wke Jan 09, 2024

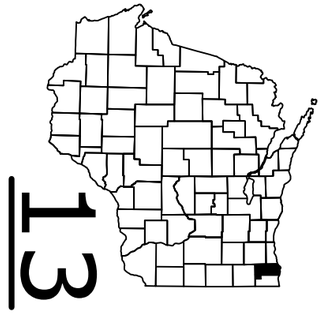
PROJECT ID:

WITH:

COUNTY: RACINE

ORDER OF SHEETS

TOTAL SHEETS = 288



DESIGN DESIGNATION

A.A.D.T.	2024	=	30,000
A.A.D.T.	2044	=	33,500
D.H.V.		=	3,103
D.D.		=	59/41
T.		=	8.4%
DESIGN SPEED		=	50 MPH - STH 20 EB (RR BRIDGES TO END OF PROJECT) AND STH 20 WB (STA 289+50 TO END OF PROJECT) 55 MPH - STH 20 EB (BEGIN OF PROJECT TO RR BRIDGES) AND STH 20 WB (BEGIN OF PROJECT TO STA 289+50)
ESALS		=	5,800,000

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 (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

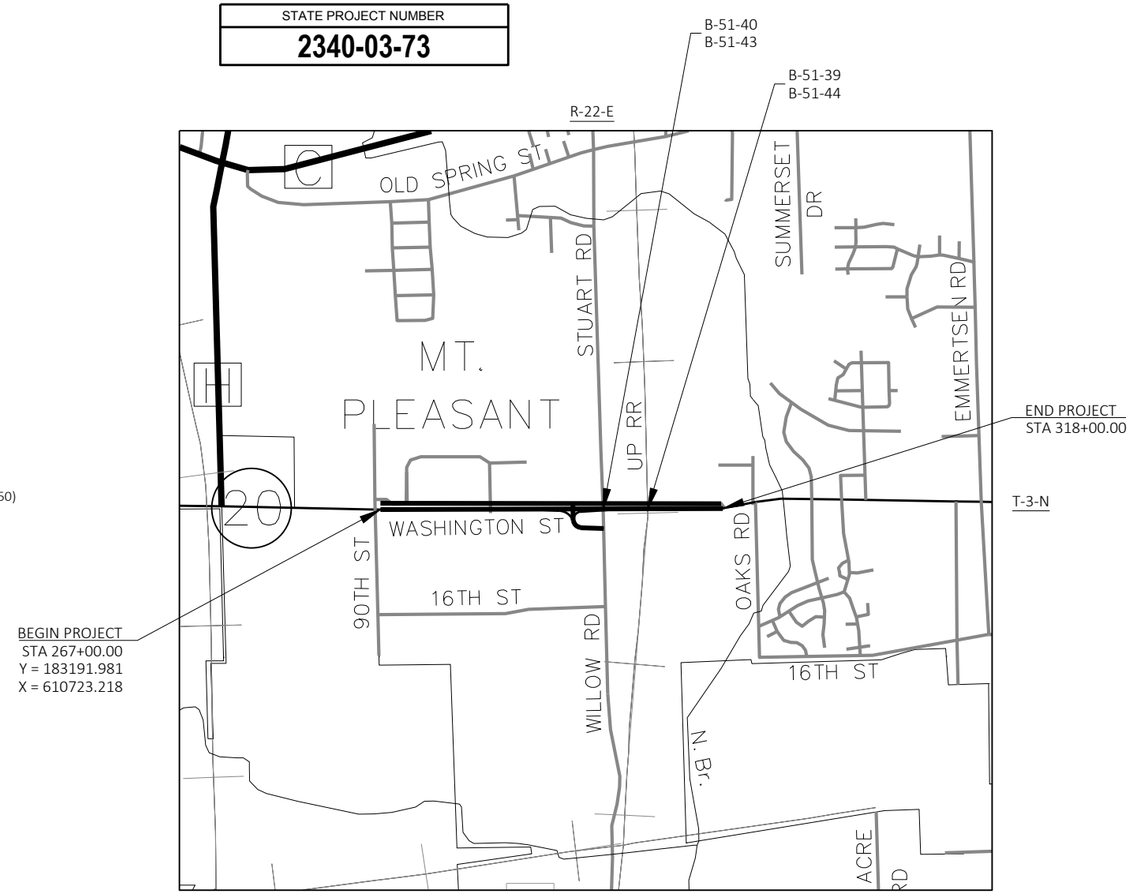
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WASHINGTON AVENUE
90TH STREET TO OAKES ROAD
STH 20
RACINE COUNTY

STATE PROJECT NUMBER
2340-03-73



LAYOUT

SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.966 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), RACINE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2007).
GPS DERIVED ELEVATIONS ARE BASED ON GEOID 09A-WI.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2340-03-73	WISC 2024119	1

ORIGINAL PLANS PREPARED BY
ch2m:
MILWAUKEE, WISCONSIN

(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	R.A. SMITH
Designer	CH2M
Project Manager	GARY METZER, PE
Regional Examiner	XXX
Regional Supervisor	JANET CANNON, PE

APPROVED FOR THE DEPARTMENT

DATE: 7/28/2023 Gary Metzer (Signature)

E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\010101-TI.DWG PLOT DATE : 7/31/2023 1:52 PM PLOT BY : PIERONI, JOE PLOT NAME :

GENERAL NOTES

DO NOT REMOVE ANY TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

RESHAPE, RESTORE AND FINISH ALL PREVIOUSLY GRASSED AREAS DISTURBED BY OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS AT NO EXPENSE TO THE DEPARTMENT.

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

D.O.T. BRIDGE BENCHMARK MONUMENT TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND EXISTING PAVEMENT ELEVATIONS.

CONSTRUCT PAVEMENT CONSISTENT WITH THE PLAN TYPICAL SECTIONS. LOCATE LONGITUDINAL JOINTS IN ASPHALT PAVEMENT OUTSIDE OF DRIVING, TURNING, BIKE, OR PARKING LANE UNLESS DIRECTED OTHERWISE BY THE ENGINEER. PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE, OR PARKING LANE. THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

SAWCUT EXISTING ASPHALT AND CONCRETE PAVEMENT AT THE MATCHLINE AS INDICATED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH 4-INCH TYPICAL DEPTH.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES AND PIPES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

VERIFY THE EXISTING STORM SEWER SYSTEM CONNECTION LOCATIONS AND ELEVATIONS BEFORE ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS BEFORE INSTALLING THE PROPOSED.

PLACE HMA PAVEMENT LAYERS WITH THE FOLLOWING THICKNESSES:

HMA PAVEMENT 2-INCH
UPPER LAYER THICKNESS 2-INCHES OF HMA PAVEMENT TYPE 4 MT 58-28 S

REFERENCE LINE CALLOUTS

'A'	STH 20 EB ON RAMP FROM WILLOW ROAD
'B'	STH 20 EB OFF RAMP TO WILLOW ROAD
'RR'	U.P. R.R.
'WL'	WILLOW ROAD

ORDER OF SECTION 2 SHEETS

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
AH	AHEAD
ASP	ASPHALTIC
BK	BACK
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
BT	BEGIN TRANSITION
CC	CENTER OF CURVATURE
CE	COMMERCIAL ENTRANCE
C&G	CURB & GUTTER
C/L OR ℄	C/L OR ℄ CENTER CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CEPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
ET	END TRANSITION
FE	FIELD ENTRANCE
FS	FULL SUPERELEVATION
HMA	HOT MIX ASPHALT
HP	HIGH POINT
HT	HEIGHT
INV	INVERT
L	LENGTH
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
ML	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NORM	NORMAL
O/S	OFFSET
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
POB	POINT OF BEGINNING
PT	POINT OF TANGENT
PUU	PIPE UNDERDRAIN UNPERFORATED
PVC	POLYVINYL CHLORIDE
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RAB	ROUNDABOUT
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
SVD	SLOTTED VANE DRAIN
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPRC	POINT OF VERTICAL REVERSE CURVE
VPT	POINT OF VERTICAL TANGENT

UTILITIES

AT&T

(LEGACY - COMMUNICATIONS LINE)
KENNETH M. NINE
110 N. MAIN ST.
CULVER, IN 46511
(574) 842-8830
(574) 904-6336
knine@jmceainc.com

(LOCAL NETWORK - COMMUNICATIONS LINE)
DALE DEFEVER
39869 LINN ST.
CANTON, MI 48147
(586) 242-2671
dd2579@att.com

(WISCONSIN - COMMUNICATIONS LINE)
MIKE VANBOVEN
411 7TH STREET
RACINE, WI 53403
(312) 676-3958
mv3658@att.com

ATC MANAGEMENT, INC.

(ELECTICITY-TRANSMISSION)
CHRIS DAILEY
P.O. BOX 47
WAUKESHA, WI 53187
(262) 506-6884
cdailey@atcllc.com

CENTURYLINK COMMUNICATIONS, LLC

(COMMUNICATIONS LINE)
BRAHIM GADDOUR
32353 INTERTECH DR.
BROOKFIELD, WI 53045
(414) 908-1027
(414) 704-1026
brahim.gaddour@lumen.com

SPECTRUM COMMUNICATIONS

(COMMUNICATIONS LINE)
JERRY SCHULTZ
1320 N DR. MARTIN LUTHER KING JR DRIVE
MILWAUKEE, WI 53212
(414) 908-4863
(414) 232-7178
Gerald.Schultz@charter.com

MIDWEST FIBER NETWORKS LLC

(COMMUNICATIONS LINE)
CORY SCHMUKI
6070 N. FLINT RD.
GLENDALE, WI 53209
(414) 459-3561
cschmuki@midwestfibernetworks.com

SPRINT COMMUNICATIONS CO LP

(COMMUNICATIONS LINE)
DAN HILLIARD
849 EARL ST.
SAINT PAUL, MN 55106
(612) 217-3526
dan.j.hilliard@sprint.com

TDS METROCOM LLC

(COMMUNICATIONS LINE)
JASON KENNY
525 JUNCTION RD.
MADISON, WI 53717
OFFICE: (262) 514-2127
jason.kenny@tdstelecom.com

WISCONSIN DEPARTMENT OF TRANSPORTATION

(WISDOT SIGNAL OPERATIONS)
141 NW BARSTOW STREET
WAUKESHA, WI 53187
(414) 750-2605

(WISDOT ELECTRICAL FIELD UNIT)
935 S. 60th ST.
WEST ALLIS, WI 53214
(414) 266-1170

WE ENERGIES

WE ENERGIES - ELECTRICITY
JAMES NELSON
7815 NORTHWESTERN AVE.
RACINE, WI 53406
(262) 884-6734
(262) 315-1189
james.nelson@we-energies.com

WE ENERGIES - GAS/PETROLEUM
CHRIS DEGRAVE
7815 NORTHWESTERN AVE.
RACINE, WI 53406
(262) 886-7018
(262) 939-9814
chris.degraves@we-energies.com

CITY OF RACINE

RACINE WATER WORKS COMMISSION
(WATER)
CHAD REGALIA
800 CENTER STREET
RACINE, WI 53403
(262)636-9434
(262)497-4611
Chad.Regalia@cityofracine.org

OTHER CONTACTS

CITY OF RACINE

DEPARTMENT OF PUBLIC WORKS
COMMISSIONER OF PUBLIC WORKS
JOHN ROONEY
CITY HALL ROOM 304
730 WASHINGTON AVE
RACINE, WI 53403
(262) 636-9121
john.rooney@cityofracine.org

SEWER AND WATER AND WASTEWATER
KEITH HAAS
800 CENTER STREET
RACINE, WI 53403
(262) 636-9434
keith.haas@cityofracine.org

JACOBS

(PROJECT MANAGER)
RANDY THOMAS
1610 NORTH 2ND STREET
SUITE #201
MILWAUKEE, WI 53212
(414) 847-0447
Randy.Thomas@jacobs.com

VILLAGE OF MOUNT PLEASANT

DIRECTOR OF PUBLIC WORKS - VILLAGE ENGINEER
TONY BEYER
8811 CAMPUS DRIVE
MOUNT PLEASANT, WI 53406
(262) 664-7849
tbeyer@mtpleasantwi.gov

VILLAGE OF MOUNT PLEASANT

MOUNT PLEASANT STORM SEWER
(DIST.1 - SEWER)
TONY BEYER
8811 CAMPUS DRIVE
MOUNT PLEASANT, WI 53406
(262) 664-7849
tbeyer@mtpleasantwi.gov

VILLAGE OF STURTEVANT

DEPUTY ADMINISTRATOR
AMANDA GAIN
2801 89TH STREET
STURTEVANT, WI 53177
(262) 886-7203
GainA@sturtevant-wi.gov

RACINE COUNTY

DIRECTOR OF PUBLIC WORKS
ROLEY BEHM
IVES GROVE OFFICE COMPLEX
14200 WASHINGTON AVENUE
STURTEVANT, WI 53177
(262) 886-8440
roland.behm@racinecounty.com

WISCONSIN DEPARTMENT OF TRANSPORTATION

(PROJECT MANAGER)
GARY METZER
141 NW BARSTOW STREET
WAUKESHA, WI 53087-0798
(262) 548-5685
gary.metzer@dot.wi.gov

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

BENTON STELZEL
141 NW BARSTOW STREET #180
WAUKESHA, WI 53188
(262) 623-0194
benton.stelzel@wisconsin.gov

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

2

90TH STREET

FOUNTAIN HILLS DRIVE

N

BEGIN PROJECT
STA 267+00.00

EXISTING WETLANDS

N. FRONTAGE ROAD

EXISTING WETLANDS

255 260 265 270 275

STH 20

EXISTING WETLANDS

EXISTING WETLANDS

COMMERCE DRIVE

STUART ROAD

N

EXISTING WETLANDS

B-51-40

EXISTING WETLANDS

EXISTING WETLANDS

N. FRONTAGE ROAD

275 280 285 290 295 300 305

STH 20

STH 20

50' A

B-51-43

EXISTING WETLANDS

EXISTING WETLANDS

EXISTING WETLANDS

WILLOW ROAD

END CONSTRUCTION

RAMP 'A'

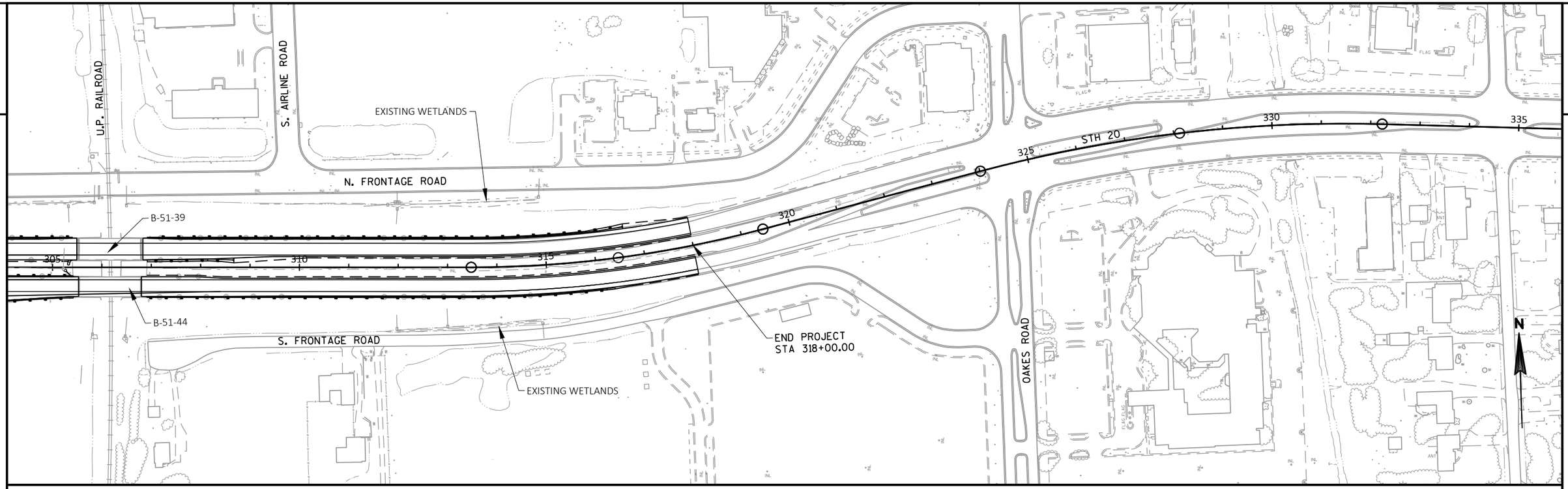
RAMP 'B'

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\020201-PO.DWG
LAYOUT NAME - PO-1

PLOT DATE : 6/26/2023 11:24 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44



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PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PROJECT OVERVIEW	SHEET 4	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\020201-PO.DWG
LAYOUT NAME - PO-2
PLOT DATE : 6/26/2023 11:24 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 44

2

STA 294+77 TO STA 297+55
STA 298+80 TO STA 305+45
STA 306+87 TO STA 313+50

STA 296+33 TO STA 297+55
STA 298+80 TO STA 300+15
STA 304+11 TO STA 305+45
STA 306+87 TO STA 308+35

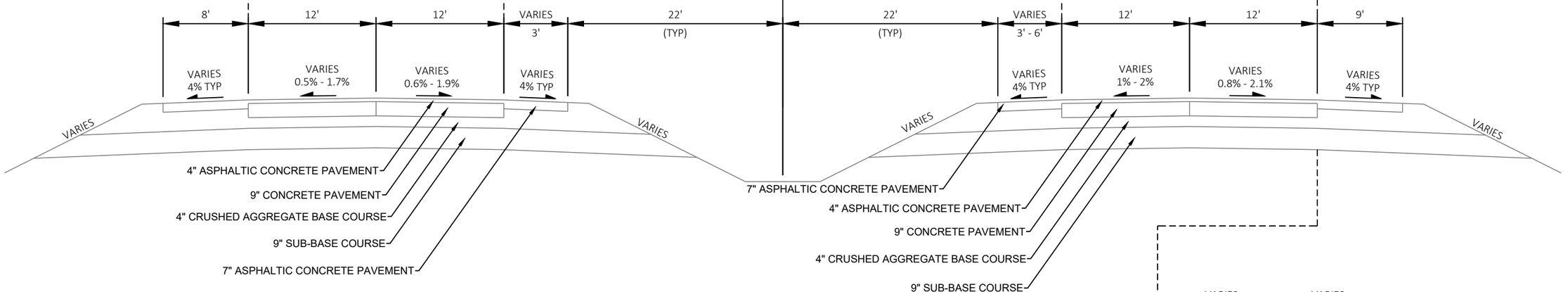
STA 296+23 TO STA 297+59
STA 298+80 TO STA 300+04
STA 304+11 TO STA 305+45
STA 306+87 TO STA 308+21

STA 296+24 TO STA 297+55
STA 298+80 TO STA 300+16
STA 304+11 TO STA 305+45
STA 306+86 TO STA 313+50

STH 20 WB

STH 20 EB

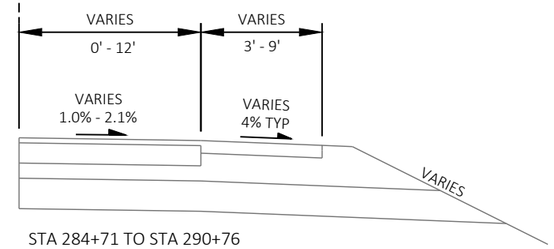
STH 20
R/L



TYPICAL EXISTING SECTION

STH 20

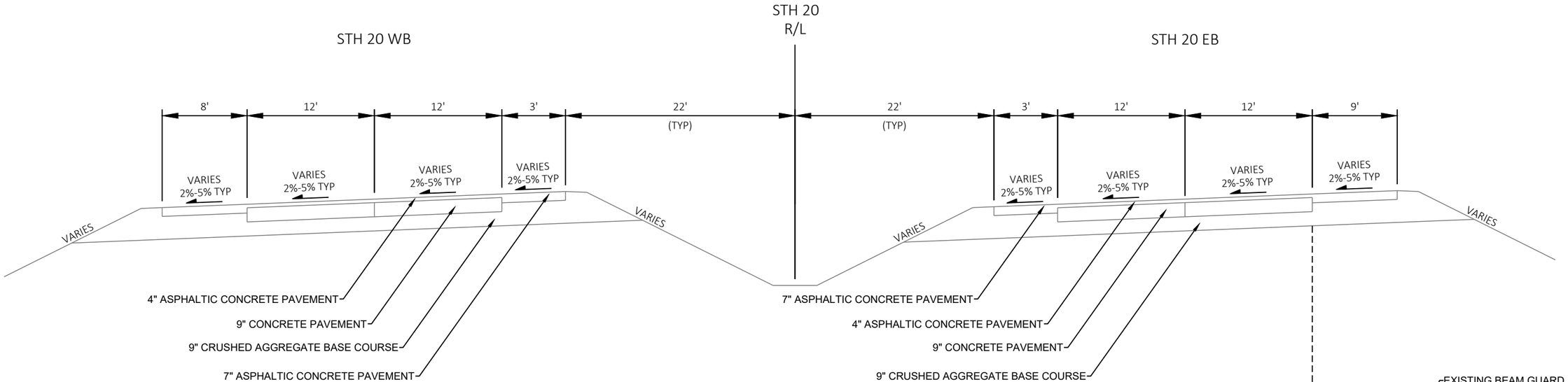
STA 267+22 TO STA 297+61
STA 298+74 TO STA 305+49
STA 306+80 TO STA 313+50

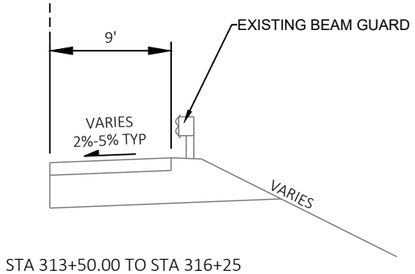


STA 284+71 TO STA 290+76
STA 294+89 TO STA 296+24
STA 300+16 TO STA 304+11

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 5	E

2





STA 313+50.00 TO STA 316+25

TYPICAL EXISTING SECTION

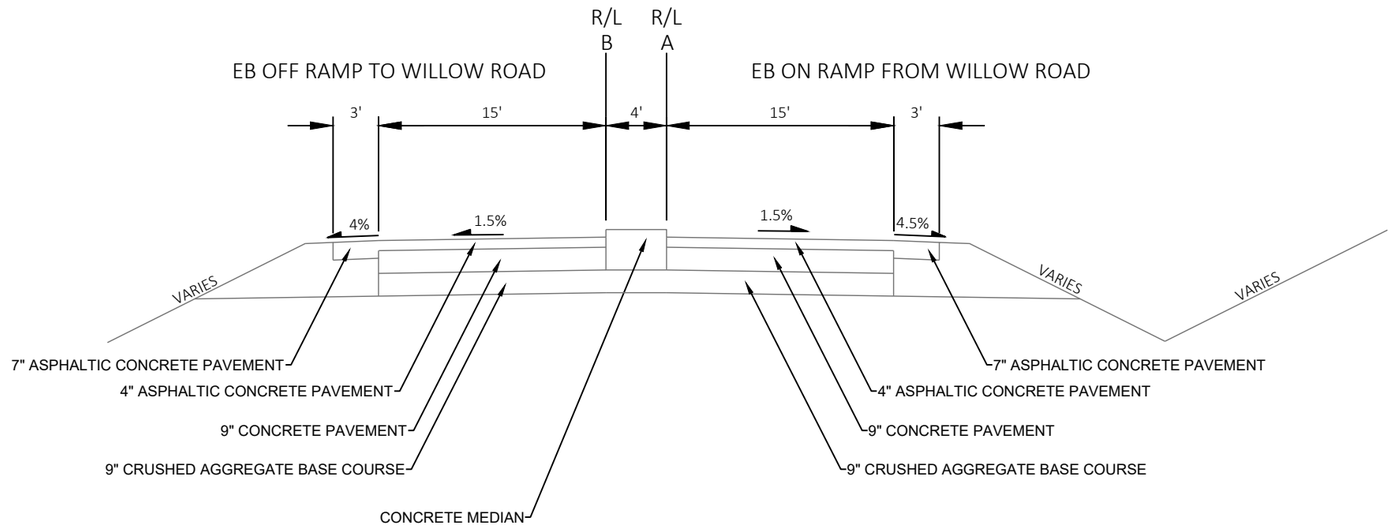
STH 20

STA 267+00 TO STA 267+22
STA 313+50 TO STA 318+00

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 6	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\020301-TS.DWG
LAYOUT NAME -02
PLOT DATE : 6/26/2023 9:04 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

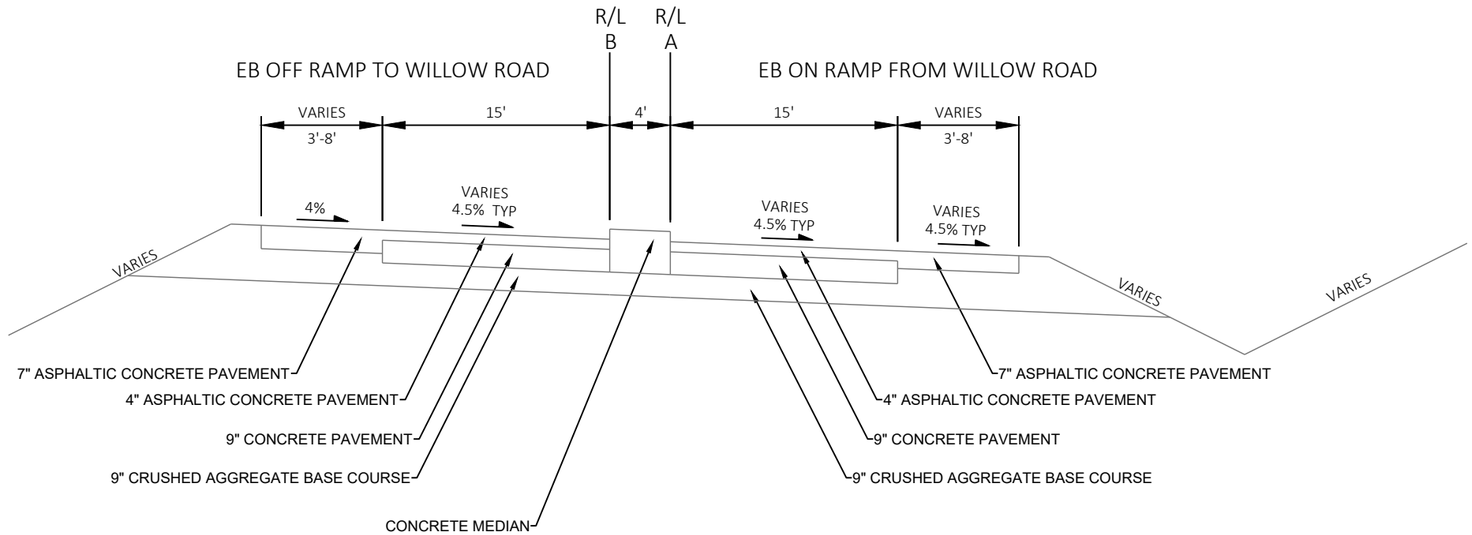


TYPICAL EXISTING SECTION

WILLOW ROAD RAMPS

STA 42A+15 TO STA 45A+92 EB ON RAMP FROM WILLOW ROAD
STA 42B+15 TO STA 45B+92 EB OFF RAMP TO WILLOW ROAD

2

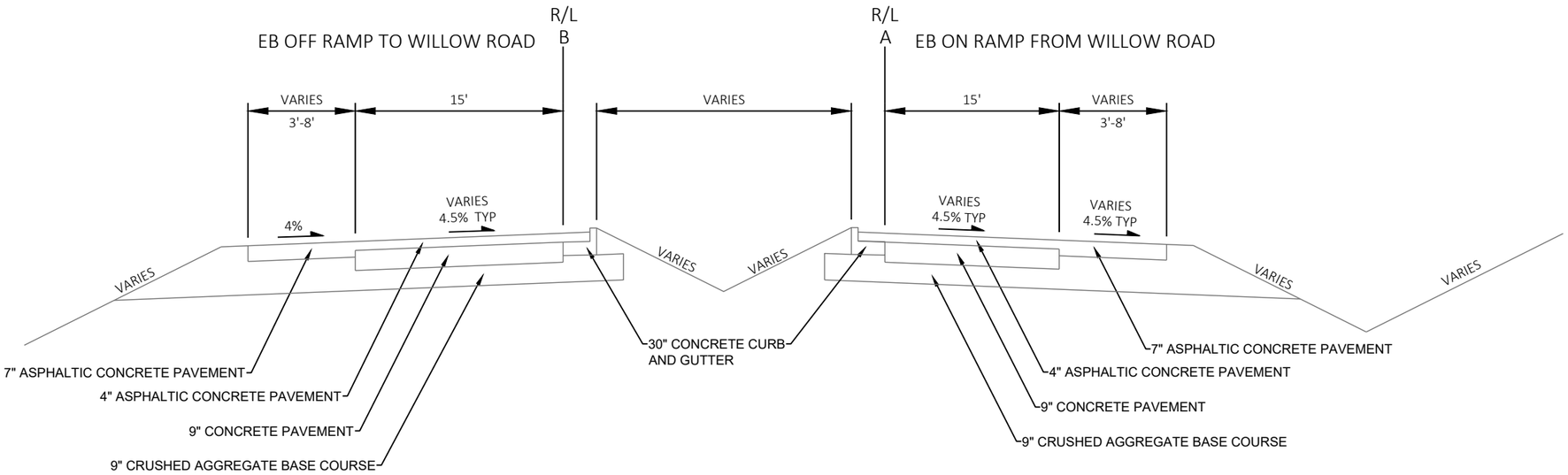


TYPICAL EXISTING SECTION

WILLOW ROAD RAMPS

STA 45A+92 TO STA 47A+67 EB ON RAMP FROM WILLOW ROAD
STA 45B+92 TO STA 47B+72 EB OFF RAMP TO WILLOW ROAD

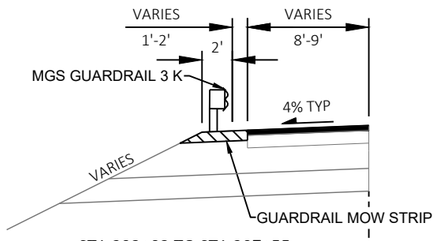
2



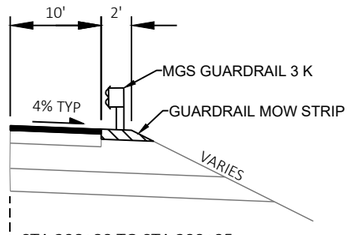
TYPICAL EXISTING SECTION

WILLOW ROAD RAMPS

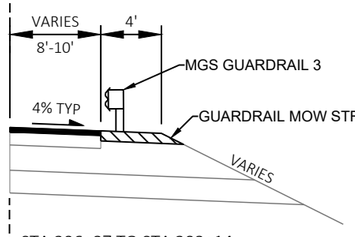
STA 47A+67 TO STA 50A+21 EB ON RAMP FROM WILLOW ROAD
STA 47B+72 TO STA 50B+94 EB OFF RAMP TO WILLOW ROAD



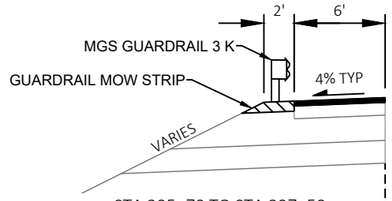
STA 293+03 TO STA 297+55
STA 289+80 TO STA 305+45
STA 306+87 TO STA 313+50



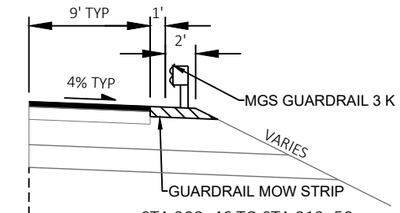
STA 298+80 TO STA 299+95



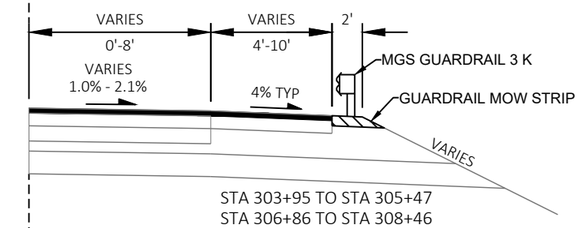
STA 306+87 TO STA 308+14



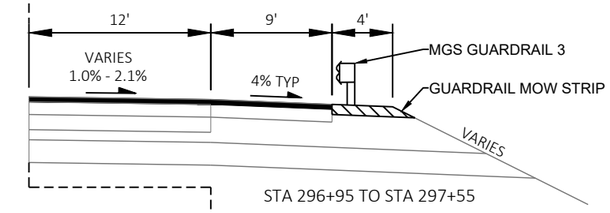
STA 295+70 TO STA 297+59
STA 303+04 TO STA 305+47



STA 308+46 TO STA 313+50



STA 303+95 TO STA 305+47
STA 306+86 TO STA 308+46

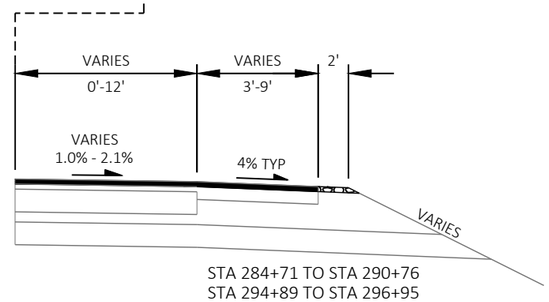


STA 296+95 TO STA 297+55

STH 20 WB

STH 20 R/L

STH 20 EB



STA 284+71 TO STA 290+76
STA 294+89 TO STA 296+95
STA 300+16 TO STA 303+95

* DEPTH VARIES, MATCH PAVED SHOULDER AND ENSURE MINIMUM DEPTH OF 3-INCHES NEW AND EXISTING AGGREGATE COMBINED.

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS ASSUMED IN LOCATIONS WITH GUARDRAIL MOW STRIP ASPHALT.

SHAPING SHOULDERS ASSUMED EVERYWHERE ELSE.

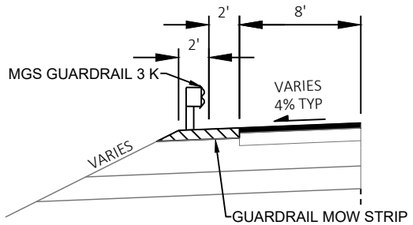
TYPICAL FINISHED SECTION

STH 20

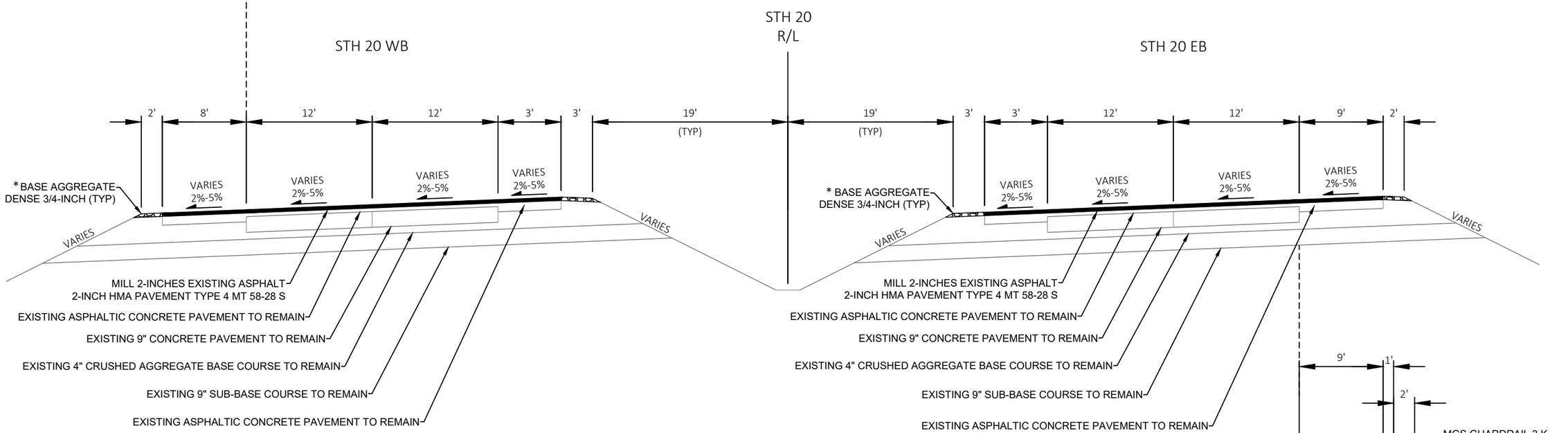
STA 267+22 TO STA 297+61
STA 298+74 TO STA 305+49
STA 306+80 TO STA 313+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 10	E

2



STA 313+50 TO STA 316+09



TYPICAL FINISHED SECTION

STH 20

STA 267+00 TO STA 267+22
STA 313+50 TO STA 318+00

STA 313+50 TO STA 316+31

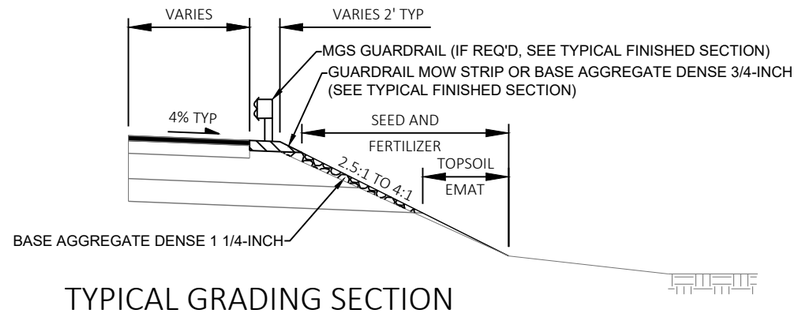
* DEPTH VARIES, MATCH PAVED SHOULDER AND ENSURE MINIMUM DEPTH OF 3-INCHES NEW AND EXISTING AGGREGATE COMBINED.

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS ASSUMED IN LOCATIONS WITH GUARDRAIL MOW STRIP ASPHALT.

SHAPING SHOULDERS ASSUMED EVERYWHERE ELSE.

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 11	E

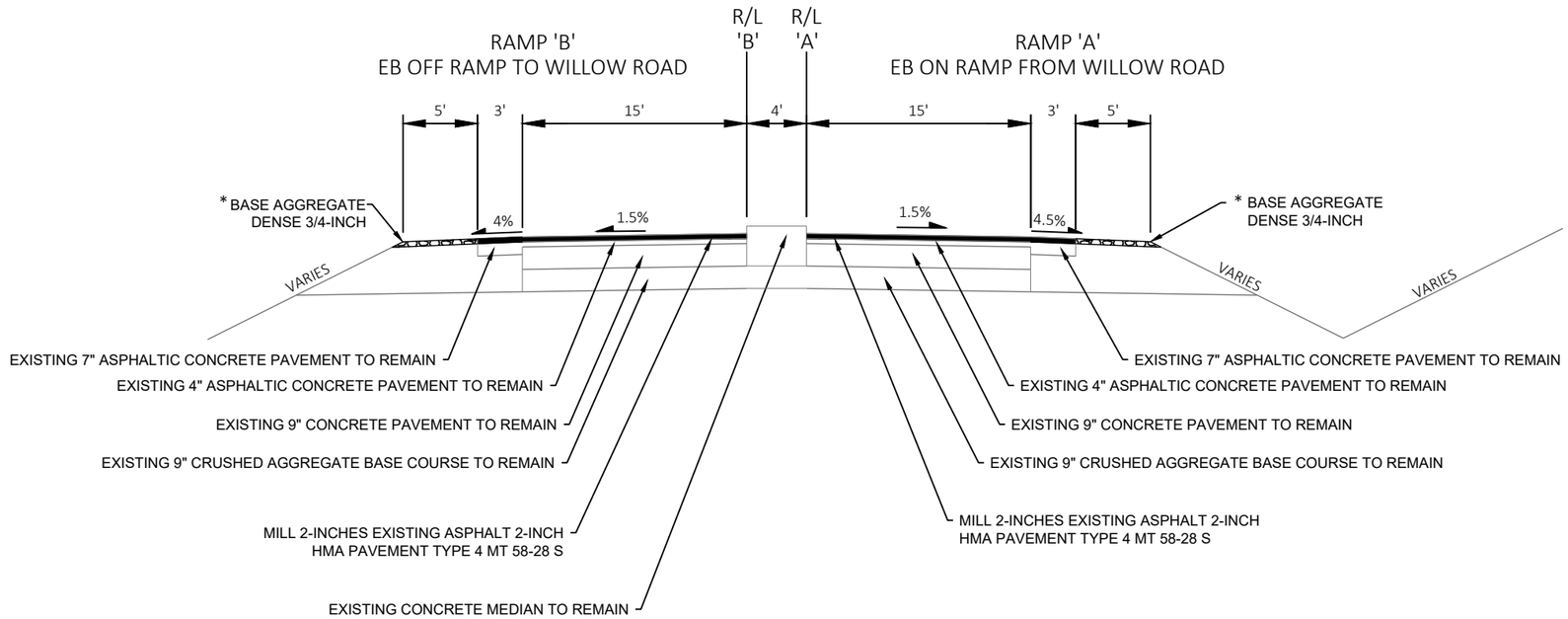
2



TYPICAL GRADING SECTION

STH 20

SEE PLANS AND CROSS SECTIONS FOR LOCATION



TYPICAL FINISH SECTION

WILLOW ROAD RAMPS

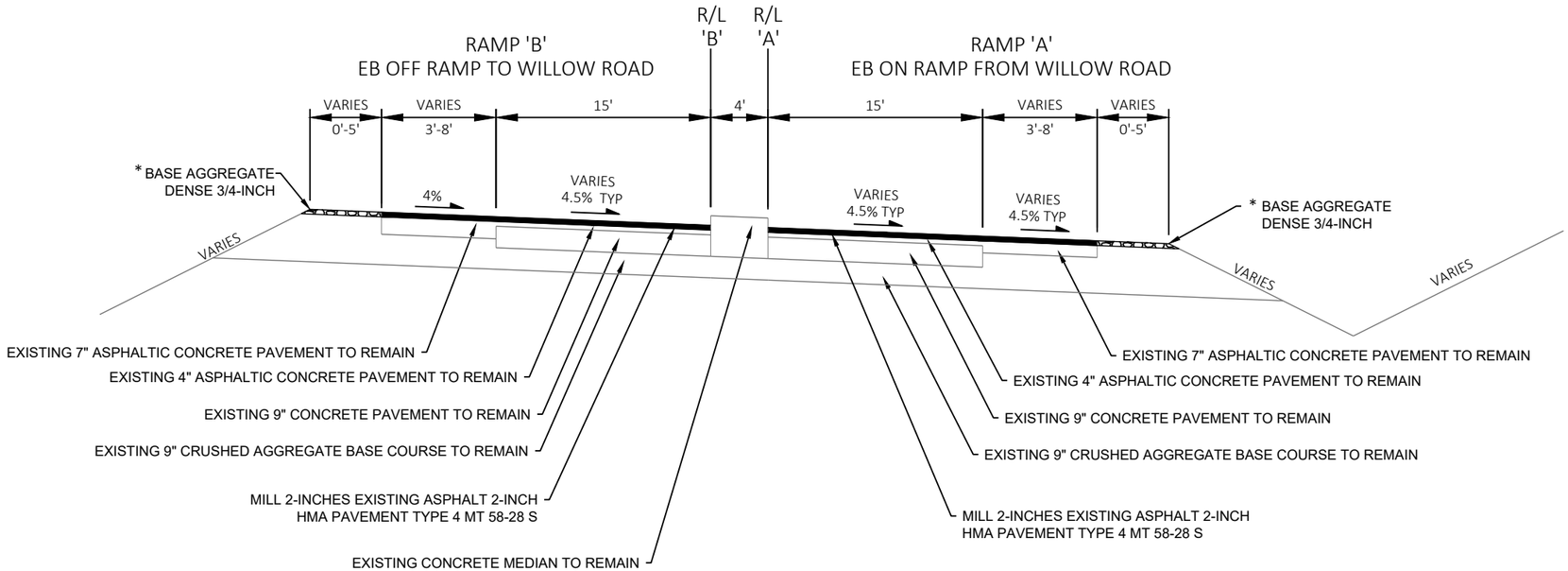
STA 42A+15 TO STA 45A+92 EB ON RAMP FROM WILLOW ROAD
STA 42B+15 TO STA 45B+92 EB OFF RAMP TO WILLOW ROAD

* DEPTH VARIES, MATCH PAVED SHOULDER AND ENSURE MINIMUM DEPTH OF 3-INCHES NEW AND EXISTING AGGREGATE COMBINED.

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS ASSUMED IN LOCATIONS WITH GUARDRAIL MOW STRIP ASPHALT.

SHAPING SHOULDERS ASSUMED EVERYWHERE ELSE.

2



TYPICAL FINISHED SECTION

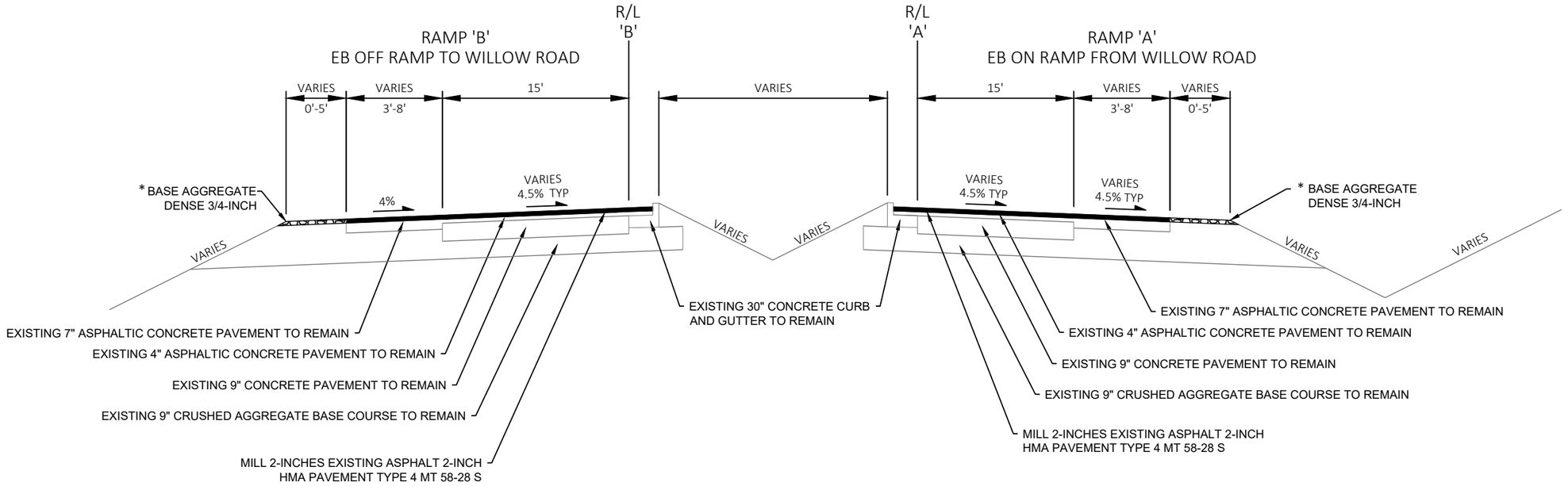
WILLOW ROAD RAMPS

STA 45A+92 TO STA 47A+67 EB ON RAMP FROM WILLOW ROAD
STA 45B+92 TO STA 47B+72 EB OFF RAMP TO WILLOW ROAD

* DEPTH VARIES, MATCH PAVED SHOULDER AND ENSURE MINIMUM DEPTH OF 3-INCHES NEW AND EXISTING AGGREGATE COMBINED.

SHAPING SHOULDERS ASSUMED.

2



TYPICAL FINISHED SECTION

WILLOW ROAD RAMPS

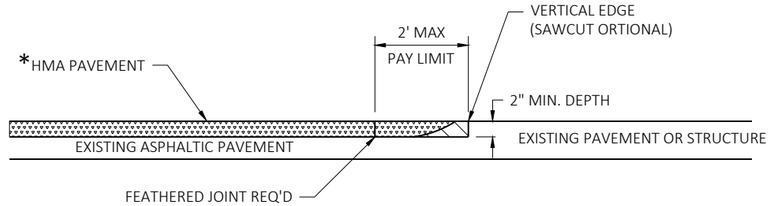
STA 47A+67 TO STA 50A+21 EB ON RAMP FROM WILLOW ROAD
STA 47B+72 TO STA 50B+94 EB OFF RAMP TO WILLOW ROAD

* DEPTH VARIES, MATCH PAVED SHOULDER AND ENSURE MINIMUM DEPTH OF 3-INCHES NEW AND EXISTING AGGREGATE COMBINED.

SHAPING SHOULDERS ASSUMED.

PROJECT NO: 2340-03-03	HWY: STH 20	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 14	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\020401-TS.DWG
LAYOUT NAME - 05
PLOT DATE : 6/26/2023 9:08 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT

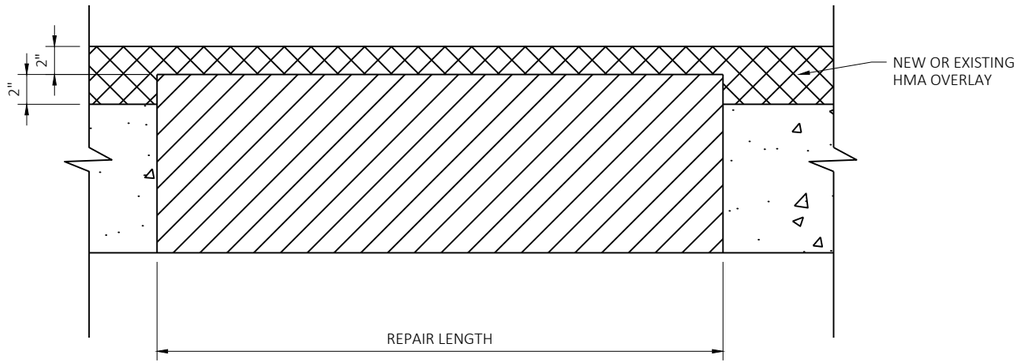


REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE
(REMOVAL OF ASPHALTIC SURFACE WEDGE IS INCIDENTAL TO THE BUTT JOINT ITEM)

*SEE TYPICAL SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



BASE PATCH SEQUENCING

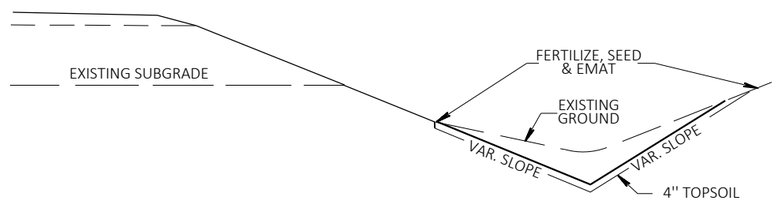
ASSUMED ORDER OF SEQUENCE

1. COMPLETE BASE PATCHING CONCRETE PRIOR TO MILLING ASPHALTIC PAVEMENT. PATCHES WILL EXTEND TO CURRENT SURFACE ELEVATION.

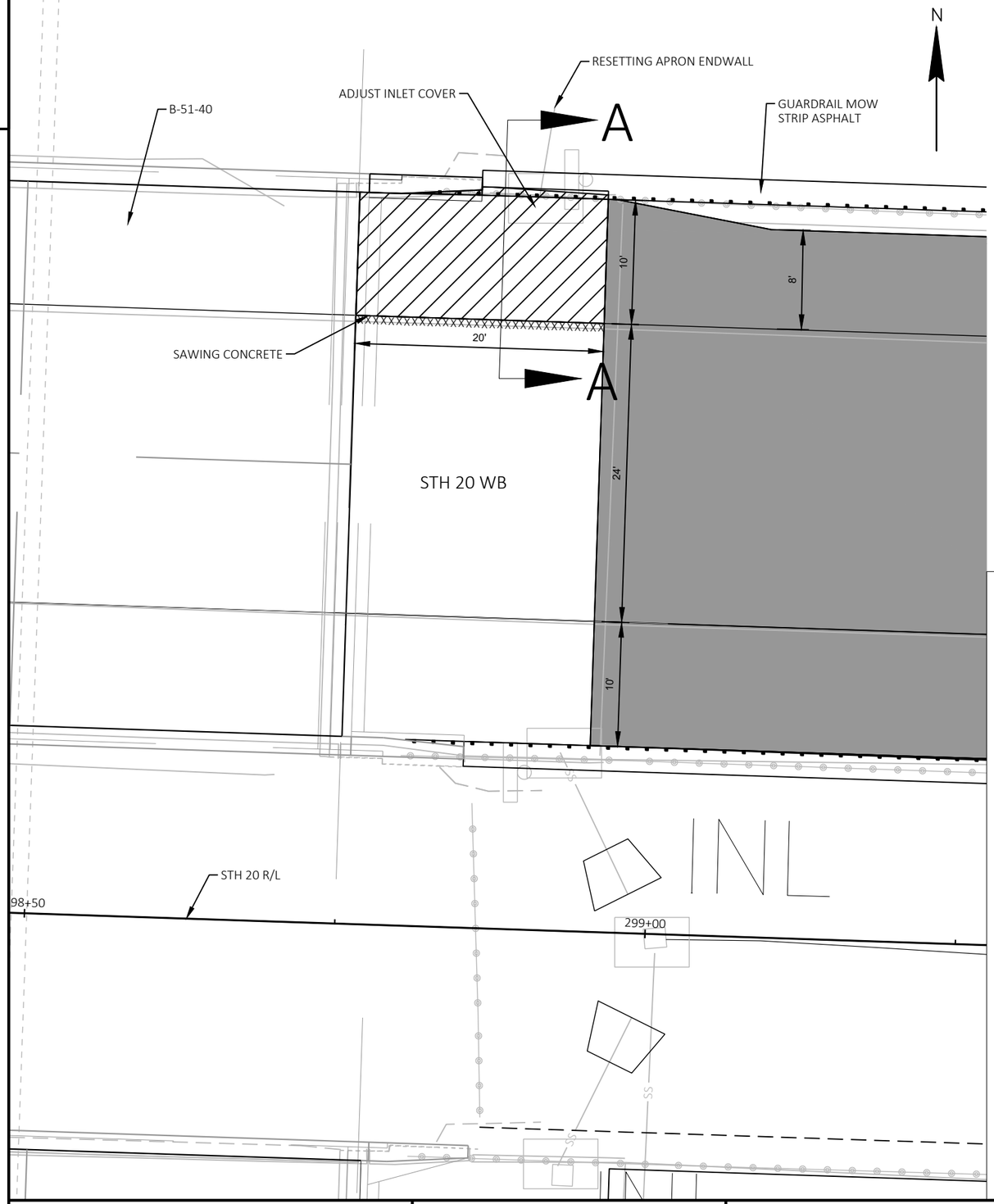
2. PERFORM 2-INCH MILL OF ENTIRE SURFACE INCLUDING THE CONCRETE BASE PATCHES. PAY THE ENTIRE AREA AS REMOVING ASPHALTIC SURFACE MILLING.

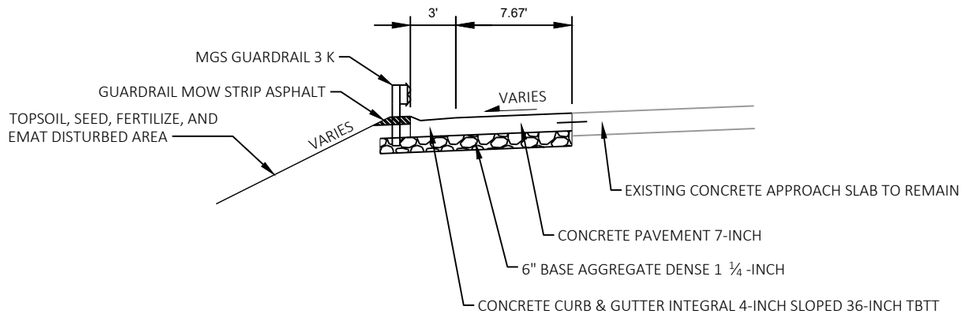
3. OVERLAY ENTIRE MILLED SURFACE WITH 2-INCHES OF HMA PAVEMENT.

4. NOTE, SEE STANDARD DETAIL DRAWING FOR BASE PATCHING DETAILS.



CLEANING DITCH DETAIL





SECTION A-A

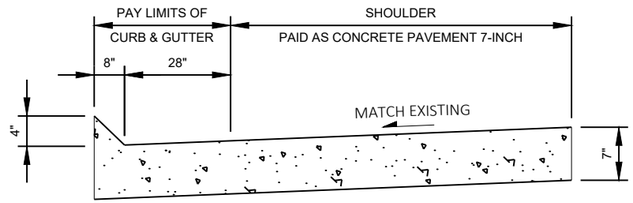
LEGEND

REMOVING CONCRETE PAVEMENT

MILL AND OVERLAY

CONCRETE SHOULDER REPLACEMENT

ADJACENT TO PARAPET REPLACEMENT ON B-51-40



CONCRETE CURB & GUTTER INTEGRAL 4-INCH SLOPED 36-INCH TBTT

SEE SDD "CONCRETE CURB AND GUTTER" FOR ADDITIONAL INFORMATION

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CONSTRUCTION DETAILS	SHEET 16	E

2

2

N

STATUE

INL

W

RIPRAP

A/C

R/L STH 20

STH 20

251 252 253 254 255 256 257 258 259

MATCHLINE STA 260+00.00

90TH STREET

FLAG

LEGEND

- SILT FENCE
- INLET PROTECTION
- (A) TYPE A
- (C) TYPE C
- (D) TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- EROSION MAT CLASS I, TYPE A
- EROSION MAT URBAN CLASS I, TYPE A
- SLOPE INTERCEPT

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	EROSION CONTROL	SHEET 17	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-022003-EC.DWG
LAYOUT NAME - Sheet - (01)

PLOT DATE : 6/26/2023 9:13 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

2

N

N. FRONTAGE ROAD

R/L STH 20

BEGIN PROJECT
STA 267+00.00

STH 20

MATCHLINE STA 260+00.00

MATCHLINE STA 273+00.00

N. FRONTAGE ROAD

R/L STH 20

STH 20

MATCHLINE STA 273+00.00

MATCHLINE STA 287+00.00

LEGEND

- SILT FENCE
- INLET PROTECTION
- (A) TYPE A
- (C) TYPE C
- (D) TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- EROSION MAT CLASS I, TYPE A
- EROSION MAT URBAN CLASS I, TYPE A
- SLOPE INTERCEPT

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	EROSION CONTROL	SHEET 18	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-022003-EC.DWG
LAYOUT NAME - Sheet - (02)

PLOT DATE : 6/26/2023 9:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

2

N

CLEANING DITCH REQ'D TO ENSURE FLOW FROM STA 295+00 TO STA 293+07, DITCH PROFILE APPROXIMATELY 0.3%

N. FRONTAGE ROAD

R/L STH 20

B-51-40

B-51-43

EROSION MAT URBAN CLASS 1, TYPE A REQ'D AROUND NEW APRON ENDWALLS TYP.

STH 20

RAMP 'A'

RAMP 'B'

R/L RAMP 'B'

WILLOW ROAD

MATCHLINE STA 287+00.00

MATCHLINE STA 301+00.00

LEGEND

- SILT FENCE
- INLET PROTECTION
- (A) TYPE A
- (C) TYPE C
- (D) TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- EROSION MAT CLASS I, TYPE A
- EROSION MAT URBAN CLASS I, TYPE A
- SLOPE INTERCEPT

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	EROSION CONTROL	SHEET 19	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-022003-EC.DWG
LAYOUT NAME - Sheet - (03)

PLOT DATE : 6/26/2023 9:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 42

2

N. FRONTAGE ROAD

B-51-39

R/L STH 20

MATCHLINE STA 301+00.00

MATCHLINE STA 315+00.00

STH 20

B-51-44

S. FRONTAGE ROAD

U.P.R.R.

LEGEND

- SILT FENCE
- INLET PROTECTION
- Ⓐ TYPE A
- Ⓒ TYPE C
- Ⓓ TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- EROSION MAT CLASS I, TYPE A
- EROSION MAT URBAN CLASS I, TYPE A
- SLOPE INTERCEPT

N. FRONTAGE ROAD

R/L STH 20

MATCHLINE STA 315+00.00

STH 20

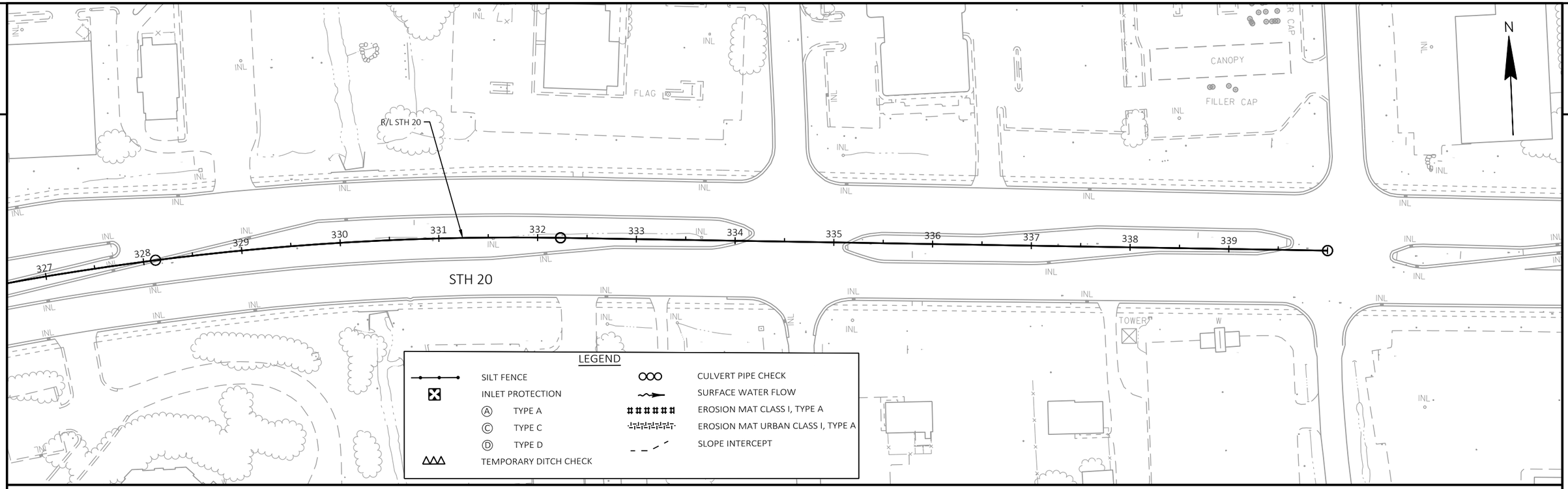
END PROJECT
STA 318+00.00

S. FRONTAGE ROAD

OAKES ROAD

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	EROSION CONTROL	SHEET 20	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-022003-EC.DWG
LAYOUT NAME - Sheet - (04)
PLOT DATE : 6/26/2023 9:17 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	EROSION CONTROL	SHEET 21	E

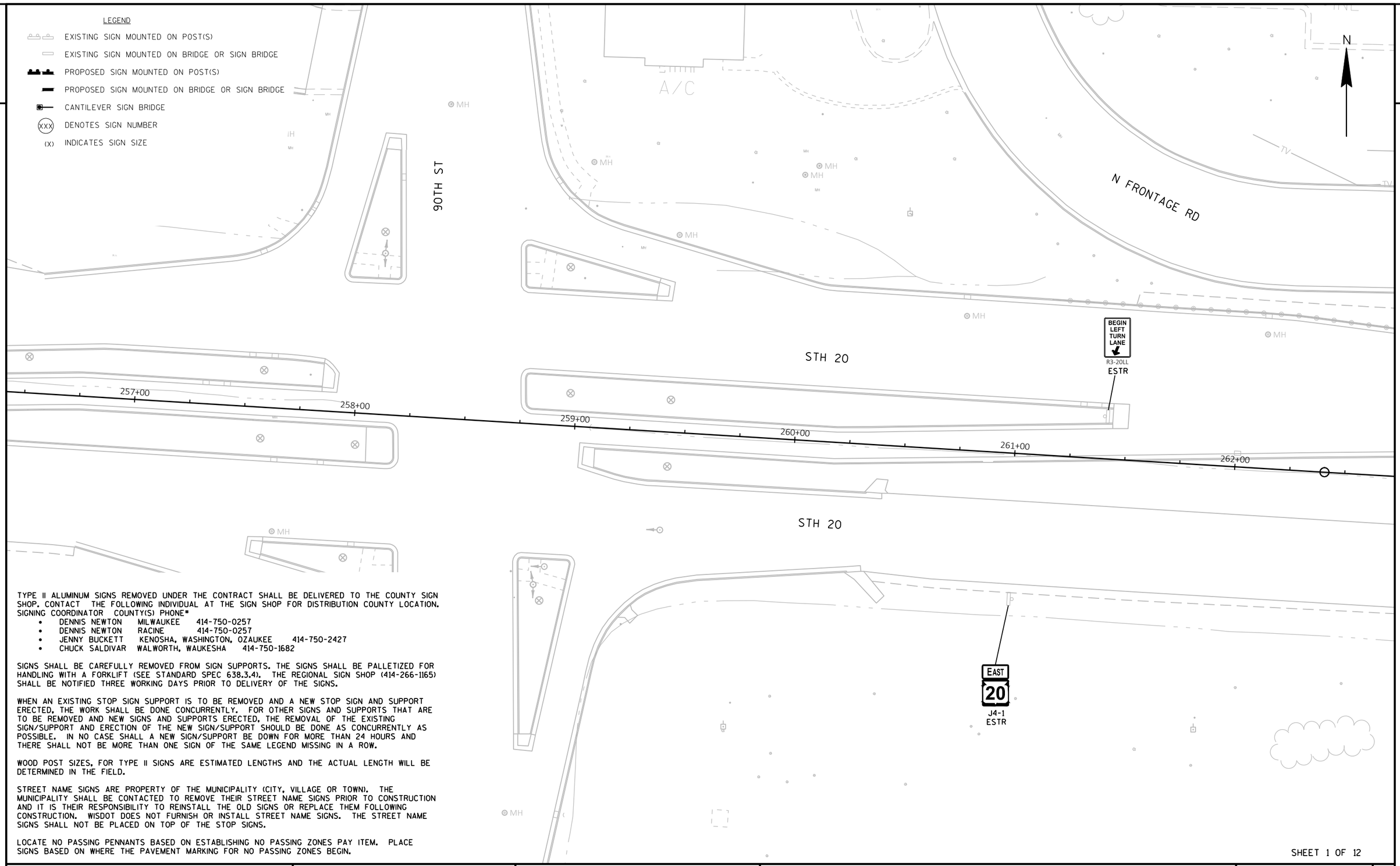
FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-022003-EC.DWG
LAYOUT NAME - Sheet - (05)

PLOT DATE : 6/26/2023 9:18 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE



TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

SIGNING COORDINATOR	COUNTY(S)	PHONE*
DENNIS NEWTON	MILWAUKEE	414-750-0257
DENNIS NEWTON	RACINE	414-750-0257
JENNY BUCKETT	KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
CHUCK SALDIVAR	WALWORTH, WAUKESHA	414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES, FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

SHEET 1 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 22	E

2

N

Mount Pleasant
Civic Campus
ESTR

N FRONTAGE RD

90th St
NEXT SIGNAL
D1-6S
ESTR

BEGIN
LEFT
TURN
LANE
R3-20L
ESTR

STH 20

263+00 264+00 265+00 266+00 267+00 268+00

SPEED
LIMIT
50
R2-1
ESTR

STH 20

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 2 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 23	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-02

PLOT DATE : 2/27/2023 10:14 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

N FRONTAGE RD

STH 20

W3-3
MOVE

1 2

SPEED LIMIT 50
R2-1
MOVE

3 4

269+00 270+00 271+00 272+00 273+00 274+00

STH 20

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 3 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 24	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-03

PLOT DATE : 2/27/2023 10:14 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N FRONTAGE RD

COMMERCE DR

STH 20

STH 20

5 STOP
R1-1
MOVE

6 ONE WAY
R6-2R
MOVE

9 DO NOT ENTER
R5-1
MOVE

7 8 SPEED LIMIT 50
R2-1
MOVE

To North Frontage Rd
NEXT EXIT
ESTR

275+00 276+00 277+00 278+00 279+00 280+00

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 4 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 25	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-04
PLOT DATE : 2/27/2023 10:14 AM
PLOT BY : VANDE LEEST, CYNTHIA
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

N FRONTAGE RD

STH 20

STH 20

281+00 282+00 283+00 284+00 285+00 286+00

WRONG WAY (10)
RS-1A
MOVE

Commerce Dr
Corporate Dr (12)
D1-2
MOVE

Stuart Rd
Willow Rd (11)
MOVE

N

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 5 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 26	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-05

PLOT DATE : 2/27/2023 10:15 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N

N FRONTAGE RD

STH 20

13 14 SPEED LIMIT 50 R2-1 MOVE

286+00 287+00 288+00 289+00 290+00 291+00 292+00

STH 20

50+00

EXIT 20 MPH W13-2 MOVE 15

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 6 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 27	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-06

PLOT DATE : 2/27/2023 10:15 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N FRONTAGE RD

STH 20

STH 20

292+00 293+00 294+00 295+00 296+00 297+00

50+00 49+00 48+00 8+00

16 EXIT D52-54R MOVE

17 W4-1R MOVE

18 19 SPEED LIMIT 45 W3-5 MOVE

BORE GUY MH

SHEET 7 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 28	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-07

PLOT DATE : 2/27/2023 10:16 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N

WILLOW RD

STH 20 EB ON RAMP

STH 20 EB OFF RAMP

48+00
47+00
46+00
45+00
44+00
43+00

WRONG WAY
R5-1A
MOVE
22

EAST
20
J3-1
ESTR

26
R4-7

W5-52L
MOVE

DO NOT ENTER
REMOVE

DO NOT ENTER
R5-1C(2S)
24

W1-7
ESTR

20
W3-1
MOVE

Stuart Rd
Willow Rd
D1-2
MOVE
21

25
STOP
R1-1

W5-52L
MOVE

23
STOP
R1-1(2S)

STOP
REMOVE

STOP
R1-1
ESTR

DO NOT ENTER
ESTR

EAST
20
J3-1
ESTR

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 7A OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 29	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-07A

PLOT DATE : 2/27/2023 10:16 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

N FRONTAGE RD

STH 20

STH 20

WILLOW RD

REMOVE
29
W5-52L (3)
4' HEIGHT

REMOVE
30
W5-52R(3)
4' HEIGHT

28
W5-52L (3)
4' HEIGHT
REMOVE

27
W5-52R(3)
4' HEIGHT
REMOVE

SPEED LIMIT
45
R2-1
ESTR

298+00
299+00
300+00
301+00
302+00
303+00

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

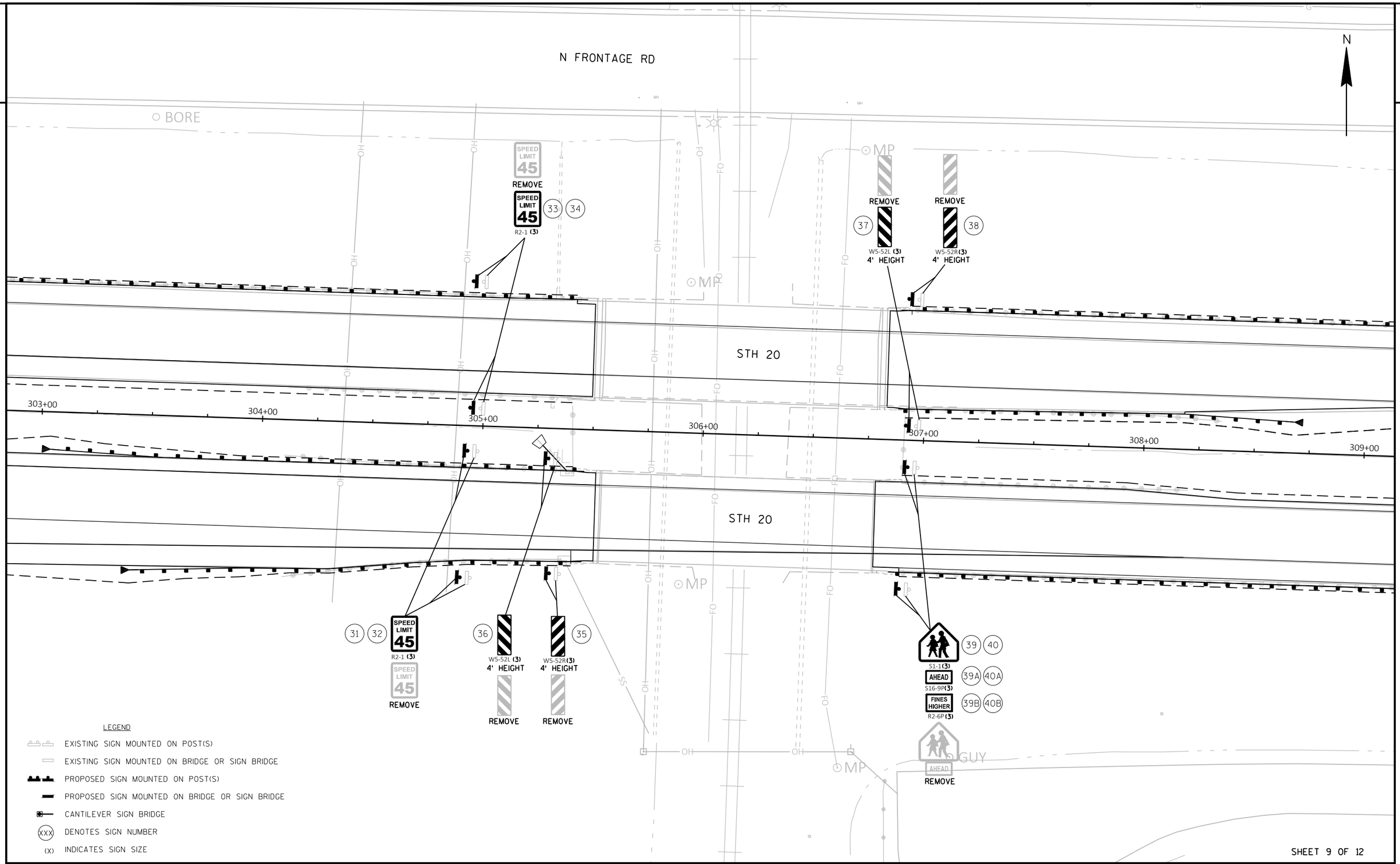
SHEET 8 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 30	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-08

PLOT DATE : 2/27/2023 10:17 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42



PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 31	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-09

PLOT DATE : 2/27/2023 10:17 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N FRONTAGE RD

N

2

NO SIGNS ON
THIS SHEET

STH 20

309+00 310+00 311+00 312+00 313+00 314+00

STH 20

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 10 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 32	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-10

PLOT DATE : 2/27/2023 10:18 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

N FRONTAGE RD

STH 20

315+00 316+00 317+00 318+00 319+00 320+00

STH 20

S FRONTAGE RD

41 42
W3-3
MOVE

44
ONLY ONLY
R3-8LAAR

43
North Frontage Road
MOVE

Oakes Rd
D1-61
ESTR

BEGIN LEFT TURN LANE
R3-20L(3)
ESTR

SHEET 11 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 33	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-11

PLOT DATE : 2/27/2023 10:18 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

STH 20

OAKES RD

SPEED LIMIT 45 R2-1 ESTR

WRONG WAY R5-1A ESTR

WEST 20 M3-2 M1-6 J4-1(3) ESTR

I55-56 ESTR

W4-2R

THIS LANE ENDS W9-62 ESTR

ONE WAY R6-2L ESTR

20 J3-1 ESTR

STOP R1-1F ESTR

DIVIDED HIGHWAY R6-3 ESTR INSTALLED UNDER 2250-15-70

DO NOT ENTER R5-1 ESTR INSTALLED UNDER 2250-15-70

R4-7 ESTR

Oakes Rd M1-94H ESTR INSTALLED UNDER 2250-15-70

ONE WAY R6-2L ESTR

STOP R1-1F ESTR

STOP R1-1 ESTR

RIGHT LANE ENDS W9-1R ESTR

STOP R1-1F ESTR

WRONG WAY R5-1A ESTR

DO NOT ENTER R5-1 ESTR

327+00

326+00

325+00

324+00

323+00

322+00

321+00

DO NOT ENTER R5-1 ESTR

R4-7 ESTR

Oakes Rd M1-94H ESTR INSTALLED UNDER 2250-15-70

STOP R1-1F ESTR

NO MOTOR VEHICLES ESTR

ONE WAY R6-2L(3) ESTR INSTALLED UNDER 2250-15-70

20 J3-1 ESTR

DIVIDED HIGHWAY R6-3 ESTR INSTALLED UNDER 2250-15-70

YIELD R1-2 ESTR

ONE WAY R6-2L ESTR

EAST 20 J4-1 ESTR

SPEED LIMIT 45 R2-1 ESTR

BEGIN LEFT TURN LANE R3-20LL(3) ESTR

BEGIN RIGHT TURN LANE R3-20R(3) ESTR

BEGIN LEFT TURN LANE R3-20LL ESTR

SHEET 12 OF 12

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PERMANENT SIGNING	SHEET 34 E

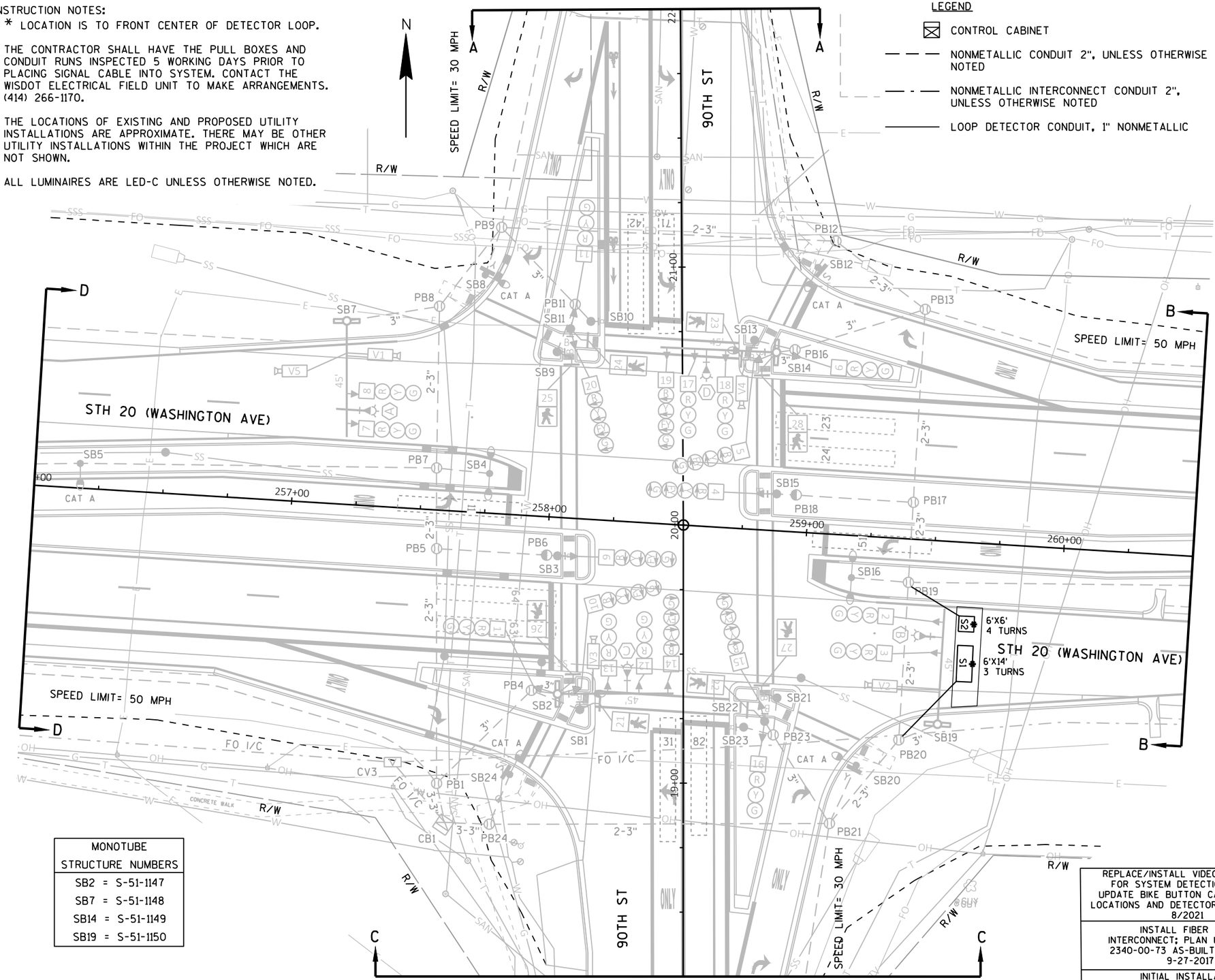
FILE NAME : N:\PDS\C3D\CAD\23400303\SIGN\023201_PS_23400303_18.DWG
LAYOUT NAME - Sht-12

PLOT DATE : 2/27/2023 10:19 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.



LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- XX VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONFIRMATION LIGHT
- CONDUIT STUBOUT
- COMMUNICATIONS VAULT
- Y YIELD SIGN
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

REVISION				
REV. NO.	INSTALL S1 & S2			
	APPROVAL RECOMMENDED		APPROVED	
3	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
	3-30-21	DJW	7-21-21	JR

REPLACE/INSTALL VIDEO DETECTION FOR SYSTEM DETECTION ZONES. UPDATE BIKE BUTTON CABINET INPUT LOCATIONS AND DETECTOR ASSIGNMENTS 8/2021

INSTALL FIBER OPTIC INTERCONNECT; PLAN UPDATE PER 2340-00-73 AS-BUILT & REDLINE 9-27-2017

INITIAL INSTALLATION 5-2014

TRAFFIC CONTROL SIGNAL
STH 20 & 90TH ST
VILLAGE OF MOUNT PLEASANT
RACINE COUNTY

SIGNAL NO. S51-0536
CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 5/5/14 — MITZI M. DOBERSEK, P.E. — REGION TRAFFIC ENGINEER

APPROVED
DATE 5/6/14 — JOANNA L. BUSH — STATE TRAFFIC ENGINEER

REGION CONTACT: DERRIN WOLFORD
DESIGNED BY:
REVISED BY: JOHN BRUGGEMAN

PAGE 1 OF 3

3-30-21 JRW

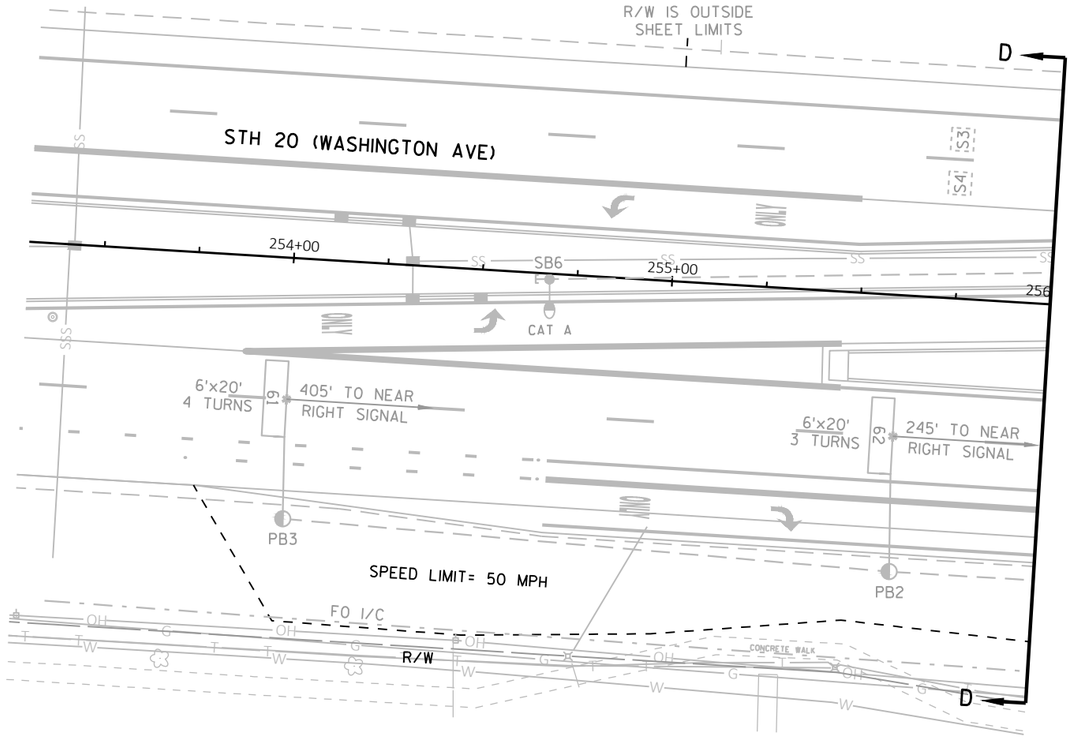
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TRAFFIC SIGNAL PLAN	SHEET 35	E

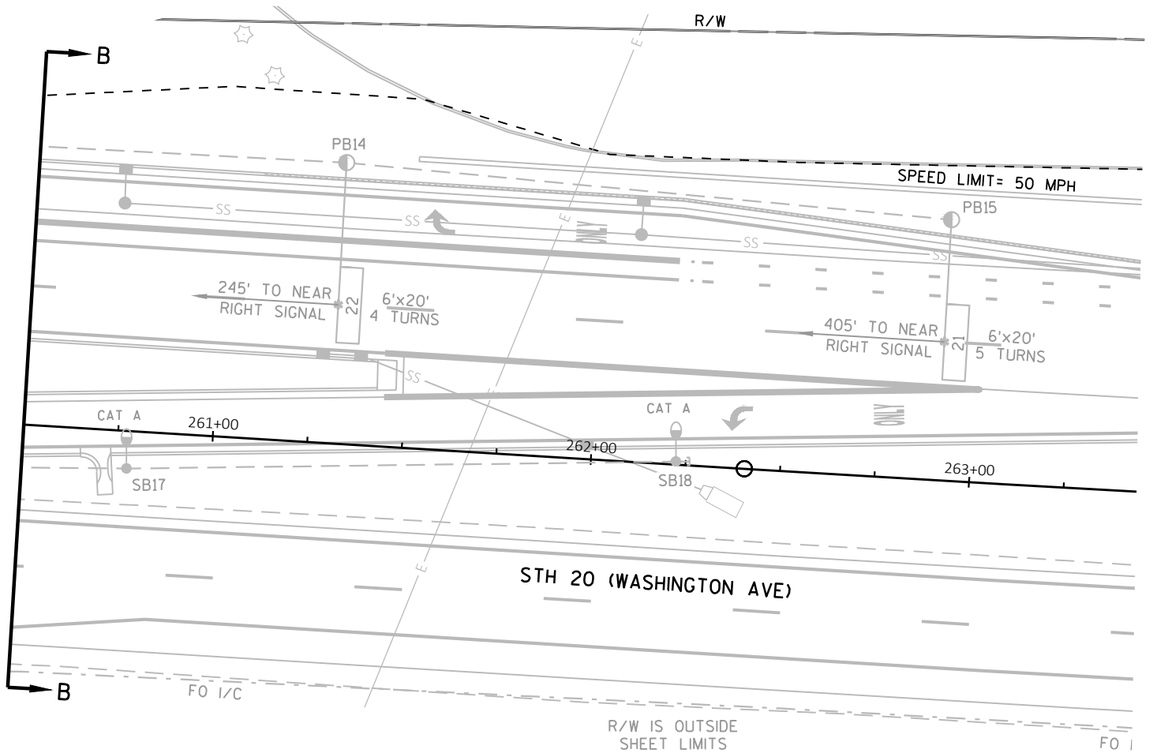
FILE NAME : N:\PDS\C3D\CAD\23400303\SIG\S51-0536\S51-0536_R3_18.DWG
LAYOUT NAME - S51-0536_R3_pg1

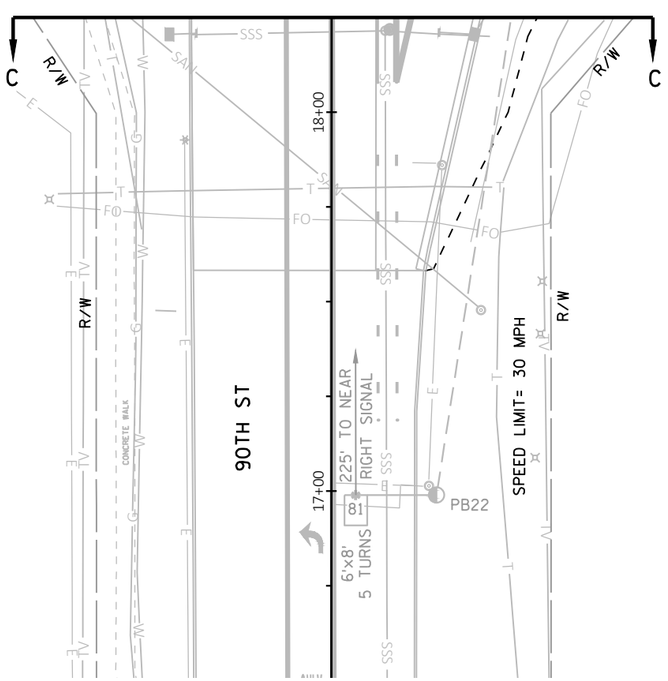
PLOT DATE : 7/11/2023 10:37 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

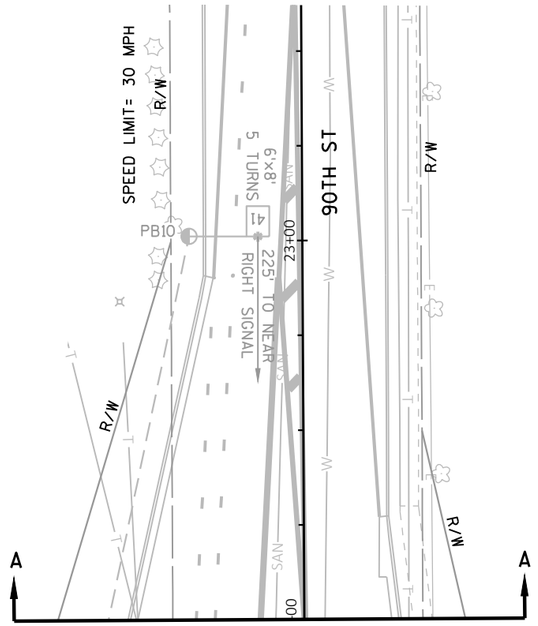
WISDOT/CADDS SHEET 42

2









TRAFFIC CONTROL SIGNAL
STH 20 & 90TH ST
VILLAGE OF MOUNT PLEASANT
RACINE COUNTY

SIGNAL NO. S51-0536

REGION CONTACT: DERRIN WOLFORD
DESIGNED BY:
REVISED BY: JOHN BRUGGEMAN

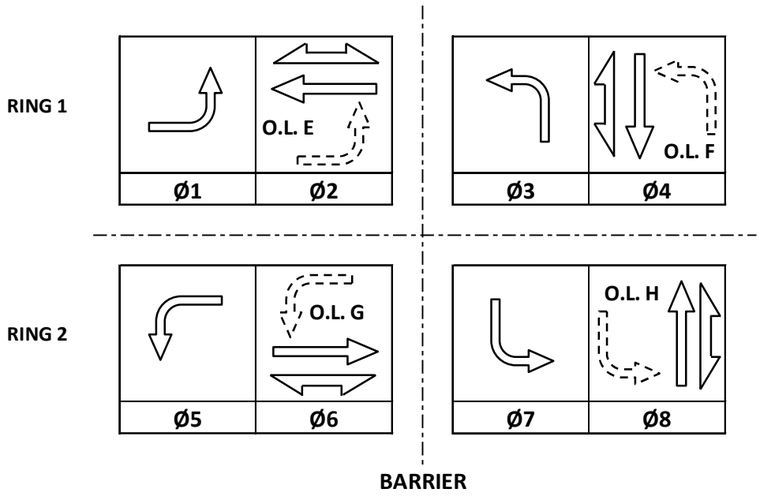
PAGE 2 OF 3

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TRAFFIC SIGNAL PLAN	SHEET 36	E

FILE NAME : N:\PDS\C3D\CAD\23400303\SIG\S51-0536\S51-0536_R3_18.DWG
LAYOUT NAME - S51-0536_R3_pg2

PLOT DATE : 7/11/2023 10:37 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1 IN:40 FT

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3	19,20	R ←
Ø4	11,12,13	R
Ø5	9,10	R ←
Ø6	1,2,3	R
Ø7	14,15	R ←
Ø8	16,17,18	R
Ø2P	23,24	
Ø4P	25,26	
Ø6P	21,22	
Ø8P	27,28	
OLE	4,5	-
OLF	19,20	-
OLG	9,10	-
OLH	14,15	-



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	1+6	4+7	3+8

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+7 OR 3+8, CONTROLLER SHALL RETURN TO PHASES 4+8.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM NO:	SS-51-0094

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
CONFIRMATION LIGHTS	X
LIFT BRIDGE	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	41	61	81	S1			
CALLED PHASE	2	4	6	8				
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X	X	X	X				
EXTEND TIME		X		X				
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	11	24	42	63	71	S3		
CALLED PHASE	1		4		7			
CALL OPTION	X		X		X			
DELAY TIME								
EXTENTION OPTION	X		X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE	2				8			

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	22		62		S2			
CALLED PHASE	2		6					
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X		X					
EXTEND TIME								
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

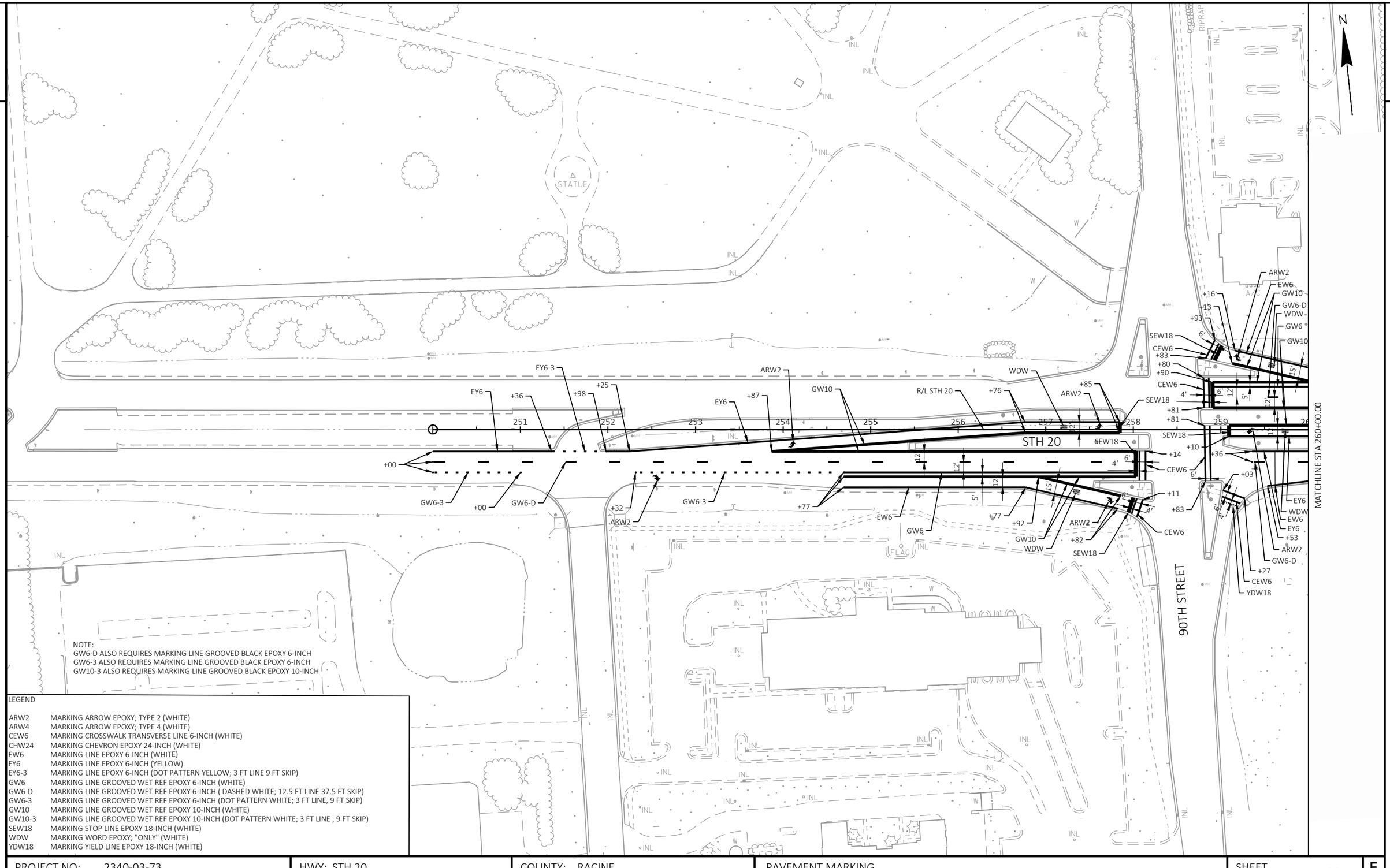
DETECTOR INPUT	20	18	24	22	22	28	26	30
PLAN LOOP DETECTOR*(S)	23	31	51	64	82	S4		
CALLED PHASE		3	5		8			
CALL OPTION		X	X		X			
DELAY TIME								
EXTENTION OPTION		X	X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE		4	6					

GENERAL NOTES:

1. BUTTONS ON SB10 AND SB23 USED TO CALL PHASE 4 AND PHASE 8 GREEN FOR BICYCLISTS VIA PROGRAMMED BIKE MIN GREEN.

STH 20 & 90TH ST
VILLAGE OF MT. PLEASANT
RACINE COUNTY

SIGNAL NO: S51-0536	CABINET TYPE: TS2
	CONTROLLER TYPE: ECONOLITE
DATE: 7/2021	PAGE NO. 3 OF 3

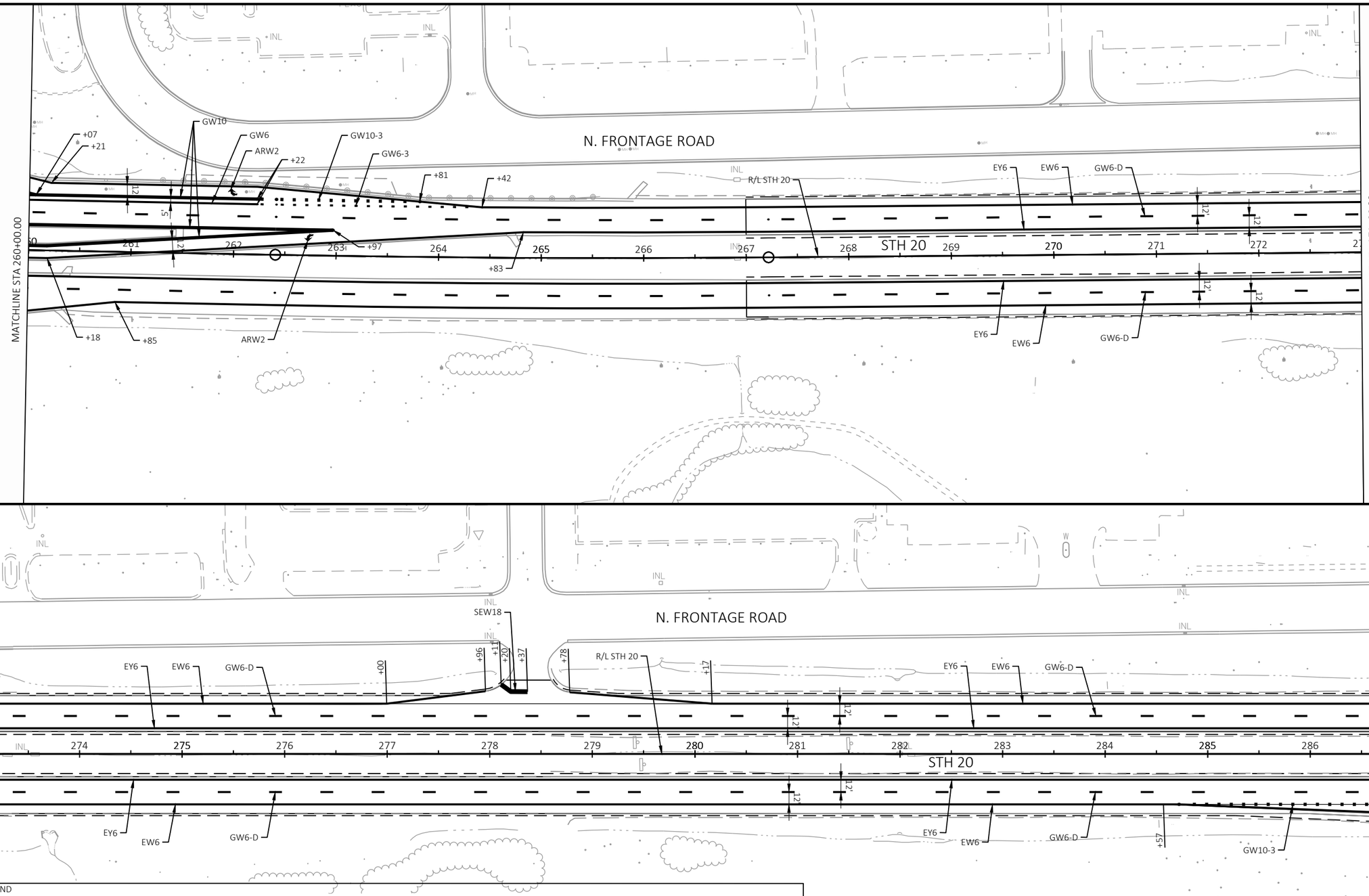


NOTE:
GW6-D ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW6-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW10-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 10-INCH

LEGEND

ARW2	MARKING ARROW EPOXY; TYPE 2 (WHITE)
ARW4	MARKING ARROW EPOXY; TYPE 4 (WHITE)
CEW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)
CHW24	MARKING CHEVRON EPOXY 24-INCH (WHITE)
EW6	MARKING LINE EPOXY 6-INCH (WHITE)
EY6	MARKING LINE EPOXY 6-INCH (YELLOW)
EY6-3	MARKING LINE EPOXY 6-INCH (DOT PATTERN YELLOW; 3 FT LINE 9 FT SKIP)
GW6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GW6-D	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE; 12.5 FT LINE 37.5 FT SKIP)
GW6-3	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOT PATTERN WHITE; 3 FT LINE, 9 FT SKIP)
GW10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
GW10-3	MARKING LINE GROOVED WET REF EPOXY 10-INCH (DOT PATTERN WHITE; 3 FT LINE , 9 FT SKIP)
SEW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
WDW	MARKING WORD EPOXY; "ONLY" (WHITE)
YDW18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PAVEMENT MARKING	SHEET 38	E



LEGEND

ARW2	MARKING ARROW EPOXY; TYPE 2 (WHITE)	GW6-D	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE; 12.5 FT LINE 37.5 FT SKIP)
ARW4	MARKING ARROW EPOXY; TYPE 4 (WHITE)	GW6-3	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOT PATTERN WHITE; 3 FT LINE, 9 FT SKIP)
CEW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)	GW10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
CHW24	MARKING CHEVRON EPOXY 24-INCH (WHITE)	GW10-3	MARKING LINE GROOVED WET REF EPOXY 10-INCH (DOT PATTERN WHITE; 3 FT LINE , 9 FT SKIP)
EW6	MARKING LINE EPOXY 6-INCH (WHITE)	SEW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
EY6	MARKING LINE EPOXY 6-INCH (YELLOW)	WDW	MARKING WORD EPOXY; "ONLY" (WHITE)
EY6-3	MARKING LINE EPOXY 6-INCH (DOT PATTERN YELLOW; 3 FT LINE 9 FT SKIP)	YDW18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
GW6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)		

NOTE:
GW6-D ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW6-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW10-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 10-INCH

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PAVEMENT MARKING	SHEET 39	E

2

2

N

N. FRONTAGE ROAD

STH 20

RAMP 'A'

RAMP 'B'

WILLOW ROAD

MATCHLINE STA 287+00.00

MATCHLINE STA 301+00.00

TOWER

A/C

ANT

BERM

INL

B-51-40

B-51-43

EY6

EW6

GW6-D

GW6-3

GW10-3

GW10

CHW24

R/L STH 20

R/L RAMP 'A'

R/L RAMP 'B'

ARW2

ARW4

SEW18

'A'+13

'A'+20

'A'+35

'A'+50

'A'+14

'A'+09

'A'+66

'B'+00

'B'+67

'B'+71

'B'+72

'B'+91

'B'+32

'B'+50

'B'+52

'B'+37

+70

+51

+09

+48

+80

133.99' R

251.32' R

189.44' R

200.00' R

50'A'

49'A'

48'A'

47'A'

46'A'

45'A'

44'A'

43'A'

50'B'

49'B'

48'B'

47'B'

46'B'

45'B'

44'B'

43'B'

12'

13'

15'

NOTE:
GW6-D ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW6-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW10-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 10-INCH

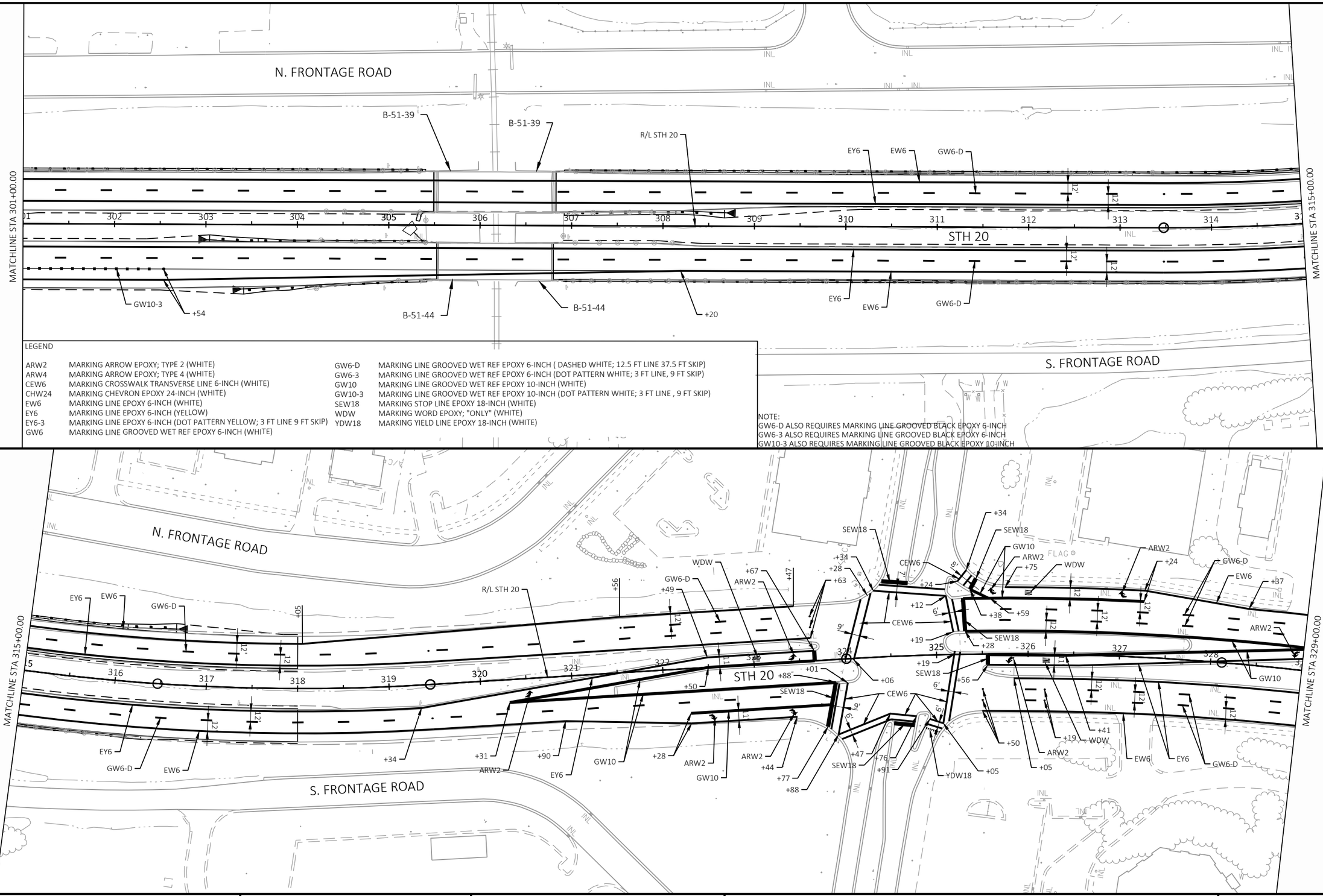
LEGEND

ARW2	MARKING ARROW EPOXY; TYPE 2 (WHITE)	GW6-D	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE; 12.5 FT LINE 37.5 FT SKIP)
ARW4	MARKING ARROW EPOXY; TYPE 4 (WHITE)	GW6-3	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOT PATTERN WHITE; 3 FT LINE, 9 FT SKIP)
CEW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)	GW10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
CHW24	MARKING CHEVRON EPOXY 24-INCH (WHITE)	GW10-3	MARKING LINE GROOVED WET REF EPOXY 10-INCH (DOT PATTERN WHITE; 3 FT LINE , 9 FT SKIP)
EW6	MARKING LINE EPOXY 6-INCH (WHITE)	SEW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
EY6	MARKING LINE EPOXY 6-INCH (YELLOW)	WDW	MARKING WORD EPOXY; "ONLY" (WHITE)
EY6-3	MARKING LINE EPOXY 6-INCH (DOT PATTERN YELLOW; 3 FT LINE 9 FT SKIP)	YDW18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)
GW6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)		

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PAVEMENT MARKING	SHEET 40	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-024501-PM.DWG
LAYOUT NAME - Sheet - (03)

PLOT DATE : 10/31/2023 8:49 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : ##########



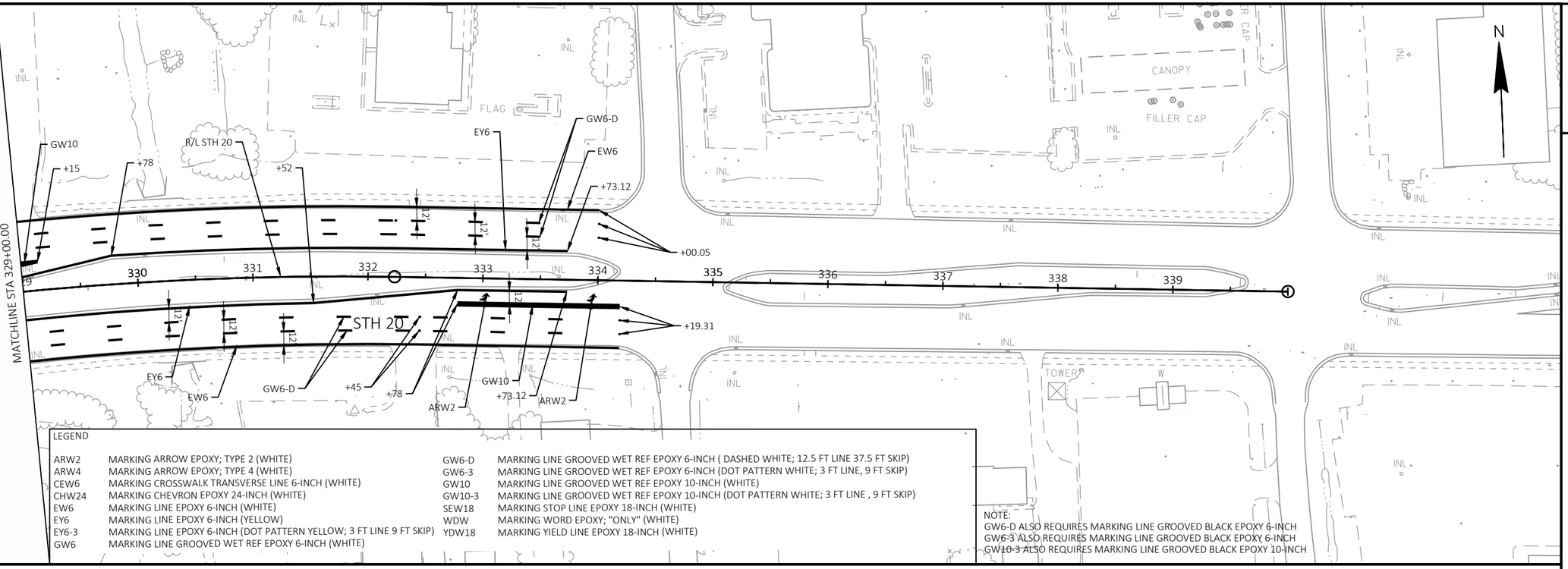
LEGEND

ARW2	MARKING ARROW EPOXY; TYPE 2 (WHITE)
ARW4	MARKING ARROW EPOXY; TYPE 4 (WHITE)
CEW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)
CHW24	MARKING CHEVRON EPOXY 24-INCH (WHITE)
EW6	MARKING LINE EPOXY 6-INCH (WHITE)
EY6	MARKING LINE EPOXY 6-INCH (YELLOW)
EY6-3	MARKING LINE EPOXY 6-INCH (DOT PATTERN YELLOW; 3 FT LINE 9 FT SKIP)
GW6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GW6-D	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE; 12.5 FT LINE 37.5 FT SKIP)
GW6-3	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOT PATTERN WHITE; 3 FT LINE, 9 FT SKIP)
GW10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
GW10-3	MARKING LINE GROOVED WET REF EPOXY 10-INCH (DOT PATTERN WHITE; 3 FT LINE , 9 FT SKIP)
SEW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
WDW	MARKING WORD EPOXY; "ONLY" (WHITE)
YDW18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)

NOTE:
GW6-D ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW6-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW10-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 10-INCH

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PAVEMENT MARKING	SHEET 41	E

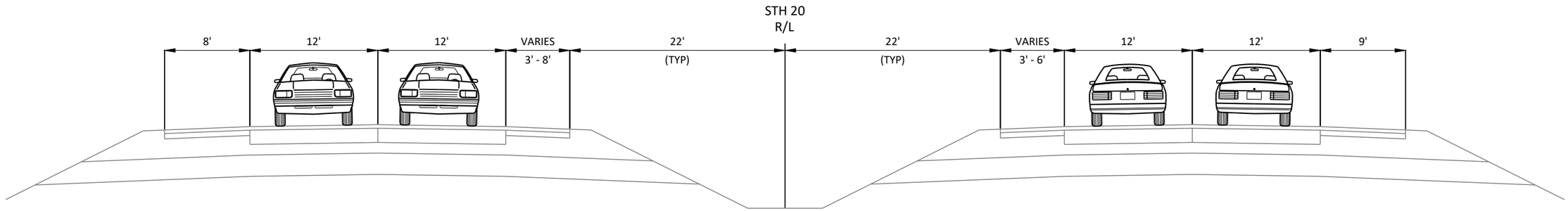
FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-024501-PM.DWG
LAYOUT NAME - Sheet - (04)
PLOT DATE : 10/31/2023 8:52 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



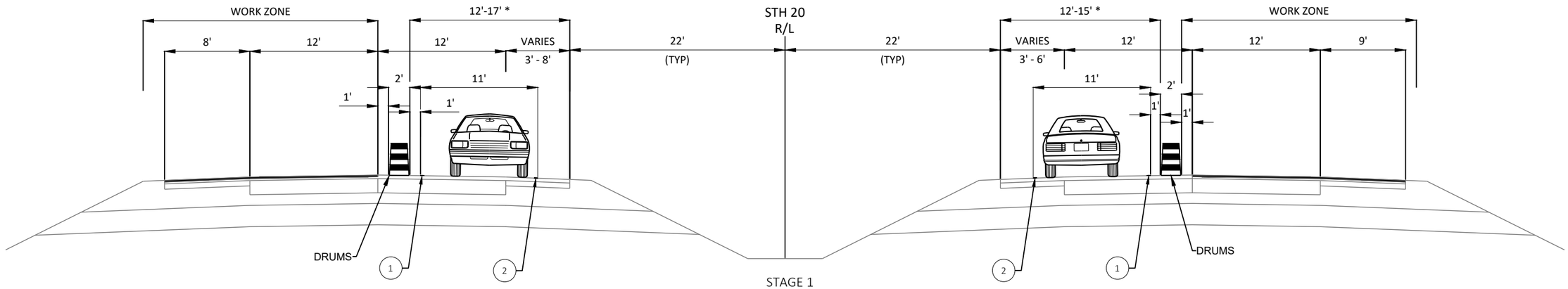
LEGEND

ARW2	MARKING ARROW EPOXY; TYPE 2 (WHITE)
ARW4	MARKING ARROW EPOXY; TYPE 4 (WHITE)
CEW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)
CHW24	MARKING CHEVRON EPOXY 24-INCH (WHITE)
EW6	MARKING LINE EPOXY 6-INCH (WHITE)
EY6	MARKING LINE EPOXY 6-INCH (YELLOW)
EY6-3	MARKING LINE EPOXY 6-INCH (DOT PATTERN YELLOW; 3 FT LINE 9 FT SKIP)
GW6	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
GW6-D	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DASHED WHITE; 12.5 FT LINE 37.5 FT SKIP)
GW6-3	MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOT PATTERN WHITE; 3 FT LINE, 9 FT SKIP)
GW10	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE)
GW10-3	MARKING LINE GROOVED WET REF EPOXY 10-INCH (DOT PATTERN WHITE; 3 FT LINE , 9 FT SKIP)
SEW18	MARKING STOP LINE EPOXY 18-INCH (WHITE)
WDW	MARKING WORD EPOXY; "ONLY" (WHITE)
YDW18	MARKING YIELD LINE EPOXY 18-INCH (WHITE)

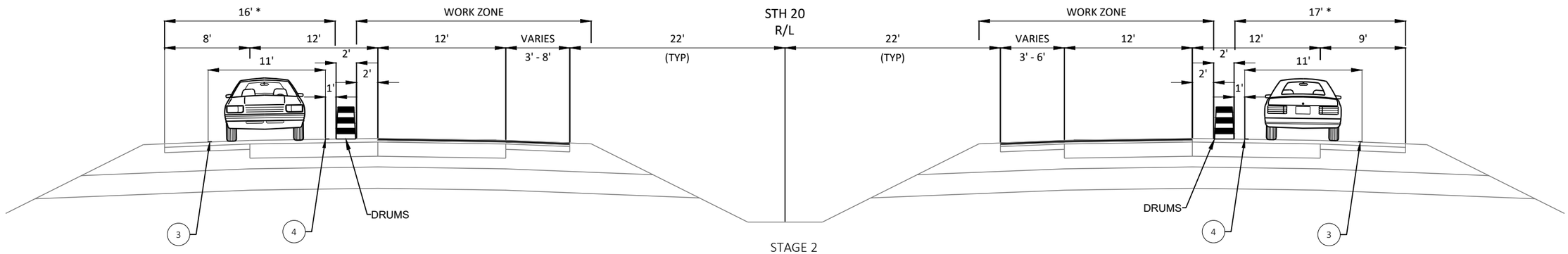
NOTE:
GW6-D ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW6-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 6-INCH
GW10-3 ALSO REQUIRES MARKING LINE GROOVED BLACK EPOXY 10-INCH



TYPICAL EXISTING SECTION



STAGE 1
MILL 2-INCHES AND PLACE 2-INCH OVERLAY
ON OUTSIDE LANE AND SHOULDER



STAGE 2
MILL 2-INCHES AND PLACE 2-INCH OVERLAY
ON INSIDE LANE AND SHOULDER

NOTE:
CONCRETE BARRIER TEMPORARY PRECAST REQUIRED
AT THE STRUCTURES OVER THE RAILROAD.
SEE STAGING SHEETS AND STRUCTURE PLANS FOR
ADDITIONAL INFORMATION.

* WIDTH INCLUDES 1-FOOT OF SHY TO
TRAFFIC CONTROL DRUMS.

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TRAFFIC CONTROL - TYPICAL SECTIONS	SHEET 43	E

GENERAL NOTES FOR TRAFFIC CONTROL

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

2) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER.

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

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

5) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE "C" STEADY BURN WARNING LIGHT.

6) WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS, SEE PLAN SHEETS FOR ADDITIONAL INFORMATION.

7) TRAFFIC CONTROL DRUM SPACING SHALL BE 100' UNLESS OTHERWISE NOTED.

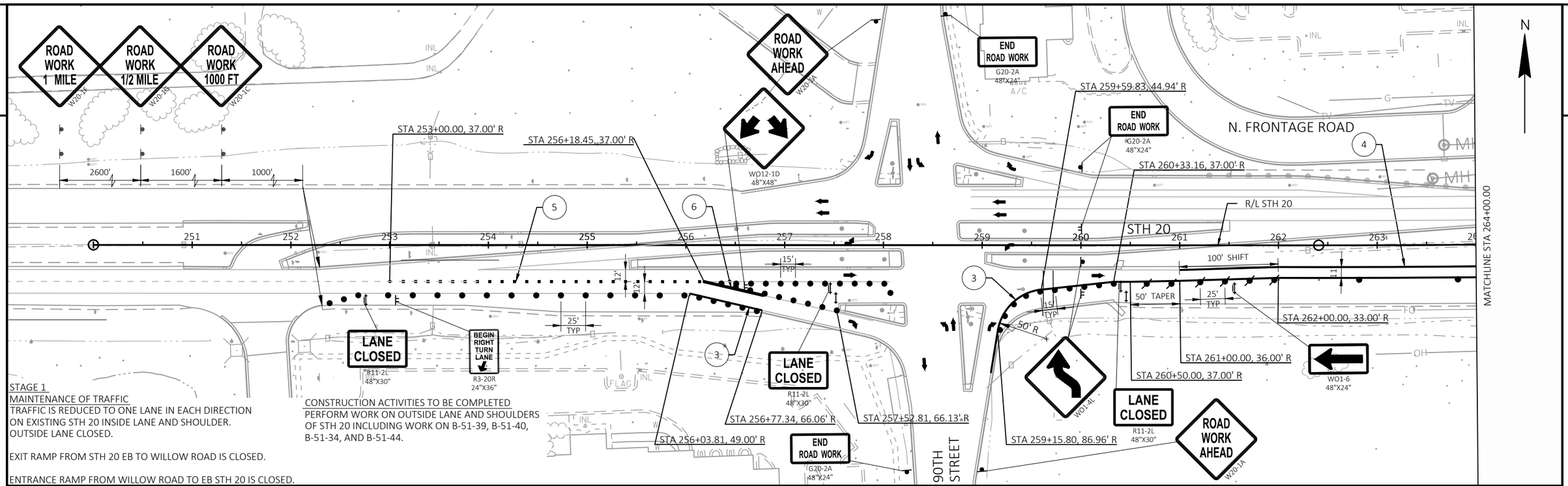
2

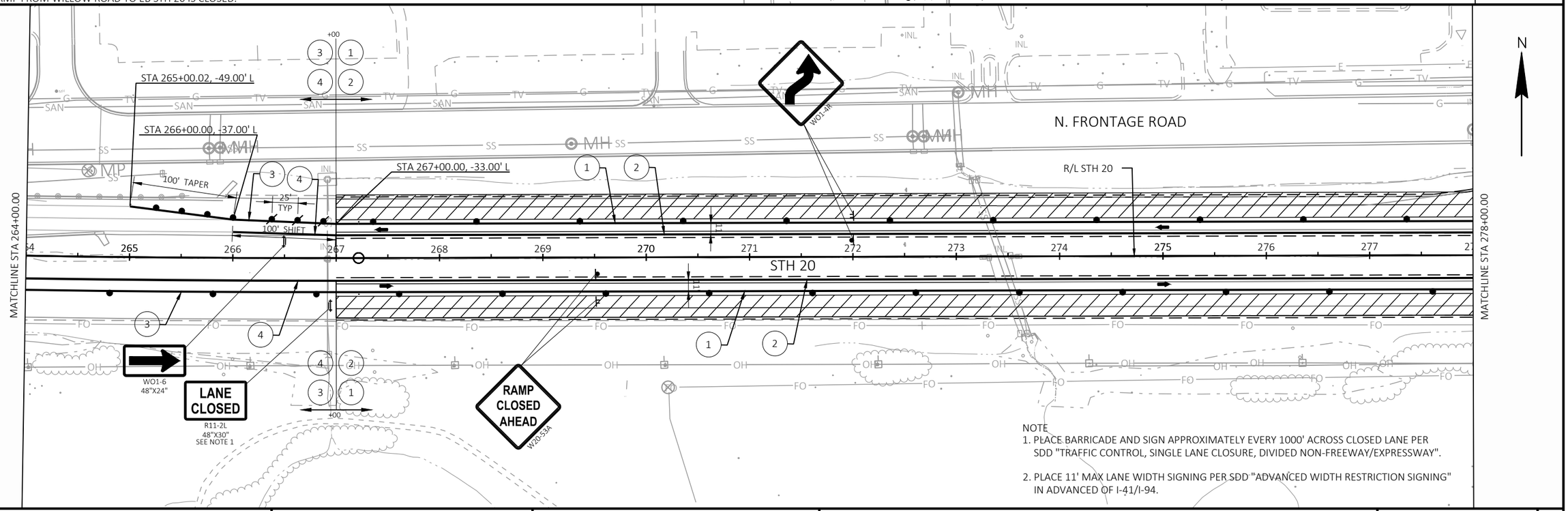
LEGEND

- TYPE III BARRICADE WITH TWO TYPE "A" LOW INTENSITY FLASHING LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE "A" LOW INTENSITY FLASHING LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- CC — CRASH CUSHION TEMPORARY

TEMPORARY PAVEMENT MARKING LEGEND

1. TEMPORARY MARKING LINE EPOXY 6-INCH (WHITE)
2. TEMPORARY MARKING LINE EPOXY 6-INCH (YELLOW)
3. TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
4. TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
5. TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH (WHITE) DOT LANE, 3' LINE, 9' GAP
6. TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH (WHITE)





PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 45	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026001-S1.DWG
LAYOUT NAME - Sheet - (01)
PLOT DATE : 6/26/2023 9:52 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

ROAD CLOSED AHEAD
W20-3R

ROAD CLOSED
R11-2
48"X30"

N. FRONTAGE ROAD

R/L STH 20

STH 20

MATCHLINE STA 278+00.00

MATCHLINE STA 292+00.00

RAMP 'B'

N

2

MATCHLINE STA 292+00.00

N. FRONTAGE ROAD

B-51-40

B-51-43

B-51-39

B-51-44

R/L STH 20

STH 20

WO1-6
48"X24"

100' SHIFT

25'
TYP

STA 302+50.00, -33.00' L

STA 303+50.00, -28.58' L

STA 304+55.63, -32.00' L

STA 300+50.00, 31.00' R

STA 303+93.15, 35.00' R

STA 299+50.00, 33.00' R

WO1-4L

WO1-4R

50'A'

49'A'

48'A'

48'B'

RAMP 'A'

RAMP 'B'

WILLOW ROAD

MATCHLINE STA 306+00.00

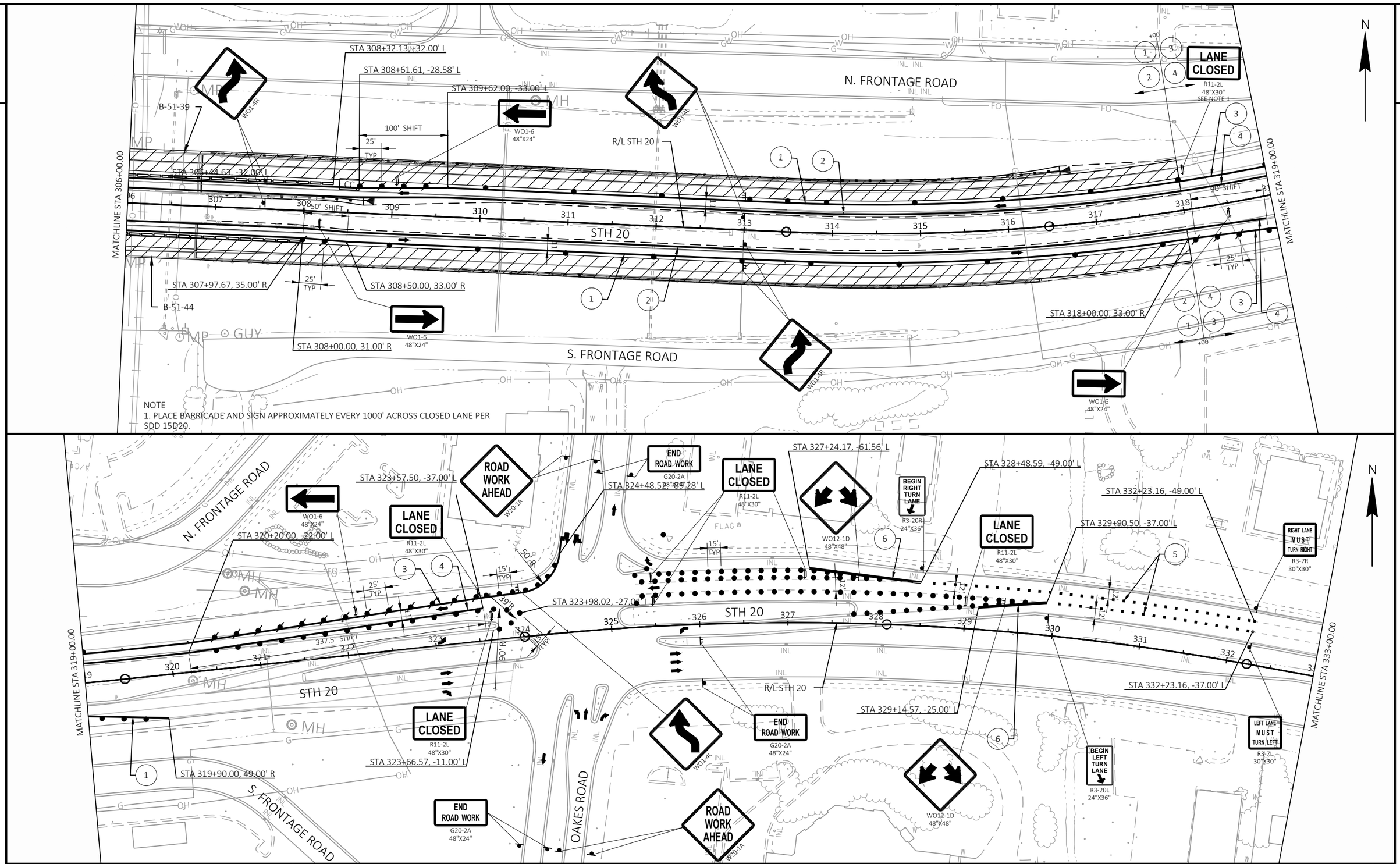
N

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 46	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026001-S1.DWG
LAYOUT NAME - Sheet - (02)

PLOT DATE : 6/26/2023 9:53 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

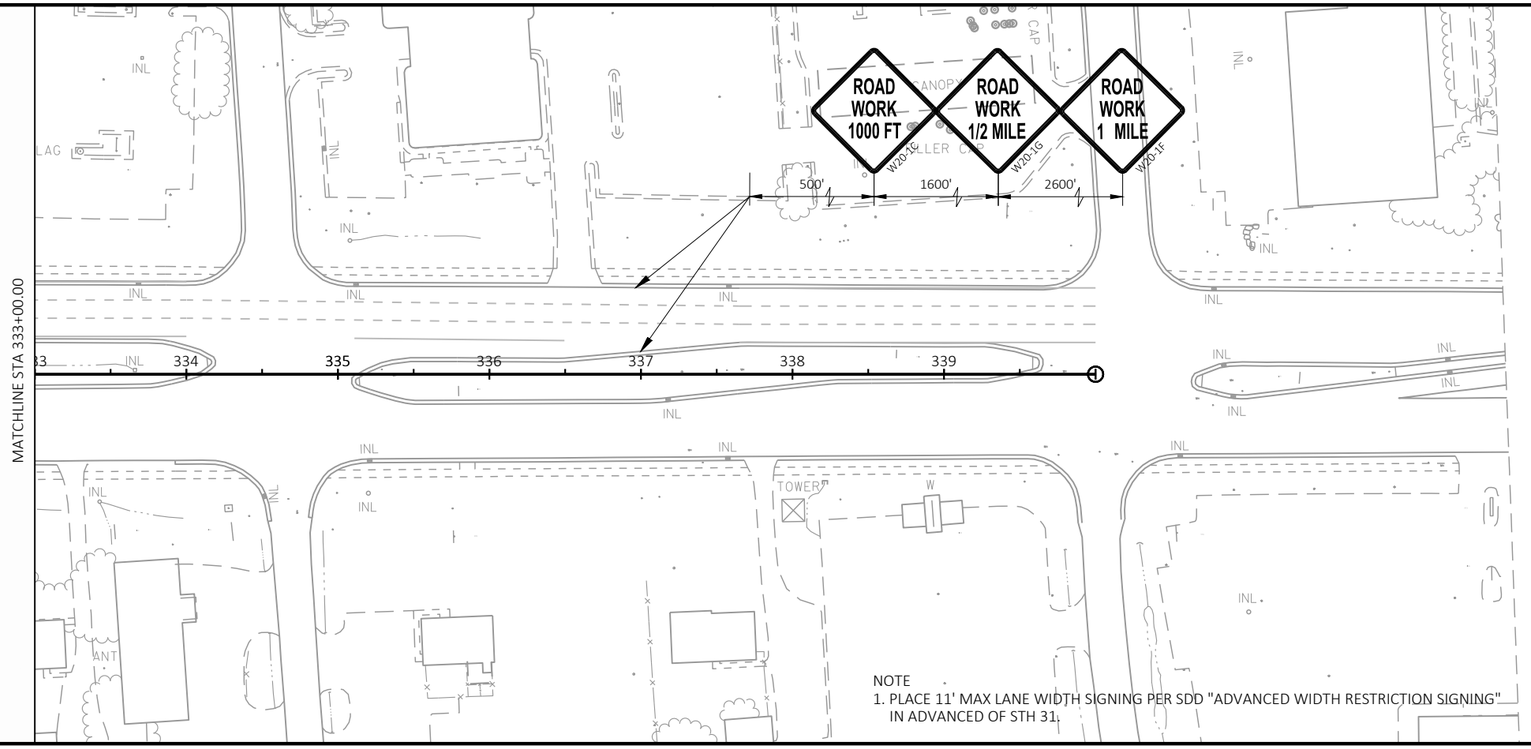
WISDOT/CADDS SHEET 44



PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 47	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026001-S1.DWG
LAYOUT NAME - Sheet - (03)

PLOT DATE : 6/26/2023 9:55 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT



2

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 48	E

2

2

N

R/L STH 20

STH 20

279 280 281 282 283 284 285 286 287 288 289 290 291 292

TRAFFIC CONTROL COVERING SIGNS TYPE II
(SHOW COVERING ARROW ON EXISTING E5-1 SIGN)

TRAFFIC CONTROL COVERING SIGNS TYPE II

TRAFFIC CONTROL COVERING SIGNS TYPE II

RAMP CLOSED 500 FT
W20-5D

RAMP CLOSED
R11-2R
48"X30"

LANE CLOSED
R11-2L
48"X30"

RAMP 'B'

R/L RAMP 'B'

MATCHLINE STA 293+00.00

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 49	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026002-S1.DWG
LAYOUT NAME - Sheet - (05)

PLOT DATE : 6/26/2023 9:56 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

2

N

MATCHLINE STA 293+00.00

B-51-40

END ROAD WORK
G20-2A
48"X24"

STH 20

B-51-43

R/L STH 20

LANE CLOSED
R11-2L
48"X30"

RAMP CLOSED
R11-2R
48"X30"

RAMP 'A'

RAMP 'B'

ROAD WORK AHEAD
W20-1A

350'

LANE CLOSED
R11-2L
48"X30"

ROAD WORK AHEAD
W20-1A

350'

R/L WILLOW ROAD

WILLOW ROAD

UP RAILROAD

END ROAD WORK
G20-2A
48"X24"

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1	SHEET 50	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026002-S1.DWG
LAYOUT NAME - Sheet - (06)

PLOT DATE : 6/26/2023 9:57 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

N

R/L STH 20

STH 20

280 282 284 285 286 288 290 292

25' TYP

25' TYP

LANE CLOSED
R11-2L
48"X30"

RIGHT LANE MUST EXIT
R3-33R
78"X36"

EXIT
E5-1
48"X48"

STA 281+41.43, 33.00' R

STA 283+41.43, 45.00' R

STA 286+91.43, 45.00' R

STA 49+63.92, -13.90' L

STA 290+51.43, 61.00' R

RAMP 'B'

R/L RAMP 'B'

8.05

49.18

3

6

STAGE 1A

MAINTENANCE OF TRAFFIC

TRAFFIC IS REDUCED TO ONE LANE IN EACH DIRECTION ON EXISTING STH 20 INSIDE LANE AND SHOULDERS.

OUTSIDE LANE IS CLOSED.

EXIT RAMP FROM STH 20 EB TO WILLOW ROAD IS OPEN.

ENTRANCE RAMP FROM WILLOW ROAD TO EB STH 20 IS CLOSED.

CONSTRUCTION ACTIVITIES TO BE COMPLETED

CONTINUE WORK ON OUTSIDE LANE AND SHOULDERS OF STH 20 INCLUDING WORK ON B-51-39, B-51-40, B-51-43 AND B-51-44.

NOTE

ALL TRAFFIC CONTROL FROM STAGE 1 TO REMAIN IN PLACE EXCEPT AS SHOWN.

MATCHLINE STA 293+00.00

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1A	SHEET 51	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026101-S1A.DWG
LAYOUT NAME - Sheet - (01)
PLOT DATE : 6/26/2023 10:01 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

NORTH FRONTAGE ROAD

STH 20

B-51-40

END ROAD WORK
G20-2A
48"X24"

R/L STH 20

LANE CLOSED
R11-2L
48"X30"

RAMP CLOSED
R11-2R
48"X30"

R/L RAMP 'A'

RAMP 'A'

RAMP 'B'

R/L RAMP 'B'

ROAD WORK AHEAD
W20-1A

350'

LANE CLOSED
R11-2L
48"X30"

ROAD WORK AHEAD
W20-1A

350'

WILLOW ROAD

R/L WILLOW ROAD

END ROAD WORK
G20-2A
48"X24"

UP RAILROAD

MATCHLINE STA 293+00.00

NOTE

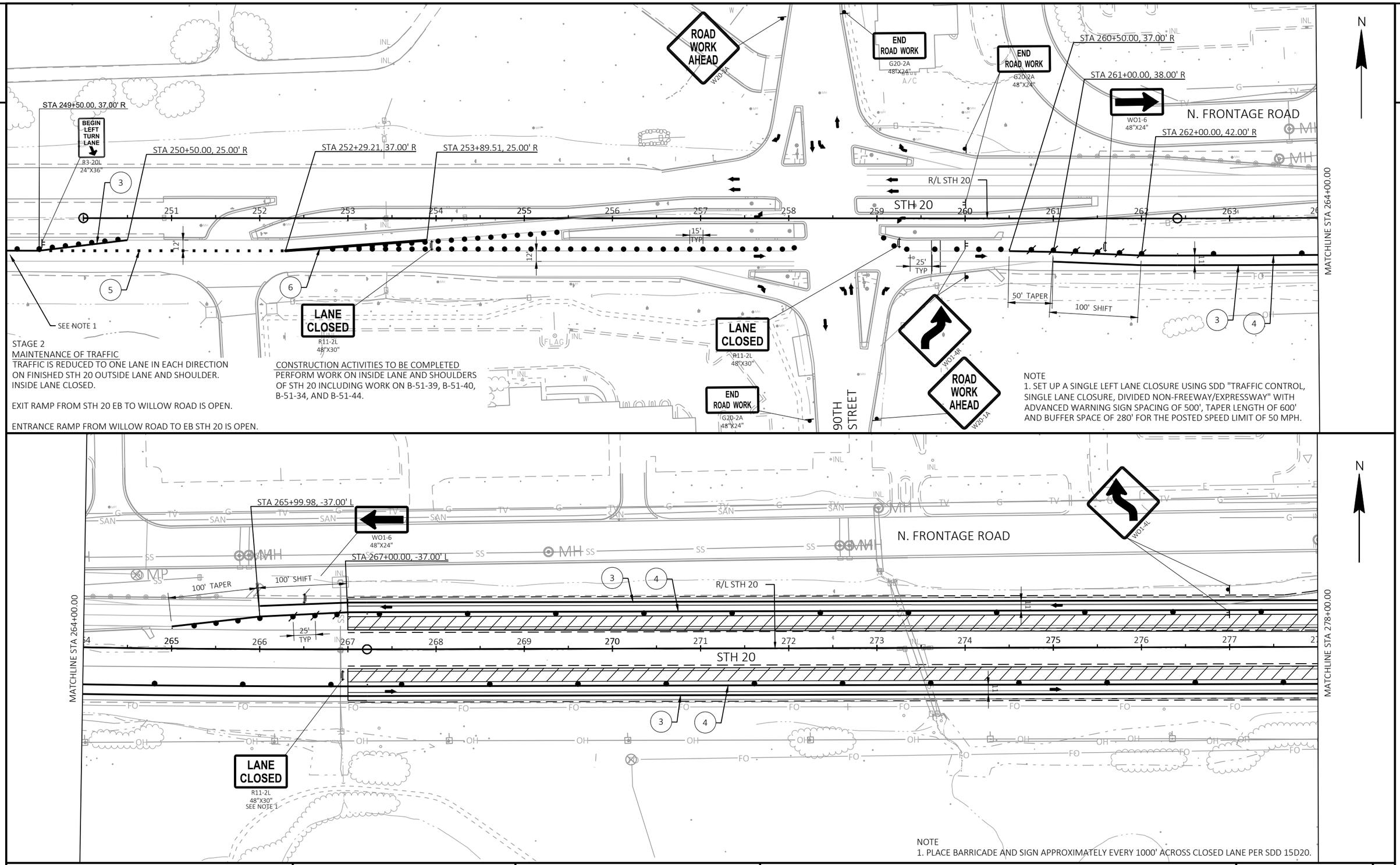
ALL TRAFFIC CONTROL FROM STAGE 1 TO REMAIN IN PLACE EXCEPT AS SHOWN.

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 1A	SHEET 52	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026101-S1A.DWG
LAYOUT NAME - Sheet - (02)

PLOT DATE : 6/26/2023 10:01 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42



STAGE 2
MAINTENANCE OF TRAFFIC
TRAFFIC IS REDUCED TO ONE LANE IN EACH DIRECTION ON FINISHED STH 20 OUTSIDE LANE AND SHOULDER. INSIDE LANE CLOSED.

EXIT RAMP FROM STH 20 EB TO WILLOW ROAD IS OPEN.

ENTRANCE RAMP FROM WILLOW ROAD TO EB STH 20 IS OPEN.

CONSTRUCTION ACTIVITIES TO BE COMPLETED
PERFORM WORK ON INSIDE LANE AND SHOULDERS OF STH 20 INCLUDING WORK ON B-51-39, B-51-40, B-51-34, AND B-51-44.

NOTE
1. SET UP A SINGLE LEFT LANE CLOSURE USING SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY" WITH ADVANCED WARNING SIGN SPACING OF 500', TAPER LENGTH OF 600' AND BUFFER SPACE OF 280' FOR THE POSTED SPEED LIMIT OF 50 MPH.

NOTE
1. PLACE BARRICADE AND SIGN APPROXIMATELY EVERY 1000' ACROSS CLOSED LANE PER SDD 15D20.

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 2	SHEET 53	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026201-S2.DWG
LAYOUT NAME - Sheet -01
PLOT DATE : 6/26/2023 10:05 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

END ROAD WORK
G20-2A
48"X24"

WO1-6
48"X24"

N. FRONTAGE ROAD

R/L STH 20

STH 20

MATCHLINE STA 278+00.00

MATCHLINE STA 292+00.00

STA 292+00.00, 37.00' R

STA 286+10.00, 53.00' R

STA 287+75.00, 64.00' R

STA 290+62.88, 49.00' R

RAMP 'B'

RIGHT LANE MUST EXIT
R3-33R
78"X36"

WO1-4R

EXIT
E5-1
48"X48"

STA 291+80.08, 96.42' R

N

2

WO1-6
48"X24"

STA 292+75.00, 45.00' R

WO4-1R

B-51-40

N. FRONTAGE ROAD

STA 302+50.00, -42.00' L

WO1-6
48"X24"

STA 303+50.00, -45.42' L

STA 304+55.62, -42.00' L

B-51-39

100' SHIFT

25' TYP

R/L STH 20

STH 20

MATCHLINE STA 292+00.00

MATCHLINE STA 306+00.00

50' TYP

75' TAPER

RAMP 'A'

49'A'

192' R

STA 294+66.16, 56.00' R

STA 294+16.16, 56.00' R

STA 293+75.49, 82.36' R

STA 297+66.16, 56.00' R

B-51-43

STA 300+66.16, 67.00' R

STA 303+93.17, 42.00' R

B-51-44

STA 303+70.00, 56.00' R

RAMP 'B'

49'B'

48' A'

END ROAD WORK
G20-2A
48"X24"

ROAD WORK AHEAD
W20-1A

WILLOW ROAD

WO4-2R

WO1-4L

N

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 2	SHEET 54	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026201-S2.DWG
LAYOUT NAME - Sheet - 02

PLOT DATE : 6/26/2023 10:06 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

N

N. FRONTAGE ROAD

STH 20

MATCHLINE STA 306+00.00

B-51-39

B-51-44

STA 308+32.13, -42.00' L

R/L STH 20

STA 311+82.00, -45.42' L

STA 312+62.00, -42.00' L

80' SHIFT

25' TYP

STA 307+97.67, 42.00' R

100' SHIFT

STA 310+00.00, 42.00' R

STA 309+00.00, 45.00' R

STA 318+00.00, 42.00' R

90' SHIFT

STA 318+90.00, 37.00' R

WO1-4L

WO1-4R

WO1-6
48"X24"

LANE CLOSED
R11-2L
48"X30"
SEE NOTE 1

NOTE
1. PLACE BARRICADE AND SIGN APPROXIMATELY EVERY 1000' ACROSS CLOSED LANE PER SDD 15D20.

