GRE

Feb 08, 2022

PROJECT ID: 9170-12-71

WITH: 9190-28-71

COUNTY: OCONTO

ORDER OF SHEETS

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

TOTAL SHEETS = 308

DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2022 | = | 3900 |
| A.A.D.T. | 2042 | = | 4300 |
| D.H.V. | 2042 | = | 611 |
| D.D. | | = | 61/39 |
| T. | | = | 15.6% |
| DESIGN SPEED | | = | 55 MPH |
| ESALS | | = | 1,500,000 |

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

# GILLETT - MOUNTAIN

TRINITY CHURCH ROAD - CTH AA

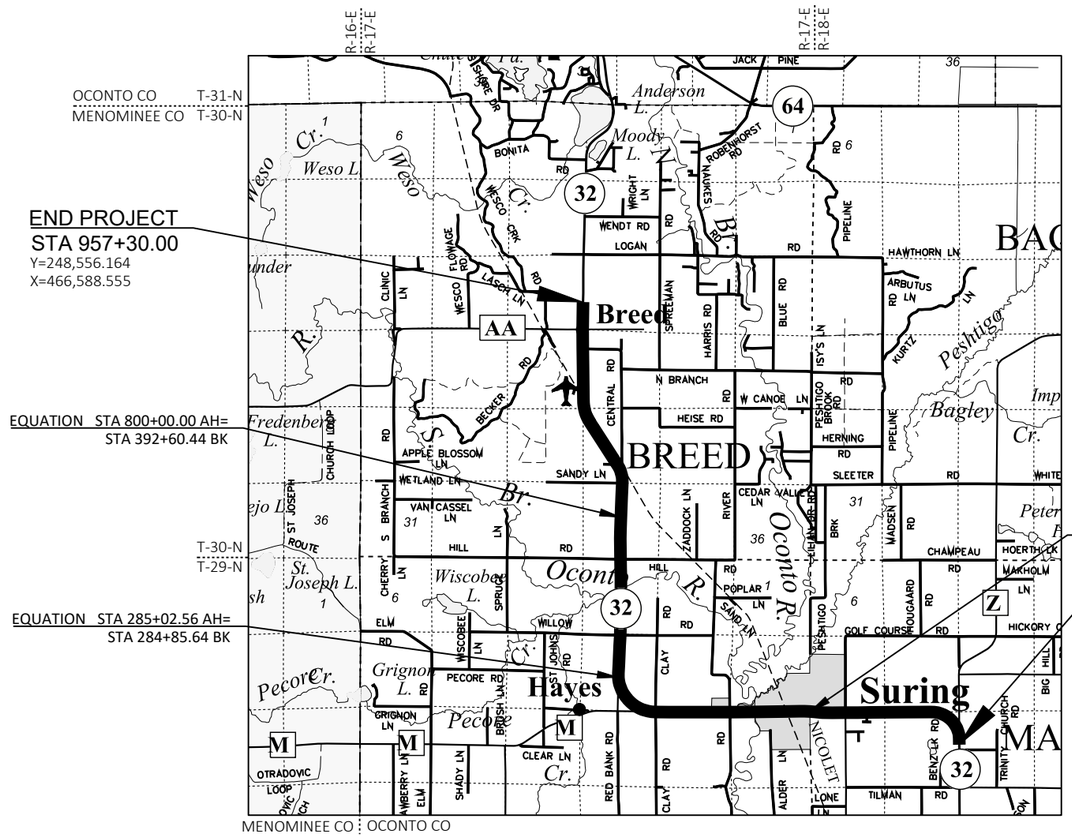
## STH 32

## OCONTO COUNTY

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 9170-12-71 | WISC 2022203 | 1 |
| | | |
| | | |
| | | |

STATE PROJECT NUMBER

**9170-12-71**




MENOMINEE CO : OCONTO CO

LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 10.154 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OCONTO COUNTY ZONE, NAD 83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. VERTICAL POSITIONS SHOWN ON THIS PLAN ARE NAVD 88(2012) DATUM.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | NE REGION |
| Designer | K. BAIERL |
| Project Manager | M. TERNES |
| Regional Examiner | |
| Regional Supervisor | D. SEGERSTROM |

APPROVED FOR THE DEPARTMENT

DATE: 11/30/2021 (Signature)

E

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\010101-TI.DWG
LAYOUT NAME - 010101-TI

PLOT DATE : 7/21/2021 3:55 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME :

## GENERAL NOTES

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.

TBT CURB ELEVATIONS ARE TO BE VERIFIED BY THE ENGINEER IN THE FIELD BEFORE CONSTRUCTING THE CURB.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND EROSION-MATTED.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR WILL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER IN THE FIELD.

EXISTING DRAINAGE DITCHES AND CULVERT PIPES WILL REMAIN FUNCTIONAL DURING EXCAVATION OPERATIONS.

## ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
TRAFFIC CONTROL
DETOUR PLAN
STORM SEWER DETAILS

## UTILITY CONTACTS

TODD BRISTER
ANR PIPELINE CO - GAS/PETROLEUM
W3925 PIPELINE LANE
EDEN, WI 53019
(920) 477-2235, (920) 979-0060
todd brister@tcenergy.com

MATT GUNDERSON
CENTURYLINK - COMMUNICATION LINE
212 CHURCH AVE
CASCO, WI 54205
(920) 896-2867, (920) 837-2344
matt.gunderson@lumen.com

JEFF TIENOR
VILLAGE OF SURING - WATER
604 E MAIN ST
SURING, WI 54174
(715) 850-1680
jtienor@ci.suring.wi.us

RORY TAMMINGA
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
1717 10TH AVENUE
MENOMINEE, MI 49858
(906) 863-4328, (262) 909-0645
Rory.tamminga@wisconsinpublicservice.com

ANDY HEIGL
ASTREA - COMMUNICATION LINE
105 KENT ST
PO BOX 190
IRON MOUNTAIN, MI 49801
(906) 221-7536, (906) 776-2609
Andy.heigl@asteaconnect.com

RICK VINCENT
NET LEC LLC - COMMUNICATION LINE
450 SECURITY BLVD
PO BOX 19079
GREEN BAY, WI 54307-9079
(920) 617-7316
rick.vincent@nsight.com

SCOTT ZELLNER
WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
2850 S ASHLAND AVE
GREEN BAY, WI 54307
(920) 617-5068, (920) 680-2188
Scott.zellner@wisconsinpublicservice.com

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

## DNR LIASION

JIM DOPERALSKI
DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION
2984 SHAWANO AVE
GREEN BAY, WI 54313
(920)662-5119
james.doperalski@wisconsin.gov

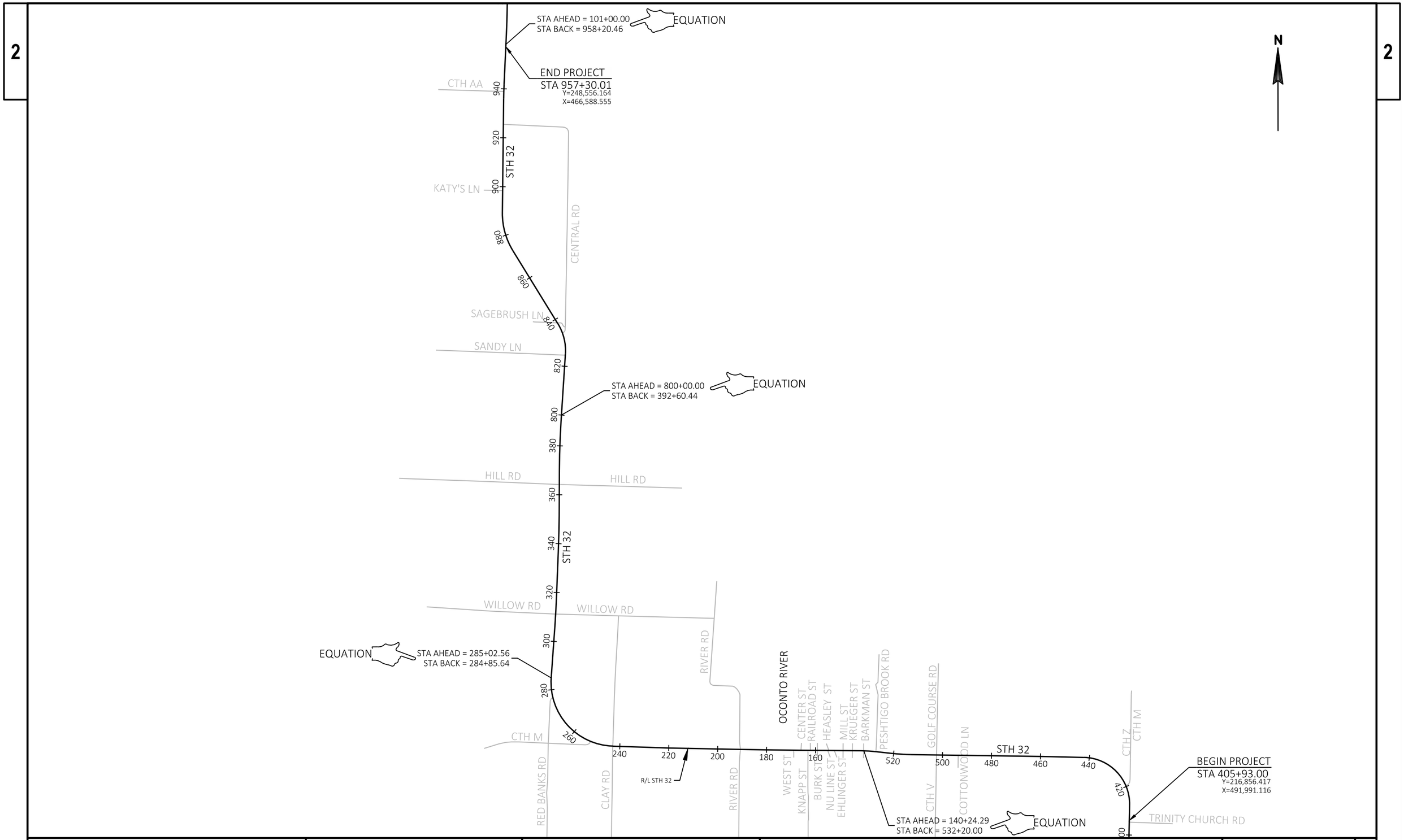
## OCONTO COUNTY COMMISSIONER

BRANDON HYTINEN
HIGHWAY COMMISSIONER
202 VAN DYKE STREET
OCONTO, WI 54153
(920) 373-4515
brandon.hytinen@co.oconto.wi.us

## NE REGION SURVEY COORDINATOR

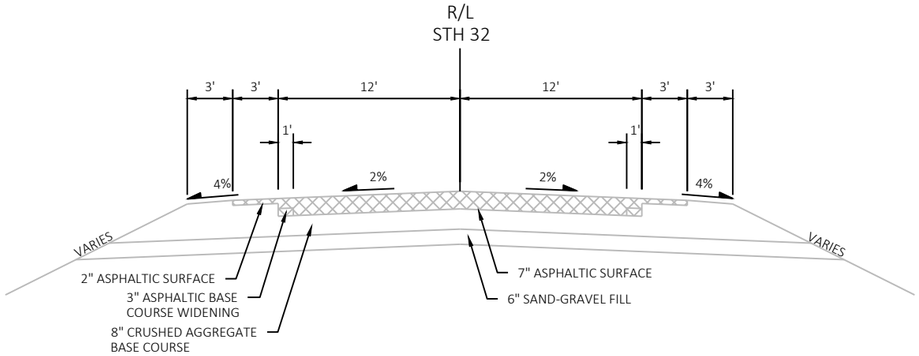
CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)492-5638
cormac.mcinnis@dot.wi.gov

2



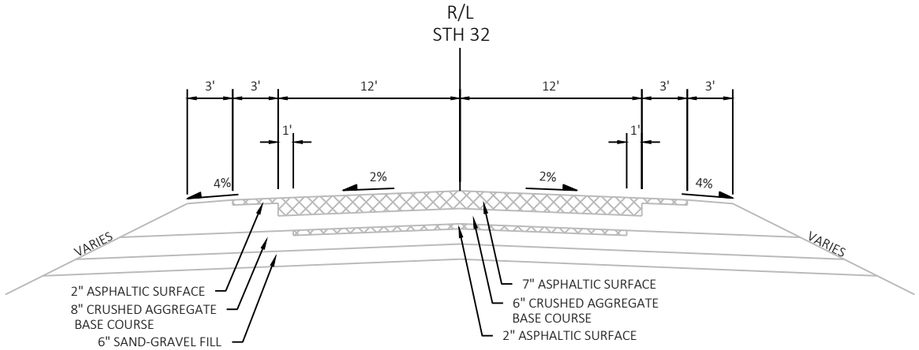

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PROJECT OVERVIEW | SHEET 3 | E |
|---|---|---|---|---|---|


FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po
PLOT DATE : 7/22/2021 8:06 AM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN: 3500 FT
WISDOT/CADDS SHEET 42



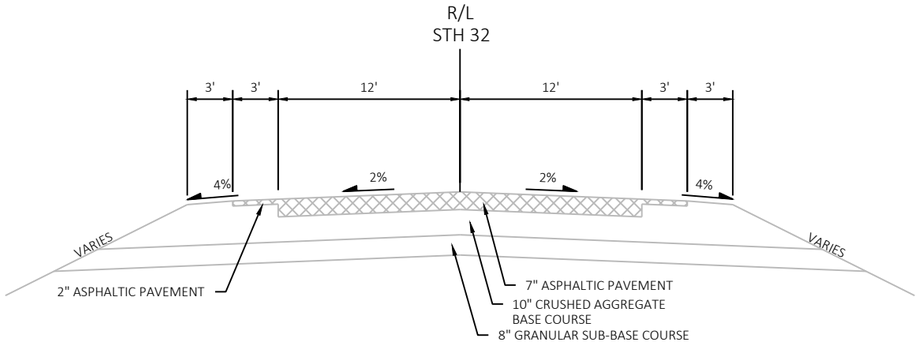

EXISTING TYPICAL SECTION STH 32

STA 405+93 TO STA 411+50
STA 437+00 TO STA 449+00



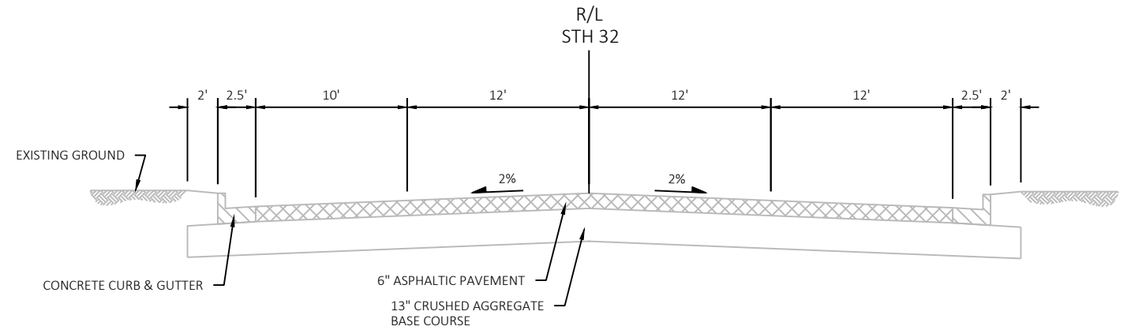

EXISTING TYPICAL SECTION STH 32

STA 411+50 TO STA 437+00



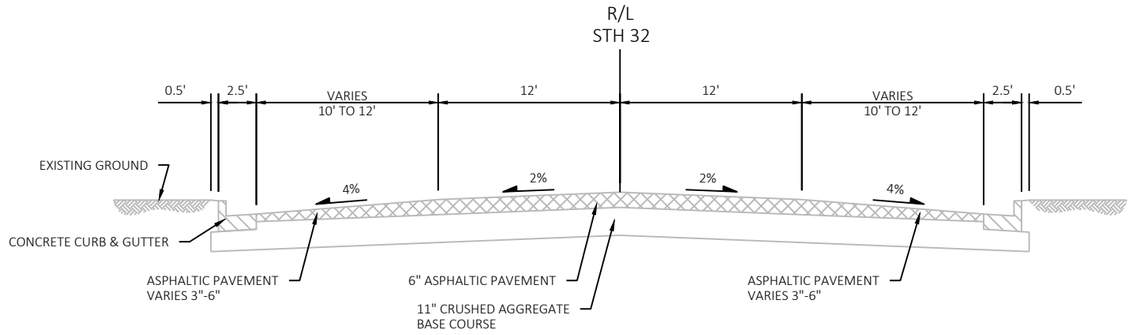

EXISTING TYPICAL SECTION STH 32

STA 449+00 TO STA 527+45



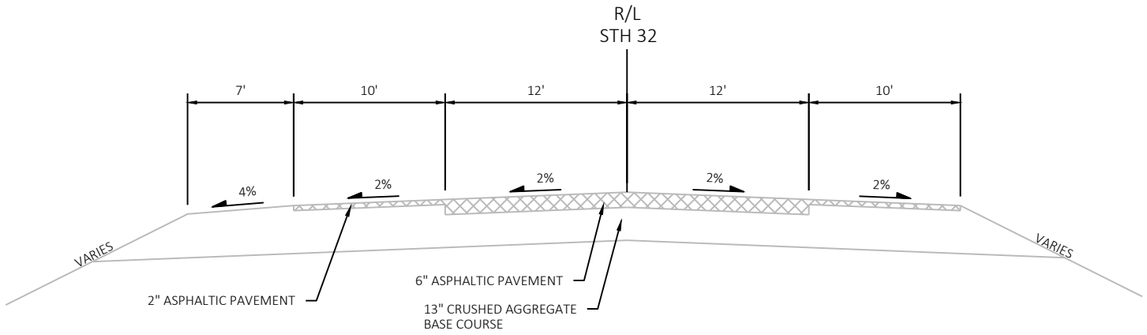

EXISTING TYPICAL SECTION STH 32

STA 527+45 TO STA 532+20



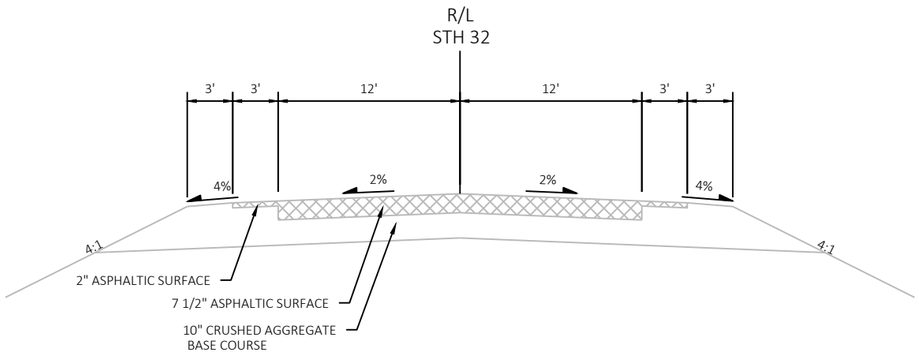

EXISTING TYPICAL SECTION STH 32

STA 140+24.29 TO STA 169+23



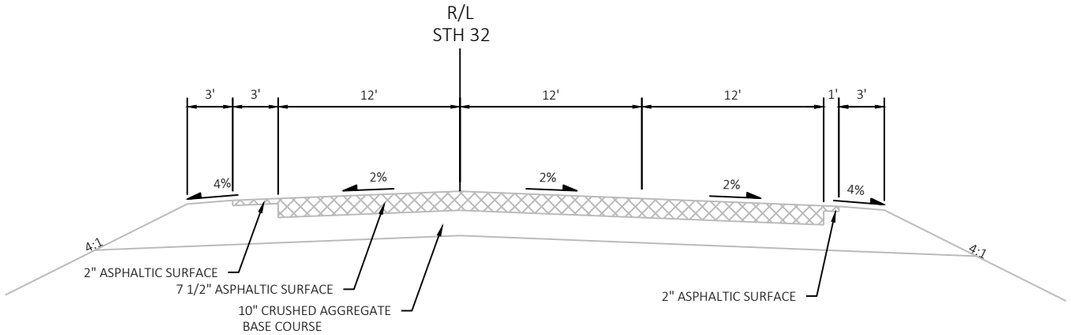

EXISTING TYPICAL SECTION STH 32

STA 169+23 TO STA 177+30



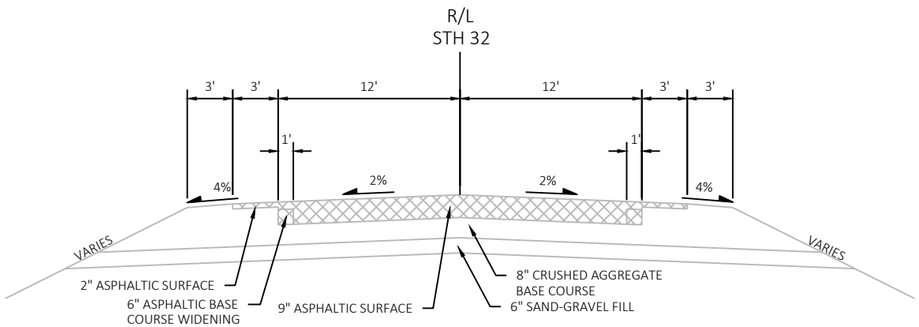

EXISTING TYPICAL SECTION STH 32

STA 177+30 TO STA 190+00
STA 229+65 TO STA 233+92
STA 280+92 TO STA 369+50




EXISTING TYPICAL SECTION STH 32

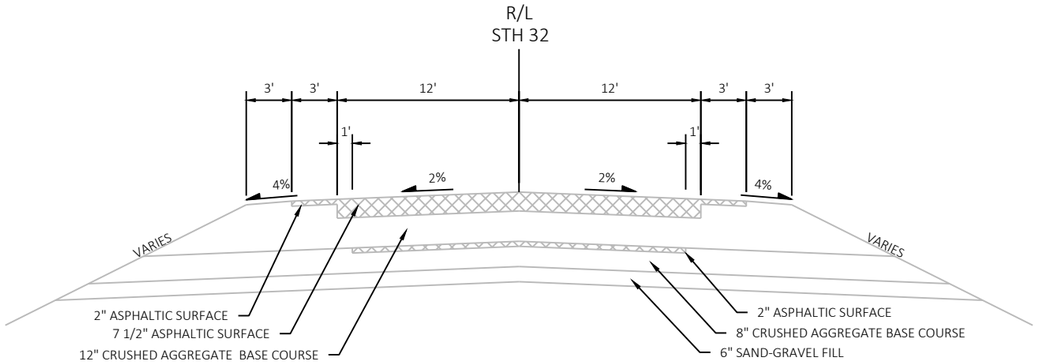
STA 190+00 TO STA 229+65
CLIMBING LANE




EXISTING TYPICAL SECTION STH 32

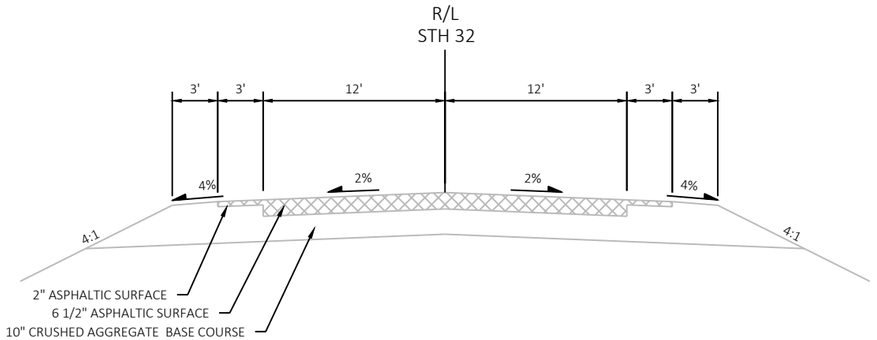
STA 233+92 TO STA 249+92

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 6 | E |
|---|---|---|---|---|---|



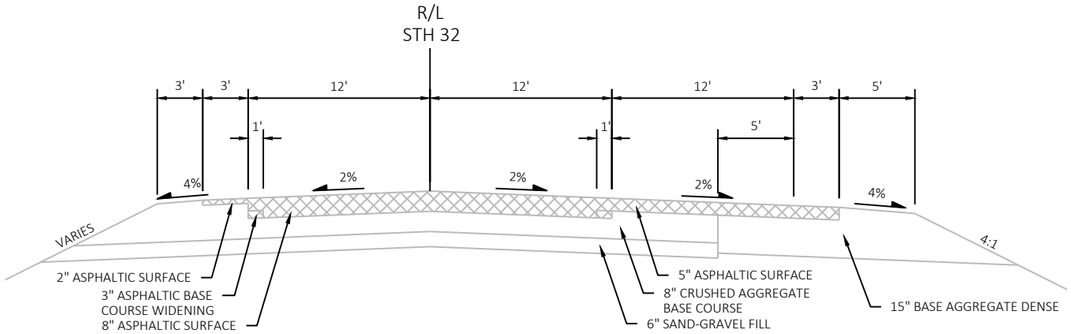

EXISTING TYPICAL SECTION STH 32

STA 249+92 TO STA 280+92




EXISTING TYPICAL SECTION STH 32

STA 369+50 TO STA 840+93

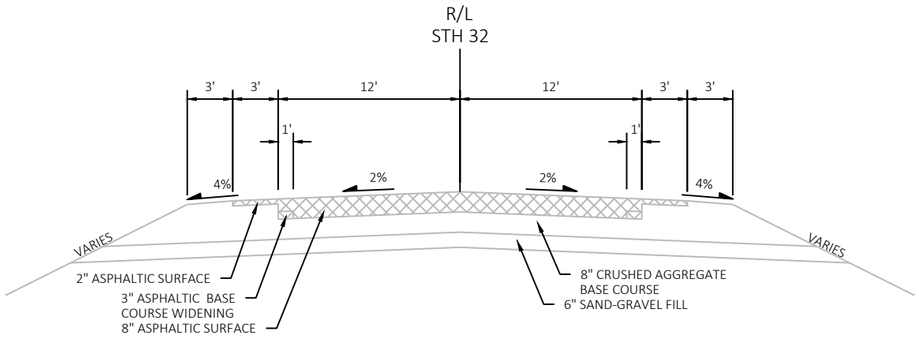



EXISTING TYPICAL SECTION STH 32

STA 840+93 TO STA 913+93

PASSING LANE

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 7 | E |
|---|---|---|---|---|---|

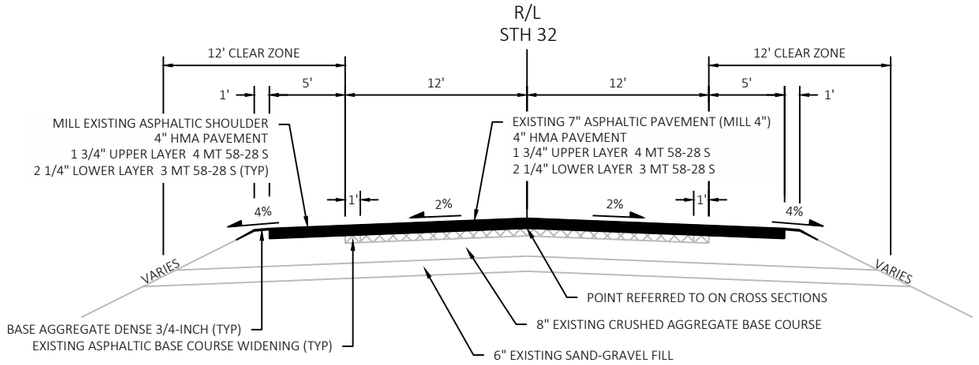



EXISTING TYPICAL SECTION STH 32

STA 913+93 TO STA 957+30

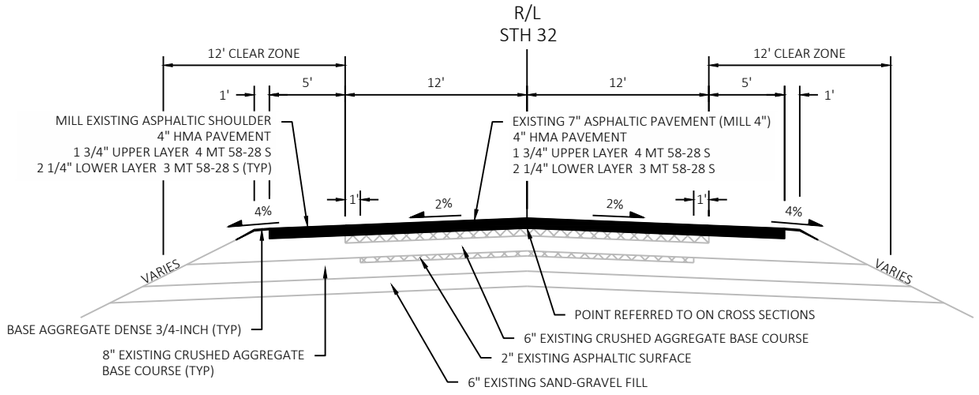
2

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 8 | E |
|---|---|---|---|---|---|



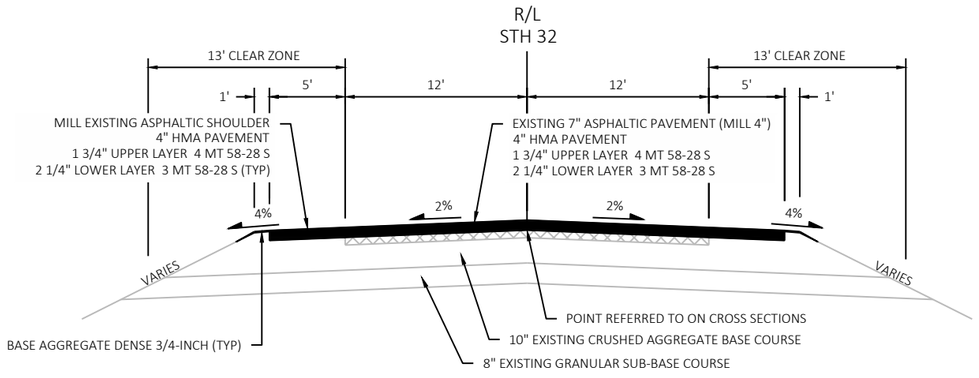

FINISHED TYPICAL SECTION STH 32

STA 405+93 TO STA 411+50
STA 437+00 TO STA 449+00




FINISHED TYPICAL SECTION STH 32

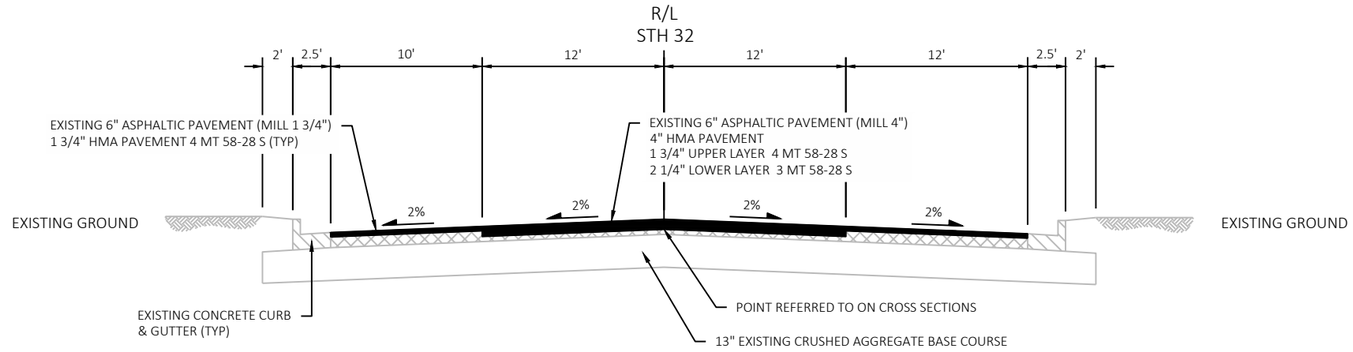
STA 411+50 TO STA 437+00




FINISHED TYPICAL SECTION STH 32

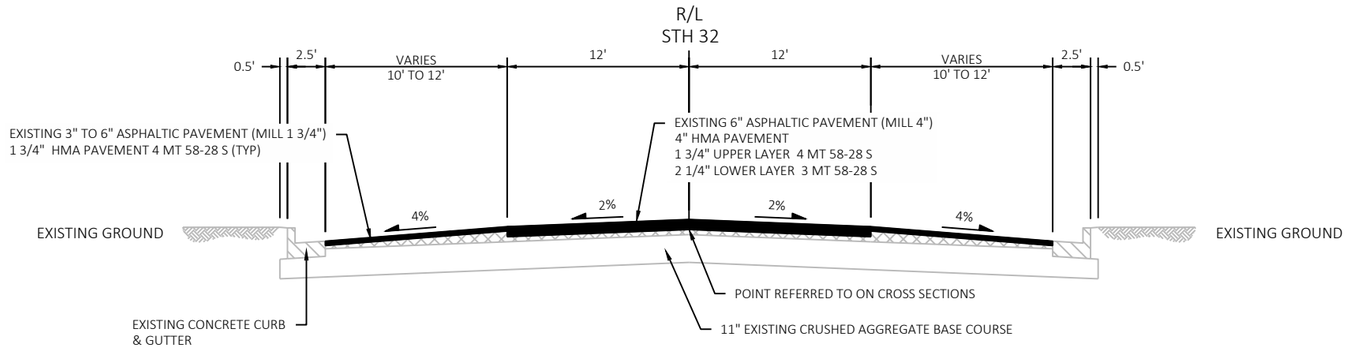
STA 449+00 TO STA 527+45

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 9 | E |
|---|---|---|---|---|---|



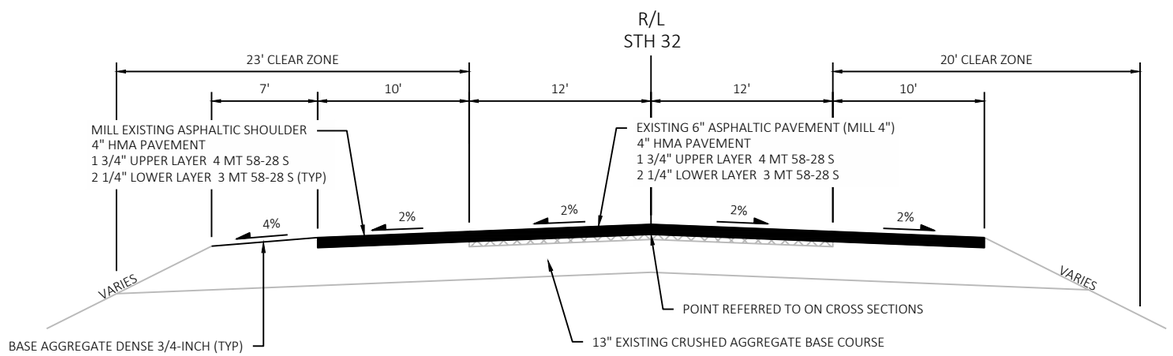

FINISHED TYPICAL SECTION STH 32

STA 527+45 TO STA 532+20




FINISHED TYPICAL SECTION STH 32

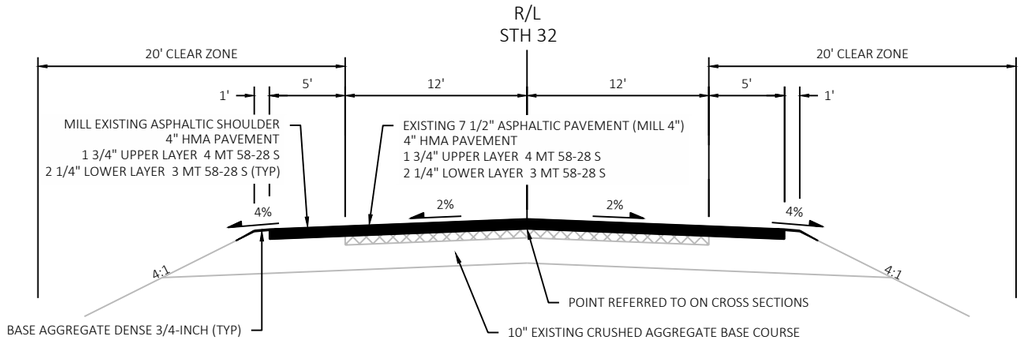
STA 140+24.29 TO STA 169+23




FINISHED TYPICAL SECTION STH 32

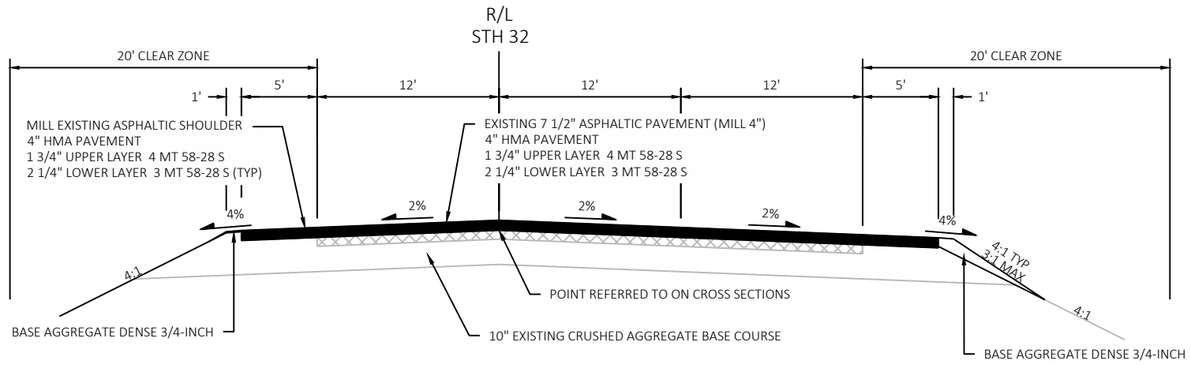
STA 169+23 TO STA 177+30

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 10 | E |
|---|---|---|---|---|---|



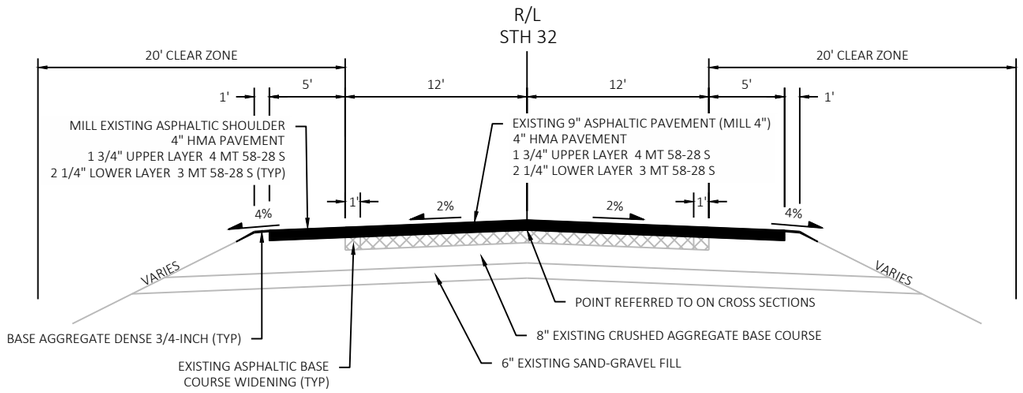

FINISHED TYPICAL SECTION STH 32

STA 177+30 TO STA 190+00
STA 229+65 TO STA 233+92
STA 280+92 TO STA 369+50




FINISHED TYPICAL SECTION STH 32

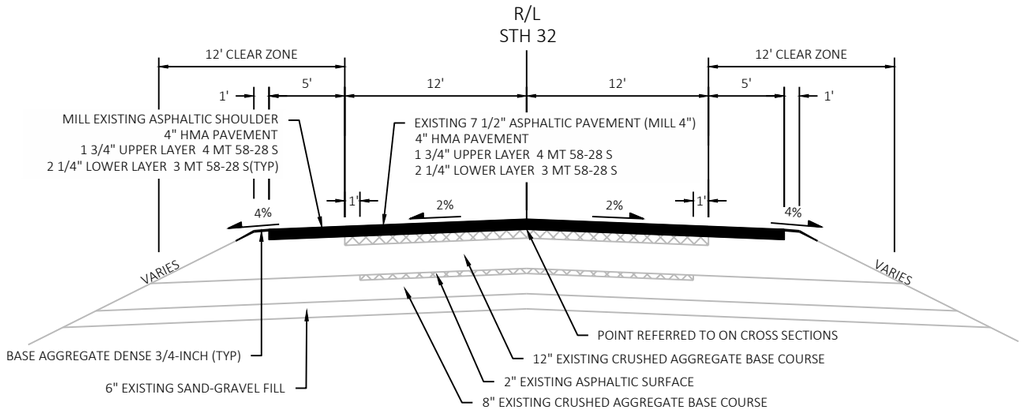
STA 190+00 TO STA 229+65
CLIMBING LANE




FINISHED TYPICAL SECTION STH 32

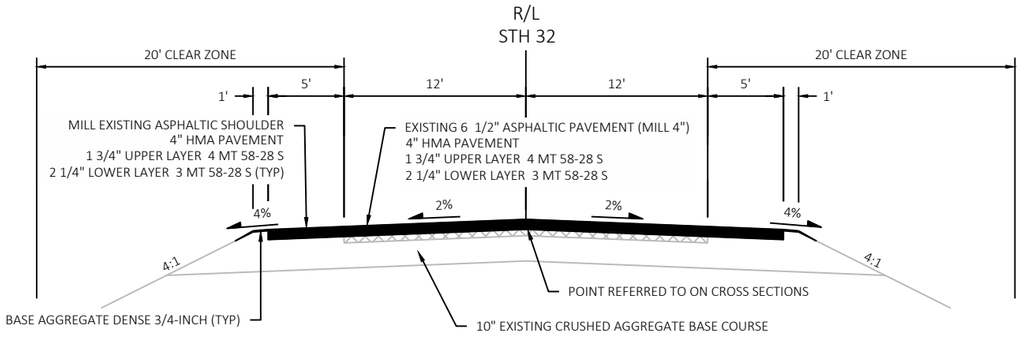
STA 233+92 TO STA 249+92

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 11 | E |
|---|---|---|---|---|---|



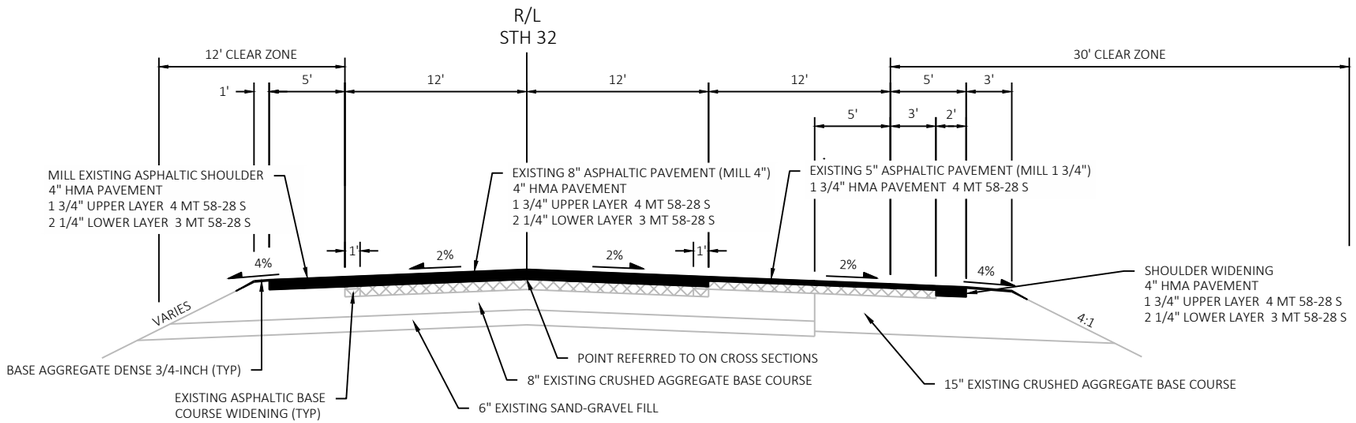

FINISHED TYPICAL SECTION STH 32

STA 249+92 TO STA 280+92




FINISHED TYPICAL SECTION STH 32

STA 369+50 TO STA 840+93

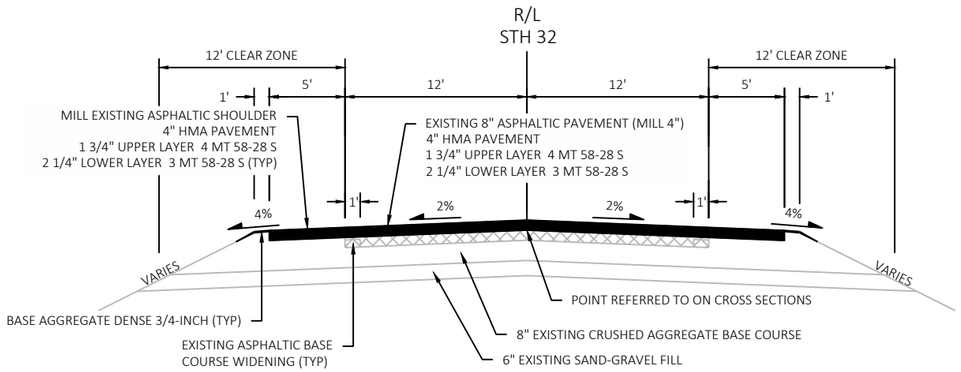



FINISHED TYPICAL SECTION STH 32

STA 840+93 TO STA 913+93

PASSING LANE

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 12 | E |
|---|---|---|---|---|---|



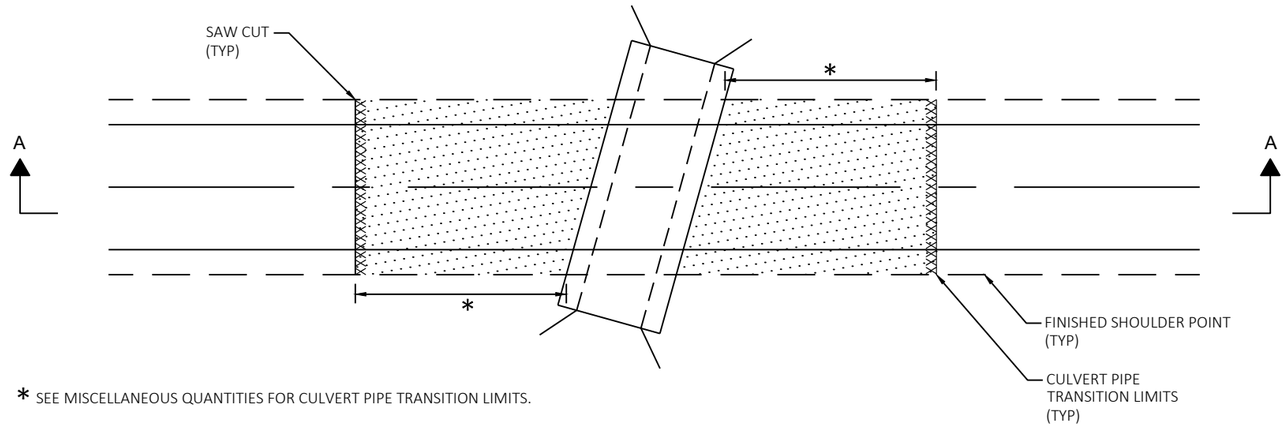

FINISHED TYPICAL SECTION STH 32

STA 913+93 TO STA 957+30

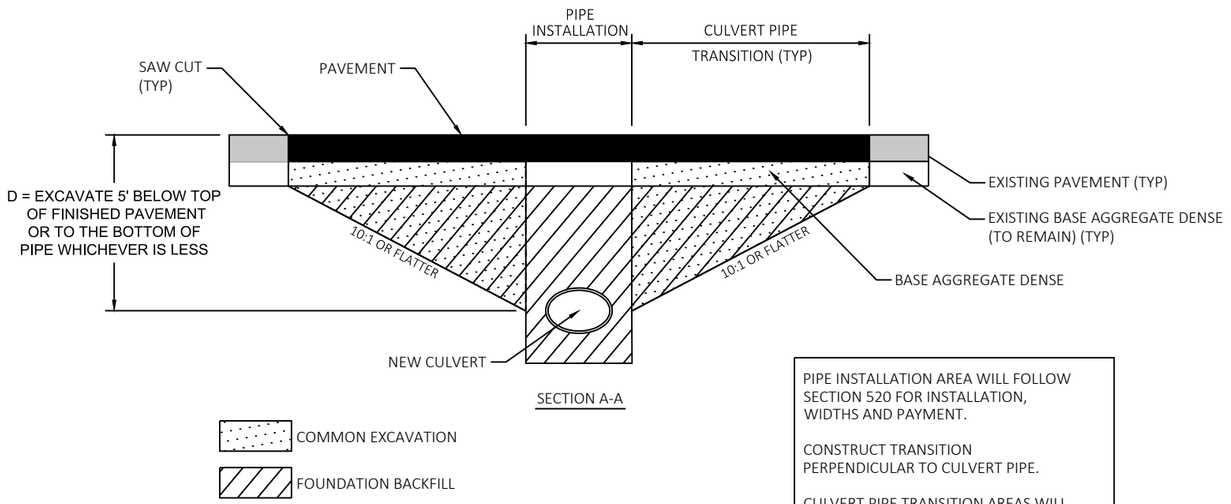
2

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | TYPICAL SECTIONS | SHEET 13 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020310-ts
PLOT DATE : 12/1/2021 4:46 PM
PLOT BY : SMITH, JENNIFER B
PLOT NAME :
PLOT SCALE : 1IN:10 FT
WISDOT/CADDS SHEET 42




* SEE MISCELLANEOUS QUANTITIES FOR CULVERT PIPE TRANSITION LIMITS.




PIPE INSTALLATION AREA WILL FOLLOW SECTION 520 FOR INSTALLATION, WIDTHS AND PAYMENT.

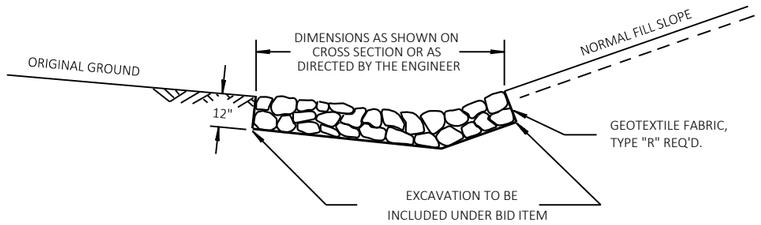
CONSTRUCT TRANSITION PERPENDICULAR TO CULVERT PIPE.

CULVERT PIPE TRANSITION AREAS WILL BE PAID BY COMMON EXCAVATION & SPV FOUNDATION BACKFILL.

PAVEMENT SAW CUT TO BE PERPENDICULAR TO ROADWAY ALIGNMENT.

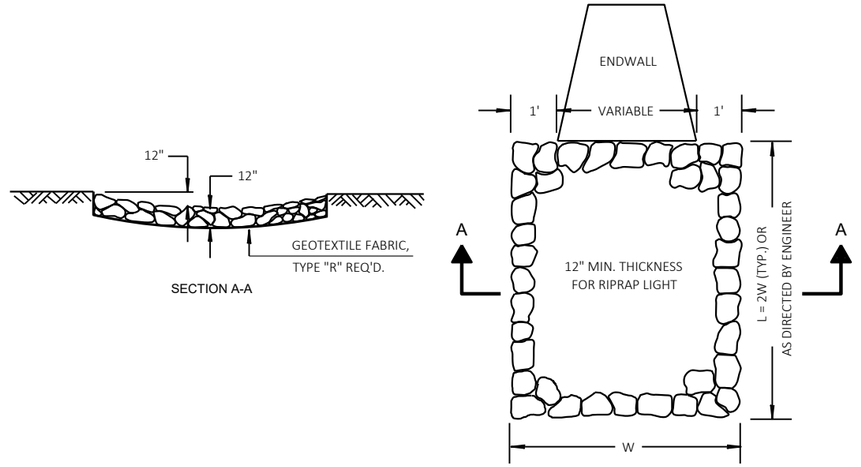
## NEW CULVERT PIPES WITH TRANSITION

STA 272+97
STA 406+86
STA 440+11
STA 452+15
STA 475+70
STA 524+90
STA 872+48



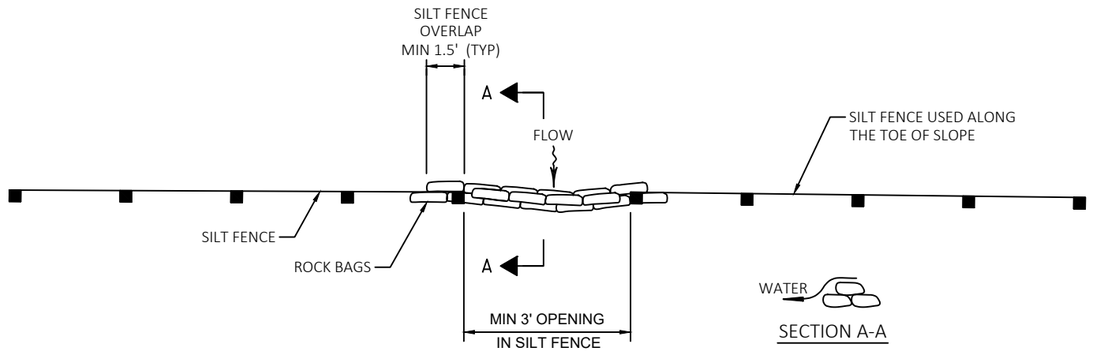

DETAIL FOR RIPRAP LIGHT IN DITCHES

STA 272+20 TO STA 273+00 RT



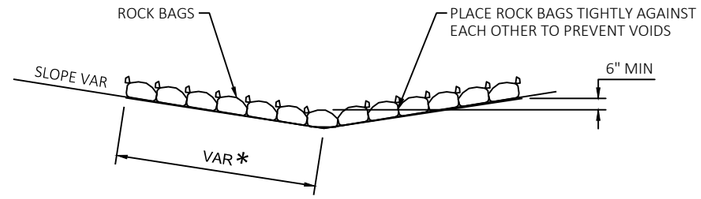

RIPRAP LIGHT TREATMENT AT CULVERTS

STA 273+20 LT

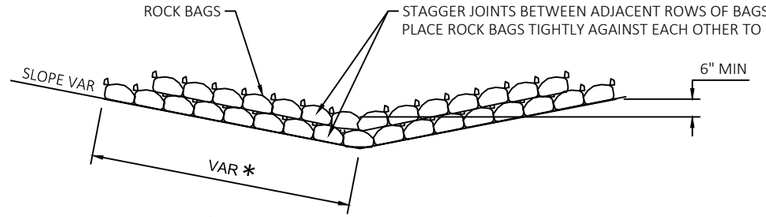



TOP VIEW

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL




SIDE VIEW (SINGLE LAYER)

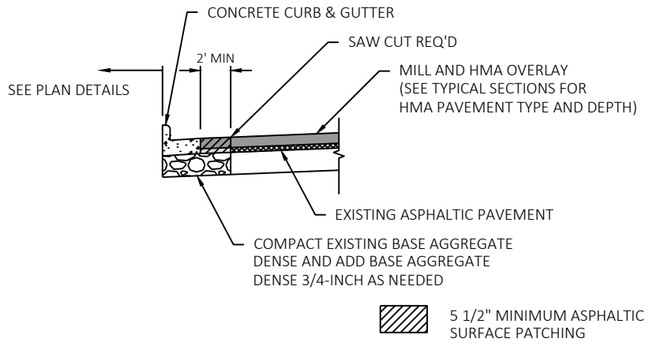



* LENGTH AND NUMBER OF BAGS MAY VARY DEPENDING ON DESIRED DEPTH OF WATER POOL

SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

PAID AS ROCK BAGS

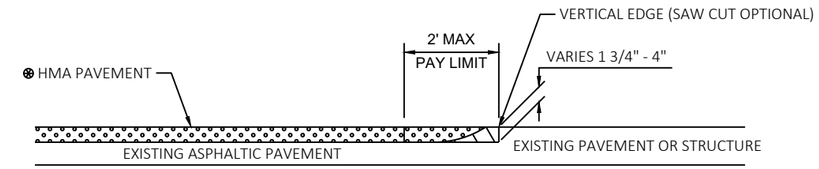



CONCRETE CURB & GUTTER REPLACEMENT DETAIL

NOTES:

COMPLETE CURB & GUTTER REPLACEMENTS AND ASPHALTIC SURFACE PATCHING TO MATCH THE EXISTING SURFACE PRIOR TO THE MILL AND OVERLAY OF STH 32.

FOR DETAILS NOT SHOWN, SEE SDD "CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES" FOR ADDITIONAL INFORMATION.

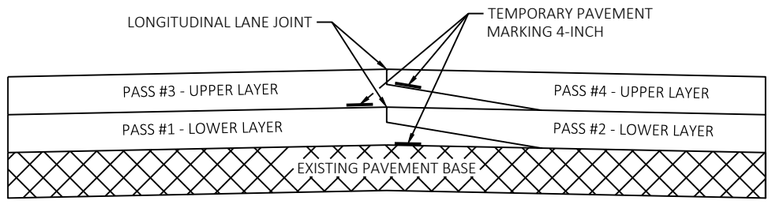



⊛ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

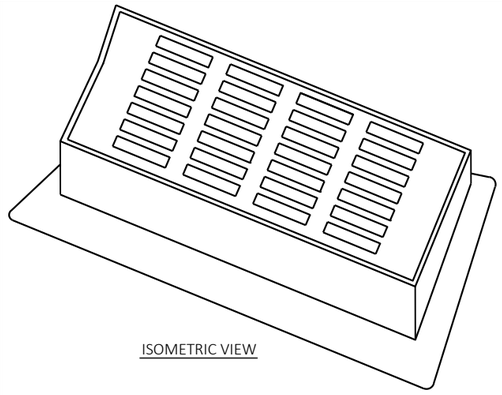
REMOVING ASPHALTIC SURFACE, MILLING

REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

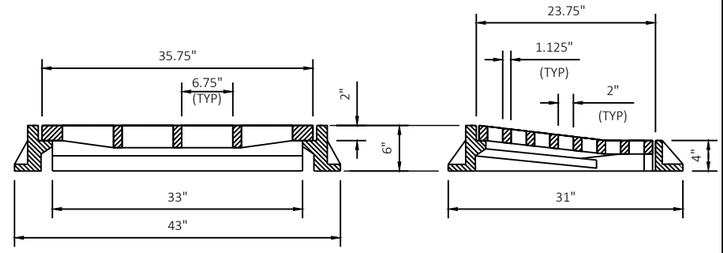
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)




PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS



ISOMETRIC VIEW

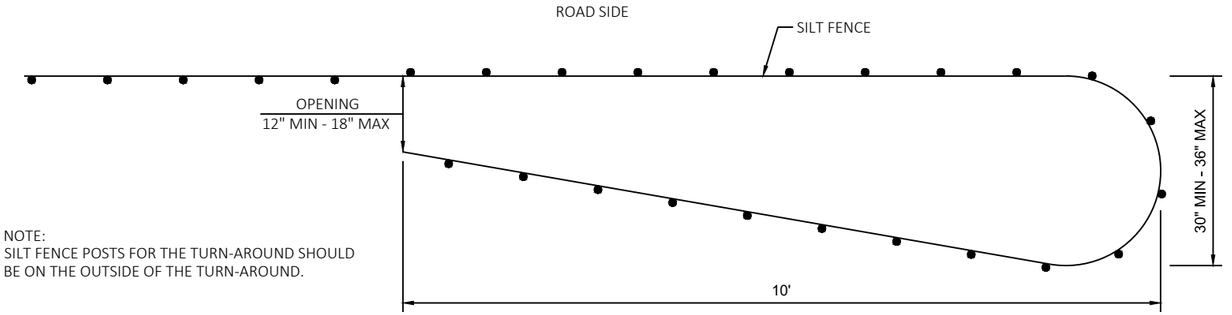



SIDE VIEW

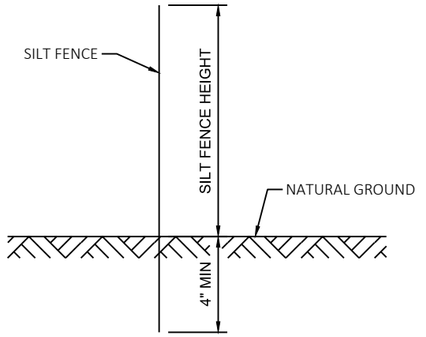
| STRUCTURE NAME | LOCATION |
|---|---|
| 30 | STA 142+69 RT |

INLET COVER DRIVEWAY SPECIAL DETAIL

2

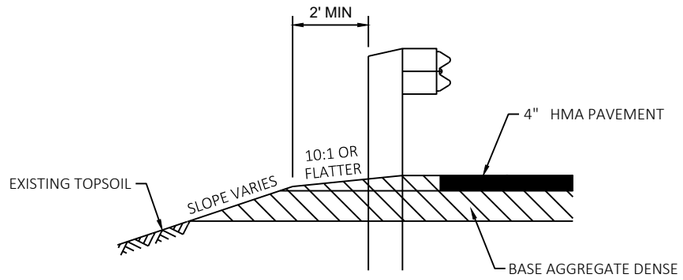



PLAN VIEW

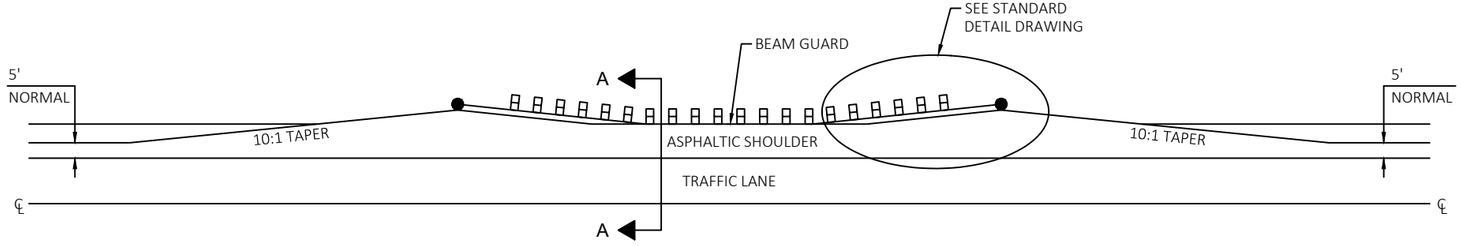



SIDE VIEW

SILT FENCE TURN-AROUND DETAIL

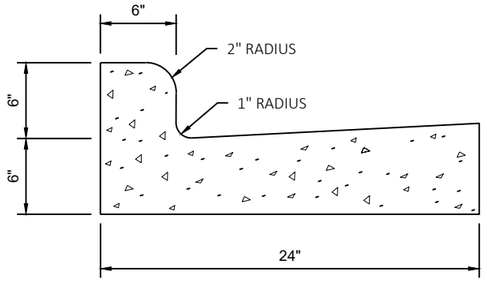



SECTION A-A

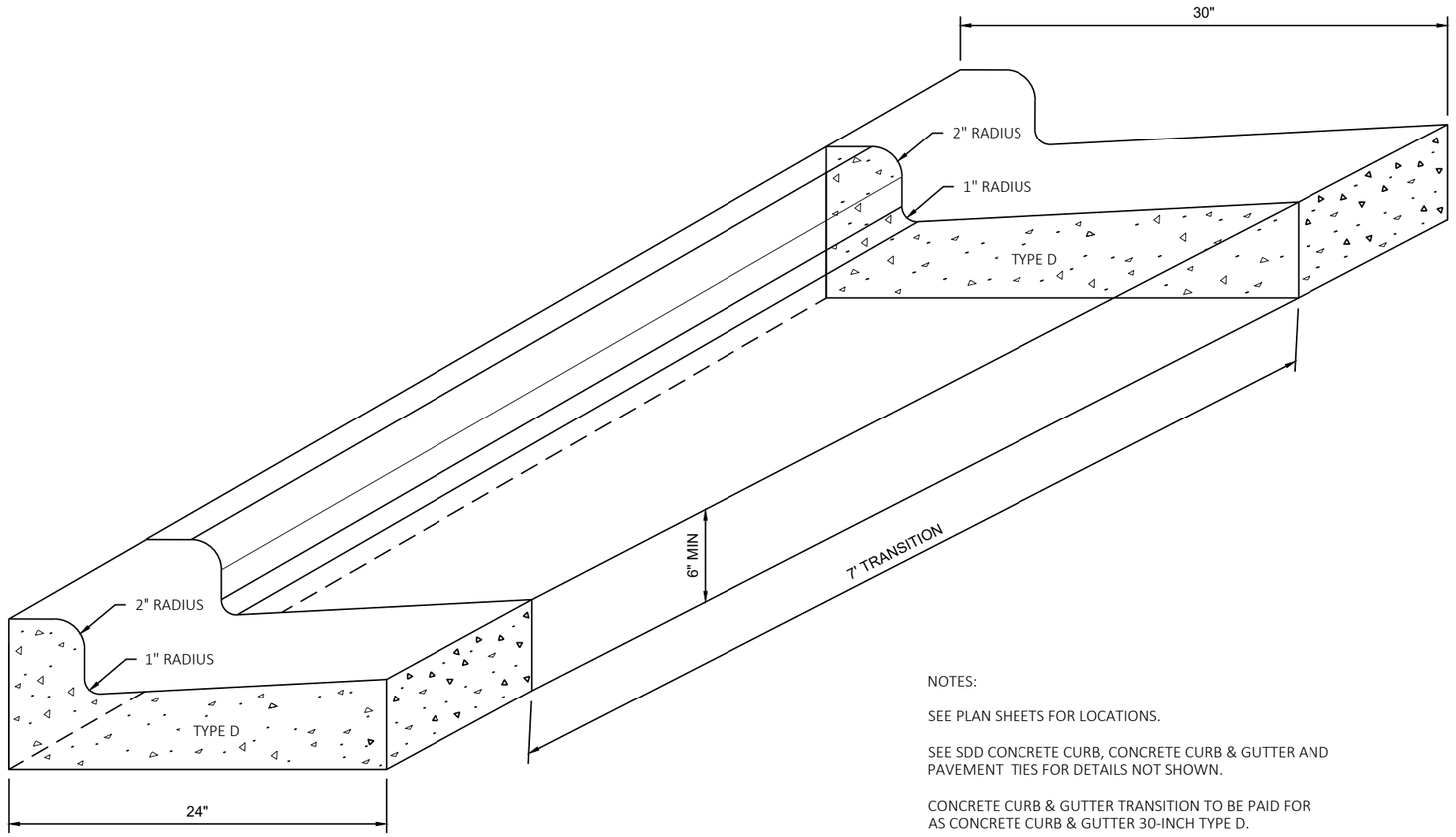



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CONSTRUCTION DETAILS | SHEET 17 | E |
|---|---|---|---|---|---|




CONCRETE CURB & GUTTER 24-INCH TYPE D




NOTES:

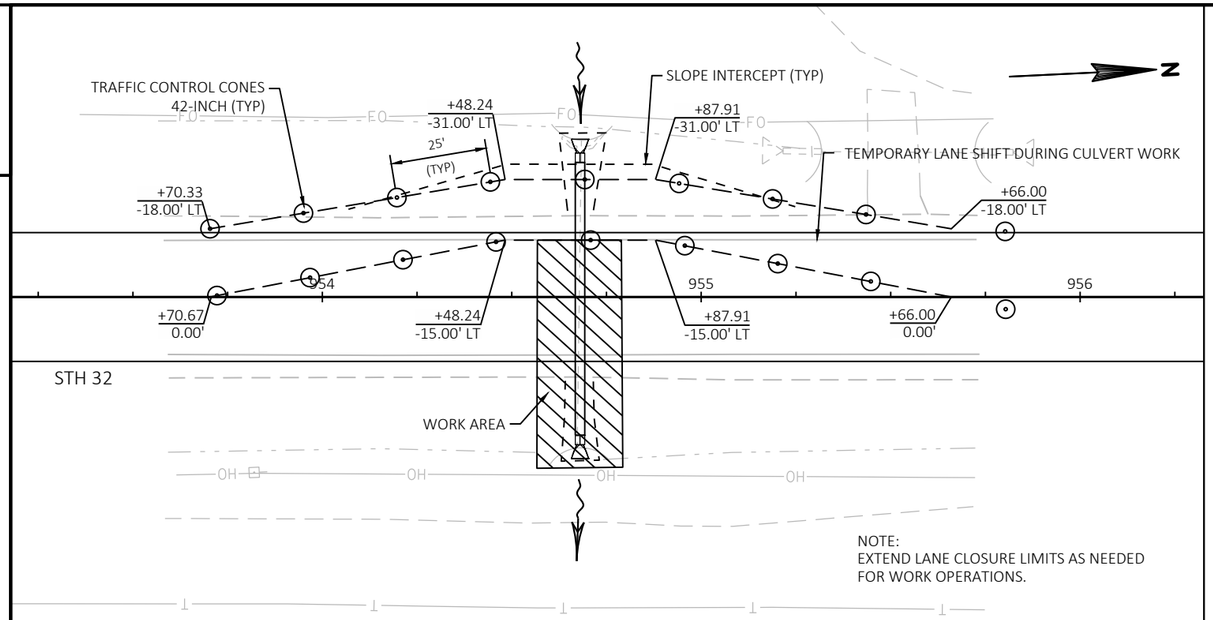
SEE PLAN SHEETS FOR LOCATIONS.

SEE SDD CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES FOR DETAILS NOT SHOWN.

CONCRETE CURB & GUTTER TRANSITION TO BE PAID FOR AS CONCRETE CURB & GUTTER 30-INCH TYPE D.

CONCRETE CURB & GUTTER TRANSITION DETAIL

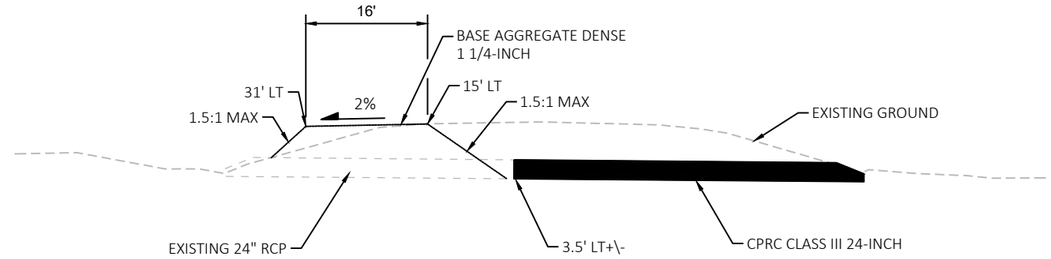
2




STAGE 1 PLAN VIEW

TEMPORARY WIDENING DETAIL CULVERT PIPE REPLACEMENT

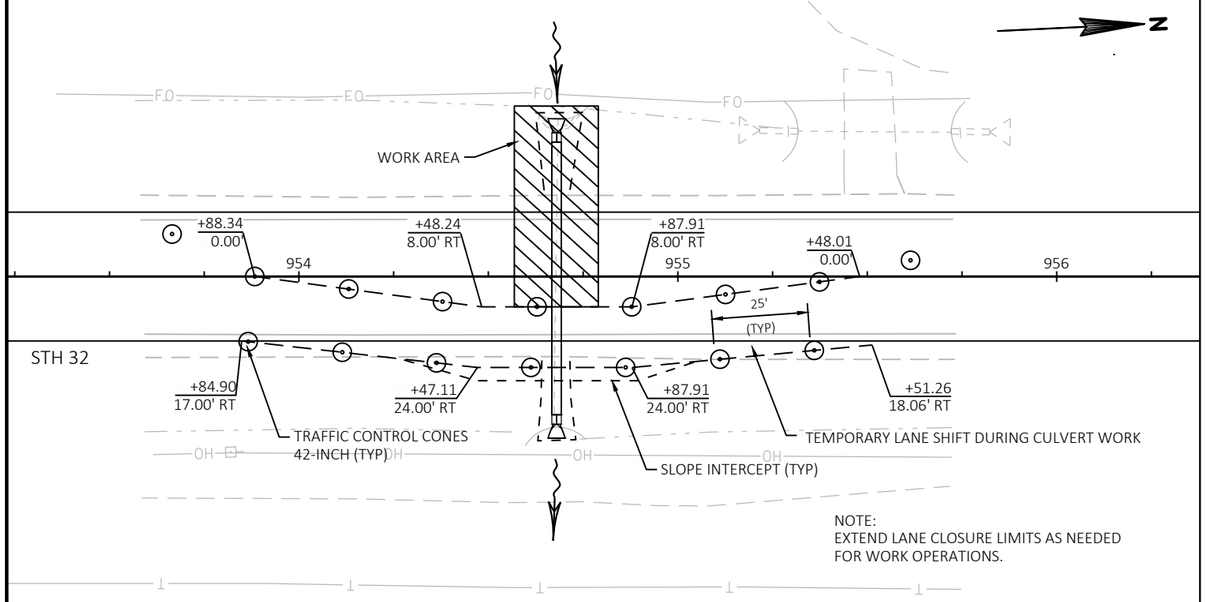
STA 954+68




STAGE 1 CROSS SECTION VIEW

TEMPORARY WIDENING DETAIL CULVERT PIPE REPLACEMENT

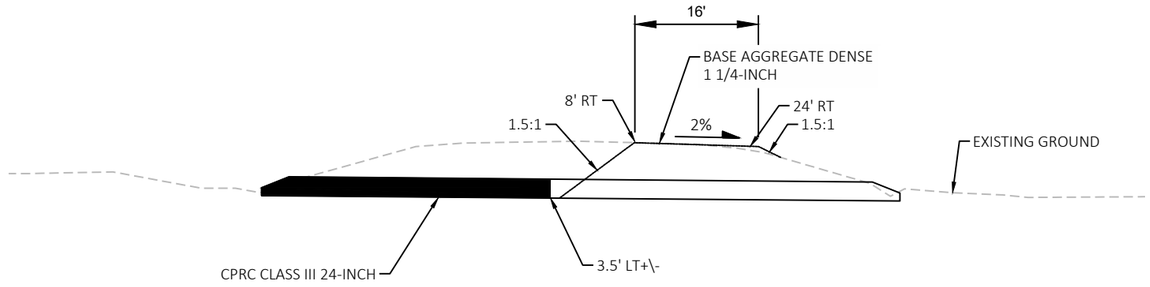
STA 954+68




STAGE 2 PLAN VIEW

TEMPORARY WIDENING DETAIL CULVERT PIPE REPLACEMENT

STA 954+68




STAGE 2 CROSS SECTION VIEW

TEMPORARY WIDENING DETAIL CULVERT PIPE REPLACEMENT

STA 954+68

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CONSTRUCTION DETAILS | SHEET 19 | E |
|---|---|---|---|---|---|

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

2

2

N

GUY

SEE BRIDGE PLANS FOR DECK PREP NEEDS

SALVAGE RAIL

R/L STH 32

337+00

338+00

339+00

STH 32

SALVAGE RAIL

LEGEND

REMOVING ASPHALTIC SURFACE, ITEM 204.0110

ASPHALT REMOVAL, INCIDENTAL

REMOVING CURB & GUTTER

REMOVING CONCRETE SIDEWALK

XXXX XXXX SAW CUT

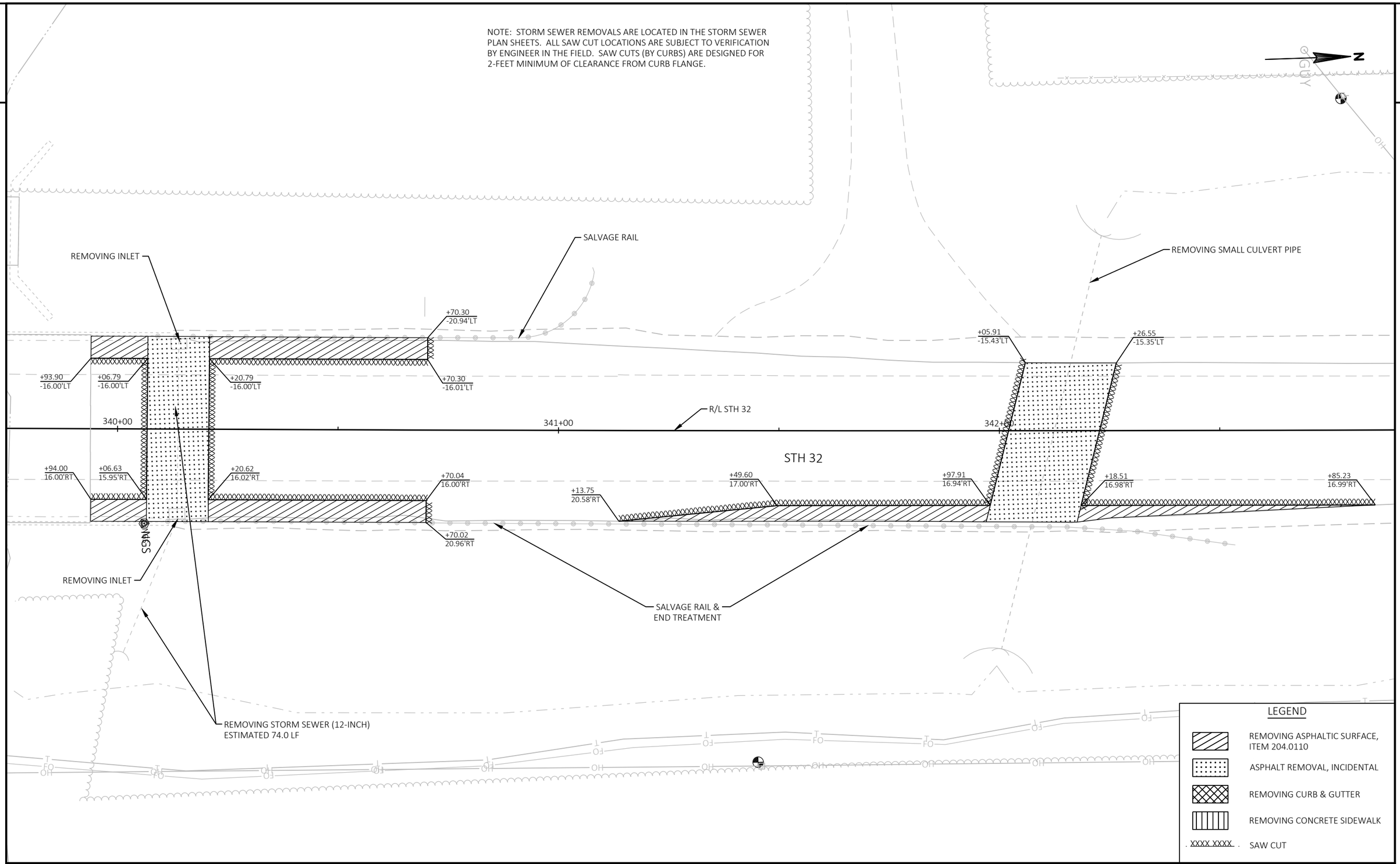
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 20 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021101-rmA

PLOT DATE : 7/22/2021 11:30 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 21 | E |
|---|---|---|---|---|---|

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

SALVAGE RAIL & END TREATMENT

+38.83 17.00'RT

+19.00 17.00'RT

+75.27 21.39'RT

+19.74 21.28'RT

+19.70 18.00'RT

+46.31 22.10'RT

+46.29 18.00'RT

R/L STH 32

177+00

176+00

175+00

STH 32

+29.27 -17.00'LT

+99.00 -17.00'LT

+03.37 -26.55'LT

+19.33 -23.50'LT

+19.33 -26.67'LT

+56.70 -23.50'LT

+56.64 -27.51'LT

SALVAGE RAIL & END TREATMENT

REMOVING ASPHALTIC FLUME (ITEM 204.0110)

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 22 | E |
|---|---|---|---|---|---|

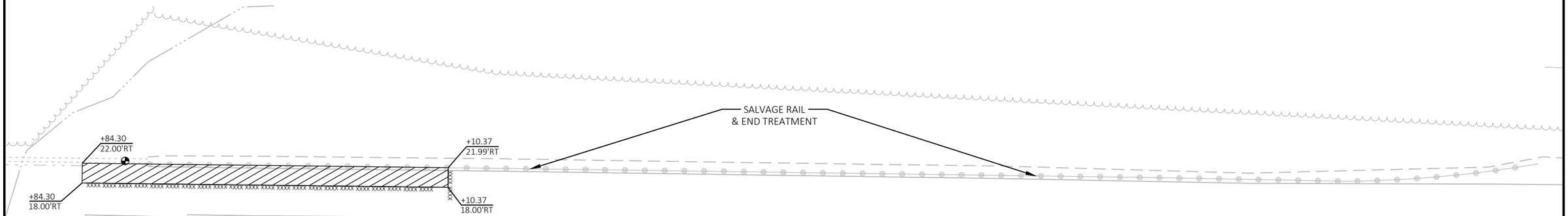
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021101-rmC

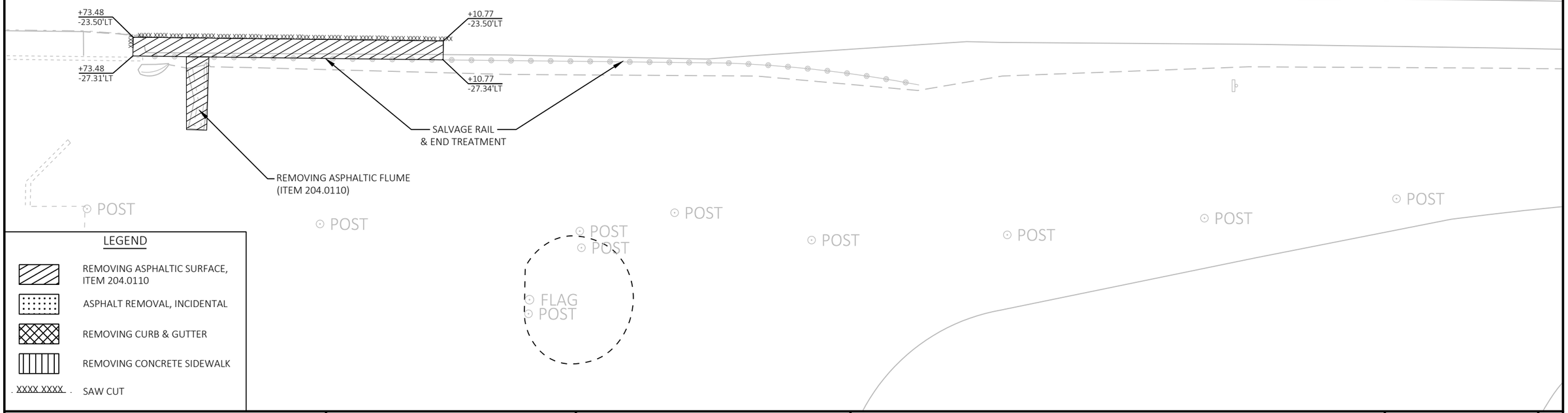
PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 23 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021102-rm

PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

NO STORM SEWER MARKINGS OR STRUCTURES FOUND IN THIS AREA

+19.99
24.30'RT

+20.01
19.78'RT

+90.00
24.13'RT

+90.01
19.67'RT

+01.58
30.87'RT

+01.59
19.46'RT

+90.22
30.87'RT

+90.18
19.48'RT

+29.52
30.78'RT

+29.52
19.34'RT

+21.57
19.32'RT

169+00

168+00

167+00

R/L STH 32

STH 32

+43.75
-14.30'LT

+43.70
-25.03'LT

+29.89
-20.24'LT

+29.86
-25.00'LT

+68.72
-20.82'LT

+75.42
-24.81'LT

+60.74
-20.71'LT

+60.71
-25.13'LT

+79.21
-31.61'LT

+79.15
-35.43'LT

+59.56
-27.11'LT

+59.55
-32.10'LT

+74.66
-35.40'LT

+05.23
-35.75'LT

END CONSTRUCTION
STA 2604+64.45
BUTT JOINT REQ'D

WEST ST

+48.63
-27.05'LT

+48.64
-31.93'LT

+35.91
-21.61'LT

+37.29
-25.89'LT

+30.57
-23.54'LT

+26.08
-27.09'LT

+26.71
-34.19'LT

+22.97
-31.84'LT

+21.73
-43.33'LT

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX — SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 24 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021103-rm

PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

2

2

CENTER ST

END CONSTRUCTION
STA 2400+40.35
BUTT JOINT REQ'D

+03.18
48.42'RT

+06.30
48.83'RT

+06.14
41.40'RT

+04.11
41.23'RT

+80.12
39.45'RT

+78.22
39.36'RT

+11.00
32.97'RT

+07.00
30.92'RT

+80.28
34.79'RT

+50.95
32.22'RT

+50.88
26.36'RT

+77.49
27.95'RT

+09.26
26.66'RT

+72.35
22.65'RT

+65.59
19.67'RT

+53.32
24.05'RT

+14.77
21.98'RT

+67.94
17.38'RT

+53.28
19.72'RT

+58.54
19.70'RT

+65.93
14.51'RT

+10.32
10.94'RT

+06.32
10.84'RT

+06.86
10.52'LT

166+00

+00.65
7.98'LT

+10.86
10.08'LT

+98.46
10.71'LT

+15.40
13.76'LT

+98.44
13.79'LT

+60.00
13.72'LT

+55.11
12.46'LT

+65.63
19.71'LT

+49.99
13.70'LT

+14.32
19.74'LT

+03.63
19.80'LT

+77.11
24.78'LT

+51.39
19.70'LT

+01.82
24.15'LT

+51.49
25.05'LT

+08.93
22.60'LT

+04.69
26.15'LT

+84.08
32.13'LT

+49.04
27.91'LT

+12.52
28.36'LT

+15.62
26.90'LT

+85.89
36.88'LT

+49.02
32.77'LT

+82.11
38.37'LT

+85.46
43.58'LT

END CONSTRUCTION
STA 2504+56.54
BUTT JOINT REQ'D

JACKSON ST

R/L STH 32

165+00

STH 32

164+00

+69.21
32.28'RT

+41.66
32.10'RT

+69.21
26.15'RT

+41.66
26.17'RT

+41.57
24.01'RT

+69.19
24.01'RT

+69.19
19.64'RT

+41.53
19.53'RT

+62.66
19.23'LT

+50.33
20.36'LT

+50.36
19.19'LT

+18.75
13.13'LT

+62.65
24.97'LT

+41.82
23.15'LT

+18.73
19.10'LT

+34.34
27.98'LT

+67.12
27.48'LT

+31.49
31.60'LT

+67.11
33.34'LT

+34.63
34.08'LT

+27.18
50.37'LT

END CONSTRUCTION
STA 2304+50.05
BUTT JOINT REQ'D

KNAPP ST

N

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX — SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 25 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021104-rm

PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

RAILROAD ST

END CONSTRUCTION
STA 2200+41.57
BUTT JOINT REQ'D

+26.70 41.27'RT
+28.78 35.29'RT
+24.79 35.01'RT
+42.96 32.01'RT
+25.24 28.80'RT
+42.96 26.10'RT
+35.43 24.72'RT
+30.26 22.40'RT
+33.86 20.91'RT

+04.79 41.81'RT
+02.78 41.86'RT
+95.73 42.48'RT
+03.73 32.89'RT
+76.64 31.99'RT
+76.65 26.19'RT
+97.96 24.66'RT
+79.49 24.28'RT
+89.10 19.74'RT
+79.45 19.70'RT

R/L STH 32

163+00 162+00 161+00 160+00

STH 32

+15.36 -14.42'LT
+09.36 -14.42'LT
+75.36 -14.30'LT
+49.36 -14.55'LT
+15.36 -20.35'LT
+09.36 -20.35'LT
+83.16 -20.35'LT
+78.14 -20.35'LT
+88.11 -24.59'LT
+83.15 -24.87'LT
+75.42 -20.30'LT
+83.04 -26.81'LT
+49.42 -20.55'LT
+60.28 -26.63'LT
+37.97 -26.60'LT
+06.05 -26.60'LT
+60.25 -32.43'LT
+42.96 -26.80'LT
+06.03 -31.74'LT
+83.02 -31.70'LT
+00.40 -39.28'LT
+92.13 -49.46'LT
+97.43 -49.58'LT

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX — SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 26 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021105-rm
PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

BURK ST

STH 32

R/L STH 32

2105+00

159+00

158+00

157+00

END CONSTRUCTION
STA 2105+52.31
BUTT JOINT REQ'D

+45.22 63.56'RT
+41.21 63.53'RT
+39.32 58.54'RT
+36.93 52.34'RT
+33.04 52.32'RT
+09.02 52.21'RT
+02.00 46.69'RT
+96.02 46.71'RT
+07.10 42.70'RT
+33.06 47.41'RT
+37.43 47.43'RT
+11.07 42.74'RT
+41.34 41.24'RT
+11.10 35.96'RT
+83.30 30.36'RT
+66.08 32.27'RT
+41.36 34.15'RT
+66.07 26.38'RT
+69.52 24.36'RT
+46.90 24.92'RT
+05.20 25.61'RT
+69.49 19.88'RT
+55.93 19.97'RT
+94.09 19.64'RT
+83.15 19.74'RT

+39.05 -13.76'LT
+33.25 -15.27'LT
+92.64 -20.31'LT
+78.48 -20.26'LT
+70.33 -20.30'LT
+57.59 -20.30'LT
+40.57 -19.56'LT
+34.76 -21.08'LT
+02.19 -24.62'LT
+40.38 -28.27'LT
+36.66 -24.13'LT
+08.37 -31.52'LT
+70.32 -24.73'LT
+61.00 -26.85'LT
+42.17 -30.92'LT
+06.09 -37.68'LT
+78.45 -29.86'LT
+09.99 -36.43'LT
+61.00 -31.78'LT
+95.60 -40.31'LT
+50.27 -24.25'LT
+95.63 -43.26'LT
+40.39 -44.45'LT
+09.13 -44.34'LT
+96.89 -51.44'LT
+01.83 -51.49'LT

END CONSTRUCTION
STA 2104+55.60
BUTT JOINT REQ'D

BURK ST

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX — SAW CUT

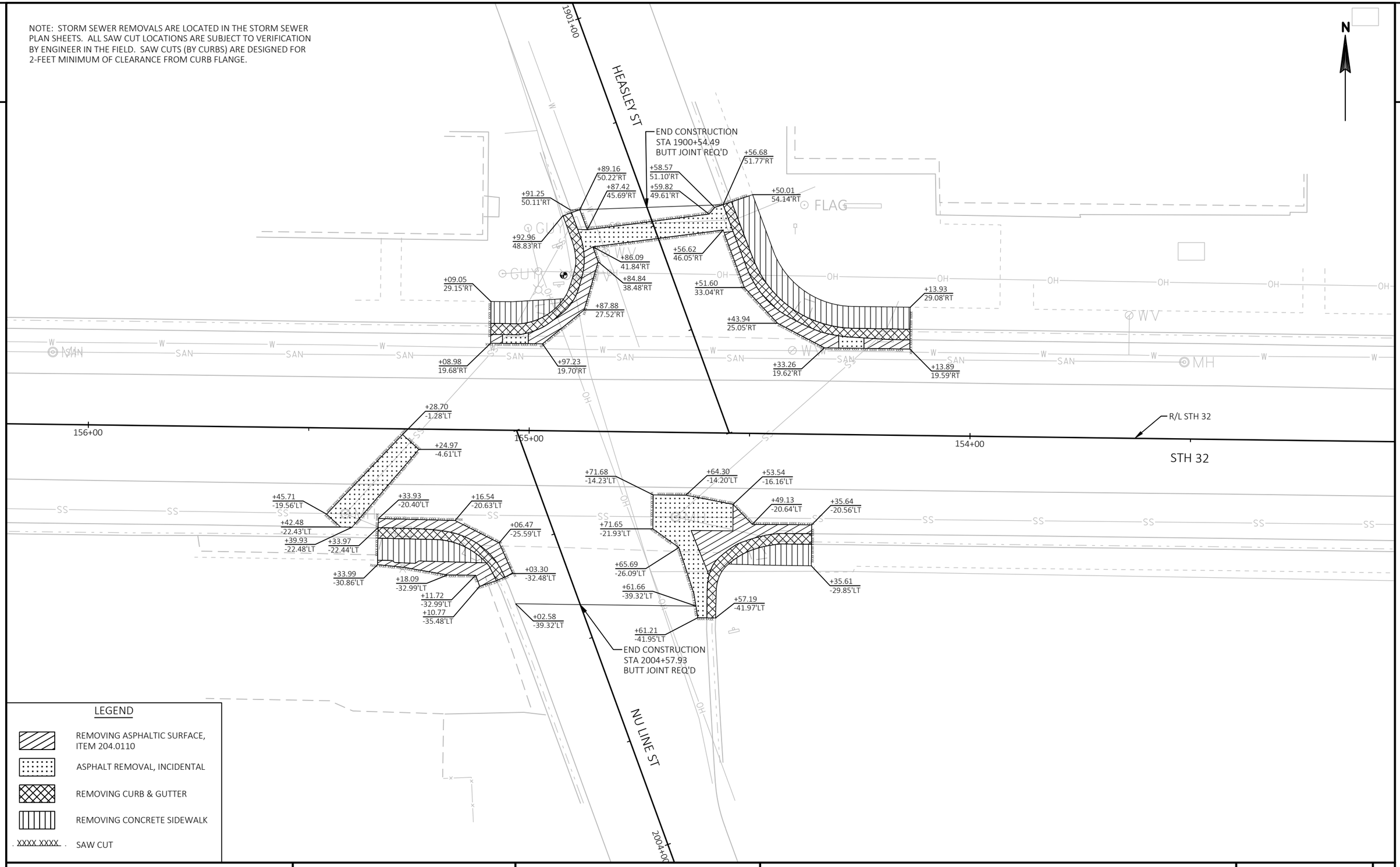
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 27 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021106-rm

PLOT DATE : 7/22/2021 11:31 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 28 | E |
|---|---|---|---|---|---|

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

NGS

NGS

BLEACHERS

BLEACHERS

OH

GUY

+82.02
32.10'RT

+87.13
31.15'RT

+87.03
29.05'RT

+86.94
19.59'RT

+76.58
32.20'RT

+64.14
32.21'RT

+48.85
29.04'RT

+48.81
19.60'RT

+48.78
26.97'RT

+42.16
27.03'RT

+48.72
20.47'RT

+42.10
20.53'RT

MH

SAN

R/L STH 32

153+00

152+00

151+00

150+00

STH 32

+56.43
-20.33'LT

+49.55
-20.33'LT

+56.43
-24.88'LT

+39.04
-24.88'LT

+62.43
-24.89'LT

+34.93
-30.08'LT

+62.42
-29.70'LT

+37.98
-32.50'LT

+33.81
-36.01'LT

+71.78
-20.61'LT

+79.75
-24.38'LT

+35.90
-20.61'LT

+85.37
-31.04'LT

+86.74
-35.62'LT

+35.94
-30.34'LT

+82.34
-36.45'LT

+84.71
-36.00'LT

+53.18
-33.72'LT

+41.48
-33.71'LT

+97.04
-15.24'LT

+91.04
-15.16'LT

+96.96
-21.24'LT

+90.96
-21.16'LT

NO STRUCTURE FOUND
CONNECTING TO THIS PIPE

END CONSTRUCTION
STA 1804+61.47
BUTT JOINT REQ'D

EHLINGER ST

1804+00

SS

FO

W

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 29 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021108-rm

PLOT DATE : 7/22/2021 11:32 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

MILL ST

END CONSTRUCTION
STA 1705+40.10
BUTT JOINT REQ'D

+00.66
37.02'RT
+03.18
37.41'RT
+07.96
37.38'RT
+07.94
32.37'RT
+15.00
32.36'RT
+14.98
21.59'RT
+09.17
21.59'RT
+00.09
25.62'RT
+00.36
39.77'RT
+96.25
40.08'RT
+94.23
39.66'RT
+94.46
34.12'RT

+59.08
40.11'RT
+61.14
38.08'RT
+61.20
33.21'RT
+56.60
25.43'RT
+49.00
21.53'RT
+49.36
38.15'RT
+49.31
36.14'RT
+47.96
36.17'RT
+47.94
32.30'RT
+36.50
32.29'RT
+36.48
26.09'RT
+29.43
26.04'RT
+29.44
21.54'RT

149+00
170+00
148+00
147+00
R/L STH 32
STH 32

+07.17
-22.48'LT
+25.62
-22.30'LT
+25.61
-26.80'LT
+19.03
-26.87'LT
+18.95
-33.54'LT
+07.40
-33.52'LT
+07.37
-37.55'LT
+97.45
-27.72'LT
+91.37
-37.71'LT
+91.30
-52.64'LT
+95.30
-52.69'LT

+49.07
-22.38'LT
+57.15
-26.42'LT
+62.31
-34.75'LT
+62.31
-44.76'LT
+58.31
-44.76'LT
+60.38
-52.33'LT
+37.01
-22.37'LT
+36.88
-33.61'LT
+47.40
-33.63'LT
+47.33
-36.67'LT
+52.78
-39.16'LT
+48.27
-41.34'LT
+52.75
-41.44'LT
+57.41
-37.73'LT

END CONSTRUCTION
STA 1704+47.50
BUTT JOINT REQ'D

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 30 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021109-rm
PLOT DATE : 7/22/2021 11:32 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

KRUEGER ST

END CONSTRUCTION
STA 1605+40.14
BUTT JOINT REQ'D

+27.85 39.98'RT
+27.86 32.20'RT
+32.74 32.19'RT
+14.64 40.11'RT
+14.69 33.50'RT
+18.42 26.15'RT
+32.75 21.59'RT
+25.97 21.59'RT

+80.61 40.16'RT
+80.37 32.71'RT
+76.34 25.71'RT
+68.95 21.54'RT
+67.84 40.21'RT
+67.86 32.23'RT
+54.29 32.23'RT
+54.27 21.60'RT

+72.61 28.16'RT
+72.66 21.52'RT
+60.15 28.10'RT
+60.12 21.56'RT

145+00
144+00
143+00
R/L STH 32
STH 32

+36.56 -22.47'LT
+36.47 -33.79'LT
+27.69 -33.80'LT
+27.68 -38.65'LT
+24.42 -42.17'LT
+28.56 -22.47'LT
+19.84 -27.56'LT
+14.61 -36.17'LT
+14.48 -41.94'LT
+16.50 -42.31'LT

+67.75 -22.38'LT
+78.24 -30.41'LT
+80.03 -37.02'LT
+78.51 -42.26'LT
+75.49 -37.96'LT
+56.01 -22.38'LT
+55.99 -33.77'LT
+67.69 -33.77'LT
+67.94 -37.84'LT

KRUEGER ST

END CONSTRUCTION
STA 1604+57.69
BUTT JOINT REQ'D

LEGEND

- REMOVING ASPHALTIC SURFACE, ITEM 204.0110
- ASPHALT REMOVAL, INCIDENTAL
- REMOVING CURB & GUTTER
- REMOVING CONCRETE SIDEWALK
- XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 31 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021110-rm
PLOT DATE : 7/22/2021 11:32 AM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

2

2

N

BARKMAN ST

END CONSTRUCTION
STA 1505+50.89
BUTT JOINT REQ'D

+60.64
37.89'RT

+62.87
33.61'RT

+68.88
33.30'RT

+68.88
32.71'RT

+89.26
32.52'RT

+99.24
30.81'RT

+54.97
50.53'RT

+18.50
51.20'RT

+54.49
35.45'RT

+56.38
30.84'RT

+99.21
25.32'RT

+84.06
25.19'RT

+84.10
20.69'RT

+70.64
20.58'RT

+62.37
24.23'RT

STA AHEAD = 140+24.29
STA BACK = 532+20.00

EQUATION

R/L STH 32

142+00

141+00

150+00

532+00

531+00

STH 32

+68.52
-22.55'LT

+46.95
-22.73'LT

+68.51
-29.00'LT

+47.02
-29.20'LT

+89.57
-23.25'LT

+68.69
-23.39'LT

+60.25
-26.91'LT

+56.62
-30.33'LT

+89.51
-32.68'LT

+59.82
-33.62'LT

+51.22
-50.12'LT

+15.47
-49.72'LT

END CONSTRUCTION
STA 1504+50.05
BUTT JOINT REQ'D

BARKMAN ST

LEGEND

REMOVING ASPHALTIC SURFACE, ITEM 204.0110

ASPHALT REMOVAL, INCIDENTAL

REMOVING CURB & GUTTER

REMOVING CONCRETE SIDEWALK

XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 32 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021111-rm

PLOT DATE : 7/22/2021 11:32 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

+86.25
24.04'RT

+77.93
24.08'RT

531+00

530+00

529+00

528+00

R/L STH 32

STH 32

+28.46
-16.47'LT

+52.52
-16.31'LT

+52.57
-22.06'LT

+28.48
-22.10'LT

+93.63
-22.19'LT

+85.25
-22.18'LT

SS

SS MH

LEGEND

REMOVING ASPHALTIC SURFACE, ITEM 204.0110

ASPHALT REMOVAL, INCIDENTAL

REMOVING CURB & GUTTER

REMOVING CONCRETE SIDEWALK

XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 33 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\917012000\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021112-rm

PLOT DATE : 7/22/2021 11:32 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

2

NOTE: STORM SEWER REMOVALS ARE LOCATED IN THE STORM SEWER PLAN SHEETS. ALL SAW CUT LOCATIONS ARE SUBJECT TO VERIFICATION BY ENGINEER IN THE FIELD. SAW CUTS (BY CURBS) ARE DESIGNED FOR 2-FEET MINIMUM OF CLEARANCE FROM CURB FLANGE.

N

PESHTIGO BROOK ST

1401+00

END CONSTRUCTION
STA 1400+60.81
BUTT JOINT REQ'D

+46.46
59.99'RT

+14.70
61.62'RT

SS

SS

SS

SS

SS

SS

SS

SS

SS

SS

MH

R/L STH 32

529+00

STH 32

528+00

527+00

526+00

LEGEND

REMOVING ASPHALTIC SURFACE, ITEM 204.0110

ASPHALT REMOVAL, INCIDENTAL

REMOVING CURB & GUTTER

REMOVING CONCRETE SIDEWALK

XXXX XXXX SAW CUT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | REMOVALS | SHEET 34 | E |
|---|---|---|---|---|---|

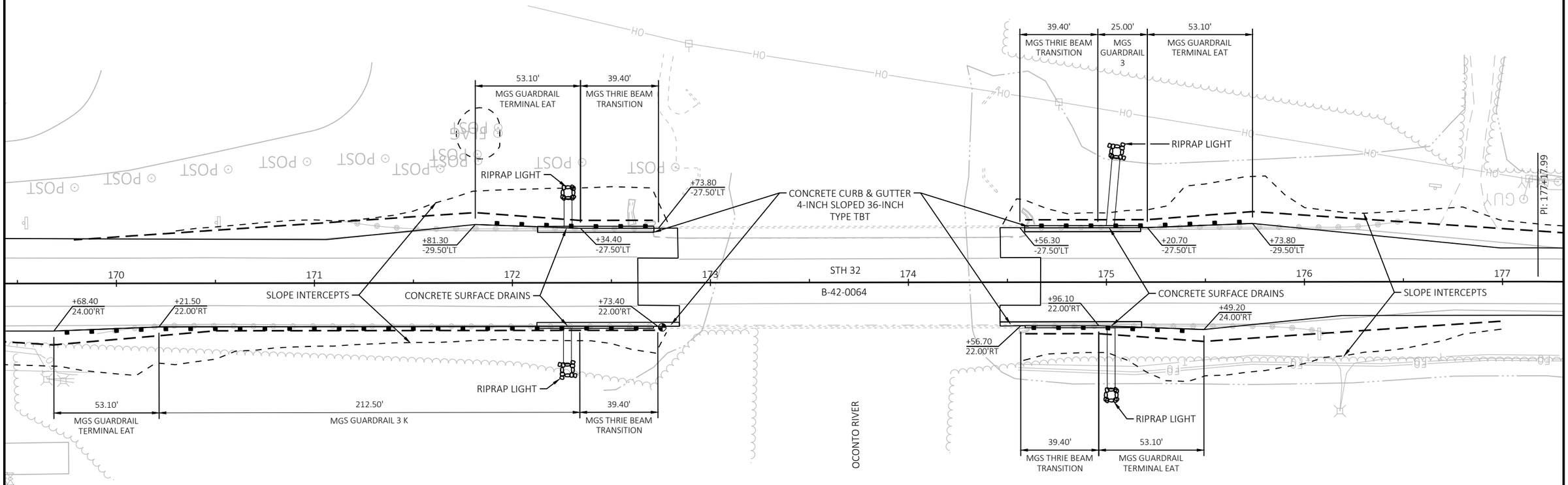
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021101-RM.DWG
LAYOUT NAME - 021113-rm

PLOT DATE : 7/22/2021 11:32 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

NOTE: FINAL PLACEMENT OF THE FLUMES MUST MAINTAIN THE MINIMUM POST SEPARATION DISTANCES IN THE STANDARD DETAIL DRAWING.

N




TBT CURB LOCATIONS (FLANGE LINE)

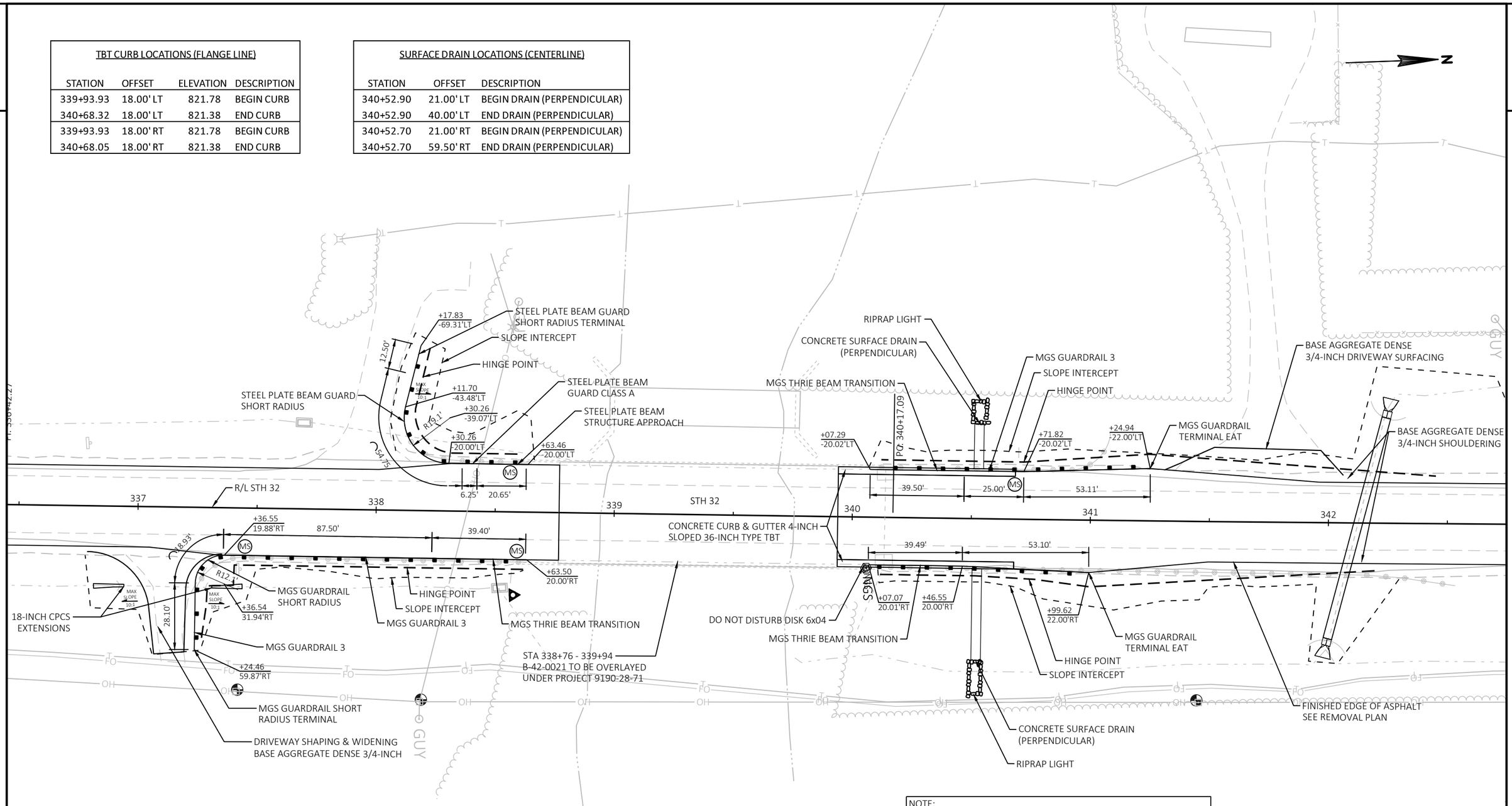
| STATION | OFFSET | ELEVATION | DESCRIPTION |
|---|---|---|---|
| 172+12.37 | 20.00' RT | 800.74 | BEGIN CURB |
| 172+84.30 | 20.00' RT | 801.49 | END CURB |
| 172+12.77 | 25.50' LT | 800.63 | BEGIN CURB |
| 172+71.48 | 25.50' LT | 801.37 | END CURB |
| 174+46.28 | 20.00' RT | 801.75 | BEGIN CURB |
| 175+17.73 | 20.00' RT | 801.32 | END CURB |
| 174+58.68 | 25.50' LT | 801.78 | BEGIN CURB |
| 175+17.33 | 25.50' LT | 801.34 | END CURB |

SURFACE DRAIN LOCATIONS (CENTERLINE)

| STATION | OFFSET | DESCRIPTION |
|---|---|---|
| 172+27.75 | 23.00' RT | BEGIN DRAIN (PERPENDICULAR) |
| 172+27.75 | 41.00' RT | END DRAIN (PERPENDICULAR) |
| 172+28.15 | 28.50' LT | BEGIN DRAIN (PERPENDICULAR) |
| 172+28.15 | 42.50' LT | END DRAIN (PERPENDICULAR) |
| 175+02.35 | 23.00' RT | BEGIN DRAIN (PERPENDICULAR) |
| 175+02.35 | 54.00' RT | END DRAIN (PERPENDICULAR) |
| 175+02.00 | 28.50' LT | BEGIN DRAIN (5° DEFLECTION) |
| 175+04.95 | 62.83' LT | END DRAIN (5° DEFLECTION) |

| TBT CURB LOCATIONS (FLANGE LINE) | | | |
|---|---|---|---|
| STATION | OFFSET | ELEVATION | DESCRIPTION |
| 339+93.93 | 18.00' LT | 821.78 | BEGIN CURB |
| 340+68.32 | 18.00' LT | 821.38 | END CURB |
| 339+93.93 | 18.00' RT | 821.78 | BEGIN CURB |
| 340+68.05 | 18.00' RT | 821.38 | END CURB |

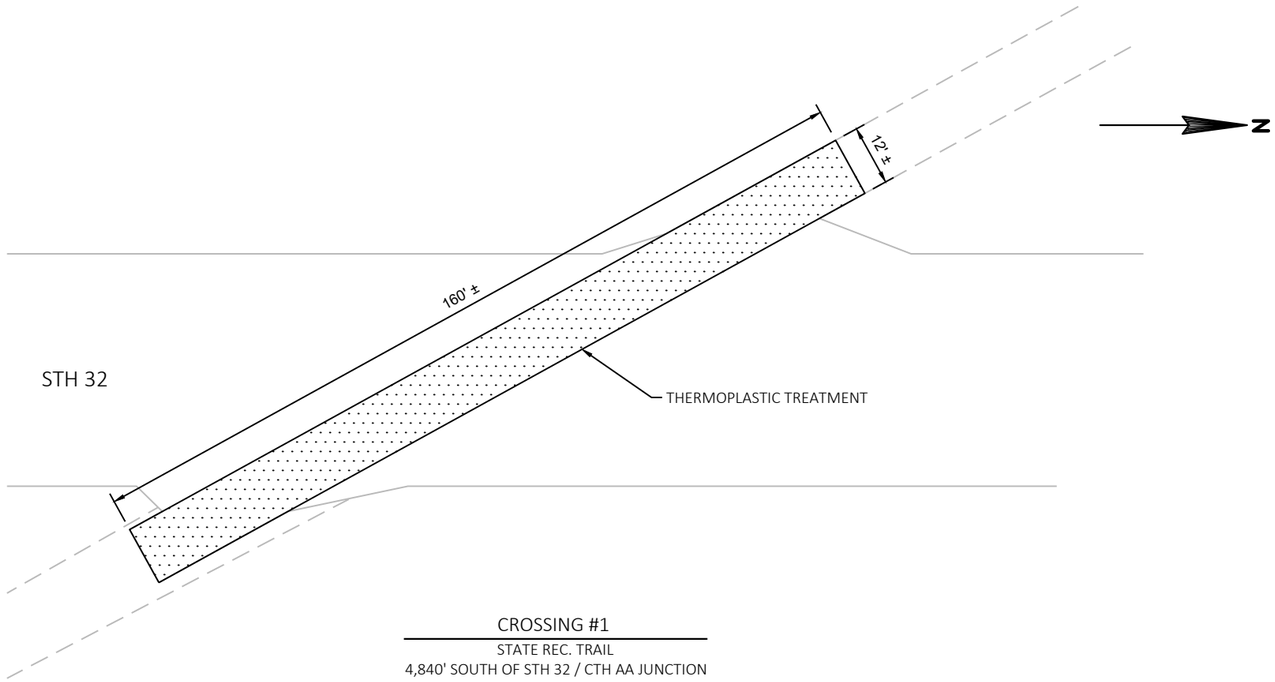
| SURFACE DRAIN LOCATIONS (CENTERLINE) | | |
|---|---|---|
| STATION | OFFSET | DESCRIPTION |
| 340+52.90 | 21.00' LT | BEGIN DRAIN (PERPENDICULAR) |
| 340+52.90 | 40.00' LT | END DRAIN (PERPENDICULAR) |
| 340+52.70 | 21.00' RT | BEGIN DRAIN (PERPENDICULAR) |
| 340+52.70 | 59.50' RT | END DRAIN (PERPENDICULAR) |



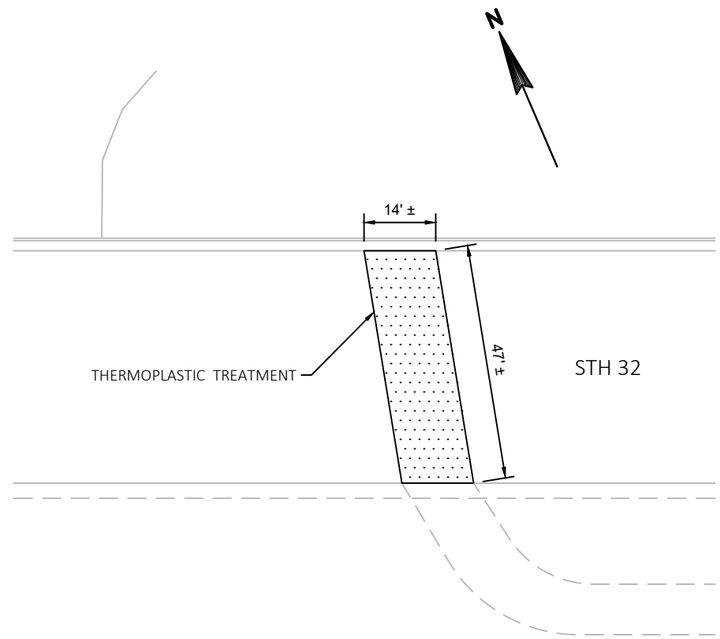

NOTE:
FINAL PLACEMENT OF THE FLUMES MUST MAINTAIN THE MINIMUM POST SEPARATION DISTANCES IN THE STANDARD DETAIL DRAWING.

(MS) MOVING SIGNS TYPE II: REMOVE SIGNS TO SAFE LOCATION DURING GROUND-DISTURBING OPERATIONS AND RETURN BEFORE FINAL RESTORATION.

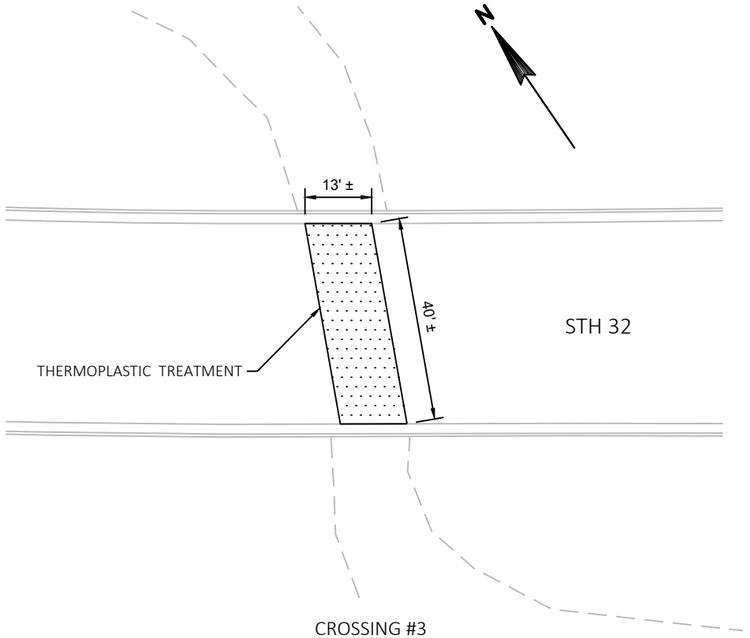
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - GUARDRAIL OVERVIEW | SHEET 36 | E |
|---|---|---|---|---|---|



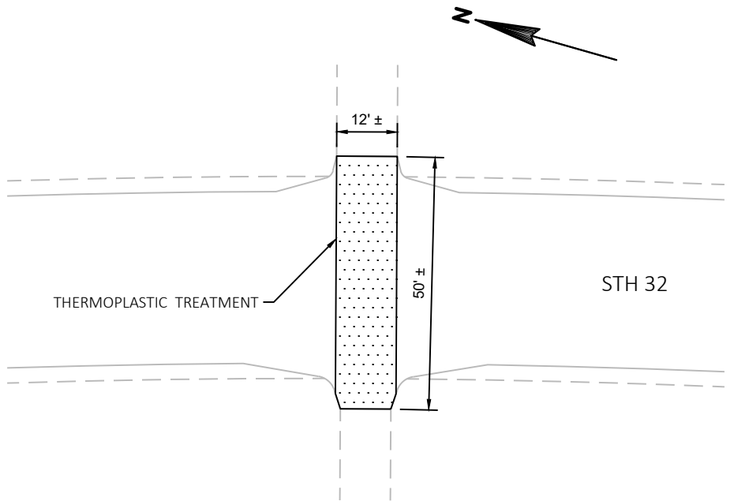

CROSSING #1
STATE REC. TRAIL
4,840' SOUTH OF STH 32 / CTH AA JUNCTION



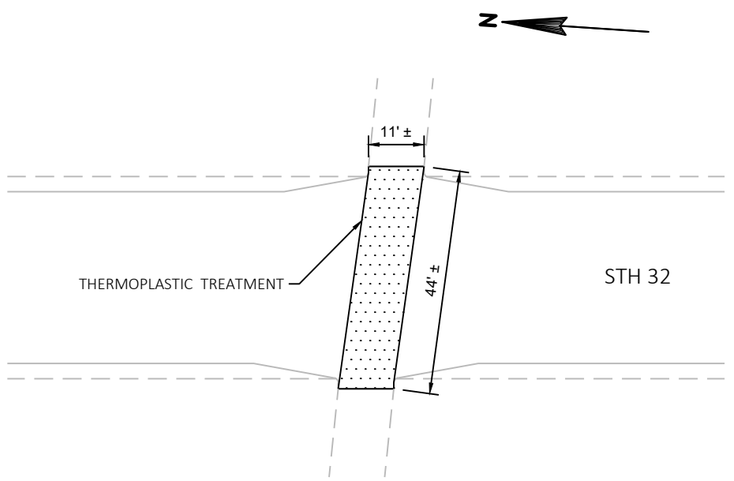

CROSSING #2
200' WEST OF STH 32 / STH 64 SOUTH JUNCTION




CROSSING #3
STATE REC. TRAIL
250' NORTH OF THE STH 32 / CTH W JUNCTION




CROSSING #4
1,150' NORTH OF STH 32 / 64 NORTH JUNCTION




CROSSING #5
1,550 ' SOUTH OF STH 32 / MAIDEN LAKE RD. JUNCTION

2

N

REMOVING ASPHALTIC SURFACE MILLING (2" DEPTH)

PT: 889+28.24

STH 32

889

890

891

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (2" THICK)

RECREATIONAL TRAIL CROSSING DETAIL

STA 889+60 TO STA 891+20

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - TRAIL APPROACH PAVING | SHEET 38 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021201-pdB

PLOT DATE : 7/22/2021 1:06 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

2

N

SNOWMOBILE CROSSING THERMOPLASTIC TREATMENT LOCATED 1,550' SOUTH OF STH 32 / MAIDEN LAKE ROAD JUNCTION *

SNOWMOBILE CROSSING THERMOPLASTIC TREATMENT LOCATED 1,150' NORTH OF STH 32 / STH 64 NORTHERN JUNCTION *

SNOWMOBILE CROSSING THERMOPLASTIC TREATMENT LOCATED 250' NORTH OF STH 32 / CTH W JUNCTION *

SNOWMOBILE CROSSING THERMOPLASTIC TREATMENT LOCATED 200' WEST OF THE STH 32 / STH 64 SOUTHERN JUNCTION *

SNOWMOBILE CROSSING THERMOPLASTIC TREATMENT LOCATED 4,840' SOUTH OF THE STH 32 / CTH AA JUNCTION *

* LOCATION TO BE VERIFIED BY ENGINEER IN THE FIELD.

RIVERVIEW
DOTY
MOUNTAIN
BRAZEAU
BAGLEY
BREED
Mountain
Breed
Klondike
N MAIDEN LK RD
NICOLET STATE TRAIL
McCashin
Oconto R.
N. Br. Oconto R.
S. Br. Oconto R.
2nd S. Br. Oconto R.
1st S. Br. Oconto R.
McCauley Cr.
Baldwin Cr.
Hines Cr.
Waupee Cr.
Waupee L.
Weso Cr.
Peshtigo Brook
S. Br. Beaver Cr.
McDonald Cr.
Bagley Cr.
Messenger Cr.
W
T
32
64
AA
Z
B
Q
G

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS (SNOWMOBILE CROSSINGS THERMOPLASTIC TREATMENTS) | SHEET 39 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021202-PD.DWG
LAYOUT NAME - 021202-pd
PLOT DATE : 7/22/2021 1:06 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:2 MI

2

2

N

169+20

168+90

INLET TO BE ADJUSTED WITH NEW CASTING

C & G 30" TYPE D REQ'D
REPLACE WITH DRIVEWAY CURB HEAD THROUGHOUT

STA 168+89.39 R/L ALI STH 32 =
STA 2605+00.00 R/L ALI WEST ST
Y=219,764.678
X=478,288.965

STH 32

169+50

169+00

168+50

WEST ST

2604+75

0

CURB RAMP TYPE 4B

168+68.0
25.8' LT
FULL HEAD

168+60.7
22.7' LT

168+70.5
27.1' LT
795.56

795.67

5.0%

168+59.6
27.1' LT

796.01

4.1%

1.4%

795.56

6.0%

1.4%

5.1%

1.0%

796.06

168+74.1
32.1' LT
795.45

168+70.5
32.1' LT
795.50

168+59.6
32.1' LT

CONCRETE CURB PEDESTRIAN (TYP)

168+77.2
35.4' LT

33.7' LT
FULL HEAD

5.0' x 2.0' DETECTABLE WARNING FIELD

RADIUS TO B.O.C. = 10.0'
RP = 168+64.7, 35.2' LT

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS & CURB REPAIR | SHEET 40 | E |
|---|---|---|---|---|---|

2

N

CONCRETE SIDEWALK 4-INCH REQ'D

EXISTING R/W

6.0%

167+01.6

166+90.2

C&G 30" TYPE D REQ'D

STH 32

168+00

167+50

167+00

INLET TO BE REPLACED
SEE STORM SEWER DETAILS

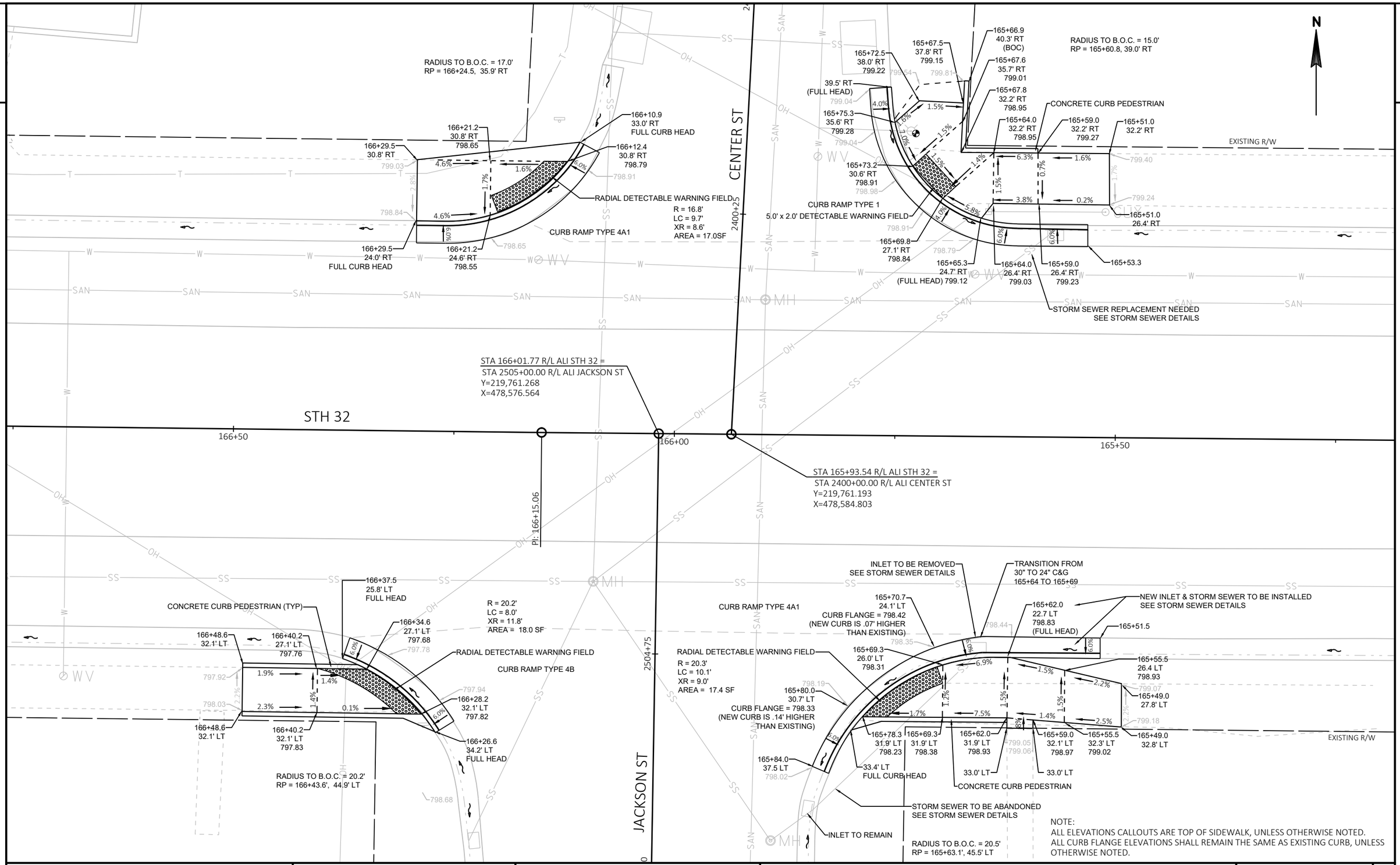
167+43.7

C&G 30" TYPE D REQ'D

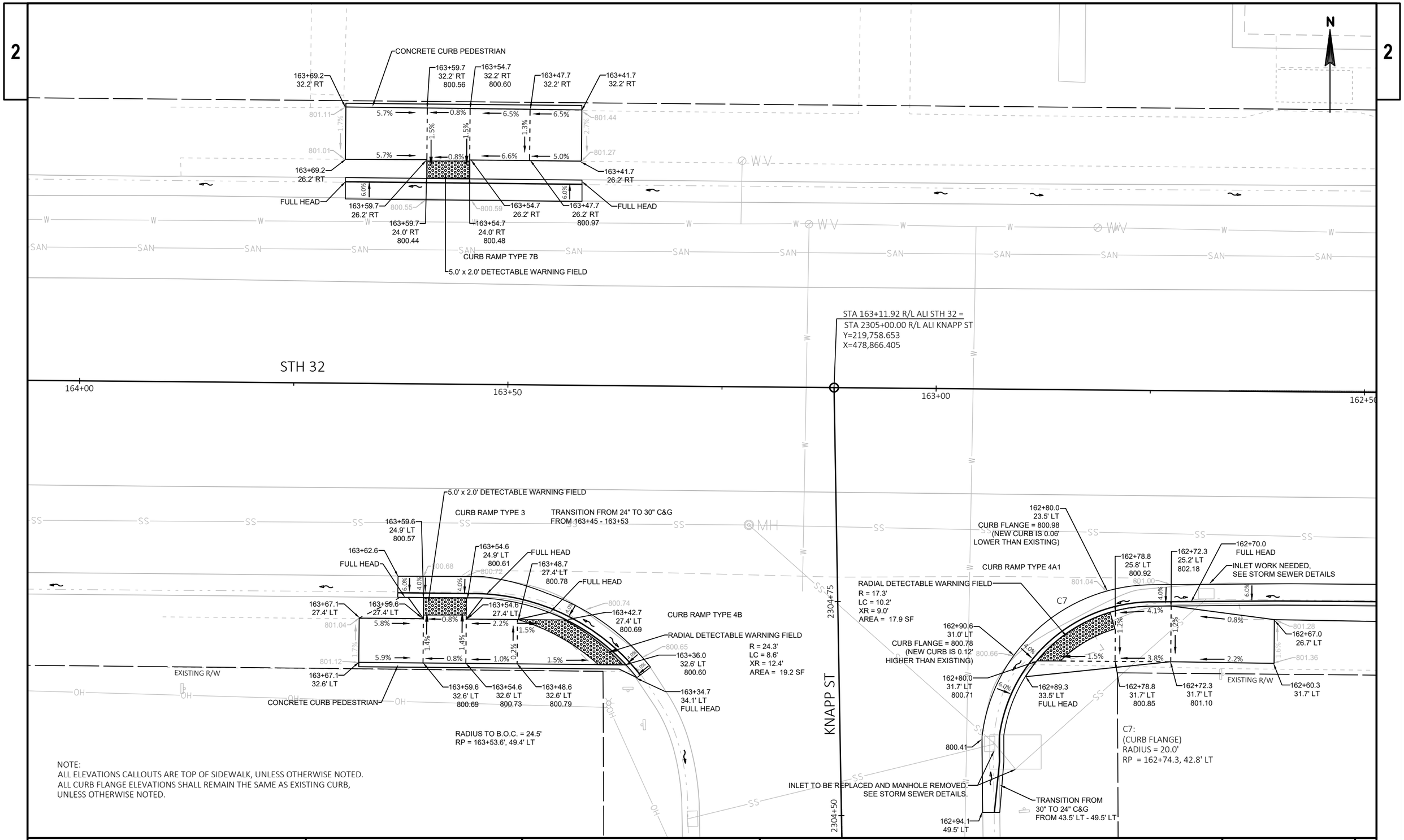
167+29.9

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB REPAIR | SHEET 41 | E |
|---|---|---|---|---|---|

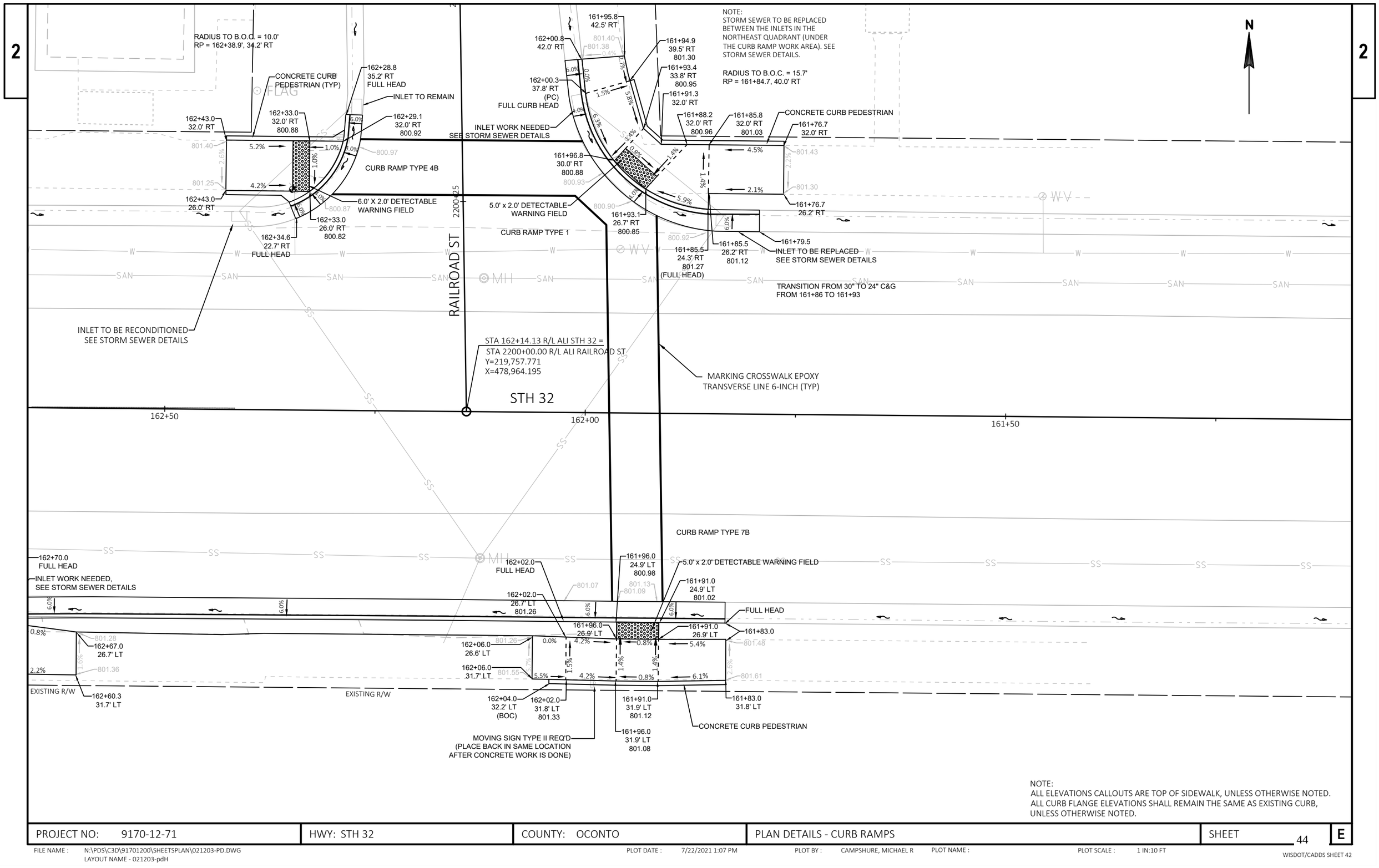



| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 42 | E |
|---|---|---|---|---|---|




NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS | SHEET 43 | E |
|---|---|---|---|---|---|




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 44 | E |
|---|---|---|---|---|---|

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

N

BURK ST

2105+75

2105+50

2105+25

EXISTING R/W

159+43.3
63.5' RT

INLET AND S.S. PIPE TO BE REPLACED.
SEE STORM SEWER DETAILS.

RADIUS TO B.O.C. = 16.0'
RP = 159+61.4, 40.4' RT

159+55.5
41.0' RT
(BOC)

159+55.0
38.0' RT
800.72

159+55.0
36.1' RT
800.61

159+55.0
32.3' RT
800.64

159+50.0
38.0' RT
800.79

159+45.9
37.0' RT
800.91
(FULL HEAD)

159+59.6
32.3' RT
800.71

159+58.3
32.3' RT
800.63

TRANSITION FROM
30" TO 24" C&G
FROM 38' RT TO 32' RT

EXISTING R/W

CONCRETE CURB PEDESTRIAN

159+66.0
32.3' RT

159+49.3
29.9' RT
800.49

5.0' x 2.0' DETECTABLE WARNING FIELD

159+66.0
26.4' RT

CURB RAMP TYPE 1

159+53.3
27.0' RT
800.52

159+69.5
22.0' RT

159+59.6
26.4' RT
800.80

159+59.3
24.6' RT
800.96
(FULL HEAD)

INLET TO BE REPLACED
SEE STORM SEWER DETAILS

159+02.0
46.7' RT

159+02.6
40.2' RT
801.39

159+09.2
42.7' RT

TRANSITION FROM
30" TO 24" C&G
FROM 43' RT TO 35' RT

159+05.9
36.7' RT
801.48
(FULL HEAD)

159+01.7
29.9' RT
800.99

5.0' x 2.0' DETECTABLE WARNING FIELD

CURB RAMP TYPE 1

158+97.6
26.8' RT
800.94

158+96.0
46.7' RT

158+96.6
40.2' RT
801.30

CONCRETE CURB PEDESTRIAN

158+96.6
36.1' RT
801.11

158+96.6
32.4' RT

158+93.8
31.6' RT
801.03

MOVING SIGN TYPE II REQ'D

158+89.2
30.7' RT
801.26

158+83.3
30.4' RT

158+83.3
24.3' RT

158+83.3
21.8' RT

158+90.1
24.4' RT
801.33
(FULL HEAD)

INLET & S.S. PIPE TO BE REPLACED
SEE STORM SEWER DETAILS

NOTE:
STORM SEWER TO BE REPLACED BETWEEN THE INLETS IN THE NORTHEAST QUADRANT (UNDER THE CURB RAMP WORK AREA). SEE STORM SEWER DETAILS. INLETS TO REMAIN.

RADIUS TO BACK OF PED. CURB = 38.5'
RP = 158+84.0, 69.5' RT

RADIUS TO B.O.C. = 19.0'
RP = 158+88.1', 43.2' RT

MARKING CROSSWALK EPOXY
TRANSVERSE LINE 6-INCH (TYP)

STA 159+26.17 R/L ALI STH 32 =
STA 2105+00.00 R/L ALI BURK ST
Y=219,755.170
X=479,252.136

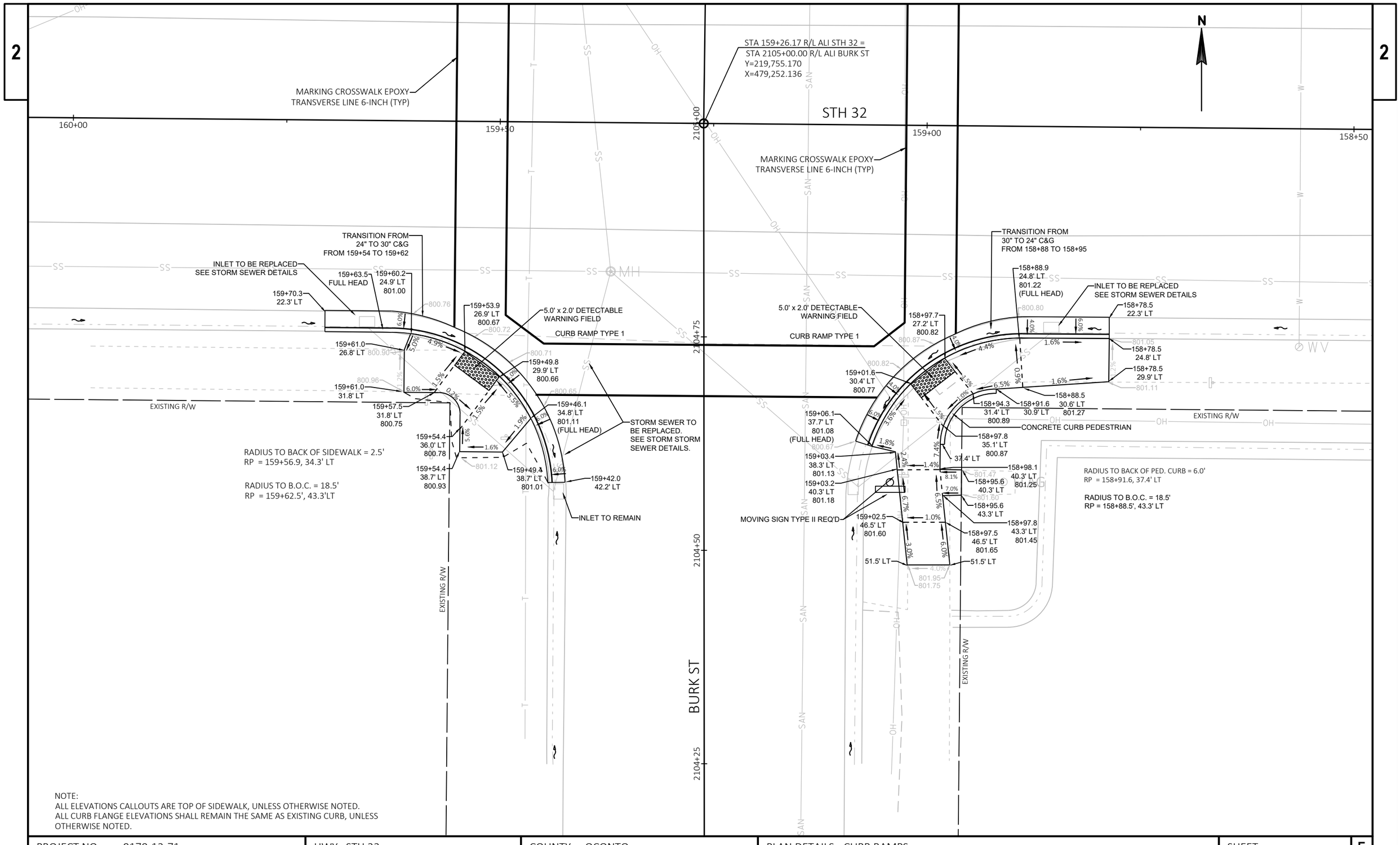
STH 32

MARKING CROSSWALK EPOXY
TRANSVERSE LINE 6-INCH (TYP)

160+00 159+50 159+00 158+50

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 45 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021203-PD.DWG
LAYOUT NAME - 021203-pdG
PLOT DATE : 7/22/2021 1:08 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:10 FT




NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 46 | E |
|---|---|---|---|---|---|

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

RADIUS TO BACK OF PED. CURB = 7.0'
RP = 155+03.6, 37.7' RT

RADIUS TO B.O.C. = 13.5'
RP = 155+03.2, 37.7' RT

NOTE:
STORM SEWER TO BE REPLACED BETWEEN THE INLETS IN THE NORTHWEST QUADRANT (UNDER THE CURB RAMP WORK AREA). SEE STORM SEWER DETAILS. INLETS TO BE REPLACED ALSO.

EXISTING R/W

155+09.0
29.2' RT

155+03.3
30.1' RT
802.26

155+02.2

155+00.1
31.0' RT
802.03

154+96.7
34.7' RT
801.93

36.2' RT

154+95.8
38.5' RT
802.08

154+91.0
49.5' RT

MOVING SIGN TYPE II REQ'D

154+90.0
38.0' RT
801.99
(FULL HEAD)

CONCRETE CURB PEDESTRIAN

154+92.1
30.1' RT
801.84

FLANGE ELEV. = 801.89
NEW CURB TO BE .11' HIGHER THAN EXISTING
(TRANSITION NORTHWARD TO EXISTING OVER 7')

5.0' x 2.0' DETECTABLE WARNING FIELD

155+09.0
24.2' RT

155+02.6
24.2' RT
802.33
(FULL HEAD)

154+95.7
26.5' RT
802.93

FLANGE ELEV. = 801.98
NEW CURB TO BE .11' HIGHER THAN EXISTING
(TRANSITION WESTWARD TO EXISTING OVER 7')

TRANSITION FROM
24" TO 30" C&G
154+96 TO 155+02

CURB RAMP TYPE 1-A

HEASLEY ST

1900+50

1900+25

RADIUS TO BACK OF PED. CURB = 19.0'
RP = 154+26.2, 49.6' RT

RADIUS TO B.O.C. = 25.0'
RP = 154+26.6, 49.4' RT

DECORATIVE STONE TO BE RESTORED BY VILLAGE

154+56.6
51.7' RT

154+50.0
54.1' RT

154+48.2
49.5' RT
801.87

154+44.4
39.7' RT
802.03

154+40.0
35.8' RT

154+48.8
37.3' RT
801.95
(FULL HEAD)

154+39.4
35.1' RT
801.75

154+35.2
32.3' RT
801.84

CONCRETE CURB PEDESTRIAN

EXISTING R/W

154+42.8
30.1' RT
801.66

CURB RAMP TYPE 1-A

5.0' x 2.0' DETECTABLE WARNING FIELD

154+38.8
27.2' RT
801.75

154+28.5
30.2' RT
802.33

154+21.2
29.6' RT
802.40

154+13.9
29.1' RT

154+13.9
24.1' RT

154+13.9
21.6' RT

TRANSITION FROM
30" TO 24" C&G
154+29 TO 155+38

154+29.1
24.3' RT
802.43
(FULL HEAD)

154+21.2
24.1' RT
802.43

INLET TO BE REPLACED AT 154+27
STORM SEWER TO BE ABANDONED
SEE STORM SEWER DETAILS

STA 154+54.60 R/L ALI STH 32 =
STA 1900+00.00 R/L ALI HEASLEY ST
Y=219,750.175
X=479,723.683

STH 32

155+50

155+00

154+50

154+00

STA 155+02.86 R/L ALI STH 32 =
STA 2005+00.00 R/L ALI NU LINE ST
Y=219,750.799
X=479,675.431

NU LINE ST

200+75

TRANSITION FROM
24" TO 30" C&G
155+18 TO 155+26

INLET TO BE RECONSTRUCTED
SEE STORM SEWER DETAILS

155+30.0
24.9' LT
801.69

155+34.0
24.8' LT

155+34.0
29.9' LT

155+31.8
30.0' LT
801.78

ASPHALTIC SURFACE REQ'D

155+24.0
31.0' LT
801.78

155+18.0
31.0' LT
801.35

155+23.9
25.0 LT
801.71
(FULL HEAD)

155+18.0
25.3 LT
801.29

RADIAL DETECTABLE WARNING FIELD
R = 14.9'
LC = 10.5'
XR = 9.2'
AREA = 18.4 SF

CURB RAMP TYPE 4A1

155+08.7
31.2' LT
801.41

155+07.8
32.5' LT
FULL HEAD

155+07.1
34.1' LT
MATCH DWY. HEAD

EXISTING R/W

RADIUS TO B.O.C. = 15.0'
RP = 155+22.7', 40.0'LT

INLET & STORM SEWER TO BE REMOVED
SEE STORM SEWER DETAILS

CURB RAMP TYPE 1-A

5.0' x 2.0' DETECTABLE WARNING FIELD

154+50.9
26.6' LT
801.95

154+40.8
25.0' LT
802.61
(FULL HEAD)

154+35.7
22.6' LT

154+35.7
25.0' LT

154+54.6
30.0' LT
801.91

TRANSITION FROM
30" TO 24" C&G
31.0' LT - 37.0' LT

NEW INLET & STORM SEWER TO BE INSTALLED
SEE STORM SEWER DETAILS

154+57.1
38.5' LT
802.37
(FULL HEAD)

154+59.1
42.0' LT

154+51.1
38.5' LT
802.28

154+50.5
34.5' LT
802.00

154+46.7
31.4' LT
802.04

154+40.2
30.5' LT
802.52

154+35.7
30.0' LT

EXISTING R/W

RADIUS TO BACK OF SIDEWALK = 6.0'
RP = 154+45.1, 37.2' LT

RADIUS TO B.O.C. = 12.0'
RP = 154+45.1, 37.2' LT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS | SHEET 47 | E |
|---|---|---|---|---|---|

2

2

N

EXISTING R/W

GUY

NICOLET STATE RECREATIONAL TRAIL

ASPHALTIC SURFACE REQ'D

151+87.0
29.1' LT

151+79.7
30.1' LT
804.17

151+75.9
30.1' LT
804.19

151+76.6
32.2' LT

151+64.2
32.2' LT

151+63.3
30.1' LT
804.24

151+54.8
30.1' LT
804.28

151+48.8
29.1' LT

151+87.0
24.1' LT
FULL CURB HEAD

151+79.7
24.1' LT
804.08

151+76.0
24.1' LT
804.10

151+60.0
24.1' LT
804.16

151+54.8
24.1' LT
804.19

151+48.8
24.1' LT
FULL CURB HEAD

TYPE 7A CURB RAMP
16.0' x 2.0' DETECTABLE WARNING FIELD

STA 152+32.75 R/L ALI STH 32 =
STA 1805+00.00 R/L ALI EHLINGER ST
Y=219,747.306
X=479,945.512

STH 32

152+50

152+00

151+50

EHLINGER ST

1804+75

1804+50

TRANSITION FROM
24" TO 30" C&G
152+49 TO 152+56

152+56.4
24.8' LT
803.57
FULL HEAD

152+62.4
24.8' LT

152+62.4
29.8' LT

152+56.4
30.9' LT
803.63

152+50.4
25.1' LT
803.28

152+50.4
30.9' LT
803.37

152+39.6
30.9' LT
803.36

152+38.1
32.6' LT
803.81
(FULL HEAD)

CURB RAMP TYPE 4A1

RADIAL DETECTABLE WARNING FIELD

R = 19.8'
LC = 11.5'
XR = 10.6'
AREA = 20.0 SF

RADIUS TO B.O.C. = 20.0'
RP = 152+53.9', 44.9' LT

R = 15.8'
LC = 10.3'
XR = 9.2'
AREA = 17.8 SF

CURB RAMP TYPE 4A1

RADIAL DETECTABLE WARNING FIELD

NEW CURB TO BE .08' HIGHER THAN EXISTING
(TRANSITION TO EXISTING HEIGHT OVER 7')

151+81.5
29.7' LT
804.27
(FLANGE ELEV.)

151+82.3
37.4' LT

151+80.7
32.8' LT
804.53
(FULL HEAD)

151+70.1
25.5' LT
804.38

151+64.5
25.2' LT
804.72
(3" CURB
HEAD)

151+58.3
25.2' LT
804.46

151+54.2
25.2' LT
804.45

151+42.3
25.2' LT
804.41

151+36.0
25.2' LT
FULL HEAD

151+79.5
31.2' LT
804.20

151+70.1
31.2' LT
804.30

151+64.5
31.2' LT
804.66

151+58.3
31.2' LT
804.60

151+54.2
31.2' LT
804.67

151+53.5
33.7' LT

151+36.0
30.3' LT

151+42.3
31.2' LT
804.67

151+41.7
33.7' LT

16.0' x 2.0' DETECTABLE WARNING FIELD
TYPE 7A CURB RAMP

RADIUS TO B.O.C. = 16.0'
RP = 151+67.1', 41.0' LT

NICOLET STATE RECREATIONAL TRAIL

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB,
UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 48 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021203-PD.DWG
LAYOUT NAME - 021203-pdD
PLOT DATE : 7/22/2021 1:09 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

2

N

CONCRETE SIDEWALK 4-INCH

150+48.8

150+42.1

INLET TO BE REPLACED
SEE STORM SEWER DETAILS

W W W

2

RADIUS TO B.O.C. = 13.5'
RP = 149+11.8', 39.7' RT

DO NOT DISTURB MONUMENT

149+06.4
37.4' RT

149+03.1
37.4' RT

149+08.0
35.9' RT

149+08.0
32.4' RT

149+15.0
32.4' RT

EXISTING R/W

ASPHALTIC SURFACE REQ'D

148+96.3
39.7' RT

TAPER CURB HEAD UP
FROM MATCH POINT
TO FULL HEAD

148+98.7
36.7' RT
804.28

149+02.3
30.1' RT
803.89

5.0' x 2.0' DETECTABLE WARNING FIELD

149+15.0
26.1' RT
804.22
(FULL HEAD)

149+06.4
27.8' RT
803.87

CURB RAMP TYPE 1-A

TRANSITION FROM
24" TO 30" C&G
149+06 to 149+15

MILL ST

1705+25

148+57.1
38.0' RT
804.28
(FULL HEAD)

148+49.2
38.1' RT

148+49.2
36.1' RT

RADIUS TO B.O.C. = 11.5'
RP = 148+45.7, 37.6' RT

148+47.9
36.1' RT

148+47.9
32.4' RT

148+42.8
32.4' RT

148+36.5
32.4' RT

EXISTING R/W

148+54.9
30.8' RT
804.01

CURB RAMP TYPE 1-A

5.0' x 2.0' DETECTABLE WARNING FIELD

148+36.5
26.1' RT

148+51.0
27.4' RT
804.03

148+29.5
23.6' RT

TRANSITION FROM
30" TO 24" C&G
148+44 to 148+51

148+42.8
26.1' RT
804.42
(FULL HEAD)

INLET TO BE REPLACED
SEE STORM SEWER DETAILS

STA 148+77.52 R/L ALI STH 32 =
STA 1705+00.00 R/L ALI MILL ST
Y=219,742.709
X=480,300.718

STH 32

149+50

149+00

148+50

148+00

TRANSITION FROM
24" TO 30" C&G
149+06 to 149+14

INLET TO BE REPLACED
SEE STORM SEWER DETAILS

149+14.5
27.0' LT
804.41
(FULL HEAD)

149+25.6
24.3' LT

149+06.6
28.0' LT
804.05

5.0' x 2.0' DETECTABLE WARNING FIELD

CURB RAMP TYPE 1-A

149+19.0
26.9' LT

149+02.2
30.4' LT
804.06

149+19.0
33.6' LT

149+14.5
33.6' LT

149+07.5
33.6' LT

148+97.3
37.3' LT
804.54
(FULL HEAD)

RADIUS TO B.O.C. = 17.0'
RP = 149+12.4, 43.9' LT

DO NOT DISTURB MONUMENT

149+07.3
39.3' LT
804.60

149+02.3
39.3' LT
804.57

ADJUSTMENT RING REPLACEMENT
SEE STORM SEWER DETAILS

148+93.3
52.7' LT

MILL ST

1704+75

1704+50

TRANSITION FROM
30" TO 24" C&G
148+43 to 148+50

ADJUSTMENT RING REPLACEMENT
SEE STORM SEWER DETAILS

148+50.0
27.8' LT
804.12

148+37.0
26.8' LT
804.38
(FULL HEAD)

5.0' x 2.0' DETECTABLE WARNING FIELD

CURB RAMP TYPE 1-A

148+54.2
30.6' LT
804.16

148+47.4
33.6' LT

148+37.0
33.6' LT
804.79

148+57.5
37.7' LT
804.49
(FULL HEAD)

148+47.4
36.7' LT

148+52.7
39.2' LT

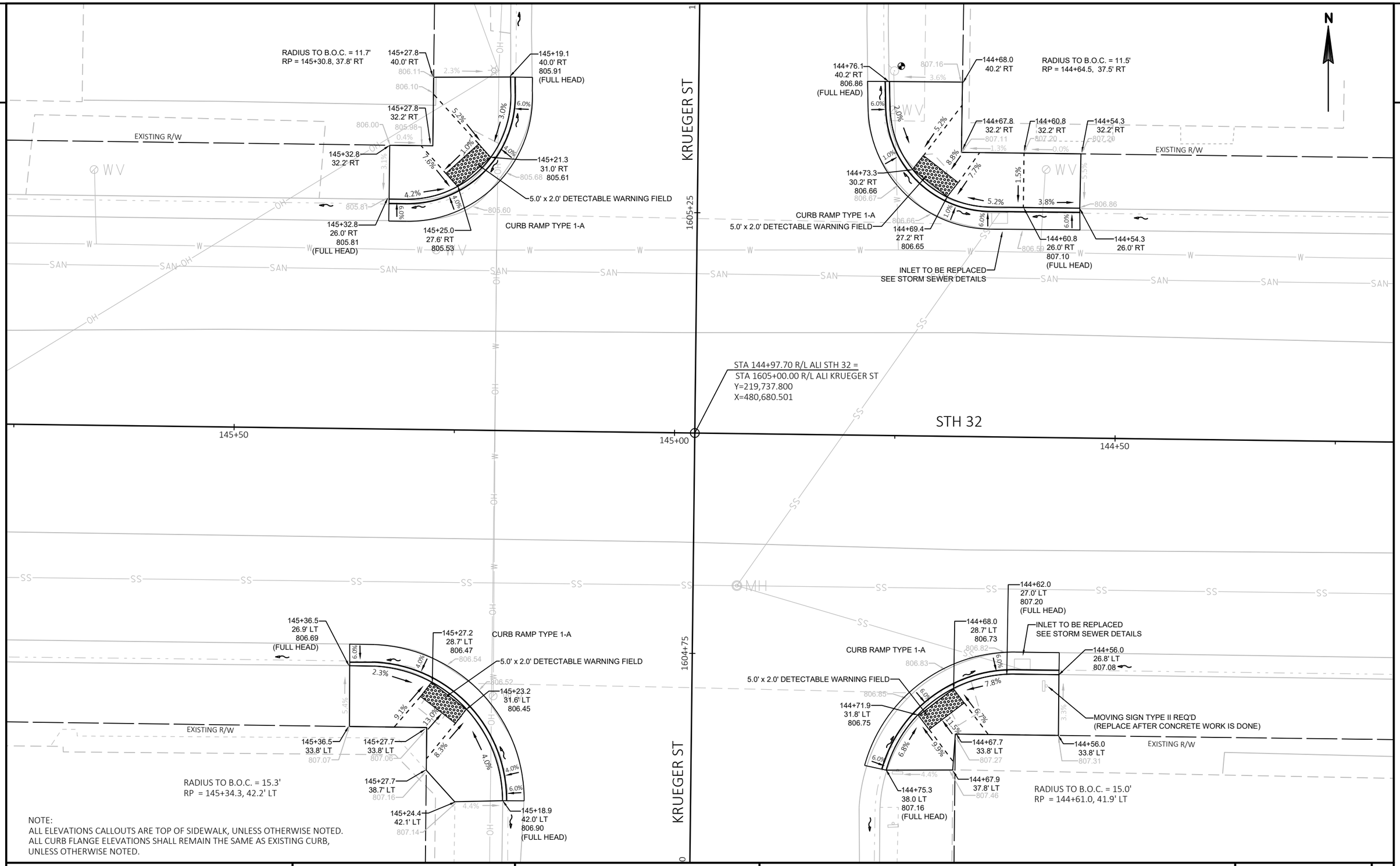
148+52.7
41.2' LT

148+48.4
41.2' LT

RADIUS TO B.O.C. = 13.0'
RP = 148+45.3, 39.9' LT

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS | SHEET 50 | E |
|---|---|---|---|---|---|




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 51 | E |
|---|---|---|---|---|---|

2

N

CONCRETE DRIVEWAY 8-INCH

EXISTING R/W

142+72.6

142+60.1

C&G 30" TYPE D REQ'D
REPLACE WITH DRIVEWAY CURB HEAD THROUGHOUT

INLET TO BE ADJUSTED WITH NEW CASTING

W W W W W W W W W W W W W W W W

SAN MH SAN SAN SAN SAN SAN SAN SAN SAN SAN SAN SAN SAN SAN

SS SS SS

STH 32

142+50

142+00

141+50

C&G 30" TYPE D REQ'D
REPLACE WITH FULL CURB HEAD THROUGHOUT

141+68.5

141+47.0

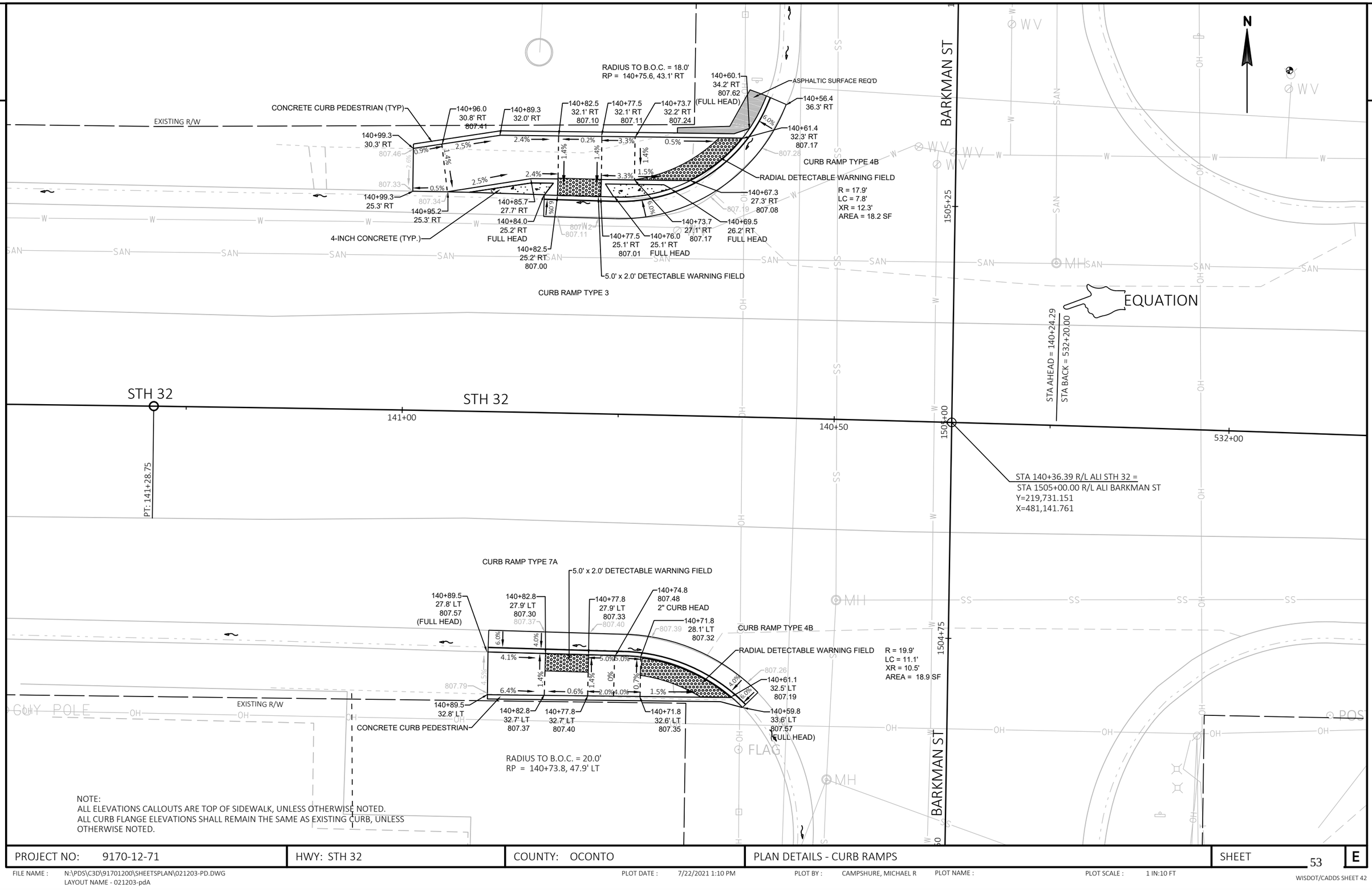
EXISTING R/W

CONCRETE SIDEWALK 4-INCH

CUY CUY

NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB REPAIRS | SHEET 52 | E |
|---|---|---|---|---|---|

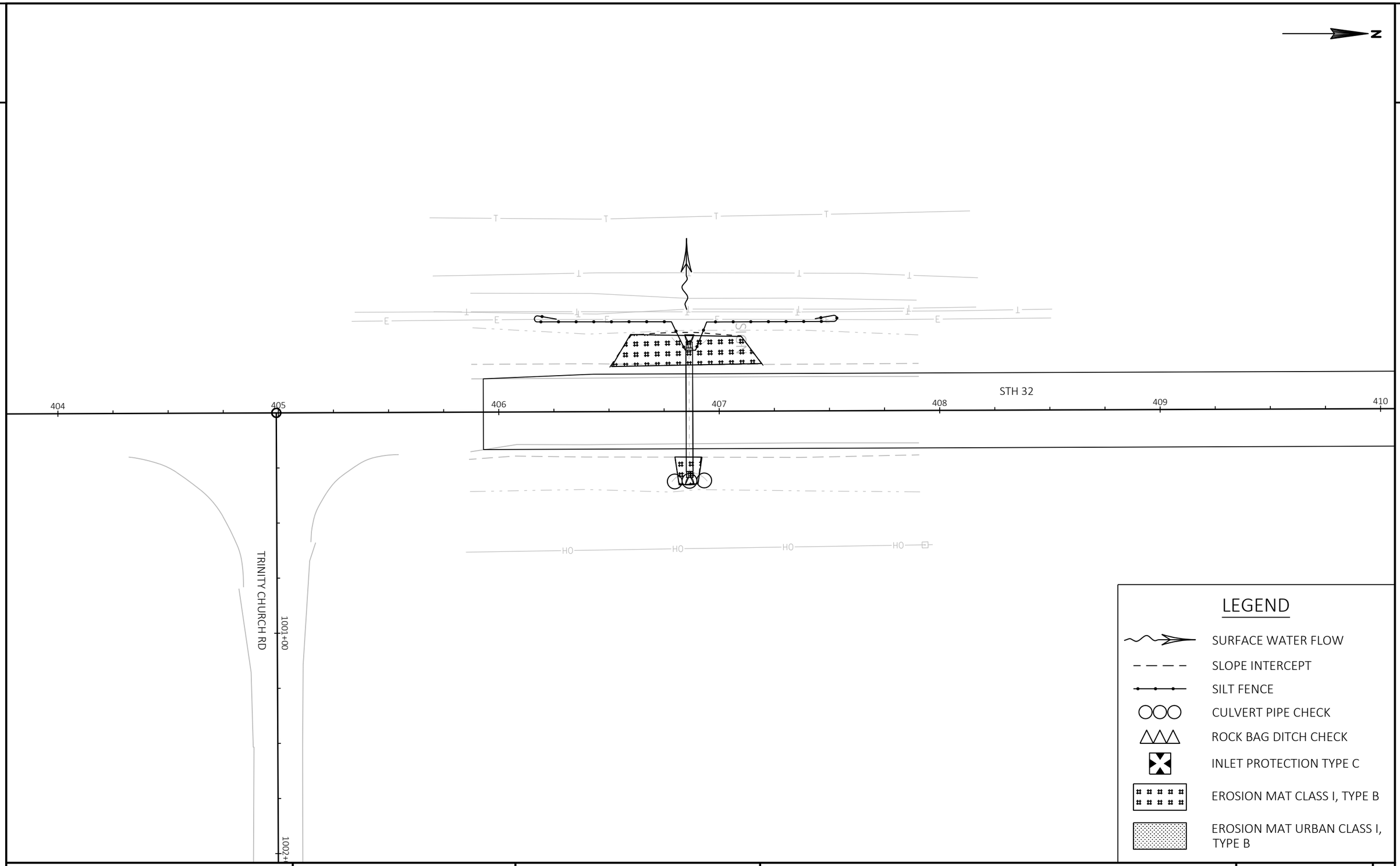



NOTE:
ALL ELEVATIONS CALLOUTS ARE TOP OF SIDEWALK, UNLESS OTHERWISE NOTED.
ALL CURB FLANGE ELEVATIONS SHALL REMAIN THE SAME AS EXISTING CURB, UNLESS OTHERWISE NOTED.

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN DETAILS - CURB RAMPS | SHEET 53 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\021203-PD.DWG
LAYOUT NAME - 021203-pdA
PLOT DATE : 7/22/2021 1:10 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 54 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022001-ec

PLOT DATE : 12/1/2021 4:48 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

421

422

423

424

425

426

STH 32

SIGN

SIGN

SEPTIC SERVICE

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 55 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022002-ec

PLOT DATE : 12/1/2021 4:48 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N

437
438
439
440
441
442
443
STH 32
F0
HO

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 56 | E |
|---|---|---|---|---|---|

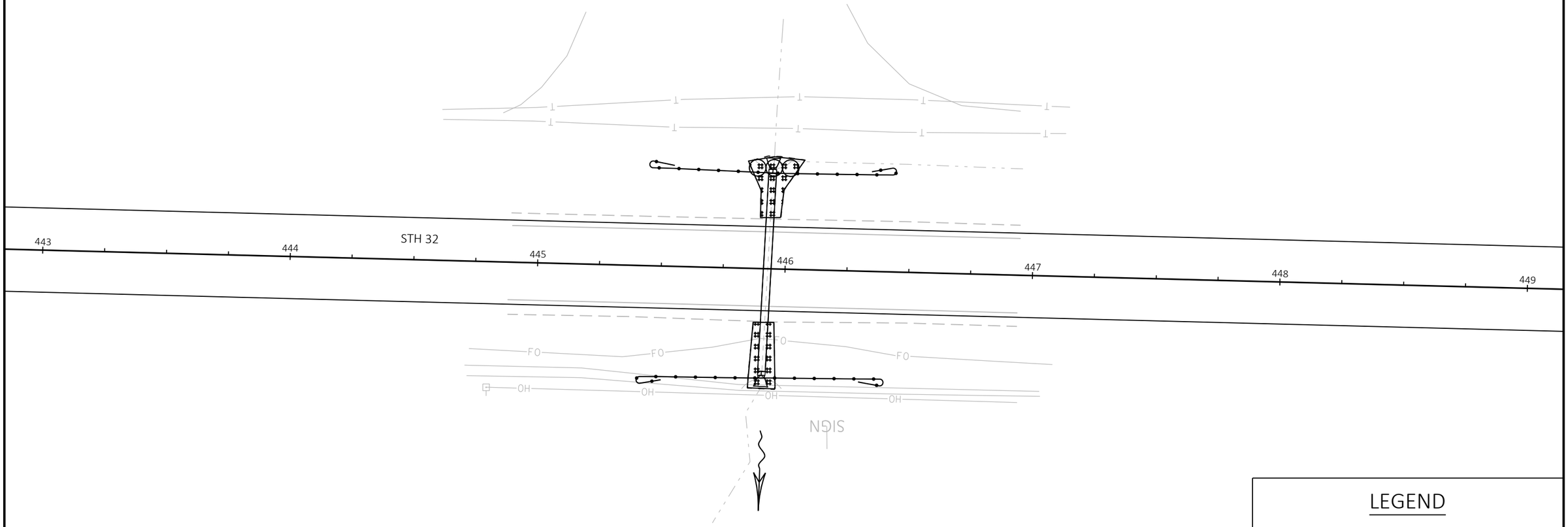
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022003-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N




## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 57 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022004-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

449 450 451 STH 32 452 453 454 455

POST

FO FO FO FO

OH OH OH OH

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 58 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022005-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

STH 32

475 476 477 478 479 480

EMT
839.696
15553

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 59 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022006-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

STH 32

485 486 487 488 489 490

FO FO FO

HO HO HO HO

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 60 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022007-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

CTH V

1304+00

1305+00

1306+00

GOLF COURSE RD

STH 32

502

503

504

505

506

507

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 61 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022008-ec

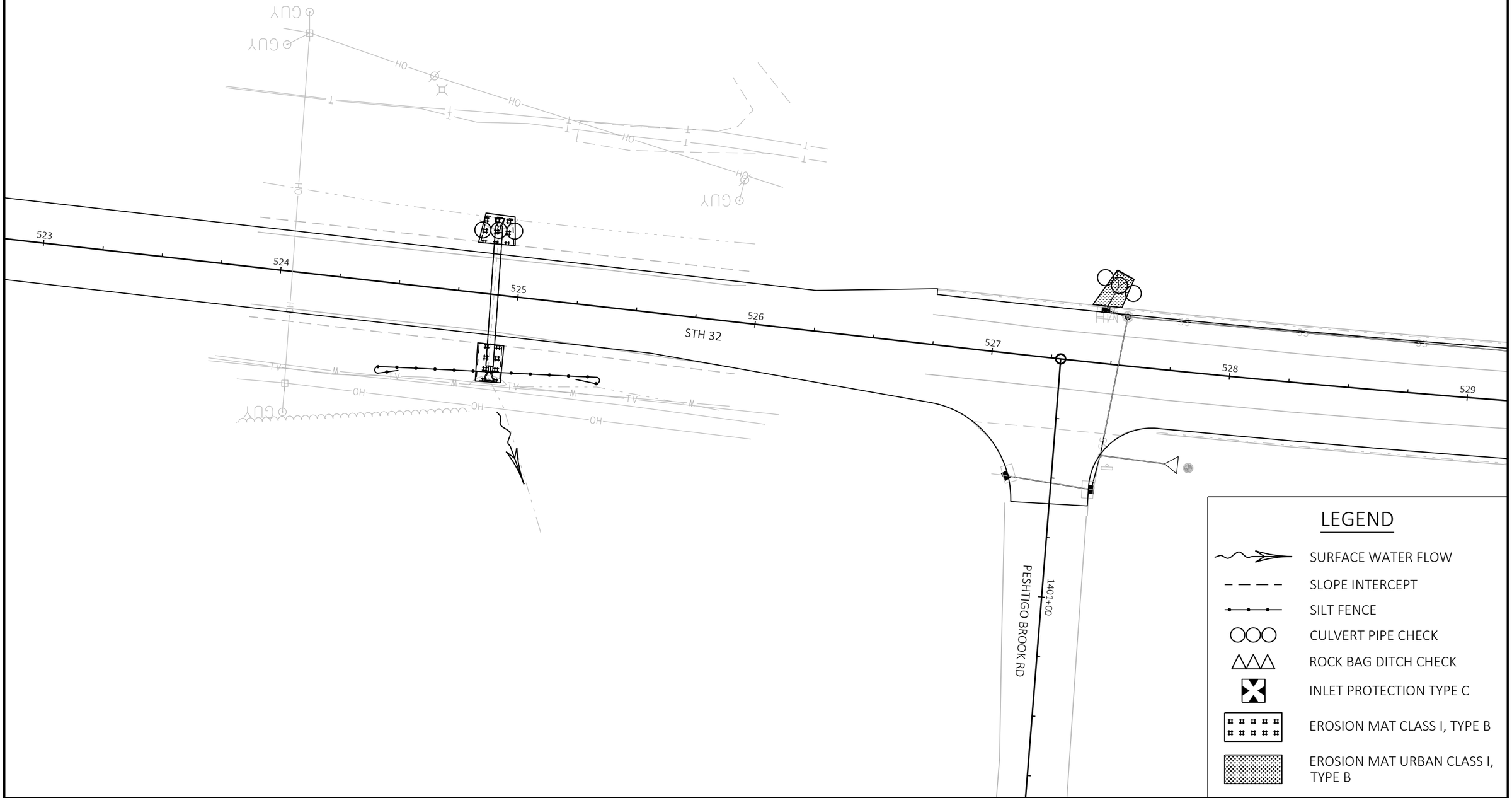
PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N


523
524
525
526
527
528
529
STH 32
PESHTIGO BROOK RD
1401+00
GUY
GUY
GUY
OH
OH
OH
OH
T
T
T

2

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

2

N

2603+00

2604+00

WEST ST

STH 32

167 168 169 170 171 172 173

SILT FENCE RELIEF WITH ROCK BAGS

TURBIDITY BARRIER
STA 169+90 - STA 170+50 RT

NO STORM SEWER MARKINGS OR STRUCTURES FOUND IN THIS AREA

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 63 | E |
|---|---|---|---|---|---|

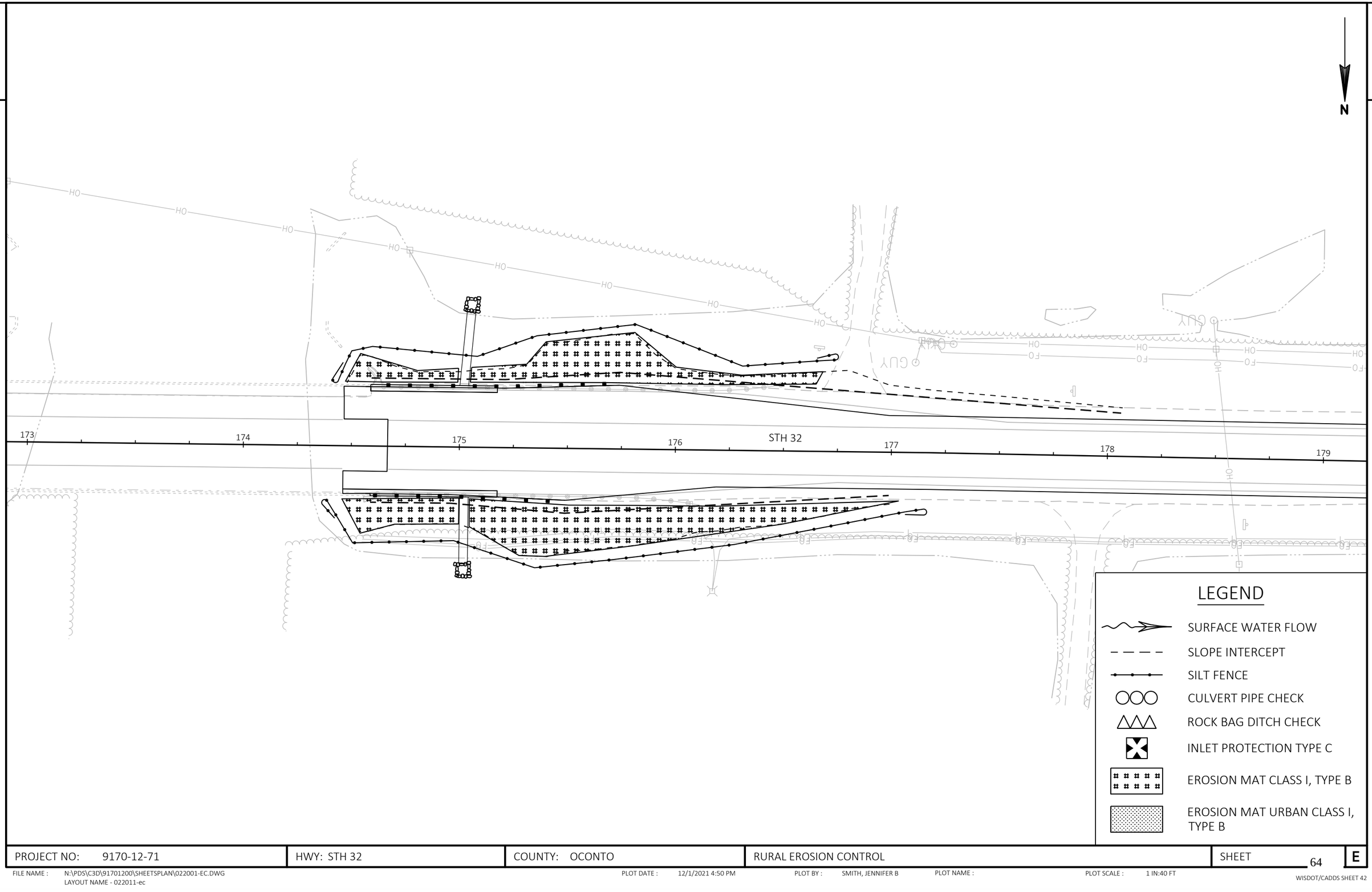
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022010-ec

PLOT DATE : 12/1/2021 4:49 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N




## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

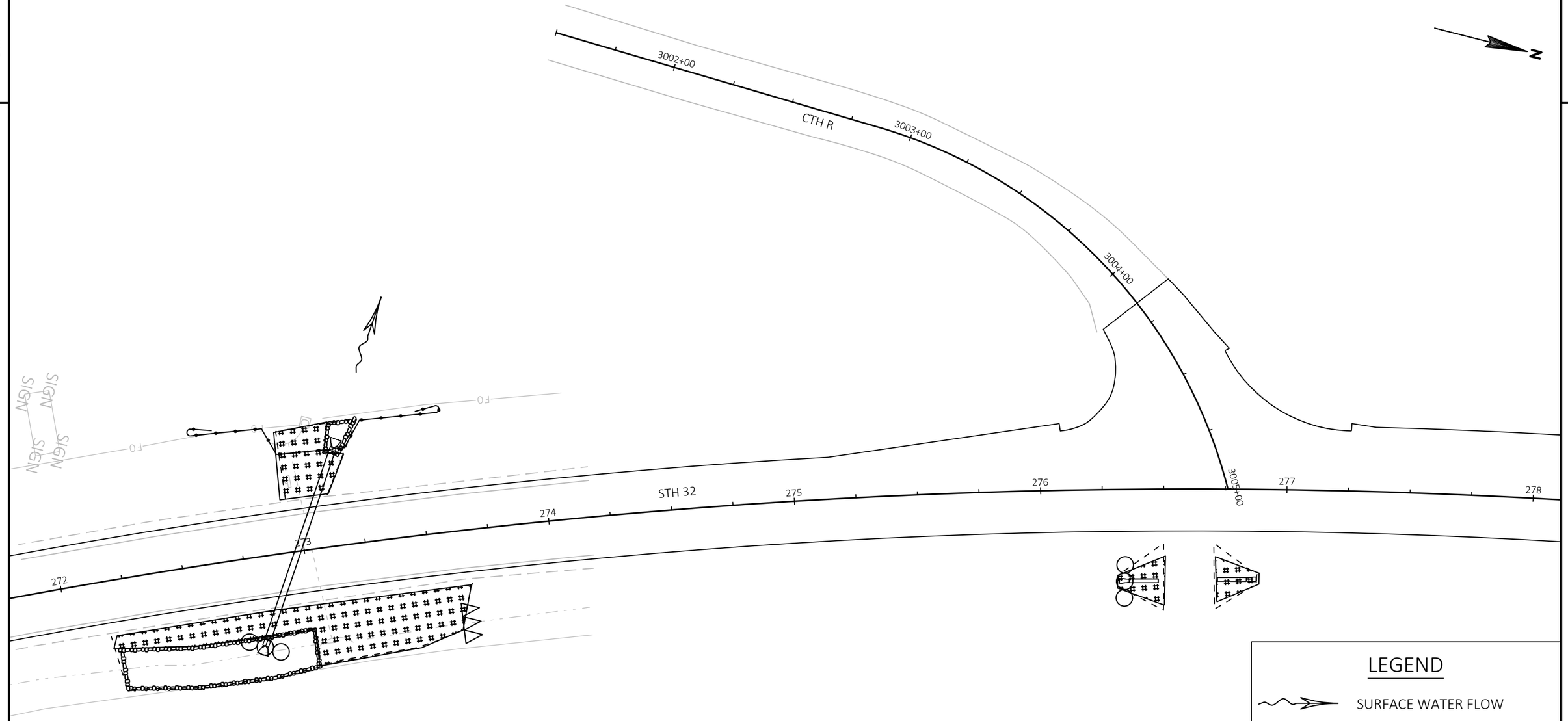
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 64 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022011-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2




## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 65 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022012-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

STH 32

305 306 307 308 309 310

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 66 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022013-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

2

334 335 336 STH 32 337 338 339 B-42-0021

GUY

INLET PROTECTION TYPE B

GUY

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 67 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022014a-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

SILT FENCE
RELIEF

B-42-0021

340

341

342

343

STH 32

344

345

SILT FENCE
RELIEF

SSS

GUY

SEPC

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 68 | E |
|---|---|---|---|---|---|

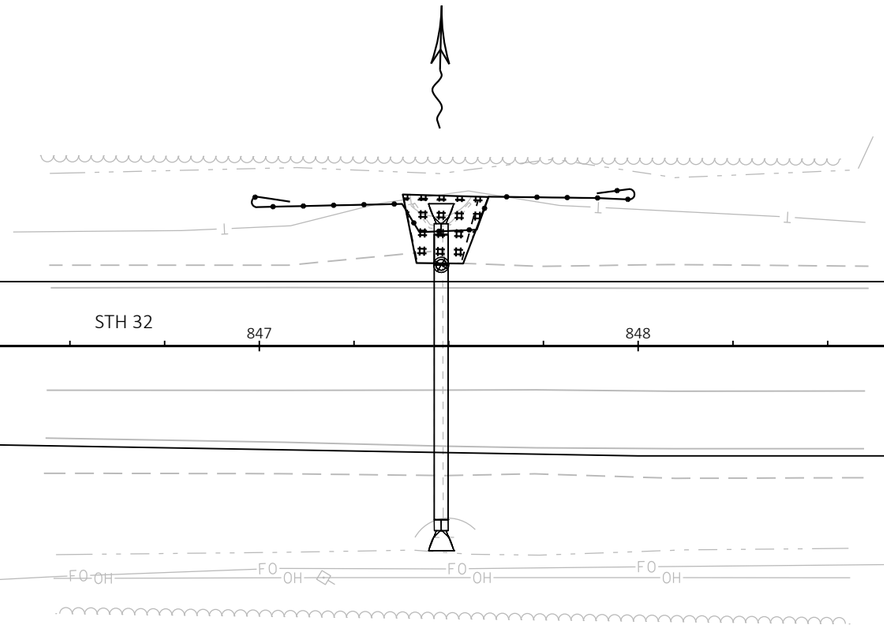
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022014b-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2



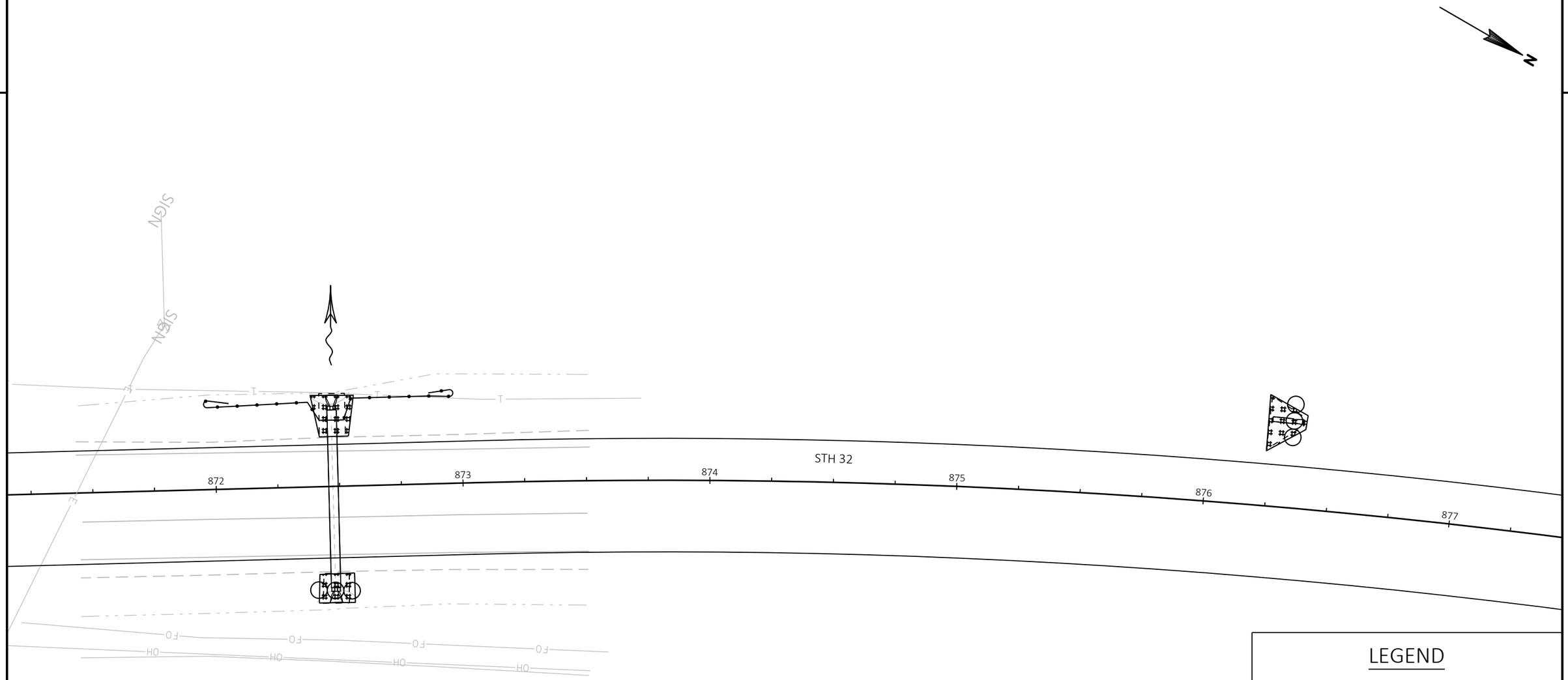

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 69 | E |
|---|---|---|---|---|---|


FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022015-ec
PLOT DATE : 12/1/2021 4:50 PM
PLOT BY : SMITH, JENNIFER B
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2




## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 70 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022016-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

STH 32

889 890 891 892 893 894 895

OH FO T

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 71 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022016b-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

913

914

915

916

917

918

STH 32

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 72 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022017-ec

PLOT DATE : 12/1/2021 4:50 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

HSE

HSE

GUY

HO

STH 32

930

931

932

933

934

935

936

POST

POST

SIGN

WELL

## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 73 | E |
|---|---|---|---|---|---|

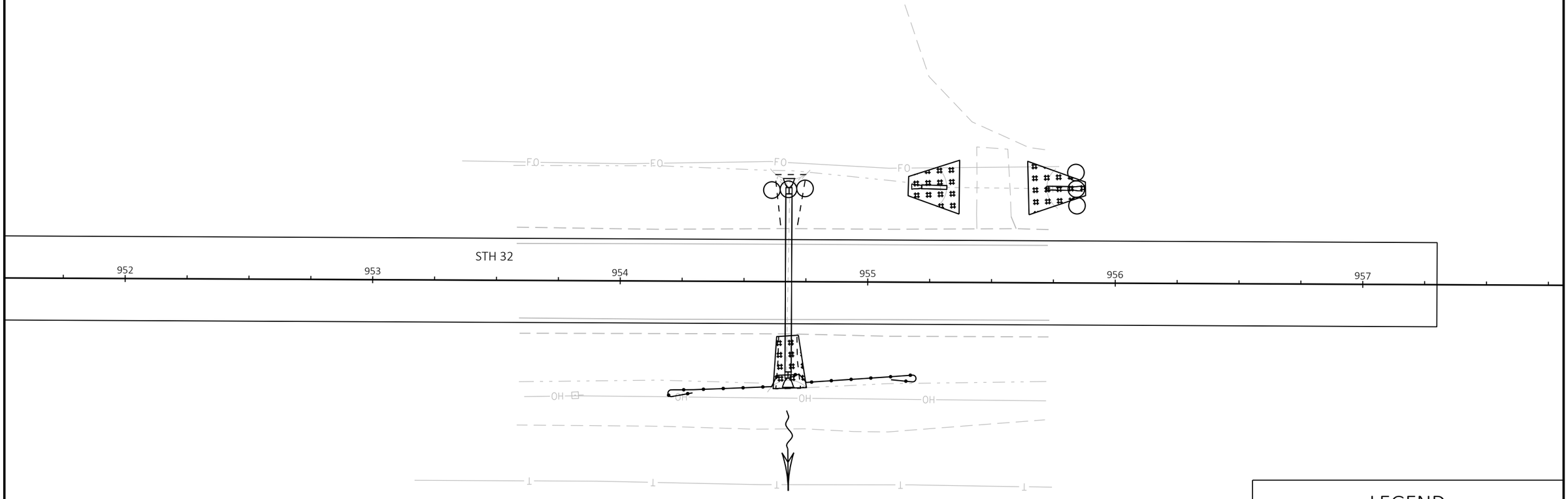
FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022018-ec

PLOT DATE : 12/1/2021 4:51 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N




## LEGEND

- SURFACE WATER FLOW
- SLOPE INTERCEPT
- SILT FENCE
- CULVERT PIPE CHECK
- ROCK BAG DITCH CHECK
- INLET PROTECTION TYPE C
- EROSION MAT CLASS I, TYPE B
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | RURAL EROSION CONTROL | SHEET 74 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022019-ec

PLOT DATE : 12/1/2021 4:51 PM PLOT BY : SMITH, JENNIFER B PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

CENTER ST

INLET PROTECTION TYPE B

R/L STH 32

167+00

166+00

165+00

164+00

STH 32

JACKSON ST

## LEGEND

- SURFACE WATER FLOW
- INLET PROTECTION TYPE C
- EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 75 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022001-ec

PLOT DATE : 7/22/2021 1:53 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

2

N

RAILROAD ST

R/L STH 32

164+00

163+00

162+00

161+00

STH 32

KNAPP ST

## LEGEND

SURFACE WATER FLOW

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 76 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022002-ec

PLOT DATE : 7/22/2021 1:53 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

2

N

BURK ST

STH 32

161+00

160+00

159+00

158+00

R/L STH 32

BURK ST

FLAG

## LEGEND

SURFACE WATER FLOW

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 77 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022003-ec

PLOT DATE : 7/22/2021 1:53 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

2

N

HEASLEY ST

NU LINE ST

STH 32

R/L STH 32

156+00

155+00

154+00

153+00

201+00

200+00

## LEGEND

SURFACE WATER FLOW

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 78 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022004-ec

PLOT DATE : 7/22/2021 1:54 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

2

N

NGS

NGS

BLEACHERS

BLEACHERS

OH

OH

GUY

FO

FO

FO

W

W

W

W

W

W

W

W

W

W

W

W

MH

SAN

SAN

SAN

SAN

SSS

SSS

SS

SS

SS

SS

SS

SS

SS

SS

SS

SS

MH

SSS

SSS

SSS

SSS

R/L STH 32

153+00

152+00

151+00

150+00

STH 32

FO

FO

FO

FO

NO STRUCTURE FOUND
CONNECTING TO THIS PIPE

EHLINGER ST

1804+00

## LEGEND

SURFACE WATER FLOW

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 79 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022005-ec

PLOT DATE : 7/22/2021 1:54 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

2

N

MILL ST

1706+

STH 32

150+00

149+00

1701+00

148+00

147+00

R/L STH 32

MILL ST

## LEGEND

SURFACE WATER FLOW

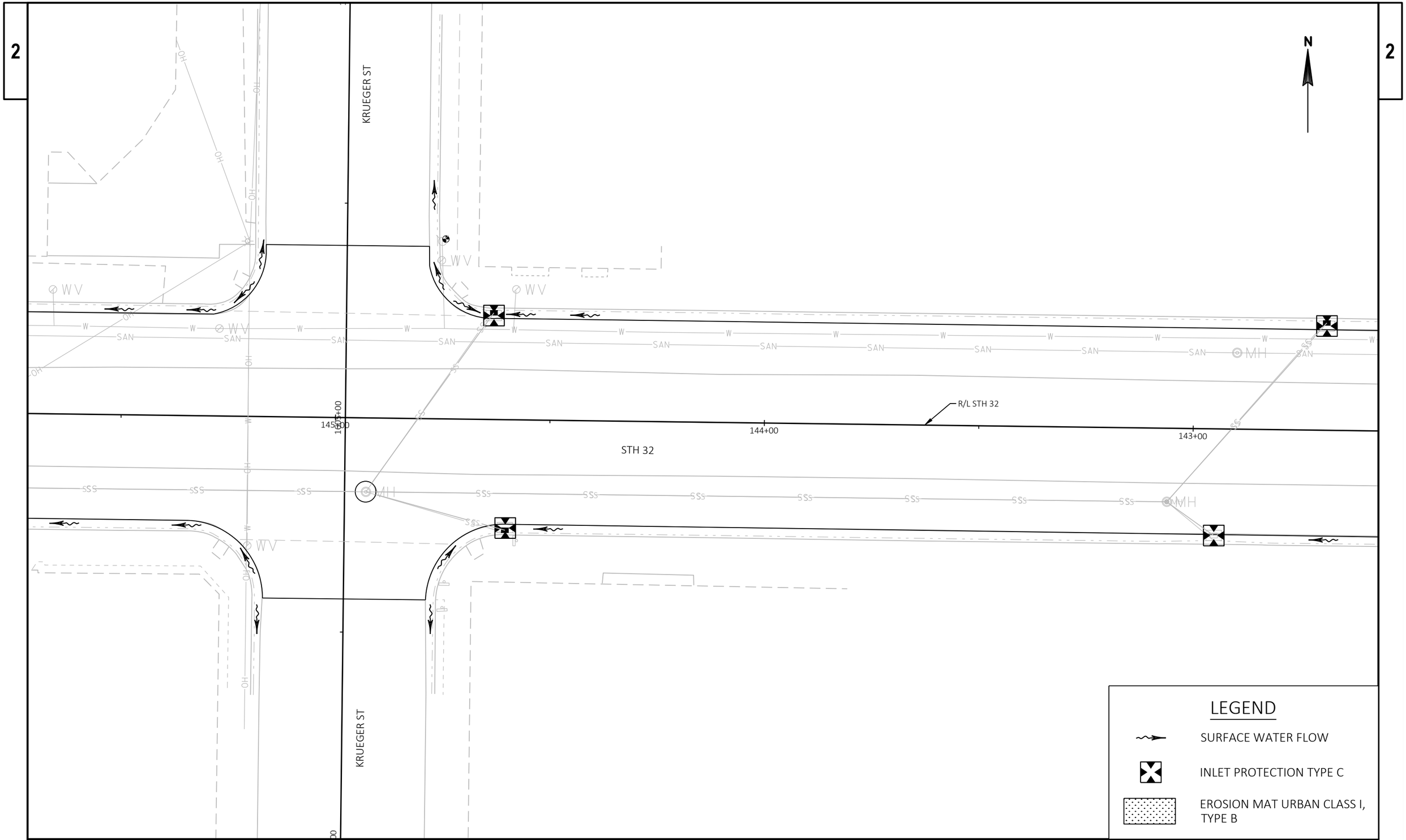
INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 80 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022006-ec

PLOT DATE : 7/22/2021 1:54 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 81 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022007-ec

PLOT DATE : 7/22/2021 1:54 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

2

N

BARKMAN ST

150

EQUATION

STA AHEAD = 140+24.29

STA BACK = 532+20.00

142+00

141+00

STH 32

150+00

532+00

R/L STH 32

531+00

BARKMAN ST

## LEGEND

SURFACE WATER FLOW

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | URBAN EROSION CONTROL | SHEET 82 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022002-EC.DWG
LAYOUT NAME - 022008-ec

PLOT DATE : 7/22/2021 1:54 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

N

STA 168+54, 51.2' RT
EXISTING INLET
EX-85

STA 168+69, 41.8' RT
EXISTING MANHOLE
EX-87

STA 169+89, 45.0' RT
EXISTING A.E.W. FOR CPRC 36-IN
EX-90

NO STORM SEWER MARKINGS OR STRUCTURES FOUND IN THIS AREA

STA 167+79, 37.8' RT
EXISTING MANHOLE
EX-84

STA 166+07, 45.4' RT
RECONDITIONING REQ'D
ADJUSTMENT RING REPLACEMENT REQ'D
77

STA 166+08, 7.9' RT
CONCRETE COLLAR REQ'D.
CC-9

CENTER ST

STA 165+78, 44.4' RT
EXISTING INLET
EX-76

STA 165+57, 22.9' RT
EXISTING INLET
EX-75

STA 165+64, 17.7' RT
CONCRETE COLLAR REQ'D.
CC-8

88 STA 169+07, 22.9' RT
ADJUSTMENT RING REPLACEMENT REQ'D
REPLACE CASTING WITH DRIVEWAY-TYPE

170

165

STA 167+39, 17.3' LT
EXISTING MANHOLE
EX-83

CC-15 STA 166+02, 11.3' LT
CONCRETE COLLAR REQ'D

74 STA 165+55, 16.7' LT
MANHOLES 4-J REQ'D.

73 STA 165+55, 24.0' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D
ABANDONING STORM SEWER REQ'D

STA 167+39, 23.9' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
82

STA 166+09, 16.8' LT
REMOVING MANHOLE REQ'D
MANHOLES 8-J REQ'D
81

STA 166+23, 46.3' LT
EXISTING INLET
EX-80

STA 165+84, 42.3' LT
EXISTING INLET
EX-78

79 STA 165+89, 46.1' LT
RECONDITIONING REQ'D

STA 166+13, 24.9' LT
CONCRETE COLLAR REQ'D
CC-17

CC-16 STA 166+05, 22.7' LT
CONCRETE COLLAR REQ'D

WEST ST

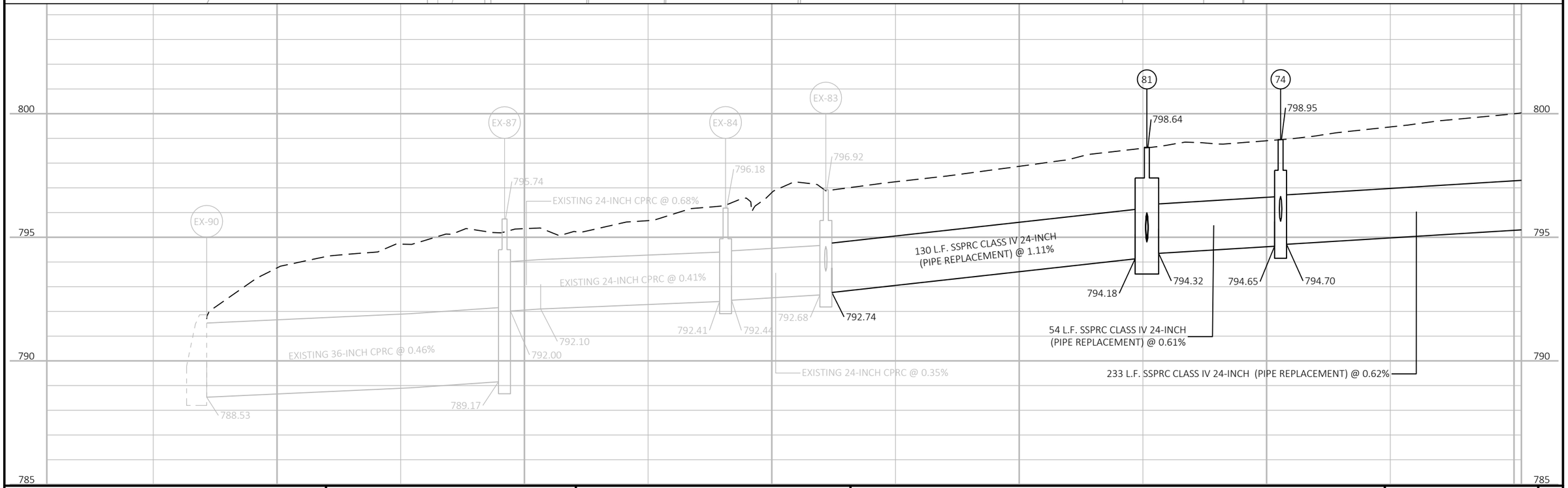
JACKSON ST

POST

POST

POST

POST




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 83 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022501-ss
PLOT DATE : 7/22/2021 2:23 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2

2

N

STA 168+54, 51.2' RT
EXISTING INLET
EX-85

STA 168+69, 41.8' RT
EXISTING MANHOLE
EX-87

STA 169+89, 45.0' RT
EXISTING A.E.W. FOR CPRC 36-IN
EX-90

NO STORM SEWER MARKINGS OR STRUCTURES FOUND IN THIS AREA

STA 167+79, 37.8' RT
EXISTING MANHOLE
EX-84

STA 166+07, 45.4' RT
RECONDITIONING REQ'D
ADJUSTMENT RING REPLACEMENT REQ'D
77

STA 166+08, 7.9' RT
CONCRETE COLLAR REQ'D.
CC-9

CENTER ST

STA 165+78, 44.4' RT
EXISTING INLET
EX-76

STA 165+57, 22.9' RT
EXISTING INLET
EX-75

88 STA 169+07, 22.9' RT
ADJUSTMENT RING REPLACEMENT REQ'D
REPLACE CASTING WITH DRIVEWAY-TYPE

CC-8 STA 165+64, 17.7' RT
CONCRETE COLLAR REQ'D.

170

165

STA 167+39, 17.3' LT
EXISTING MANHOLE
EX-83

CC-15 STA 166+02, 11.3' LT
CONCRETE COLLAR REQ'D

74 STA 165+55, 16.7' LT
MANHOLES 4-J REQ'D.

73 STA 165+55, 24.0' LT
INLETS 2x3-H REQ'D.

REMOVING INLET REQ'D

ABANDONING STORM SEWER REQ'D

STA 167+39, 23.9' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
82

STA 166+09, 16.8' LT
REMOVING MANHOLE REQ'D
MANHOLES 8-J REQ'D
81

STA 166+23, 46.3' LT
EXISTING INLET
EX-80

STA 165+84, 42.3' LT
EXISTING INLET
EX-78

WEST ST

JACKSON ST

79 STA 165+89, 46.1' LT
RECONDITIONING REQ'D

STA 166+13, 24.9' LT
CONCRETE COLLAR REQ'D
CC-17

CC-16 STA 166+05, 22.7' LT
CONCRETE COLLAR REQ'D

POST POST POST POST

800
795
790
785

EX-76 77 81 798.92 798.96 798.64 CC-9 796.14 795.94 795.68 795.26 794.99
25 L.F. SSPRC CLASS IV 12-INCH (PIPE REPLACEMENT) @ 1.09%
EXISTING 12-INCH CPRC @ 1.12%
EXISTING 10-INCH CPRC @ 0.68%

EX-75 81 798.63 798.64 CC-8 CC-15 795.77 795.67 795.10 794.96
9 L.F. SSPRC CLASS IV 12-INCH (PIPE REPLACEMENT) @ 1.10%
EXISTING 12-INCH CPRC @ 1.20%
9 L.F. SSPRC CLASS IV 12-INCH @ 1.56%

EX-80 81 798.64 797.78 CC-17 794.85 794.82 794.81
9 L.F. SSPRC CLASS IV 12-INCH @ 0.11%
EXISTING 12-INCH CPRC @ 0.13%

81 798.64 EX-78 79 798.02 797.78 CC-16 794.85 794.85 794.92 794.95
7 L.F. SSPRC CLASS IV 12-INCH @ 0.00%
EXISTING 10-INCH PVC @ 0.52%
EXISTING 12-INCH CPRC @ 0.00%

74 73 798.95 798.50 795.75 795.65
7 L.F. SSPRC CLASS IV 12-INCH @ 1.37%

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 84 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022507-ss
PLOT DATE : 7/22/2021 2:23 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2

RAILROAD ST

63 STA 162+01, 36.9' RT
ADJUSTMENT RING REPLACEMENT REQ'D

64 STA 161+84, 23.2' RT
INLETS 2x3-H REQ'D
REMOVING INLET REQ'D

STA 162+28, 36.2' RT
EXISTING INLET
EX-65

STA 162+41, 23.2' RT
EXISTING INLET
EX-66

CC-11 STA 159+45, 59.7' RT
CONCRETE COLLAR REQ'D

57 STA 159+45, 50.8' RT
MANHOLES 5-A REQ'D
REMOVING INLET REQ'D

CC-10 STA 159+50, 43.4' RT
CONCRETE COLLAR REQ'D

56 STA 159+65, 23.4' RT
INLETS 2x3-H
REMOVING INLET REQ'D

BURK ST

CC-12 STA 159+36, 49.7' RT
CONCRETE COLLAR REQ'D

CC-13 STA 159+44, 41.8' RT
CONCRETE COLLAR REQ'D

EX-55 STA 159+08, 46.3' RT
EXISTING INLET

REMOVING STORM S

54 STA 158+89, 23.2' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'

N

2

CC-14 STA 162+96, 39.1' LT
CONCRETE COLLAR REQ'D

CC-5 STA 161+54, 17.5' LT
CONCRETE COLLAR REQ'D.

CC-6 STA 161+70, 17.4' LT
CONCRETE COLLAR REQ'D.

67 STA 162+12, 17.4' LT
ADJUSTMENT RING REPLACEMENT REQ'D.

68 STA 162+68, 23.8' LT
ADJUSTMENT RING REPLACEMENT REQ'D

CC-7 STA 162+80, 34.7' LT
CONCRETE COLLAR REQ'D.

72 STA 163+22, 16.1' LT
ADJUSTMENT RING REPLACEMENT REQ'D

STA 163+28, 50.4' LT
EXISTING INLET
EX-70

STA 162+96, 42.3' LT
CONNECT TO EXISTING PVC
WHEN RELAYING PIPE
PVC-3

STA 162+93, 41.3' LT
INLETS 4-H REQ'D
REMOVING INLET REQ'D
71

KNAPP ST

REMOVE MH (EX-69)
PIPE BEING REROUTED
AND MH NOT REPLACED

160

CC-4 STA 159+39, 26.7' LT
CONCRETE COLLAR REQ'D.

62 STA 159+37, 17.4' LT
ADJUSTMENT RING REPLACEMENT REQ'D.

60 STA 159+65, 23.7' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

STA 159+43, 43.3' LT
EXISTING INLET
EX-61

BURK ST

58 STA 158+85, 23.7' LT
INLETS 2x3-H REQ'D
REMOVING INLET REQ'D

EX-59 STA 159+08, 42.4' LT
EXISTING INLET

72 67 62

801.23 801.21 801.06

800 795 790 785

CC-6 CC-5

EXISTING 24-INCH CPRC @ 0.22%

EXISTING 24-INCH CPRC @ 0.10%

EXISTING 24-INCH CPRC @ 0.06%

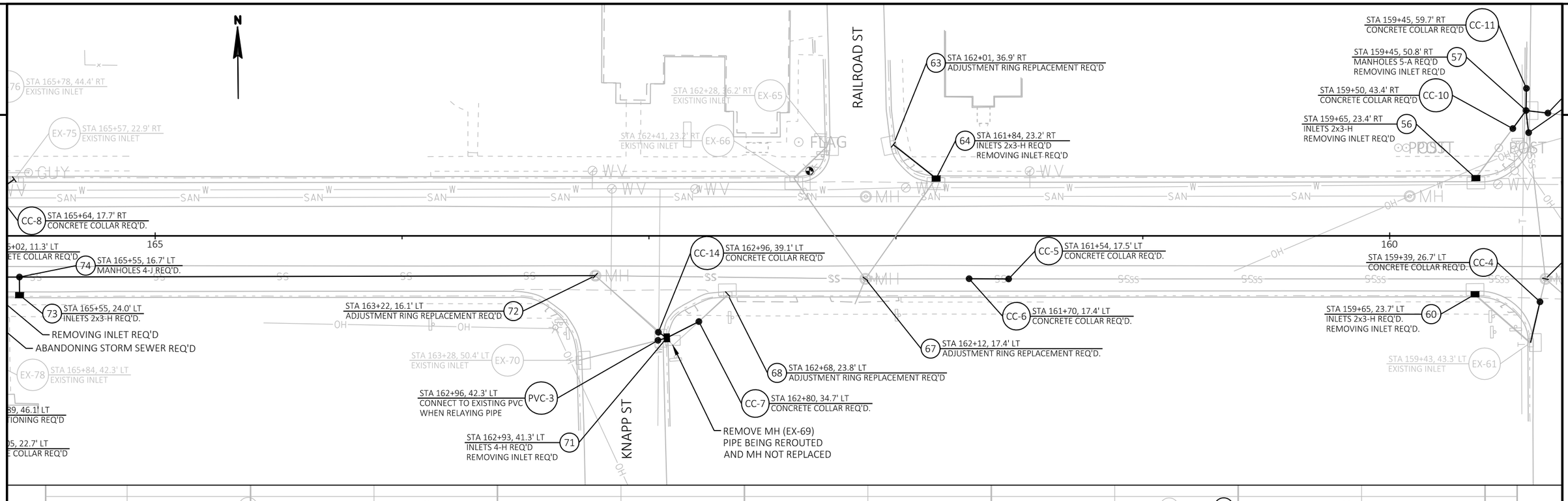
EXISTING 24-INCH CPRC @ 0.17%

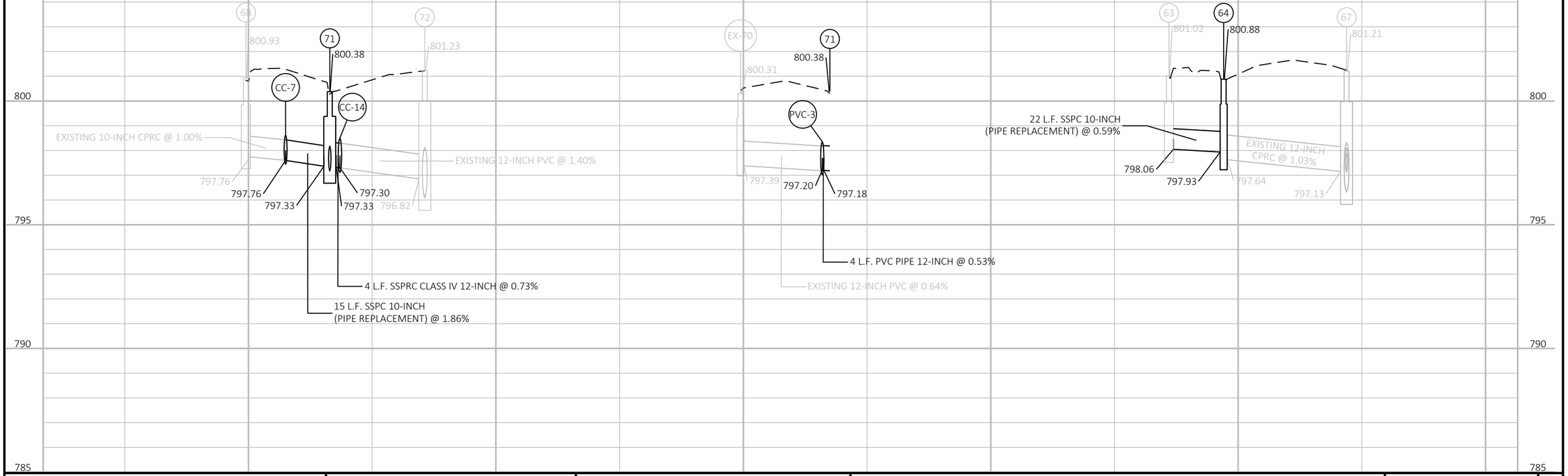
796.14 796.08 796.32 796.33 796.37 796.39 796.53 796.75

233 L.F. SSPRC CLASS IV 24-INCH (PIPE REPLACEMENT) @ 0.62%

16 L.F. SSPRC CLASS IV 24-INCH
(PIPE REPLACEMENT) @ 0.12%

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 85 | E |
|---|---|---|---|---|---|




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 86 | E |
|---|---|---|---|---|---|

2

RAILROAD ST

63 STA 162+01, 36.9' RT
ADJUSTMENT RING REPLACEMENT REQ'D

64 STA 161+84, 23.2' RT
INLETS 2x3-H REQ'D
REMOVING INLET REQ'D

CC-11 STA 159+45, 59.7' RT
CONCRETE COLLAR REQ'D

57 STA 159+45, 50.8' RT
MANHOLES 5-A REQ'D
REMOVING INLET REQ'D

CC-10 STA 159+50, 43.4' RT
CONCRETE COLLAR REQ'D

56 STA 159+65, 23.4' RT
INLETS 2x3-H
REMOVING INLET REQ'D

BURK ST

CC-12 STA 159+36, 49.7' RT
CONCRETE COLLAR REQ'D

CC-13 STA 159+44, 41.8' RT
CONCRETE COLLAR REQ'D

EX-55 STA 159+08, 46.3' RT
EXISTING INLET

REMOVING STORM SEWER REQ'D

54 STA 158+89, 23.2' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

N

CC-5 STA 161+54, 17.5' LT
CONCRETE COLLAR REQ'D.

CC-6 STA 161+70, 17.4' LT
CONCRETE COLLAR REQ'D.

67 STA 162+12, 17.4' LT
ADJUSTMENT RING REPLACEMENT REQ'D.

+68, 23.8' LT
MENT RING REPLACEMENT REQ'D

34.7' LT
OLLAR REQ'D.

ED

160

CC-4 STA 159+39, 26.7' LT
CONCRETE COLLAR REQ'D.

62 STA 159+37, 17.4' LT
ADJUSTMENT RING REPLACEMENT REQ'D.

60 STA 159+65, 23.7' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

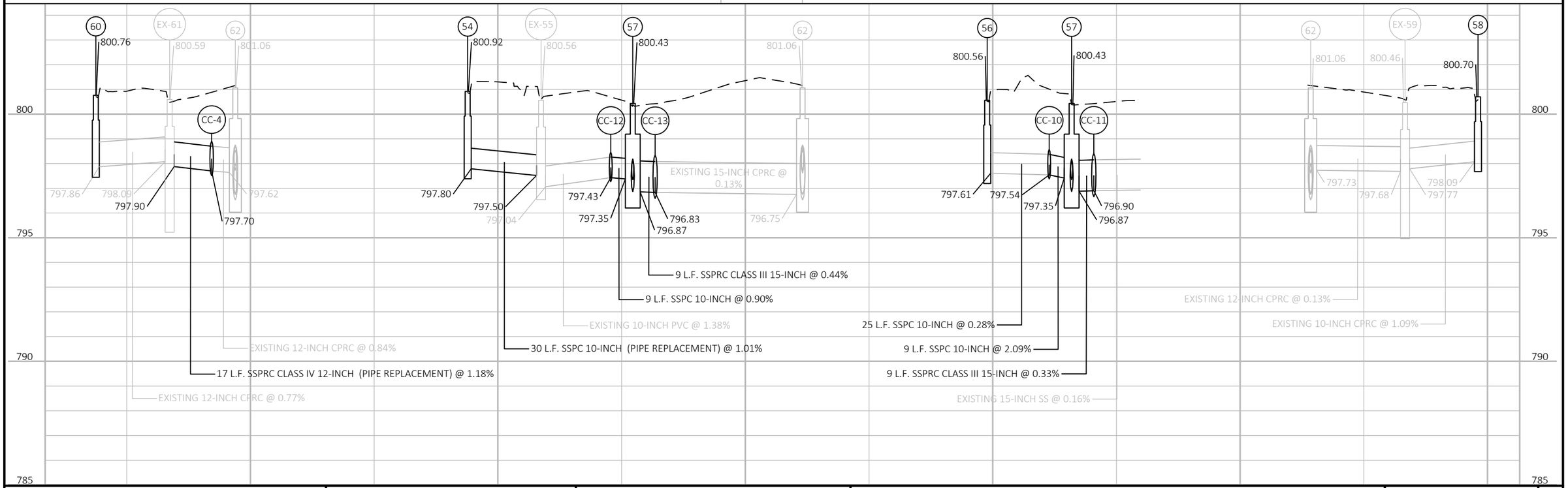
STA 159+43, 43.3' LT
EXISTING INLET
EX-61

58 STA 158+85, 23.7' LT
INLETS 2x3-H REQ'D
REMOVING INLET REQ'D

EX-59 STA 159+08, 42.4' LT
EXISTING INLET

STA 155+41, 1
RECONDITION
ADJUSTMENT

STA 155
RECONS
REPLAC




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 87 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022509-ss
PLOT DATE : 7/22/2021 2:24 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2

N

G STORM SEWER REQ'D

9, 23.2' RT
-H REQ'D.
INLET REQ'D.

STA 154+90, 43.3' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
50

STA 155+03, 23.1' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
51

HEASLEY ST

PVC-2 STA 154+50, 50.0' RT
CONNECTION TO PVC PIPE REQ'D.

49 STA 154+54, 48.4' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

PVC-1 STA 154+18, 26.8' RT
CONNECTION TO PVC PIPE REQ'D.

REMOVING INLET REQ'D

STA 154+27, 23.1' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
46

ABANDONING STORM SEWER REQ'D

NGS

FLAG

BLEACHERS

BLEACHERS

STA 155+30, 5.9' LT
CONCRETE COLLAR REQ'D.
CC-3

155

STA 154+67, 19.2' LT
MANHOLES 5-J REQ'D.
REMOVING MANHOLE REQ'D.
48

CC-18 STA 154+58, 19.2' LT
CONCRETE COLLAR REQ'D

REMOVING INLET REQ'D

REMOVING STORM SEWER REQ'D

47 STA 154+58, 37.8' LT
INLETS 2x3-H REQ'D.

STA 155+41, 19.4' LT
RECONDITIONING MANHOLE REQ'D.
ADJUSTMENT RING REPLACEMENT REQ'D.
53

STA 155+28, 23.9' LT
RECONSTRUCTING INLET REQ'D
REPLACE TOP BLOCK COURSE & ABOVE
52

NU LINE ST

' LT
'D
REQ'D

805
800
795
790

53
801.50
797.43
797.62

48
802.11
797.72
797.77
797.80

CC-18

EXISTING 24-INCH CPRC @ 0.17%

EXISTING 21-INCH CPRC @ 0.13%

EXISTING 21-INCH CPRC @ 0.42%

9 L.F. SSPRC CLASS IV 21-INCH @ 0.33%

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 88 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022503-ss

PLOT DATE : 7/22/2021 2:24 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 41

2

N

G STORM SEWER REQ'D

9, 23.2' RT
-H REQ'D.
INLET REQ'D.

STA 154+90, 43.3' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
50

STA 155+03, 23.1' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
51

HEASLEY ST

PVC-2 STA 154+50, 50.0' RT
CONNECTION TO PVC PIPE REQ'D.

49 STA 154+54, 48.4' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

PVC-1 STA 154+18, 26.8' RT
CONNECTION TO PVC PIPE REQ'D.

REMOVING INLET REQ'D

STA 154+27, 23.1' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.
46

ABANDONING STORM SEWER REQ'D

NGS

FLAG

BLEACHERS

BLEACHERS

STA 155+30, 5.9' LT
CONCRETE COLLAR REQ'D.
CC-3

155

STA 154+67, 19.2' LT
MANHOLES 5-J REQ'D.
REMOVING MANHOLE REQ'D.
48

CC-18 STA 154+58, 19.2' LT
CONCRETE COLLAR REQ'D

REMOVING INLET REQ'D

REMOVING STORM SEWER REQ'D

47 STA 154+58, 37.8' LT
INLETS 2x3-H REQ'D.

STA 155+41, 19.4' LT
RECONDITIONING MANHOLE REQ'D.
ADJUSTMENT RING REPLACEMENT REQ'D.
53

STA 155+28, 23.9' LT
RECONSTRUCTING INLET REQ'D
REPLACE TOP BLOCK COURSE & ABOVE
52

NU LINE ST

' LT
'D
REQ'D

2

805
800
795
790

46 802.02
49 801.39
50 801.56
51 801.92
53 801.50
PVC-1
CC-3
799.06
799.01
798.80
798.53
798.50
798.25
798.22
798.09
798.06
798.00
797.95
EXISTING 12-INCH CPRC @ 0.15%

10 L.F. PVC PIPE 8-INCH @ 0.51%
37 L.F. SSPRC CLASS IV 12-INCH @ 0.73%
36 L.F. SSPRC CLASS IV 12-INCH (PIPE REPLACEMENT) @ 0.70%
24 L.F. SSPRC CLASS IV 12-INCH (PIPE REPLACEMENT) @ 0.53%
18 L.F. SSPRC CLASS IV 12-INCH (PIPE REPLACEMENT) @ 0.28%

49 801.39
PVC-2
799.00
798.95
4 L.F. PVC PIPE 8-INCH @ 1.19%

47 801.94
48 802.11
798.75
798.52
20 L.F. SSPRC CLASS IV 12-INCH @ 1.13%

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 89 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022510-ss

PLOT DATE : 7/22/2021 2:25 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 41

2

2

N

NGS

GUY

N MILL ST

43 STA 150+45, 24.0' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

36 STA 148+40, 25.0' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

150

STA 150+94, 18.2' LT
ADJUSTMENT RING REPLACEMENT REQ'D. 45

STA 148+88, 17.9' LT
EXISTING MANHOLE EX-42

STA 149+16, 25.8' LT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D. 40

NO STRUCTURE FOUND
CONNECTING TO THIS PIPE

EX-44 STA 150+88, 23.9' LT
EXISTING INLET

STA 148+94, 40.8' LT
EXISTING MANHOLE EX-41

37 STA 148+40, 25.8' LT
ADJUSTMENT RING REPLACEMENT REQ'D

EX-38 STA 148+60, 47.0' LT
EXISTING INLET

STA 148+94, 48.8' LT
RECONSTRUCTING INLET REQUIRED
REPLACE ALL ADJUSTING RINGS (APPROX 15 INCHES) 39

EHLINGER ST

MILL ST

810
805
800
795

45
804.33
799.32
799.35
EXISTING 21-INCH CPRC @ 0.42%

EX-42
804.43
799.94
800.13
EXISTING 21-INCH CPRC @ 0.29%
EXISTING 18-INCH CPRC @ 0.58%

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 90 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022504-ss

PLOT DATE : 7/22/2021 2:25 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 41

2

N KRUEGER ST

KRUEGER ST

N BARKMAN ST

S BARKMAN ST

33 STA 144+63, 24.9' RT
INLETS 2x3-H REQ'D.
REMOVING INLET REQ'D.

30 STA 142+69, 25.0' RT
INLETS 2X3-SP REQ'D.
REMOVING INLET REQ'D.

EQUATION
STA AHEAD = 140+24.29
STA BACK = 532+20.00

EX-17 STA 140+51, 65.0'
EXISTING DIRECT

EX-18 STA 140+56, 53.3' R
EXISTING INLET

EX-20 STA 140+49,
EXISTING MA

EX-22 STA 140+52
EXISTING IN

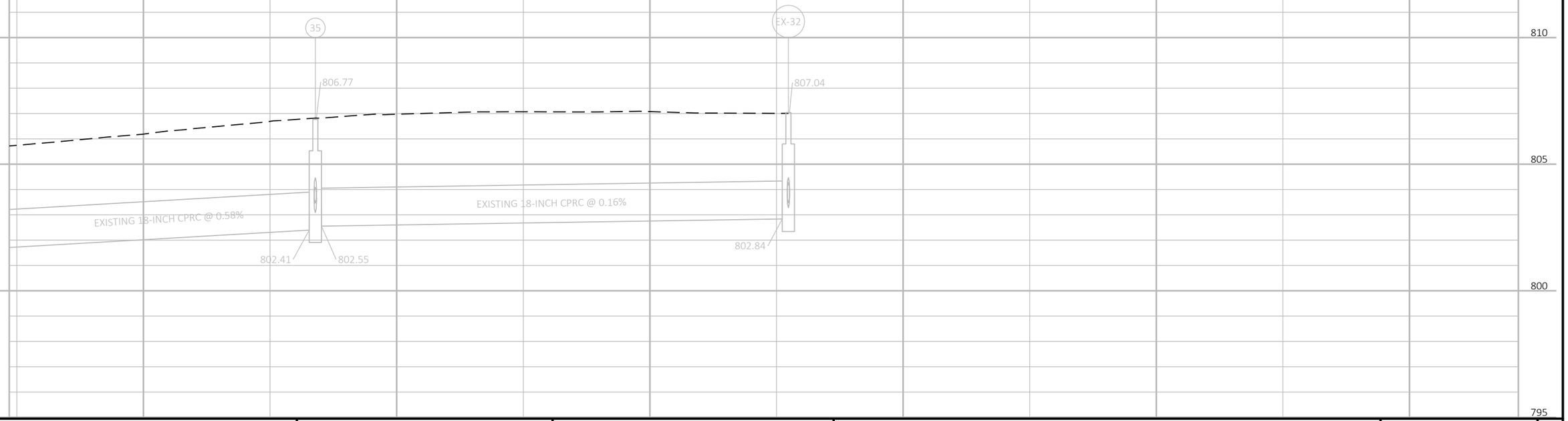
STA 144+93, 17.2' LT
RECONDITIONING REQ'D 35

34 STA 144+60, 25.8' LT
INLETS 2x3-H REQ'D
REMOVING INLET REQ'D

STA 143+06, 17.2' LT
EXISTING MANHOLE EX-32

EX-31 STA 142+95, 24.9' LT
EXISTING INLET

145




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 91 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022505-ss

PLOT DATE : 7/22/2021 2:25 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

N BARKMAN ST

S BARKMAN ST

EQUATION

STA AHEAD = 140+24.29
STA BACK = 532+20.00

EX-17 STA 140+51, 65.0' RT
EXISTING DIRECT TAP (NO STRUCT.)

EX-16 STA 532+18, 64.5' RT
EXISTING INLET

EX-18 STA 140+56, 53.3' RT
EXISTING INLET

EX-19 STA 140+51, 53.5' RT
EXISTING DIRECT TAP (NO STRUCT.)

EX-12 STA 531+48, 37.5' RT
EXISTING FIELD INLET

EX-13 STA 531+48, 25.0' RT
EXISTING INLET

NOTE: EXISTING SSPRC IS CURVED WITH MULTIPLE DEFLECTION POINTS APPROXIMATE LOCATION

EX-8 STA 529+80, 24.9' RT
EXISTING INLET

STA 530+33, 19.4' LT
CONCRETE COLLAR REQ'D. CC-1

STA 530+48, 19.3' LT
CONCRETE COLLAR REQ'D. CC-2

530

EX-20 STA 140+49, 20.9' LT
EXISTING MANHOLE

EX-15 STA 531+48, 17.5' LT
EXISTING MANHOLE

EX-14 STA 531+47, 22.6' LT
EXISTING INLET

EX-11 STA 529+87, 19.6' LT
EXISTING MANHOLE

EX-10 STA 529+82, 23.1' LT
EXISTING INLET

EX-9 STA 529+83, 38.4' LT
EXISTING INLET

EX-23 STA 140+50, 41.6' LT
EXISTING MANHOLE

EX-21 STA 532+15, 52.2' LT
EXISTING INLET

EX-22 STA 140+52, 50.6' LT
EXISTING INLET

STA 527+47, 53.0' RT
EXISTING INLET EX-2

STA 527+77, 39.1' RT
EXISTING A.E.W. FOR CPRC 12-IN EX-3

EX-1 STA 527+11, 51.1' R
EXISTING INLET

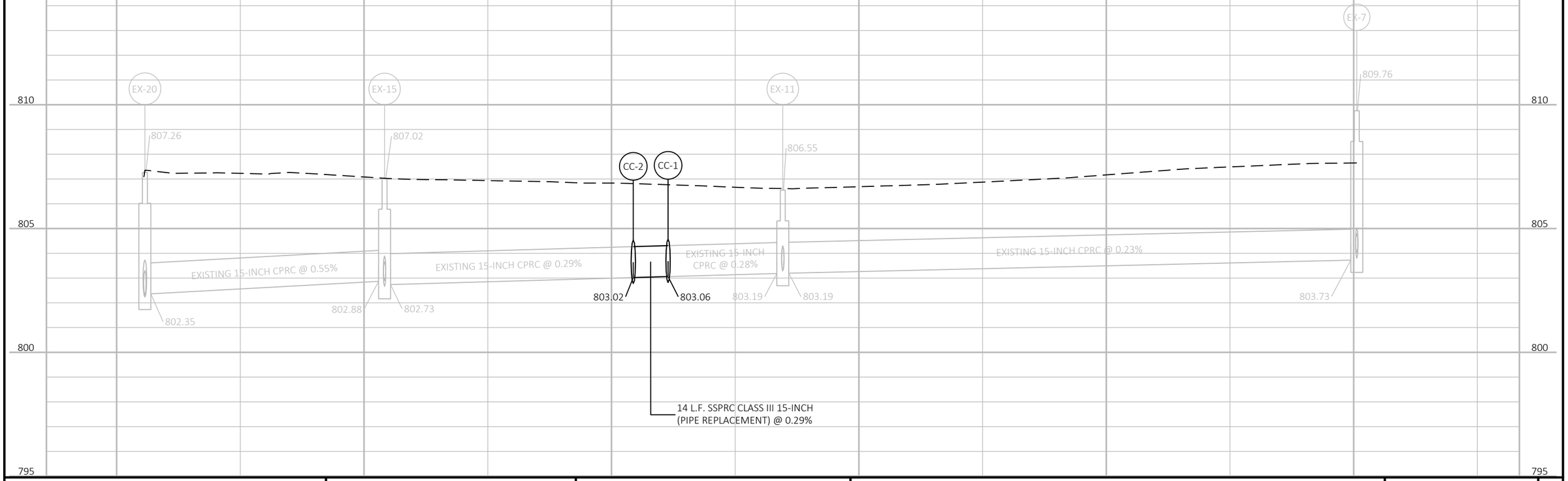
EX-4 STA 527+50, 38.4' RT
EXISTING DIRECT TAP (NO STRUCT.)

STA 527+55, 20.5' LT
EXISTING MANHOLE EX-7

EX-6 STA 527+46, 22.5' LT
EXISTING INLET

STA 527+50, 32.8' LT
RESETTING 12-INCH CPRC ENDWALL REQ'D. 5
JOINT TIE RETROFIT REQ'D.

N




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 92 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022506-ss

PLOT DATE : 7/22/2021 2:25 PM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 41

N BARKMAN ST

EX-17 STA 140+51, 65.0' RT
EXISTING DIRECT TAP (NO STRUCT.)

EX-16 STA 532+18, 64.5' RT
EXISTING INLET

EX-18 STA 140+56, 53.3' RT
EXISTING INLET

EX-19 STA 140+51, 53.5' RT
EXISTING DIRECT TAP (NO STRUCT.)

EQUATION
STA AHEAD = 140+24.29
STA BACK = 532+20.00

EX-12 STA 531+48, 37.5' RT
EXISTING FIELD INLET

EX-13 STA 531+48, 25.0' RT
EXISTING INLET

NOTE: EXISTING SSPRC IS CURVED WITH MULTIPLE DEFLECTION POINTS APPROXIMATE LOCATION

EX-8 STA 529+80, 24.9' RT
EXISTING INLET

STA 530+33, 19.4' LT
CONCRETE COLLAR REQ'D. CC-1

STA 530+48, 19.3' LT
CONCRETE COLLAR REQ'D. CC-2

530

EX-11 STA 529+87, 19.6' LT
EXISTING MANHOLE

EX-20 STA 140+49, 20.9' LT
EXISTING MANHOLE

EX-15 STA 531+48, 17.5' LT
EXISTING MANHOLE

EX-14 STA 531+47, 22.6' LT
EXISTING INLET

EX-10 STA 529+82, 23.1' LT
EXISTING INLET

EX-9 STA 529+83, 38.4' LT
EXISTING INLET

EX-23 STA 140+50, 41.6' LT
EXISTING MANHOLE

EX-21 STA 532+15, 52.2' LT
EXISTING INLET

S BARKMAN ST

EX-22 STA 140+52, 50.6' LT
EXISTING INLET

STA 527+47, 53.0' RT
EXISTING INLET

EX-2

STA 527+77, 39.1' RT
EXISTING A.E.W. FOR CPRC 12-IN

EX-3

EX-1 STA 527+11, 51.1' R
EXISTING INLET

EX-4 STA 527+50, 38.4' RT
EXISTING DIRECT TAP (NO STRUCT.)

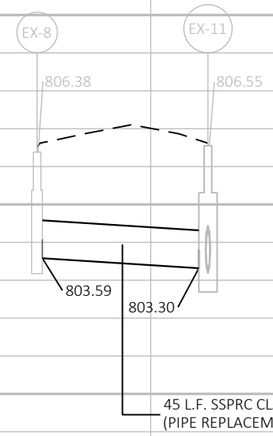
STA 527+55, 20.5' LT
EXISTING MANHOLE

EX-7

EX-6 STA 527+46, 22.5' LT
EXISTING INLET

STA 527+50, 32.8' LT
RESETTING 12-INCH CPRC ENDWALL REQ'D. 5
JOINT TIE RETROFIT REQ'D.

N




810
805
800
795

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STORM SEWER | SHEET 93 | E |
|---|---|---|---|---|---|

2

NOTE: AT STATION 178+50, EDGELINE ITEM SWITCHES TO GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE).

MARKING LINE EPOXY 4-INCH (WHITE)

MARKING LINE EPOXY 4-INCH (YELLOW)

MARKING CURB EPOXY (YELLOW) (TYP)

MARKING CROSS EPOXY TRANSVERSE LINE 6-INCH (TYP)

STH 32

176 174 172 170 168 166 164 162

166+10.76 32.83' RT
166+29.51 23.60' RT
CENTER ST
165+76.00 39.54' RT
165+53.31 23.87' RT
163+39.76 23.74' RT
163+74.59 23.77' RT
161+79.49 24.03' RT
162+00.95 42.05' RT
162+28.57 35.21' RT
162+35.32 24.43' RT
RAILROAD ST

168+60.76 -24.93' LT
168+74.89 -35.41' LT
166+37.27 -25.67' LT
166+26.51 -34.00' LT
WEST ST
165+51.48 -24.76' LT
165+82.36 -38.31' LT
JACKSON ST
163+74.77 -24.66' LT
163+34.45 -33.93' LT
162+92.44 -49.41' LT
162+61.03 -24.69' LT
162+11.98 -24.62' LT
161+83.24 -24.64' LT
KNAPP ST

159+45.06 54.12' RT
159+69.45 24.19' RT
159+07.34 42.75' RT
158+83.21 24.04' RT
154+92.73 48.89' RT
155+08.99 23.97' RT
HEASLEY ST
154+53.23 47.48' RT
154+13.93 23.84' RT
NGS
FLAG
BLEACHERS
NGS
151+86.97 23.91' RT
151+48.84 23.86' RT
148+98.13 39.77' RT
149+14.99 25.91' RT
148+57.46 38.06' RT
148+29.42 25.85' RT

STH 32

160 158 156 154 152 150 148 146

159+70.31 -24.54' LT
159+43.81 -42.15' LT
158+78.47 -24.50' LT
159+06.35 -37.54' LT
BURK ST
155+34.04 -24.58' LT
155+06.72 -34.05' LT
154+35.62 -24.77' LT
154+57.40 -39.32' LT
NU LINE ST
152+56.41 -24.65' LT
152+37.98 -32.43' LT
EHLINGER ST
151+35.92 -25.01' LT
151+82.61 -36.38' LT
149+25.56 -26.50' LT
148+96.56 -36.93' LT
MILL ST
148+36.98 -26.56' LT
148+58.58 -44.76' LT

145+32.71 25.88' RT
145+18.89 40.12' RT
144+76.38 40.22' RT
144+54.36 25.82' RT
140+58.39 37.13' RT
140+84.10 24.91' RT
STA AHEAD = 140+24.29
STA BACK = 532+20.00
EQUATION
PESHTIGO BROOK RD
MARKING LINE EPOXY 4-INCH (YELLOW)

STH 32

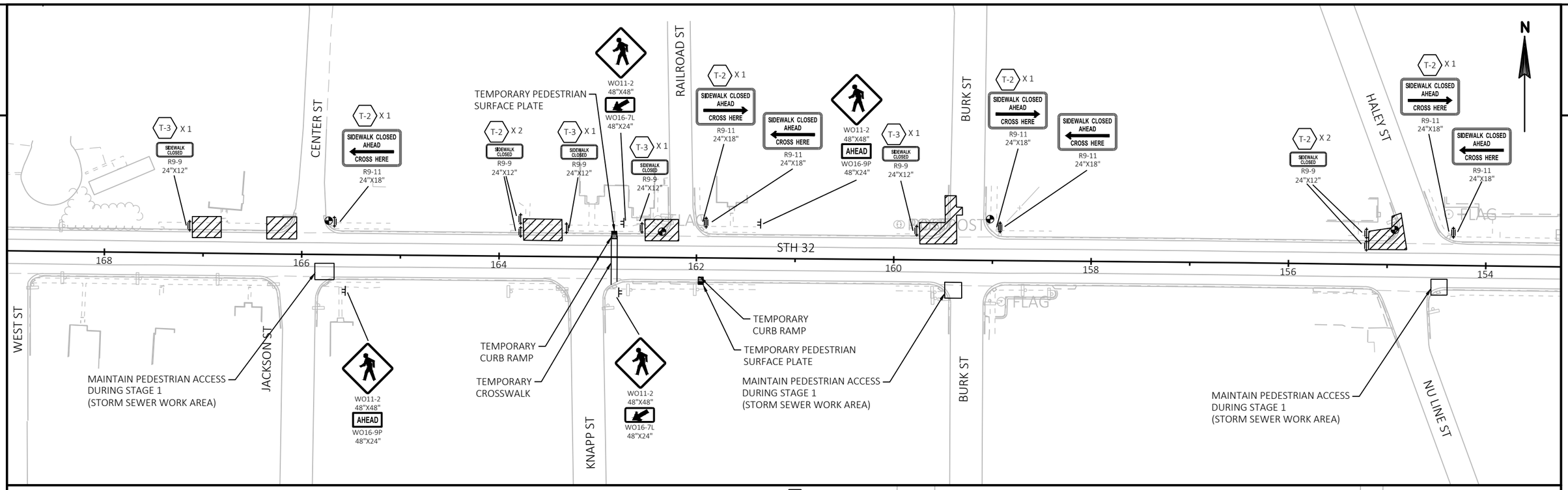
144 142 532 530 528 526 524

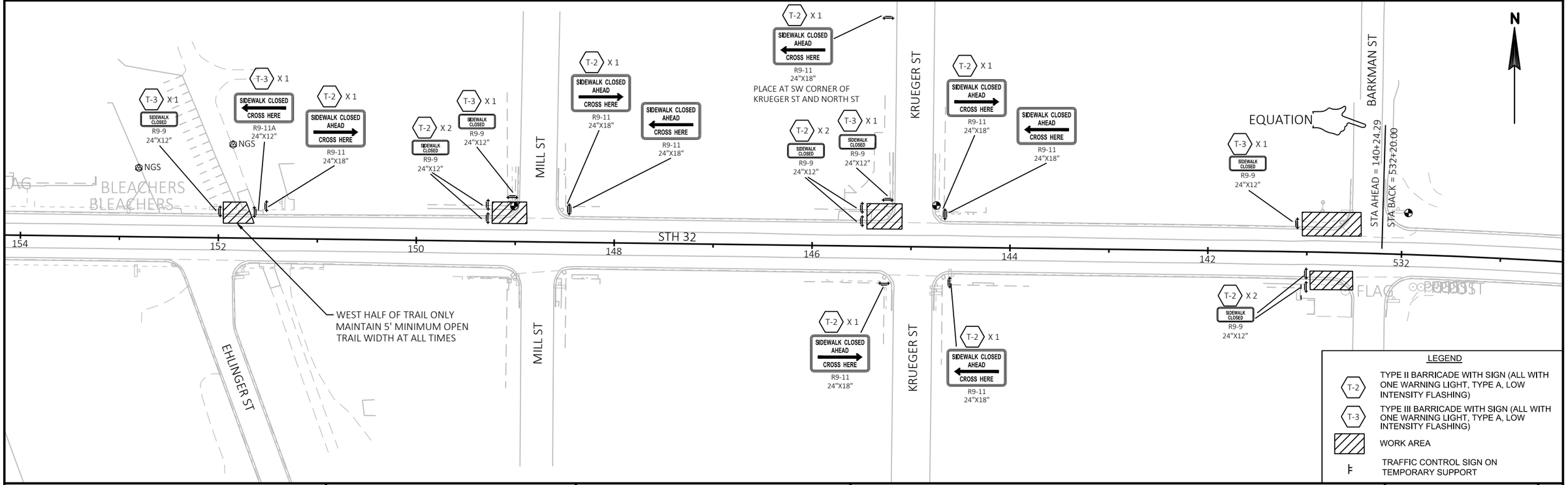
144+56.06 -26.63' LT
144+75.69 -37.94' LT
145+18.77 -41.99' LT
145+36.51 -26.70' LT
KRUEGER ST
140+89.51 -27.60' LT
140+71.72 -27.76' LT
FLAG
BARKMAN ST
MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PAVEMENT MARKING | SHEET 94 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 024501-pm
PLOT DATE : 7/22/2021 2:54 PM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STAGE CONSTRUCTION (STAGE 1 PEDESTRIAN ACCOMMODATIONS) | SHEET 95 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026001-s1

PLOT DATE : 10/22/2021 9:13 AM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

* INSTALLED IN STAGE 1

CENTER ST

RAILROAD ST

WEST ST

JACKSON ST

KNAPP ST

BURK ST

HALEY ST

NU LINE ST

MILL ST

KRUEGER ST

EHLINGER ST

BARKMAN ST

STH 32

168 166 164 162 160 158 156 154

154 152 150 148 146 144 142 532

* TEMPORARY PEDESTRIAN SURFACE PLATE

* TEMPORARY CURB RAMP

* TEMPORARY CROSSWALK

TEMPORARY PEDESTRIAN SURFACE PLATE

TEMPORARY CROSSWALK

TEMPORARY CURB RAMP

MAINTAIN PEDESTRIAN ACCESS DURING STAGE 2 (STORM SEWER WORK AREA)

PLACE AT SE CORNER OF KRUEGER ST AND NORTH ST

EQUATION

STA AHEAD = 140+24.29

STA BACK = 532+20.00

EAST HALF OF TRAIL ONLY. MAINTAIN 5' MINIMUM OPEN TRAIL WIDTH AT ALL TIMES.

T-2 X 1 SIDEWALK CLOSED AHEAD CROSS HERE R9-11 24"X18"

T-2 X 1 SIDEWALK CLOSED CROSS HERE R9-11A 24"X12"

T-2 X 2 SIDEWALK CLOSED R9-9 24"X12"

T-3 X 1 SIDEWALK CLOSED R9-9 24"X12"

T-3 X 1 SIDEWALK CLOSED CROSS HERE R9-11A 24"X12"

WO11-2 48"X48" AHEAD WO16-9P 48"X24"

WO11-2 48"X48" WO16-7L 48"X24"

TEMPORARY PEDESTRIAN SURFACE PLATE

FLAG

BLEACHERS

NGS

POST

N

LEGEND

T-2 TYPE II BARRICADE WITH SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)

T-3 TYPE III BARRICADE WITH SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)

WORK AREA

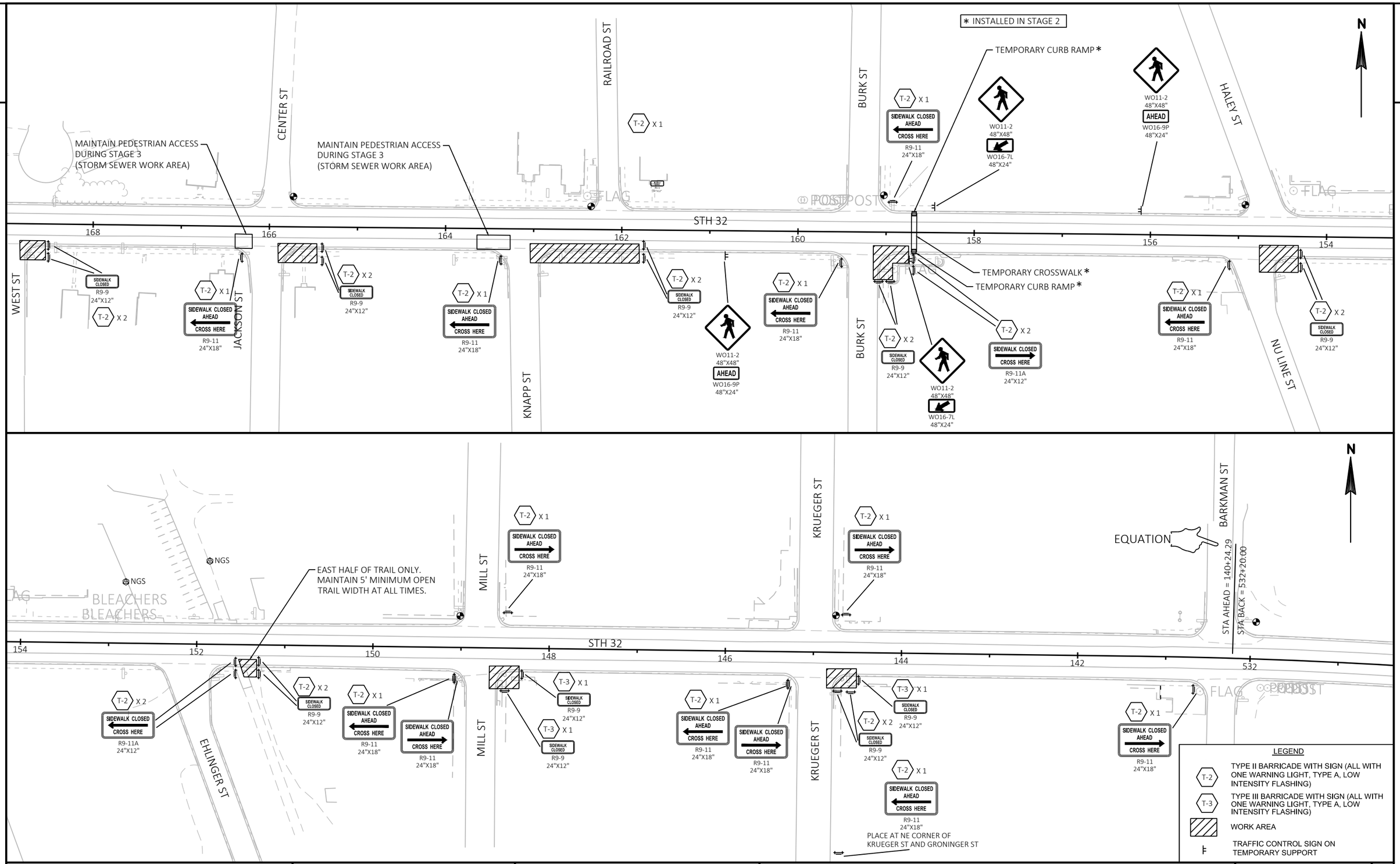
TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STAGE CONSTRUCTION (STAGE 2 PEDESTRIAN ACCOMMODATIONS) | SHEET 96 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026001-s2

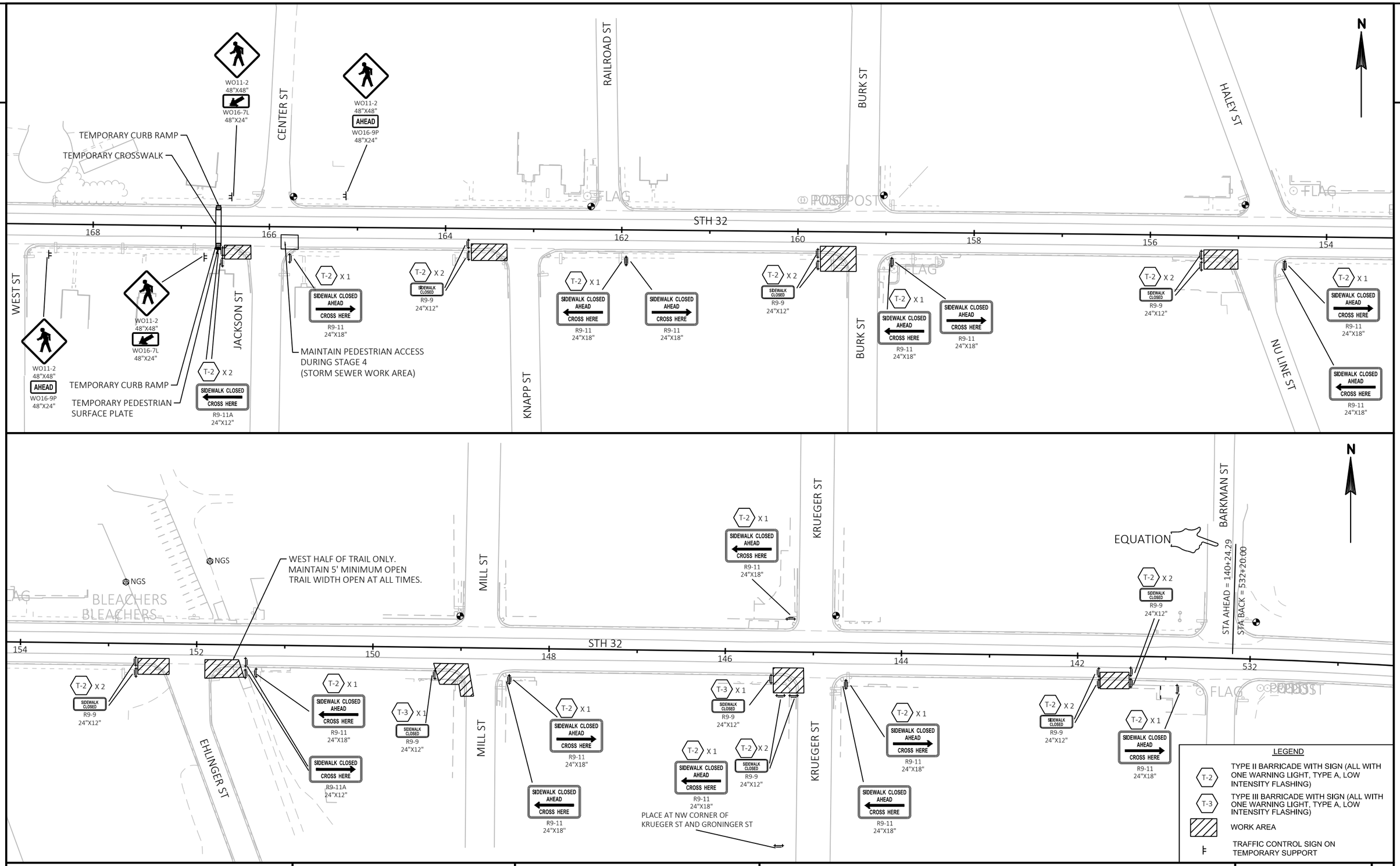
PLOT DATE : 10/25/2021 5:36 AM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STAGE CONSTRUCTION (STAGE 3 PEDESTRIAN ACCOMMODATIONS) | SHEET 97 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026001-s3
PLOT DATE : 10/22/2021 9:13 AM
PLOT BY : MALUEG, RYAN P
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | STAGE CONSTRUCTION (STAGE 4 PEDESTRIAN ACCOMMODATIONS) | SHEET 98 | E |
|---|---|---|---|---|---|


FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 026001-s4
PLOT DATE : 10/22/2021 9:13 AM
PLOT BY : MALUEG, RYAN P
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

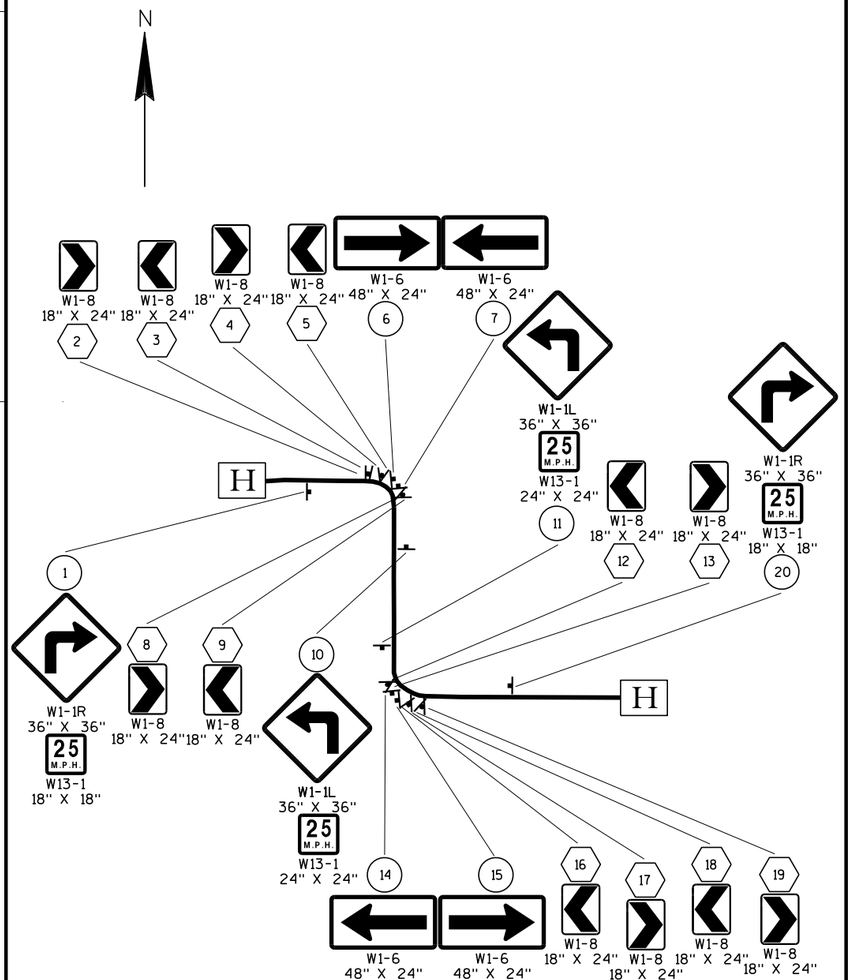
2

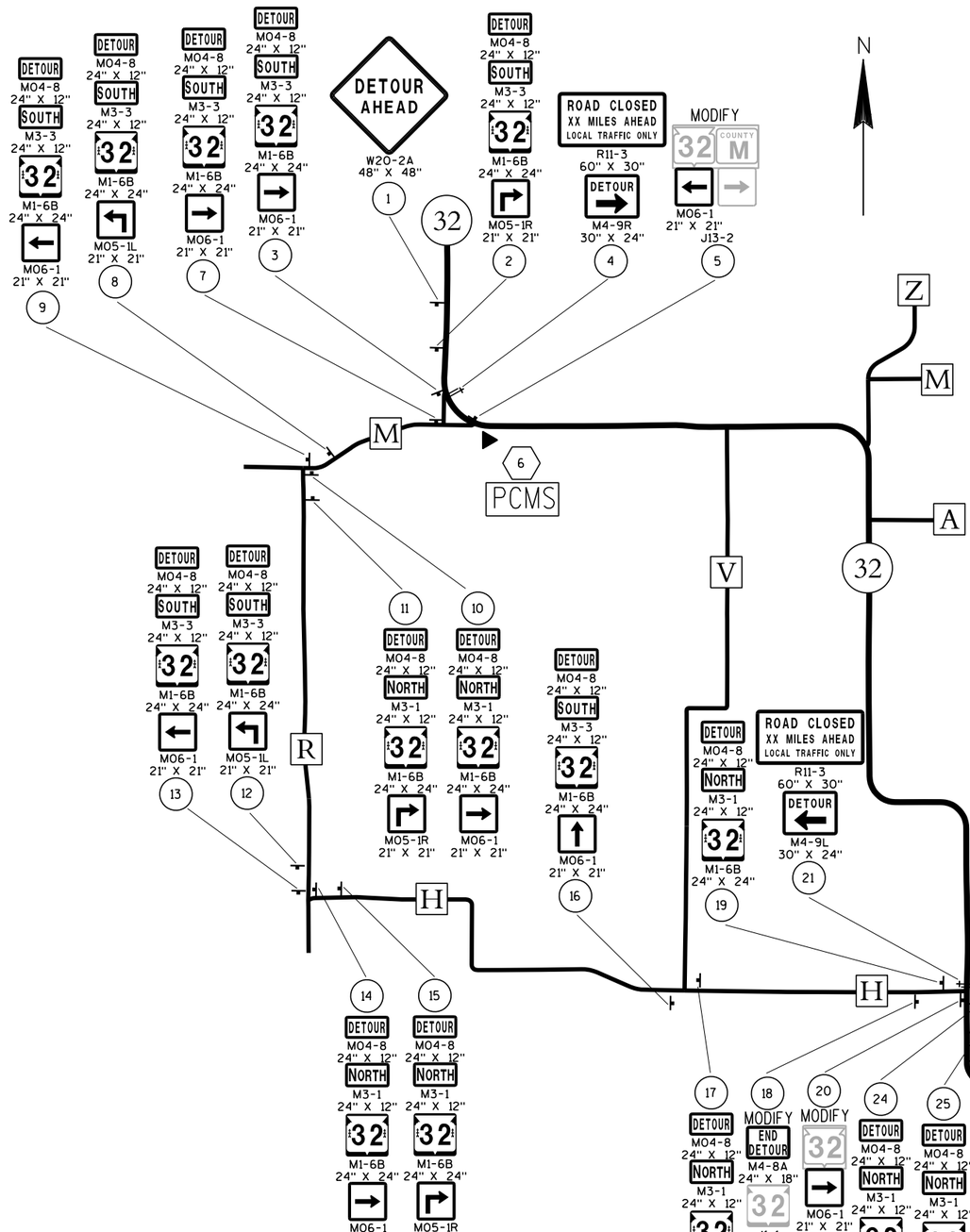
# LEGEND

- POST MOUNTED SIGN
- SIGN-REMOVE AND REPLACE
- SIGN-REMOVE EXISTING
- SIGN-PLACE NEW

## SIGNING NOTES

PLACE PERMANENT SIGNING IMMEDIATELY PRIOR TO PUTTING DETOUR IN-PLACE. LEAVE SIGNS IN-PLACE AFTER DETOUR HAS BEEN REMOVED AND PROJECT HAS BEEN COMPLETED.




LEGEND

- (X) SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
- SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN
- (X) CHANGEABLE PORTABLE MESSAGE BOARD

SHEET 1 OF 1

PLAN SHEET PRODUCED BY WisDOT-NE REGION

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | DETOUR SIGNING DETAIL | SHEET 99 E |
|---|---|---|---|---|


FILE NAME : N:\spo\traffic\A Work Zone\Detours\Oconto County\STH 32\CTH H - CTH R\027001_dt.dgn PLOT DATE : 23-JAN-2020 07:35 PLOT BY : dotj1f PLOT NAME : PLOT SCALE : 1200:1

WISDOT/CADDS SHEET 42

9170-12-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0002 | 203.0100 | Removing Small Pipe Culverts | EACH | 17.000 | 17.000 |
| 0006 | 204.0110 | Removing Asphaltic Surface | SY | 658.000 | 658.000 |
| 0008 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 441.000 | 441.000 |
| 0010 | 204.0120 | Removing Asphaltic Surface Milling | SY | 213,555.000 | 213,555.000 |
| 0012 | 204.0150 | Removing Curb & Gutter | LF | 1,227.000 | 1,227.000 |
| 0014 | 204.0155 | Removing Concrete Sidewalk | SY | 511.000 | 511.000 |
| 0016 | 204.0210 | Removing Manholes | EACH | 3.000 | 3.000 |
| 0018 | 204.0220 | Removing Inlets | EACH | 22.000 | 22.000 |
| 0020 | 204.0245 | Removing Storm Sewer (size) 01. 10-15 Inch | LF | 436.000 | 436.000 |
| 0022 | 204.0245 | Removing Storm Sewer (size) 02. 21- 24 Inch | LF | 442.000 | 442.000 |
| 0024 | 204.0291.S | Abandoning Sewer | CY | 2.400 | 2.400 |
| 0026 | 204.9060.S | Removing (item description) 01. Concrete Chunks | EACH | 1.000 | 1.000 |
| 0028 | 204.9060.S | Removing (item description) 02. Concrete Ditch Check | EACH | 1.000 | 1.000 |
| 0030 | 205.0100 | Excavation Common | CY | 2,748.000 | 2,748.000 |
| 0034 | 208.1500.S | Temporary Lane Shift During Culvert Work | EACH | 2.000 | 2.000 |
| 0038 | 211.0100 | Prepare Foundation for Asphaltic Paving (project) 01. 9170-12-71 | LS | 1.000 | 1.000 |
| 0042 | 211.0400 | Prepare Foundation for Asphaltic Shoulders | STA | 919.000 | 919.000 |
| 0044 | 213.0100 | Finishing Roadway (project) 01. 9170-12-71 | EACH | 1.000 | 1.000 |
| 0048 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 3,320.000 | 3,320.000 |
| 0050 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 2,974.000 | 2,974.000 |
| 0052 | 416.0180 | Concrete Driveway 8-Inch | SY | 2.800 | 2.800 |
| 0054 | 416.1010 | Concrete Surface Drains | CY | 15.100 | 15.100 |
| 0056 | 455.0605 | Tack Coat | GAL | 23,466.000 | 23,466.000 |
| 0058 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics | EACH | 2.000 | 2.000 |
| 0060 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density | EACH | 2.000 | 2.000 |
| 0062 | 460.2005 | Incentive Density PWL HMA Pavement | DOL | 36,065.000 | 36,065.000 |
| 0064 | 460.2007 | Incentive Density HMA Pavement Longitudinal Joints | DOL | 50,118.000 | 50,118.000 |
| 0066 | 460.2010 | Incentive Air Voids HMA Pavement | DOL | 52,028.000 | 52,028.000 |
| 0068 | 460.6223 | HMA Pavement 3 MT 58-28 S | TON | 29,186.000 | 29,186.000 |
| 0070 | 460.6224 | HMA Pavement 4 MT 58-28 S | TON | 22,842.000 | 22,842.000 |
| 0072 | 465.0105 | Asphaltic Surface | TON | 1,619.000 | 1,619.000 |
| 0074 | 465.0110 | Asphaltic Surface Patching | TON | 50.000 | 50.000 |
| 0076 | 465.0120 | Asphaltic Surface Driveways and Field Entrances | TON | 149.000 | 149.000 |
| 0078 | 465.0425 | Asphaltic Shoulder Rumble Strips 2-Lane Rural | LF | 78,747.000 | 78,747.000 |
| 0080 | 465.0475 | Asphalt Centerline Rumble Strips 2-Lane Rural | LF | 39,173.000 | 39,173.000 |
| 0096 | 520.1024 | Apron Endwalls for Culvert Pipe 24-Inch | EACH | 10.000 | 10.000 |
| 0098 | 520.1030 | Apron Endwalls for Culvert Pipe 30-Inch | EACH | 4.000 | 4.000 |
| 0100 | 520.3424 | Culvert Pipe Class III-A Non-metal 24-Inch | LF | 332.000 | 332.000 |
| 0102 | 520.3430 | Culvert Pipe Class III-A Non-metal 30-Inch | LF | 80.000 | 80.000 |
| 0104 | 520.3624 | Culvert Pipe Class III-B Non-metal 24-Inch | LF | 90.000 | 90.000 |
| 0106 | 520.3630 | Culvert Pipe Class III-B Non-metal 30-Inch | LF | 96.000 | 96.000 |
| 0108 | 520.8000 | Concrete Collars for Pipe | EACH | 19.000 | 19.000 |
| 0110 | 520.8700 | Cleaning Culvert Pipes | EACH | 3.000 | 3.000 |
| 0112 | 520.9700.S | Culvert Pipe Liners (size) 01. 18- Inch | LF | 147.000 | 147.000 |
| 0114 | 520.9750.S | Cleaning Culvert Pipes for Liner Verification | EACH | 1.000 | 1.000 |
| 0116 | 521.1018 | Apron Endwalls for Culvert Pipe Steel 18-Inch | EACH | 2.000 | 2.000 |
| 0118 | 521.1024 | Apron Endwalls for Culvert Pipe Steel 24-Inch | EACH | 2.000 | 2.000 |
| 0120 | 521.1515 | Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 15-Inch 6 to 1 | EACH | 1.000 | 1.000 |
| 0122 | 521.1518 | Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 6 to 1 | EACH | 5.000 | 5.000 |

9170-12-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0124 | 521.1524 | Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 24-Inch 6 to 1 | EACH | 1.000 | 1.000 |
| 0126 | 521.1618 | Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 10 to 1 | EACH | 2.000 | 2.000 |
| 0128 | 521.3115 | Culvert Pipe Corrugated Steel 15-Inch | LF | 10.000 | 10.000 |
| 0130 | 521.3118 | Culvert Pipe Corrugated Steel 18-Inch | LF | 52.000 | 52.000 |
| 0132 | 521.3124 | Culvert Pipe Corrugated Steel 24-Inch | LF | 20.000 | 20.000 |
| 0134 | 522.0118 | Culvert Pipe Reinforced Concrete Class III 18-Inch | LF | 8.000 | 8.000 |
| 0136 | 522.0124 | Culvert Pipe Reinforced Concrete Class III 24-Inch | LF | 224.000 | 224.000 |
| 0138 | 522.0136 | Culvert Pipe Reinforced Concrete Class III 36-Inch | LF | 96.000 | 96.000 |
| 0140 | 522.0424 | Culvert Pipe Reinforced Concrete Class IV 24-Inch | LF | 80.000 | 80.000 |
| 0142 | 522.0436 | Culvert Pipe Reinforced Concrete Class IV 36-Inch | LF | 8.000 | 8.000 |
| 0144 | 522.1024 | Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch | EACH | 8.000 | 8.000 |
| 0146 | 522.1036 | Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch | EACH | 3.000 | 3.000 |
| 0148 | 522.2419 | Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch | LF | 112.000 | 112.000 |
| 0150 | 522.2424 | Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch | LF | 160.000 | 160.000 |
| 0152 | 522.2619 | Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch | EACH | 4.000 | 4.000 |
| 0154 | 522.2624 | Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch | EACH | 4.000 | 4.000 |
| 0156 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D | LF | 903.000 | 903.000 |
| 0158 | 601.0588 | Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT | LF | 410.000 | 410.000 |
| 0160 | 601.0600 | Concrete Curb Pedestrian | LF | 370.500 | 370.500 |
| 0162 | 602.0405 | Concrete Sidewalk 4-Inch | SF | 5,125.000 | 5,125.000 |
| 0164 | 602.0505 | Curb Ramp Detectable Warning Field Yellow | SF | 306.000 | 306.000 |
| 0166 | 602.0605 | Curb Ramp Detectable Warning Field Radial Yellow | SF | 182.800 | 182.800 |
| 0168 | 606.0100 | Riprap Light | CY | 64.100 | 64.100 |
| 0172 | 608.0315 | Storm Sewer Pipe Reinforced Concrete Class III 15-Inch | LF | 32.000 | 32.000 |
| 0174 | 608.0412 | Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch | LF | 268.000 | 268.000 |
| 0176 | 608.0421 | Storm Sewer Pipe Reinforced Concrete Class IV 21-Inch | LF | 9.000 | 9.000 |
| 0178 | 608.0424 | Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch | LF | 433.000 | 433.000 |
| 0180 | 608.6010 | Storm Sewer Pipe Composite 10-Inch | LF | 84.000 | 84.000 |
| 0182 | 611.0430 | Reconstructing Inlets | EACH | 2.000 | 2.000 |
| 0184 | 611.0530 | Manhole Covers Type J | EACH | 3.000 | 3.000 |
| 0186 | 611.0600 | Inlet Covers Type A | EACH | 1.000 | 1.000 |
| 0188 | 611.0624 | Inlet Covers Type H | EACH | 18.000 | 18.000 |
| 0190 | 611.2004 | Manholes 4-FT Diameter | EACH | 1.000 | 1.000 |
| 0192 | 611.2005 | Manholes 5-FT Diameter | EACH | 2.000 | 2.000 |
| 0194 | 611.2008 | Manholes 8-FT Diameter | EACH | 1.000 | 1.000 |
| 0196 | 611.3004 | Inlets 4-FT Diameter | EACH | 1.000 | 1.000 |
| 0198 | 611.3230 | Inlets 2x3-FT | EACH | 18.000 | 18.000 |
| 0202 | 614.0200 | Steel Thrie Beam Structure Approach | LF | 20.700 | 20.700 |
| 0204 | 614.0305 | Steel Plate Beam Guard Class A | LF | 6.300 | 6.300 |
| 0206 | 614.0345 | Steel Plate Beam Guard Short Radius | LF | 54.800 | 54.800 |
| 0208 | 614.0390 | Steel Plate Beam Guard Short Radius Terminal | EACH | 1.000 | 1.000 |
| 0210 | 614.0920 | Salvaged Rail | LF | 1,182.000 | 1,182.000 |
| 0212 | 614.0925 | Salvaged Guardrail End Treatments | EACH | 5.000 | 5.000 |
| 0214 | 614.2300 | MGS Guardrail 3 | LF | 165.600 | 165.600 |
| 0216 | 614.2330 | MGS Guardrail 3 K | LF | 212.500 | 212.500 |
| 0218 | 614.2350 | MGS Guardrail Short Radius | LF | 18.900 | 18.900 |
| 0220 | 614.2500 | MGS Thrie Beam Transition | LF | 275.800 | 275.800 |
| 0222 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 6.000 | 6.000 |
| 0224 | 614.2630 | MGS Guardrail Short Radius Terminal | EACH | 1.000 | 1.000 |

9170-12-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0226 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 9170-12-71 | EACH | 1.000 | 1.000 |
| 0230 | 619.1000 | Mobilization | EACH | 0.900 | 0.900 |
| 0232 | 624.0100 | Water | MGAL | 72.000 | 72.000 |
| 0234 | 625.0100 | Topsoil | SY | 285.000 | 285.000 |
| 0236 | 625.0500 | Salvaged Topsoil | SY | 4,939.000 | 4,939.000 |
| 0238 | 628.1504 | Silt Fence | LF | 6,041.000 | 6,041.000 |
| 0240 | 628.1520 | Silt Fence Maintenance | LF | 604.000 | 604.000 |
| 0242 | 628.1905 | Mobilizations Erosion Control | EACH | 7.000 | 7.000 |
| 0244 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0246 | 628.2004 | Erosion Mat Class I Type B | SY | 4,939.000 | 4,939.000 |
| 0248 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 285.000 | 285.000 |
| 0250 | 628.6005 | Turbidity Barriers | SY | 20.800 | 20.800 |
| 0252 | 628.7010 | Inlet Protection Type B | EACH | 3.000 | 3.000 |
| 0254 | 628.7015 | Inlet Protection Type C | EACH | 48.000 | 48.000 |
| 0256 | 628.7555 | Culvert Pipe Checks | EACH | 174.000 | 174.000 |
| 0258 | 628.7570 | Rock Bags | EACH | 143.000 | 143.000 |
| 0260 | 629.0210 | Fertilizer Type B | CWT | 3.410 | 3.410 |
| 0262 | 630.0130 | Seeding Mixture No. 30 | LB | 85.300 | 85.300 |
| 0264 | 630.0140 | Seeding Mixture No. 40 | LB | 8.800 | 8.800 |
| 0266 | 630.0500 | Seed Water | MGAL | 58.900 | 58.900 |
| 0268 | 633.5200 | Markers Culvert End | EACH | 58.000 | 58.000 |
| 0270 | 634.0614 | Posts Wood 4x6-Inch X 14-FT | EACH | 10.000 | 10.000 |
| 0272 | 634.0616 | Posts Wood 4x6-Inch X 16-FT | EACH | 15.000 | 15.000 |
| 0274 | 637.2230 | Signs Type II Reflective F | SF | 118.250 | 118.250 |
| 0276 | 638.2102 | Moving Signs Type II | EACH | 13.000 | 13.000 |
| 0278 | 638.2602 | Removing Signs Type II | EACH | 7.000 | 7.000 |
| 0280 | 638.3000 | Removing Small Sign Supports | EACH | 19.000 | 19.000 |
| 0282 | 642.5401 | Field Office Type D | EACH | 0.500 | 0.500 |
| 0284 | 643.0300 | Traffic Control Drums | DAY | 9,915.000 | 9,915.000 |
| 0286 | 643.0410 | Traffic Control Barricades Type II | DAY | 1,050.000 | 1,050.000 |
| 0288 | 643.0420 | Traffic Control Barricades Type III | DAY | 975.000 | 975.000 |
| 0290 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 2,730.000 | 2,730.000 |
| 0292 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 1,046.000 | 1,046.000 |
| 0294 | 643.0900 | Traffic Control Signs | DAY | 11,304.000 | 11,304.000 |
| 0296 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 2.000 | 2.000 |
| 0298 | 643.1050 | Traffic Control Signs PCMS | DAY | 28.000 | 28.000 |
| 0300 | 643.1070 | Traffic Control Cones 42-Inch | DAY | 40.000 | 40.000 |
| 0302 | 643.5000 | Traffic Control | EACH | 0.500 | 0.500 |
| 0304 | 644.1430 | Temporary Pedestrian Surface Plate | SF | 342.000 | 342.000 |
| 0306 | 644.1601 | Temporary Pedestrian Curb Ramp | DAY | 130.000 | 130.000 |
| 0308 | 645.0130 | Geotextile Type R | SY | 225.600 | 225.600 |
| 0310 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 55,011.000 | 55,011.000 |
| 0312 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch | LF | 98,133.000 | 98,133.000 |
| 0314 | 646.3020 | Marking Line Epoxy 8-Inch | LF | 95.000 | 95.000 |
| 0316 | 646.3040 | Marking Line Grooved Wet Ref Epoxy 8-Inch | LF | 1,090.000 | 1,090.000 |
| 0318 | 646.4520 | Marking Line Same Day Epoxy 4-Inch | LF | 2,705.000 | 2,705.000 |
| 0320 | 646.7420 | Marking Crosswalk Epoxy Transverse Line 6-Inch | LF | 514.000 | 514.000 |
| 0322 | 646.8120 | Marking Curb Epoxy | LF | 802.000 | 802.000 |
| 0324 | 646.8220 | Marking Island Nose Epoxy | EACH | 6.000 | 6.000 |

9170-12-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0326 | 649.0105 | Temporary Marking Line Paint 4-Inch | LF | 146,758.000 | 146,758.000 |
| 0328 | 649.0120 | Temporary Marking Line Epoxy 4-Inch | LF | 51,946.000 | 51,946.000 |
| 0330 | 649.0150 | Temporary Marking Line Removable Tape 4-Inch | LF | 389.000 | 389.000 |
| 0332 | 650.4000 | Construction Staking Storm Sewer | EACH | 57.000 | 57.000 |
| 0334 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 1,619.000 | 1,619.000 |
| 0336 | 650.6000 | Construction Staking Pipe Culverts | EACH | 16.000 | 16.000 |
| 0340 | 650.8000 | Construction Staking Resurfacing Reference | LF | 53,575.000 | 53,575.000 |
| 0342 | 650.9000 | Construction Staking Curb Ramps | EACH | 36.000 | 36.000 |
| 0344 | 650.9910 | Construction Staking Supplemental Control (project) 01. 9170-12-71 | LS | 1.000 | 1.000 |
| 0348 | 650.9920 | Construction Staking Slope Stakes | LF | 1,493.000 | 1,493.000 |
| 0350 | 690.0150 | Sawing Asphalt | LF | 6,809.000 | 6,809.000 |
| 0352 | 690.0250 | Sawing Concrete | LF | 702.000 | 702.000 |
| 0356 | 740.0440 | Incentive IRI Ride | DOL | 88,725.000 | 88,725.000 |
| 0360 | ASP.1T0A | On-the-Job Training Apprentice at $5.00/HR | HRS | 2,500.000 | 2,500.000 |
| 0362 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 3,280.000 | 3,280.000 |
| 0364 | SPV.0035 | Special 01. Foundation Backfill | CY | 1,606.000 | 1,606.000 |
| 0366 | SPV.0035 | Special 02.  Abandoning Culvert Pipe | CY | 12.400 | 12.400 |
| 0368 | SPV.0060 | Special 01. Inlet Covers Driveway Special | EACH | 2.000 | 2.000 |
| 0370 | SPV.0060 | Special 02. Adjustment Ring Replacement | EACH | 10.000 | 10.000 |
| 0372 | SPV.0060 | Special 03. Reconditioning Manholes | EACH | 4.000 | 4.000 |
| 0374 | SPV.0060 | Special 04. Resetting Pipe End | EACH | 1.000 | 1.000 |
| 0376 | SPV.0060 | Special 05. Joint Tie Retrofit | EACH | 4.000 | 4.000 |
| 0378 | SPV.0060 | Special 06. Adjusting Water Valve Boxes | EACH | 9.000 | 9.000 |
| 0380 | SPV.0060 | Special 07.  Temporary Water Diversion, 30-Inch Culvert Station 487+64 | EACH | 1.000 | 1.000 |
| 0382 | SPV.0090 | Special 01. PVC Pipe 8- Inch | LF | 14.000 | 14.000 |
| 0384 | SPV.0090 | Special 02. PVC Pipe 12- Inch | LF | 4.000 | 4.000 |
| 0386 | SPV.0090 | Special 03. Curb & Gutter 24- Inch Type D | LF | 306.000 | 306.000 |
| 0388 | SPV.0180 | Special 01. Protective Thermoplastic Coating at Snowmobile Crossing | SY | 465.000 | 465.000 |

## REMOVING & ABANDONING PIPE CULVERTS

| STATION | LOCATION | 203.0100 REMOVING SMALL PIPE CULVERTS EACH | SPV.0035.02 ABANDONING CULVERT PIPE CY | REMARKS |
|---|---|---|---|---|
| 406+86 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 56 LF |
| 423+52 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 118 LF |
| 440+11 | LT/RT | 1 | --- | CROSS CULVERT: 30-INCH CPRC X 78 LF |
| 445+93 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 84 LF |
| 452+16 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 70 LF |
| 475+70 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 72 LF |
| 479+56 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 4 LF (PARTIAL REMOVAL) |
| 487+64 | LT/RT | 1 | --- | CROSS CULVERT: 30-INCH CPCS X 90 LF |
| 504+25 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 90 LF |
| 524+90 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 62 LF |
| 273+03 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 80 LF |
| 342+12 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPCS X 96 LF |
| 847+48 | LT | 1 | --- | CROSS CULVERT: 36-INCH CPRC X 12 LF (PARTIAL REMOVAL) |
| 872+47 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 76 LF |
| 891+93 | LT/RT | --- | 12.4 | CROSS CULVERT: 30-INCH CPRC X 82 LF |
| 915+92 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 76 LF |
| 933+13 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 76 LF |
| 954+68 | LT/RT | 1 | --- | CROSS CULVERT: 24-INCH CPRC X 80 LF |
| | **TOTAL** | 17 | 12.4 | |

## REMOVALS - GUARDRAIL AREAS

| STATION | - | STATION | LOCATION | 204.0110 REMOVING ASPHALTIC SURFACE* SY | 614.0920 SALVAGED RAIL LF | 614.0925 SALVAGED GUARDRAIL END TREATMENTS*** EACH | 690.0150 SAWING ASPHALT* LF | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 169+90 | - | 172+73 | RT | --- | 246 | 1 | --- | --- |
| 171+14 | - | 172+74 | LT | --- | 123 | 1 | --- | --- |
| 172+10 | - | 172+84 | RT | 35 | --- | --- | 78 | TBT CURB INSTALLATION |
| 172+11 | - | 172+73 | LT | 36 | --- | --- | 70 | TBT CURB INSTALLATION |
| 172+58 | - | 172+63 | LT | 7 | --- | --- | --- | FLUME REMOVAL |
| 174+46 | - | 175+20 | RT | 30 | --- | --- | 77 | TBT CURB INSTALLATION |
| 174+56 | - | 175+20 | LT | 28 | --- | --- | 70 | TBT CURB INSTALLATION |
| 174+57 | - | 174+64 | LT | 4 | --- | --- | --- | FLUME REMOVAL |
| 174+57 | - | 176+16 | RT | --- | 122 | 1 | --- | --- |
| 174+56 | - | 176+53 | LT | --- | 160 | 1 | --- | --- |
| 175+75 | - | 176+10 | RT | 7 | --- | --- | 64 | NEW E.A.T. APPROACH PER S.D.D. 14 B 44 |
| 176+03 | - | 177+29 | LT | 27 | --- | --- | 127 | NEW E.A.T. APPROACH PER S.D.D. 14 B 44 |
| 337+24 | - | 338+64 | RT | --- | 150 | --- | --- | --- |
| 338+12 | - | 338+64 | LT | --- | 60 | --- | --- | --- |
| 339+94 | - | 342+85 | RT | 34 | 250 | --- | 343 | TBT CURB, SS & CP RMVLS, & NEW E.A.T. APPROACH** |
| 339+94 | - | 341+08 | LT | 73 | 73 | 1 | 61 | TBT CURB INSTALLATION |
| | | | **TOTALS** | 282 | 1,182 | 5 | 890 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN
** REMOVING ASPHALT IS INCIDENTAL TO STORM SEWER & CULVERT PIPE REMOVAL LOCATIONS
*** END TREATMENTS ASSUMED TO BE 37.5 LF FOR THIS TABLE'S CALCULATIONS.

## REMOVALS - URBAN

| STATION | TO | STATION | OFFSET | 204.0110 REMOVING ASPHALTIC SURFACE* SY | 204.0150 REMOVING CURB & GUTTER LF | 204.0155 REMOVING CONCRETE SIDEWALK SY | 690.0150 SAWING ASPHALT* LF | 690.0250 SAWING CONCRETE LF | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 529+78 | - | 529+94 | LT/RT | 19 | --- | --- | 94 | --- | STR. EX-8 TO EX-11 (MID-BLOCK) |
| 530+28 | - | 530+53 | LT | --- | --- | --- | 35 | --- | STR. CC-1 TO CC-2 (MID-BLOCK) |
| 140+57 | - | 140+90 | LT | 8 | 32 | 13 | 39 | 10 | BARKMAN ST (NW) |
| 140+55 | - | 140+99 | RT | 16 | 32 | 22 | 101 | 10 | BARKMAN ST (SW) |
| 141+47 | - | 141+69 | LT | 5 | 22 | 5 | 25 | 31 | MID-BLOCK |
| 142+60 | - | 142+73 | RT | 1 | 12 | 3 | 16 | 22 | STR. 30 (MID-BLOCK) |
| 144+56 | - | 144+79 | LT | 7 | 25 | 13 | 36 | 35 | KRUEGER ST (SE) |
| 144+54 | - | 144+81 | RT | 8 | 32 | 19 | 43 | 41 | KRUEGER ST (NE) |
| 145+14 | - | 145+37 | LT | 8 | 28 | 15 | 38 | 31 | KRUEGER ST (SW) |
| 145+15 | - | 145+33 | RT | 7 | 25 | 14 | 47 | 20 | KRUEGER ST (NW) |
| 148+37 | - | 148+62 | LT | 12 | 34 | 17 | 50 | 30 | MILL ST (SE) |
| 148+29 | - | 148+61 | RT | 10 | 36 | 16 | 46 | 44 | MILL ST (NE) |
| 148+91 | - | 149+26 | LT | 15 | 50 | 17 | 60 | 34 | MILL ST (SW) |
| 148+94 | - | 149+15 | RT | 9 | 26 | 11 | 44 | 27 | MILL ST (NW) |
| 150+42 | - | 150+49 | RT | --- | 7 | 2 | 11 | 16 | STR. 43 (MID-BLOCK) |
| 150+91 | - | 150+97 | LT | 4 | --- | --- | 24 | --- | STR. 45 (MID-BLOCK) |
| 151+36 | - | 151+87 | LT | 18 | 53 | 22 | 75 | 10 | EHLINGER ST (SE) & TRAIL (S) |
| 151+49 | - | 151+87 | RT | 14 | 38 | 21 | 62 | 15 | TRAIL (N) |
| 152+35 | - | 152+62 | LT | 6 | 22 | 10 | 29 | 16 | EHLINGER ST (SW) |
| 154+14 | - | 154+85 | RT | 13 | 58 | 29 | 120 | 15 | HEASLEY ST (NE) |
| 154+35 | - | 154+72 | LT | 13 | 35 | 8 | 73 | 10 | NU LINE ST (SE) |
| 154+85 | - | 155+09 | RT | 11 | 40 | 8 | 51 | 10 | HEASLEY ST (NW) |
| 155+04 | - | 155+46 | LT | 16 | 32 | 12 | 128 | 10 | NU LINE ST (SW) |
| 158+78 | - | 159+10 | LT | 8 | 34 | 23 | 43 | 18 | BURK ST (SE) |
| 158+83 | - | 159+11 | RT | 11 | 36 | 24 | 47 | 17 | BURK ST (NE) |
| 159+33 | - | 159+70 | LT | 11 | 37 | 6 | 107 | 10 | BURK ST (SW) |
| 159+41 | - | 159+69 | RT | 13 | 59 | 10 | 79 | 11 | BURK ST (NW) |
| 161+49 | - | 161+76 | LT | --- | --- | --- | 65 | --- | CC-5 TO CC-6 (MID-BLOCK) |
| 161+83 | - | 163+00 | LT | 38 | 127 | 44 | 231 | 76 | RAILROAD ST (S) & KNAPP ST (SE) |
| 161+77 | - | 162+05 | RT | 9 | 34 | 18 | 43 | 16 | RAILROAD ST (NE) |
| 162+75 | - | 162+43 | RT | 4 | 15 | 8 | 22 | 11 | RAILROAD ST (NW) |
| 163+31 | - | 163+67 | LT | 10 | 32 | 19 | 26 | 11 | KNAPP ST (SW) |
| 163+42 | - | 163+69 | RT | 6 | 28 | 19 | 32 | 17 | KNAPP ST (NW) |
| 163+19 | - | 165+55 | LT | --- | --- | --- | 478 | --- | STR. 72 - STR. 74 |
| 165+49 | - | 165+86 | LT | 10 | 37 | 14 | 29 | 10 | JACKSON ST (SE) |
| 165+51 | - | 165+79 | RT | 7 | 34 | 14 | 52 | 9 | CENTER ST (NE) |
| 165+55 | - | 166+16 | LT/RT | --- | --- | --- | 190 | --- | STR. 74 - STR. 81 & CC-19 - STR. 81 |
| 166+02 | - | 166+30 | RT | 10 | 24 | 10 | 52 | 12 | CENTER ST (NW) |
| 166+23 | - | 166+49 | LT | 4 | 14 | 10 | 21 | 10 | JACKSON ST (SW) |
| 166+16 | - | 167+44 | LT | --- | --- | --- | 256 | --- | STR. 81 TO STR. EX-83 |
| 166+90 | - | 167+02 | RT | 3 | 12 | 9 | 15 | 19 | MID-BLOCK |
| 167+30 | - | 167+44 | LT | --- | 14 | --- | 11 | 5 | STR. 82 (MID-BLOCK) |
| 168+60 | - | 168+79 | LT | 7 | 21 | 7 | 31 | 10 | WEST ST (SE) |
| 168+90 | - | 169+20 | RT | 7 | 30 | --- | 34 | 3 | E.A.T. APPROACH |
| | | | | 376 | 1,227 | 511 | 3,111 | 702 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN
NOTE: STORM SEWER REMOVAL QUANTITIES LISTED ELSEWHERE IN PLAN.
NOTE: MILLING REMOVAL QUANTITIES LISTED ELSEWHERE IN PLAN.

## REMOVING ASPHALTIC SURFACE BUTT JOINTS

| STATION | LOCATION | 204.0115 SY | REMARKS |
|---|---|---|---|
| 405+93 | STH 32 | 7 | PROJECT LIMITS |
| 411+88 | LT | 6 | PRIVATE ENTRANCE |
| 417+27 | RT | 7 | MUNICIPAL ENTRANCE |
| 1100+87 | CTH Z | 10 | SIDEROAD LIMITS |
| 462+16 | LT | 4 | WATER TOWER ENTRANCE |
| 465+26 | RT | 3 | PRIVATE ENTRANCE |
| 490+11 | LT | 5 | PRIVATE ENTRANCE |
| 491+80 | LT | 5 | PRIVATE ENTRANCE |
| 1204+17 | COTTONWOOD LN | 6 | SIDEROAD LIMITS |
| 499+49 | RT | 4 | PRIVATE ENTRANCE |
| 1304+12 | CTH V | 6 | SIDEROAD LIMITS |
| 1305+78 | GOLF COURSE RD | 6 | SIDEROAD LIMITS |
| 508+39 | RT | 3 | PRIVATE ENTRANCE |
| 508+87 | RT | 4 | PRIVATE ENTRANCE |
| 509+00 | LT | 6 | PRIVATE ENTRANCE |
| 1400+61 | PESHTIGO BROOK RD | 7 | SIDEROAD LIMITS |
| 1505+51 | N BARKMAN ST | 7 | SIDEROAD LIMITS |
| 1504+50 | S BARKMAN ST | 7 | SIDEROAD LIMITS |
| 1605+40 | KRUEGER ST | 8 | SIDEROAD LIMITS |
| 1604+58 | KRUEGER ST | 8 | SIDEROAD LIMITS |
| 1705+40 | MILL ST | 8 | SIDEROAD LIMITS |
| 1704+47 | MILL ST | 7 | SIDEROAD LIMITS |
| 1804+61 | EHLINGER ST | 11 | SIDEROAD LIMITS |
| 1900+54 | HEASLEY ST | 8 | SIDEROAD LIMITS |
| 2004+58 | NU-LINE ST | 10 | SIDEROAD LIMITS |
| 2105+52 | BURK ST | 8 | SIDEROAD LIMITS |
| 2104+56 | BURK ST | 7 | SIDEROAD LIMITS |
| 2200+42 | RAILROAD ST | 5 | SIDEROAD LIMITS |
| 2304+50 | KNAPP ST | 7 | SIDEROAD LIMITS |
| 2400+40 | CENTER ST | 6 | SIDEROAD LIMITS |
| 2604+64 | WEST ST | 6 | SIDEROAD LIMITS |
| 172+63 | B-42-064 | 11 | BEGIN BRIDGE |
| 174+67 | B-42-064 | 11 | END BRIDGE |
| 187+39 | RT | 7 | PRIVATE ENTRANCE |
| 2705+78 | RIVER RD | 7 | SIDEROAD LIMITS |
| | SUBTOTAL | 241 | |

## REMOVING ASPHALTIC SURFACE BUTT JOINTS

| STATION | LOCATION | 204.0115 SY | REMARKS |
|---|---|---|---|
| 2704+20 | RIVER RD | 7 | SIDEROAD LIMITS |
| 203+78 | RT | 10 | MUNICIPAL ENTRANCE |
| 217+38 | LT | 16 | COMMERCIAL ENTRANCE |
| 218+93 | RT | 5 | PRIVATE ENTRANCE |
| 241+40 | RT | 7 | MUNICIPAL ENTRANCE |
| 2805+80 | CLAY RD | 6 | SIDEROAD LIMITS |
| 2804+26 | CLAY RD | 7 | SIDEROAD LIMITS |
| 2903+42 | CTH M | 8 | SIDEROAD LIMITS |
| 3004+15 | CTH R | 7 | SIDEROAD LIMITS |
| 3104+20 | WILLOW RD | 6 | SIDEROAD LIMITS |
| 3105+78 | WILLOW RD | 7 | SIDEROAD LIMITS |
| 337+89 | LT | 8 | PRIVATE ENTRANCE |
| 338+76 | B-42-021 | 9 | BEGIN BRIDGE |
| 339+94 | B-42-021 | 9 | END BRIDGE |
| 3204+18 | HILL RD | 6 | SIDEROAD LIMITS |
| 3205+81 | HILL RD | 6 | SIDEROAD LIMITS |
| 821+20 | LT | 7 | PRIVATE ENTRANCE |
| 3400+71 | CENTRAL RD (S JCT.) | 7 | SIDEROAD LIMITS |
| 883+90 | LT | 6 | PRIVATE ENTRANCE |
| 921+64 | LT | 6 | COMMERCIAL ENTRANCE |
| 923+86 | LT | 6 | COMMERCIAL ENTRANCE |
| 3700+80 | CENTRAL RD (N JCT.) | 6 | SIDEROAD LIMITS |
| 925+27 | LT | 3 | PRIVATE ENTRANCE |
| 929+89 | LT | 2 | PRIVATE ENTRANCE |
| 932+23 | RT | 4 | PRIVATE ENTRANCE |
| 932+40 | LT | 5 | PRIVATE ENTRANCE |
| 3804+17 | CTH AA | 6 | SIDEROAD LIMITS |
| 940+10 | LT | 6 | COMMERCIAL ENTRANCE |
| 940+65 | LT | 5 | COMMERCIAL ENTRANCE |
| 957+30 | STH 32 | 8 | PROJECT LIMITS |
| | SUBTOTAL | 200 | |
| | **PAGE TOTAL** | **441** | |

## REMOVALS - MISC

| STATION | TO | STATION | LOCATION | 204.9060.S.01 REMOVING CONCRETE CHUNKS EACH | 204.9060.S.02 REMOVING CONCRETE DITCH CHECK EACH | REMARKS |
|---|---|---|---|---|---|---|
| 212+70 | - | 213+20 | RT | 1 | --- | DISCARDED SLABS OF CONCRETE SITTING ON SLOPE |
| 272+50 | - | 272+50 | RT | --- | 1 | --- |
| | | | **TOTAL** | 1 | 1 | |

## REMOVING ASPHALTIC SURFACE MILLING

| STATION | TO | STATION | LOCATION | 204.0120 SY | REMARKS |
|---|---|---|---|---|---|
| 405+93 | - | 957+30 | STH 32 | 177,577 | MAINLINE AND 3' SHOULDERS |
| 411+68 | - | 412+08 | LT | 25 | PRIVATE ENTRANCE |
| 414+89 | - | 421+89 | RT | 1,178 | CTH Z INTERSECTION & RIGHT TURN LANE |
| 416+18 | - | 423+59 | LT | 675 | BYPASS LANE |
| 462+00 | - | 462+31 | LT | 20 | WATER TOWER ENTRANCE |
| 465+18 | - | 465+36 | RT | 12 | PRIVATE ENTRANCE |
| 489+93 | - | 490+28 | LT | 22 | PRIVATE ENTRANCE |
| 491+60 | - | 491+98 | LT | 24 | PRIVATE ENTRANCE |
| 492+18 | - | 495+30 | LT | 554 | COTTONWOOD LN INTERSECTION |
| 499+36 | - | 499+63 | RT | 18 | PRIVATE ENTRANCE |
| 499+38 | - | 503+95 | RT | 591 | GOLF COURSE RD INTERSECTION |
| 501+09 | - | 505+87 | LT | 654 | CTH V INTERSECTION |
| 508+29 | - | 508+49 | RT | 13 | PRIVATE ENTRANCE |
| 508+75 | - | 509+00 | RT | 17 | PRIVATE ENTRANCE |
| 508+79 | - | 509+18 | LT | 25 | PRIVATE ENTRANCE |
| 525+38 | - | 527+73 | RT | 361 | PESHTIGO BROOK RD INTERSECTION |
| 526+12 | - | 168+61 | LT | 2,394 | PARKING LANE |
| 527+73 | - | 169+22 | RT | 2,377 | PARKING LANE |
| 531+80 | - | 140+74 | RT | 213 | N BARKMAN ST INTERSECTION |
| 531+80 | - | 140+73 | LT | 206 | S BARKMAN ST INTERSECTION |
| 144+65 | - | 145+29 | RT | 141 | KRUEGER ST INTERSECTION |
| 144+62 | - | 145+33 | LT | 170 | KRUEGER ST INTERSECTION |
| 148+46 | - | 149+11 | RT | 151 | MILL ST INTERSECTION |
| 148+41 | - | 149+13 | LT | 201 | MILL ST INTERSECTION |
| 151+63 | - | 152+60 | LT | 196 | EHLINGER ST INTERSECTION |
| 154+29 | - | 155+03 | RT | 192 | HEASLEY ST INTERSECTION |
| 154+45 | - | 155+21 | LT | 163 | NU-LINE ST INTERSECTION |
| 158+90 | - | 159+60 | RT | 194 | BURK ST INTERSECTION |
| 158+90 | - | 159+62 | LT | 163 | BURK ST INTERSECTION |
| 161+86 | - | 162+38 | RT | 107 | RAILROAD ST INTERSECTION |
| 162+67 | - | 163+54 | LT | 203 | KNAPP ST INTERSECTION |
| 165+63 | - | 166+25 | RT | 123 | CENTER ST INTERSECTION |
| 165+66 | - | 166+41 | LT | 175 | JACKSON ST INTERSECTION |
| 168+64 | - | 169+14 | LT | 94 | WEST ST INTERSECTION |
| 169+14 | - | 172+83 | LT | 371 | GUARDRAIL SHOULDER |
| 169+22 | - | 172+84 | RT | 241 | GUARDRAIL SHOULDER |
| 174+46 | - | 176+44 | RT | 123 | GUARDRAIL SHOULDER |
| 174+46 | - | 177+14 | LT | 294 | GUARDRAIL SHOULDER |
| 187+10 | - | 187+62 | RT | 32 | PRIVATE ENTRANCE |
| 188+81 | - | 192+26 | RT | 739 | RIVER RD INTERSECTION |
| | | | SUBTOTAL | 191,029 | |

## REMOVING ASPHALTIC SURFACE MILLING

| STATION | TO | STATION | LOCATION | 204.0120 SY | REMARKS |
|---|---|---|---|---|---|
| 189+27 | - | 192+26 | LT | 528 | RIVER RD INTERSECTION |
| 192+26 | - | 230+58 | RT | 4,043 | CLIMBING LANE |
| 203+41 | - | 204+03 | RT | 42 | MUNICIPAL ENTRANCE |
| 217+03 | - | 217+74 | LT | 45 | COMMERCIAL ENTRANCE |
| 218+71 | - | 219+13 | RT | 29 | PRIVATE ENTRANCE |
| 241+18 | - | 241+63 | RT | 28 | MUNICIPAL ENTRANCE |
| 241+17 | - | 244+71 | RT | 547 | CLAY RD INTERSECTION |
| 241+26 | - | 244+39 | LT | 481 | CLAY RD INTERSECTION |
| 248+03 | - | 256+54 | RT | 545 | BYPASS LANE |
| 250+43 | - | 257+68 | LT | 1,641 | CTH M INTERSECTION & RIGHT TURN LANE |
| 274+98 | - | 281+45 | LT | 893 | CTH R INTERSECTION & RIGHT TURN LANE |
| 309+63 | - | 312+57 | LT | 467 | WILLOW RD INTERSECTION |
| 309+72 | - | 312+98 | RT | 541 | WILLOW RD INTERSECTION |
| 337+61 | - | 338+77 | LT | 61 | GUARDRAIL SHOULDER & PRIVATE ENTRANCE |
| 336+91 | - | 338+77 | RT | 92 | GUARDRAIL SHOULDER |
| 339+94 | - | 342+19 | LT | 118 | GUARDRAIL SHOULDER |
| 339+94 | - | 341+72 | RT | 94 | GUARDRAIL SHOULDER |
| 362+54 | - | 365+60 | LT | 494 | HILL RD INTERSECTION |
| 362+54 | - | 365+81 | RT | 505 | HILL RD INTERSECTION |
| 820+96 | - | 821+43 | LT | 29 | PRIVATE ENTRANCE |
| 824+17 | - | 824+96 | LT | 108 | SANDY LN INTERSECTION |
| 832+05 | - | 835+13 | RT | 520 | CENTRAL RD INTERSECTION |
| 837+98 | - | 839+40 | LT | 211 | SAGEBRUSH LN INTERSECTION |
| 841+00 | - | 913+92 | RT | 8,783 | PASSING LANE |
| 883+71 | - | 884+09 | LT | 31 | PRIVATE ENTRANCE |
| 889+63 | | 890+16 | RT | 46 | REC TRAIL CROSSING (2" DEPTH) |
| 890+56 | | 891+17 | LT | 61 | REC TRAIL CROSSING (2" DEPTH) |
| 921+40 | - | 921+84 | LT | 40 | COMMERCIAL ENTRANCE |
| 923+69 | - | 924+17 | LT | 85 | COMMERCIAL ENTRANCE |
| 925+16 | - | 925+40 | LT | 11 | PRIVATE ENTRANCE |
| 924+20 | - | 926+91 | RT | 457 | CENTRAL RD INTERSECTION |
| 929+70 | - | 930+08 | LT | 15 | PRIVATE ENTRANCE |
| 932+05 | - | 932+39 | RT | 15 | PRIVATE ENTRANCE |
| 932+24 | - | 932+57 | LT | 19 | PRIVATE ENTRANCE |
| 936+46 | - | 941+47 | RT | 291 | STRETCH OF WIDER SHOULDER |
| 937+34 | - | 940+21 | LT | 511 | CTH AA INTERSECTION |
| 939+89 | - | 940+28 | LT | 48 | COMMERCIAL ENTRANCE |
| 940+48 | - | 940+85 | LT | 52 | COMMERCIAL ENTRANCE |
| | | | SUBTOTAL | 22,526 | |

**PAGE TOTAL 213,555**

## PREPARE FOUNDATION FOR ASPHALTIC PAVING

| STATION | TO | STATION | LOCATION | 211.0100.01 (PROJECT 9170-12-00) LS | REMARKS |
|---|---|---|---|---|---|
| 405+93 | - | 957+30 | STH 32 | 1 | --- |
| | | | **TOTAL** | 1 | |

## REMOVING STORM SEWER

| STATION | TO | STATION | OFFSET | FROM STRUCT. | TO STRUCT. | 204.0210 REMOVING MANHOLES EACH | 204.0220 REMOVING INLETS EACH | 204.0245.01 REMOVING STORM SEWER (10-INCH THRU 15-INCH) LF | 204.0245.02 REMOVING STORM SEWER (21-INCH THRU 24-INCH) LF | 204.0291.S ABANDONING SEWER CY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 529+80 | - | 529+87 | LT/RT | EX-8 | EX-11 | --- | --- | 45 | --- | --- | |
| 530+33 | - | 530+48 | 19' LT | CC-1 | CC-2 | --- | --- | 14 | --- | --- | |
| 142+69 | | --- | 24' RT | 30 | --- | --- | 1 | --- | --- | --- | |
| 144+60 | | --- | 25' LT | 34 | --- | --- | 1 | --- | --- | --- | |
| 144+63 | | --- | 24' RT | 33 | --- | --- | 1 | --- | --- | --- | |
| 148+40 | | --- | 25' RT | 36 | --- | --- | 1 | --- | --- | --- | |
| 149+16 | | --- | 25' LT | 40 | --- | --- | 1 | --- | --- | --- | |
| 150+45 | | --- | 23' RT | 43 | --- | --- | 1 | --- | --- | --- | |
| 154+18 | - | 154+19 | 25' RT | PVC-1 | 46 | --- | --- | 5 | --- | --- | PVC PIPE |
| 154+19 | - | 154+67 | LT/RT | 46 | 48 | 1 | 1 | --- | --- | 1.9 | |
| 154+42 | - | 154+67 | 24' LT | 47 | 48 | --- | 1 | 25 | --- | --- | |
| 154+54 | - | 154+90 | 48' RT | 49 | 50 | --- | 1 | 36 | --- | --- | |
| 154+58 | - | 154+67 | 19' LT | CC-18 | 48 | --- | --- | --- | 9 | --- | |
| 154+90 | - | 155+03 | RT | 50 | 51 | --- | 2 | 24 | --- | --- | |
| 155+30 | - | 155+41 | LT | CC-3 | 53 | --- | --- | 18 | --- | --- | |
| 158+85 | | --- | 24' LT | 58 | --- | --- | 1 | --- | --- | --- | |
| 158+89 | - | 159+08 | RT | 54 | EX-55 | --- | 1 | 30 | --- | --- | |
| 159+36 | - | 159+45 | RT | CC-12 | 57 | --- | 1 | 9 | --- | --- | |
| 159+45 | - | 159+45 | RT | CC-11 | 57 | --- | --- | 9 | --- | --- | |
| 159+45 | - | 159+44 | RT | 57 | CC-13 | --- | --- | 9 | --- | --- | |
| 159+45 | - | 159+50 | RT | CC-10 | 57 | --- | --- | 9 | --- | --- | |
| 159+39 | - | 159+43 | LT | EX-61 | CC-4 | --- | --- | 18 | --- | --- | |
| 159+65 | - | 159+65 | 24' LT | 60 | --- | --- | 1 | --- | --- | --- | |
| 159+65 | - | 159+65 | 23' RT | 56 | --- | --- | 1 | --- | --- | --- | |
| 161+54 | - | 161+70 | 17' LT | CC-5 | CC-6 | --- | --- | --- | 16 | --- | |
| 161+84 | - | 162+01 | RT | 63 | 64 | --- | 1 | 22 | --- | --- | |
| 162+80 | - | 162+93 | LT | CC-7 | 71 | 1 | 1 | 22 | --- | --- | FIELD MH TO BE REMOVED & NOT REPLACED |
| 162+93 | - | 162+96 | 40' LT | 71 | CC-14 | --- | --- | 4 | --- | --- | |
| 162+93 | - | 162+96 | 42' LT | PVC-3 | 71 | --- | --- | 4 | --- | --- | |
| 163+22 | - | 166+09 | 17' LT | 72 | 81 | --- | --- | --- | 287 | --- | 24-INCH REINF. CONC. PIPE TRUNK LINE |
| 165+57 | - | 165+64 | RT | EX-75 | CC-8 | --- | --- | 9 | --- | --- | |
| 165+65 | - | 165+84 | LT | 73 | EX-78 | --- | 1 | --- | --- | 0.5 | ABANDON FROM EXISTING LOCATION OF INL 73 |
| 166+02 | - | 166+09 | LT | CC-15 | 81 | --- | --- | 9 | --- | --- | |
| 166+05 | - | 166+09 | LT | CC-16 | 81 | --- | --- | 7 | --- | --- | |
| 166+08 | - | 166+09 | LT/RT | CC-9 | 81 | --- | --- | 25 | --- | --- | |
| 166+09 | - | 166+13 | LT | CC-17 | 81 | --- | --- | 9 | --- | --- | |
| 166+09 | - | 167+39 | 17' LT | 81 | EX-83 | 1 | --- | --- | 130 | --- | 24-INCH REINF. CONC. PIPE TRUNK LINE |
| 167+39 | - | 167+39 | 24' LT | 82 | --- | --- | 1 | --- | --- | --- | |
| 340+01 | - | 340+15 | LT/RT | N/A | N/A | --- | 2 | 74 | --- | --- | NORTH ABUTMENT B-42-0064 |
| | | | | | **TOTALS** | 3 | 22 | 436 | 442 | 2.4 | |

## PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

| STATION | TO | STATION | LOCATION | 211.0400 STA | REMARKS |
|---|---|---|---|---|---|
| 405+93 | - | 416+40 | LT | 12 | BEGIN PROJECT - CTH Z |
| 423+50 | - | 492+32 | LT | 70 | CTH Z - COTTONWOOD LN |
| 495+22 | - | 501+22 | LT | 7 | COTTONWOOD LN - CTH V |
| 505+68 | - | 526+24 | LT | 22 | CTH V - PESHTIGO BROOK RD |
| 177+00 | - | 189+43 | LT | 13 | B.42.0064 - RIVER RD |
| 192+13 | - | 241+42 | LT | 50 | RIVER RD - CLAY RD |
| 244+23 | - | 250+59 | LT | 7 | CLAY RD - CTH M |
| 257+58 | - | 275+14 | LT | 19 | CTH M - CTH R |
| 281+38 | - | 309+87 | LT | 29 | CTH R - WILLOW RD |
| 312+35 | - | 337+61 | LT | 26 | WILLOW RD - B.42.0021 |
| 341+97 | - | 362+86 | LT | 22 | B.42.0021 - HILL RD |
| 365+36 | - | 824+27 | LT | 460 | HILL RD - SANDY LN |
| 824+89 | - | 838+11 | LT | 15 | SANDY LN - SAGEBRUSH LN |
| 839+29 | - | 897+97 | LT | -349 | SAGEBRUSH LN - KATY'S LN |
| 899+01 | - | 937+54 | LT | 39 | KATY'S LN - CTH AA |
| 940+13 | - | 957+30 | LT | 18 | CTH AA - END PROJECT |
| 406+00 | - | 414+93 | RT | 9 | BEGIN PROJECT - CTH Z |
| 421+84 | - | 499+50 | RT | 79 | CTH Z - GOLF COURSE RD |
| 503+76 | - | 525+60 | RT | 23 | GOLF COURSE RD - PESHTIGO BROOK RD |
| 176+20 | - | 188+97 | RT | 13 | B.42.0064 - RIVER RD |
| 192+25 | - | 241+18 | RT | 50 | RIVER RD - CLAY RD |
| 244+54 | - | 248+44 | RT | 5 | CLAY RD - CTH M |
| 256+35 | - | 309+88 | RT | 54 | CTH M - WILLOW RD |
| 312+82 | - | 337+00 | RT | 25 | WILLOW RD - B.42.0021 |
| 341+55 | - | 362+72 | RT | 22 | B.42.0021 - HILL RD |
| 365+63 | - | 832+28 | RT | 468 | HILL RD - CENTRAL RD (S JCT) |
| 834+86 | - | 924+29 | RT | -317 | CENTRAL RD (S JCT) - CENTRAL RD (N JCT) |
| 926+75 | - | 936+58 | RT | 11 | CENTRAL RD (N JCT) - CTH AA |
| 941+29 | - | 957+30 | RT | 17 | CTH AA - END PROJECT |
| | | | **TOTAL** | 919 | |

EARTHWORK SUMMARY

| DIVISION | STATION | LOCATION | 205.0100 COMMON EXCAVATION CY (1) | | UNEXPANDED FILL | EXPANDED FILL (13) | MASS ORDINATE +/- (14) | WASTE | SPV.0035.01 FOUNDATION BACKFILL CY (15) | COMMENT: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT | CULVERT PIPE TRANSITION EXCAVATION (3) | | FACTOR 1.15 | | | FACTOR 1.15 | |
| DIVISION 1 | | | | | | | | | | |
| CP 406+86 | 406+45 - 407+25 | STH 32 | 0 | 292 | 14 | 16 | 276 | 276 | 182 | NEW C.P. WITH TRANSITION |
| CP 440+11 | 439+50 - 440+70 | STH 32 | 0 | 467 | 42 | 48 | 418 | 418 | 307 | NEW C.P. WITH TRANSITION |
| CP 452+16 | 451+70 - 452+65 | STH 32 | 0 | 380 | 22 | 25 | 354 | 354 | 230 | NEW C.P. WITH TRANSITION |
| CP 475+70 | 475+25 - 476+15 | STH 32 | 0 | 358 | 0 | 0 | 358 | 358 | 217 | NEW C.P. WITH TRANSITION |
| CP 524+90 | 524+50 - 525+30 | STH 32 | 0 | 301 | 0 | 0 | 301 | 301 | 172 | NEW C.P. WITH TRANSITION |
| GUARDRAIL - EAST | 168+90 - 172+71 | STH 32 | 0 | 0 | 111 | 127 | -127 | 0 | 0 | |
| GUARDRAIL - WEST | 174+60 - 176+50 | STH 32 | 0 | 0 | 87 | 101 | -101 | 0 | 0 | |
| CP 272+97 | 272+10 - 273+60 | STH 32 | 12 | 411 | 60 | 69 | 353 | 353 | 181 | NEW C.P. WITH TRANSITION |
| GUARDRAIL - SOUTH | 337+50 - 338+65 | STH 32 | 0 | 0 | 16 | 18 | -18 | 0 | 0 | |
| GUARDRAIL - NORTH | 340+08 - 342+00 | STH 32 | 0 | 0 | 25 | 29 | -29 | 0 | 0 | |
| CP 342+13 | 342+00 - 342+85 | STH 32 | 18 | 0 | 0 | 0 | 18 | 18 | 0 | |
| CP 872+48 | 872+00 - 872+95 | STH 32 | 0 | 510 | 18 | 21 | 489 | 489 | 317 | NEW C.P. WITH TRANSITION |
| DIVISION 1 SUBTOTAL | | | 30 | 2,718 | 396 | 455 | 2,293 | 2,568 | 1,606 | |
| GRAND TOTAL | | | 30 | 2,718 | 396 | 455 | 2,293 | 2,568 | 1,606 | |
| TOTAL COMMON EXC | | | 2,748 | | | | | | | |

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND CULVERT PIPE TRANSITION EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(3) CULVERT PIPE TRANSITION EXCAVATION TO BE BACKFILLED WITH FOUNDATION BACKFILL MATERIAL.

(13) EXPANDED FILL FACTOR = 1.15

(14) 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.

(15) THE QUANTITY FOR FOUNDATION BACKFILL IS EQUAL TO THE CULVERT PIPE TRANSITION (CY) MINUS THE PROPOSED PAVEMENT AND BASE AGGREGATE (CY), MULTIPLIED BY AN EXPANDED BACKFILL FACTOR OF 1.15.

## BASE AGGREGATE DENSE 1 1/4-INCH

| STATION | TO | STATION | LOCATION | 305.0120 TON | 624.0100 WATER* MGAL | ESTIMATED THICKNESS** | REMARKS |
|---|---|---|---|---|---|---|---|
| 406+45 | - | 407+25 | STH 32 | 158 | 2 | 8 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 423+20 | - | 423+83 | STH 32 | 67 | 1 | 14 INCHES | CULVERT PIPE REPLACEMENT |
| 439+50 | - | 440+70 | STH 32 | 236 | 2 | 8 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 445+87 | - | 445+98 | STH 33 | 23 | 1 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 451+70 | - | 452+65 | STH 32 | 247 | 2 | 10 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 475+25 | - | 476+15 | STH 32 | 233 | 2 | 10 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 487+43 | - | 487+87 | STH 32 | 73 | 1 | 10 INCHES | CULVERT PIPE REPLACEMENT |
| 504+11 | - | 504+40 | STH 32 | 87 | 1 | 10 INCHES | CULVERT PIPE REPLACEMENT |
| 524+50 | - | 525+30 | STH 32 | 240 | 2 | 10 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 529+78 | - | 529+94 | STH 32 | 33 | 1 | 13 INCHES | SS WORK: EX-8 TO EX-11 |
| 530+28 | - | 530+53 | LT | 12 | 0 | 13 INCHES | SS WORK: CC-1 TO CC-2 |
| 142+60 | - | 142+73 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 30 |
| 144+56 | - | 144+64 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 34 |
| 144+60 | - | 144+67 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 33 |
| 148+37 | - | 148+43 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 37 |
| 148+37 | - | 148+42 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 36 |
| 148+91 | - | 148+97 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 39 |
| 149+13 | - | 149+19 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 40 |
| 150+42 | - | 150+48 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 43 |
| 150+91 | - | 150+97 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 45 |
| 154+24 | - | 154+30 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 46 |
| 154+48 | - | 154+72 | LT | 23 | 1 | 11 INCHES | SS WORK: INLET 47 TO MH 48 TO CC-18 |
| 154+50 | - | 154+94 | RT | 14 | 1 | 11 INCHES | SS WORK: INLET 49 TO INLET 50 |
| 155+00 | - | 155+06 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 51 |
| 155+25 | - | 155+46 | LT | 10 | 0 | 11 INCHES | SS WORK: CC-3 TO MH 53 |
| 158+82 | - | 158+88 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 58 |
| 158+83 | - | 158+89 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 54 |
| 159+33 | - | 159+48 | RT | 14 | 1 | 11 INCHES | SS WORK: MH 57 |
| 159+33 | - | 159+45 | LT | 12 | 1 | 11 INCHES | SS WORK: CC-4 TO MH 62 |
| 159+62 | - | 159+68 | LT | 4 | 0 | 11 INCHES | SS WORK: INLET 60 |
| 159+62 | - | 159+68 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 56 |
| 161+49 | - | 161+76 | LT | 12 | 1 | 11 INCHES | SS WORK: CC-5 TO CC-6 |
| 161+80 | - | 161+91 | RT | 5 | 0 | 11 INCHES | SS WORK: INLET 64 |
| 161+98 | - | 162+04 | RT | 3 | 0 | 11 INCHES | SS WORK; INLET 63 |
| 162+09 | - | 162+15 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 67 |
| 162+65 | - | 162+71 | LT | 3 | 0 | 11 INCHES | SS WORK: INLET 68 |
| 162+90 | - | 163+00 | LT | 6 | 0 | 11 INCHES | SS WORK: INLET 71 |
| 163+18 | - | 166+16 | LT | 136 | 2 | 11 INCHES | SS WORK: MH 72 TO MH 81 |
| 165+53 | - | 165+67 | RT | 7 | 0 | 11 INCHES | SS WORK: EX-75 TO CC-8 |
| 166+03 | - | 166+10 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 77 |
| 166+06 | - | 166+11 | STH 32 | 6 | 0 | 11 INCHES | SS WORK: CC-9 TO MH 81 |
| 166+15 | - | 167+44 | LT | 61 | 1 | 11 INCHES | SS WORK: MH 81 TO EX-83 TO INL 82 |
| 169+04 | - | 169+10 | RT | 3 | 0 | 11 INCHES | SS WORK: INLET 88 |
| 272+50 | - | 273+45 | STH 32 | 541 | 5 | 20 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 340+06 | - | 340+21 | STH 32 | 42 | 1 | 10 INCHES | STORM SEWER REMOVAL |
| 341+97 | - | 342+27 | STH 32 | 52 | 1 | 10 INCHES | CULVERT PIPE REPLACEMENT |
| 872+00 | - | 872+95 | STH 32 | 373 | 4 | VARIES 8 TO 15 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 892+00 | - | 892+22 | STH 32 | 51 | 1 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 915+82 | - | 916+02 | STH 32 | 47 | 1 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 933+05 | - | 933+23 | STH 32 | 41 | 1 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 954+58 | - | 954+78 | STH 32 | 48 | 1 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| | | | **TOTAL** | 2,974 | 38 | | |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN
** MATCH SURROUNDING AGGREGATE THICKNESS

## TEMPORARY LANE SHIFT DURING CULVERT WORK

FOR INFORMATION ONLY
(INCIDENTAL TO ITEM 208.1500)

| STATION | TO | STATION | LOCATION | 208.1500.S EACH | BASE AGGREGATE DENSE 1 1/4-INCH TON | REMARKS |
|---|---|---|---|---|---|---|
| 953+70 | - | 955+66 | LT | 1 | 142 | SEE CONSTRUCTION DETAIL |
| 953+85 | - | 955+52 | RT | 1 | 36 | SEE CONSTRUCTION DETAIL |
| | | | **TOTAL** | 2 | | |

## BASE AGGREGATE DENSE 3/4-INCH

| STATION | TO | STATION | LOCATION | 305.0110 TON | 624.0100 WATER* MGAL | REMARKS |
|---|---|---|---|---|---|---|
| 405+93 | - | 527+45 | STH 32 | 567 | 6 | GRAVEL SHOULDERS LT & RT |
| 169+23 | - | 177+30 | STH 32 | 140 | 1 | GRAVEL SHOULDER LT |
| 177+30 | - | 190+00 | STH 32 | 59 | 1 | GRAVEL SHOULDERS LT & RT |
| 190+00 | - | 229+65 | STH 32 | 185 | 2 | GRAVEL SHOULDERS LT & RT |
| 229+65 | - | 392+60 | STH 32 | 754 | 8 | GRAVEL SHOULDERS LT & RT |
| 800+00 | - | 913+93 | STH 32 | 1,063 | 11 | GRAVEL SHOULDERS LT & RT |
| 913+93 | - | 957+30 | STH 32 | 202 | 2 | GRAVEL SHOULDERS LT & RT |
| 405+93 | - | 957+30 | STH 32 | 247 | 2 | DRIVEWAYS (58 TOTAL) |
| 140+50 | - | 169+20 | STH 32 | 72 | 1 | FINE GRADING CURB & HMA REPLACEMENT** |
| 336+80 | - | 337+35 | RT | 30 | 1 | DRIVEWAY WIDENING & SHAPING |
| | | | **TOTAL** | 3,320 | 34 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN
** REUSE EXISTING GRAVEL TO THE EXTENT PRACTICABLE

## RIPRAP ITEMS

| STATION | TO | STATION | LOCATION | 606.0100 RIPRAP LIGHT CY | 645.0130 GEOTEXTILE FABRIC TYPE R SY | REMARKS |
|---|---|---|---|---|---|---|
| 172+25 | - | 172+30 | RT | 1.3 | 6.9 | NE QUAD B-42-0064 |
| 172+26 | - | 172+31 | LT | 1.3 | 6.9 | SE QUAD B-42-0064 |
| 175+00 | - | 175+05 | RT | 1.3 | 6.9 | NW QUAD B-42-0064 |
| 175+00 | - | 175+07 | LT | 1.3 | 6.9 | SW QUAD B-42-0064 |
| 272+20 | - | 273+00 | RT | 48.9 | 167.8 | REDITCHING / CULVERT INLET |
| 273+15 | - | 273+28 | LT | 4.8 | 7.1 | CULVERT OUTLET |
| 340+49 | | 340+55 | RT | 2.8 | 12.9 | NE QUAD B-42-0021 |
| 340+50 | | 340+56 | LT | 2.2 | 10.2 | NW QUAD B-42-0021 |
| | | | **TOTALS** | 64.1 | 225.6 | |

## HMA SUMMARY

| | | | | | 460.0105.S | 460.0110.S | HMA PAVEMENT 3 MT 58-28 S | | | | HMA PAVEMENT 4 MT 58-28 S | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 455.0605 | HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS | HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY | 460.6223 | INCENTIVE DENSITY PWL | INCENTIVE AIR VOIDS | INCENTIVE DENSITY HMA PAVEMENT LONGITUDINAL JOINTS | 460.6224 | INCENTIVE DENSITY PWL | INCENTIVE AIR VOIDS | INCENTIVE DENSITY HMA PAVEMENT LONGITUDINAL JOINTS | |
| STATION | TO | STATION | LOCATION | TACK COAT GAL | EACH | EACH | TON | TON * | TON ** | LF *** | TON | TON * | TON ** | LF *** | REMARKS |
| 405+93 | - | 957+30 | STH 32 | 17,047 | 2 | 2 | 19,320 | 19,320 | 19,320 | 102,346 | 13,922 | 13,922 | 13922 | 100,746 | THRU LANES ONLY |
| 192+25 | - | 230+15 | RT | 587 | --- | --- | 665 | 665 | 665 | 7,580 | 479 | 479 | 479 | 7,580 | CLIMBING LANE |
| 840+93 | - | 913+93 | RT | 615 | --- | --- | --- | --- | --- | --- | 948 | 948 | 948 | 12,000 | PASSING LANE |
| 406+80 | - | 526+24 | STH 32 | 664 | --- | --- | 1,805 | --- | 1,805 | --- | 1,301 | --- | 1301 | --- | 5' PAVED SHOULDERS |
| 526+24 | - | 168+61 | LT | 237 | --- | --- | --- | --- | --- | --- | 366 | 366 | 366 | 10,299 | PARKING LANE LT |
| 527+72 | - | 169+23 | RT | 236 | --- | --- | --- | --- | --- | --- | 364 | 364 | 364 | 10,041 | PARKING LANE RT |
| 169+14 | - | 176+99 | LT | 104 | --- | --- | 118 | --- | 118 | --- | 85 | --- | 85 | --- | GUARDRAIL SHOULDER LT |
| 169+23 | - | 176+20 | RT | 67 | --- | --- | 76 | --- | 76 | --- | 55 | --- | 55 | --- | GUARDRAIL SHOULDER RT |
| 176+20 | - | 337+05 | STH 32 | 894 | --- | --- | 2,431 | --- | 2,431 | --- | 1,751 | --- | 1751 | --- | 5' PAVED SHOULDERS |
| 337+05 | - | 341+55 | RT | 13 | --- | --- | 15 | --- | 15 | --- | 11 | --- | 11 | --- | GUARDRAIL SHOULDER RT |
| 338+01 | - | 341+96 | LT | 11 | --- | --- | 12 | --- | 12 | --- | 9 | --- | 9 | --- | GUARDRAIL SHOULDER LT |
| 341+55 | - | 840+93 | STH 32 | 511 | --- | --- | 1,390 | --- | 1,390 | --- | 1,002 | --- | 1002 | --- | 5' PAVED SHOULDERS |
| 840+93 | - | 913+93 | LT | 203 | --- | --- | 552 | --- | 552 | --- | 397 | --- | 397 | --- | 5' PAVED SHOULDER |
| 840+93 | - | 913+93 | RT | 389 | --- | --- | 552 | --- | 552 | --- | 159 | --- | 159 | --- | 5' SHLDR. (WIDENING AREA) |
| 913+93 | - | 957+30 | STH 32 | 241 | --- | --- | 655 | --- | 655 | --- | 472 | --- | 472 | --- | 5' PAVED SHOULDERS |
| 414+93 | - | 421+86 | RT | 122 | --- | --- | 138 | --- | 138 | --- | 100 | --- | 100 | --- | CTH Z INT. & RT. TURN LANE |
| 416+40 | - | 423+51 | LT | 63 | --- | --- | 72 | --- | 72 | --- | 52 | --- | 52 | --- | BYPASS LANE |
| 492+32 | - | 495+22 | LT | 58 | --- | --- | 66 | --- | 66 | --- | 48 | --- | 48 | --- | COTTONWOOD LN INT. |
| 499+49 | - | 503+76 | RT | 64 | --- | --- | 73 | --- | 73 | --- | 52 | --- | 52 | --- | GOLF COURSE RD INT. |
| 501+21 | - | 505+68 | LT | 73 | --- | --- | 83 | --- | 83 | --- | 60 | --- | 60 | --- | CTH V INT. |
| 526+24 | - | 527+72 | RT | 28 | --- | --- | --- | --- | --- | --- | 43 | --- | 43 | --- | PESHTIGO BROOK RD INT. |
| 531+86 | - | 140+73 | LT & RT | 32 | --- | --- | --- | --- | --- | --- | 50 | --- | 50 | --- | BARKMAN ST INT. (N & S) |
| 144+62 | - | 145+33 | LT & RT | 25 | --- | --- | --- | --- | --- | --- | 38 | --- | 38 | --- | KRUEGER ST INT. (N & S) |
| 148+41 | - | 149+15 | LT & RT | 28 | --- | --- | --- | --- | --- | --- | 43 | --- | 43 | --- | MILL ST INT. (N & S) |
| 151+68 | - | 152+56 | LT | 14 | --- | --- | --- | --- | --- | --- | 21 | --- | 21 | --- | EHLINGER ST INT. |
| 154+27 | - | 155+03 | RT | 15 | --- | --- | --- | --- | --- | --- | 23 | --- | 23 | --- | HEASLEY ST INT. |
| 154+45 | - | 155+21 | LT | 13 | --- | --- | --- | --- | --- | --- | 20 | --- | 20 | --- | NU-LINE ST INT. |
| 158+88 | - | 159+62 | LT & RT | 29 | --- | --- | --- | --- | --- | --- | 44 | --- | 44 | --- | BURK ST INT. (N & S) |
| 161+86 | - | 162+38 | RT | 9 | --- | --- | --- | --- | --- | --- | 13 | --- | 13 | --- | RAILROAD ST INT. |
| 162+67 | - | 163+54 | LT | 16 | --- | --- | --- | --- | --- | --- | 25 | --- | 25 | --- | KNAPP ST INT. |
| 165+60 | - | 166+25 | RT | 10 | --- | --- | --- | --- | --- | --- | 16 | --- | 16 | --- | CENTER ST INT. |
| 165+66 | - | 166+41 | LT | 14 | --- | --- | --- | --- | --- | --- | 22 | --- | 22 | --- | JACKSON ST INT. |
| 168+64 | - | 169+14 | LT | 8 | --- | --- | --- | --- | --- | --- | 12 | --- | 12 | --- | WEST ST INT. |
| 188+97 | - | 192+26 | RT | 83 | --- | --- | 94 | --- | 94 | --- | 68 | --- | 68 | --- | RIVER RD INT. |
| 189+43 | - | 192+13 | LT | 56 | --- | --- | 63 | --- | 63 | --- | 45 | --- | 45 | --- | RIVER RD INT. |
| 241+38 | - | 244+55 | RT | 57 | --- | --- | 64 | --- | 64 | --- | 46 | --- | 46 | --- | CLAY RD INT. |
| 241+41 | - | 244+22 | LT | 50 | --- | --- | 56 | --- | 56 | --- | 41 | --- | 41 | --- | CLAY RD INT. |
| 248+43 | | 256+35 | RT | 85 | --- | --- | 96 | --- | 96 | --- | 69 | --- | 69 | --- | BYPASS LANE |
| 250+59 | - | 257+56 | LT | 175 | --- | --- | 198 | --- | 198 | --- | 143 | --- | 143 | --- | CTH M INT. & RT. TURN LANE |
| 275+16 | - | 281+37 | LT | 101 | --- | --- | 114 | --- | 114 | --- | 82 | --- | 82 | --- | CTH R INT. & RT TURN LANE |
| 309+88 | - | 312+81 | RT | 56 | --- | --- | 64 | --- | 64 | --- | 46 | --- | 46 | --- | WILLOW RD INT. |
| 309+88 | - | 312+35 | LT | 49 | --- | --- | 55 | --- | 55 | --- | 40 | --- | 40 | --- | WILLOW RD INT. |
| 362+73 | - | 365+62 | RT | 52 | --- | --- | 59 | --- | 59 | --- | 43 | --- | 43 | --- | HILL RD INT. |
| 362+87 | - | 365+35 | LT | 52 | --- | --- | 59 | --- | 59 | --- | 42 | --- | 42 | --- | HILL RD INT. |
| 824+27 | - | 824+89 | LT | 11 | --- | --- | 13 | --- | 13 | --- | 9 | --- | 9 | --- | SANDY LN INT. |
| 832+28 | - | 834+85 | RT | 54 | --- | --- | 61 | --- | 61 | --- | 44 | --- | 44 | --- | CENTRAL RD INT. |
| 838+12 | - | 839+26 | LT | 22 | --- | --- | 25 | --- | 25 | --- | 18 | --- | 18 | --- | SAGEBRUSH LN INT. |
| 924+30 | - | 926+73 | RT | 48 | --- | --- | 54 | --- | 54 | --- | 39 | --- | 39 | --- | CENTRAL RD INT. |
| 937+53 | | 940+10 | STH 32 | 77 | --- | --- | 87 | --- | 87 | --- | 63 | --- | 63 | --- | CTH AA INT. & EXTRA SHLDR RT |
| | | | **TOTALS** | 23,466 | 2 | 2 | 29,186 | 19,985 | 29,186 | 109,926 | 22,842 | 16,079 | 22,842 | 140,666 | |

* Tonnage is eligible for Incentive Density PWL 460.2005

** Tonnage is eligible for Incentive Air Voids 460.2010.

*** LF is eligible for Incentive Density HMA Pavement Longitudinal Joints 460.2007

## ASPHALTIC SURFACE

| STATION | TO | STATION | LOCATION | 465.0105 TON | THICKNESS* | REMARKS |
|---|---|---|---|---|---|---|
| 406+45 | - | 407+25 | STH 32 | 108 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 423+25 | - | 423+79 | STH 32 | 24 | 7 INCHES | CULVERT PIPE REPLACEMENT |
| 439+50 | - | 440+70 | STH 32 | 164 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 445+87 | - | 445+99 | STH 32 | 15 | 7 INCHES | CULVERT PIPE REPLACEMENT |
| 451+70 | - | 452+65 | STH 32 | 127 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 475+25 | - | 476+15 | STH 32 | 122 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 487+45 | - | 487+85 | STH 32 | 36 | 7 INCHES | CULVERT PIPE REPLACEMENT |
| 504+11 | - | 504+40 | STH 32 | 44 | 7 INCHES | CULVERT PIPE REPLACEMENT |
| 524+50 | - | 525+30 | STH 32 | 111 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 529+78 | - | 529+94 | LT/RT | 15 | 6 INCHES | STORM SEWER WORK |
| 530+28 | - | 530+53 | LT | 6 | 6 INCHES | STORM SEWER WORK |
| 140+56 | - | 140+90 | LT | 3 | 6 INCHES | CURB REPLACEMENT (BARKMAN ST. INT.) |
| 140+56 | - | 140+84 | RT | 3 | 6 INCHES | CURB REPLACEMENT (BARKMAN ST - NW) |
| 140+59 | - | 140+69 | RT | 1 | 3 INCHES | BEHIND SIDEWALK |
| 141+47 | - | 141+69 | LT | 2 | 6 INCHES | CURB REPLACEMENT |
| 142+60 | - | 142+73 | RT | 1 | 6 INCHES | CURB REPLACEMENT |
| 144+54 | - | 144+81 | RT | 3 | 6 INCHES | CURB REPLACEMENT (KRUEGER ST - NE) |
| 144+56 | - | 144+80 | LT | 3 | 6 INCHES | CURB REPLACEMENT (KRUEGER ST - SE) |
| 145+15 | - | 145+33 | RT | 3 | 6 INCHES | CURB REPLACEMENT (KRUEGER ST - NW) |
| 145+15 | - | 145+37 | LT | 3 | 6 INCHES | CURB REPLACEMENT (KRUEGER ST - SW) |
| 148+29 | - | 148+61 | RT | 4 | 6 INCHES | CURB REPLACEMENT (MILL ST - NE) |
| 148+37 | - | 148+62 | LT | 4 | 6 INCHES | CURB REPLACEMENT (MILL ST - SE) |
| 148+94 | - | 149+15 | RT | 3 | 6 INCHES | CURB REPLACEMENT (MILL ST - NW) |
| 148+91 | - | 149+26 | LT | 5 | 6 INCHES | CURB REPLACEMENT (MILL ST - SW) |
| 150+42 | - | 150+49 | RT | 1 | 6 INCHES | INLET REPLACEMENT |
| 150+91 | - | 150+97 | LT | 1 | 6 INCHES | MANHOLE WORK |
| 151+35 | - | 151+87 | LT | 5 | 6 INCHES | CURB REPLACEMENT (TRAIL - S & EHLINGER - SE) |
| 151+49 | - | 151+87 | RT | 3 | 6 INCHES | CURB REPLACEMENT & PARKING LOT (TRAIL -N) |
| 152+35 | - | 152+63 | LT | 2 | 6 INCHES | CURB REPLACEMENT (EHLINGER - SW) |
| 154+14 | - | 154+85 | RT | 10 | 6 INCHES | CURB REPLACEMENT & SS WORK (HEASLEY - NE) |
| 154+36 | - | 154+72 | LT | 13 | 6 INCHES | CURB REPLACEMENT & SS WORK (NU LINE - SE) |
| 154+85 | - | 155+09 | RT | 5 | 6 INCHES | CURB REPLACEMENT (HEASLEY - NW) |
| 155+03 | - | 155+46 | LT | 11 | 6 INCHES | CURB , PARKING LOT, & SS WORK (NU LINE - SW) |
| 158+78 | - | 159+10 | LT | 3 | 6 INCHES | CURB REPLACEMENT (BURK ST - SE) |
| 158+83 | - | 159+12 | RT | 4 | 6 INCHES | CURB REPLACEMENT (BURK ST - NE) |
| 159+33 | - | 159+71 | LT | 8 | 6 INCHES | CURB REPLACEMENT & SS WORK (BURK ST - SW) |
| 159+33 | - | 159+69 | RT | 8 | 6 INCHES | CURB REPLACEMENT & SS WORK (BURK ST - NW) |
| 161+49 | - | 163+00 | LT | 23 | 6 INCHES | CURB REPLACEMENT & SS WORK (KNAPP ST - SE) |
| 161+76 | - | 162+05 | RT | 3 | 6 INCHES | CURB REPLACEMENT (RAILROAD ST - NE) |
| 162+25 | - | 162+43 | RT | 1 | 6 INCHES | CURB REPLACEMENT (RAILROAD ST -NW) |
| 163+31 | - | 163+67 | LT | 4 | 6 INCHES | CURB REPLACEMENT (KNAPP ST - SW) |
| 163+41 | - | 163+69 | RT | 2 | 6 INCHES | CURB REPLACEMENT (KNAPP ST - NW) |
| 163+19 | - | 165+97 | LT | 65 | 6 INCHES | STORM SEWER WORK |
| 165+50 | - | 165+80 | RT | 4 | 6 INCHES | CURB REPLACEMENT (JACKSON ST - NE) |
| 165+50 | - | 165+86 | LT | 4 | 6 INCHES | CURB REPLACEMENT (JACKSON ST - SE) |
| 166+03 | - | 166+29 | RT | 3 | 6 INCHES | CURB REPLACEMENT (JACKSON ST - NW) |
| 166+23 | - | 166+48 | LT | 1 | 6 INCHES | CURB REPLACEMENT (JACKSON ST - SW) |
| 165+97 | - | 166+44 | LT/RT | 49 | 6 INCHES | STORM SEWER WORK |
| 166+90 | - | 167+02 | RT | 1 | 6 INCHES | CURB REPLACEMENT |
| 167+30 | - | 167+44 | LT | 1 | 6 INCHES | CURB REPLACEMENT |
| 168+59 | - | 168+79 | LT | 2 | 6 INCHES | CURB REPLACEMENT (WEST ST - SE) |
| 168+90 | - | 169+20 | RT | 2 | 6 INCHES | CURB REPLACEMENT (WEST ST - NW) |
| 172+10 | - | 175+20 | STH 32 | 22 | 6 INCHES | TBT CURB LOCATIONS (4) |
| 272+50 | - | 273+45 | STH 32 | 129 | 7 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 339+94 | - | 340+70 | STH 32 | 36 | 7 INCHES | TBT CURB & SS REMOVAL |
| 341+96 | - | 342+27 | STH 32 | 34 | 7 INCHES | CULVERT PIPE REPLACEMENT |
| 872+00 | - | 872+95 | STH 32 | 206 | 8 INCHES | CULV. PIPE REPLACEMENT W/ TRANSITION |
| 892+00 | - | 892+22 | STH 32 | 50 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 915+81 | - | 916+03 | STH 32 | 31 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 933+03 | - | 933+23 | STH 32 | 28 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| 954+57 | - | 954+79 | STH 32 | 31 | 8 INCHES | CULVERT PIPE REPLACEMENT |
| | | | **TOTAL** | 1,619 | | |

* MATCH SURROUNDING ASPHALT THICKNESS. TABLE DEPTH WAS ESTIMATED OFF ASBUILT INFORMATION.

## ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

| STATION | LOCATION | 465.0120 TON | REMARKS |
|---|---|---|---|
| 411+88 | LT | 4 | PRIVATE ENTRANCE |
| 417+27 | RT | 9 | MUNICIPAL ENTRANCE |
| 462+16 | LT | 3 | WATER TOWER ENTRANCE |
| 465+26 | RT | 3 | PRIVATE ENTRANCE |
| 490+11 | LT | 4 | PRIVATE ENTRANCE |
| 491+80 | LT | 4 | PRIVATE ENTRANCE |
| 499+49 | RT | 3 | PRIVATE ENTRANCE |
| 508+39 | RT | 3 | PRIVATE ENTRANCE |
| 508+87 | RT | 3 | PRIVATE ENTRANCE |
| 509+00 | LT | 4 | PRIVATE ENTRANCE |
| 187+39 | RT | 5 | PRIVATE ENTRANCE |
| 203+78 | RT | 7 | MUNICIPAL ENTRANCE |
| 217+38 | LT | 8 | COMMERCIAL ENTRANCE |
| 218+93 | RT | 5 | PRIVATE ENTRANCE |
| 241+40 | RT | 5 | MUNICIPAL ENTRANCE |
| 337+89 | LT | 10 | PRIVATE ENTRANCE |
| 821+20 | LT | 5 | PRIVATE ENTRANCE |
| 883+90 | LT | 5 | PRIVATE ENTRANCE |
| 889+83 | RT | 5 | REC TRAIL CROSSING |
| 890+85 | LT | 7 | REC TRAIL CROSSING |
| 921+64 | LT | 7 | COMMERCIAL ENTRANCE |
| 923+86 | LT | 14 | COMMERCIAL ENTRANCE |
| 925+27 | LT | 2 | PRIVATE ENTRANCE |
| 929+89 | LT | 3 | PRIVATE ENTRANCE |
| 932+23 | RT | 3 | PRIVATE ENTRANCE |
| 932+40 | LT | 3 | PRIVATE ENTRANCE |
| 940+10 | LT | 8 | COMMERCIAL ENTRANCE |
| 940+65 | LT | 9 | COMMERCIAL ENTRANCE |
| | **TOTAL** | 149 | |

## MARKERS CULVERT ENDS

| STATION | LOC. | 633.5200 EACH |
|---|---|---|
| 406+87 | STH 32 | 2 |
| 423+52 | STH 32 | 2 |
| 440+11 | STH 32 | 2 |
| 445+93 | STH 32 | 2 |
| 452+17 | STH 32 | 2 |
| 475+70 | STH 32 | 2 |
| 479+56 | STH 32 | 2 |
| 487+65 | STH 32 | 2 |
| 504+26 | STH 32 | 2 |
| 524+90 | STH 32 | 2 |
| 184+00 | STH 32 | 2 |
| 204+13 | STH 32 | 2 |
| 210+42 | STH 32 | 2 |
| 244+18 | STH 32 | 2 |
| 286+14 | STH 32 | 2 |
| 272+97 | STH 32 | 2 |
| 307+69 | STH 32 | 2 |
| 329+00 | STH 32 | 2 |
| 337+63 | LT | 1 |
| 338+47 | RT | 1 |
| 342+13 | STH 32 | 2 |
| 364+92 | STH 32 | 2 |
| 805+79 | STH 32 | 2 |
| 819+33 | STH 32 | 2 |
| 847+48 | STH 32 | 2 |
| 872+48 | STH 32 | 2 |
| 891+93 | STH 32 | 2 |
| 915+92 | STH 32 | 2 |
| 933+14 | STH 32 | 2 |
| 954+68 | STH 32 | 2 |
| | **TOTALS** | 58 |

## ASPHALTIC SURFACE PATCHING

| STATION | TO | STATION | LOCATION | 465.0110 TON | REMARKS |
|---|---|---|---|---|---|
| 405+93 | - | 957+30 | STH 32 | 50.0 | UNDISTRIBUTED |
| | | | **TOTALS** | 50.0 | |

## ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

| STATION | TO | STATION | LOCATION | 465.0425 LF | REMARKS |
|---|---|---|---|---|---|
| 405+93 | - | 410+18 | LT | 425 | GAP FOR RESIDENTIAL DRIVEWAY |
| 410+85 | - | 411+58 | LT | 73 | GAP FOR RESIDENTIAL DRIVEWAY |
| 412+23 | - | 451+15 | LT | 3,892 | GAP FOR RESIDENTIAL DRIVEWAY |
| 451+80 | - | 461+83 | LT | 1,003 | GAP FOR WATER TOWER DRIVEWAY |
| 462+50 | - | 479+44 | LT | 1,694 | GAP FOR RESIDENTIAL DRIVEWAY |
| 480+09 | - | 489+75 | LT | 966 | GAP FOR RESIDENTIAL DRIVEWAY |
| 490+48 | - | 491+43 | LT | 95 | GAP FOR RESIDENTIAL DRIVEWAY |
| 495+22 | - | 497+85 | LT | 263 | BEGIN 45 MPH ZONE |
| 178+50 | - | 187+00 | LT | 850 | GAP FOR RESIDENTIAL DRIVEWAY |
| 187+87 | - | 188+91 | LT | 104 | GAP FOR SIDE ROAD |
| 193+39 | - | 203+52 | LT | 1,013 | GAP FOR RESIDENTIAL DRIVEWAY |
| 204+35 | - | 208+50 | LT | 415 | GAP FOR RESIDENTIAL DRIVEWAY |
| 209+31 | - | 213+86 | LT | 455 | GAP FOR RESIDENTIAL DRIVEWAY |
| 214+53 | - | 216+73 | LT | 220 | GAP FOR COMMERCIAL DRIVEWAY |
| 218+52 | - | 240+91 | LT | 2,239 | GAP FOR SIDE ROAD |
| 244+47 | - | 248+71 | LT | 424 | GAP FOR SIDE ROAD |
| 257+58 | - | 274+66 | LT | 1,708 | GAP FOR SIDE ROAD |
| 281+37 | - | 290+49 | LT | 895 | GAP FOR COMMERCIAL DRIVEWAY |
| 292+47 | - | 302+15 | LT | 968 | GAP FOR COMMERCIAL DRIVEWAY |
| 303+88 | - | 309+36 | LT | 548 | GAP FOR SIDE ROAD |
| 312+96 | - | 317+12 | LT | 416 | GAP FOR RESIDENTIAL DRIVEWAY |
| 317+79 | - | 337+55 | LT | 1,976 | GAP FOR RESIDENTIAL DWY. & BRIDGE |
| 340+19 | - | 341+31 | LT | 112 | GAP FOR FISHING GROUNDS DWY. |
| 342+13 | - | 355+42 | LT | 1,329 | GAP FOR RESIDENTIAL DRIVEWAY |
| 356+06 | - | 362+36 | LT | 630 | GAP FOR SIDE ROAD |
| 365+95 | - | 395+22 | LT | 2,927 | GAP FOR RESIDENTIAL DRIVEWAY |
| 395+85 | - | 820+79 | LT | 1,754 | GAP FOR RESIDENTIAL DRIVEWAY |
| 821+56 | - | 823+76 | LT | 220 | GAP FOR SIDE ROAD |
| 825+88 | - | 831+91 | LT | 603 | GAP FOR RESIDENTIAL DRIVEWAY |
| 832+73 | - | 837+64 | LT | 491 | GAP FOR SIDE ROAD |
| 840+00 | - | 875+55 | LT | 3,555 | GAP FOR COMMERCIAL DRIVEWAY |
| 877+00 | - | 883+52 | LT | 652 | GAP FOR RESIDENTIAL DRIVEWAY |
| 884+26 | - | 890+51 | LT | 625 | GAP FOR REC TRAIL CROSSING |
| 891+22 | - | 897+46 | LT | 624 | GAP FOR SIDE ROAD |
| 899+82 | - | 901+62 | LT | 180 | GAP FOR RESIDENTIAL DRIVEWAY |
| 902+24 | - | 904+53 | LT | 229 | GAP FOR RESIDENTIAL DRIVEWAY |
| 905+14 | - | 911+96 | LT | 682 | GAP FOR RESIDENTIAL DRIVEWAY |
| 912+71 | - | 918+28 | LT | 557 | GAP FOR RESIDENTIAL DRIVEWAY |
| 918+93 | - | 919+80 | LT | 87 | GAP FOR SERIES OF 4 DRIVEWAYS |
| 925+59 | - | 929+57 | LT | 398 | GAP FOR RESIDENTIAL DRIVEWAY |
| 930+24 | - | 932+05 | LT | 181 | GAP FOR RESIDENTIAL DRIVEWAY |
| 932+75 | - | 934+42 | LT | 167 | GAP FOR RESIDENTIAL DRIVEWAY |
| 935+10 | - | 936+37 | LT | 127 | GAP FOR RESIDENTIAL DWYS. & SIDE ROAD |
| 942+79 | - | 957+30 | LT | 1,451 | PROJECT LIMITS |
| | | | SUBTOTAL | 38,223 | |

**NOTES**

ALL LOCATIONS TO BE VERIFIED BY ENGINEER IN THE FIELD.
ALL SHOULDER RUMBLES STRIPS ARE TYPE 1.

## ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

| STATION | TO | STATION | LOCATION | 465.0425 LF | REMARKS |
|---|---|---|---|---|---|
| 406+60 | - | 414+93 | RT | 833 | GAP FOR SIDE ROAD |
| 422+35 | - | 437+54 | RT | 1,519 | GAP FOR RESIDENTIAL DRIVEWAY |
| 438+34 | - | 447+38 | RT | 904 | GAP FOR SERIES OF 3 DRIVEWAYS |
| 449+70 | - | 454+51 | RT | 481 | GAP FOR SERIES OF 2 DRIVEWAYS |
| 456+49 | - | 461+82 | RT | 533 | GAP FOR RESIDENTIAL DRIVEWAY |
| 462+45 | - | 464+95 | RT | 250 | GAP FOR RESIDENTIAL DRIVEWAY |
| 465+57 | - | 474+75 | RT | 918 | GAP FOR UTILITY ENTRANCE |
| 475+44 | - | 483+58 | RT | 814 | GAP FOR RESIDENTIAL DRIVEWAY |
| 484+36 | - | 493+85 | RT | 949 | GAP FOR COMMERCIAL DRIVEWAY |
| 495+85 | - | 497+85 | RT | 200 | BEGIN 45 MPH ZONE |
| 178+50 | - | 187+02 | RT | 852 | GAP FOR RESIDENTIAL DWY. & SIDE ROAD |
| 192+76 | - | 203+40 | RT | 1,064 | GAP FOR MUNICIPAL ENTRANCE |
| 204+13 | - | 218+62 | RT | 1,449 | GAP FOR RESIDENTIAL DRIVEWAY |
| 219+26 | - | 222+21 | RT | 295 | GAP FOR RESIDENTIAL DRIVEWAY |
| 222+81 | - | 225+38 | RT | 257 | GAP FOR RESIDENTIAL DRIVEWAY |
| 226+06 | - | 229+33 | RT | 327 | GAP FOR RADIO TOWER DRIVEWAY |
| 230+02 | - | 233+69 | RT | 367 | GAP FOR CEMETERY DRIVEWAY |
| 234+34 | - | 235+25 | RT | 91 | GAP FOR CEMETERY DRIVEWAY |
| 235+95 | - | 237+07 | RT | 112 | GAP FOR CEMETERY DRIVEWAY |
| 237+75 | - | 238+61 | RT | 86 | GAP FOR CEMETERY DRIVEWAY |
| 239+33 | - | 241+02 | RT | 169 | GAP FOR MUNICIPAL DWY. & SIDE ROAD |
| 245+04 | - | 293+15 | RT | 4,794 | GAP FOR RESIDENTIAL DRIVEWAY |
| 293+79 | - | 309+56 | RT | 1,577 | GAP FOR SIDE ROAD |
| 313+32 | - | 322+83 | RT | 951 | GAP FOR RESIDENTIAL DRIVEWAYS |
| 324+48 | - | 338+52 | RT | 1,404 | GAP FOR BRIDGE |
| 340+19 | - | 343+33 | RT | 314 | GAP FOR RESIDENTIAL DRIVEWAY |
| 343+98 | - | 359+00 | RT | 1,502 | GAP FOR RESIDENTIAL DRIVEWAY |
| 359+67 | - | 362+37 | RT | 270 | GAP FOR SIDE ROAD |
| 366+13 | - | 807+83 | RT | 3,430 | GAP FOR RESIDENTIAL DRIVEWAY |
| 808+45 | - | 811+14 | RT | 269 | GAP FOR RESIDENTIAL DRIVEWAY |
| 811+75 | - | 814+84 | RT | 309 | GAP FOR RESIDENTIAL DRIVEWAY |
| 815+55 | - | 822+34 | RT | 679 | GAP FOR RESIDENTIAL DRIVEWAY |
| 822+99 | - | 832+04 | RT | 905 | GAP FOR SIDE ROAD |
| 835+35 | - | 889+59 | RT | 5,424 | GAP FOR REC TRAIL CROSSING |
| 890+22 | - | 923+70 | RT | 3,348 | GAP FOR SIDE ROAD |
| 927+22 | - | 931+93 | RT | 471 | GAP FOR RESIDENTIAL DRIVEWAY |
| 932+54 | - | 948+70 | RT | 1,616 | GAP FOR RESIDENTIAL DRIVEWAY |
| 949+39 | - | 957+30 | RT | 791 | PROJECT LIMITS |
| | | | SUBTOTAL | 40,524 | |
| | | | **PAGE TOTAL** | **78,747** | |

**NOTES**

ALL LOCATIONS TO BE VERIFIED BY ENGINEER IN THE FIELD.
ALL SHOULDER RUMBLES STRIPS ARE TYPE 1.

## ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL

| STATION | TO | STATION | LOCATION | 465.0475 LF | REMARKS |
|---|---|---|---|---|---|
| 407+00 | - | 418+06 | STH 32 | 1,106 | PROJECT LIMITS - CTH Z |
| 422+06 | - | 491+51 | STH 32 | 6,945 | CTH Z - COTTONWOOD LN |
| 496+15 | - | 497+85 | STH 32 | 170 | COMMERCIAL DWY. - BEGIN 45 MPH |
| 178+50 | - | 188+69 | STH 32 | 1,019 | BEGIN 55 MPH - RIVER RD |
| 192+69 | - | 216+38 | STH 32 | 2,369 | RIVER RD - COMMERCIAL DRIVEWAY |
| 218+38 | - | 240+42 | STH 32 | 2,204 | COMMERCIAL DRIVEWAY - CLAY RD |
| 244+86 | - | 250+10 | STH 32 | 524 | CLAY RD - CTH M |
| 254+10 | - | 274+76 | STH 32 | 2,066 | CTH M - CTH R |
| 278+76 | - | 290+22 | STH 32 | 1,129 | CTH R - COMMERCIAL DRIVEWAY |
| 292+22 | - | 301+78 | STH 32 | 956 | COMMERCIAL DWY. - COMMERCIAL DWY. |
| 303+78 | - | 309+27 | STH 32 | 549 | COMMERCIAL DRIVEWAY - WILLOW RD |
| 313+27 | - | 338+52 | STH 32 | 2,525 | WILLOW RD - BRIDGE |
| 340+19 | - | 362+22 | STH 32 | 2,203 | BRIDGE - HILL RD |
| 366+22 | - | 822+55 | STH 32 | 4,893 | HILL RD - SANDY LN |
| 826+55 | - | 831+59 | STH 32 | 504 | SANDY LN - CENTRAL RD |
| 835+59 | - | 837+65 | STH 32 | 206 | CENTRAL RD (S JCT) - SAGEBRUSH LN * |
| 839+65 | - | 875+00 | STH 32 | 3,535 | SAGEBRUSH LN * - COMMERCIAL DRIVEWAY |
| 877+00 | - | 889+44 | STH 32 | 1,244 | COMMERCIAL DWY. - REC TRAIL CROSSING |
| 891+43 | - | 896+41 | STH 32 | 498 | REC TRAIL CROSSING - KATY'S LN |
| 900+41 | - | 920+64 | STH 32 | 2,023 | KATY'S LN - COMMERCIAL DRIVEWAY |
| 927+45 | - | 936+85 | STH 32 | 940 | CENTRAL RD - CTH AA |
| 941+65 | - | 957+30 | STH 32 | 1,565 | CTH AA - PROJECT LIMITS |
| | | | **TOTAL** | 39,173 | |

*USE COMMERCIAL DRIVEWAY STANDARDS FOR SAGEBRUSH LANE

## CROSS CULVERT PIPE SUMMARY

| | | NONMETAL CULVERT PIPE | | | | | | | | STEEL CULVERT PIPE | | REINFORCED CONCRETE CULVERT PIPE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CULVERT PIPE NONMETAL | | | | APRON ENDWALLS FOR CULVERT PIPE | | | | CULVERT PIPE STEEL | APRON ENDWALLS FOR CULVERT PIPE STEEL | CULVERT PIPE REINFORCED CONCRETE | | | | | | | APRON ENDWALLS FOR CULVERT PIPE REINF. CONCRETE | | | | |
| STATION | LOC. | 520.3424 CLASS III-A 24-INCH LF | 520.3430 CLASS III-A 30-INCH LF | 520.3624 CLASS III-B 24-INCH LF | 520.3630 CLASS III-B 30-INCH LF | 520.1024 24-INCH EACH | 520.1030 30-INCH EACH | 520.8700 CLEANING CULVERT PIPES EACH | 520.9700.S CULVERT PIPE LINER (18-INCH) LF | 521.3124 CULV. PIPE CORRUG. STEEL 24-INCH* LF | 521.1018 18-INCH EACH | 521.1024 24-INCH EACH | 522.0124 CLASS III 24-INCH LF | 522.0136 CLASS III 36-INCH LF | 522.0424 CLASS IV 24-INCH LF | 522.0436 CLASS IV 36-INCH LF | 522.2419 HORIZONTAL ELLIPTICAL CLASS HE-IV 19X30-INCH LF | 522.2424 HORIZONTAL ELLIPTICAL CLASS HE-IV 24X38-INCH LF | JOINT TIES ** EACH | 522.1024 24-INCH EACH | 522.1036 36-INCH EACH | 522.2619 HORIZONTAL ELLIPTICAL 19X30-INCH EACH | 522.2624 HORIZONTAL ELLIPTICAL 24X38-INCH EACH | REMARKS |
| 406+87 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 56 | --- | 12 | --- | --- | 2 | --- | |
| 423+52 | STH 32 | 116 | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 440+11 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 80 | --- | --- | --- | 12 | 2 | --- | --- | --- | |
| 445+93 | STH 32 | --- | 80 | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 452+17 | STH 32 | 70 | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 475+70 | STH 32 | 70 | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 479+56 | LT | --- | --- | --- | --- | --- | --- | 1 | --- | 6 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | EXTENSION |
| 479+56 | RT | --- | --- | --- | --- | --- | --- | --- | --- | 6 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | EXTENSION |
| 487+65 | STH 32 | --- | --- | --- | 96 | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 504+26 | STH 32 | --- | --- | 90 | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 524+90 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 56 | --- | 12 | --- | --- | 2 | --- | |
| 204+13 | STH 32 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 272+97 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 80 | --- | --- | --- | --- | --- | 12 | 2 | --- | --- | --- | |
| 307+69 | STH 32 | --- | --- | --- | --- | --- | --- | --- | 147 | --- | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | EXISTING 30" CPCS |
| 342+13 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 96 | --- | --- | --- | --- | 12 | --- | 2 | --- | --- | |
| 819+33 | STH 32 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 847+48 | LT | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 8 | --- | --- | 2 | --- | 1 | --- | --- | EXTENSION |
| 872+48 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 72 | 12 | --- | --- | --- | 2 | |
| 891+93 | STH 32 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 88 | 12 | --- | --- | --- | 2 | |
| 915+92 | STH 32 | 76 | --- | --- | --- | 2 | --- | --- | -- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| 933+14 | STH 32 | --- | --- | --- | --- | --- | --- | --- | -- | --- | --- | --- | 72 | --- | --- | --- | --- | --- | 12 | 2 | --- | --- | --- | |
| 954+68 | STH 32 | --- | --- | --- | --- | --- | --- | --- | -- | --- | --- | --- | 72 | --- | --- | --- | --- | --- | 12 | 2 | --- | --- | --- | |
| **TOTALS** | | 332 | 80 | 90 | 96 | 10 | 4 | 3 | 147 | 12 | 2 | 2 | 224 | 96 | 80 | 8 | 112 | 160 | 110 | 8 | 3 | 4 | 4 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

** FOR INFORMATION ONLY (NOT A PAY ITEM)

NOTE: MINIMUM THICKNESS OF 0.064 INCHES REQUIRED FOR CORRUGATED STEEL CULVERTS

## CROSS CULVERT ADDITIONAL ITEMS

| STATION | LOC. | 520.8000 CONCRETE COLLARS FOR PIPE* EACH | 520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION EACH | SPV.0060.05 JOINT TIE RETROFIT* EACH | REMARKS |
|---|---|---|---|---|---|
| 307+69 | STH 32 | --- | 1 | --- | --- |
| 847+48 | LT | 1 | --- | 2 | EXTENSION |
| **TOTALS** | | 1 | 1 | 2 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

## DRIVEWAY CULVERT PIPE SUMMARY

| | | APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL | | | | 521.3115 CULVERT PIPE CORRUGATED STEEL 15-INCH LF | 521.3118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF | 521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH * LF | 522.0118 CULVERT PIPE REINF. CONC. CLASS III 18-INCH LF | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 521.1515 15-INCH 6 TO 1 | 521.1518 18-INCH 6 TO 1 | 521.1524 24-INCH 6 TO 1 | 521.1618 18-INCH 10 TO 1 | | | | | |
| STATION | LOC. | EACH | EACH | EACH | EACH | | | | | REMARKS |
| 437+75 | RT | 1 | --- | --- | --- | 10 | --- | --- | --- | EXTENSION |
| 474+85 | RT | --- | --- | 1 | --- | --- | --- | 8 | --- | EXTENSION |
| 276+40 | RT | --- | 1 | --- | --- | --- | 12 | --- | --- | EXTENSION |
| 276+80 | RT | --- | 1 | --- | --- | --- | 12 | --- | --- | EXTENSION |
| 336+88 | RT | --- | --- | --- | 1 | --- | 4 | --- | --- | EXTENSION |
| 337+38 | RT | --- | --- | --- | 1 | --- | 4 | --- | --- | EXTENSION |
| 876+30 | LT | --- | 1 | --- | --- | --- | --- | --- | 8 | EXTENSION |
| 955+20 | LT | --- | 1 | --- | --- | --- | 10 | --- | --- | EXTENSION |
| 955+80 | LT | --- | 1 | --- | --- | --- | 10 | --- | --- | EXTENSION |
| **TOTALS** | | 1 | 5 | 1 | 2 | 10 | 52 | 8 | 8 | |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

NOTE: MINIMUM THICKNESS OF 0.064 INCHES REQUIRED FOR CORRUGATED STEEL CULVERTS

## STORM SEWER STRUCTURES

| STRUCTURE | STATION* | OFFSET* | ELEVATION RIM** | ELEVATION INVERT*** | DEPTH **** FT | 520.8000 CONCRETE COLLARS FOR PIPE ***** EACH | SPV.0060.01 INLET COVERS DRIVEWAY SPECIAL EACH | 611.0430 RECON-STRUCTING INLETS EACH | 611.0600 INLET COVERS TYPE A EACH | 611.0624 INLET COVERS TYPE H EACH | 611.0530 MANHOLE COVERS TYPE J EACH | 611.2004 MANHOLES 4-FT DIAMETER EACH | 611.2005 MANHOLES 5-FT DIAMETER EACH | 611.2008 MANHOLES 8-FT DIAMETER EACH | 611.3004 INLETS 4-FT DIAMETER EACH | 611.3230 INLETS 2x3-FT EACH | SPV.0060.02 ADJUSTMENT RING REPLACEMENT EACH | SPV.0060.03 RE-CONDITIONING MANHOLES EACH | SPV.0060.04 RESETTING PIPE END EACH | SPV.0060.05 JOINT TIE RETROFIT ***** EACH | 650.4000 CONSTR. STAKING STORM SEWER EACH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 527+51.4 | 36.7' LT | --- | 804.87 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | 1 |
| CC-1 | 530+33.5 | 19.5' LT | --- | 803.06 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-2 | 530+47.5 | 19.3' LT | --- | 803.02 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 30 | 142+69.1 | 25.0' RT | 806.47 | 803.38 | 2.34 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 33 | 144+63.5 | 24.9 ' RT | 806.55 | 803.55 | 2.25 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 34 | 144+60.2 | 25.8' LT | 806.78 | 804.08 | 1.95 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 35 | 144+92.8 | 17.5' LT | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- |
| 36 | 148+40.1 | 25.0' RT | 803.88 | 801.04 | 2.09 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 37 | 148+40.4 | 25.8' LT | 804.03 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| 39 | 148+94.3 | 48.8' LT | 804.09 | --- | | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 40 | 149+15.6 | 25.8' LT | 803.99 | 800.85 | 2.39 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 43 | 150+45.3 | 24.0' RT | 803.38 | 799.68 | 2.95 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 45 | 150+94.0 | 18.2' LT | 804.33 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| PVC-1 | 154+18.2 | 26.8' RT | --- | 799.06 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 46 | 154+27.2 | 23.1' RT | 802.02 | 798.80 | 2.47 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 47 | 154+58.2 | 37.8' LT | 801.94 | 798.75 | 2.44 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| CC-18 | 154+57.6 | 19.2' LT | --- | 797.80 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 48 | 154+66.6 | 19.2' LT | 802.11 | 797.77 | 2.78 | --- | --- | --- | --- | --- | 1 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | 1 |
| 49 | 154+54.3 | 48.4' RT | 801.39 | 798.50 | 2.14 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| PVC -2 | 154+50.3 | 50.0' RT | --- | 799.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 50 | 154+89.8 | 43.3' RT | 801.56 | 798.22 | 2.59 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 51 | 155+03.4 | 23.1' RT | 801.92 | 798.06 | 3.11 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| CC-3 | 155+29.5 | 5.9' LT | --- | 798.00 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 52 | 155+28.2 | 23.9' LT | 801.30 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 53 | 155+41.5 | 19.4' LT | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 |
| 54 | 158+89.4 | 23.2' RT | 800.92 | 797.80 | 2.37 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| CC-10 | 159+50.2 | 43.4' RT | --- | 797.54 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-11 | 159+44.6 | 59.7' RT | --- | 796.90 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-12 | 159+35.9 | 49.7' RT | --- | 797.43 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-13 | 159+43.7 | 41.8' RT | --- | 796.83 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 56 | 159+65.1 | 23.4' RT | 800.56 | 797.61 | 2.20 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 57 | 159+44.7 | 50.8' RT | 800.43 | 796.87 | 2.11 | --- | --- | --- | 1 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | 1 |
| 58 | 158+85.3 | 23.7' LT | 800.70 | 798.09 | 1.86 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 60 | 159+65.4 | 23.7' LT | 800.76 | 797.86 | 2.15 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 62 | 159+36.9 | 17.4' LT | 801.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| CC-4 | 159+39.1 | 26.7' LT | --- | 797.70 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-5 | 161+54.3 | 17.4' LT | --- | 796.39 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-6 | 161+70.4 | 17.4' LT | --- | 796.37 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 63 | 162+00.9 | 36.9' RT | 801.02 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| 64 | 161+83.8 | 23.2' RT | 800.88 | 797.64 | 2.49 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 67 | 162+12.3 | 17.4' LT | 801.21 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| 68 | 162+68.1 | 23.8' LT | 800.93 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| CC-7 | 162+79.8 | 34.7' LT | --- | 797.76 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 71 | 162+93.3 | 41.6' LT | 800.38 | 797.16 | 1.97 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 |
| PVC-3 | 162+96.3 | 42.3' LT | --- | 797.20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-14 | 162+96.3 | 39.1' LT | --- | 797.30 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 72 | 163+21.8 | 16.1' LT | 801.23 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| 73 | 165+55.0 | 24.0' LT | 798.50 | 795.75 | 2.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 74 | 165+55.0 | 16.7' LT | 798.95 | 794.65 | 2.91 | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-8 | 165+64.4 | 17.7' RT | --- | 795.67 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 77 | 166+07.1 | 45.4' RT | 798.96 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 |
| 79 | 165+88.8 | 46.1' LT | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- |
| CC-9 | 166+08.4 | 7.9' RT | --- | 795.26 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-15 | 166+02.0 | 11.3' LT | --- | 795.10 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-16 | 166+05.0 | 22.7' LT | --- | 794.85 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| CC-17 | 166+12.8 | 24.9' LT | --- | 794.82 | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 81 | 166+09.0 | 16.8' LT | 798.64 | 794.18 | 3.06 | --- | --- | --- | --- | --- | 1 | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 |
| 82 | 167+38.8 | 23.9' LT | 796.52 | 793.71 | 2.06 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 |
| 88 | 169+06.7 | 22.9' RT | 795.20 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | 1 |
| | | **TOTALS** | | | | 18 | 2 | 2 | 1 | 18 | 3 | 1 | 2 | 1 | 1 | 18 | 10 | 4 | 1 | 2 | 57 |

* STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURE

** RIM ELEVATIONS ARE MEASURED AT CENTER OF MANHOLE COVERS AND AT THE FLANGE OF INLET CASTINGS

*** INVERT IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE. VALUES FOR CONCRETE COLLAR AND PVC CONNECTIONS ARE BASED ON PIPE FLOW LINE INTERPOLATION, AND MAY VARY.

**** DEPTH = RIM ELEV - TOP OF TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6 INCH ADJUSTMENT RING HEIGHT

***** ADDITIONAL QUANTITIES LISTED ELSEWHERE IN THE PLAN

## STORM SEWER PIPES

| FROM | | TO | INLET* | DISCHARGE* | SLOPE | 608.6010 SPV.0090.01 PVC PIPE 8-INCH LF | 608.6010 SPV.0090.02 PVC PIPE 12-INCH LF | 608.6010 STORM SEWER PIPE COMPOSITE 10-INCH LF | STORM SEWER PIPE REINFORCED CONCRETE 608.0412 CLASS IV 12-INCH LF | 608.0315 CLASS III 15-INCH LF | 608.0421 CLASS IV 21-INCH LF | 608.0424 CLASS IV 24-INCH LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EX-8 | - | EX-11 | 803.59 | 803.30 | 0.63% | --- | --- | --- | 46 | --- | --- | --- |
| CC-1 | - | CC-2 | 803.06 | 803.02 | 0.29% | --- | --- | --- | --- | 14 | --- | --- |
| PVC-1 | - | 46 | 799.06 | 799.01 | 0.50% | 10 | --- | --- | --- | --- | --- | --- |
| PVC-2 | - | 49 | 799.00 | 798.95 | 1.25% | 4 | --- | --- | --- | --- | --- | --- |
| 46 | - | 49 | 798.80 | 798.53 | 0.73% | --- | --- | --- | 37 | --- | --- | --- |
| 49 | - | 50 | 798.50 | 798.25 | 0.69% | --- | --- | --- | 36 | --- | --- | --- |
| 50 | - | 51 | 798.22 | 798.09 | 0.54% | --- | --- | --- | 24 | --- | --- | --- |
| CC-18 | - | 48 | 797.80 | 797.77 | 0.33% | --- | --- | --- | --- | --- | 9 | --- |
| 47 | - | 48 | 798.75 | 798.52 | 1.15% | --- | --- | --- | 20 | --- | --- | --- |
| CC-3 | - | 53 | 798.00 | 797.95 | 0.28% | --- | --- | --- | 18 | --- | --- | --- |
| 54 | - | EX-55 | 797.80 | 797.50 | 1.00% | --- | --- | 30 | --- | --- | --- | --- |
| CC-10 | - | 57 | 797.54 | 797.35 | 2.11% | --- | --- | 9 | --- | --- | --- | --- |
| CC-11 | - | 57 | 796.90 | 796.87 | 0.33% | --- | --- | --- | --- | 9 | --- | --- |
| CC-12 | - | 57 | 797.43 | 797.35 | 0.89% | --- | --- | 9 | --- | --- | --- | --- |
| 57 | - | CC-13 | 796.87 | 796.83 | 0.44% | --- | --- | --- | --- | 9 | --- | --- |
| EX-61 | - | CC-4 | 797.90 | 797.70 | 1.18% | --- | --- | --- | 17 | --- | --- | --- |
| CC-5 | - | CC-6 | 796.39 | 796.37 | 0.12% | --- | --- | --- | --- | --- | --- | 16 |
| 63 | - | 64 | 798.06 | 797.93 | 0.59% | --- | --- | 22 | --- | --- | --- | --- |
| PVC-3 | - | 71 | 797.20 | 797.18 | 0.50% | --- | 4 | --- | --- | --- | --- | --- |
| CC-7 | - | 71 | 797.76 | 797.33 | 3.07% | --- | --- | 14 | --- | --- | --- | --- |
| 71 | - | CC-14 | 797.33 | 797.30 | 0.75% | --- | --- | --- | 4 | --- | --- | --- |
| 72 | - | 74 | 796.14 | 794.70 | 0.62% | --- | --- | --- | --- | --- | --- | 233 |
| 73 | - | 74 | 795.75 | 795.65 | 1.43% | --- | --- | --- | 7 | --- | --- | --- |
| 74 | - | 81 | 794.65 | 794.32 | 0.61% | --- | --- | --- | --- | --- | --- | 54 |
| CC-9 | - | 81 | 795.26 | 794.99 | 1.08% | --- | --- | --- | 25 | --- | --- | --- |
| CC-15 | - | 81 | 795.10 | 794.96 | 1.56% | --- | --- | --- | 9 | --- | --- | --- |
| EX-75 | - | CC-8 | 795.77 | 795.67 | 1.11% | --- | --- | --- | 9 | --- | --- | --- |
| CC-16 | - | 81 | 794.85 | 794.85 | 0.00% | --- | --- | --- | 7 | --- | --- | --- |
| CC-17 | - | 81 | 794.82 | 794.81 | 0.11% | --- | --- | --- | 9 | --- | --- | --- |
| 81 | - | EX-83 | 794.18 | 792.74 | 1.11% | --- | --- | --- | --- | --- | --- | 130 |
| | | | | **TOTALS** | | 14 | 4 | 84 | 268 | 32 | 9 | 433 |

* VALUES FOR CONCRETE COLLAR AND PVC CONNECTIONS ARE BASED ON PIPE FLOW LINE INTERPOLATION, AND MAY VARY.

## EROSION CONTROL

| STATION | TO | STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF | 628.6005 TURBIDITY BARRIERS SY | 628.7570 ROCK BAGS EACH | 628.7555 CULVERT PIPE CHECKS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 406+16 | - | 407+54 | STH 32 | 178 | 18 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 422+64 | - | 424+40 | STH 32 | 245 | 25 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 437+70 | - | 437+70 | RT | --- | --- | --- | --- | 2 | DRIVEWAY CULVERT WORK |
| 439+85 | - | 440+86 | STH 32 | 126 | 13 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 445+40 | - | 446+44 | STH 32 | 246 | 25 | --- | --- | 8 | CROSS CULVERT REPLACEMENT |
| 451+73 | - | 452+68 | STH 32 | 125 | 13 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 474+77 | - | 474+44 | RT | --- | --- | --- | --- | 6 | DRIVEWAY CULVERT WORK |
| 475+28 | - | 476+18 | STH 32 | 113 | 11 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 479+26 | - | 480+25 | STH 32 | 123 | 12 | --- | --- | 6 | CROSS CULVERT REPAIRS |
| 486+98 | - | 488+33 | STH 32 | 263 | 26 | --- | --- | 8 | CROSS CULVERT REPLACEMENT |
| 503+75 | - | 504+77 | STH 32 | 262 | 26 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 524+44 | - | 525+38 | RT | 118 | 12 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 527+50 | - | 527+50 | LT | --- | --- | --- | --- | 2 | ENDWALL REPAIRS |
| 168+44 | - | 172+89 | RT | 476 | 48 | --- | --- | --- | GUARDRAIL REPLACEMENT |
| 169+90 | | 170+50 | RT | --- | --- | 16.7 | --- | --- | GUARDRAIL REPLACEMENT |
| 172+45 | - | 172+90 | LT | 77 | 8 | --- | 18 | --- | GUARDRAIL REPLACEMENT |
| 174+36 | - | 177+17 | RT | 317 | 32 | --- | --- | --- | GUARDRAIL REPLACEMENT |
| 174+40 | - | 176+75 | LT | 271 | 27 | --- | --- | --- | GUARDRAIL REPLACEMENT |
| 272+55 | - | 273+65 | STH 32 | 139 | 14 | --- | 20 | 6 | CROSS CULVERT REPLACEMENT |
| 276+33 | - | 276+33 | RT | --- | --- | --- | --- | 3 | DRIVEWAY CULVERT WORK |
| 307+24 | - | 308+20 | STH 32 | 236 | 24 | --- | --- | --- | CULVERT LINING WORK |
| 336+81 | | 338+84 | STH 32 | 202 | 20 | --- | 20 | 2 | GUARDRAIL REPLACEMENT |
| 341+51 | - | 342+45 | STH 32 | 498 | 50 | --- | 56 | 10 | GUARDRAIL REPLACEMENT & CP WORK |
| 846+96 | - | 847+97 | LT | 135 | 14 | --- | --- | --- | CROSS CULVERT REPAIRS |
| 871+96 | - | 872+96 | STH 32 | 135 | 14 | --- | --- | 10 | CROSS CULVERT REPLACEMENT |
| 876+33 | - | 876+33 | LT | --- | --- | --- | --- | 3 | DRIVEWAY CULVERT WORK |
| 891+59 | | 893+16 | LT | 158 | 16 | --- | --- | 10 | CROSS CULVERT REPLACEMENT |
| 915+41 | - | 916+43 | STH 32 | 135 | 14 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 932+63 | - | 933+63 | STH 32 | 127 | 13 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 954+19 | - | 955+19 | STH 32 | 128 | 13 | --- | --- | 6 | CROSS CULVERT REPLACEMENT |
| 955+84 | - | 955+84 | LT | --- | --- | --- | --- | 3 | DRIVEWAY CULVERT WORK |
| | | | STH 32 | 1,208 | 121 | 4.2 | 29 | 35 | UNDISTRIBUTED (25%) |
| | | | **TOTALS** | 6,041 | 604 | 20.8 | 143 | 174 | |

## BEAMGUARD / GUARDRAIL SUMMARY

| STATION | TO | STATION | LOCATION | STEEL PLATE BEAM GUARD 614.0200 THRIE BEAM STRUCTURE APPROACH LF | 614.0305 CLASS A LF | 614.0345 SHORT RADIUS LF | 614.0390 SHORT RADIUS TERMINAL EACH | MGS GUARDRAIL 614.2300 3 LF | 614.2330 3 K LF | 614.2350 SHORT RADIUS LF | 614.2500 THRIE BEAM TRANSITION LF | 614.2610 TERMINAL EAT EACH | 614.2630 SHORT RADIUS TERMINAL EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 169+64 | - | 172+69 | RT | --- | --- | --- | --- | --- | 212.5 | --- | 39.4 | 1 | --- | NE QUAD B-42-0064 |
| 171+77 | - | 172+70 | LT | --- | --- | --- | --- | --- | --- | --- | 39.4 | 1 | --- | SE QUAD B-42-0064 |
| 174+52 | - | 175+45 | RT | --- | --- | --- | --- | 25.0 | --- | --- | 39.4 | 1 | --- | NW QUAD B-42-0064 |
| 174+52 | - | 175+70 | LT | --- | --- | --- | --- | --- | --- | --- | 39.4 | 1 | --- | SW QUAD B-42-0064 |
| 337+24 | - | 337+37 | RT | --- | --- | --- | --- | 28.1 | --- | 18.9 | --- | --- | 1 | SE QUAD B-42-0021 (TERMINAL END ALONG DWY. EDGE) |
| 337+37 | - | 338+64 | RT | --- | --- | --- | --- | 87.5 | --- | --- | 39.4 | --- | --- | SE QUAD B-42-0021 |
| 338+11 | - | 338+64 | LT | 20.7 | 6.3 | 54.8 | 1 | --- | --- | --- | --- | --- | --- | SW QUAD B-42-0021 |
| 340+07 | - | 341+00 | RT | --- | --- | --- | --- | --- | --- | --- | 39.4 | 1 | --- | NE QUAD B-42-0021 |
| 340+07 | - | 341+25 | LT | --- | --- | --- | --- | 25.0 | --- | --- | 39.4 | 1 | --- | NW QUAD B-42-0021 |
| | | | **TOTALS** | 20.7 | 6.3 | 54.8 | 1 | 165.6 | 212.5 | 18.9 | 275.8 | 6 | 1 | |

## INLET PROTECTION

| STATION | LOCATION | 628.7010 TYPE B EACH | 628.7015 TYPE C EACH | REMARKS |
|---|---|---|---|---|
| 140+52 | LT | --- | 1 | BARKMAN ST - SW |
| 140+56 | RT | --- | 1 | BARKMAN ST - NW |
| 142+69 | RT | --- | 1 | MID-BLOCK |
| 142+95 | LT | --- | 1 | MID-BLOCK |
| 144+60 | LT | --- | 1 | KRUEGER ST - SE |
| 144+63 | RT | --- | 1 | KRUEGER ST - NE |
| 148+40 | RT | --- | 1 | MILL ST - NE |
| 148+40 | LT | --- | 1 | MILL ST - SE |
| 148+60 | LT | --- | 1 | MILL ST - SE |
| 148+94 | LT | --- | 1 | MILL ST - SW |
| 149+16 | LT | --- | 1 | MILL ST - SW |
| 150+45 | RT | --- | 1 | MID-BLOCK |
| 150+88 | LT | --- | 1 | MID-BLOCK |
| 154+27 | RT | --- | 1 | HEASLEY ST - NE |
| 154+54 | RT | --- | 1 | HEASLEY ST - NE |
| 154+58 | LT | --- | 1 | NU LINE ST - SE |
| 154+90 | RT | --- | 1 | HEASLEY ST - NW |
| 155+03 | RT | --- | 1 | HEASLEY ST - NW |
| 155+28 | LT | --- | 1 | NU LINE ST - SW |
| 158+85 | LT | --- | 1 | BURK ST - SE |
| 159+08 | LT | --- | 1 | BURK ST - SE |
| 158+89 | RT | --- | 1 | BURK ST - NE |
| 159+08 | RT | --- | 1 | BURK ST - NE |
| 159+43 | LT | --- | 1 | BURK ST - SW |
| 159+65 | LT | --- | 1 | BURK ST - SW |
| 159+45 | RT | --- | 1 | BURK ST - NW |
| 159+65 | RT | --- | 1 | BURK ST - NW |
| 161+84 | RT | --- | 1 | RAILROAD ST - NE |
| 162+01 | RT | --- | 1 | RAILROAD ST - NE |
| 162+28 | RT | --- | 1 | RAILROAD ST - NW |
| 162+41 | RT | --- | 1 | RAILROAD ST - NW |
| 162+68 | LT | --- | 1 | KNAPP ST - SE |
| 162+93 | LT | --- | 1 | KNAPP ST - SE |
| 165+55 | LT | --- | 1 | JACKSON ST - SE |
| 165+84 | LT | --- | 1 | JACKSON ST - SE |
| 165+57 | RT | --- | 1 | CENTER ST - NE |
| 166+07 | RT | 1 | --- | CENTER ST - NW |
| 167+39 | LT | --- | 1 | MID-BLOCK |
| 169+07 | RT | --- | 1 | WEST ST - NW |
| 338+52 | RT | 1 | --- | SE QUAD B-42-0021 |
| | STH 32 | 1 | 10 | UNDISTRIBUTED (25%) |
| | **TOTALS** | 3 | 48 | |

## CONCRETE ITEMS

| STATION | TO | STATION | LOC. | 416.0180 CONCRETE DRIVEWAY 8-INCH SY | 416.1010 CONCRETE SURFACE DRAINS CY | 601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF | 601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF | 601.0600 CONCRETE CURB PEDESTRIAN LF | 602.0405 CONCRETE SIDEWALK 4-INCH SF | 602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF | 602.0605 CURB RAMP DETECTABLE WARNING FIELD RADIAL YELLOW SF | SPV.0090.03 CONCRETE CURB & GUTTER 24-INCH TYPE D LF | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140+56 | - | 140+99 | RT | --- | --- | --- | 31.5 | 62.0 | 207 | 10 | 18.2 | --- | BARKMAN ST - NW |
| 140+58 | - | 140+90 | LT | --- | --- | --- | 31.5 | 29.0 | 116 | 10 | 18.9 | --- | BARKMAN ST - SW |
| 141+47 | - | 141+69 | LT | --- | --- | --- | 21.5 | --- | 43 | --- | --- | --- | MID-BLOCK |
| 142+60 | - | 142+73 | RT | 2.8 | --- | --- | 12.5 | --- | --- | --- | --- | --- | STR. 30 (MID-BLOCK) |
| 144+54 | - | 144+79 | RT | --- | --- | --- | 32.0 | --- | 171 | 10 | --- | --- | KRUEGER ST - NE |
| 144+56 | - | 144+78 | LT | --- | --- | --- | 25.5 | --- | 124 | 10 | --- | --- | KRUEGER ST - SE |
| 145+16 | - | 145+33 | RT | --- | --- | --- | 23.5 | --- | 123 | 10 | --- | --- | KRUEGER ST - NW |
| 145+16 | - | 145+37 | LT | --- | --- | --- | 27.0 | --- | 138 | 10 | --- | --- | KRUEGER ST - SW |
| 148+29 | - | 158+60 | RT | --- | --- | --- | 22.0 | --- | 150 | 10 | --- | 13.5 | MILL ST - NE |
| 148+37 | - | 148+60 | LT | --- | --- | --- | 13.0 | --- | 174 | 10 | --- | 21.5 | MILL ST - SE |
| 148+96 | - | 149+15 | RT | --- | --- | --- | 8.5 | --- | 112 | 10 | --- | 17.0 | MILL ST - NW |
| 148+93 | - | 149+26 | LT | --- | --- | --- | 19.0 | --- | 158 | 10 | --- | 30.5 | MILL ST - SW |
| 150+42 | - | 150+49 | RT | --- | --- | --- | 6.5 | --- | 13 | --- | -- | --- | STR. 43 (MID-BLOCK) |
| 151+36 | - | 151+85 | LT | --- | --- | --- | 52.5 | --- | 278 | 32 | 17.8 | --- | EHLINGER ST - SE / TRAIL - S |
| 151+48 | - | 151+87 | RT | --- | --- | --- | 38.5 | --- | 249 | 32 | --- | --- | TRAIL - N |
| 152+36 | - | 152+63 | LT | --- | --- | --- | 6.5 | --- | 121 | --- | 20.0 | 15.0 | EHLINGER ST - SW |
| 154+13 | - | 154+57 | RT | --- | --- | --- | 25.0 | 13.0 | 294 | 10 | --- | 32.0 | HEASLEY ST - NE |
| 154+35 | - | 154+59 | LT | --- | --- | --- | 29.0 | --- | 145 | 10 | --- | 5.0 | NU LINE - SE |
| 154+88 | - | 155+09 | RT | --- | --- | --- | 13.0 | 9.0 | 138 | 10 | --- | 27.0 | HEASLEY ST - NW |
| 155+05 | - | 155+34 | LT | --- | --- | --- | 16.0 | --- | 135 | --- | 18.4 | 15.5 | NU LINE - SW |
| 158+78 | - | 159+09 | LT | --- | --- | --- | 17.0 | 10.0 | 242 | 10 | --- | 17.0 | BURK ST - SE |
| 158+83 | - | 159+09 | RT | --- | --- | --- | 35.0 | 21.0 | 214 | 10 | --- | --- | BURK ST - NE |
| 159+42 | - | 159+70 | LT | --- | --- | --- | 16.0 | --- | 109 | 10 | --- | 20.5 | BURK ST - SW |
| 159+43 | - | 159+70 | RT | --- | --- | --- | 32.0 | 19.5 | 148 | 10 | --- | 25.0 | BURK ST - NW |
| 161+76 | - | 162+03 | RT | --- | --- | --- | 13.5 | 23.5 | 179 | 10 | --- | 19.5 | RAILROAD ST - NE |
| 162+26 | - | 162+43 | RT | --- | --- | --- | --- | 23.5 | 75 | 12 | --- | 14.0 | RAILROAD ST - NW |
| 161+83 | - | 162+94 | LT | --- | --- | --- | 127.0 | 21.5 | 285 | 10 | 17.9 | --- | RAILROAD ST -S / KNAPP ST - SE |
| 163+32 | - | 163+67 | LT | --- | --- | --- | 18.0 | 31.5 | 166 | 10 | 19.2 | 13.5 | KNAPP ST - SW |
| 163+41 | - | 163+69 | RT | --- | --- | --- | 27.5 | 27.5 | 177 | 10 | --- | --- | KNAPP ST - NW |
| 165+51 | - | 165+78 | RT | --- | --- | --- | 32.5 | 16.5 | 166 | 10 | --- | --- | CENTER ST - NE |
| 165+49 | - | 165+84 | LT | --- | --- | --- | 17.5 | 17.0 | 161 | --- | 17.4 | 19.5 | JACKSON ST - SE |
| 166+08 | - | 166+30 | RT | --- | --- | --- | 22.5 | --- | 109 | --- | 17.0 | --- | CENTER ST - NW |
| 166+24 | - | 166+49 | LT | --- | --- | --- | 14.0 | 20.5 | 89 | --- | 18.0 | --- | JACKSON ST - SW |
| 166+90 | - | 167+02 | RT | --- | --- | --- | 11.5 | --- | 49 | --- | --- | --- | MID-BLOCK |
| 167+30 | - | 167+44 | LT | --- | --- | --- | 14.0 | --- | --- | --- | --- | --- | STR. 82 (MID-BLOCK) |
| 168+60 | - | 168+77 | LT | --- | --- | --- | 20.5 | 25.5 | 67 | 10 | --- | --- | WEST ST (SE) |
| 168+90 | - | 169+20 | RT | --- | --- | --- | 30.0 | --- | --- | --- | --- | --- | E.A.T. APPROACH |
| 172+12 | | 172+84 | RT | --- | 1.7 | 72.0 | --- | --- | --- | --- | --- | --- | B-42-0064 SURFACE DRAIN -NE |
| 172+13 | - | 172+72 | LT | --- | 2.4 | 59.0 | --- | --- | --- | --- | --- | --- | B-42-0064 SURFACE DRAIN - SE |
| 174+46 | - | 175+18 | RT | --- | 2.8 | 72.0 | --- | --- | --- | --- | --- | --- | B-42-0064 SURFACE DRAIN - NW |
| 174+58 | - | 175+17 | LT | --- | 3.0 | 59.0 | --- | --- | --- | --- | --- | --- | B-42-0064 SURFACE DRAIN - SW |
| 339+94 | | 340+68 | LT | --- | 1.8 | 74.0 | --- | --- | --- | --- | --- | --- | B-42-0021 SURFACE DRAIN - NW |
| 339+94 | | 340+68 | RT | --- | 3.3 | 74.0 | --- | --- | --- | --- | --- | --- | B-42-0021 SURFACE DRAIN - NE |
| | | **TOTALS** | | 2.8 | 15.1 | 410.0 | 903.0 | 370.5 | 5,125.0 | 306.0 | 182.8 | 306.0 | |

## RESTORATION ITEMS

| STATION | TO | STATION | LOCATION | 625.0100 TOPSOIL SY | 625.0500 SALVAGED TOPSOIL SY | 628.2004 EROSION MAT CLASS I TYPE B SY | 628.2008 EROSION MAT URBAN CLASS I TYPE B SY | 629.0210 FERTILIZER TYPE B CWT | 630.0130 SEEDING MIXTURE NO. 30 LB | 630.0140 SEEDING MIXTURE NO. 40 LB | 630.0500 SEED WATER MGAL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 406+50 | - | 407+20 | STH 32 | --- | 97 | 97 | --- | 0.06 | 1.7 | --- | 1.1 | C.P. WORK |
| 423+03 | - | 424+07 | STH 32 | --- | 47 | 47 | --- | 0.03 | 0.8 | --- | 0.5 | C.P. WORK |
| 437+65 | - | 437+80 | RT | --- | 30 | 30 | --- | 0.02 | 0.5 | --- | 0.3 | DWY. C.P. WORK |
| 439+41 | - | 440+60 | STH 32 | --- | 247 | 247 | --- | 0.16 | 4.5 | --- | 2.8 | C.P. WORK |
| 445+83 | - | 446+07 | STH 32 | --- | 63 | 63 | --- | 0.04 | 1.1 | --- | 0.7 | C.P. WORK |
| 451+88 | - | 452+41 | STH 32 | --- | 108 | 108 | --- | 0.07 | --- | 2.0 | 1.2 | C.P. WORK |
| 474+74 | - | 475+80 | STH 32 | --- | 55 | 55 | --- | 0.03 | 1.0 | --- | 0.6 | DWY. & CROSS C.P. WORK |
| 479+00 | - | 479+98 | STH 32 | --- | 159 | 159 | --- | 0.10 | 2.9 | --- | 1.8 | C.P. WORK |
| 487+17 | - | 487+98 | STH 32 | --- | 178 | 178 | --- | 0.11 | 3.2 | --- | 2.0 | C.P. WORK |
| 504+14 | - | 504+40 | STH 32 | --- | 91 | 91 | --- | 0.06 | 1.6 | --- | 1.0 | C.P. WORK |
| 524+80 | - | 525+00 | STH 32 | --- | 37 | 37 | --- | 0.02 | 0.7 | --- | 0.4 | C.P. WORK |
| 527+40 | - | 527+56 | STH 32 | 16 | --- | --- | 16 | 0.01 | --- | 0.3 | 0.2 | S.S. WORK |
| 140+59 | - | 140+91 | LT | 3 | --- | --- | 3 | 0.01 | --- | 0.1 | 0.1 | BARKMAN ST - SW |
| 148+96 | - | 149+07 | LT | 4 | --- | --- | 4 | 0.01 | --- | 0.1 | 0.1 | MILL ST - SW |
| 151+35 | - | 151+82 | LT | 8 | --- | --- | 8 | 0.01 | --- | 0.1 | 0.1 | EHLINGER/TRAIL - SE |
| 151+49 | - | 151+82 | RT | 5 | --- | --- | 5 | 0.01 | --- | 0.1 | 0.1 | TRAIL - N |
| 152+38 | - | 152+62 | LT | 4 | --- | --- | 4 | 0.01 | --- | 0.1 | 0.0 | EHLINGER ST - SW |
| 154+34 | - | 154+66 | LT | 7 | --- | --- | 7 | 0.01 | --- | 0.1 | 0.1 | NU LINE ST - SE |
| 154+88 | - | 155+10 | RT | 11 | --- | --- | 11 | 0.01 | --- | 0.2 | 0.1 | HEASLEY ST - NW |
| 158+78 | - | 159+07 | LT | 11 | --- | --- | 11 | 0.01 | --- | 0.2 | 0.1 | BURK ST - SE |
| 158+82 | - | 159+07 | RT | 11 | --- | --- | 11 | 0.01 | --- | 0.2 | 0.1 | BURK ST - NE |
| 159+44 | - | 159+70 | LT | 8 | --- | --- | 8 | 0.01 | --- | 0.2 | 0.1 | BURK ST - SW |
| 159+46 | - | 159+70 | RT | 28 | --- | --- | 28 | 0.02 | --- | 0.5 | 0.3 | BURK ST - NW |
| 161+76 | - | 161+96 | RT | 7 | --- | --- | 7 | 0.01 | --- | 0.1 | 0.1 | RAILROAD ST - NE |
| 162+29 | - | 162+44 | RT | 5 | --- | --- | 5 | 0.01 | --- | 0.1 | 0.1 | RAILROAD ST - NW |
| 161+82 | - | 162+92 | LT | 39 | --- | --- | 39 | 0.02 | --- | 0.7 | 0.4 | RAILROAD / KNAPP - SE |
| 163+34 | - | 163+37 | LT | 8 | --- | --- | 8 | 0.01 | --- | 0.2 | 0.1 | KNAPP ST - SW |
| 163+41 | - | 163+69 | RT | 10 | --- | --- | 10 | 0.01 | --- | 0.2 | 0.1 | KNAPP ST - NW |
| 165+50 | - | 165+77 | RT | 10 | --- | --- | 10 | 0.01 | --- | 0.2 | 0.1 | CENTER ST - NE |
| 165+50 | - | 165+82 | LT | 8 | --- | --- | 8 | 0.01 | --- | 0.1 | 0.1 | JACKSON ST - SE |
| 166+05 | - | 166+30 | RT | 7 | --- | --- | 7 | 0.01 | --- | 0.1 | 0.1 | CENTER ST - NW |
| 166+26 | - | 166+50 | LT | 6 | --- | --- | 6 | 0.01 | --- | 0.1 | 0.1 | JACKSON ST - SW |
| 166+90 | - | 167+02 | RT | 3 | --- | --- | 3 | 0.01 | --- | 0.1 | 0.1 | MID-BLOCK |
| 167+30 | - | 167+44 | LT | 4 | --- | --- | 4 | 0.01 | --- | 0.1 | 0.1 | MID-BLOCK |
| 168+59 | - | 168+70 | LT | 4 | --- | --- | 4 | 0.01 | --- | 0.1 | 0.1 | WEST ST - SE |
| 168+60 | - | 172+85 | RT | --- | 440 | 440 | --- | 0.28 | 7.9 | --- | 4.9 | GRDRAIL. & CURB WORK - NE |
| 171+00 | - | 172+82 | LT | --- | 212 | 212 | --- | 0.13 | 3.8 | --- | 2.4 | GRDRAIL. & CURB WORK - SE |
| 174+38 | - | 177+08 | RT | --- | 360 | 360 | --- | 0.23 | 6.5 | --- | 4.0 | GRDRAIL. & CURB WORK - NW |
| 174+38 | - | 176+70 | LT | --- | 206 | 206 | --- | 0.13 | 3.7 | --- | 2.3 | GRDRAIL. & CURB WORK - SW |
| 272+18 | - | 273+63 | STH 32 | --- | 284 | 284 | --- | 0.18 | 5.1 | --- | 3.2 | C.P. WORK |
| 276+26 | - | 276+90 | RT | --- | 50 | 50 | --- | 0.03 | 0.9 | --- | 0.6 | DWY. C.P. WORK |
| 307+55 | - | 307+75 | RT | --- | 24 | 24 | --- | 0.02 | 0.4 | --- | 0.3 | C.P. WORK |
| 336+81 | - | 338+62 | RT | --- | 144 | 144 | --- | 0.09 | 2.6 | --- | 1.6 | GUARDRAIL WORK - SE |
| 338+07 | - | 338+66 | LT | --- | 128 | 128 | --- | 0.08 | 2.3 | --- | 1.4 | GUARDRAIL WORK - SW |
| 340+09 | - | 342+29 | RT | --- | 222 | 222 | --- | 0.14 | 4.0 | --- | 2.5 | GUARDRAIL & C.P. WORK - NE |
| 340+09 | - | 342+82 | LT | --- | 311 | 311 | --- | 0.20 | 5.6 | --- | 3.5 | GUARDRAIL & C.P. WORK - NW |
| 847+38 | - | 847+58 | LT | --- | 35 | 35 | --- | 0.02 | 0.6 | --- | 0.4 | C.P. WORK |
| 872+35 | - | 872+55 | STH 32 | --- | 47 | 47 | --- | 0.03 | 0.8 | --- | 0.5 | C.P. WORK |
| 876+24 | - | 876+38 | LT | --- | 25 | 25 | --- | 0.02 | 0.5 | --- | 0.3 | DWY. C.P. WORK |
| 891+80 | | 892+48 | STH 32 | --- | 167 | 167 | --- | 0.11 | 3.0 | --- | 1.9 | |
| 915+82 | - | 916+00 | STH 32 | --- | 52 | 52 | --- | 0.03 | 0.9 | --- | 0.6 | C.P. WORK |
| 933+05 | - | 933+32 | STH 32 | --- | 53 | 53 | --- | 0.03 | --- | 1.0 | 0.6 | C.P. WORK |
| 954+59 | - | 955+89 | STH 32 | --- | 78 | 78 | --- | 0.05 | 1.4 | --- | 0.9 | DWY. & CROSS C.P. WORK |
| | | | STH 32 | 57 | 988 | 988 | 57 | 0.68 | 17.1 | 1.8 | 11.8 | UNDISTRIBUTED (25%) |
| | | | **TOTALS** | 285 | 4,939 | 4,939 | 285 | 3.41 | 85.3 | 8.8 | 58.9 | |

## MOBILIZATIONS EROSION CONTROL

| 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|
| 7 | 2 |

3

## ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO. | LOCATION | SIGN CODE | W X H | 637.2230 SIGNS TYPE II REFLECTIVE TYPE F S.F. | 634.0614 POSTS WOOD 4x6x14 EACH | 634.0616 POSTS WOOD 4x6x16 * EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS * EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | CTH H, EAST OF RED BANKS RD, W. OF NORTH CURVE | W1-1R | 36" X 36" | 9.00 | | 1 | 1 | 1 | |
| | " | W13-1 | 18" X 18" | 2.25 | | | | | 25 MPH, PLACE BELOW SIGN #1 |
| 2 | CTH H, EAST OF RED BANKS RD, ON POINT OF CURVATURE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 3 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #2 |
| 4 | CTH H, EAST OF RED BANKS RD, IN CURVE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 5 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #4 |
| 6 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 7 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 8 | CTH H, EAST OF RED BANKS RD, ON POINT OF TANGENCY | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 9 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #8 |
| 10 | CTH H, EAST OF RED BANKS RD, BETWEEN CURVES | W1-1L | 36" X 36" | 9.00 | | | | | |
| | " | W13-1 | 24" X 24" | 4.00 | | | | | 25 MPH, PLACE BELOW SIGN #10 |
| 11 | " | W1-1L | 36" X 36" | 9.00 | | 1 | 1 | 1 | |
| | " | W13-1 | 24" X 24" | 4.00 | | | | | 25 MPH, PLACE BELOW SIGN #11 |
| 12 | CTH H, EAST OF RED BANKS RD, ON POINT OF CURVATURE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 13 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #12 |
| 14 | CTH H, EAST OF RED BANKS RD, IN CURVE | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 15 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 16 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 17 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #16 |
| 18 | CTH H, EAST OF RED BANKS RD, ON POINT OF TANGENCY | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 19 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #18 |
| 20 | CTH H, EAST OF RED BANKS RD, E. OF SOUTH CURVE | W1-1R | 36" X 36" | 9.00 | | 1 | 1 | 1 | |
| | " | W13-1 | 24" X 24" | 4.00 | | | | | 25 MPH, PLACE BELOW SIGN #20 |
| **DETOUR ROUTE - TOTALS** | | | | 118.25 | 10 | 3 | 7 | 7 | |

* ADDITIONAL QUANTITIES FOUND ELSEWHERE IN PLAN

### MOVING SIGNS

| STATION | OFFSET | 634.0616 POSTS WOOD 4X6X16 * EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS * EACH | LOCATION | SIGN MESSAGE |
|---|---|---|---|---|---|---|
| 144+58 | LT | 1 | 1 | 1 | KRUEGER ST - SE | SPEED LIMIT 30 |
| 154+93 | RT | 1 | 1 | 1 | HEASLEY ST - NW | STOP |
| 158+95 | RT | 1 | 2 | 1 | BURK ST - NE | (PED CROSSING & ARROW) |
| 159+02 | LT | 1 | 1 | 1 | BURK ST - SE | STOP |
| 162+00 | LT | 1 | 2 | 1 | RAILROAD ST - SE | (PED CROSSING & ARROW) |
| 273+00 | LT | 1 | 2 | 1 | CP REPLACEMENT | (CHEVRONS) |
| 337+42 | RT | 1 | 1 | 1 | SE QUAD B-42-0021 | ADOPT-A-HIGHWAY |
| 338+57 | LT | 1 | 1 | 1 | SW QUAD B-42-0021 | ADOPT-A-HIGHWAY |
| 338+65 | RT | 2 | 1 | 2 | SE QUAD B-42-0021 | SOUTH BRANCH OCONTO RIVER |
| 340+69 | LT | 2 | 1 | 2 | NW QUAD B-42-0021 | SOUTH BRANCH OCONTO RIVER |
| | **TOTAL** | 12 | 13 | 12 | | |

* ADDITIONAL QUANTITIES FOUND ELSEWHERE IN PLAN

## TRAFFIC CONTROL

| LOCATION | DURATION DAYS | 643.0300 DRUMS NO. | 643.0300 DRUMS DAY | 643.0420 BARRICADES TYPE III* NO. | 643.0420 BARRICADES TYPE III* DAY | 643.0705 WARNING LIGHTS TYPE A* NO. | 643.0705 WARNING LIGHTS TYPE A* DAY | 643.0715 WARNING LIGHTS TYPE C NO. | 643.0715 WARNING LIGHTS TYPE C DAY | 643.0900 SIGNS* NO. | 643.0900 SIGNS* DAY | 643.1050 SIGNS PCMS NO. | 643.1050 SIGNS PCMS DAY | 643.1070 CONES 42-INCH NO. | 643.1070 CONES 42-INCH DAY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOUTH PROJECT LIMITS | 7 | 5 | 35 | --- | --- | --- | --- | 5 | 35 | --- | --- | 1 | 7 | --- | --- | PRIOR TO CONSTRUCTION |
| NORTH PROJECT LIMITS | 7 | 5 | 35 | --- | --- | --- | --- | 5 | 35 | --- | --- | 1 | 7 | --- | --- | PRIOR TO CONSTRUCTION |
| STH 32 @ CTH H | 7 | 5 | 35 | --- | --- | --- | --- | 5 | 35 | --- | --- | 1 | 7 | --- | --- | PRIOR TO DETOUR |
| STH 32 @ CTH M | 7 | 5 | 35 | --- | --- | --- | --- | 5 | 35 | --- | --- | 1 | 7 | --- | --- | PRIOR TO DETOUR |
| SOUTH PROJECT LIMITS | 130 | --- | --- | --- | --- | --- | --- | --- | --- | 5 | 650 | --- | --- | --- | --- | ADVANCE WARNING SIGNS |
| NORTH PROJECT LIMITS | 130 | --- | --- | --- | --- | --- | --- | --- | --- | 5 | 650 | --- | --- | --- | --- | ADVANCE WARNING SIGNS |
| WITHIN PROJECT | 130 | --- | --- | --- | --- | --- | --- | --- | --- | 8 | 1,040 | --- | --- | --- | --- | ROAD WORK NEXT XX MILES |
| SIDEROAD LIMITS | 130 | --- | --- | --- | --- | --- | --- | --- | --- | 38 | 4,940 | --- | --- | --- | --- | ADVANCE WARNING SIGNS |
| CTH A | 10 | --- | --- | 3 | 30 | 6 | 60 | --- | --- | 3 | 30 | --- | --- | --- | --- | BARRICADE WITH R11-3 SIGN (0.5 MILES) |
| TRINITY CHURCH ROAD | 10 | --- | --- | 5 | 50 | 6 | 60 | --- | --- | 1 | 10 | --- | --- | --- | --- | CLOSURE BARRICADES (MAINLINE) |
| CTH M & RIVER RD | 10 | --- | --- | 2 | 20 | 4 | 40 | --- | --- | 2 | 20 | --- | --- | --- | --- | BARRICADES WITH R11-3 SIGN (1.5 / 0.5 MILES) |
| WEST ST | 10 | --- | --- | 5 | 50 | 6 | 60 | --- | --- | 1 | 10 | --- | --- | --- | --- | CLOSURE BARRICADES (MAINLINE) |
| CTH Z - CENTER ST | 10 | --- | --- | 48 | 480 | 96 | 960 | --- | --- | 96 | 960 | --- | --- | --- | --- | CLOSURE - SDD 15C03 DETAIL #3 (12 INTERSECTIONS) |
| 954+68 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 40 | 40 | TEMP WIDENING FOR C.P. REPLACEMENT |
| THROUGHOUT PROJECT | 12 | 300 | 3,600 | --- | --- | --- | --- | 75 | 900 | 15 | 180 | --- | --- | --- | --- | CULVERT PIPE WORK & SHOULDER WORK |
| 169+00 - 179+00 (B-42-064) | 3 | 50 | 150 | --- | --- | --- | --- | 2 | 6 | 2 | 6 | --- | --- | --- | --- | GUARDRAIL WORK |
| THROUGHOUT PROJECT | 45 | --- | --- | --- | --- | --- | --- | --- | --- | 6 | 270 | --- | --- | --- | --- | LOW SHOULDER / UNEVEN LANES / GROOVED SFC. |
| VILLAGE OF SURING | 28 | 25 | 700 | --- | --- | --- | --- | --- | --- | 1 | 28 | --- | --- | --- | --- | STORM SEWER WORK |
| VILLAGE OF SURING | 40 | 75 | 3,000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CURB RAMP WORK |
| 190+00 - 223+00 (CLIMBING LANE) | 15 | 50 | 750 | 3 | 45 | 6 | 90 | --- | --- | 5 | 75 | --- | --- | --- | --- | LANE CLOSURES FOR RESURFACING & CP WORK |
| 841+00 - 914+00 (PASSING LANE) | 15 | 100 | 1,500 | 6 | 90 | 12 | 180 | --- | --- | 7 | 105 | --- | --- | --- | --- | LANE CLOSURES FOR RESURFACING & CP WORK |
| SNOWMOBILE CROSSINGS | 5 | 15 | 75 | --- | --- | --- | --- | --- | --- | 6 | 30 | --- | --- | --- | --- | THERMOPLASTIC TREATMENTS |
| | **TOTALS** | | 9,915 | | 765 | | 1,450 | | 1,046 | | 9,004 | | 28 | | 40 | |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN THE PLAN

## PEDESTRIAN ACCOMMODATIONS

| LOCATION | DURATION DAYS | 643.0410 TRAFFIC CONTROL BARRICADES TYPE II NO. | 643.0410 DAY | 643.0420 TRAFFIC CONTROL BARRICADES TYPE III* NO. | 643.0420 DAY | 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A* NO. | 643.0705 DAY | 643.0900 TRAFFIC CONTROL SIGNS* NO. | 643.0900 DAY | 644.1601 TEMPORARY PEDESTRIAN CURB RAMP NO. | 644.1601 DAY | 644.1430 TEMPORARY PEDESTRIAN SURFACE PLATE SF | 649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH LF | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VILLAGE OF SURING | 10 | 20 | 200 | 9 | 90 | 29 | 290 | 37 | 370 | 2 | 20 | 21 | 95 | STAGE 1 |
| VILLAGE OF SURING | 10 | 28 | 280 | 5 | 50 | 33 | 330 | 53 | 530 | 7 | 70 | 310 | 206 | STAGE 2 |
| VILLAGE OF SURING | 10 | 29 | 290 | 3 | 30 | 32 | 320 | 34 | 340 | 2 | 20 | 0 | 0 | STAGE 3 |
| VILLAGE OF SURING | 10 | 28 | 280 | 2 | 20 | 30 | 300 | 34 | 340 | 2 | 20 | 11 | 88 | STAGE 4 |
| | **TOTALS** | | 1,050 | | 190 | | 1,240 | | 1,580 | | 130 | 342 | 389 | |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN THE PLAN

## TRAFFIC CONTROL DETOUR SIGN SUMMARY

| SIGN NO. | LOCATION | SIGN CODE | SIZE W X H | NUMBER IN SERVICE | APPROX. SERVICE PERIOD 10 DAYS | 643.0900 SIGNS DAYS | 643.0420 BARRICADES TYPE III DAYS | 643.0705 WARNING LIGHTS TYPE A DAYS | NO OF CYCLES | 643.0920 COVERING SIGNS TYPE II EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | STH 32, N. OF CTH M/R, PLACE 1500' N. OF CTH M/R INTERSECTION | W 20-2A | 48"X48" | 1 | 10 | 10 | | | | | |
| 2 | STH 32, N. OF CTH M/R, PLACE 500' N. OF CTH M/R INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1R | 21"X21" | 1 | 10 | 10 | | | | | |
| 3 | STH 32, AT CTH M/R, PLACE RIGHT OF EXISTING J13-2 SIGN | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | RIGHT |
| 4 | STH 32, AT CTH M/R, PLACE ON RIGHT SHOULDER AT CTH M/R INTERSECTION | R 11-3 | 60"X30" | 1 | 10 | 10 | 10 | 20 | | | 2.0 MILES AHEAD |
| | " | M 4-9R | 30"X24" | 1 | 10 | 10 | | | | | |
| 5 | CTH R, AT STH 32, MODIFY EXISTING J13-2 SIGN AT STH 32 INTERSECTION | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | LEFT |
| 6 | STH 32, S. OF CTH M/R, PLACE ON RIGHT SHOULDER, FIELD DETERMINE LOCATION | PCMS | | 1 | | | | | | | PLACE IN ADVANCE OF DETOUR |
| 7 | CTH R, AT STH 32, MODIFY EXISTING J13-2 SIGN AT STH 32 INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | RIGHT |
| 8 | CTH M/R, E. OF CTH R, PLACE 500' E. OF CTH R INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1L | 21"X21" | 1 | 10 | 10 | | | | | |
| 9 | CTH M/R, AT CTH R, PLACE RIGHT OF EXISTING J13-2 SIGN | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | LEFT |
| 10 | CTH R, AT CTH M, PLACE RIGHT OF EXISTING J13-2 SIGN | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | RIGHT |
| 11 | CTH R, S. OF CTH M, PLACE 500' S. OF CTH M INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1R | 21"X21" | 1 | 10 | 10 | | | | | |
| 12 | CTH R, N. OF CTH H, PLACE 500' N. OF CTH H INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1L | 21"X21" | 1 | 10 | 10 | | | | | |
| 13 | CTH R, AT CTH H, PLACE RIGHT OF EXISTING J13-1 SIGN | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | LEFT |
| PAGE SUBTOTALS | | | | 41 | | 400 | 10 | 20 | | 0 | |

## TRAFFIC CONTROL DETOUR SIGN SUMMARY

| SIGN NO. | LOCATION | SIGN CODE | SIZE W X H | NUMBER IN SERVICE | APPROX. SERVICE PERIOD 10 DAYS | 643.0900 SIGNS DAYS | 643.0420 BARRICADES TYPE III DAYS | 643.0705 WARNING LIGHTS TYPE A DAYS | NO OF CYCLES | 643.0920 COVERING SIGNS TYPE II EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | CTH H, AT CTH R, PLACE RIGHT OF EXISTING R1-1 SIGN | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | RIGHT |
| 15 | CTH H, E. OF CTH R, PLACE 500' E. OF CTH R INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1R | 21"X21" | 1 | 10 | 10 | | | | | |
| 16 | CTH H, W. OF CTH V, PLACE 150' W. OF CTH V INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | AHEAD |
| 17 | CTH H, E. OF CTH V, PLACE 150' E. OF CTH V INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | AHEAD |
| 18 | CTH H, W. OF STH 32, MODIFY EXISTING J1-1 SIGN W. OF STH 32 INTERSECTION | M 4-8A | 24"X18" | 1 | 10 | 10 | | | | | |
| 19 | CTH H, W. OF STH 32, PLACE 250' W. OF STH 32 INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| 20 | CTH H, AT STH 32, MODIFY EXISTING J13-1 SIGN AS SHOWN | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | RIGHT |
| 21 | STH 32, AT CTH H, PLACE ON RIGHT SHOULDER IN NE QUADRANT OF INTERSECTION | R 11-3 | 60"X30" | 1 | 10 | 10 | 10 | 20 | | | 6.2 MILES AHEAD |
| | " | M 4-9L | 30"X24" | 1 | 10 | 10 | | | | | |
| 22 | STH 32, N. OF CTH H, COVER EXISTING J4-1 SIGN AS SHOWN | | | | | | | | 2 | 2 | COVER ENTIRE SIGN |
| 23 | STH 32, N. OF CTH H, PLACE ON RIGHT SHOULDER, FIELD DETERMINE LOCATION | PCMS | | 1 | | | | | | | PLACE IN ADVANCE OF DETOUR |
| 24 | STH 32, AT CTH H, PLACE RIGHT OF EXISTING J13-1 SIGN AT CTH H INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 10 | 10 | | | | | LEFT |
| 25 | STH 32, S. OF CTH H, PLACE 500' S. OF CTH H INTERSECTION | MO 4-8 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 10 | 10 | | | | | |
| | " | M 1-6B | 24"X24" | 1 | 10 | 10 | | | | | 32 |
| | " | MO 5-1L | 21"X21" | 1 | 10 | 10 | | | | | |
| 26 | STH 32, S. OF CTH H, PLACE 1500' S. OF CTH H INTERSECTION | W 20-2A | 48"X48" | 1 | 10 | 10 | | | | | |
| | PAGE SUBTOTALS | | | 33 | | 320 | 10 | 20 | | 2 | |
| | **PROJECT DETOUR TOTALS** | | | **74** | | **720** | **20** | **40** | | **2** | |

## PAVEMENT MARKING SUMMARY

| STATION | TO | STATION | LOCATION | 646.1020 MARKING LINE EPOXY 4-INCH LF | 646.3020 MARKING LINE EPOXY 8-INCH LF | 646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH LF | 646.3040 MARKING LINE GROOVED WET REF EPOXY 8-INCH LF | 646.4520 MARKING LINE SAME DAY EPOXY 4-INCH LF | 646.7420 MARKING CROSSWALK EPOXY TRANSV. LINE 6-INCH LF | 646.8120 MARKING CURB EPOXY LF | 646.8220 MARKING ISLAND NOSE EPOXY EACH | 649.0105 TEMPORARY MARKING LINE PAINT 4-INCH LF | 649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH LF | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 405+93 | - | 957+30 | STH 32 (CL) | --- | --- | --- | --- | --- | --- | --- | --- | 47,457 | --- | YELLOW | MILLED SURFACE |
| 405+93 | - | 957+30 | STH 32 (CL) | --- | --- | --- | --- | --- | --- | --- | --- | 47,457 | --- | YELLOW | LOWER LAYER HMA (AFTER FIRST PASS) |
| 405+93 | - | 957+30 | STH 32 (CL) | --- | --- | --- | --- | --- | --- | --- | --- | 47,457 | --- | YELLOW | UPPER LAYER HMA (AFTER FIRST PASS) |
| 192+25 | - | 225+25 | STH 32 (RT) | --- | --- | --- | --- | --- | --- | --- | --- | 792 | --- | WHITE (4.0' SKIPS) | CLIMBING LANE (3 APPLICATIONS) - MILLING, LOWER LAYER & UPPER LAYER |
| 192+25 | - | 225+25 | STH 32 (RT) | --- | --- | --- | --- | --- | --- | --- | --- | 825 | --- | WHITE (12.5' SKIPS) | CLIMBING LANE - AFTER FINAL ASPHALT PLACEMENT |
| 848+00 | - | 904+50 | STH 32 (RT) | --- | --- | --- | --- | --- | --- | --- | --- | 1,356 | --- | WHITE (4.0' SKIPS) | PASSING LANE (3 APPLICATIONS) - MILLING, LOWER LAYER & UPPER LAYER |
| 848+00 | - | 904+50 | STH 32 (RT) | --- | --- | --- | --- | --- | --- | --- | --- | 1,413 | --- | WHITE (12.5' SKIPS) | PASSING LANE - AFTER FINAL ASPHALT PLACEMENT |
| 406+45 | - | 497+85 | STH 32 (CL) | 9,843 | '--- | --- | --- | --- | --- | --- | --- | --- | 9,843 | YELLOW | RUMBLE STRIP AREA |
| 497+85 | - | 178+50 | STH 32 (CL) | --- | --- | --- | --- | 2,705 | --- | --- | --- | --- | --- | YELLOW | NON-RUMBLE STRIP AREA |
| 178+50 | - | 957+30 | STH 32 (CL) | 42,104 | --- | --- | --- | --- | --- | --- | --- | --- | 42,104 | YELLOW | RUMBLE STRIP AREA |
| 406+45 | - | 526+75 | STH 32 (LT) | --- | --- | 11,745 | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | BEGIN PROJECT THRU BEGIN CURB |
| 169+20 | - | 178+50 | STH 32 (LT) | 930 | --- | --- | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | END OF CURB THRU BEGIN 55 MPH ZONE |
| 178+50 | - | 957+30 | STH 32 (LT) | 120 | --- | 35,955 | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | BEGIN 55 MPH ZONE TO END PROJECT (DO NOT GROOVE BRIDGE AT 338+76) |
| 406+45 | - | 526+75 | STH 32 (RT) | --- | --- | 11,745 | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | BEGIN PROJECT THRU BEGIN CURB |
| 169+20 | - | 178+50 | STH 32 (RT) | 930 | --- | --- | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | END OF CURB THRU BEGIN 55 MPH ZONE |
| 178+50 | - | 957+30 | STH 32 (RT) | 120 | --- | 36,275 | --- | --- | --- | --- | --- | --- | --- | WHITE (EDGELINE) | BEGIN 55 MPH ZONE TO END PROJECT (DO NOT GROOVE BRIDGE AT 338+76) |
| 192+25 | - | 225+25 | STH 32 (RT) | --- | --- | 825 | --- | --- | --- | --- | --- | --- | --- | WHITE (12.5' SKIPS) | CLIMBING LANE |
| 841+00 | - | 904+50 | STH 32 (RT) | --- | --- | 1,588 | --- | --- | --- | --- | --- | --- | --- | WHITE (3.0' & 12.5' SKIPS) | PASSING LANE |
| 416+08 | - | 419+58 | STH 32 (RT) | 140 | 60 | --- | 350 | --- | --- | 12 | 3 | --- | --- | YELLOW & WHITE | CTH Z INTERSECTION |
| 502+40 | - | 504+15 | STH 32 (LT) | 90 | --- | --- | 90 | --- | --- | --- | --- | --- | --- | YELLOW & WHITE | CTH V INTERSECTION |
| 140+50 | - | 168+80 | STH 32 (LT/RT) | --- | --- | --- | --- | --- | 514 | 760 | --- | --- | --- | YELLOW & WHITE | WITHIN VILLAGE - SEE PLAN DETAILS FOR LOCATIONS |
| 251+75 | - | 256+48 | STH 32 (LT) | 450 | 35 | --- | 350 | --- | --- | 30 | 3 | --- | --- | YELLOW & WHITE | CTH M INTERSECTION |
| 276+25 | - | 280+25 | STH 32 (LT) | 145 | --- | --- | 300 | --- | --- | --- | --- | --- | --- | YELLOW & WHITE | CTH R INTERSECTION |
| 938+65 | - | 938+95 | STH 32 (LT) | 140 | --- | --- | --- | --- | --- | --- | --- | --- | --- | YELLOW & WHITE | CTH AA INTERSECTION |
| 397+48 | - | 965+75 | STH 32 (CL) | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | N/A | NONE |
| | | | **TOTALS** | 55,011 | 95 | 98,133 | 1,090 | 2,705 | 514 | 802 | 6 | 146,758 | 51,946 | | |

**NOTES:**

SEE "PEDESTRIAN ACCOMMODATIONS" TABLE FOR TEMPORARY MARKING LINE (REMOVABLE TAPE) QUANTITIES

SEE SPECIAL PROVISIONS FOR APPLICATION PROCEDURE IN CENTERLINE RUMBLE STRIP AREAS

MARK CENTERLINE IN DIRECTION OF PASSING AND CLIMBING LANES

## PROTECTIVE THERMOPLASTIC COATING AT SNOWMOBILE CROSSINGS

| CROSSING NO. | GENERAL LOCATION | SPV.0180.01 SY | REMARKS |
|---|---|---|---|
| CROSSING #1 | 4,840' SOUTH OF STH 32 / CTH AA JUNCTION | 213 | STATE RECREATIONAL TRAIL |
| CROSSING #2 | 200' WEST OF STH 32 / STH 64 SOUTH JUNCTION | 73 | NONE |
| CROSSING #3 | 250' NORTH OF STH 32 / CTH W JUNCTION | 58 | STATE RECREATIONAL TRAIL |
| CROSSING #4 | 1,150' NORTH OF STH 32 / STH 64 NORTH JUNCTION | 67 | NONE |
| CROSSING #5 | 1,550' SOUTH OF STH 32 / MAIDEN LAKE RD. JUNCTION | 54 | NONE |
| | **TOTAL** | 465 | |

## CONSTRUCTION STAKING PIPE CULVERTS

| | | | | | | END OF PIPE LOCATIONS | | | | 650.6000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C.L. STATION | LOC. | SKEW | LT ELEV | RT ELEV | SLOPE | STA - LT | OFFSET - LT | STA - RT | OFFSET - RT | EACH | REMARKS |
| 406+87 | STH 32 | NONE | 855.70 | 856.10 | 0.71 | 406+86.5 | 28.7 | 406+86.5 | 27.3 | 1 | --- |
| 423+52 | STH 32 | 48°20' RHF | 851.00 | 850.50 | 0.43 | 423+12.5 | 34.1 | 423+99.0 | 43.1 | 1 | --- |
| 440+11 | STH 32 | 33°27' RHF | 843.40 | 842.10 | 1.63 | 439+92.0 | 29.1 | 440+36.0 | 37.6 | 1 | --- |
| 445+93 | STH 32 | 1°47' LHF | 839.60 | 839.20 | 0.50 | 445+94.0 | 38.5 | 445+91.5 | 41.5 | 1 | --- |
| 452+17 | STH 32 | 2°27' LHF | 846.20 | 846.70 | 0.71 | 452+18.0 | 35.5 | 452+15.0 | 34.5 | 1 | --- |
| 475+70 | STH 32 | 2°52' LHF | 836.20 | 836.00 | 0.29 | 475+72.0 | 35.0 | 475+68.5 | 35.0 | 1 | --- |
| 487+65 | STH 32 | 23°58' RHF | 827.20 | 826.50 | 0.73 | 487+45.0 | 44.0 | 487+84.0 | 43.7 | 1 | --- |
| 504+26 | STH 32 | 2°52' RHF | 812.90 | 812.80 | 0.11 | 504+23.5 | 45.0 | 504+28.0 | 45.0 | 1 | --- |
| 524+90 | STH 32 | 2°33' RHF | 805.50 | 805.20 | 0.54 | 524+89.0 | 26.0 | 524+91.5 | 30.0 | 1 | --- |
| 272+97 | STH 32 | 26°44' LHF | 853.90 | 855.20 | 1.62 | 273+16.0 | 37.5 | 272+80.0 | 34.0 | 1 | --- |
| 342+13 | STH 32 | 14°28' LHF | 813.30 | 812.40 | 0.94 | 342+24.0 | 44.3 | 342+00.0 | 48.7 | 1 | --- |
| 872+48 | STH 32 | NONE | 864.10 | 864.50 | 0.56 | 872+47.5 | 31.0 | 872+47.5 | 41.0 | 1 | --- |
| 892+11 | STH 32 | 19°14' LHF | 871.70 | 872.50 | 0.91 | 892+23.7 | 36.4 | 891+94.7 | 46.7 | 1 | --- |
| 915+92 | STH 32 | NONE | 886.20 | 886.80 | 0.79 | 915+92.0 | 39.0 | 915+92.0 | 37.0 | 1 | --- |
| 933+14 | STH 32 | 0°48' RHF | 893.10 | 893.00 | 0.14 | 933+13.0 | 36.5 | 933+14.0 | 35.5 | 1 | --- |
| 954+68 | STH 32 | NONE | 879.90 | 879.20 | 0.97 | 954+68.0 | 35.5 | 954+68.0 | 36.5 | 1 | --- |
| | | | | | | | | | **TOTAL** | 16 | |

## CONSTRUCTION STAKING

| | | | | 650.5500 | 650.8000 | 650.9000 | 650.9910 | 650.9920 | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CURB & GUTTER | RESURFACING REFERENCE | CURB RAMPS | SUPPLEMENTAL CONTROL | SLOPE STAKES | |
| STATION | TO | STATION | LOCATION | LF | LF | EACH | LS | LF | REMARKS |
| 405+93 | - | 957+30 | STH 32 | --- | 53,575 | --- | 1 | --- | PROJECT-WIDE |
| 406+60 | - | 407+10 | LT | -- | --- | --- | --- | 50 | CP WORK |
| 439+50 | - | 440+50 | LT | -- | --- | --- | --- | 100 | CP WORK |
| 140+55 | - | 169+20 | STH 32 | 1,209.0 | --- | 36 | --- | --- | CURB RAMPS & CURB REPAIR |
| 168+90 | - | 177+50 | STH 32 | 410.0 | --- | --- | --- | 670 | TBT CURB & GUARDRAIL |
| 272+20 | - | 273+60 | RT | --- | --- | --- | --- | 140 | REDITCHING |
| 337+37 | - | 342+70 | LT | --- | --- | --- | --- | 533 | TBT CURB, GUARDRAIL & CP WORK |
| | | | **TOTALS** | 1,619.0 | 53,575 | 36 | 1 | 1,493 | |

NOTES:
-- STORM SEWER STAKING ITEM CAN BE FOUND IN THE "STORM SEWER STRUCTURES" TABLE
-- CULVERT PIPE STAKING ITEM CAN BE FOUND IN THE "CULVERT PIPE STAKING" TABLE

## ADJUSTING WATER VALVE BOX

| | | SPV.0060.06 | | |
|---|---|---|---|---|
| STATION | OFFSET | EACH | LOCATION | REMARKS |
| 140+38 | LT | 1 | BARKMAN ST. INT. | MILL & PAVE AREA |
| 144+58 | RT | 1 | KRUEGER ST. INT. (NE) | WITHIN CURB RAMP CONCRETE AREA |
| 144+76 | RT | 1 | KRUEGER ST. INT. (NE) | WITHIN CURB RAMP CONCRETE AREA |
| 145+20 | LT | 1 | KRUEGER ST. INT. (SW) | IN ASPHALT, CLOSE TO CURB REPLACEMENT |
| 148+61 | LT | 1 | MILL ST. INT. (SE) | IN ASPHALT, CLOSE TO CURB REPLACEMENT |
| 154+89 | RT | 1 | HEASLEY ST. INT. (NW) | WITHIN CURB RAMP CONCRETE AREA |
| 155+13 | LT | 1 | NU LINE ST. INT. (SW) | WITHIN CURB RAMP CONCRETE AREA |
| 159+11 | RT | 1 | BURK ST. INT. | MILL & PAVE AREA |
| 163+15 | RT | 1 | PARKING LANE | MILL & PAVE AREA |
| | **TOTAL** | 9 | **CATEGORY 0020** | |

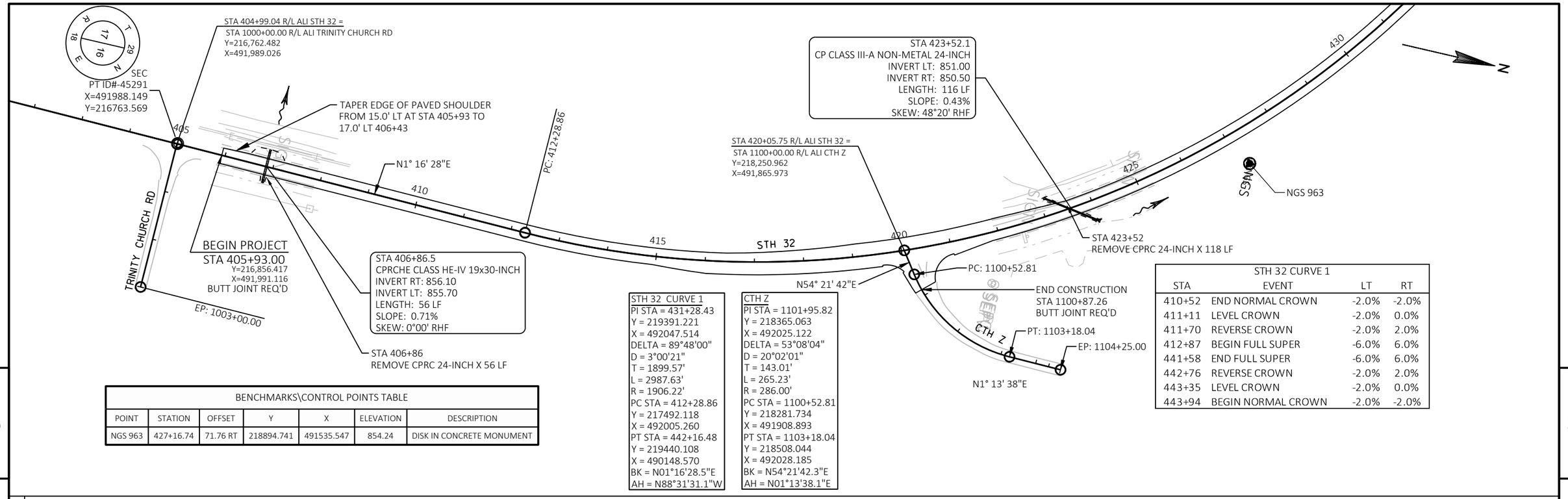
## SAWING ASPHALT

| STATION | LOCATION | 690.0150* LF | REMARKS |
|---|---|---|---|
| 405+93 | STH 32 | 32 | PROJECT LIMITS |
| 407+25 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 411+88 | LT | 27 | PRIVATE ENTRANCE |
| 417+27 | LT | 33 | PRIVATE ENTRANCE |
| 1100+87 | CTH Z | 47 | SIDEROAD LIMITS |
| 423+52 | STH 32 | 90 | C.P. REPLACEMENT |
| 439+50 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 440+70 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 445+93 | STH 32 | 60 | C.P. REPLACEMENT |
| 451+70 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 452+65 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 462+16 | LT | 20 | WATER TOWER ENTRANCE |
| 465+26 | RT | 13 | PRIVATE ENTRANCE |
| 475+25 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 476+15 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 487+64 | STH 32 | 60 | C.P. REPLACEMENT |
| 490+11 | LT | 22 | PRIVATE ENTRANCE |
| 491+80 | LT | 24 | PRIVATE ENTRANCE |
| 1204+17 | COTTONWOOD LN | 27 | SIDEROAD LIMITS |
| 499+49 | RT | 19 | PRIVATE ENTRANCE |
| 1304+12 | CTH V | 27 | SIDEROAD LIMITS |
| 1305+78 | GOLF COURSE RD | 29 | SIDEROAD LIMITS |
| 504+25 | STH 32 | 79 | C.P. REPLACEMENT |
| 508+39 | RT | 14 | PRIVATE ENTRANCE |
| 508+87 | RT | 20 | PRIVATE ENTRANCE |
| 509+00 | LT | 25 | PRIVATE ENTRANCE |
| 524+50 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 525+30 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 1400+61 | PESHTIGO BROOK RD | 32 | SIDEROAD LIMITS |
| 1504+50 | S BARKMAN ST | 31 | SIDEROAD LIMITS |
| 1505+51 | N BARKMAN ST | 32 | SIDEROAD LIMITS |
| 1604+58 | KRUEGER ST | 38 | SIDEROAD LIMITS |
| 1605+39 | KRUEGER ST | 38 | SIDEROAD LIMITS |
| 1704+54 | MILL ST | 33 | SIDEROAD LIMITS |
| 1705+40 | MILL ST | 37 | SIDEROAD LIMITS |
| 1804+62 | EHLINGER ST | 49 | SIDEROAD LIMITS |
| 1900+44 | HEASLEY ST | 36 | SIDEROAD LIMITS |
| 2004+62 | NU-LINE ST | 45 | SIDEROAD LIMITS |
| 2104+56 | BURK ST | 33 | SIDEROAD LIMITS |
| 2105+42 | BURK ST | 34 | SIDEROAD LIMITS |
| | **SUBTOTAL** | 1,374 | |

| STATION | LOCATION | 690.0150* LF | REMARKS |
|---|---|---|---|
| 2200+38 | RAILROAD ST | 24 | SIDEROAD LIMITS |
| 2304+50 | KNAPP ST | 33 | SIDEROAD LIMITS |
| 2400+40 | CENTER ST | 28 | SIDEROAD LIMITS |
| 2504+57 | JACKSON ST | 36 | SIDEROAD LIMITS |
| 2604+68 | WEST ST | 29 | SIDEROAD LIMITS |
| 187+39 | RT | 31 | PRIVATE ENTRANCE |
| 2704+20 | RIVER RD | 33 | SIDEROAD LIMITS |
| 2705+78 | RIVER RD | 30 | SIDEROAD LIMITS |
| 203+78 | RT | 43 | MUNICIPAL ENTRANCE |
| 217+38 | LT | 71 | COMMERCIAL ENTRANCE |
| 218+93 | RT | 22 | PRIVATE ENTRANCE |
| 241+40 | RT | 30 | MUNICIPAL ENTRANCE |
| 2804+26 | CLAY RD | 30 | SIDEROAD LIMITS |
| 2805+80 | CLAY RD | 28 | SIDEROAD LIMITS |
| 2903+42 | CTH M | 34 | SIDEROAD LIMITS |
| 272+50 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 273+45 | STH 32 | 30 | C.P. REPLACEMENT WITH TRANSITION |
| 3004+15 | CTH R | 33 | SIDEROAD LIMITS |
| 3104+20 | WILLOW RD | 29 | SIDEROAD LIMITS |
| 3105+78 | WILLOW RD | 31 | SIDEROAD LIMITS |
| 337+89 | LT | 36 | PRIVATE ENTRANCE |
| 3204+18 | HILL RD | 29 | SIDEROAD LIMITS |
| 3205+81 | HILL RD | 29 | SIDEROAD LIMITS |
| 821+20 | LT | 22 | PRIVATE ENTRANCE |
| 3400+71 | CENTRAL RD | 33 | SIDEROAD LIMITS |
| 872+00 | STH 32 | 42 | C.P. REPLACEMENT WITH TRANSITION |
| 872+95 | STH 32 | 42 | C.P. REPLACEMENT WITH TRANSITION |
| 883+90 | LT | 25 | PRIVATE ENTRANCE |
| 892+11 | STH 32 | 90 | C.P. REPLACEMENT |
| 915+92 | STH 32 | 60 | C.P. REPLACEMENT |
| 921+64 | LT | 25 | COMMERCIAL ENTRANCE |
| 923+86 | LT | 26 | COMMERCIAL ENTRANCE |
| 925+27 | LT | 12 | PRIVATE ENTRANCE |
| 3700+80 | CENTRAL RD | 28 | SIDEROAD LIMITS |
| 929+89 | LT | 10 | PRIVATE ENTRANCE |
| 932+23 | RT | 20 | PRIVATE ENTRANCE |
| 932+40 | LT | 21 | PRIVATE ENTRANCE |
| 933+13 | STH 32 | 60 | C.P. REPLACEMENT |
| 3804+17 | CTH AA | 29 | SIDEROAD LIMITS |
| 940+10 | LT | 27 | COMMERCIAL ENTRANCE |
| 940+65 | LT | 21 | COMMERCIAL ENTRANCE |
| 954+68 | STH 32 | 60 | C.P. REPLACEMENT |
| 957+30 | STH 32 | 34 | PROJECT LIMITS |
| | **SUBTOTAL** | 1,434 | |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN THE PLAN

**PAGE TOTALS** **2,808**

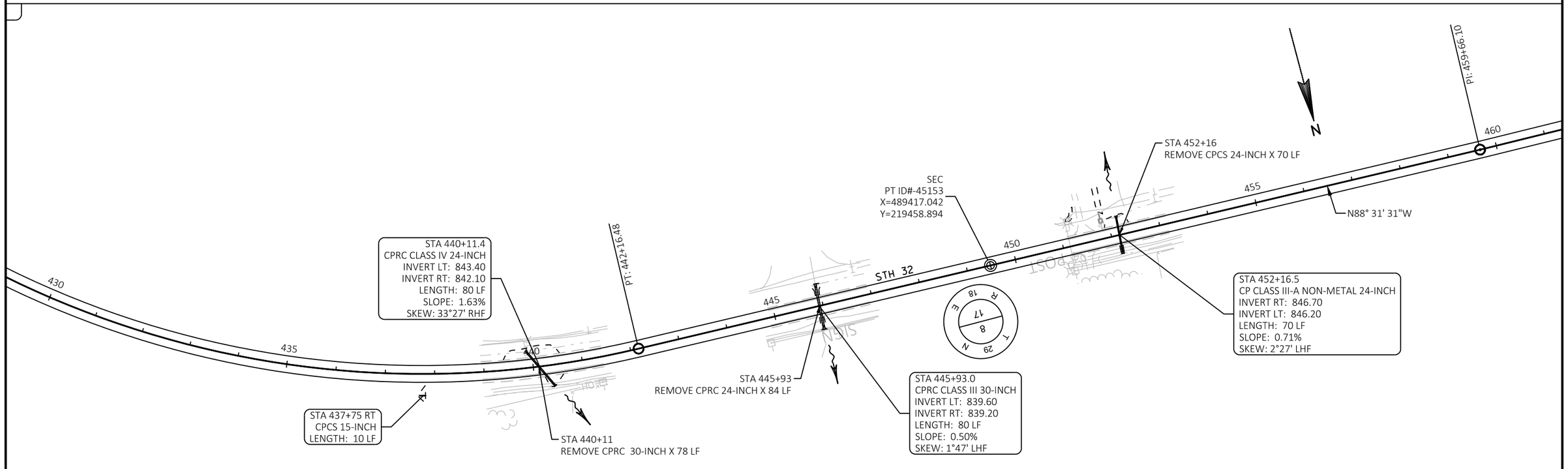



| BENCHMARKS\CONTROL POINTS TABLE | | | | | | |
|---|---|---|---|---|---|---|
| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
| NGS 963 | 427+16.74 | 71.76 RT | 218894.741 | 491535.547 | 854.24 | DISK IN CONCRETE MONUMENT |

| STH 32 CURVE 1 |
|---|
| PI STA = 431+28.43 |
| Y = 219391.221 |
| X = 492047.514 |
| DELTA = 89°48'00" |
| D = 3°00'21" |
| T = 1899.57' |
| L = 2987.63' |
| R = 1906.22' |
| PC STA = 412+28.86 |
| Y = 217492.118 |
| X = 492005.260 |
| PT STA = 442+16.48 |
| Y = 219440.108 |
| X = 490148.570 |
| BK = N01°16'28.5"E |
| AH = N88°31'31.1"W |

| CTH Z |
|---|
| PI STA = 1101+95.82 |
| Y = 218365.063 |
| X = 492025.122 |
| DELTA = 53°08'04" |
| D = 20°02'01" |
| T = 143.01' |
| L = 265.23' |
| R = 286.00' |
| PC STA = 1100+52.81 |
| Y = 218281.734 |
| X = 491908.893 |
| PT STA = 1103+18.04 |
| Y = 218508.044 |
| X = 492028.185 |
| BK = N54°21'42.3"E |
| AH = N01°13'38.1"E |

| STH 32 CURVE 1 | | | |
|---|---|---|---|
| STA | EVENT | LT | RT |
| 410+52 | END NORMAL CROWN | -2.0% | -2.0% |
| 411+11 | LEVEL CROWN | -2.0% | 0.0% |
| 411+70 | REVERSE CROWN | -2.0% | 2.0% |
| 412+87 | BEGIN FULL SUPER | -6.0% | 6.0% |
| 441+58 | END FULL SUPER | -6.0% | 6.0% |
| 442+76 | REVERSE CROWN | -2.0% | 2.0% |
| 443+35 | LEVEL CROWN | -2.0% | 0.0% |
| 443+94 | BEGIN NORMAL CROWN | -2.0% | -2.0% |



PI: 459+66.10

STA 475+70.2
CP CLASS III-A NON-METAL 24-INCH
INVERT LT: 836.20
INVERT RT: 836.00
LENGTH: 70 LF
SLOPE: 0.29%
SKEW: 2°52' LHF

STA 479+56.4 - LT EXTENSION
CPCS 24-INCH
INVERT LT: 834.80
INVERT LT: 834.70
LENGTH: 6 LF
SLOPE: 1.66%

STA 479+56
CLEANING CULVERT PIPE REQ'D
REMOVE 2 LF OF EXISTING CPCS LT + RT

SEC
PT ID#-45145
X=486796.082
Y=219510.388

460 465 470 475 STH 32 480 N89° 04' 26"W 485 490

STA 474+85 RT
CPCS 24-INCH
LENGTH: 8 LF

EMT
839.696
15553

STA 475+70
REMOVE CPCS 24-INCH X 72 LF

STA 479+56.4 - EXISTING PIPE
CPCS 24-INCH

STA 479+56.4 - RT EXTENSION
CPCS 24-INCH
INVERT RT: 834.40
INVERT RT: 834.35
LENGTH: 6 LF
SLOPE: 0.82%

STA 487+64
REMOVE CPCS 30-INCH X 90 LF

STA 487+64.6
CP CLASS III-B NON-METAL 30-INCH
INVERT LT: 827.20
INVERT RT: 826.50
LENGTH: 96 LF
SLOPE: -0.73%
SKEW: 23°58' RHF

N

5

5

BP: 1201+75.00

COTTONWOOD LN N1° 38' 09"E

END CONSTRUCTION
STA 1204+17.30
BUTT JOINT REQ'D

BP: 1301+75.00

CTH V N1° 28' 49"E

END CONSTRUCTION
STA 1304+12.25
BUTT JOINT REQ'D

STA 502+41.23 R/L ALI STH 32 =
STA 1305+00.00 R/L ALI CTH V -- GOLF COURSE RD
Y=219,554.244
X=484,124.965

SEC
PT ID#-45137
X=484122.921
Y=219553.942

PC: 512+90.73

PT: 520+54.40

N

490 495 500 505 STH 32 510 515 520

STA 493+51.06 R/L ALI STH 32 =
STA 1205+00.00 R/L ALI COTTONWOOD LN
Y=219,539.854
X=485,015.013

GOLF COURSE RD N1° 28' 49"E

END CONSTRUCTION
STA 1305+78.00
BUTT JOINT REQ'D

EP: 1308+00.00

STA 504+25
REMOVE CPCS 24-INCH X 90 LF

STA 504+25.8
CP CLASS III-B NON-MATERIAL 24-INCH
INVERT LT: 812.90
INVERT RT: 812.80
LENGTH: 90 LF
SLOPE: 0.11%
SKEW: 2°52' RHF

STH 32 CURVE 2
PI STA = 516+72.87
Y = 219577.387
X = 482693.512
DELTA = 5°34'41"
D = 0°43'50"
T = 382.13'
L = 763.66'
R = 7844.12'
PC STA = 512+90.73
Y = 219571.210
X = 483075.596
PT STA = 520+54.40
Y = 219620.674
X = 482313.838
BK = N89°04'25.5"W
AH = N83°29'44.6"W

STH 32 CURVE 2

| STA | EVENT | LT | RT |
|---|---|---|---|
| 511+30 | END NORMAL CROWN | -2.0% | -2.0% |
| 512+10 | LEVEL CROWN | 0.0% | -2.0% |
| 512+90 | BEGIN FULL SUPER | 2.0% | -2.0% |
| 520+50 | END FULL SUPER | 2.0% | -2.0% |
| 521+30 | LEVEL CROWN | 0.0% | -2.0% |
| 522+10 | BEGIN NORMAL CROWN | -2.0% | -2.0% |

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 126 | E |
|---|---|---|---|---|---|

| STH 32 CURVE 3 | |
|---|---|
| PI STA = 530+10.32 | |
| Y = 219728.958 | |
| X = 481364.071 | |
| DELTA = 5°45'48" | |
| D = 0°54'59" | |
| T = 314.68' | |
| L = 628.82' | |
| R = 6251.50' | |
| PC STA = 526+95.64 | |
| Y = 219693.312 | |
| X = 481676.722 | |
| PT STA = 141+28.75 | |
| Y = 219733.028 | |
| X = 481049.420 | |
| BK = N83°29'44.6"W | |
| AH = N89°15'32.3"W | |

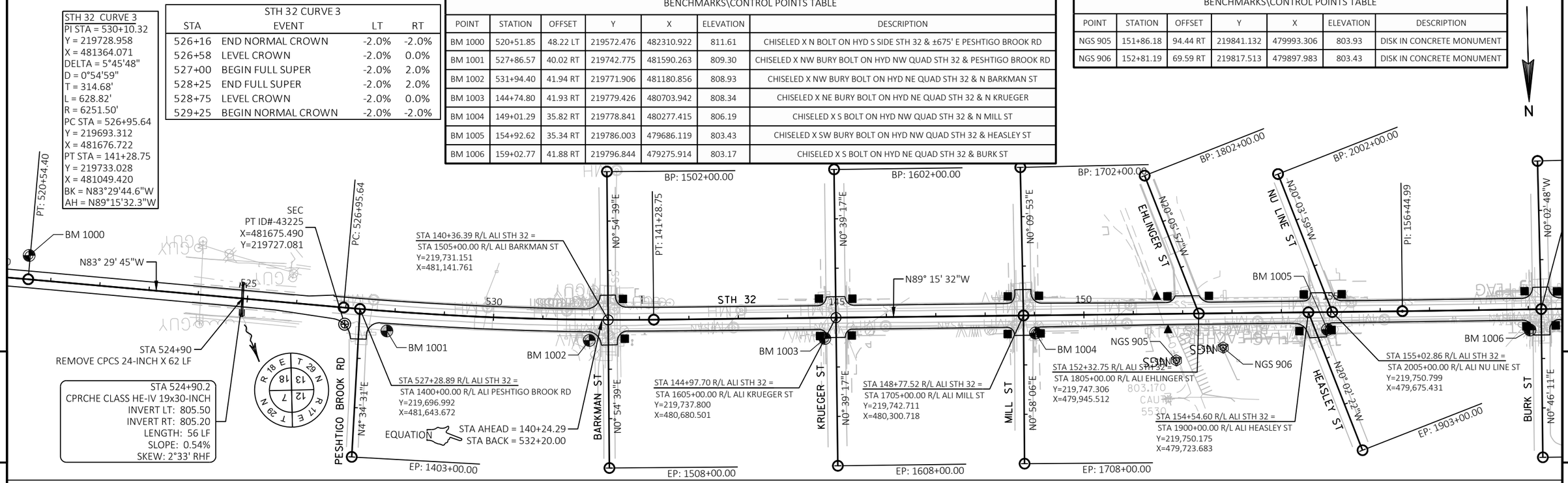
| STH 32 CURVE 3 | | | |
|---|---|---|---|
| STA | EVENT | LT | RT |
| 526+16 | END NORMAL CROWN | -2.0% | -2.0% |
| 526+58 | LEVEL CROWN | -2.0% | 0.0% |
| 527+00 | BEGIN FULL SUPER | -2.0% | 2.0% |
| 528+25 | END FULL SUPER | -2.0% | 2.0% |
| 528+75 | LEVEL CROWN | -2.0% | 0.0% |
| 529+25 | BEGIN NORMAL CROWN | -2.0% | -2.0% |

BENCHMARKS\CONTROL POINTS TABLE

| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
|---|---|---|---|---|---|---|
| BM 1000 | 520+51.85 | 48.22 LT | 219572.476 | 482310.922 | 811.61 | CHISELED X N BOLT ON HYD S SIDE STH 32 & ±675' E PESHTIGO BROOK RD |
| BM 1001 | 527+86.57 | 40.02 RT | 219742.775 | 481590.263 | 809.30 | CHISELED X NW BURY BOLT ON HYD NW QUAD STH 32 & PESHTIGO BROOK RD |
| BM 1002 | 531+94.40 | 41.94 RT | 219771.906 | 481180.856 | 808.93 | CHISELED X NW BURY BOLT ON HYD NE QUAD STH 32 & N BARKMAN ST |
| BM 1003 | 144+74.80 | 41.93 RT | 219779.426 | 480703.942 | 808.34 | CHISELED X NE BURY BOLT ON HYD NE QUAD STH 32 & N KRUEGER |
| BM 1004 | 149+01.29 | 35.82 RT | 219778.841 | 480277.415 | 806.19 | CHISELED X S BOLT ON HYD NW QUAD STH 32 & N MILL ST |
| BM 1005 | 154+92.62 | 35.34 RT | 219786.003 | 479686.119 | 803.43 | CHISELED X SW BURY BOLT ON HYD NW QUAD STH 32 & HEASLEY ST |
| BM 1006 | 159+02.77 | 41.88 RT | 219796.844 | 479275.914 | 803.17 | CHISELED X S BOLT ON HYD NE QUAD STH 32 & BURK ST |

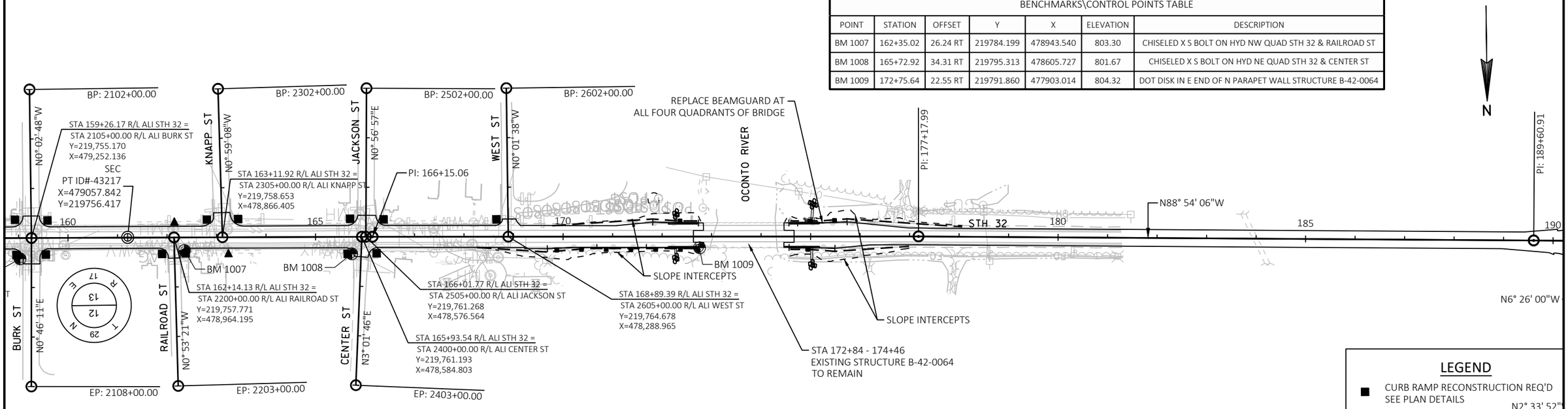
BENCHMARKS\CONTROL POINTS TABLE

| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
|---|---|---|---|---|---|---|
| NGS 905 | 151+86.18 | 94.44 RT | 219841.132 | 479993.306 | 803.93 | DISK IN CONCRETE MONUMENT |
| NGS 906 | 152+81.19 | 69.59 RT | 219817.513 | 479897.983 | 803.43 | DISK IN CONCRETE MONUMENT |




BENCHMARKS\CONTROL POINTS TABLE

| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
|---|---|---|---|---|---|---|
| BM 1007 | 162+35.02 | 26.24 RT | 219784.199 | 478943.540 | 803.30 | CHISELED X S BOLT ON HYD NW QUAD STH 32 & RAILROAD ST |
| BM 1008 | 165+72.92 | 34.31 RT | 219795.313 | 478605.727 | 801.67 | CHISELED X S BOLT ON HYD NE QUAD STH 32 & CENTER ST |
| BM 1009 | 172+75.64 | 22.55 RT | 219791.860 | 477903.014 | 804.32 | DOT DISK IN E END OF N PARAPET WALL STRUCTURE B-42-0064 |

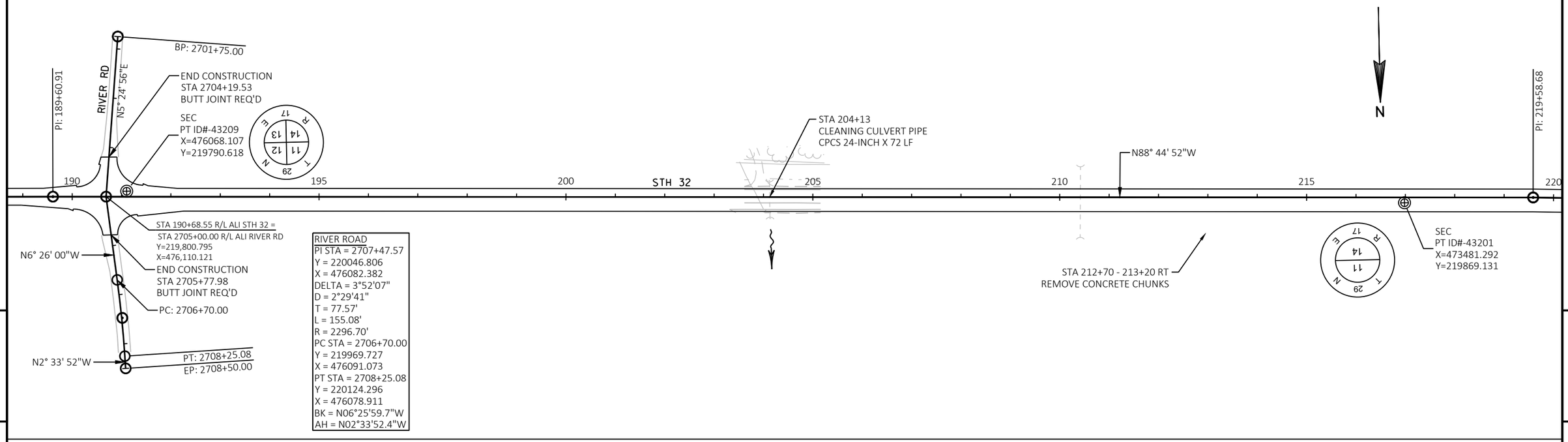



## LEGEND

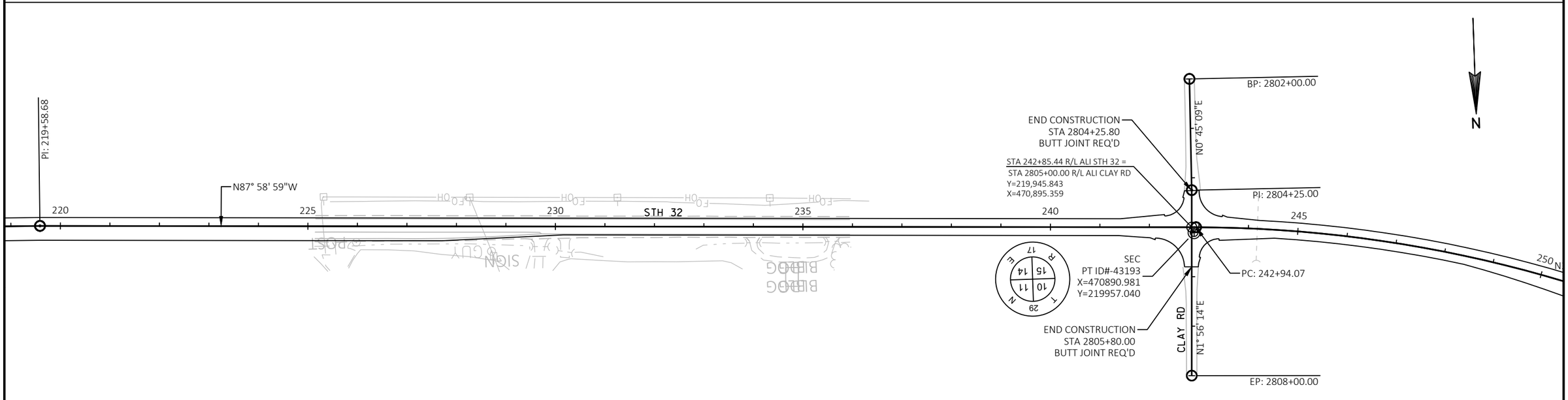
- ■ CURB RAMP RECONSTRUCTION REQ'D SEE PLAN DETAILS
- ▲ NEW CURB RAMP REQ'D SEE PLAN DETAILS

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 127 | E |
|---|---|---|---|---|---|

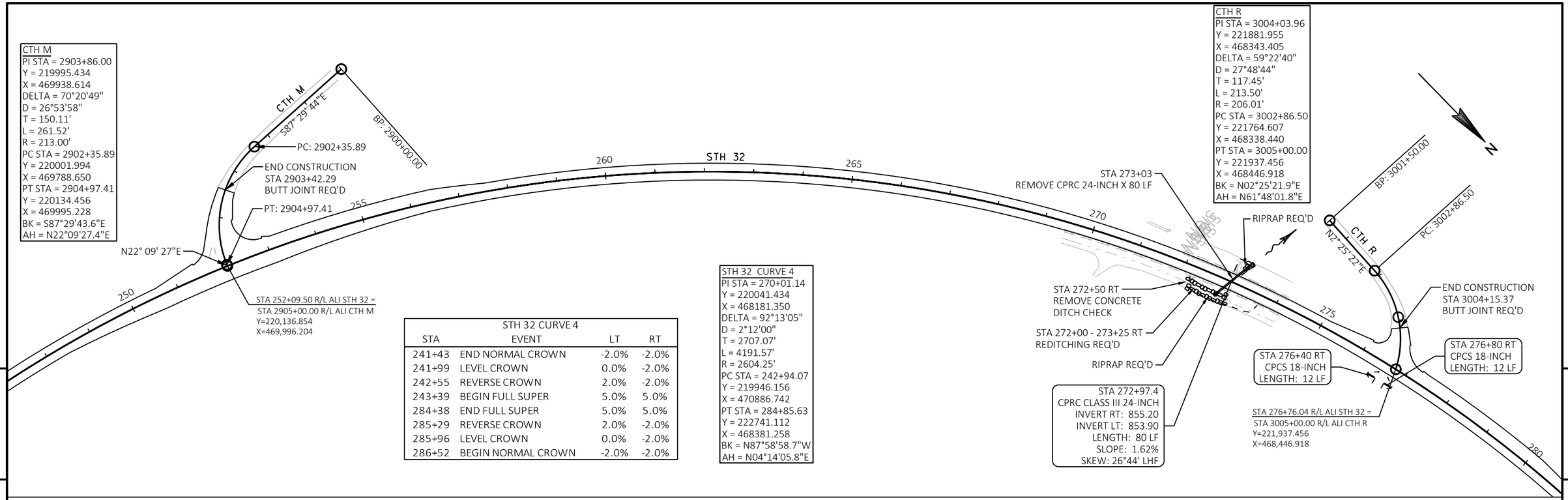

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050203-pn
PLOT DATE : 7/29/2021 7:16 AM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 44



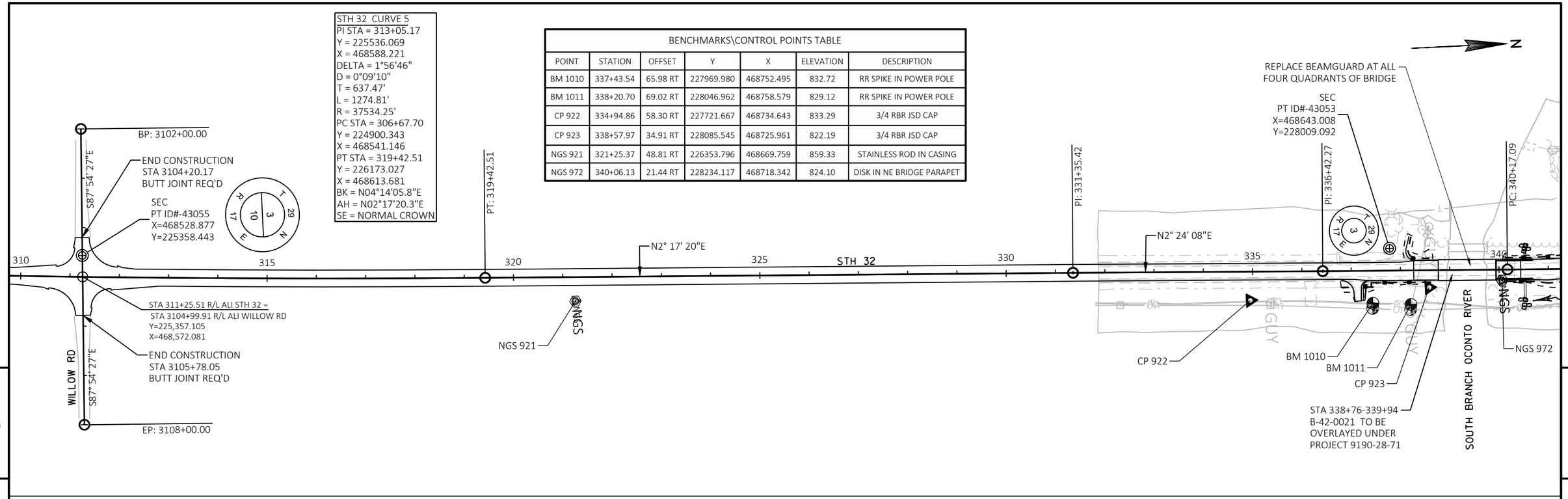

| RIVER ROAD |
|---|
| PI STA = 2707+47.57 |
| Y = 220046.806 |
| X = 476082.382 |
| DELTA = 3°52'07" |
| D = 2°29'41" |
| T = 77.57' |
| L = 155.08' |
| R = 2296.70' |
| PC STA = 2706+70.00 |
| Y = 219969.727 |
| X = 476091.073 |
| PT STA = 2708+25.08 |
| Y = 220124.296 |
| X = 476078.911 |
| BK = N06°25'59.7"W |
| AH = N02°33'52.4"W |

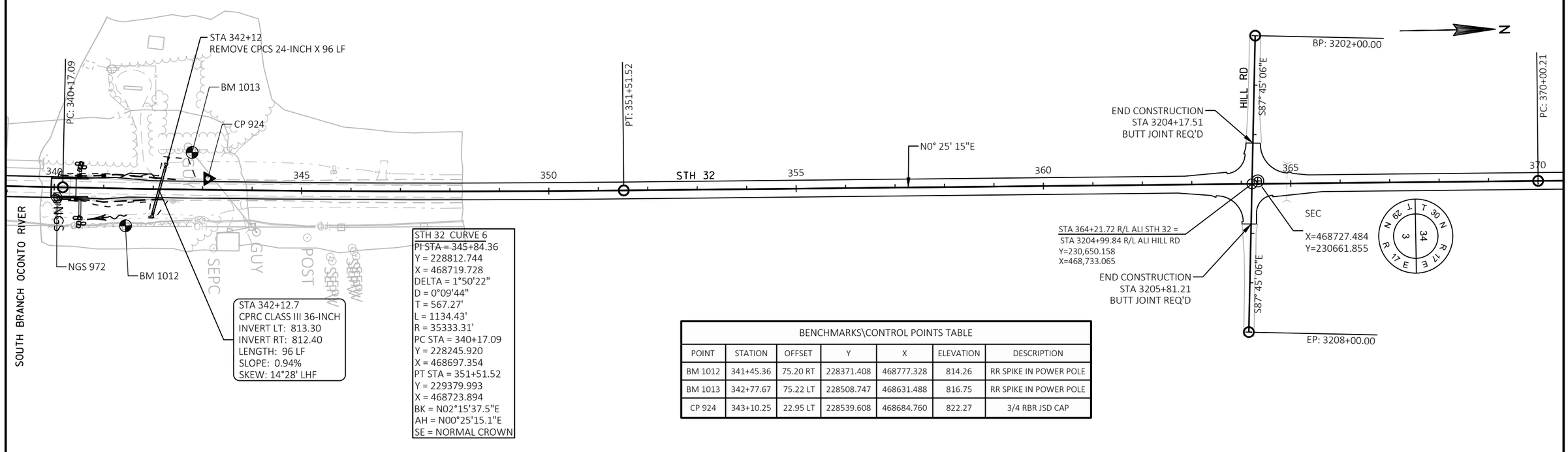



| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 128 | E |
|---|---|---|---|---|---|



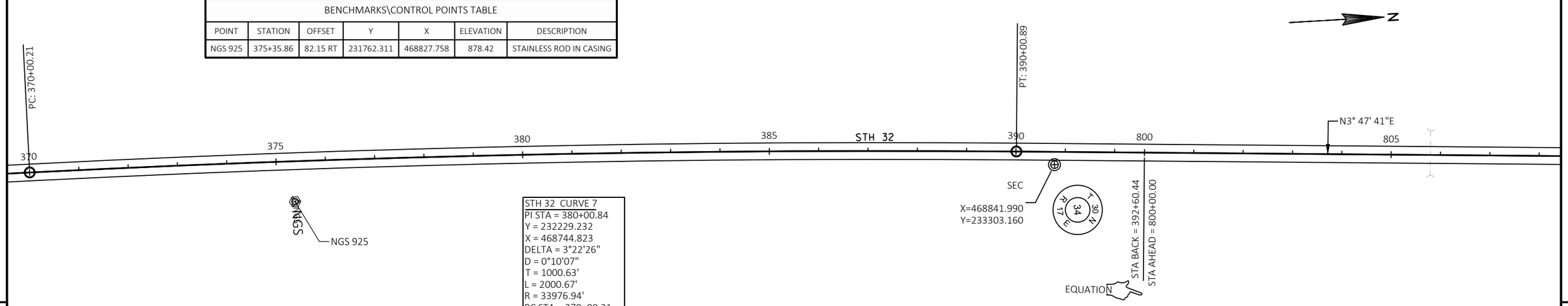

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 129 | E |
|---|---|---|---|---|---|



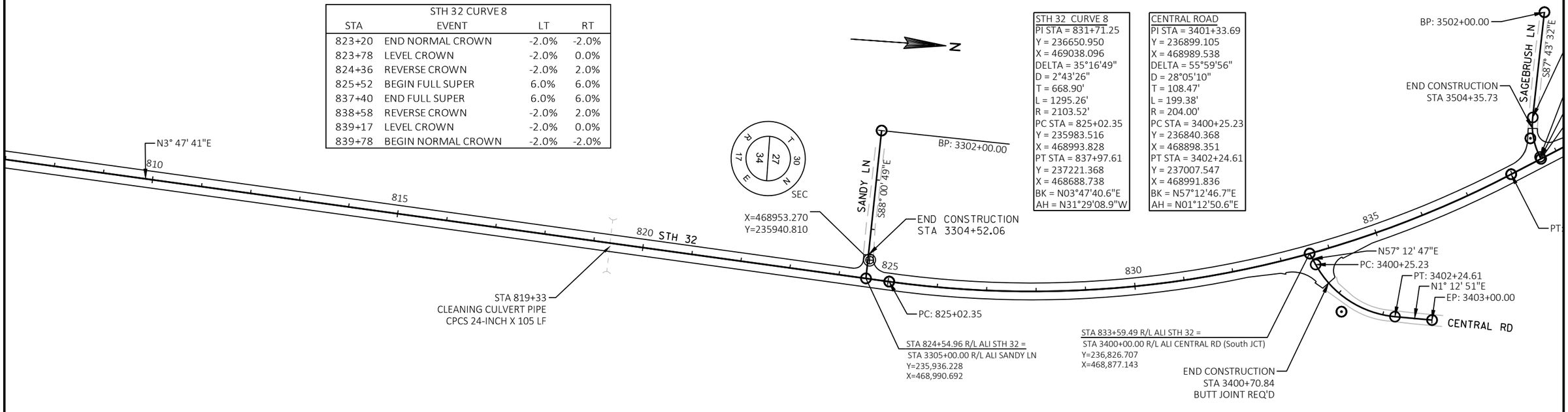

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 130 | E |
|---|---|---|---|---|---|

| BENCHMARKS\CONTROL POINTS TABLE | | | | | | |
|---|---|---|---|---|---|---|
| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
| NGS 925 | 375+35.86 | 82.15 RT | 231762.311 | 468827.758 | 878.42 | STAINLESS ROD IN CASING |




STH 32 CURVE 7
PI STA = 380+00.84
Y = 232229.232
X = 468744.823
DELTA = 3°22'26"
D = 0°10'07"
T = 1000.63'
L = 2000.67'
R = 33976.94'
PC STA = 370+00.21
Y = 231228.633
X = 468737.473
PT STA = 390+00.89
Y = 233227.664
X = 468811.045
BK = N00°25'15.1"E
AH = N03°47'40.6"E
SE = NORMAL CROWN

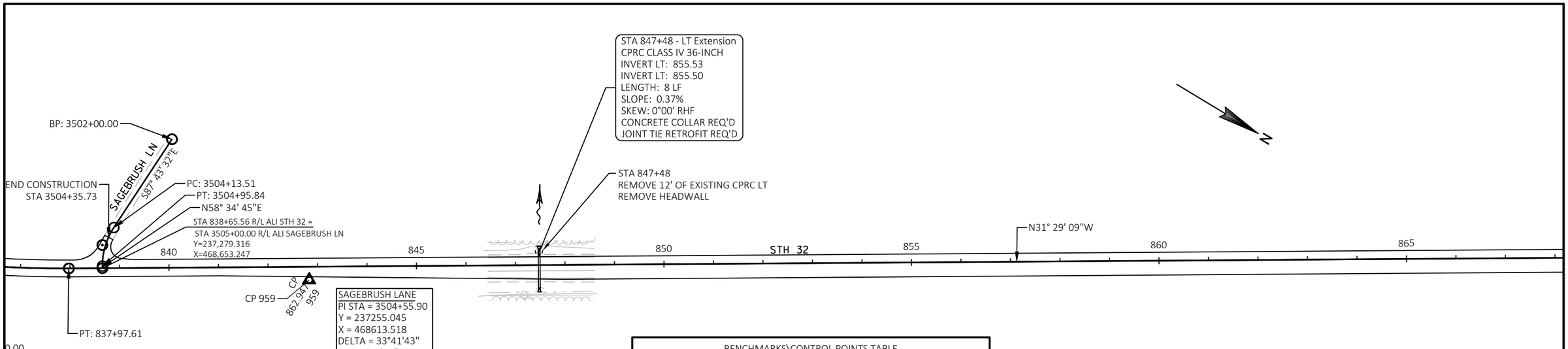
| STH 32 CURVE 8 | | | |
|---|---|---|---|
| STA | EVENT | LT | RT |
| 823+20 | END NORMAL CROWN | -2.0% | -2.0% |
| 823+78 | LEVEL CROWN | -2.0% | 0.0% |
| 824+36 | REVERSE CROWN | -2.0% | 2.0% |
| 825+52 | BEGIN FULL SUPER | 6.0% | 6.0% |
| 837+40 | END FULL SUPER | 6.0% | 6.0% |
| 838+58 | REVERSE CROWN | -2.0% | 2.0% |
| 839+17 | LEVEL CROWN | -2.0% | 0.0% |
| 839+78 | BEGIN NORMAL CROWN | -2.0% | -2.0% |



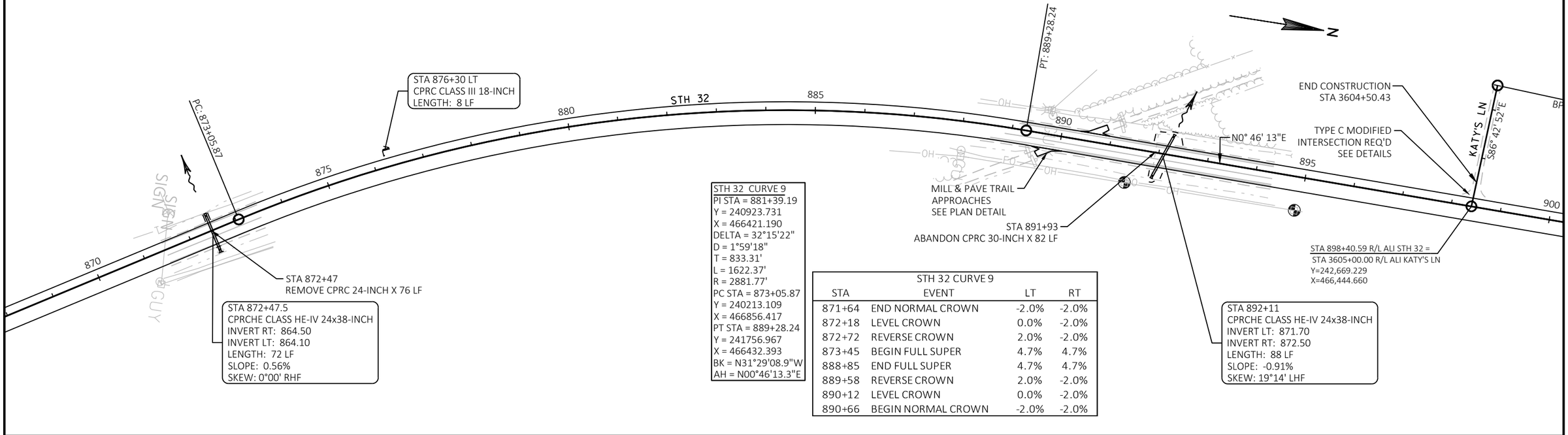

STH 32 CURVE 8
PI STA = 831+71.25
Y = 236650.950
X = 469038.096
DELTA = 35°16'49"
D = 2°43'26"
T = 668.90'
L = 1295.26'
R = 2103.52'
PC STA = 825+02.35
Y = 235983.516
X = 468993.828
PT STA = 837+97.61
Y = 237221.368
X = 468688.738
BK = N03°47'40.6"E
AH = N31°29'08.9"W

CENTRAL ROAD
PI STA = 3401+33.69
Y = 236899.105
X = 468989.538
DELTA = 55°59'56"
D = 28°05'10"
T = 108.47'
L = 199.38'
R = 204.00'
PC STA = 3400+25.23
Y = 236840.368
X = 468898.351
PT STA = 3402+24.61
Y = 237007.547
X = 468991.836
BK = N57°12'46.7"E
AH = N01°12'50.6"E

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 131 | E |
|---|---|---|---|---|---|

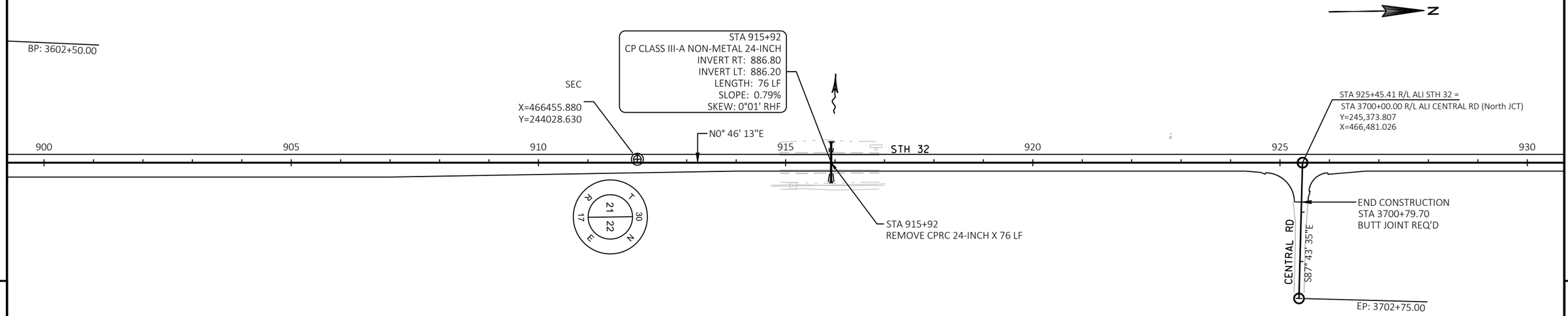


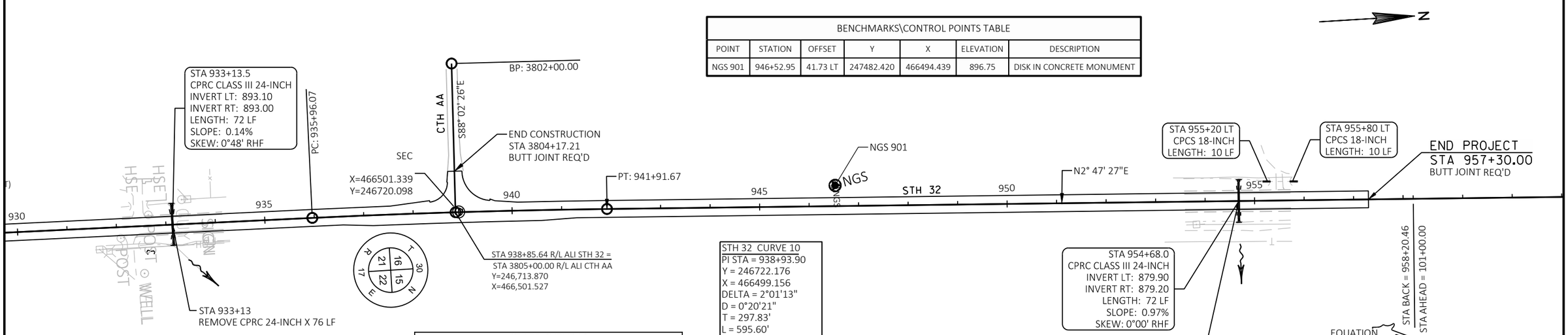

| BENCHMARKS\CONTROL POINTS TABLE | | | | | | |
|---|---|---|---|---|---|---|
| POINT | STATION | OFFSET | Y | X | ELEVATION | DESCRIPTION |
| CP 959 | 842+83.08 | 26.82 RT | 237649.370 | 468458.051 | 862.95 | |




| STH 32 CURVE 9 | | | |
|---|---|---|---|
| STA | EVENT | LT | RT |
| 871+64 | END NORMAL CROWN | -2.0% | -2.0% |
| 872+18 | LEVEL CROWN | 0.0% | -2.0% |
| 872+72 | REVERSE CROWN | 2.0% | -2.0% |
| 873+45 | BEGIN FULL SUPER | 4.7% | 4.7% |
| 888+85 | END FULL SUPER | 4.7% | 4.7% |
| 889+58 | REVERSE CROWN | 2.0% | -2.0% |
| 890+12 | LEVEL CROWN | 0.0% | -2.0% |
| 890+66 | BEGIN NORMAL CROWN | -2.0% | -2.0% |

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 132 | E |
|---|---|---|---|---|---|




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 133 | E |
|---|---|---|---|---|---|

# Standard Detail Drawing List

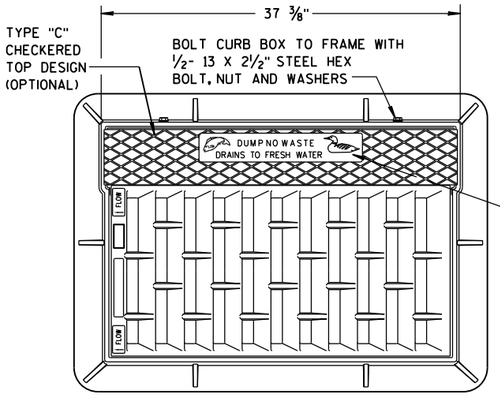
| | |
|---|---|
| 08A05-19A | INLET COVERS TYPE A, H, A-S, H-S & Z |
| 08A05-19D | INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M |
| 08B09-02 | MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER |
| 08C07-02 | INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT |
| 08D01-22A | CONCRETE CURB & GUTTER |
| 08D01-22B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS |
| 08D02-07A | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-07B | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-07C | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D05-20A | CURB RAMPS TYPES 1 AND 1-A |
| 08D05-20B | CURB RAMPS TYPES 2 AND 3 |
| 08D05-20C | CURB RAMPS TYPES 4A AND 4A1 |
| 08D05-20D | CURB RAMPS TYPE 4B AND 4B1 |
| 08D05-20E | CURB RAMPS TYPES 5, 6, 7A, 7B & 8 |
| 08D05-20F | CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS |
| 08D05-20G | CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES |
| 08D21-01 | DRIVEWAYS WITHOUT CURB & GUTTER |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08E11-02 | TURBIDITY BARRIER |
| 08E15-01 | CULVERT PIPE CHECK |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 08F02-01 | APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE |
| 08F04-07 | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL |
| 08F07-05 | STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS |
| 09A01-13A | AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE |
| 13A10-02A | 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING |
| 13A10-02B | 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING |
| 13A10-02C | 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING |
| 13A10-02D | 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING |
| 13C19-03 | HMA LONGITUDINAL JOINTS |
| 14B15-11A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-11B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-11C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS |
| 14B18-06A | STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS) |
| 14B20-11A | STEEL THRIE BEAM STRUCTURE APPROACH |
| 14B20-11B | STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS |
| 14B27-01A | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B27-01B | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B27-01C | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B42-06A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-06B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-06C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-06D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 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) |
| 14B53-01A | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01B | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01C | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01D | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01E | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01F | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |

6

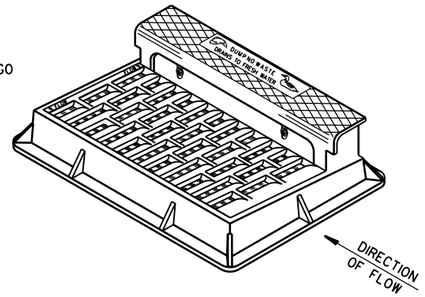
# Standard Detail Drawing List

| | |
|---|---|
| 14B53-01G | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01H | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 14B53-01I | SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS) |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-08C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 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 |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE) |
| 15C11-08B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C12-07 | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |
| 15C19-06A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY |
| 15C33-04 | STOP LINE AND CROSSWALK PAVEMENT MARKING |
| 15C35-04A | PAVEMENT MARKING (INTERSECTIONS) |
| 15C35-04B | PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE) |
| 15C35-04C | PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE) |
| 15D28-04 | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |
| 15D30-06A | TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION |
| 15D30-06B | TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION |
| 15D30-06C | TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION |
| 15D39-02 | TRAFFIC CONTROL, DROP-OFF SIGNING |
| 15D44-02 | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES |
| 15D45-02 | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL |
| 15D45-03 | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL |
| 15D50-01A | TRAFFIC CONTROL, ADDED LANE CLOSURE WITHOUT LANE SHIFT |
| 15D50-01B | TRAFFIC CONTROL, ADDED LANE CLOSURE WITH LANE SHIFT |

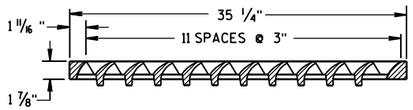

6

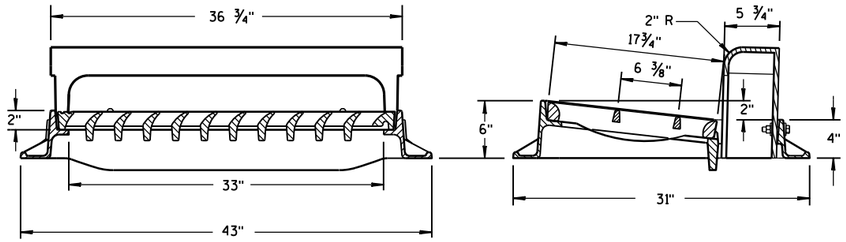


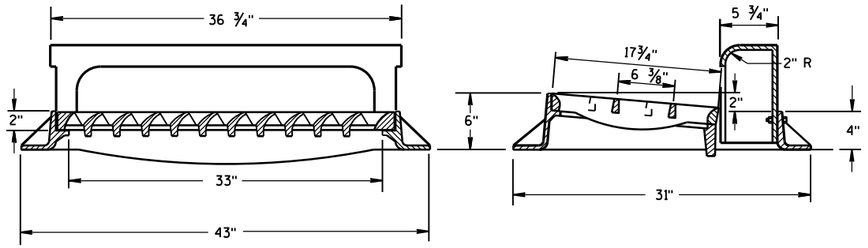

**NOTE:**
**GRATE IS REVERSIBLE.**




NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

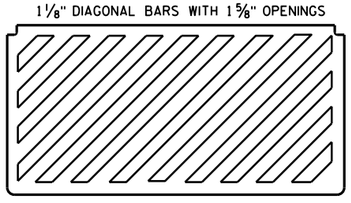



## TYPE "H"

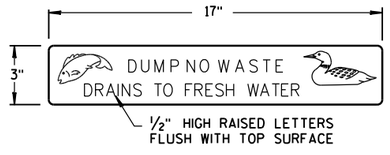
**NOTE: EITHER CASTING IS ACCEPTABLE**



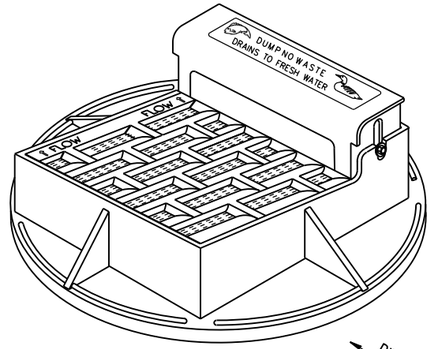

## SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

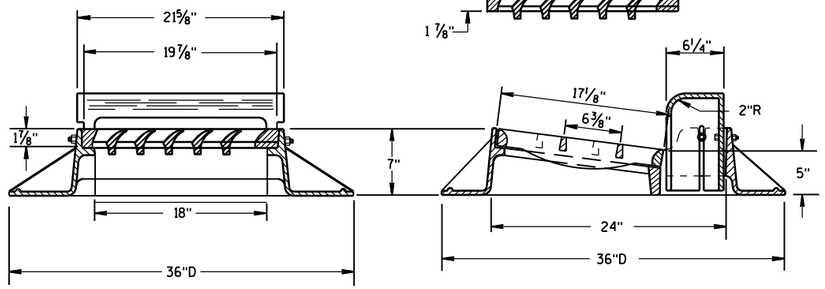



## LOGO DETAIL




NOTE: CURB BOX ADJUSTABLE 4" TO 9"

**NOTE:**
**GRATE IS REVERSIBLE.**



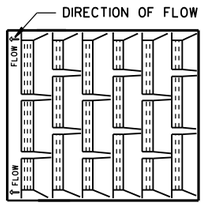

## TYPE "A"

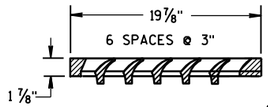
## GENERAL NOTES

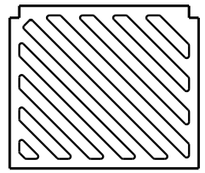
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



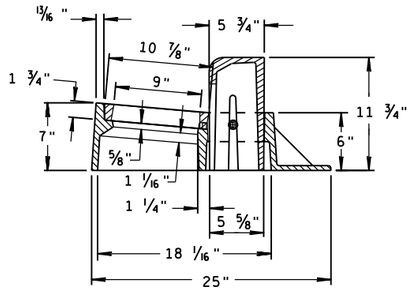



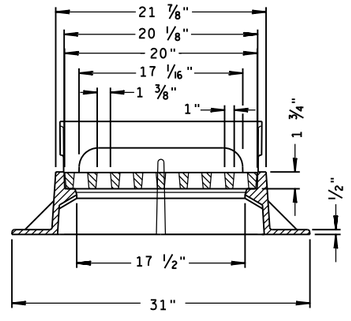




## SPECIAL GRATE FOR TYPE "A" COVER

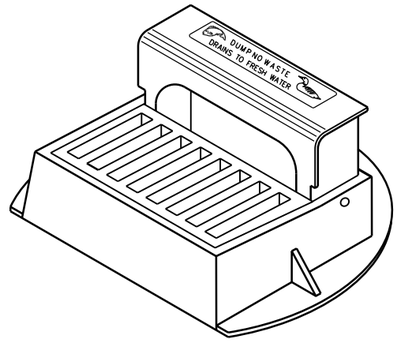
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)




## TYPE "Z"




## INLET COVERS TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

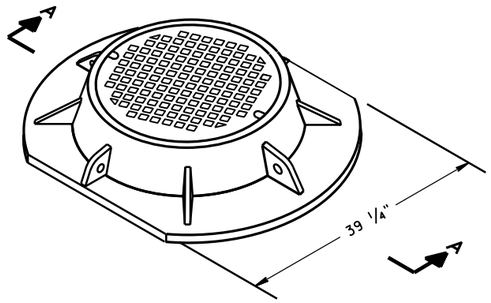
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

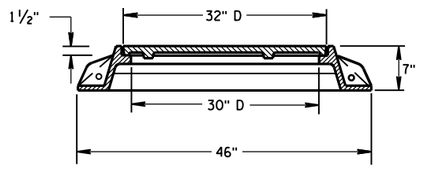




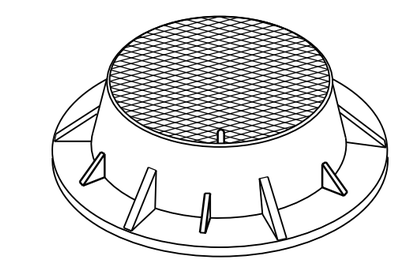
6

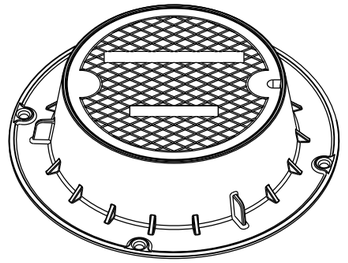
S.D.D. 8 A 5-19a

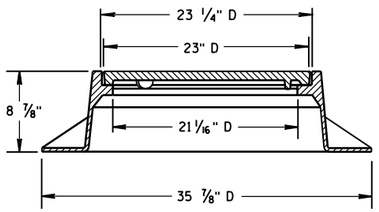


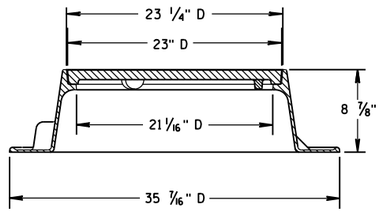




SECTION A-A
TYPE "K"







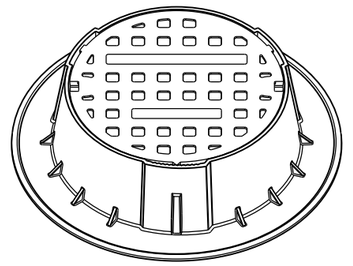

TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

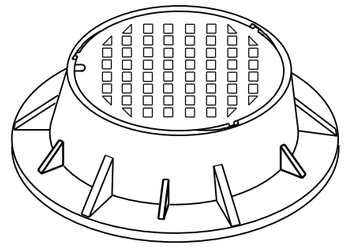
## GENERAL NOTES

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

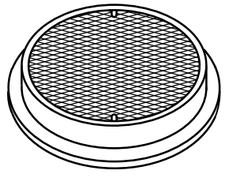
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

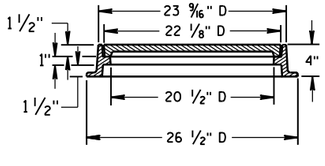
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



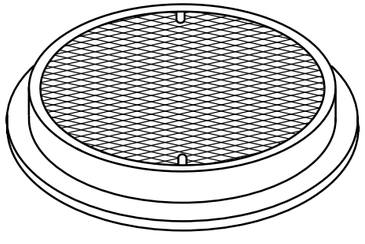



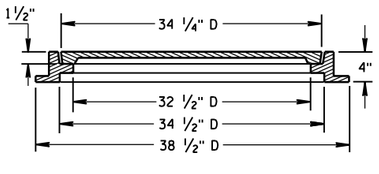

TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



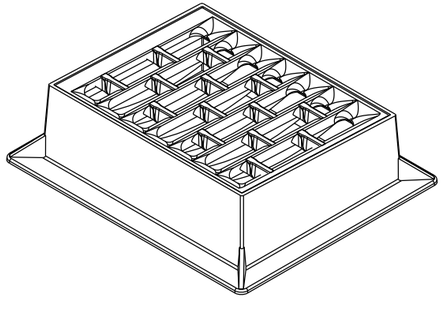


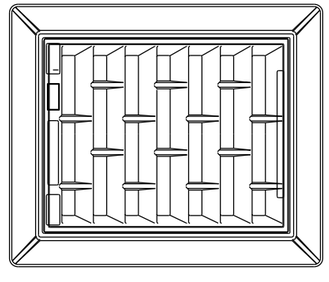

TYPE "L"

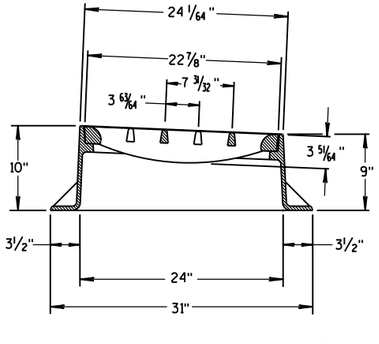


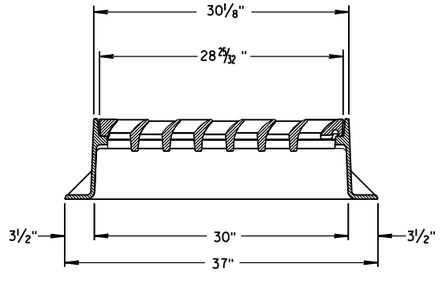



TYPE "M"








INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

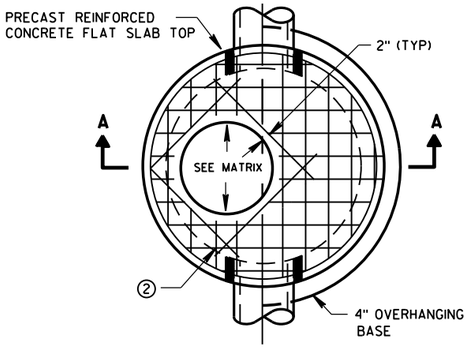


6

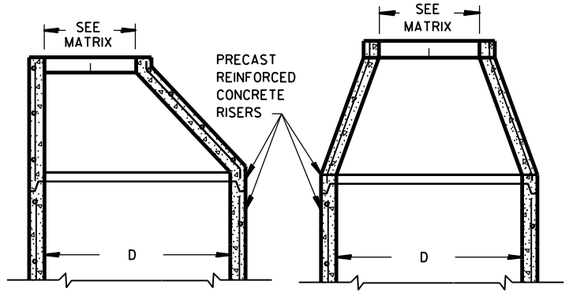
S.D.D. 8 A 5-19d

6

S.D.D. 8 A 5-19d

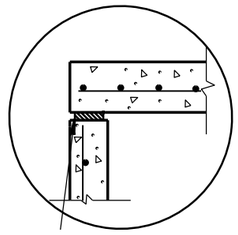



PLAN VIEW CIRCULAR OPENING

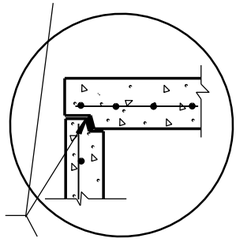



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

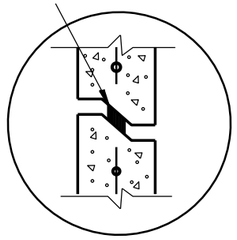


TOP WITH PLAIN END JOINT



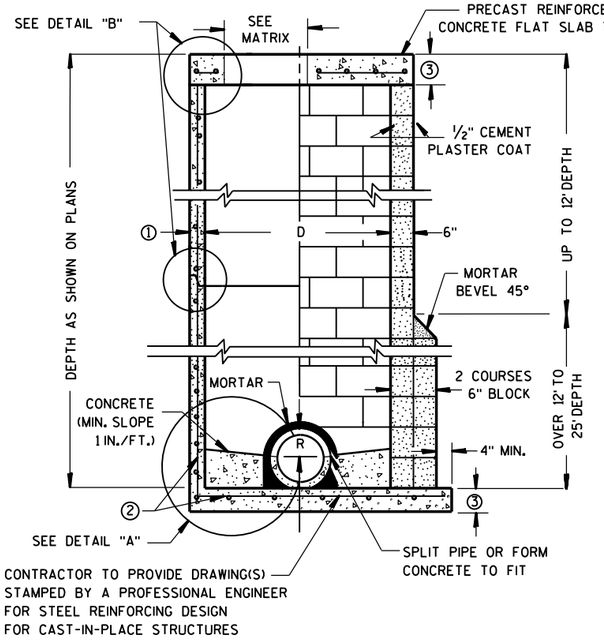
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



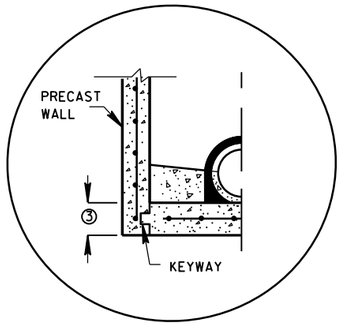
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

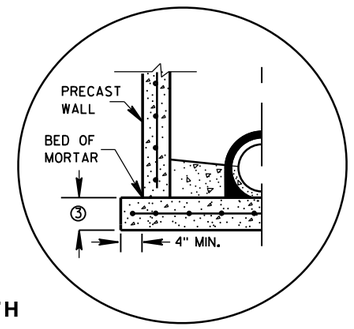



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

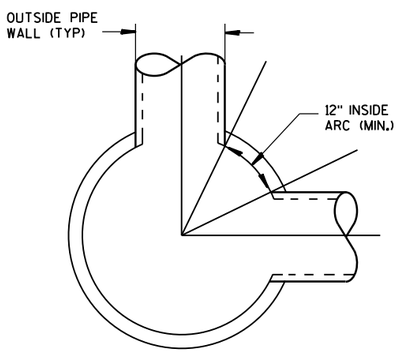



PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION




SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"




DETAIL "C"

## GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

## MANHOLE COVER OPENING MATRIX

| MANHOLE COVER TYPE | C | ALL J'S | K | L | M |
|---|---|---|---|---|---|
| OPENING SIZE (FT) | | | | | |
| 2 DIA. | X | X | | X | |
| 3 DIA. | | | X | | X |

## PIPE MATRIX

| MANHOLE SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES | |
|---|---|---|
| | 180° SEPARATION (IN) | 90° SEPARATION (IN) |
| 3-FT | 15 | 12 |
| 4-FT | 24 | 18 |
| 5-FT | 36 | 24 |
| 6-FT | 42 | 36 |
| 7-FT | 48 | 36 |
| 8-FT | 60 | 42 |

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

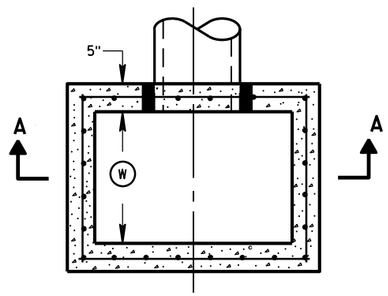
Sept., 2016
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERV

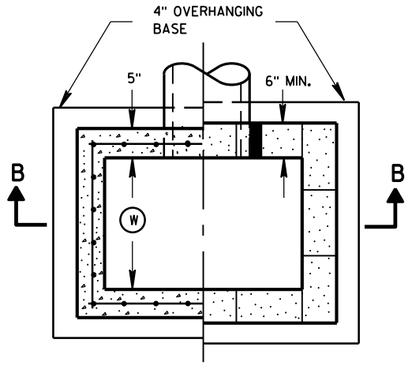
FHWA



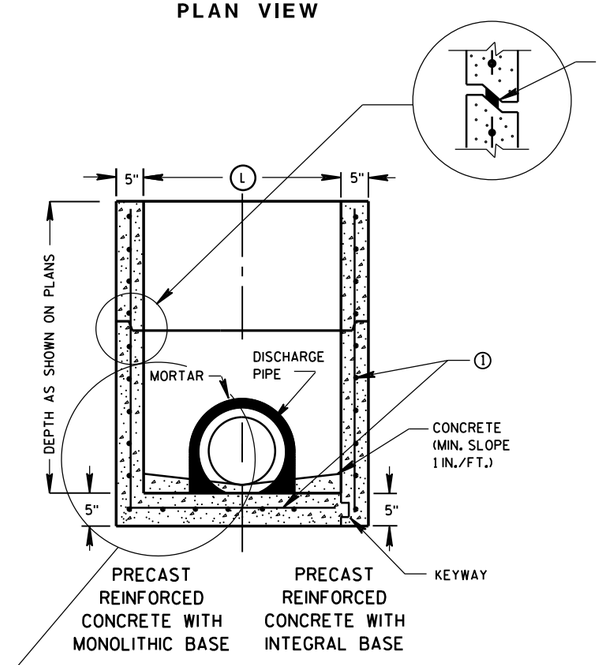

6
S.D.D. 8 B 9-2



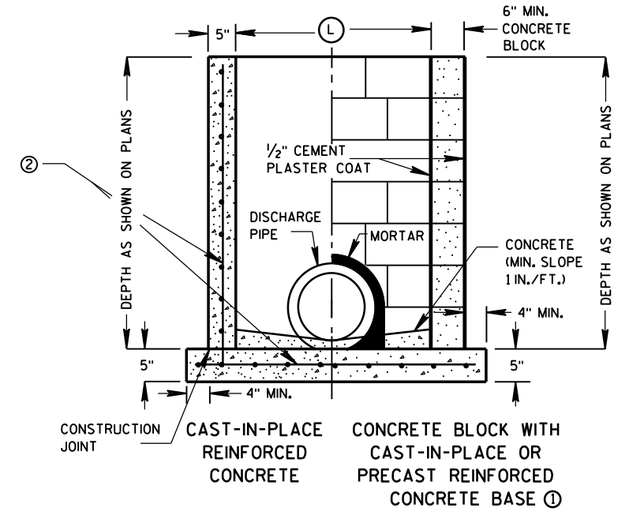

PLAN VIEW



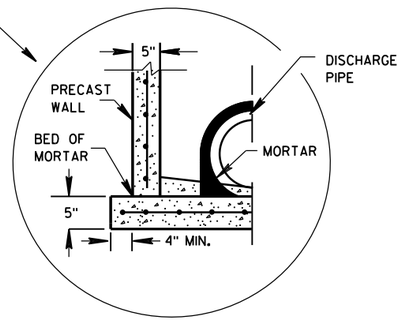

PLAN VIEW




SECTION A-A




SECTION B-B




SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

## GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

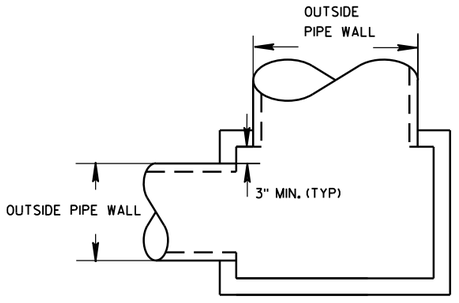
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

## INLET COVER MATRIX

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

## PIPE MATRIX

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



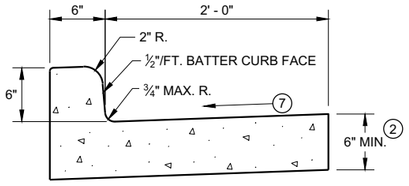

DETAIL "A"

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

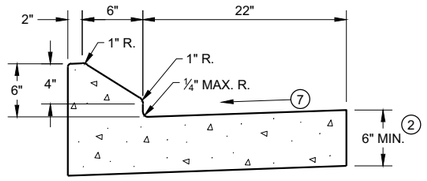
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
FHWA

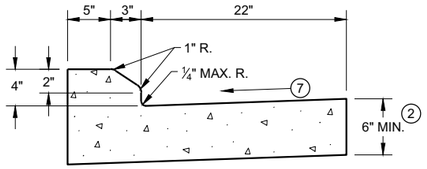
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



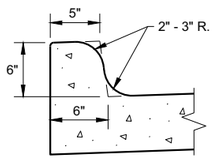

TYPES A[1] & D



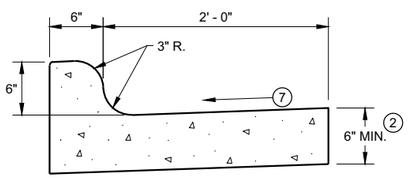

6" SLOPED CURB TYPES G[1] & J




4" SLOPED CURB TYPES G[1] & J

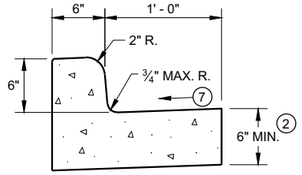



TYPES K[1] & L
(OPTIONAL CURB SHAPE)



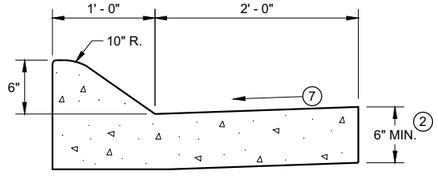

TYPES K[1] & L

## CONCRETE CURB AND GUTTER 30"




TYPES A[1] & D

## CONCRETE CURB AND GUTTER 18"

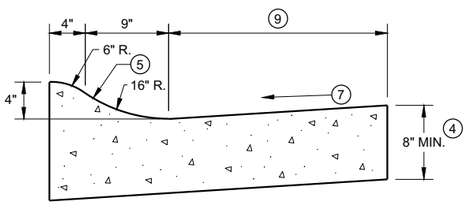



6" SLOPED CURB TYPES A[1] & D



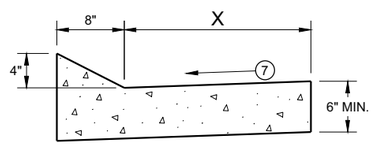

4" SLOPED CURB TYPES A[1] & D

## CONCRETE CURB AND GUTTER 36"




4" SLOPED CURB TYPES R[1] & T

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

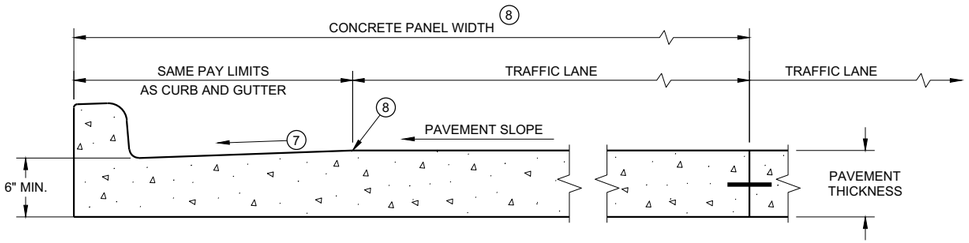



TYPES TBT & TBTT[1]

## CONCRETE CURB AND GUTTER

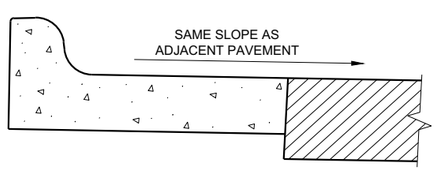
### PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

| 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.

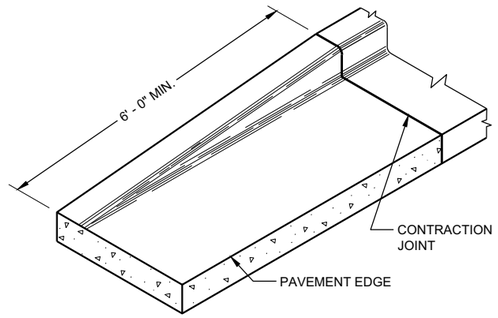
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

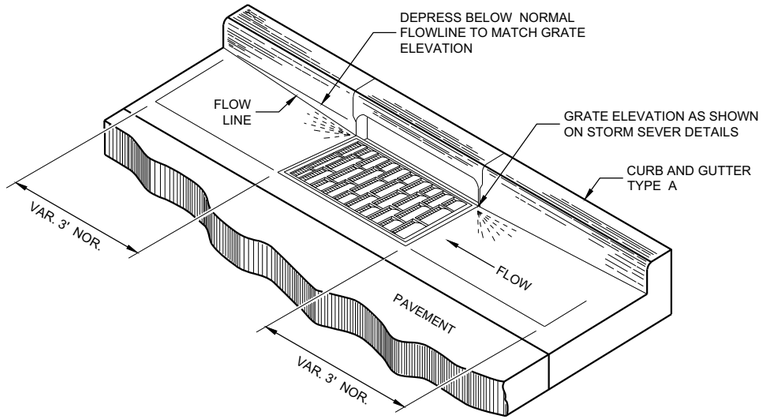
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

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




## 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.

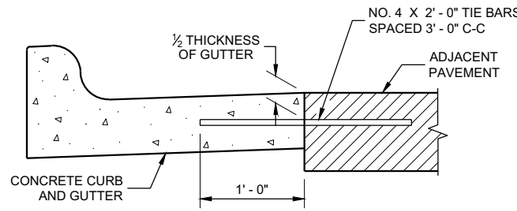
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

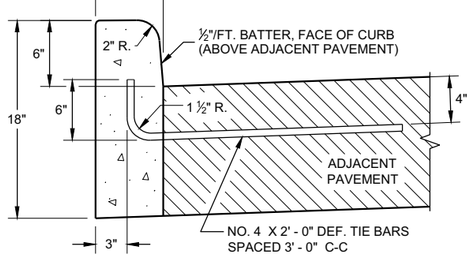
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(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.

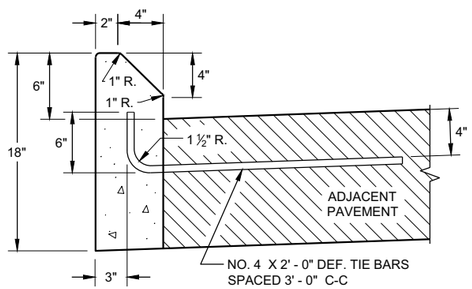
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.




## TYPICAL TIE BAR LOCATION (1)

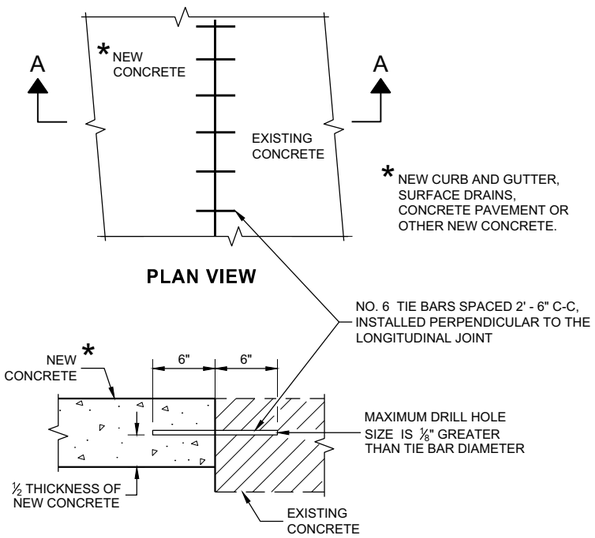



## TYPES A (1) & D




## TYPES G (1) & J

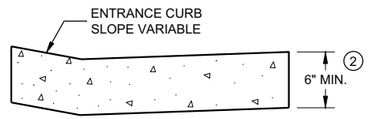
## CONCRETE CURB




## PLAN VIEW

## SECTION A - A

## TIE BARS DRILLED INTO EXISTING PAVEMENT




## DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

## CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA



6

SDD08D01 - 22b

6

SDD08D01 - 22b

## 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.

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

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

(2) NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

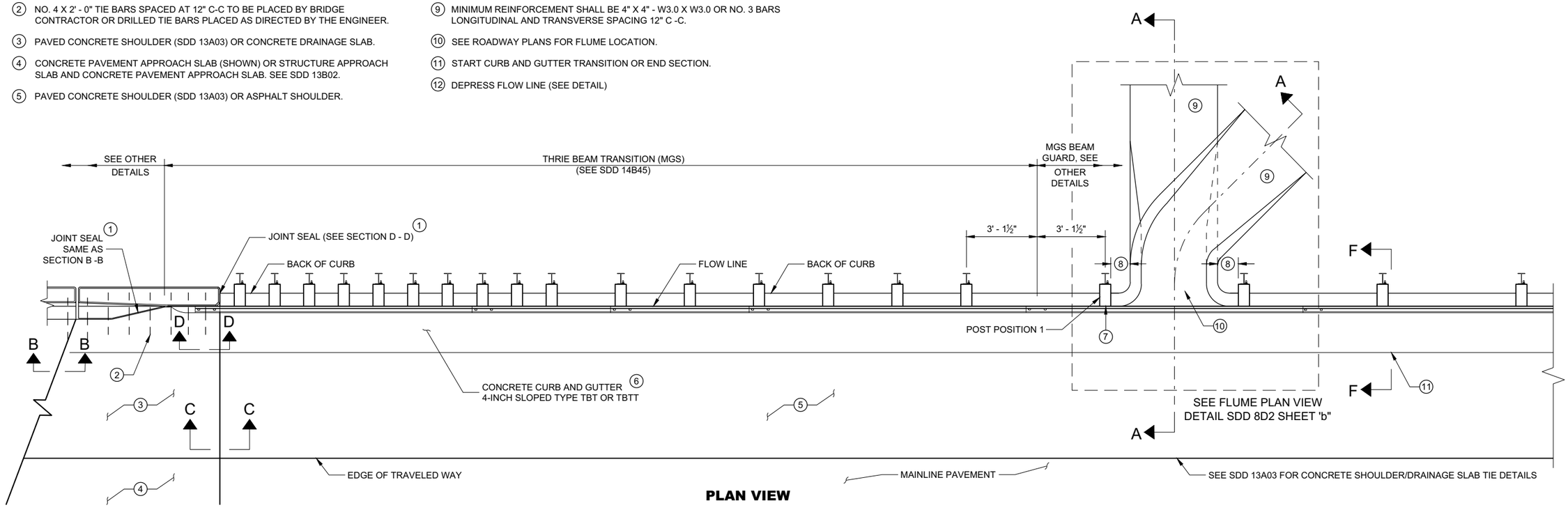
(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

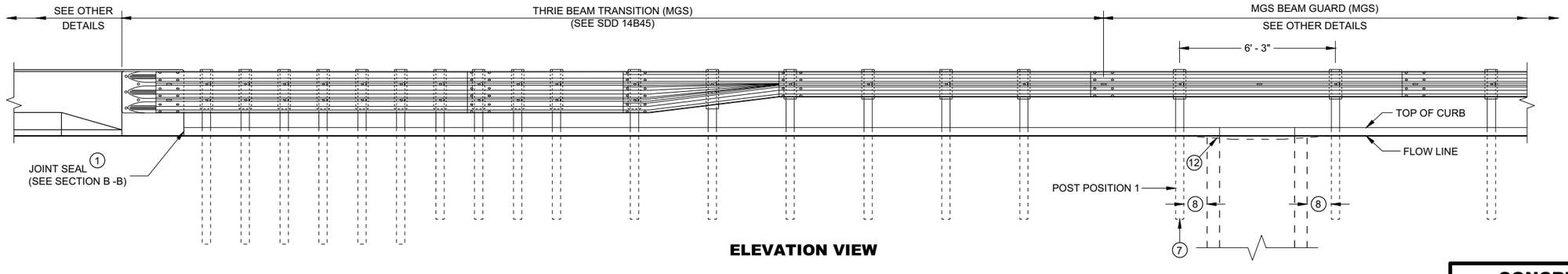
(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(11) START CURB AND GUTTER TRANSITION OR END SECTION.

(12) DEPRESS FLOW LINE (SEE DETAIL)




**PLAN VIEW**




**ELEVATION VIEW**

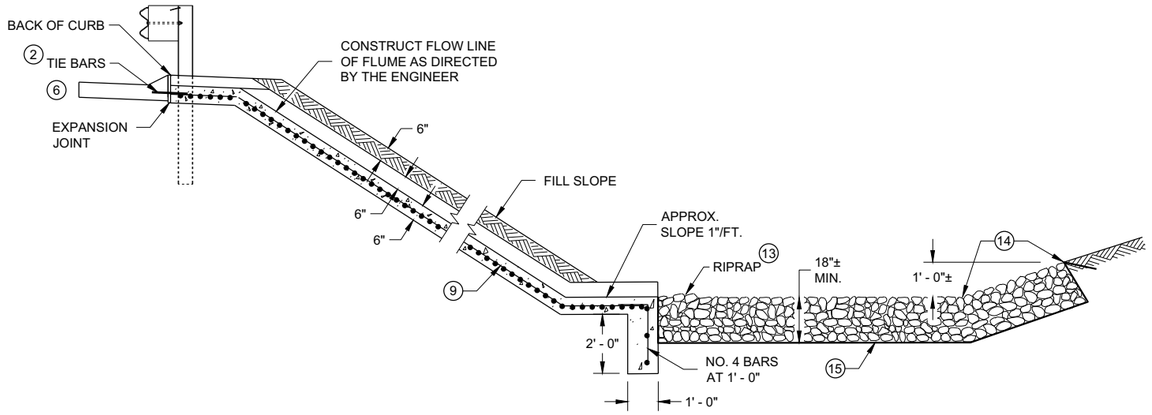
**CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

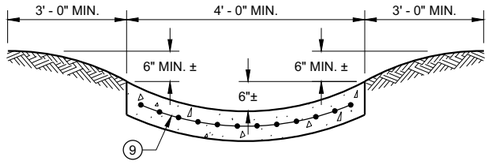


SDD 08D02 - 07a

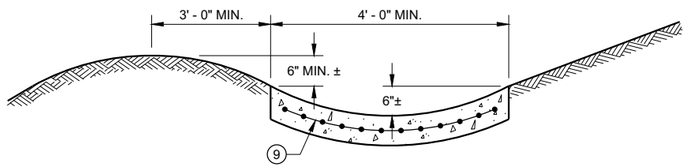
SDD 08D02 - 07a



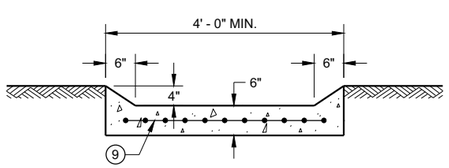

**SECTION A - A**



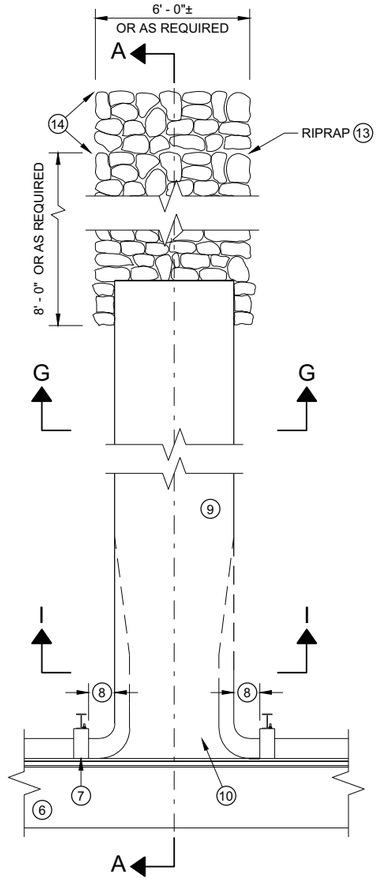

**SECTION G - G**



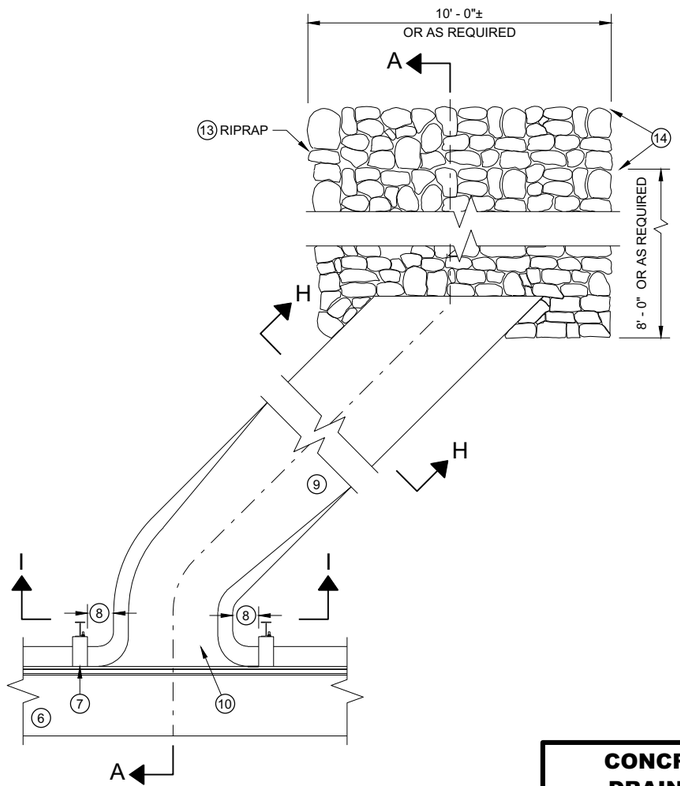

**SECTION H - H**




**SECTION I - I**




**PLAN VIEW PERPENDICULAR FLUME**




**PLAN VIEW SKEWED FLUME**

## 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.

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

1. USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
2. NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
3. PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
4. CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
5. PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
6. CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
7. PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
8. CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
9. MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.
10. SEE ROADWAY PLANS FOR FLUME LOCATION.
11. START CURB AND GUTTER TRANSITION OR END SECTION.
12. DEPRESS FLOW LINE (SEE DETAIL)
13. MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
14. LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
15. GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

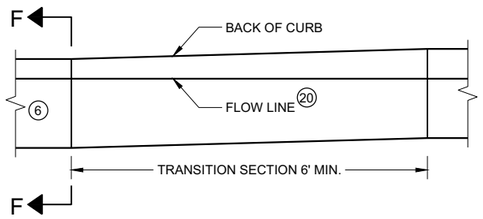


6

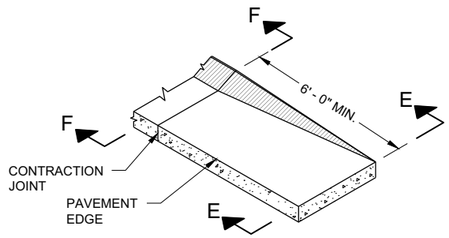
SDD 08D02 - 07b

6

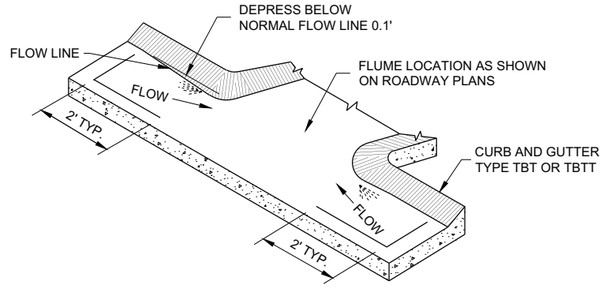
SDD 08D02 - 07b




**CURB AND GUTTER TRANSITION SECTION**
**CONCRETE CURB AND GUTTER 4-INCH SLOPED**
**36 INCH TYPE TBT OR TBTT**




**CURB AND GUTTER END SECTION**
**CONCRETE CURB AND GUTTER 4-INCH SLOPED**
**36 INCH TYPE TBT OR TBTT**




**CURB AND GUTTER FLOW LINE DEPRESSION**
**AT FLUMES CONCRETE CURB AND GUTTER**
**4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

## 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.

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

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

(2) NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(11) START CURB AND GUTTER TRANSITION OR END SECTION.

(12) DEPRESS FLOW LINE (SEE DETAIL)

(13) MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.

(14) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(15) GEOTEXTILE FABRIC TYPE HR.

(16) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.

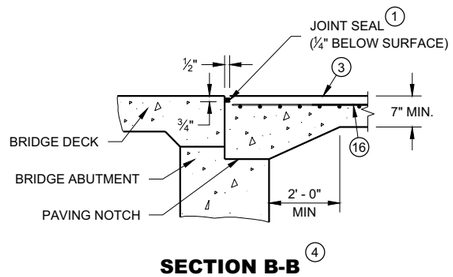
(17) MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.

(18) MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.

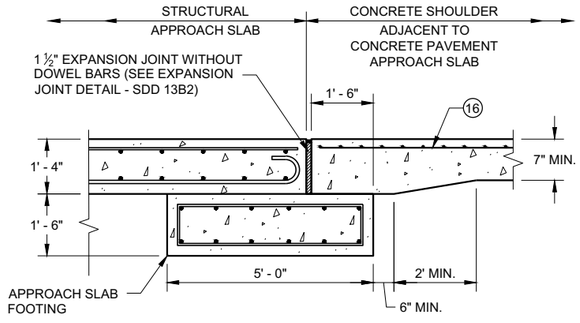
(19) ALIGN FACE OF POST BLOCK WITH FLOW LINE.

(20) MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.

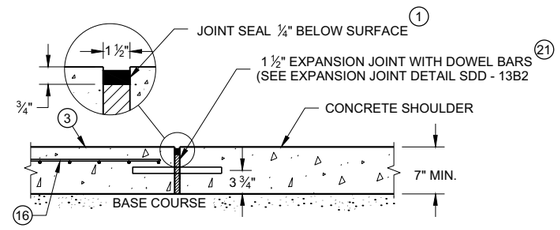
(21) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



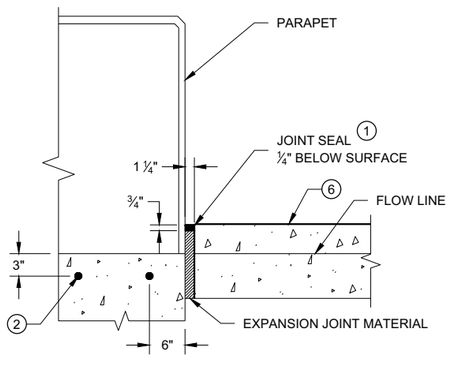

**SECTION B-B** (4)



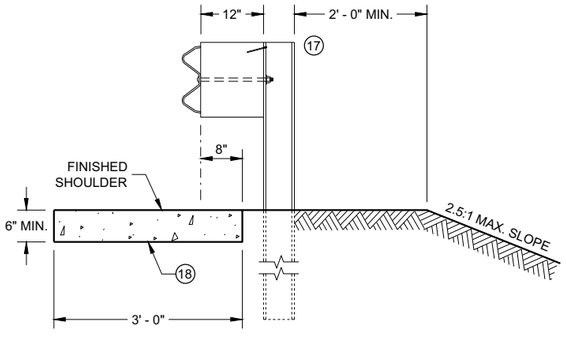

**SECTION C - C**
**JOINT DETAIL FOR BRIDGE WITH STRUCTURAL APPROACH SLAB AND CONCRETE APPROACH SLAB**



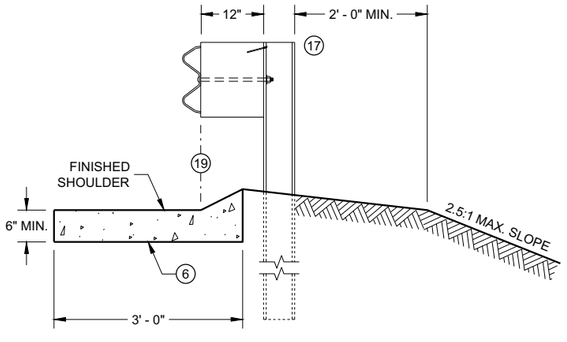

**SECTION C - C**
**JOINT DETAIL FOR BRIDGE APPROACH WITH CONCRETE SHOULDERS**




**SECTION D - D**




**SECTION E - E**




**SECTION F - F**

**CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

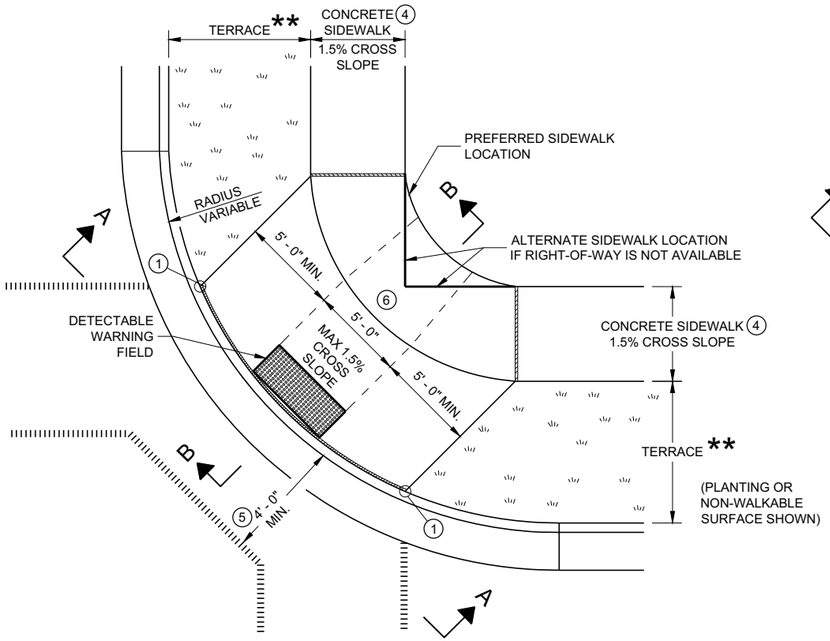


SDD 08D02 - 07c

SDD 08D02 - 07c

6

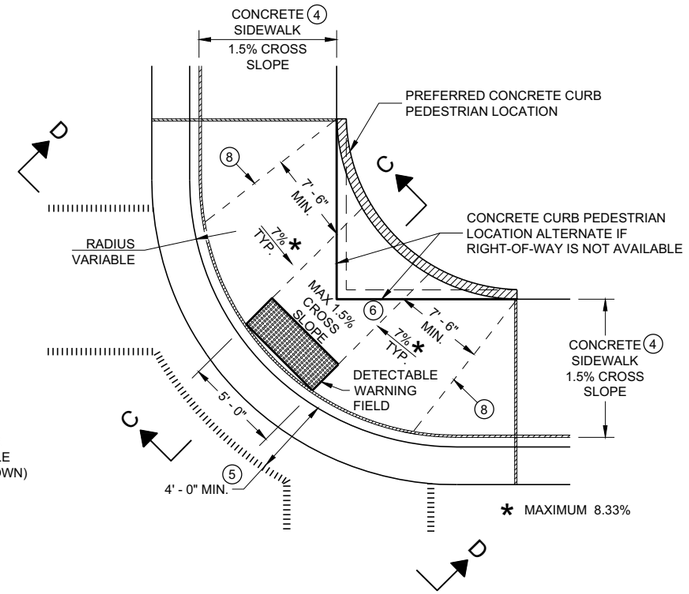
6




**PLAN VIEW**

## CURB RAMP TYPE 1

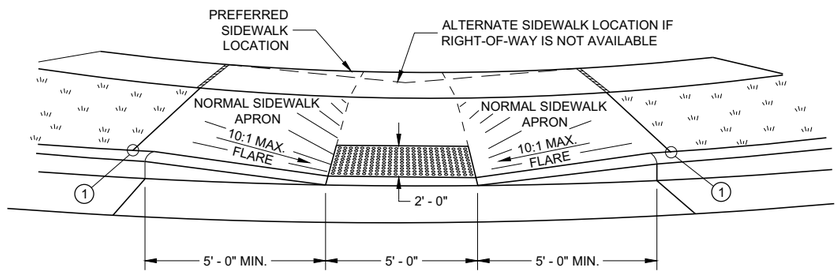
**(CENTER OF CORNER RADIUS)**



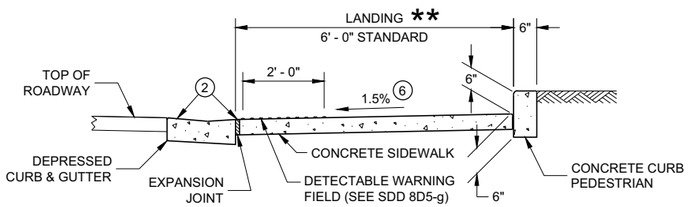

**PLAN VIEW**

## CURB RAMP TYPE 1 - A

**(NO TERRACE)**

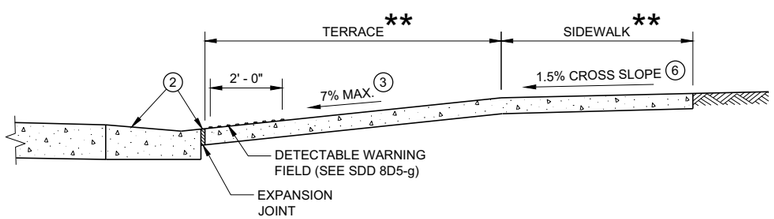



**VIEW A - A FOR TYPE 1**

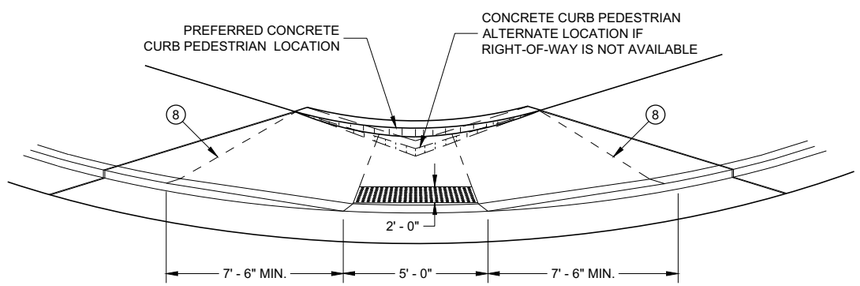



**SECTION C - C FOR TYPE 1 - A**

** WIDTH SHOWN ELSEWHERE IN THE PLANS




**SECTION B - B FOR TYPE 1**




**VIEW D - D FOR TYPE 1 - A**

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

## LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

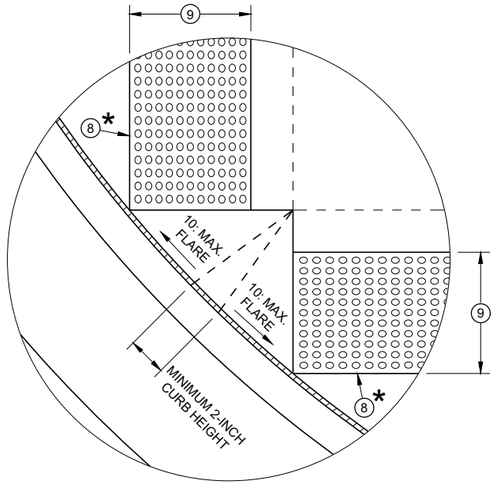
**CURB RAMPS**
**TYPE 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

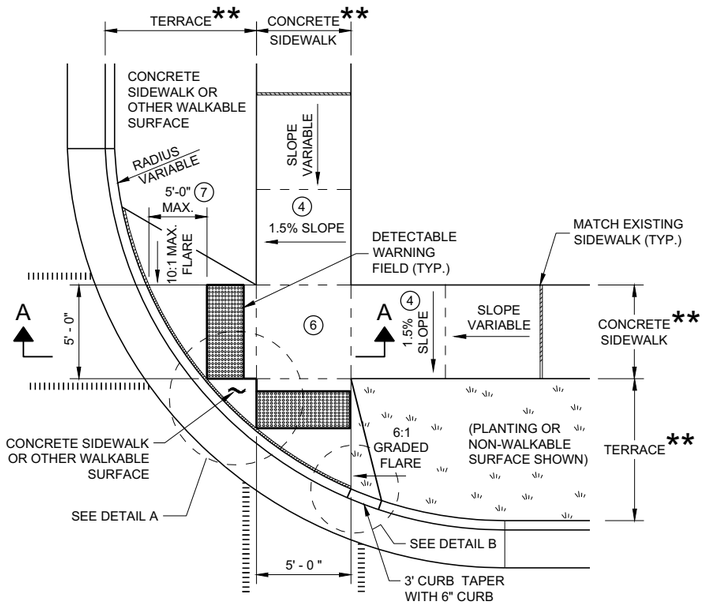



6


SDD 08D05 - 20a




**DETAIL A**




**PLAN VIEW**
**CURB RAMP TYPE 2**
**(CENTER OF CORNER RADIUS)**

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

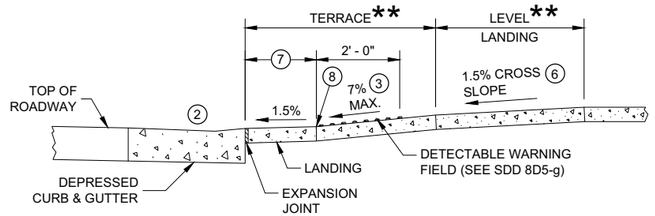
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

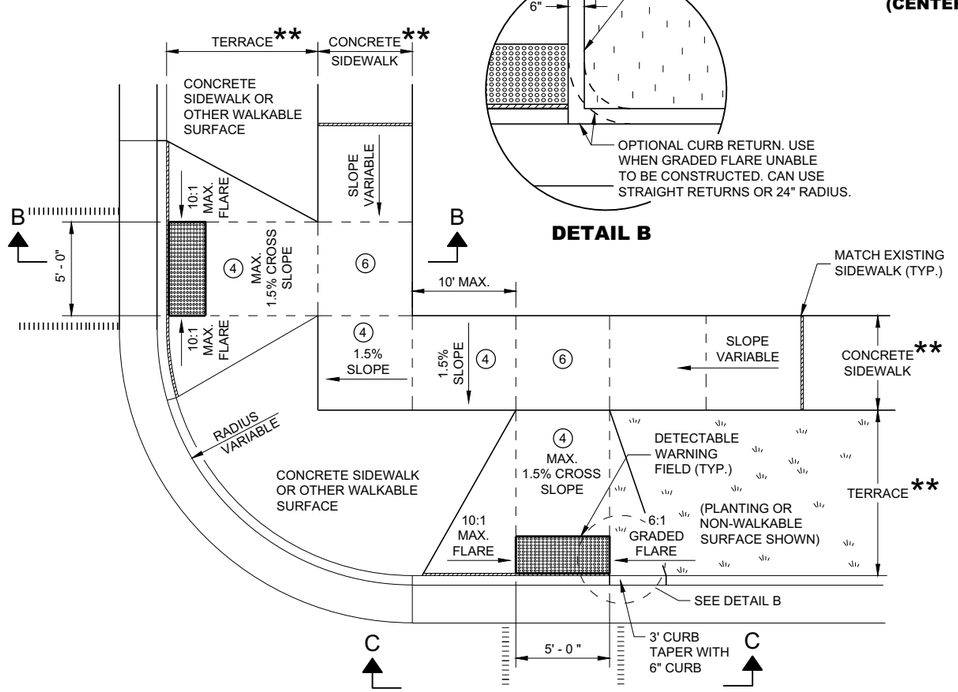
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.




**SECTION A - A FOR TYPE 2**

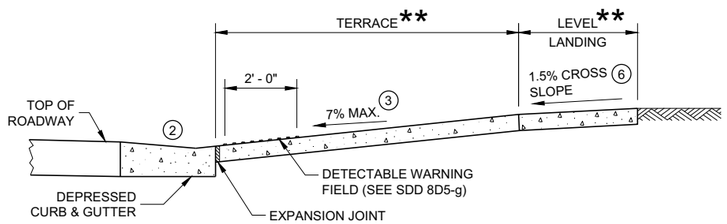
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS




**DETAIL B**

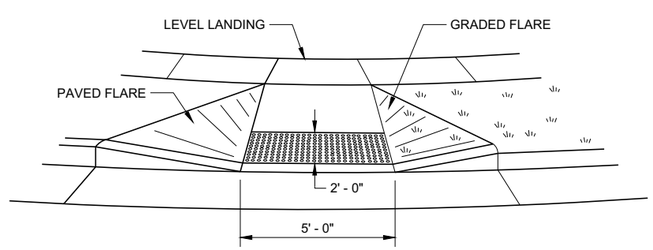
**PLAN VIEW**
**CURB RAMP TYPE 3**
**(OUTSIDE OF CROSSWALK AREA)**




**SECTION B - B FOR TYPE 3**

## LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)




**VIEW C - C FOR TYPE 3**

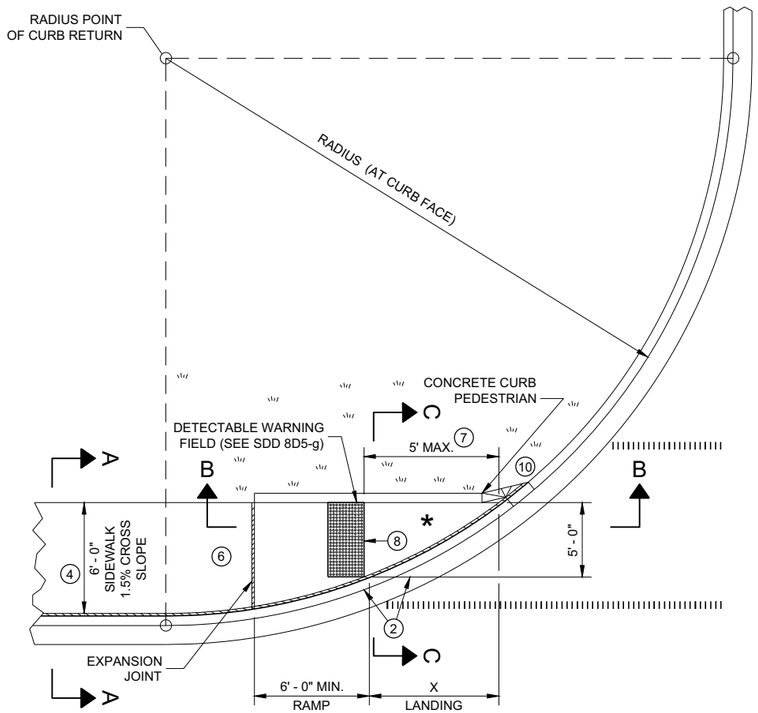
**CURB RAMPS TYPE 2 AND 3**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION




6


SDD 08D05 - 20b

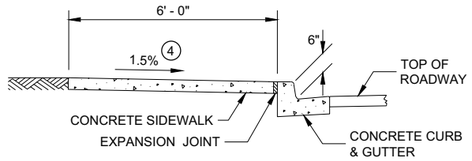



**PLAN VIEW**

**CURB RAMP TYPE 4A**

| RADIUS (AT CURB FACE) | X |
|---|---|
| 10 FEET | 4' - 7" |
| 15 FEET | 6' - 5½" |

INTERMEDIATE RADII CAN BE INTERPOLATED




**SECTION A - A FOR TYPE 4A**

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

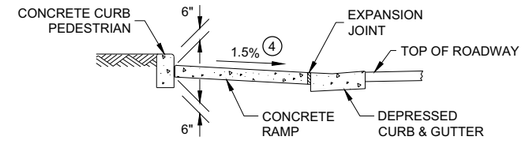
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

## LEGEND

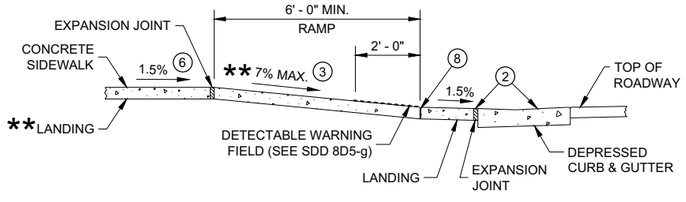
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



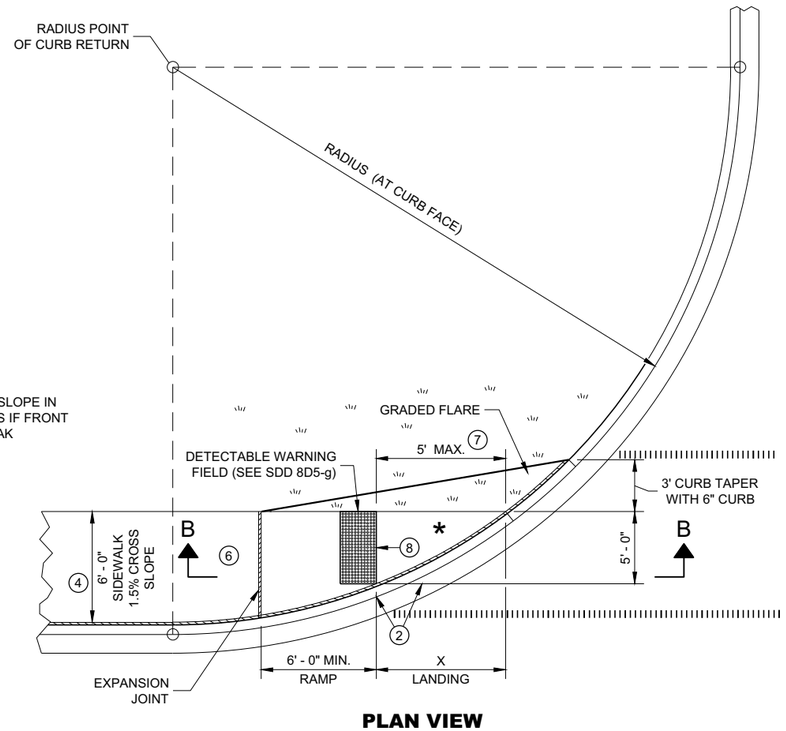

**SECTION C - C FOR TYPE 4A**




**SECTION B - B FOR TYPE 4A AND TYPE 4A1**

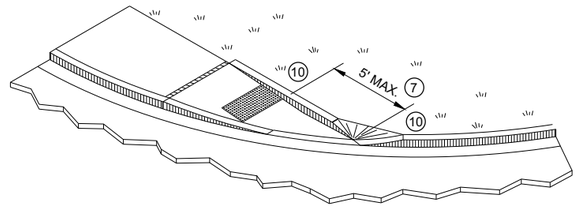
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

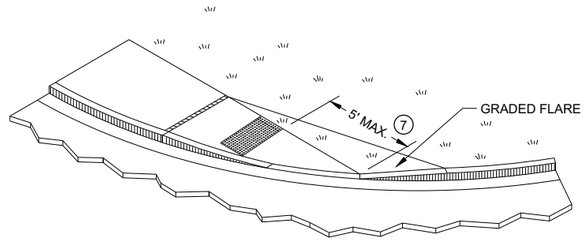



**PLAN VIEW**

**CURB RAMP TYPE 4A1**




**ISOMETRIC VIEW FOR TYPE 4A**




**ISOMETRIC VIEW FOR TYPE 4A1**

**CURB RAMPS**
**TYPE 4A AND 4A1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

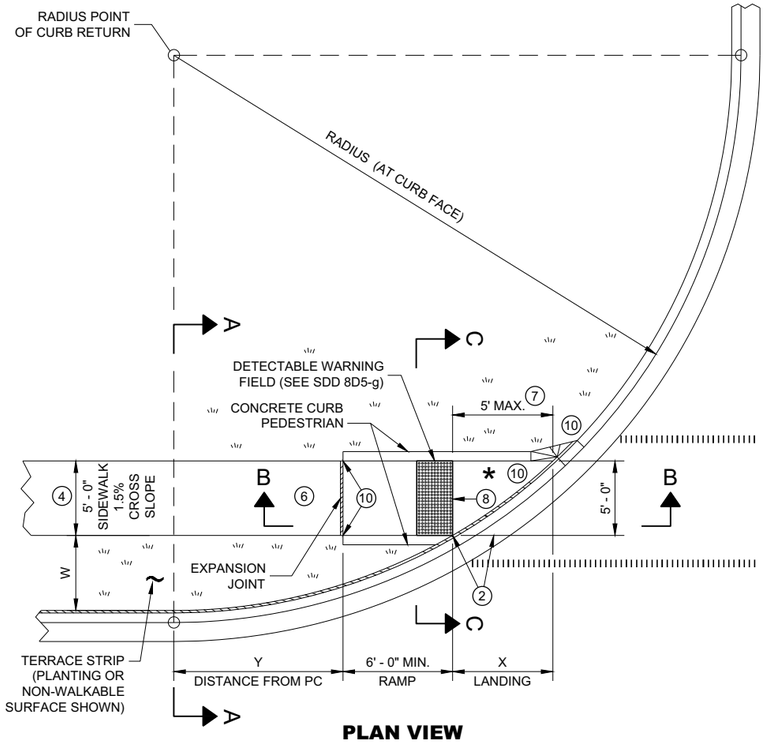




6



SDD 08D05 - 20c




**PLAN VIEW**

**CURB RAMP TYPE 4B**

| RADIUS (AT CURB FACE) | W = 3' - 0" | | W = 4' - 0" | | W = 5' - 0" | | W = 6' - 0" | | W = 7' - 0" | | W = 8' - 0" | | W = 9' - 0" | | W = 10' - 0" | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X | Y | X | Y | X | Y | X | Y | X | Y | X | Y | X | Y | X | Y |
| 10 FEET | 2' - 10 ¼" | 0' - 5" | 2' - 1" | 1' - 4 ½" | 1' - 5" | 2' - 1" | 0' - 10" | 2' - 7 ½" | 0' - 3 ¼" | 3' - 0 ¼" | | | | | | |
| 15 FEET | 4' - 6 ¾" | 2' - 1 ¾" | 3' - 9" | 3' - 5 ¾" | 3' - 1 ¼" | 4' - 6" | 2' - 6 ¾" | 5' - 4 ½" | 2' - 1" | 6' - 1" | 1' - 8" | 6' - 8 ½" | 1' - 3 ¼" | 7' - 2 ½" | 0' - 10 ¾" | 7' - 7 ¼" |
| 20 FEET | 5' - 9 ¾" | 3' - 6 ½" | 4' - 11 ½" | 5' - 1 ¾" | 4' - 3 ¼" | 6' - 5 ½" | 3' - 8 ¾" | 7' - 7" | 3' - 3" | 8' - 6 ½" | 2' - 10" | 9' - 4 ½" | 2' - 5 ½" | 10' - 1 ¼" | 2' - 1 ¼" | 10' - 9" |
| 30 FEET | | | 6' - 9 ¼" | 7' - 11 ¼" | 6' - 0 ¼" | 9' - 8" | 5' - 5" | 11' - 1 ¾" | 4' - 10 ¾" | 12' - 5 ¾" | 4' - 5 ½" | 13' - 7 ¾" | 4' - 0 ¾" | 14' - 8 ½" | 3' - 8 ½" | 15' - 8 ¼" |
| 40 FEET | | | | | | | | | 6' - 1 ¾" | 15' - 8 ½" | 5' - 8" | 17' - 2" | 5' - 3" | 18' - 5 ¾" | 4' - 10 ¾" | 19' - 8 ¼" |
| 50 FEET | | | | | | | | | | | | | | | 5' - 10 ¼" | 23' - 2" |

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

## LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

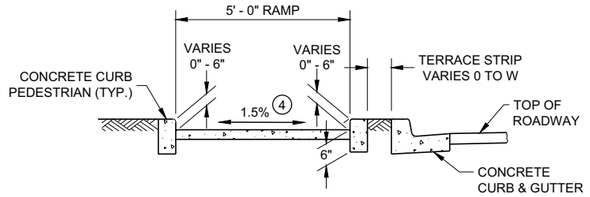
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

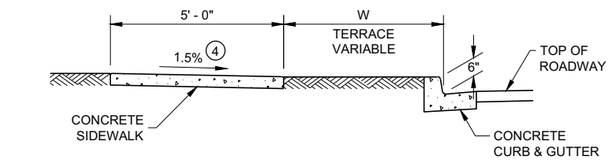
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

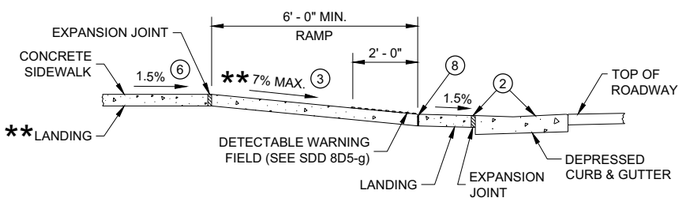
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.




**SECTION C - C FOR TYPE 4B**



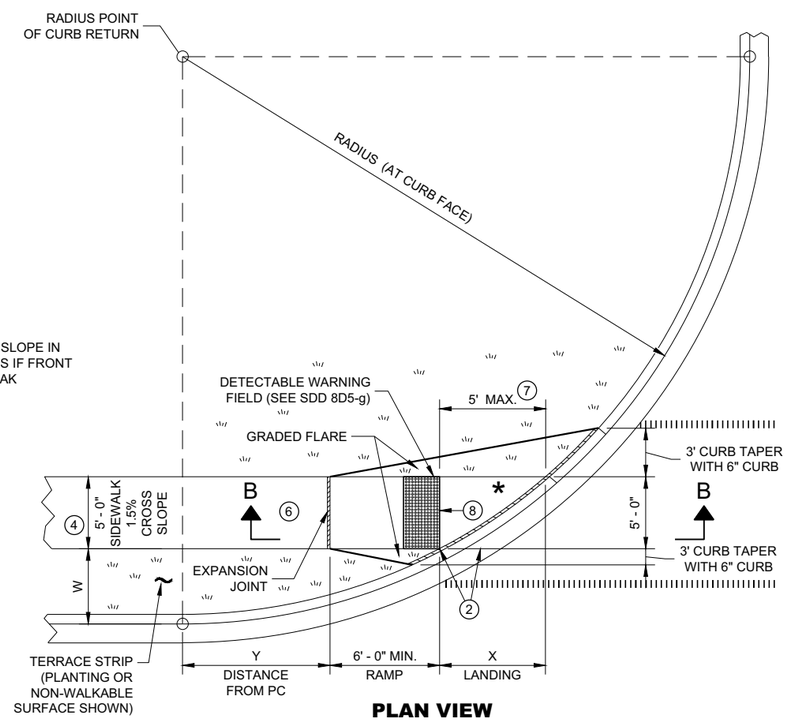

**SECTION A - A FOR TYPE 4B**




**SECTION B - B FOR TYPE 4B AND TYPE 4B1**

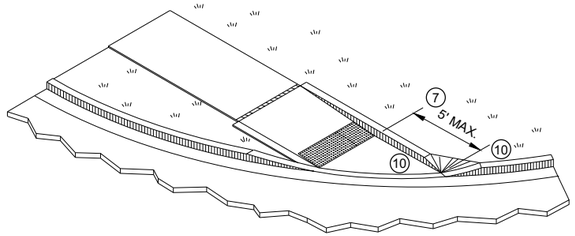
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

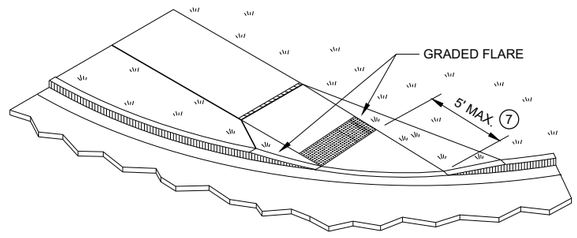



**PLAN VIEW**

**CURB RAMP TYPE 4B1**




**ISOMETRIC VIEW FOR TYPE 4B**




**ISOMETRIC VIEW FOR TYPE 4B1**

**CURB RAMPS TYPE 4B AND 4B1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

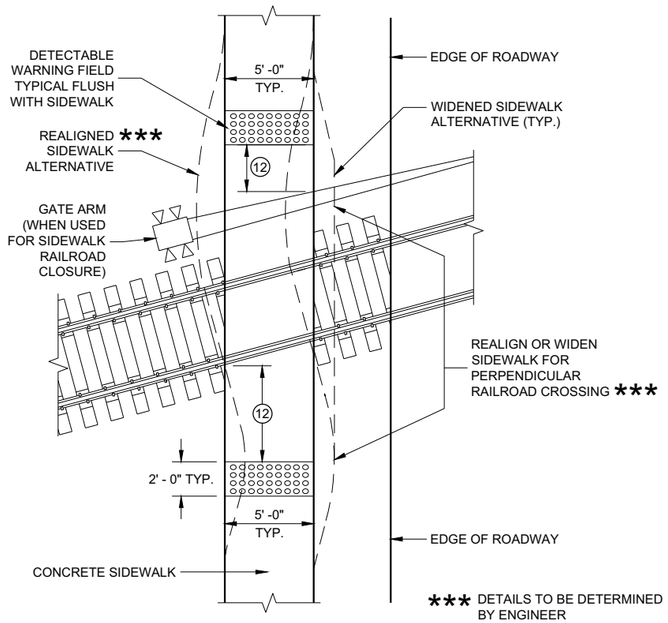






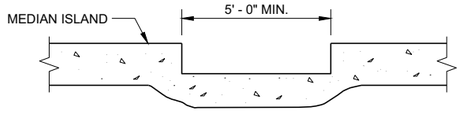
6

SDD 08D05 - 20d

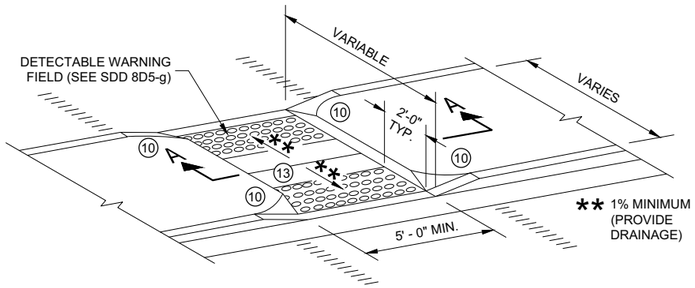



## CURB RAMP TYPE 8

### DETECTABLE WARNINGS AT RAILROAD CROSSING




### SECTION A - A FOR TYPE 5




## CURB RAMP TYPE 5

### MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

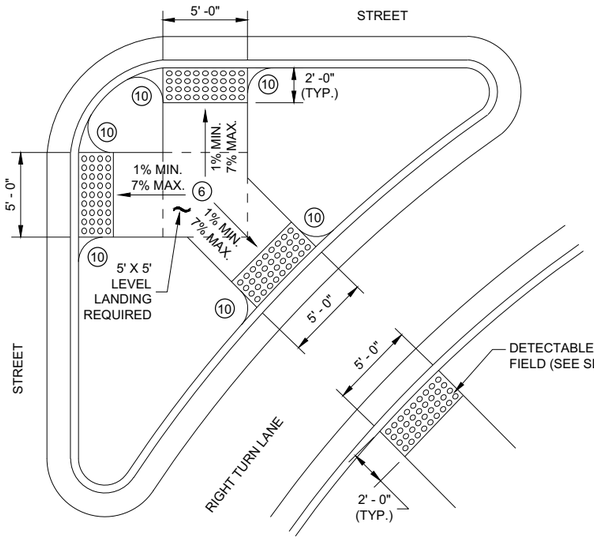
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

## LEGEND

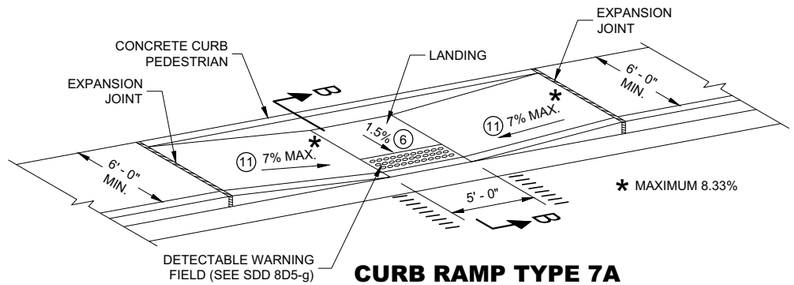
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)




## CURB RAMP TYPE 6

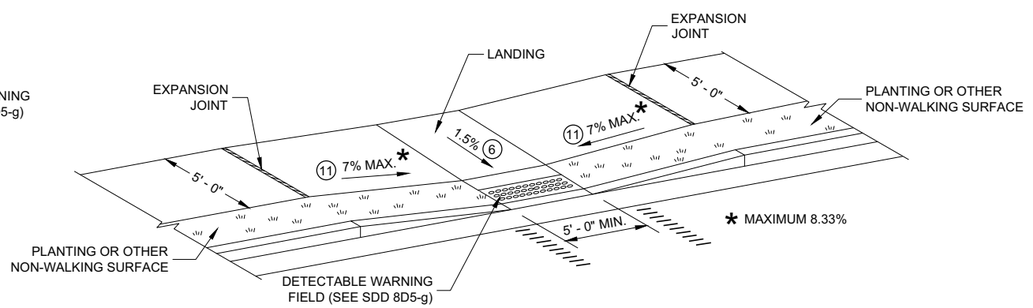
### DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS




## CURB RAMP TYPE 7A

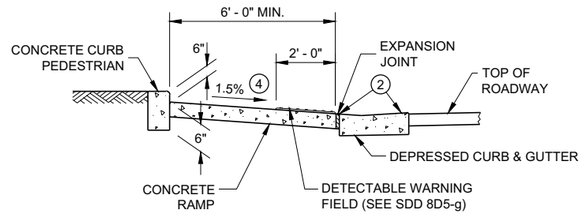
### MID BLOCK CROSSING




## CURB RAMP TYPE 7B

### MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.




### SECTION B - B FOR TYPE 7A

**CURB RAMPS TYPE 5, 6, 7A, 7B & 8**

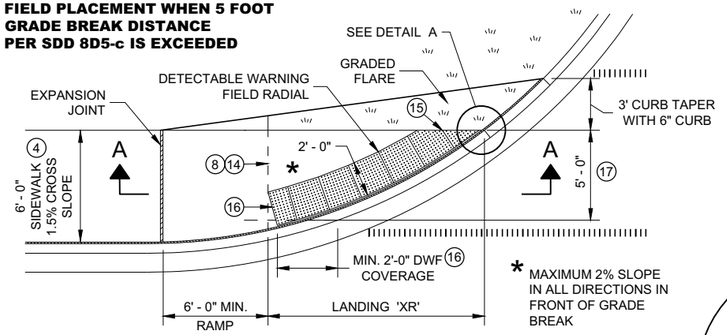
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SDD 08D05 - 20e

SDD 08D05 - 20e

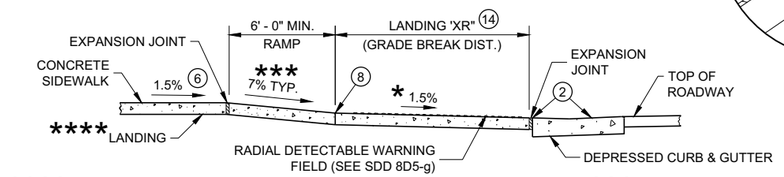
**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED**




**PLAN VIEW**

## CURB RAMP TYPE 4A1

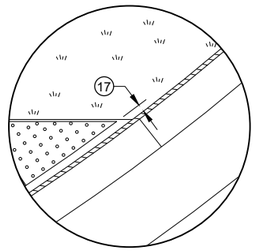
**(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**




**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

**SECTION A - A FOR TYPE 4A1**



**DETAIL A**

## LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AD ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

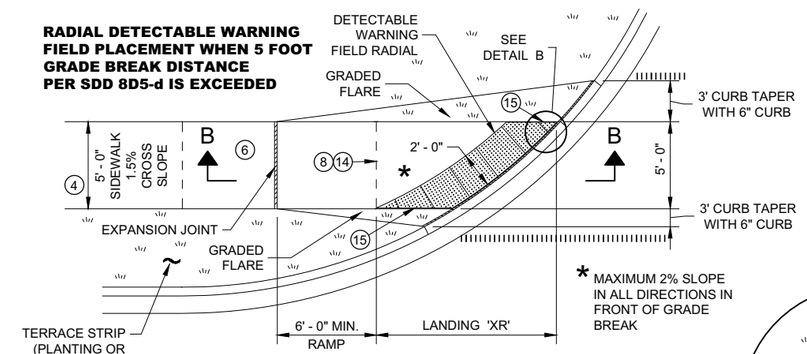
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

(17) A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

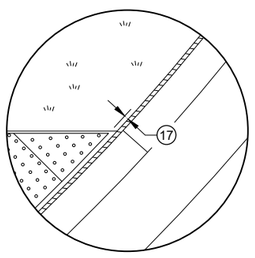
**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED**



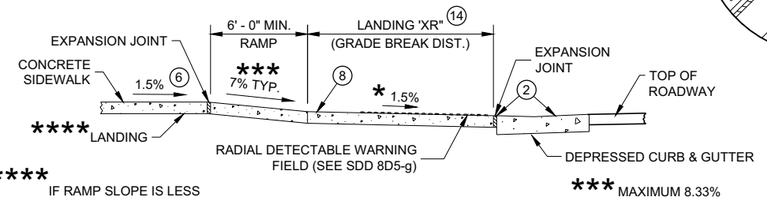

**PLAN VIEW**

## CURB RAMP TYPE 4B1

**(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**



**DETAIL B**

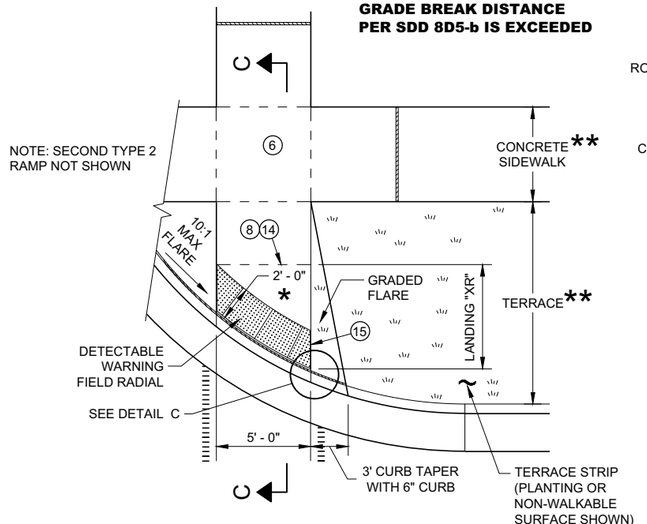



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

**SECTION B - B FOR TYPE 4B1**

**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED**

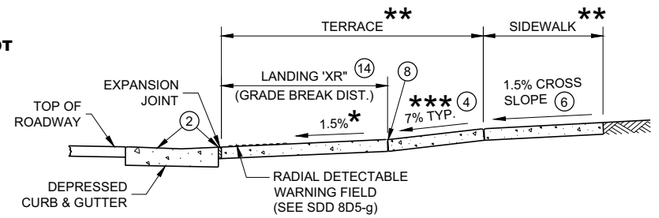



**PLAN VIEW**

## CURB RAMP TYPE 2

**(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

**(ON LINE WITH SIDEWALK)**

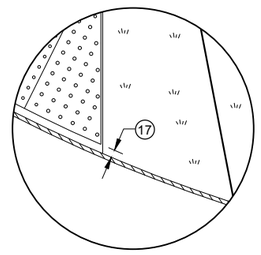



**SECTION C - C FOR TYPE 2**

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



**DETAIL C**

## CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

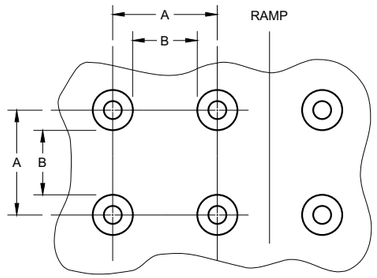


SDD 08D05 - 20f

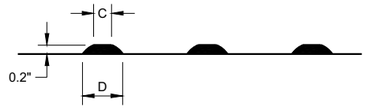
SDD 08D05 - 20f

| | MIN. | MAX. |
|---|---|---|
| A | 1.6" | 2.4" |
| B | 0.65" | 1.5" |
| C | * | * |
| D | 0.9" | 1.4" |

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

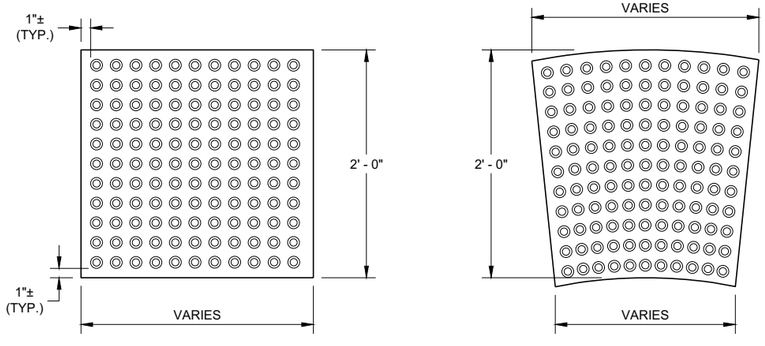



**PLAN VIEW**




**ELEVATION VIEW**

## TRUNCATED DOMES
### DETECTABLE WARNING PATTERN DETAIL




**RECTANGULAR PLATES**

**RADIAL PLATES**

**PLAN VIEW**
**DETECTABLE WARNING FIELDS (TYPICAL)**

## GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

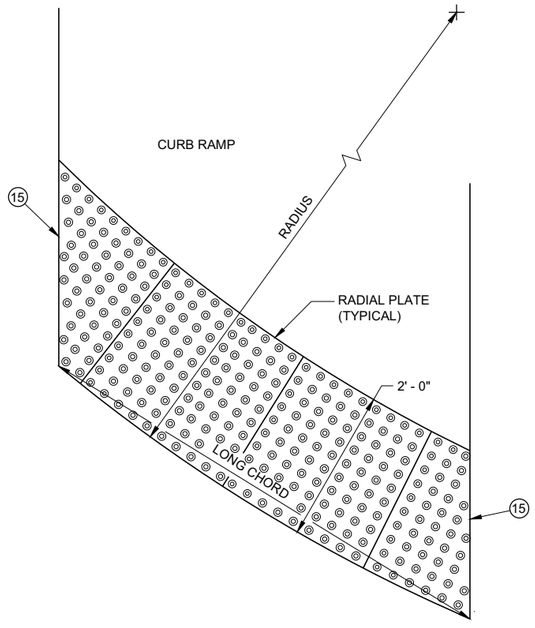
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

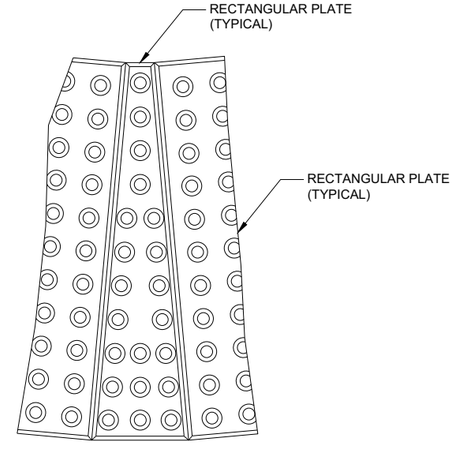
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.




**PLAN VIEW**
**RADIAL DETECTABLE WARNING FIELD ATTRIBUTES**




**PLAN VIEW**
**RADIAL WEDGE PLATE CONNECTION DETAIL**

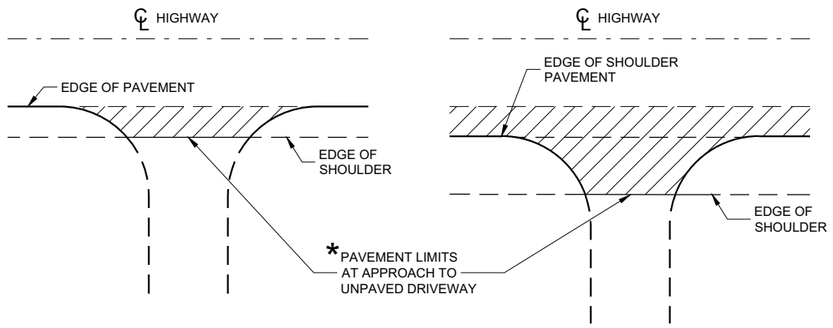
**CURB RAMPS**
**RECTANGULAR AND RADIAL**
**DETECTABLE WARNING PLATES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA


6
SDD 08D05 - 20g

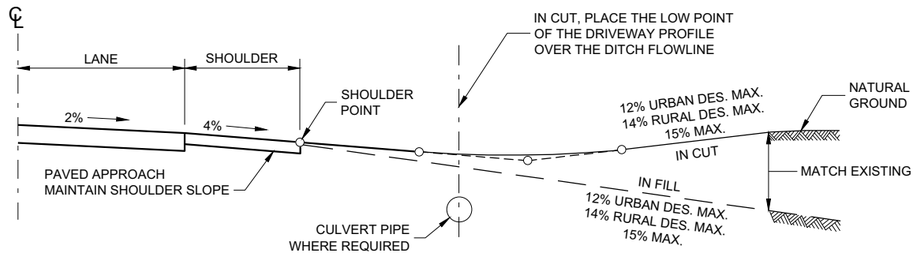



**PLAN VIEW**
(UNPAVED SHOULDER ON HIGHWAY)

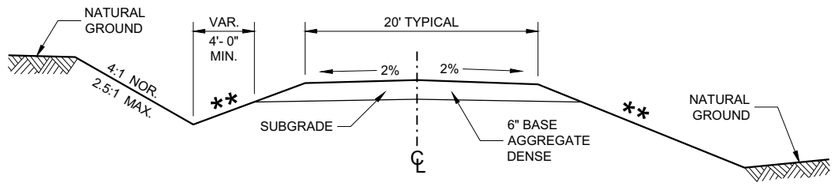



**PLAN VIEW**
(PAVED SHOULDER ON HIGHWAY)

## RURAL DRIVEWAY INTERSECTION DETAIL
## (NO CURB AND GUTTER OR SIDEWALK)




## TYPICAL DRIVEWAY PROFILES

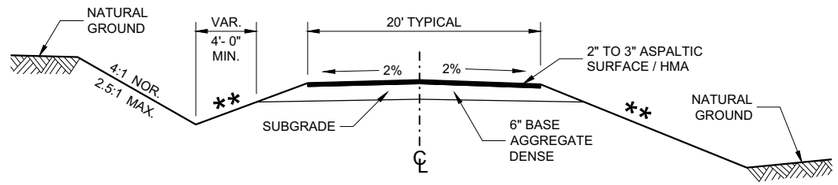



**IN CUT** **IN FILL**

## TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE AGGREGATE SURFACE

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

| POSTED SPEED MPH | MAX. SLOPE |
|---|---|
| <35 | 4:1 |
| ≥ 35 TO < 60 | 6:1 |
| ≥60 | 10:1 |




**IN CUT** **IN FILL**

## TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE

6

SDD 08D21 - 01

6

SDD 08D21 - 01

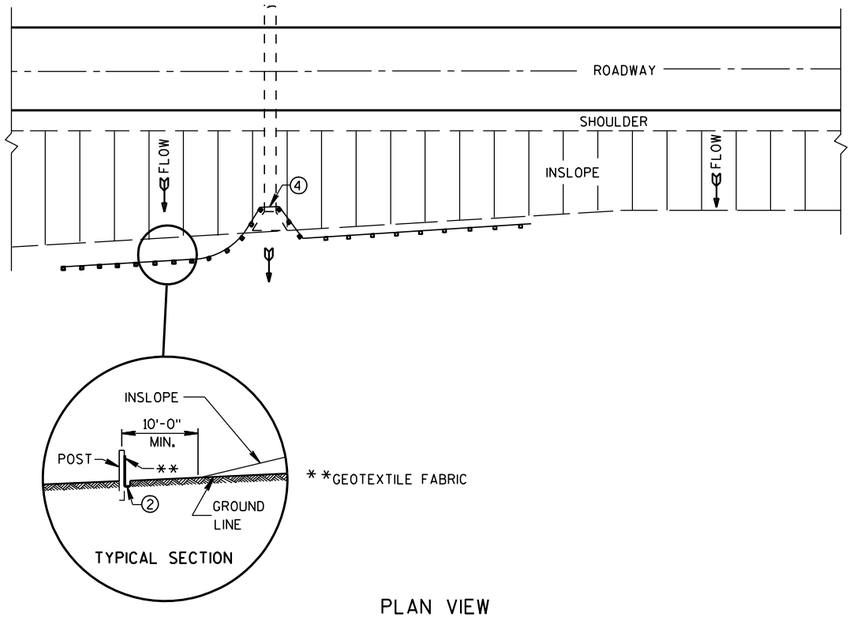
## DRIVEWAYS WITHOUT CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2017
DATE

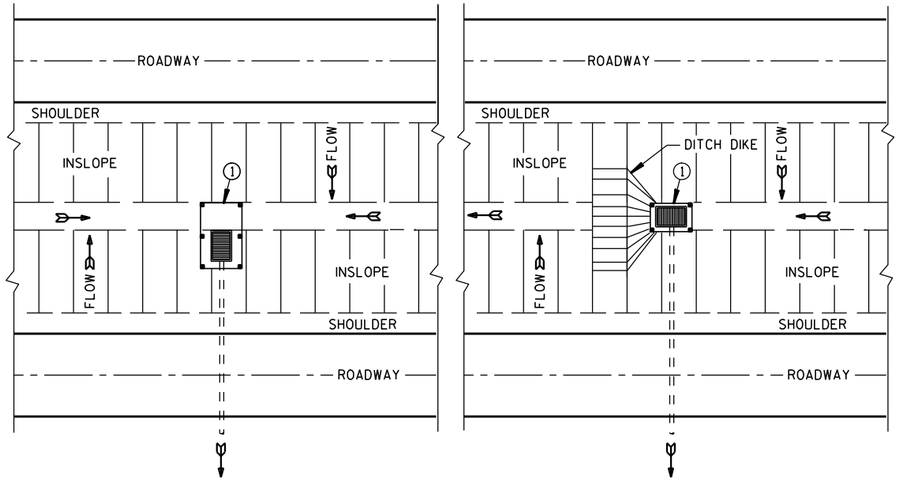
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



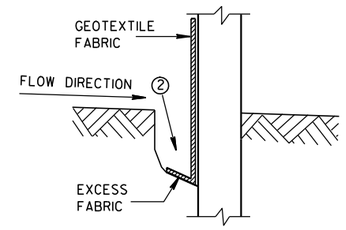

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

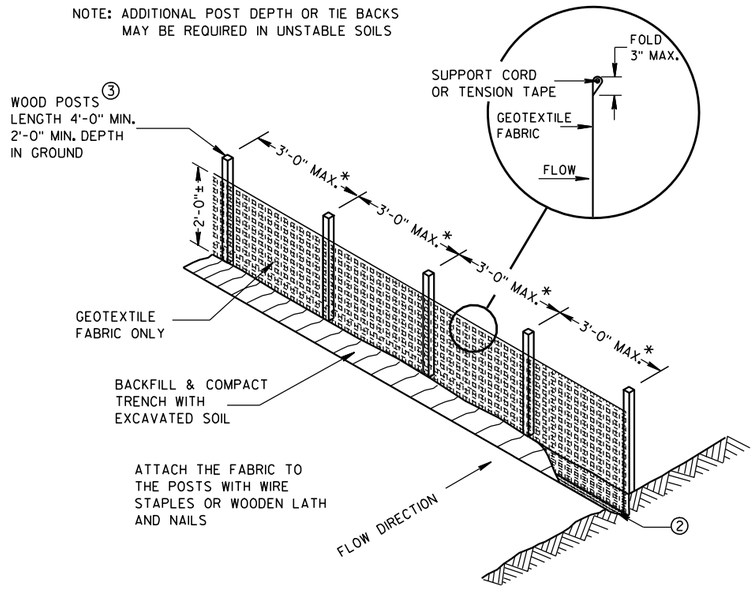
## GENERAL NOTES

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.

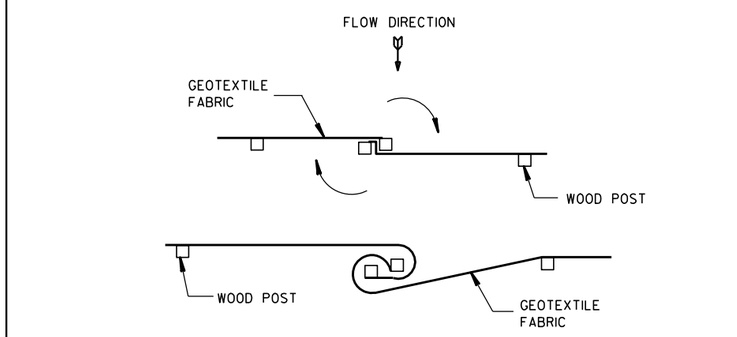



## TRENCH DETAIL

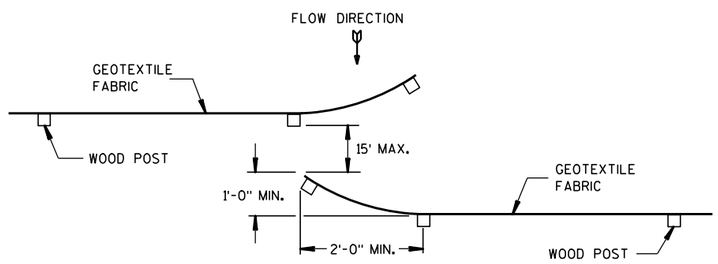



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

## SILT FENCE

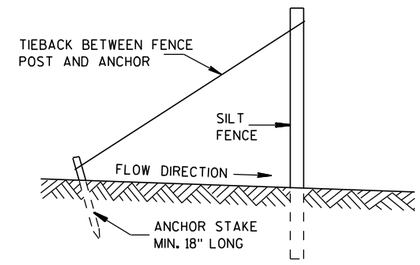



TWIST METHOD




HOOK METHOD

## 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

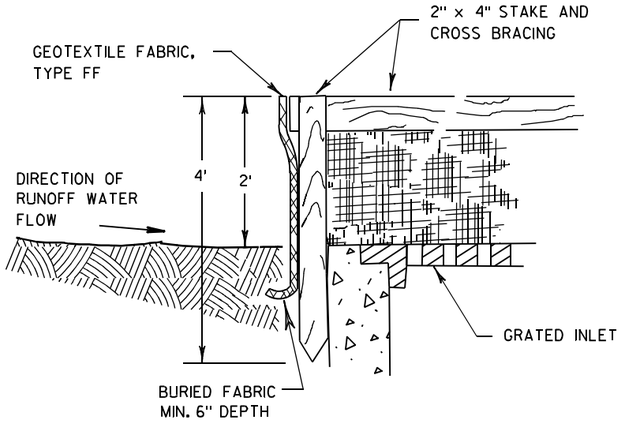


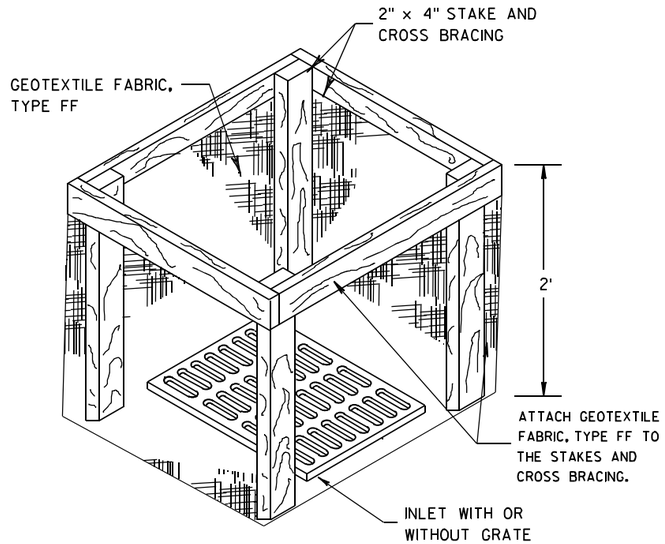
6

S.D.D. 8 E 9-6

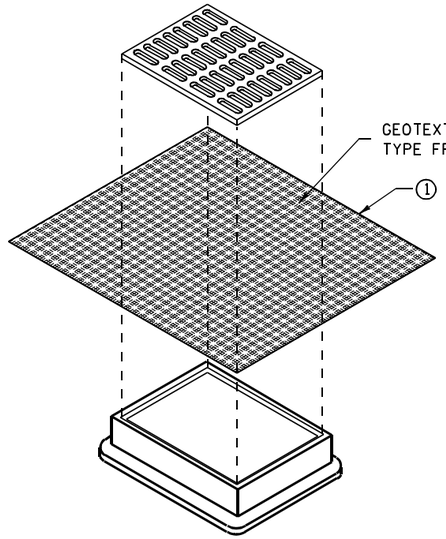
6

S.D.D. 8 E 9-6



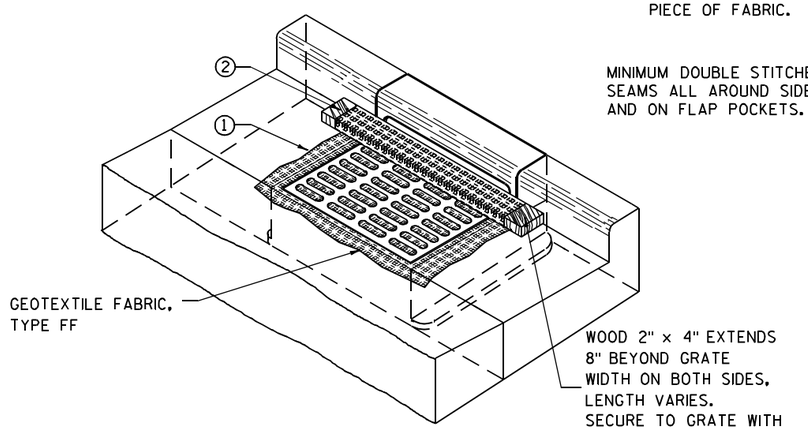




## INLET PROTECTION, TYPE A

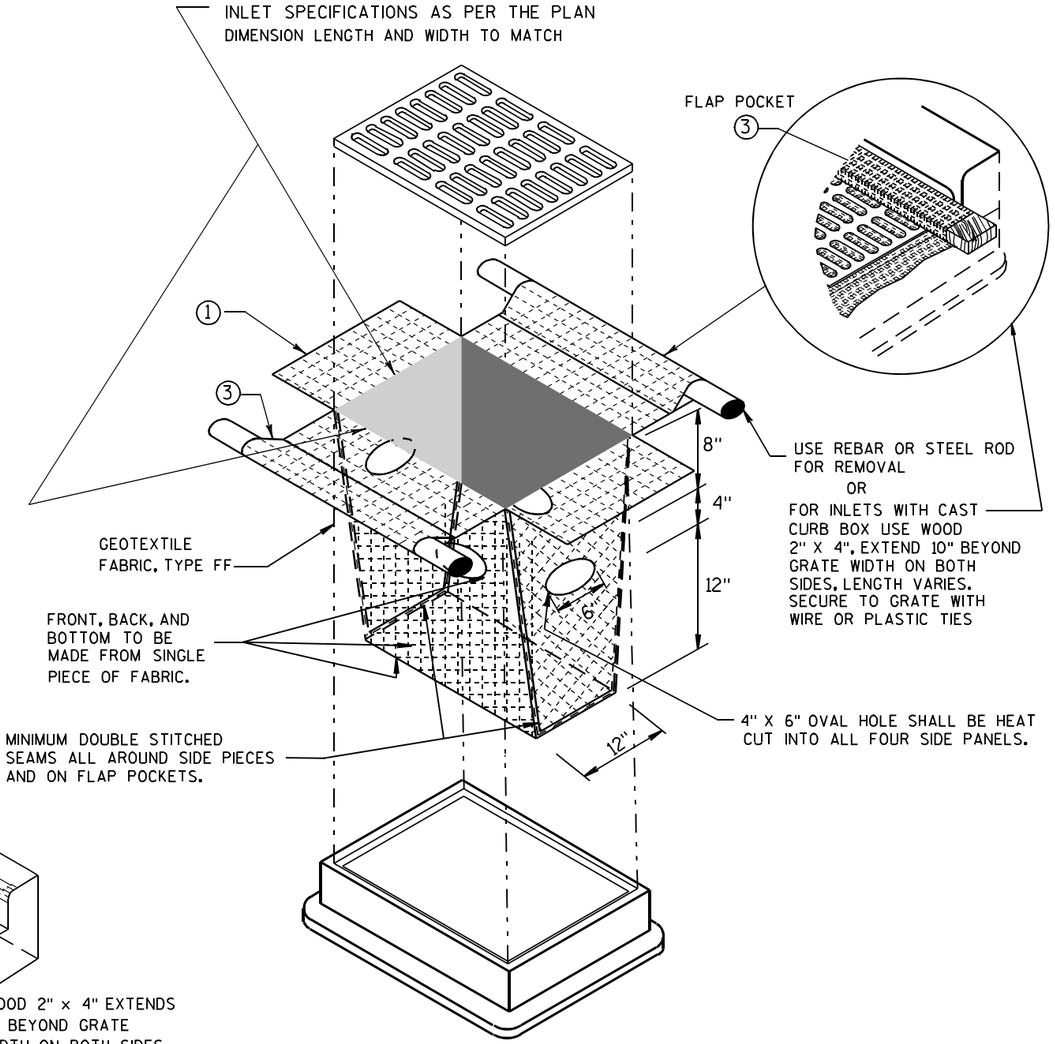



## INLET PROTECTION, TYPE B
## (WITHOUT CURB BOX)

(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

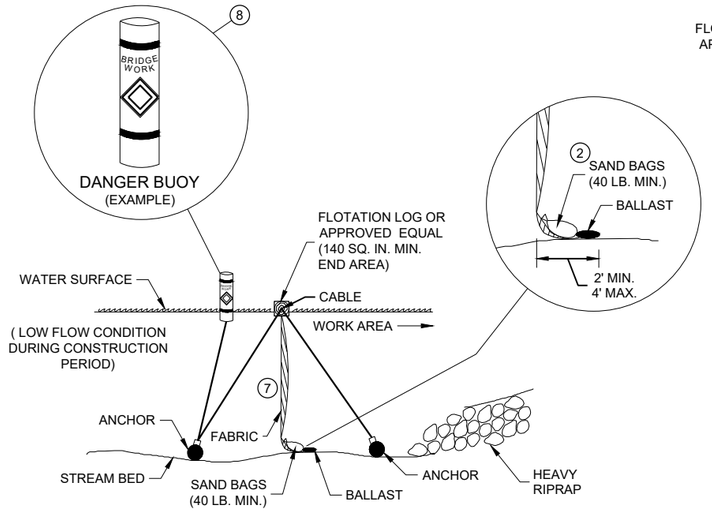
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

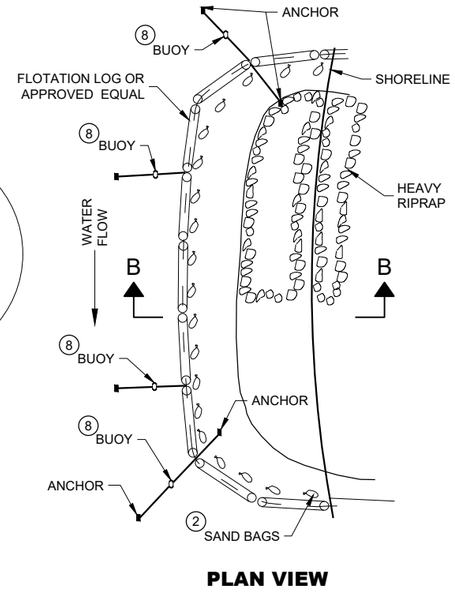



6

S.D.D. 8 E 10-2

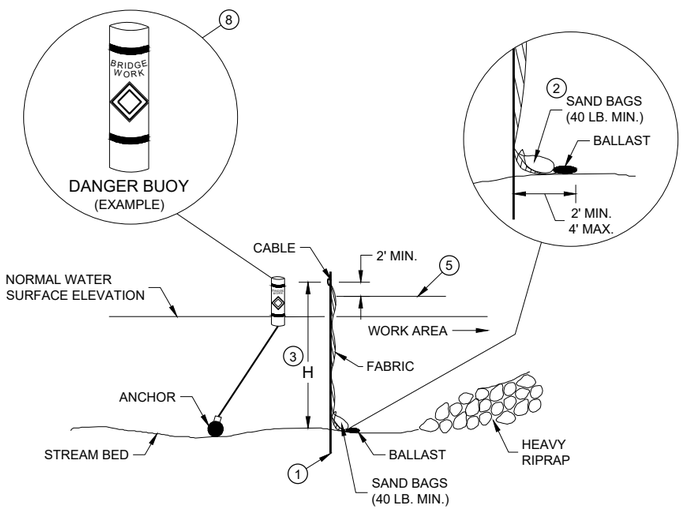



**SECTION B - B**

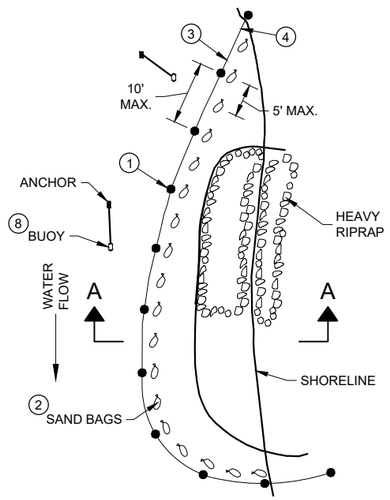



**PLAN VIEW**

**TURBIDITY BARRIER - FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**SECTION A - A**




**PLAN VIEW**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**

**TURBIDITY BARRIER PLACEMENT DETAILS**

## GENERAL NOTES

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

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

(1) DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

(2) SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

(3) WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.

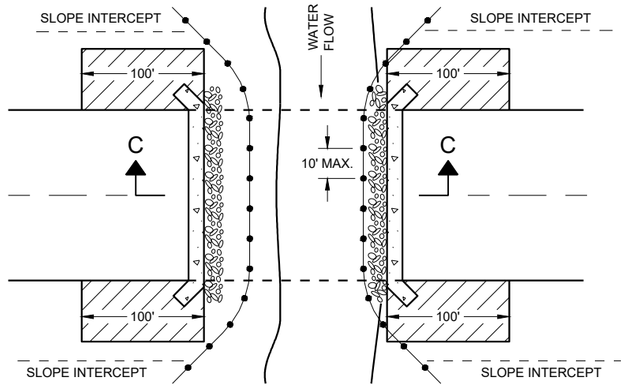
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(5) ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

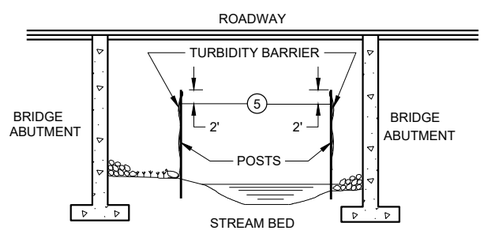
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(7) ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

(8) USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.




**PLAN VIEW**




**SECTION C - C**

**TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

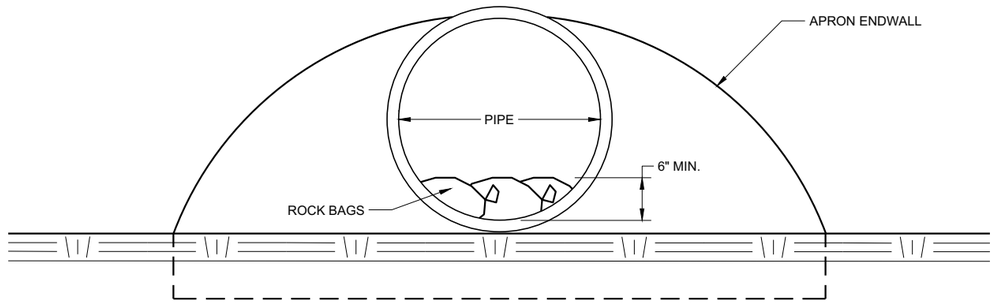
APPROVED
6/4/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

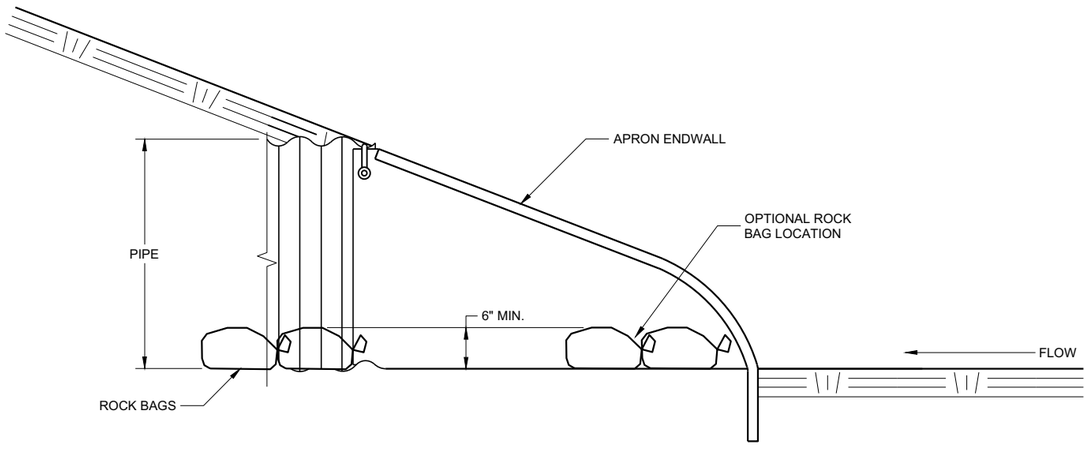




6
SDD 08E11 - 02




**END VIEW**




**SIDE VIEW**

## CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

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



6

SDD 08E15 - 01

6

SDD 08E15 - 01

## METAL APRON ENDWALLS

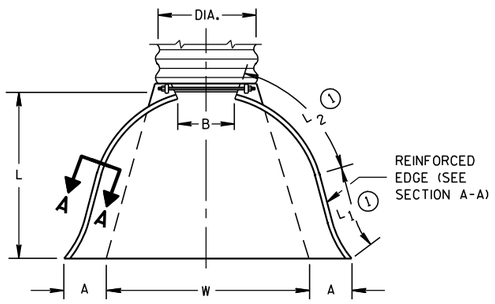
| PIPE DIA. (IN.) | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | .064 | .060 | 6 | 6 | 6 | 21 | 12 | 17 1/2 | 24 | 2 1/2 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

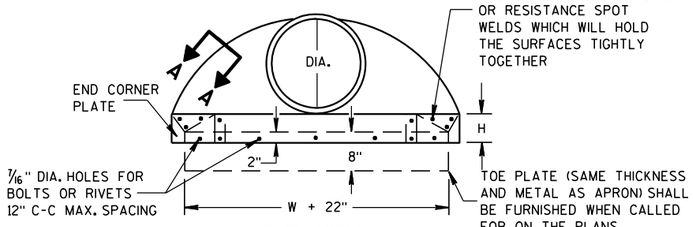
## REINFORCED CONCRETE APRON ENDWALLS

| 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 |

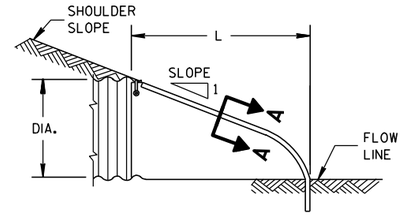
*MINIMUM
**MAXIMUM




PLAN VIEW

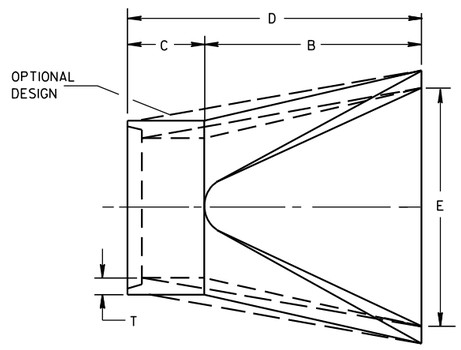



END VIEW

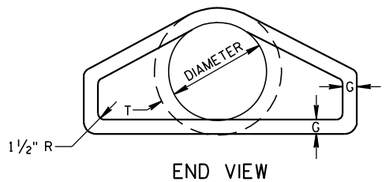



SIDE ELEVATION

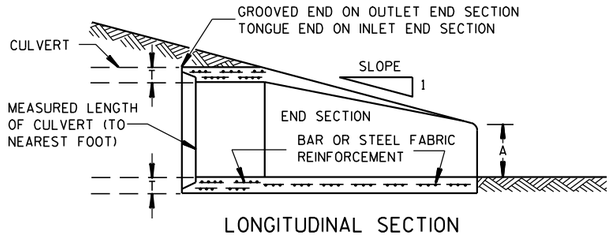
## METAL ENDWALLS




PLAN

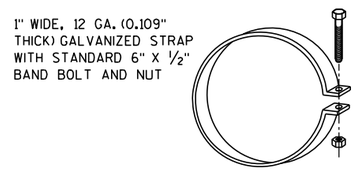



END VIEW



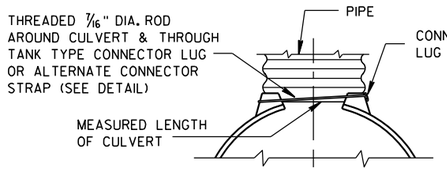

LONGITUDINAL SECTION

## CONCRETE ENDWALLS

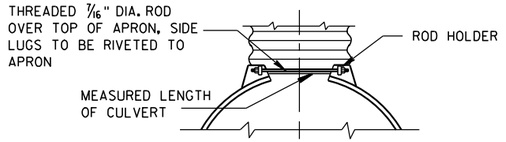



ALTERNATE FOR TYPE 1 CONNECTION

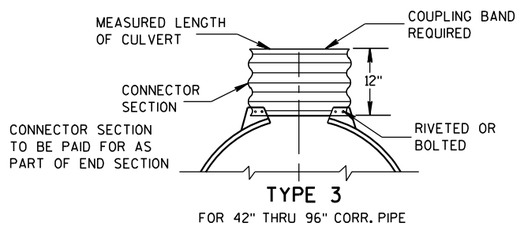
## END SECTION CONNECTOR STRAP



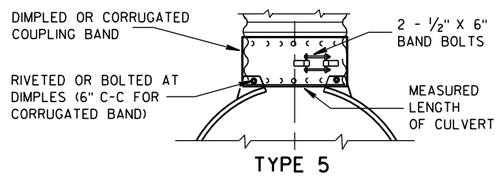

TYPE 1
FOR 12" THRU 24" CORR. PIPE




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

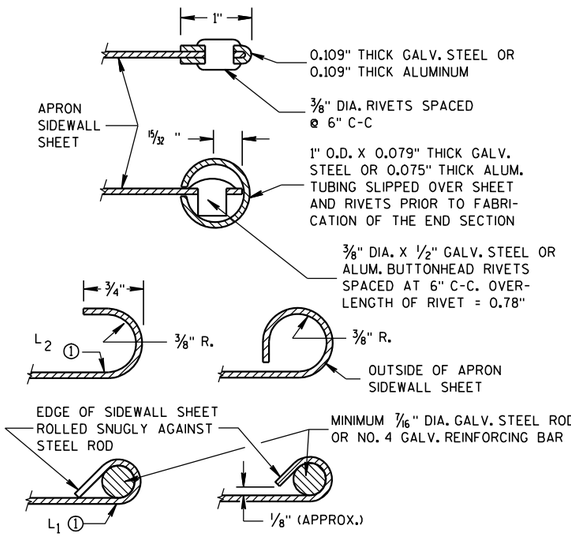
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

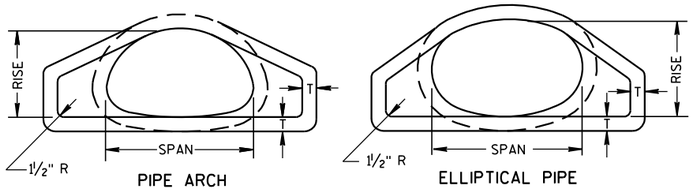
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

# APRON ENDWALLS FOR CULVERT PIPE

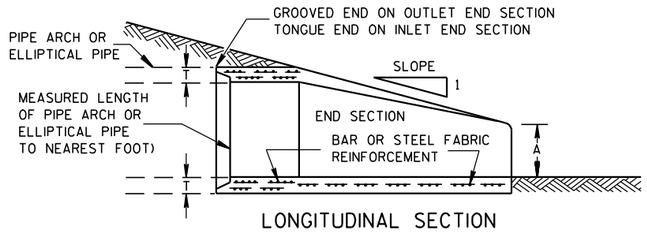
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

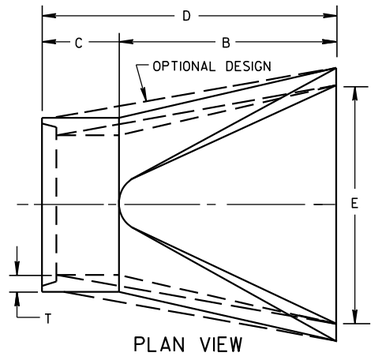

6
S.D.D. 8 F 1-11




END VIEW

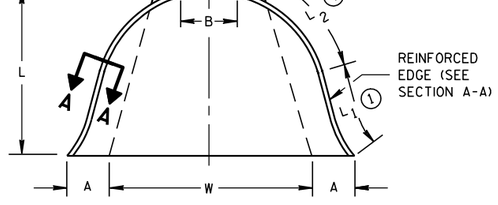



LONGITUDINAL SECTION

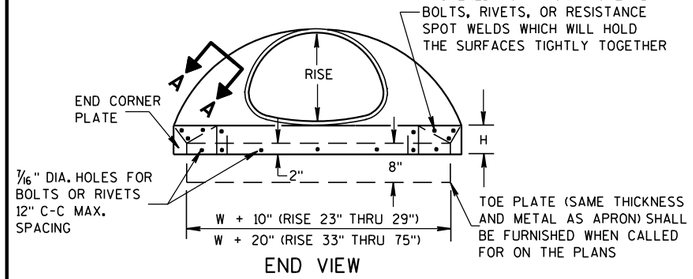



PLAN VIEW

# CONCRETE ENDWALLS

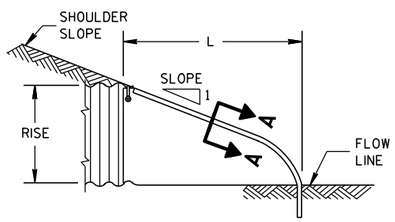



PLAN VIEW



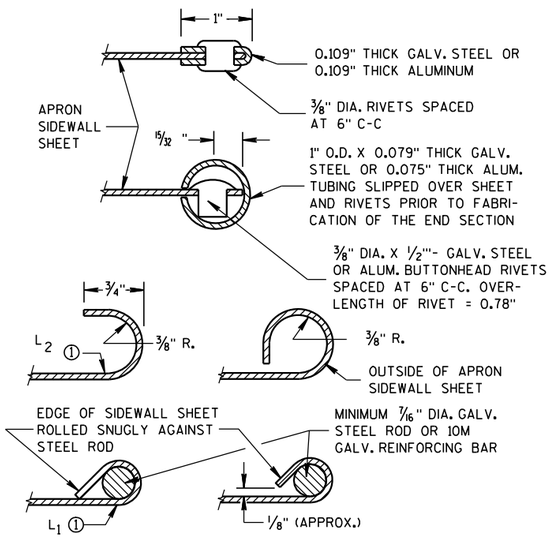

END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

END VIEW




SIDE ELEVATION

## METAL ENDWALLS




## SECTION A-A

### 2- 2/3" X 1/2" CORRUGATIONS

| EQUIV. DIA. (Inches) | (Inches) SPAN | (Inches) RISE | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 17 | 13 | .064 | .060 | 7 | 9 | 6 | 19 | 14 | 16 | 30 | 2½ to 1 | 1 Pc. |
| 18 | 21 | 15 | .064 | .060 | 7 | 10 | 6 | 23 | 14 | 19⅜ | 36 | 2½ to 1 | 1 Pc. |
| 21 | 24 | 18 | .064 | .060 | 8 | 12 | 6 | 28 | 18 | 21¾ | 42 | 2½ to 1 | 1 Pc. |
| 24 | 28 | 20 | .064 | .060 | 9 | 14 | 6 | 32 | 18 | 27½ | 48 | 2½ to 1 | 1 Pc. |
| 30 | 35 | 24 | .079 | .075 | 10 | 16 | 6 | 39 | 18 | 37⅝ | 60 | 2½ to 1 | 1 Pc. |
| 36 | 42 | 29 | .079 | .075 | 12 | 18 | 8 | 46 | 24 | 45⅜ | 75 | 2½ to 1 | 1 Pc. |
| 42 | 49 | 33 | .109 | .105 | 13 | 21 | 9 | 53 | 24 | 54¾ | 85 | 2½ to 1 | 2 Pc. |
| 48 | 57 | 38 | .109 | .105 | 18 | 26 | 12 | 63 | 24 | 68 | 90 | 2½ to 1 | 3 Pc. |
| 54 | 64 | 43 | .109 | .105 | 18 | 30 | 12 | 70 | 24 | 72¾ | 102 | 2¼ to 1 | 3 Pc. |
| 60 | 71 | 47 | .109* | .105* | 18 | 33 | 12 | 77 | 30 | 82¼ | 114 | 2¼ to 1 | 3 Pc. |
| 66 | 77 | 52 | .109* | .105* | 18 | 36 | 12 | 77 | — | — | 126 | 2 to 1 | 3 Pc. |
| 72 | 83 | 57 | .109* | .105* | 18 | 39 | 12 | 77 | — | — | 138 | 2 to 1 | 3 Pc. |

### 3" X 1" CORRUGATIONS

| EQUIV. DIA. (Inches) | (Inches) SPAN | (Inches) RISE | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | 53 | 41 | .109 | .105 | 18 | 26 | 12 | 63 | 24 | 72¾ | 90 | 2½ to 1 | 2 Pc. |
| 54 | 60 | 46 | .109 | .105 | 18 | 30 | 12 | 70 | 30 | 82¼ | 102 | 2 to 1 | 2 Pc. |
| 60 | 66 | 51 | .109* | .105* | 18 | 33 | 12 | 77 | — | — | 114 | 1½ to 1 | 3 Pc. |
| 66 | 73 | 55 | .109* | .105* | 18 | 36 | 12 | 77 | — | — | 126 | 1½ to 1 | 3 Pc. |
| 72 | 81 | 59 | .109* | .105* | 18 | 39 | 12 | 77 | — | — | 138 | 2 to 1 | 3 Pc. |
| 78 | 87 | 63 | .109* | .105* | 22 | 38 | 12 | 77 | — | — | 148 | 1½ to 1 | 3 Pc. |
| 84 | 95 | 67 | .109* | .105* | 22 | 34 | 12 | 77 | — | — | 162 | 1½ to 1 | 3 Pc. |
| 90 | 103 | 71 | .109* | .105* | 22 | 38 | 12 | 77 | — | — | 174 | 1½ to 1 | 3 Pc. |
| 96 | 112 | 75 | .109* | .105* | 24 | 40 | 12 | 77 | — | — | 174 | 1½ to 1 | 3 Pc. |

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

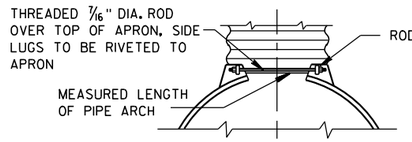
### REINFORCED CONCRETE PIPE ARCH

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) ** SPAN | ** RISE | T | A | B | C | D | E | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 29 | 18 | 3 | 8½ | 39 | 33 | 72 | 48 | 3 to 1 |
| 30 | 36 | 22 | 3½ | 9½ | 50 | 46 | 96 | 60 | 3 to 1 |
| 36 | 44 | 27 | 4 | 11⅛ | 60 | 36 | 96 | 72 | 3 to 1 |
| 42 | 51 | 31 | 4½ | 15 13/16 | 60 | 36 | 96 | 78 | 3 to 1 |
| 48 | 58 | 36 | 5 | 21 | 60 | 36 | 96 | 84 | 3 to 1 |
| 54 | 65 | 40 | 5½ | 25½ | 60 | 36 | 96 | 90 | 3 to 1 |
| 60 | 73 | 45 | 6 | 31 | 60 | 36 | 96 | 96 | 3 to 1 |
| 72 | 88 | 54 | 7 | 31 | 60 | 39 | 99 | 120 | 2 to 1 |
| 84 | 102 | 62 | 8 | 28½ | 83 | 19 | 102 | 144 | 2 to 1 |

### REINFORCED CONCRETE ELLIPTICAL PIPE

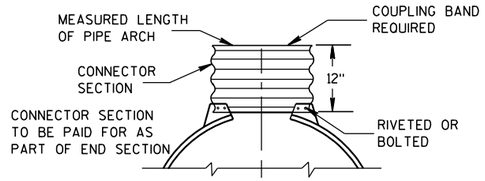
| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) ** SPAN | ** RISE | T | A | B | C | D | E | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 30 | 19 | 3¼ | 8½ | 39 | 33 | 72 | 48 | 3 to 1 |
| 30 | 38 | 24 | 3¾ | 9½ | 54 | 18 | 72 | 60 | 3 to 1 |
| 36 | 45 | 29 | 4½ | 11⅛ | 60 | 24 | 84 | 72 | 2½ to 1 |
| 42 | 53 | 34 | 5 | 15¾ | 60 | 36 | 96 | 78 | 2½ to 1 |
| 48 | 60 | 38 | 5½ | 21 | 60 | 36 | 96 | 84 | 2½ to 1 |
| 54 | 68 | 43 | 6 | 25½ | 60 | 36 | 96 | 90 | 2½ to 1 |
| 60 | 76 | 48 | 6½ | 30 | 60 | 36 | 96 | 96 | 2½ to 1 |

**NOMINAL SIZE



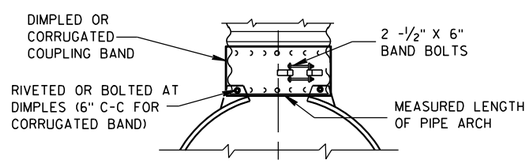

TYPE 2

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




TYPE 3

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




TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

## CONNECTION DETAILS

# GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

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

**APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

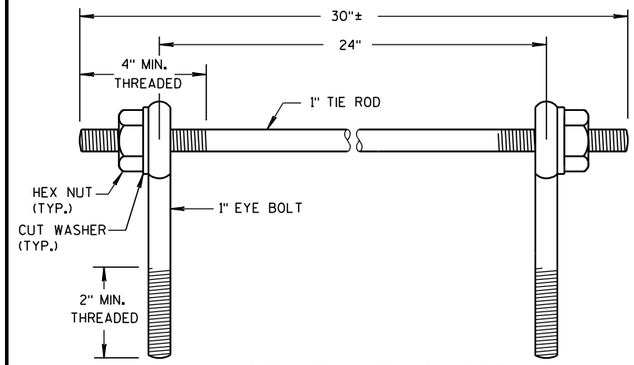


6

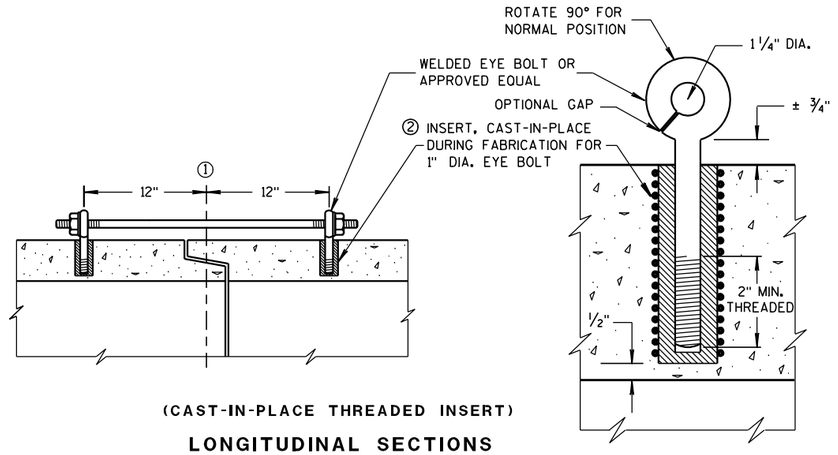
S.D.D. 8 F 2-1

6

S.D.D. 8 F 2-1




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 ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

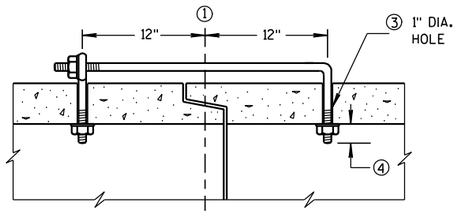
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

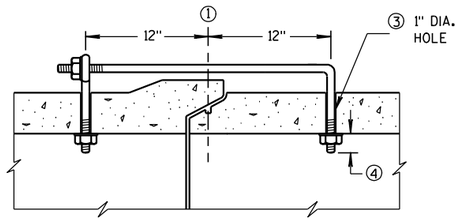
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.




(TONGUE & GROOVE PIPE)

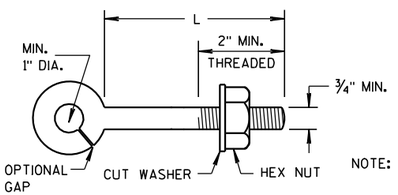



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

**EYE BOLT DIMENSION TABLE**

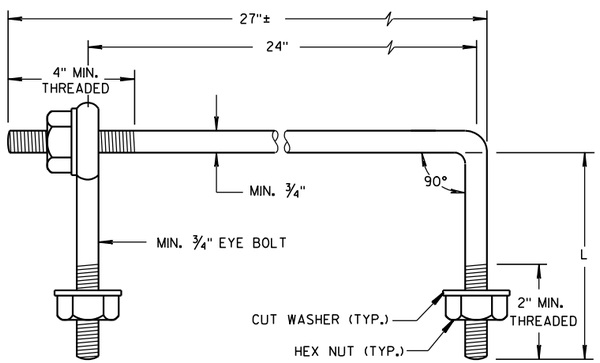
| PIPE SIZE | L = LENGTH | |
|---|---|---|
| | TONGUE & GROOVE PIPE | MODIFIED BELL PIPE |
| 18" TO 24" | 4 1/2" | 6 1/4" |
| 30" | 5" | 7" |
| 36" | 5 1/2" | 7" |
| 42" | 6" | |
| 48" | 6 1/2" | |
| 60" | 7 1/2" | |
| 66" | 8" | |




NOTE:

EYE BOLT

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




EYE BOLT AND TIE ROD

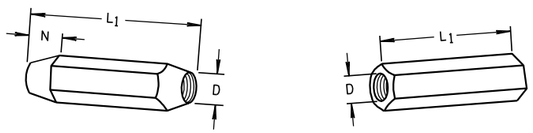
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

**ADJUSTABLE TIE ROD TABLE**

| PIPE DIAMETER | TIE ROD DIAMETER | D | $L_1$ | N |
|---|---|---|---|---|
| 12-60 | 5/8 | 5/8 | 5 | 1/2 |
| 66-84 | 3/4 | 3/4 | 5 | 1/2 |
| 90-108 | 1 | 1 | 7 | 1 1/16 |

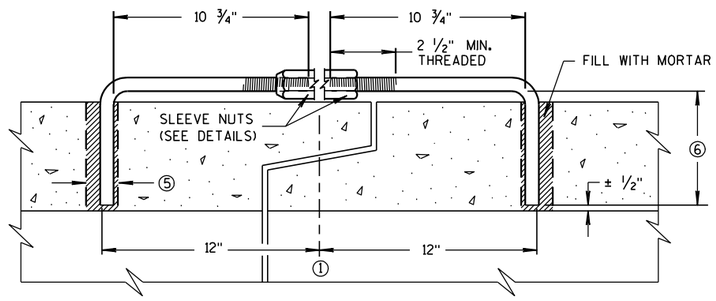
DIMENSIONS SHOWN ARE IN INCHES




TAPERED PLAIN

RIGHT AND LEFT THREADS

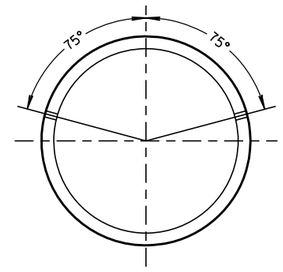
SLEEVE NUTS




LONGITUDINAL SECTION

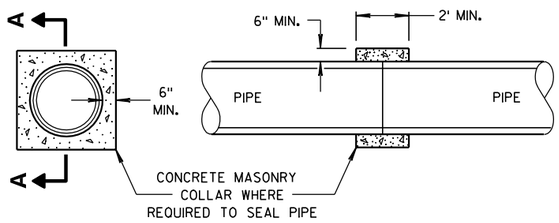
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

# 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

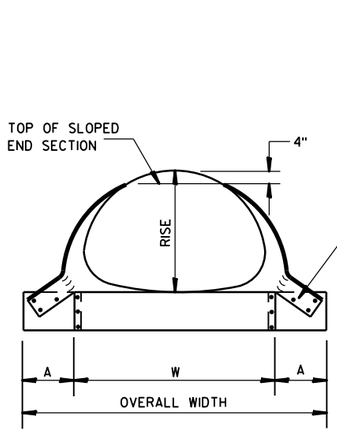
APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
159
FHWA

6

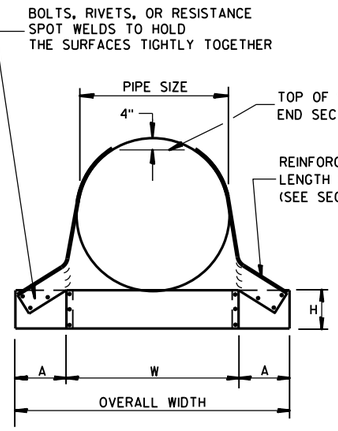
S.D.D. 8 F 4-7

6

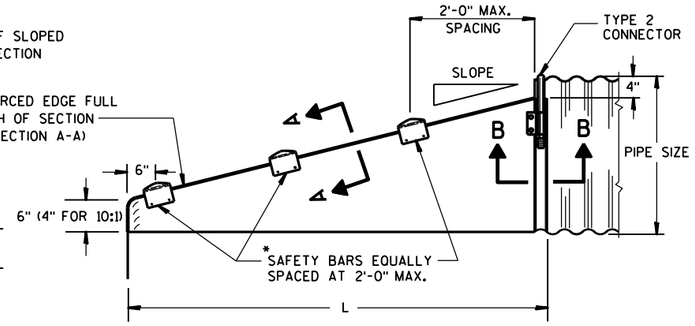
S.D.D. 8 F 4-7




FRONT VIEW




FRONT VIEW




SIDE VIEW

## GENERAL NOTES

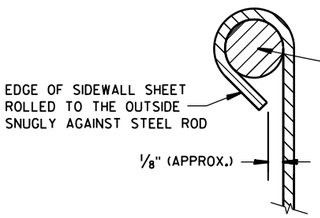
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

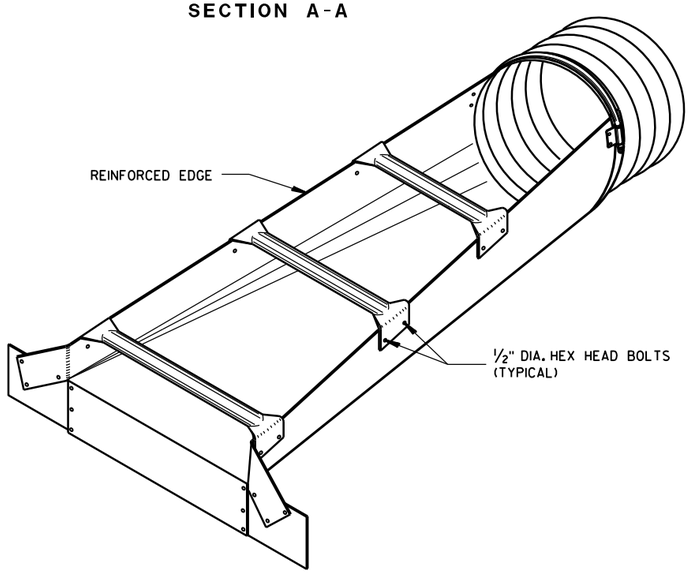
SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

**STEEL APRON ENDWALLS FOR CULVERT PIPE**
**SLOPED SIDE DRAINS**

| PIPE DIA. (IN.) | MIN. THICK. (Inches) | DIMENSIONS (Inches) | | | | L DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | H | W | OVERALL WIDTH | SLOPE | LENGTH INCHES | SLOPE | LENGTH INCHES | SLOPE | LENGTH INCHES |
| 15 | .064 | 8 | 6 | 21 | 37 | 4:1 | 20 | 6:1 | 30 | 10:1 | 70 |
| 18 | .064 | 8 | 6 | 24 | 40 | 4:1 | 32 | 6:1 | 48 | 10:1 | 100 |
| 21 | .064 | 8 | 6 | 27 | 43 | 4:1 | 44 | 6:1 | 66 | 10:1 | 130 |
| 24 | .064 | 8 | 6 | 30 | 46 | 4:1 | 56 | 6:1 | 84 | 10:1 | 160 |
| 30 | .109 | 12 | 9 | 36 | 60 | 4:1 | 80 | 6:1 | 120 | 10:1 | 220 |
| 36 | .109 | 12 | 9 | 42 | 66 | 4:1 | 104 | 6:1 | 156 | 10:1 | 280 |
| 42 | .109 | 16 | 12 | 48 | 80 | 4:1 | 128 | 6:1 | 192 | —— | —— |
| 48 | .109 | 16 | 12 | 54 | 86 | 4:1 | 152 | 6:1 | 228 | —— | —— |
| 54 | .109 | 16 | 12 | 60 | 92 | 4:1 | 176 | 6:1 | 264 | —— | —— |
| 60 | .109 | 16 | 12 | 66 | 98 | 4:1 | 200 | 6:1 | 300 | —— | —— |



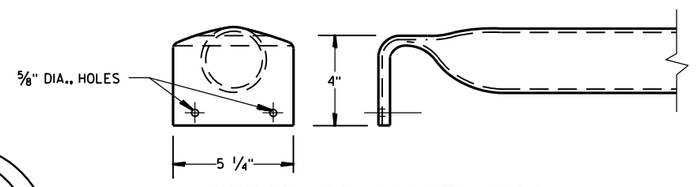

SECTION A-A



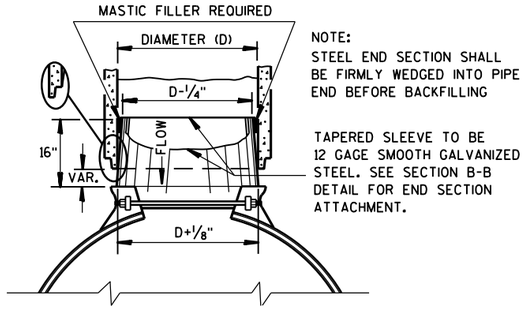

ISOMETRIC VIEW

*NOTE:
THREE SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

3" GALVANIZED PIPE. FLATTEN ENDS, THEN BEND OUTSIDE 4" TO MATCH END SECTION SIDES.




DETAIL OF SAFETY BAR

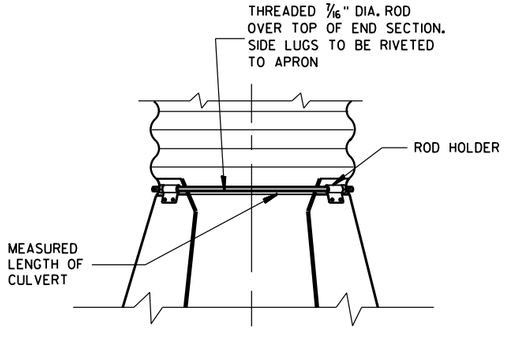



STEEL ADAPTER SLEEVE FOR CONCRETE PIPE

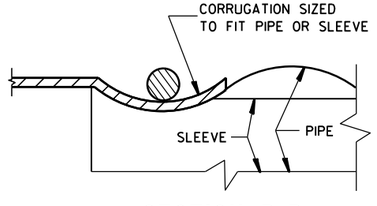
**STEEL APRON ENDWALLS FOR PIPE ARCH**
**SLOPED SIDE DRAINS**

| EQUIV. DIA. (Inches) | (Inches) SPAN | (Inches) RISE | MIN. THICK. (Inches) ① | DIMENSIONS (Inches) A | H | W | OVERALL WIDTH | L DIMENSIONS SLOPE | LENGTH INCHES | SLOPE | LENGTH INCHES | SLOPE | LENGTH INCHES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 17 | 13 | .064 * | 7 | 6 | 30 | 44 | 4:1 | 19 | 6:1 | 30 | 10:1 ② | 70 |
| 18 | 21 | 15 | .064 * | 8 | 6 | 27 | 43 | 4:1 | 20 | 6:1 | 30 | 10:1 | 70 |
| 21 | 24 | 18 | .064 * | 8 | 6 | 30 | 46 | 4:1 | 32 | 6:1 | 48 | 10:1 | 100 |
| 24 | 28 | 20 | .064 * | 8 | 6 | 34 | 50 | 4:1 | 40 | 6:1 | 60 | 10:1 | 120 |
| 30 | 35 | 24 | .079 * | 12 | 9 | 41 | 65 | 4:1 | 56 | 6:1 | 84 | 10:1 | 160 |
| 36 | 42 | 29 | .109 * | 12 | 9 | 48 | 72 | 4:1 | 76 | 6:1 | 114 | 10:1 | 210 |
| 42 | 49 | 33 | .109 | 16 | 12 | 55 | 87 | 4:1 | 92 | 6:1 | 138 | —— | —— |
| 48 | 57 | 38 | .109 | 16 | 12 | 63 | 95 | 4:1 | 112 | 6:1 | 168 | —— | —— |
| 54 | 64 | 43 | .109 | 16 | 12 | 70 | 102 | 4:1 | 132 | 6:1 | 198 | —— | —— |

① * MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".
② ACTUAL SLOPE GREATER THAN 10:1.




TYPE 2
CONNECTION DETAIL




SECTION B-B

**STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/14/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

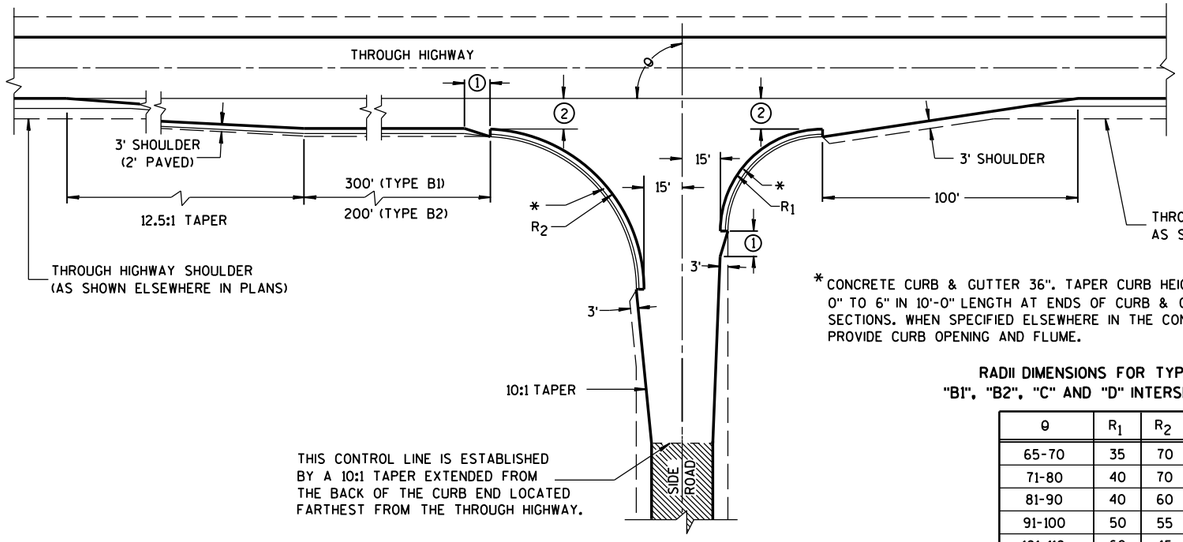


6

S.D.D. 8 F 7-5

6

S.D.D. 8 F 7-5

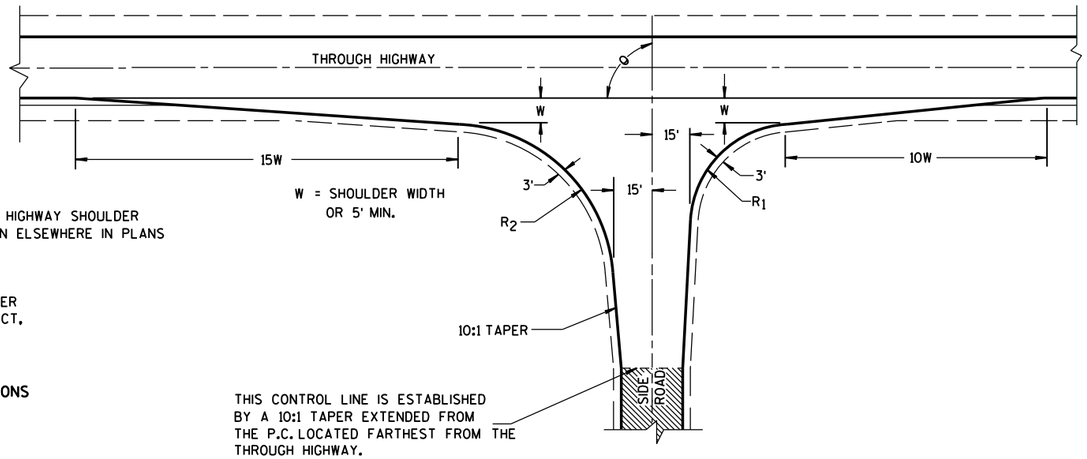



TYPE "B1" AND "B2"

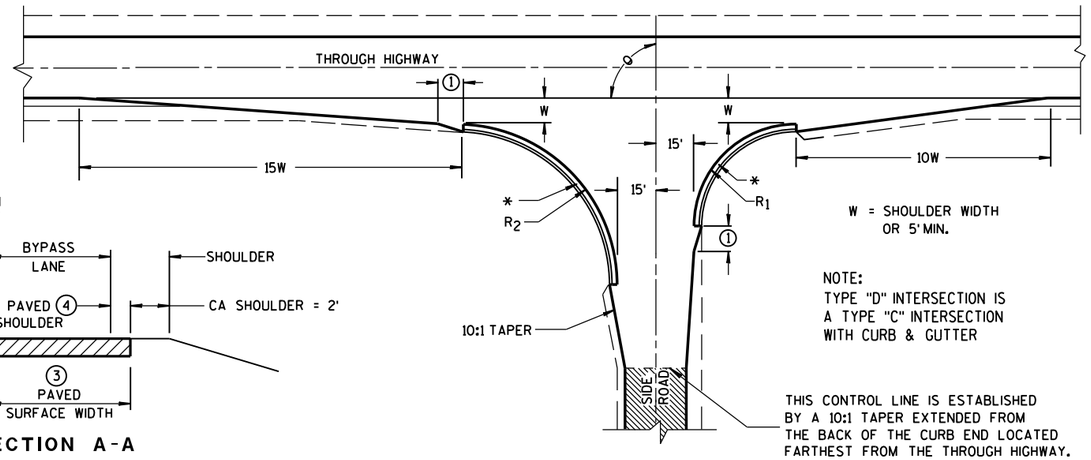
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

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

| θ | $R_1$ | $R_2$ |
|---|---|---|
| 65-70 | 35 | 70 |
| 71-80 | 40 | 70 |
| 81-90 | 40 | 60 |
| 91-100 | 50 | 55 |
| 101-110 | 60 | 45 |




TYPE "C"




TYPE "D"

## GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

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

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

EXISTING PAVED SURFACE

BYPASS LANE

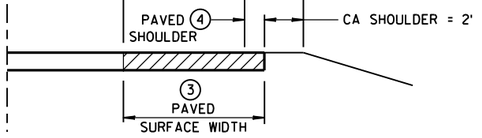
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

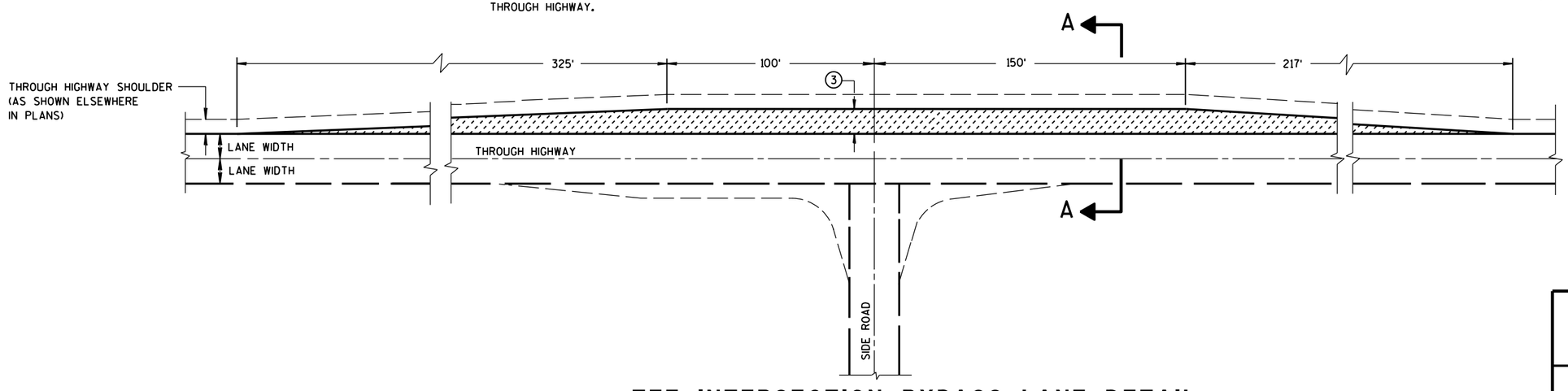
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.




SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)




TEE INTERSECTION BYPASS LANE DETAIL

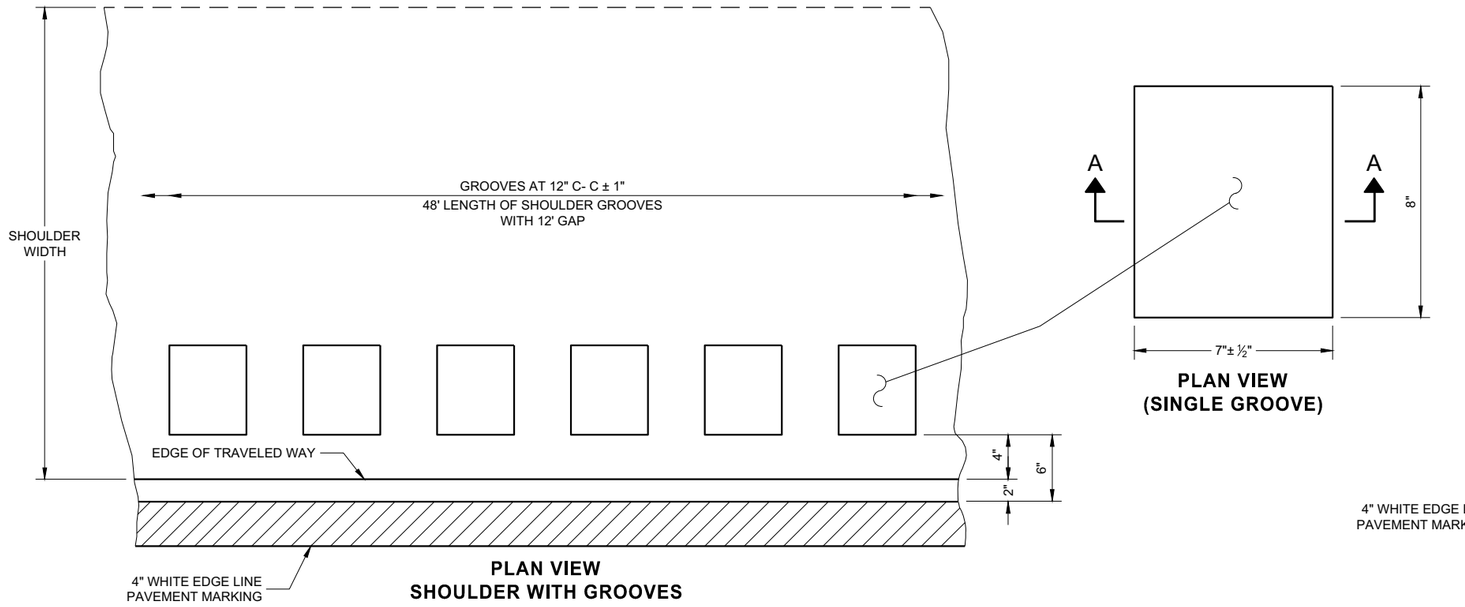
AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR




6

S.D.D. 9 A 1-13a




**PLAN VIEW**
**SHOULDER WITH GROOVES**

**PLAN VIEW**
**(SINGLE GROOVE)**

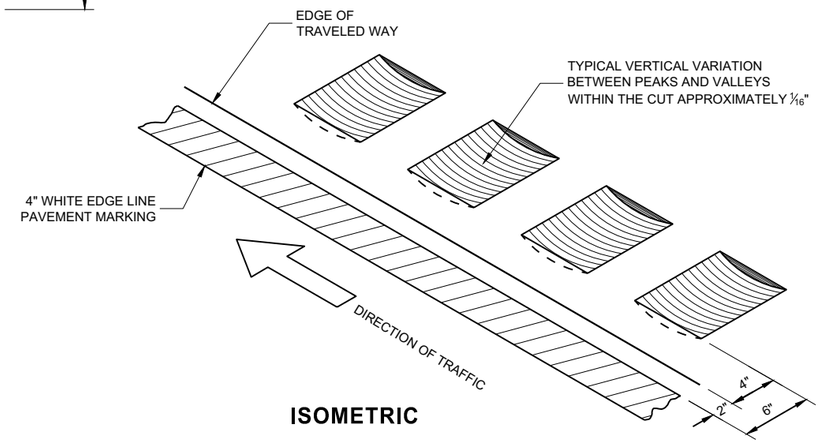
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**

## GENERAL NOTES

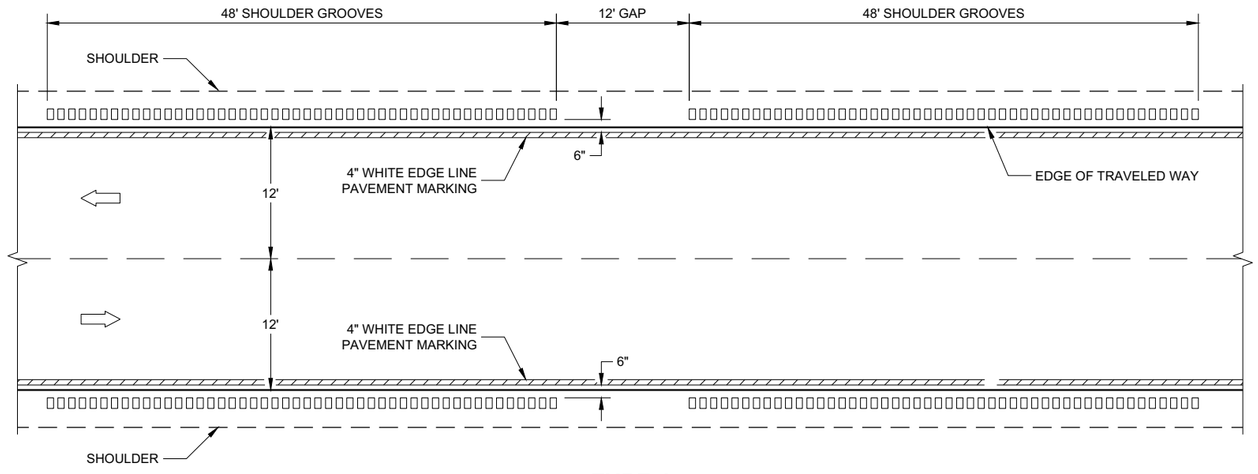
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

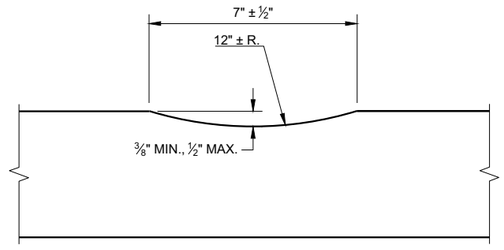
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.




**ISOMETRIC**




**TYPE 1**
**2 - LANE SHOULDER RUMBLE STRIP**




**SECTION A - A**

**2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING**

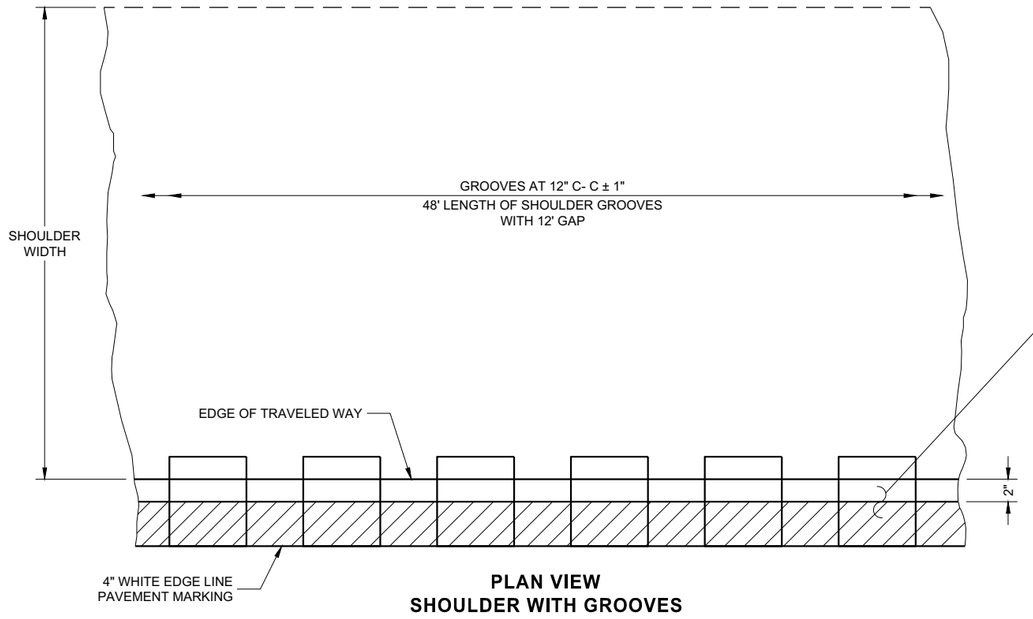
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA



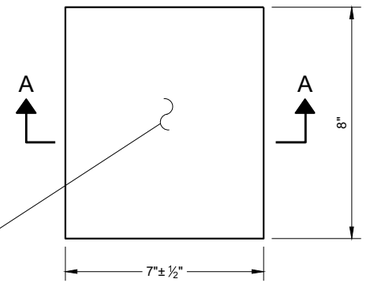
SDD 13A10 - 02a

6

SDD 13A10 - 02a




**PLAN VIEW**
**SHOULDER WITH GROOVES**



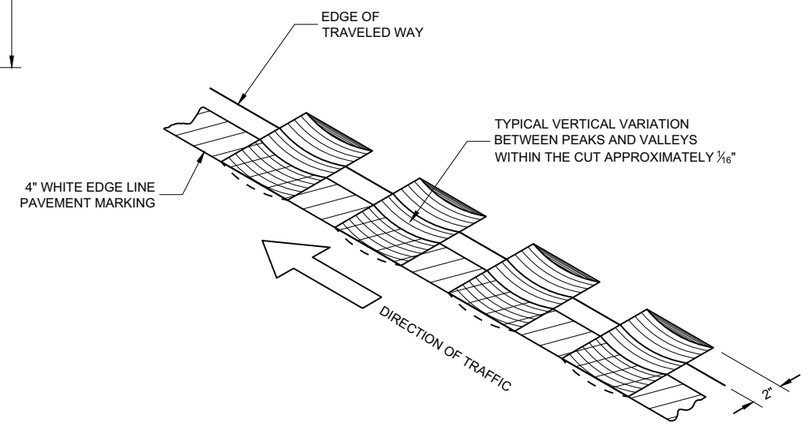

**PLAN VIEW**
**(SINGLE GROOVE)**

## GENERAL NOTES

DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

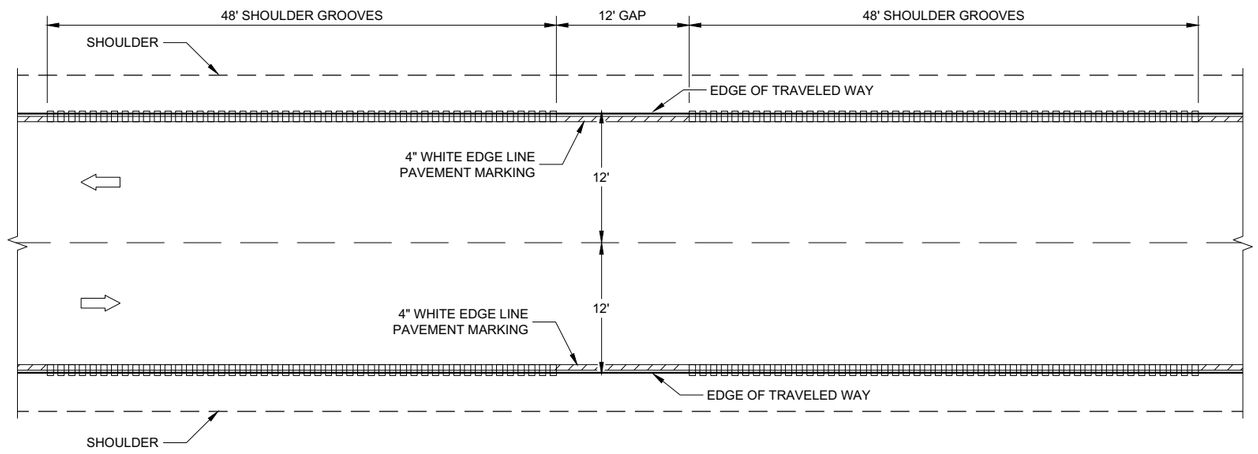
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

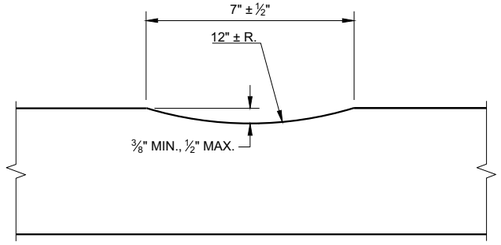



**ISOMETRIC**

## PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP




**TYPE 2**
**2 - LANE SHOULDER RUMBLE STRIP**




**SECTION A - A**

**2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

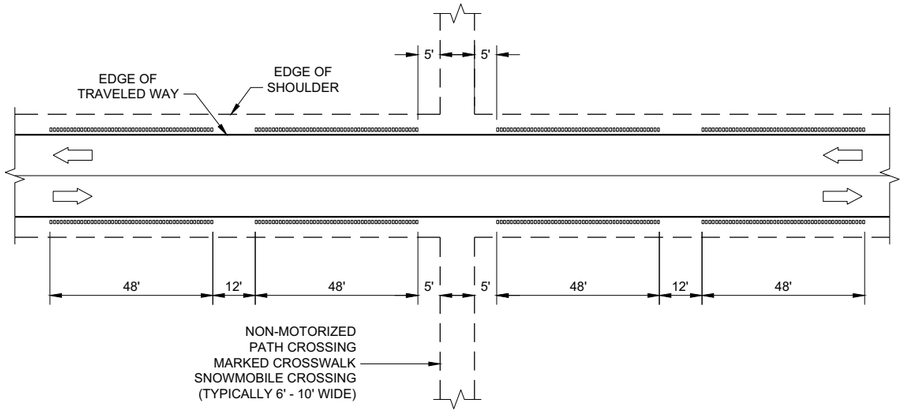


SDD 13A10 - 02b

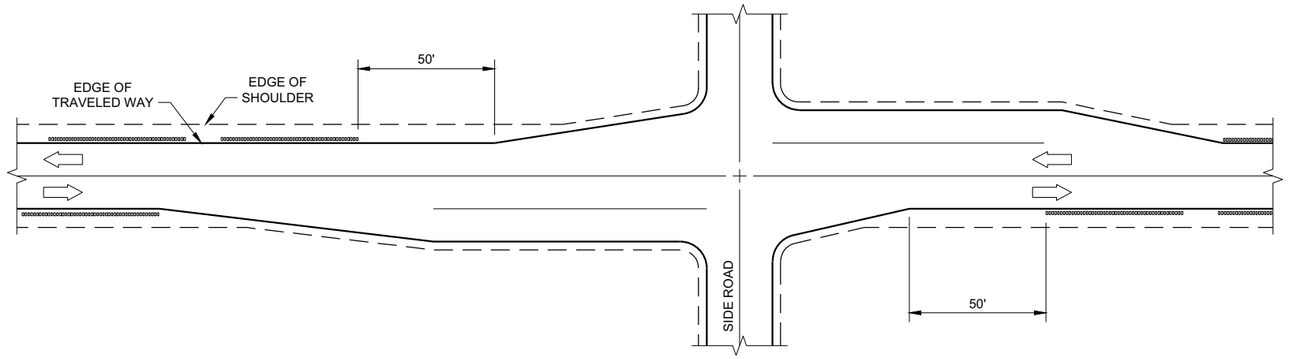
6

SDD 13A10 - 02b

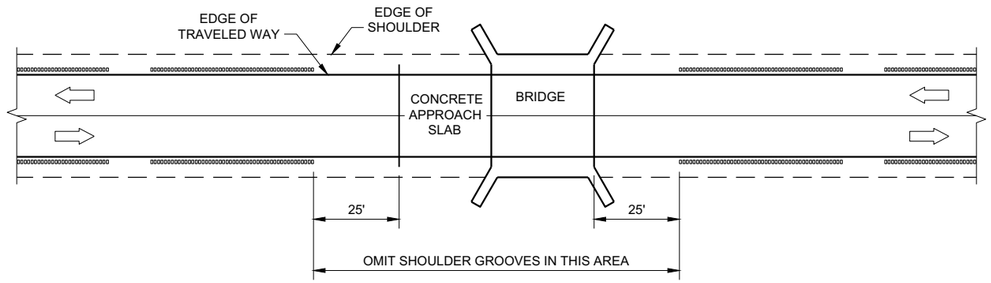
6



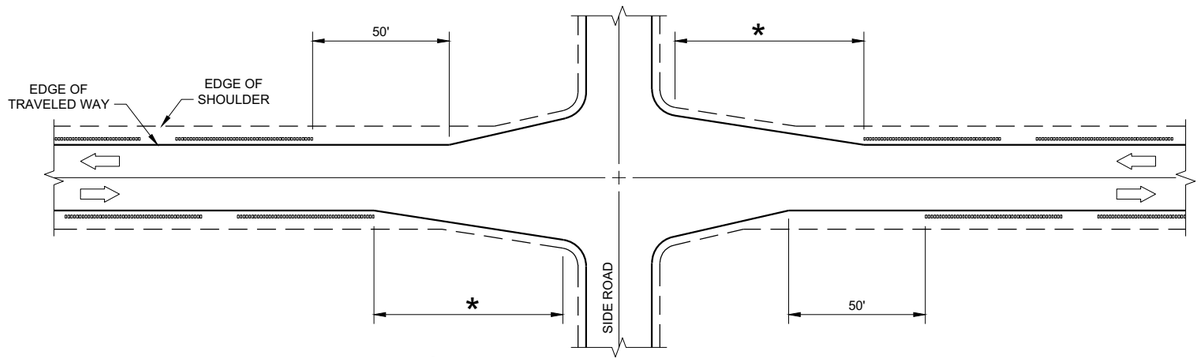

## SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS




## SHOULDER GROOVES AT RIGHT TURN LANE

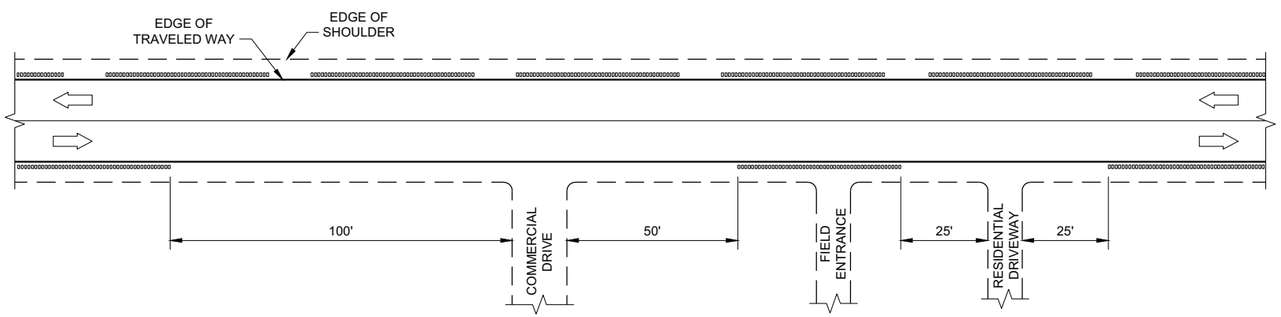



## SHOULDER GROOVES AT BRIDGES




* GREATER OF 100' OR APPROACH TAPER LENGTH

## SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER




## SHOULDER GROOVES AT DRIVEWAYS (1)

## GENERAL NOTES

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

**2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

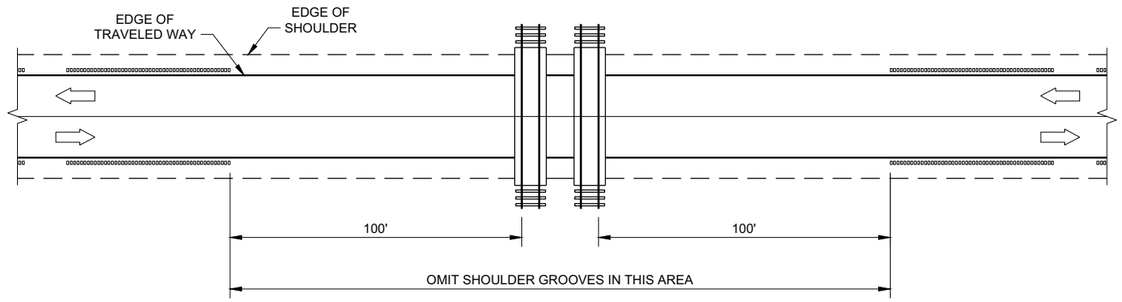


6

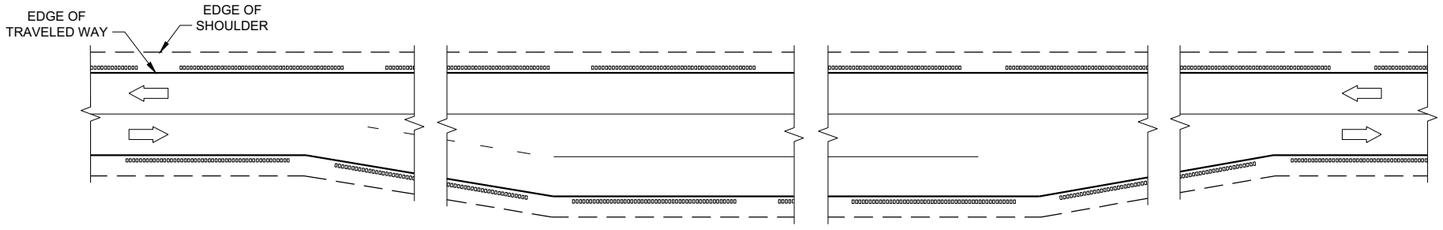
SDD 13A10 - 02c

6

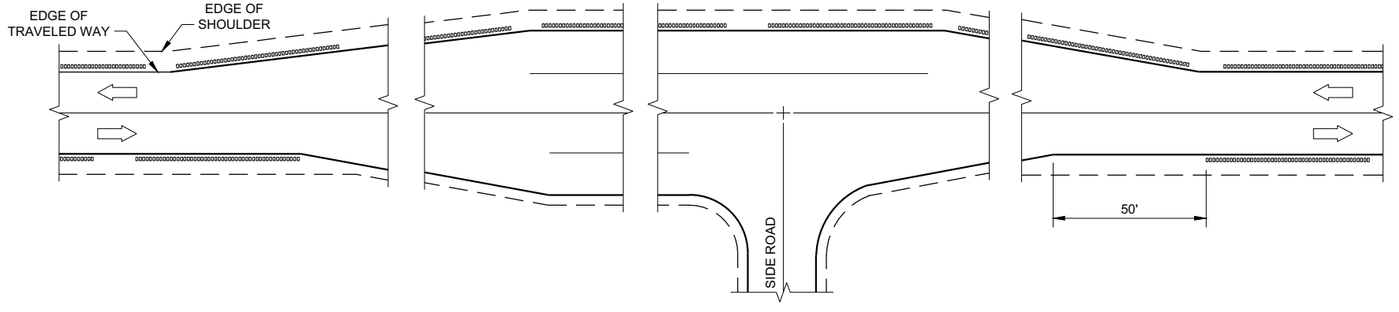
SDD 13A10 - 02c




**SHOULDER GROOVES AT RAILROADS**




**SHOULDER GROOVES AT PASSING AND CLIMBING LANES**




**SHOULDER GROOVES AT BYPASS LANES**

6

6

SDD 13A10 - 02d

SDD13A10 - 02d

**2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING**

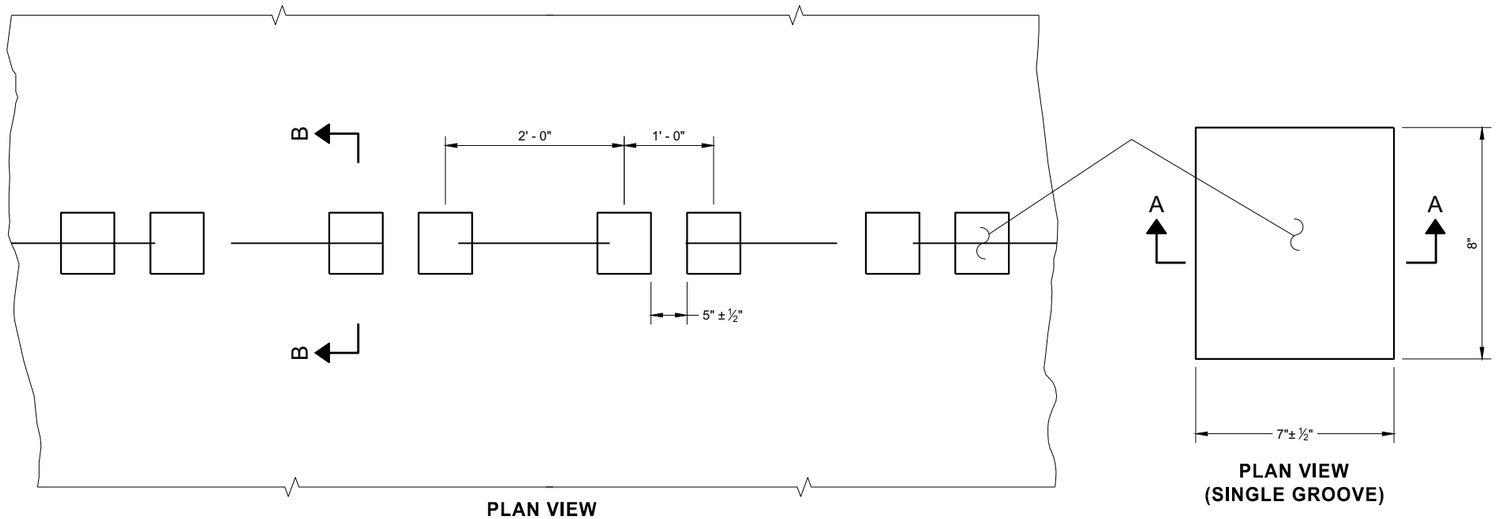
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA




PLAN VIEW
SHOULDER WITH GROOVES




PLAN VIEW
(SINGLE GROOVE)

## PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

## GENERAL NOTES

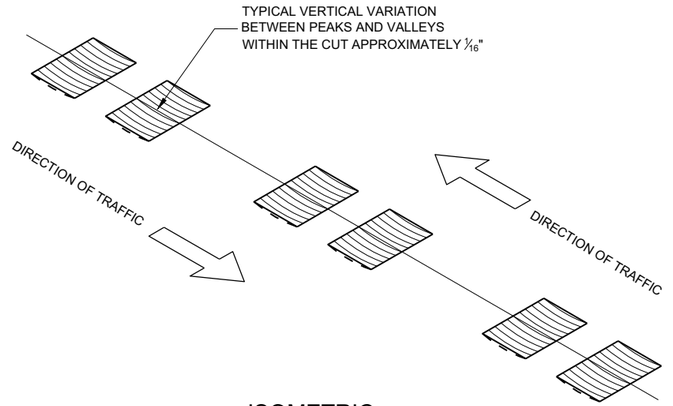
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

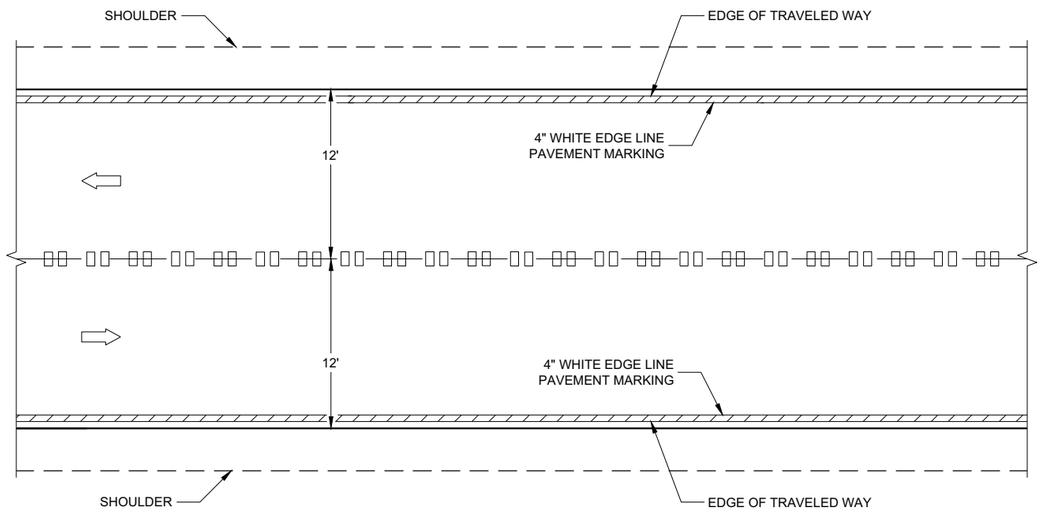
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

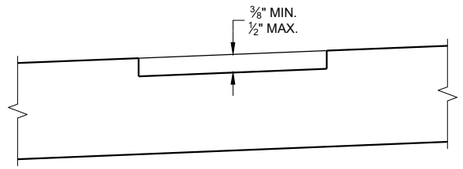
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



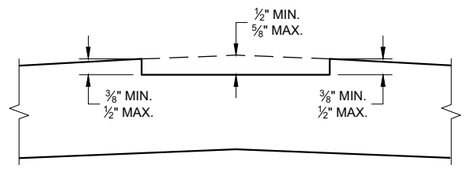

ISOMETRIC



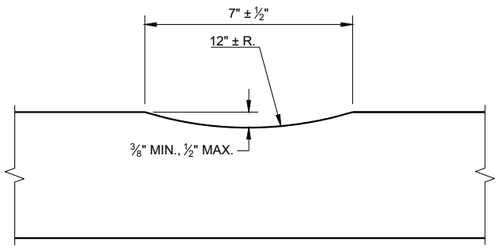

## CENTERLINE GROOVES ON TWO-WAY ROADWAYS




SECTION B - B
SUPERELEVATED ROADWAY




SECTION B - B
CROWNED ROADWAY




SECTION A - A

**2-LANE RURAL**
**CENTER LINE RUMBLE STRIP, MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

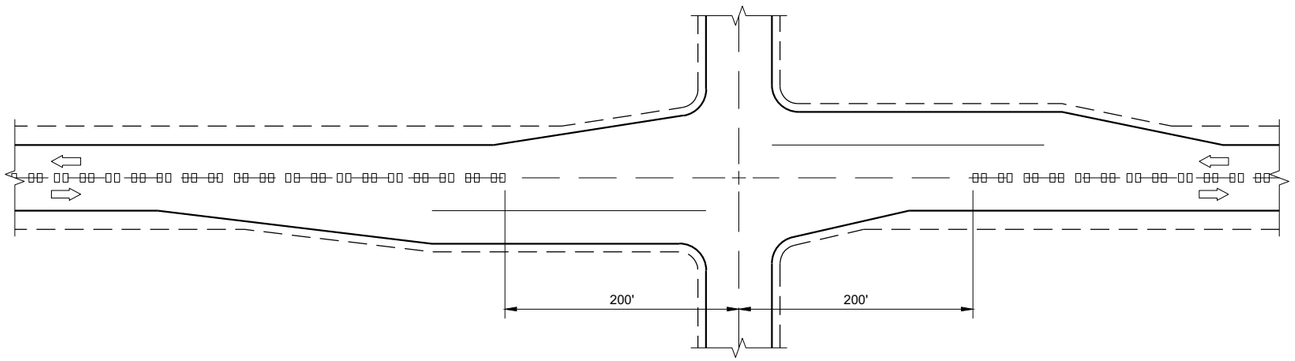


6

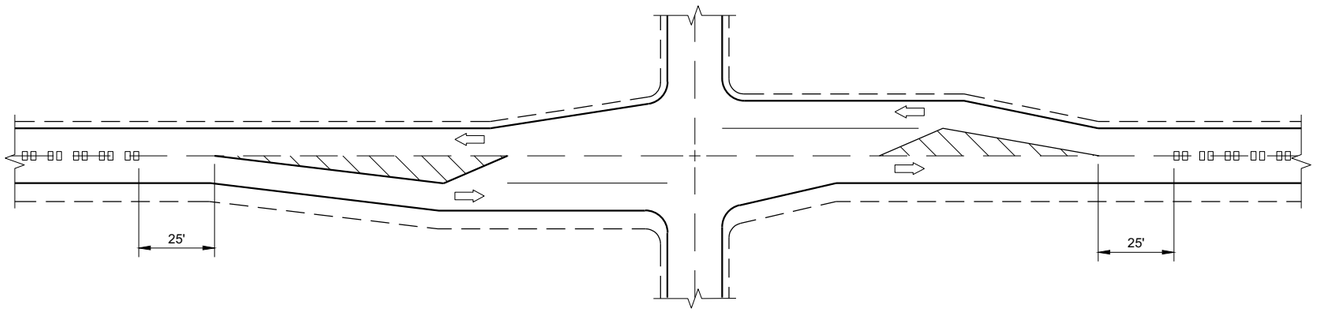
SDD 13A11 - 03a

6

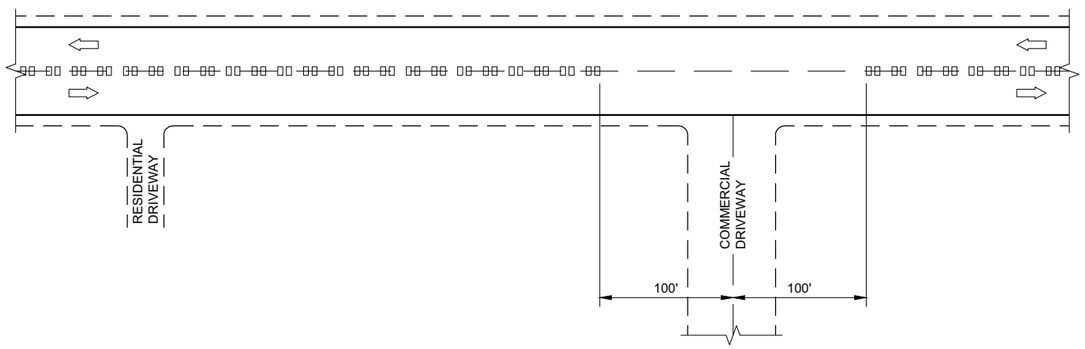
SDD 13A11 - 03a




## CENTERLINE GROOVES AT INTERSECTIONS



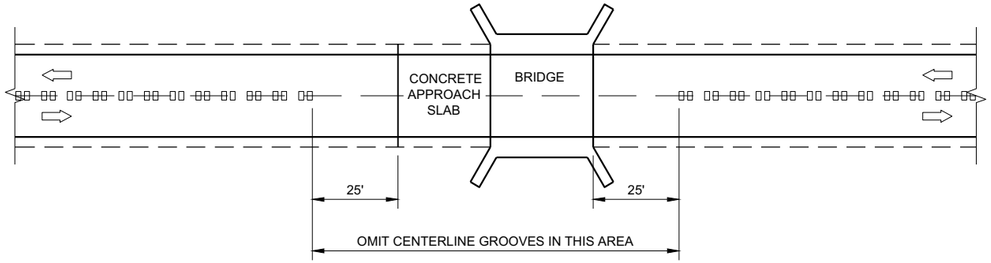

## CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



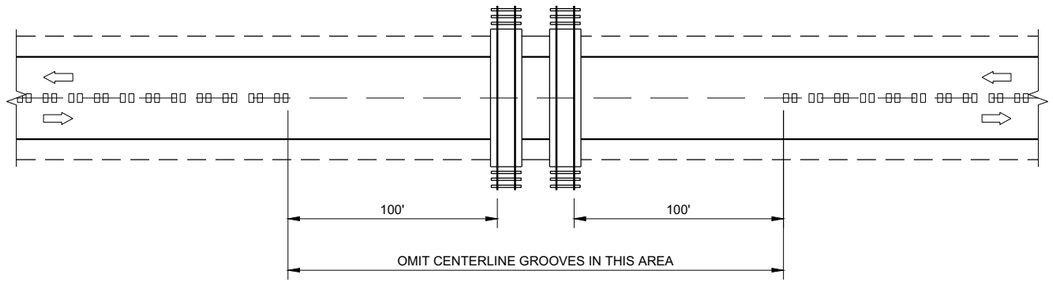

## CENTERLINE GROOVES AT DRIVEWAYS (1)

## GENERAL NOTES

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




## CENTERLINE GROOVES AT BRIDGES




## CENTERLINE GROOVES AT RAILROADS

# 2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

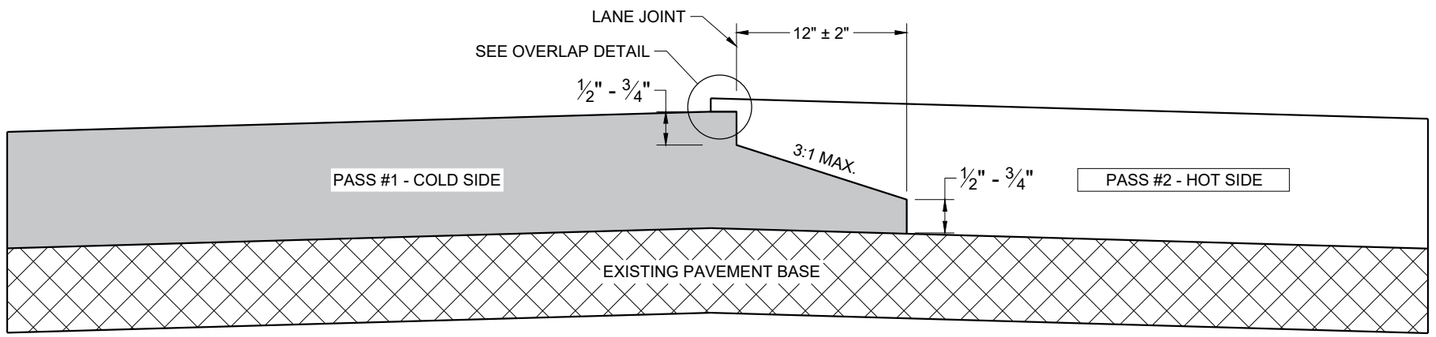
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

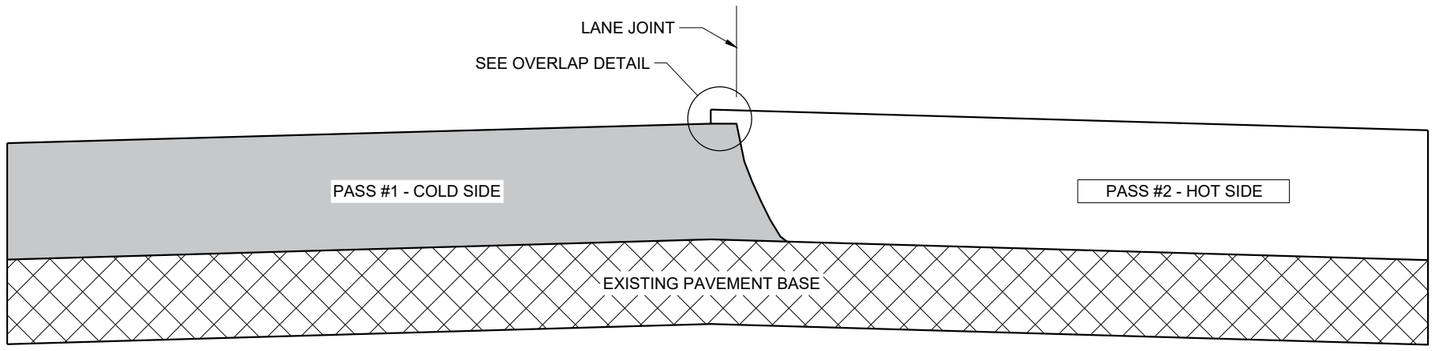




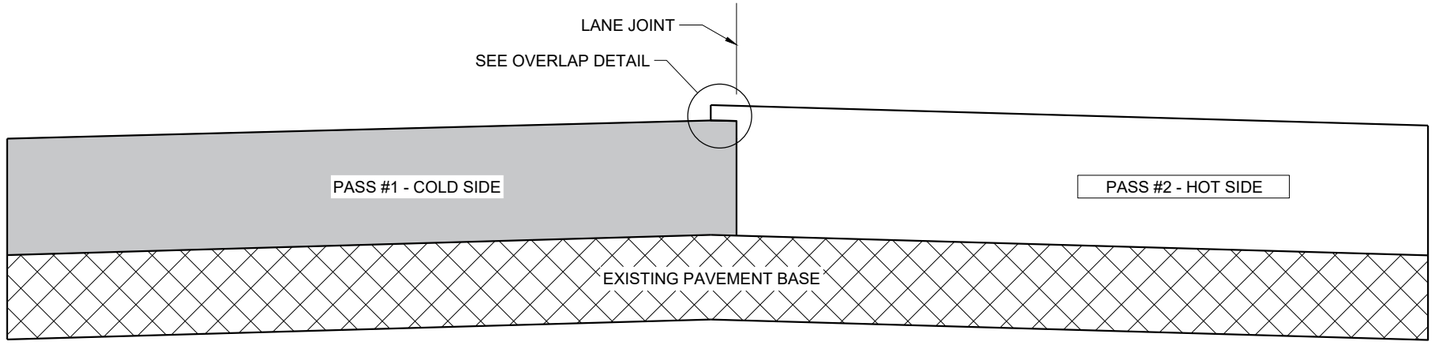
6
SDD13A11 - 03b




**TYPICAL PAVEMENT CROSS SECTION**
**NOTCHED WEDGE JOINT**




**TYPICAL PAVEMENT CROSS SECTION**
**VERTICAL JOINT**




**TYPICAL PAVEMENT CROSS SECTION**
**VERTICAL JOINT (MILLED)**

## GENERAL NOTES

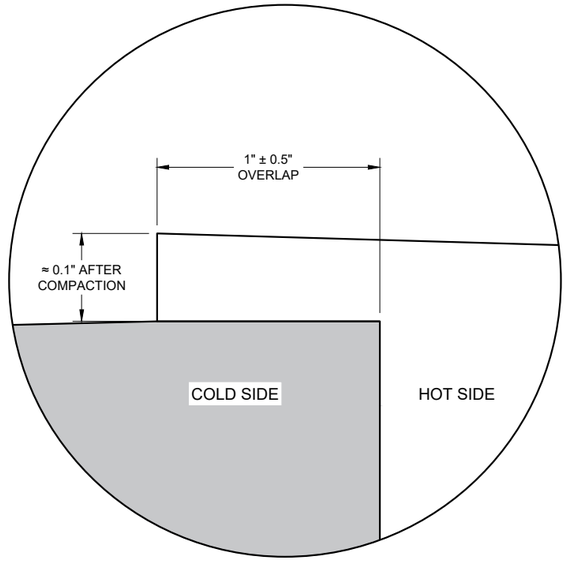
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)**

6

6

SDD 13C19 - 03

SDD 13C19 - 03

**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

## GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

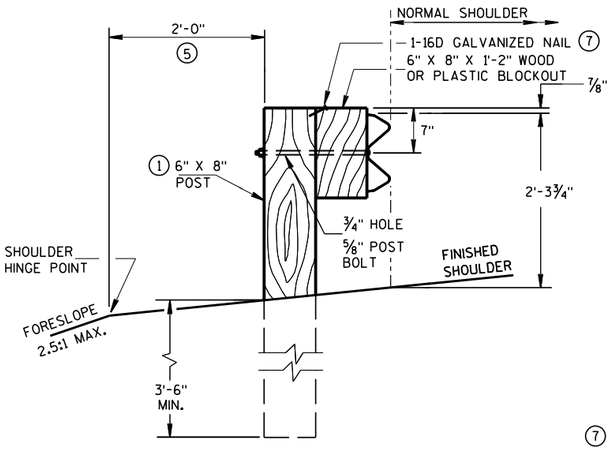
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

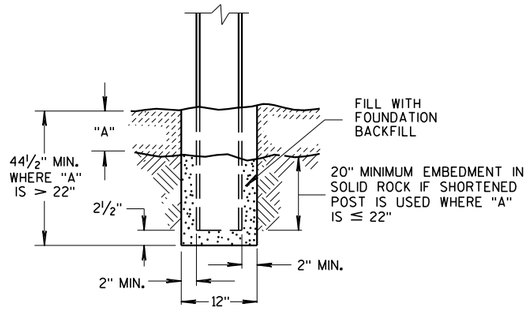
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

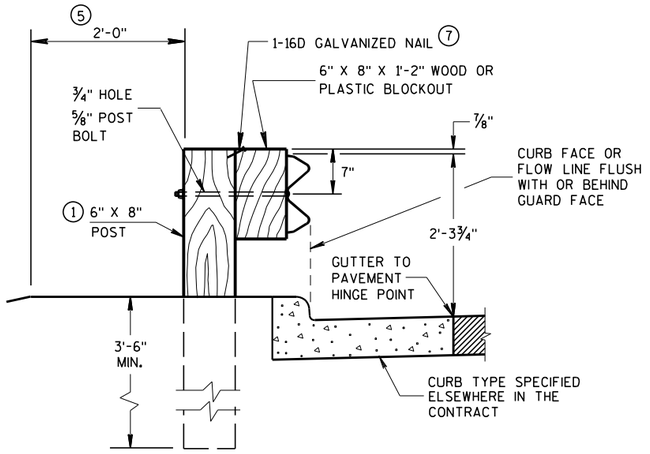
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



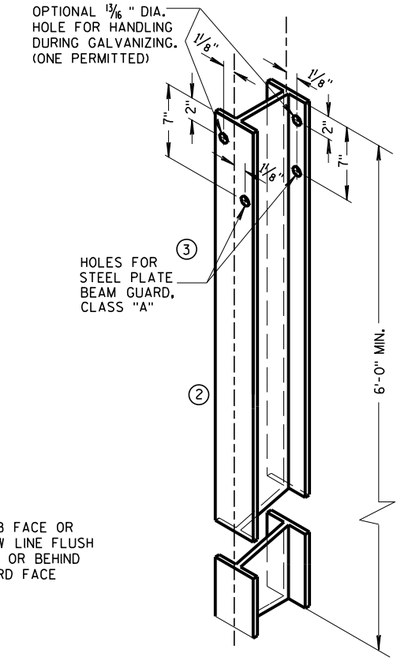

END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION




END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

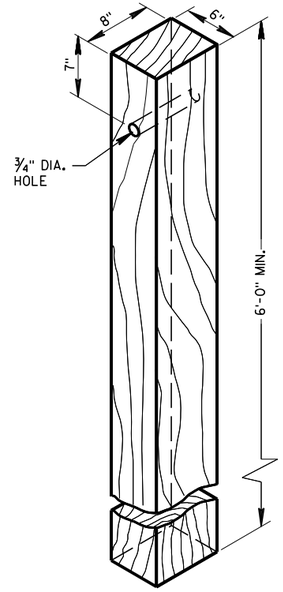



END VIEW
LOCATED ALONG A CURBED ROADWAY

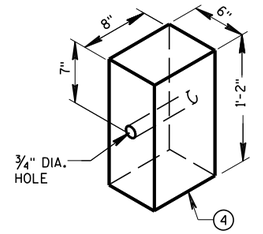



STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①

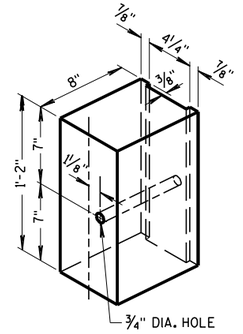
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



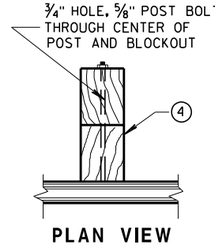

WOOD POST
(6"X8") NOMINAL



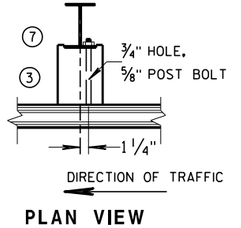

WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



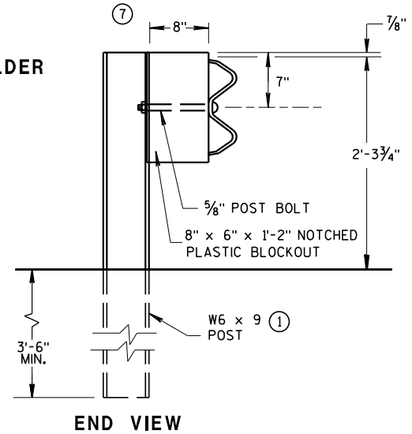

TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①



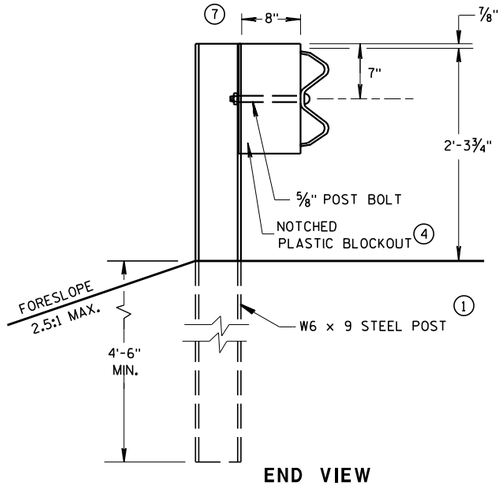

PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



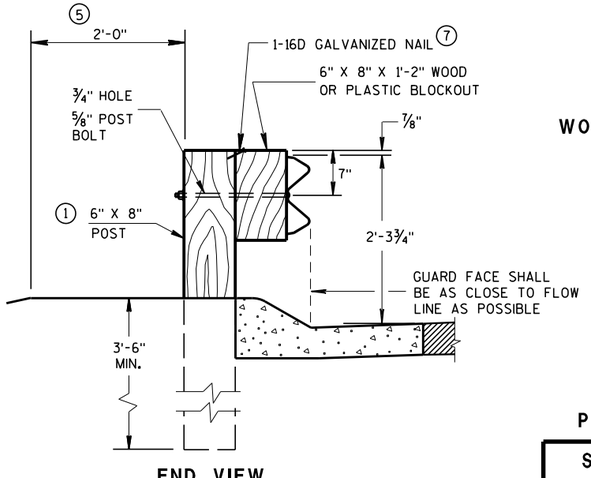

PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM




END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION




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




END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

## TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

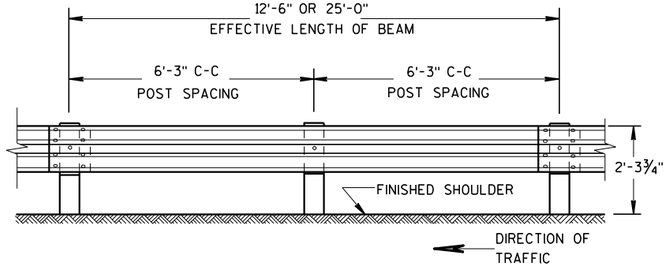
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



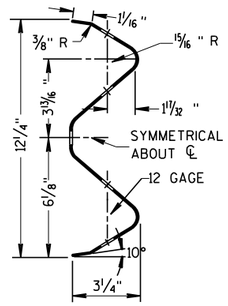


6
S.D.D. 14 B 15-11a

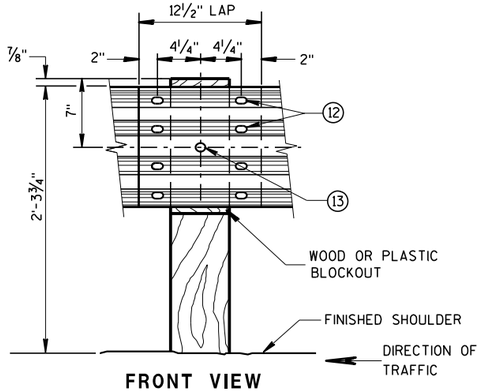



FRONT VIEW

## POST SPACING STANDARD INSTALLATION




## SECTION THRU W BEAM




FRONT VIEW

## BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

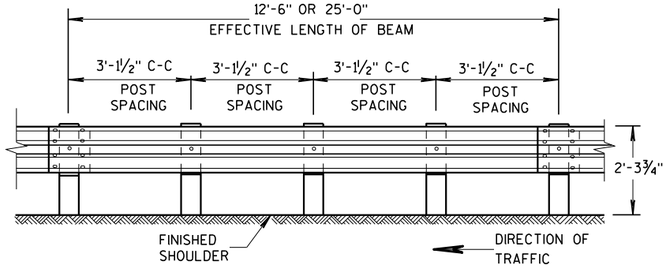
## GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

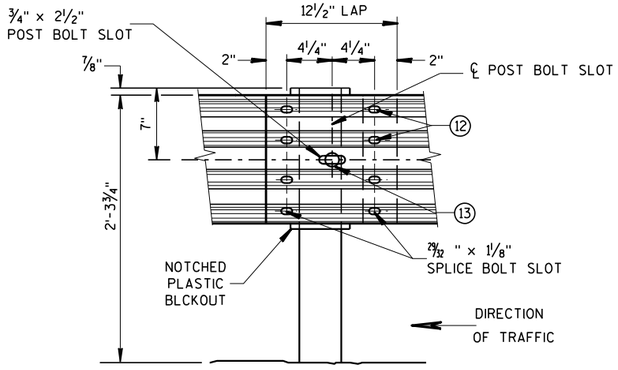
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



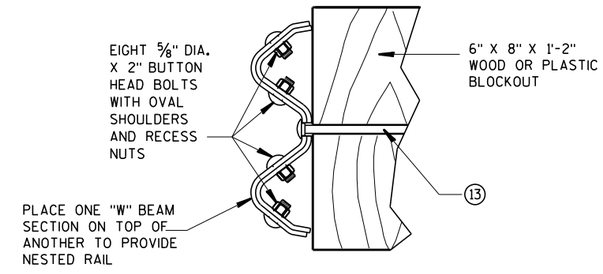

FRONT VIEW

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




FRONT VIEW

## BEAM SPLICE AT STEEL POST

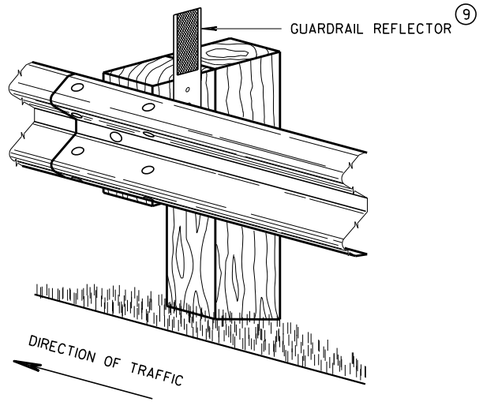



## NESTED W BEAM (NW)

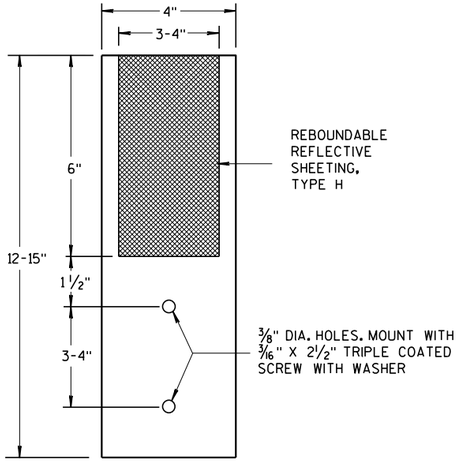
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

## TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.




## 4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *




4"x 12" GUARDRAIL REFLECTOR

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

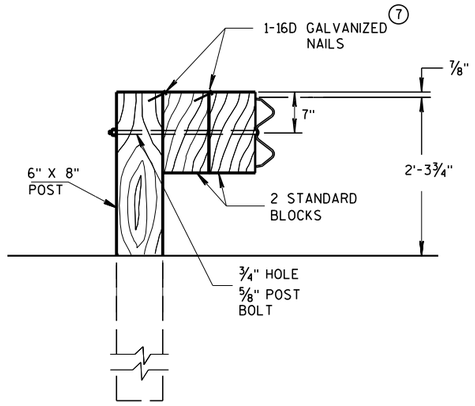
STATE OF WISCO 170
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 15-11b

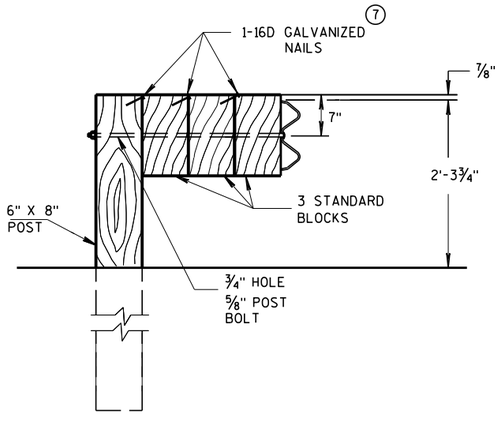
6

S.D.D. 14 B 15-11b




**DETAIL FOR DOUBLE BLOCKS**

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

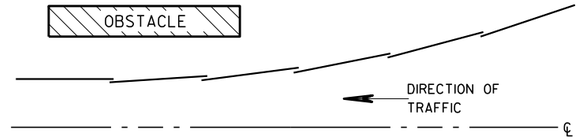



**DETAIL FOR TRIPLE BLOCKS**

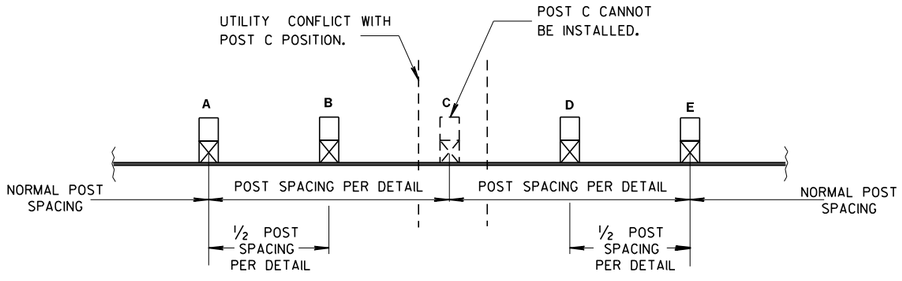
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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




**PLAN VIEW**
**BEAM LAPPING DETAIL**




**POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION**

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

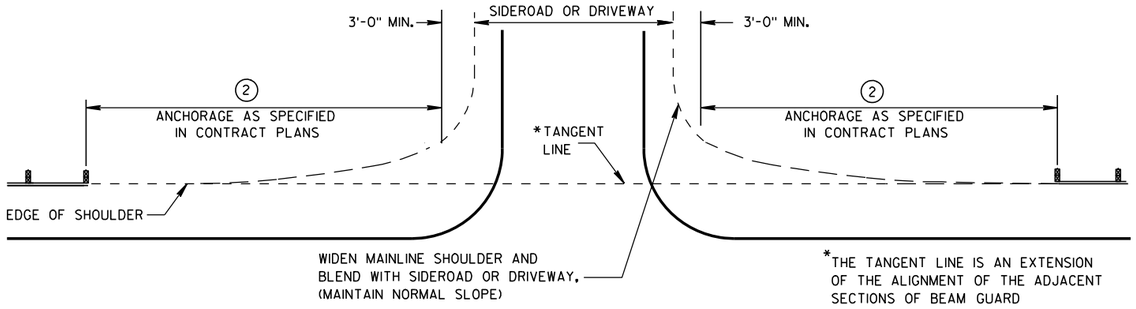
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

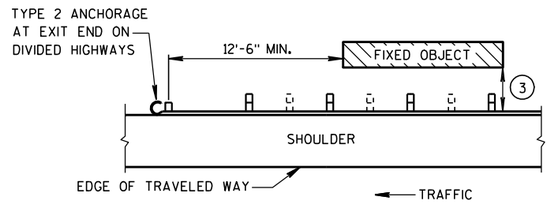




6
S.D.D. 14 B 15-11c




## BEAM GUARD AT SIDEROADS OR DRIVEWAYS




## BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

## GENERAL NOTES

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

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

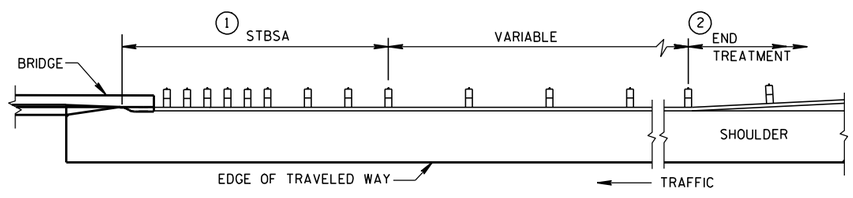
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

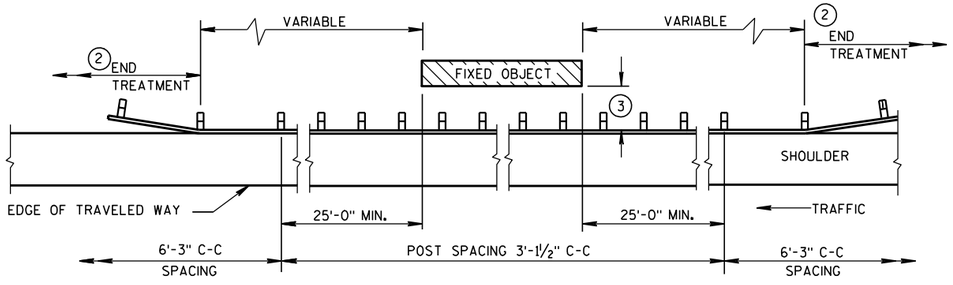
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

| MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT | POST SPACING |
|---|---|
| 3'-6" | 3' - 1½" |
| 4'-6" | 6' - 3" |

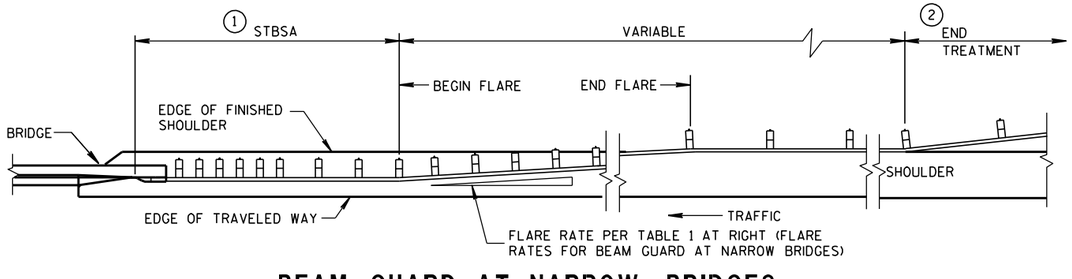



## BEAM GUARD AT FULL WIDTH BRIDGES




## BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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




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

**TABLE 1**
**FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES**

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

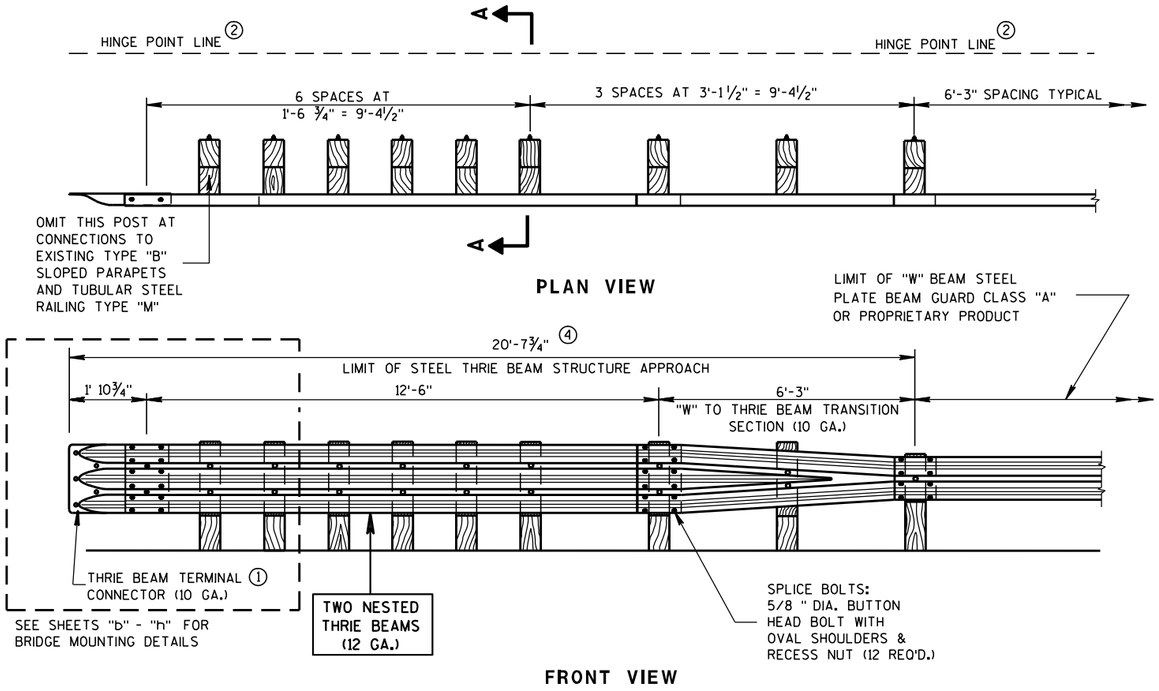
**STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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




6
S.D.D. 14 B 18-6a



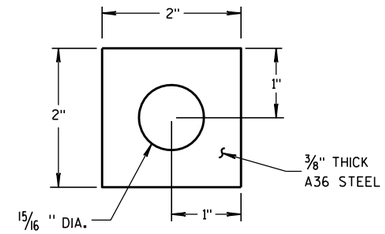




PLATE WASHER DETAIL

## GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

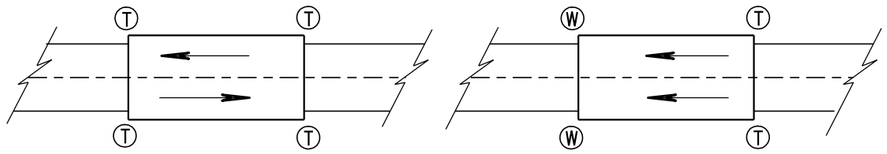
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



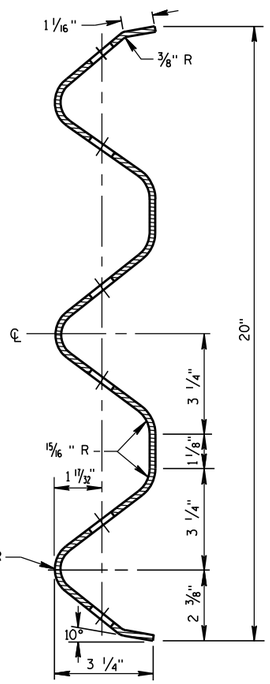

TWO WAY TRAFFIC

ONE WAY TRAFFIC

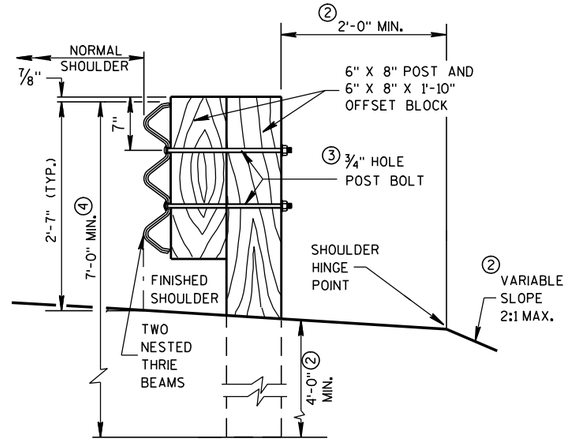
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

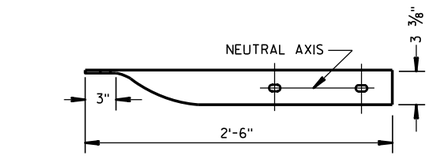
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

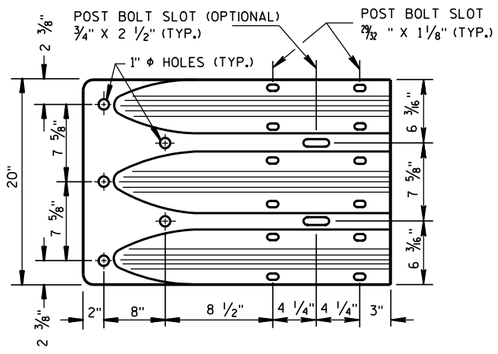



SECTION THRU THRIE BEAM RAIL ELEMENT

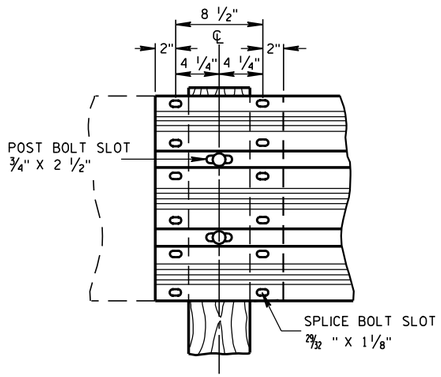



SECTION A-A




THRIE BEAM TERMINAL CONNECTOR



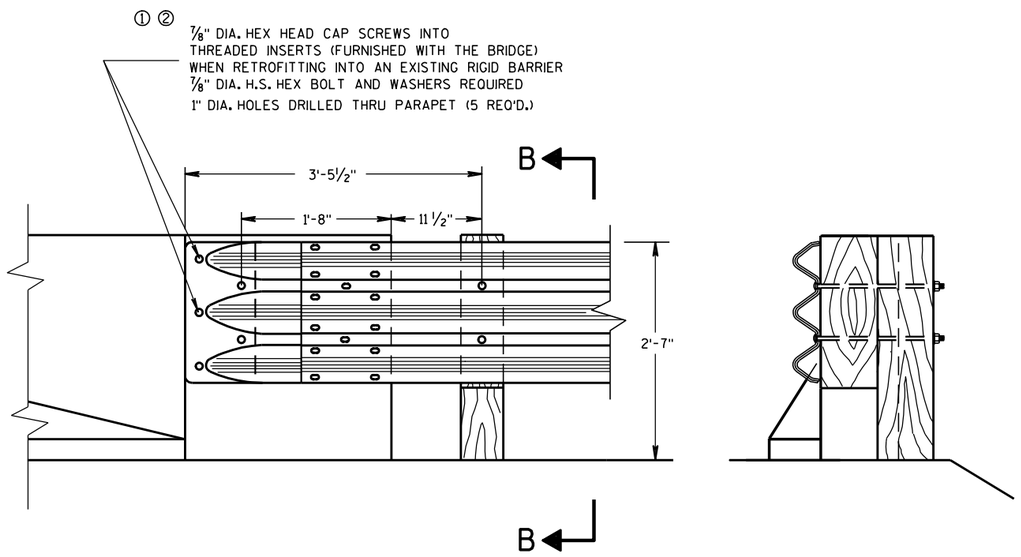

THRIE BEAM SPLICE

**STEEL THRIE BEAM STRUCTURE APPROACH**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA




FRONT VIEW

SECTION B-B

## 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.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

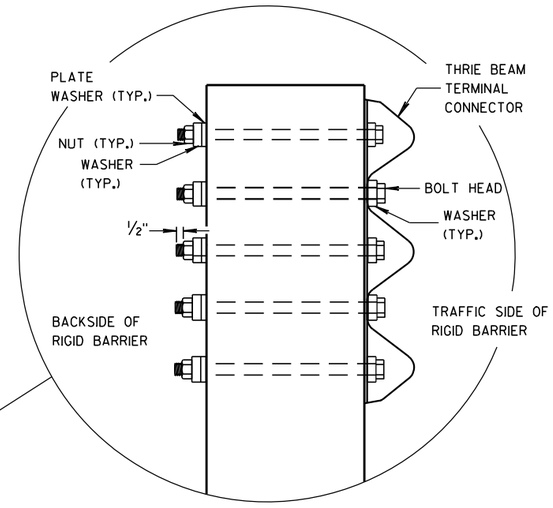
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

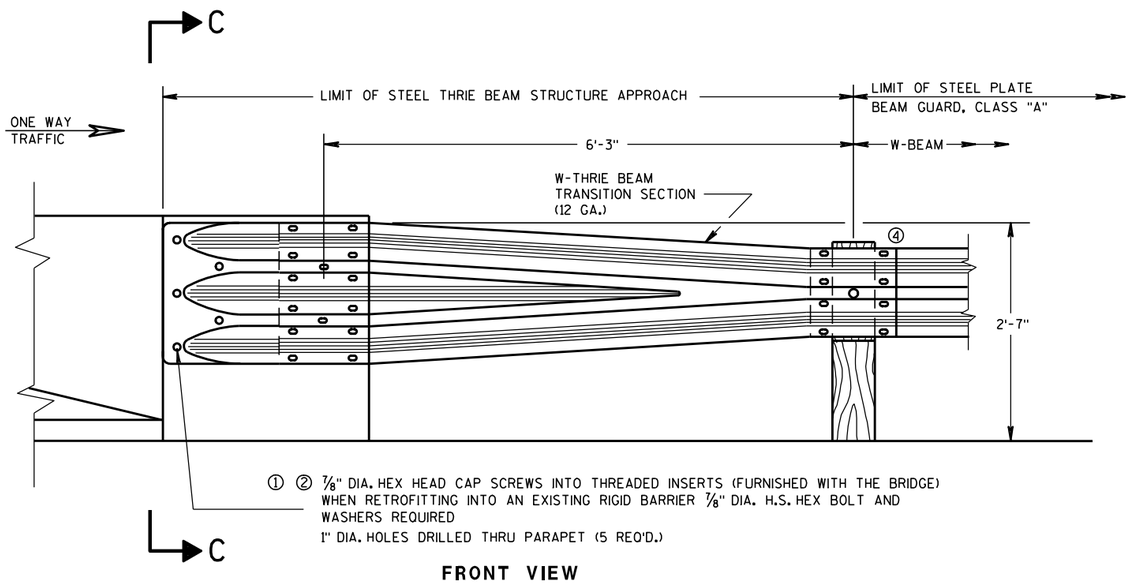
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ 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".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



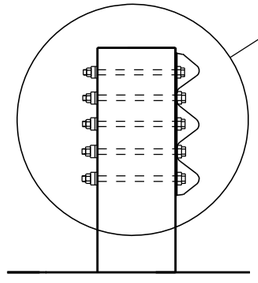




① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

## W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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



SECTION C-C

## STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

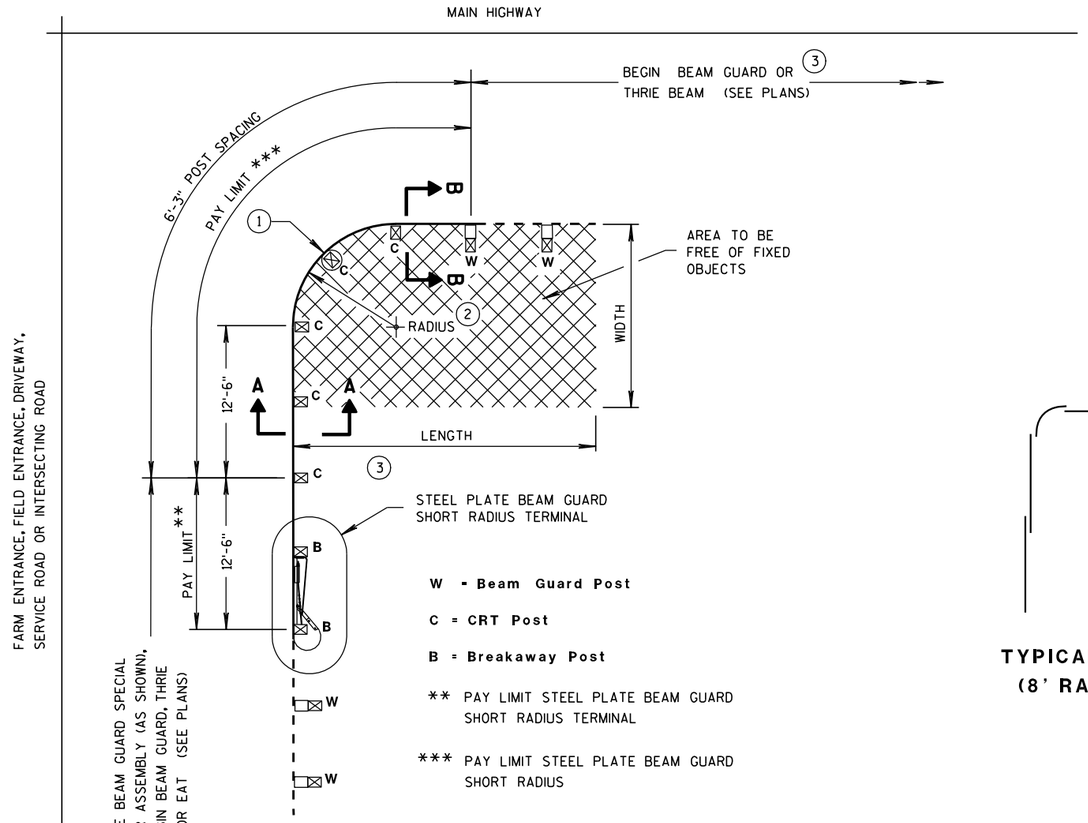
APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS 1174
ENGINEER
FHWA

6

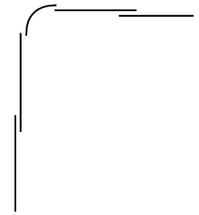
S.D.D. 14 B 20-11b

6

S.D.D. 14 B 20-11b




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



**TYPICAL LAP SPLICES**
**(8' RADIUS SHOWN)**

## GENERAL NOTES

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

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

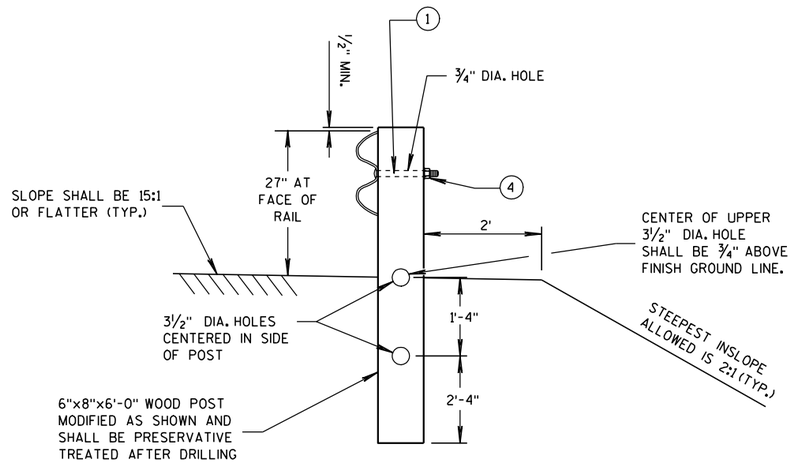
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

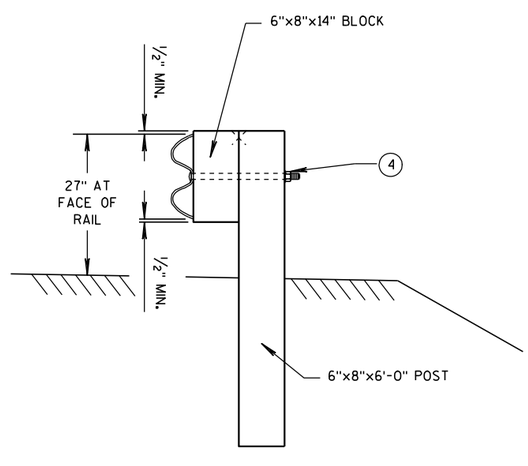
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

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

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




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




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

# STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

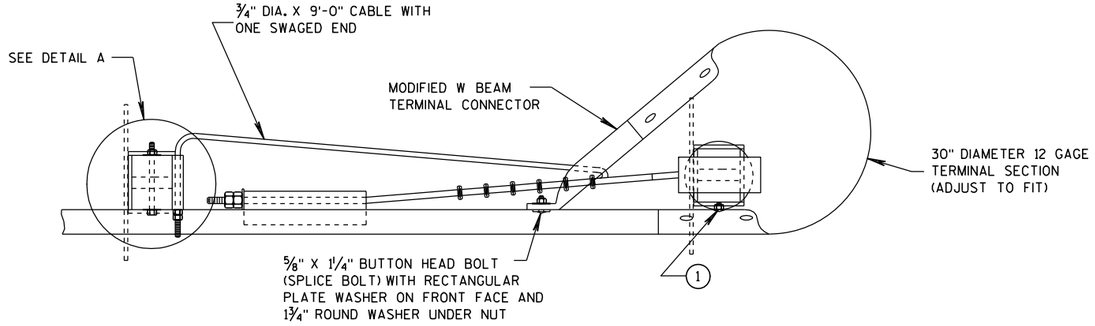


6

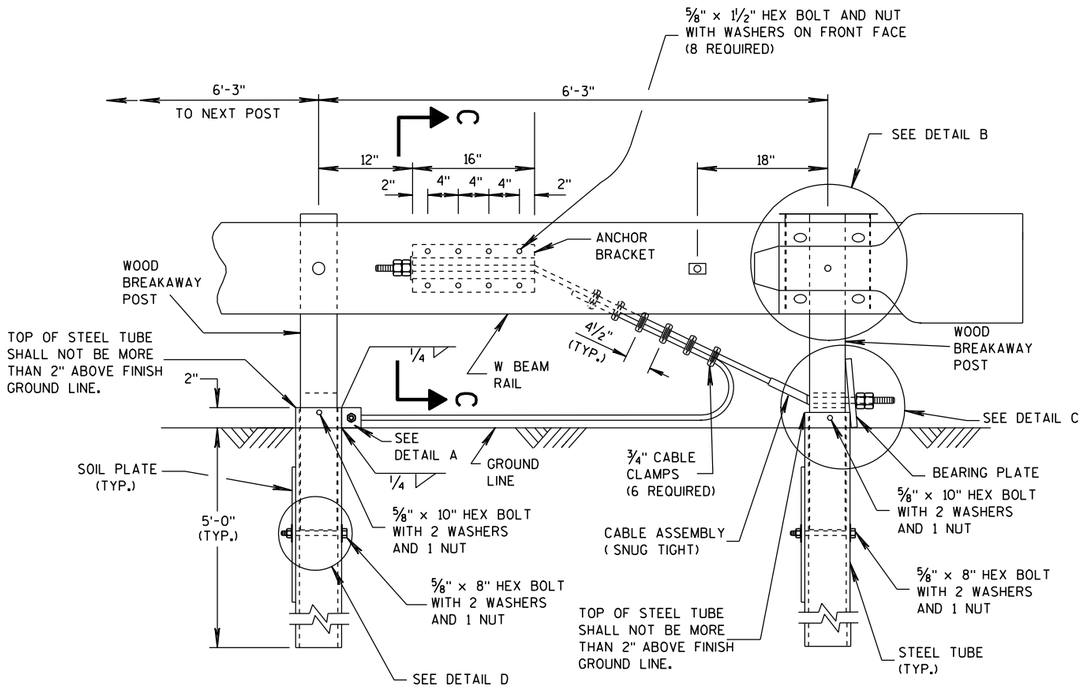
S.D.D. 14 B 27-1a

6

S.D.D. 14 B 27-1a




**PLAN VIEW**



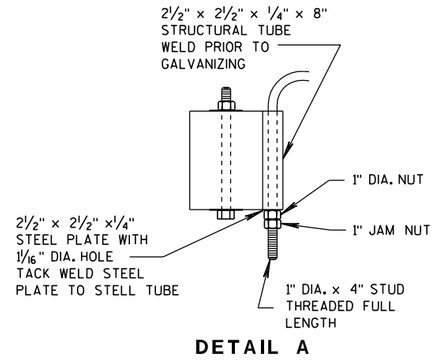

**ELEVATION VIEW**

# STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

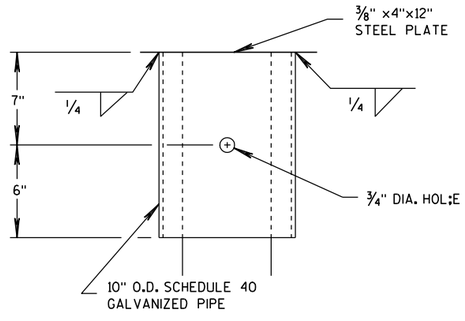
## GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.




**DETAIL A**




**DETAIL B**

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

**STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

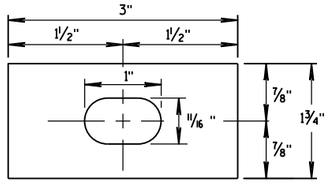


6

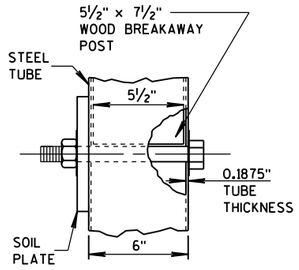
S.D.D. 14 B 27-1b

6

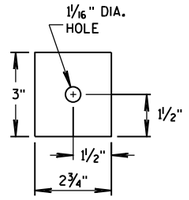
S.D.D. 14 B 27-1b



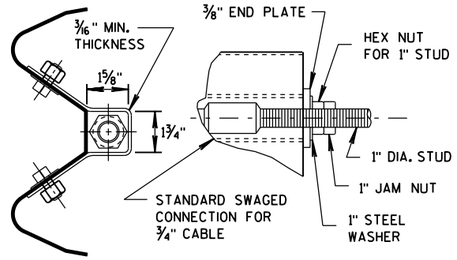

**RECTANGULAR PLATE WASHER**



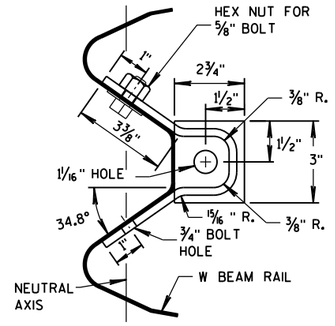

**DETAIL D**



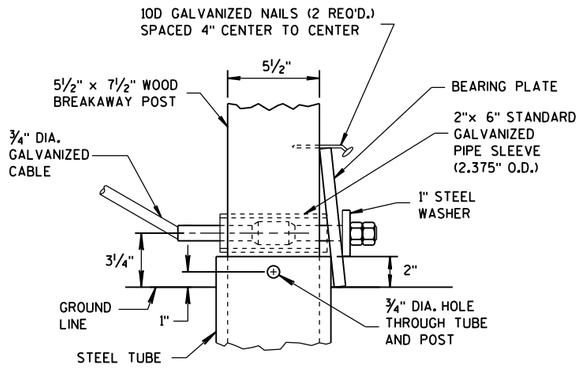

**END PLATE**



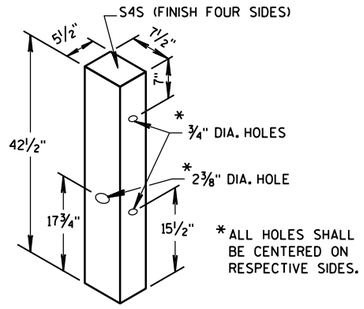

**SECTION C-C**
**(END PLATE REMOVED)**



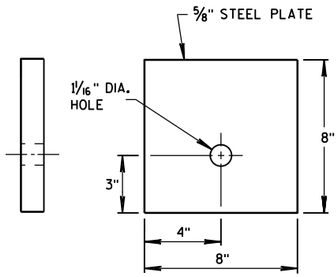

**ANCHOR BRACKET**



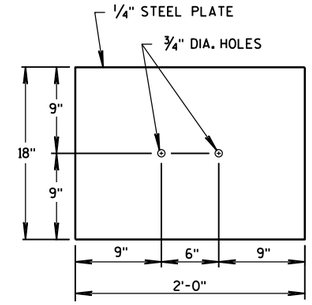

**DETAIL C**



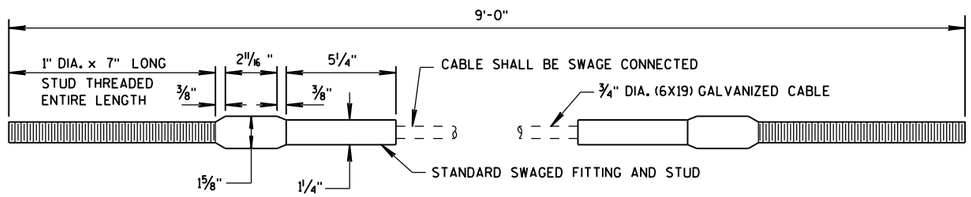

**WOOD BREAKAWAY POST**



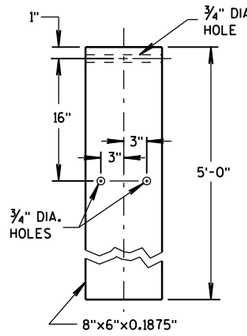

**BEARING PLATE**




**SOIL PLATE**




**CABLE ASSEMBLY**




**STEEL TUBE**

**STEEL PLATE BEAM GUARD**
**SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



6

S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

(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.

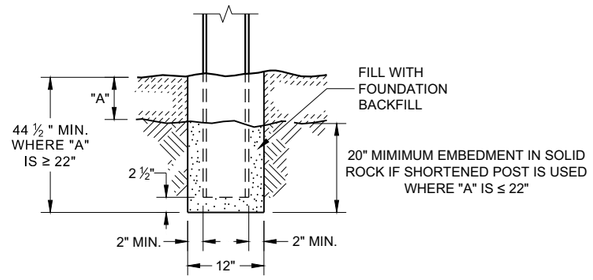
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

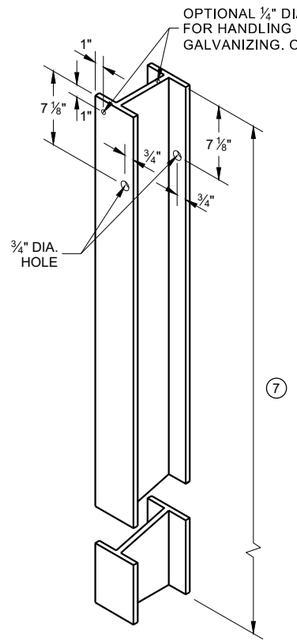
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

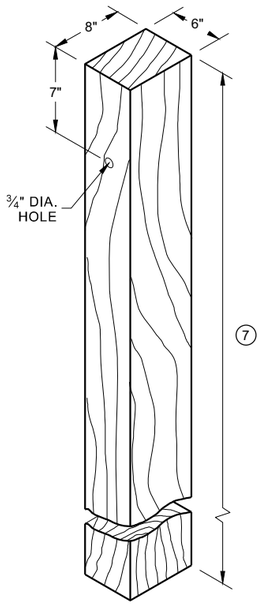
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



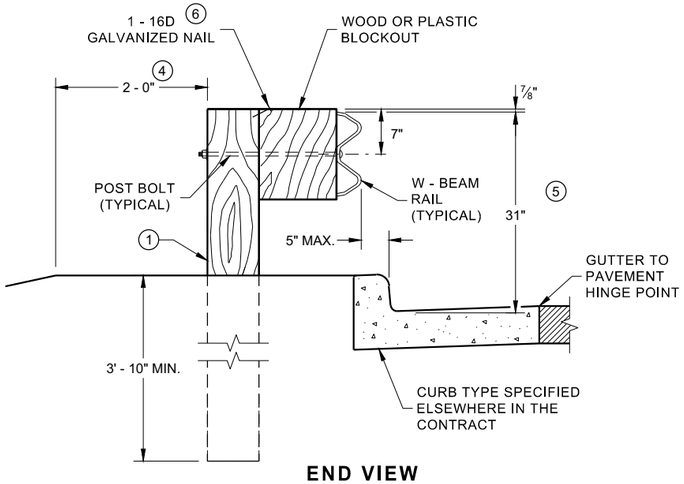

END VIEW
**SETTING STEEL OR WOOD POST IN ROCK** (3)



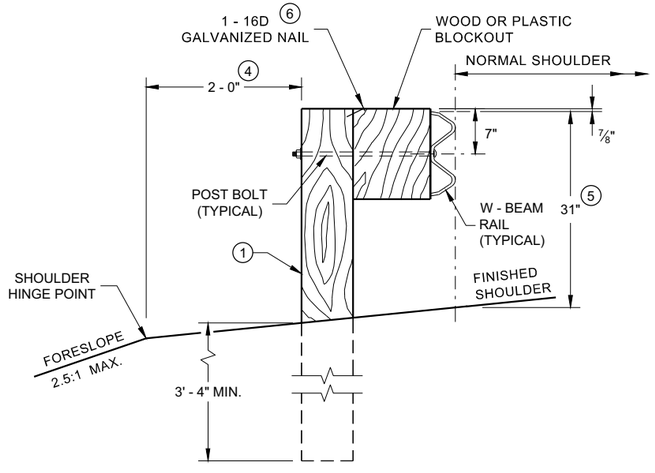

**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)** (1)



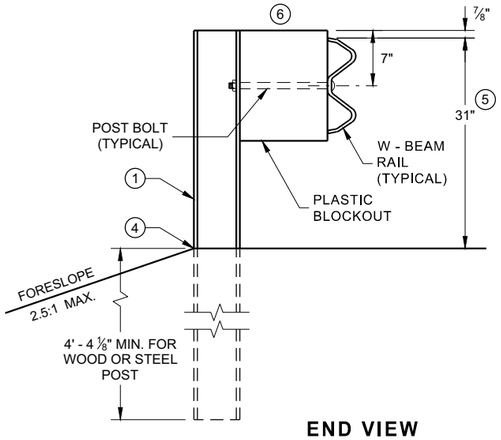

**WOOD POST (6" X 8") NOMINAL** (1)



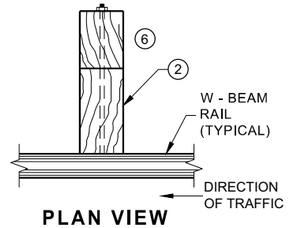

END VIEW
**LOCATED ALONG A CURBED ROADWAY**



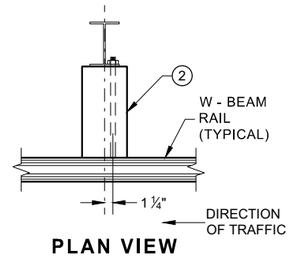

END VIEW
**LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION**



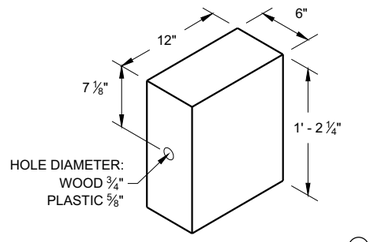

END VIEW
**MGS LONGER POST AT HALFPOST SPACING W BEAM (K)**




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




PLAN VIEW
**STEEL POST, PLASTIC BLOCKOUT & BEAM**




**WOOD OR PLASTIC BLOCKOUT** (2)

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

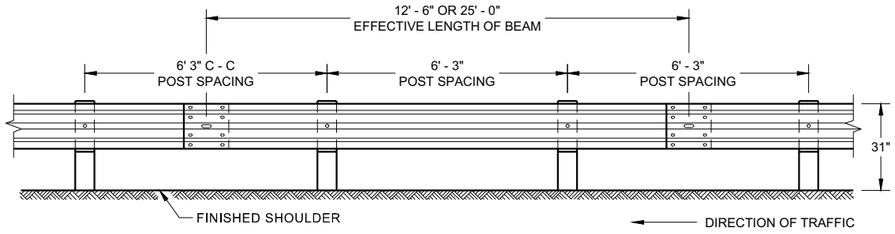
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



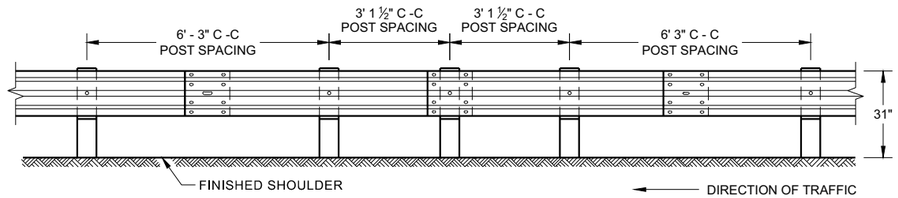
SDD 14B42 - 06a

6

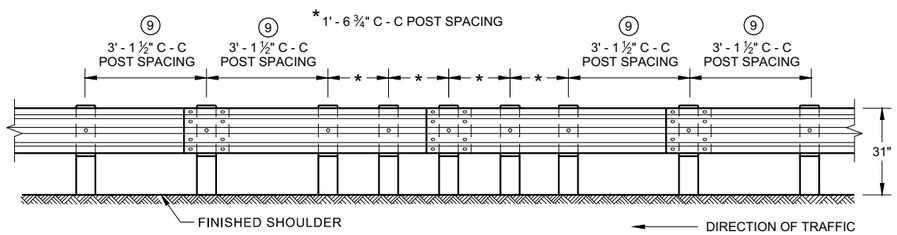
SDD 14B42 - 06a



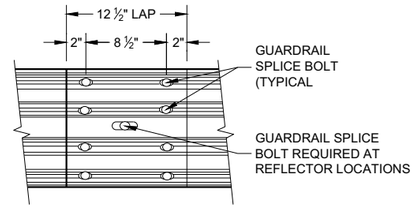

**FRONT VIEW**
**POST SPACING STANDARD INSTALLATION**



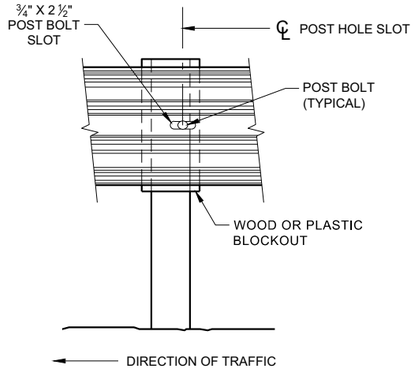

**FRONT VIEW**
**HALF POST SPACING (HS) AND**
**HALF POST SPACING WITH LONGER POSTS (K)**



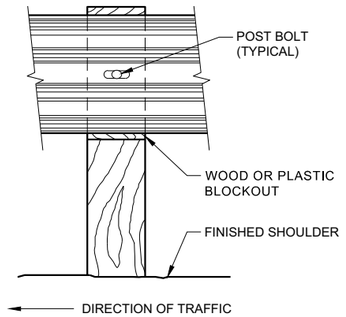

**FRONT VIEW**
**QUARTER POST SPACING (QS)**



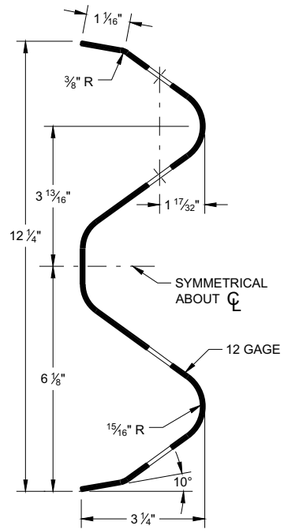

**FRONT VIEW**
**MID-SPAN BEAM SPLICE**



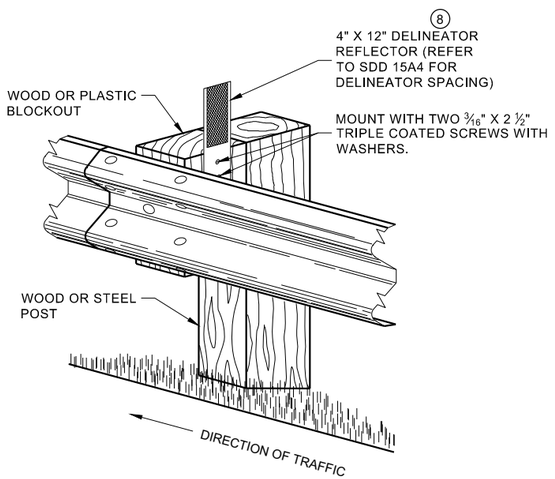

**FRONT VIEW AT STEEL POST**




**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.

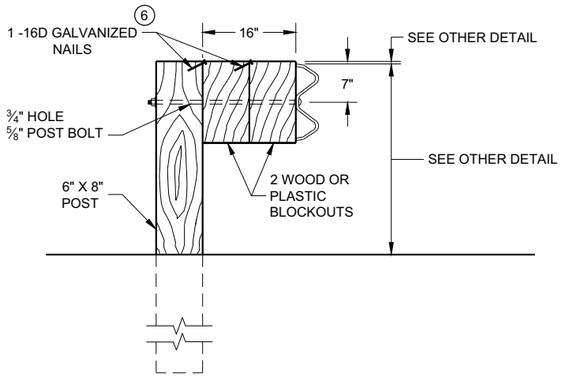
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

**MIDWEST GUARDRAIL SYSTEM**
**(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION




6
SDD 14B42 - 06b

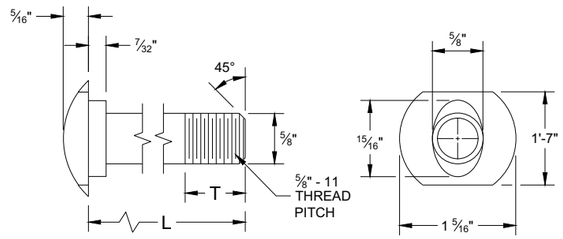



## DETAIL FOR 16" BLOCKOUT DEPTH

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.

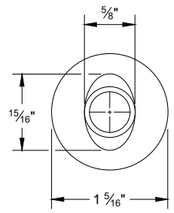
NOTE:

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.

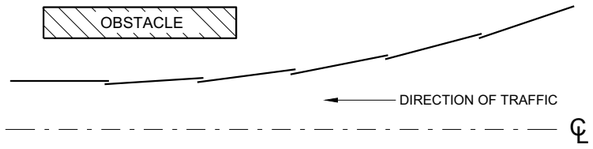



## POST BOLT TABLE

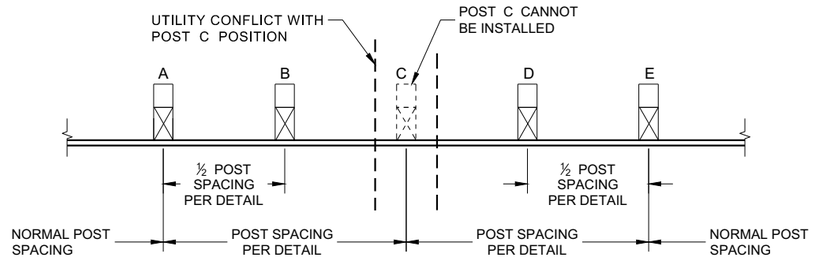
| L | T (MIN.) |
|---|---|
| 1 ¼" | 1 ⅛" |
| 2" | 1 ¾" |
| 10" | 4" |
| 14" | 4 1⁄16" |
| 18" | 4" |
| 21" | 4 1⁄16" |
| 25" | 4" |



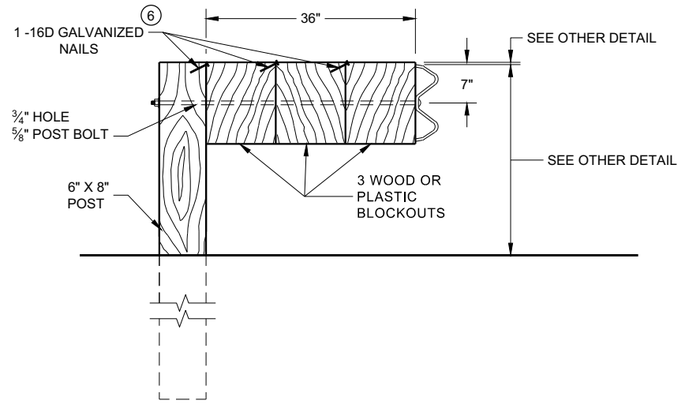

## ALTERNATE BOLT HEAD



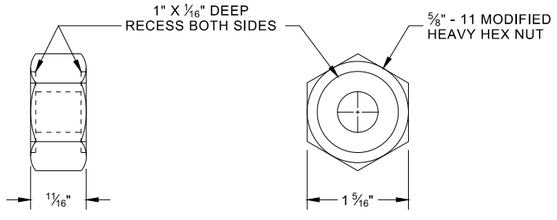

## PLAN VIEW
## BEAM LAPPING DETAIL



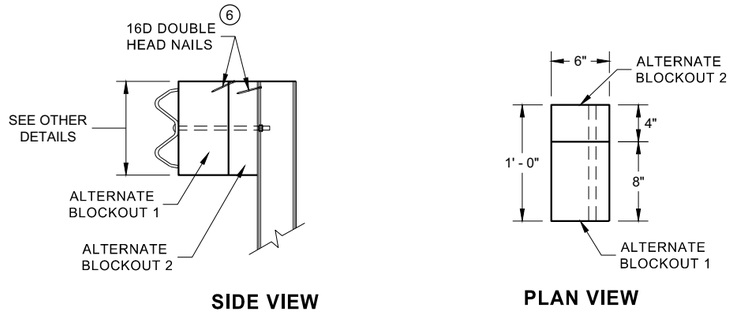

## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION




## DETAIL FOR 36" BLOCKOUT DEPTH




## POST BOLT, SPLICE BOLT AND RECESS NUT




## 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.

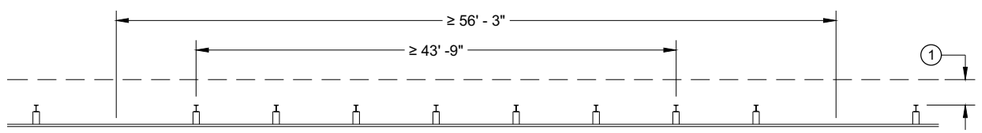
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(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.

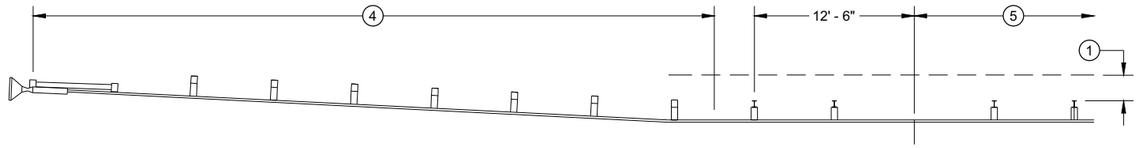
**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**



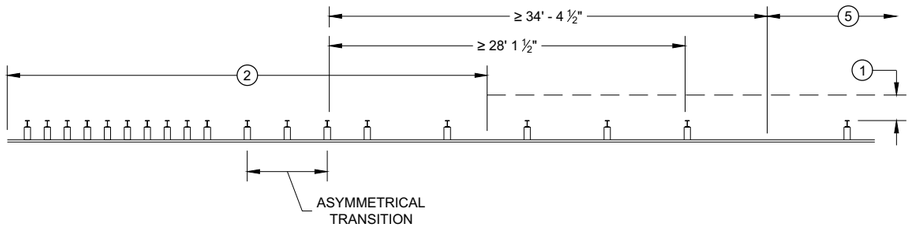
6
SDD 14B42 - 06c



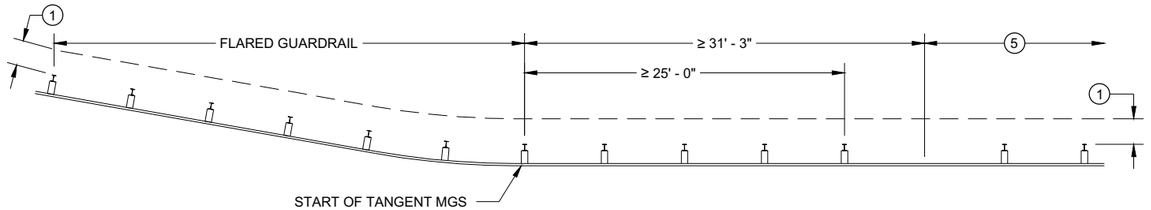

**MISSING POST IN NORMAL BEAM GUARD RUN**



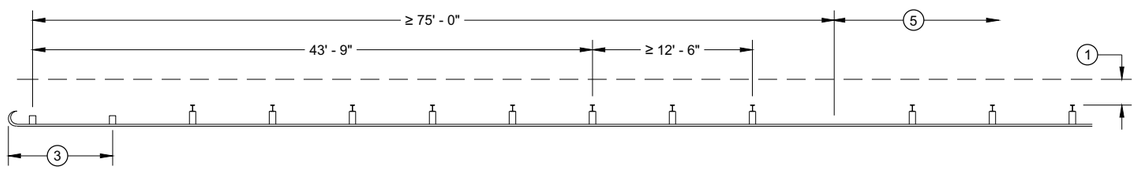

**MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT**



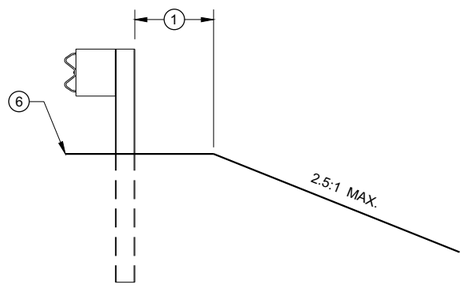

**MISSING POST NEAR APPROACH THRIE BEAM TRANSITION**




**MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD**




**MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL**




**CROSS SECTION VIEW**

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

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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




6


SDD 14B42 - 06d

## 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.

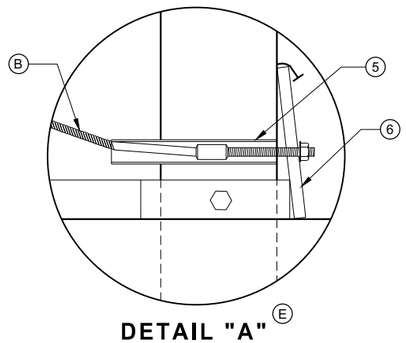
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

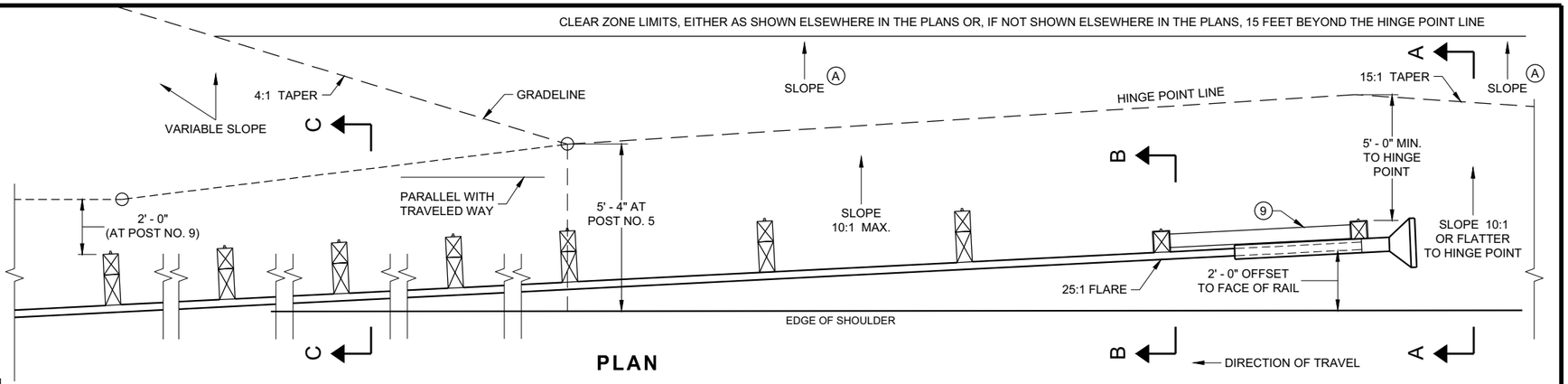
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

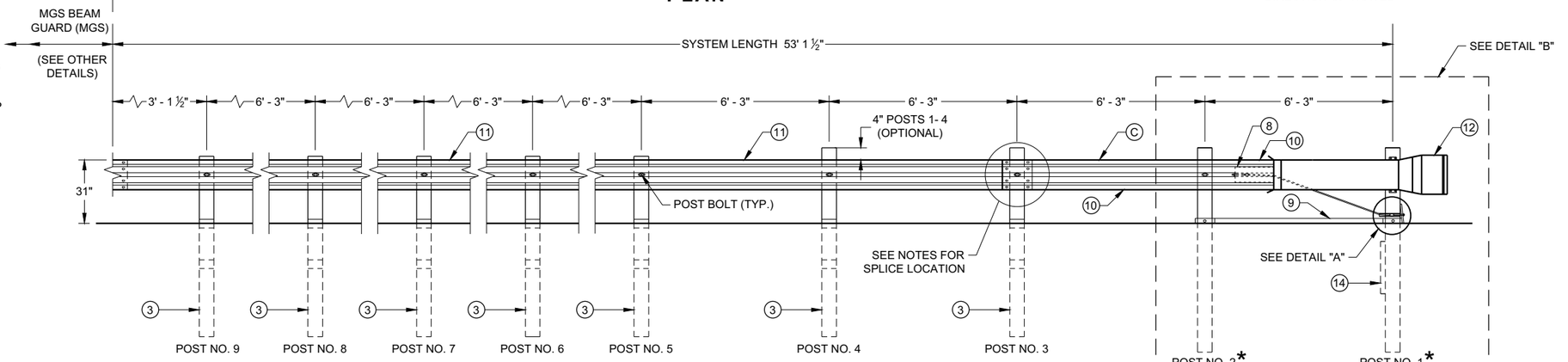
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

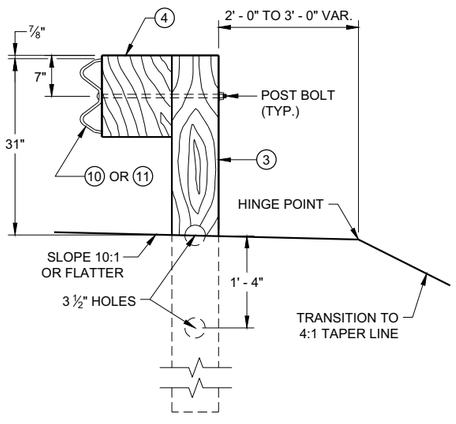
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



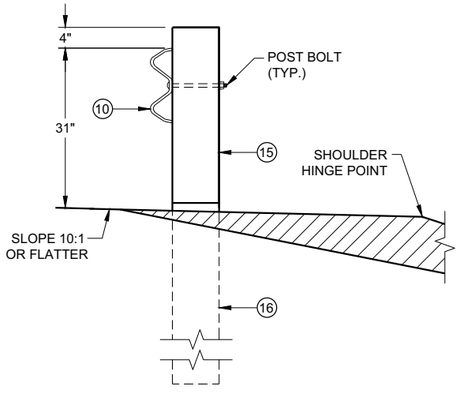

DETAIL "A" (E)



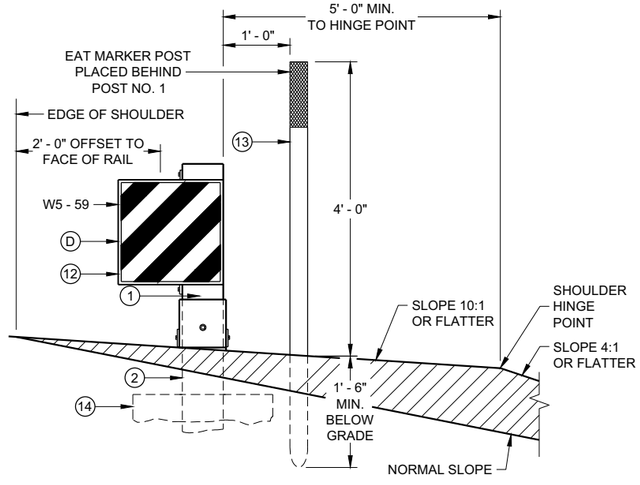



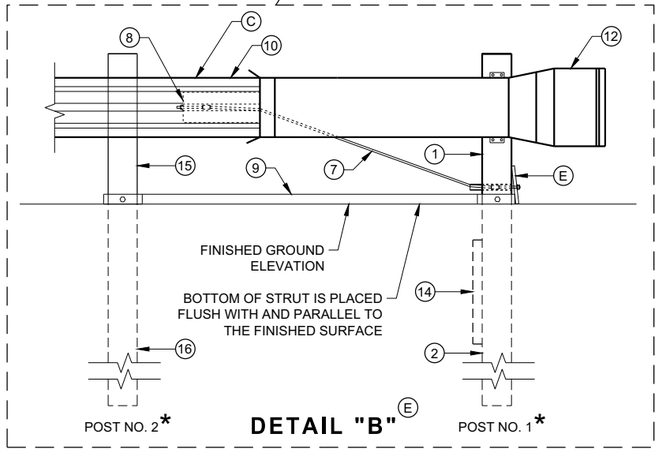

SECTION C - C
TYPICAL AT POST NOS. 3 - 9




SECTION B - B
TYPICAL AT POST NO. 2*




SECTION A - A
TYPICAL AT POST NO. 1*



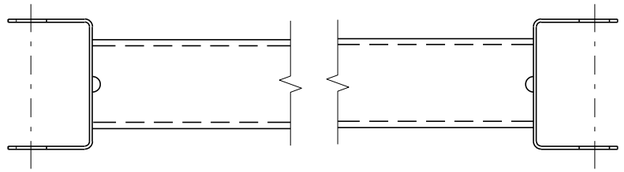

**MIDWEST GUARDRAIL SYSTEM**
**ENERGY ABSORBING TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SDD 14B44 - 04a

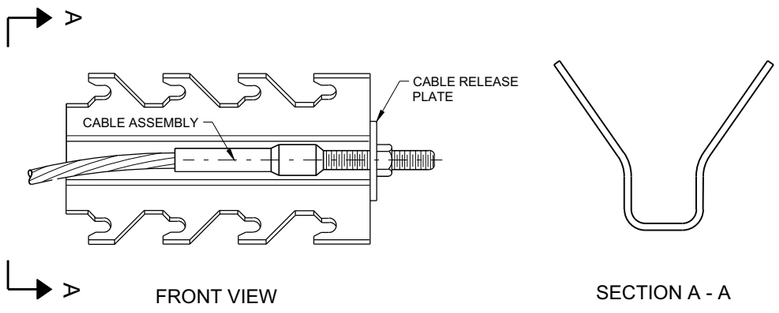
SDD 14B44 - 04a



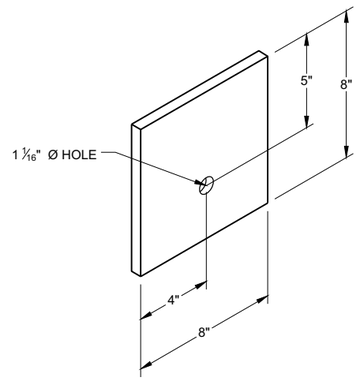
GENERIC GROUND STRUT ⑨ Ⓔ

## BILL OF MATERIALS

| PART NO. | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>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.<br>SECTIONS VARY IN LENGTH. |
| ⑫ | IMPACT HEAD |
| ⑬ | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST) |
| ⑭ | SOIL PLATE |
| ⑮ | UPPER POST NO. 2 |
| ⑯ | LOWER POST NO. 2 |




GENERIC ANCHOR CABLE BOX ⑧ Ⓔ




BEARING PLATE ⑥ Ⓔ

6

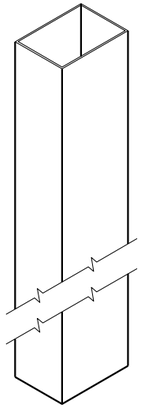
6

SDD 14B44 - 04b

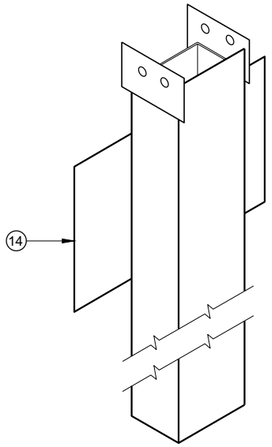
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM**
**ENERGY ABSORBING TERMINAL (MGS)**

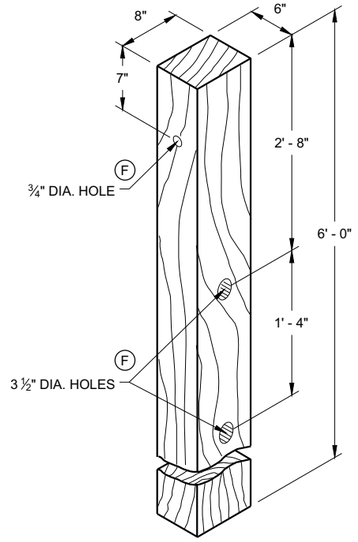
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



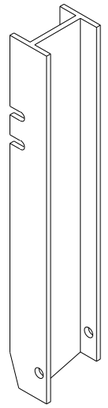
**UPPER POST NO. 1** (1) (E)



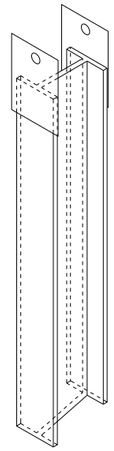

**LOWER POST NO. 1** (2) (E)



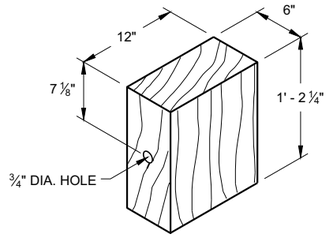

**WOOD CRT POST** (3) (E)
POSTS NUMBER 3-9



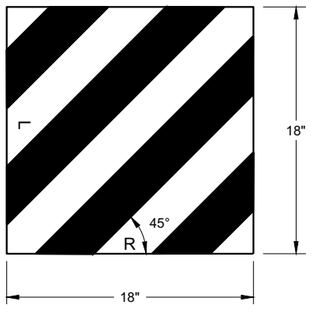
**UPPER POST NO. 2** (15) (E)



**LOWER POST NO. 2** (16) (E)

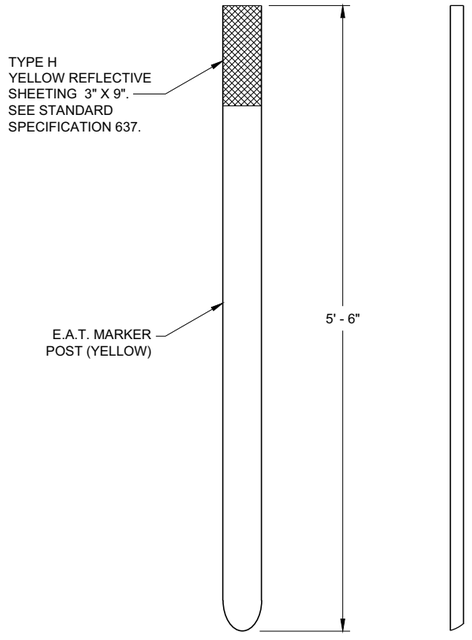



**WOOD BLOCKOUT** (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



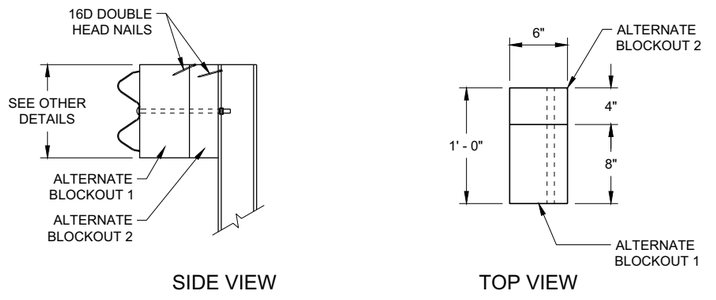

W5 - 59

**REFLECTIVE SHEETING DETAIL** (E)




FRONT VIEW SIDE VIEW

**E.A.T. MARKER POST** (13)




SIDE VIEW TOP VIEW

**ALTERNATE WOOD BLOCKOUT DETAIL**

6

SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

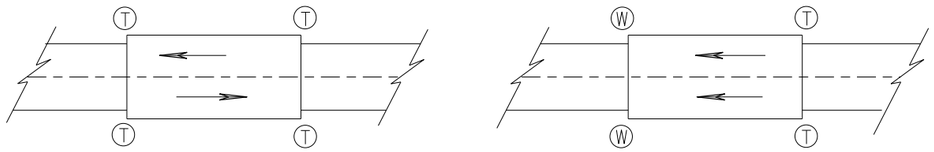
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

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.

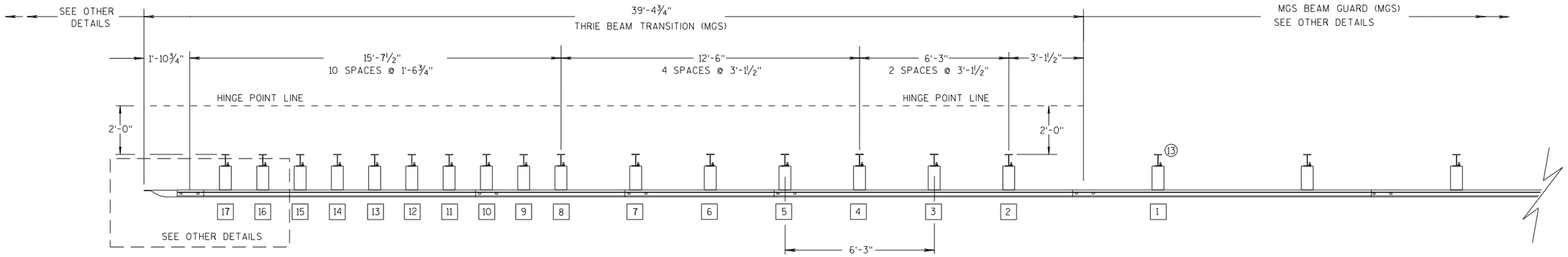
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

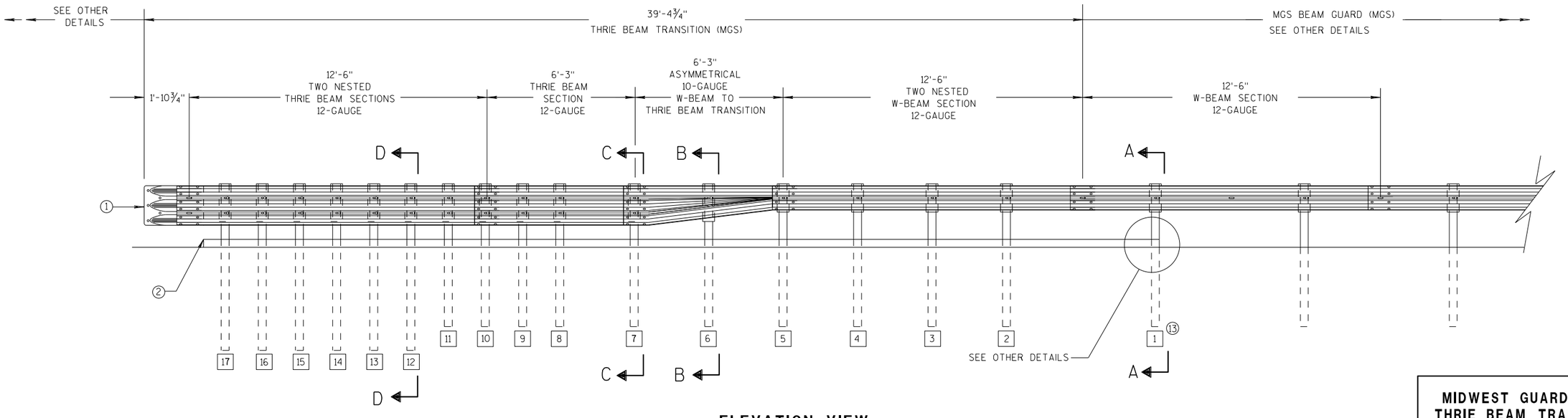
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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

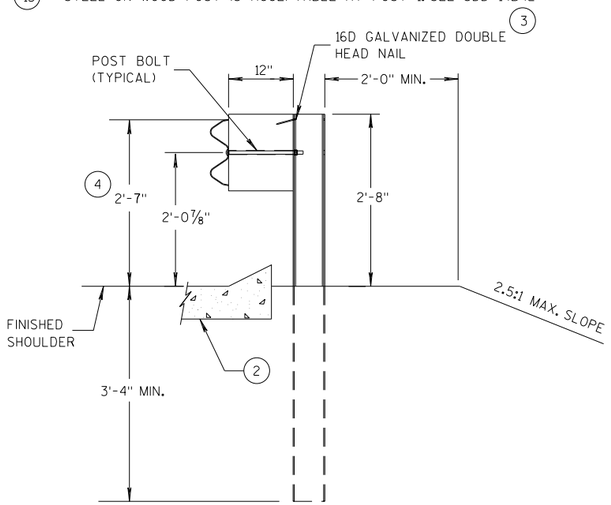
## GENERAL NOTES

(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.

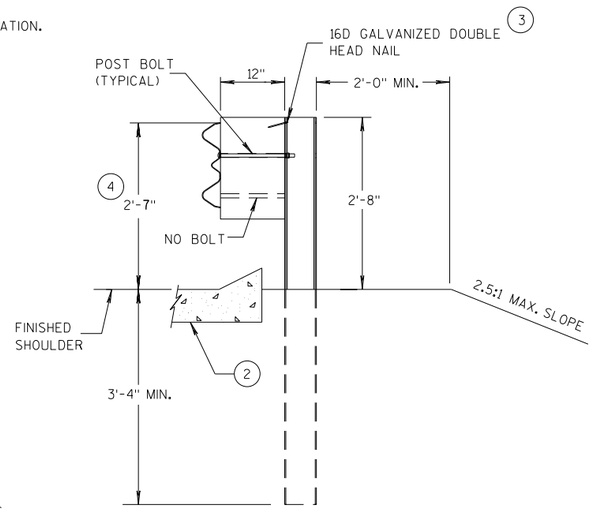
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



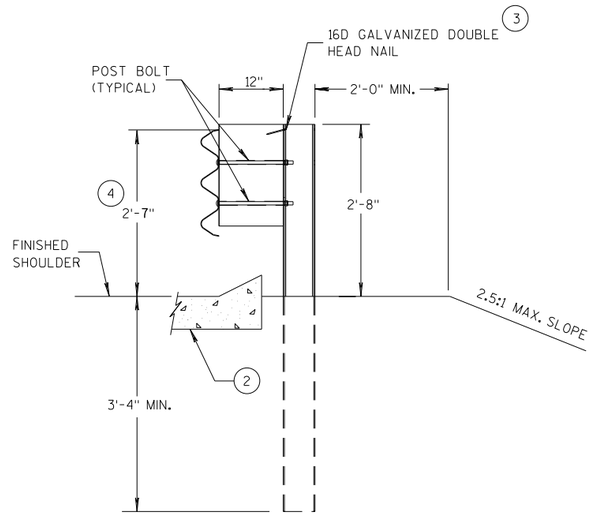

SECTION A-A (13)

**POSTS 1-5**



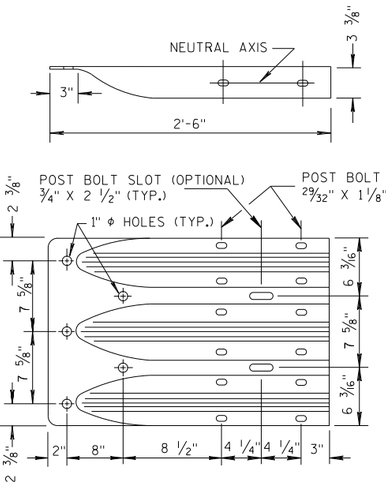

SECTION B-B

**POST 6**

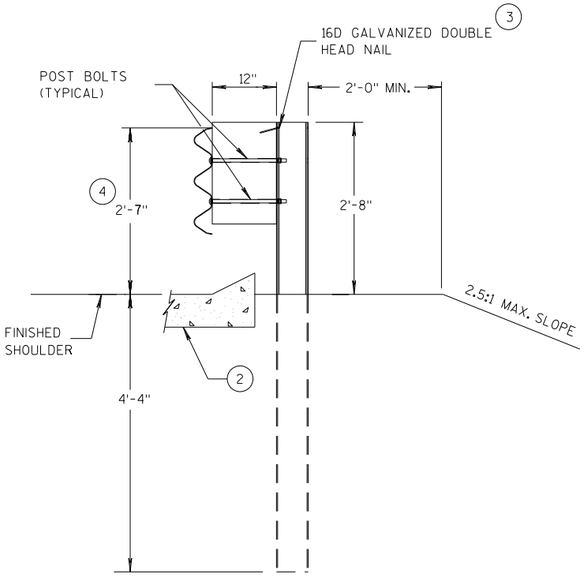



SECTION C-C

**POSTS 7-11**

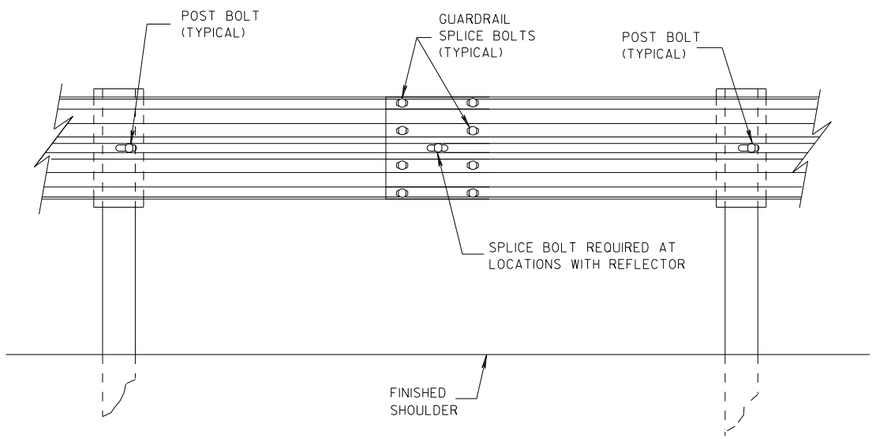



**THRIE BEAM TERMINAL CONNECTOR**




SECTION D-D

**POSTS 12-17**




**SPLICE DETAIL**

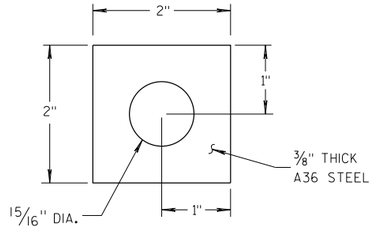
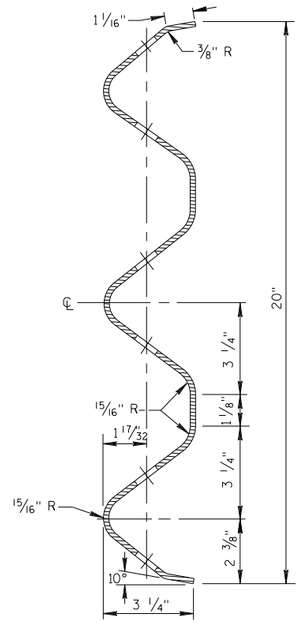



**PLATE WASHER DETAIL**




**SECTION THRU THRIE BEAM RAIL ELEMENT**

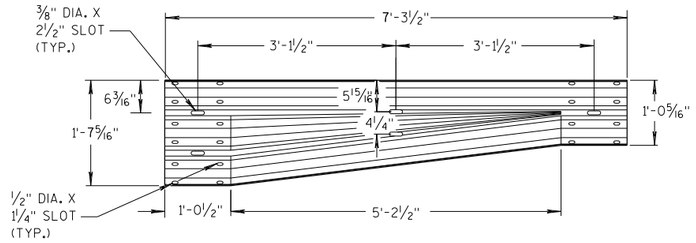
**MIDWEST GUARDRAIL SYSTEM**
**THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

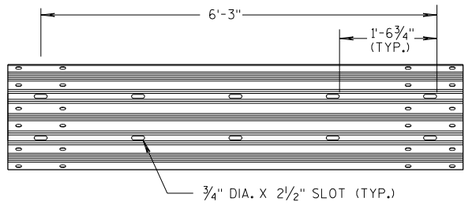



6

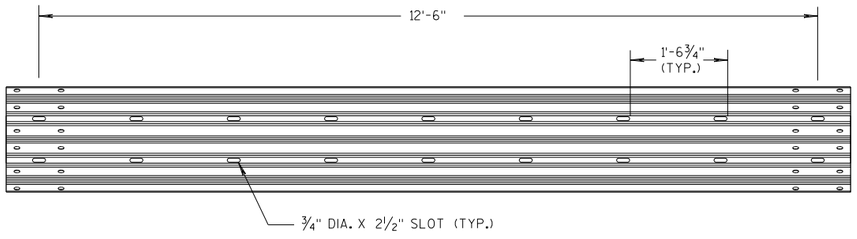
S.D.D. 14 B 45-5b



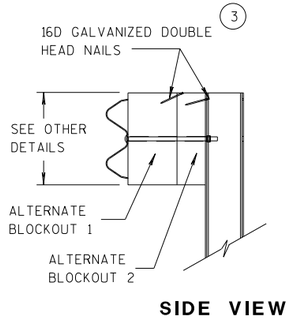

## W-BEAM TO THRIE BEAM TRANSITION SECTION



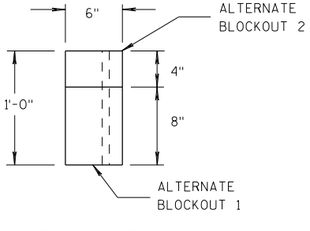

## 6'-3" THRIE BEAM SECTION




## 12'-6" THRIE BEAM SECTION

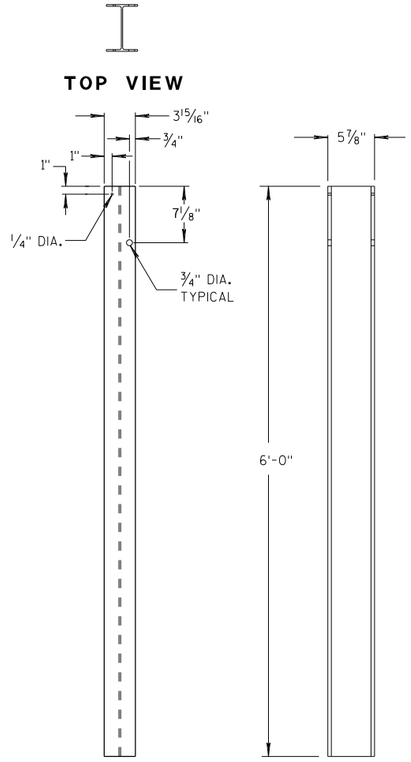



SIDE VIEW



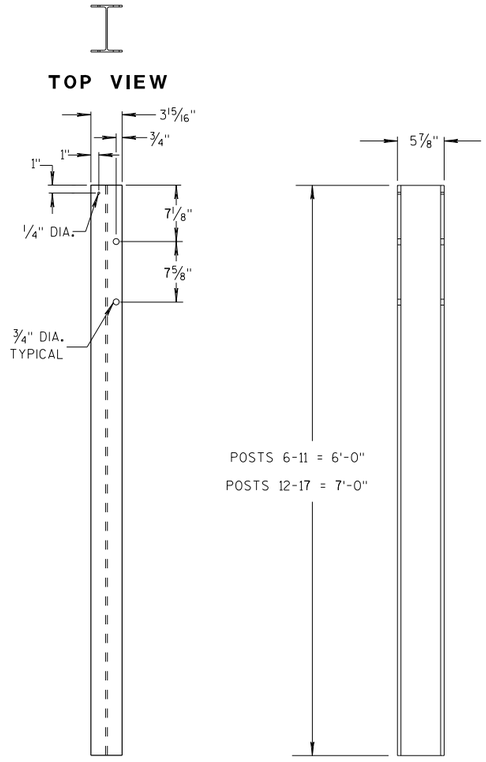

TOP VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL



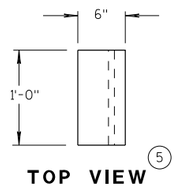

FRONT VIEW SIDE VIEW

## STEEL POSTS 1-5 (13)

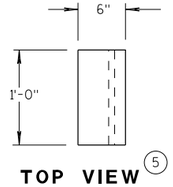



FRONT VIEW SIDE VIEW

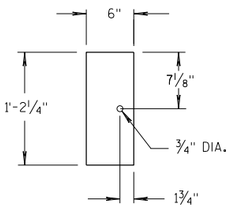
## STEEL POSTS 6-17




TOP VIEW (5)

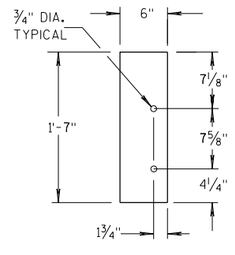



TOP VIEW (5)




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.

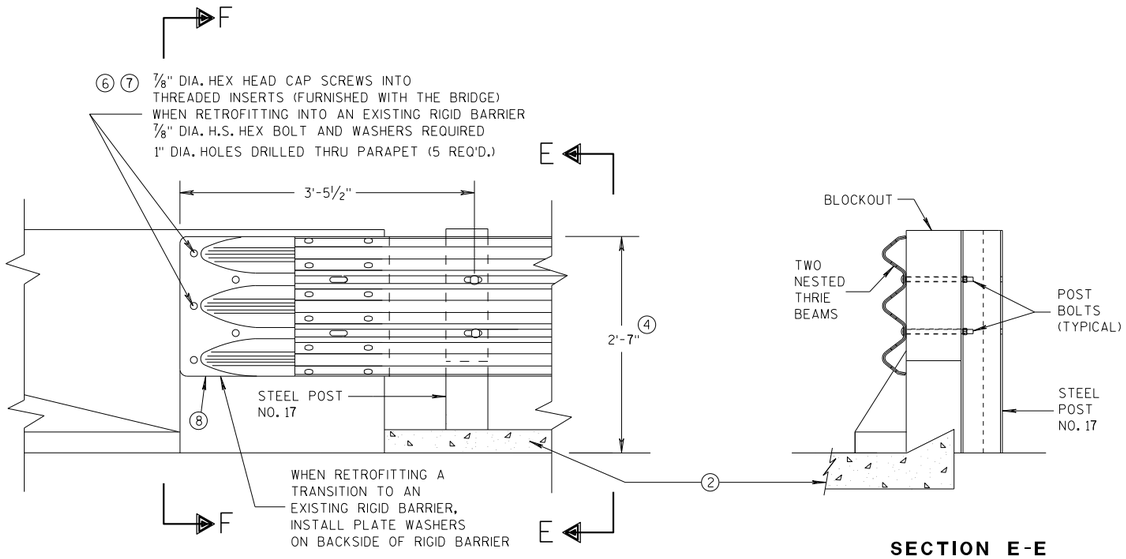
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF




6
S.D.D. 14 B 45-5c




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.

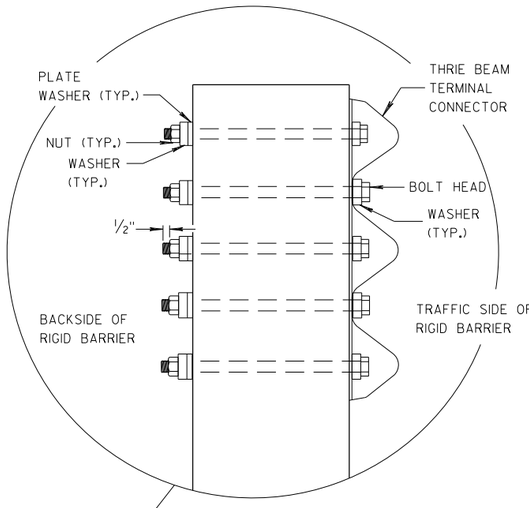
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

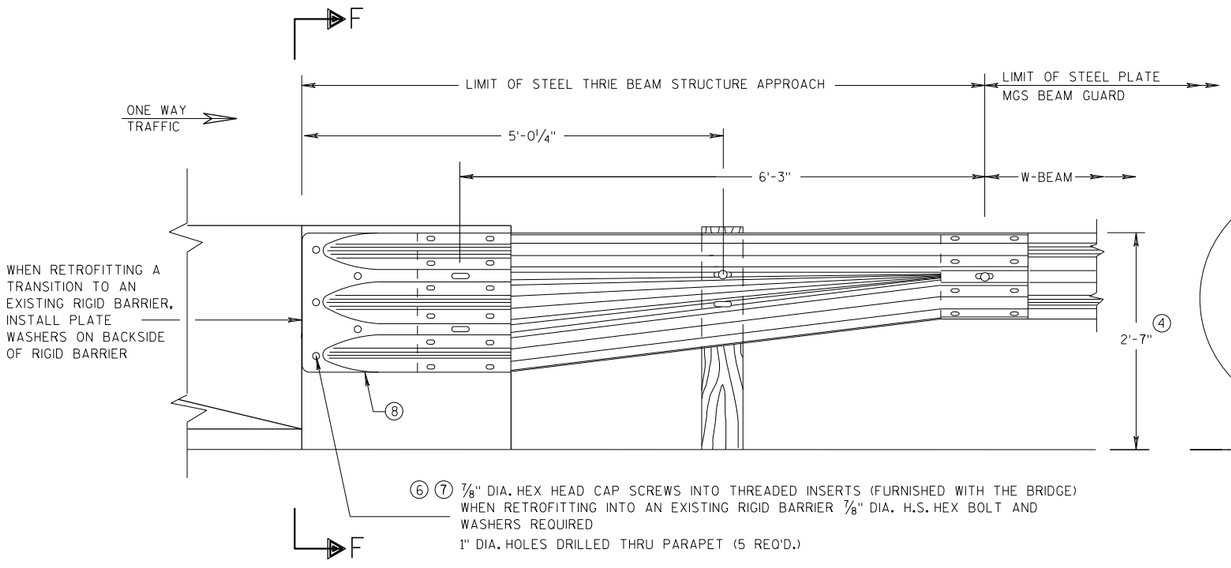
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

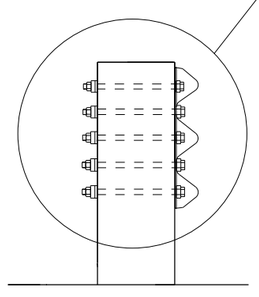
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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".

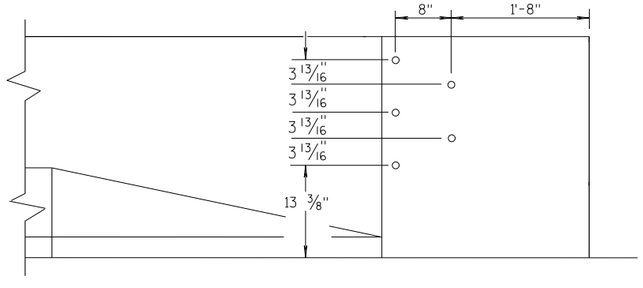



FRONT VIEW



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

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



6

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

# 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.

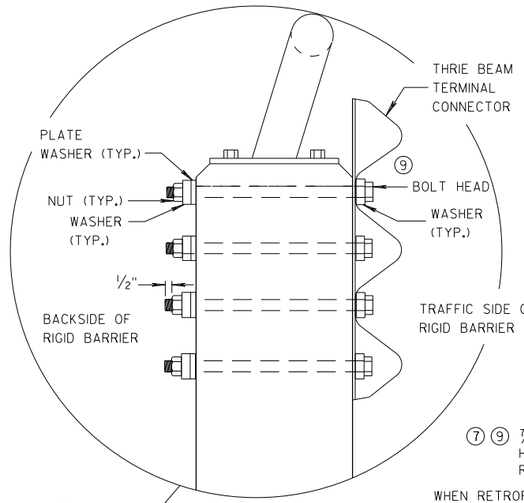
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

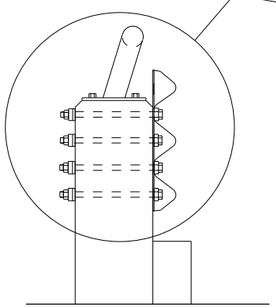
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.

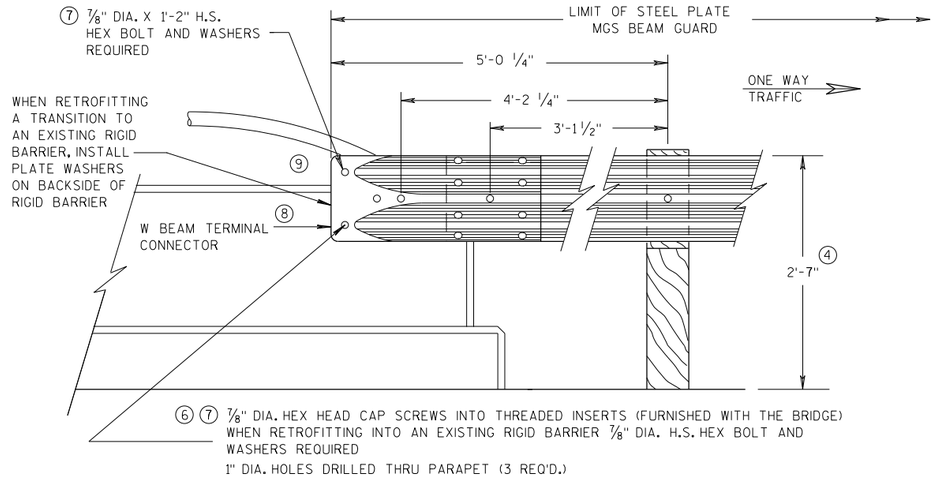
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(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.



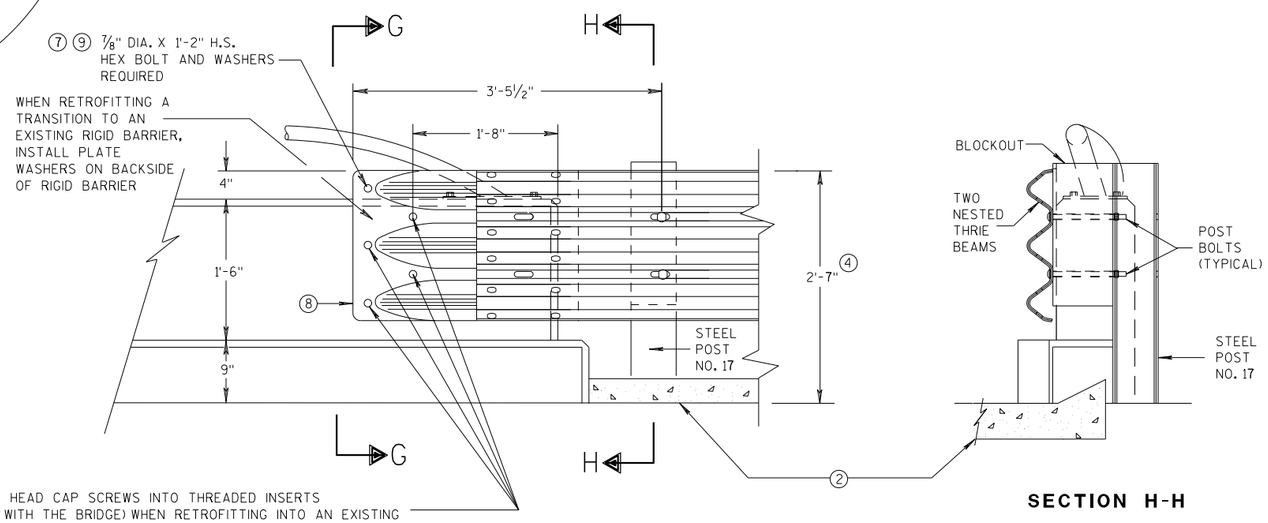
SECTION G-G




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
DEPARTMENT OF TRANSPORTATION

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

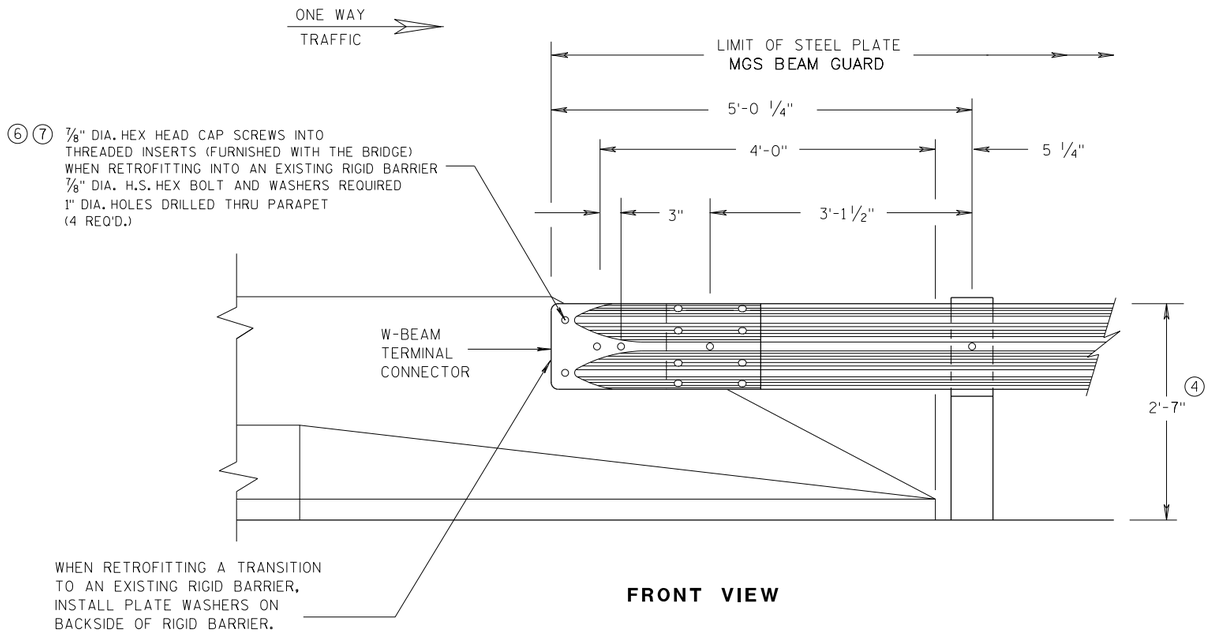


6

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

6

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




FRONT VIEW

## W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

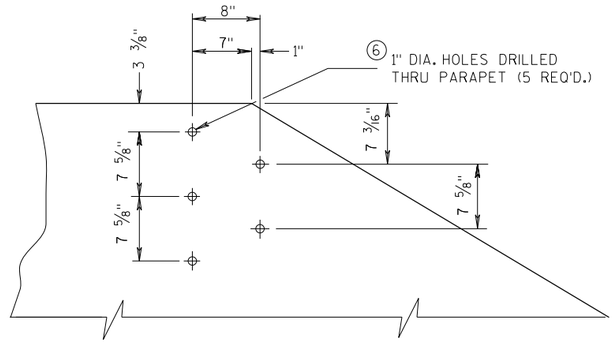
## GENERAL NOTES

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

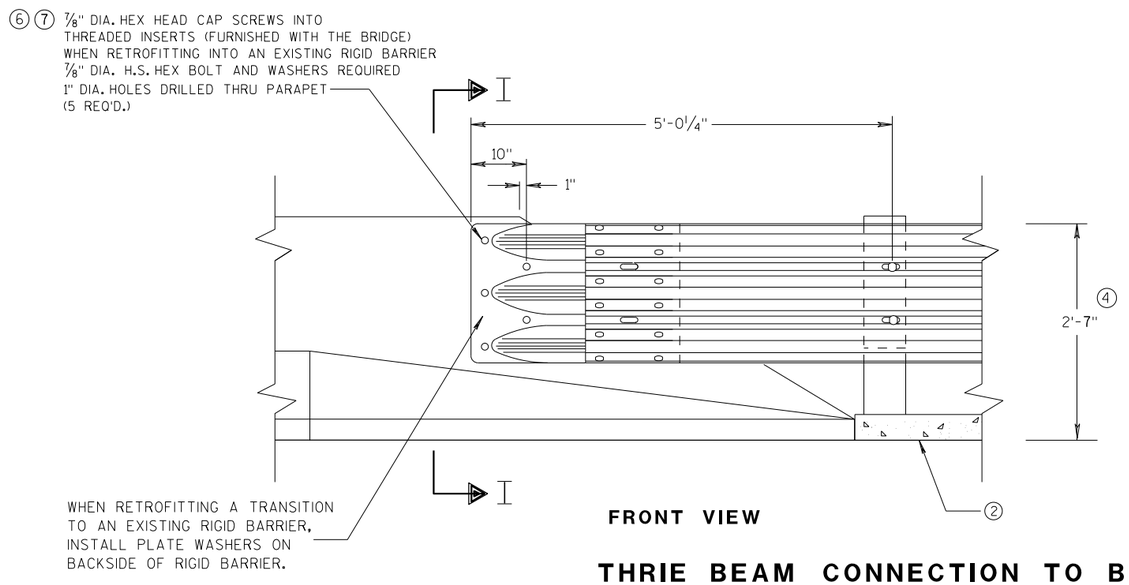
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

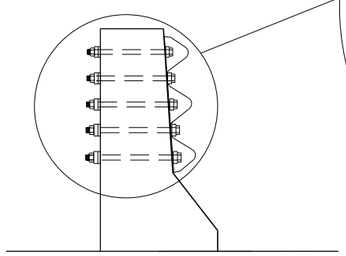
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.



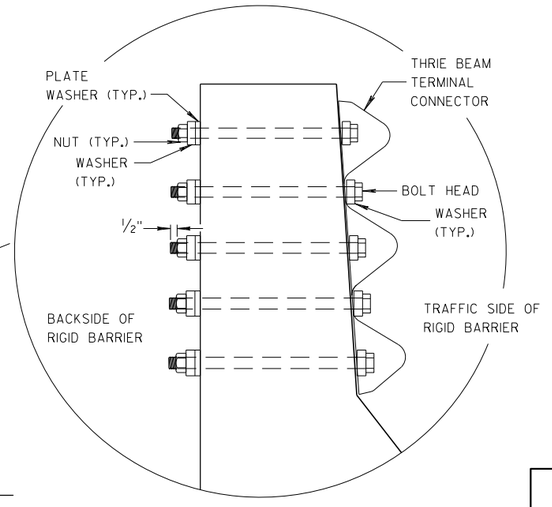

DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION




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

APPROVED
07/2018 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS I[illegible]ENT
UNIT SUPERVI
FHWA

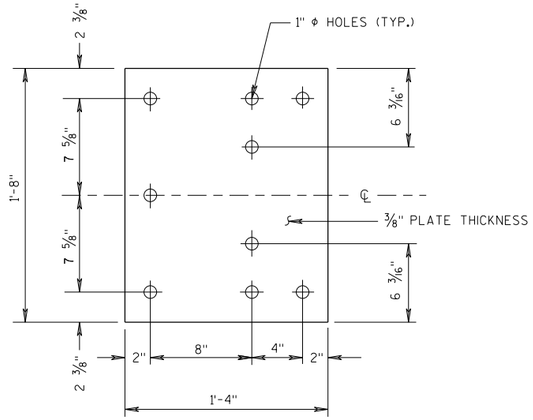


6

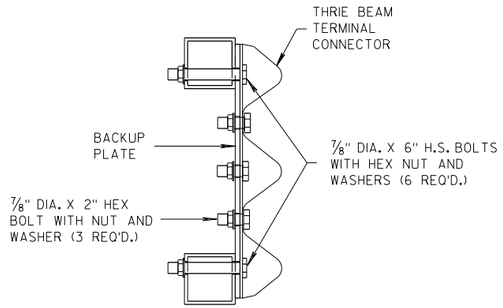
S.D.D. 14 B 45-5f

6

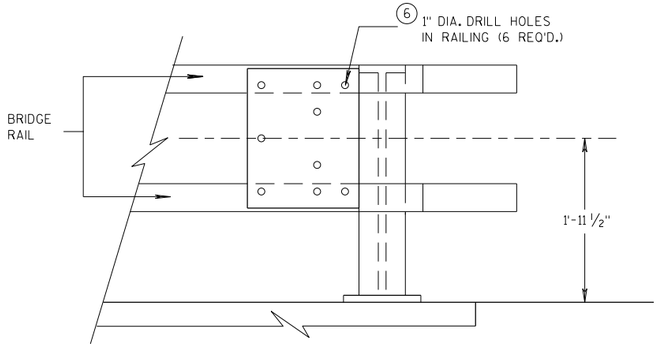
S.D.D. 14 B 45-5f




## BACK-UP PLATE DETAIL




## SECTION J-J

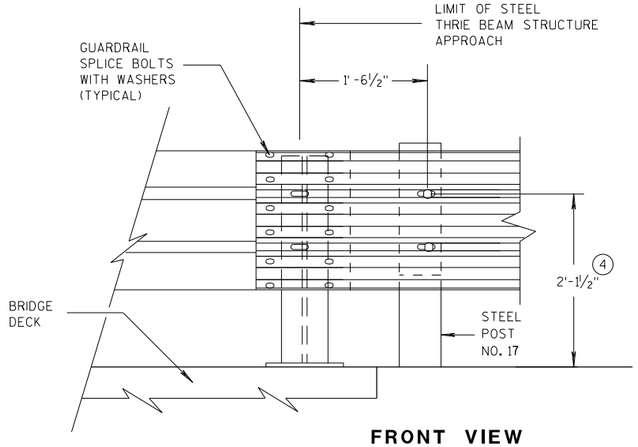



## BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

# GENERAL NOTES

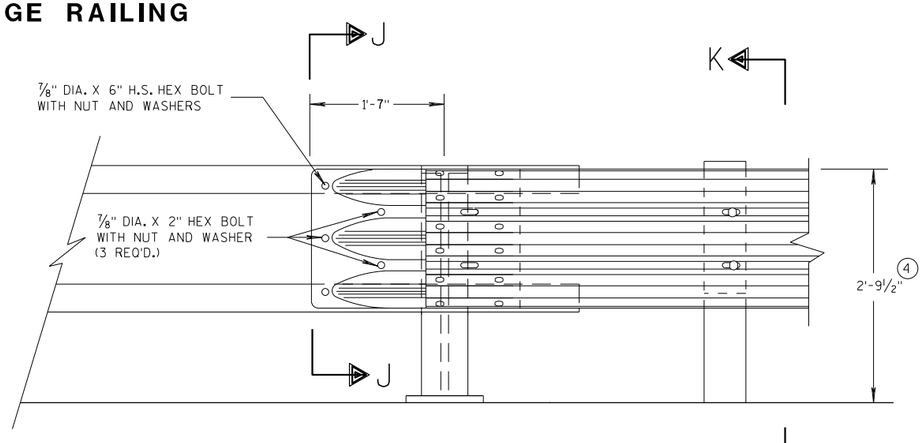
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

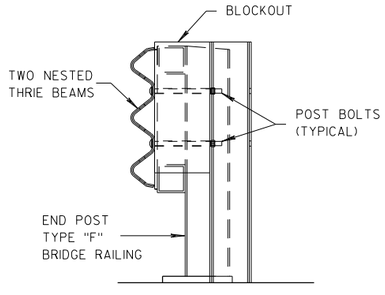



FRONT VIEW

## THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"




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

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

191

6

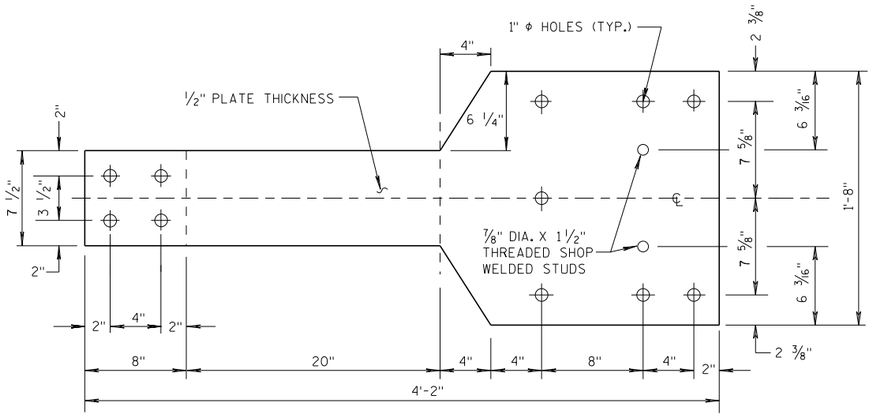
S.D.D. 14 B 45-5g

6

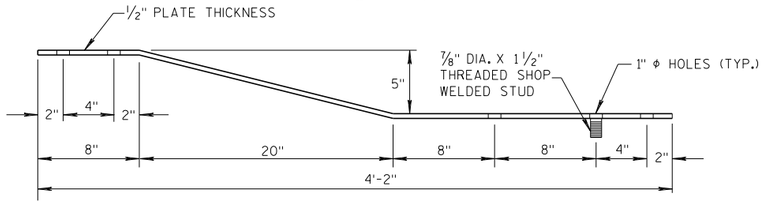
S.D.D. 14 B 45-5g

## GENERAL NOTES

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

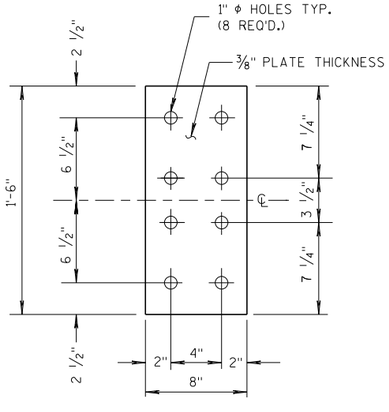



FRONT VIEW



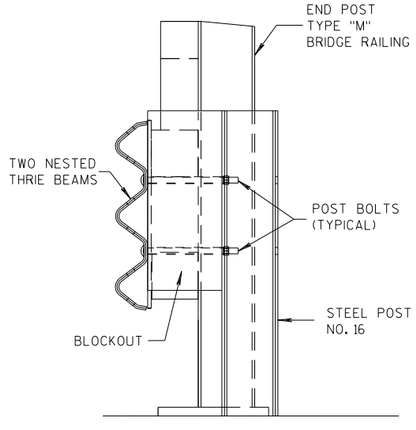

PLAN VIEW

## BACK-UP PLATE DETAIL, TYPE "M"

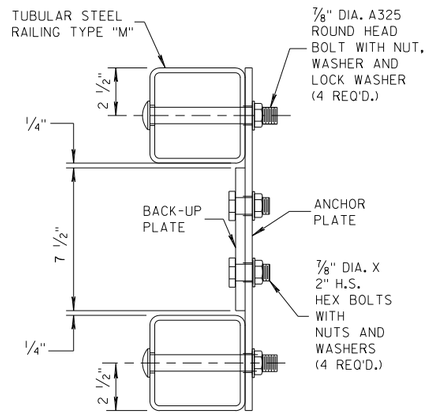



FRONT VIEW

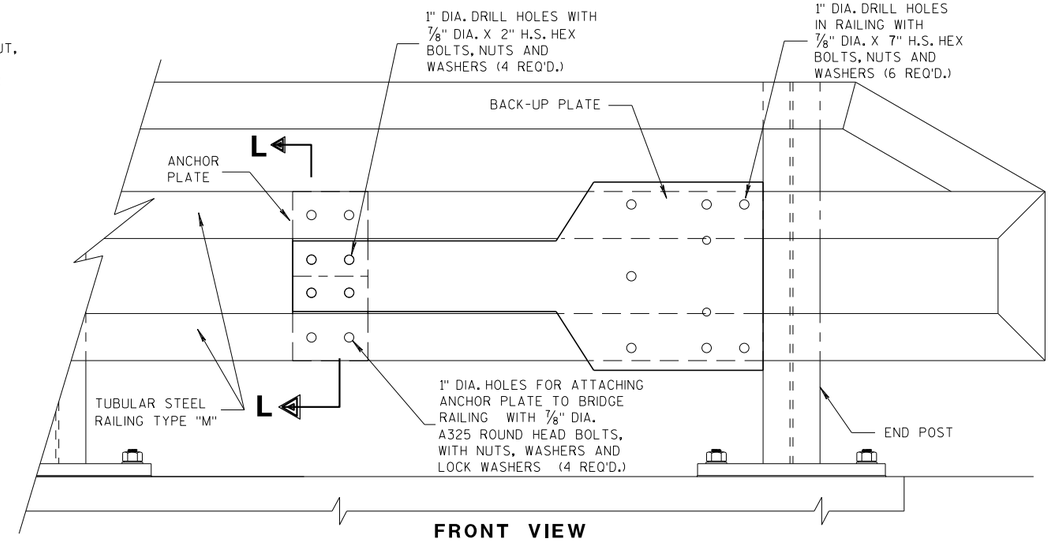
## ANCHOR PLATE DETAIL, TYPE "M"




SECTION M-M

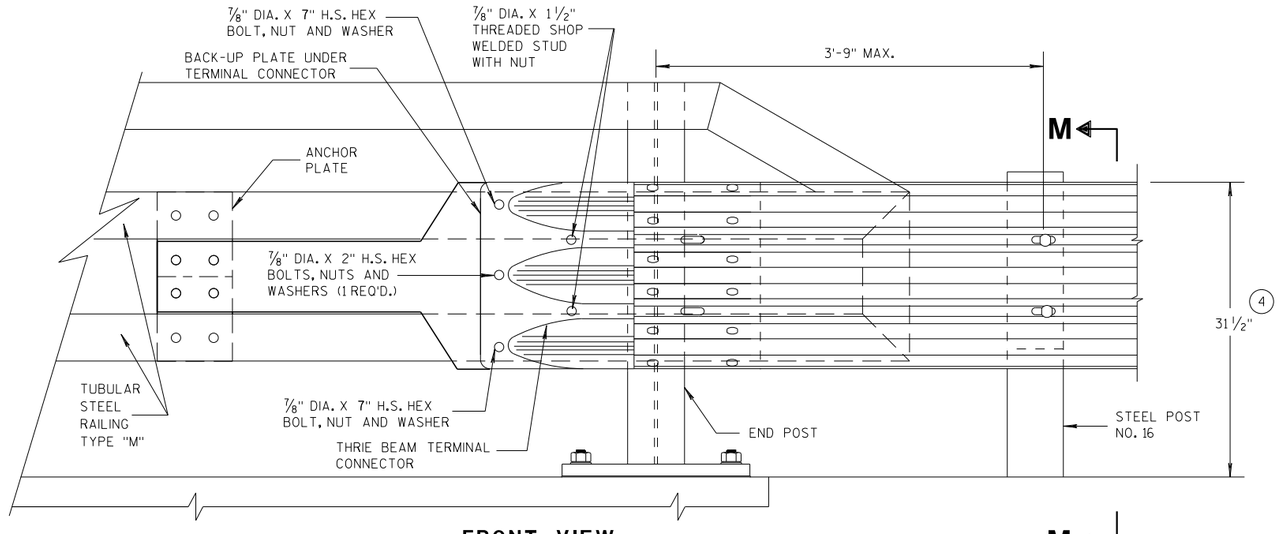



SECTION L-L

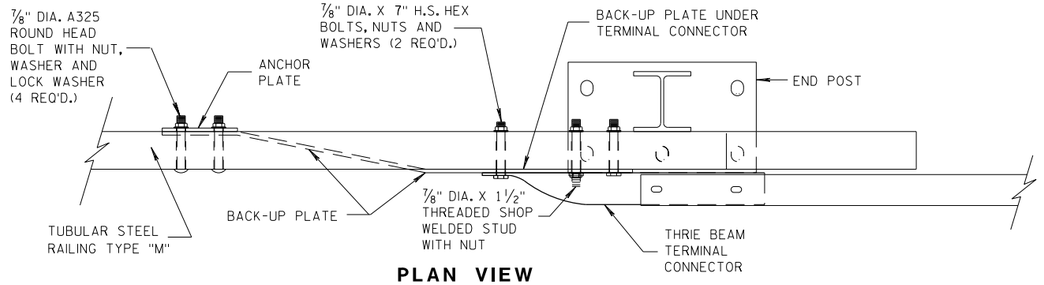



FRONT VIEW

## 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

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

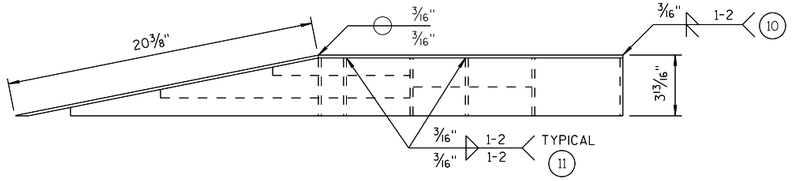


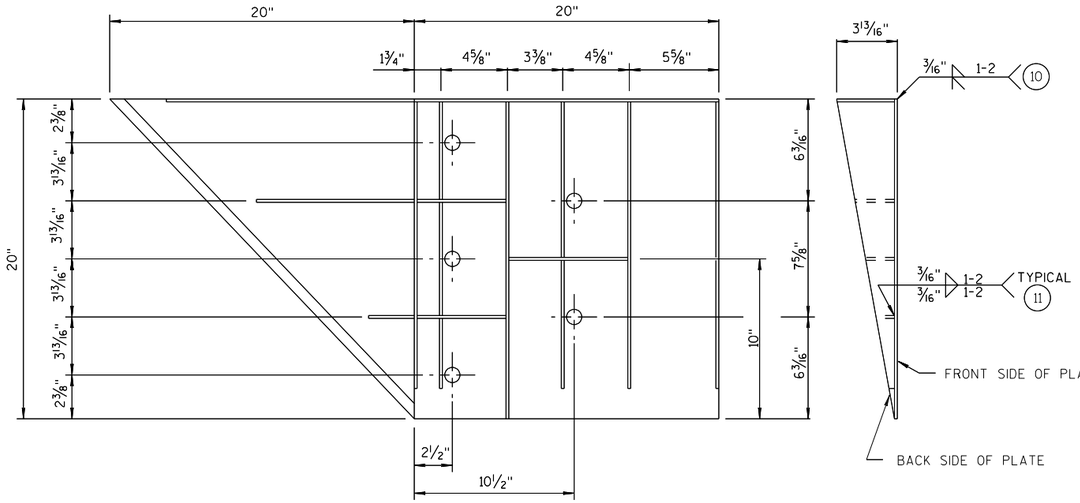
6

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

6

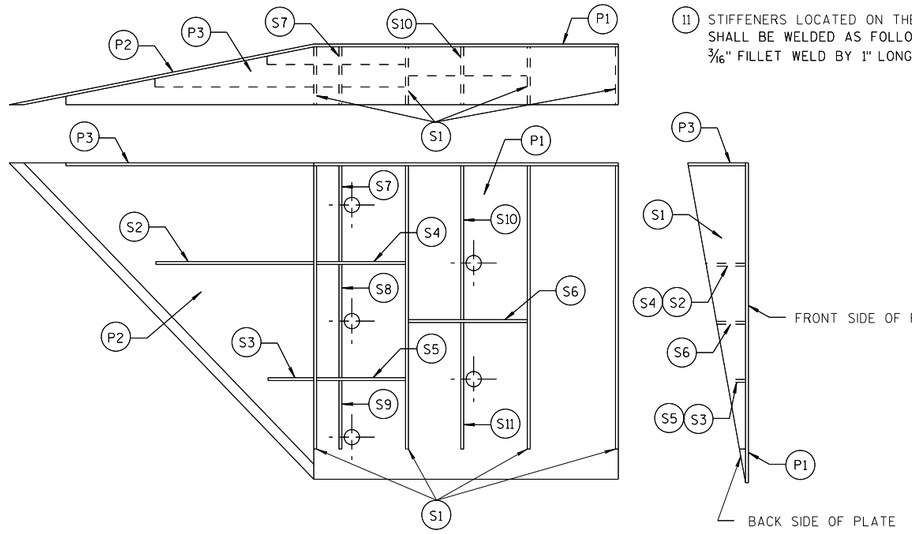
S.D.D. 14 B 45-5h




## 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)**

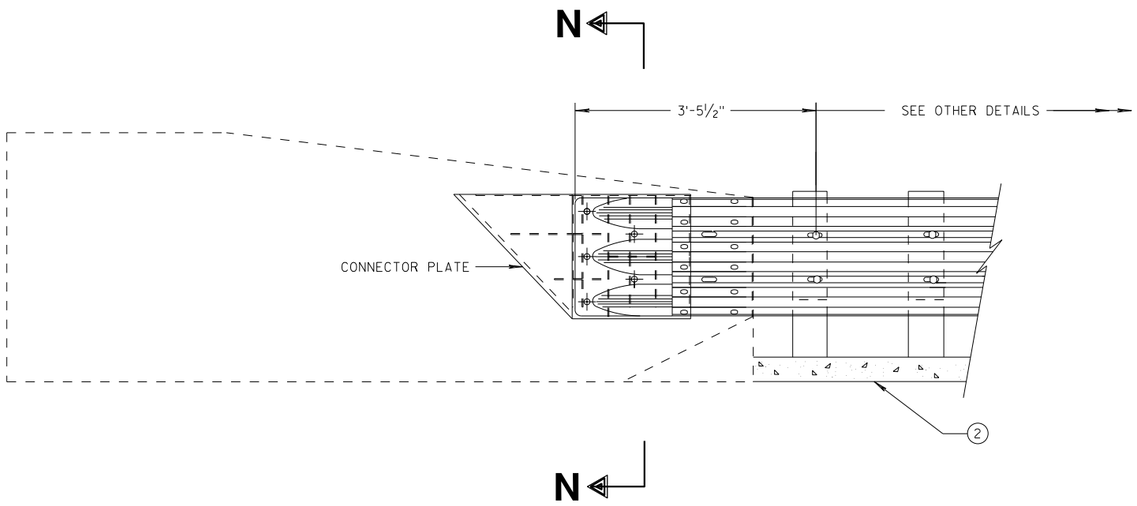
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

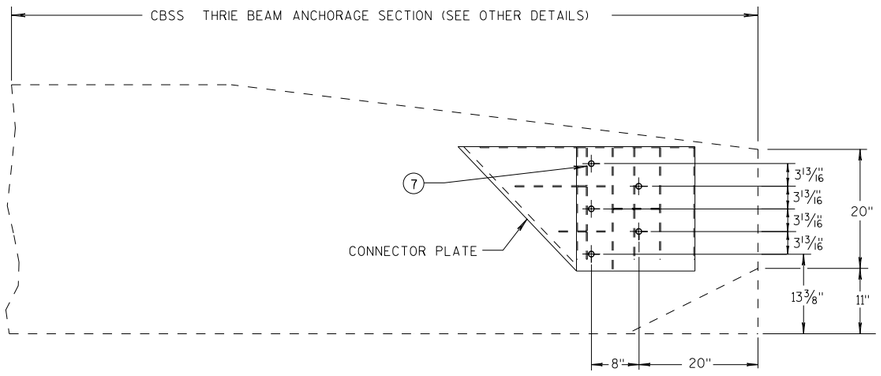
/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI




6
S.D.D. 14 B 45-5i




## THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



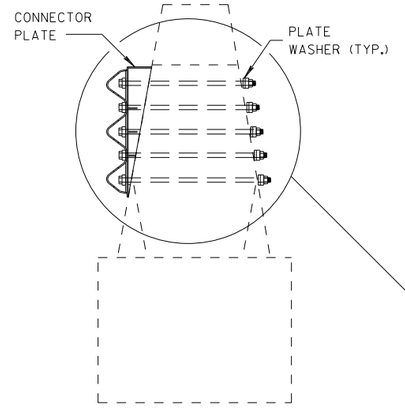

## SINGLE SLOPE CONNECTION PLATE PLACEMENT

## GENERAL NOTES

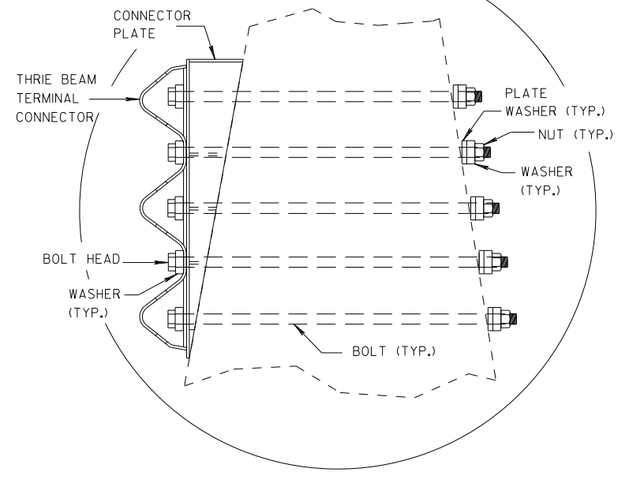
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DI
UNIT SUPERVIS
FHWA

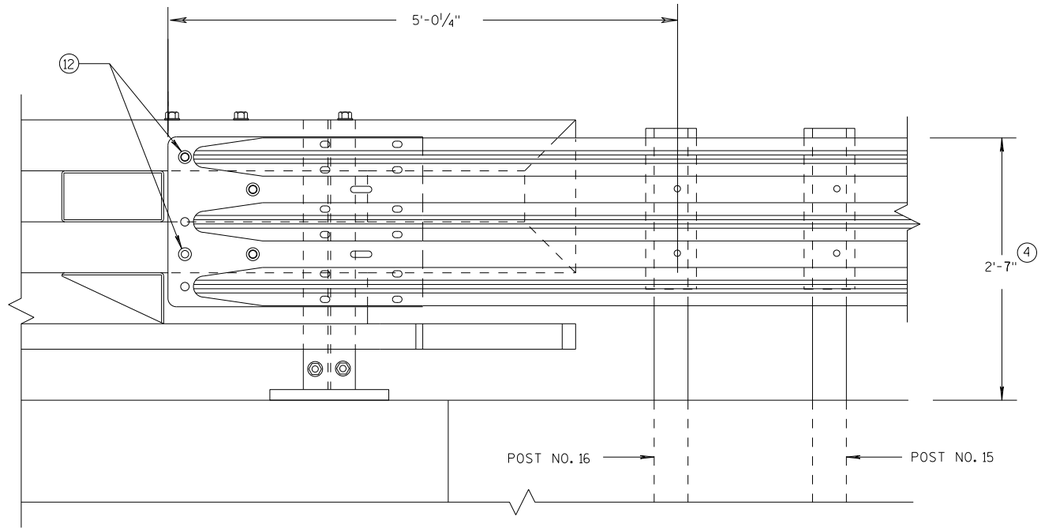


6

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

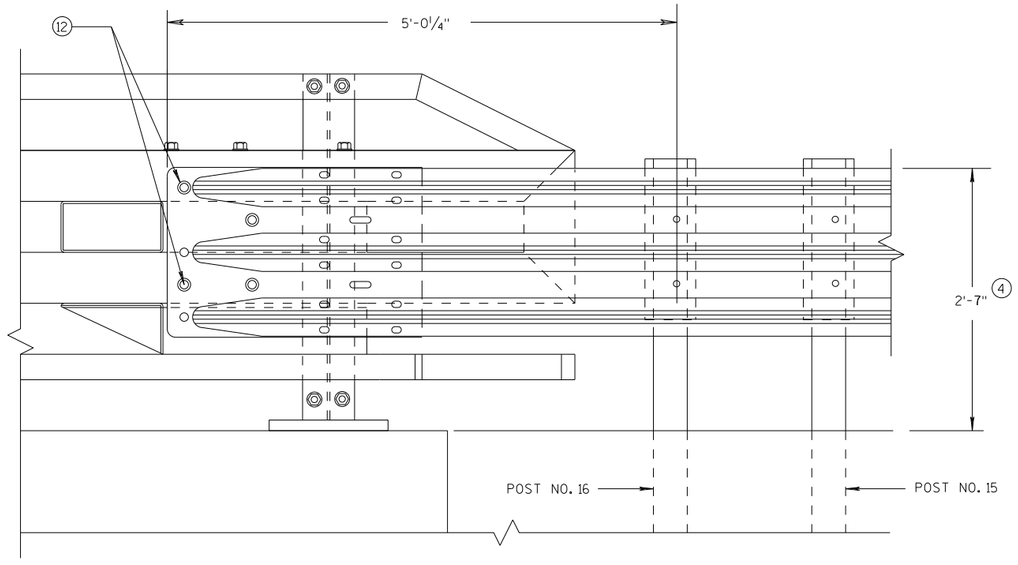
6

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

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS



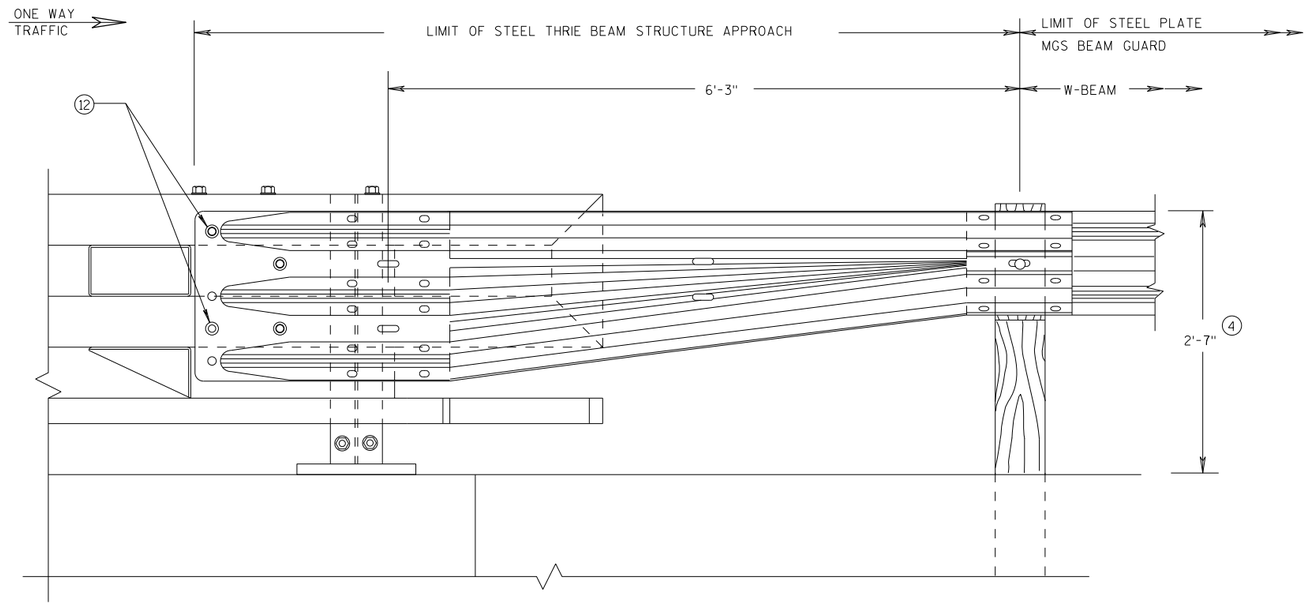
NT

6

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

6

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




FRONT VIEW

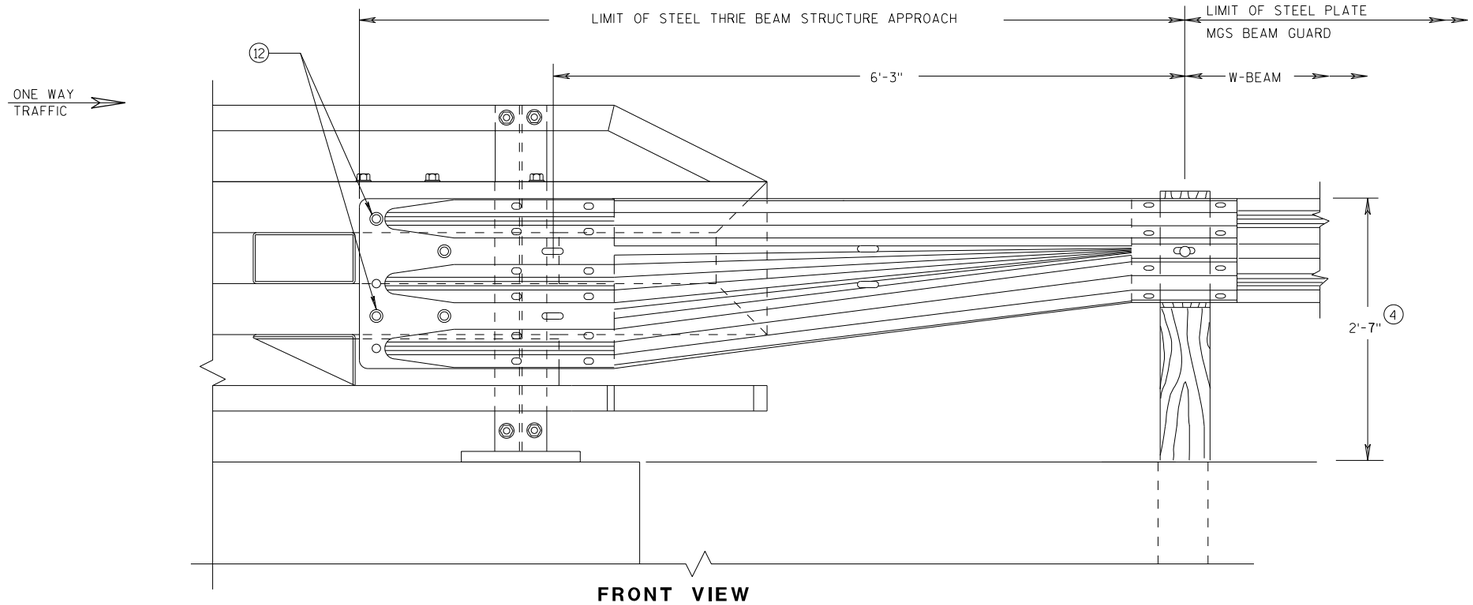
## W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(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

APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
NT
FHWA

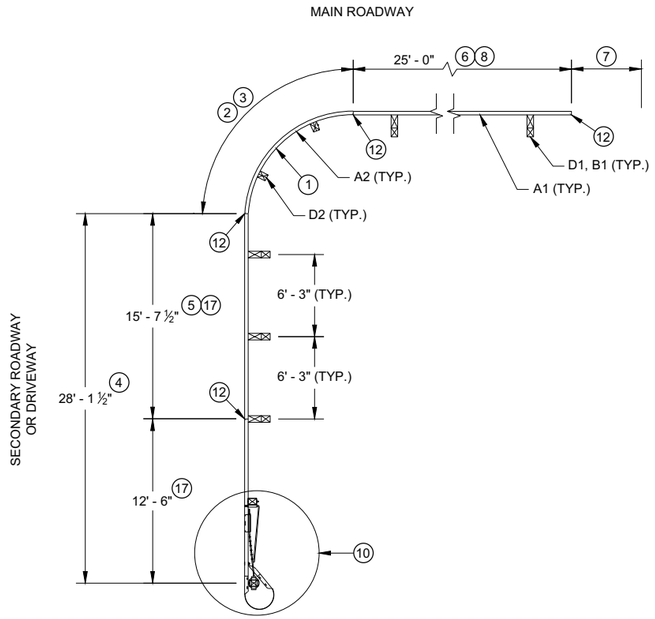


6

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

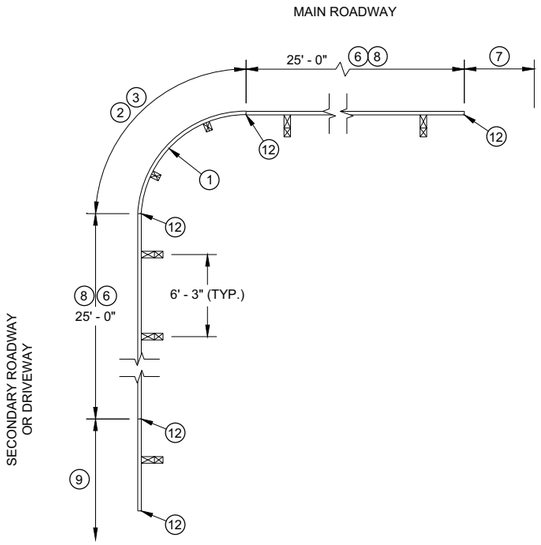
6

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




**PLAN VIEW**

## SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY

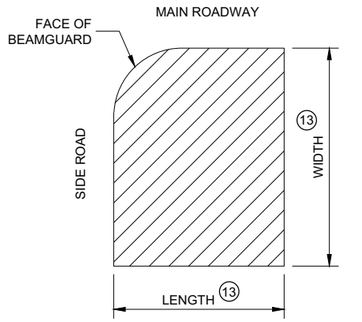



**PLAN VIEW**

## SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY

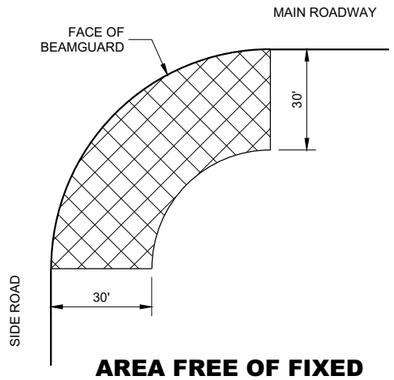
**TABLE FOR RADIUS OF 32' AND LESS**

| RADIUS (FT) | LENGTH (FT) | WIDTH (FT) |
|---|---|---|
| 8 | 25 | 15 |
| 16 | 30 | 15 |
| 24 | 40 | 20 |
| 32 | 50 | 30 |

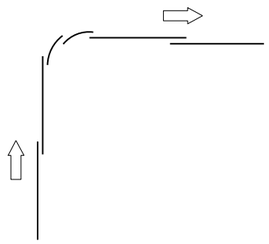



## AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS

16




## AREA FREE OF FIXED OBJECTS FOR RADIUS GREATER THAN 32'



## LAP SPLICE DETAIL

## GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

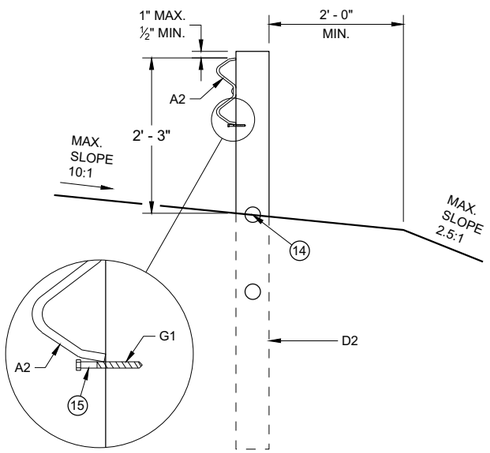
UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.

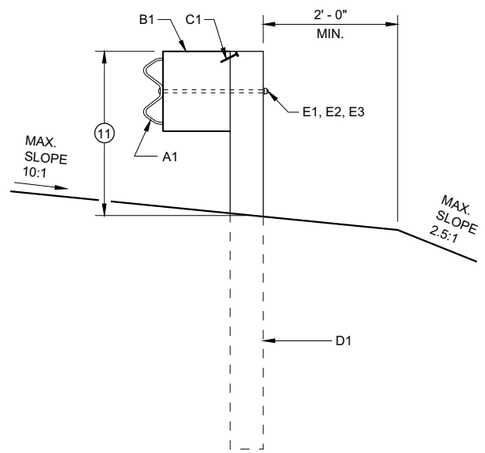
UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE ¼" TO ½" BEYOND THE NUT.

DRAWINGS ARE NOT TO SCALE.

1. RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
2. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.
3. WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
4. MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
5. ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
6. MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
7. BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
8. TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
9. ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
10. SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
11. HEIGHT VARIES. SEE NOTE 8 AND 8 .
12. BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
13. SEE TABLE FOR VALUES.
14. MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".
15. DRILL POST $^{15}/_{64}$" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
16. SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
17. TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

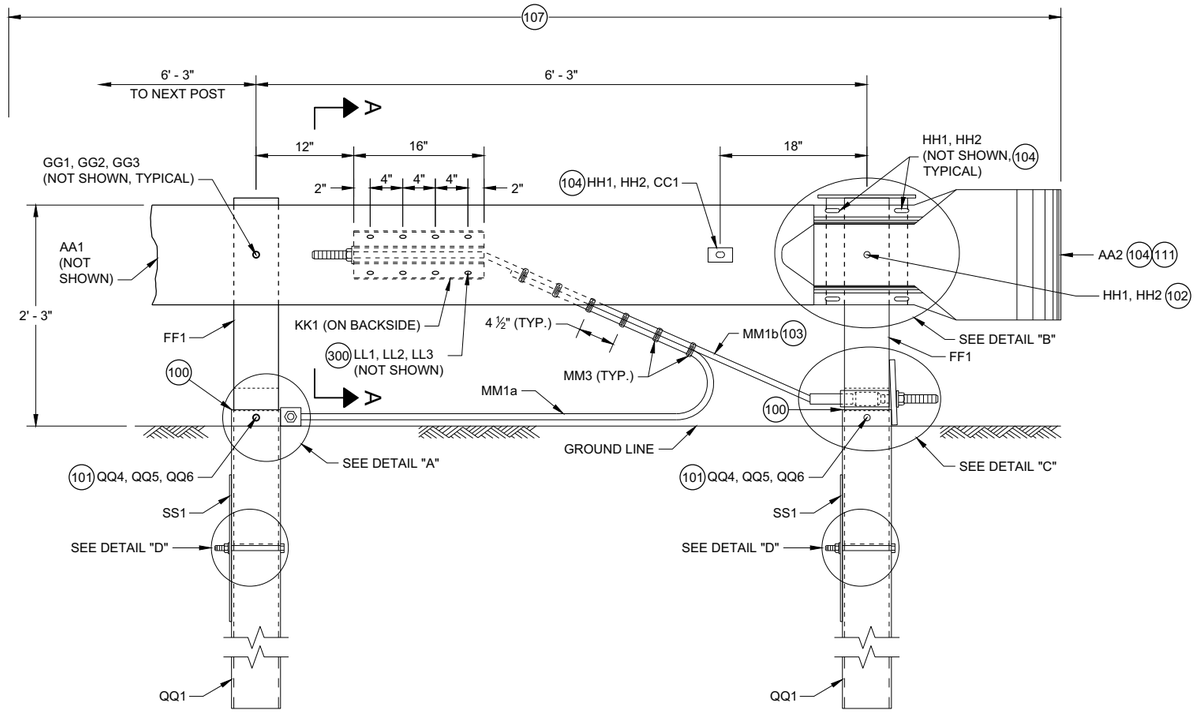



## CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



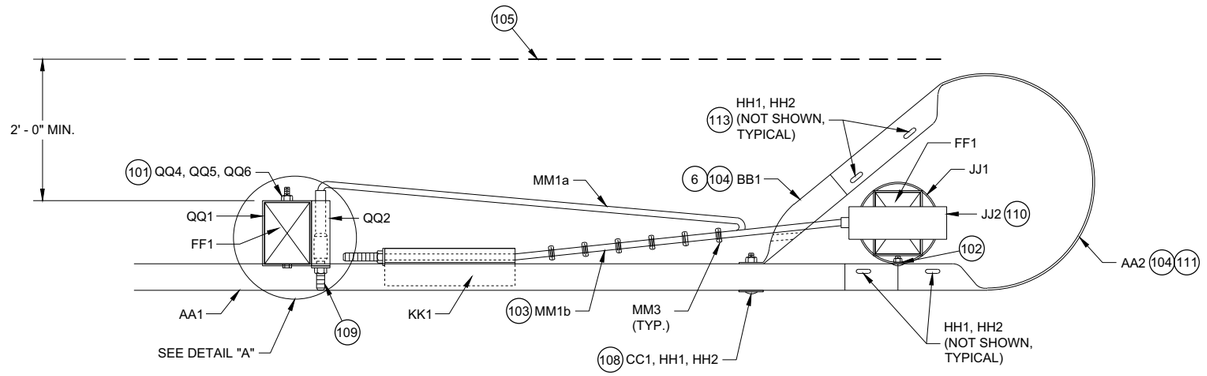

## BEAM GUARD POSTS IN HEIGHT TRANSITION

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**




**PROFILE VIEW**

**SHORT RADIUS TERMINAL**




**TOP VIEW**

**SHORT RADIUS TERMINAL**

## GENERAL NOTES

100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.

101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".

103 CABLE IS TAUT.

104 ADJUST AA2 AND BB1 TO FIT.

105 BREAK POINT OF SHOULDER.

106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.

107 PAY LIMIT FOR BEAM GUARD.

108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.

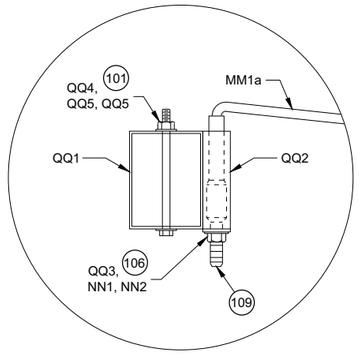
109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

110 SEE STEEL PIPE ASSEMBLY DETAILS.

111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.

112 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.

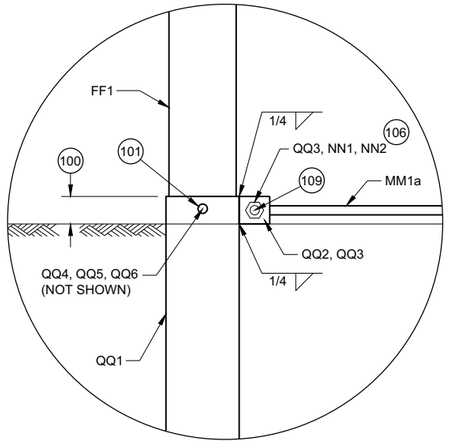
113 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.




**TOP VIEW**

**DETAIL "A"**

**(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)**




**PROFILE VIEW**

**DETAIL "A"**

6

SDD 14B53 - 01b

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

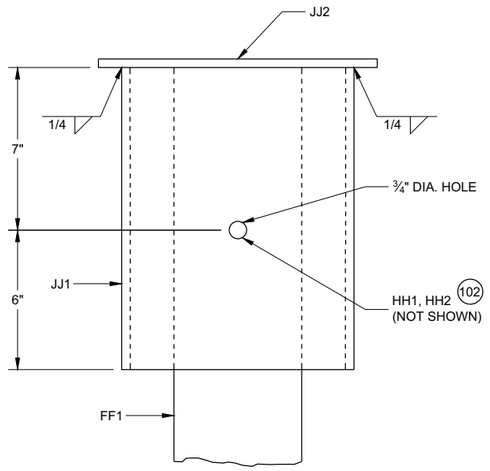


6

SDD 14B53 - 01b

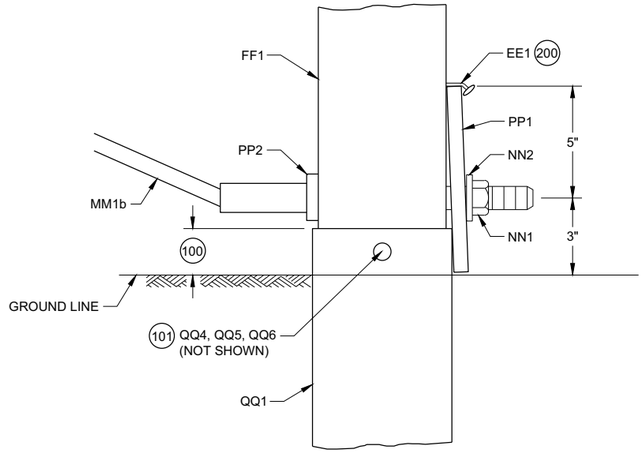
## GENERAL NOTES

(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.



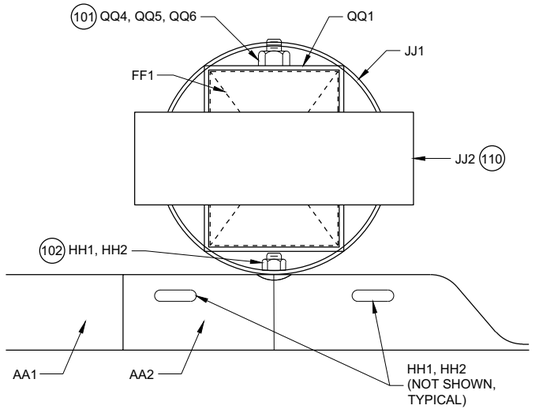

**PROFILE VIEW**

**DETAIL "B"**
**STEEL PIPE ASSEMBLY**
**(BEAM GUARD AND W BEAM END SECTION NOT SHOWN)**



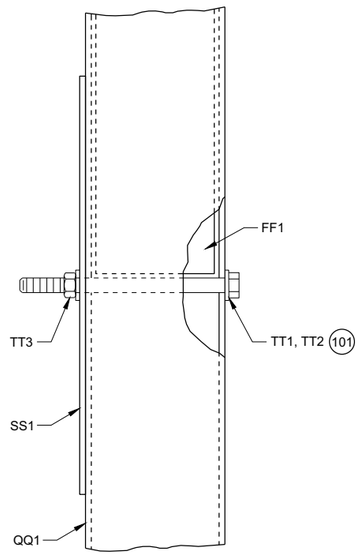

**PROFILE VIEW**

**DETAIL "C"**




**PLAN VIEW**

**DETAIL "B"**
**STEEL PIPE ASSEMBLY**




**PROFILE VIEW**

**DETAIL "D"**

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

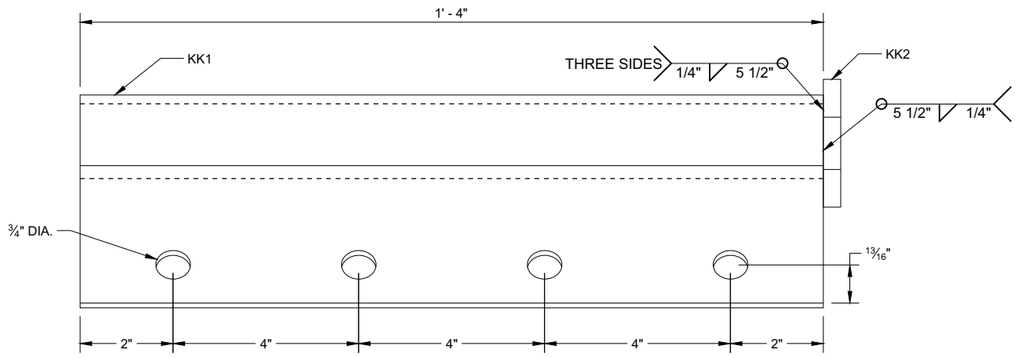


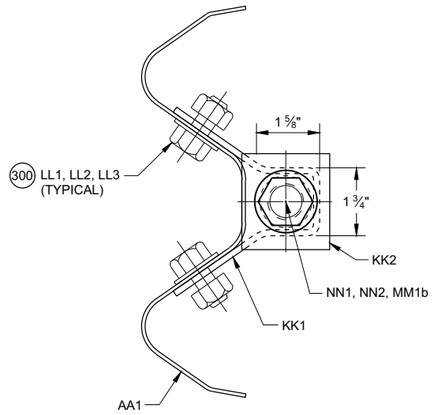

6

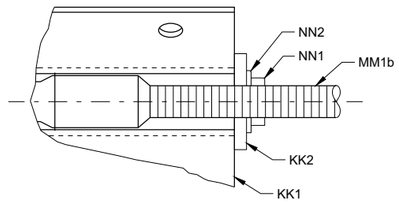
SDD 14B53 - 01c

## GENERAL NOTES

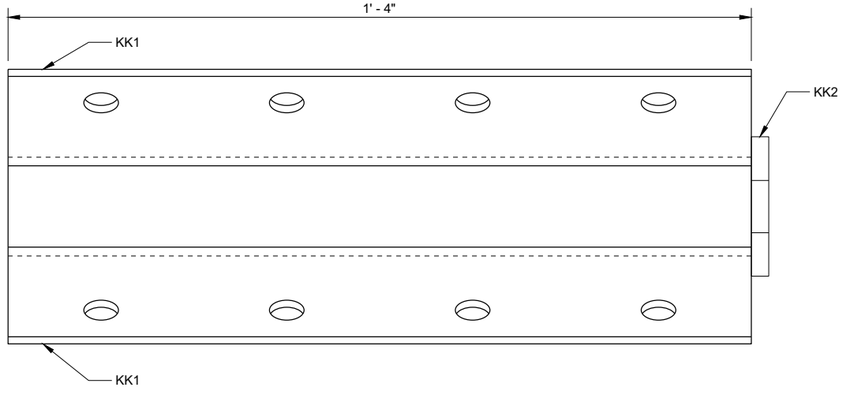
(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.

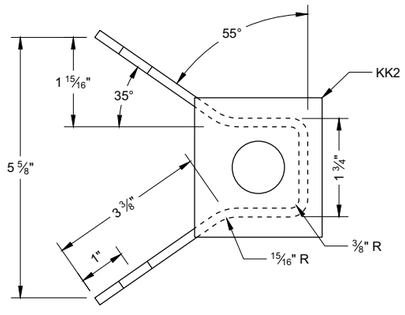


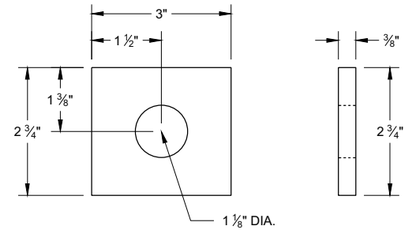




**SECTION A - A**




**ANCHOR BRACKET (KK1, KK2)**




**ANCHOR BRACKET BEARING PLATE (KK2)**

6

6

SDD 14B53 - 01d

SDD 14B53 - 01d

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

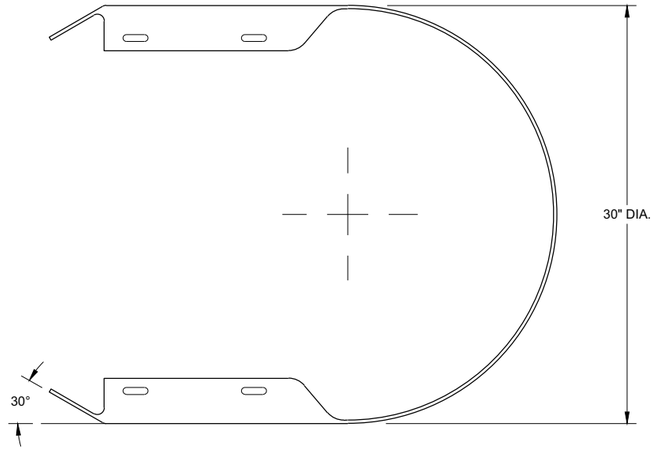
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

200

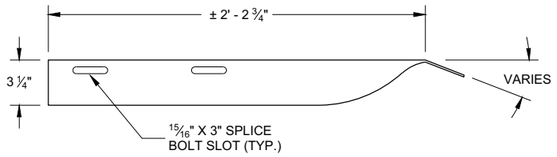
## GENERAL NOTES

(400) CROSS SECTION OF PART IS TO FIT OVER AA1 .

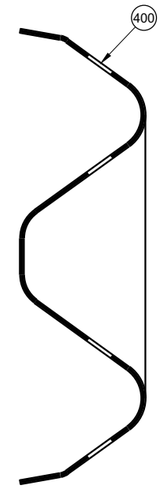
(401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



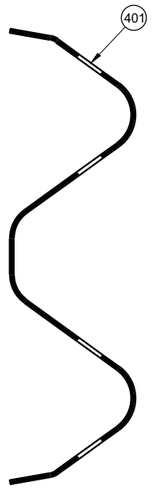

**TOP VIEW**



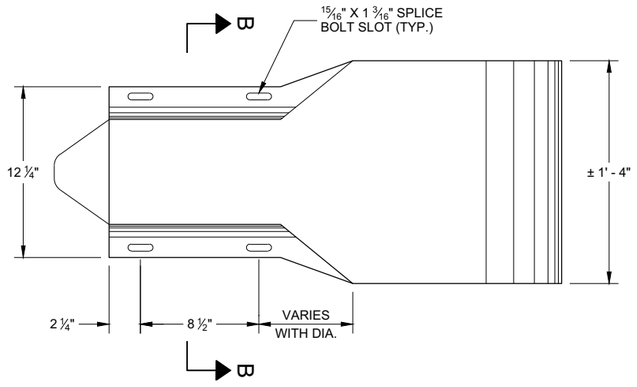

**TOP VIEW**




**SECTION B -B**

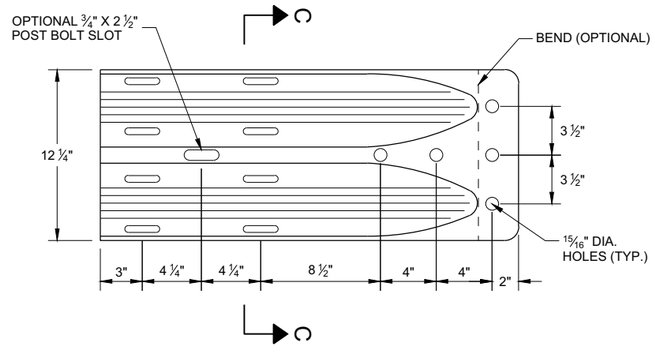



**SECTION C -C**



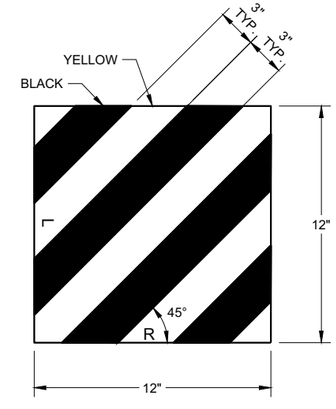

**PROFILE VIEW**

**W BEAM**
**END SECTION BUFFER (AA2)**




**PROFILE VIEW**

**W BEAM**
**TERMINAL CONNECTOR (BB1)**




**REFLECTIVE SHEETING (UU1, UU2)**

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

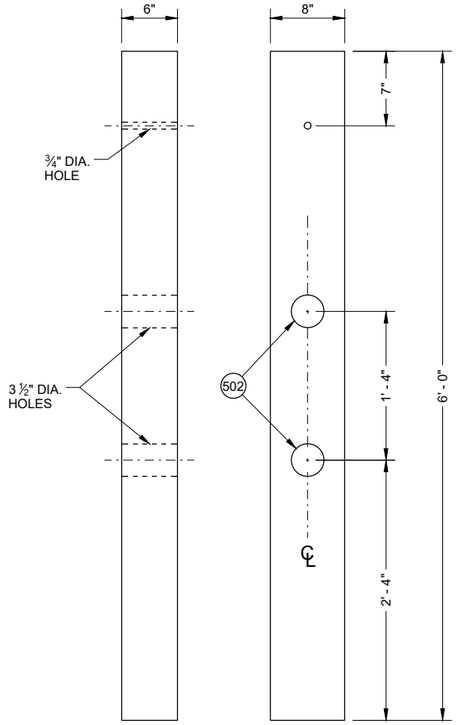




6

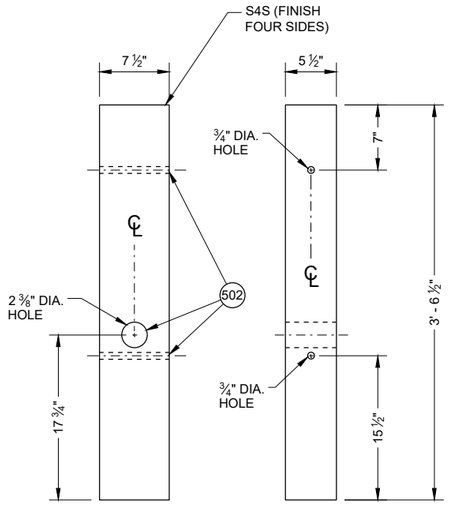


SDD 14B53 - 01e



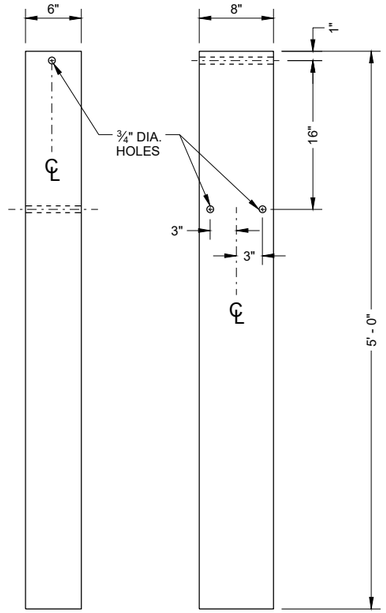

FRONT VIEW SIDE VIEW

**CONTROLLED RELEASE POST (CRT) (DD2)**




FRONT VIEW SIDE VIEW

**WOOD BREAKAWAY POST (FF1)**




FRONT VIEW SIDE VIEW

**FOUNDATION TUBE (QQ1)** 500

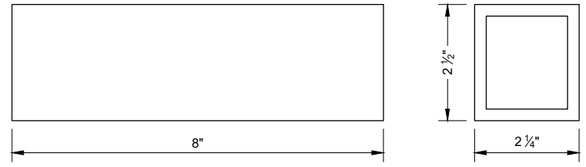
## GENERAL NOTES

500 SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.

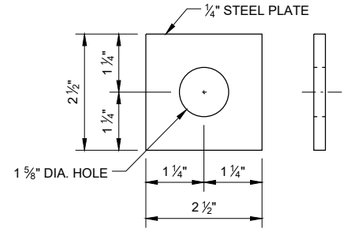
501 FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

502 LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.

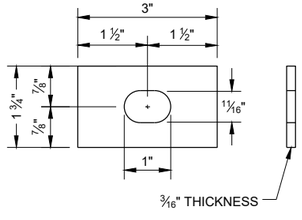
503 MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE 109.



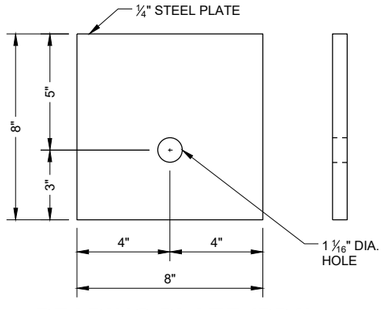

**FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)**



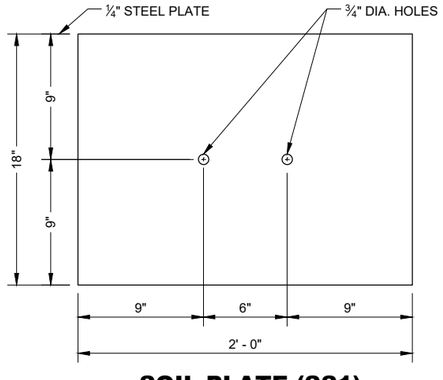

**ANCHOR CABLE TUBE END PLATE (QQ3)**



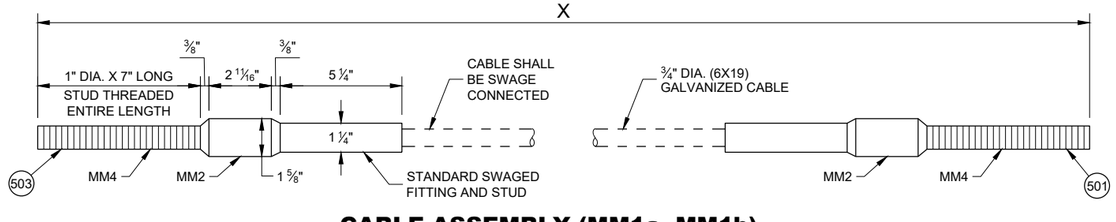

**RECTANGULAR PLATE WASHER (CC1)**




**BEARING PLATE (PP1)**




**SOIL PLATE (SS1)**




**CABLE ASSEMBLY (MM1a, MM1b)**

**"X" LENGTH**

| | |
|---|---|
| MM1b | 9' - 0" |
| MM1b | 6' - 8" |

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION





6



SDD 14B53 - 01f

## BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| A1 | BEAM GUARD RAIL | AASHTO M180, CLASS A, TYPE 2 | |
| | | APPROVED PRODUCER | |
| A2 | BEAM GUARD RAIL - SHOP BENT | INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION. | |
| | | AASHTO M180, CLASS A, TYPE 2 | |
| | | APPROVED PRODUCER | |
| B1 | BLOCK - WOOD | WISDOT SPEC. 614 | SEE SDD 14B42 |
| C1 | NAIL | ASTM A153 HOT DIP CLASS D | |
| | | ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD) | |
| D1 | POST-STRONG POST-WOOD | WISDOT SPEC. 614 | SEE SDD 14B42 |
| D2 | POST-CRT-WOOD | WISDOT SPEC. 614 | |
| E1 | POST BOLT | ASTM A307 GRADE A OR SAE J429 GRADE 2 | 5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | AASHTO M180 | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| E2 | POST BOLT - WASHER | ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD) | 5/8" DIA. |
| | | GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 | |
| E3 | POST BOLT - NUT | AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD | 5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | ASTM A563 GRADE A HEAVY HEX HEAD | |
| F1 | SPLICE BOLT | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | 5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | ASTM A307 GRADE A OR SAE J429 GRADE 2 | |
| | | UNC | |
| | | AASHTO M180 | |

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| F2 | SPLICE BOLT - NUT | ASTM A563 GRADE A | 5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1 | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | UNC | |
| G1 | LAG SCREW | ASTM A308 GRADE A ASTM A153 CLASS D | 1/2" DIA. 6" LONG |
| H1 | DELINEATOR - BEAM GUARD | | SEE SDD 14B42 FOR MORE INFORMATION |
| H2 | DELINEATION - SHEETING | YELLOW OR WHITE | |
| | | WISDOT SPEC 637 TYPE SH | |
| | | APPROVED PRODUCT LIST | |
| J1 | FOUNDATION BACKFILL | STANDARD SPEC. 614 | |
| AA1 | BEAM GUARD RAIL - PUNCHED | AASHTO M180, CLASS A, TYPE 2 | |
| | | APPROVED PRODUCER | |
| AA2 | BEAM GUARD RAIL - END SECTION BUFFER | AASHTO M180, CLASS A, TYPE 2 | |
| | | APPROVED PRODUCER | |
| BB1 | BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED | AASHTO M180, CLASS A, TYPE 2 | |
| | | APPROVED PRODUCER | |
| CC1 | SHORT RADIUS - SQUARE WASHER | AASHTO M180 | |
| | | GALV. AASHTO M111 / ASTM A123 | |
| EE1 | NAIL | ASTM A153 HOT DIP CLASS D | |
| | | ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED) | |
| FF1 | POST - BCT - WOOD | S4S FINISH ON 4 SIDES | |
| | | WISDOT SPEC. 614 | |
| GG1 | POST BOLT | ASTM A307 GRADE A OR SAE J429 GRADE 2 | 3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | AASHTO M180 | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| GG2 | POST BOLT - WASHER | ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD) | 3/8" DIA. |
| | | GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 | |



6



SDD 14B53 - 01g

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

## BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| GG3 | POST BOLT - NUT | ASTM A563 GRADE A | ⅜" DIA. SEE 14B42 FOR GEOMETRY |
| | | AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | ASTM A563 GRADE A HEAVY HEX HEAD | |
| HH1 | SPLICE BOLT | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | ⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | ASTM A307 GRADE A OR SAE J429 GRADE 2 | |
| | | UNC | |
| | | AASHTO M180 HEAD GEOMETRY | |
| HH2 | SPLICE BOLT - NUT | ASTM A563 GRADE A | ⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY |
| | | AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | UNC | |
| JJ1 | PIPE - STEEL | ASTM A53 GALVANIZED GRADE B SCHEDULE 40 | 10" O.D. |
| JJ2 | TOP PLATE | 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 | DIMENSIONS ⅜" X 4" X 1' - 0" |
| | | GALV. AASHTO M111 / ASTM A123 | |
| KK1 | ANCHOR BRACKET | 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 | |
| | | GALV. AASHTO M111 / ASTM A123 | |
| KK2 | ANCHOR BRACKET - BEARING PLATE | 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 | |
| | | GALV. AASHTO M111 / ASTM A123 | |
| LL1 | ANCHOR BRACKET - BOLT | ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD | ⅝" DIA. |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| LL2 | ANCHOR BRACKET - WASHER | ASTM F436 TYPE 1 (HARDEN WASHER ONLY) | ⅝" DIA. |
| | | GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 | |
| LL3 | ANCHOR BRACKET - NUT | ASTM A563 GRADE A | ⅝" DIA. |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | UNC | |
| MM1a | ANCHOR CABLE | AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED | |
| MM1b | ANCHOR CABLE | AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED | |
| MM2 | ANCHOR CABLE - SWAGE FITTING | ASTM A576 GRADE 1035 | |
| | | SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS. | |
| | | GALV. AASHTO M111 / ASTM A123 | |
| | | ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE. | |
| MM3 | WIRE ROPE CABLE CLAMPS | FF-C-450D TYPE 1 CLASS 1 | ¾" |
| | | ASTM A153 HOT DIP CLASS D | |
| MM4 | ANCHOR CABLE - SWAGE FITTING - STUD | ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| NN1 | ANCHOR CABLE - NUT | ASTM A563 GRADE A | 1" DIA. |
| | | AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | UNC | |
| NN2 | ANCHOR CABLE - NUT - WASHER | ASTM F436 TYPE 1 (HARDEN WASHER ONLY) | 1" DIA. |
| | | GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 | |





**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**



6

SDD 14B53 - 01h

## BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| PP1 | BEARING PLATE AT POST | 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 | |
| | | GALV. AASHTO M111 / ASTM A123 | |
| PP2 | PIPE - STEEL | ASTM A53 GALVANIZED GRADE B SCHEDULE 40 | 2" DIA. x 6" LONG |
| QQ1 | FOUNDATION TUBE | ASTM A500 GRADE B | 8" X 6" X 3/16" |
| | | GALV. AASHTO M111 / ASTM A123 | |
| QQ2 | SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE | ASTM A500 GRADE B | DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8" |
| | | GALV. AASHTO M111 / ASTM A123 | |
| QQ3 | SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE | 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 | DIMENSIONS 2 1/2" X 2 1/2" X 1/4" |
| | | GALV. AASHTO M111 / ASTM A123 | |
| QQ4 | GROUND STRUT AND YOKE - BOLT | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | 5/8 DIA. |
| | | ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD | |
| | | UNC | |
| QQ5 | GROUND PLATE AND YOKE - WASHER | ASTM F436 TYPE 1 (HARDEN WASHER ONLY) | 5/8 DIA. |
| | | GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 | |
| QQ6 | GROUND STRUT AND YOKE - NUT | HEAVY HEX | 5/8 DIA. |
| | | UNC | |
| | | ASTM A563 GRADE A | |
| | | OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 | |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|---|---|---|---|
| SS1 | SOIL PLATE | 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 | |
| | | GALV. AASHTO M111 / A123 | |
| TT1 | SOIL PLATE - BOLT | ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD | 5/8 DIA. |
| | | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | |
| | | UNC | |
| TT2 | SOIL PLATE - WASHER | ASTM F436 TYPE 1 (HARDEN WASHER ONLY) | 5/8 DIA. |
| | | GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 | |
| TT3 | SOIL PLATE - NUT | GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1 | 5/8 DIA. |
| UU1 | OBJECT MARKER - SHEETING | MUTCD / WISDOT OBJECT MARKER TYPE 3 | PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER. |
| | | WISDOT SPEC 637 TYPE F | |
| | | APPROVED PRODUCT LIST | |
| UU2 | OBJECT MARKER - ALUMINUM PLATE | WISDOT SPEC 637 ALUMINUM PLATE | MATERIAL AND THICKNESS OF MATERIALS |
| UU3 | OBJECT MARKER - SCREWS | STAINLESS SELF-TAPPING SCREWS | |
| VV1 | FOUNDATION BACKFILL | WISDOT SPEC 614 | |

**SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

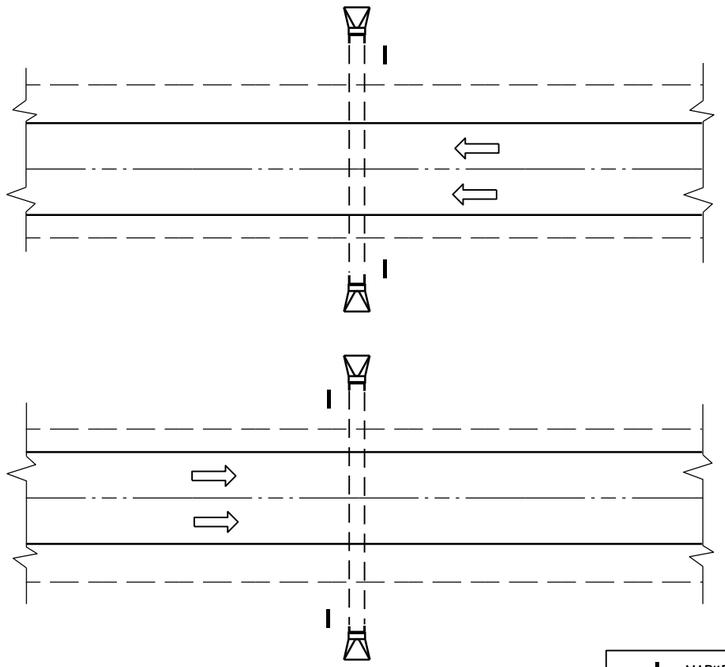
APPROVED
June 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA



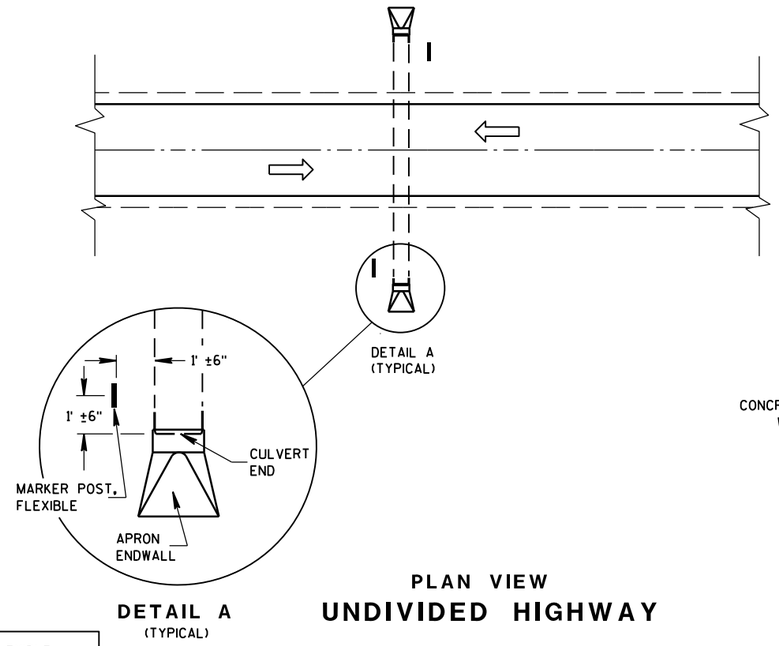

6


SDD 14B53 - 01i



PLAN VIEW

**DIVIDED HIGHWAY**




DETAIL A
(TYPICAL)

PLAN VIEW

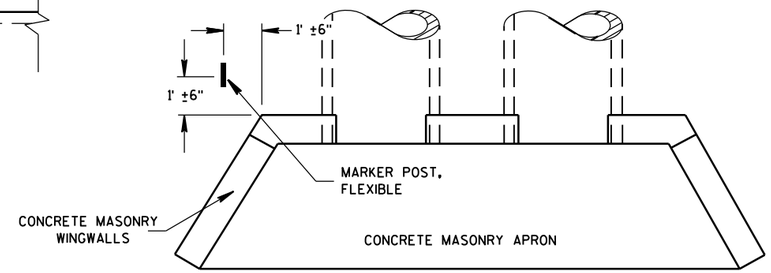
**UNDIVIDED HIGHWAY**

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

## GENERAL NOTES

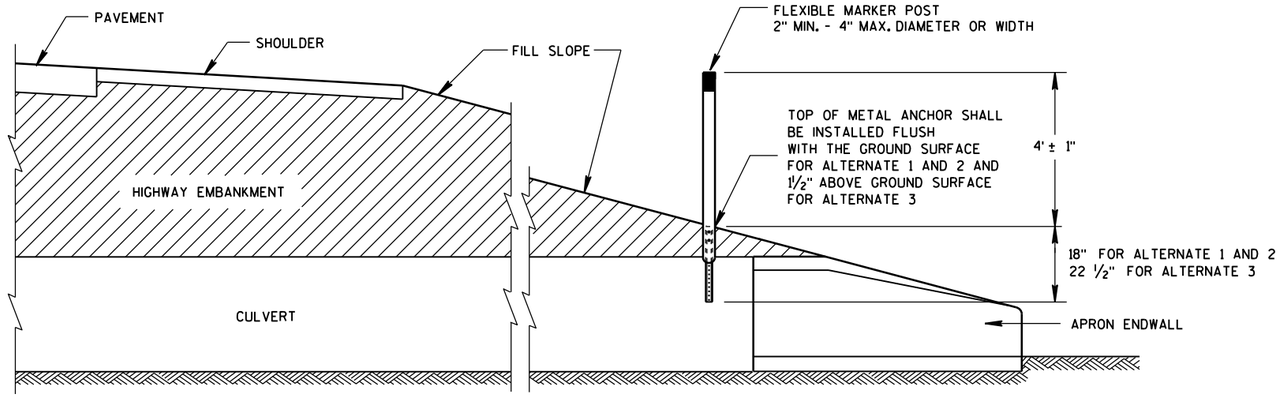
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.




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

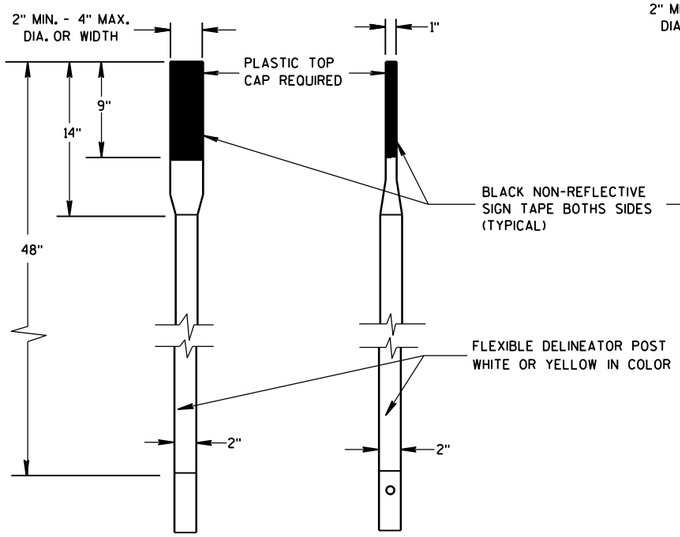


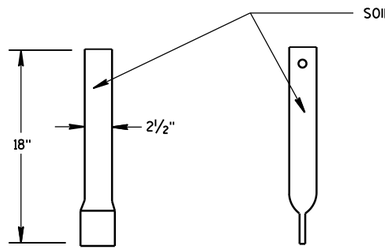
6

S.D.D. 15 A 3-2a

6

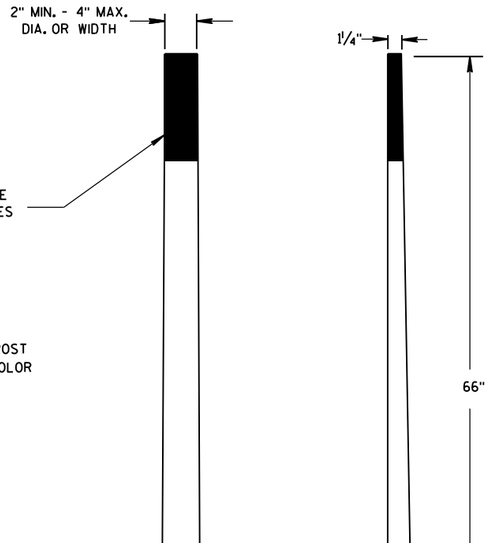
S.D.D. 15 A 3-2a



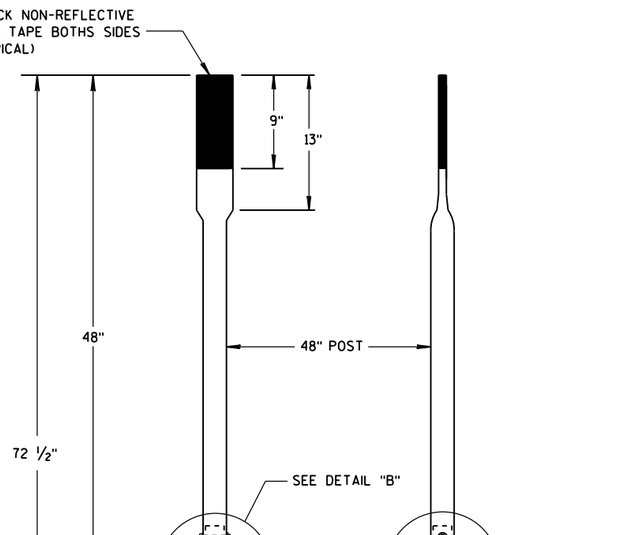

FRONT VIEW SIDE VIEW

ALTERNATE 1




FRONT VIEW SIDE VIEW

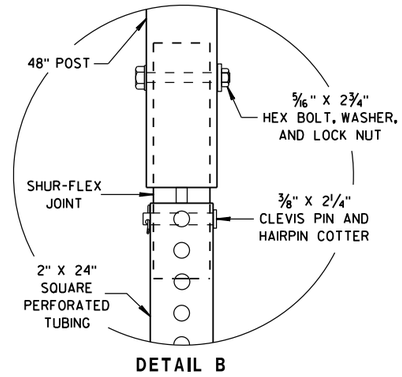
ALTERNATE 2



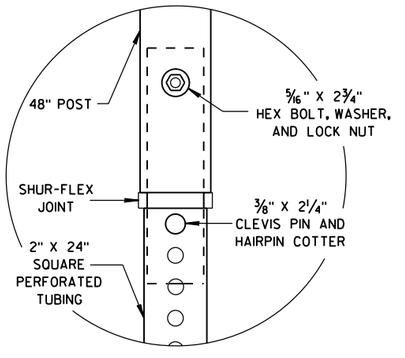

FRONT VIEW SIDE VIEW

ALTERNATE 3

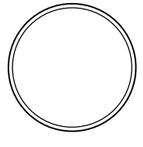
## FLEXIBLE MARKER POSTS



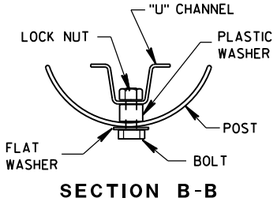

DETAIL B



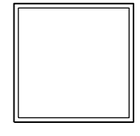

DETAIL C



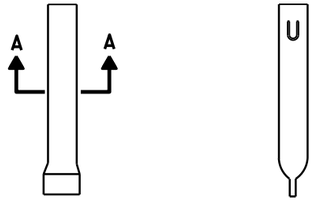
SECTION A-A




SECTION B-B

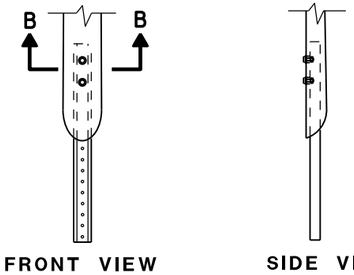


SECTION C-C



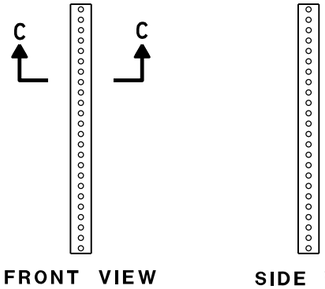

FRONT VIEW SIDE VIEW

ALTERNATE 1




FRONT VIEW SIDE VIEW

ALTERNATE 2




FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POST ANCHORS

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

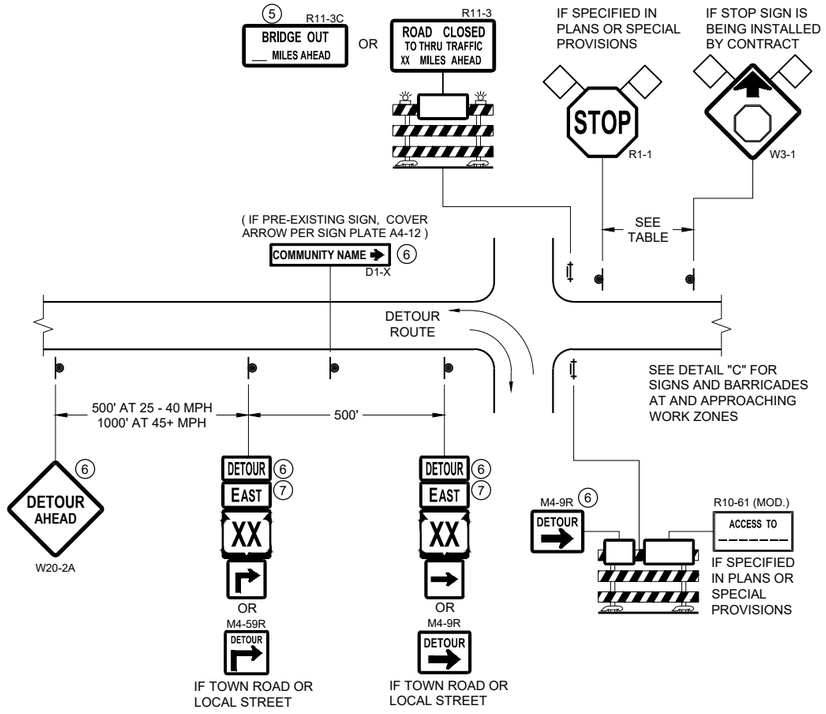


6

S.D.D. 15 A 3-2b

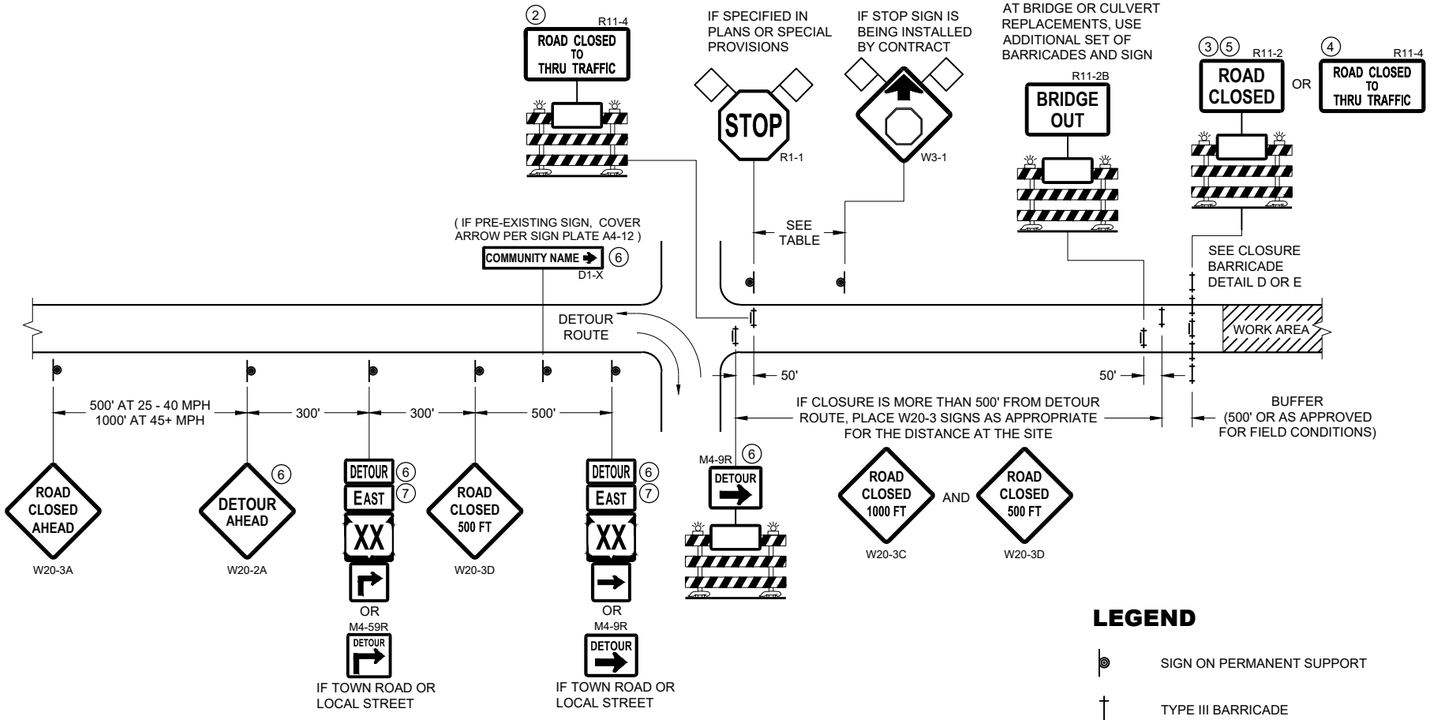
6

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 )



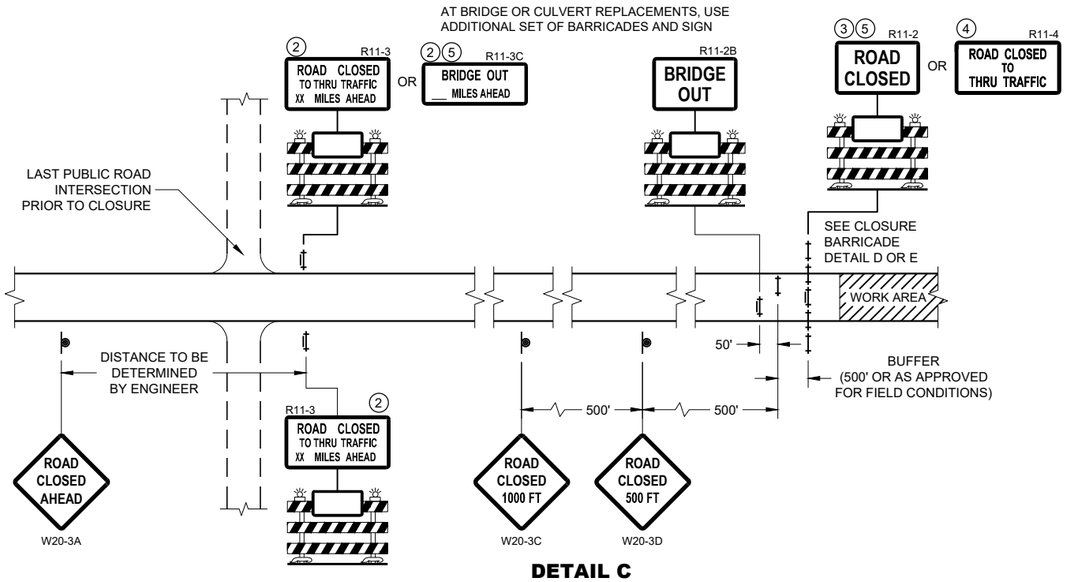

## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )

## 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




## 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

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

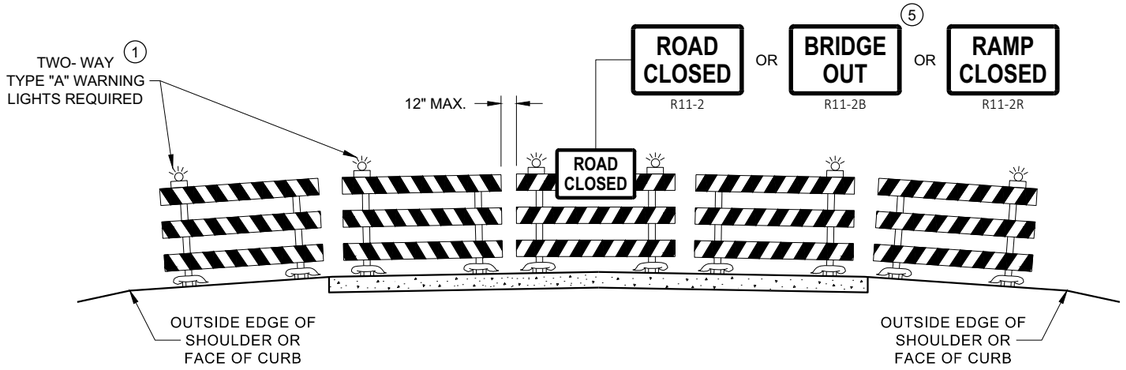
FHWA



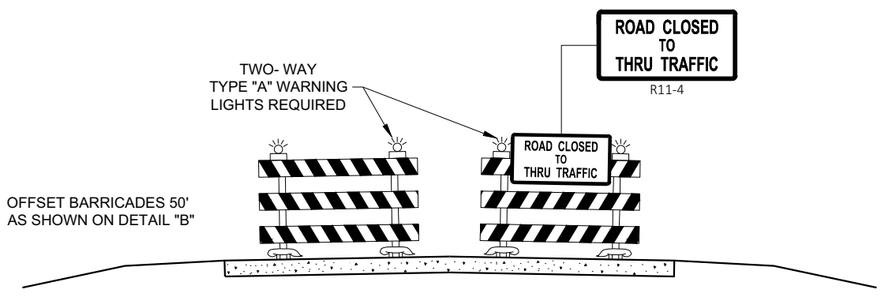
6

SDD 15C02 - 08a

SDD 15C02 - 08a




**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
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA



6

SDD 15C02 - 08b

6

SDD 15C02 - 08b

**THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.**

## LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- 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 EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR 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 WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

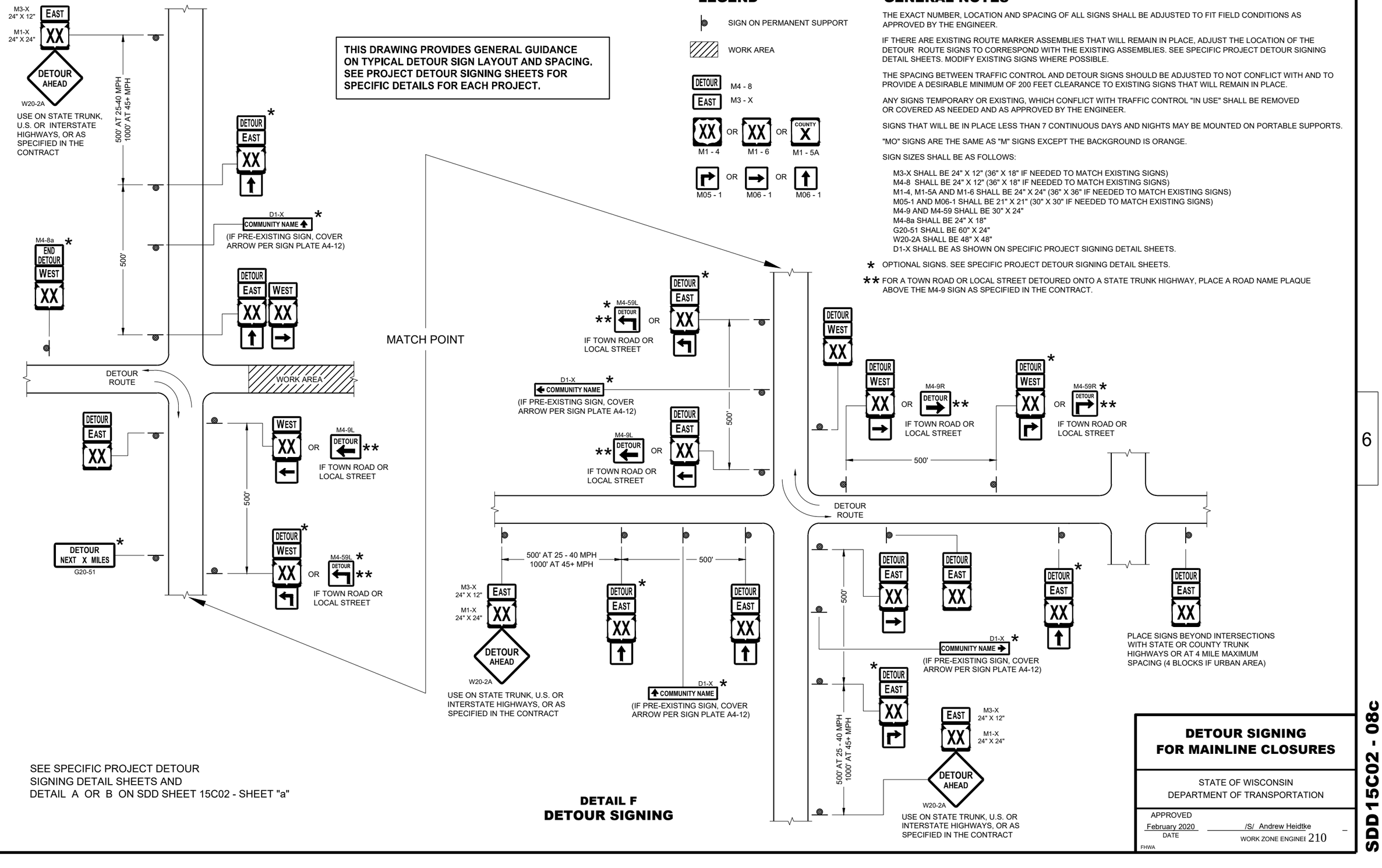
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- 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)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.




SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

**DETAIL F**
**DETOUR SIGNING**

**DETOUR SIGNING FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

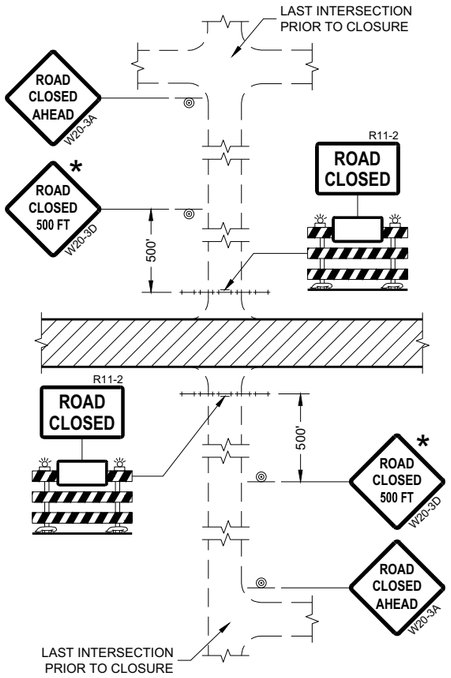
FHWA



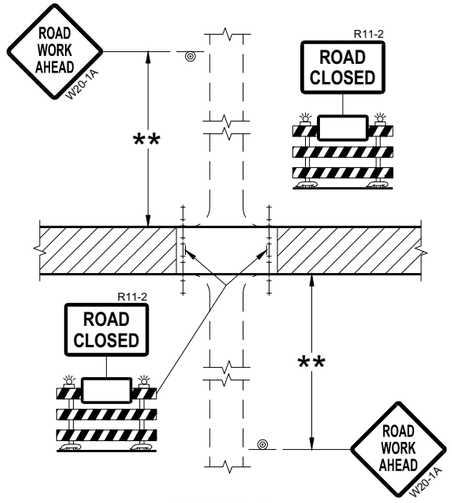
SDD 15C02 - 08c

6

SDD 15C02 - 08c




**DETAIL 1**
(NO ACCESS TO PROJECT)




**DETAIL 2**
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO 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.

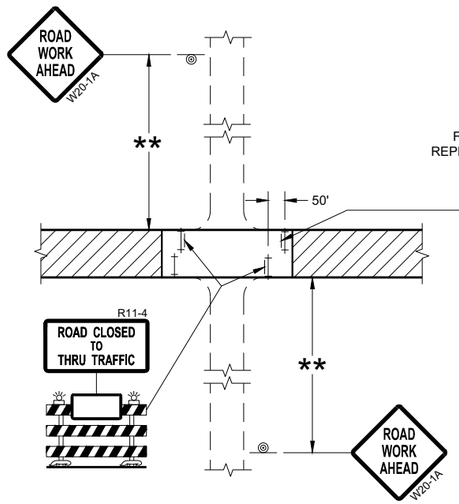
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

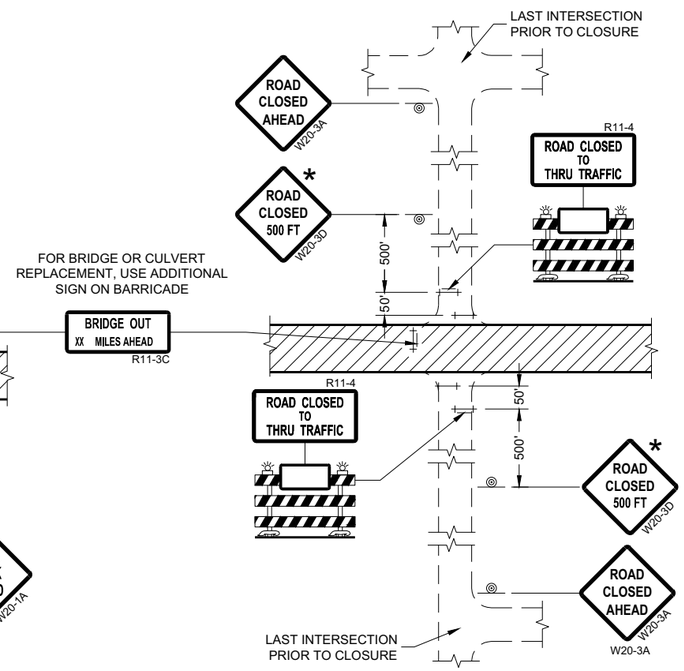
THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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.




**DETAIL 3**
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

**DETAIL 4**
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

## 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 ENGINEER

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.

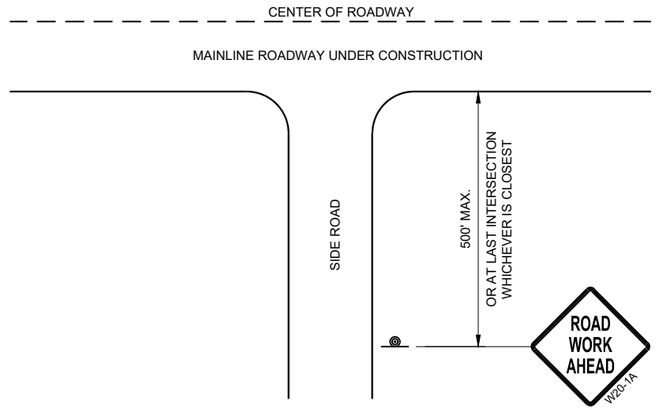
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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.



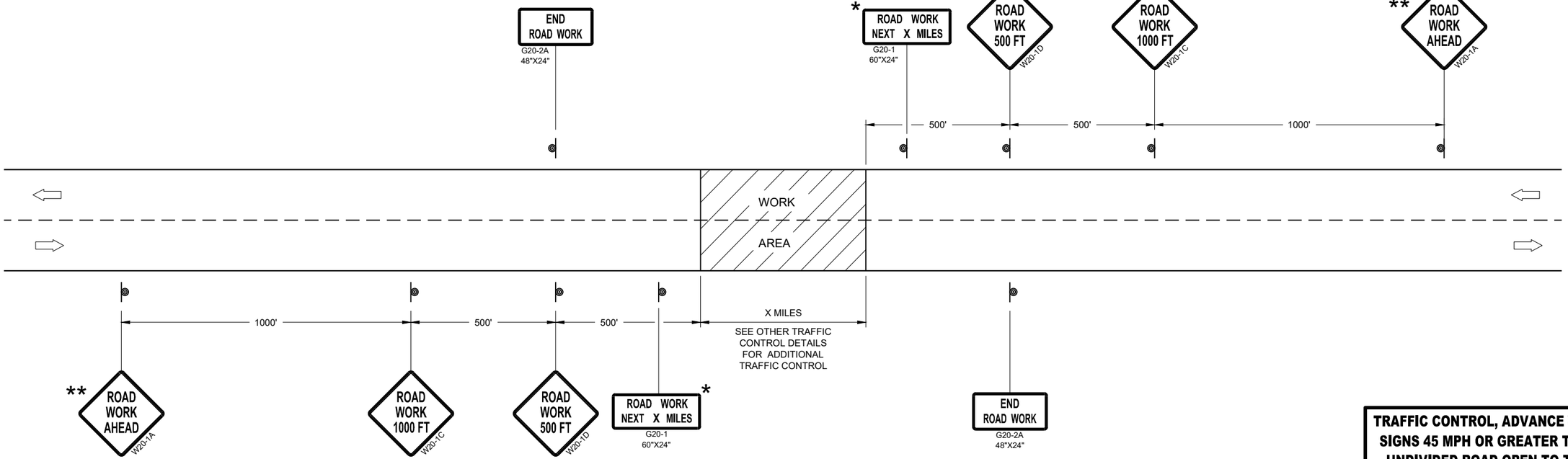

**TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL**

## 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

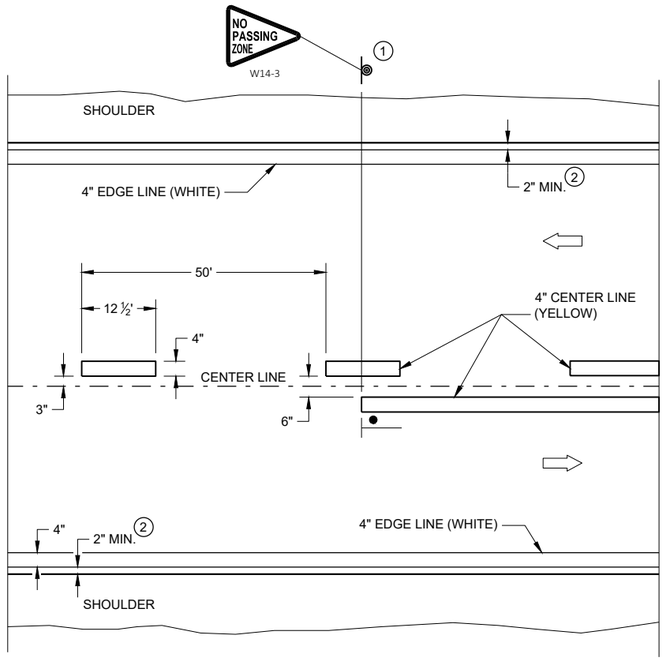
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

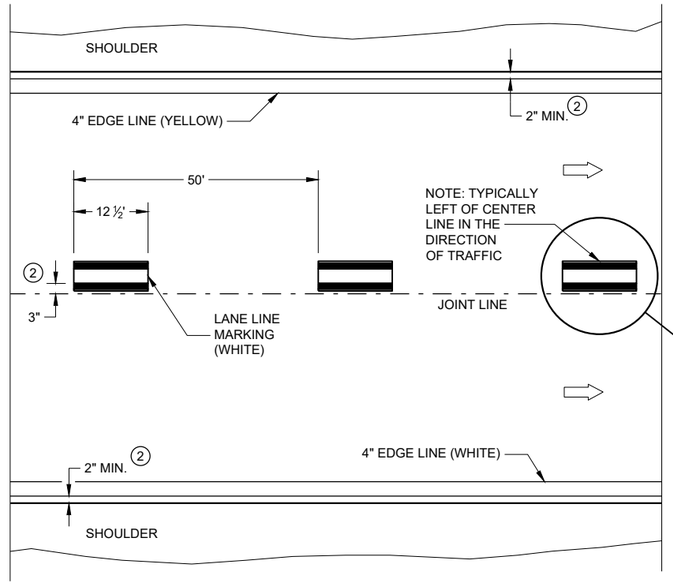



6


SDD 15C04 - 05

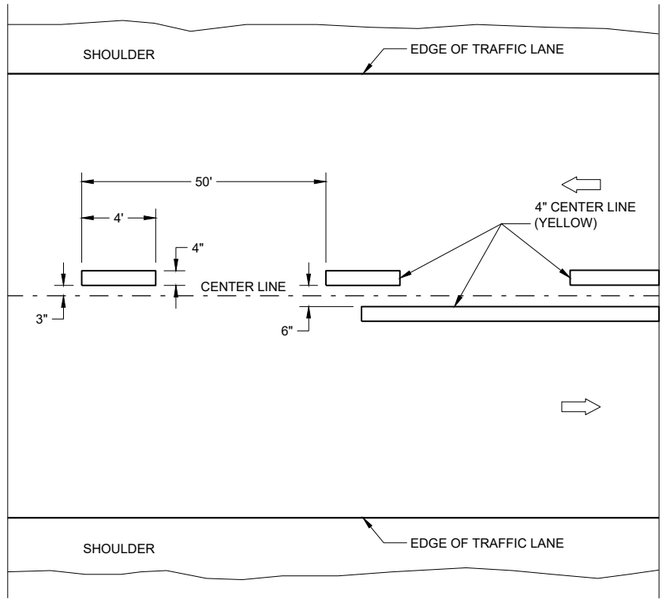



**TWO WAY TRAFFIC**

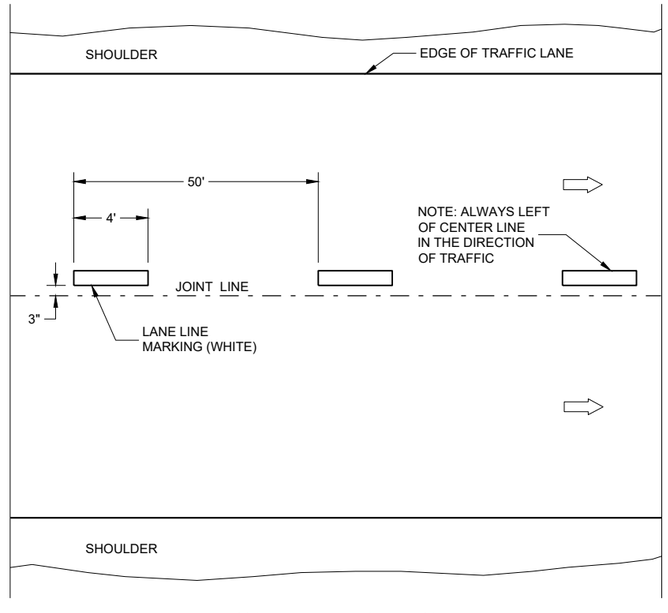



**ONE WAY TRAFFIC**

## PERMANENT PAVEMENT MARKING




**TWO WAY TRAFFIC**




**ONE WAY TRAFFIC**

## TEMPORARY PAVEMENT MARKING

## GENERAL NOTES

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

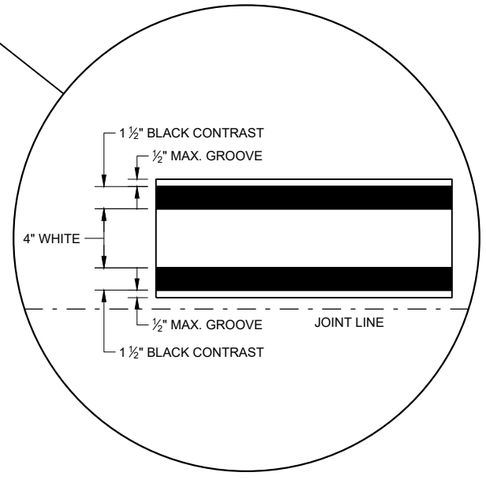
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

## LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC




**LONGITUDINAL MARKING (MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Matthew Rauch
STATEWIDE SIGNING AND M ENGINEER

FHWA

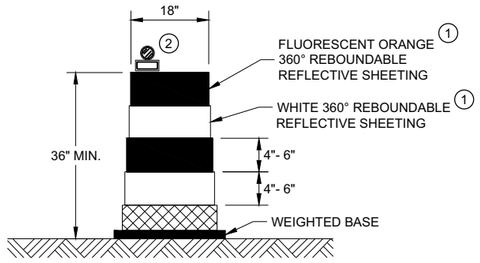


SDD 15C08 - 20a

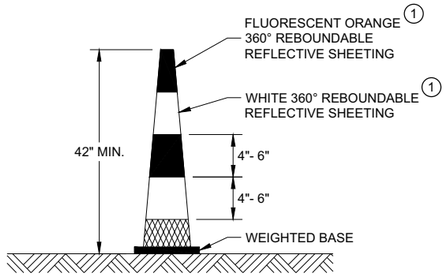
SDD 15C08 - 20a

## 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.

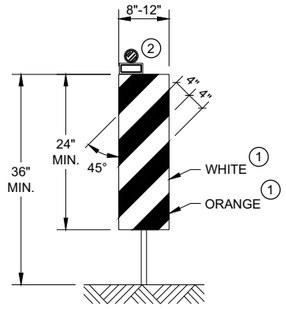



### DRUM



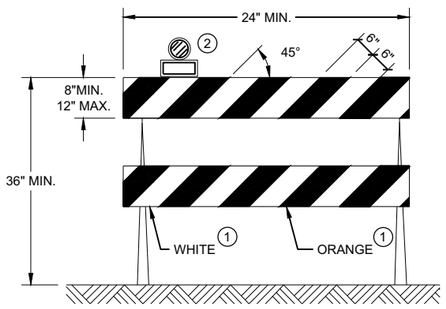

### 42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



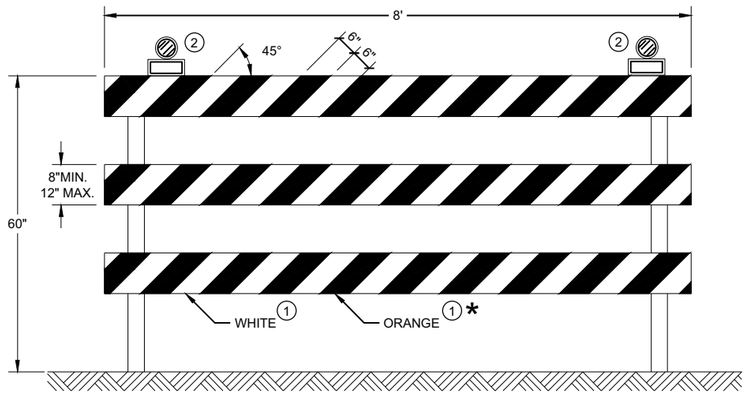

### VERTICAL PANEL

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 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



6

6

SDD 15C11 - 08b

SDD 15C11 - 08b

## LEGEND

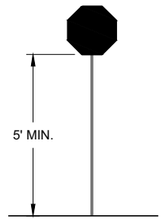
SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF




**STOP/SLOW PADDLE ON SUPPORT STAFF**

## GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

## FLAGGING

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

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

## TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

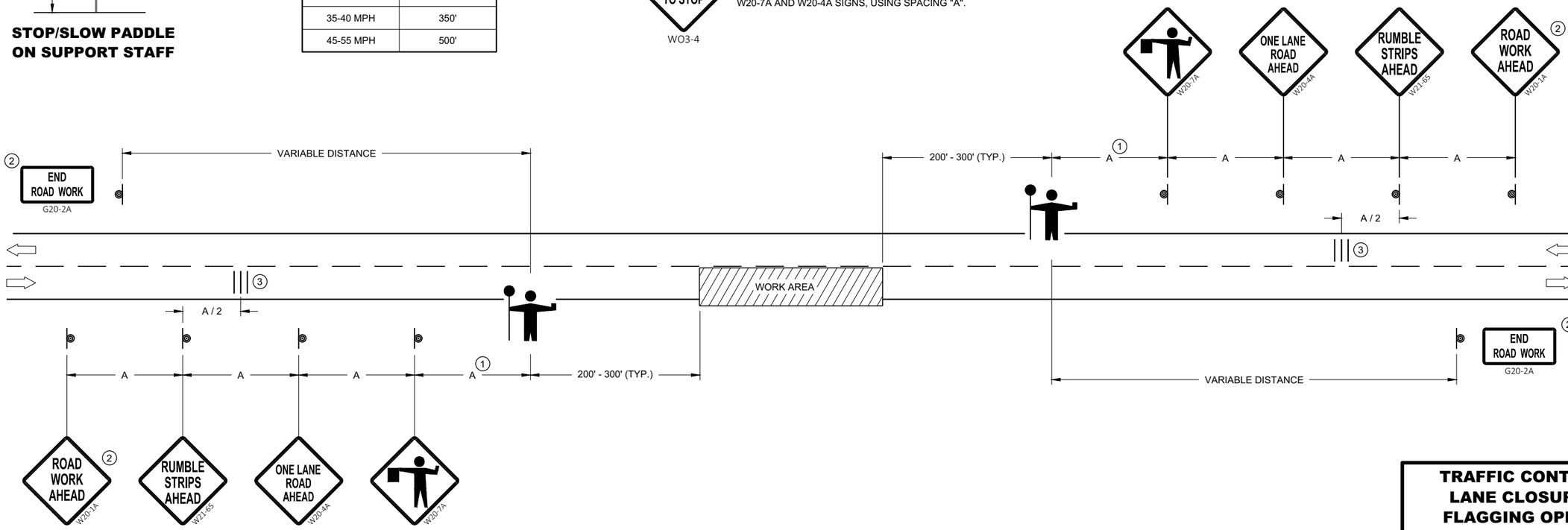
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

## SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|---|---|
| 25-30 MPH | 200' |
| 35-40 MPH | 350' |
| 45-55 MPH | 500' |

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".




**TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION**

**TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA



6

SDD 15C12 - 07

SDD 15C12 - 07

## LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

## GENERAL NOTES

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

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

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

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

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

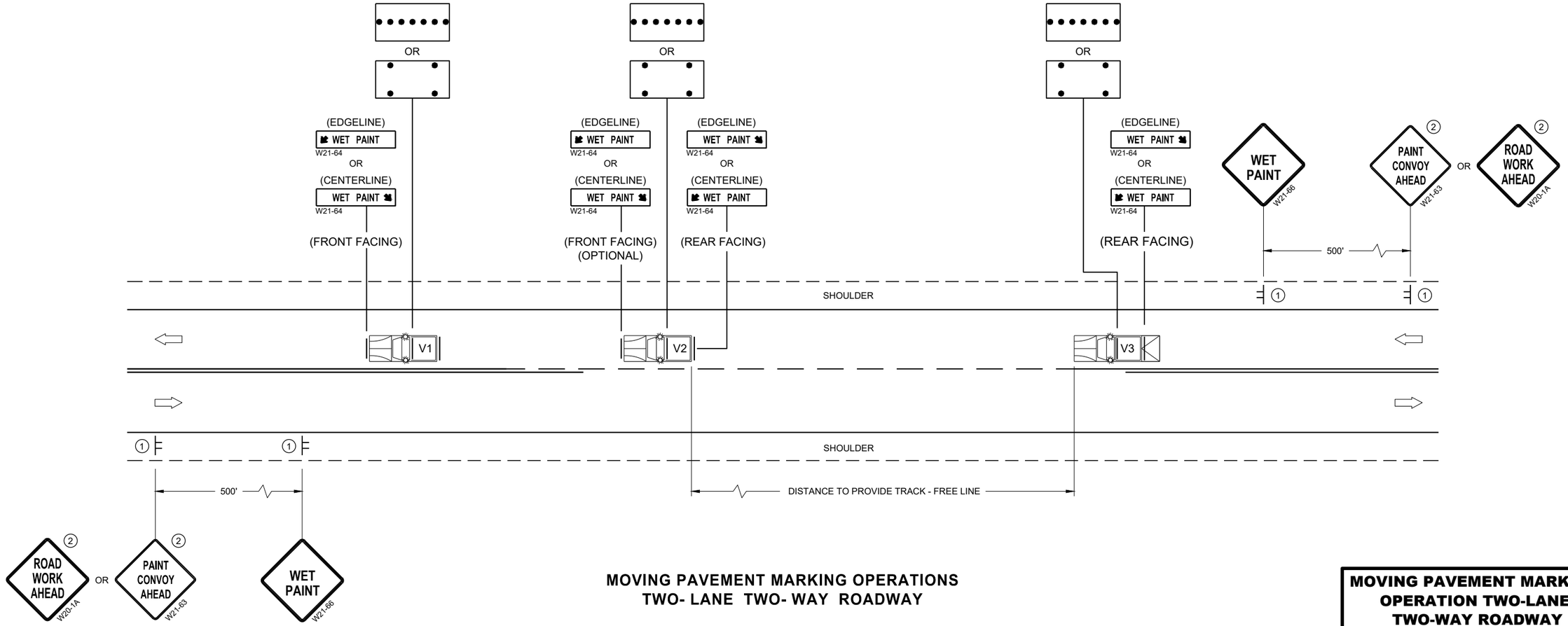
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.




## MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

**MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



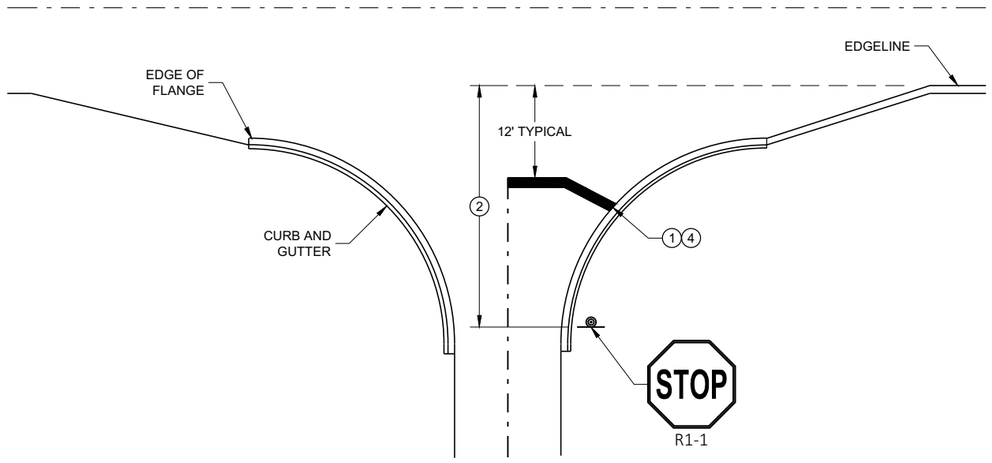
SDD 15C19 - 06a

SDD 15C19 - 06a

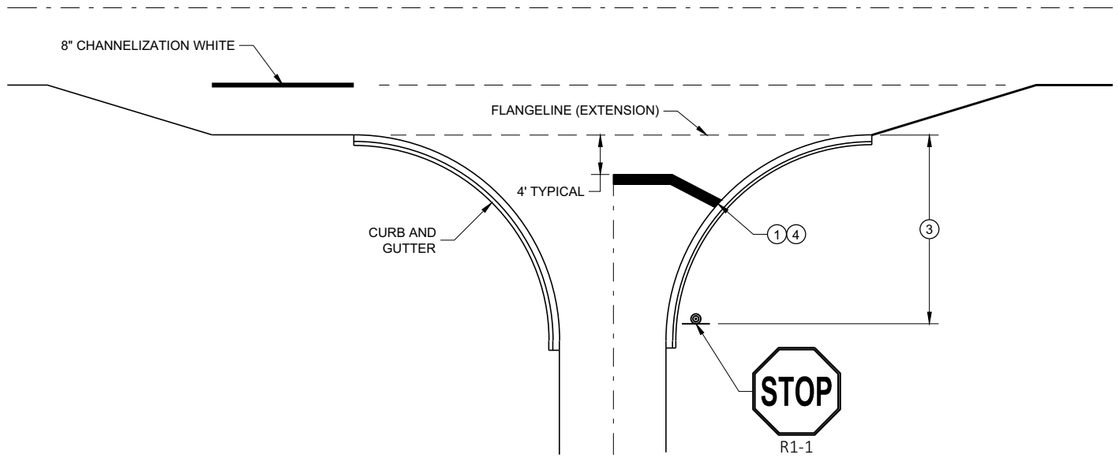
## GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

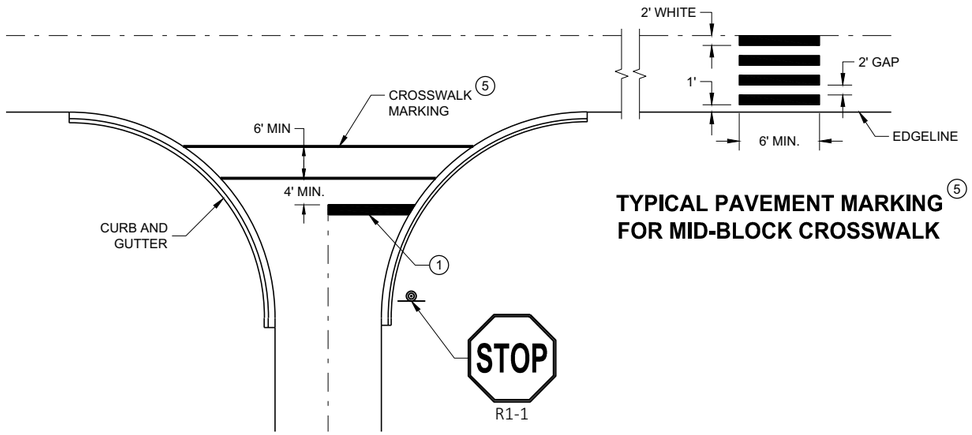
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE 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**

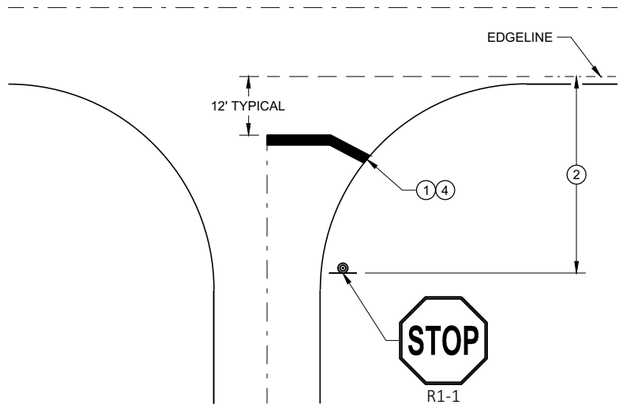



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**




**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





6
SDD 15C33 - 04

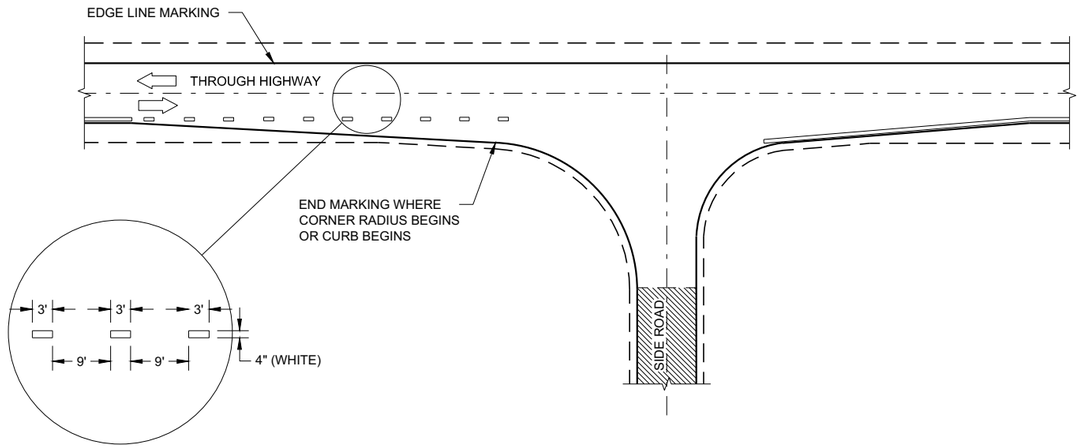
## GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

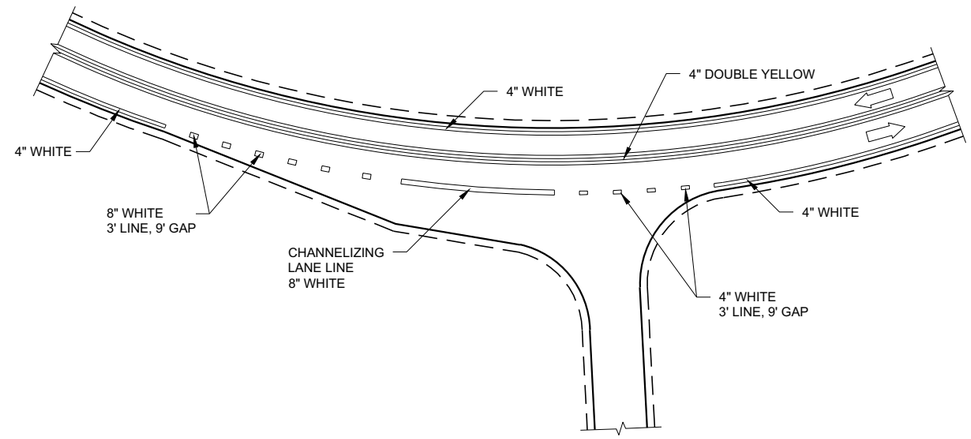
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

## LEGEND

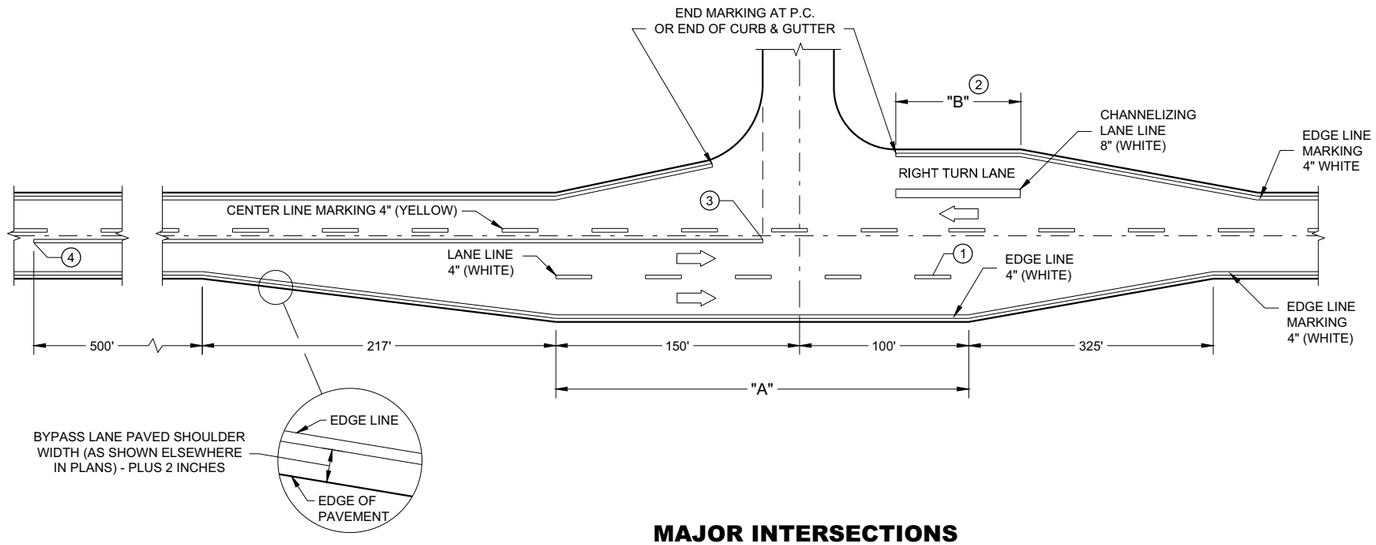
DIRECTION OF TRAVEL




**MINOR INTERSECTION**




**INTERSECTION ON OUTSIDE OF CURVE**




**MAJOR INTERSECTIONS**

**(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)**

**PAVEMENT MARKING (INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

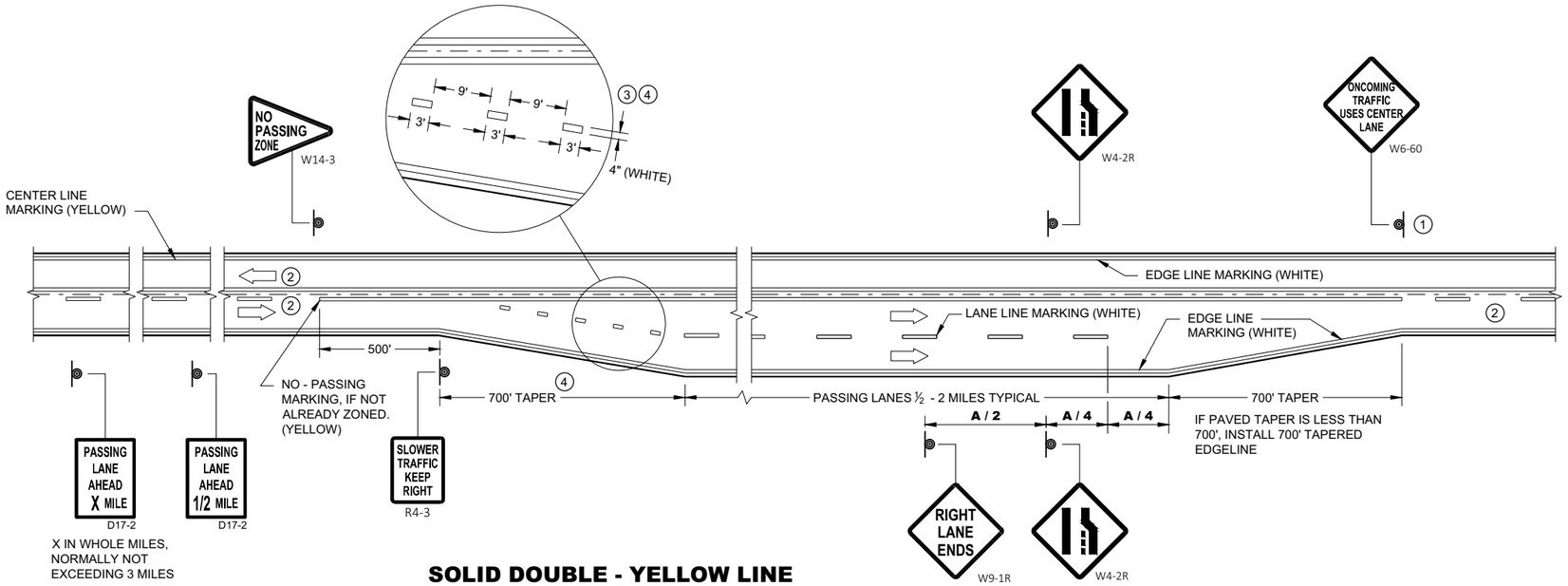


6

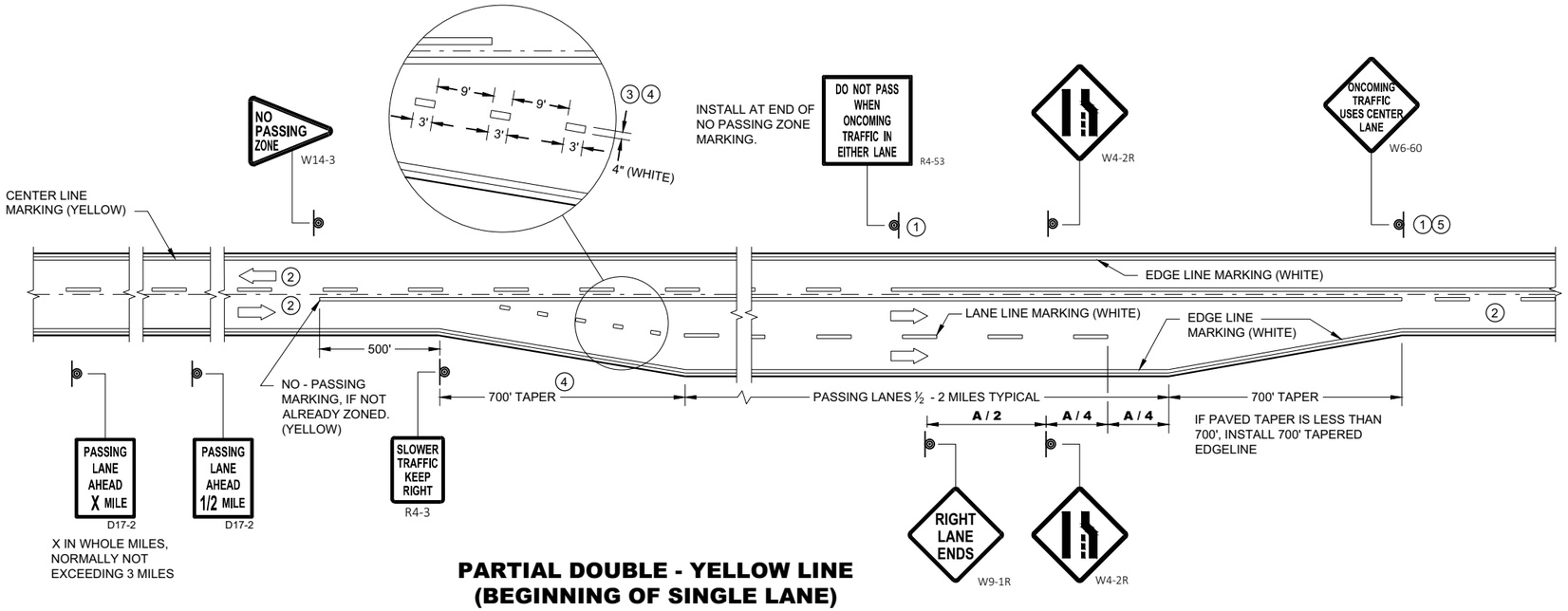
SDD 15C35 - 04a

6

SDD 15C35 - 04a




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




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

## GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY 1 MILE UP UNTIL R4-53.

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL

**DISTANCE TABLE**

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 45 | 775 |
| 50 | 885 |
| 55 | 990 |

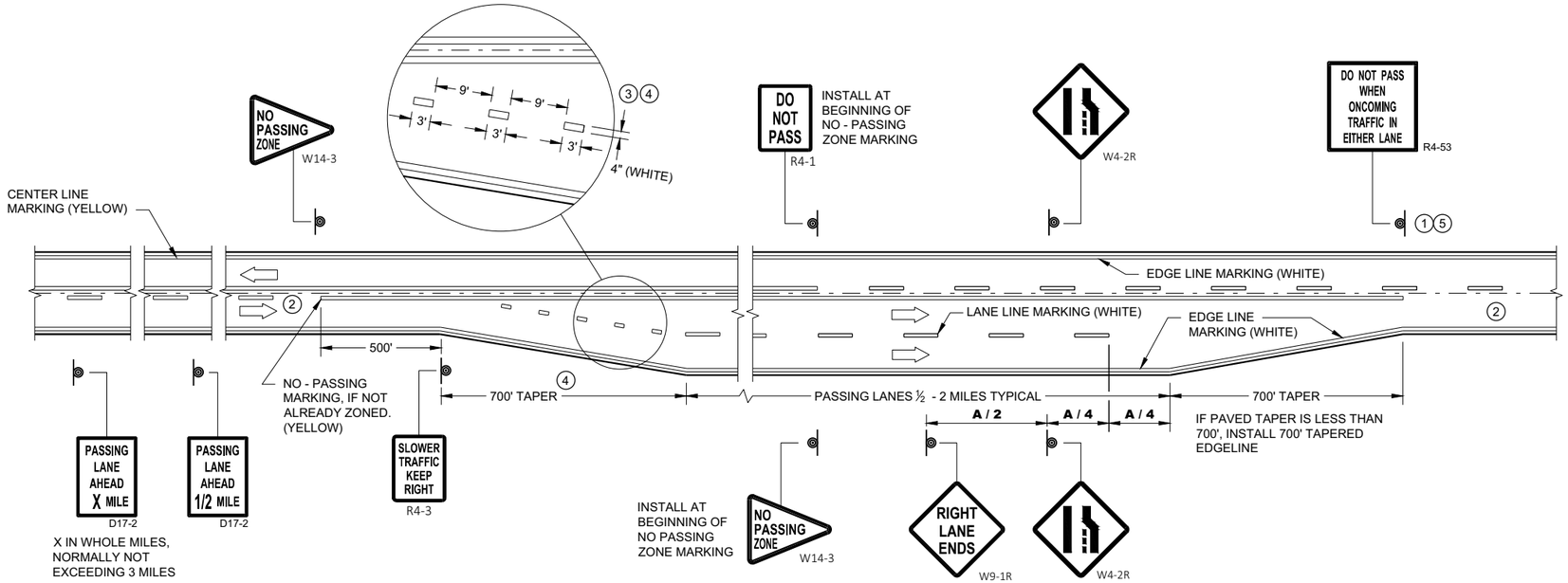
**PAVEMENT MARKING & SIGNING (CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

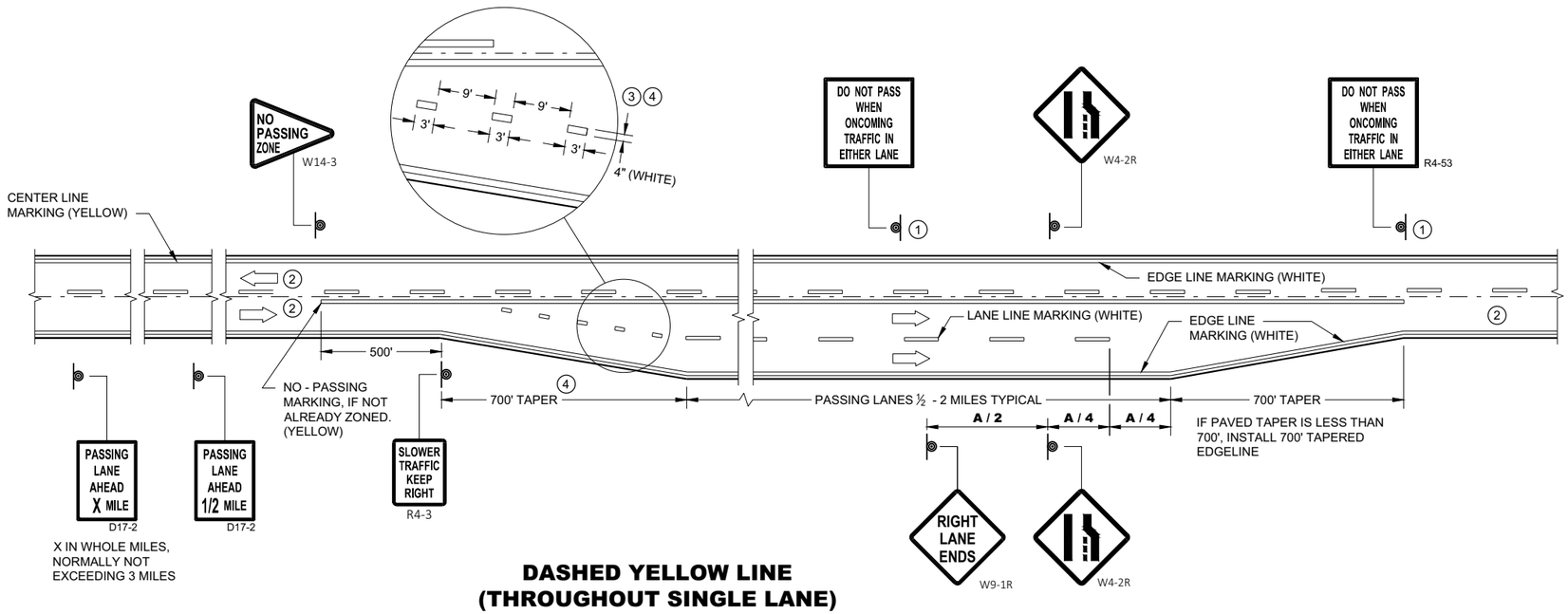


SDD 15C35 - 04b

SDD 15C35 - 04b




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




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

## GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY ONE MILE UP UNTIL NO PASSING ZONE.

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL

**DISTANCE TABLE**

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 45 | 775 |
| 50 | 885 |
| 55 | 990 |

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MAF ENGINEER
FHWA



SDD 15C35 - 04c

SDD 15C35 - 04c

## LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK ZONE

## GENERAL NOTES

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 THE REGIONAL TRAFFIC UNIT.

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

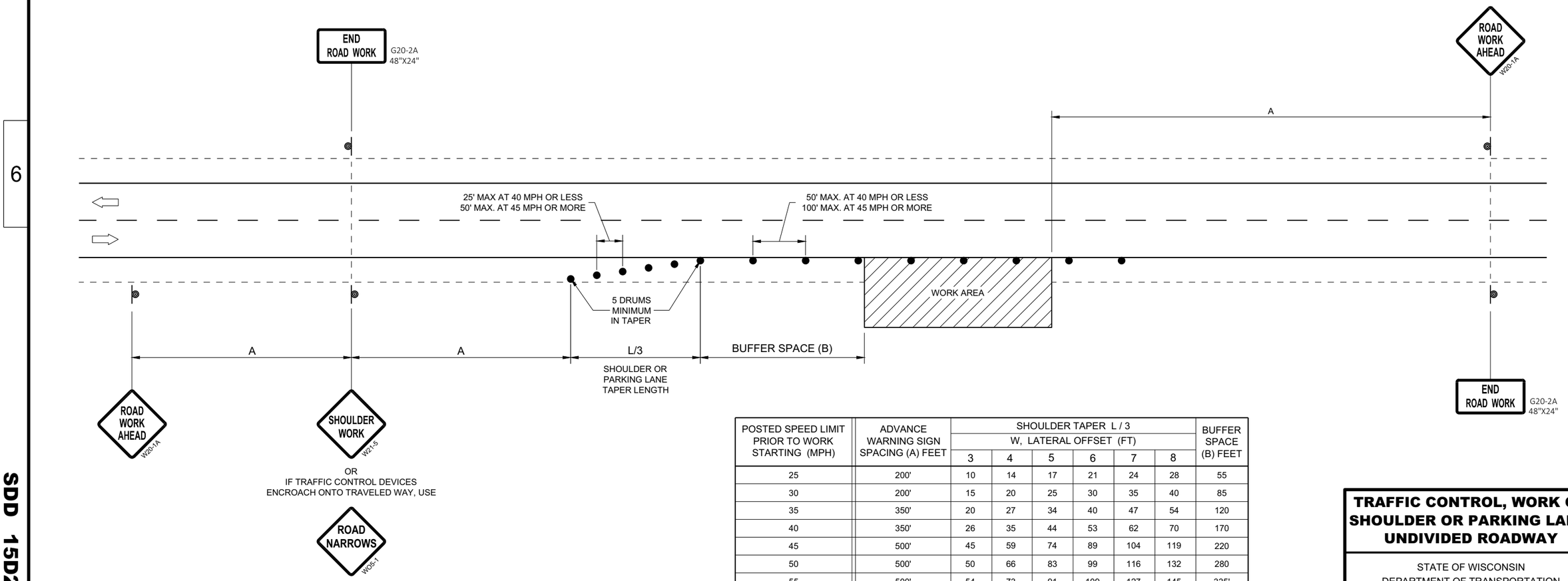
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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




| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET | SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT) | | | | | | BUFFER SPACE (B) FEET |
|---|---|---|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 | 7 | 8 | |
| 25 | 200' | 10 | 14 | 17 | 21 | 24 | 28 | 55 |
| 30 | 200' | 15 | 20 | 25 | 30 | 35 | 40 | 85 |
| 35 | 350' | 20 | 27 | 34 | 40 | 47 | 54 | 120 |
| 40 | 350' | 26 | 35 | 44 | 53 | 62 | 70 | 170 |
| 45 | 500' | 45 | 59 | 74 | 89 | 104 | 119 | 220 |
| 50 | 500' | 50 | 66 | 83 | 99 | 116 | 132 | 280 |
| 55 | 500' | 54 | 73 | 91 | 109 | 127 | 145 | 335' |

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

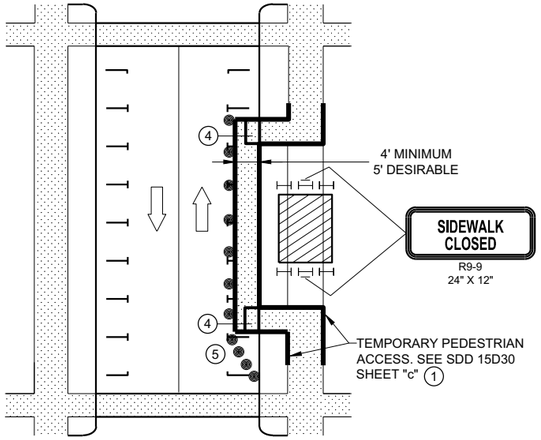
FHWA




6

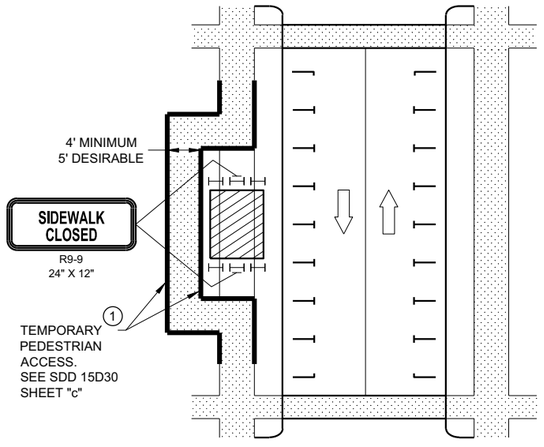

SDD 15D28 - 04

NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

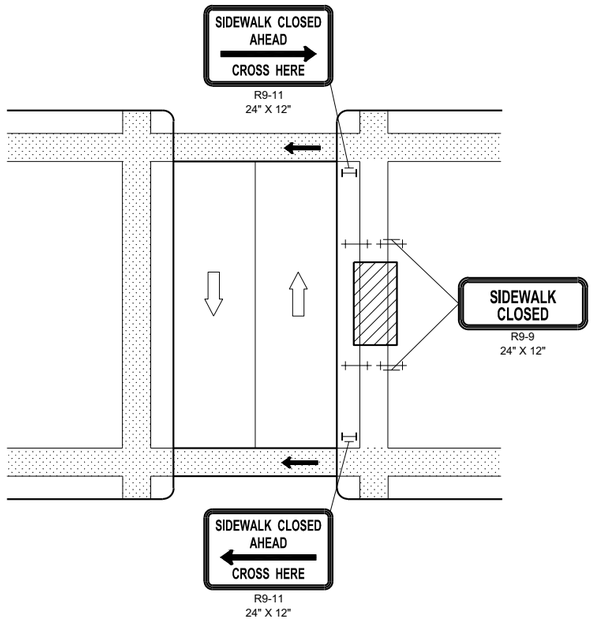



**MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE**

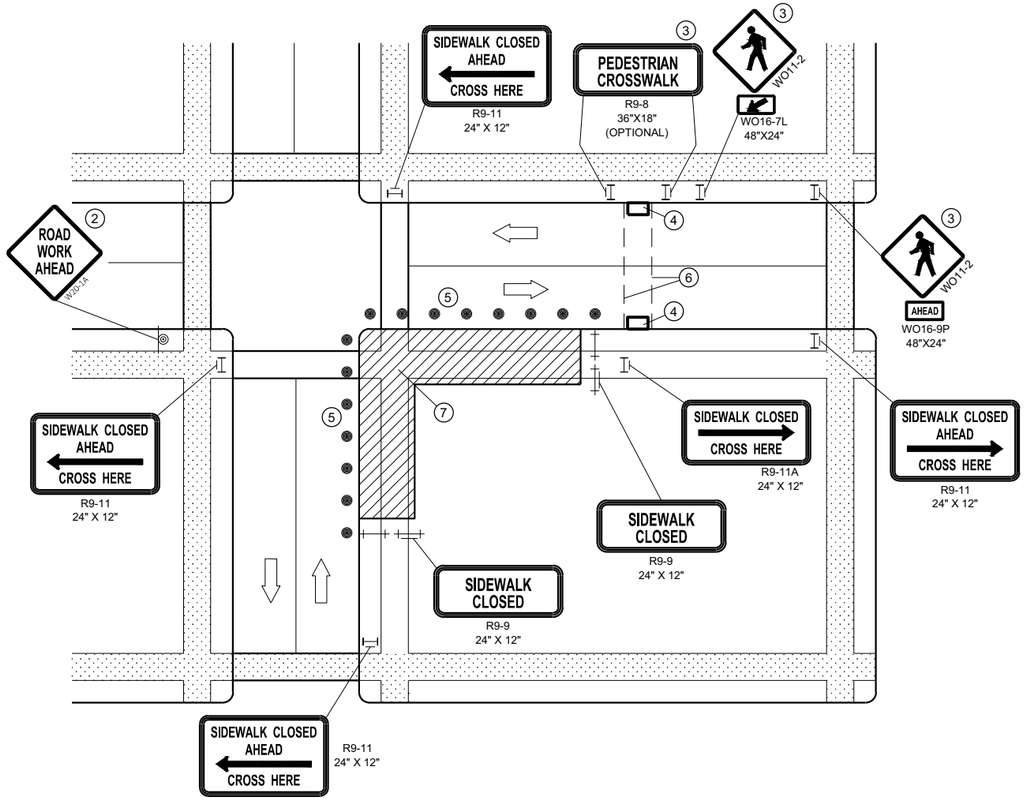
NOTE: LAYOUT SAME AS ABOVE.




**SIDEWALK DIVERSION**




**MID-BLOCK SIDEWALK CLOSURE**




**CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK**

## GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTIME CLOSURE, USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEK LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

1. IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE
2. "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
3. IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
4. TEMPORARY CURB RAMPS. SEE SDD 15D30 SHEET "b'.
5. DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
6. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
7. LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

## LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- DIRECTION OF TRAFFIC

**TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

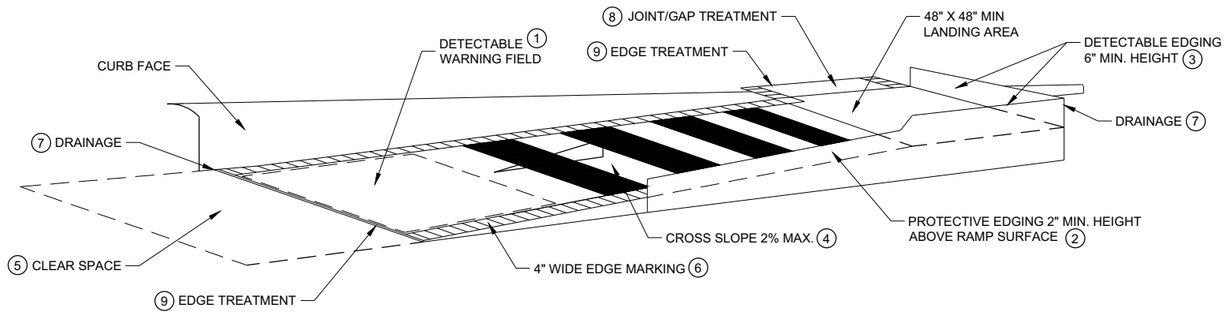


6

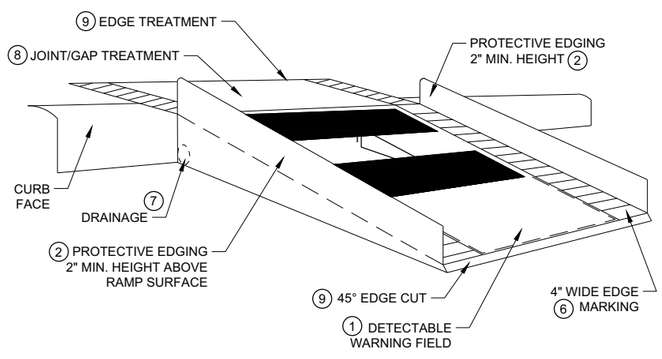
SDD 15D30 - 06a

6

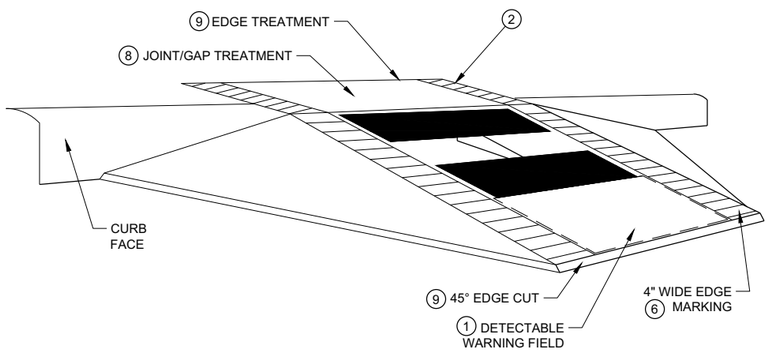
SDD15D30 - 06a




## TEMPORARY CURB RAMP PARALLEL TO CURB




WITH PROTECTIVE EDGE




WITH SIDE APRON

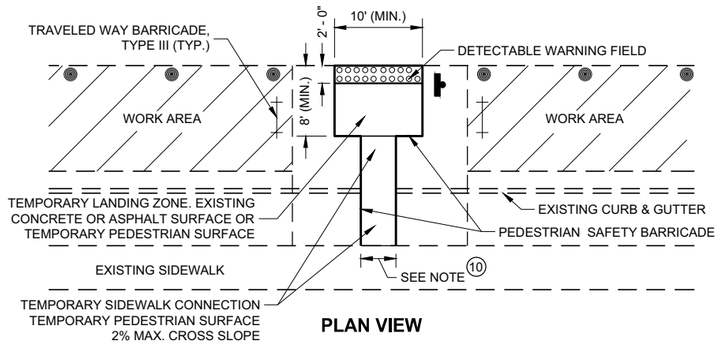
## TEMPORARY CURB RAMP PERPENDICULAR TO CURB

## GENERAL NOTES

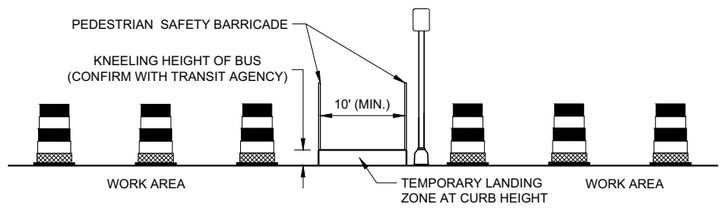
NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

1. CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 08D05, SHEET "e".
2. PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
5. CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
7. DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES SHALL BE VERTICAL UP TO ¼" HIGH AND BEVELED AT 1:2 BETWEEN ¼" AND ½".
10. 5" WIDE MIN. WITH PEDESTRIAN SAFETY BARRICADE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY BARRICADE.




PLAN VIEW



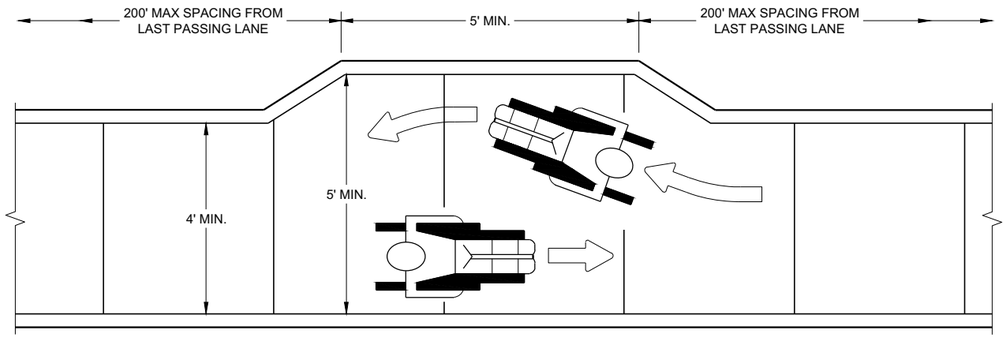

PROFILE VIEW

## TEMPORARY BUS STOP PAD

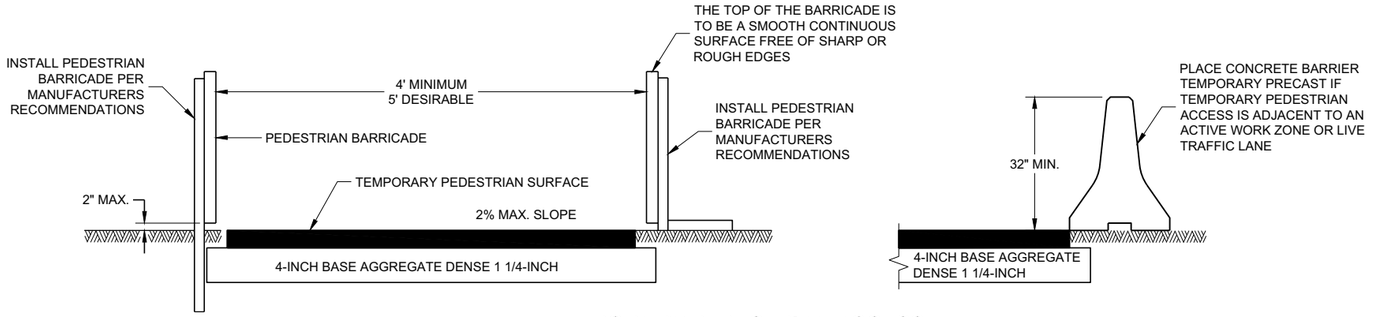
### LEGEND

- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE
- WORK AREA

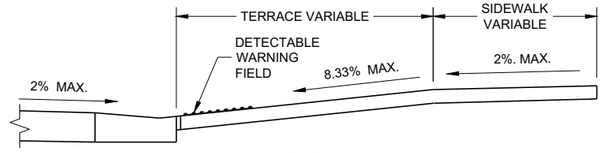
## TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION



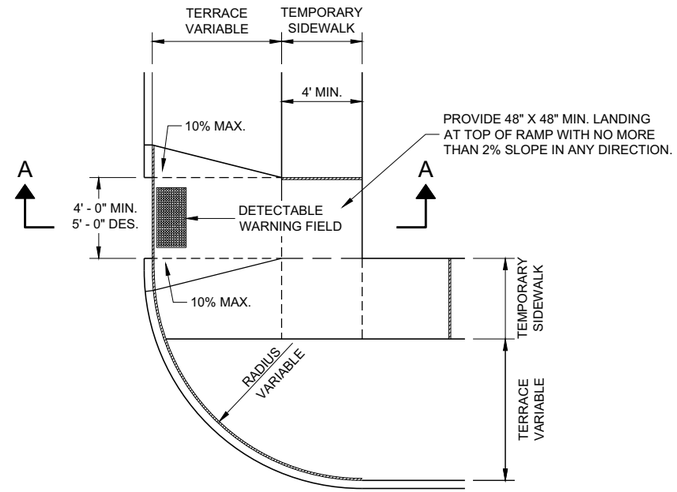

**NARROW SIDEWALK PASSING DETAIL**




**TEMPORARY PEDESTRIAN ACCESS**



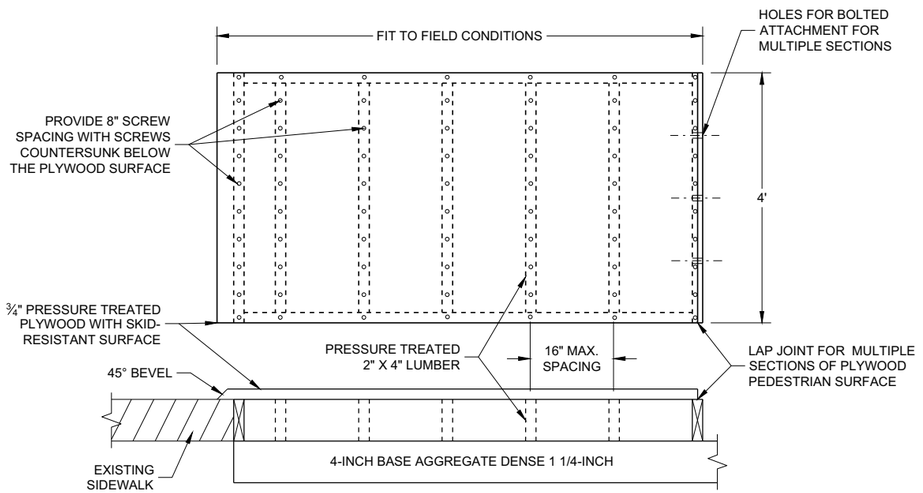

**SECTION A - A**



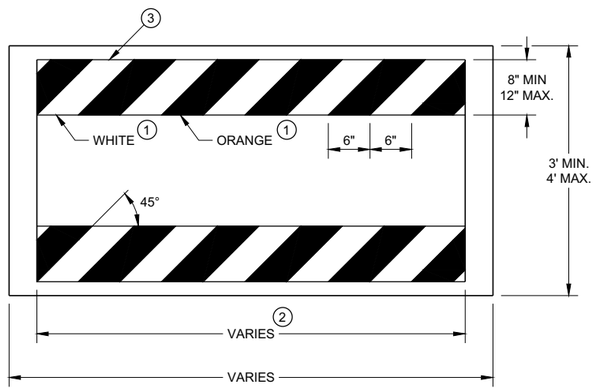

**PLAN VIEW**

**TEMPORARY TYPE 3 RAMP**

(OUTSIDE OF CROSSWALK AREA)




**TEMPORARY PEDESTRIAN SURFACE PLYWOOD**




**TEMPORARY PEDESTRIAN BARRICADE ***

## GENERAL NOTES

BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

(3) PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

**TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

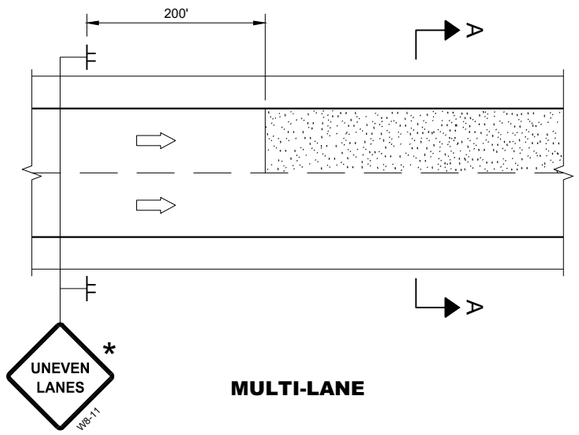
FHWA



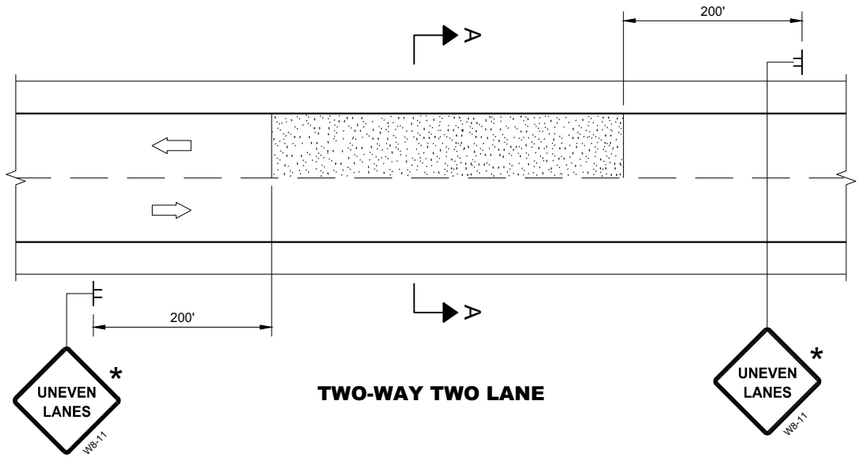
SDD 15D30 - 06c

6

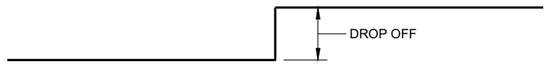
SDD 15D30 - 06c




**MULTI-LANE**

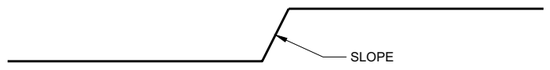



**TWO-WAY TWO LANE**

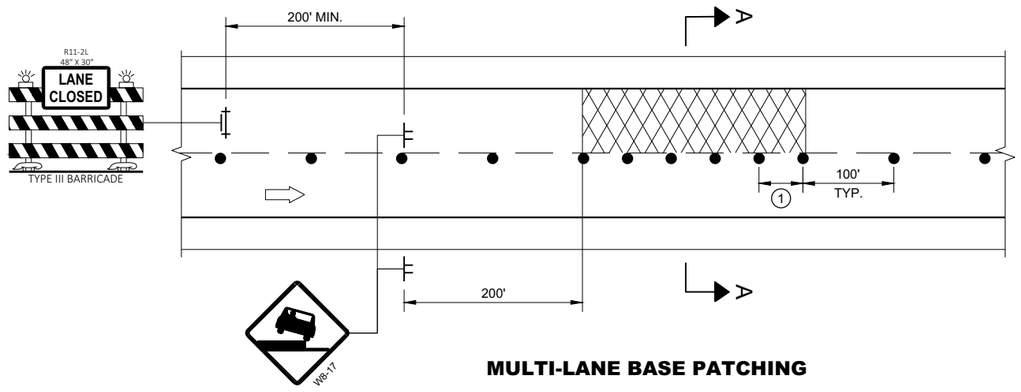



**SECTION A - A**

**OR**

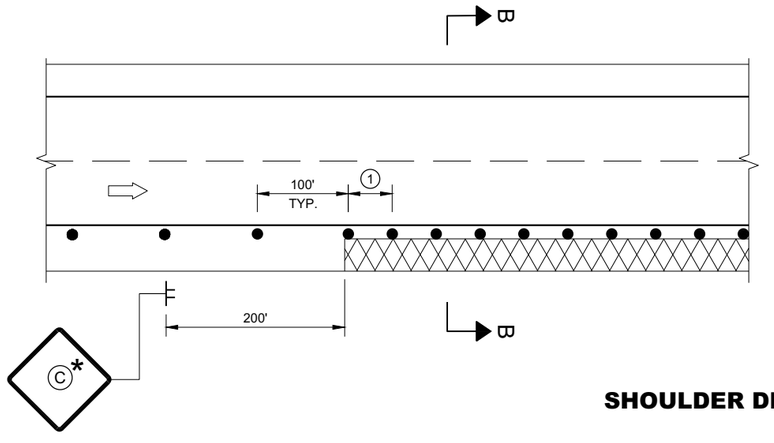



**SECTION A - A**

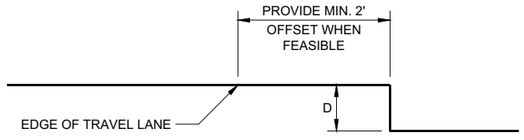



**MULTI-LANE BASE PATCHING**

**ADJACENT LANE DROP-OFFS**




**SHOULDER DROP-OFFS**




**SECTION B - B**

| D | SIGN (C) |
|---|---|
| < 2" WITH A SLOPE STEEPER THAN 3:1 | LOW SHOULDER<br>WO8-9 |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | SHOULDER DROP - OFF<br>W8-9A<br>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

## GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

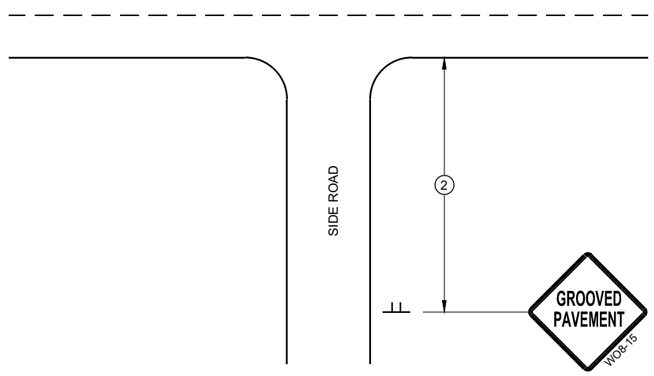
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

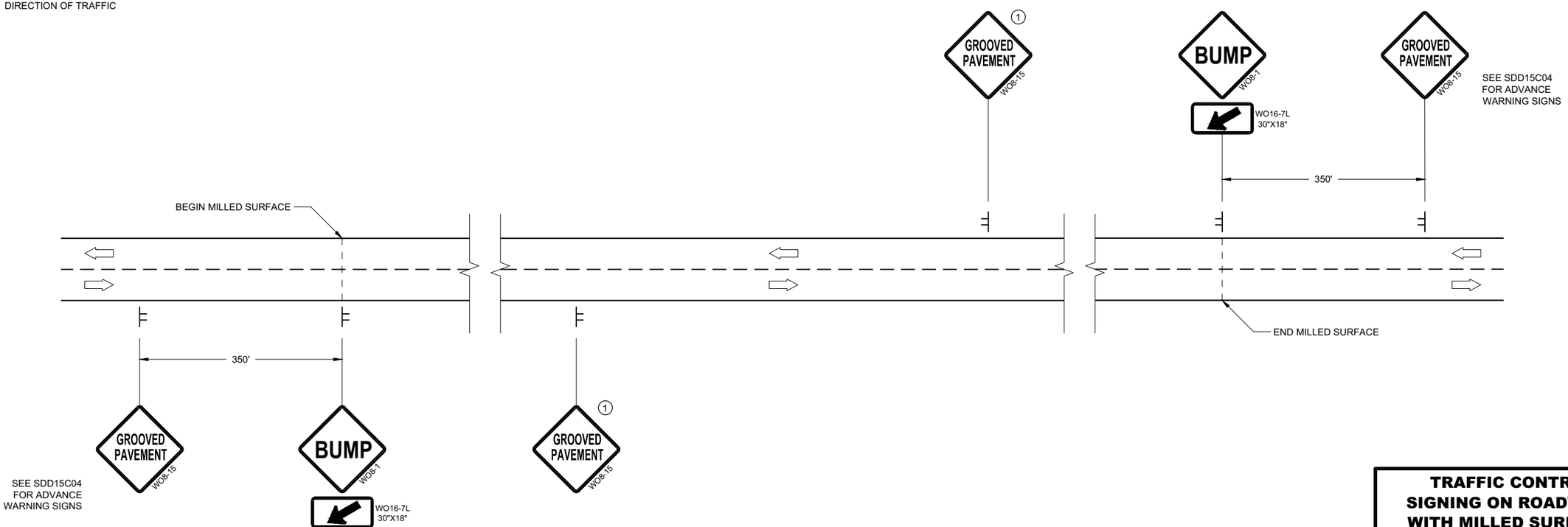
## LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC




**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**




**DETAIL FOR SIGNING ON MILLED SURFACES**

**TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA





6
SDD 15D44 - 02

## GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

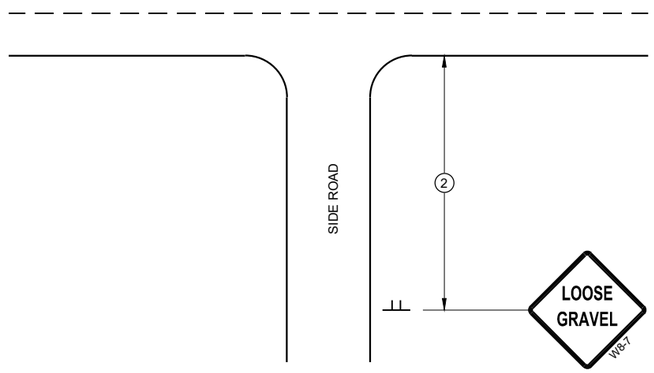
(1) PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

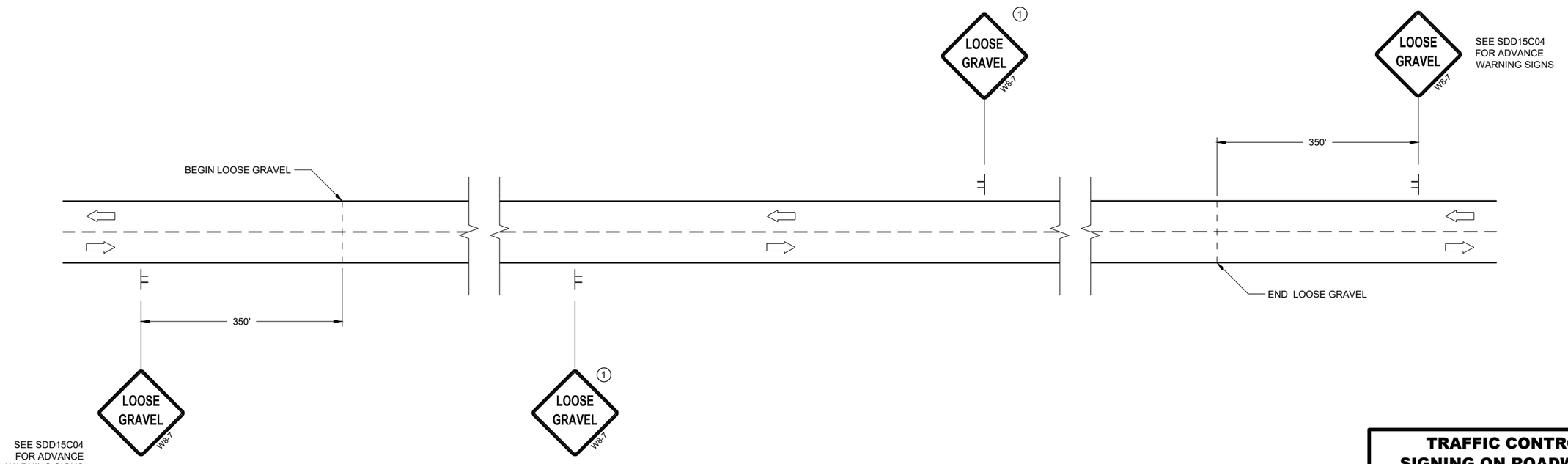
## LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC




**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**




**DETAIL FOR SIGNING ON CHIP SEALED SURFACES**

**TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE 227

FHWA

6

SDD 15D45 - 02

6

SDD 15D45 - 02

## GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

(1) PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

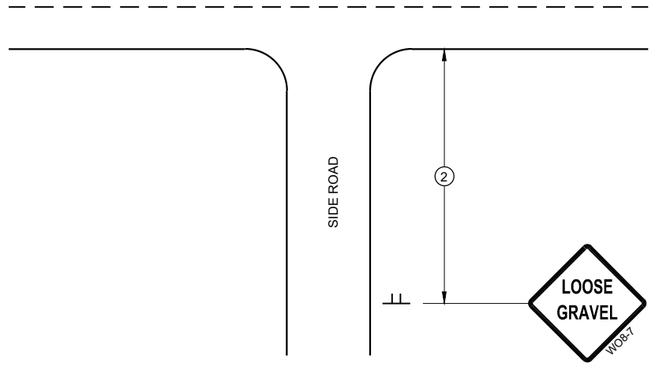
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

(3) ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

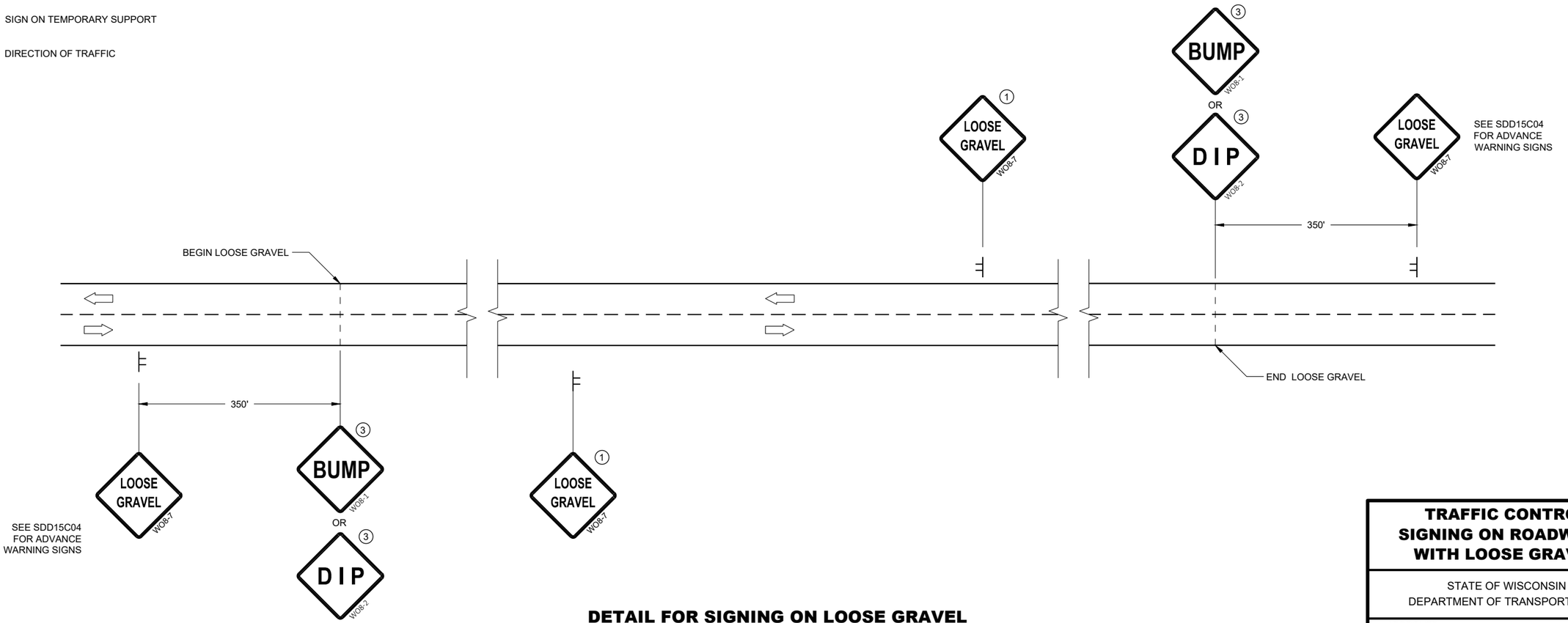
## LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC




**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**




**DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES**

**TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA




6


SDD 15D45 - 03

## 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.

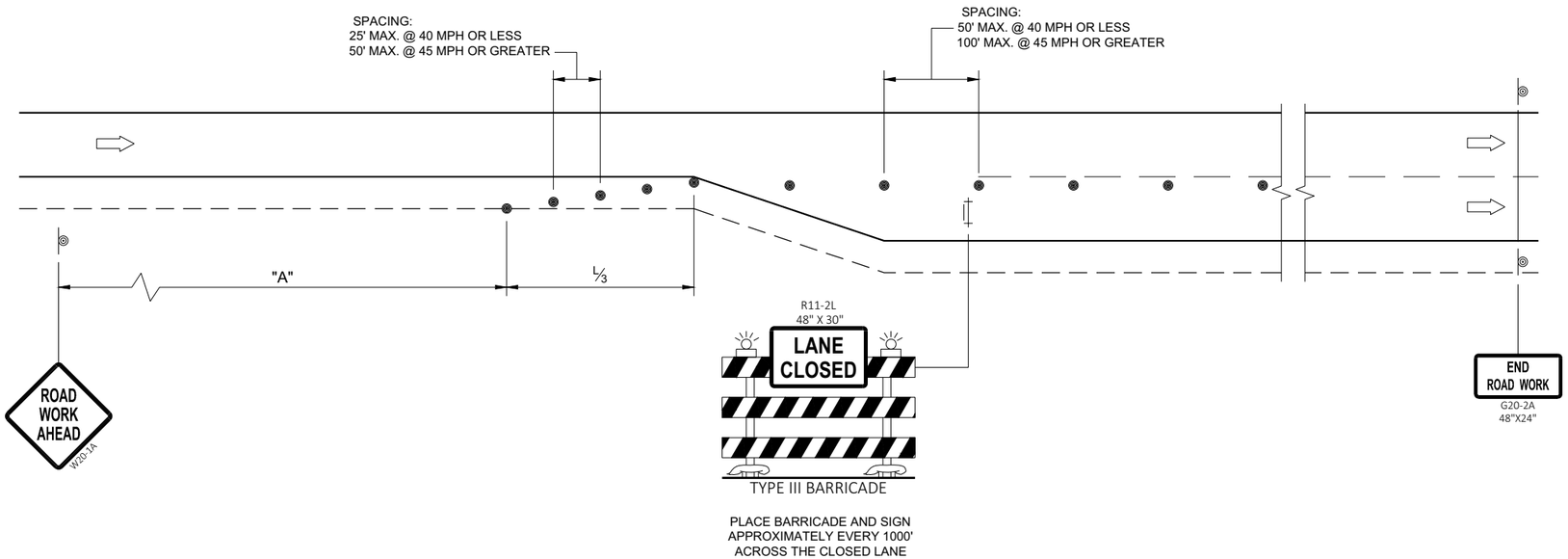
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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 SEVEN 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

## ADDED LANE CLOSURE WITHOUT LANE SHIFT

**TRAFFIC CONTROL**
**ADDED LANE CLOSURE**
**WITHOUT LANE SHIFT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA



6

SDD 15D50 - 01a

6

SDD 15D50 - 01a

## 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) FEET |
|---|---|---|
| 25 | 200 | 60 |
| 30 | 200 | 90 |
| 35 | 350 | 120 |
| 40 | 350 | 160 |
| 45 | 500 | 270 |
| 50 | 500 | 300 |
| 55 | 500 | 330 |

## 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.

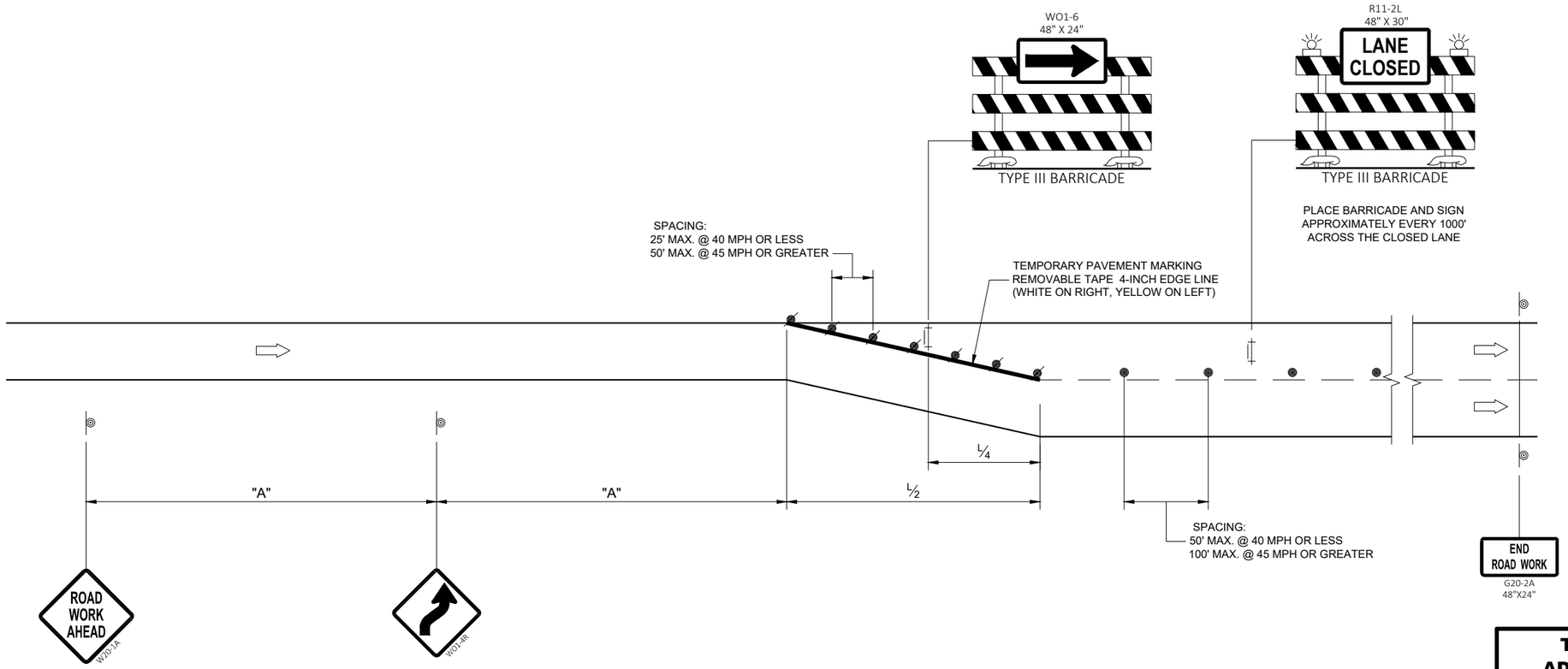
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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 SEVEN 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 TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR FOUR CONTINUOUS DAYS AND NIGHTS.




## ADDED LANE CLOSURE WITH LANE SHIFT

**TRAFFIC CONTROL, ADDED LANE CLOSURE WITH LANE SHIFT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

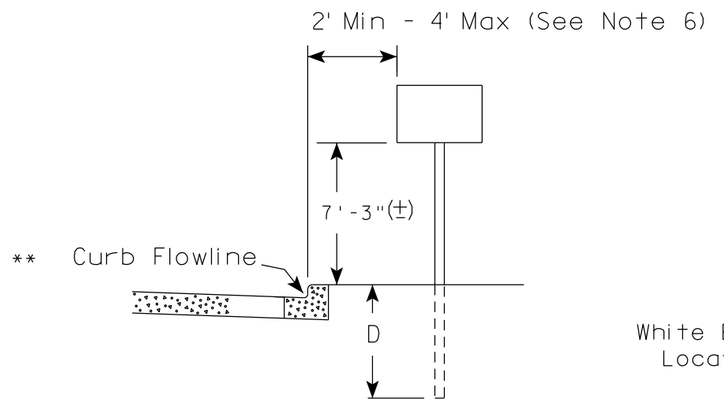
APPROVED
February 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA



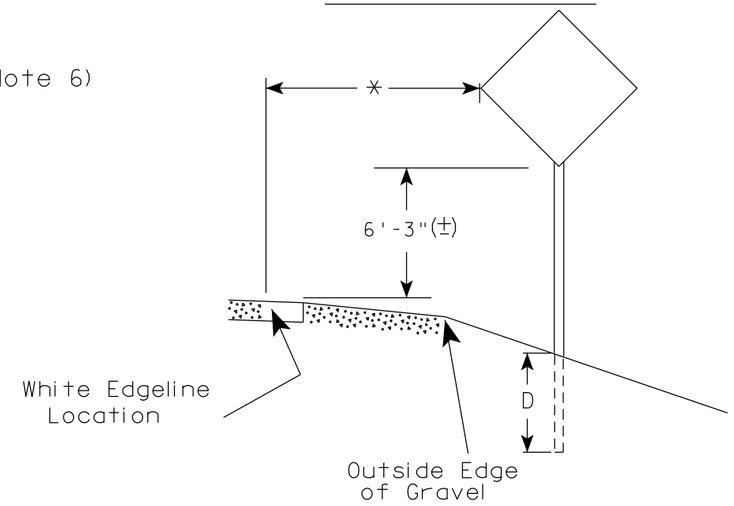
SDD 15D50 - 01b

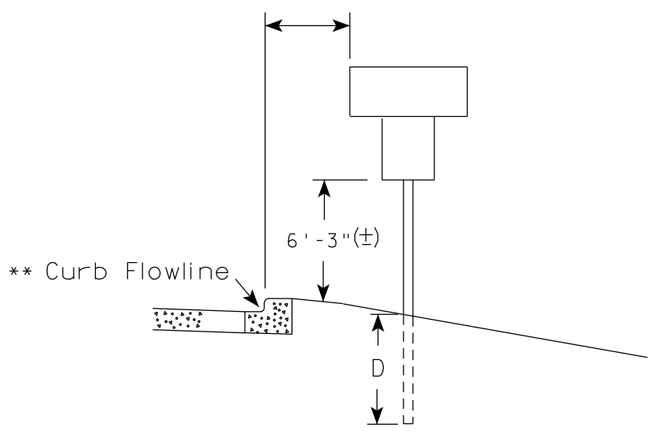
SDD 15D50 - 01b

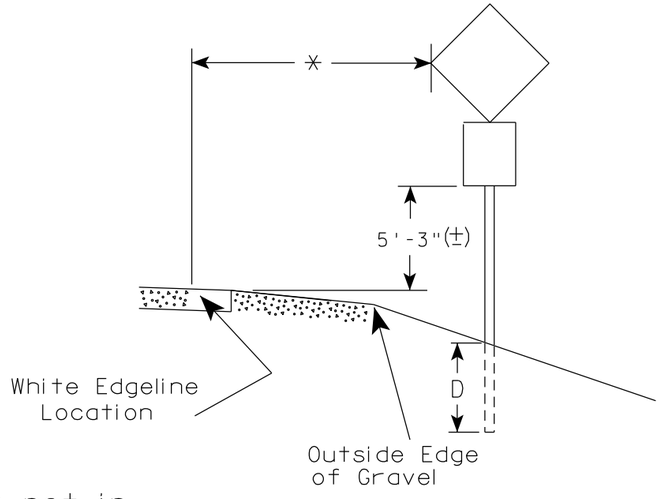
## URBAN AREA




## 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.

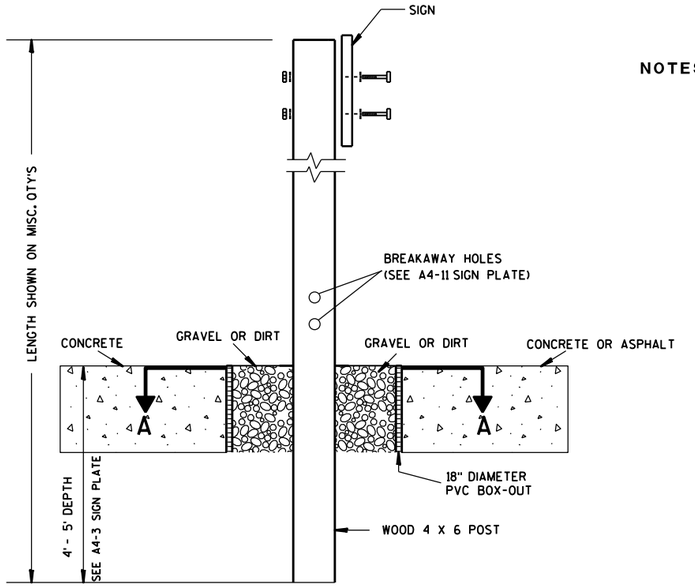
# TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

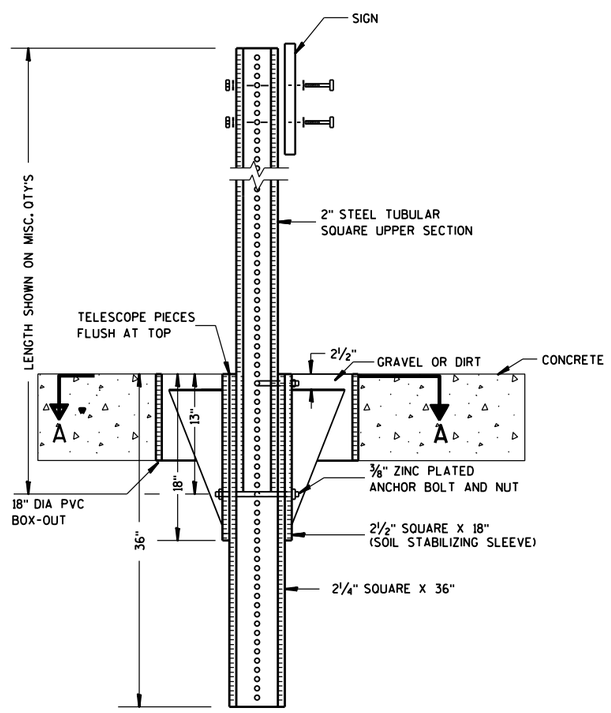
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 231 | E |
|---|---|---|---|---|---|




**ELEVATION VIEW**

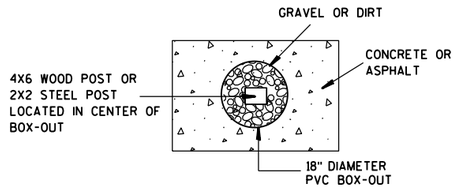
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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

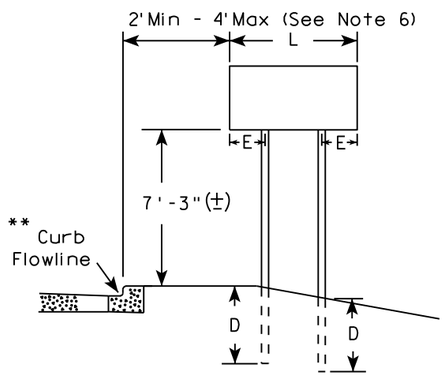
DATE 1/27/14 PLATE NO. A4-3B.1



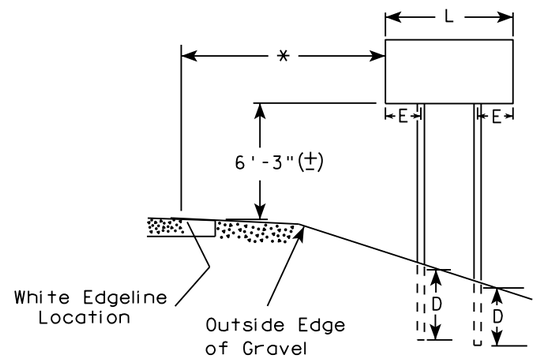
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

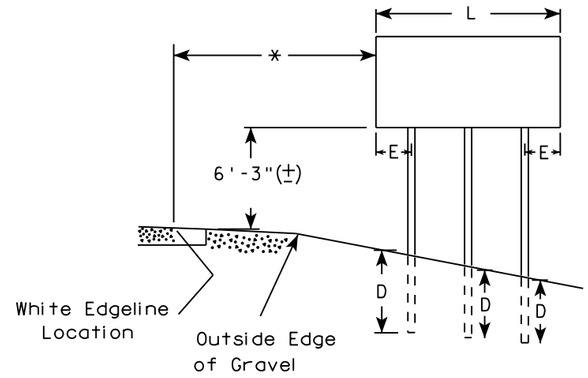
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

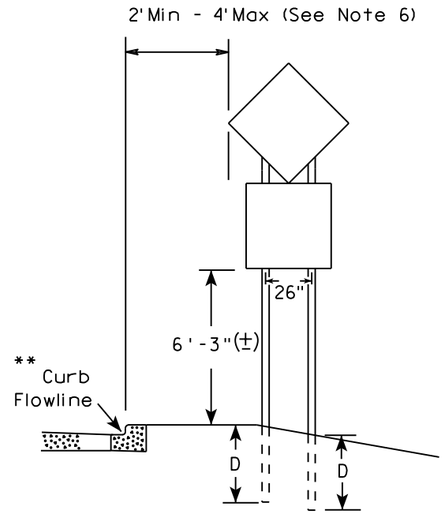
## URBAN AREA



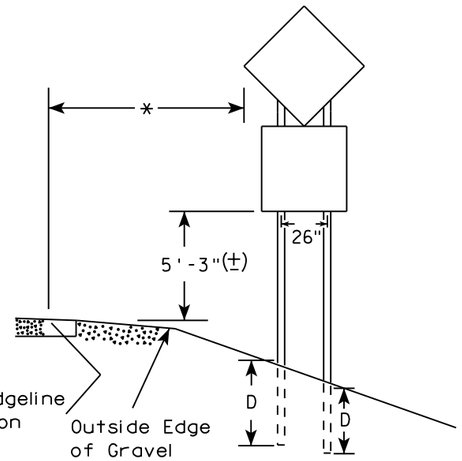

## RURAL AREA (See Note 3)




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' |

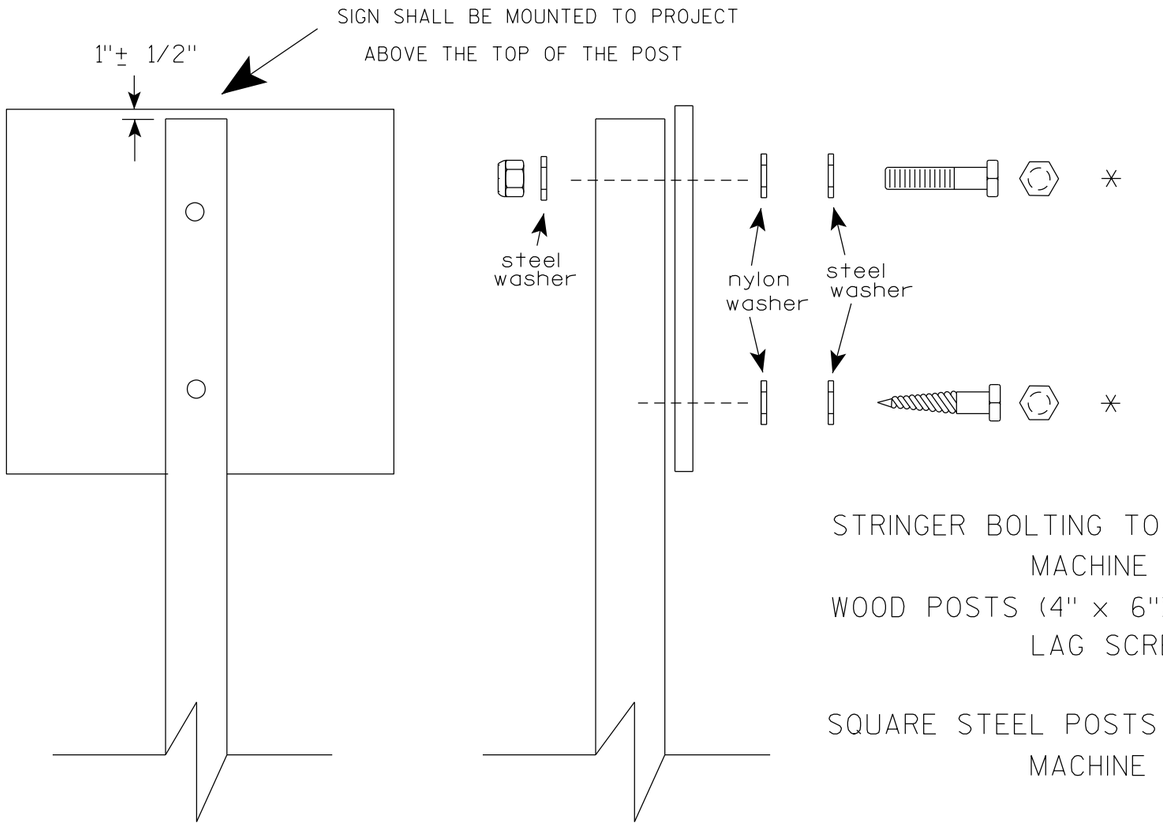
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

*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: 233 | 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

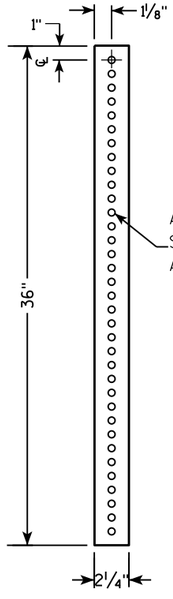
DATE 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

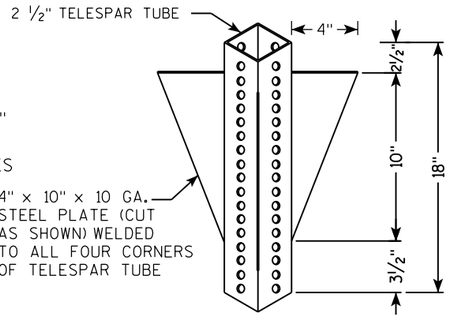
SHEET NO: 234 E

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

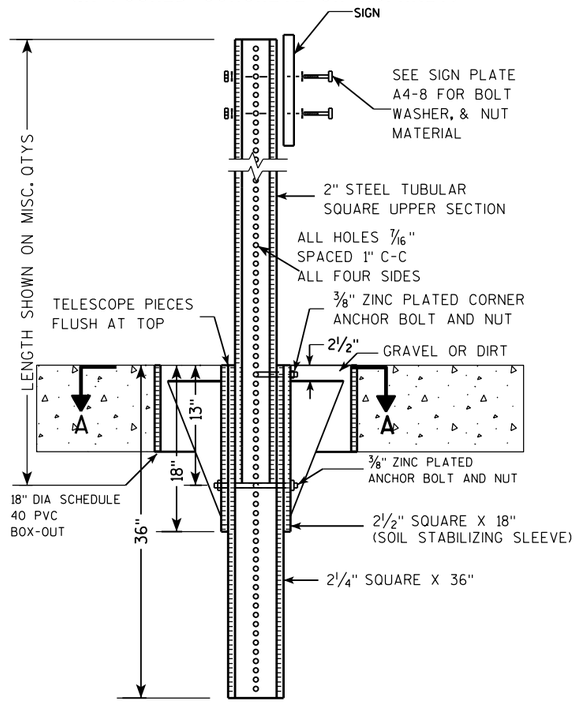
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



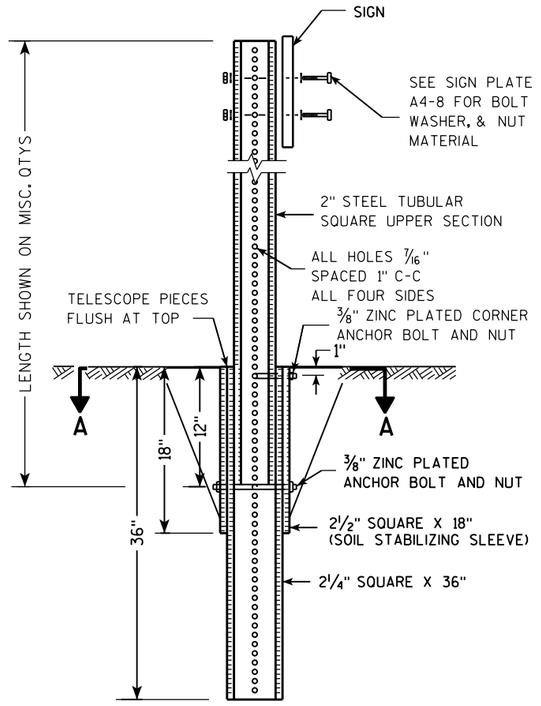

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

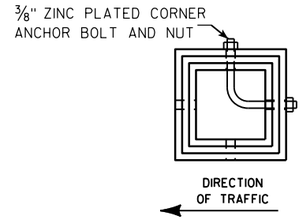



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




## 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*

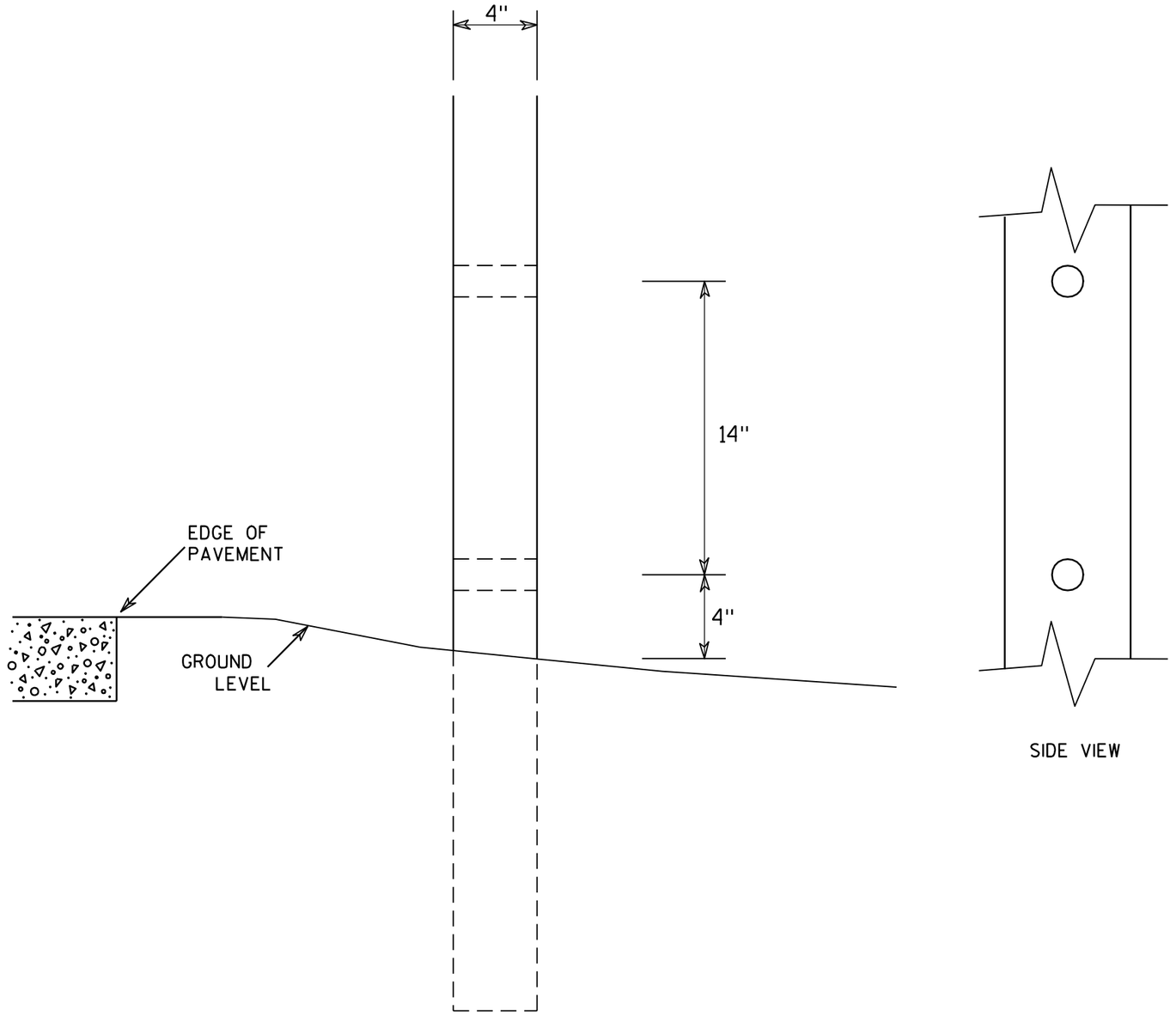
APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE 235 A4-9.9

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42






SIDE VIEW

GENERAL NOTES

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

# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

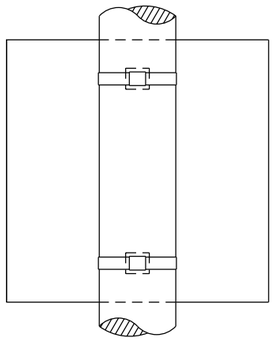
APPROVED Chester J Spang for State Traffic Engineer

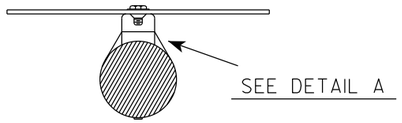
DATE 3/27/97 PLATE NO. A4-11.2

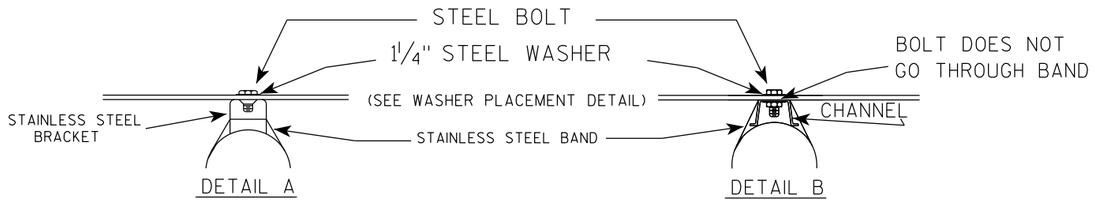
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 236 | E |
|---|---|---|---|---|---|

# BANDING

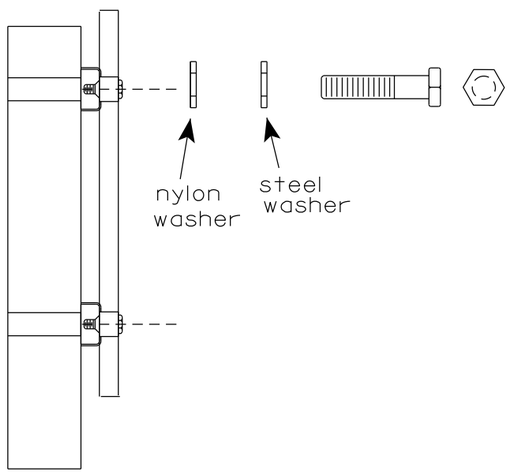
SINGLE SIGN






WASHER PLACEMENT

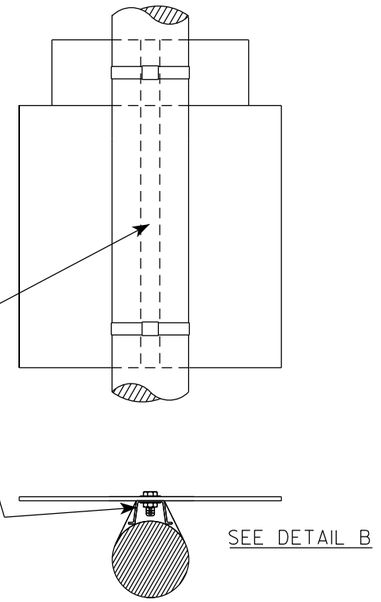



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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




STANDARD SIGN
SIGN BANDING DETAILS

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

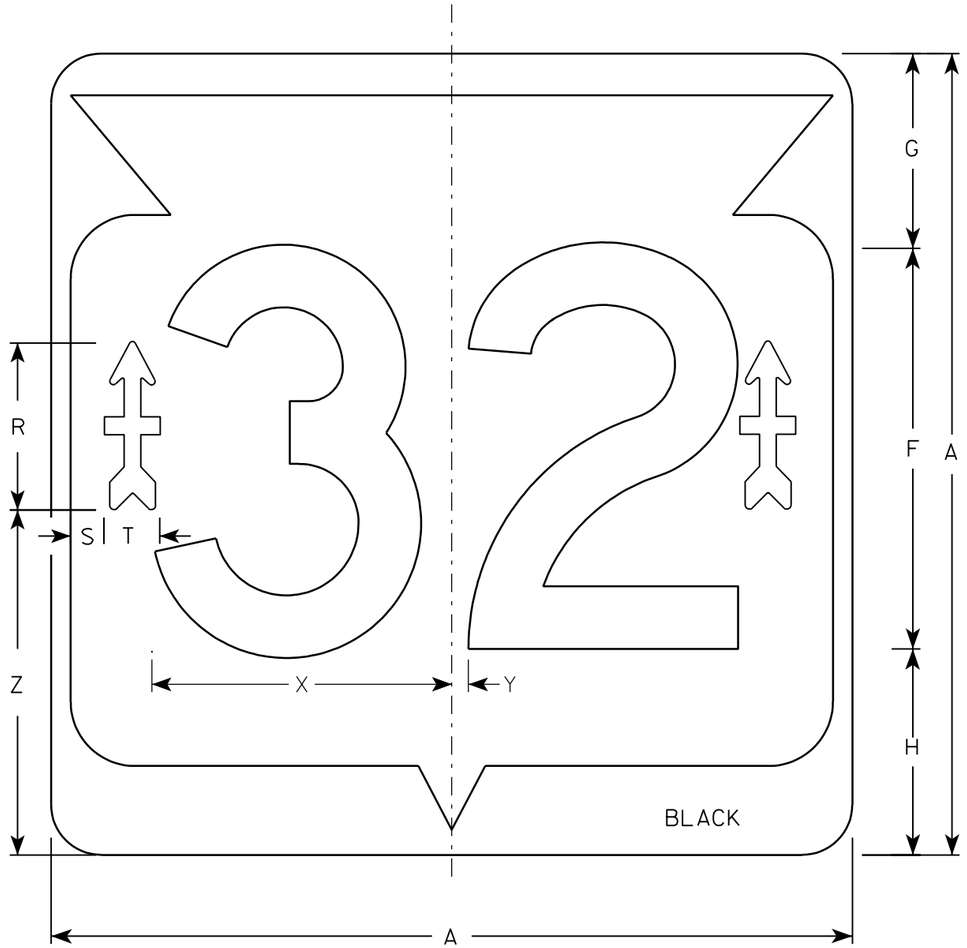
DATE 6/10/19 PLATE NO. A5-9.4

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 237 | 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

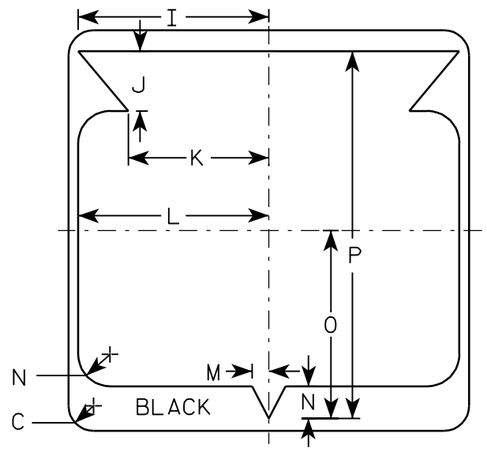
7



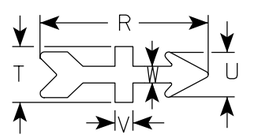

M1-6B

NOTES

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




32nd DIVISION ARROW
ACTUAL SIZE




Metric equivalent for this sign is:

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m² |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 ½ | | | 12 | 5 ½ | 6 ½ | 10 ¼ | 2 ½ | 8 ⅞ | 11 ½ | 1 | 1 ⅞ | 11 ¼ | 21 ⅞ | | 5 ⅛ | ¾ | 1 ⅞ | 1 ½ | ⅝ | ⅝ | 9 | ½ | 10 ½ | 4.0 | .36 |
| 3 | 36 | | 2 ¼ | | | 18 | 8 ¾ | 9 ¼ | 15 ⅜ | 5 ⅜ | 12 ⅝ | 17 ⅛ | 1 ½ | 2 ⅞ | 16 ⅞ | 33 | | 7 ½ | 1 ½ | 2 ½ | 2 | ⅞ | ¾ | 13 ½ | ¾ | 15 ½ | 9.0 | .81 |
| 4 | 36 | | 2 ¼ | | | 18 | 8 ¾ | 9 ¼ | 15 ⅜ | 5 ⅜ | 12 ⅝ | 17 ⅛ | 1 ½ | 2 ⅞ | 16 ⅞ | 33 | | 7 ½ | 1 ½ | 2 ½ | 2 | ⅞ | ¾ | 13 ½ | ¾ | 15 ½ | 9.0 | .81 |
| 5 | 36 | | 2 ¼ | | | 18 | 8 ¾ | 9 ¼ | 15 ⅜ | 5 ⅜ | 12 ⅝ | 17 ⅛ | 1 ½ | 2 ⅞ | 16 ⅞ | 33 | | 7 ½ | 1 ½ | 2 ½ | 2 | ⅞ | ¾ | 13 ½ | ¾ | 15 ½ | 9.0 | .81 |

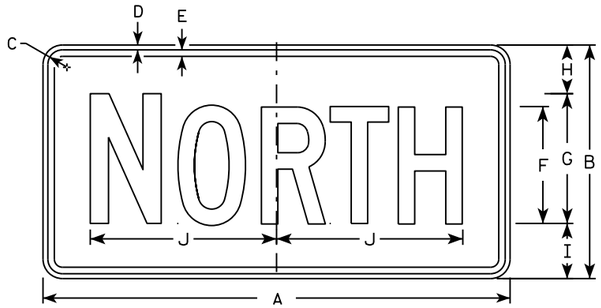
STATE ROUTE MARKER "32"
M1-6B FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

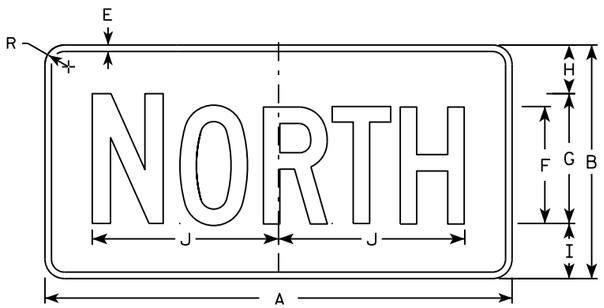
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 12/5/05 PLATE NO. M1-6B.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 238 | E



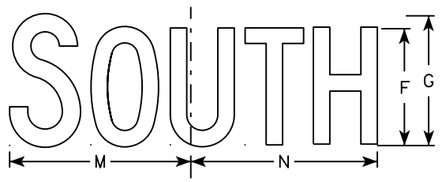

M3-1
MM3-1
MP3-1



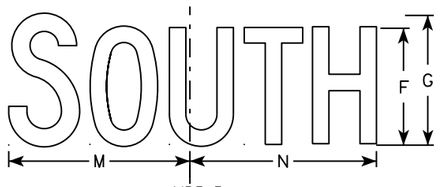

MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

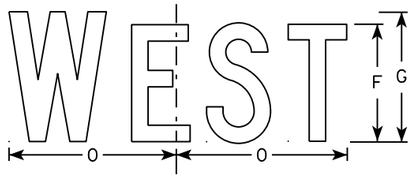
MB3-2
MK3-2
MN3-2



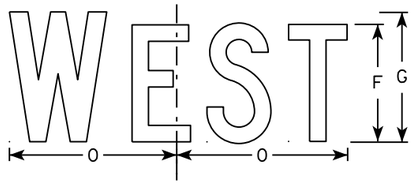

M3-3
MM3-3
MP3-3




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

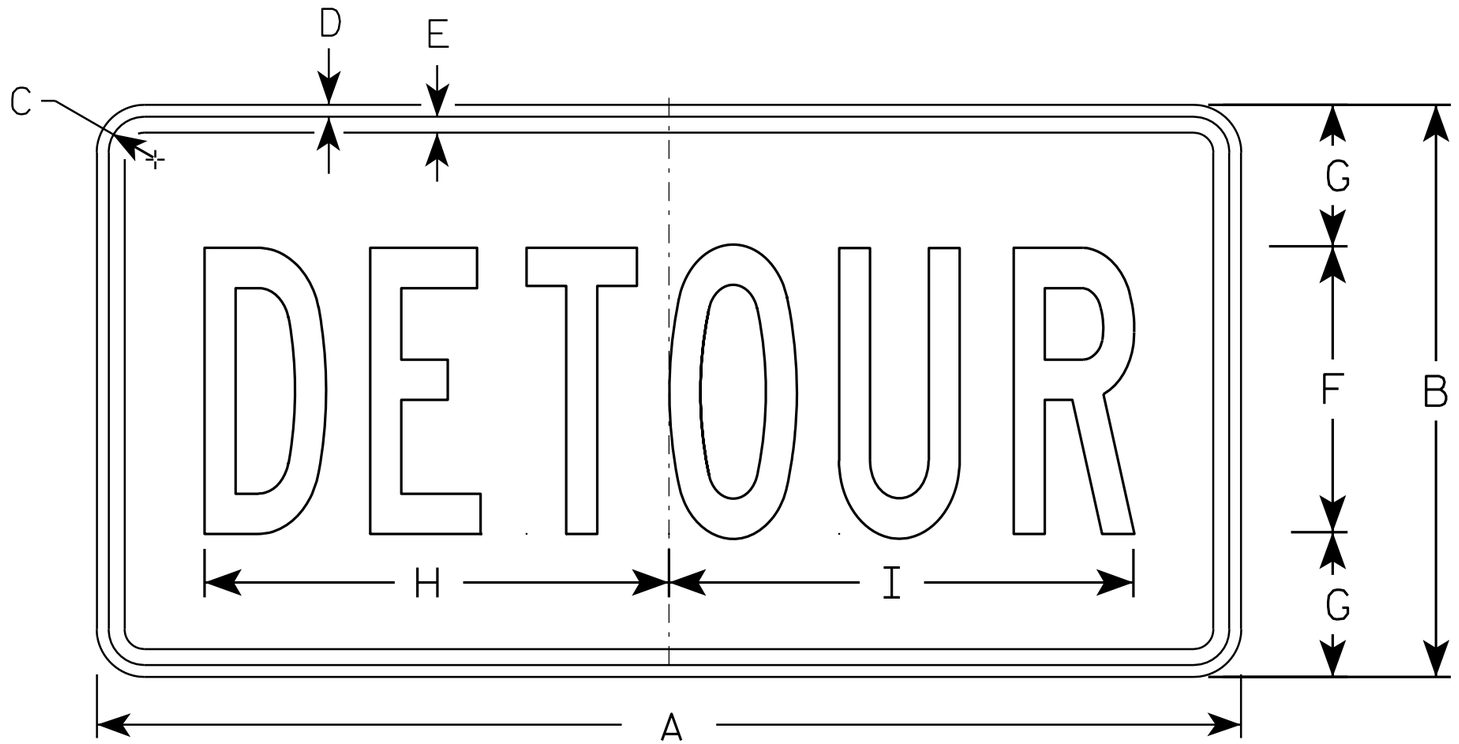
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




M4-8

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - B
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 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

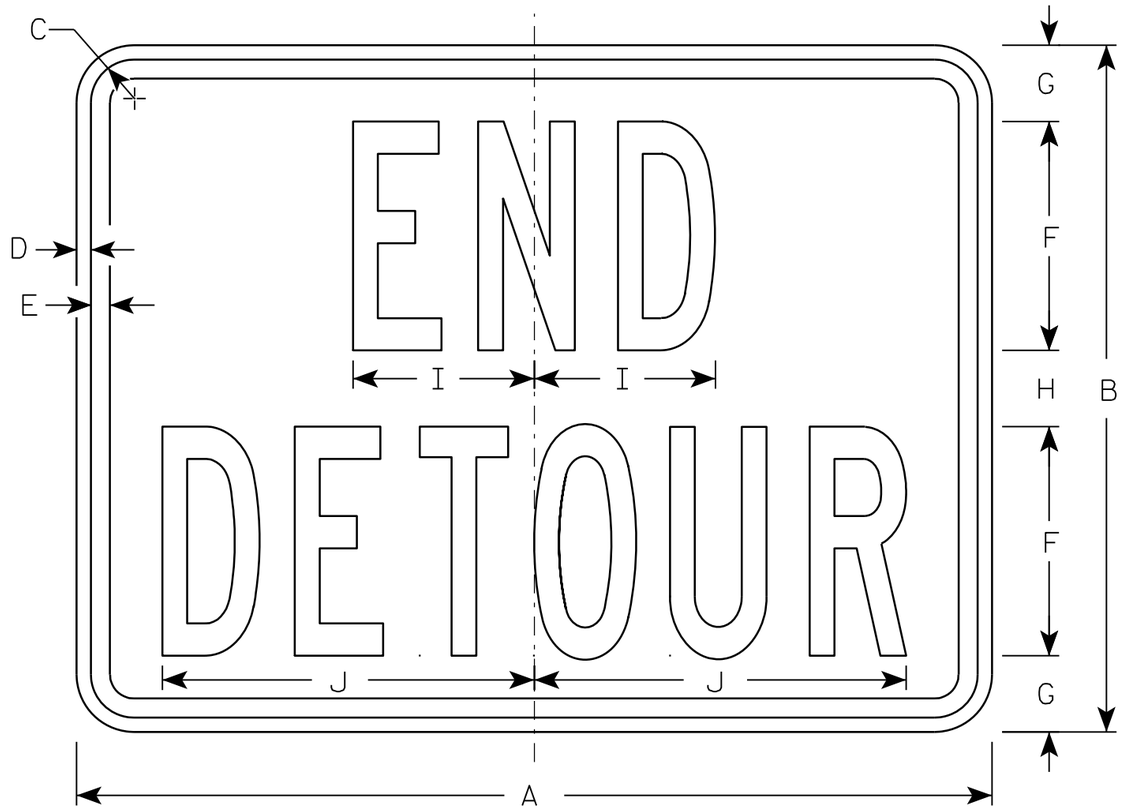
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 240 | E |
|---|---|---|---|---|---|




M4-8A

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 - B
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 | 18 | 1 1/8 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

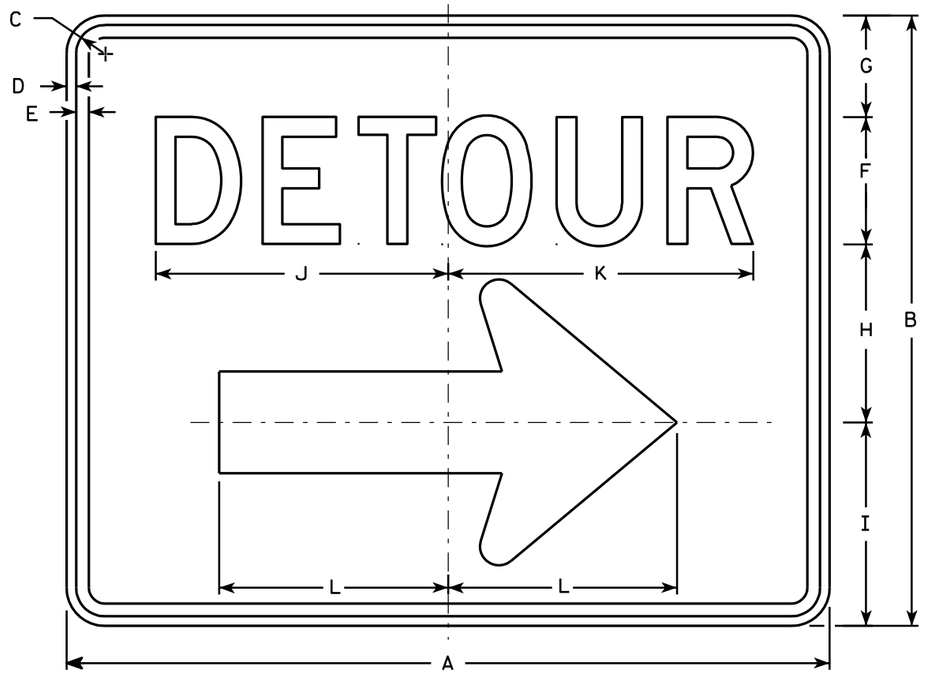
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

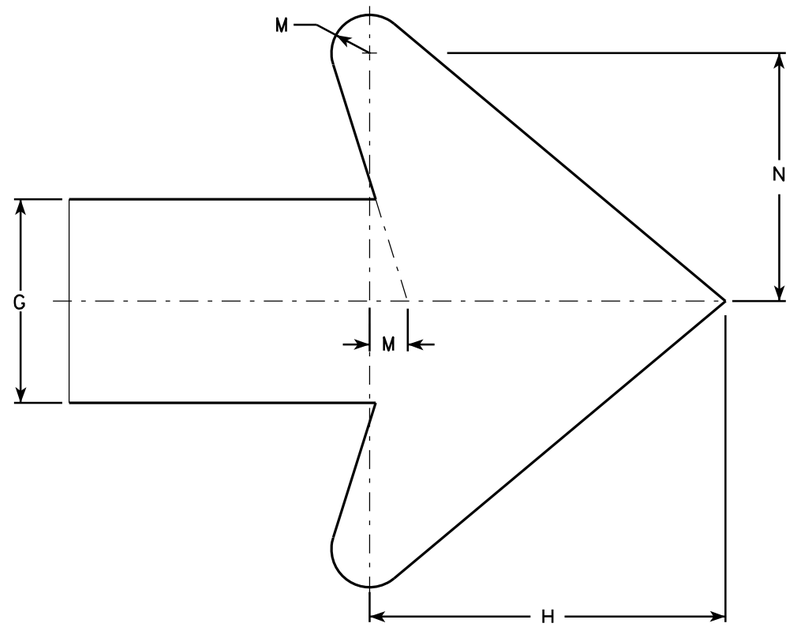
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 241 | E |
|---|---|---|---|---|---|




M4-9R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.




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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 4 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |

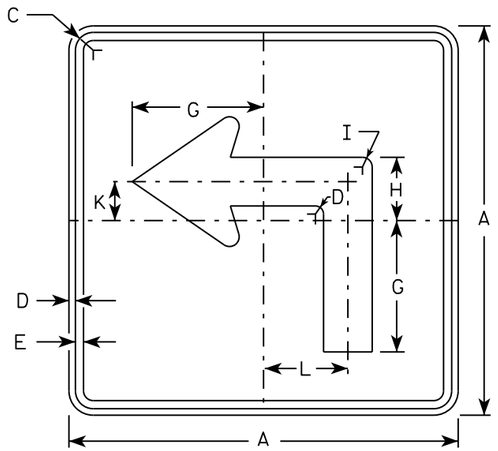
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

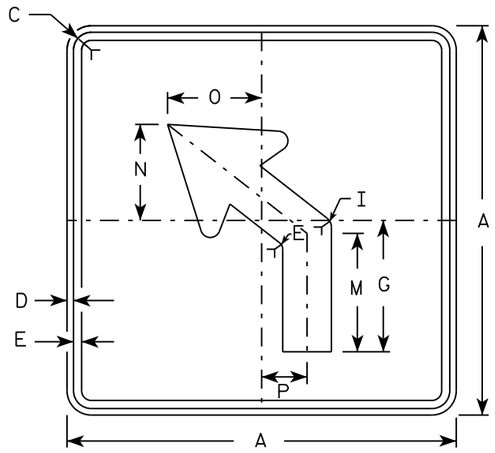
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

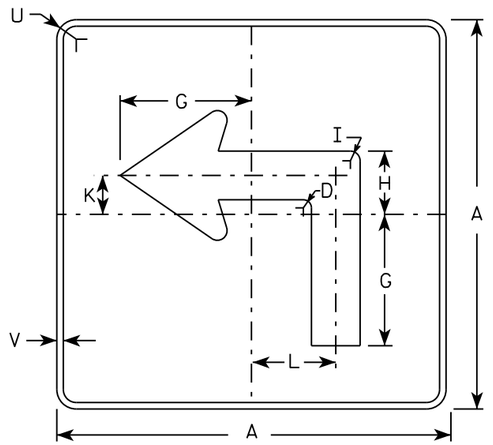
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 242 | E |
|---|---|---|---|---|---|



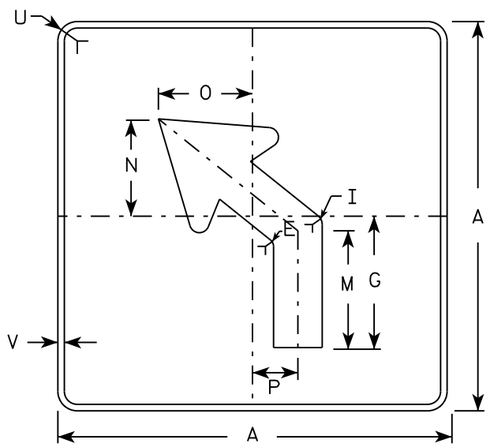

M5-1L
MM5-1L
MO5-1L
MP5-1L



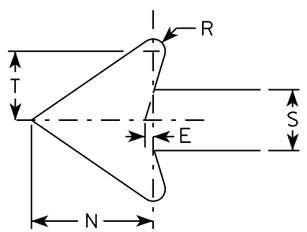

M5-2L
MM5-2L
MO5-2L
MP5-2L




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

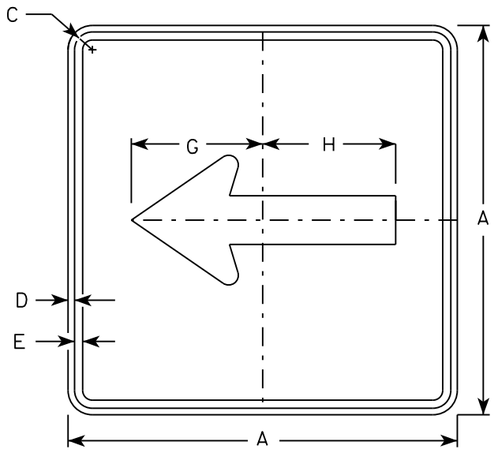
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

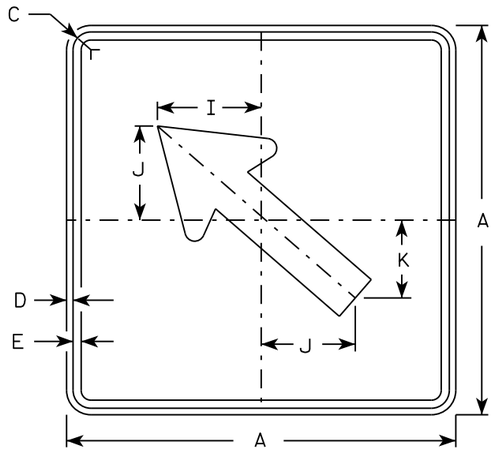


PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



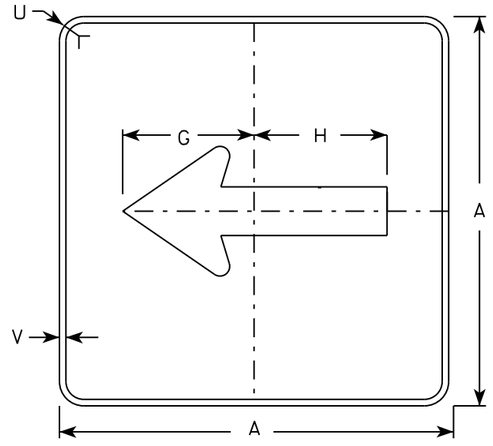

M6-1
MM6-1
MO6-1
MP6-1



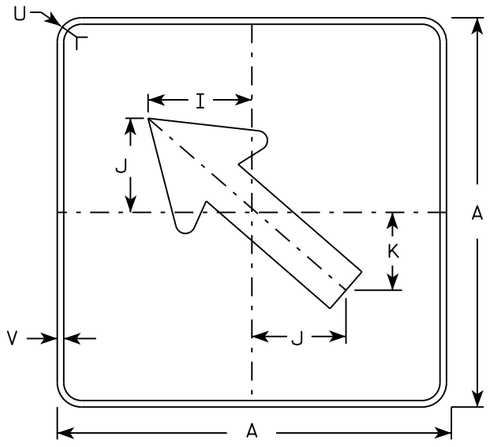

M6-2
MM6-2
MO6-2
MP6-2

NOTES

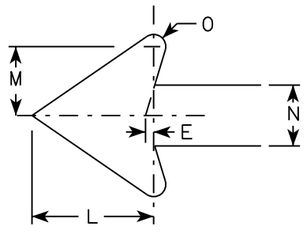
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - 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

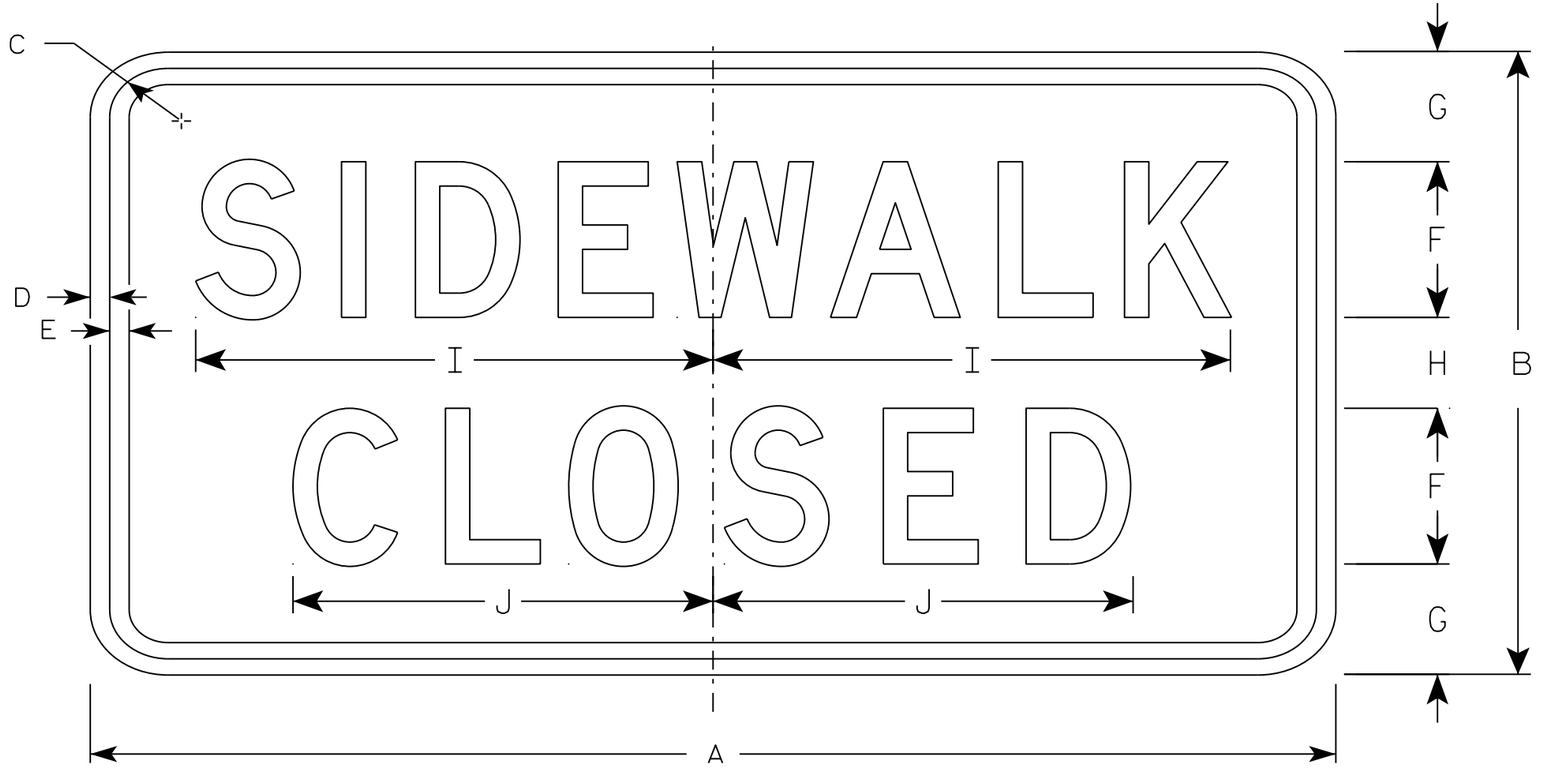
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 244 M6-1.15

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



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




R9-9

NOTES

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

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

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

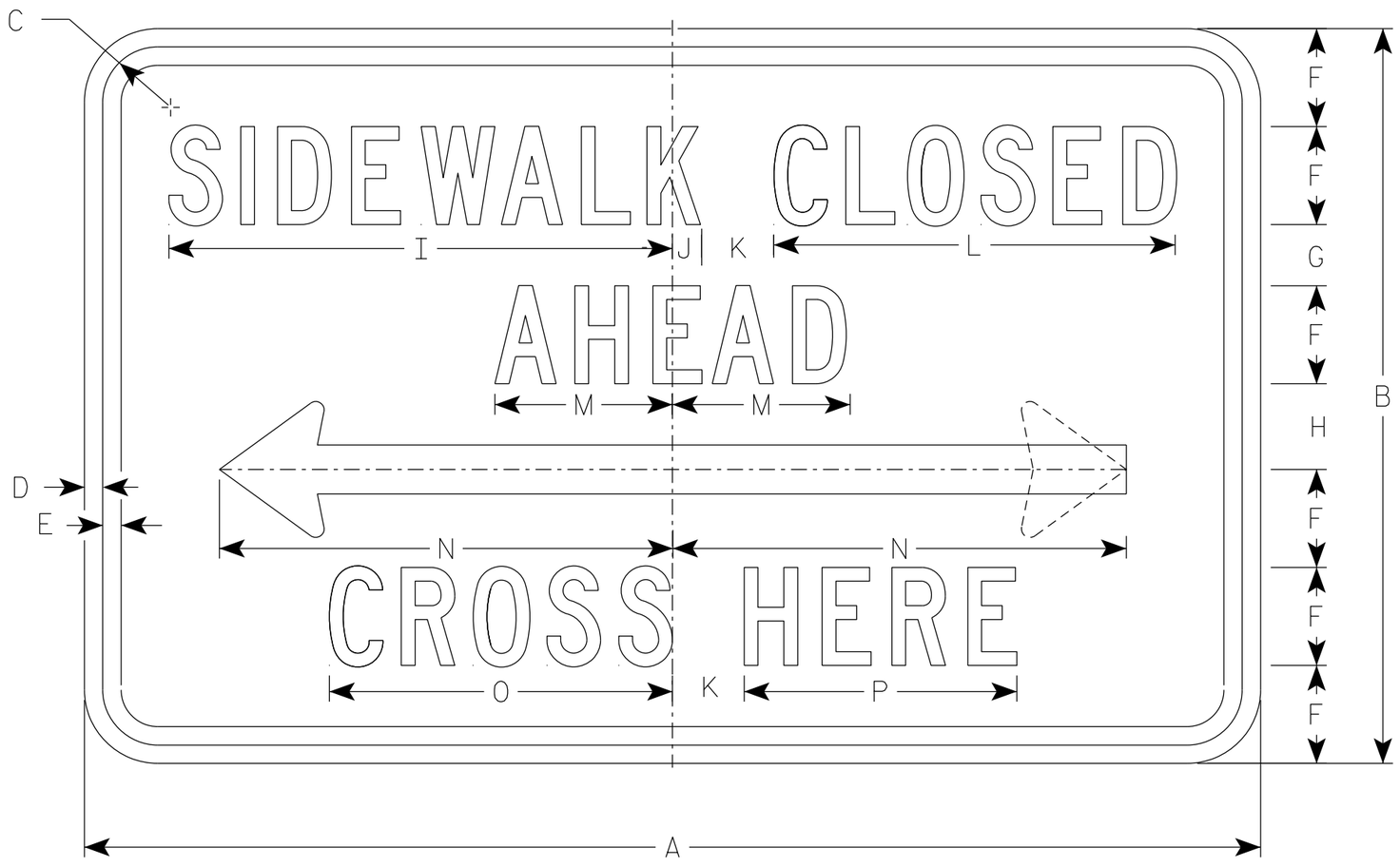
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 245 R9-9.6

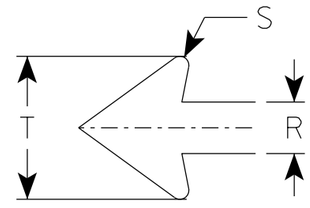
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R99.DGN PLOT DATE : 11-AUG-2016 11:33 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 2.918761:1.000000




R9-11




NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C except Size 1 is Series D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.
6. R9-11 D (double arrow)
   R9-11 L (left arrow)
   R9-11 R (right arrow)

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

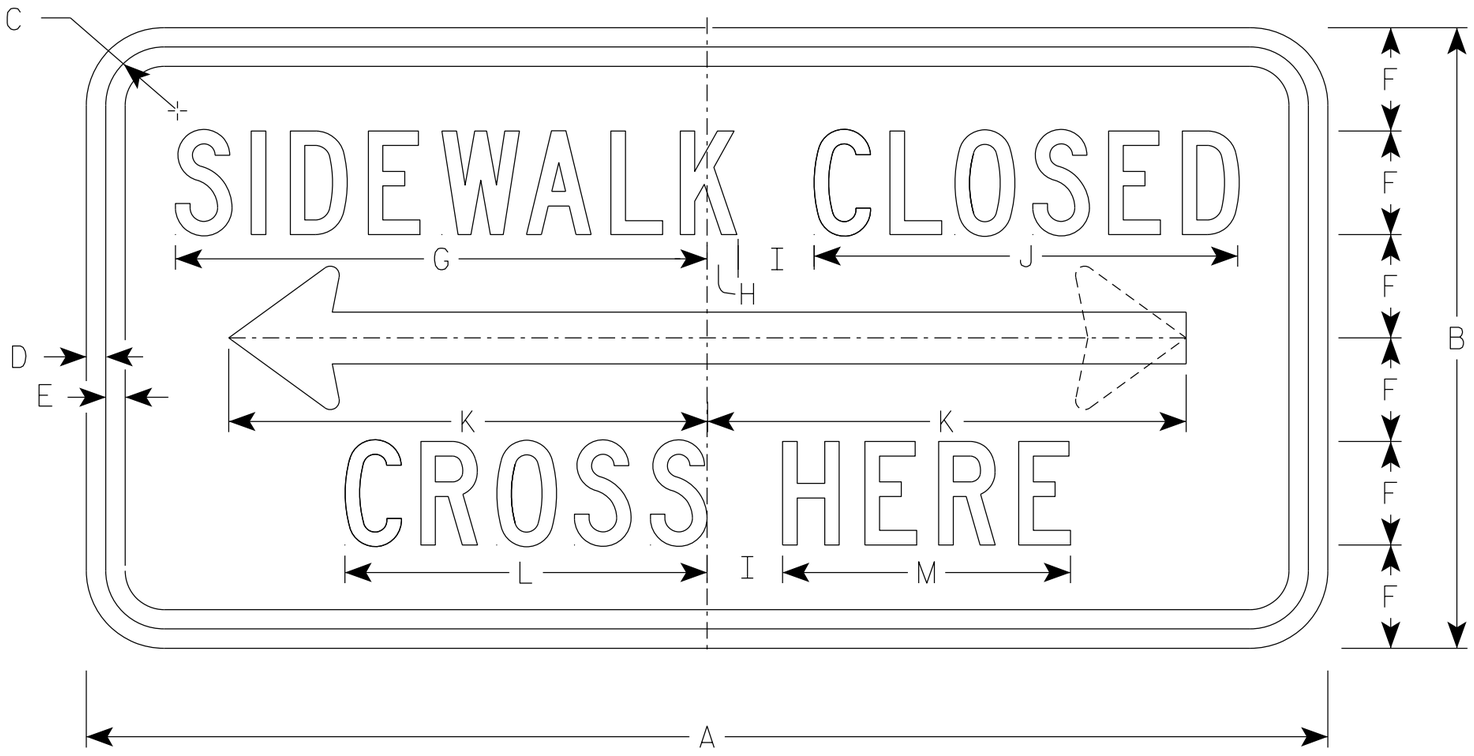
STANDARD SIGN
R9-11

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
*For* State Traffic Engineer

DATE 3/30/2021 PLATE NO. R9-11.4

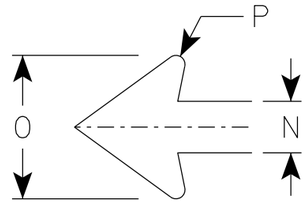
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 246 | E




R9-11A

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for paths and Trails.
6. R9-11AD (double arrow)
   R9-11AL (left arrow)
   R9-11AR (right arrow)




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 | 12 | 1 1/8 | 3/8 | 3/8 | 2 | 10 1/4 | 5/8 | 1 1/2 | 8 1/4 | 9 1/4 | 7 | 5 5/8 | 1 | 2 3/4 | 1/8 | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 2 | 10 1/4 | 5/8 | 1 1/2 | 8 1/4 | 9 1/4 | 7 | 5 5/8 | 1 | 2 3/4 | 1/8 | | | | | | | | | | | 2.0 |
| 3 | 30 | 15 | 1 1/8 | 3/8 | 1/2 | 2 1/2 | 12 3/4 | 1/2 | 2 | 10 1/4 | 12 3/8 | 8 5/8 | 6 3/4 | 1 1/4 | 3 5/8 | 1/4 | | | | | | | | | | | 3.125 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R9-11A

*WISCONSIN DEPT OF TRANSPORTATION*

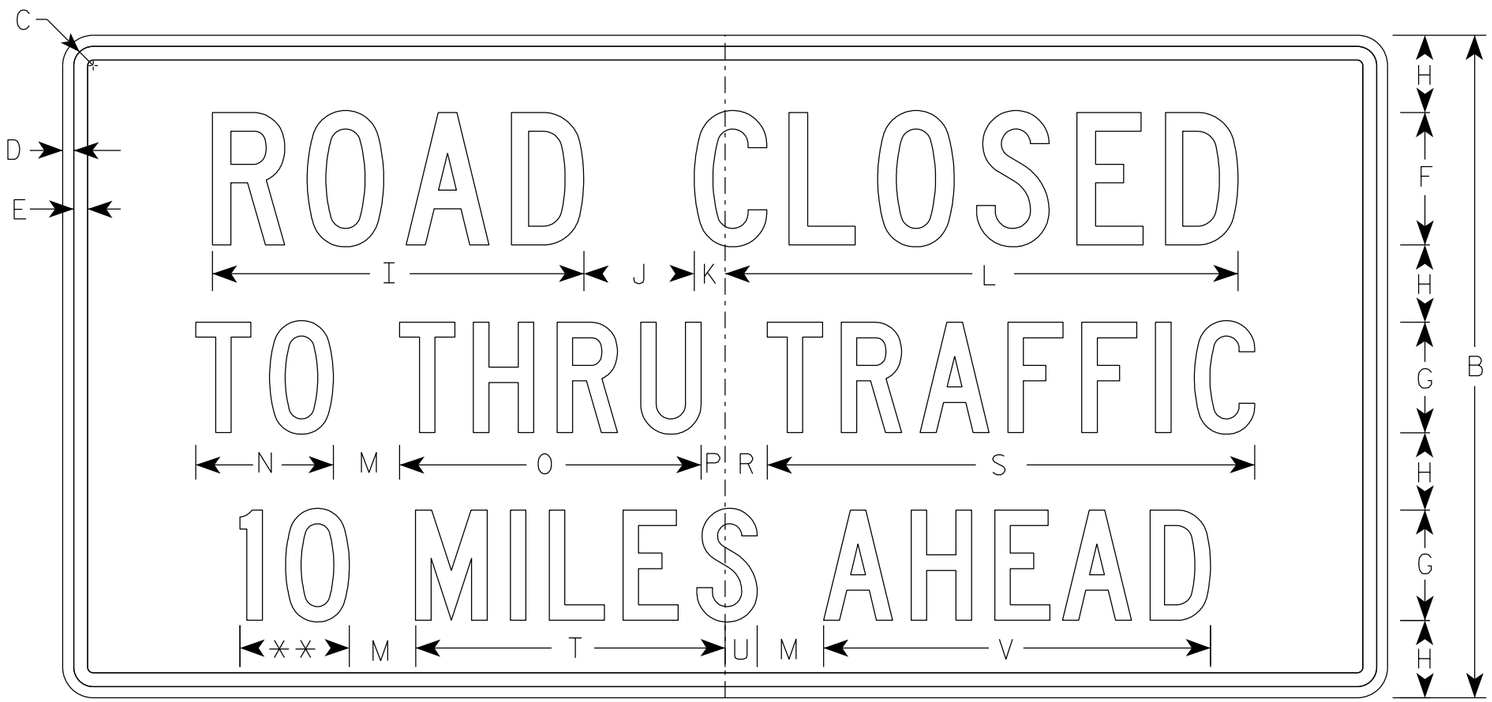
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2021 PLATE NO. R9-11A.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 247 | E

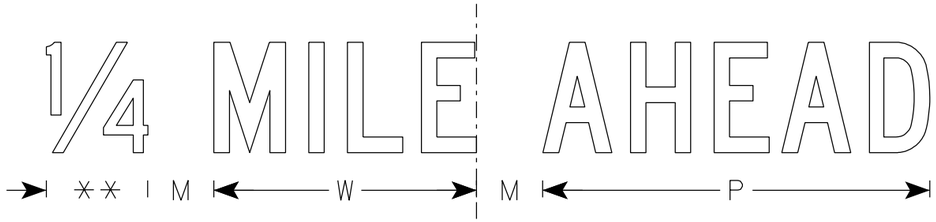
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.




R11-3

** See Note 5



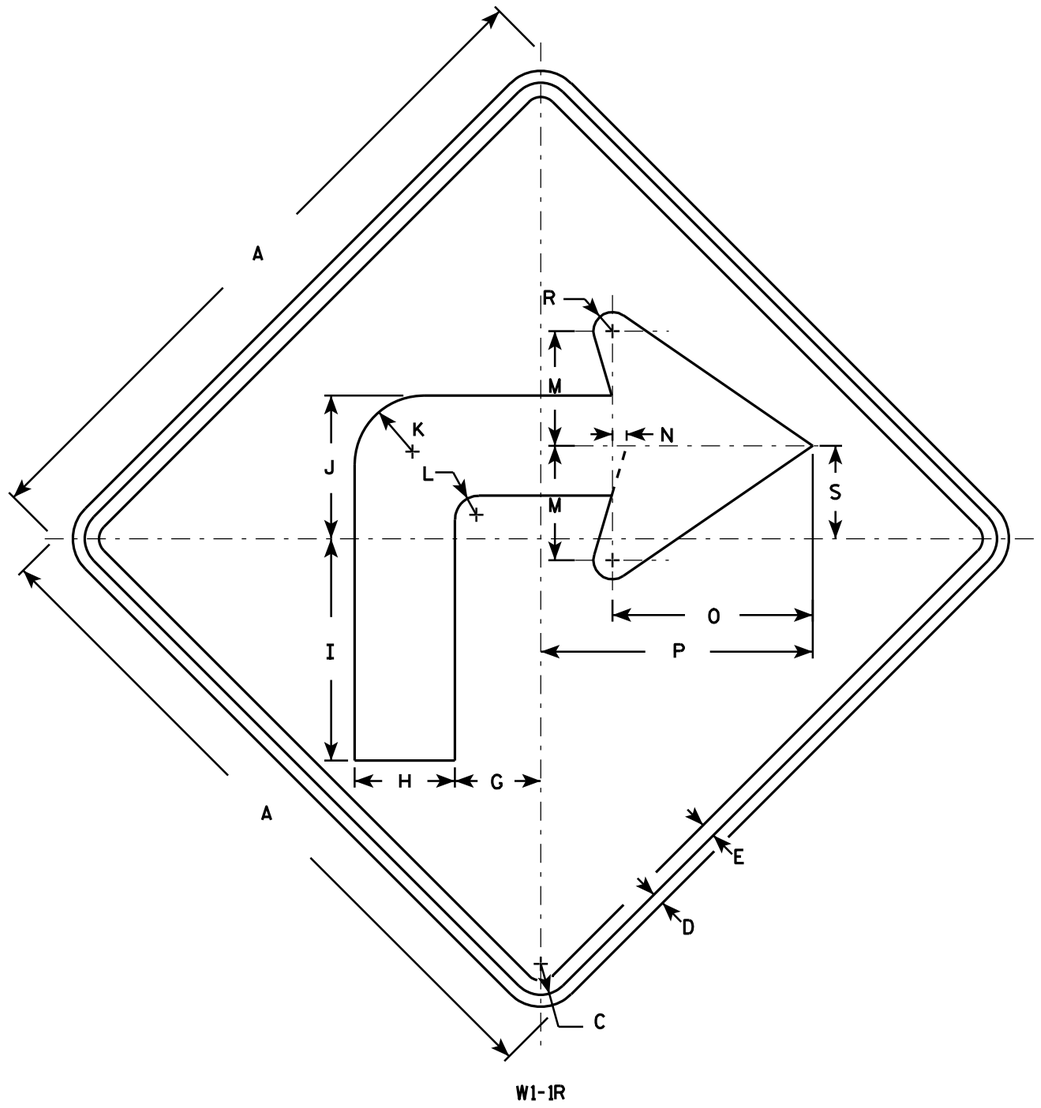

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 18 | 1 1/4 | 3/8 | 3/8 | 4 | 3 | 2 | 11 1/4 | 3 | 1 1/8 | 15 3/8 | 2 | 3 3/4 | 8 1/4 | 5/8 | | 1 3/8 | 13 1/4 | 8 3/8 | 7/8 | 10 1/2 | 7 1/8 | | | | 4.5 |
| 2S | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 3 1/2 | 16 7/8 | 5 | 1 3/8 | 23 1/4 | 3 | 6 1/4 | 13 5/8 | 1 1/8 | | 1 7/8 | 22 1/8 | 14 | 1 1/2 | 17 1/2 | 11 7/8 | | | | 12.5 |
| 2M | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 3 1/2 | 16 7/8 | 5 | 1 3/8 | 23 1/4 | 3 | 6 1/4 | 13 5/8 | 1 1/8 | | 1 7/8 | 22 1/8 | 14 | 1 1/2 | 17 1/2 | 11 7/8 | | | | 12.5 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 6/14/2021 PLATE NO. R11-3.9

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 248 | E |
|---|---|---|---|---|---|




W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R 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 | 24 | | 1 1/8 | 3/8 | 1/2 | | 3 | 3 1/2 | 7 3/4 | 5 | 2 1/2 | 7/8 | 4 | 1/2 | 7 | 9 1/2 | | 5/8 | 3 1/4 | | | | | | | | 4.0 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |

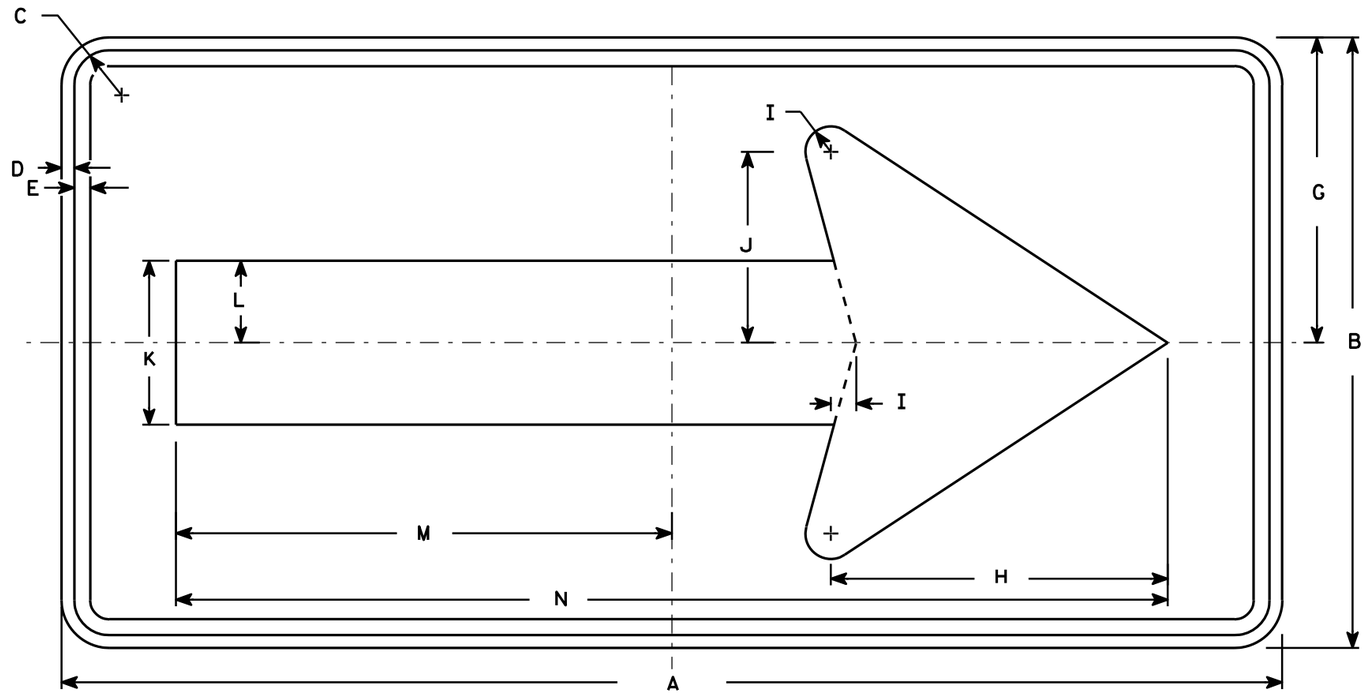
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 249 | E




W1-6

## NOTES

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 18 | 1 1/8 | 3/8 | 3/8 | | 9 | 10 | 3/4 | 5 5/8 | 4 3/4 | 2 3/8 | 14 5/8 | 29 1/4 | | | | | | | | | | | | | 4.5 |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 96 | 48 | 2 1/4 | 3/4 | 1 | | 24 | 26 1/2 | 2 | 15 | 13 | 6 1/2 | 39 | 78 | | | | | | | | | | | | | 32.0 |

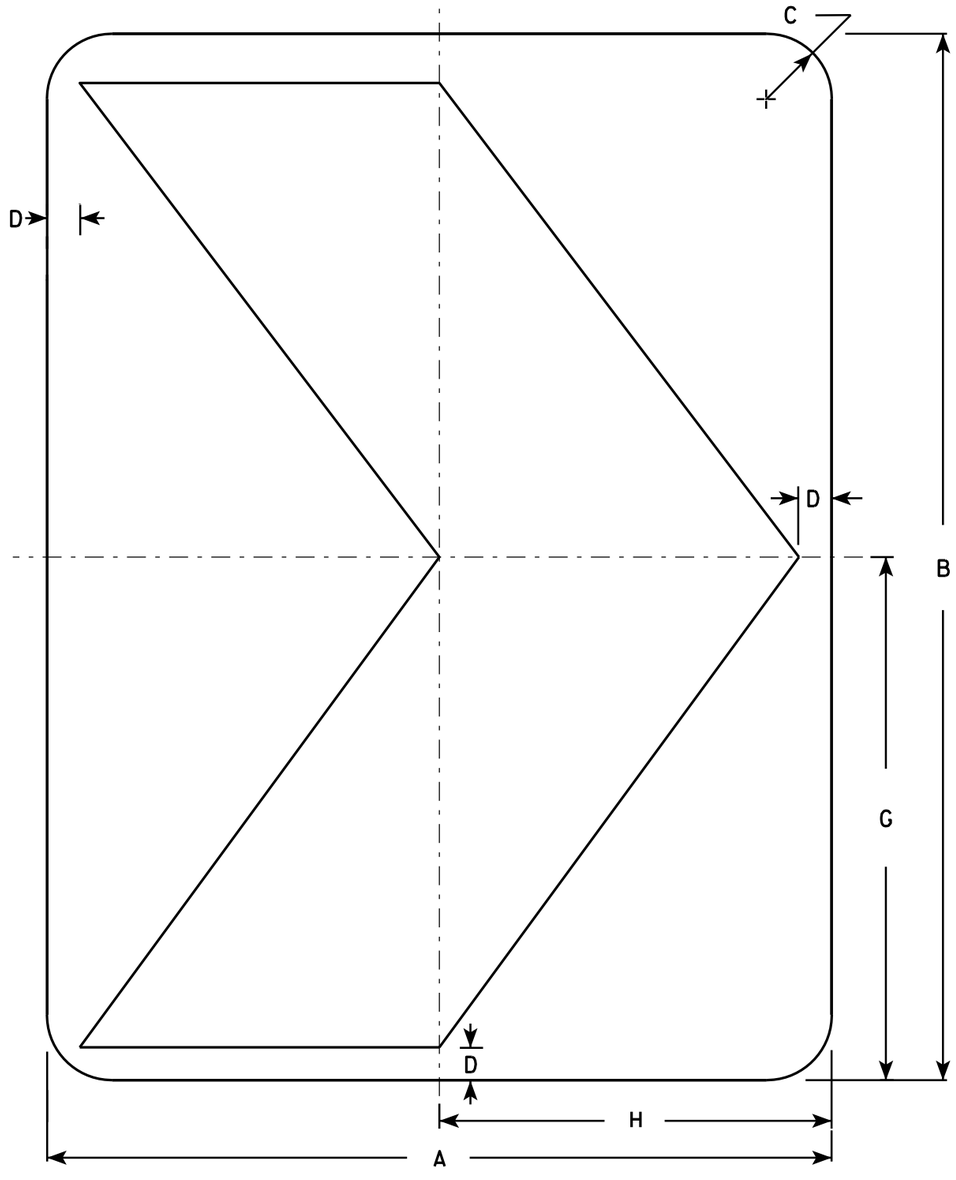
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 250 |
|---|---|---|---|---|




## NOTES

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

W1-8

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 18 | 1 ½ | ½ | | | 9 | 6 | | | | | | | | | | | | | | | | | | | 1.5 |
| 2S | 18 | 24 | 1 ½ | ¾ | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 18 | 24 | 1 ½ | ¾ | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 24 | 30 | 1 ½ | 1 | | | 15 | 12 | | | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 36 | 1 ⅞ | 1 ¼ | | | 18 | 15 | | | | | | | | | | | | | | | | | | | 7.5 |
| 5 | 36 | 48 | 2 ¼ | 1 ½ | | | 24 | 18 | | | | | | | | | | | | | | | | | | | 12.0 |

# STANDARD SIGN
# W1-8

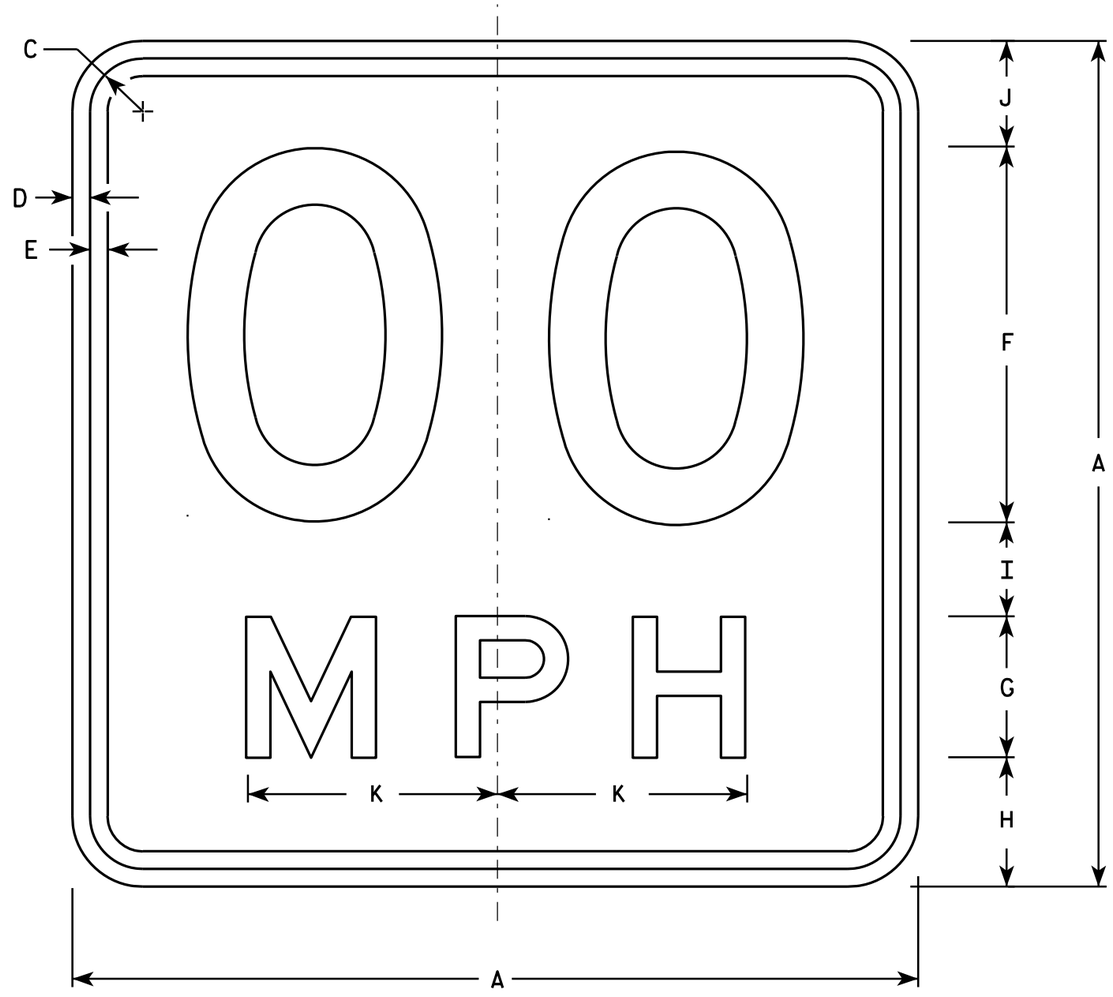
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

SHEET NO: 251 E




W13-1

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

NOTES

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

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

STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

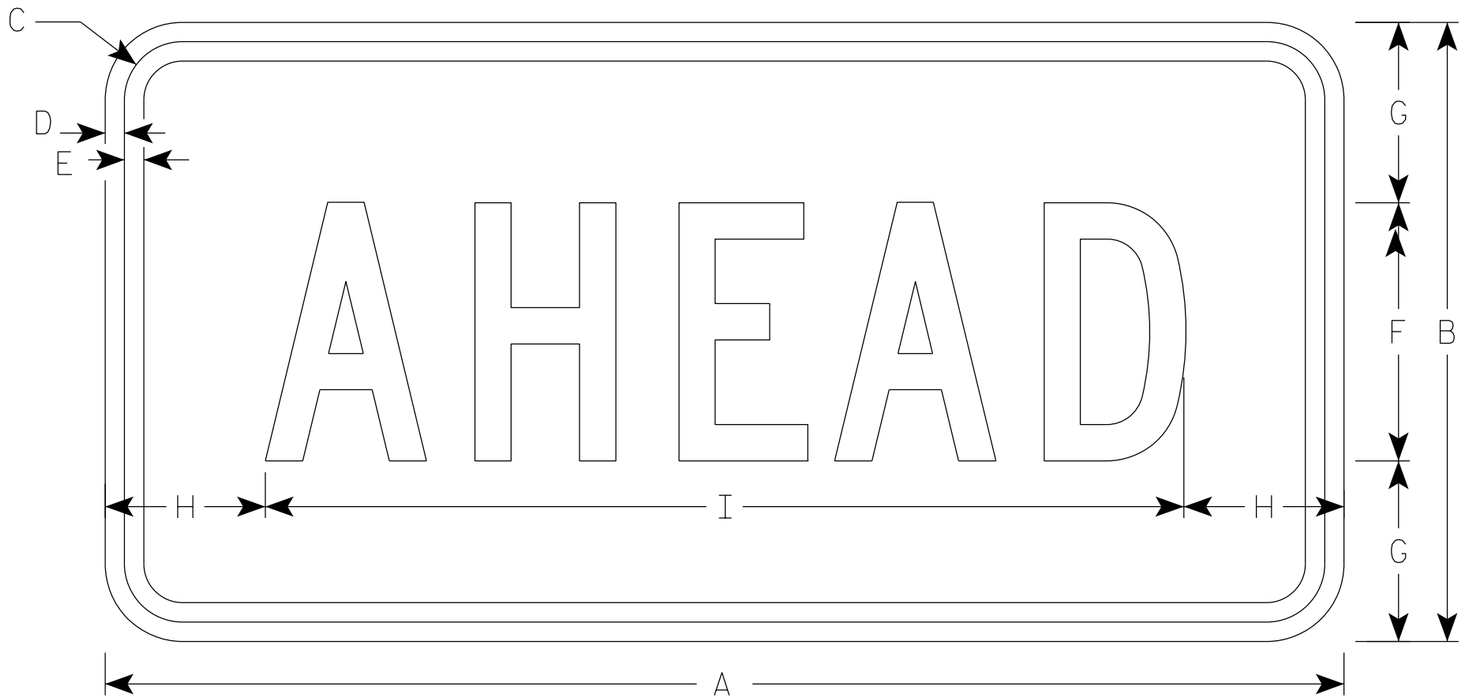
APPROVED Matthew R Rauch
For State Traffic Engineer

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

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 252 | E |
|---|---|---|---|---|---|

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - C




W16-9P

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 5 | 3 1/2 | 3 1/8 | 17 3/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 2M | 30 | 18 | 1 1/8 | 3/8 | 1/2 | 7 | 5 1/2 | 2 3/4 | 24 1/2 | | | | | | | | | | | | | | | | | | 3.75 |
| 3 | 30 | 18 | 1 1/8 | 3/8 | 1/2 | 7 | 3 1/2 | 2 3/4 | 24 1/2 | | | | | | | | | | | | | | | | | | 3.75 |
| 4 | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 10 | 7 | 6 1/8 | 35 3/4 | | | | | | | | | | | | | | | | | | 8.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

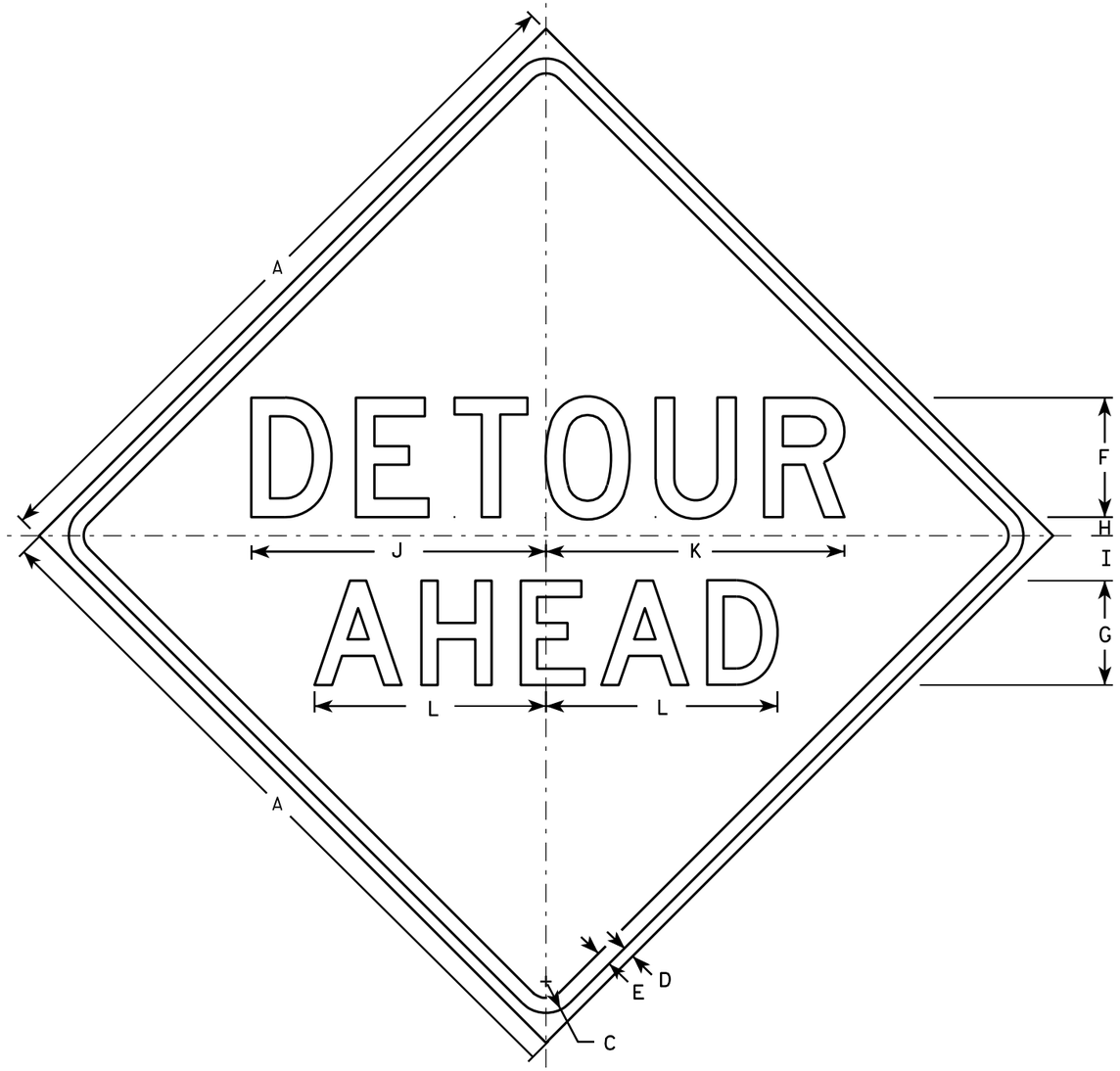
STANDARD SIGN
W16-9P

WISCONSIN DEPT OF TRANSPORTATION

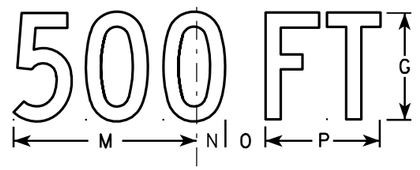
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/7/19 PLATE NO. W16-9P.7

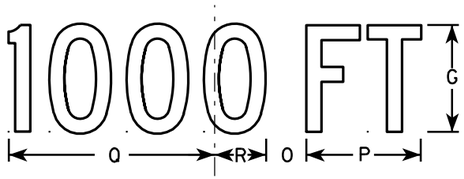
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 253 | E



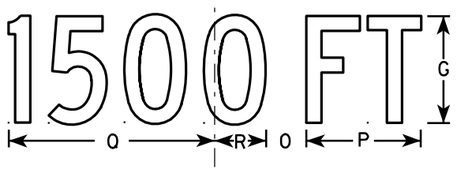

W20-2A



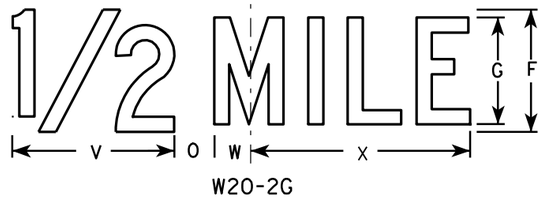

W20-2D




W20-2C




W20-2B




W20-2G

W20-2F

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. Line 1 is Series D.
   Line 2 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 | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 5 | 1 | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9 | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8 | 1 3/4 | 10 3/4 | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |

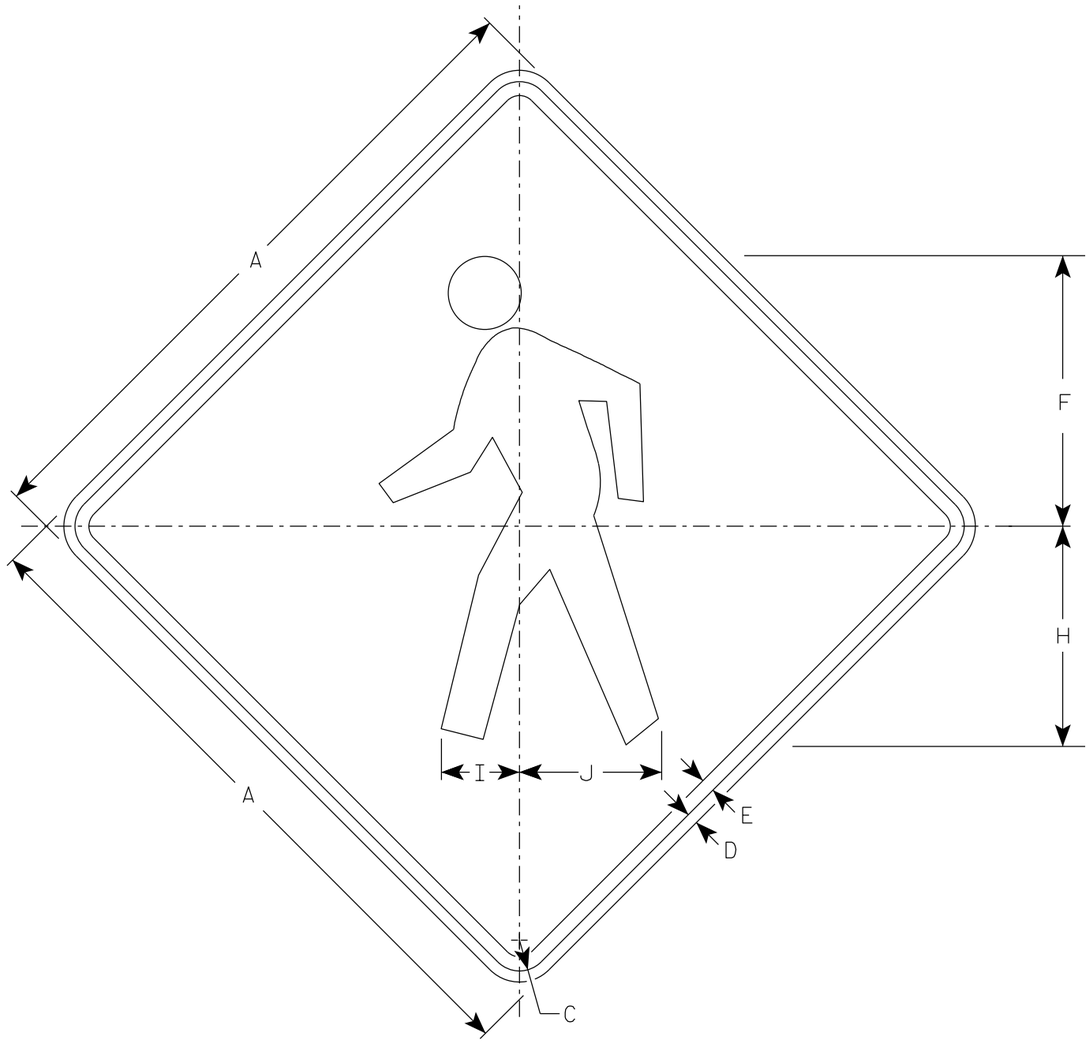
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 254 | E |
|---|---|---|---|---|---|




WO11-2

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.

| 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 1/2 | | 11 7/8 | 4 1/4 | 7 5/8 | | | | | | | | | | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 19 3/8 | | 15 3/4 | 5 5/8 | 10 1/4 | | | | | | | | | | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 19 3/8 | | 15 3/4 | 5 5/8 | 10 1/4 | | | | | | | | | | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 19 3/8 | | 15 3/4 | 5 5/8 | 10 1/4 | | | | | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 19 3/8 | | 15 3/4 | 5 5/8 | 10 1/4 | | | | | | | | | | | | | | | | | 16.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN

WO11-2

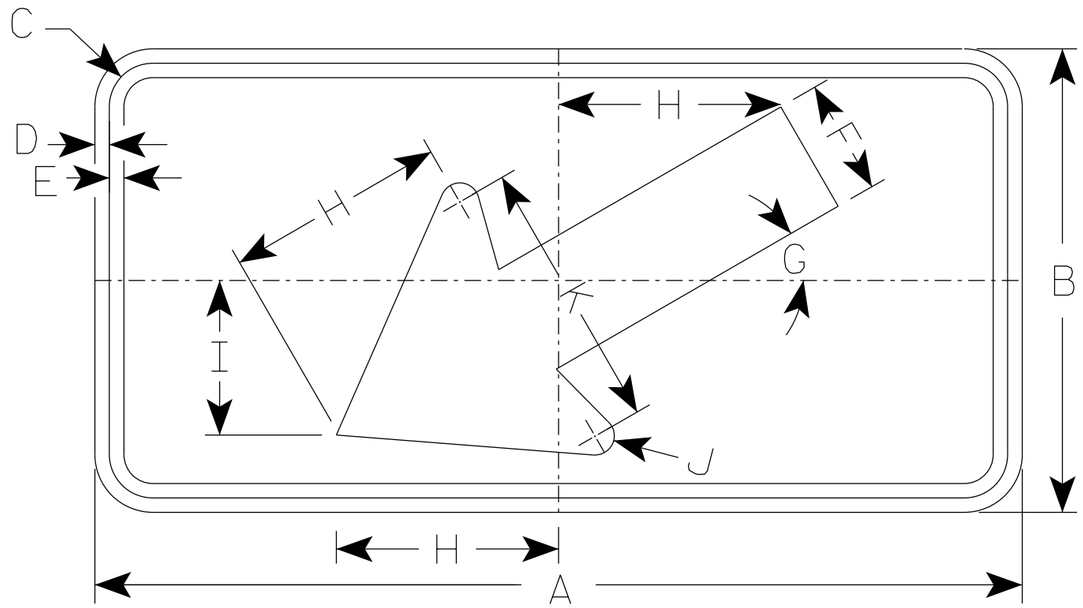
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 4/8/2020 PLATE NO. WO11-2.1

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 255 | E |
|---|---|---|---|---|---|




W016-7L

## NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded but corners shall be rounded when base material is metal.
4. W016-7R is the same as W016-L 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 | 30 | 18 | 1 1/8 | 3/8 | 1/2 | 4 1/2 | 30° | 8 1/2 | 6 | 5/8 | 10 1/4 | | | | | | | | | | | | | | | | 3.75 |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 30° | 11 1/2 | 8 | 1 | 14 | | | | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 30° | 11 1/2 | 8 | 1 | 14 | | | | | | | | | | | | | | | | 8.0 |
| 3 | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 30° | 11 1/2 | 8 | 1 | 14 | | | | | | | | | | | | | | | | 8.0 |
| 4 | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 30° | 11 1/2 | 8 | 1 | 14 | | | | | | | | | | | | | | | | 8.0 |
| 5 | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 30° | 11 1/2 | 8 | 1 | 14 | | | | | | | | | | | | | | | | 8.0 |

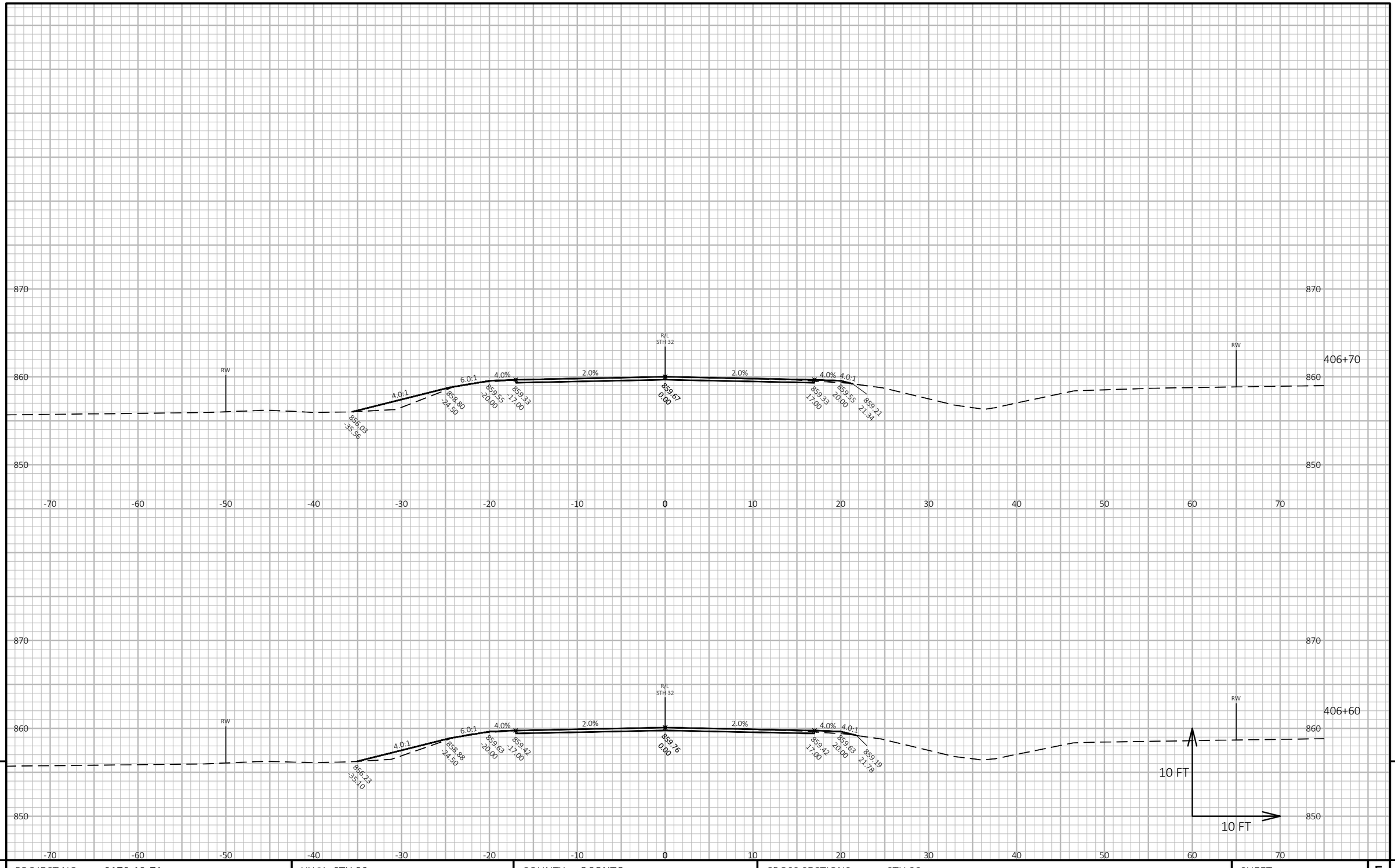
# STANDARD SIGN
# W016-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/2021 PLATE NO. W016-7.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 256 | E |
|---|---|---|---|---|---|




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 257 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090201-xs

PLOT DATE : 8/27/2021 2:58 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 258 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090202-xs

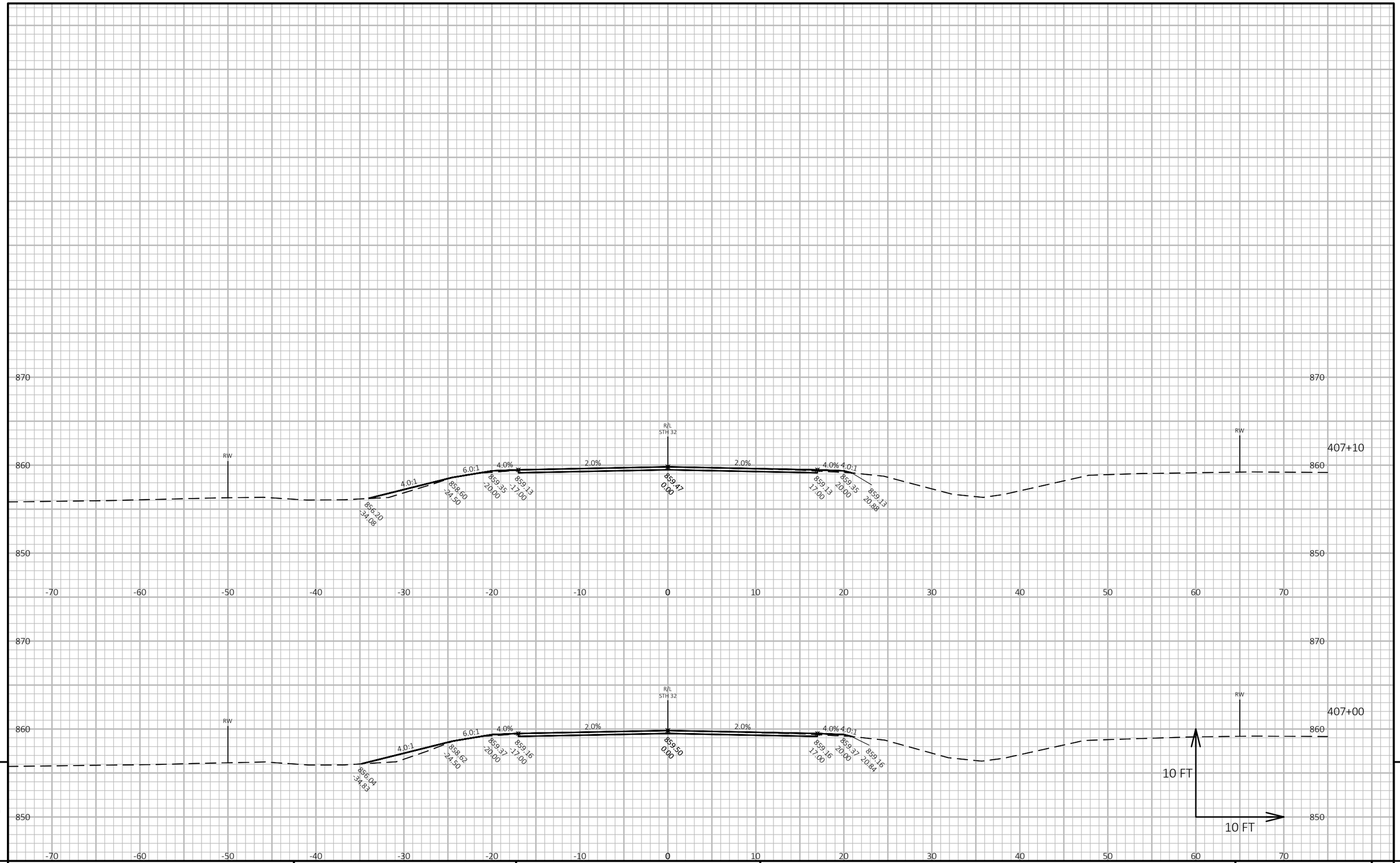
PLOT DATE : 8/27/2021 2:58 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 259 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090203-xs

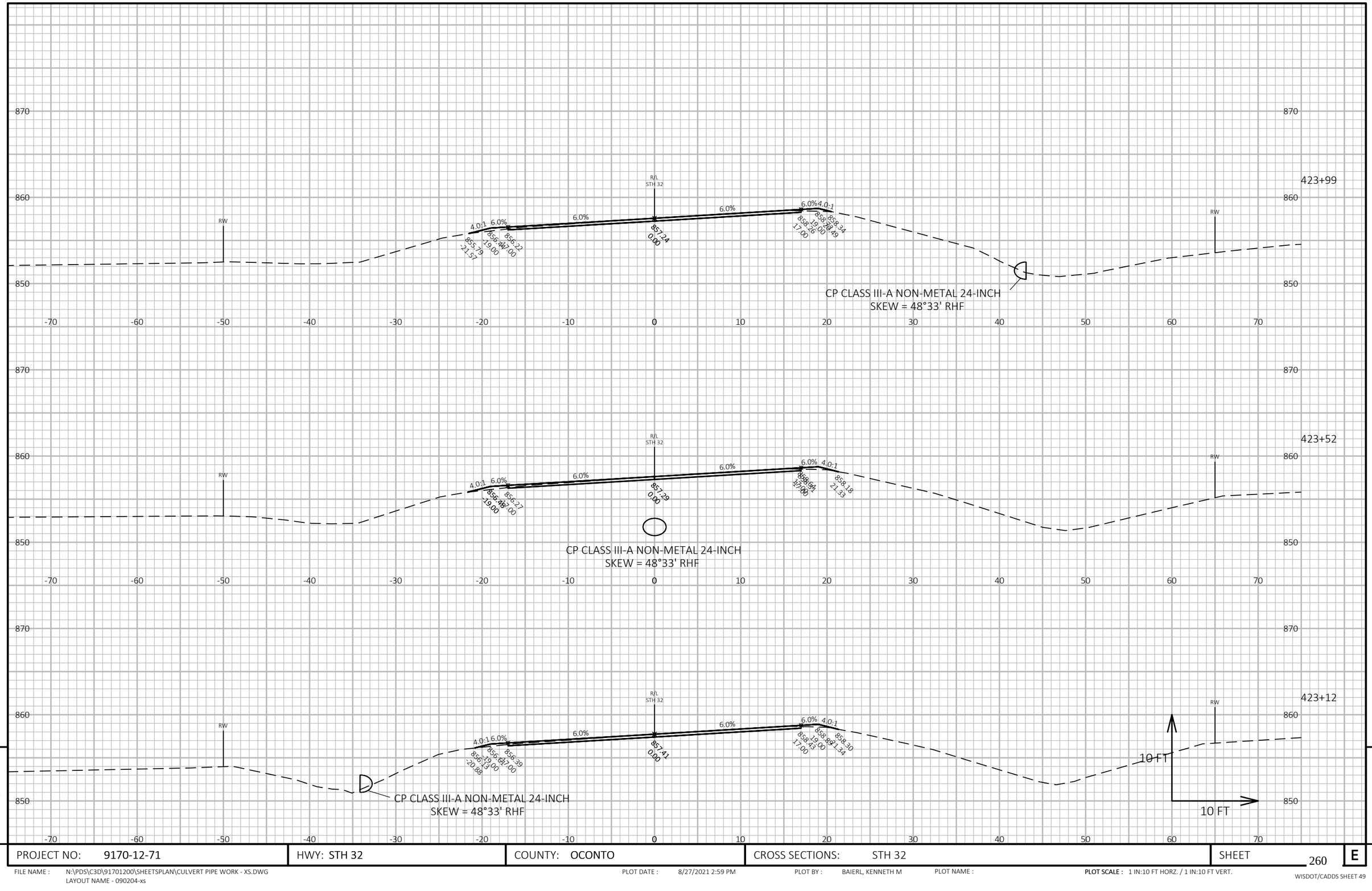
PLOT DATE : 8/27/2021 2:58 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| | | | | | |
|---|---|---|---|---|---|
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 260 | E |

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090204-xs

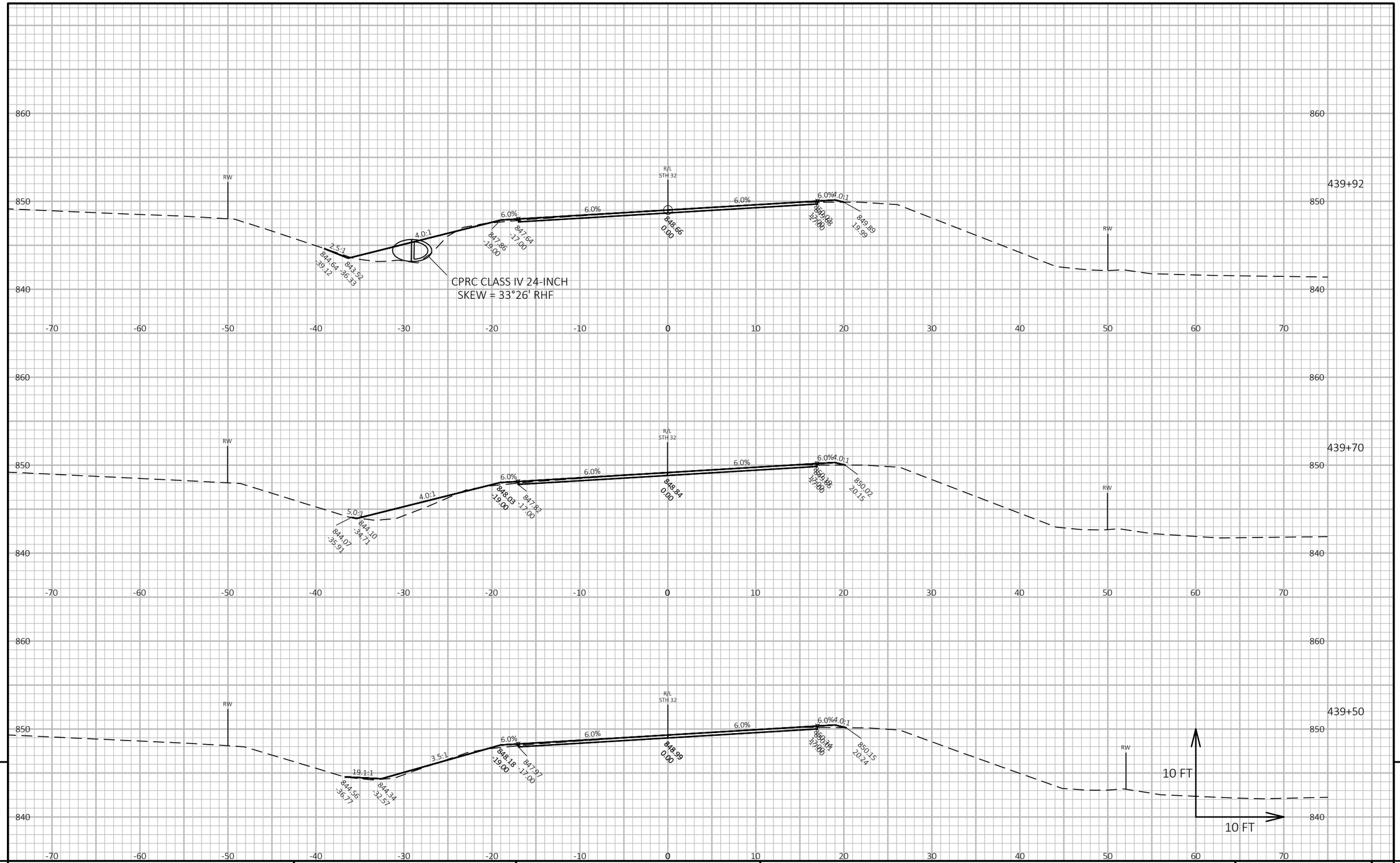
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 261 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090205-xs

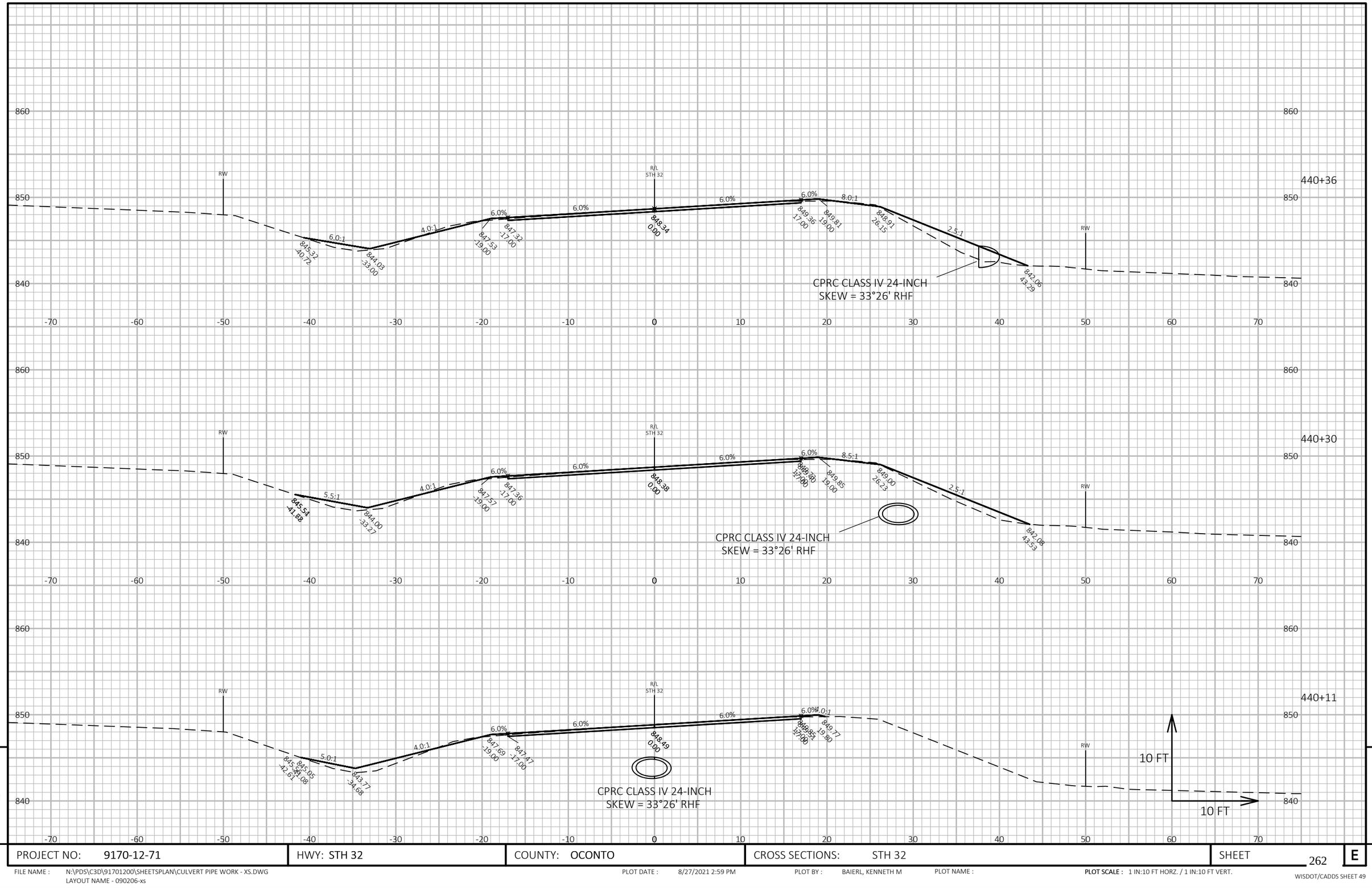
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 262 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090206-xs

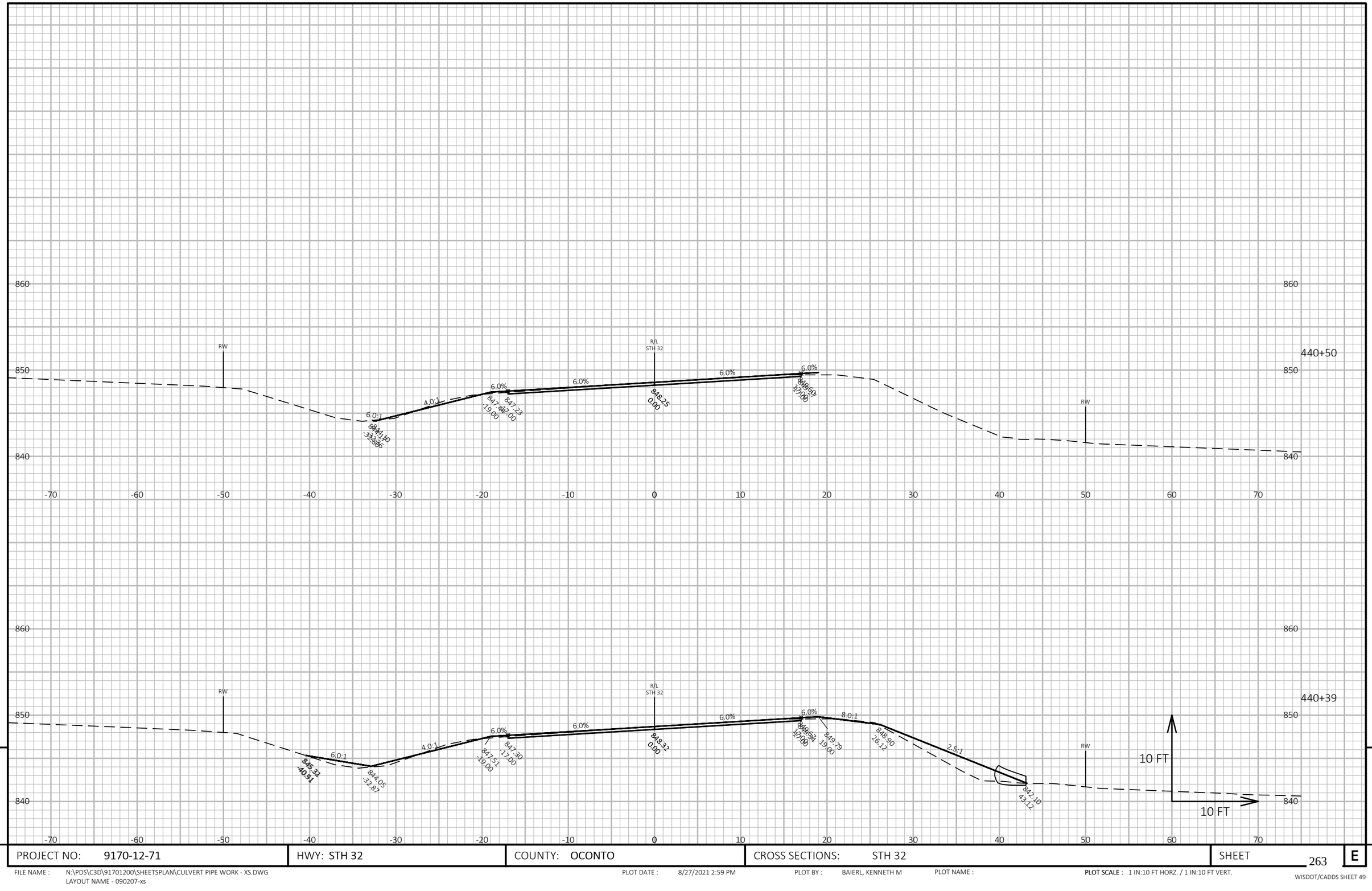
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 263 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090207-xs

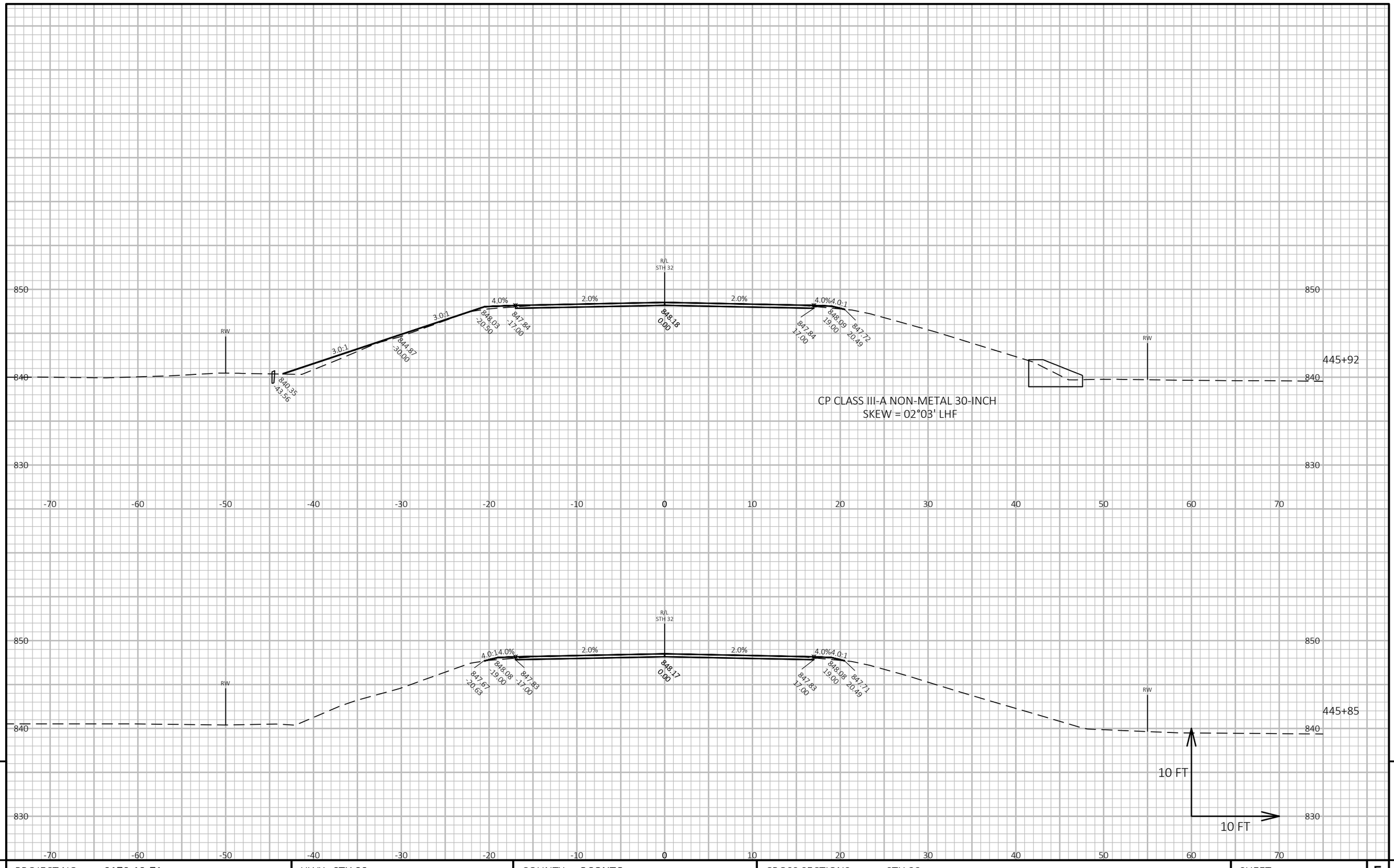
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 264 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090208-xs

PLOT DATE : 8/27/2021 2:59 PM

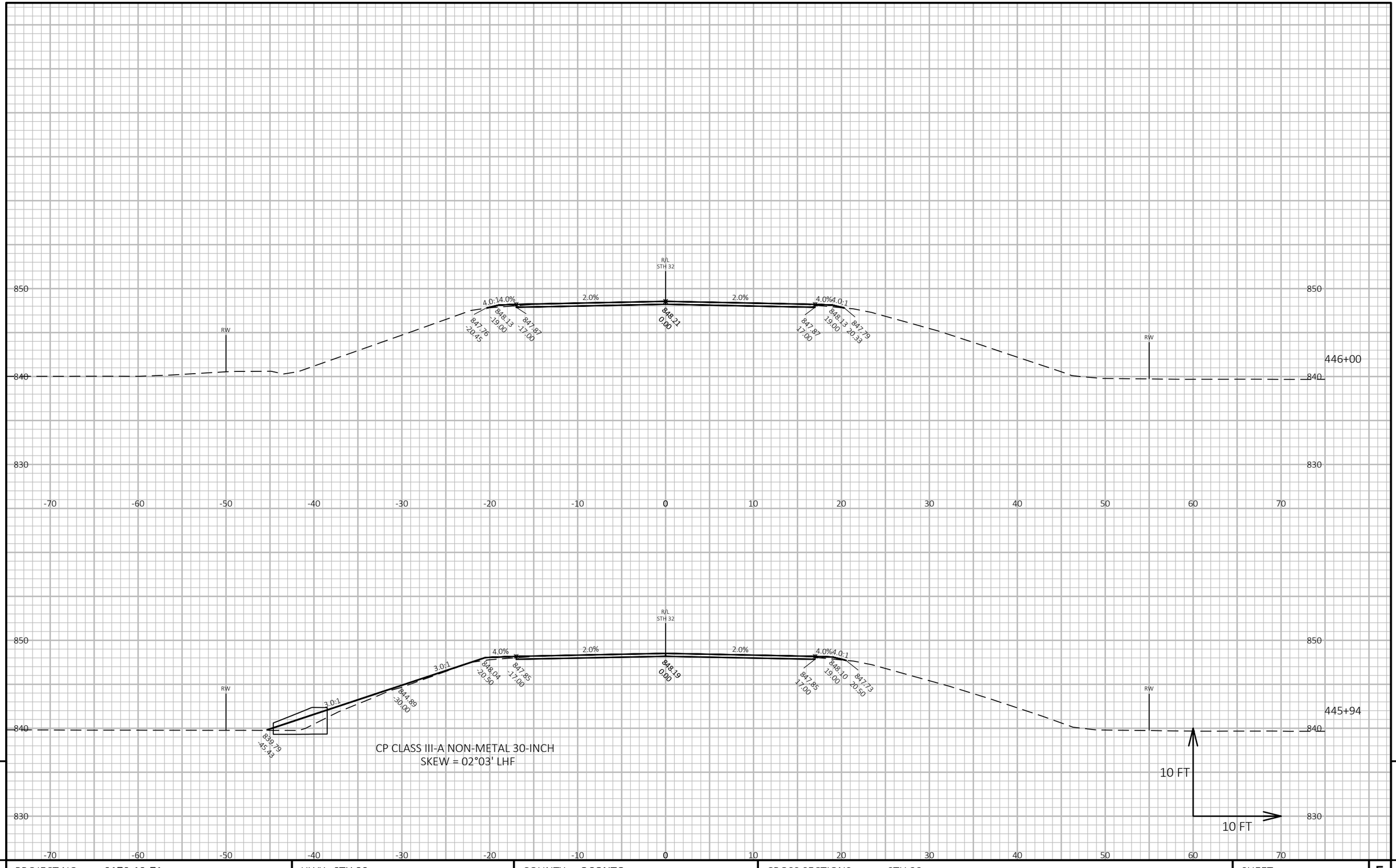
PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

CP CLASS III-A NON-METAL 30-INCH
SKEW = 02°03' LHF




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 265 E |
|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090209-xs

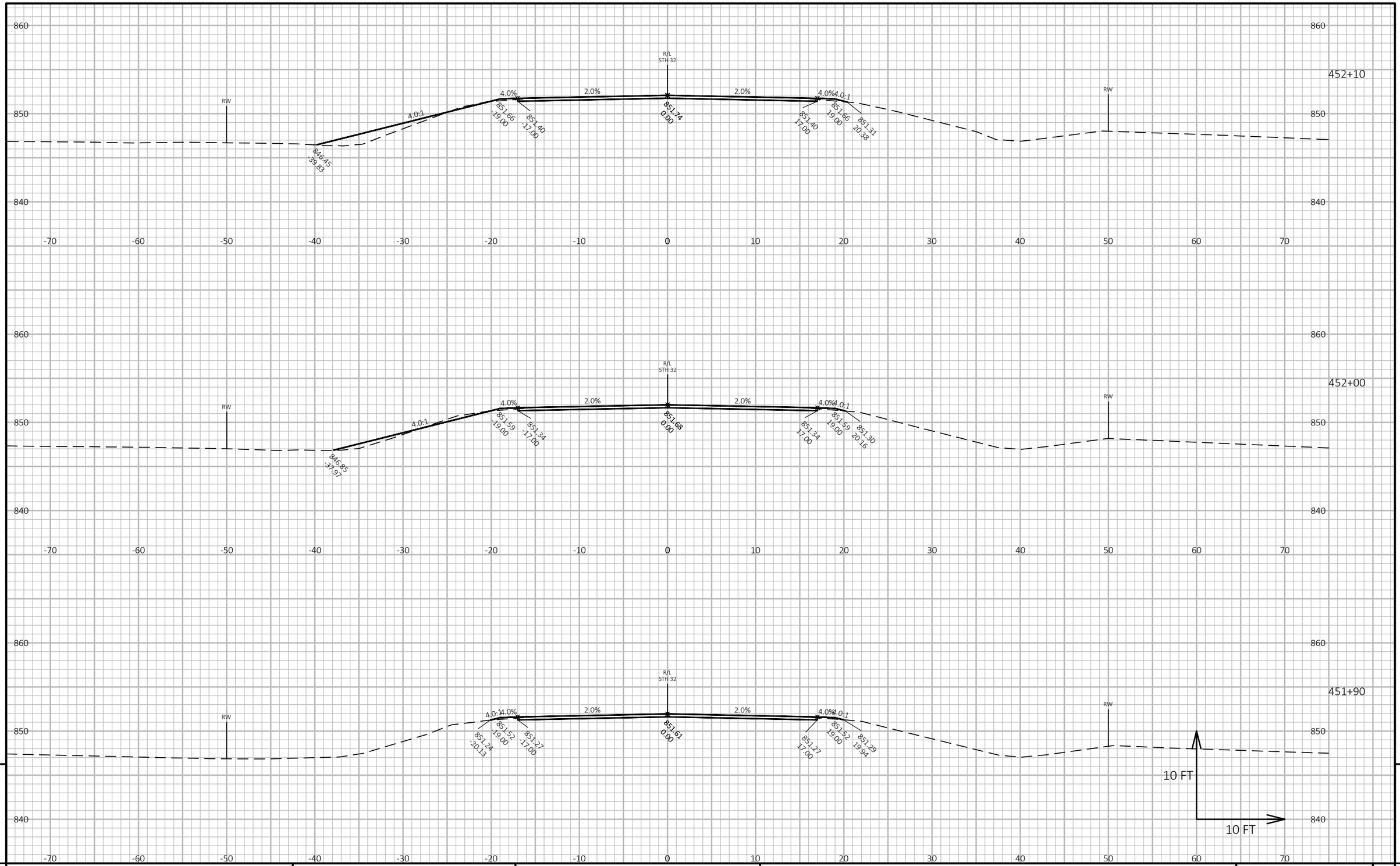
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 266 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090210-xs

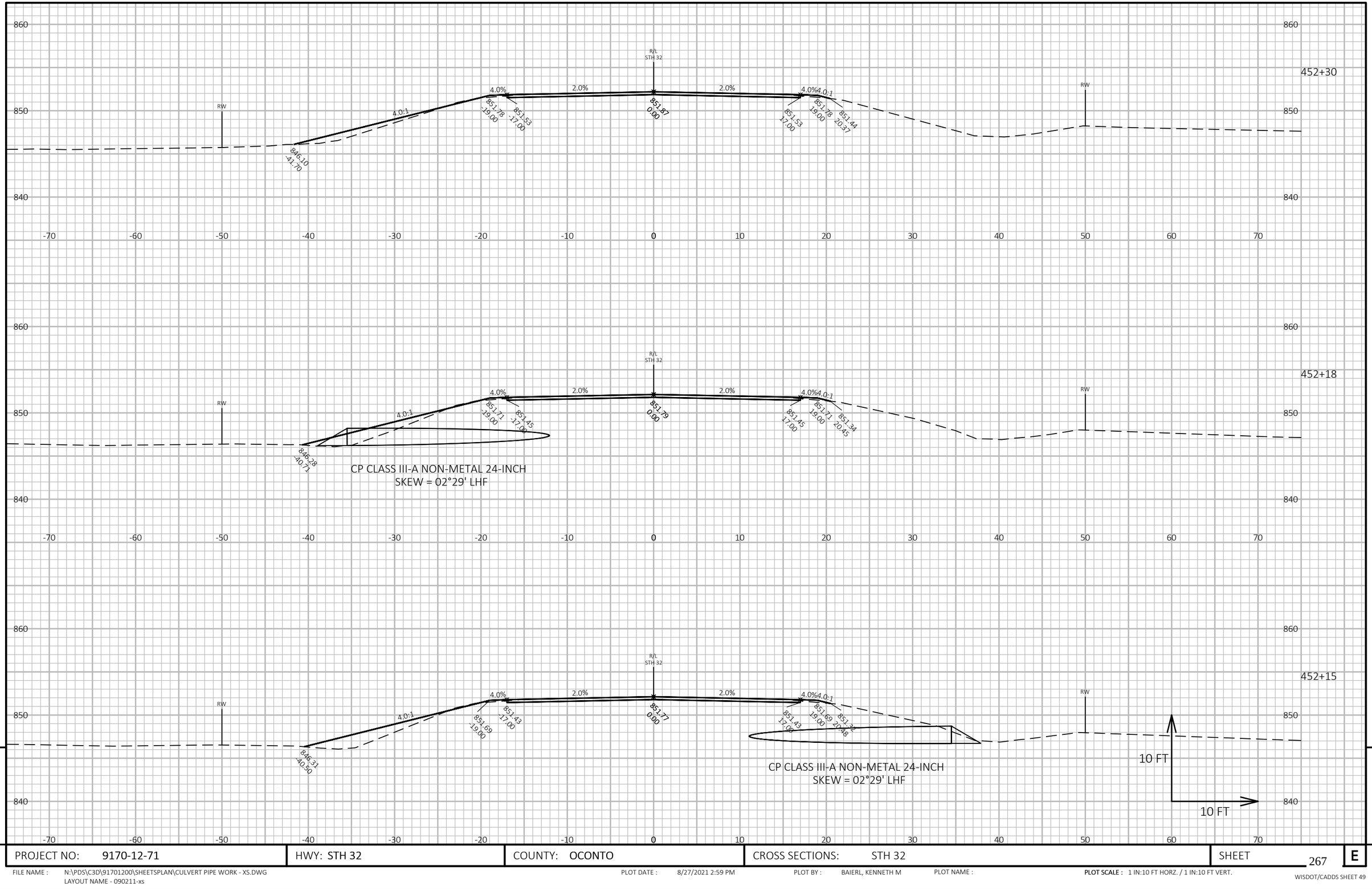
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







CP CLASS III-A NON-METAL 24-INCH
SKEW = 02°29' LHF




CP CLASS III-A NON-METAL 24-INCH
SKEW = 02°29' LHF

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 267 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090211-xs

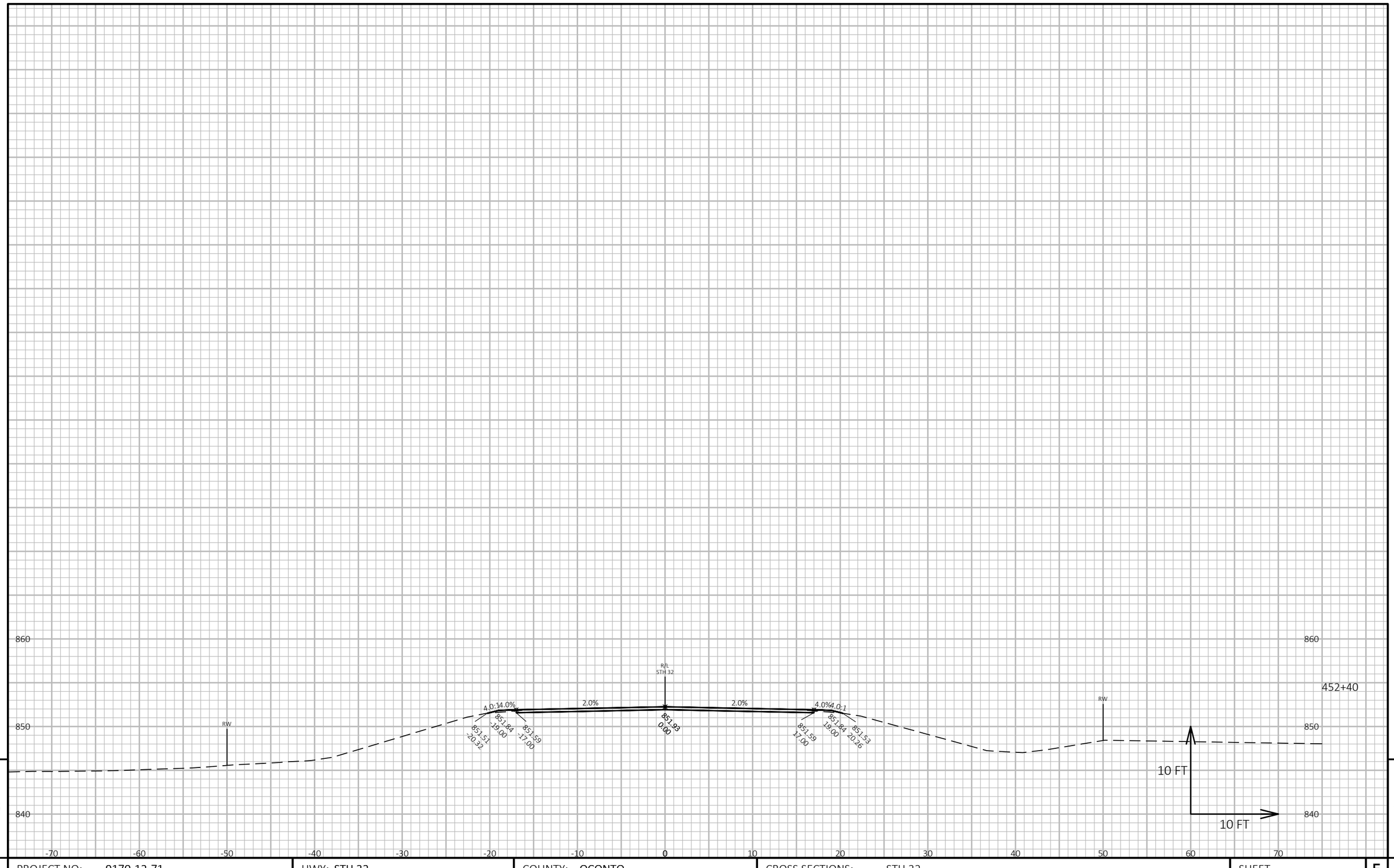
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| | | | | | |
|---|---|---|---|---|---|
| 9 | PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 268 E |

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090212-xs

PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 269 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090213-xs

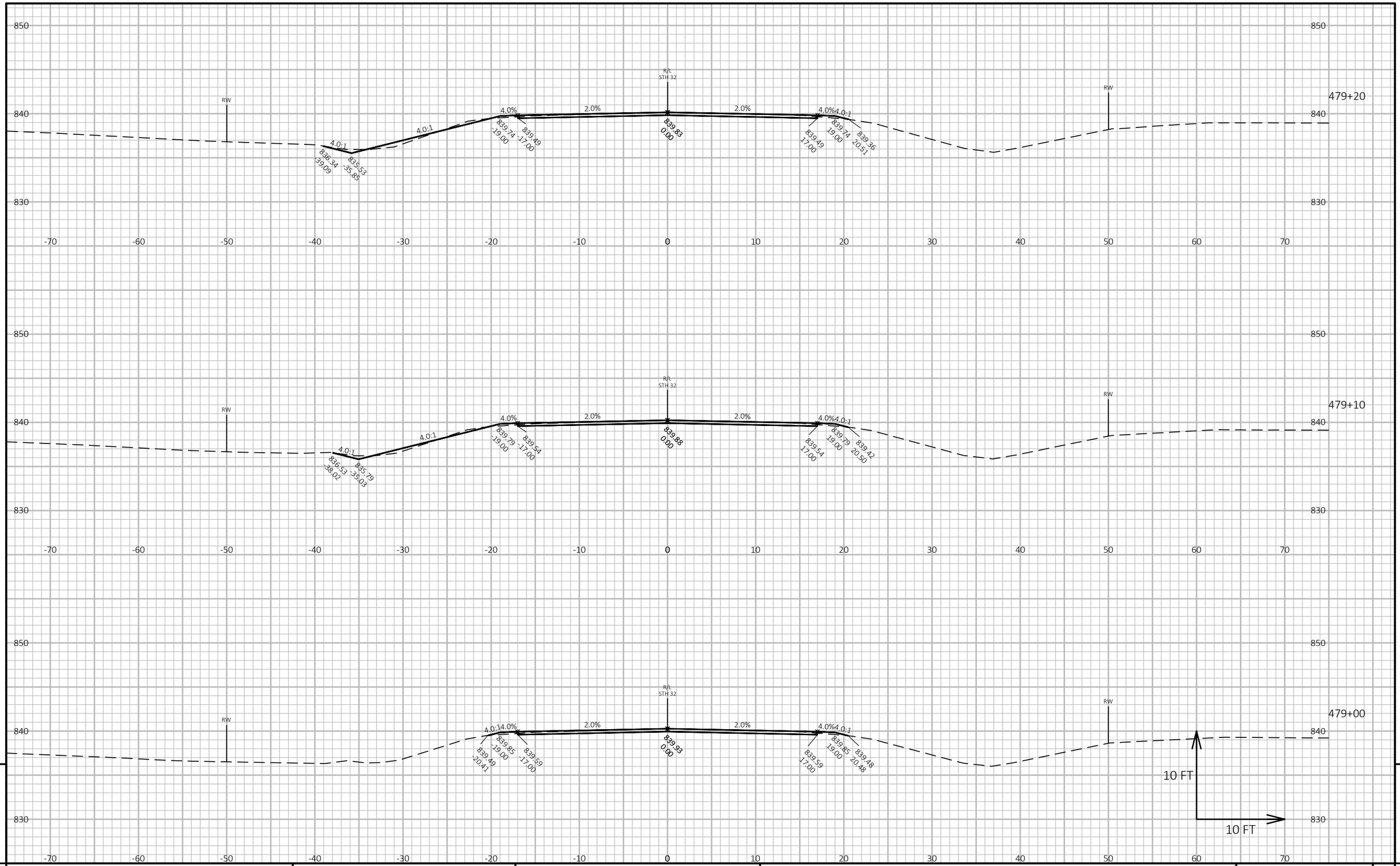
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 270 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090214-xs

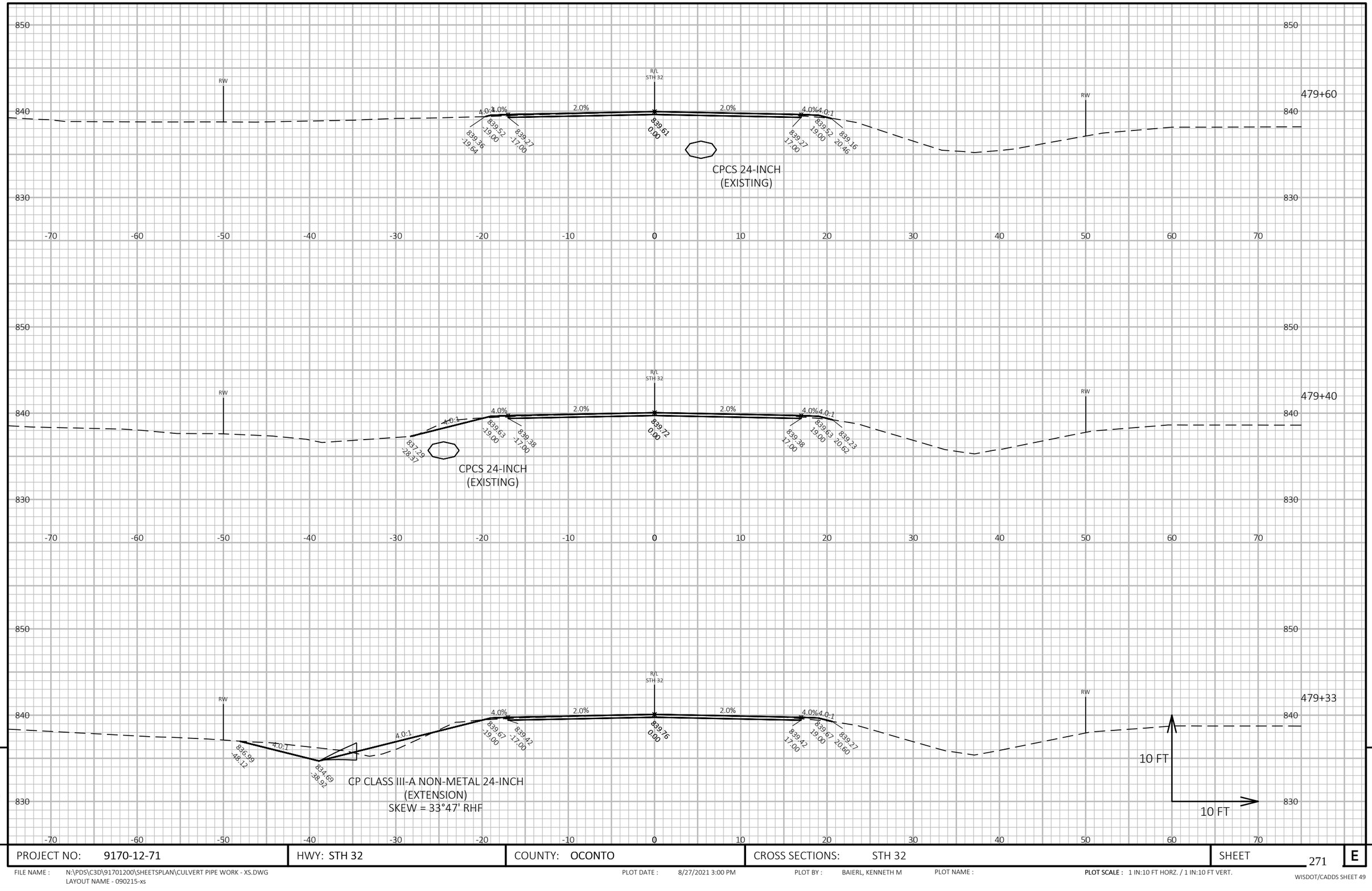
PLOT DATE : 8/27/2021 2:59 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9 9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 271 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090215-xs

PLOT DATE : 8/27/2021 3:00 PM PLOT BY : BAIERL, KENNETH M PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 272 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090216-xs

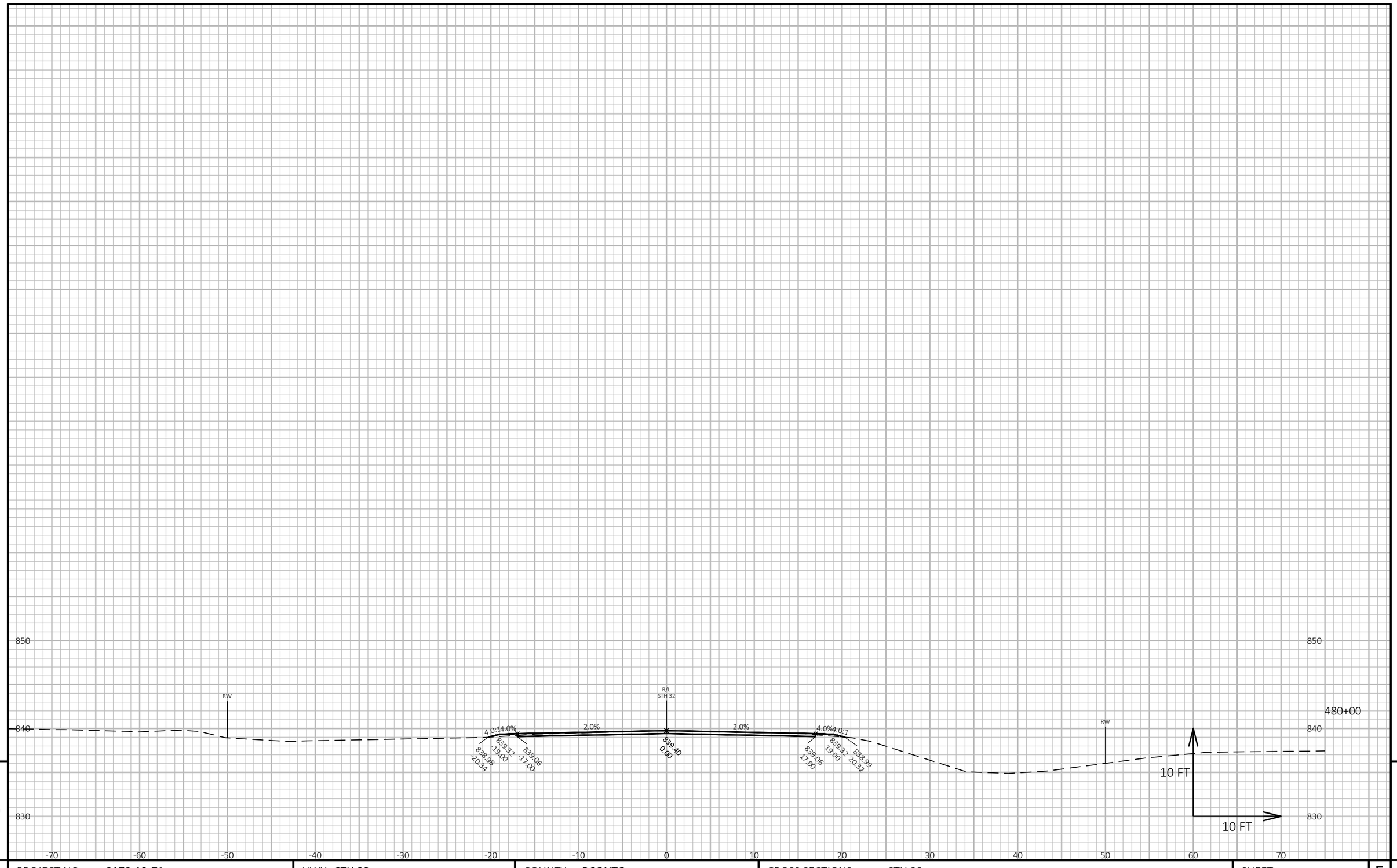
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 273 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090217-xs

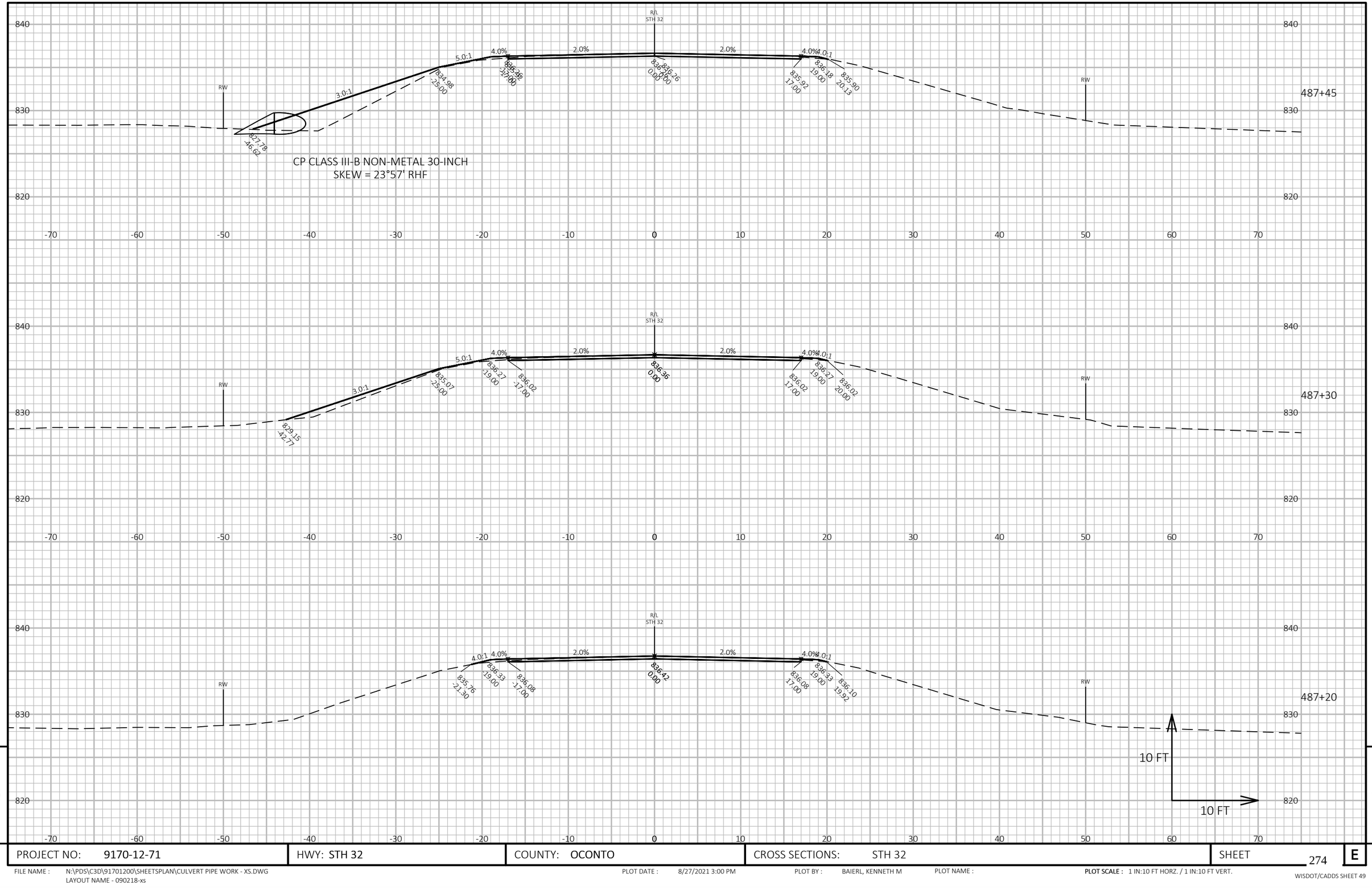
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 274 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090218-xs

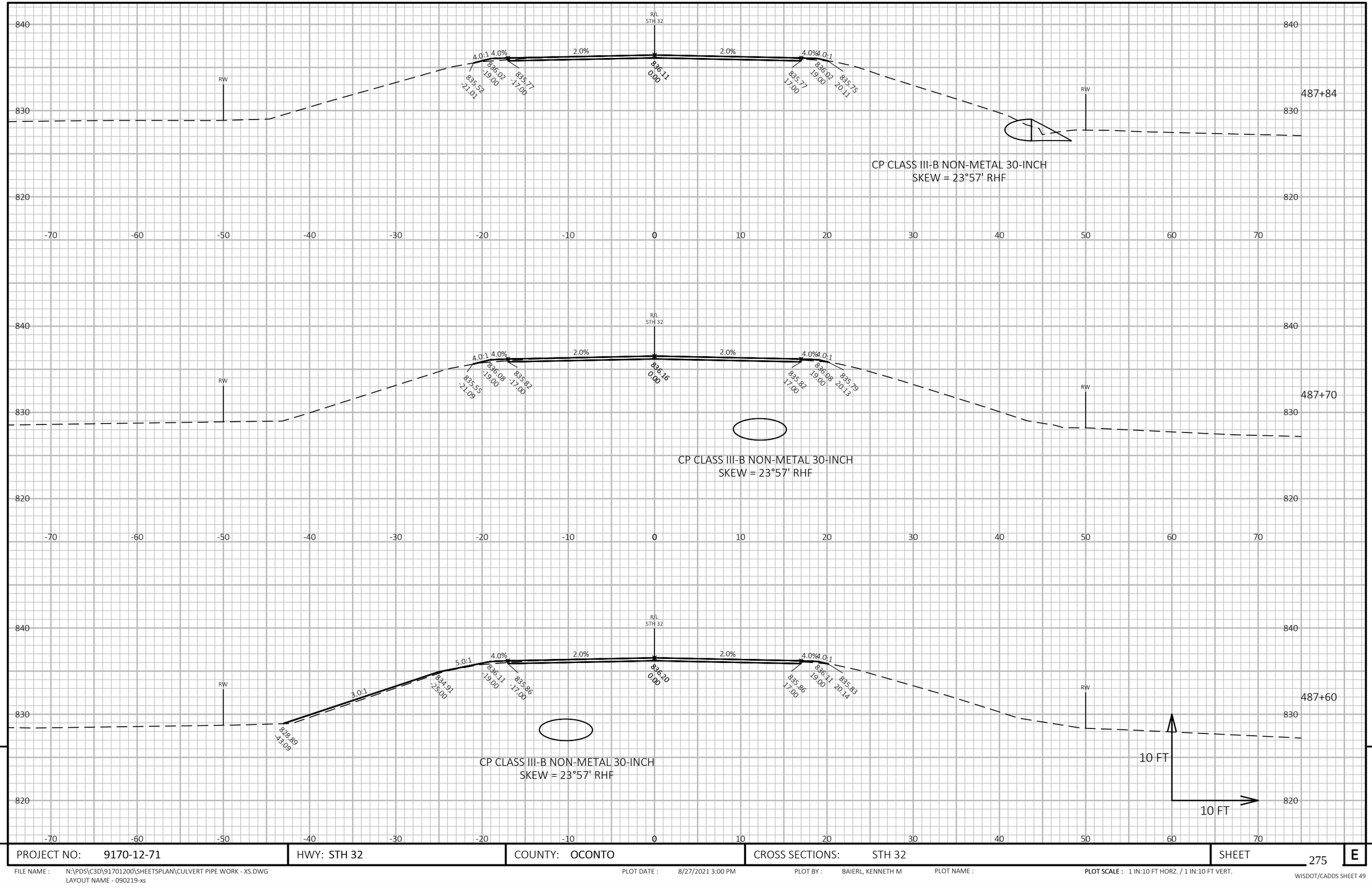
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 275 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090219-xs

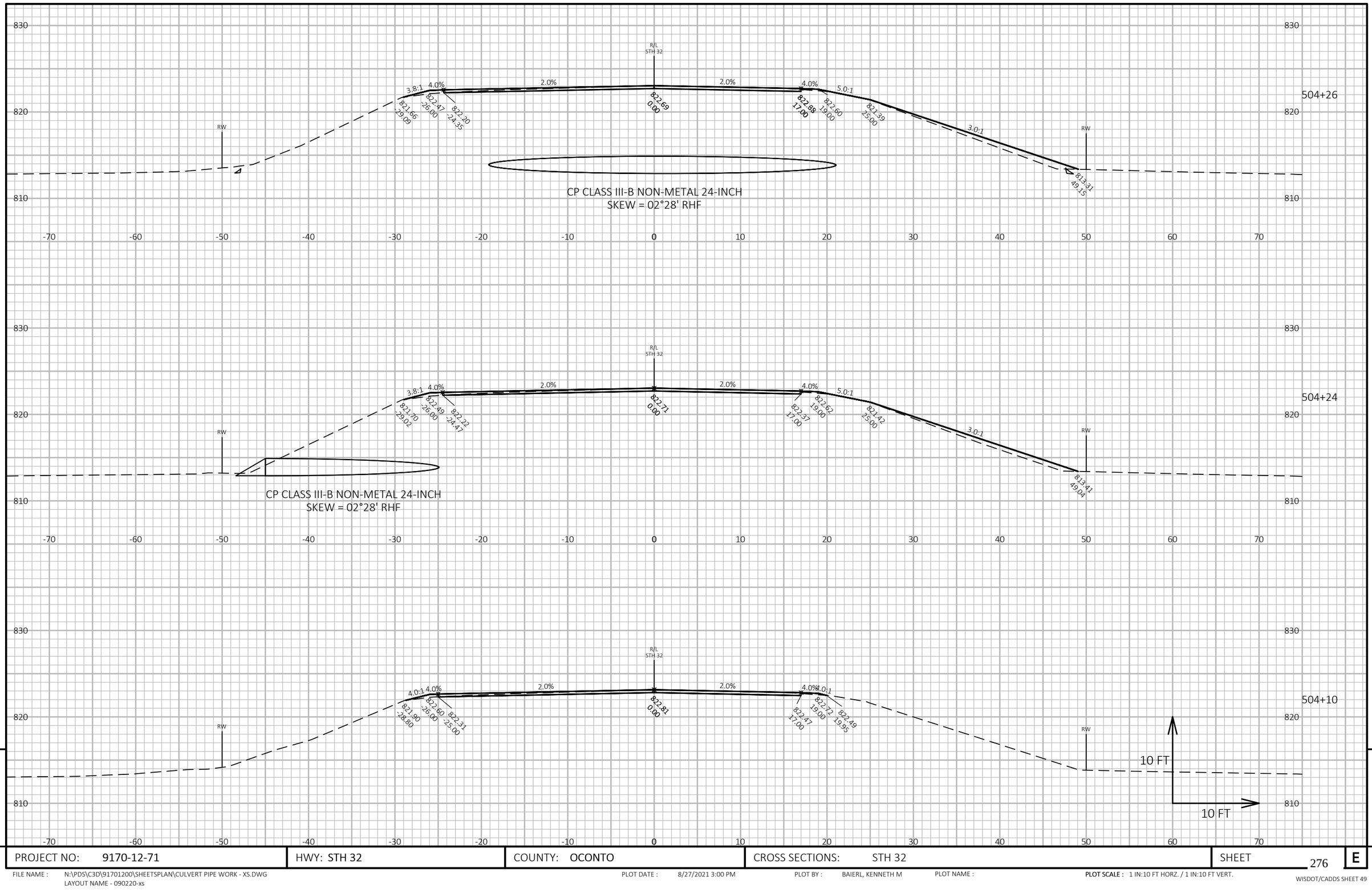
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 276 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090220-xs

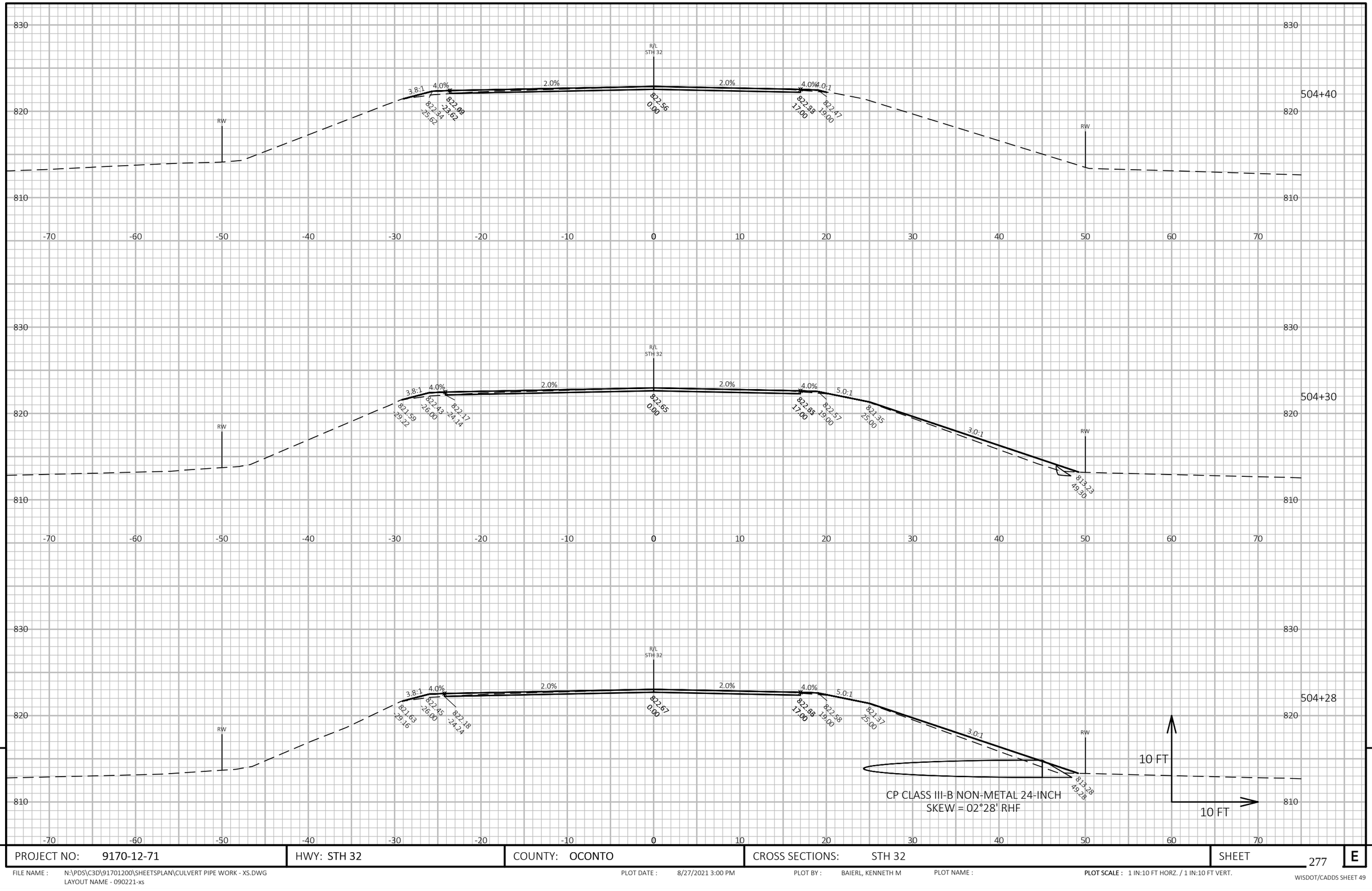
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 277 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090221-xs

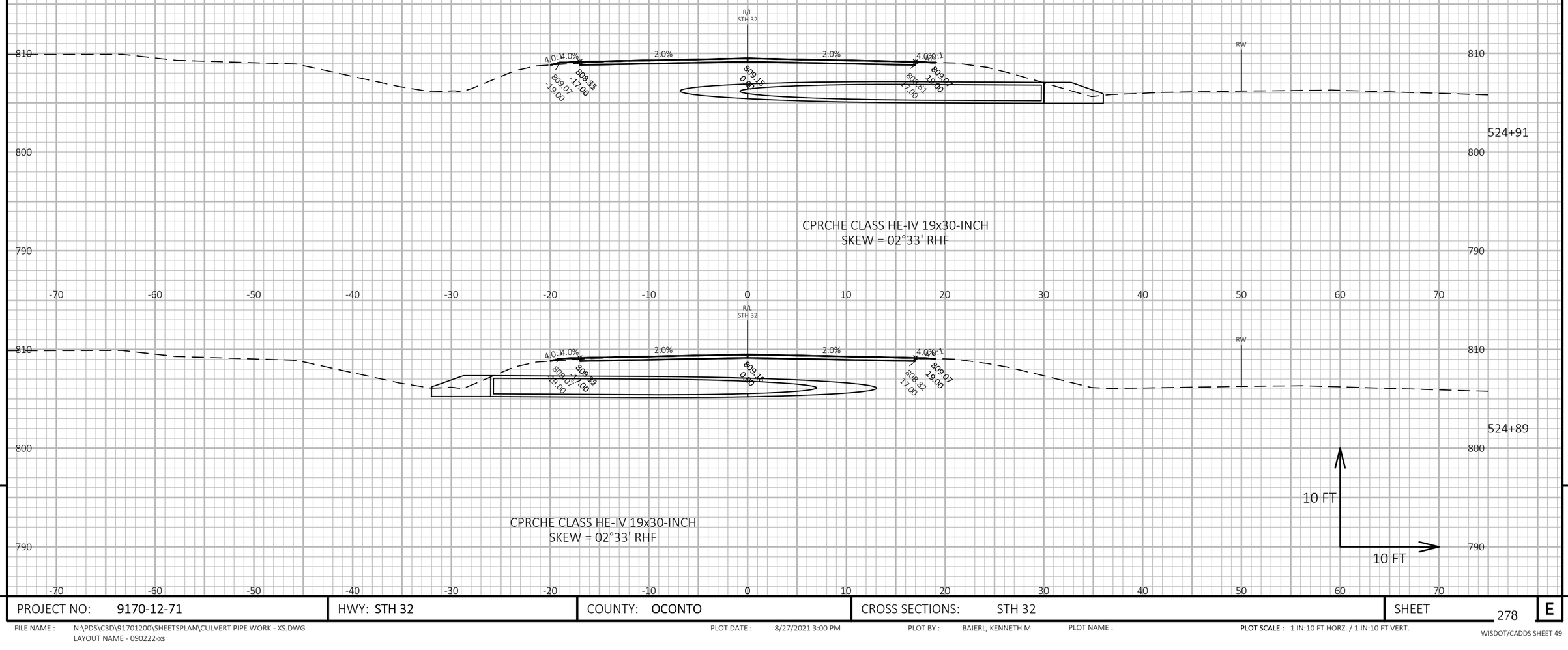
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9 9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 278 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090222-xs

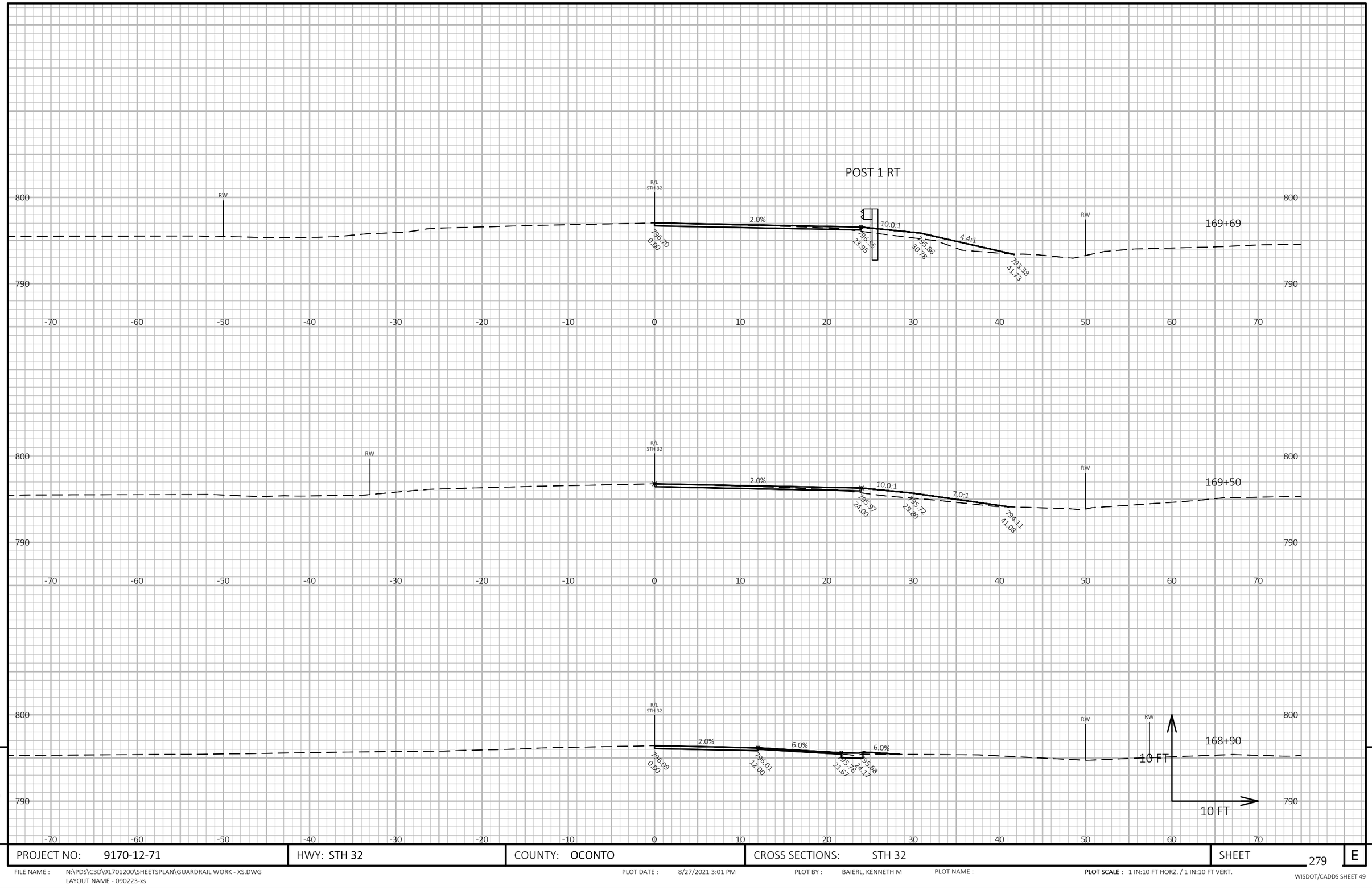
PLOT DATE : 8/27/2021 3:00 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 279 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090223-xs

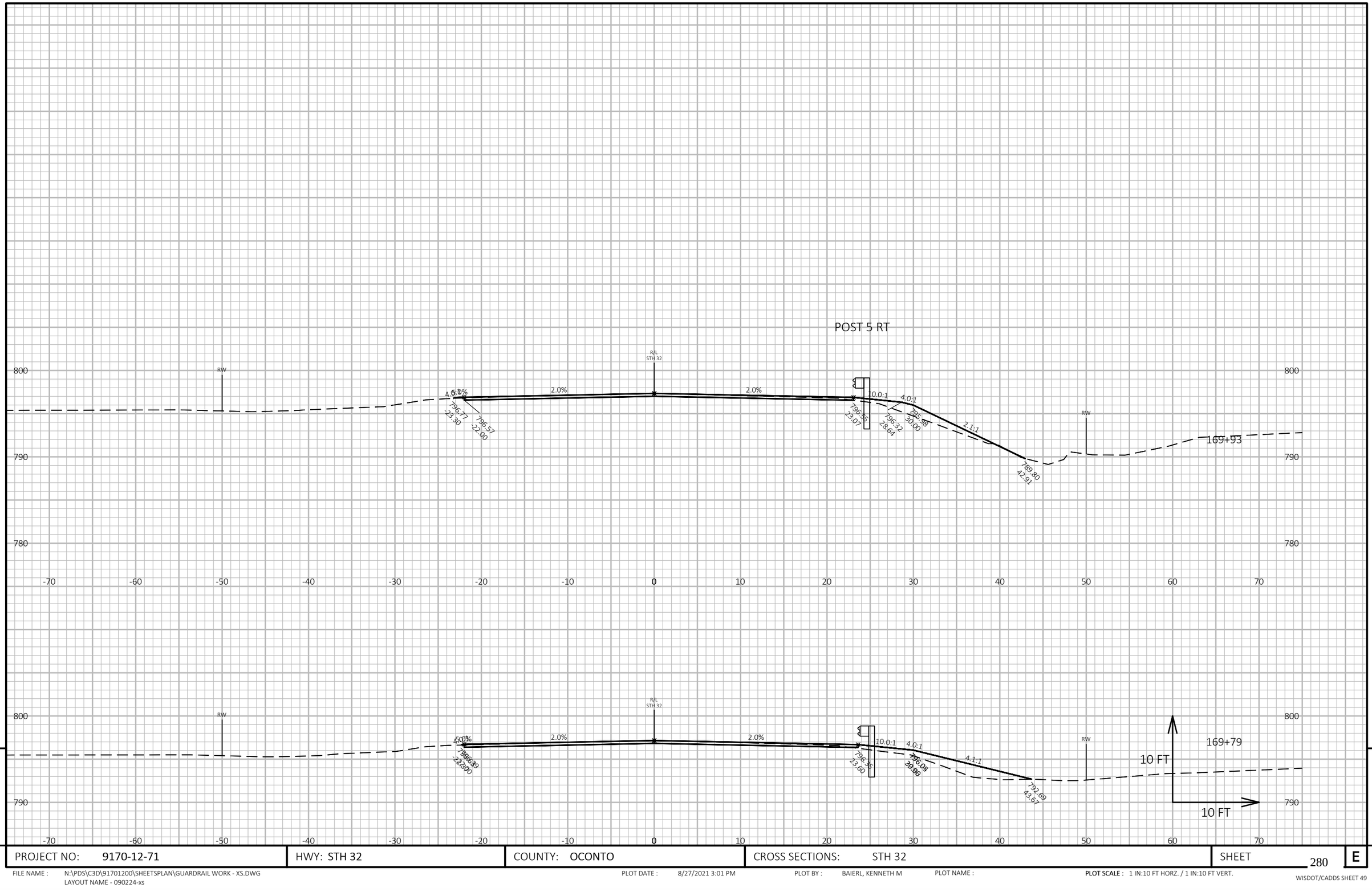
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

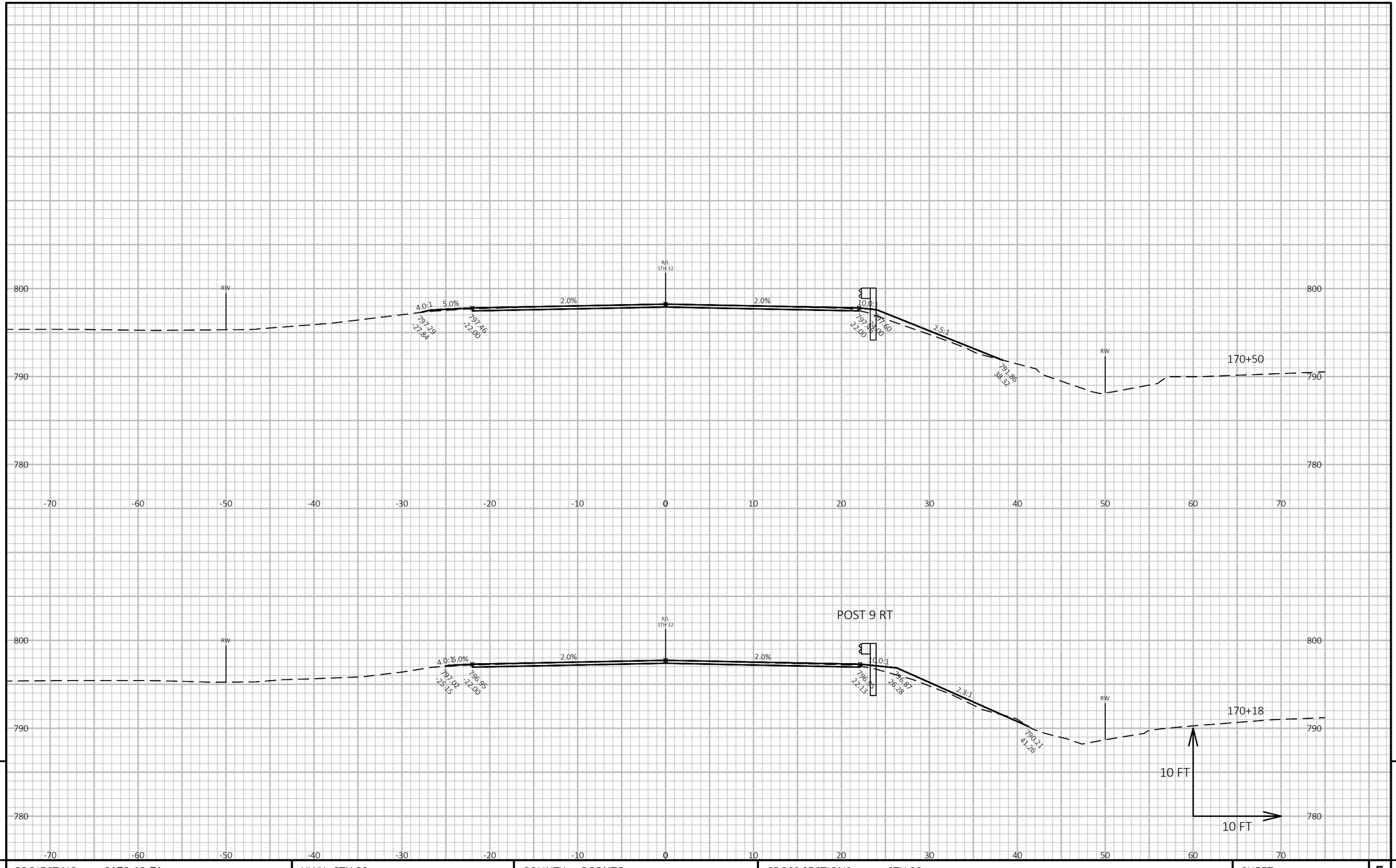
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 280 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090224-xs

PLOT DATE : 8/27/2021 3:01 PM PLOT BY : BAIERL, KENNETH M PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 281 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090225-xs

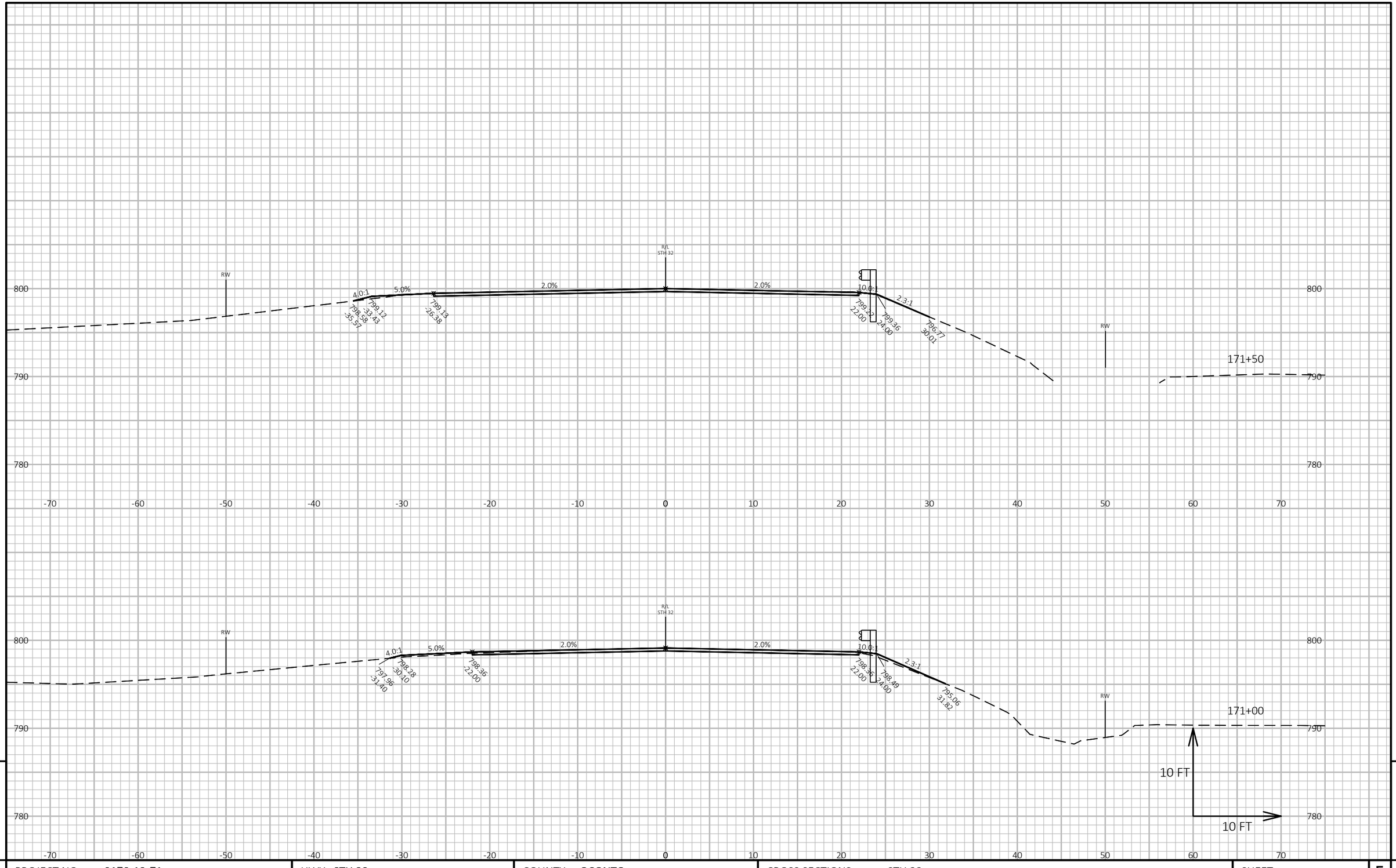
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 282 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090226-xs

PLOT DATE : 8/27/2021 3:01 PM

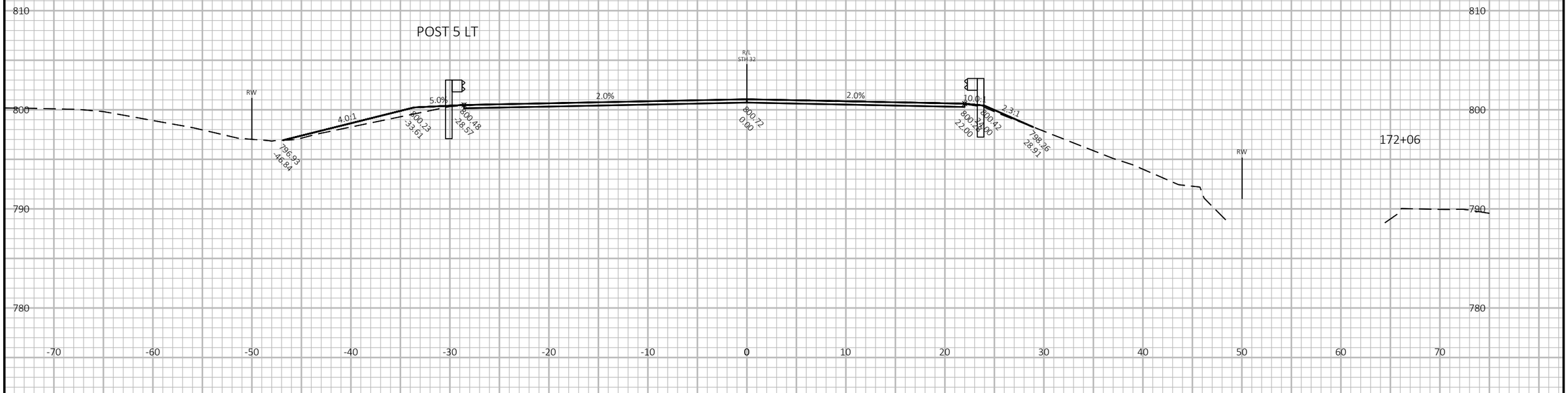
PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

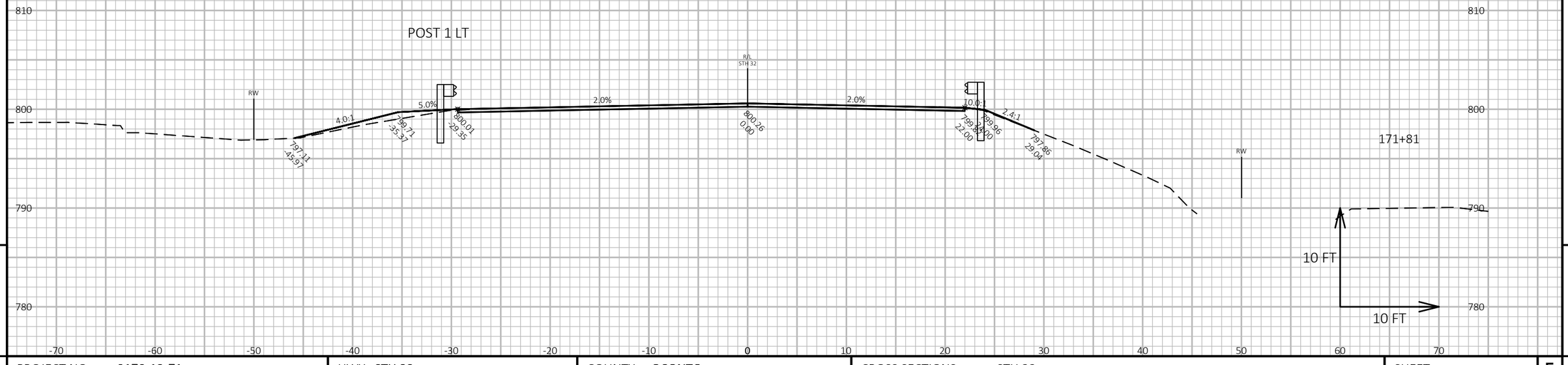
WISDOT/CADDS SHEET 49

POST 5 LT




172+06

POST 1 LT




171+81




9 9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 283 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090227-xs

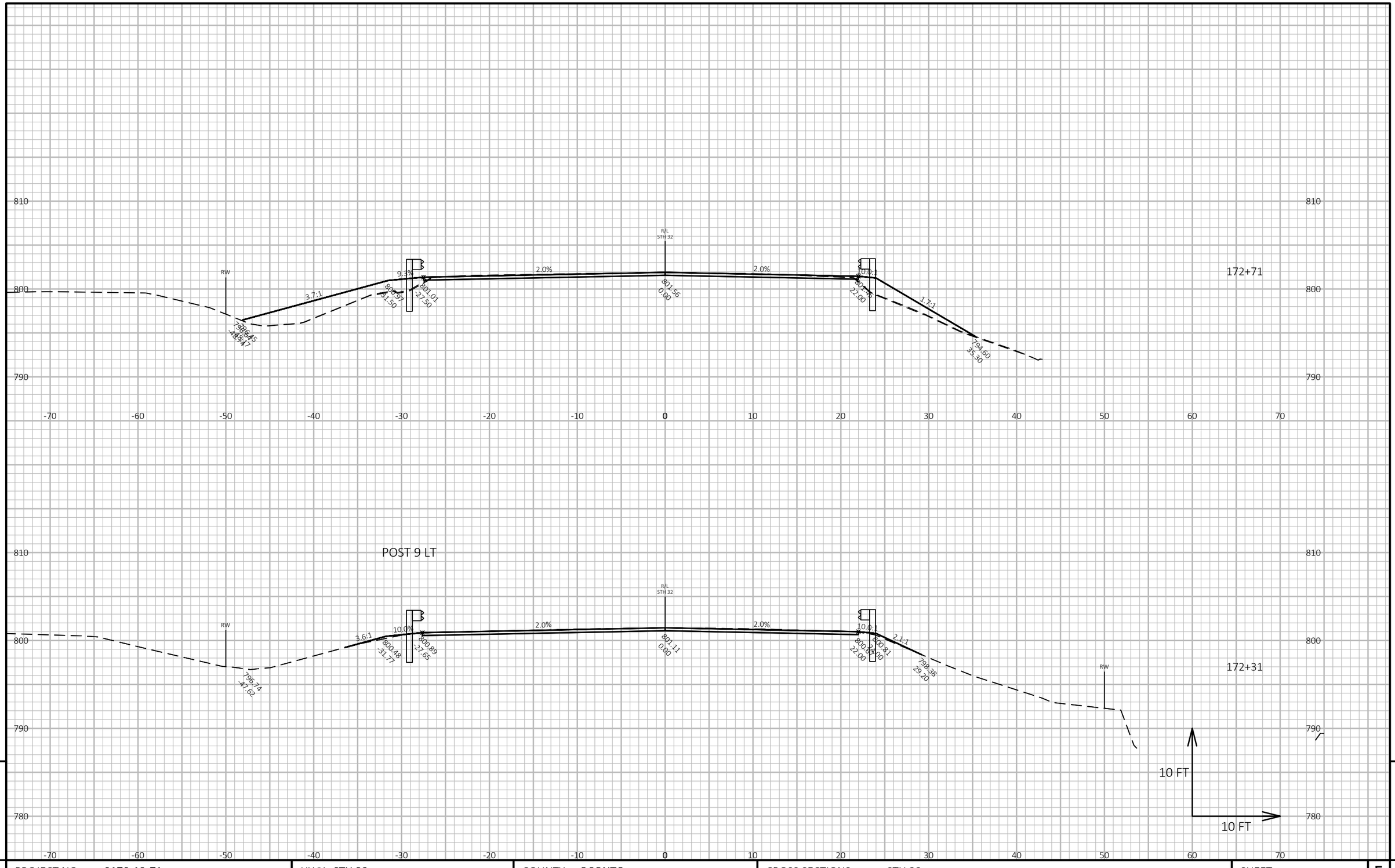
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| | | | | |
|---|---|---|---|---|
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 284 E |

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090228-xs

PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 9 LT

POST 5 RT

175+24

POST 9 RT

174+99

174+60

10 FT

10 FT

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 285 E |
|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090229-xs

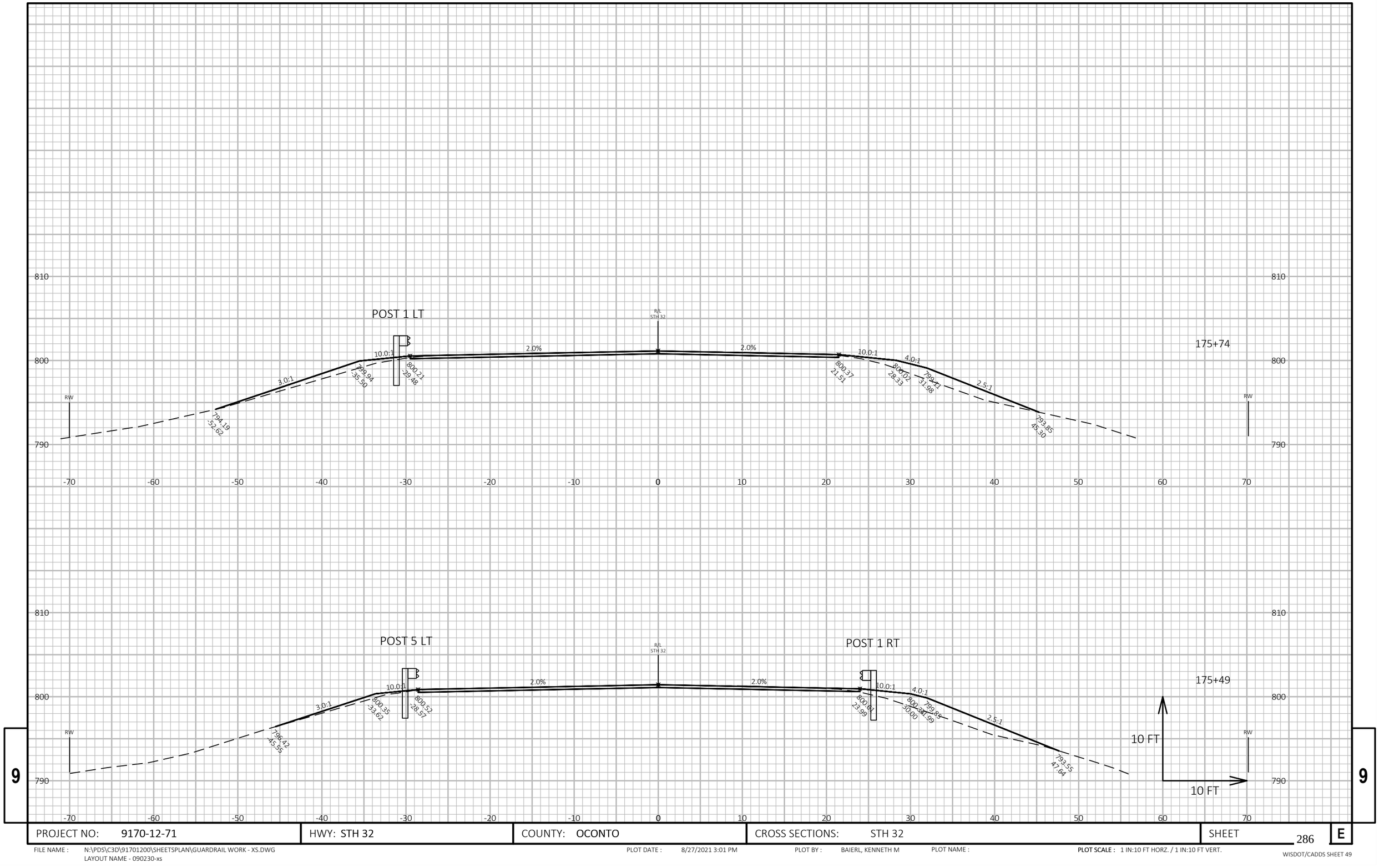
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

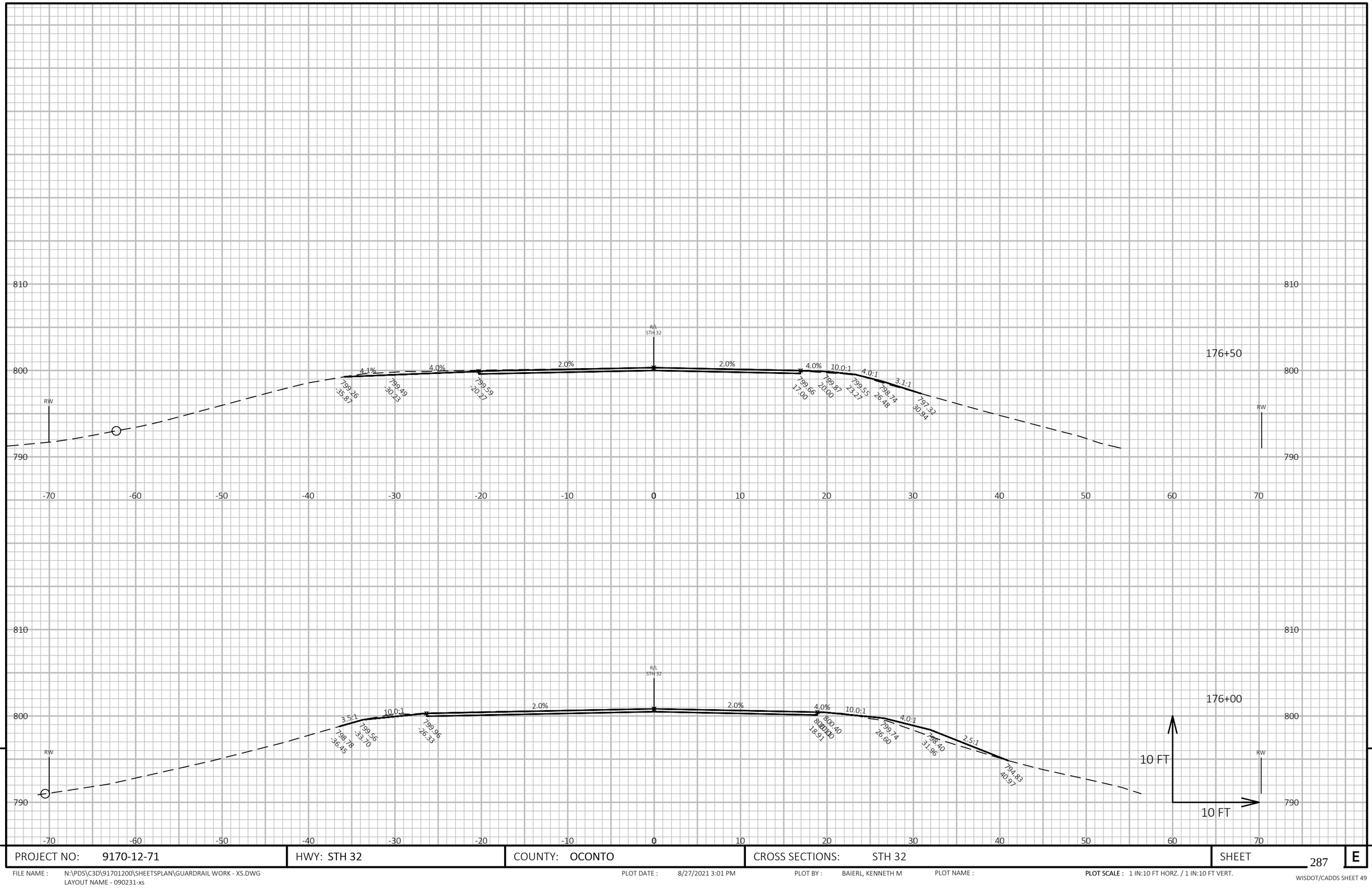
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 286 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090230-xs

PLOT DATE : 8/27/2021 3:01 PM PLOT BY : BAIERL, KENNETH M PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 287 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090231-xs

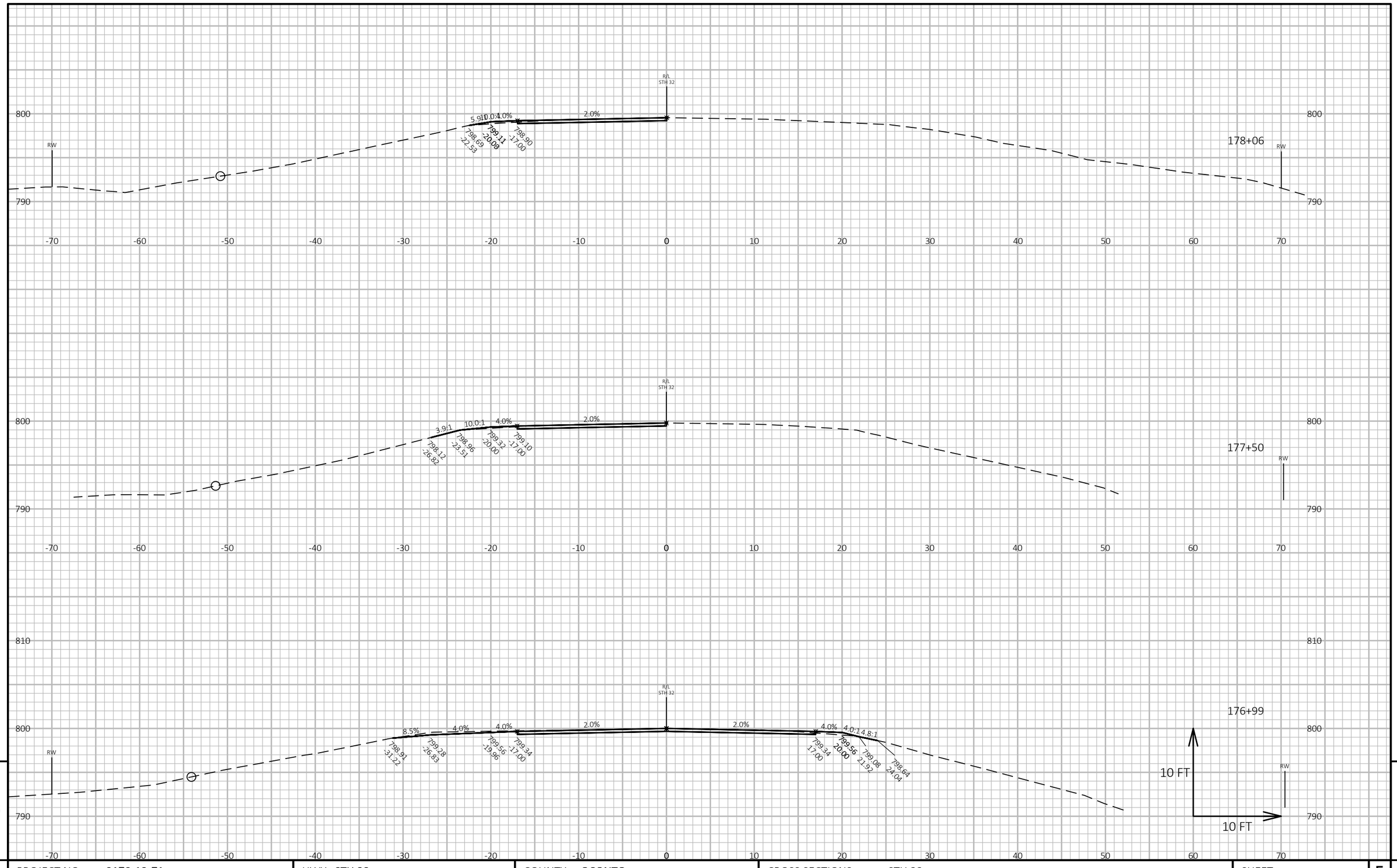
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 288 | E |
|---|---|---|---|---|---|


FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\GUARDRAIL WORK - XS.DWG
LAYOUT NAME - 090232-xs

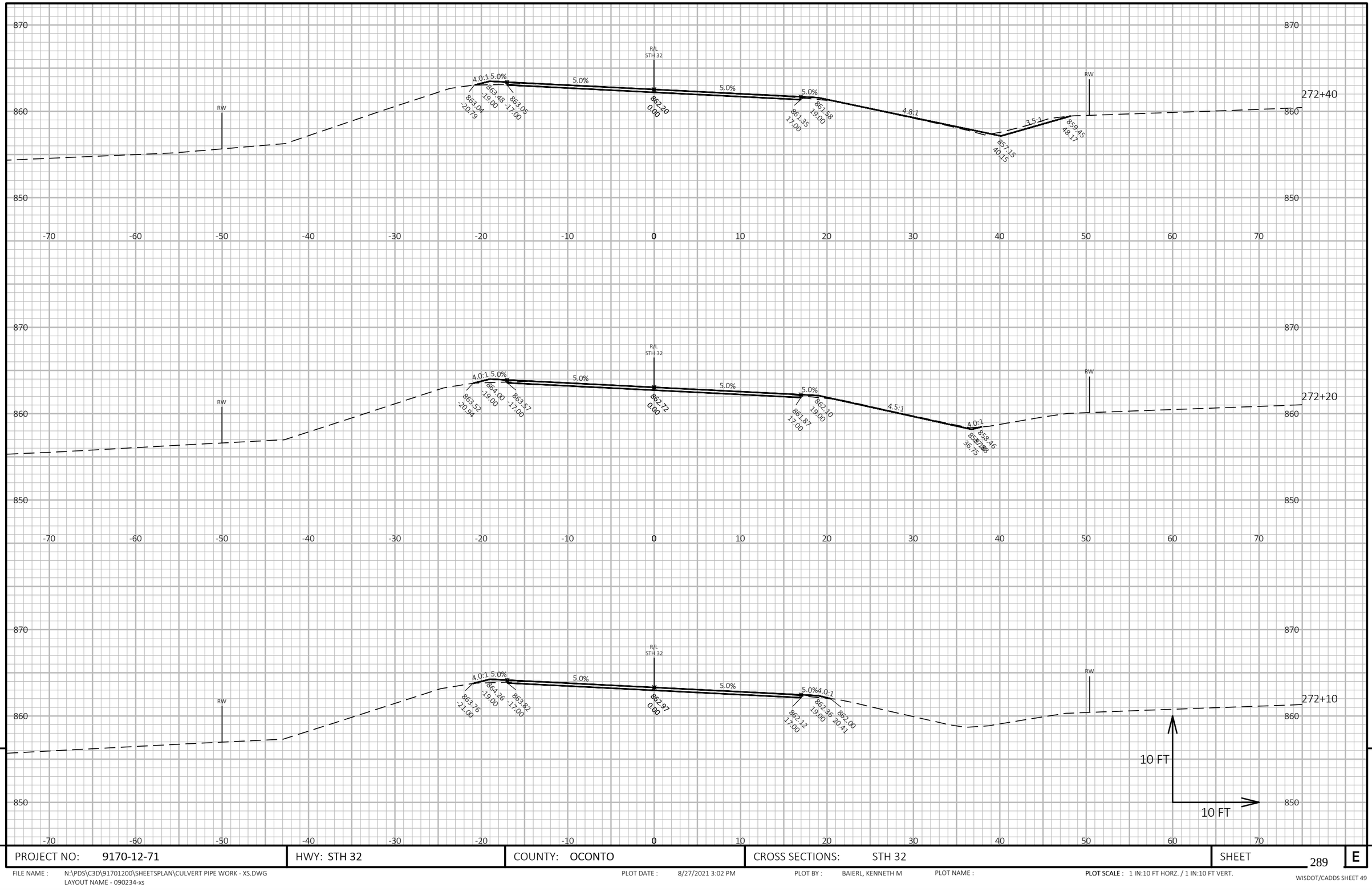
PLOT DATE : 8/27/2021 3:01 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 289 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090234-xs

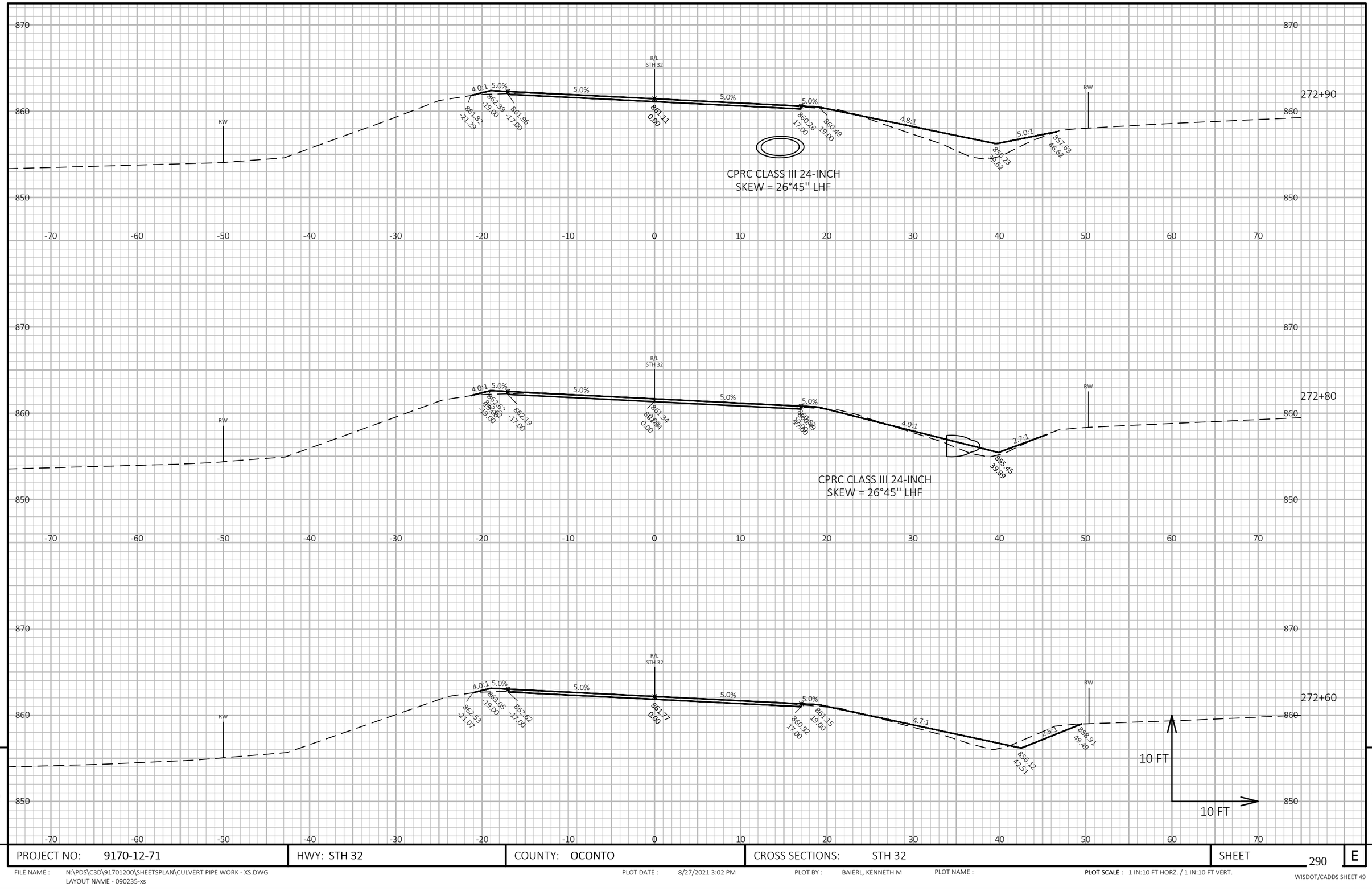
PLOT DATE : 8/27/2021 3:02 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



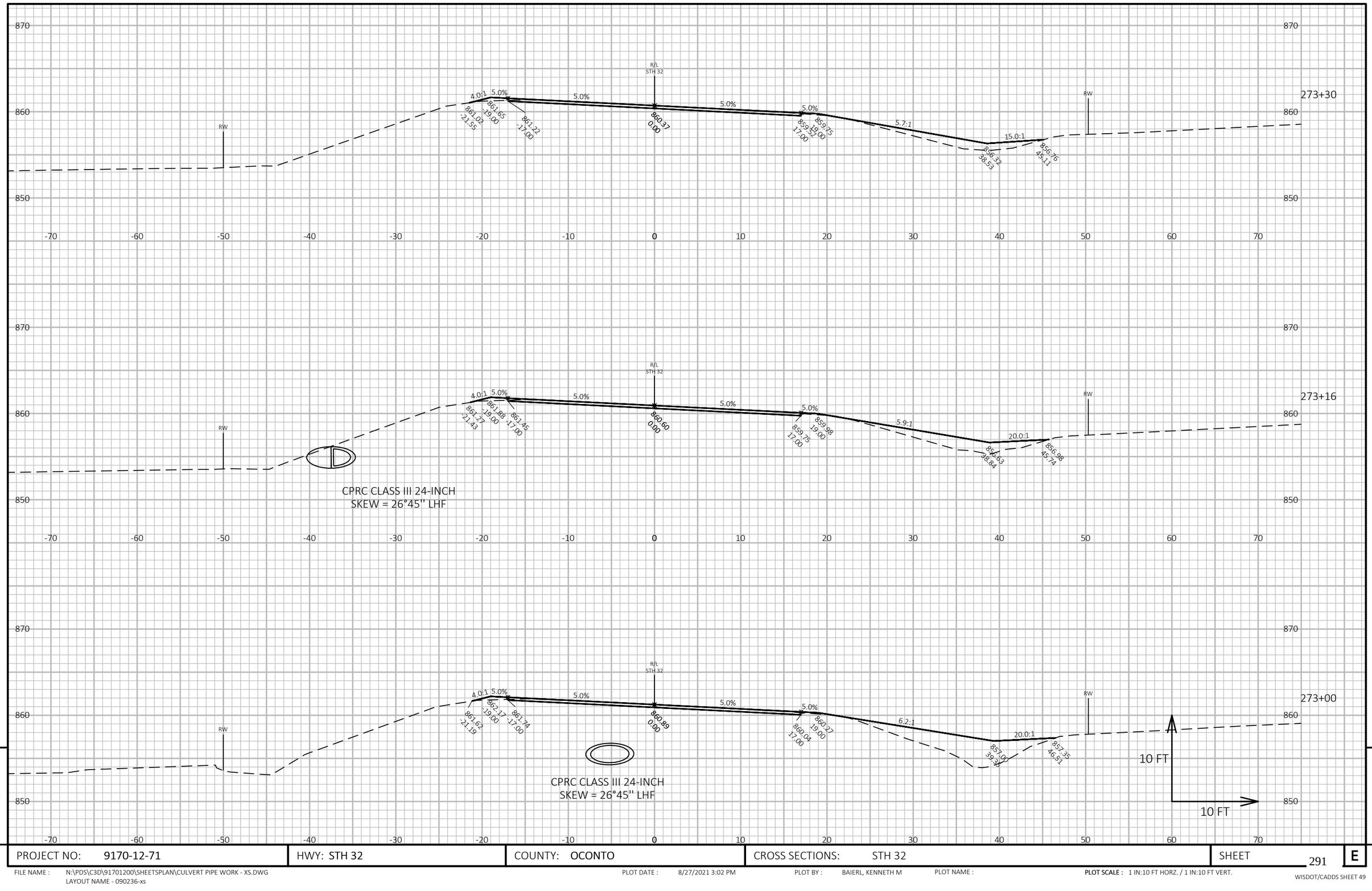

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 290 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090235-xs

PLOT DATE : 8/27/2021 3:02 PM PLOT BY : BAIERL, KENNETH M PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 291 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090236-xs

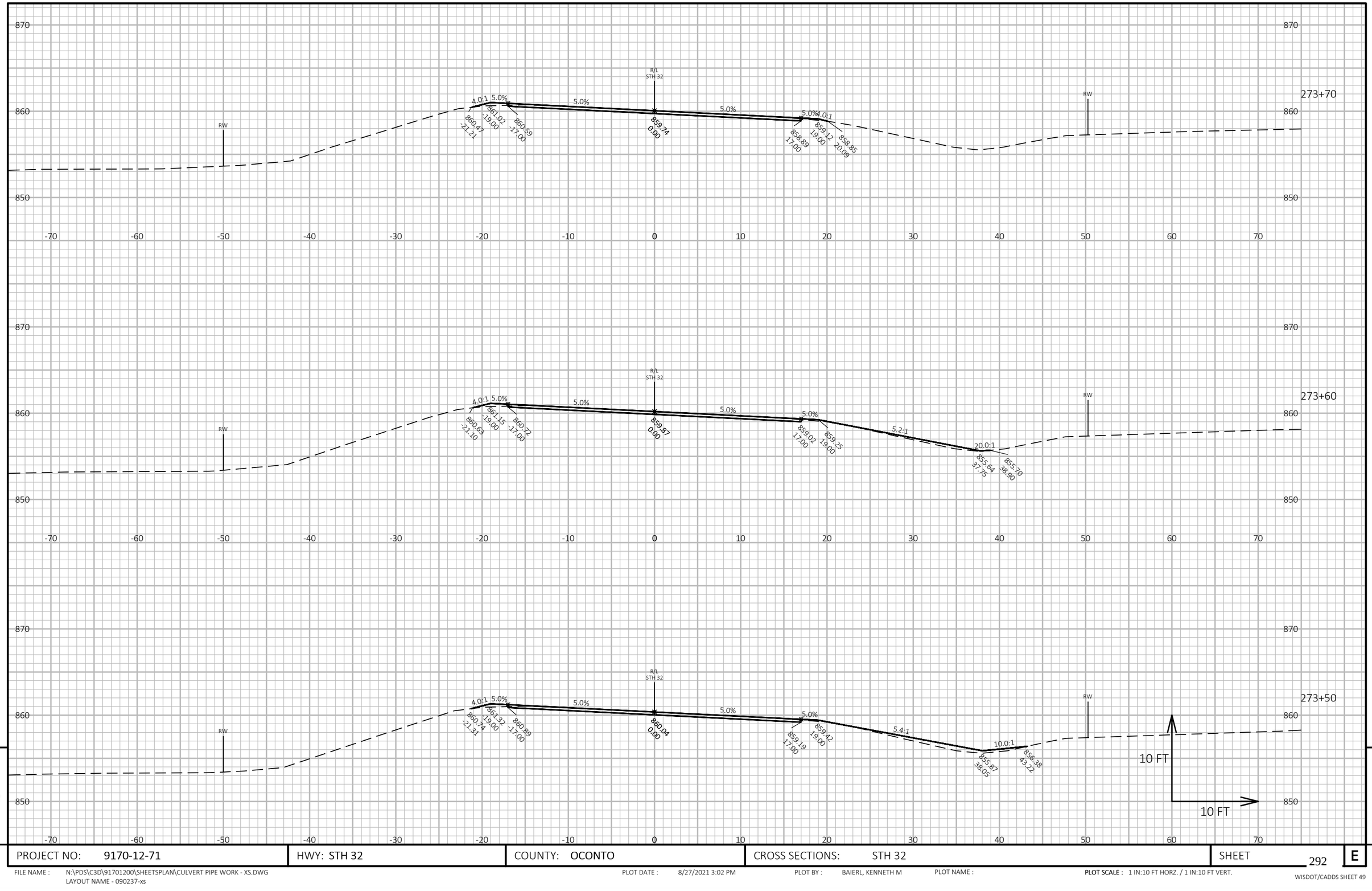
PLOT DATE : 8/27/2021 3:02 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 292 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090237-xs

PLOT DATE : 8/27/2021 3:02 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

840
830
820
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

POINT OF TANGENCY
(MGS SHORT
RADIUS TERMINAL)

337+37

2.0%
825.17
0.45
824.78
20.00
10.0:1
824.98
41.30

840
830
820
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

337+05

EX
RW

2.0%
4.0%
825.82
0.48
825.48
17.48

10 FT
10 FT

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 293 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090241-xs

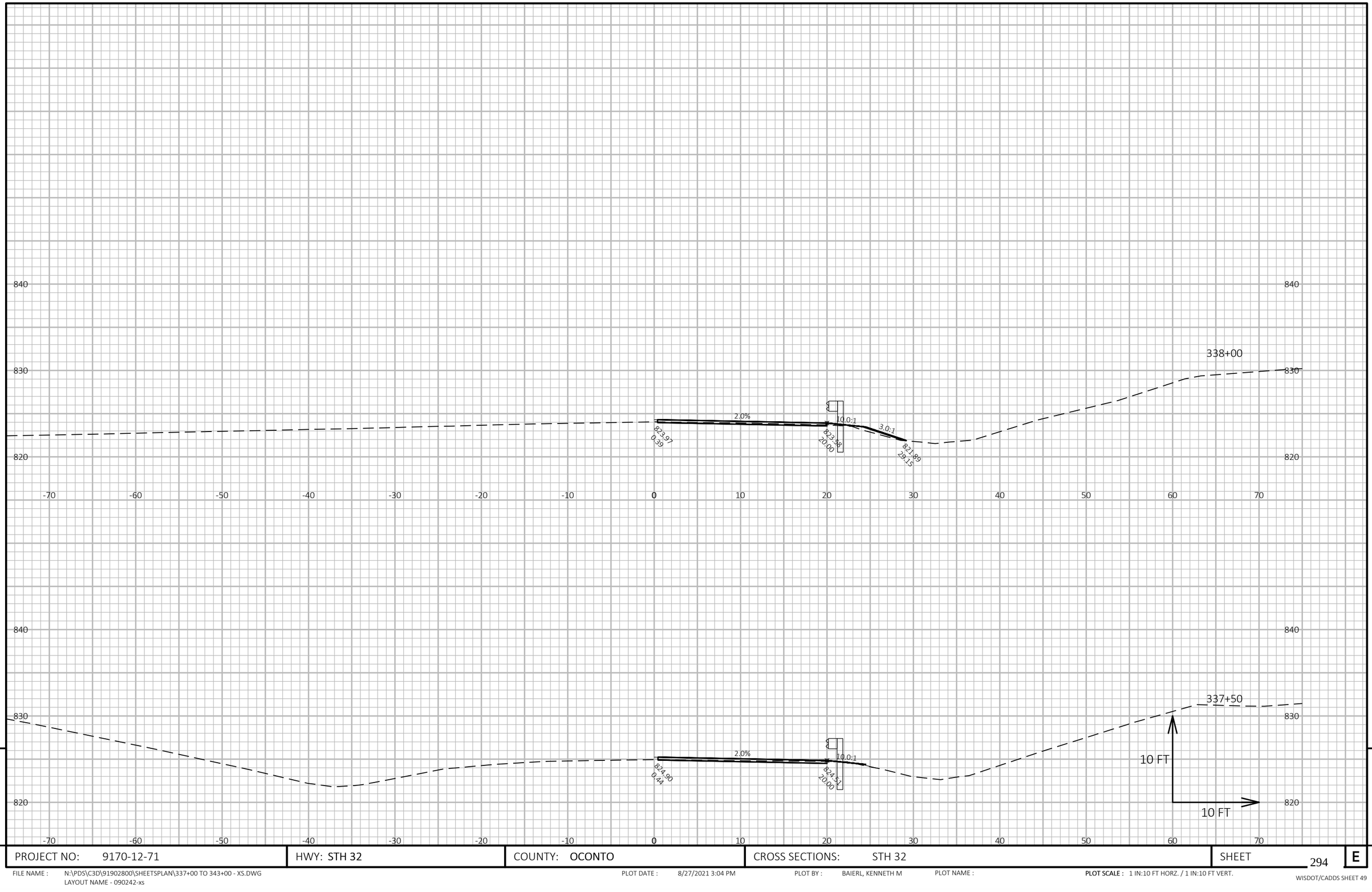
PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 294 | E |
|---|---|---|---|---|---|

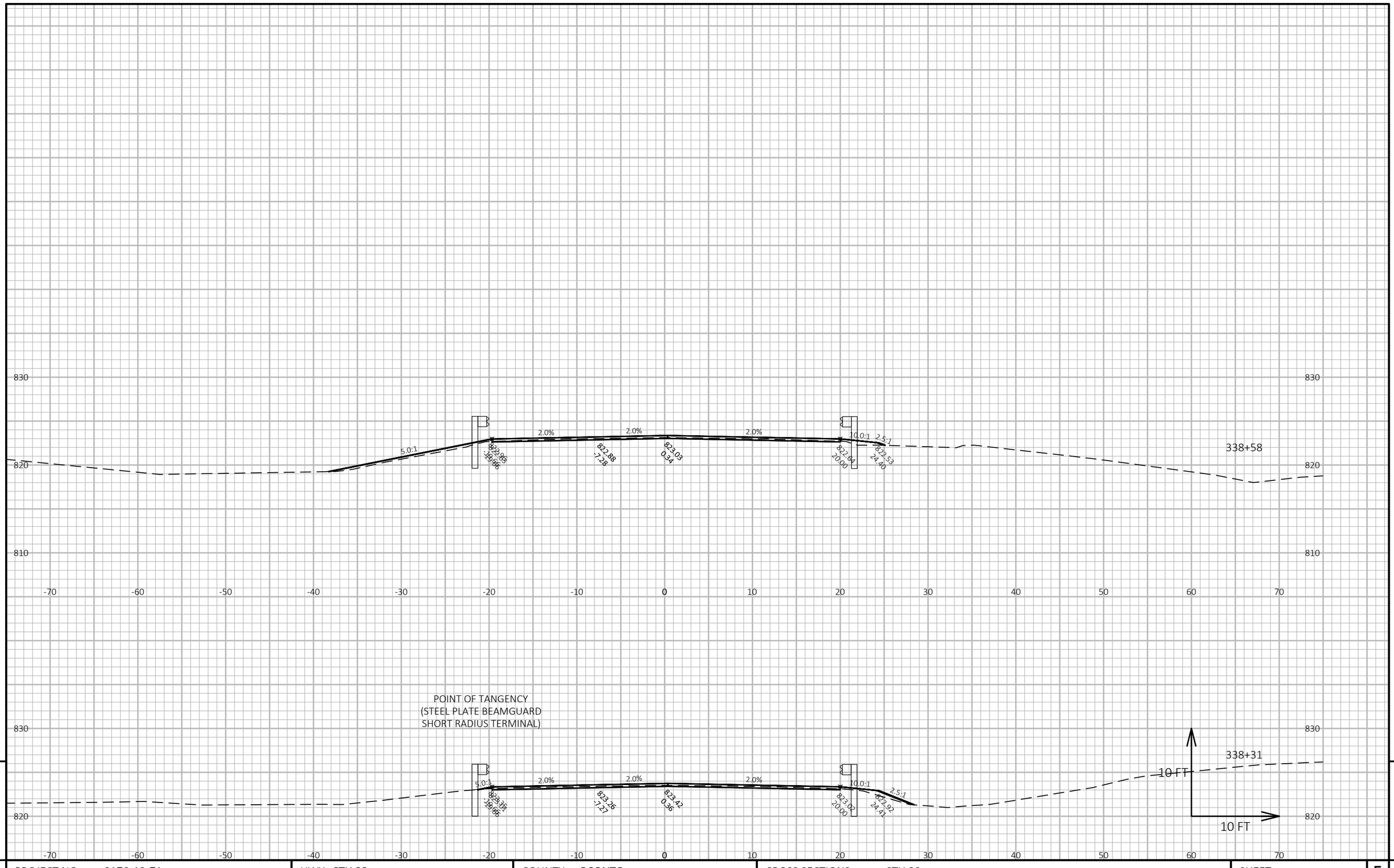
FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090242-xs

PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 295 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090243-xs

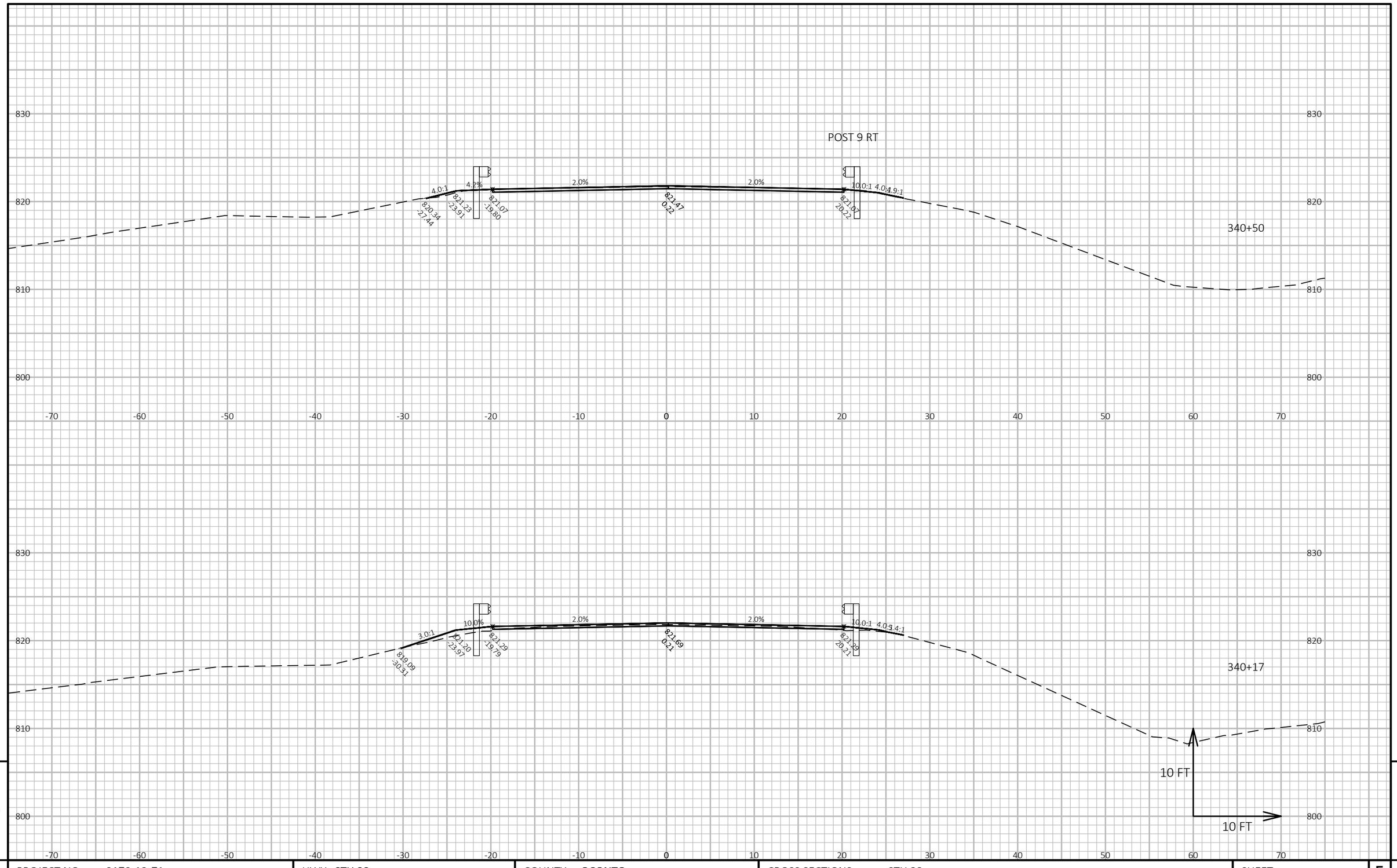
PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 296 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090244-xs

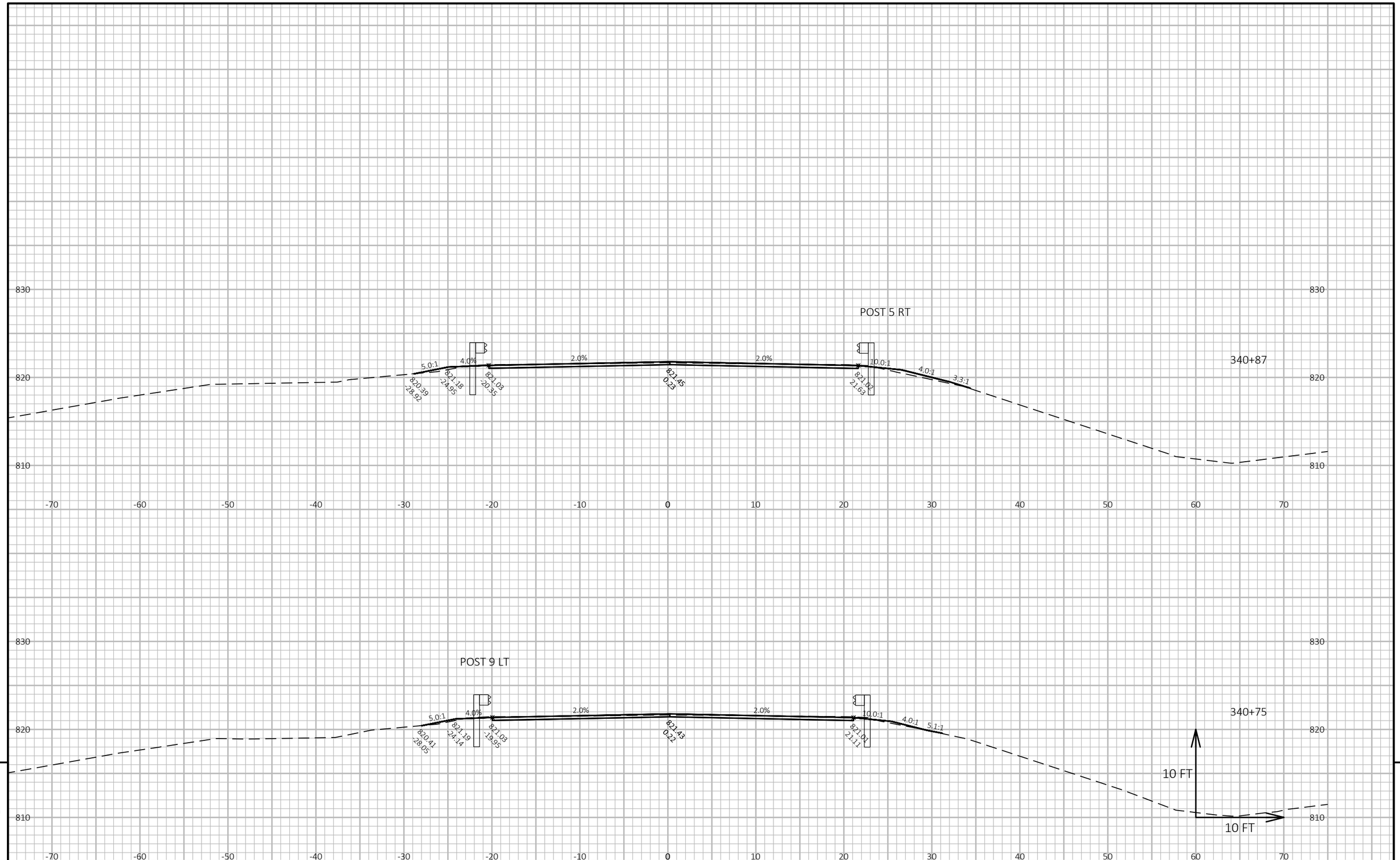
PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 297 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090245-xs

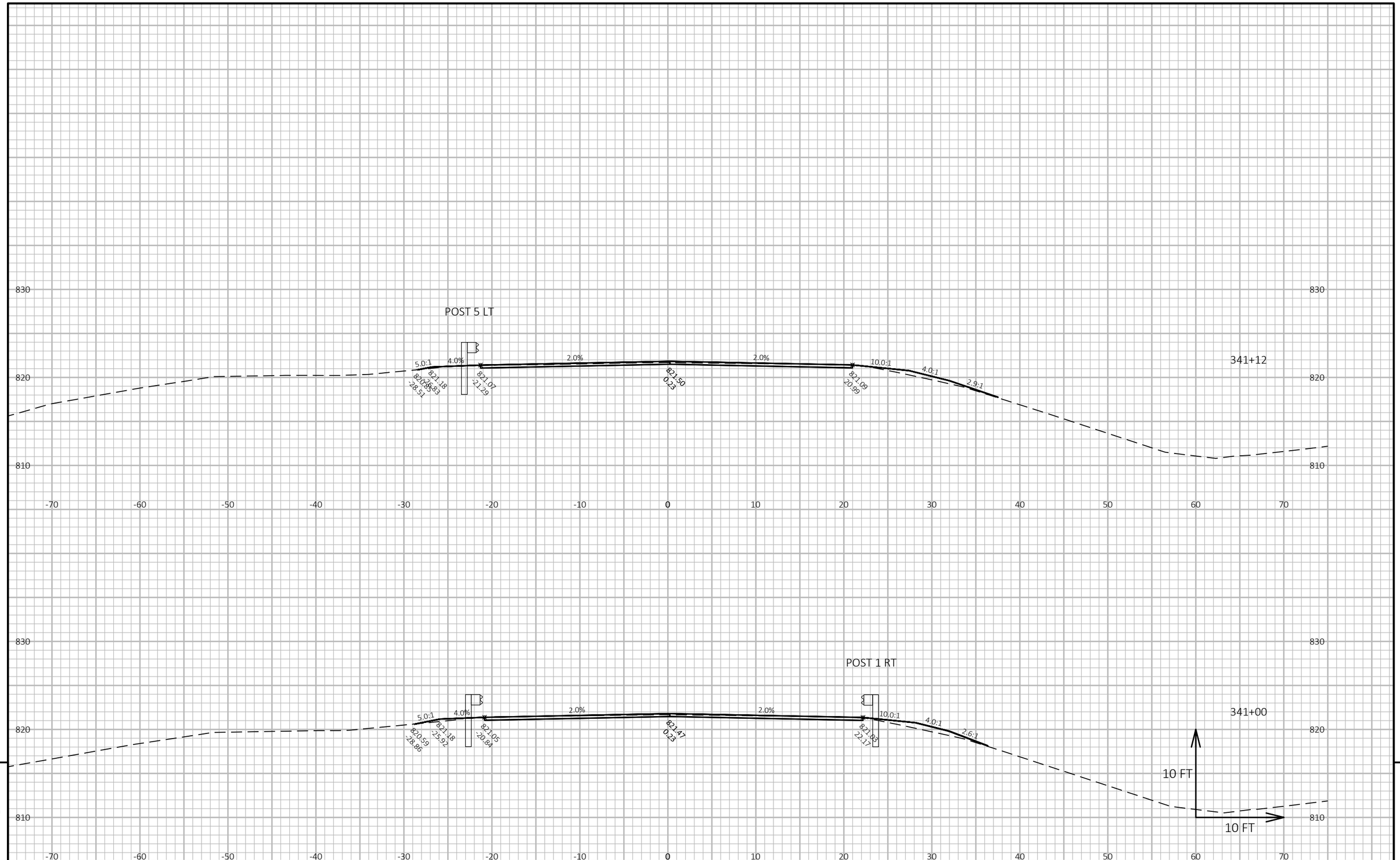
PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 298 E |
|---|---|---|---|---|

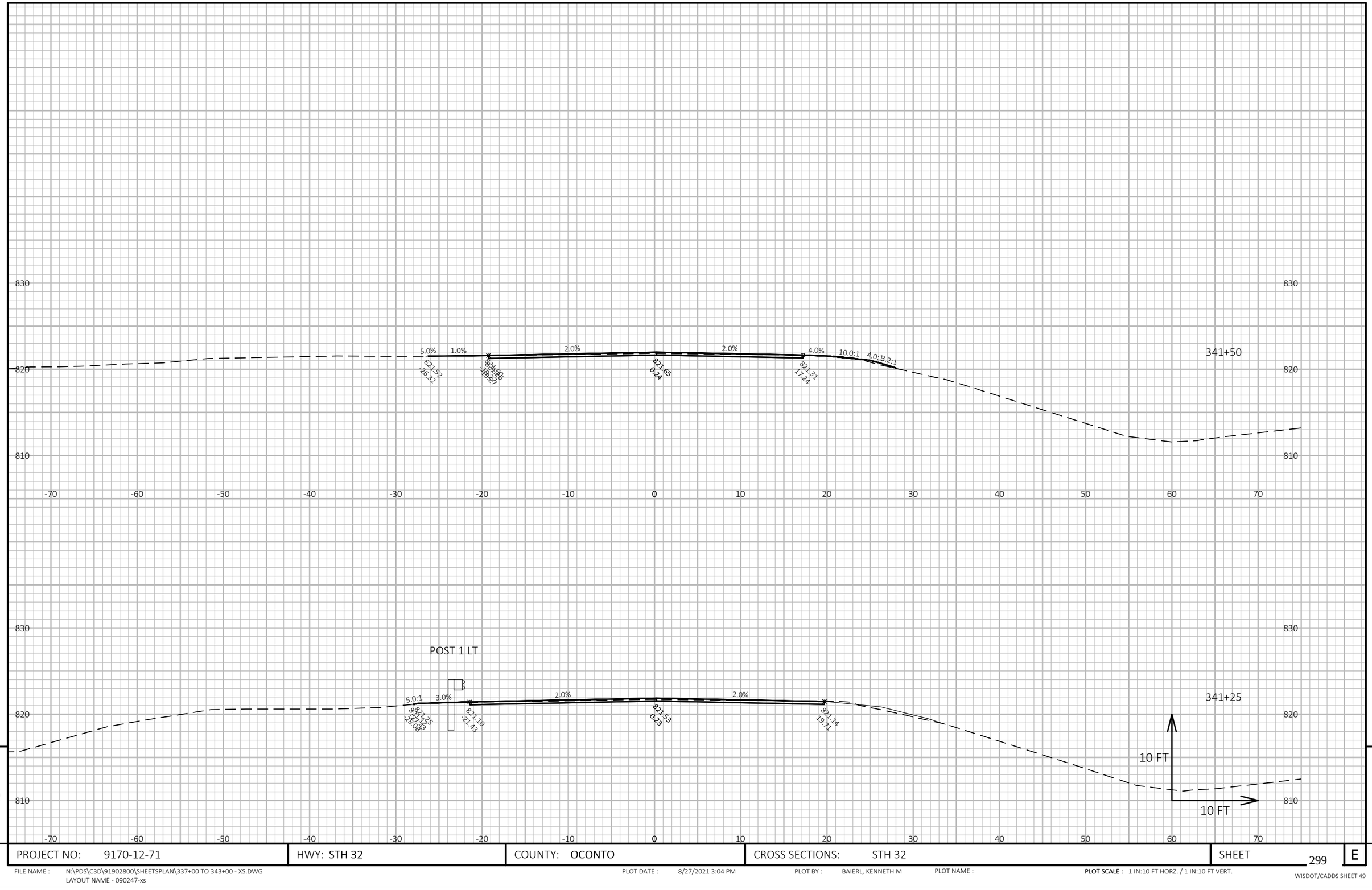
FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090246-xs

PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 299 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\337+00 TO 343+00 - XS.DWG
LAYOUT NAME - 090247-xs

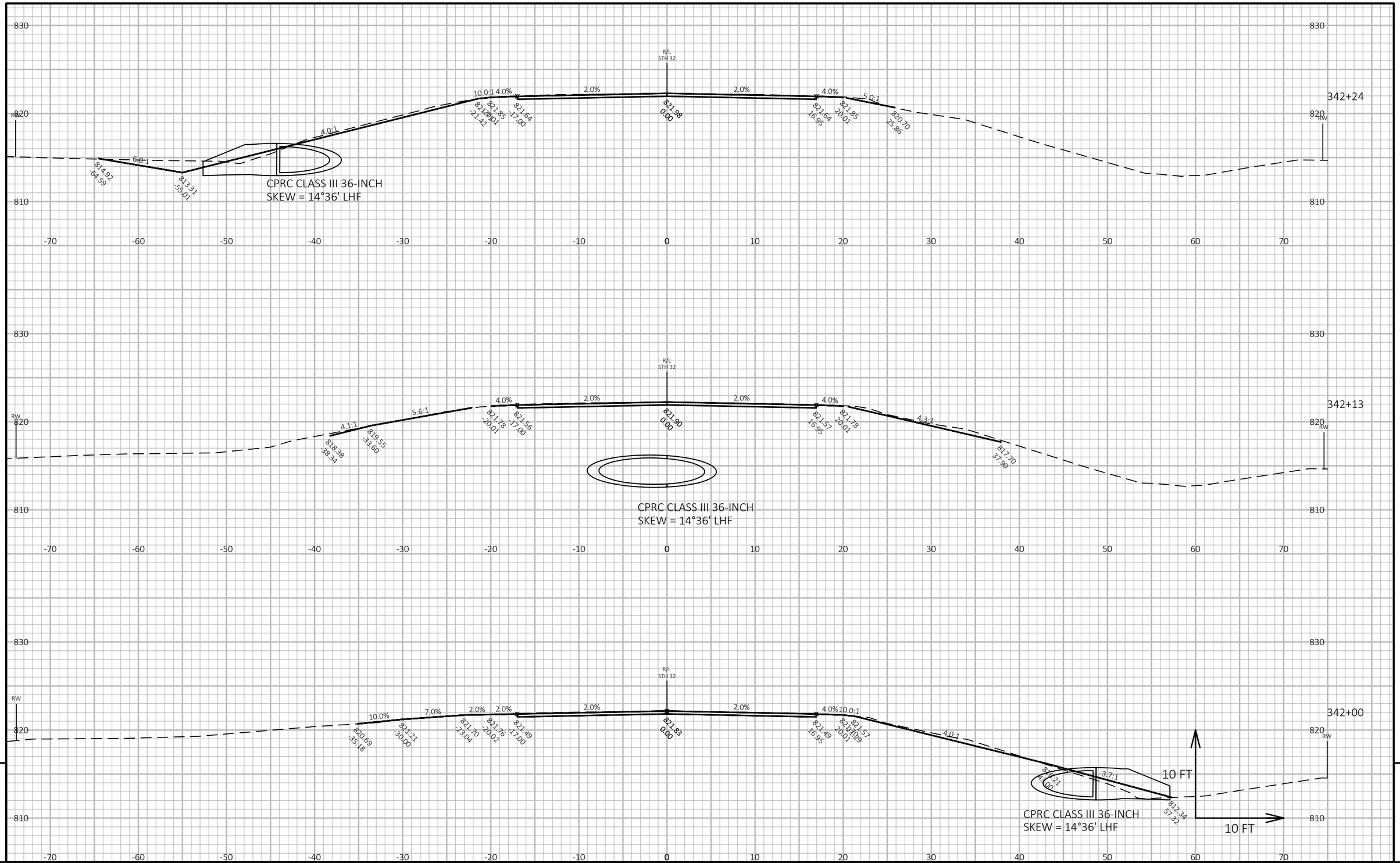
PLOT DATE : 8/27/2021 3:04 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| | | | | |
|---|---|---|---|---|
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 300 E |

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090250-xs

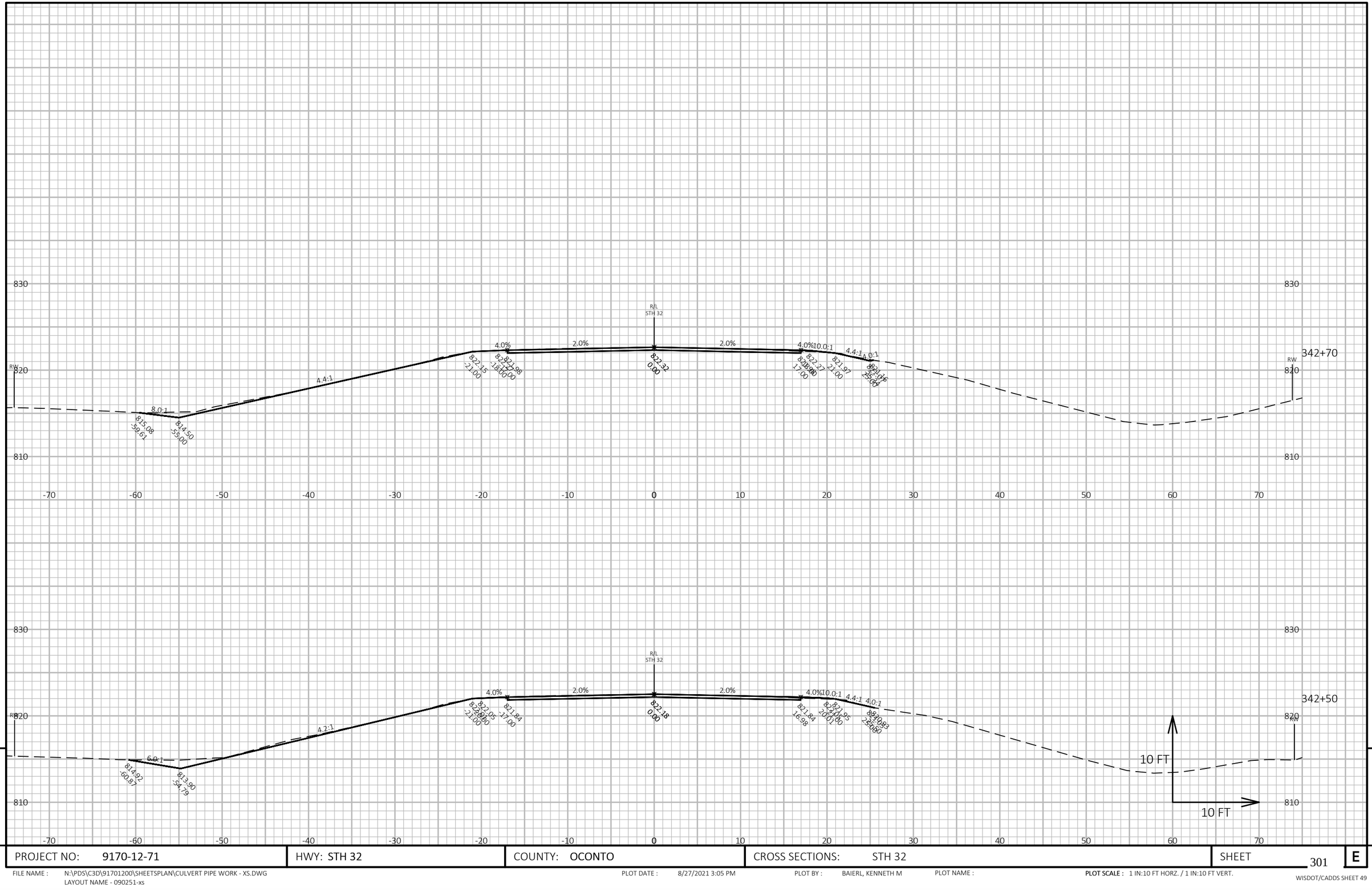
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 301 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090251-xs

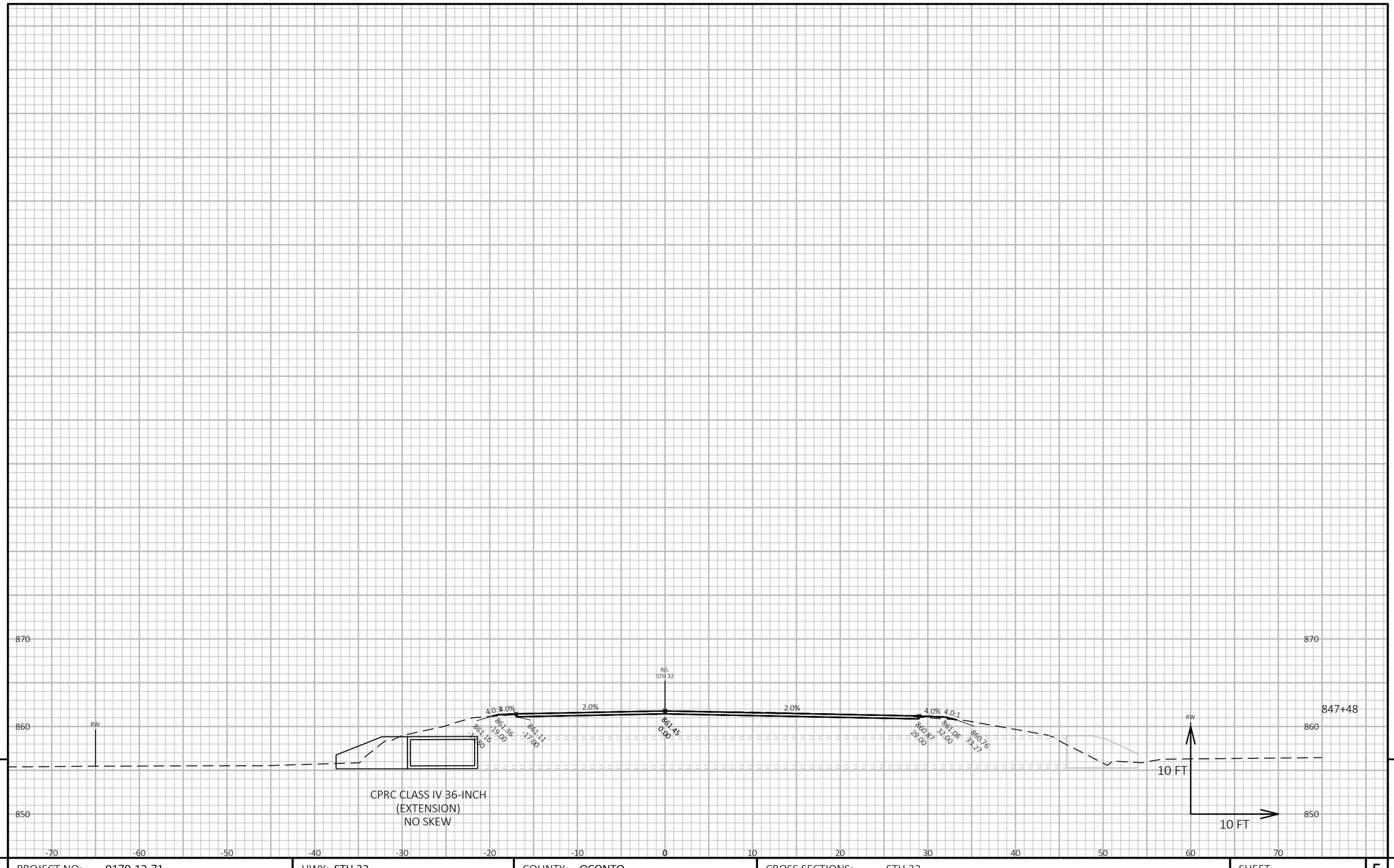
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 302 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090254-xs

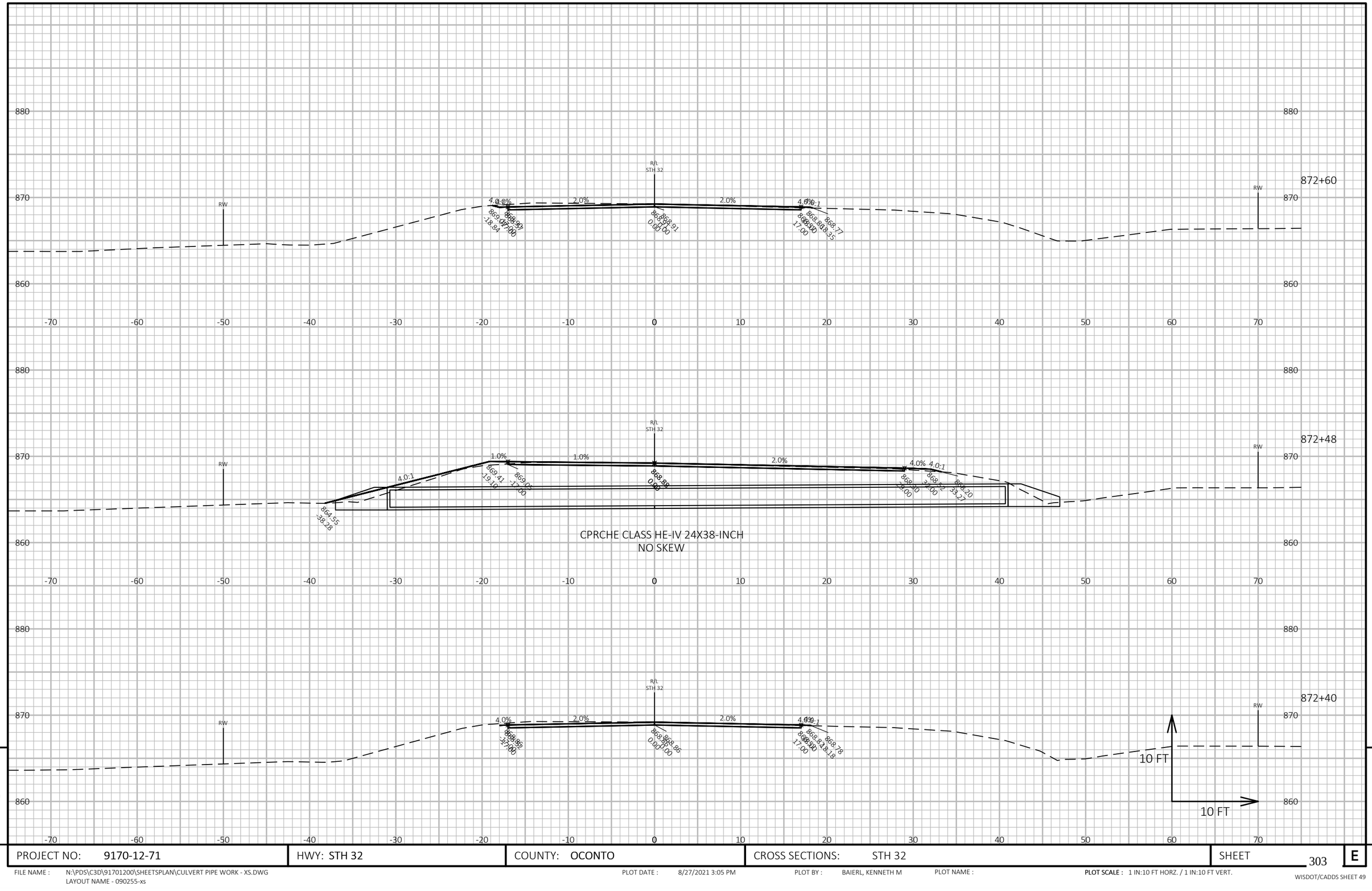
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 303 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090255-xs

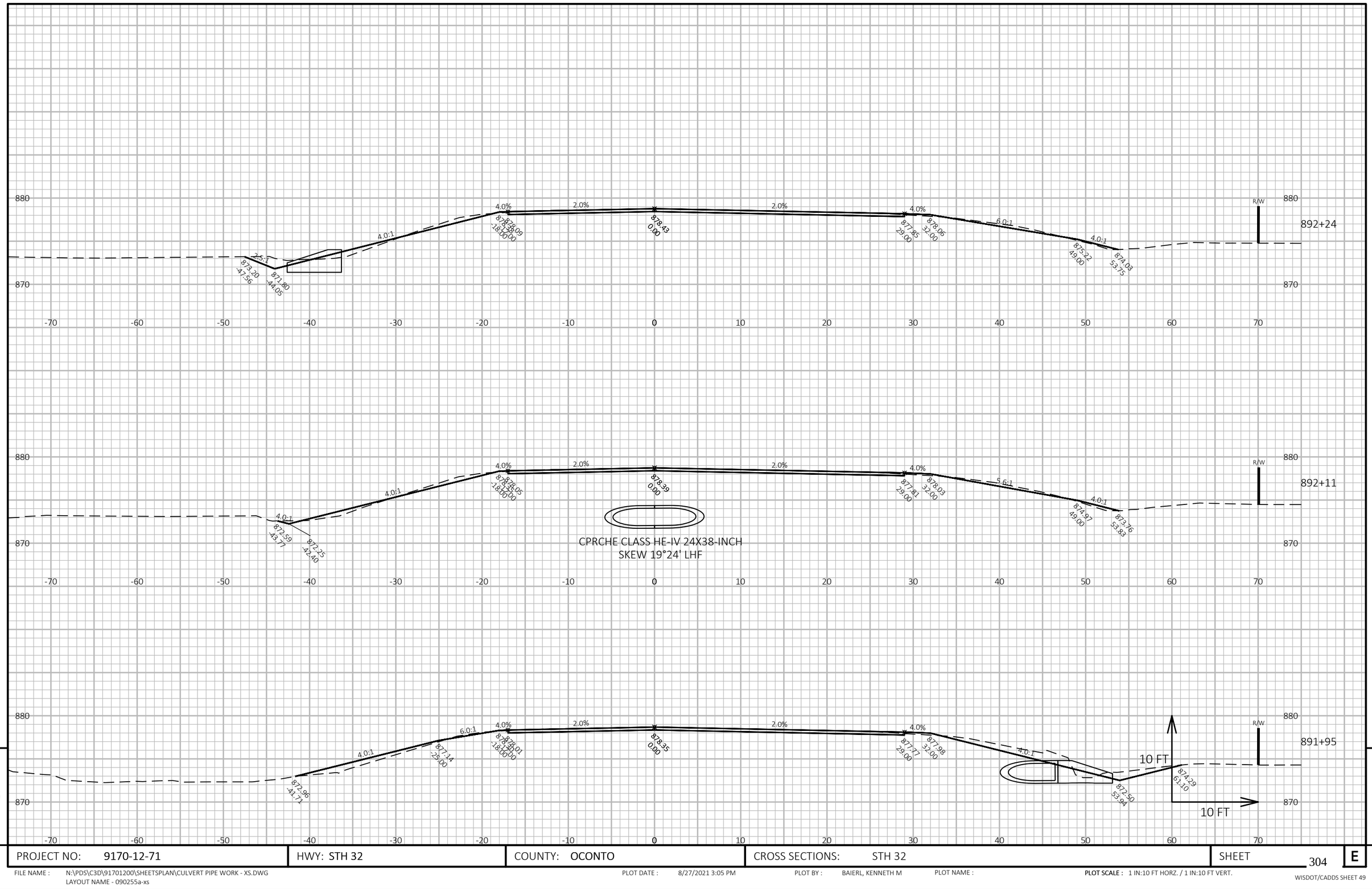
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| | | | | |
|---|---|---|---|---|
| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 304 E |

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090255a-xs

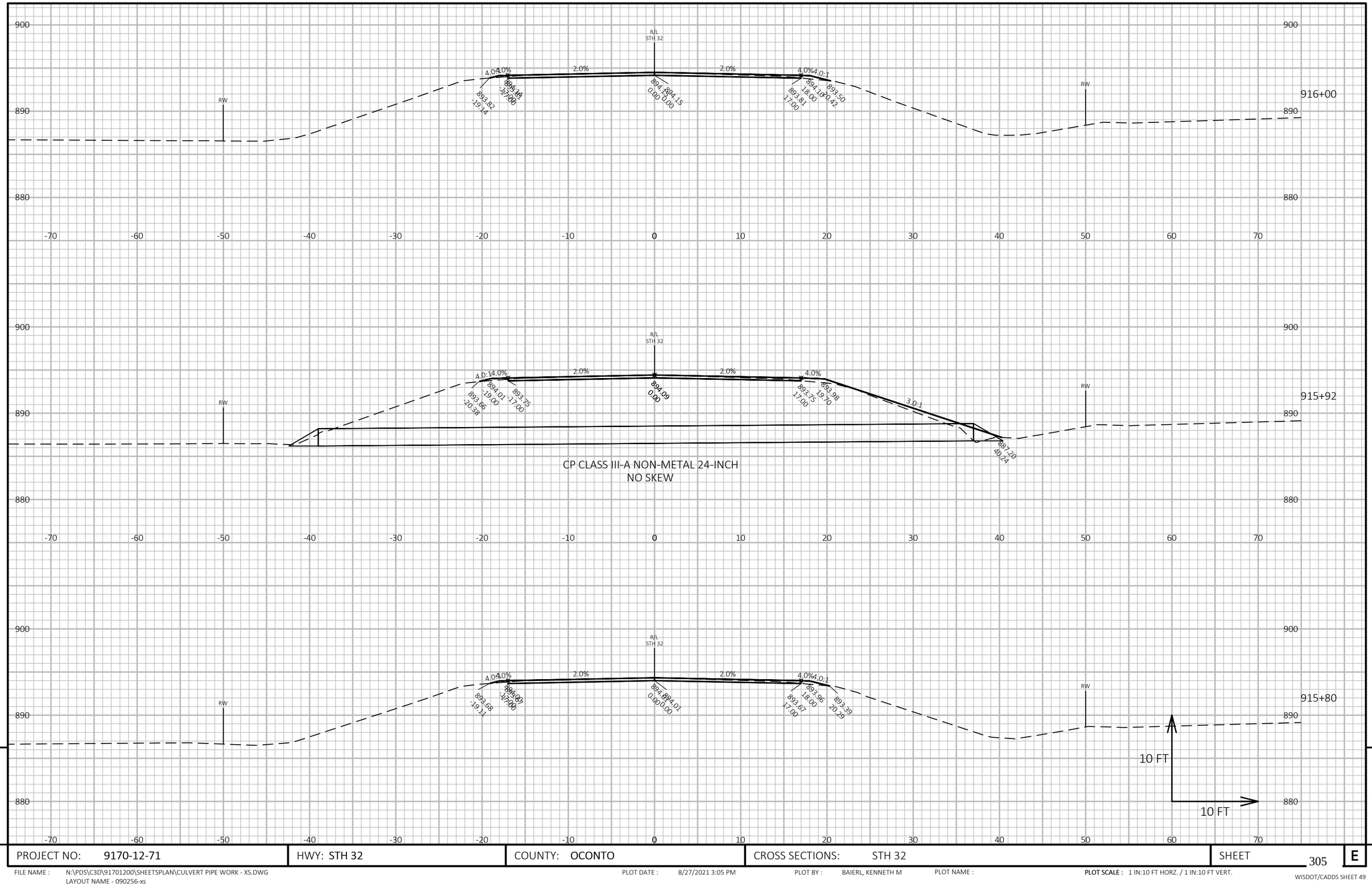
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




CP CLASS III-A NON-METAL 24-INCH
NO SKEW

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 305 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090256-xs

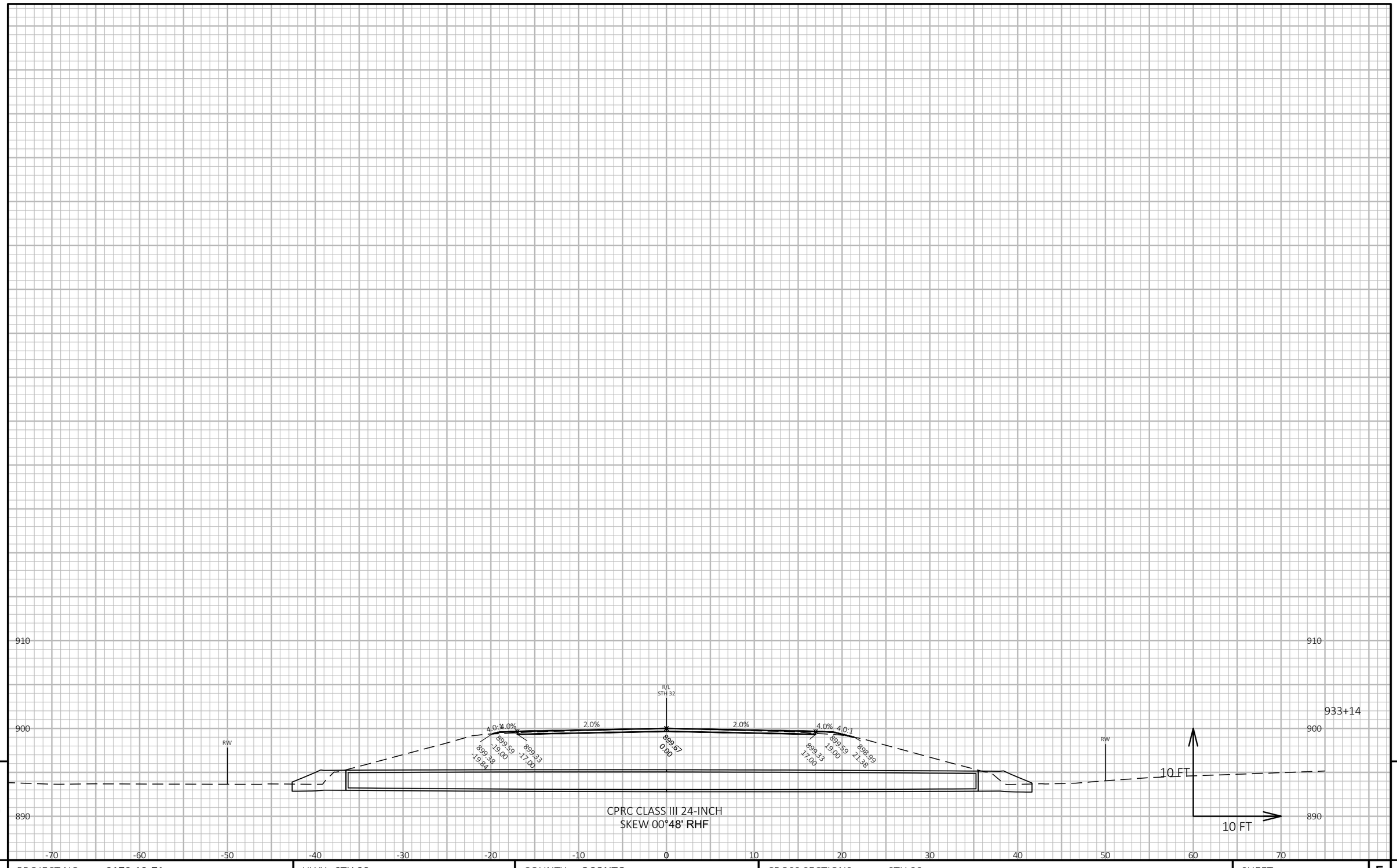
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




CPRC CLASS III 24-INCH
SKEW 00°48' RHF

9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 306 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090257-xs

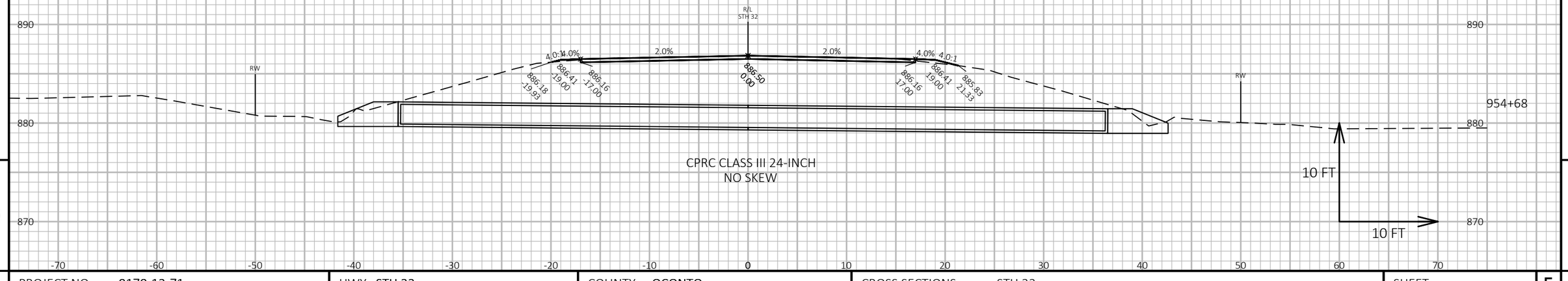
PLOT DATE : 8/27/2021 3:05 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 9170-12-71 | HWY: STH 32 | COUNTY: OCONTO | CROSS SECTIONS: STH 32 | SHEET 307 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91701200\SHEETSPLAN\CULVERT PIPE WORK - XS.DWG
LAYOUT NAME - 090258-xs

PLOT DATE : 8/27/2021 3:06 PM

PLOT BY : BAIERL, KENNETH M

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

GRE

Feb 08, 2022

PROJECT ID: 9190-28-71

WITH: 9170-12-71

COUNTY: OCONTO

ORDER OF SHEETS


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


TOTAL SHEETS =

DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2022 | = | 2900 |
| A.A.D.T. | 2042 | = | 3500 |
| D.H.V. | 2042 | = | 497 |
| D.D. | | = | 61/39 |
| T. | | = | 14.6% |
| DESIGN SPEED | | = | 55 MPH |
| ESALS | | = | |

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

# SURING - BREED

SOUTH BRANCH OCONTO RIVER BRIDGE

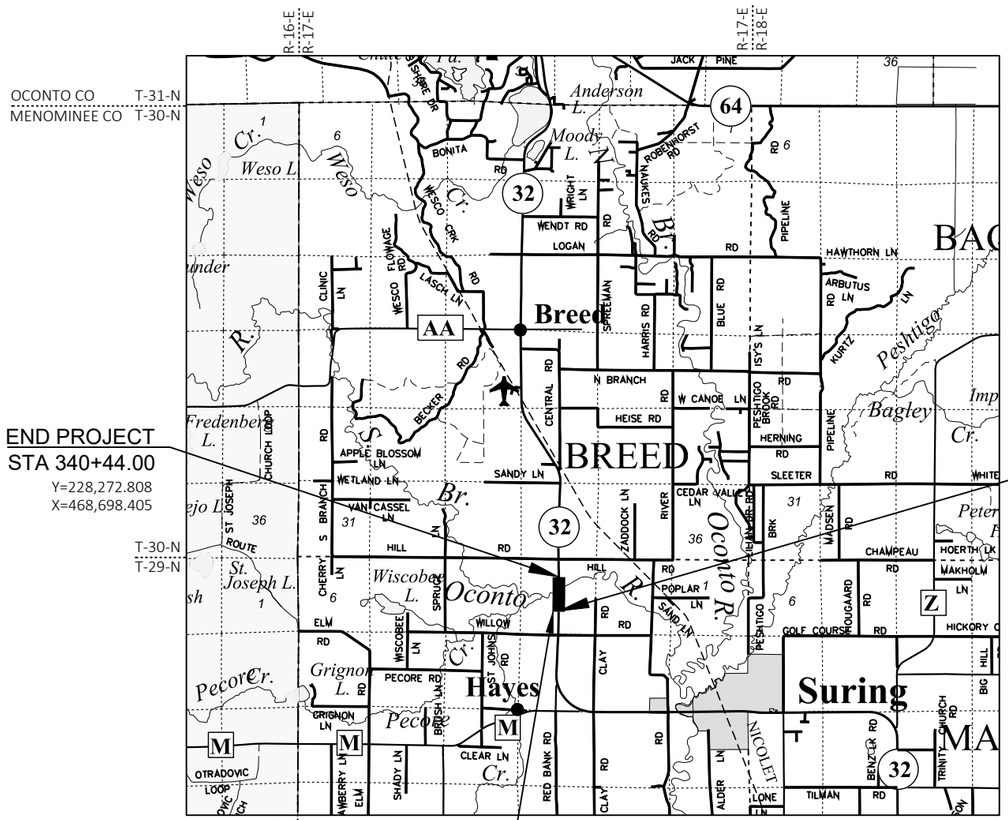
## STH 32

## OCONTO COUNTY

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 9190-28-71 | | |
| | | |
| | | |
| | | |

STATE PROJECT NUMBER

**9190-28-71**




END PROJECT
STA 340+44.00
Y=228,272.808
X=468,698.405

BEGIN PROJECT
STA 338+27.00
Y=228,055.976
X=468,689.856

B-42-0021

MENOMINEE CO : OCONTO CO
LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.041 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OCONTO COUNTY ZONE, NAD 83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. VERTICAL POSITIONS SHOWN ON THIS PLAN ARE NAVD 88(2012) DATUM.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | NE REGION |
| Designer | K. BAIERL |
| Project Manager | M. TERNES |
| Regional Examiner | |
| Regional Supervisor | D. SEGERSTROM |

APPROVED FOR THE DEPARTMENT

DATE: 11/30/2021 (Signature)

E

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\010101-TI.DWG
LAYOUT NAME - 010101-TI

PLOT DATE : 7/21/2021 9:09 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME :

## GENERAL NOTES

LOCATIONS OF THE 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.

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

## ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
DETOUR PLAN

## UTILITY CONTACTS

MATT GUNDERSON
CENTURYLINK - COMMUNICATION LINE
212 CHURCH AVE
CASCO, WI 54205
(920) 896-2867, (920) 837-2344
matt.gunderson@lumen.com

RORY TAMMINGA
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
1717 10TH AVENUE
MENOMINEE, MI 49858
(906) 863-4328, (262) 909-0645
Rory.tamminga@wisconsinpublicservice.com

ANDY HEIGL
ASTREA - COMMUNICATION LINE
105 KENT ST
PO BOX 190
IRON MOUNTAIN, MI 49801
(906) 221-7536, (906) 776-2609
Andy.heigl@asteaconnect.com

SCOTT ZELLNER
WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY 2850
S ASHLAND AVE
GREEN BAY, WI 54307
(920) 617-5068, (920) 680-2188
Scott.zellner@wisconsinpublicservice.com

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

## DNR LIAISON

JIM DOPERALSKI
DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION
2984 SHAWANO AVE
GREEN BAY, WI 54313
(920)662-5119
james.doperalski@wisconsin.gov

## OCONTO COUNTY COMMISSIONER

BRANDON HYTINEN
HIGHWAY COMMISSIONER
202 VAN DYKE STREET
OCONTO, WI 54153
(920)373-4515
brandon.hytinen@co.oconto.wi.us

## NE REGION SURVEY COORDINATOR

CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)492-5638
cormac.mcinnis@dot.wi.gov

2

2

2

N

OCONTO RIVER

DNR FISHING GROUNDS PUBLIC ACCESS

BEGIN PROJECT
STA 338+27.00
Y=228,055.976
X=468,689.856

336 337 338 339 340 341 STH 32 342 343 344 345

NGS

END PROJECT
STA 340+44.00
Y=228,272.808
X=468,698.405

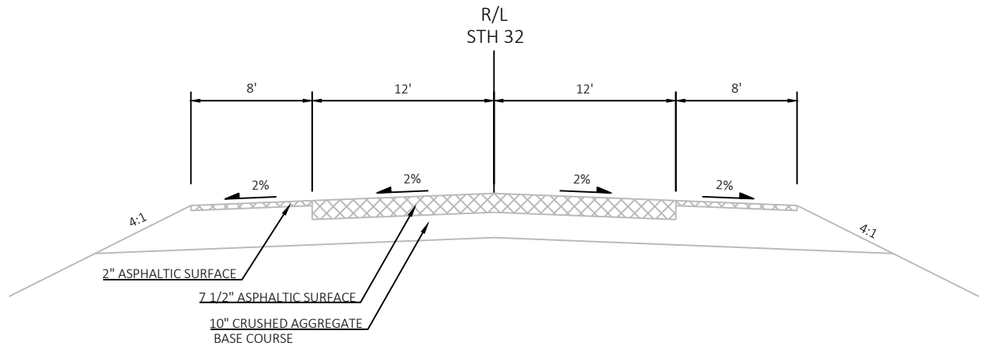
SEPC

| PROJECT NO: 9190-28-71 | HWY: STH 32 | COUNTY: OCONTO | PROJECT OVERVIEW | SHEET 3 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po

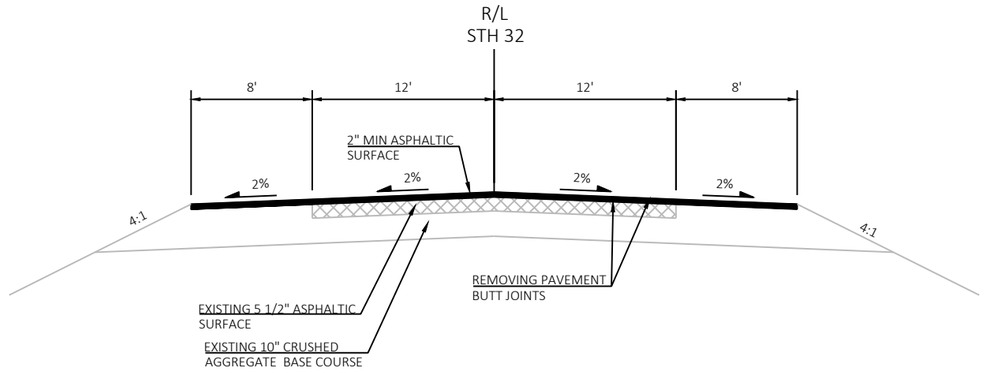
PLOT DATE : 7/21/2021 9:16 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:60 FT

WISDOT/CADDS SHEET 42




EXISTING TYPICAL SECTION STH 32

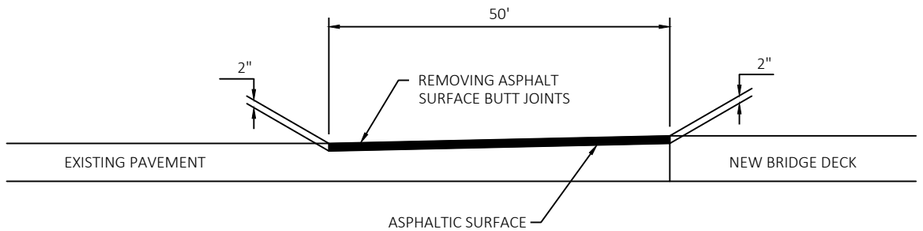
STA 338+27 TO STA 338+77
STA 339+94 TO STA 340+44




FINISHED TYPICAL SECTION STH 32

STA 338+27 TO STA 338+77
STA 339+94 TO STA 340+44

2




BRIDGE APPROACH PAVING DETAIL

STH 32 BRIDGE APPROACH

| PROJECT NO: 9190-28-71 | HWY: STH 32 | COUNTY: OCONTO | CONSTRUCTION DETAILS | SHEET 5 | E |
|---|---|---|---|---|---|

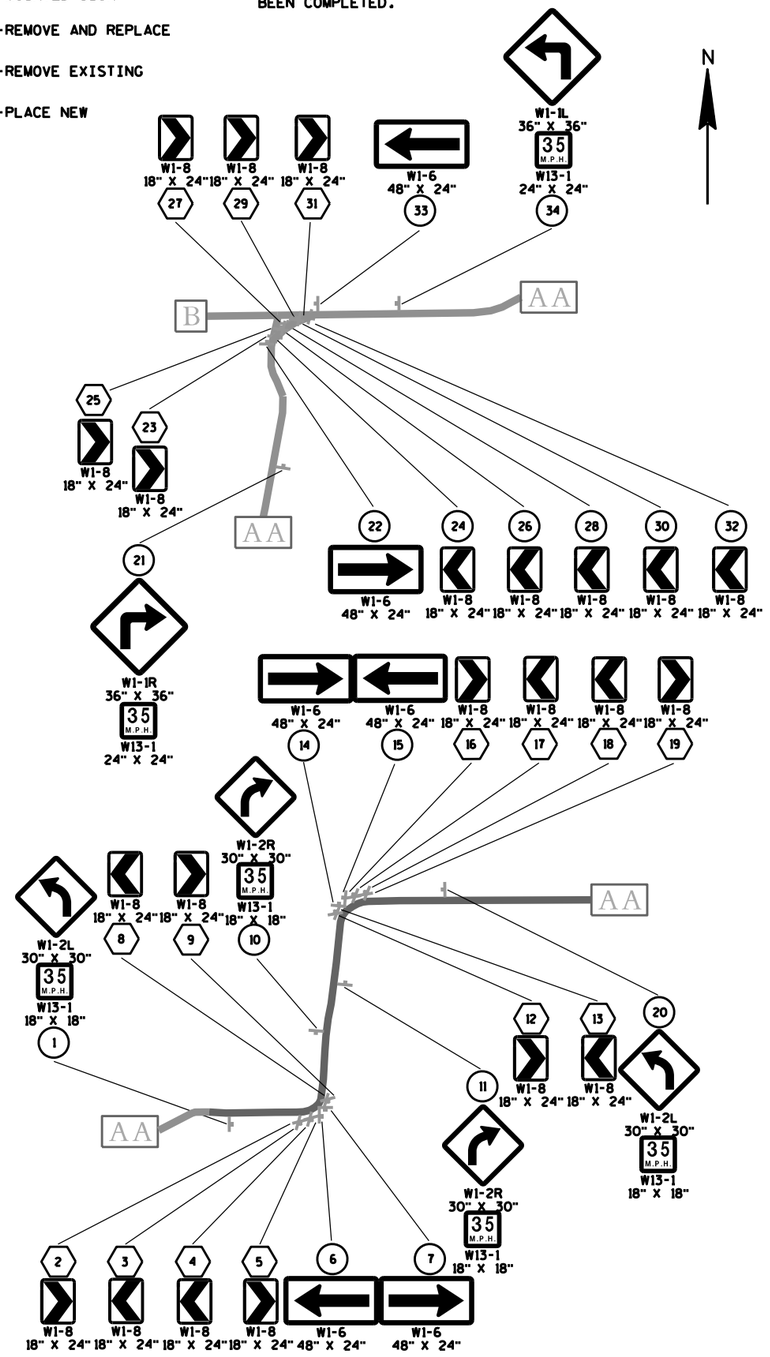
FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\021001-CD.DWG
LAYOUT NAME - 021001-cd
PLOT DATE : 7/21/2021 9:25 AM
PLOT BY : CAMPSHURE, MICHAEL R
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

## LEGEND

- POST MOUNTED SIGN
- SIGN-REMOVE AND REPLACE
- SIGN-REMOVE EXISTING
- SIGN-PLACE NEW

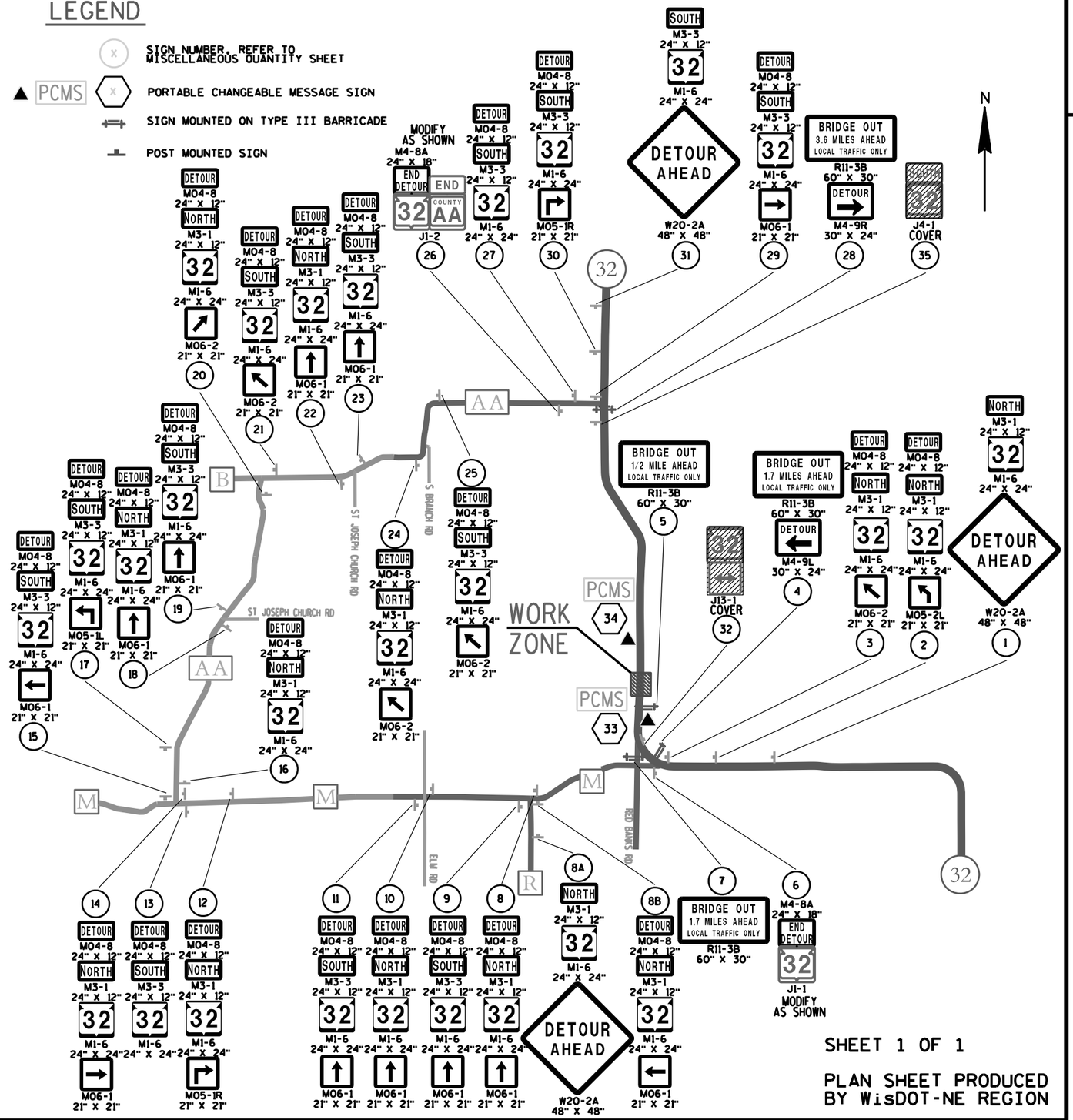
## SIGNING NOTES

PLACE PERMANENT SIGNING IMMEDIATELY PRIOR TO PUTTING DETOUR IN-PLACE. LEAVE SIGNS IN-PLACE AFTER DETOUR HAS BEEN REMOVED AND PROJECT HAS BEEN COMPLETED.




## LEGEND

- (x) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- ▲ PCMS (x) PORTABLE CHANGEABLE MESSAGE SIGN
- SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN




SHEET 1 OF 1

PLAN SHEET PRODUCED BY WisDOT-NE REGION

| PROJECT NO: 9190-28-71 | HWY: STH 32 | COUNTY: OCONTO | DETOUR SIGNING DETAIL | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

9190-28-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0004 | 203.0260 | Removing Structure Over Waterway Minimal Debris (structure) 01. B-42-021 | EACH | 1.000 | 1.000 |
| 0008 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 444.400 | 444.400 |
| 0032 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-42-021 | LS | 1.000 | 1.000 |
| 0036 | 210.1500 | Backfill Structure Type A | TON | 150.000 | 150.000 |
| 0040 | 211.0100 | Prepare Foundation for Asphaltic Paving (project) 01. 9190-28-71 | LS | 1.000 | 1.000 |
| 0046 | 213.0100 | Finishing Roadway (project) 01. 9190-28-71 | EACH | 1.000 | 1.000 |
| 0050 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 56.000 | 56.000 |
| 0056 | 455.0605 | Tack Coat | GAL | 37.100 | 37.100 |
| 0072 | 465.0105 | Asphaltic Surface | TON | 76.100 | 76.100 |
| 0082 | 502.0100 | Concrete Masonry Bridges | CY | 192.000 | 192.000 |
| 0084 | 502.3200 | Protective Surface Treatment | SY | 550.000 | 550.000 |
| 0086 | 502.3210 | Pigmented Surface Sealer | SY | 151.000 | 151.000 |
| 0088 | 502.4205 | Adhesive Anchors No. 5 Bar | EACH | 176.000 | 176.000 |
| 0090 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 39,075.000 | 39,075.000 |
| 0092 | 506.4000 | Steel Diaphragms (structure) 01. B-42-021 | EACH | 10.000 | 10.000 |
| 0094 | 516.0500 | Rubberized Membrane Waterproofing | SY | 14.000 | 14.000 |
| 0170 | 606.0300 | Riprap Heavy | CY | 6.000 | 6.000 |
| 0200 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 4.000 | 4.000 |
| 0228 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 9190-28-71 | EACH | 1.000 | 1.000 |
| 0230 | 619.1000 | Mobilization | EACH | 0.100 | 0.100 |
| 0270 | 634.0614 | Posts Wood 4x6-Inch X 14-FT | EACH | 17.000 | 17.000 |
| 0272 | 634.0616 | Posts Wood 4x6-Inch X 16-FT | EACH | 6.000 | 6.000 |
| 0274 | 637.2230 | Signs Type II Reflective F | SF | 174.000 | 174.000 |
| 0278 | 638.2602 | Removing Signs Type II | EACH | 20.000 | 20.000 |
| 0280 | 638.3000 | Removing Small Sign Supports | EACH | 17.000 | 17.000 |
| 0282 | 642.5401 | Field Office Type D | EACH | 0.500 | 0.500 |
| 0288 | 643.0420 | Traffic Control Barricades Type III | DAY | 1,720.000 | 1,720.000 |
| 0290 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 2,800.000 | 2,800.000 |
| 0294 | 643.0900 | Traffic Control Signs | DAY | 8,680.000 | 8,680.000 |
| 0296 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 2.000 | 2.000 |
| 0298 | 643.1050 | Traffic Control Signs PCMS | DAY | 14.000 | 14.000 |
| 0302 | 643.5000 | Traffic Control | EACH | 0.500 | 0.500 |
| 0338 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-42-0021 | LS | 1.000 | 1.000 |
| 0346 | 650.9910 | Construction Staking Supplemental Control (project) 01. 9190-28-71 | LS | 1.000 | 1.000 |
| 0350 | 690.0150 | Sawing Asphalt | LF | 80.000 | 80.000 |
| 0354 | 715.0502 | Incentive Strength Concrete Structures | DOL | 1,152.000 | 1,152.000 |
| 0358 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. 339+25 | EACH | 1.000 | 1.000 |

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

3

## REMOVING ASPHALTIC SURFACE BUTT JOINTS

| STATION | TO | STATION | LOCATION | 204.0115 SY | REMARKS |
|---|---|---|---|---|---|
| 338+27 | - | 338+77 | STH 32 | 222.2 | SOUTH PROJECT LIMITS |
| 339+94 | - | 340+44 | STH 32 | 222.2 | NORTH PROJECT LIMITS |
| | | | **TOTAL** | 444.4 | |

## PREPARE FOUNDATION FOR ASPHALTIC PAVING

| STATION | TO | STATION | LOCATION | 211.0100.01 (PROJECT 9190-28-71) LS | REMARKS |
|---|---|---|---|---|---|
| 338+27 | - | 340+44 | STH 32 | 1 | --- |
| | | | **TOTAL** | 1 | |

## SAWING ASPHALT

| STATION | LOCATION | 690.0150 LF | REMARKS |
|---|---|---|---|
| 338+27 | STH 32 | 40.0 | SOUTH PROJECT LIMITS |
| 339+94 | STH 32 | 40.0 | NORTH PROJECT LIMITS |
| | **TOTAL** | 80.0 | |

## ASPHALTIC ITEMS

| STATION | TO | STATION | LOCATION | 455.0605 TACK COAT GAL | 465.0105 ASPHALTIC SURFACE TON | REMARKS |
|---|---|---|---|---|---|---|
| 338+27 | - | 338+77 | STH 32 | 18.5 | 38.0 | SOUTH PROJECT LIMITS |
| 339+94 | - | 340+44 | STH 32 | 18.5 | 38.0 | NORTH PROJECT LIMITS |
| | | | **TOTAL** | 37.1 | 76.1 | |

## BASE AGGREGATE DENSE 1 1/4-INCH

| STATION | TO | STATION | LOCATION | 305.0120 TON | REMARKS |
|---|---|---|---|---|---|
| 338+61 | - | 338+77 | STH 32 | 28.0 | SOUTH ABUTMENT - RESTORE ROAD BASE ALONG WINGS & ABUTMENT BACK FACE |
| 339+96 | - | 340+12 | STH 32 | 28.0 | NORTH ABUTMENT - RESTORE ROAD BASE ALONG WINGS & ABUTMENT BACK FACE |
| | | | **TOTAL** | 56.0 | |

## TRAFFIC CONTROL

| LOCATION | DURATION DAYS | 643.0420 BARRICADES TYPE III NO. | 643.0420 BARRICADES TYPE III DAY | 643.0705 WARNING LIGHTS TYPE A NO. | 643.0705 WARNING LIGHTS TYPE A DAY | 643.0900 SIGNS NO. | 643.0900 SIGNS DAY | REMARKS |
|---|---|---|---|---|---|---|---|---|
| WILLOW ROAD | 80 | 2 | 160 | 4 | 320 | 2 | 160 | BARRICADES WITH R11-3 SIGNS |
| SOUTH LIMITS APPROACH | 80 | --- | --- | --- | --- | 3 | 240 | PER S.D.D. |
| SOUTH WORK AREA LIMITS | 80 | 7 | 560 | 10 | 800 | 2 | 160 | PER S.D.D. |
| NORTH WORK AREA LIMITS | 80 | 7 | 560 | 10 | 800 | 2 | 160 | PER S.D.D. |
| NORTH LIMITS APPROACH | 80 | --- | --- | --- | --- | 3 | 240 | PER S.D.D. |
| HILL ROAD | 80 | 2.00 | 160 | 4.00 | 320 | 2 | 160 | BARRICADES WITH R11-3 SIGNS |
| **TOTALS** | | | 1,440 | | 2,240 | | 1,120 | |

## CONSTRUCTION STAKING STRUCTURE LAYOUT

| STATION | TO | STATION | LOCATION | 650.6500* EACH | REMARKS |
|---|---|---|---|---|---|
| 338+67 | - | 340+20 | STH 32 | 1 | B-42-0021 |
| | | | **TOTAL** | 1 | |

* CATEGORY 0020

## ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO. | LOCATION | SIGN CODE | W X H | 637.2230 SIGNS TYPE II REFLECTIVE TYPE F S.F. | 634.0614 POSTS WOOD 4x6x14 EACH | 634.0616 POSTS WOOD 4x6x16 EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD | W1-2L | 30" X 30" | 6.25 | | 1 | 1 | 1 | |
| | " | W13-1 | 18" X 18" | 2.25 | | | 1 | | 35 MPH, MOUNT BELOW SIGN #1 |
| 2 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, ON POINT OF CURVATURE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 3 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #2 |
| 4 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, IN CURVE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 5 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #4 |
| 6 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 7 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 8 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, ON POINT OF TANGENCY | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 9 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #8 |
| 10 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD | W1-2R | 30" X 30" | 6.25 | | 1 | 1 | 1 | |
| | " | W13-1 | 18" X 18" | 2.25 | | | | | 35 MPH, MOUNT BELOW SIGN #10 |
| 11 | " | W1-2R | 30" X 30" | 6.25 | | 1 | 1 | 1 | |
| | " | W13-1 | 18" X 18" | 2.25 | | | | | 35 MPH, MOUNT BELOW SIGN #11 |
| 12 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, ON POINT OF CURVATURE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 13 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #12 |
| 14 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, IN CURVE | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 15 | " | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 16 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 17 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #16 |
| 18 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD, ON POINT OF TANGENCY | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 19 | " | W1-8 | 18" X 24" | 3.00 | | | | | MOUNT ON BACK OF SIGN #18 |
| 20 | CTH AA, BETWEEN ST JOSEPH CHURCH AND S BRANCH RD | W1-2L | 30" X 30" | 6.25 | | 1 | 1 | 1 | |
| | " | W13-1 | 18" X 18" | 2.25 | | | 1 | | 35 MPH, MOUNT BELOW SIGN #20 |
| 21 | CTH AA, S. OF CTH B, SOUTH OF CURVE | W1-1R | 36" X 36" | 9.00 | | 1 | 1 | 1 | |
| | " | W13-1 | 24" X 24" | 4.00 | | | 1 | | 35 MPH, MOUNT BELOW SIGN #21 |
| 22 | CTH AA, AT CTH B INTERSECTION, ON POINT OF CURVATURE | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 23 | CTH AA, AT CTH B INTERSECTION, IN CURVE | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 24 | " | W1-8 | 18" X 24" | 3.00 | | | 1 | 1 | MOUNT ON BACK OF SIGN #23 |
| 25 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 26 | " | W1-8 | 18" X 24" | 3.00 | | | 1 | 1 | MOUNT ON BACK OF SIGN #25 |
| 27 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 28 | " | W1-8 | 18" X 24" | 3.00 | | | 1 | 1 | MOUNT ON BACK OF SIGN #27 |
| 29 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 30 | " | W1-8 | 18" X 24" | 3.00 | | | 1 | 1 | MOUNT ON BACK OF SIGN #29 |
| 31 | " | W1-8 | 18" X 24" | 3.00 | 1 | | | | 80' SPACING |
| 32 | " | W1-8 | 18" X 24" | 3.00 | | | 1 | 1 | MOUNT ON BACK OF SIGN #31 |
| 33 | CTH AA, N. OF CTH B, ON POINT OF TANGENCY | W1-6 | 48" X 24" | 8.00 | 1 | | 1 | 1 | |
| 34 | CTH AA, N. OF CTH B INTERSECTION | W1-1L | 36" X 36" | 9.00 | | 1 | 1 | 1 | |
| | " | W13-1 | 24" X 24" | 4.00 | | | | | 35 MPH, MOUNT BELOW SIGN #34 |
| | **DETOUR ROUTE - SUBTOTALS** | | | **174.00** | **17** | **6** | **20** | **17** | |

3

## TRAFFIC CONTROL DETOUR SIGN SUMMARY

| SIGN NO. | LOCATION | SIGN CODE | SIZE W X H | NUMBER IN SERVICE | APPROX. SERVICE PERIOD 70 DAYS | 643.0900 SIGNS DAYS | 643.0420 BARRICADES TYPE III DAYS | 643.0705 WARNING LIGHTS TYPE A DAYS | 643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS | NO OF CYCLES | 643.0920 COVERING SIGNS TYPE II EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | STH 32, E. OF CTH M, PLACE 1500' E. OF CTH M | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | W 20-2A | 48"X48" | 1 | 70 | 70 | | | | | | |
| 2 | STH 32, E. OF CTH M, PLACE 750' E. OF CTH M | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 5-2L | 21"X21" | 1 | 70 | 70 | | | | | | |
| 3 | STH 32, AT CTH M INTERSECTION, PLACE LEFT OF EXISTING J13-2 SIGN | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-2 | 21"X21" | 1 | 70 | 70 | | | | | | TILT LEFT |
| 4 | STH 32, AT CTH M INTERSECTION, PLACE ON RIGHT SHOULDER AT INTERSECTION | R 11-3B | 60"X30" | 1 | 70 | 70 | 70 | 140 | | | | 1.7 MILES AHEAD |
| | " | M 4-9L | 30"X24" | 1 | 70 | 70 | | | | | | |
| 5 | STH 32, AT WILLOW RD INTERSECTION, PLACE ON RIGHT SHOULDER IN SE QUADRANT | R 11-3B | 60"X30" | 1 | 70 | 70 | 70 | 140 | | | | 1/2 MILE AHEAD |
| 6 | CTH M, BETWEEN RED BANKS RD & STH 32, MODIFY EXISTING J1-1 AS SHOWN | M 4-8A | 24"X18" | 1 | 70 | 70 | | | | | | |
| 7 | RED BANKS RD, BETWEEN CTH M & STH 32, PLACE ON SHOULDER JUST N. OF CTH M | R 11-3B | 60"X30" | 1 | 70 | 70 | 70 | 140 | | | | 1.7 MILES AHEAD |
| 8 | CTH M, E. OF CTH R, PLACE 100' E. OF CTH R INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 8A | CTH R, S. OF CTH M, PLACE 750' S. OF CTH M INTERSECTION | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | W 20-2A | 48"X48" | 1 | 70 | 70 | | | | | | |
| 8B | CTH R, AT CTH M, PLACE RIGHT OF EXISTING R1-1 SIGN AT CTH M INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | LEFT |
| 9 | CTH M, W. OF CTH R, PLACE 100' W. OF CTH INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 10 | CTH M, E. OF ELM RD, PLACE 100' E. OF ELM RD INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 11 | CTH M, W. OF ELM RD, PLACE 100' W. OF ELM RD INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 12 | CTH M, E. OF CTH AA, PLACE 750' E. OF CTH AA INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 5-1R | 21"X21" | 1 | 70 | 70 | | | | | | |
| 13 | CTH M, E. OF CTH AA, PLACE 100' E. OF CTH AA INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| 14 | CTH M, E. OF CTH AA, PLACE RIGHT OF EXISTING J13-2 SIGN AT INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | RIGHT |
| PAGE SUBTOTALS | | | | 49 | | 3,430 | 210 | 420 | 0 | | 0 | |

## TRAFFIC CONTROL DETOUR SIGN SUMMARY

| SIGN NO. | LOCATION | SIGN CODE | SIZE W X H | NUMBER IN SERVICE | APPROX. SERVICE PERIOD 50 DAYS | 643.0900 SIGNS DAYS | 643.0420 BARRICADES TYPE III DAYS | 643.0705 WARNING LIGHTS TYPE A DAYS | 643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS | NO OF CYCLES | 643.0920 COVERING SIGNS TYPE II EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | CTH AA, N. OF CTH M, PLACE RIGHT OF EXISTING R1-1 SIGN AT INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | LEFT |
| 16 | CTH AA, N. OF CTH M, PLACE RIGHT OF EXISTING M1-5 SIGN | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| 17 | CTH AA, N. OF CTH M, PLACE 750' N. OF CTH M INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 5-1L | 21"X21" | 1 | 70 | 70 | | | | | | |
| 18 | CTH AA, S. OF ST JOSPEH CHURCH RD, PLACE 100' S. OF INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 19 | CTH AA, N. OF ST JOSEPH CHURCH RD, PLACE 100' N. OF INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 20 | CTH AA, S. OF CTH B, PLACE 200' S. OF CURVE | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-2 | 21"X21" | 1 | 70 | 70 | | | | | | TILT LEFT |
| 21 | CTH AA, N. OF CTH B, PLACE 200' N. OF CURVE | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-2 | 21"X21" | 1 | 70 | 70 | | | | | | TILT RIGHT |
| 22 | CTH AA, S. OF ST JOSPEH CHURCH RD, PLACE 100' S. OF INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 23 | CTH AA, N. OF ST JOSEPH CHURCH RD, PLACE 100' N. OF INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | AHEAD |
| 24 | CTH AA, S. OF BRANCH RD, PLACE 200' PRIOR TO CURVE | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-1 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-2 | 21"X21" | 1 | 70 | 70 | | | | | | TILT RIGHT |
| 25 | CTH AA, N. OF BRANCH RD, PLACE 200' PRIOR TO CURVE | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-2 | 21"X21" | 1 | 70 | 70 | | | | | | TILT LEFT |
| 26 | CTH AA, S. OF STH 32, MODIFY EXISTING J1-2 SIGN AS SHOWN | M 4-8A | 24"X12" | 1 | 70 | 70 | | | | | | |
| 27 | CTH AA, S. OF STH 32, PLACE RIGHT OF EXISTING M1-5 SIGN | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| PAGE SUBTOTALS | | | | 47 | | 3,290 | 0 | 0 | 0 | | 0 | |

3

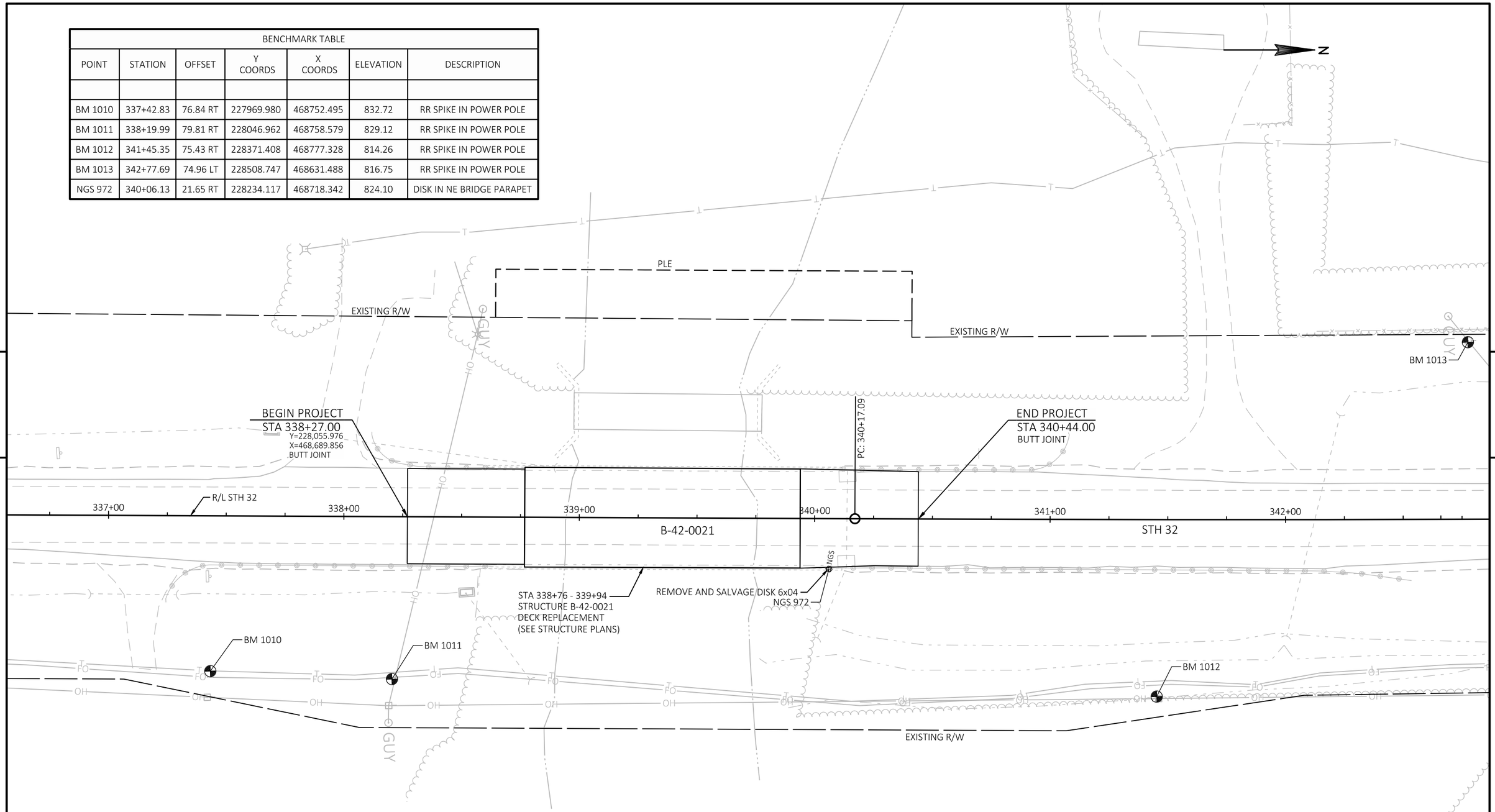
## TRAFFIC CONTROL DETOUR SIGN SUMMARY

| SIGN NO. | LOCATION | SIGN CODE | SIZE W X H | NUMBER IN SERVICE | APPROX. SERVICE PERIOD 50 DAYS | 643.0900 SIGNS DAYS | 643.0420 BARRICADES TYPE III DAYS | 643.0705 WARNING LIGHTS TYPE A DAYS | 643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS | NO OF CYCLES | 643.0920 COVERING SIGNS TYPE II EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | STH 32, AT CTH AA, PLACE JUST S. OF CTH AA INTERSECTION ON RIGHT SHOULDER | R 11-3B | 60"X30" | 1 | 70 | 70 | 70 | 140 | | | | 3.6 MILES AHEAD |
| | " | M 4-9R | 30"X24" | 1 | 70 | 70 | | | | | | |
| 29 | STH 32, AT CTH AA, PLACE RIGHT OF EXISTING J13-1 SIGN | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 6-1 | 21"X21" | 1 | 70 | 70 | | | | | | RIGHT |
| 30 | STH 32, N. OF CTH AA, PLACE 750' N. OF CTH AA INTERSECTION | MO 4-8 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 3-3 | 24"X12" | 1 | 70 | 70 | | | | | | |
| | " | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | MO 5-1R | 21"X21" | 1 | 70 | 70 | | | | | | |
| 31 | STH 32, N. OF CTH AA, PLACE 1500' N. OF CTH AA INTERSECTION | M 1-6 | 24"X24" | 1 | 70 | 70 | | | | | | 32 |
| | " | W 20-2A | 48"X48" | 1 | 70 | 70 | | | | | | |
| 32 | STH 32, AT RED BANKS RD, COVER EXISTING J13-1 SIGN AS SHOWN | | | | | | | | | 1 | 1 | COVER "32 LT-RT" |
| 33 | STH 32, N. OF CTH M, PLACE JUST N. OF CTH M ON RIGHT SHOULDER, FIELD DETERMINED | PCMS | | | | | | | 7 | | | PLACE 7 DAYS PRIOR TO PROJECT START |
| 34 | STH 32, N. OF CTH M, PLACE JUST N. OF CTH M ON RIGHT SHOULDER, FIELD DETERMINED | PCMS | | | | | | | 7 | | | PLACE 7 DAYS PRIOR TO PROJECT START |
| 35 | STH 32, S. OF CTH AA, COVER EXISITNG J4-1 SIGN AS SHOWN | | | 1 | 60 | | | | | 1 | 1 | COVER "SOUTH 32" |
| | PAGE SUBTOTALS | | | 13 | | 840 | 70 | 140 | 14 | | 2 | |
| | **DETOUR TOTALS** | | | **109** | | **7,560** | **280** | **560** | **14** | | **2** | |

3

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010, UNLESS OTHERWISE NOTED.

| BENCHMARK TABLE | | | | | | |
|---|---|---|---|---|---|---|
| POINT | STATION | OFFSET | Y COORDS | X COORDS | ELEVATION | DESCRIPTION |
| | | | | | | |
| BM 1010 | 337+42.83 | 76.84 RT | 227969.980 | 468752.495 | 832.72 | RR SPIKE IN POWER POLE |
| BM 1011 | 338+19.99 | 79.81 RT | 228046.962 | 468758.579 | 829.12 | RR SPIKE IN POWER POLE |
| BM 1012 | 341+45.35 | 75.43 RT | 228371.408 | 468777.328 | 814.26 | RR SPIKE IN POWER POLE |
| BM 1013 | 342+77.69 | 74.96 LT | 228508.747 | 468631.488 | 816.75 | RR SPIKE IN POWER POLE |
| NGS 972 | 340+06.13 | 21.65 RT | 228234.117 | 468718.342 | 824.10 | DISK IN NE BRIDGE PARAPET |




| PROJECT NO: 9190-28-71 | HWY: STH 32 | COUNTY: OCONTO | PLAN | SHEET 13 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\91902800\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-PN

PLOT DATE : 7/21/2021 9:29 AM PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:40 FT

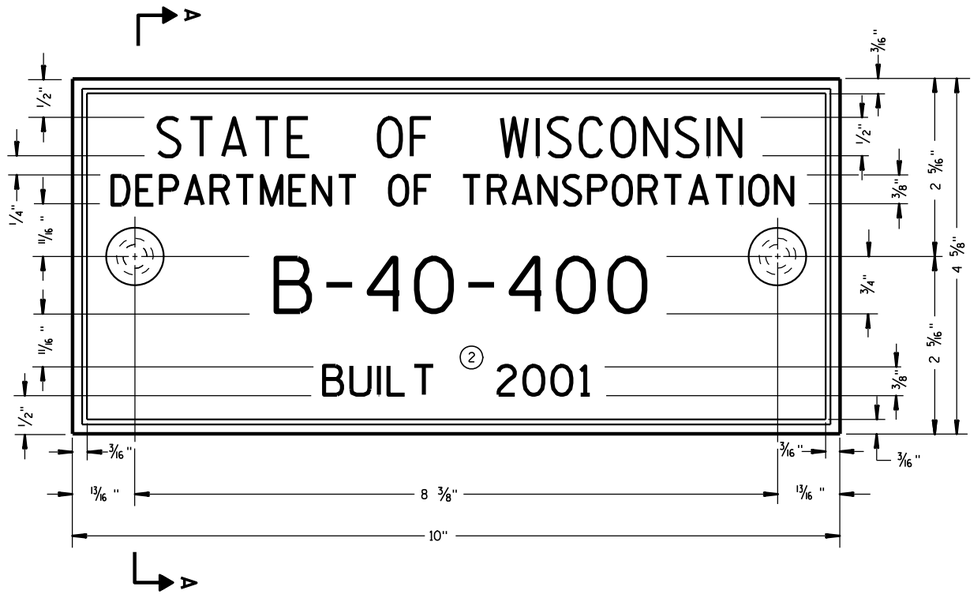
WISDOT/CADDS SHEET 44

# Standard Detail Drawing List

| | |
|---|---|
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-08C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C03-05 | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C12-08 | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |

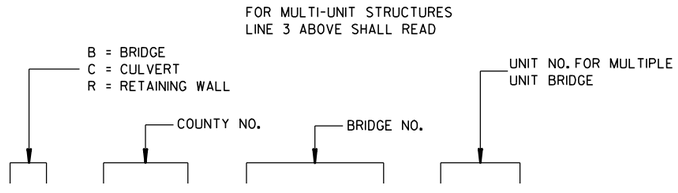
6

6




## TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)




## NUMBERING DESIGNATION
## MULTI-UNIT STRUCTURES

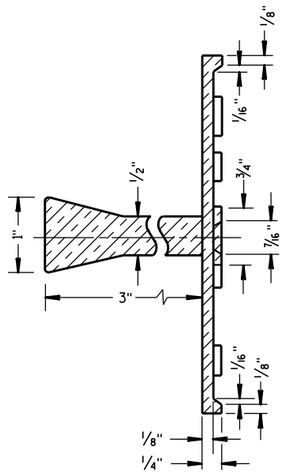
## GENERAL NOTES

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

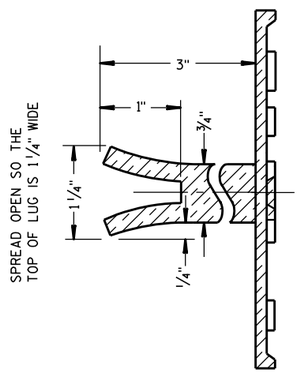
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

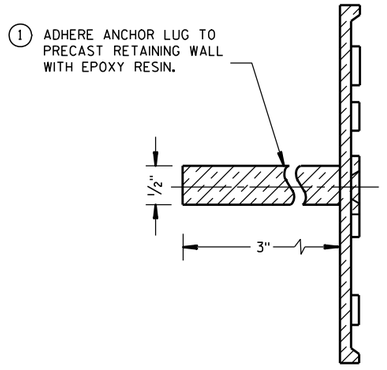
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




SECTION A-A




ALTERNATE LUG




## ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

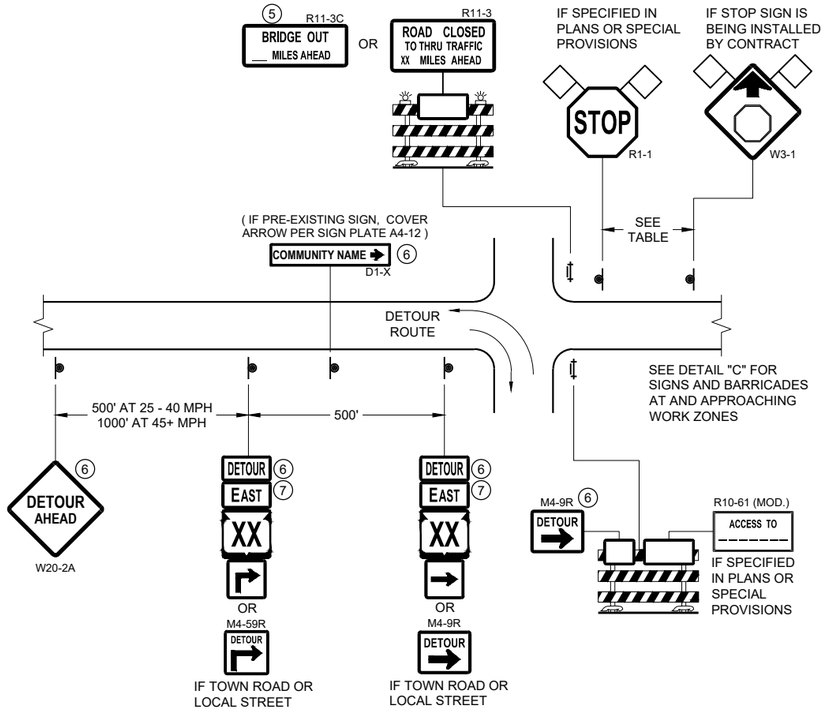
/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA



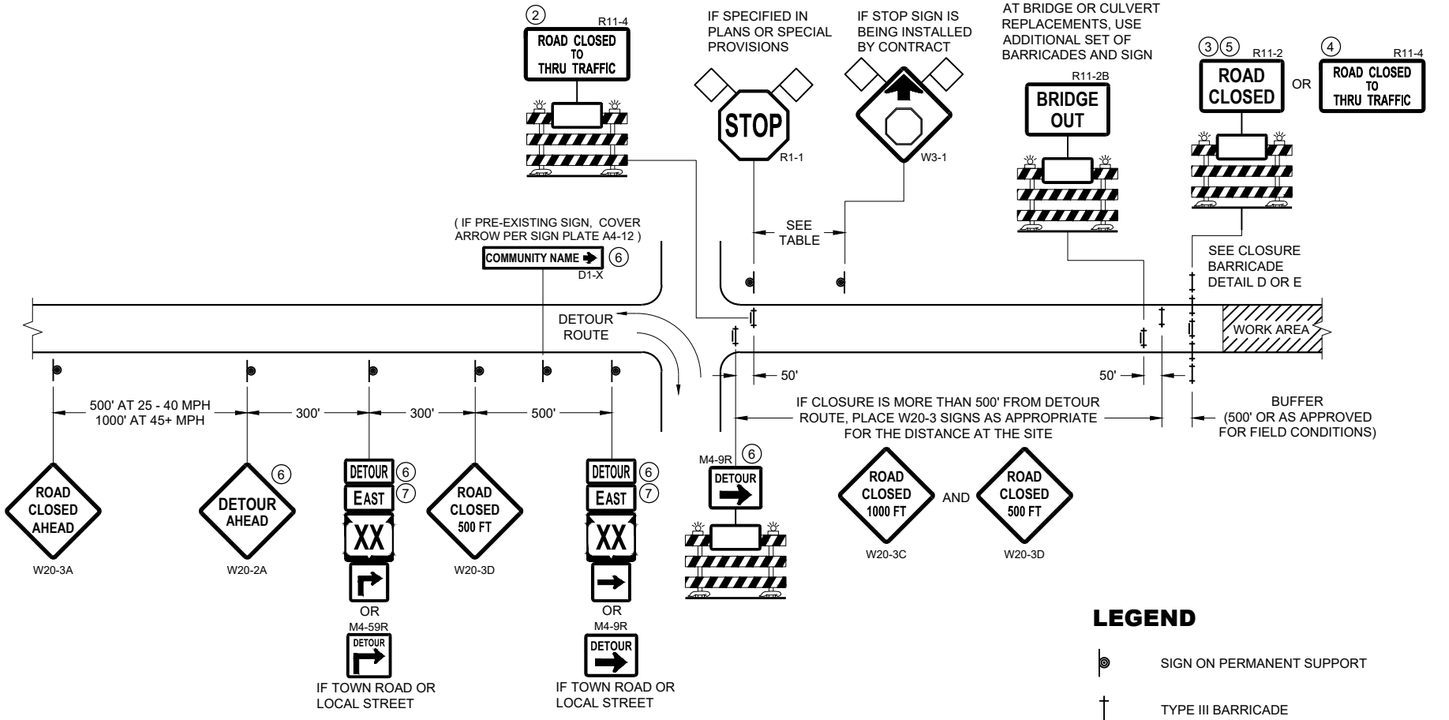
6

S.D.D. 12 A 3-10




## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )



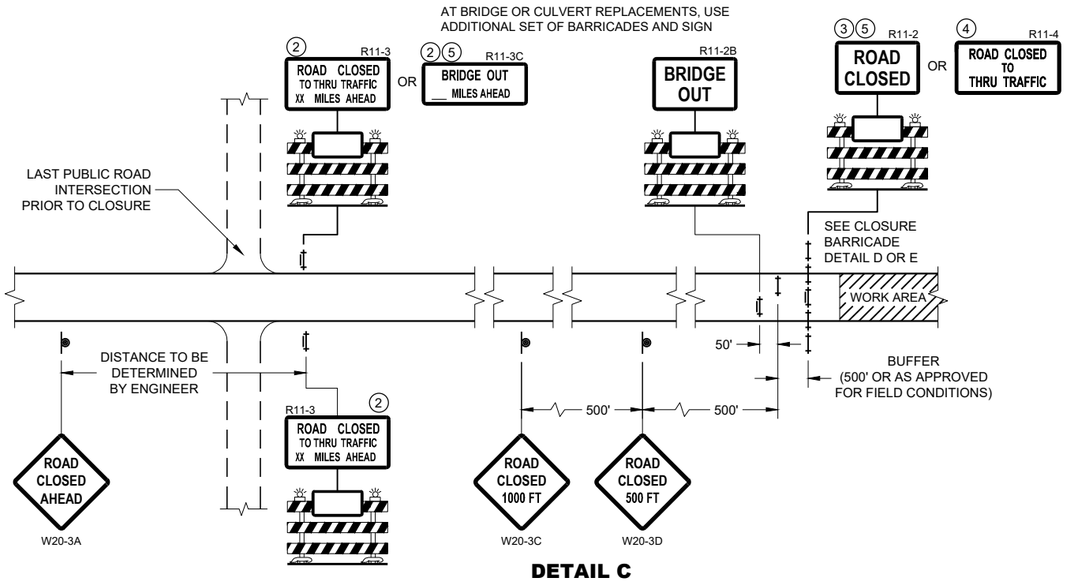

## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )

## 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




## 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

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

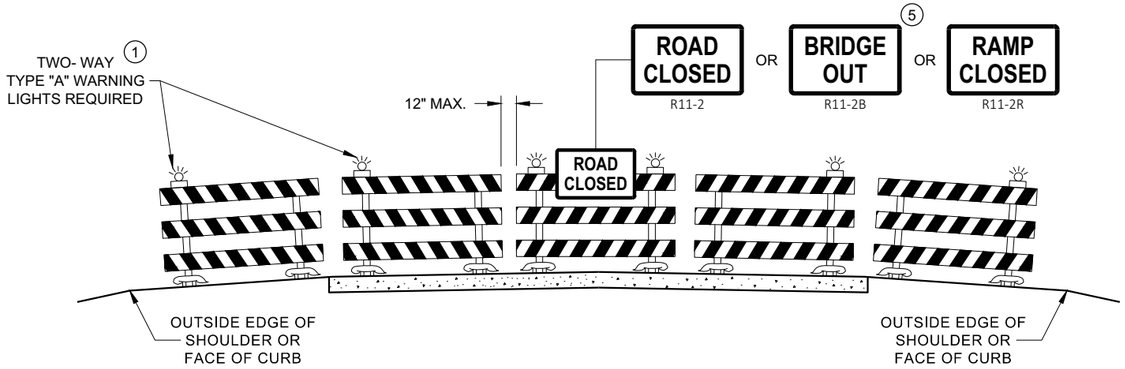
FHWA



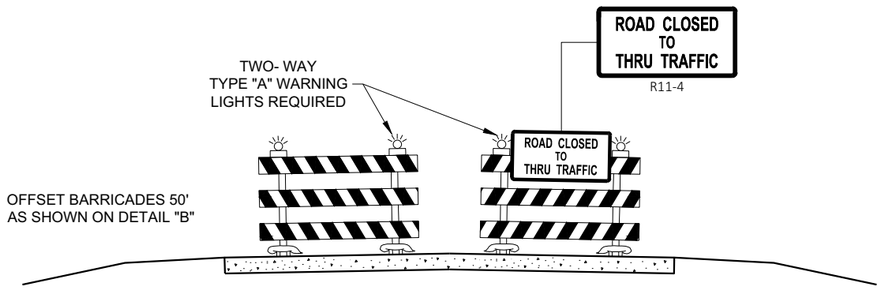
6

SDD 15C02 - 08a

SDD 15C02 - 08a




**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
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA



6

SDD 15C02 - 08b

6

SDD 15C02 - 08b

**THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.**

## LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- 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 EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR 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 WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

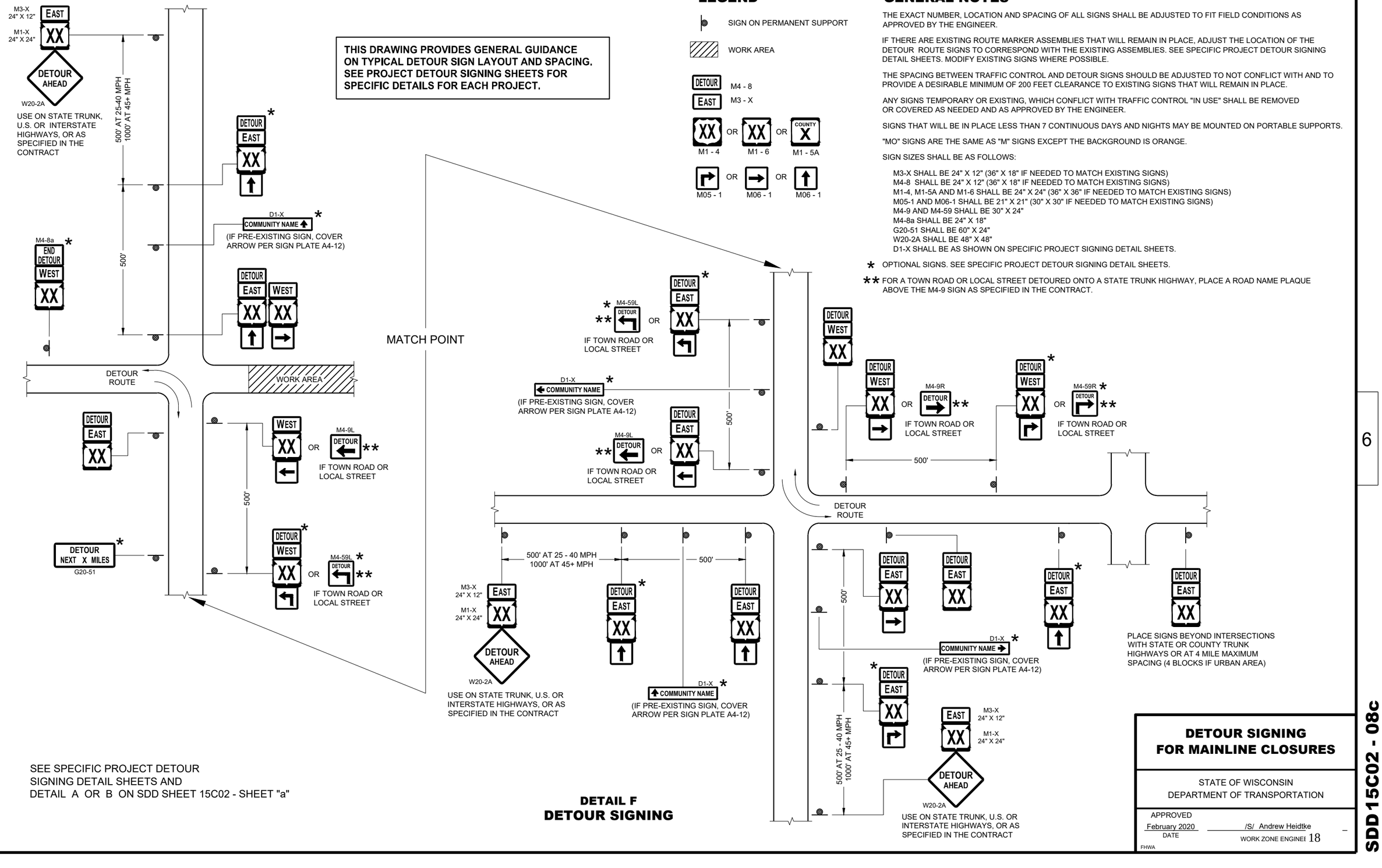
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- 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)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.




SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

**DETAIL F**
**DETOUR SIGNING**

# DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

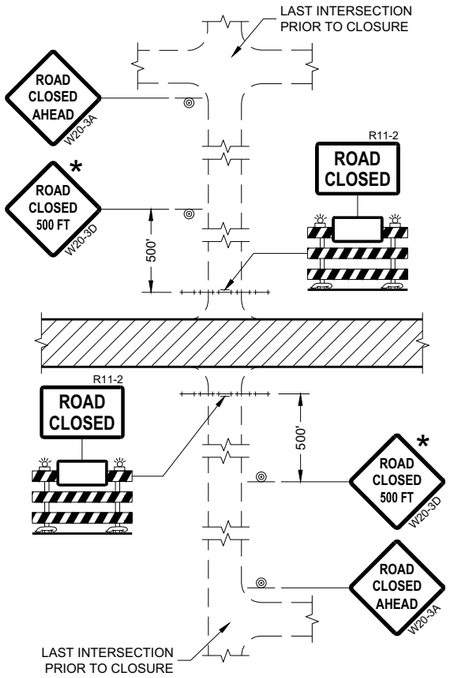
FHWA



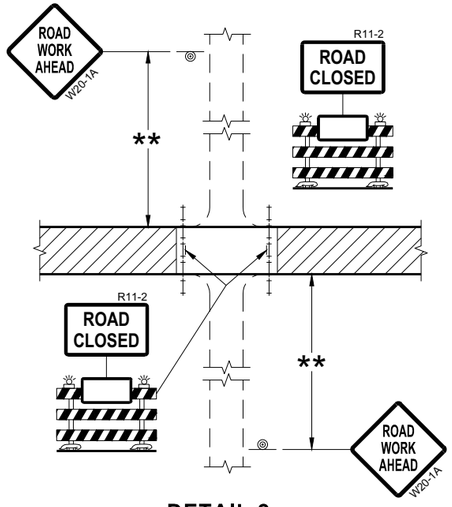
SDD 15C02 - 08c

6

SDD 15C02 - 08c




**DETAIL 1**
(NO ACCESS TO PROJECT)




**DETAIL 2**
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO 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.

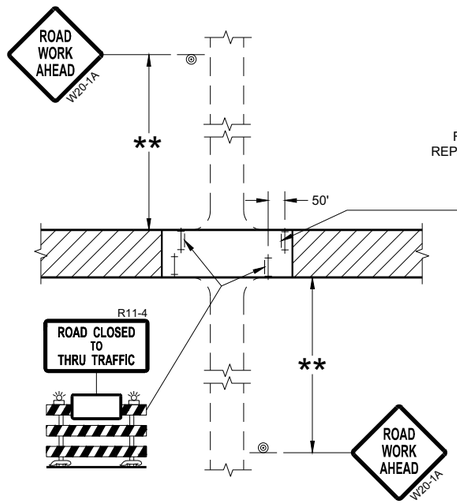
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

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.

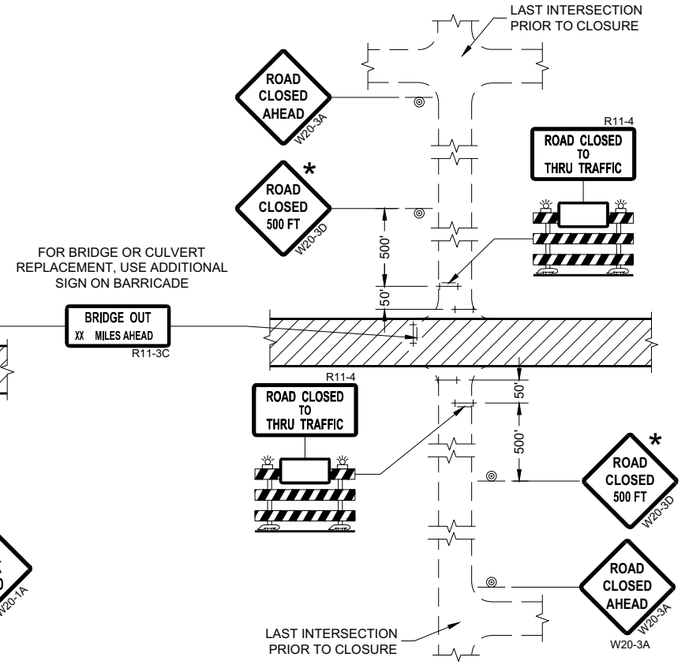
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* 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.




**DETAIL 3**
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)




**DETAIL 4**
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

## 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



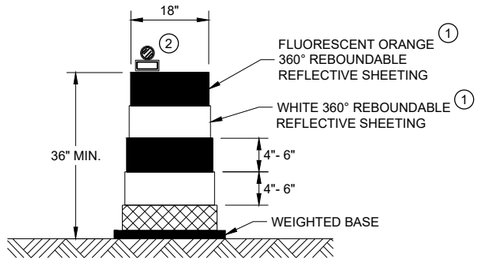
6



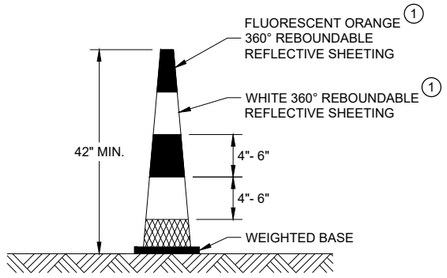
SDD 15C03 - 05

## 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.

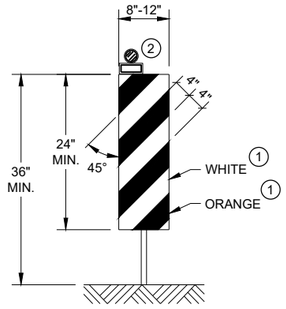



### DRUM



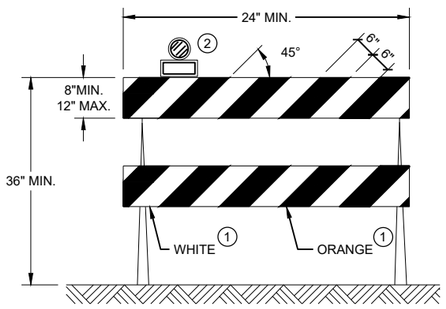

### 42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



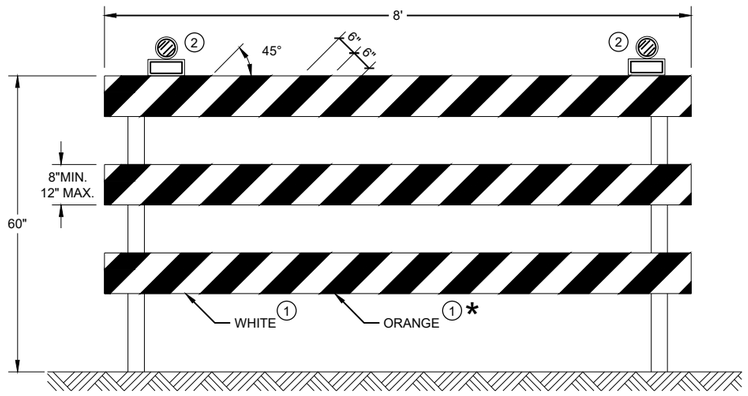

### VERTICAL PANEL

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
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA



6

SDD15C11 - 09b

6

SDD15C11 - 09b

## LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

## GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

## FLAGGING

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

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

## TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

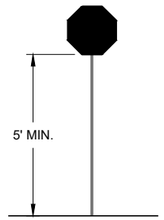
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



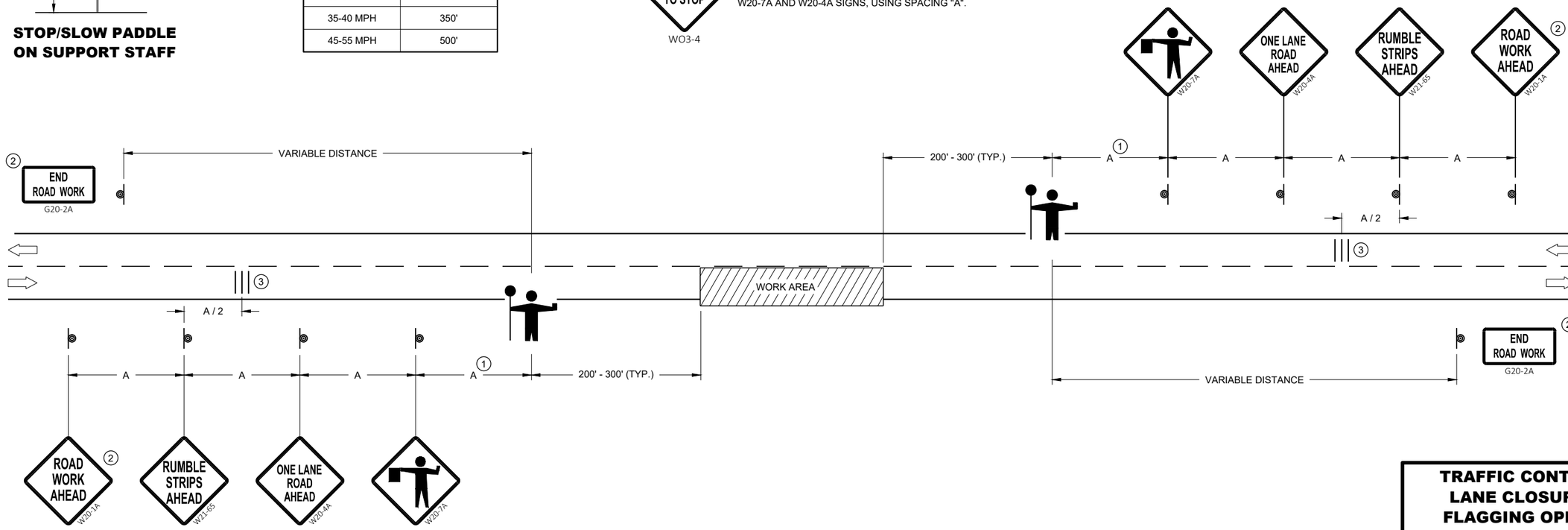

**STOP/SLOW PADDLE ON SUPPORT STAFF**

## SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|---|---|
| 25-30 MPH | 200' |
| 35-40 MPH | 350' |
| 45-55 MPH | 500' |

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".




# TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

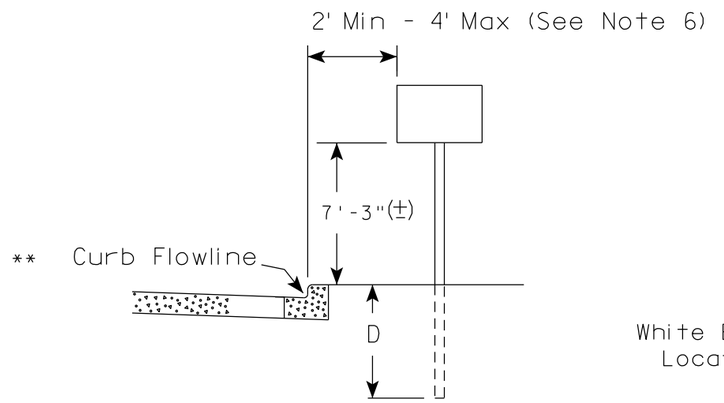
FHWA



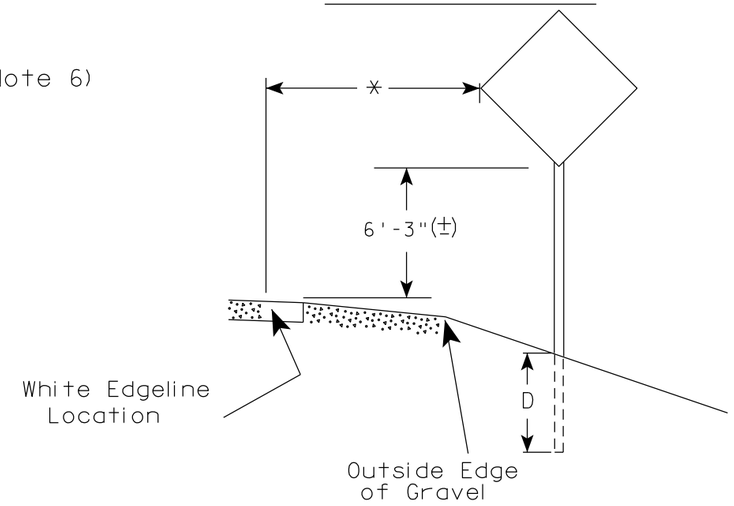


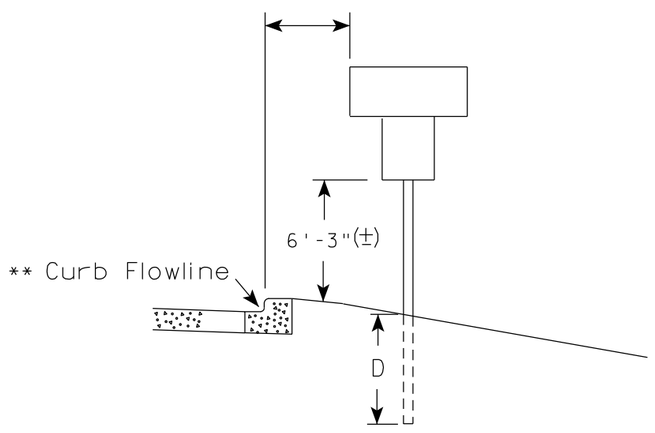
6
SDD 15C12 - 08

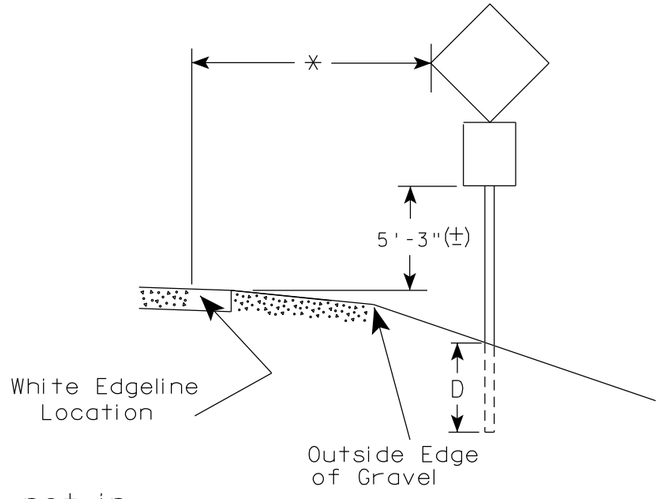
## URBAN AREA




## 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.

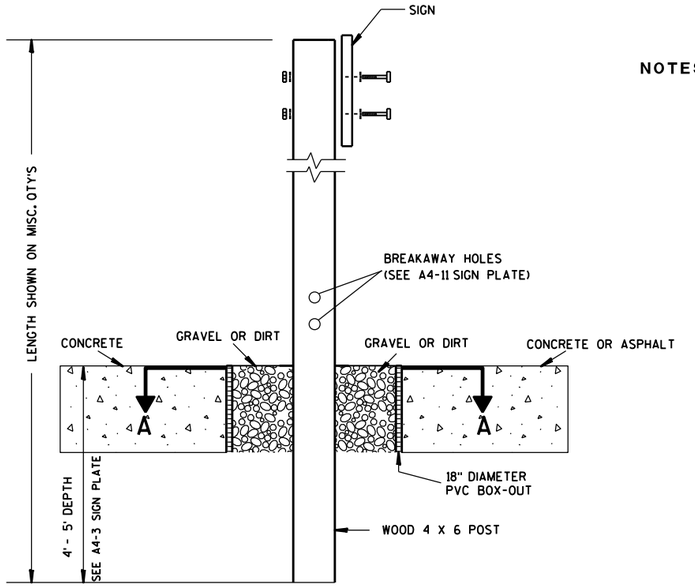
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

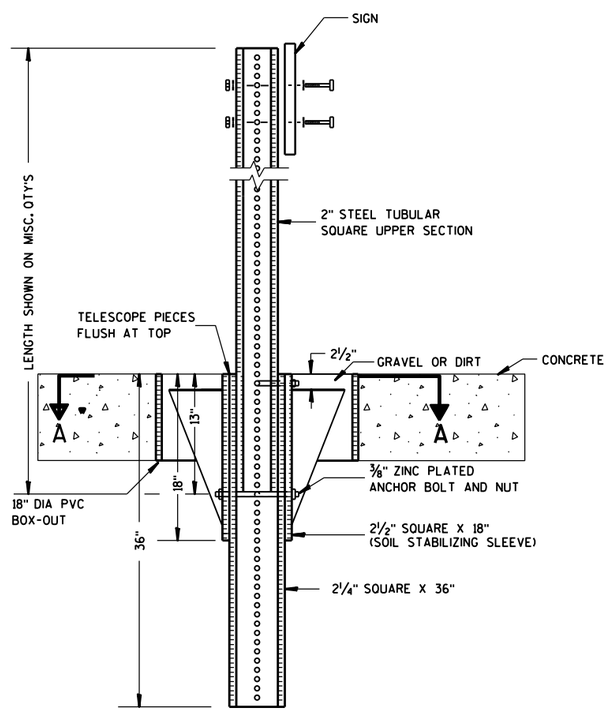
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 22 | E |
|---|---|---|---|---|---|




**ELEVATION VIEW**

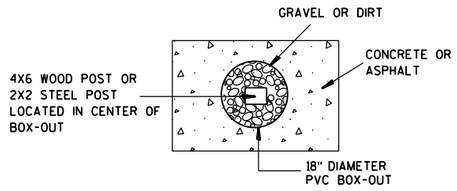
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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*

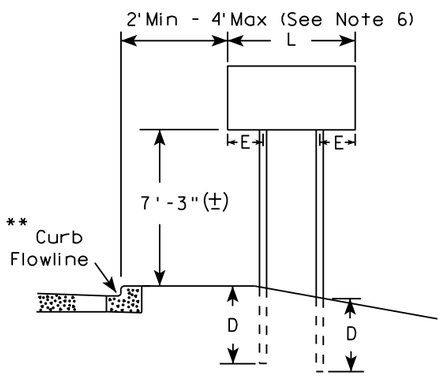
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

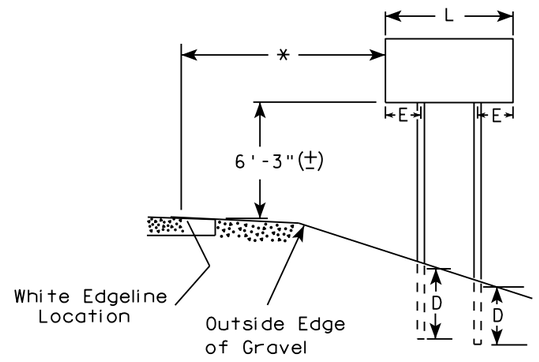


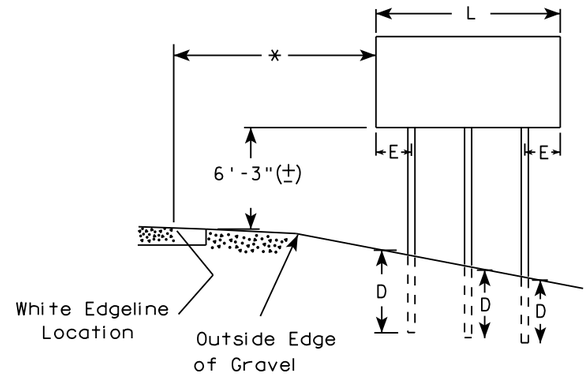
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

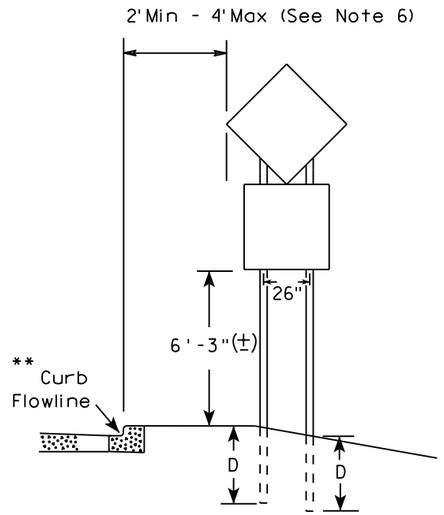
## URBAN AREA



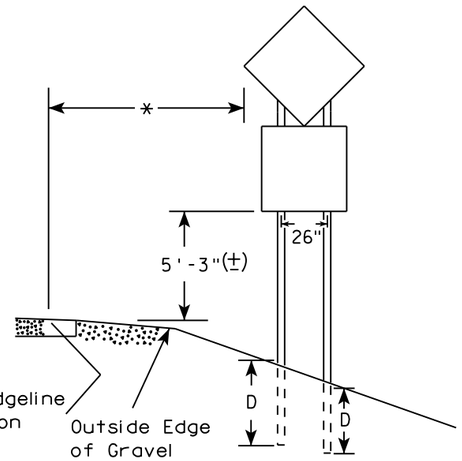

## RURAL AREA (See Note 3)




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' |

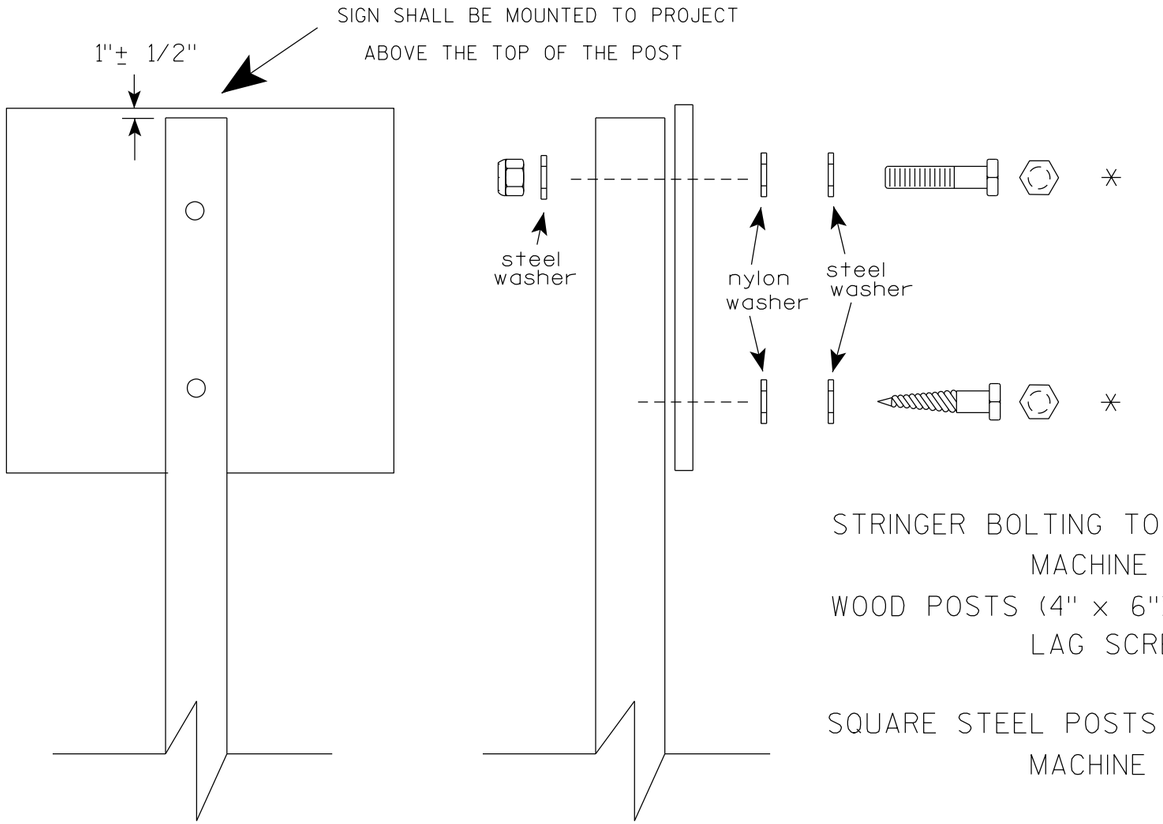
**TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS**

*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: 24 | 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

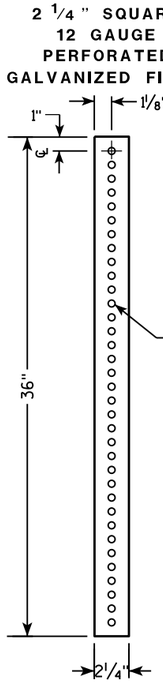
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

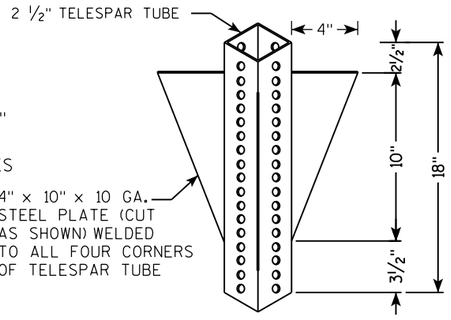
DATE 4/1/2020 PLATE NO. A4-8.9

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

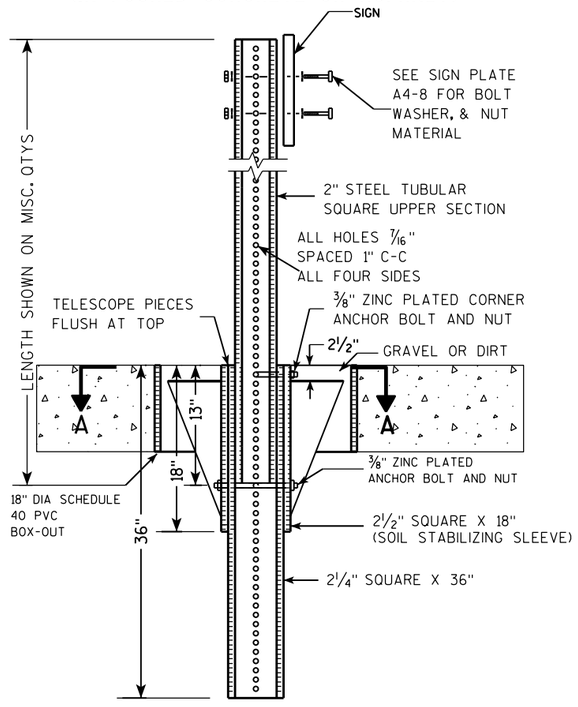
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



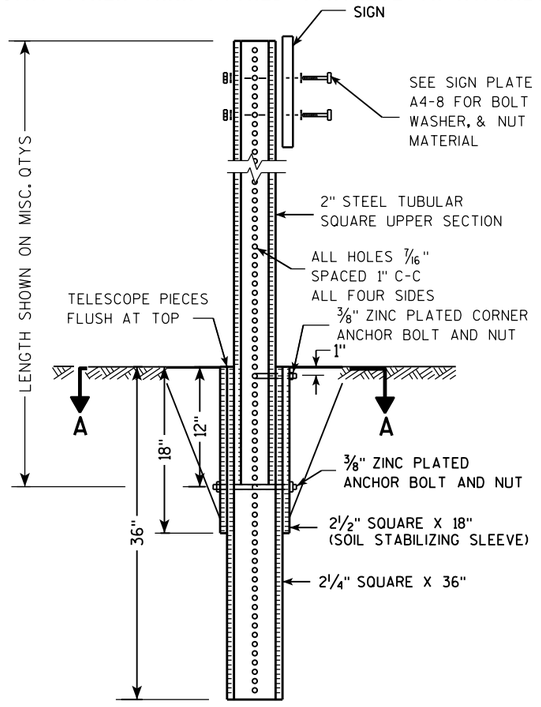

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

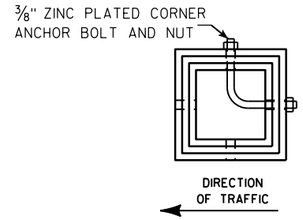



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




## 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*

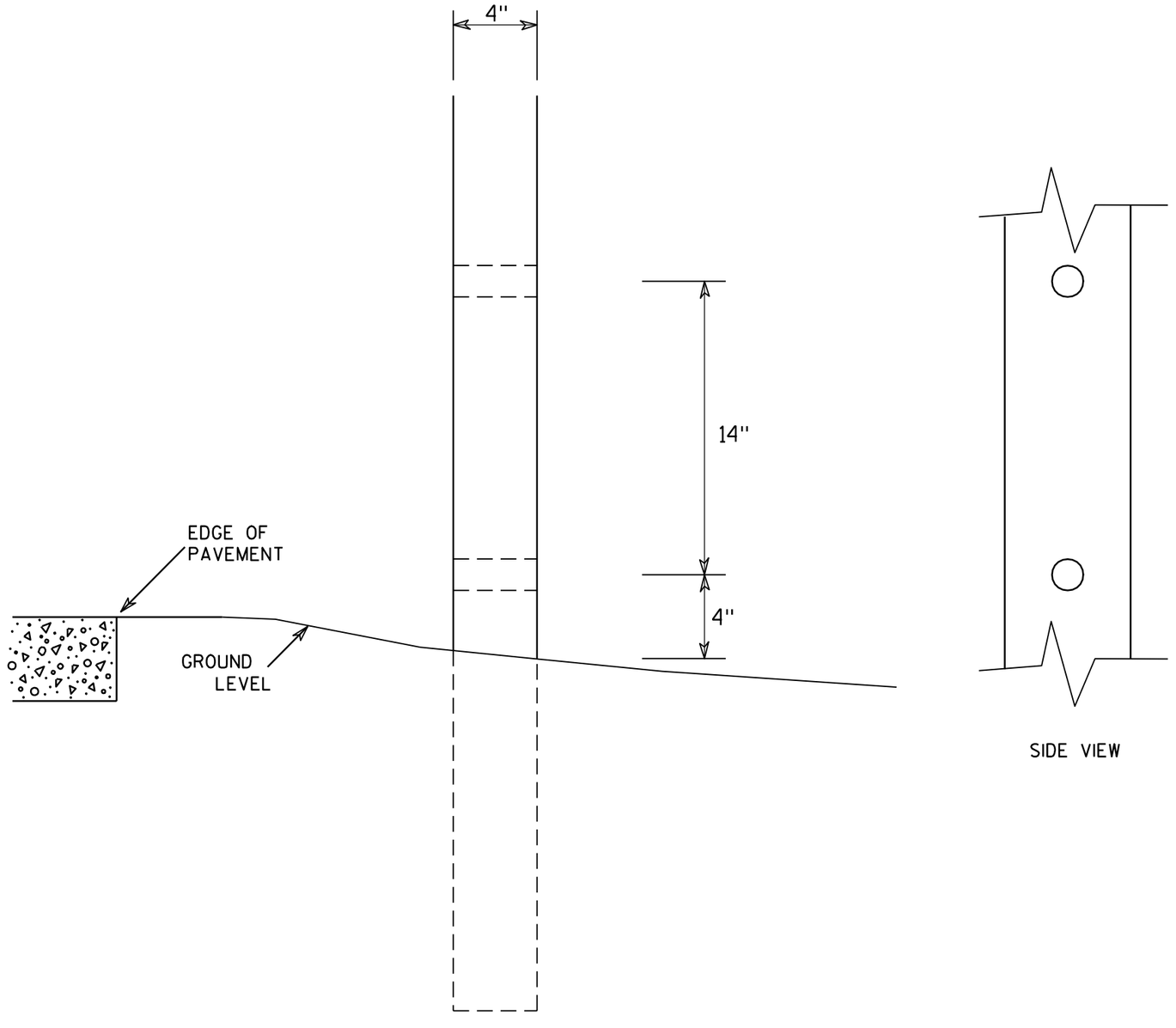
APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9



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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42






SIDE VIEW

GENERAL NOTES

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

# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

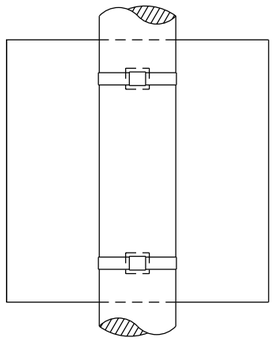
APPROVED Chester J Spang for State Traffic Engineer

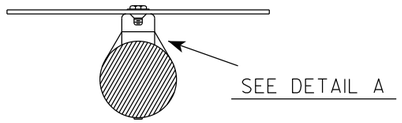
DATE 3/27/97 PLATE NO. A4-11.2

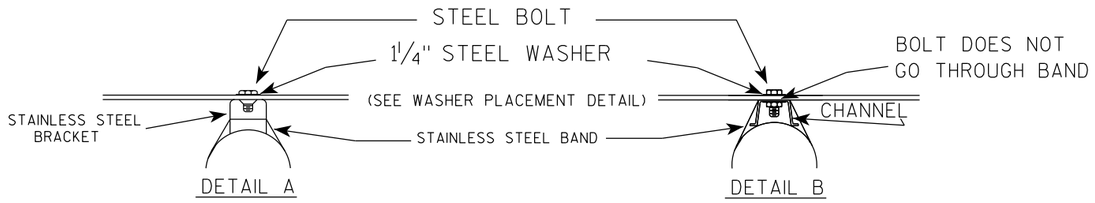
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 27 | E |
|---|---|---|---|---|---|

# BANDING

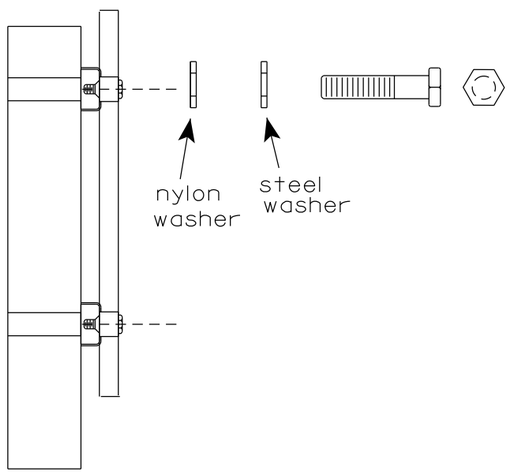
SINGLE SIGN






WASHER PLACEMENT

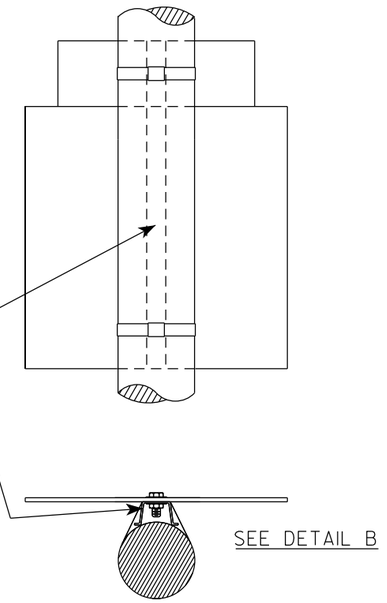



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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




STANDARD SIGN
SIGN BANDING DETAILS

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

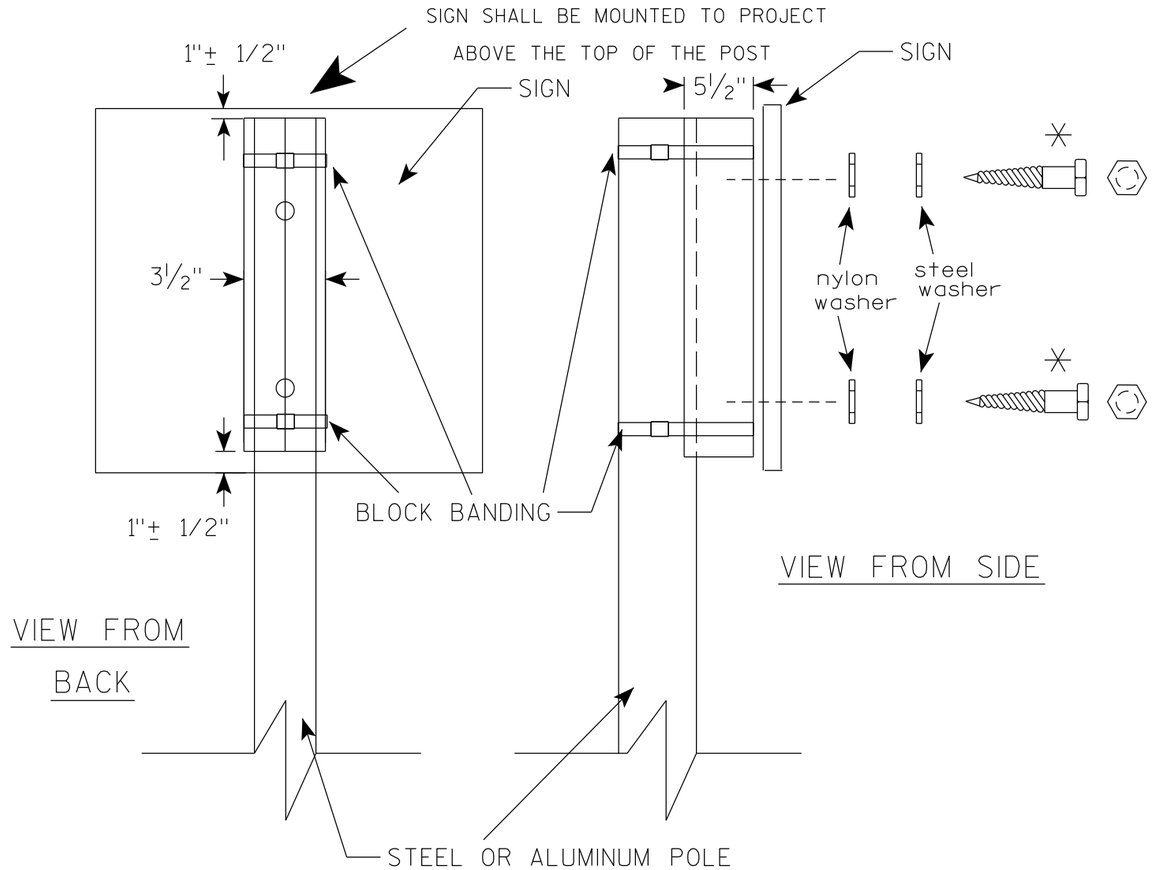
DATE 6/10/19 PLATE NO. A5-9.4

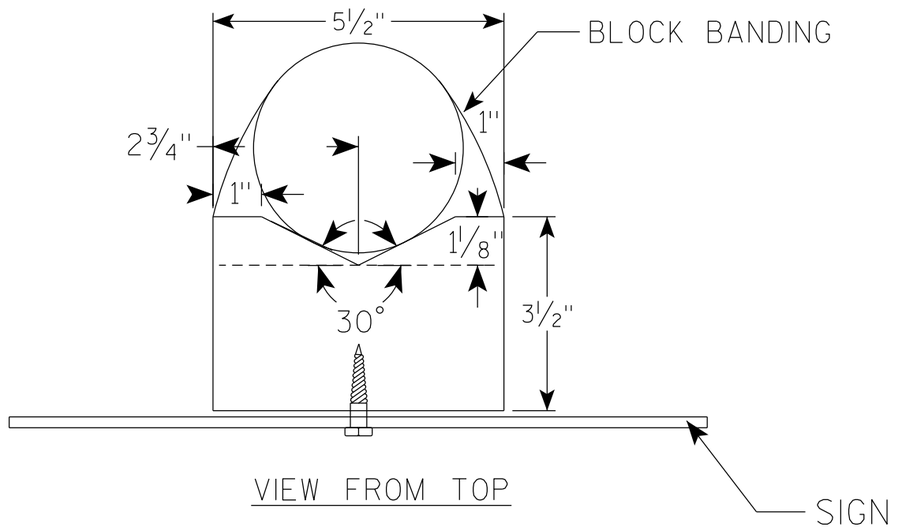
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 28 | E |
|---|---|---|---|---|---|

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

7




## 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"

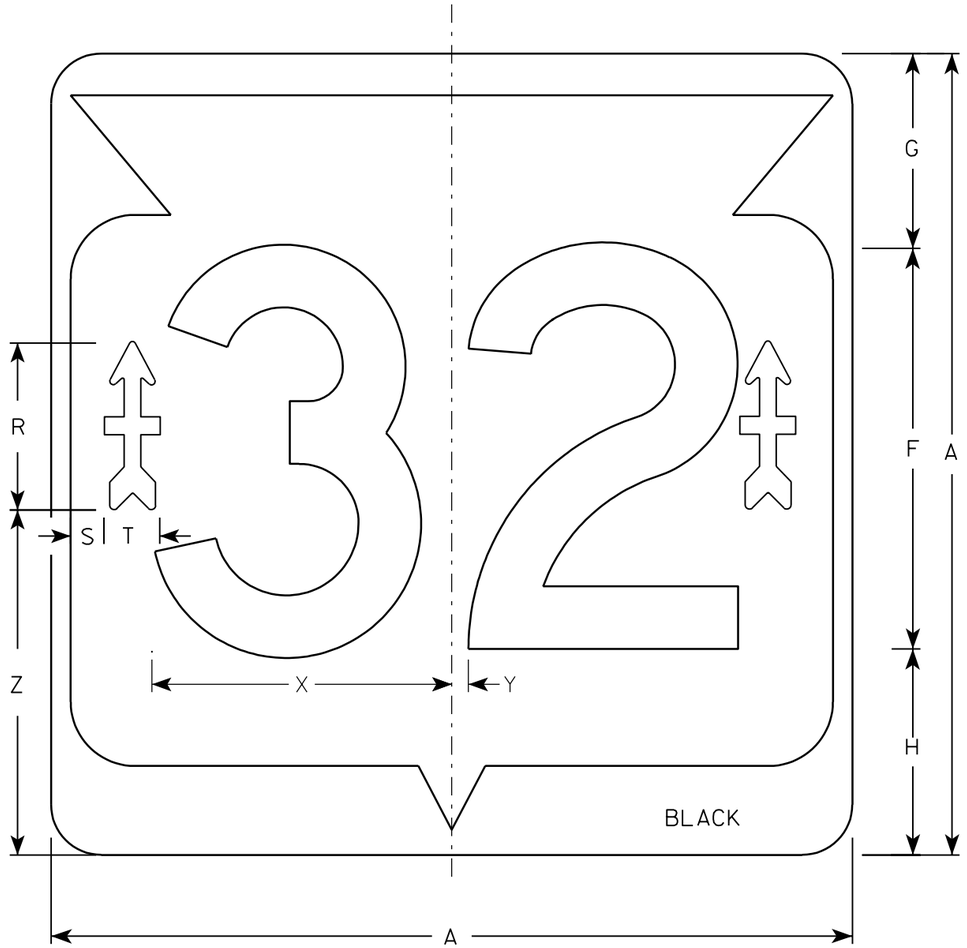
# BLOCK BANDING DETAIL ( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

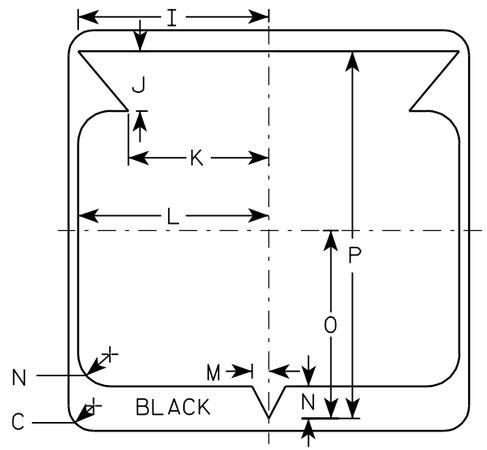
PROJECT NO: | SHEET NO: 29 | E



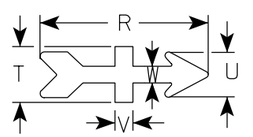

M1-6B

NOTES

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




32nd DIVISION ARROW
ACTUAL SIZE




Metric equivalent for this sign is:

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | 5 1/8 | 3/4 | 1 7/8 | 1 1/2 | 5/8 | 5/8 | 9 | 1/2 | 10 1/2 | 4.0 | .36 |
| 3 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | 7 1/2 | 1 1/2 | 2 1/2 | 2 | 7/8 | 3/4 | 13 1/2 | 3/4 | 15 1/2 | 9.0 | .81 |
| 4 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | 7 1/2 | 1 1/2 | 2 1/2 | 2 | 7/8 | 3/4 | 13 1/2 | 3/4 | 15 1/2 | 9.0 | .81 |
| 5 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | 7 1/2 | 1 1/2 | 2 1/2 | 2 | 7/8 | 3/4 | 13 1/2 | 3/4 | 15 1/2 | 9.0 | .81 |

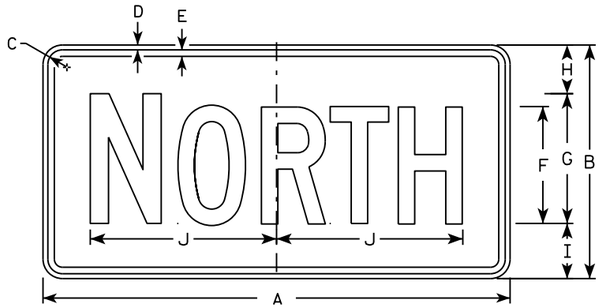
STATE ROUTE MARKER "32"
M1-6B FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

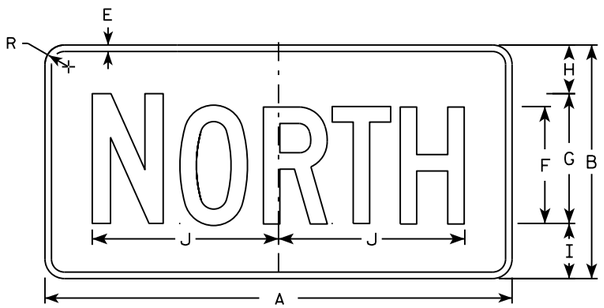
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 12/5/05 PLATE NO. M1-6B.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 30 | E |
|---|---|---|---|---|---|



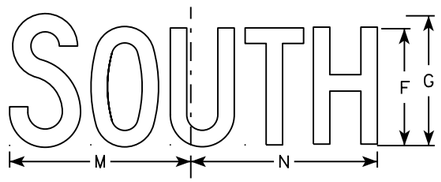

M3-1
MM3-1
MP3-1



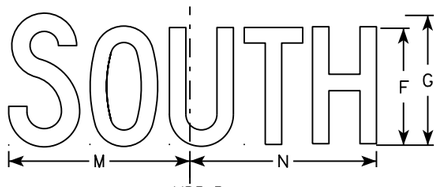

MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

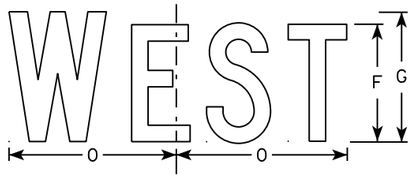
MB3-2
MK3-2
MN3-2



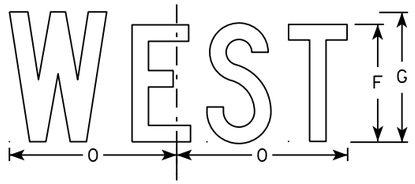

M3-3
MM3-3
MP3-3




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

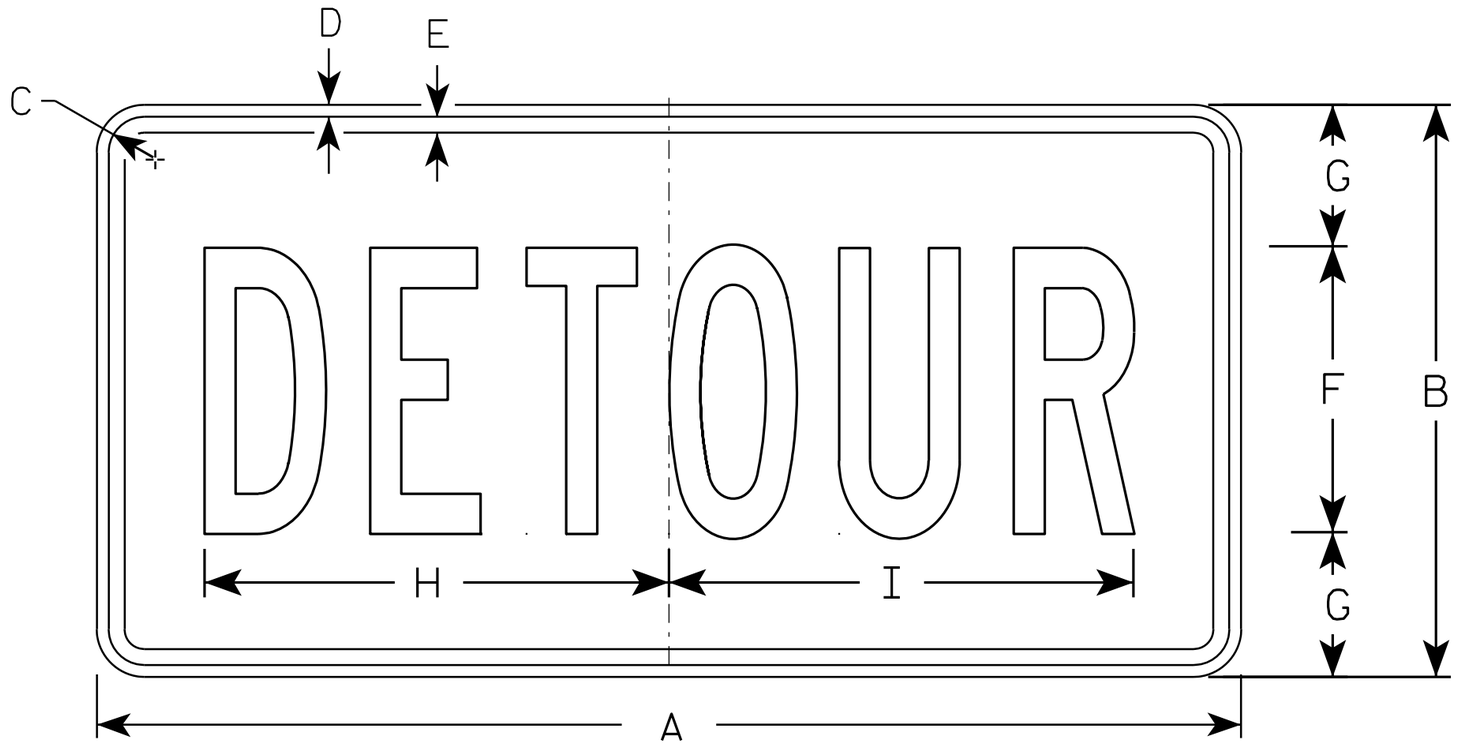
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




M4-8

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - B
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 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

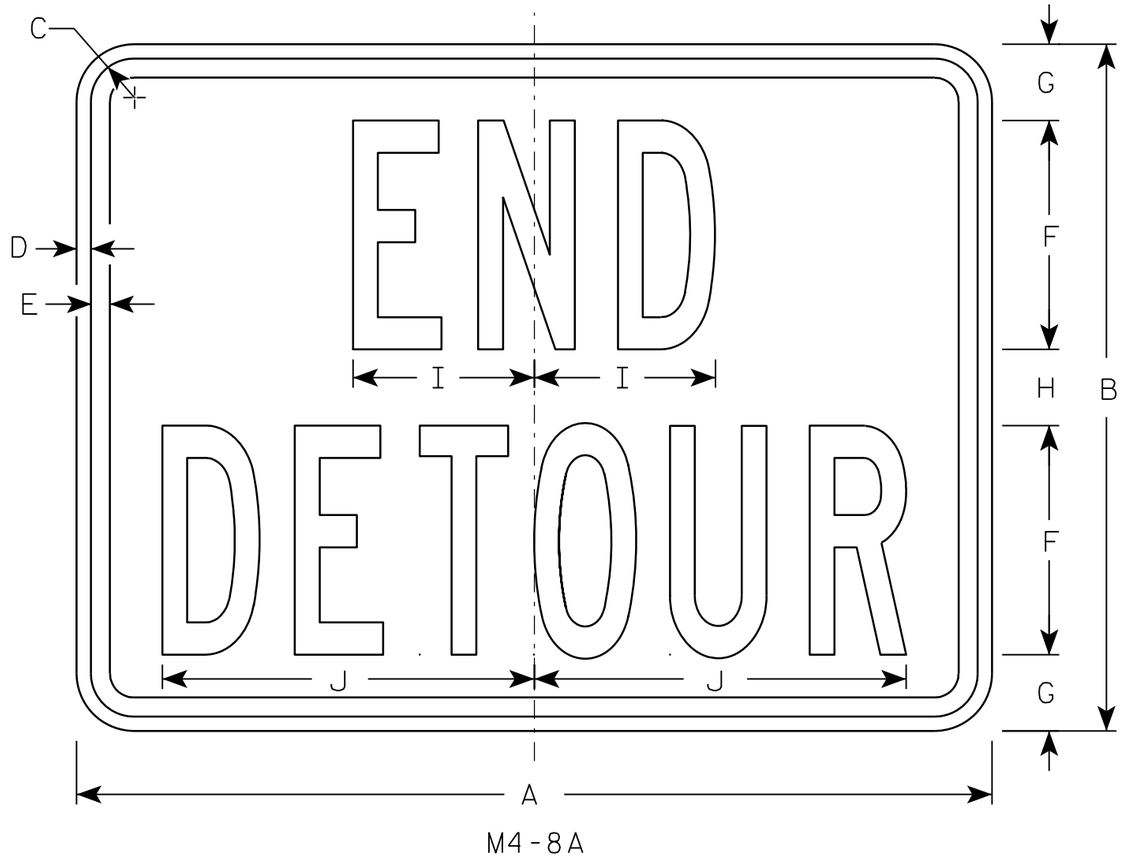
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 32 | E |
|---|---|---|---|---|---|




M4-8A

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 - B
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 | 18 | 1 1/8 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

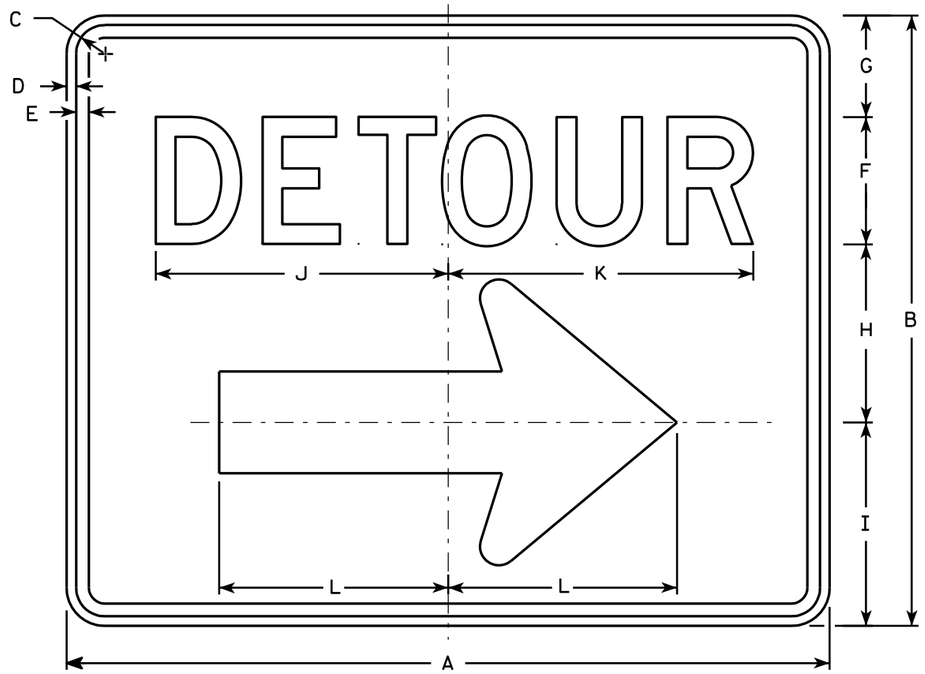
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

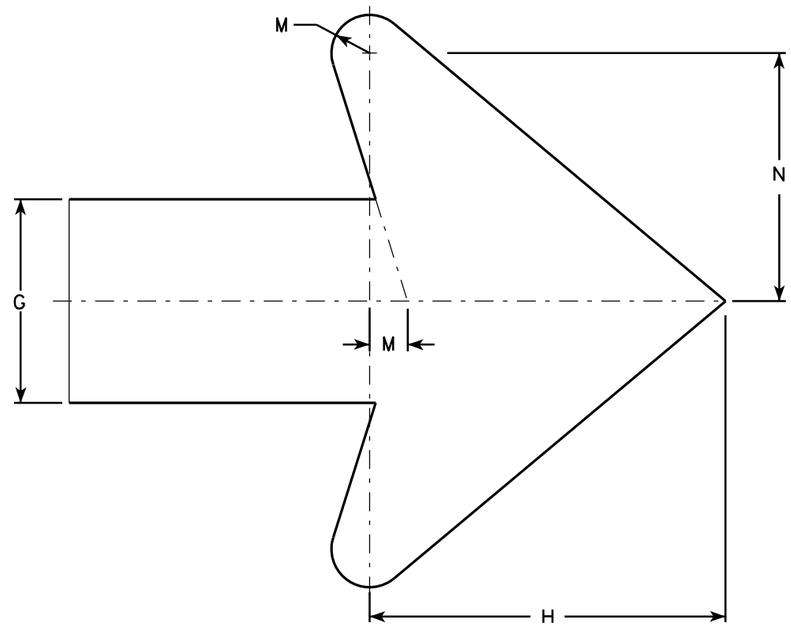
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 33 | E |
|---|---|---|---|---|---|




M4-9R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.




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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7 | 8 | 11 1/2 | 12 | 9 | 3/4 | 4 7/8 | | | | | | | | | | | | | 5.00 |
| 4 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 | | | | | | | | | | | | | 12.0 |

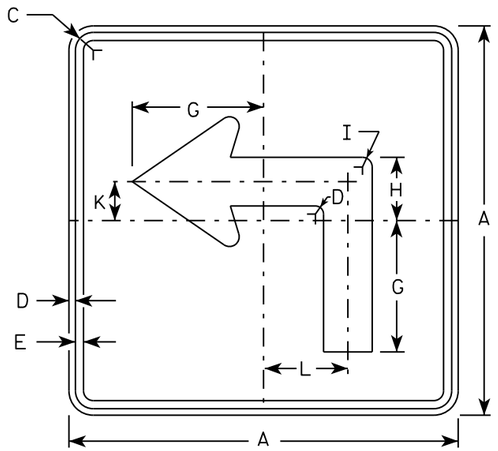
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

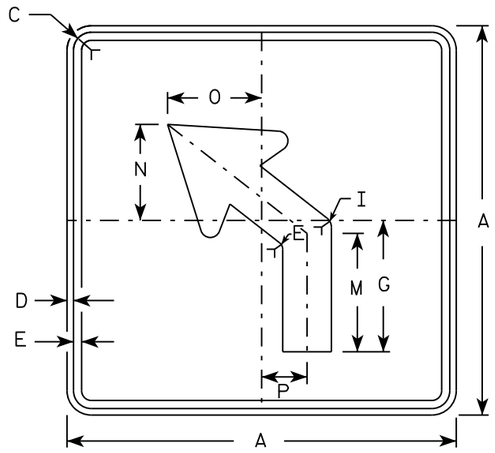
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

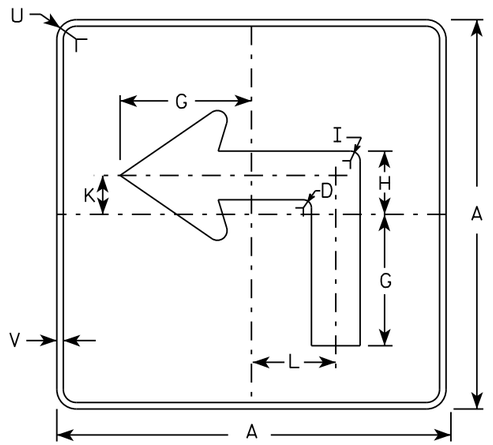
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 34 | E |
|---|---|---|---|---|---|



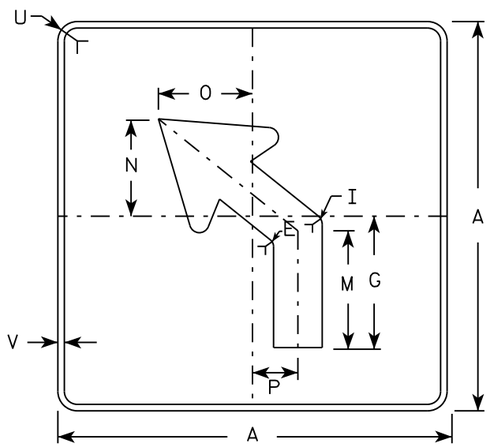

M5-1L
MM5-1L
MO5-1L
MP5-1L



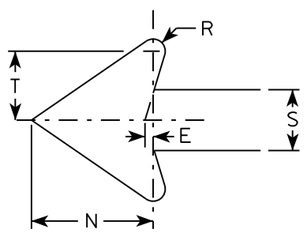

M5-2L
MM5-2L
MO5-2L
MP5-2L




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

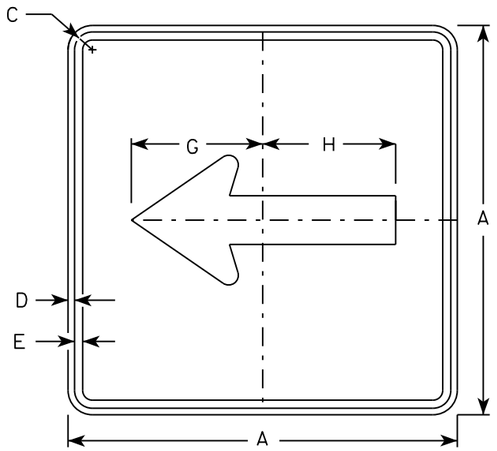
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

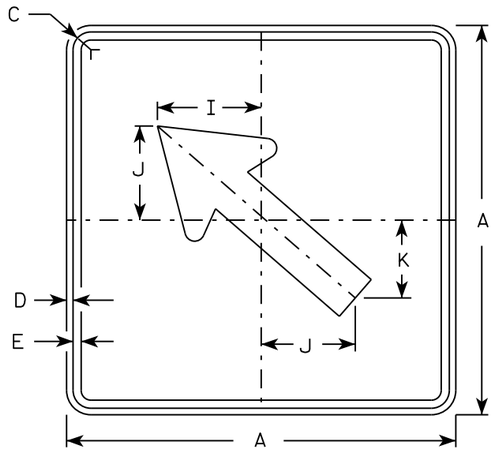


PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



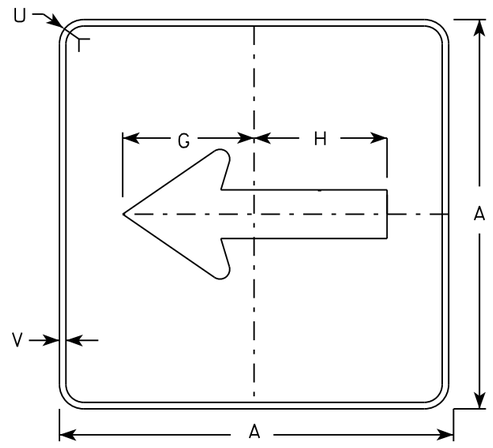

M6-1
MM6-1
MO6-1
MP6-1



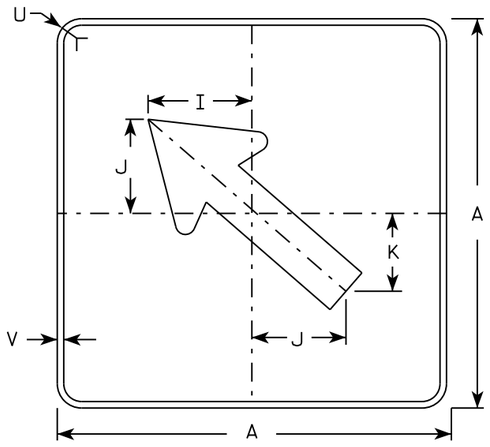

M6-2
MM6-2
MO6-2
MP6-2

NOTES

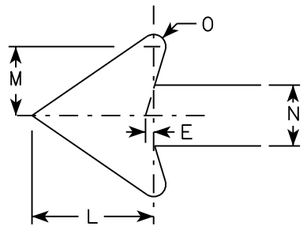
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - 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

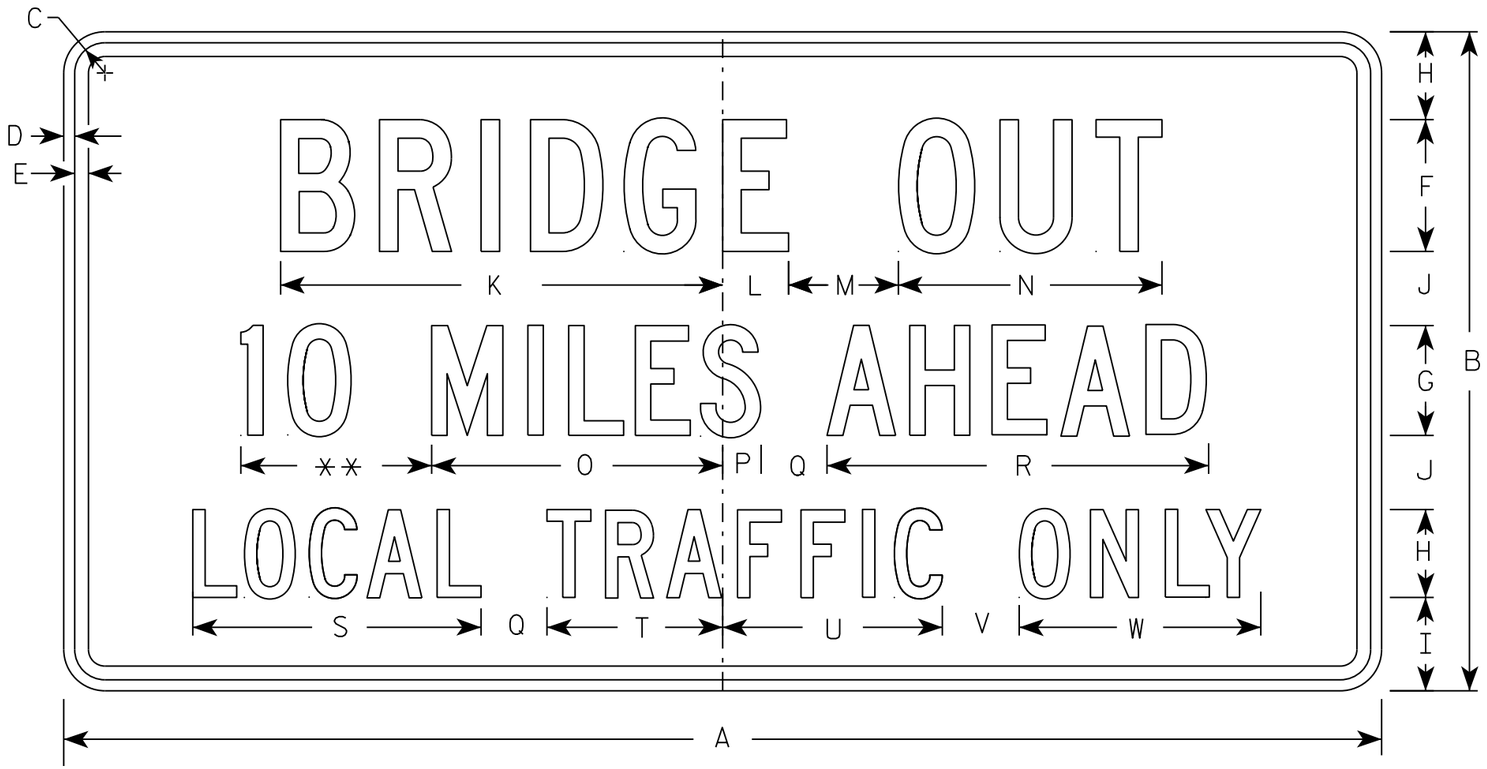
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 36 M6-1.15

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

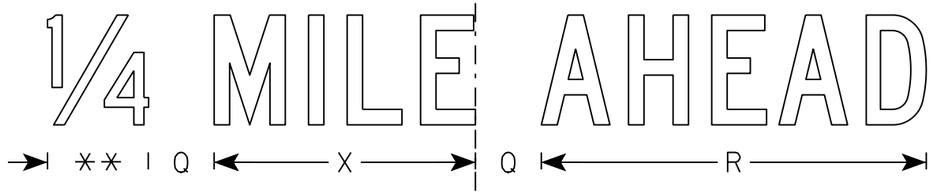


FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




R11-3B

** See Note 5




NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile 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 | 36 | 18 | 1 3/8 | 1/2 | 5/8 | 4 | 3 | 2 1/2 | 2 | 2 | 13 1/4 | 2 1/4 | 3 | 8 | 8 | 1 1/2 | 2 | 10 3/4 | 8 3/8 | 4 3/4 | 6 1/2 | 2 | 6 3/4 | 7 1/8 | | | 4.5 |
| 2S | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 4 1/4 | 3 3/8 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | 13 1/8 | 8 | 10 | 3 1/2 | 11 | 11 7/8 | | | 12.5 |
| 2M | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 4 1/4 | 3 3/8 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | 13 1/8 | 8 | 10 | 3 1/2 | 11 | 11 7/8 | | | 12.5 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

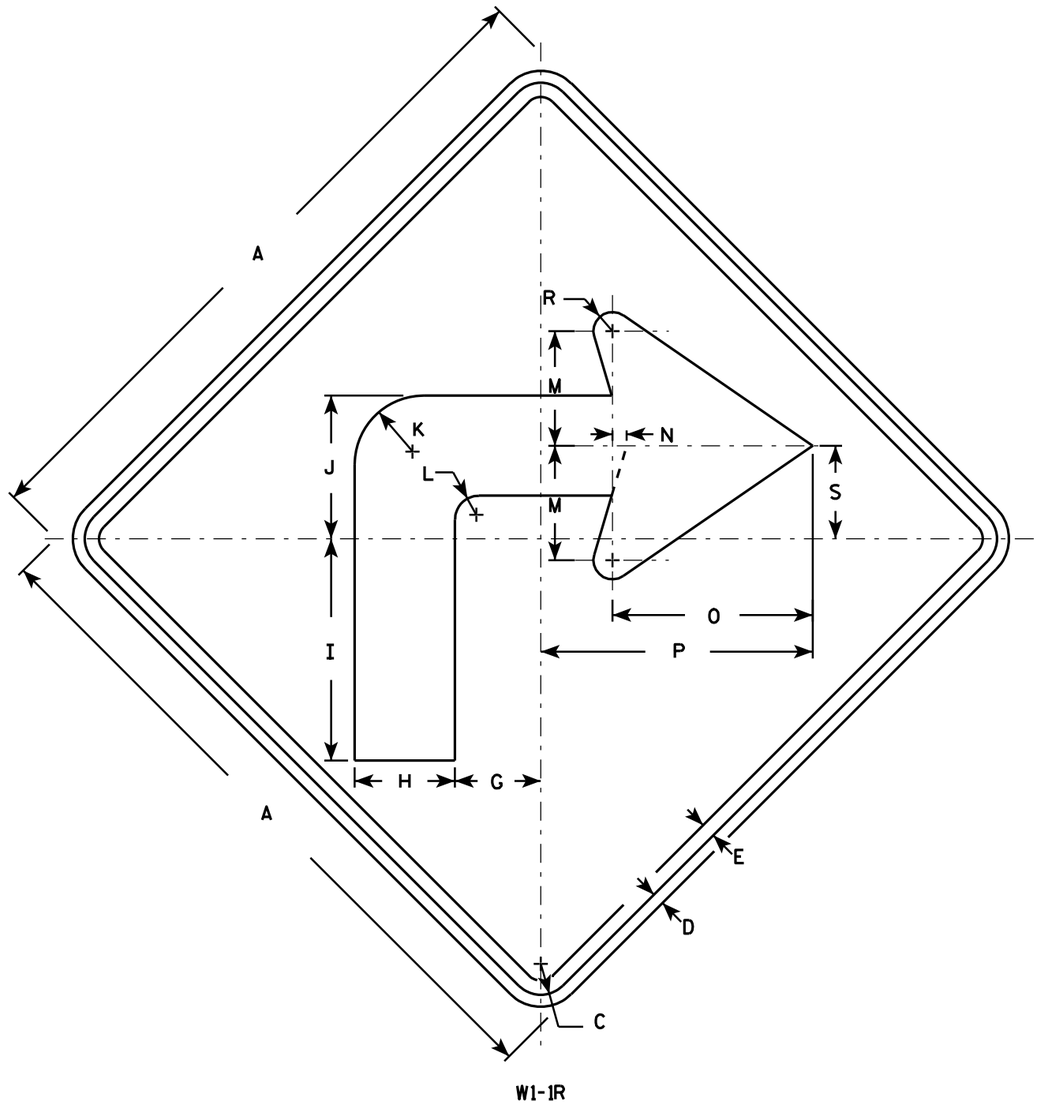
STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 37 | E




W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R 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 | 24 | | 1 1/8 | 3/8 | 1/2 | | 3 | 3 1/2 | 7 3/4 | 5 | 2 1/2 | 7/8 | 4 | 1/2 | 7 | 9 1/2 | | 5/8 | 3 1/4 | | | | | | | | 4.0 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |

STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

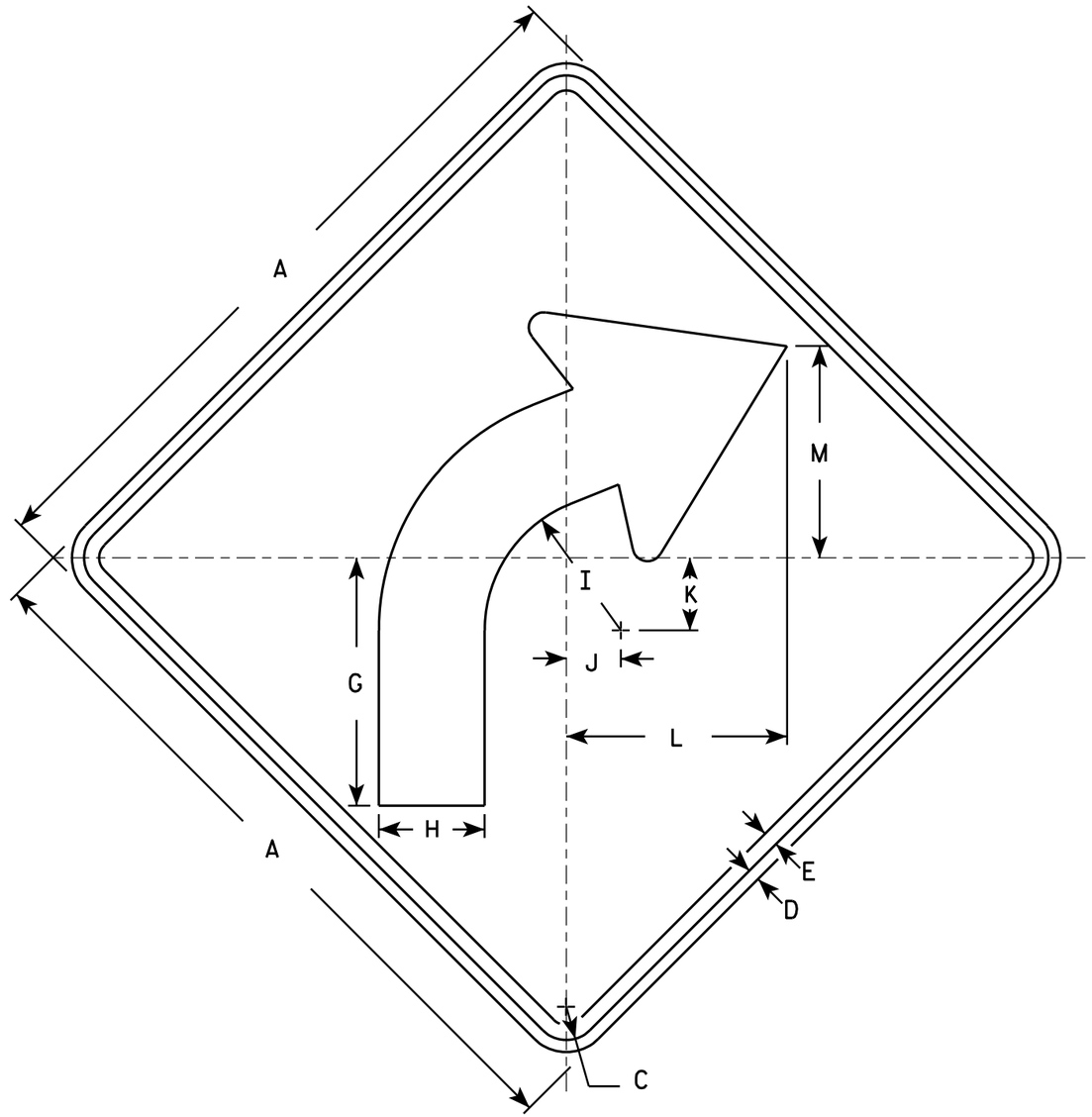
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 38 | E


7

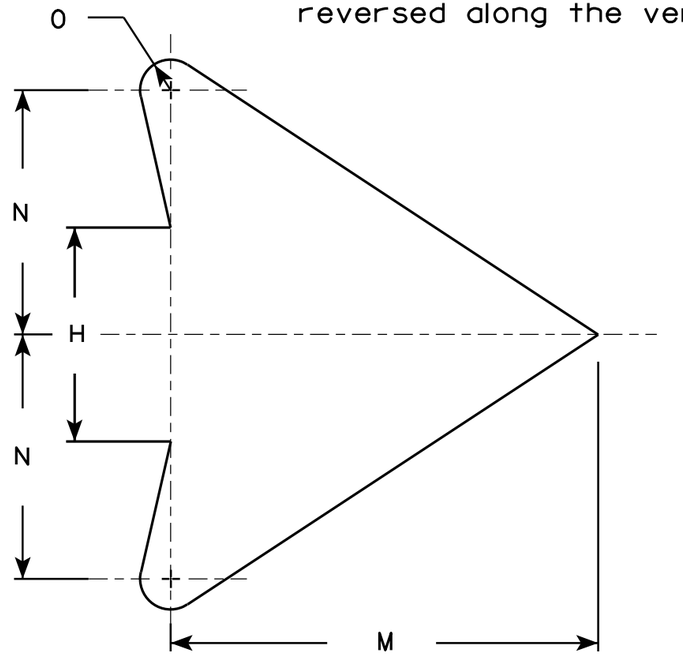
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W11.DGN PLOT DATE : 15-MAY-2012 13:47 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 7.939035:1.000000
WISDOT/CADDS SHEET 42

NOTES

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




W1-2R




ARROW DETAIL

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

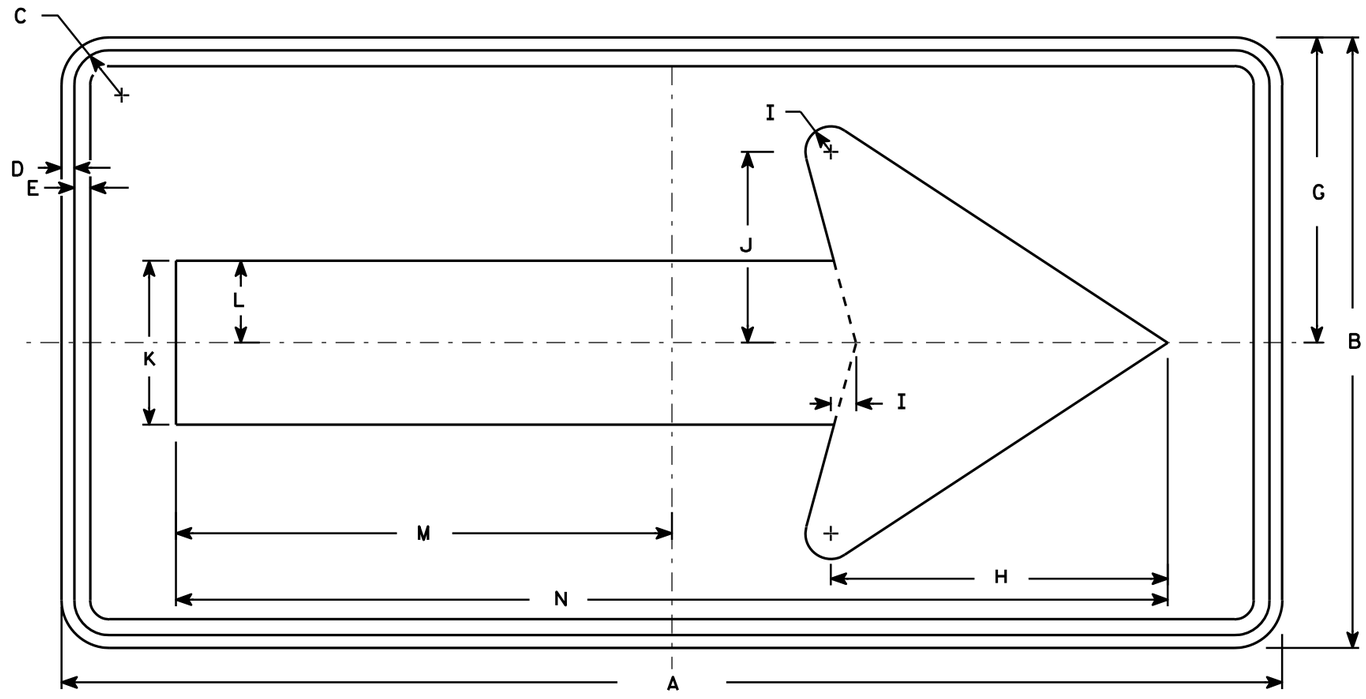
STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 39 | E |
|---|---|---|---|---|---|




W1-6

## NOTES

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 18 | 1 1/8 | 3/8 | 3/8 | | 9 | 10 | 3/4 | 5 5/8 | 4 3/4 | 2 3/8 | 14 5/8 | 29 1/4 | | | | | | | | | | | | | 4.5 |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 96 | 48 | 2 1/4 | 3/4 | 1 | | 24 | 26 1/2 | 2 | 15 | 13 | 6 1/2 | 39 | 78 | | | | | | | | | | | | | 32.0 |

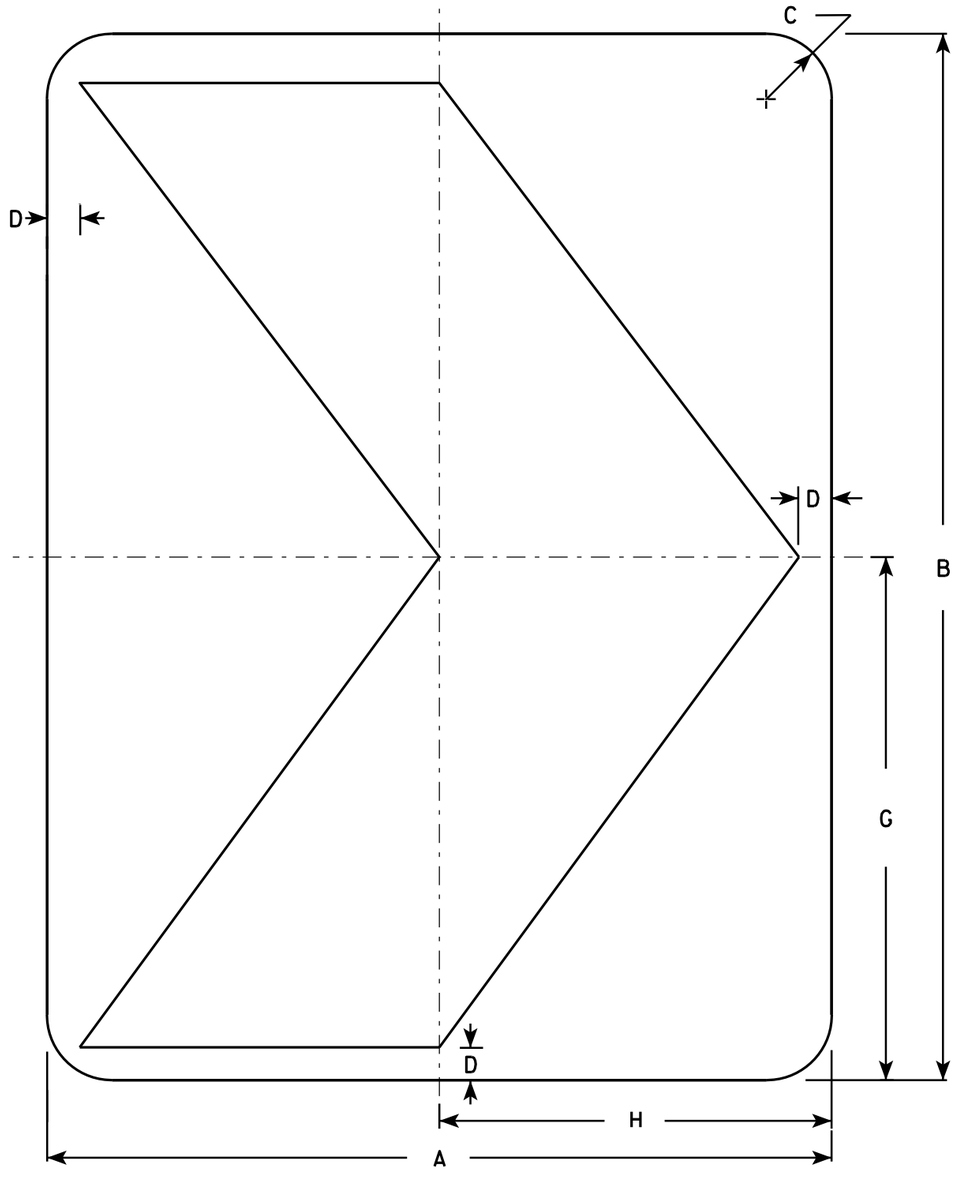
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 40




W1-8

## NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. 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 | 12 | 18 | 1 ½ | ½ | | | 9 | 6 | | | | | | | | | | | | | | | | | | | 1.5 |
| 2S | 18 | 24 | 1 ½ | ¾ | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 18 | 24 | 1 ½ | ¾ | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 24 | 30 | 1 ½ | 1 | | | 15 | 12 | | | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 36 | 1 ⅞ | 1 ¼ | | | 18 | 15 | | | | | | | | | | | | | | | | | | | 7.5 |
| 5 | 36 | 48 | 2 ¼ | 1 ½ | | | 24 | 18 | | | | | | | | | | | | | | | | | | | 12.0 |

STANDARD SIGN
W1-8

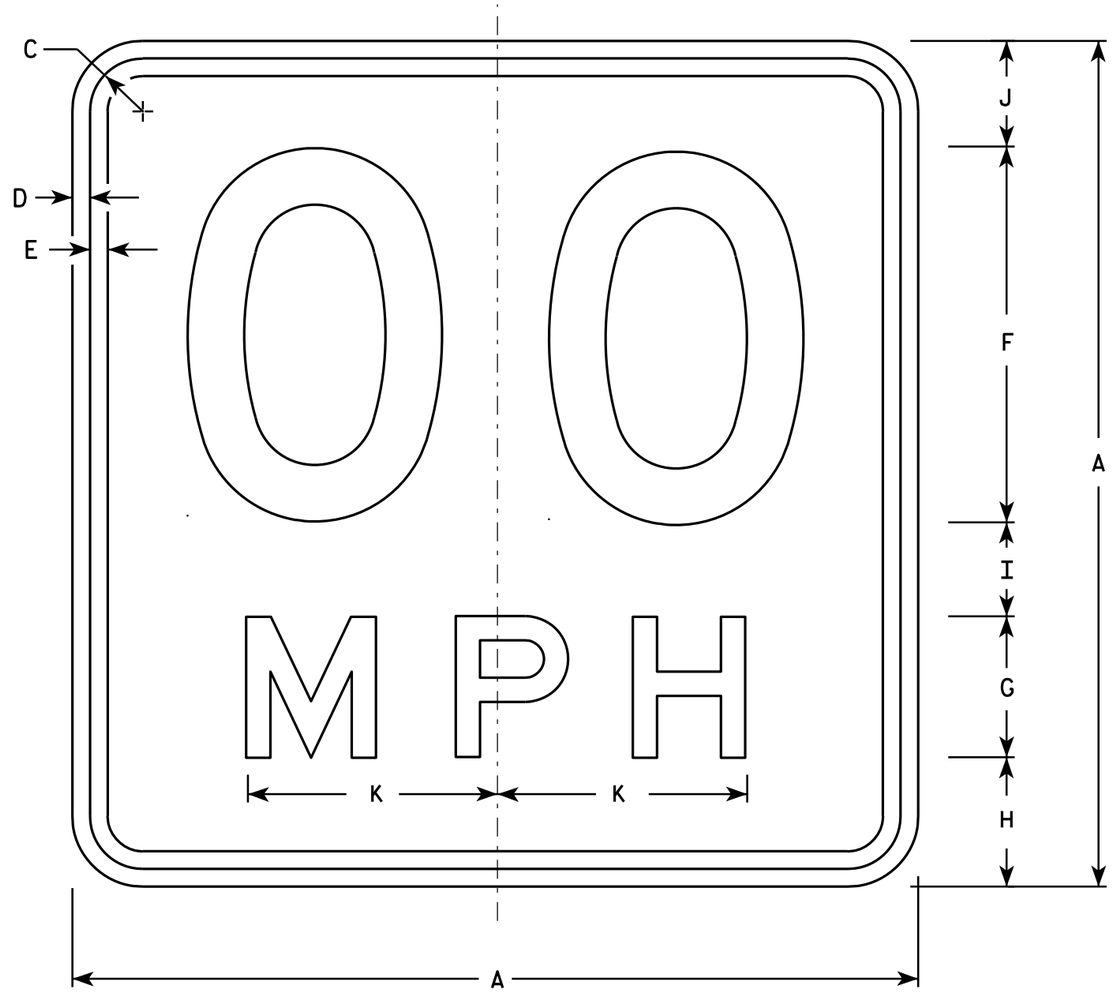
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

SHEET NO: 41 E




W13-1

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

NOTES

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

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

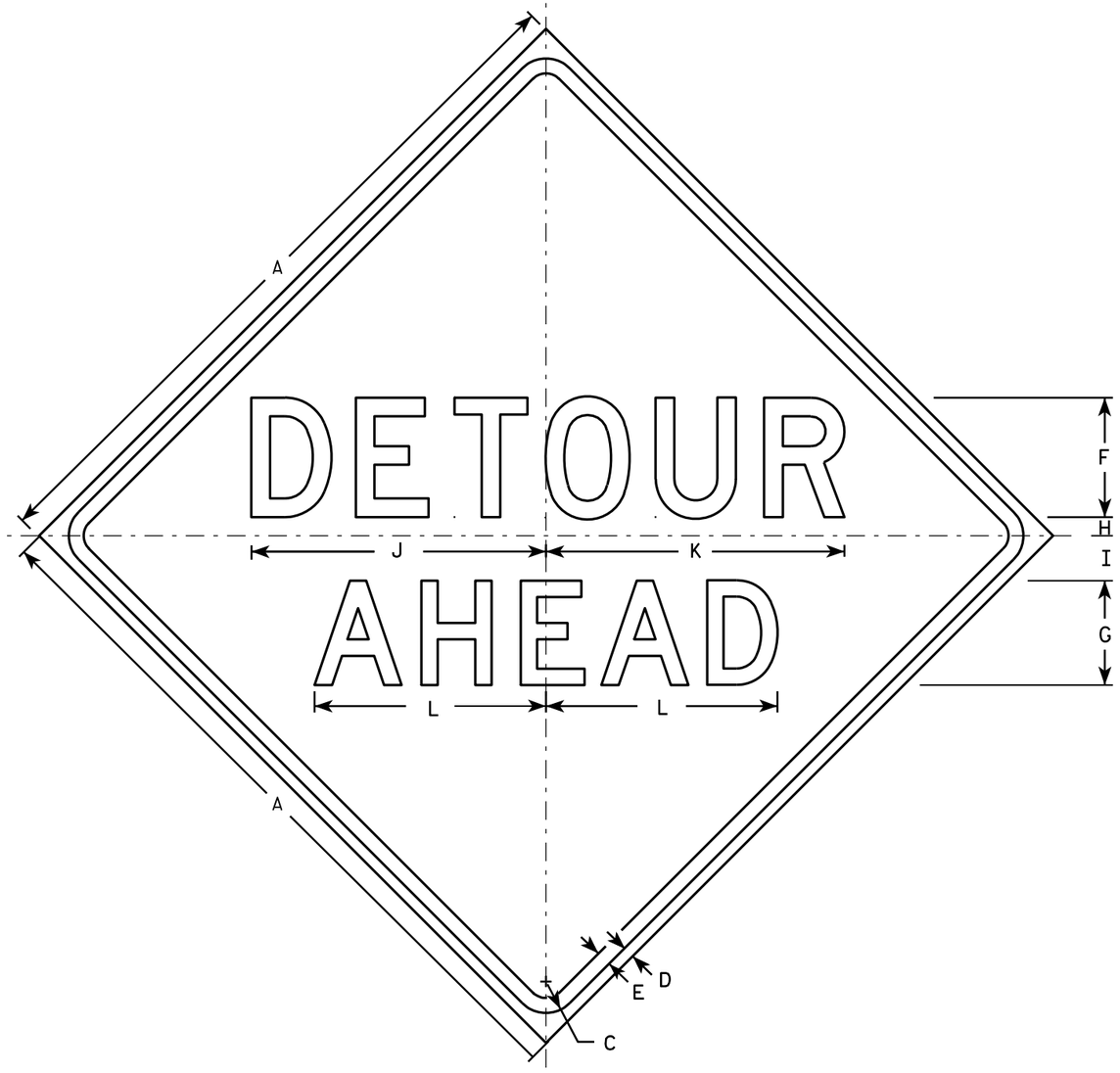
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

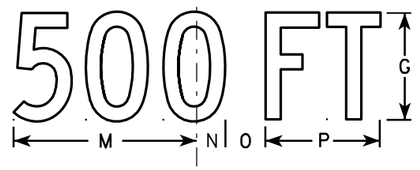
APPROVED Matthew R Rauch
For State Traffic Engineer

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

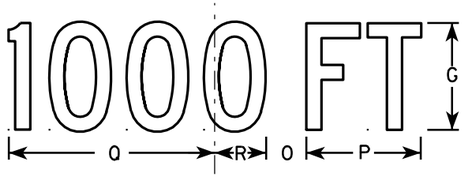
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 42 | E



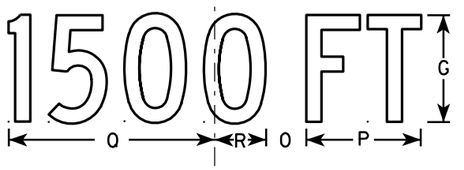

W20-2A



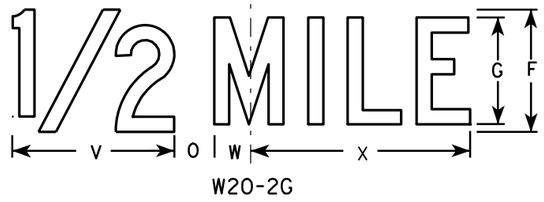

W20-2D




W20-2C




W20-2B




W20-2G

W20-2F

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. Line 1 is Series D.
   Line 2 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 | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 5 | 1 | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9 | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8 | 1 3/4 | 10 3/4 | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

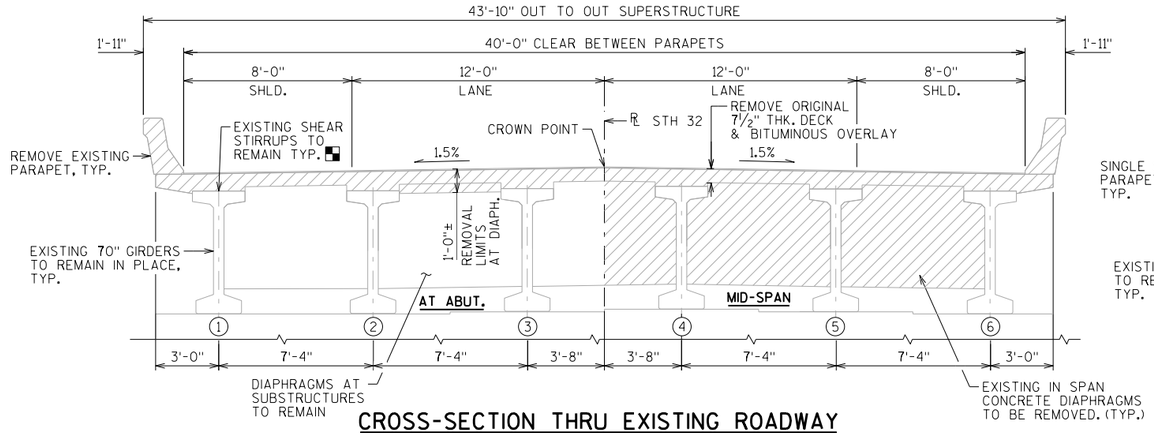
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 43 | E



FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42

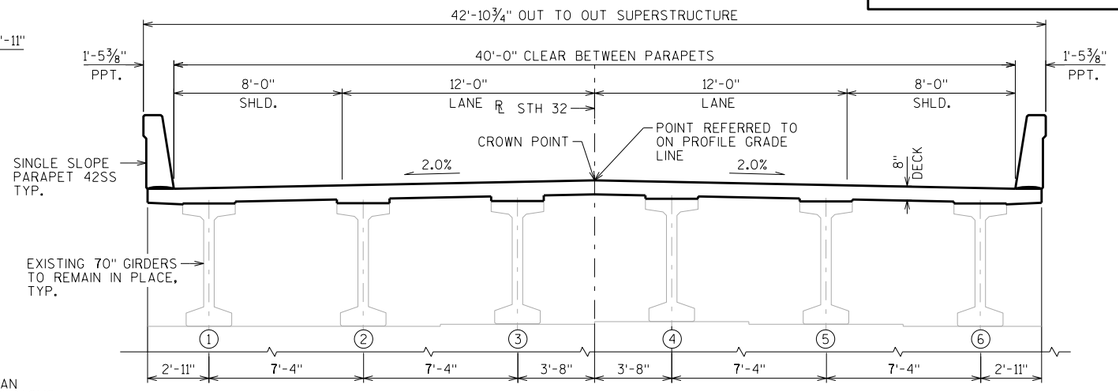
| STATE PROJECT NUMBER |
|---|
| 9190-28-71 |

■ CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE EXISTING SHEAR STIRRUPS AND TOP GIRDER FLANGE. DO NOT CUT THE EXISTING SHEAR STIRRUPS. THE ENGINEER WILL INSPECT THE GIRDERS PRIOR TO PLACING NEW DECK.



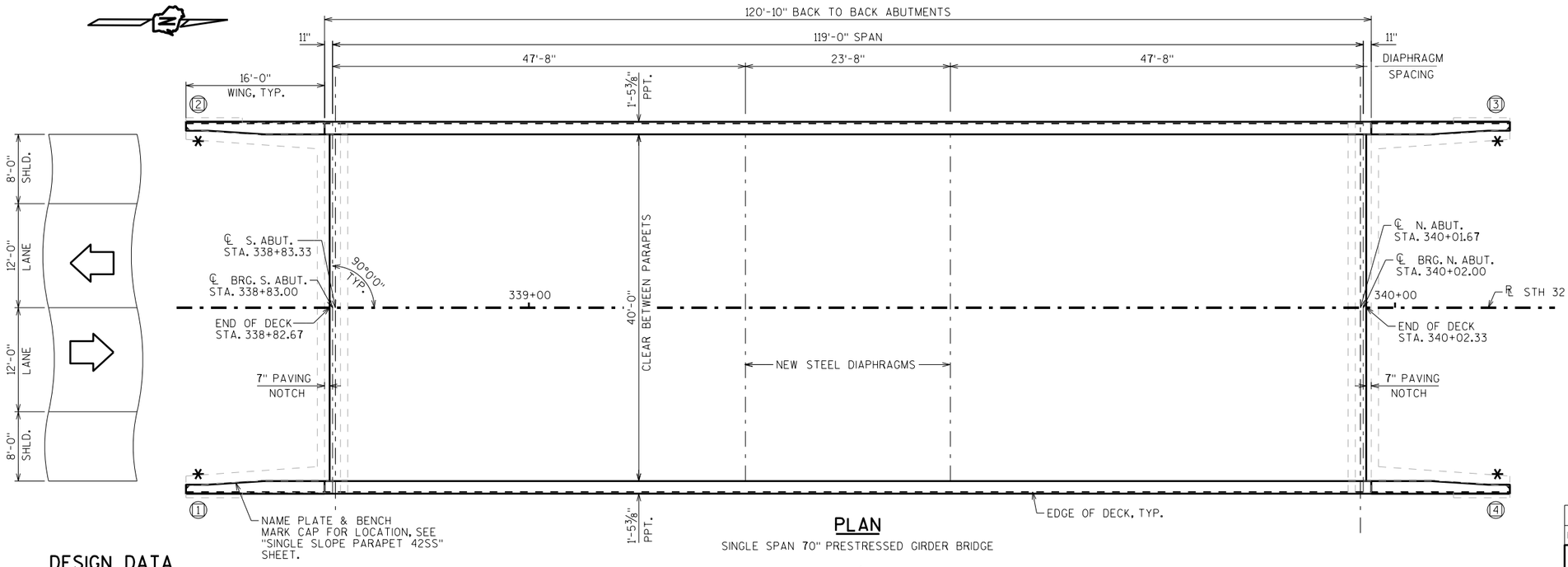

## CROSS-SECTION THRU EXISTING ROADWAY

LOOKING NORTH SHOWING REMOVALS




## CROSS-SECTION THRU PROPOSED ROADWAY

LOOKING NORTH




## PLAN

SINGLE SPAN 70" PRESTRESSED GIRDER BRIDGE

OCONTO RIVER

## DESIGN DATA

**LIVE LOAD:**

DESIGN LOADING: HS-20
INVENTORY RATING: HS-22
OPERATING RATING: HS-46
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250(KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

**MATERIAL PROPERTIES:**

CONCRETE MASONRY:
SUPERSTRUCTURE ——— f'c = 4,000 P.S.I.
ALL OTHER ——— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.

## TRAFFIC VOLUME

**STH 32**
ADT = 3500 (2042)
R.D.S. = 55 M.P.H.

✱ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".
▢ INDICATES WING NUMBER
◯ INDICATES GIRDER NUMBER

## LIST OF DRAWINGS


1. GENERAL PLAN
2. QUANTITIES & REMOVALS
3. SUPERSTRUCTURE
4. SUPERSTRUCTURE DETAILS
5. STEEL DIAPHRAGM
6. SINGLE SLOPE PARAPET 42SS



**STRUCTURE DESIGN CONTACTS:**
STACIE WEIS (608) 261-6109
DOMINIQUE BECHLE (608) 261-8205


| NO. | DATE | REVISION | BY |
|---|---|---|---|

BUREAU OF STRUCTURES
WISCONSIN DEPARTMENT OF TRANSPORTATION

ACCEPTED DMB 12/07/21
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-42-21

STH 32 OVER SOUTH BRANCH OCONTO RIVER

| COUNTY | TOWN |
|---|---|
| OCONTO | HOW |

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGNED CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| SEW | ACT | SEW | ACT |

GENERAL PLAN

SHEET 1 OF 6

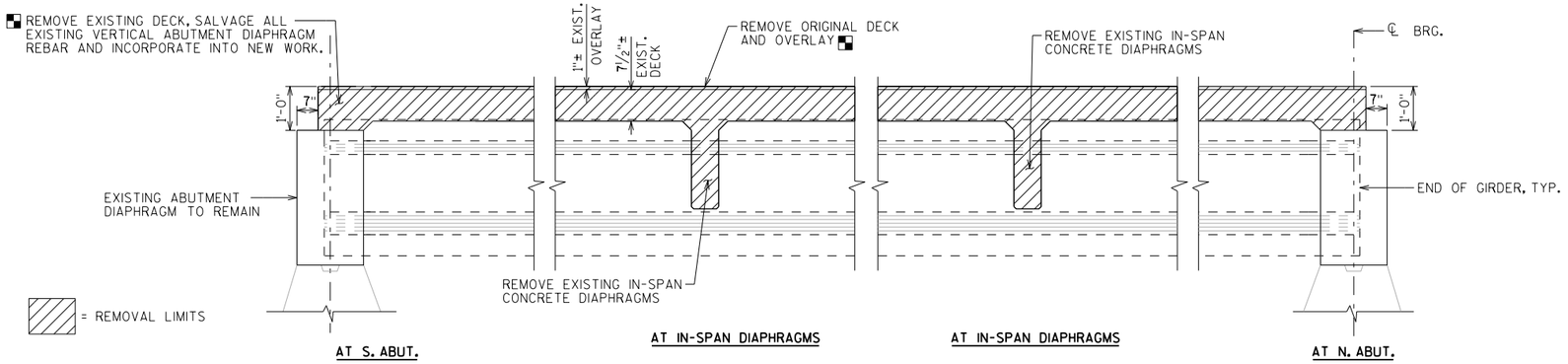
44

I.D. 9190-28-00A DATE: DEC. 2021

SCALE = 7.00

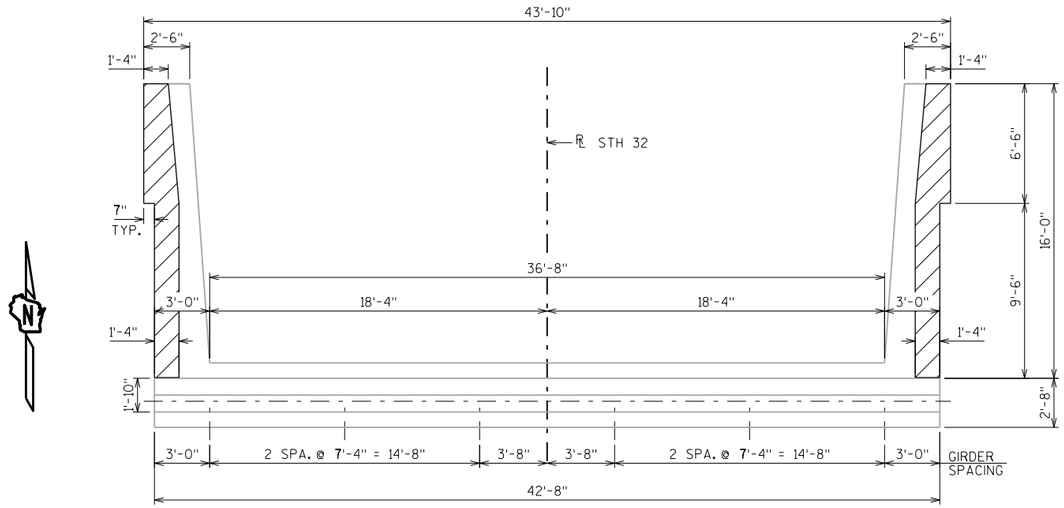
8

8




## PART LONGITUDINAL SECTION

SHOWING DECK REMOVAL LIMITS




## NORTH ABUTMENT PLAN

SHOWING REMOVALS, SOUTH ABUTMENT SIMILAR

## TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | SUPER. | SOUTH ABUT. | NORTH ABUT. | TOTALS |
|---|---|---|---|---|---|---|
| 203.0260 | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (B-42-21) | EACH | ——— | ——— | ——— | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-42-21 | LS | ——— | ——— | ——— | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | ——— | 75 | 75 | 150 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 174.1 | 8.9 | 8.9 | 192 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 550 | ——— | ——— | 550 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 119 | 16 | 16 | 151 |
| 502.4205 | ADHESIVE ANCHORS NO. 5 BAR | EACH | ——— | 88 | 88 | 176 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 36,395 | 1,340 | 1,340 | 39,075 |
| 506.4000 | STEEL DIAPHRAGMS B-42-21 | EACH | 10 | ——— | ——— | 10 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | ——— | 7 | 7 | 14 |
| ☆ 606.0300 | RIPRAP HEAVY | CY | ——— | 3 | 3 | 6 |
| 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | 4 | ——— | ——— | 4 |
| | | | | | | |
| | NON-BID ITEMS | | | | | |
| | FILLER | SIZE | ——— | ——— | ——— | ½" |
| | | | | | | |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

AT THE BACK FACE OF THE ABUTMENT WINGS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON WINGS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "SUPERSTRUCTURES DETAILS" SHEET.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT.

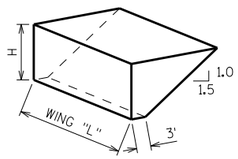
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1975.

ANY EXCAVATION NECESSARY TO COMPLETE THE CONSTRUCTION OF THE NEW DECK AND PARAPETS SHALL BE CONSIDERED INCIDENTAL TO THE THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-42-21".

CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE TOP FLANGE OF GIRDER AND EXISTING SHEAR STIRRUPS. DO NOT CUT THE EXISTING SHEAR STIRRUPS. THE ENGINEER SHALL INSPECT THE GIRDERS PRIOR TO PLACING THE DECK.

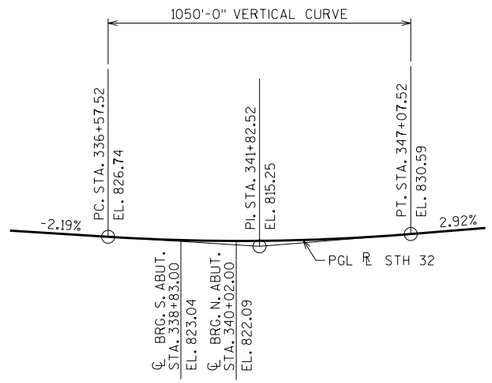
BRIDGE STATIONING MAY VARY BASED ON EXACT LOCATION OF THE BRIDGE ALONG THE ALIGNMENT. CONTRACTOR SHALL FIELD VERIFY. VARIATIONS TO THE NEW GRADE LINE OVER ½" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE BUREAU OF STRUCTURES DESIGN SECTION FOR REVIEW.

☆ RIPRAP TO BE PLACED ALONG THE WINGS AFTER CONSTRUCTION OF THE NEW UPPER WINGS AND PARAPETS. NEW WING TIPS TO BE BURIED.

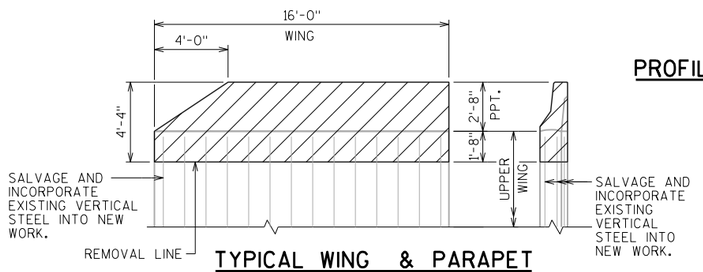



## ABUTMENT WING BACKFILL DIAGRAM

L = WING LENGTH (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
$V_{CF}$ = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
$V_{CY}$ = $V_{CF}$ (EF)/27
$V_{TON}$ = $V_{CY}$ (2.0)




## PROFILE GRADE LINE - STH 32




## TYPICAL WING & PARAPET

SHOWING REMOVALS

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-42-21

DRAWN BY SEW | PLANS CK'D. ACT

QUANTITIES & REMOVALS

SHEET 2

45

STATE PROJECT NUMBER

9190-28-71

8

8

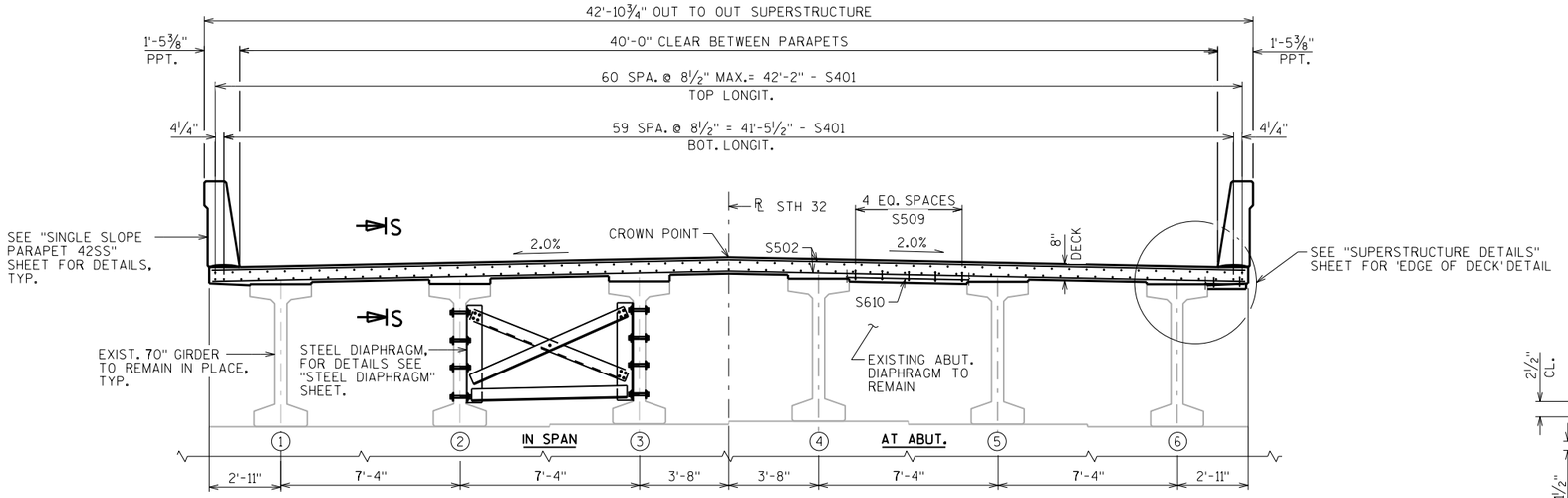
SCALE = 2.00

STATE PROJECT NUMBER

9190-28-71

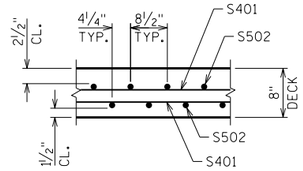
○ INDICATES GIRDER NUMBER

▢ INDICATES WING NUMBER

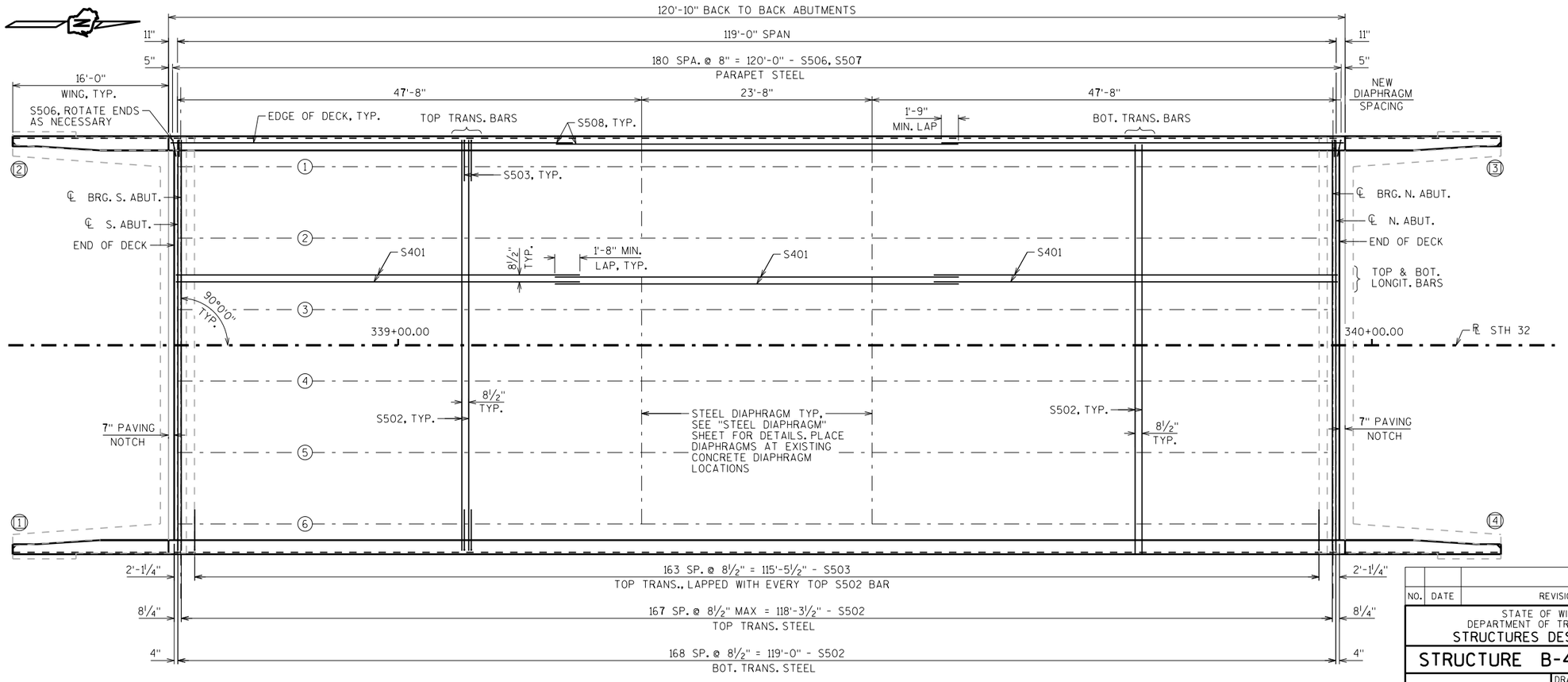



## CROSS-SECTION THRU PROPOSED ROADWAY

LOOKING NORTH




## SECTION S-S




## PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-42-21

DRAWN BY SEW | PLANS CK'D. ACT

SUPERSTRUCTURE

SHEET 3

46

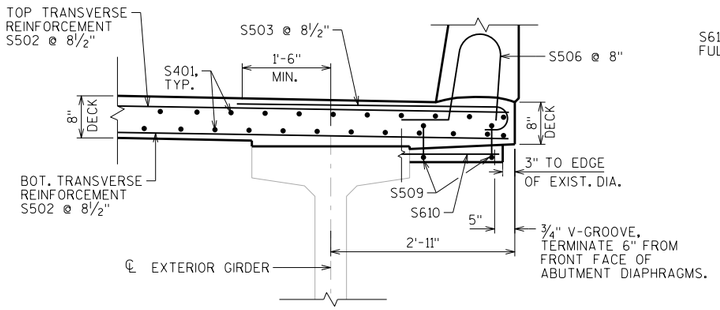
SCALE = 6.00

8

8

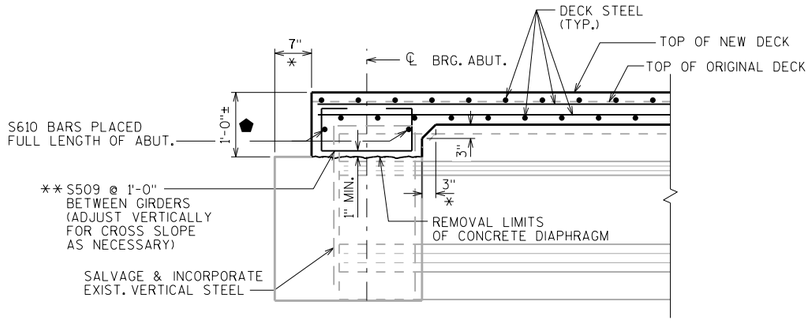
STATE PROJECT NUMBER

9190-28-71




## DECK STEEL DETAIL

(TYP. AT BOTH EDGES)




## SECTION THRU ABUT. DIAPH.

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

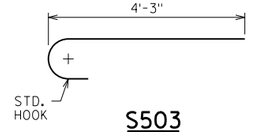
** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS

⬟ VARIES. PRESERVE HORIZONTAL FACE OF EXISTING PAVING NOTCH.

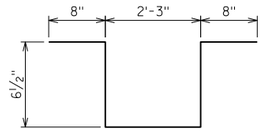
## BILL OF BARS

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

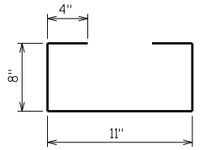
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| S401 | X | 366 | 41'-6" | | | TOP & BOT. - LONGIT. |
| S502 | X | 337 | 42'-2" | | | TOP & BOT. - TRANS. |
| S503 | X | 328 | 4'-11" | X | | TOP EDGE - TRANS. |
| S404 | X | 720 | 4'-4" | X | | GIRDER HAUNCH - VERT. - TRANS. |
| S405 | X | 36 | 41'-6" | | | GIRDER HAUNCH - LONGIT. |
| S506 | X | 362 | 4'-5" | X | | PPT. - VERT. - TRANS. |
| S507 | X | 362 | 6'-8" | X | | PPT. - VERT. - TRANS. |
| S508 | X | 48 | 41'-6" | | | PPT. - LONGIT. |
| S509 | X | 58 | 2'-5" | X | | ABUT. DIAPH. - VERT. |
| S610 | X | 4 | 42'-2" | | | ABUT. DIAPH. - HORIZ. - TRANS. |



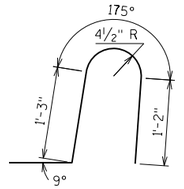

## S503



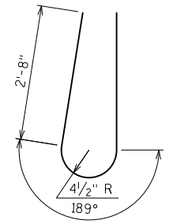

## S404



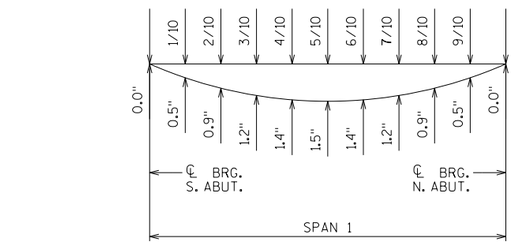

## S509




## S506




## S507



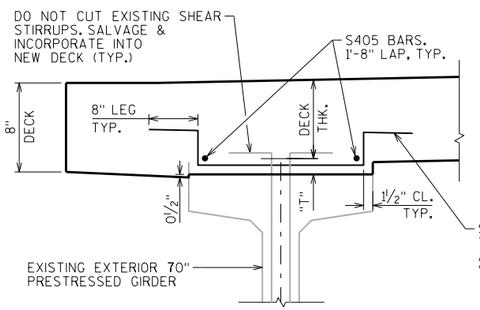

## DEFLECTION DIAGRAM

NOTE: DEFLECTIONS USED FOR COMPUTING GIRDER ELEVATIONS SHALL BE CALCULATED BY TAKING GIRDER ELEVATIONS BEFORE & AFTER THE EXISTING DECK IS REMOVED. THE DEFLECTIONS GIVEN ON THIS PLAN SHALL BE USED AS A REFERENCE ONLY. FIELD MEASURED DEFLECTION DATA SHALL BE PROPORTIONED TO ACCOUNT FOR THE NEW DECK, HAUNCH, AND PARAPET VERSUS THE EXISTING DECK, HAUNCH, AND PARAPET. EXISTING DECK THICKNESS SHALL BE FIELD VERIFIED.

## TOP OF DECK ELEVATIONS

EOD = EDGE OF DECK

| | ℄ S. ABUT. | 1/10 PT. | 2/10 PT. | 3/10 PT. | 4/10 PT. | 5/10 PT. | 6/10 PT. | 7/10 PT. | 8/10 PT. | 9/10 PT. | ℄ N. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W. EOD | 822.65 | 822.52 | 822.40 | 822.29 | 822.18 | 822.08 | 821.99 | 821.91 | 821.83 | 821.76 | 821.69 |
| GIRDER 1 | 822.68 | 822.55 | 822.43 | 822.32 | 822.22 | 822.12 | 822.02 | 821.94 | 821.86 | 821.79 | 821.72 |
| GIRDER 2 | 822.83 | 822.70 | 822.58 | 822.47 | 822.36 | 822.26 | 822.17 | 822.09 | 822.01 | 821.94 | 821.87 |
| GIRDER 3 | 822.97 | 822.85 | 822.73 | 822.61 | 822.51 | 822.41 | 822.32 | 822.23 | 822.15 | 822.08 | 822.02 |
| ℄ STH 32/CROWN | 823.05 | 822.92 | 822.80 | 822.69 | 822.58 | 822.48 | 822.39 | 822.31 | 822.23 | 822.16 | 822.09 |
| GIRDER 4 | 822.97 | 822.85 | 822.73 | 822.61 | 822.51 | 822.41 | 822.32 | 822.23 | 822.15 | 822.08 | 822.02 |
| GIRDER 5 | 822.83 | 822.70 | 822.58 | 822.47 | 822.36 | 822.26 | 822.17 | 822.09 | 822.01 | 821.94 | 821.87 |
| GIRDER 6 | 822.68 | 822.55 | 822.43 | 822.32 | 822.22 | 822.12 | 822.02 | 821.94 | 821.86 | 821.79 | 821.72 |
| E. EOD | 822.65 | 822.52 | 822.40 | 822.29 | 822.18 | 822.08 | 821.99 | 821.91 | 821.83 | 821.76 | 821.69 |




## DECK HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD.

THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½"

TO DETERMINE 'T', ELEVATION OF TOP OF GIRDERS AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEVATION AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.7" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-42-21

DRAWN BY SEW | PLANS CK'D. ACT

SUPERSTRUCTURE DETAILS

SHEET 4

47

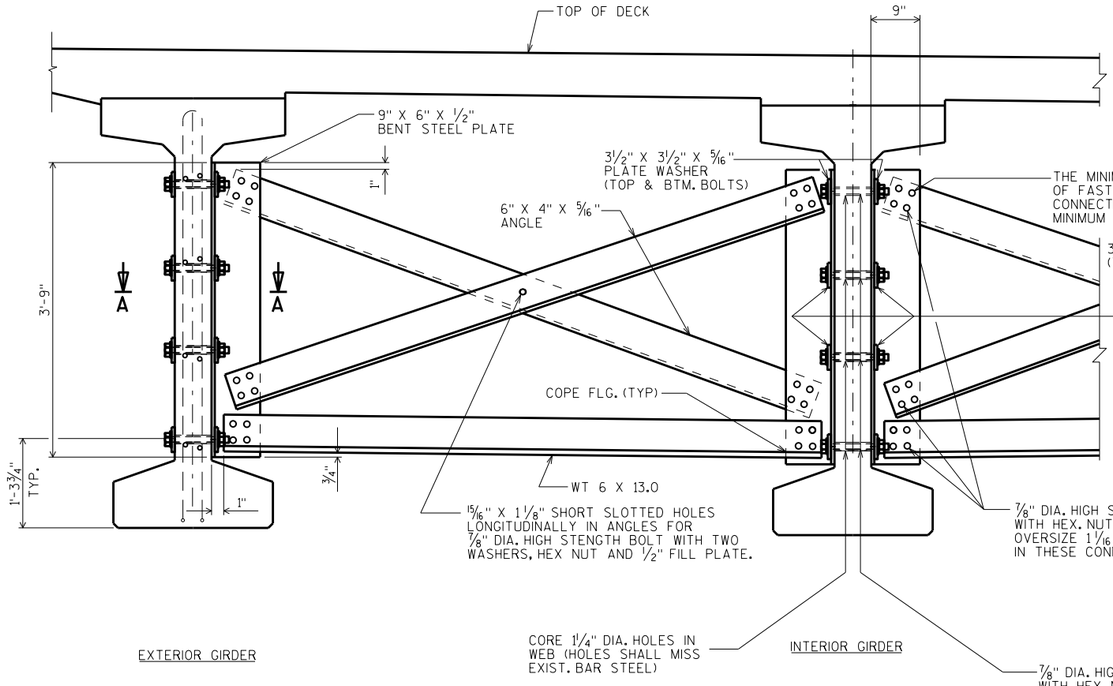
SCALE = 1.00

8

8

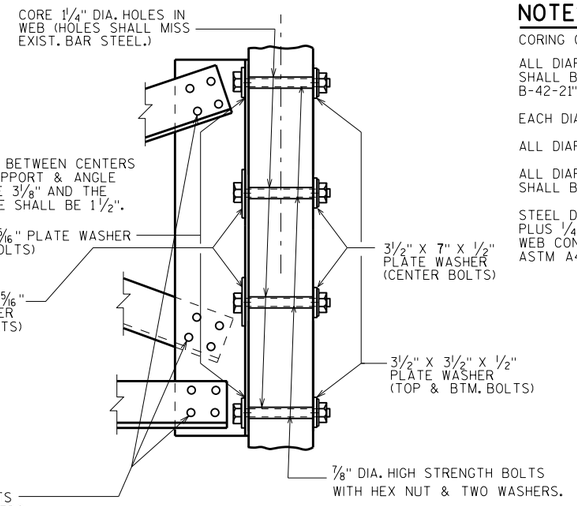
STATE PROJECT NUMBER

9190-28-71




## PART TRANSVERSE SECTION AT DIAPHRAGM

(70" PRESTRESSED GIRDER)




## SECTION AT INTERIOR GIRDERS

## NOTES

CORING GIRDERS INCLUDED IN BID ITEM "STEEL DIAPHRAGMS B-42-21".

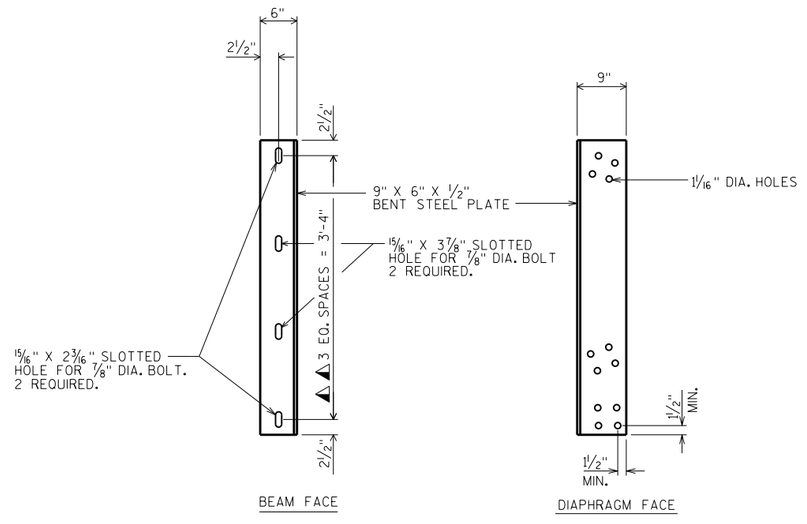
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-42-21", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.




## DIAPHRAGM SUPPORT

◭◭ BOLT HOLES SHALL BE SPACED TO MISS EXISTING PRESTRESSED STRANDS IN CONCRETE GIRDERS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-42-21

DRAWN BY SEW | PLANS CK'D. ACT

STEEL DIAPHRAGM

SHEET 5

48

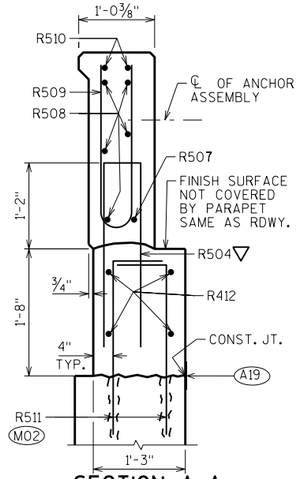
SCALE = 1.0

8

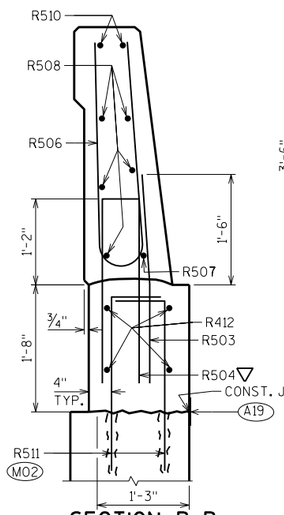
8

STATE PROJECT NUMBER

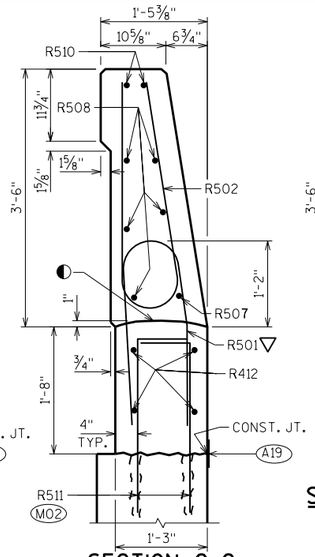
9190-28-71



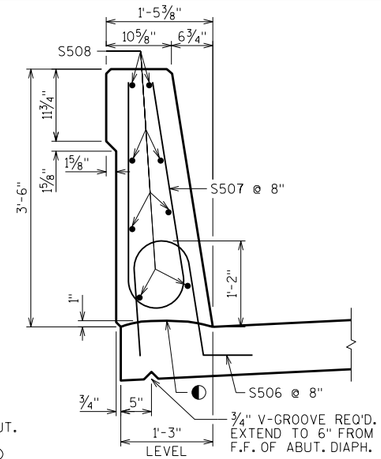

SECTION A-A



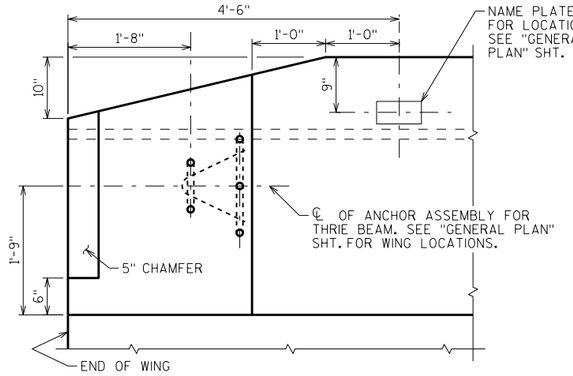

SECTION B-B




SECTION C-C




## SECTION THRU PARAPET ON DECK




## PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET

## BILL OF BARS

FOR ABUTMENT PARAPETS

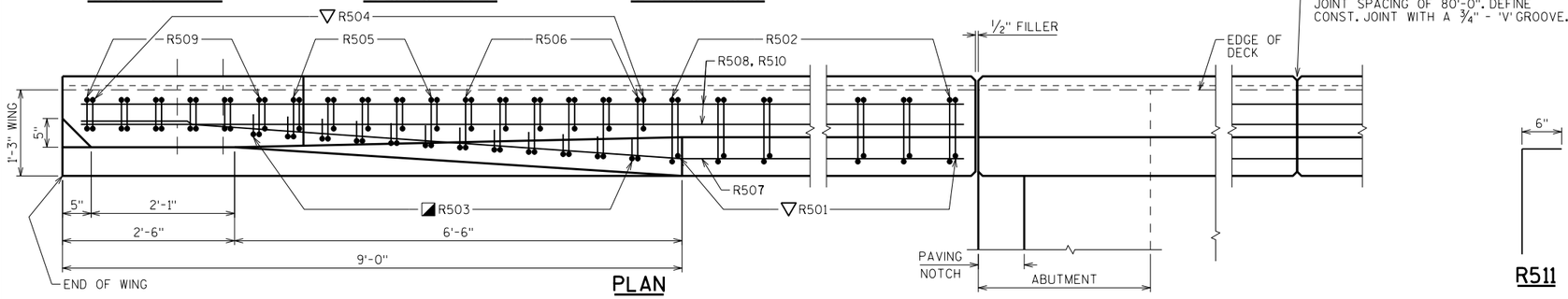
| BAR MARK | COAT | S. ABUT. | N. ABUT. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 22 | 22 | 5'-10 | X | | PARAPET VERT. |
| R502 | X | 22 | 22 | 6'-8" | X | | PARAPET VERT. |
| R503 | X | 24 | 24 | 3'-0" | X | | PARAPET VERT. |
| R504 | X | 34 | 34 | 5'-7" | X | | PARAPET VERT. |
| R505 | X | 10 | 10 | 6'-5" | X | | PARAPET VERT. |
| R506 | X | 12 | 12 | 6'-6" | X | | PARAPET VERT. |
| R507 | X | 2 | 2 | 15'-8" | X | | PARAPET HORIZ. |
| R508 | X | 10 | 10 | 15'-8" | | | PARAPET HORIZ. |
| R509 | X | 12 | 12 | 5'-5" | X | ⚠ | PARAPET VERT. |
| R510 | X | 4 | 4 | 15'-8" | X | | PARAPET HORIZ. |
| (M02) R511 | X | 88 | 88 | 2'-4" | X | | WING TOP - VERT. |
| R412 | X | 8 | 8 | 15'-8" | | | WING TOP - HORIZ |
| | | | | | | | |

⚠ 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

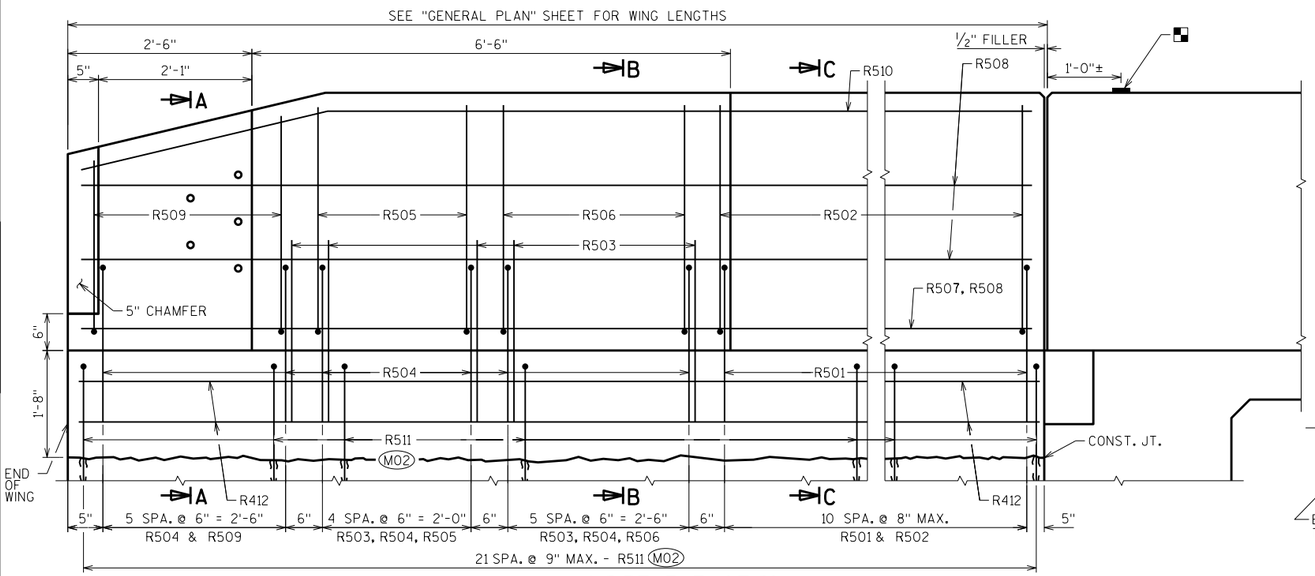
| BAR MARK | NO. REQ'D | LENGTH |
|---|---|---|
| R509 | 4 SERIES OF 6 | 4'-9" TO 6'-1" |

BUNDLE AND TAG EACH SERIES SEPARATELY.




## PLAN

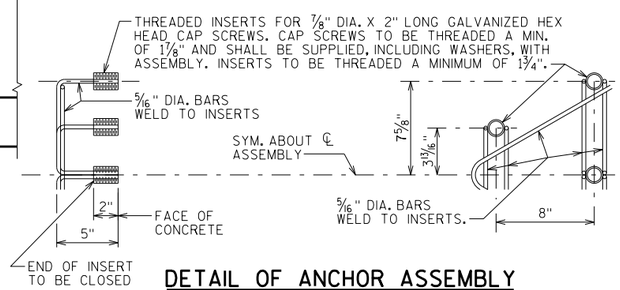
SW CORNER SHOWN, OTHERS SIMILAR




## INSIDE ELEVATION

SW CORNER SHOWN, OTHERS SIMILAR

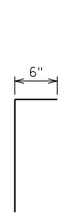
BENCH MARK CAP

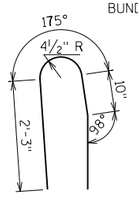



## DETAIL OF ANCHOR ASSEMBLY

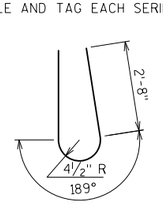
NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

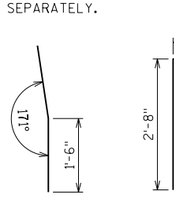


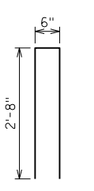

R501



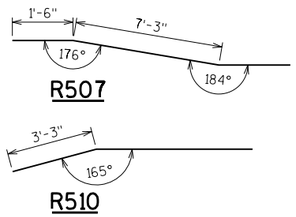

R502




R503



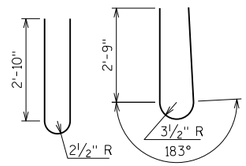

R504




R507



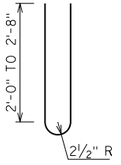

R510




R505




R506




R509

◐ CONST. JOINT - STRIKE OFF AS SHOWN

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(M02) ADHESIVE ANCHORS NO. 5 BAR. EMBED 6" IN CONCRETE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-42-21

DRAWN BY: SEW | PLANS CK'D.: ACT

SINGLE SLOPE PARAPET 42SS

SHEET 6

49

SCALE = 1.00

8

8

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov