WKE

PROJECT ID: 4825-05-71

WITH: NA

COUNTY: WASHINGTON

DECEMBER 2026

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 = 138



28

N

DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2027 | = | 3000 |
| A.A.D.T. | 2047 | = | 4000 |
| D.H.V. | | = | 1.0 |
| D.D. | | = | 0.5 |
| T. | | = | 6.0 |
| DESIGN SPEED | | = | 35 MPH |
| ESALS | | = | 386,900 |

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'ER')
- 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**

# T BARTON, LIGHTHOUSE LN

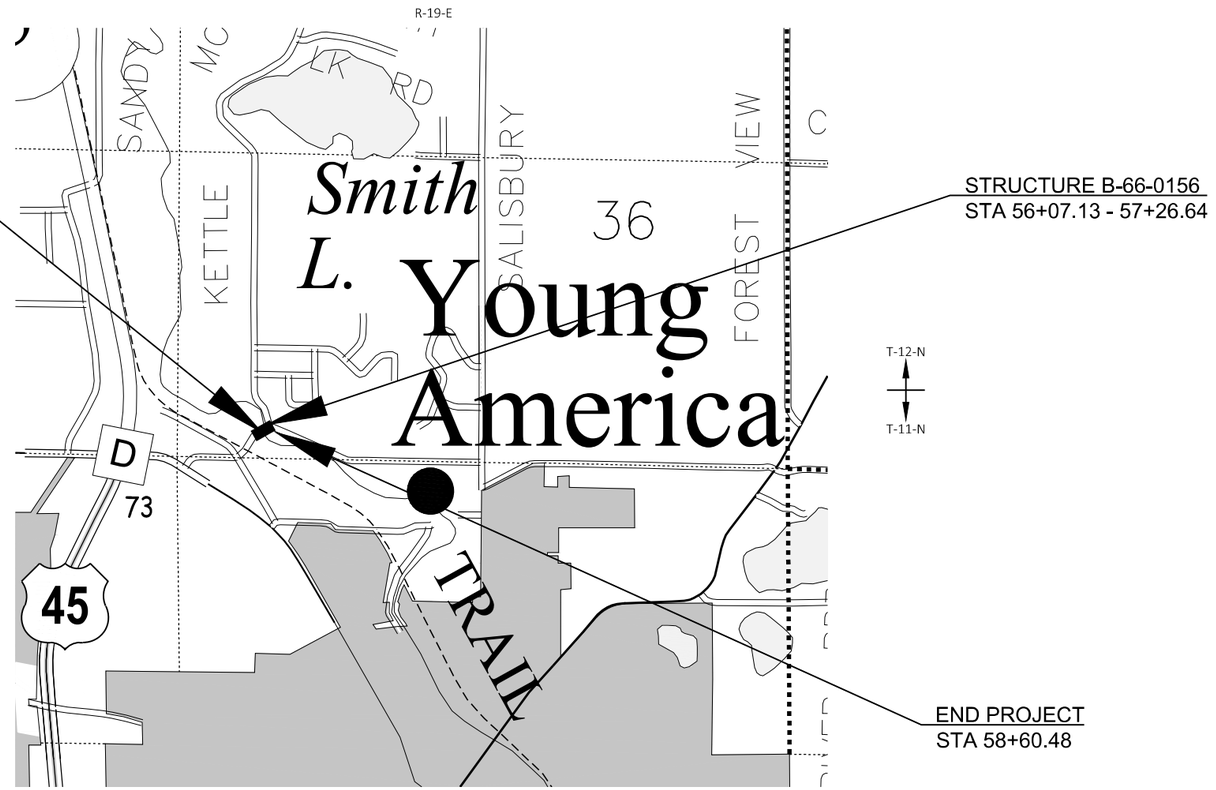
**OVER MILWAUKEE RIVER P66-0044**

## LOC STR

## WASHINGTON COUNTY

| STATE PROJECT NUMBER |
|---|
| 4825-05-71 |

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 4825-05-71 | | |
| | | |
| | | |
| | | |




BEGIN PROJECT
STA 55+45.18
N: 196332.7187
E: 358806.8473

STRUCTURE B-66-0156
STA 56+07.13 - 57+26.64

END PROJECT
STA 58+60.48

LAYOUT

SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.037 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WASHINGTON COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18

ACCEPTED FOR
*TOWN OF BARTON*

Date 08/24/2026 Kristine A Turner
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

WISCONSIN
SCOTT G. AHLES
E-29044
WAUKESHA, WI
PROFESSIONAL ENGINEER

Mead & Hunt

DATE: 8/24/2026 Scott G. Ahles
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | MEAD & HUNT, INC |
| Designer | MEAD & HUNT, INC |
| Project Manager | JOSEPH JELACIC |
| Regional Examiner | REGIONAL EXAMINER |
| Regional Supervisor | AMY TAETSCH |

APPROVED FOR THE DEPARTMENT

DATE: 8/31/26 Joseph C Jelacic
(Signature)

Digitally signed by Joseph C Jelacic
DN: CN=Joseph C Jelacic, E=Joseph.Jelacic@dot.wi.gov, OU=WisDOT, O=DOT-SPM, C=US
Date: 2026.08.31 13:39:54-05'00'

E

## UTILITIES CONTACTS

AT&T
COMMUNICATION LINE
STEVEN BURTCH
2220 WISCONSIN AVE
WAUKESHA, WI 53186
PHONE: 262-506-2849
EMAIL: SB7561@ATT.COM

WE ENERGIES
ELECTRICITY
JOE FELLENZ
W140 N9100 LILLY RD
MENMONEE FALLS, WI 53051
PHONE: 262-502-6831
EMAIL: JOSEPH.FELLENZ@WE-ENERGIES.COM

SPECTRUM
COMMUNICATION LINE
NICK FRASE
1515 W WASHINGTON ST
WEST BEND, WI 53095
PHONE: 920-304-6797
EMAIL: NICK.FRASE@CHARTER.COM

WE ENERGIES
GAS
LINDSAY BOGAR
231 W. MICHIGAN AVE
MILWAUKEE, WI 53208-2918
PHONE: 414-944-5616
EMAIL: LINDSAY.BOGAR@WE-ENERGIES.COM

## ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL DETAILS
PLAN DETAILS
EROSION CONTROL DETAILS
PAVEMENT MARKING & PERMANENT SIGNING
TRAFFIC CONTROL DETAILS
DETOUR PLAN
ALIGNMENT DETAILS

| HWY 5-INCHES | | |
|---|---|---|
| LAYER | THICKNESS | TYPE |
| UPPER | 2-INCHES | ASPHALTIC SURFACE |
| LOWER | 3-INCHES | ASPHALTIC SURFACE |

## RUNOFF COEFFICIENT TABLE

| | HYDROLOGIC SOIL GROUP | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | |
| | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | |
| LAND USE: | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER |
| ROW CROPS: | .08<br>.22 | .16<br>.30 | .22<br>.38 | .12<br>.26 | .20<br>.34 | .27<br>.44 | .15<br>.30 | .24<br>.37 | .33<br>.50 | .19<br>.34 | .28<br>.41 | .38<br>.56 |
| MEDIAN STRIPTURF: | .19<br>.24 | .20<br>.26 | .24<br>.30 | .19<br>.25 | .22<br>.28 | .26<br>.33 | .20<br>.26 | .23<br>.30 | .30<br>.37 | .20<br>.27 | .25<br>.32 | .30<br>.40 |
| SIDE SLOPETURF: | | | .25<br>.32 | | | .27<br>.34 | | | .28<br>.36 | | | .30<br>.38 |
| PAVEMENT: | | | | | | | | | | | | |
| ASPHALT: | .70 - .95 | | | | | | | | | | | |
| CONCRETE: | .80 - .95 | | | | | | | | | | | |
| BRICK: | .70 - .80 | | | | | | | | | | | |
| DRIVES, WALKS: | .75 - .85 | | | | | | | | | | | |
| ROOFS: | .75 - .95 | | | | | | | | | | | |
| GRAVEL ROADS, SHOULDERS: | .40 - .60 | | | | | | | | | | | |

TOTAL PROJECT AREA = 1.670 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.885 ACRES

## WISDOT PROJECT MANAGER

JOSEPH JELACIC
WISDOT LOCAL PROGRAM - SE REGION
141 NW BARSTOW ST
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## WISCONSIN DNR LIAISON

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

## 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.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 115 LBS/SY/IN.

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

TOPSOIL SHALL BE PLACED 1-INCH BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

CURVE DATA IS BASED ON THE RADIUS DEFINITION.

THE EXACT LOCATION AND WIDTH OF DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. DRIVEWAYS SHALL BE REPLACED IN KIND. COMMERCIAL DRIVEWAYS SHALL BE A MINIMUM OF 30 FEET WIDE UNLESS SHOWN OTHERWISE IN THE PLANS. ALL RESIDENTIAL DRIVEWAYS SHALL BE A MAXIMUM OF 20 FEET WIDE.

PIPE AND INLET ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS

CURB AND GUTTER PLAN GRADES ARE AT THE FLANGE LINE UNLESS OTHERWISE NOTED.

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

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OR PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

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

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

2

## STANDARD ABBREVIATIONS

| | |
|---|---|
| ABUT | ABUTMENT |
| AC | ACRE |
| AGG | AGGREGATE |
| AH | AHEAD |
| ∠ | ANGLE |
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| AE | APRON ENDWALL |
| ASPH | ASPHALTIC |
| BK | BACK |
| BC | BACK OF CURB |
| BAD | BASE AGGREGATE DENSE |
| BL OR B/L | BASE LINE |
| BM | BENCH MARK |
| CB | CATCH BASIN |
| CL OR C/L | CENTER LINE |
| Δ | CENTRAL ANGLE OR DELTA |
| CE | COMMERCIAL ENTRANCE |
| CONC | CONCRETE |
| CSW | CONCRETE SIDEWALK |
| CONST | CONSTRUCTION |
| CP | CONTROL POINT |
| CO | COUNTY |
| CTH | COUNTY TRUCK HIGHWAY |
| CY | CUBIC YARD |
| CP | CULVERT PIPE |
| CPCA | CULVERT PIPE CORRUGATED ALUMINUM |
| CPCPE | CULVERT PIPE CORRUGATED POLYETHYLENE |
| CPCPP | CULVERT PIPE CORRUGATED POLYPROPYLENE |
| CPCS | CULVERT PIPE CORRUGATED STEEL |
| CPCSAC | CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED |
| CPCSPC | CULVERT PIPE CORRUGATED STEEL POLYMER COATED |
| CPRC | CULVERT PIPE REINFORCED CONCRETE |
| CPRCHE | CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL |
| CPS | CULVERT PIPE SALVAGED |
| CPT | CULVERT PIPE TEMPORARY |
| C & G | CURB AND GUTTER |
| D | DEGREE OF CURVE |
| DHV | DESIGN HOUR VOLUME |
| DIA | DIAMETER |
| DD | DIRECTIONAL DISTRIBUTION |
| DE | DRAINAGE EASEMENT |
| DWY | DRIVEWAY |
| EA | EACH |
| EB | EASTBOUND |
| EL OR ELEV | ELEVATION |
| EMB | EMBANKMENT |
| EW | ENDWALL |
| EAT | ENERGY ABSORBING TERMINAL |
| ESALS | EQUIVALENT SINGLE AXLE LOADS |
| EXC | EXCAVATION |
| EBS | EXCAVATION BELOW SUBGRADE |
| EXIST | EXISTING |
| FERT | FERTILIZER |
| FE | FIELD ENTRANCE |
| FL OR F/L | FLOW LINE |
| FT | FOOT |
| FTMS | FREEWAY TRAFFIC MANAGEMENT SYSTEM |
| HES | HIGH EARLY STRENGTH |
| HE | HIGHWAY EASEMENT |
| CWT | HUNDRED WEIGHT |
| IN DIA | INCH DIAMETER |
| INL | INLET |
| ID | INSIDE DIAMETER |
| INTERS | INTERSECTION |
| IH | INTERSTATE HIGHWAY |
| INV | INVERT |
| JT | JOINT |
| LT | LEFT |
| LHF | LEFT HAND FORWARD |
| L | LENGTH OF CURVE |
| LF | LINEAR FOOT |
| LC | LONG CHORD OF CURVE |
| LS | LUMP SUM |
| MGAL | ONE THOUSAND GALLONS |
| MH | MANHOLE |
| ML OR M/L | MATCH LINE |
| NOM | NOMINAL |
| NC | NORMAL CROWN |
| NB | NORTHBOUND |
| NO | NUMBER |
| OD | OUTSIDE DIAMETER |
| PACS | PIPE ARCH CORRUGATED STEEL |
| PAVT | PAVEMENT |
| PLE | PERMANENT LIMITED EASEMENT |
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| PT | POINT OF TANGENCY |
| PCC | PORTLAND CEMENT CONCRETE |
| LB | POUND |
| PSI | POUNDS PER SQUARE INCH |
| PE | PRIVATE ENTRANCE |
| PROJ | PROJECT |
| PL | PROPERTY LINE |
| PRW | PROPOSED RIGHT OF WAY |
| R | RADIUS |
| RL OR R/L | REFERENCE LINE |
| REQD | REQUIRED |
| RT | RIGHT |
| RHF | RIGHT HAND FORWARD |
| R/W | RIGHT OF WAY |
| RD | ROAD |
| RDWY | ROADWAY |
| SHLDR | SHOULDER |
| SW | SIDEWALK |
| SB | SOUTHBOUND |
| SPECS | SPECIFICATIONS |
| SF | SQUARE FEET |
| SY | SQUARE YARD |
| SDD | STANDARD DETAIL DRAWINGS |
| STH | STATE TRUNK HIGHWAY |
| STA | STATION |
| SSPC | STORM SEWER PIPE COMPOSITE |
| SSCPE | STORM SEWER PIPE CORRUGATED POLYETHYLENE |
| SSCPP | STORM SEWER PIPE CORRUGATED POLYPROPYLENE |
| SSPNRC | STORM SEWER PIPE NON-REINFORCED CONCRETE |
| SSPRC | STORM SEWER PIPE REINFORCED CONCRETE |
| SSPRC | STORM SEWER PIPE REINFORCED CONCRETE |
| SSPRCHE | STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL |
| SE | SUPERELEVATION |
| SL OR S/L | SURVEY LINE |
| TEMP | TEMPORARY |
| TI | TEMPORARY INTEREST |
| TLE | TEMPORARY LIMITED EASEMENT |
| TC | TOP OF CURB |
| TL OR T/L | TRANSIT LINE |
| T | TRUCKS (PERCENT OF) |
| TYP | TYPICAL |
| USH | UNITED STATES HIGHWAY |
| VAR | VARIABLE |
| VC | VERTICAL CURVE |
| VPC | VERTICAL POINT OF CURVATURE |
| VPI | VERTICAL POINT OF INTERSECTION |
| VPT | VERTICAL POINT OF TANGENCY |
| W | WEST |
| WB | WESTBOUND |

2

N

KETTLE MORAINE DR

EP: 112+72.89

END CONSTRUCTION
STA 112+17.29

PI: 110+53.05

BP: 110+00.00

PT: 58+99.56

PC: 57+32.84

PT: 56+24.49

BEGIN PROJECT
STA 55+45.18

PC: 54+19.15

STA 62+00.00
Y=196299.200
X=359409.905

END CONSTRUCTION
STA 59+42.54

END PROJECT
STA 58+60.48

STA 53+00.00
Y=196135.111
X=358664.871

STRUCTURE B-66-0156
STA 56+07.13 - STA 57+26.64

MILWAUKEE RIVER

NEWARK DR

BEGIN CONSTRUCTION
STA 54+19.15

LIGHTHOUSE LN

EISENBAHN STATE TRAIL

SLEEPY HOLLOW RD

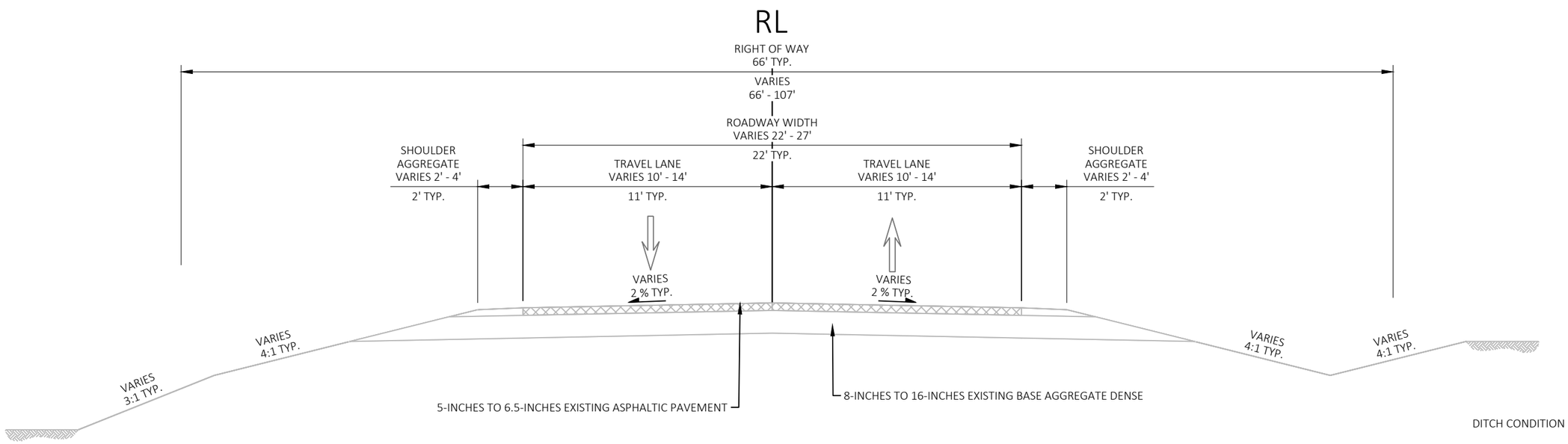
N MAIN ST

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | PROJECT OVERVIEW | SHEET 4 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\020201-PO.DWG
LAYOUT NAME - 01

PLOT DATE : 8/19/2026 11:20 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:200 FT

2




## EXISTING TYPICAL SECTION

LIGHTHOUSE LN STA 54+19.15 - 56+14.86
LIGHTHOUSE LN STA 57+06.25 - 59+42.54
KETTLE MORAINE DR STA 110+11.98 - 112+72.89

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | TYPICAL SECTIONS | SHEET 5 | E |
|---|---|---|---|---|---|

2

2

RL

RIGHT OF WAY
66' TYP.
VARIES
66' - 107'

CLEARZONE
19' TYPICAL

SHOULDER
12'

TRAVEL LANE
12'

TRAVEL LANE
12'

SHOULDER
12'

CLEARZONE
19' TYPICAL

AGGREGATE
4'

PAVED
8'

SEE NOTE 1

POINT REFERRED
TO ON PROFILE

PAVED
8'

AGGREGATE
4'

SEE NOTE 1

5- INCHES BASE AGGREGATE DENSE 3/4-INCH

TOPSOIL, SEED, FERTILIZER &
EROSION MAT CLASS I TYPE B URBAN
TYP.

4.0:1

2.0%

2.0%

2.0%

2.0%

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

2.5:1

POINT REFERRED TO
ON CROSS SECTIONS

UPPER LAYER: 2-INCH ASPHALTIC SURFACE
LOWER LAYER: 3-INCH ASPHALTIC SURFACE

10-INCHES BASE AGGREGATE DENSE 1 1/4-INCH

CUT CONDITION

## FINISHED TYPICAL SECTION

LIGHTHOUSE LN STA 55+45.18 - 56+07.13
LIGHTHOUSE LN STA 57+26.34 - 57+86.73

FILL CONDITION

SHOULDER
VARIES
12' TYP.
4'-16'

AGGREGATE
3'-6'

PAVED
0-10'

SEE NOTE 1

SHOULDER
VARIES
12' TYP.
4'-16'

PAVED
0-10'

AGGREGATE
3'-6'

SEE NOTE 1

5- INCHES BASE AGGREGATE DENSE
3/4-INCH (TYP.)

TOPSOIL, SEED, FERTILIZER &
EROSION MAT CLASS I TYPE B URBAN
TYP.

4.0:1

2.0%

2.0%

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

2.5:1

EXISTING 5-INCHES ASPHALTIC SURFACE

UPPER LAYER: 2-INCH ASPHALTIC SURFACE
LOWER LAYER: 3-INCH ASPHALTIC SURFACE (TYP.)

10-INCHES BASE AGGREGATE DENSE 1 1/4-INCH (TYP.)

EXISTING 8-INCHES BASE AGGREGATE DENSE

## FINISHED TYPICAL SECTION

LIGHTHOUSE LN STA 54+19.15 - 55+45.18
LIGHTHOUSE LN STA 58+60.48 - 59+42.54 RT
KETTLE MORAINE DR STA 110+53.10 - 112+17.29 LT

RL

RIGHT OF WAY
66' TYP.
VARIES
66' - 107'

ROADWAY WIDTH
VARIES 22' - 27'
22' TYP.

TRAVEL LANE
VARIES 12' - 13'
12' TYP.

TRAVEL LANE
12' TYP.

NOTES

1 - BEAMGUARD LIMITS
- LIGHTHOUSE LANE
  STA 54+98.89 TO 55+97.44 RT
  STA 57+34.56 TO 57+53.23 LT
  STA 57+34.97 TO 58+38.11 RT
- KETTLE MORAINE
  STA 110+20.37 TO 111+11.80 LT

CORRECTIVE CROWN MILLING
VARIES 0' - 5'

2' TYP.
EXISTING CROWN POINT

SEE NOTE 1

POINT REFEREED
TO ON PROFILE

2- INCHES REMOVING ASPHALTIC SURFACE MILLING
2-INCHES ASPHALTIC SURFACE

SEE NOTE 1

2-INCHES BASE AGGREGATE DENSE 3/4-INCH

2.0%

2.0%

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

4.0:1

2.5:1

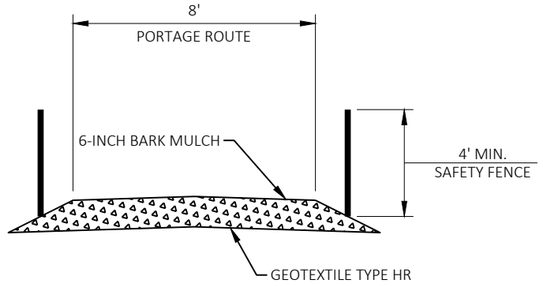
EXISTING 8-INCHES BASE AGGREGATE DENSE

FILL CONDITION

## FINISHED TYPICAL SECTION

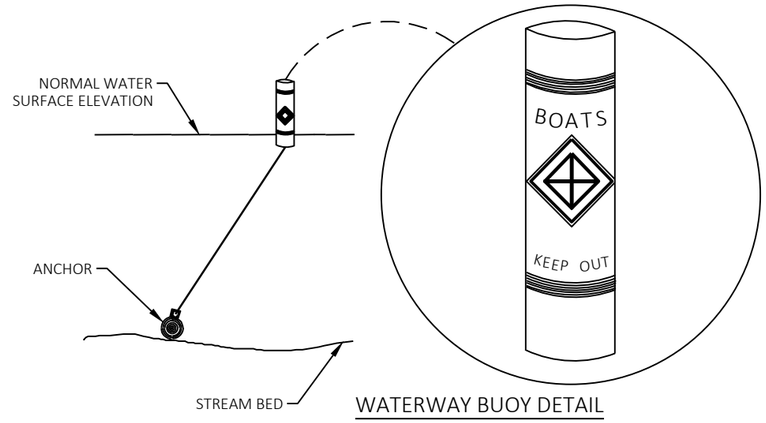
LIGHTHOUSE LN STA 57+86.73 - 58+60.48
KETTLE MORAINE DR STA 110+11.98 - 110+53.10

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | TYPICAL SECTIONS | SHEET 6 | E |
|---|---|---|---|---|---|

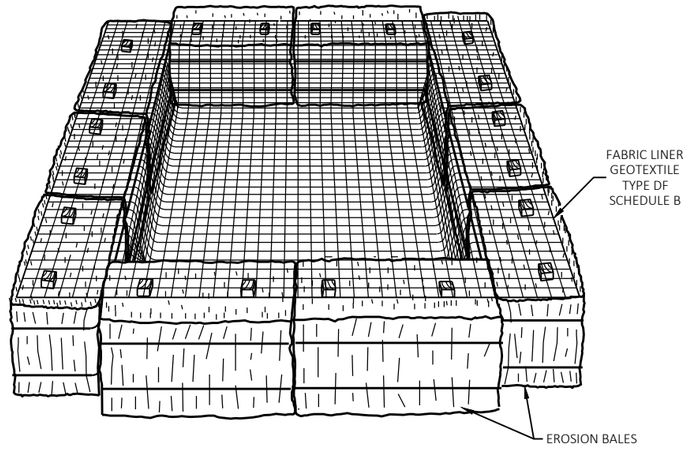



NOTES
1. BARK MULCH REQUIRED ON ALL EXISTING SURFACES OTHER THAN LOCATIONS WITH TURF GRASS, TIMBER MATS OR PAVEMENT
2. SAFETY FENCE REQUIRED ALONG ENTIRETY OF PORTAGE PATH UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.

## TEMPORARY PORTAGE PATH




## WATERWAY BUOY DETAIL




## TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

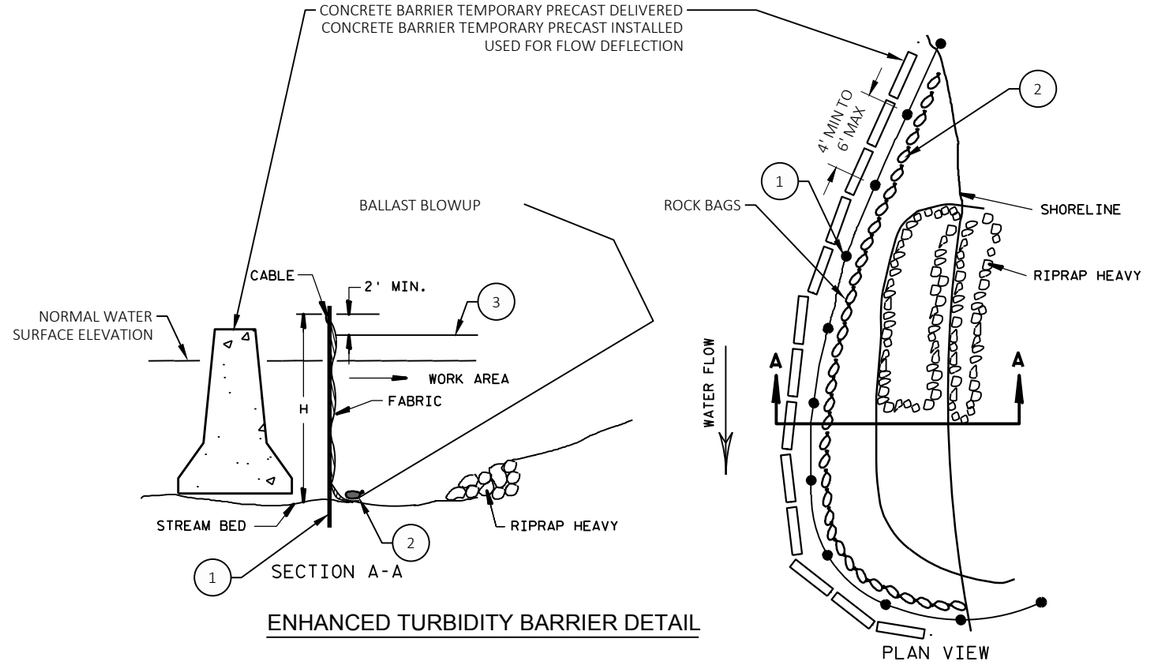
STORAGE VOLUME (CF) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT

SOLUTION:
SV (CF) = 16 X 50
SV = 800 CF

$$\frac{800\ CF}{1.5\ FT} = 533\ SF$$

USE A 20 FT X 27 FT BASIN



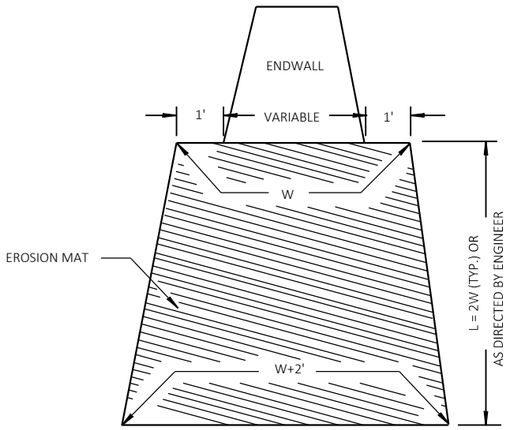

## ENHANCED TURBIDITY BARRIER DETAIL

NOTES:

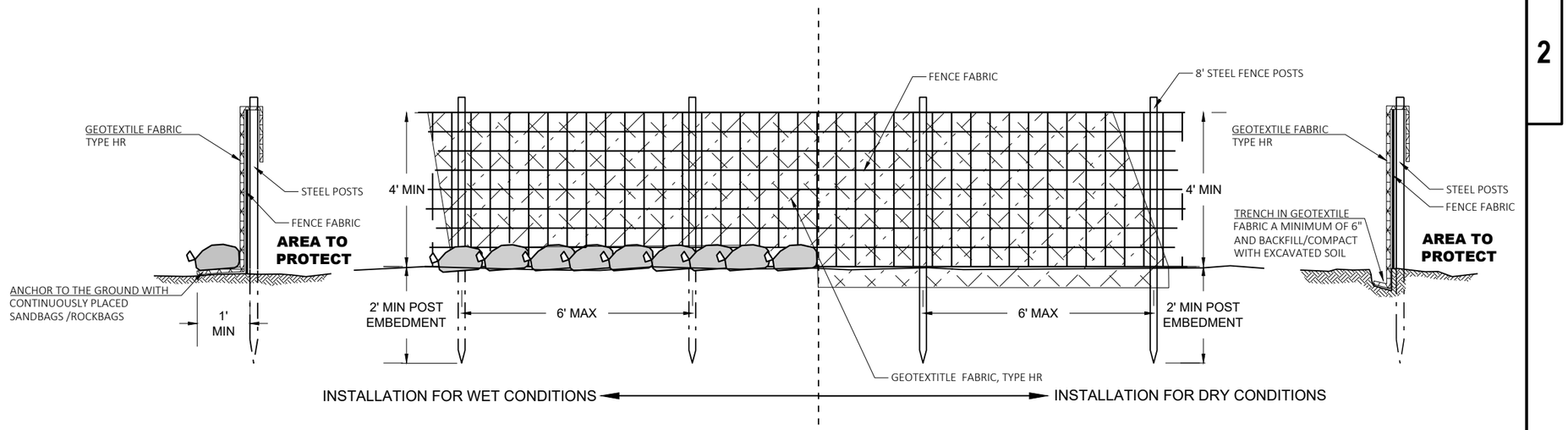
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SEPCIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. SEE SDD 08E11-02 TURBIDITY BARRIER FOR ADDITIONAL INFORMATION.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEER'S DISCRETION, WHEN PERMANENT ERSOIN CONTROL MEASURES HAVE BEEN ESTABLISHED.

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HGIH WATER ELEVATIONS.
2. INSTALL A CONTINUOUS LINE OF ROCK BAGS TO ANCHOR THE BARRIER TO THE STREAM BED.
3. ESTIMATE HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2 FEET GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

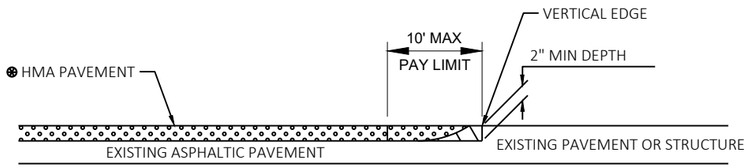



EROSION MAT TREATMENT AT CULVERTS




SILT FENCE HEAVY DUTY

GENERAL NOTES:
1. ATTACH FENCE FABRIC TO POSTS A MINIMUM OF 3 TIES PER POST (TOP, MIDDLE, BOTTOM)
2. ATTACH GEOTEXTILE FABRIC TO FENCE FABRIC AND/OR POSTS AT A MAXIMUM SPACING OF EVERY 2 FEET ALONG THE TOP AND ADDITIONALLY AS NECESSARY TO PREVENT DISPLACEMENT BY WIND AND WAVE ACTIONS.

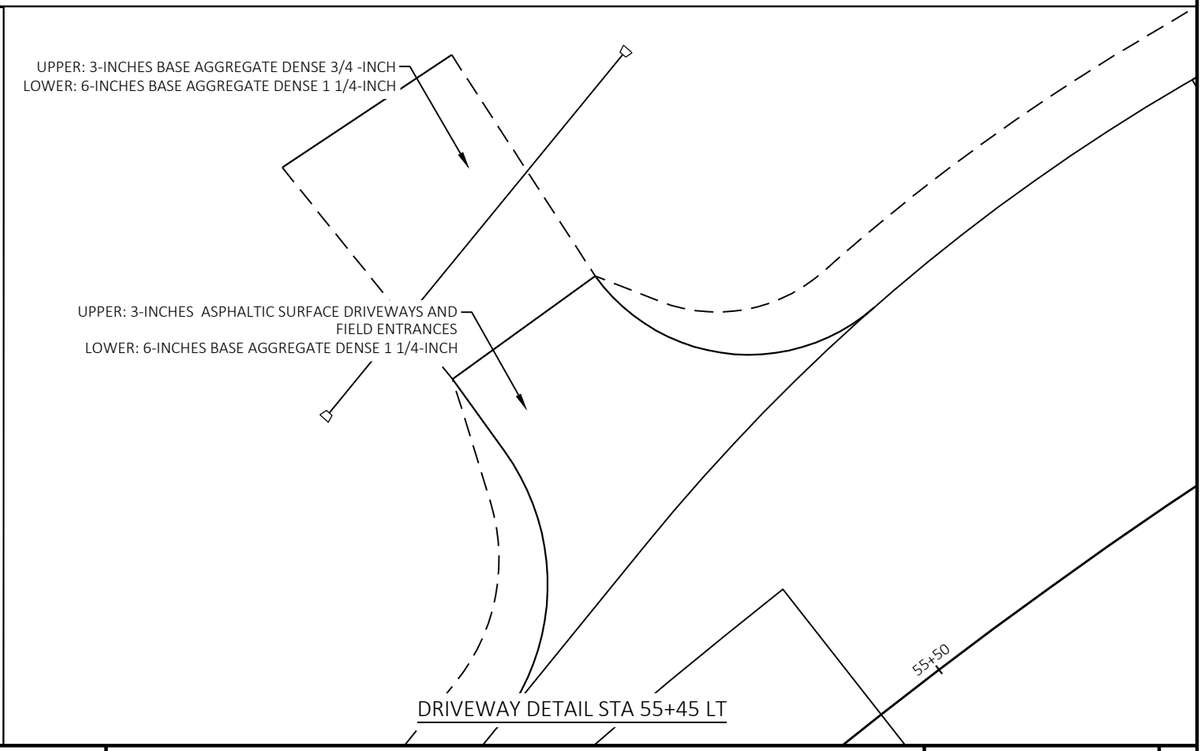



SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

REMOVING ASPHALTIC SURFACE, MILLING

REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

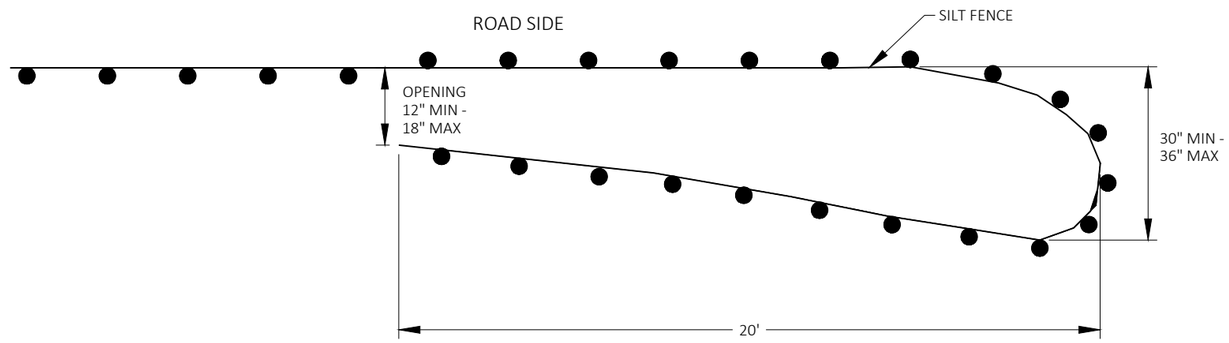
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)




DRIVEWAY DETAIL STA 55+45 LT

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION DETAILS | SHEET 8 | E |
|---|---|---|---|---|---|

2




PLAN VIEW

## TEMPORARY SMALL ANIMAL TURN-AROUND

GENERAL NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

SEE SDD 8E9 FOR ADDITIONAL INSTALLATION REQUIREMENTS.

2

LEGEND

### (SIGN NUMBER) - ACTION
R - REMOVING SMALL SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS
M - MOVING SIGNS AND REMOVING SMALL SIGN SUPPORTS
SEE PERMANENT MARKING & SIGNING FOR PROPOSED LOCATIONS

CLEARING & GRUBBING

REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS

REMOVING SMALL SIGN SUPPORTS

REMOVING SMALL PIPE CULVERTS

SLOPE INTERCEPT (TYP.)

REMAIN IN PLACE

REMAIN IN PLACE

REMAIN IN PLACE

REMAIN IN PLACE

BEGIN CONSTRUCTION
STA 54+19.15

BEGIN PROJECT
STA 55+45.18

END CONSTRUCTION
STA 112+17.29

END PROJECT
STA 58+60.48

END CONSTRUCTION
STA 59+33.61

EXISTING STRUCTURE P66-0044
2 SPAN I GIRDER CONCRETE BRIDGE
TO BE REMOVED

TRAIL CROSSING

KETTLE MORAINE DR

LIGHTHOUSE LN

LIGHTHOUSE LANE

KETTLE MORAINE SCENIC DRIVE

NEWARK DR

MILWAUKEE RIVER

PROPOSED R/W

R/W

TLE

PLE

NO PARKING FROM HERE TO BRIDGE

TRAFFIC FROM LEFT DOES NOT STOP

NO FISHING OFF BRIDGE

NARROW BRIDGE

WEIGHT LIMIT 15 TONS

SPEED LIMIT 35

STOP

35M 30M 52M 52M 60M 55M 140R 70R 80R 100R 101R 90R 110R 25M 40M 45M 10R 50R

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | REMOVAL DETAILS | SHEET 10 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\021101-RM.DWG
LAYOUT NAME - 021101-RM

PLOT DATE : 8/19/2026 11:21 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

## LEGEND

CGTBT — CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE TBT

CSD — CONCRETE SURFACE DRAINS (PERPENDICULAR)

END CONSTRUCTION
STA 112+17.29

N

WETLAND #1B
WETLAND TYPE: M(D)
NO IMPACT

WETLAND #1A
WETLAND TYPE: SS
PERMANENT IMPACT

CONCRETE PAVEMENT 7-INCH
STA 55+85 TO 55+99 LT OR
PER CRASH CUSHION MANUFACTURER RECOMMENDATION

SLOPE INTERCEPT (TYP.)

SLOPE INTERCEPT (TYP.)

SEE BEAM GUARD DETAILS

SEE BEAM GUARD DETAILS

SEE BEAM GUARD DETAILS

KETTLE MORAINE DR

LIGHTHOUSE LANE

NEWARK DR

MILWAUKEE RIVER

R/W

TLE

PLE

112+00

111+00

56+00

57+00

58+00

59+00

60+00

54+00

55+00

STRUCTURE B-66-0156
3-SPAN CONC SLAB BRIDGE
STA 56+07.13 TO STA 57+26.64 REQUIRED

ASPHALTIC SURFACE (2-INCH)

BEGIN CONSTRUCTION
STA 54+19.15

WETLAND #2
WETLAND TYPE: M(D)
TEMPORARY IMPACT

END CONSTRUCTION
STA 59+42.54

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | PLAN DETAILS | SHEET 11 | E |
|---|---|---|---|---|---|

| NORTHWEST APPROACH | | | | | | |
|---|---|---|---|---|---|---|
| POINT NUMBER | STATION | OFFSET | ELEVATION | NORTHING | EASTING | DESCRIPTION |
| 400 | 54+88.80 | 11.43' LT | 925.93 | 196301.97 | 358757.21 | MATCH EXISTING |
| 401 | 55+14.71 | 13.90' LT | 925.66 | 196322.92 | 358774.25 | DETAIL SHEETS |
| 402 | 55+40.11 | 18.44' LT | 925.30 | 196343.88 | 358791.28 | SHLDR PC R131' |
| 403 | 55+61.99 | 21.93' LT | 924.90 | 196360.68 | 358807.66 | SHLDR MID R131' |
| 404 | 55+79.57 | 107.21' RT | 0.00 | 196261.89 | 358892.16 | SHLDR CENTER R131' |
| 405 | 55+83.97 | 22.74' LT | 924.74 | 196374.26 | 358826.80 | SHLDR PT R131' |
| 406 | 55+98.64 | 22.72' LT | 924.65 | 196382.14 | 358840.35 | SHLDR END |
| 451 | 55+25.59 | 15.58' LT | 925.52 | 196331.84 | 358781.49 | DWY PC R15' |
| 452 | 55+33.17 | 19.73' LT | 924.96 | 196340.19 | 358784.81 | DWY MID R15' |
| 453 | 55+37.08 | 29.10' LT | 923.98 | 196350.07 | 358782.02 | DWY PT R15' |
| 454 | 55+23.36 | 30.39' LT | 922.40 | 196341.30 | 358769.85 | DWY CENTER R15' |
| 455 | 55+37.43 | 34.98' LT | 923.51 | 196354.85 | 358778.57 | DWY END HMA |
| 456 | 55+47.93 | 34.41' LT | 923.51 | 196361.64 | 358787.99 | DWY END HMA/ PC R15' |
| 457 | 55+59.26 | 34.21' LT | 922.54 | 196368.96 | 358798.12 | DWY CENTER R15' |
| 458 | 55+51.45 | 25.05' LT | 924.43 | 196356.54 | 358796.72 | DWY MID R15' |
| 459 | 55+60.40 | 21.77' LT | 924.92 | 196359.56 | 358806.37 | DWY PT R15' |

| NORTHEAST APPROACH | | | | | | |
|---|---|---|---|---|---|---|
| POINT NUMBER | STATION | OFFSET | ELEVATION | NORTHING | EASTING | DESCRIPTION |
| 100 | 57+36.29 | 20.04' LT | 923.84 | 196438.65 | 358968.15 | BEGIN CG |
| 101 | 57+53.25 | 21.19' LT | 923.80 | 196446.46 | 358985.20 | END CG |
| 102 | 57+58.04 | 22.44' LT | 923.77 | 196449.29 | 358989.88 | SHLDR PC R24' |
| 103 | 57+65.63 | 28.19' LT | 923.71 | 196457.19 | 358996.50 | SHLDR MID R24' |
| 104 | 57+51.29 | 44.63' LT | 922.61 | 196467.90 | 358975.44 | SHLDR CENTER R24' |
| 105 | 57+70.76 | 42.55' LT | 923.76 | 196472.60 | 358998.82 | SHLDR PT R24' |
| 106 | 57+70.89 | 24.42' LT | 923.79 | 196455.01 | 359003.20 | MILL & OVERLAY LIMIT |
| 107 | 57+86.73 | 12.00' LT | 923.95 | 196446.20 | 359022.58 | MILL & OVERLAY LIMIT |
| 108 | 110+48.91 | 16.67' LT | 924.03 | 196478.57 | 358997.73 | MILL & OVERLAY LIMIT |
| 109 | 110+52.90 | 11.31' LT | 924.31 | 196483.62 | 359002.11 | MILL & OVERLAY LIMIT |
| 110 | 57+93.56 | 54.07' LT | 924.68 | 196488.96 | 359024.66 | MILL & OVERLAY LIMIT |
| 111 | 110+61.40 | 16.67' LT | 924.46 | 196490.78 | 358995.06 | SHLDR PI |
| 112 | 111+11.37 | 18.51' LT | 926.41 | 196539.20 | 358982.61 | SHLDR PI |
| 113 | 111+65.41 | 11.28' LT | 928.64 | 196593.54 | 358978.16 | MATCH EXISTING |

| SOUTHWEST APPROACH | | | | | | |
|---|---|---|---|---|---|---|
| POINT NUMBER | STATION | OFFSET | ELEVATION | NORTHING | EASTING | DESCRIPTION |
| 300 | 54+19.15 | 12.40' RT | 926.56 | 196231.92 | 358735.42 | MATCH EXISTING |
| 301 | 61+94.06 | 482.30' RT | 0.00 | 195860.02 | 359210.50 | SHLDR CENTER R600' |
| 303 | 54+99.28 | 22.05' RT | 925.32 | 196286.67 | 358788.72 | SHLDR PC R600' |
| 305 | 55+27.73 | 22.15' RT | 925.00 | 196304.92 | 358808.01 | SHLDR MID R600' |
| 306 | 55+56.13 | 21.16' RT | 924.89 | 196322.30 | 358828.10 | SHLDR PT R600'/SHLDR PT R210' |
| 307 | 55+95.40 | 230.06' RT | 0.00 | 196160.52 | 358961.93 | SHLDR CENTER R210' |
| 308 | 55+75.79 | 20.36' RT | 924.80 | 196333.42 | 358842.82 | SHLDR MID R210' |
| 309 | 55+95.42 | 20.10' RT | 924.70 | 196343.21 | 358858.45 | SHLDR PT R210' |

| SOUTHEAST APPROACH | | | | | | |
|---|---|---|---|---|---|---|
| POINT NUMBER | STATION | OFFSET | ELEVATION | NORTHING | EASTING | DESCRIPTION |
| 200 | 57+37.07 | 19.96' RT | 923.78 | 196402.26 | 358984.76 | CG PC R145' |
| 201 | 57+57.90 | 19.78' RT | 923.65 | 196408.92 | 359002.27 | CG MID R145' |
| 202 | 57+55.54 | 164.76' RT | 0.00 | 196270.37 | 359044.95 | CG CENTER R145' |
| 203 | 57+78.74 | 20.06' RT | 923.51 | 196413.27 | 359020.50 | CG PT R145' |
| 204 | 57+87.08 | 18.45' RT | 0.00 | 196416.17 | 359027.63 | CG MID R170' |
| 205 | 57+32.80 | 179.51' RT | 0.00 | 196255.55 | 359047.49 | CG CENTER R170' |
| 206 | 57+95.30 | 20.53' RT | 923.22 | 196415.09 | 359035.25 | CG END R170' |
| 207 | 58+16.67 | 21.34' RT | 923.39 | 196415.41 | 359054.36 | SHLDR MID R170' |
| 208 | 58+38.13 | 22.35' RT | 923.58 | 196413.45 | 359073.38 | SHLDR PT R170' |
| 209 | 58+81.79 | 19.95' RT | 924.22 | 196407.53 | 359111.91 | SHLDR PC R200' |
| 210 | 59+33.91 | 214.24' RT | 0.00 | 196210.07 | 359080.12 | SHLDR CENTER R200' |
| 211 | 58+99.68 | 17.19' RT | 924.43 | 196404.25 | 359128.03 | SHLDR MID R200' |
| 212 | 59+15.99 | 15.04' RT | 924.58 | 196399.65 | 359143.82 | SHLDR PT R200' |
| 213 | 59+38.66 | 12.98' RT | 924.78 | 196392.42 | 359165.41 | MATCH EXISTING |
| 214 | 57+86.73 | 10.99' RT | 923.67 | 196423.49 | 359026.15 | MILL & OVERLAY LIMIT |
| 215 | 58+60.49 | 12.00' RT | 0.00 | 196420.40 | 359095.17 | MILL & OVERLAY LIMIT |

2

2

R/W

N

CRASH CUSHIONS PERMANENT CONCRETE PAVEMENT PER MANUFACTURER RECOMMENDATION

54+75

55+00

55+25

55+50

55+75

56+00

56+25

LIGHTHOUSE LANE

MGS GUARDRAIL TERMINAL EAT

MGS THRIE BEAM TRANSITION

STA 55+95.42, 20.10' RT

POST 1
STA 54+99.27, 22.38' RT

STA 55+05.96, 22.50' RT

R600'

POST 5
STA 55+32.79, 23.39' RT

POST 9
STA 55+52.87, 22.66' RT

STA 55+59.53, 22.23' RT

R210'

STA 55+76.14, 21.60' RT

STA 55+79.47, 21.52' RT

STA 55+94.41, 21.34' RT

TLE

R/W

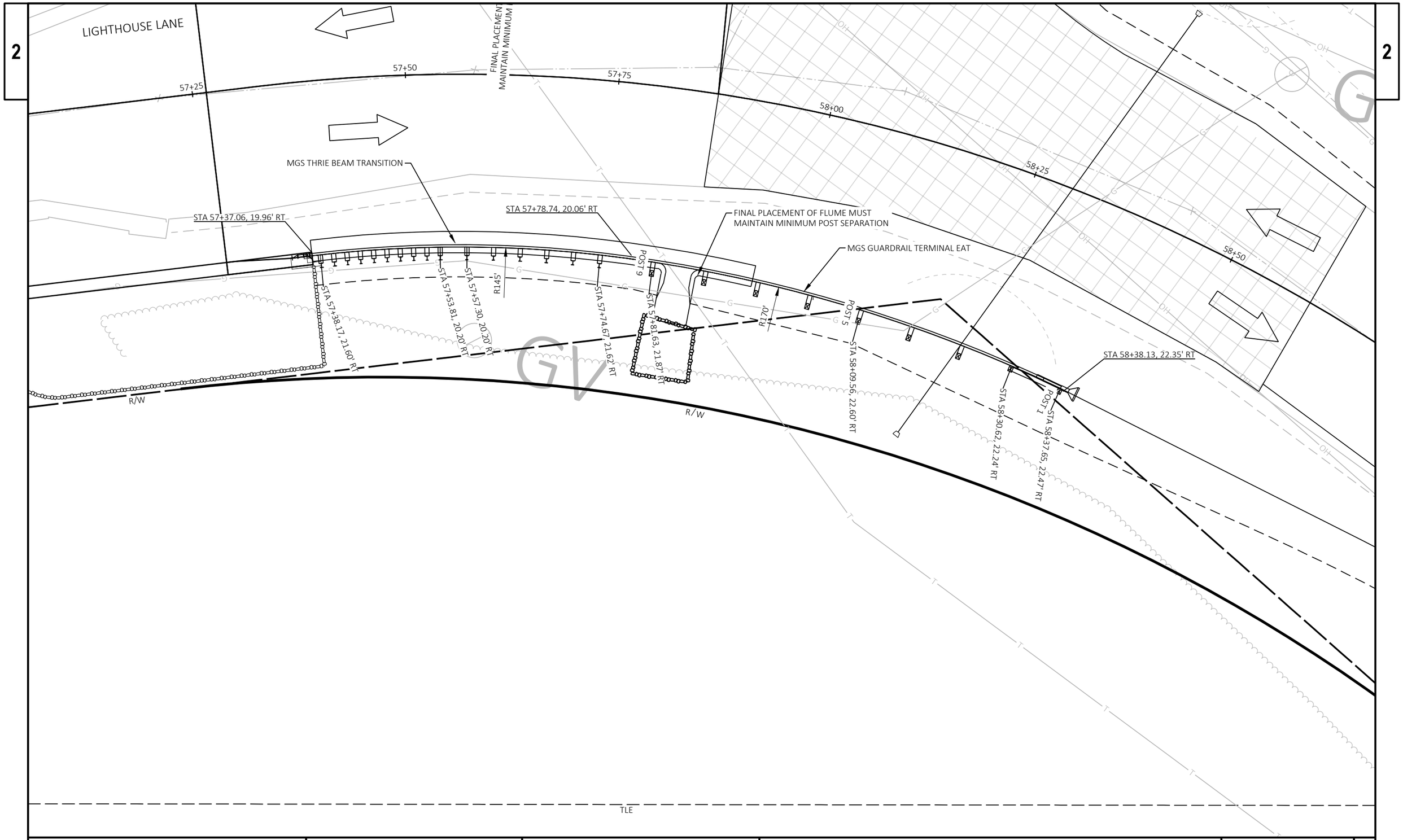
GUY

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | BEAM GUARD DETAILS | SHEET 13 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\021201-BG.DWG
LAYOUT NAME - 01

PLOT DATE : 8/19/2026 11:22 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42




| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | BEAM GUARD DETAILS | SHEET 14 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\021201-BG.DWG
LAYOUT NAME - 02

PLOT DATE : 8/19/2026 11:22 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42

2

N

LIGHTHOUSE LANE

57+25

BRIDGE PARAPET WALL

STA 57+34.02, -20.42' LT

STA 57+37.13, -21.47' LT

STEEL THRIE BEAM STRUCTURE APPROACH

STA 57+44.17, -21.78' LT

STA 57+46.98, -21.98' LT

STEEL PLATE BEAM GUARD CLASS A

57+50

STA 57+52.58, -22.51' LT

STA 57+53.96, -22.67' LT

PC

STEEL PLATE BEAM GUARD SHORT RADIUS
24' SHORT RADIUS, LENGTH 31.7'

STA 57+54.08, -21.41' LT

STA 57+59.36, -23.53' LT

CRT

FINAL PLACEMENT OF FLUME MUST
MAINTAIN MINIMUM POST SEPARATION

STA 57+64.05, -26.67' LT

CRT

CRT

STA 57+67.72, -31.16' LT
STA 110+31.35, -20.16' LT

STA 110+36.89, -17.51' LT

STA 110+42.93, -16.37' LT

STA 110+44.24, -16.33' LT

CRT

CRT

CRT

STA 110+49.16, -16.33' LT

CRT

STA 110+55.41, -16.33' LT

CRT

STA 110+61.66, -17.00' LT

STA 110+67.87, -17.25' LT

STA 110+74.11, -17.50' LT

STA 110+80.36, -17.75' LT

STA 110+86.60, -18.00' LT

STA 110+92.85, -18.25' LT

STA 110+99.09, -18.50' LT

STA 111+05.40, -18.08' LT

STA 111+11.65, -18.33' LT

TLE

R/W

12.50'

50.00'

PT

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

57+75

110+25

110+50

110+75

111+00

KETTLE MORAINE DR

111+50

58+00

BROCK GUY

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | BEAM GUARD DETAILS | SHEET 15 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\021201-BG.DWG
LAYOUT NAME - 03

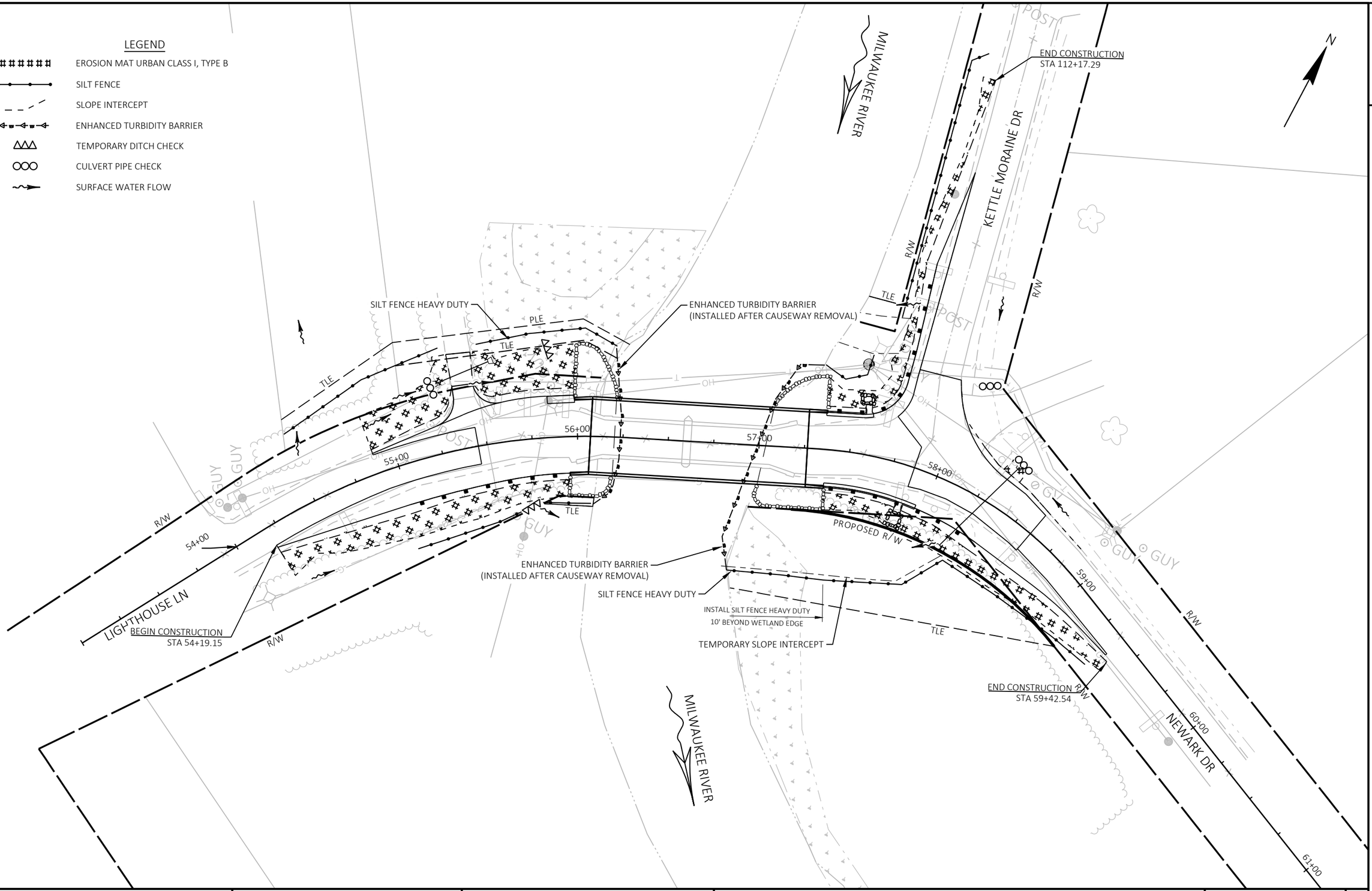
PLOT DATE : 10/21/2026 2:09 PM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- ENHANCED TURBIDITY BARRIER
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW




| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | EROSION CONTROL PLAN | SHEET 16 | E |
|---|---|---|---|---|---|

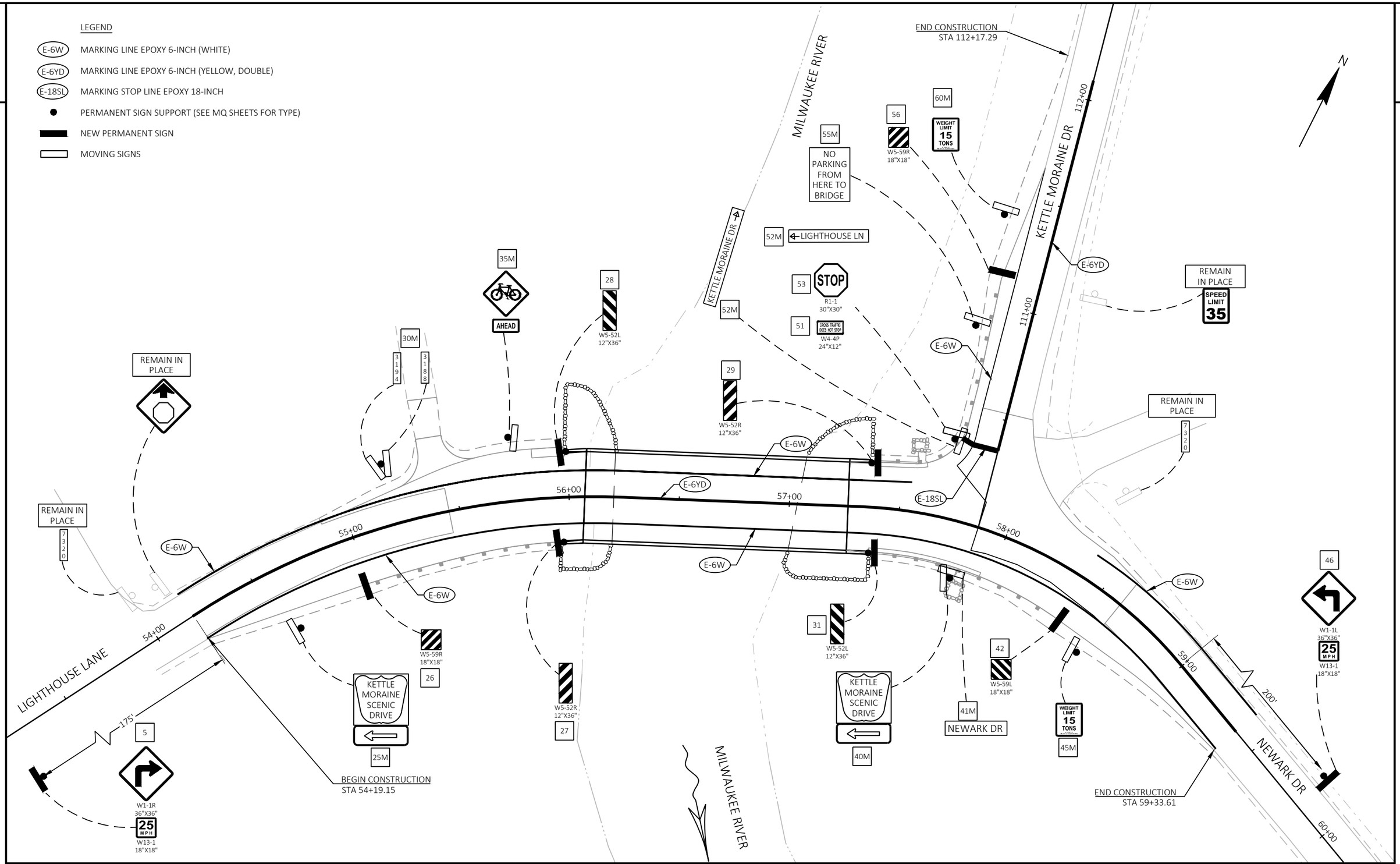
FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\022001-EC1.DWG
LAYOUT NAME - 01

PLOT DATE : 8/19/2026 11:22 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

LEGEND

- E-6W — MARKING LINE EPOXY 6-INCH (WHITE)
- E-6YD — MARKING LINE EPOXY 6-INCH (YELLOW, DOUBLE)
- E-18SL — MARKING STOP LINE EPOXY 18-INCH
- PERMANENT SIGN SUPPORT (SEE MQ SHEETS FOR TYPE)
- NEW PERMANENT SIGN
- MOVING SIGNS



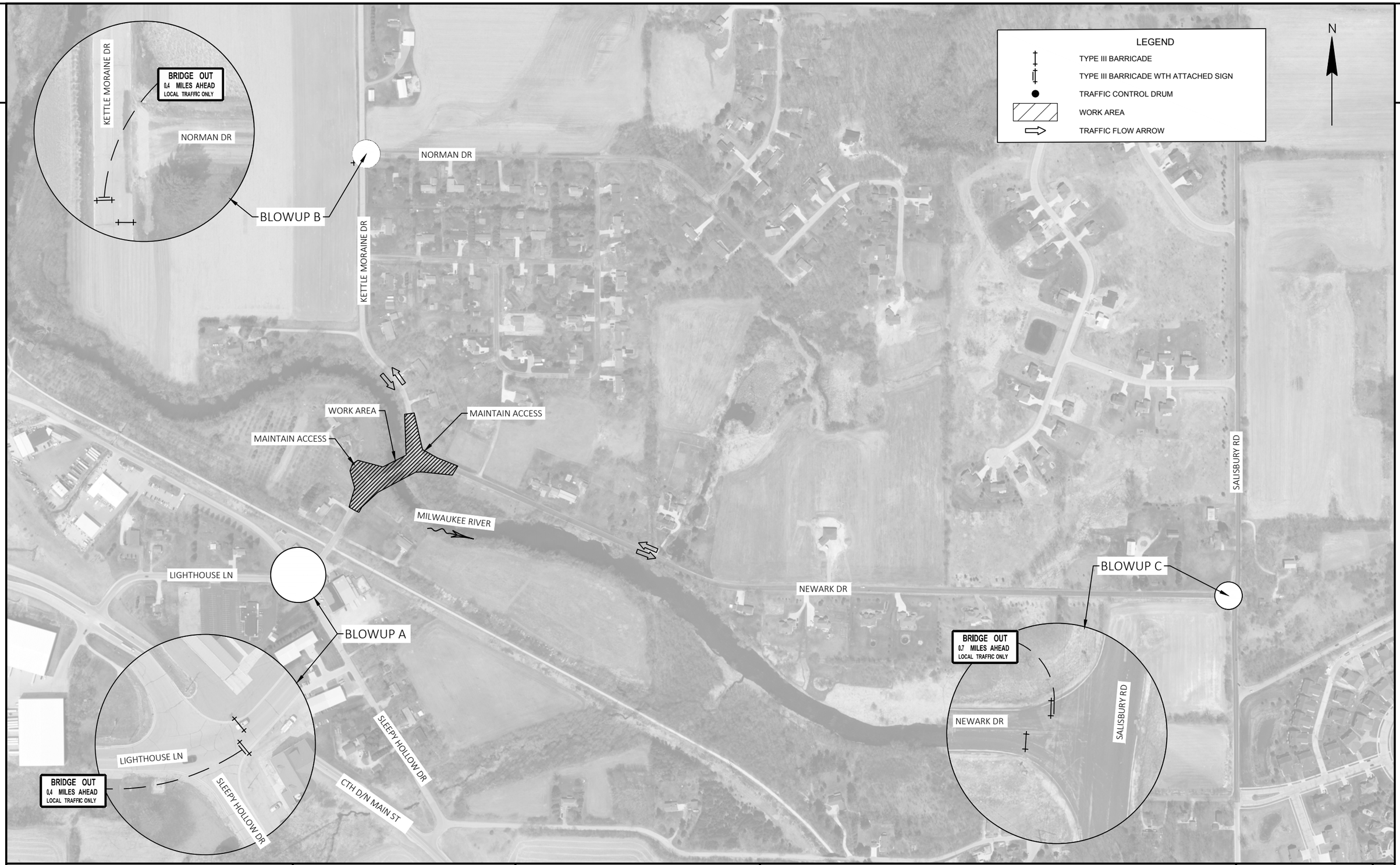

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | PAVEMENT MARKING/ PERMANENT SIGNING DETAIL | SHEET 17 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\024501-PM_2.DWG
LAYOUT NAME - 024501-pm

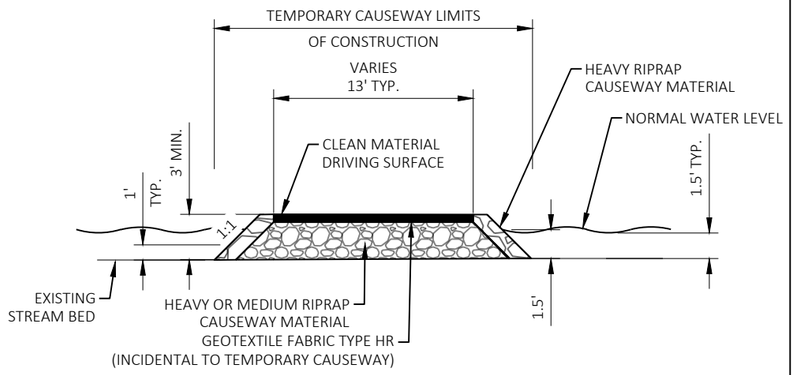
PLOT DATE : 8/19/2026 11:22 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2




| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | TRAFFIC CONTROL ADVANCE WARNING | SHEET 18 | E |
|---|---|---|---|---|---|




SECTION A-A
TEMPORARY CAUSEWAY DETAIL
SEE SPECIAL PROVISIONS

2

MILWAUKEE RIVER

SPECIAL 60"X24" BRIDGE OUT USE PORTAGE
M6-1 21"X21"

BRIDGE OUT R11-2B 48"X30"

ROAD CLOSED R11-2 48"X30"

KETTLE MORAINE DR

PERMANENT SLOPE INTERCEPT

TEMPORARY SLOPE INTERCEPT

R/W

TLE

MAINTAIN DRIVEWAY ACCESS

141' SEE NOTE 3

PLE

COFFERDAM FOR CAUSEWAY INSTALLATION

CONCRETE BARRIER TEMPORARY PRECAST INSTALLED

ENHANCED TURBIDITY BARRIER

COFFERDAM

57' SEE NOTE 3

SEE NOTE 4

16'

62'

A-A

38' SEE NOTE 3

60' SEE NOTE 3

56+00

57+00

58+00

59+00

60+00

61+00

55+00

54+00

TEMPORARY CAUSEWAY (SEE CONSTRUCTION DETAIL)

(3) CULVERT PIPE TEMPORARY 24-INCH

TEMPORARY PORTAGE ROUTE, SEE CONSTRUCTION DETAILS

8'

PROPOSED R/W

TIMBER MATS
(INCIDENTAL TO TEMPORARY CAUSEWAY)

TEMPORARY SLOPE INTERCEPT

PERMANENT SLOPE INTERCEPT

LIGHTHOUSE LN

NEWARK DR

SPECIAL 60"X24" BRIDGE OUT USE PORTAGE
M6-1 21"X21"

BRIDGE OUT R11-2B 48"X30"

ROAD CLOSED R11-2 48"X30"

ROAD CLOSED R11-2 48"X30"

BRIDGE OUT R11-2B 48"X30"

NOTES:

1) TEMPORARY ACCESS TO THE RIVER ARE ASSUMED TO BE 15 FEET WIDE WITH A 12% MAXIMUM PROFILE. WITHIN THE RIVER TEMPORARY ACCESS ARE ASSUMED TO BE 15 FEET WIDE.

2) THE CONFIGURATION SHOWN FOR TEMPORARY ACCESS ARE FOR INFORMATION ONLY. THE APPROVED SECTION 10 / 404 PERMIT FOR THE PROJECT IS BASED ON THE CONFIGURATION SHOWN.

3) PLACE WATERWAY BUOYS WITHIN +/- 10 FEET OF THE DIMENSIONS SHOW OR AS DIRECTED BY FIELD ENGINEER.

4) THE CONTRACTOR SHALL MAXIMIZE A CLEAR OPENING OF THE MILWAUKEE RIVER AT ALL TIMES.

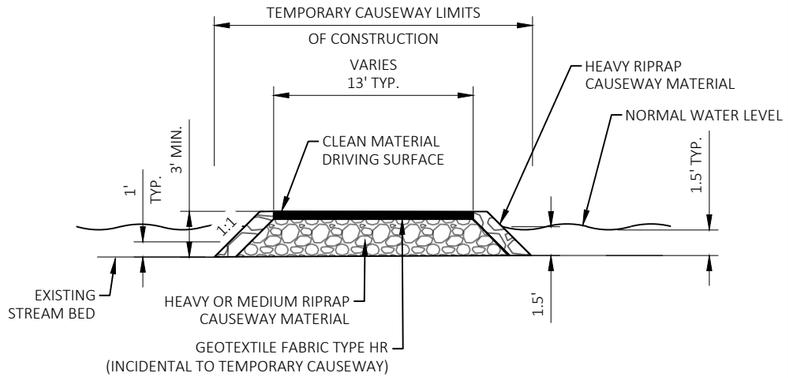
LEGEND

WORK ZONE

WATERWAY BUOYS

TRAFFIC CONTROL BARRICADE TYPE 3 WITH/WITHOUT SIGN

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION STAGE CAUSEWAY INSTALLATION & PIER REMOVAL | SHEET 19 | E |
|---|---|---|---|---|---|




SECTION A-A
TEMPORARY CAUSEWAY DETAIL
SEE SPECIAL PROVISIONS




NOTES:

1) TEMPORARY ACCESS TO THE RIVER ARE ASSUMED TO BE 15 FEET WIDE WITH A 12% MAXIMUM PROFILE. WITHIN THE RIVER TEMPORARY ACCESS ARE ASSUMED TO BE 15 FEET WIDE.

2) THE CONFIGURATION SHOWN FOR TEMPORARY ACCESS ARE FOR INFORMATION ONLY. THE APPROVED SECTION 10 / 404 PERMIT FOR THE PROJECT IS BASED ON THE CONFIGURATION SHOWN.

3) PLACE WATERWAY BUOYS WITHIN +/- 10 FEET OF THE DIMENSIONS SHOW OR AS DIRECTED BY FIELD ENGINEER.

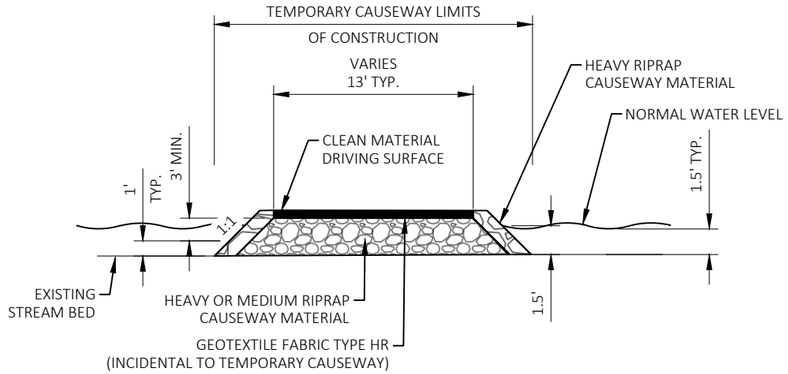
4) THE CONTRACTOR SHALL MAXIMIZE A CLEAR OPENING OF THE MILWAUKEE RIVER AT ALL TIMES.

5) ENHANCED TURBIDITY BARRIER INSTALLED DURING CAUSEWAY INSTALLATION

LEGEND

- WORK ZONE
- WATERWAY BUOYS
- TRAFFIC CONTROL BARRICADE TYPE 3 WITH/WITHOUT SIGN
- CONCRETE BARRIER TEMPORARY PRECAST INSTALLED

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION STAGE CAUSEWAY EXTENSION & PIER CONSTRUCTION | SHEET 20 | E |
|---|---|---|---|---|---|




SECTION A-A
TEMPORARY CAUSEWAY DETAIL
SEE SPECIAL PROVISIONS



NOTES:

1) TEMPORARY ACCESS TO THE RIVER ARE ASSUMED TO BE 15 FEET WIDE WITH A 12% MAXIMUM PROFILE. WITHIN THE RIVER TEMPORARY ACCESS ARE ASSUMED TO BE 15 FEET WIDE.

2) THE CONFIGURATION SHOWN FOR TEMPORARY ACCESS ARE FOR INFORMATION ONLY. THE APPROVED SECTION 10 / 404 PERMIT FOR THE PROJECT IS BASED ON THE CONFIGURATION SHOWN

3*) PLACE WATERWAY BUOYS WITHIN +/- 10 FEET OF THE DIMENSIONS SHOW OR AS DIRECTED BY FIELD ENGINEER.

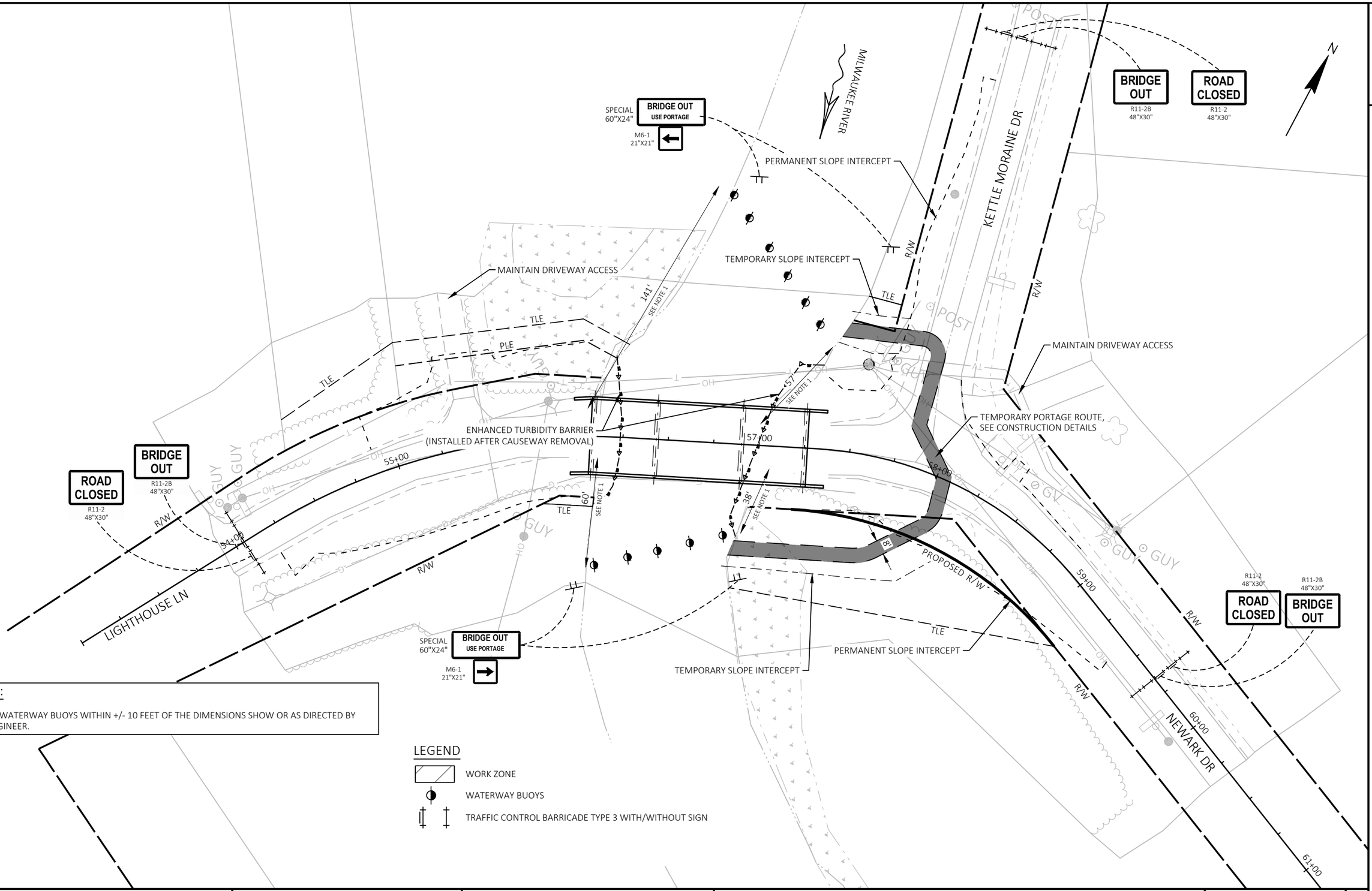
4) THE CONTRACTOR SHALL MAXIMIZE A CLEAR OPENING OF THE MILWAUKEE RIVER AT ALL TIMES.

LEGEND

- WORK ZONE
- WATERWAY BUOYS
- TRAFFIC CONTROL BARRICADE TYPE 3 WITH/WITHOUT SIGN

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION STAGE CAUSEWAY REMOVAL | SHEET 21 | E |
|---|---|---|---|---|---|

2




NOTES:

5) PLACE WATERWAY BUOYS WITHIN +/- 10 FEET OF THE DIMENSIONS SHOW OR AS DIRECTED BY FIELD ENGINEER.

LEGEND

- WORK ZONE
- WATERWAY BUOYS
- TRAFFIC CONTROL BARRICADE TYPE 3 WITH/WITHOUT SIGN

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION STAGE BRIDGE CONSTRUCTION | SHEET 22 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\026102A-S1.DWG
LAYOUT NAME - 02A
PLOT DATE : 8/19/2026 11:23 AM
PLOT BY : BROCK BEHNKE
PLOT NAME :
PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 42

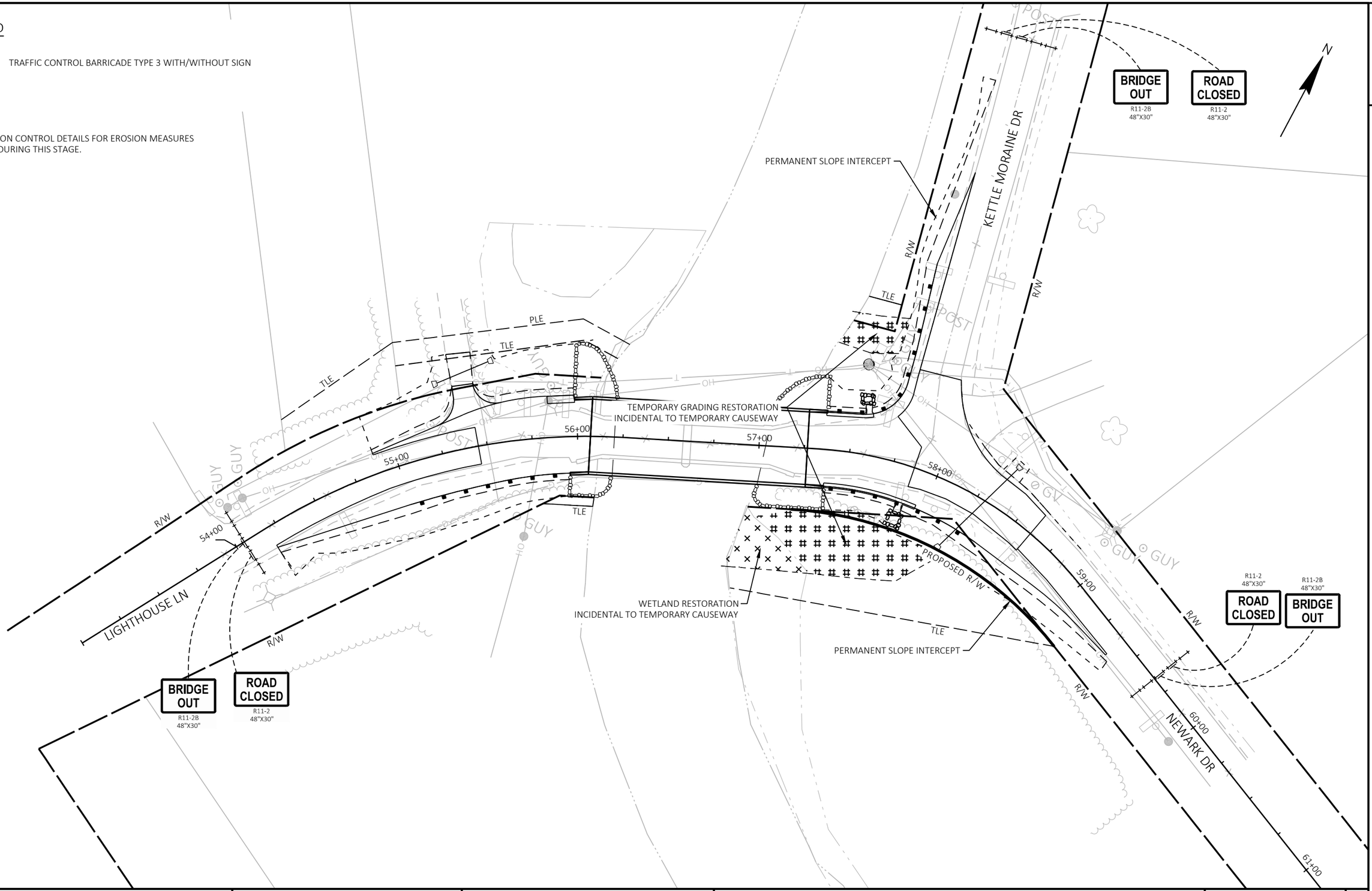
2

## LEGEND

TRAFFIC CONTROL BARRICADE TYPE 3 WITH/WITHOUT SIGN

## NOTE

SEE EROSION CONTROL DETAILS FOR EROSION MEASURES IN PLACE DURING THIS STAGE.




2

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CONSTRUCTION STAGE CAUSEWAY RESTORATION & ROADWAY WORK | SHEET 23 | E |
|---|---|---|---|---|---|


FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\026201-S2.DWG
LAYOUT NAME - 01
PLOT DATE : 8/19/2026 11:24 AM
PLOT BY : BROCK BEHNKE
PLOT NAME :
PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 42

2

2

N

KETTLE MORAINE DR

SALISBURY RD

NEWARK DR

WORK ZONE

SLEEPY HOLLOW RD

WOODFORD DR

MILWAUKEE RIVER

US 45

N MAIN ST/CTH D

BARTON AVE STH 144

STH 144

4W
1W
1W
2W-R
1W-R
3W
7E
3E
4E
1E
1E
7W
3W
3E
2W-R
3E
1W-R
3W
2W-R
1E-L
1W-R
3W
2E-L
2E-L
1E-L
3E

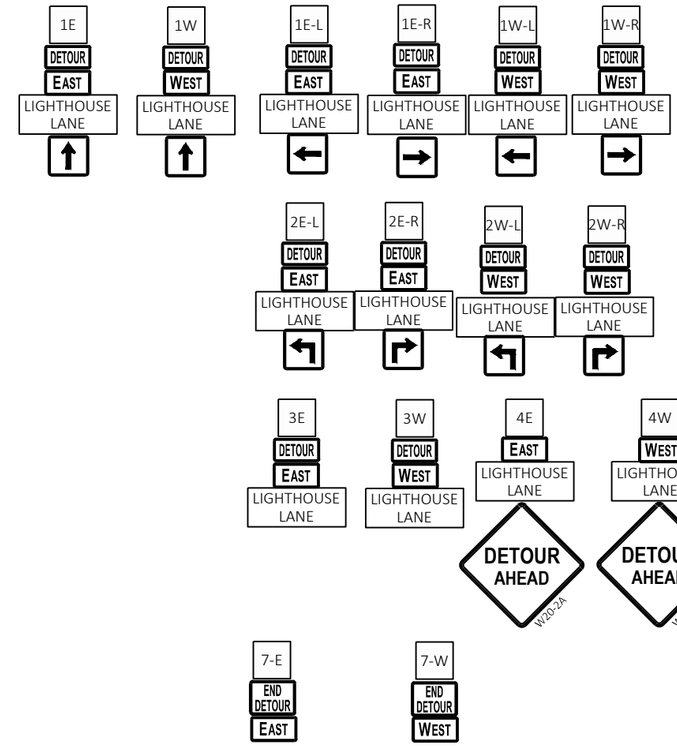
## LEGEND

ABBREVIATIONS

(#) - DENOTES SIGN LEGEND NUMBER

(X) - DENOTES CARDINAL DIRECTION

PROPOSED DETOUR ROUTE




| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | DETOUR PLAN | SHEET 24 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\027001-DT.DWG
LAYOUT NAME - 01

PLOT DATE : 8/19/2026 11:24 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:1000 FT

WISDOT/CADDS SHEET 42

2

N

**CURVE 1**
PI STA = 55+25.20
N = 196329.866
E = 358777.947
DELTA = 35°19'51" RT
D = 17°12'21"
T = 106.05'
L = 205.34'
R = 333.00'
PC STA = 54+19.15
N = 196238.152
E = 358724.697
PT STA = 56+24.49
N = 196373.895
E = 358874.427
DB = N30°08'23"E
DA = N65°28'13"E

**CURVE 2**
PI STA = 58+21.50
N = 196455.687
E = 359053.658
DELTA = 48°14'39" RT
D = 28°56'14"
T = 88.66'
L = 166.72'
R = 198.00'
PC STA = 57+32.84
N = 196418.878
E = 358972.999
PT STA = 58+99.56
N = 196420.030
E = 359134.833
DB = N65°28'13"E
DA = S66°17'08"E

KETTLE MORAINE DR

EP: 112+72.89

5000

PI: 110+53.05

BP: 110+00.00

END CONSTRUCTION
STA 112+17.29

PT: 58+99.56

PC: 57+32.84

PT: 56+24.49

BEGIN PROJECT
STA 55+45.18

112

111

58

S66°17'08"E

60

20

N65°28'13"E

56

PC: 54+19.15

54

STA 62+00.00
Y=196299.200
X=359409.905

END CONSTRUCTION
STA 59+42.54

END PROJECT
STA 58+60.48

CURVE 2

STRUCTURE B-66-0156
STA 56+07.13 - STA 57+26.64

STA 53+00.00
Y=196135.111
X=358664.871

CURVE 1

MILWAUKEE RIVER

NEWARK DR

21

BEGIN CONSTRUCTION
STA 54+19.15

LIGHTHOUSE LN

22

EISENBAHN STATE TRAIL

SLEEPY HOLLOW RD

N MAIN ST

BENCHMARK & CONTROL POINT TABLE

| POINT | STATION | OFFSET | Y COORDS | X COORDS | ELEVATION | TYPE |
|---|---|---|---|---|---|---|
| 20 | 0+00.00 | 0.00 | 196336.200 | 359362.200 | 924.209 | BM |
| 21 | 0+00.00 | 0.00 | 196033.000 | 358578.000 | 932.356 | BM |
| 22 | 0+00.00 | 0.00 | 195889.800 | 358227.300 | 937.954 | BM |
| 5000 | 57+52.82 | 49.25 LT | 196472.876 | 358975.736 | 922.577 | BM RR SK |

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | ALIGNMENT DETAILS | SHEET 25 | E |
|---|---|---|---|---|---|

## Estimate Of Quantities

4825-05-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0002 | 201.0105 | Clearing | STA | 8.000 | 8.000 |
| 0004 | 201.0205 | Grubbing | STA | 8.000 | 8.000 |
| 0006 | 203.0100 | Removing Small Pipe Culverts | EACH | 2.000 | 2.000 |
| 0008 | 203.0260 | Removing Structure Over Waterway Minimal Debris (structure) 01. P-66-0044 | EACH | 1.000 | 1.000 |
| 0010 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 56.000 | 56.000 |
| 0012 | 204.0120 | Removing Asphaltic Surface Milling | SY | 310.000 | 310.000 |
| 0014 | 205.0100 | Excavation Common | CY | 474.000 | 474.000 |
| 0016 | 205.0400 | Excavation Marsh | CY | 21.000 | 21.000 |
| 0018 | 206.1001 | Excavation for Structures Bridges (structure) 01. B-66-0156 | EACH | 1.000 | 1.000 |
| 0020 | 206.5001 | Cofferdams (structure) 01. B-66-0156 | EACH | 1.000 | 1.000 |
| 0022 | 208.0100 | Borrow | CY | 290.000 | 290.000 |
| 0024 | 209.0200.S | Backfill Controlled Low Strength | CY | 18.000 | 18.000 |
| 0026 | 210.1500 | Backfill Structure Type A | TON | 290.000 | 290.000 |
| 0028 | 211.0101 | Prepare Foundation for Asphaltic Paving (project) 01. 4825-05-71 | EACH | 1.000 | 1.000 |
| 0030 | 213.0100 | Finishing Roadway (project) 01. 4825-05-71 | EACH | 1.000 | 1.000 |
| 0032 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 255.000 | 255.000 |
| 0034 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 915.000 | 915.000 |
| 0036 | 415.0070 | Concrete Pavement 7-Inch | SY | 7.000 | 7.000 |
| 0038 | 455.0605 | Tack Coat | GAL | 142.000 | 142.000 |
| 0040 | 465.0105 | Asphaltic Surface | TON | 305.000 | 305.000 |
| 0042 | 465.0120 | Asphaltic Surface Driveways and Field Entrances | TON | 5.000 | 5.000 |
| 0044 | 502.0100 | Concrete Masonry Bridges | CY | 489.000 | 489.000 |
| 0046 | 502.3200 | Protective Surface Treatment | SY | 531.000 | 531.000 |
| 0048 | 502.3210 | Pigmented Surface Sealer | SY | 138.000 | 138.000 |
| 0050 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 8,330.000 | 8,330.000 |
| 0052 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 70,650.000 | 70,650.000 |
| 0054 | 516.0500 | Rubberized Membrane Waterproofing | SY | 22.000 | 22.000 |
| 0056 | 520.2024 | Culvert Pipe Temporary 24-Inch | LF | 260.000 | 260.000 |
| 0058 | 521.1018 | Apron Endwalls for Culvert Pipe Steel 18-Inch | EACH | 2.000 | 2.000 |
| 0060 | 521.1228 | Apron Endwalls for Pipe Arch Steel 28x20-Inch | EACH | 2.000 | 2.000 |
| 0062 | 521.3118 | Culvert Pipe Corrugated Steel 18-Inch | LF | 31.000 | 31.000 |
| 0064 | 521.3728 | Pipe Arch Corrugated Steel 28x20-Inch | LF | 60.000 | 60.000 |
| 0066 | 550.0020 | Pre-Boring Rock or Consolidated Materials | LF | 250.000 | 250.000 |
| 0068 | 550.1100 | Piling Steel HP 10-Inch x 42 Lb | LF | 420.000 | 420.000 |
| 0070 | 601.0584 | Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBT | LF | 70.000 | 70.000 |
| 0072 | 602.3010 | Concrete Surface Drains | CY | 3.000 | 3.000 |
| 0074 | 603.8000 | Concrete Barrier Temporary Precast Delivered | LF | 250.000 | 250.000 |
| 0076 | 603.8125 | Concrete Barrier Temporary Precast Installed | LF | 400.000 | 400.000 |
| 0078 | 606.0200 | Riprap Medium | CY | 4.000 | 4.000 |
| 0080 | 606.0300 | Riprap Heavy | CY | 252.000 | 252.000 |
| 0082 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 156.000 | 156.000 |
| 0084 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 4.000 | 4.000 |
| 0086 | 614.0200 | Steel Thrie Beam Structure Approach | LF | 20.600 | 20.600 |
| 0088 | 614.0345 | Steel Plate Beam Guard Short Radius | LF | 51.600 | 51.600 |
| 0090 | 614.0370 | Steel Plate Beam Guard Energy Absorbing Terminal | EACH | 1.000 | 1.000 |
| 0092 | 614.0800 | Crash Cushions Permanent | EACH | 1.000 | 1.000 |
| 0094 | 614.2500 | MGS Thrie Beam Transition | LF | 79.000 | 79.000 |
| 0096 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 2.000 | 2.000 |
| 0098 | 616.0700.S | Fence Safety | LF | 530.000 | 530.000 |

4825-05-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0100 | 618.0100 | Maintenance and Repair of Haul Roads (project) 01. 4825-05-71 | EACH | 1.000 | 1.000 |
| 0102 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0104 | 624.0100 | Water | MGAL | 18.000 | 18.000 |
| 0106 | 625.0100 | Topsoil | SY | 860.000 | 860.000 |
| 0108 | 628.1504 | Silt Fence | LF | 585.000 | 585.000 |
| 0110 | 628.1520 | Silt Fence Maintenance | LF | 585.000 | 585.000 |
| 0112 | 628.1530.S | Silt Fence Heavy Duty | LF | 136.000 | 136.000 |
| 0114 | 628.1535.S | Silt Fence Heavy Duty Maintenance | LF | 136.000 | 136.000 |
| 0116 | 628.1905 | Mobilizations Erosion Control | EACH | 5.000 | 5.000 |
| 0118 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 6.000 | 6.000 |
| 0120 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 860.000 | 860.000 |
| 0122 | 628.7504 | Temporary Ditch Checks | LF | 30.000 | 30.000 |
| 0124 | 628.7555 | Culvert Pipe Checks | EACH | 15.000 | 15.000 |
| 0126 | 629.0210 | Fertilizer Type B | CWT | 1.000 | 1.000 |
| 0128 | 630.0140 | Seeding Mixture No. 40 | LB | 39.000 | 39.000 |
| 0130 | 630.0200 | Seeding Temporary | LB | 23.000 | 23.000 |
| 0132 | 630.0500 | Seed Water | MGAL | 30.000 | 30.000 |
| 0134 | 633.5200 | Markers Culvert End | EACH | 4.000 | 4.000 |
| 0136 | 634.0614 | Posts Wood 4x6-Inch x 14-FT | EACH | 7.000 | 7.000 |
| 0138 | 634.0616 | Posts Wood 4x6-Inch x 16-FT | EACH | 5.000 | 5.000 |
| 0140 | 634.0808 | Posts Tubular Steel 2x2-Inch x 8-FT | EACH | 1.000 | 1.000 |
| 0142 | 634.0816 | Posts Tubular Steel 2x2-Inch x 16-FT | EACH | 1.000 | 1.000 |
| 0144 | 637.2210 | Signs Type II Reflective H | SF | 5.180 | 5.180 |
| 0146 | 637.2230 | Signs Type II Reflective F | SF | 43.250 | 43.250 |
| 0148 | 638.2102 | Moving Signs Type II | EACH | 10.000 | 10.000 |
| 0150 | 638.2602 | Removing Signs Type II | EACH | 9.000 | 9.000 |
| 0152 | 638.3000 | Removing Small Sign Supports | EACH | 19.000 | 19.000 |
| 0154 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0156 | 643.0300 | Traffic Control Drums | DAY | 500.000 | 500.000 |
| 0158 | 643.0420 | Traffic Control Barricades Type III | DAY | 2,100.000 | 2,100.000 |
| 0160 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 3,000.000 | 3,000.000 |
| 0162 | 643.0900 | Traffic Control Signs | DAY | 8,344.000 | 8,344.000 |
| 0164 | 643.1000 | Traffic Control Signs Fixed Message | SF | 100.000 | 100.000 |
| 0166 | 643.1050 | Traffic Control Signs PCMS | DAY | 28.000 | 28.000 |
| 0168 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0170 | 645.0111 | Geotextile Type DF Schedule A | SY | 108.000 | 108.000 |
| 0172 | 645.0120 | Geotextile Type HR | SY | 402.000 | 402.000 |
| 0174 | 646.2020 | Marking Line Epoxy 6-Inch | LF | 2,340.000 | 2,340.000 |
| 0176 | 646.6120 | Marking Stop Line Epoxy 18-Inch | LF | 18.000 | 18.000 |
| 0178 | 650.5000 | Construction Staking Base | LF | 263.000 | 263.000 |
| 0180 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 70.000 | 70.000 |
| 0182 | 650.6000 | Construction Staking Pipe Culverts | EACH | 2.000 | 2.000 |
| 0184 | 650.6501 | Construction Staking Structure Layout (structure) 01. B-66-0156 | EACH | 1.000 | 1.000 |
| 0186 | 650.9911 | Construction Staking Supplemental Control (project) 01. 4825-05-71 | EACH | 1.000 | 1.000 |
| 0188 | 650.9920 | Construction Staking Slope Stakes | LF | 638.000 | 638.000 |
| 0190 | 690.0150 | Sawing Asphalt | LF | 485.000 | 485.000 |
| 0192 | 715.0502 | Incentive Strength Concrete Structures | DOL | 2,934.000 | 2,934.000 |
| 0194 | 715.0720 | Incentive Compressive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 0196 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. 56+66 | EACH | 1.000 | 1.000 |

## Estimate Of Quantities

4825-05-71

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0198 | 999.2100.S | Installing and Maintaining Climbing Turtle Exclusion Fence | LF | 100.000 | 100.000 |
| 0200 | SPV.0060 | Special 01. Temporary Causeway | EACH | 1.000 | 1.000 |
| 0202 | SPV.0060 | Special 02. Temporary Portage Path | EACH | 1.000 | 1.000 |
| 0204 | SPV.0060 | Special 03. Fisheries Consultant (4825-05-71) | EACH | 1.000 | 1.000 |
| 0206 | SPV.0180 | Special 01. Enhanced Turbidity Barrier | SY | 375.000 | 375.000 |
| 0208 | SPV.0195 | Special 01. Infill Riprap B-66-0156 | TON | 136.000 | 136.000 |

3

# REMOVALS

| STATION | TO | STATION | LT/RT | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA | REMARKS |
|---|---|---|---|---|---|---|---|
| 54+45 | - | 56+40 | LT | LIGHTHOUSE LN | 2 | 2 | NORTHWEST STRUCTURE |
| 54+14 | - | 56+33 | RT | LIGHTHOUSE LN | 2 | 2 | SOUTHWEST STRUCTURE |
| 57+12 | - | 58+91 | RT | LIGHTHOUSE LN | 2 | 2 | SOUTHEAST STRUCTURE |
| 110+27 | - | 112+15 | LT | KETTLE MORAINE DR | 2 | 2 | NORTHEAST STRUCTURE |
| | | | | TOTAL 0010 | 8 | 8 | |

| STATION | TO | STATION | RT/LT | LOCATION | 203.0100 REMOVING SMALL PIPE CULVERTS EACH | REMARKS |
|---|---|---|---|---|---|---|
| 55+35 | - | 55+53 | LT | LIGHTHOUSE LANE | 1 | 15" CMCP DRIVEWAY |
| 58+26 | - | 58+35 | RT/LT | LIGHTHOUSE LANE | 1 | 24" CMCP EAST APPROACH |
| | | | | TOTAL 0010 | 2 | |

| STATION | TO | STATION | LT/RT | LOCATION | 204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY | 204.0120 REMOVING ASPHALTIC SURFACE MILLING SY | 690.0150 SAWING ASPHALT LF | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 54+20 | - | 55+45 | LT/RT | LIGHTHOUSE LANE | - | - | 203 | WEST APPROACH |
| 57+71 | - | 58+65 | LT/RT | LIGHTHOUSE LANE | 28 | 310 | 92 | INTERSECTION |
| 58+60 | - | 59+33 | RT | LIGHTHOUSE LANE | 28 | - | 77 | EAST APPROACH SHOULDER EDGE |
| 110+66 | - | 111+65 | LT | KETTLE MORAINE DRIVE | - | - | 113 | SHOULDER EDGE |
| | | | | TOTAL 0010 | 56 | 310 | 485 | |

# PAVEMENT

| STATION | TO | STATION | LT/RT | LOCATION | 305.0110 BASE AGGREGATE DENSE 3/4-INCH TON | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON | 455.0605 TACK COAT GAL | 465.0105 ASPHALTIC SURFACE TON | 465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON | 624.0100 WATER MGAL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54+19 | - | 56+08 | LT/RT | LIGHTHOUSE LN | 85 | 270 | 30 | 65 | - | 5.4 | WEST APPROACH SHOULDER |
| 54+19 | - | 56+08 | LT/RT | LIGHTHOUSE LN | - | 115 | 24 | 60 | - | 1.8 | WEST APPROACH MAINLINE |
| 55+26 | - | 55+60 | LT | LIGHTHOUSE LN | 5 | 20 | 2 | - | 5 | 0.4 | DRIVEWAY |
| 55+85 | - | 55+99 | LT | LIGHTHOUSE LN | - | 5 | - | - | - | 0.1 | CRASH CUSHION |
| 57+27 | - | 59+42 | LT/RT | LIGHTHOUSE LN | 65 | 225 | 29 | 65 | - | 4.4 | EAST APPROACH SHOULDER |
| 57+27 | - | 57+87 | LT/RT | LIGHTHOUSE LN | - | 90 | 21 | 45 | - | 1.4 | EAST APPROACH MAINLINE |
| 57+36 | - | 57+55 | LT | LIGHTHOUSE LN | - | 10 | - | - | - | 0.2 | NORTHEAST CURB & GUTTER |
| 57+37 | - | 57+95 | RT | LIGHTHOUSE LN | - | 20 | - | - | - | 0.3 | SOUTHEAST CURB & GUTTER |
| 57+71 | - | 58+60 | LT/RT | LIGHTHOUSE LN | 25 | 15 | 26 | 45 | - | 0.6 | INTERSECTION |
| 110+25 | - | 111+65 | LT | KETTLE MORAINE DR | 75 | 145 | 10 | 25 | - | 3.3 | SHOULDER |
| | | | | UNDISTRIBUTED | - | - | - | - | - | 0.1 | |
| | | | | | 255 | 915 | 142 | 305 | 5 | 18.0 | |

| LOCATION | 211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 4825-05-71) EACH |
|---|---|
| LIGHTHOUSE LN | 1 |
| TOTAL 0010 | 1 |

| LOCATION | 415.0070 CONCRETE PAVEMENT 7-INCH SY | 614.0800 CRASH CUSHIONS PERMANENT EACH | BACK WIDTH FT | OBJECT MARKING PATTERN | CRASH TEST LEVEL | TRAFFIC DIRECTION | TRAFFFIC LOCATION | CRASH CUSHION SHIELDS |
|---|---|---|---|---|---|---|---|---|
| STA 55+94.5 LT | 7 | 1 | 1' 5 3/8" | OM-3L (W5-58L) | TL-2 | BIDIRECTIONAL | L | PERMANENT STRUCTURE PARAPET WALL |
| TOTAL 0010 | 7 | 1 | | | | | | |

| STATION | TO | STATION | RT/LT | LOCATION | 601.0584 CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE TBT LF | 602.3010 CONCRETE SURFACE DRAINS CY | 606.0200 RIPRAP MEDIUM CY | 645.0120 GEOTEXTILE TYPE HR SY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 57+36 | - | 57+55 | LT | LIGHTHOUSE LANE | 22 | 1 | 2 | 12 | NORTHEAST BRIDGE QUADRANT |
| 57+37 | - | 57+82 | RT | LIGHTHOUSE LANE | 48 | 2 | 2 | 12 | SOUTHEAST BRIDGE QUADRANT |
| | | | | TOTAL 0010 | 70 | 3 | 4 | 24 | |

3

## EXCAVATION

| DIVISION | FROM/TO STATION | LOCATION | 205.0100 EXCAVATION COMMON (1) CUT (2) | 205.0100 EXCAVATION COMMON (1) EBS EXCAVATION (3) | UNUSABLE PAVEMENT MATERIAL (4) | AVAILABLE MATERIAL (5) | 205.0400 MARSH EXCAVATION (6) | REDUCED MARSH IN FILL (8) FACTOR 0.60 | REDUCED EBS IN FILL (9) FACTOR 0.80 | EXPANDED MARSH BACKFILL (10) FACTOR 1.50 | EXPANDED EBS BACKFILL (11) FACTOR 1.30 | UNEXPANDED FILL | EXPANDED FILL (13) FACTOR 1.10 | MASS ORDINATE +/- (14) | WASTE | 208.0100 BORROW | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIVISION 1 | | | | | | | | | | | | | | | | | |
| | 54+19.15 TO 56+08.00 | LIGHTHOUSE LN WEST APPROACH | 191 | 13 | 27 | 164 | 21 | 21 | 13 | 51 | 26 | 339 | 339 | -175 | 27 | 252 | |
| DIVISION 2 | | | | | | | | | | | | | | | | | |
| | 57+26.64 TO 59+38.66 | LIGHTHOUSE LN EAST APPROACH | 190 | 10 | 38 | 152 | 0 | 0 | 10 | 0 | 20 | 94 | 98 | 54 | 92 | 20 | |
| | 110+43.51 to 112+17.29 | KETTLE MORAINE DR | 61 | 9 | 4 | 57 | 0 | 0 | 9 | 0 | 18 | 5 | 1 | 56 | 4 | 18 | |
| GRAND TOTAL | | | 442 | 32 | 69 | 373 | 21 | 21 | 32 | 51 | 64 | 438 | 438 | -65 | 123 | 290 | |
| TOTAL COMMON EXC | | | 474 | | | | | | | | | | | | | | |

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(3) EBS EXCAVATION TO BE BACKFILLED WITH BORROW MATERIAL.
(4) UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - UNUSUABLE PAVEMENT MATERIAL
(6) MARSH EXCAVATION - TO BE BACKFILLED WITH BORROW MATERIAL. ITEM NUMBER 205.0400
(8) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = .60
(9) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = .80
(10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH BORROW MATERIAL. MARSH BACKFILL FACTOR = 1.50. ITEM NUMBER 208.0100
(11) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH BORROW MATERIAL. EBS BACKFILL FACTOR = 1.30. ITEM NUMBER 208.0100
(13) EXPANDED FILL FACTOR = 1.10
EXPANDED FILL = (UNEXPANDED FILL - REDUCED MARSH - REDUCED EBS) * FILL FACTOR
(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) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

## CULVERT PIPE

NOTE: STATION & OFFSET ARE PROVIDED TO END OF CULVERT PIPE

| PIPE NO. | ENDWALL NO. | UPSTREAM (US) STATION | UPSTREAM (US) OFFSET | UPSTREAM (US) ELEVATION | DOWNSTREAM (DS) ENDWALL NO. | DOWNSTREAM (DS) STATION | DOWNSTREAM (DS) OFFSET | DOWNSTREAM (DS) ELEVATION | LOCATION | 521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH | 521.1228 APRON ENDWALLS FOR PIPE ARCH STEEL 28X20-INCH EACH | 521.3118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF | 521.3728 PIPE ARCH CORRUGATED STEEL 28X20-INCH LF | 628.7555 CULVERT PIPE CHECKS EACH | 633.5200 MARKERS CULVERT END EACH | 650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110 | 110U | 55+30.53' | 38.5' LT | 920.657' | 110D | 55+57.07' | 45.0' LT | 919.501' | LIGHTHOUSE LN | 2 | - | 31 | - | 5 | 2 | 1 | DRIVEWAY |
| 100 | 100U | 58+35.32' | 24.2' LT | 921.798' | 100D | 58+19.11' | 33.7' RT | 919.475' | LIGHTHOUSE LN | - | 2 | - | 60 | 5 | 2 | 1 | |
| - | - | 110+50 | RT | - | - | - | - | - | KETTLE MORAINE DR | - | - | - | - | 5 | - | - | DRIVEWAY |
| | | | | | | | | | TOTAL 0010 | 2 | 2 | 31 | 60 | 15 | 4 | 2 | |

| STATION | LOCATION | 209.0200.S BACKFILL CONTROLLED LOW STRENGTH CY | PIPE NO. |
|---|---|---|---|
| 58+30 | LIGHTHOUSE LN | 18 | 100 |
| | TOTAL 0010 | 18 | |

*** CMCP MINIMUM WALL THICKNESS (0.064")
**** PACS MINIMUM WALL THICKNESS (0.064")

3

## BEAM GUARD

| STATION | TO | STATION | LT/RT | LOCATION | 614.2500 MGS THRIE BEAM TRANSITION LF | 614.2610 MGS GUARDRAIL TERMINAL EAT EACH | REMARKS |
|---|---|---|---|---|---|---|---|
| 54+99 | - | 55+98 | RT | LIGHTHOUSE LN | 39.5 | 1 | WEST APPROACH |
| 57+34 | - | 58+38 | RT | LIGHTHOUSE LN | 39.5 | 1 | EAST APPROACH |
| | | | | TOTAL 0010 | 79.0 | 2 | |

| STATION | TO | STATION | LT/RT | LOCATION | 614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF | 614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF | 614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 57+34 | - | 57+53 | LT | LIGHTHOUSE LN | 20.6 | - | - | EAST APPROACH |
| 110+20 | - | 111+12 | LT | KETTLE MORAINE DR | - | 51.6 | 1 | |
| | | | | TOTAL 0010 | 20.6 | 51.6 | 1 | |

3

## SIGNING

| STATION | OFFSET | PLAN SIGN NO. | LOCATION | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH |
|---|---|---|---|---|---|
| 53+18 | 22.4' RT | 10R | LIGHTHOUSE LN | 1 | 1 |
| 54+65 | 19.9' RT | 25M | LIGHTHOUSE LN | - | 1 |
| 55+57 | 23' LT | 30M | LIGHTHOUSE LN | - | 1 |
| 55+71 | 20.4' LT | 35M | LIGHTHOUSE LN | - | 1 |
| 55+91 | 18.2' LT | 70R | LIGHTHOUSE LN | 1 | 1 |
| 56+00 | 13.6' RT | 90R | LIGHTHOUSE LN | 1 | 1 |
| 56+03 | 15.9' LT | 80R | LIGHTHOUSE LN | 1 | 1 |
| 57+21 | 14.1' LT | 100R | LIGHTHOUSE LN | 1 | 1 |
| 57+21 | 15' RT | 110R | LIGHTHOUSE LN | 1 | 1 |
| 57+52 | 52.5' LT | 101R | LIGHTHOUSE LN | 1 | 2 |
| 57+66 | 28' LT | 52M | LIGHTHOUSE LN | - | 1 |
| 57+66 | 28' LT | 140R | LIGHTHOUSE LN | 1 | 1 |
| 57+87 | 16.9' RT | 40M | LIGHTHOUSE LN | - | 1 |
| 58+06 | 17.1' RT | 41M | LIGHTHOUSE LN | - | 1 |
| 58+26 | 23.9' LT | 50R | LIGHTHOUSE LN | 1 | 1 |
| 58+61 | 16.9' RT | 45M | LIGHTHOUSE LN | - | 1 |
| 110+86 | 16.2' LT | 55 | KETTLE MORAINE DR | - | 1 |
| 111+05 | 15.2' LT | 60 | KETTLE MORAINE DR | - | 1 |
| | | | TOTAL 0010 | 9 | 19 |

| STATION | OFFSET | PLAN SIGN NO. | LOCATION | 634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH | 634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH | 634.0808 POSTS TUBULAR STEEL 2X2-INCH X 8-FT EACH | 634.0816 POSTS TUBULAR STEEL 2X2-INCH X 16-FT EACH | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 638.2102 MOVING SIGNS TYPE II EACH |
|---|---|---|---|---|---|---|---|---|---|---|
| 53+22 | 23.9' RT | 5 | LIGHTHOUSE LN | - | 1 | - | - | - | 11.25 | - |
| 54+61 | 28.9' RT | 25M | LIGHTHOUSE LN | - | 1 | - | - | - | - | 1 |
| 55+01 | 22.8' RT | 26 | LIGHTHOUSE LN | - | - | - | - | - | 2.25 | - |
| 55+21 | 28' LT | 30M | LIGHTHOUSE LN | - | - | 1 | - | - | - | 2 |
| 55+75 | 29' LT | 35M | LIGHTHOUSE LN | - | 1 | - | - | - | - | 1 |
| 55+97 | 20.3' RT | 27 | LIGHTHOUSE LN | 1 | - | - | - | - | 3.00 | - |
| 55+99 | 20.7' LT | 28 | LIGHTHOUSE LN | 1 | - | - | - | - | 3.00 | - |
| 57+38 | 20.8' RT | 31 | LIGHTHOUSE LN | 1 | - | - | - | - | 3.00 | - |
| 57+36 | 20' LT | 29 | LIGHTHOUSE LN | 1 | - | - | - | - | 3.00 | - |
| 57+37 | 20.8' RT | 51<br>52M<br>53 | LIGHTHOUSE LN | - | - | - | 1 | 5.18 | 2.00 | 1 |
| 57+81 | 25.8' RT | 40M<br>41M | LIGHTHOUSE LN | - | 1 | - | - | - | - | 2 |
| 58+38 | 22' RT | 42 | LIGHTHOUSE LN | - | - | - | - | - | 2.25 | - |
| 58+58 | 29.3' RT | 45M | LIGHTHOUSE LN | 1 | - | - | - | - | - | 1 |
| 59+79 | 18' LT | 46 | LIGHTHOUSE LN | - | 1 | - | - | - | 11.25 | - |
| 110+88 | 24' LT | 55M | KETTLE MORAINE DR | 1 | - | - | - | - | - | 1 |
| 111+12 | 18.3' LT | 56 | KETTLE MORAINE DR | - | - | - | - | - | 2.25 | - |
| 111+40 | 24' LT | 60M | KETTLE MORAINE DR | 1 | - | - | - | - | - | 1 |
| | | | TOTAL 0010 | 7 | 5 | 1 | 1 | 5.18 | 43.25 | 10 |

## PAVEMENT MARKING

| STATION | TO | STATION | LOCATION | 646.2020 MARKING LINE EPOXY 6-INCH WHITE LF | 646.2020 MARKING LINE EPOXY 6-INCH YELLOW LF | 646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE LF |
|---|---|---|---|---|---|---|
| 54+19 | - | 59+39 | LIGHTHOUSE LN | 951 | 1,041 | - |
| 110+36 | - | 112+09 | KETTLE MORAINE DR | - | 348 | 18 |
| | | | TOTAL 0010 | 2,340 | | 18 |

## EROSION CONTROL

| STATION | TO | STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF | 628.1530.S SILT FENCE HEAVY DUTY LF | 628.1535.S SILT FENCE HEAVY DUTY MAINTENANCE LF |
|---|---|---|---|---|---|---|---|
| 54+51 | - | 55+34 | LIGHTHOUSE LN | 98 | 98 | - | - |
| 54+95 | - | 56+09 | LIGHTHOUSE LN | 100 | 100 | - | - |
| 55+52 | - | 56+20 | LIGHTHOUSE LN | - | - | 82 | 82 |
| 56+94 | - | 57+42 | LIGHTHOUSE LN | - | - | 54 | 54 |
| 57+42 | - | 59+36 | LIGHTHOUSE LN | 170 | 170 | - | - |
| 110+37 | - | 112+27 | KETTLE MORAINE DR | 217 | 217 | - | - |
| | | | TOTAL 0010 | 585 | 585 | 136 | 136 |

| STATION | TO | STATION | LT/RT | LOCATION | 625.0100 TOPSOIL SY | 628.2008 EROSION MAT URBAN CLASS I TYPE B SY | 629.0210 FERTILIZER TYPE B CWT | 630.0140 SEEDING MIXTURE NO. 40 LB | 630.0200 SEEDING TEMPORARY LB | 630.0500 SEED WATER MGAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 54+19 | - | 55+95 | RT | LIGHTHOUSE LN | 209 | 209 | 0.14 | 9.4 | 5.7 | 7.1 |
| 54+89 | - | 55+38 | LT | LIGHTHOUSE LN | 118 | 118 | 0.08 | 5.3 | 3.2 | 4.0 |
| 55+49 | - | 56+00 | LT | LIGHTHOUSE LN | 139 | 139 | 0.09 | 6.3 | 3.8 | 4.7 |
| 57+37 | - | 59+43 | RT | LIGHTHOUSE LN | 192 | 192 | 0.13 | 8.7 | 5.2 | 6.5 |
| 110+20 | - | 112+17 | LT | KETTLE MORAINE DR | 124 | 124 | 0.08 | 5.6 | 3.4 | 4.2 |
| | | | | UNDISTRIBUTED | 78 | 78 | 0.48 | 3.7 | 1.7 | 3.5 |
| | | | | TOTAL 0010 | 860 | 860 | 1.00 | 39.0 | 23.0 | 30.0 |

| LOCATION | 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|
| PRECONSTRUCTION | 1 | - |
| STRUCTURE REMOVAL | 1 | 2 |
| PROPOSED STRUCTURE CONSTRUCTION | 1 | 2 |
| ROADWAY GRADING | 1 | 2 |
| FINAL RESTORATION | 1 | - |
| TOTAL 0010 | 5 | 6 |

| STATION | OFFSET | LOCATION | 628.7504 TEMPORARY DITCH CHECKS LF |
|---|---|---|---|
| 55+45 | RT | LIGHTHOUSE LN | 10 |
| 55+85 | LT | LIGHTHOUSE LN | 10 |
| 57+75 | RT | LIGHTHOUSE LN | 10 |
| | | TOTAL 0010 | 30 |

## WATERWAY

| LOCATION | SPV.0060.03 SPECIAL (03. FISHERIES CONSULTANT (4825-05-71)) EACH |
|---|---|
| LIGHTHOUSE LN | 1 |
| TOTAL 0010 | 1 |

| LOCATION | 520.2024 CULVERT PIPE TEMPORARY 24-INCH LF | REMARKS |
|---|---|---|
| CAUSEWAY | 200 | CAUSEWAY INSTALLATION & PIER REMOVAL |
| CAUSEWAY | 60 | CAUSEWAY EXTENSION & PIER CONSTRUCTION |
| TOTAL 0010 | 260 | |

| LOCATION | 616.0700.S FENCE SAFETY LF | SPV.0060.02 SPECIAL (02. TEMPORARY PORTAGE PATH) EACH |
|---|---|---|
| PORTAGE ROUTE | 530 | 1 |
| TOTAL 0010 | 530 | 1 |

| STATION | TO | STATION | STAGE | LOCATION | 603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF | 603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF | SPV.0060.01 SPECIAL (01. TEMPORARY CAUSEWAY) EACH | SPV.0180.01 SPECIAL (01. ENHANCED TURBIDITY BARRIER) SY | FOR INFORMATIONAL PURPOSES ONLY TOPSOIL SY | EROSION MAT URBAN CLASS I TYPE B SY | FERTILIZER TYPE B CWT | SEEDING MIXTURE NO. 40 LB | WETLAND RESTORATION SY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | STRUCTURE REMOVAL & CONSTRUCTION | LIGHTHOUSE LN | 250 | 250 | 1 | 170 | - | - | - | - | - | TEMPORARY CAUSEWAY |
| 56+91 | - | 57+34 | AFTER CAUSEWAY REMOVAL | LIGHTHOUSE LN | - | 150 | - | 85 | - | - | - | - | - | EAST SIDE OF MILWAUKEE RIVER |
| 56+79 | - | 58+06 | ROADWAY GRADING | LIGHTHOUSE LN RT | - | - | - | 120 | 350 | 350 | 0.3 | 17 | 89 | CAUSEWAY RESTORATION |
| | | | | TOTAL 0010 | 250 | 400 | 1 | 375 | 350 | 350 | 0.3 | 17 | 89 | |

| LOCATION | 999.2100.S INSTALLING AND MAINTAINING CLIMBING TURTLE EXCLUSION FENCE LF |
|---|---|
| LIGHTHOUSE LN | 100 |
| TOTAL 0010 | 100 |

3

## TRAFFIC CONTROL

| LOCATION | 643.0300 TRAFFIC CONTROL DRUMS DAY |
|---|---|
| CLEARING & GRUBBING WORK | 500 |
| TOTAL 0010 | 500 |

| SHEET | EACH | 643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY | 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY |
|---|---|---|---|
| ADVANCE WARNING | 6 | 600 | 900 |
| BRIDGE REMOVAL BRIDGE CONSTRUCTION ROADWAY WORK | 15.00 | 1,500 | 2,100 |
| TOTAL 0010 | | 2,100 | 3,000 |

| SHEET | SIGN CODE OR LEGEND NO. | EACH | 643.0900 TRAFFIC CONTROL SIGNS DAY | 643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF | REMARKS |
|---|---|---|---|---|---|
| ADVANCE WARNING | R11-3C | 3 | 300 | - | |
| BRIDGE REMOVAL BRIDGE CONSTRUCTION | R11-2B | 3 | 255 | - | |
| | R11-2 | 3 | 255 | - | |
| | M6-1 | 1 | 85 | - | |
| | SPECIAL | 1 | - | 10.00 | PORTAGE SIGN |
| ROADWAY WORK | R11-2B | 3 | 45 | - | |
| | R11-2 | 3 | 45 | - | |
| DETOUR ROUTE | 1E | 2 | 600 | 7.50 | "LIGHTHOUSE LANE" |
| | 1W | 2 | 600 | 7.50 | "LIGHTHOUSE LANE" |
| | 1E-L | 2 | 600 | 7.50 | "LIGHTHOUSE LANE" |
| | 1W-R | 3 | 900 | 11.25 | "LIGHTHOUSE LANE" |
| | 2E-L | 2 | 600 | 7.50 | "LIGHTHOUSE LANE" |
| | 2W-R | 3 | 900 | 11.25 | "LIGHTHOUSE LANE" |
| | 3E | 4 | 800 | 15.00 | "LIGHTHOUSE LANE" |
| | 3W | 4 | 800 | 15.00 | "LIGHTHOUSE LANE" |
| | 4E | 1 | 200 | 3.75 | "LIGHTHOUSE LANE" |
| | 4W | 1 | 200 | 3.75 | "LIGHTHOUSE LANE" |
| | 7-E | 1 | 200 | - | |
| | 7-W | 1 | 200 | - | |
| UNDISTRIBUTED | | - | 759 | - | |
| | | TOTAL 0010 | 8,344 | 100.00 | |

| LOCATION | 643.1050 TRAFFIC CONTROL SIGNS PCMS DAY | REMARKS |
|---|---|---|
| LIGHTHOUSE LN & SLEEPY HOLLOW RD | 14 | ROADWAY TO CLOSE "WEEKDAY MONTH, DAY" |
| NEWARK DR & KETTLE MORAINE SCENIC DR | 14 | ROADWAY TO CLOSE "WEEKDAY MONTH, DAY" |
| TOTAL 0010 | 28 | |

## OTHER

| LOCATION | 650.5000 CONSTRUCTION STAKING BASE LF | 650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF | 650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-66-156) EACH | 650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 4825-05-71) EACH | 650.9920 CONSTRUCTION STAKING SLOPE STAKES LF |
|---|---|---|---|---|---|
| LIGTHOUSE LN | 122 | 70 | 1 | 1 | 400 |
| KETTLE MORAINE DR | 141 | - | - | - | 238 |
| TOTAL 0010 | 263 | 70 | 1 | 1 | 638 |

| LOCATION | 999.2000.S.01 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STATION) (01. STATION 56+50) EACH |
|---|---|
| P66-0044 | 1 |
| TOTAL 0010 | 1 |

## CONVENTIONAL UTILITY SYMBOLS

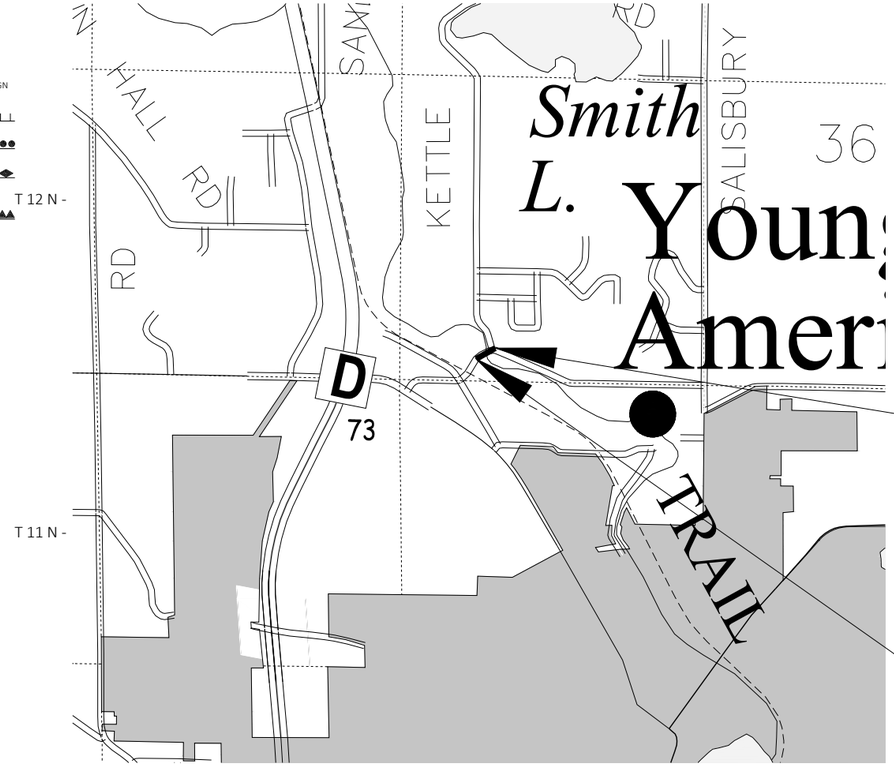
| | | | | | |
|---|---|---|---|---|---|
| FIRE HYDRANT | | WATER | W | ELECTRIC POLE | |
| WATER VALVE | WV | GAS | G | ELECTRIC POLE W/ LIGHT | |
| WATER VALVE SERVICE | WVS | TELEPHONE | T | GUY WIRE ANCHOR | GUY |
| WELL | WELL | OVERHEAD TRANSMISSION LINES | OH | GUY POLE | GUY POLE |
| SANITARY MANHOLE | SAN | ELECTRIC | E | LIGHT POLE | |
| SEPTIC COVER | SEPTIC | CABLE TELEVISION | TV | TRAFFIC SIGNAL POLE | |
| STORM MANHOLE | SS | FIBER OPTIC | FO | ELECTRIC MANHOLE | EL |
| MANHOLE (GENERIC) | MH | SANITARY SEWER | SAN | ELECTRIC METER | |
| GAS VALVE | GV | STORM SEWER | SS | ELECTRIC PULLBOX | |
| GAS VAULT | | COMBINED SEWER | SSS | ELECTRIC VAULT | |
| GAS VENT | GVT | | | TELEPHONE MANHOLE | TEL |
| CONTROL BOX | | | | TELEPHONE PEDESTAL | |
| COMMUNICATIONS VAULT | | | | CABLE TV MANHOLE | TV |
| ELECTRIC TOWER | | | | CABLE TV PEDESTAL | |

## CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W OR HE LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
EXISTING CENTERLINE
CORPORATE LIMITS
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)
BUILDING
TO BE REMOVED
BRIDGE
CULVERT

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
GEODETIC SURVEY MONUMENT
NON-PERMITTED SIGN
PERMITTED SIGN
ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
PARCEL NUMBER 25
PARALLEL OFFSETS

R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND SURVEY MONUMENT (SEE FOUND MONUMENT TABLE) IP






## CONVENTIONAL ABBREVIATIONS

| | | | |
|---|---|---|---|
| ACCESS RIGHTS | AR | PROPERTY LINE | PL |
| ACRES | AC | RECORDED AS | (100') |
| ALUMINUM | ALUM | REEL / IMAGE | R/I |
| AND OTHERS | ET AL | REFERENCE LINE | R/L |
| BLOCK | BLK | REMAINING | REM |
| CENTERLINE | C/L | RESTRICTIVE DEVELOPMENT EASEMENT | RDE |
| CERTIFIED SURVEY MAP | CSM | RIGHT | RT |
| CONCRETE | CONC | RIGHT OF WAY | R/W |
| COUNTY TRUNK HIGHWAY | CTH | SECTION | SEC |
| CORNER | COR | SEPTIC VENT | SEPV |
| DOCUMENT NUMBER | DOC | SQUARE FEET | SF |
| EASEMENT | EASE | STATE TRUNK HIGHWAY | STH |
| EXISTING | EX | STATION | STA |
| GAS VALVE | GV | TELEPHONE PEDESTAL | TP |
| GRID NORTH | GN | TRANSPORTATION PROJECT PLAT | TPP |
| IDENTIFICATION | ID | UNITED STATES HIGHWAY | USH |
| INTERSTATE HIGHWAY | IH | VOLUME | V |
| LEFT | LT | | |
| MONUMENT | MON | | |
| NATIONAL GEODETIC SURVEY | NGS | | |
| NUMBER | NO | | |
| OUTLOT | OL | | |
| PAGE | P | | |
| POINT OF TANGENCY | PT | | |
| POINT OF BEGINNING | POB | | |
| POINT OF CURVATURE | PC | | |
| POINT OF COMPOUND CURVE | PCC | | |
| POINT OF INTERSECTION | PI | | |

## CURVE DATA ABBREVIATIONS

| | |
|---|---|
| LONG CHORD | LCH |
| LONG CHORD BEARING | LCB |
| RADIUS | R |
| DEGREE OF CURVE | D |
| DELTA ANGLE | Δ /DELTA |
| LENGTH OF CURVE | L |
| TANGENT | T |
| DIRECTION AHEAD | DA |
| DIRECTION BACK | DB |

LAYOUT
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = N/A

| R/W PROJECT NUMBER | SHEET NUMBER | TOTAL SHEETS |
|---|---|---|
| 4825-05-01 | | |
| FEDERAL PROJECT NUMBER N/A | 4.01 | 2 |

PLAT OF RIGHT OF WAY REQUIRED FOR

# T BARTON, LIGHTHOUSE LN
# OVER MILWAUKEE RIVER BRIDGE P66-0044

| | |
|---|---|
| LIGHTHOUSE | WASHINGTON |

CONSTRUCTION PROJECT NUMBER
4852-05-71

### END PROJECT
553.30' NORTH AND 1,903.10.' EAST OF THE SOUTHWEST ¼ CORNER OF SECTION 35, T-12-N, R-19-E
STA 58+60.48
Y = 196432.0743
X = 359097.9710

### BEGIN PROJECT
427.36' NORTH AND 1,657.50' EAST OF THE SOUTHWEST ¼ CORNER OF SECTION 35, T-12-N, R-19-E
STA 55+45.18
Y = 196332.7187
X = 358806.8473

## NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), WASHINGTON COUNTY, NAD83 (2011)IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY AND PERMANENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN <CITY/REGION OFFICE>

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE DETAIL PAGES.

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

ORIGINAL PLANS PREPARED BY

Mead & Hunt

WISCONSIN RICK R. HILLMANN S-3005 NEW BERLIN WI. LAND SURVEYOR

DATE: 5/4/2026 (Signature)

REVISION DATE

TOWN OF BARTON

APPROVED FOR THE TOWN

DATE: June 16, 2026 Kristino Turner (Signatur



FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\040102-RP.DWG
PLOT DATE : 4/29/2026 1:55 PM
PLOT BY : JODY HILBER
PLOT NAME :

| Line Table | | |
|---|---|---|
| Line # | Length | Direction |
| L1 | 17.122 | S35° 02' 53.82"E |
| L2 | 74.514 | S27° 17' 45.80"W |
| L3 | 105.968 | S55° 05' 06.12"W |
| L4 | 29.108 | N89° 01' 39.33"W |
| L5 | 10.197 | S12° 15' 14.44"W |
| L6 | 20.914 | S89° 01' 39.33"E |
| L7 | 105.104 | N54° 25' 49.63"E |
| L8 | 33.487 | S35° 02' 53.82"E |
| L9 | 27.473 | S65° 21' 21.04"W |
| L10 | 4.950 | S19° 38' 53.11"E |
| L11 | 29.970 | N05° 07' 10.19"W |
| L12 | 16.970 | N33° 08' 35.57"W |
| L13 | 181.363 | S72° 22' 33.15"W |
| L14 | 23.752 | N65° 33' 48.02"E |
| L15 | 89.437 | N65° 33' 48.02"E |
| L16 | 89.318 | S66° 14' 59.14"E |
| L17 | 18.628 | S77° 17' 48.48"W |
| L18 | 11.774 | S04° 27' 43.76"W |

TLE STATION OFFSET TABLE

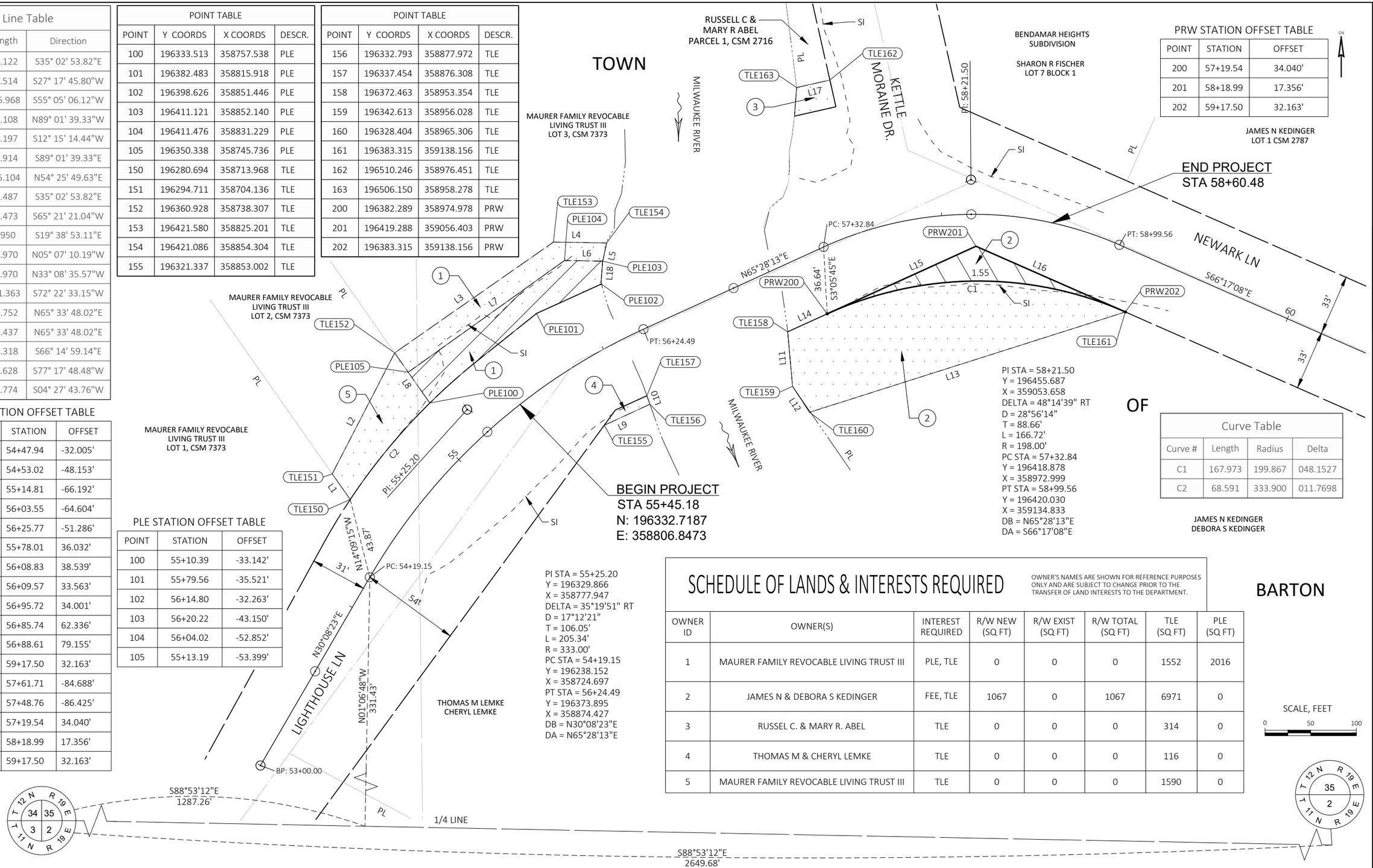
| POINT | STATION | OFFSET |
|---|---|---|
| 150 | 54+47.94 | -32.005' |
| 151 | 54+53.02 | -48.153' |
| 152 | 55+14.81 | -66.192' |
| 153 | 56+03.55 | -64.604' |
| 154 | 56+25.77 | -51.286' |
| 155 | 56+78.01 | 36.032' |
| 156 | 56+08.83 | 38.539' |
| 157 | 56+09.57 | 33.563' |
| 158 | 56+95.72 | 34.001' |
| 159 | 56+85.74 | 62.336' |
| 160 | 56+88.61 | 79.155' |
| 161 | 59+17.50 | 32.163' |
| 162 | 57+61.71 | -84.688' |
| 163 | 57+48.76 | -86.425' |
| 200 | 57+19.54 | 34.040' |
| 201 | 58+18.99 | 17.356' |
| 202 | 59+17.50 | 32.163' |

| POINT TABLE | | | |
|---|---|---|---|
| POINT | Y COORDS | X COORDS | DESCR. |
| 100 | 196333.513 | 358757.538 | PLE |
| 101 | 196382.483 | 358815.918 | PLE |
| 102 | 196398.626 | 358851.446 | PLE |
| 103 | 196411.121 | 358852.140 | PLE |
| 104 | 196411.476 | 358831.229 | PLE |
| 105 | 196350.338 | 358745.736 | PLE |
| 150 | 196280.694 | 358713.968 | TLE |
| 151 | 196294.711 | 358704.136 | TLE |
| 152 | 196360.928 | 358738.307 | TLE |
| 153 | 196421.580 | 358825.201 | TLE |
| 154 | 196421.086 | 358854.304 | TLE |
| 155 | 196321.337 | 358853.002 | TLE |

| POINT TABLE | | | |
|---|---|---|---|
| POINT | Y COORDS | X COORDS | DESCR. |
| 156 | 196332.793 | 358877.972 | TLE |
| 157 | 196337.454 | 358876.308 | TLE |
| 158 | 196372.463 | 358953.354 | TLE |
| 159 | 196342.613 | 358956.028 | TLE |
| 160 | 196328.404 | 358965.306 | TLE |
| 161 | 196383.315 | 359138.156 | TLE |
| 162 | 196510.246 | 358976.451 | TLE |
| 163 | 196506.150 | 358958.278 | TLE |
| 200 | 196382.289 | 358974.978 | PRW |
| 201 | 196419.288 | 359056.403 | PRW |
| 202 | 196383.315 | 359138.156 | PRW |

PLE STATION OFFSET TABLE

| POINT | STATION | OFFSET |
|---|---|---|
| 100 | 55+10.39 | -33.142' |
| 101 | 55+79.56 | -35.521' |
| 102 | 56+14.80 | -32.263' |
| 103 | 56+20.22 | -43.150' |
| 104 | 56+04.02 | -52.852' |
| 105 | 55+13.19 | -53.399' |




PRW STATION OFFSET TABLE

| POINT | STATION | OFFSET |
|---|---|---|
| 200 | 57+19.54 | 34.040' |
| 201 | 58+18.99 | 17.356' |
| 202 | 59+17.50 | 32.163' |

| Curve Table | | | |
|---|---|---|---|
| Curve # | Length | Radius | Delta |
| C1 | 167.973 | 199.867 | 048.1527 |
| C2 | 68.591 | 333.900 | 011.7698 |

## SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.

| OWNER ID | OWNER(S) | INTEREST REQUIRED | R/W NEW (SQ FT) | R/W EXIST (SQ FT) | R/W TOTAL (SQ FT) | TLE (SQ FT) | PLE (SQ FT) |
|---|---|---|---|---|---|---|---|
| 1 | MAURER FAMILY REVOCABLE LIVING TRUST III | PLE, TLE | 0 | 0 | 0 | 1552 | 2016 |
| 2 | JAMES N & DEBORA S KEDINGER | FEE, TLE | 1067 | 0 | 1067 | 6971 | 0 |
| 3 | RUSSEL C. & MARY R. ABEL | TLE | 0 | 0 | 0 | 314 | 0 |
| 4 | THOMAS M & CHERYL LEMKE | TLE | 0 | 0 | 0 | 116 | 0 |
| 5 | MAURER FAMILY REVOCABLE LIVING TRUST III | TLE | 0 | 0 | 0 | 1590 | 0 |

| REVISION DATE | DATE | SCALE, FEET | HWY: LIGHTHOUSE LANE | STATE R/W PROJECT NUMBER 4825-05-01 | PLAT SHEET 4.02 | |
|---|---|---|---|---|---|---|
| | GRID FACTOR | 0 50 100 | COUNTY: WASHINGTON | CONSTRUCTION PROJECT NUMBER 4825-05-71 | PS&E SHEET 35 | E |

FILE NAME : 040101-RP.DWG
LAYOUT NAME - 040102-rp
PLOT DATE : 5/4/2026 12:03 PM PLOT BY : JODY HILBER PLOT NAME : PLOT SCALE :
WISDOT/CADDS SHEET 75

NOTE: STATION AND OFFSET FOR CULVERT PIPE APRON END WALLS ARE GIVEN TO END OF CULVERT PIPE

110, CPCS 18-INCH 31 FT @ 3.78%
INVERT: 920.66' (110U)
INVERT: 919.50' (110D)

110D, AE-CPCS 18-INCH
STA 55+57.07, 45.0' LT

110U, AE-CPCS 18-INCH
STA 55+30.53, 38.5' LT

SLOPE INTERCEPT (TYP.)

BEGIN CONSTRUCTION
STA 54+19.15

BEGIN PROJECT
STA 55+45.18

EXISTING STRUCTURE
P-66-0156

END MILL AND OVERLAY
STA 110+53.10

END CONSTRUCTION
STA 112+17.29
SEE PLAN DETAIL SHEET

100U, AE-PACS SLOPED SIDE DRAIN 4 TO 1
STA 58+35.32, 24.2' LT

100, PACS 28X20-INCH 60 FT @ 3.87%
INVERT: 921.80' (100U)
INVERT: 919.48' (100D)

PROPOSED R/W

BEGIN MILL AND OVERLAY
STA 57+86.73

100D, AE-PACS SLOPED SIDE DRAIN 4 TO 1
STA 58+19.11, 33.7' RT

STRUCTURE B-66-0156
SEE STRUCTURE DRAWINGS
STA 56+07.13 TOSTA 57+26.64

MILWAUKEE RIVER

END CONSTRUCTION
STA 59+42.54

END PROJECT
STA 58+60.48

KETTLE MORAINE DR

NEWARK DR

LIGHTHOUSE LN

TLE

R/W

PLE

54+00

55+00

56+00

57+00

58+00

59+00

60+00

$HW_{100}$
EL. 927.06

$HW_2$
EL. 919.44

OBSERVED WATER
EL. 915.20
(3/24/2025)

STA 55+45.18
EL 925.45

BEGIN/END MILL AND OVERLAY

STRUCTURE B-66-0156 REQ'D

-0.65%

1.38%

VCL = 41.38
K = 16.95

LP STA 57+95.51
LP EL 923.87

VPC STA 57+86.73
VPC EL 923.89

VPI STA 58+07.42
VPI EL 923.78

VPT STA 58+28.11
VPT EL 924.18

STA 58+60.48
EL 924.63

STA 56+50
REMOVE STRUCTURE P-66-0044
2 SPAN I GIRDER CONCRETE BRIDGE
93' OVERALL LENGTH
23' OVERALL WIDTH

STA 56+50
STRUCTURE B-66-0156 REQ'D
PROPOSED 3 SPAN CONC HAUNCHED SLAB BRIDGE
119.5' OVERALL LENGTH
43.6' OVERALL WIDTH
40' CLEAR ROADWAY WIDTH
$0^0$ SKEW

930
925
920
915
912

925.42 925.26 925.10 924.94 924.77 924.61 924.45 924.29 924.13 923.97 923.87 924.12 924.48
925.42 925.26 925.10 924.94 924.77 924.61 924.45 924.29 924.13 923.97 923.87 924.12 924.48

53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | PLAN AND PROFILE: PLAN AND PROFILE | SHEET 36 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\050101-PP.DWG
LAYOUT NAME - 01

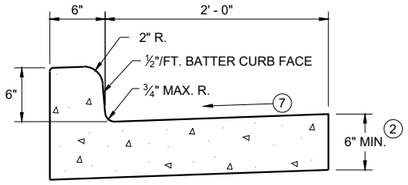
PLOT DATE : 8/19/2026 11:25 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 44

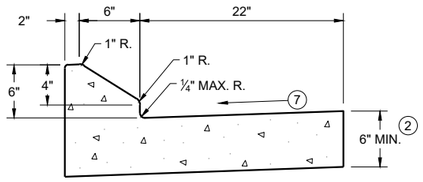
# Standard Detail Drawing List

| | |
|---|---|
| 08D01-24A | CONCRETE CURB & GUTTER |
| 08D01-24B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS |
| 08D02-08A | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-08B | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-08C | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 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 |
| 09A14-01 | DRIVEWAYS WITHOUT CURB AND GUTTER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 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 |
| 14B18-06B | STEEL PLATE BEAM GUARD, CLASS "A" AT MEDIAN APPROACH TO BRIDGES |
| 14B20-12A | STEEL THRIE BEAM STRUCTURE APPROACH |
| 14B20-12B | STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS |
| 14B20-12G | STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL |
| 14B24-09A | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B24-09B | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B24-09C | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B27-01A | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B27-01C | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B42-07A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B45-05A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A04-08E | DELINEATOR POST WITH REFLECTIVE SHEETING |
| 15C02-10A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-10B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-10C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C06-12 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-24A | PERMANENT LONGITUDINAL PAVEMENT MARKINGS |
| 15C33-05 | STOP LINE AND CROSSWALK PAVEMENT MARKING |

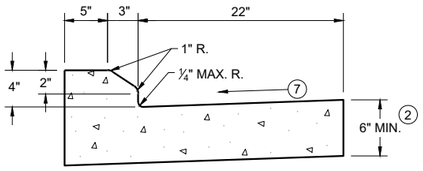

6



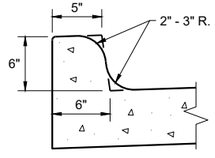

**TYPES A (1) & D**



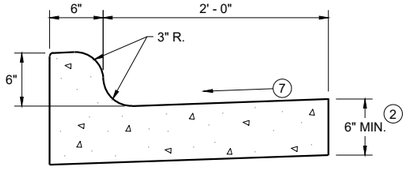

**6" SLOPED CURB TYPES G (1) & J**




**4" SLOPED CURB TYPES G (1) & J**

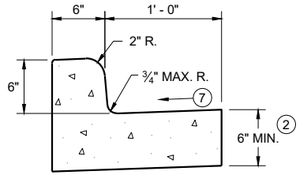



**TYPES K (1) & L**
(OPTIONAL CURB SHAPE)



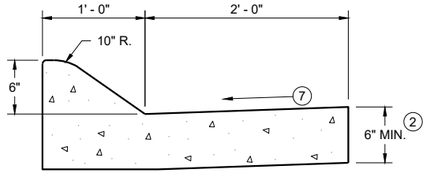

**TYPES K (1) & L**

**CONCRETE CURB AND GUTTER 30"**

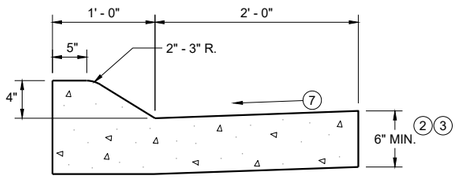



**TYPES A (1) & D**

**CONCRETE CURB AND GUTTER 18"**

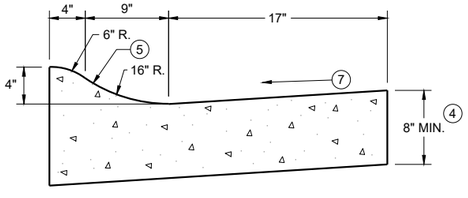



**6" SLOPED CURB TYPES A (1) & D**



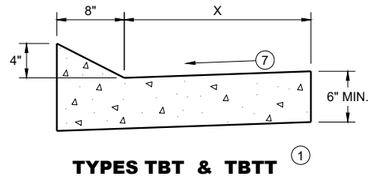

**4" SLOPED CURB TYPES A (1) & D**

**CONCRETE CURB AND GUTTER 36"**




**4" SLOPED CURB TYPES R (1) & T**
**CONCRETE CURB AND GUTTER 30"**

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

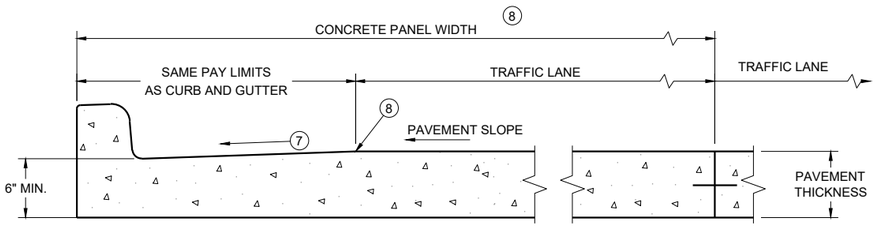



**TYPES TBT & TBTT (1)**

**CONCRETE CURB AND GUTTER**

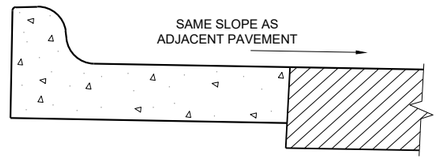
**PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE**

| 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.

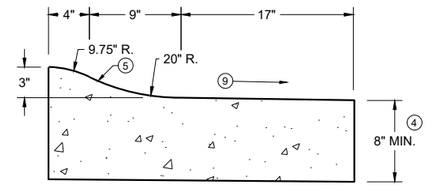
(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(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.

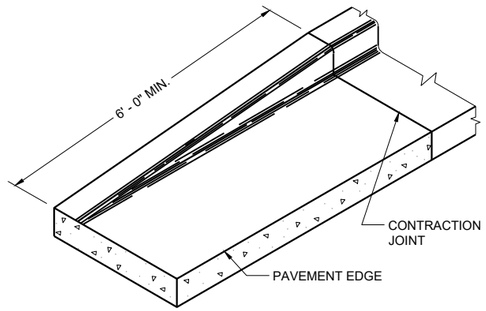
(9) SLOPE TO BE REVERSE SLOPE MATCHING THE SLOPE OF THE PAVEMENT AND THE CIRCULATORY ROADWAY



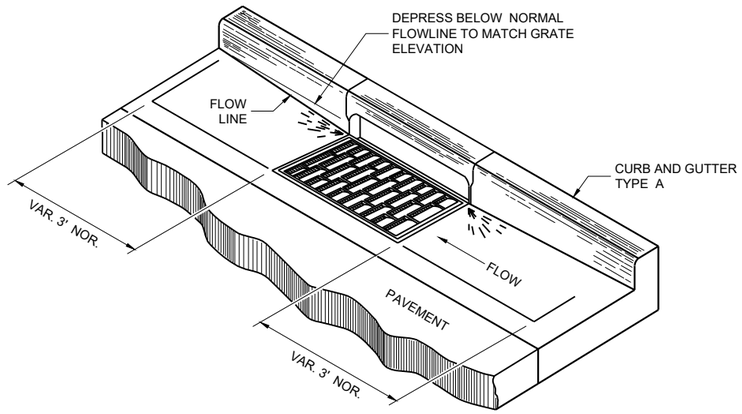

**3" SLOPED CURB TYPES R (1) & T**

**CONCRETE CURB AND GUTTER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION




## END SECTION CURB AND GUTTER




## DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

## GENERAL NOTES

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

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

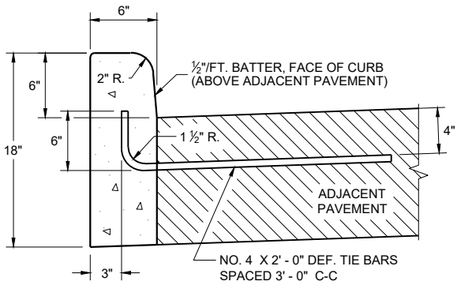
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

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

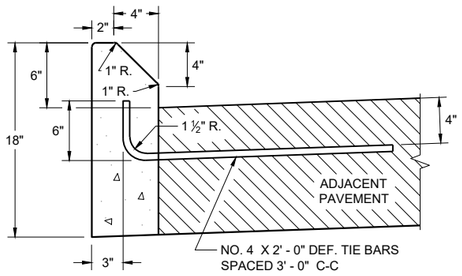
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

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

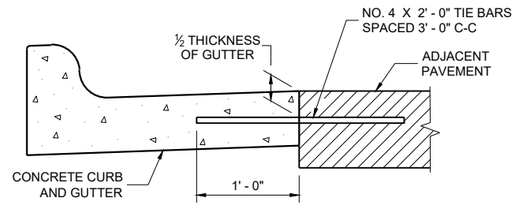



TYPES A (1) & D

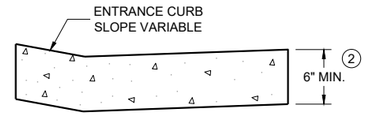



TYPES G (1) & J

### CONCRETE CURB

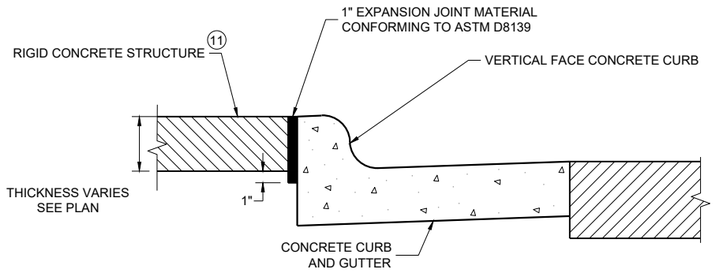



### TYPICAL TIE BAR LOCATION (1)

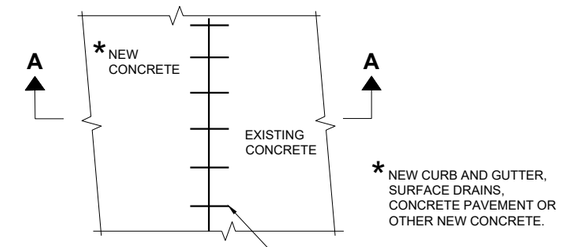



### DRIVEWAY ENTRANCE CURB (10)

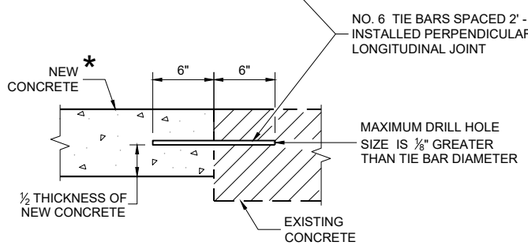
(WHEN DIRECTED BY THE ENGINEER)




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




PLAN VIEW




SECTION A - A

### TIE BARS DRILLED INTO EXISTING PAVEMENT

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA





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SDD 08D01-24b

## 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)

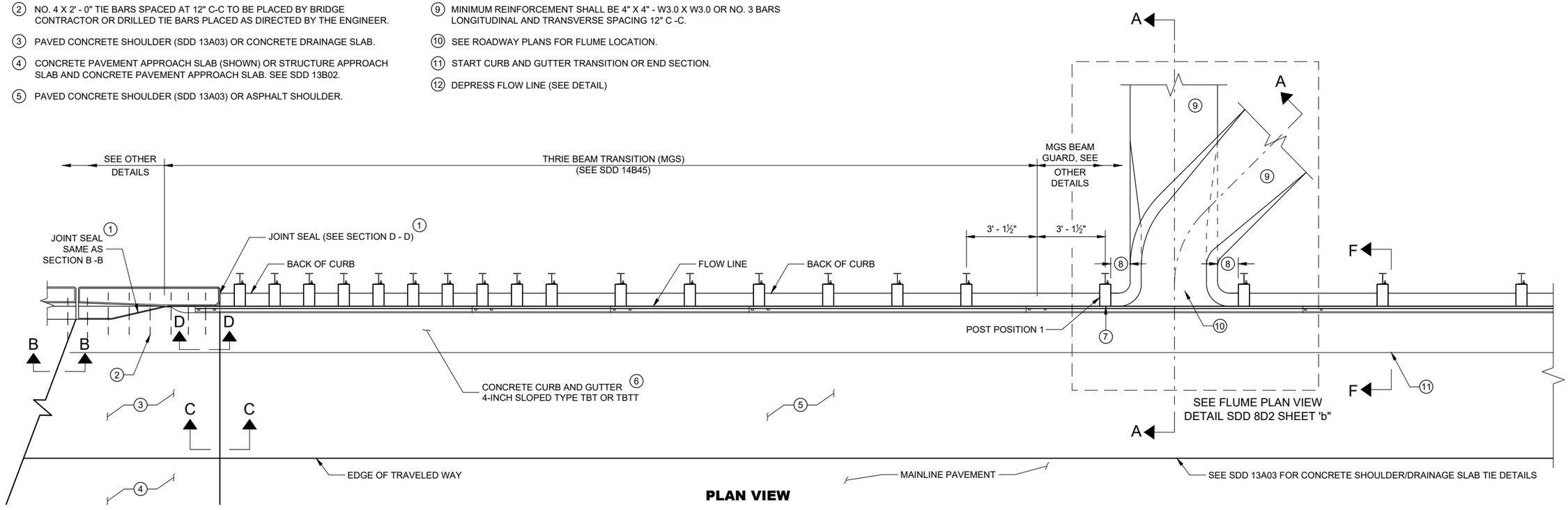
(8) CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.

(9) MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C -C.

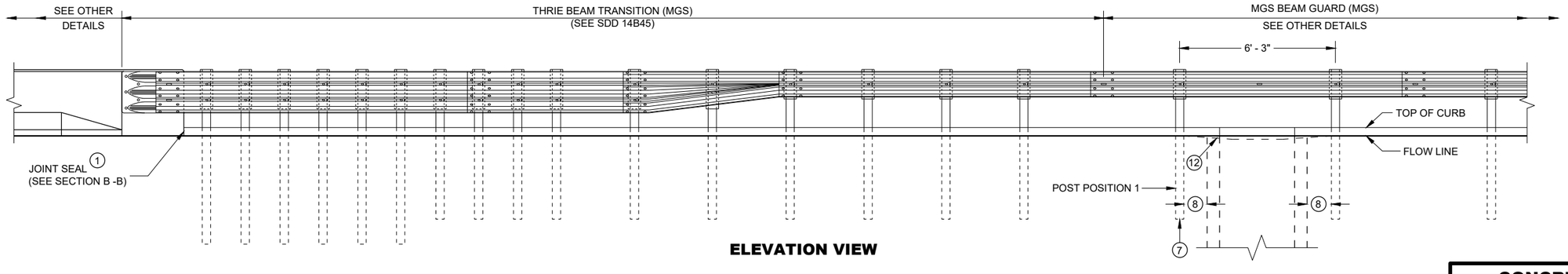
(10) SEE ROADWAY PLANS FOR FLUME LOCATION.

(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

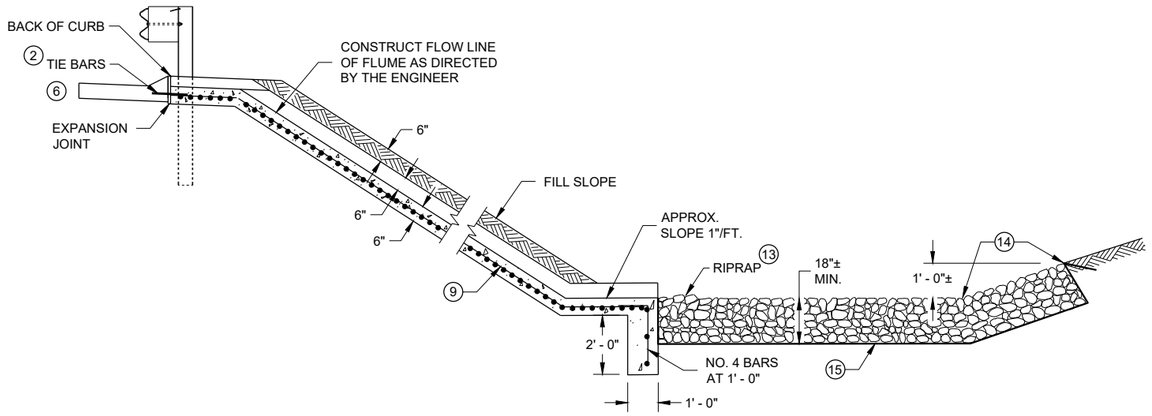


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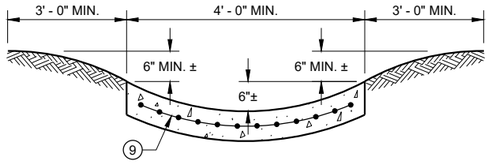
SDD 08D02 - 08a

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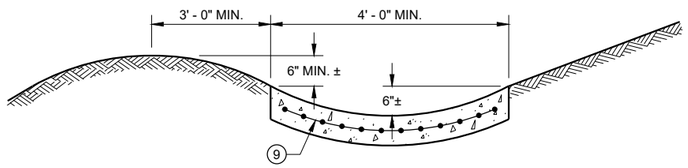
SDD 08D02 - 08a



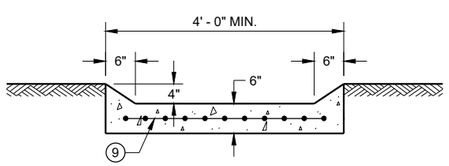

**SECTION A - A**



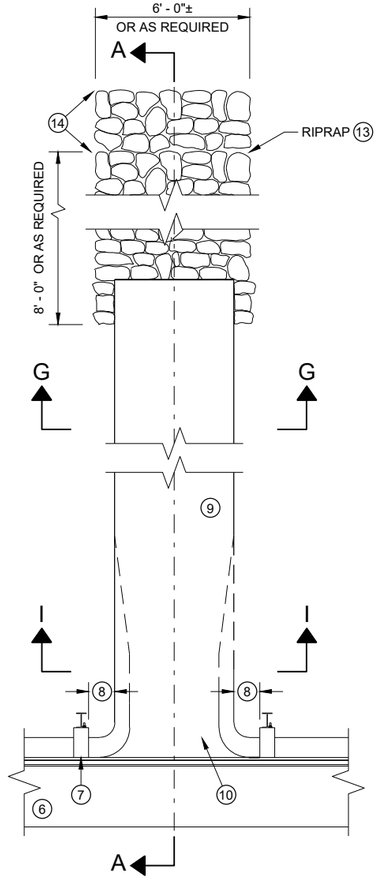

**SECTION G - G**



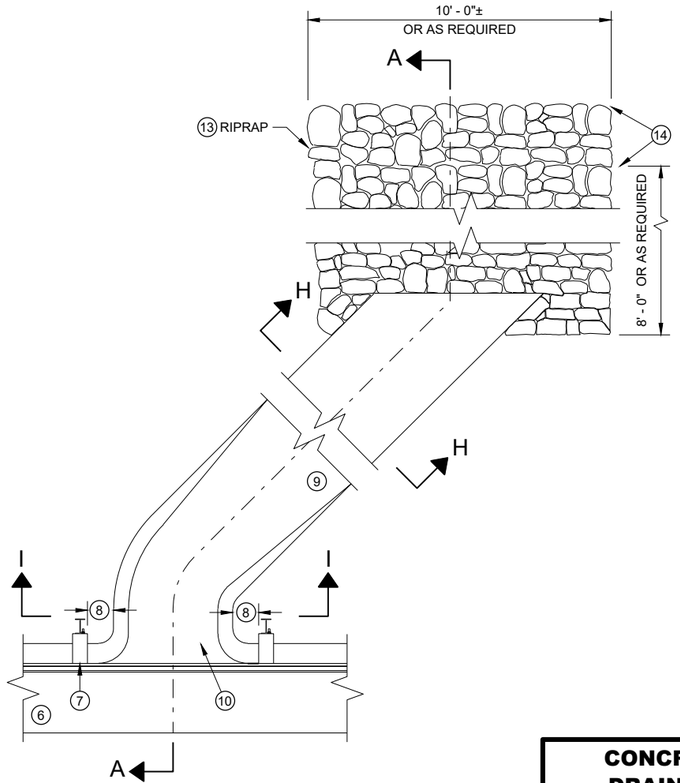

**SECTION H - H**




**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.

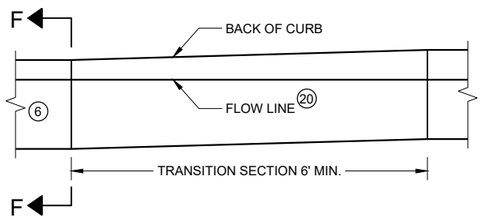
1. USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
2. NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
3. PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
4. CONCRETE PAVEMENT APPROACH 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 TYPE HR.

**CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES**

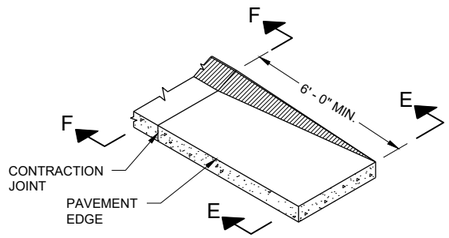
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



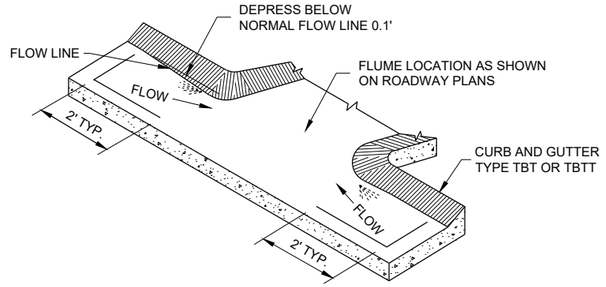

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SDD 08D02 - 08b




**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.

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(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 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.

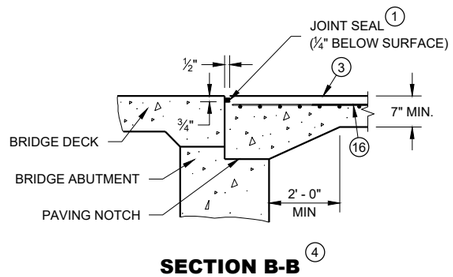
(17) MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.

(18) MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.

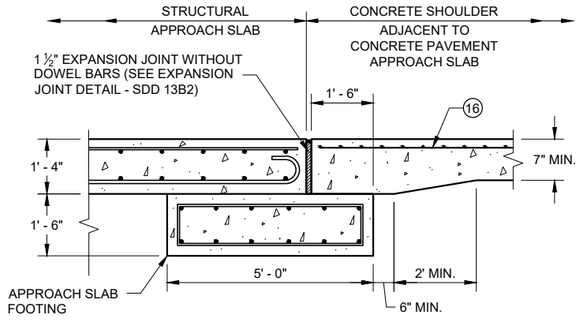
(19) ALIGN FACE OF POST BLOCK WITH FLOW LINE.

(20) MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.

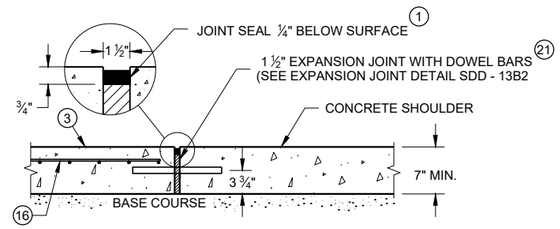
(21) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



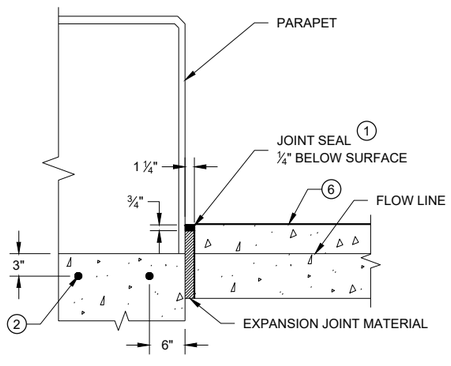

**SECTION B-B**



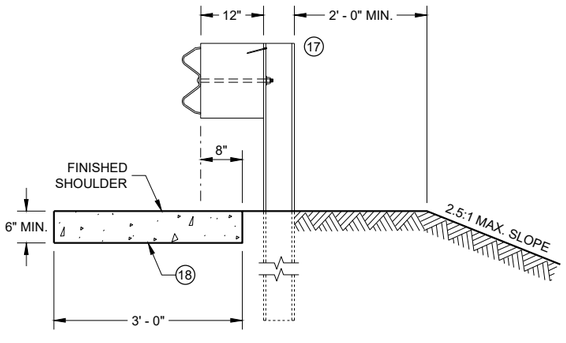

**SECTION C - C**
**JOINT DETAIL FOR BRIDGE WITH STRUCTURAL APPROACH SLAB AND CONCRETE APPROACH SLAB**



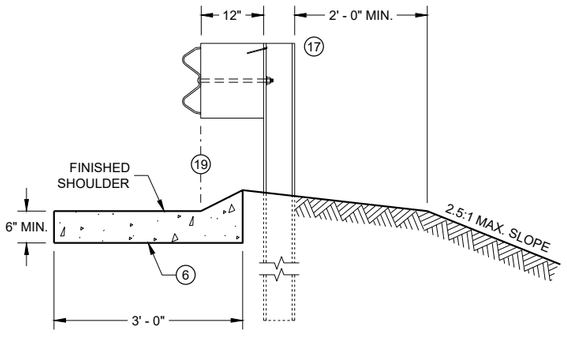

**SECTION C - C**
**JOINT DETAIL FOR BRIDGE APPROACH WITH CONCRETE SHOULDERS**




**SECTION D - D**




**SECTION E - E**




**SECTION F - F**

**CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

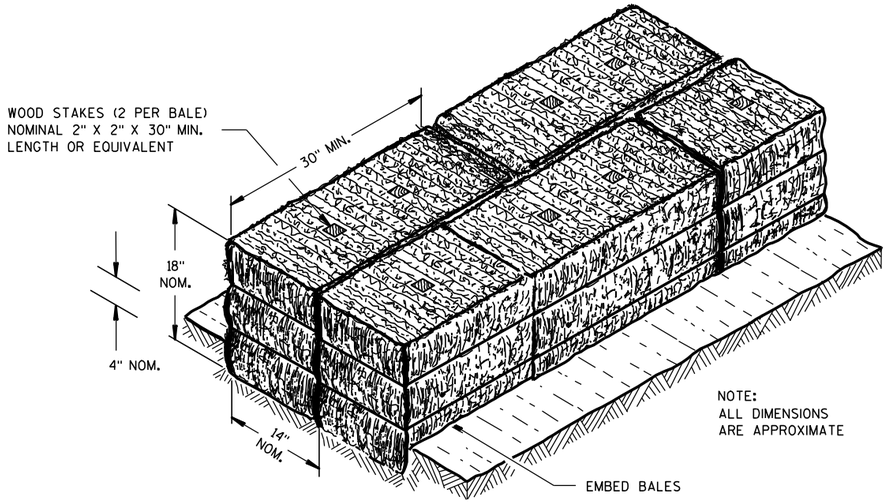
APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

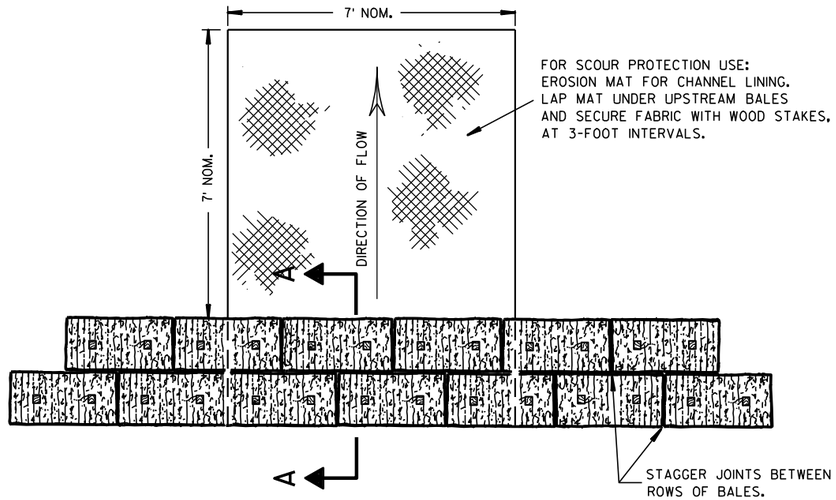


SDD 08D02 - 08c

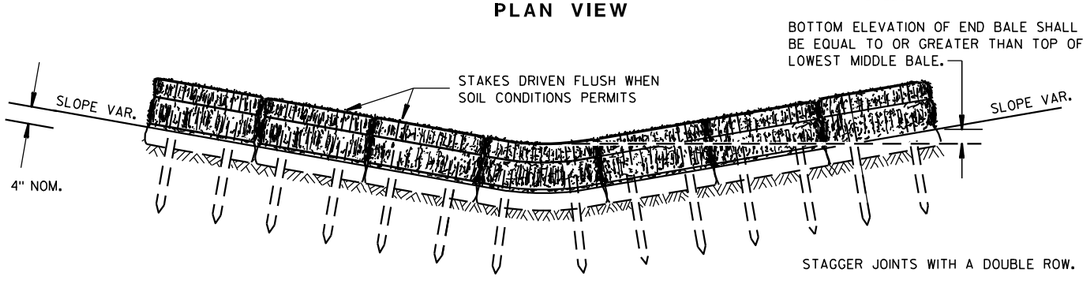
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SECTION A-A




PLAN VIEW



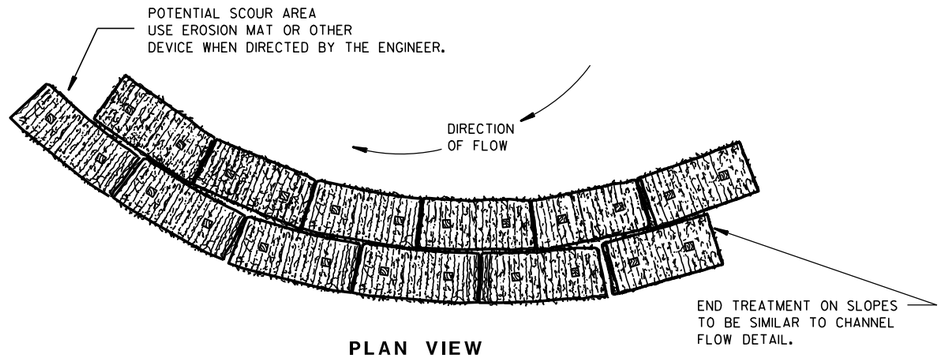

FRONT ELEVATION

## TEMPORARY DITCH CHECK USING EROSION BALES (1)

## GENERAL NOTES

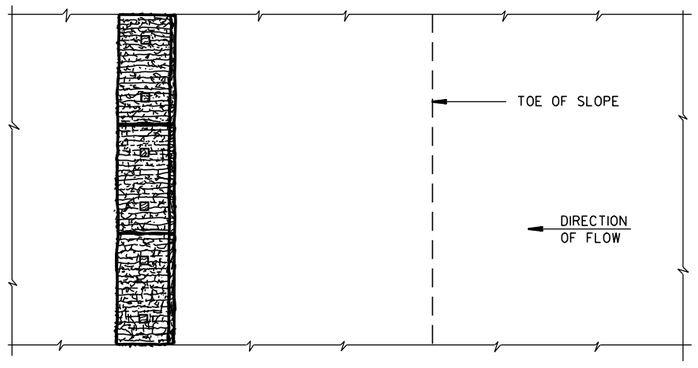
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

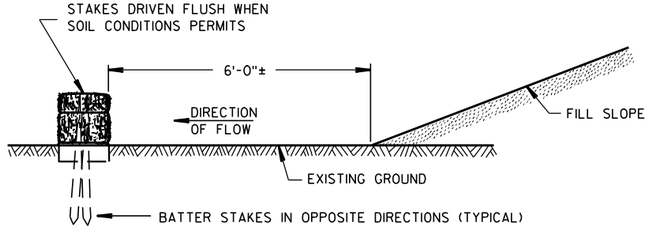



PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW




PLAN VIEW




FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

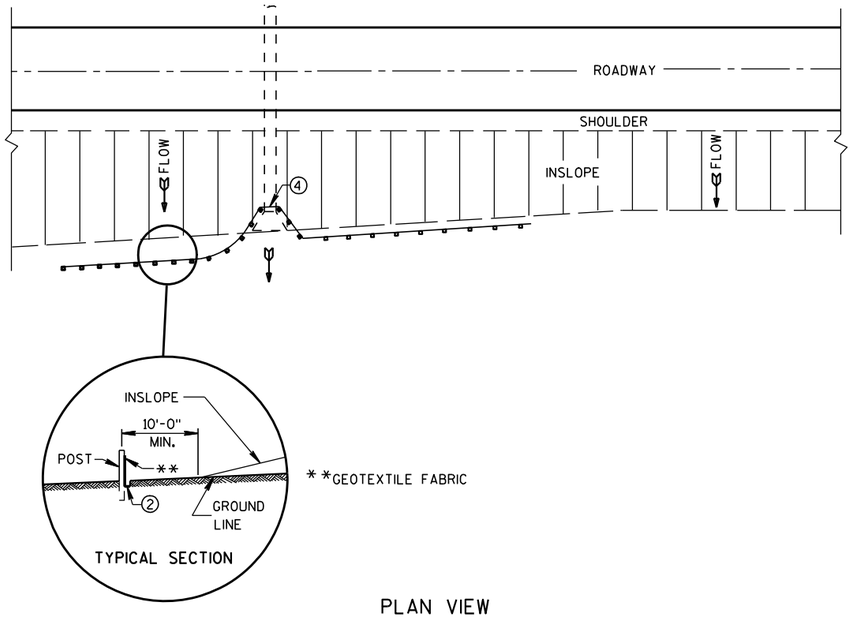
**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

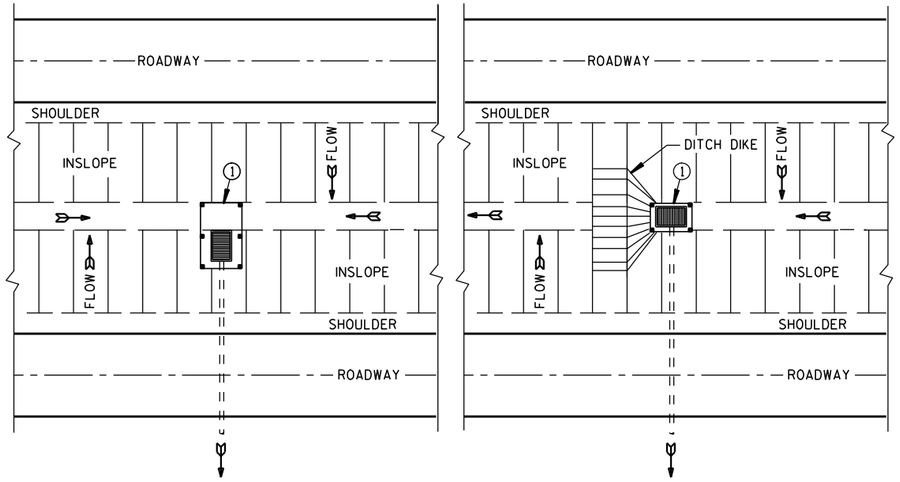
6/04/02 DATE — /S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



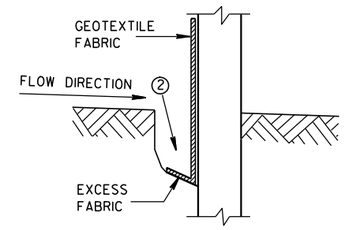

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

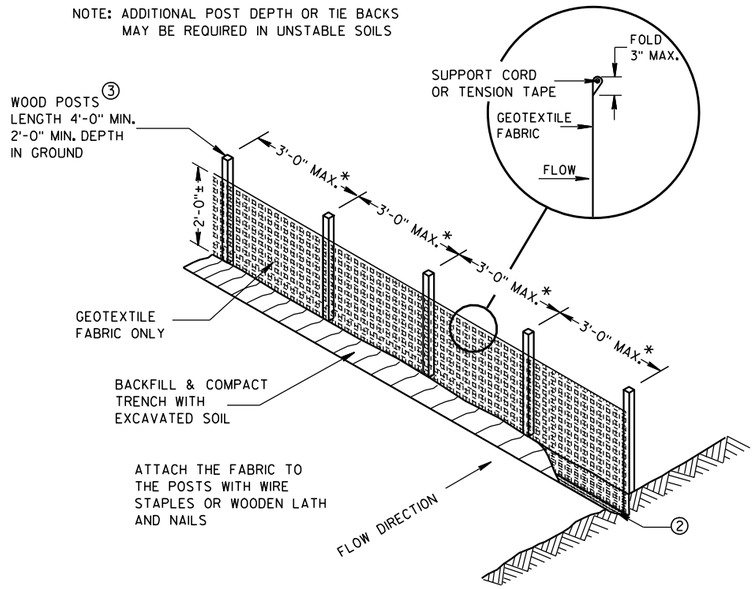
## GENERAL NOTES

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.

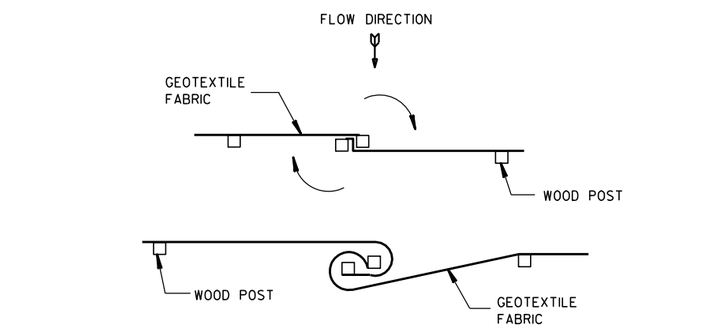



## TRENCH DETAIL

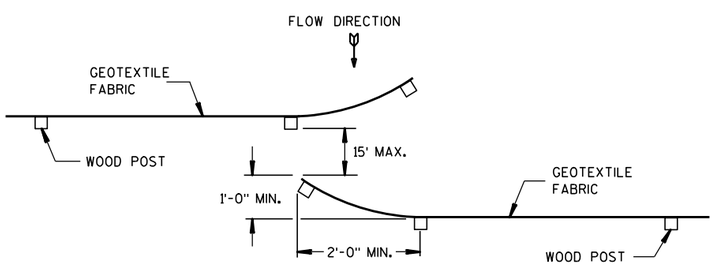



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

## SILT FENCE

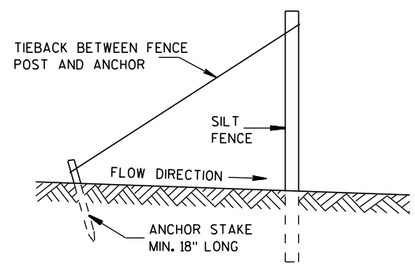



TWIST METHOD




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

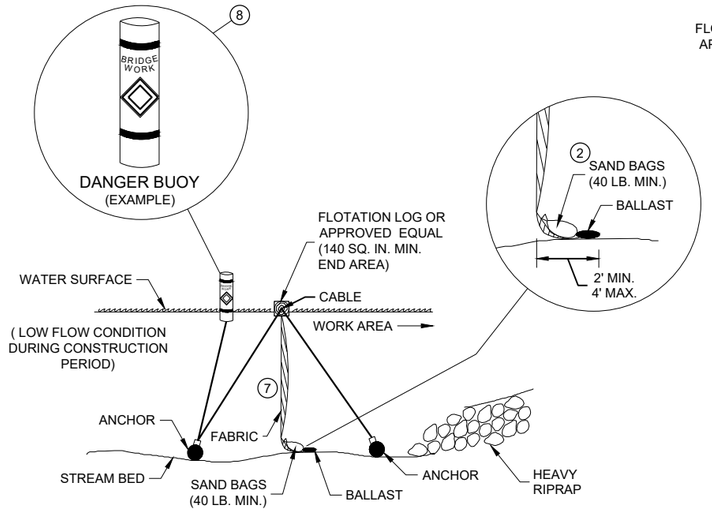


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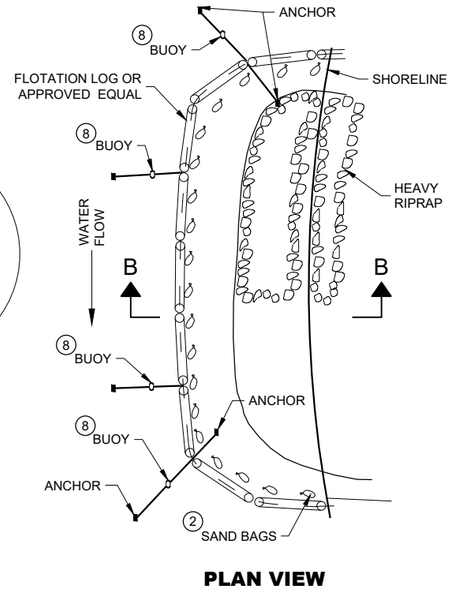
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

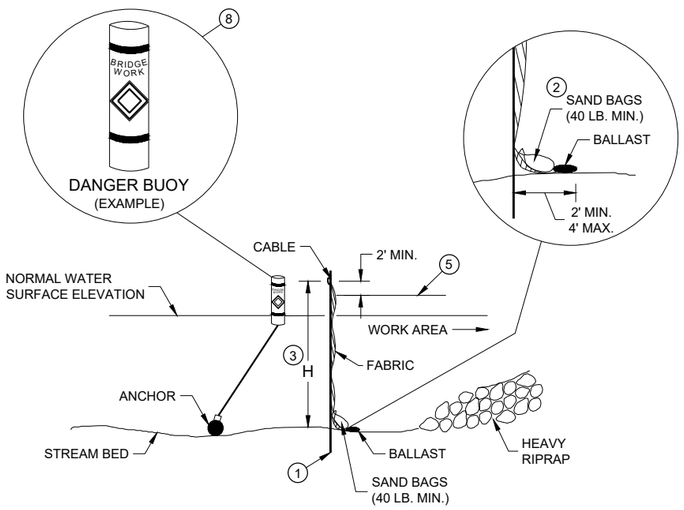



**SECTION B - B**

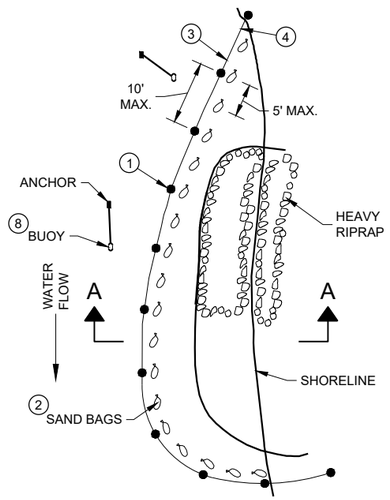



**PLAN VIEW**

**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.

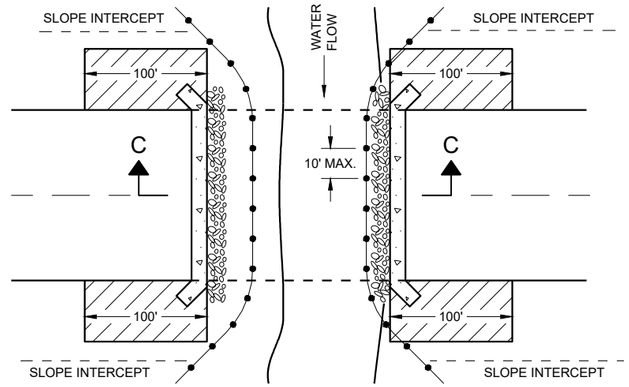
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(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.

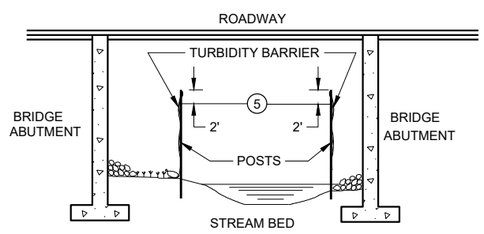
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(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

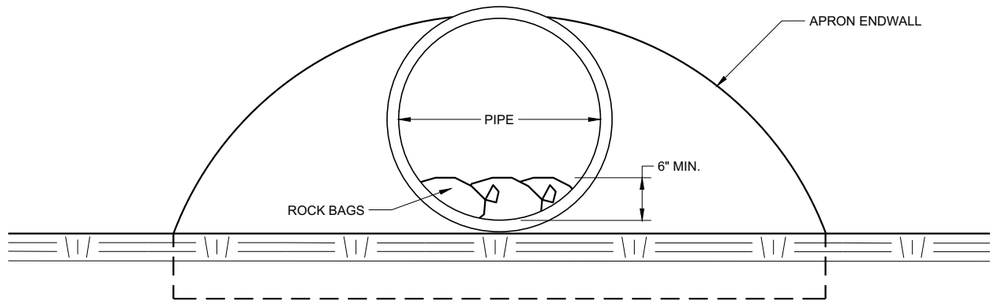
APPROVED
6/4/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOI
ENGINEER

FHWA

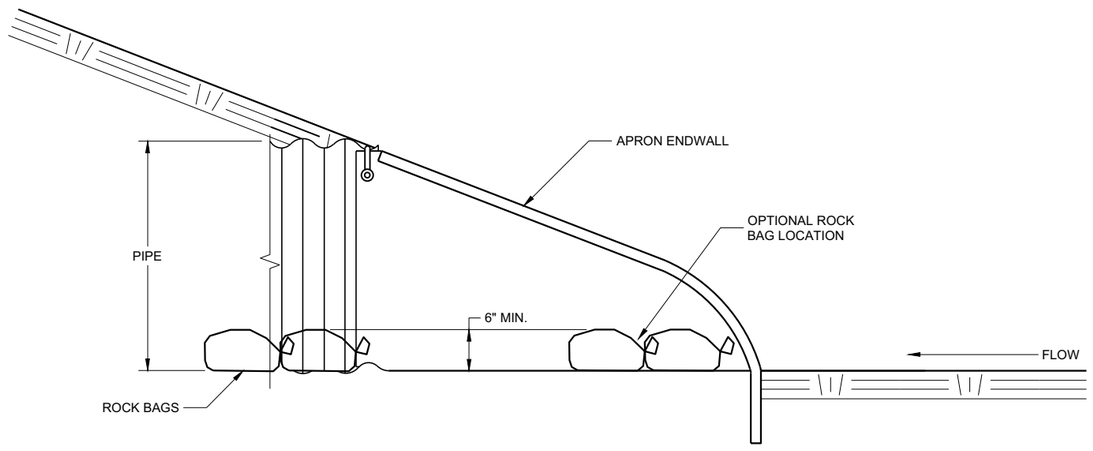




6
SDD 08E11 - 02




**END VIEW**




**SIDE VIEW**

## CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

**CULVERT PIPE CHECK**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Daniel Schave
EROSION CONTROL ENGI

FHWA



6

SDD 08E15 - 01

6

SDD 08E15 - 01

## METAL APRON ENDWALLS

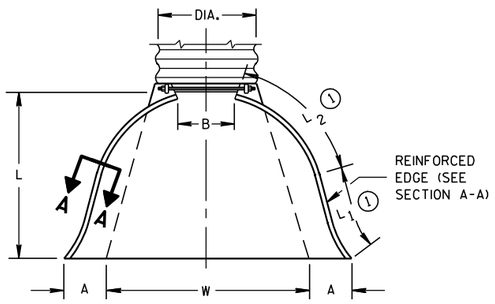
| PIPE DIA. (IN.) | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | .064 | .060 | 6 | 6 | 6 | 21 | 12 | 17 1/2 | 24 | 2 1/2 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

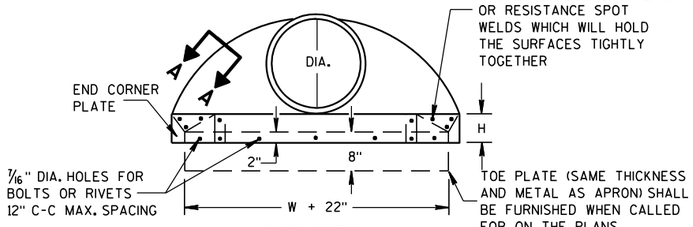
## REINFORCED CONCRETE APRON ENDWALLS

| 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 |

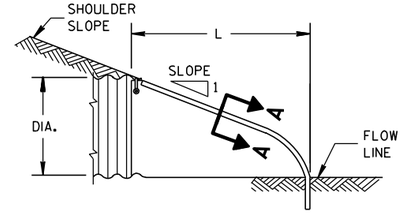
*MINIMUM
**MAXIMUM




PLAN VIEW

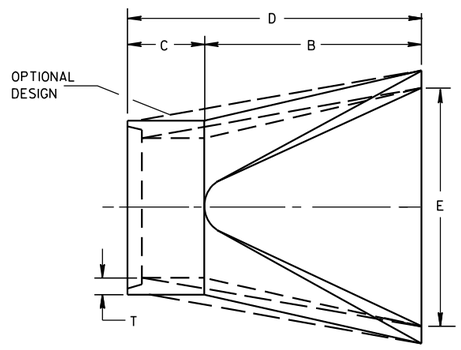



END VIEW

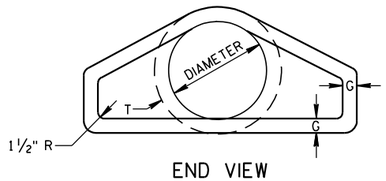



SIDE ELEVATION

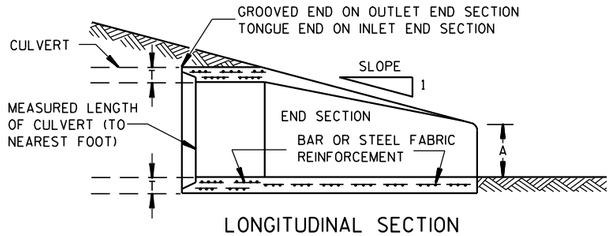
## METAL ENDWALLS




PLAN

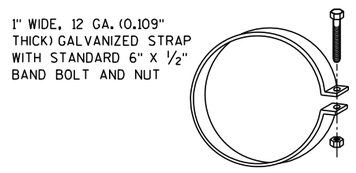



END VIEW



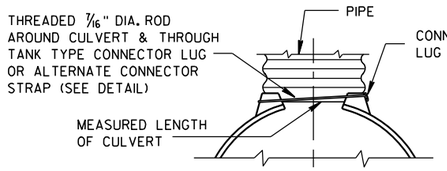

LONGITUDINAL SECTION

## CONCRETE ENDWALLS

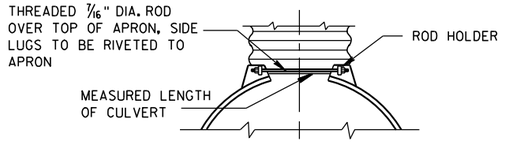



ALTERNATE FOR TYPE 1 CONNECTION

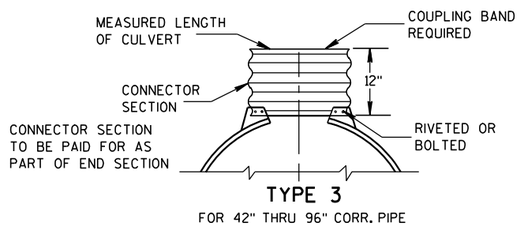
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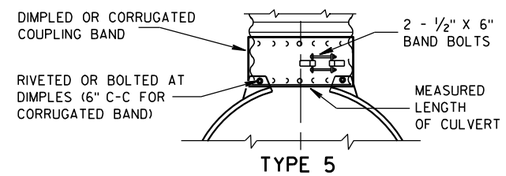

TYPE 1
FOR 12" THRU 24" CORR. PIPE




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

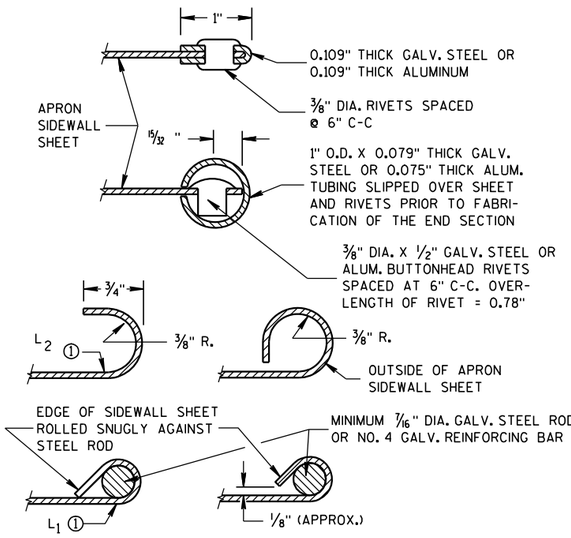
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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**

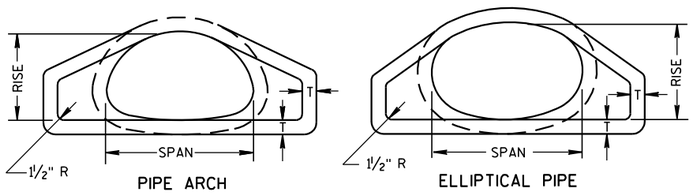
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

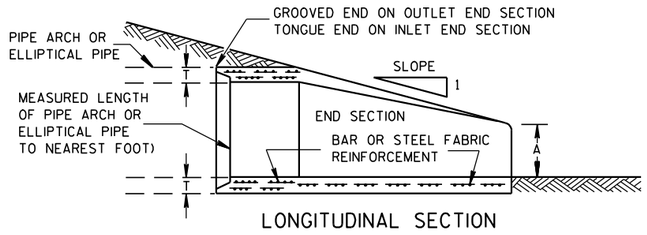



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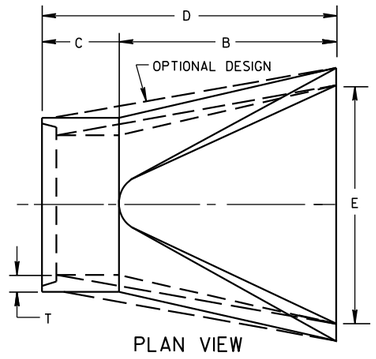
S.D.D. 8 F 1-11




END VIEW

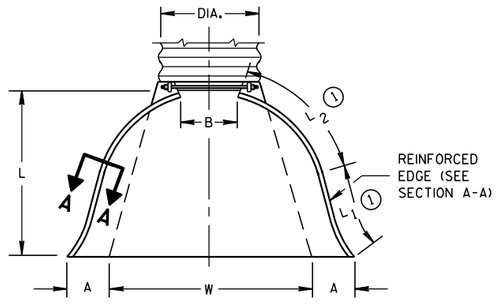



LONGITUDINAL SECTION

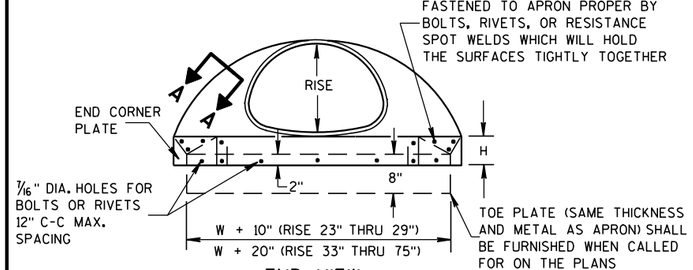



PLAN VIEW

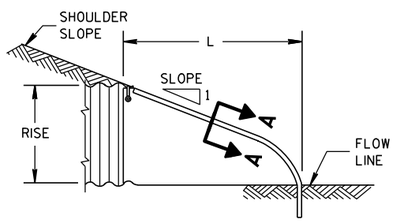
# CONCRETE ENDWALLS




PLAN VIEW




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

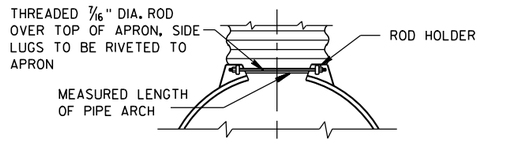
## REINFORCED CONCRETE PIPE ARCH

| 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

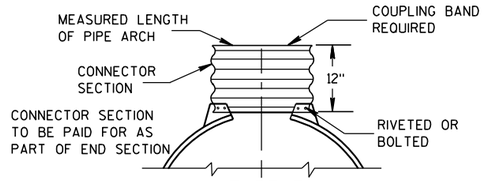
| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) ** SPAN | ** RISE | T | A | B | C | D | E | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 30 | 19 | 3¼ | 8½ | 39 | 33 | 72 | 48 | 3 to 1 |
| 30 | 38 | 24 | 3¾ | 9½ | 54 | 18 | 72 | 60 | 3 to 1 |
| 36 | 45 | 29 | 4½ | 11⅛ | 60 | 24 | 84 | 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



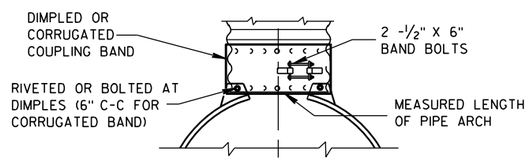

TYPE 2

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**

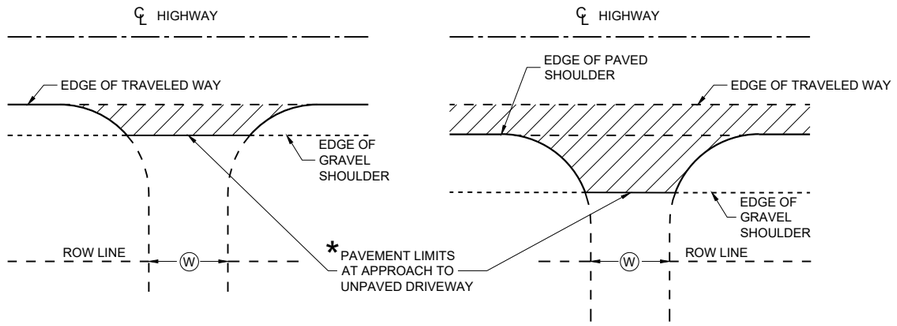
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

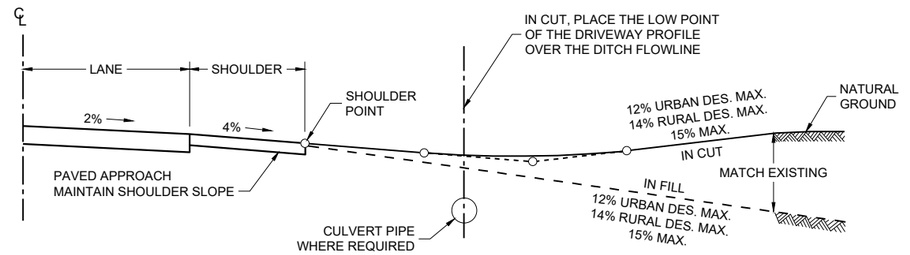



* WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

**PLAN VIEW**
(UNPAVED SHOULDER ON HIGHWAY)

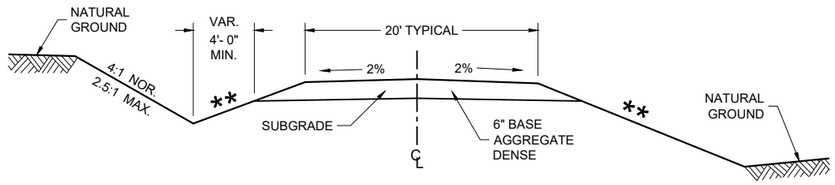
**PLAN VIEW**
(PAVED SHOULDER ON HIGHWAY)

## RURAL DRIVEWAY INTERSECTION DETAIL (NO CURB AND GUTTER OR SIDEWALK)




## TYPICAL DRIVEWAY PROFILES

Ⓦ : DRIVEWAY WIDTHS (MEASURED AT ROW LINE)
~ COMMERCIAL & INDUSTRIAL 16' MIN. - 35' MAX.
~ RESIDENTIAL & AGRICULTURAL (NONCOMMERCIAL) 16' MIN. - 24' MAX.

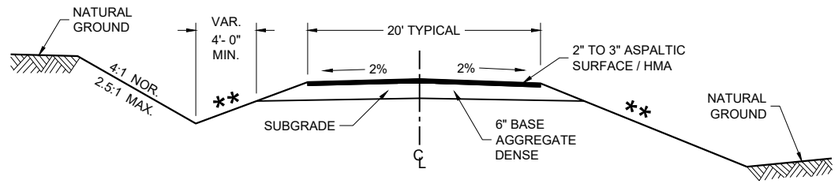



IN CUT IN FILL

## 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 |



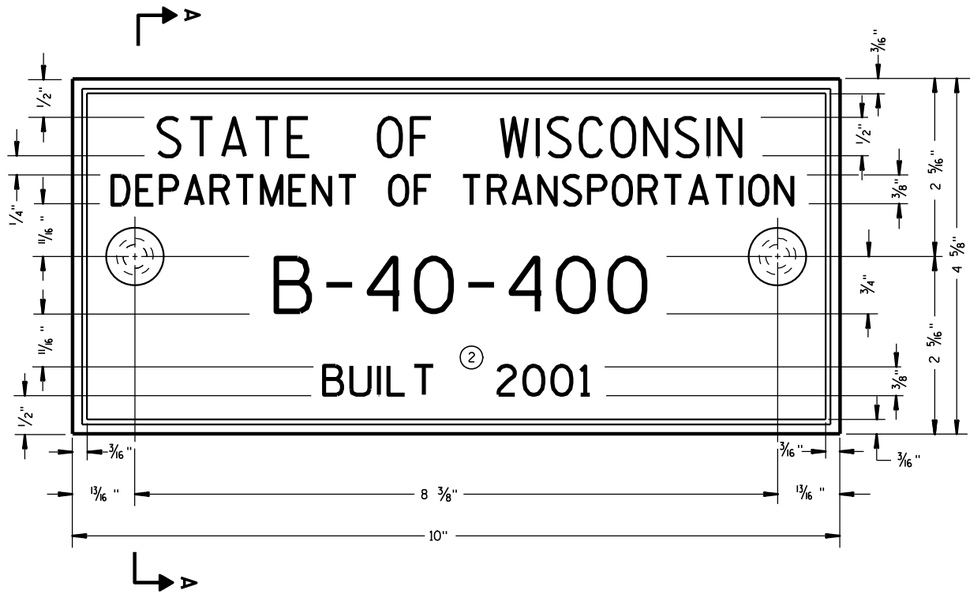

IN CUT IN FILL

## TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE

## DRIVEWAYS WITHOUT CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA




## TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

## NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

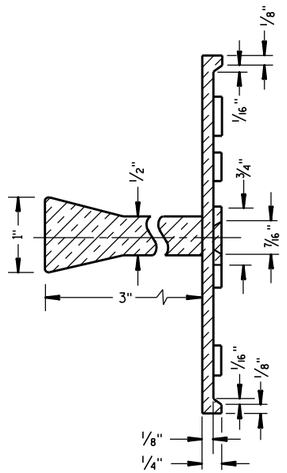
## GENERAL NOTES

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

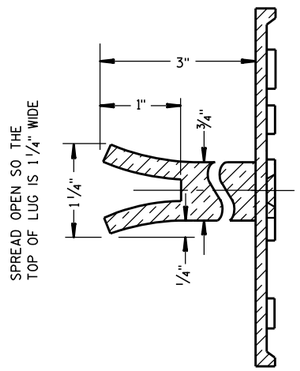
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

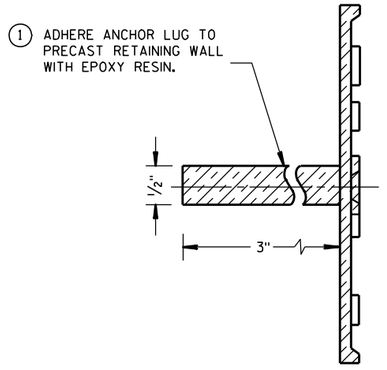
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




SECTION A-A




ALTERNATE LUG




## ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

# NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

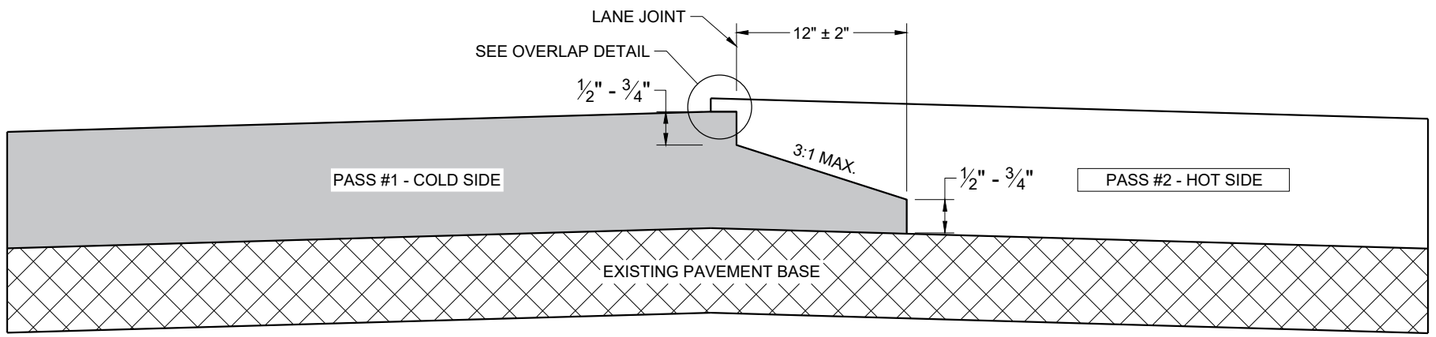


6

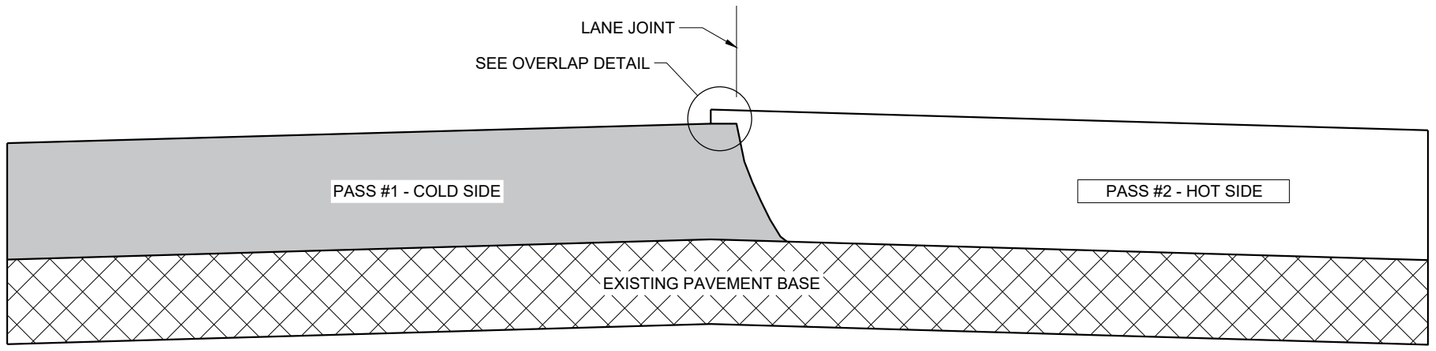
S.D.D. 12 A 3-10

6

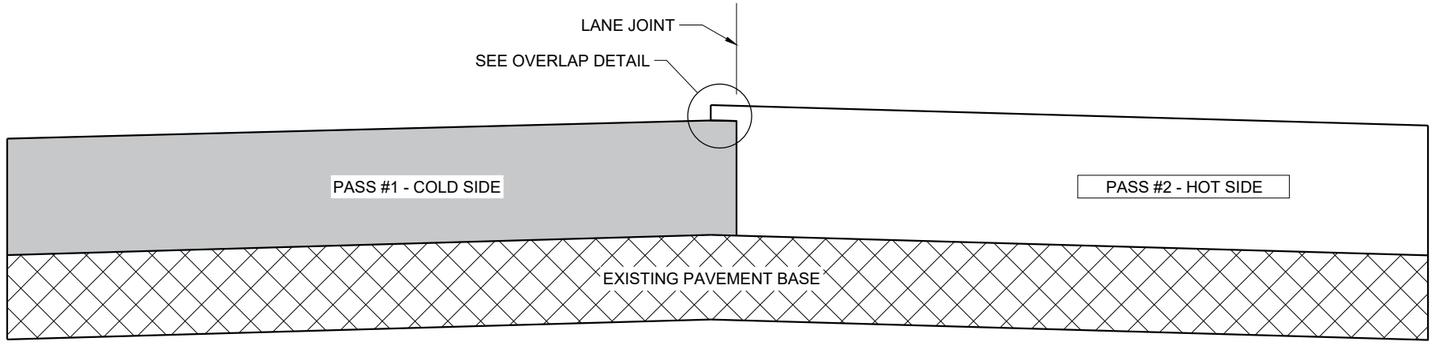
S.D.D. 12 A 3-10




**TYPICAL PAVEMENT CROSS SECTION**
**NOTCHED WEDGE JOINT**




**TYPICAL PAVEMENT CROSS SECTION**
**VERTICAL JOINT**




**TYPICAL PAVEMENT CROSS SECTION**
**VERTICAL JOINT (MILLED)**

## GENERAL NOTES

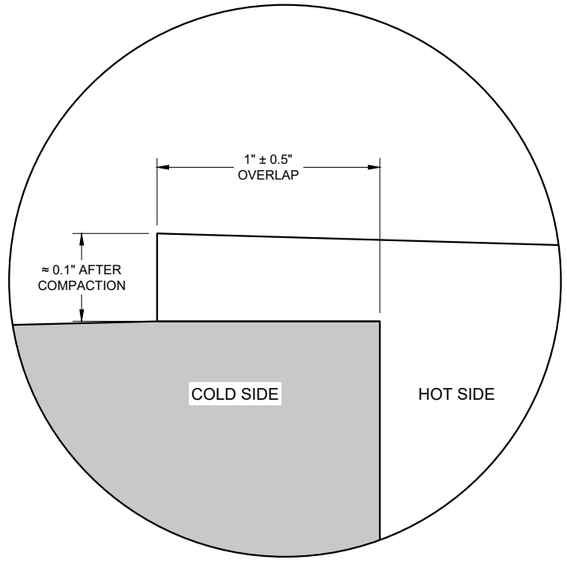
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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




**OVERLAP DETAIL (TYPICAL)**

**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA



6

SDD 13C19 - 03

6

SDD 13C19 - 03

# SDD 14B15a Steel Plate Beam Guard, Class "A", Installation and Elements

## GENERAL NOTES

1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6"X8" 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 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 DAMAGE 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.

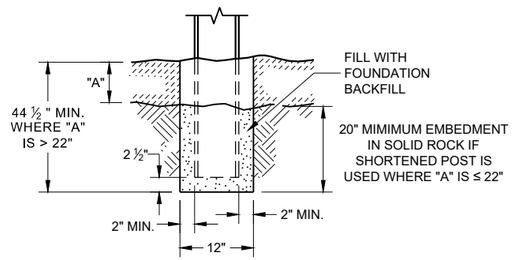
5. IF THE DISTACE FROM BACK OF POST TO SHOULDER HIGHE POINT IS LESS THAN 2 FEET, INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

6. IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCHES IN DIAMETER POST HOLE 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 ADEQUATELY.

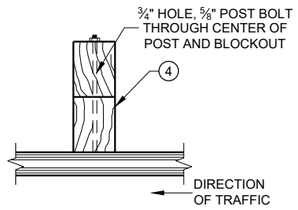
7. WHEN USING STEEL POSTS AND WOOD BLOCKOUTS, INSTALL FOUR 16d GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

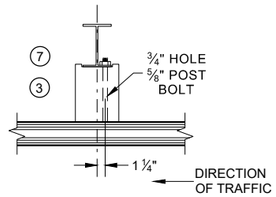
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



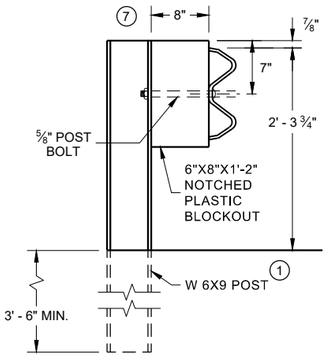

END VIEW
**SETTING STEEL OR WOOD POST IN ROCK** (6)



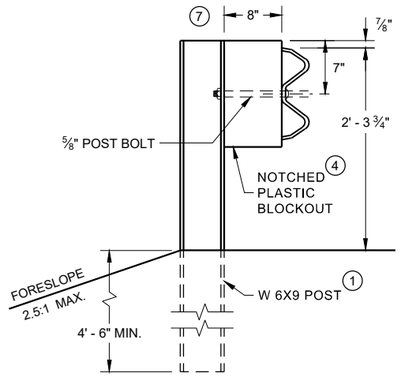

PLAN VIEW
**WOOD POST, BLOCKOUT AND BEAM**



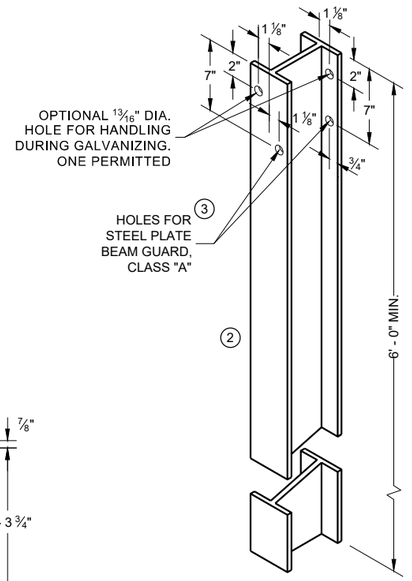

PLAN VIEW
**WOOD POST, BLOCKOUT AND BEAM**




END VIEW
**STEEL POST AND NOTCHED PLASTIC BLOCKOUT ALTERNATIVE STANDARD INSTALLATION**

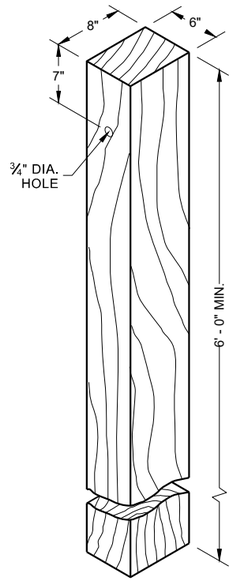



END VIEW
**LONGER POST AT HALF POST SPACING W BEAM (LHW)**

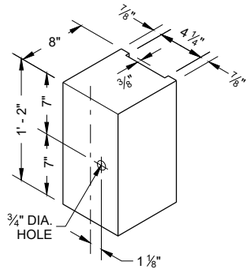



**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)** (1)

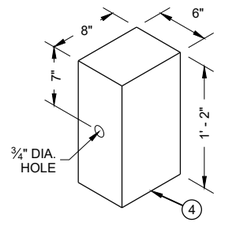
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



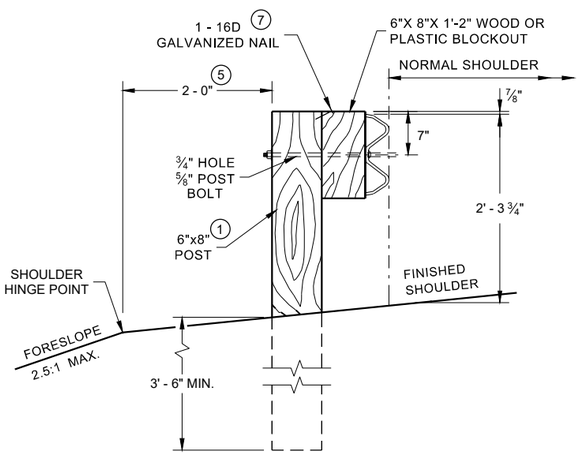

**WOOD POST (6" X 8") NOMINAL** (1)



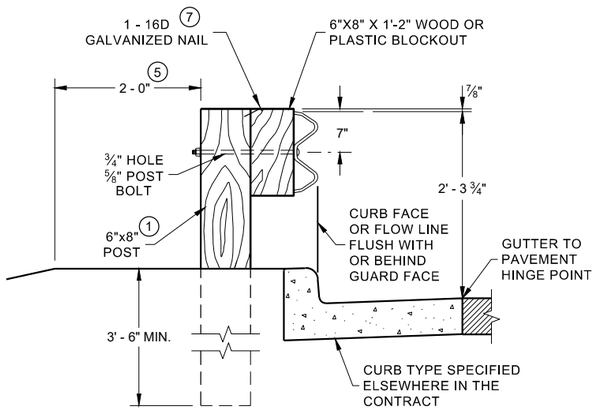

**TYPICAL NOTCHED PLASTIC BLOCKOUT FOR STEEL POSTS**



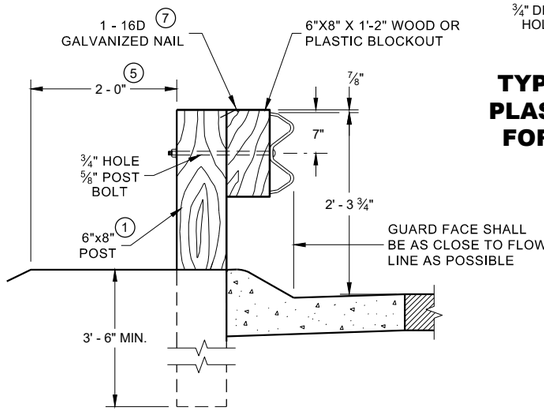

**WOOD OR PLASTIC BLOCKOUT FOR WOOD POSTS**




END VIEW
**LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION**




END VIEW
**LOCATED ALONG A CURBED ROADWAY**



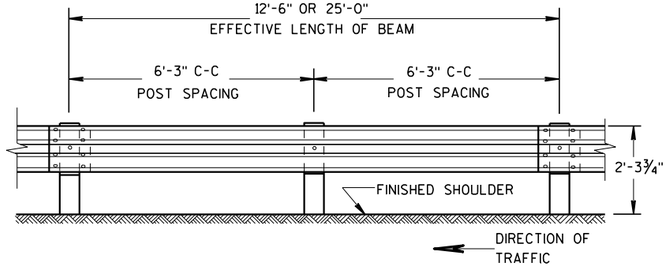

END VIEW
**LOCATED ALONG A MOUNTABLE CURBED ROADWAY**

**STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION AND ELEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

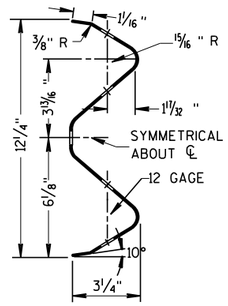


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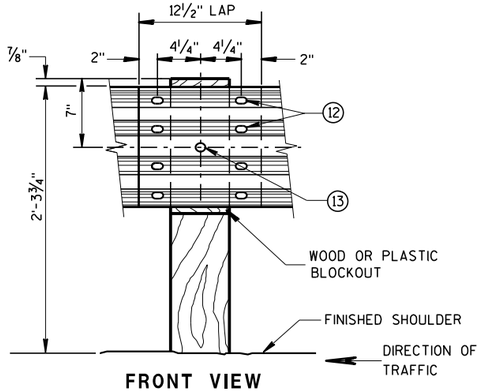



FRONT VIEW

## 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.

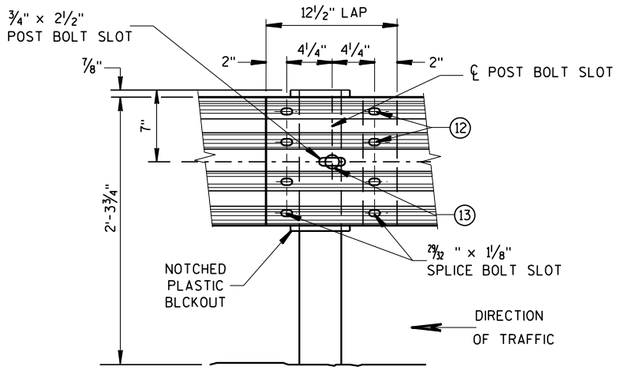
(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.




FRONT VIEW

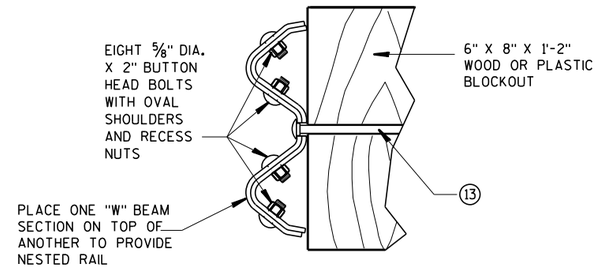
## POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)




FRONT VIEW

BEAM SPLICE AT STEEL POST

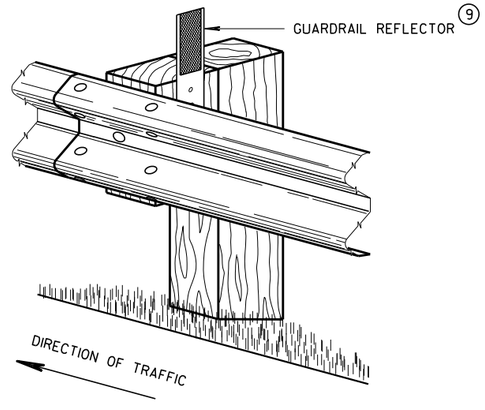
## TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



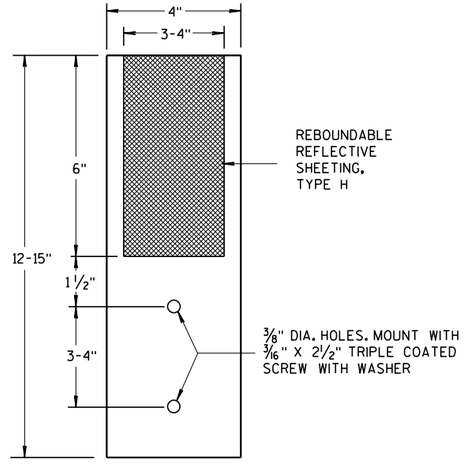

## NESTED W BEAM (NW)

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

* 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**

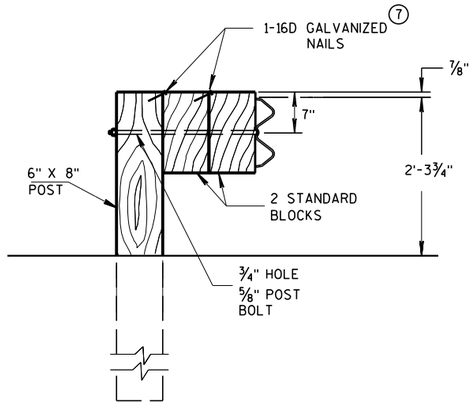
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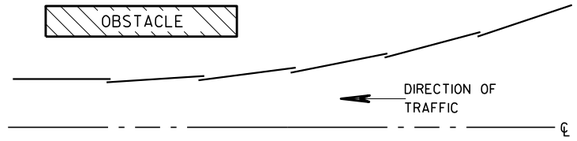
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S.D.D. 14 B 15-11b

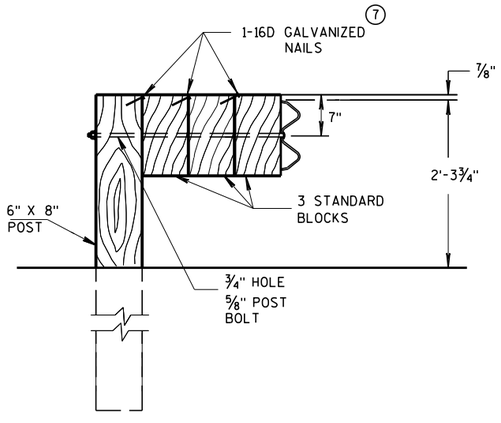



**DETAIL FOR DOUBLE BLOCKS**

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

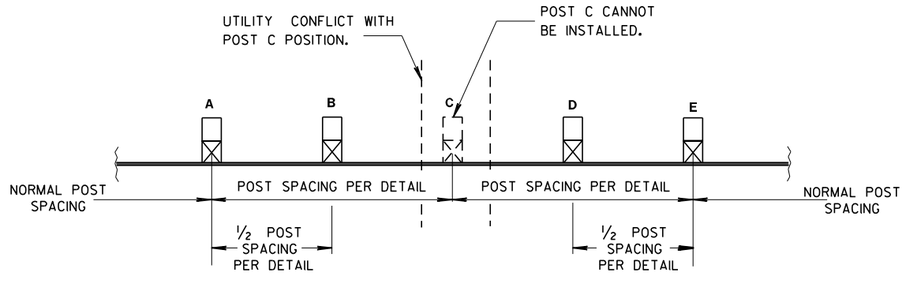



**PLAN VIEW**
**BEAM LAPPING DETAIL**




**DETAIL FOR TRIPLE BLOCKS**

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




**POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION**

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

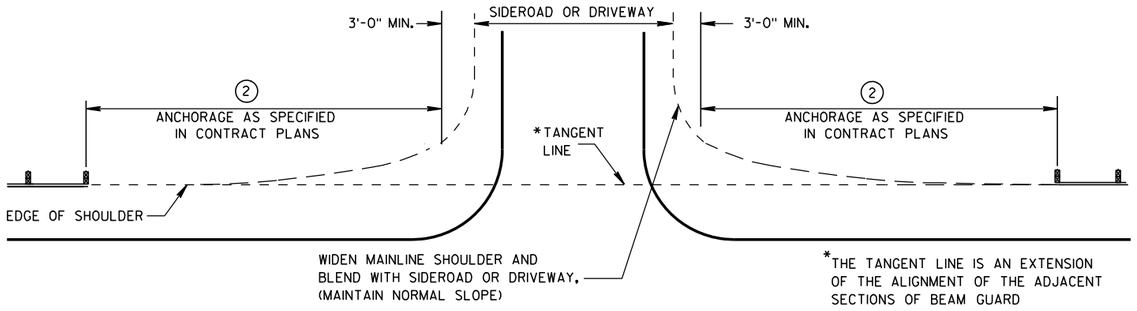
DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

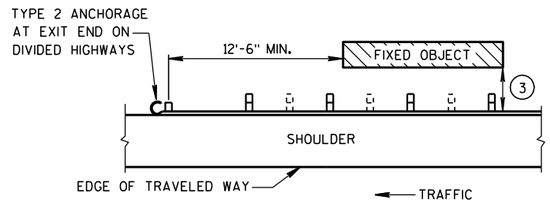
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APPROVED
June 2017
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
54
FHWA

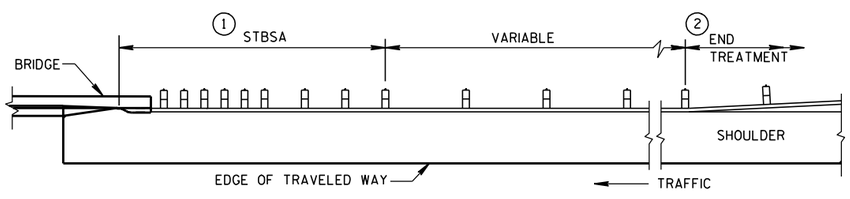

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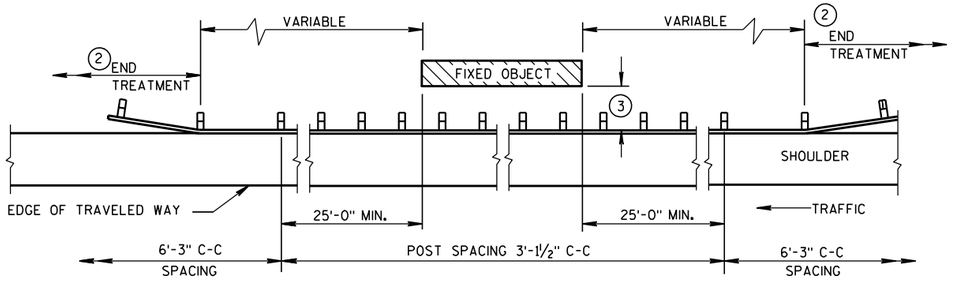

## BEAM GUARD AT SIDEROADS OR DRIVEWAYS




## BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

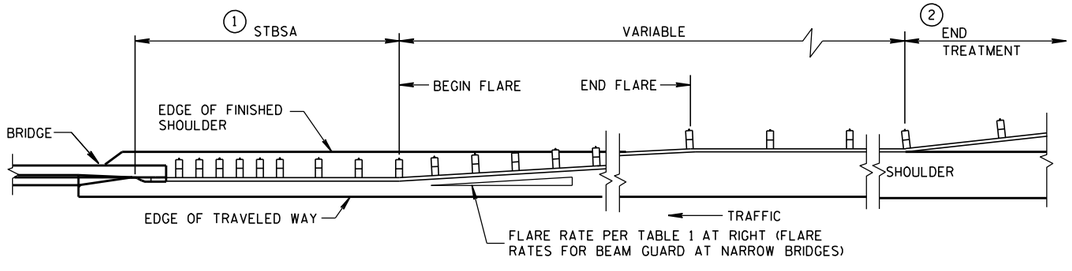



## BEAM GUARD AT FULL WIDTH BRIDGES




## BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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




## 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 |

## 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" |

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

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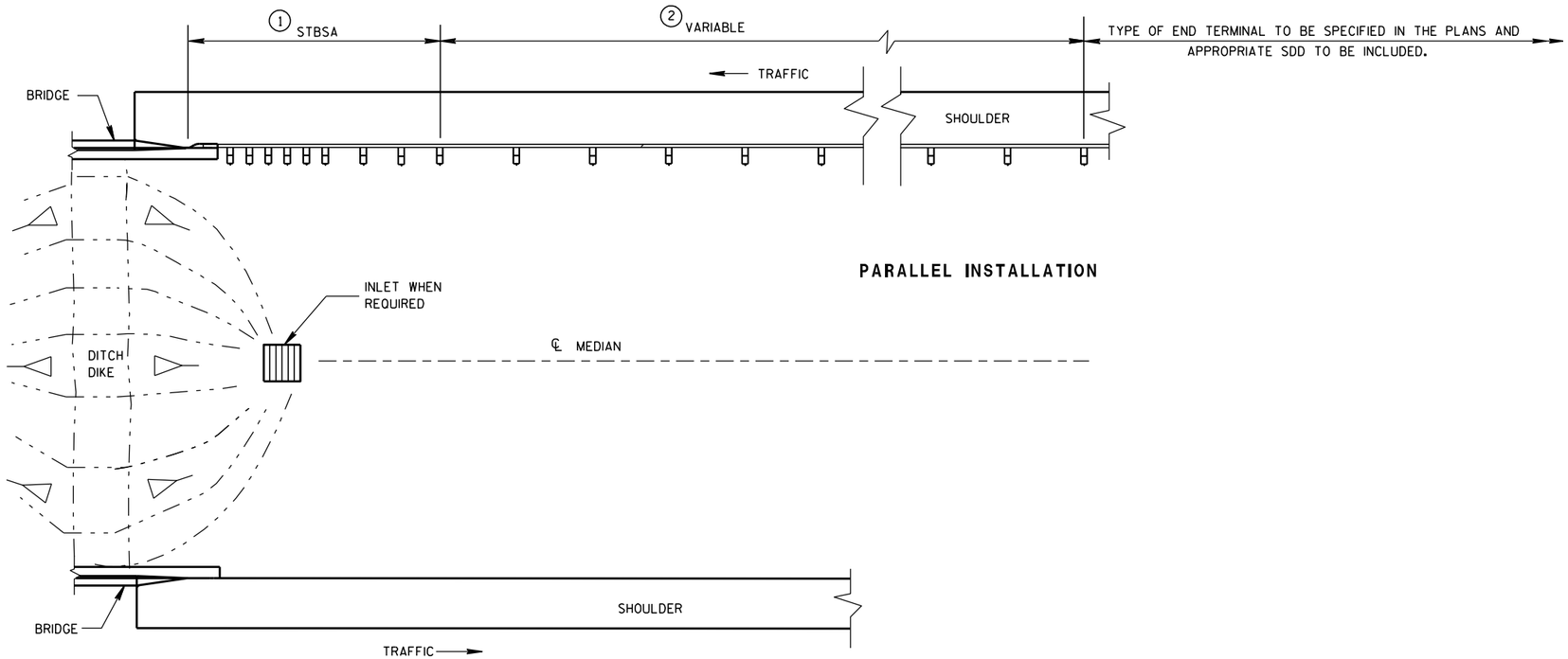
8-21-07
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

## GENERAL NOTES

1. STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
2. LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.




PARALLEL INSTALLATION

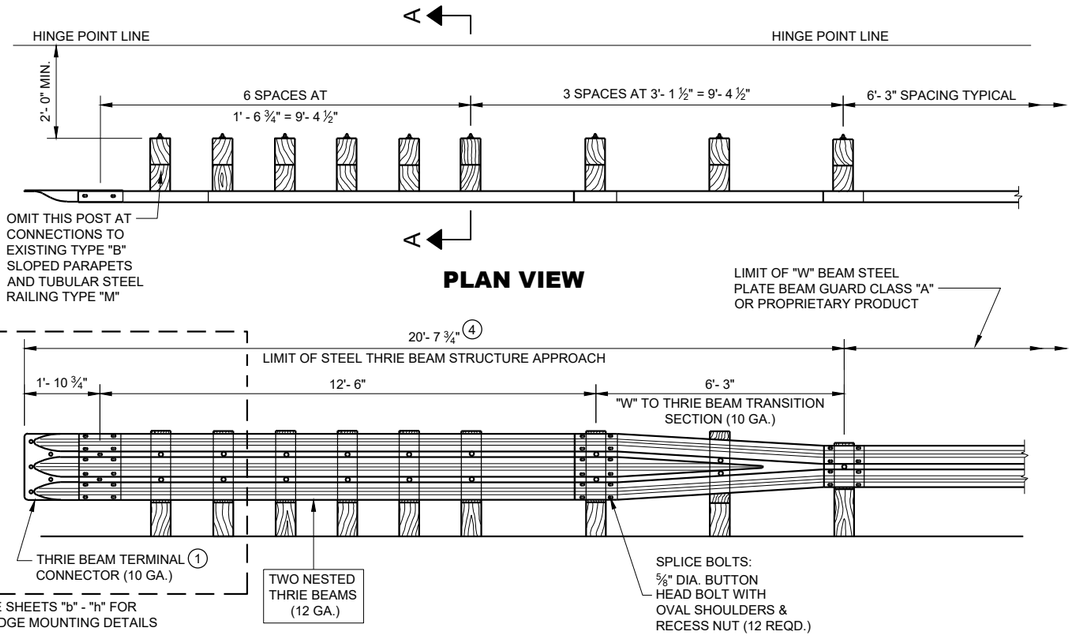
# BEAM GUARD AT MEDIAN APPROACH TO BRIDGES

| STEEL PLATE BEAM GUARD CLASS "A" AT MEDIAN APPROACH TO BRIDGES | |
|---|---|
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| APPROVED | |
| 8-21-07 DATE | /S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER |
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S.D.D. 14 B 18-6b



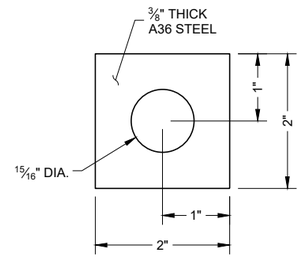




PLATE WASHER DETAIL

## 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.

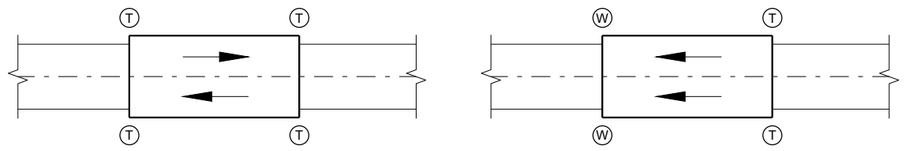
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 ½" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

(2) MINIMUM EMBEDMENT SHALL BE 4'- 0".

(3) POST BOLTS ARE ⅝" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A ⅝" 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

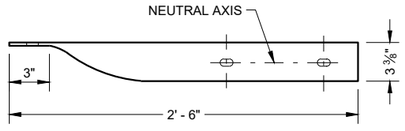


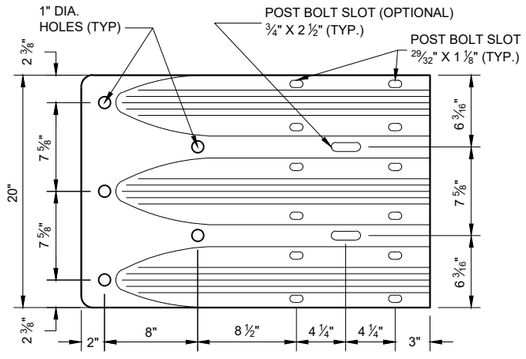

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

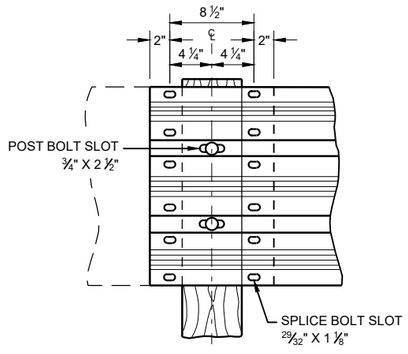
(W) W-BEAM CONNECTION WHEN REQUIRED

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

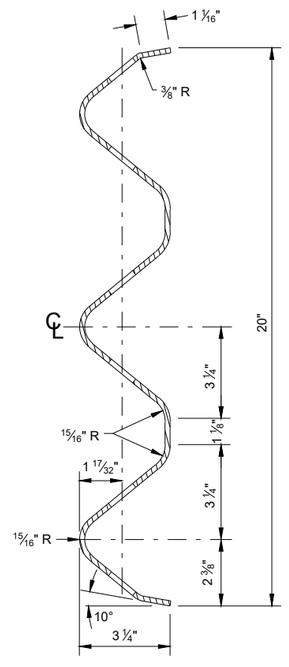


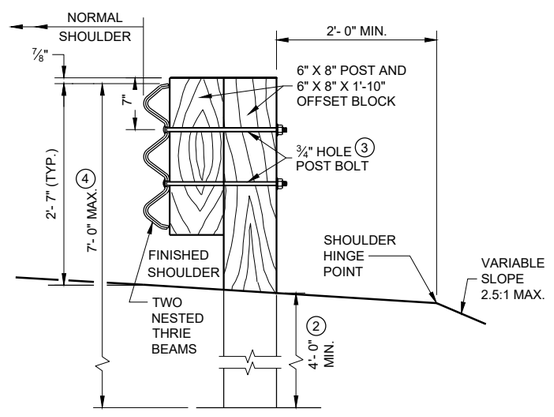

THRIE BEAM TERMINAL CONNECTOR




THRIE BEAM SPLICE




SECTION THRU BEAM RAIL ELEMENT




SECTION A-A

**STEEL THRIE BEAM STRUCTURE APPROACH**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 — DATE
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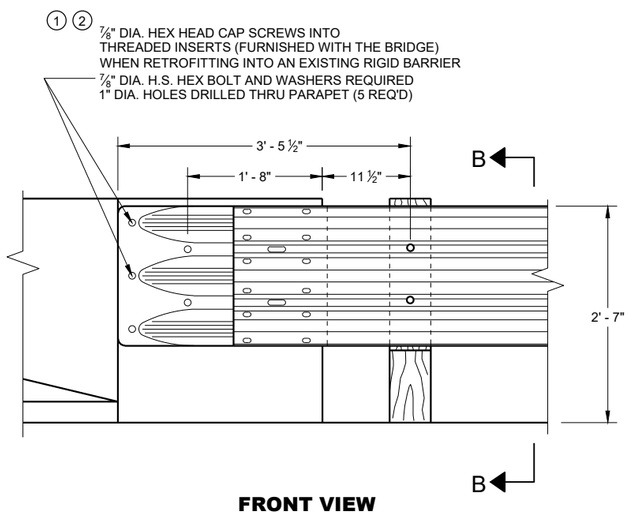




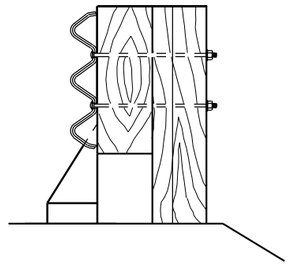
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SDD 14B20 - 12a

SDD 14B20 - 12a




**FRONT VIEW**



**SECTION B - B**

## THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

## GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

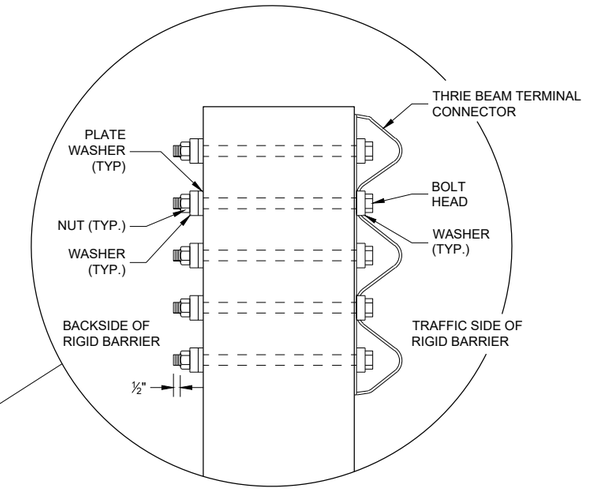
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

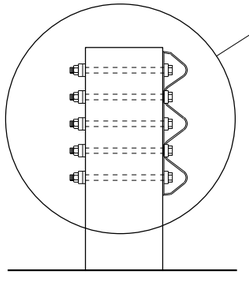
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR.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

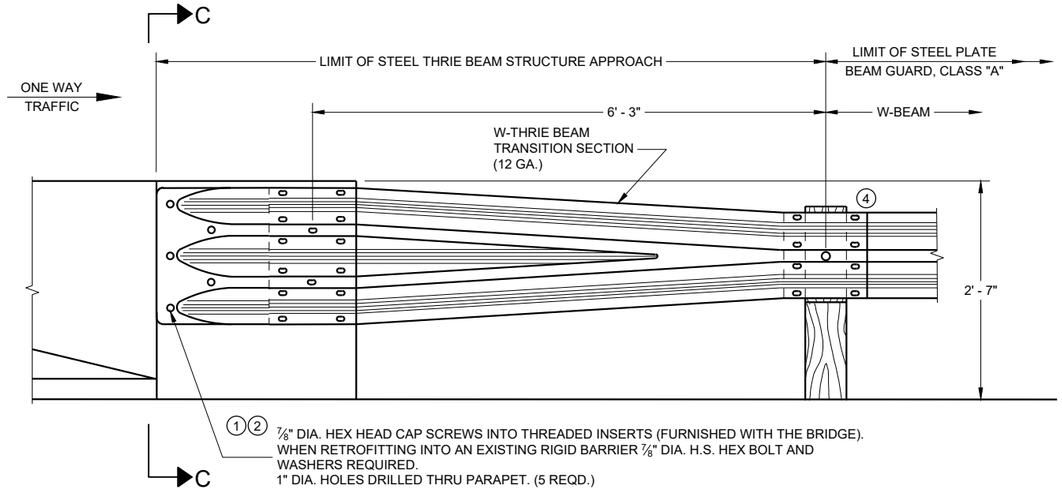
④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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.



**SECTION C - C**




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 REQD.)

**FRONT VIEW**

## W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

## STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

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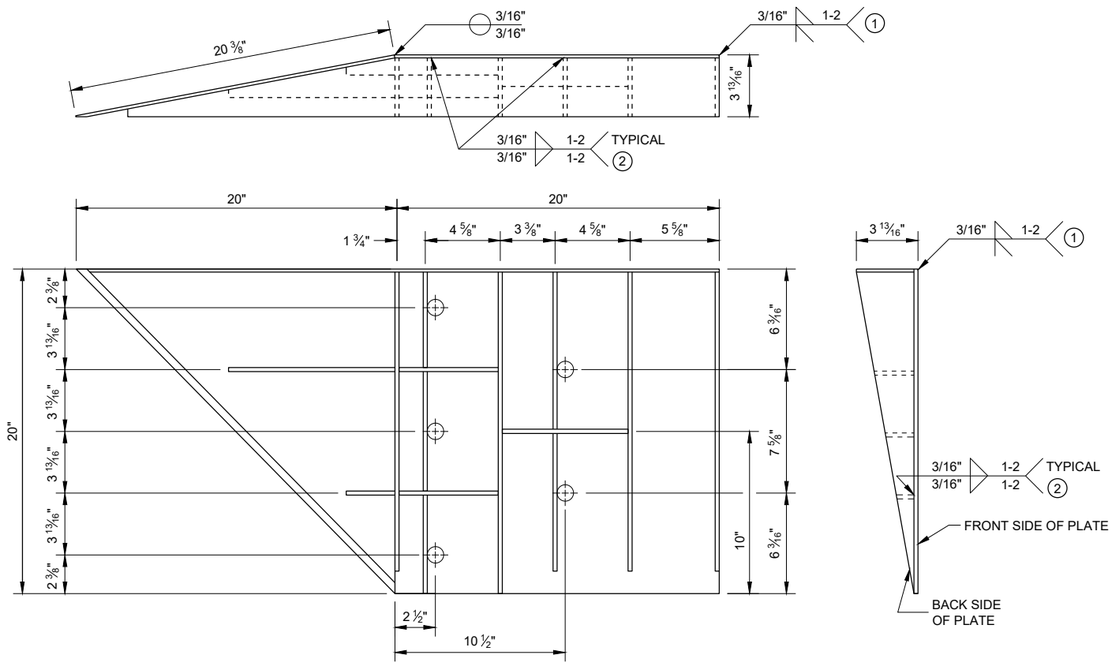




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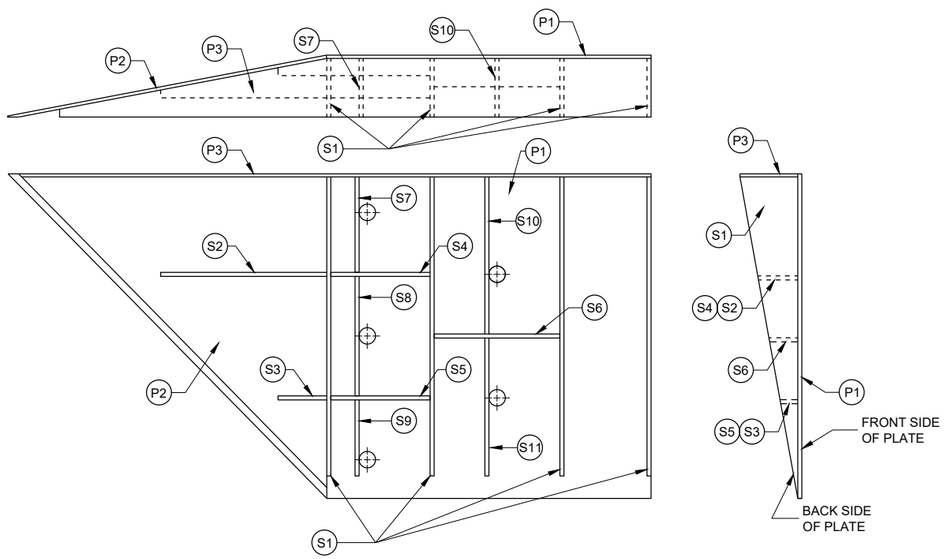


SDD 14B20 - 12b




## 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.

(1) 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.

(2) 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 PLATED 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 1/16" | 1/4" |
| S11 | 1 | | 8 1/2" x 8 3/4" x 1 13/16" | 1/4" |

## STEEL THRIE BEAM STRUCTURE APPROACH

**STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
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SDD 14B20 - 12g

## BILL OF MATERIALS

| NOTE NO. | DESCRIPTION |
|---|---|
| ① | WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9" |
| ② | STEEL TUBE TS 8" X 6" X 0.188", 6'-0" |
| ④ | WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0" |
| ⑤ | WOOD OFFSET BLOCKS: 6' X 8" X 1'-2" |
| ⑥ | PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE |
| ⑦ | BEARING PLATE |
| ⑧ | BCT CABLE ASSEMBLY |
| ⑨ | CABLE ANCHOR BOX |
| ⑩ | STRUT & YOKE |
| ⑪ | STEEL PLATE BEAM, END PANEL 12 GA. |
| ⑫ | STEEL PLATE BEAM: 12 GA. 13'-6½" |
| ⑬ | IMPACT HEAD |
| ⑭ | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS |

## GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

(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.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

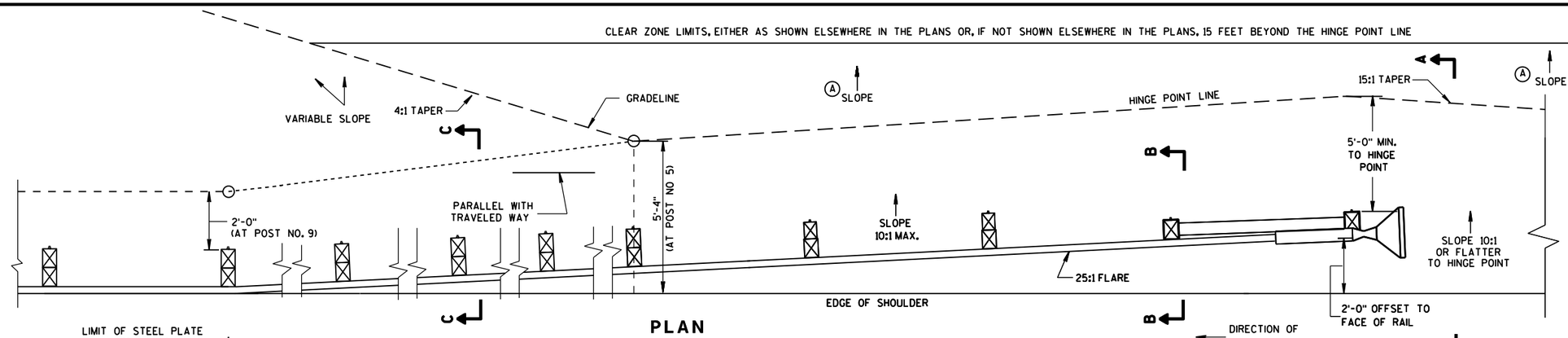
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

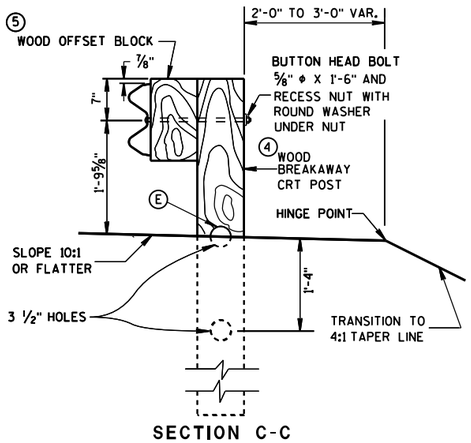
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

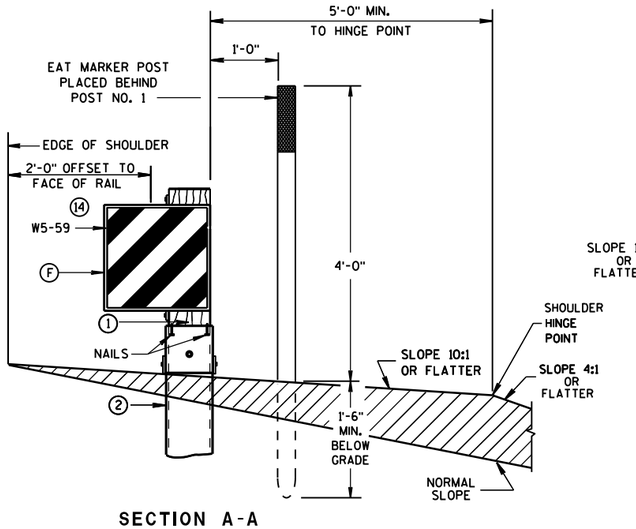
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

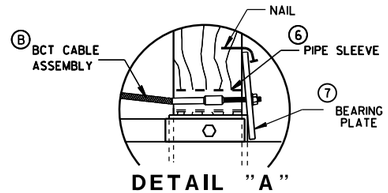
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

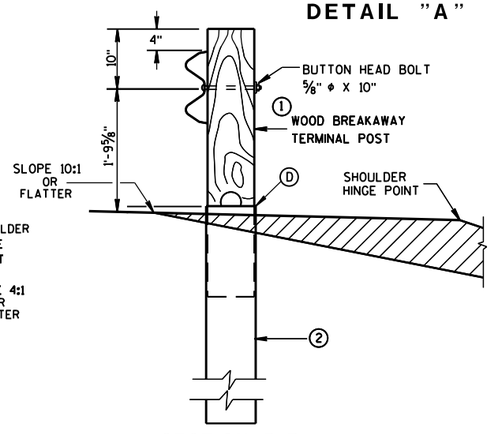
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

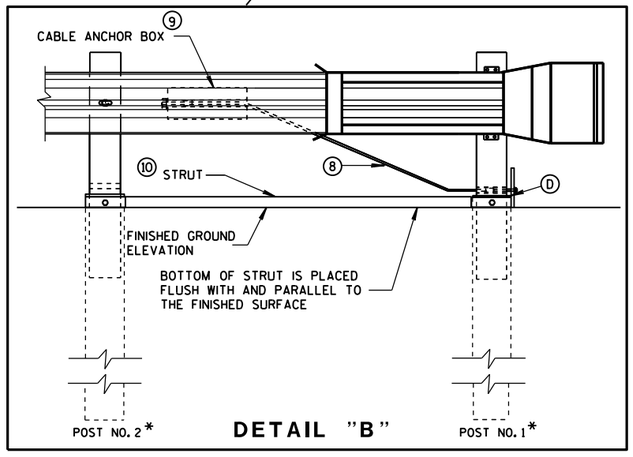



**STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

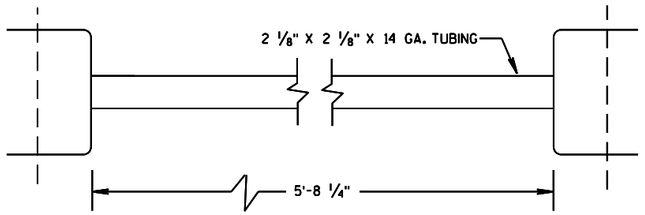




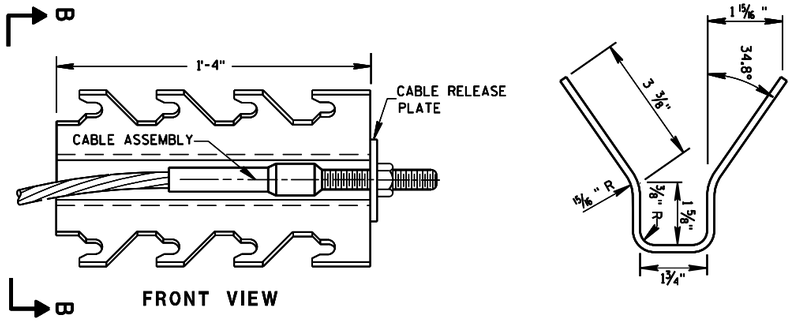


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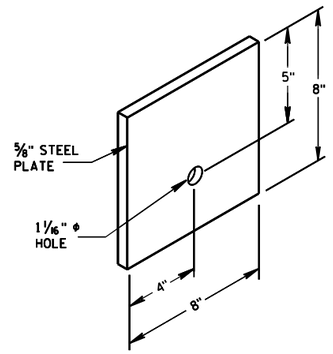
S.D.D. 14 B 24-9a




⑩ STRUT DETAIL




⑨ CABLE ANCHOR BOX




⑦ STEEL BEARING PLATE

6

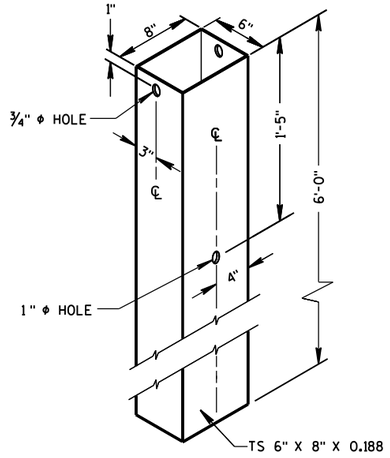
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S.D.D. 14 B 24-9b

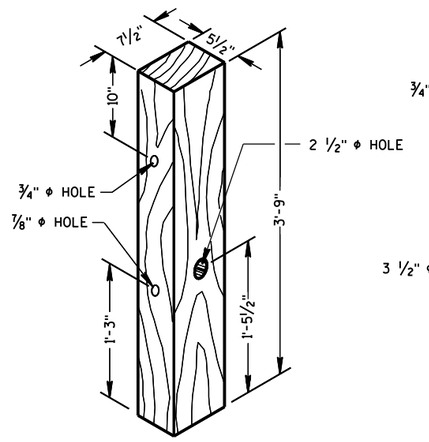
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

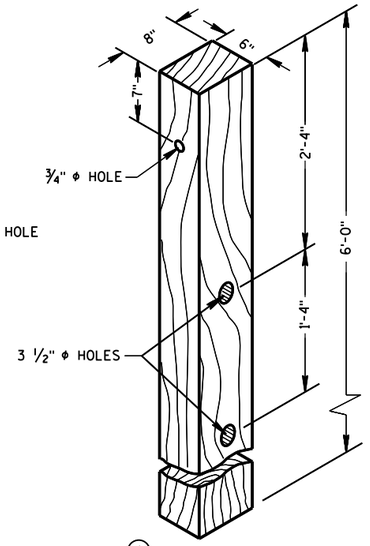
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI




② 72" STEEL TUBE
(POSTS NO. 1-2




① TERMINAL POST

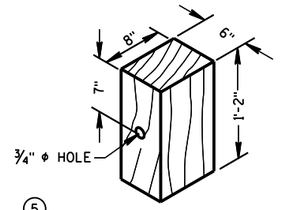



④ CRT POST
(POSTS NO'S 5-8

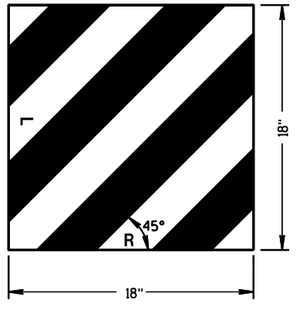
## WOOD BREAKAWAY POSTS

## GENERAL NOTES

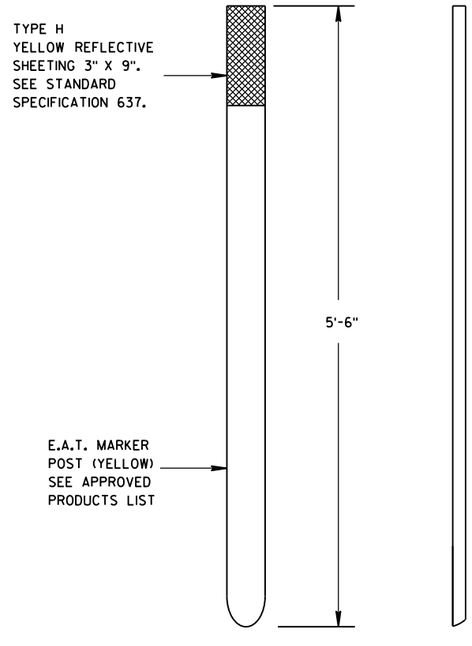
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.




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




⑭ REFLECTIVE SHEETING DETAILS




E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERV...

62

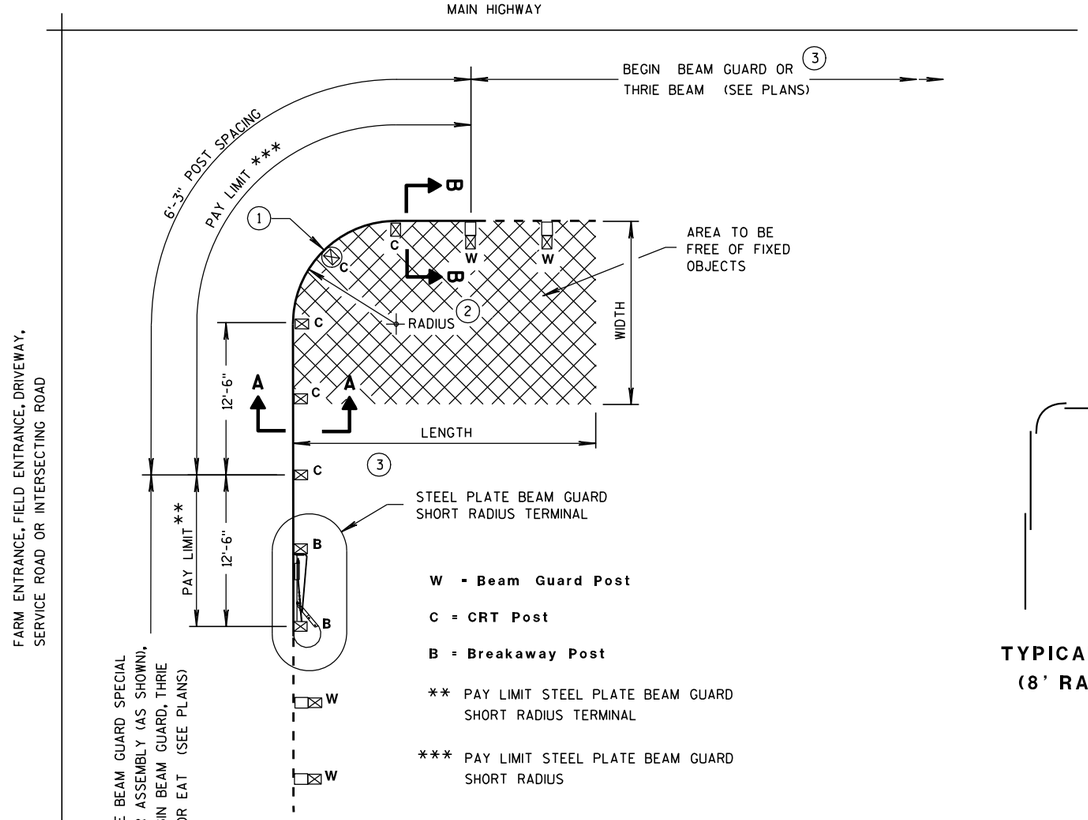
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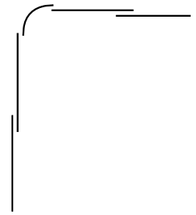
S.D.D. 14 B 24-9c

6

S.D.D. 14 B 24-9c




**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.

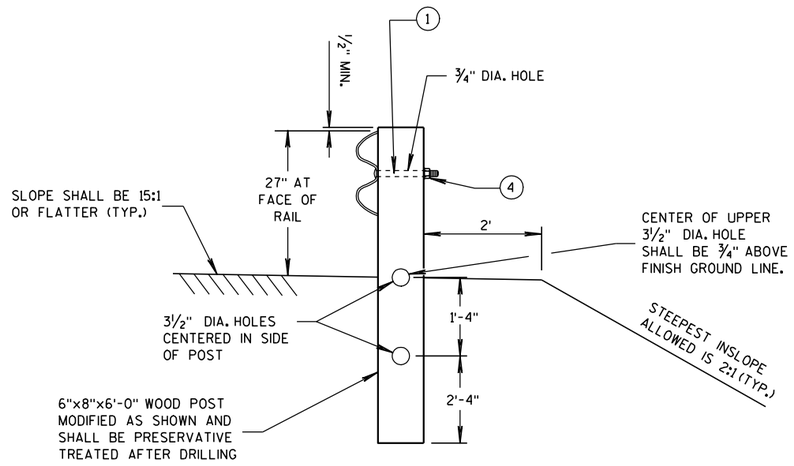
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

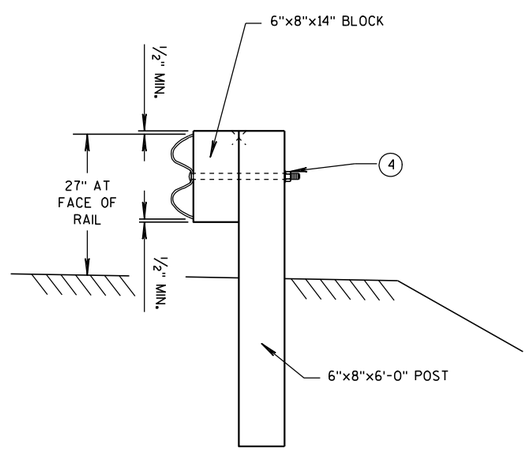
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

| 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

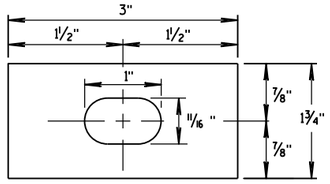
| STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | 63 |

6

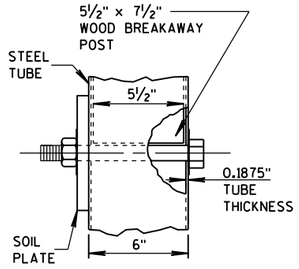
S.D.D. 14 B 27-1a

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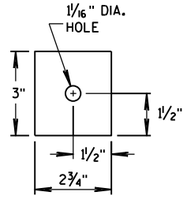
S.D.D. 14 B 27-1a



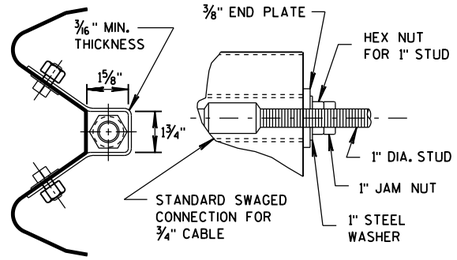

**RECTANGULAR PLATE WASHER**



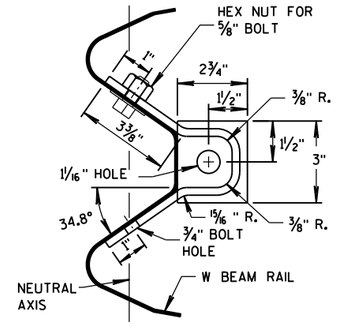

**DETAIL D**



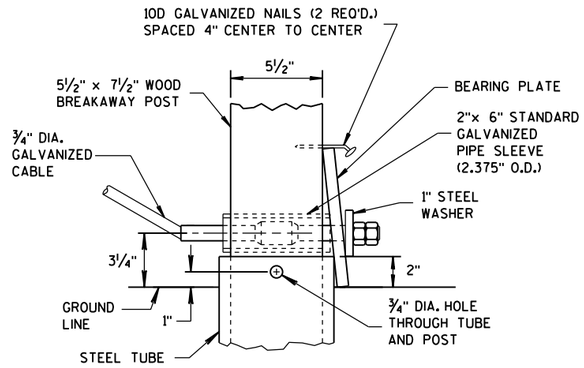

**END PLATE**



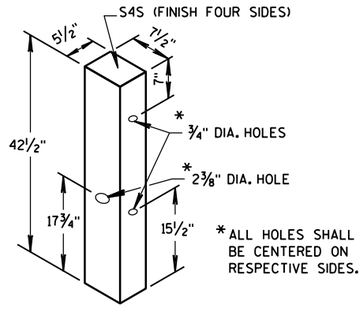

**SECTION C-C**
**(END PLATE REMOVED)**



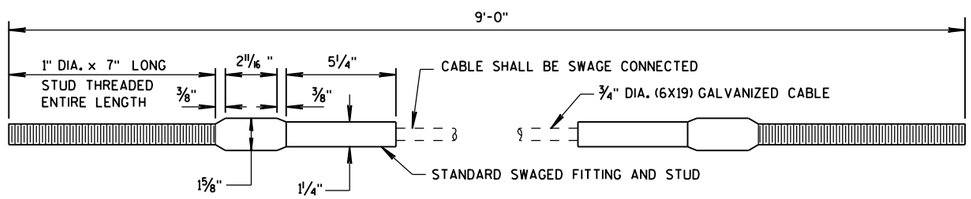

**ANCHOR BRACKET**



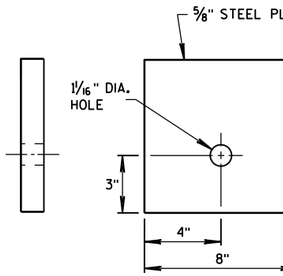

**DETAIL C**



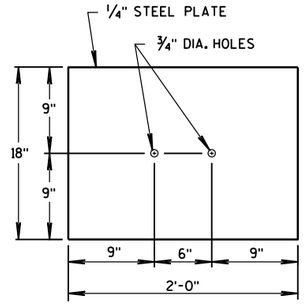

**WOOD BREAKAWAY POST**



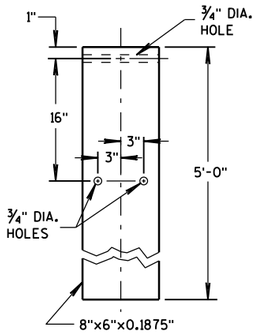

**CABLE ASSEMBLY**




**BEARING PLATE**




**SOIL PLATE**




**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.

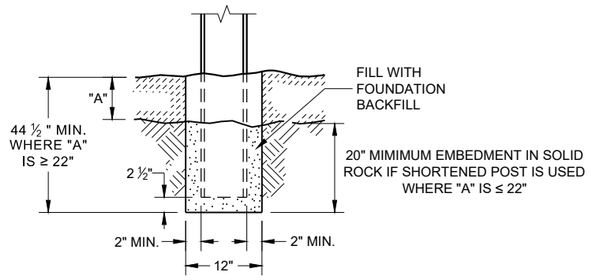
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

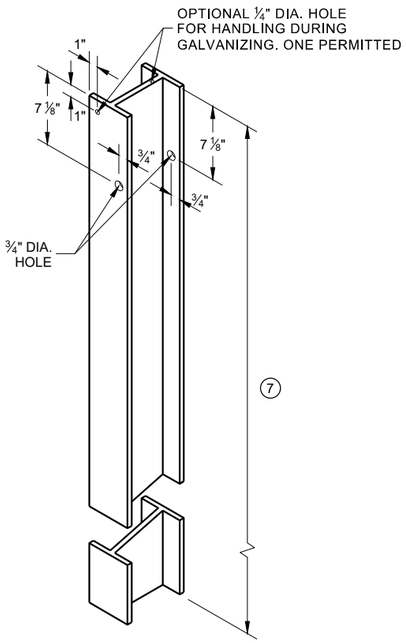
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

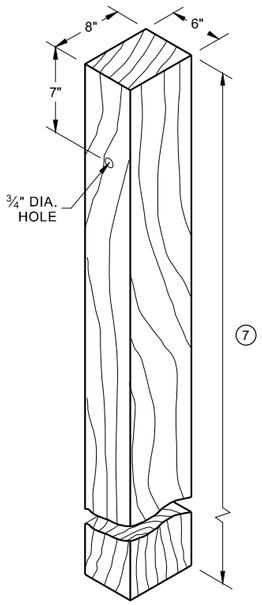
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



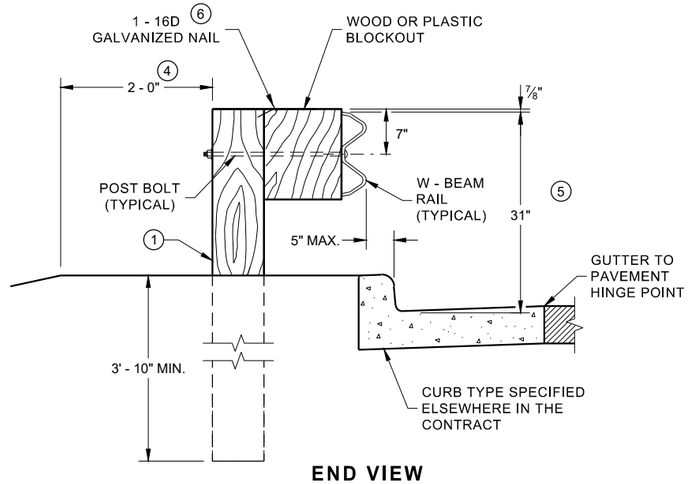

END VIEW
**SETTING STEEL OR WOOD POST IN ROCK** (3)



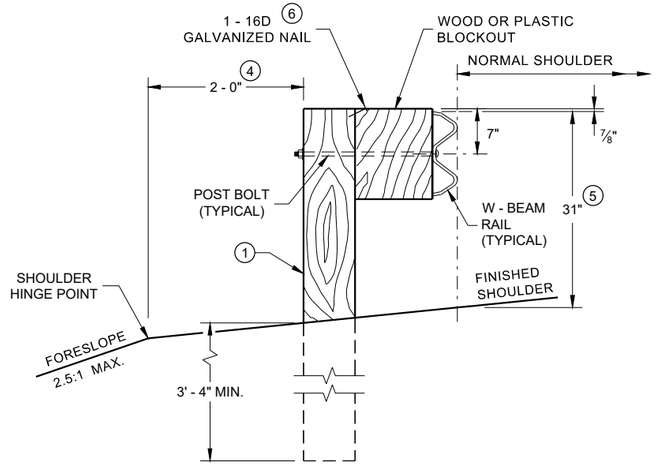

**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)** (1)



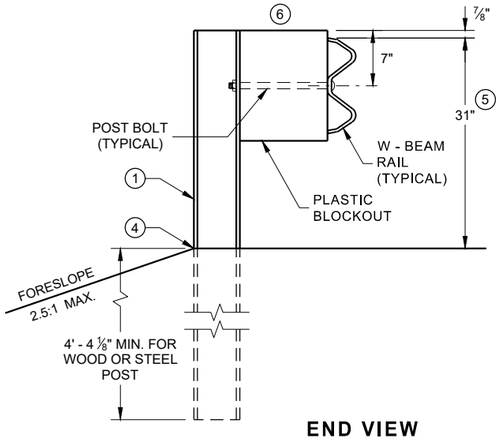

**WOOD POST (6" X 8") NOMINAL** (1)



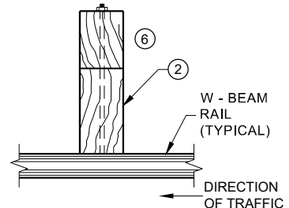

END VIEW
**LOCATED ALONG A CURBED ROADWAY**



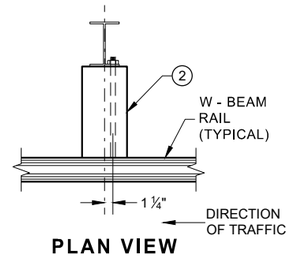

END VIEW
**LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION**



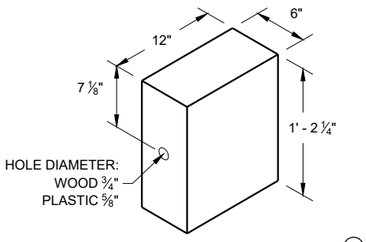

END VIEW
**MGS LONGER POST AT HALFPOST SPACING W BEAM (K)**




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

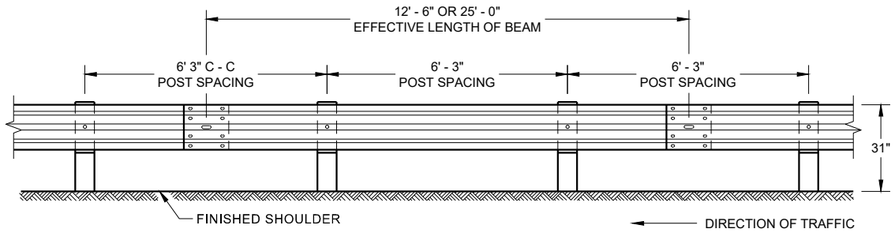


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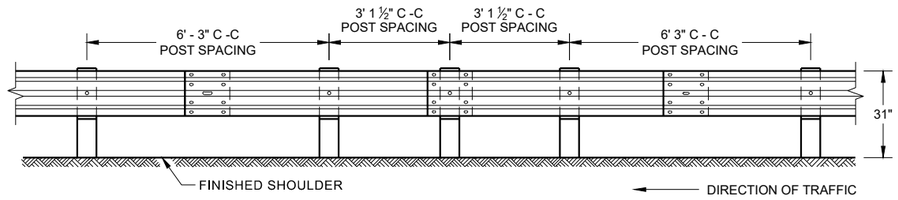
SDD 14B42 - 07a

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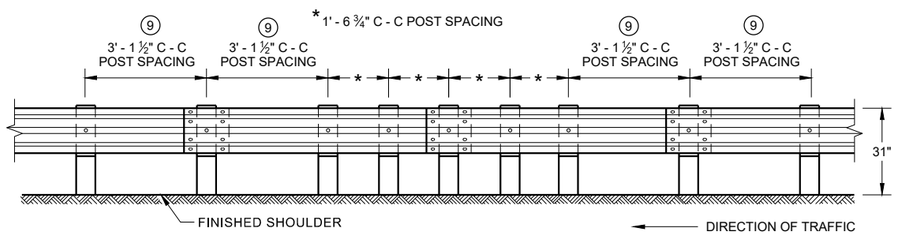
SDD 14B42 - 07a



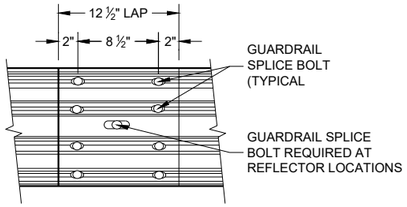

**FRONT VIEW**
## POST SPACING STANDARD INSTALLATION



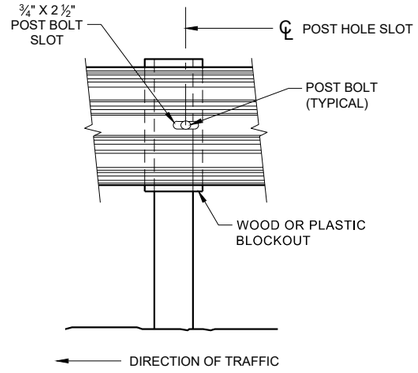

**FRONT VIEW**
## HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



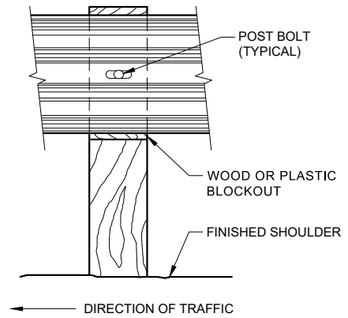

**FRONT VIEW**
## QUARTER POST SPACING (QS)



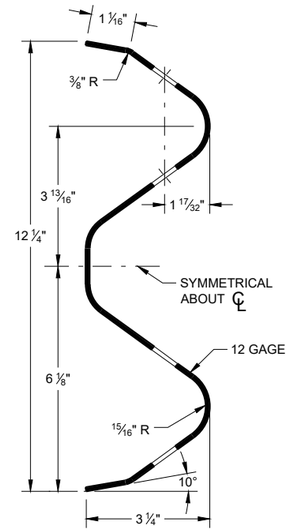

**FRONT VIEW**
## MID-SPAN BEAM SPLICE



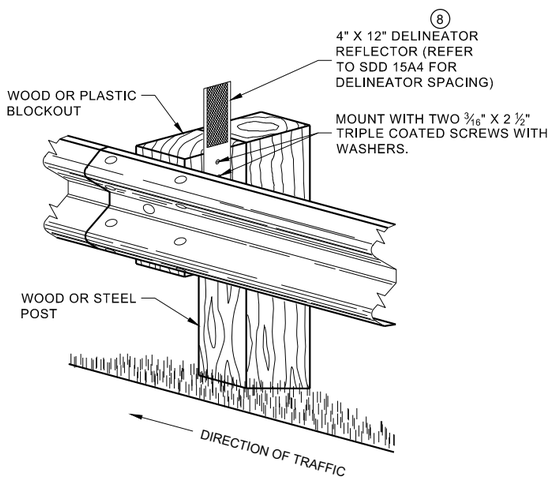

## FRONT VIEW AT STEEL POST




## 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.

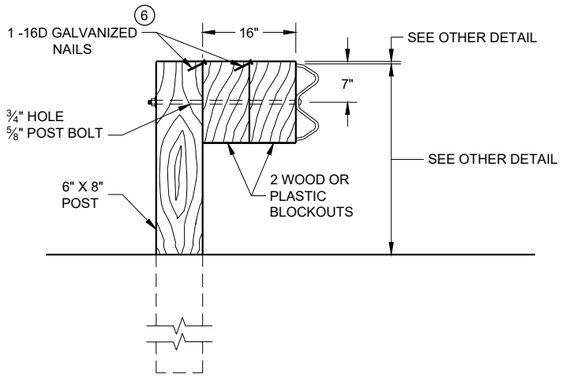
**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION




6

SDD 14B42 - 07b
SDD 14B42 - 07b

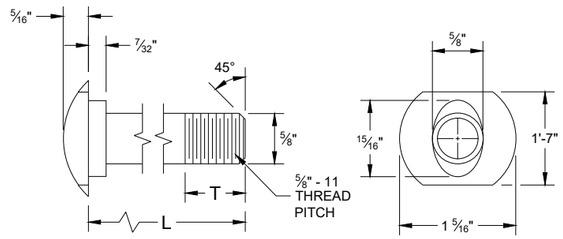



## DETAIL FOR 16" BLOCKOUT DEPTH

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

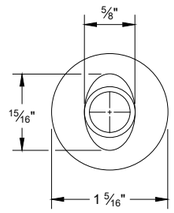
NOTE:

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

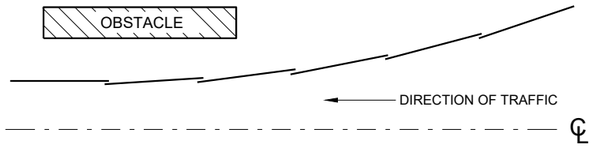



## POST BOLT TABLE

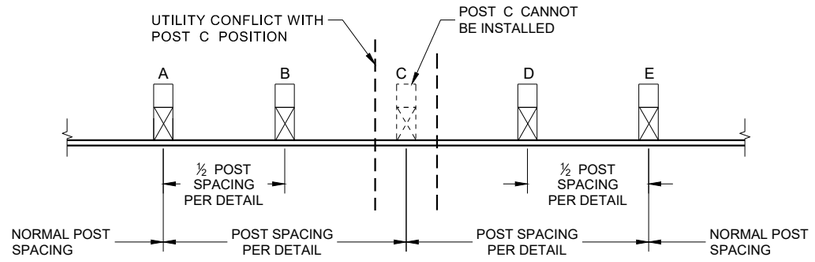
| L | T (MIN.) |
|---|---|
| 1 ¼" | 1 ⅛" |
| 2" | 1 ¾" |
| 10" | 4" |
| 14" | 4 1⁄16" |
| 18" | 4" |
| 21" | 4 1⁄16" |
| 25" | 4" |



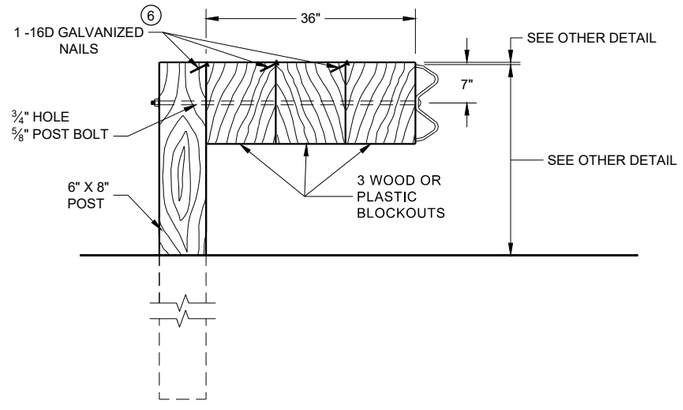

## ALTERNATE BOLT HEAD



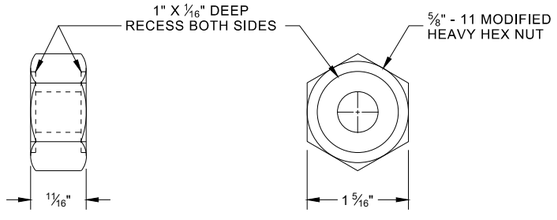

## PLAN VIEW
## BEAM LAPPING DETAIL



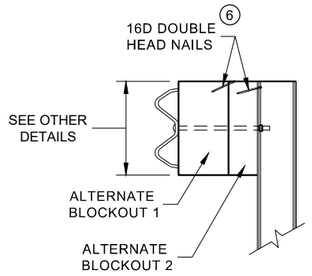

## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



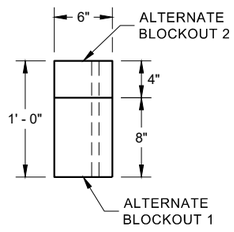

## DETAIL FOR 36" BLOCKOUT DEPTH




## POST BOLT, SPLICE BOLT AND RECESS NUT




## SIDE VIEW




## PLAN VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL

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

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

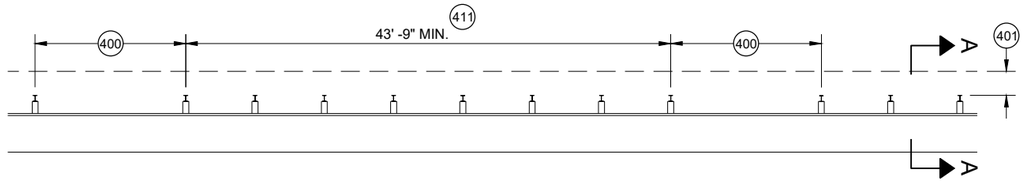
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

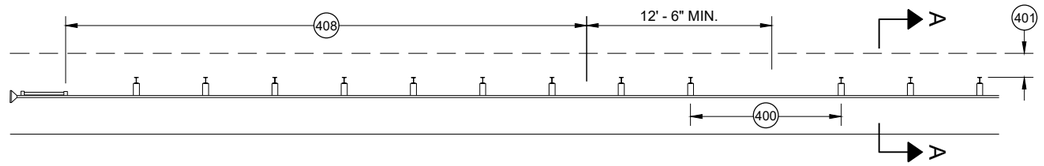


6

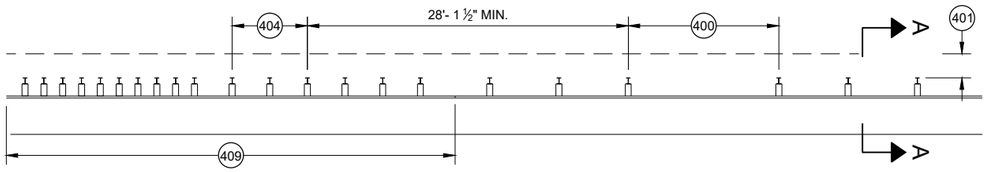
SDD 14B42 - 07c



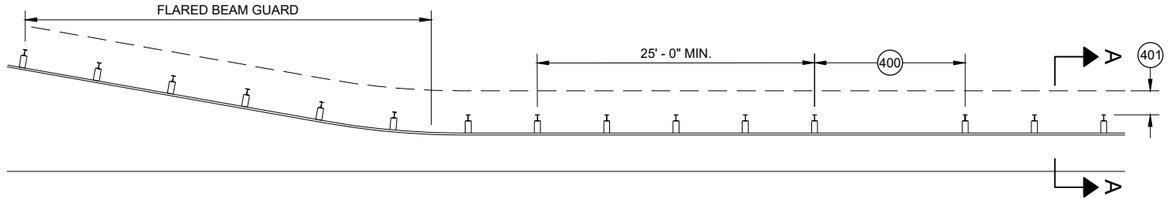

**MISSING POST IN MGS GUARDRAIL**



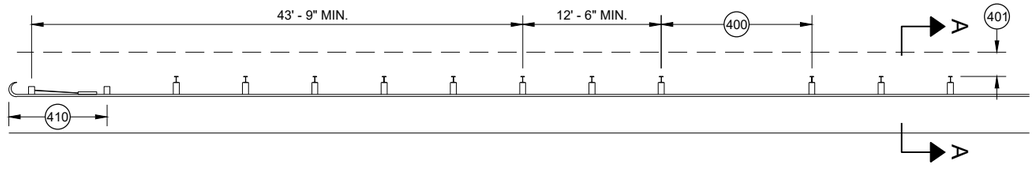

**MISSING POST IN MGS GUARDRAIL NEAR EAT**



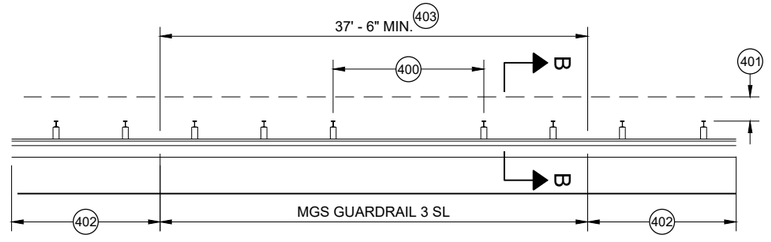

**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**




**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

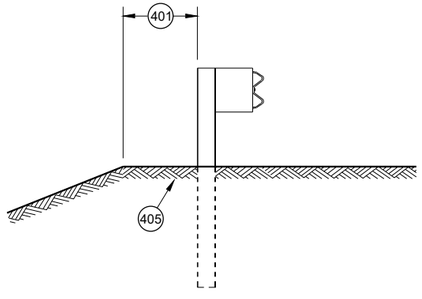



**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

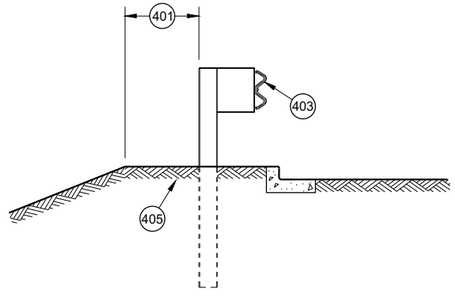



**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)** 407

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




**SECTION A - A** 406




**SECTION B - B** 406

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA



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SDD 14B42 - 07d

SDD 14B42 - 07d

## GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

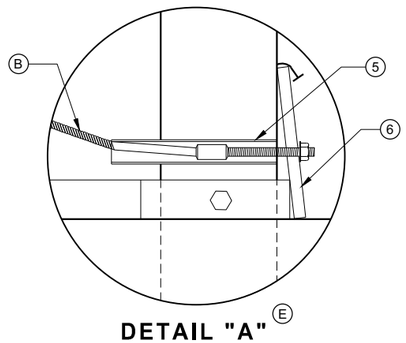
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

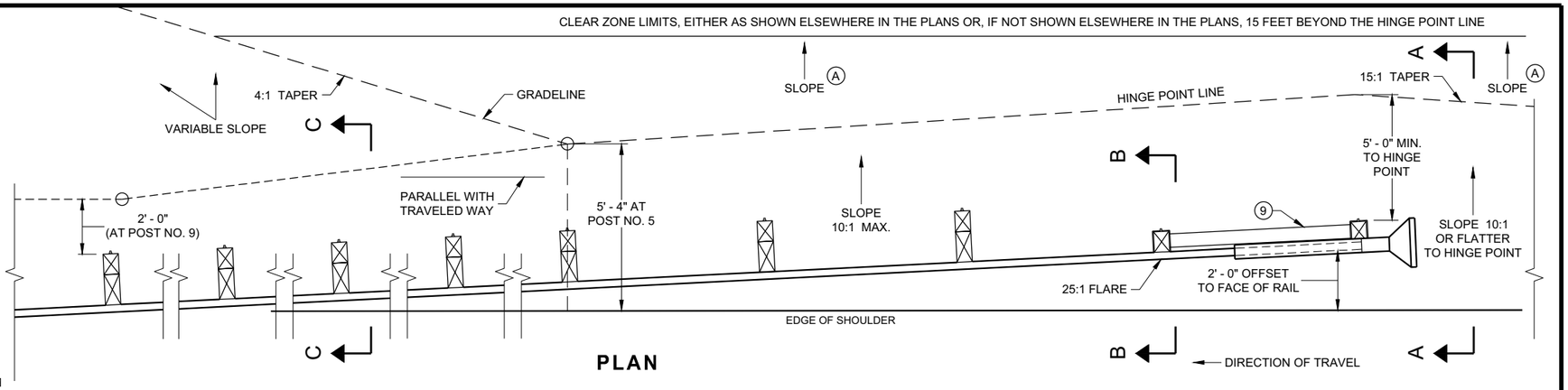
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

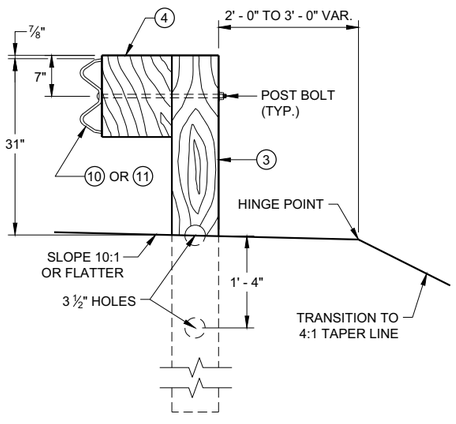
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

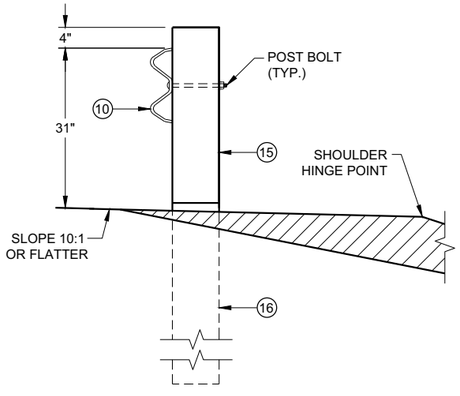



DETAIL "A" (E)

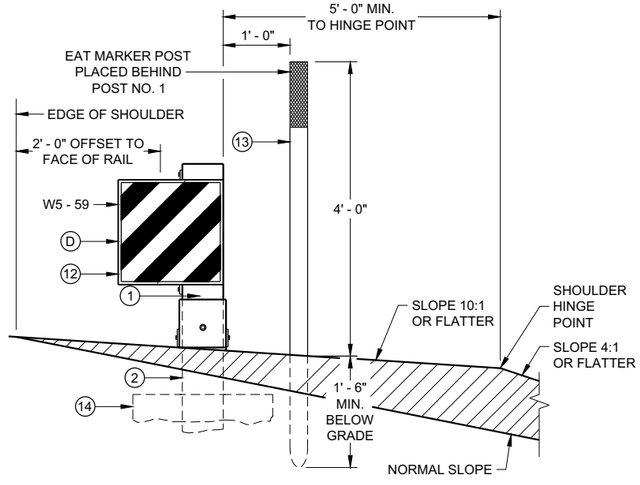


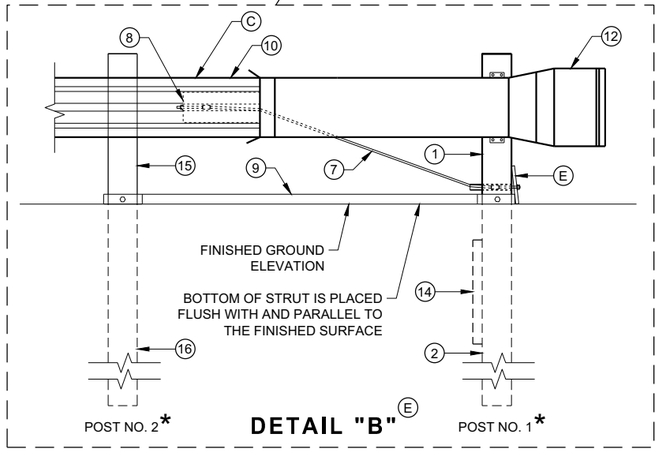

SECTION C - C
TYPICAL AT POST NOS. 3 - 9




SECTION B - B
TYPICAL AT POST NO. 2*




SECTION A - A
TYPICAL AT POST NO. 1*




DETAIL "B" (E)

**MIDWEST GUARDRAIL SYSTEM**
**ENERGY ABSORBING TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

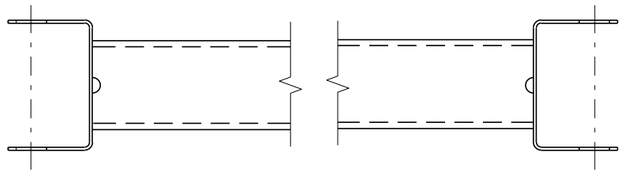


SDD 14B44 - 04a

SDD 14B44 - 04a

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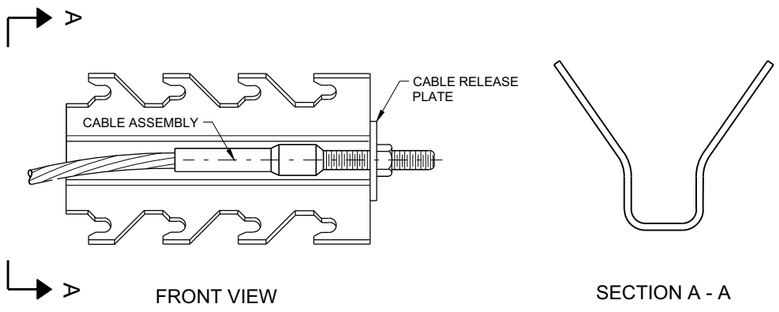
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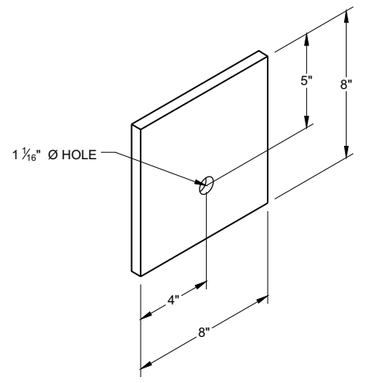
## GENERIC GROUND STRUT ⑨ Ⓔ

## 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

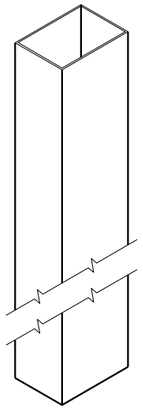
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SDD 14B44 - 04b

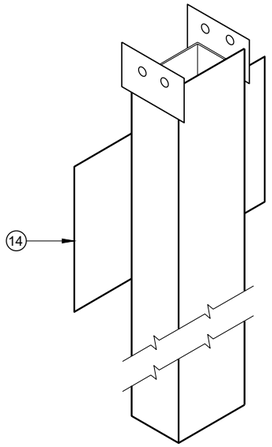
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM**
**ENERGY ABSORBING TERMINAL**
**(MGS)**

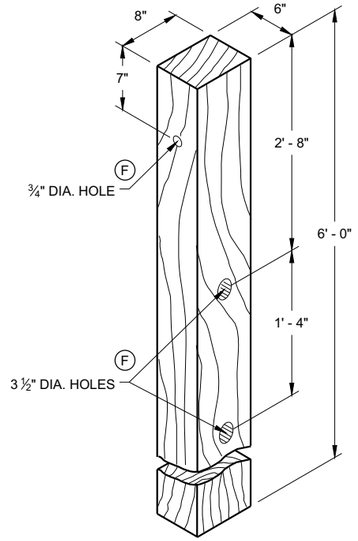
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



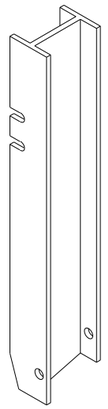
**UPPER POST NO. 1** (1) (E)



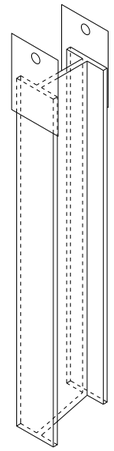

**LOWER POST NO. 1** (2) (E)



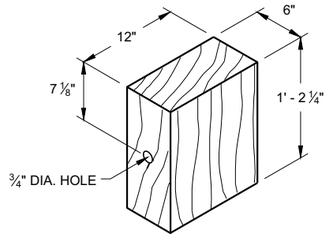

**WOOD CRT POST** (3) (E)
POSTS NUMBER 3-9



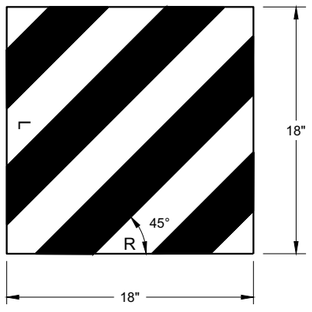
**UPPER POST NO. 2** (15) (E)



**LOWER POST NO. 2** (16) (E)

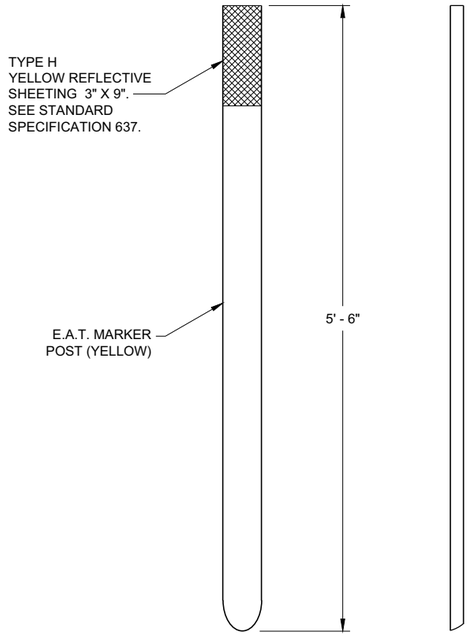



**WOOD BLOCKOUT** (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



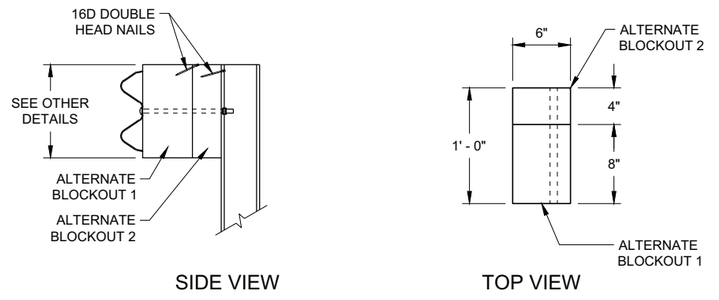

W5 - 59

**REFLECTIVE SHEETING DETAIL** (E)




FRONT VIEW SIDE VIEW

**E.A.T. MARKER POST** (13)




SIDE VIEW TOP VIEW

**ALTERNATE WOOD BLOCKOUT DETAIL**

**MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

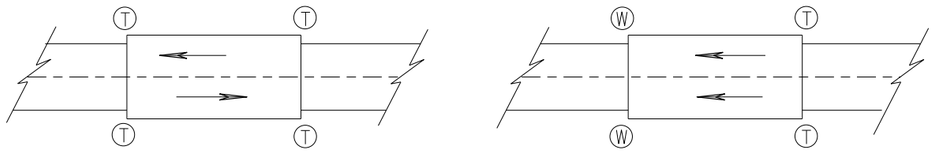
APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA




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SDD 14B44 - 04c




**TWO WAY TRAFFIC**




**ONE WAY TRAFFIC**

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

## GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

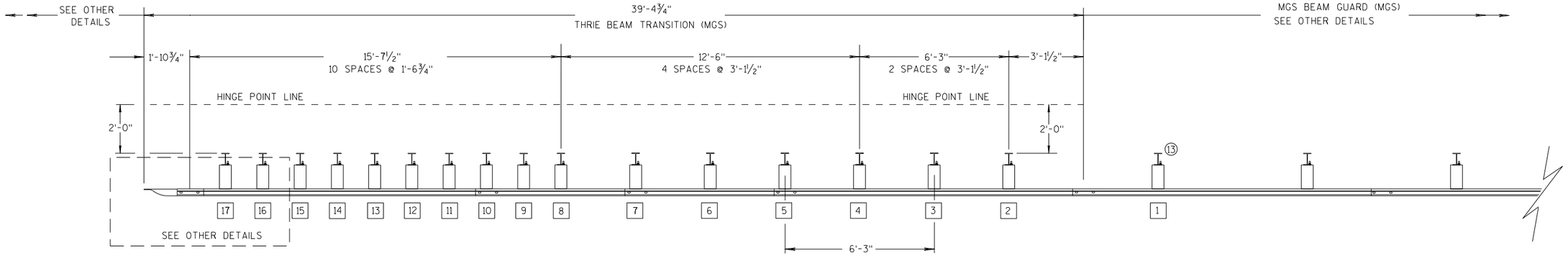
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

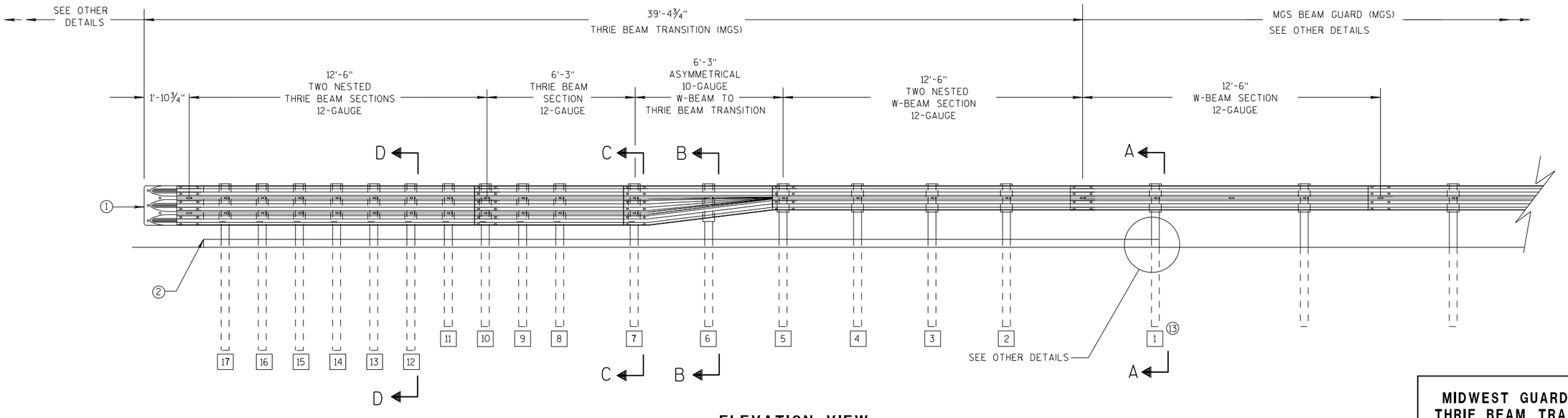
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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




**PLAN VIEW**




**ELEVATION VIEW**

## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR







6

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

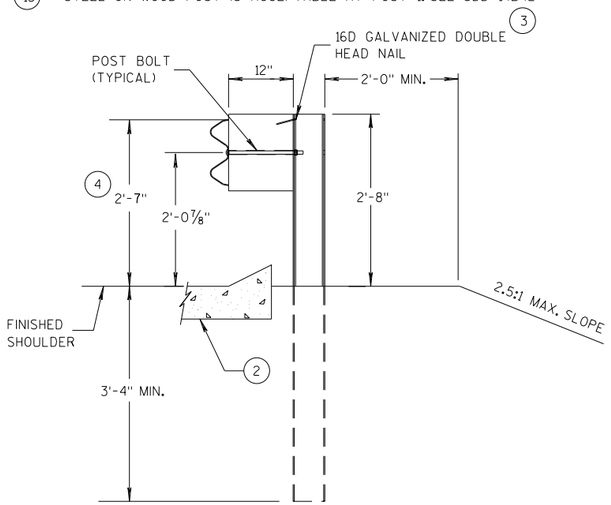
## GENERAL NOTES

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

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

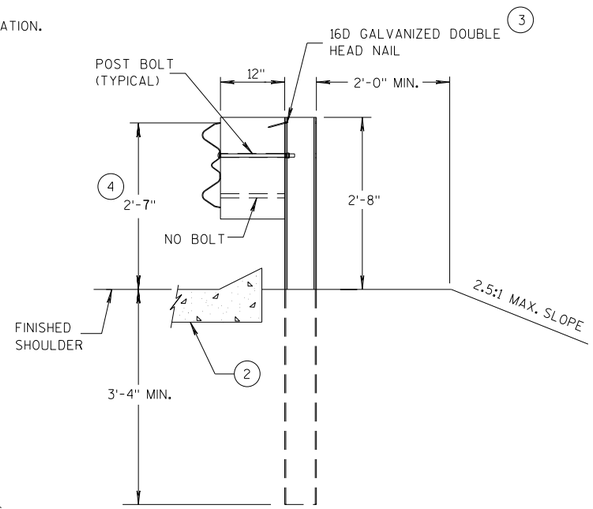
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



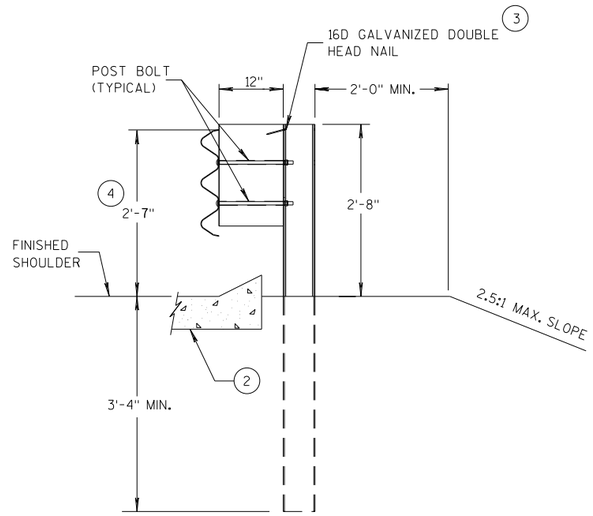

SECTION A-A (13)

**POSTS 1-5**



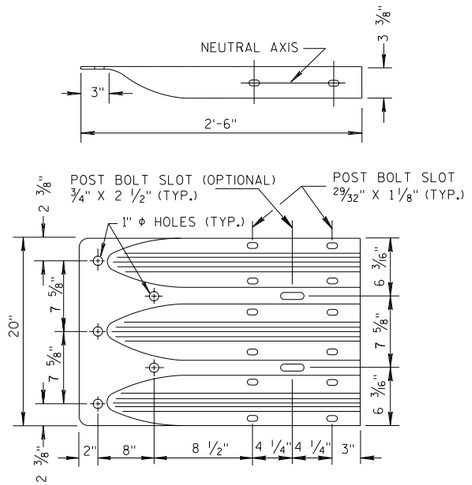

SECTION B-B

**POST 6**

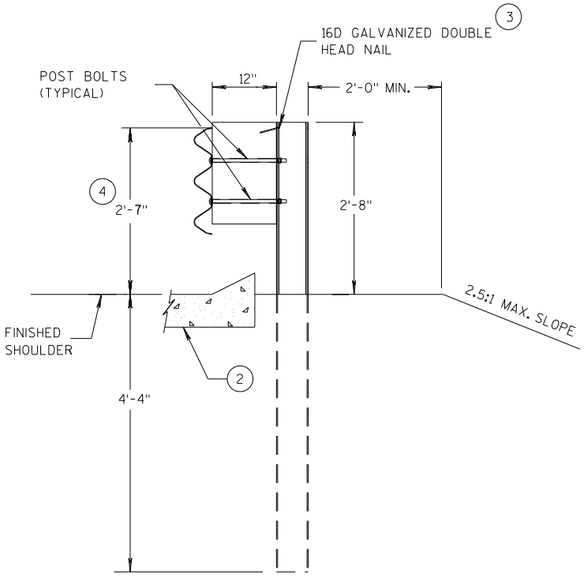



SECTION C-C

**POSTS 7-11**

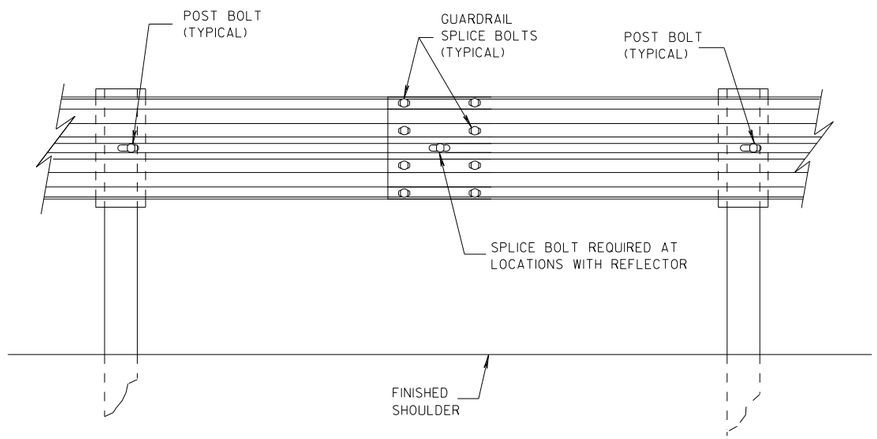



**THRIE BEAM TERMINAL CONNECTOR**




SECTION D-D

**POSTS 12-17**




**SPLICE DETAIL**

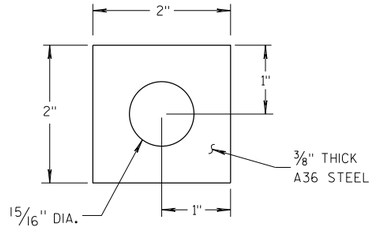
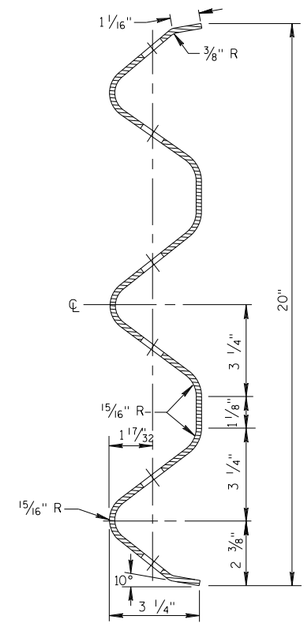



**PLATE WASHER DETAIL**




**SECTION THRU THRIE BEAM RAIL ELEMENT**

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

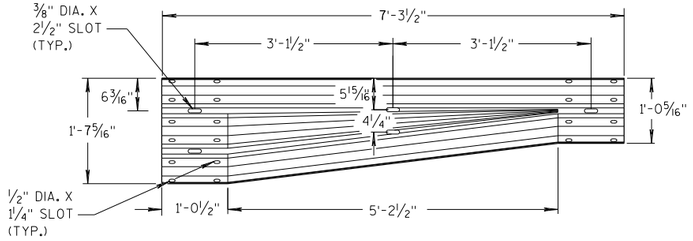
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 73

6

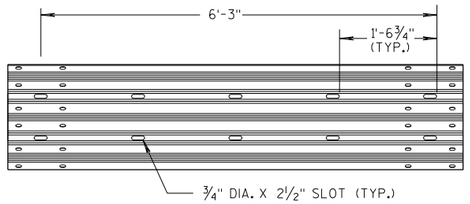
S.D.D. 14 B 45-5b

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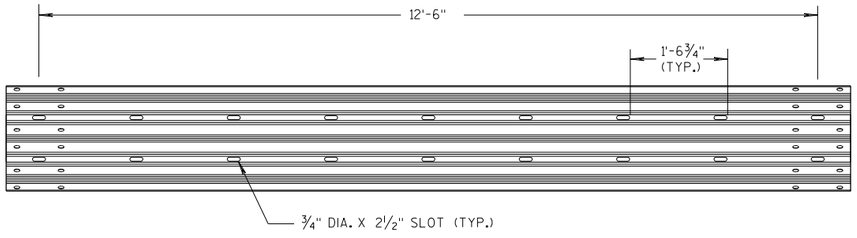
S.D.D. 14 B 45-5b



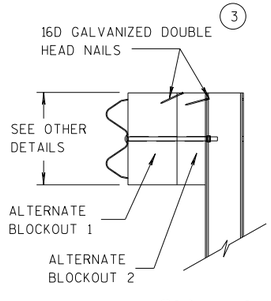

## W-BEAM TO THRIE BEAM TRANSITION SECTION



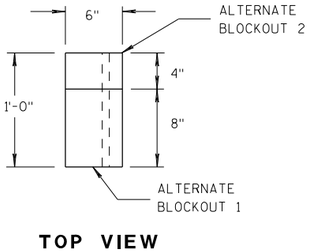

## 6'-3" THRIE BEAM SECTION




## 12'-6" THRIE BEAM SECTION

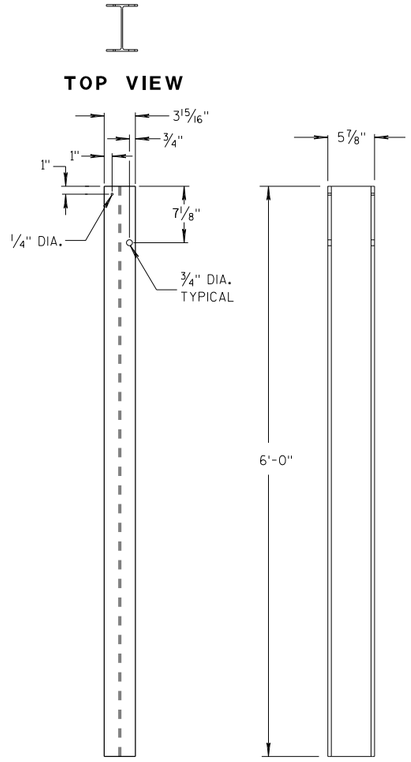



SIDE VIEW



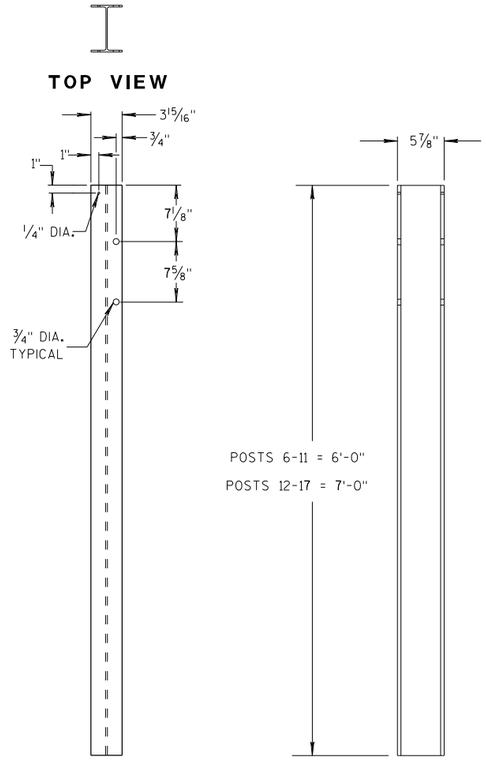

TOP VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL



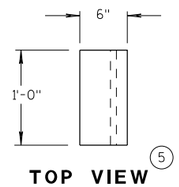

FRONT VIEW SIDE VIEW

## STEEL POSTS 1-5 (13)

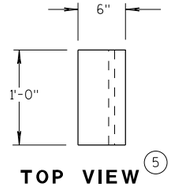



FRONT VIEW SIDE VIEW

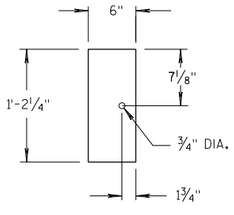
## STEEL POSTS 6-17




TOP VIEW (5)

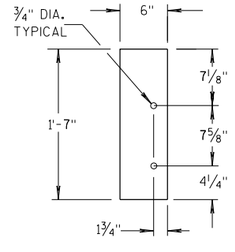



TOP VIEW (5)




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)**

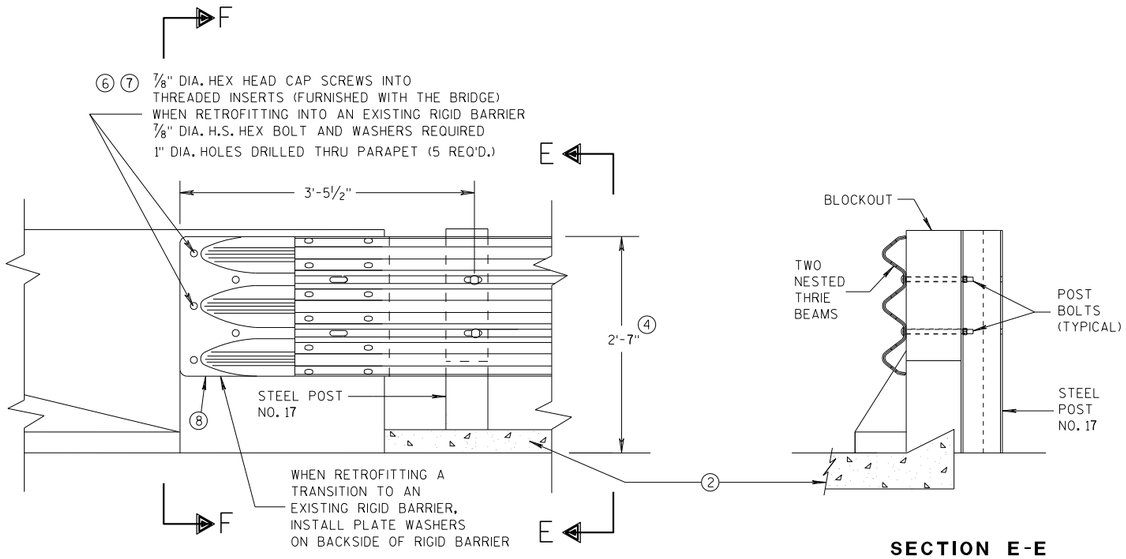
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 74

6

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

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.

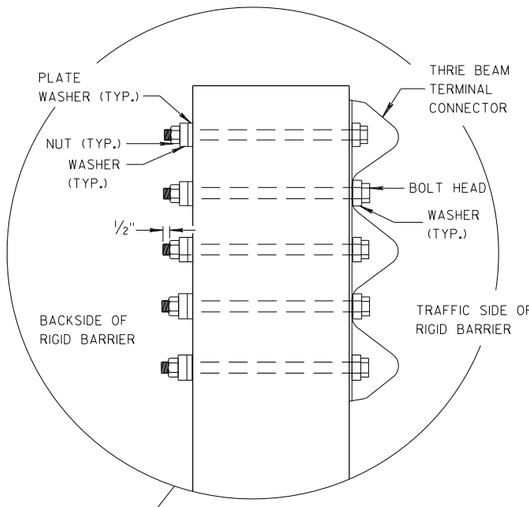
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

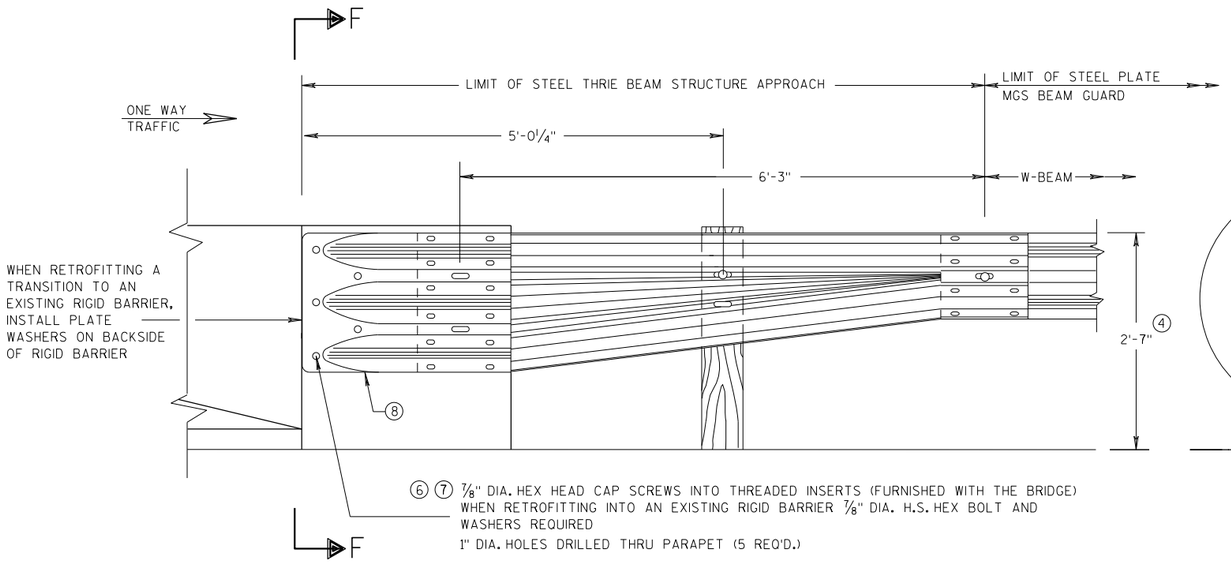
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

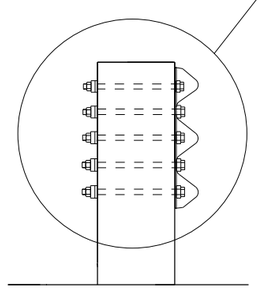
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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".

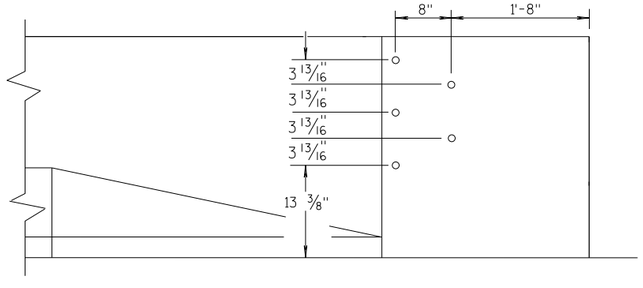



FRONT VIEW



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 SUPERVI
NT
FHWA

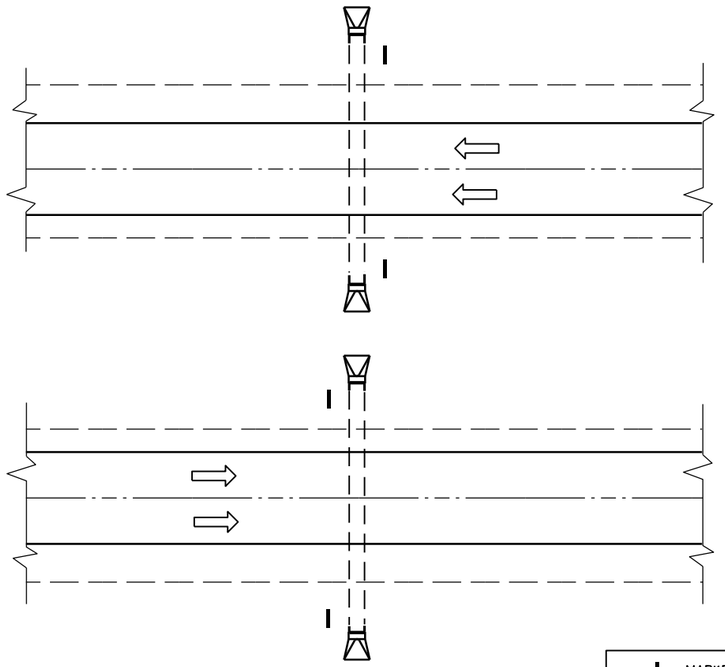


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S.D.D. 14 B 45-5d

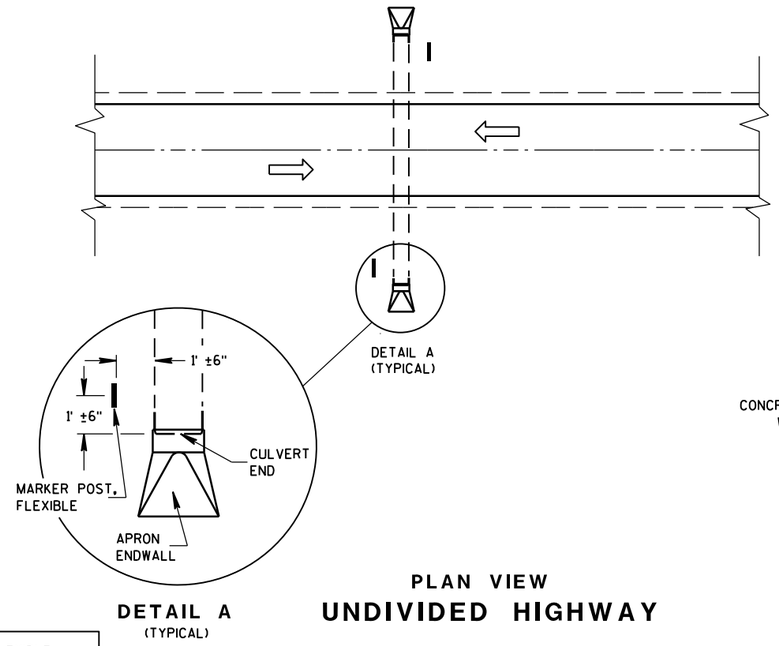
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S.D.D. 14 B 45-5d



PLAN VIEW

## DIVIDED HIGHWAY




DETAIL A
(TYPICAL)

PLAN VIEW

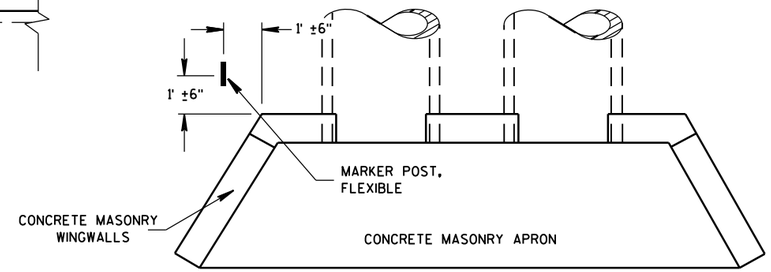
## UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

## GENERAL NOTES

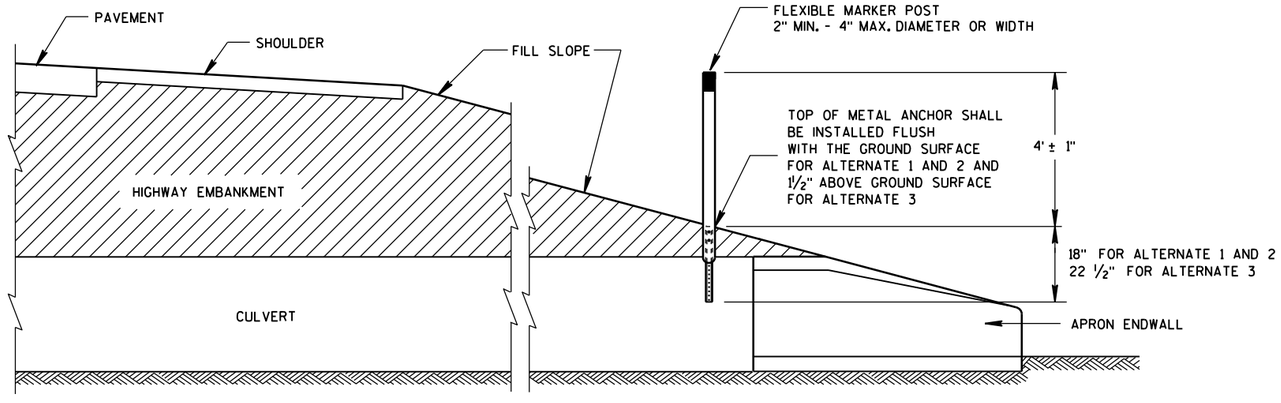
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.




PLAN VIEW

## CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

## FLEXIBLE MARKER POST LOCATION




CROSS SECTION

## FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

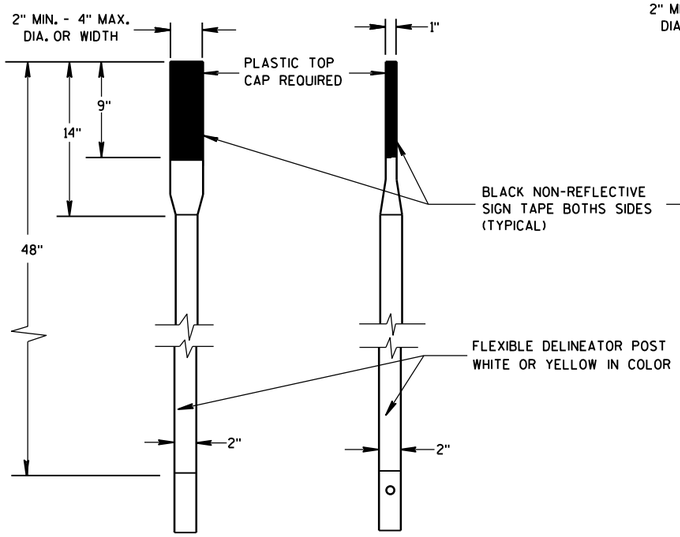


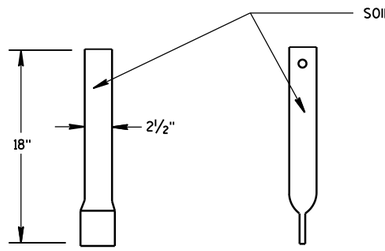
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S.D.D. 15 A 3-2a

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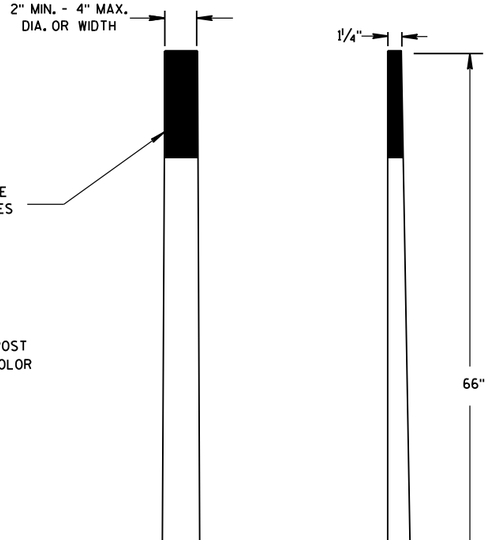
S.D.D. 15 A 3-2a



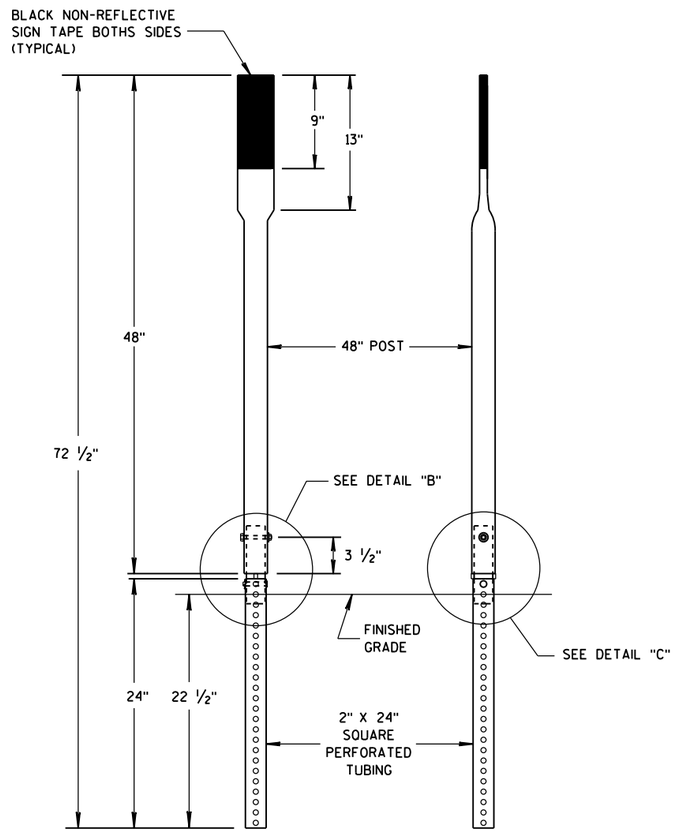

FRONT VIEW SIDE VIEW

ALTERNATE 1




FRONT VIEW SIDE VIEW

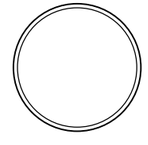
ALTERNATE 2



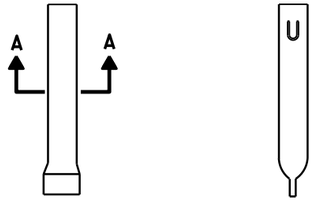

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POSTS

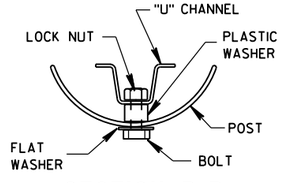


SECTION A-A

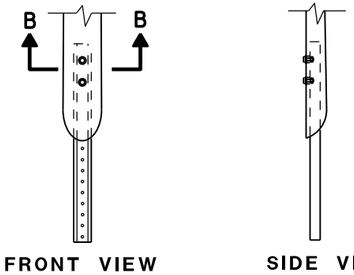



FRONT VIEW SIDE VIEW

ALTERNATE 1

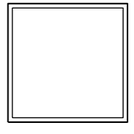



SECTION B-B

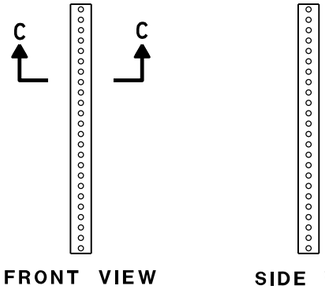



FRONT VIEW SIDE VIEW

ALTERNATE 2



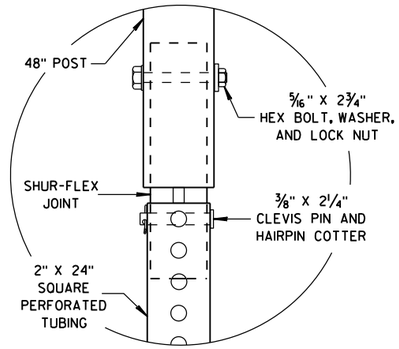
SECTION C-C



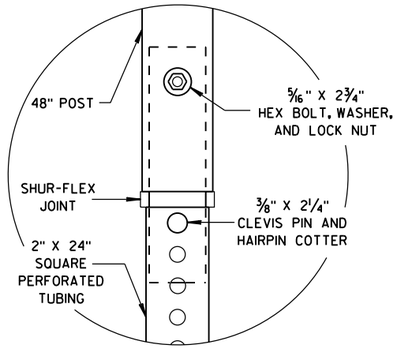

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POST ANCHORS




DETAIL B




DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

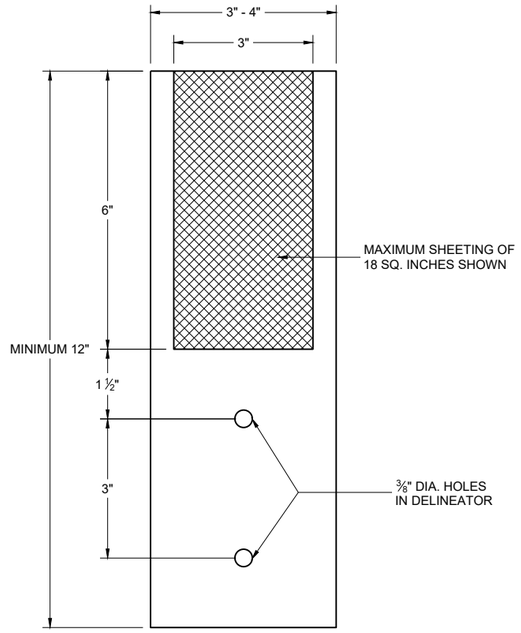


6

S.D.D. 15 A 3-2b

6

S.D.D. 15 A 3-2b




**4" x 12" DELINEATOR**
**WITH REFLECTIVE SHEETING**

**REFLECTOR SPACING TABLE**

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

**DELINEATOR POST**
**WITH REFLECTIVE SHEETING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

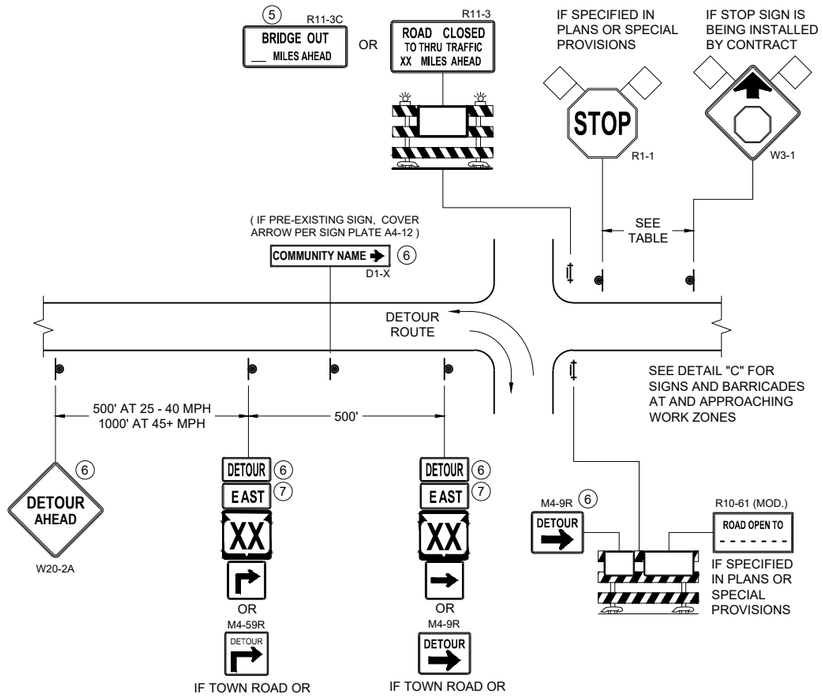
FHWA



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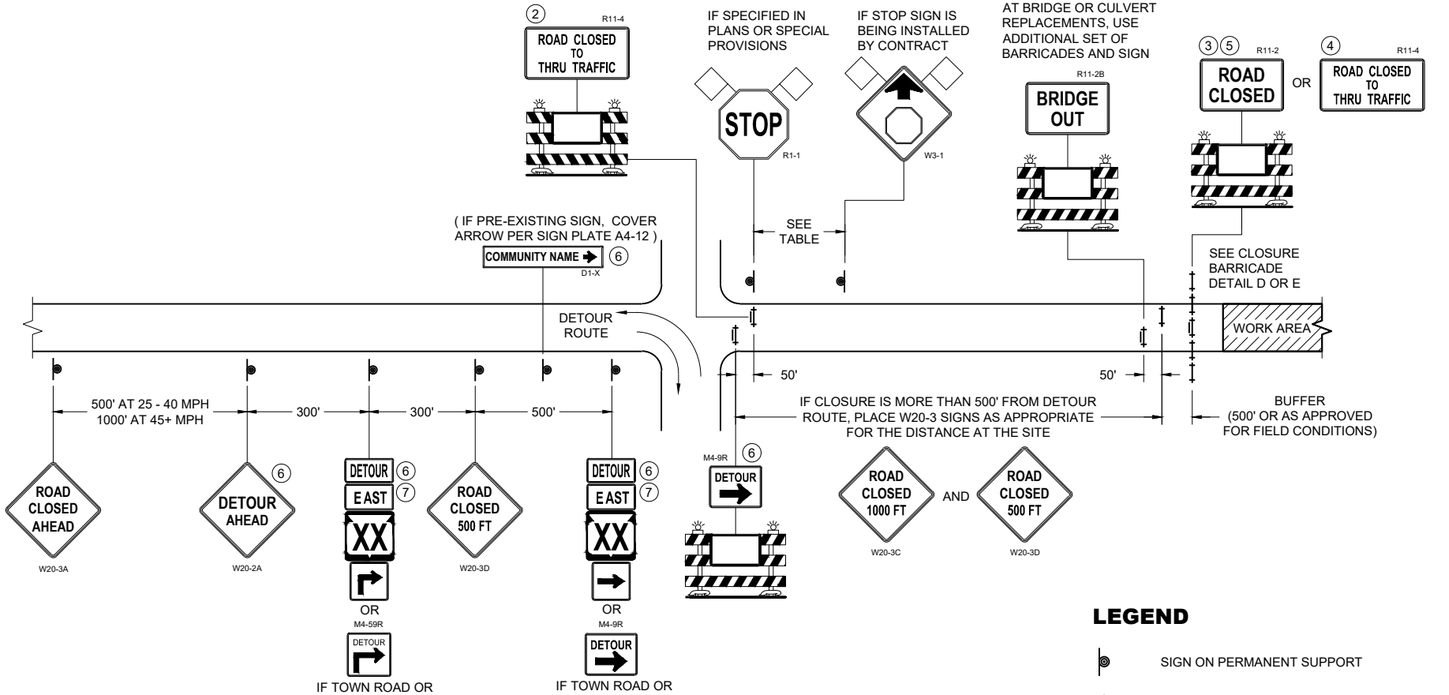


SDD 15A04-08e



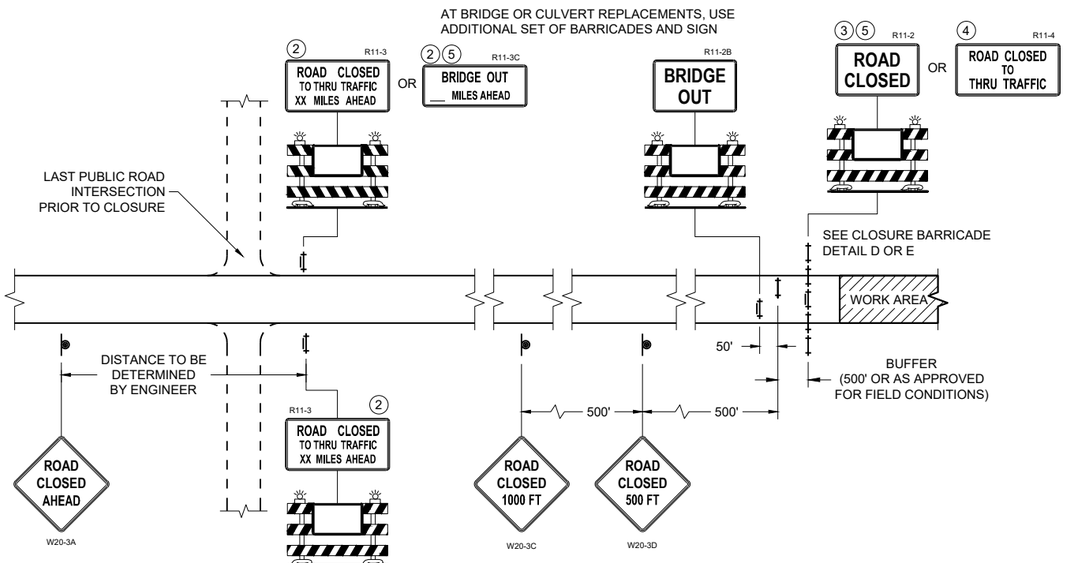

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




## DETAIL C
## MAINLINE CLOSURE, NO POSTED DETOUR

| SPEED LIMIT (MPH) | "STOP AHEAD" ADVANCE WARNING DISTANCE (FT) |
|---|---|
| 25 | 200 |
| 30 | 200 |
| 35 | 350 |
| 40 | 350 |
| 45 | 500 |
| 50 | 550 |
| 55 | 750 |

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES (1) THROUGH (7)

## LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

# BARRICADES AND SIGNS FOR MAINLINE CLOSURES

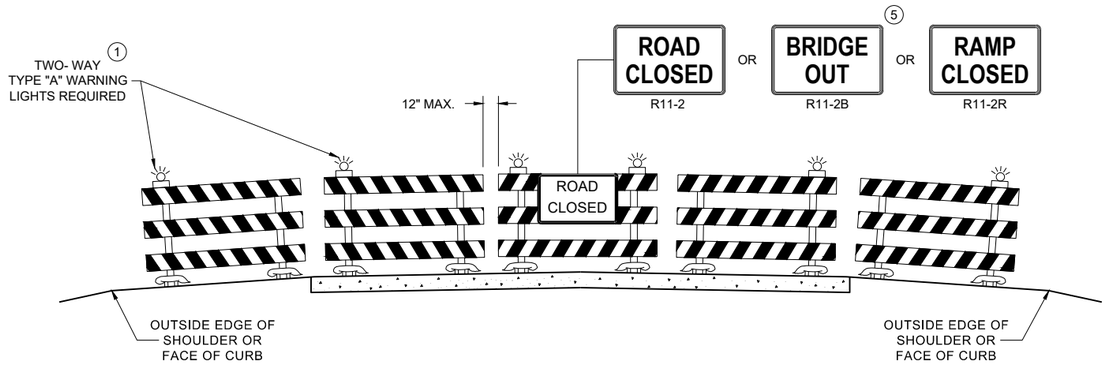
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

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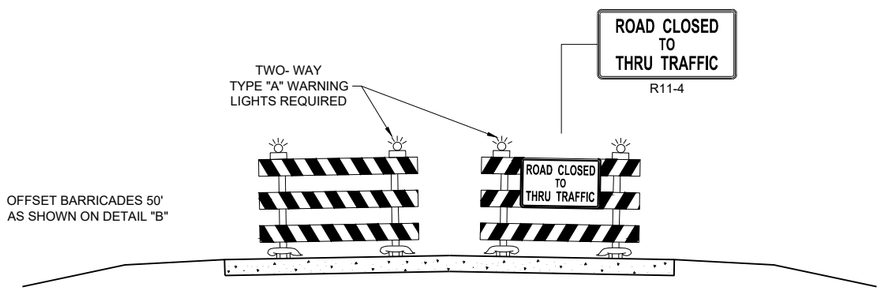
6
SDD 15C02-10a




**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.

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

"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"

SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

(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
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA




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SDD 15C02-10b

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.

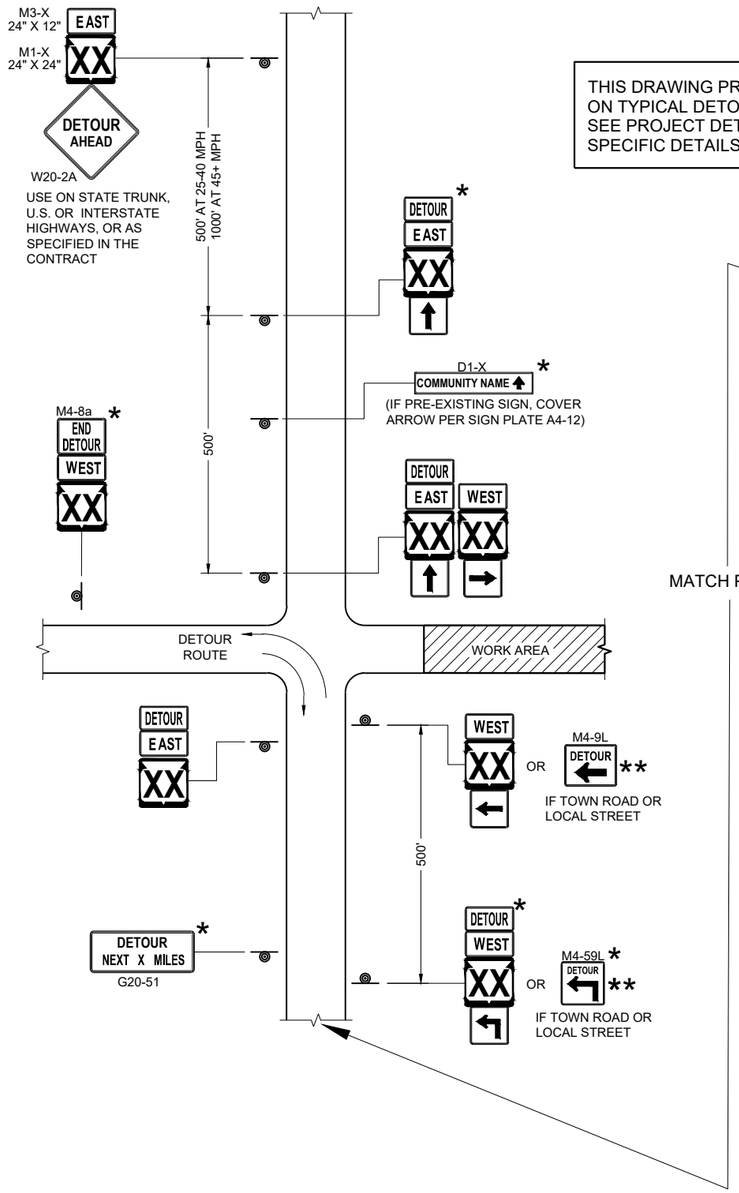
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

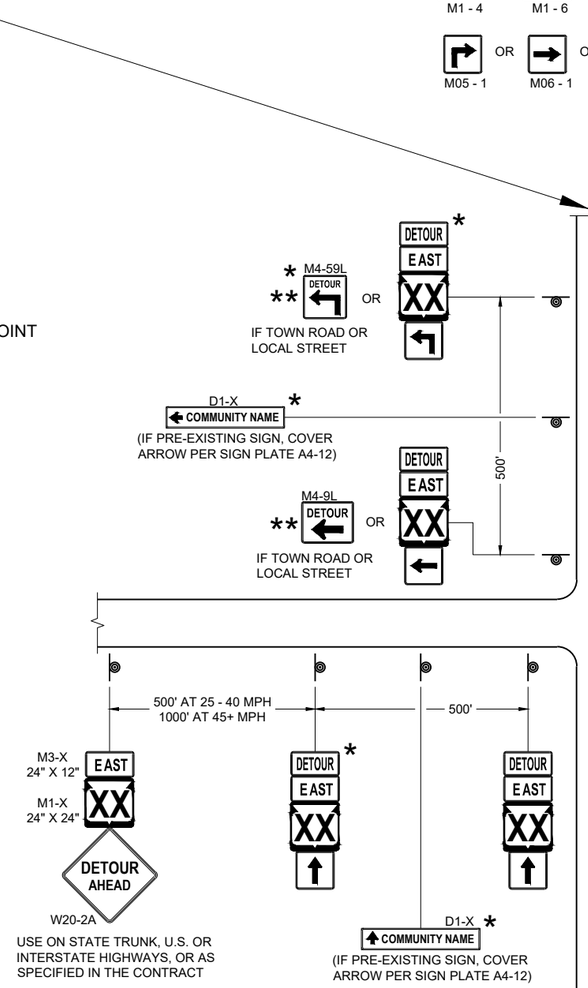
SIGN SIZES SHALL BE AS FOLLOWS:

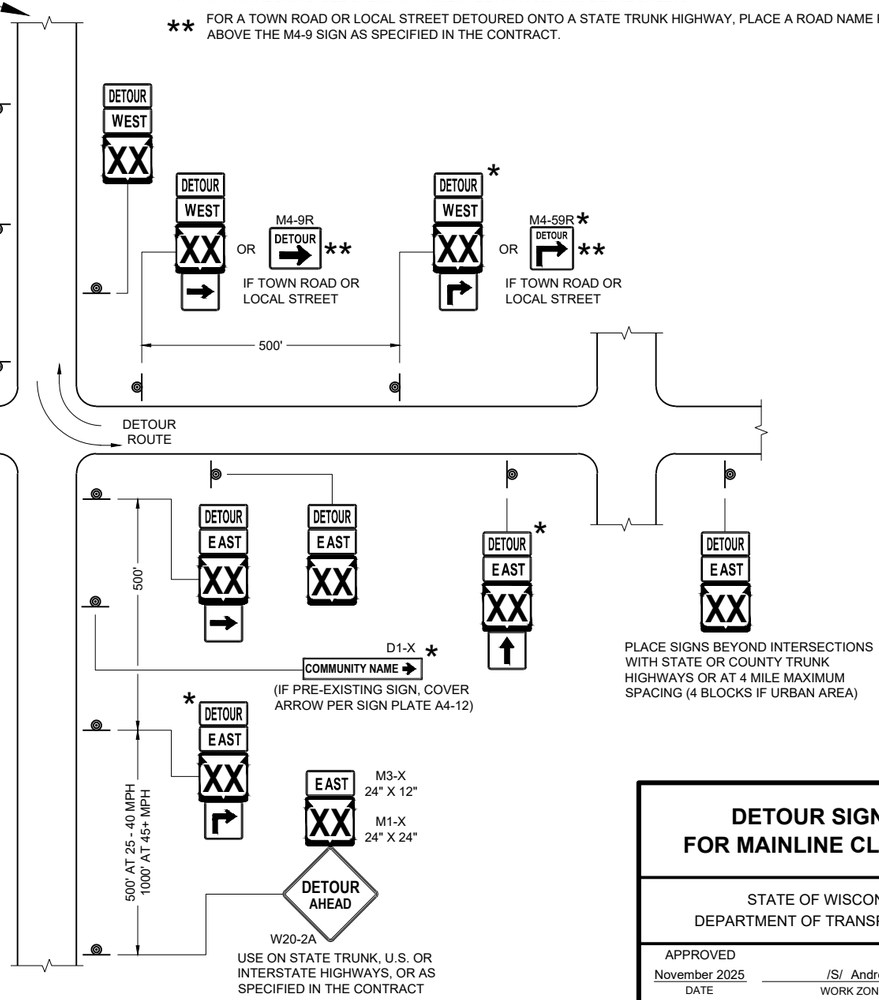
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING 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**

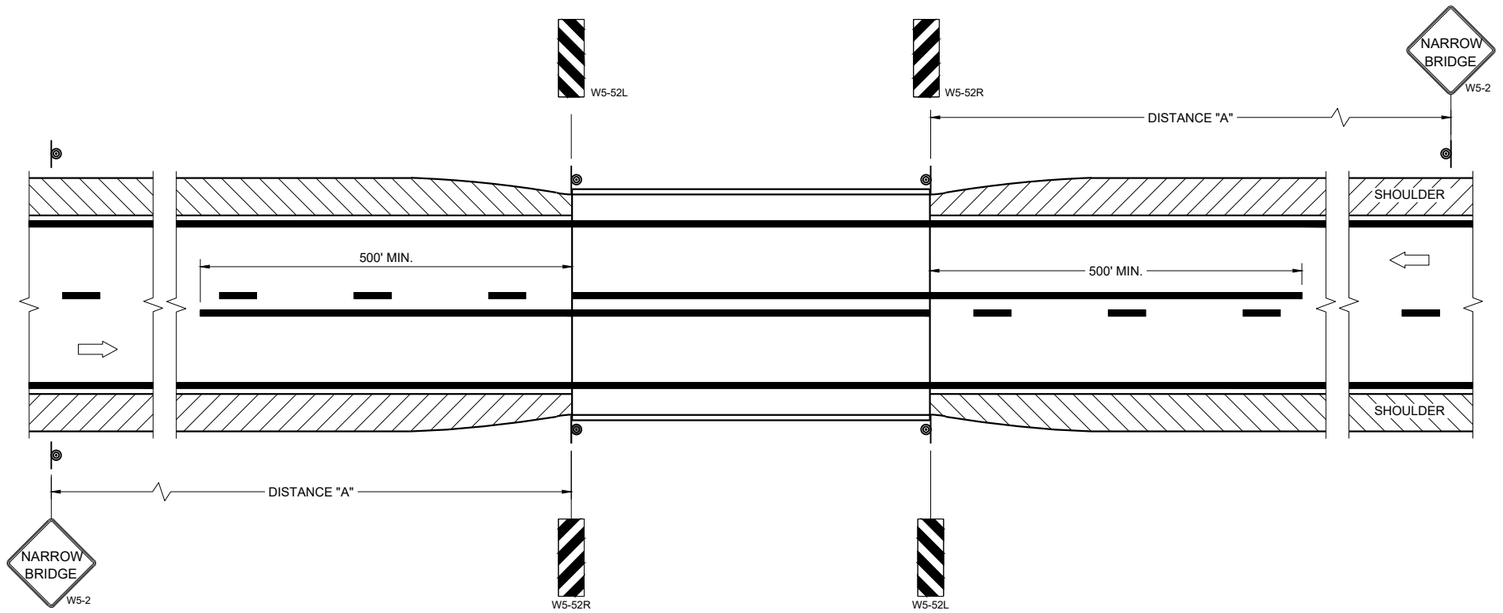
## DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

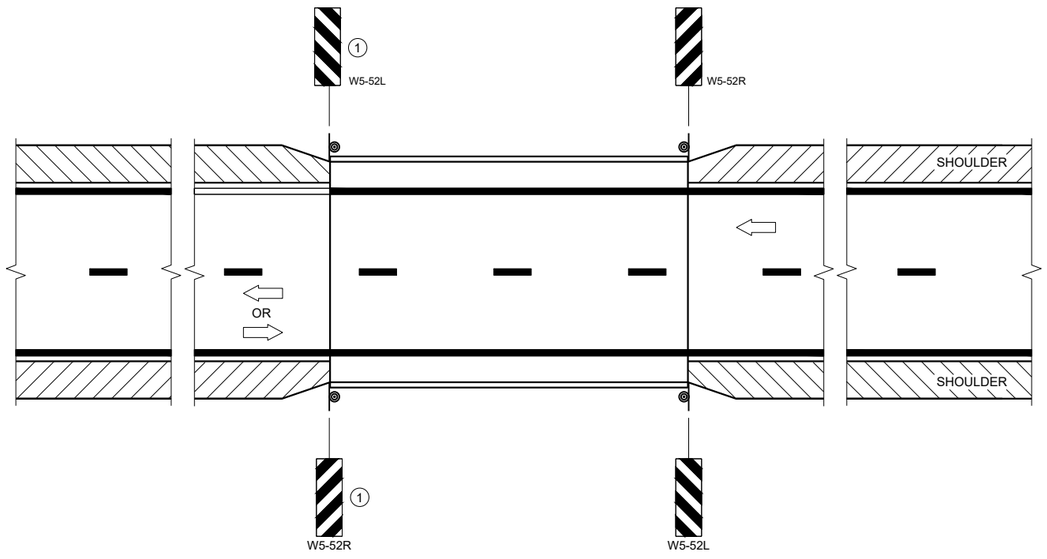
FHWA


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SDD 15C02-10c




## SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.




## SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

## GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

(1) OMIT ON ONE-WAY TRAVELED WAYS.

## LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

### DISTANCE TABLE

| POSTED OR 85TH PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 25 | 150' |
| 30 | 200' |
| 35 | 250' |
| 40 | 300' |
| 45 | 400' |
| 50 | 550' |
| 55 | 700' |

**SIGNING AND MARKING FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Jeannie Silver
Statewide Pavement Marking Engineer
FHWA


6
SDD 15C06-12

## 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.

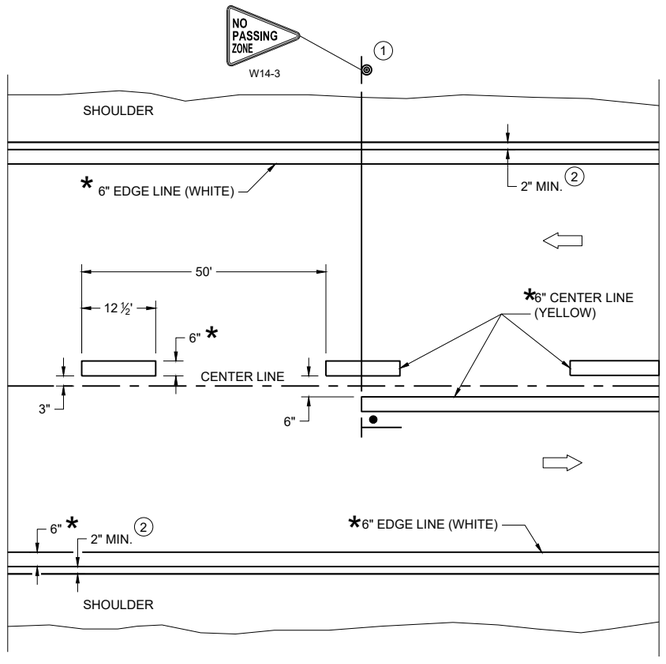
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

## LEGEND

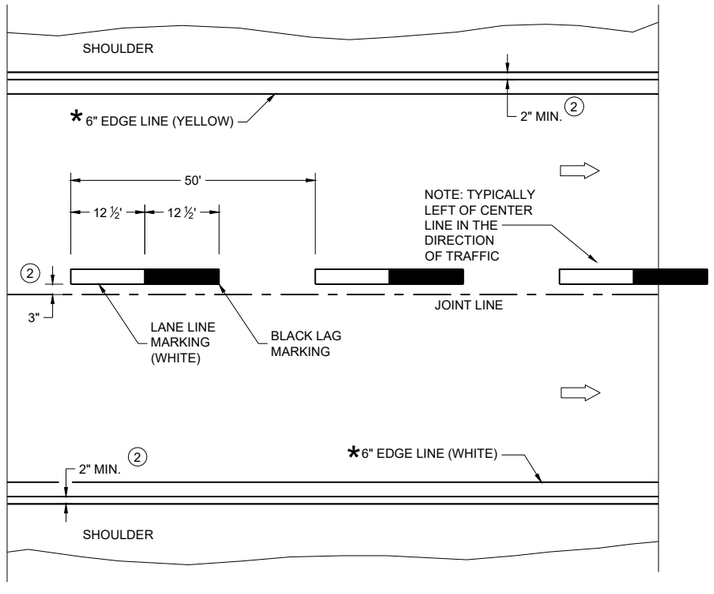
"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC




TWO WAY TRAFFIC




ONE WAY TRAFFIC

**PERMANENT PAVEMENT MARKING**

6

SDD 15C08-24a

**PERMANENT LONGITUDINAL PAVEMENT MARKINGS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



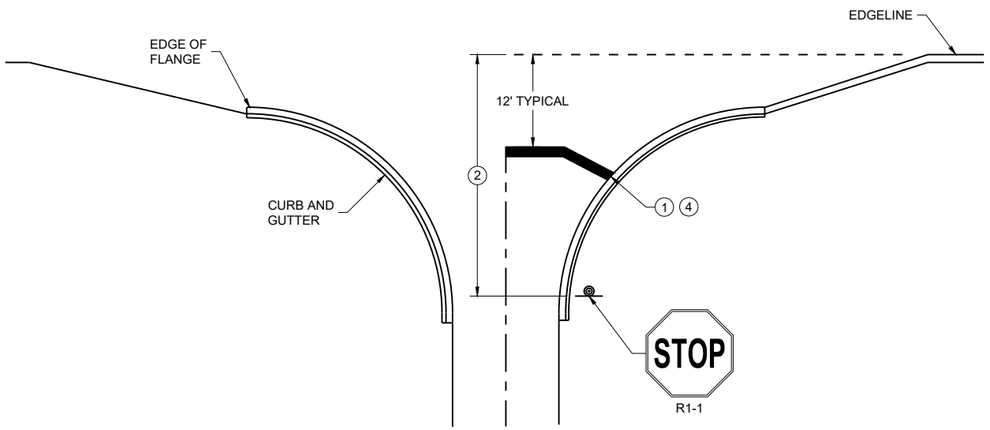
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SDD 15C08-24a

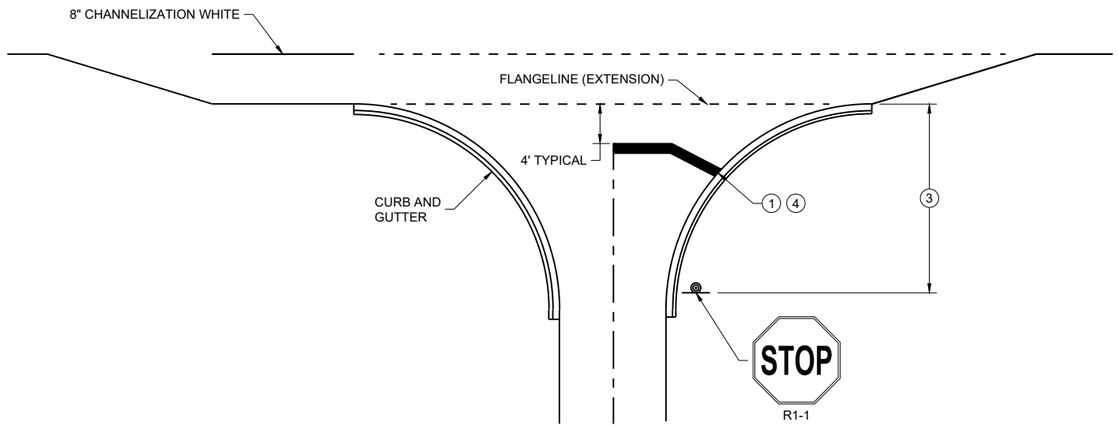
## GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

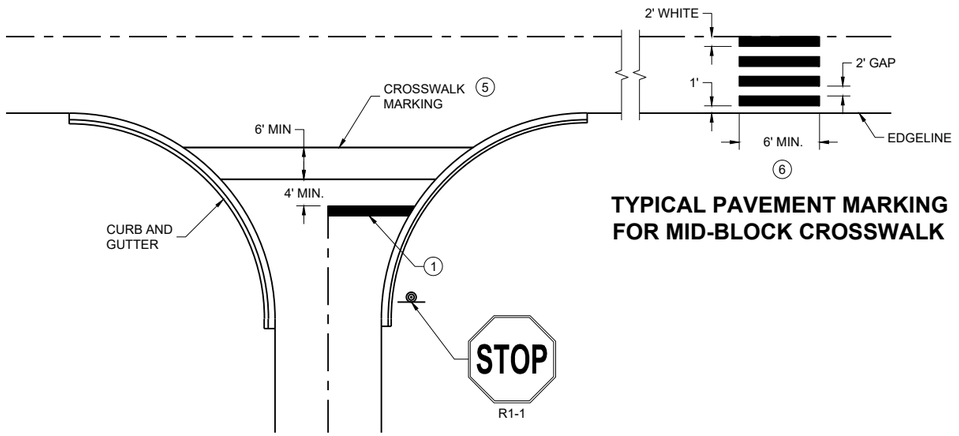
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE 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.
6. POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS




**TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**

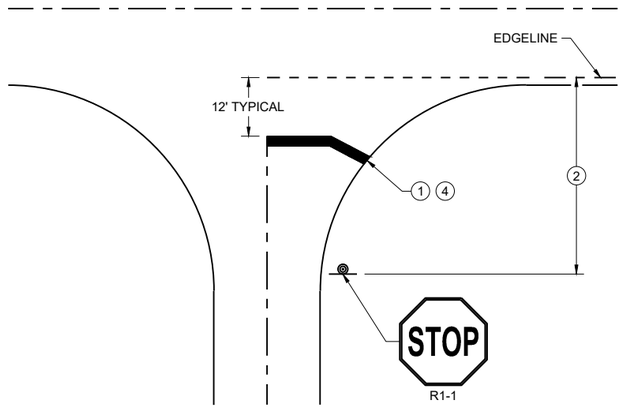



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE**




**TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK** (5)

**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS 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

March 2024 — DATE

/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

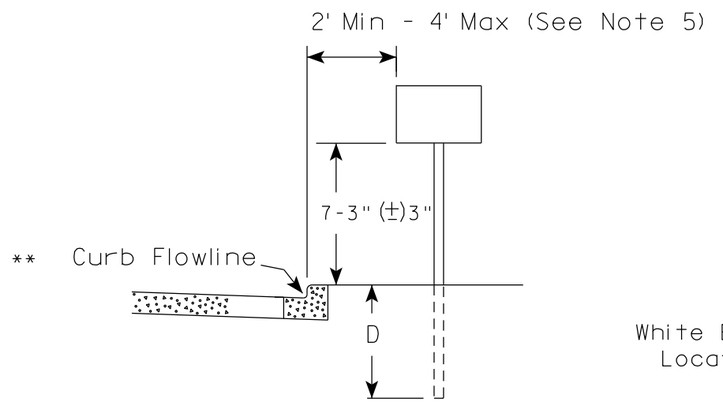




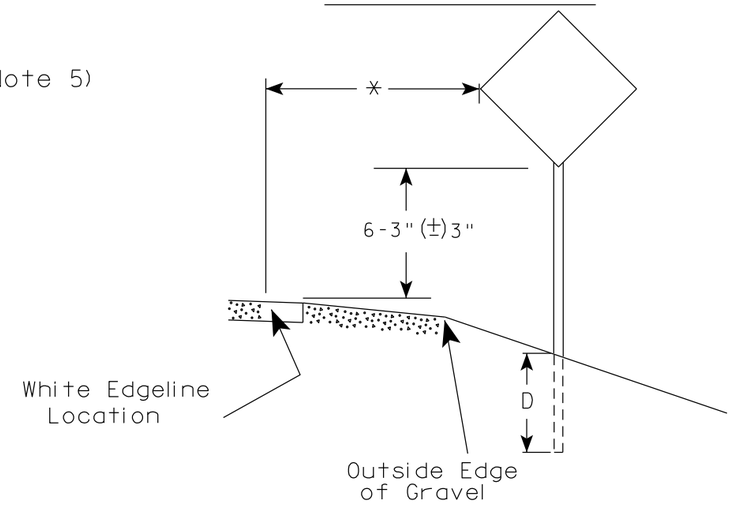
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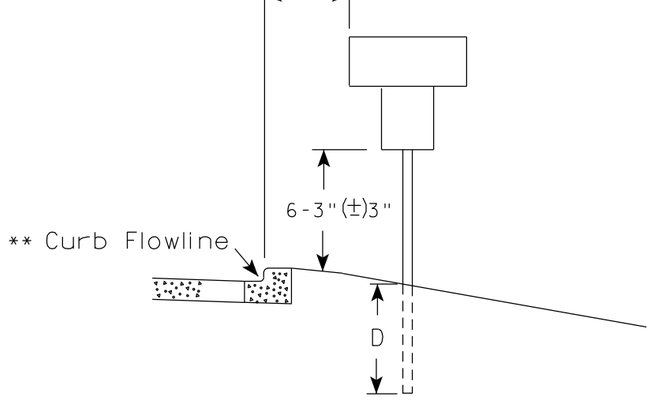
SDD 15C33-05

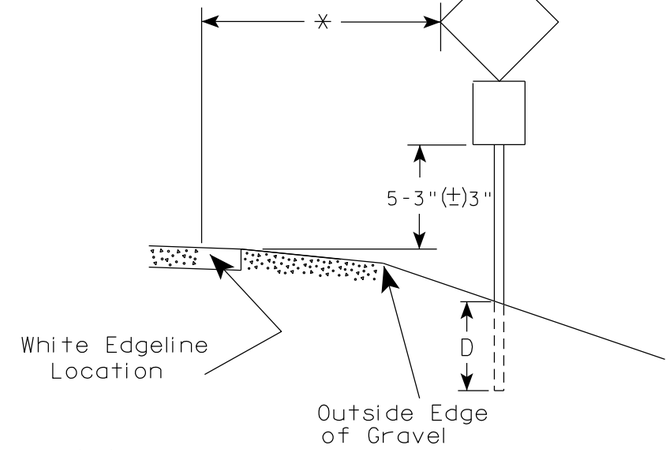
## URBAN AREA




## 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" (±) 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directd by the Engineer.

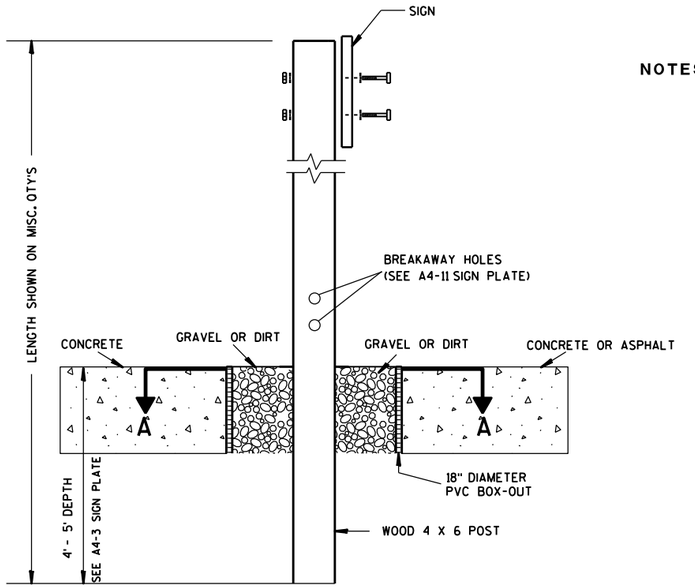
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-3.23

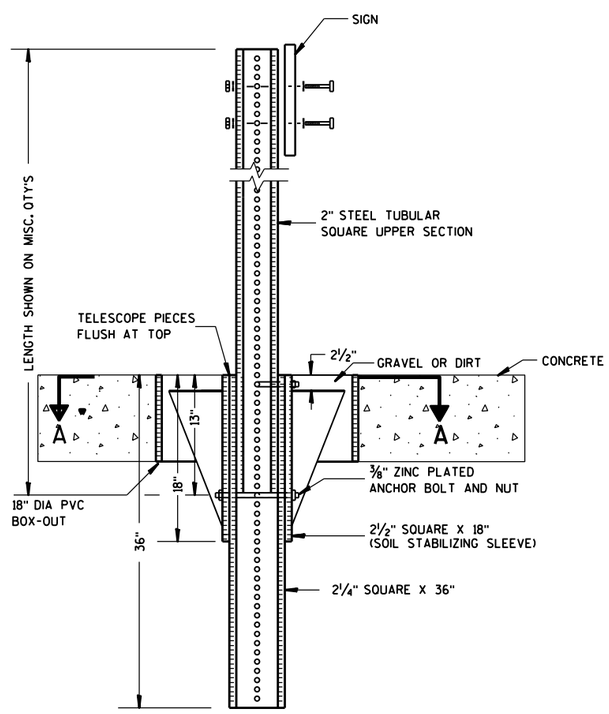
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 85 | E |
|---|---|---|---|---|---|




**ELEVATION VIEW**

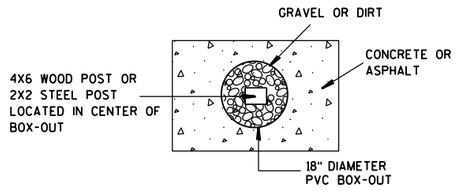
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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

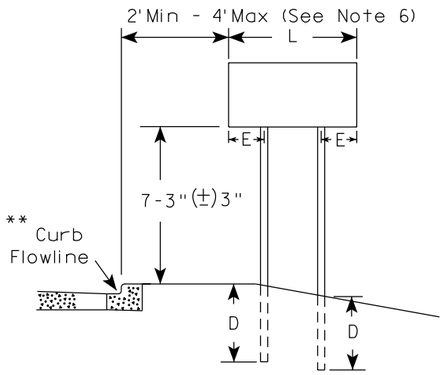
DATE 1/27/14 PLATE NO. A4-3B.1

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

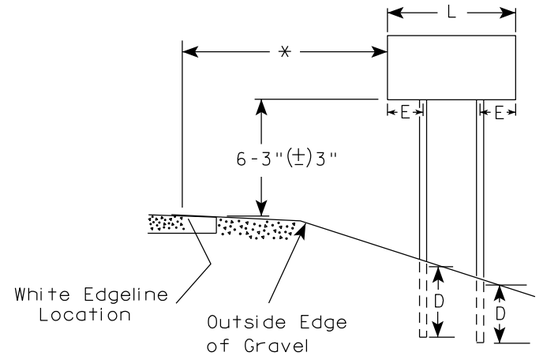


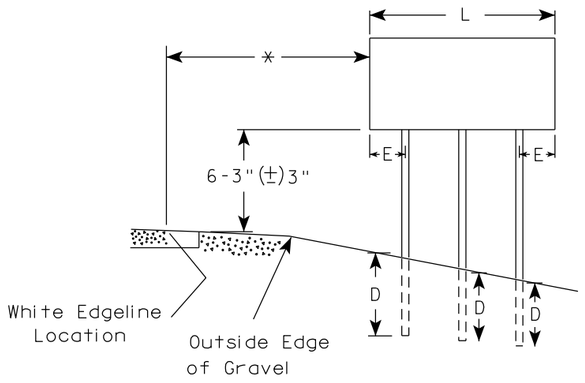
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

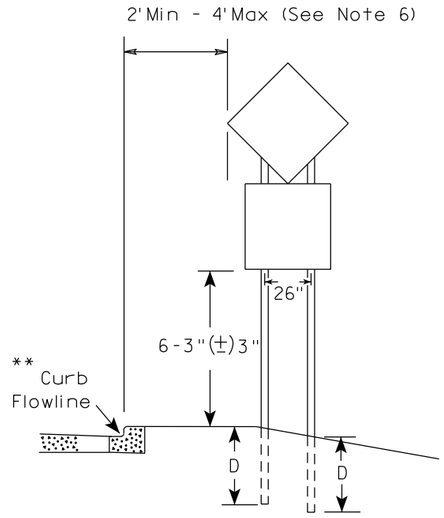
## URBAN AREA



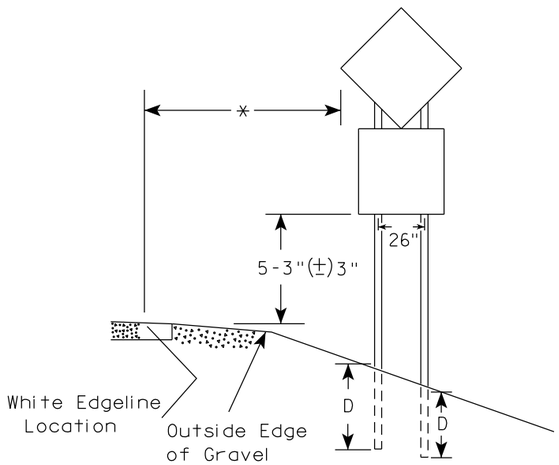

## RURAL AREA (See Note 3)




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" (±) 3" or 6'-3" (±) 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" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 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' |

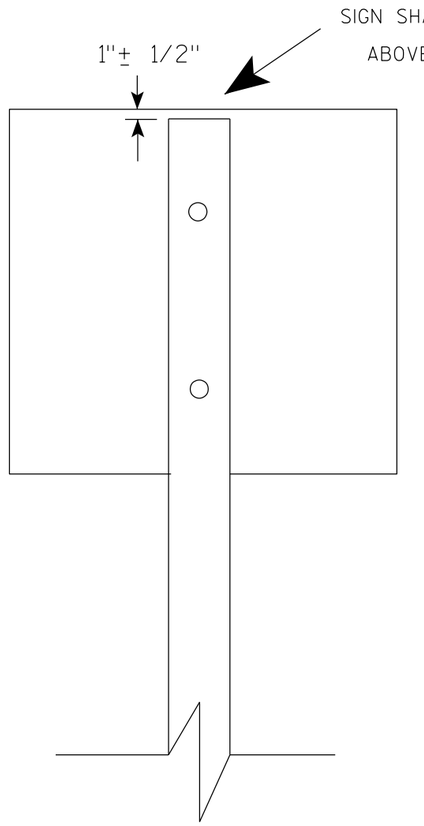
## TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

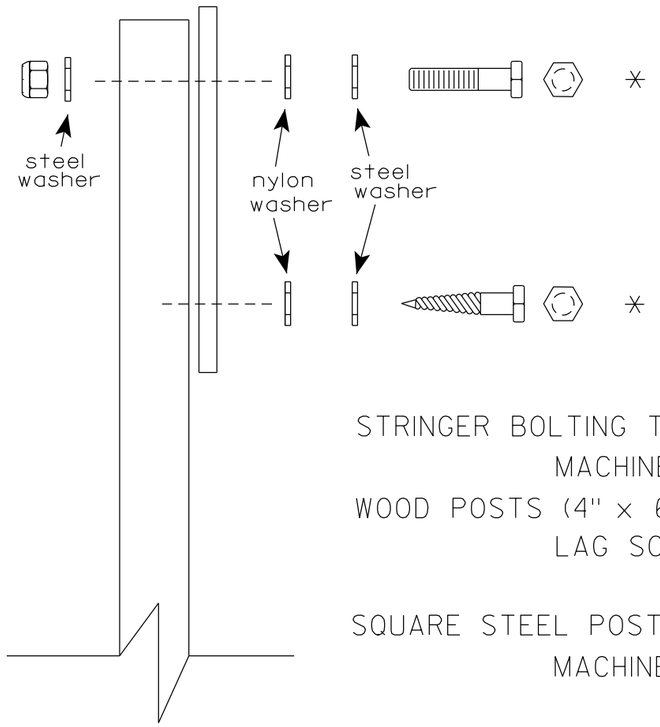
*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 87 | 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

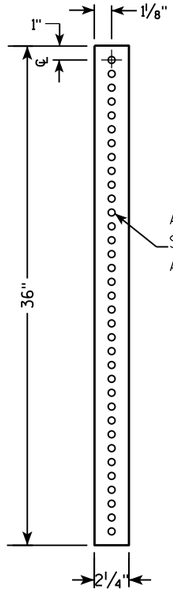
*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

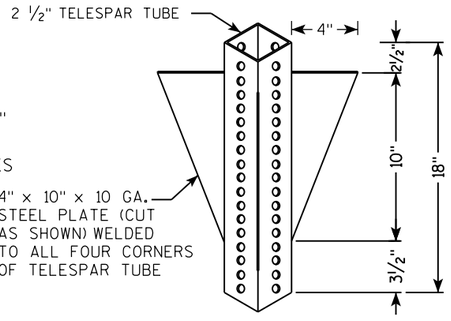
DATE 4/1/2020 PLATE NO. A4-8.9

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

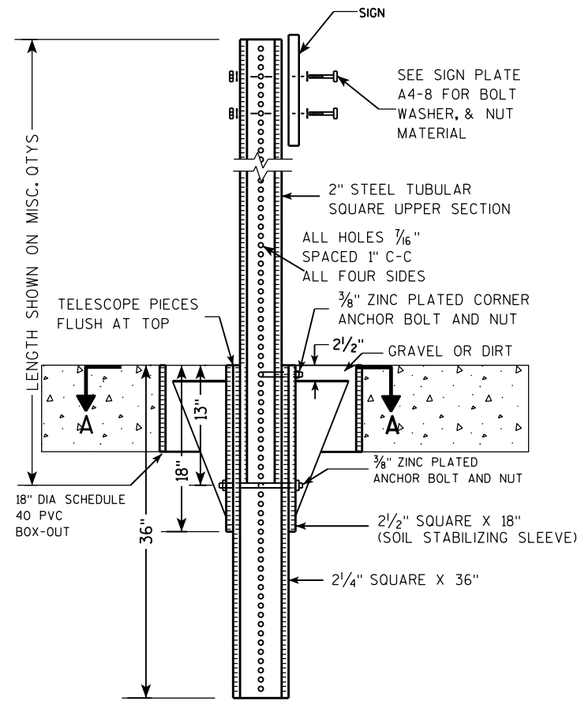
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



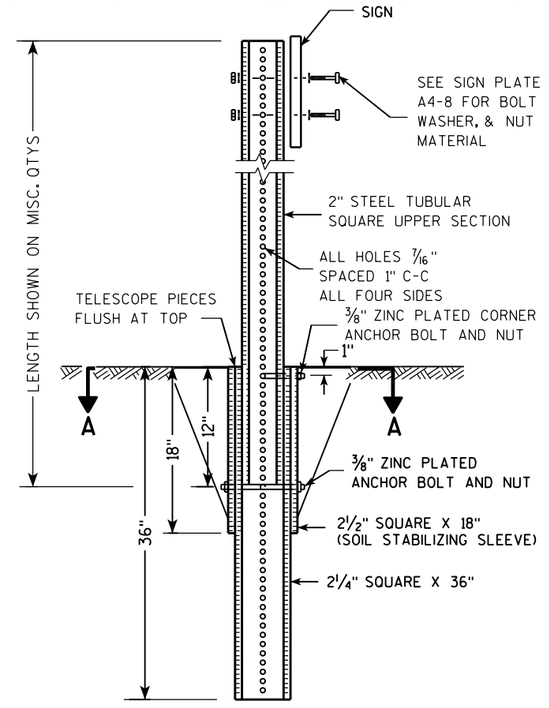

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

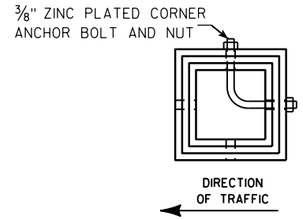



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




## 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).**

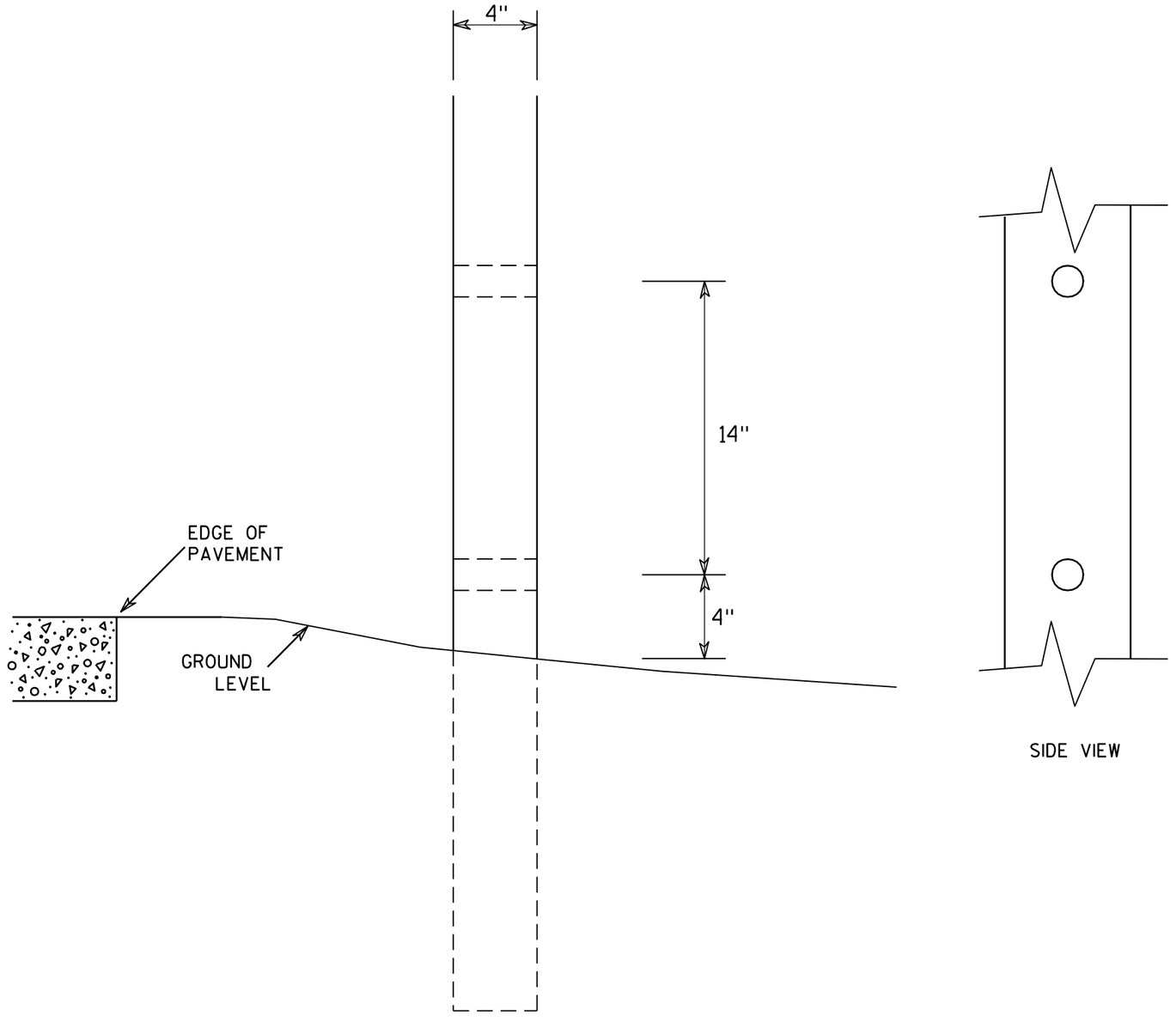
TUBULAR STEEL
SIGN POST
A4-9

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE 89 A4-9.9

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|






SIDE VIEW

GENERAL NOTES

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

7

7

# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

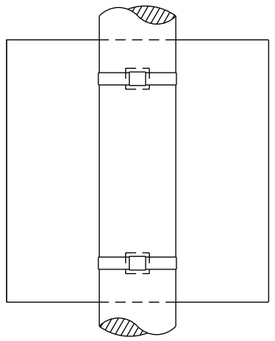
APPROVED Chester J Spang
for State Traffic Engineer

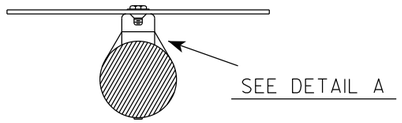
DATE 3/27/97 PLATE NO. A4-11.2

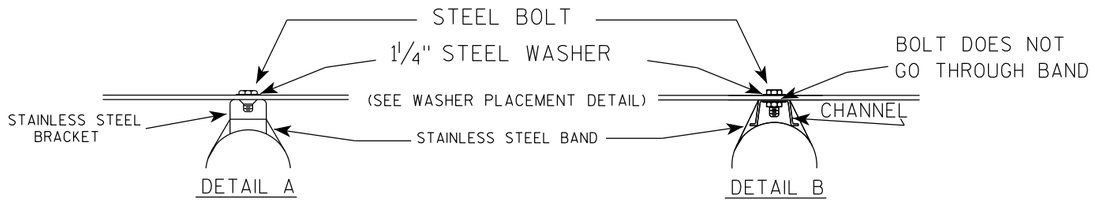
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 90 | E |
|---|---|---|---|---|---|

# BANDING

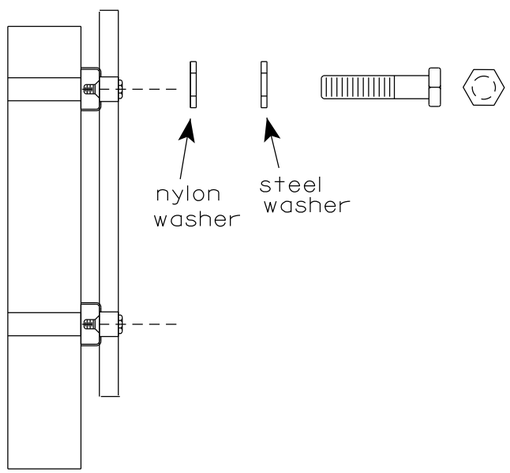
SINGLE SIGN






WASHER PLACEMENT

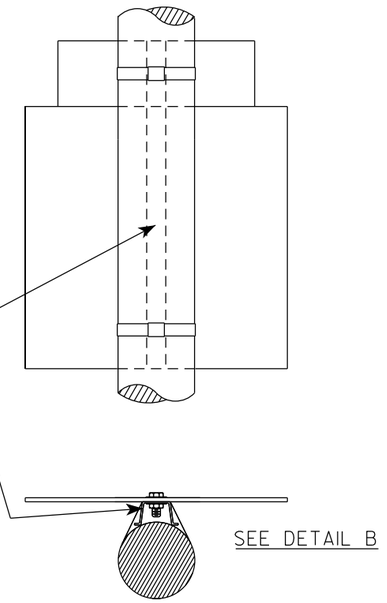



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

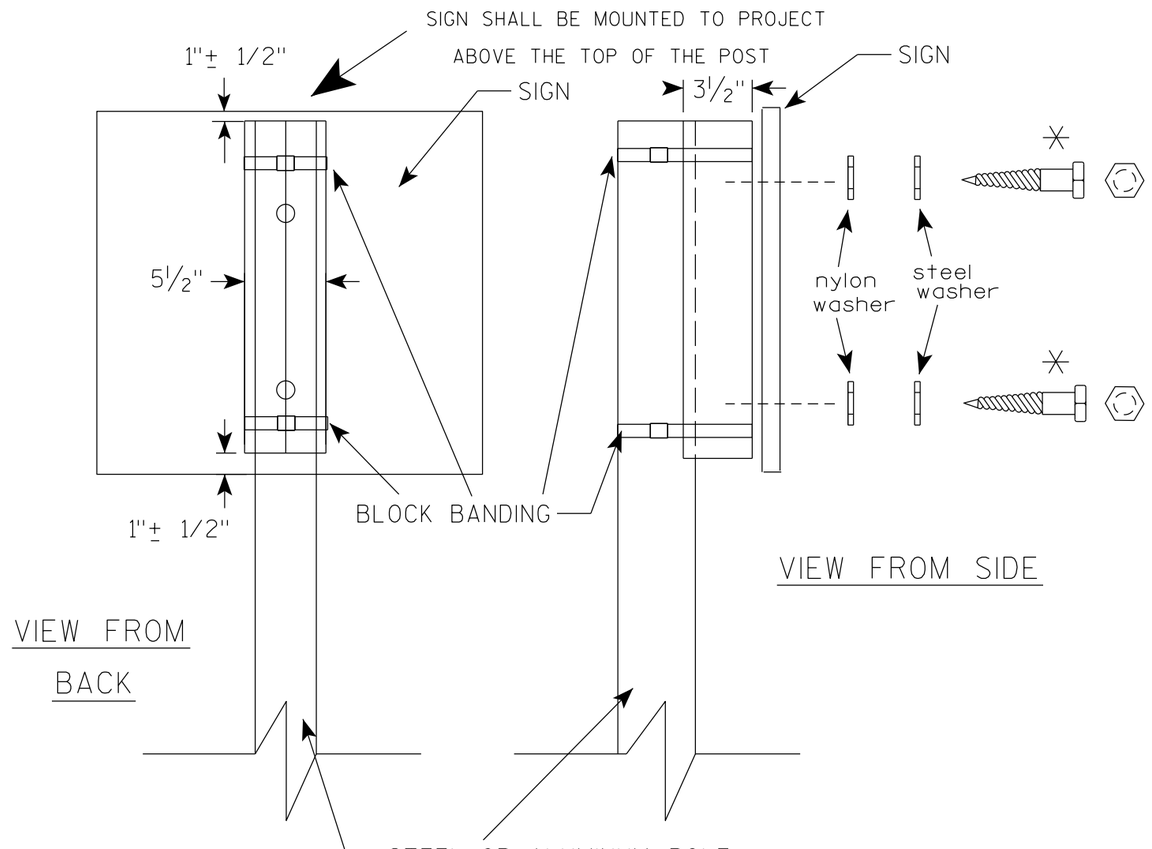
DATE 6/10/19 PLATE NO. A5-9.4

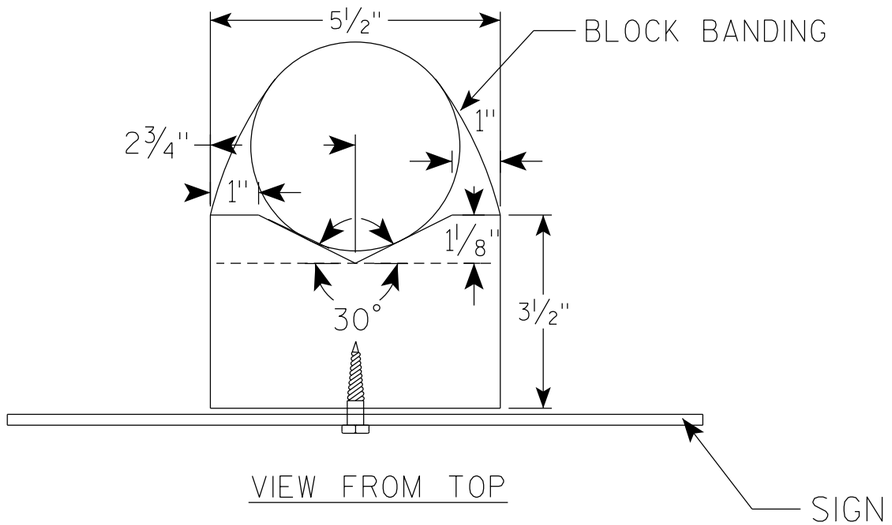
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 91 | E |
|---|---|---|---|---|---|

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 )

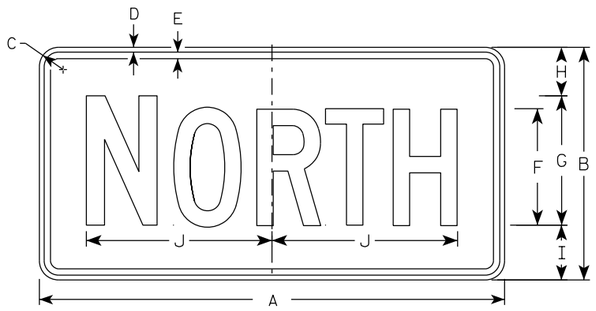
*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

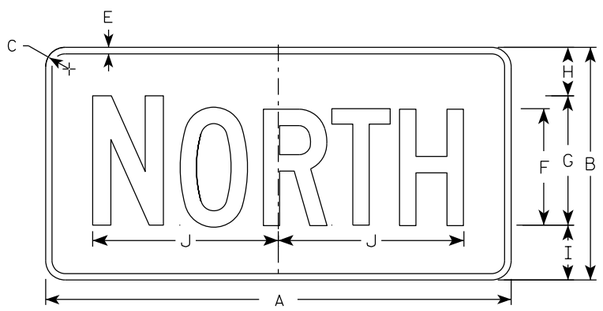
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

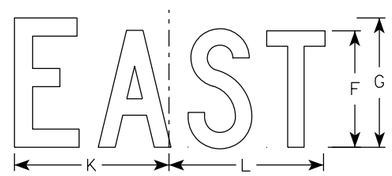
SHEET NO: 92 E




M3-1
MM3-1
MP3-1



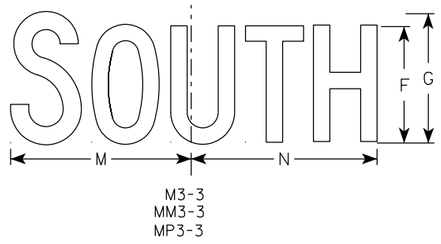

MB3-1
MK3-1
MN3-1



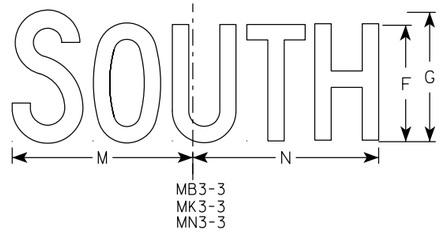

M3-2
MM3-2
MP3-2



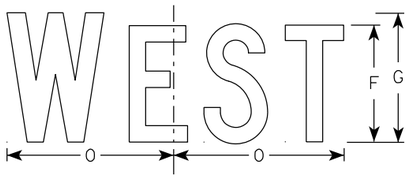

MB3-2
MK3-2
MN3-2



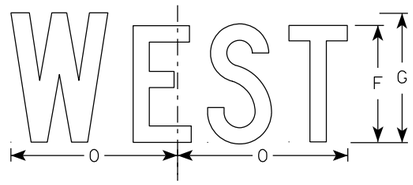

M3-3
MM3-3
MP3-3




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 Reflective
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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/2 | 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 | | | | | | | | | | | | 2.00 |
| 2M | 24 | 12 | 1 1/2 | 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 | | | | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | | | | | | | | | | 4.5 |

STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

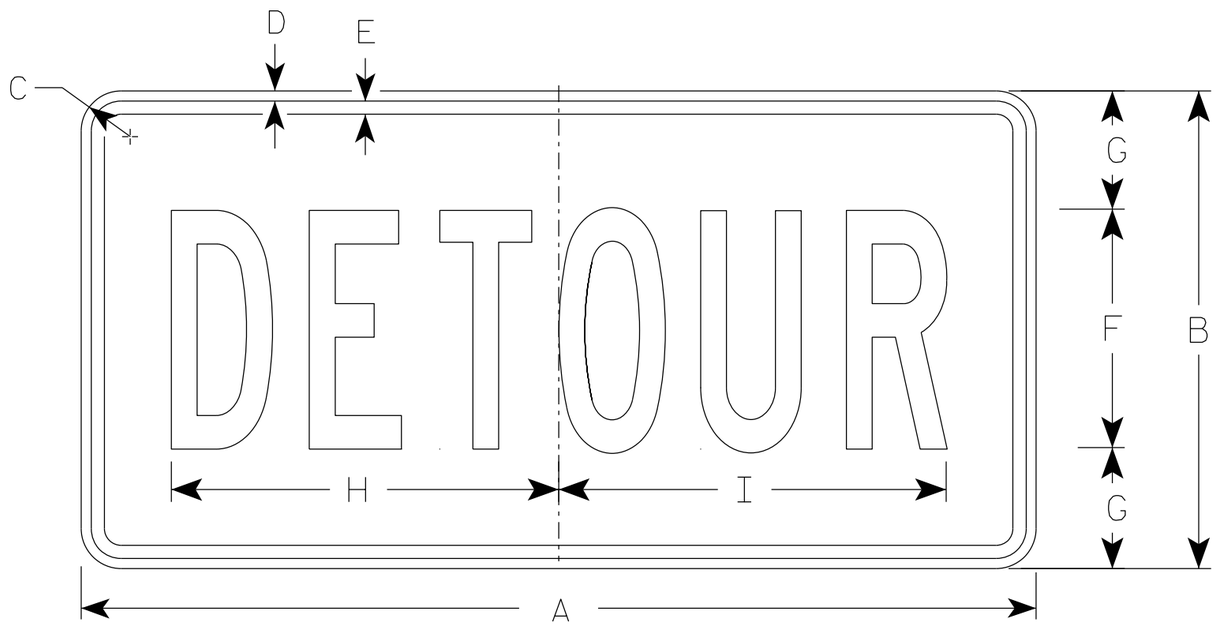
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 93 | E

NOTES

1. Sign is Type II - Type F Reflective
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.




M4-8

| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |

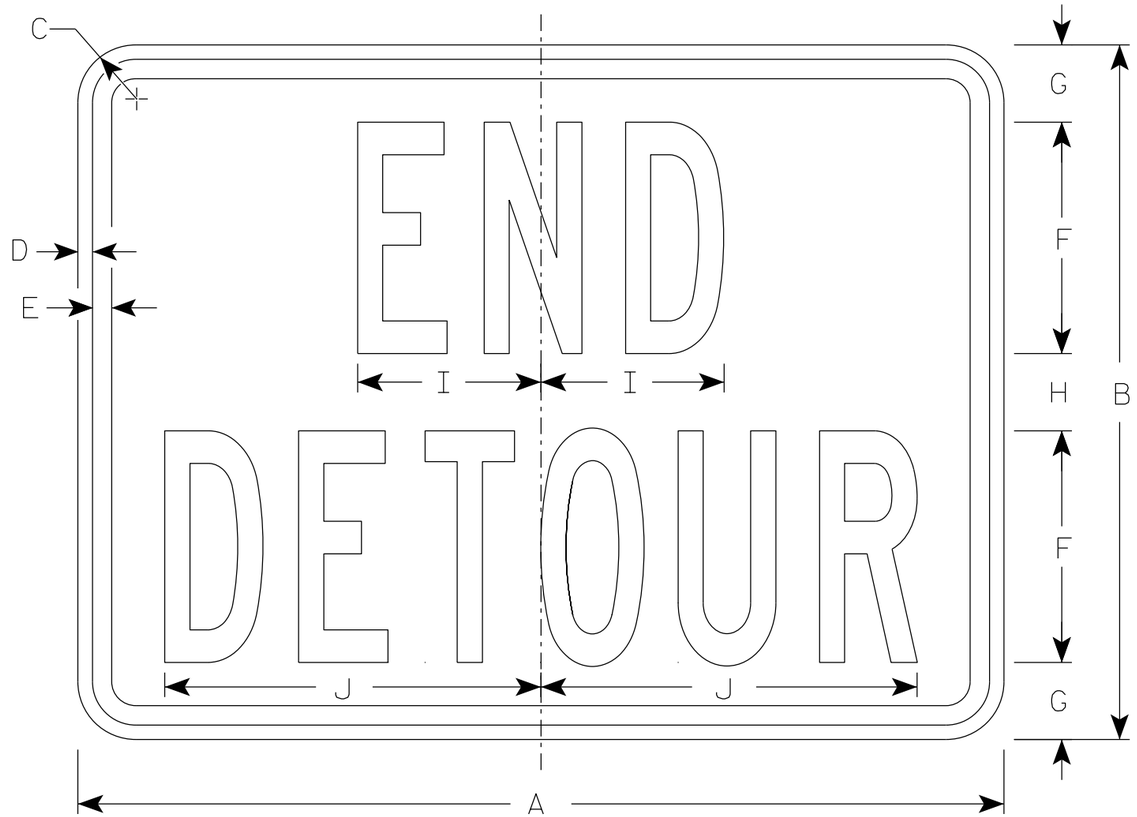
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 94 | E |
|---|---|---|---|---|---|




M4-8A

NOTES

1. Sign is Type II - Type F Reflective
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 ½ | ⅜ | ½ | 6 | 2 | 2 | 4 ¾ | 9 ¾ | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 24 | 18 | 1 ½ | ⅜ | ½ | 6 | 2 | 2 | 4 ¾ | 9 ¾ | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 ½ | ⅜ | ½ | 8 | 2 ½ | 3 | 6 ¾ | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 24 | 1 ½ | ⅜ | ½ | 8 | 2 ½ | 3 | 6 ¾ | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 5 | 30 | 24 | 1 ½ | ⅜ | ½ | 8 | 2 ½ | 3 | 6 ¾ | 13 | | | | | | | | | | | | | | | | | 5.0 |

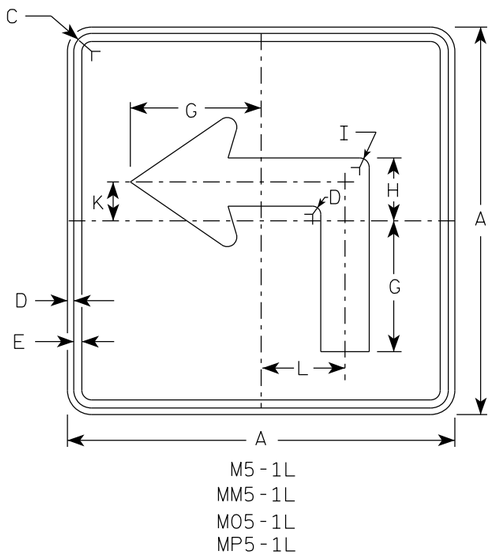
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

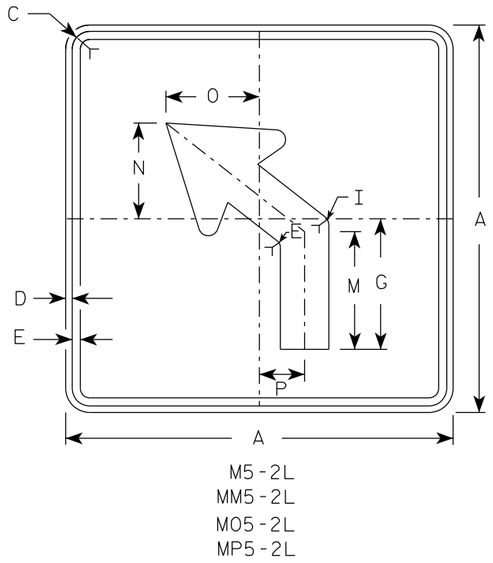
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4

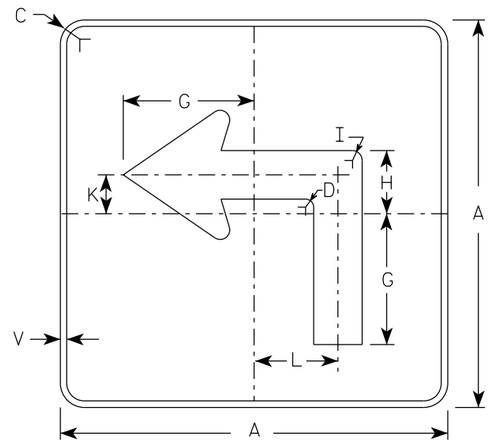
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 95 | E



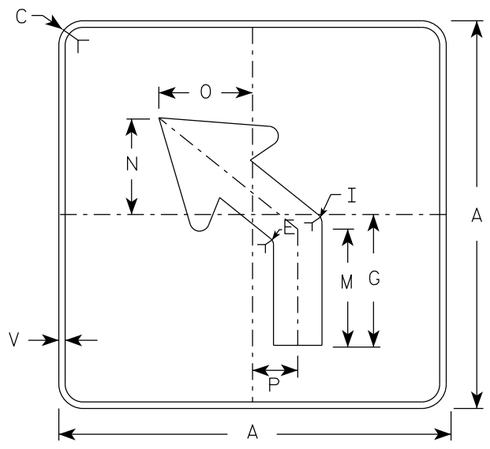

M5-1L
MM5-1L
MO5-1L
MP5-1L




M5-2L
MM5-2L
MO5-2L
MP5-2L




MB5-1L
MK5-1L
MN5-1L
MR5-1L

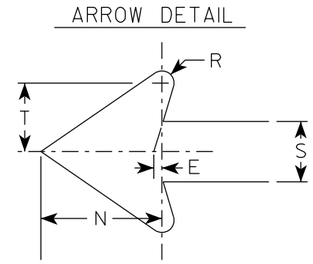



MB5-2L
MK5-2L
MN5-2L
MR5-2L

## 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
   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.

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 | 21 | | 1 1/2 | 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 | | 1/2 | | | | | 3.06 |
| 2M | 21 | | 1 1/2 | 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 | | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 7/8 | 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 | | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 7/8 | 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 | | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 7/8 | 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 | | 1/2 | | | | | 6.25 |

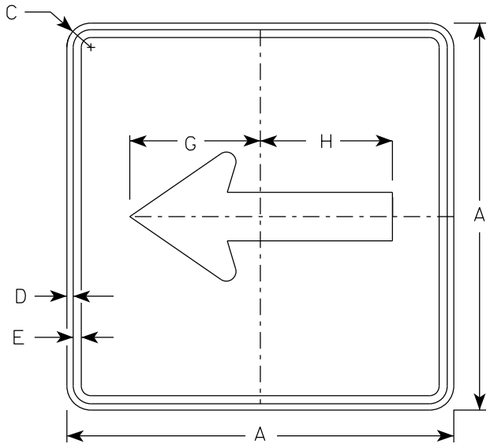
# STANDARD SIGN
# M5-1 & M5-2

*WISCONSIN DEPT OF TRANSPORTATION*

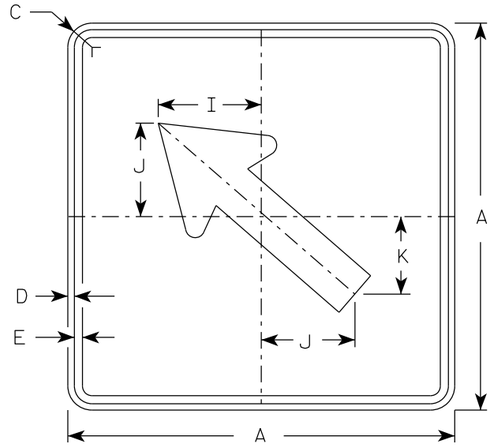
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M5-1.15

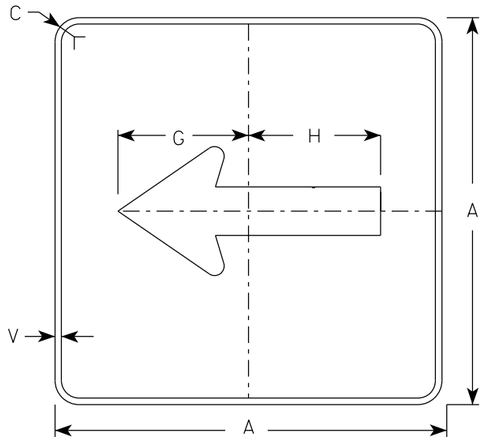
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 96 | E



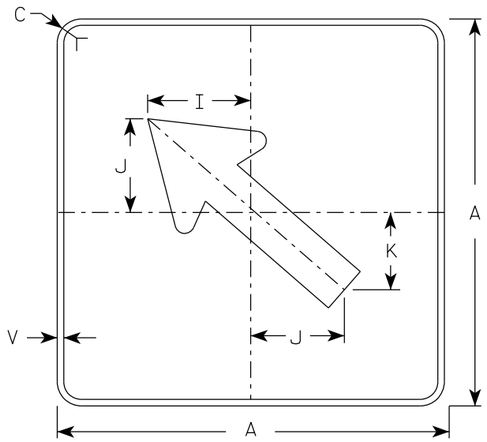

M6-1
MM6-1
MO6-1
MP6-1




M6-2
MM6-2
MO6-2
MP6-2




MB6-1
MK6-1
MN6-1
MR6-1

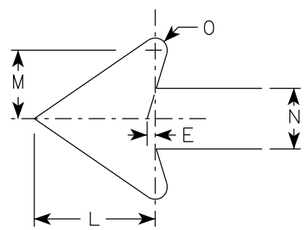



MB6-2
MK6-2
MN6-2
MR6-2

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. 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

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 | 21 | | 1 1/2 | 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 | | | | | | | 1/2 | | | | | 3.06 |
| 2M | 21 | | 1 1/2 | 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 | | | | | | | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 7/8 | 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 | | | | | | | 1/2 | | | | | 6.25 |

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

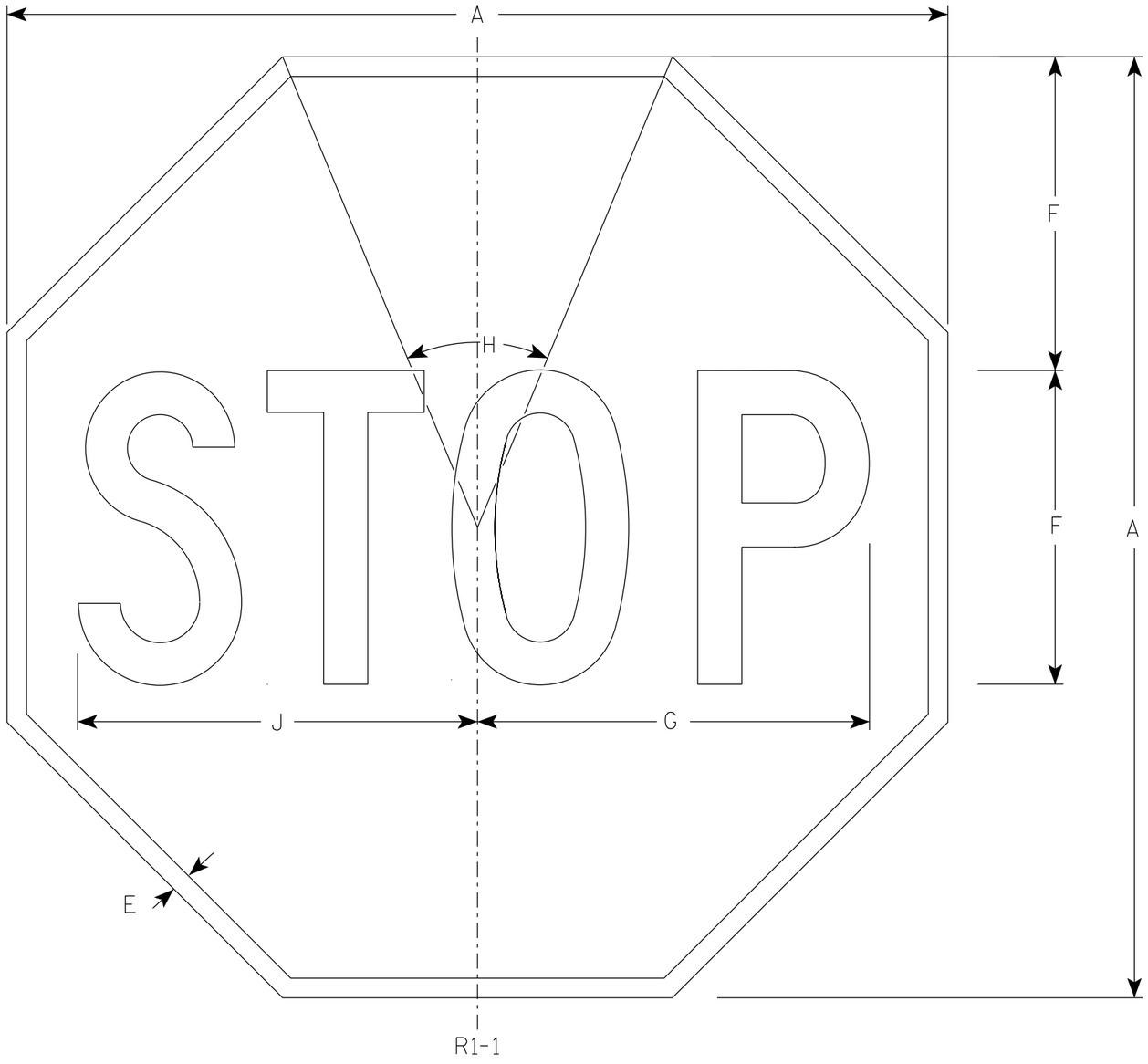
DATE 2/13/2023 PLATE NO. M6-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 97 | E



7

7




NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

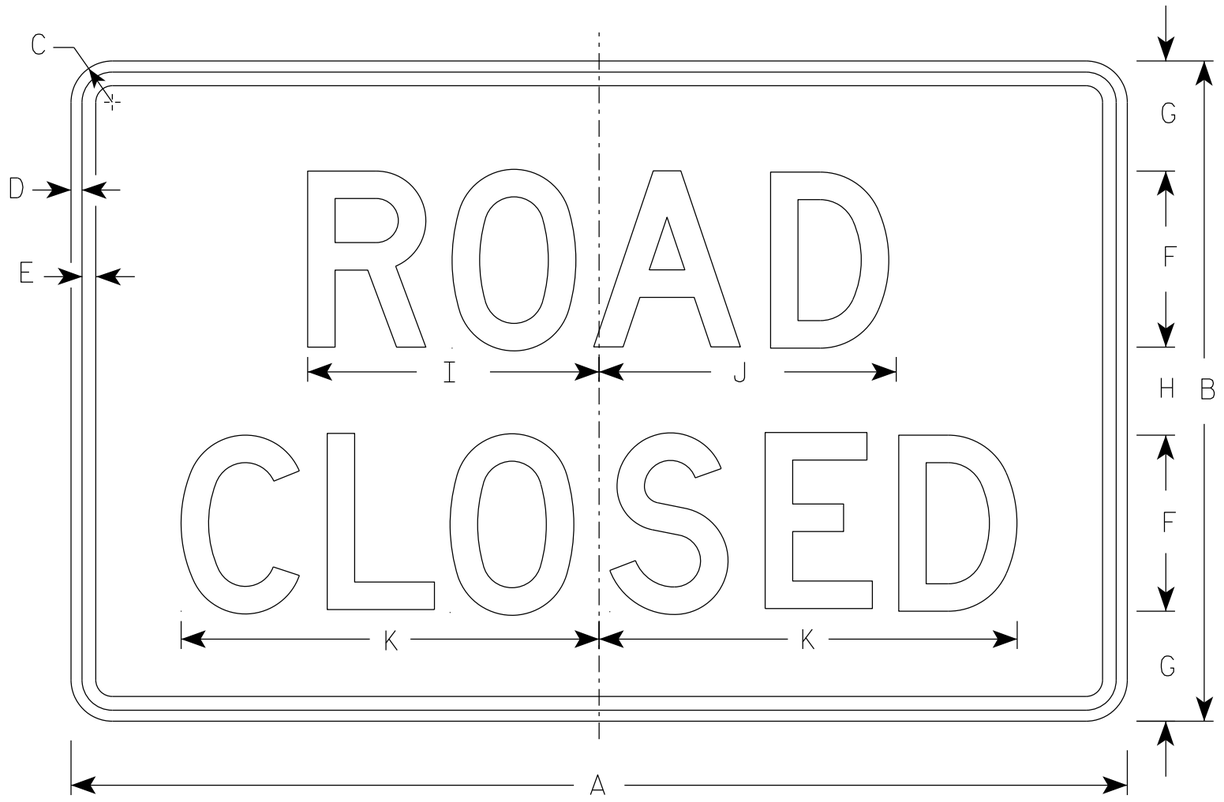
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/9/2025 PLATE NO. R1-1.14

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 98 E



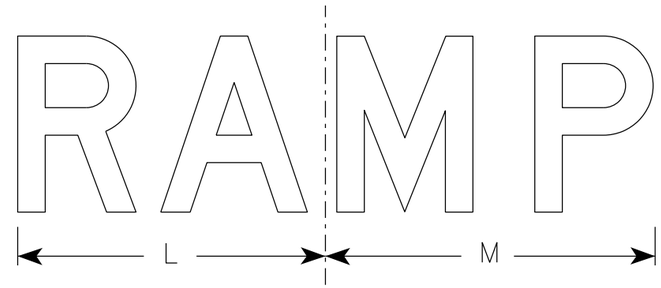

7



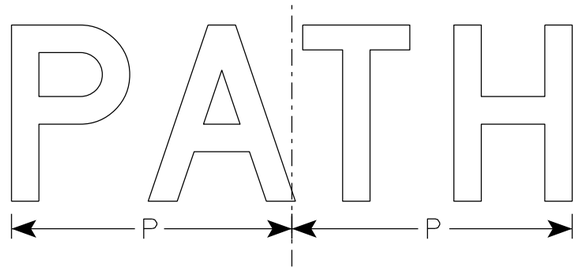

R11-2

NOTES

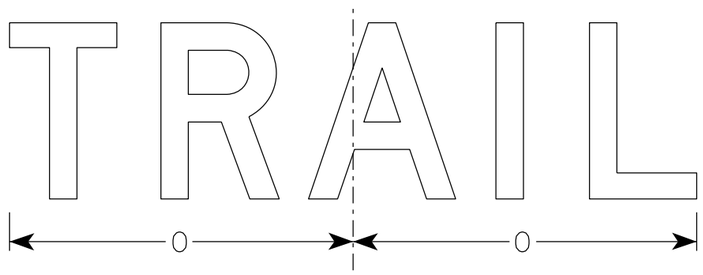
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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



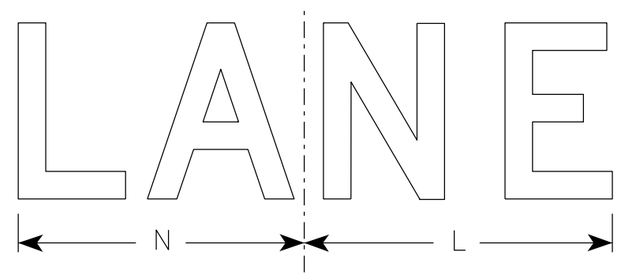

R11-2R




R11-2C




R11-2T




R11-2L

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | 12 3/4 | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | 12 3/4 | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | 12 3/4 | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | 12 3/4 | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | 12 3/4 | | | | | | | | | | | 10.0 |

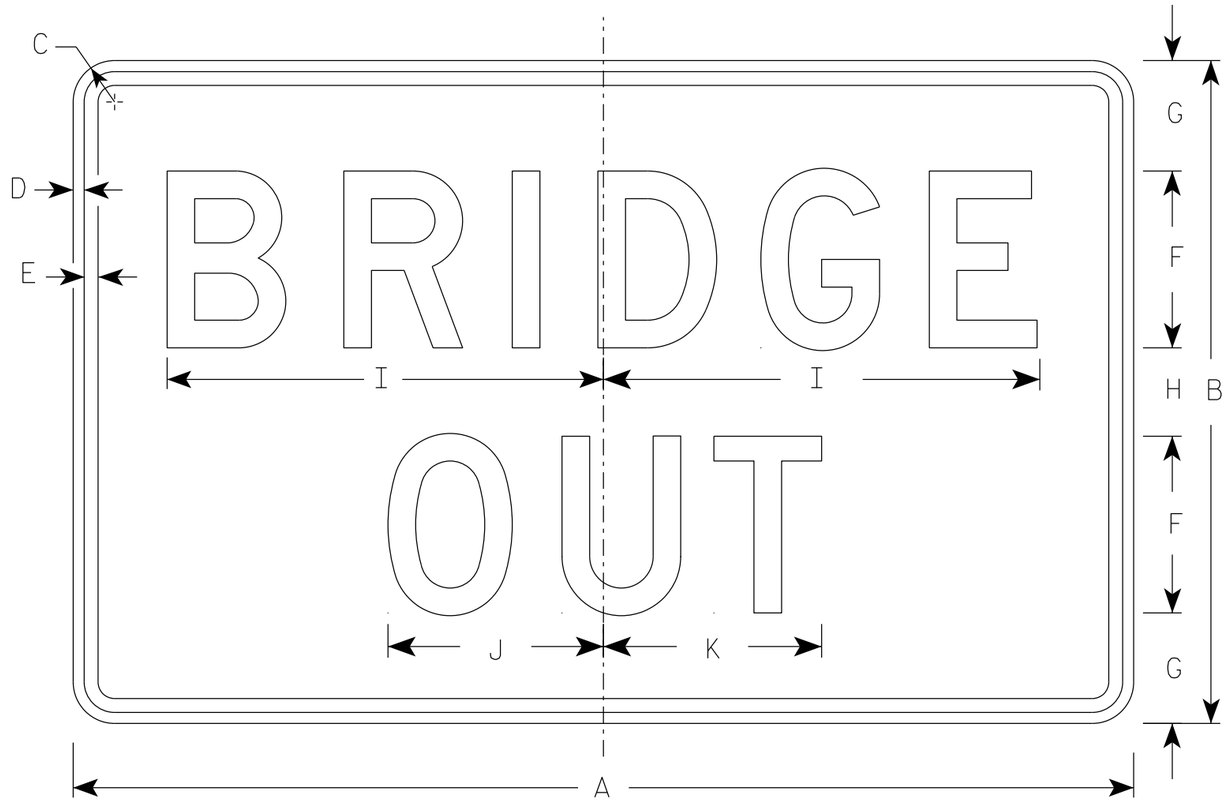
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/3/26 PLATE NO. R11-2.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E




R11-2B

NOTES

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 | | | | | | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 | | | | | | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 | | | | | | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 | | | | | | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 | | | | | | | | | | | | | | | | 10.0 |

STANDARD SIGN
R11-2B

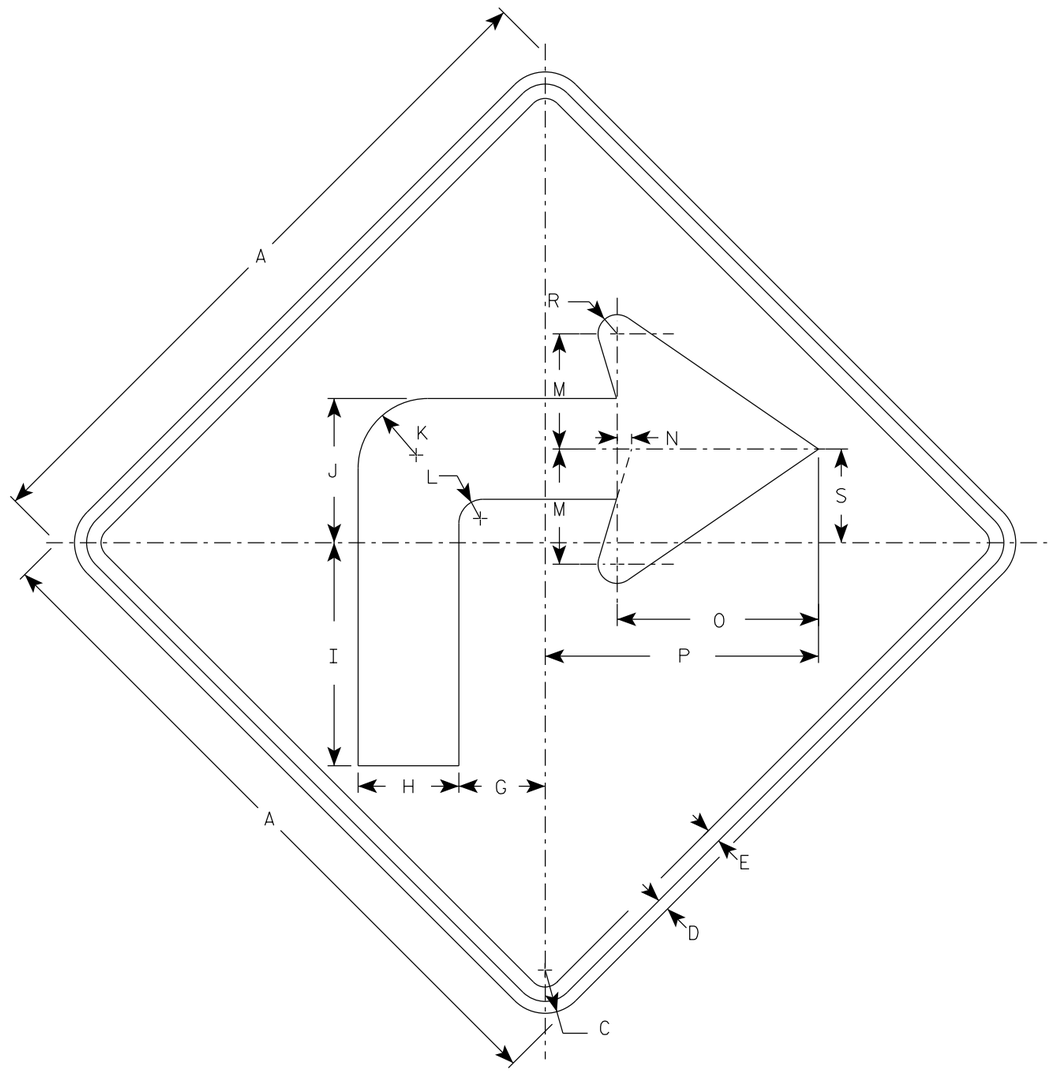
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-2B.3

PROJECT NO:

SHEET NO: 100 E




W1-1R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. 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 1/2 | 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 | | 2 1/4 | 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 | | 2 1/4 | 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 | | 2 1/4 | 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 | | 3 | 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 | | 3 | 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 3/22/2023 PLATE NO. W1-1.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - B




W4-4P

| 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 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 8 | 1 1/2 | 3/8 | 10 | 6 1/4 | 2 1/4 | 2 1/4 | 6 1/4 | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 8 | 1 1/2 | 3/8 | 10 | 6 1/4 | 2 1/4 | 2 1/4 | 6 1/4 | | | | | | | | | | | 2.0 |
| 3 | 36 | 15 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 1 3/4 | 10 3/4 | 2 3/8 | 3/8 | 13 1/2 | 8 3/8 | 3 | 3 1/8 | 8 3/8 | | | | | | | | | | | 3.75 |
| 4 | 42 | 18 | 1 1/2 | 3/8 | 1/2 | 5 | 3 | 2 | 13 3/8 | 3 1/8 | 3/8 | 16 7/8 | 10 1/2 | 3 5/8 | 3 7/8 | 10 3/8 | | | | | | | | | | | 5.25 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

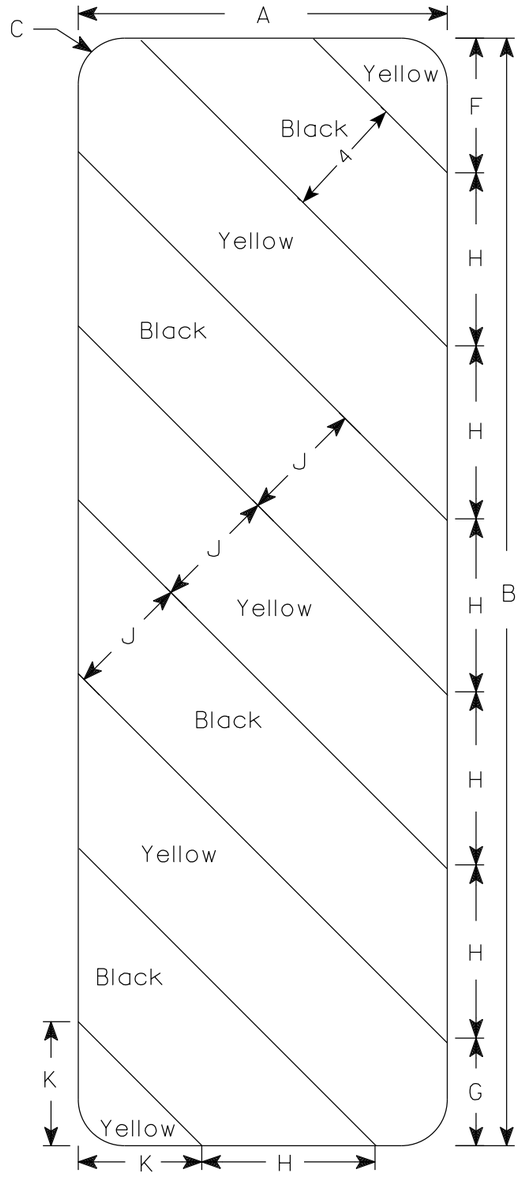
STANDARD SIGN
W4-4P

WISCONSIN DEPT OF TRANSPORTATION

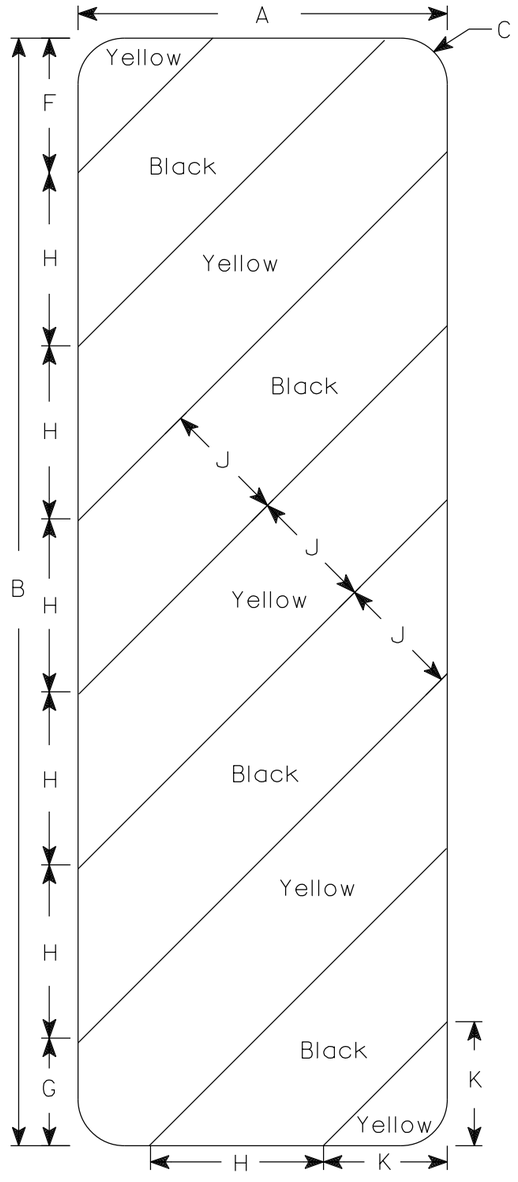
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 9/5/2023 PLATE NO. W4-4P.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 102 E




W5-52L




W5-52R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Alternate colors of stripes as shown.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 12 | 36 | 1 1/2 | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 2M | 12 | 36 | 1 1/2 | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 3 | 18 | 54 | 1 1/2 | | | 6 | 5 1/2 | 8 1/2 | 45° | 6 | 6 9/16 | | | | | | | | | | | | | | | | 6.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

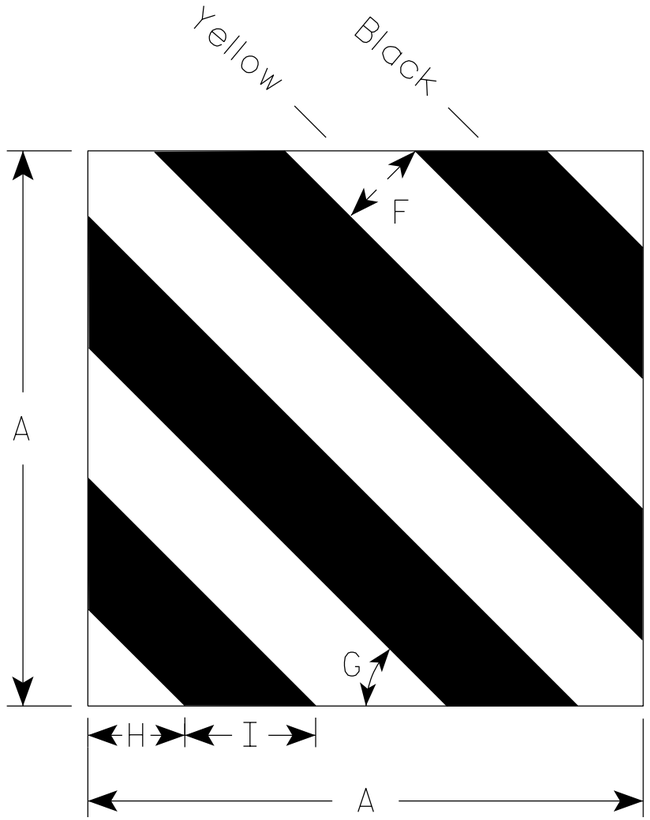
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

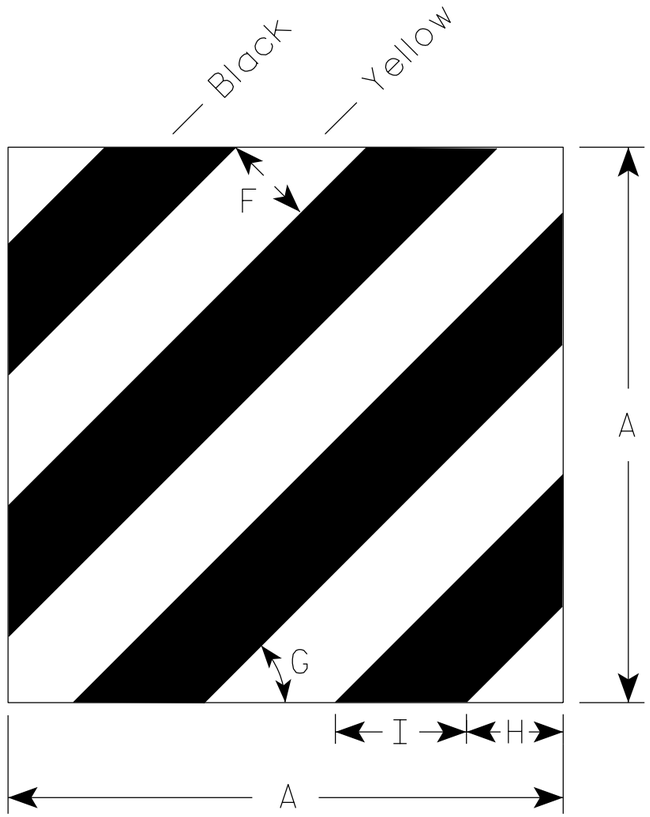
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 103 E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Base material is to be .040 sheet aluminum.




W5-59L




W5-59R

| 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 | | | | | 2 | 45° | 2 7/8 | 2 1/8 | | | | | | | | | | | | | | | | | | 1.00 |
| 2S | 18 | | | | | 3 | 45° | 3 1/8 | 4 1/4 | | | | | | | | | | | | | | | | | | 2.25 |
| 2M | 18 | | | | | 3 | 45° | 3 1/8 | 4 1/4 | | | | | | | | | | | | | | | | | | 2.25 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN

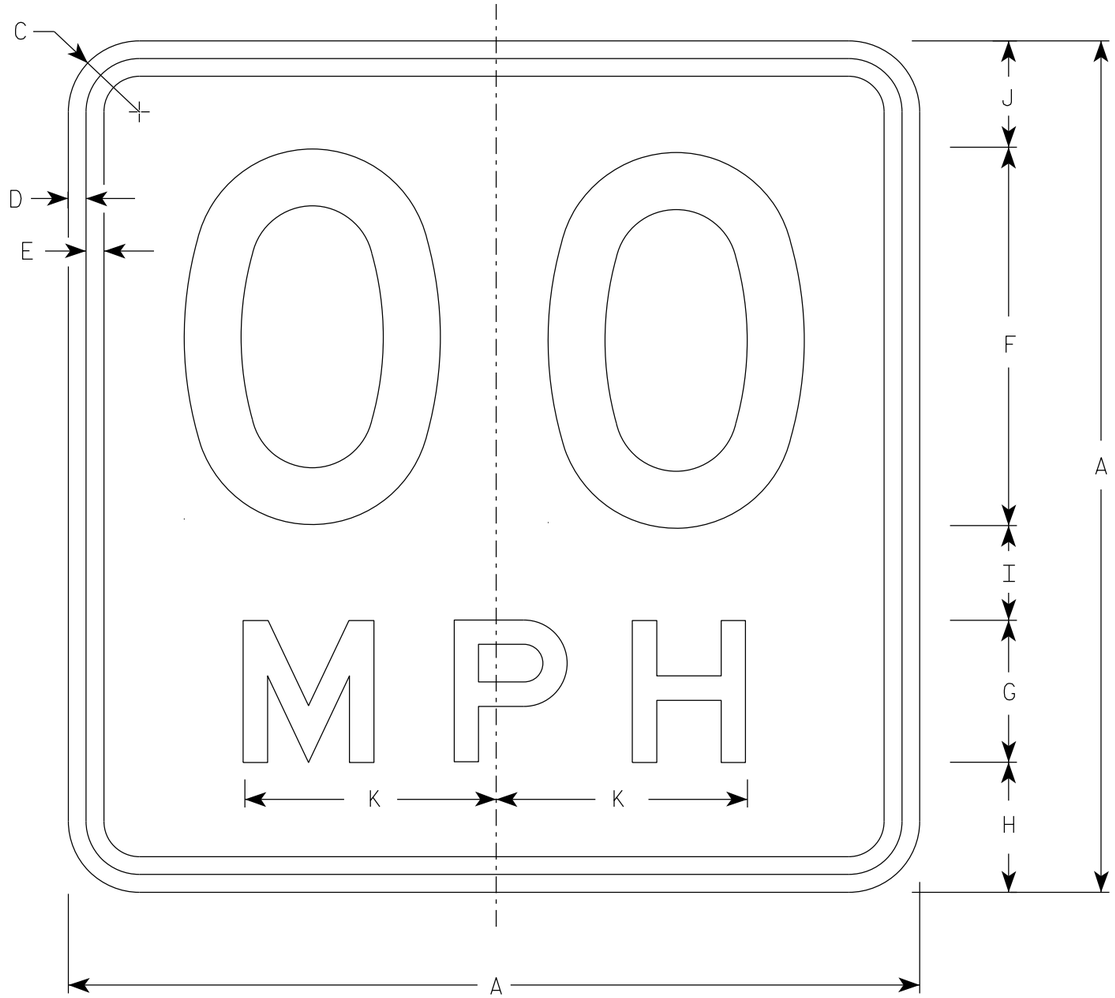
W5-59L & W5-59R

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/5/2024 PLATE NO. W5-59.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 104 | E




W13-1

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 5
4. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
5. Line 1 is Series D
   Line 2 is Series E

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

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

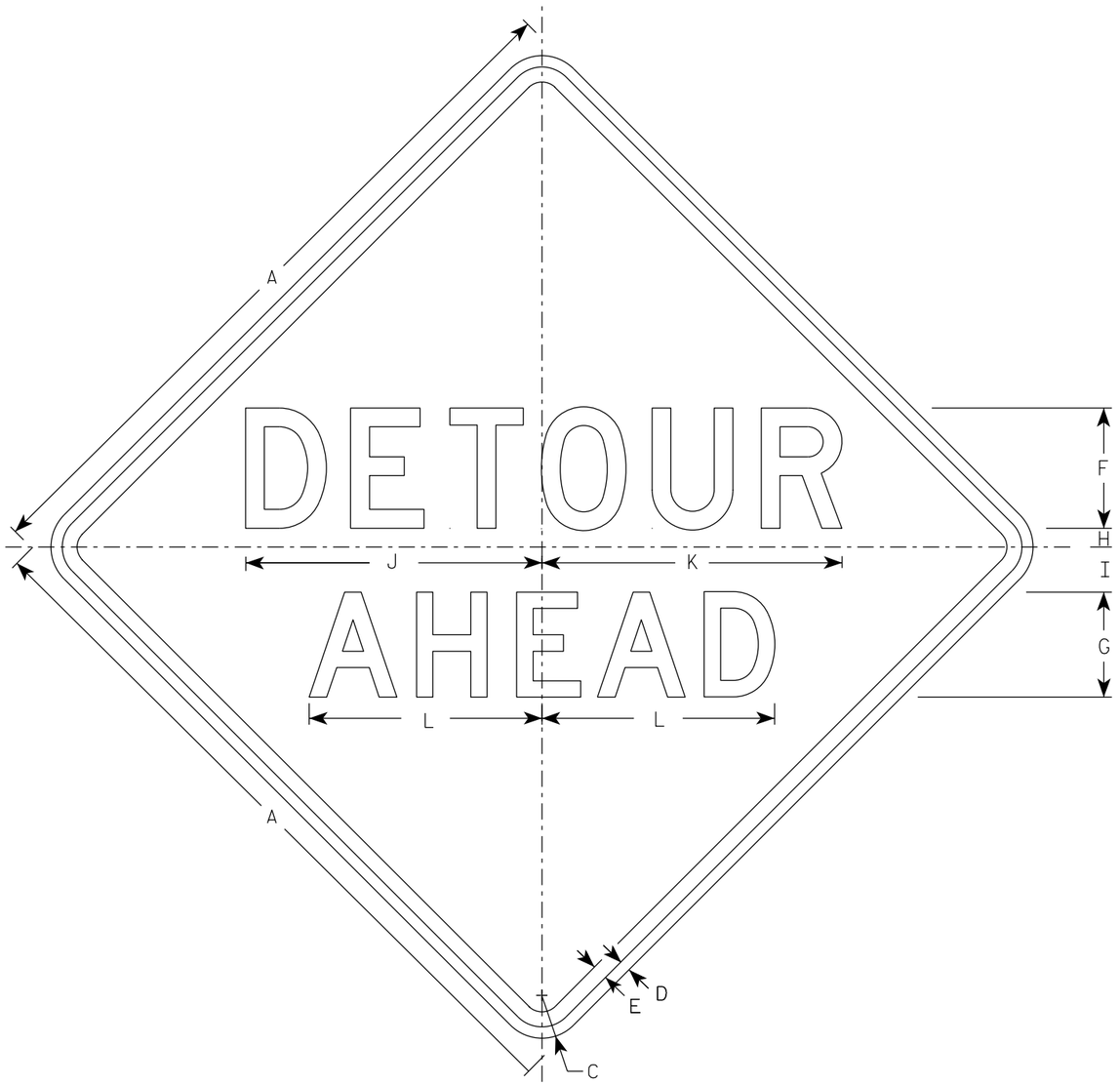
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/8/2024 PLATE NO. W13-1.17

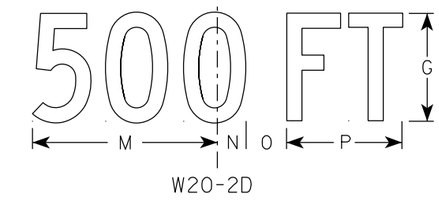
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



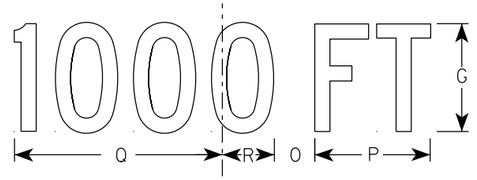

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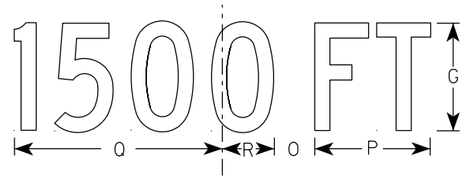

W20-2A



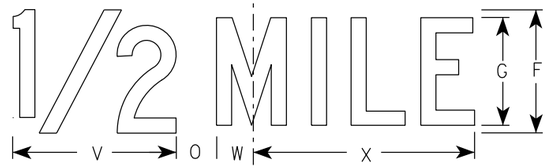

W20-2D



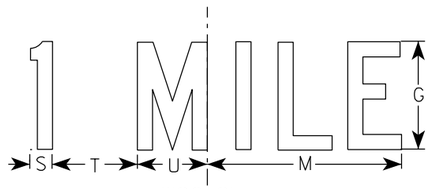

W20-2C




W20-2B




W20-2G




W20-2F

NOTES

1. Sign is Type II - Type F Reflective
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 | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 2 1/4 | 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 | | 3 | 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 | | 3 | 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 | | 3 | 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 | | 3 | 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 | | 3 | 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

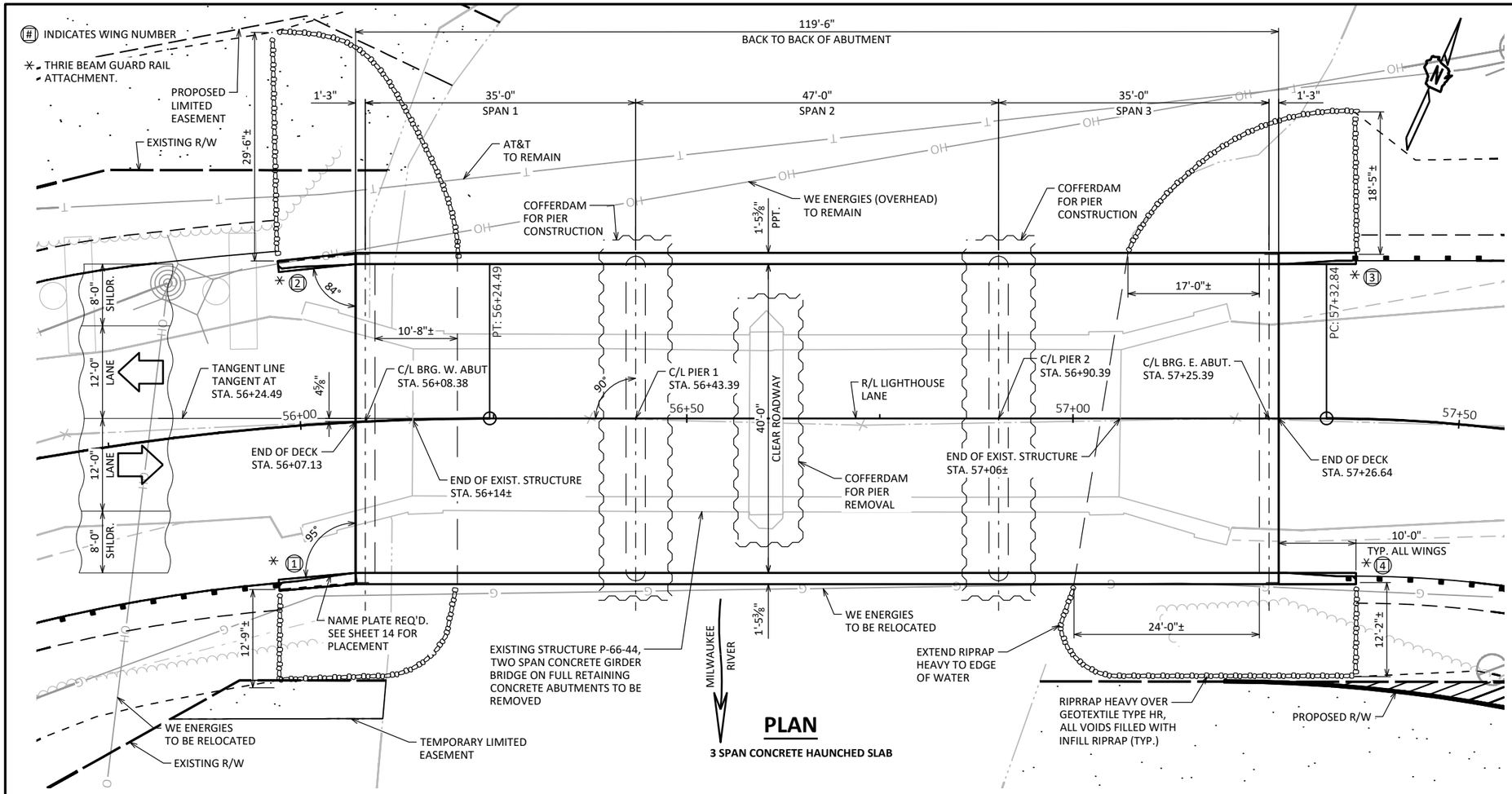
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E |
|---|---|---|---|---|

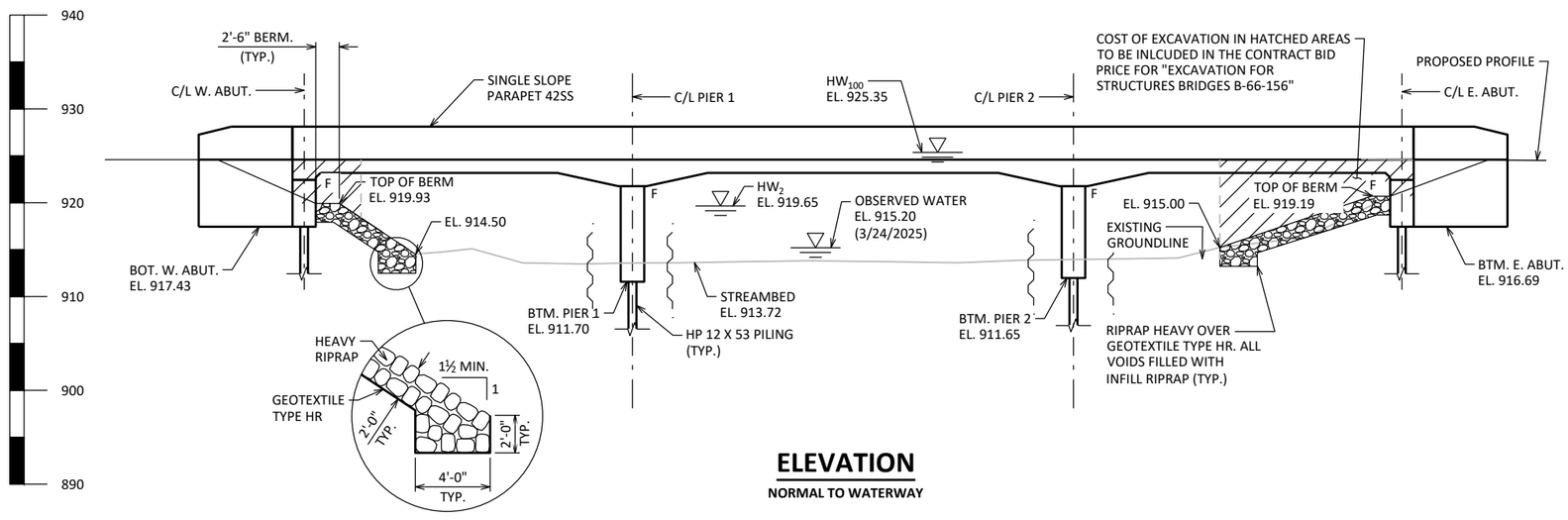


FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W202.DGN PLOT DATE : 10-JAN 2024 11:36 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42




## PLAN

**3 SPAN CONCRETE HAUNCHED SLAB**




## ELEVATION

**NORMAL TO WATERWAY**

STATE PROJECT NUMBER

**4825-05-71**

## DESIGN DATA

**LIVE LOAD:**

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.07
OPERATING RATING: RF = 1.39
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 PSI
ALL OTHER — $f'_c$ = 3,500 PSI

BAR STEEL REINFORCEMENT
GRADE 60 — $f_y$ = 60,000 PSI

## FOUNDATION DATA

ABUTMENTS AND PIERS TO BE SUPPORTED ON HP 12 X 53 PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 220 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5. ESTIMATED 15 FEET LONG AT ABUTMENTS AND PIERS.

## HYDRAULIC DATA

**100-YEAR FREQUENCY:**

$Q_{100}$= 8223 C.F.S.
$Q_{BRIDGE}$ = 7948 C.F.S.
$Q_{ROADWAY}$ = 275 C.F.S.
$V_{100}$= 9.60 F.P.S.
$HW_{100}$= EL. 925.35
WATERWAY AREA = 829.0 SQ. FT.
DRAINAGE AREA = 220 SQ. MI.
SCOUR CRITICAL CODE = 5

**ROADWAY OVERTOPPING**

FREQUENCY = 25 YEARS
Q = 5650 C.F.S.
HW. = EL. 925.07

**2-YEAR FREQUENCY:**

$Q_2$= 2200 C.F.S.
$V_2$= 5.0 F.P.S.
$HW_2$= EL. 919.65

## TRAFFIC DATA

**LIGHTHOUSE LANE:**

ADT = 2200 (2047)
R.D.S. = 35 MPH

## CURVE DATA

**LIGHTHOUSE LANE**

P.I. = 55+25.20
Δ = 35°19'51" RT
D = 17°12'21"
T = 106.05'
L = 205.34'
R = 333.00'
S.E. = NORMAL CROWN
P.C. = 54+19.15
P.T. = 56+24.49

## LIST OF DRAWINGS:


1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER 1
9. PIER 2
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE CROSS SECTIONS
12. SUPERSTRUCTURE DATA
13. SUPERSTRUCTURE DETAILS
14. SINGLE SLOPE PARAPET 42SS



**STRUCTURE DESIGN CONTACTS:**

CONSULTANT: MATT BUCKLI 608-443-0441
BUREAU OF STRUCTURES: AARON BONK 608-261-0261


| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


Mead & Hunt, Inc.
2440 Deming Way
Middleton, WI 53562
608.273.6380
www.meadhunt.com


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED JLR 10/28/26
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-66-156

LIGHTHOUSE LANE OVER MILWAUKEE RIVER

| COUNTY | TOWN |
|---|---|
| WASHINGTON | BARTON |

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION

| DESIGNED BY | JLA | DESIGNED CK'D | MJB | DRAWN BY | JLA | PLANS CK'D | MJB |
|---|---|---|---|---|---|---|---|

WISCONSIN MATTHEW J. BUCKLI E-39849 MADISON WI 10/28/26 PROFESSIONAL ENGINEER

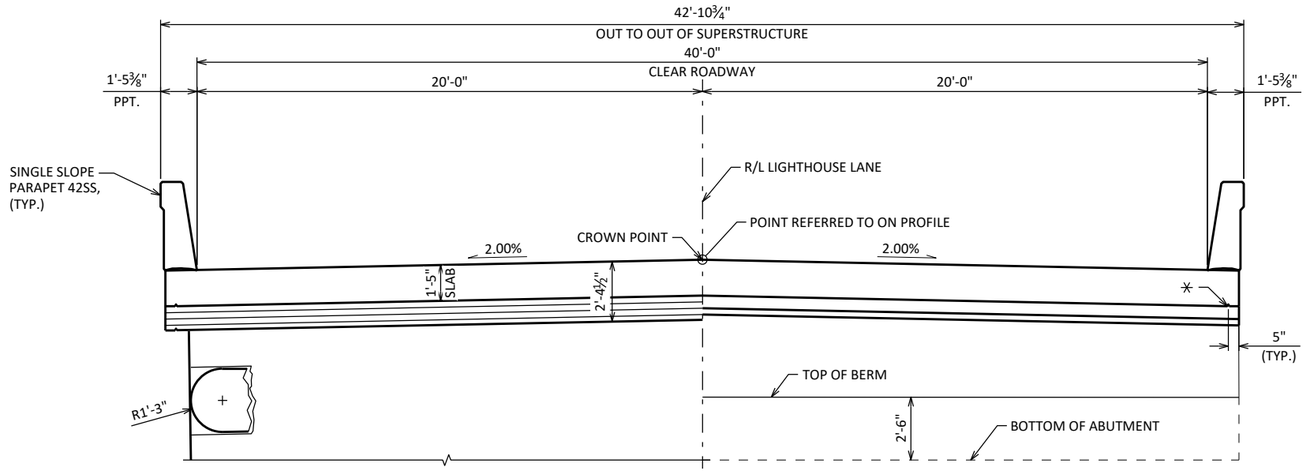
**GENERAL PLAN**

SHEET 1 OF 14
107

I.D. DATE:

8 8

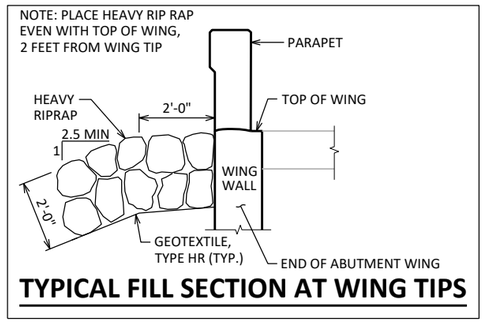
| STATE PROJECT NUMBER |
|---|
| 4825-05-71 |




## SECTION THRU ROADWAY

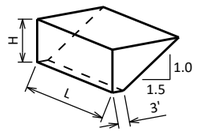
LOOKING UPSTATION

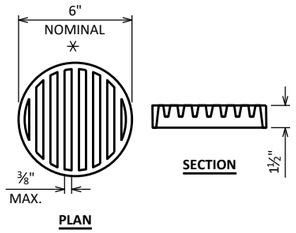
**AT PIERS**




## TYPICAL FILL SECTION AT WING TIPS

**AT ABUTMENTS**




## ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (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)

## RODENT SHIELD DETAIL

⚹ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

## 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.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-66-156" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK.

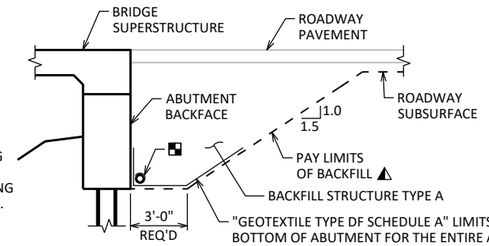
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

AT ABUTMENTS AND PIERS, DEWATER BELOW BOTTOM OF SUBSTRUCTURE ELEVATION PRIOR TO PLACING CONCRETE.

⚹ ¾" V-GROOVE REQ'D. EXTEND TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.




## TYPICAL SECTION THRU ABUTMENT

◭ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

◩ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

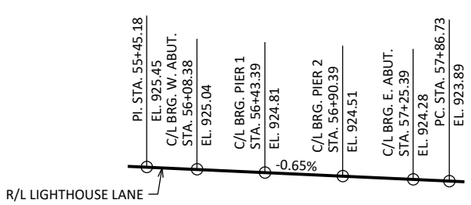
## BENCH MARK

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 1 | 57+52.82 | RR SPIKE | 922.58 |
| | | | |

## TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | SUPER | W. ABUT. | PIER 1 | PIER 2 | E. ABUT. | TOTALS |
|---|---|---|---|---|---|---|---|---|
| 203.0260 | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-66-44 | EACH | --- | --- | --- | --- | --- | 1 |
| 206.1001 | EXCAVATION FOR STRUCTURES BRIDGES B-66-156 | EACH | --- | --- | --- | --- | --- | 1 |
| ◐ 206.5001 | COFFERDAMS B-66-156 | EACH | --- | --- | --- | --- | --- | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | --- | 146 | --- | --- | 144 | 290 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 337.6 | 37.2 | 38.9 | 38.0 | 37.0 | 489 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 531 | --- | --- | --- | --- | 531 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 118 | 10 | --- | --- | 10 | 138 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | --- | 2440 | 1730 | 1710 | 2450 | 8330 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 66510 | 1990 | 80 | 80 | 1990 | 70650 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | --- | 11 | --- | --- | 11 | 22 |
| 550.0020 | PRE-BORING ROCK OR CONSOLIDATED MATERIALS | LF | --- | 73 | 51 | 55 | 71 | 250 |
| 550.1120 | PILING STEEL HP 12-INCH X 53 LB | LF | --- | 90 | 120 | 120 | 90 | 420 |
| 606.0300 | RIPRAP HEAVY | CY | --- | 106 | --- | --- | 146 | 252 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | --- | 78 | --- | --- | 78 | 156 |
| 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | --- | 2 | --- | --- | 2 | 4 |
| 645.0111 | GEOTEXTILE TYPE DF SCHEDULE A | SY | --- | 54 | --- | --- | 54 | 108 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | --- | 159 | --- | --- | 219 | 378 |
| SPV.0195 | INFILL RIPRAP B-66-156 | TON | --- | 57 | --- | --- | 79 | 136 |
| | | | | | | | | |
| | NON-BID ITEMS | | | | | | | |
| | FILLER | SIZE | --- | --- | --- | --- | --- | ½", ¾" |
| | NAME PLATE | EACH | | | | | | 1 |

◐ SEE "CONSTRUCTION DETAILS" FOR COFFERDAMS NEEDED AT CAUSEWAY




## PROFILE GRADE LINE

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**CROSS SECTION & QUANTITIES**

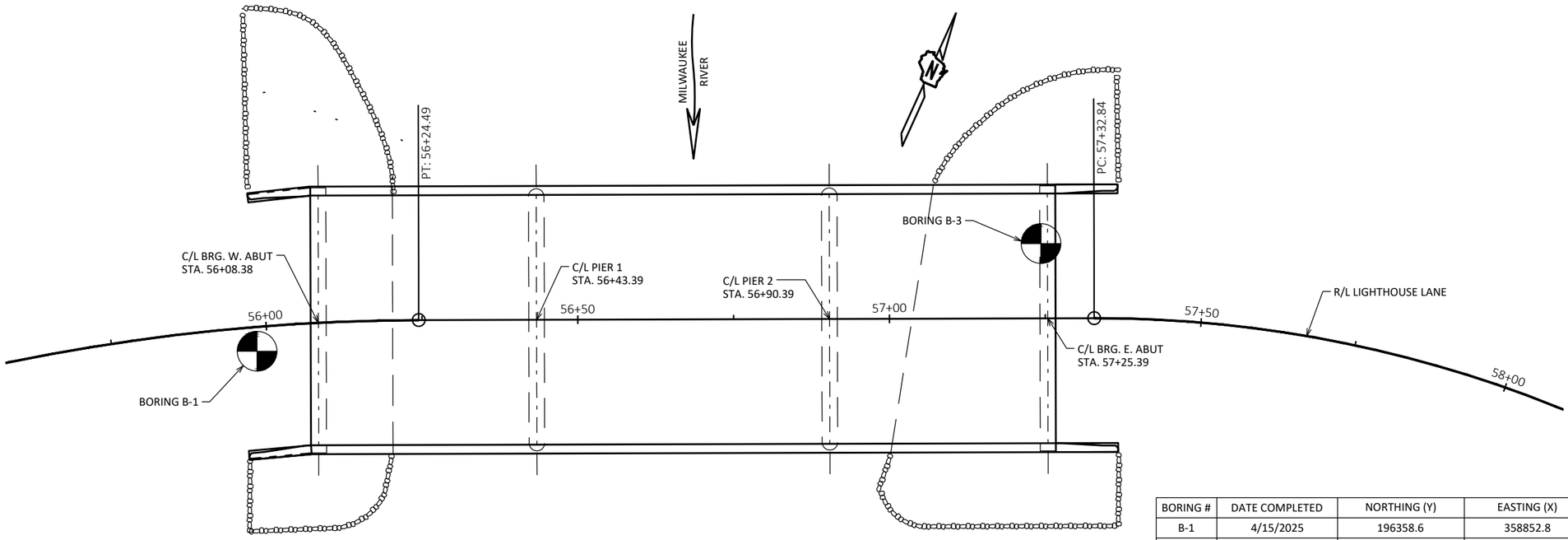
SHEET 2
108

8

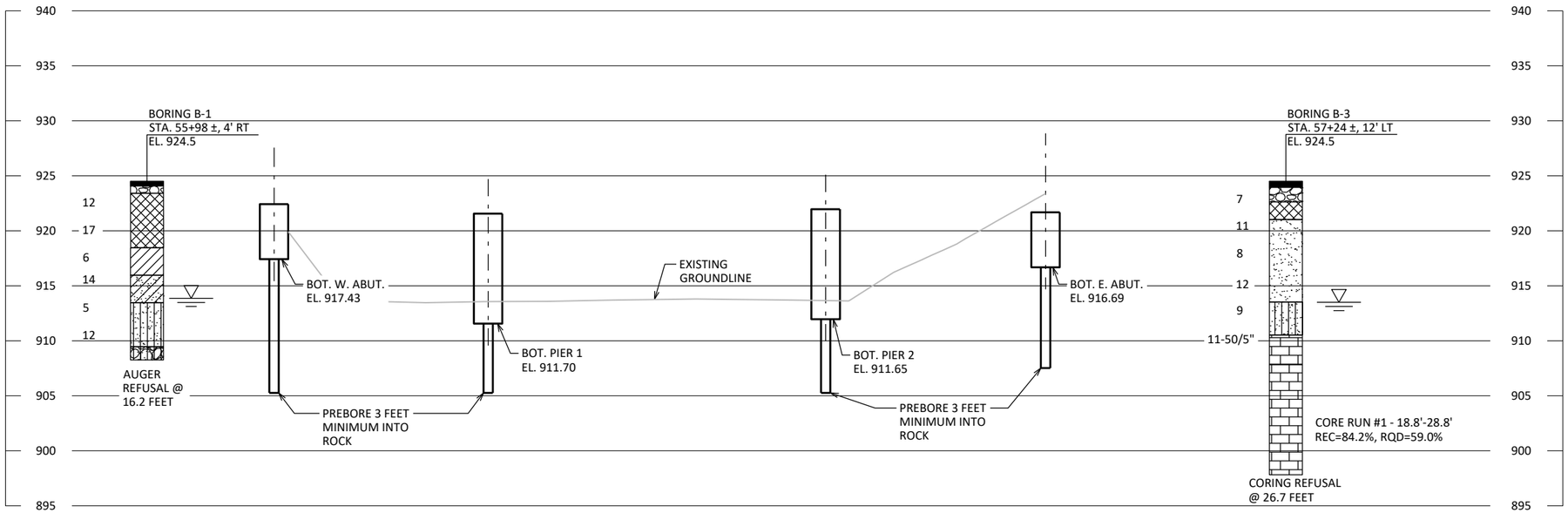
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STATE PROJECT NUMBER

**4825-05-71**



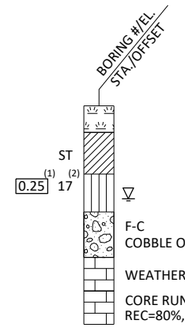

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|---|---|---|---|
| B-1 | 4/15/2025 | 196358.6 | 358852.8 |
| B-3 | 4/14/2025 | 196426.3 | 358960.3 |
| BORINGS COMPLETED BY: TERRACON | | | |
| REPORT COMPLETED BY: TERRACON | | | |
| ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) WASHINGTON COUNTY | | | |




**MATERIAL SYMBOLS**

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

**LEGEND OF BORING**




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

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

**GROUND WATER ELEVATION**

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

**ABBREVIATIONS**

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SUBSURFACE EXPLORATION**

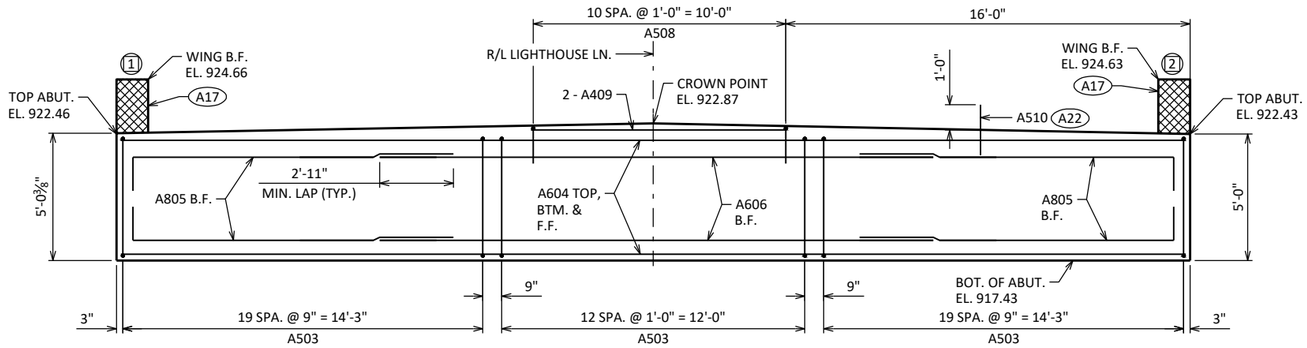
SHEET 3
109

8

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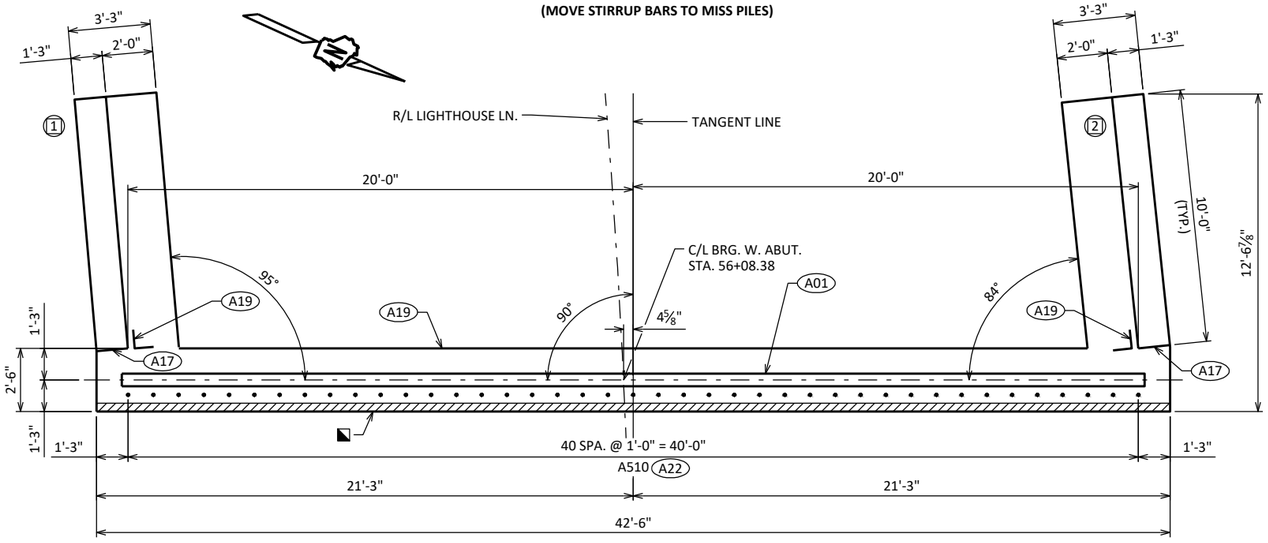
STATE PROJECT NUMBER

**4825-05-71**

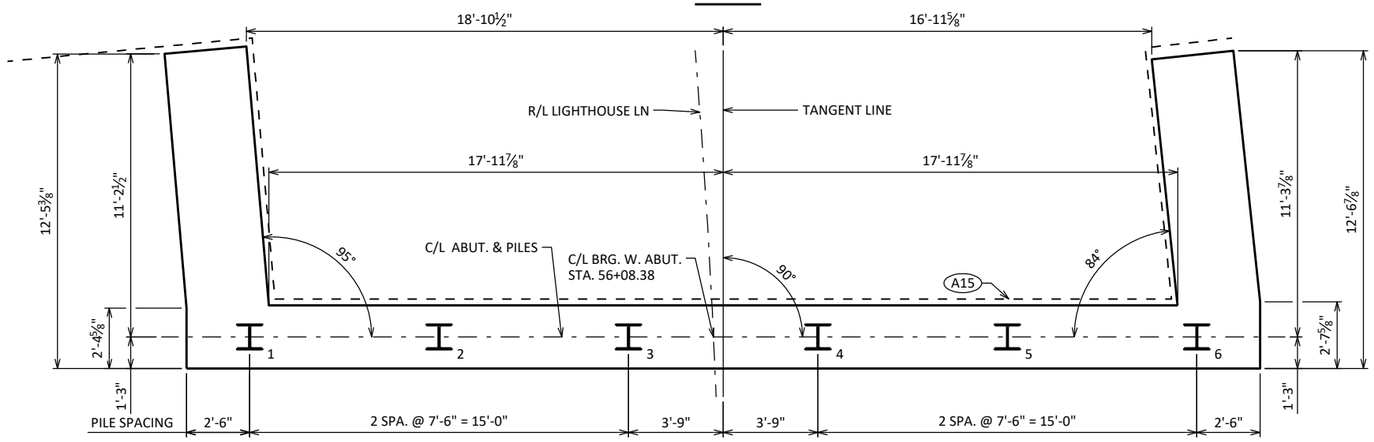



## ELEVATION LOOKING WEST

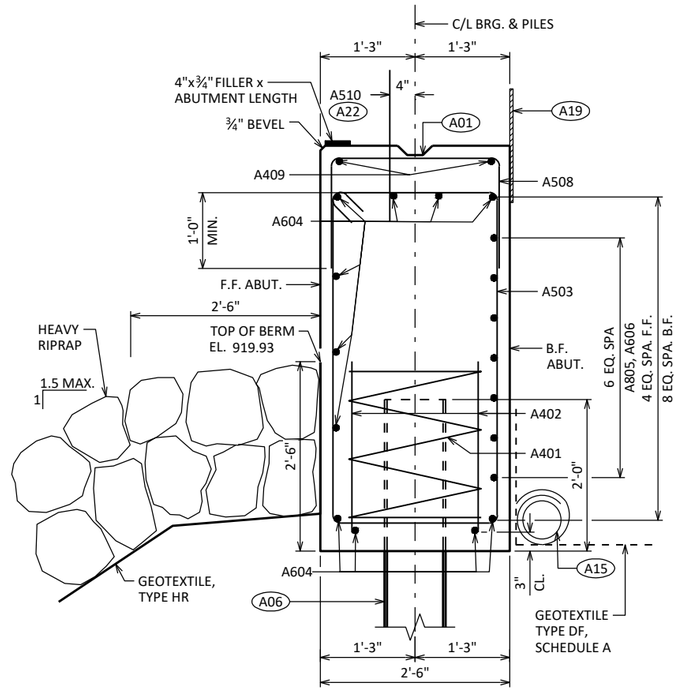
**(MOVE STIRRUP BARS TO MISS PILES)**




## PLAN




## PILE PLAN




## SECTION THRU BODY

(A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A06) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. ESTIMATED 15 FEET LONG.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

◪ 4" X ¾" PREFORMED JOINT FILLER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**WEST ABUTMENT**

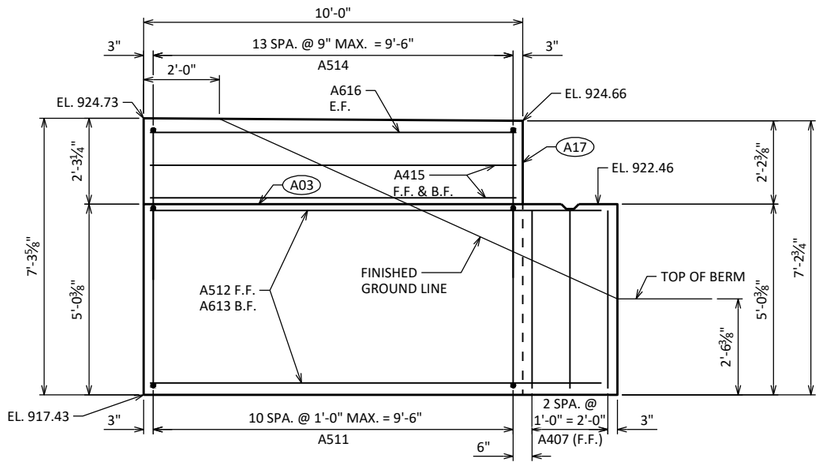
SHEET 4
110

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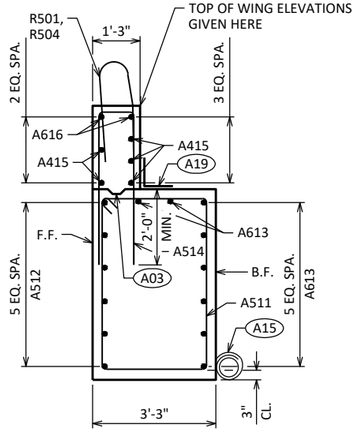
STATE PROJECT NUMBER

**4825-05-71**

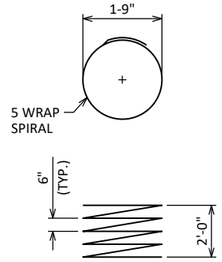



## WING 1 ELEVATION

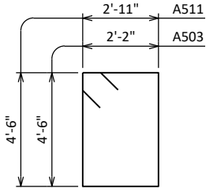
LOOKING AT FRONT FACE




## WING 1 SECTION



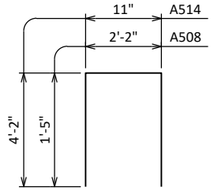

## A401




## A503, A511




## A805




## A508, A514

## 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 | |
|---|---|---|---|---|---|---|---|
| A401 | | 6 | 28'-0" | X | | ABUTMENT BODY - 1 PER PILE | SPIRAL |
| A402 | | 12 | 2'-3" | | | ABUTMENT BODY - 2 PER PILE | VERT. |
| A503 | | 53 | 14'-0" | X | | ABUTMENT BODY - STIRRUPS | VERT. |
| A604 | | 11 | 42'-2" | | | ABUTMENT BODY - F.F, TOP, BTM | HORIZ. |
| A805 | | 14 | 14'-1" | X | | ABUTMENT BODY - B.F. | HORIZ. |
| A606 | | 7 | 21'-11" | | | ABUTMENT BODY - B.F. | HORIZ. |
| A407 | | 6 | 4'-7" | | | ABUTMENT BODY - AT ENDS | VERT. |
| A508 | | 11 | 4'-9" | X | | ABUTMENT BODY - TOP | VERT. |
| A409 | | 2 | 10'-6" | | | ABUTMENT BODY - TOP | HORIZ. |
| A510 | X | 41 | 2'-0" | | | ABUTMENT BODY - DOWELS | VERT. |
| A511 | X | 22 | 15'-6" | X | | WING BODY - STIRRUP | VERT. |
| A512 | X | 12 | 12'-2" | | | WING BODY - F.F. | HORIZ. |
| A613 | X | 16 | 12'-0" | | | WING BODY - B.F. & TOP | HORIZ. |
| A514 | X | 28 | 9'-0" | X | | WING TOP | VERT. |
| A415 | X | 10 | 9'-7" | | | WING TOP - F.F. & B.F. | HORIZ. |
| A616 | X | 4 | 9'-7" | | | WING TOP - TOP | HORIZ. |

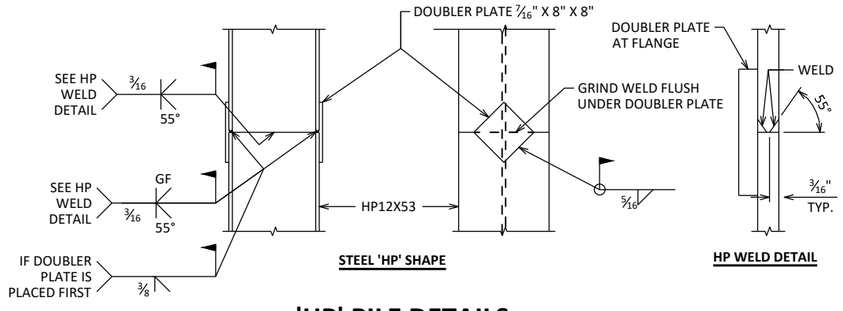



## WING 2 ELEVATION

LOOKING AT FRONT FACE




## WING 2 SECTION




## 'HP' PILE DETAILS

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**WEST ABUTMENT DETAILS**

SHEET 5

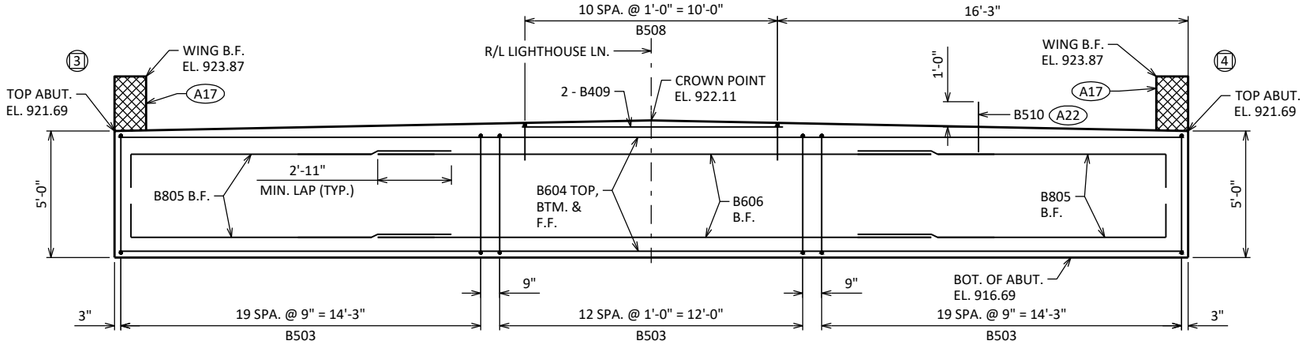
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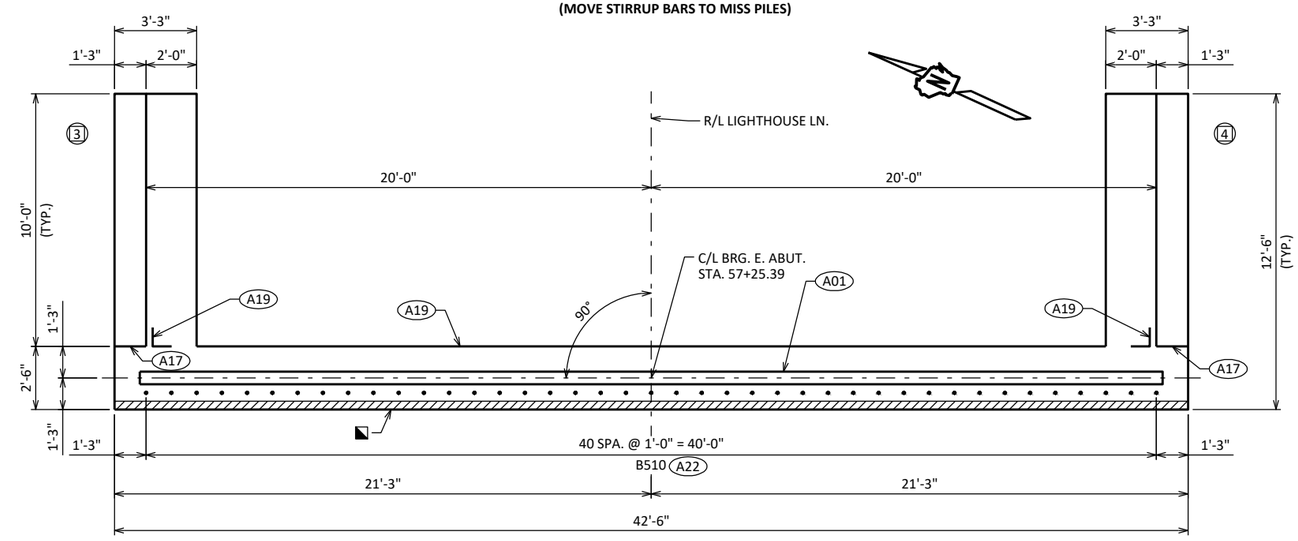
STATE PROJECT NUMBER

**4825-05-71**

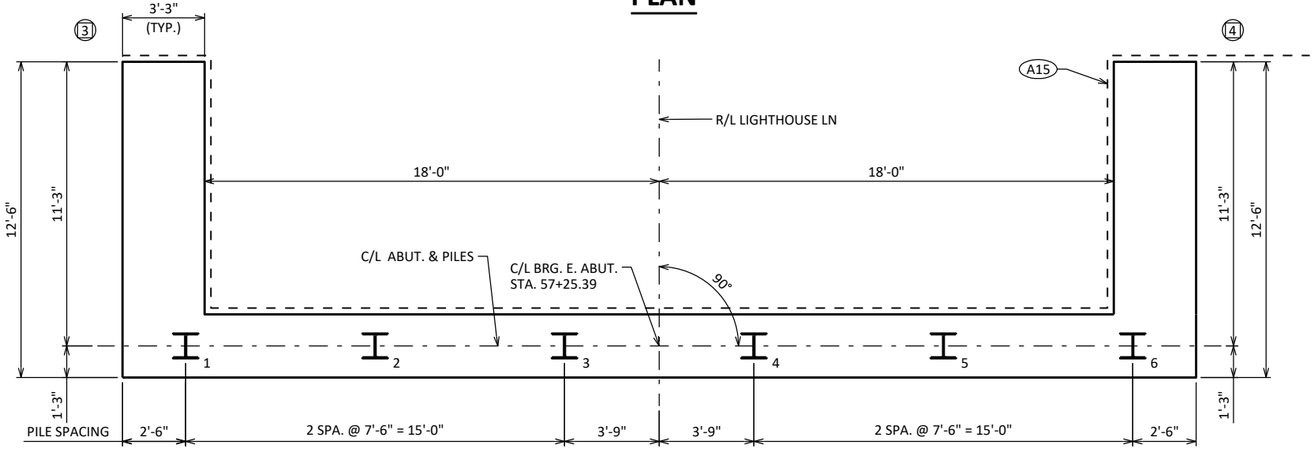



## ELEVATION LOOKING EAST

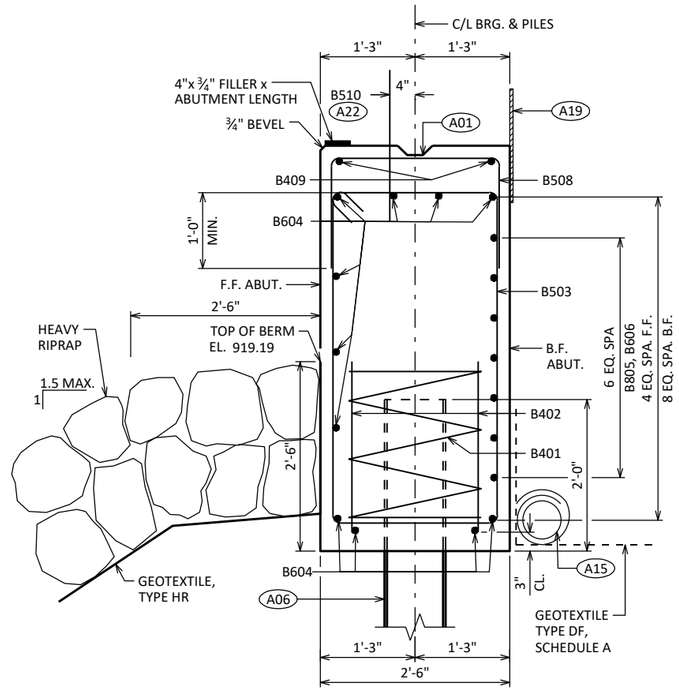
**(MOVE STIRRUP BARS TO MISS PILES)**




## PLAN




## PILE PLAN




## SECTION THRU BODY

A01 CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

A06 SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. ESTIMATED 15 FEET LONG.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

A17 ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A22 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

◪ 4" X ¾" PREFORMED JOINT FILLER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**EAST ABUTMENT**

SHEET 6

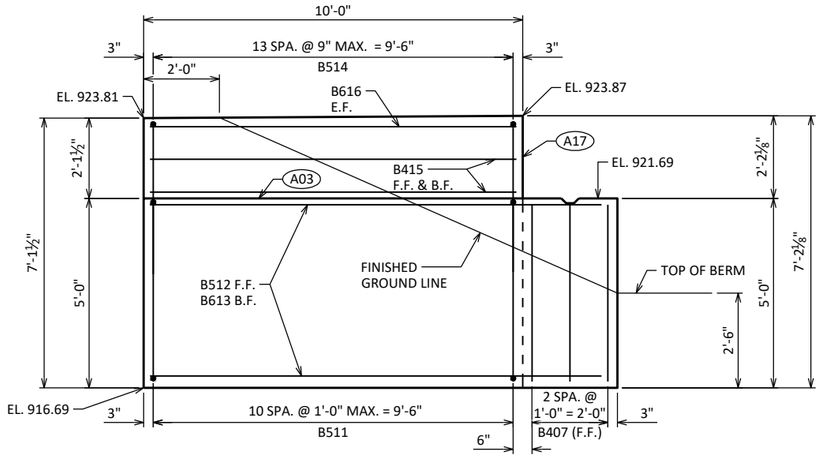


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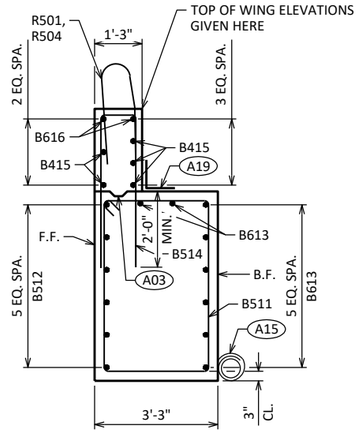
STATE PROJECT NUMBER

**4825-05-71**

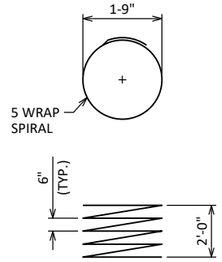



## WING 3 ELEVATION

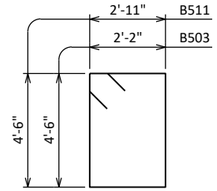
LOOKING AT FRONT FACE




## WING 3 SECTION



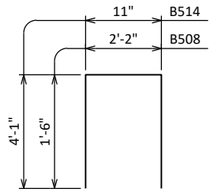

## B401



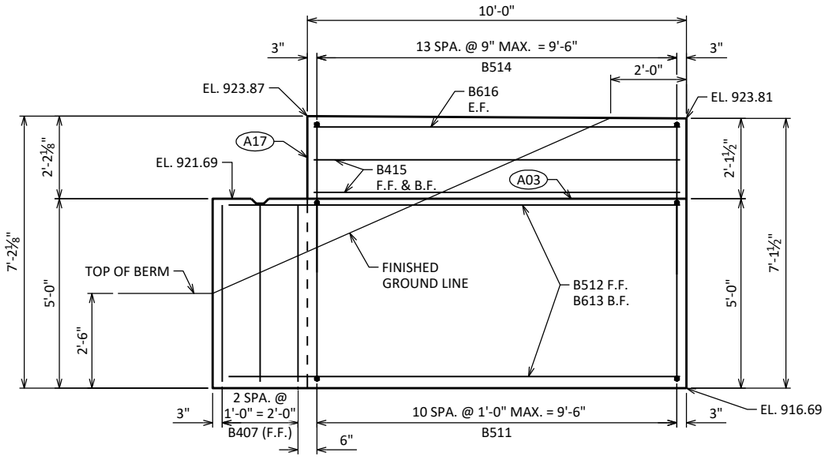

## B503, B511




## B805




## B508, B514

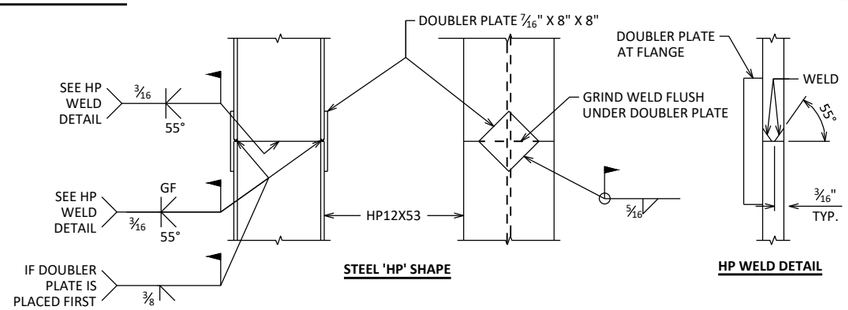



## WING 4 ELEVATION

LOOKING AT FRONT FACE




## WING 4 SECTION




**STEEL 'HP' SHAPE** | **HP WELD DETAIL**

## 'HP' PILE DETAILS

## 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 | |
|---|---|---|---|---|---|---|---|
| B401 | | 6 | 28'-0" | X | | ABUTMENT BODY - 1 PER PILE | SPIRAL |
| B402 | | 12 | 2'-3" | | | ABUTMENT BODY - 2 PER PILE | VERT. |
| B503 | | 53 | 14'-0" | X | | ABUTMENT BODY - STIRRUPS | VERT. |
| B604 | | 11 | 42'-2" | | | ABUTMENT BODY - F.F, TOP, BTM | HORIZ. |
| B805 | | 14 | 14'-1" | X | | ABUTMENT BODY - B.F. | HORIZ. |
| B606 | | 7 | 21'-11" | | | ABUTMENT BODY - B.F. | HORIZ. |
| B407 | | 6 | 4'-7" | | | ABUTMENT BODY - AT ENDS | VERT. |
| B508 | | 11 | 4'-11" | X | | ABUTMENT BODY - TOP | VERT. |
| B409 | | 2 | 10'-6" | | | ABUTMENT BODY - TOP | HORIZ. |
| B510 | X | 41 | 2'-0" | | | ABUTMENT BODY - DOWELS | VERT. |
| B511 | X | 22 | 15'-6" | X | | WING BODY - STIRRUP | VERT. |
| B512 | X | 12 | 12'-2" | | | WING BODY - F.F. | HORIZ. |
| B613 | X | 16 | 12'-1" | | | WING BODY - B.F. & TOP | HORIZ. |
| B514 | X | 28 | 8'-10" | X | | WING TOP | VERT. |
| B415 | X | 10 | 9'-7" | | | WING TOP - F.F. & B.F. | HORIZ. |
| B616 | X | 4 | 9'-7" | | | WING TOP - TOP | HORIZ. |

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

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(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**EAST ABUTMENT DETAILS**

SHEET 7

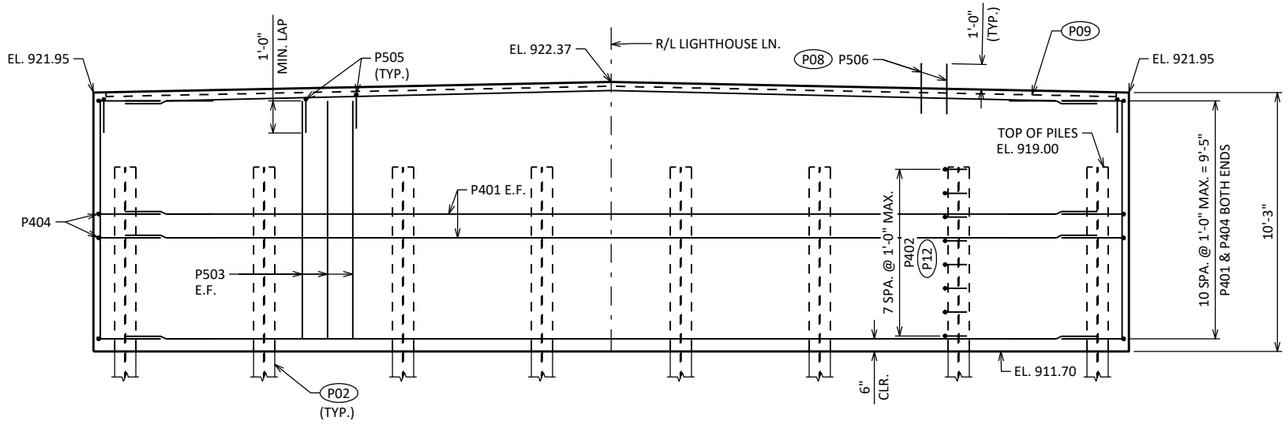


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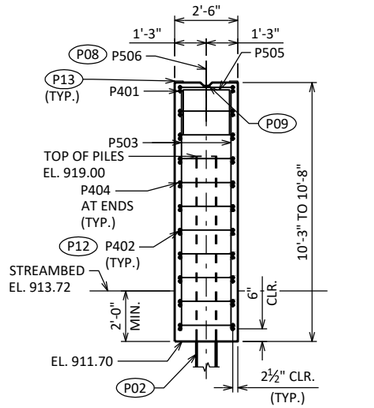
STATE PROJECT NUMBER

**4825-05-71**




## ELEVATION

(LOOKING EAST)

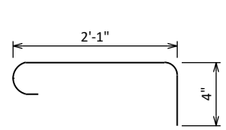



## TYPICAL SECTION THRU PIER

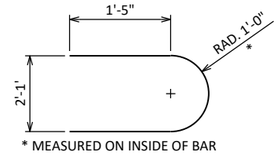
## BILL OF BARS

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

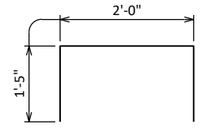
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| P401 | | 22 | 38'-6" | | | SHAFT HORIZ. |
| P402 | | 64 | 2'-11" | X | | SHAFT AT PILES HORIZ. |
| P503 | | 86 | 9'-6" | | | SHAFT VERT. |
| P404 | | 22 | 6'-1" | X | | SHAFT AT ENDS HORIZ. |
| P505 | | 20 | 4'-7" | X | | SHAFT AT TOP VERT. |
| P506 | X | 40 | 2'-0" | | | SHAFT DOWELS VERT. |



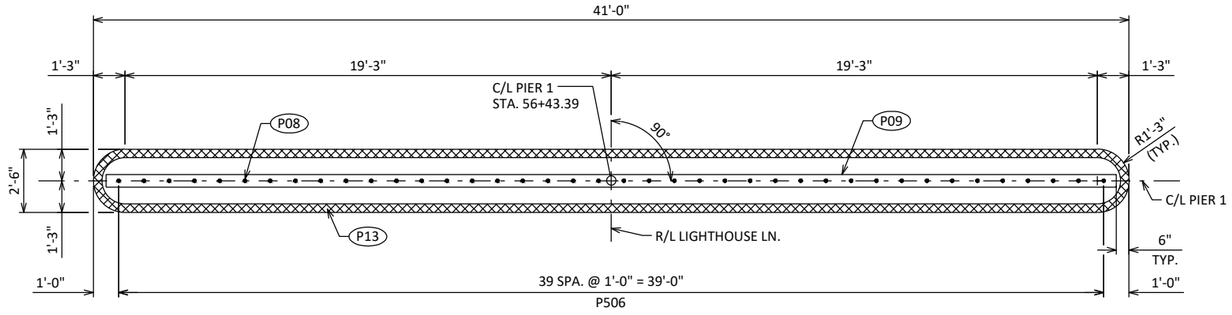

## P402



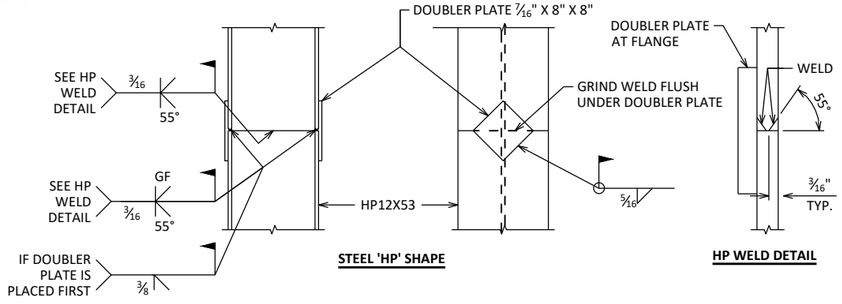

## P404



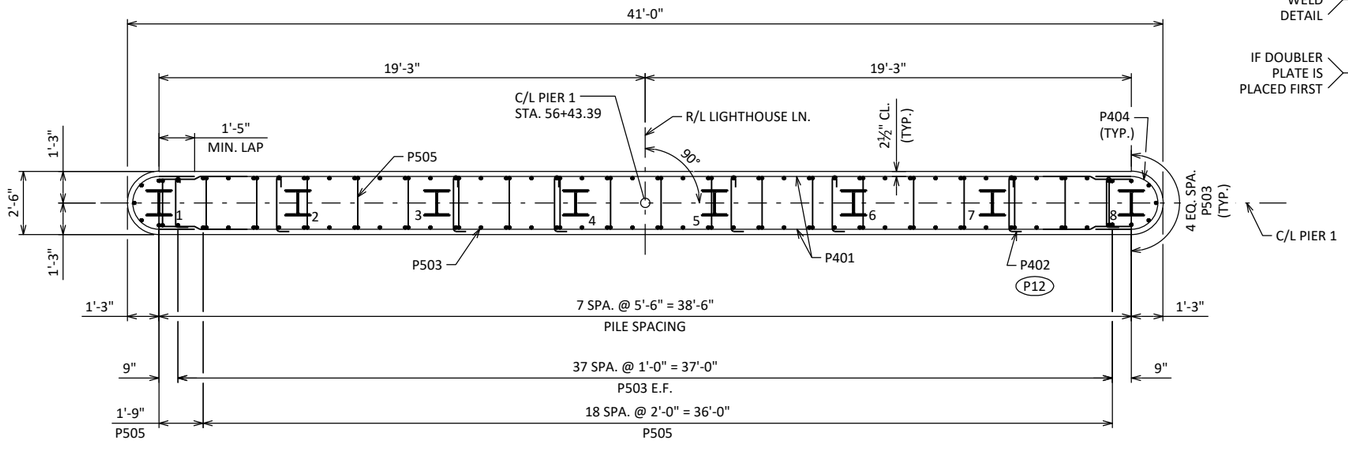

## P505




## PLAN




## 'HP' PILE DETAILS




## PILE AND REINFORCEMENT PLAN

(P02) SUPPORT PIER ON HP 12 x 53 STEEL PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. ESTIMATED 15 FEET LONG.

(P08) BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

(P12) PLACE ADJACENT TO EACH PILE AT 1'-0" VERTICAL CENTERS. TIE TO THE NEAREST VERTICAL #5 BAR. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

(P13) 4" X ¾" PREFORMED JOINT FILLER LENGTH OF PIER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**PIER 1**

SHEET 8

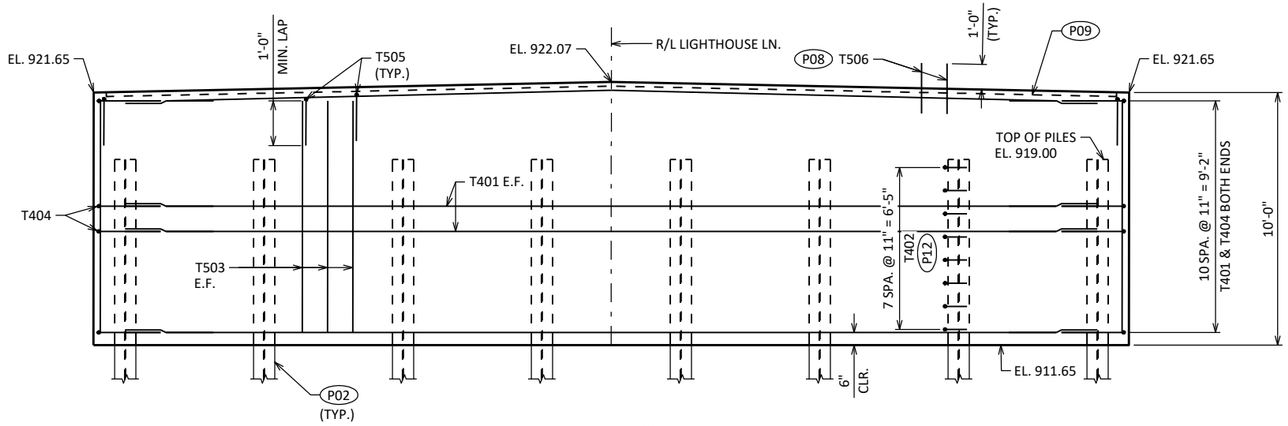


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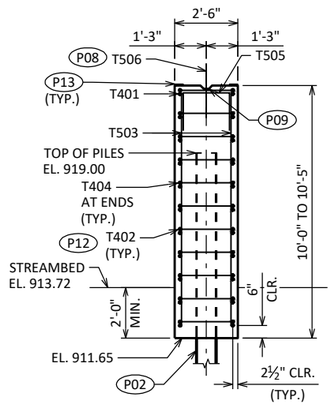
STATE PROJECT NUMBER

**4825-05-71**




## ELEVATION

(LOOKING EAST)

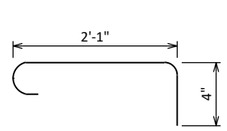



## TYPICAL SECTION THRU PIER

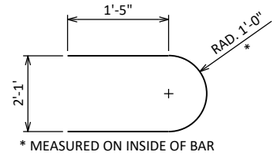
## BILL OF BARS

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 |
|---|---|---|---|---|---|---|
| T401 | | 22 | 38'-6" | | | SHAFT HORIZ. |
| T402 | | 64 | 2'-11" | X | | SHAFT AT PILES HORIZ. |
| T503 | | 86 | 9'-3" | | | SHAFT VERT. |
| T404 | | 22 | 6'-1" | X | | SHAFT AT ENDS HORIZ. |
| T505 | | 20 | 4'-7" | X | | SHAFT AT TOP VERT. |
| T506 | X | 40 | 2'-0" | | | SHAFT DOWELS VERT. |

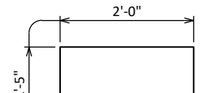



## T402

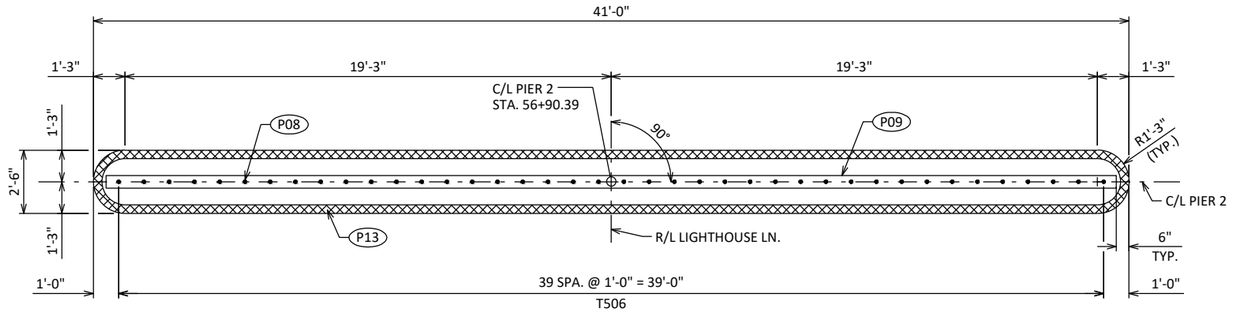



* MEASURED ON INSIDE OF BAR

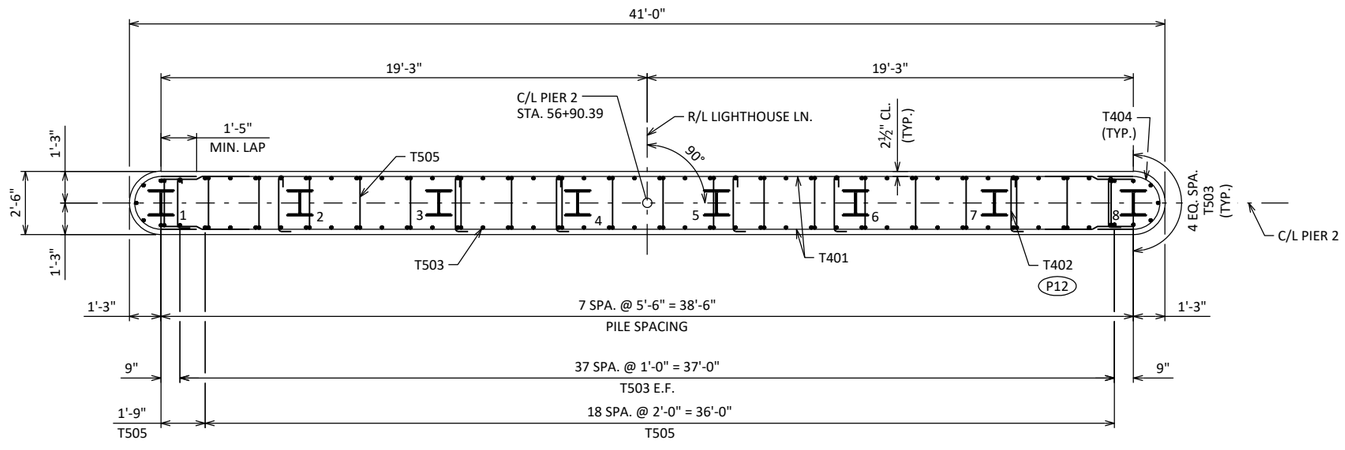
## T404



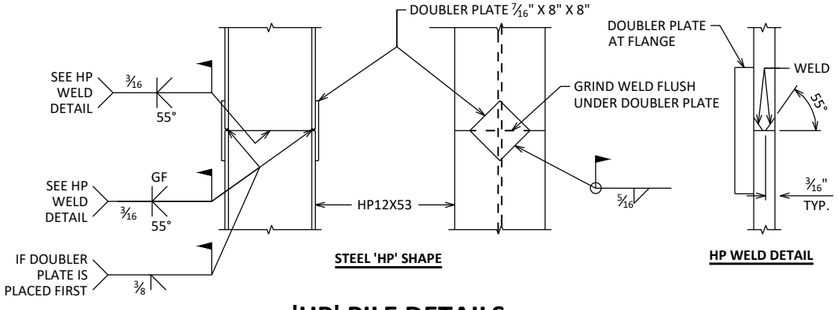

## T505




## PLAN




## PILE AND REINFORCEMENT PLAN




STEEL 'HP' SHAPE

HP WELD DETAIL

## 'HP' PILE DETAILS

P02 SUPPORT PIER ON HP 12 x 53 STEEL PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. ESTIMATED 15 FEET LONG.

P08 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

P09 KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

P12 PLACE ADJACENT TO EACH PILE AT 1'-0" VERTICAL CENTERS. TIE TO THE NEAREST VERTICAL #5 BAR. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

P13 4" X ¾" PREFORMED JOINT FILLER LENGTH OF PIER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**PIER 2**

SHEET 9

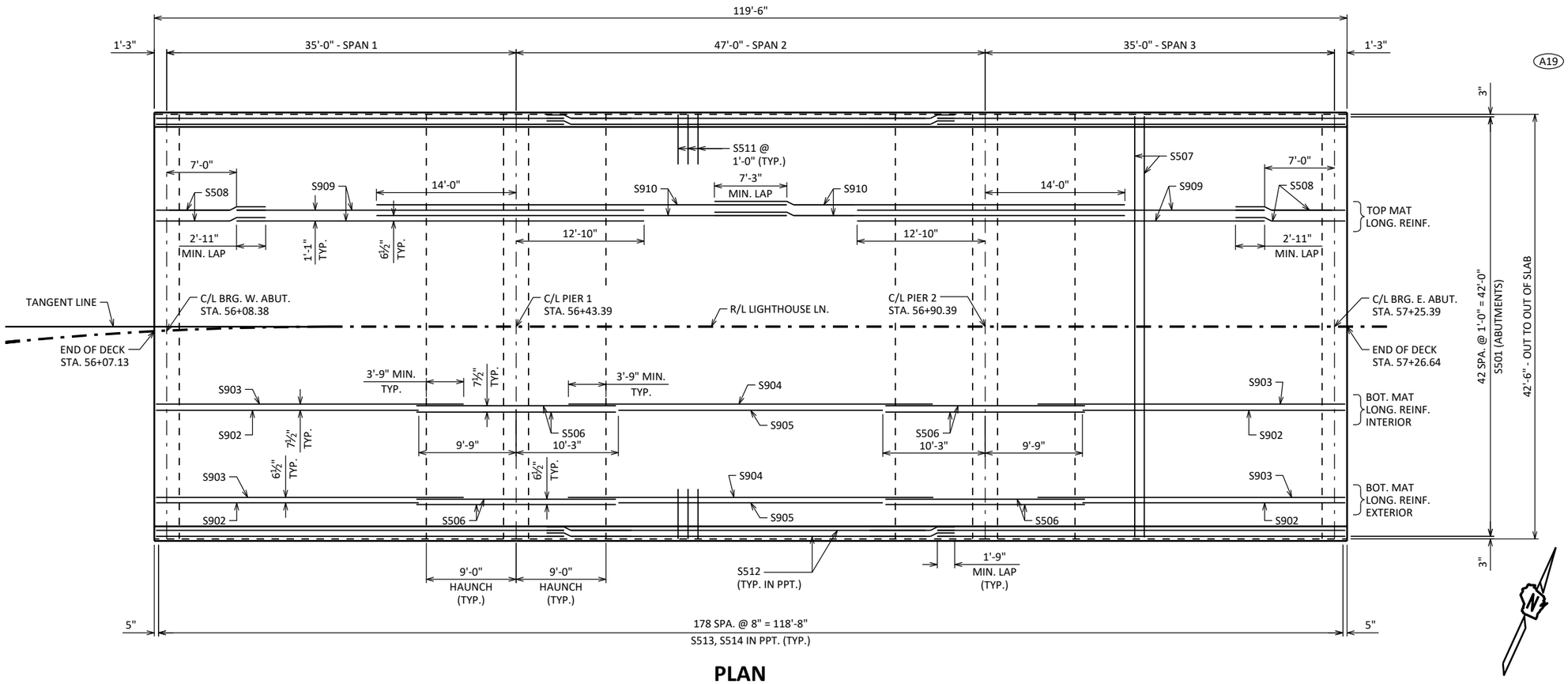
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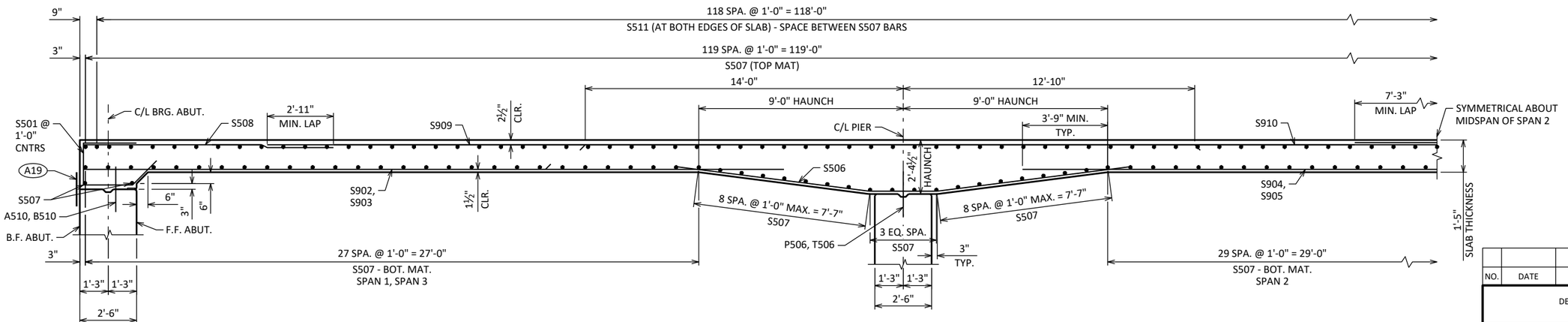
STATE PROJECT NUMBER

**4825-05-71**




A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

## PLAN




## LONGITUDINAL SECTION

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SUPERSTRUCTURE**

SHEET 10

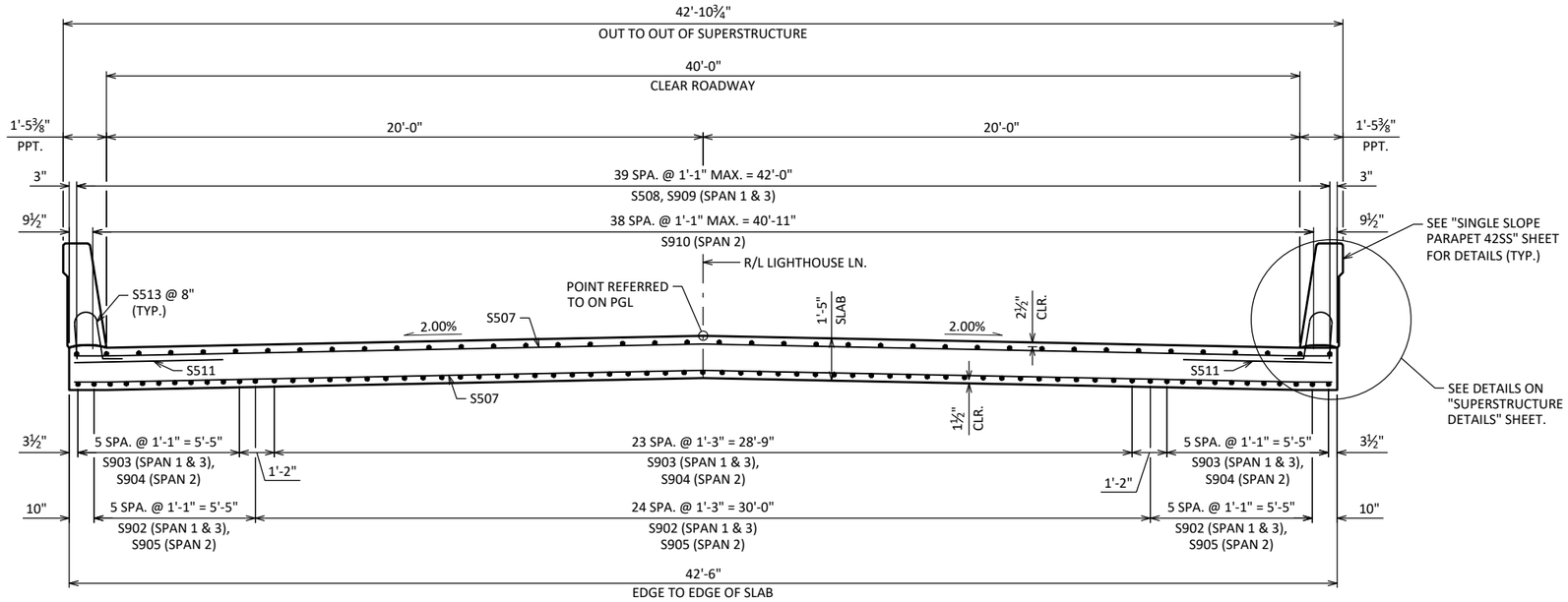


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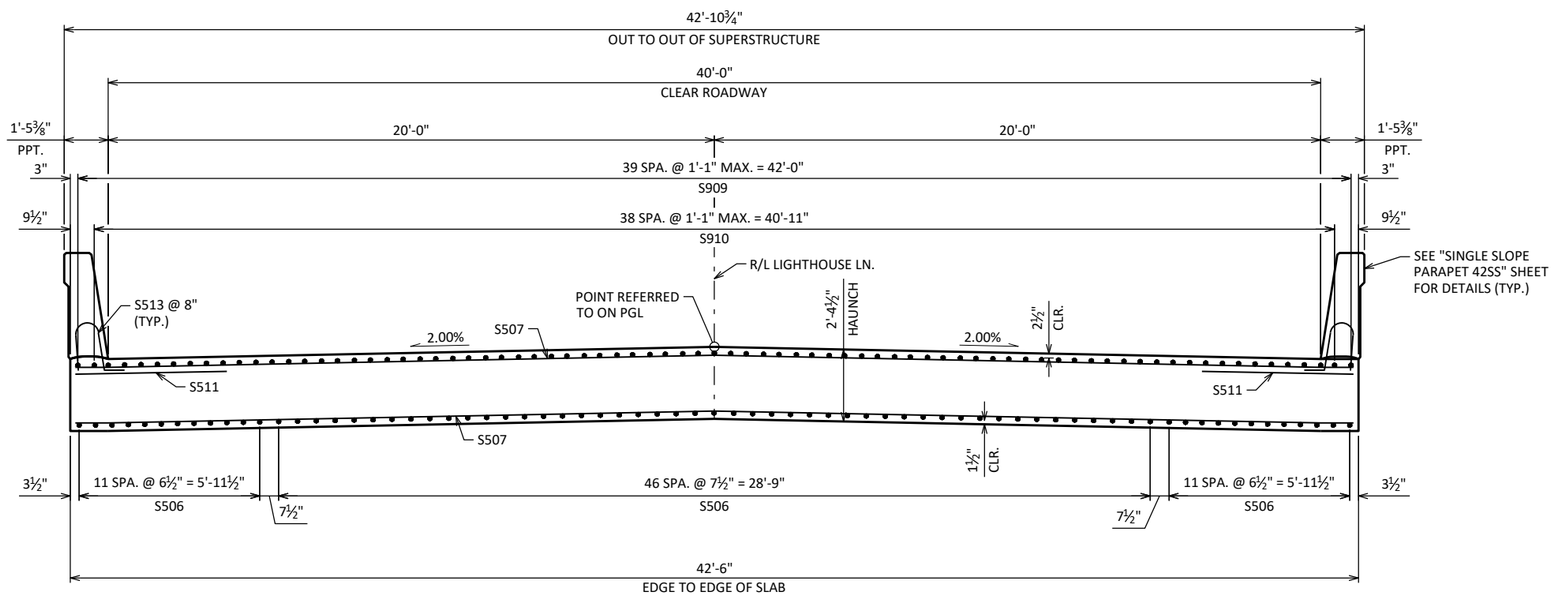
STATE PROJECT NUMBER

**4825-05-71**




## CROSS SECTION THRU SLAB AT MID SPAN

**LOOKING EAST**




## CROSS SECTION THRU SLAB AT PIER

8

8

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

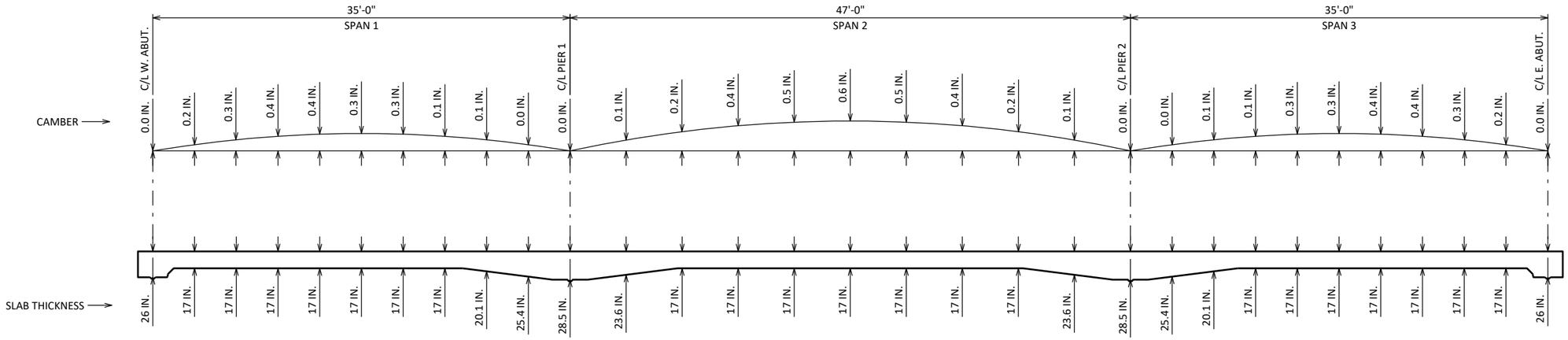
**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SUPERSTRUCTURE CROSS SECTIONS**

SHEET 11

| STATE PROJECT NUMBER |
|---|
| **4825-05-71** |




## NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

## CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.
PARAPET PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, OR REFERENCE LINE FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
MINUS (-) SLAB THICKNESS
PLUS (+) CAMBER
PLUS (+) FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS = TOP OF SLAB FALSEWORK ELEVATION.

## TOP OF DECK ELEVATIONS

| LOCATION | C/L W. 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. | C/L PIER 1 | 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. | C/L PIER 2 | 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. | C/L E. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N. EOD | 924.63 | 924.61 | 924.59 | 924.57 | 924.55 | 924.53 | 924.50 | 924.48 | 924.46 | 924.43 | 924.41 | 924.38 | 924.35 | 924.32 | 924.29 | 924.26 | 924.23 | 924.20 | 924.17 | 924.14 | 924.11 | 924.08 | 924.06 | 924.04 | 924.02 | 923.99 | 923.97 | 923.95 | 923.92 | 923.90 | 923.88 |
| R/L LIGHTHOUSE LN. | 925.04 | 925.02 | 924.99 | 924.97 | 924.95 | 924.93 | 924.90 | 924.88 | 924.86 | 924.83 | 924.81 | 924.78 | 924.75 | 924.72 | 924.69 | 924.66 | 924.63 | 924.60 | 924.57 | 924.54 | 924.51 | 924.48 | 924.46 | 924.44 | 924.42 | 924.39 | 924.37 | 924.35 | 924.32 | 924.30 | 924.28 |
| S. EOD | 924.65 | 924.63 | 924.60 | 924.57 | 924.55 | 924.53 | 924.50 | 924.48 | 924.46 | 924.43 | 924.41 | 924.38 | 924.35 | 924.32 | 924.29 | 924.26 | 924.23 | 924.20 | 924.17 | 924.14 | 924.11 | 924.08 | 924.06 | 924.04 | 924.02 | 923.99 | 923.97 | 923.95 | 923.92 | 923.90 | 923.88 |

## SURVEY TOP OF SLAB ELEVATIONS

| | C/L BRG. W. ABUT. | 5/10 PT. | C/L PIER 1 | 5/10 PT. | C/L PIER 2 | 5/10 PT. | C/L BRG. E. ABUT. |
|---|---|---|---|---|---|---|---|
| N. GUTTER | | | | | | | |
| R/L LIGHTHOUSE LN. | | | | | | | |
| S. GUTTER | | | | | | | |

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF SUBSTRUCTURE UNITS, AND AT 5/10 PTS OF SPAN TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND REFERENCE LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SUPERSTRUCTURE DATA**

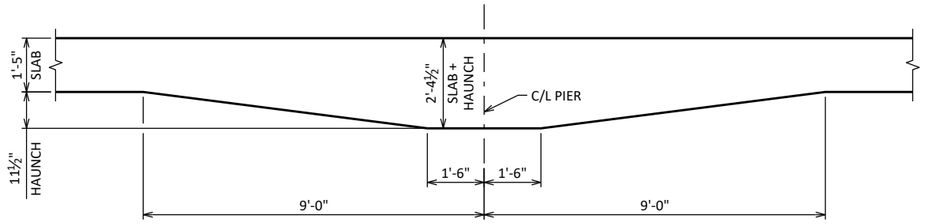
SHEET 12
118

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STATE PROJECT NUMBER

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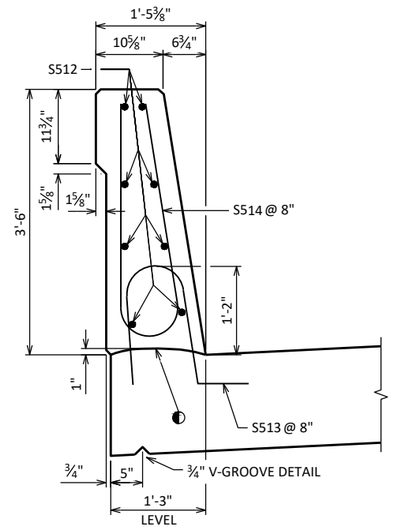

## PART LONGITUDINAL SLAB & HAUNCH SECTION AT PIERS

(STEEL REINFORCEMENT NOT SHOWN)

## BILL OF BARS

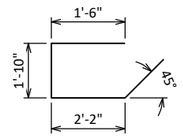
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION | |
|---|---|---|---|---|---|---|---|
| S501 | X | 86 | 6'-9" | X | | SLAB - ABUTMENT STIRRUP | LONGIT. |
| S902 | X | 70 | 26'-4" | | | SLAB - BOTTOM - SPANS 1 & 3 | LONGIT. |
| S903 | X | 72 | 30'-10" | | | SLAB - BOTTOM - SPANS 1 & 3 | LONGIT. |
| S904 | X | 36 | 36'-6" | | | SLAB - BOTTOM - SPAN 2 | LONGIT. |
| S905 | X | 35 | 26'-6" | | | SLAB - BOTTOM - SPAN 2 | LONGIT. |
| S506 | X | 142 | 22'-2" | X | | SLAB - BOTTOM. - OVER PIERS | LONGIT. |
| S507 | X | 246 | 42'-2" | | | SLAB - TOP & BOTTOM | TRANS. |
| S508 | X | 80 | 11'-0" | | | SLAB - TOP - SPANS 1 & 3 | LONGIT. |
| S909 | X | 80 | 40'-10" | | | SLAB - TOP | LONGIT. |
| S910 | X | 78 | 41'-2" | | | SLAB - TOP | LONGIT. |
| S511 | X | 238 | 5'-0" | | | SLAB - TOP AT EDGES | TRANS. |
| S512 | X | 48 | 40'-11" | | | PPT. - HORIZ. | |
| S513 | X | 358 | 4'-5" | X | | PPT. - VERT. | |
| S514 | X | 358 | 6'-8" | X | | PPT. - VERT. | |

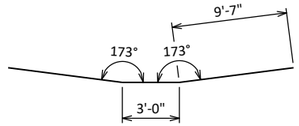



## SECTION THRU PPT. ON BRIDGE

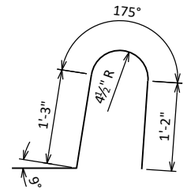
◐ CONST. JOINT - STRIKE OFF AS SHOWN.



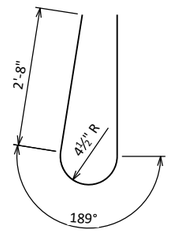

**S501**




**S506**




**S513**




**S514**

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SUPERSTRUCTURE DETAILS**

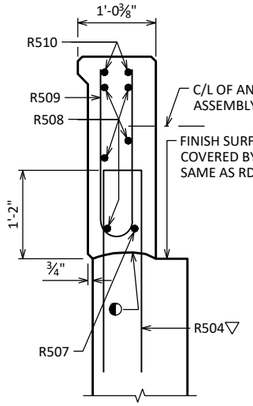
SHEET 13
119

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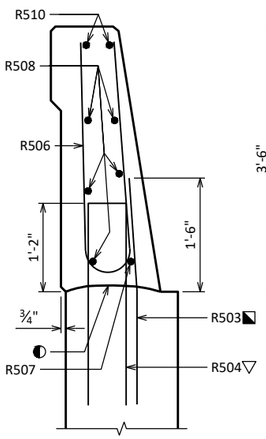
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STATE PROJECT NUMBER

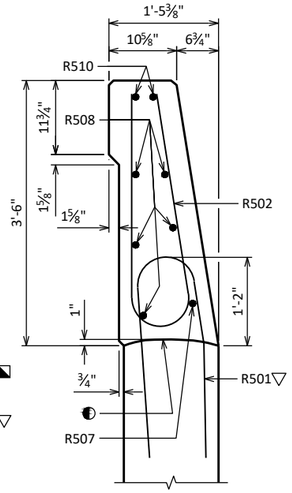
**4825-05-71**



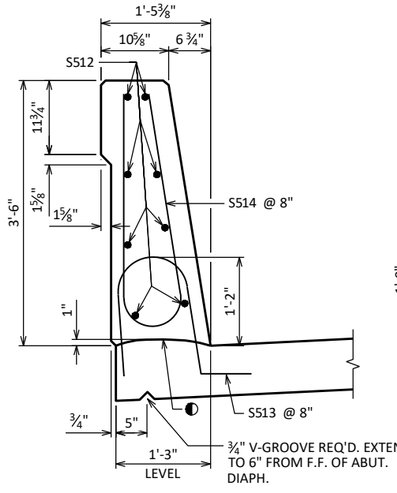

**SECTION A-A**



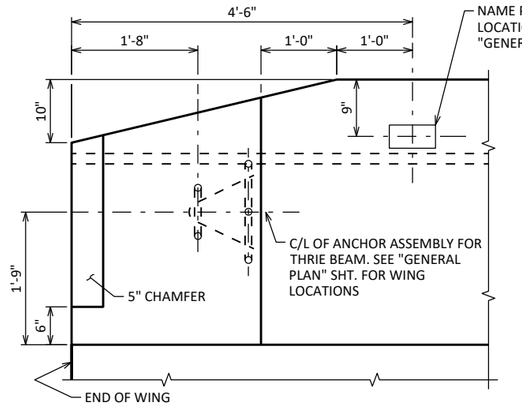

**SECTION B-B**




**SECTION C-C**




**SECTION THRU PARAPET ON DECK**




**PARAPET END TREATMENT DETAIL**

LOOKING AT INSIDE FACE OF PARAPET

## BILL OF BARS

FOR WING PARAPETS

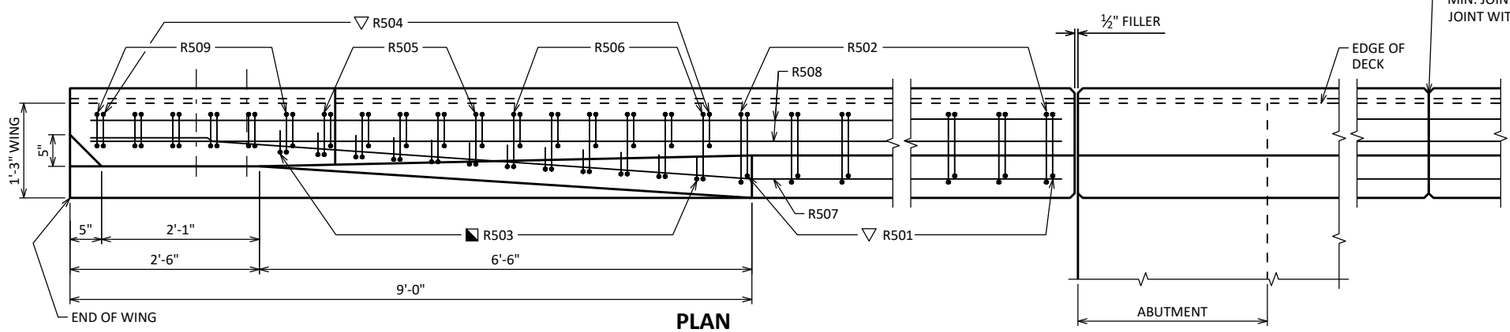
| BAR MARK | COAT | W. ABUT. | E. ABUT. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 6 | 6 | 5'-10" | X | | PARAPET VERT. |
| R502 | X | 6 | 6 | 6'-8" | X | | PARAPET VERT. |
| R503 | X | 24 | 24 | 3'-0" | X | | PARAPET VERT. |
| R504 | X | 34 | 34 | 5'-7" | 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 | 9'-7" | X | | PARAPET HORIZ. |
| R508 | X | 10 | 10 | 9'-7" | | | PARAPET HORIZ. |
| R509 | X | 12 | 12 | 5'-5" | X | ⚠ | PARAPET VERT. |
| R510 | X | 4 | 4 | 9'-7" | X | | PARAPET HORIZ. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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

## BAR SERIES TABLE

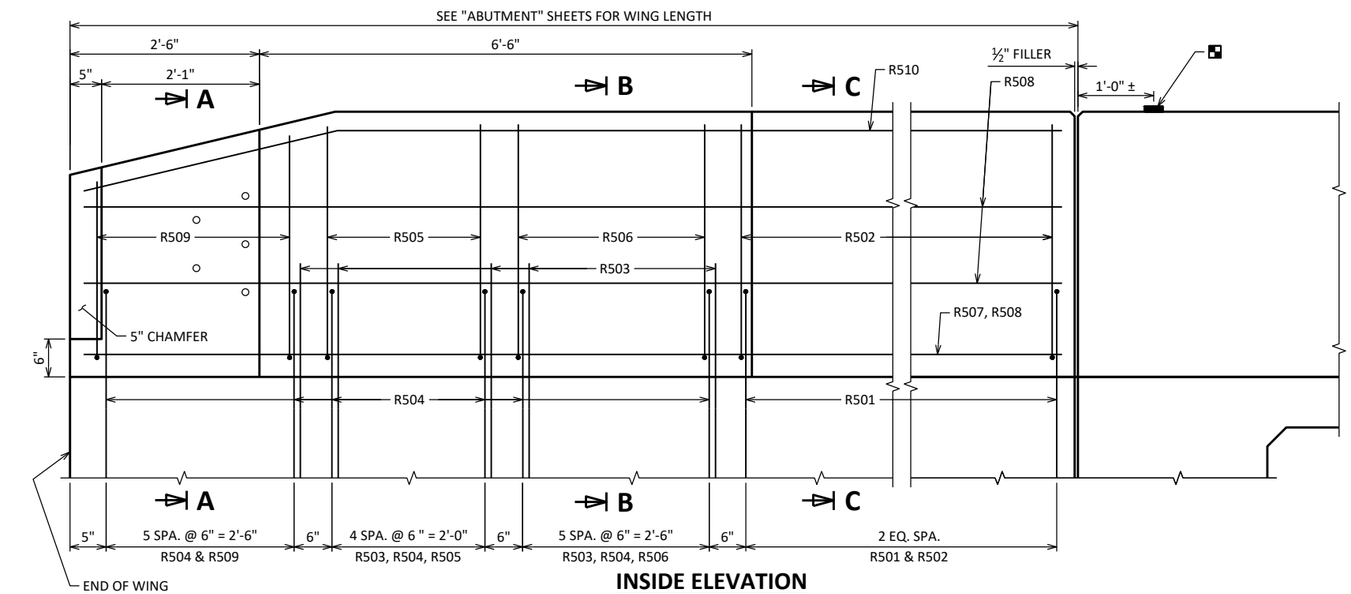
BUNDLE AND TAG EACH SERIES SEPARATELY.

| BAR MARK | NO. REQ'D. | LENGTH |
|---|---|---|
| R509 | 4 SERIES OF 6 | 4'-9" TO 6'-1" |



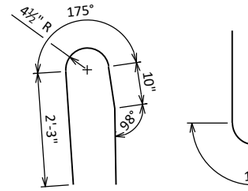

**PLAN**

SE CORNER SHOWN, OTHERS SIMILAR

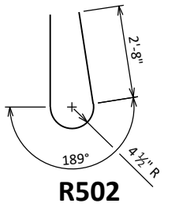



**INSIDE ELEVATION**

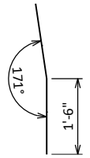
SE CORNER SHOWN, OTHERS SIMILAR



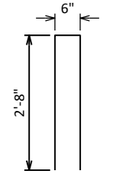

**R501**



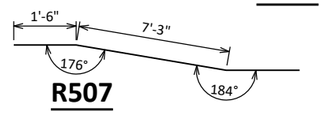

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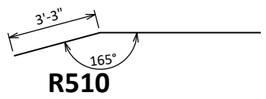

**R503**



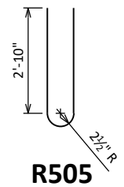

**R504**



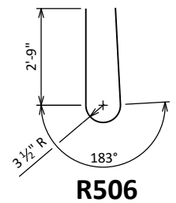

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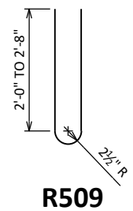

**R510**




**R505**




**R506**



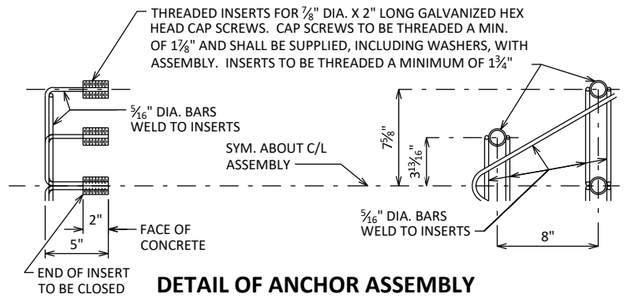

**R509**

◐ 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.

◪ BENCH MARK CAP (WHEN SUPPLIED). AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.




**DETAIL OF ANCHOR ASSEMBLY**

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**STRUCTURE B-66-156**

DRAWN BY JLA | PLANS CK'D MJB

**SINGLE SLOPE PARAPET 42SS**

SHEET 14

120

8

8

DIVISION 1 - ALI-LIGHTHOUSE-LN

| STATION | REAL STATION | DISTANCE | AREA (SF) | | | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | | | CUMULATIVE VOL (CY) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT | UNUSABLE PAVEMENT MATERIAL | FILL | MARSH EXC | EBS | CUT NOTE 1 | UNUSABLE PAVEMENT MATERIAL NOTE 2 | FILL NOTE 3 | MARSH EXC | EBS | CUT 0.90 NOTE 1 | EXPANDED FILL 1.10 | EXPANDED MARSH BACKFILL 1.50 NOTE 4 | EXPANDED EBS BACKFILL 1.30 NOTE 5 | REDUCED MARSH IN FILL 0.60 NOTE 6 | REDUCED EBS IN FILL 0.80 NOTE 7 | MASS ORDINATE NOTE 8 |
| 54+19.15 | 5419.15 | 0.00 | 14.80 | 0.00 | 0.82 | 0.00 | 0.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54+50.00 | 5450.00 | 30.85 | 14.56 | 0.00 | 3.13 | 0.00 | 0.15 | 17 | 0 | 3 | 0 | 1 | 16 | 3 | 0 | 2 | 0 | 1 | 13 |
| 54+88.80 | 5488.80 | 38.8 | 20.04 | 0.00 | 25.35 | 0.00 | 0.20 | 25 | 0 | 21 | 0 | 1 | 39 | 26 | 0 | 4 | 0 | 2 | 13 |
| 54+99.28 | 5499.28 | 10.48 | 20.12 | 0.00 | 30.17 | 0.00 | 0.20 | 8 | 0 | 11 | 0 | 1 | 47 | 38 | 0 | 6 | 0 | 3 | 9 |
| 55+00.00 | 5500.00 | 0.72 | 20.12 | 0.00 | 30.46 | 0.00 | 0.20 | 1 | 0 | 1 | 0 | 1 | 48 | 39 | 0 | 8 | 0 | 4 | 9 |
| 55+26.06 | 5526.06 | 26.06 | 27.39 | 0.00 | 37.31 | 0.00 | 0.27 | 23 | 0 | 33 | 0 | 1 | 69 | 75 | 0 | 10 | 0 | 5 | -6 |
| 55+42.94 | 5542.94 | 16.88 | 42.74 | 0.00 | 28.59 | 0.00 | 0.43 | 22 | 0 | 21 | 0 | 1 | 89 | 98 | 0 | 12 | 0 | 6 | -9 |
| 55+50.00 | 5550.00 | 7.06 | 71.49 | 10.42 | 25.56 | 0.00 | 0.71 | 15 | 2 | 8 | 0 | 1 | 103 | 106 | 0 | 14 | 0 | 7 | -5 |
| 55+52.78 | 5552.78 | 2.78 | 63.96 | 10.42 | 41.84 | 0.00 | 0.64 | 7 | 2 | 4 | 0 | 1 | 110 | 110 | 0 | 16 | 0 | 8 | -4 |
| 55+60.40 | 5560.40 | 7.62 | 54.59 | 10.42 | 53.38 | 1.35 | 0.55 | 17 | 3 | 14 | 1 | 1 | 126 | 124 | 2 | 18 | 1 | 9 | -5 |
| 55+75.00 | 5575.00 | 14.6 | 47.77 | 10.42 | 78.67 | 14.59 | 0.48 | 28 | 6 | 36 | 5 | 1 | 152 | 160 | 10 | 20 | 4 | 10 | -21 |
| 55+84.55 | 5584.55 | 9.55 | 41.62 | 10.42 | 95.57 | 18.57 | 0.42 | 16 | 4 | 31 | 6 | 1 | 167 | 190 | 19 | 22 | 8 | 11 | -40 |
| 56+00.00 | 5600.00 | 15.45 | 28.89 | 10.42 | 129.26 | 23.94 | 0.29 | 21 | 6 | 65 | 13 | 1 | 186 | 253 | 39 | 24 | 16 | 12 | -90 |
| 56+08.00 | 5608.00 | 8 | 0.00 | 10.42 | 426.40 | 27.76 | 0.00 | 5 | 4 | 83 | 8 | 1 | 191 | 339 | 51 | 26 | 21 | 13 | -175 |

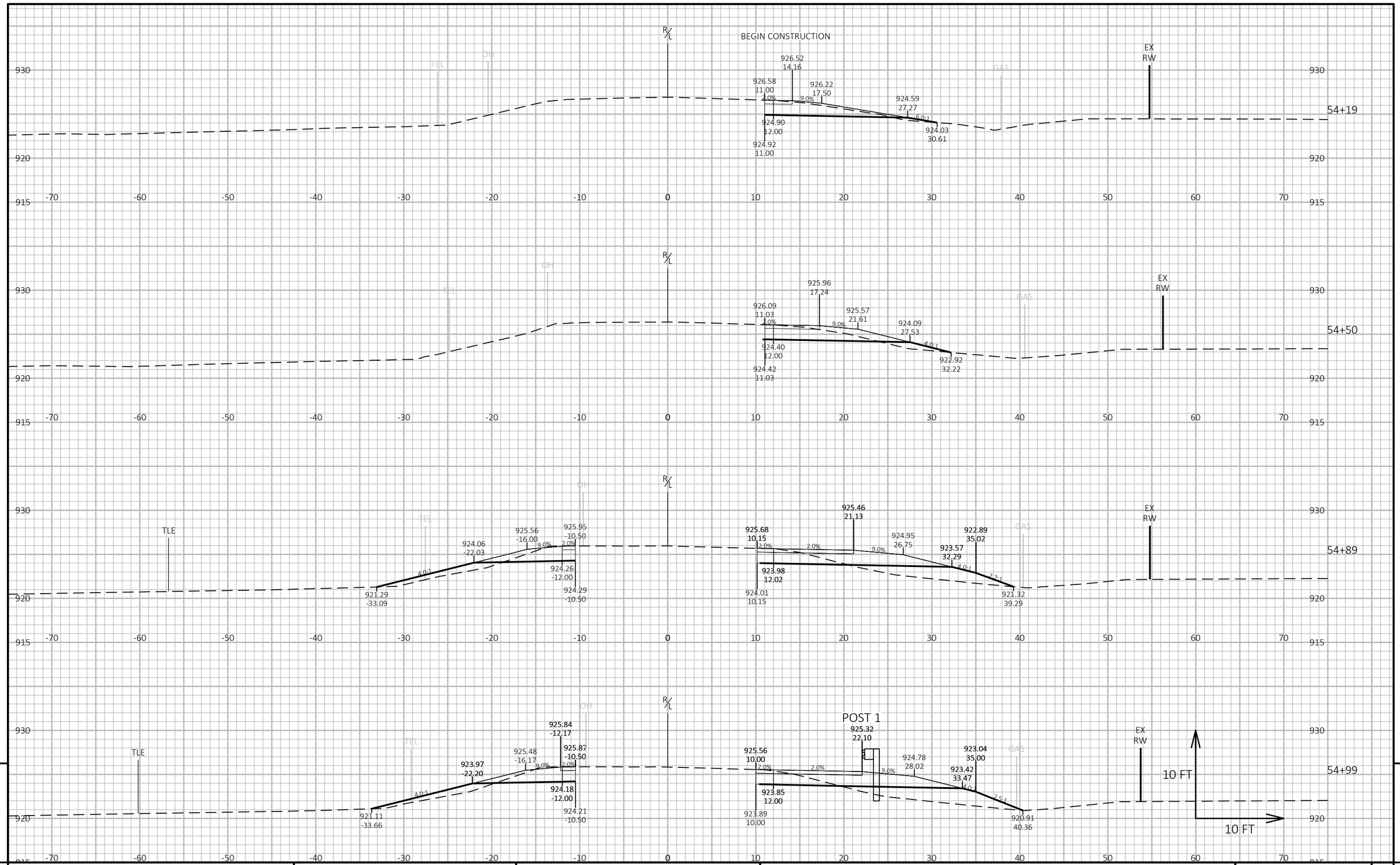
DIVISION 2 - ALI-KETTLE-MORAINE-SCENIC-DRIVE

| STATION | REAL STATION | DISTANCE | AREA (SF) | | | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | | | CUMULATIVE VOL (CY) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT | UNUSABLE PAVEMENT MATERIAL | FILL | MARSH EXC | EBS | CUT NOTE 1 | UNUSABLE PAVEMENT MATERIAL NOTE 2 | FILL NOTE 3 | MARSH EXC | EBS | CUT 0.90 NOTE 1 | EXPANDED FILL 1.10 | EXPANDED MARSH BACKFILL 1.50 NOTE 4 | EXPANDED EBS BACKFILL 1.30 NOTE 5 | REDUCED MARSH IN FILL 0.60 NOTE 6 | REDUCED EBS IN FILL 0.80 NOTE 7 | MASS ORDINATE NOTE 8 |
| 110+43.51 | 11043.51 | 0.00 | 14.96 | 3.83 | 0.00 | 0.00 | 0.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 110+50.00 | 11050.00 | 6.49 | 16.53 | 3.83 | 0.00 | 0.00 | 0.17 | 4 | 1 | 1 | 0 | 1 | 4 | 1 | 0 | 2 | 0 | 1 | 2 |
| 110+64.95 | 11064.95 | 14.95 | 11.01 | 0.00 | 0.00 | 0.00 | 0.11 | 8 | 2 | 0 | 0 | 1 | 12 | 0 | 0 | 4 | 0 | 2 | 9 |
| 110+89.94 | 11089.94 | 24.99 | 13.69 | 0.00 | 0.00 | 0.00 | 0.14 | 12 | 0 | 0 | 0 | 1 | 23 | -1 | 0 | 6 | 0 | 3 | 21 |
| 111+00.00 | 11100.00 | 10.06 | 13.88 | 0.00 | 0.00 | 0.00 | 0.14 | 6 | 0 | 0 | 0 | 1 | 29 | -2 | 0 | 8 | 0 | 4 | 28 |
| 111+11.66 | 11111.66 | 11.66 | 14.16 | 0.00 | 0.00 | 0.00 | 0.14 | 7 | 0 | 0 | 0 | 1 | 36 | -3 | 0 | 10 | 0 | 5 | 36 |
| 111+50.00 | 11150.00 | 38.34 | 5.06 | 0.00 | 0.04 | 0.00 | 0.05 | 14 | 0 | 1 | 0 | 1 | 49 | -2 | 0 | 12 | 0 | 6 | 48 |
| 111+58.57 | 11158.57 | 8.57 | 4.84 | 0.00 | 0.05 | 0.00 | 0.05 | 2 | 0 | 1 | 0 | 1 | 51 | -1 | 0 | 14 | 0 | 7 | 49 |
| 112+00.00 | 11200.00 | 41.43 | 3.16 | 0.00 | 0.09 | 0.00 | 0.03 | 7 | 0 | 1 | 0 | 1 | 58 | 0 | 0 | 16 | 0 | 8 | 55 |
| 112+17.29 | 11217.29 | 17.29 | 3.28 | 0.00 | 2.55 | 0.00 | 0.03 | 3 | 0 | 1 | 0 | 1 | 61 | 1 | 0 | 18 | 0 | 9 | 56 |

DIVISION - ALI-LIGHTHOUSE-LN

| STATION | REAL STATION | DISTANCE | AREA (SF) | | | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | | | CUMULATIVE VOL (CY) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT | UNUSABLE PAVEMENT MATERIAL | FILL | MARSH EXC | EBS | CUT NOTE 1 | UNUSABLE PAVEMENT MATERIAL NOTE 2 | FILL NOTE 3 | MARSH EXC | EBS | CUT 0.90 NOTE 1 | EXPANDED FILL 1.10 | EXPANDED MARSH BACKFILL 1.50 NOTE 4 | EXPANDED EBS BACKFILL 1.30 NOTE 5 | REDUCED MARSH IN FILL 0.60 NOTE 6 | REDUCED EBS IN FILL 0.80 NOTE 7 | MASS ORDINATE NOTE 8 |
| 57+26.64 | 5726.64 | 0.00 | 64.97 | 10.42 | 63.38 | 0.00 | 0.65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57+34.97 | 5734.97 | 8.33 | 72.63 | 10.42 | 12.31 | 0.00 | 0.73 | 22 | 4 | 12 | 0 | 1 | 20 | 13 | 0 | 2 | 0 | 1 | 3 |
| 57+50.00 | 5750.00 | 15.03 | 70.74 | 10.42 | 0.00 | 0.00 | 0.71 | 40 | 6 | 4 | 0 | 1 | 56 | 17 | 0 | 4 | 0 | 2 | 29 |
| 57+81.67 | 5781.67 | 31.67 | 58.08 | 10.42 | 4.08 | 0.00 | 0.58 | 76 | 13 | 3 | 0 | 1 | 125 | 20 | 0 | 6 | 0 | 3 | 82 |
| 58+00.00 | 5800.00 | 18.33 | 13.90 | 4.17 | 15.27 | 0.00 | 0.14 | 25 | 5 | 7 | 0 | 1 | 148 | 27 | 0 | 8 | 0 | 4 | 93 |
| 58+09.60 | 5809.60 | 9.6 | 12.00 | 4.17 | 23.79 | 0.00 | 0.12 | 5 | 2 | 7 | 0 | 1 | 153 | 34 | 0 | 10 | 0 | 5 | 89 |
| 58+37.40 | 5837.40 | 27.8 | 10.41 | 4.17 | 24.87 | 0.00 | 0.10 | 12 | 5 | 26 | 0 | 1 | 164 | 62 | 0 | 12 | 0 | 6 | 67 |
| 58+50.00 | 5850.00 | 12.6 | 10.68 | 4.17 | 16.29 | 0.00 | 0.11 | 5 | 2 | 10 | 0 | 1 | 169 | 72 | 0 | 14 | 0 | 7 | 60 |
| 58+61.00 | 5861.00 | 11 | 6.36 | 0.00 | 12.87 | 0.00 | 0.06 | 4 | 1 | 6 | 0 | 1 | 173 | 78 | 0 | 16 | 0 | 8 | 57 |
| 59+00.00 | 5900.00 | 39 | 5.60 | 0.00 | 5.33 | 0.00 | 0.06 | 9 | 0 | 14 | 0 | 1 | 182 | 93 | 0 | 18 | 0 | 9 | 51 |
| 59+38.66 | 5938.66 | 38.66 | 5.29 | 0.00 | 1.16 | 0.00 | 0.05 | 8 | 0 | 5 | 0 | 1 | 190 | 98 | 0 | 20 | 0 | 10 | 54 |

| NOTES: | |
|---|---|
| 1 - CUT | CUT INCLUDES UNUSABLE PAVEMENT MATERIAL |
| 2 - UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS |
| 3 - FILL | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME |
| 4 - EXPANDED MARSH BACKFILL | WILL BE BACKFILLED WITH GRANULAR BACKFILL |
| 5 - EXPANDED EBS | WILL BE BACKFILLED WITH GRANULAR BACKFILL |
| 6 - REDUCED MARSH IN FILL | REDUCED MARSH EXCAVATION THAT CAN BE USED IN FILL OUTSIDE THE 1:1 SLOPES |
| 7 - REDUCED EBS IN FILL | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL OUTSIDE THE 1:1 SLOPES |
| 8 - MASS ORDINATE | IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL) * FILL FACTOR)] |




9

9

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 122 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 01

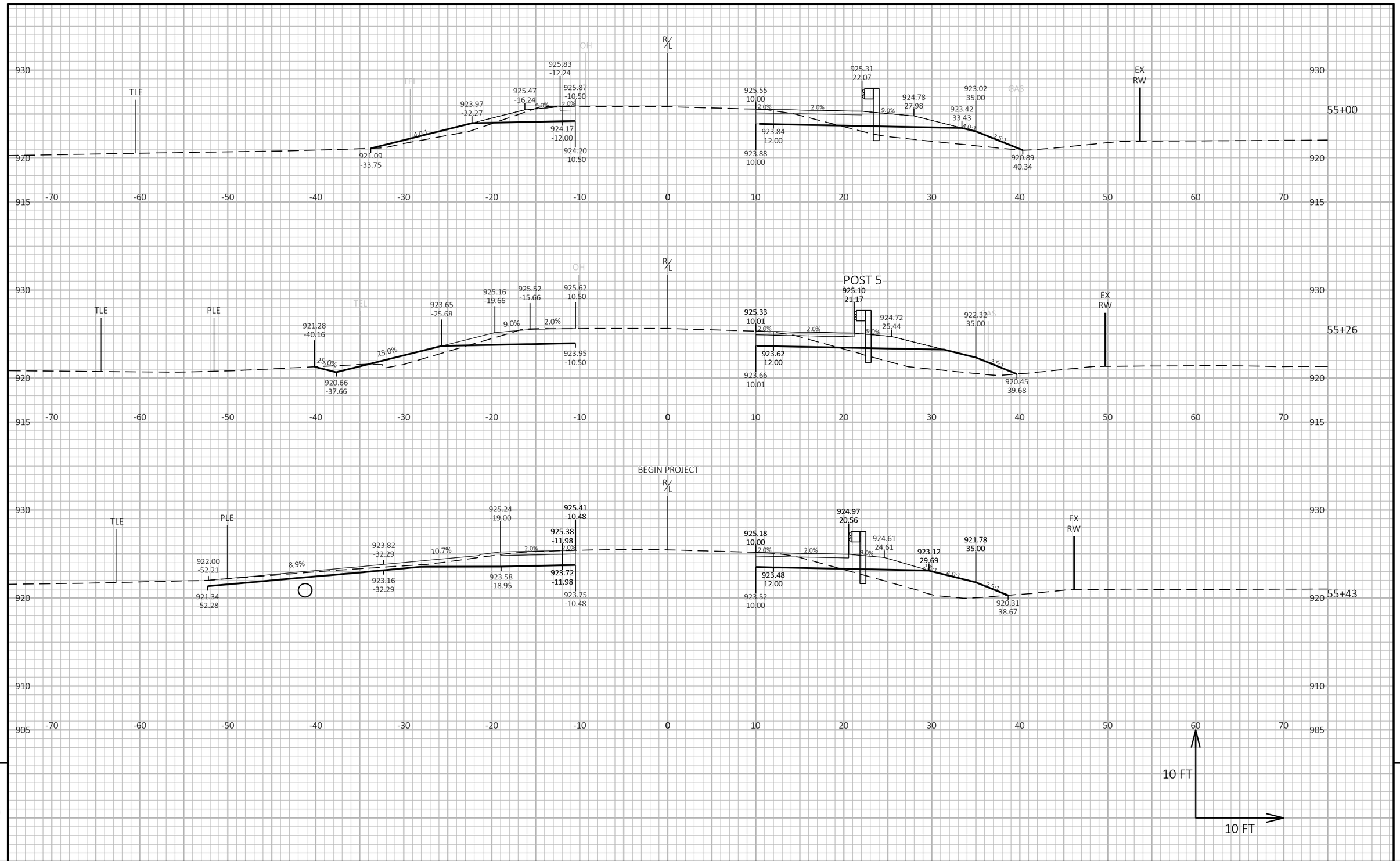
PLOT DATE : 8/24/2026 9:03 AM

PLOT BY : BROCK BEHNKE

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

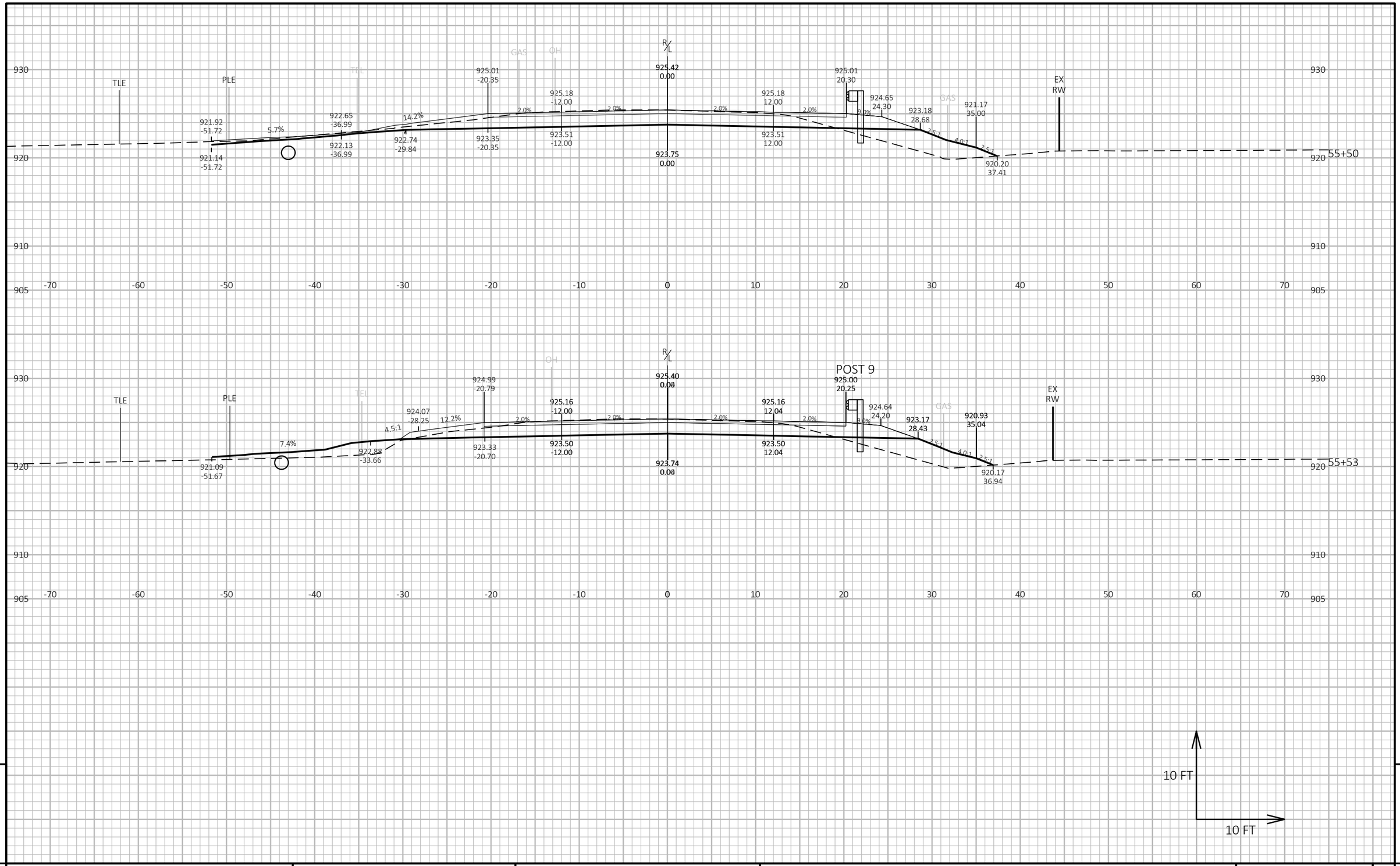



| | | | | |
|---|---|---|---|---|
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 123 E |

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 02

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

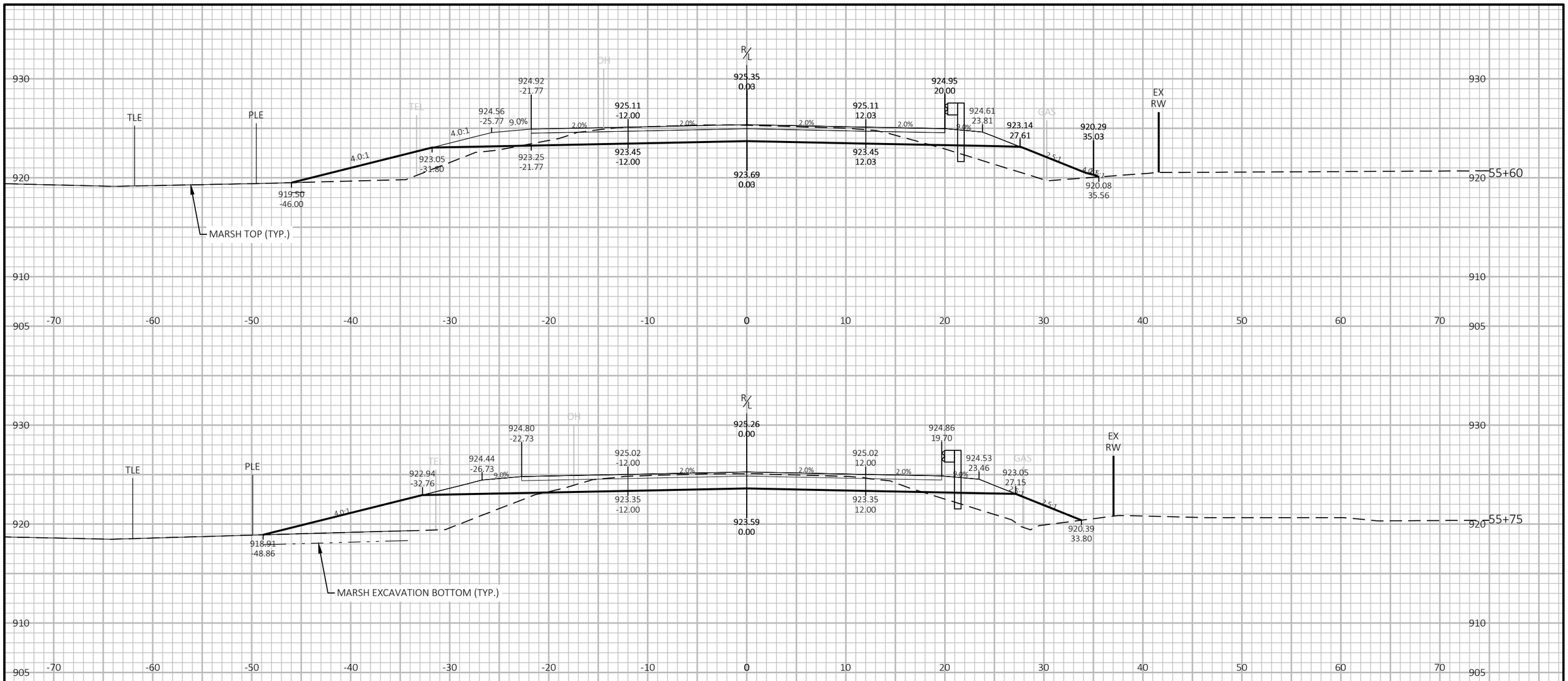
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| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 124 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 03

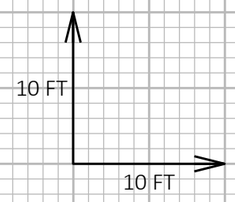
PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49










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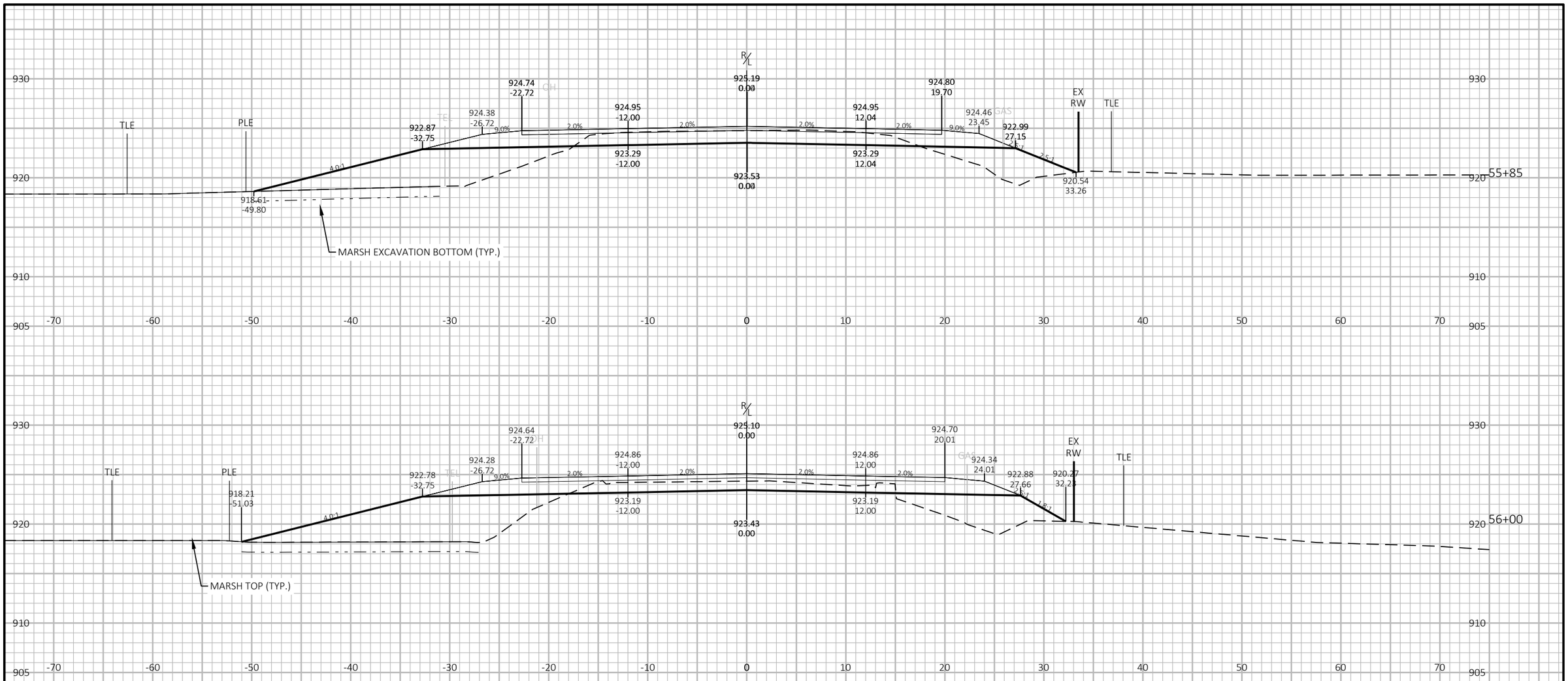
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 125 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 04

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

9

| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 126 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 05

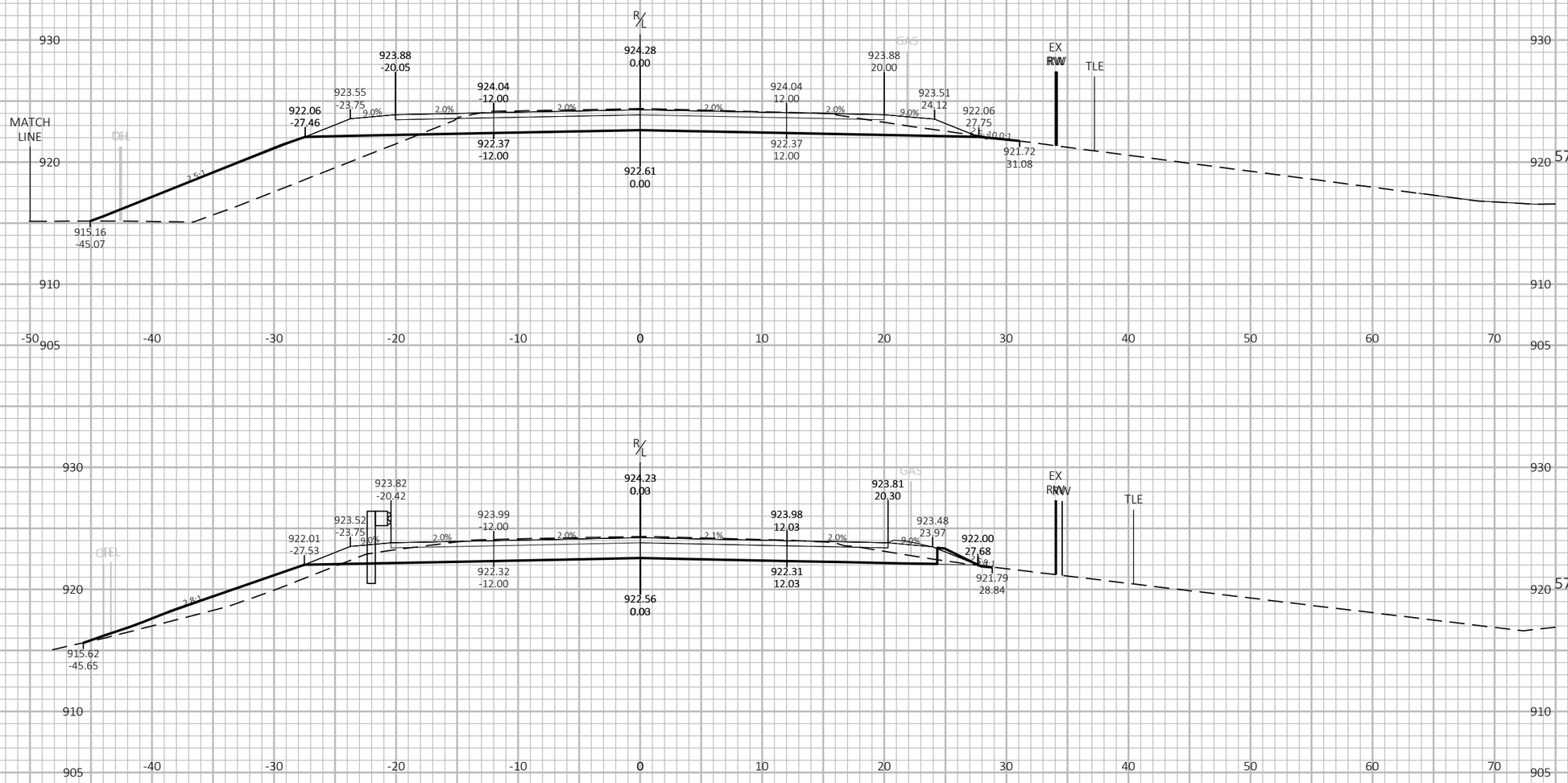
PLOT DATE : 8/24/2026 9:03 AM

PLOT BY : BROCK BEHNKE

PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

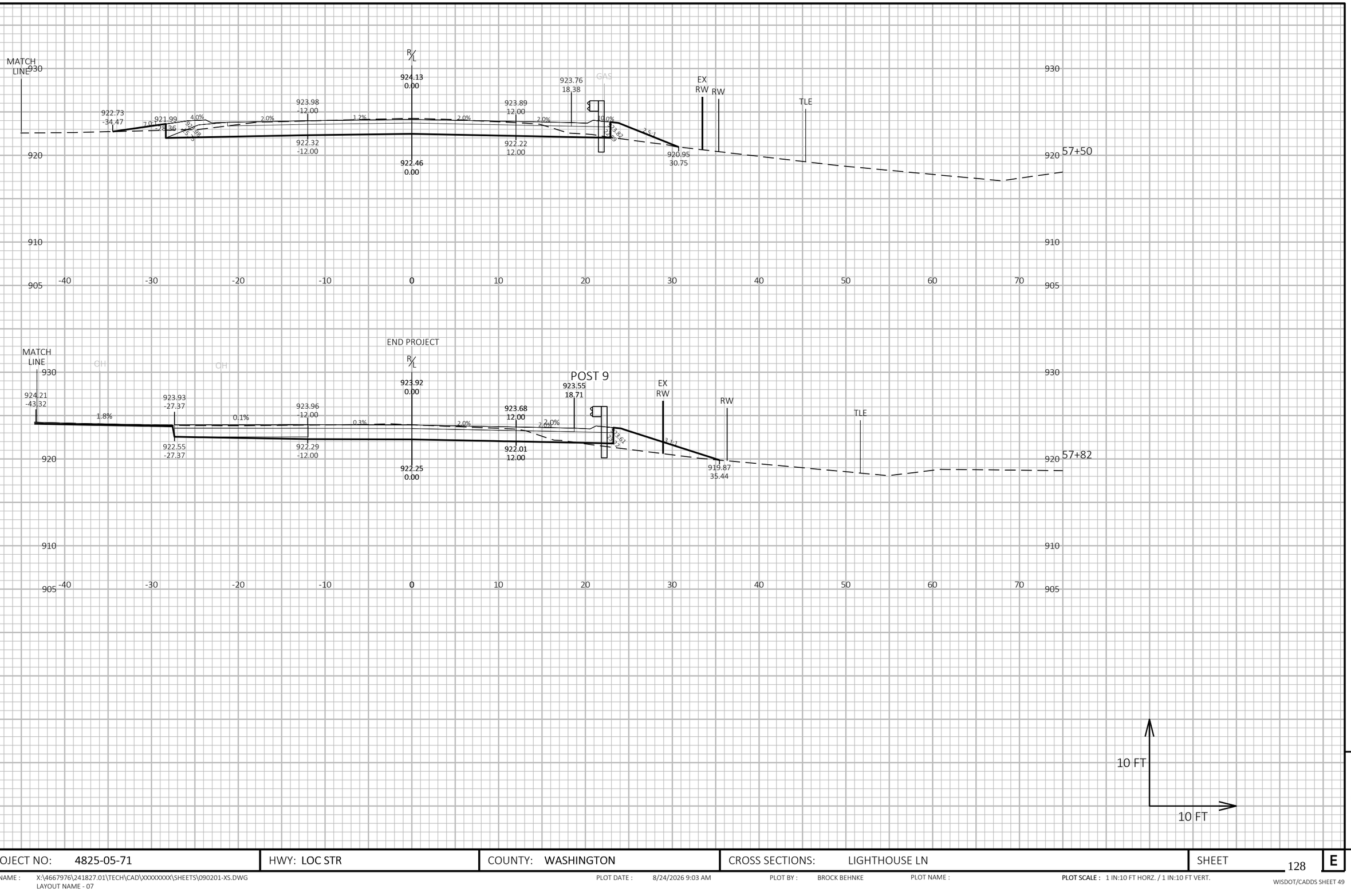



| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 127 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 06

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

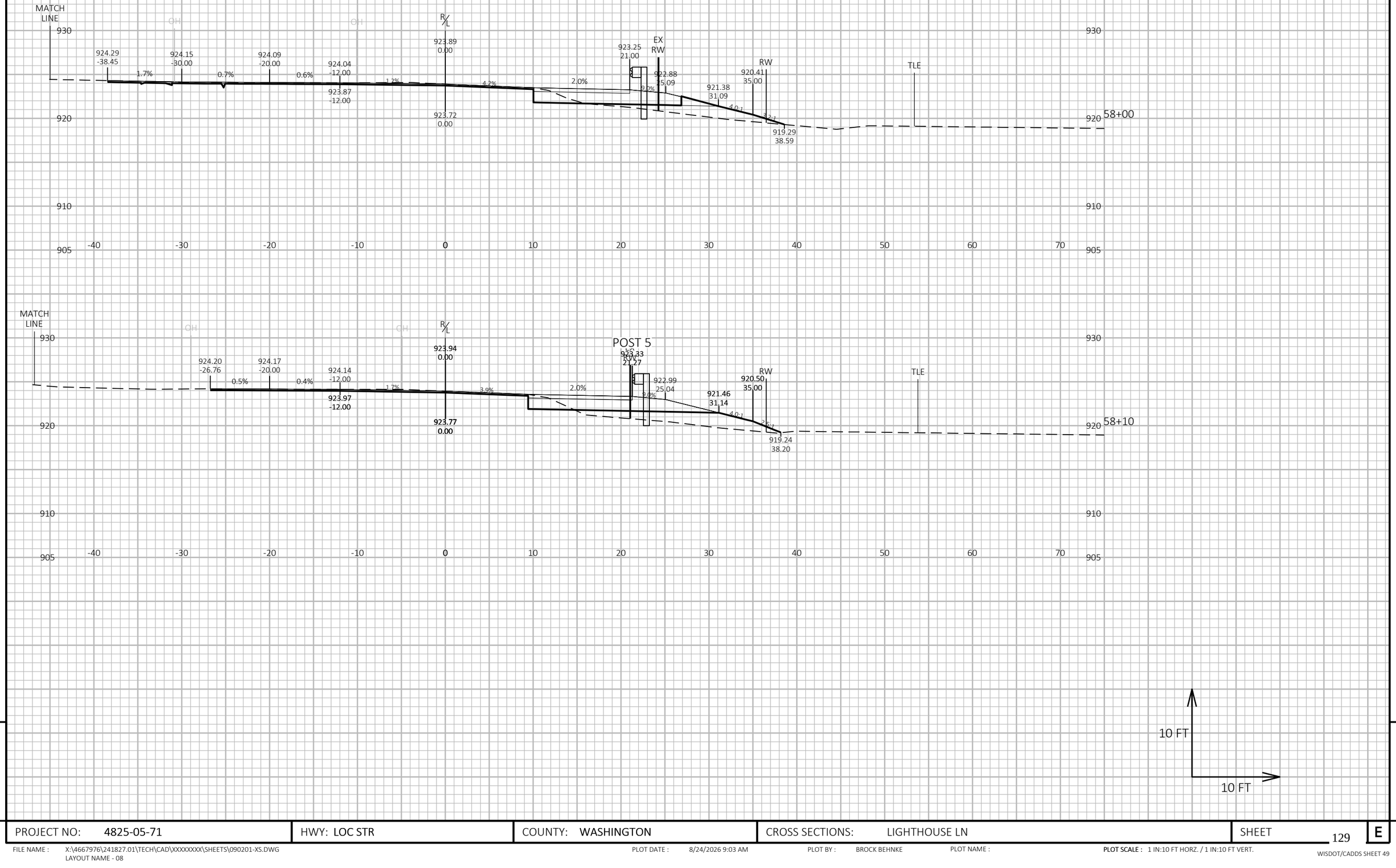



| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 128 E |
|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 07

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

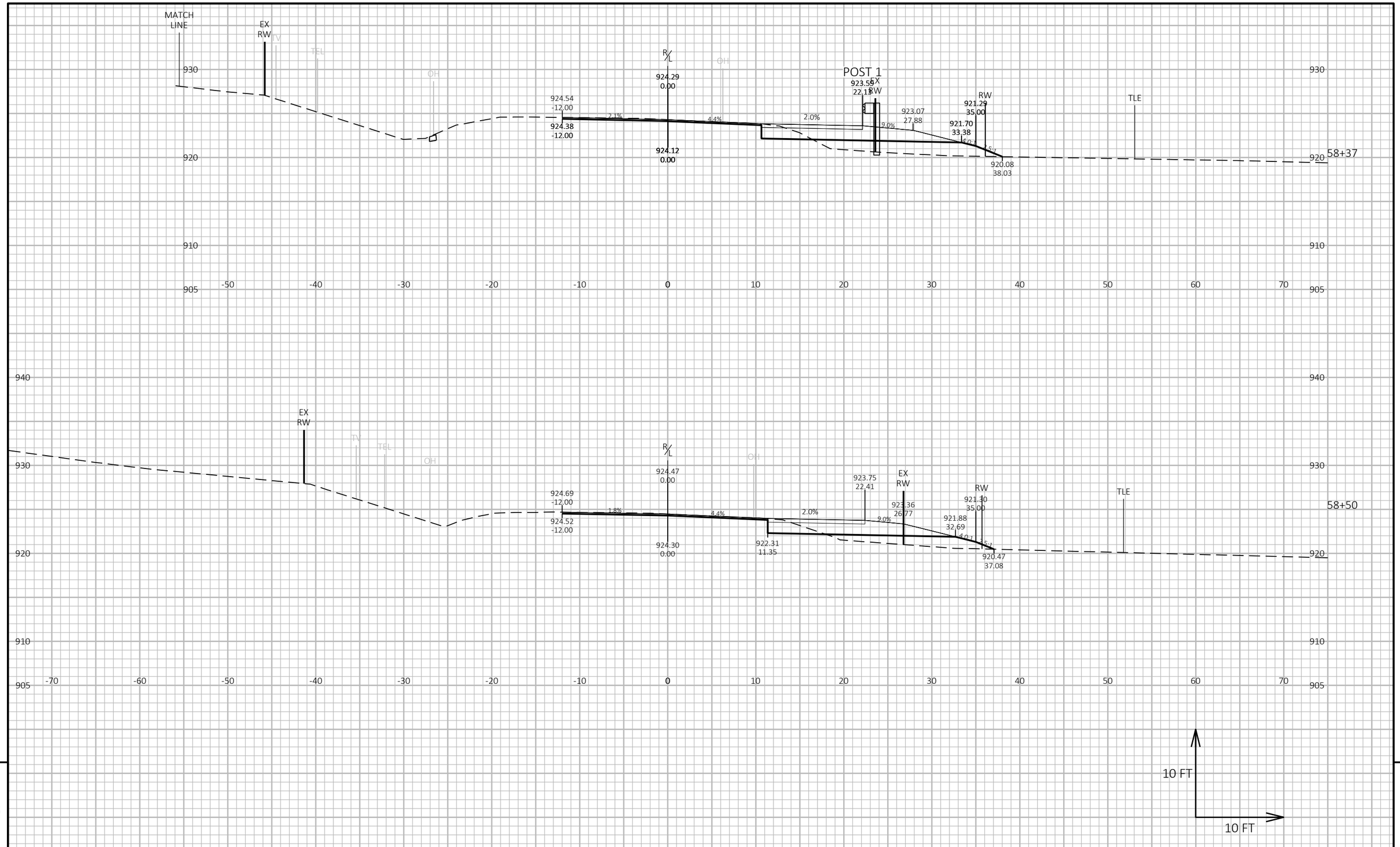



| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 129 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 08

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

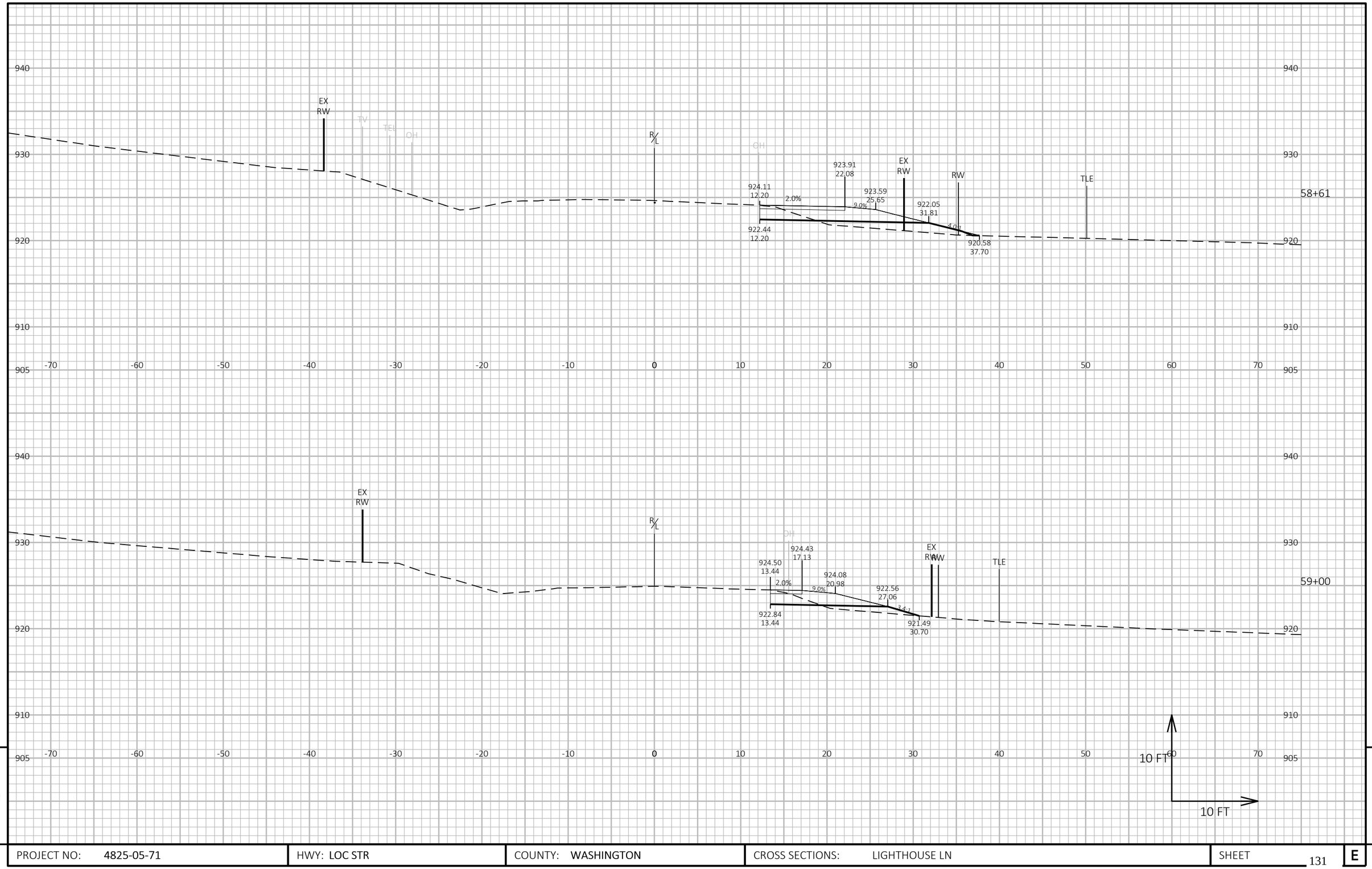



| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 130 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 09

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

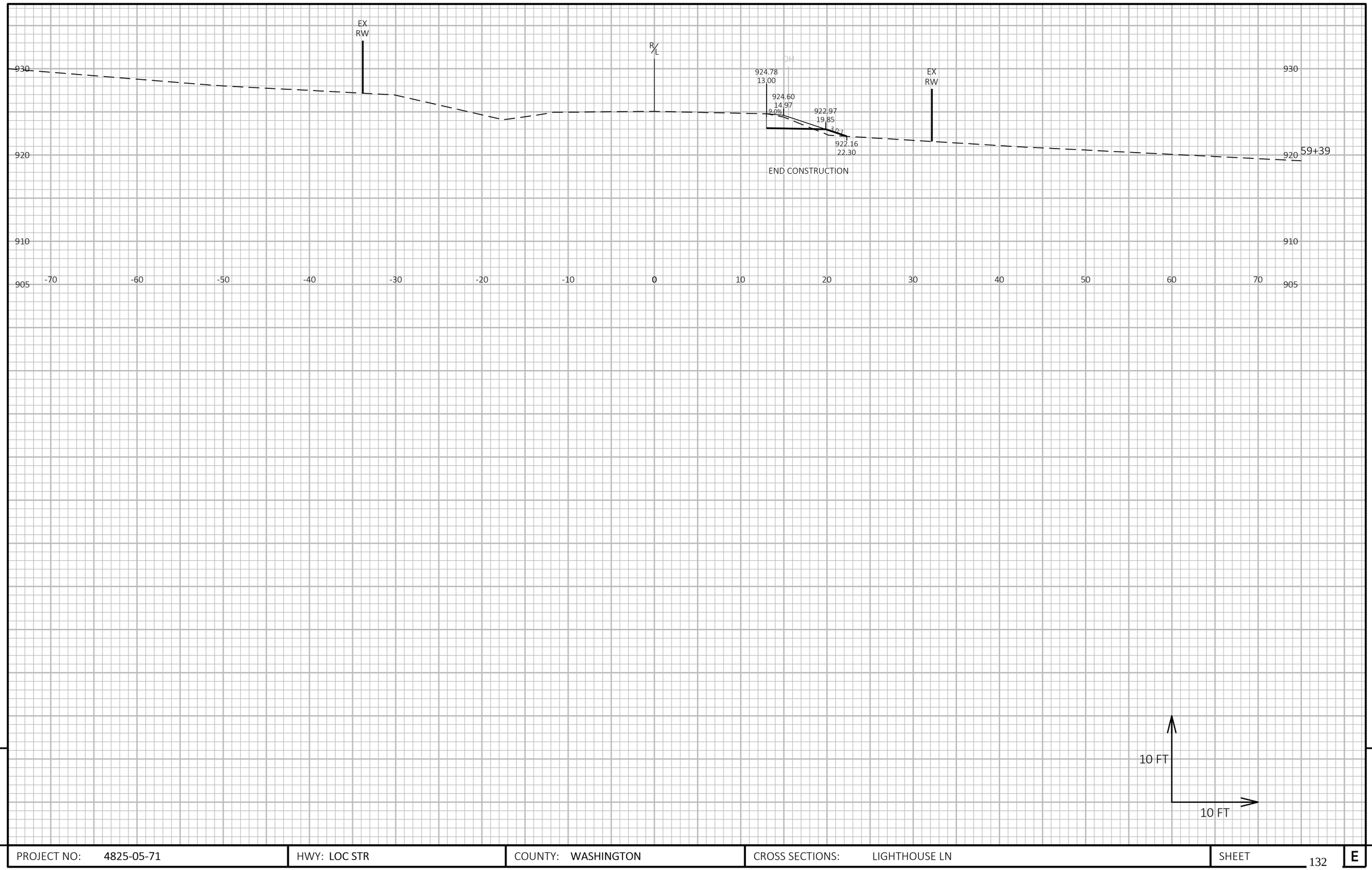



| | | | | |
|---|---|---|---|---|
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 131 E |

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 10

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




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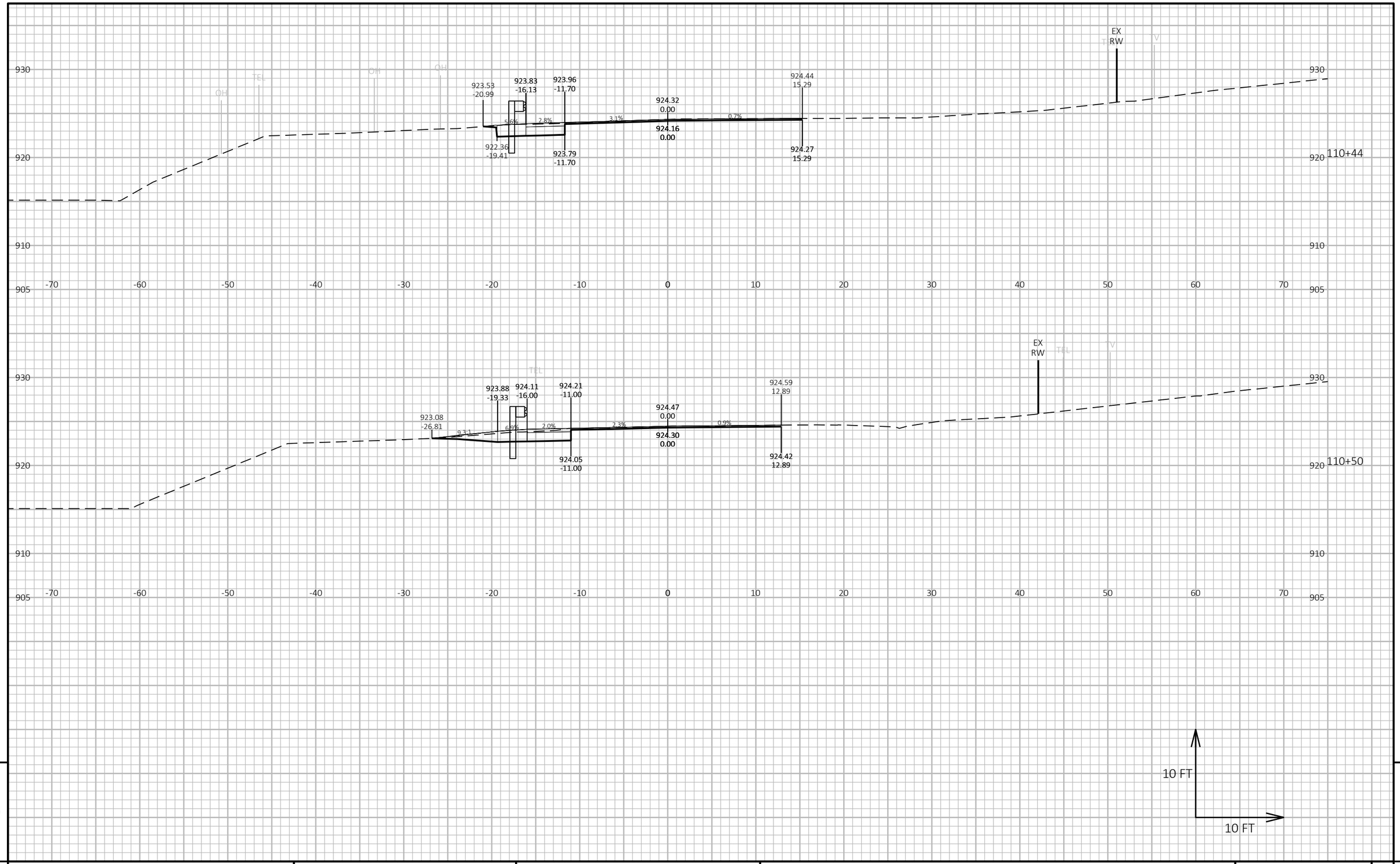
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: LIGHTHOUSE LN | SHEET 132 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 11

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




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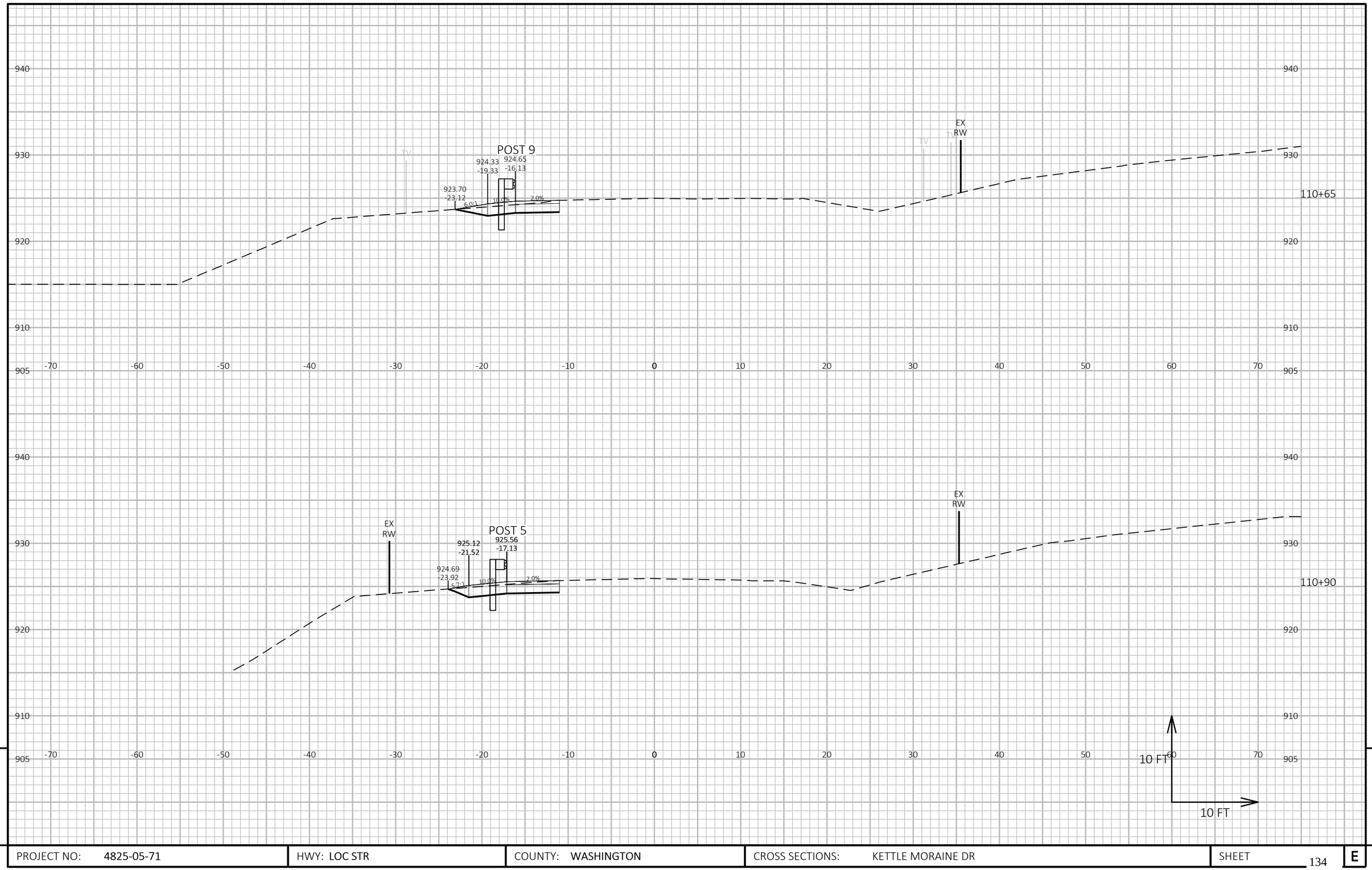
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: KETTLE MORAINE DR | SHEET 133 | E |
|---|---|---|---|---|---|

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FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 12

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




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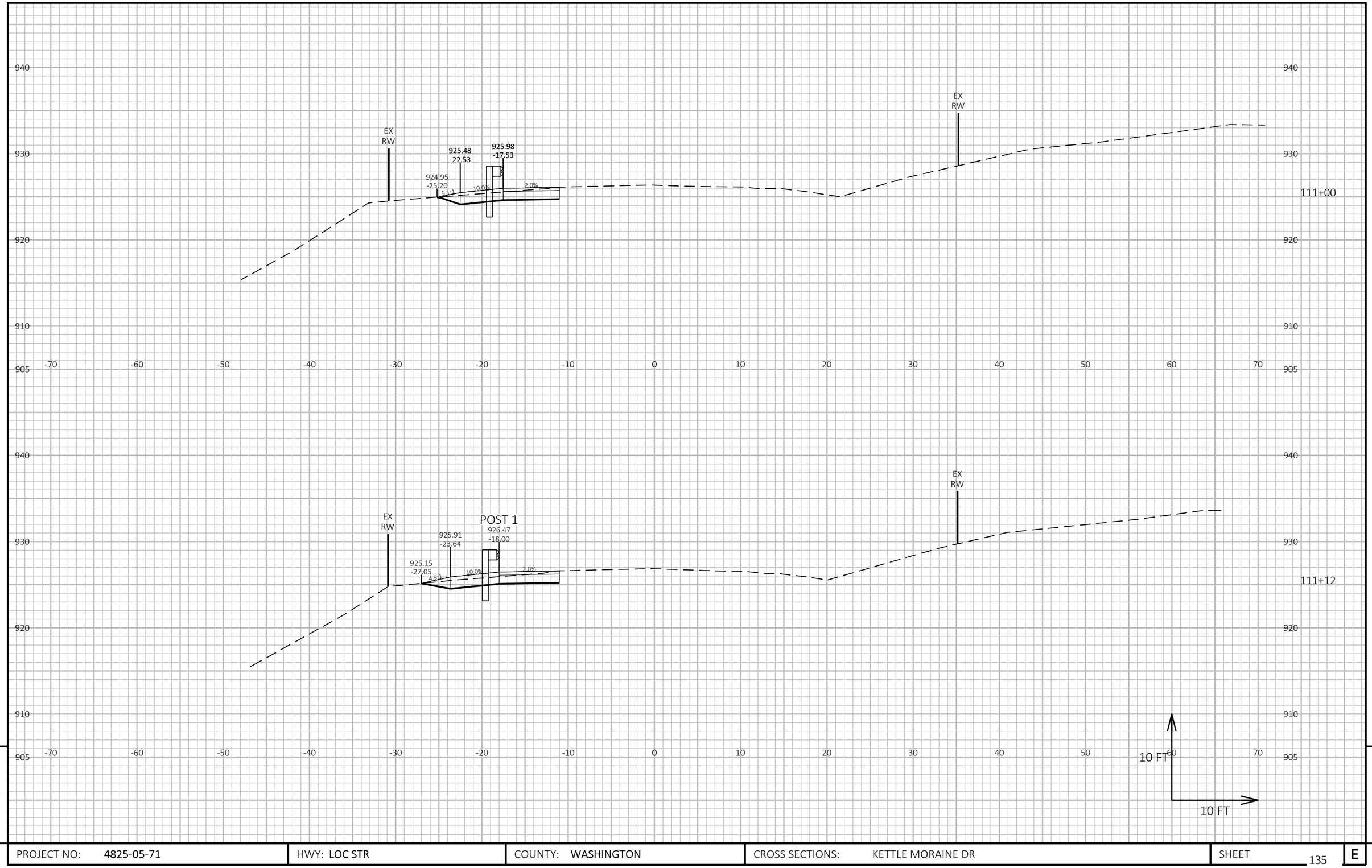
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| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: KETTLE MORAINE DR | SHEET 134 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




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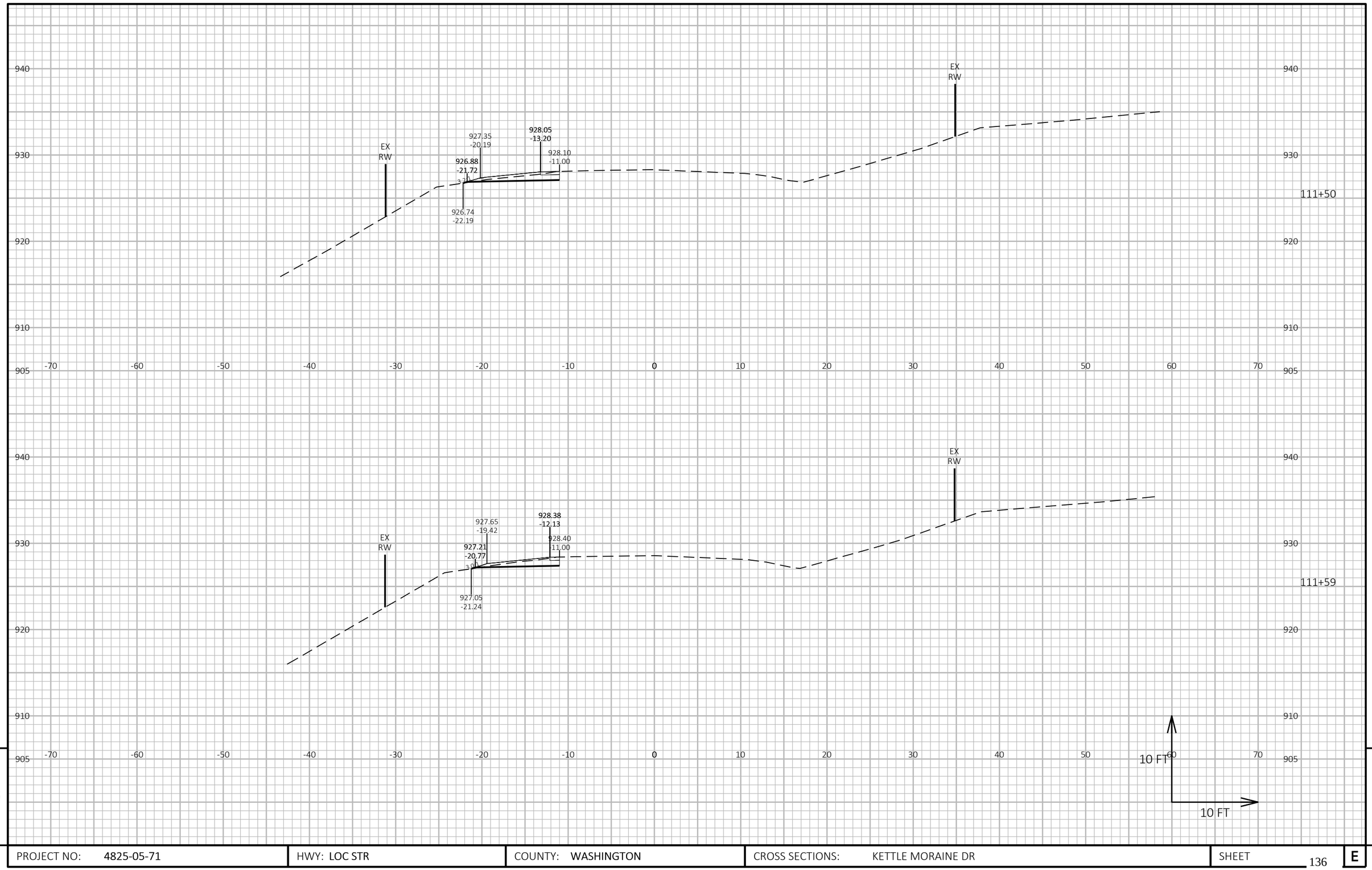
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: KETTLE MORAINE DR | SHEET 135 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 14

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




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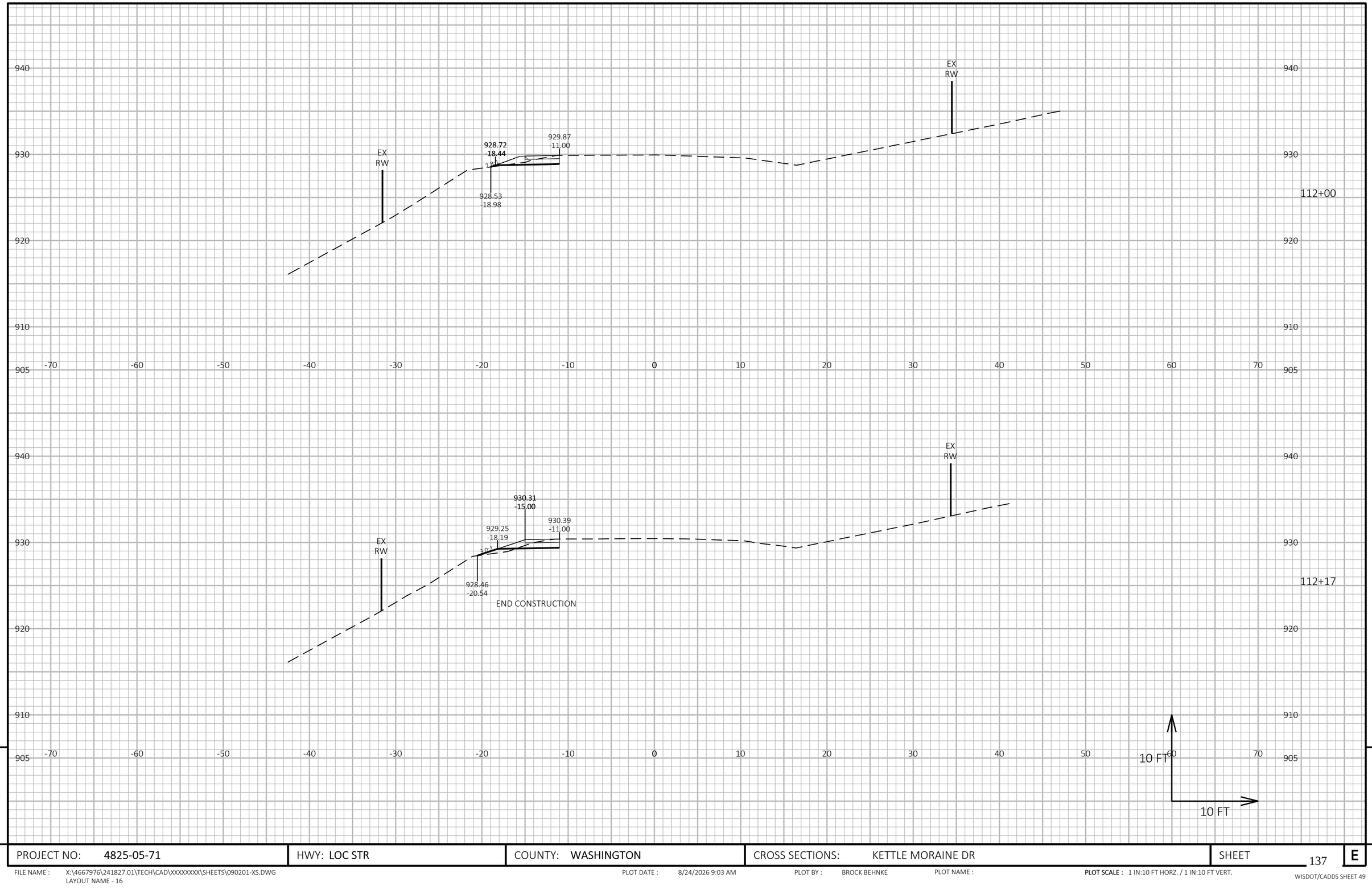
| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: KETTLE MORAINE DR | SHEET 136 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 15

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE PLOT NAME :

**PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




| PROJECT NO: 4825-05-71 | HWY: LOC STR | COUNTY: WASHINGTON | CROSS SECTIONS: KETTLE MORAINE DR | SHEET 137 | E |
|---|---|---|---|---|---|

FILE NAME : X:\4667976\241827.01\TECH\CAD\XXXXXXXX\SHEETS\090201-XS.DWG
LAYOUT NAME - 16

PLOT DATE : 8/24/2026 9:03 AM PLOT BY : BROCK BEHNKE 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.

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