N

N. FRONTAGE ROAD

S. FRONTAGE ROAD

OAKES ROAD

STH 20

MATCHLINE STA 319+00.00

MATCHLINE STA 333+00.00

ROAD WORK AHEAD
W20-4R

ROAD WORK AHEAD
W20-1A

END ROAD WORK
G20-2A
48"X24"

LANE CLOSED
R11-2L
48"X30"

STA 320+55.00, -42.00' L

STA 321+45.00, -38.00' L

STA 321+90.00, -37.00' L

STA 323+45.80, -49.00' L

STA 323+70.52, -49.00' L

STA 323+98.17, -27.21' L

STA 319+40.17, 25.00' R

STA 327+09.73, -49.00' L

STA 327+24.17, -61.56' L

STA 328+48.59, -49.00' L

STA 329+14.57, -25.00' L

STA 329+90.50, -37.00' L

STA 332+23.16, -49.00' L

STA 332+23.16, -37.00' L

BEGIN RIGHT TURN LANE
R3-20R
24"X36"

BEGIN LEFT TURN LANE
R3-20L
24"X36"

PAVEMENT MARKING FROM STAGE 1 TO REMAIN

RIGHT LANE MUST TURN RIGHT
R3-7R
30"X30"

LEFT LANE MUST TURN LEFT
R3-7L
30"X30"

50' R

90' R

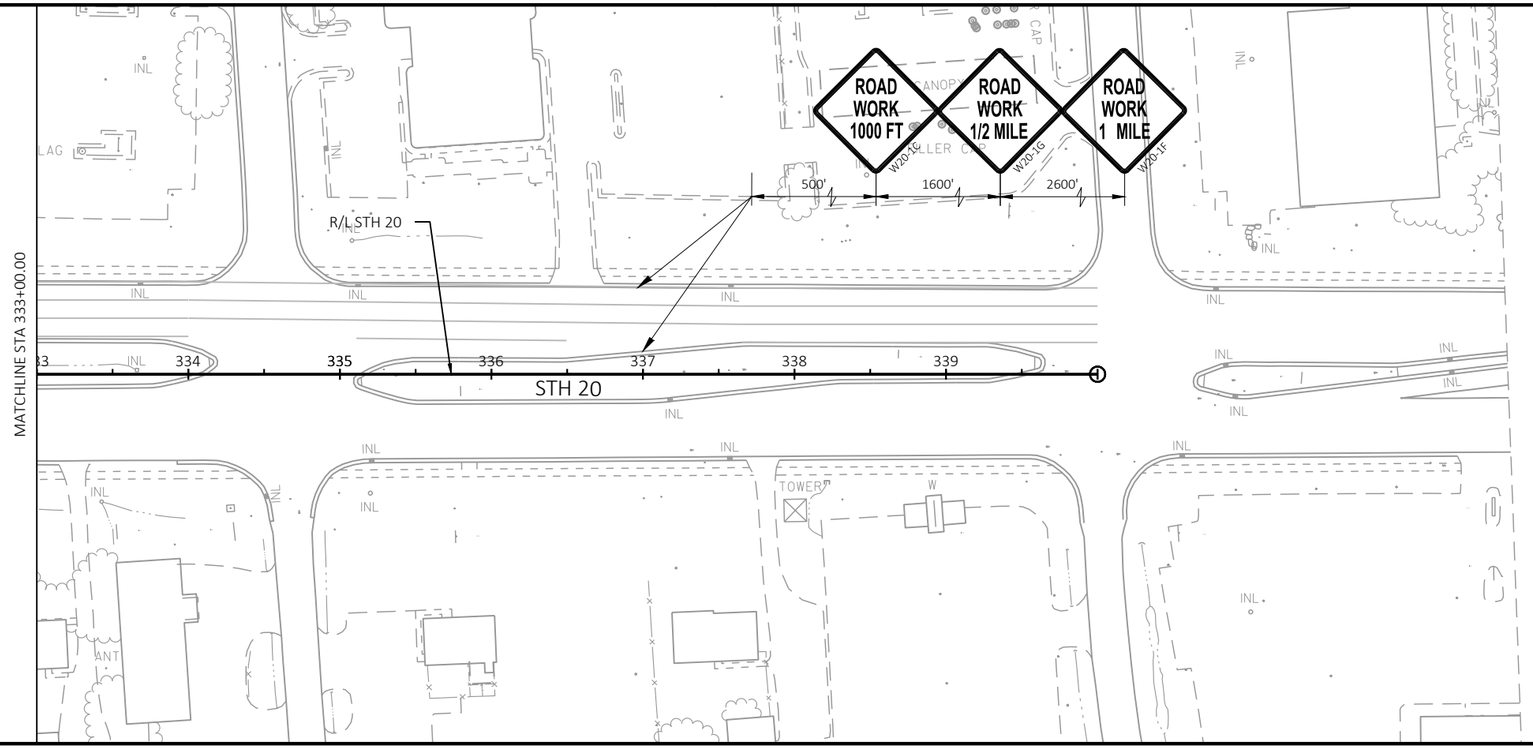
45' TAPER

15' TYP

12'

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 2	SHEET 55	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\23400303-026201-S2.DWG
LAYOUT NAME - Sheet - (03)
PLOT DATE : 6/26/2023 10:08 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



2

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	STAGE CONSTRUCTION - STAGE 2	SHEET 56	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\2340303-026201-S2.DWG
LAYOUT NAME - Sheet - (04)
PLOT DATE : 6/26/2023 10:08 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

EAST
M3-2
24"X12"
20
M1-6
24"X24"
RAMP CLOSED AHEAD
W20-53A

1

TO
M04-5
24"X12"
EAST
M3-2
24"X12"
20
M1-6
24"X24"

2

TO
M04-5
24"X12"
STUART RD
WILLOW RD
FMS

3

STUART RD
WILLOW RD
RAMP CLOSED AHEAD
USE 90TH STREET
FMS

4

MO6-1
21"X21"
A

MO6-1
21"X21"
B

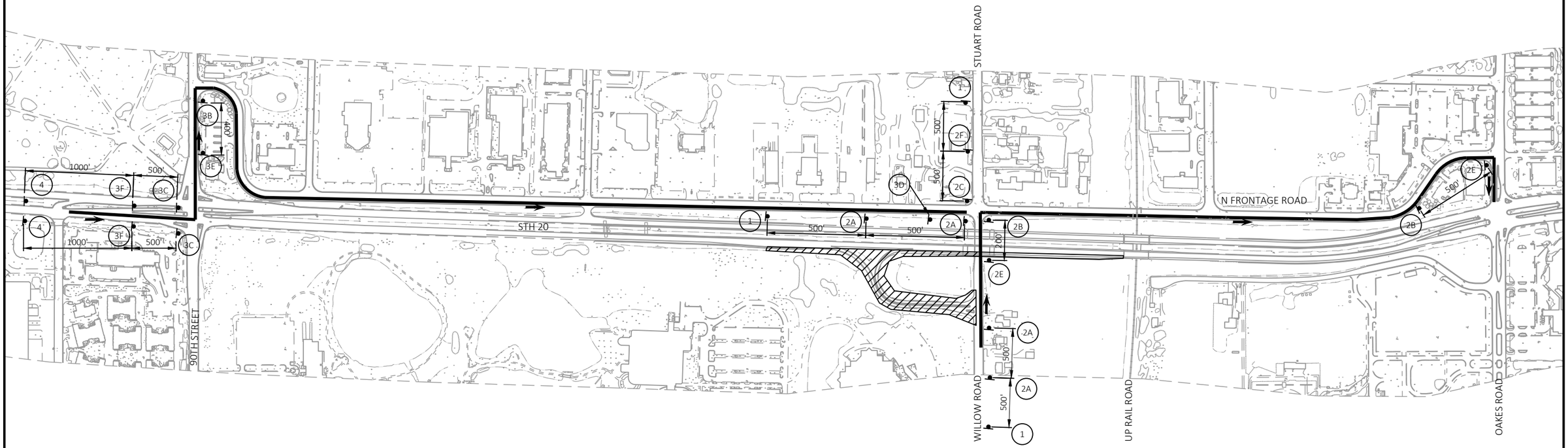
MO6-1
21"X21"
C

MO6-4
21"X21"
D

MO5-1R
21"X21"
E

MO5-1L
21"X21"
F

N



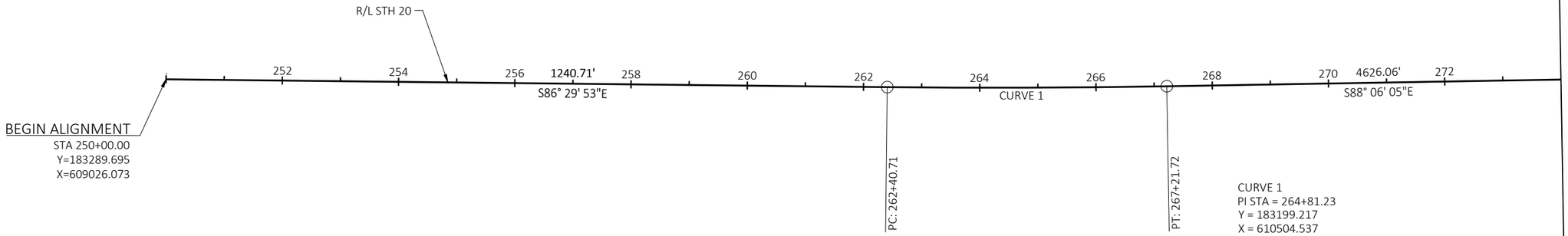
LEGEND

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

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	DETOUR PLAN	SHEET 57	E

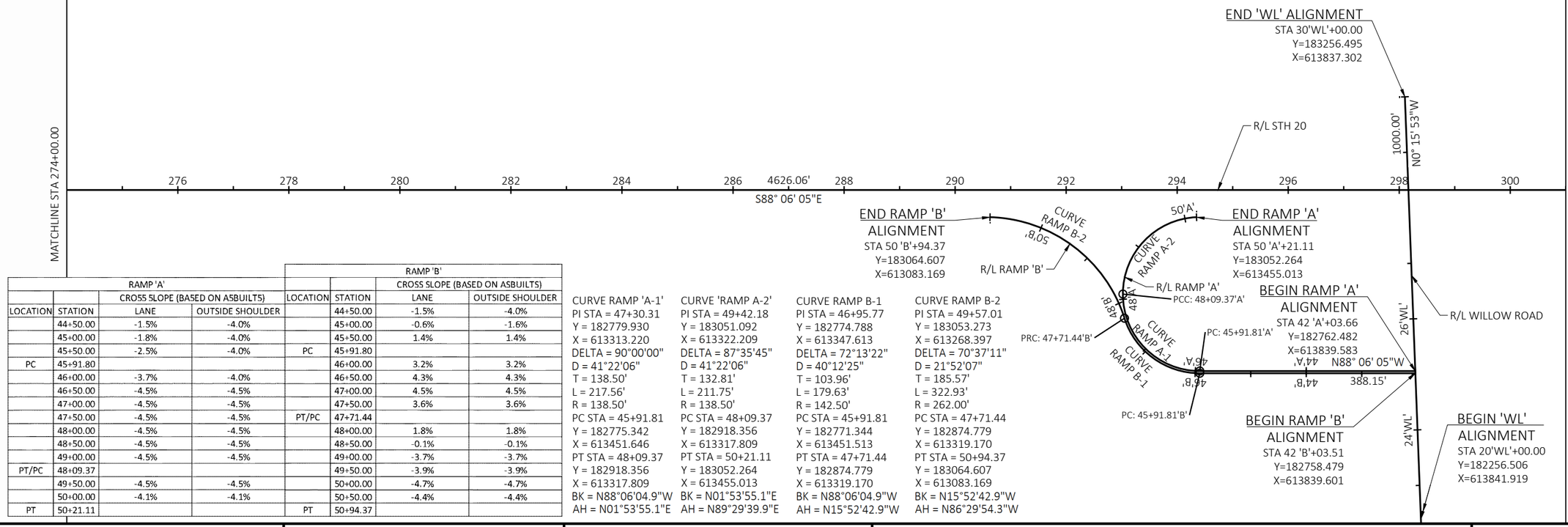
FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\027001-DT.DWG
LAYOUT NAME - Detour-01

PLOT DATE : 6/26/2023 10:47 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:500 FT



STH 20 - CURVE 1									
		CROSS SLOPE (BASED ON ASBUILTS)							
LOCATION	STATION	WB OUTSIDE SHOULDER	WB LEFT LANE	WB RIGHT LANE	WB INSIDE SHOULDER	EB INSIDE SHOULDER	EB LEFT LANE	EB RIGHT LANE	EB OUTSIDE SHOULDER
END NORMAL CROWN	261+20.71	-4.0%	-1.5%	-1.5%	-4.0%	-4.0%	-1.5%	-1.5%	-4.0%
LEVEL CROWN	261+92.71	-4.0%	-1.5%	0.0%	0.0%	-4.0%	-1.5%	0.0%	0.0%
PC	262+40.71	-4.0%	-1.8%	1.3%	1.3%	-4.0%	-1.8%	1.3%	1.3%
BEGIN FULL SUPER	262+64.71	-4.0%	-2.0%	2.0%	2.0%	-4.0%	-2.0%	2.0%	2.0%
END FULL SUPER	266+97.72	-4.0%	-2.0%	2.0%	2.0%	-4.0%	-2.0%	2.0%	2.0%
PT	267+21.72	-4.0%	-1.8%	1.3%	1.3%	-4.0%	-1.8%	1.3%	1.3%
LEVEL CROWN	267+69.72	-4.0%	-1.5%	0.0%	0.0%	-4.0%	-1.5%	0.0%	0.0%
BEGIN NORMAL CROWN	268+41.72	-4.0%	-1.5%	-1.5%	-4.0%	-4.0%	-1.5%	-1.5%	-4.0%

CURVE 1
PI STA = 264+81.23
Y = 183199.217
X = 610504.537
DELTA = 1°36'12"
D = 0°20'00"
T = 240.52'
L = 481.01'
R = 17189.00'
PC STA = 262+40.71
Y = 183213.909
X = 610264.466
PT STA = 267+21.72
Y = 183191.248
X = 610744.924
BK = S86°29'52.9"E
AH = S88°06'04.9"E



RAMP 'A'				RAMP 'B'			
		CROSS SLOPE (BASED ON ASBUILTS)				CROSS SLOPE (BASED ON ASBUILTS)	
LOCATION	STATION	LANE	OUTSIDE SHOULDER	LOCATION	STATION	LANE	OUTSIDE SHOULDER
	44+50.00	-1.5%	-4.0%		44+50.00	-1.5%	-4.0%
	45+00.00	-1.8%	-4.0%		45+00.00	-0.6%	-1.6%
	45+50.00	-2.5%	-4.0%		45+50.00	1.4%	1.4%
PC	45+91.80			PC	45+91.80		
	46+00.00	-3.7%	-4.0%		46+00.00	3.2%	3.2%
	46+50.00	-4.5%	-4.5%		46+50.00	4.3%	4.3%
	47+00.00	-4.5%	-4.5%		47+00.00	4.5%	4.5%
	47+50.00	-4.5%	-4.5%		47+50.00	3.6%	3.6%
	47+50.00	-4.5%	-4.5%	PT/PC	47+71.44		
	48+00.00	-4.5%	-4.5%		48+00.00	1.8%	1.8%
	48+50.00	-4.5%	-4.5%		48+50.00	-0.1%	-0.1%
	49+00.00	-4.5%	-4.5%		49+00.00	-3.7%	-3.7%
PT/PC	48+09.37				49+50.00	-3.9%	-3.9%
	49+50.00	-4.5%	-4.5%		50+00.00	-4.7%	-4.7%
	50+00.00	-4.1%	-4.1%		50+50.00	-4.4%	-4.4%
PT	50+21.11			PT	50+94.37		

CURVE RAMP 'A-1'
PI STA = 47+30.31
Y = 182779.930
X = 613313.220
DELTA = 90°00'00"
D = 41°22'06"
T = 138.50'
L = 217.56'
R = 138.50'
PC STA = 45+91.81
Y = 182775.342
X = 613451.646
PT STA = 48+09.37
Y = 182918.356
X = 613317.809
BK = N88°06'04.9"W
AH = N01°53'55.1"E

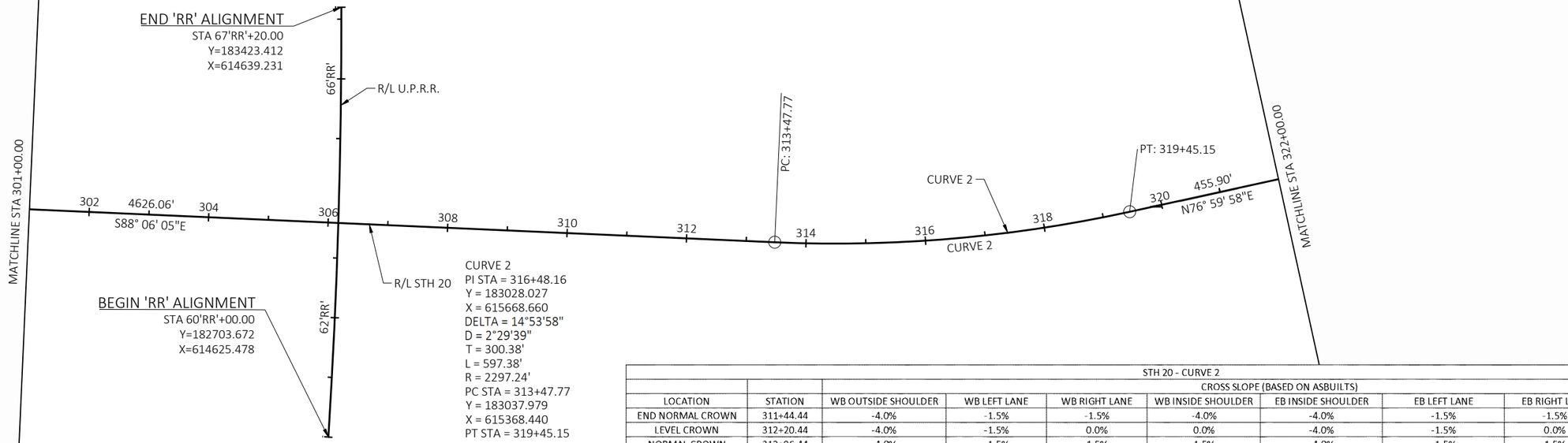
CURVE 'RAMP A-2'
PI STA = 49+42.18
Y = 183051.092
X = 613322.209
DELTA = 87°35'45"
D = 41°22'06"
T = 132.81'
L = 211.75'
R = 138.50'
PC STA = 48+09.37
Y = 182918.356
X = 613317.809
PT STA = 50+21.11
Y = 183052.264
X = 613455.013
BK = N01°53'55.1"E
AH = N89°29'39.9"E

CURVE RAMP B-1
PI STA = 46+95.77
Y = 182774.788
X = 613347.613
DELTA = 72°13'22"
D = 40°12'25"
T = 103.96'
L = 179.63'
R = 142.50'
PC STA = 45+91.81
Y = 182771.344
X = 613451.513
PT STA = 47+71.44
Y = 182874.779
X = 613319.170
BK = N88°06'04.9"W
AH = N15°52'42.9"W

CURVE RAMP B-2
PI STA = 49+57.01
Y = 183053.273
X = 613268.397
DELTA = 70°37'11"
D = 21°52'07"
T = 185.57'
L = 322.93'
R = 262.00'
PC STA = 47+71.44
Y = 182874.779
X = 613319.170
PT STA = 50+94.37
Y = 183064.607
X = 613083.169
BK = N15°52'42.9"W
AH = N86°29'54.3"W

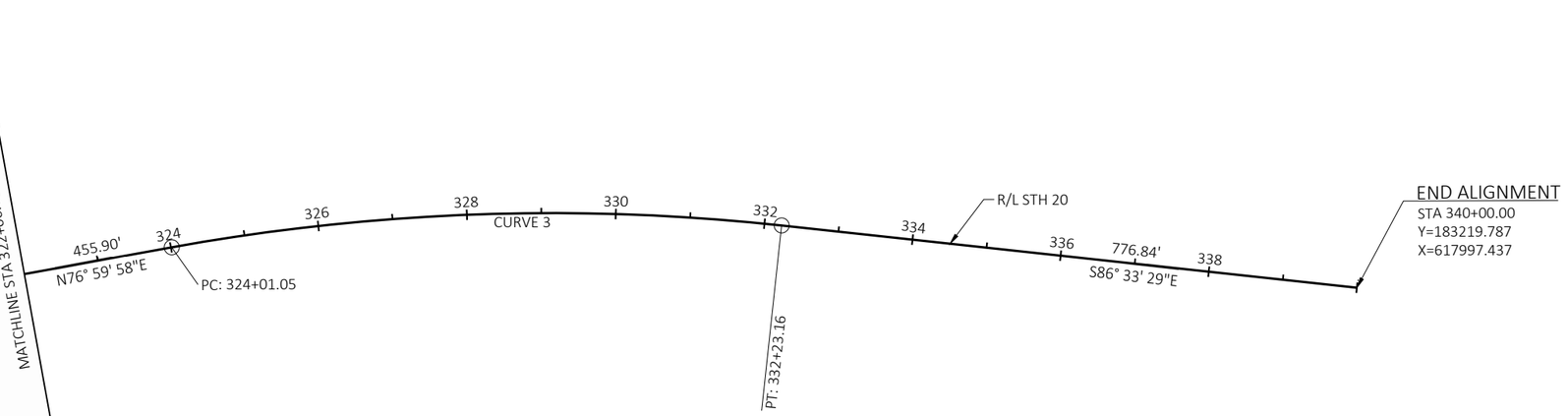
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	ALIGNMENT DIAGRAM	SHEET 58	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\027201-AD.DWG
LAYOUT NAME - Alin-01
PLOT DATE : 6/26/2023 1:34 PM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 44



CURVE 2
PI STA = 316+48.16
Y = 183028.027
X = 615668.660
DELTA = 14°53'58"
D = 2°29'39"
T = 300.38'
L = 597.38'
R = 2297.24'
PC STA = 313+47.77
Y = 183037.979
X = 615368.440
PT STA = 319+45.15
Y = 183095.602
X = 615961.345
BK = S88°06'04.9"E
AH = N76°59'57.6"E

STH 20 - CURVE 2									
		CROSS SLOPE (BASED ON ASBUILTS)							
LOCATION	STATION	WB OUTSIDE SHOULDER	WB LEFT LANE	WB RIGHT LANE	WB INSIDE SHOULDER	EB INSIDE SHOULDER	EB LEFT LANE	EB RIGHT LANE	EB OUTSIDE SHOULDER
END NORMAL CROWN	311+44.44	-4.0%	-1.5%	-1.5%	-4.0%	-4.0%	-1.5%	-1.5%	-4.0%
LEVEL CROWN	312+20.44	-4.0%	-1.5%	0.0%	0.0%	-4.0%	-1.5%	0.0%	0.0%
NORMAL CROWN	312+96.44	-4.0%	-1.5%	1.5%	1.5%	-4.0%	-1.5%	1.5%	1.5%
PC	313+47.77	-4.4%	-3.1%	3.1%	3.1%	-4.4%	-3.1%	3.1%	3.1%
BEGIN FULL SUPER	314+11.44	-5.0%	-5.0%	5.0%	5.0%	-5.0%	-5.0%	5.0%	5.0%
END FULL SUPER	318+81.48	-5.0%	-5.0%	5.0%	5.0%	-5.0%	-5.0%	5.0%	5.0%
PT	319+45.15	-4.4%	-3.1%	3.1%	3.1%	-4.4%	-3.1%	3.1%	3.1%
NORMAL CROWN	319+96.48	-4.0%	-1.5%	1.5%	1.5%	-4.0%	-1.5%	1.5%	1.5%
LEVEL CROWN	320+72.48	-4.0%	-1.5%	0.0%	0.0%	-4.0%	-1.5%	0.0%	0.0%
BEGIN NORMAL CROWN	321+48.48	-4.0%	-1.5%	-1.5%	-4.0%	-4.0%	-1.5%	-1.5%	-4.0%



CURVE 3
PI STA = 328+14.95
Y = 183291.273
X = 616808.845
DELTA = 16°26'33"
D = 2°00'00"
T = 413.90'
L = 822.11'
R = 2864.74'
PC STA = 324+01.05
Y = 183198.162
X = 616405.555
PT STA = 332+23.16
Y = 183266.425
X = 617221.999
BK = N76°59'57.6"E
AH = S86°33'29.4"E

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	ALIGNMENT DIAGRAM	SHEET 59	E

2

FOUNTAIN HILL DRIVE

FLAG

INL

CP107
CP FENO
STA 263+82.45, 162.85' LT
N: 183368.460
E: 610414.586
EL: 694.339

BM120
BM NW FLANGE BOLT
STA 265+01.40, 157.2' LT
N: 183356.998
E: 610531.999
EL: 693.037

N

N. FRONTAGE ROAD

STH 20

265

BM119
BM NW FLANGE BOLT
STA 269+63.50, 163.850' LT
N: 183346.998
E: 610992.000
EL: 691.256

CP106
CP FENO
STA 269+95.15, 161.5' LT
N: 183343.616
E: 610023.561
EL: 690.334

N. FRONTAGE ROAD

STH 20

270

CP105
BERNTSEN FENO MONUMENT WITH 2" ALUMINUM CAP. SET ON THE NW QUADRANT OF THE INTERSECTION OF COMMERCE DR. AND N. FRONTAGE RD.
STA 278+05.96, 162.6' LT
N: 183317.877
E: 611833.956
EL: 686.002

COMMERCE DRIVE

BM110
SET BENCHMARK CROSS ON NE FLANGE BOLT OF HYDRANT IN THE NW QUADRANT OF THE INTERSECTION OF WASHINGTON AVE. AND COMMERCE DR.
STA. 278+13.18, 192.5' LT
N: 183347.502
E: 611842.015
EL: 686.974

N. FRONTAGE ROAD

STH 20

280

290

STH 20

RAMP 'B'

RAMP 'A'

CP104
BERNTSEN FENO MONUMENT WITH 2" ALUMINUM CAP. SET ON THE S SIDE OF WASHINGTON AVE. ON THE W SIDE OF THE GRASS ISLAND BETWEEN THE OFF RAMP AND WASHINGTON AVE.
STA 291+94.26, 70.9' RT
N: 183038.386
E: 613213.758
EL: 686.924

BM114
SET BENCHMARK BOX ON 36" RCP LOCATED ON THE WEST SIDE OF THE JUG HANDLE.
STA. 292+19.24, 160.9' RT
N: 182947.696
E: 613235.744
EL: 681.41

CP101
BERNTSEN FENO MONUMENT WITH 2" ALUMINUM CAP. SET IN THE NW QUADRANT OF THE INTERSECTION OF S. STUART RD. AND N. FRONTAGE RD.
STA 279+23.12, 186.9' LT
N: 183278.564
E: 613750.868
EL: 683.994

BERM

STUART ROAD

BM111
SET BENCHMARK CROSS ON NE FLANGE BOLT OF A HYDRANT IN THE NW QUADRANT OF THE INTERSECTION OF S. STUART RD. AND N. FRONTAGE RD.
STA. 297+63.34, 201.2' LT
N: 183291.541
E: 613791.541
EL: 686.152

N. FRONTAGE ROAD

BM118
SET BENCHMARK ON ALUMINUM CAPLOCATED AT THE NE CORNER OF THE WASHINGTON AVE. WESTBOUND BRIDGE OVER S. STUART RD.
STA. 298+79.33, 59.7' LT
N: 183146.330
E: 613902.785
EL: 704.532

95

300

STH 20

BM115
SET BENCHMARK ON ALUMINUM CAP LOCATED AT THE SW CORNER OF THE WASHINGTON AVE. EASTBOUND BRIDGE OVER WILLOW RD.
STA. 297+58.58, 70.6' RT
N: 183020.069
E: 613777.781
EL: 701.505

WILLOW ROAD

BM117
SET BENCHMARK ON ALUMINUM CAP LOCATED AT THE NE CORNER OF WASHINGTON AVE. WESTBOUND BRIDGE OVER RAIL ROAD.
STA. 306+83.67, 59.5' LT
N: 183119.455
E: 614706.669
EL: 717.354

N. FRONTAGE ROAD

STH 20

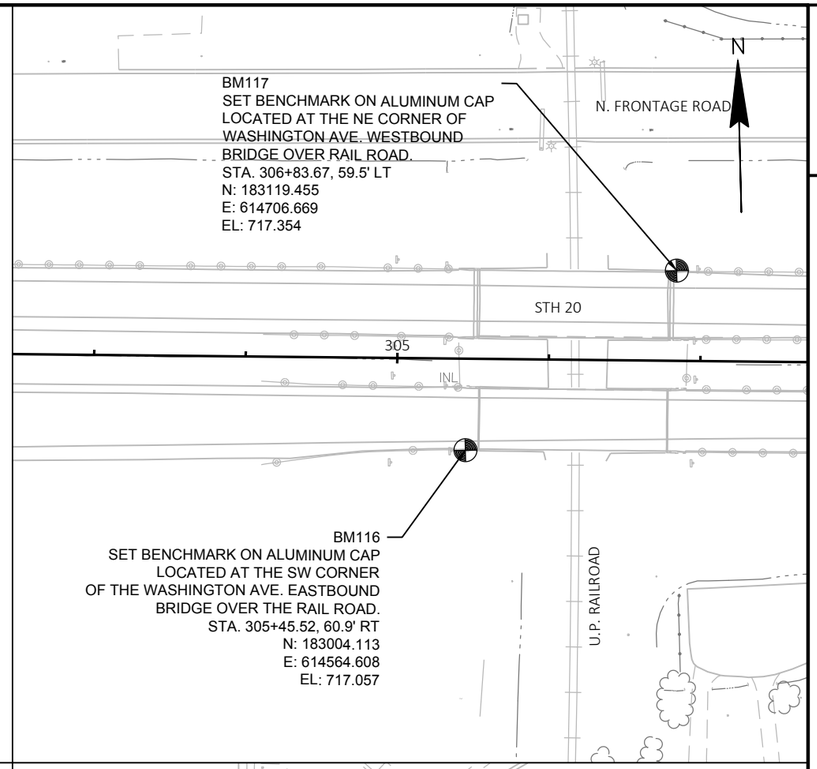
305

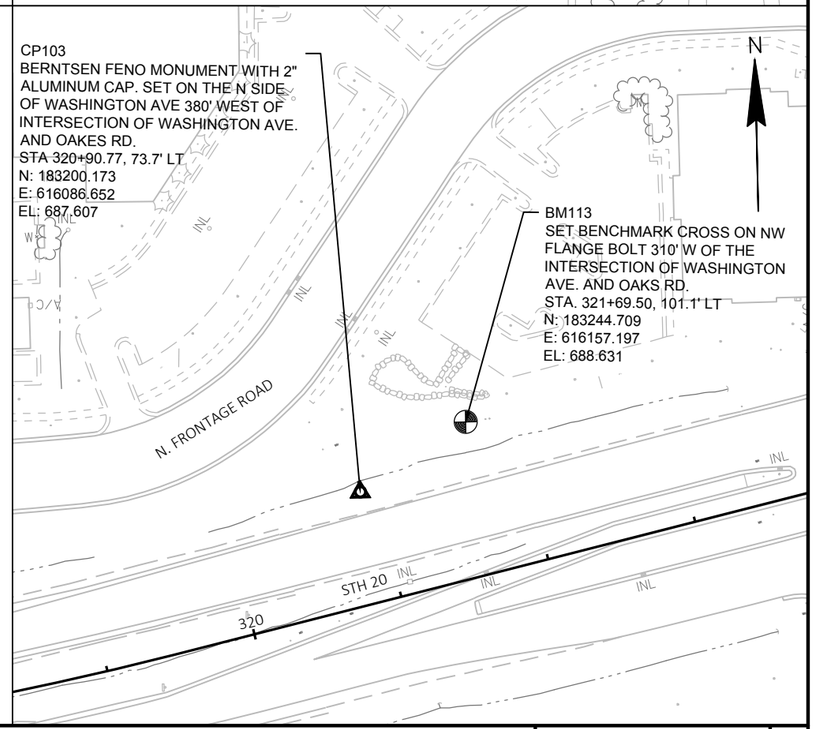
BM116
SET BENCHMARK ON ALUMINUM CAP LOCATED AT THE SW CORNER OF THE WASHINGTON AVE. EASTBOUND BRIDGE OVER THE RAIL ROAD.
STA. 305+45.52, 60.9' RT
N: 183004.113
E: 614564.608
EL: 717.057

U.P. RAILROAD

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	BENCHMARK AND CONTROL POINTS OVERVIEW	SHEET 60	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\027301-SC.DWG
LAYOUT NAME - Bench-01
PLOT DATE : 7/31/2023 2:49 PM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42





PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	BENCHMARK AND CONTROL POINTS OVERVIEW	SHEET 61	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\027301-SC.DWG
LAYOUT NAME - Bench-02
PLOT DATE : 7/31/2023 2:44 PM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

Estimate Of Quantities

2340-03-73

Line	Item	Item Description	Unit	Total	Qty
0002	203.0220	Removing Structure (structure) 11. B-51-40	EACH	1.000	1.000
0004	204.0100	Removing Concrete Pavement	SY	23.000	23.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	79.000	79.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	44,801.000	44,801.000
0010	204.0130	Removing Curb	LF	7.000	7.000
0012	204.0165	Removing Guardrail	LF	4,017.000	4,017.000
0014	204.0190	Removing Surface Drains	EACH	1.000	1.000
0016	204.0245	Removing Storm Sewer (size) 01. 12-INCH	LF	20.000	20.000
0018	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	4.000	4.000
0020	205.0100	Excavation Common	CY	35.000	35.000
0022	206.1001	Excavation for Structures Bridges (structure) 11. B-51-40	EACH	1.000	1.000
0024	208.0100	Borrow	CY	239.000	239.000
0026	210.1500	Backfill Structure Type A	TON	26.000	26.000
0028	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 2340-03-73	EACH	1.000	1.000
0030	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	38.000	38.000
0032	213.0100	Finishing Roadway (project) 01. 2340-03-73	EACH	1.000	1.000
0034	305.0110	Base Aggregate Dense 3/4-Inch	TON	657.000	657.000
0036	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	310.000	310.000
0038	305.0500	Shaping Shoulders	STA	183.000	183.000
0040	390.0100	Removing Pavement for Base Patching	CY	2,920.000	2,920.000
0042	390.0305	Base Patching Concrete HES	CY	2,920.000	2,920.000
0044	415.0070	Concrete Pavement 7-Inch	SY	20.000	20.000
0046	416.0610	Drilled Tie Bars	EACH	365.000	365.000
0048	416.0620	Drilled Dowel Bars	EACH	4,103.000	4,103.000
0050	455.0605	Tack Coat	GAL	3,138.000	3,138.000
0052	460.2000	Incentive Density HMA Pavement	DOL	3,160.000	3,160.000
0054	460.6224	HMA Pavement 4 MT 58-28 S	TON	4,938.000	4,938.000
0056	465.0315	Asphaltic Flumes	SY	6.000	6.000
0058	502.0100	Concrete Masonry Bridges	CY	9.000	9.000
0060	502.3101	Expansion Device	LF	88.000	88.000
0062	502.3200	Protective Surface Treatment	SY	1,211.000	1,211.000
0064	502.3210	Pigmented Surface Sealer	SY	458.000	458.000
0066	502.4205	Adhesive Anchors No. 5 Bar	EACH	98.000	98.000
0068	502.4206	Adhesive Anchors No. 6 Bar	EACH	8.000	8.000
0070	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	4,215.000	4,215.000
0072	506.2610	Bearing Pads Elastomeric Laminated	EACH	12.000	12.000
0074	506.7050.S	Removing Bearings (structure) 10. B-51-39	EACH	12.000	12.000
0076	509.0301	Preparation Decks Type 1	SY	259.000	259.000
0078	509.0302	Preparation Decks Type 2	SY	186.000	186.000
0080	509.0505.S	Cleaning Decks to Reapply Concrete Masonry Overlay	SY	1,211.000	1,211.000
0082	509.1000	Joint Repair	SY	40.000	40.000
0084	509.1500	Concrete Surface Repair	SF	295.000	295.000
0086	509.2000	Full-Depth Deck Repair	SY	4.000	4.000
0088	509.2500	Concrete Masonry Overlay Decks	CY	119.000	119.000
0090	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 11. B-51-44	SY	568.000	568.000
0092	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 13. B-51-39	SY	642.000	642.000
0094	509.9010.S	Removing Asphaltic Concrete Deck Overlay (structure) 11. B-51-44	SY	568.000	568.000
0096	509.9010.S	Removing Asphaltic Concrete Deck Overlay (structure) 13. B-51-39	SY	642.000	642.000
0098	509.9020.S	Epoxy Crack Sealing	LF	20.000	20.000
0100	509.9050.S	Cleaning Parapets	LF	1,120.000	1,120.000

2340-03-73

Line	Item	Item Description	Unit	Total	Qty
0102	516.0500	Rubberized Membrane Waterproofing	SY	3.000	3.000
0104	517.0901.S	Preparation and Coating of Top Flanges (structure) 10. B-51-39	EACH	1.000	1.000
0106	517.4501.S	Negative Pressure Containment and Collection of Waste Materials (structure) 11. B-51-44	EACH	1.000	1.000
0108	517.4501.S	Negative Pressure Containment and Collection of Waste Materials (structure) 13. B-51-39	EACH	1.000	1.000
0110	517.6001.S	Portable Decontamination Facility	EACH	2.000	2.000
0112	520.8700	Cleaning Culvert Pipes	EACH	2.000	2.000
0114	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	4.000	4.000
0116	603.8000	Concrete Barrier Temporary Precast Delivered	LF	798.000	798.000
0118	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,596.000	1,596.000
0120	603.8500	Anchoring Concrete Barrier Temporary Precast	LF	1,084.000	1,084.000
0122	603.8505	Anchoring Concrete Barrier Temporary Precast on Bridge Decks	LF	512.000	512.000
0124	604.9010.S	Slope Paving Repair Crushed Aggregate	CY	38.000	38.000
0126	604.9015.S	Reseal Crushed Aggregate Slope Paving	SY	1,500.000	1,500.000
0128	608.6012	Storm Sewer Pipe Composite 12-Inch	LF	20.000	20.000
0130	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0132	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	1.000	1.000
0134	614.0396	Guardrail Mow Strip Asphalt	SY	1,365.000	1,365.000
0136	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	264.000	264.000
0138	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0140	614.2300	MGS Guardrail 3	LF	112.500	112.500
0142	614.2330	MGS Guardrail 3 K	LF	3,275.000	3,275.000
0144	614.2500	MGS Thrie Beam Transition	LF	433.400	433.400
0146	614.2610	MGS Guardrail Terminal EAT	EACH	7.000	7.000
0148	614.2620	MGS Guardrail Terminal Type 2	EACH	2.000	2.000
0150	618.0100	Maintenance and Repair of Haul Roads (project) 01. 2340-03-73	EACH	1.000	1.000
0152	619.1000	Mobilization	EACH	1.000	1.000
0154	624.0100	Water	MGAL	17.000	17.000
0156	625.0100	Topsoil	SY	1,865.000	1,865.000
0158	627.0200	Mulching	SY	945.000	945.000
0160	628.1504	Silt Fence	LF	1,190.000	1,190.000
0162	628.1520	Silt Fence Maintenance	LF	1,190.000	1,190.000
0164	628.1905	Mobilizations Erosion Control	EACH	9.000	9.000
0166	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0168	628.2002	Erosion Mat Class I Type A	SY	210.000	210.000
0170	628.2006	Erosion Mat Urban Class I Type A	SY	1,640.000	1,640.000
0172	628.7005	Inlet Protection Type A	EACH	13.000	13.000
0174	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0176	628.7020	Inlet Protection Type D	EACH	6.000	6.000
0178	628.7504	Temporary Ditch Checks	LF	295.000	295.000
0180	628.7555	Culvert Pipe Checks	EACH	60.000	60.000
0182	629.0210	Fertilizer Type B	CWT	1.350	1.350
0184	630.0130	Seeding Mixture No. 30	LB	130.000	130.000
0186	630.0200	Seeding Temporary	LB	30.000	30.000
0188	630.0500	Seed Water	MGAL	70.000	70.000
0190	633.5200	Markers Culvert End	EACH	6.000	6.000
0192	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	50.000	50.000
0194	637.2210	Signs Type II Reflective H	SF	89.180	89.180
0196	637.2230	Signs Type II Reflective F	SF	75.000	75.000
0198	638.2102	Moving Signs Type II	EACH	32.000	32.000

Estimate Of Quantities

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Line	Item	Item Description	Unit	Total	Qty
0200	638.2602	Removing Signs Type II	EACH	20.000	20.000
0202	638.3000	Removing Small Sign Supports	EACH	48.000	48.000
0204	642.5201	Field Office Type C	EACH	1.000	1.000
0206	643.0300	Traffic Control Drums	DAY	43,784.000	43,784.000
0208	643.0420	Traffic Control Barricades Type III	DAY	4,582.000	4,582.000
0210	643.0705	Traffic Control Warning Lights Type A	DAY	9,165.000	9,165.000
0212	643.0715	Traffic Control Warning Lights Type C	DAY	5,711.000	5,711.000
0214	643.0800	Traffic Control Arrow Boards	DAY	56.000	56.000
0216	643.0900	Traffic Control Signs	DAY	19,316.000	19,316.000
0218	643.0920	Traffic Control Covering Signs Type II	EACH	18.000	18.000
0220	643.1000	Traffic Control Signs Fixed Message	SF	151.000	151.000
0222	643.3170	Temporary Marking Line Epoxy 6-Inch	LF	20,402.000	20,402.000
0224	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	28,612.000	28,612.000
0226	643.3280	Temporary Marking Line Removable Tape 10-Inch	LF	2,833.000	2,833.000
0228	643.5000	Traffic Control	EACH	1.000	1.000
0230	646.2020	Marking Line Epoxy 6-Inch	LF	31,210.000	31,210.000
0232	646.2025	Marking Line Grooved Black Epoxy 6-Inch	LF	4,494.000	4,494.000
0234	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	5,160.000	5,160.000
0236	646.4025	Marking Line Grooved Black Epoxy 10-Inch	LF	318.000	318.000
0238	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	5,775.000	5,775.000
0240	646.5020	Marking Arrow Epoxy	EACH	21.000	21.000
0242	646.5120	Marking Word Epoxy	EACH	7.000	7.000
0244	646.6120	Marking Stop Line Epoxy 18-Inch	LF	347.000	347.000
0246	646.6220	Marking Yield Line Epoxy 18-Inch	EACH	2.000	2.000
0248	646.7220	Marking Chevron Epoxy 24-Inch	LF	32.000	32.000
0250	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	1,266.000	1,266.000
0252	646.9000	Marking Removal Line 4-Inch	LF	271.000	271.000
0254	650.4500	Construction Staking Subgrade	LF	1,682.000	1,682.000
0256	650.5000	Construction Staking Base	LF	4,978.000	4,978.000
0258	650.6501	Construction Staking Structure Layout (structure) 01. B-50-39	EACH	1.000	1.000
0260	650.6501	Construction Staking Structure Layout (structure) 02. B-50-40	EACH	1.000	1.000
0262	650.6501	Construction Staking Structure Layout (structure) 03. B-50-43	EACH	1.000	1.000
0264	650.6501	Construction Staking Structure Layout (structure) 04. B-50-44	EACH	1.000	1.000
0266	650.8000	Construction Staking Resurfacing Reference	LF	11,909.000	11,909.000
0268	650.9911	Construction Staking Supplemental Control (project) 01. 2340-03-73	EACH	1.000	1.000
0270	650.9920	Construction Staking Slope Stakes	LF	1,682.000	1,682.000
0272	652.0800	Conduit Loop Detector	LF	176.000	176.000
0274	655.0700	Loop Detector Lead In Cable	LF	459.000	459.000
0276	655.0800	Loop Detector Wire	LF	352.000	352.000
0278	690.0150	Sawing Asphalt	LF	2,182.000	2,182.000
0280	690.0250	Sawing Concrete	LF	6,648.000	6,648.000
0282	740.0440	Incentive IRI Ride	DOL	4,636.000	4,636.000
0284	801.0117	Railroad Flagging Reimbursement	DOL	17,250.000	17,250.000
0286	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 306+16.79	EACH	1.000	1.000
0288	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 02. 306+17.49	EACH	1.000	1.000
0290	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,000.000	2,000.000
0292	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,280.000	2,280.000
0294	SPV.0060	Special 01. Cleaning Storm Sewer	EACH	5.000	5.000
0296	SPV.0060	Special 02. Resetting Apron Endwall	EACH	1.000	1.000
0298	SPV.0060	Special 03. Resetting Culvert Pipe Joints	EACH	2.000	2.000

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Line	Item	Item Description	Unit	Total	Qty
0300	SPV.0060	Special 11. Embedded Galvanic Anodes	EACH	108.000	108.000
0302	SPV.0060	Special 12. Structure Repainting Recycled Abrasive Special B-51-39	EACH	1.000	1.000
0304	SPV.0060	Special 13. Structure Repainting Recycled Abrasive Special B-51-44	EACH	1.000	1.000
0306	SPV.0060	Special 14. Vegetation Removal B-51-39	EACH	1.000	1.000
0308	SPV.0060	Special 15. Vegetation Removal B-51-44	EACH	1.000	1.000
0310	SPV.0090	Special 01. Concrete Curb & Gutter Integral 4-INCH Sloped 36-Inch Type TBTT	LF	10.000	10.000
0312	SPV.0090	Special 02. Cleaning Ditch	LF	193.000	193.000
0314	SPV.0165	Special 10. Removing Loose Concrete	SF	95.000	95.000
0316	SPV.0180	Special 10. Abutment Seat Cleaning and Sealing	SY	24.000	24.000
0318	SPV.0180	Special 11. Methacrylate Flood Seal	SY	1,199.000	1,199.000

STORM SEWER REMOVAL ITEMS

STATION	LOCATION	204.0245 REMOVING STORM SEWER 12-INCH LF	204.9060.S.01 REMOVING APRON ENDWALLS EACH	REMARKS
CAT 0010				
PROJECT NO: 2340-03-73				
STAGE 1				
298+92	80' RT	--	1	12-INCH
STAGE 1 SUBTOTAL		--	1	
STAGE 2				
298+99	3' LT	--	1	12-INCH
298+99	7' RT	--	1	12-INCH
305+24 - 305+39	5' RT	20	1	
STAGE 2 SUBTOTAL		20	3	
PROJECT TOTAL		20	4	

ROADWAY REMOVAL ITEMS

STATION	-	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0130 REMOVING CURB LF	204.0190 REMOVING SURFACE DRAINS EACH
CAT 0010								
PROJECT NO: 2340-03-73								
STAGE 1								
267+00	-	297+64	EB	--	5	7,699	--	--
298+76	-	305+53	EB	--	--	2,247	--	--
306+80	-	318+00	EB	--	5	2,663	--	--
267+00	-	297+61	WB	--	14	6,907	--	--
298+74	-	305+49	WB	--	--	1,462	--	--
298+75	-	298+95	WB	23	--	--	--	--
306+83	-	318+00	WB	--	4	2,468	--	--
42+15	-	50+21	RAMP A	--	18	1,923	--	--
42+15	-	50+94	RAMP B	--	19	2,233	--	--
STAGE 1 SUBTOTAL				23	66	27,601	--	--
STAGE 2								
267+00	-	297+64	EB	--	3	5,148	--	--
298+76	-	305+53	EB	--	--	1,310	--	--
306+80	-	318+00	EB	--	3	1,922	--	--
267+00	-	297+61	WB	--	3	5,240	--	--
298+74	-	305+49	WB	--	--	1,600	7	1
306+83	-	318+00	WB	--	3	1,980	--	--
STAGE 2 SUBTOTAL				--	13	17,200	7	1
PROJECT TOTAL				23	79	44,801	7	1

REMOVING GUARDRAIL

ROADWAY	STATION	-	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
CAT 0010					
PROJECT NO: 2340-03-73					
STAGE 1					
STH 20 EB					
	296+24	-	297+58	70' RT	135
	298+81	-	300+15	70' RT	134
	304+11	-	305+46	60' RT	135
	306+85	-	316+25	60' RT	940
STH 20 WB					
	294+77	-	297+55	59' LT	278
	298+80	-	305+45	59' LT	665
	306+87	-	313+47	69' LT	660
STAGE 1 SUBTOTAL					2,947
STAGE 2					
STH 20 EB					
	296+23	-	297+59	18' RT	136
	298+81	-	300+04	18' RT	123
	304+10	-	305+46	18' RT	136
	306+86	-	308+21	18' RT	135
STH 20 WB					
	296+33	-	297+55	14' LT	122
	298+80	-	300+16	13' LT	136
	304+11	-	305+45	14' LT	134
	306+87	-	308+35	14' LT	148
STAGE 2 SUBTOTAL					1,070
PROJECT TOTAL					4,017

EARTHWORK SUMMARY

DIVISION	EROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON CY (1) CUT (2)	205.0100 EXCAVATION COMMON CY (1) EBS EXCAVATION (3)	SALVAGED/UNUSABLE AGGREGATE MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED EILL	EXPANDED EILL (6) FACTOR 1.25	MASS ORDINATE +/- (7)	208.0100 BORROW CY
DIVISION 1										
	295+78.77 to 303+98.26	STH 20 EB OUTSIDE	3	0	3	0	39	49	-49	49
	301+53.95 to 317+27.93	STH 20 WB OUTSIDE	7	0	7	0	64	80	-80	80
DIVISION 1 SUBTOTAL			10	0	10	0	103	129	-129	129
DIVISION 2										
	294+28.78 to 305+41.85	STH 20 EB MEDIAN	9	0	9	0	61	76	-76	76
	299+97.73 to 308+93.86	STH 20 WB MEDIAN	16	0	16	0	27	34	-34	34
DIVISION 2 SUBTOTAL			25	0	25	0	88	110	-110	110
GRAND TOTAL			35	0	35	0	191	239	-239	239
		TOTAL EXC COMMON	35							

NOTES:
(1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100.
(2) SALVAGED/UNSUABLE AGGREGATE MATERIAL IS INCLUDED IN CUT.
(3) NO EBS IS ANTICIPATED. IF EBS IS REQUIRED IT WILL BE PAID AS EXCAVATION COMMON, ITEM NUMBER 205.0100.
(4) SALVAGED/UNUSABLE AGGREGATE MATERIAL IS ASSUMED TO BE UNUSABLE FOR FILL OPERATIONS.
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE AGGREGATE MATERIAL
(6) EXPANDED FILL FACTOR = 1.25
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
(7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

PREPARE FOUNDATION

	STATION	-	STATION		211.0101 PREPARE FOUNDATION FOR ASPHALTIC PAVING EACH	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	305.0500 SHAPING SHOULDERS STA
CAT 0010							
PROJECT NO: 2340-03-73					1		
STAGE 1							
STH 20 EB	267+00	-	318+00	RT	--	12	39
STH 20 WB	267+00	-	318+00	LT	--	20	31
RAMP 'A'	42+15	-	50+21	RT	--	--	8
RAMP 'B'	42+15	-	50+94	LT	--	--	9
STAGE 1 SUBTOTAL					--	32	87
STAGE 2							
STH 20 EB	267+00	-	318+00	RT	--	4	47
STH 20 WB	267+00	-	318+00	LT	--	2	49
STAGE 2 SUBTOTAL					--	6	96
PROJECT TOTAL					1	38	183

NOTE: PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS ASSUMED IN LOCATIONS WITH GUARDRAIL MOW STRIP ASPHALT.
SHAPING SHOULDERS ASSUMED EVERYWHERE ELSE (WHERE THE EXISTING SHOULDERS ARE TO BE MILLED AND OVERLAID).

FINISHING ROADWAY

LOCATION	213.0100 FINISHING ROADWAY EACH
CAT 0010	
PROJECT NO: 2340-03-73	1
PROJECT TOTAL	1

BASE AGGREGATE

STATION	-	STATION	LOCATION	305.0110** BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
CAT 0010					
PROJECT NO: 2340-03-73					
STAGE 1					
267+00	-	297+64	EB	96	27
298+76	-	305+53	EB	16	27
306+80	-	318+00	EB	16	--
267+00	-	297+61	WB	5	--
298+74	-	305+49	WB	68	32
306+83	-	318+00	WB	--	20
42+15	-	50+21	RAMP A	4	--
42+15	-	50+94	RAMP B	29	--
STAGE 1 SUBTOTAL				234	106
STAGE 2					
267+00	-	297+64	EB	115	66
298+76	-	305+53	EB	19	57
306+80	-	318+00	EB	44	--
267+00	-	297+61	WB	119	--
298+74	-	305+49	WB	22	45
306+83	-	318+00	WB	44	8
STAGE 2 SUBTOTAL				363	176
UNDISTRIBUTED				60	28
PROJECT TOTAL				657	310

** NOTE: BASE AGGREGATE DENSE 3/4-INCH CALCULATED AT A 2-INCH DEPTH

BASE PATCHING AND CONCRETE

STATION	-	STATION	390.0100 REMOVING PAVEMENT FOR BASE PATCHING CY	390.0305 BASE PATCHING CONCRETE HES CY	415.0070 CONCRETE PAVEMENT 7-INCH SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	690.0150* SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
CAT 0010									
PROJECT NO: 2340-03-73									
STAGE 1									
STH 20 EB									
259+62	-	259+72	31	31	--	--	35	--	63
267+00	-	318+00	282	282	--	31	440	94	856
RAMP A									
42+15	-	50+21	339	339	--	48	336	188	548
RAMP B									
42+15	-	50+94	217	217	--	32	196	120	330
STH 20 WB									
267+00	-	318+00	521	521	--	20	1,078	361	1,537
298+75	-	298+95	--	--	20	6	--	--	20
STAGE 1 SUBTOTAL			1,390	1,390	20	137	2,085	763	3,354
STAGE 2									
STH 20 EB									
259+62	-	259+72	15	15	--	--	16	--	34
267+00	-	318+00	205	205	--	7	418	142	598
STH 20 WB									
267+00	-	318+00	1,170	1,170	--	188	1,386	832	2,344
STAGE 2 SUBTOTAL			1,390	1,390	--	195	1,820	974	2,976
UNDISTRIBUTED			141	141		33	198	88	318
PROJECT TOTAL			2,920	2,920	20	365	4,103	1,825	6,648

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

HMA PAVEMENTS AND MATERIALS

STATION	- STATION	LOCATION	455.0605 TACK COAT GAL	HMA PAVEMENT 4 460.6224 HMA PAVEMENT 4 MT 58-28 S TON	REMARKS
CAT 0010					
PROJECT NO: 2340-03-73					
STAGE 1					
259+62	- 259+72	EB	1	6	AT LOOP
267+00	- 297+64	EB	539	847	
298+76	- 305+53	EB	157	247	
306+80	- 318+00	EB	186	293	
267+00	- 297+61	WB	483	760	
298+74	- 305+49	WB	102	161	
306+83	- 318+00	WB	173	271	
42+15	- 50+21	RAMP A	135	212	
42+15	- 50+94	RAMP B	156	246	
STAGE 1 SUBTOTAL			1,934	3,042	
STAGE 2					
259+62	- 259+72	EB	1	3	AT LOOP
267+00	- 297+64	EB	360	566	
298+76	- 305+53	EB	92	144	
306+80	- 318+00	EB	135	211	
267+00	- 297+61	WB	367	576	
298+74	- 305+49	WB	112	176	
306+83	- 318+00	WB	139	218	
STAGE 2 SUBTOTAL			1,205	1,895	
PROJECT TOTAL			3,138	4,938	

DRAINAGE ITEMS

STATION	LOCATION	520.8700 CLEANING CULVERT PIPES EACH	SPV.0060.01 CLEANING STORM SEWER EACH	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	608.6012 STORM SEWER PIPE COMPOSITE 12-INCH LF	SPV.0060.02 RESETTING APRON ENDWALL EACH	SPV.0060.03 RESETTING CULVERT PIPE JOINTS EACH	611.8115 ADJUSTING INLET COVERS EACH	633.5200 MARKERS CULVERT END EACH	REMARKS
CAT 0010										
PROJECT NO: 2340-03-73										
STAGE 1										
298+91	66' & 58' LT	--	--	--	--	1	--	1	1	12-INCH PIPE
298+92	80' RT	--	--	1	--	--	--	--	1	
48'A'+80	LT/RT	--	1	--	--	--	--	--	--	21-INCH PIPE
50'A'+12	60' RT	--	1	--	--	--	1	--	--	48-INCH PIPE
45'B'+49.94	38' LT	--	--	--	--	--	1	--	1	24-INCH PIPE
STAGE 1 SUBTOTAL		--	2	1	--	1	2	1	3	
STAGE 2										
282+00	LT/RT	--	2	--	--	--	--	--	--	15-INCH PIPE
290+00	RT	1	--	--	--	--	--	--	--	12-INCH PIPE
298+99	3' LT	--	--	1	--	--	--	--	1	
298+99	7' RT	--	--	1	--	--	--	--	1	
305+25	19' RT	--	--	1	20	--	--	--	1	
311+98	LT/RT	1	--	--	--	--	--	--	--	15-INCH PIPE
313+00	RT	--	1	--	--	--	--	--	--	15-INCH PIPE
STAGE 2 SUBTOTAL		2	3	3	20	--	--	--	3	
PROJECT TOTAL		2	5	4	20	1	2	1	6	

ASHPALTIC FLUMES

STATION	LOCATION	465.0315 ASPHALTIC FLUMES SY
CAT 0010		
PROJECT NO: 2340-03-73		
STAGE 2		
305+36	15' LT	6
STAGE 2 SUBTOTAL		6
PROJECT TOTAL		6

CLEANING DITCH

ROADWAY	STATION	- STATION	LOCATION	SPV.0090.02 CLEANING DITCH LF
CAT 0010				
PROJECT NO: 2340-03-73				
STAGE 1				
STH 20 WB	290+07	- 295+00	LT	193
STAGE 1 SUBTOTAL				193
PROJECT TOTAL				193

CURB AND GUTTER ITEMS

STATION	-	STATION	LOCATION	SPV.0090.01 CONCRETE CURB & GUTTER INTEGRAL 4-INCH SLOPED 36-INCH TYPE TBTT LF
CAT 0010				
PROJECT NO: 2340-03-73				
STAGE 1				
298+85	-	298+95	59' LT	10
STAGE 1 SUBTOTAL				10
PROJECT TOTAL				10

WATER

STATION	-	STATION	LOCATION	624.0100 WATER MGAL
CAT 0010				
PROJECT NO: 2340-03-73				
STAGE 1				
267+00	-	297+64	EB	2
298+76	-	305+53	EB	1
306+80	-	318+00	EB	1
267+00	-	297+61	WB	1
298+74	-	305+49	WB	1
306+83	-	318+00	WB	1
42+15	-	50+21	RAMP A	1
42+15	-	50+94	RAMP B	1
STAGE 1 SUBTOTAL				8
STAGE 2				
267+00	-	297+64	EB	3
298+76	-	305+53	EB	1
306+80	-	318+00	EB	1
267+00	-	297+61	WB	2
298+74	-	305+49	WB	1
306+83	-	318+00	WB	1
STAGE 2 SUBTOTAL				8
UNDISTRIBUTED				1
PROJECT TOTAL				17

BEAM GUARD

STATION	-	STATION	LOCATION	614.0396 GUARDRAIL MOW STRIP ASPHALT SY	614.0397 GUARDRAIL MOW STRIP EMULSIFIED ASPHALT SY	614.2300 MGS GUARDRAIL 3 LF	614.2330 MGS GUARDRAIL 3 K LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH
CAT 0010										
PROJECT NO: 2340-03-73										
STAGE 1										
STH 20 EB										
296+41	-	297+59	70' RT	26	34	25.0	--	39.4	1	--
303+42	-	305+47	64'RT	36	34	--	112.5	39.4	1	--
306+86	-	316+32	59' RT	290	7	--	912.5	39.4	--	1
STH 20 WB										
293+01	-	297+55	59' LT	164	9	--	412.5	39.4	--	1
298+80	-	305+45	59' LT	280	--	--	587.5	78.8	--	--
306+88	-	316+64	59' LT	395	45	--	875.0	39.4	1	--
STAGE 1 SUBTOTAL				1,191	129	25.0	2,900.0	275.8	3	2
STAGE 2										
STH 20 EB										
295+16	-	297+59	19' RT	47	34	--	150.0	39.4	1	--
303+04	-	305+47	19' RT	45	32	--	150.0	39.4	1	--
STH 20 WB										
298+80	-	300+48	15' LT	28	32	--	75.0	39.4	1	--
306+87	-	308+67	16.2' LT	54	37	87.5	--	39.4	1	--
STAGE 2 SUBTOTAL				174	135	87.5	375.0	157.6	4	--
PROJECT TOTAL				1,365	264	112.5	3,275.0	433.4	7	2

HAUL ROADS

	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EACH
CAT 0010	
PROJECT NO: 2340-03-73	1
PROJECT TOTAL	1

MOBILIZATION

LOCATION	619.1000 MOBILIZATION EACH
CAT 0010	
PROJECT NO: 2340-03-73	1
PROJECT TOTAL	1

MOBILIZATION EROSION CONTROL ITEMS

LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
CAT 0010		
PROJECT NO: 2340-03-73		
STAGE 1	3	3
STAGE 1A	3	-
STAGE 2	3	3
PROJECT TOTAL	9	6

3

LANDSCAPING ITEMS

STATION	-	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
CAT 0010									
PROJECT NO: 2340-03-73									
STAGE 1									
293+00	-	298+00	LT	260	87	0.12	12	3	6
293+00	-	298+00	RT	28	34	0.05	5	1	3
298+00	-	306+00	LT	138	74	0.10	10	2	5
298+00	-	306+00	RT	232	102	0.14	14	3	7
306+00	-	318+00	LT	232	99	0.13	14	3	7
42'A'+15	-	50'A'+21	RT	20	7	0.01	1	1	1
42'B'+15	-	50'B'+94	LT	13	4	0.01	1	1	1
STAGE 1 SUBTOTAL				923	407	0.56	57	14	30
STAGE 2									
293+00	-	298+00	MED	253	133	0.18	18	4	9
298+00	-	306+00	MED	210	151	0.20	21	5	11
306+00	-	318+00	MED	106	63	0.09	9	2	5
STAGE 2 SUBTOTAL				569	347	0.47	48	11	25
UNDISTRIBUTED				373	191	0.32	25	5	15
PROJECT TOTAL				1,865	945	1.35	130	30	70

BIRD DETERRENT SYSTEM

LOCATION	999.2000.S.01 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM STATION 306+16.79 EACH	999.2000.S.02 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM STATION 306+17.49 EACH
CAT 0010		
PROJECT NO: 2340-03-73		
PRE-STAGE 1	1	1
PROJECT TOTAL	1	1

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6501 STRUCTURE LAYOUT (STRUCTURE) EACH	650.8000 RESURFACING REFERENCE LF	650.9911 SUPPLEMENTAL CONTROL EACH	650.9920 SLOPE STAKES LF	COMMENTS
CAT 0010										
PROJECT NO: 2340-03-73										
267+00	-	318+00	EB	939	2,167	--	5,100	1	939	
267+00	-	318+00	WB	743	2,811	--	5,100	--	743	
42+15	-	50+21	RAMP 'A'	--	--	--	818	--	--	
42+15	-	50+94	RAMP 'B'	--	--	--	891	--	--	
			B-50-39	--	--	1	--	--	--	650.6501.01
			B-50-40	--	--	1	--	--	--	650.6501.02
			B-50-43	--	--	1	--	--	--	650.6501.03
			B-50-44	--	--	1	--	--	--	650.6501.04
PROJECT TOTAL				1,682	4,978		11,909	1	1,682	

NOTE: SUBGRADE AND SLOPE STAKING COUNTED FOR EACH SIDE OF THE ROADWAY IN AREAS OF SPOT GRADING.
BASE STAKING COUNTED FOR IN AREAS OF PROPOSED BEAM GUARD.

FIELD OFFICE

	642.5201 FIELD OFFICE TYPE C EACH
CAT 0010	
PROJECT NO: 2340-03-73	1
PROJECT TOTAL	1

TRAFFIC CONTROL PROJECT

	643.5000 TRAFFIC CONTROL EACH
CAT 0010	
PROJECT NO: 2340-03-73	1
PROJECT TOTAL	1

SAWING

STATION	LOCATION	690.0150* SAWING ASPHALT LF
CAT 0010		
PROJECT NO: 2340-03-73		
STAGE 1		
267+00	EB	21
318+00	EB	21
267+00	WB	20
278+40	WB	45
318+00	WB	20
42+15	RAMP A	83
42+15	RAMP B	87
STAGE 1 SUBTOTAL		297
STAGE 2		
267+00	EB	15
318+00	EB	15
267+00	WB	15
318+00	WB	15
STAGE 2 SUBTOTAL		60
PROJECT TOTAL		357

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

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TRAFFIC CONTROL ITEMS

STA/ LOCATION	STAGE DURATION DAYS	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST LF	603.8505 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE DECKS LF	614.0905 CRASH CUSHION TEMPORARY EACH	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II NO. OF CYCLES	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II NO. OF SIGNS	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF
CAT 0010																						
PROJECT NO: 2340-03-73																						
STAGE 1	42																					
STH 20		798	798	542	256	2	309	12,978	33	1,386	66	2,772	38	1,596	--	--	105	4,410	--	--	--	--
RAMP 'A'		--	--	--	--	--	--	--	3	126	6	252	--	--	--	--	2	84	--	--	--	--
RAMP 'B'		--	--	--	--	--	--	--	3	126	6	252	--	--	--	--	5	210	--	--	--	--
WILLOW ROAD		--	--	--	--	--	18	756	2	84	4	168	3	126	--	--	6	252	--	--	--	--
DETOUR		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63	2,646	11	1	11	151
		798	798	542	256	2		13,734		1,722		3,444		1,722		--		7,602	11			151
STAGE 1A	30																					
STH 20		--	--	--	--	--	303	9,090	33	990	66	1,980	38	1,140	--	--	105	3,150	--	--	--	--
RAMP 'A'		--	--	--	--	--	--	--	3	90	6	180	--	--	--	--	2	60	--	--	--	--
RAMP 'B'		--	--	--	--	--	26	780	1	30	2	60	10	300	--	--	3	90	--	--	--	--
WILLOW ROAD		--	--	--	--	--	--	--	2	60	4	120	--	--	--	--	6	180	--	--	--	--
DETOUR		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	49	1,470	6	1	6	--
		--	--	--	--			9,870		1,170		2,340		1,440		--		4,950	6			--
STAGE 2	53																					
STH 20		--	798	542	256	2	334	17,702	27	1,431	54	2,862	42	2,226	1	53	100	5,300	--	--	--	--
RAMP 'A'		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	159	--	--	--	--
RAMP 'B'		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	212	--	--	--	--
		--	798	542	256	2		17,702		1,431		2,862		2,226		53		5,671	--			--
UNDISTRIBUTED		--	--	--	--	--		2,478		259		519		323		3		1,093	1			--
PROJECT TOTAL		798	1,596	1,084	512	4		43,784		4,582		9,165		5,711		56		19,316	18			151

3

EROSION CONTROL

STATION	-	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2002 EROSION MAT CLASS I TYPE A SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7012 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
CAT 0010												
PROJECT NO: 2340-03-73												
STAGE 1												
STH 20												
267+00	-	293+00	LT	--	--	--	--	1	--	--	--	20
267+00	-	293+00	MED	--	--	--	--	5	--	--	15	2
267+00	-	293+00	RT	--	--	--	--	--	--	--	--	3
293+00	-	298+00	LT	--	--	--	260	--	2	--	9	--
293+00	-	298+00	MED	--	--	--	--	1	--	--	52	--
293+00	-	298+00	RT	207	207	--	--	--	--	2	--	--
298+00	-	306+00	LT	329	329	138	--	--	2	--	42	--
298+00	-	306+00	MED	--	--	--	--	1	--	--	78	--
298+00	-	306+00	RT	192	192	--	231	--	2	2	--	--
306+00	-	318+00	LT	222	222	28	218	--	--	--	--	3
306+00	-	318+00	MED	--	--	--	--	1	--	--	40	--
306+00	-	318+00	RT	--	--	--	--	--	--	--	--	--
RAMP 'A'												
42+15	-	50+21	LT/RT	--	--	--	20	--	--	--	--	8
RAMP 'B'												
42+15	-	50+94	LT/RT	--	--	--	12	1	--	1	--	11
STAGE 1 SUBTOTAL				950	950	166	742	10	6	5	236	47
STAGE 2												
STH 20												
293+00	-	298+00	MED	--	--	--	253	--	--	--	--	--
298+00	-	306+00	MED	--	--	--	209	--	--	--	--	--
306+00	-	318+00	MED	--	--	--	105	--	--	--	--	--
STAGE 2 SUBTOTAL				--	--	--	568	--	--	--	--	--
PROJECT SUBTOTAL				950	950	166	1,309	10	6	5	236	47
UNDISTRIBUTED				240	240	44	331	3	2	1	59	13
PROJECT TOTAL				1,190	1,190	210	1,640	13	8	6	295	60

3

PAVEMENT MARKING

STATION - STATION LOCATION	646.2020 MARKING LINE EPOXY 6-INCH WHITE LF	646.2020 MARKING LINE EPOXY 6-INCH YELLOW LF	646.2020 MARKING LINE EPOXY 6-INCH 3 FT LINE 9 FT SKIP YELLOW LF	646.2025 MARKING LINE GROOVED BLACK EPOXY 6-INCH 12.5 FT LINE 37.5 FT SKIP WHITE LF	646.2025 MARKING LINE GROOVED BLACK EPOXY 6-INCH 3 FT LINE 9 FT SKIP WHITE LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH WHITE LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH 12.5 FT LINE 37.5 FT SKIP WHITE LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH 3 FT LINE 9 FT SKIP WHITE LF	646.4025 MARKING LINE GROOVED BLACK EPOXY 10-INCH 12.5 FT LINE 37.5 FT SKIP WHITE LF	646.4025 MARKING LINE GROOVED BLACK EPOXY 10-INCH 3 FT LINE 9 FT SKIP WHITE LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH WHITE LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH 3 FT LINE 9 FT SKIP WHITE LF	646.5020 MARKING ARROW EPOXY TYPE 2 WHITE EACH	646.5020 MARKING ARROW EPOXY TYPE 4 WHITE EACH	646.5120 MARKING WORD EPOXY "ONLY" WHITE EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE LF	646.6220 MARKING YIELD LINE EPOXY 18-INCH EACH	646.7220 MARKING CHEVRON EPOXY 24-INCH LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH WHITE LF	646.9000 MARKING REMOVAL LINE 4-INCH LF	643.3170 TEMPORARY MARKING LINE EPOXY 6-INCH WHITE LF	643.3170 TEMPORARY MARKING LINE EPOXY 6-INCH YELLOW LF	643.3180 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH WHITE LF	643.3180 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH YELLOW LF	643.3280 TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH WHITE LF	643.3280 TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH 3 FT LINE 9 FT SKIP WHITE LF
CAT 0010																										
PROJECT NO: 2340-03-73																										
STAGE 1																										
253+00 - 319+90 STH 20 EB	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	58	5,107	5,105	2,024	662	776	58
265+00 - 332+23 STH 20 WB	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	155	5,094	5,096	888	702	206	155
42+32 - 50+94 RAMP 'B'	723	720	--	--	--	--	--	--	--	--	120	--	--	--	--	38	--	--	--	--	--	--	135	--	136	--
STAGE 1 SUBTOTAL	723	720	--	--	--	--	--	--	--	--	120	--	--	--	--	38	--	--	--	213	10,201	10,201	3,047	1,364	1,118	213
STAGE 2																										
250+00 - 334+19 STH 20 EB	6,026	7,948	16	2,246	85	334	2,246	85	--	278	2,906	278	10	--	3	143	2	--	754	58	--	--	6,421	5,904	853	145
258+80 - 334+00 STH 20 WB	7,180	7,270	--	2,108	55	332	2,108	55	--	40	2,190	40	8	--	4	166	--	--	512	--	--	--	5,856	5,840	206	155
49+13 - 50+21 RAMP 'A'	472	720	--	--	--	--	--	--	--	--	113	--	--	--	--	--	--	--	--	--	--	--	56	--	51	--
48+63 - 50+94 RAMP 'B'	135	--	--	--	--	--	--	--	--	--	128	--	2	1	--	--	--	32	--	--	--	--	124	--	92	--
STAGE 2 SUBTOTAL	13,813	15,938	16	4,354	140	666	4,354	140	--	318	5,337	318	20	1	7	309	2	32	1,266	58	--	--	12,457	11,744	1,202	300
PROJECT TOTAL	14,536	16,658	16	4,354	140	666	4,354	140	--	318	5,457	318	20	1	7	347	2	32	1,266	271	10,201	10,201	15,504	13,108	2,320	513
	31,210			4,494			5,160		318		5,775		21								20,402		28,612		2,833	

TRAFFIC DETECTOR LOOPS

CAT 0060

LOOP NO.	HOME RUN PB	LOCATION** ^	SIZE (FT)x(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR L.F.	655.0700 LOOP DETECTOR LEAD IN CABLE L.F.	655.0800 LOOP DETECTOR WIRE L.F.
S1	PB20	259+67, 46.9' RT	6 x 14	3	ASPHALT	9F15-4B	104	199	196
S2	PB19	259+67, 31.5' RT	6 x 6	4	ASPHALT	9F15-4B	72	260	156
						TOTAL	176	459	352

** LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	W3-3	--	--	x	--	--	--	--	1	1	1	--	--
2	W3-3	--	--	x	--	--	--	--	1	1	1	--	--
3	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
4	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
5	R1-1	--	--	x	--	--	--	--	1	1	1	--	--
6	R6-2R	--	--	x	--	--	--	--	1	1	1	--	--
7	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
8	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
9	R5-1	--	--	x	--	--	--	--	1	1	1	--	--
10	R5-1a	--	--	x	--	--	--	--	1	1	1	--	--
11		Sturt Rd , Willow Rd (Arrow)	--	x	--	--	--	--	2	2	1	--	--
12	D1-2	Commerce Dr, Corporate Dr (Arrow)	--	x	--	--	--	--	2	2	1	--	--
13	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
14	R2-1	SPEED LIMIT 50	--	x	--	--	--	--	1	1	1	--	--
15	W13-2	EXIT/ 20 MPH	--	x	--	--	--	--	1	1	1	--	--
16	D52-54R		--	x	--	--	--	--	1	1	1	--	--
17	W4-1R	--	--	x	--	--	--	--	1	1	1	--	--
18	W3-5	SPEED LIMIT 45 (AHEAD)	--	x	--	--	--	--	1	1	1	--	--
19	W3-5	SPEED LIMIT 45 (AHEAD)	--	x	--	--	--	--	1	1	1	--	--
20	W3-1	--	--	x	--	--	--	--	1	1	1	--	--
21	D1-2	(Arrow)Sturt Rd , Willow Rd (Arrow)	--	x	--	--	--	--	2	2	1	--	--
22	R5-1a	--	--	x	--	--	--	--	--	--	1	21	--
23	R1-1 (2S)	--	36	x	36	5.180		1	1	1		--	--
24	R5-1C (2S)	--	36	x	36	9.000			--	--		23	--
25	R1-1	--	--	x	--	--	--		1	1	1	--	W5-52L MOVE PART OF SIGN # 25
--		--	--	x	--	--	--	--	--	--		--	--
26	R4-7	--	--	x	--	--	--	--	--	--	1	25	W5-52L MOVE PART OF SIGN # 26
--		--	--	x	--	--	--	--	--	--			--

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
27	W5-52L(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
28	W5-52R(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
29	W5-52L(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
30	W5-52R(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
31	R2-1	SPEED LIMIT 45	36	x	48	12.000		1	1	1	--	--	--
32	R2-1	SPEED LIMIT 45	36	x	48	12.000		1	1	1	--	--	--
33	R2-1	SPEED LIMIT 45	36	x	48	12.000		1	1	1	--	--	--
34	R2-1	SPEED LIMIT 45	36	x	48	12.000		1	1	1	--	--	--
35	W5-52L(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
36	W5-52R(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
37	W5-52L(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
38	W5-52R(3)	--	18	x	54		6.750	1	1	1	--	--	4' MOUNTING HT.
39	S1-1(3)	--	36	x	36		6.750	1	1	1	--	--	--
39a	S16-9P(3)	--	30	x	18		3.750		--	--	--	39	--
39b	R2-6P(3)	--	36	x	24	6.000			--	--	--	39	--
40	S1-1(3)	--	36	x	36		6.750	1	1	1	--	--	--
40a	S16-9P(3)	--	30	x	18		3.750		--	--	--	40	--
40b	R2-6P(3)	--	36	x	24	6.000			--	--	--	40	--
41	W3-3	--	--	x	--	--	--	--	1	1	1	--	--
42	W3-3	--	--	x	--	--	--	--	1	1	1	--	--
43		North Frontage Rd (arrow)	--	x	--	--	--	--	1	1	1	--	--
44	R3-8LAAR	--	72	x	30	15.000		--	--	2	--	--	--
--		--	--	x	--	--	--	--	--	--	--	--	--
--		UNDISTRIBUTED	--	x	--	--	--	5	5	5	5	--	--
TOTALS						89.180	75.000	20	48	50	32		

90TH STREET

MH

STH 20 WB

PC: 262+40.71

258

260

262

R/L STH 20

MATCHLINE STA 263+00.00

STH 20 EB

+62

+72

EXISTING WETLANDS

N

LEGEND

BASE PATCH

+XX

+XX

5

5

725
720
715
710
705
700
695
690

EXISTING PROFILE AT STH 20EB PGL

EXISTING PROFILE AT STH 20WB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

710.06	709.96	709.68	708.72	706.25	706.21	705.97	705.56	705.11	704.79	704.15	703.59	702.98	702.35	702.18	701.40	700.68	700.12	699.69

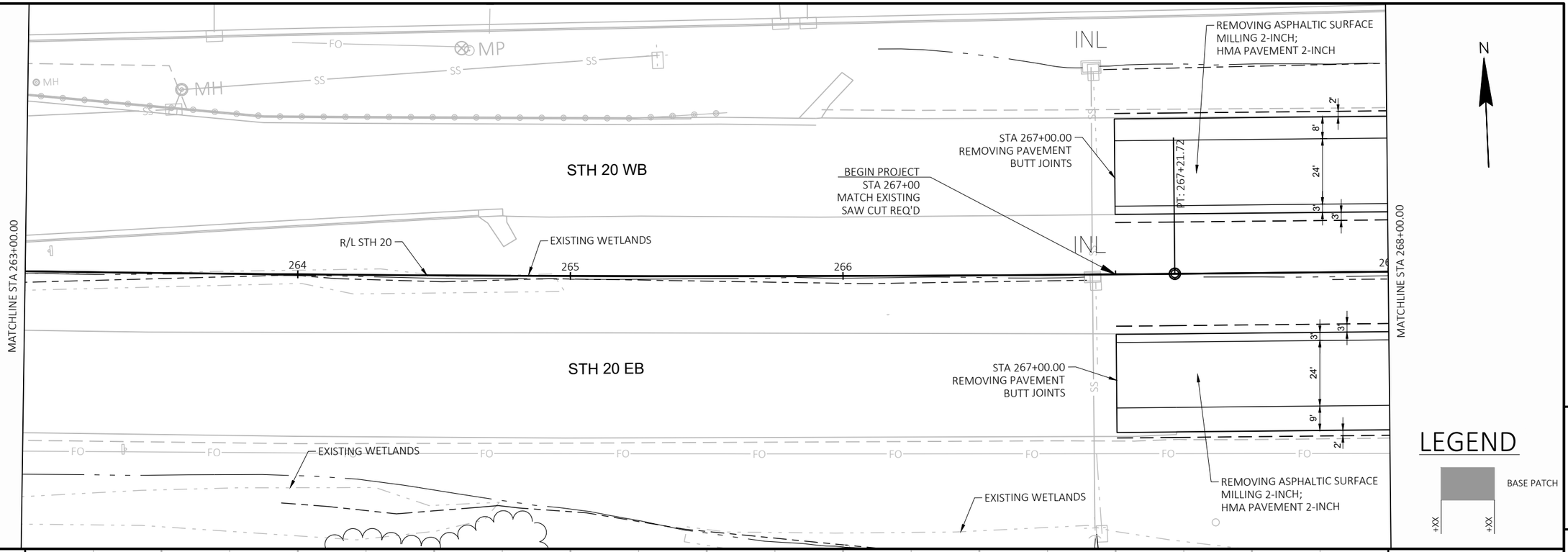
258+50 259+00 259+50 260+00 260+50 261+00 261+50 262+00 262+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 77	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 03

PLOT DATE : 6/26/2023 10:56 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

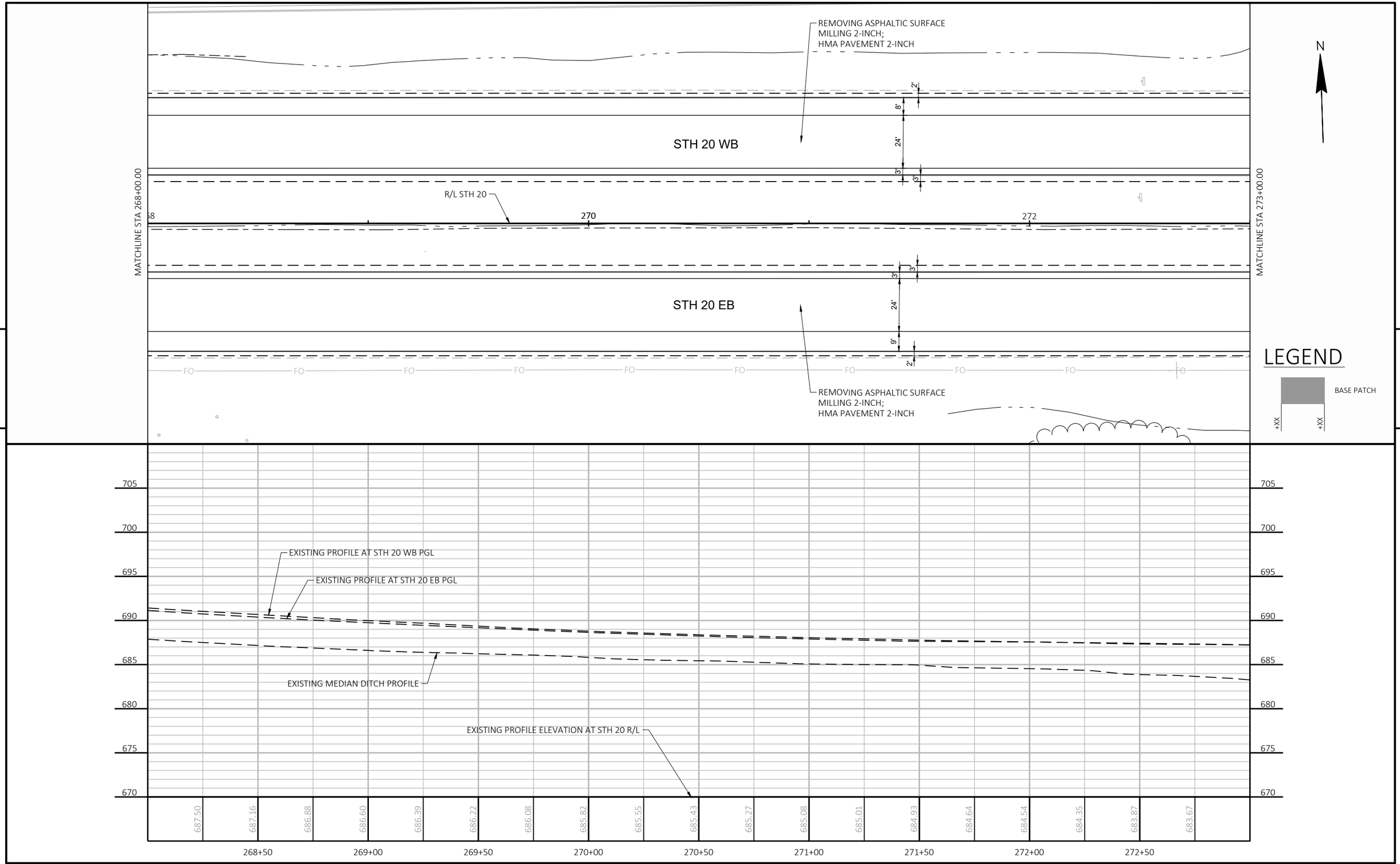


PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 78	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 04

PLOT DATE : 6/26/2023 10:56 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 79	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 05

PLOT DATE : 6/26/2023 10:57 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

EXISTING WETLANDS

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

EXISTING WETLANDS

N

MATCHLINE STA 273+00.00

2'
8'
24'
3'
3'

STH 20 WB

+85 +13 +33 +47 +75 +05 +28 +34 +58 +64 +73 +79 +17 +23 +38 +44 +55 +78 +84 +83

R/L STH 20

INL

274 275 276

MATCHLINE STA 278+00.00

3'
3'
24'
9'
2'

STH 20 EB

+10 +16 +50 +56 +17 +37

FO

EXISTING WETLANDS

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

EXISTING WETLANDS

LEGEND

BASE PATCH

+XX +XX

5

5

705
700
695
690
685
680
675
670

EXISTING PROFILE AT STH 20 EB PGL

EXISTING PROFILE AT STH 20 WB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

682.36 684.78 681.75 682.20 682.60 682.86 683.03 683.05 683.09 683.19 683.19 683.31 683.43 683.52 683.60 683.62 683.72 683.88 684.04

273+50 274+00 274+50 275+00 275+50 276+00 276+50 277+00 277+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 80	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 06

PLOT DATE : 6/26/2023 10:58 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

REMOVING PAVEMENT BUTT JOINTS

EXISTING WETLANDS

REMOVING ASPHALTIC SURFACE MILLING 2-INCH; HMA PAVEMENT 2-INCH

N

MATCHLINE STA 278+00.00

MATCHLINE STA 283+00.00

STH 20 WB

STH 20 EB

R/L STH 20

CLEANING STORM SEWER REQ'D

INL

278

280

282

23'

2'

8'

24'

3'

3'

3'

3'

24'

9'

2'

+04 +10 +20 +36 +68 +74 +94 +00 +28 +34 +83 +09 +15 +59 +85 +91 +00 +06 +30 +36 +50 +56 +00 +06 +45 +51 +58 +64

+01 +07 +60 +66 +63 +69 +95 +01

FO

EXISTING WETLANDS

REMOVING ASPHALTIC SURFACE MILLING 2-INCH; HMA PAVEMENT 2-INCH

LEGEND

BASE PATCH

+XX +XX

705
700
695
690
685
680
675
670

EXISTING PROFILE AT STH 20 EB PGL

EXISTING PROFILE AT STH 20 WB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

684.29 684.27 683.99 683.64 683.46 683.12 682.93 682.78 682.60 682.42 682.47 682.20 682.31 681.90 681.55 681.10 679.50 679.60 679.71

278+50 279+00 279+50 280+00 280+50 281+00 281+50 282+00 282+50

5

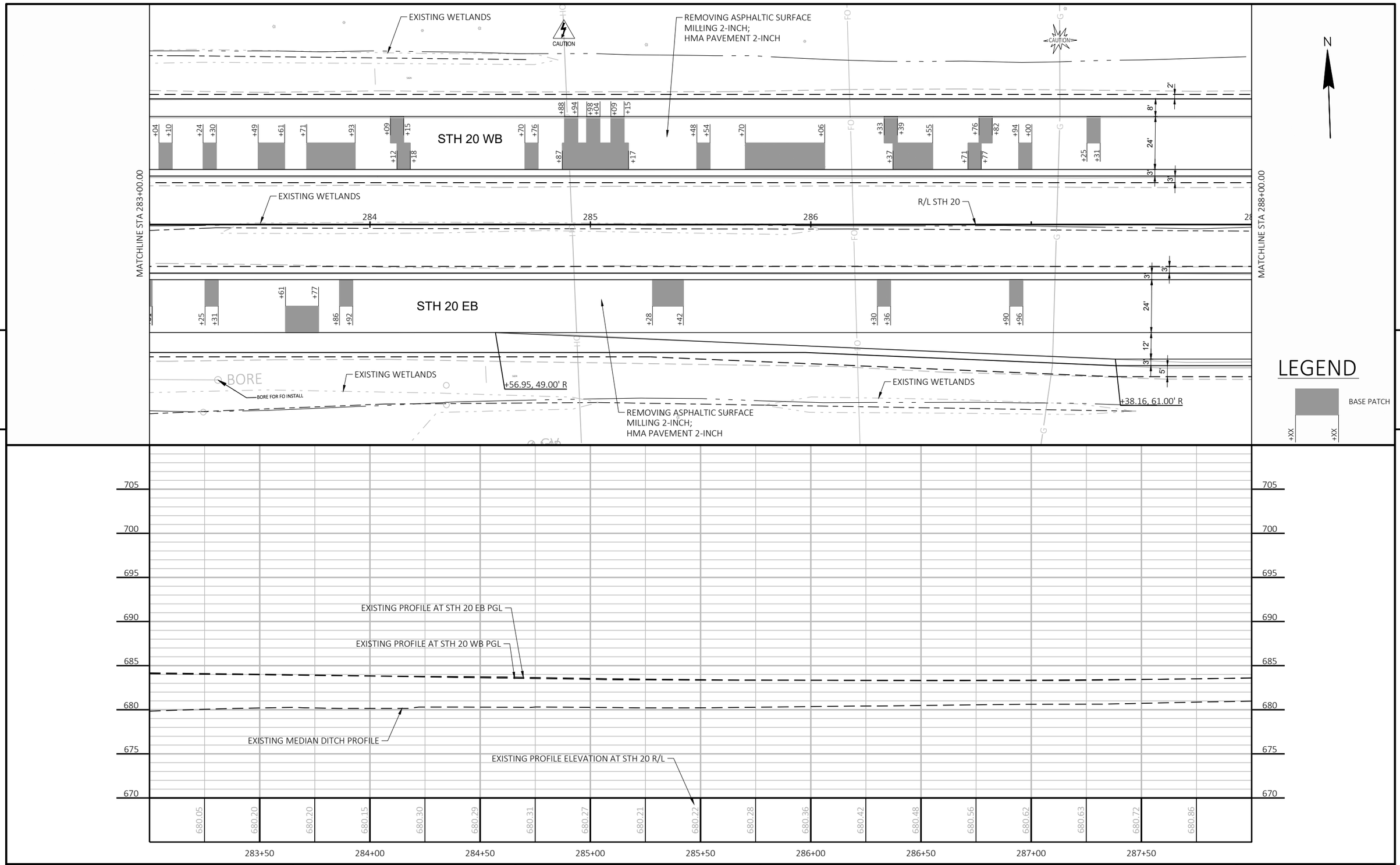
5

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 81	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 07

PLOT DATE : 6/26/2023 10:59 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 82	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 08

PLOT DATE : 6/26/2023 10:59 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

STH 20 WB

MATCHLINE STA 288+00.00

MATCHLINE STA 293+00.00

R/L STH 20

EXISTING WETLANDS

EXISTING CULVERT
CLEANING CULVERT PIPE REQ'D

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

EXISTING WETLANDS

+51.43, 64.00' R

RAMP 'B'

N

LEGEND

BASE PATCH

EXISTING PROFILE AT STH 20 WB PGL

EXISTING PROFILE AT STH 20 EB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 83	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 09

PLOT DATE : 6/26/2023 11:00 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

MGS GUARDRAIL TERMINAL TYPE 2
STA 293+03.43, 59.00' LT
MOW STRIP EMULSIFIED ASPHALT REQ'D

CLEANING DITCH REQ'D TO ENSURE FLOW FROM STA 295+00 TO STA 293+07, DITCH PROFILE APPROXIMATELY 0.3%

+84.72, -58.00' L

REMOVING ASPHALTIC SURFACE MILLING 2-INCH;
HMA PAVEMENT 2-INCH

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

EXISTING CONCRETE PAVEMENT APPROACH SLAB TO REMAIN

B-51-40

MATCHLINE STA 293+00.00

STH 20 WB

+12.55, -15.00' L

STA 297+40.42

+61.28, -22.00' L

SLOPE INTERCEPT

REMOVING GUARDRAIL

R/L STH 20

294 295 296

MGS EAT POST 1
STA 295+16.37, 17.00' RT
MOW STRIP EMULSIFIED ASPHALT REQ'D

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

STH 20 EB

STA 297+41.53

50' A'

RAMP 'A'

REMOVING ASPHALTIC SURFACE MILLING 2-INCH;
HMA PAVEMENT 2-INCH

SLOPE INTERCEPT

MGS EAT POST 1
STA 296+41.39, 73.00' RT MOW
STRIP EMULSIFIED ASPHALT REQ'D

MGS GUARDRAIL 3 REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

EXISTING CONCRETE PAVEMENT APPROACH SLAB TO REMAIN

B-51-43

MATCHLINE STA 298+00.00

N

LEGEND

BASE PATCH +XX +XX

705
700
695
690
685
680
675
670

EXISTING PROFILE AT STH 20 EB PGL

EXISTING PROFILE AT STH 20 WB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

686.09 686.61 687.44 688.48 688.52 688.25 688.89 689.54 689.86 690.45 691.19 691.73 692.31 693.08 693.59 694.06 694.89 696.40 690.04

293+50 294+00 294+50 295+00 295+50 296+00 296+50 297+00 297+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 84	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 10

PLOT DATE : 6/26/2023 11:01 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

CONCRETE PAVEMENT 7-INCH, CONCRETE CURB AND GUTTER INTEGRAL 4-INCH SLOPED 36-INCH TBTT, ADJUSTING INLET COVER

RESETTING APRON ENDWALL

EXISTING CONCRETE PAVEMENT APPROACH SLAB TO REMAIN

REMOVE APRON ENDWALL AEW FOR CULVERT PIPE STEEL 12-INCH REQ'D

B-51-40

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

MGS EAT POST 1
STA 300+47.77, 13.01' LT
MOW STRIP EMULSIFIED ASPHALT REQ'D

REMOVING ASPHALTIC SURFACE MILLING 2-INCH;
HMA PAVEMENT 2-INCH

STA 298+95.00

STH 20 WB

MATCHLINE STA 298+00.00

MATCHLINE STA 303+00.00

WILLOW ROAD

R/L STH 20

SLOPE INTERCEPT

MGS GUARDRAIL 3 K
REMOVING GUARDRAIL REQ'D
MOW STRIP ASHPALT REQ'D

REMOVING GUARDRAIL

REMOVE APRON ENDWALL AEW FOR CULVERT PIPE STEEL 12-INCH REQ'D

STH 20 EB

STA 298+98.91

EXISTING CONCRETE PAVEMENT APPROACH SLAB TO REMAIN

REMOVE APRON ENDWALL AEW FOR CULVERT PIPE STEEL 12-INCH REQ'D

B-51-43

REMOVING GUARDRAIL

REMOVING ASPHALTIC SURFACE MILLING 2-INCH;
HMA PAVEMENT 2-INCH

+40.00, 61.00' R

SLOPE INTERCEPT

N

LEGEND

BASE PATCH

+XX +XX

EXISTING PROFILE AT STH 20 WB PGL

EXISTING PROFILE AT STH 20 EB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

715 710 705 700 695 690 685 680

682.78 686.85 698.02 698.77 699.19 699.93 700.46 701.40 701.77 702.28 702.62 703.33 704.03 704.70 705.47 706.05 706.68 707.22 707.71

298+50 299+00 299+50 300+00 300+50 301+00 301+50 302+00 302+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 85	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 11

PLOT DATE : 6/26/2023 11:02 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

SLOPE
INTERCEPT

CAUTION

B-51-39

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

MATCHLINE STA 303+00.00

8'
24'
10'
3'

+14 +18 +20 +02 +08 +45 +51 +52 +67 +91 +97

STA 305+49.00

STH 20 WB

+27 +55 +69 +81

STA 306+83.00

REMOVE CURB
REMOVE SURFACE DRAIN
ASPHALTIC FLUME REQ'D

R/L STH 20

304 305 306

REMOVING GUARDRAIL

SLOPE INTERCEPT

REMOVE STORM SEWER
12-INCH STORM SEWER PIPE COMPOSITE
AEW FOR CULVERT PIPE STEEL 12-INCH REQ'D

MGS GUARDRAIL 3 REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

MATCHLINE STA 308+00.00

6'
24'

MGS EAT POST 1
STA 303+04.16, 17.00' RT
MOW STRIP EMULSIFIED ASPHALT REQ'D

MGS GUARDRAIL 3 K
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

STA 305+52.57

STH 20 EB
STA 306+80.23

+92.59, 19.00' R

REMOVING GUARDRAIL

MGS EAT POST 1
STA 303+41.66, 70.48' RT
MOW STRIP EMULSIFIED
ASPHALT REQ'D

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

SLOPE
INTERCEPT

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

B-51-44

U.P.R.R.

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

N

LEGEND

BASE PATCH

+XX +XX

5

5

EXISTING PROFILE AT STH 20 EB PGL

EXISTING PROFILE AT STH 20 WB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

715 710 705 700 695 690 685 680

708.71 709.20 709.59 710.02 710.33 710.64 710.87 711.10 711.80 710.91 699.71 696.12 708.13 713.10 712.64 712.42 711.99

303+50 304+00 304+50 305+00 305+50 306+00 306+50 307+00 307+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 86	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 12

PLOT DATE : 6/26/2023 11:02 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

MGS GUARDRAIL 3 REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

MATCHLINE STA 308+00.00

MATCHLINE STA 313+00.00

STH 20 WB

STH 20 EB

SLOPE INTERCEPT

R/L STH 20

310

312

MGS EAT POST 1
STA 308+67.19, 14.75' LT
MOW STRIP EMULSIFIED ASPHALT REQ'D

REMOVING GUARDRAIL

+43.21, 22.00' R

+40.00, 49.00' R

+70.48, 58.47' R

CLEANING CULVERT
PIPE REQ'D

MGS GUARDRAIL 3 K REQUIRED
REMOVING GUARDRAIL REQ'D
MOW STRIP ASPHALT REQ'D

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

N

LEGEND

BASE PATCH

+XX +XX

5

5

EXISTING PROFILE AT STH 20 WB PGL

EXISTING PROFILE AT STH 20 EB PGL

EXISTING MEDIAN DITCH PROFILE

EXISTING PROFILE ELEVATION AT STH 20 R/L

725 720 715 710 705 700 695 690

711.92 711.47 711.01 710.66 710.38 710.12 709.91 709.58 709.37 709.11 708.65 708.12 707.50 706.78 706.34 705.75 705.16 704.33 703.66

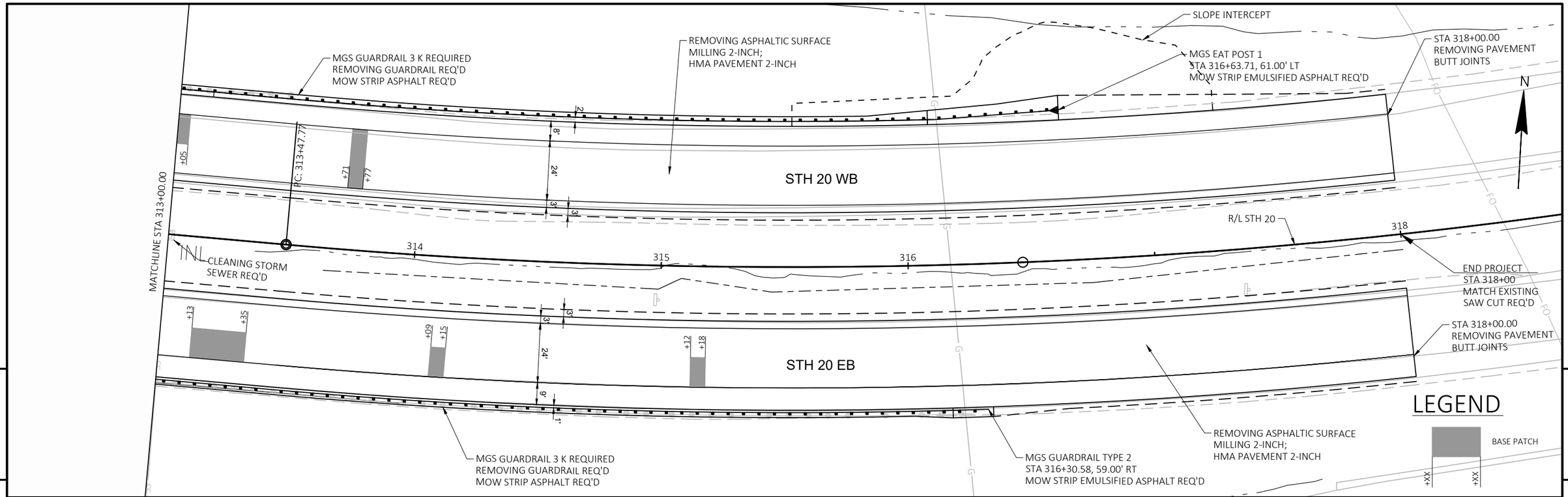
308+50 309+00 309+50 310+00 310+50 311+00 311+50 312+00 312+50

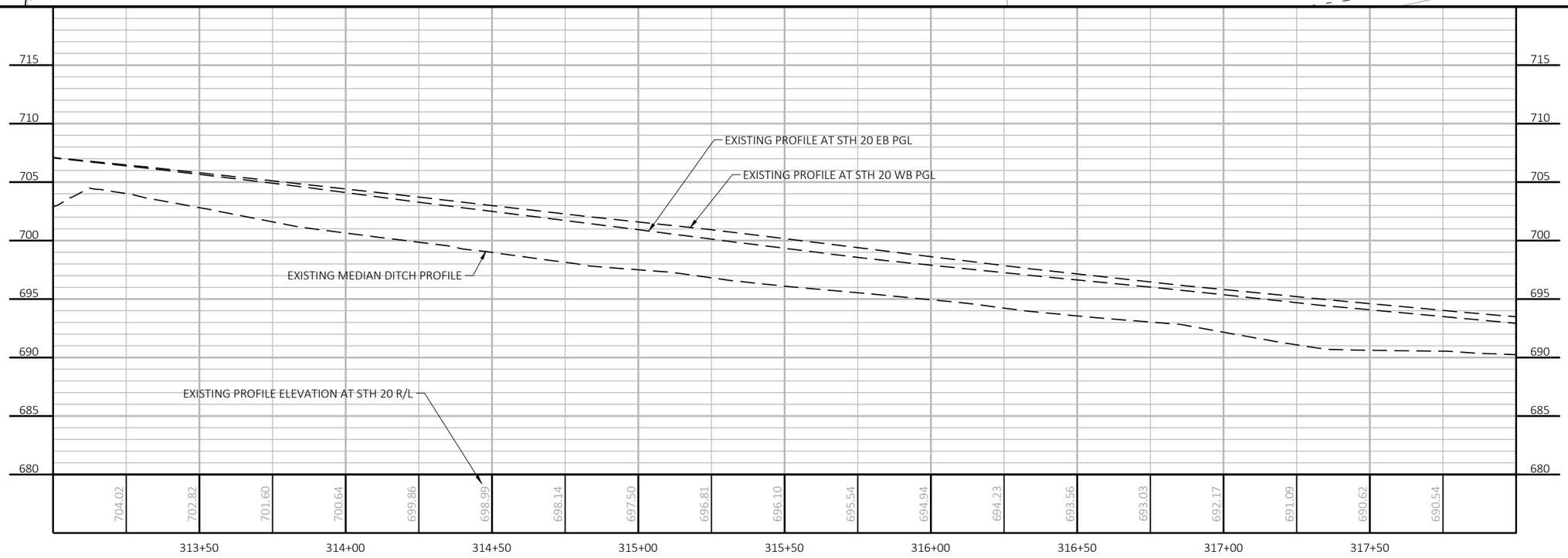
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 87	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 13

PLOT DATE : 6/26/2023 11:03 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

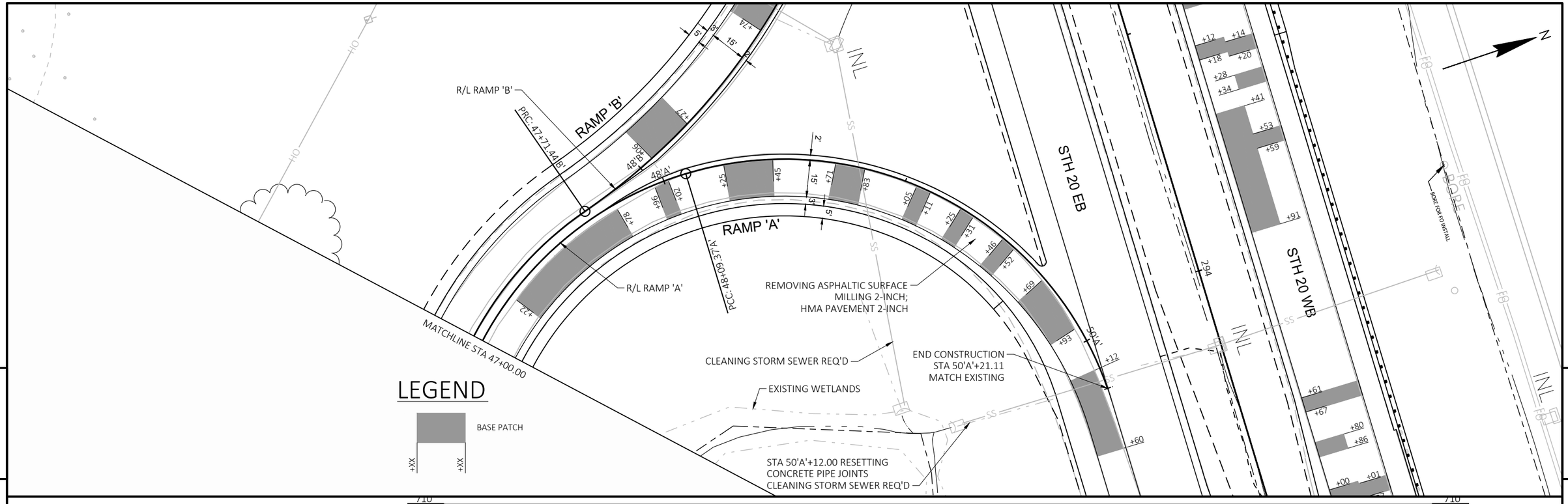
WISDOT/CADDS SHEET 44

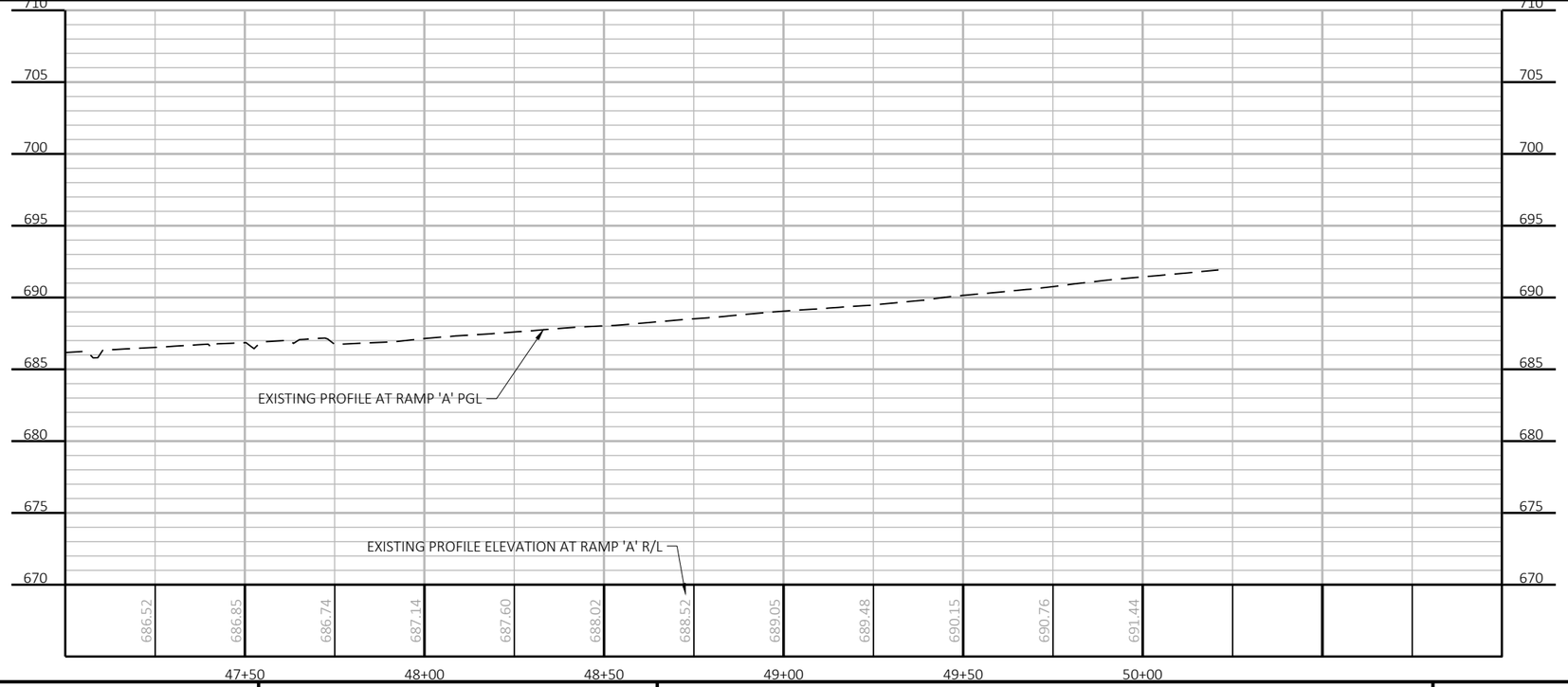




PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: STH 20	SHEET 88	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050120-PP.DWG
LAYOUT NAME - 14
PLOT DATE : 6/26/2023 11:04 AM
PLOT BY : PIERONI, JOE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44





PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: RAMP 'A'	SHEET 89 E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050122-PP.DWG
LAYOUT NAME - 02

PLOT DATE : 6/26/2023 11:05 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

WILLOW ROAD

24'WL'

12'

24+29.13, -24.00' L

EXISTING WETLANDS

STA 45'B'+49.94
RESETTING CONCRETE PIPE JOINTS

PC: 45+91.82'B'

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PEMENT 2-INCH

43+71.68, -15.34' L

R/L RAMP 'B'

RAMP 'B'

3'

5'

15'

+84 +54 +73 +85 +00 +07 +18 +34 +66 +71

46'B'

46'A'

44'B'

44'A'

BEGIN CONSTRUCTION
STA 42'B'+15.52
MATCH EXISTING
SAW CUT REQ'D

25'WL'

BEGIN CONSTRUCTION
STA 42'A'+15.67
MATCH EXISTING
SAW CUT REQ'D

CAUTION

+33 +39 +49 +55 +66 +72

MATCHLINE STA 47+00.00

N

RAMP 'A'

R/L RAMP 'A'

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PEMENT 2-INCH

PC: 45+91.81'A'

43+13.83, 15.00' R

REMOVING PAVEMENT
BUTT JOINTS

EXISTING WETLANDS

25+77.15, -22.00' L

LEGEND

BASE PATCH

+XX +XX

5

5

705
700
695
690
685
680
675
670

681.65 681.84 681.77 681.77 681.91 682.04 682.25 682.45 682.66 682.88 683.09 683.30 683.56 683.84 684.12 684.91 685.18 685.50 685.37

EXISTING PROFILE AT RAMP 'A' AND RAMP 'B' PGL

EXISTING PROFILE ELEVATION AT RAMP 'A' AND RAMP 'B' R/L

42+50 43+00 43+50 44+00 44+50 45+00 45+50 46+00 46+50

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: RAMP 'A' AND RAMP 'B'	SHEET 90	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050122-PP.DWG
LAYOUT NAME - 01

PLOT DATE : 6/26/2023 11:06 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

LEGEND

BASE PATCH

+XX +XX

REMOVING ASPHALTIC SURFACE
MILLING 2-INCH;
HMA PAVEMENT 2-INCH

EXISTING WETLANDS

MATCHLINE STA 47+00.00

PRC: 47+71.44'B'

PCC: 48+09.37'A'

RAMP 'A'

RAMP 'B'

R/L RAMP 'A'

R/L RAMP 'B'

END CONSTRUCTION
STA 50'B'+94.37
MATCH EXISTING

48'B'

48'A'

50'B'

STH 20 EB

STH 20 WB

+72 +78 +96 +02 +25 +45 +71 +06 +17 +24 +25 +20 +26 +58 +64 +29 +45 +98 +04 +77 +83 +60 +66 +05 +11 +84 +10 +17 +23 +18 +24 +55

5' 3' 15' 2'

290

N

TNI

EXISTING PROFILE AT RAMP 'B' PGL

EXISTING PROFILE ELEVATION AT RAMP 'B' R/L

710	705	700	695	690	685	680	675	670

686.52	686.85	686.74	687.14	687.60	688.02	688.52	689.05	689.48	690.15	690.76	691.44

47+50 48+00 48+50 49+00 49+50 50+00

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	PLAN AND PROFILE: RAMP 'A' AND RAMP 'B'	SHEET 91	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\050121-PP.DWG
LAYOUT NAME - 02

PLOT DATE : 6/26/2023 11:07 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:40 FT

Standard Detail Drawing List

08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
12A03-10	NAME PLATE (STRUCTURES)
13A03-07	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C14-07A	BASE PATCHING CONCRETE
13C14-07B	BASE PATCHING CONCRETE
13C14-07C	BASE PATCHING CONCRETE
13C18-07A	CONCRETE PAVEMENT JOINTING
13C18-07B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
13C18-07D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
13C18-07F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
13C18-08A	CONCRETE PAVEMENT JOINTING
13C18-08B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-08C	CONCRETE PAVEMENT JOINT TYPES
13C18-08D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
13C19-03	HMA LONGITUDINAL JOINTS
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
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)
14B47-05A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

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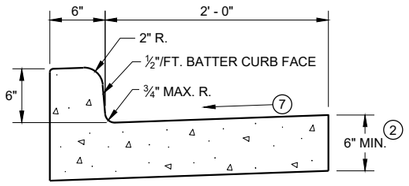
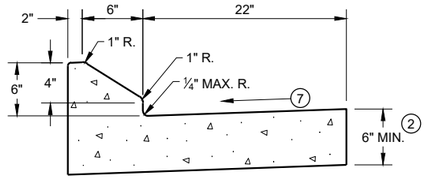
Standard Detail Drawing List

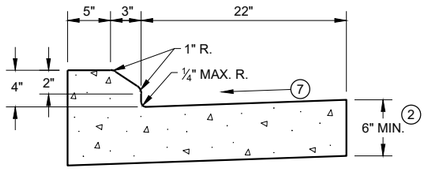
14B47-05B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-05C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-05D	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-05E	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-05F	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-05G	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09D	ON RAMP LANE CLOSURE
15C02-09E	OFF RAMP LANE CLOSURE
15C02-09F	ADVANCED WIDTH RESTRICTION SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C20-02	YIELD MARKING
15C31-05A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-05C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D12-11A	TRAFFIC CONTROL, LANE CLOSURE
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-06A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-05A	TRAFFIC CONTROL, FULL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D40-05C	TRAFFIC CONTROL, PARTIAL LANE SHIFT NON-FREEWAY/EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D40-05D	TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER
15D50-03A	TRAFFIC CONTROL, ADDED LANE CLOSURE WITHOUT LANE SHIFT



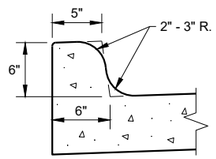
TYPES A (1) & D



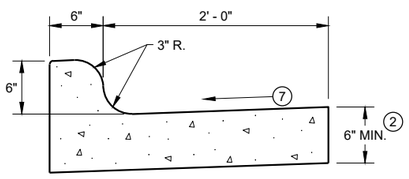
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

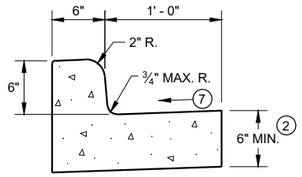


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



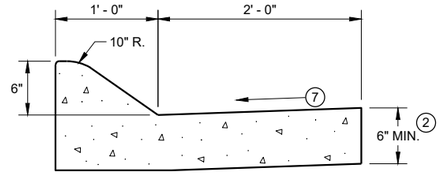
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

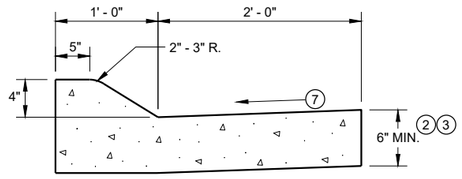


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

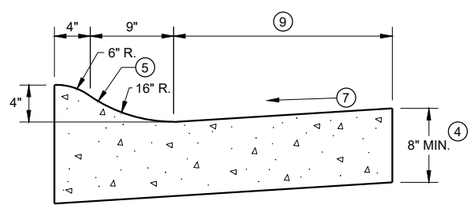


6" SLOPED CURB TYPES A (1) & D



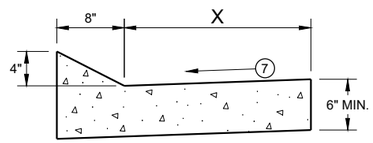
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

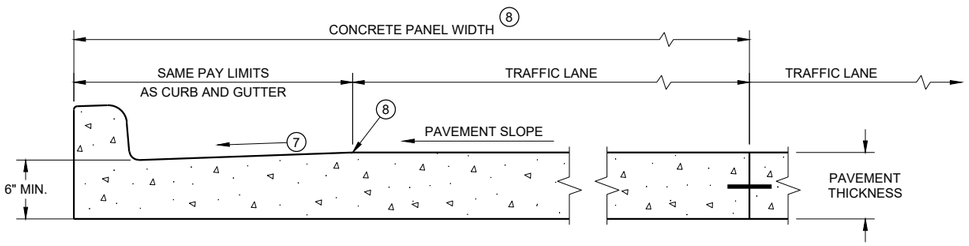


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

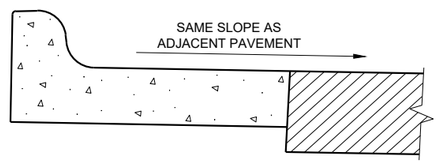
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

DETAILS OF CONSTRUCTION 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 AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 GUTTERS 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) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES 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.

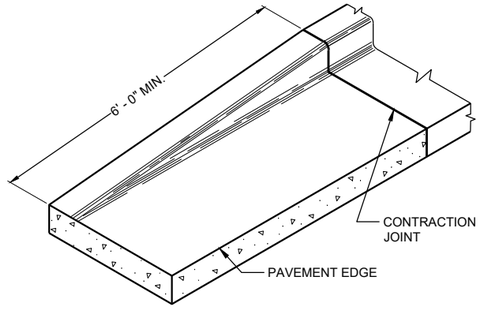
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

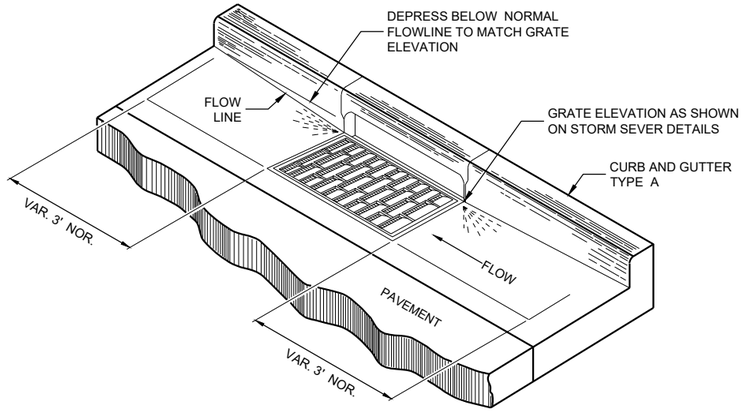
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 08D01 - 23a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

DETAILS OF CONSTRUCTION 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.

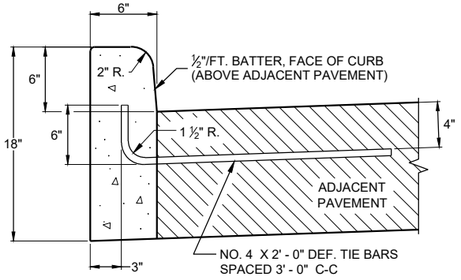
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

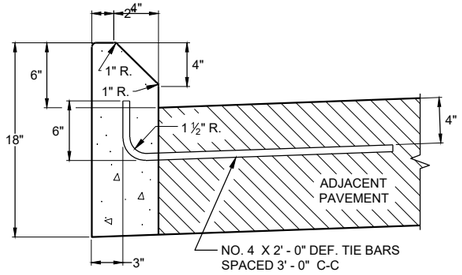
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(10) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

(11) PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

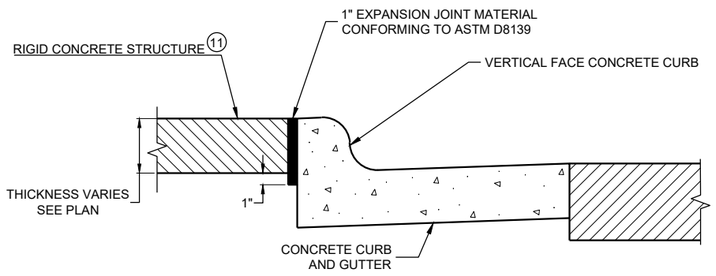


TYPES A (1) & D

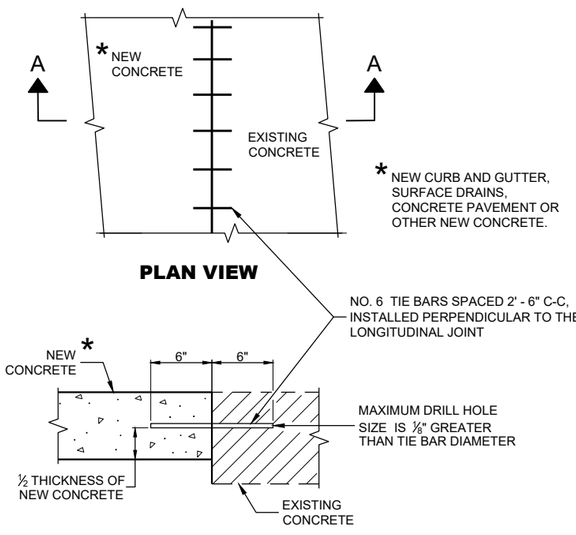


TYPES G (1) & J

CONCRETE CURB



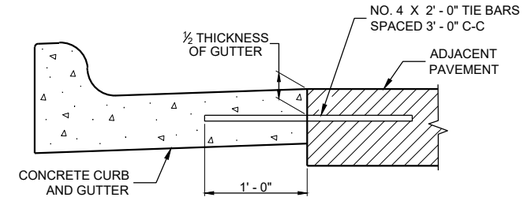
EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)



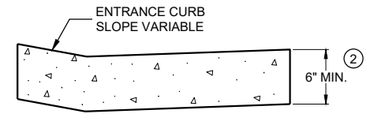
PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

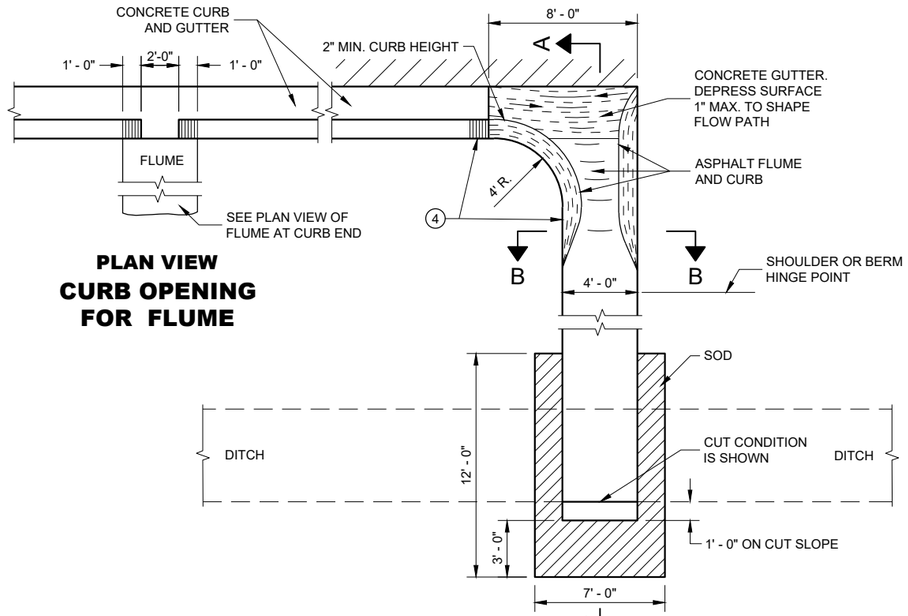
FHWA

6

SDD08D01 - 23b

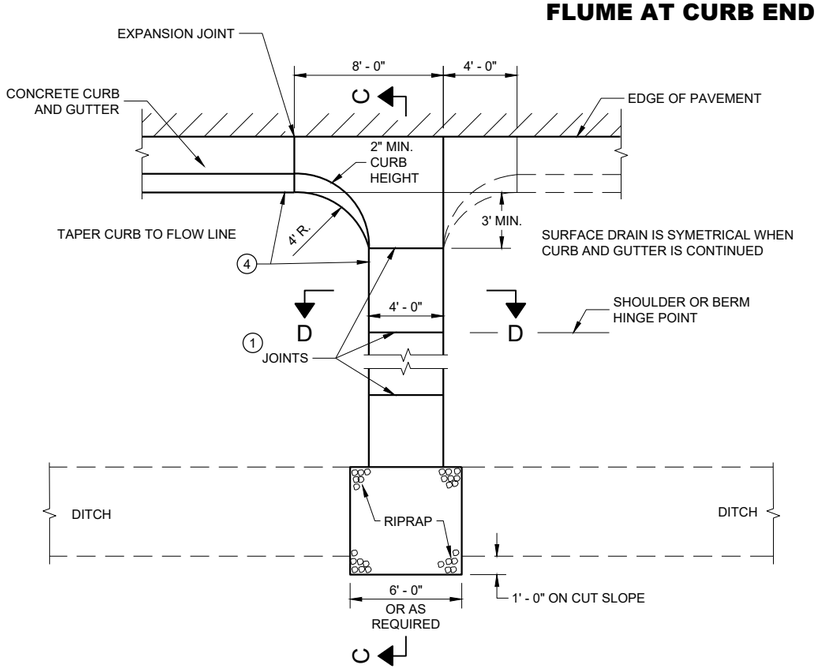
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



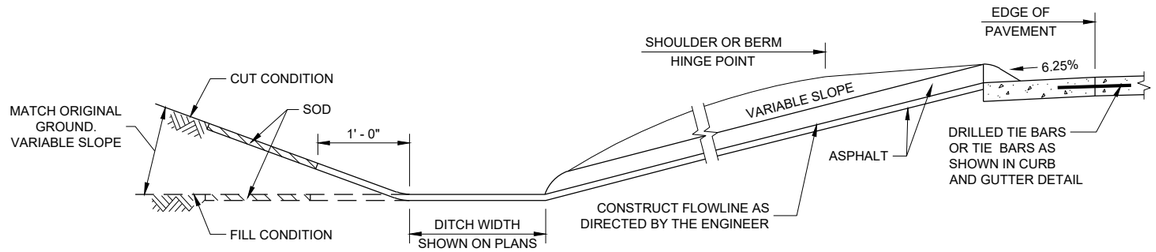
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

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

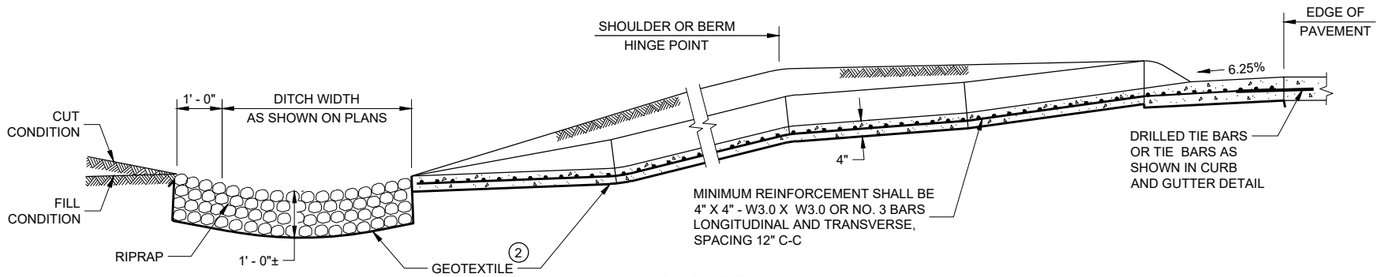
4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

1. JOINTS SHALL BE ⅛" TO ¼" WIDE BY 1½" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
2. GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
3. CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
4. ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.

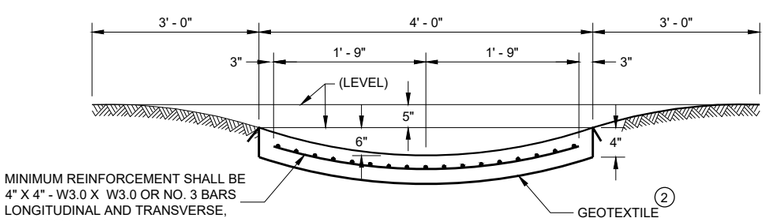


SECTION A - A

SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

SDD 08D04 - 07

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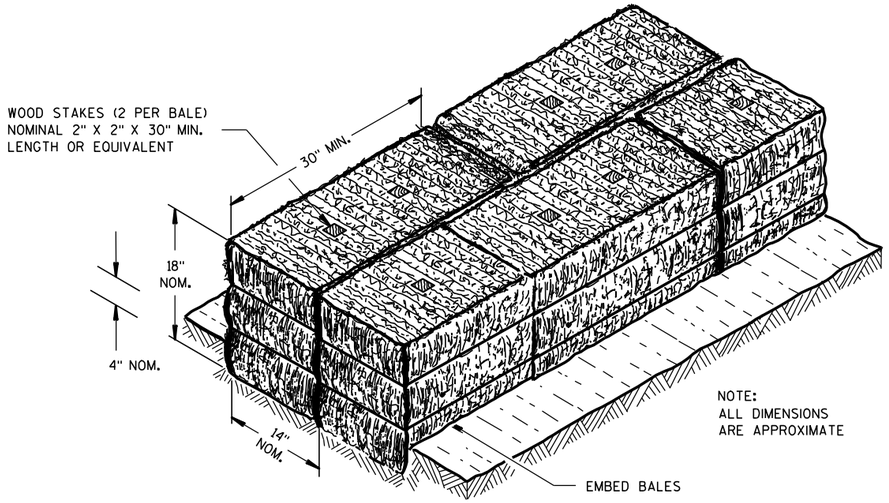
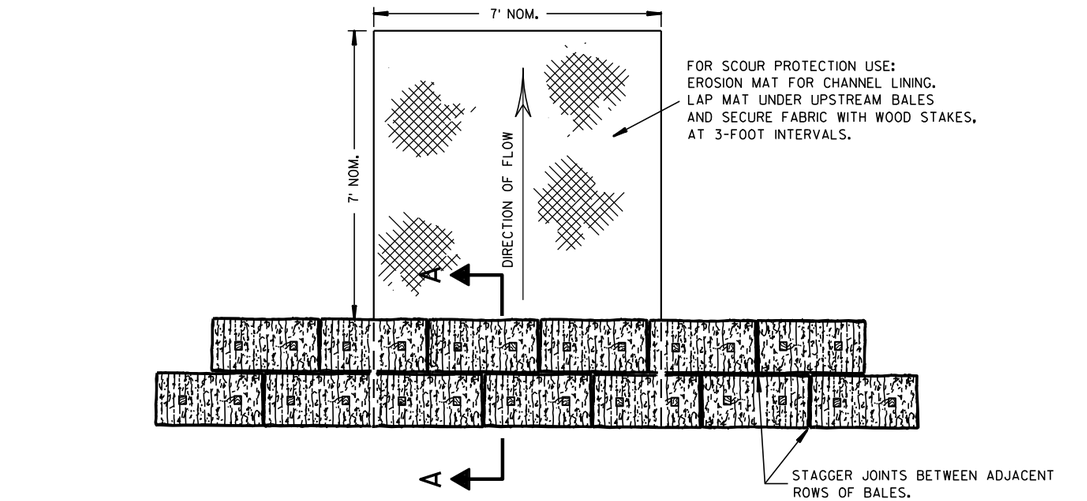
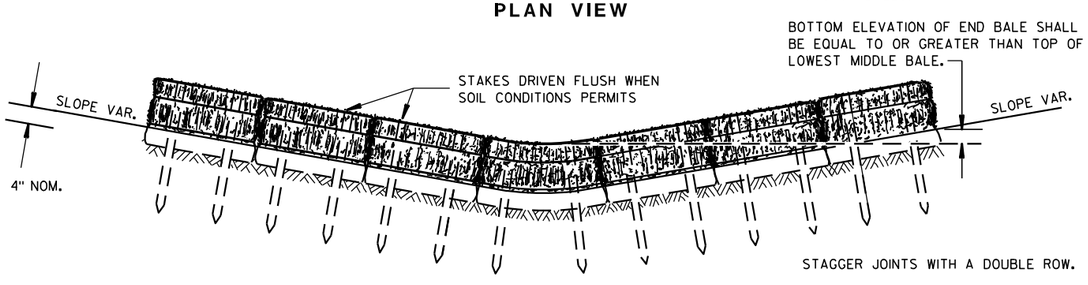
SDD 08D04 - 07



SECTION A-A



PLAN VIEW



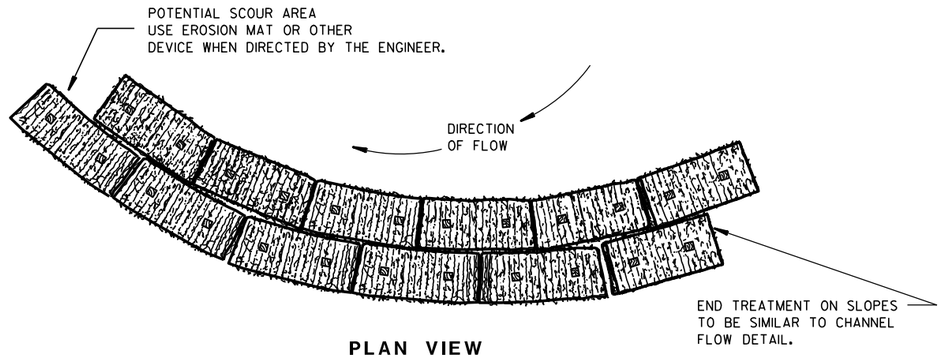
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

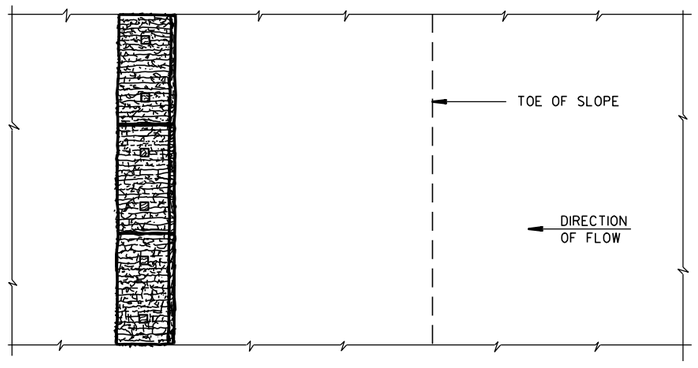
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

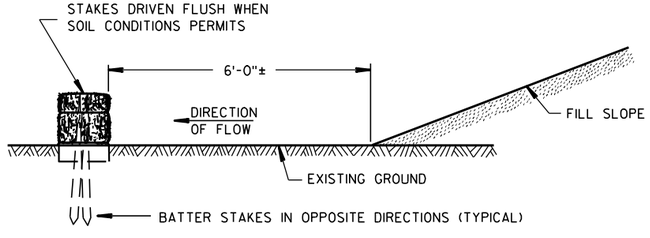


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

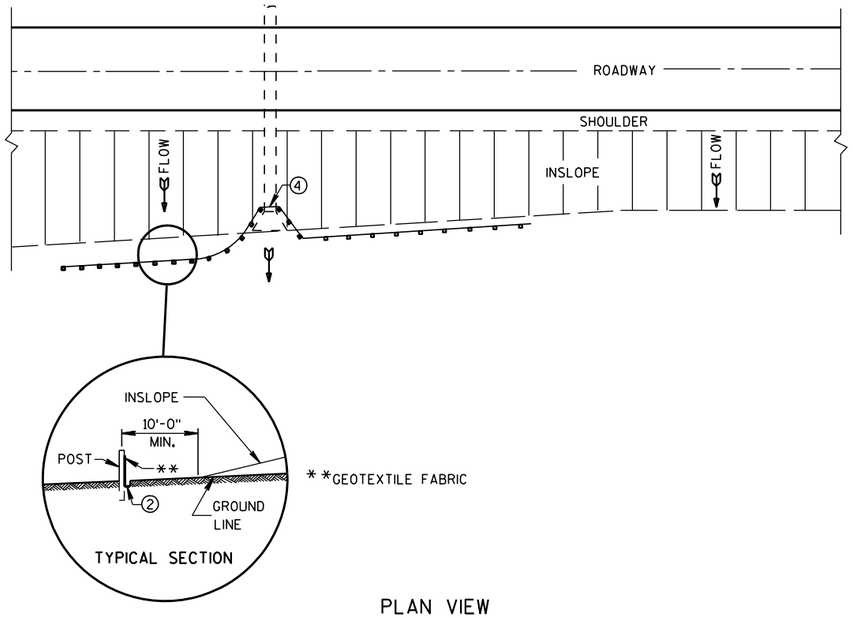
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

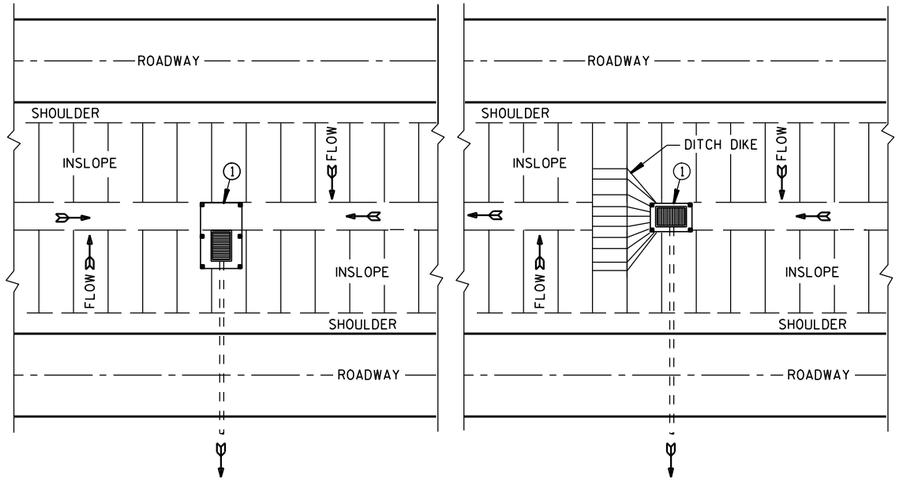
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



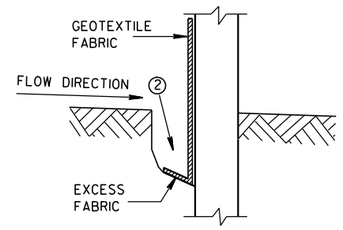
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

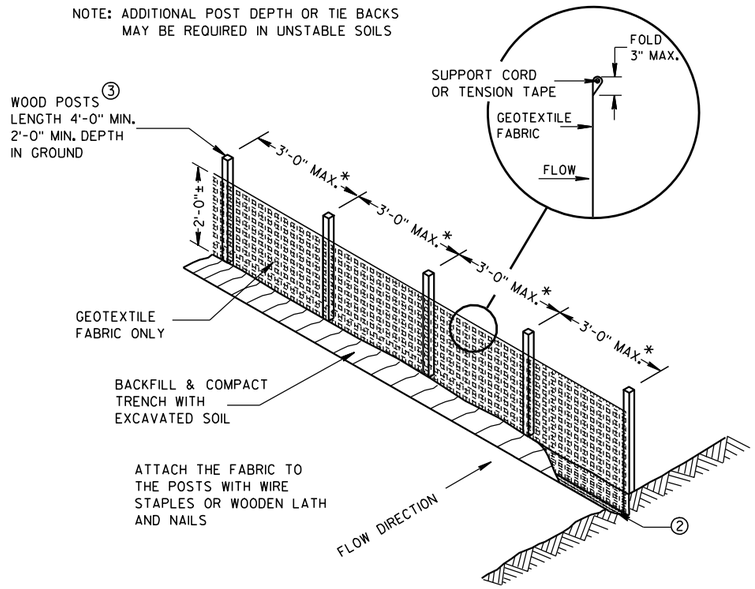
GENERAL NOTES

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

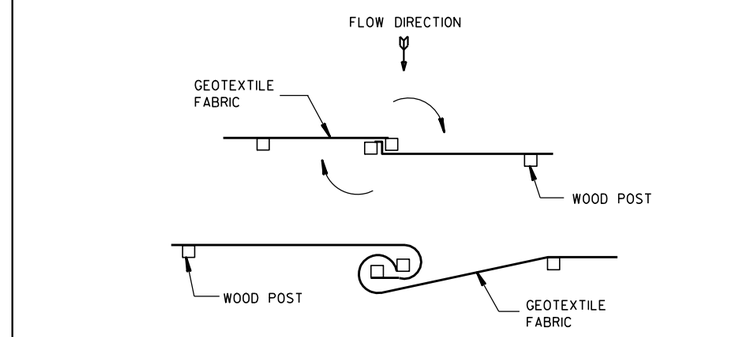
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



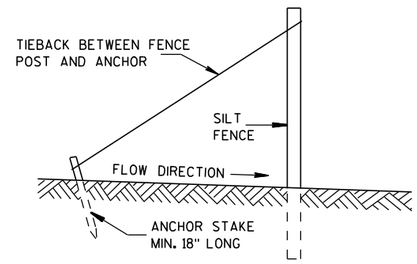
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

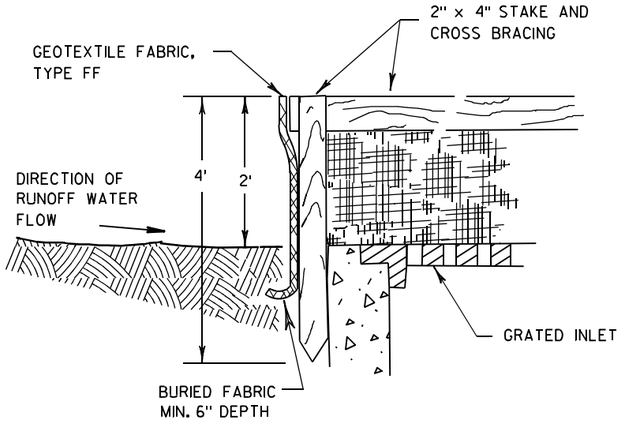
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

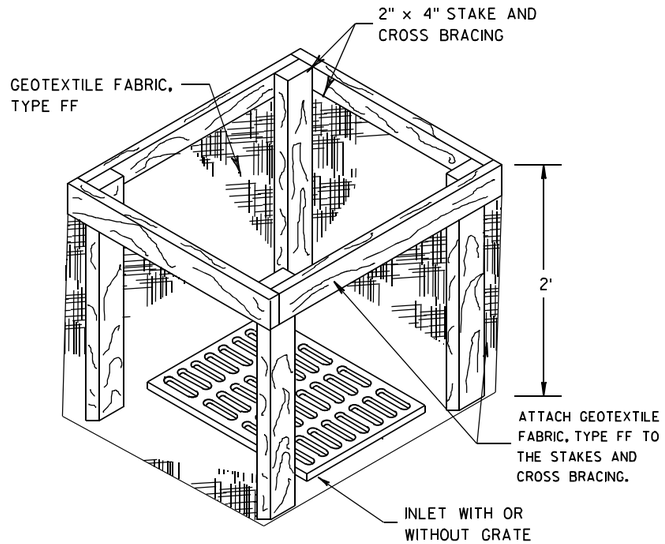
6

S.D.D. 8 E 9-6

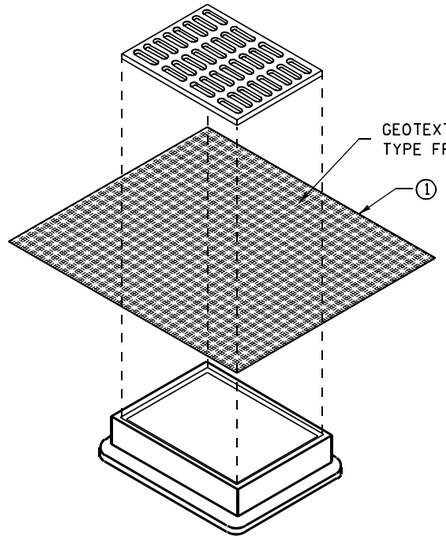
6

S.D.D. 8 E 9-6



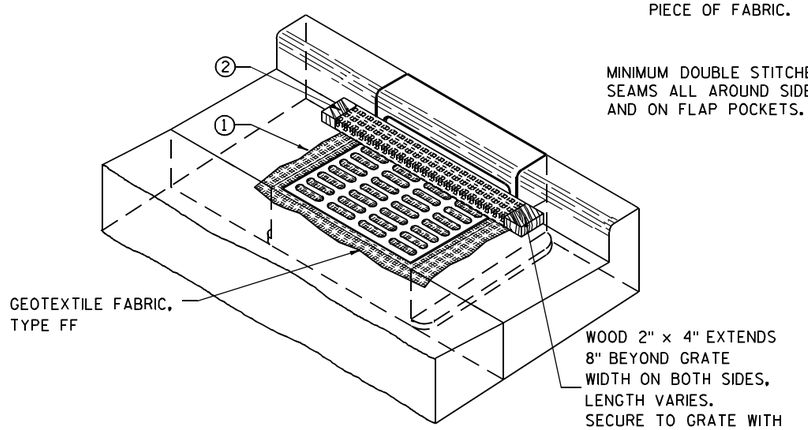


INLET PROTECTION, TYPE A

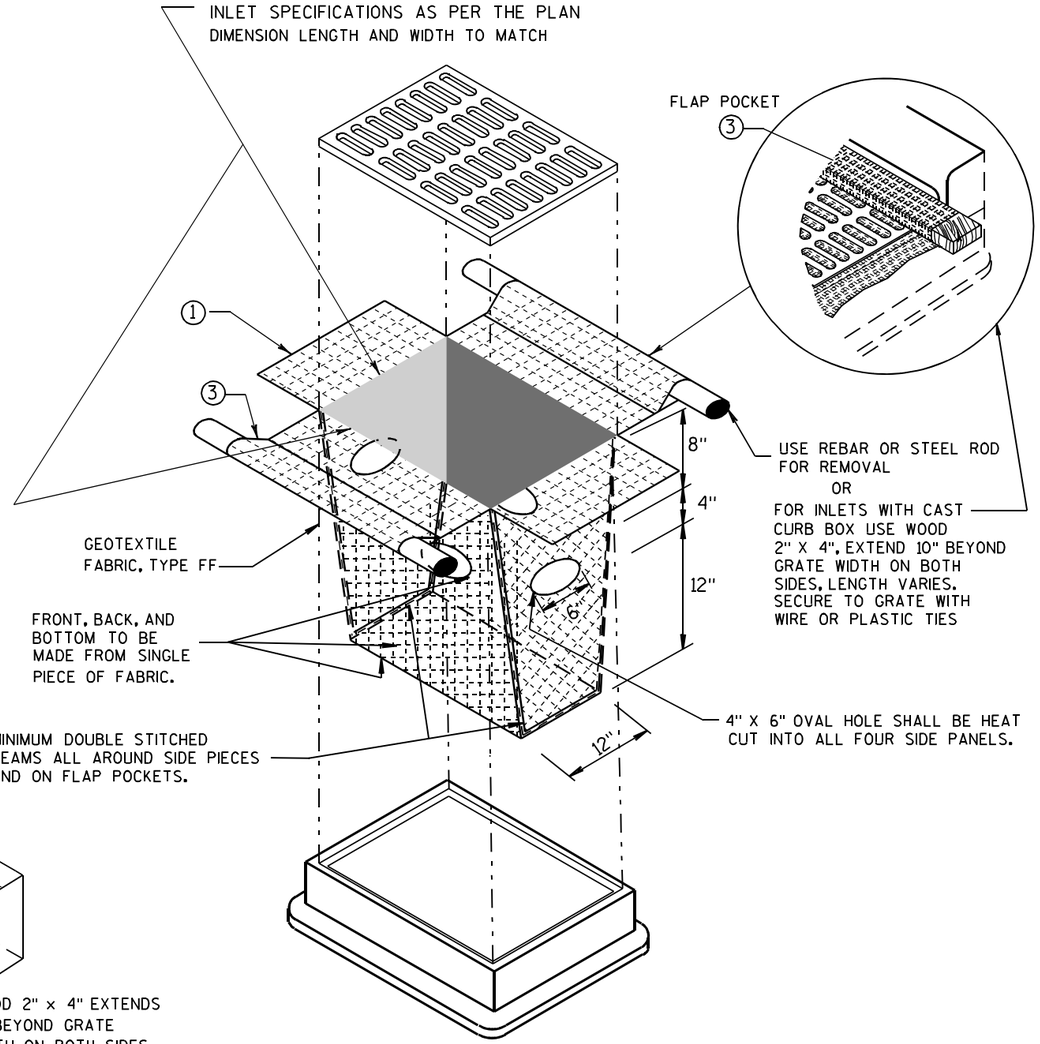


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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.

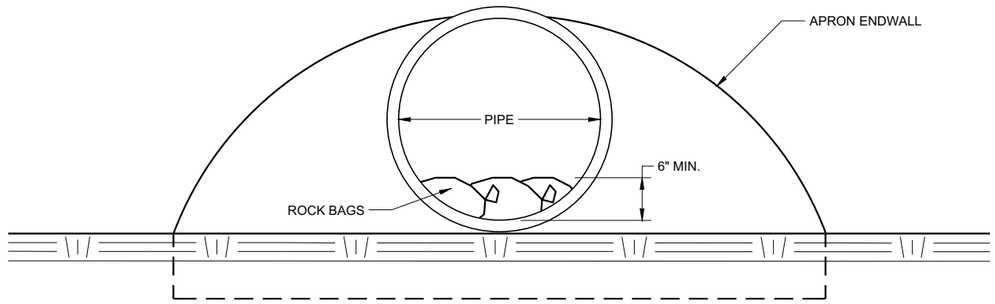
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

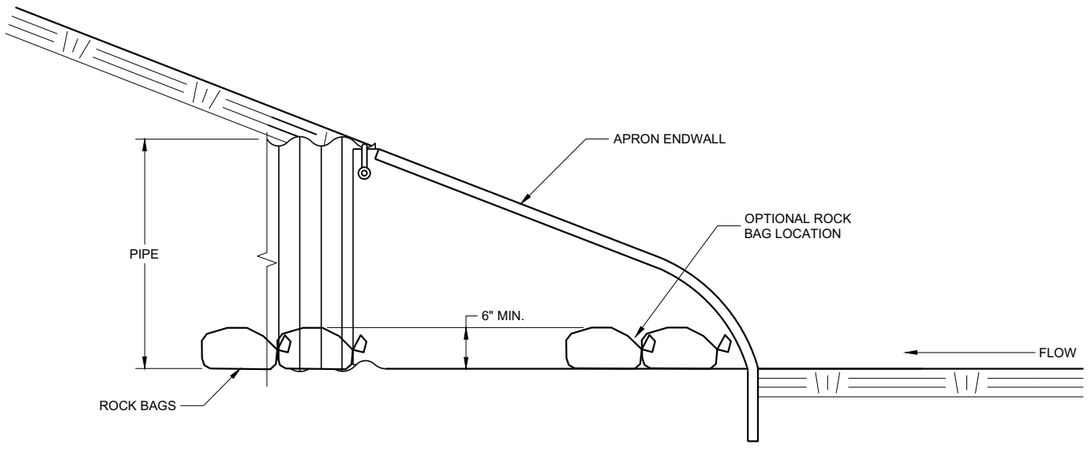
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 10-2



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI
FHWA	

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SDD 08E15 - 01

METAL APRON ENDWALLS

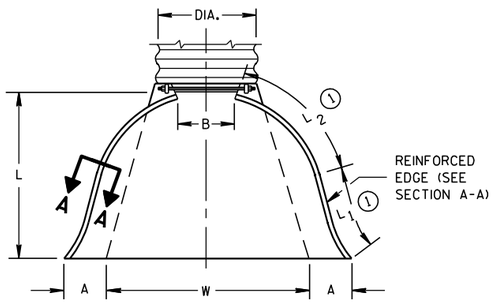
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

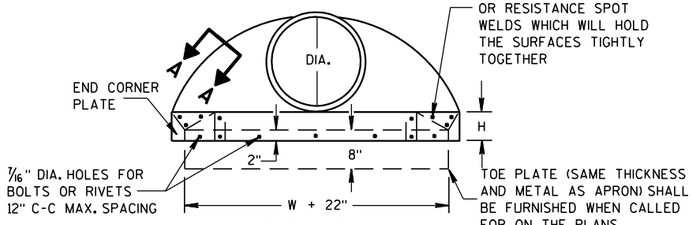
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

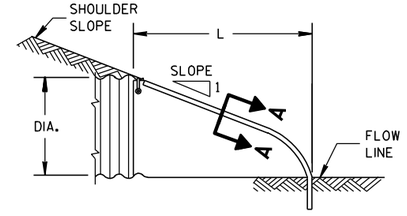
*MINIMUM
**MAXIMUM



PLAN VIEW

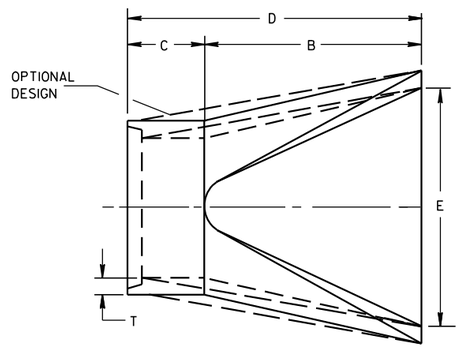


END VIEW

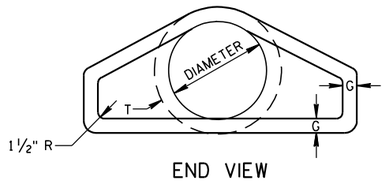


SIDE ELEVATION

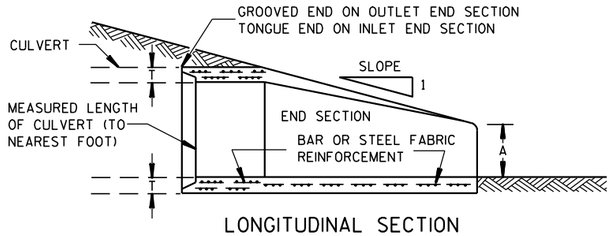
METAL ENDWALLS



PLAN

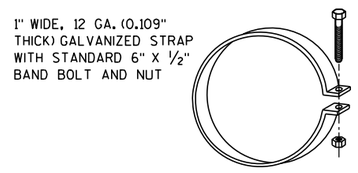


END VIEW



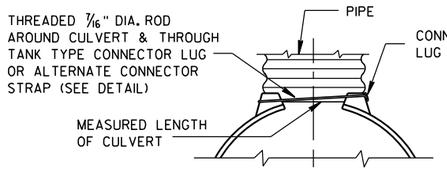
LONGITUDINAL SECTION

CONCRETE ENDWALLS

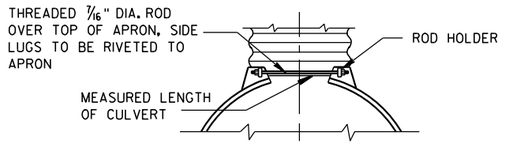


ALTERNATE FOR TYPE 1 CONNECTION

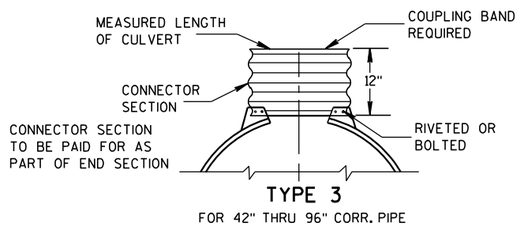
END SECTION CONNECTOR STRAP



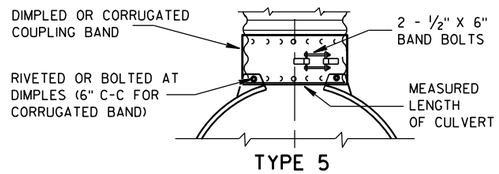
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

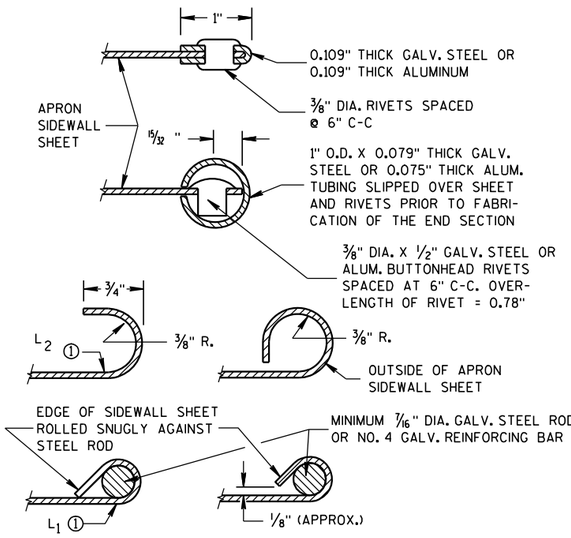
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOP 101 NEER
FHWA

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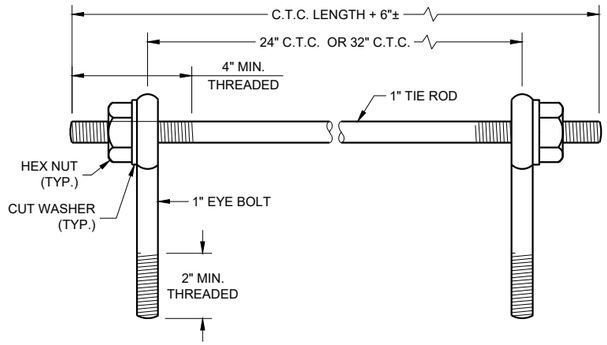
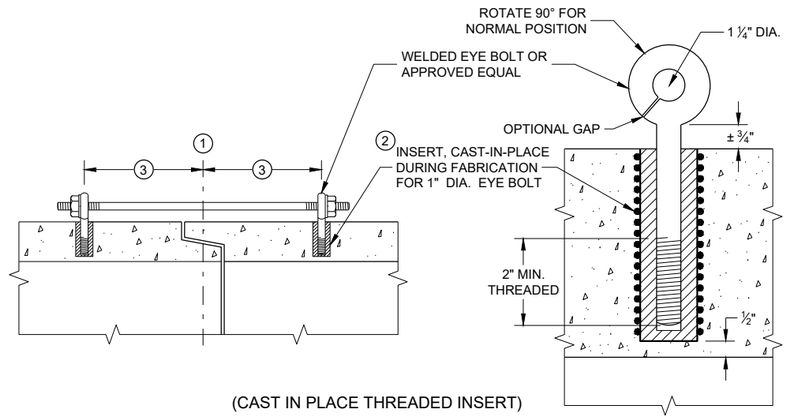
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

(1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

(2) THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

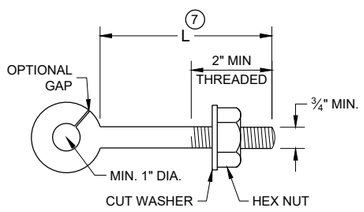
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

(4) BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

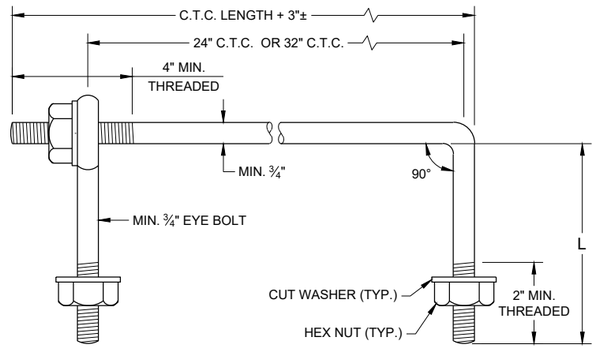
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

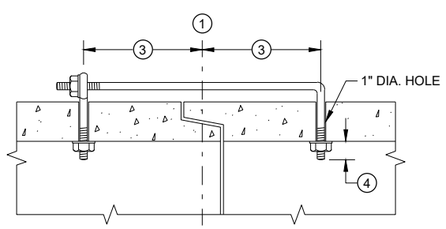


EYE BOLT (7)

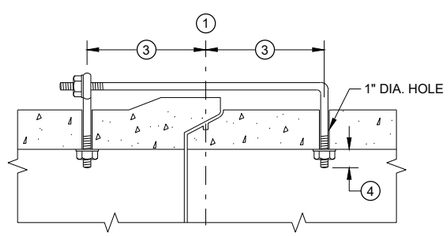
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

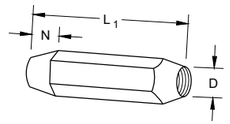
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



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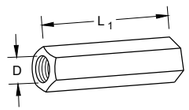
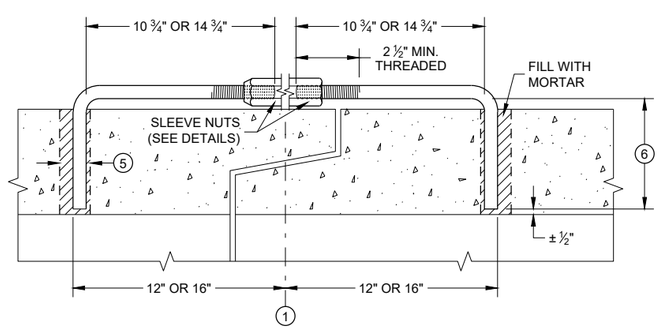


PLAIN

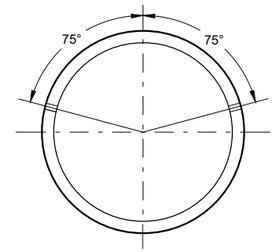
RIGHT AND LEFT THREADS

SLEEVE NUTS



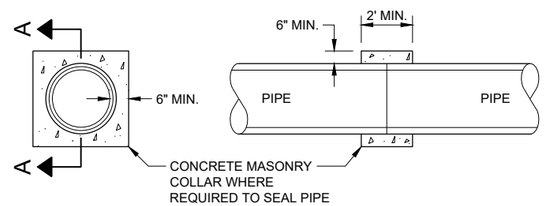
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

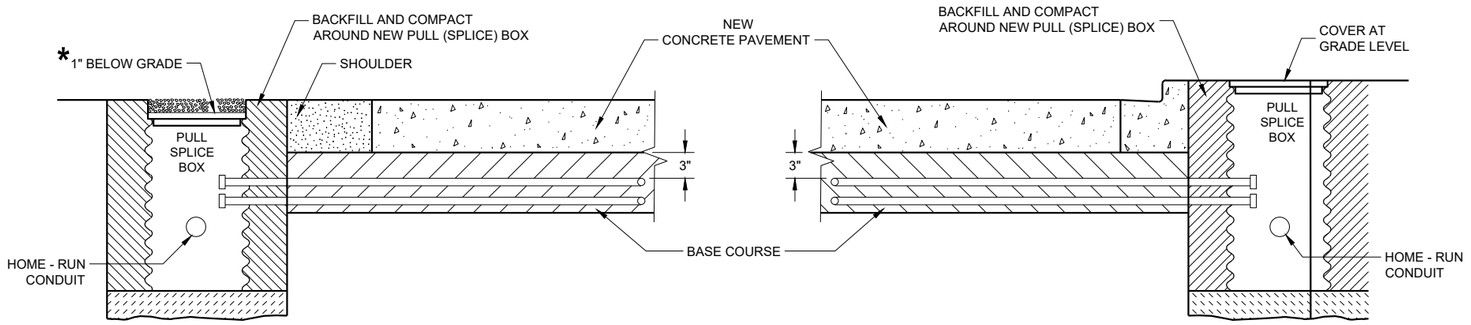
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

SDD 08F04 - 08

SDD 08F04 - 08



SECTION A - A
NO CURB AND GUTTER

SECTION B - B
CURB AND GUTTER

* RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

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.

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

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

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

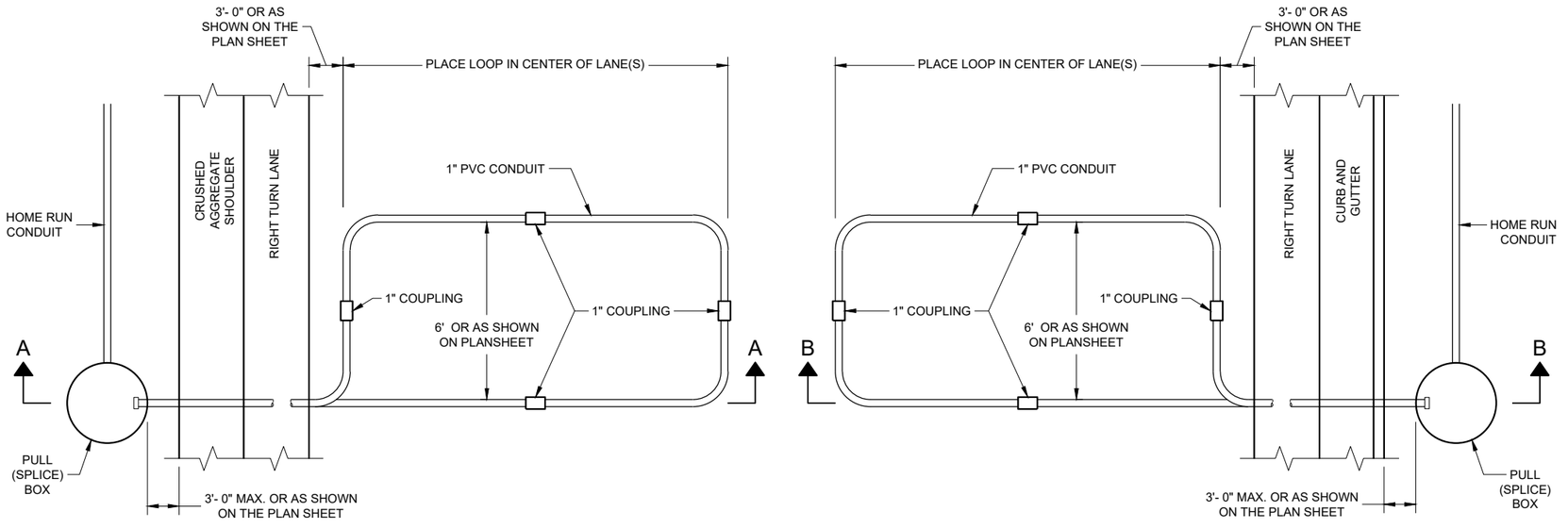
THE #12 AWG LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

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

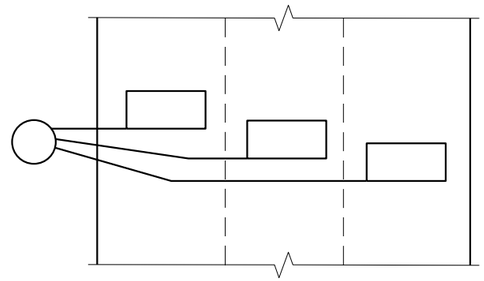
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT 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 LOOP DETECTOR
WITH 24" PULL (SPLICE) BOX



MULTI-LANE
INSTALLATION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

FHWA

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SDD 09F15 - 04b

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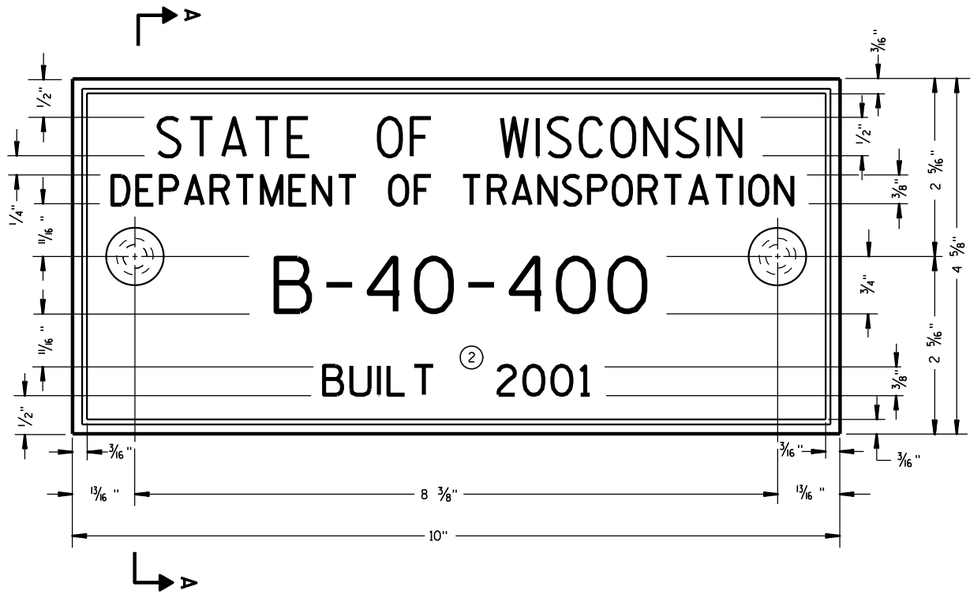
SDD 09F15 - 04b



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

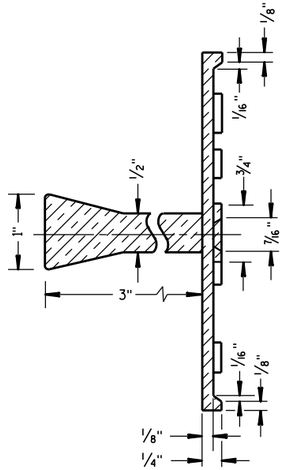
GENERAL NOTES

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

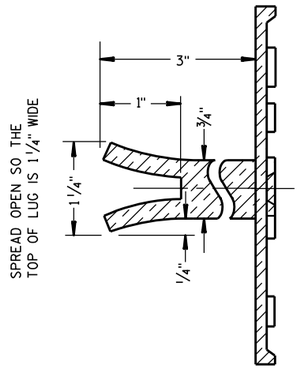
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

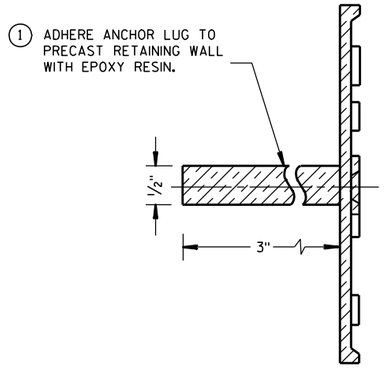
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck-- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

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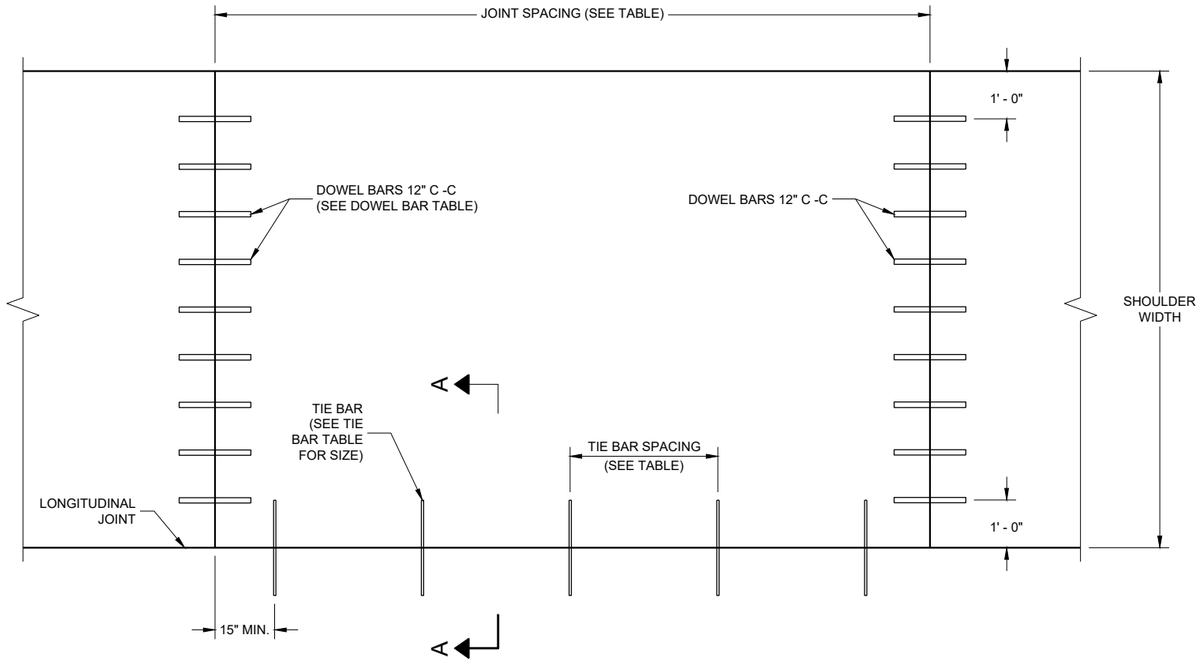


PLAN VIEW

CONCRETE PAVEMENT SHOULDER

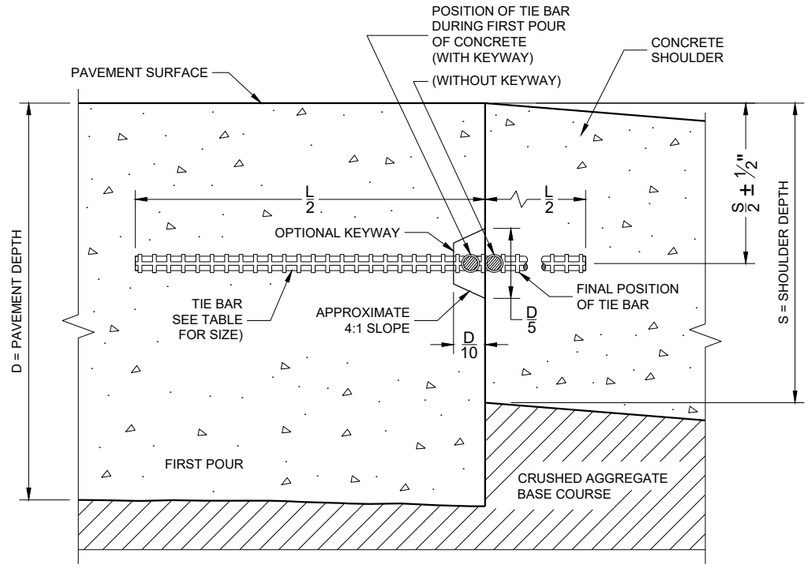
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A - A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
<10 ½"	NO. 4	30"	36"
>10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BATS 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.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12"
7", 7 ½"	1"	14"
8" & ABOVE	1 ¼"	15"

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FRO THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp
PAVEMENT SUPERVIS

FHWA

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SDD 13A03 - 07

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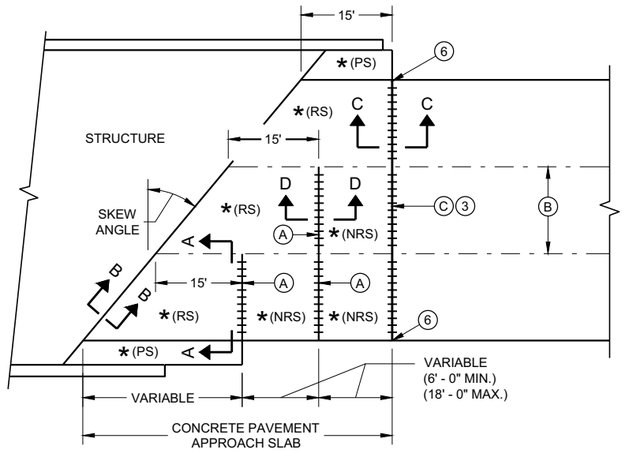
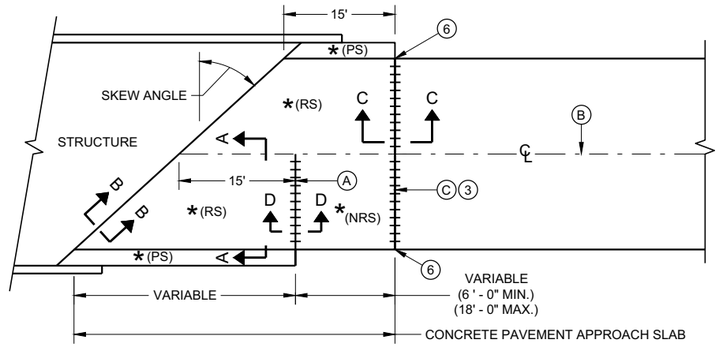
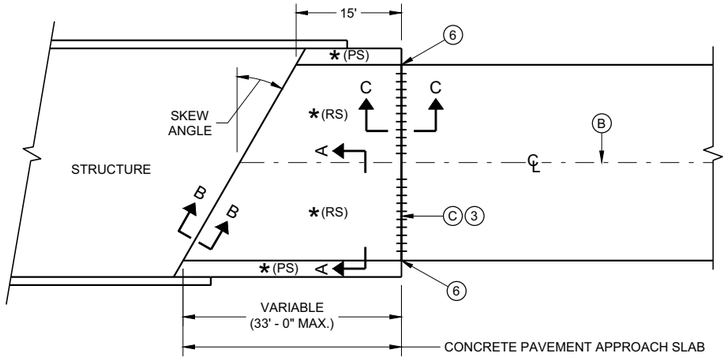
SDD 13A03 - 07



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

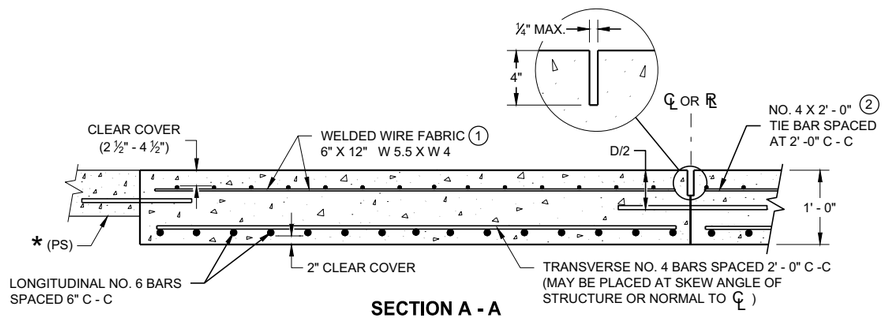
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

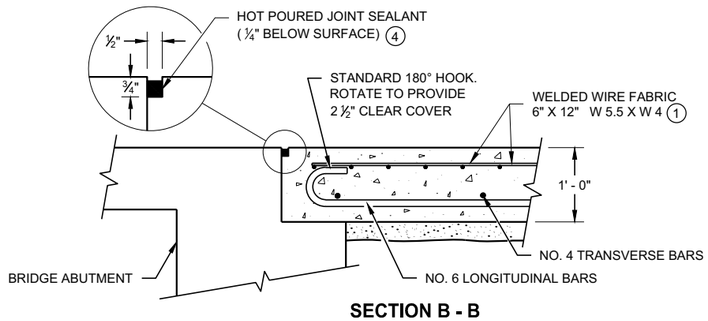
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

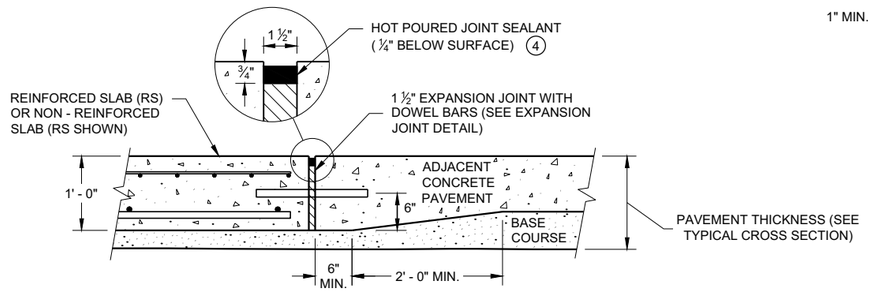
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0 " C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

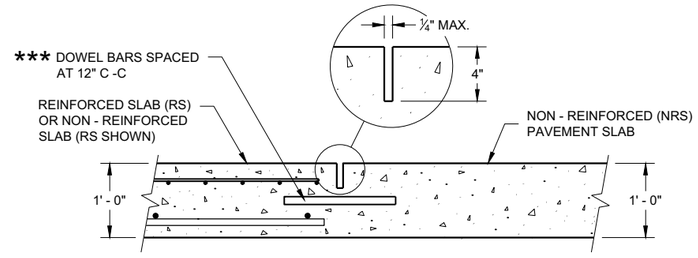
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

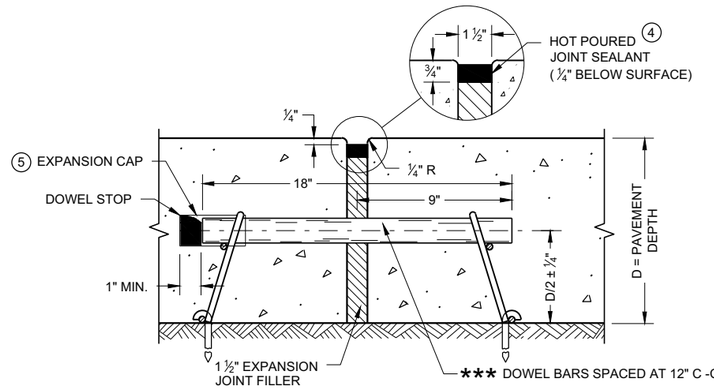
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

FHWA

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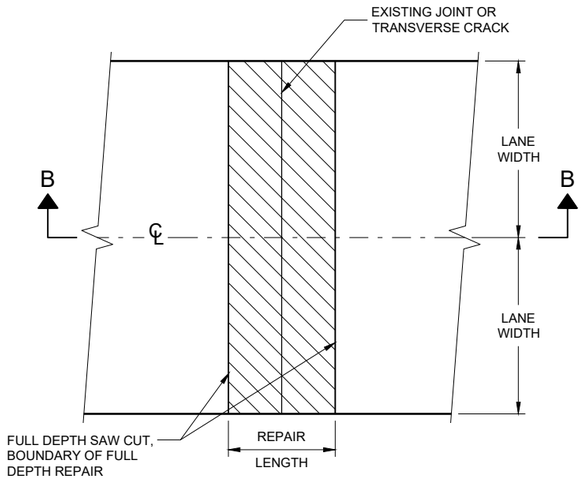
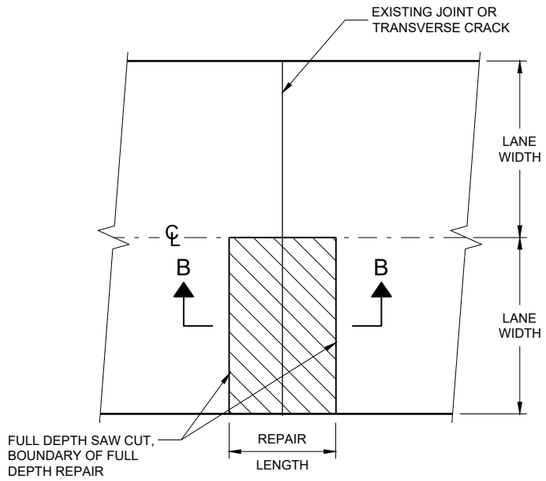
SDD 13B02 - 09a

SDD 13B02 - 09a



PLAN VIEW
DOUBLE LANE REPAIR



PLAN VIEW
SINGLE LANE REPAIR

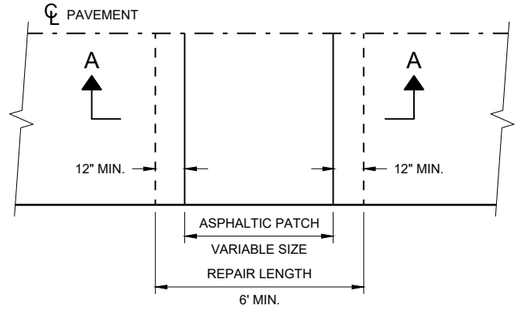
GENERAL NOTES

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 AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

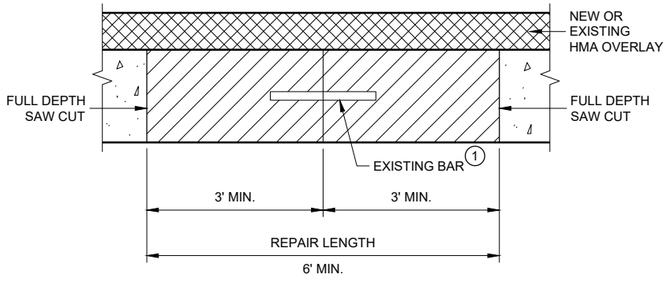
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

(1) DOWEL BARS MAY NOT BE PRESENT.

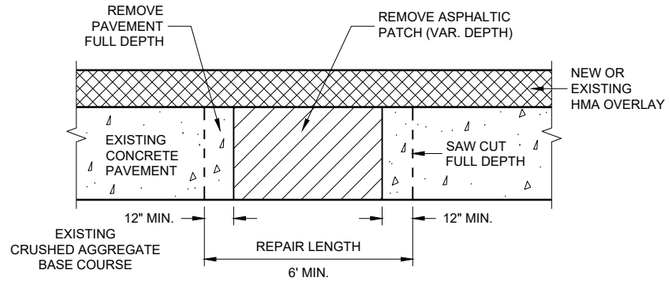


PLAN VIEW

FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B - B
CONCRETE REMOVAL



SECTION A - A

HMA PATCH REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
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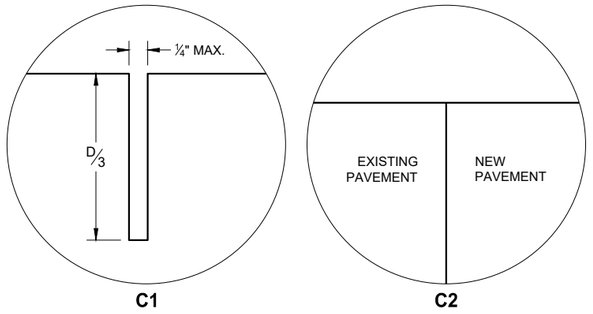
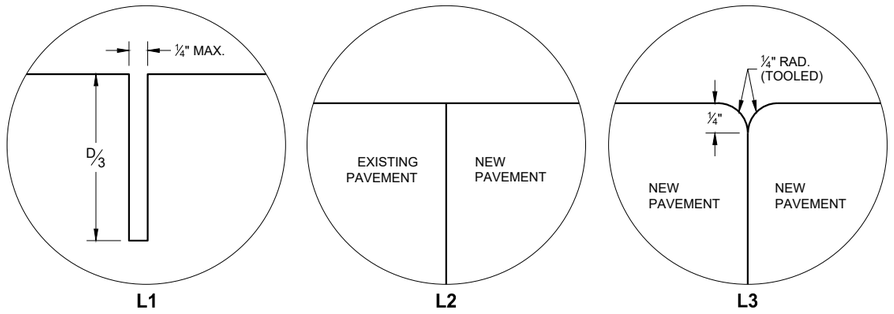
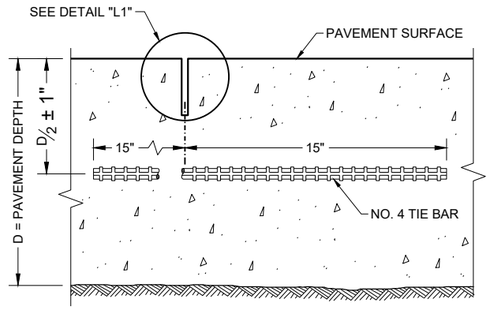


TRANSVERSE JOINTS

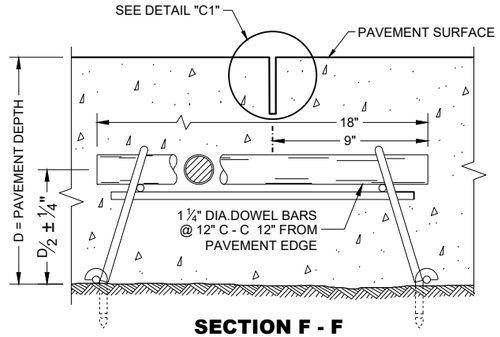


LONGITUDINAL JOINTS



SECTION C - C

SAWED LONGITUDINAL JOINT



SECTION F - F

CONTRACTION JOINT

GENERAL NOTES

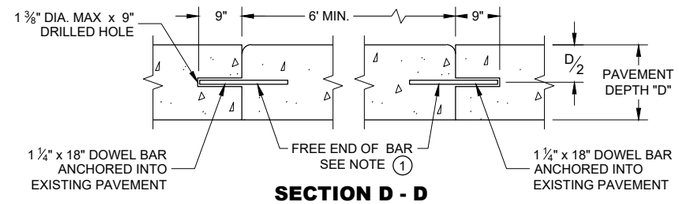
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

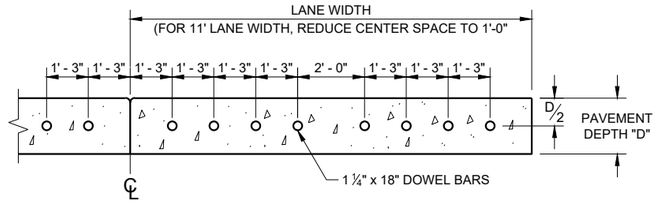
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT O EDGE.

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

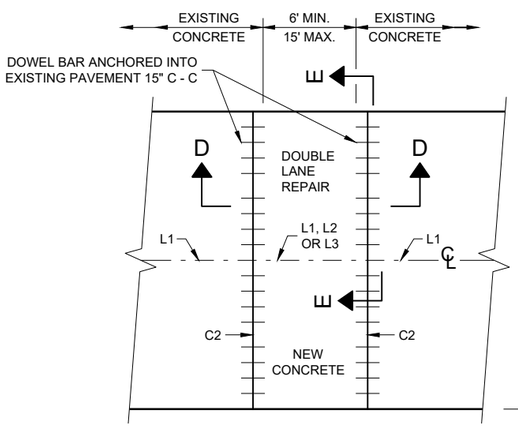


SECTION D - D



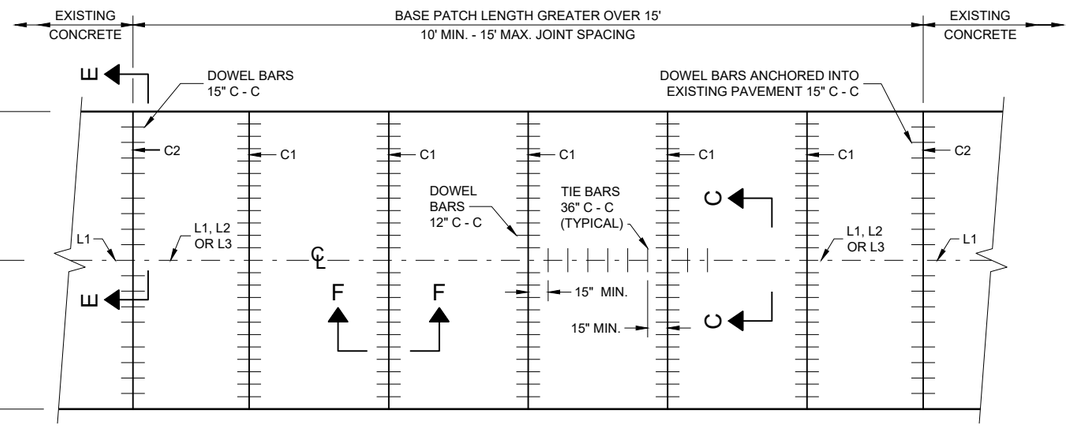
SECTION E - E

SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT



PLAN VIEW

MULTILANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

MULTILANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT 108

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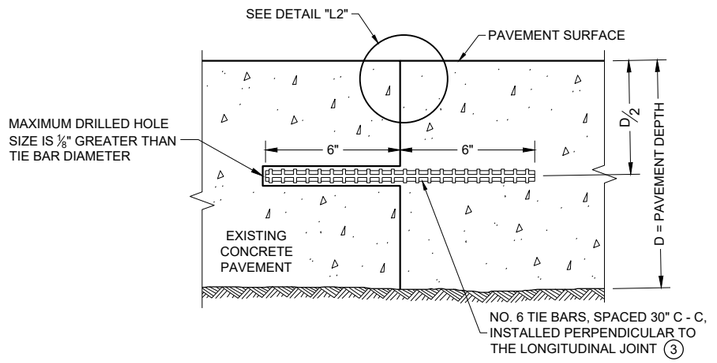
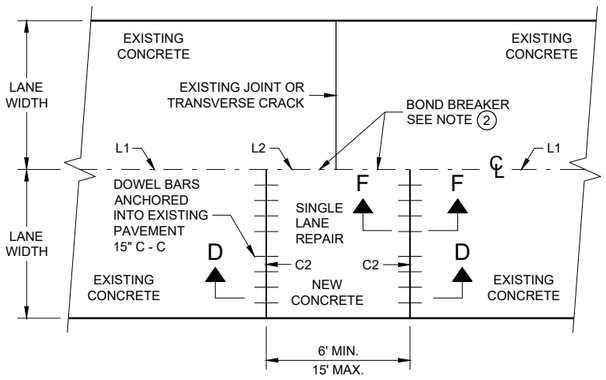


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

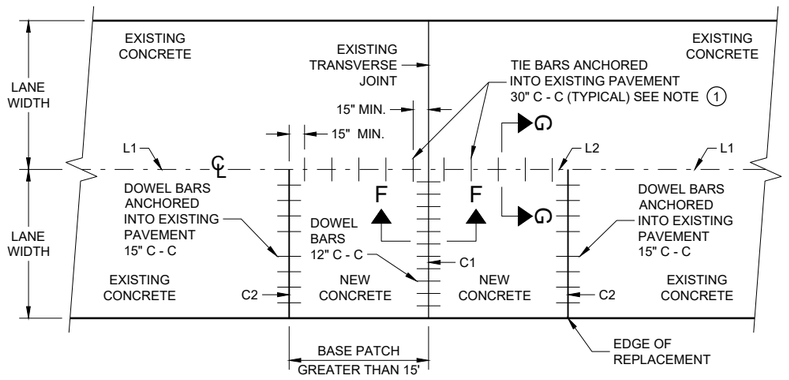
GENERAL NOTES

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 HOES WITH AN EPOXY.



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



PLAN VIEW

SINGLE LANE CONCRETE BASE PATCH GREATER THAN 15' LENGTH

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

FHWA

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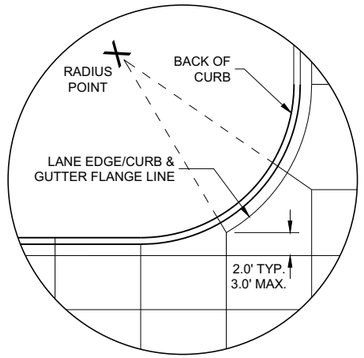
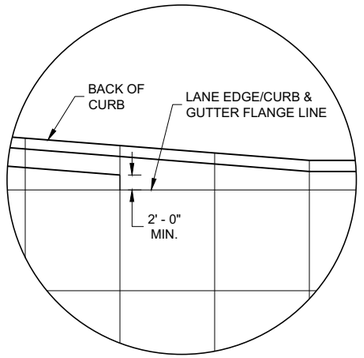
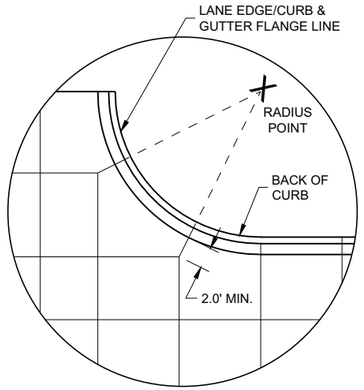


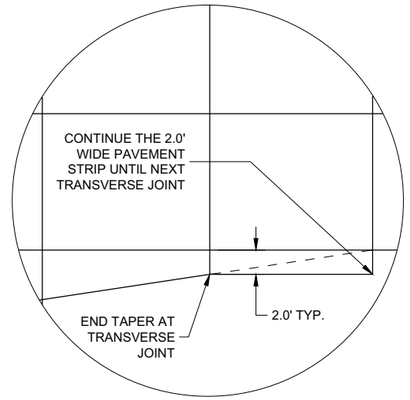
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

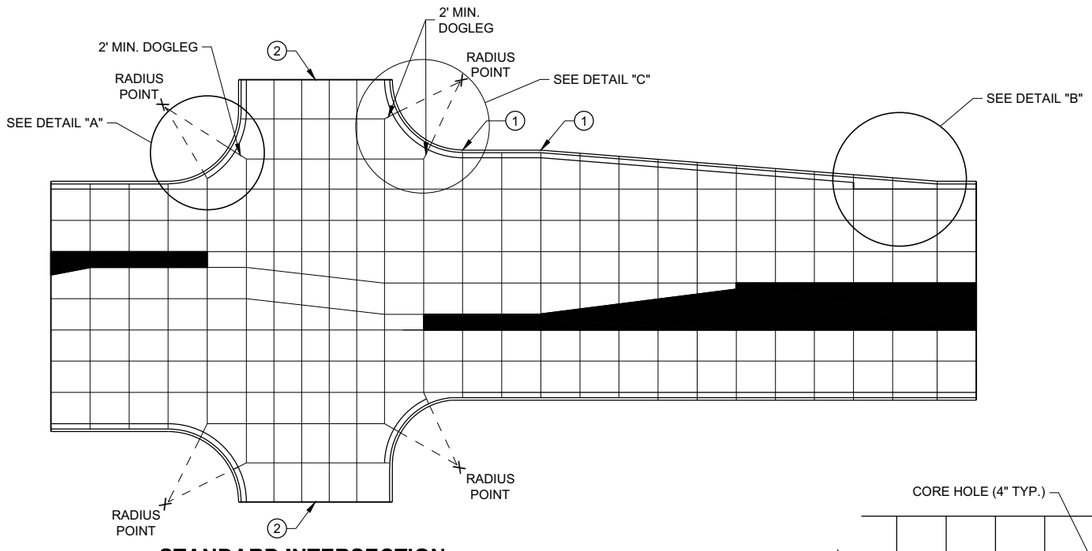
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITHEDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.

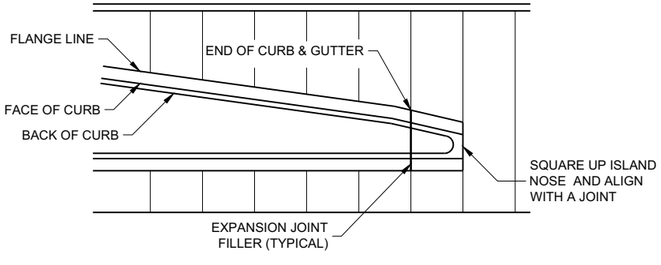


STANDARD INTERSECTION

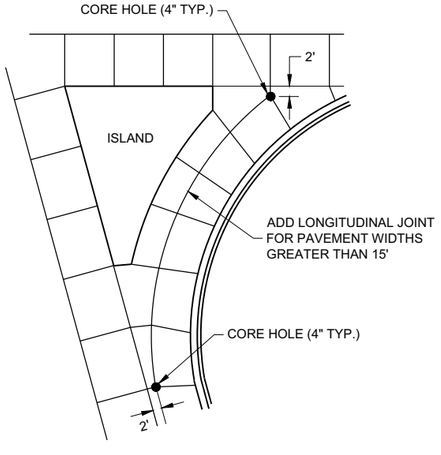
PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'

SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
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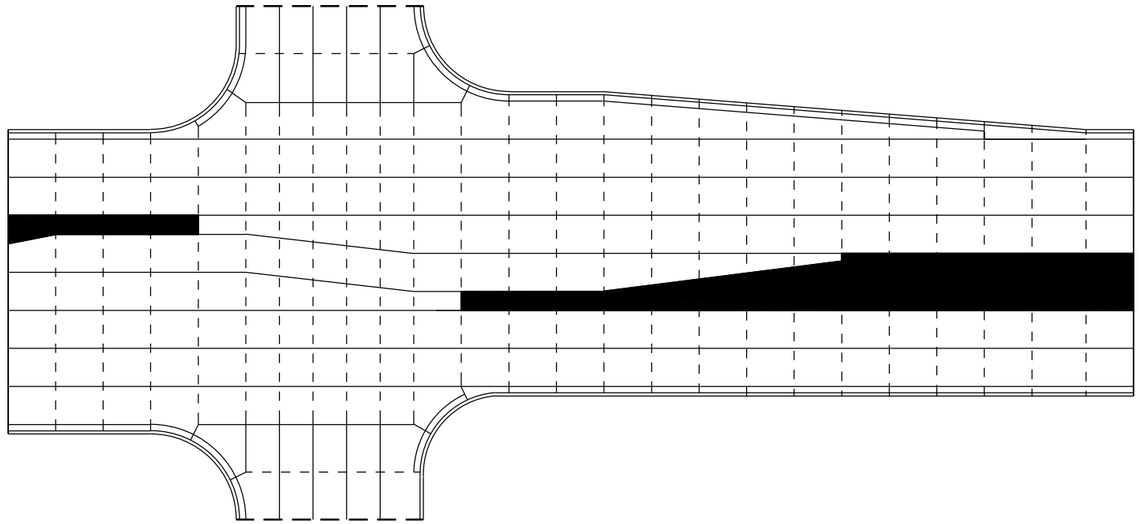
LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

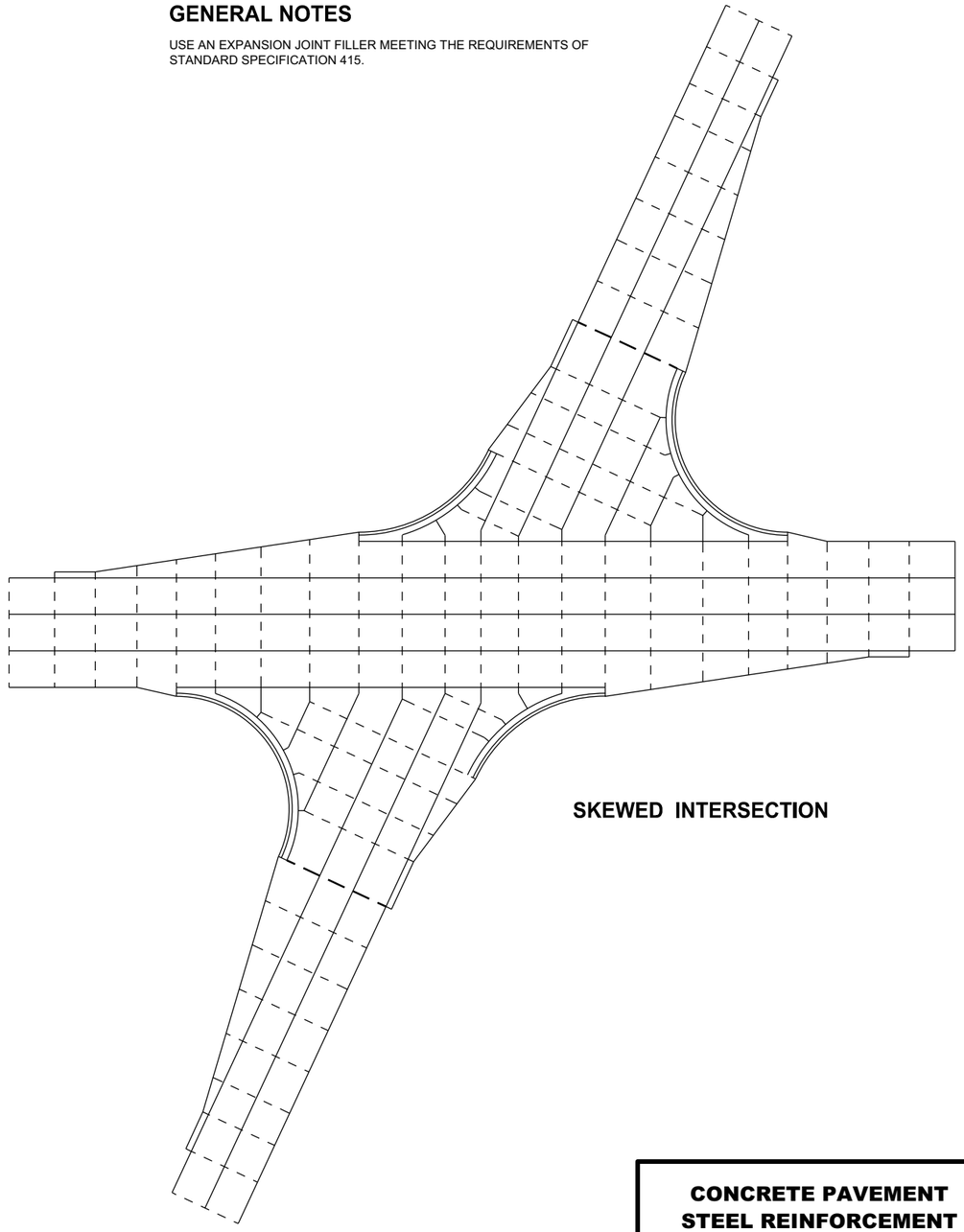
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

6

SDD 13C18 - 07b

CONCRETE PAVEMENT STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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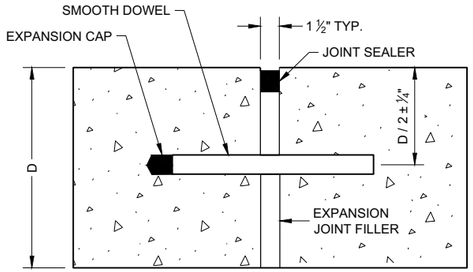
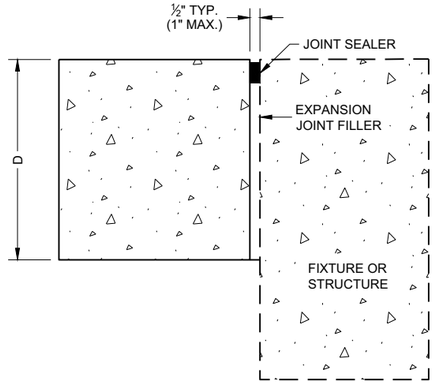
SDD 13C18 - 07b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

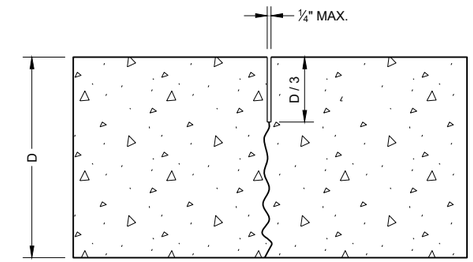
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

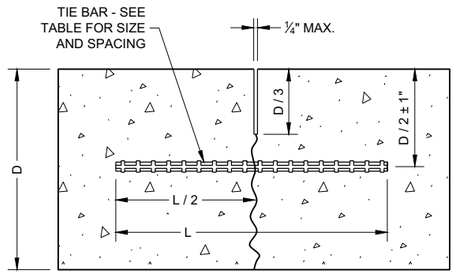
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

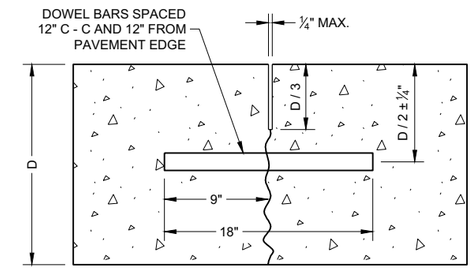
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

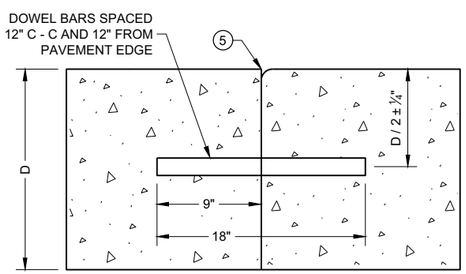


TIED LONGITUDINAL

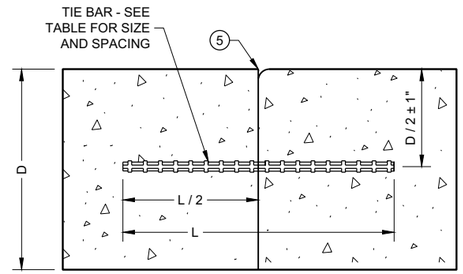


DOWELED TRANSVERSE

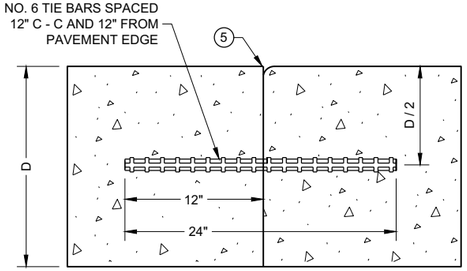
CONTRACTION JOINTS (2)



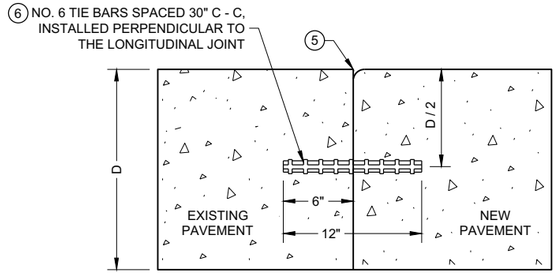
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

CONCRETE PAVEMENT JOINT TYPES

STATE OF WISCONSIN
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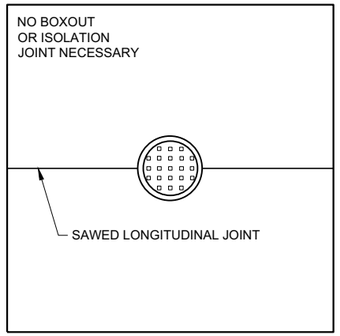
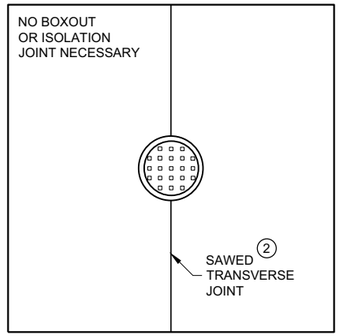
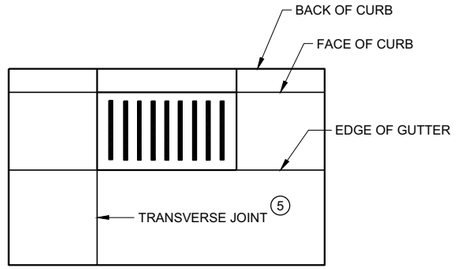


MANHOLE WITH LONGITUDINAL JOINT



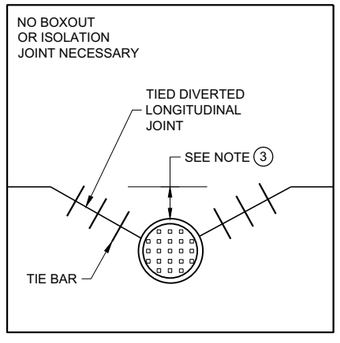
MANHOLE WITH TRANSVERSE JOINT



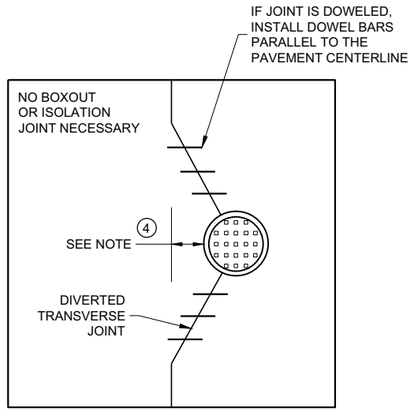
INLET WITH TRANSVERSE JOINT

GENERAL NOTES

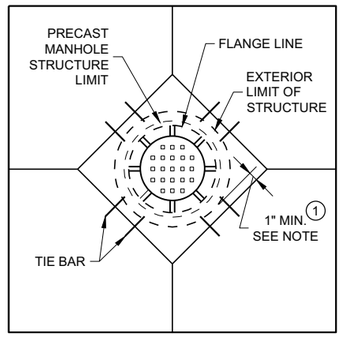
1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
4. IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

FHWA

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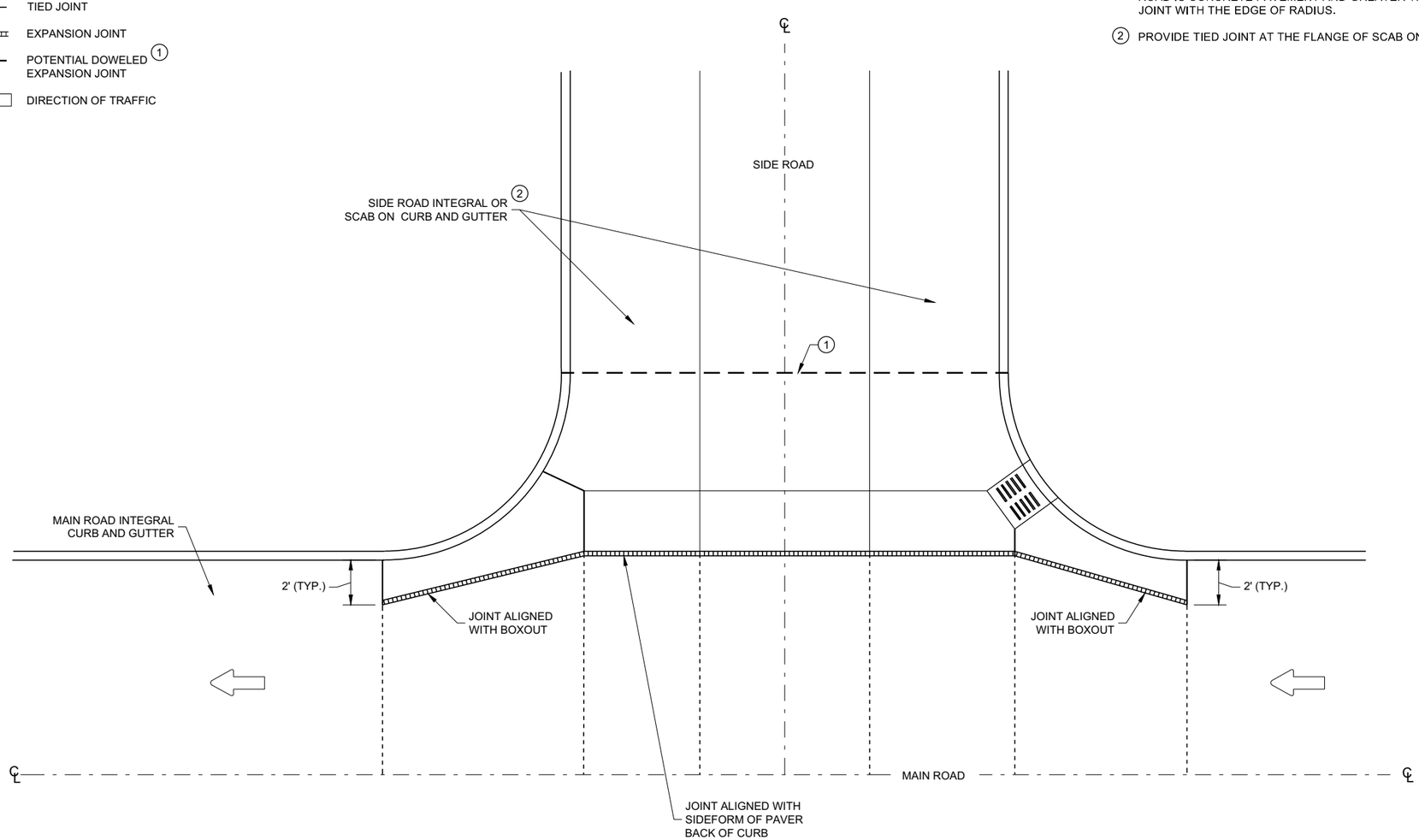
LEGEND

- DOWELED JOINT
- TIED JOINT
- EXPANSION JOINT
- POTENTIAL DOWELED EXPANSION JOINT (1)
- DIRECTION OF TRAFFIC



GENERAL NOTES

(1) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.

(2) PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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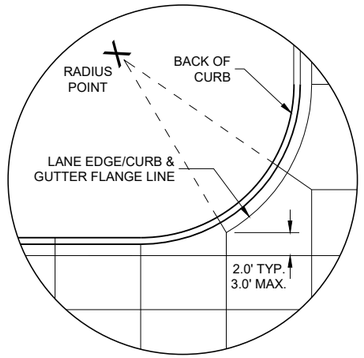
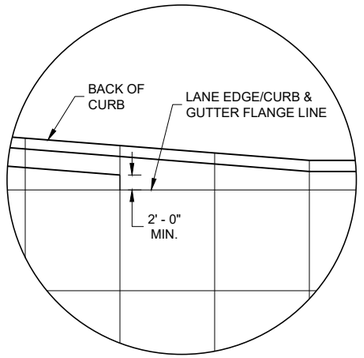
SDD 13C18 - 07f

6

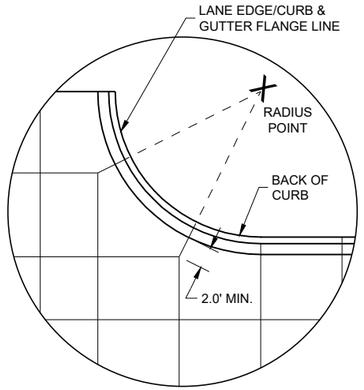
SDD 13C18 - 07f



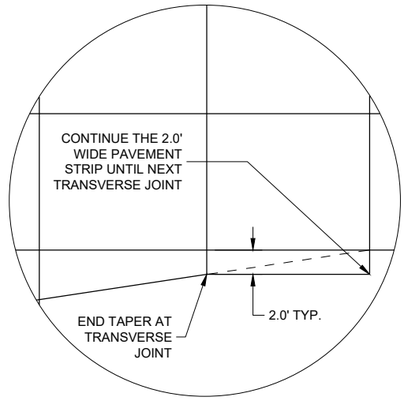
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

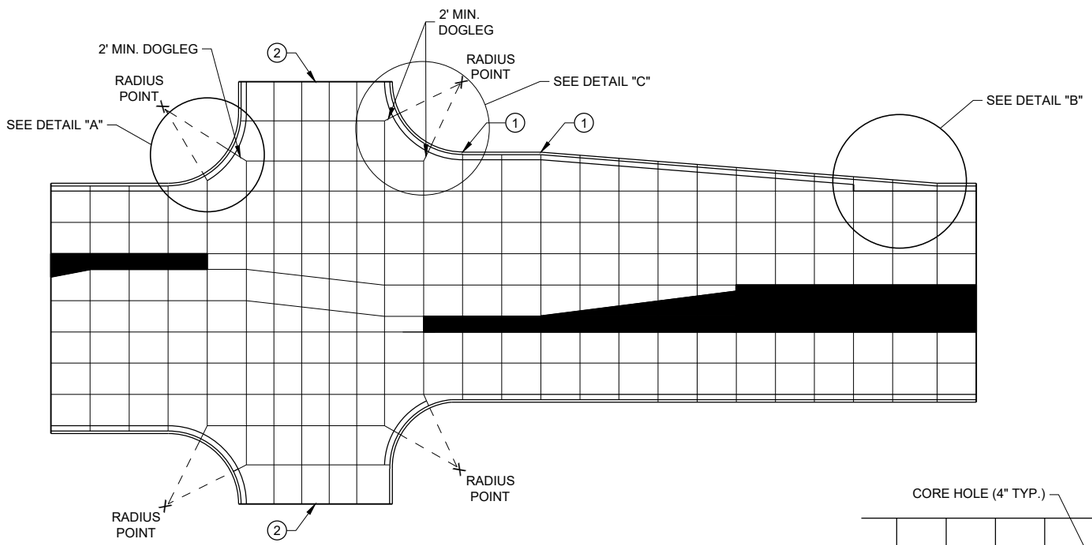
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.

(2) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.

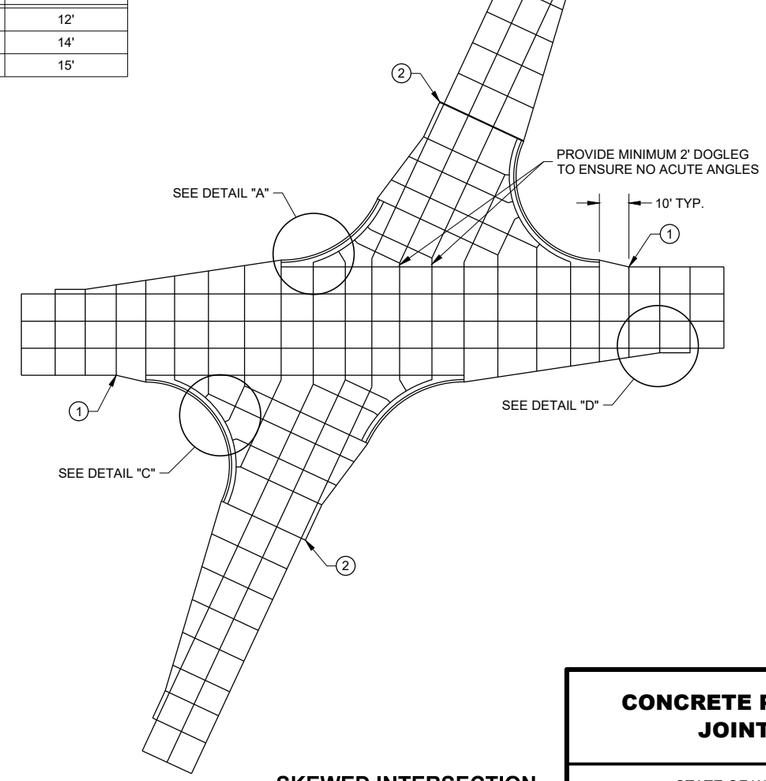
(3) THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



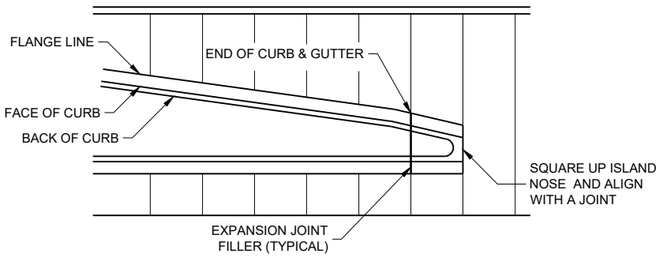
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

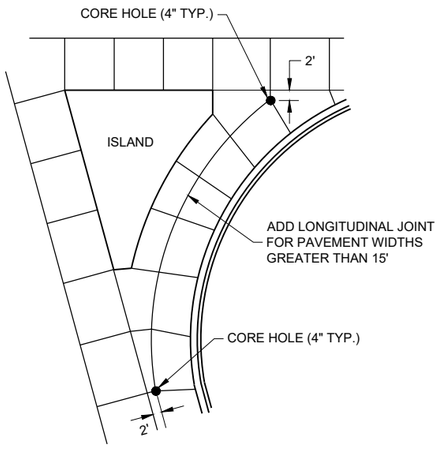
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 13C18 - 08a

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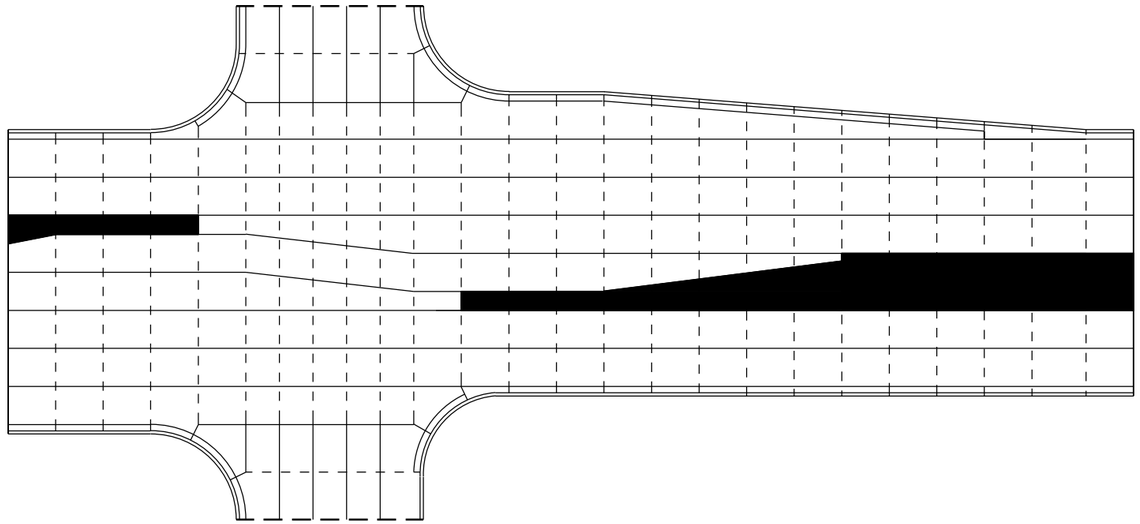
SDD 13C18 - 08a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

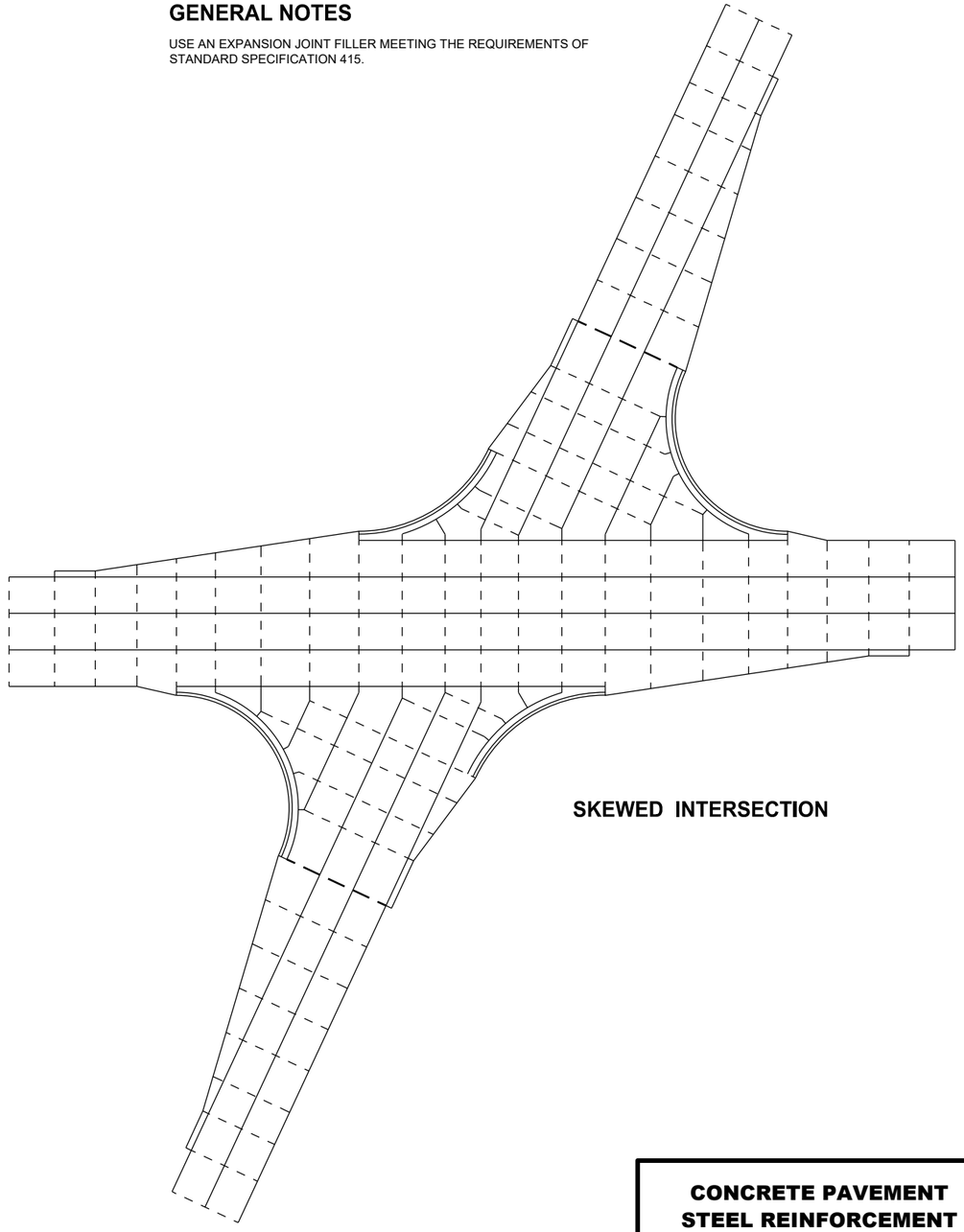
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

6

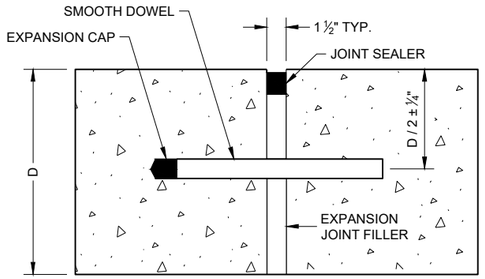
SDD 13C18 - 08b

CONCRETE PAVEMENT STEEL REINFORCEMENT

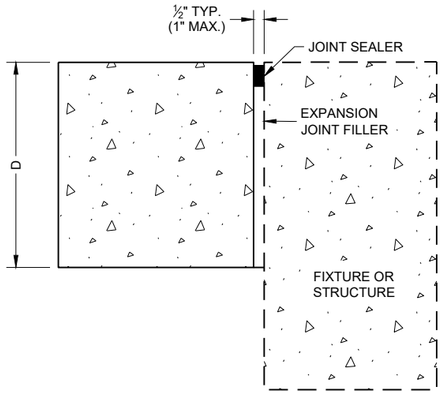
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

SDD 13C18 - 08b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

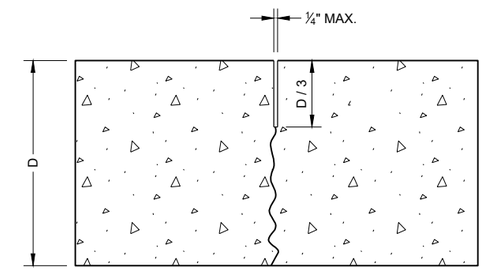
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

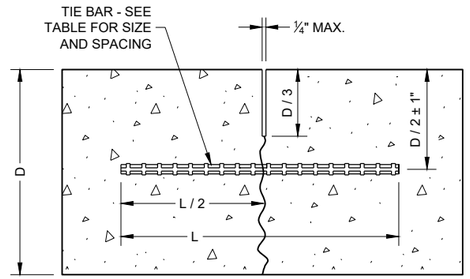
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

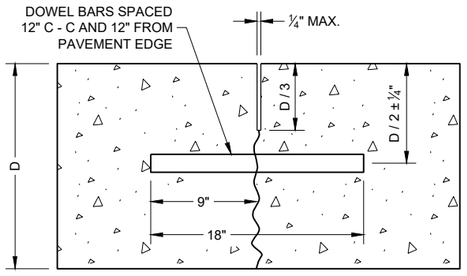
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

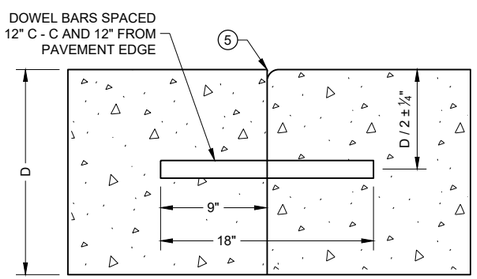


TIED LONGITUDINAL

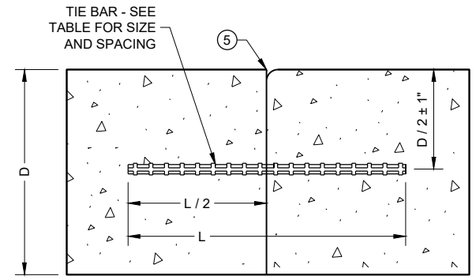


DOWELED TRANSVERSE

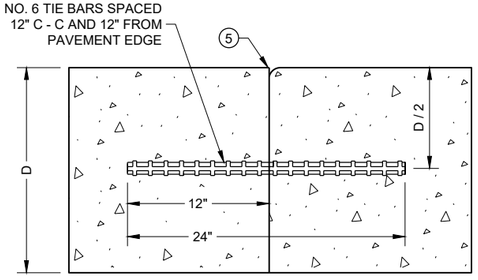
CONTRACTION JOINTS (2)



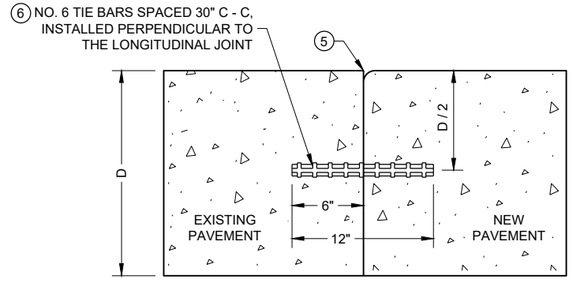
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



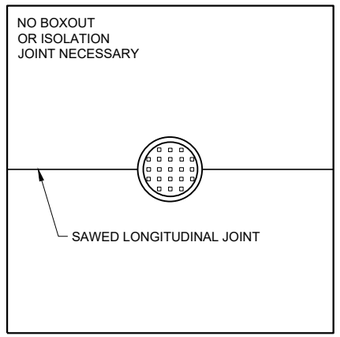
TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



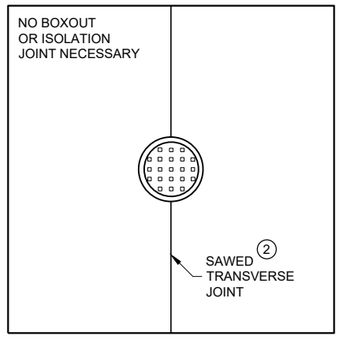
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

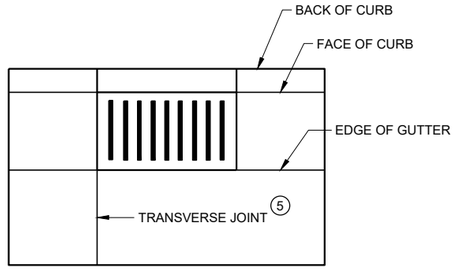
CONCRETE PAVEMENT JOINT TYPES



MANHOLE WITH LONGITUDINAL JOINT



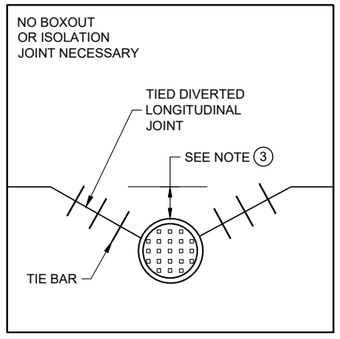
MANHOLE WITH TRANSVERSE JOINT



INLET WITH TRANSVERSE JOINT

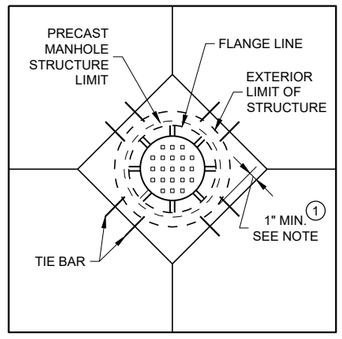
GENERAL NOTES

1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
4. IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT

MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVISI

FHWA

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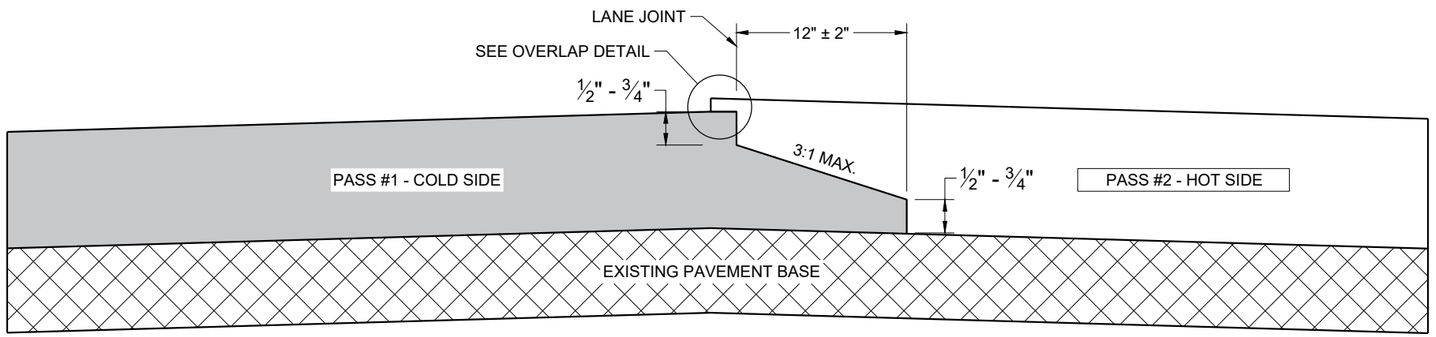
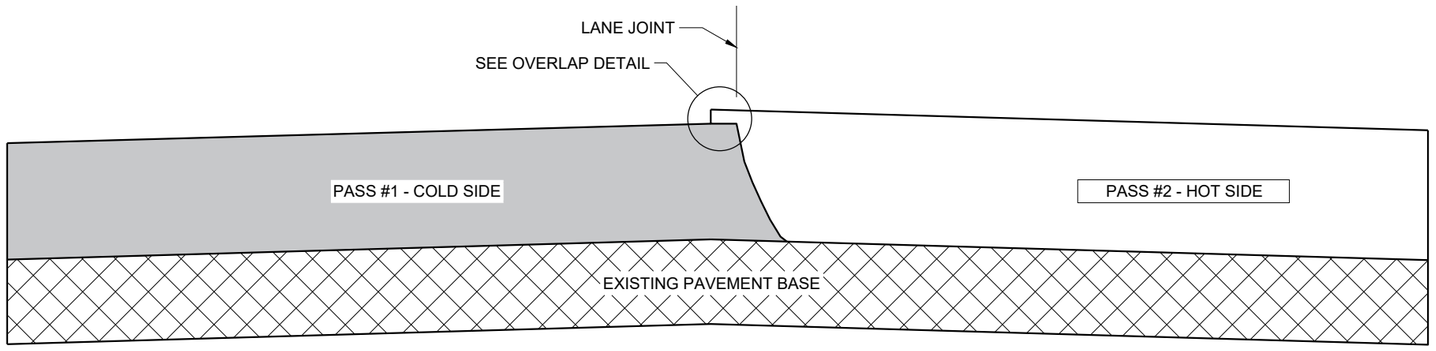
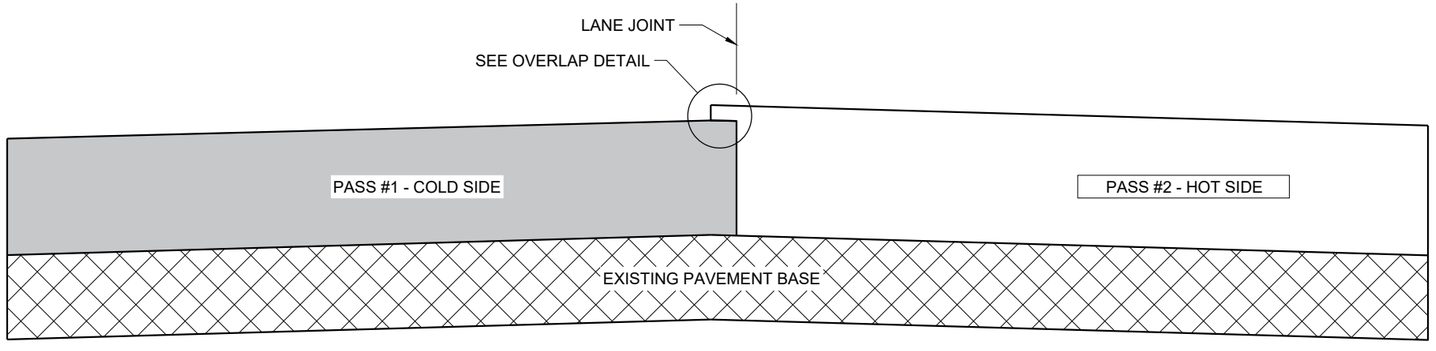
SDD13C18 - 08d



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

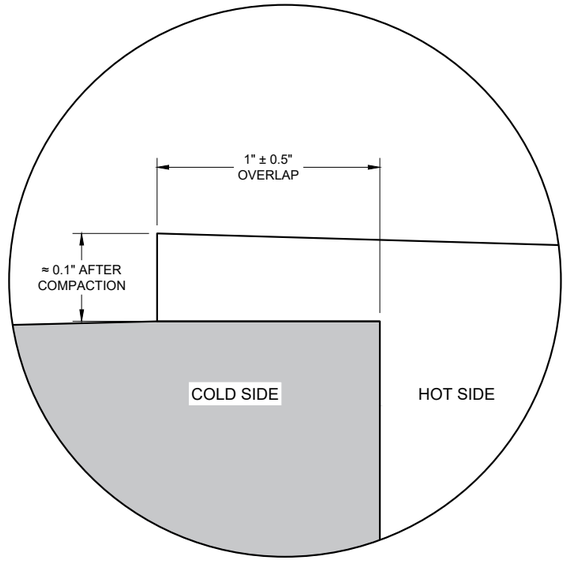
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 0.5" AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGIN

FHWA

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SDD 13C19 - 03

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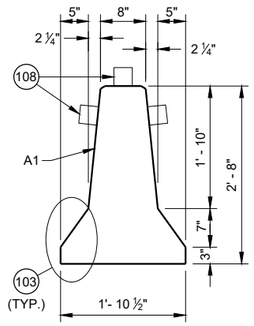
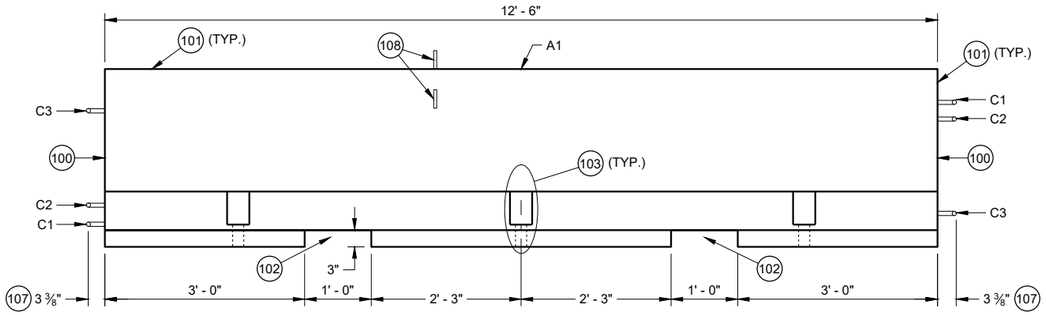
SDD 13C19 - 03



CROSS SECTION



PROFILE VIEW

GENERAL NOTES

PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

(100) PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
- A. TYPE OF BARRIER: WI-CBTP
- B. MANUFACTURER
- C. DATE OF MANUFACTURE (MONTH AND YEAR)

(101) 1" OPTIONAL CHAMFER

(102) SEE LIFTING SLOT DETAIL

(103) SEE ANCHOR BLOCK DETAIL

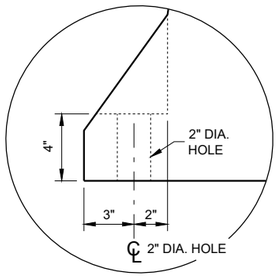
(104) 1 ¼" MIN. CLEAR COVER

(105) 2" MIN. CLEAR COVER

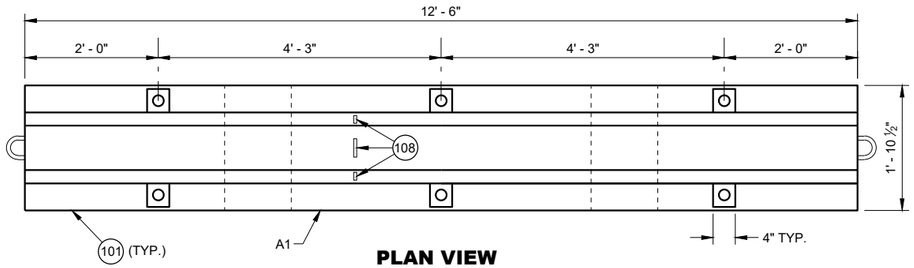
(106) 1" MIN. CLEAR COVER

(107) ± ⅛" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)

(108) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TO MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAT 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

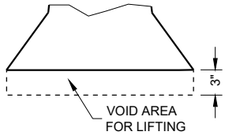


ANCHOR BLOCK DETAIL

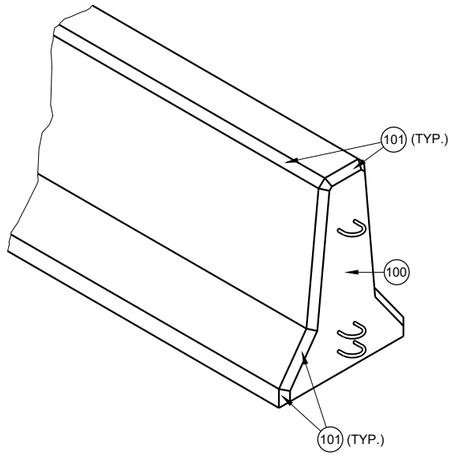


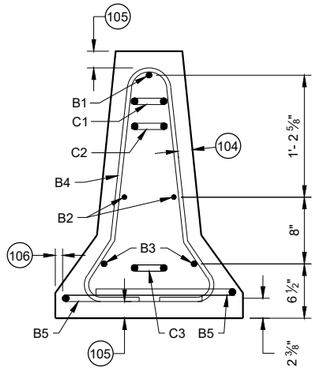
PLAN VIEW

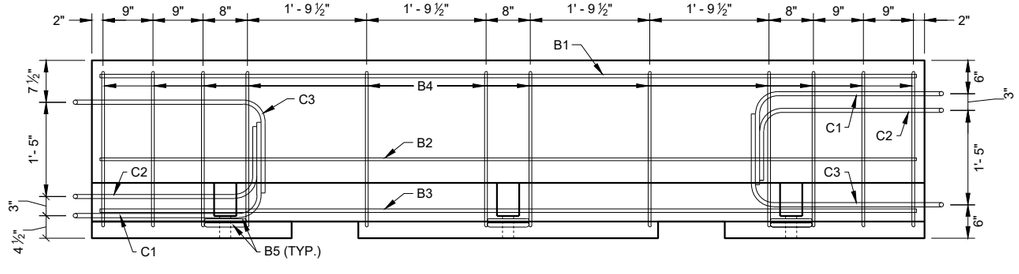
TEMPORARY BARRIER



LIFTING SLOT DETAIL (TYP.)



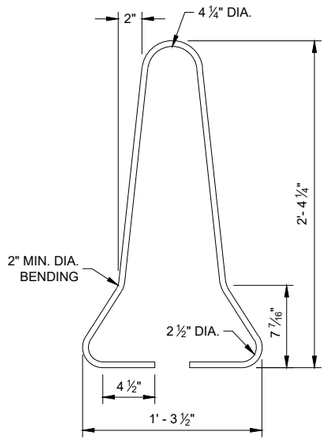




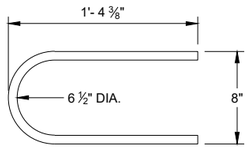
PROFILE VIEW

TEMPORARY BARRIER REINFORCEMENT

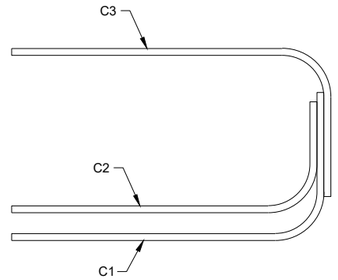
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"



B4 BAR DETAIL

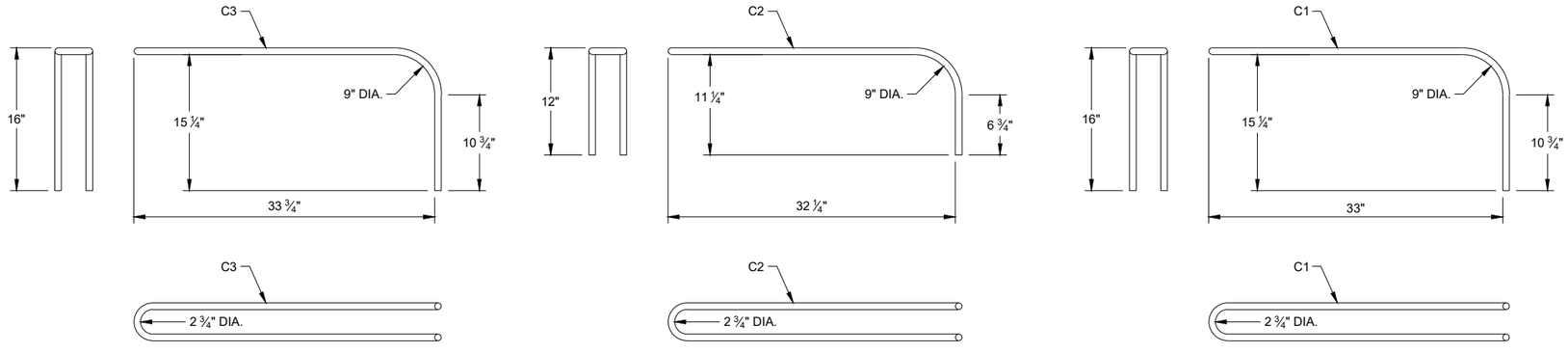


B5 BAR DETAIL



PROFILE VIEW

LOOP BAR ASSEMBLY



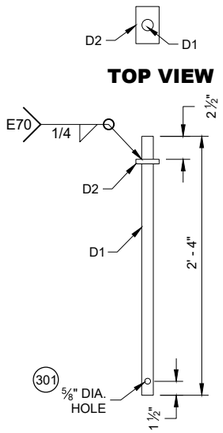
C BAR DETAILS

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

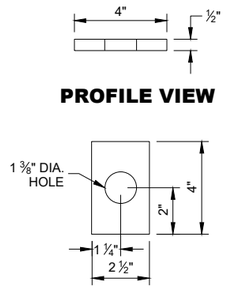
SDD 14B07-16b



TOP VIEW

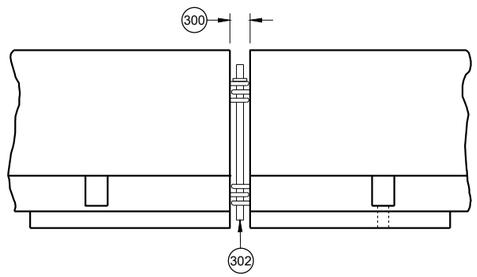
PROFILE VIEW

CONNECTOR PIN ASSEMBLY



PROFILE VIEW

TOP VIEW D2



CONNECTING TEMPORARY BARRIER SECTIONS

GENERAL NOTES

300 SET WITH 3 ⅝" WOOD BLOCK.

301 HOLE IS OPTIONAL.

302 CONNECTOR PIN ASSEMBLY.

303 CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.

304 CONCRETE DECK.

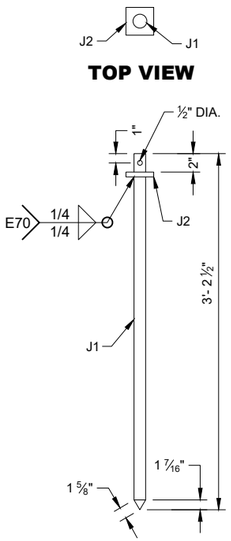
305 DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.

306 MINIMUM OF 2" OF ASPHALT.

307 ASPHALT ANCHOR PIN ASSEMBLY

308 IF DRILLING A PILOT HOLE, THE MAX, DIA. OF THE HOLE IS 3/4"

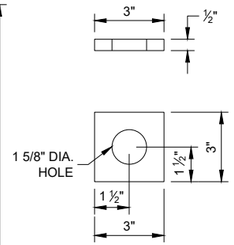
309 WHEN THERE IS ASPHALT OVERLAYING CONCRETE PAVEMENT, A 1 5/8" DIA. PILOT HOLE CAN BE DRILLED INTO THE OVERLAY AND CONCRETE. IF NEEDED DRILL A 3/4" PILOT HOLE IN BASE COURSE.



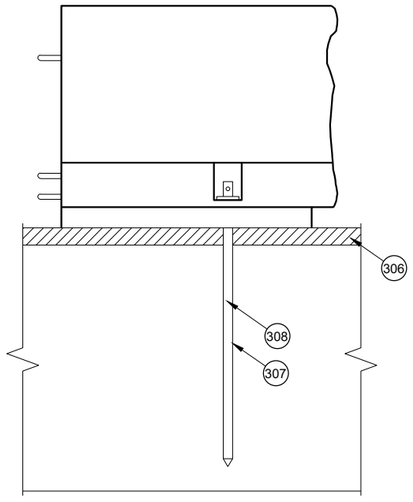
TOP VIEW

PROFILE VIEW

ASPHALT ANCHOR PIN ASSEMBLY

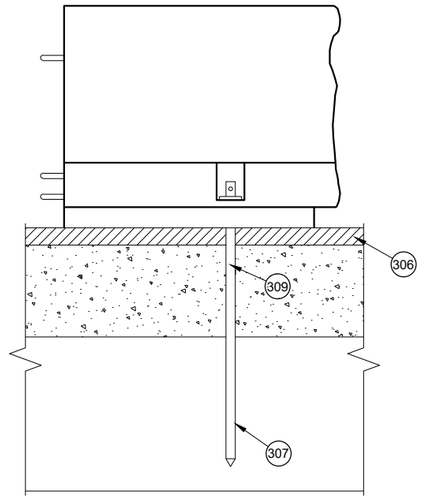


TOP VIEW J2



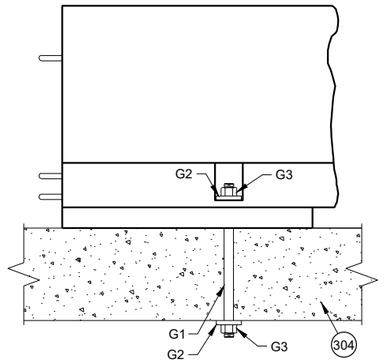
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT PAVEMENT



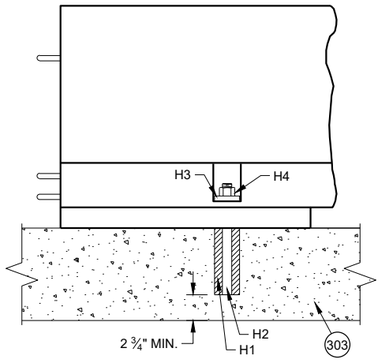
SIDE VIEW

ASPHALT ANCHOR INSTALLATION THROUGH ASPHALT OVERLAY ON TOP OF CONCRETE PAVEMENT



SIDE VIEW

THROUGH BOLT ANCHOR INSTALLATION (305)



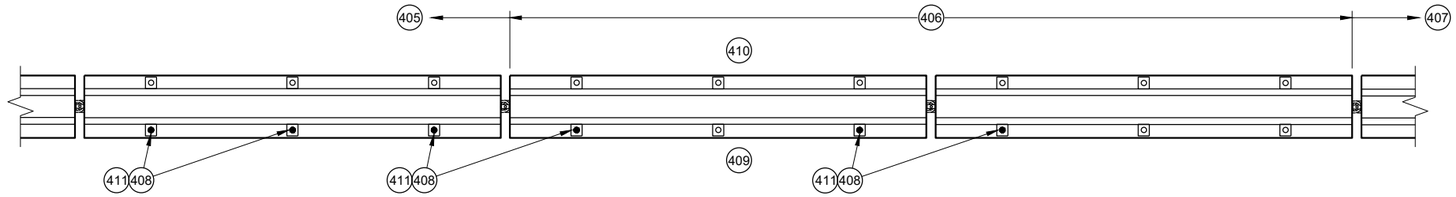
SIDE VIEW

ADHESIVE ANCHOR INSTALLATION (305)

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

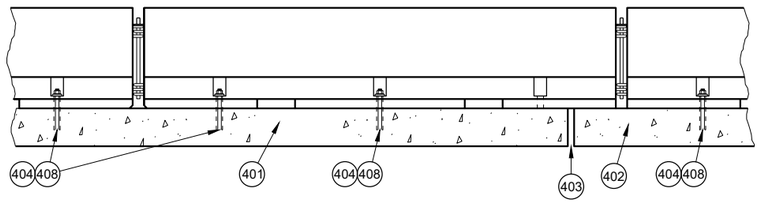
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16c



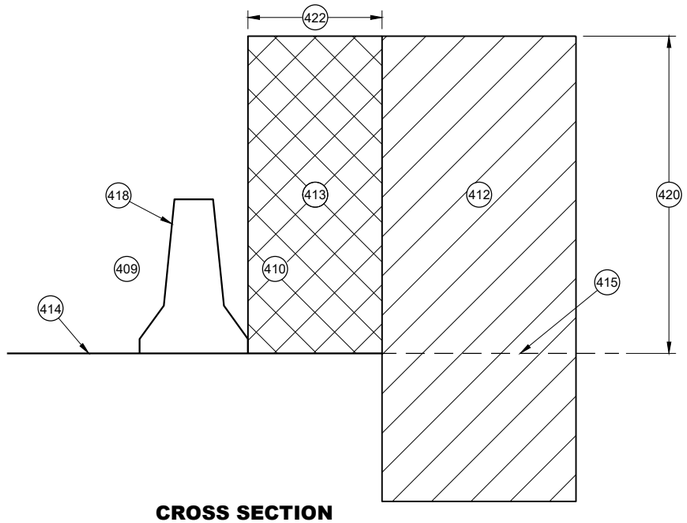
PLAN VIEW

TRANSITION FROM FREE STANDING TO ANCHORED BARRIER



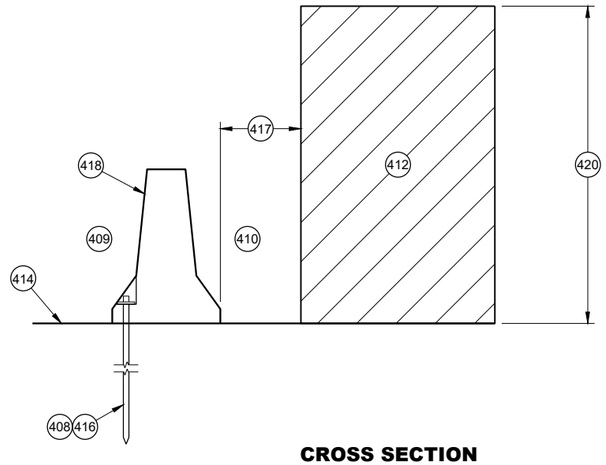
PROFILE VIEW

ANCHORED BARRIER NEAR EXPANSION JOINT (400)



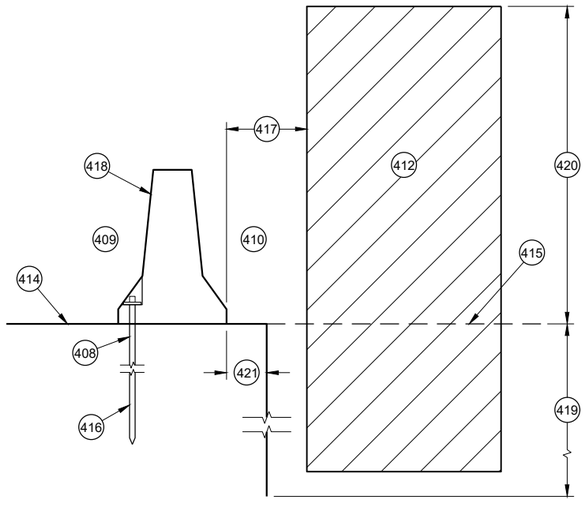
CROSS SECTION

FREE STANDING BARRIER



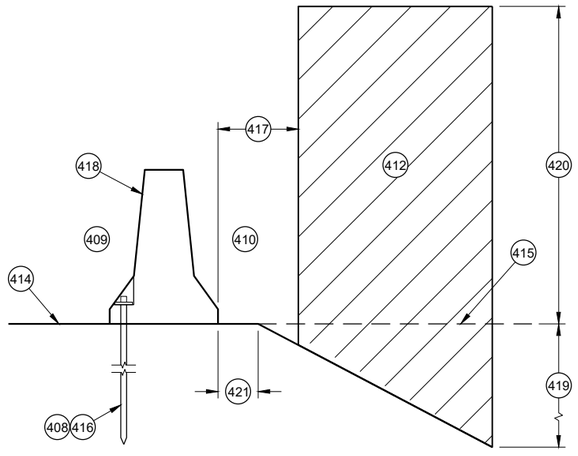
CROSS SECTION

ANCHORED BARRIER FOR OBJECTS ABOVE THE GRADE LINE AND NEAR THE BARRIER



CROSS SECTION

ANCHORED BARRIER NEAR VERTICAL DROP OFF



CROSS SECTION

ANCHORED BARRIER NEAR A SLOPE

GENERAL NOTES

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

(401) CONCRETE DECK

(402) CONCRETE DECK OR APPROACH SLAB.

(403) EXPANSION JOINT

(404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.

(405) ANCHORED TEMPORARY BARRIER

(406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING

(407) FREE STANDING BARRIER

(408) REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

(409) TRAFFIC SIDE

(410) NON-TRAFFIC SIDE

(411) ANCHOR LOCATION. SEE ANCHORING DETAILS.

(412) WORK AREA

(413) AREA FREE OF OBJECTS AND WORKERS

(414) GRADE LINE

(415) EXTENDED GRADE LINE

(416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.

(417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.

(418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.

(419) DEPTHS OF 3 FEET OR MORE.

(420) Y = 6.5'

(421) OFFSET FROM BACK OF BARRIER EDGE:

CONCRETE PAVEMENT	0.5'
ASPHALT	0.5'

(422) POSTED SPEED (MPH):

45 OR GREATER	4.0'
40 OR LOWER	2.0'

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16d

GENERAL NOTES

500 EXISTING RIGID BARRIERS (VARIES)

501 TEMPORARY BARRIER

502 SEE OTHER DETAIL ON HOW TO ANCHOR TEMPORARY BARRIER (BARRIER ASPHALT ANCHOR SHOWN).

503 ANCHORS ARE REQUIRED ON BOTH SIDE OF THE TEMPORARY BARRIER.

504 NESTED RAILS ARE REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

505 TRAFFIC TRAVELS FROM PERMANENT BARRIER TO TEMPORARY BARRIER.

506 TRAFFIC TRAVELS FROM TEMPORARY BARRIER TO PERMANENT BARRIER.

507 VERTICAL BARRIER

508 SAFETY SHAPE BARRIER

509 SINGLE SLOPE BARRIER

510 CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF RIGID BARRIER.

511 BENT THRIE BEAM TO FIT.

512 THRIE BEAM PIECES ARE OFFSET 15 ¼" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.

513 TWO (2) P1, P2 AND P3 ARE REQUIRED

514 FIVE (5) N1, N2 AND N3 ARE REQUIRED

515 TWO (2) R1, R2 AND R3 ARE REQUIRED

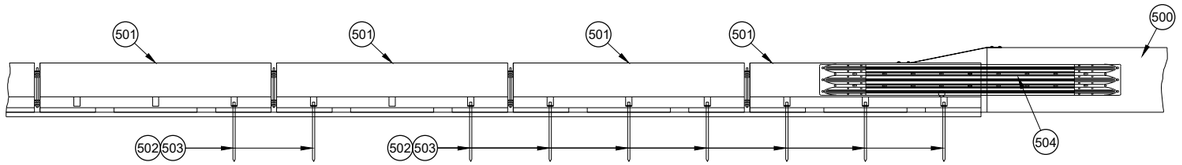
516 CUT WOOD BLOCK TO FIT.

517 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

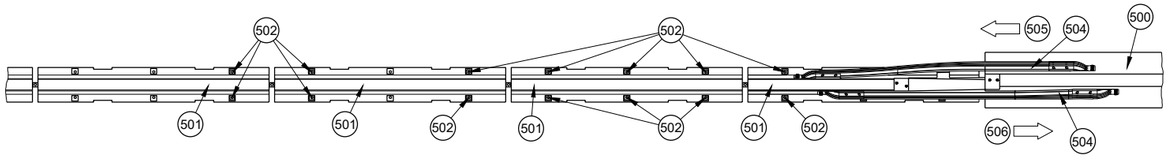
518 CAP ASSEMBLY

519 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.

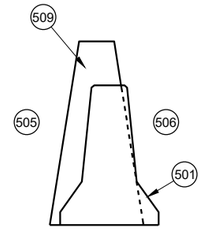
520 ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



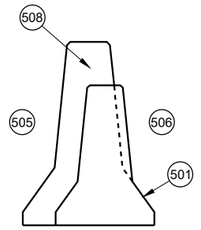
PROFILE VIEW



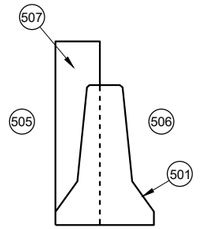
PLAN VIEW



CROSS SECTION TEMPORARY BARRIER PLACEMENT SINGLE SLOPE

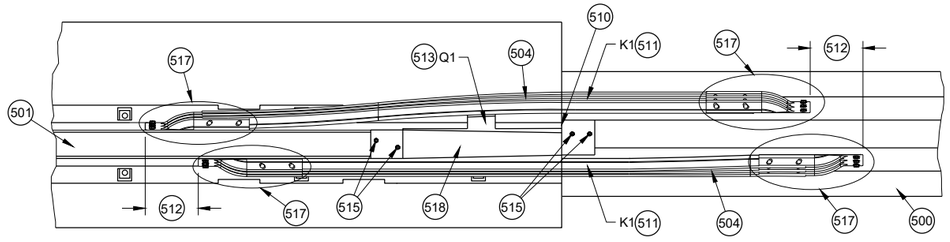


CROSS SECTION TEMPORARY BARRIER PLACEMENT SAFETY SHAPE

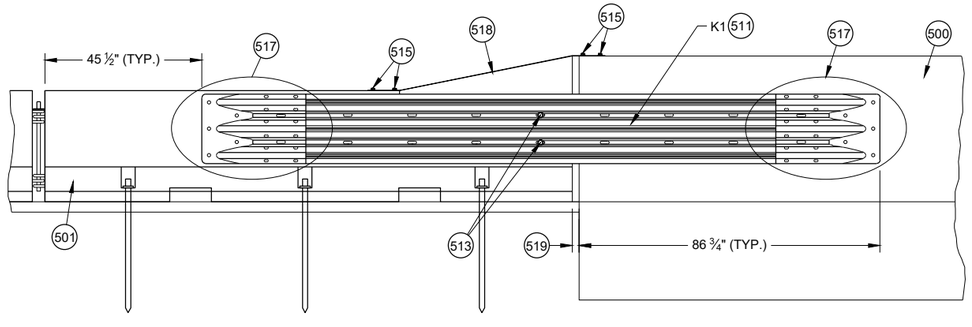


CROSS SECTION TEMPORARY BARRIER PLACEMENT VERTICAL

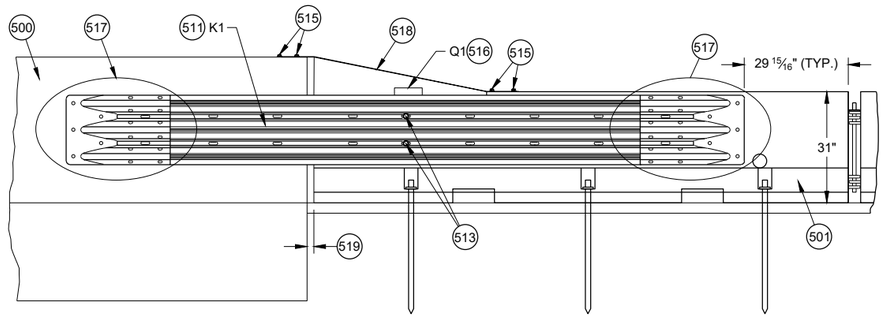
PLAN VIEW
TRANSITION TO RIGID BARRIER



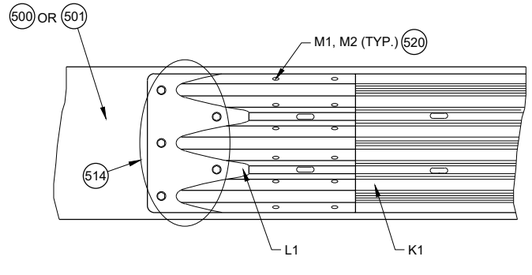
PLAN DETAIL VIEW
TRANSITION TO RIGID BARRIER



FRONT DETAIL VIEW
TRANSITION TO RIGID BARRIER



BACK DETAIL VIEW
TRANSITION TO RIGID BARRIER



517 DETAIL PLAN VIEW
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16e

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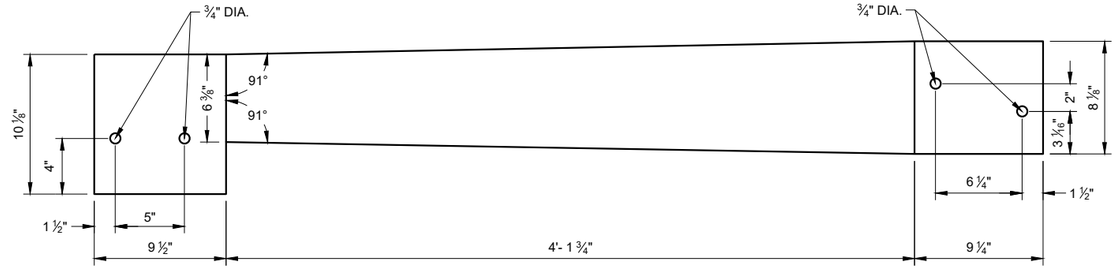
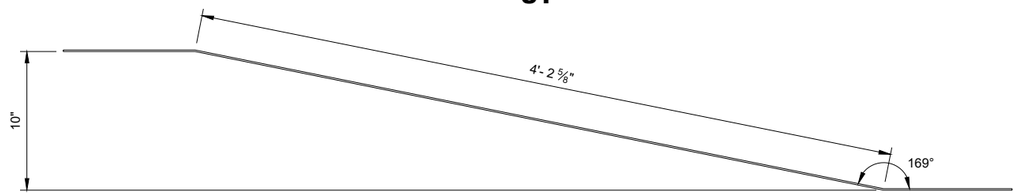
SDD 14B07-16e



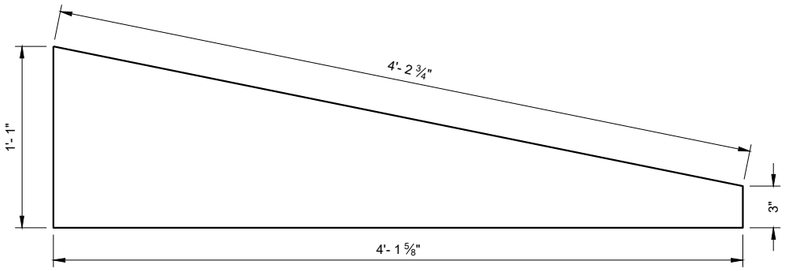
TOP VIEW

S1



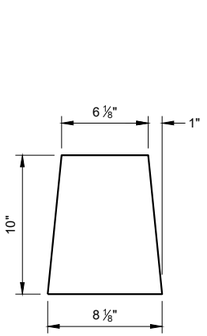
ELEVATION VIEW

S1

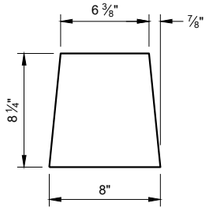


SIDE VIEW

S3



S2



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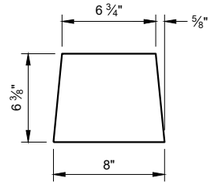
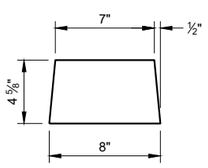
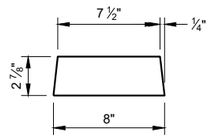


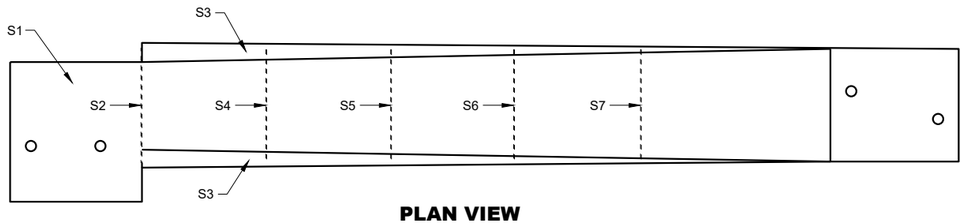
S5



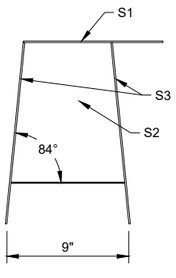
S6



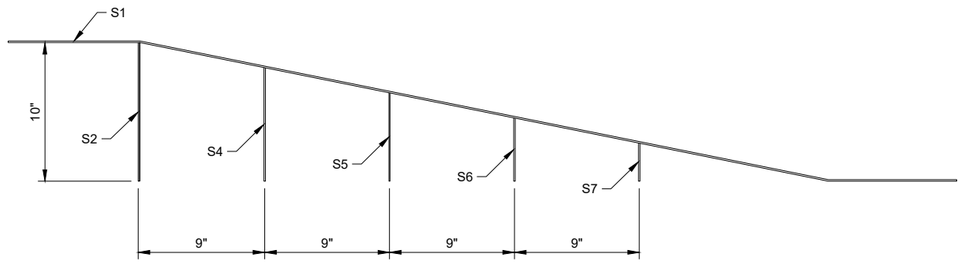
S7



PLAN VIEW



BACK VIEW



SIDE VIEW (600)

42" TOP CAP ASSEMBLY

GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES

STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

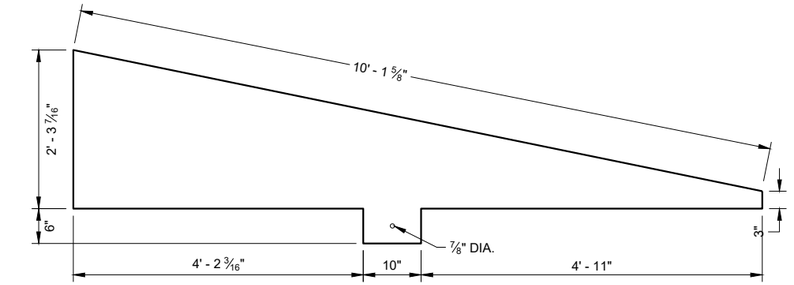
(600) SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

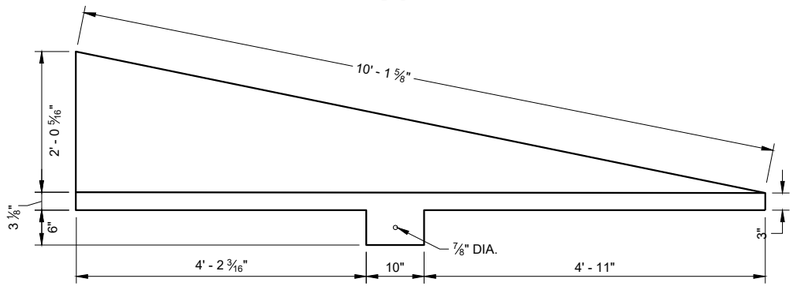
6

SDD 14B07-16f



SIDE VIEW
T4

END VIEW



SIDE VIEW
T3

END VIEW

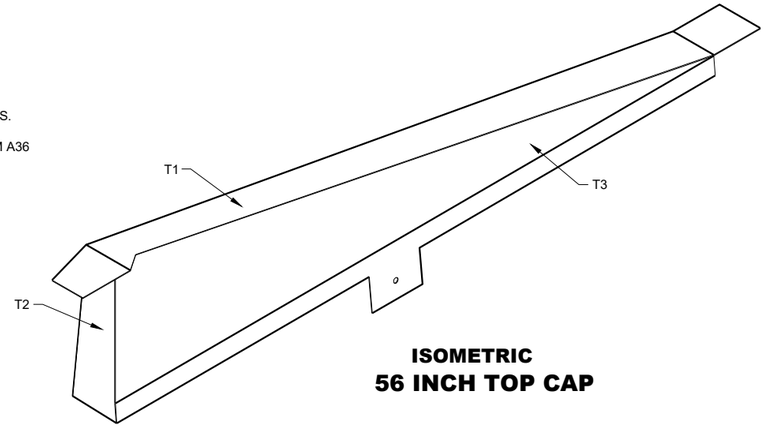
GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIE SIDES

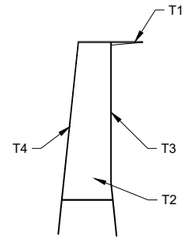
STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

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

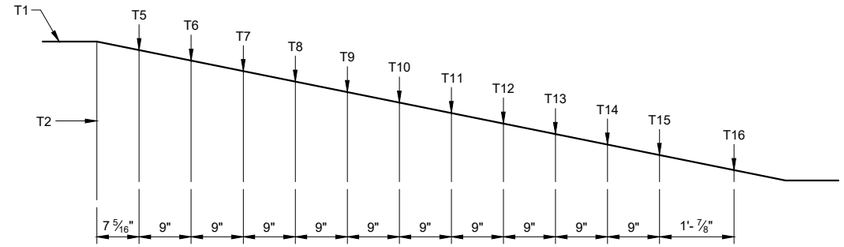
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



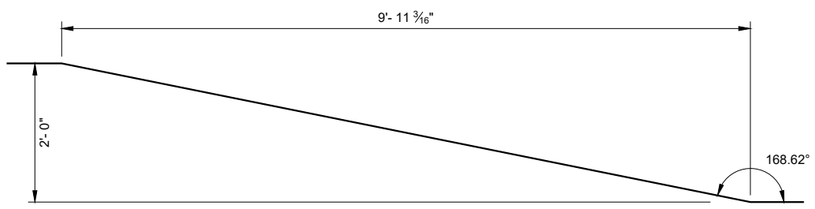
ISOMETRIC
56 INCH TOP CAP



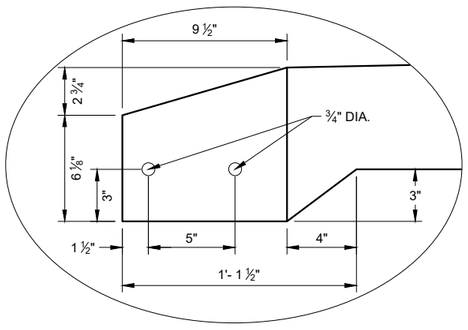
END VIEW
56 INCH TOP CAP



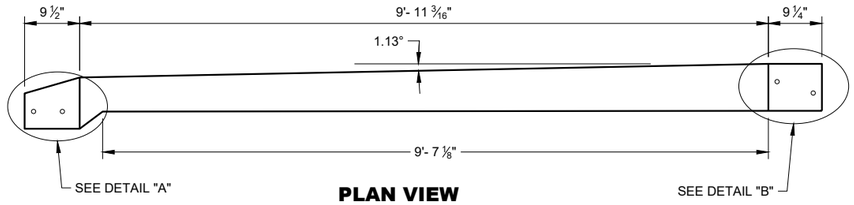
SIDE VIEW (700)
56 INCH TOP CAP



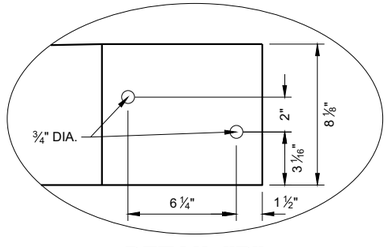
SIDE VIEW
TOP PLATE T1



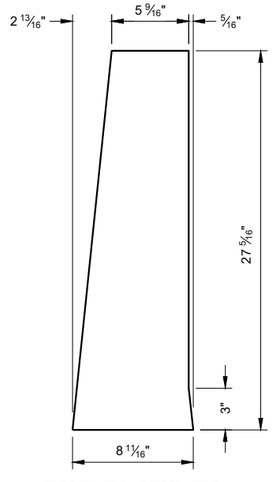
DETAIL "A"



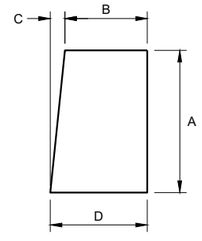
PLAN VIEW
TOP PLATE T1



DETAIL "B"



END PLATE T2



GUSSET PLATES
T5 - T16

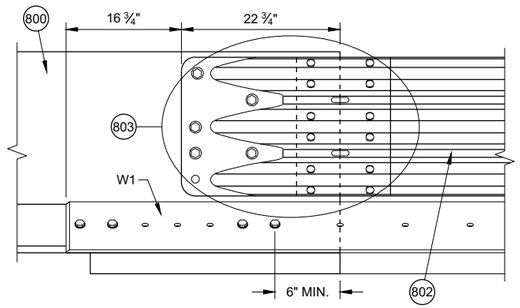
GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
T5	22 13/16"	5 1/16"	2 5/16"	8 1/16"
T6	21"	5 7/8"	2 3/16"	8 1/16"
T7	19 3/16"	6 1/16"	1 15/16"	8 1/16"
T8	17 3/8"	6 1/4"	1 13/16"	8 1/16"
T9	15 5/16"	6 7/16"	1 9/16"	8 1/16"
T10	13 3/4"	6 5/8"	1 7/16"	8 1/16"
T11	11 15/16"	6 13/16"	1 1/4"	8 1/16"
T12	10 1/8"	7"	1 1/16"	8 1/16"
T13	8 5/16"	7 3/16"	7/8"	8 1/16"
T14	6 1/2"	7 3/8"	1 1/16"	8 1/16"
T15	4 11/16"	7 9/16"	1/2"	8"
T16	2 7/8"	7 3/4"	1/4"	8"

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

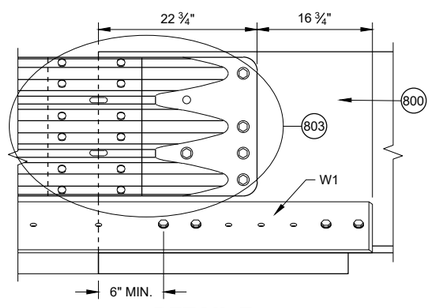
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

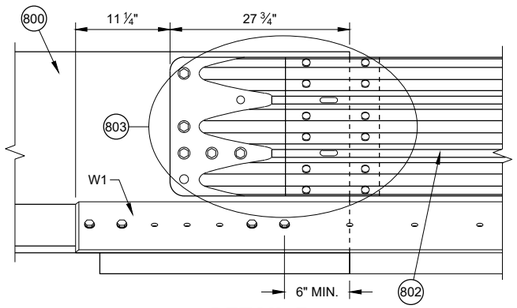
SDD 14B07-16g



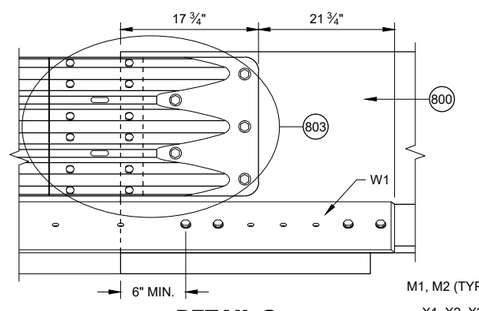
DETAIL D



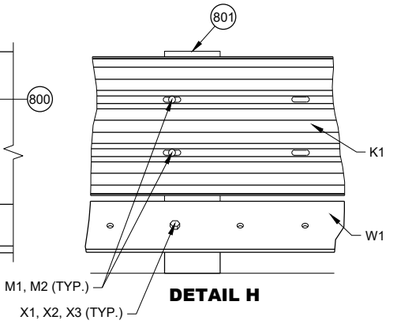
DETAIL E



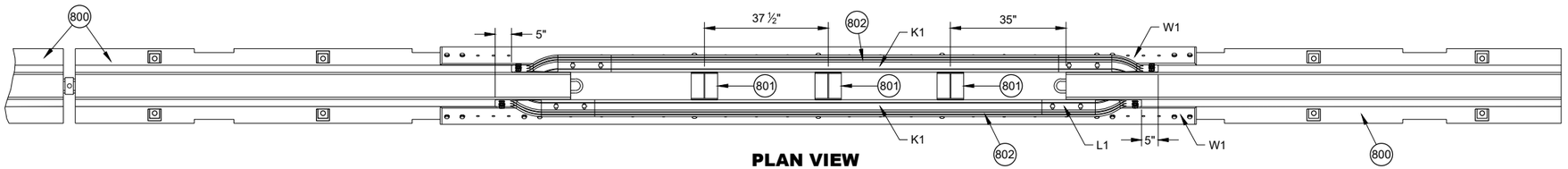
DETAIL F



DETAIL G



DETAIL H



PLAN VIEW

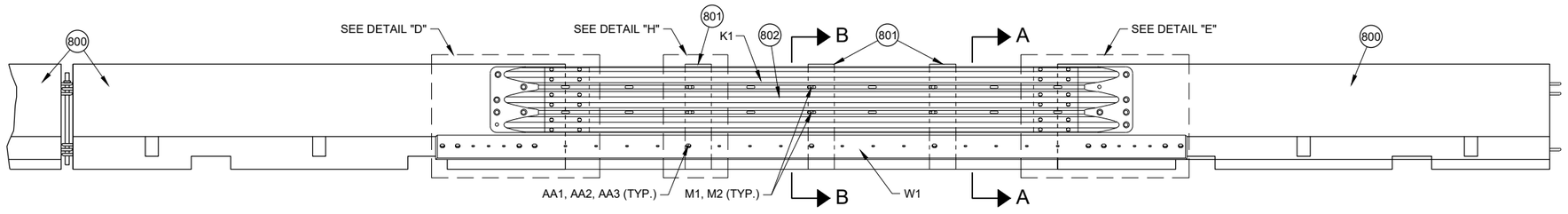
GENERAL NOTES

(800) FREE STANDING TEMPORARY BARRIER

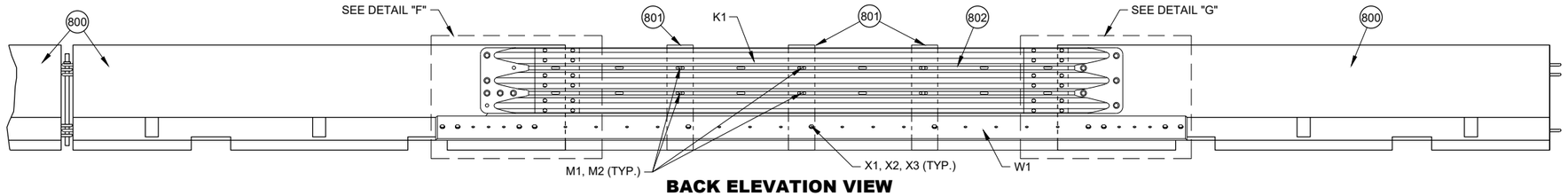
(801) GAP STIFFENER ASSEMBLY

(802) THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.

(803) SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL



FRONT ELEVATION VIEW



BACK ELEVATION VIEW

PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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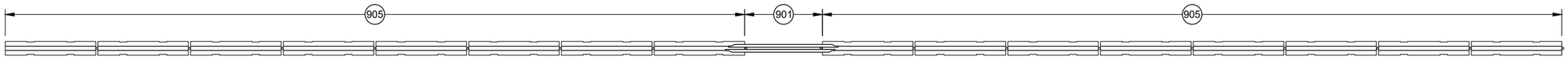
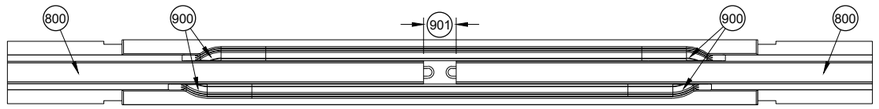
SDD 14B07-16h



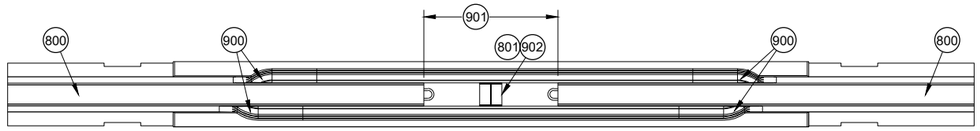
PLAN VIEW
GAP WITHIN SPACING



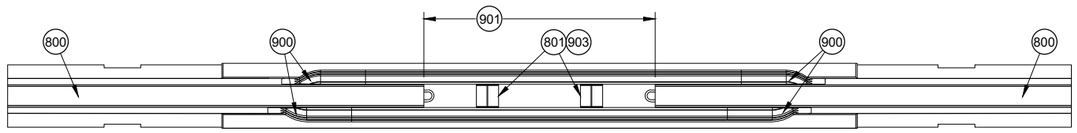
PLAN VIEW
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX. (904)

GENERAL NOTES

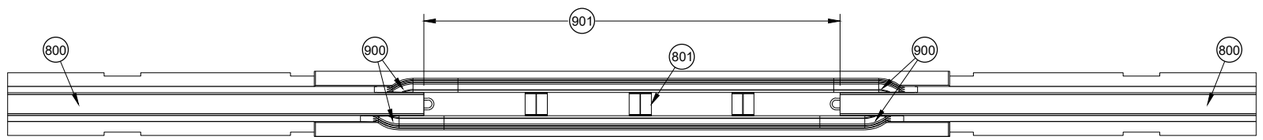
(900) SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
(901) TEMPORARY BARRIER GAP
(902) GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
(903) GAP STIFFENER ASSEMBLY IS OFFSET 18 ¾" FROM CENTER
(904) MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
(905) MINIMUM OF 8 CONTINUOUS FREE STANDING TEMPORARY BARRIERS



PLAN VIEW
TEMPORARY BARRIER GAP OVER 1' TO 4' MAX. (904)



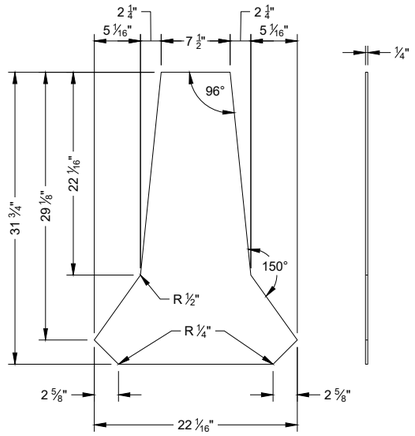
PLAN VIEW
TEMPORARY BARRIER GAP OVER 4' TO 7' MAX. (904)



PLAN VIEW
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX. (904)

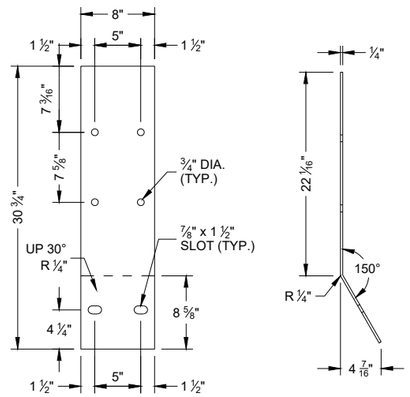
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

6
SDD 14B07-16i



PROFILE VIEW SIDE VIEW

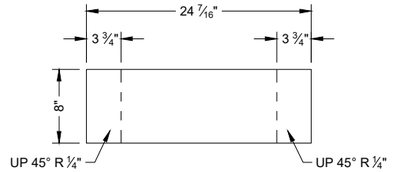
STIFFENER ASSEMBLY CENTER PANEL U1



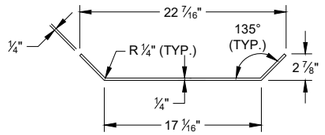
FLAT PATTERN

SIDE VIEW

STIFFENER ASSEMBLY SIDE PANEL U2

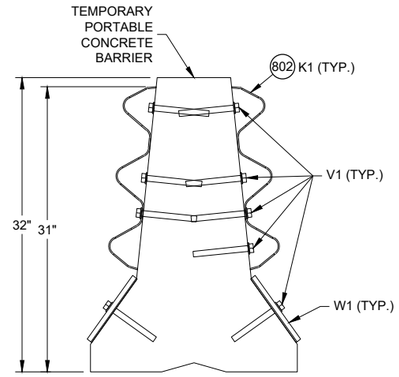


FLAT PATTERN

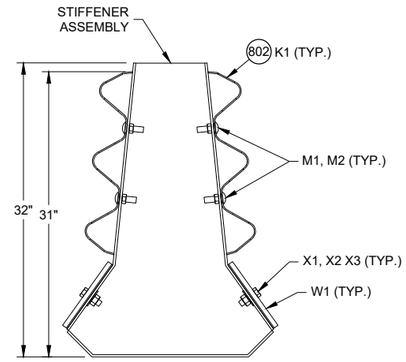


PROFILE VIEW

STIFFENER ASSEMBLY BOTTOM PANEL U3

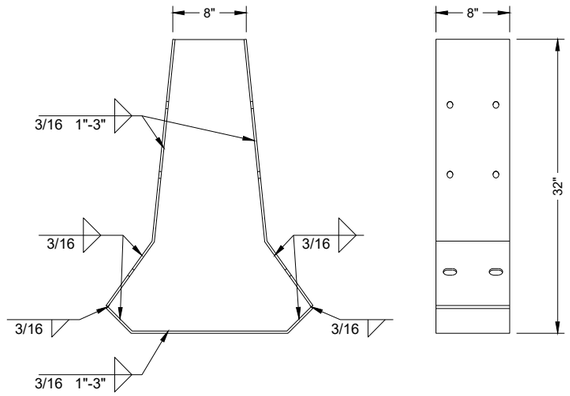


SECTION A - A



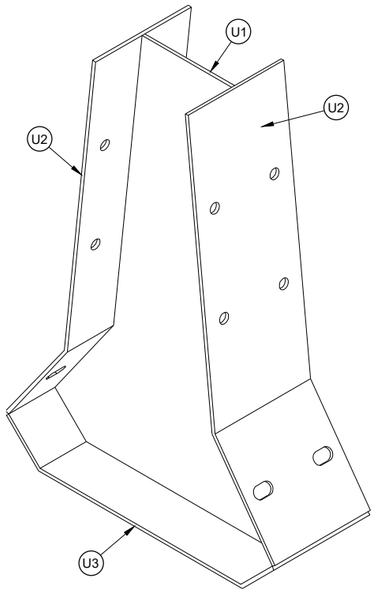
SECTION B - B

PLAN VIEW



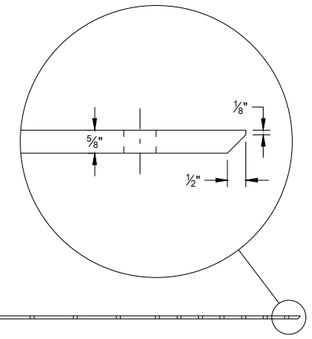
PROFILE VIEW

SIDE VIEW

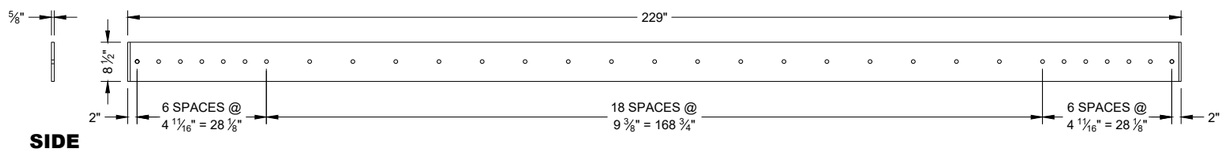


ISOMETRIC

GAP STIFFENER ASSEMBLY



PLAN VIEW



SIDE VIEW

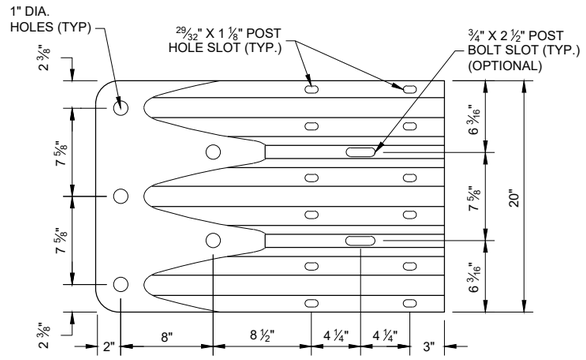
ELEVATION VIEW

W1 TOE PLATE

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

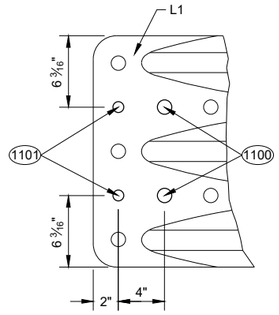
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B07-16j



ELEVATION VIEW

THRIE BEAM TERMINAL CONNECTOR



ELEVATION VIEW

ADDITIONAL THRIE BEAM (1102) TERMINAL CONNECTOR HOLE DETAIL

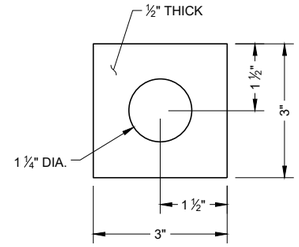


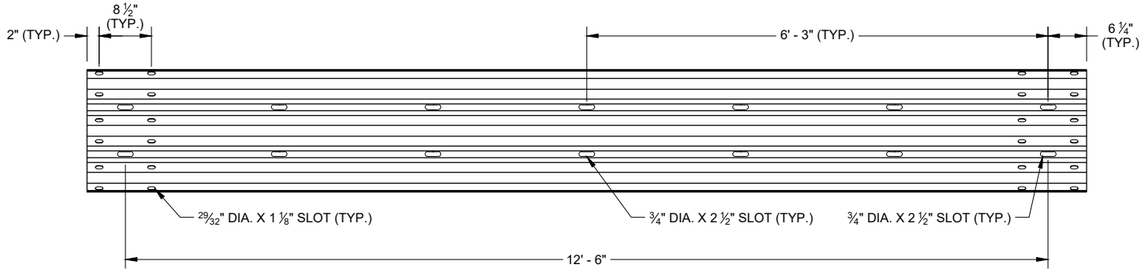
PLATE WASHER DETAIL G2, H3

GENERAL NOTES

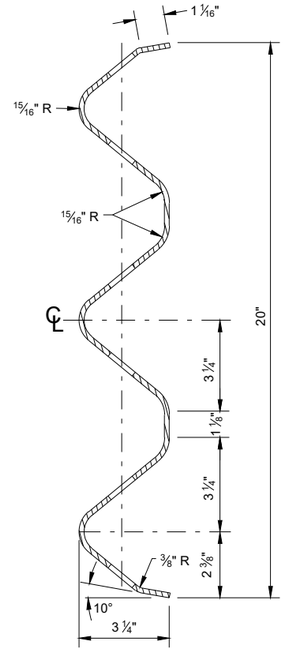
(1100) 1" DIA. HOLE

(1101) 3/4" DIA. HOLE

(1102) PROVIDE HOLES IN THRIE BEAM TERMINAL CONNECTOR TO LIMIT STEEL REINFORCEMENT OR LOOP BAR CONFLICT. CONTRACTOR MAY FIELD DRILL ADDITIONAL HOLE OR PROVIDE THRIE BEAM TERMINAL CONNECTOR WITH ADDITIONAL HOLES FROM SUPPLIER.



SLOTTED THRIE BEAM RAIL K1



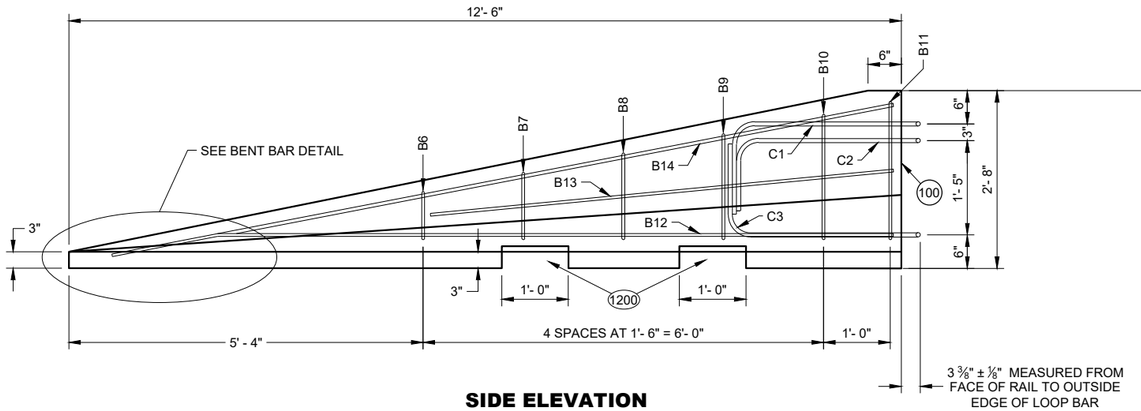
SECTION THROUGH BEAM K1

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

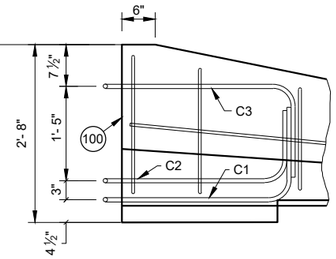
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16k



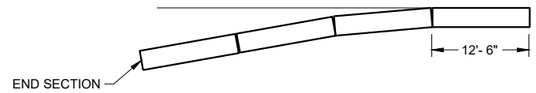
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



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

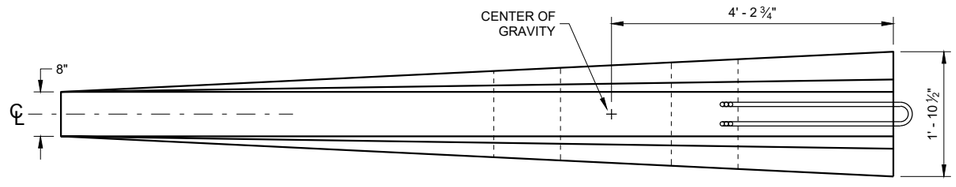
GENERAL NOTES

(1200) SEE LIFTING SLOT DETAIL. LOCATION OF LIFTING SLOTS DETERMINED BY CONTRACTOR.

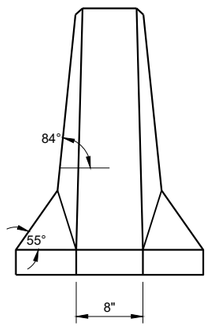


FLARE AT BARRIER END

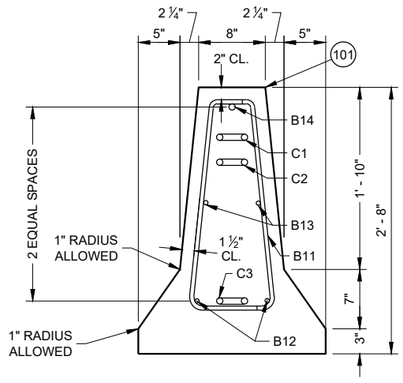
POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1



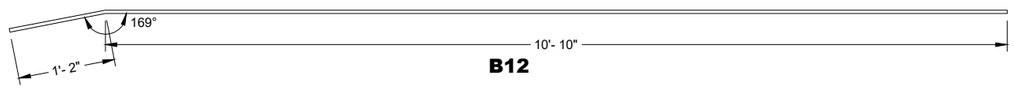
PLAN VIEW



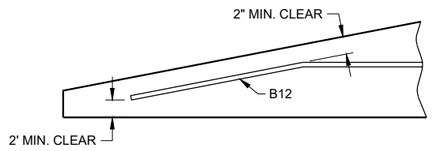
FRONT ELEVATION



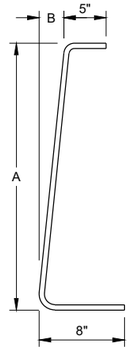
END SECTION



B12



BENT BAR DETAIL



BAR	A	B
B6	10"	1"
B7	1'- 1"	1 ¼"
B8	1'- 5"	1 ⅝"
B9	1'- 8"	1 ⅞"
B10	2'- 0 ½"	2 ⅜"
B11	2'- 3"	2 ¾"

B BARS
2 OF EACH SIZE REQUIRED FOR STIRRUP ASSEMBLY

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B07-16I

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅛" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅛" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	⅝" DIA.
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA. LENGTH 6"
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA.
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614	
R1	CAP - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	⅝" DIA.
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S3	CAP 42-INCH SIDE PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE

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SDD 14B07-16m

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T3	CAP 56-INCH SIDE PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T4	CAP 56-INCH SIDE PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T5	CAP 56-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T6	CAP 56-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T7	CAP 56-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T8	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T9	CAP 42-INCH GUSSET 5	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T10	CAP 42-INCH GUSSET 6	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T11	CAP 42-INCH GUSSET 7	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T12	CAP 42-INCH GUSSET 8	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T13	CAP 42-INCH GUSSET 9	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T14	CAP 42-INCH GUSSET 10	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T15	CAP 42-INCH GUSSET 11	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T16	CAP 42-INCH GUSSET 12	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
U1	GAP STIFFENER	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U2	GAP STIFFENER - CONNECTOR PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U3	GAP STIFFENER - CONNECTOR PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
X3	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

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SDD 14B07-16n

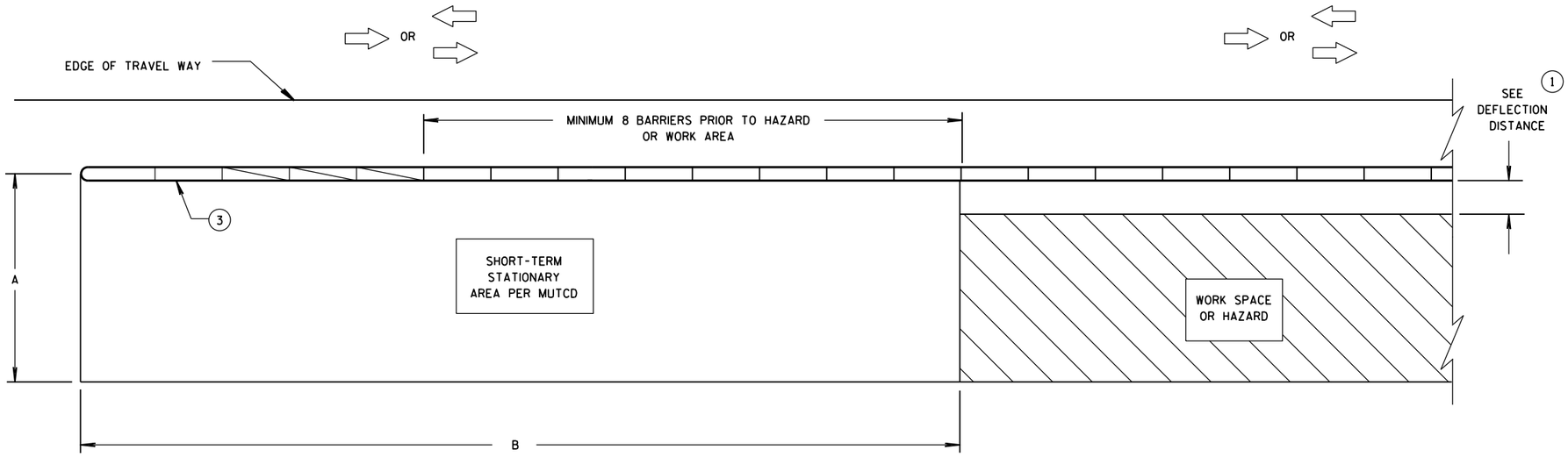
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

6

SDD 14B07-16n



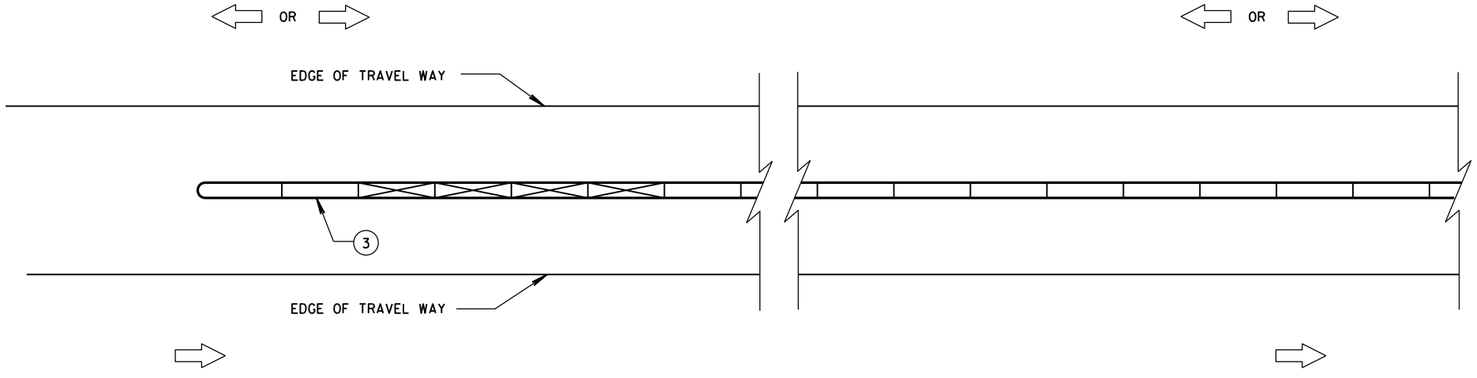
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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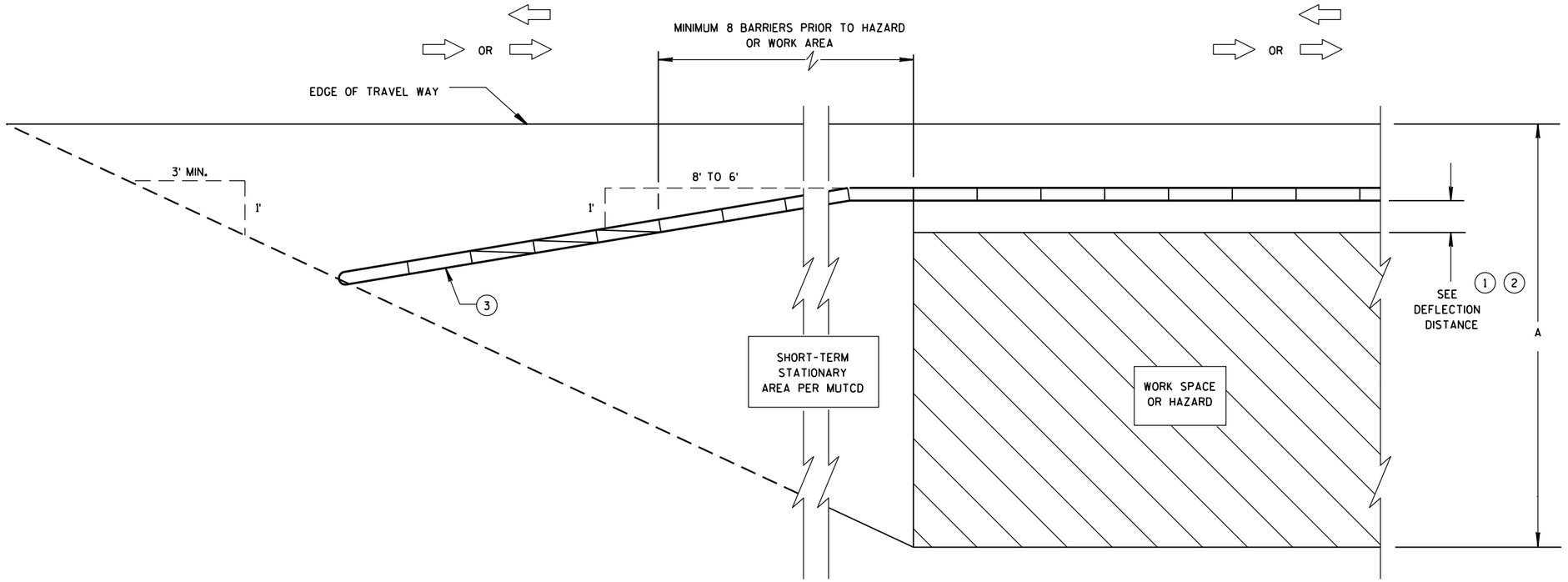
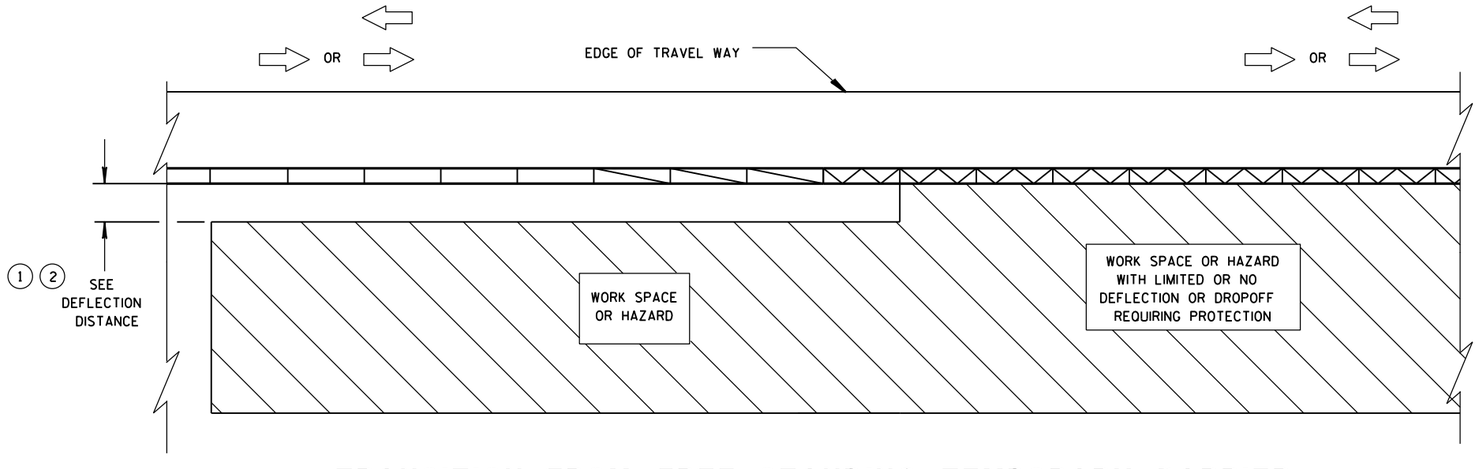
S.D.D. 14 B 8-2a
S.D.D. 14 B 8-2a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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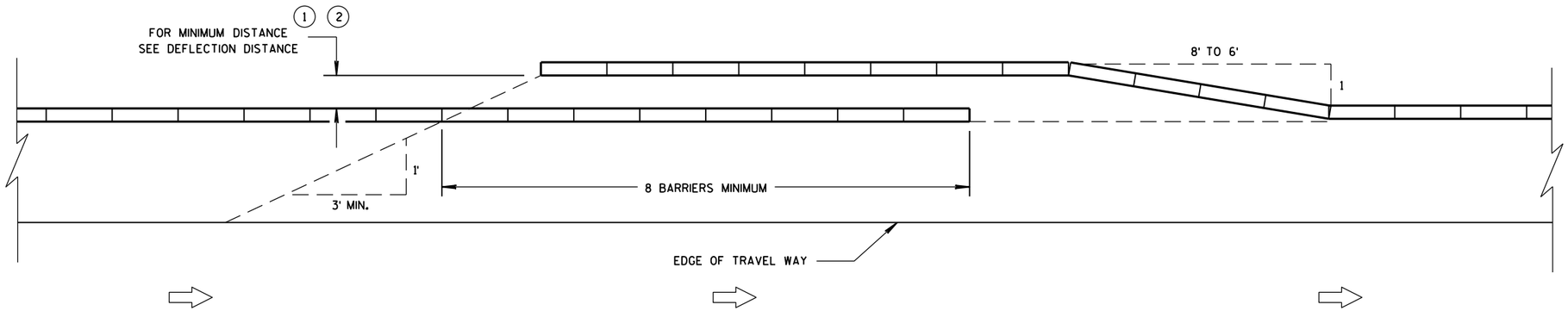
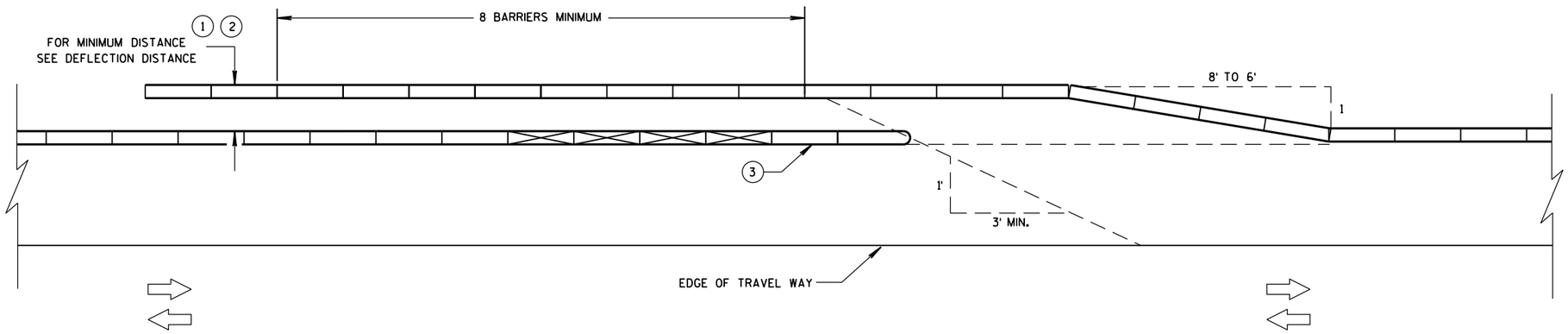
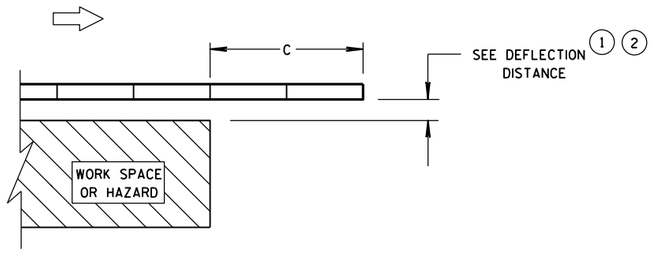
S.D.D. 14 B 8-2b



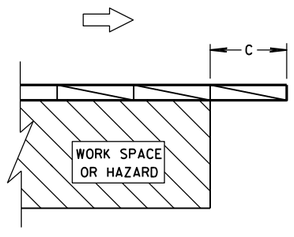
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

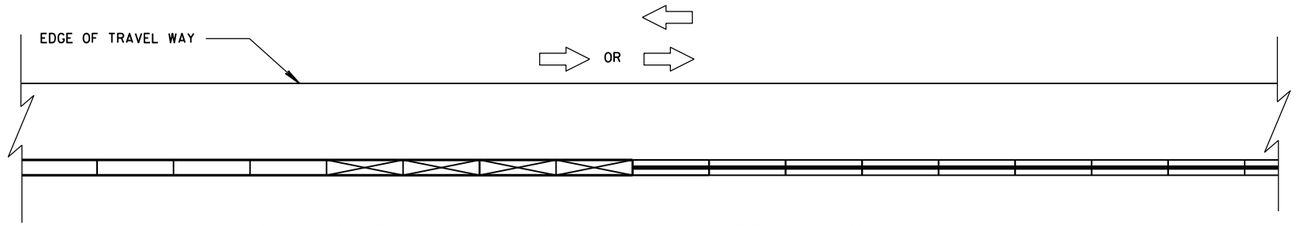
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

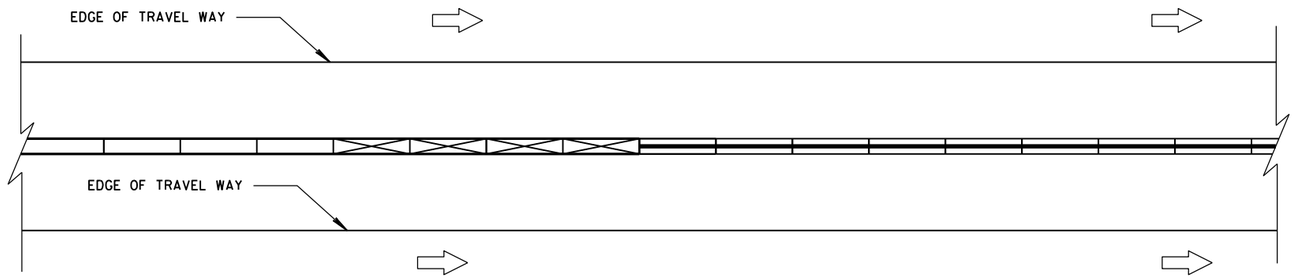
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 8-2c



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

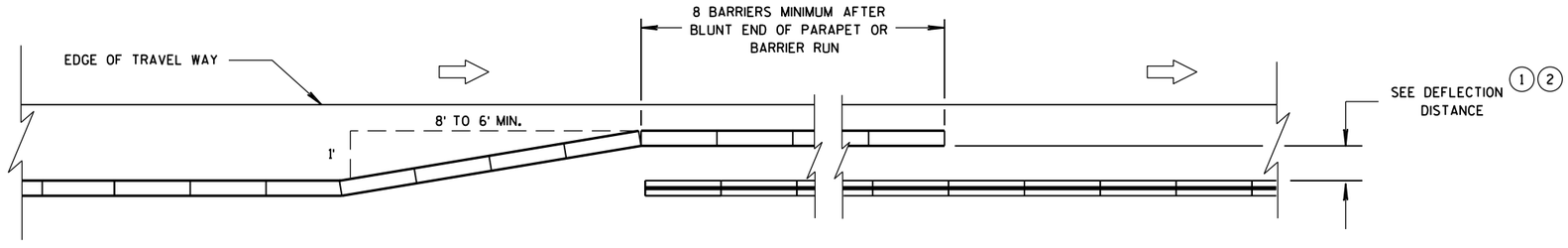
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

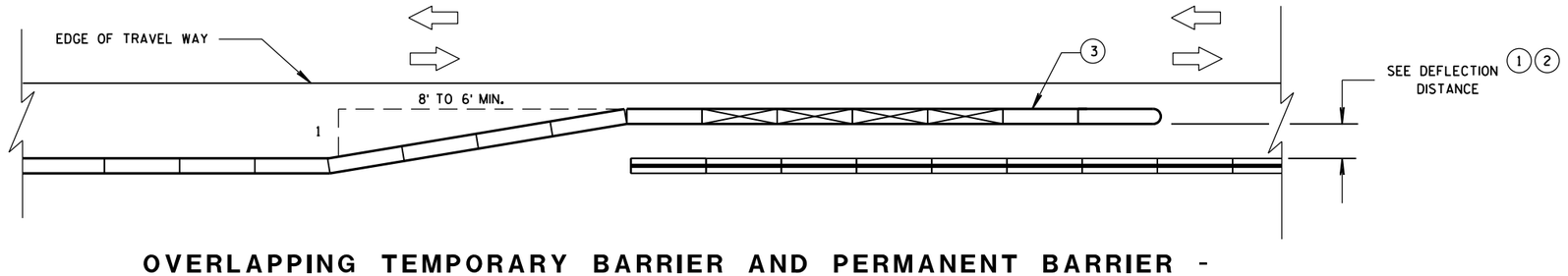
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

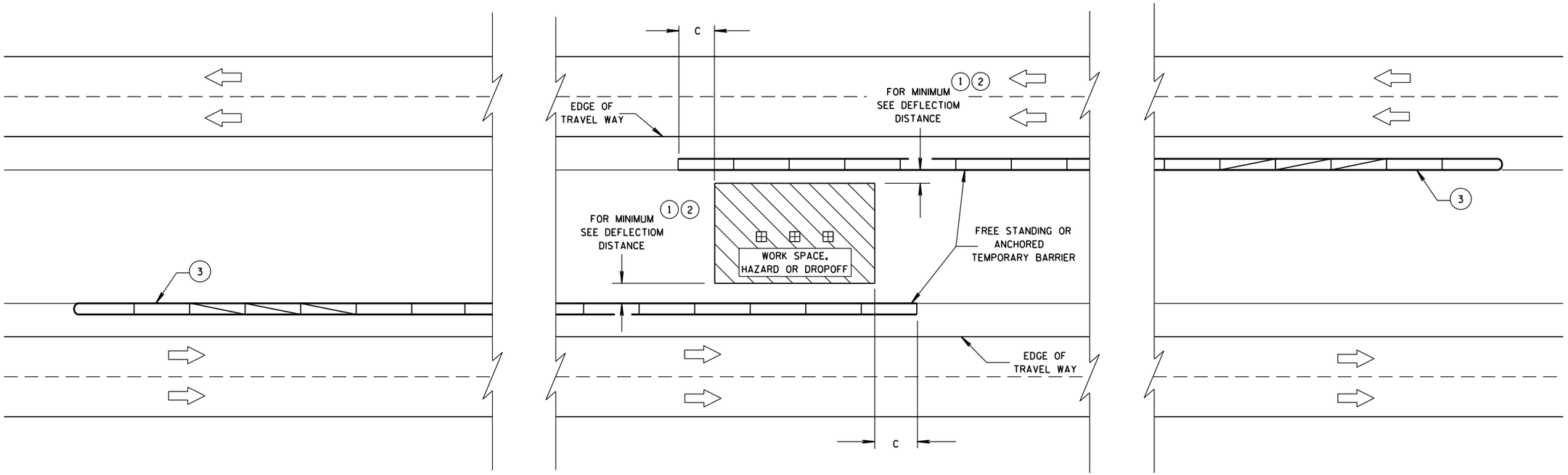
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



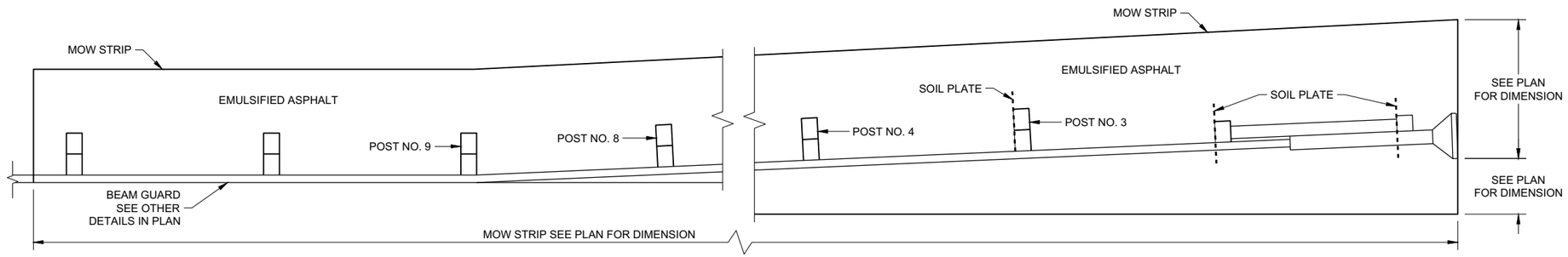
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 8-2e



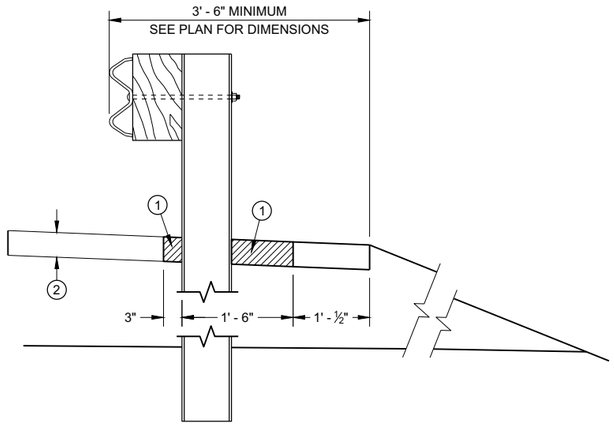
PLAN VIEW

MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

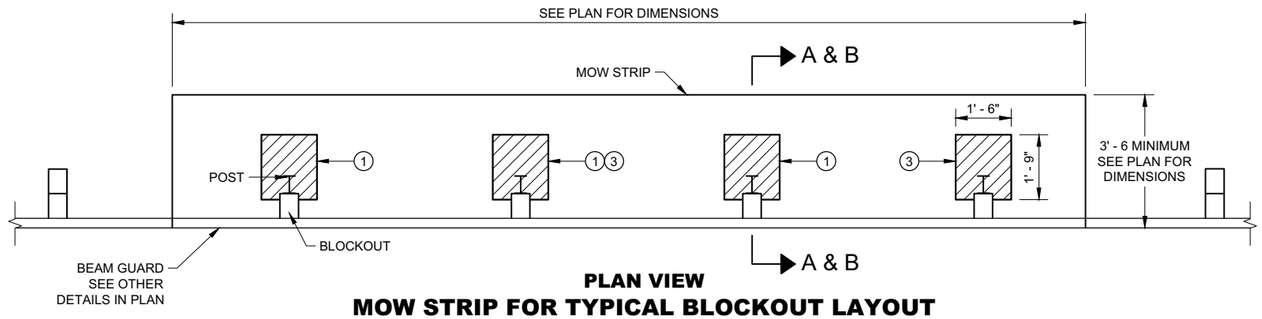
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

1. CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
2. DEPTH OF MOW STRIP:
   ASPHALT - 4"
   CONCRETE - 4"
   EMULSIFIED ASPHALT - 1" OR LESS
3. FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)

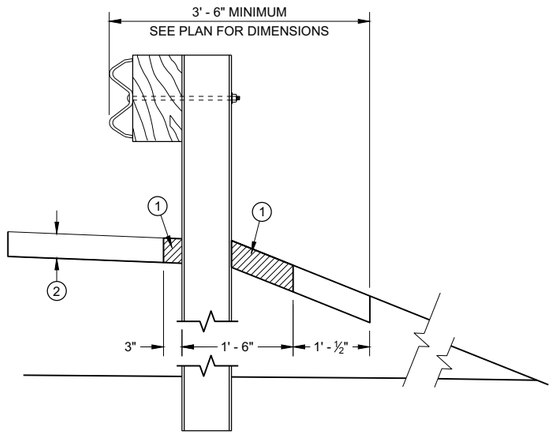


SECTION A - A

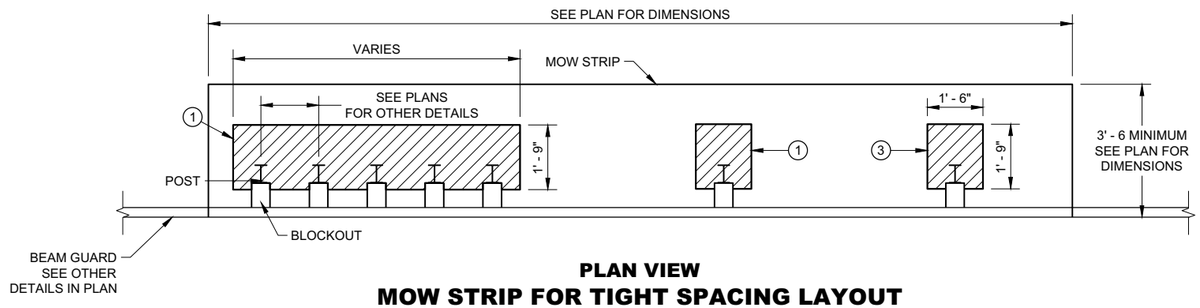


PLAN VIEW

MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT

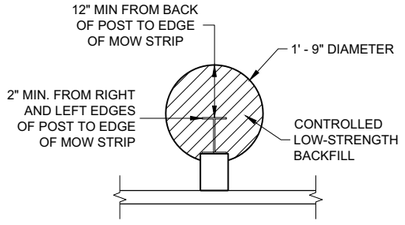


SECTION B - B

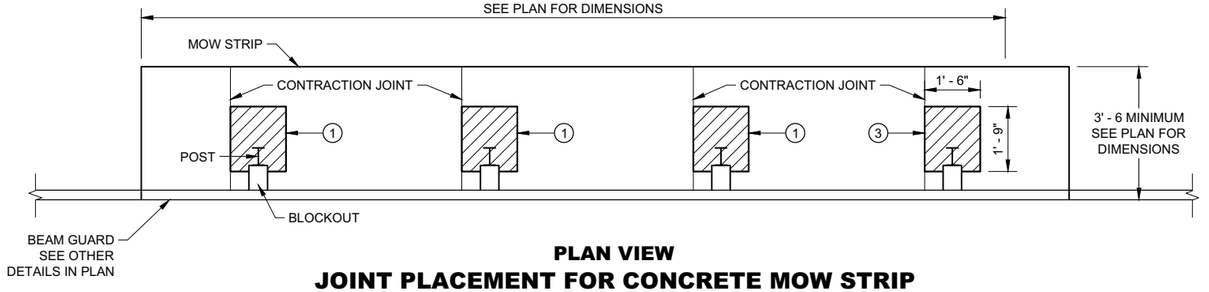


PLAN VIEW

MOW STRIP FOR TIGHT SPACING LAYOUT



ALTERNATIVE HMA MOW STRIP DESIGN



PLAN VIEW

JOINT PLACEMENT FOR CONCRETE MOW STRIP

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B28 - 04a

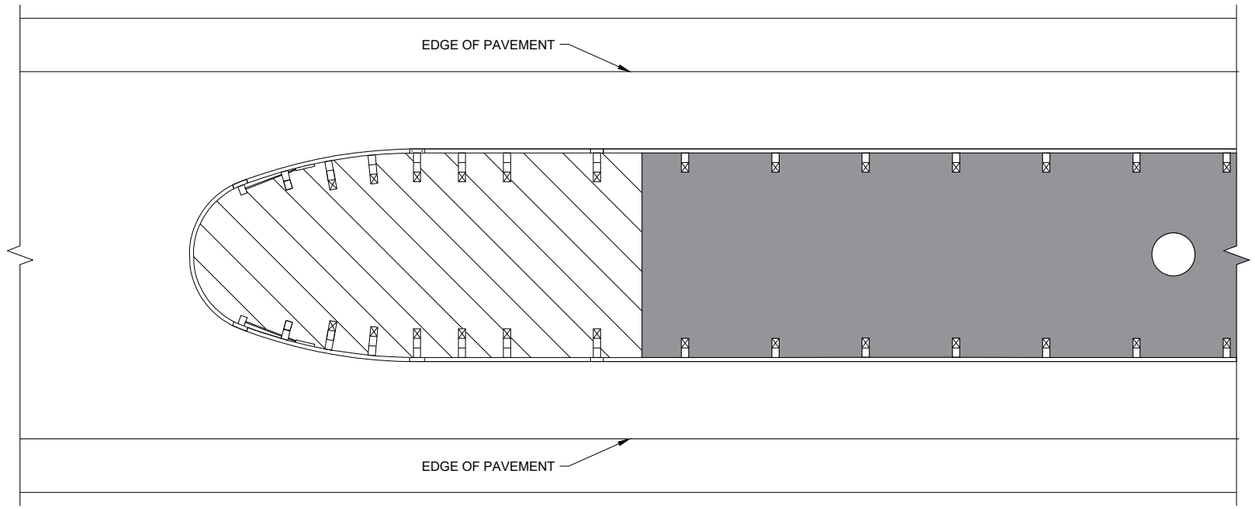
LEGEND

CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

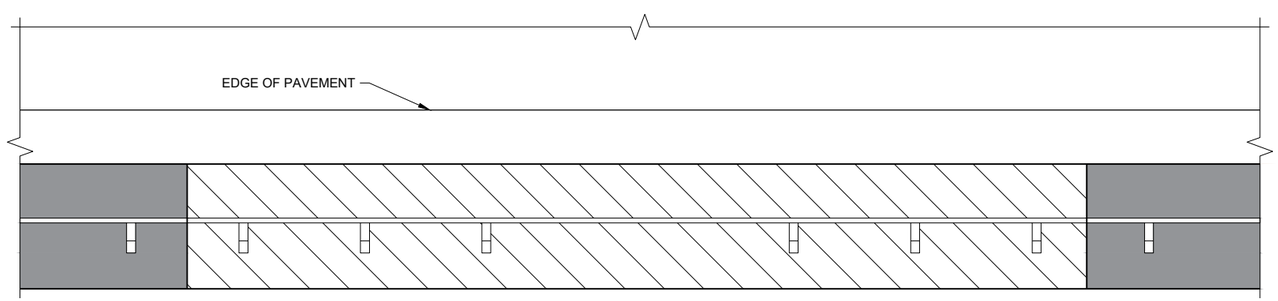
EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

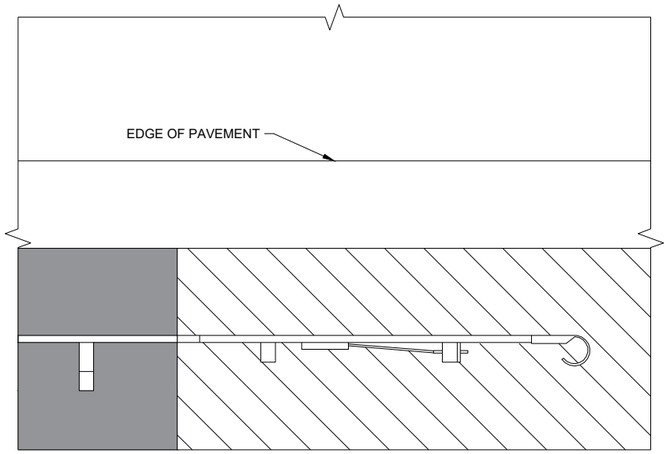
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



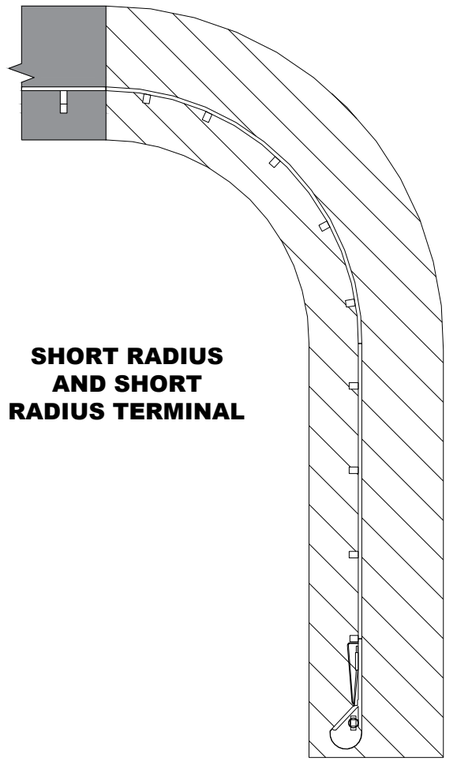
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



SHORT RADIUS AND SHORT RADIUS TERMINAL

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
ENGINEER

FHWA

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(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.

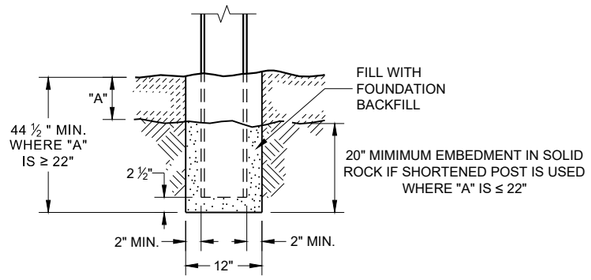
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

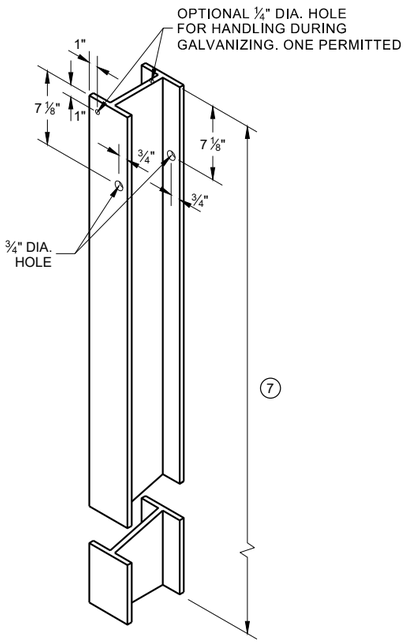
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

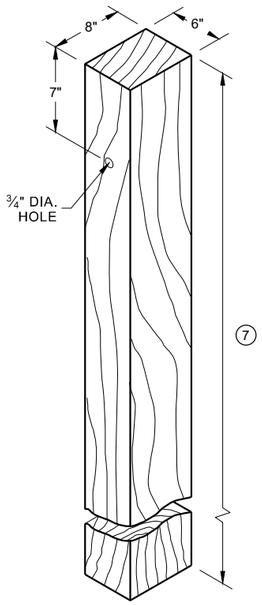
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



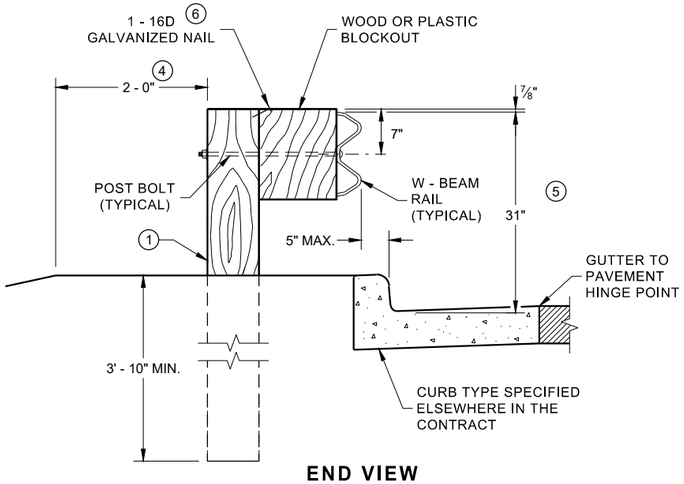
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



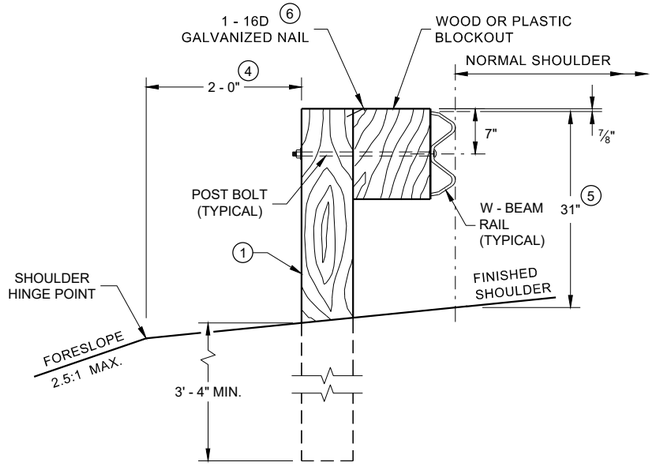
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



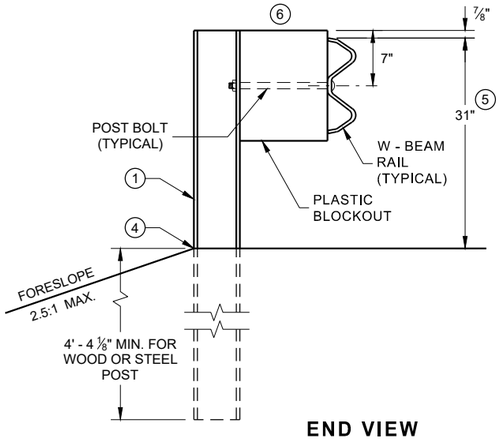
WOOD POST (6" X 8") NOMINAL (1)



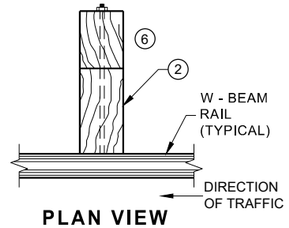
END VIEW
LOCATED ALONG A CURBED ROADWAY



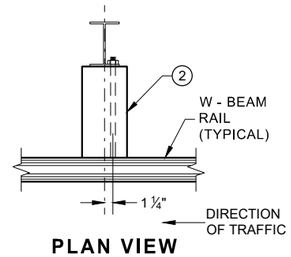
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



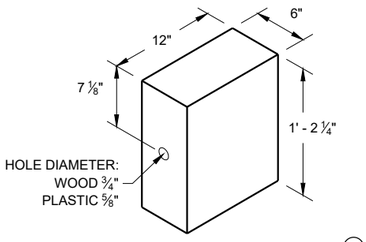
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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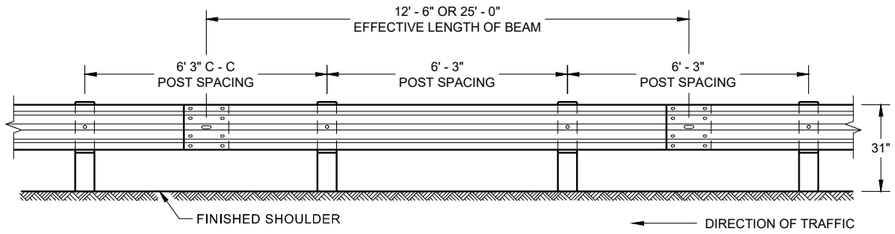
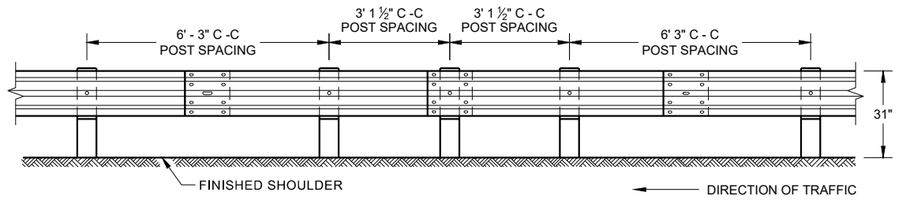
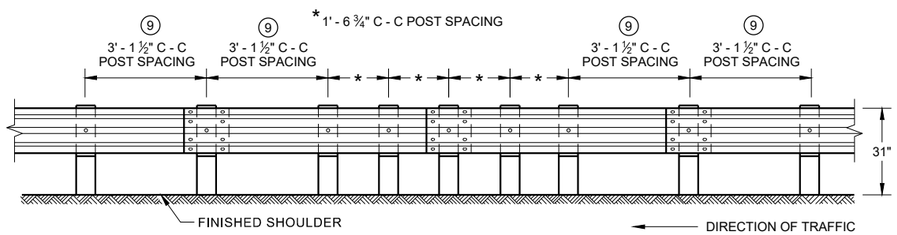


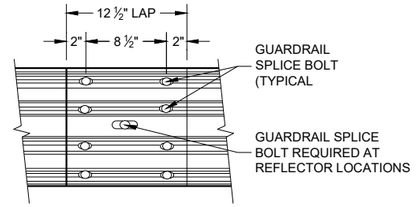
FRONT VIEW
POST SPACING STANDARD INSTALLATION



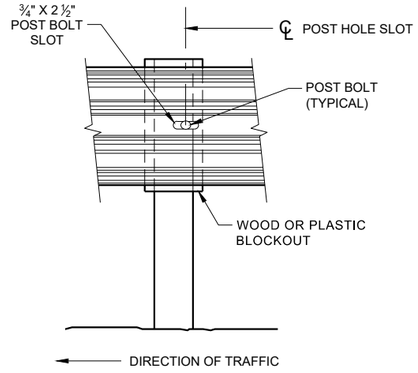
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



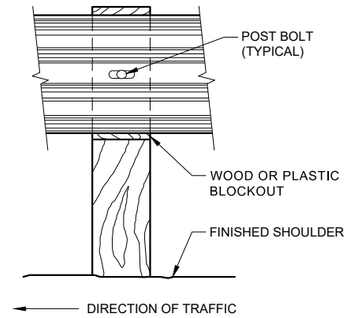
FRONT VIEW
QUARTER POST SPACING (QS)



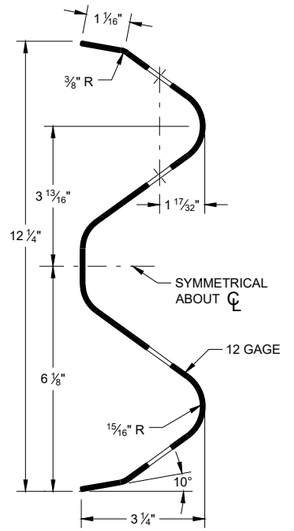
FRONT VIEW
MID-SPAN BEAM SPLICE



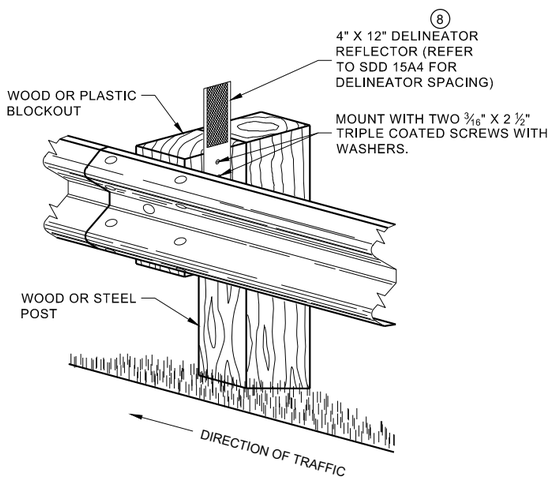
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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.

⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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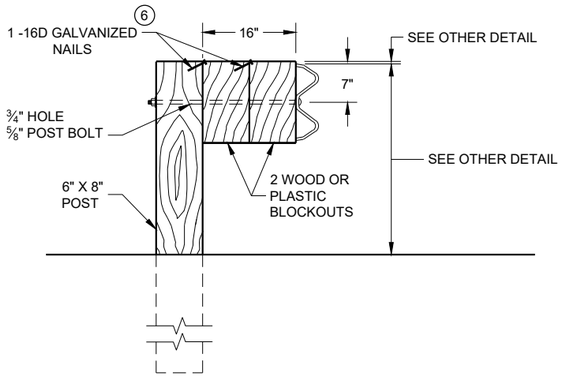
SDD 14B42 - 07b

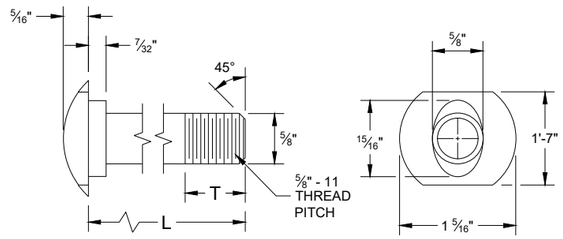


DETAIL FOR 16" BLOCKOUT DEPTH

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.

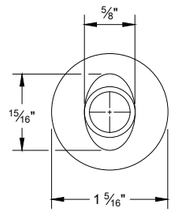
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

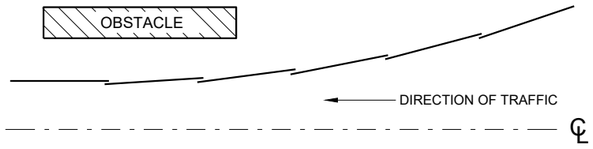


POST BOLT TABLE

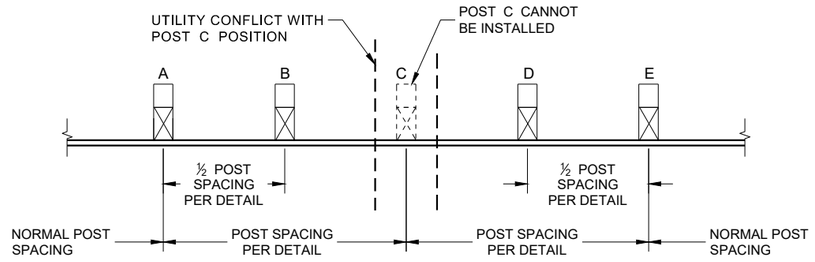
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



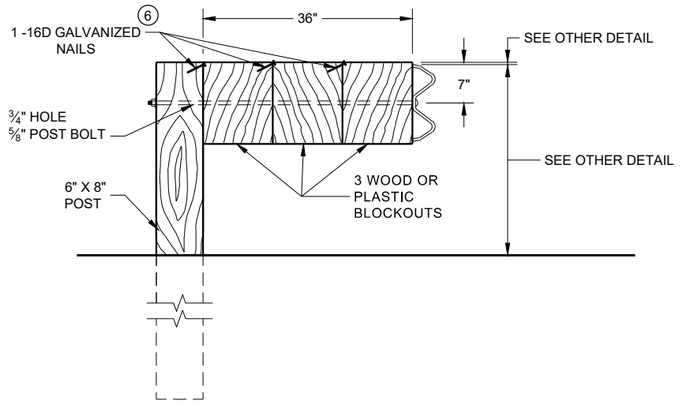
ALTERNATE BOLT HEAD



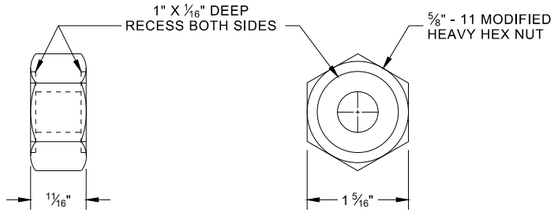
PLAN VIEW
BEAM LAPPING DETAIL



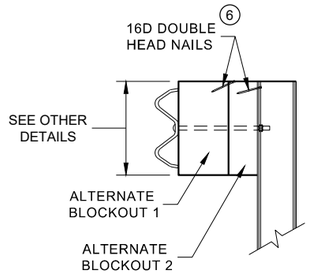
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



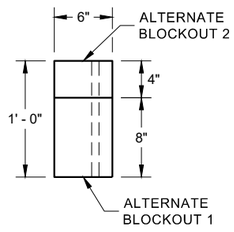
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



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.

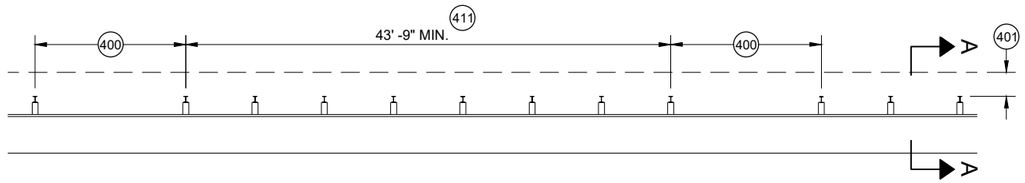
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(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.

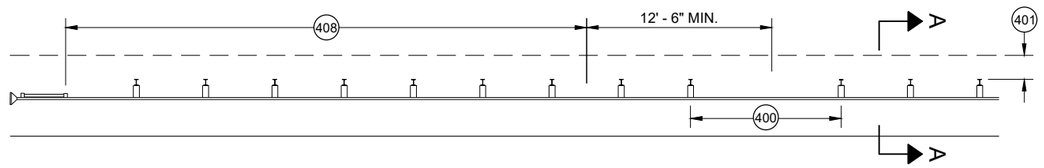
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

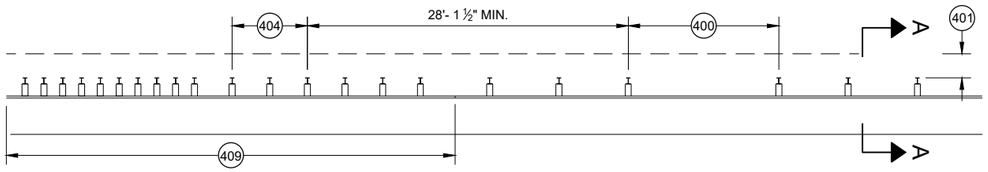
SDD 14B42 - 07c



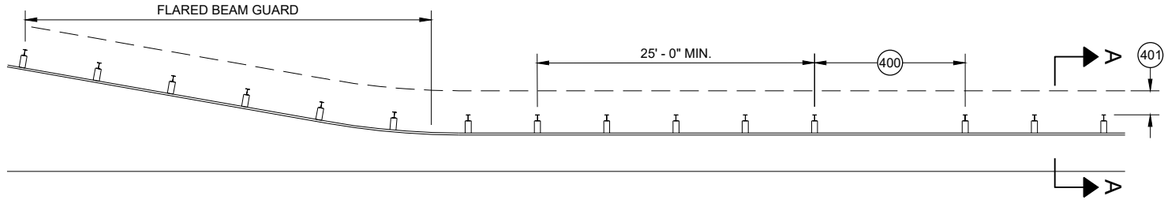
MISSING POST IN MGS GUARDRAIL



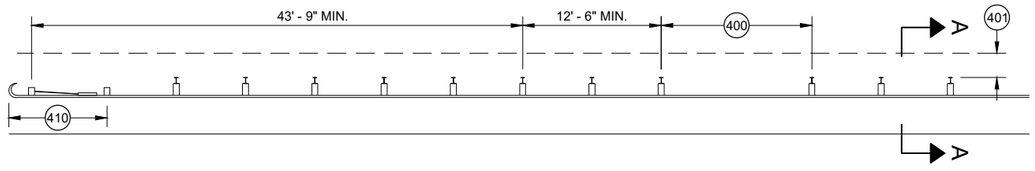
MISSING POST IN MGS GUARDRAIL NEAR EAT



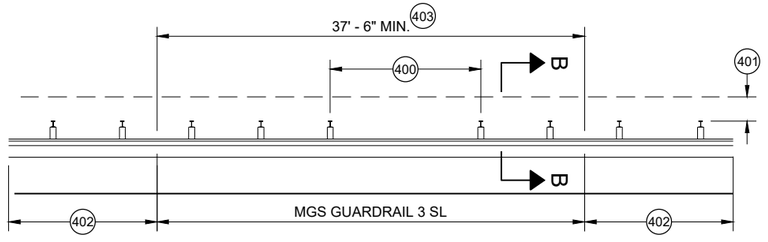
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

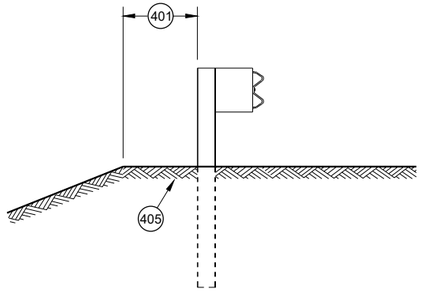


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

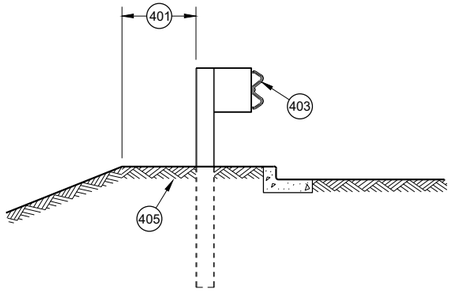


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(400) MAX SPAN 12' - 6"
(401) 2' MIN.
(402) MGS GUARDRAIL 3
(403) NESTING BEAM GUARD
(404) ASYMMETRIC TRANSITION
(405) SOIL WELL DRAINED AND COMPACTED
(406) SEE OTHER DRAWINGS IN THIS SDD
(407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
(408) SEE SDD 14B44
(409) SEE SDD 14B45
(410) SEE SDD 14B47
(411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

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

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

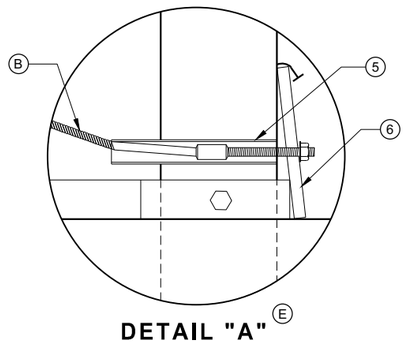
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

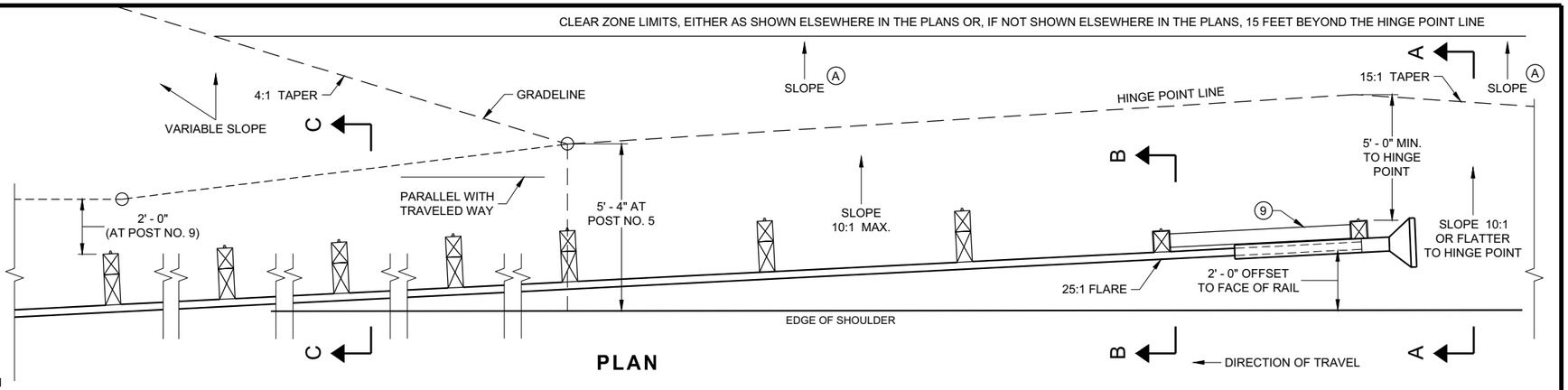
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

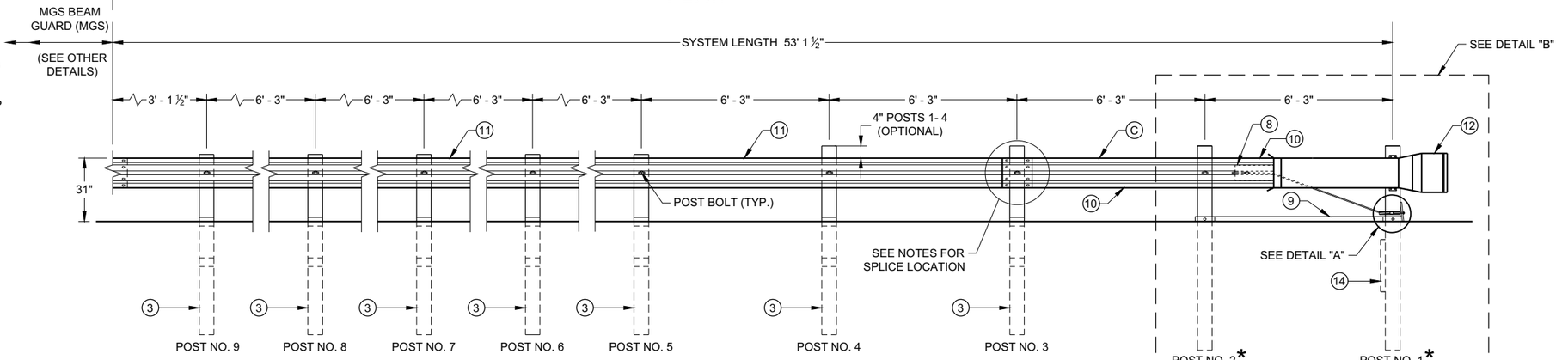
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



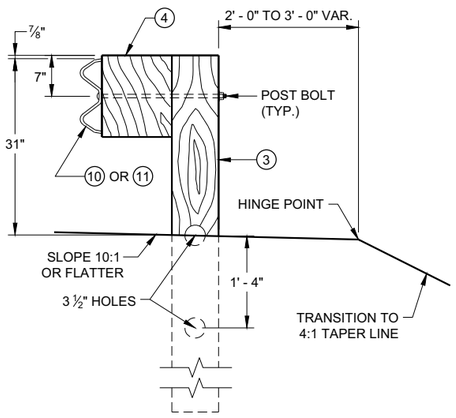
DETAIL "A" (E)



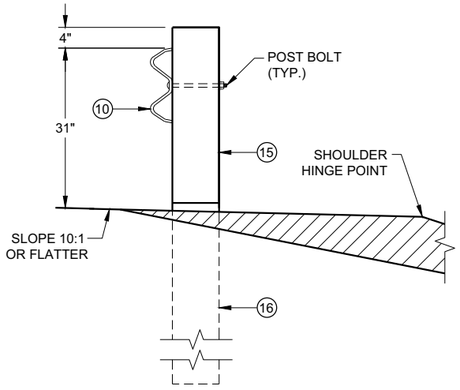
PLAN



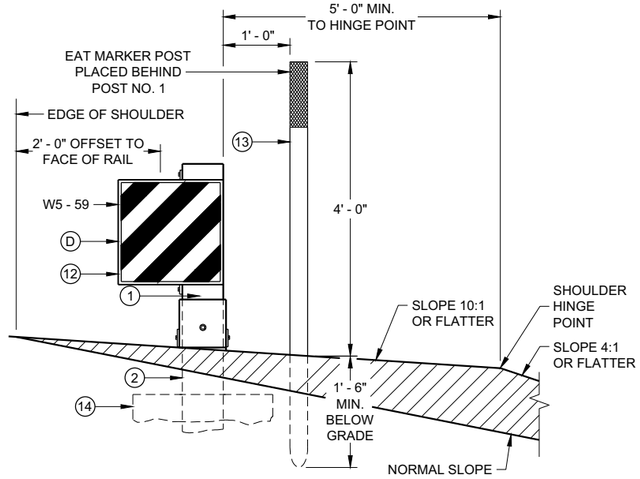
ELEVATION



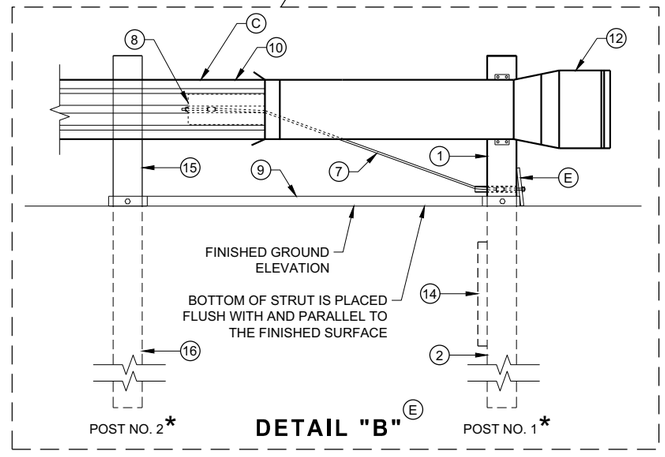
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



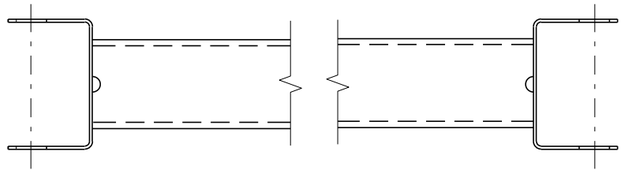
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

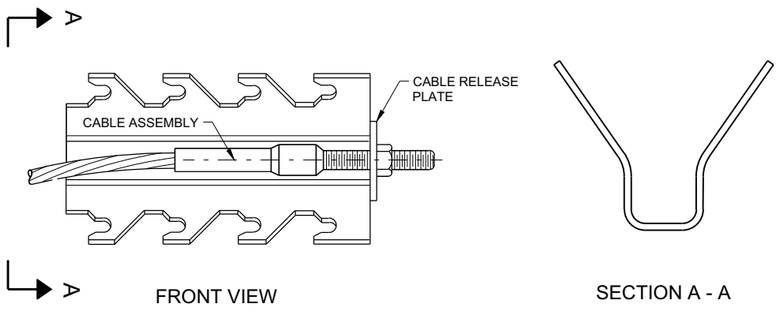
SDD 14B44 - 04a



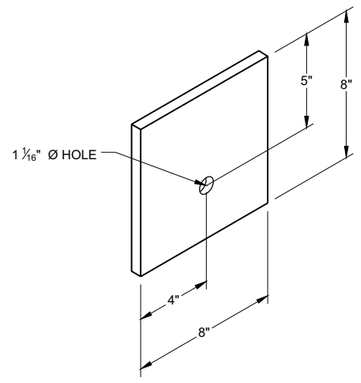
GENERIC GROUND STRUT (9) (E)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
(1)	UPPER POST NO. 1 6" X 6" TUBE
(2)	LOWER POST NO. 1
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	IMPACT HEAD
(13)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
(14)	SOIL PLATE
(15)	UPPER POST NO. 2
(16)	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX (9) (E)



BEARING PLATE (6) (E)

6

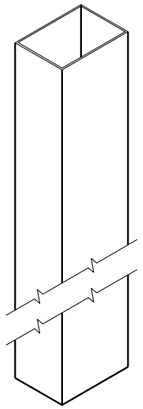
6

SDD 14B44 - 04b

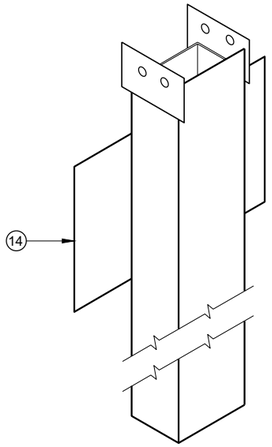
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

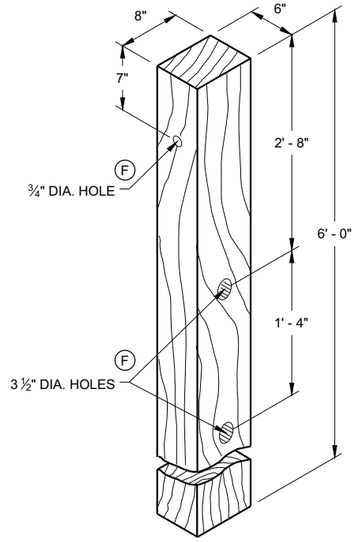
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA



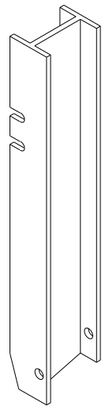
UPPER POST NO. 1 (1) (E)



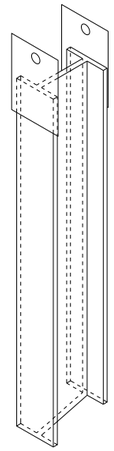
LOWER POST NO. 1 (2) (E)



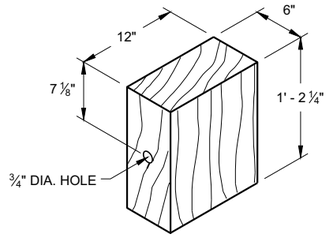
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



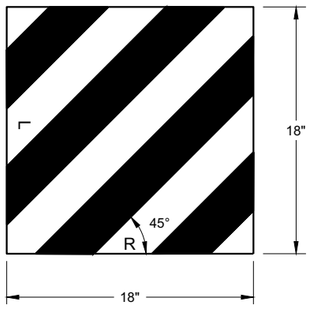
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

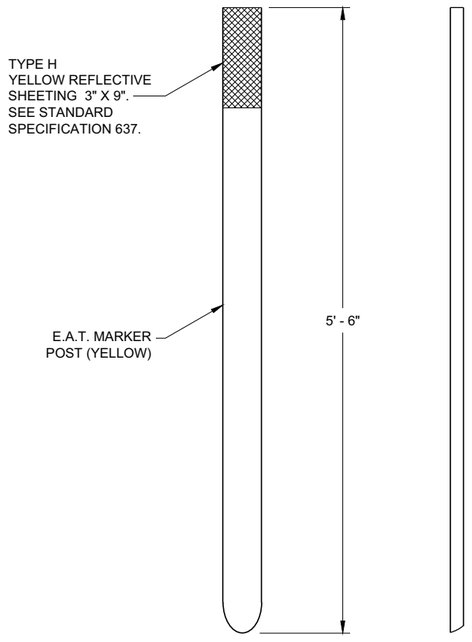


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



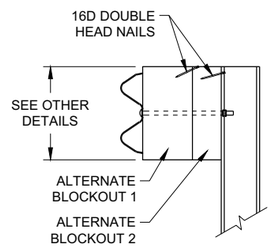
W5 - 59

REFLECTIVE SHEETING DETAIL (E)

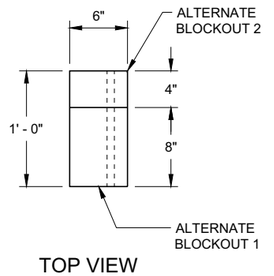


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

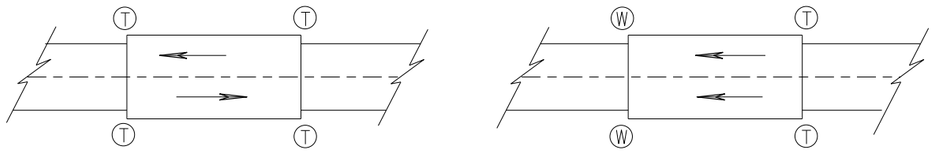
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

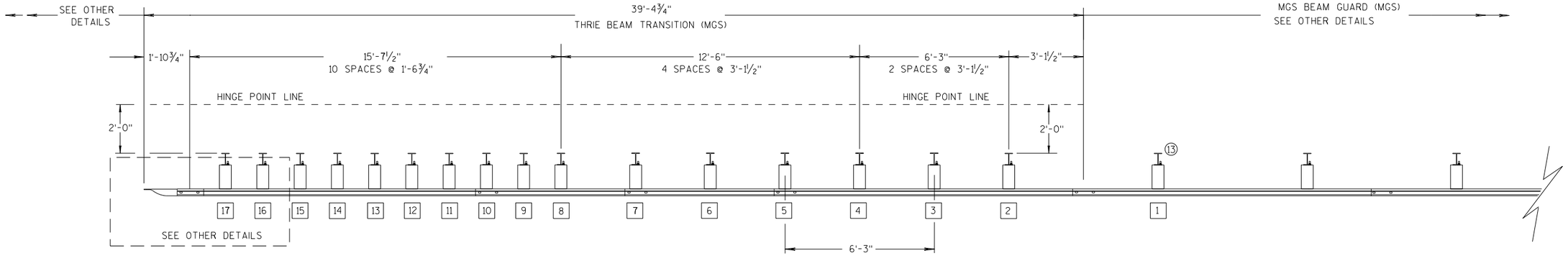
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

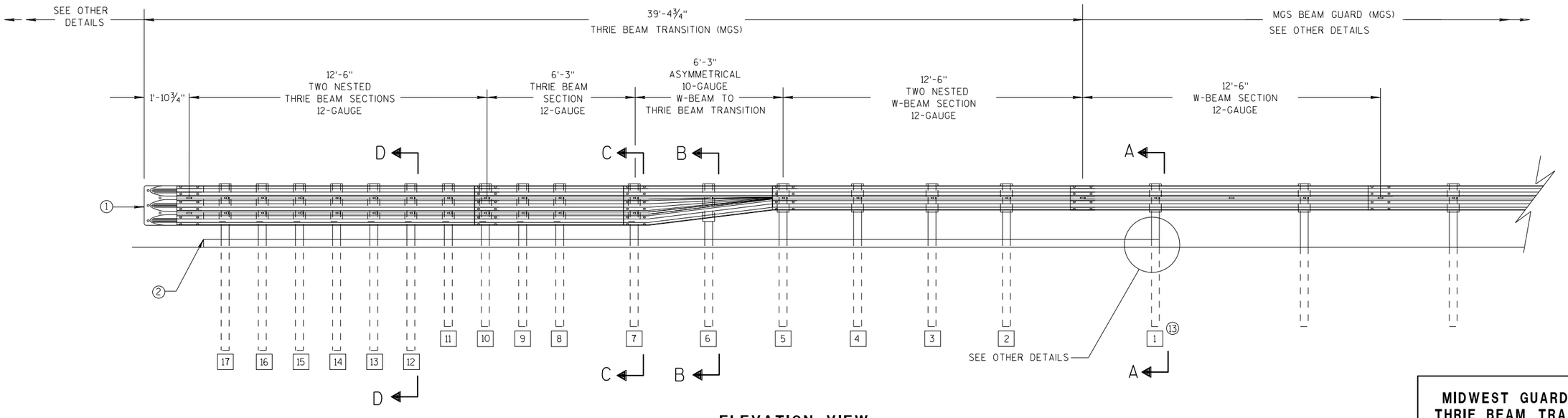
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR

6

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

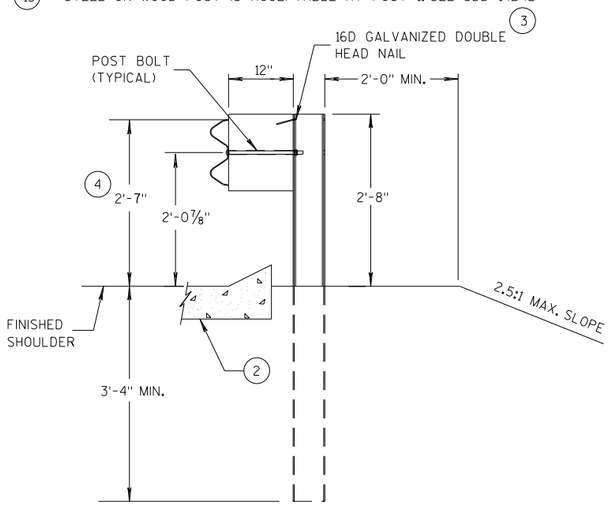
GENERAL NOTES

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

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

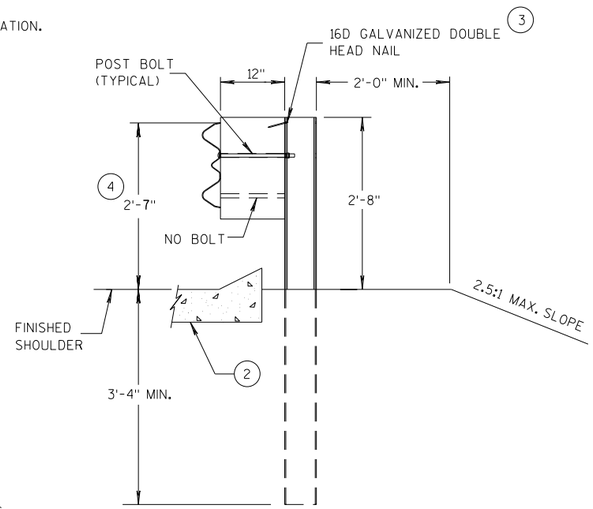
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



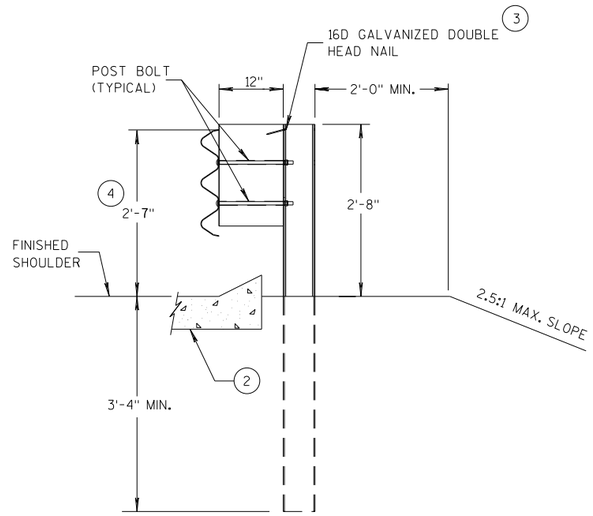
SECTION A-A (13)

POSTS 1-5



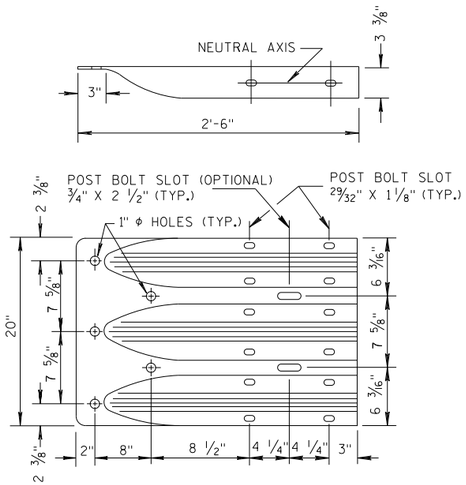
SECTION B-B

POST 6

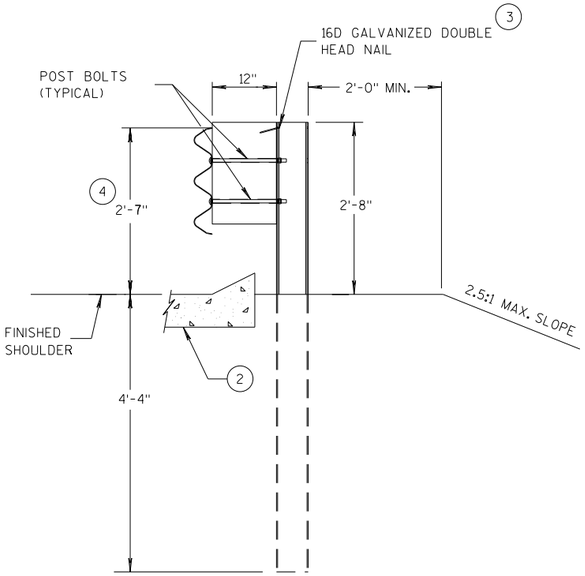


SECTION C-C

POSTS 7-11

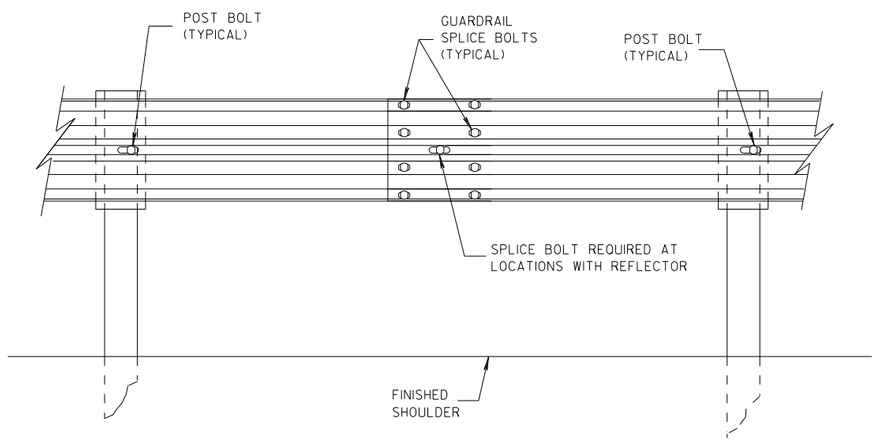


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

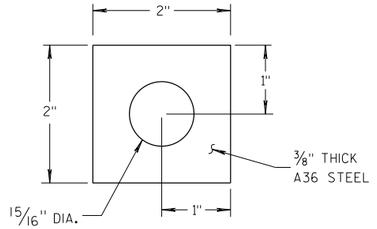
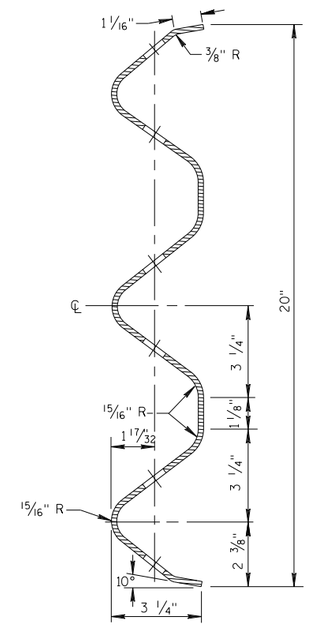


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

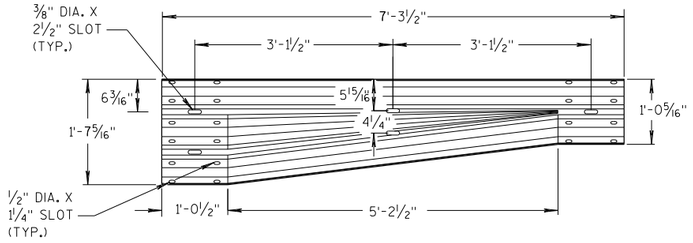
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 149

6

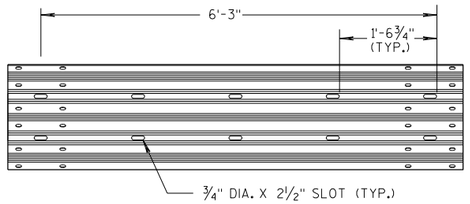
S.D.D. 14 B 45-5b

6

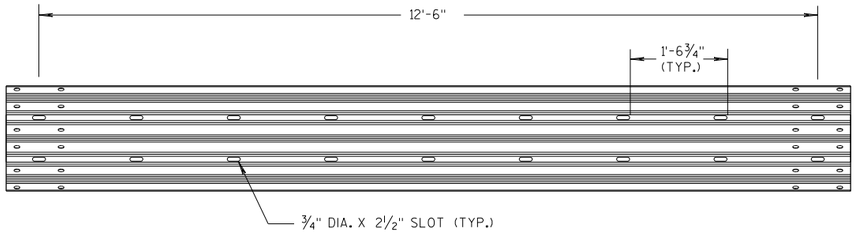
S.D.D. 14 B 45-5b



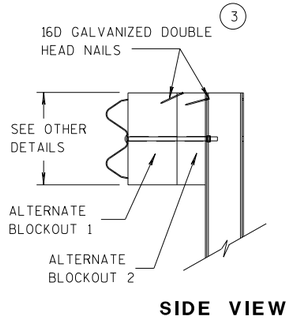
W-BEAM TO THRIE BEAM TRANSITION SECTION



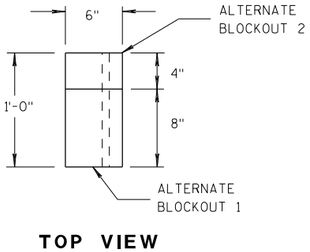
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

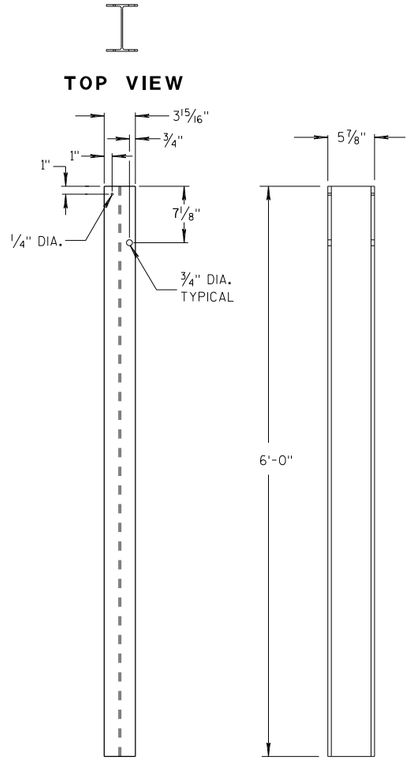


SIDE VIEW



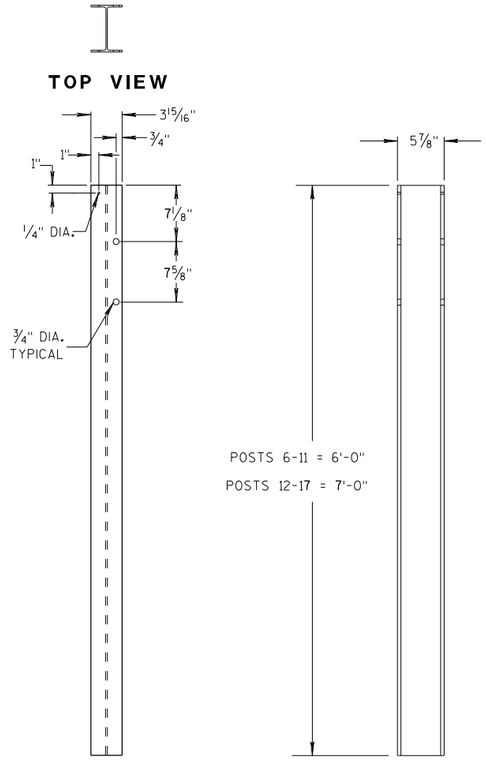
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



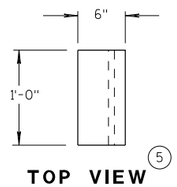
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

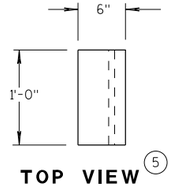


FRONT VIEW SIDE VIEW

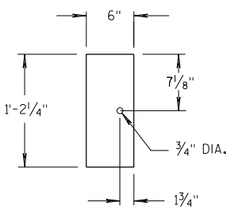
STEEL POSTS 6-17



TOP VIEW (5)

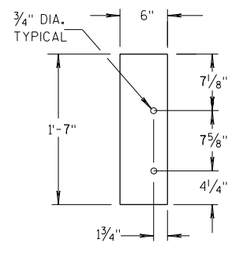


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



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 TRANSPOF 150

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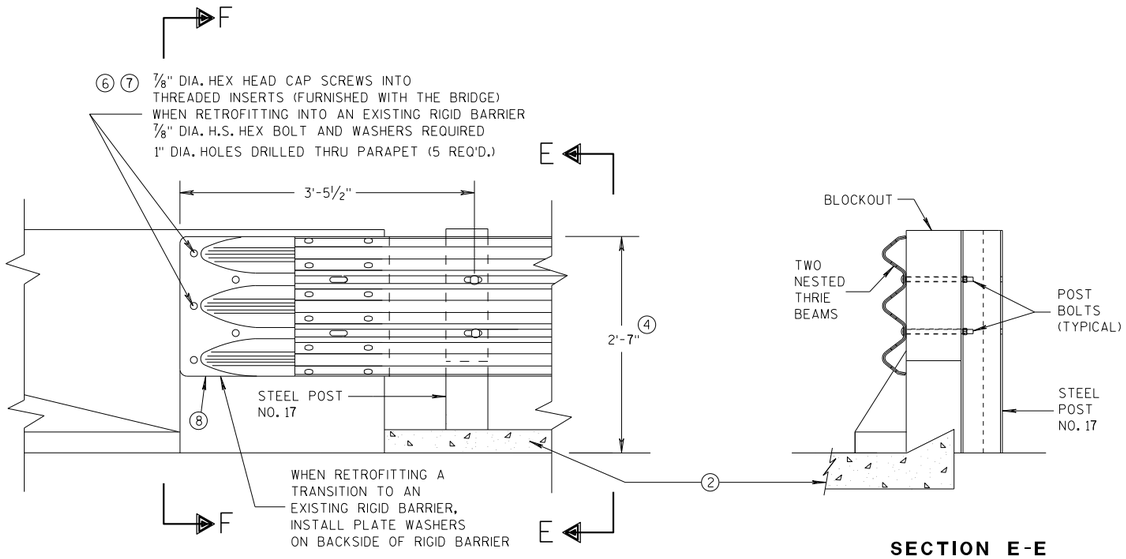


FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

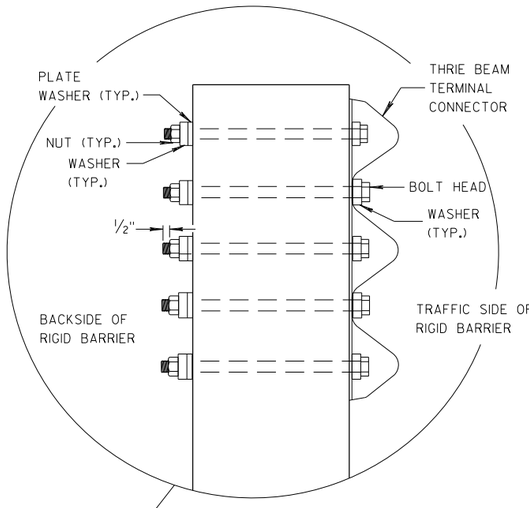
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

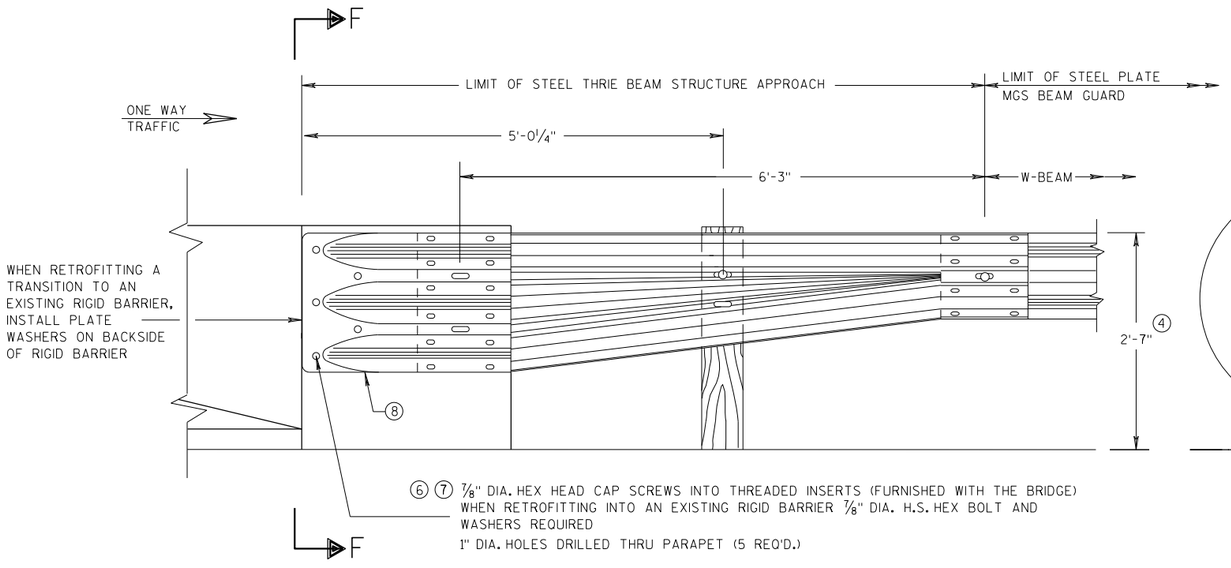
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

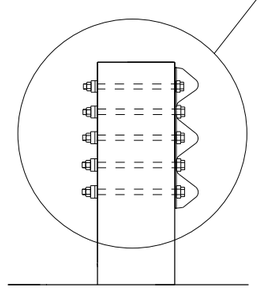
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" 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".

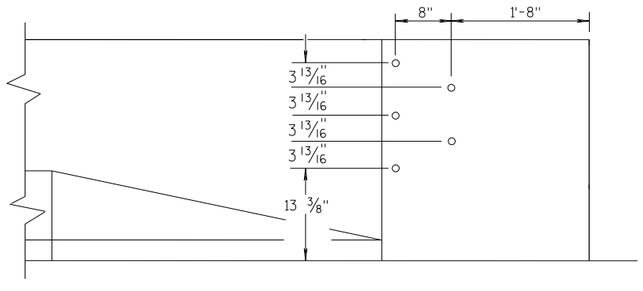




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D UNIT SUPERVIS ...NT
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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.

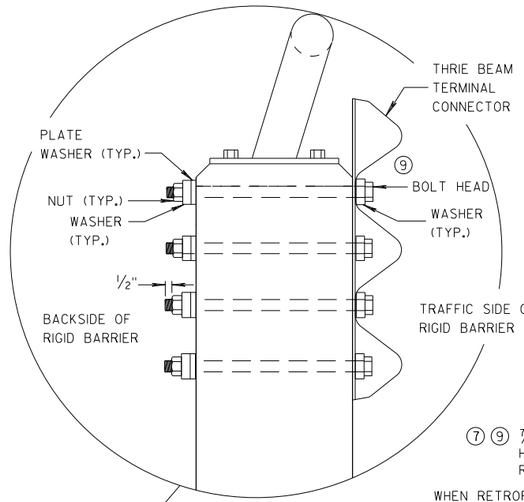
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

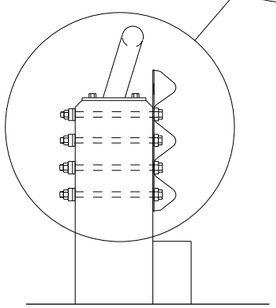
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

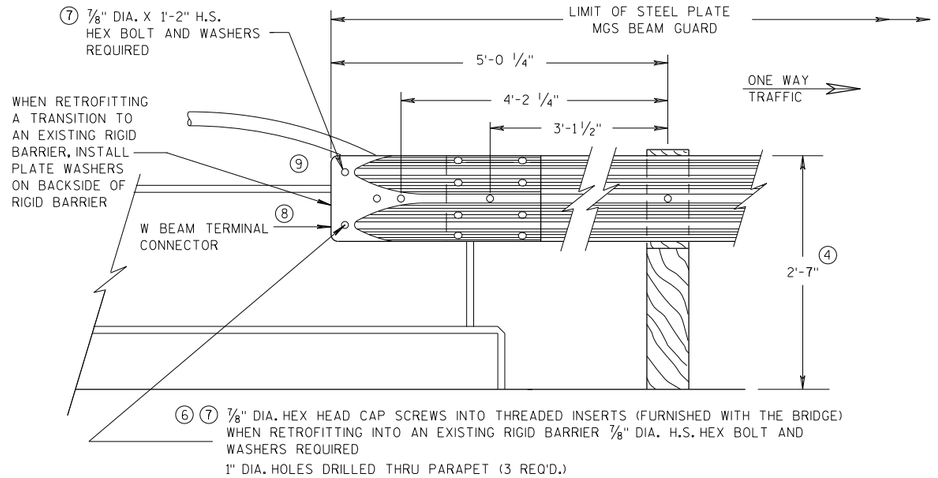
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





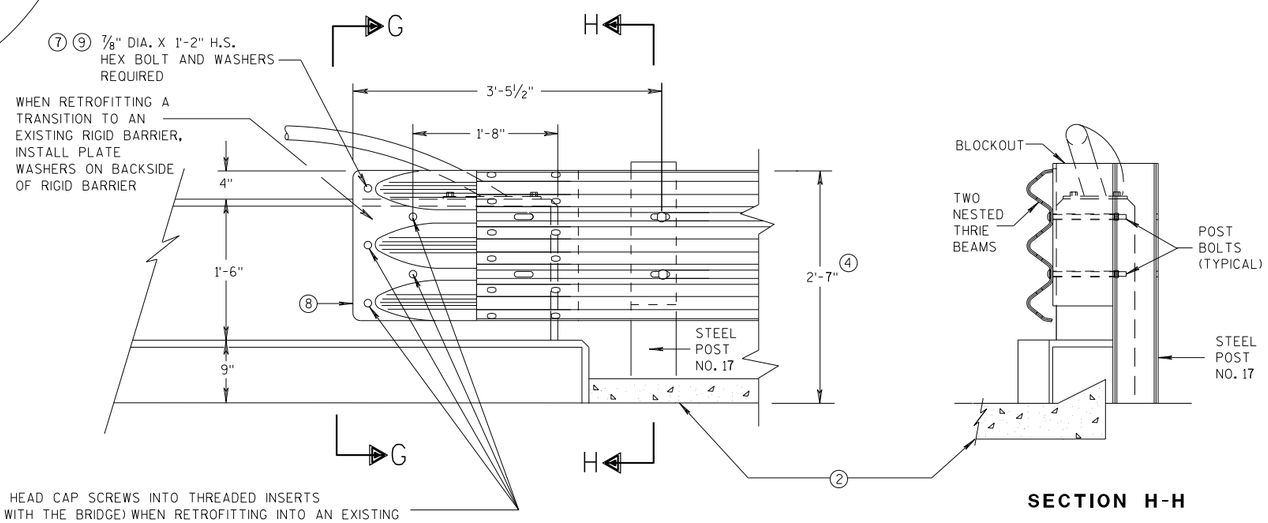
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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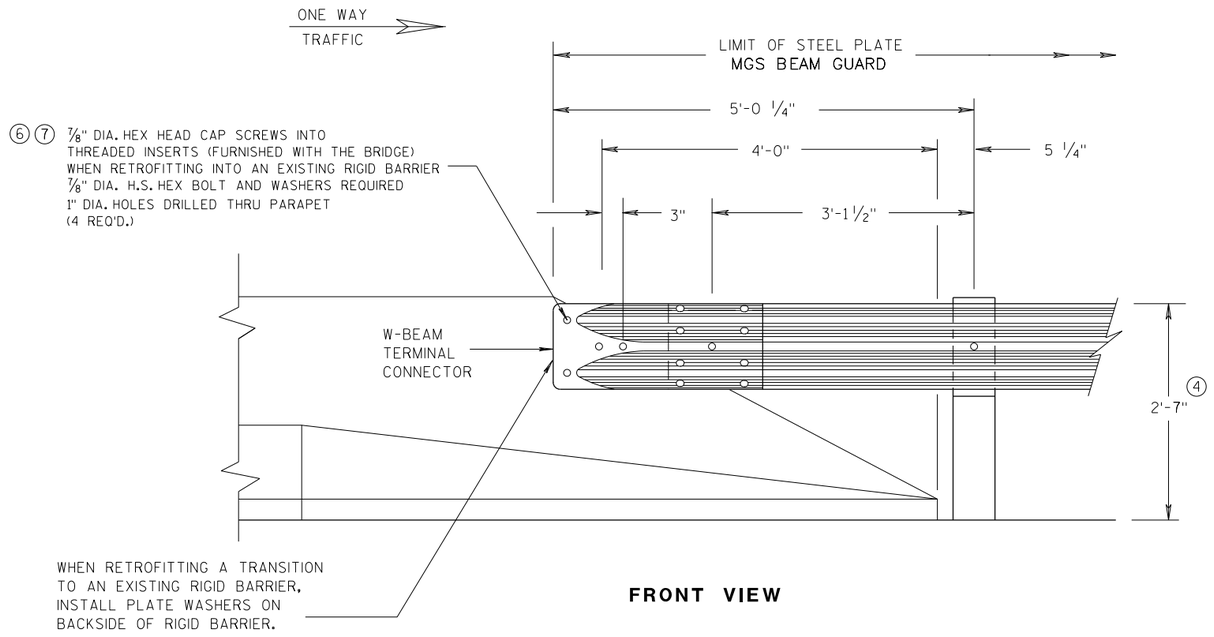


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

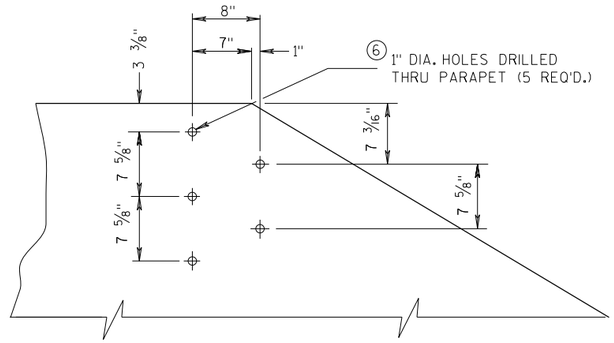
GENERAL NOTES

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

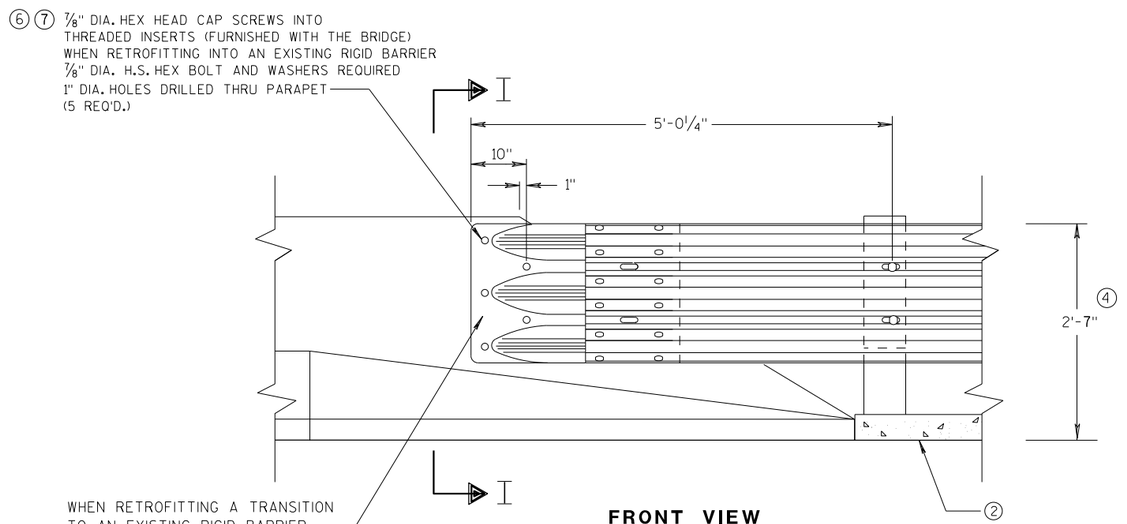
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

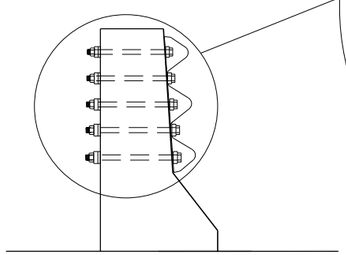
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



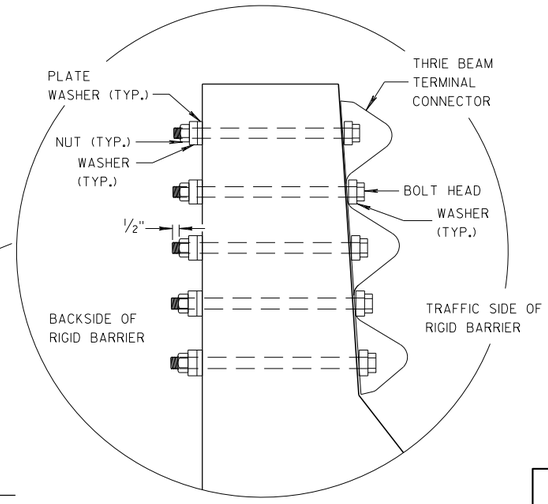
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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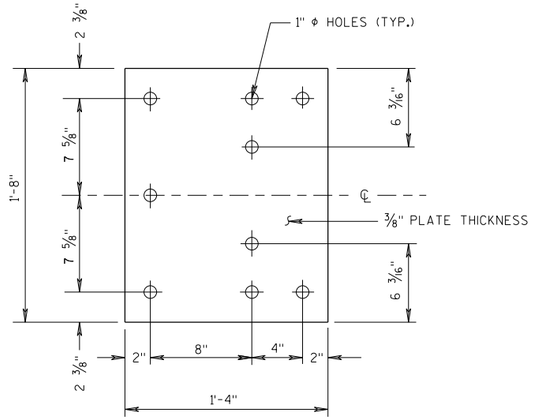
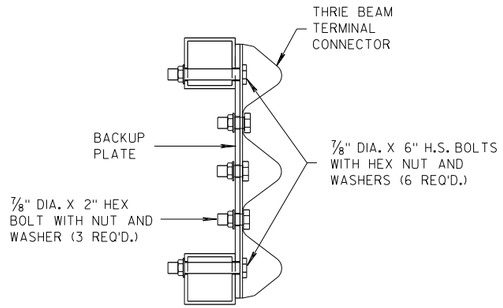


BACK-UP PLATE DETAIL

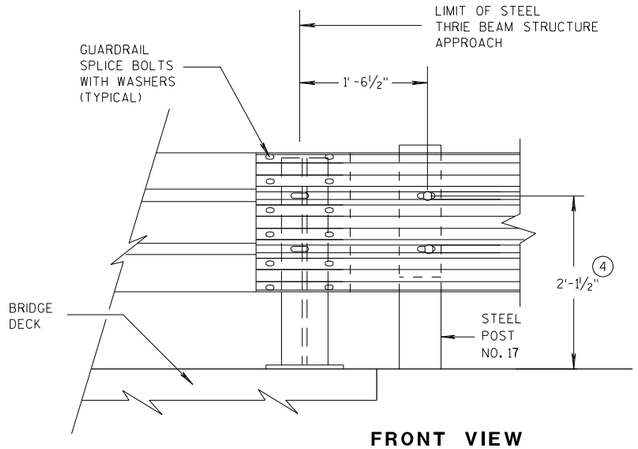


SECTION J-J

GENERAL NOTES

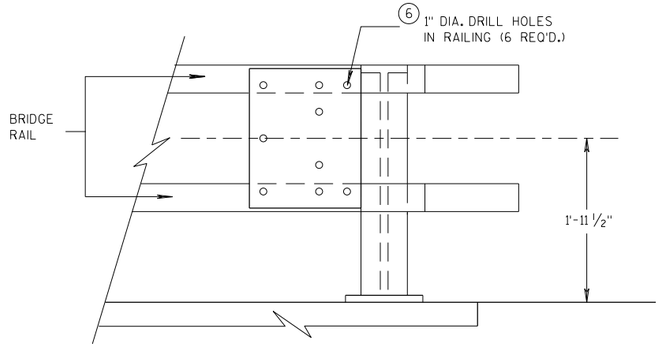
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

(6) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

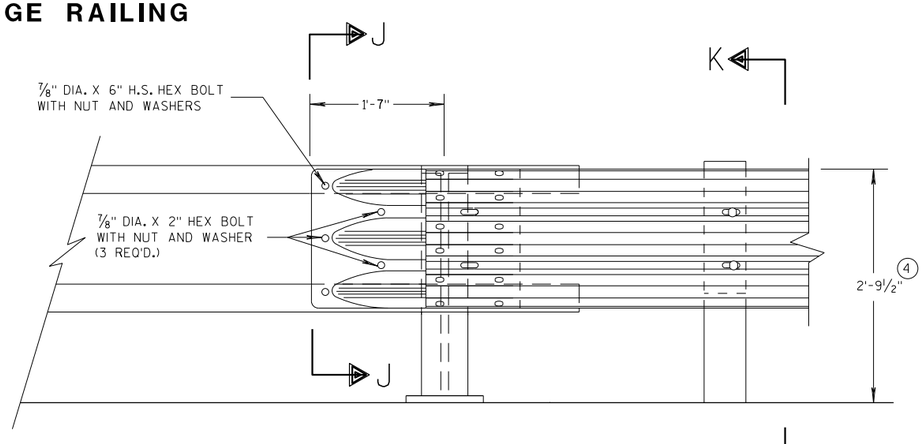


FRONT VIEW

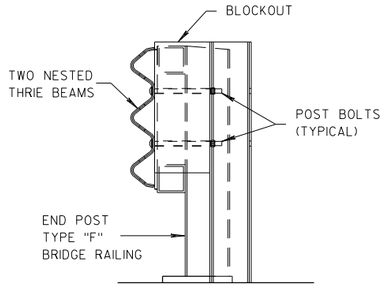
THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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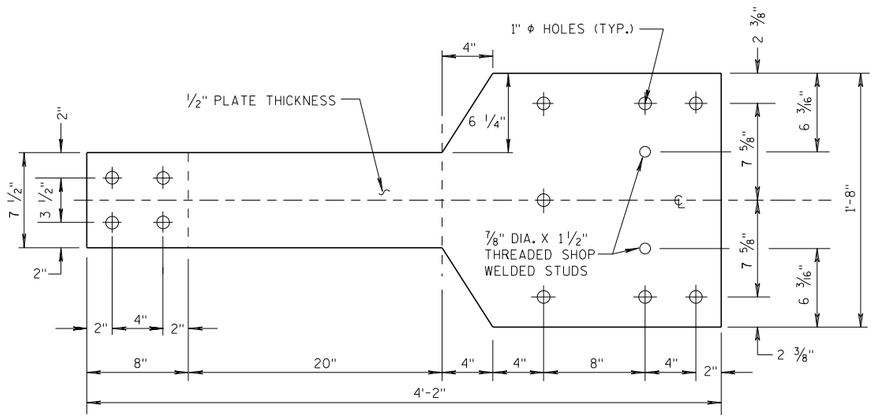
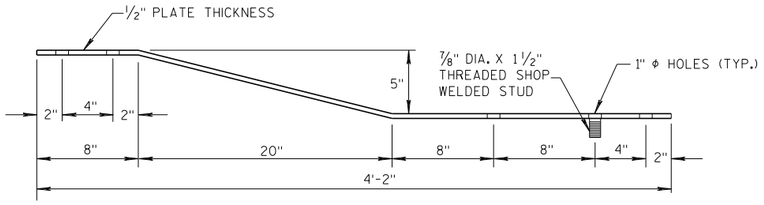
GENERAL NOTES

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

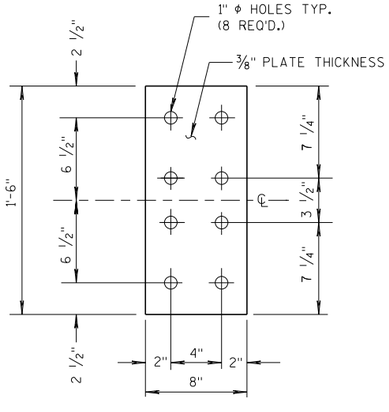


FRONT VIEW



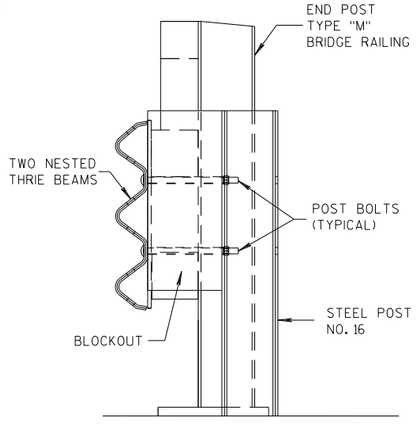
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

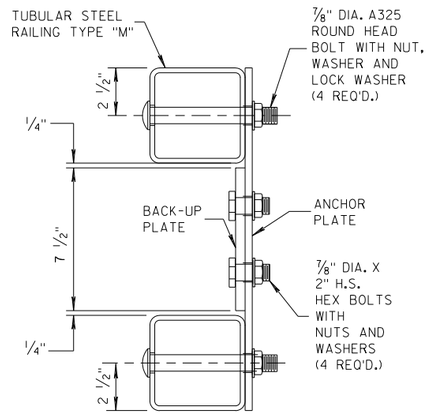


FRONT VIEW

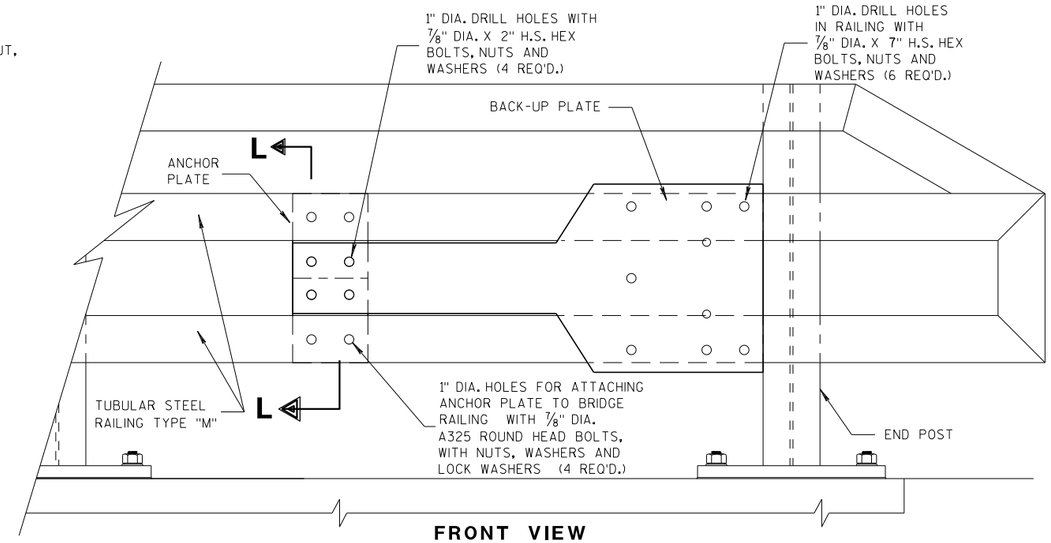
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

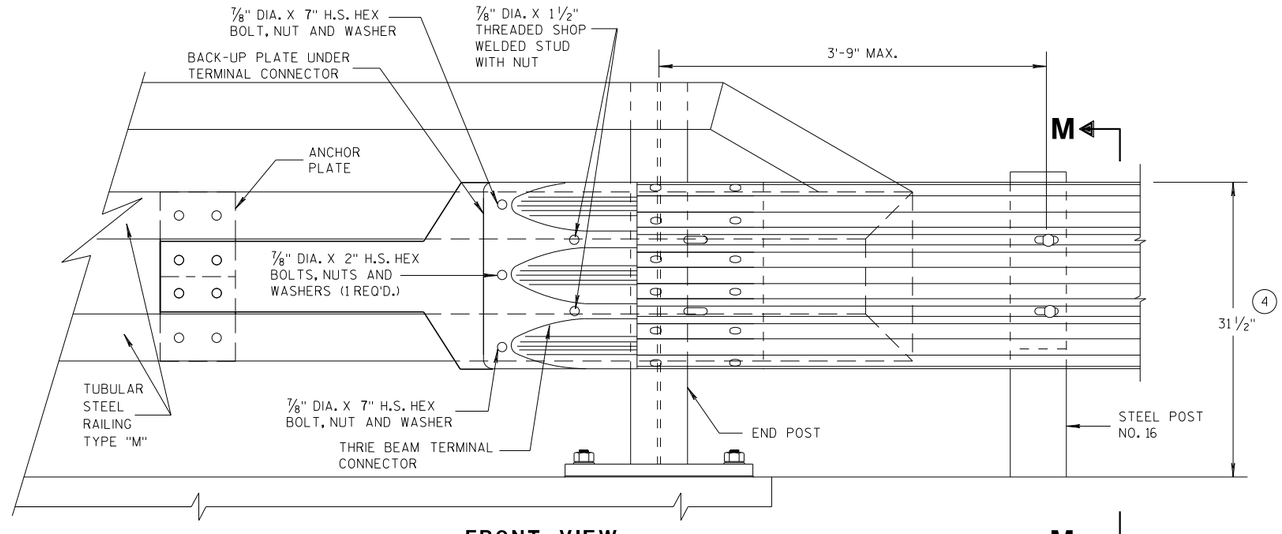


SECTION L-L

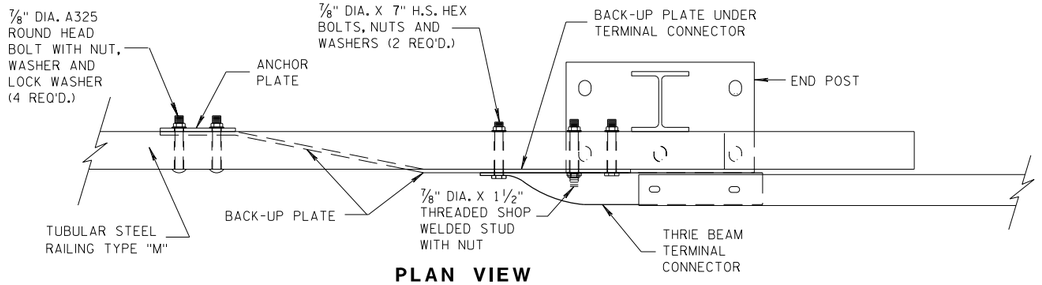


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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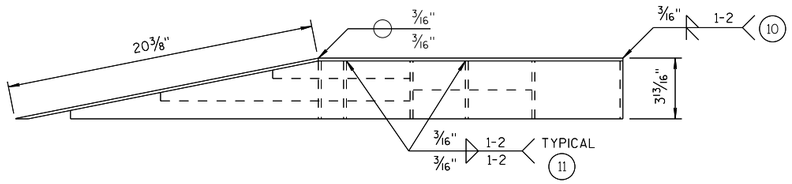

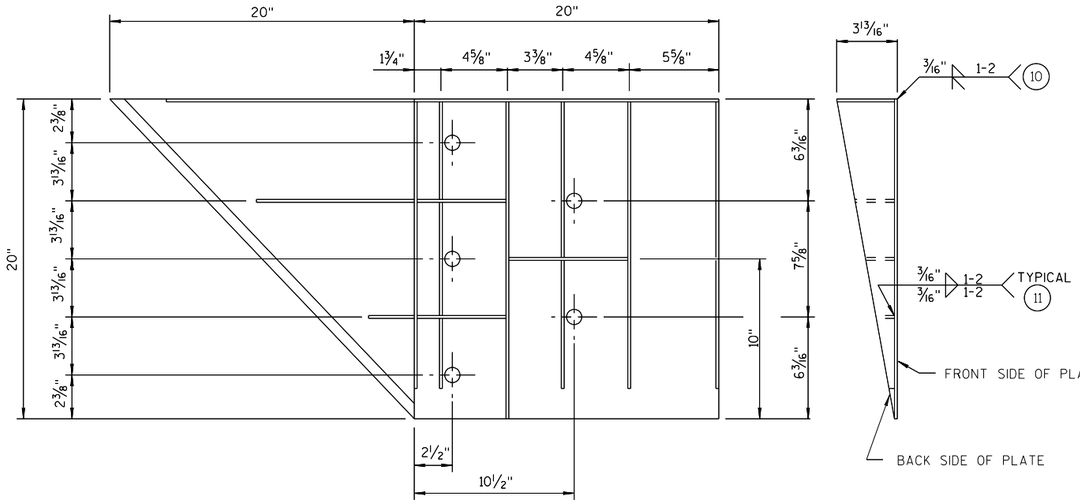

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

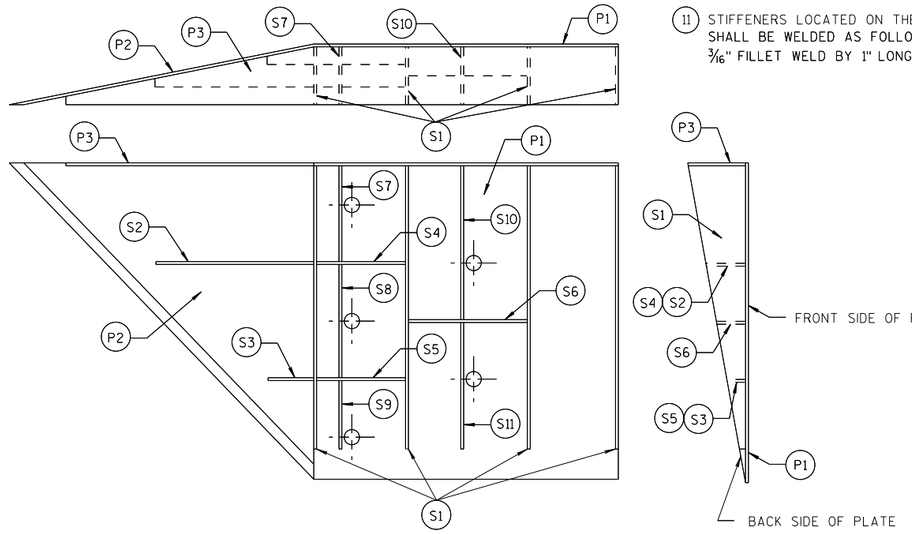

PLATE AND STIFFENER IDENTIFICATION

(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.

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

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

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 9/16"	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 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 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 9/16" 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 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

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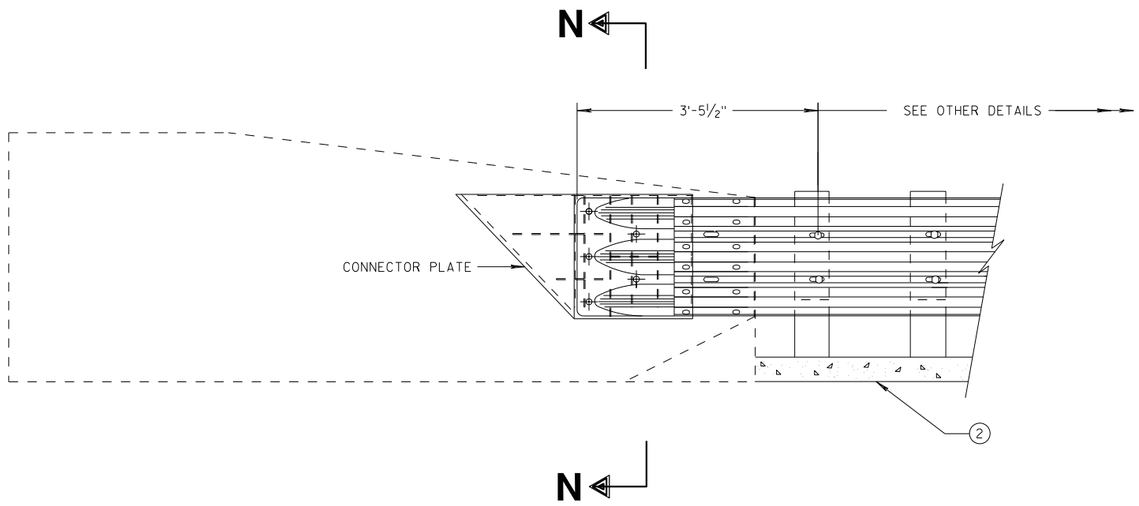
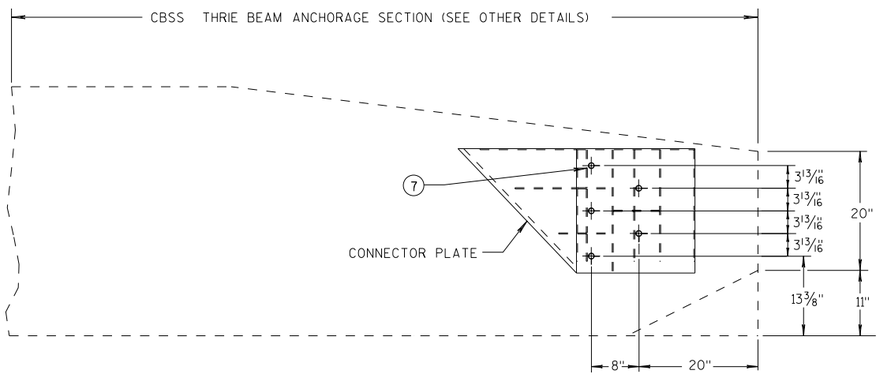
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



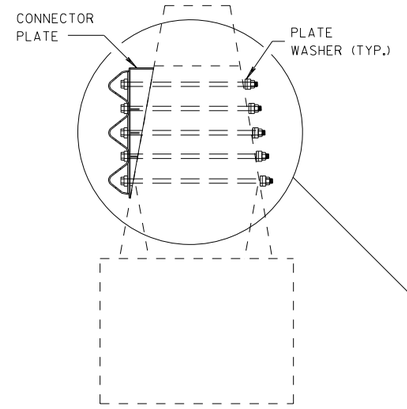
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

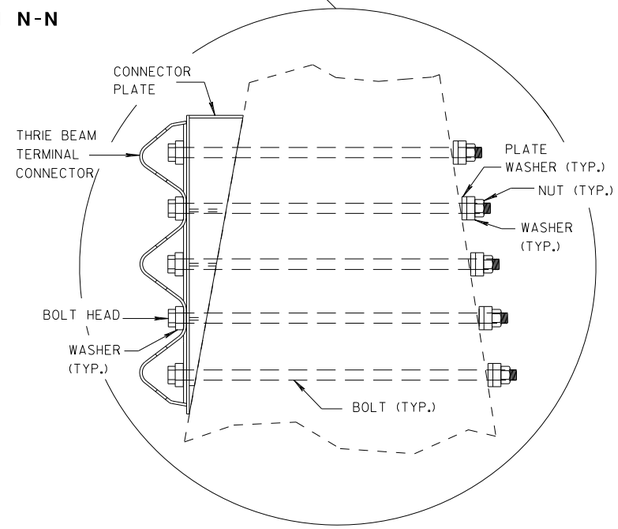
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 5/32" 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

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UNIT SUPERVIS

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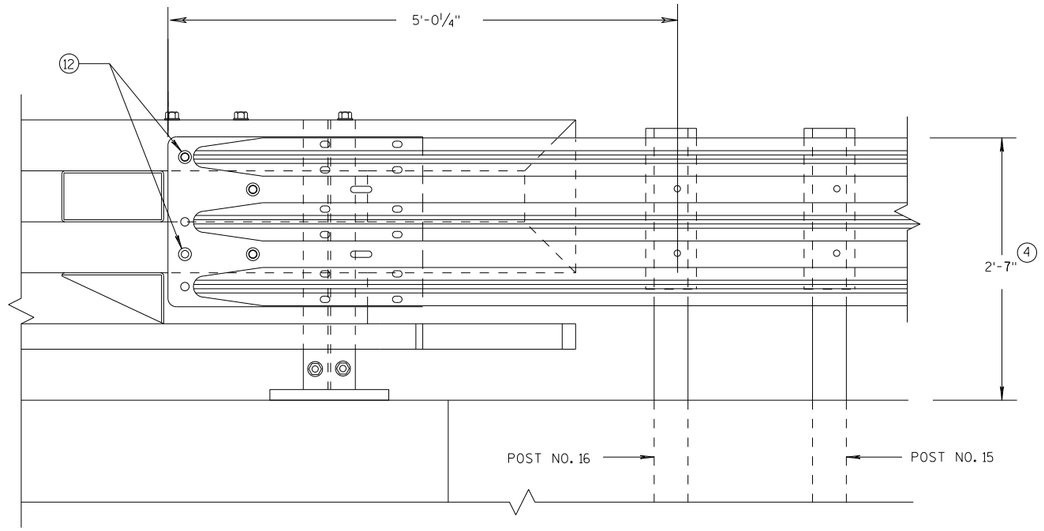
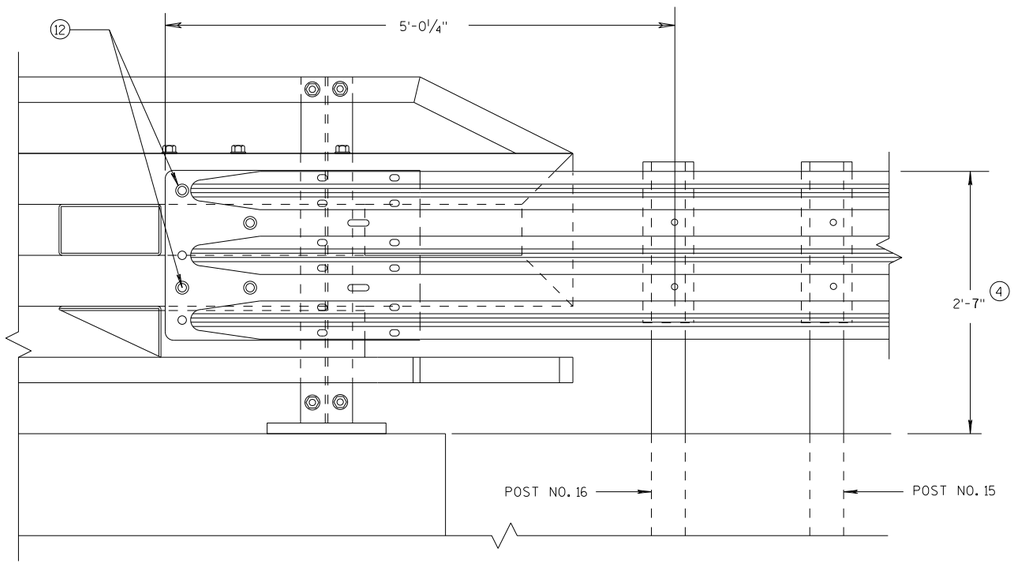
S.D.D. 14 B 45-5j



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 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 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018
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S.D.D. 14 B 45-5k

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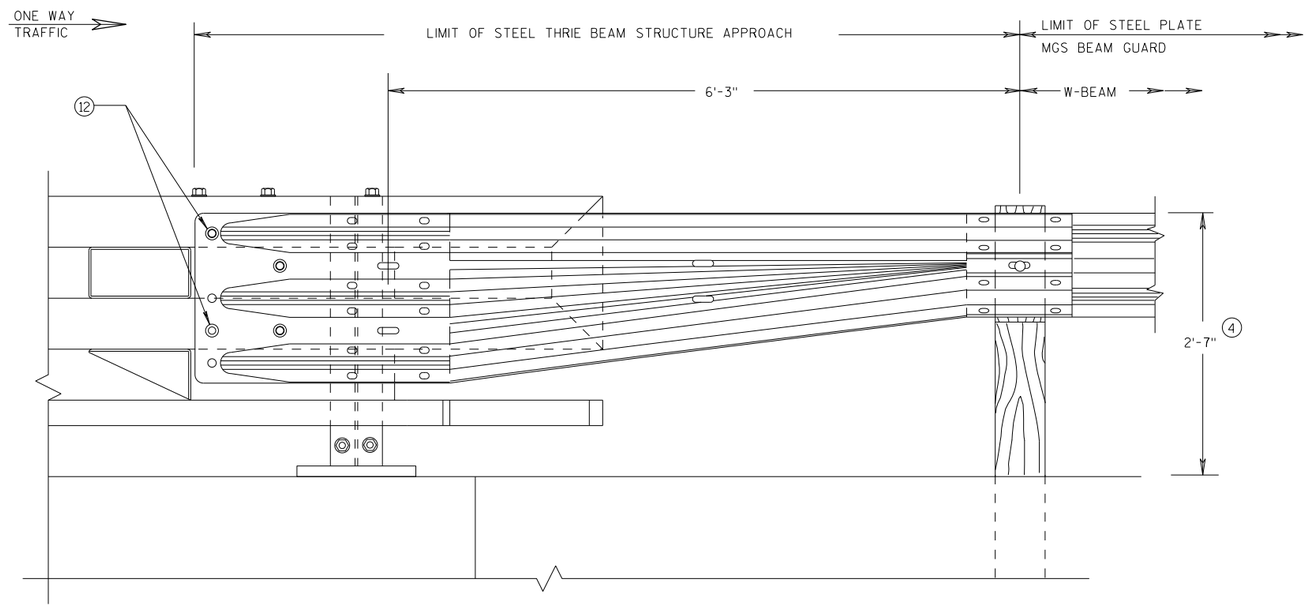
S.D.D. 14 B 45-5k



FRONT VIEW

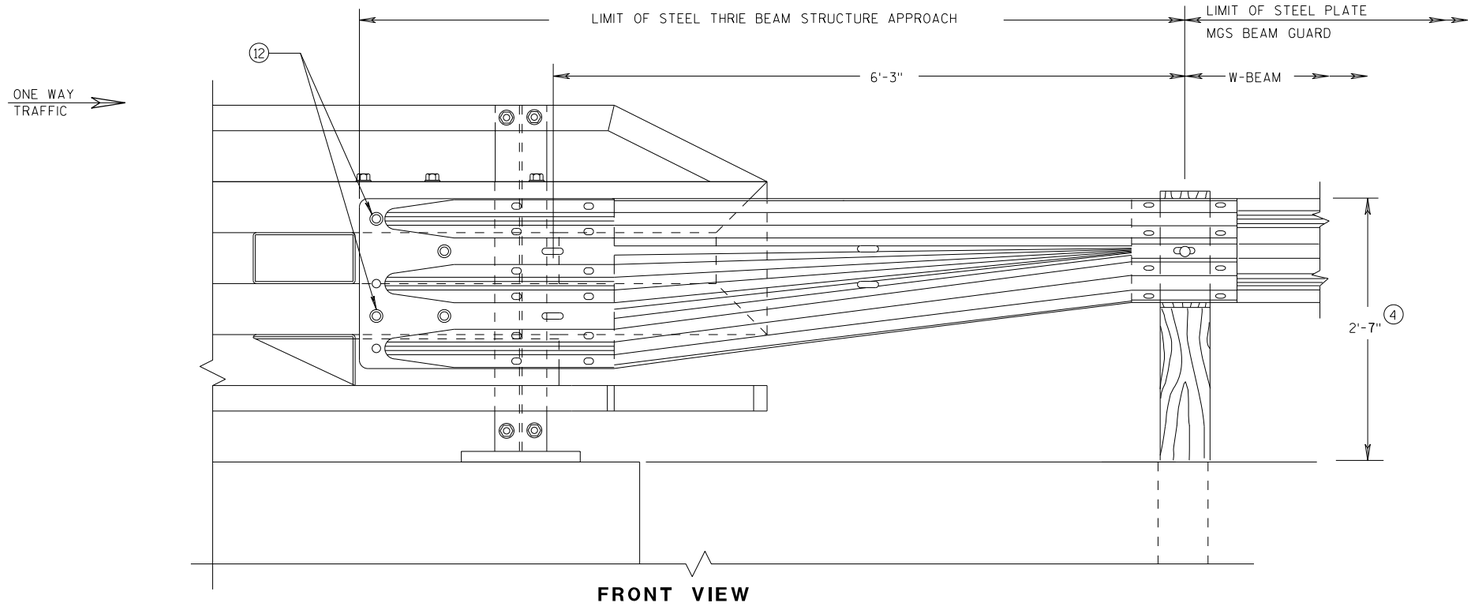
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 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 1/2-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018 DATE
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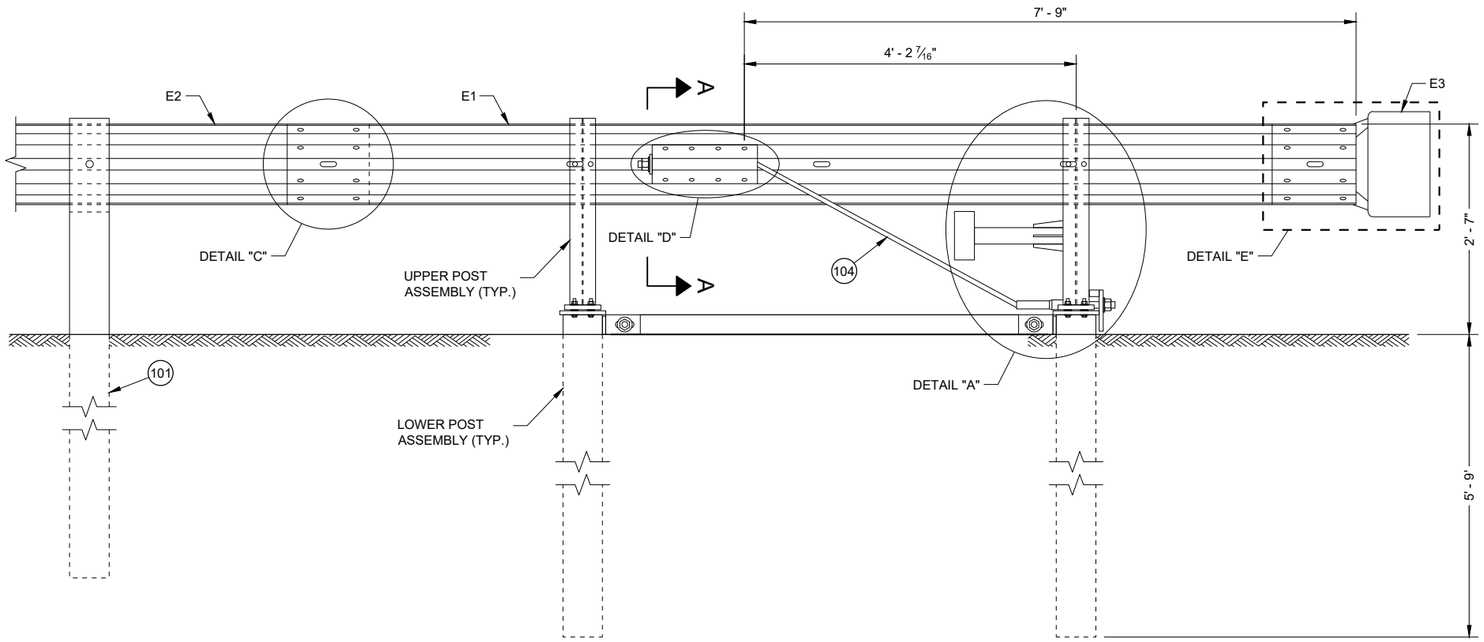
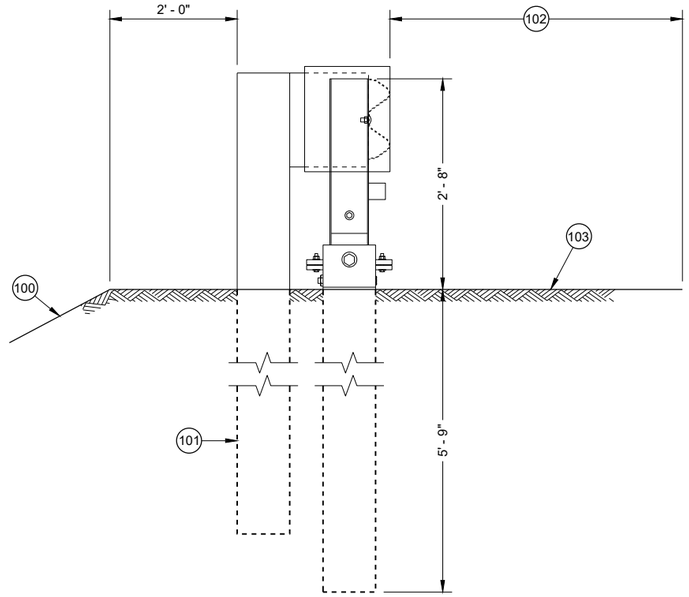
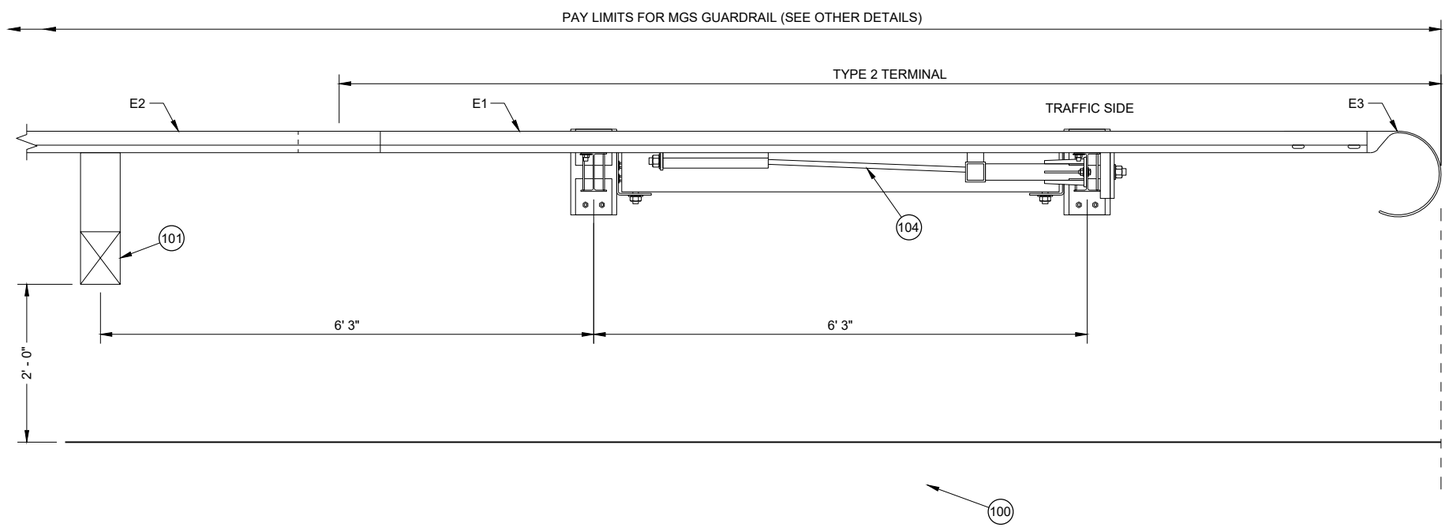


BACK VIEW
TYPE 2 TERMINAL



SIDE VIEW
TYPE 2 TERMINAL



TOP VIEW
TYPE 2 TERMINAL

GENERAL NOTES

(100) MAXIMUM SLOPE IS 2.5:1.

(101) SEE SDD 14B42 FOR MORE INFORMATION.

(102) SHOULDER

(103) MAXIMUM SLOPE IS 10:1.

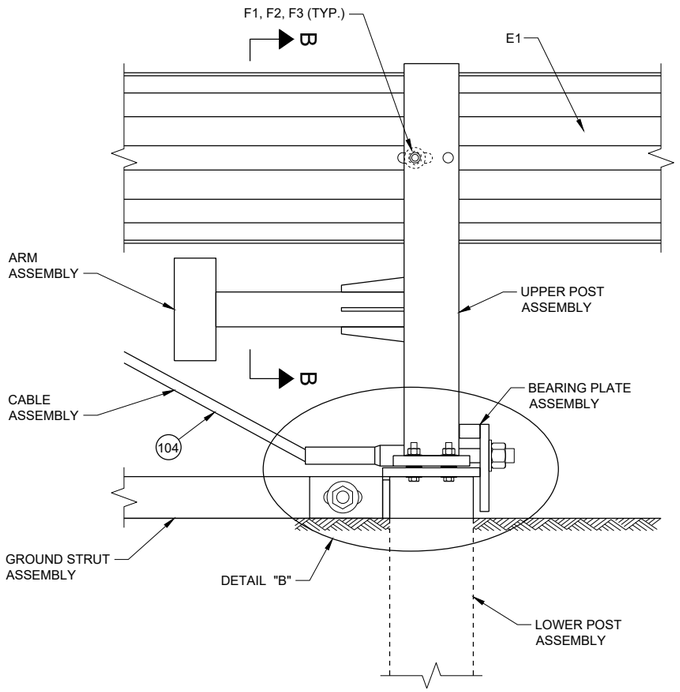
(104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL SYSTEM (MGS)
TYPE 2 TERMINAL

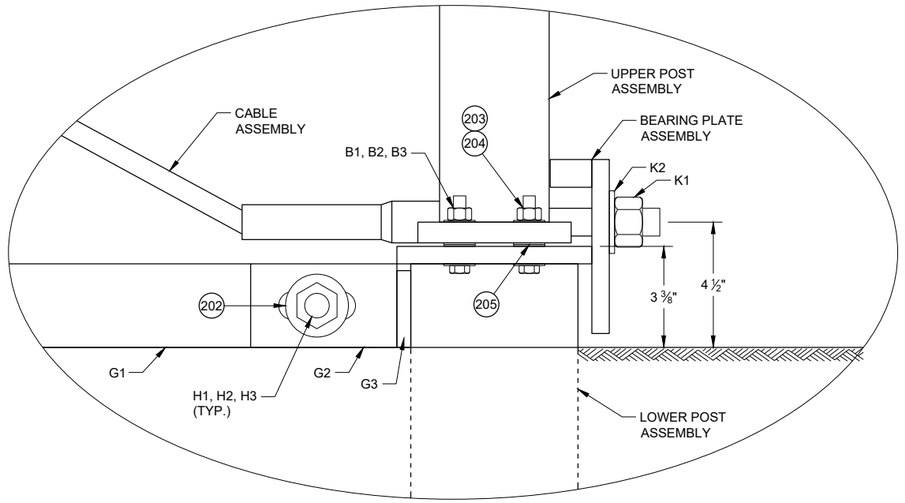
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

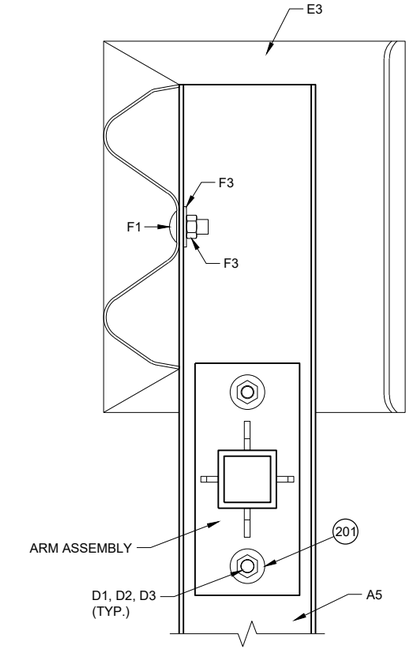
SDD 14B47 - 05a



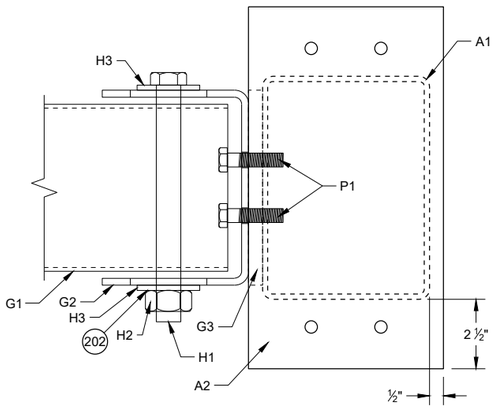
DETAIL "A"



DETAIL "B"

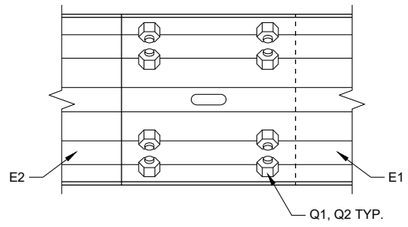


SECTION B - B



TOP VIEW

GROUND STRUT CONNECTION DETAIL



DETAIL "C"

GENERAL NOTES

200 INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

201 INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.

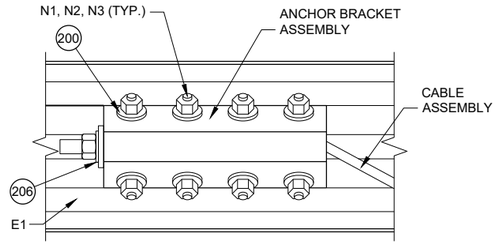
202 INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.

203 INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.

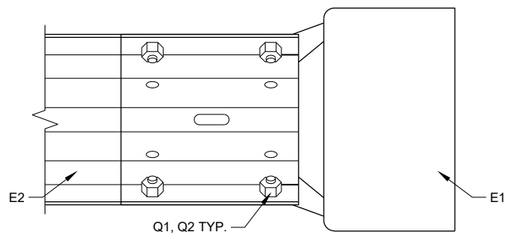
204 TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.

205 TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.

206 INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.



DETAIL "D"



DETAIL "E"

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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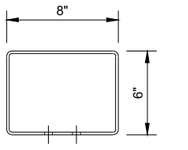
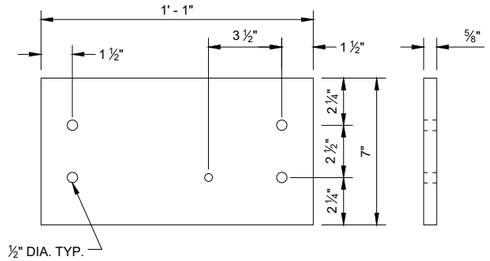
SDD 14B47 - 05b

GENERAL NOTES

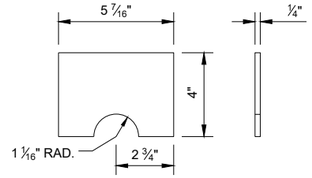
(300) TAP FOR 1/2" AFTER GALVANIZATION



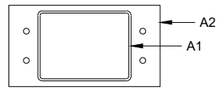
TOP VIEW



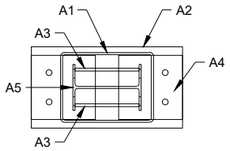
LOWER PLATE (A2)

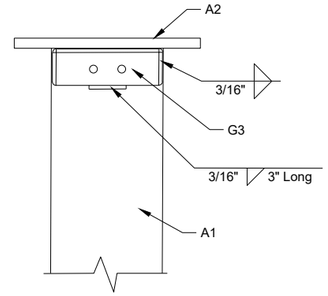


POST GUSSET (A3)

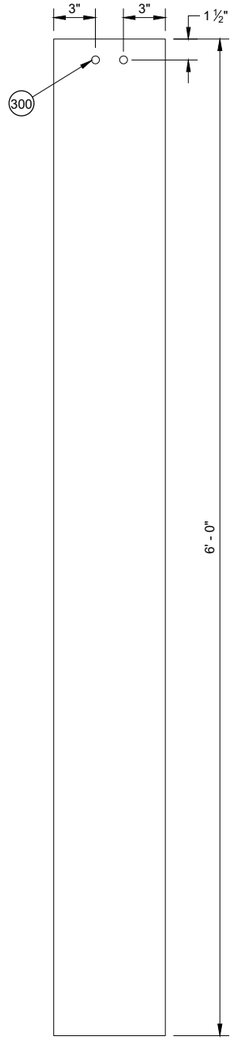


PLAN VIEW



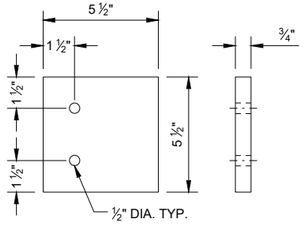


WELDING DETAIL
G3 AND A1

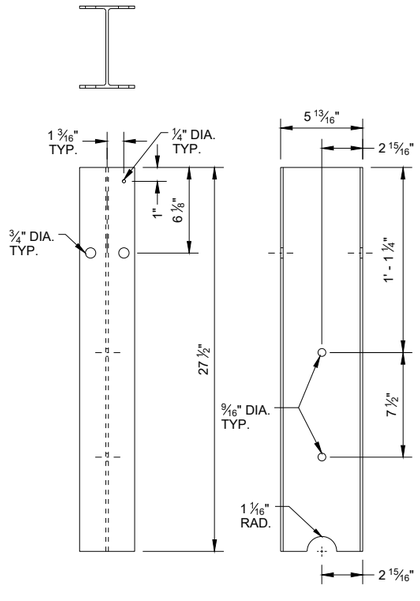


SIDE VIEW

FOUNDATION TUBE (A1)

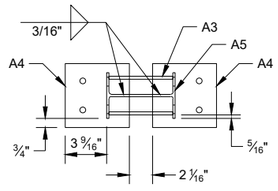


UPPER PLATE (A4)

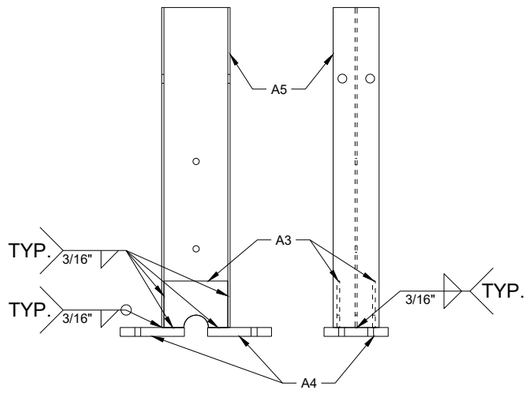


FRONT VIEW SIDE VIEW

TYPE 2 POST (A5)

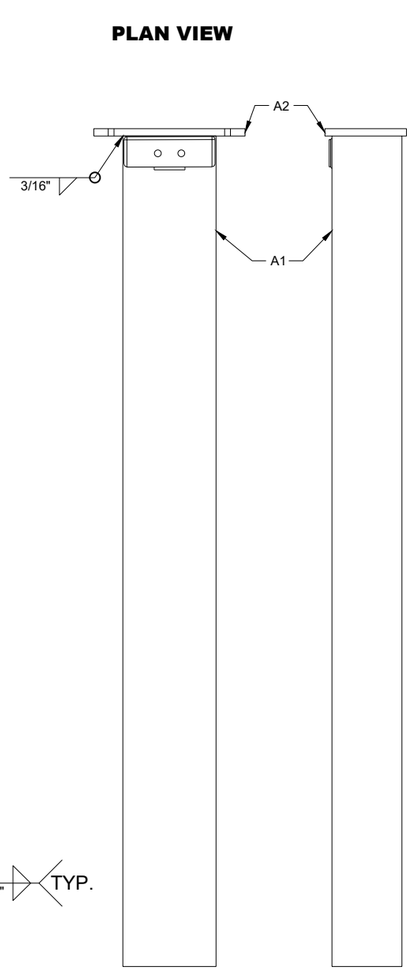


PLAN VIEW



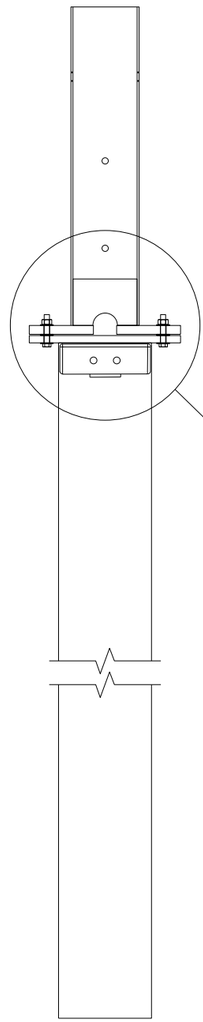
SIDE VIEW FRONT VIEW

UPPER POST ASSEMBLY

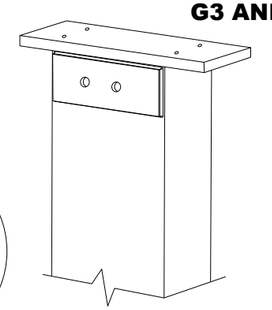


FRONT VIEW SIDE VIEW

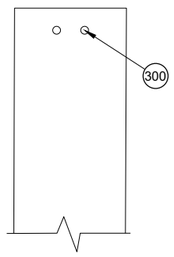
LOWER POST ASSEMBLY



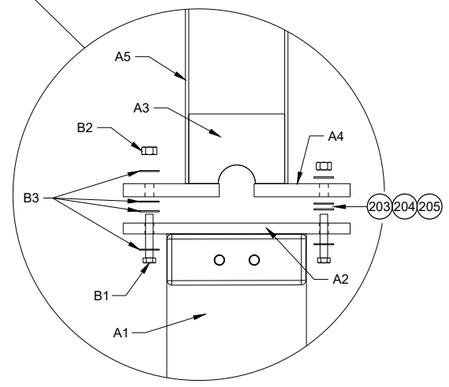
ASSEMBLED POST



ASSEMBLY DETAIL
ISOMETRIC



A1



POST CONNECTION DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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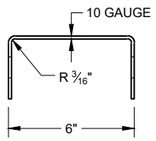
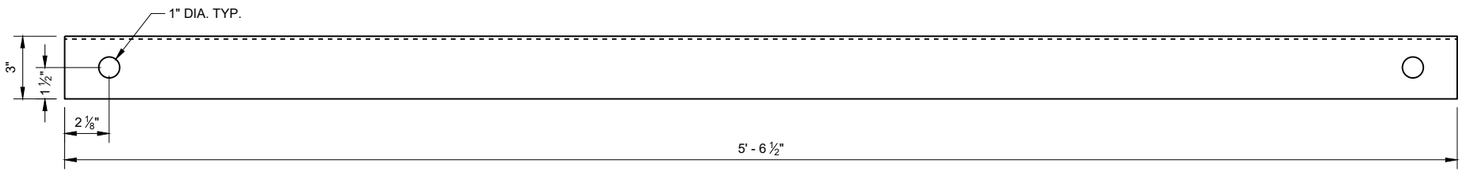
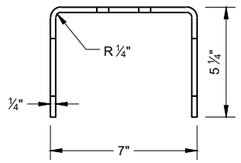


SIDE VIEW

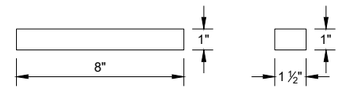


FRONT VIEW

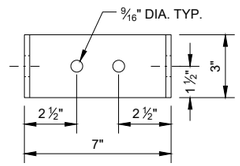
GROUND STRUT CHANNEL (G1)



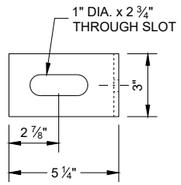
TOP VIEW



BEARING PLATE FLANGE (L2)

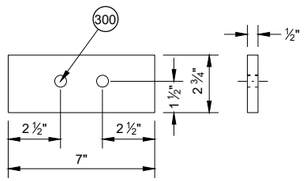


FRONT VIEW

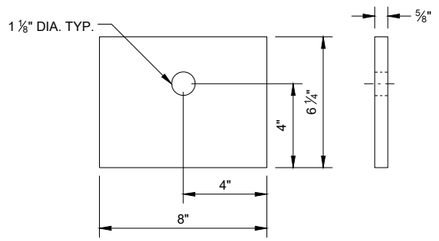


SIDE VIEW

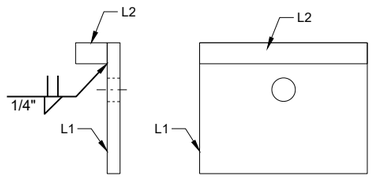
GROUND STRUT CONNECTOR (G2)



GROUND STRUT PLATE (G3)

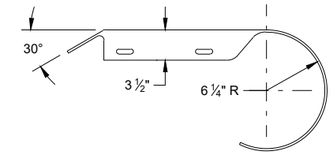


BEARING PLATE (L1)

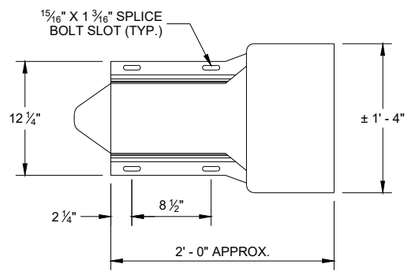


SIDE VIEW FRONT VIEW

BEARING PLATE ASSEMBLY

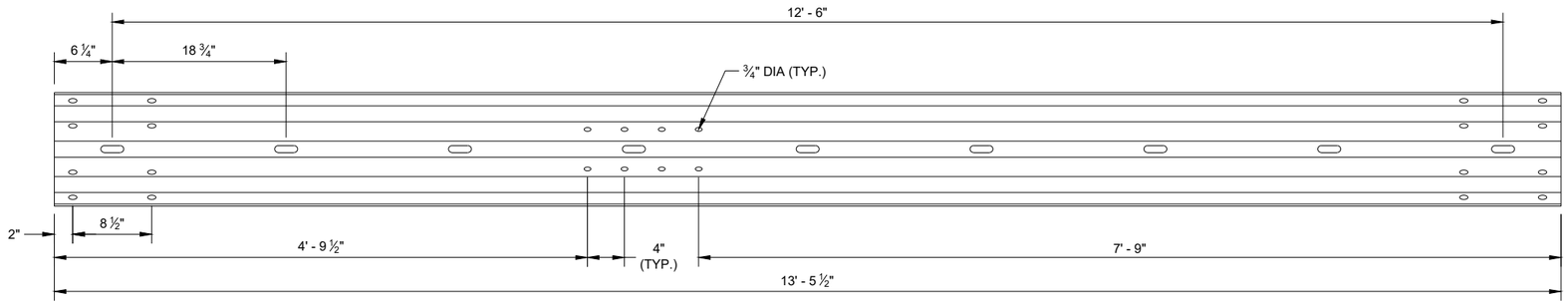


PLAN VIEW

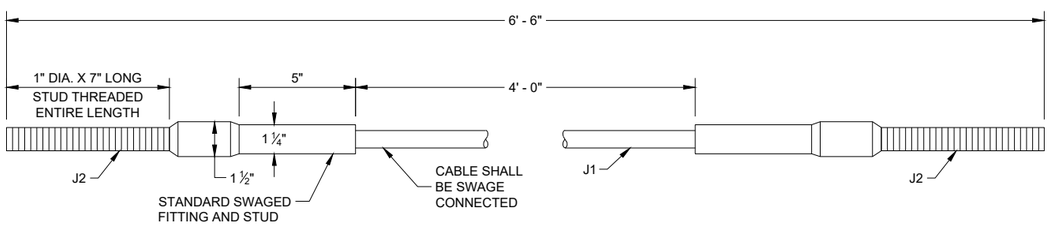


ELEVATION VIEW

ROUNDED BUFFER END (E3)



TYPE 2 GUARDRAIL (E1)



CABLE ASSEMBLY

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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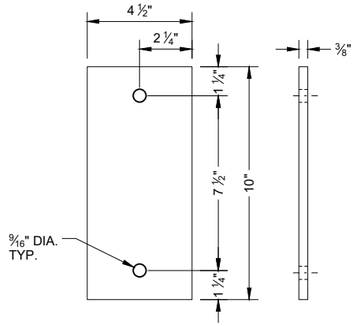
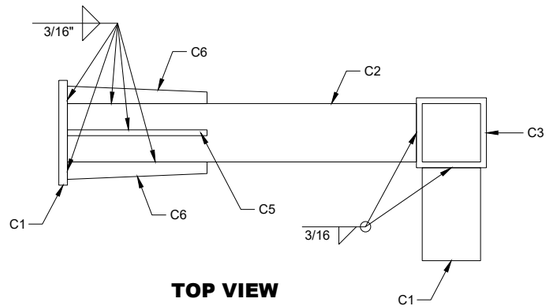
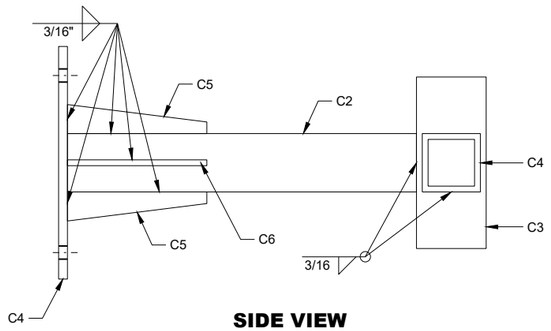


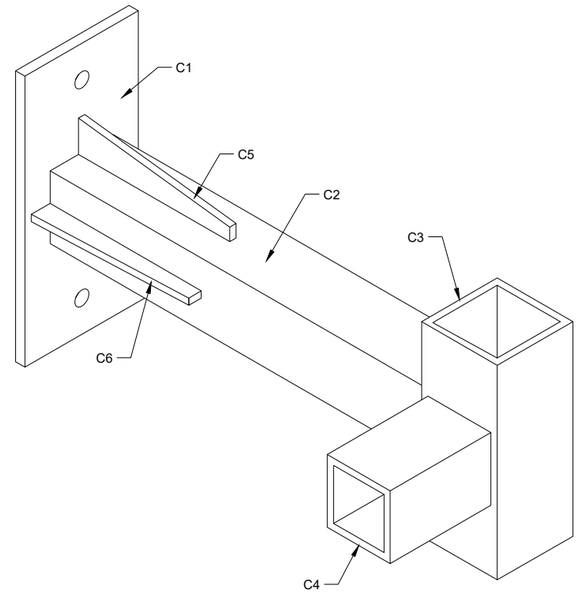
ARM PLATE (C1)



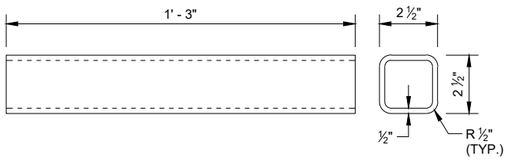
TOP VIEW
ARM ASSEMBLY



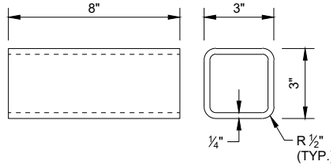
SIDE VIEW
ARM ASSEMBLY



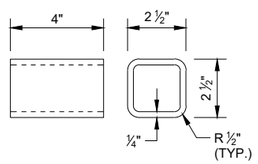
ISOMETRIC VIEW
ARM ASSEMBLY



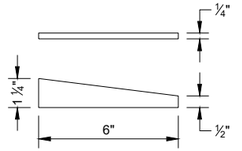
ARM TUBE 1 (C2)



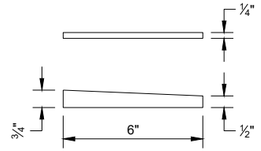
ARM TUBE 2 (C3)



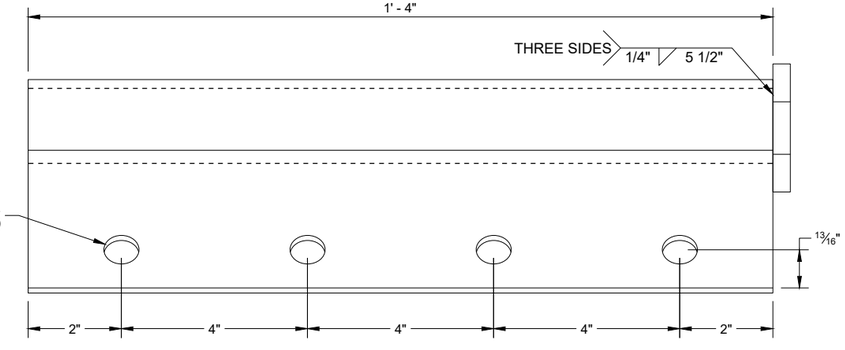
ARM TUBE 3 (C4)

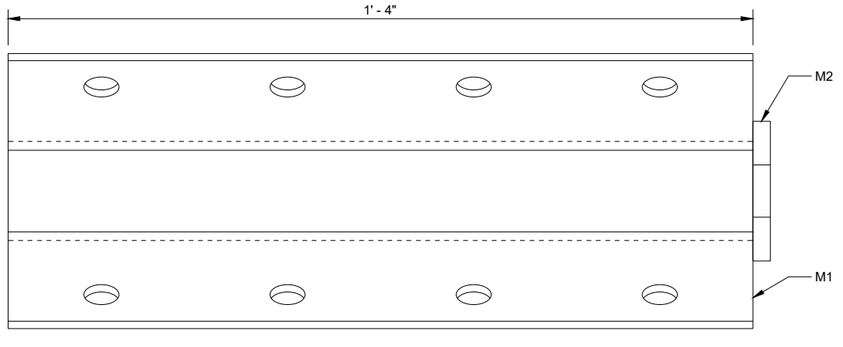


ARM GUSSET PLATE 1 (C5)

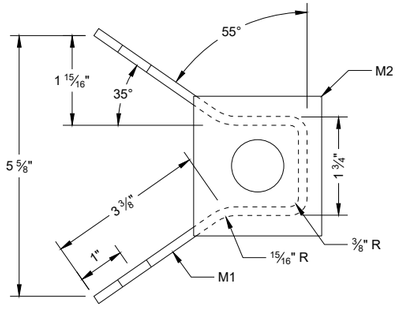


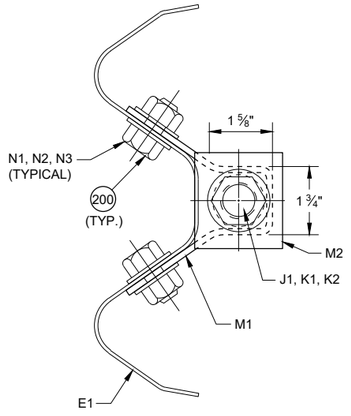
ARM GUSSET PLATE 2 (C6)

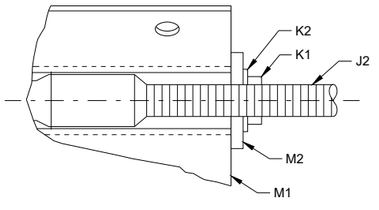




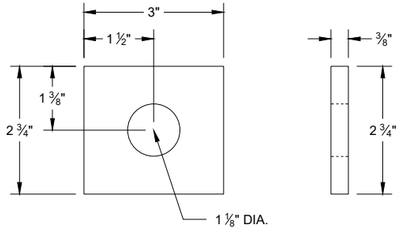
ANCHOR BRACKET (M1, M2)







SECTION A - A



ANCHOR BRACKET BEARING PLATE (M2)

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	TYPE 2 FOUNDATION TUBE	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
A2	LOWER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
A3	POST GUSSET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
A4	UPPER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/4" THICKNESS
A5	TYPE 2 POST	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI, w6x9 or w6x8.5	
B1	BREAKAWAY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	7/16" DIA.
B2	BREAKAWAY BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/16" DIA.
B3	BREAKAWAY BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
C1	ARM ASSEMBLY PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
C2	ARM ASSEMBLY TUBE 1	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
C3	ARM ASSEMBLY TUBE 2	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 3" x 3" x 1/4"
C4	ARM ASSEMBLY TUBE 3	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 2 1/2" x 2 1/2" X 1/4"
C5	ARM ASSEMBLY GUSSET PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
C6	ARM ASSEMBLY GUSSET PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
D1	ARM ASSEMBLY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	1/2" DIA.
D2	ARM ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	1/2" DIA.
D3	ARM ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
E1	TYPE 2 GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E2	BEAM GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E3	BEAM GUARD ROUNDED BUFFER END	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
F1	POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
F2	POST BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
F3	POST BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
G1	GROUND STRUT CHANNEL	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" x 11 3/4" x 10 GAUGE
G2	GROUND STRUT CONNECTOR	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
G3	GROUND STRUT PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" THICKNESS

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
H1	GROUND STRUT BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	7/8" DIA.
H2	GROUND STRUT BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/8" DIA.
H3	GROUND STRUT BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
J1	BCT CABLE	AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS	**3/4" DIA.**
J2	BCT CABLE	UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."	
K1	CABLE ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1" DIA.
K2	CABLE ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1	1" DIA.
L1	BEARING PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
L2	BEARING PLATE FLANGE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1" THICKNESS
M1	BEAM GUARD ANCHOR BRACKET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
M2	BEAM GUARD ANCHOR END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
N1	ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
N2	ANCHOR BRACKET BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
N3	ANCHOR BRACKET BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 /ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
P1	FOUNDATION TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
Q1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
Q2	SPLICE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	5/8" DIA.

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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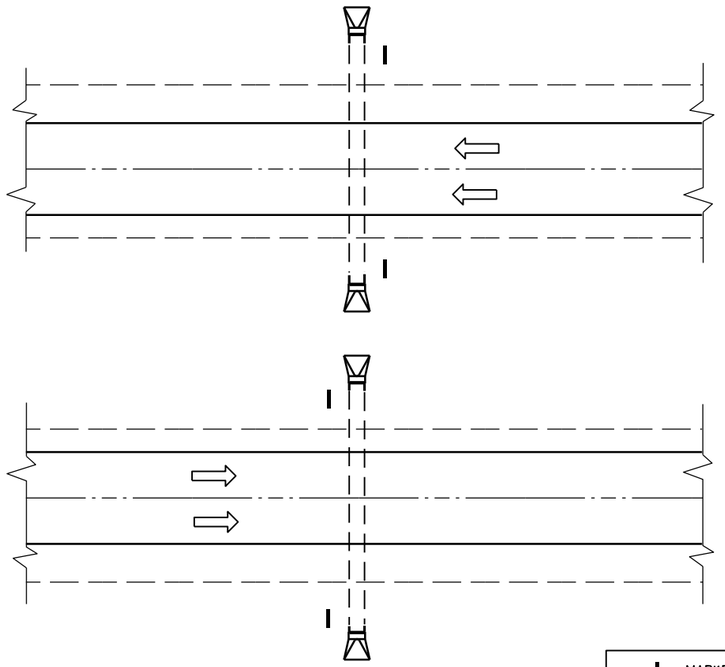
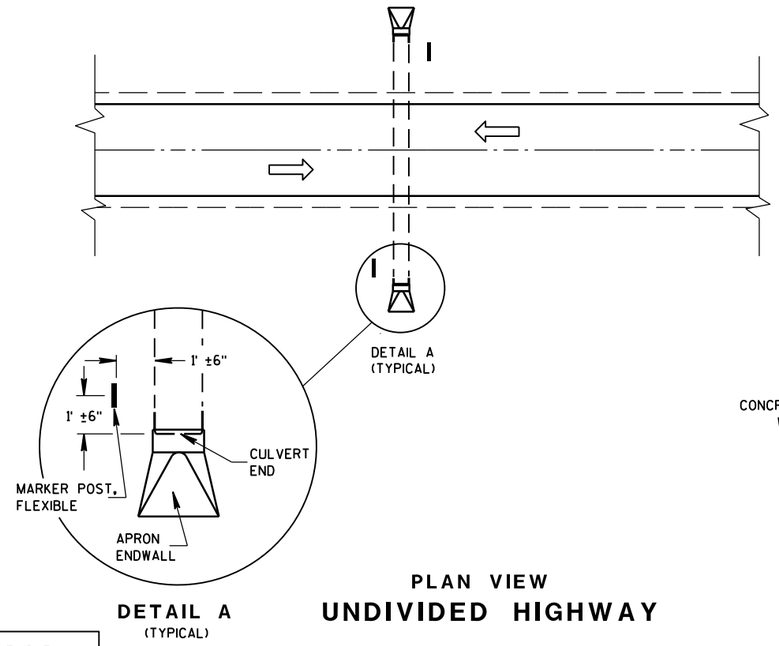


PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

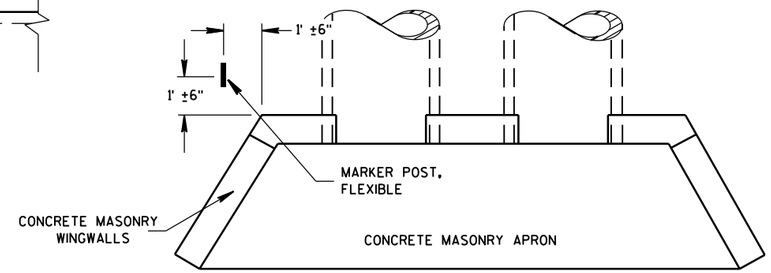
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

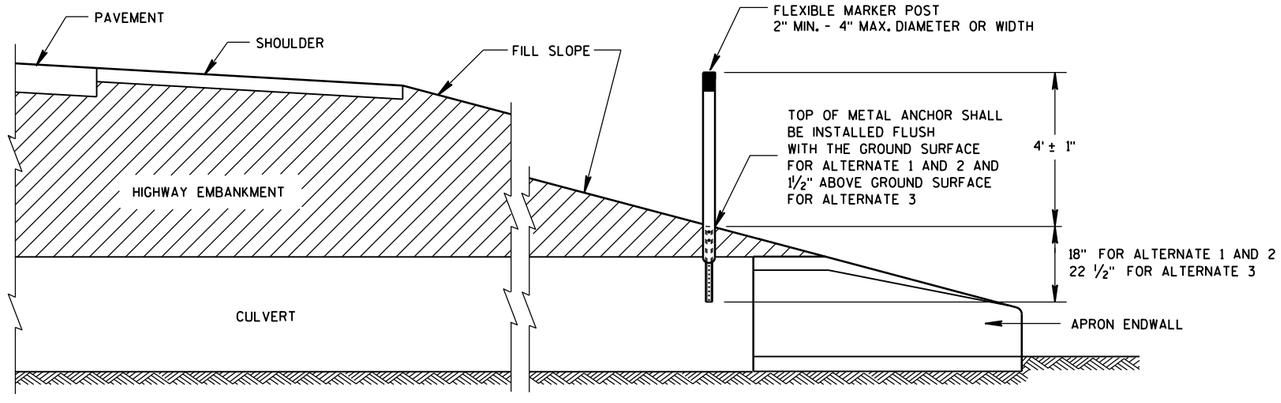
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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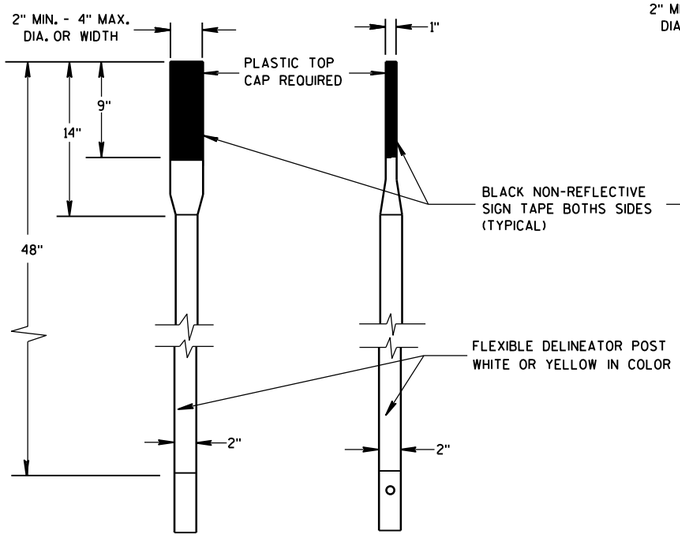
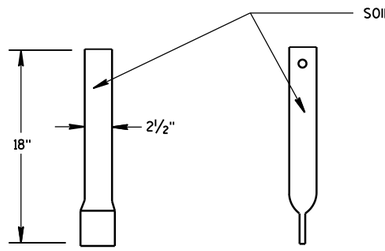
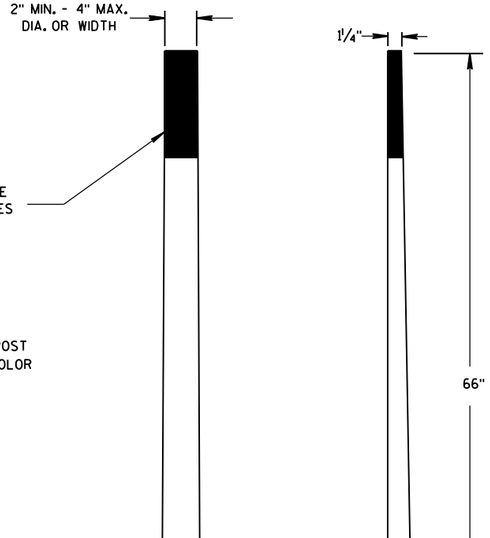
S.D.D. 15 A 3-2a





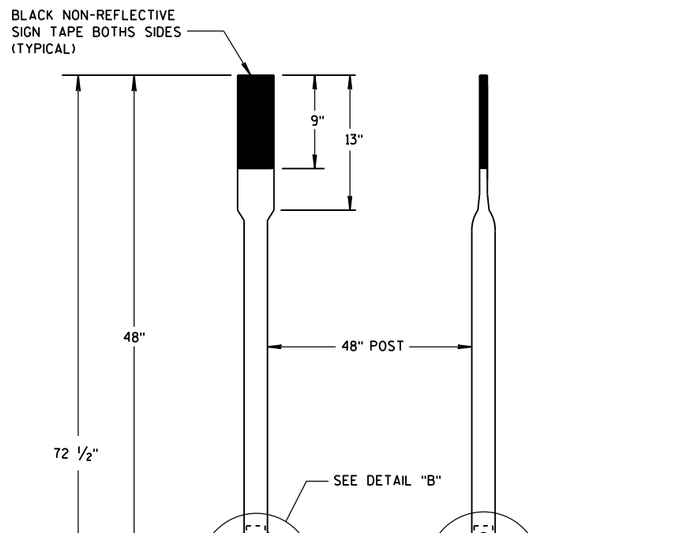
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

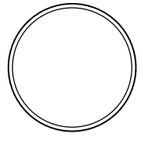
ALTERNATE 2



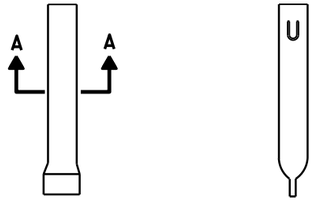
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

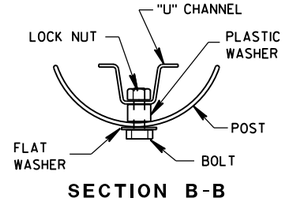


SECTION A-A

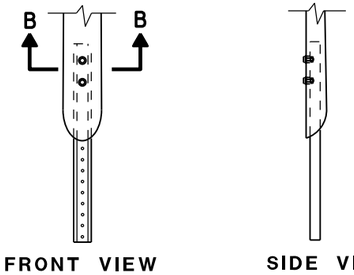


FRONT VIEW SIDE VIEW

ALTERNATE 1

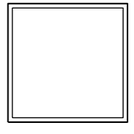


SECTION B-B

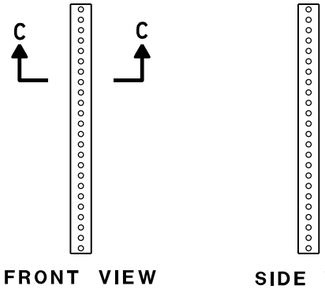


FRONT VIEW SIDE VIEW

ALTERNATE 2



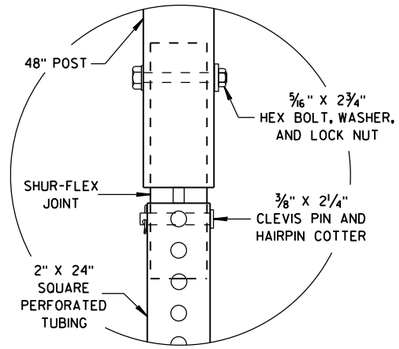
SECTION C-C



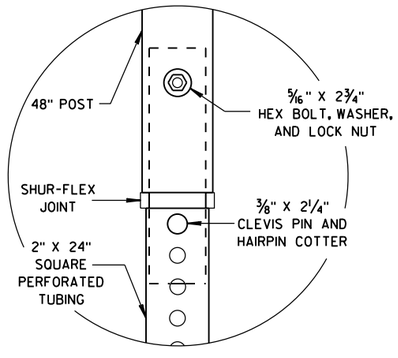
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 3-2b

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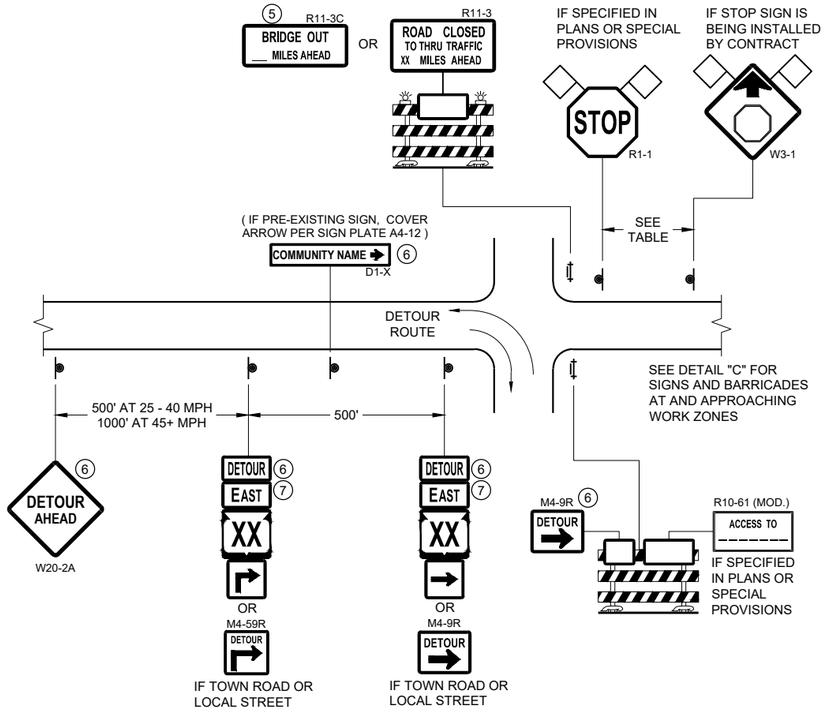
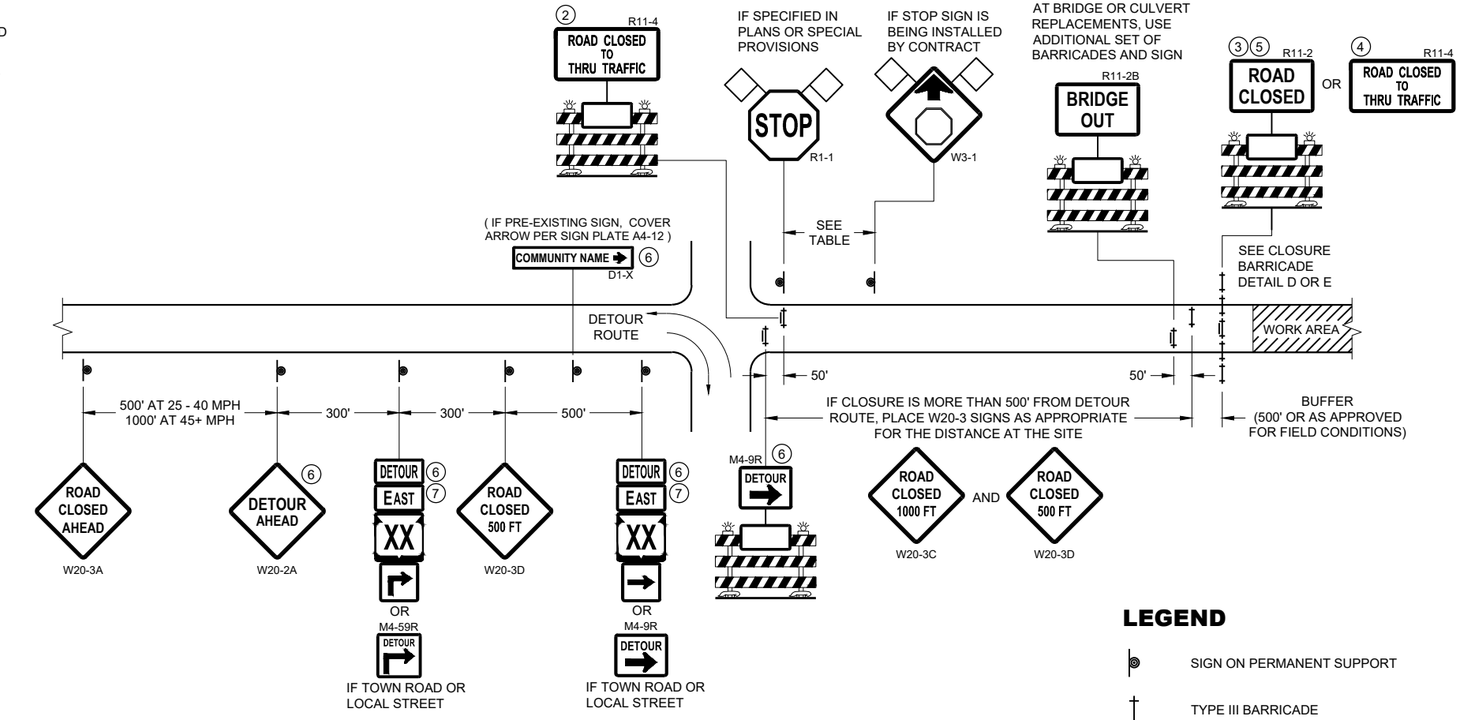
S.D.D. 15 A 3-2b



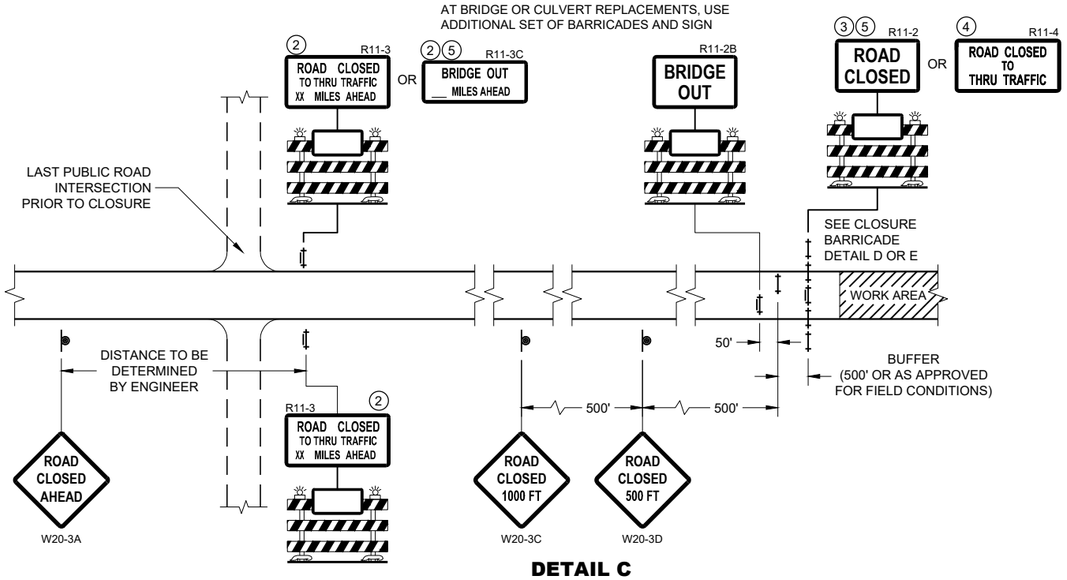
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

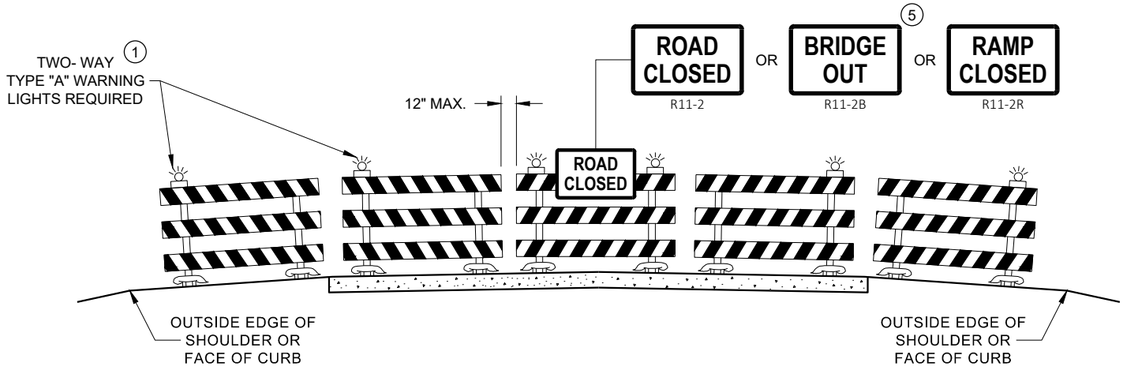
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

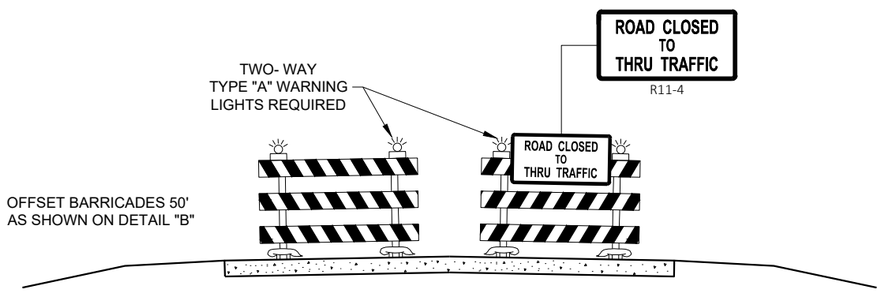
FHWA

6

SDD 15C02 - 09a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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.

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

BARRICADES 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.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

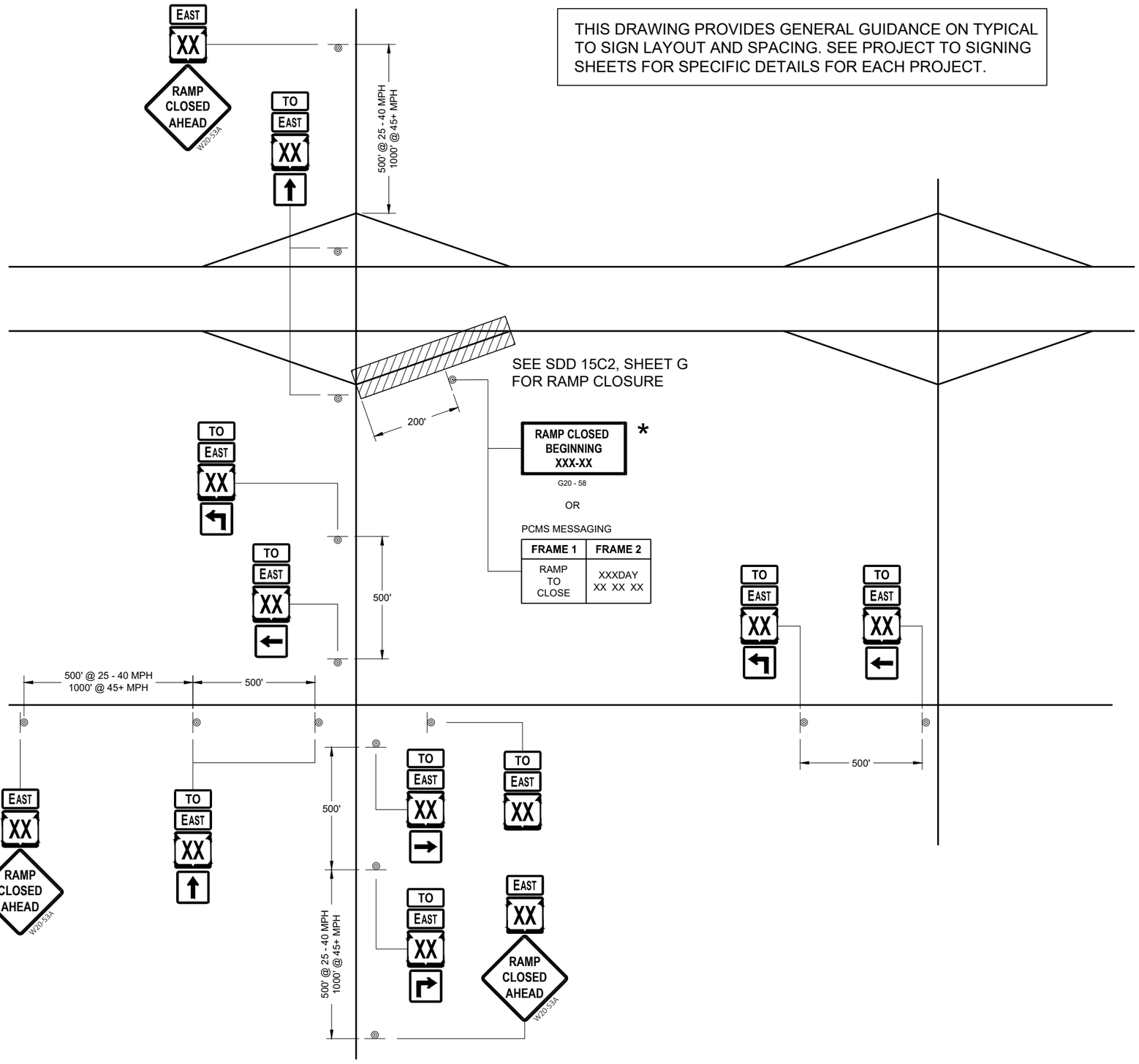
APPROVED
May 2023
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

6

SDD 15C02 - 09b

6

SDD 15C02 - 09b



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL TO SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

LEGEND

SIGN ON PERMANENT SUPPORT

TO EAST — MO4 - 5, M3 - X

XX M1 - 6 OR XX M1 - 4 OR INTERSTATE XX M1 - 1

M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOW:
- M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
- MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- W20 - 53A SHALL BE 48" X 48"

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

ON RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

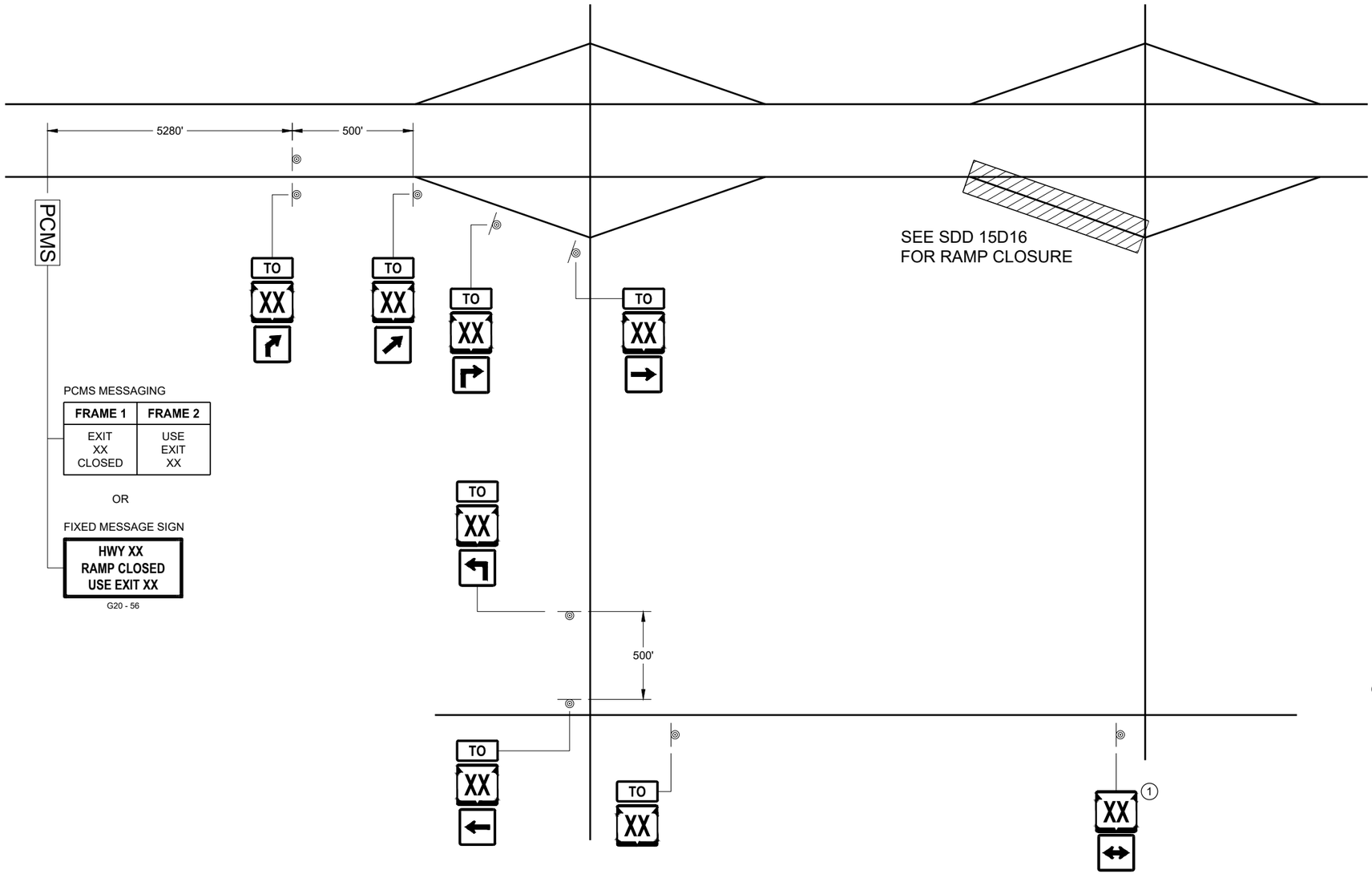
FHWA

6

SDD 15C02 - 09d

SDD 15C02 - 09d

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



PCMS MESSAGING

FRAME 1	FRAME 2
EXIT XX CLOSED	USE EXIT XX

OR

FIXED MESSAGE SIGN

HWY XX
RAMP CLOSED
USE EXIT XX

G20 - 56

LEGEND

SIGN ON PERMANENT SUPPORT

PCMS PORTABLE CHANGEABLE MESSAGE SIGN

TO MO4 - 5

XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A

M05 - 1 OR M05 - 2 OR M06 - 1 OR M06 - 2 OR M06 - 4

GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.

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

"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOW:
- MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
- MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

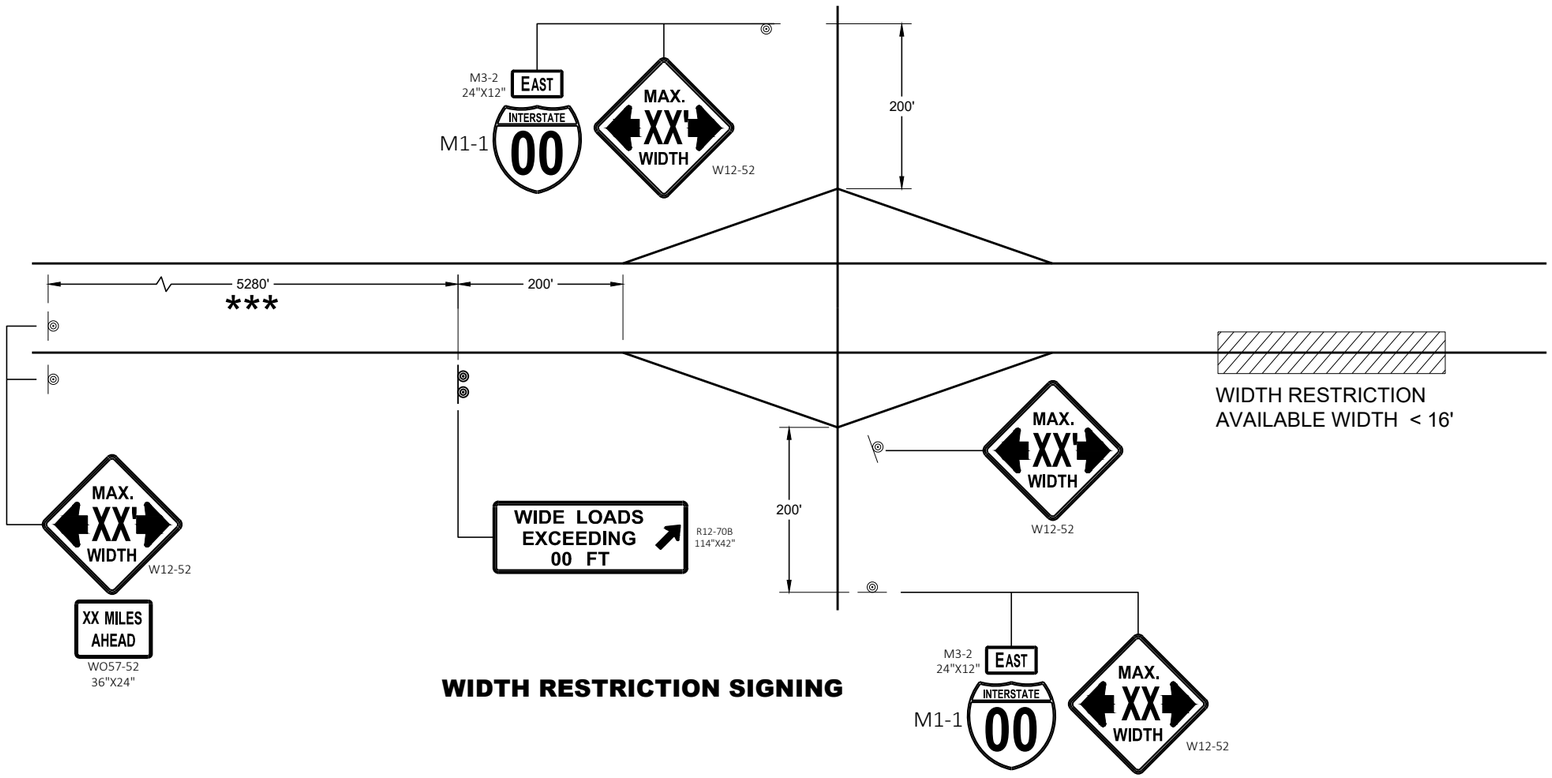
(1) ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP LANE CLOSURE

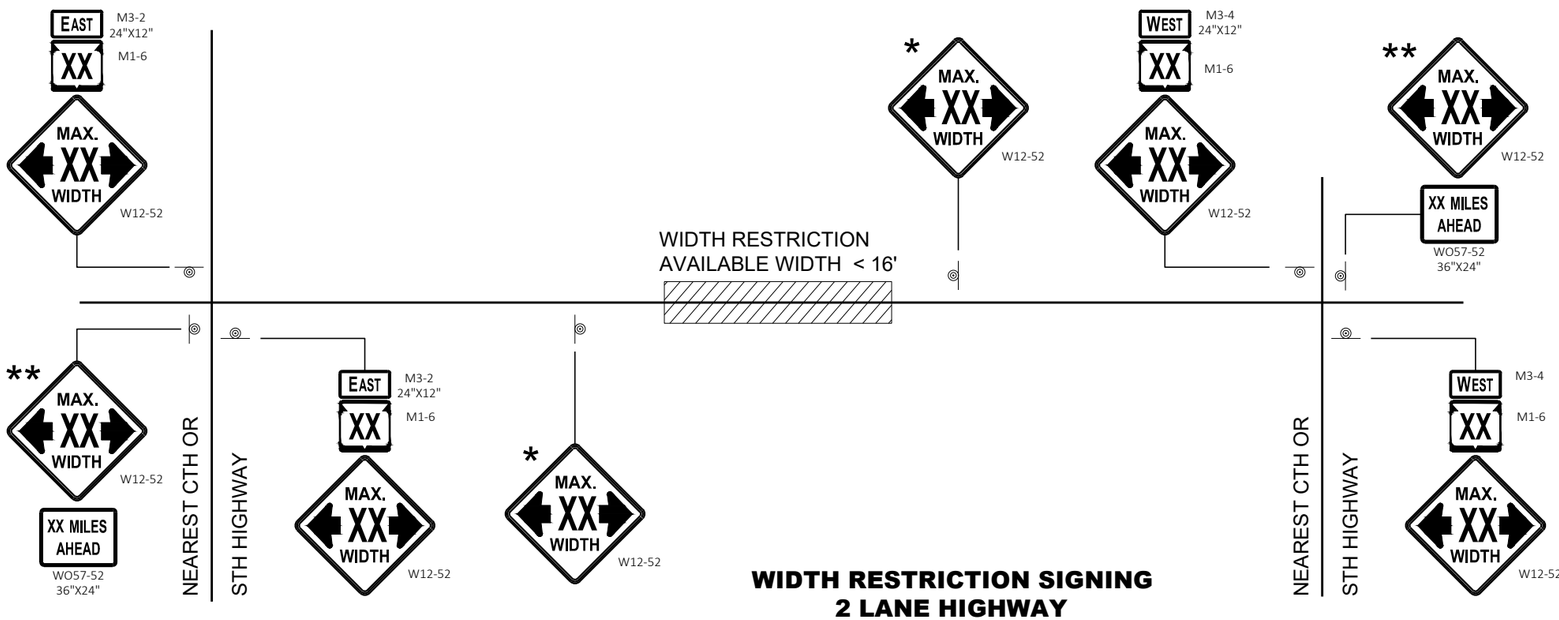
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 DATE
/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA

6
SDD 15C02 - 09e



WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

LEGEND

◎ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS 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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.

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

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

** SIGN SHALL BE VISIBLE FROM ROADWAY.

*** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

ADVANCED WIDTH RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

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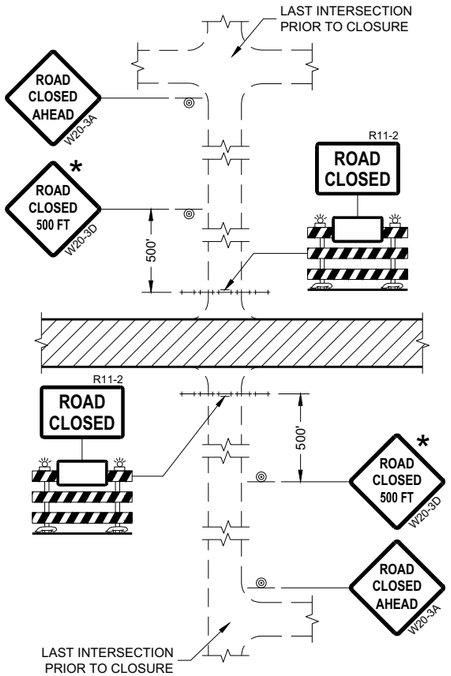
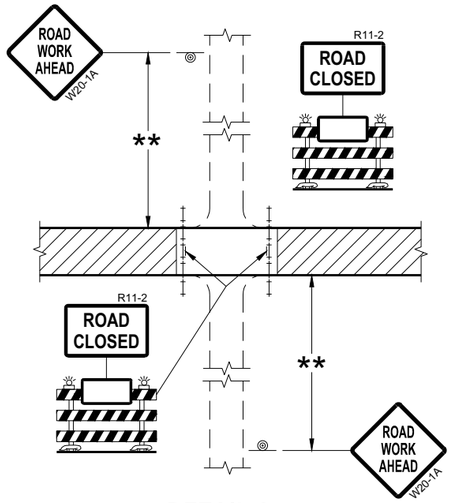
SDD 15C02 - 09f

6

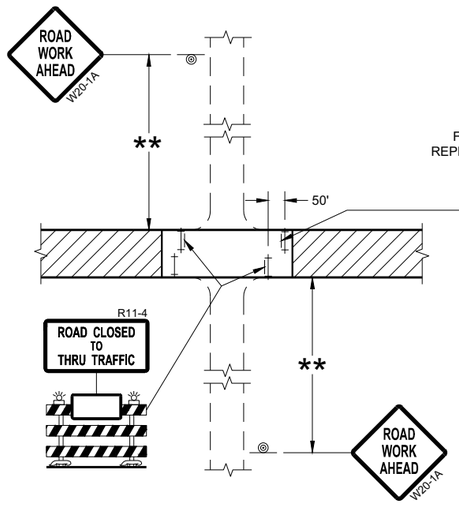
SDD 15C02 - 09f



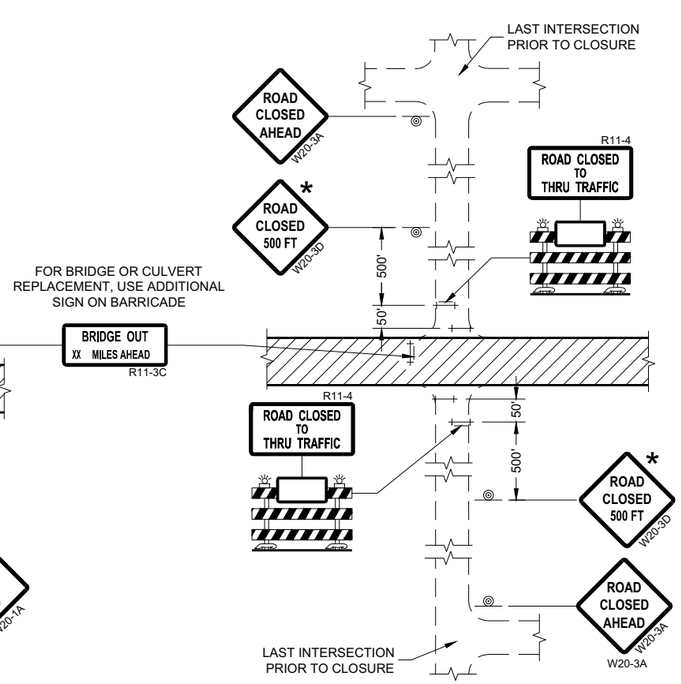
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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.

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C03 - 05

SDD 15C03 - 05

GENERAL NOTES

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

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

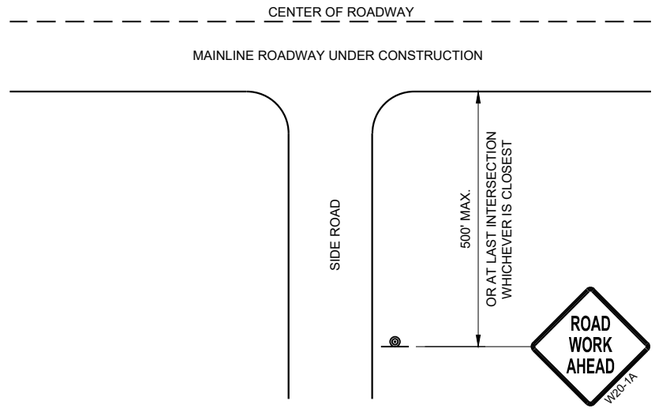
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

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



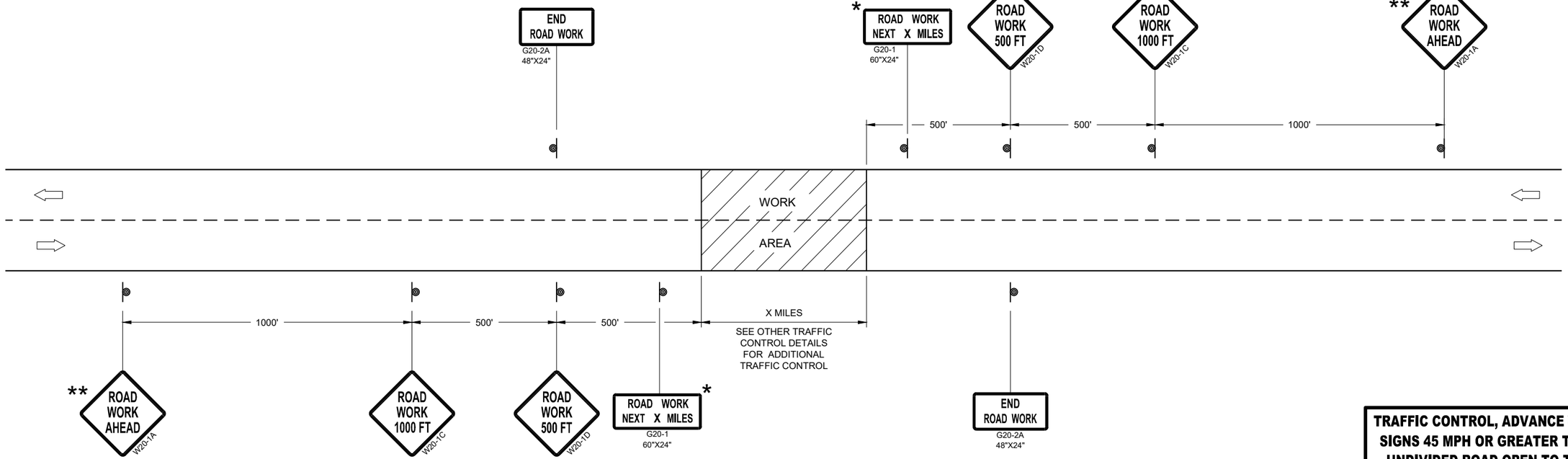
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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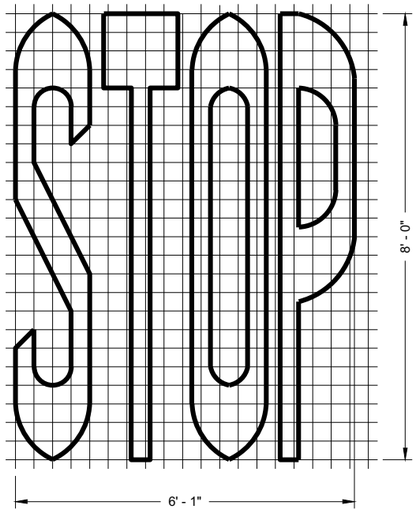
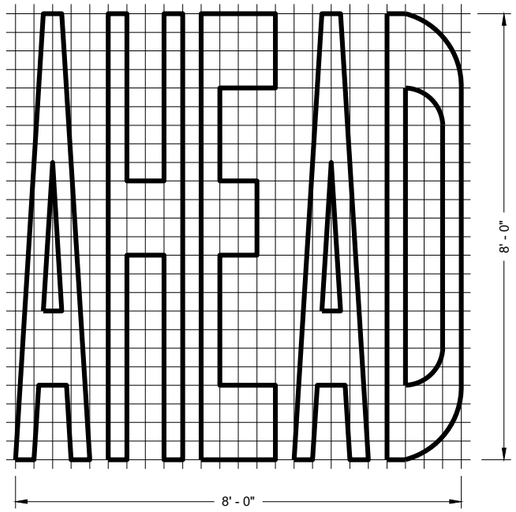
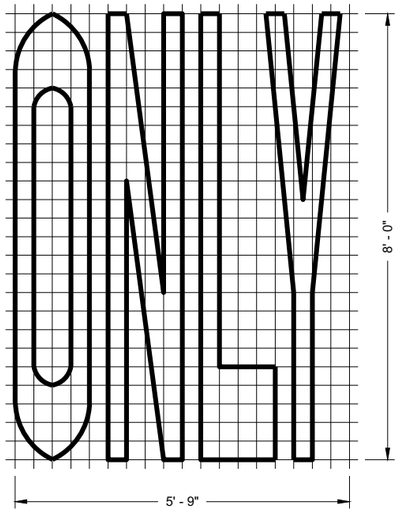
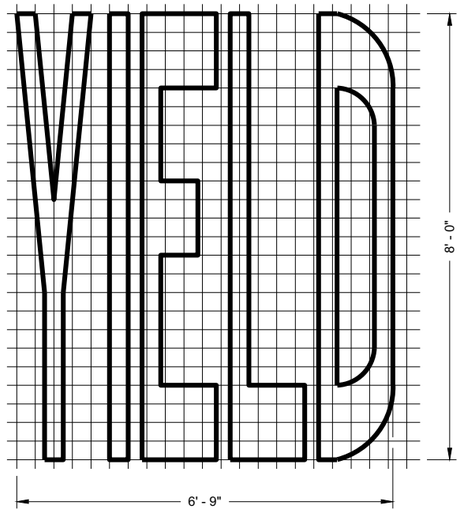
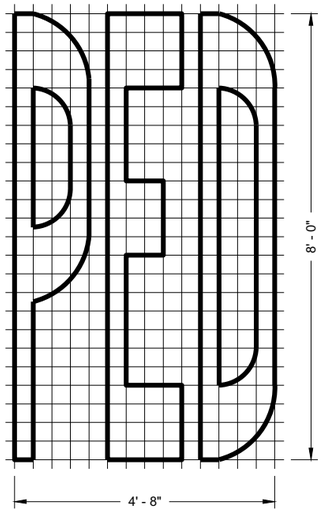
SDD 15C04 - 05



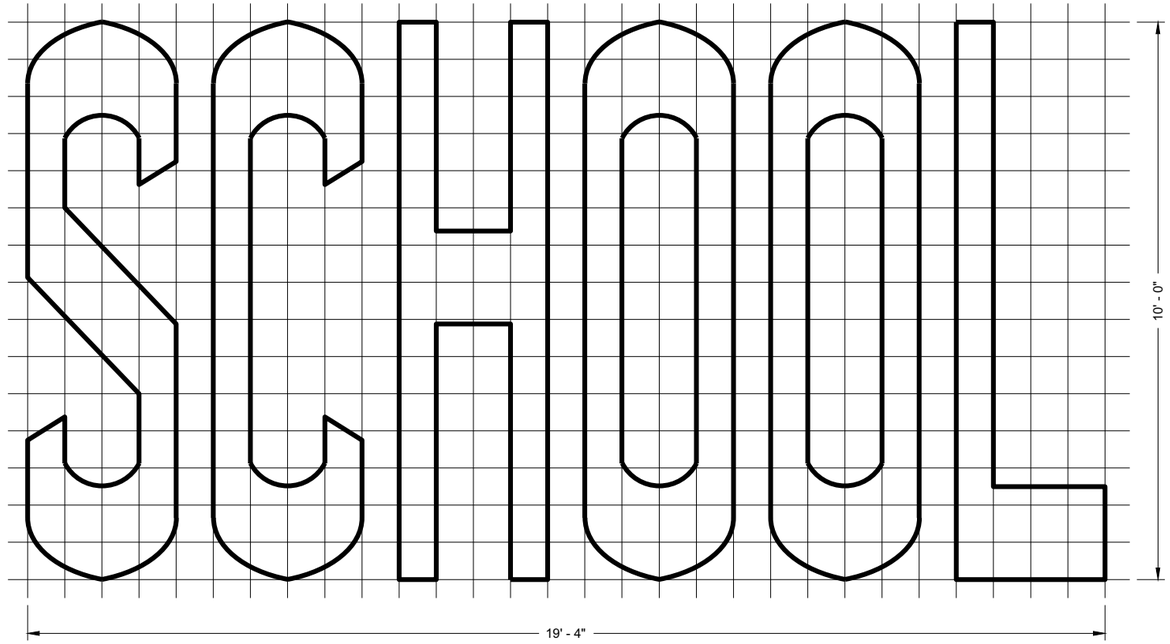








SINGLE LANE



TWO - LANE

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 WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

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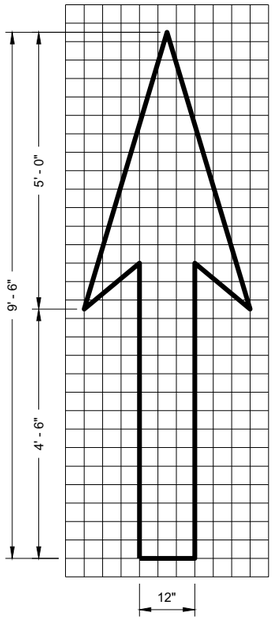
SDD 15C07 - 15b

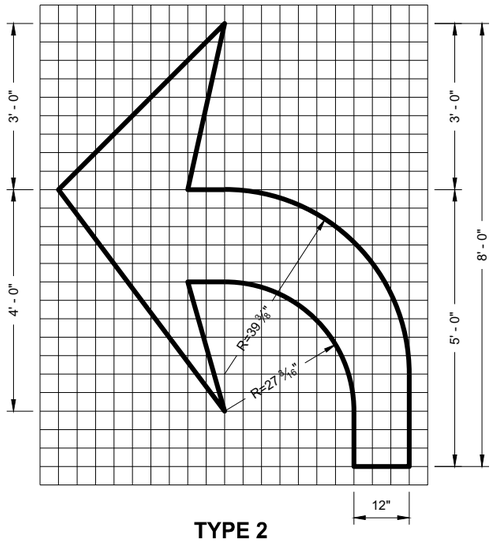
SDD 15C07 - 15b

GENERAL NOTES

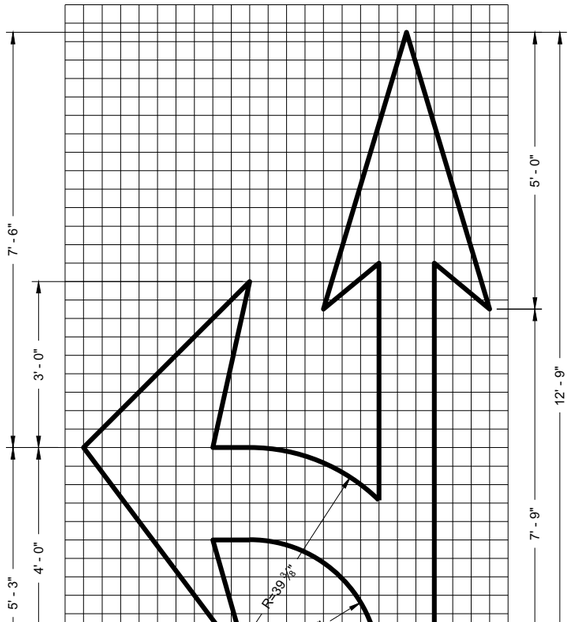
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



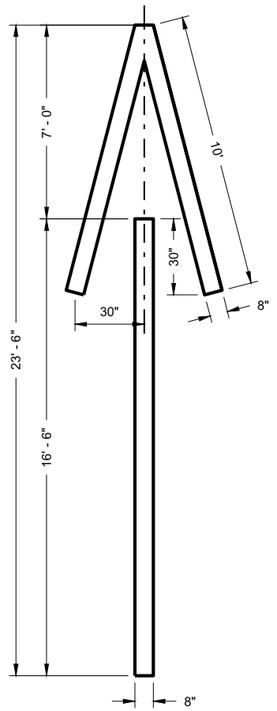
TYPE 1



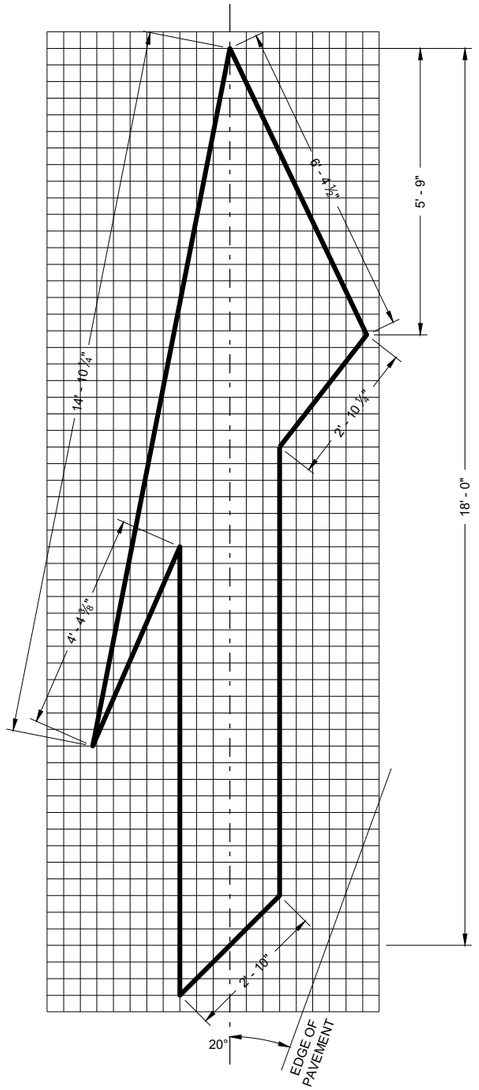
TYPE 2



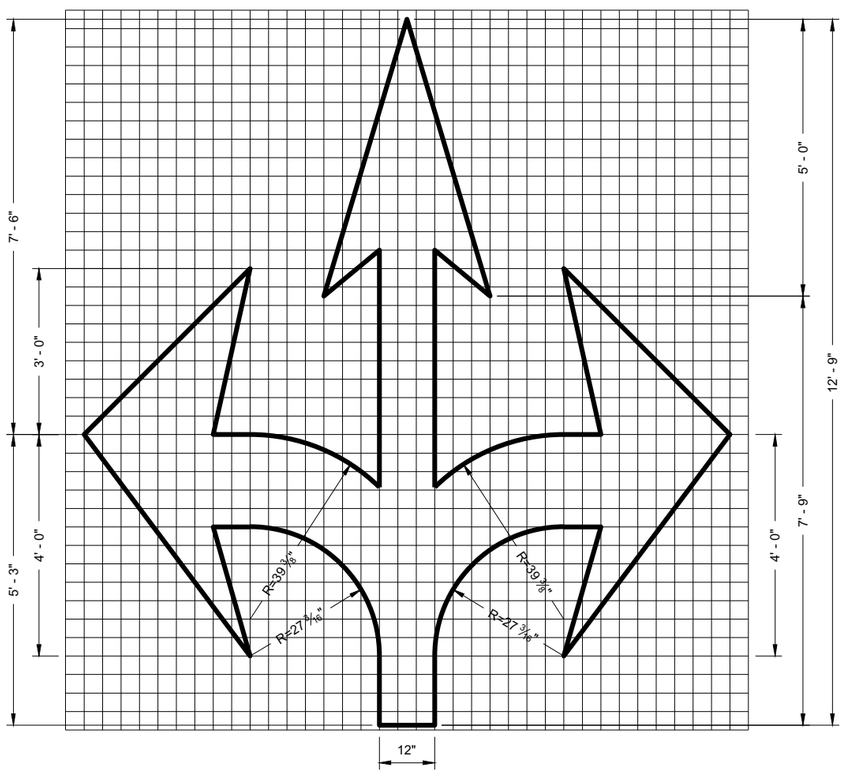
TYPE 3



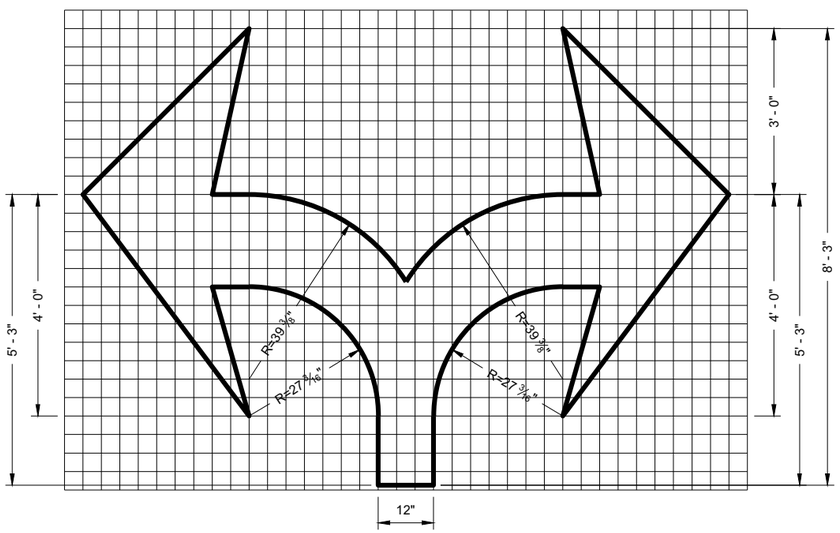
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

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SDD 15C07 - 15c

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SDD 15C07 - 15c

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

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

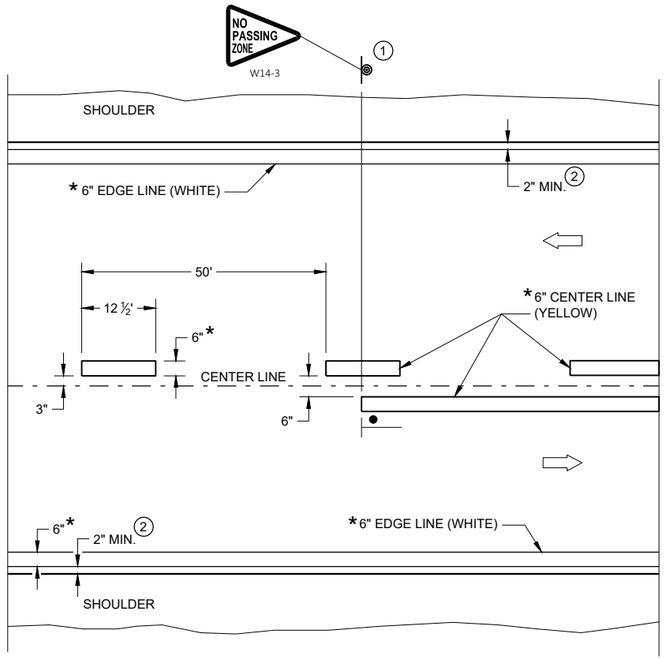
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

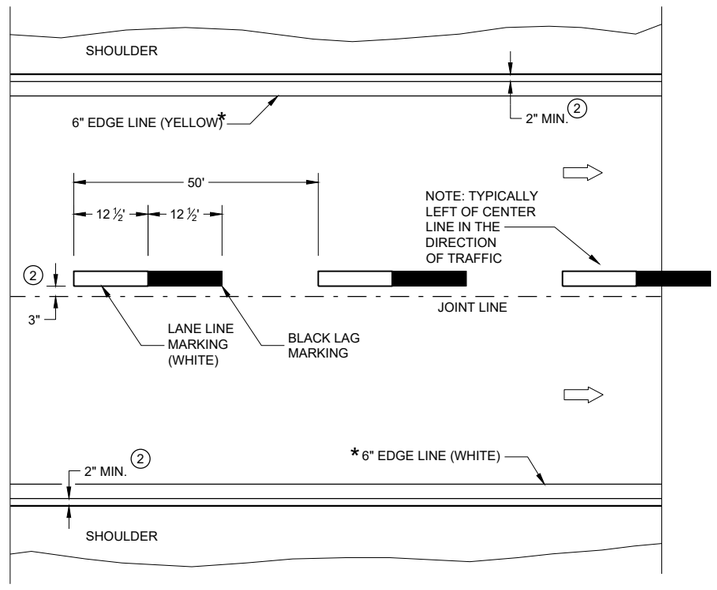
"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M
ENGINEER

FHWA

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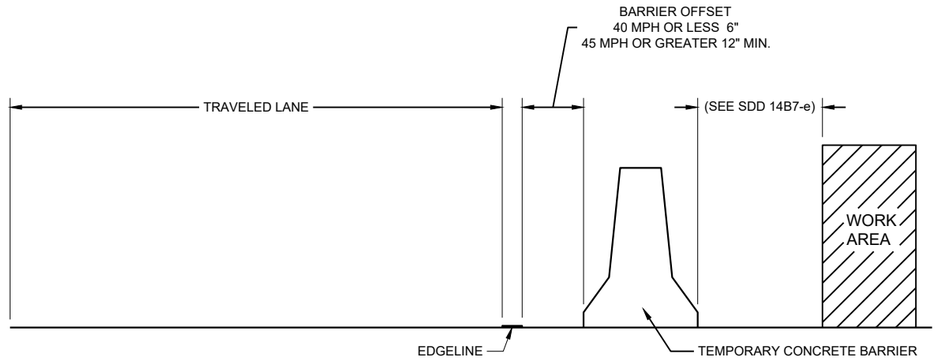
SDD 15C08-23a



TEMPORARY BARRIER OFFSET FROM EDGELINE

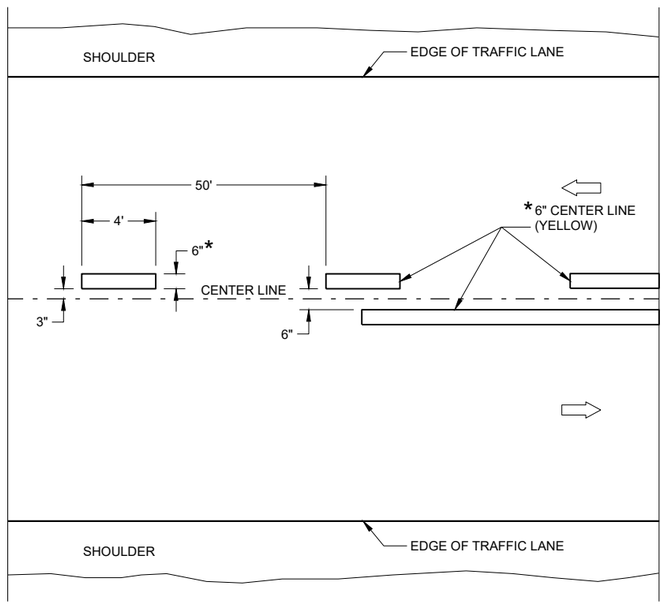
GENERAL NOTES

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

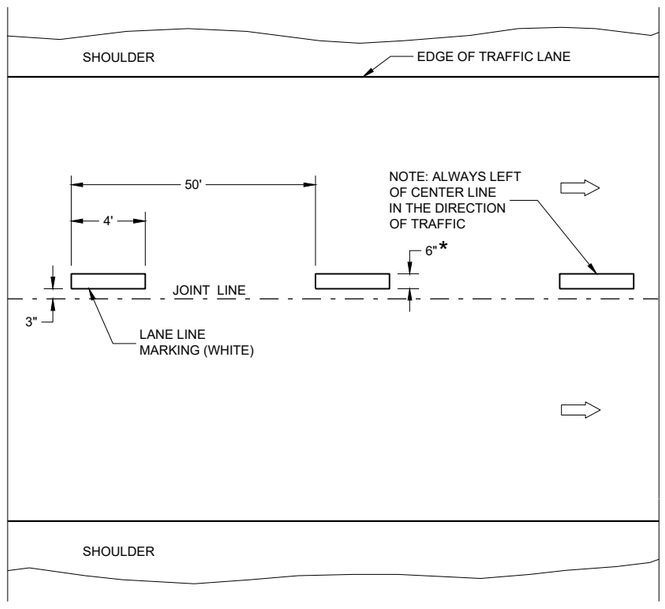
LEGEND

⇨ DIRECTION OF TRAFFIC

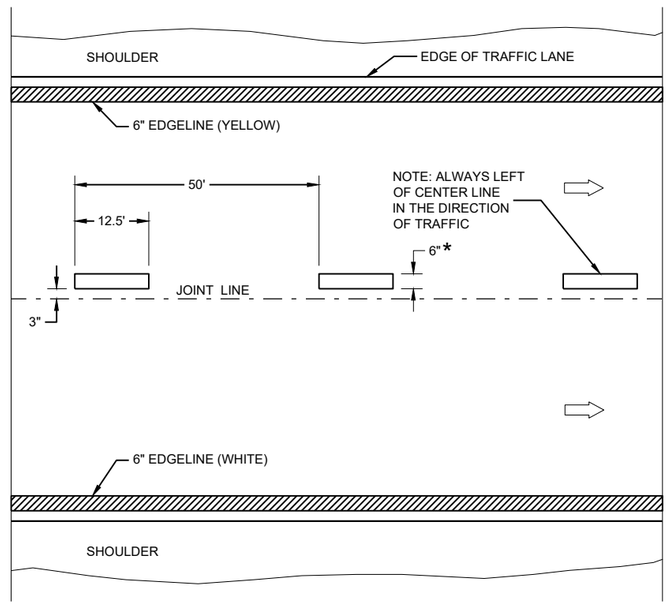
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Jeannie Silver — STATEWIDE SIGNING AND M ENGINEER

FHWA

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SDD 15C08-23b

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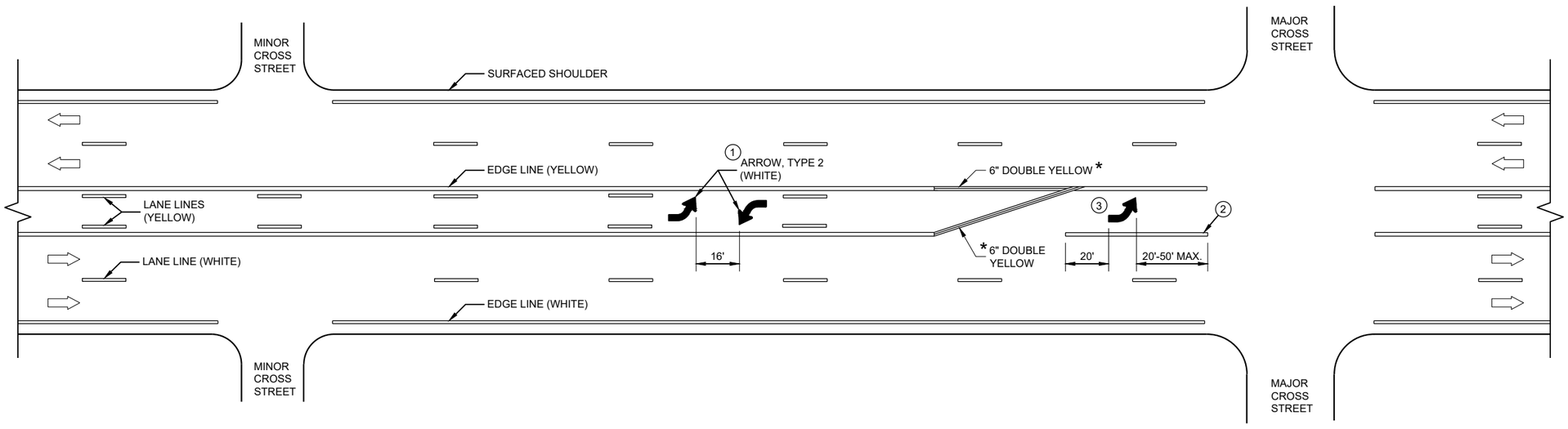
SDD 15C08-23b

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 10" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



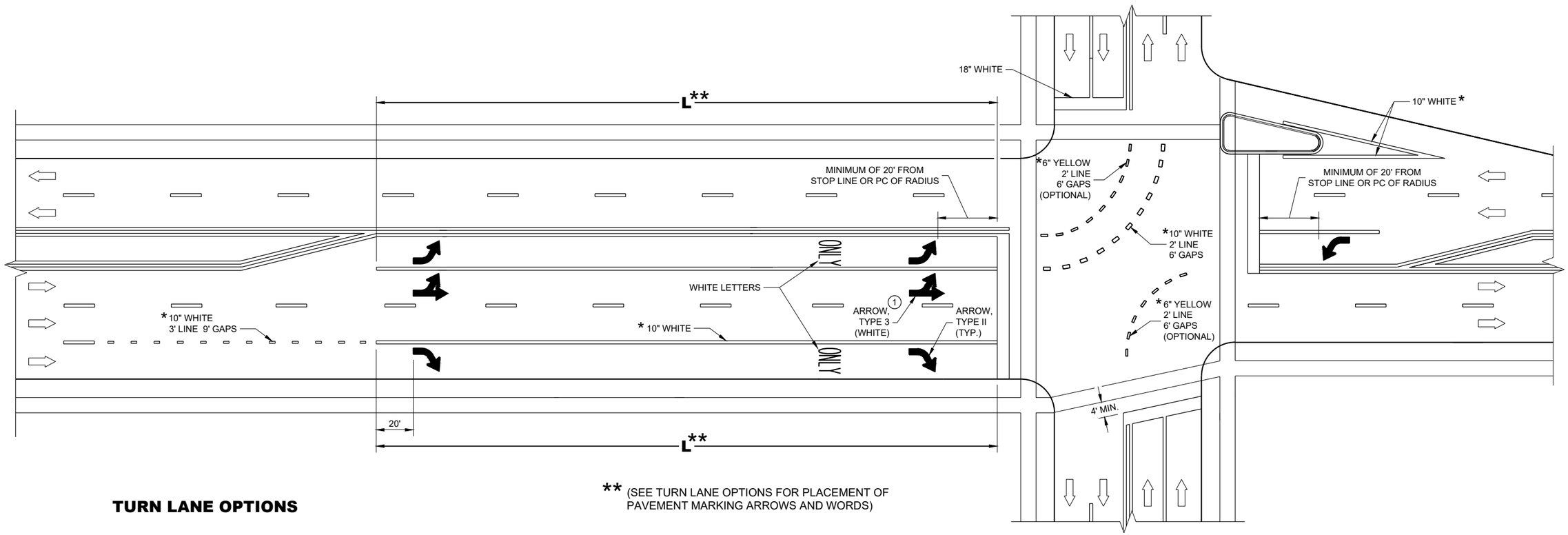
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA· 180

SDD 15C08-23c

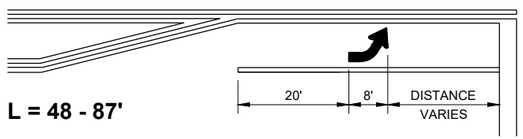
6



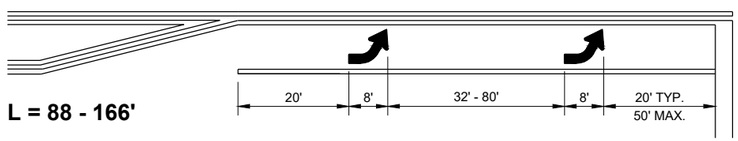
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

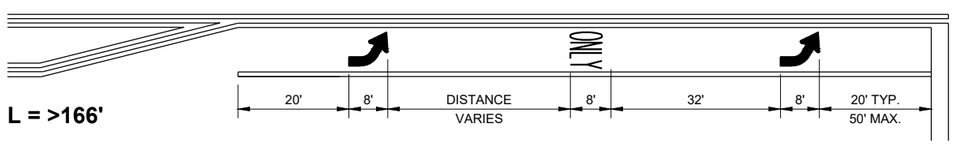
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

(1) QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

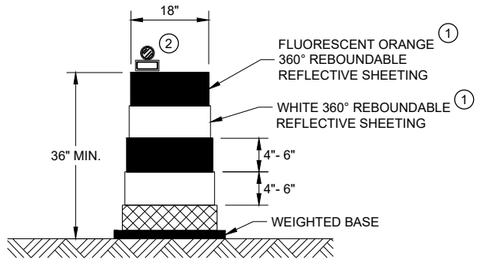
PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 15C08-23d

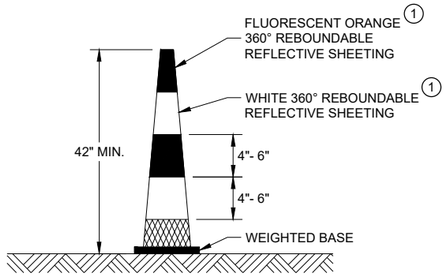
GENERAL NOTES

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.



DRUM

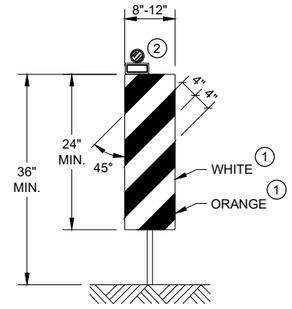
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

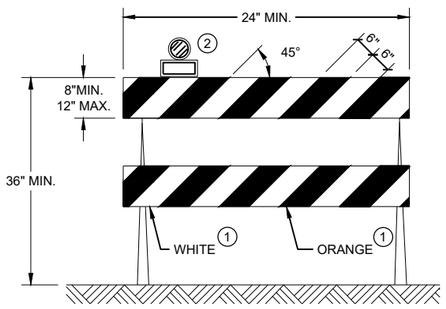
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



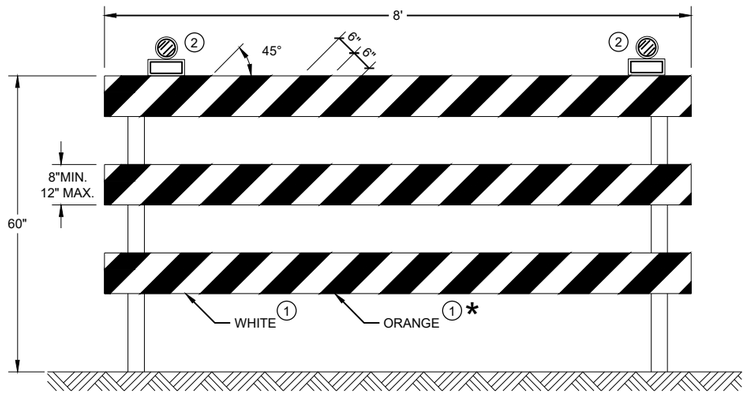
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III 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
November 2022
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C11 - 10b

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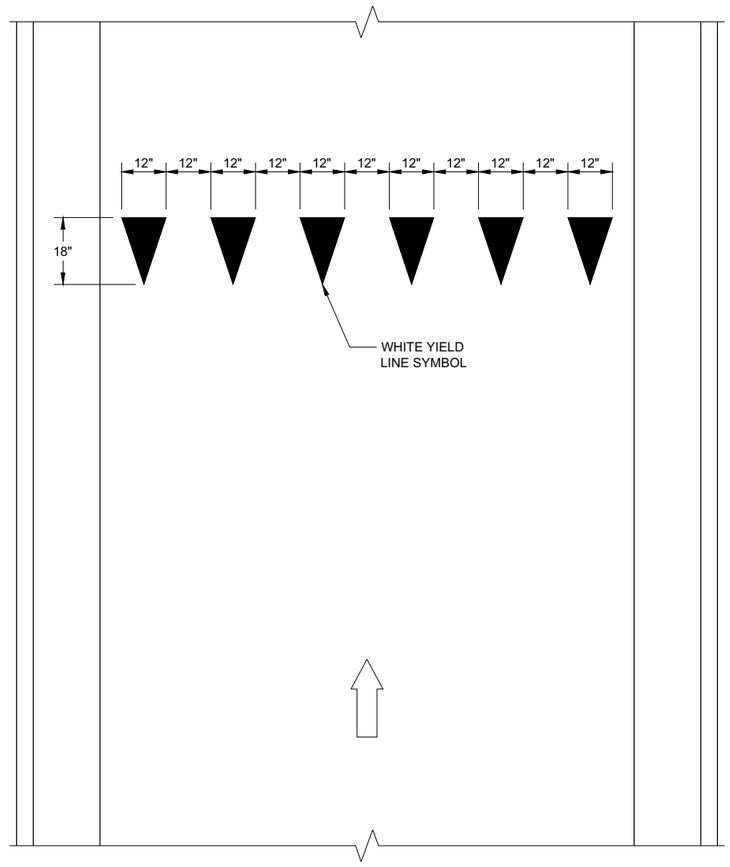
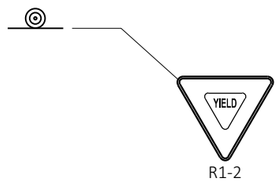
SDD 15C11 - 10b



YIELD LINE



R1-2

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAVEL

YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-81-2016
DATE

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

FHWA

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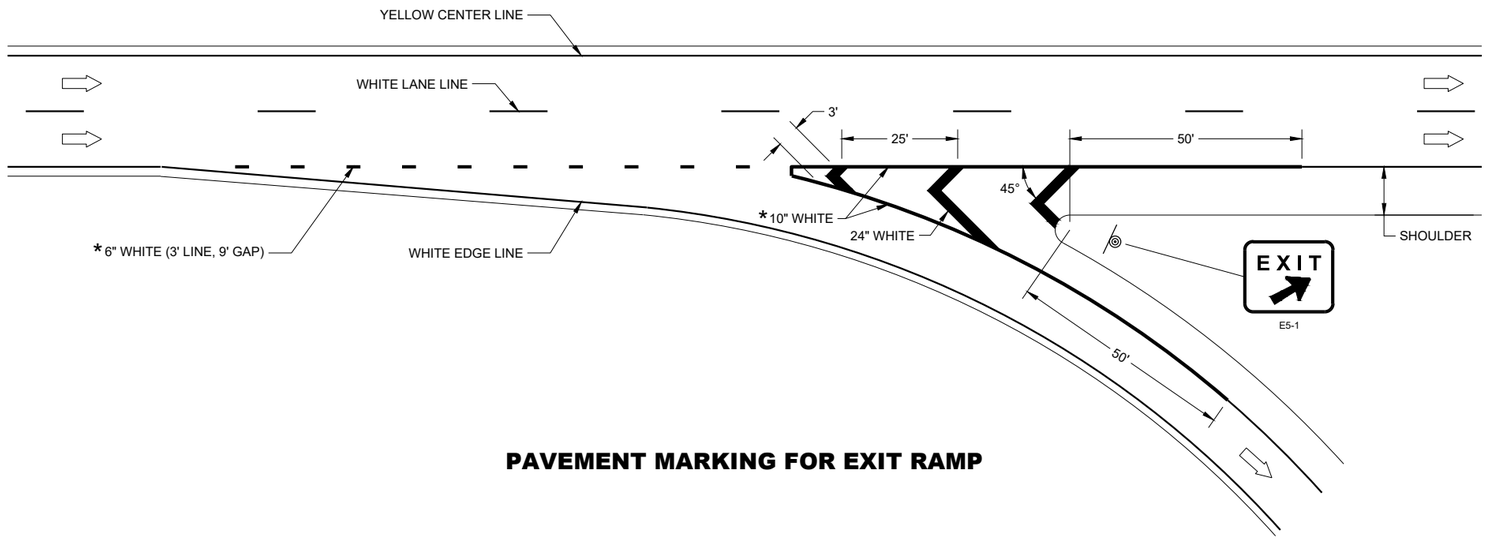
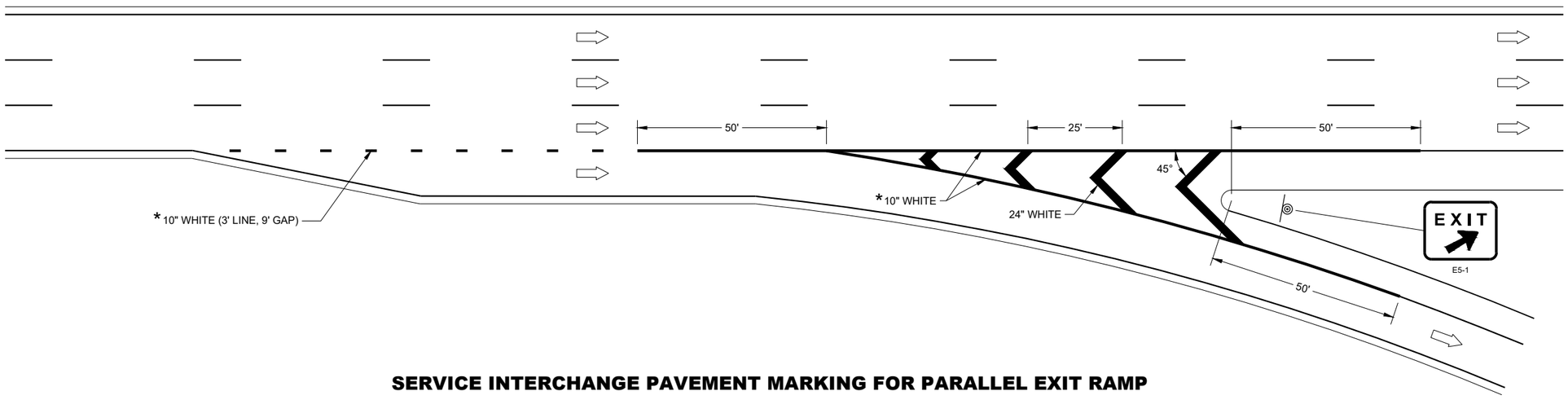
SDD 15C20 - 02

SDD 15C20 - 02



PAVEMENT MARKING FOR EXIT RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAVEL

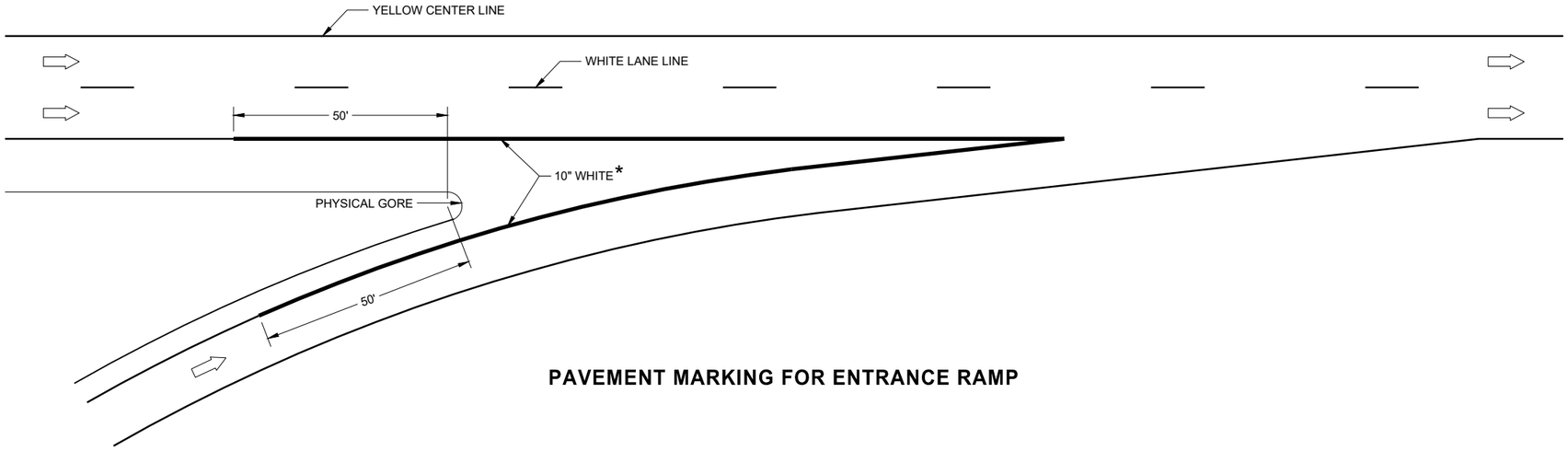
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING, EXIT RAMP AND PARALLEL EXIT RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

SDD 15C31-05a



PAVEMENT MARKING FOR ENTRANCE RAMP

GENERAL NOTES

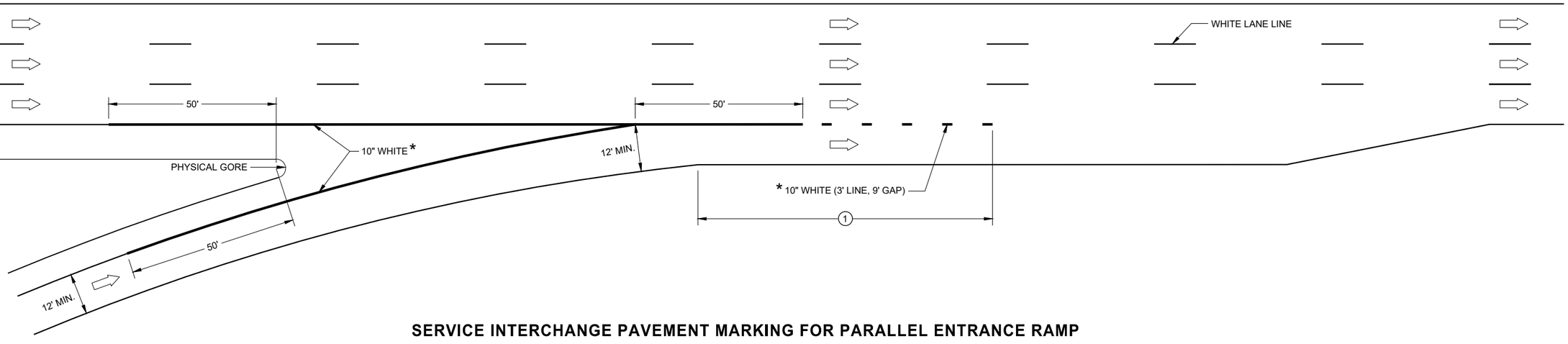
PLACE GROOVE 3 INCHES LEFT OF JOINT.

(1) ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

LEGEND

DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

PAVEMENT MARKING, ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

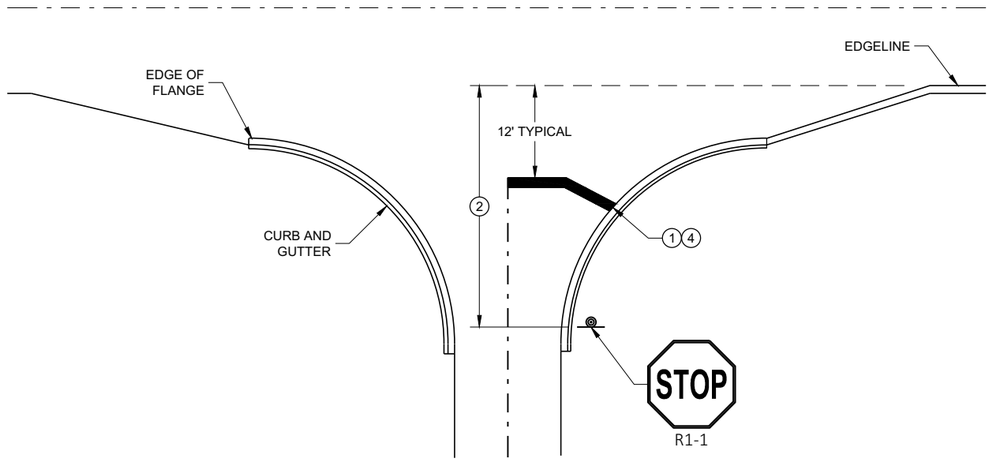
6

SDD 15C31-05c

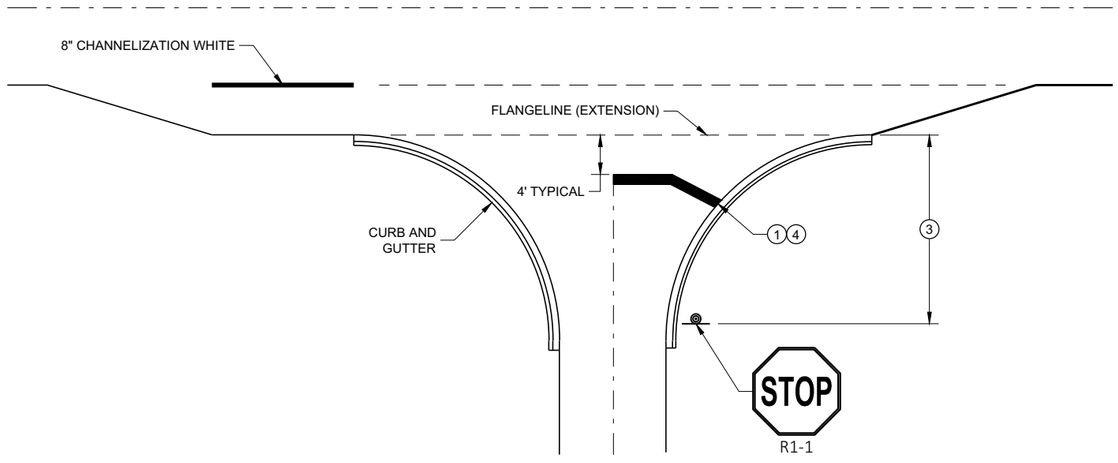
GENERAL NOTES

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

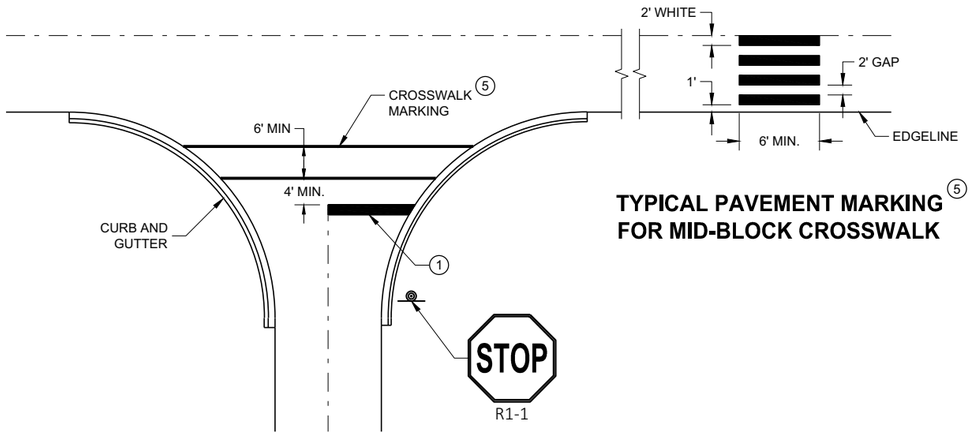
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

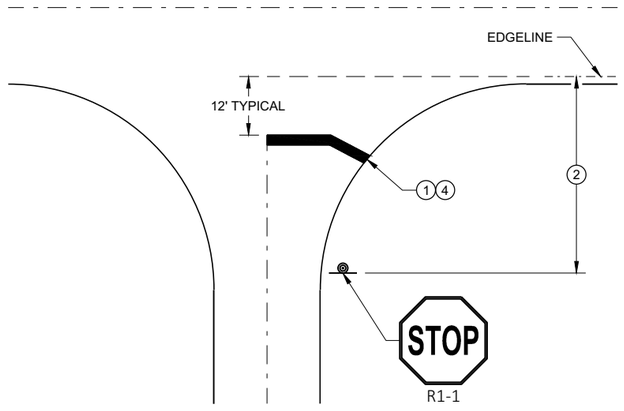


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

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SDD 15C33 - 04

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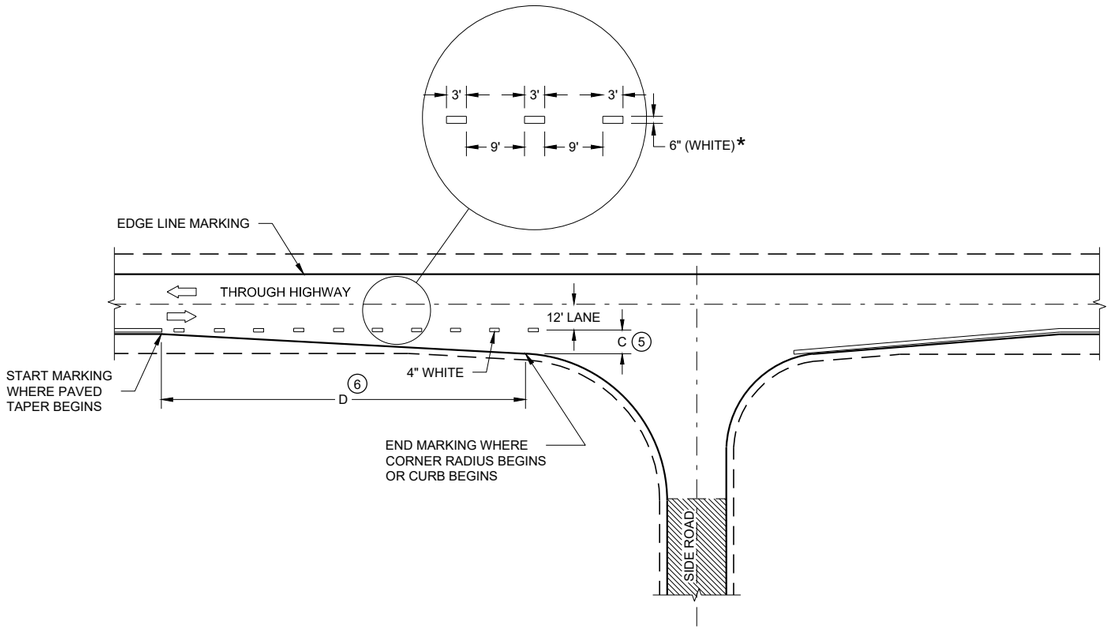
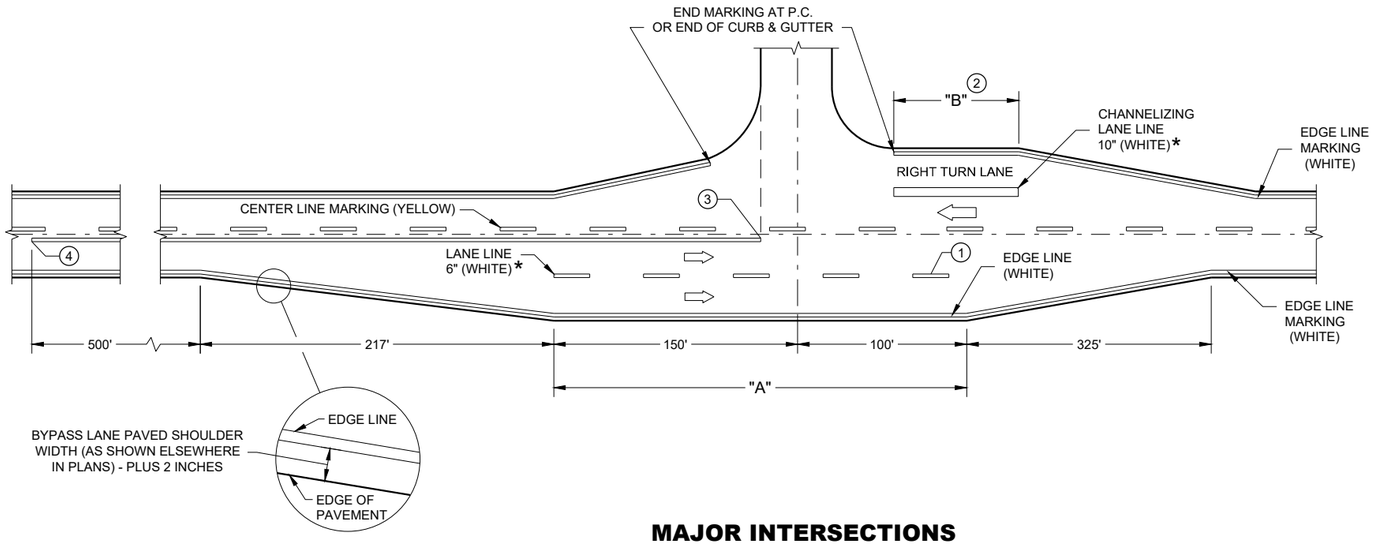
SDD 15C33 - 04



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

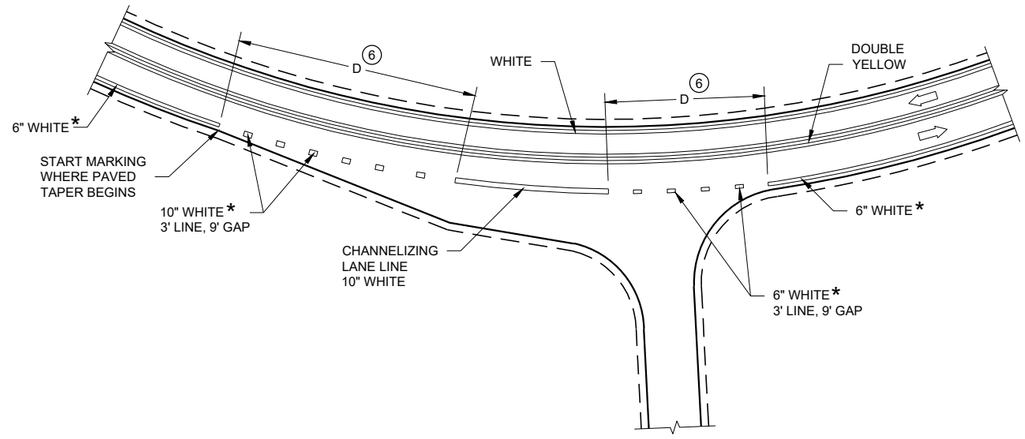
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
5. WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
6. WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

SDD 15C35-06a

6

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 DESIRABLE) CLEARANCE TO EXISTING SIGNS.

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

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

"WO" 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 OR AS APPROVED BY THE ENGINEER.

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 AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

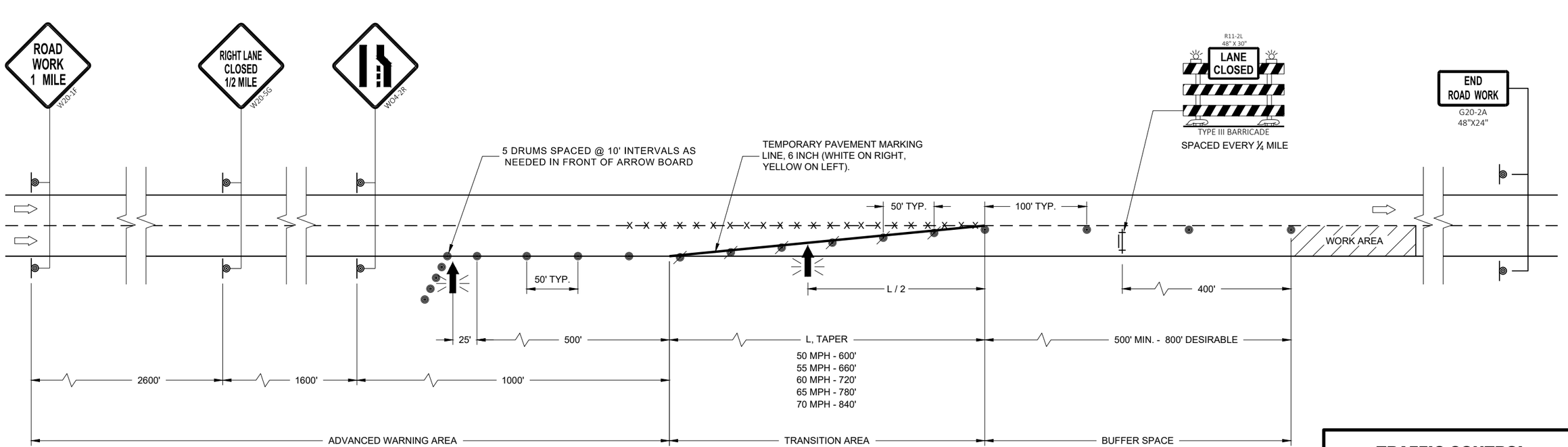
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE 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 ONE HALF 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.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

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



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D12 - 11a

6

SDD 15D12 - 11a

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

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.

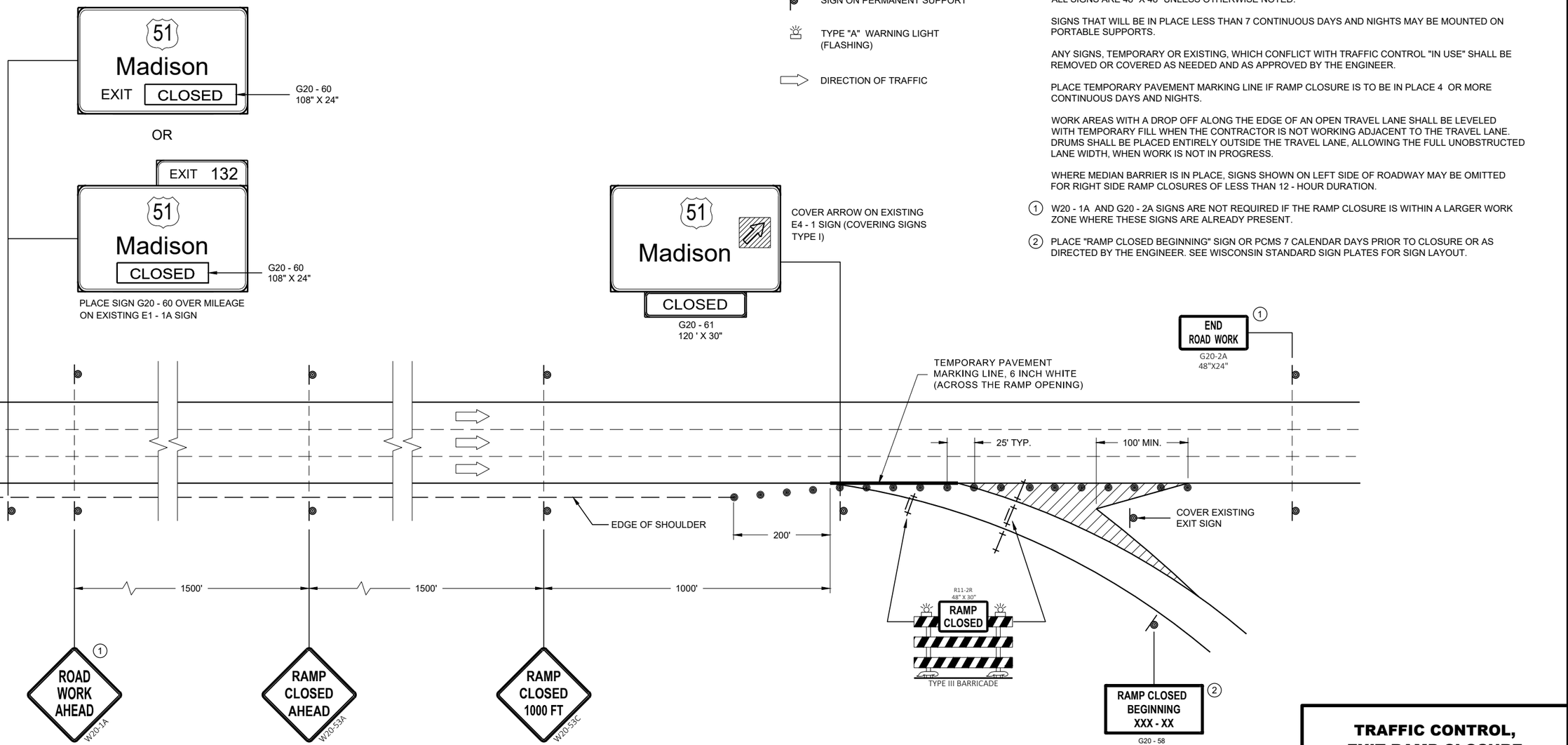
PLACE TEMPORARY PAVEMENT MARKING LINE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF 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 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.

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

(2) PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



OR

PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

SDD 15D16-06

LEGEND

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

GENERAL NOTES

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

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

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE 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.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON TEMPORARY SUPPORTS.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

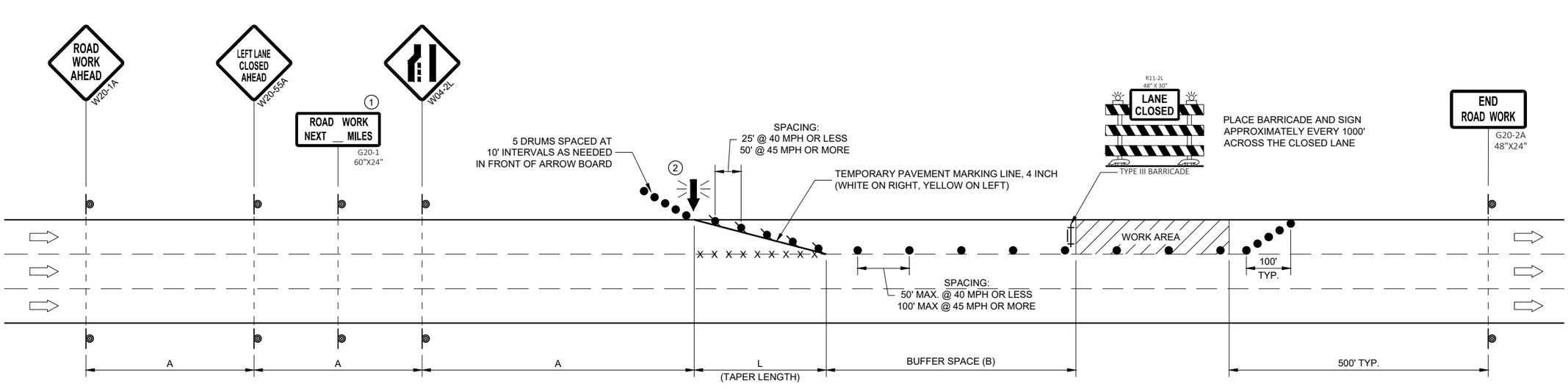
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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.

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

(2) WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'

TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

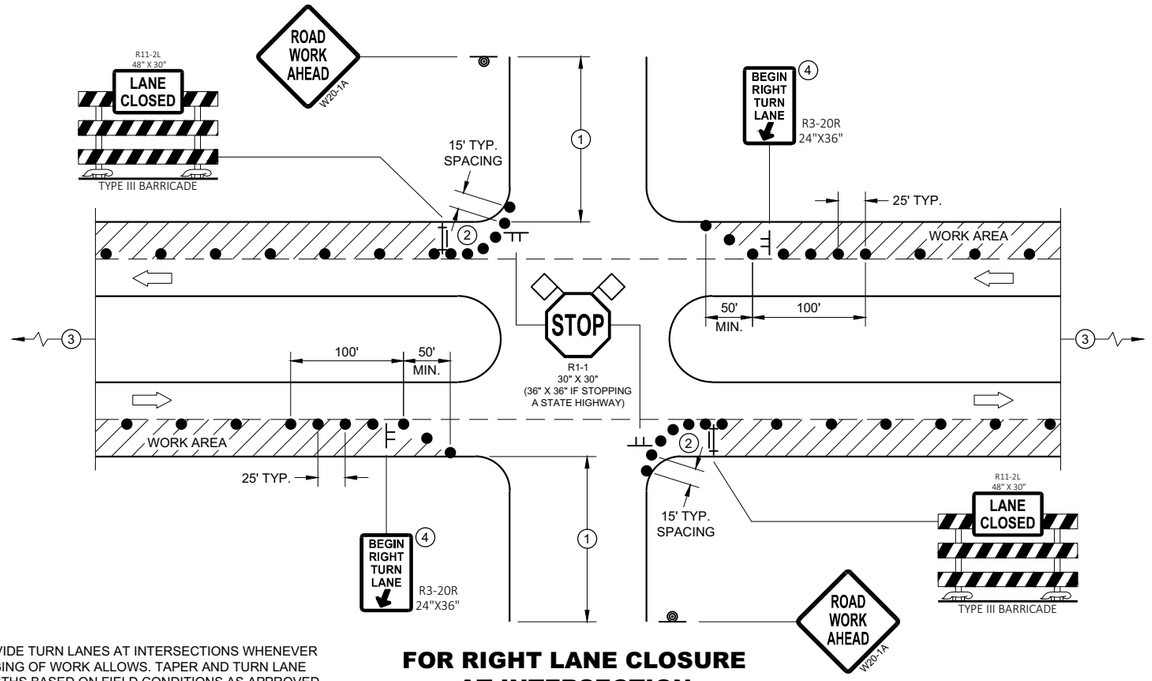
FHWA

6

SDD 15D20 - 06a

6

SDD15D20 - 06a



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE 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.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

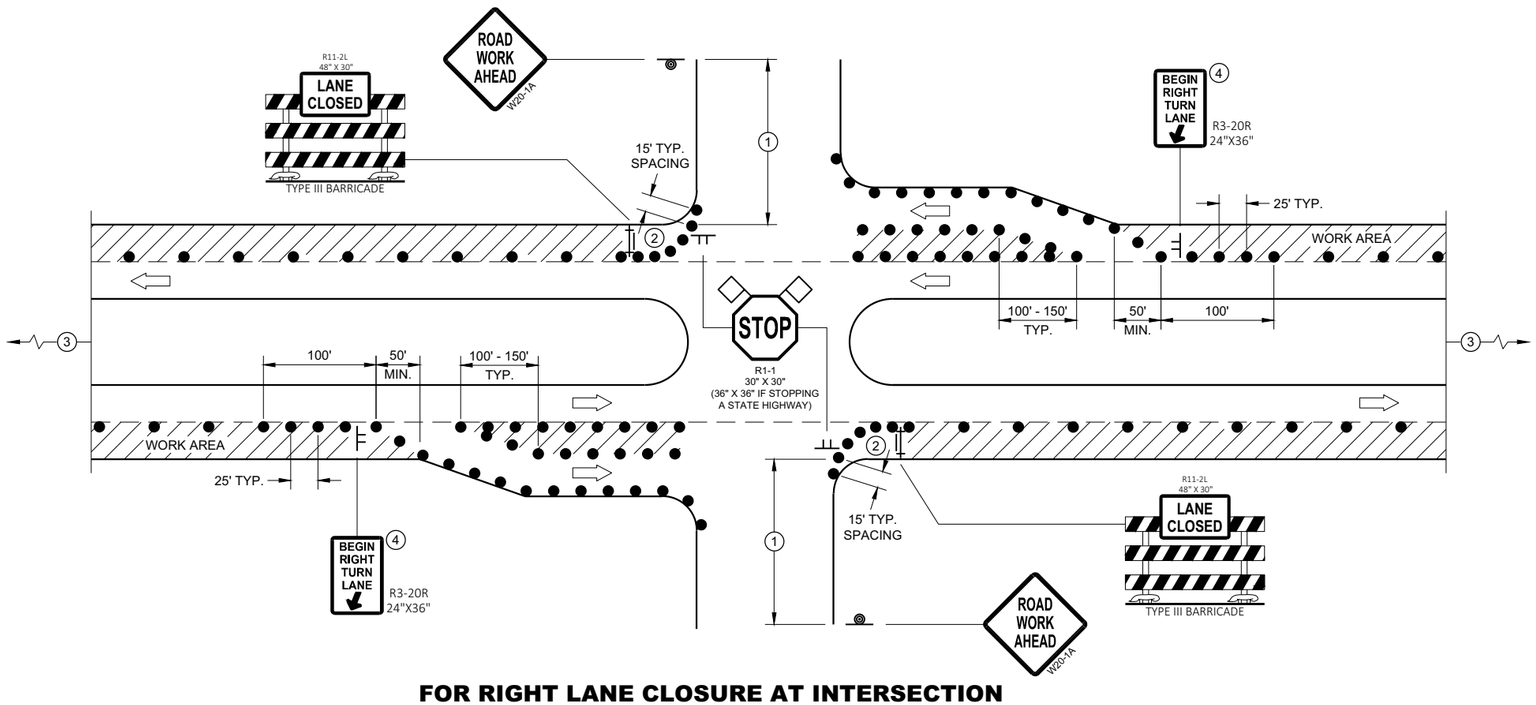
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

(1) 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.

(2) ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

(4) MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

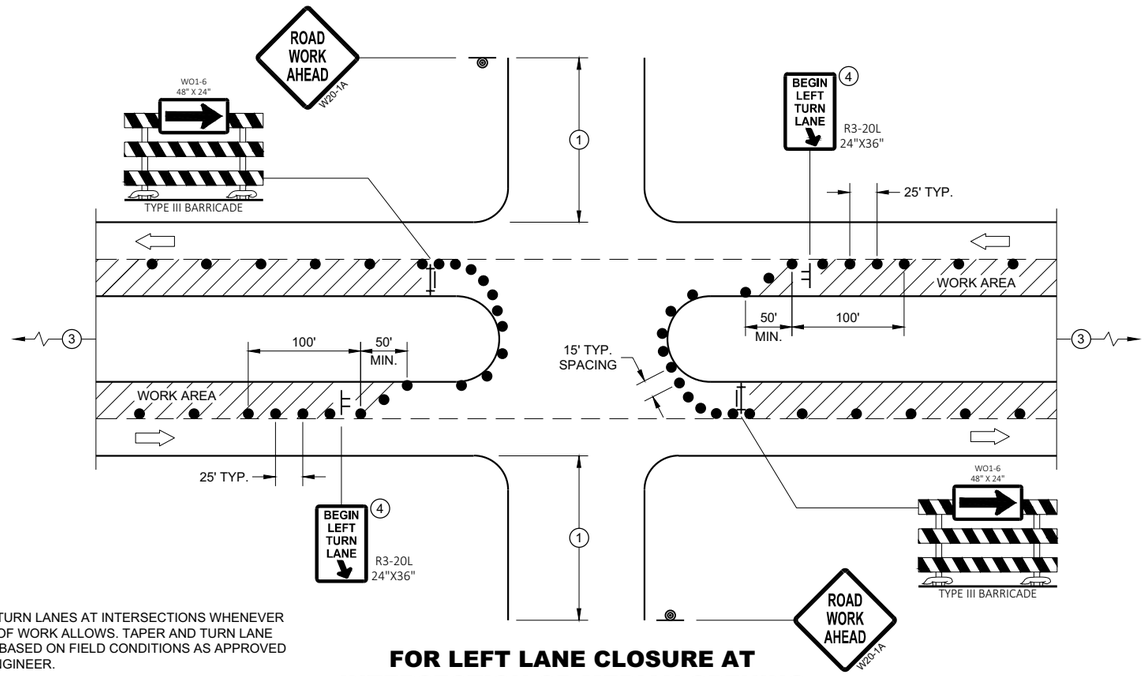
- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD15D21 - 07a



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE 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.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

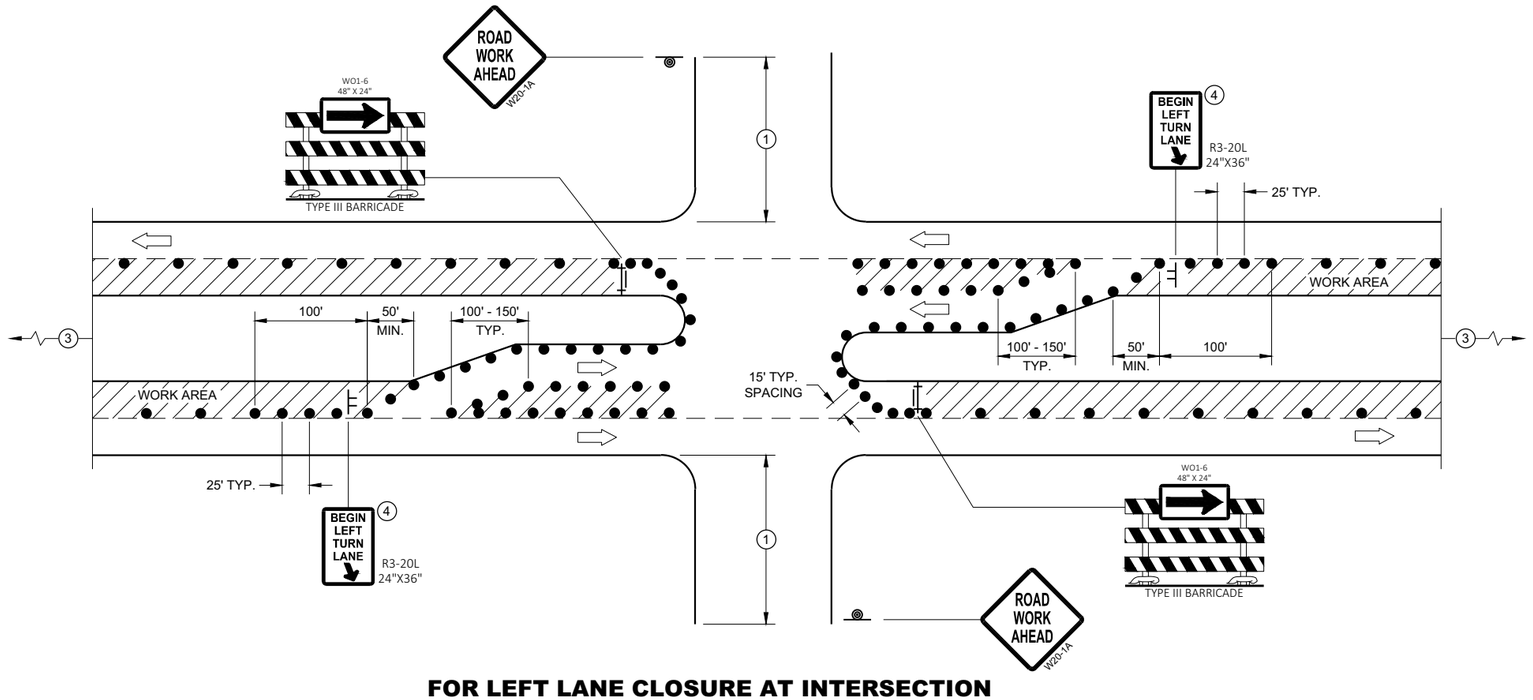
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

(1) 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.

(2) ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

(4) MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D21 - 07b

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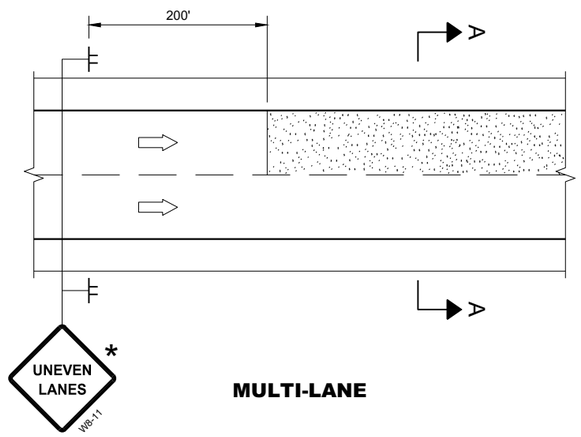
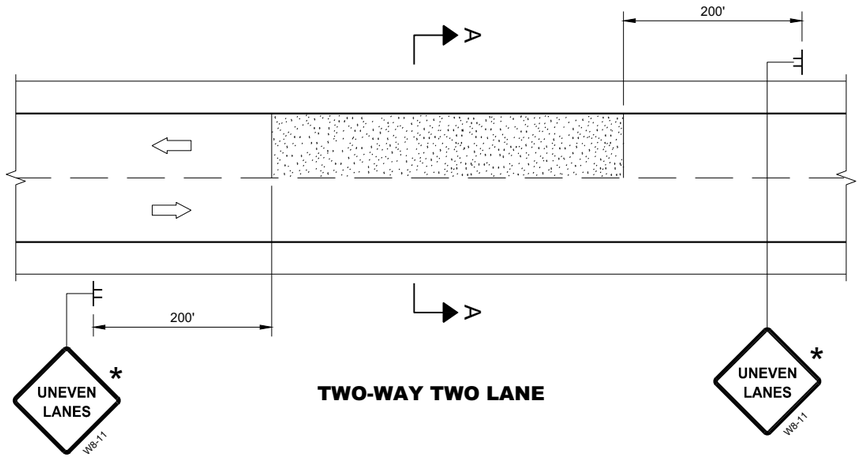
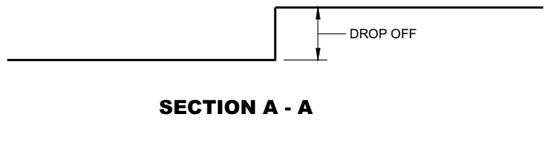
SDD 15D21 - 07b



MULTI-LANE

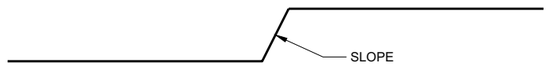


TWO-WAY TWO LANE

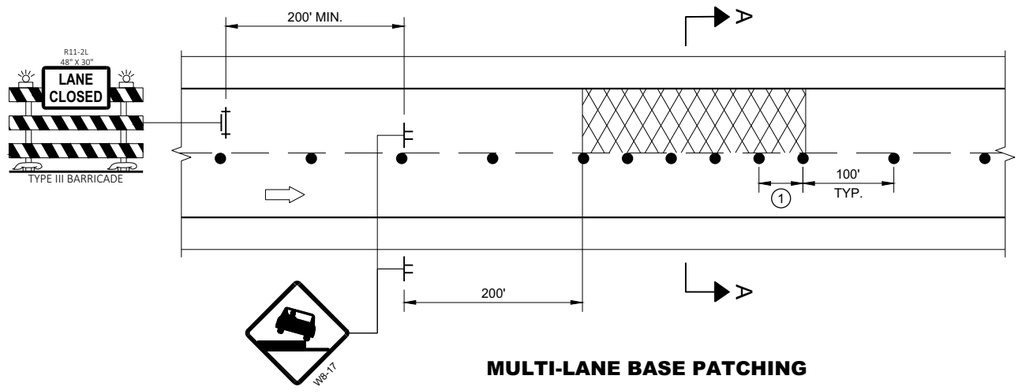


SECTION A - A

OR

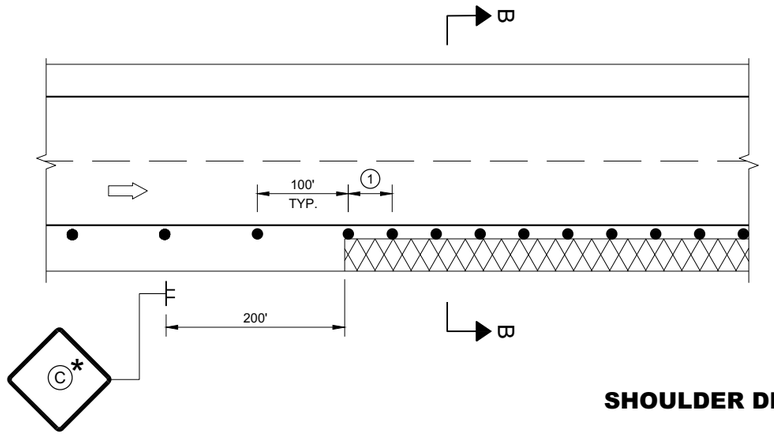


SECTION A - A

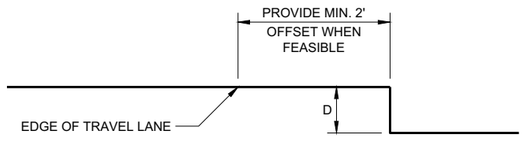


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
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

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 EVERY ENTRANCE RAMP.

(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D39 - 02

6

SDD 15D39 - 02

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)					BUFFER SPACE (B) FEET
		10	11	12	13	14	
25	200	52	57	63	68	73	55
30	200	75	83	90	98	105	85
35	350	102	112	123	133	143	120
40	350	133	147	160	173	187	170
45	500	225	248	270	293	315	220

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 DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" 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 ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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 AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

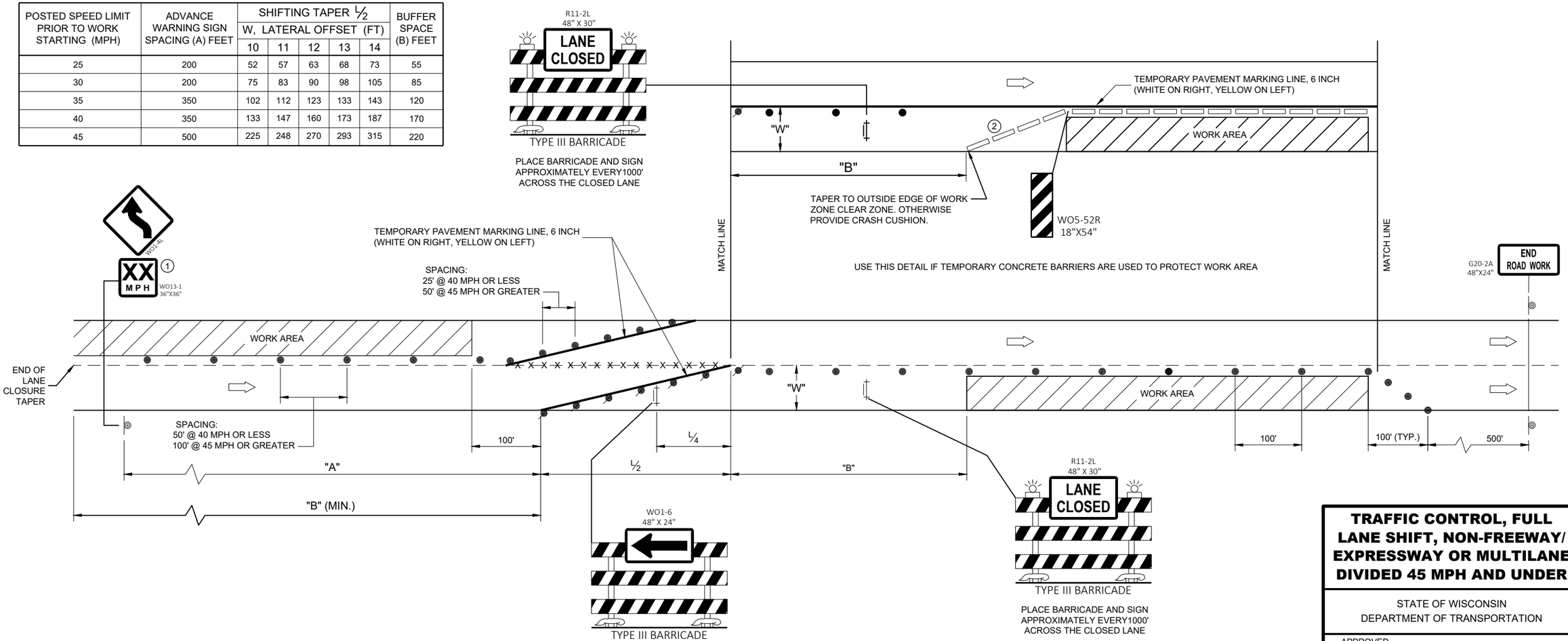
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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 SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

(1) USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

(2) BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER



TRAFFIC CONTROL, FULL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D40-05a

6

SDD 15D40-05a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

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 DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" 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 ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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 AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS 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.

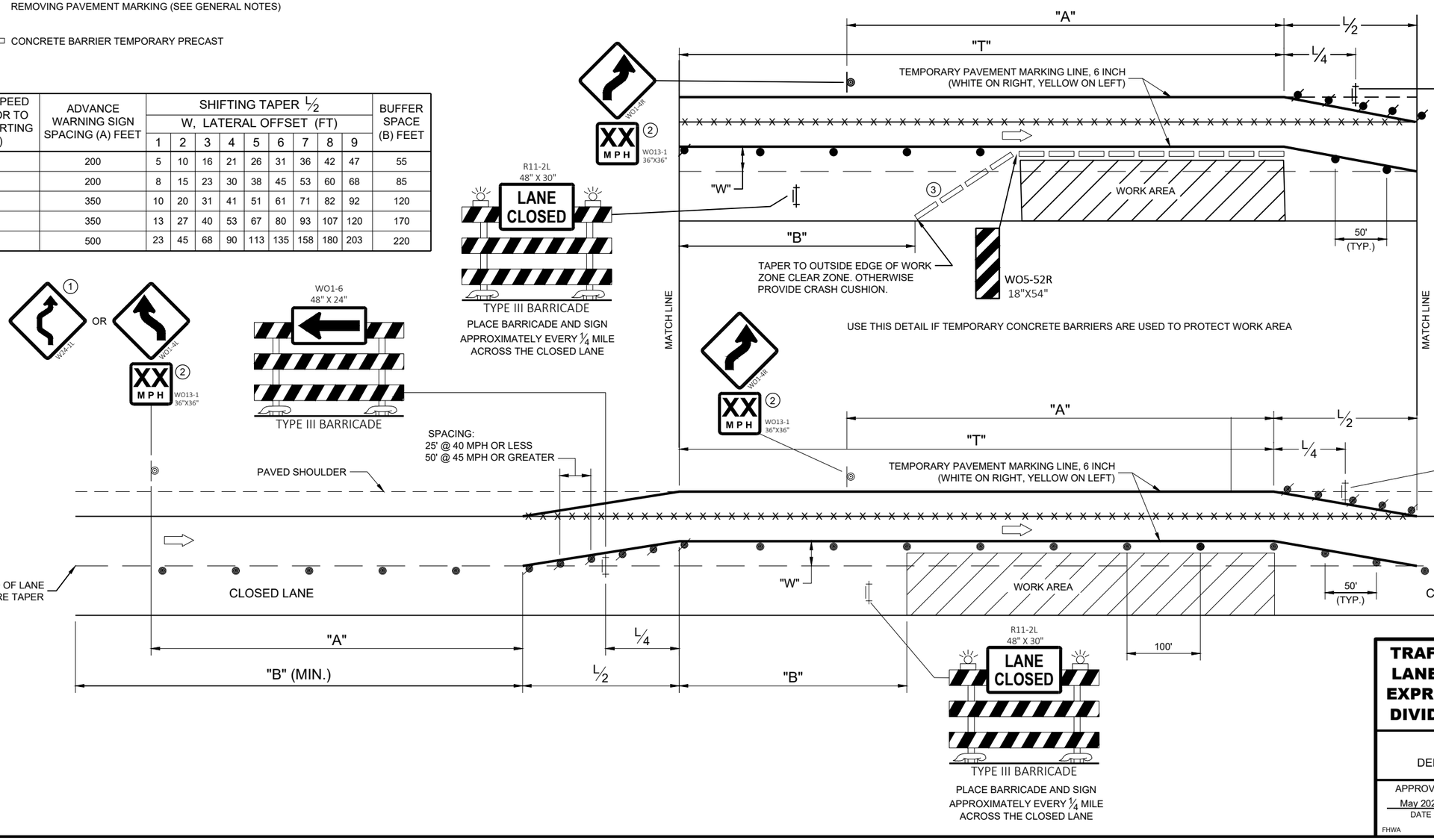
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP 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.

(1) USE ONLY WHEN T<600', OMIT WO1-4R.

(2) IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

(3) BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)									BUFFER SPACE (B) FEET
		1	2	3	4	5	6	7	8	9	
25	200	5	10	16	21	26	31	36	42	47	55
30	200	8	15	23	30	38	45	53	60	68	85
35	350	10	20	31	41	51	61	71	82	92	120
40	350	13	27	40	53	67	80	93	107	120	170
45	500	23	45	68	90	113	135	158	180	203	220



TRAFFIC CONTROL, PARTIAL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D40-05c

6

SDD 15D40-05c

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)								
	1	2	3	4	5	6	7	8	9
50	25	50	75	100	125	150	175	200	225
55	28	55	83	110	138	165	193	220	248
60	30	60	90	120	150	180	210	240	270
65	33	65	98	130	163	195	228	260	293
70	35	70	105	140	175	210	245	280	315

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 DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" 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 ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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.

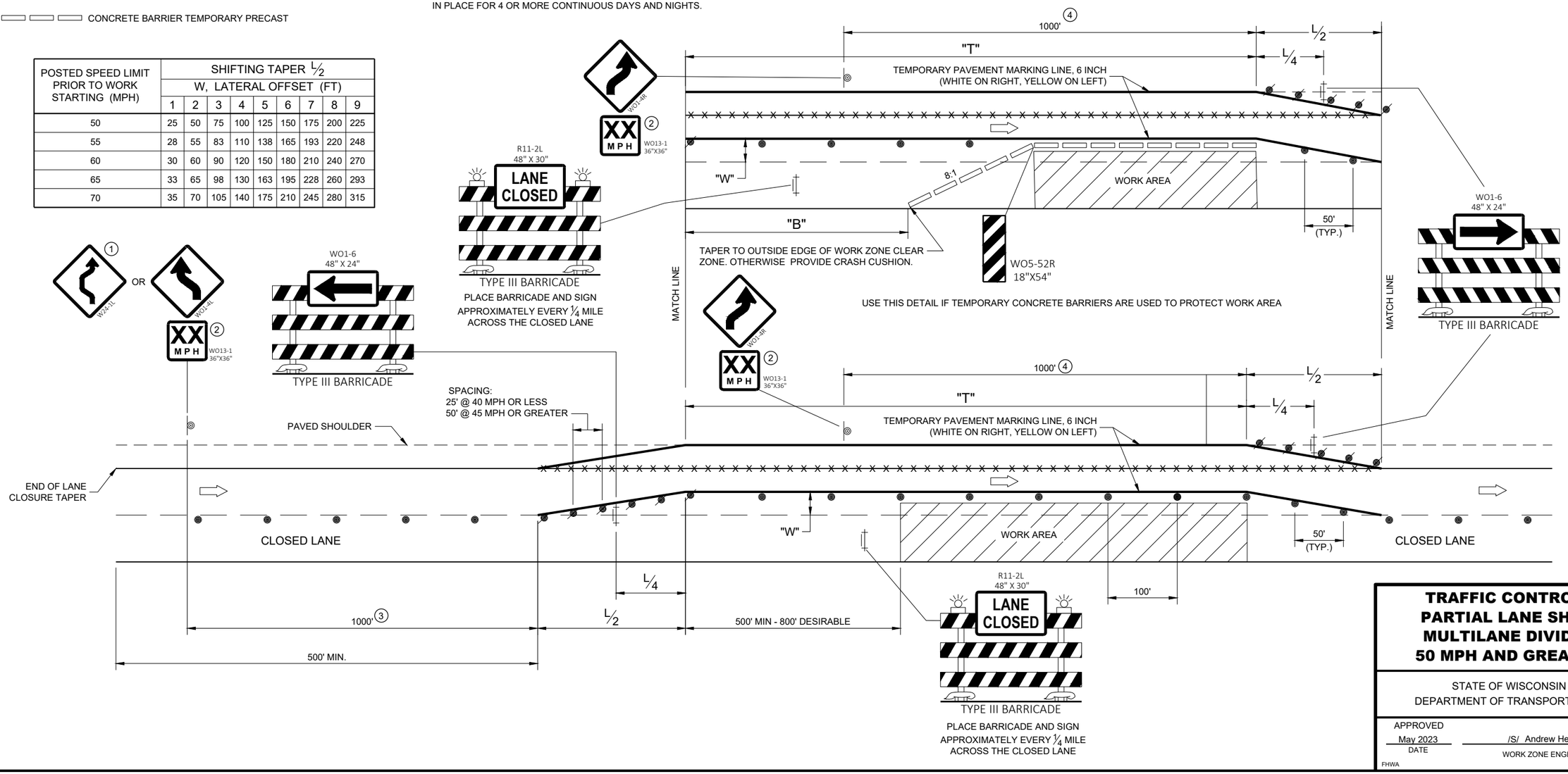
REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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 SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

1. USE ONLY WHEN T<600', OMIT WO1-4R.
2. IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
3. IF THE BEGINNING OF LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE LANE CLOSURE TAPER.
4. IF THE BEGINNING OF THE SECOND LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF THE FIRST LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE FIRST LANE CLOSURE TAPER.



TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D40-05d

6

SDD 15D40-05d

LEGEND

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

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)					
		3	4	5	6	7	8
25	200	10	14	17	21	24	28
30	200	15	20	25	30	35	40
35	350	20	27	34	40	47	54
40	350	26	35	44	53	62	70
45	500	45	59	74	89	104	119
50	500	50	66	83	99	116	132
55	500	54	73	91	109	127	145

GENERAL NOTES

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"x36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

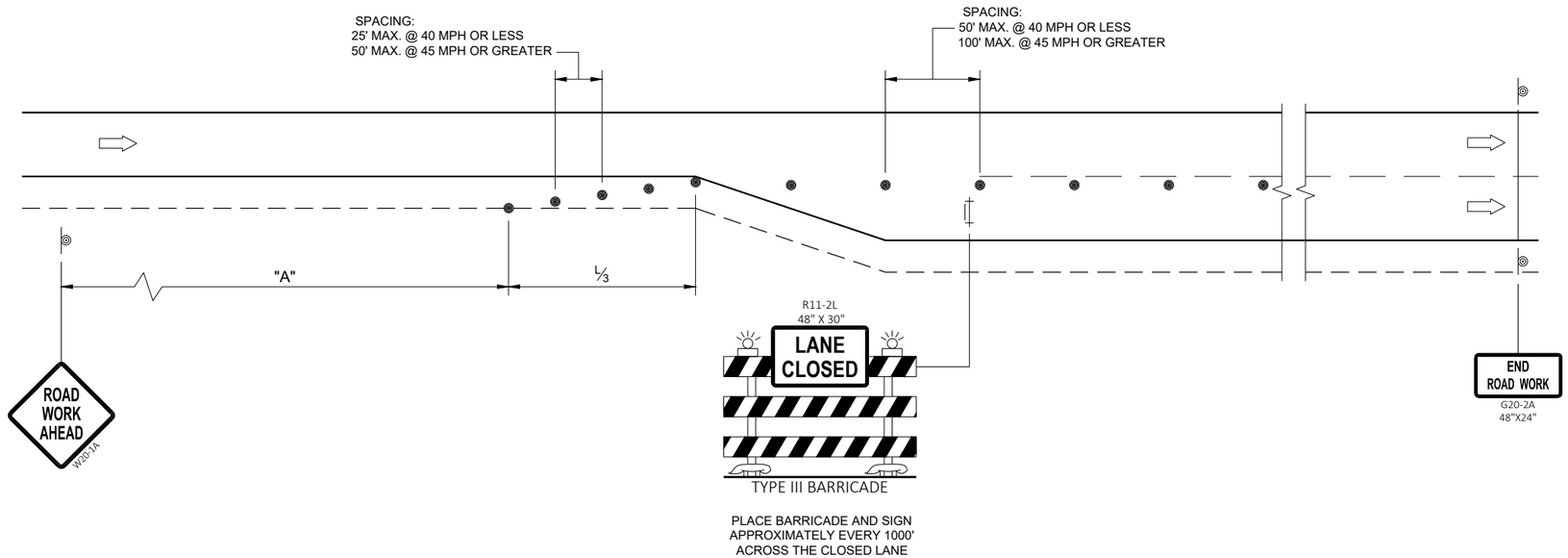
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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.

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

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

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



PLACE BARRICADE AND SIGN APPROXIMATELY EVERY 1000' ACROSS THE CLOSED LANE

TRAFFIC CONTROL
ADDED LANE CLOSURE
WITHOUT LANE SHIFT

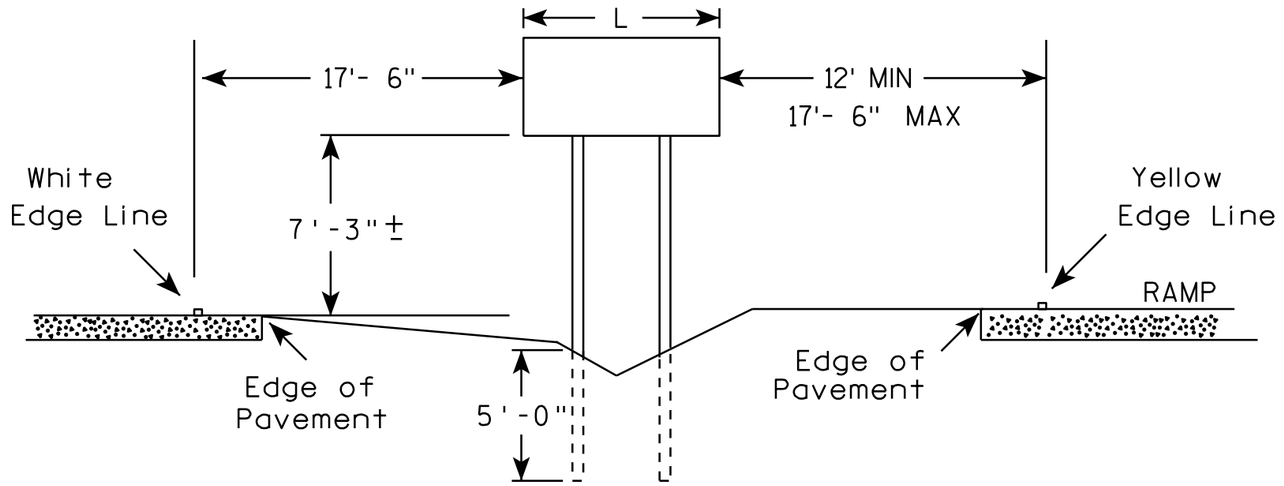
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

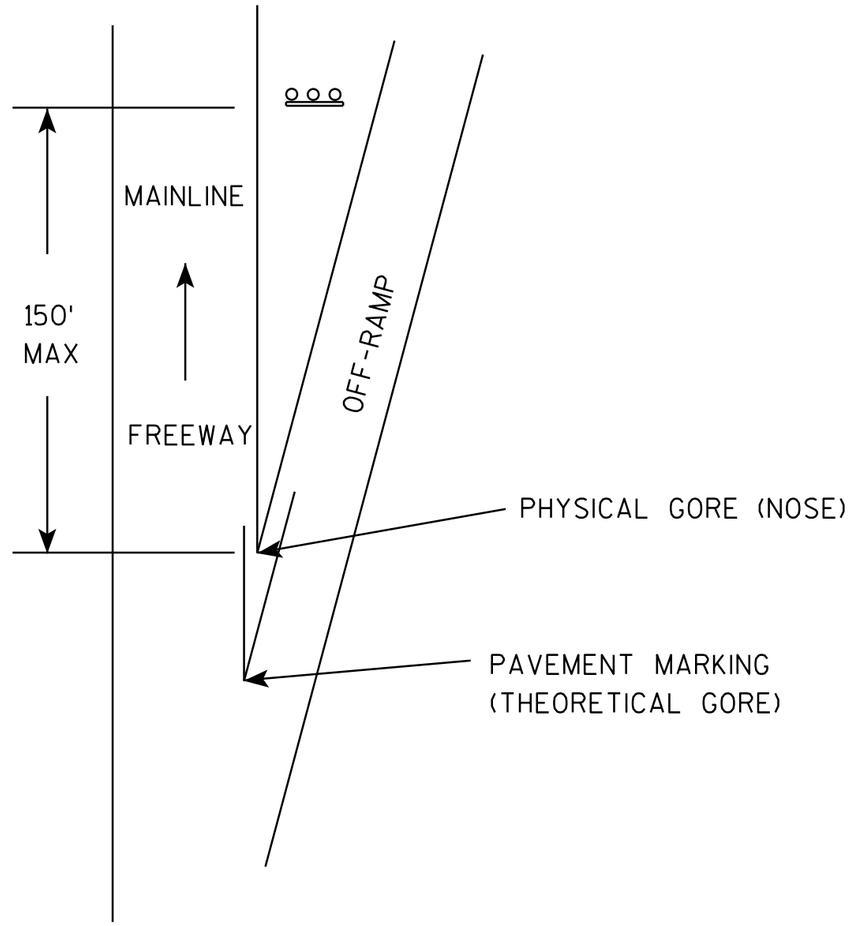
APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6
SDD 15D50-03a





GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The (∓) tolerance for the mounting height is 3 inches.

7

7

TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

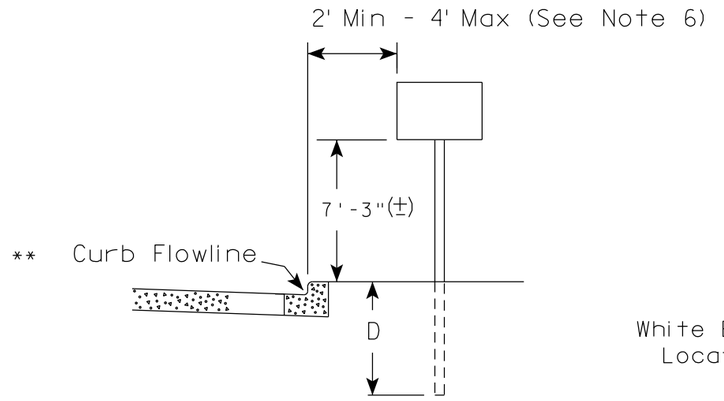
DATE 2/06/14 PLA A4-2.3

PROJECT NO: | SHEET NO: E

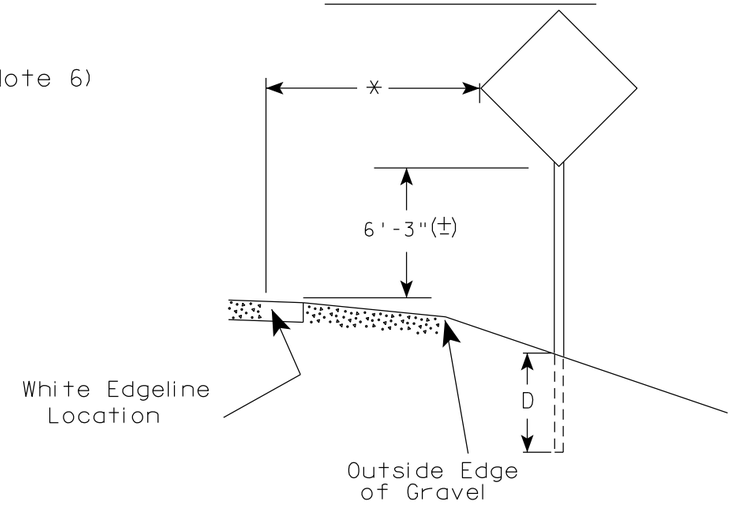
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A42.DGN PLOT DATE : 06-FEB-2014 12:36 PLOT BY : mscsja

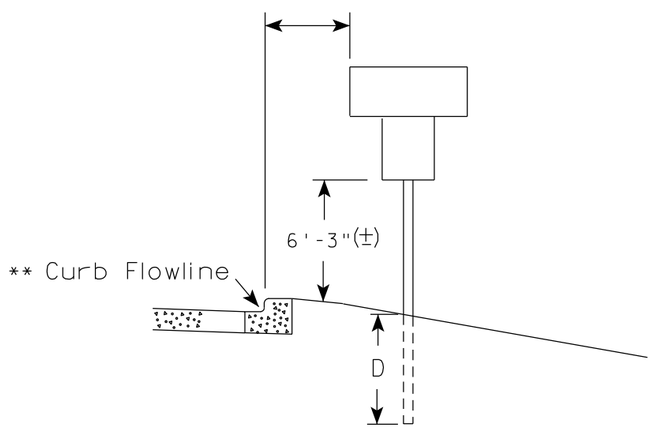
WISDOT/CADDS SHEET 42

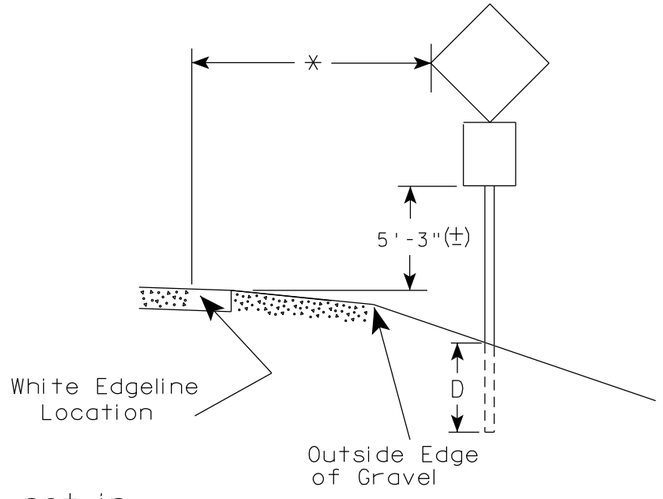
URBAN AREA



RURAL AREA (See Note 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. Offset of signs is measured from the flow line.

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

POST EMBEDMENT DEPTH

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

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 or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) 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" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

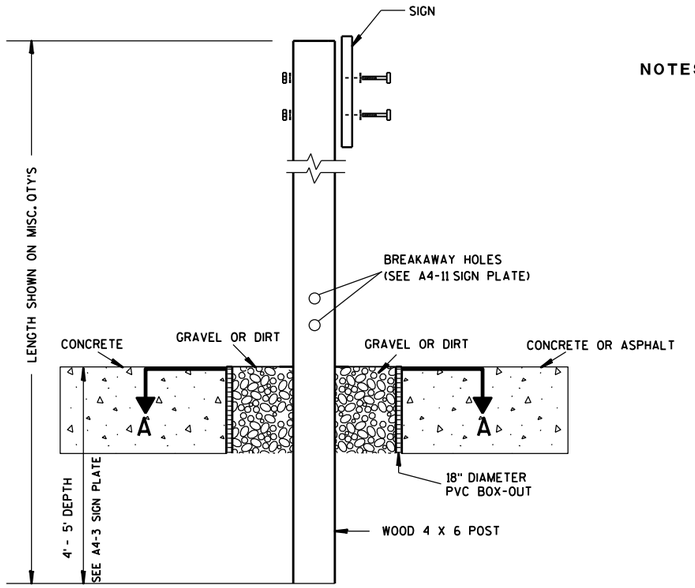
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

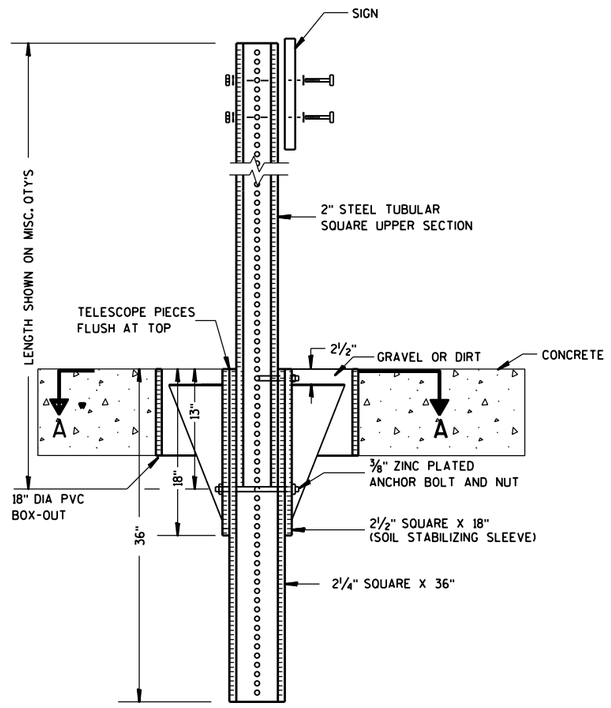
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 199	E



ELEVATION VIEW

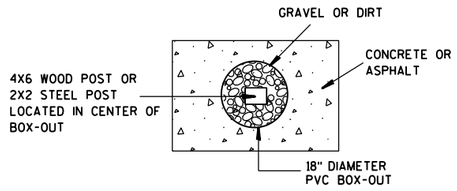
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

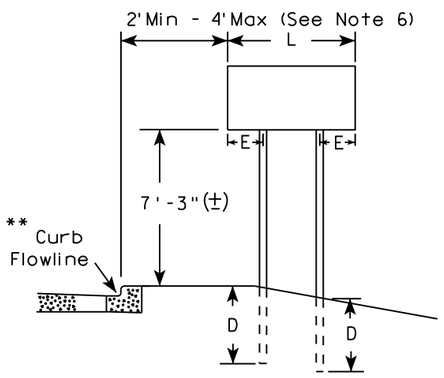
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

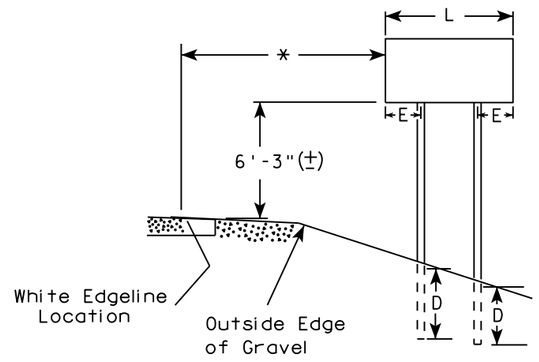
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

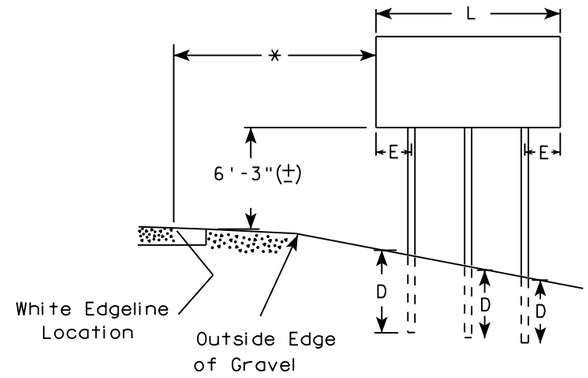
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

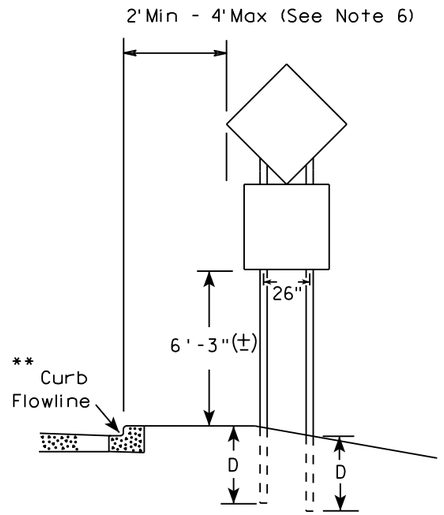
URBAN AREA



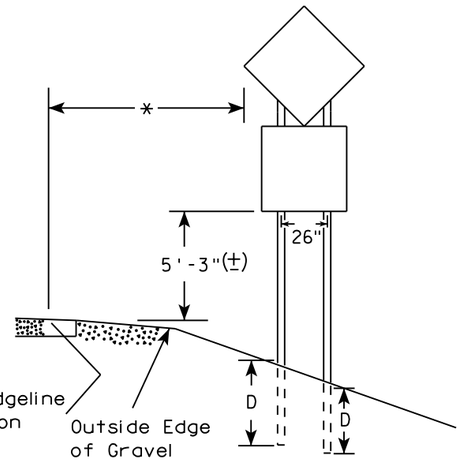
RURAL AREA (See Note 3)







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"

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.

POST EMBEDMENT DEPTH

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

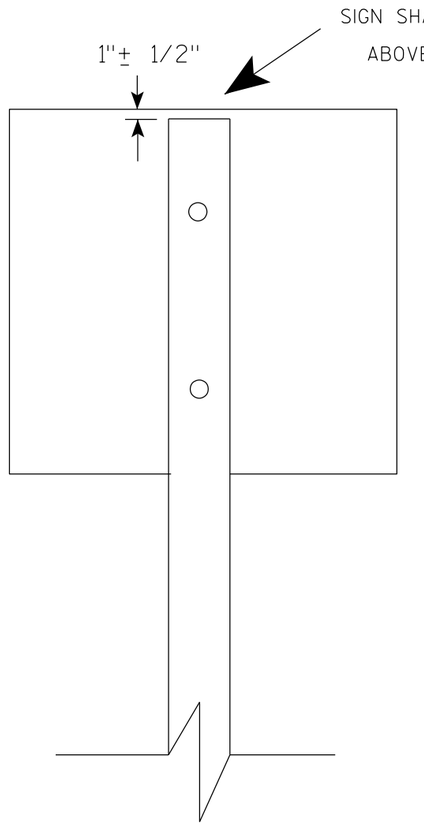
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

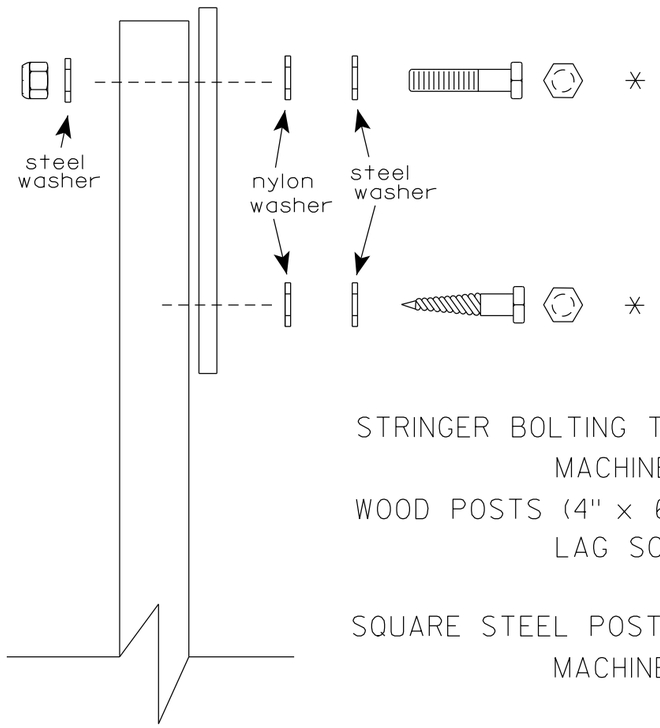
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 201	E





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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (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

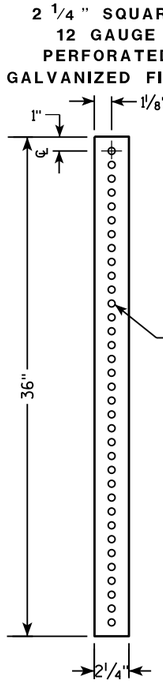
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

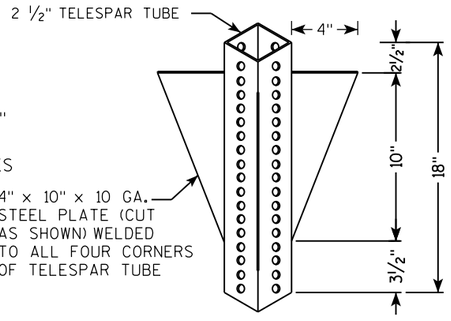
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

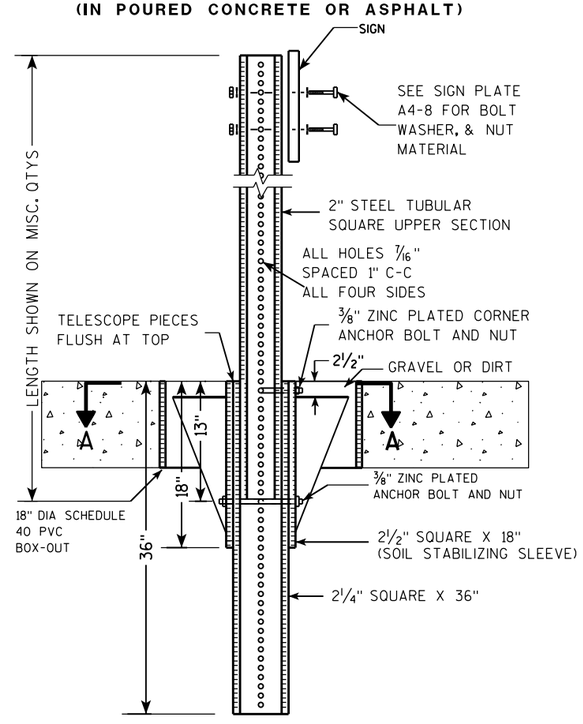
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



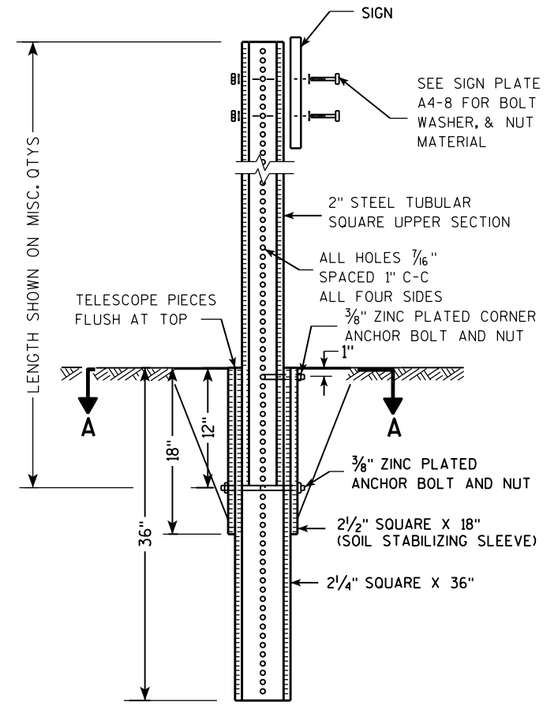
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

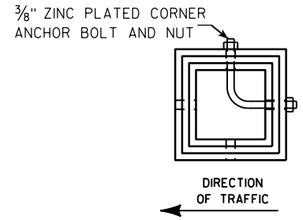


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

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

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

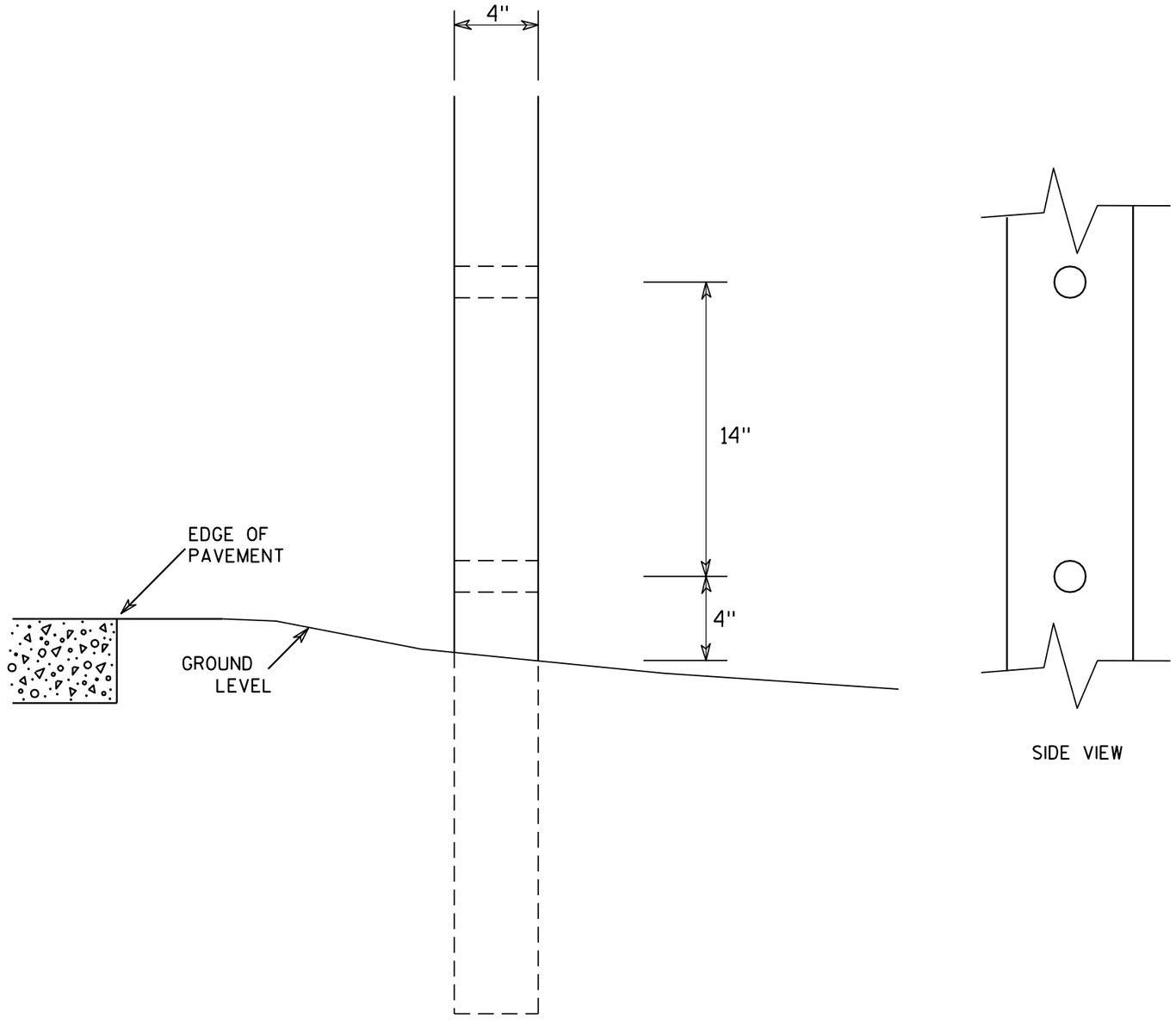
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 203 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

7

7

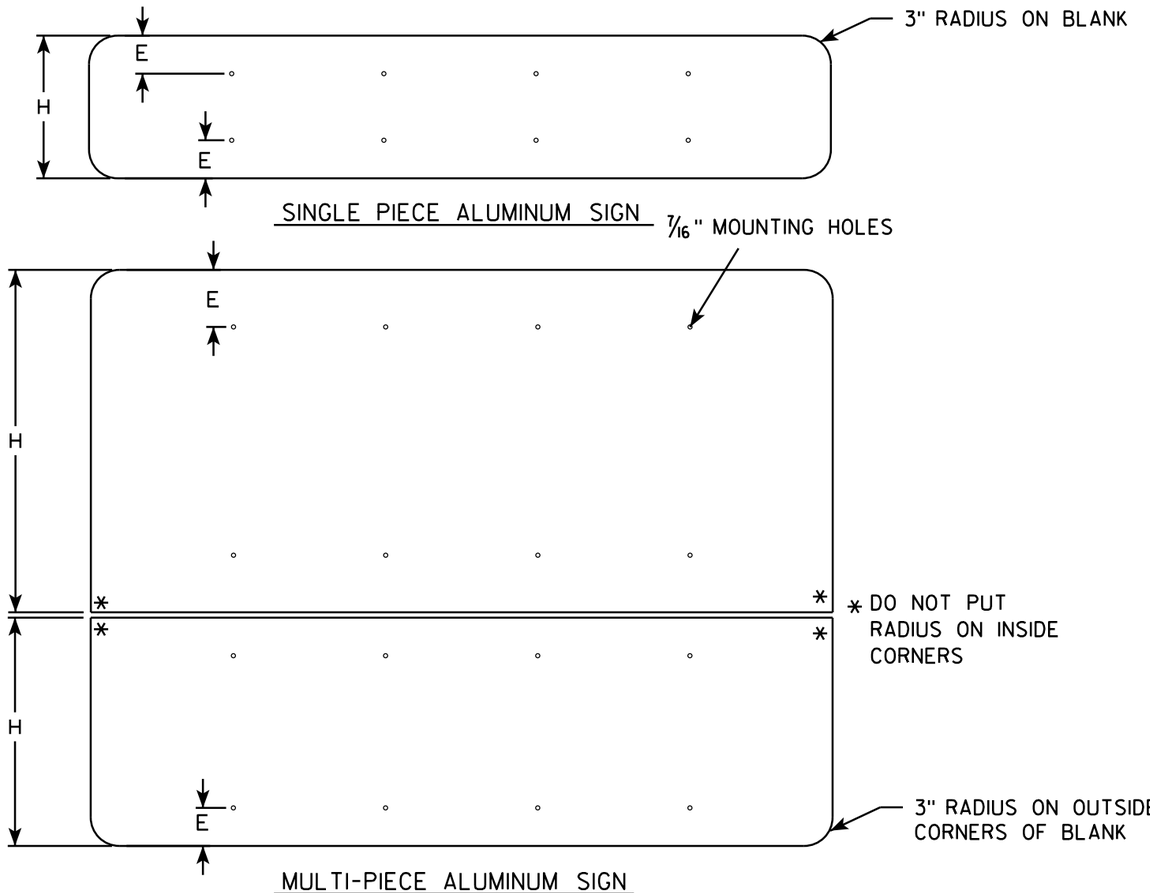
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

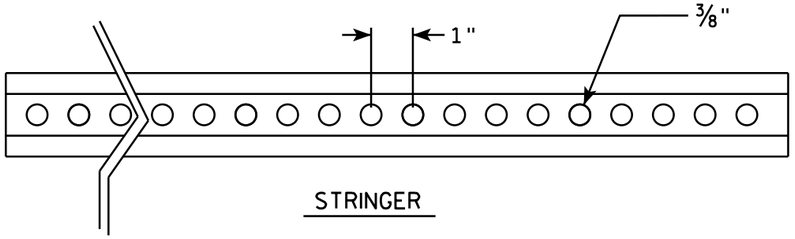
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 204	E



GENERAL NOTES

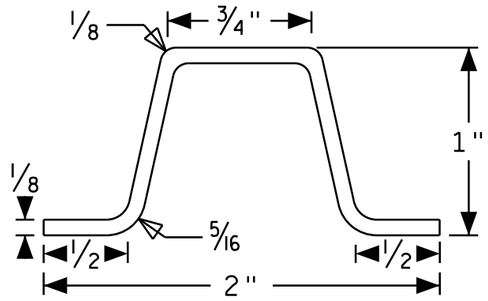
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER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

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16½" 33½" 50½" 67½"
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19½" 38½" 57½" 76½"
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22½" 43½" 64½" 85½"
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

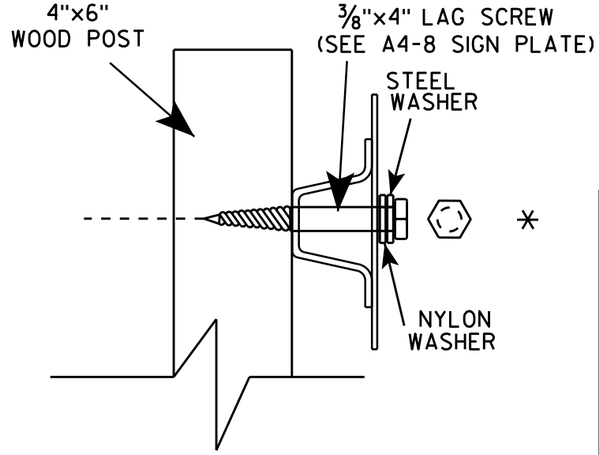


STRINGER

CROSS SECTION VIEW OF CHANNEL



POST MOUNTING



SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

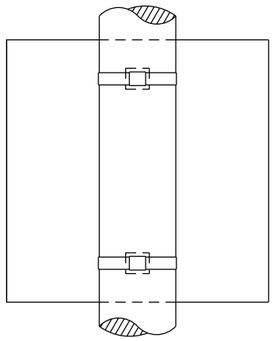
DATE 4/26/16 PLATE NO A4-18.1

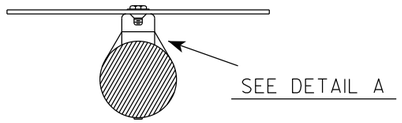
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

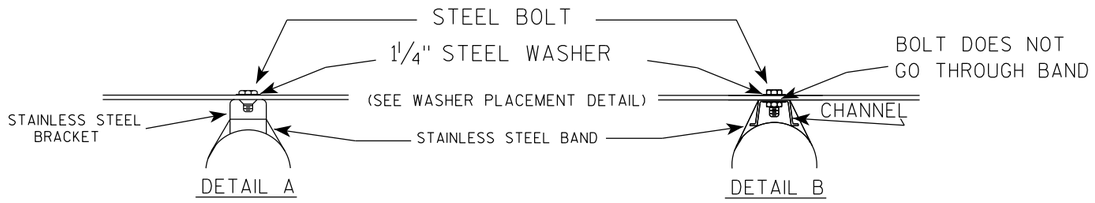
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A418.dgn PLOT DATE : 27-APR-2016 13:56 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 41.805205:1.000000 WISDOT/CADDS SHEET 42

BANDING

SINGLE SIGN



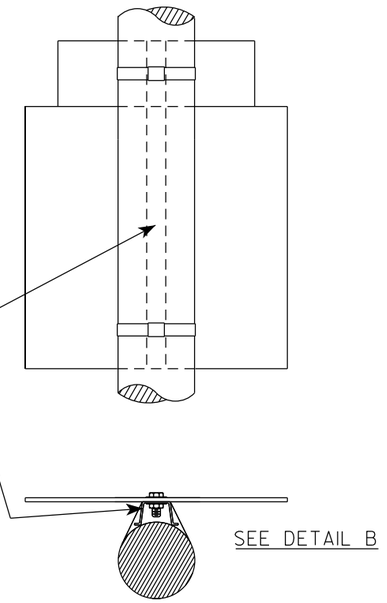




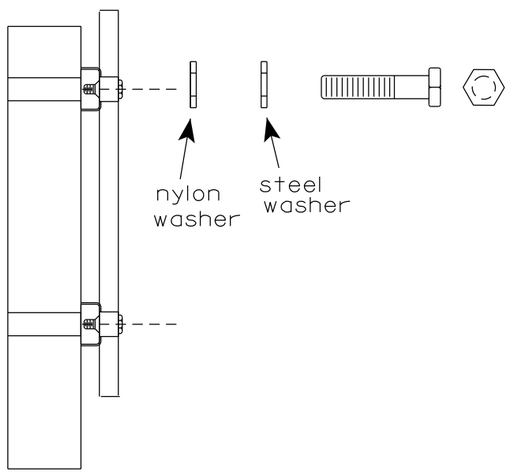
GENERAL NOTES

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 ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" 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 6/10/19 PLATE NO. A5-9.4

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 206	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

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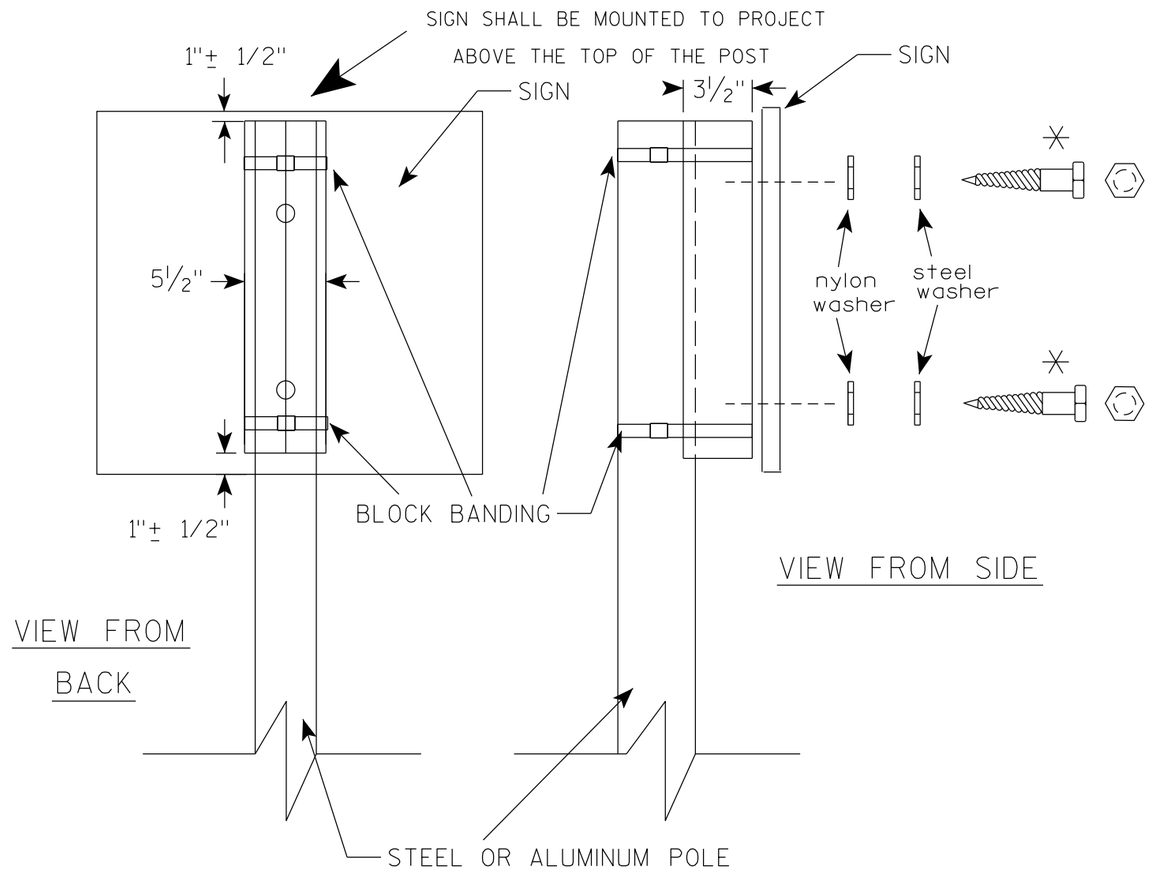
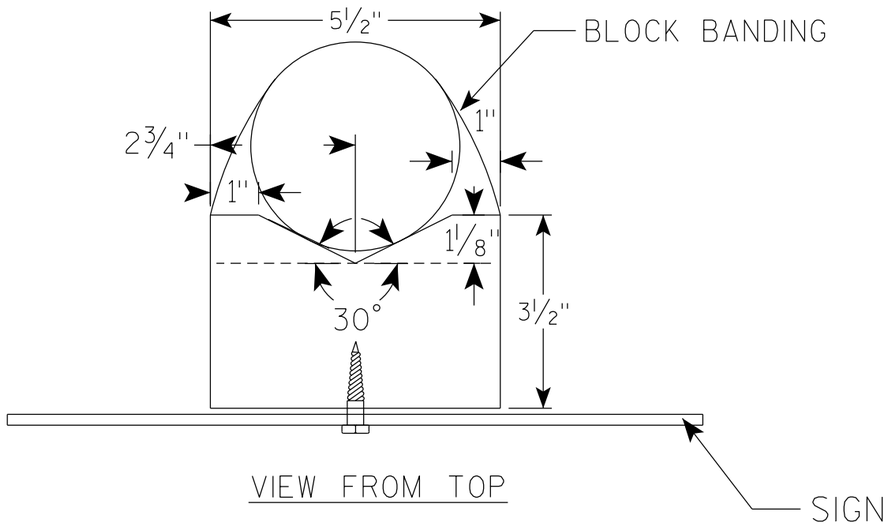




GENERAL NOTES

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, ¾" 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 NORNALLY 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
   b. 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 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

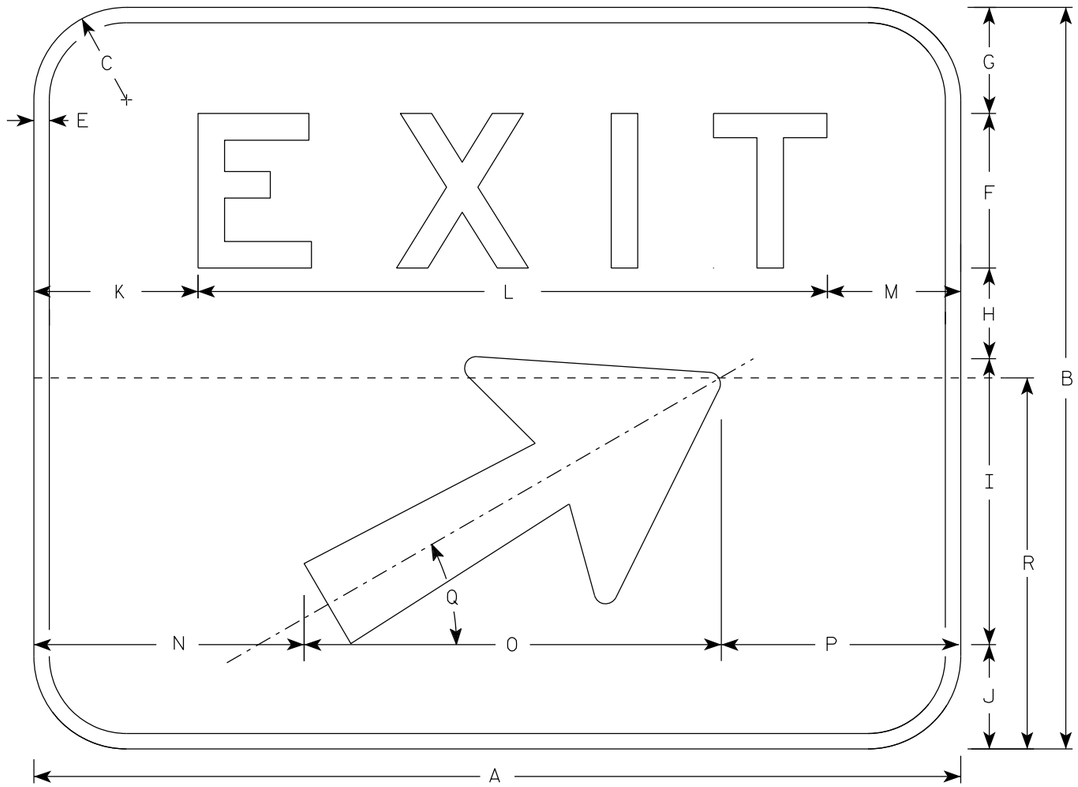
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 207 E



E5-1

NOTES

1. Sign is Type II - Type H reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E
4. Sign shall be split into two seperate pieces as shown on the detail by the dashed line (----------) for sizes 4 & 5.
5. Arrow is Type "A" from sign plate A1-1.
6. As per the Standard Spec's, this sign shall not have a vertical joint.
7. Size 3 E5-1 shall only be used in a Work Zone application with a Temporary Sign Support

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	48	48	6		1	10	6 7/8	5 7/8	18 1/2	6 3/4	8 1/2	31 1/8	8 3/8	11 1/2	27	9 1/2	30°	30									16.0
4	60	48	6		1	10	6 7/8	5 7/8	18 1/2	6 3/4	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°	30									20.0
5	72	60	6		1	12	9 3/4	10	18 1/2	9 3/4	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°	30									30.0

STANDARD SIGN
E5-1

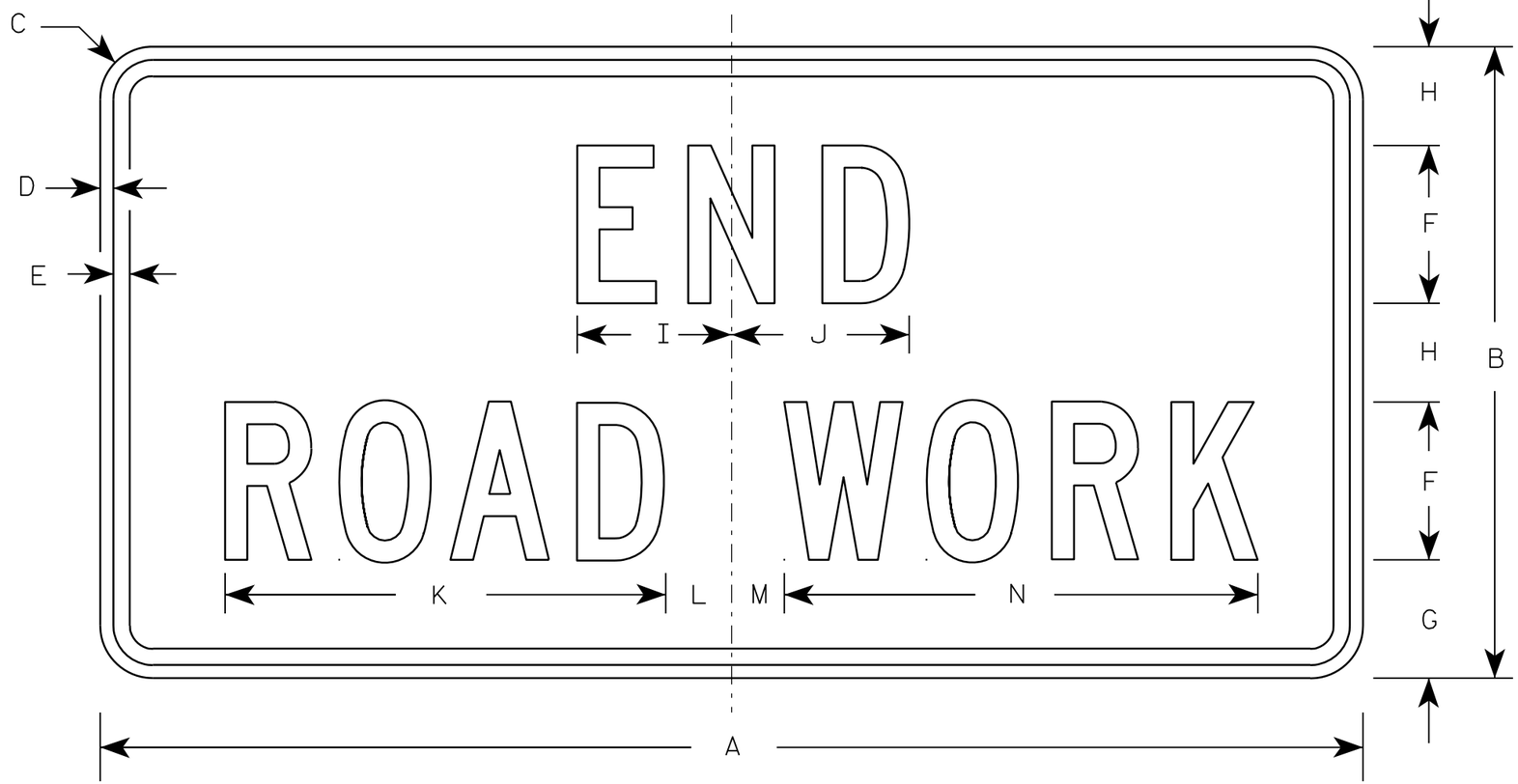
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/9/2022 PLATE NO. E5-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 208 | E

7



G20-2A

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 - 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.

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 m2
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

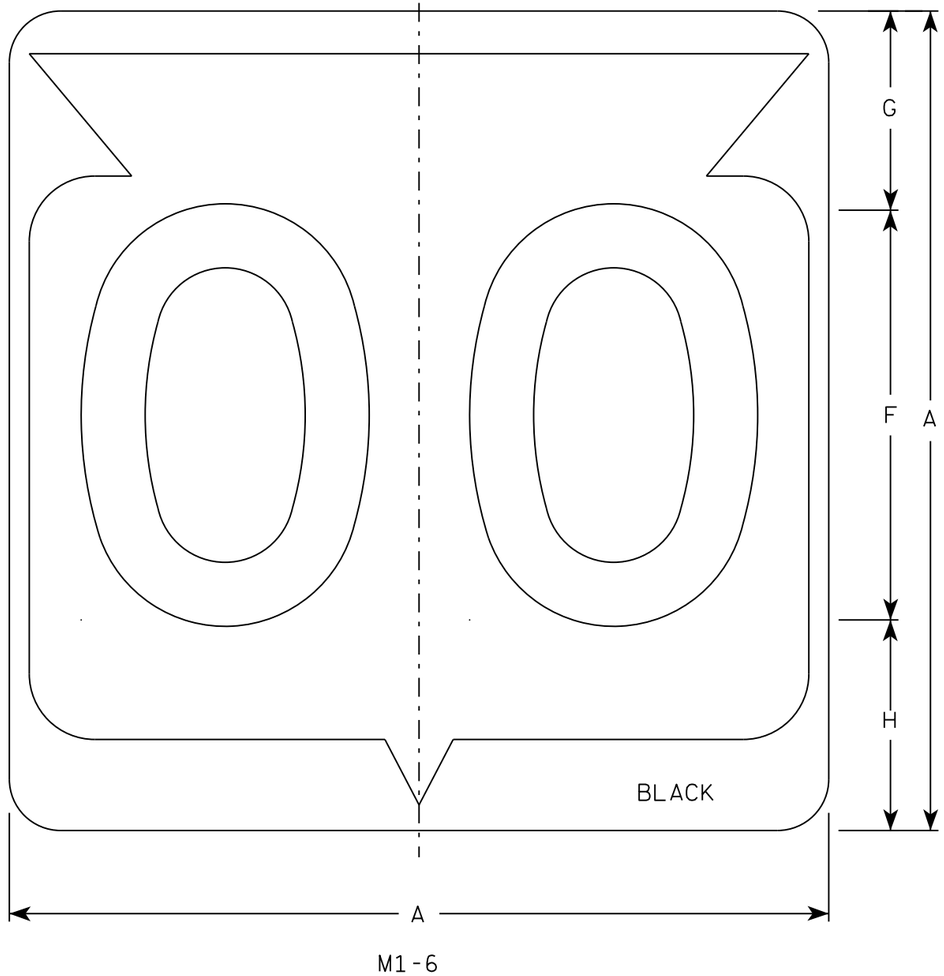
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

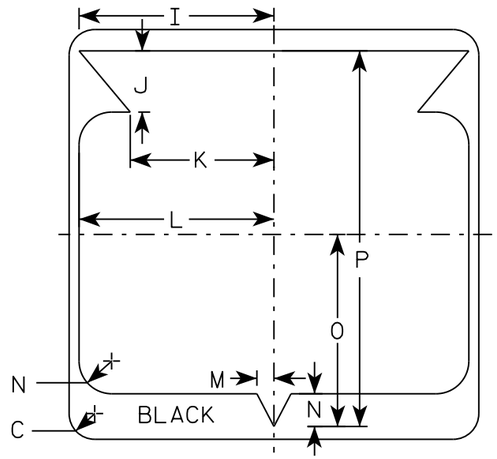
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 209	E



M1-6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D except 3 number signs 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																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

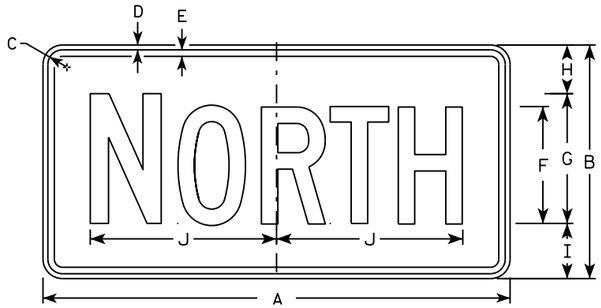
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

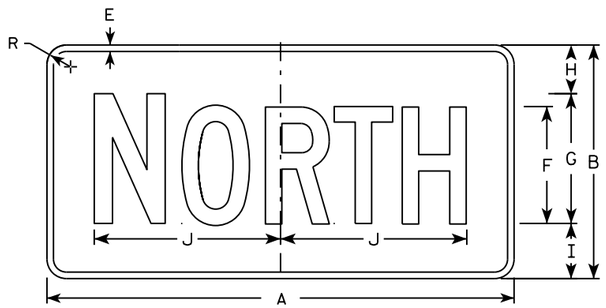
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 210 E



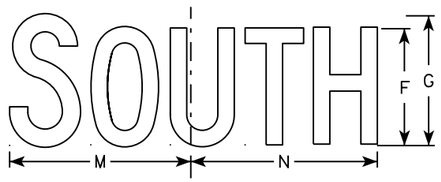
M3-1
MM3-1
MP3-1



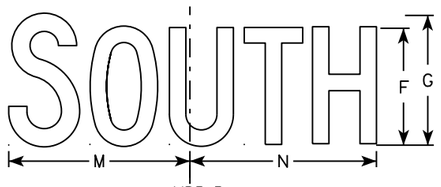
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

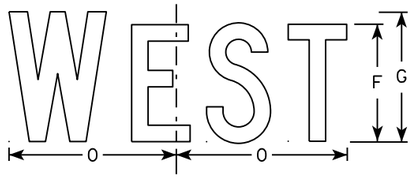
MB3-2
MK3-2
MN3-2



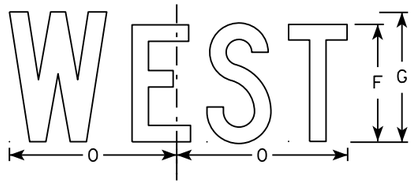
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

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

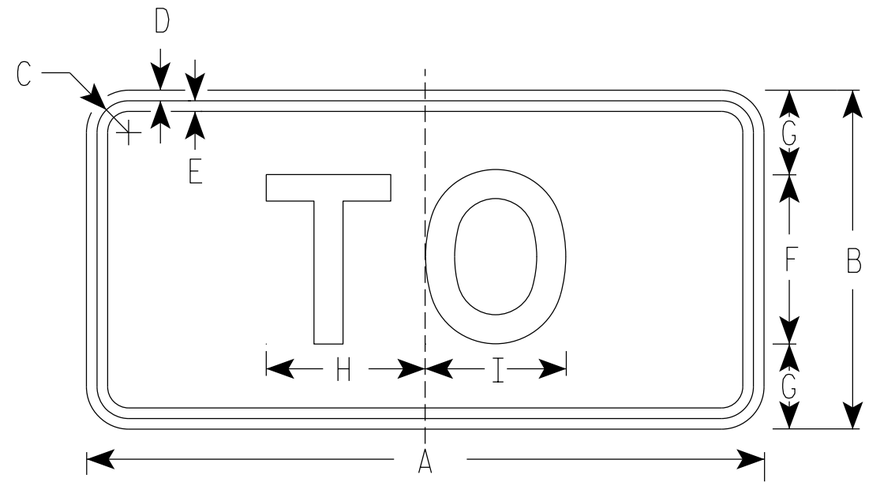
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

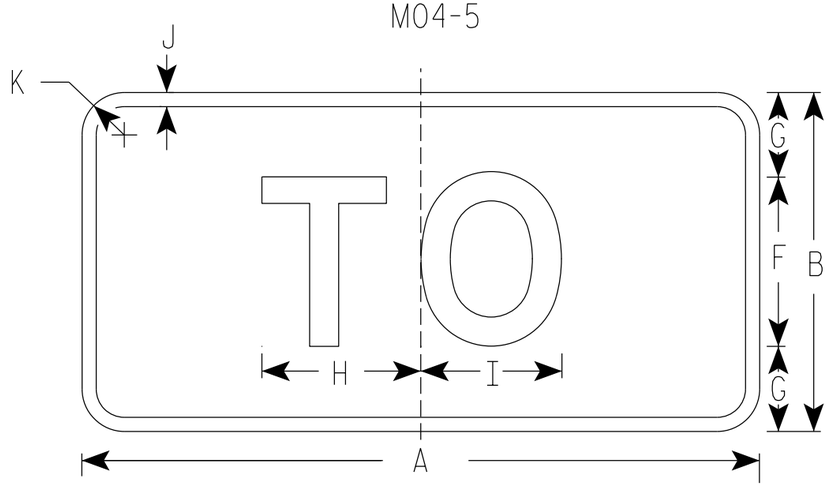
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

   M04-5 Background - Orange Type F Reflective
   Message - Black

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

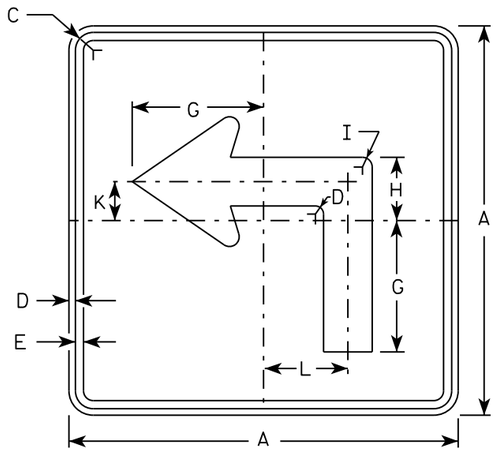
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

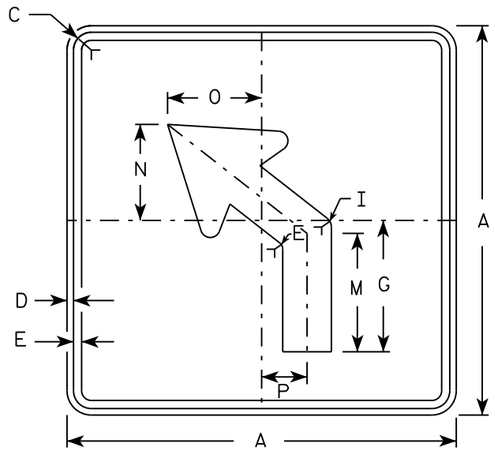
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/7/19 PLATE NO. M4-5.9

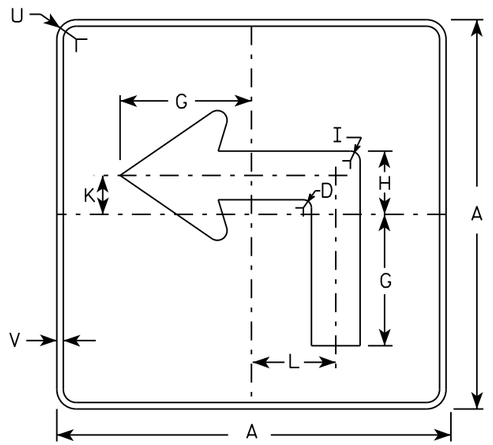
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 212 | E



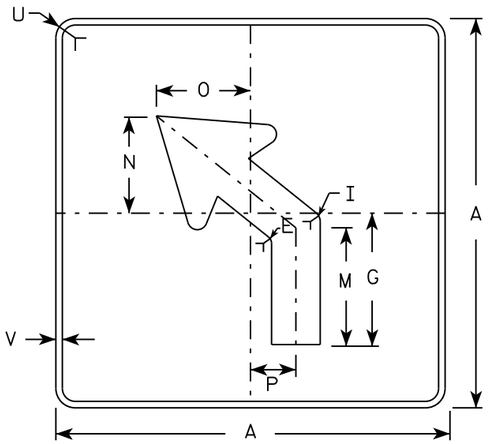
M5-1L
MM5-1L
MO5-1L
MP5-1L



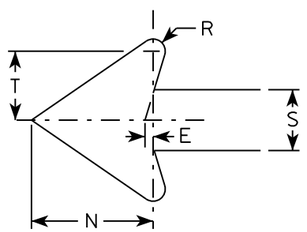
M5-2L
MM5-2L
MO5-2L
MP5-2L



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



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



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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

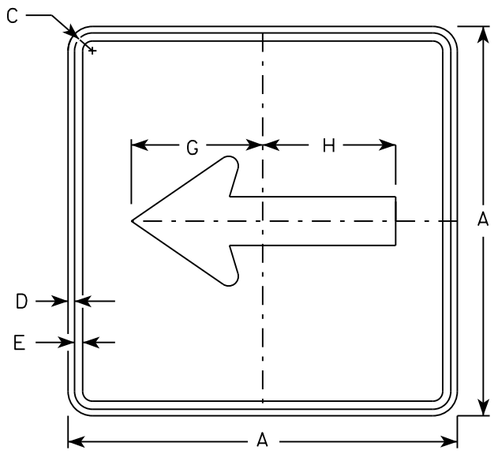
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

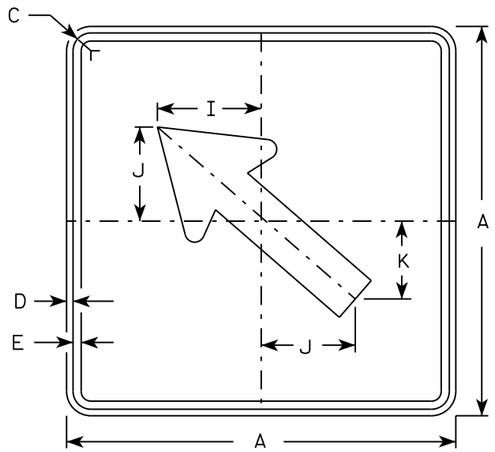
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



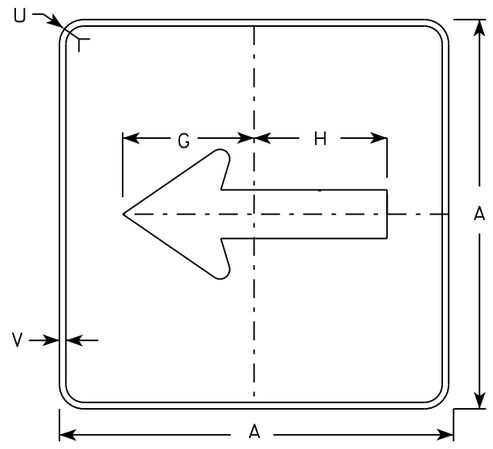
M6-1
MM6-1
MO6-1
MP6-1



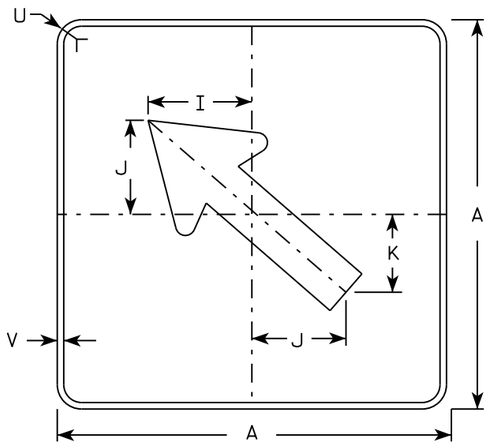
M6-2
MM6-2
MO6-2
MP6-2

NOTES

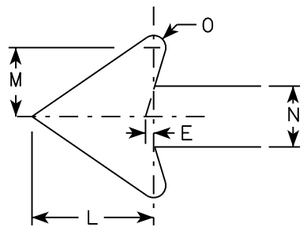
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



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



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



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

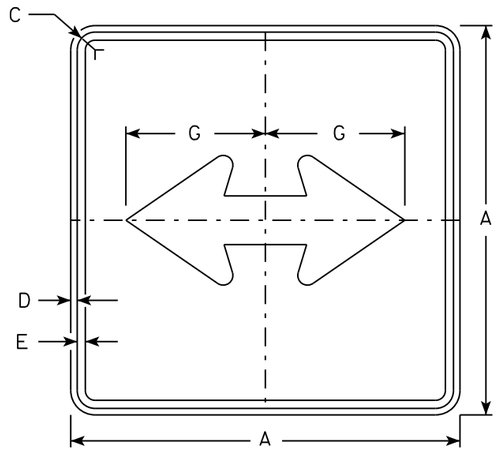
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

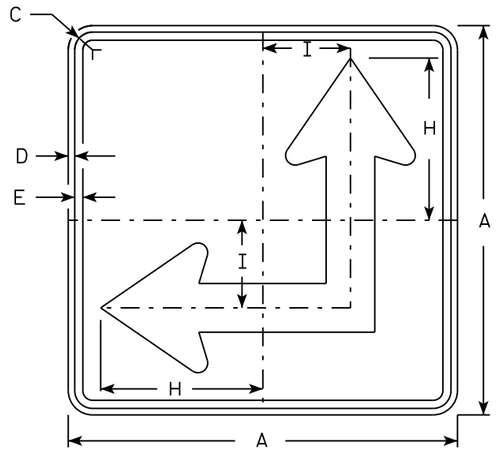
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 214 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



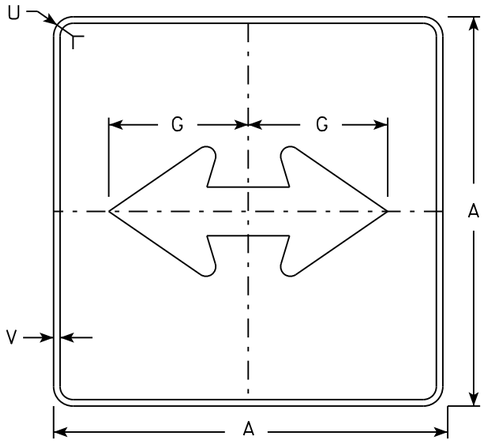
M6-4
MM6-4
MO6-4
MP6-4



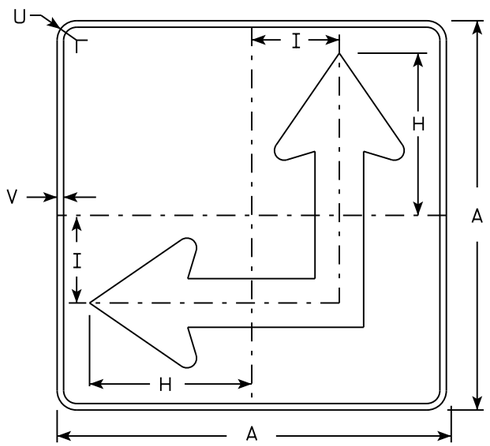
M6-6
MM6-6
MO6-6
MP6-6

NOTES

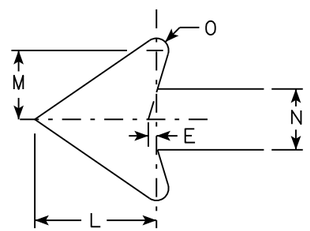
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background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



MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6



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

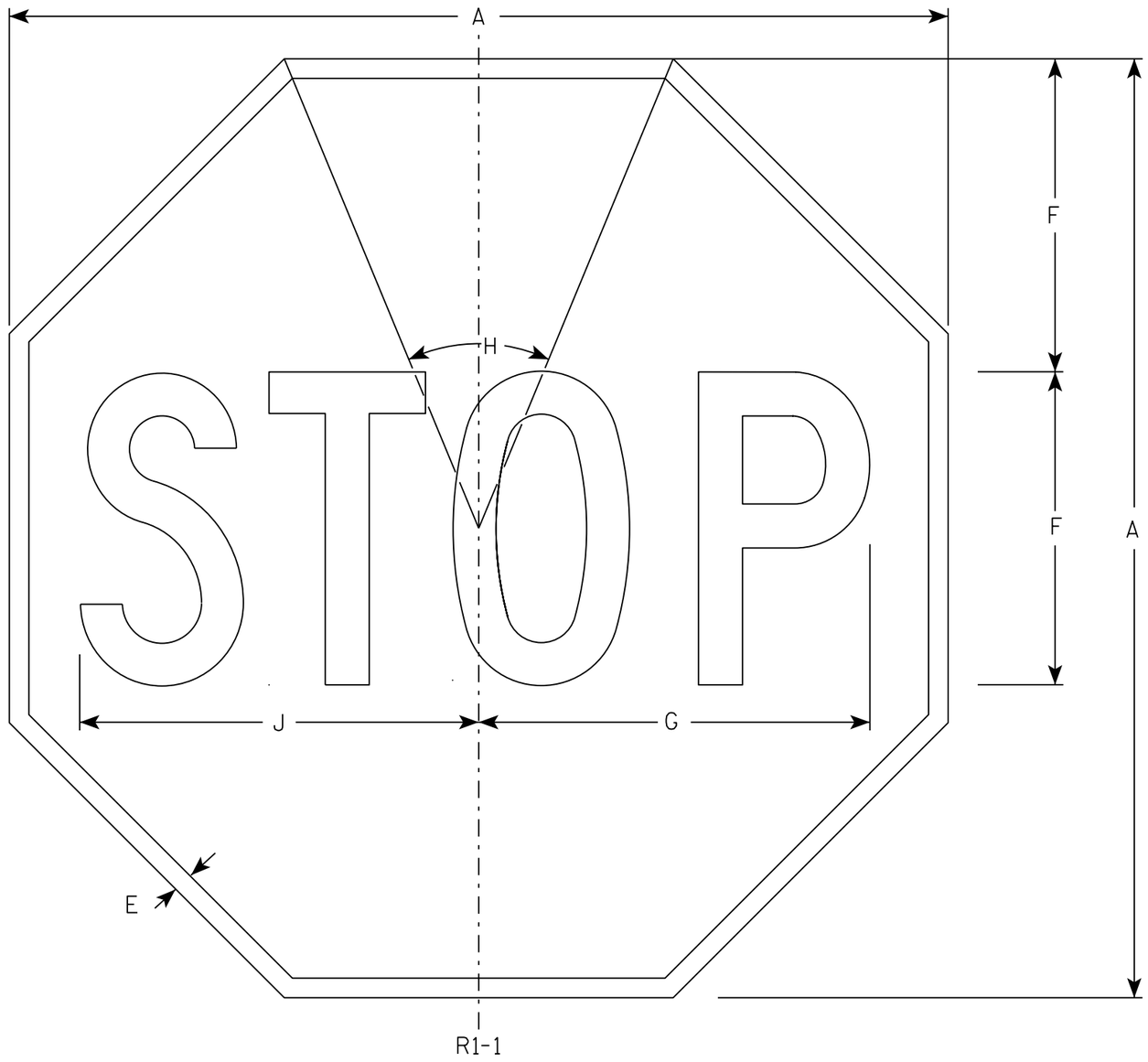
STANDARD SIGN
M6-4 & M6-6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 215 M6-4.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



NOTES

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

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

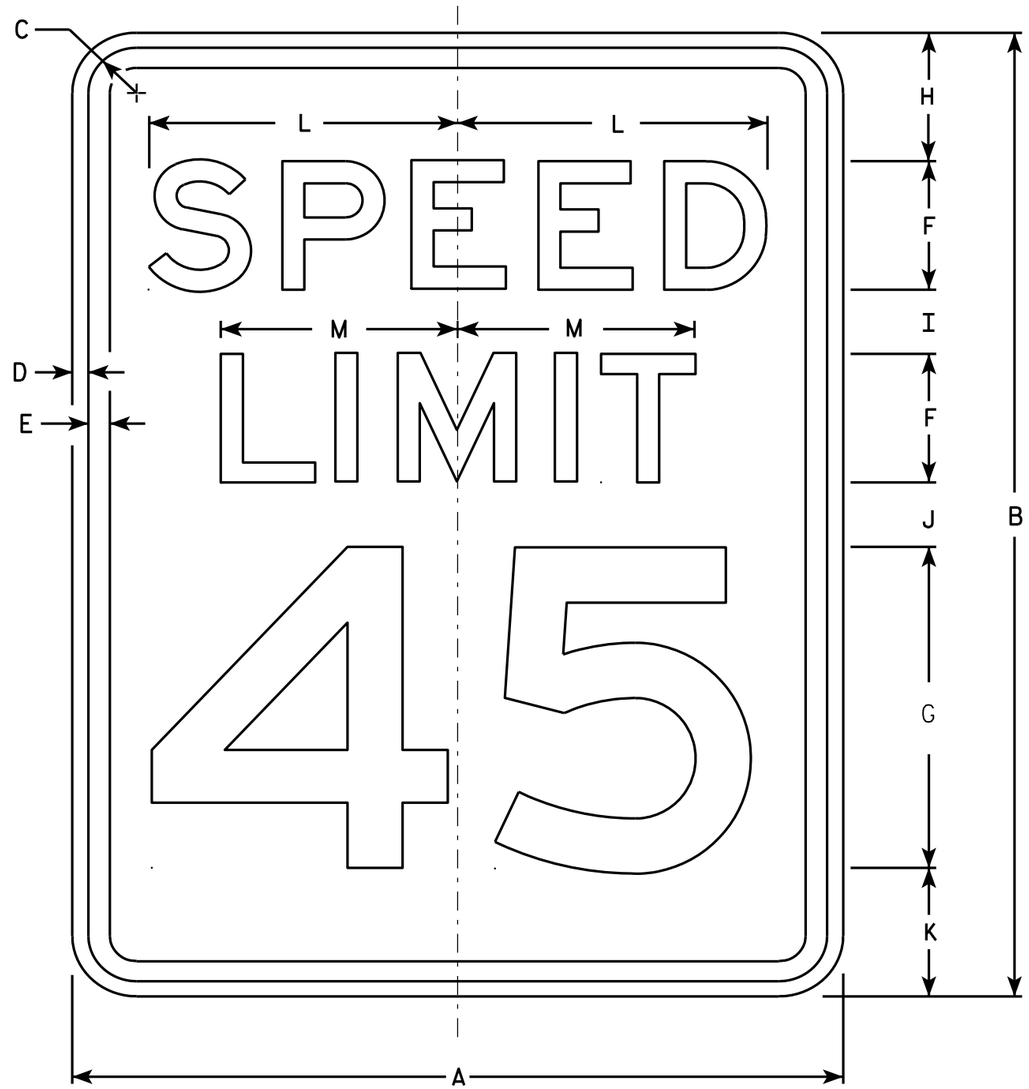
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 216	E



R2-1

NOTES

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

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

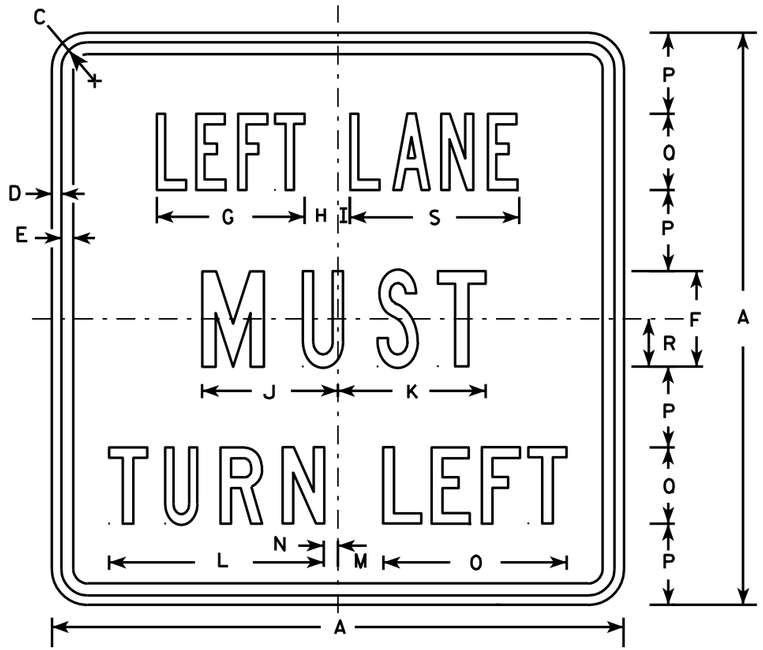
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

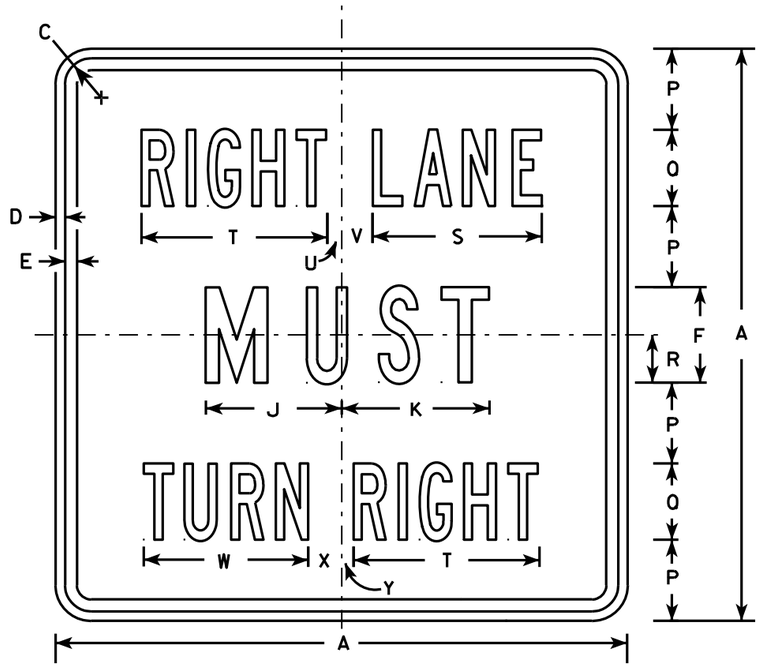
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 217	E



R3-7L



R3-7R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Line 1 is Series B.
   Line 2 is Series C.
   Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

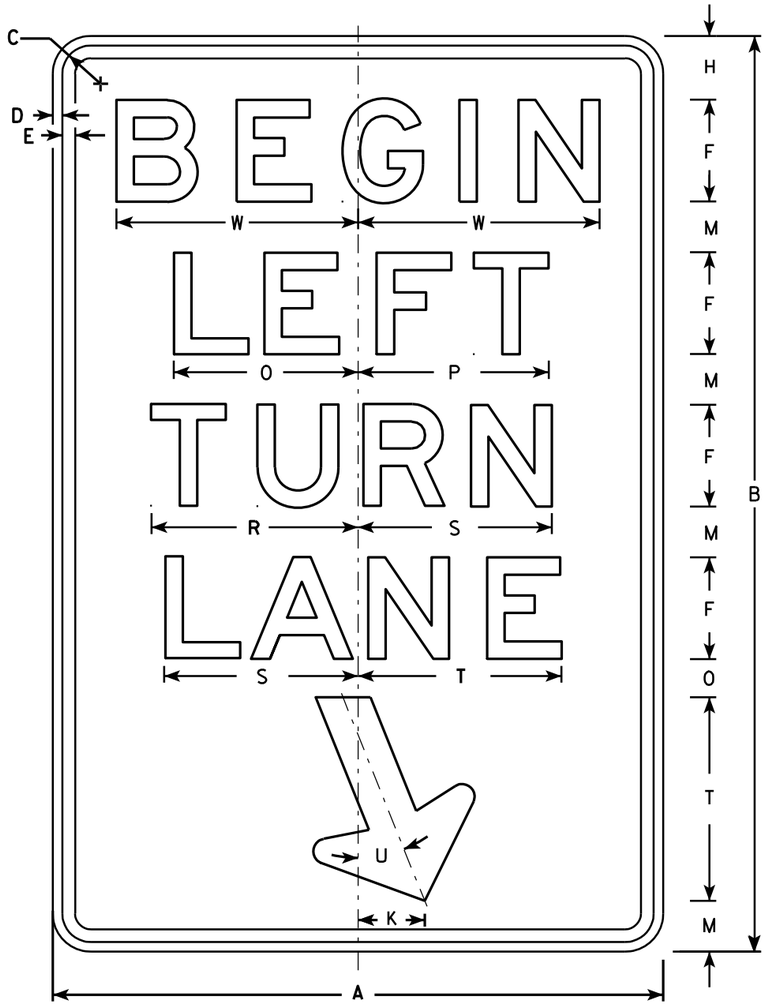
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

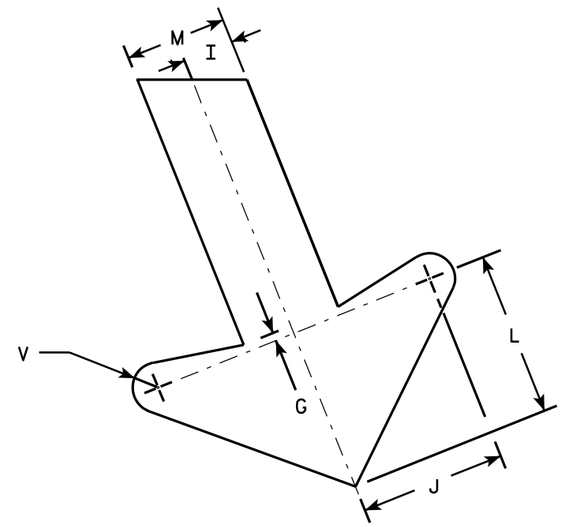
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 218 | E



R3-20L

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

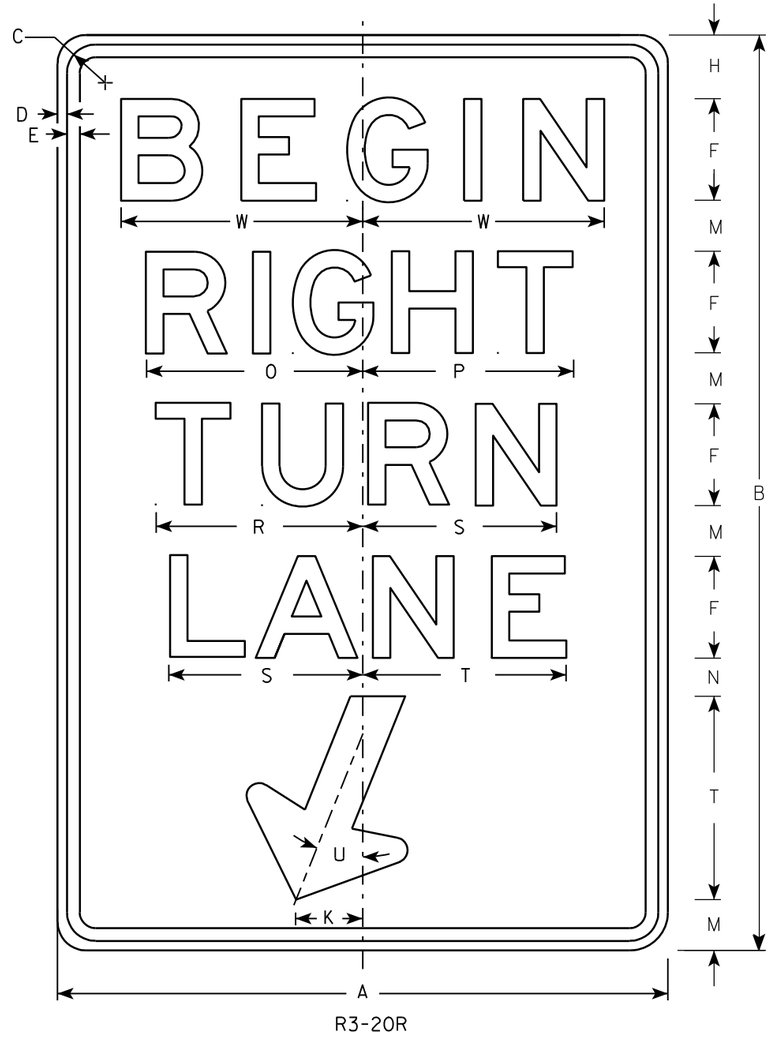
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

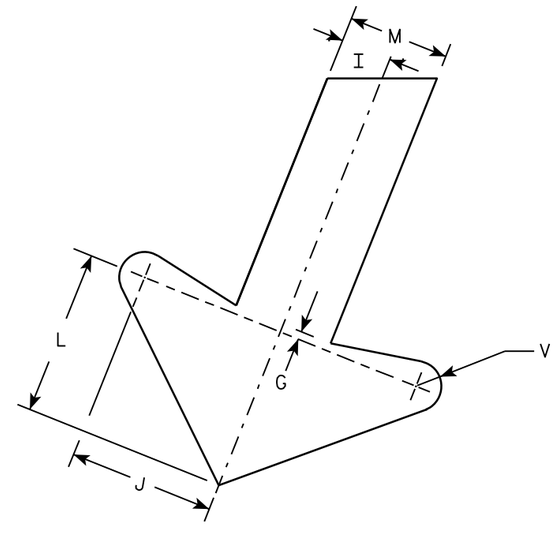
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 219 | E



R3-20R

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

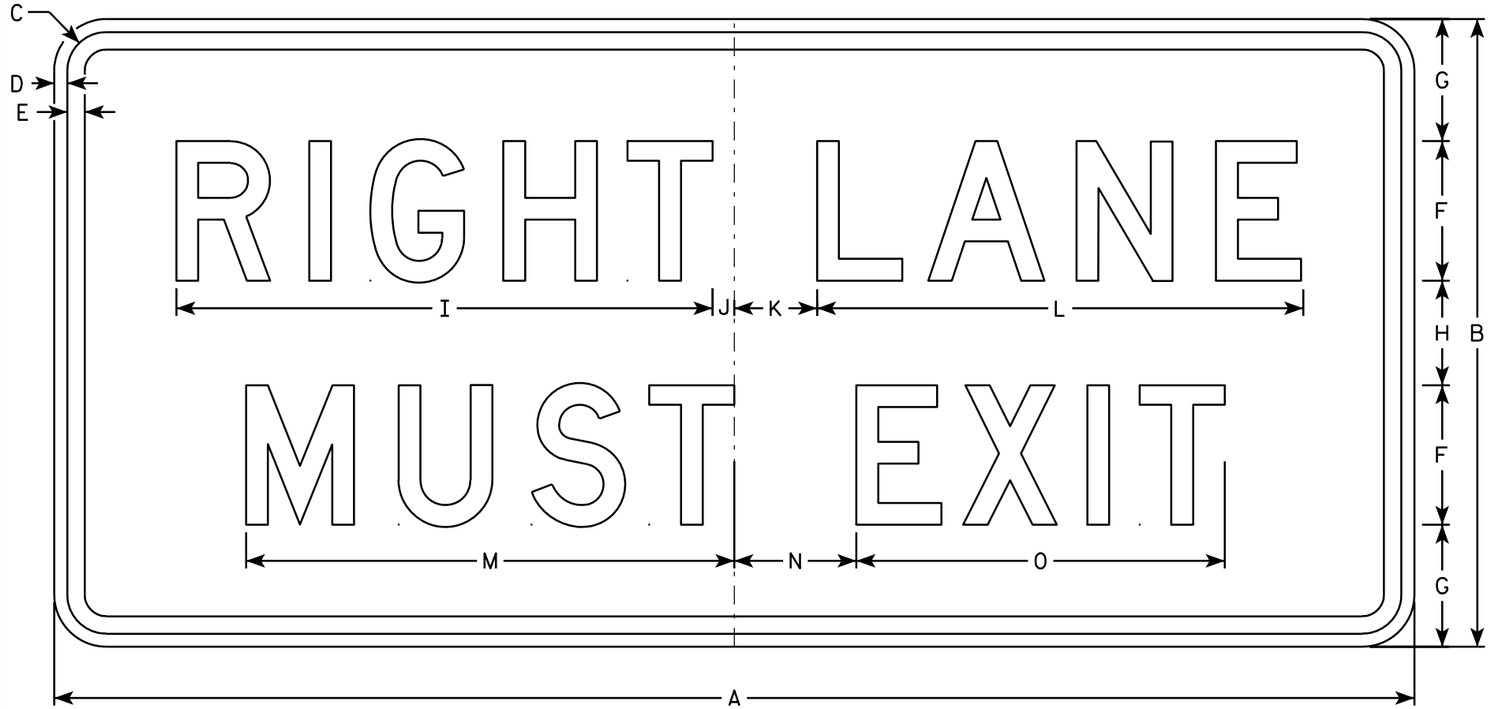
STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

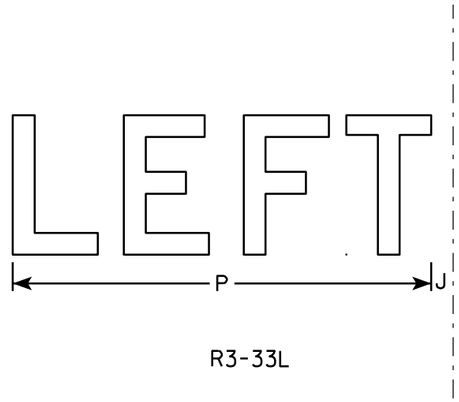
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 220 | E



R3-33R



R3-33L

NOTES

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

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

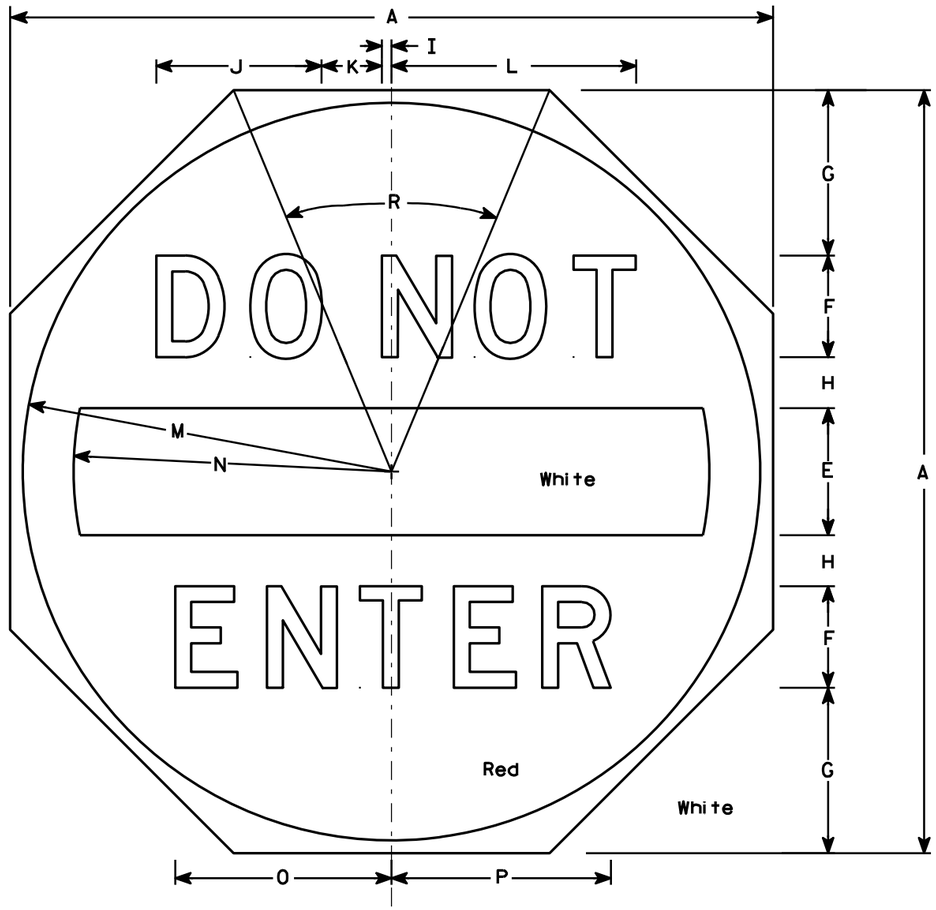
STANDARD SIGN
R3-33

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 221 | E



R5-1C

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8		45°									5.18
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									7.46
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									7.46
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									13.25
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8		45°									13.25

STANDARD SIGN
R5-1C

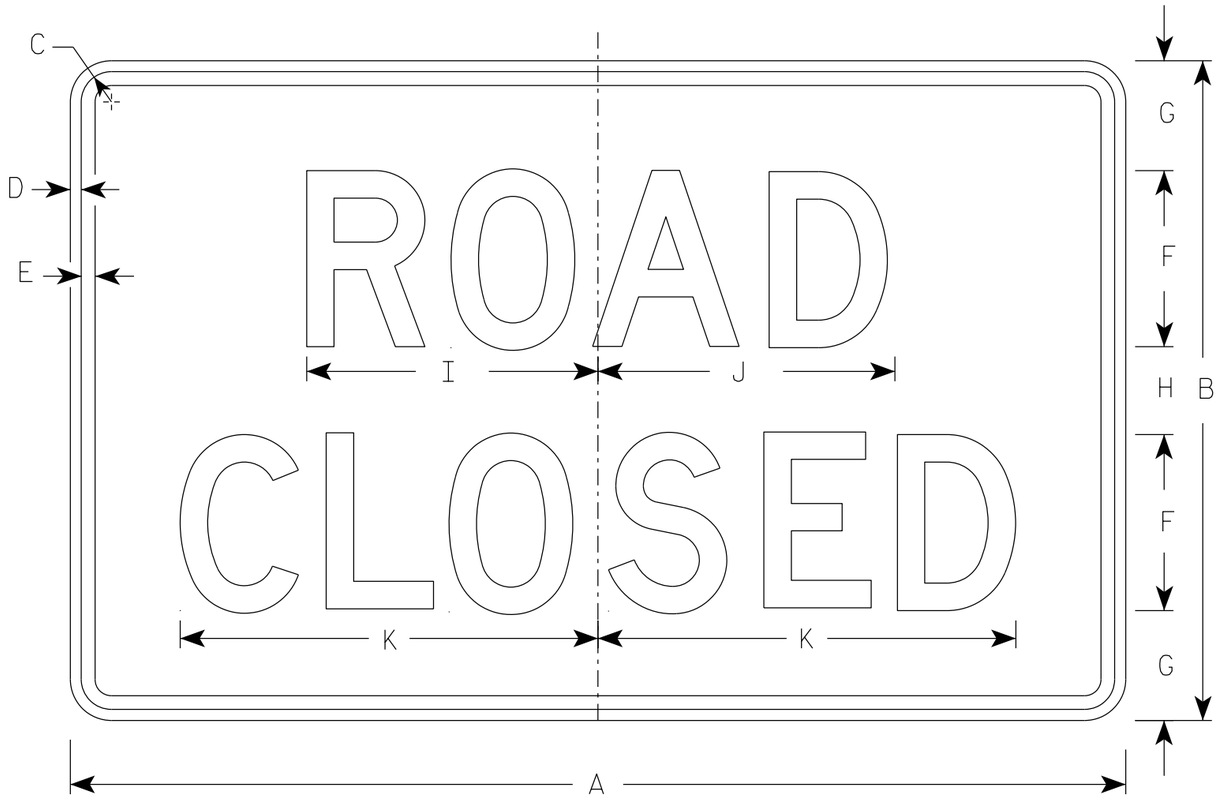
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

State Traffic Engineer

DATE 3/23/11 PLATE NO. R5-1C.1

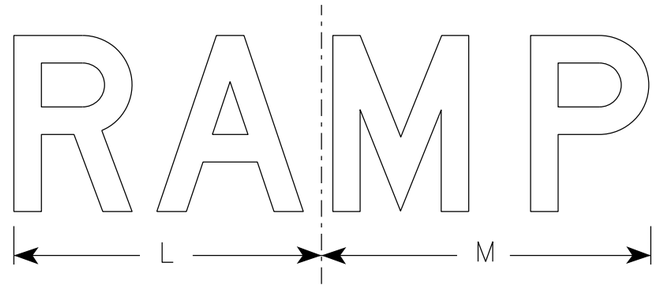
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 222 | E



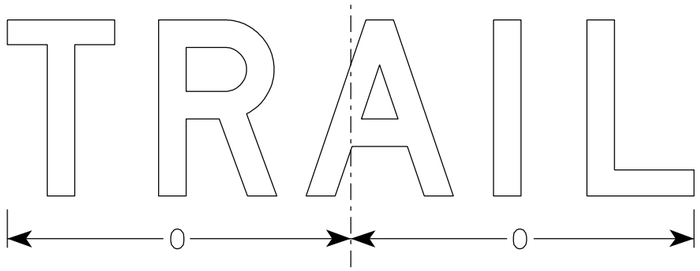
R11-2

NOTES

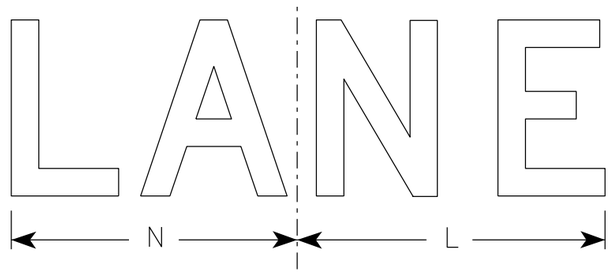
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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



R11-2R



R11-2T



R11-2L

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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												10.0

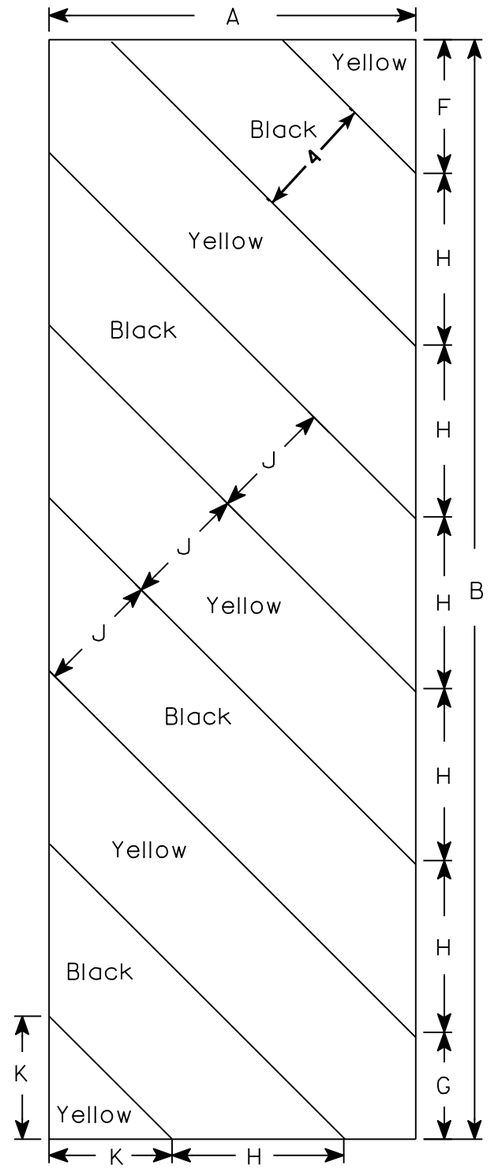
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

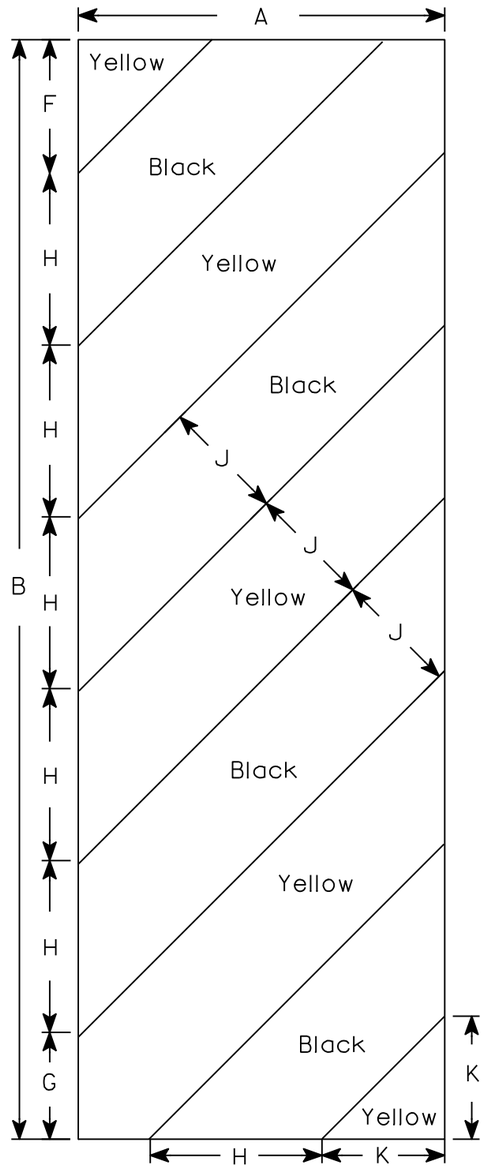
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 223	E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

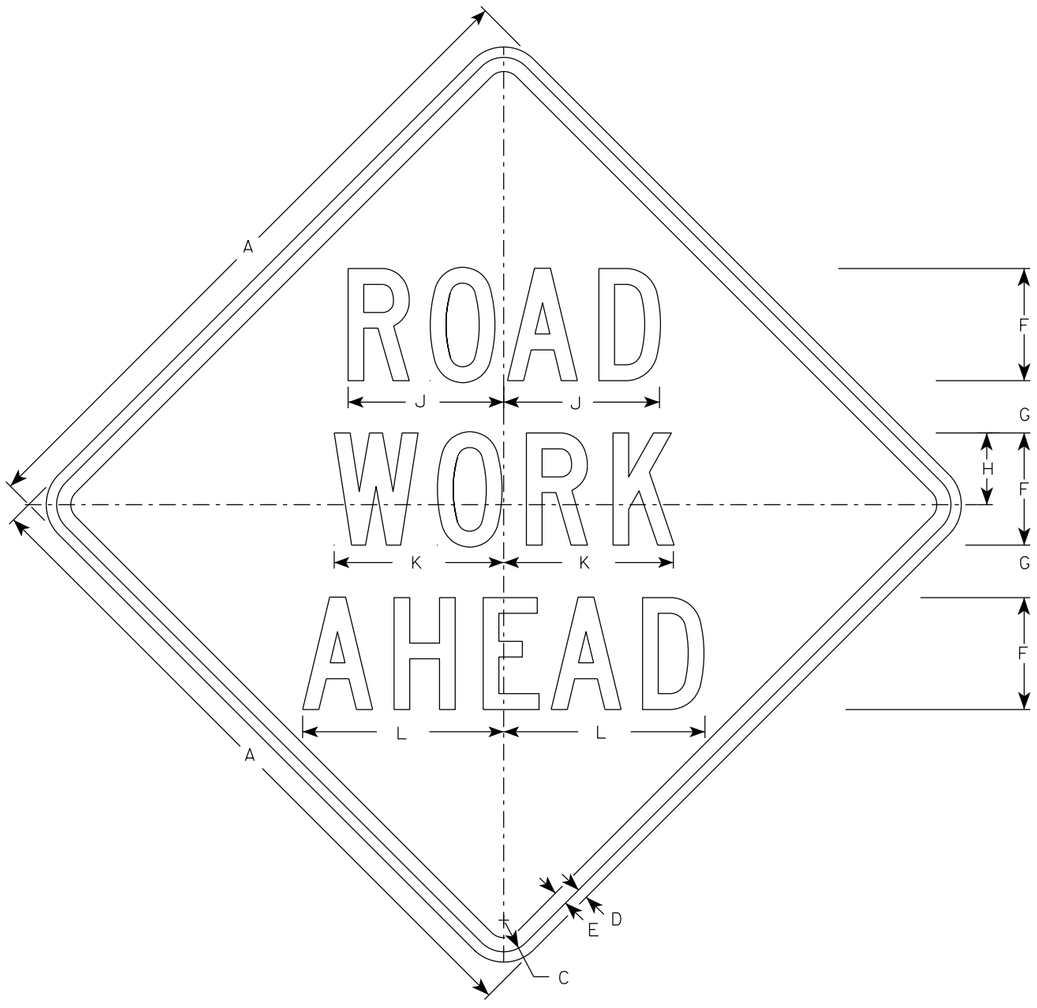
APPROVED Matthew R Rauch
for State Traffic Engineer

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

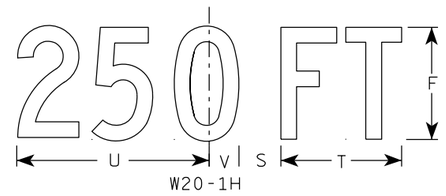
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 224	E

NOTES

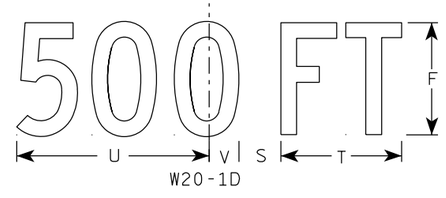
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1A

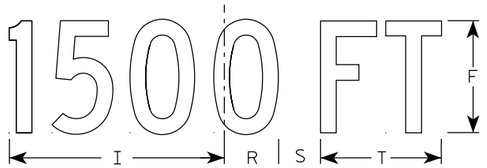


W20-1H

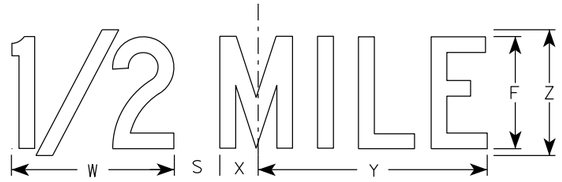


W20-1D

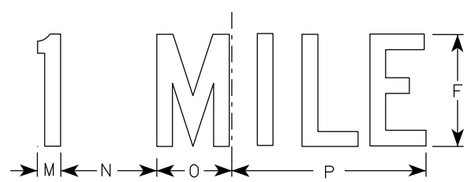
W20-1C



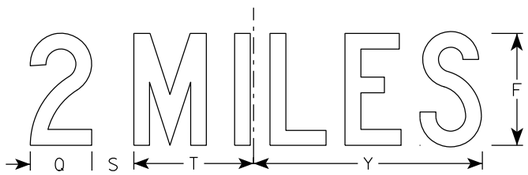
W20-1B



W20-1G



W20-1F



W20-1E

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	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	3 1/4	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, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

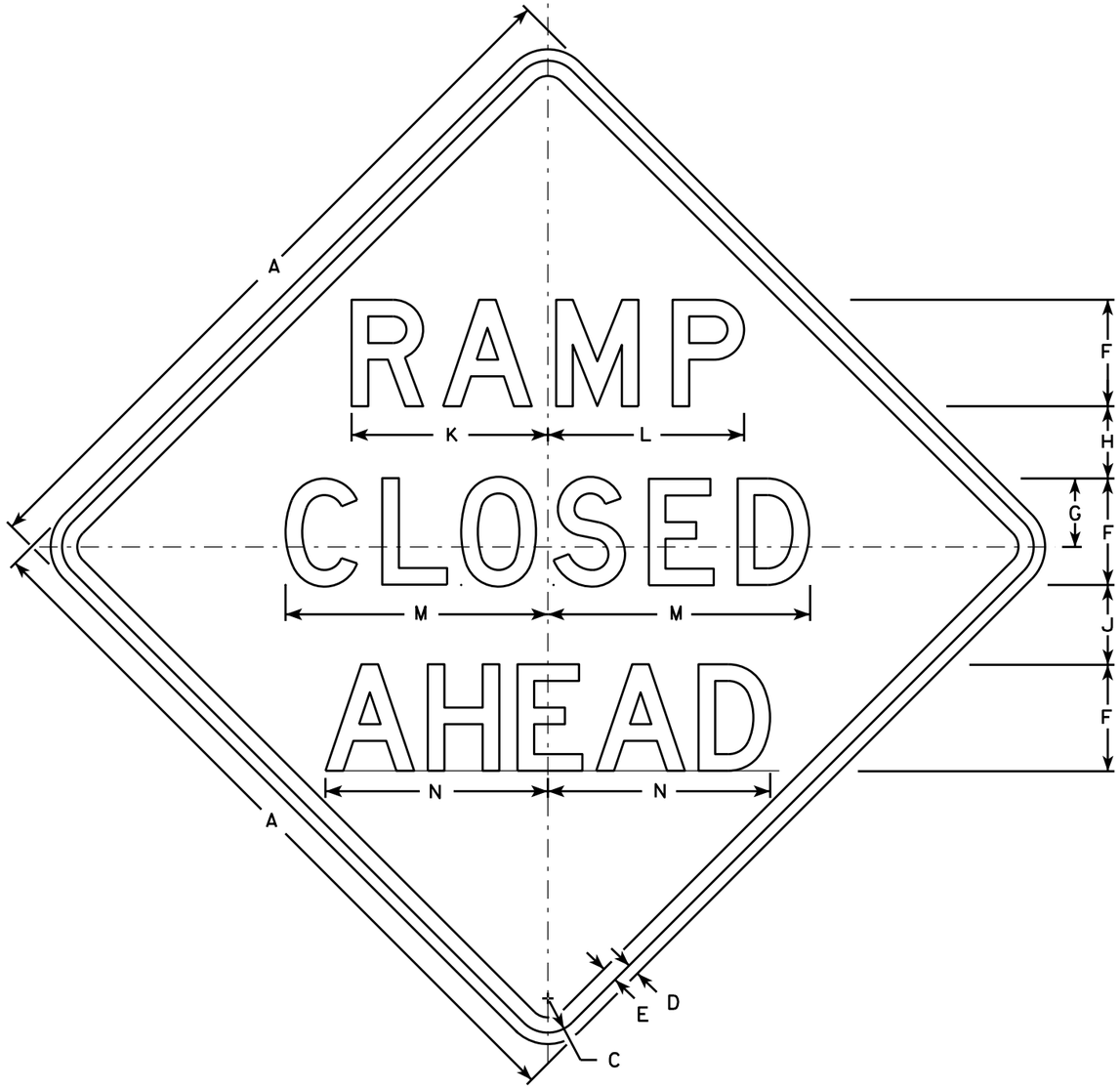
SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 25-MARCH-2020 PLOT BY : dotc4c

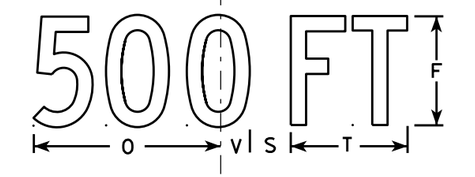
WISDOT/CADDS SHEET 42

7

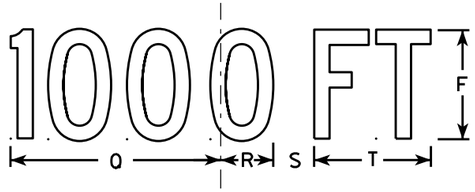
7



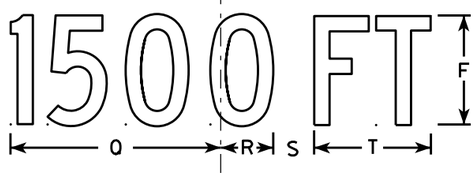
W20-53A



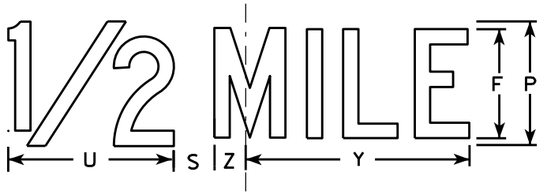
W20-53D



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

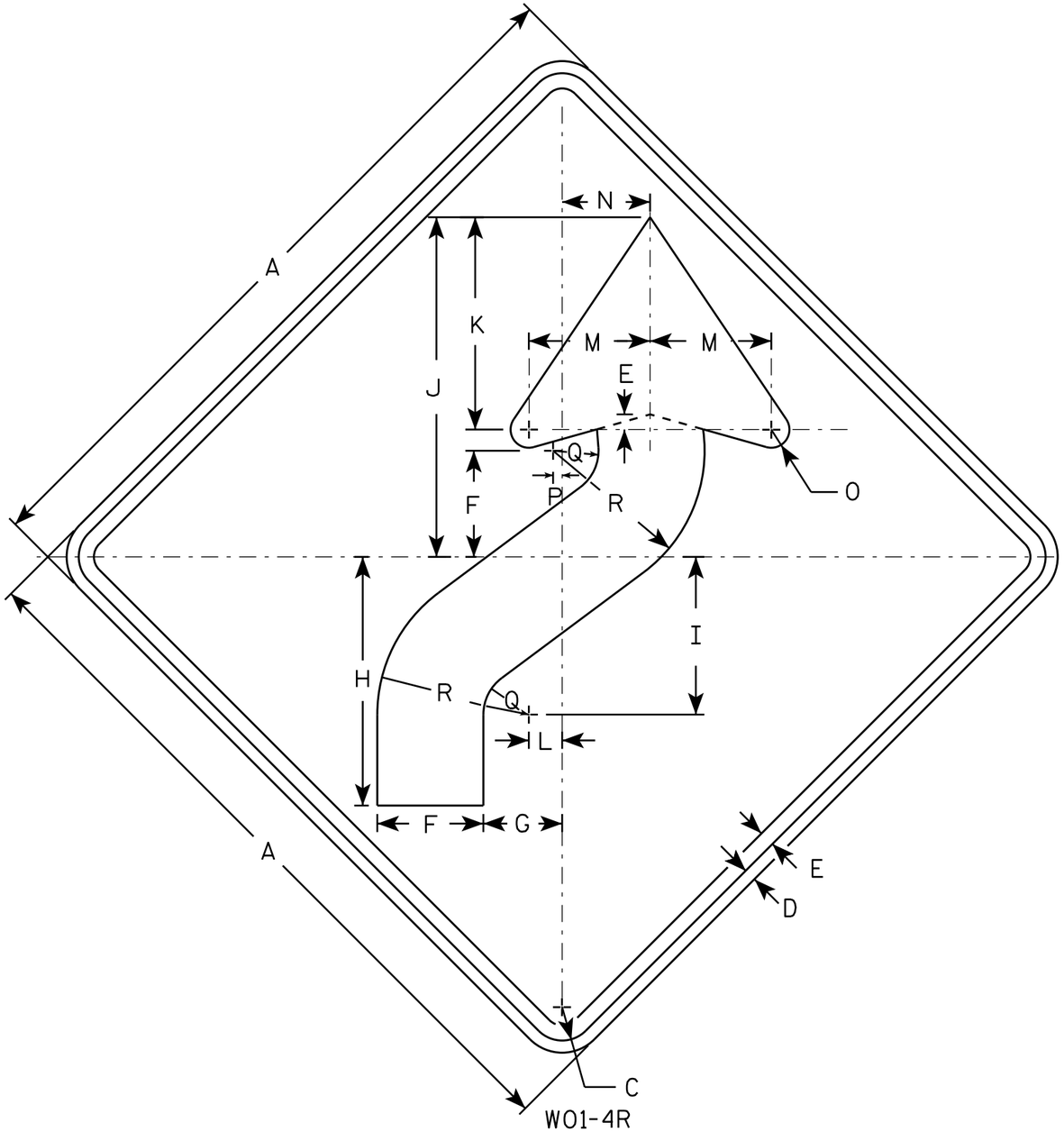
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W2053.DGN PLOT DATE : 27-MAY-2015 19:40 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.729210:1.000000
WISDOT/CADDS SHEET 42



W01-4R

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

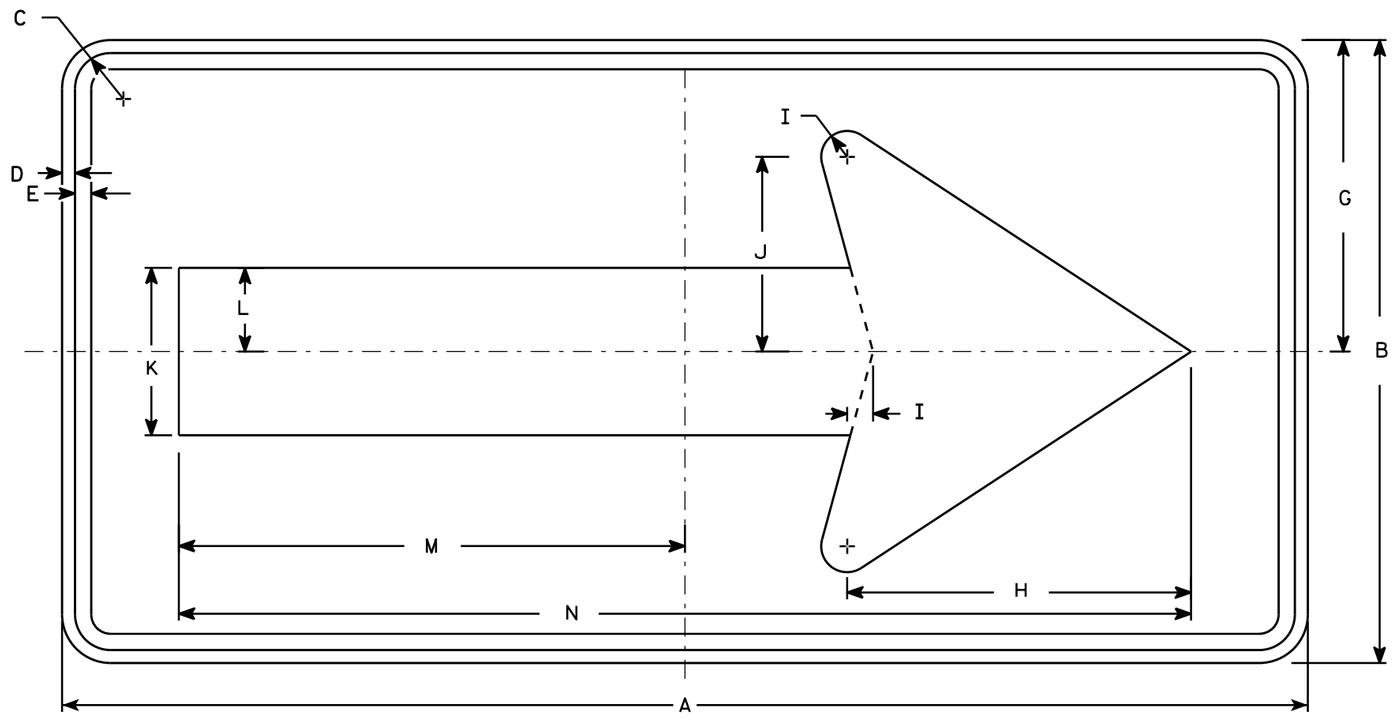
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000
WISDOT/CADDS SHEET 42



W01-6

NOTES

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

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	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

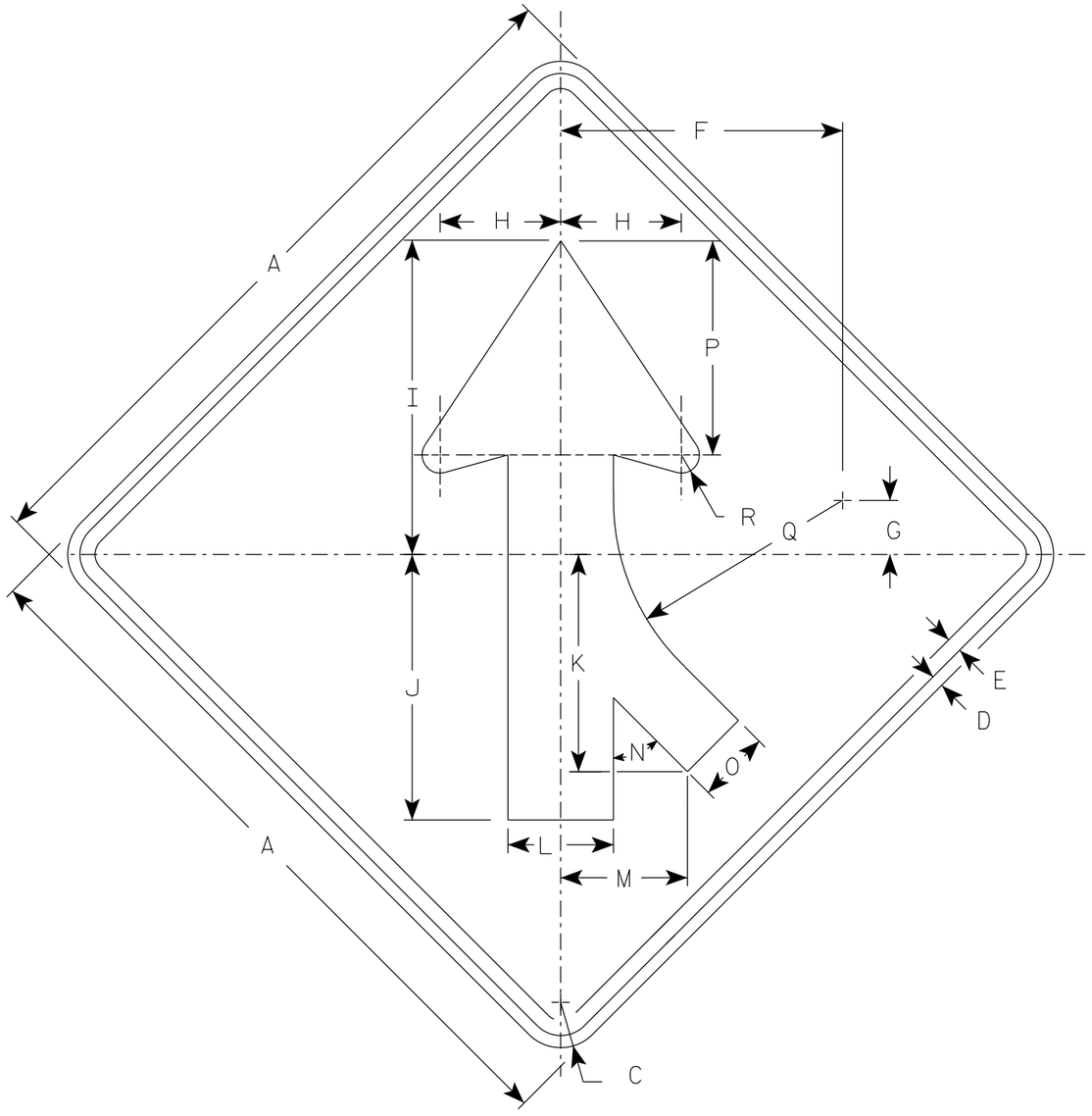
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W04-1R

NOTES

1. Sign is Type II - Type F Reflective
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. W04-1L is the same as W04-1R 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	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2S	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
2M	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
3	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN
W04-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2021 PLATE NO. W04-1.2

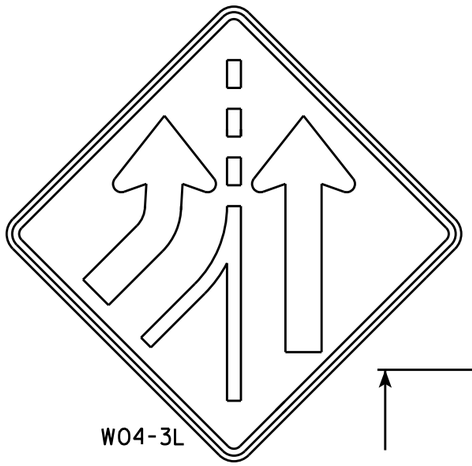
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

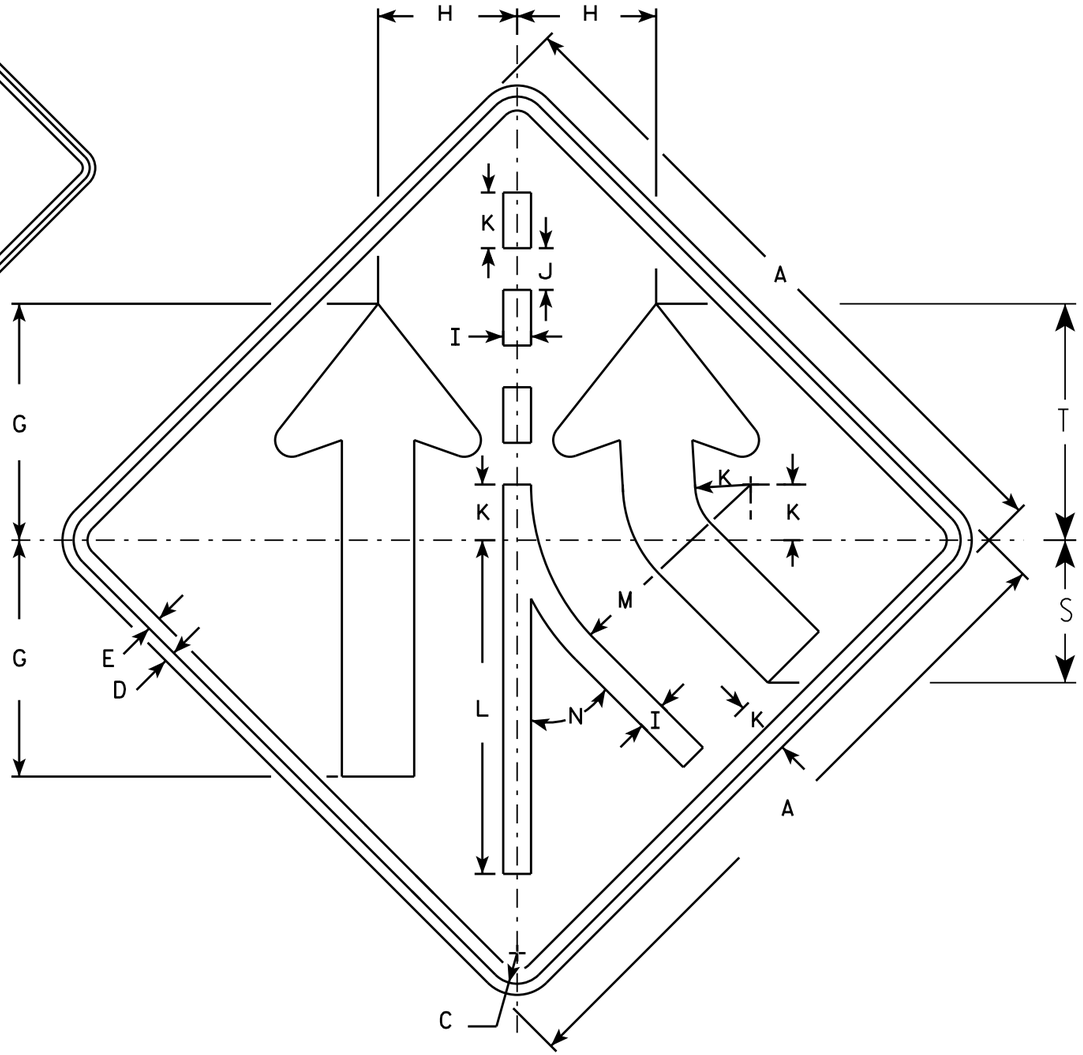
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W041.dgn PLOT DATE : 30-MAR 2021 8:25 PLOT BY : dotc4c PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 42

7

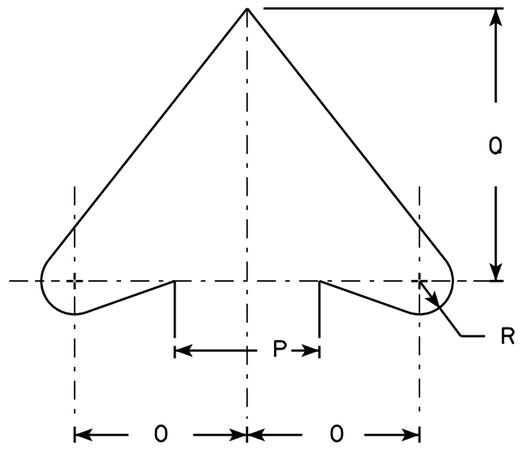
7





NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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. W04-3 L is the same as W04-3 R except the arrow is reversed along the vertical centerline.



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	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
2S	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
2M	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
3	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
4	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
5	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0

STANDARD SIGN

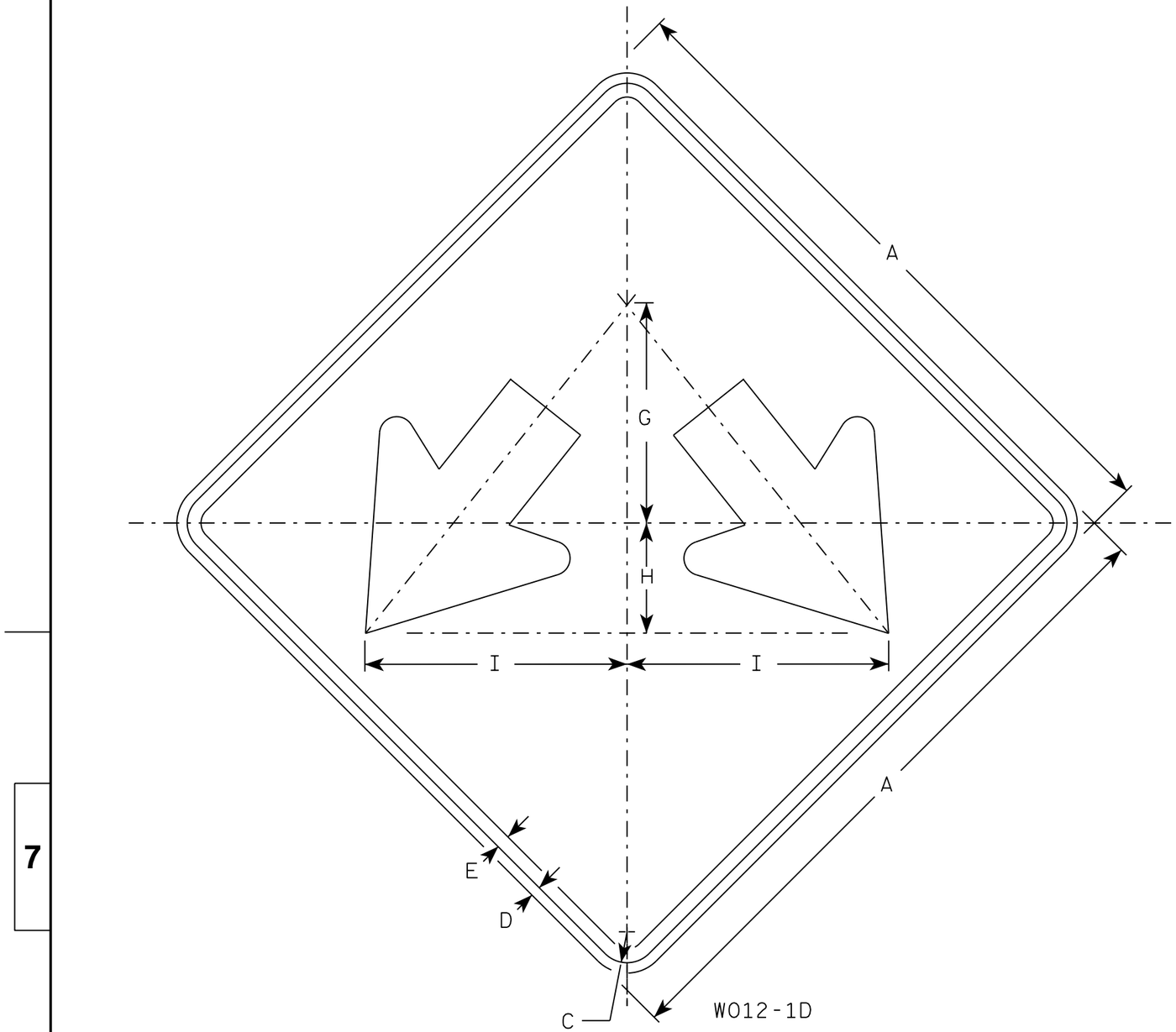
W0433

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W04-3.1

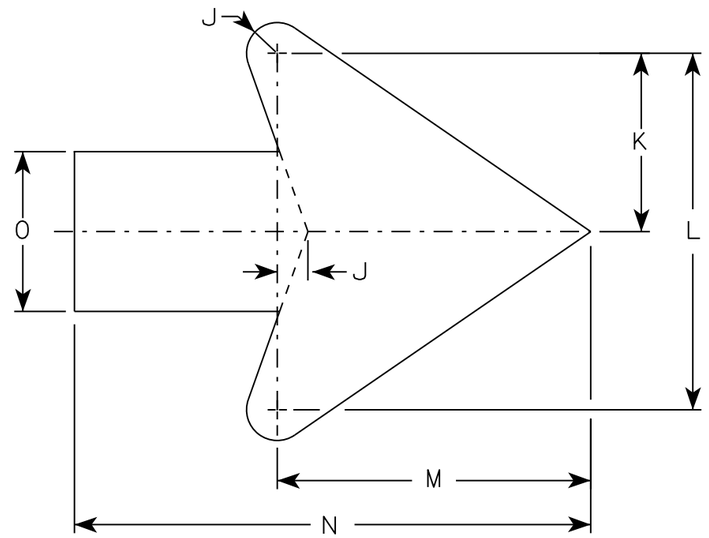
PROJECT NO: SHEET NO: E



W012-1D

NOTES

1. Sign is Type II - Type F Reflective
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.



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	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0

STANDARD SIGN
W012-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

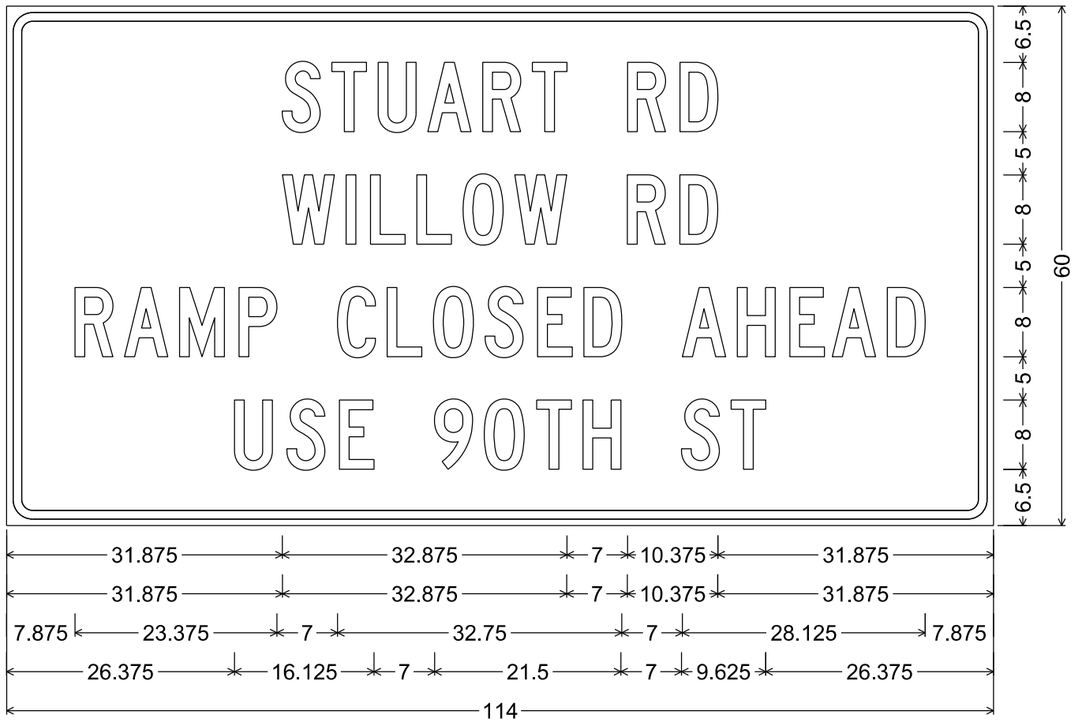
DATE 7/28/16 PLATE NO W012-1D.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

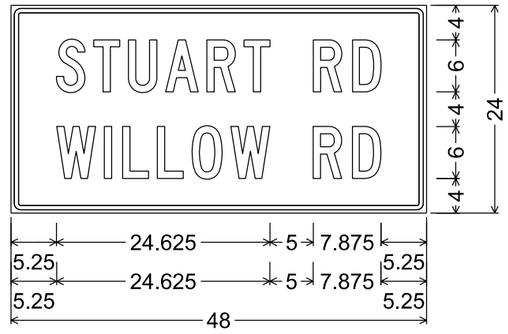
FILE NAME : C:\CADfiles\Projects\tr_stdplate\W0121D.DGN PLOT DATE : 11-AUG-2016 11:28 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 4.621375:1.000000

NOTES

1. Fixed Message Signs - Type II Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C



3.000" Radius, 1.000" Border, 0.750" Indent



1.125" Radius, 0.500" Border, 0.375" Indent

7

7

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	TEMPORARY SIGNING	SHEET NO: 232	E

STATE PROJECT NUMBER
2340-03-73

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS15
OPERATING RATING: HS26
WISCONSIN STANDARD PERMIT VEHCILE (WIS-SPV) = 140 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE, OVERLAY DECKS .....f'c = 4,000 psi
ALL OTHER .....f'c = 4,000 psi
BAR STEEL REINFORCEMENT
GRADE 60 .....fy = 60,000 psi

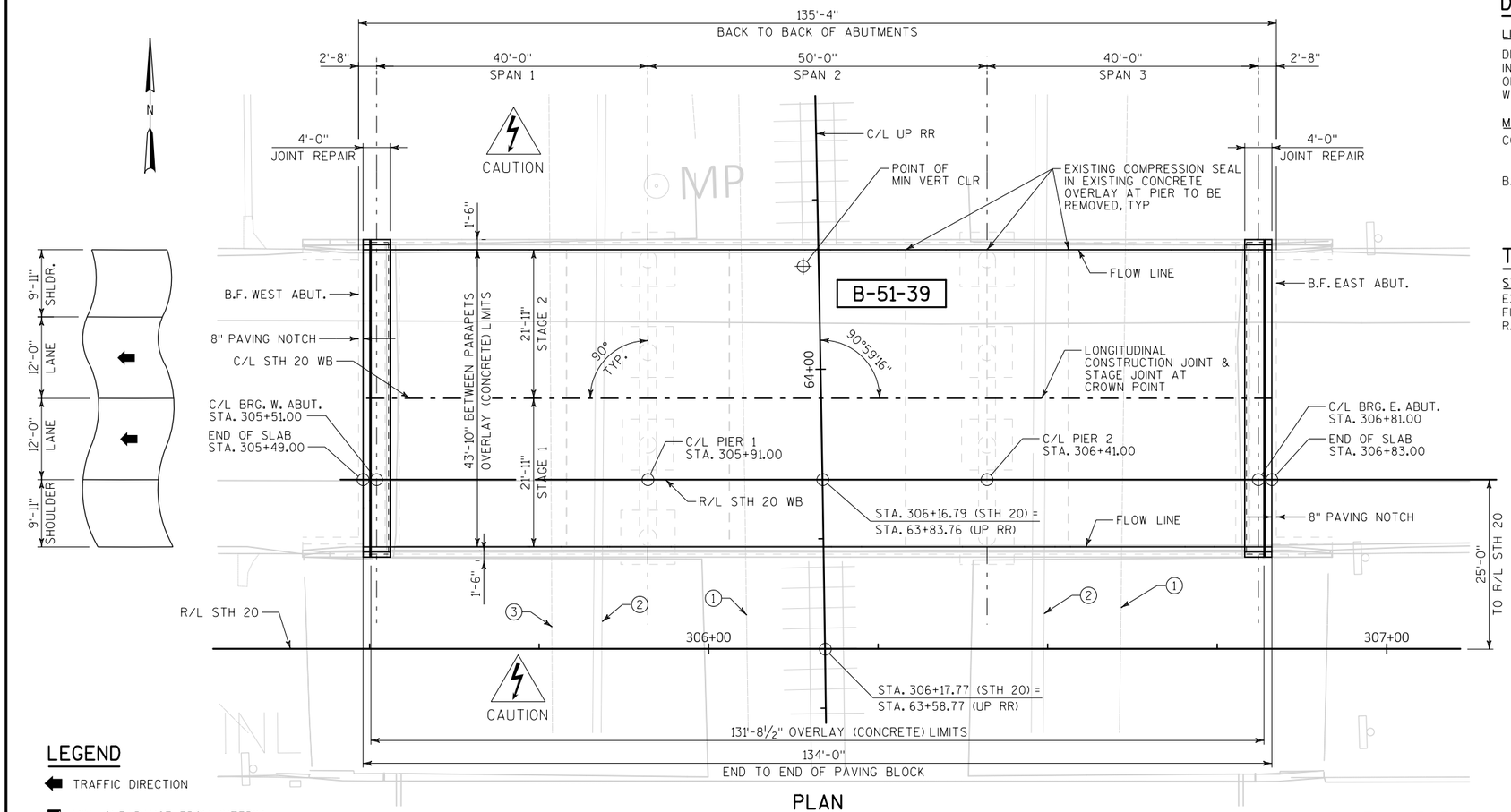
TRAFFIC DATA

STH 20
EXISTING A.D.T. = 14,500 (2017)
FUTURE A.D.T. = 16,800 (2042)
R.D.S. = 50 MPH

LIST OF DRAWINGS

UPRR GENERAL CONSTRUCTION REQUIREMENTS

1. ALL WORK WITHIN 25'OF TRACK, OVER TRACK, OR WITH POTENTIAL TO FOUL TRACK REQUIRES UPRR FLAGMAN TO BE ON SITE.
2. ALL EQUIPMENT, MATERIALS, AND PERSONNEL SHALL REMAIN OUTSIDE THE MINIMUM CONSTRUCTION CLEARANCE ENVELOPE, EXCEPT WHEN WITHIN PRE-DETERMINED TRACK CURFEWS.
3. ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT WITHIN 50 FEET DURING THE APPROACH AND PASSAGE OF A TRAIN.
4. EQUIPMENT SHALL NOT BE SUPPORTED BY THE TRACK BALLAST, SUB-BALLAST, TIES, OR RAILS AT ANY TIME.
5. STORAGE AND STAGING AREAS ARE NOT PERMITTED WITHIN UPRR RIGHT OF WAY, EXCEPT WITHIN PRE-APPROVED ZONES SUCH AS EASEMENTS.
6. TEMPORARY TRACK CROSSINGS MUST BE APPROVED BY UPRR'S LOCAL OPERATING UNIT AND UPRR MANAGER OF INDUSTRY AND PUBLIC PROJECTS PRIOR TO START OF CONSTRUCTION.
7. TRACK CROSSINGS AND USE OF UPRR ACCESS ROADS / HAUL ROADS MUST BE COORDINATED WITH UPRR'S LOCAL MANAGER OF TRACK MAINTENANCE (AND YARD MASTER, IF WITHIN YARD LIMITS).
8. TEMPORARY DRAINAGE STRUCTURES AND/OR BMP'S SHALL NOT DIRECT STORMWATER TOWARDS UPRR TRACKS OR ACCESS ROADS.
9. UNATTENDED EXCAVATIONS WITHIN UPRR RIGHT OF WAY SHALL BE PROPERLY SECURED BY FENCING AND/OR COVERING(S) PER OSHA REQUIREMENTS.
10. FOR ANY CONSTRUCTION THAT INCLUDES HEAVY EQUIPMENT OR EXCAVATION, ALL UTILITIES WITHIN UPRR RIGHT OF WAY MUST BE IDENTIFIED AND MARKED PRIOR TO START OF CONSTRUCTION. UPRR CALL BEFORE YOU DIG: UP.COM/CBUD



LEGEND

TRAFFIC DIRECTION

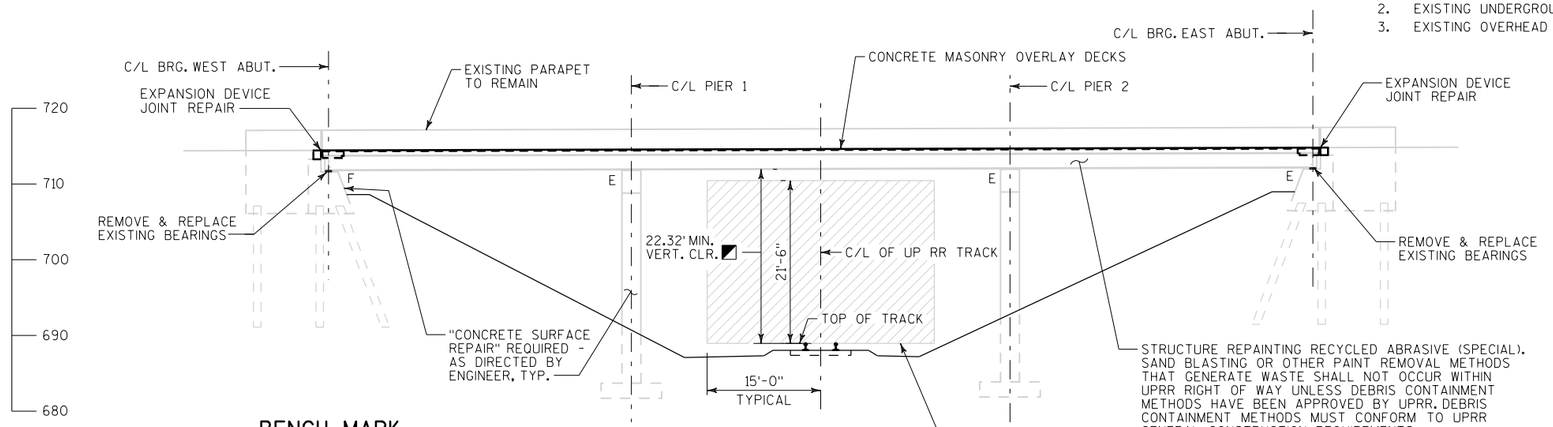
MIN. CLEARANCE FROM INTERIM BRIDGE INSPECTION REPORT FOR B-51-39 DATED: 07/18/2018

PLAN

(EXISTING 3 SPAN - W24 STEEL GIRDERS)
REMOVE EXISTING POLYMER MODIFIED ASPHALT & CONCRETE OVERLAYS
INSTALL NEW CONCRETE OVERLAY

UTILITY LEGEND

1. EXISTING UNDERGROUND FIBER OPTIC CABLE TO REMAIN
2. EXISTING UNDERGROUND STORM SEWER TO REMAIN
3. EXISTING OVERHEAD ELECTRIC TRANSMISSION LINES TO REMAIN



ELEVATION

LOOKING NORTH

BENCH MARK

NUMBER		ELEVATION
BM 1	ALUMINUM PLUG LOCATED IN THE SW PARAPET WALL, B-51-44	717.39

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
ED MCCRIGHT (414) 272-2426

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
ch2m:
MILWAUKEE, WISCONSIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 08/25/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN
EDWARD K. McCRIGHT
E-37422
MILWAUKEE, WI
7/31/23
PROFESSIONAL ENGINEER

STRUCTURE B-51-39

STH 20 WB OVER UP RR

COUNTY	TOWN/~~CITY/VILLAGE~~
RACINE	MOUNT PLEASANT

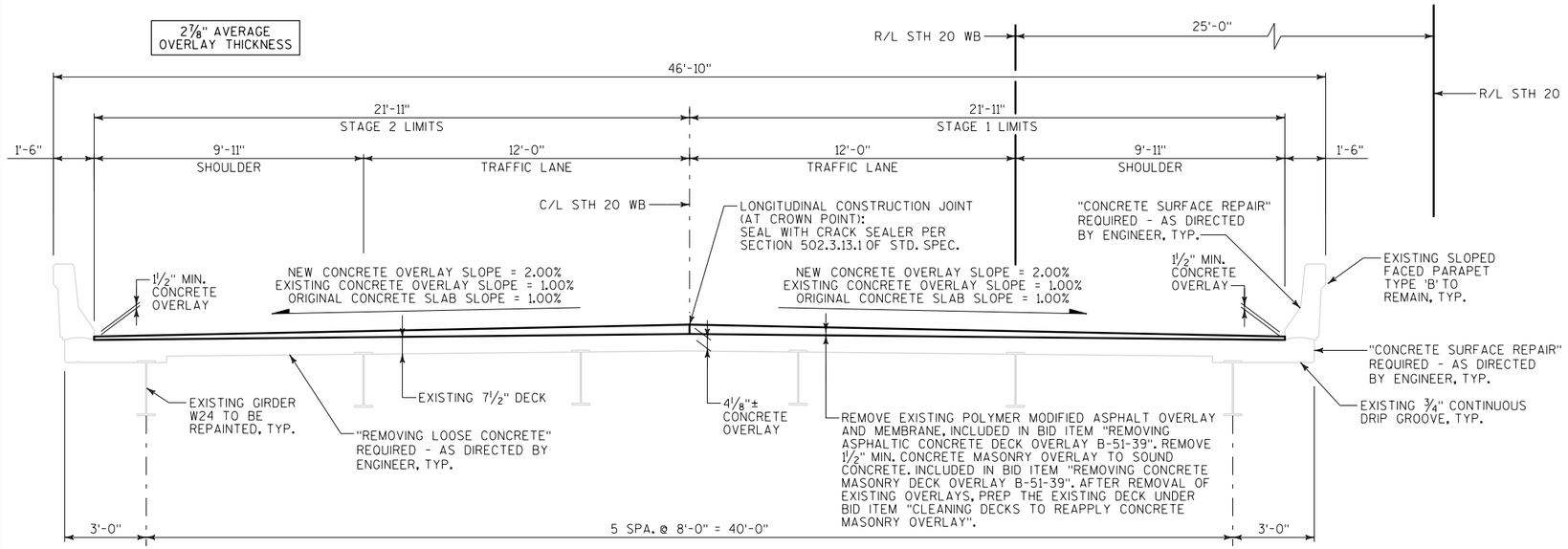
DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EKM	SGM	EKM	SGM

GENERAL PLAN & ELEVATION

SHEET 1 OF 9

FILE NAME : B-51-39_01_GP.dgn PLOT DATE : 20-JUL-2023 PLOT BY : emccrigh B-51-39_01_GP PLOT SCALE : 20:1



TYPICAL SECTION

(LOOKING EAST)

LEGEND

☆ CUT EXISTING ANCHOR BOLTS FLUSH WITH TOP OF EXISTING CONCRETE BEAM SEAT AND GRIND SMOOTH. PAINT ENDS OF EXPOSED ANCHOR BOLTS WITH EPOXY CONFORMING TO AASHTO M-235, TYPE 3, GRADE 2, CLASS B OR C.

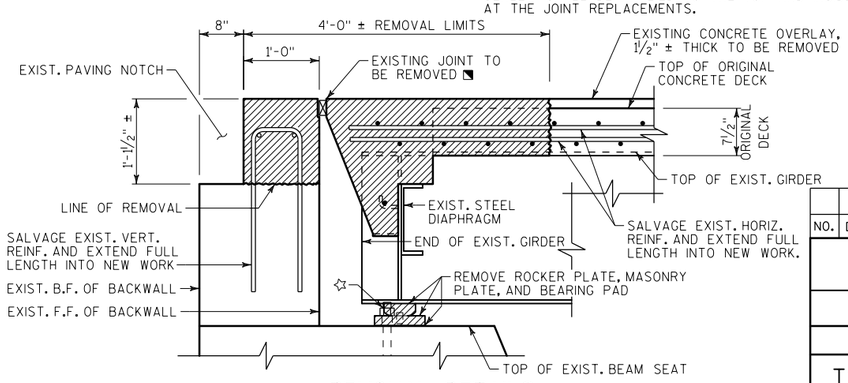
◥ WEST ABUTMENT - COMPRESSION JOINT SHOWN, EAST ABUTMENT - EXPANSION JOINT SIMILAR

◐ WEST ABUTMENT - ROCKER PLATE, MASONRY PLATE, AND BEARING PAD SHOWN, EAST ABUTMENT - TOP PLATE, LUBRICATED BRONZE PLATE, ROCKER PLATE, KEEPER BARS, AND MASONRY PLATE SIMILAR

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	SUPER	TOTAL
502.0100	CONCRETE MASONRY BRIDGES	CY	---	---	---	---	2	2
502.3101	EXPANSION DEVICE	LF	---	---	---	---	88	88
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	---	---	642	642
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	---	---	122	122
502.4205	ADHESIVE ANCHORS NO.5 BAR	EACH	---	---	---	---	92	92
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	---	---	---	3,550	3,550
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	---	---	---	---	12	12
506.7050.S	REMOVING BEARINGS B-51-39	EACH	---	---	---	---	12	12
509.0301	PREPARATION DECKS TYPE 1	SY	---	---	---	---	34	34
509.0302	PREPARATION DECKS TYPE 2	SY	---	---	---	---	17	17
509.0505.S	CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY	SY	---	---	---	---	642	642
509.1000	JOINT REPAIR	SY	---	---	---	---	40	40
509.1500	CONCRETE SURFACE REPAIR	SF	20	---	10	30	---	60
509.2000	FULL DEPTH DECK REPAIR	SY	---	---	---	---	1	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	---	---	---	---	62	62
509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-51-39	SY	---	---	---	---	642	642
509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-51-39	SY	---	---	---	---	642	642
509.9020.S	EPOXY CRACK SEALING	LF	10	---	---	10	---	20
509.9050.S	CLEANING PARAPETS	LF	---	---	---	---	305	305
517.0901.S	PREPARATION AND COATING OF TOP FLANGES B-51-39	EACH	---	---	---	---	1	1
517.4501.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-51-39	EACH	---	---	---	---	1	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	---	---	---	---	1	1
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	7	---	---	2	---	9
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	290	---	---	290	---	580
SPV.0060.11	EMBEDDED GALVANIC ANODES	EACH	14	---	10	19	---	43
SPV.0060.12	STRUCTURE REPAINTING RECYCLED ABRASIVE SPECIAL B-51-39	EACH	---	---	---	---	1	1
SPV.0060.14	VEGETATION REMOVAL B-51-39	EACH	---	---	---	---	1	1
SPV.0165.10	REMOVING LOOSE CONCRETE	SF	---	---	---	---	35	35
SPV.0180.10	ABUTMENT SEAT CLEANING AND SEALING	SY	12	---	---	12	---	24

ALL ITEMS ARE CATEGORY 0020



REMOVAL DETAILS

WEST ABUTMENT SHOWN W/ ASPHALTIC OVERLAY REMOVED
(EAST ABUTMENT OPPOSITE BUT SIMILAR)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

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

ALL REINFORCING BARS ARE ENGLISH. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

LOCATIONS OF "CONCRETE SURFACE REPAIR" SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. QUANTITIES SHOWN FOR THIS BID ITEM ARE APPROXIMATE. ALL SUBSTRUCTURE CONCRETE SURFACE REPAIRS SHALL INCLUDE "EMBEDDED GALVANIC ANODES", PAID FOR SEPARATELY.

REPLACE ALL BEARINGS AT BOTH ABUTMENTS. TO BE PAID FOR AS "REMOVING BEARINGS B-51-39" AND "BEARING PADS ELASTOMERIC LAMINATED".

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", AND "FULL-DEPTH DECK REPAIR" AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL DECK DEPTH REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE, SHALL BE PAID PER LINEAL FOOT AS "EXPANSION DEVICE".

REMOVAL OF THE PARAPET AND MEDIAN AT JOINTS IS INCLUDED IN BID ITEM "JOINT REPAIR". DEBRIS CONTAINMENT FOR JOINT REMOVAL AND REPLACEMENT OPERATIONS AND OTHER REHABILITATION WORK IS INCLUDED UNDER THE BID ITEM "JOINT REPAIR".

NEW CONCRETE AT JOINT REPAIR IS PAID FOR AS "CONCRETE MASONRY OVERLAY DECKS".

NEW CONCRETE TO REPLACE THE PARAPET AT THE JOINT REPAIRS IS PAID FOR AS "CONCRETE MASONRY BRIDGES".

CLEAN AND PAINT ALL EXPOSED STEEL SUPERSTRUCTURE SURFACES UNDERNEATH THE BRIDGE. THE SURFACES INCLUDE GIRDERS, DIAPHRAGMS, CONNECTIONS, ETC. ALL CLEANING AND PAINTING TO BE PAID FOR AS "STRUCTURE REPAINTING RECYCLED ABRASIVE SPECIAL B-51-39".

SAND BLASTING OR OTHER PAINT REMOVAL METHODS THAT GENERATE WASTE SHALL NOT OCCUR WITHIN UPRR RIGHT OF WAY UNLESS DEBRIS CONTAINMENT METHODS HAVE BEEN APPROVED BY UPRR. DEBRIS CONTAINMENT METHODS MUST CONFORM TO UPRR GENERAL CONSTRUCTION REQUIREMENTS.

EXISTING EXPANSION BEARINGS AT PIERS 1 AND 2 ARE TO BE CLEANED AND PAINTED. THIS WORK IS PAID FOR UNDER "STRUCTURE REPAINTING RECYCLED ABRASIVE (SPECIAL) B-51-39".

EXISTING STEEL SUPERSTRUCTURE SHALL BE PAINTED GRAY, AMS STD. COLOR NUMBER 26293.

BEVEL EXPOSED EDGES OF CONCRETE 3/4", UNLESS NOTED OTHERWISE.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS SHALL BE INCIDENTAL TO BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED UPON A MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER THE "CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY". EXPECTED AVERAGE OVERLAY THICKNESS IS 2 7/8". IF EXPECTED OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2" CONTACT THE STRUCTURES DESIGN SECTION.

"PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

"PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF EXISTING PARAPETS. PERFORM "CLEANING PARAPETS" PRIOR TO THIS APPLICATION. "PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF NEW SECTIONS OF PARAPET AT THE JOINT REPLACEMENTS.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-39

DRAWN BY TEK | PLANS CK'D. EKM

TYPICAL SECTION, GENERAL NOTES & QUANTITIES

SHEET 2 OF 9

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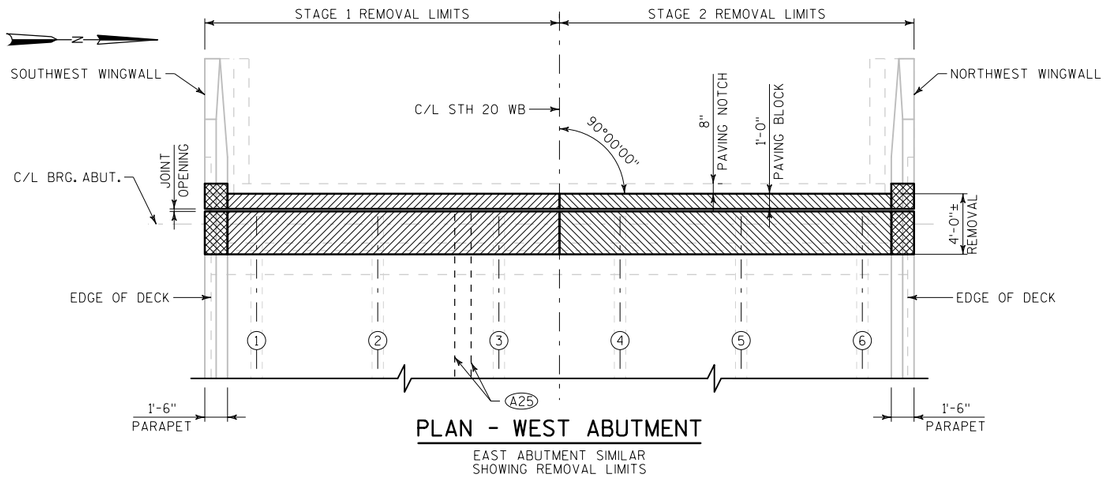
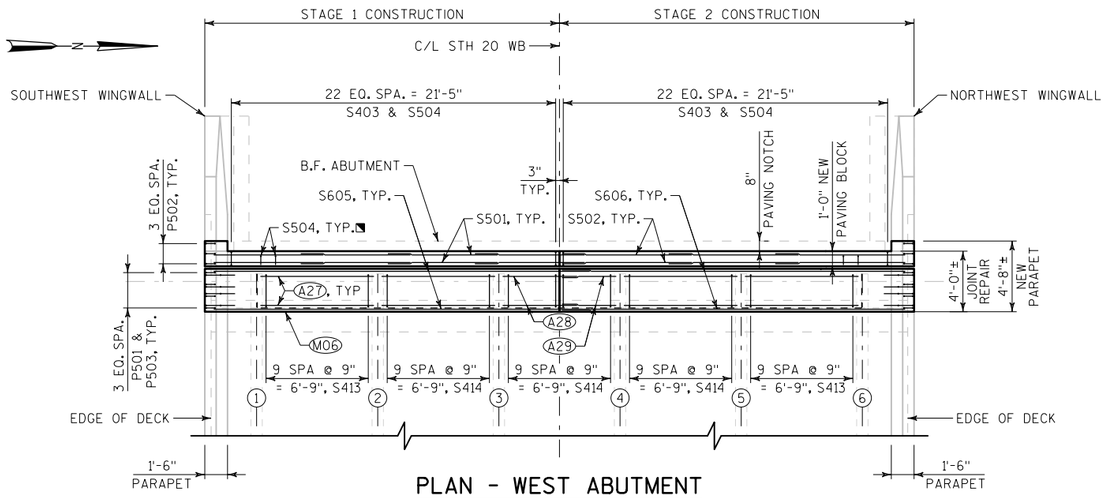


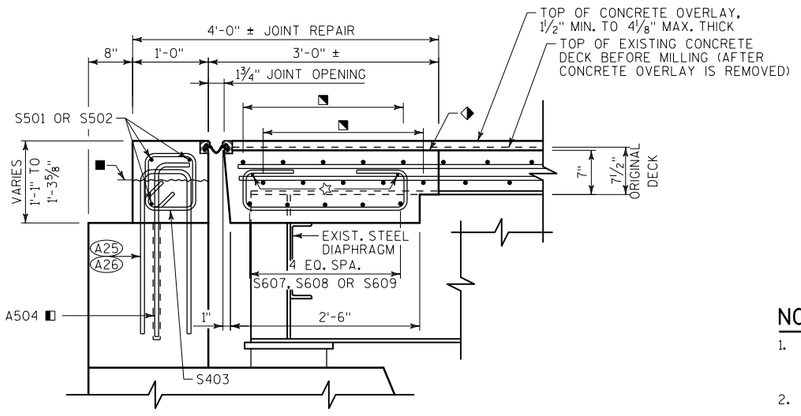
PLAN - WEST ABUTMENT

EAST ABUTMENT SIMILAR
SHOWING REMOVAL LIMITS

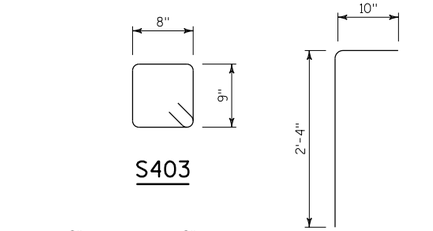


PLAN - WEST ABUTMENT

EAST ABUTMENT SIMILAR
SHOWING REMOVAL LIMITS



SECTION THRU JOINT REPAIR



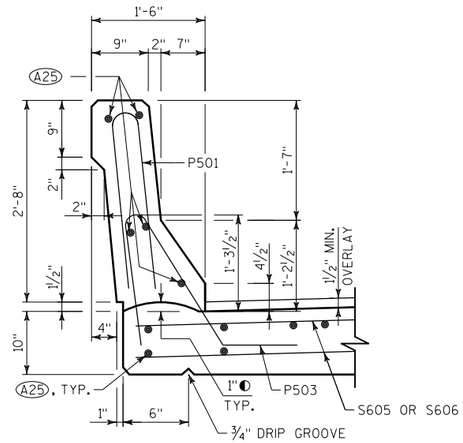
BAR MARK	DIM. 'A'
S413	9"
S414	6"

BAR MARK	DIM. 'A'
P501	2'-4"
P502	2'-2"

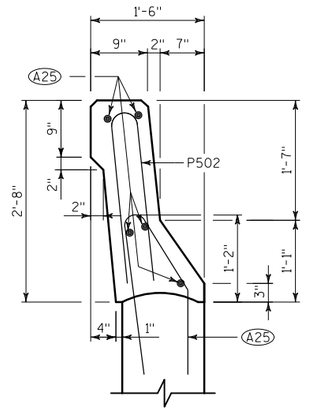
BILL OF BARS - JOINT REPAIR

BAR MARK	COAT	NO. BARS STAGE 1	NO. BARS STAGE 2	NO. BARS TOTAL	LENGTH	BENT	LOCATION
S501	X	24	---	24	7'-3"		PAVING BLOCK - TRANSVERSE
S502	X	---	18	18	8'-7"		PAVING BLOCK - TRANSVERSE
S403	X	46	46	92	3'-4"	X	PAVING BLOCK - STIRRUPS - VERTICAL
S504	X	46	46	92	3'-0"	X	PAVING BLOCK - VERTICAL
S605	X	20	---	20	24'-6"		SUPERSTRUCTURE - TRANSVERSE
S606	X	---	20	20	22'-8"		SUPERSTRUCTURE - TRANSVERSE
S607	X	20	20	40	7'-6"		DIAPHRAGM - TRANSVERSE - BOTTOM
S608	X	10	---	10	5'-9"		DIAPHRAGM - TRANSVERSE - BOTTOM
S609	X	---	10	10	3'-7"		DIAPHRAGM - TRANSVERSE - BOTTOM
S410	X	8	8	16	7'-6"		DIAPHRAGM - TRANSVERSE - TOP
S411	X	4	---	4	4'-11"		DIAPHRAGM - TRANSVERSE - TOP
S412	X	---	4	4	3'-7"		DIAPHRAGM - TRANSVERSE - TOP
S413	X	20	20	40	4'-8"	X	DIAPHRAGM - VERTICAL
S414	X	30	30	60	4'-2"	X	DIAPHRAGM - VERTICAL
S415	X	8	8	16	7'-3"		EXPANSION DEVICE - TRANSVERSE
S416	X	2	---	2	4'-10"		EXPANSION DEVICE - TRANSVERSE
S417	X	---	2	2	3'-6"		EXPANSION DEVICE - TRANSVERSE
P501	X	8	8	16	4'-10"	X	PARAPET - VERTICAL
P502	X	6	6	12	4'-6"	X	PARAPET - VERTICAL
P503	X	8	8	16	4'-7"	X	PARAPET & DECK - VERTICAL

NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES BAR SIZE.



SECTION THRU PARAPET ON BRIDGE



SECTION THRU PARAPET ON WINGWALL

LEGEND

- (A25) SALVAGE EXISTING REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK.
- (A26) IF EXISTING BARS ARE SEVERLY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY ANCHORED NO. 5 L-SHAPED BARS WITH A 10" HORIZONTAL LEG. EMBED 7". WORK TO BE PAID UNDER ITEM "JOINT REPAIR".
- (M06) ROUGHEN SURFACE OF CONCRETE ¼" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.
- ■ OPTIONAL CONSTRUCTION JOINT 1" MINIMUM BELOW EXISTING REINFORCEMENT.
- ◆ HOLD BACK TOP OF NEW ABUTMENT DIAPHRAGM ON DECK TO ALLOW FOR CONCRETE OVERLAY.
- ◐ CONSTRUCTION JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- ◧ ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-6" IN CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.
- (A27) S607 - BOTTOM, S410 - TOP
- (A28) S608 - BOTTOM, S411 - TOP
- (A29) S609 - BOTTOM, S412 - TOP
- ◥ 4 EQ. SPA., S605 OR S606
- ☆ S410, S411 OR S412

NOTES:

1. MINIMUM LAP LENGTHS
   NO. 5 BAR = 1'-0"
   NO. 6 BAR = 1'-10"
2. SEE "COVER PLATE DETAILS" SHEET AND INCORPORATE IN JOINT REPAIR.

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STRUCTURE B-51-39

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JOINT REPAIR DETAILS

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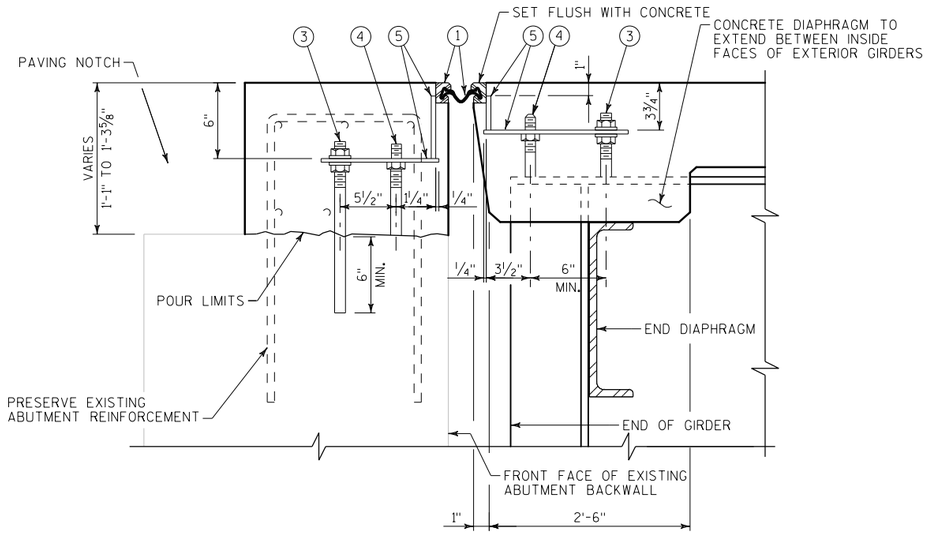
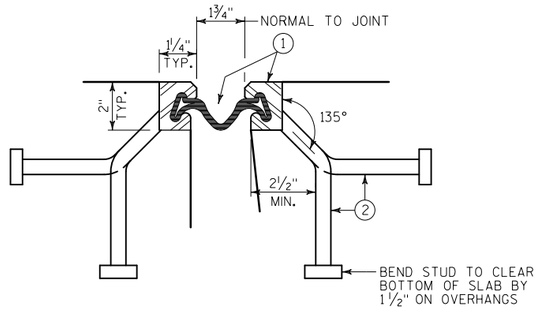


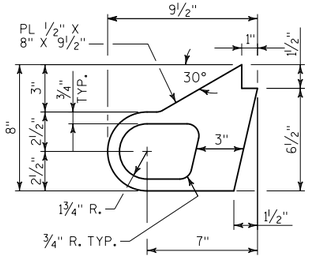
SECTION THRU JOINT AT ABUTMENT

NORMAL TO C/L STRUCTURE

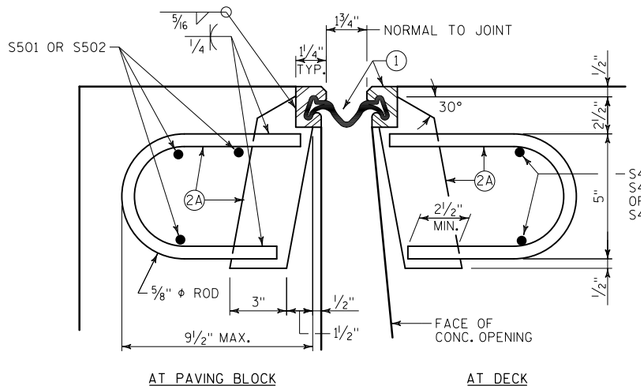


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS

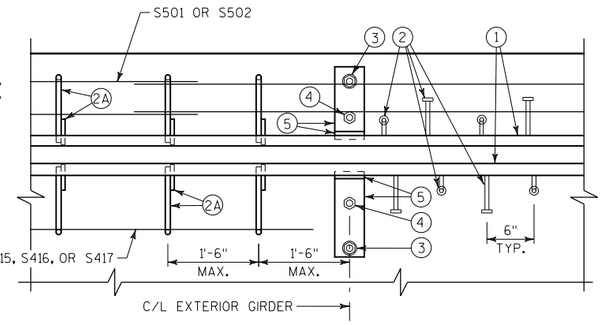


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS



PART PLAN

LEGEND

(1) NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.

(2) STUDS ⅝"ϕ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.

(2A) ½" THICK ANCHOR PLATE WITH ⅝"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.

(3) ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

(4) ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.

(5) FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.

(6) GALVANIZED PLATE ⅜" X 1'-2" X 2'-0" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.

(7) ¾"ϕ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

(8) ¾"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

(9) ¾"ϕ X 2¼" GALVANIZED THREADED COUPLING.

(10) 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, ANCHOR PLATES SHALL BE PROVIDED 3" FROM EACH SIDE OF THE FIELD SPLICE. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE", LF.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-39

DRAWN BY EKM | PLANS CK'D. SGM

EXPANSION DEVICE

SHEET 4 OF 9

8

8

FILE NAME : B-51-39_04_ED.dgn PLOT DATE : 29-JUL-2021 PLOT BY : emccrigh B-51-39_04_ED PLOT SCALE : 2:1

STATE PROJECT NUMBER

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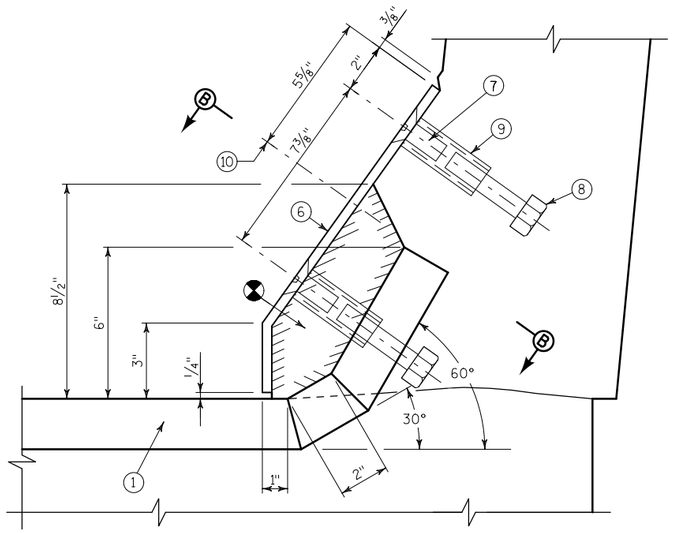
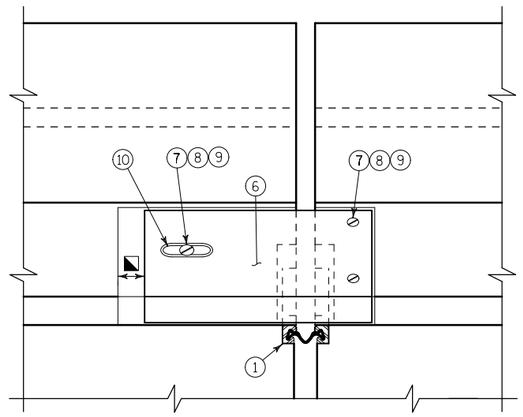
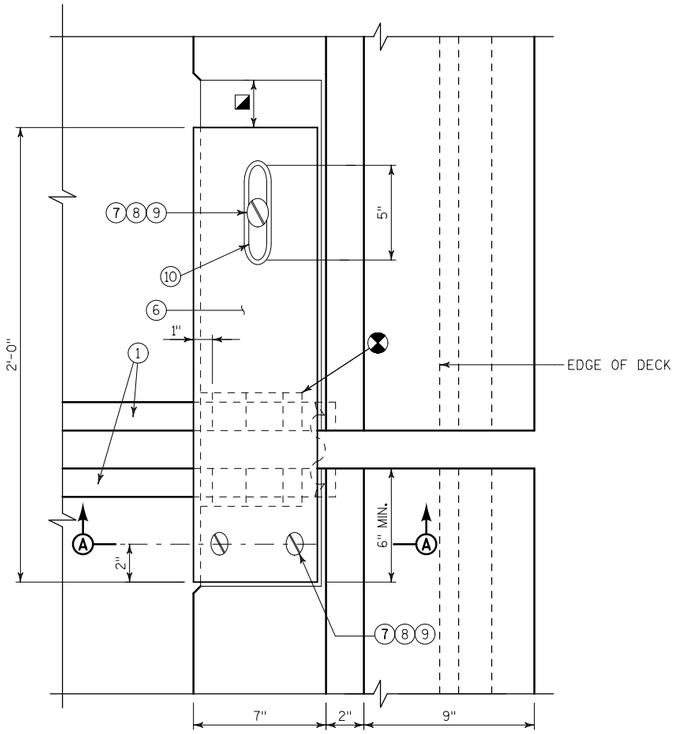


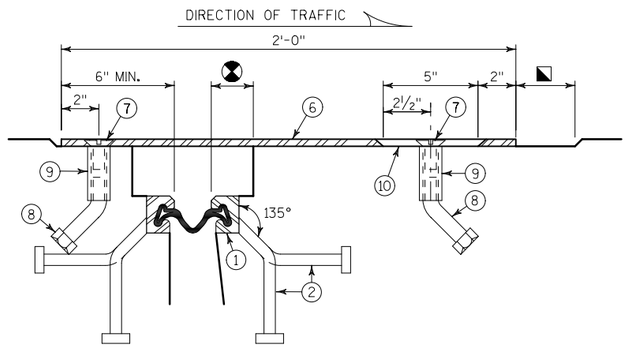
SECTION A-A



VIEW OF PARAPET PLATE FROM ROADWAY



PLAN



SECTION B-B

BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

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STRUCTURE B-51-39

DRAWN BY	EKM	PLANS CK'D.	SGM

COVER PLATE DETAILS

SHEET 5 OF 9

STATE PROJECT NUMBER
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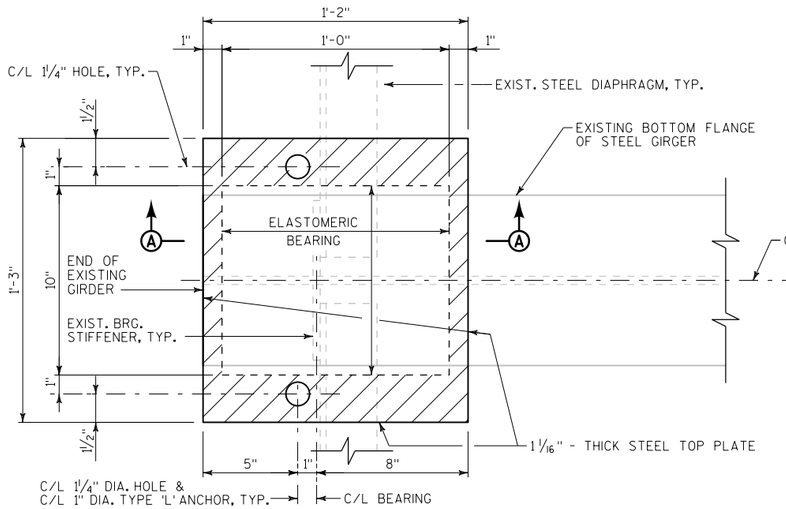
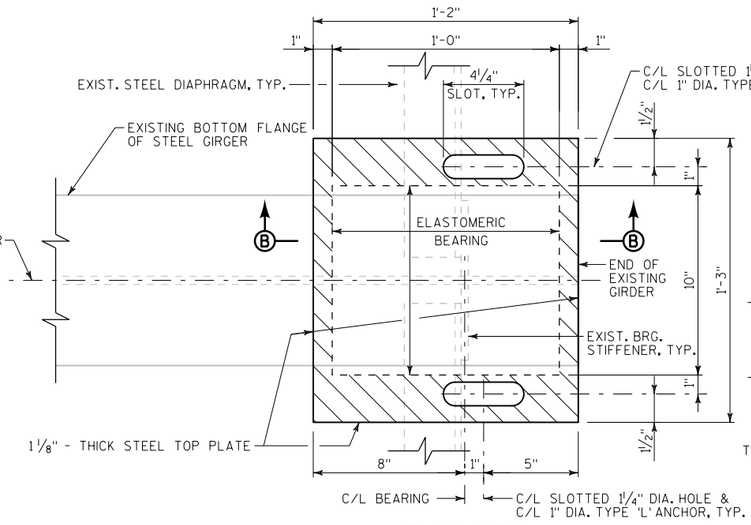
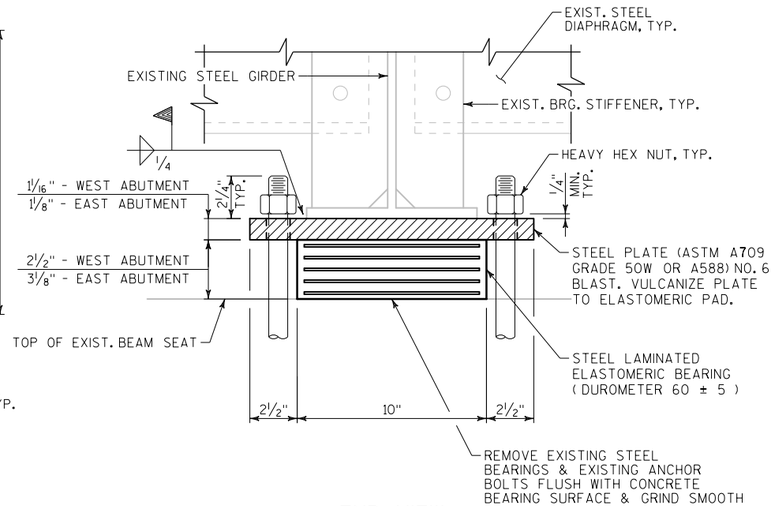


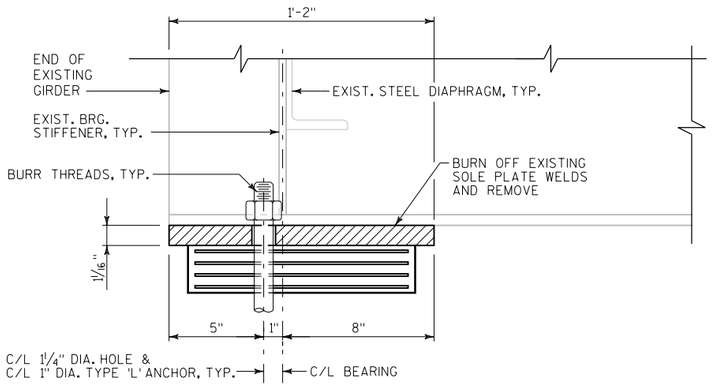
PLAN VIEW
(WEST ABUTMENT)



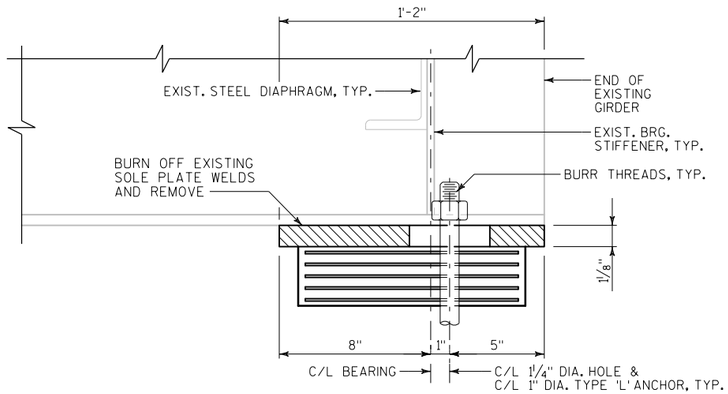
PLAN VIEW
(EAST ABUTMENT)



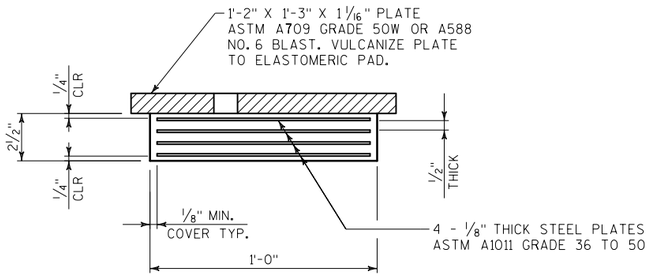
END VIEW
(BOTH ABUTMENTS)



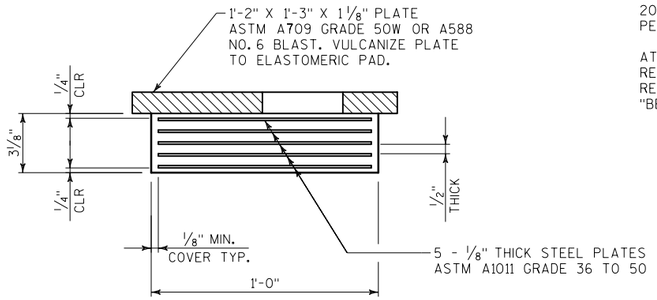
SECTION A-A
(WITH TOP PLATE DETAILS)



SECTION B-B
(WITH TOP PLATE DETAILS)



SECTION A-A
(WITH ADDITIONAL BEARING DETAILS)



SECTION B-B
(WITH ADDITIONAL BEARING DETAILS)

NOTES

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.

ALL MATERIAL USED FOR BEARINGS, ANCHOR BOLTS & HEAVY HEX NUTS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS SHALL BE THREADED 2". PROVIDE ONE HEAVY HEX NUT PER BOLT. BOLT LENGTH TO BE 2'-0". PROJECT ANCHOR BOLTS 6½" ABOVE TOP OF CONCRETE.

ANCHOR BOLTS AND NUTS SHALL CONFORM TO ASTM F1554 GRADE 55 OR MATERIAL OF EQUIVALENT YEILD STRENGTH AND ELONGATION.

ANCHOR BOLTS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

GRIND EXISTING WELD THAT ATTACHED EXISTING TOP PLATE TO EXISTING BOTTOM FLANGE. GRIND AFFECTED AREAS SMOOTH.

WELDING PROCEDURES SHALL BE ESTABLISHED BY THE CONTRACTOR TO RESTRICT THE MAXIMUM TEMPERATURE REACHED BY THE SURFACES IN CONTACT WITH ELASTOMER TO 200° F (93° C). TEMPERATURES SHALL BE CONTROLLED BY TEMPERATURE INDICATING WAX PENCILS OR OTHER SUITABLE MEANS APPROVED BY THE ENGINEER.

AT THE CONTRACTOR'S DESCRETION, THE END DIAPHRAGMS MAY BE REMOVED AND RE-INSTALLED IN KIND, TO PROVIDE ADDITIONAL ROOM TO INSTALL THE ANCHOR BOLTS. REMOVAL AND RE-INSTALLATION OF THE END DIAPHRAGMS IS INCIDENTAL TO THE BID ITEM "BEARING PAD ELASTOMERIC LAMINATED".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

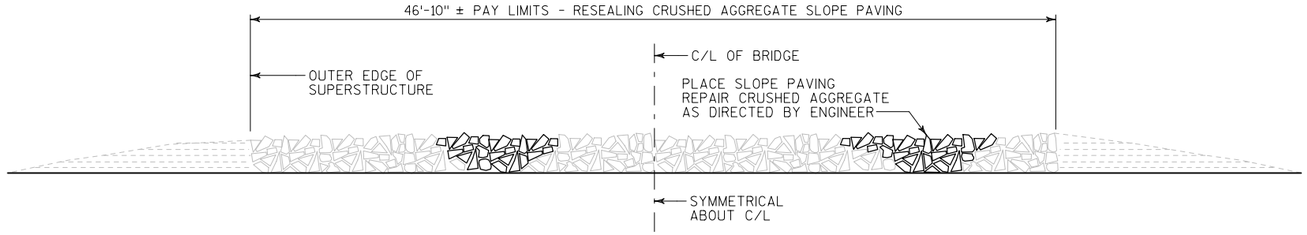
STRUCTURE B-51-39

DRAWN BY	EKM	PLANS CK'D.	SGM

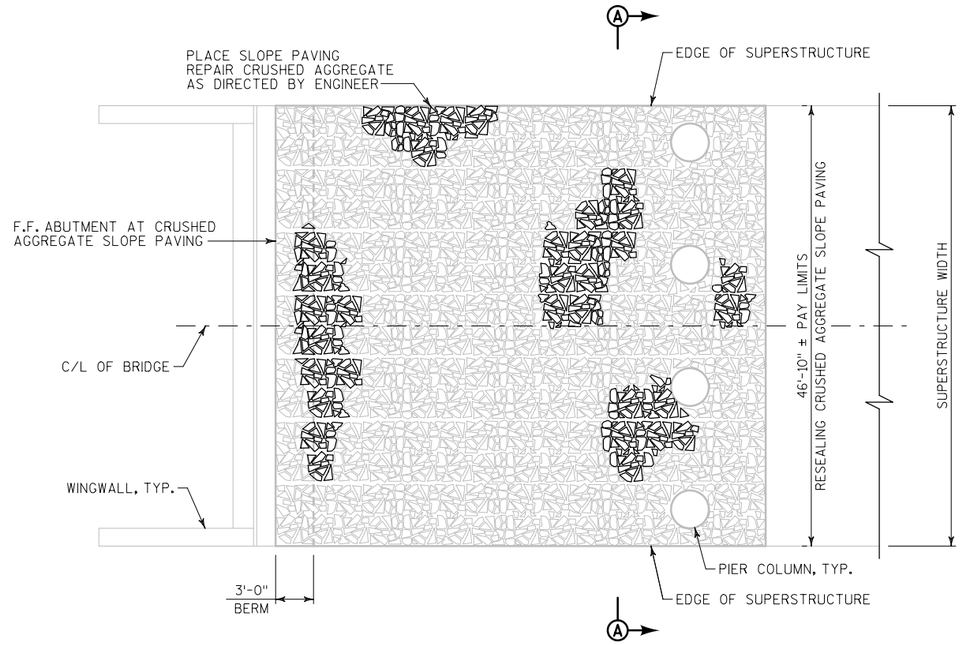
ELASTOMERIC BEARINGS

SHEET 6 OF 9

STATE PROJECT NUMBER
2340-03-73

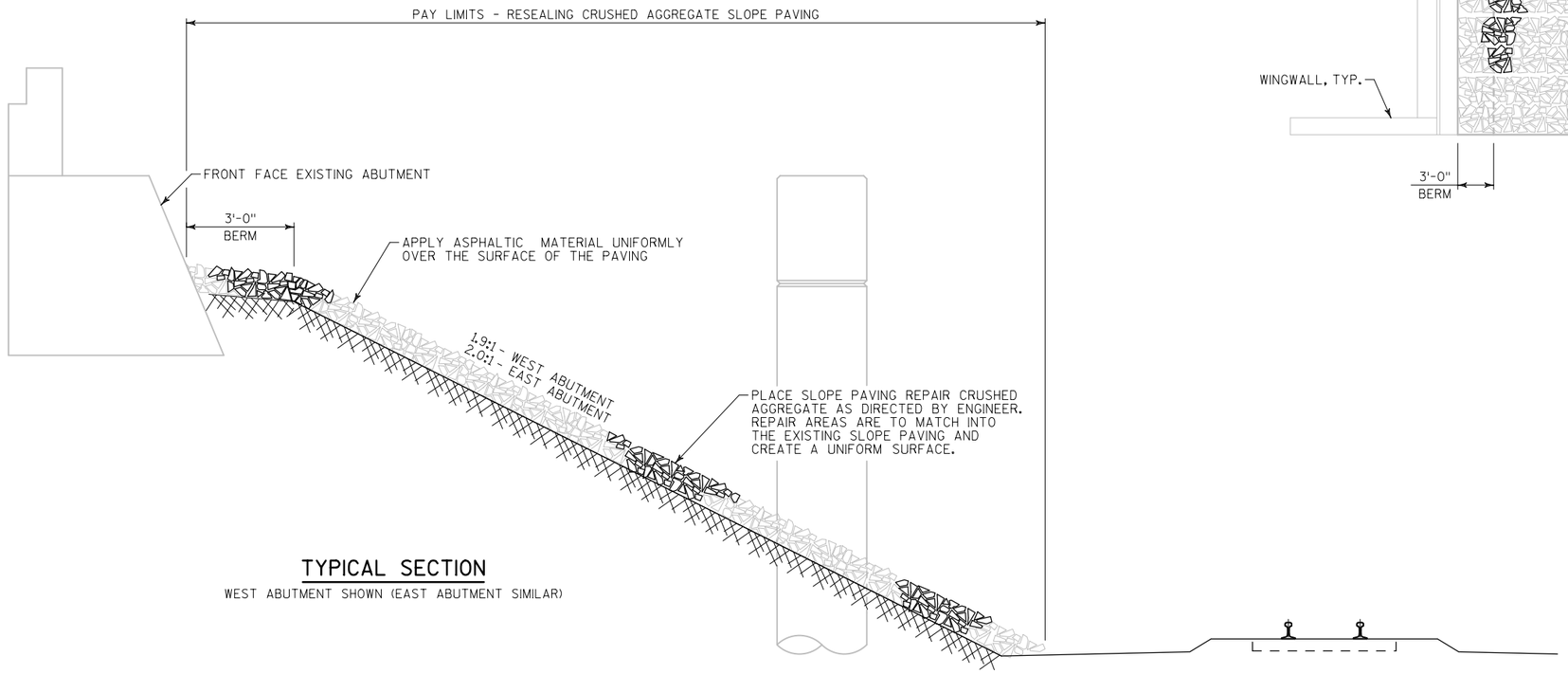


SECTION A-A



PARTIAL PLAN

SPAN 1 SHOWN (SPAN 3 SIMILAR)



TYPICAL SECTION

WEST ABUTMENT SHOWN (EAST ABUTMENT SIMILAR)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-39

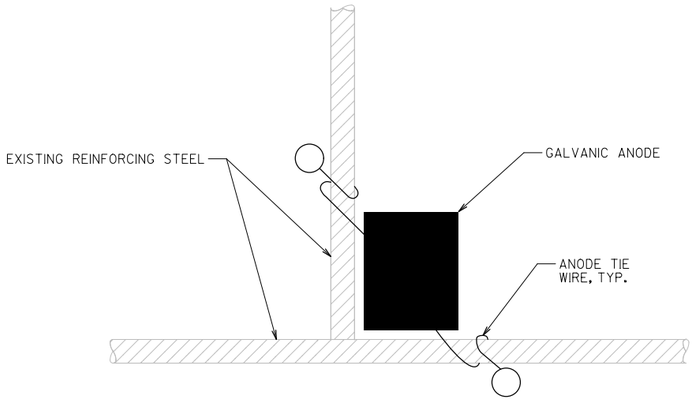
DRAWN BY EKM | PLANS CK'D. SGM

SLOPE PAVING REPAIR AND RESEALING

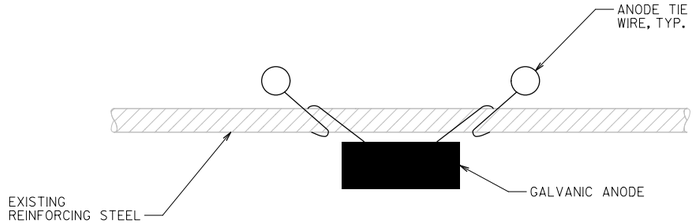
SHEET 7 OF 9

FILE NAME : B-51-39_07_SP.dgn PLOT DATE : 21-APR-2021 PLOT BY : emccrigh B-51-39_07_SP PLOT SCALE : 2:1

STATE PROJECT NUMBER
2340-03-73

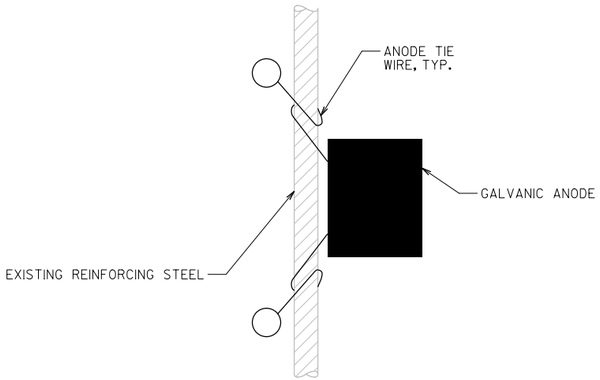


TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



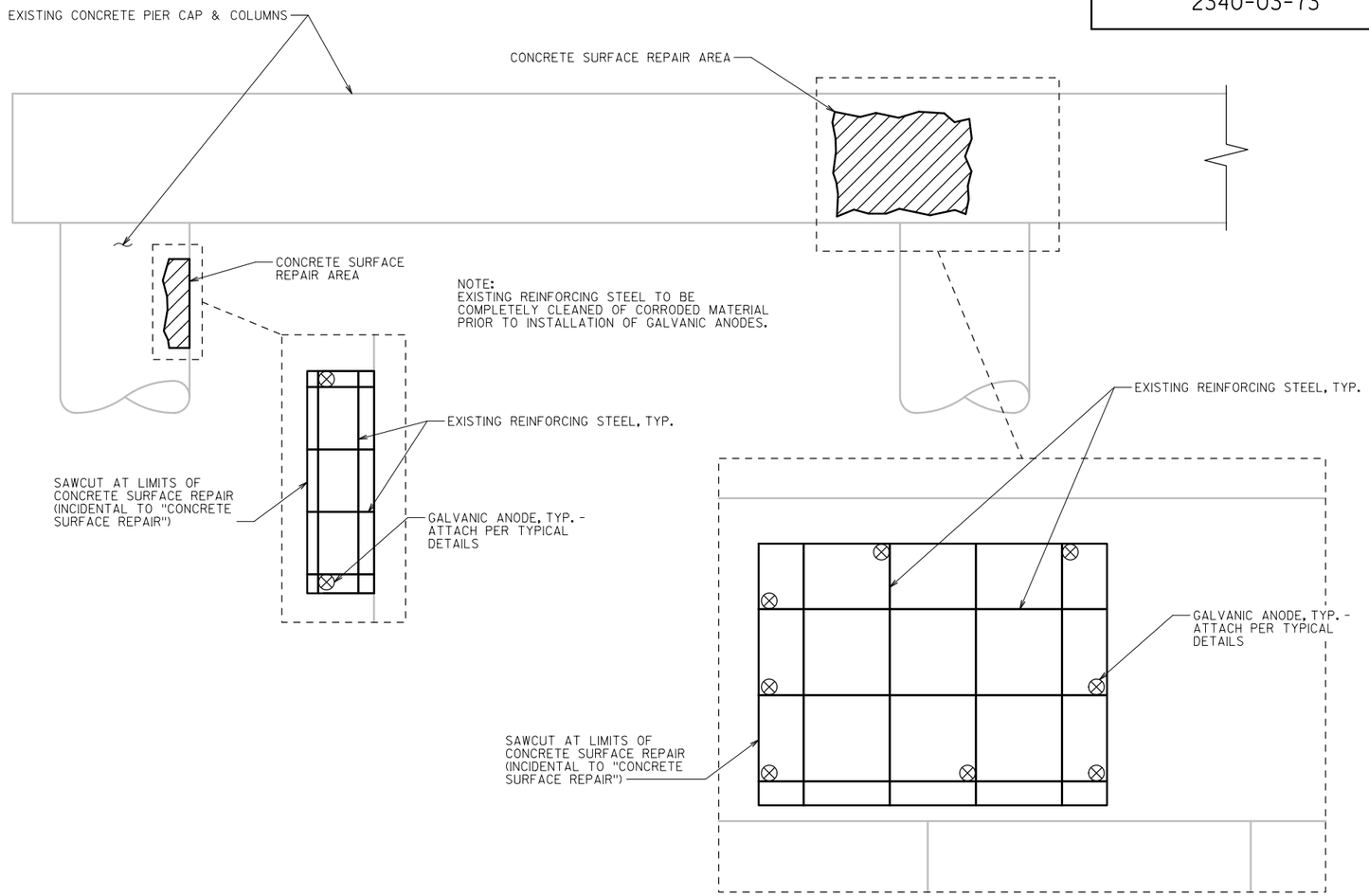
TYPICAL INSTALLATION BELOW BAR STEEL

(HORIZONTAL)



TYPICAL INSTALLATION BESIDE BAR STEEL

(VERTICAL)



TYPICAL SUBSTRUCTURE REPAIR DETAIL

PIER SHOWN, ABUTMENT SIMILAR. SUPERSTRUCTURE OMITTED FOR CLARITY.
VERTICAL SURFACE REPAIR SHOWN, HORIZONTAL SURFACE REPAIR SIMILAR.

NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT AND PAYMENT INFORMATION.

EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORRODED MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

PROVIDE GALVANIC ANODES IN CONCRETE SURFACE REPAIR AREAS IN SUBSTRUCTURE ONLY.

THE ESTIMATED ANODE QUANTITY ON PLANS IS BASED ON A MAXIMUM SPACING OF 24" AROUND PERIMETER OF THE CONCRETE SURFACE REPAIR AREA. PLACE ADDITIONAL ANODES AT THE INTERIOR OF REPAIRED AREA SO CENTER TO CENTER SPACING OF ANODES IS NOT GREATER THAN 24" IN ANY DIRECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-39

DRAWN BY	EKM	PLANS CK'D.	SGM

GALVANIC ANODES

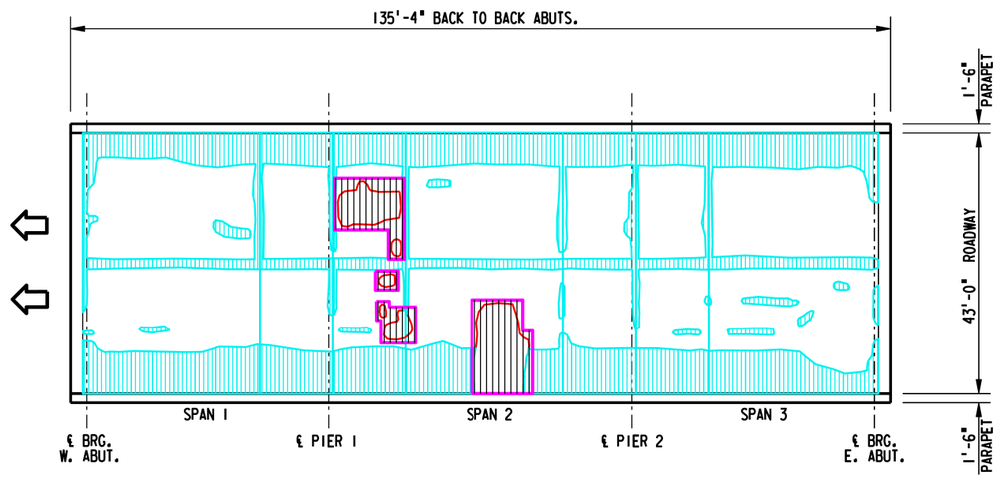
SHEET 8 OF 9

8

8

STATE PROJECT NUMBER

2340-03-73



PLAN

PROPOSED REHABILITATION AREAS

N

REHABILITATION AREA SUMMARY		STRUCTURE NO. B-51-39	
ITEM	UNIT	QUANT.	%
TOTAL AREA	yd^2	652.1	
SHADE/DEBRIS	yd^2	0	
PREPARATION, DECKS, TYPE 1	yd^2	34.1	5.2
PREPARATION, DECKS, TYPE 2	yd^2	17.1	2.6
FULL DEPTH DECK REPAIR	yd^2	1.0	0.2

LEGEND

DECK PREPARATION AREA

SHADE/DEBRIS

DELAMINATION
SPALL
DEBOND/SCALING
ASPHALT PATCH
CONCRETE PATCH

SCALE 0' 5' 10' 20'

SURFACE TYPE: PMA (ROSPHALT) OVERLAY/PCC OVERLAY
INFRARED INSPECTION DATE: 3/2/21 & 3/5/21

NOTE:

DELAMINATION AREAS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY. THE FIELD ENGINEER WILL SOUND THE DECK AND MARK AREAS IN THE FIELD. THE ESTIMATED QUANTITIES FOR THE DECK PREPARATION AND DECK REPAIR BID ITEMS ARE ADAPTED FROM THE ABOVE INFRARED THERMOGRAPHY SURVEY RESULTS.

NO	DATE	REVISIONS	DRN	CHK

DATA COL TT/TG
ANALYSIS DS
CADD DS
CHECKED DU

AECOM

PROPOSED REHABILITATION AREAS FOR STH 20 WB OVER CNW RAILROAD
STRUCTURE NO. B-51-39

PREPARED FOR WISCONSIN DEPARTMENT OF TRANSPORTATION
SOUTHEAST REGION

DATE 3/17/21
PROJECT NO 60630160
FILENAME B-51-39-REHAB.DGN
SHEET NO 1 OF 1
DRAWING NO

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-39

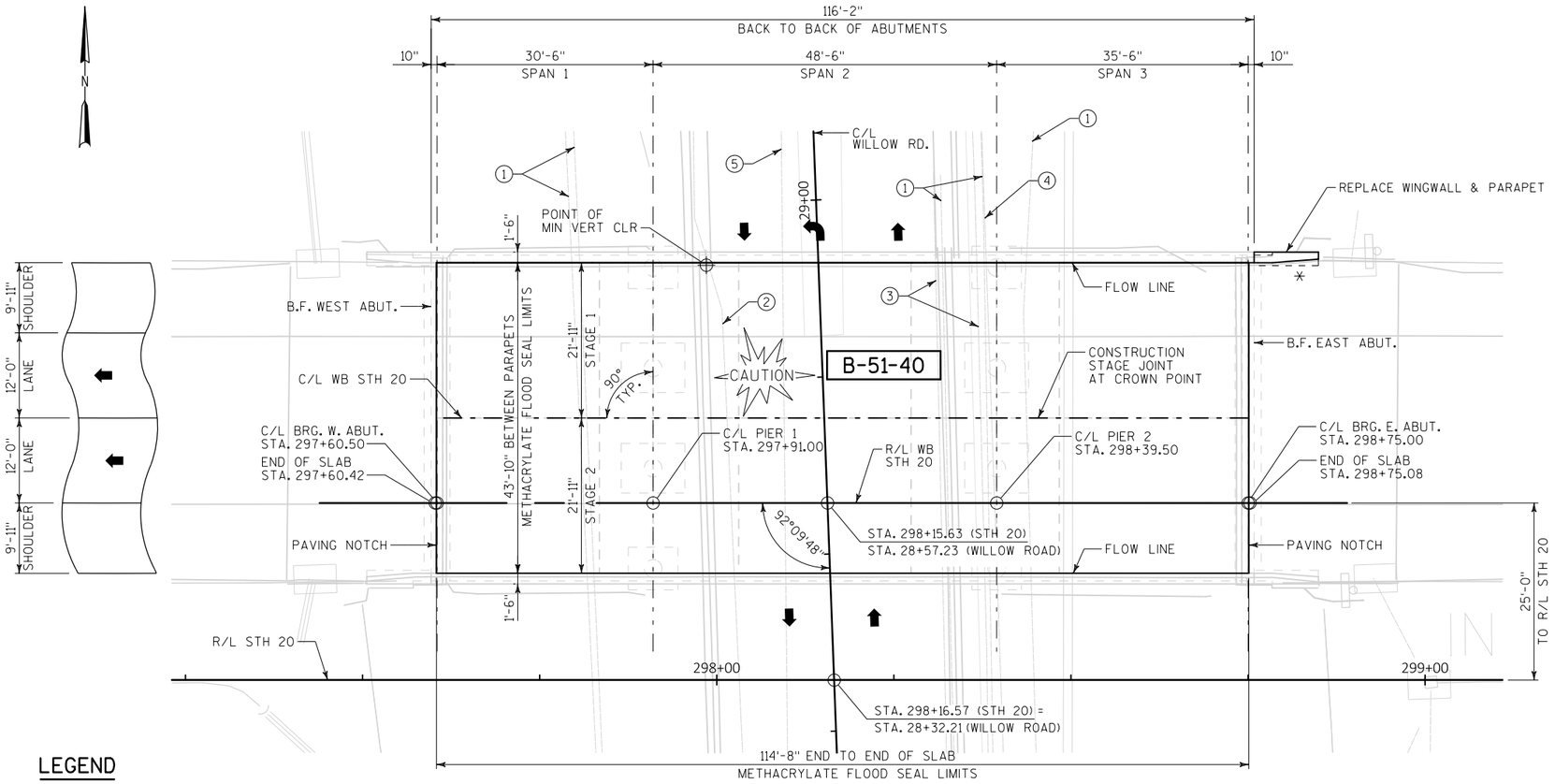
DRAWN BY EKM | PLANS CK'D. SGM

DECK CONDITION SURVEY

SHEET 9 OF 9

FILE NAME : B-51-39_09_DS.dgn PLOT DATE : 21-APR-2021 PLOT BY : emccrigh B-51-39_09_DS PLOT SCALE : 10:1

STATE PROJECT NUMBER
2340-03-73

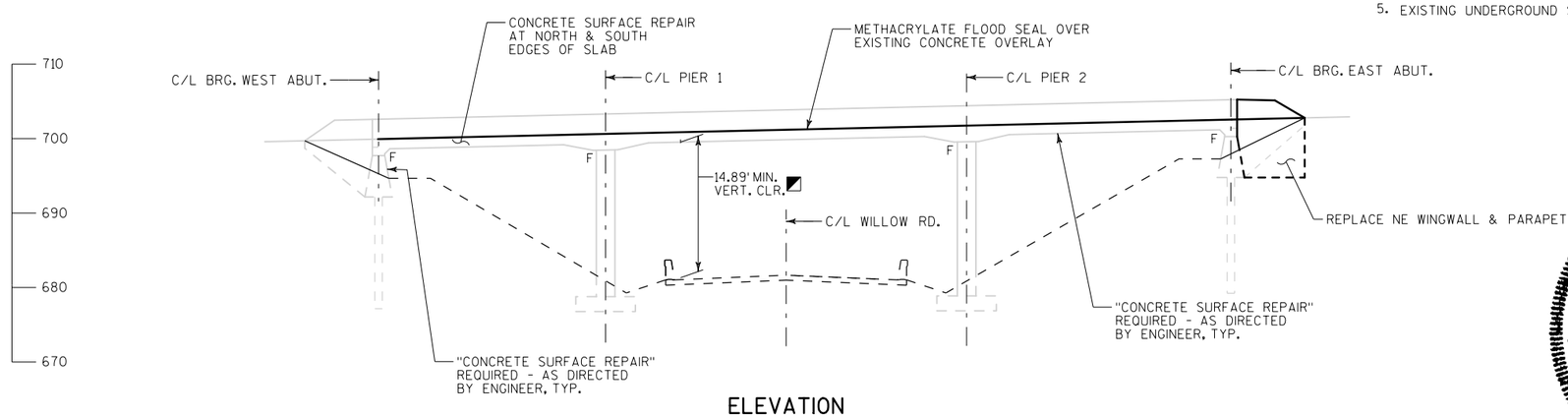


PLAN

METHACRYLATE FLOOD SEAL OF 3-SPAN HAUNCHED CONCRETE SLAB BRIDGE

LEGEND

- TRAFFIC DIRECTION
- MIN. CLEARANCE FROM INTERIM BRIDGE INSPECTION REPORT FOR B-51-40 DATED: 08/16/2016
- PROVIDE THRIE BEAM ATTACHMENT



ELEVATION

LOOKING NORTH

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS15
OPERATING RATING: HS25
WISCONSIN STANDARD PERMIT VEHCILE (WIS-SPV) = 230 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE .....f'c = 4,000 psi
ALL OTHER .....f'c = 4,000 psi
CONCRETE SURFACE REPAIR .....f'c = 4,000 psi

TRAFFIC DATA

STH 20
EXISTING A.D.T. = 14,500 (2017)
FUTURE A.D.T. = 16,800 (2042)
R.D.S. = 50 MPH

WILLOW ROAD
EXISTING A.D.T. = 5,800 (2014)

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION, GENERAL NOTES, AND QUANTITIES
3. NORTHEAST WINGWALL REPLACEMENT
4. NORTHEAST PARAPET REPLACEMENT
5. GALVANIC ANODES

BENCH MARK

NUMBER		ELEVATION
BM 1	ALUMINUM DISK LOCATED IN THE SW CORNER OF BRIDGE ON THE PARAPET WALL	701.82'
BM 3	ALUMINUM DISK LOCATED IN THE NE CORNER OF BRIDGE ON THE PARAPET WALL	704.63'

UTILITY LEGEND

1. EXISTING UNDERGROUND FIBER OPTIC CABLE TO REMAIN
2. EXISTING UNDERGROUND GAS LINE TO REMAIN
3. EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN
4. EXISTING UNDERGROUND WATERMAIN TO REMAIN
5. EXISTING UNDERGROUND STORM SEWER TO REMAIN

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
ED MCCRIGHT (414) 272-2426

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
ch2m:
MILWAUKEE, WISCONSIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ SDR 08/25/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN
EDWARD K. McCRIGHT
E-37422
MILWAUKEE, WI
6/1/23
PROFESSIONAL ENGINEER

STRUCTURE B-51-40

STH 20 WB OVER WILLOW ROAD

COUNTY	TOWN/~~CITY/VILLAGE~~
RACINE	MOUNT PLEASANT

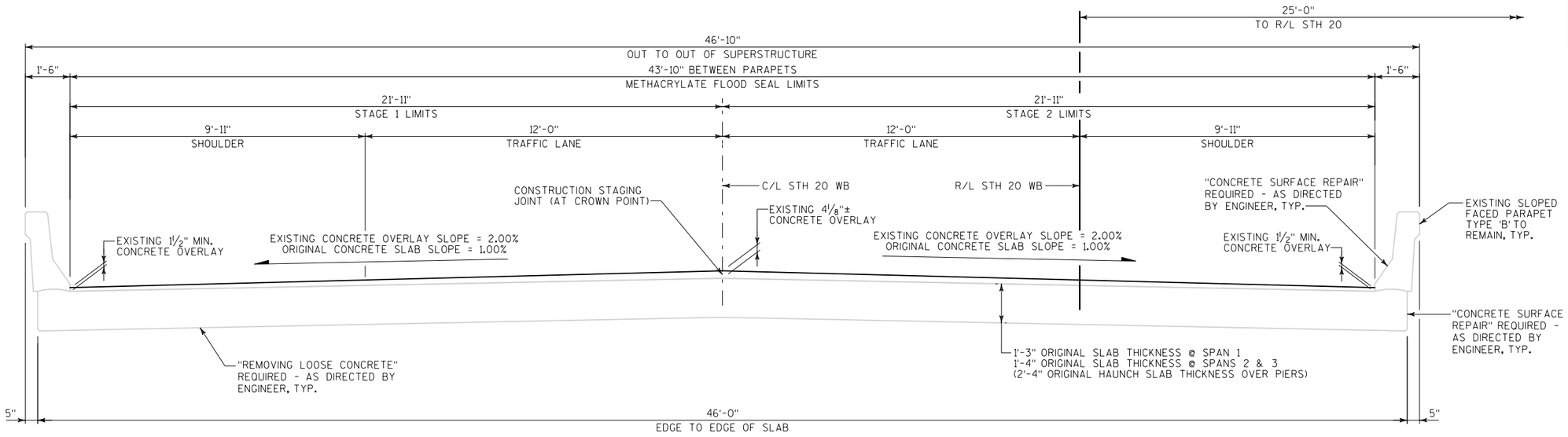
DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EKM	SGM	EKM	SGM

GENERAL PLAN & ELEVATION

SHEET 1 OF 5

STATE PROJECT NUMBER
2340-03-73



TYPICAL SECTION

LOOKING EAST

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT, UNLESS SPECIFIED OTHERWISE.

NEW CONCRETE TO REPLACE THE PARAPET AND WINGWALL AT THE EAST ABUTMENT IS PAID FOR AS "CONCRETE MASONRY BRIDGES".

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

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

ALL REINFORCING BARS ARE ENGLISH. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ANY EXCAVATION REQUIRED TO REPLACE THE NE WINGWALL AND PARAPET TO BE PAID AS BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-51-40".

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR.

DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "METHACRYLATE FLOOD SEAL".

LOCATIONS OF "CONCRETE SURFACE REPAIR" SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. QUANTITIES SHOWN FOR THIS BID ITEM ARE APPROXIMATE. ALL SUBSTRUCTURE CONCRETE SURFACE REPAIRS SHALL INCLUDE "EMBEDDED GALVANIC ANODES", PAID FOR SEPARATELY.

"PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF EXISTING PARAPETS. PERFORM "CLEANING PARAPETS" PRIOR TO THIS APPLICATION. "PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF NEW SECTIONS OF PARAPET AT THE WINGWALL REPLACEMENT.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF THE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	SUPER	TOTAL
203.0220	REMOVING STRUCTURE (B-51-40)	EACH	---	---	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES (B-51-40)	EACH	---	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	---	---	26	---	26
502.0100	CONCRETE MASONRY BRIDGES	CY	---	---	---	6	1	7
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	---	---	---	6	---	6
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	---	---	---	8	---	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	---	---	535	130	665
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	---	---	108	108
509.1500	CONCRETE SURFACE REPAIR	SF	5	5	---	5	40	55
509.9050.S	CLEANING PARAPETS	LF	---	---	---	---	260	260
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	---	---	3	---	3
614.0150	ANCHOR ASSEMBLIES STEEL PLATE BEAM GUARD	EACH	---	---	---	---	---	1
SPV.0060.11	EMBEDDED GALVANIC ANODES	EACH	7	7	---	7	---	21
SPV.0165.10	REMOVING LOOSE CONCRETE	SF	---	---	---	---	15	15
SPV.0180.11	METHACRYLATE FLOOD SEAL	SY	---	---	---	---	560	560
	NON-BID ITEMS							
	PREFORMED JOINT FILLER	SIZE						1/2"
	NAME PLATE	EACH						1

ALL ITEMS ARE CATEGORY 0030

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-40

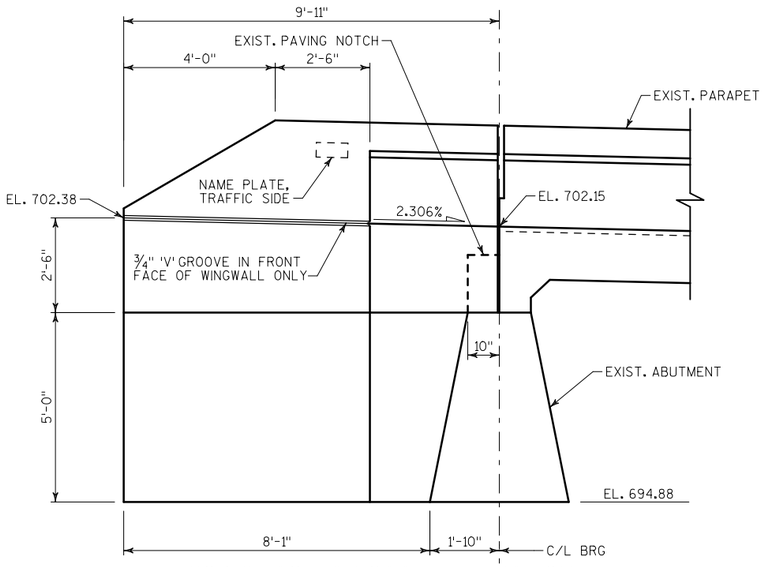
DRAWN BY EKM | PLANS CK'D. SGM

TYPICAL SECTION, GENERAL NOTES AND QUANTITIES

SHEET 2 OF 5

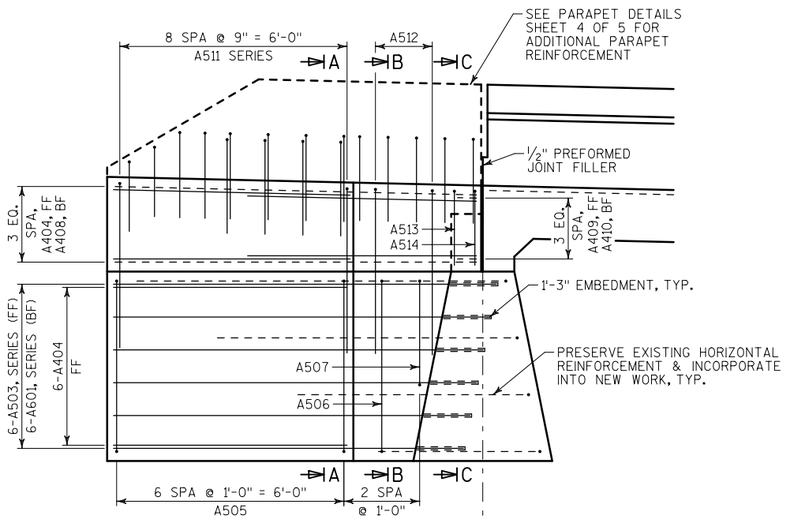
FILE NAME : B-51-40_02_TS.dgn PLOT DATE : 01-MAY-2023 PLOT BY : emccrigh B-51-40_02_TS PLOT SCALE : 8:1

STATE PROJECT NUMBER
2340-03-73



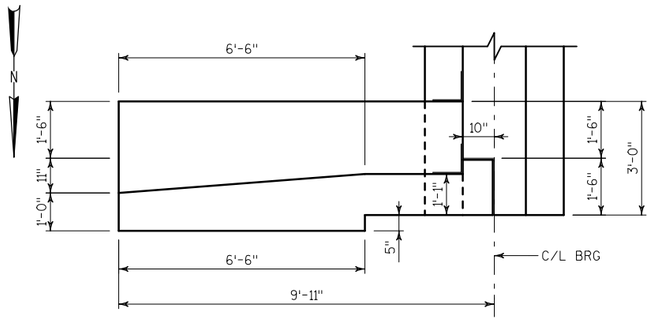
NORTHEAST WINGWALL ELEVATION

LOOKING SOUTH



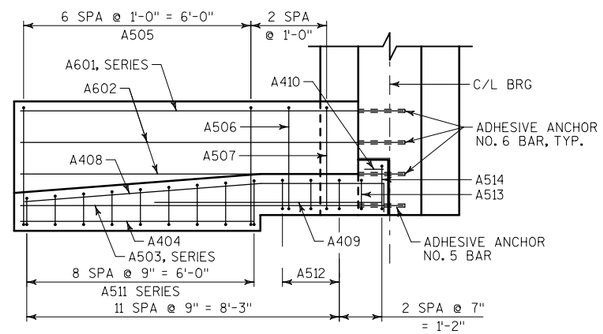
NORTHEAST WINGWALL ELEVATION

LOOKING SOUTH



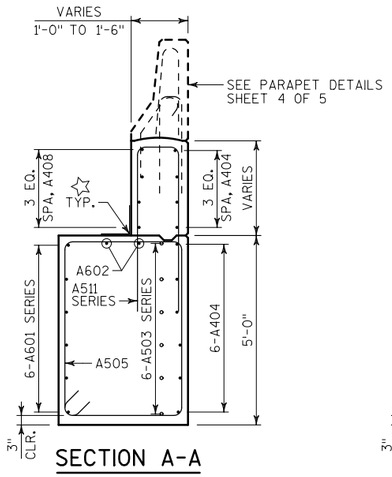
PARTIAL PLAN AT NORTHEAST WINGWALL

(REINFORCEMENT NOT SHOWN)

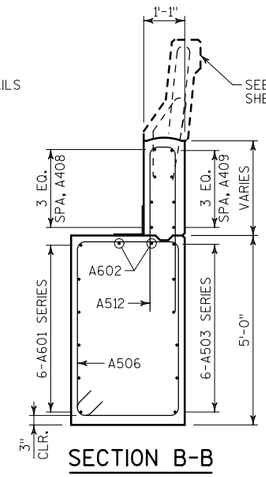


PARTIAL PLAN AT NORTHEAST WINGWALL

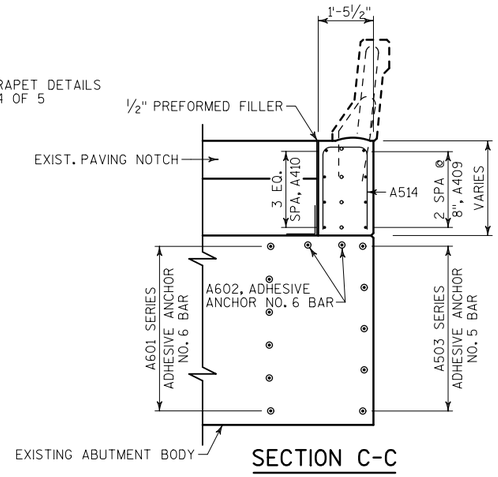
(PARAPET REINFORCEMENT NOT SHOWN)



SECTION A-A



SECTION B-B



SECTION C-C

LEGEND

☆ RUBBERIZED MEMBRANE WATERPROOFING

BILL OF BARS - WINGWALL REPLACEMENT

BAR MARK	COAT	NO. BARS	LENGTH	BENT	SERIES	LOCATION
A601	X	6	9'-9"		⚠	WINGWALL - HORIZONTAL - BF
A602	X	2	10'-2"			WINGWALL - HORIZONTAL - TOP
A503	X	6	9'-9"		⚠	WINGWALL - HORIZONTAL - FF
A404	X	10	6'-2"			WINGWALL & STEM - HORIZONTAL - FF
A505	X	7	16'-0"	X		WINGWALL - VERTICAL - STIRRUP
A506	X	1	15'-2"	X		WINGWALL - VERTICAL - STIRRUP
A507	X	1	11'-8"	X		WINGWALL - VERTICAL - STIRRUP
A408	X	4	10'-2"	X		STEM - HORIZONTAL - BF
A409	X	4	6'-0"			STEM - HORIZONTAL - FF
A410	X	4	0'-6"			STEM - HORIZONTAL - BF
A511	X	9	9'-4"	X	⚠	STEM - VERTICAL - TIE
A512	X	3	9'-2"	X		STEM - VERTICAL - TIE
A513	X	1	4'-2"	X		STEM - VERTICAL - TIE
A514	X	1	4'-6"	X		STEM - VERTICAL - TIE

NOTES: BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES BAR SIZE.

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

BAR SERIES TABLE

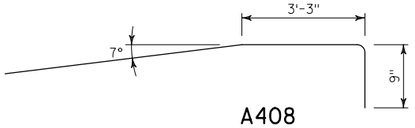
BAR MARK	NO. REQ'D.	LENGTH
A601	1 SERIES OF 6	9'-3" TO 10'-2"
A503	1 SERIES OF 6	9'-3" TO 10'-2"
A511	1 SERIES OF 9	4'-9" TO 5'-3"

A505, A506 & A507

BAR MARK	DIM. 'A'	DIM. 'B'
A505	3'-1"	4'-7"
A506	2'-8"	4'-7"
A507	2'-8"	2'-10"

A511, A512, A513 & A514

BAR MARK	DIM. 'A'	DIM. 'B'
A511	VARIES 8" TO 1'-2"	4'-4"
A512	9"	4'-4"
A513	9"	1'-10"
A514	1'-1"	1'-10"



A408

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-40

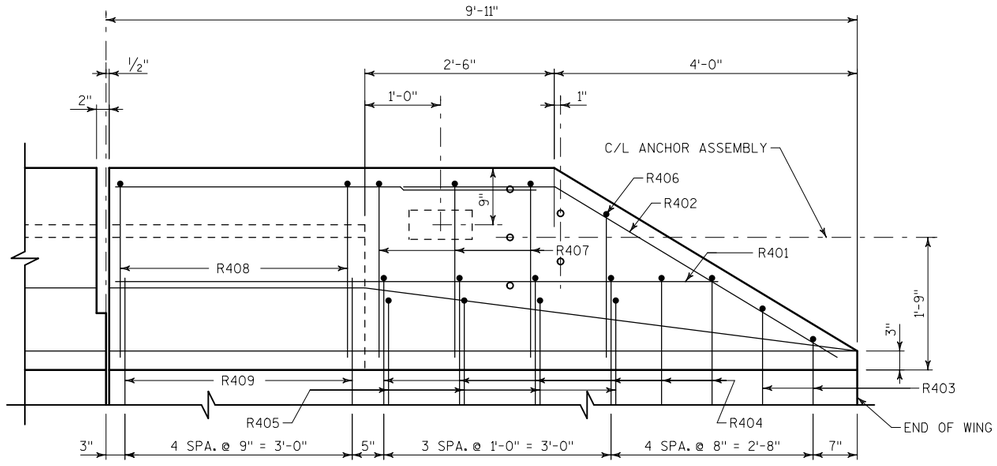
DRAWN BY EKM | PLANS CK'D. SGM

NORTHEAST WINGWALL REPLACEMENT

SHEET 3 OF 5

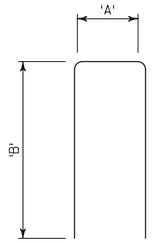
STATE PROJECT NUMBER

2340-03-73



PARAPET ELEVATION

TRAFFIC SIDE



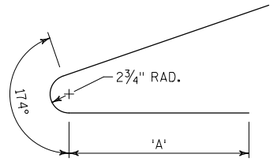
R403 & R404

BAR MARK	DIM. 'A'	DIM. 'B'
R403	6 1/2"	1'-10"
R404	7"	2'-3"

BILL OF BARS - PARAPET REPLACEMENT

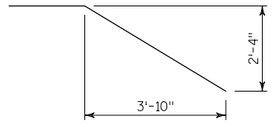
BAR MARK	COAT	NO. BARS	LENGTH	BENT	LOCATION
R401	X	4	5'-6"		PARAPET - HORIZONTAL
R402	X	2	6'-8"	X	PARAPET - HORIZONTAL - TOP
R403	X	2	4'-1"	X	PARAPET - VERTICAL - TIE
R404	X	6	4'-11"	X	PARAPET - VERTICAL - TIE
R405	X	4	3'-1"	X	PARAPET - VERTICAL - DOWEL - FF
R406	X	1	4'-0"	X	PARAPET - VERTICAL - TIE
R407	X	3	5'-0"	X	PARAPET - VERTICAL - TIE
R408	X	5	4'-10"	X	PARAPET - VERTICAL - TIE
R409	X	5	4'-7"	X	PARAPET - VERTICAL - TIE
R510	X	5	5'-6"		PARAPET - HORIZONTAL

NOTES: BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES BAR SIZE.

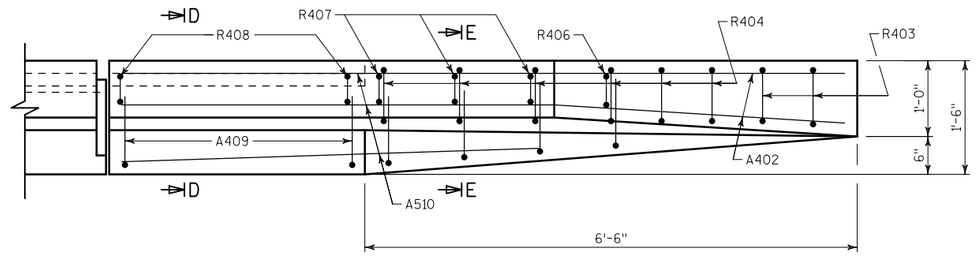


R406 & R407

BAR MARK	DIM. 'A'
R406	1'-8"
R407	2'-2"

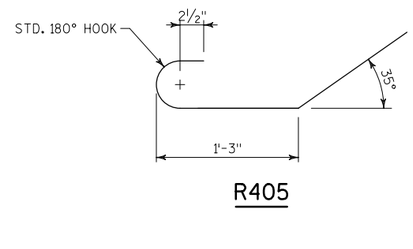


R402



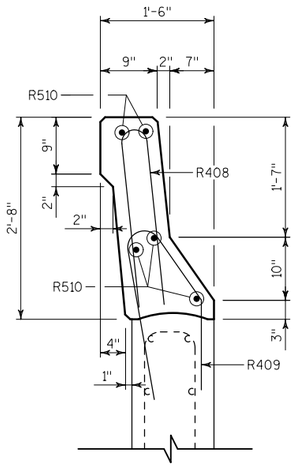
PARAPET PLAN

(WINGWALL NOT SHOWN)

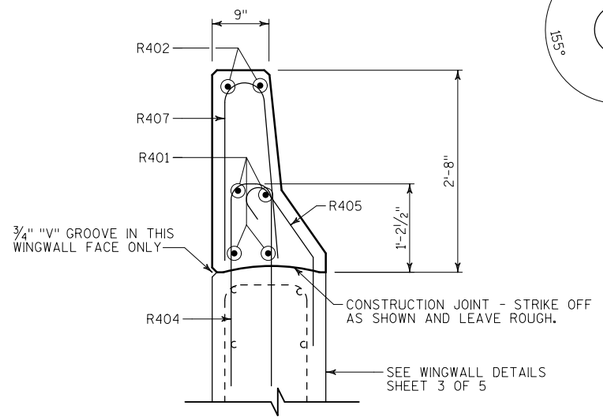


R409

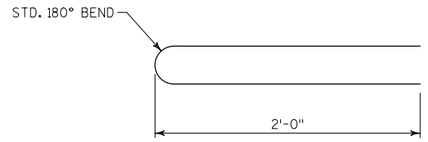
R405



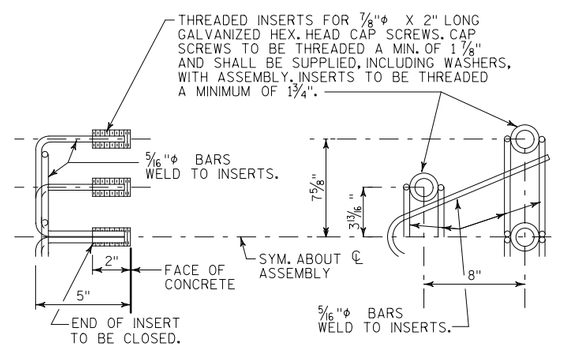
SECTION D-D



SECTION E-E



R408



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-40

DRAWN BY EKM | PLANS CK'D. SGM

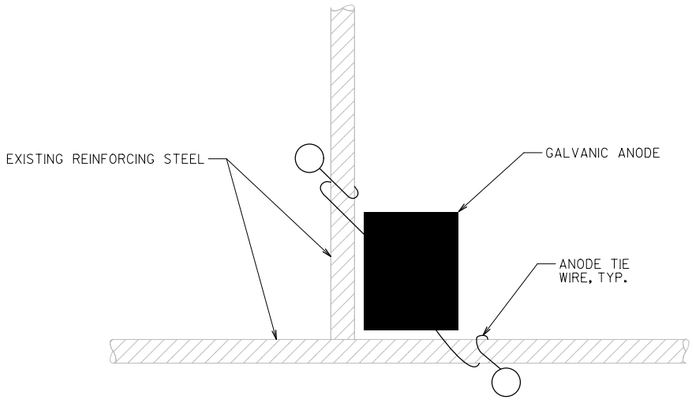
NORTHEAST PARAPET REPLACEMENT

SHEET 4 OF 5

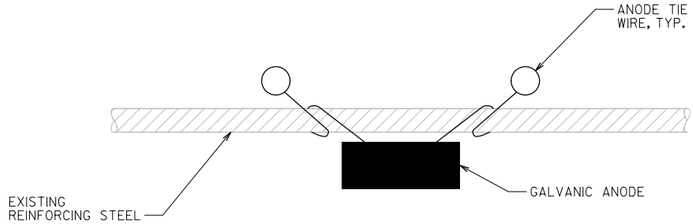
8

8

STATE PROJECT NUMBER
2340-03-73

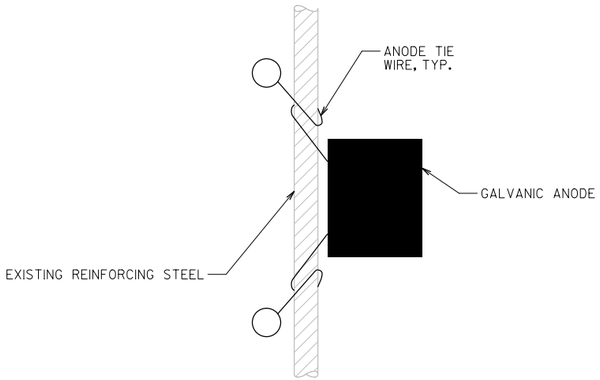


TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



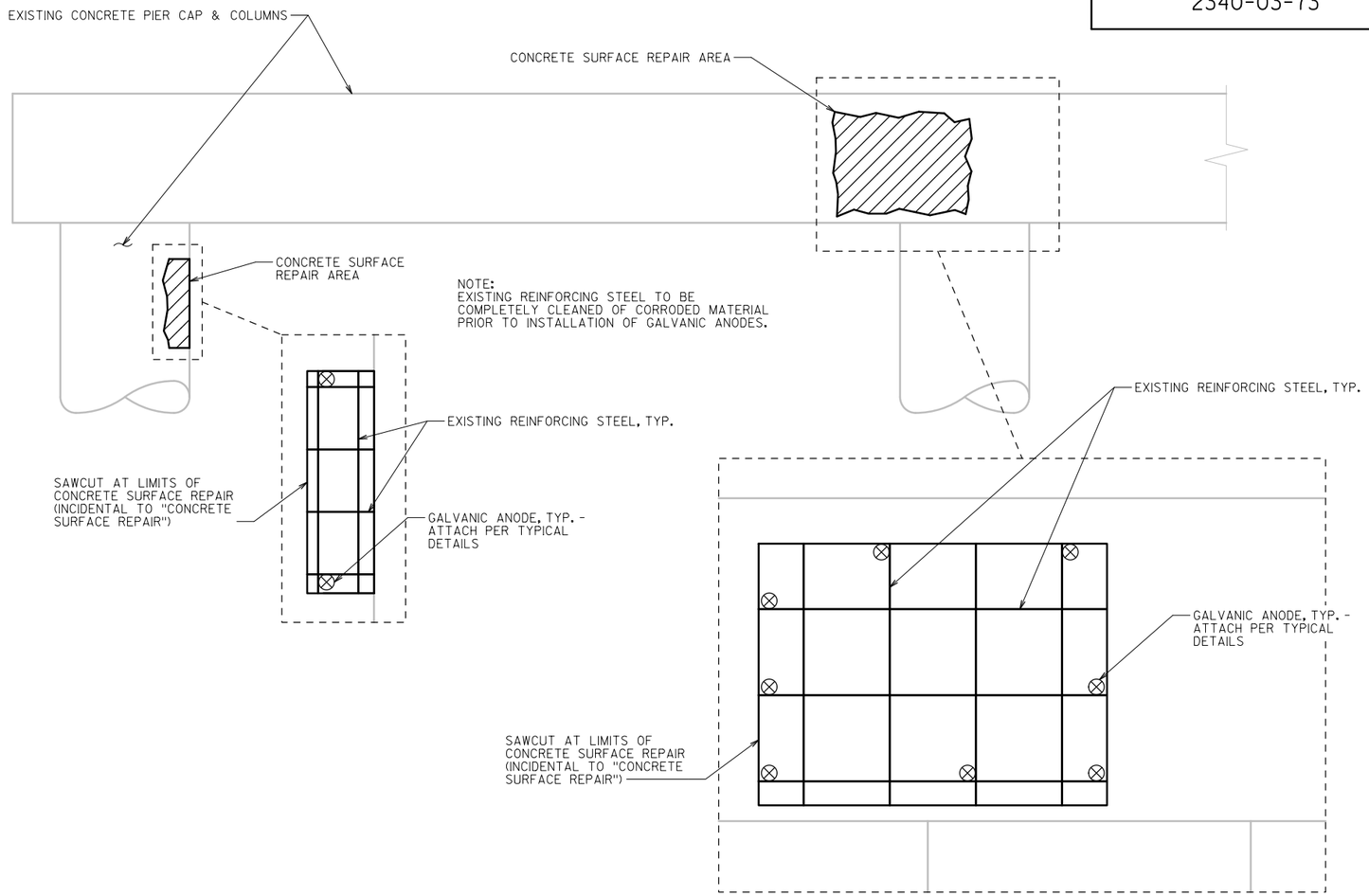
TYPICAL INSTALLATION BELOW BAR STEEL

(HORIZONTAL)



TYPICAL INSTALLATION BESIDE BAR STEEL

(VERTICAL)



TYPICAL SUBSTRUCTURE REPAIR DETAIL

PIER SHOWN, ABUTMENT SIMILAR. SUPERSTRUCTURE OMITTED FOR CLARITY.
VERTICAL SURFACE REPAIR SHOWN, HORIZONTAL SURFACE REPAIR SIMILAR.

NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT AND PAYMENT INFORMATION.

EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORRODED MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

PROVIDE GALVANIC ANODES IN CONCRETE SURFACE REPAIR AREAS IN SUBSTRUCTURE ONLY.

THE ESTIMATED ANODE QUANTITY ON PLANS IS BASED ON A MAXIMUM SPACING OF 24" AROUND PERIMETER OF THE CONCRETE SURFACE REPAIR AREA. PLACE ADDITIONAL ANODES AT THE INTERIOR OF REPAIRED AREA SO CENTER TO CENTER SPACING OF ANODES IS NOT GREATER THAN 24" IN ANY DIRECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

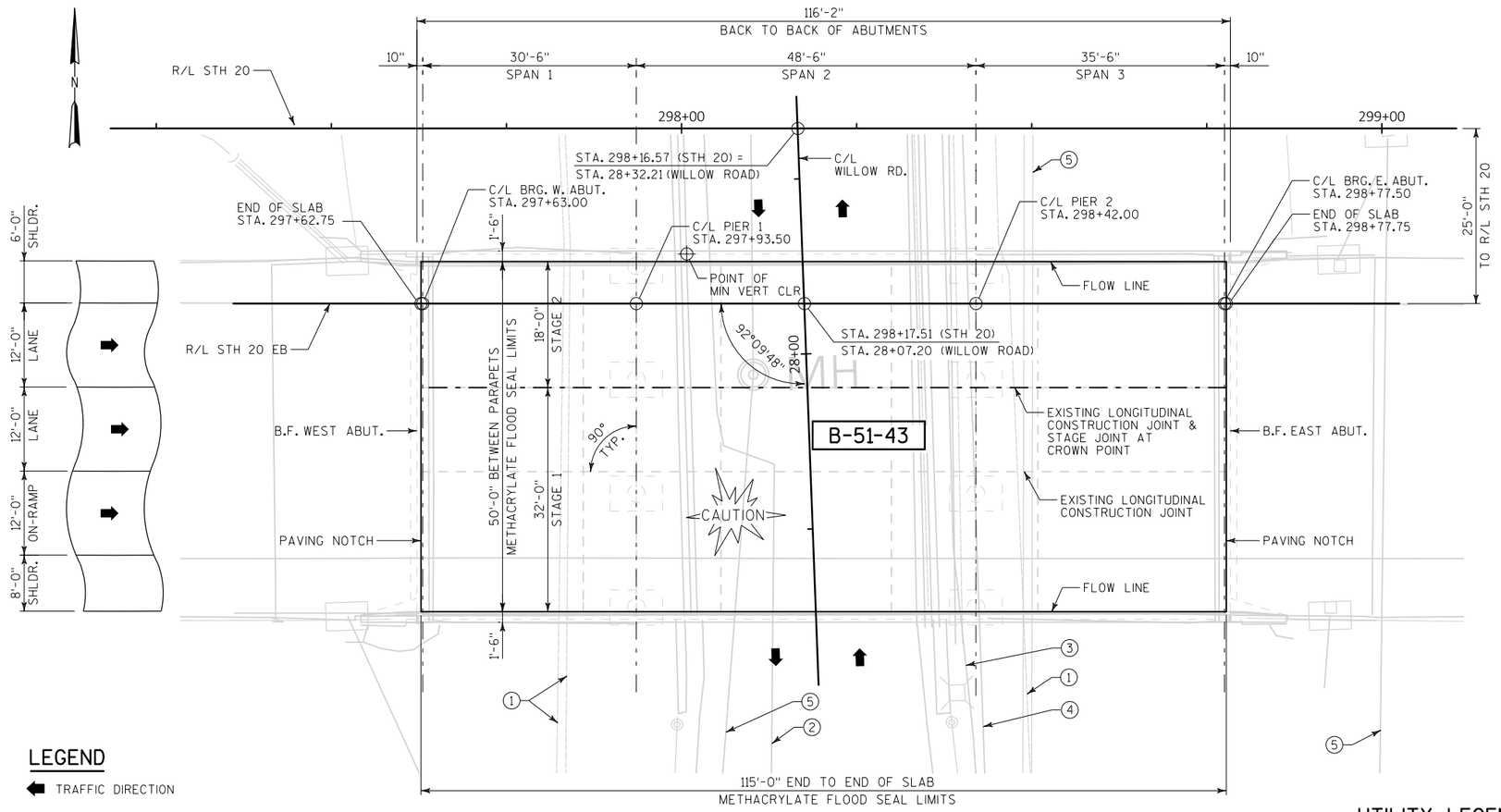
STRUCTURE B-51-40

DRAWN BY	EKM	PLANS CK'D.	SGM

GALVANIC ANODES

SHEET 5 OF 5

STATE PROJECT NUMBER
2340-03-73



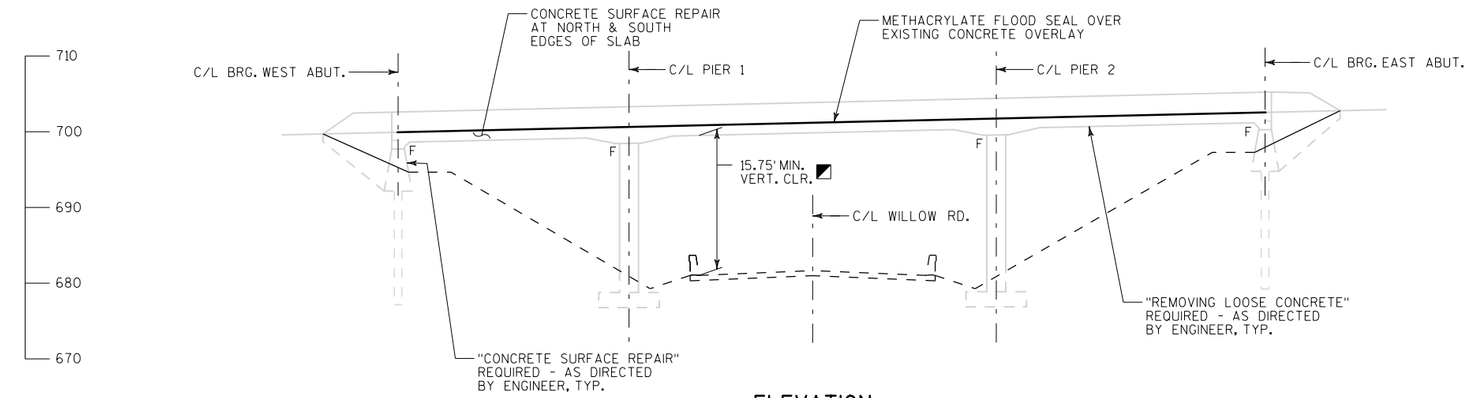
PLAN

METHACRYLATE FLOOD SEAL OF 3-SPAN HAUNCHED CONCRETE SLAB BRIDGE

LEGEND

TRAFFIC DIRECTION

MIN. CLEARANCE FROM INTERIM BRIDGE INSPECTION REPORT FOR B-51-43 DATED: 08/01/2018



ELEVATION

LOOKING NORTH

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS20
OPERATING RATING: HS34
WISCONSIN STANDARD PERMIT VEHCILE (WIS-SPV) = 240 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE .....f'c = 4,000 psi
ALL OTHER .....f'c = 4,000 psi
CONCRETE SURFACE REPAIR .....f'c = 4,000 psi

TRAFFIC DATA

STH 20
EXISTING A.D.T. = 14,500 (2017)
FUTURE A.D.T. = 16,800 (2042)
R.D.S. = 50 MPH

WILLOW ROAD
EXISTING A.D.T. = 5,800 (2014)

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION, GENERAL NOTES, AND QUANTITIES
3. SLOPE PAVING REPAIR AND RESEALING
4. GALVANIC ANODES

BENCH MARK

NUMBER		ELEVATION
BM 2	ALUMINUM DISK LOCATED IN THE SW CORNER OF BRIDGE ON THE PARAPET WALL	701.61'

UTILITY LEGEND

1. EXISTING UNDERGROUND FIBER OPTIC CABLE TO REMAIN
2. EXISTING UNDERGROUND GAS LINE TO REMAIN
3. EXISTING UNDERGROUND WISDOT SIGNAL LINE TO REMAIN
4. EXISTING UNDERGROUND WATERMAIN TO REMAIN
5. EXISTING UNDERGROUND STORM SEWER TO REMAIN

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
ED MCCRIGHT (414) 272-2426

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
ch2m:
MILWAUKEE, WISCONSIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ SDR 08/25/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-51-43

STH 20 EB OVER WILLOW ROAD

COUNTY	TOWN/~~CITY/VILLAGE~~
RACINE	MOUNT PLEASANT

DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EKM	SGM	EKM	SGM

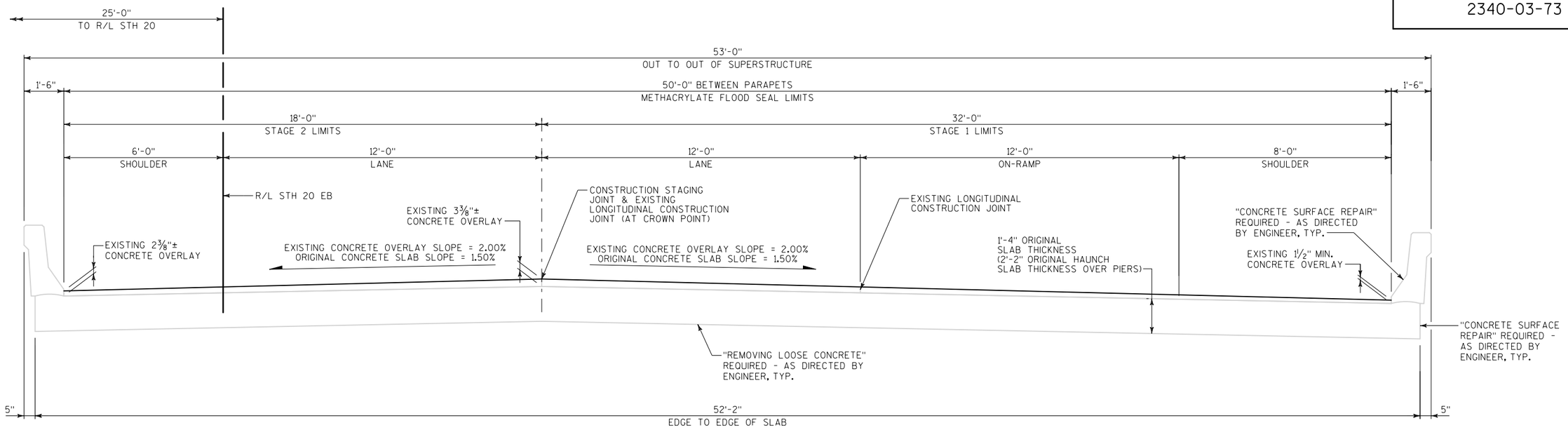
GENERAL PLAN & ELEVATION

SHEET 1 OF 4

WISCONSIN
EDWARD K. McCRIGHT
E-37844
MILWAUKEE, WI
7/29/21
PROFESSIONAL ENGINEER

FILE NAME : B-51-43_01_GP.dgn PLOT DATE : 29-JUL-2021 PLOT BY : emccrigh B-51-43_01_GP PLOT SCALE : 20:1

STATE PROJECT NUMBER
2340-03-73



TYPICAL SECTION

LOOKING EAST

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT, UNLESS SPECIFIED OTHERWISE.

DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "METHACRYLATE FLOOD SEAL".

LOCATIONS OF "CONCRETE SURFACE REPAIR" SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. QUANTITIES SHOWN FOR THIS BID ITEM ARE APPROXIMATE. ALL SUBSTRUCTURE CONCRETE SURFACE REPAIRS SHALL INCLUDE "EMBEDDED GALVANIC ANODES", PAID FOR SEPARATELY.

"PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF EXISTING PARAPETS. PERFORM "CLEANING PARAPETS" PRIOR TO THIS APPLICATION.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF THE UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	SUPER	TOTAL
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	---	---	108	108
509.1500	CONCRETE SURFACE REPAIR	SF	5	10	---	5	70	90
509.9050.S	CLEANING PARAPETS	LF	---	---	---	---	260	260
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	3	---	---	9	---	12
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	195	---	---	225	---	420
SPV.0060.11	EMBEDDED GALVANIC ANODES	EACH	7	10	---	7	---	24
SPV.0165.10	REMOVING LOOSE CONCRETE	SF	---	---	---	---	15	15
SPV.0180.11	METHACRYLATE FLOOD SEAL	SY	---	---	---	---	639	639

ALL ITEMS ARE CATEGORY 0040

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

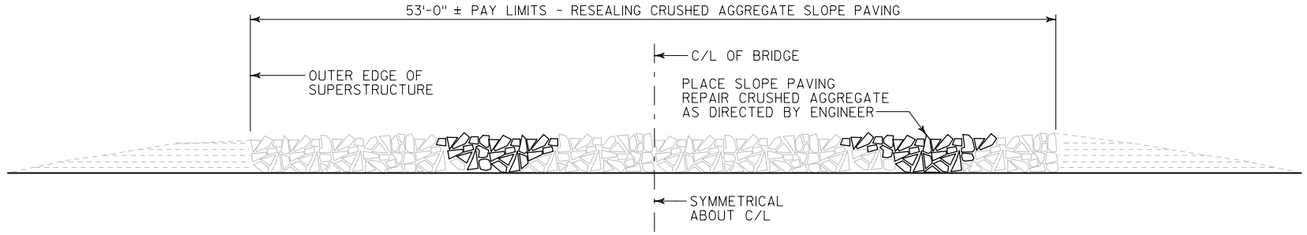
STRUCTURE B-51-43

DRAWN BY EKM | PLANS CK'D. SGM

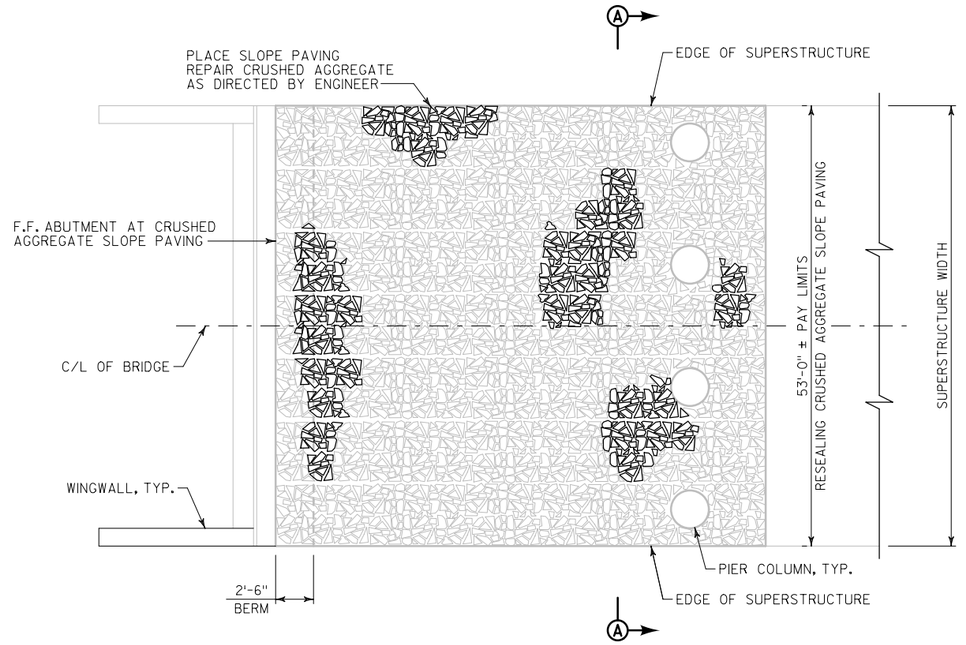
TYPICAL SECTION, GENERAL NOTES AND QUANTITIES

SHEET 2 OF 4

STATE PROJECT NUMBER
2340-03-73

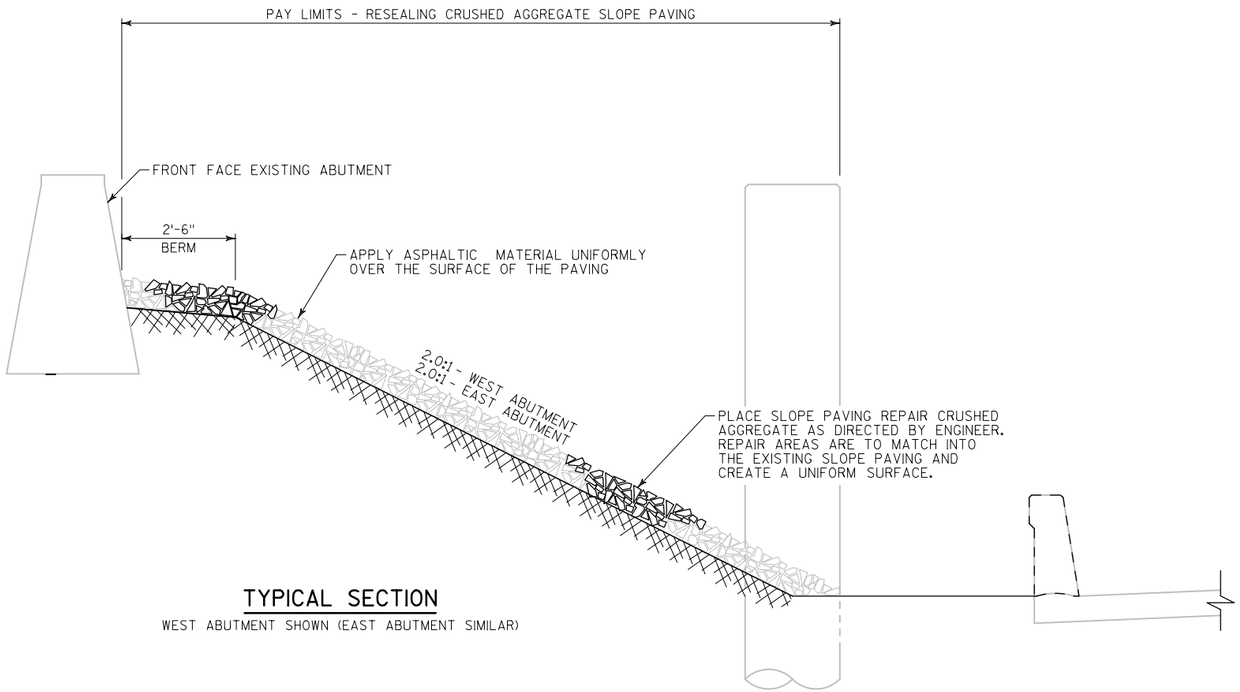


SECTION A-A



PARTIAL PLAN

SPAN 1 SHOWN (SPAN 3 SIMILAR)



TYPICAL SECTION

WEST ABUTMENT SHOWN (EAST ABUTMENT SIMILAR)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-43

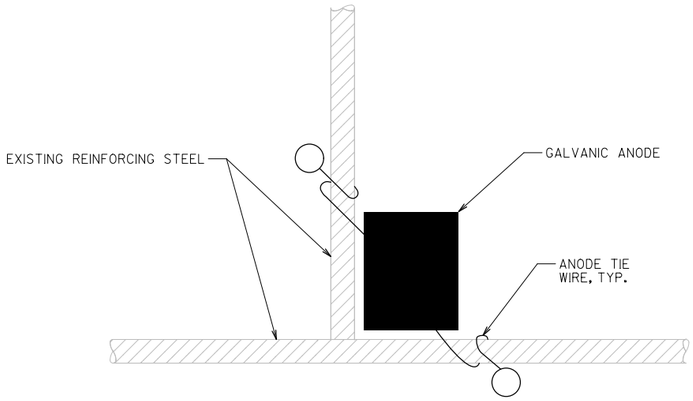
DRAWN BY EKM | PLANS CK'D. SGM

SLOPE PAVING REPAIR AND RESEALING

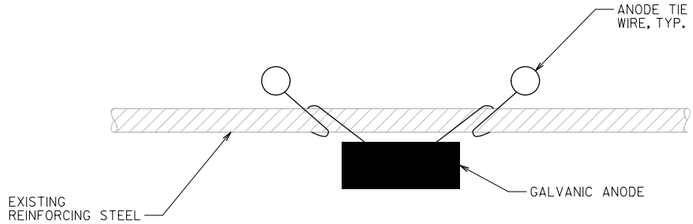
SHEET 3 OF 4

FILE NAME : B-51-43_03_SP.dgn PLOT DATE : 09-APR-2021 PLOT BY : emccrigh B-51-43_03_SP PLOT SCALE : 2:1

STATE PROJECT NUMBER
2340-03-73

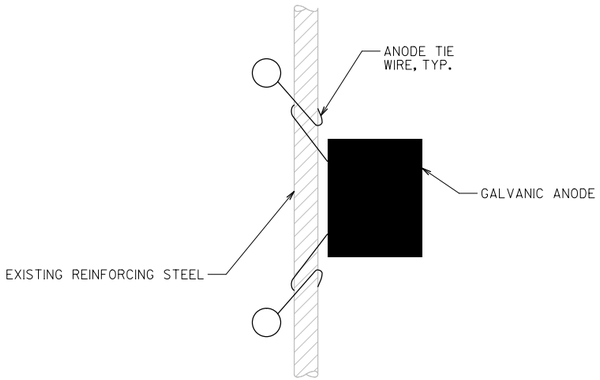


TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



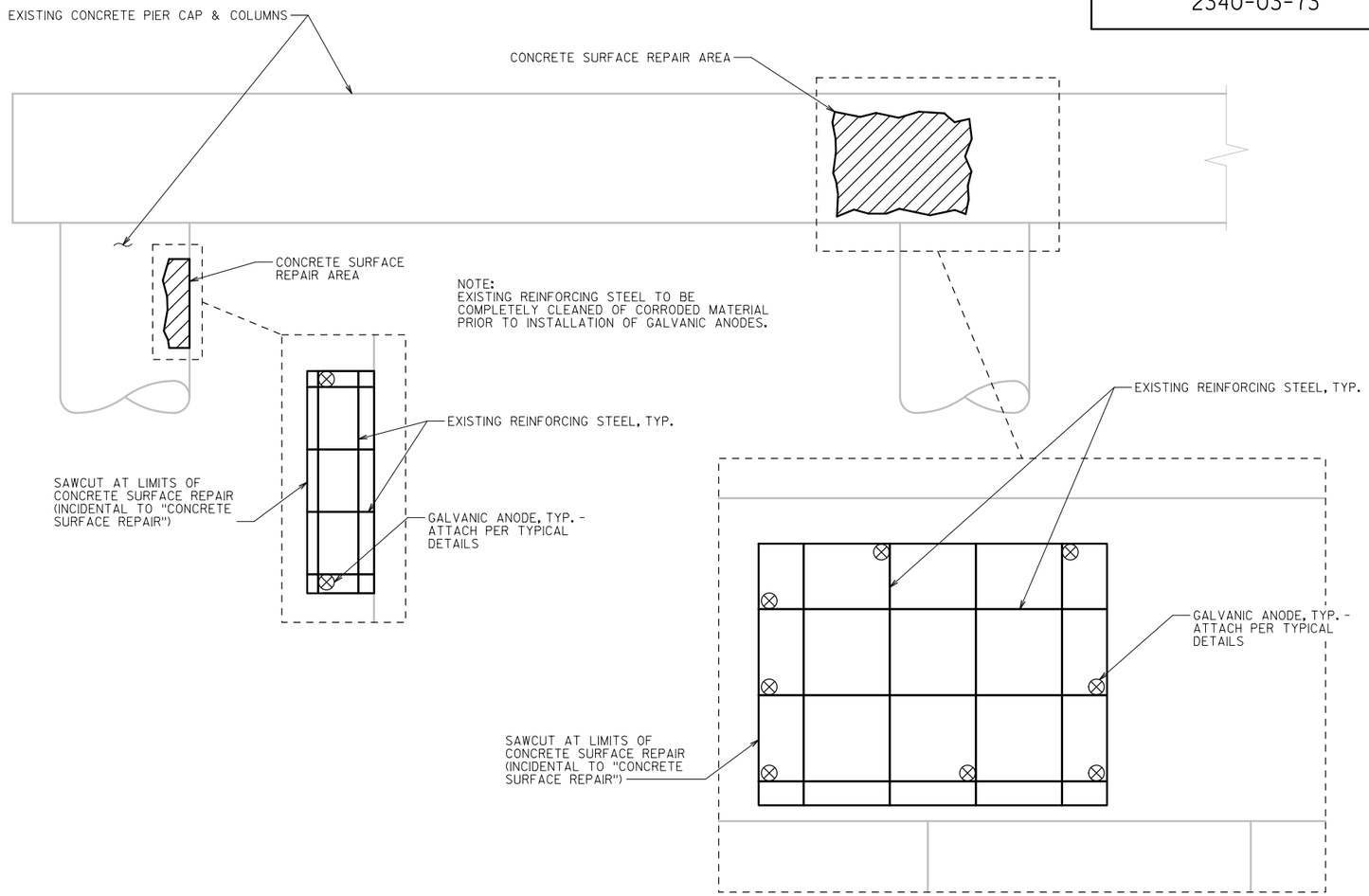
TYPICAL INSTALLATION BELOW BAR STEEL

(HORIZONTAL)



TYPICAL INSTALLATION BESIDE BAR STEEL

(VERTICAL)



TYPICAL SUBSTRUCTURE REPAIR DETAIL

PIER SHOWN, ABUTMENT SIMILAR. SUPERSTRUCTURE OMITTED FOR CLARITY.
VERTICAL SURFACE REPAIR SHOWN, HORIZONTAL SURFACE REPAIR SIMILAR.

NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT AND PAYMENT INFORMATION.

EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORRODED MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

PROVIDE GALVANIC ANODES IN CONCRETE SURFACE REPAIR AREAS IN SUBSTRUCTURE ONLY.

THE ESTIMATED ANODE QUANTITY ON PLANS IS BASED ON A MAXIMUM SPACING OF 24" AROUND PERIMETER OF THE CONCRETE SURFACE REPAIR AREA. PLACE ADDITIONAL ANODES AT THE INTERIOR OF REPAIRED AREA SO CENTER TO CENTER SPACING OF ANODES IS NOT GREATER THAN 24" IN ANY DIRECTION.

NO.	DATE	REVISION	BY

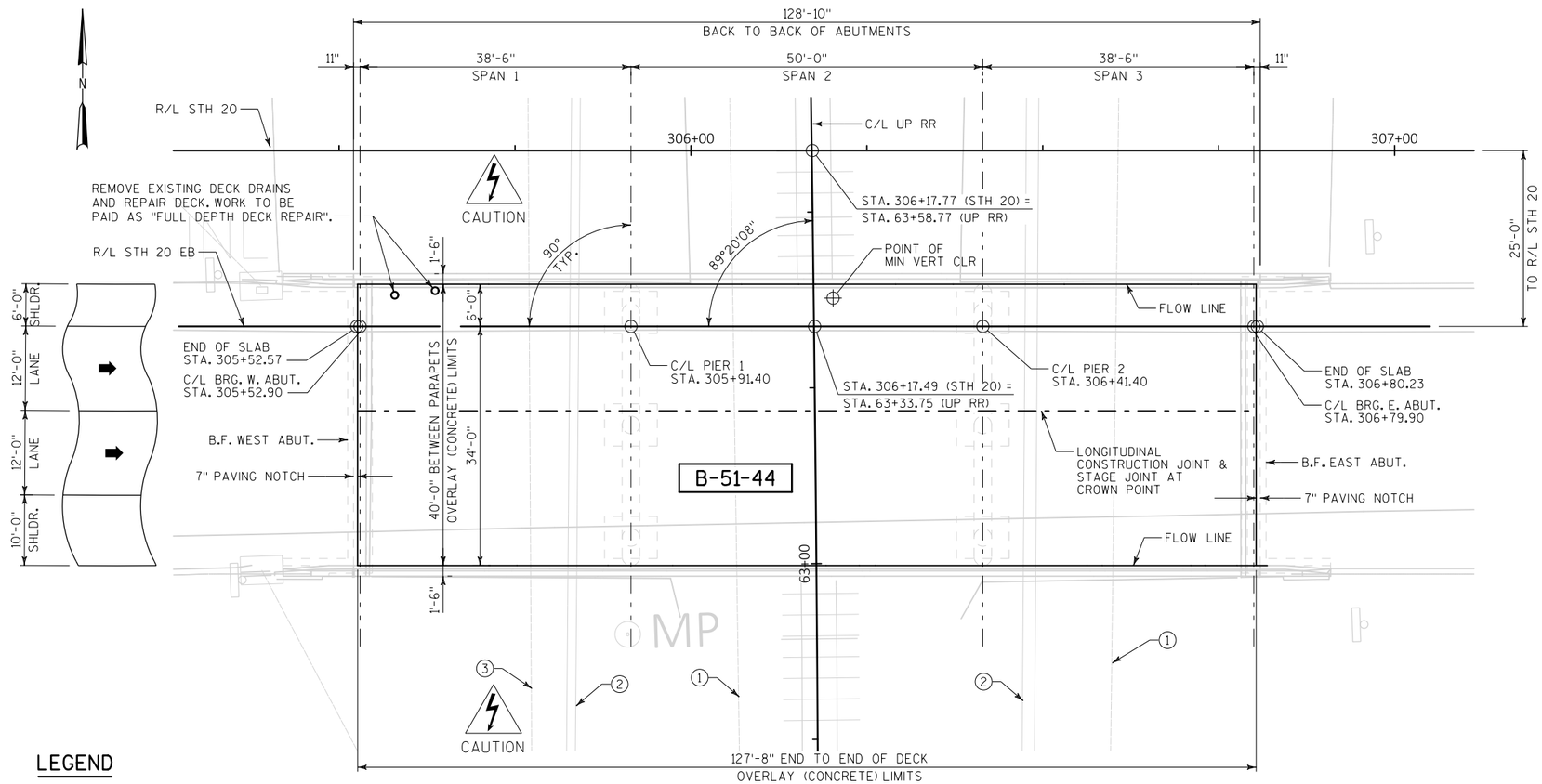
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-43

DRAWN BY	EKM	PLANS CK'D.	SGM

GALVANIC ANODES

SHEET 4 OF 4

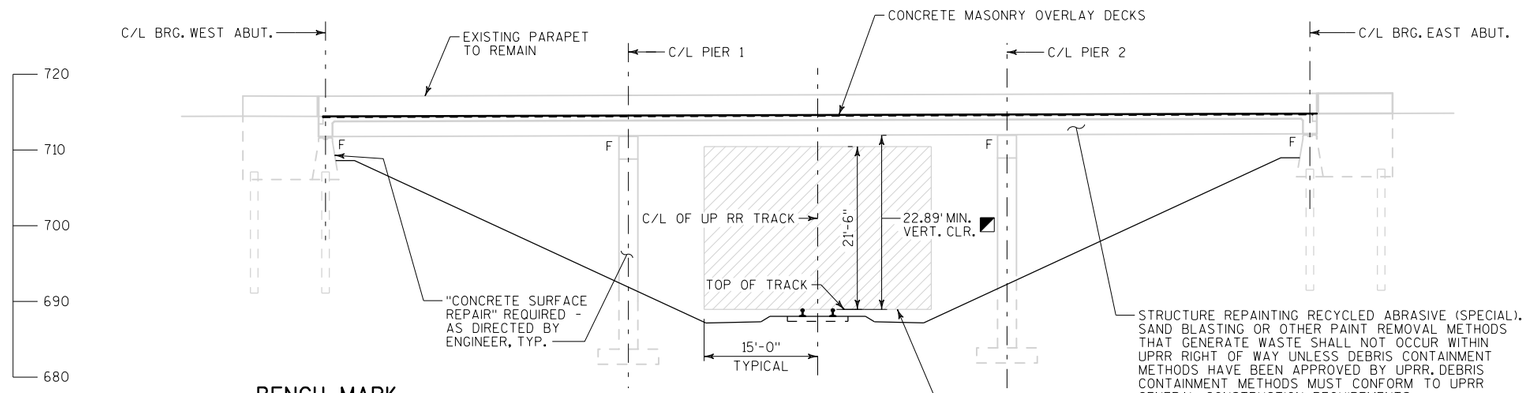


PLAN

(EXISTING 3 SPAN - W24 STEEL GIRDERS)
REMOVE EXISTING POLYMER MODIFIED ASPHALT & CONCRETE OVERLAYS
INSTALL NEW CONCRETE OVERLAY

LEGEND

- TRAFFIC DIRECTION
- MIN. CLEARANCE FROM INTERIM BRIDGE INSPECTION REPORT FOR B-51-44 DATED: 07/18/2018



ELEVATION

LOOKING NORTH

BENCH MARK

NUMBER		ELEVATION
BM 1	ALUMINUM PLUG LOCATED IN THE SW PARAPET WALL, B-51-44	717.39

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS19
OPERATING RATING: HS32
WISCONSIN STANDARD PERMIT VEHCILE (WIS-SPV) = 210 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE, OVERLAY DECKS .....f'c = 4,000 psi
ALL OTHER .....f'c = 4,000 psi
BAR STEEL REINFORCEMENT
GRADE 60 .....fy = 60,000 psi

TRAFFIC DATA

STH 20
EXISTING A.D.T. = 14,500 (2017)
FUTURE A.D.T. = 16,800 (2042)
R.D.S. = 50 MPH

LIST OF DRAWINGS

UPRR GENERAL CONSTRUCTION REQUIREMENTS

1. ALL WORK WITHIN 25' OF TRACK, OVER TRACK, OR WITH POTENTIAL TO FOUL TRACK REQUIRES UPRR FLAGMAN TO BE ON SITE.
2. ALL EQUIPMENT, MATERIALS, AND PERSONNEL SHALL REMAIN OUTSIDE THE MINIMUM CONSTRUCTION CLEARANCE ENVELOPE, EXCEPT WHEN WITHIN PRE-DETERMINED TRACK CURFEWS.
3. ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT WITHIN 50 FEET DURING THE APPROACH AND PASSAGE OF A TRAIN.
4. EQUIPMENT SHALL NOT BE SUPPORTED BY THE TRACK BALLAST, SUB-BALLAST, TIES, OR RAILS AT ANY TIME.
5. STORAGE AND STAGING AREAS ARE NOT PERMITTED WITHIN UPRR RIGHT OF WAY, EXCEPT WITHIN PRE-APPROVED ZONES SUCH AS EASEMENTS.
6. TEMPORARY TRACK CROSSINGS MUST BE APPROVED BY UPRR'S LOCAL OPERATING UNIT AND UPRR MANAGER OF INDUSTRY AND PUBLIC PROJECTS PRIOR TO START OF CONSTRUCTION.
7. TRACK CROSSINGS AND USE OF UPRR ACCESS ROADS / HAUL ROADS MUST BE COORDINATED WITH UPRR'S LOCAL MANAGER OF TRACK MAINTENANCE (AND YARD MASTER, IF WITHIN YARD LIMITS).
8. TEMPORARY DRAINAGE STRUCTURES AND/OR BMP'S SHALL NOT DIRECT STORMWATER TOWARDS UPRR TRACKS OR ACCESS ROADS.
9. UNATTENDED EXCAVATIONS WITHIN UPRR RIGHT OF WAY SHALL BE PROPERLY SECURED BY FENCING AND/OR COVERING(S) PER OSHA REQUIREMENTS.
10. FOR ANY CONSTRUCTION THAT INCLUDES HEAVY EQUIPMENT OR EXCAVATION, ALL UTILITIES WITHIN UPRR RIGHT OF WAY MUST BE IDENTIFIED AND MARKED PRIOR TO START OF CONSTRUCTION. UPRR CALL BEFORE YOU DIG: UP.COM/CBUD

UTILITY LEGEND

1. EXISTING UNDERGROUND FIBER OPTIC CABLE TO REMAIN
2. EXISTING UNDERGROUND STORM SEWER TO REMAIN
3. EXISTING OVERHEAD ELECTRIC TRANSMISSION LINES TO REMAIN

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
ED MCCRIGHT (414) 272-2426

STATE PROJECT NUMBER
2340-03-73

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
ch2m:
MILWAUKEE, WISCONSIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 08/25/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-51-44

STH 20 EB OVER UP RR

COUNTY	TOWN/~~CITY/VILLAGE~~
RACINE	MOUNT PLEASANT

DESIGN SPEC. REHABILITATION N/A

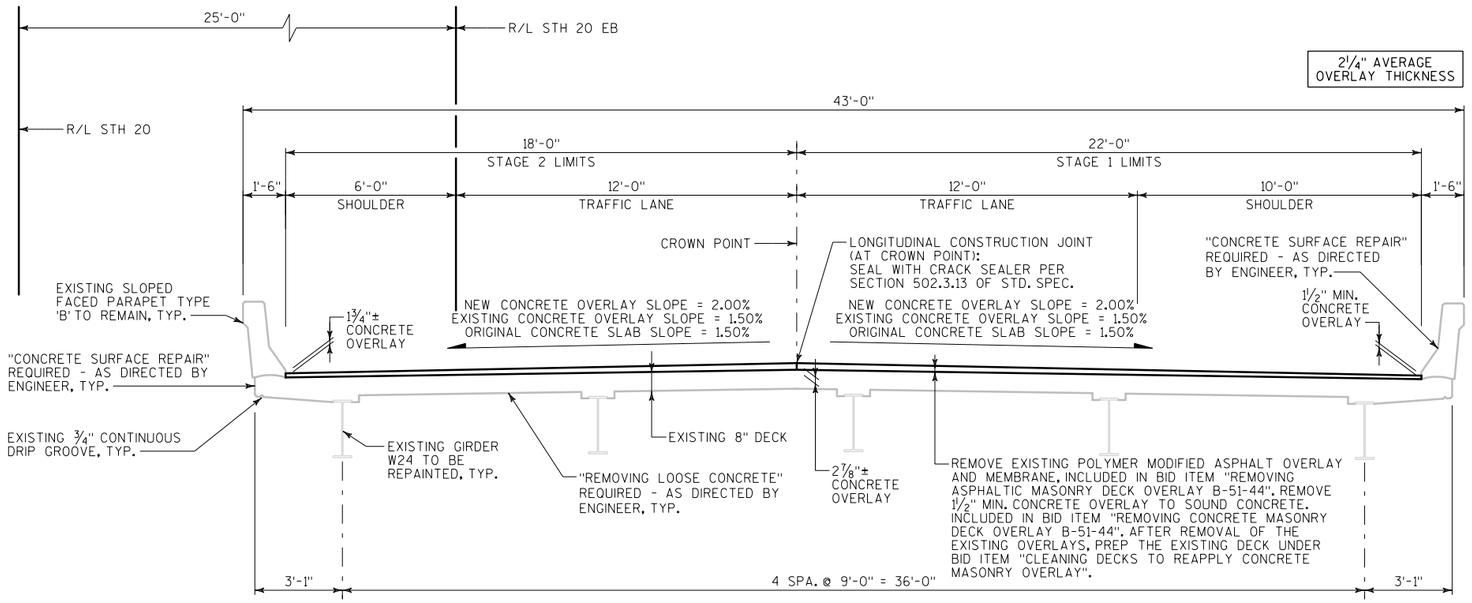
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EKM	SGM	EKM	SGM

GENERAL PLAN & ELEVATION

SHEET 1 OF 5

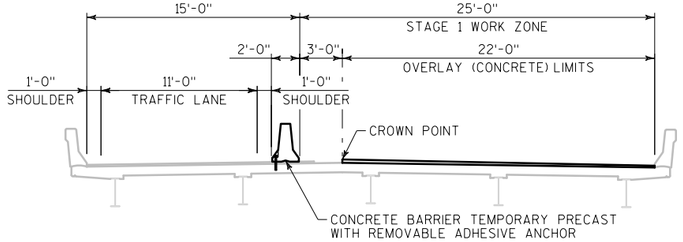
251

WISCONSIN
EDWARD K. MCCRIGHT
E-37422
MILWAUKEE, WI
7/31/23
PROFESSIONAL ENGINEER



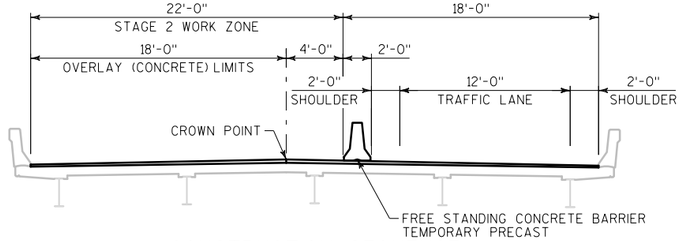
TYPICAL SECTION

(LOOKING EAST)



CONSTRUCTION SEQUENCE

(STAGE 1 - LOOKING EAST)



CONSTRUCTION SEQUENCE

(STAGE 2 - LOOKING EAST)

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	SUPER	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	---	---	569	569
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	---	---	120	120
509.0301	PREPARATION DECKS TYPE 1	SY	---	---	---	---	225	225
509.0302	PREPARATION DECKS TYPE 2	SY	---	---	---	---	169	169
509.0505.S	CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY	SY	---	---	---	---	569	569
509.1500	CONCRETE SURFACE REPAIR	SF	10	---	---	10	70	90
509.2000	FULL DEPTH DECK REPAIR	SY	---	---	---	---	3	3
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	---	---	---	---	57	57
509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-51-44	SY	---	---	---	---	568	568
509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-51-44	SY	---	---	---	---	568	568
509.9050.S	CLEANING PARAPETS	LF	---	---	---	---	295	295
517.4501.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-51-44	EACH	---	---	---	---	1	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	---	---	---	---	1	1
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	6	---	---	11	---	17
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	235	---	---	265	---	500
SPV.0060.11	EMBEDDED GALVANIC ANODES	EACH	10	---	---	10	---	20
SPV.0060.13	STRUCTURE REPAINTING RECYCLED ABRASIVE SPECIAL B-51-44	EACH	---	---	---	---	1	1
SPV.0060.15	VEGETATION REMOVAL B-51-44	EACH	---	---	---	---	---	1
SPV.0165.10	REMOVING LOOSE CONCRETE	SF	---	---	---	---	30	30

ALL ITEMS ARE CATEGORY 0050

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

LOCATIONS OF "CONCRETE SURFACE REPAIR" SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. QUANTITIES SHOWN FOR THIS BID ITEM ARE APPROXIMATE. ALL SUBSTRUCTURE CONCRETE SURFACE REPAIRS SHALL INCLUDE "EMBEDDED GALVANIC ANODES", PAID FOR SEPARATELY.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", AND "FULL-DEPTH DECK REPAIR" AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL DECK DEPTH REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

CLEAN AND PAINT ALL EXPOSED STEEL SUPERSTRUCTURE SURFACES UNDERNEATH THE BRIDGE. THE SURFACES INCLUDE GIRDERS, DIAPHRAGMS, CONNECTIONS, ETC. ALL CLEANING AND PAINTING TO BE PAID FOR AS "STRUCTURE REPAINTING RECYCLED ABRASIVE SPECIAL B-51-44".

SAND BLASTING OR OTHER PAINT REMOVAL METHODS THAT GENERATE WASTE SHALL NOT OCCUR WITHIN UPRR RIGHT OF WAY UNLESS DEBRIS CONTAINMENT METHODS HAVE BEEN APPROVED BY UPRR. DEBRIS CONTAINMENT METHODS MUST CONFORM TO UPRR GENERAL CONSTRUCTION REQUIREMENTS.

EXISTING STEEL SUPERSTRUCTURE SHALL BE PAINTED GRAY, AMS STD. COLOR NUMBER 26293.

EXISTING FIXED BEARINGS AT ABUTMENTS AND PIERS ARE TO BE CLEANED AND PAINTED. THIS WORK IS PAID FOR UNDER "CLEANING AND PAINTING BEARINGS".

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS SHALL BE INCIDENTAL TO BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED UPON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER THE "CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY". EXPECTED AVERAGE OVERLAY THICKNESS IS 2¼". IF EXPECTED OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½" CONTACT THE STRUCTURES DESIGN SECTION.

"PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

"PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF EXISTING PARAPETS. PERFORM "CLEANING PARAPETS" PRIOR TO THIS APPLICATION.

STATE PROJECT NUMBER

2340-03-73

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-44

DRAWN BY EKM | PLANS CK'D. SGM

TYPICAL SECTION, GENERAL NOTES AND QUANTITIES

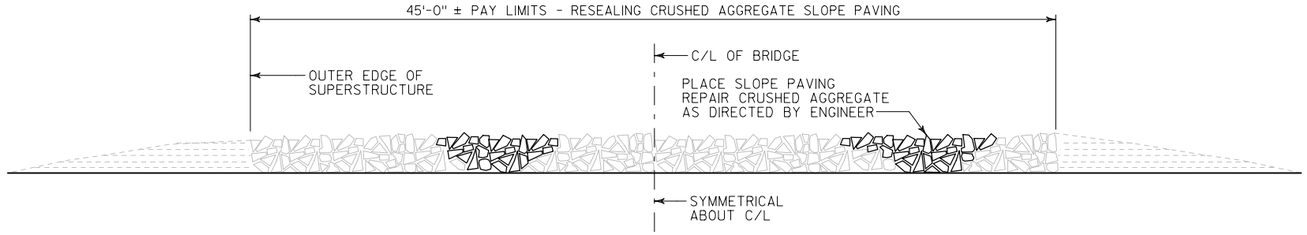
SHEET 2 OF 5

252

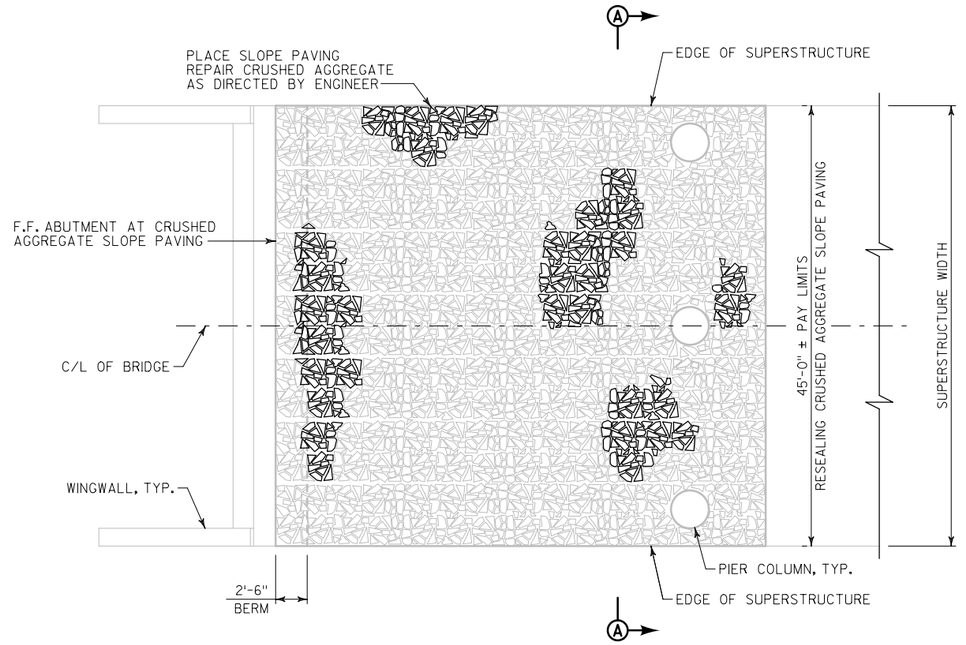
8

8

STATE PROJECT NUMBER
2340-03-73

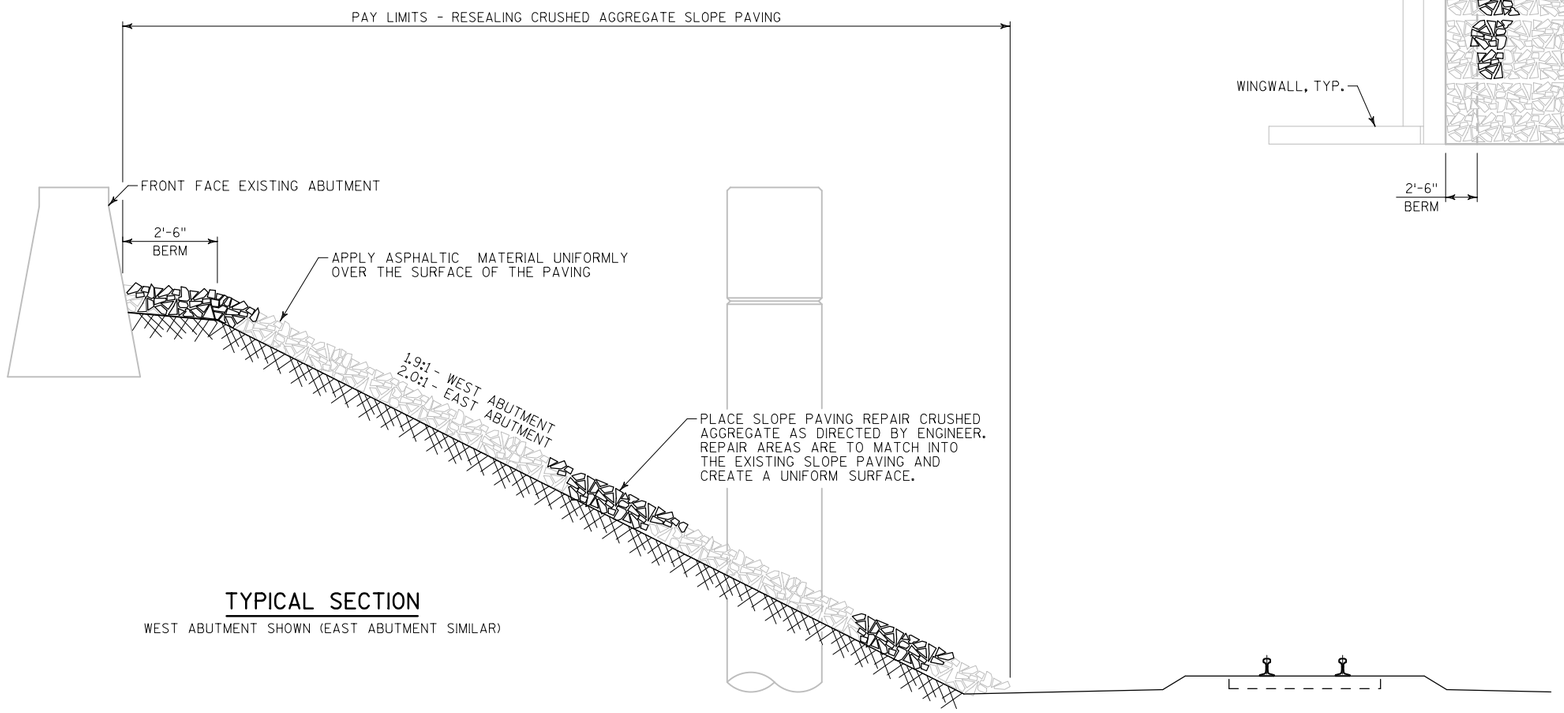


SECTION A-A



PARTIAL PLAN

SPAN 1 SHOWN (SPAN 3 SIMILAR)



TYPICAL SECTION

WEST ABUTMENT SHOWN (EAST ABUTMENT SIMILAR)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-44

DRAWN BY EKM | PLANS CK'D. SGM

SLOPE PAVING REPAIR AND RESEALING

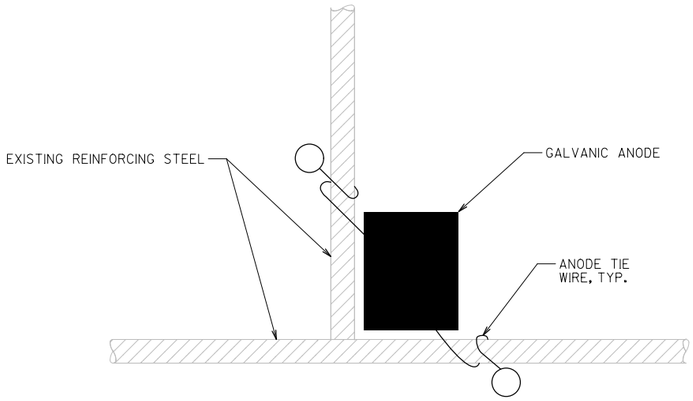
SHEET 3 OF 5

253

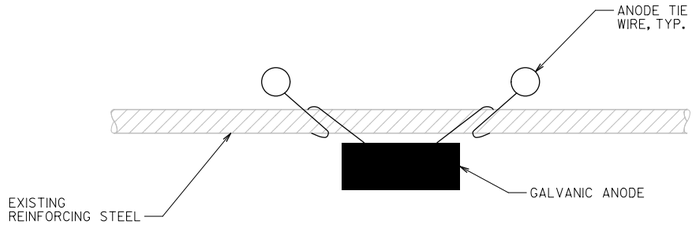
FILE NAME : B-51-44_03_SP.dgn PLOT DATE : 22-MAR-2021 PLOT BY : emccrigh B-51-44_03_SP PLOT SCALE : 2:1

STATE PROJECT NUMBER

2340-03-73

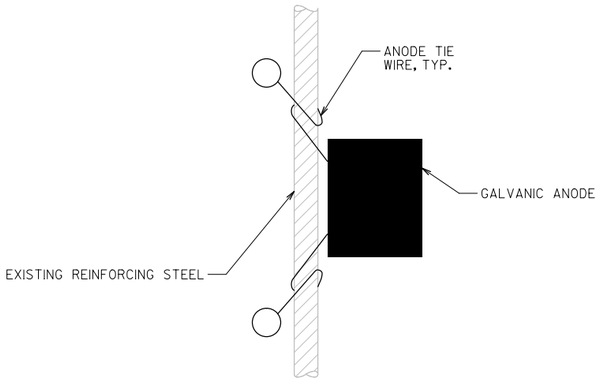


TYPICAL INSTALLATION AT BAR STEEL INTERSECTION



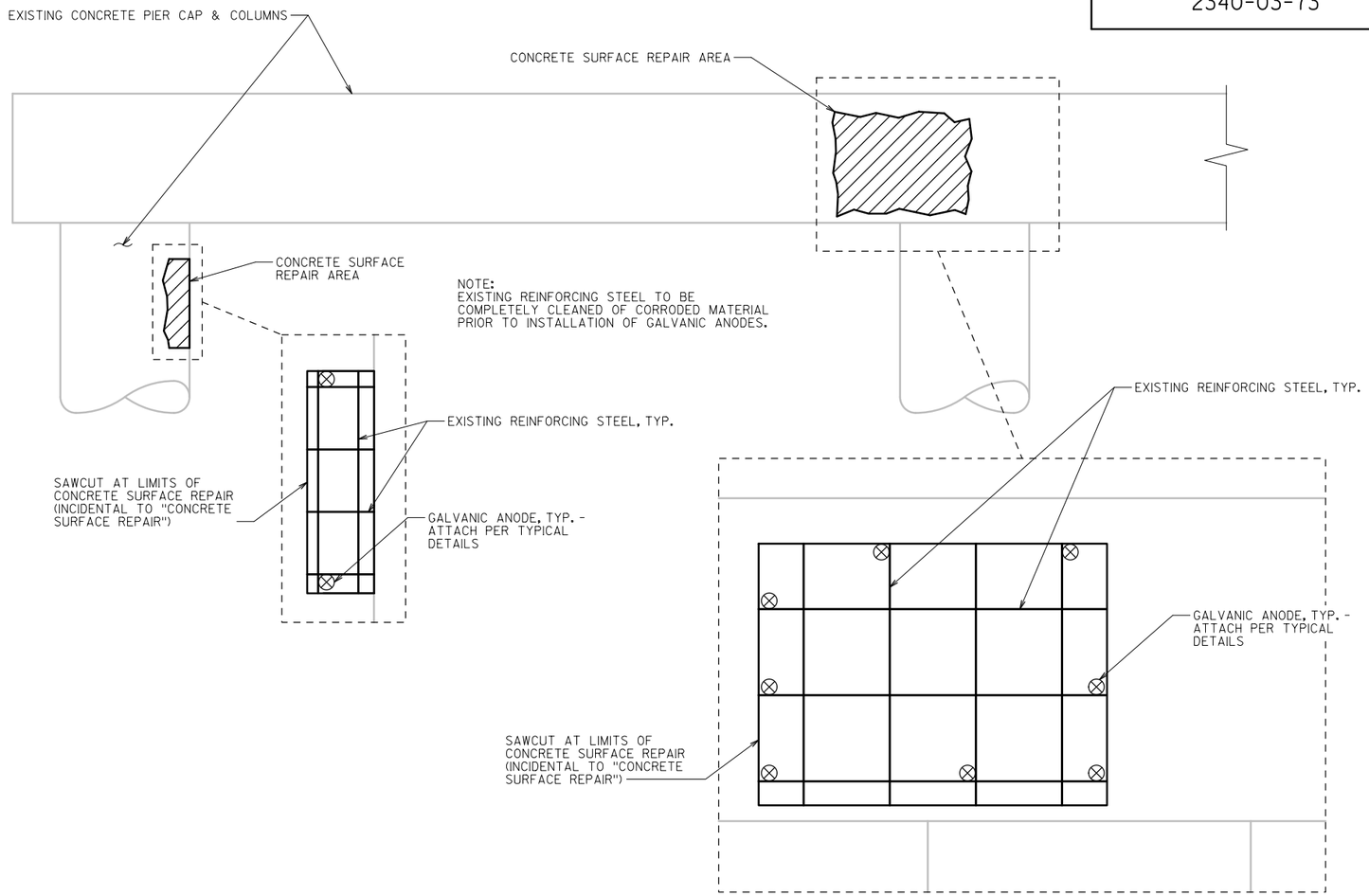
TYPICAL INSTALLATION BELOW BAR STEEL

(HORIZONTAL)



TYPICAL INSTALLATION BESIDE BAR STEEL

(VERTICAL)



TYPICAL SUBSTRUCTURE REPAIR DETAIL

PIER SHOWN, ABUTMENT SIMILAR. SUPERSTRUCTURE OMITTED FOR CLARITY.
VERTICAL SURFACE REPAIR SHOWN, HORIZONTAL SURFACE REPAIR SIMILAR.

NOTES

SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT AND PAYMENT INFORMATION.

EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORRODED MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF 1½" AND A MINIMUM BOTTOM COVER OF ¾".

PROVIDE GALVANIC ANODES IN CONCRETE SURFACE REPAIR AREAS IN SUBSTRUCTURE ONLY.

THE ESTIMATED ANODE QUANTITY ON PLANS IS BASED ON A MAXIMUM SPACING OF 24" AROUND PERIMETER OF THE CONCRETE SURFACE REPAIR AREA. PLACE ADDITIONAL ANODES AT THE INTERIOR OF REPAIRED AREA SO CENTER TO CENTER SPACING OF ANODES IS NOT GREATER THAN 24" IN ANY DIRECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-44

DRAWN BY EKM | PLANS CK'D. SGM

GALVANIC ANODES

SHEET 4 OF 5

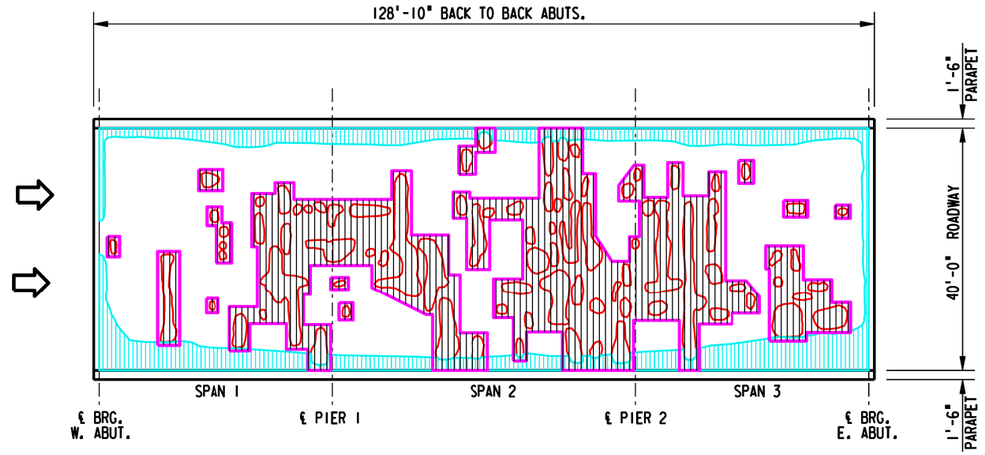
8

8

FILE NAME : B-51-44_04_GA.dgn PLOT DATE : 22-MAR-2021 PLOT BY : emccrigh B-51-44_04_GA PLOT SCALE : 0.333333:1

STATE PROJECT NUMBER

2340-03-73



PLAN

PROPOSED REHABILITATION AREAS

N

REHABILITATION AREA SUMMARY		STRUCTURE NO. B-51-44	
ITEM	UNIT	QUANT.	%
TOTAL AREA	yd^2	567.6	
SHADE/DEBRIS	yd^2	0	
PREPARATION, DECKS, TYPE 1	yd^2	224.1	39.5
PREPARATION, DECKS, TYPE 2	yd^2	168.1	29.6
FULL DEPTH DECK REPAIR	yd^2	3.0	0.5

LEGEND

DECK PREPARATION AREA

SHADE/DEBRIS

DELAMINATION

SPALL

DEBOND

ASPHALT PATCH

CONCRETE PATCH

SCALE 0' 5' 10' 20'

SURFACE TYPE: PMA (ROSPHALT) OVERLAY
INFRARED INSPECTION DATE: 3/2/21 & 3/5/21

NOTE:

DELAMINATION AREAS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY. THE FIELD ENGINEER WILL SOUND THE DECK AND MARK AREAS IN THE FIELD. THE ESTIMATED QUANTITIES FOR THE DECK PREPARATION AND DECK REPAIR BID ITEMS ARE ADAPTED FROM THE ABOVE INFRARED THERMOGRAPHY SURVEY RESULTS.

NO	DATE	REVISIONS	DRN	CHK	DATE

DATA COL TT/TG
ANALYSIS DS
CADD DS
CHECKED DU

AECOM

PROPOSED REHABILITATION AREAS FOR STH 20 EB OVER CNW RAILROAD STRUCTURE NO. B-51-44

PREPARED FOR WISCONSIN DEPARTMENT OF TRANSPORTATION SOUTHEAST REGION

DATE 3/17/21
PROJECT NO 60630160
FILENAME B-51-44-REHAB.DGN
SHEET NO 1 OF 1
DRAWING NO

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-44

DRAWN BY EKM | PLANS CK'D. SGM

DECK CONDITION SURVEY

SHEET 5 OF 5

DIVISION 1 - STH 20 EB OUTSIDE

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED EILL 1.25	MASS ORDINATE NOTE 3
295+78.77	0.21	0.21	0.00	0	0	0	0	0	0
296+00.00	0.22	0.22	0.04	0	0	0	0	0	0
296+41.73	0.84	0.84	0.00	1	1	0	1	0	0
296+50.00	0.33	0.33	0.00	0	0	0	1	0	0
296+66.73	0.08	0.08	1.57	0	0	0	1	0	0
296+91.39	0.04	0.04	1.31	0	0	1	1	1	-1
297+00.00	0.03	0.03	1.34	0	0	0	1	1	-1
297+50.00	0.00	0.00	0.04	0	0	1	1	3	-3
297+54.17	0.27	0.27	0.00	0	0	0	1	3	-3
302+59.93	0.58	0.58	0.00	0	0	0	1	3	-3
303+00.00	0.81	0.81	5.19	1	1	4	2	8	-8
303+41.64	0.35	0.35	15.52	1	1	16	3	28	-28
303+50.00	0.28	0.28	13.78	0	0	5	3	34	-34
303+66.65	0.04	0.04	8.89	0	0	7	3	43	-43
303+91.66	0.00	0.00	1.00	0	0	5	3	49	-49
303+98.26	0.49	0.49	0.00	0	0	0	3	49	-49
COLUMN TOTALS				3	3	39			

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE AGGREGATE EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED OR UNUSABLE AGGREGATE MATERIAL) - ((FILL) * FILL FACTOR)]

9

9

DIVISION 1 - STH 20 WB OUTSIDE

STATION	AREA (SE)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
				NOTE 1		NOTE 2	NOTE 1		NOTE 3
301+53.95	0.00	0.00	0.00	0	0	0	0	0	0
302+00.00	0.00	0.00	0.62	0	0	1	0	1	-1
302+50.00	0.00	0.00	1.78	0	0	2	0	4	-4
303+00.00	0.00	0.00	0.19	0	0	2	0	6	-6
303+31.90	0.00	0.00	0.00	0	0	0	0	6	-6
305+00.00	0.00	0.00	0.11	0	0	0	0	6	-6
305+40.08	0.70	0.70	6.64	1	1	5	1	13	-13
315+52.93	1.92	1.92	0.00	0	0	0	1	13	-13
316+00.00	1.27	1.27	0.00	3	3	0	4	13	-13
316+12.39	0.69	0.69	0.00	0	0	0	4	13	-13
316+38.05	0.76	0.76	6.08	1	1	3	5	16	-16
316+50.00	0.68	0.68	19.77	0	0	6	5	24	-24
316+63.73	0.69	0.69	31.30	0	0	13	5	40	-40
317+00.00	1.10	1.10	9.47	1	1	27	6	74	-74
317+27.92	1.40	1.40	0.00	1	1	5	7	80	-80
COLUMN TOTALS				7	7	64			

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE AGGREGATE EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED OR UNUSABLE AGGREGATE MATERIAL) - ((FILL) * FILL FACTOR)]

9

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DIVISION 2 - STH 20 EB INSIDE

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
				NOTE 1		NOTE 2	NOTE 1		NOTE 3
294+28.78	0.12	0.12	0.00	0	0	0	0	0	0
294+50.00	0.00	0.00	2.94	0	0	1	0	1	-1
295+00.00	0.13	0.13	4.01	0	0	6	0	9	-9
295+16.61	0.01	0.01	6.37	0	0	3	0	13	-13
295+41.61	0.00	0.00	4.12	0	0	5	0	19	-19
295+50.00	0.00	0.00	3.59	0	0	1	0	20	-20
295+66.61	0.01	0.01	2.81	0	0	2	0	23	-23
296+00.00	0.46	0.46	1.55	0	0	3	0	26	-26
296+50.00	0.15	0.15	0.52	1	1	2	1	29	-29
297+00.00	0.00	0.00	2.10	0	0	2	1	31	-31
297+36.80	0.01	0.01	0.00	0	0	1	1	33	-33
302+35.16	0.00	0.00	2.04	0	0	0	1	33	-33
302+50.00	0.00	0.00	2.76	0	0	1	1	34	-34
303+00.00	0.00	0.00	6.75	0	0	9	1	45	-45
303+04.28	0.00	0.00	7.45	0	0	1	1	46	-46
303+29.16	0.00	0.00	5.83	0	0	6	1	54	-54
303+50.00	0.00	0.00	4.21	0	0	4	1	59	-59
303+54.16	0.00	0.00	3.71	0	0	1	1	60	-60
304+00.00	4.32	4.32	0.00	4	4	3	5	64	-64
304+50.00	0.00	0.00	2.41	4	4	2	9	66	-66
305+00.00	0.00	0.00	2.07	0	0	4	9	71	-71
305+41.85	0.00	0.00	3.49	0	0	4	9	76	-76
COLUMN TOTALS				9	9	45			

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE AGGREGATE EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED OR UNUSABLE AGGREGATE MATERIAL) - ((FILL) * FILL FACTOR)]

DIVISION 2 - STH 20 WB INSIDE

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT	SALVAGED/UNUSABLE AGGREGATE MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
				NOTE 1		NOTE 2	NOTE 1		NOTE 3
299+97.73	0.10	0.00	0.00	0	0	0	0	0	0
300+00.00	0.00	0.00	0.00	0	0	0	0	0	0
300+22.52	0.00	0.00	0.00	0	0	0	0	0	0
300+47.77	0.00	0.00	11.00	0	0	5	0	6	-6
300+50.50	0.00	0.00	10.79	0	0	1	0	8	-8
301+00.00	0.00	0.00	5.94	0	0	15	0	26	-26
301+50.00	0.00	0.00	0.15	0	0	6	0	34	-34
301+50.70	0.00	0.00	0.12	0	0	0	0	34	-34
306+91.92	0.03	0.03	2.68	0	0	0	0	34	-34
307+00.00	0.57	0.57	0.00	0	0	0	0	34	-34
307+50.00	0.29	0.29	0.00	1	1	0	1	34	-34
308+00.00	3.67	3.67	0.00	4	4	0	5	34	-34
308+17.19	7.29	7.29	0.00	3	3	0	8	34	-34
308+42.19	3.29	3.29	0.00	5	5	0	13	34	-34
308+50.00	1.61	1.61	0.00	1	1	0	14	34	-34
308+67.19	0.75	0.75	0.45	1	1	0	15	34	-34
308+93.86	0.34	0.34	0.00	1	1	0	16	34	-34
COLUMN TOTALS				16	16	27			

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE AGGREGATE EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED OR UNUSABLE AGGREGATE MATERIAL) - ((FILL) * FILL FACTOR)]

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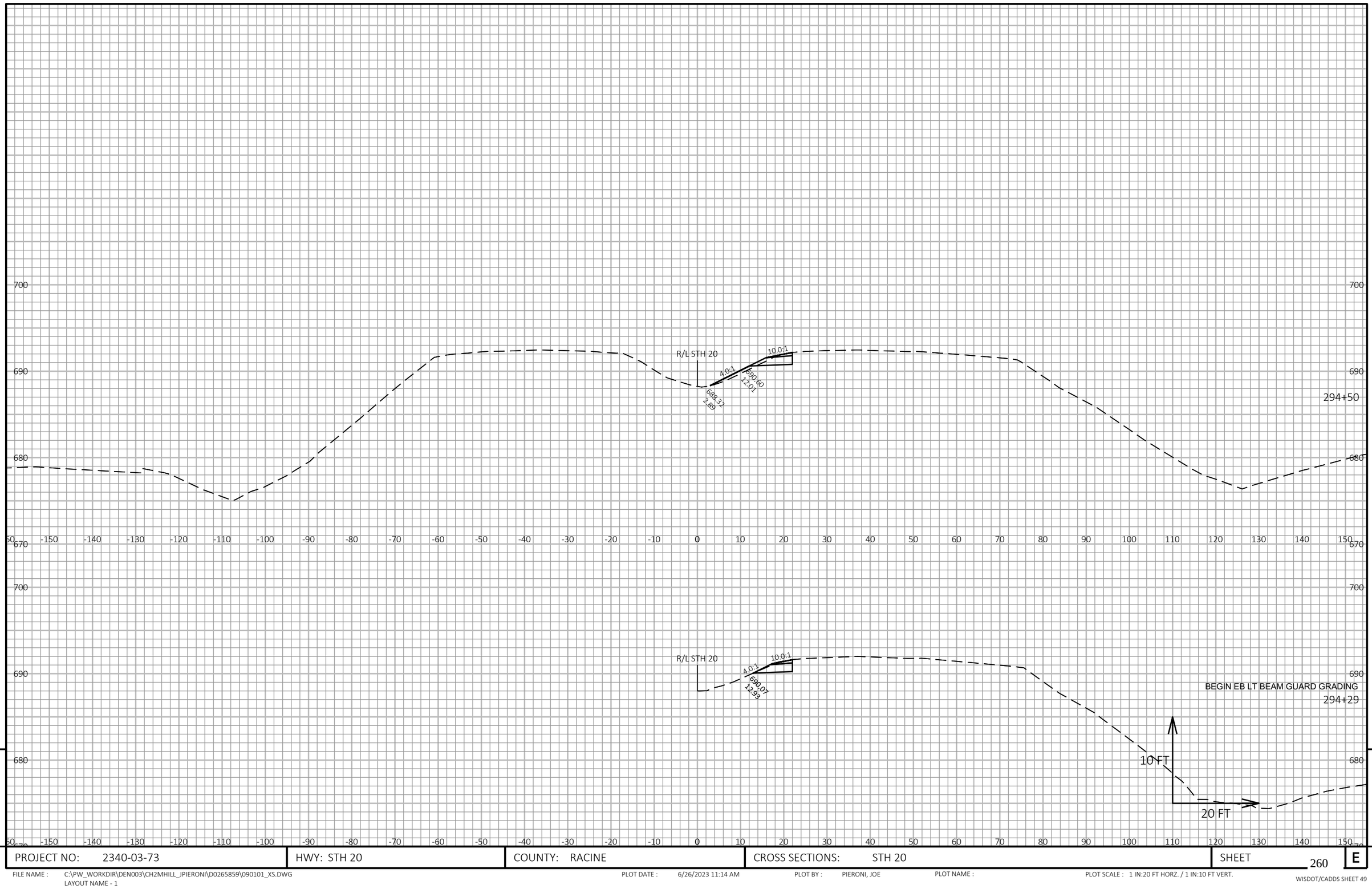

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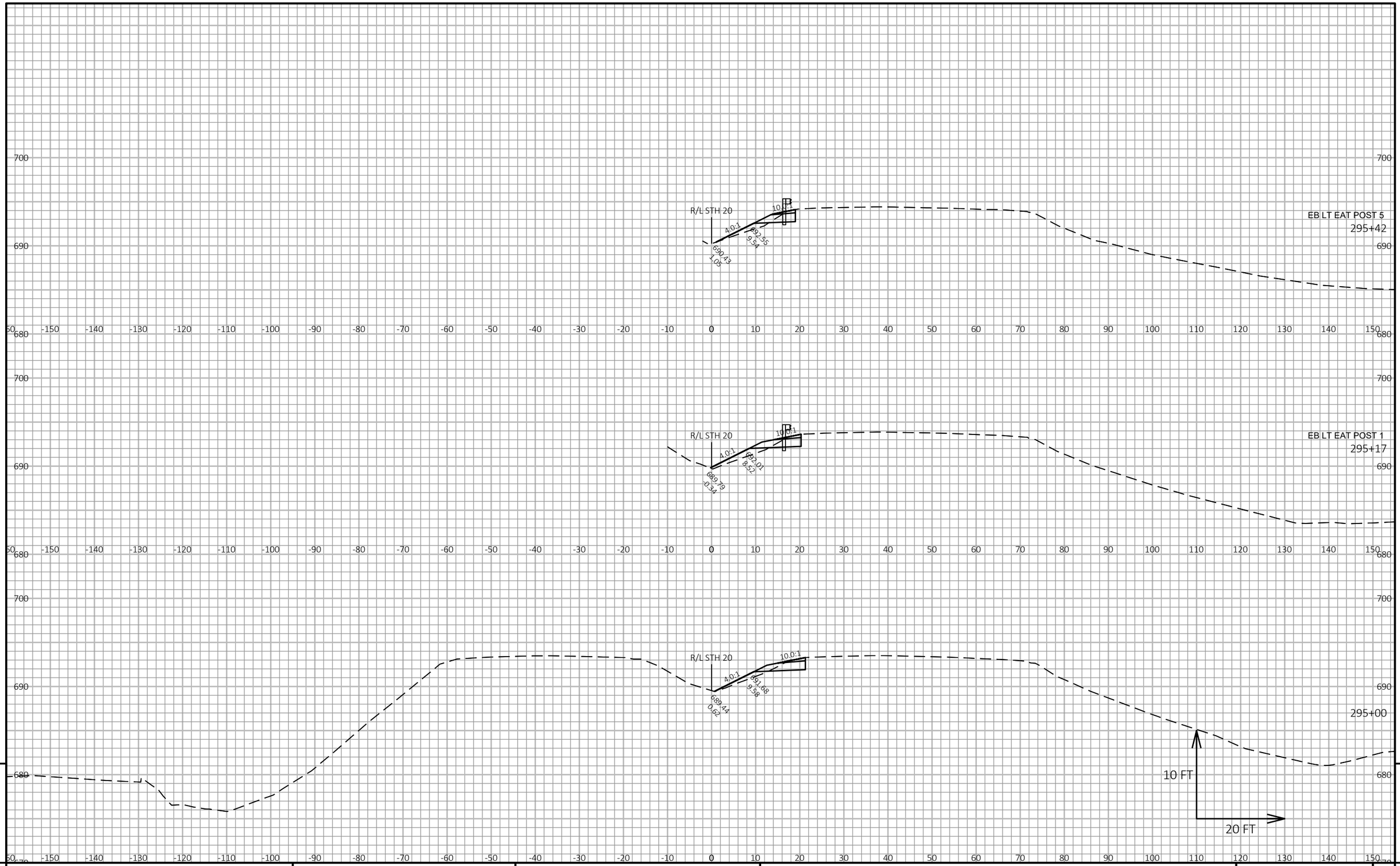
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 260	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 1

PLOT DATE : 6/26/2023 11:14 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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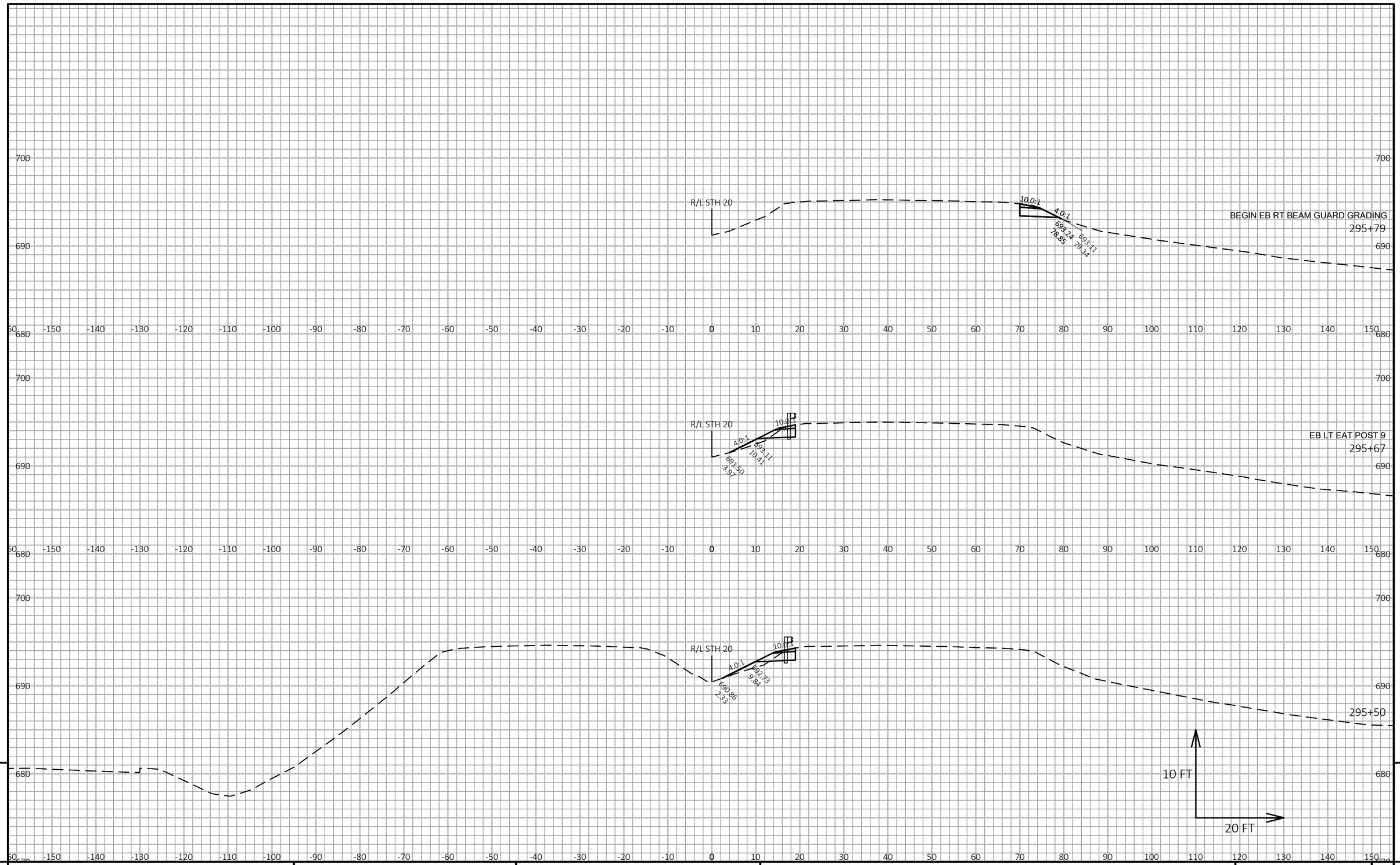
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 261	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 2

PLOT DATE : 6/26/2023 11:14 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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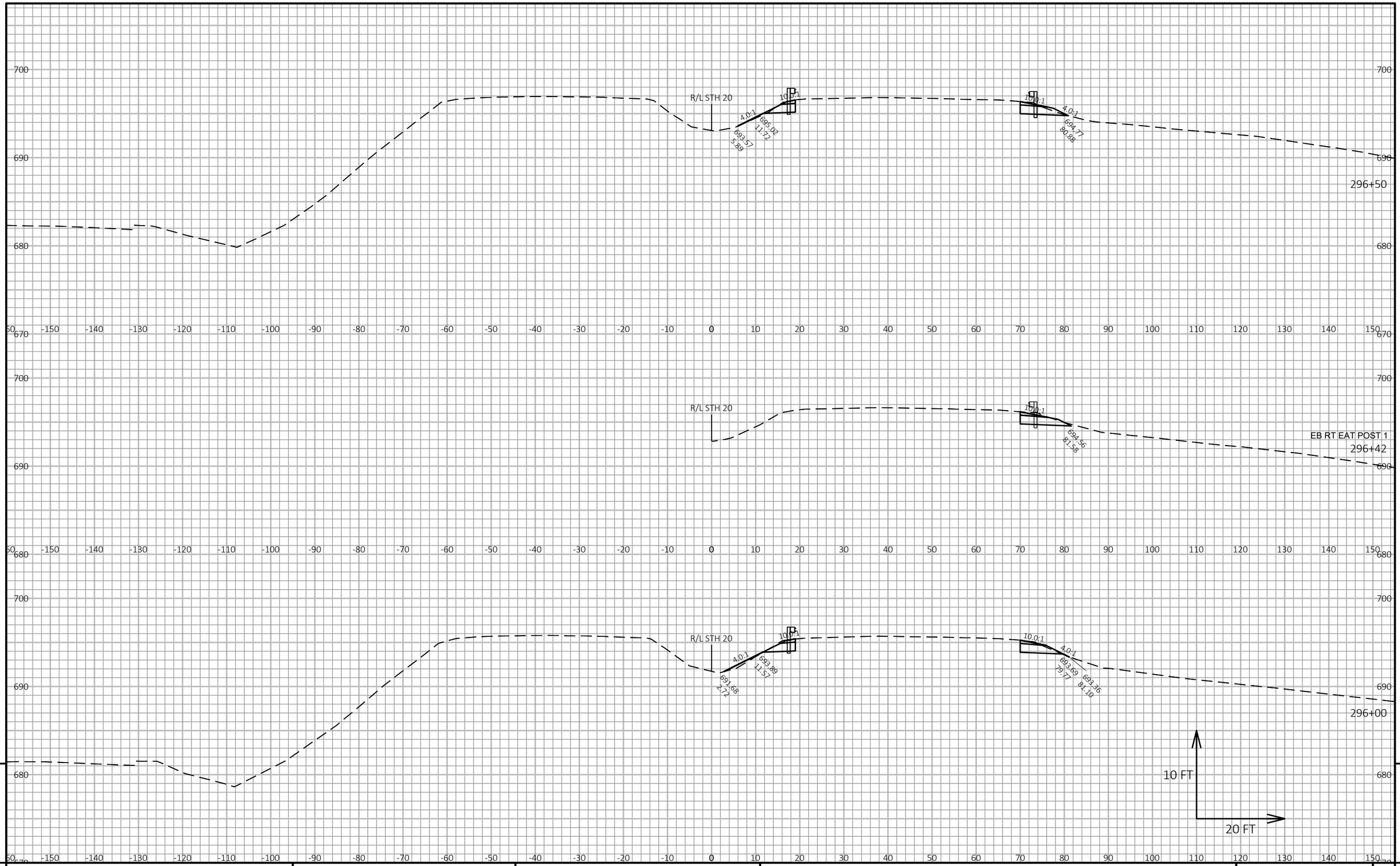
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 262	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 3

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

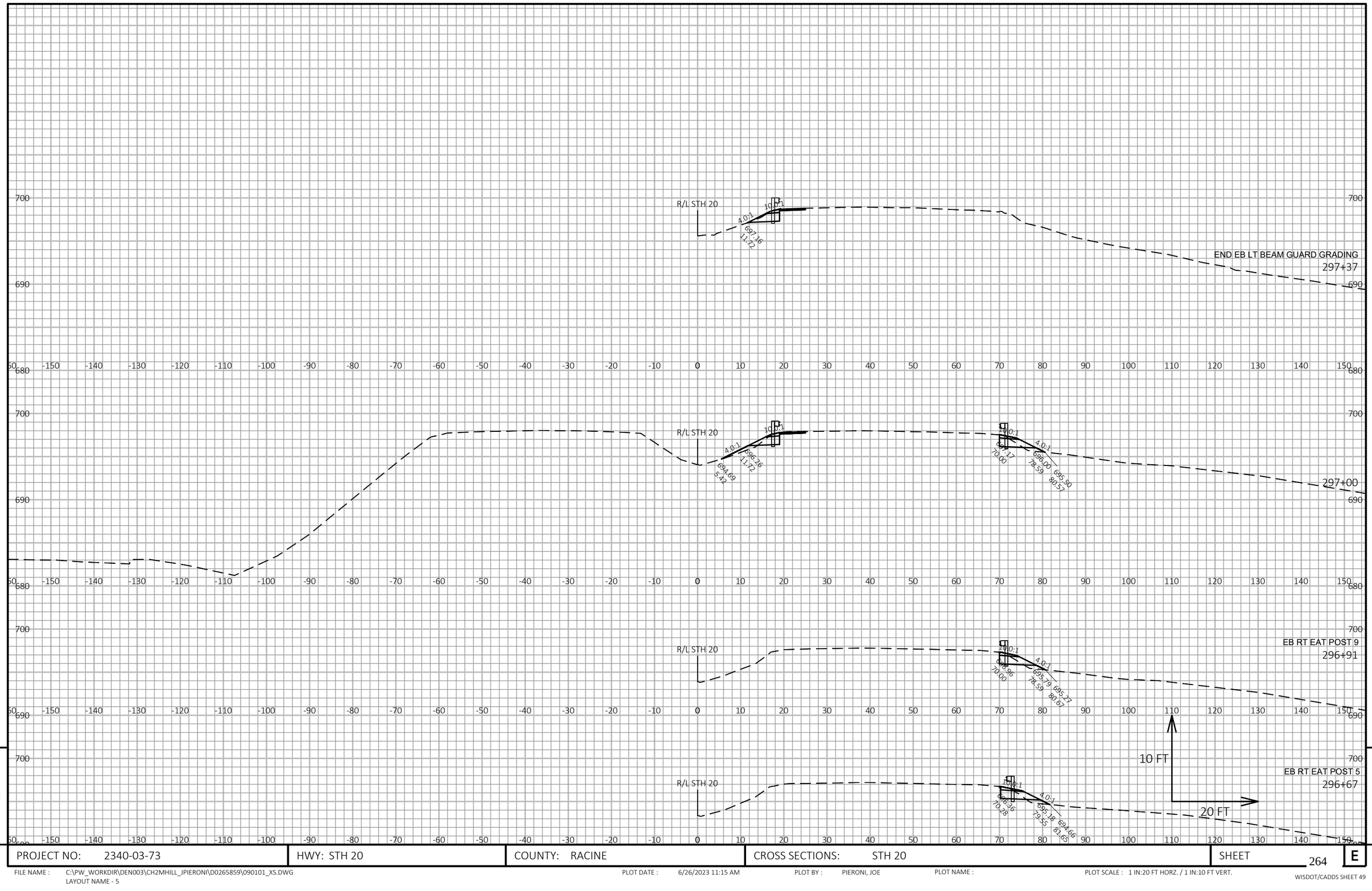


PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 263	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 4

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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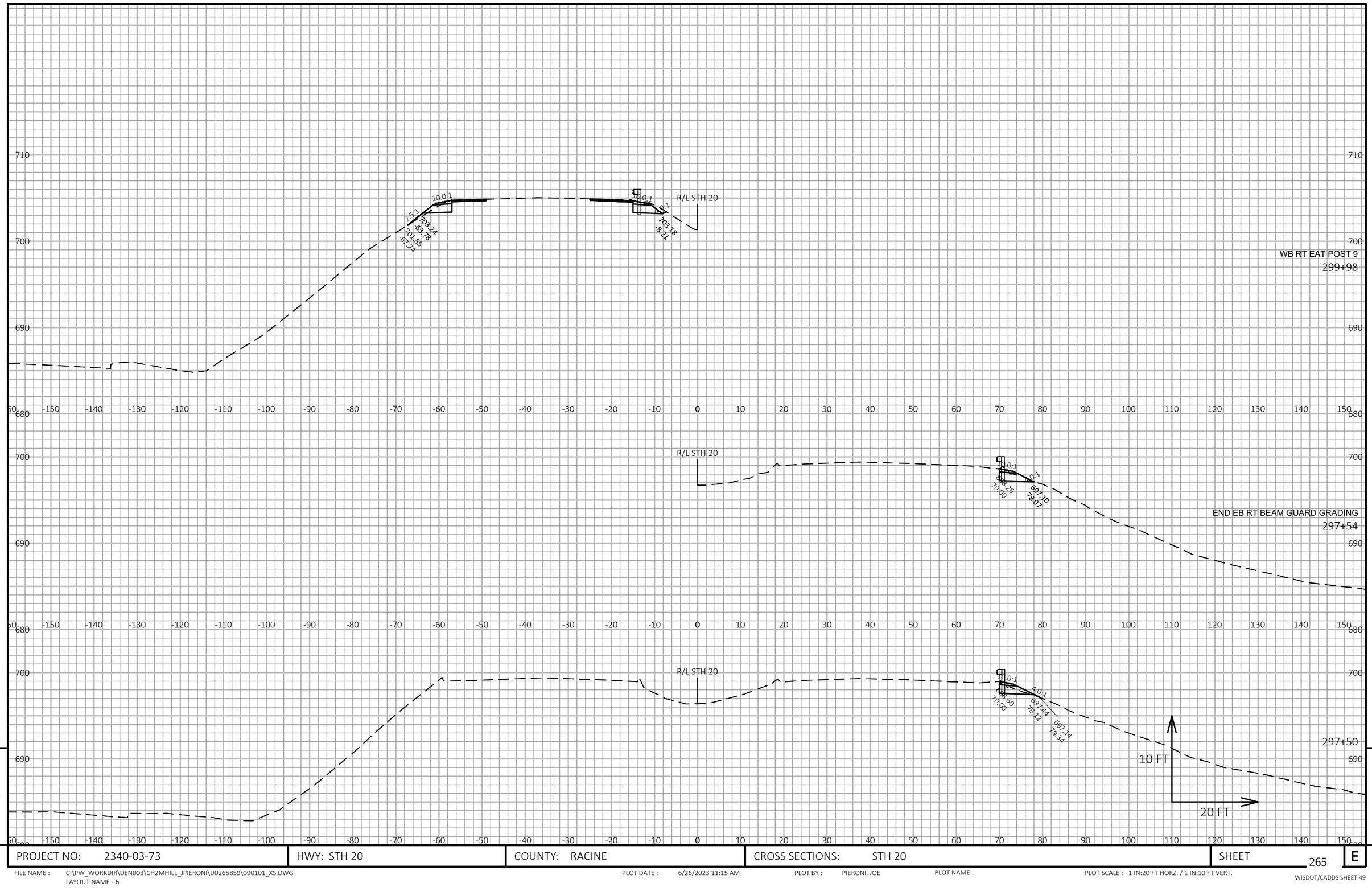
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 264	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 5

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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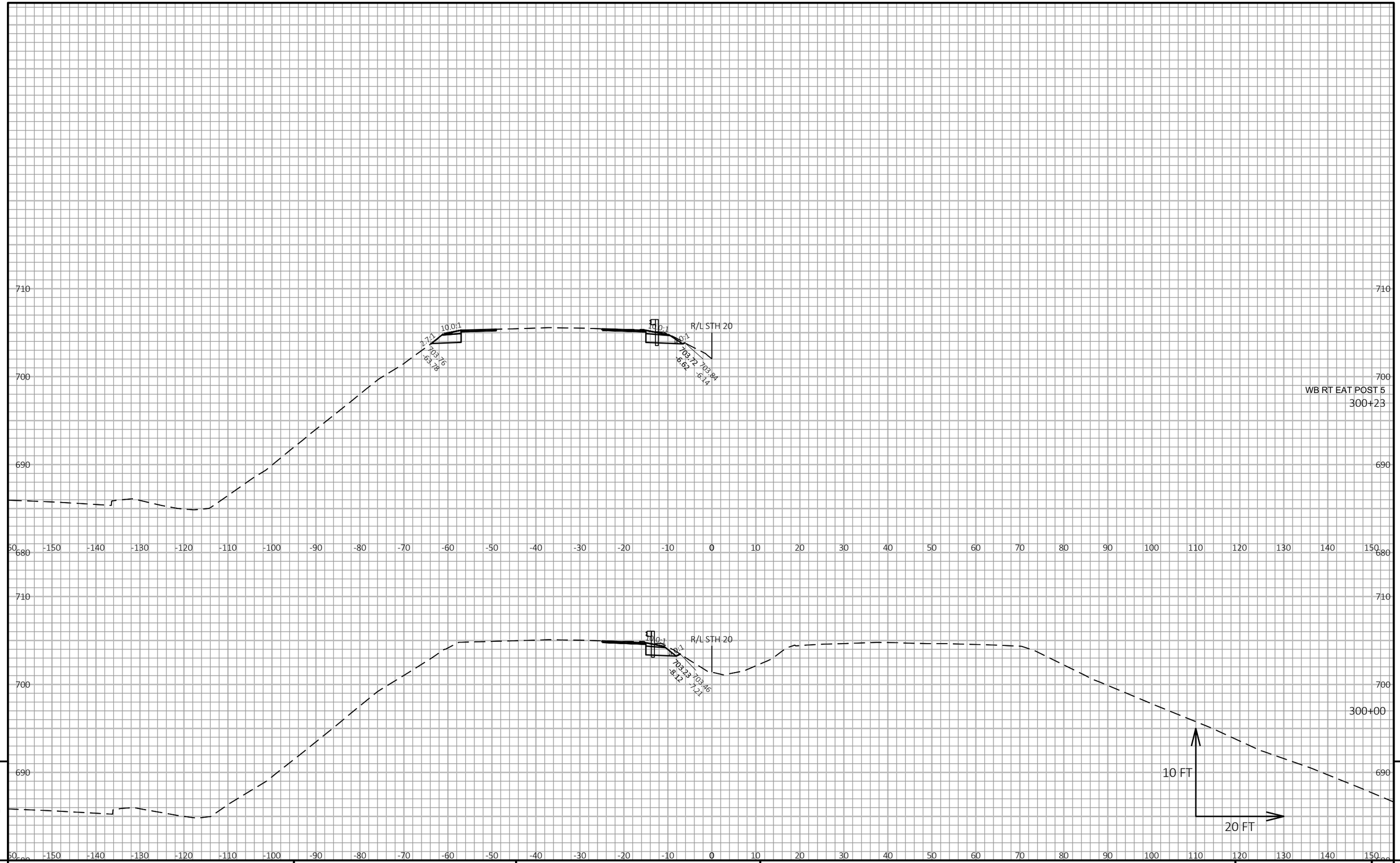
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 265	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 6

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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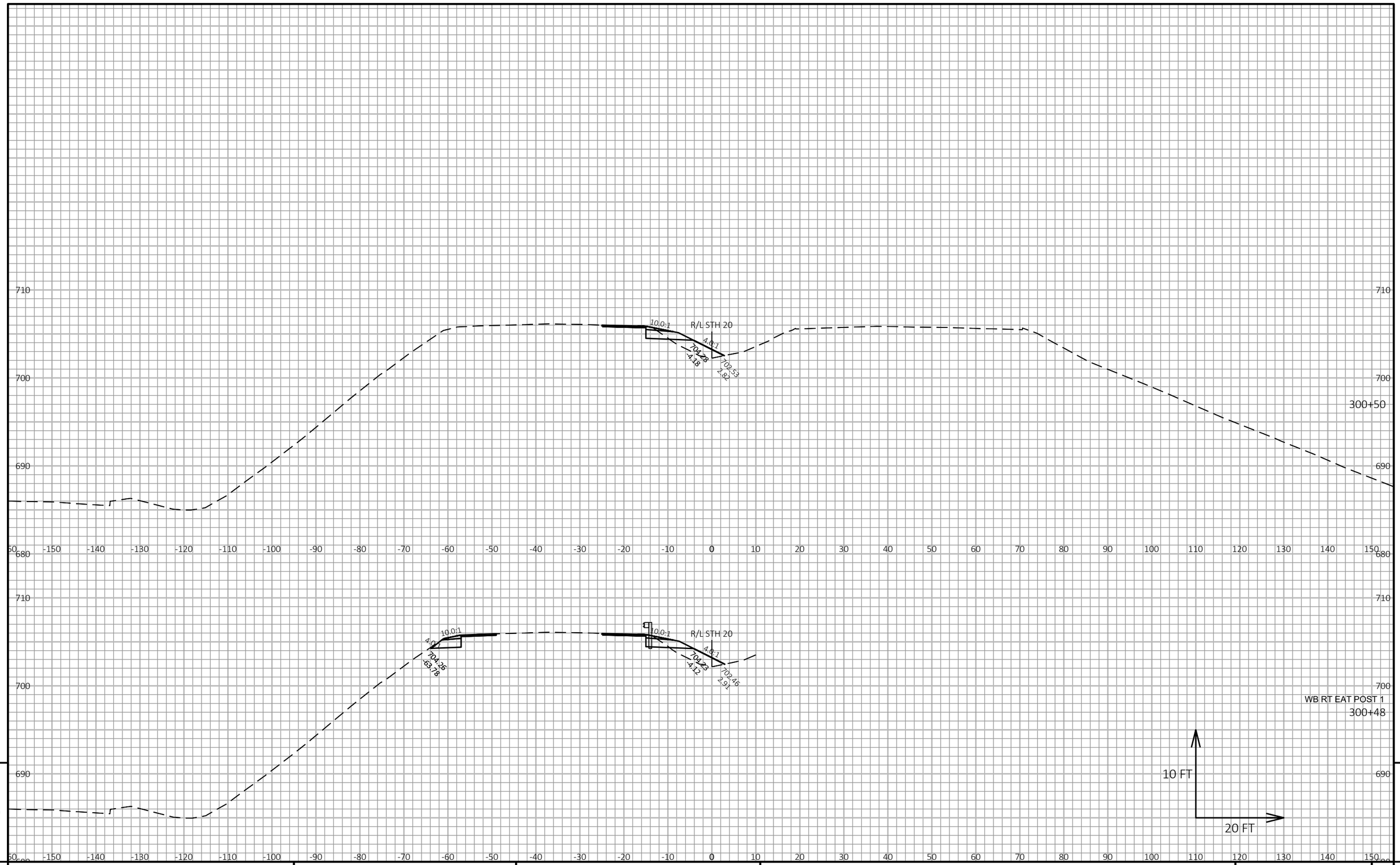
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 266	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 7

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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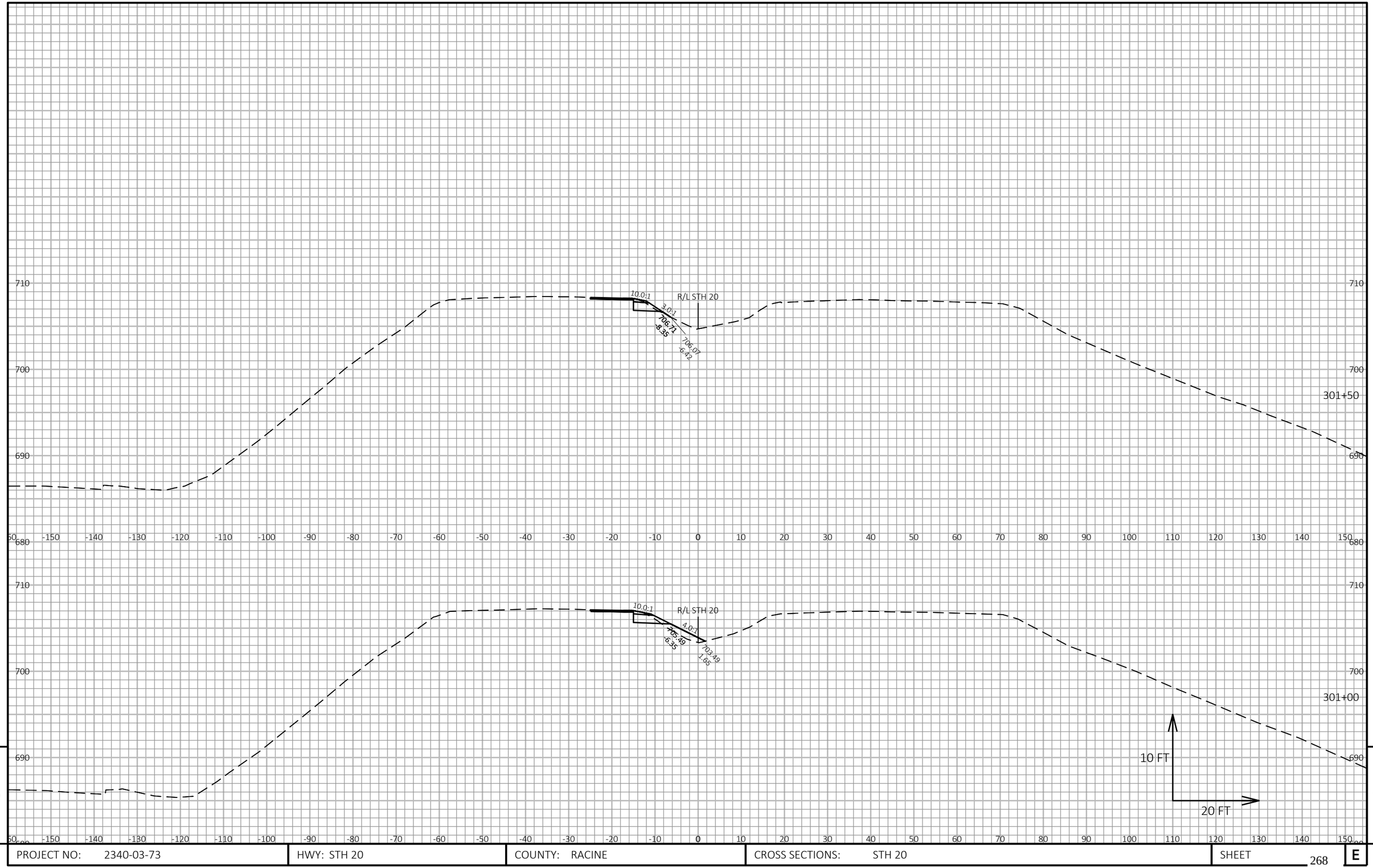
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 267	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 8

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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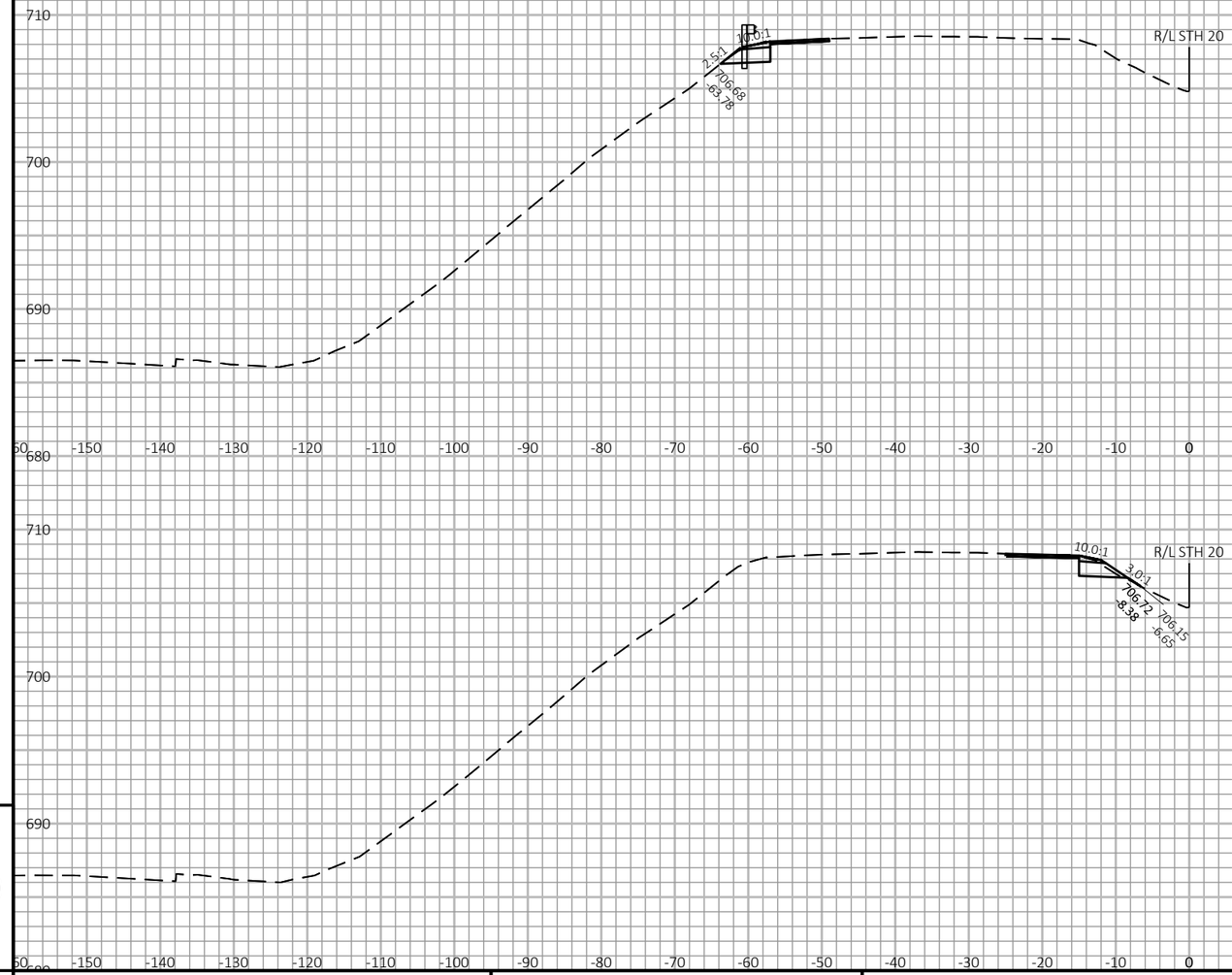
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 268	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 9

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



BEGIN WB LT BEAM GUARD GRADING
301+54

END WB RT BEAM GUARD GRADING
301+51

10 FT
20 FT

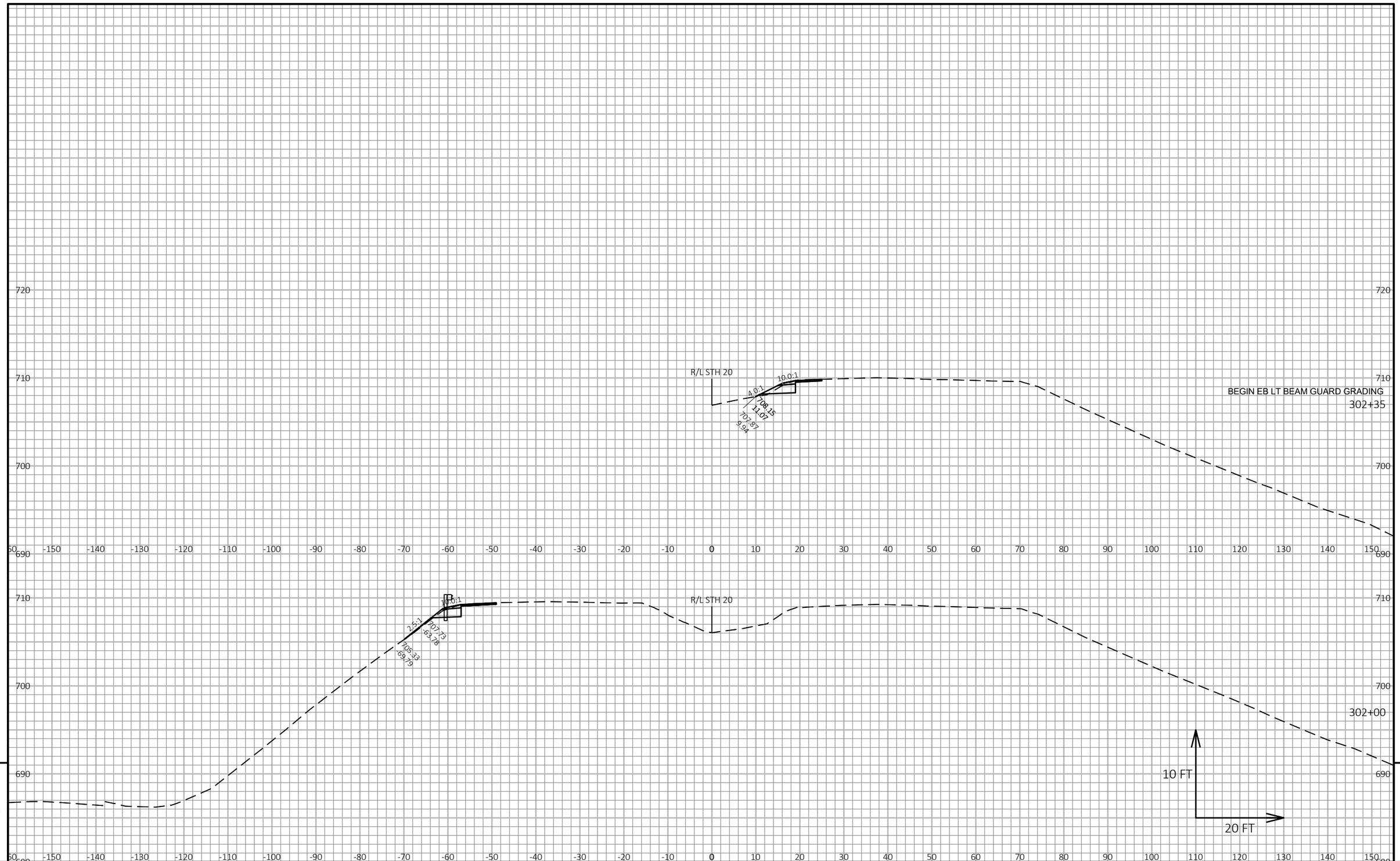
9 9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 269	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 10

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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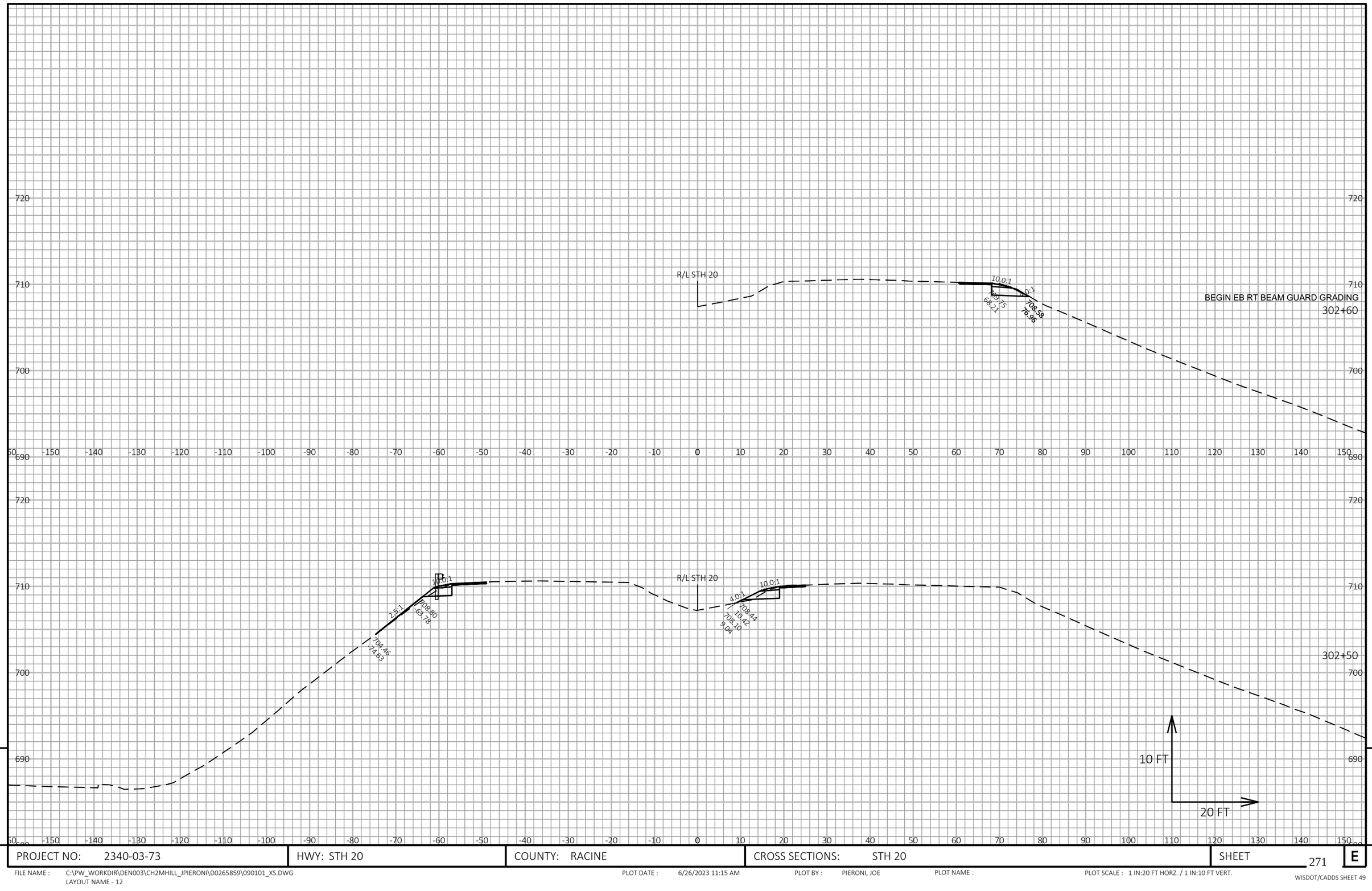
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 270	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 11

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



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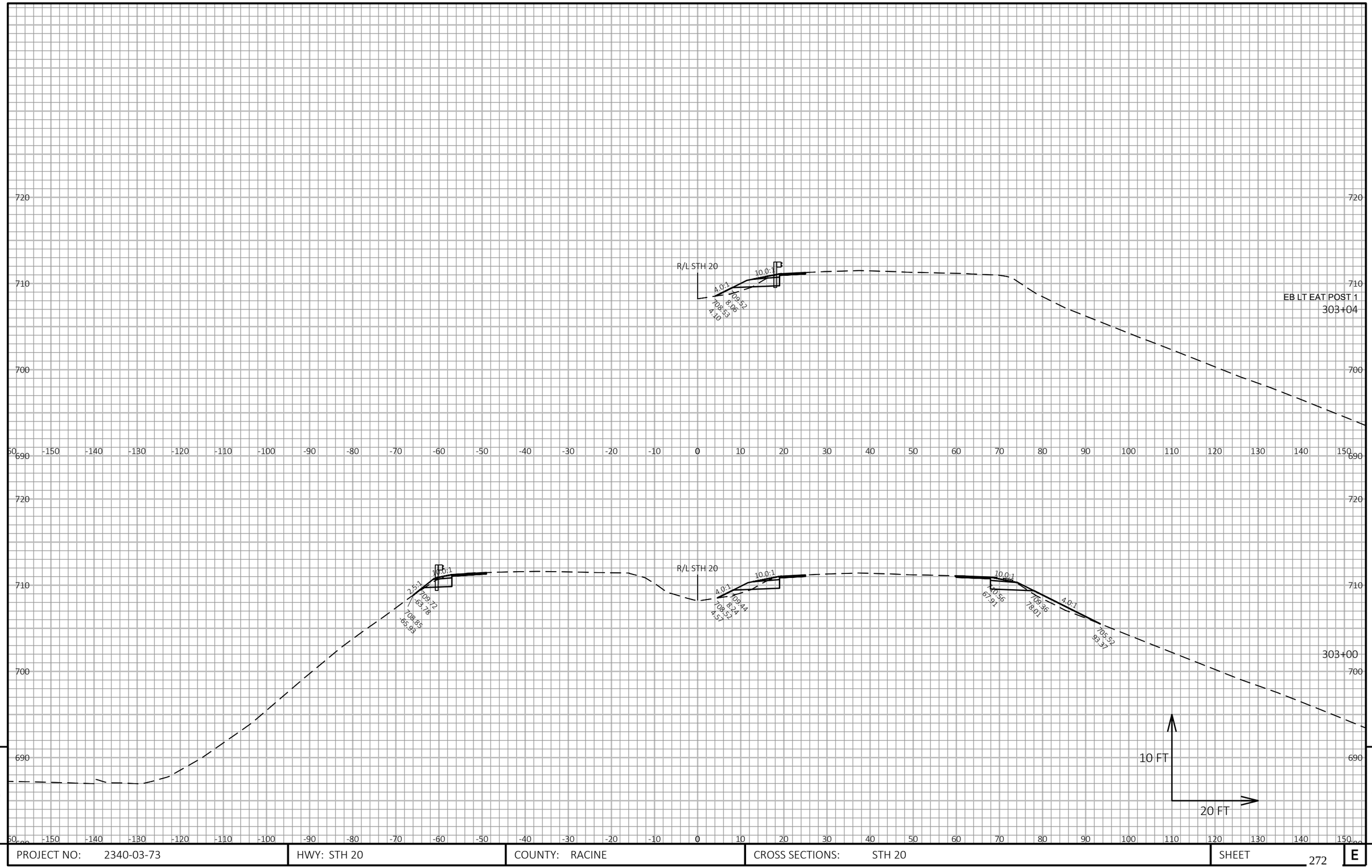
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 271	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 12

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

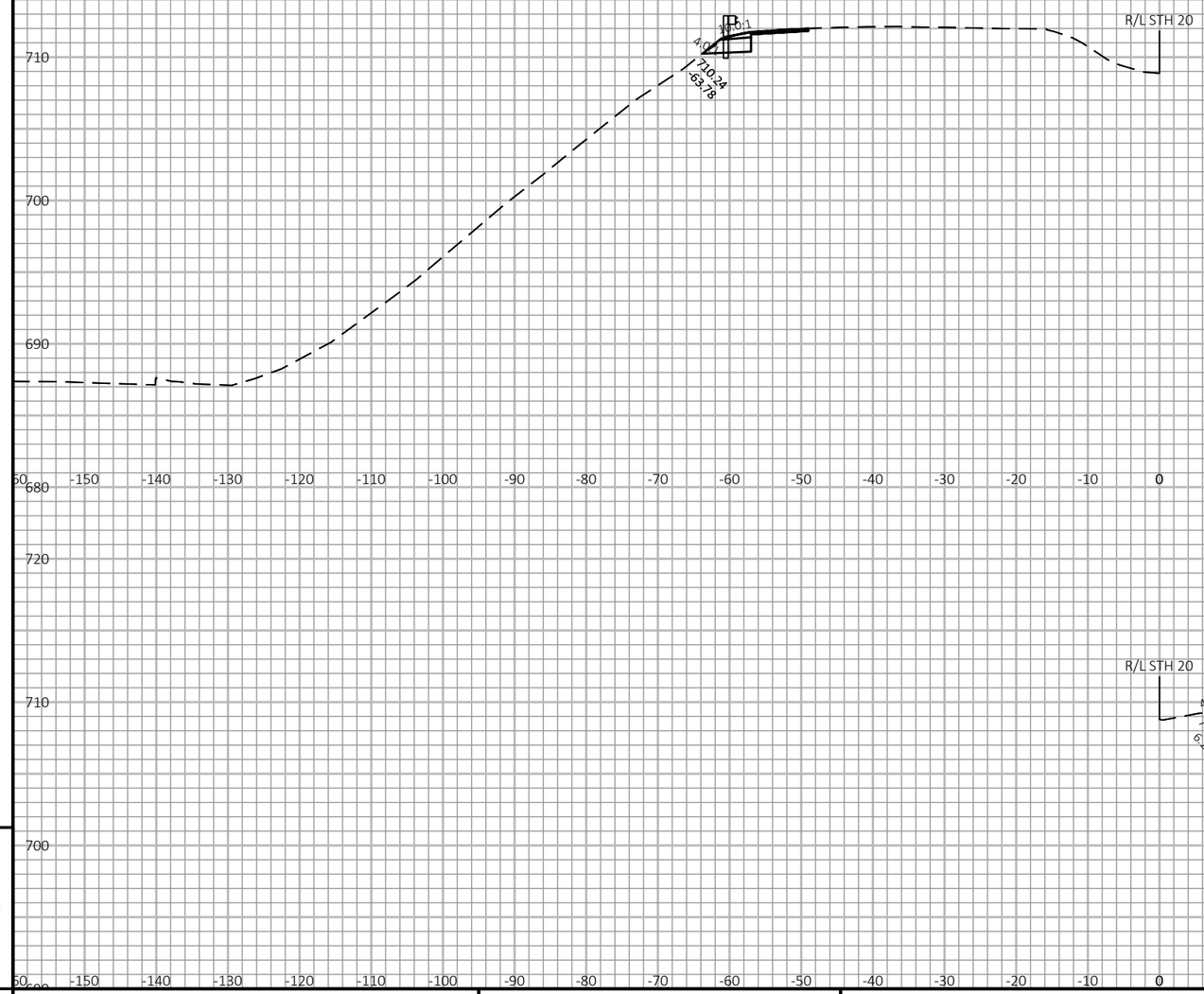


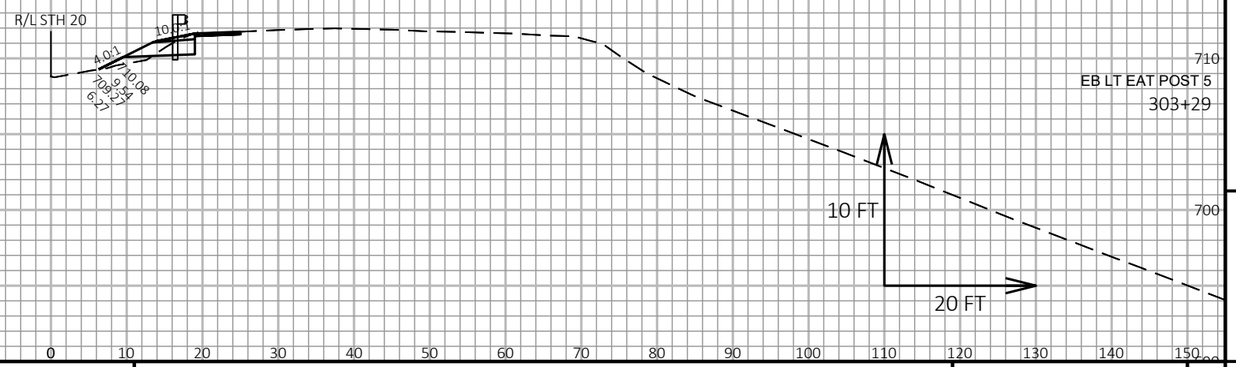
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 272 E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 13

PLOT DATE : 6/26/2023 11:15 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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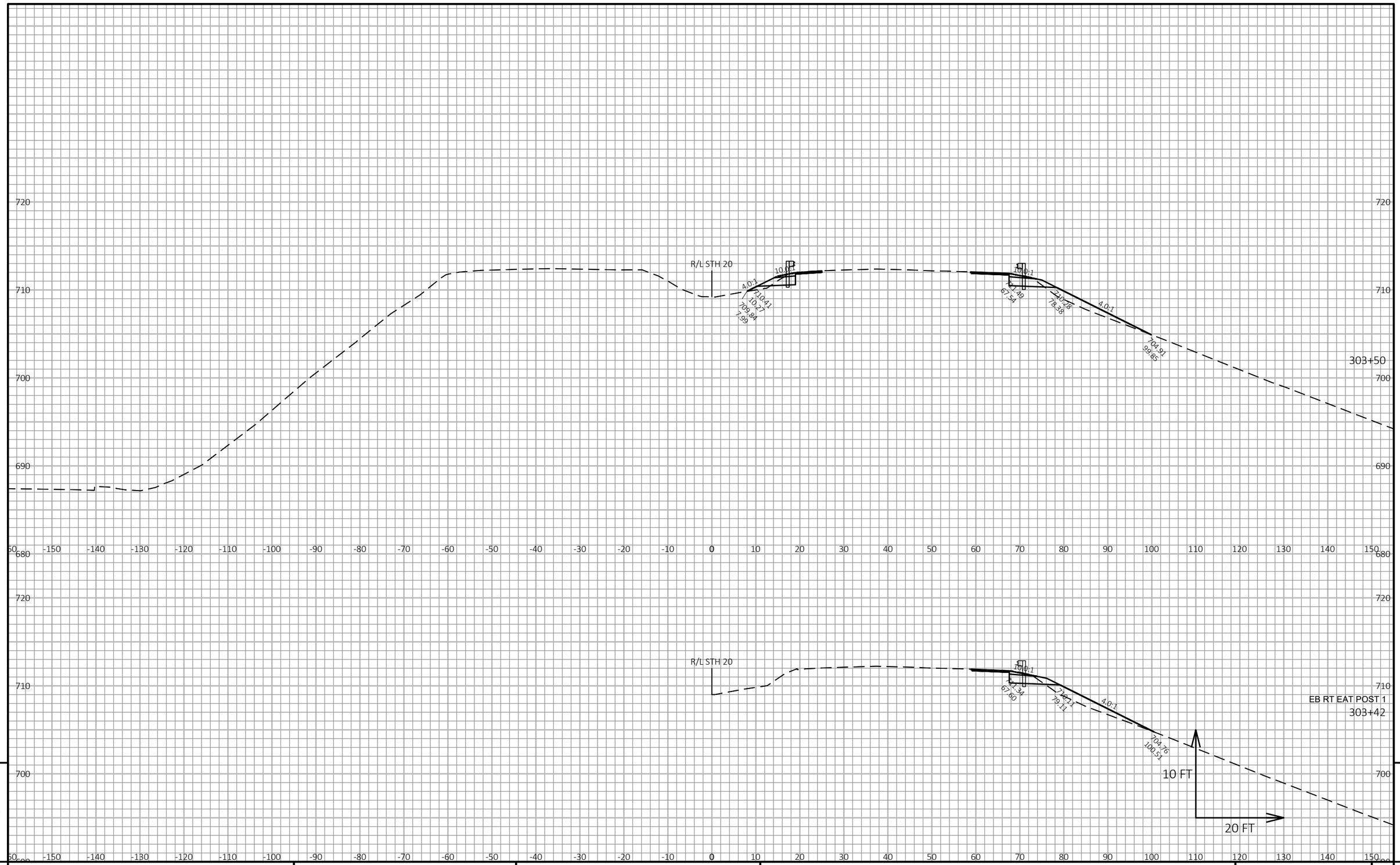
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 273	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 14

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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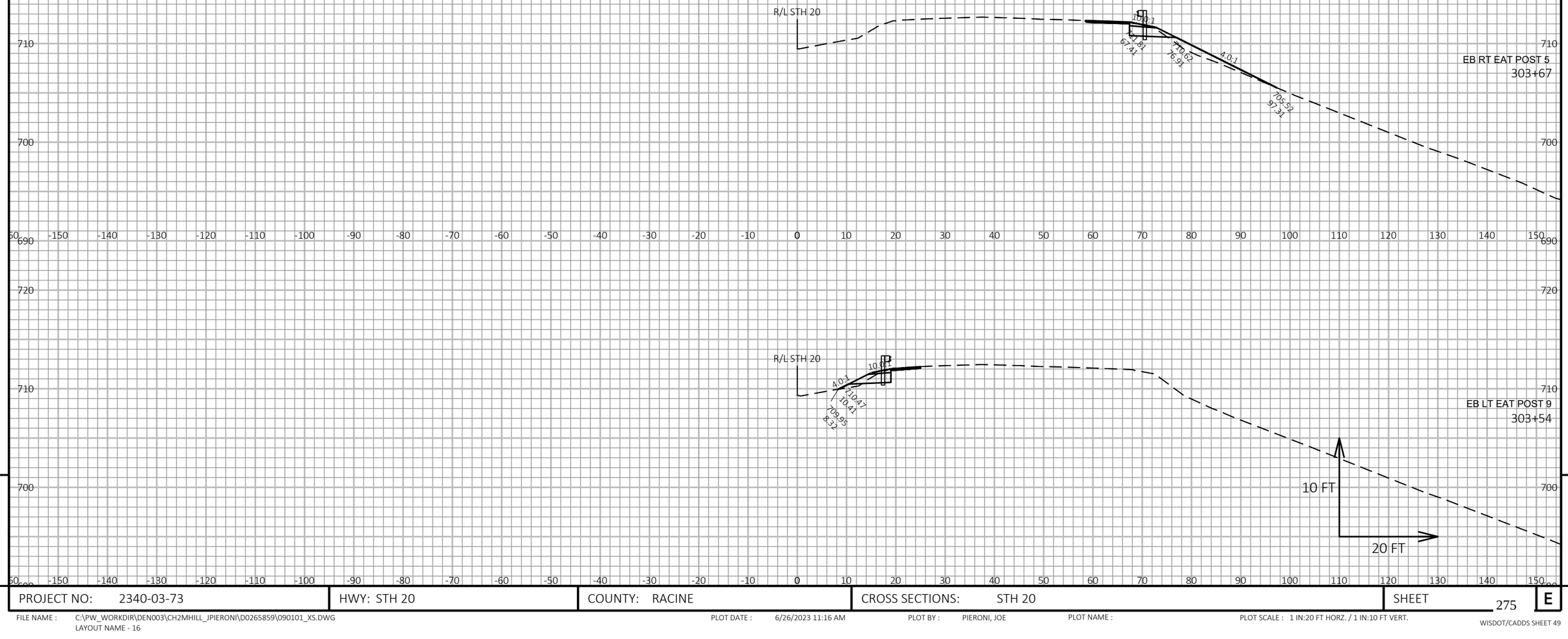
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 274	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 15

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

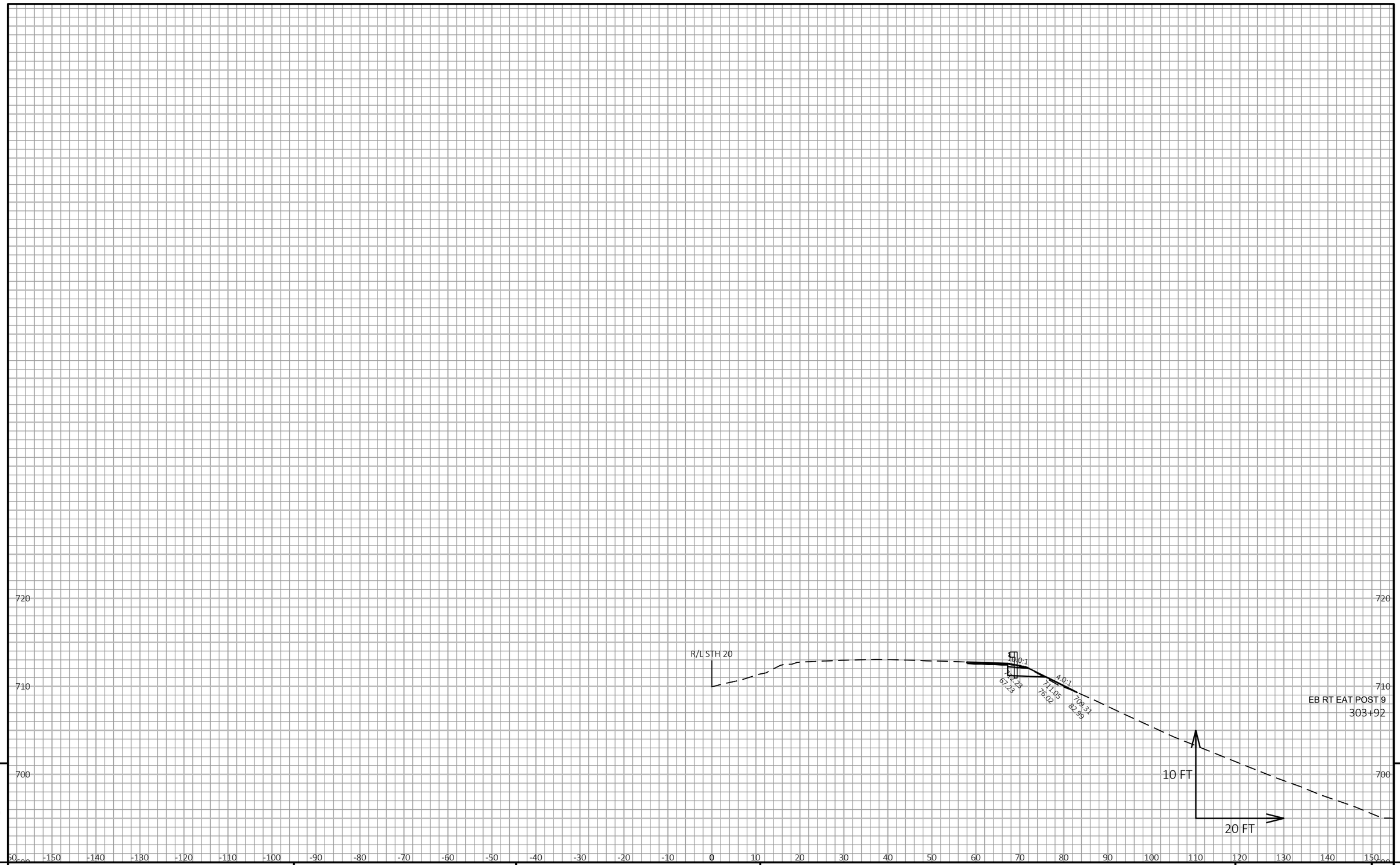
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 275	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 16

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

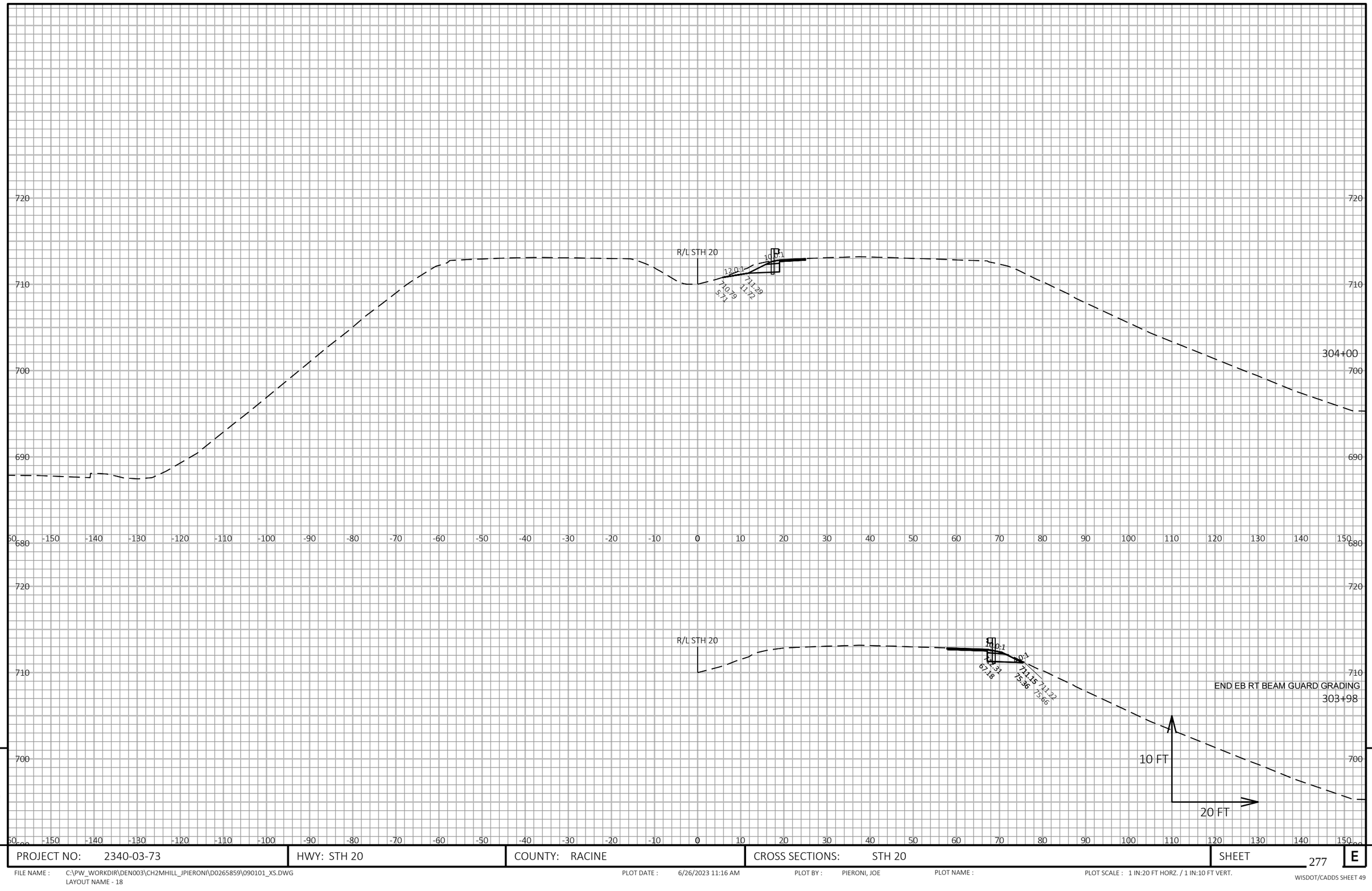
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 276	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 17

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

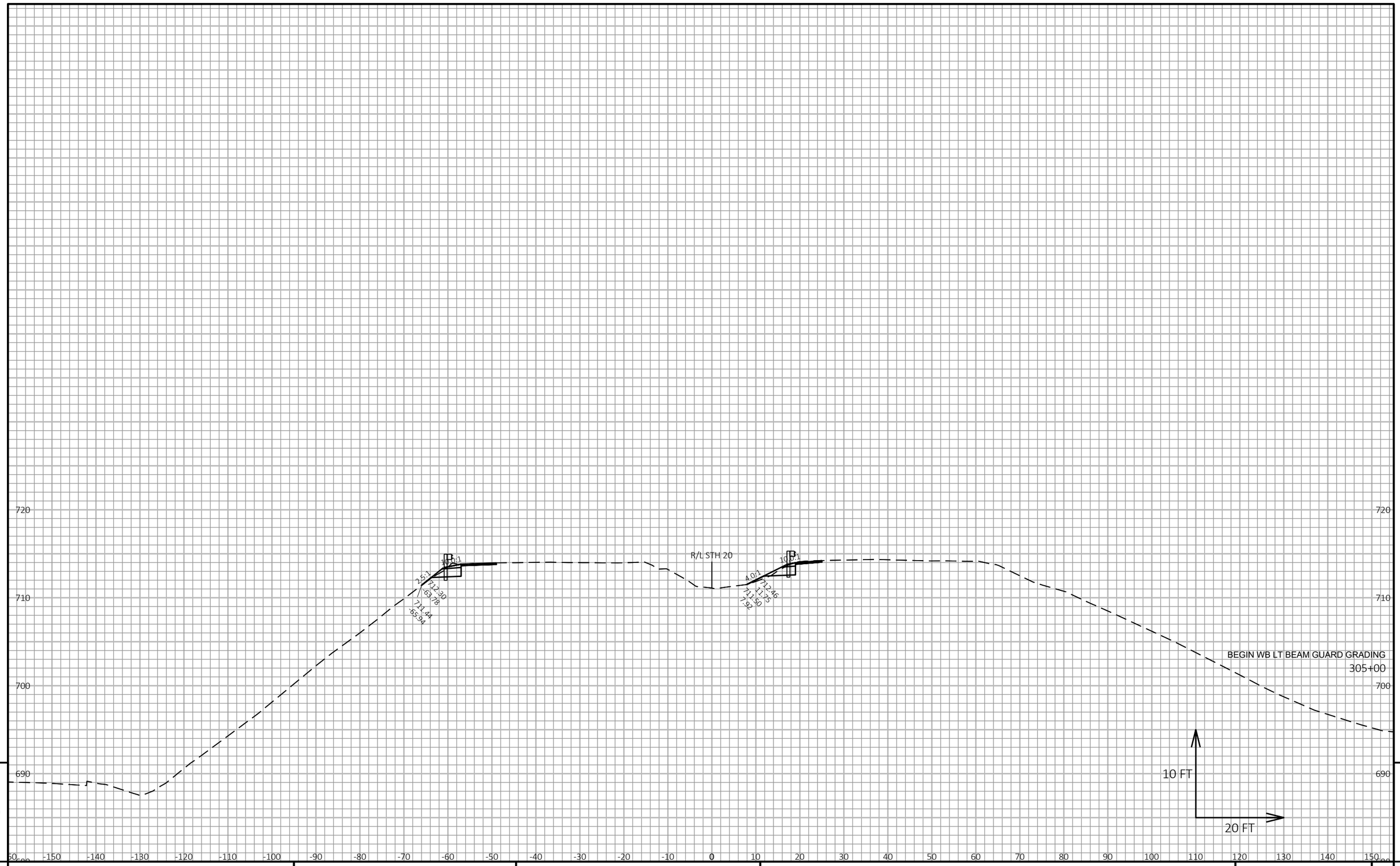
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 277	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 18

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

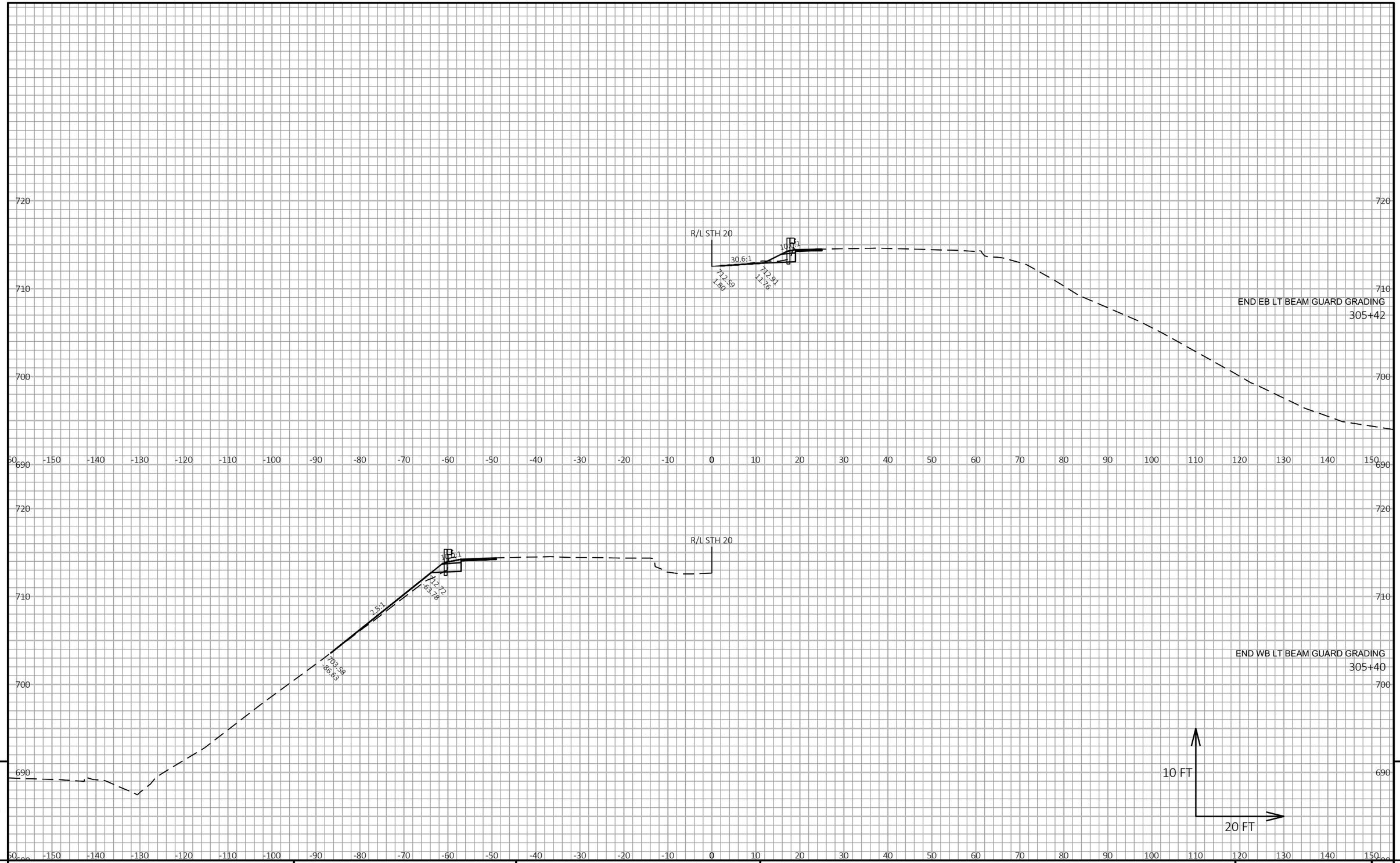
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 278	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 20

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

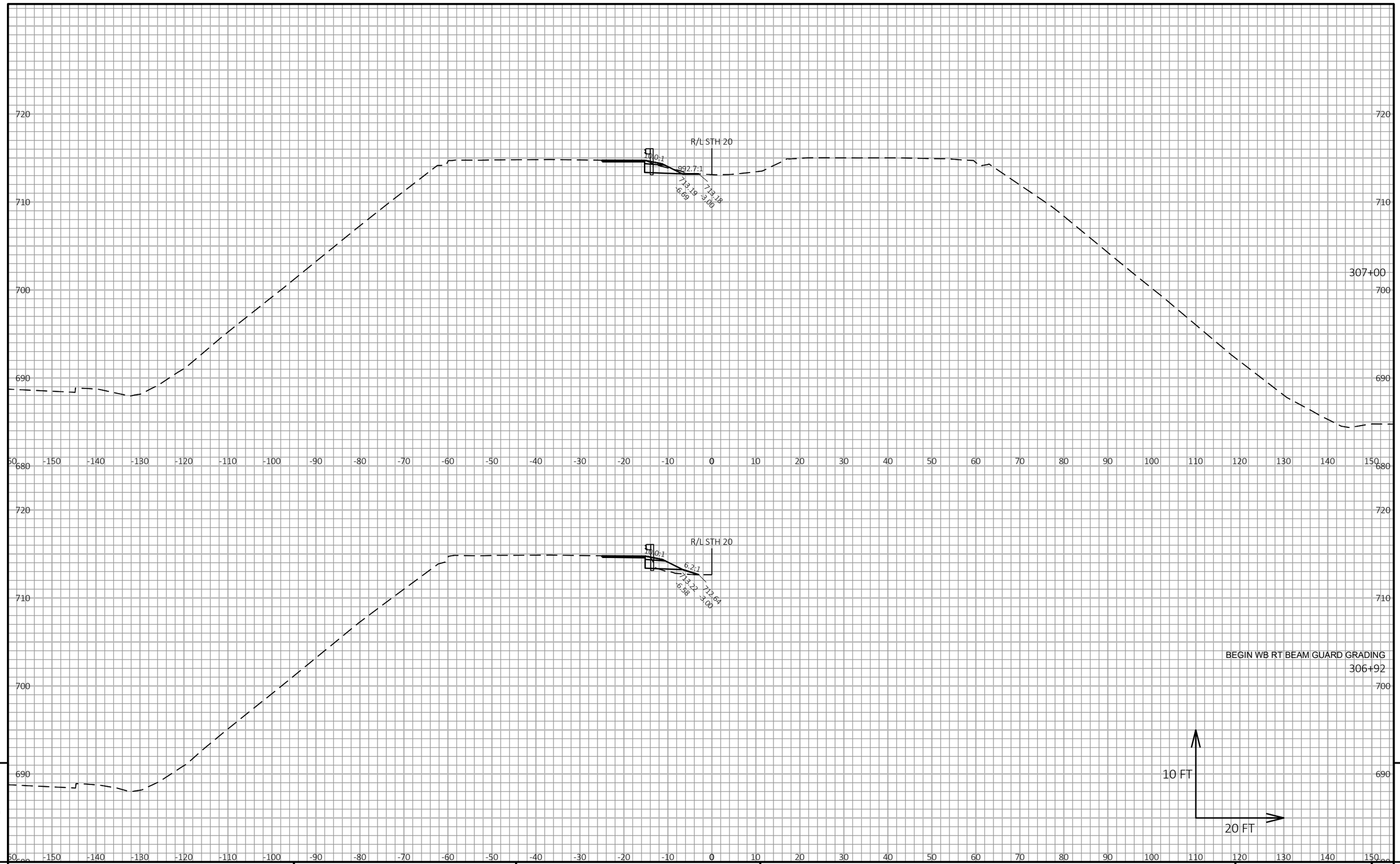
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 279	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 21

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



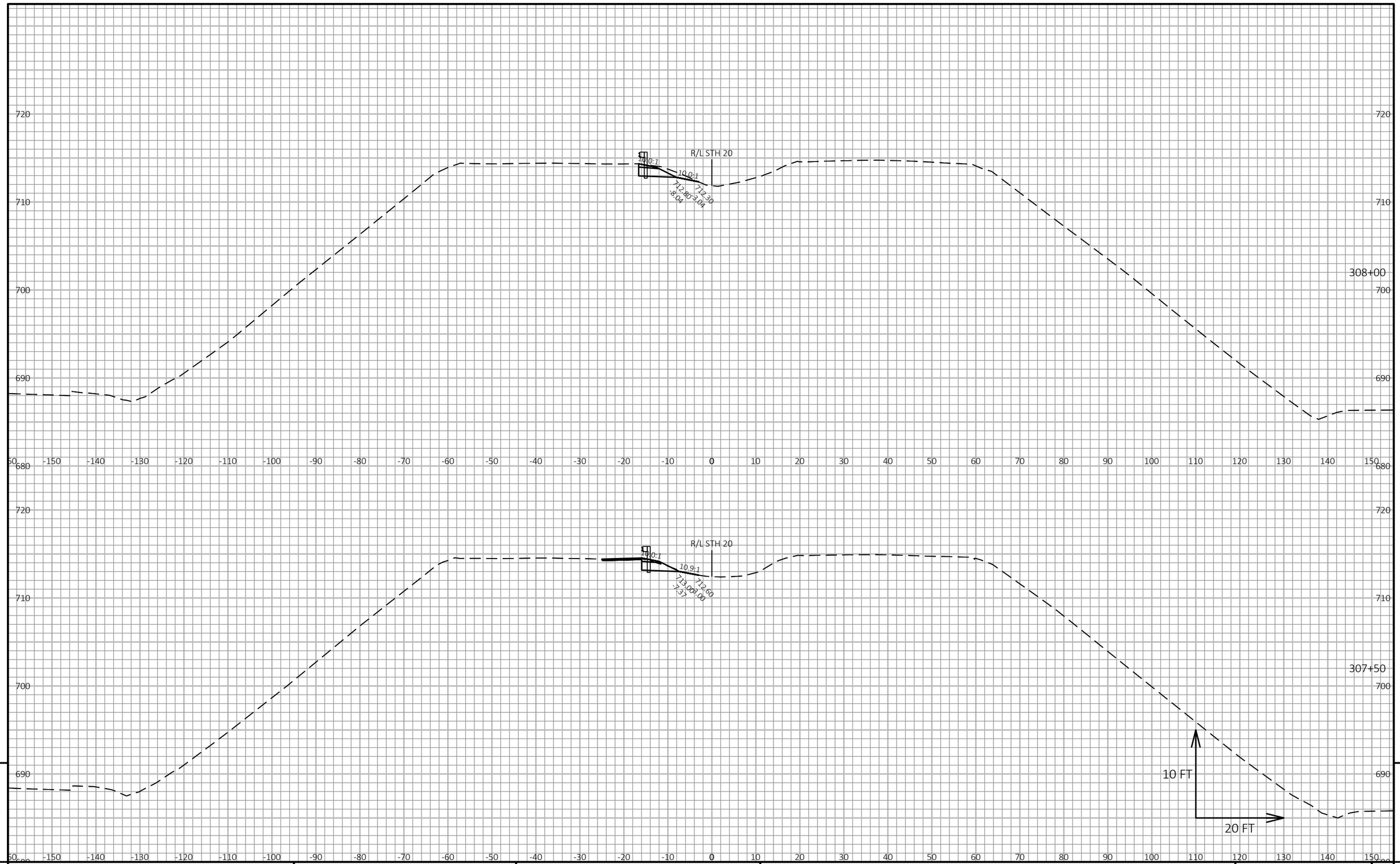
9

9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 280	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 22

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



9

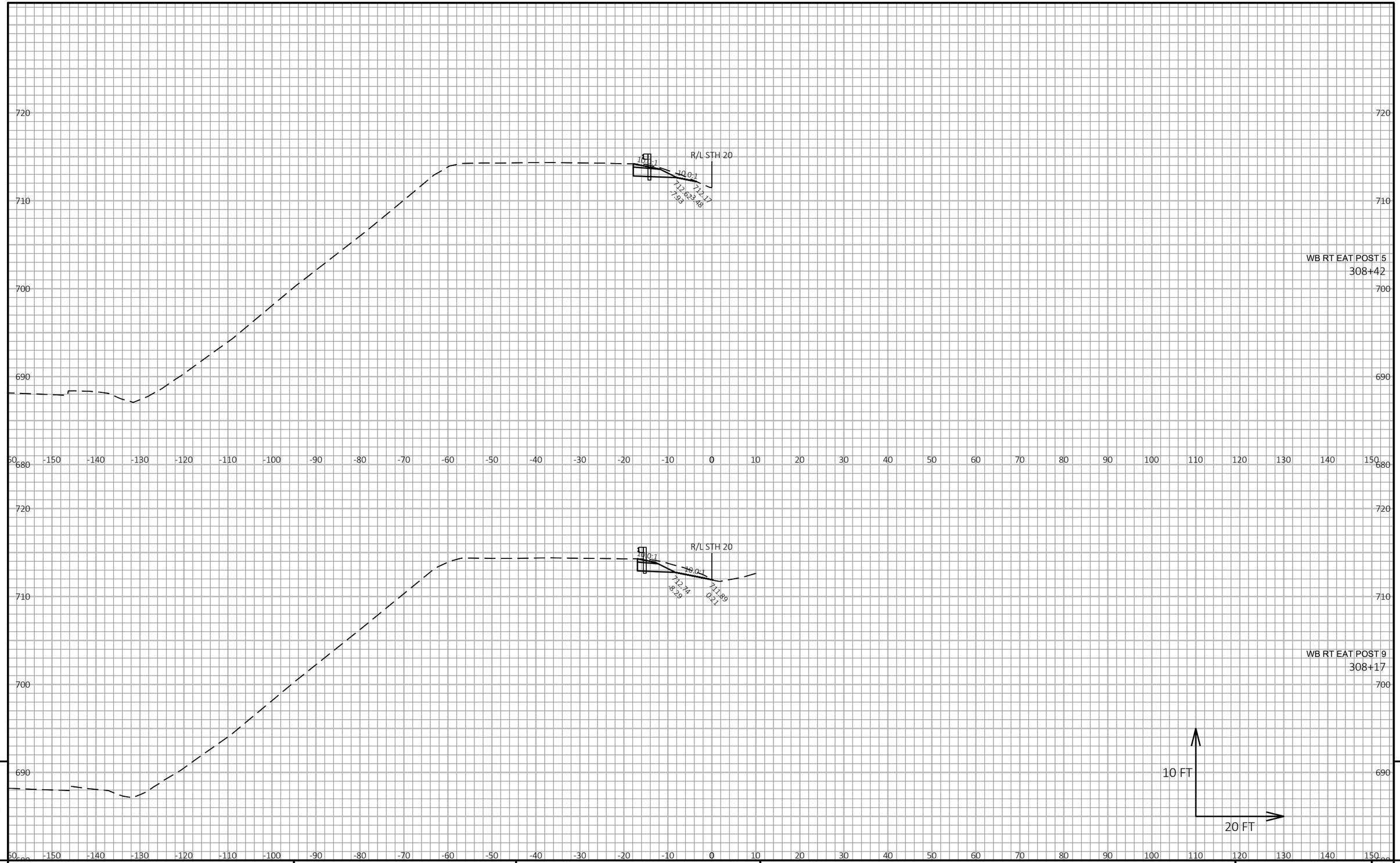
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 281	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 23

PLOT DATE : 6/26/2023 11:16 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



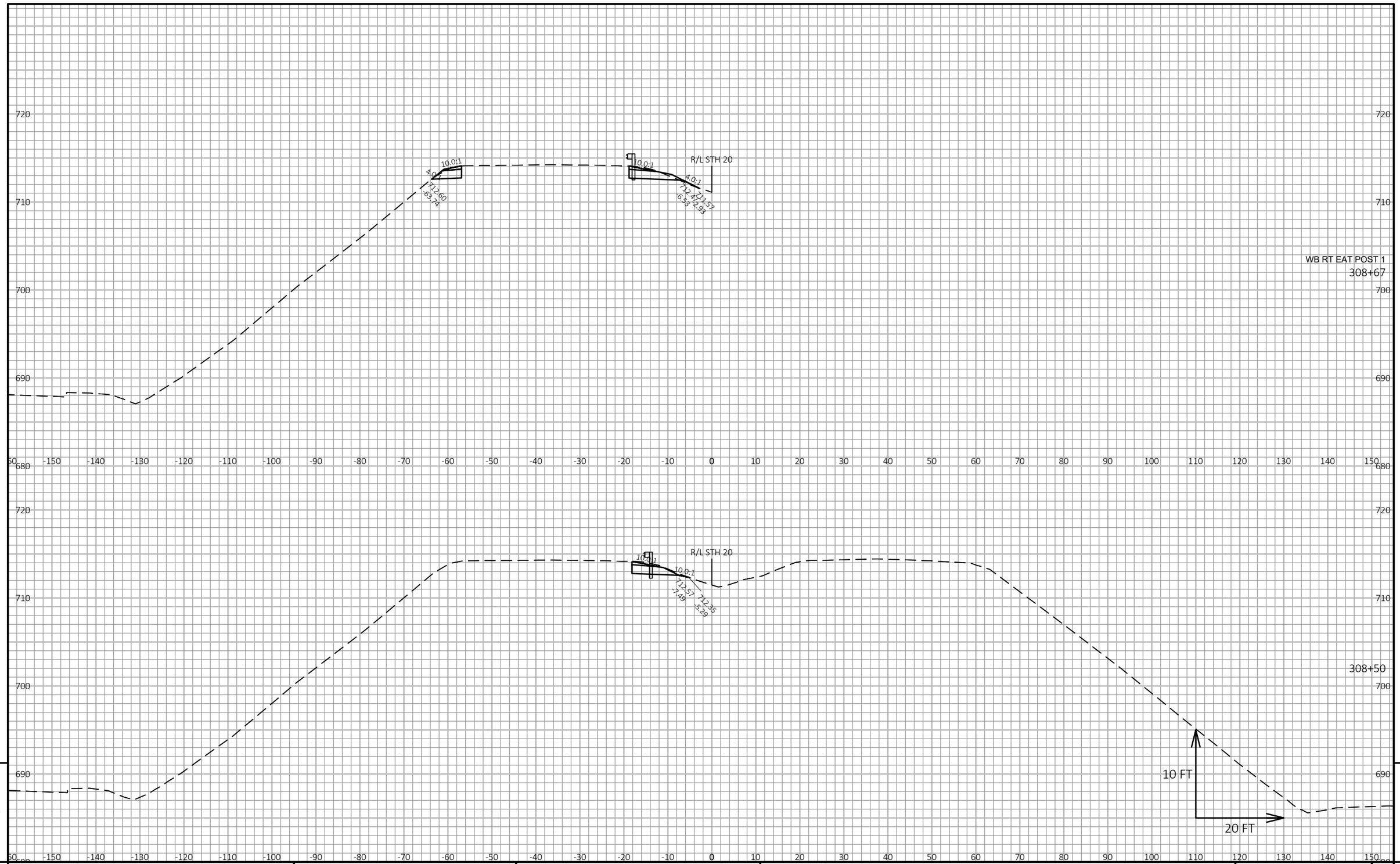
9 9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 282	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 24

PLOT DATE : 6/26/2023 11:17 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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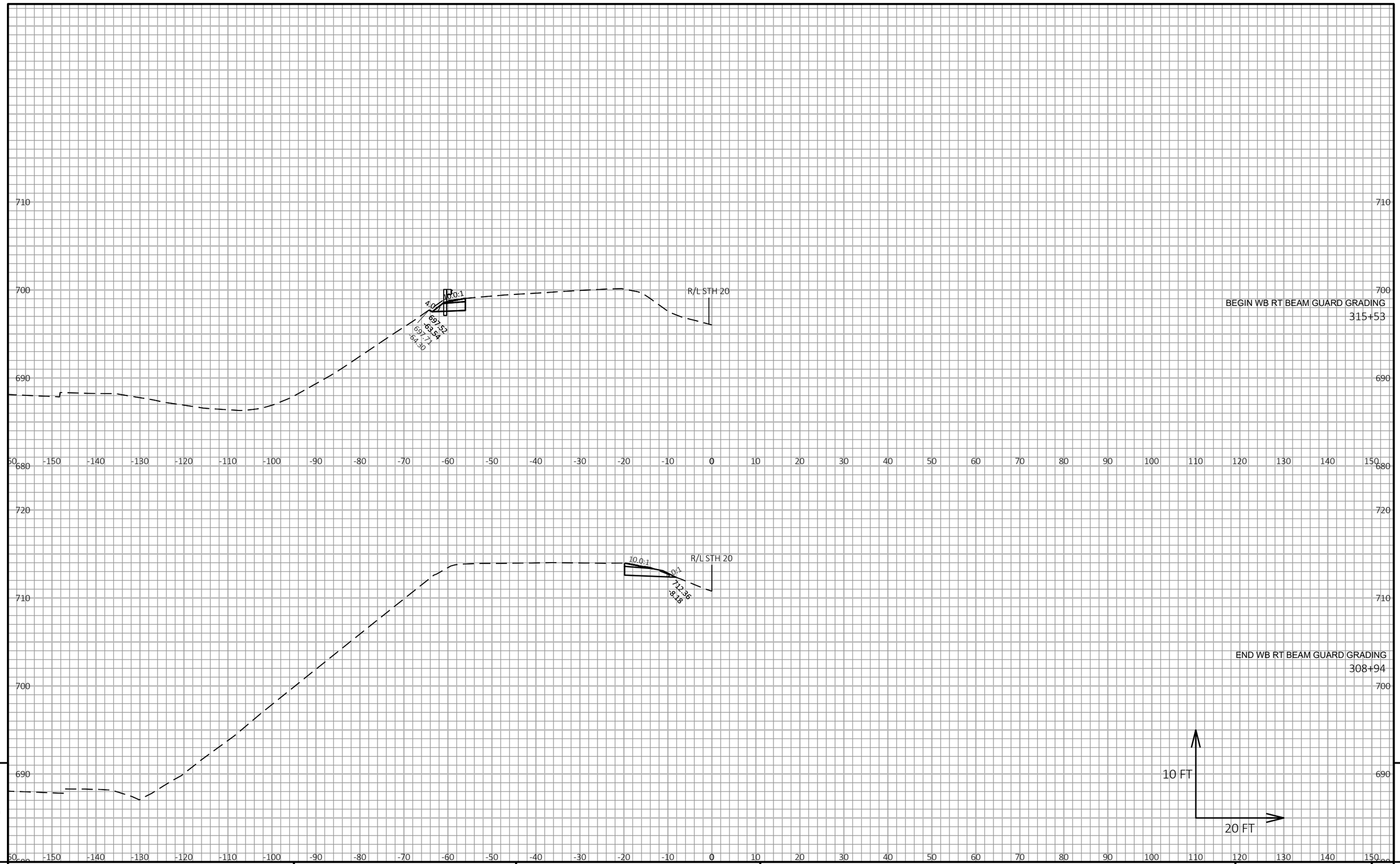
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 283	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 25

PLOT DATE : 6/26/2023 11:17 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

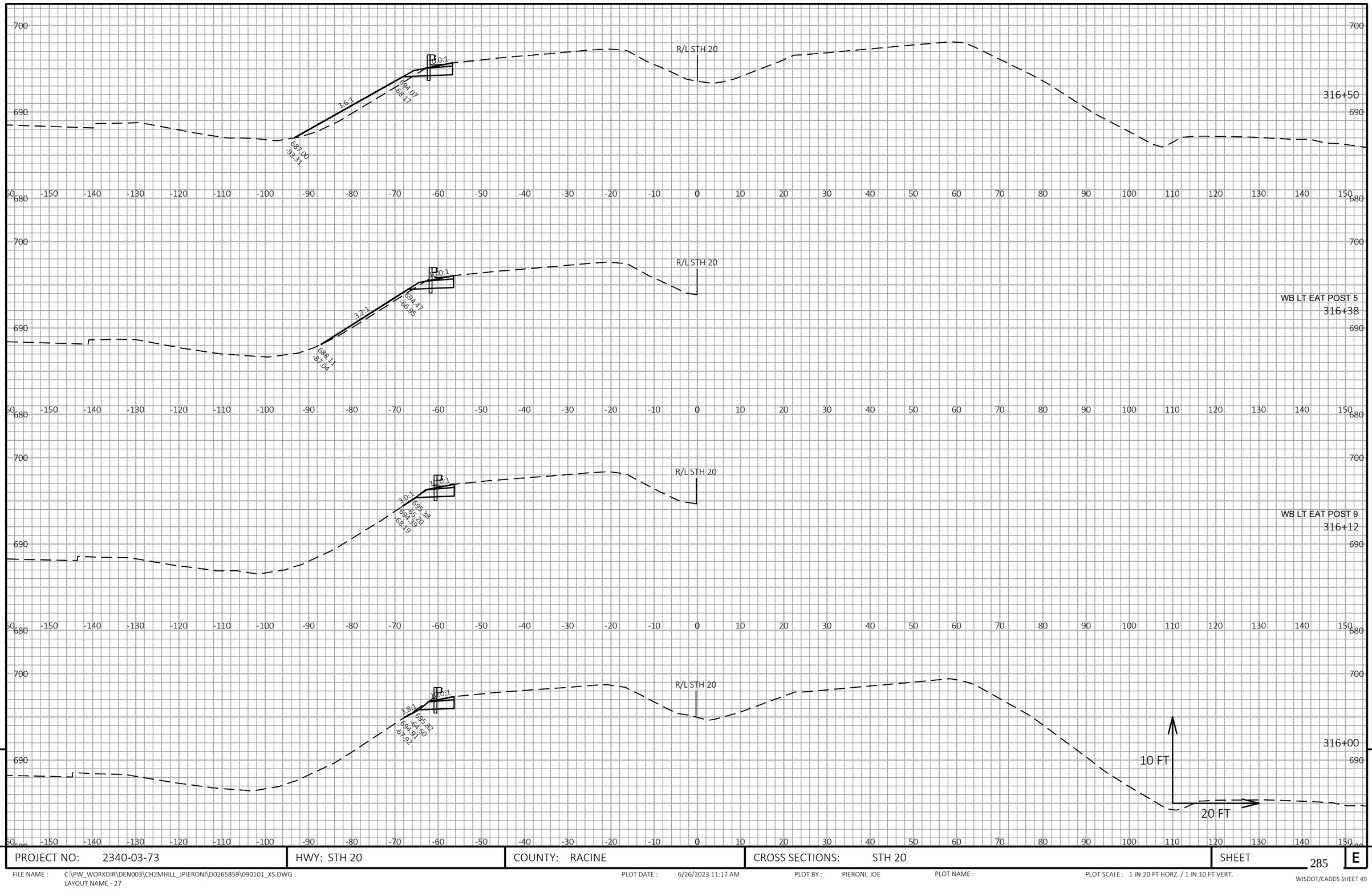
9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 284	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 26

PLOT DATE : 6/26/2023 11:17 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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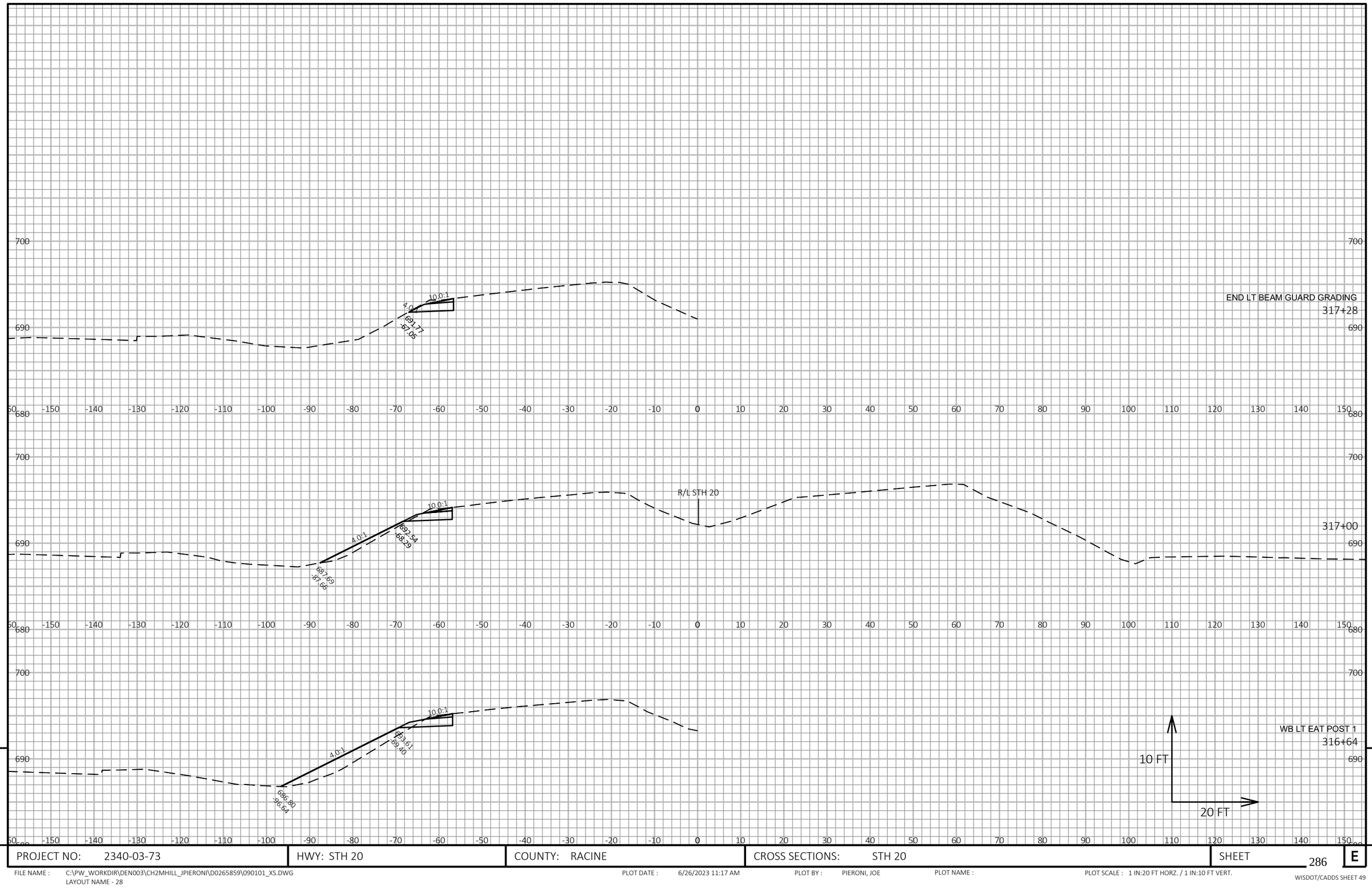
PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 285	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 27

PLOT DATE : 6/26/2023 11:17 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 2340-03-73	HWY: STH 20	COUNTY: RACINE	CROSS SECTIONS: STH 20	SHEET 286	E

FILE NAME : C:\PW_WORKDIR\DEN003\CH2MHILL_JPIERONI\D0265859\090101_XS.DWG
LAYOUT NAME - 28

PLOT DATE : 6/26/2023 11:17 AM PLOT BY : PIERONI, JOE PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov