WIS | JANUARY 2022

PROJECT ID: 6794-00-72

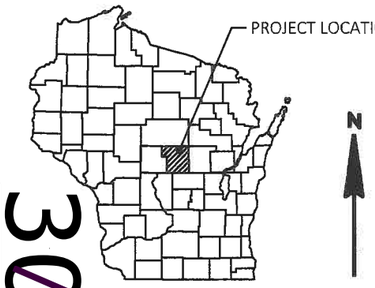
WITH: N/A

COUNTY: PORTAGE

ORDER OF SHEETS



TOTAL SHEETS = 58




30

DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2022 | = | 1,680 |
| A.A.D.T. | 2042 | = | 2,040 |
| D.H.V. | | = | < 15.0 |
| D.D. | | = | 60/40 |
| T. | | = | 10.0% |
| DESIGN SPEED | | = | 45 MPH |
| ESALS | | = | 280,000 |

CONVENTIONAL SYMBOLS

| PLAN | | PROFILE | |
|---|---|---|---|
| CORPORATE LIMITS | | GRADE LINE | |
| PROPERTY LINE | | ORIGINAL GROUND | |
| LOT LINE | | MARSH OR ROCK PROFILE (To be noted as such) | ROCK |
| LIMITED HIGHWAY EASEMENT | | SPECIAL DITCH | LABEL |
| EXISTING RIGHT OF WAY | | GRADE ELEVATION | 95.36 |
| PROPOSED OR NEW R/W LINE | | CULVERT (Profile View) | |
| SLOPE INTERCEPT | | UTILITIES | |
| REFERENCE LINE | 300'EB' | ELECTRIC | E |
| EXISTING CULVERT | | FIBER OPTIC | FO |
| PROPOSED CULVERT (Box or Pipe) | | GAS | G |
| COMBUSTIBLE FLUIDS | CAUTION | SANITARY SEWER | SAN |
| | | STORM SEWER | SS |
| MARSH AREA | | TELEPHONE | T |
| | | WATER | W |
| WOODED OR SHRUB AREA | | UTILITY PEDESTAL | |
| | | POWER POLE | |
| | | TELEPHONE POLE | |

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

**PLAN OF PROPOSED IMPROVEMENT**

# CTH K - MARATHON COUNTY LINE

**PLOVER RIVER BRIDGE B-49-0192**

## CTH Y

## PORTAGE COUNTY

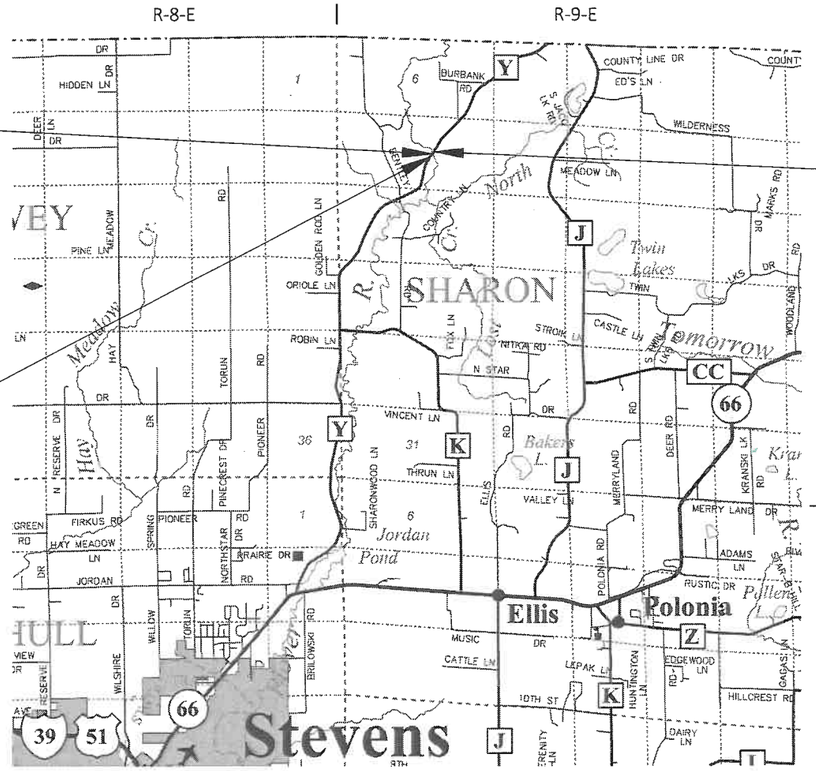
| STATE PROJECT NUMBER |
|---|
| 6794-00-72 |

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 6794-00-72 | WISC 2022128 | 1 |
| | | |
| | | |
| | | |

BRIDGE B-49-0192

END PROJECT
STA 11+75

BEGIN PROJECT
STA 8+25
Y = 253,576.21
X = 194,317.17




LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.066 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), PORTAGE 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 12A.

ACCEPTED FOR
COUNTY of PORTAGE

7/14/2021 (Date)
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY


MSA
146 North Central Ave, Marshfield WI 54449
(715) 384-2133 www.msa-ps.com



WISCONSIN
SEAN M. SPROMBERG
E-37771-008
SCHOFIELD, WI
PROFESSIONAL ENGINEER

7/13/2021

DATE: (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | MSA PROFESSIONAL SERVICES, INC. |
| Designer | MSA PROFESSIONAL SERVICES, INC. |
| Project Manager | MICHAEL GRAGE, PE |
| Regional Examiner | N/A |
| Regional Supervisor | DAN ERVA, PE |

APPROVED FOR THE DEPARTMENT

DATE: 7/14/2021 (Signature)

E

## STANDARD ABBREVIATIONS

| | |
|---|---|
| AC | ACRE |
| AGG | AGGREGATE |
| < | ANGLE |
| ASPH | ASPHALTIC |
| AC | ASPHALT CEMENT |
| ADT | AVERAGE DAILY TRAFFIC |
| B & B | BALLED AND BURLAPPED |
| BM | BENCH MARK |
| CB | CATCH BASIN |
| ` OR C/L | CENTER LINE |
| C-C | CENTER TO CENTER |
| CONC | CONCRETE |
| CO | COUNTY |
| CTH | COUNTY TRUNK HIGHWAY |
| CY | CUBIC YARD |
| CULV | CULVERT |
| CP | CULVERT PIPE |
| CPRC | CULVERT PIPE REINFORCED CONCRETE |
| C & G | CURB AND GUTTER |
| D | DEGREE OF CURVE |
| DHV | DESIGN HOUR VOLUME |
| DIA OR \| | DIAMETER |
| DIST | DISTRICT |
| DWY | DRIVEWAY |
| E | EAST |
| X | EAST GRID COORDINATE |
| EB | EASTBOUND |
| ELEC | ELECTRIC |
| EL OR ELEV | ELEVATION |
| EMB | EMBANKMENT |
| EW | ENDWALL |
| ESALS | EQUIVALENT SINGLE AXLE LOADS |
| EXC | EXCAVATION |
| EBS | EXCAVATION BELOW SUBGRADE |
| EXIST | EXISTING |
| EXP | EXPANSION |
| F-F | FACE TO FACE |
| FERT | FERTILIZER |
| FE | FIELD ENTRANCE |
| F/L | FLOW LINE |
| FT | FOOT |
| GN | GRID NORTH |
| HR | HANDICAP RAMP |
| HT | HEIGHT |
| CWT | HUNDREDWEIGHT |
| HYD | HYDRANT |
| IN DIA | INCH DIAMETER |
| INL | INLET |
| ID | INSIDE DIAMETER |
| I | INTERSECTION ANGLE |
| IE | INVERT ELEVATION |
| IP | IRON PIPE OR PIN |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LF | LINEAR FOOT |
| LC | LONG CHORD OF CURVE |
| LCB | LONG CHORD BEARING |
| LS | LUMP SUM |
| MH | MANHOLE |
| N | NORTH |
| Y | NORTH GRID COORDINATE |
| OE | OUTLET ELEVATION |
| OL | OUT LOT |
| OD | OUTSIDE DIAMETER |
| OH | OVERHEAD LINES |
| PAVT | PAVEMENT |
| PLE | PERMANENT LIMITED EASEMENT |
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| PT | POINT OF TANGENCY |
| PCC | PORTLAND CEMENT CONCRETE |
| LB | POUND |
| PE | PRIVATE ENTRANCE |
| R OR RAD | RADIUS |
| RR | RAILROAD |
| R | RANGE |
| ~ OR R/L | REFERENCE LINE |
| REQD | REQUIRED |
| RT | RIGHT |
| R/ W | RIGHT-OF-WAY |
| RD | ROAD |
| SALV | SALVAGED |
| SAN | SANITARY SEWER |
| SECT | SECTION |
| SHLDR | SHOULDER |
| SW | SIDEWALK |
| S | SOUTH |
| SB | SOUTHBOUND |
| SPECS | SPECIFICATIONS |
| SQ | SQUARE |
| SF OR SQ FT | SQUARE FEET |
| SY | SQUARE YARD |
| SSPRC | STORM SEWER PIPE REINFORCED CONCRETE |
| STD | STANDARD |
| SDD | STANDARD DETAIL DRAWINGS |
| STH | STATE TRUNK HIGHWAYS |
| STA | STATION |
| SS | STORM SEWER |
| T | TANGENT |
| TEL | TELEPHONE |
| TEMP | TEMPORARY |
| TLE | TEMPORARY LIMITED EASEMENT |
| T | TON |
| TC | TOP OF CURB |
| TN | TOWN |
| TRANS | TRANSITION |
| T | TRUCKS (percent of) |
| TYP | TYPICAL |
| UNCL | UNCLASSIFIED |
| USH | UNITED STATES HIGHWAY |
| VAR | VARIABLE |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| VOL | VOLUME |
| WM | WATER MAIN |
| WV | WATER VALVE |
| W | WEST |
| WB | WESTBOUND |
| YD | YARD |

## SECTION 2 ORDER



## UTILITIES

OVERHEAD ELECTRIC:
CENTRAL WISCONSIN ELECTRIC COOPERATIVE
10401 LYSTUL ROAD, P.O. BOX 100
ROSHOLT, WI 54473
ATTN: DENNIS MAGEE
PHONE: (715) 677-2211
dennis.magee@cwecoop.com

BURIED TELEPHONE:
AT&T
70 E DIVISION STREET
FOND DU LAC, WI 54935
ATTN: CHARLES BARTELT
PHONE: (920) 929-1013
cb1461@att.com

## DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
146 NORTH CENTRAL AVE
MARSHFIELD, WI 54449
ATTN: SEAN SPROMBERG, PE
PHONE: (715) 304-0451
sspromberg@msa-ps.com

## COUNTY CONTACT

PORTAGE COUNTY HIGHWAY DEPARTMENT
800 PLOVER ROAD
PLOVER, WI 54467
ATTN: NATHAN CHECK, COMMISSIONER
PHONE: (715) 345-5230
checkn@co.portage.wi.us

## DNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
ATTN: CASEY JONES
PHONE: (715) 213-6571
Casey.Jones@wisconsin.gov

## WISDOT CONTACT

WISCONSIN DEPARTMENT OF TRANSPORTATION
1681 2ND AVENUE SOUTH
WISCONSIN RAPIDS, WI 54495
ATTN: JASON SCHAEFFER
PHONE: (715) 421-7309
jason.schaeffer@dot.wi.gov

## 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 STRIP-<br>TURF | .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 SLOPE-<br>TURF | | | .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 = 0.53 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.40 ACRES

* - NOT A MEMBER OF DIGGERS HOTLINE

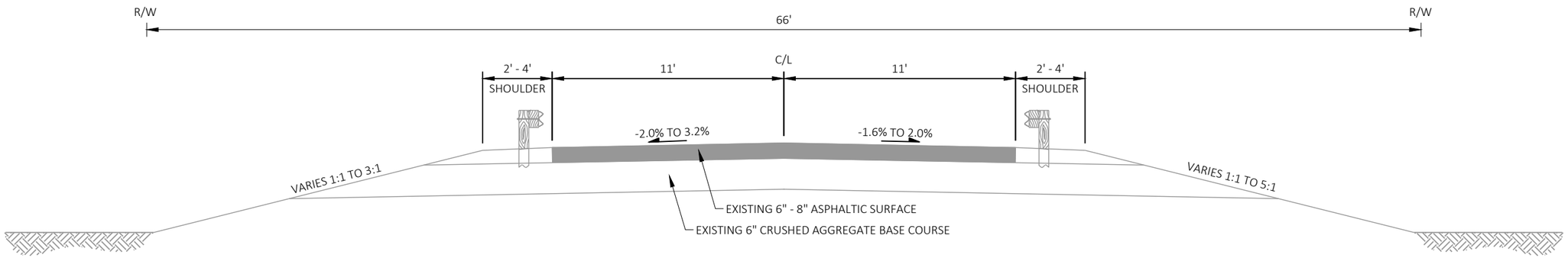
DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

## 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.

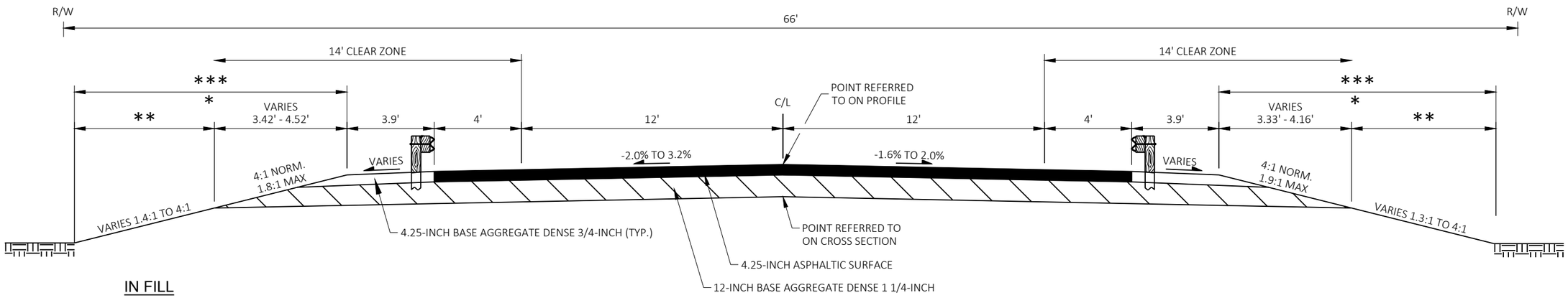
THE 4.25" ASPHALTIC SURFACE SHALL CONSIST OF A 2" UPPER LAYER WITH NO. 4 (12.5 MM) NOMINAL SIZE AGGREGATE AND A 2.25" LOWER LAYER WITH NO. 4 (12.5 MM) NOMINAL SIZE AGGREGATE.

RIGHT OF WAY LOCATIONS ARE APPROXIMATE BASED ON GIS.




## EXISTING TYPICAL SECTION

STA 8+25 - STA 11+75




IN FILL

## PROPOSED TYPICAL SECTION

STA 8+25 - STA 11+75
STA. 9+50 TO STA. 10+50, 2.0% NORMAL CROWN

NOTES:

* RIPRAP HEAVY OVER GEOTEXTILE TYPE HR IN AREAS STEEPER THAN 2:1 SLOPES (SEE CROSS SECTIONS FOR LIMITS)

** SALVAGED TOPSOIL AND EROSION MAT URBAN CLASS I, TYPE B LIMITS

*** SEEDING MIXTURE #20, SEEDING TEMPORARY, & FERTILIZER TYPE B LIMITS

| PROJECT NO: 6794-00-72 | HWY: CTH Y | COUNTY: PORTAGE | TYPICAL SECTIONS | SHEET 3 | E |
|---|---|---|---|---|---|

## Estimate Of Quantities

6794-00-72

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0002 | 201.0105 | Clearing | STA | 1.000 | 1.000 |
| 0004 | 201.0205 | Grubbing | STA | 1.000 | 1.000 |
| 0006 | 203.0260 | Removing Structure Over Waterway Minimal Debris (structure) 01. B-49-3 | EACH | 1.000 | 1.000 |
| 0008 | 205.0100 | Excavation Common | CY | 385.000 | 385.000 |
| 0010 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-49-192 | LS | 1.000 | 1.000 |
| 0012 | 210.1500 | Backfill Structure Type A | TON | 352.000 | 352.000 |
| 0014 | 213.0100 | Finishing Roadway (project) 01. 6794-00-72 | EACH | 1.000 | 1.000 |
| 0016 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 44.000 | 44.000 |
| 0018 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 820.000 | 820.000 |
| 0020 | 455.0605 | Tack Coat | GAL | 68.000 | 68.000 |
| 0022 | 465.0105 | Asphaltic Surface | TON | 228.000 | 228.000 |
| 0024 | 502.0100 | Concrete Masonry Bridges | CY | 166.000 | 166.000 |
| 0026 | 502.3200 | Protective Surface Treatment | SY | 365.000 | 365.000 |
| 0028 | 503.0137 | Prestressed Girder Type I 36W-Inch | LF | 308.000 | 308.000 |
| 0030 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 4,220.000 | 4,220.000 |
| 0032 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 21,230.000 | 21,230.000 |
| 0034 | 506.2605 | Bearing Pads Elastomeric Non-Laminated | EACH | 8.000 | 8.000 |
| 0036 | 506.4000 | Steel Diaphragms (structure) 01. B-49-192 | EACH | 3.000 | 3.000 |
| 0038 | 513.4061 | Railing Tubular Type M | LF | 218.000 | 218.000 |
| 0040 | 516.0500 | Rubberized Membrane Waterproofing | SY | 18.000 | 18.000 |
| 0042 | 550.0500 | Pile Points | EACH | 16.000 | 16.000 |
| 0044 | 550.0600 | Pile Redriving | EACH | 16.000 | 16.000 |
| 0046 | 550.2108 | Piling CIP Concrete 10 3/4 X 0.50-Inch | LF | 920.000 | 920.000 |
| 0048 | 606.0300 | Riprap Heavy | CY | 389.000 | 389.000 |
| 0050 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 140.000 | 140.000 |
| 0052 | 614.0920 | Salvaged Rail | LF | 517.000 | 517.000 |
| 0054 | 614.2300 | MGS Guardrail 3 | LF | 50.000 | 50.000 |
| 0056 | 614.2500 | MGS Thrie Beam Transition | LF | 157.200 | 157.200 |
| 0058 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 4.000 | 4.000 |
| 0060 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 6794-00-72 | EACH | 1.000 | 1.000 |
| 0062 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0064 | 624.0100 | Water | MGAL | 25.000 | 25.000 |
| 0066 | 625.0500 | Salvaged Topsoil | SY | 80.000 | 80.000 |
| 0068 | 628.1504 | Silt Fence | LF | 520.000 | 520.000 |
| 0070 | 628.1520 | Silt Fence Maintenance | LF | 520.000 | 520.000 |
| 0072 | 628.1905 | Mobilizations Erosion Control | EACH | 3.000 | 3.000 |
| 0074 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0076 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 80.000 | 80.000 |
| 0078 | 628.6005 | Turbidity Barriers | SY | 340.000 | 340.000 |
| 0080 | 629.0210 | Fertilizer Type B | CWT | 0.500 | 0.500 |
| 0082 | 630.0120 | Seeding Mixture No. 20 | LB | 8.000 | 8.000 |
| 0084 | 630.0200 | Seeding Temporary | LB | 8.000 | 8.000 |
| 0086 | 630.0500 | Seed Water | MGAL | 6.000 | 6.000 |
| 0088 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 4.000 | 4.000 |
| 0090 | 637.2230 | Signs Type II Reflective F | SF | 12.000 | 12.000 |
| 0092 | 638.2602 | Removing Signs Type II | EACH | 4.000 | 4.000 |
| 0094 | 638.3000 | Removing Small Sign Supports | EACH | 4.000 | 4.000 |
| 0096 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0098 | 643.0420 | Traffic Control Barricades Type III | DAY | 1,360.000 | 1,360.000 |

## Estimate Of Quantities

6794-00-72

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0100 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 2,040.000 | 2,040.000 |
| 0102 | 643.0900 | Traffic Control Signs | DAY | 765.000 | 765.000 |
| 0104 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0106 | 645.0111 | Geotextile Type DF Schedule A | SY | 88.000 | 88.000 |
| 0108 | 645.0120 | Geotextile Type HR | SY | 862.000 | 862.000 |
| 0110 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 1,400.000 | 1,400.000 |
| 0112 | 650.4500 | Construction Staking Subgrade | LF | 272.000 | 272.000 |
| 0114 | 650.5000 | Construction Staking Base | LF | 272.000 | 272.000 |
| 0116 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-49-192 | LS | 1.000 | 1.000 |
| 0118 | 650.9910 | Construction Staking Supplemental Control (project) 01. 6794-00-72 | LS | 1.000 | 1.000 |
| 0120 | 650.9920 | Construction Staking Slope Stakes | LF | 272.000 | 272.000 |
| 0122 | 690.0150 | Sawing Asphalt | LF | 56.000 | 56.000 |
| 0124 | 715.0502 | Incentive Strength Concrete Structures | DOL | 996.000 | 996.000 |
| 0126 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. 10+00 | EACH | 1.000 | 1.000 |
| 0128 | ASP.1T0A | On-the-Job Training Apprentice at $5.00/HR | HRS | 300.000 | 300.000 |
| 0130 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 600.000 | 600.000 |

3

## CLEARING AND GRUBBING

| STATION | TO | STATION | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA |
|---|---|---|---|---|---|
| 8+00 | - | 9+00 | | 1 | 1 |
| | | | TOTAL 0010 | 1 | 1 |

## EXCAVATION COMMON

| STATION | TO | STATION | LOCATION | 205.0100 EXCAVATION COMMON CY |
|---|---|---|---|---|
| 8+25 | - | 9+60.75 | MAINLINE | 208 |
| 10+39.25 | - | 11+75 | MAINLINE | 177 |
| | | | TOTAL | 385 |

## BASE AGGREGATE

| STATION | TO | STATION | LOCATION | 305.0110 BASE AGGREGATE DENSE 3/4-INCH TON | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON | 624.0100 WATER MGAL |
|---|---|---|---|---|---|---|
| 8+25 | - | 9+60.75 | MAINLINE | 24 | 420 | 13 |
| 10+39.25 | - | 11+75 | MAINLINE | 20 | 400 | 12 |
| | | | TOTAL | 44 | 820 | 25 |

## ASPHALTIC SURFACE

| STATION | LOCATION | 455.0600 TACK COAT TON | 465.0105 ASPHALTIC SURFACE TON |
|---|---|---|---|
| 9+60.75 | MAINLINE | 34 | 114 |
| 11+75 | MAINLINE | 34 | 114 |
| | TOTAL | 68 | 228 |

## RIPRAP HEAVY AND GEOTEXTILE TYPE HR

| STATION | TO | STATION | LOCATION | 606.0300 RIPRAP HEAVY CY | 645.0120 GEOTEXTILE TYPE HR SY |
|---|---|---|---|---|---|
| 8+25 | - | 9+47 | MAINLINE, LT. | 67 | 161 |
| 8+25 | - | 9+47 | MAINLINE, RT. | 15 | 35 |
| 10+53 | - | 11+75 | MAINLINE, LT. | 80 | 187 |
| 10+53 | - | 11+75 | MAINLINE, RT. | 77 | 179 |
| | | | TOTAL | 239 | 562 |

## MGS GUARDRAIL

| STATION | TO | STATION | LOCATION | 614.0920 SALVAGED RAIL LF | 614.2300 MGS GUARDRAIL 3 LF | 614.2500 MGS THRIE BEAM TRANSITION LF | 614.2610 MGS GUARDRAIL TERMINAL EAT EACH |
|---|---|---|---|---|---|---|---|
| 8+44.56 | - | 8+97.68 | MAINLINE, LT & RT | | - | - | 2 |
| 8+97.68 | - | 9+10.18 | MAINLINE, LT & RT | | 25 | - | - |
| 9+10.18 | - | 9+49.58 | MAINLINE, LT & RT | | - | 78.6 | - |
| 10+50.42 | - | 10+89.92 | MAINLINE, LT & RT | | - | 78.6 | - |
| 10+89.82 | - | 11+02.32 | MAINLINE, LT & RT | | 25 | - | - |
| 11+02.32 | - | 11+55.45 | MAINLINE, LT & RT | | - | - | 2 |
| 8+49.5 | - | 9+77.0 | MAINLINE, LT & RT | 255 | - | - | - |
| 10+23 | - | 11+54 | MAINLINE, LT & RT | 262 | - | - | - |
| | | | TOTAL | 517 | 50 | 157.2 | 4 |

## RESTORATION

| STATION | TO | STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 628.2008 EROSION MAT URBAN CLASS I TYPE B SY | 629.0210 FERTILIZER TYPE B CWT | 630.0120 SEEDING MIXTURE NO. 20 LB | 630.0200 SEEDING TEMPORARY LB | 630.0500 SEED WATER MGAL |
|---|---|---|---|---|---|---|---|---|---|
| 8+25 | - | 9+47 | MAINLINE, LT. | 18 | 18 | 0.1 | 2 | 2 | 1 |
| 8+25 | - | 9+47 | MAINLINE, RT. | 28 | 28 | 0.1 | 2 | 2 | 2 |
| 10+53 | - | 11+75 | MAINLINE, LT. | 7 | 7 | 0.1 | 1 | 1 | 1 |
| 10+53 | - | 11+75 | MAINLINE, RT. | 13 | 13 | 0.1 | 1 | 1 | 1 |
| | - | | UNDISTRIBUTED | 14 | 14 | 0.1 | 2 | 2 | 1 |
| | | | TOTAL | 80 | 80 | 0.5 | 8 | 8 | 6 |

3

## EROSION CONTROL

| STATION | TO | STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF | 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH | 628.6005 TURBIDITY BARRIERS SY |
|---|---|---|---|---|---|---|---|---|
| 8+25 | - | 9+20 | MAINLINE, LT. | 100 | 100 | - | - | - |
| 8+25 | - | 9+29 | MAINLINE, RT. | 105 | 105 | - | - | - |
| 9+20 | - | 9+72 | MAINLINE, LT. & RT. | - | - | - | - | 141 |
| 10+28 | - | 11+08 | MAINLINE, LT. & RT. | - | - | - | - | 132 |
| 11+08 | - | 11+75 | MAINLINE, LT. | 71 | 71 | - | - | - |
| 10+39 | - | 11+75 | MAINLINE, RT. | 141 | 141 | - | - | - |
| | - | | UNDISTRIBUTED | 103 | 103 | 3 | 2 | 67 |
| | | | TOTAL | 520 | 520 | 3 | 2 | 340 |

## SIGNING

| STATION | LOCATION | 634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|
| 9+46 | MAINLINE, LT. | 1 | 3 | 1 | 1 | W5-52L |
| 9+46 | MAINLINE, RT. | 1 | 3 | 1 | 1 | W5-52R |
| 10+53 | MAINLINE, LT. | 1 | 3 | 1 | 1 | W5-52L |
| 10+53 | MAINLINE, RT. | 1 | 3 | 1 | 1 | W5-52R |
| | TOTAL | 4 | 12 | 4 | 4 | |

## TRAFFIC CONTROL

| LOCATION | DAYS | TRAFFIC CONTROL BARRICADES TYPE III EACH | 643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY | TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH | 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY | TRAFFIC CONTROL SIGNS EACH | 643.0900 TRAFFIC CONTROL SIGNS DAY |
|---|---|---|---|---|---|---|---|
| JUNCTION WITH CTH K | 85 | 2 | 170 | 4 | 340 | 5 | 425 |
| BEGIN OF PROJECT | 85 | 7 | 595 | 10 | 850 | 2 | 170 |
| END OF PROJECT | 85 | 7 | 595 | 10 | 850 | 2 | 170 |
| JUNCTION WITH CTH J | 85 | 2 | 170 | 4 | 340 | 5 | 425 |
| | TOTAL | | 1,360 | | 2,040 | | 765 |

## PAVEMENT MARKING

| STATION | TO | STATION | LOCATION | 646.1020 MARKING LINE EPOXY 4-INCH LF | REMARKS |
|---|---|---|---|---|---|
| 8+25 | - | 11+75 | MAINLINE, C/L | 700 | SOLID DOUBLE YELLOW |
| 8+25 | - | 11+75 | MAINLINE, LT &RT | 700 | SOLID WHITE |
| | | | TOTAL | 1,400 | |

## CONSTRUCTION STAKING

| STATION | TO | STATION | LOCATION | 650.4500 CONSTRUCTION STAKING SUBGRADE LF | 650.5000 CONSTRUCTION STAKING BASE LF | 650.9920 CONSTRUCTION STAKING SLOPE STAKES LF | 650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT 01.B-49-0192 LS | 650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 01.6794-00-72 LS |
|---|---|---|---|---|---|---|---|---|
| 8+25 | - | 9+60.75 | MAINLINE | 136 | 136 | 136 | - | - |
| 10+39.25 | - | 11+75 | MAINLINE | 136 | 136 | 136 | - | - |
| PROJECT 6794-00-72 | | | | - | - | - | 1 | 1 |
| | | | TOTAL | 272 | 272 | 272 | 1 | 1 |

## SAWING ASPHALT

| STATION | LOCATION | 690.0150 SAWING ASPHALT LF |
|---|---|---|
| 8+25 | MAINLINE | 28 |
| 11+75 | MAINLINE | 28 |
| | TOTAL | 56 |

3

| CONTROL POINTS | | | | | |
|---|---|---|---|---|---|
| NO. | STATION | ELEV. | DESCRIPTION | Y | X |
| 5 | 4+96.20 | 1153.22 | PK NAIL 0.07' RT | 253,300.32 | 194,138.36 |
| 1 | 5+16.66 | 1153.37 | 12" NAIL 16.48' LT | 253,326.41 | 194,134.89 |
| 2 | 8+41.21 | 1153.28 | 12" NAIL 15.41' LT | 253,598.38 | 194,314.00 |
| 3 | 11+59.92 | 1152.22 | 12" NAIL 15.36' RT | 253,833.31 | 194,532.29 |
| 4 | 13+86.00 | 1152.17 | 12" NAIL 16.96' RT | 254,017.77 | 194,138.36 |
| 6 | 14+99.68 | 1150.89 | PK NAIL 0.05' RT | 254,125.11 | 194,708.02 |

LEGEND
SILT FENCE
RIPRAP HEAVY
SURFACE WATER FLOW

SCOTT PLASKI
SARAH PLASKI

TORREY LEMKE ET AL
C/O DIANE LEMKE

CURVE 2
PI STA = 13+41.35
Y = 253986.85
X = 194630.15
DELTA = 7°58'53"
D = 3°46'10"
T = 106.04'
L = 211.74'
R = 1520.00'
PC STA = 12+35.31
Y = 253902.55
X = 194565.81
PT STA = 14+47.04
Y = 254079.26
X = 194682.15

N

BURIED TELEPHONE (AT&T)
MGS THRIE BEAM TRANSITION
BM 246
MGS GUARDRAIL TERMINAL EAT
MGS GUARDRAIL 3
+44.56 16.0' LT
EXIST R/W
CP 2
PT: 9+43.37
W5-52L 12"X36"
PI: 10+43.29
W5-52R 12"X36"
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL 3
MGS GUARDRAIL TERMINAL EAT
+55.45 16.0' LT
PC: 12+35.31
SAWING ASPHALT
+69.56 16.0' LT
+94.56 16.0' LT
8+00
9+00
CTH Y
(ASPHALT)
10+00
11+00
+05.45 16.0' LT
+30.45 16.0' LT
12+00
13+00
N38°03'47"E
N37°21'03"E
N32°46'29"E
+69.56 16.0' RT
+94.56 16.0' RT
+05.45 16.0' RT
+30.45 16.0' RT
+55.45 16.0' RT
BM 321
CURVE 1
PI STA = 8+37.30
Y = 253587.61
X = 194322.23
DELTA = 5°17'18"
D = 2°29'28"
T = 106.22'
L = 212.28'
R = 2300.00'
PC STA = 7+31.08
Y = 253498.31
X = 194264.73
PT STA = 9+43.37
Y = 253671.24
X = 194387.71
+44.56 16.0' RT
MGS GUARDRAIL TERMINAL EAT
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL 3
EXISTING STRUCTURE B-49-0003 (TO BE REMOVED)
STRUCTURE B-49-0192
W5-52R 12"X36"
W5-52L 12"X36"
CP 3
MGS GUARDRAIL TERMINAL EAT
SLOPE INTERCEPT (TYP.)
MGS GUARDRAIL 3
SALVAGED RAIL
MGS THRIE BEAM TRANSITION
APPROXIMATE WETLAND BOUNDARY (TYP.)
PC: 7+31.08
BEGIN PROJECT
STA 8+25
Y = 253,576.21
X = 194,317.17
END PROJECT
STA 11+75
Y = 253,854.62
X = 194,529.23
EDGE OF WATER (TYP.)
PLOVER RIVER
OVERHEAD ELECTRIC (CENTRAL WISCONSIN ELECTRIC COOPERATIVE)
P.L.
OH
MARY ANN PEPOWSKI
MARY ANN PEPOWSKI
STEVENS POINT AREA SCHOOL DISTRICT

| BENCHMARKS | | | |
|---|---|---|---|
| NO. | STATION | ELEV. | DESCRIPTION |
| 246 | 8+98.27 | 1149.82 | 2 NAILS IN 36" TREE 37.74' LT |
| 321 | 9+64.91 | 1153.11 | CHISELED SQUARE IN WINGWALL 14.70' RT |
| 560 | 13+88.69 | 1148.76 | 2 NAILS IN PED 33.46' LT |

PROPOSED PROFILE
-0.09%
-0.47%
EXISTING GROUND
STA 8+25.00
EL 1153.11
VPC STA 9+50.00
VPC EL 1153.00
VPI STA 10+00.00
VPI EL 1152.96
VPT STA 10+50.00
VPT EL 1152.72
STA 11+75.00
EL 1152.14
VCL = 100.00
K = 261.59
HIGH WATER 100
ELEV. = 1147.03
OBSERVED WATER
ELEV. = 1146.31±
(01-14-2020)

STA 10+00 STRUCTURE B-49-0192
SINGLE SPAN 36W" PRESTRESSED CONCRETE GIRDER
32.0 FT CLEAR ROADWAY WIDTH
78.5 FT OVERALL LENGTH
NO SKEW

REMOVE EXISTING BRIDGE B-49-0003
STA 10+00
SINGLE SPAN STEEL DECK GIRDER
24.0 FT CLEAR ROADWAY WIDTH
73.0 FT OVERALL LENGTH
NO SKEW

1150
1145
1140
1139

EXISTING GROUND: 1153.26, 1153.29, 1153.23, 1153.00, 1152.95, 1152.76, 1140.00, 1152.61, 1152.25, 1152.18, 1152.09, 1151.91, 1151.63, 1151.49
PROPOSED PROFILE: 1153.09, 1153.05, 1153.00, 1152.91, 1152.72, 1152.49, 1152.25

7 8 9 10 11 12 13 13

| PROJECT NO: 6794-00-72 | HWY: CTH Y | COUNTY: PORTAGE | PLAN AND PROFILE: CTH Y | SHEET 8 | E |
|---|---|---|---|---|---|

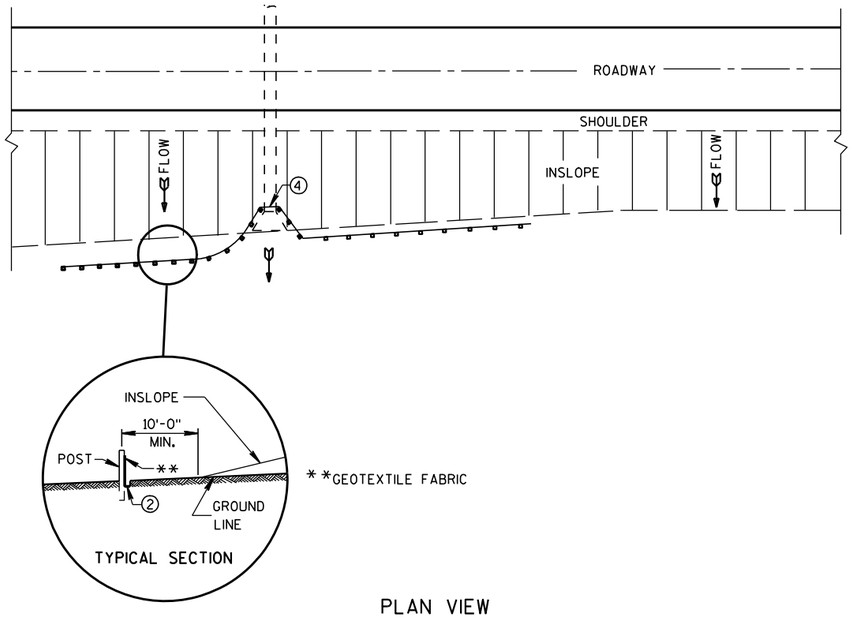
FILE NAME : P:\11500S\11510S\11512\11512013\CADD\DESIGN\ALIPROFS\ALIPROF-CTH Y.DWG
LAYOUT NAME - 050101-pp
PLOT DATE : 11/2/2021 1:23 PM
PLOT BY : MARISSA WACKER
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

# Standard Detail Drawing List

| | |
|---|---|
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 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) |
| 14B45-05H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C06-09 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE) |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |

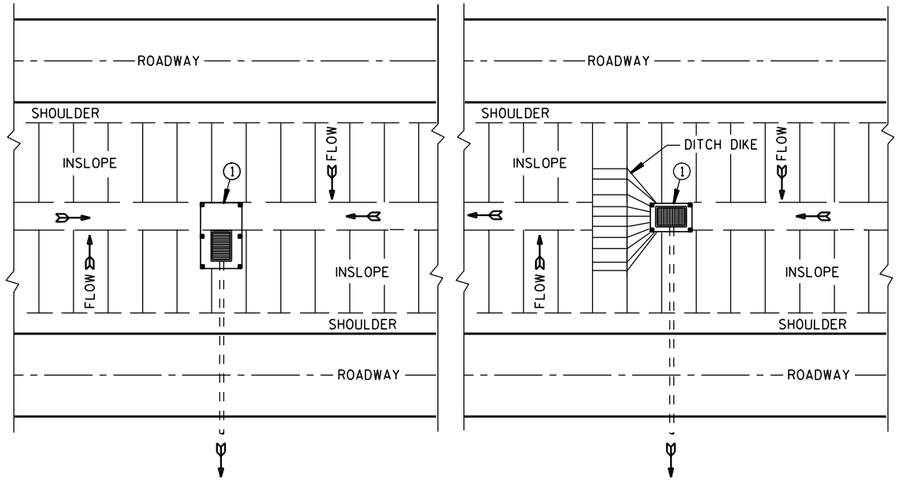


6




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



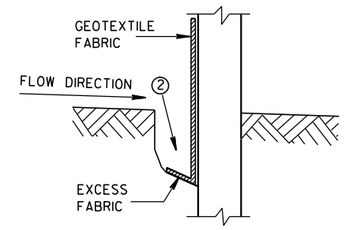

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

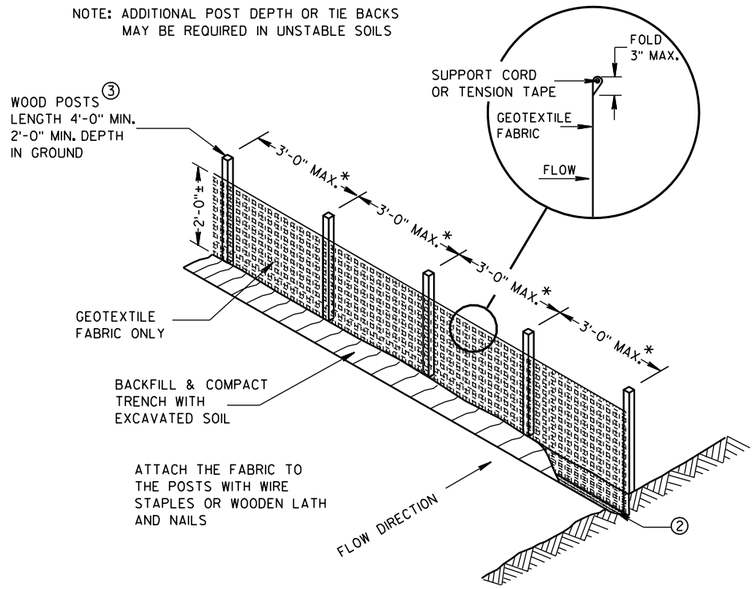
## GENERAL NOTES

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

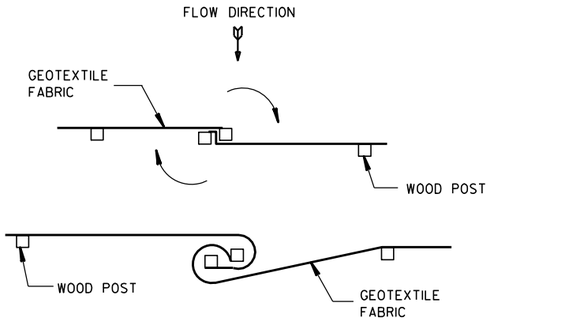
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



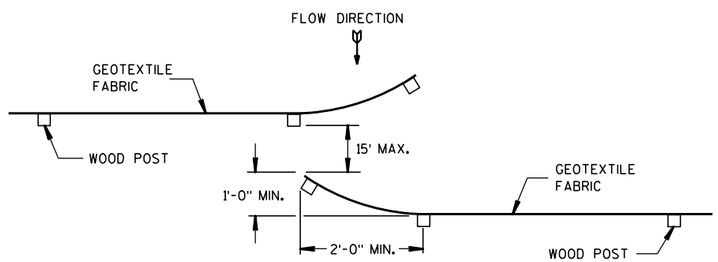

## TRENCH DETAIL




## SILT FENCE

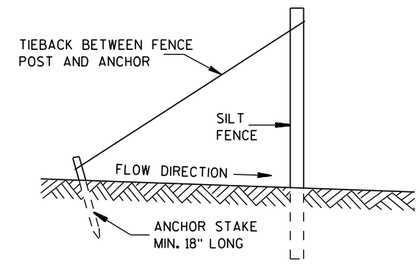



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

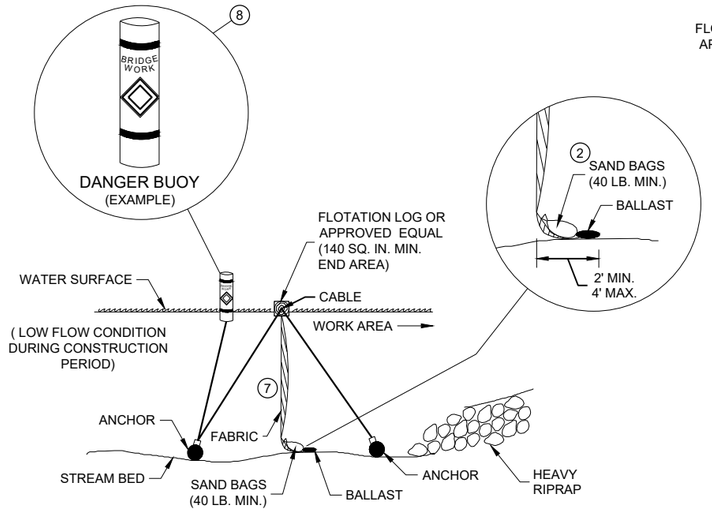


6

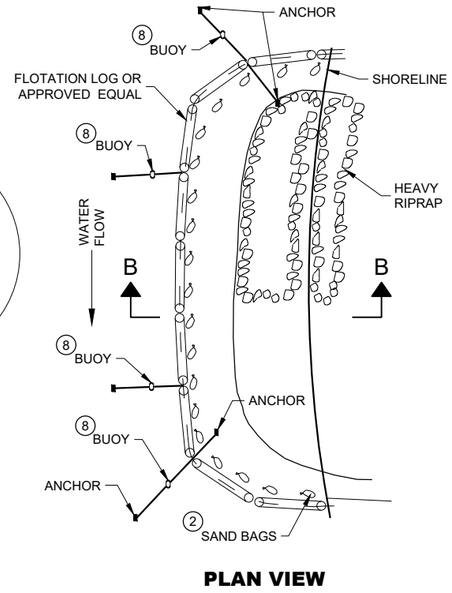
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

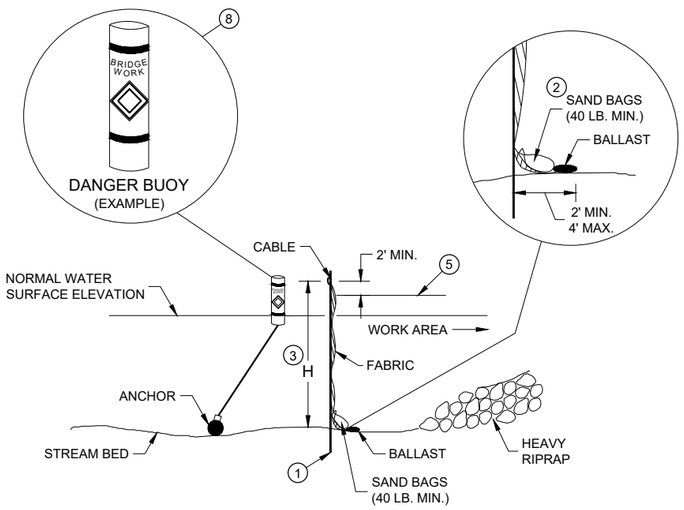



**SECTION B - B**

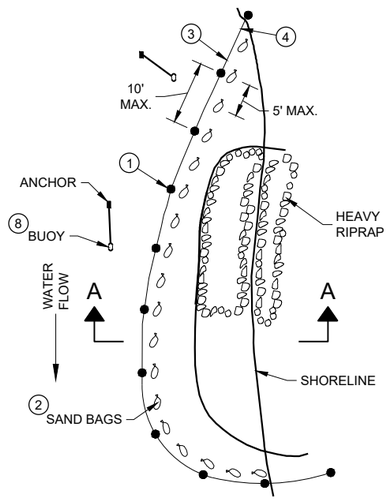



**PLAN VIEW**

**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.

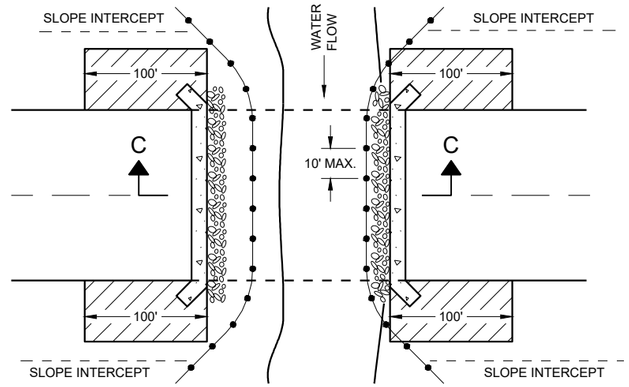
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(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.

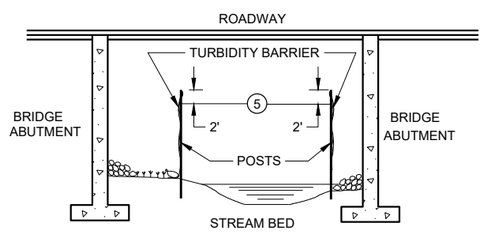
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(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**

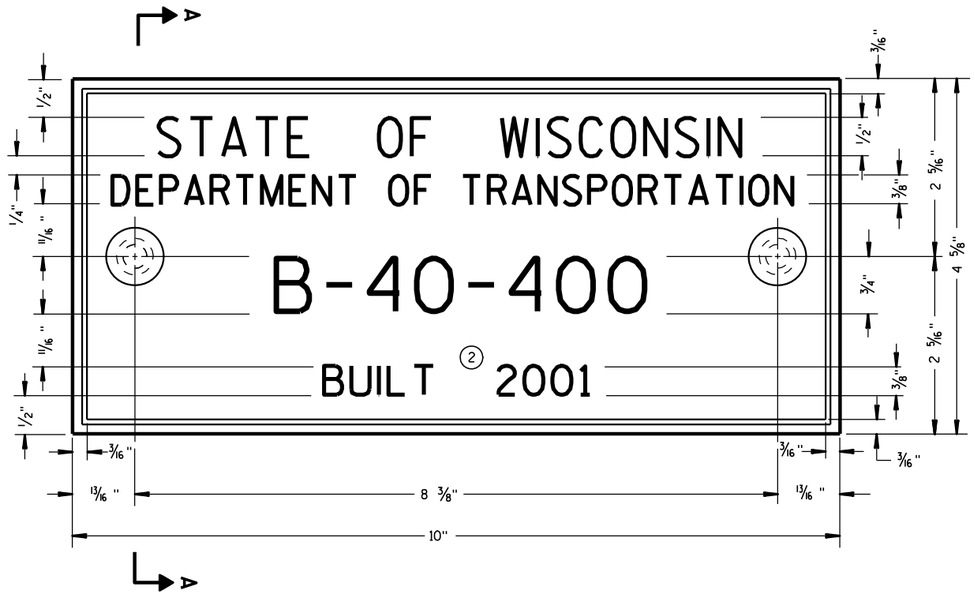
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA




6
SDD 08E11 - 02




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

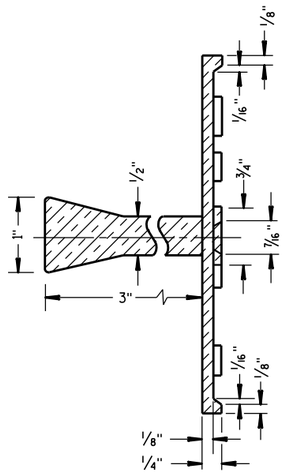
## GENERAL NOTES

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.

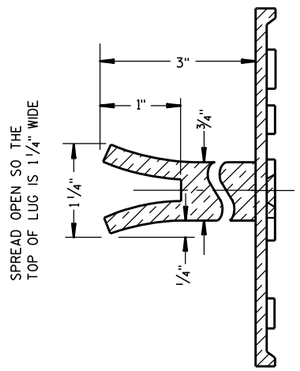
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(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**

FOR MULTI-UNIT STRUCTURES LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

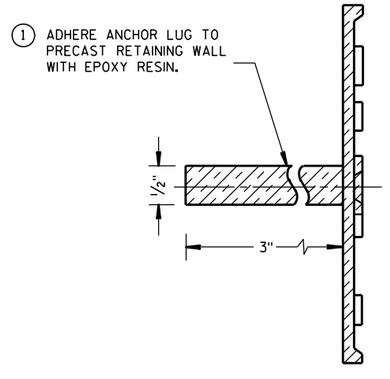
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

**NUMBERING DESIGNATION**
**MULTI-UNIT STRUCTURES**




**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

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

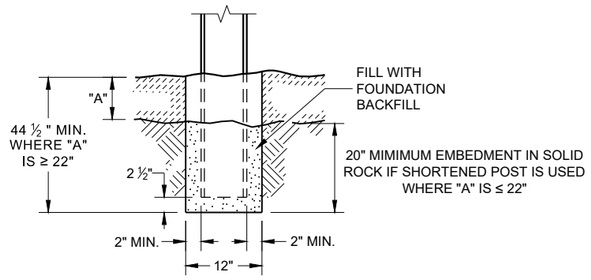
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

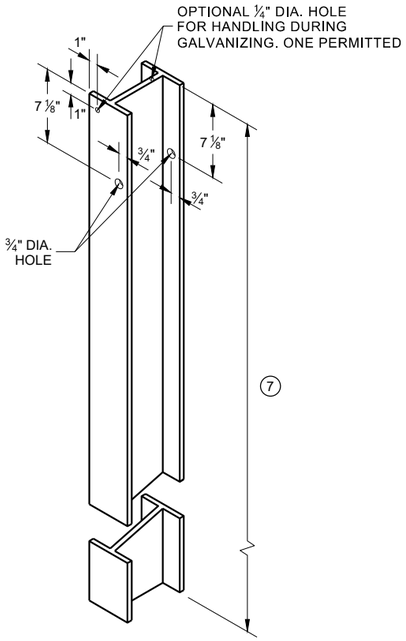
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

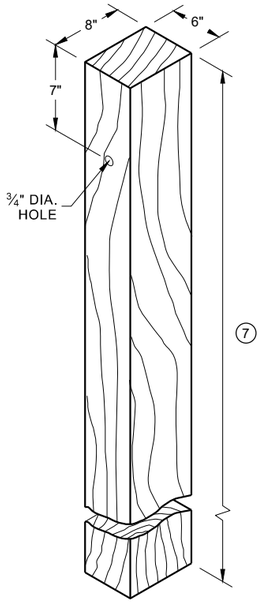
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



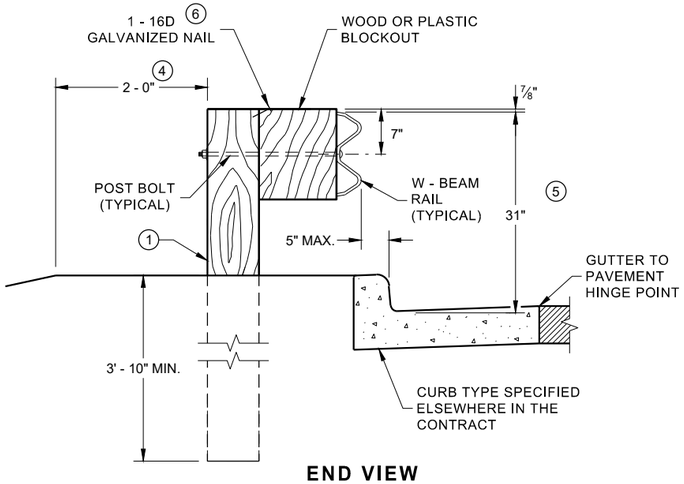

END VIEW
**SETTING STEEL OR WOOD POST IN ROCK** (3)



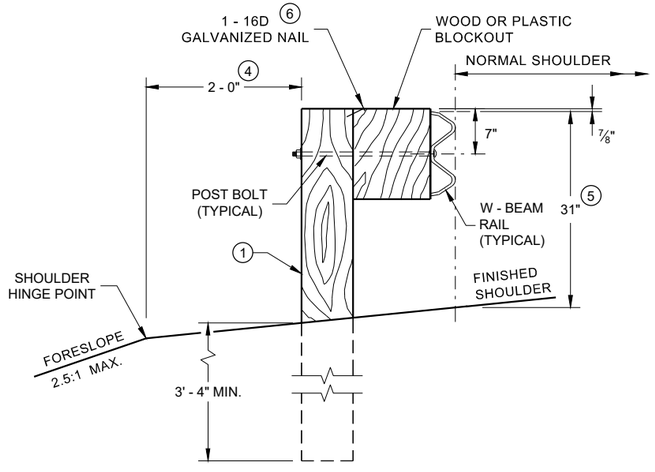

**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)** (1)



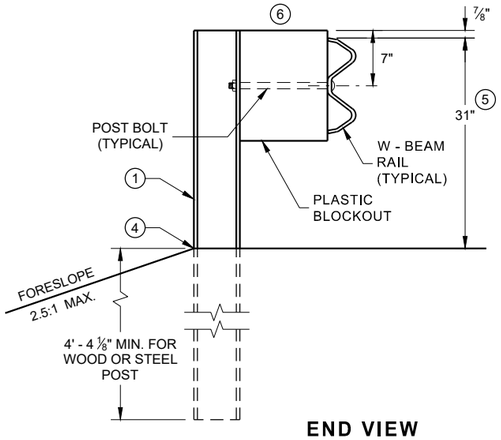

**WOOD POST (6" X 8") NOMINAL** (1)



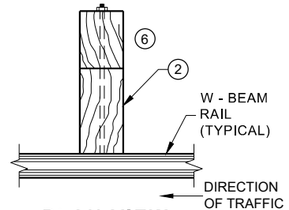

END VIEW
**LOCATED ALONG A CURBED ROADWAY**



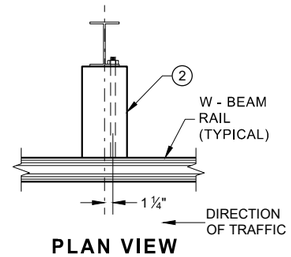

END VIEW
**LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION**



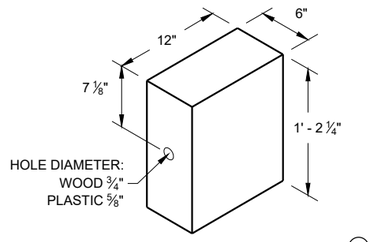

END VIEW
**MGS LONGER POST AT HALFPOST SPACING W BEAM (K)**




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




PLAN VIEW
**STEEL POST, PLASTIC BLOCKOUT & BEAM**




**WOOD OR PLASTIC BLOCKOUT** (2)

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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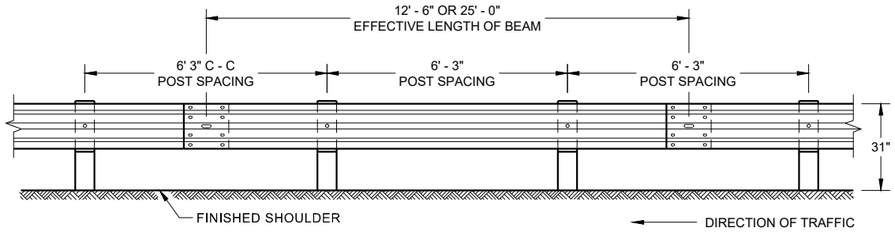
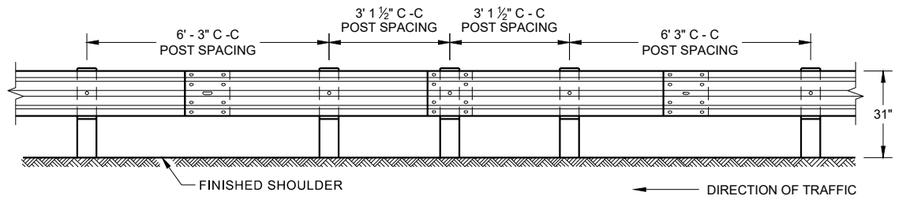
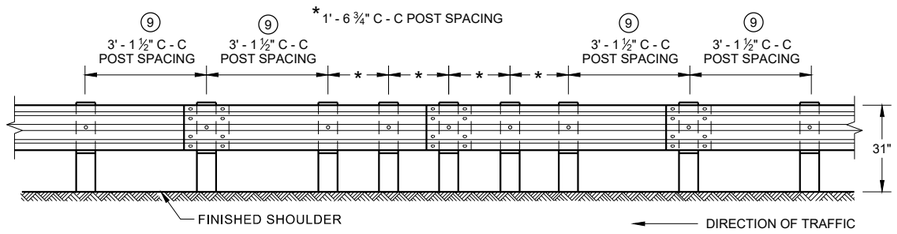


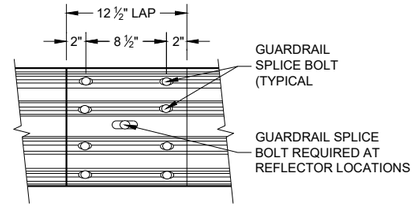

**FRONT VIEW**
**POST SPACING STANDARD INSTALLATION**




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




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




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

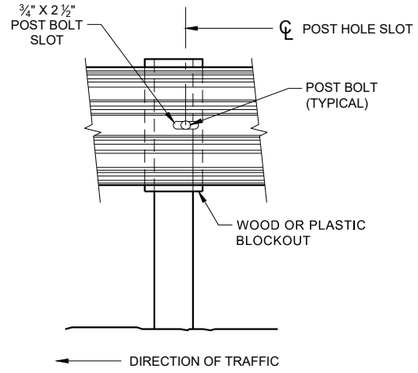
## GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

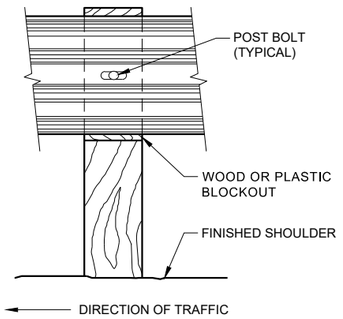
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

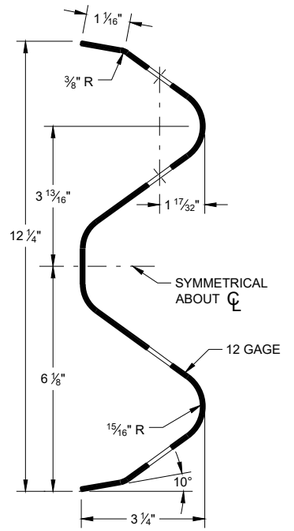
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



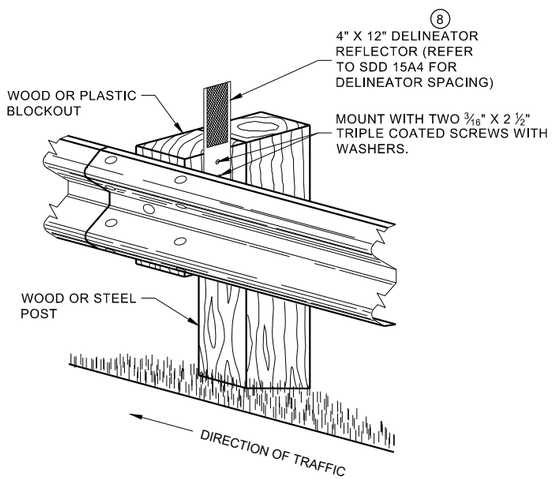

**FRONT VIEW AT STEEL POST**




**FRONT VIEW AT WOOD POST**




**SECTION THRU W-BEAM RAIL**




**ONE SIDED REFLECTOR DETAIL**
**AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM**
**(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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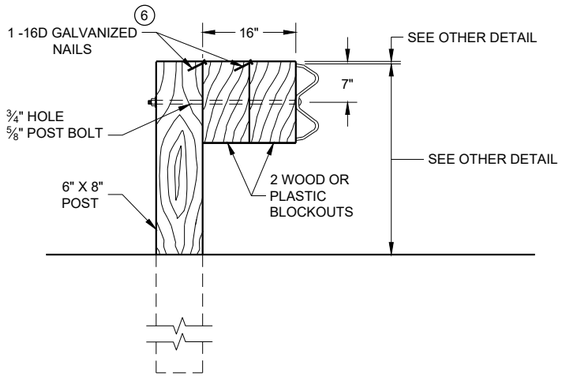
SDD 14B42 - 07b
SDD 14B42 - 07b

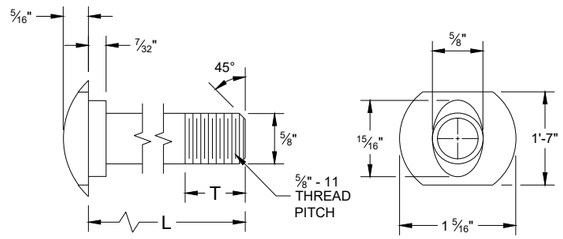



## DETAIL FOR 16" BLOCKOUT DEPTH

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.

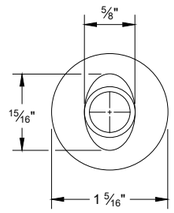
NOTE:

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.

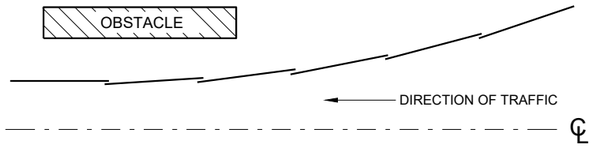



## POST BOLT TABLE

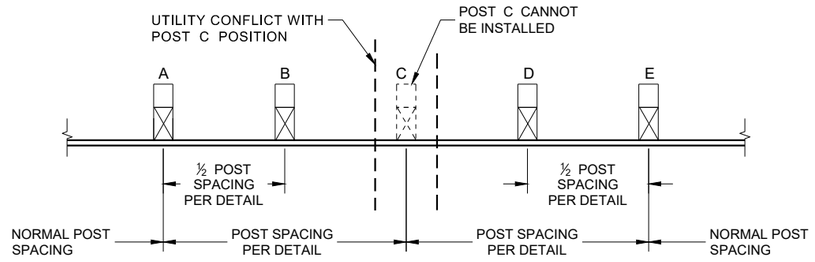
| L | T (MIN.) |
|---|---|
| 1 ¼" | 1 ⅛" |
| 2" | 1 ¾" |
| 10" | 4" |
| 14" | 4 1⁄16" |
| 18" | 4" |
| 21" | 4 1⁄16" |
| 25" | 4" |



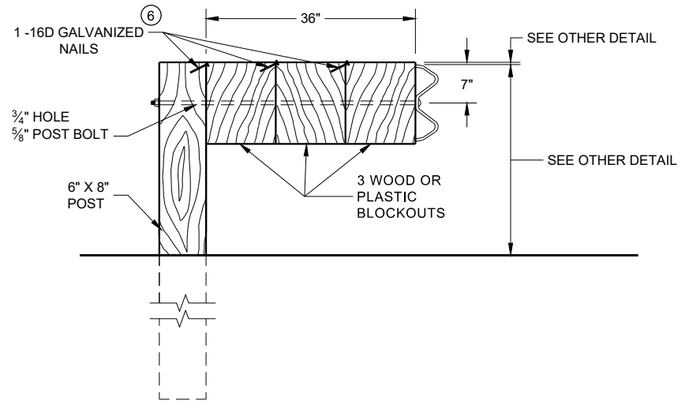

## ALTERNATE BOLT HEAD



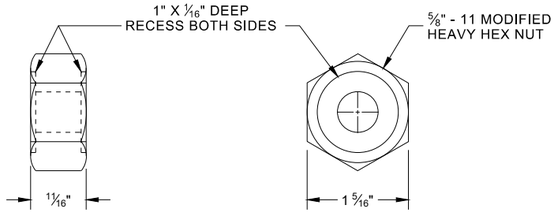

## PLAN VIEW
## BEAM LAPPING DETAIL



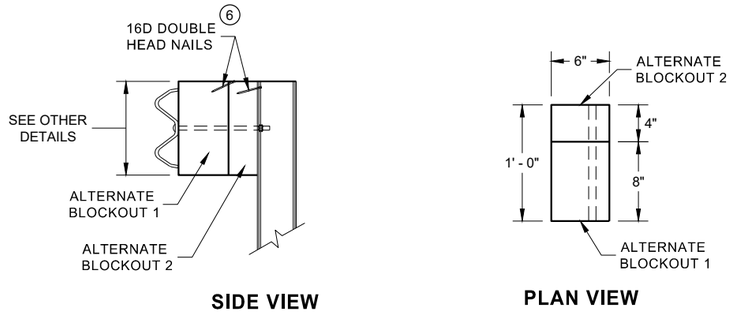

## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION




## 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**



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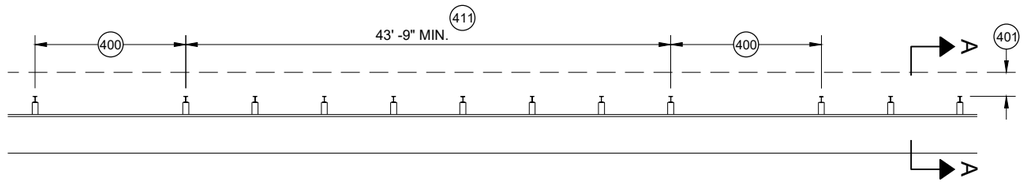
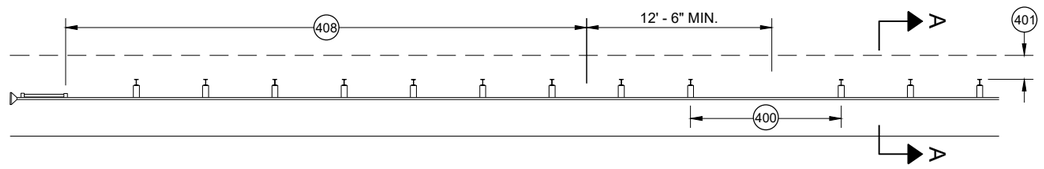
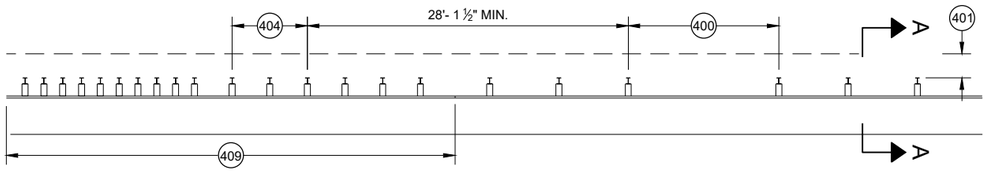


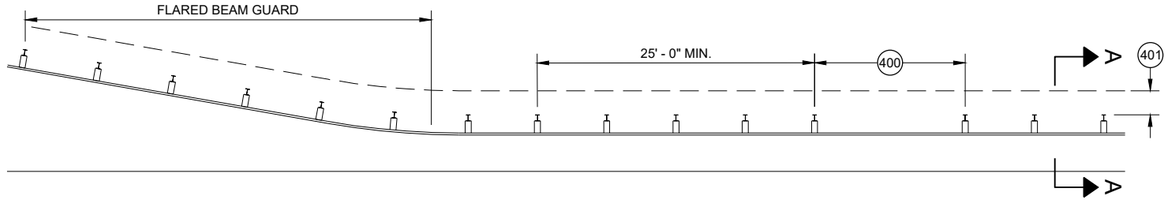

**MISSING POST IN MGS GUARDRAIL**



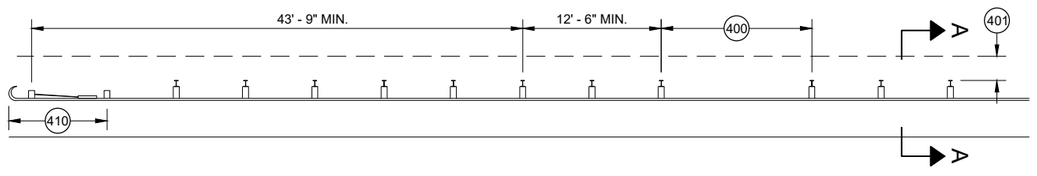

**MISSING POST IN MGS GUARDRAIL NEAR EAT**



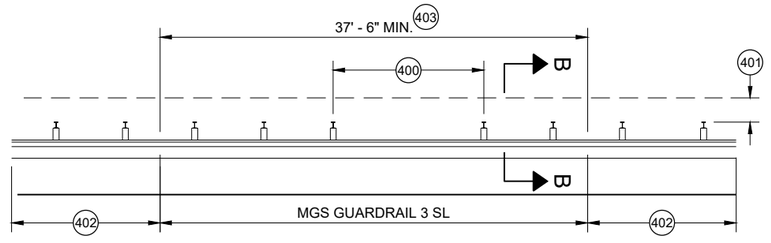

**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**




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

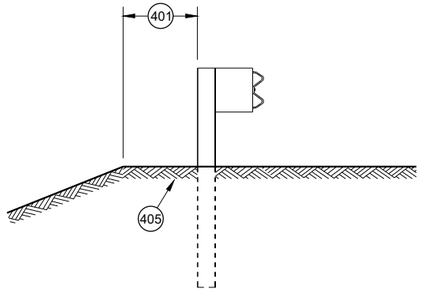



**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

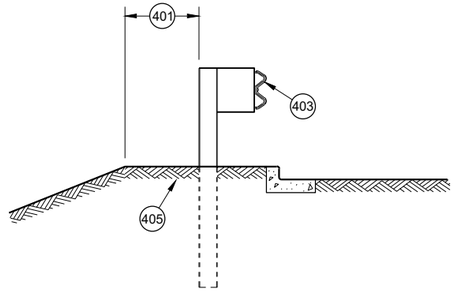



**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)** 407

(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

## GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

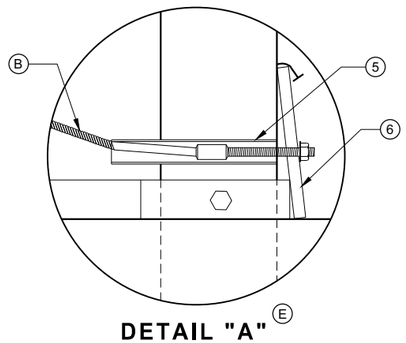
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

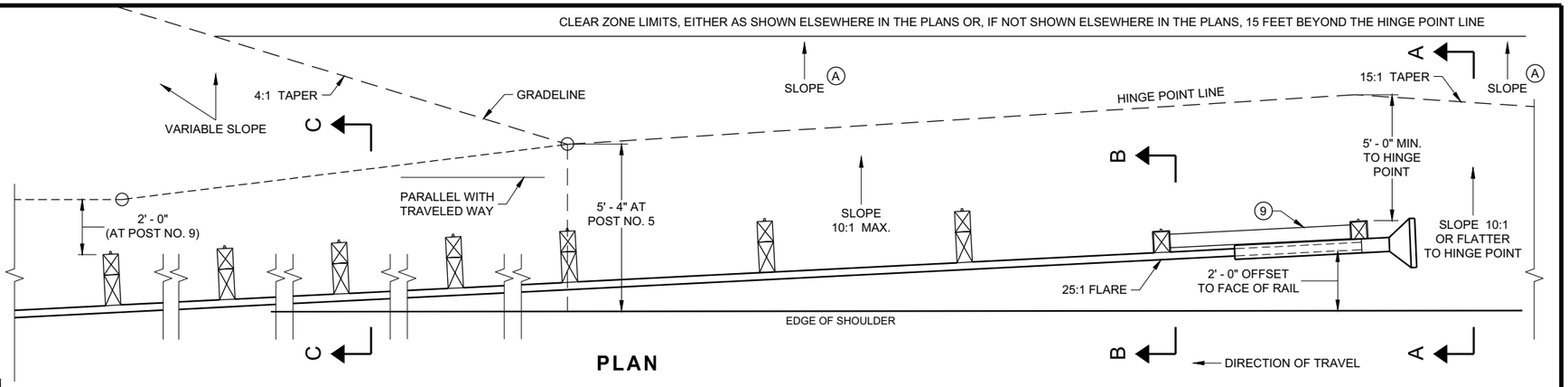
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

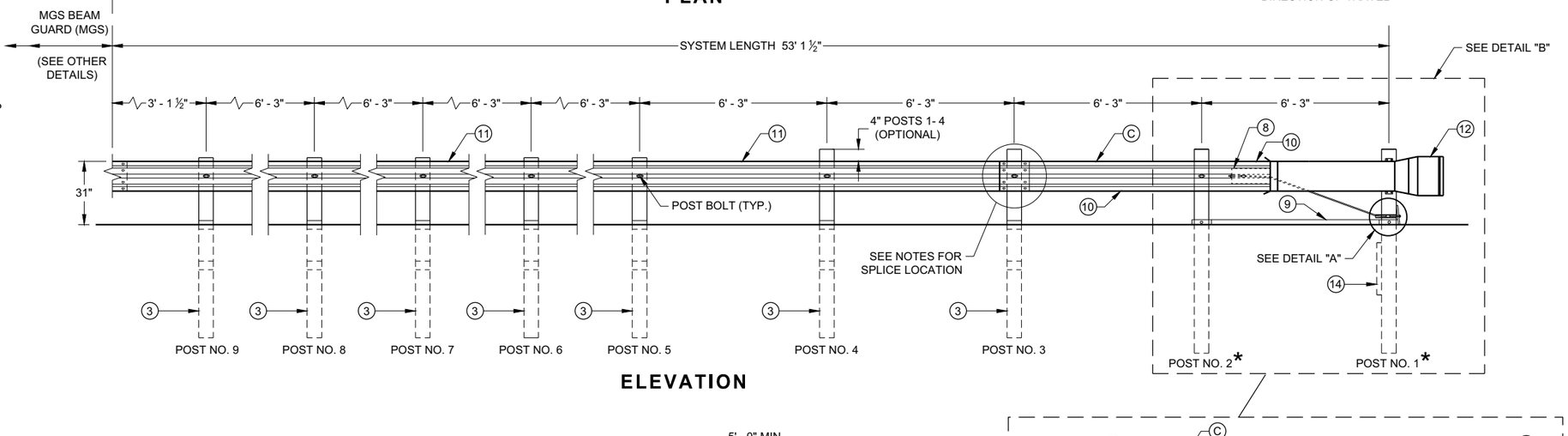
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



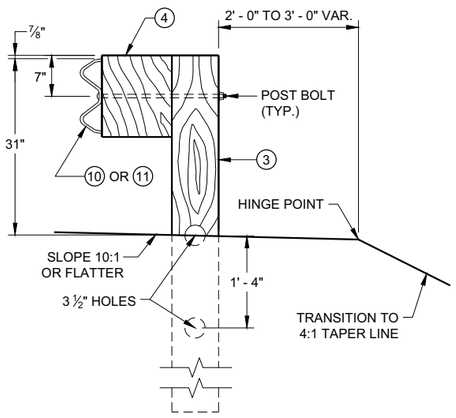

DETAIL "A" (E)



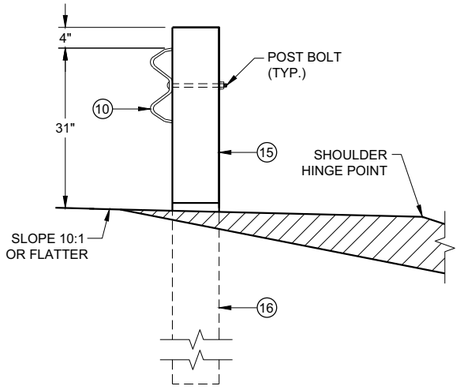

PLAN



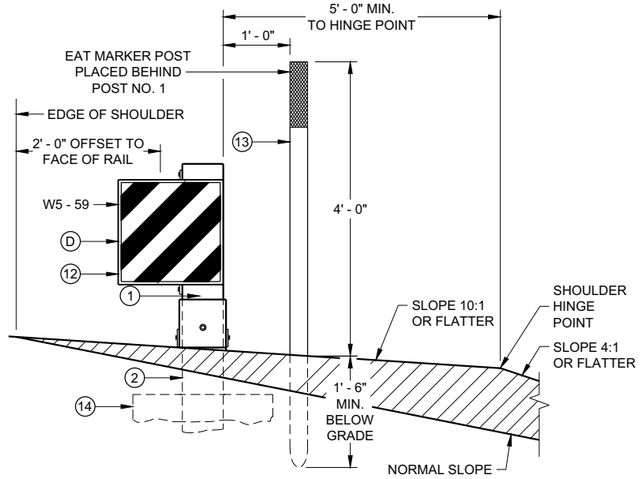

ELEVATION



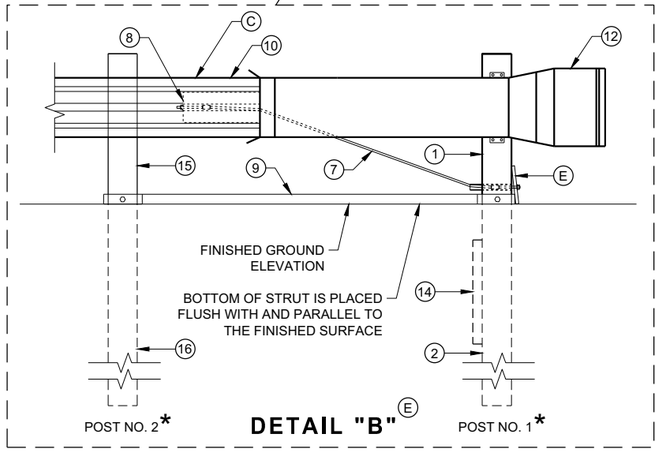

SECTION C - C
TYPICAL AT POST NOS. 3 - 9




SECTION B - B
TYPICAL AT POST NO. 2*




SECTION A - A
TYPICAL AT POST NO. 1*




DETAIL "B" (E)

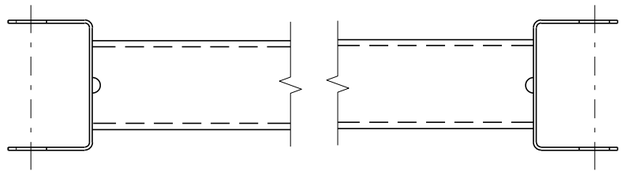
**MIDWEST GUARDRAIL SYSTEM**
**ENERGY ABSORBING TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SDD 14B44 - 04a

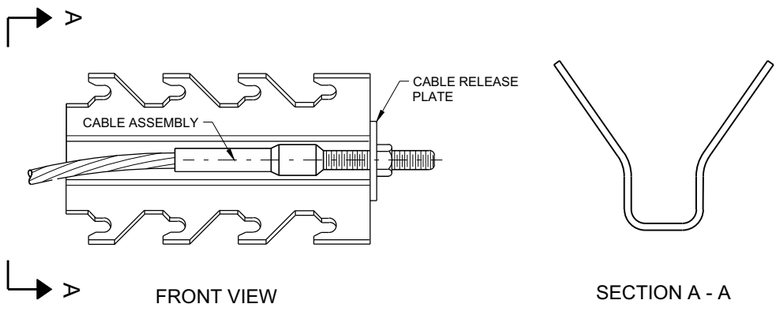
SDD 14B44 - 04a



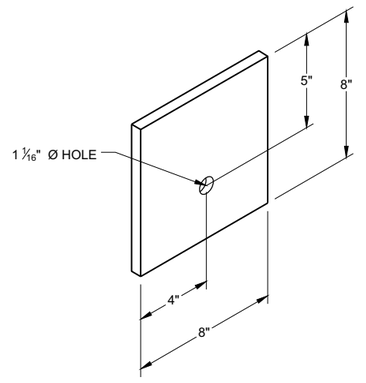
## GENERIC GROUND STRUT ⑨ Ⓔ

## 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 ⑨ Ⓔ




## BEARING PLATE ⑥ Ⓔ

6

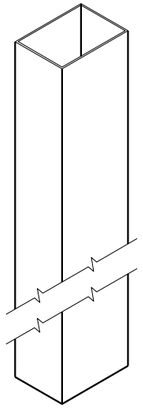
6

SDD 14B44 - 04b

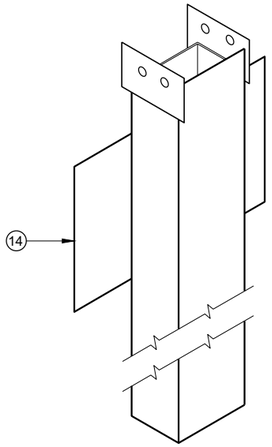
SDD 14B44 - 04b

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

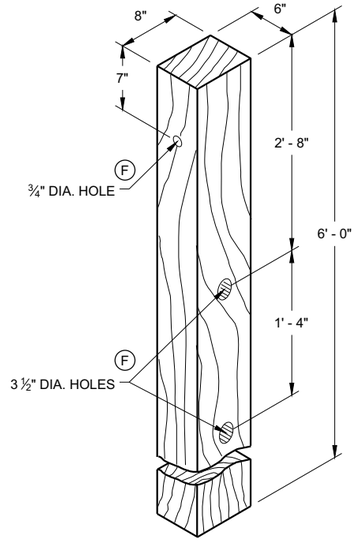
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



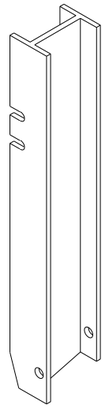
**UPPER POST NO. 1** (1) (E)



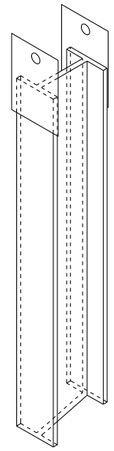

**LOWER POST NO. 1** (2) (E)



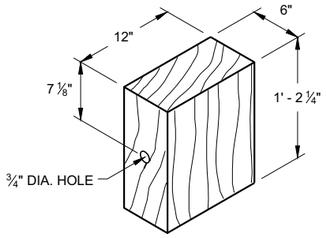

**WOOD CRT POST** (3) (E)
POSTS NUMBER 3-9



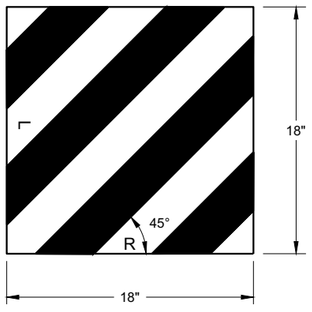
**UPPER POST NO. 2** (15) (E)



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

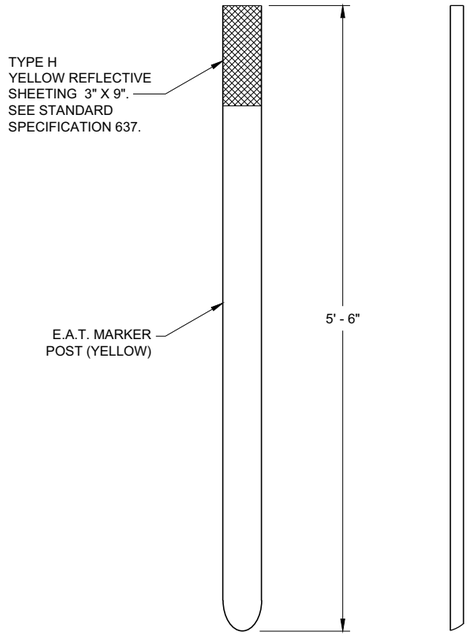



**WOOD BLOCKOUT** (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



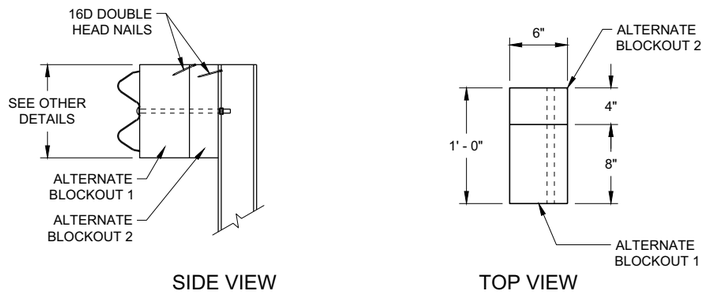

W5 - 59

**REFLECTIVE SHEETING DETAIL** (E)




FRONT VIEW SIDE VIEW

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




SIDE VIEW TOP VIEW

**ALTERNATE WOOD BLOCKOUT DETAIL**

**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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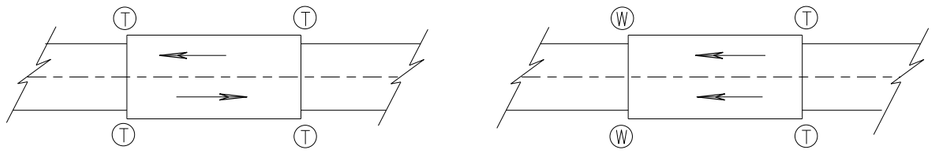
SDD 14B44 - 04c




**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.

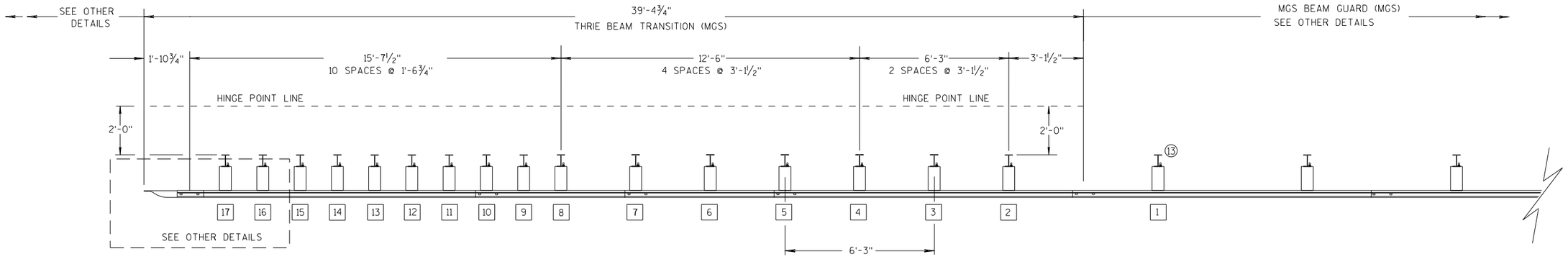
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

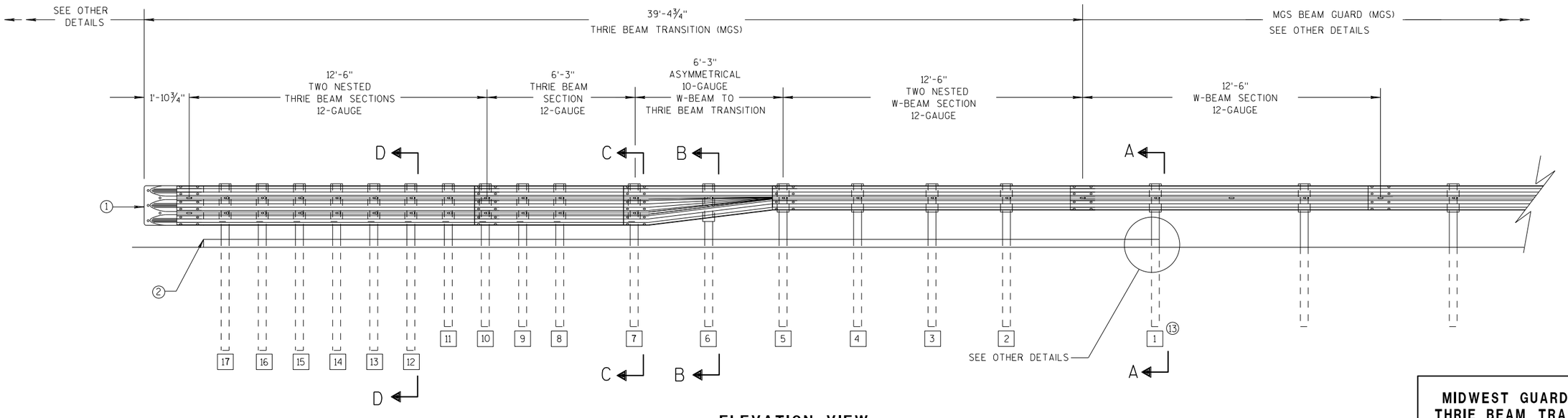
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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







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

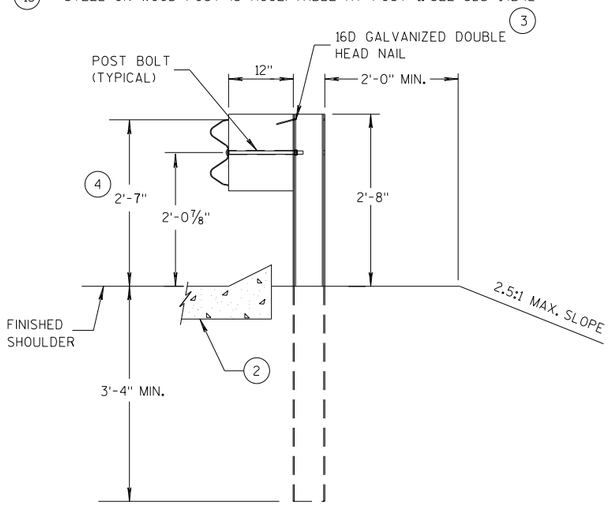
## GENERAL NOTES

(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.

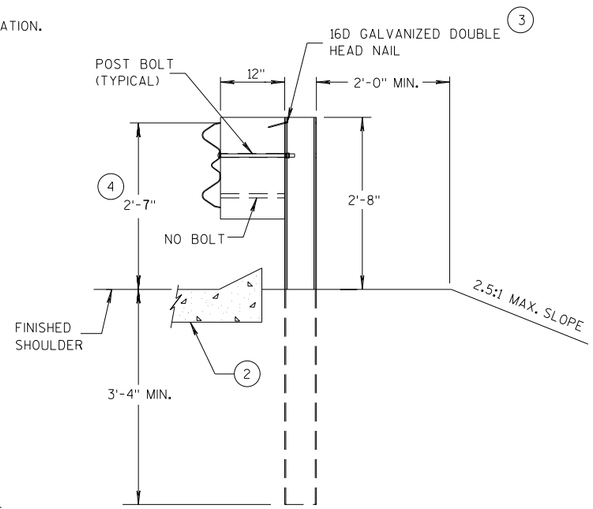
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



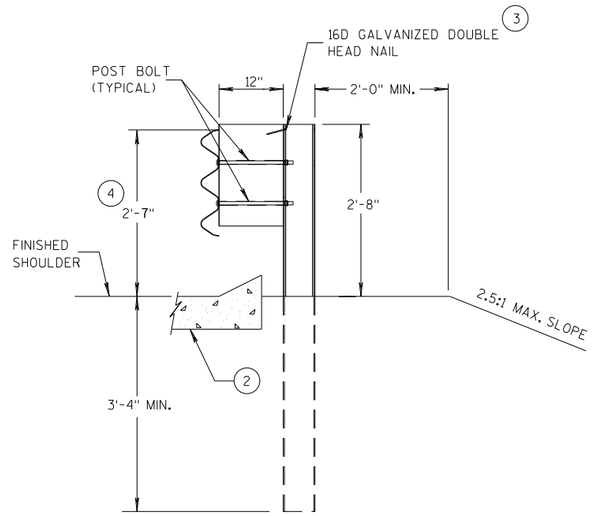

SECTION A-A (13)

**POSTS 1-5**



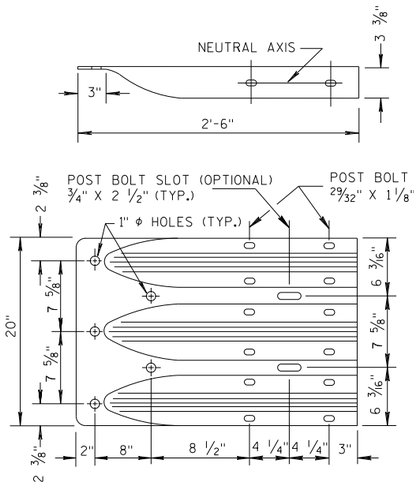

SECTION B-B

**POST 6**

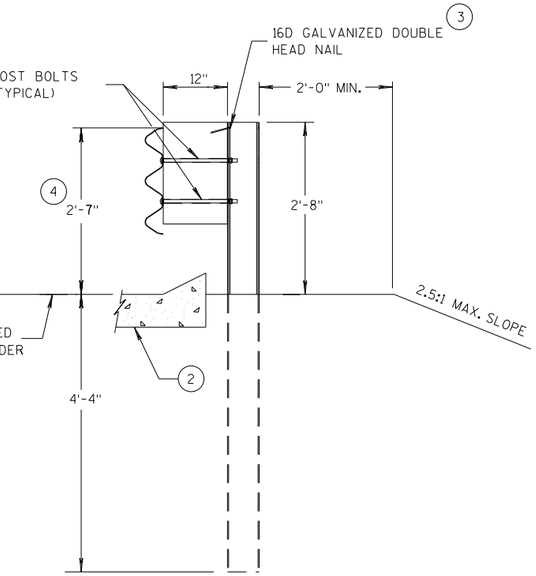



SECTION C-C

**POSTS 7-11**

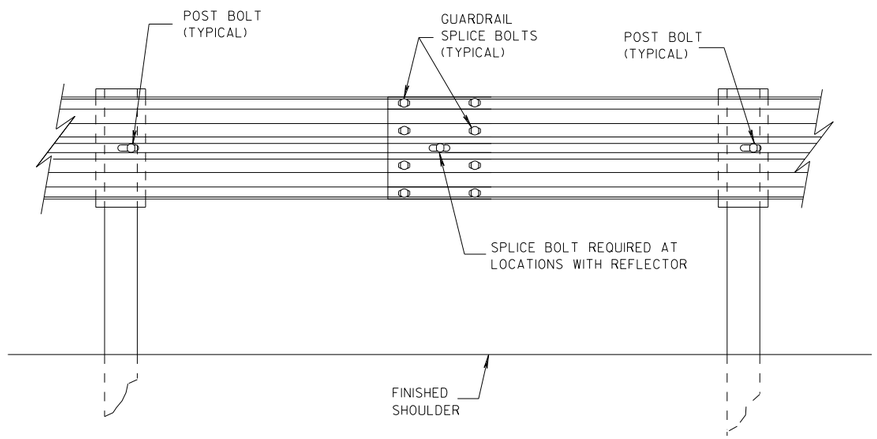



**THRIE BEAM TERMINAL CONNECTOR**




SECTION D-D

**POSTS 12-17**




**SPLICE DETAIL**

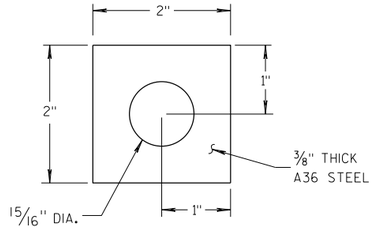
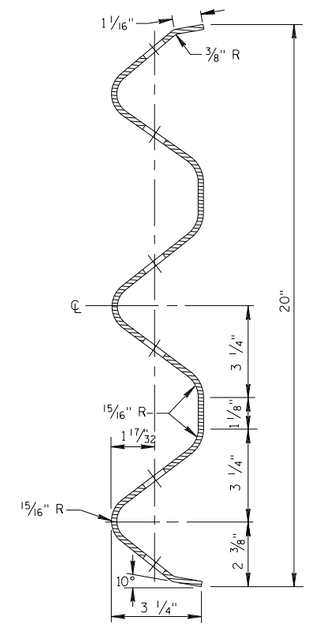



**PLATE WASHER DETAIL**




**SECTION THRU THRIE BEAM RAIL ELEMENT**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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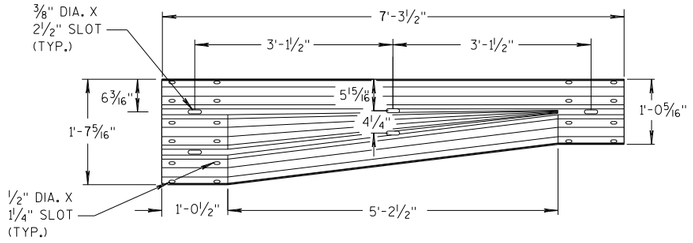
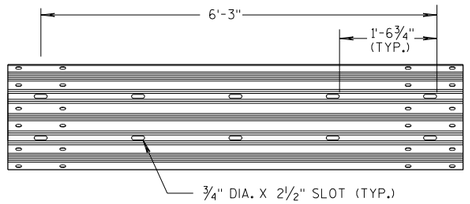
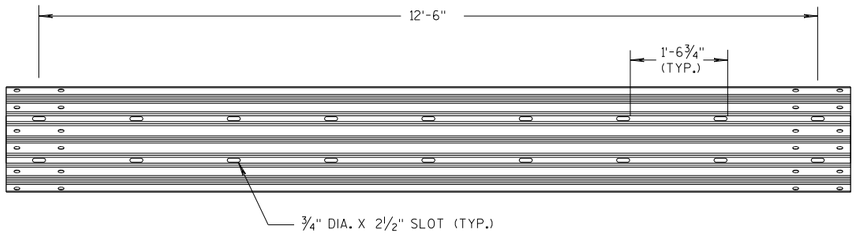
S.D.D. 14 B 45-5b



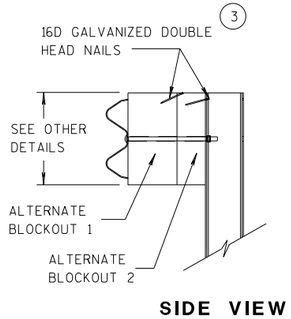

## W-BEAM TO THRIE BEAM TRANSITION SECTION



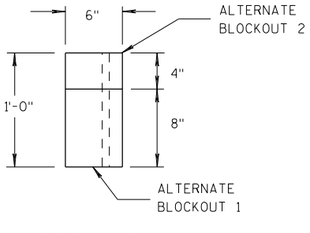

## 6'-3" THRIE BEAM SECTION




## 12'-6" THRIE BEAM SECTION

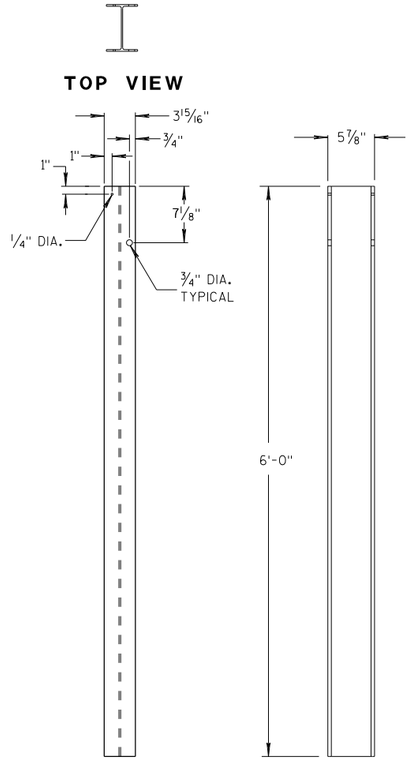



SIDE VIEW



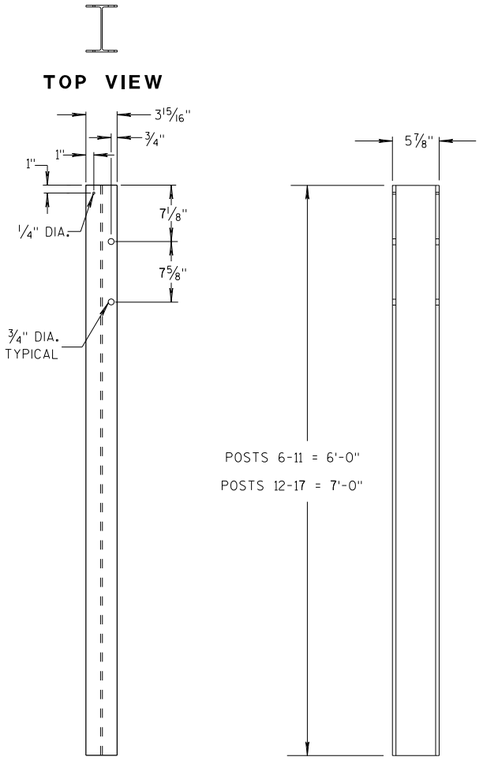

TOP VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL



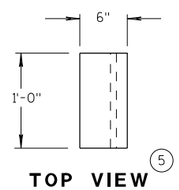

FRONT VIEW SIDE VIEW

## STEEL POSTS 1-5 (13)

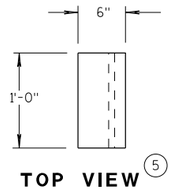



FRONT VIEW SIDE VIEW

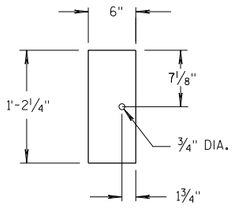
## STEEL POSTS 6-17




TOP VIEW (5)

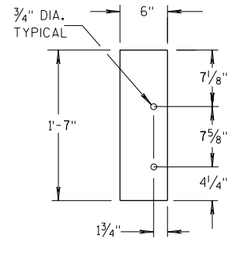



TOP VIEW (5)




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 22

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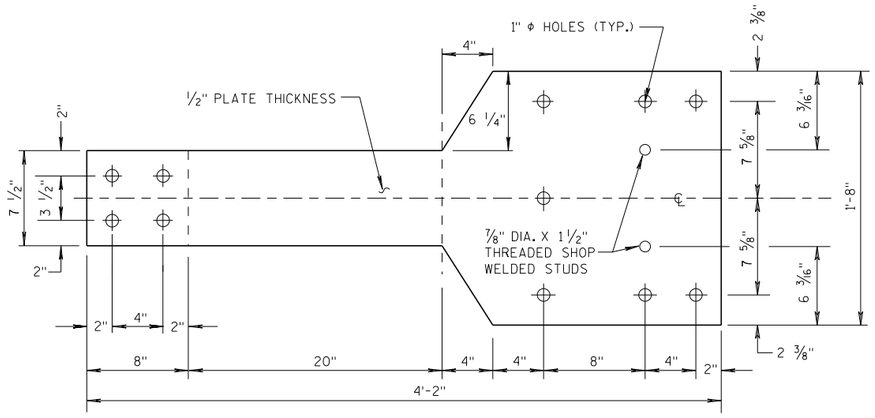
S.D.D. 14 B 45-5c

6

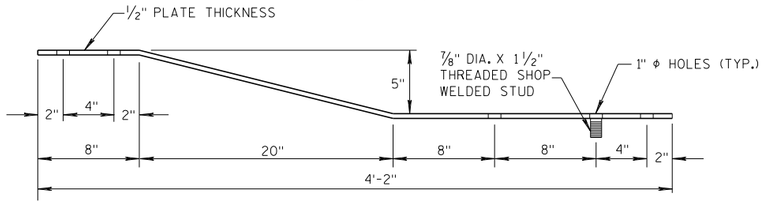
S.D.D. 14 B 45-5c

## GENERAL NOTES

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

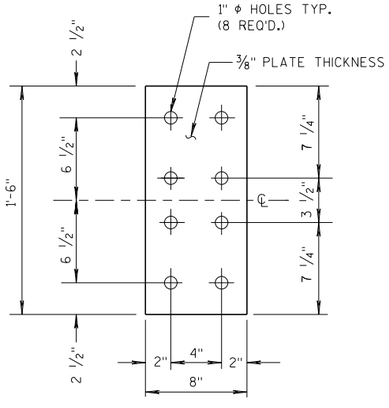



FRONT VIEW



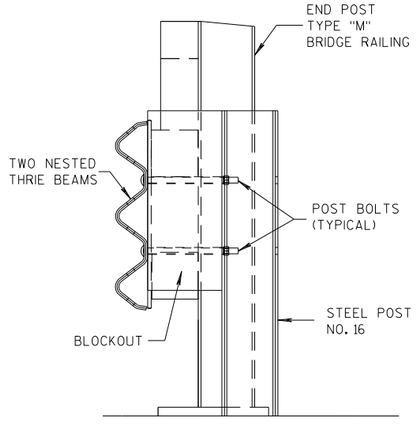

PLAN VIEW

## BACK-UP PLATE DETAIL, TYPE "M"

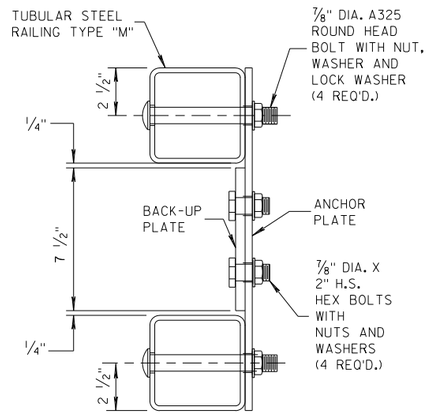



FRONT VIEW

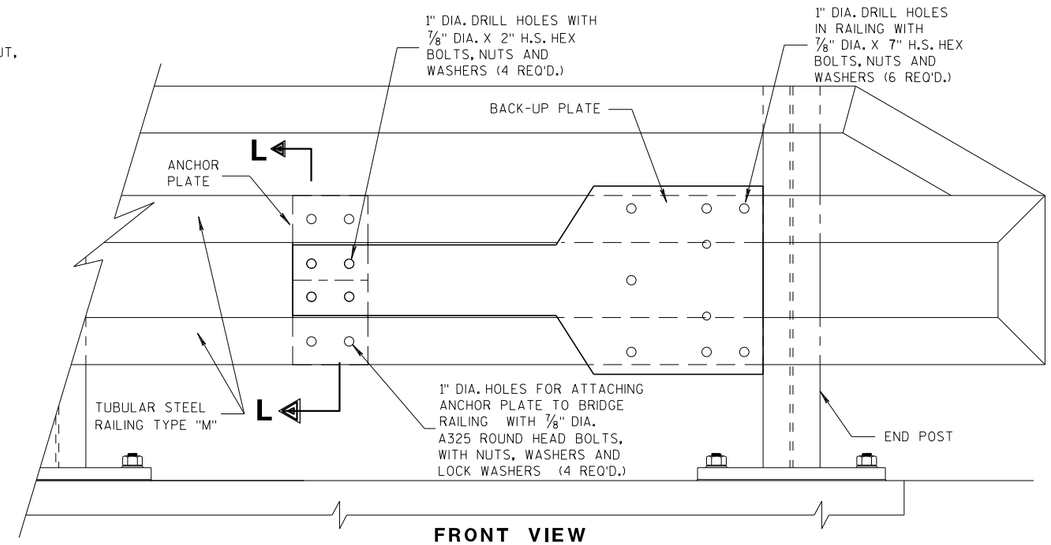
## ANCHOR PLATE DETAIL, TYPE "M"




SECTION M-M

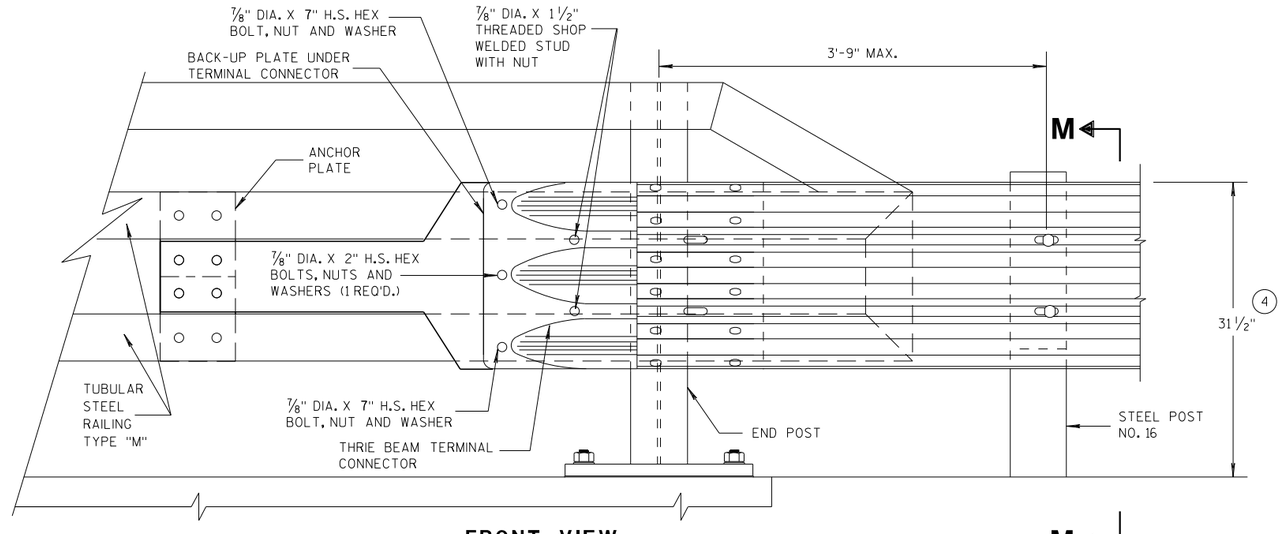



SECTION L-L

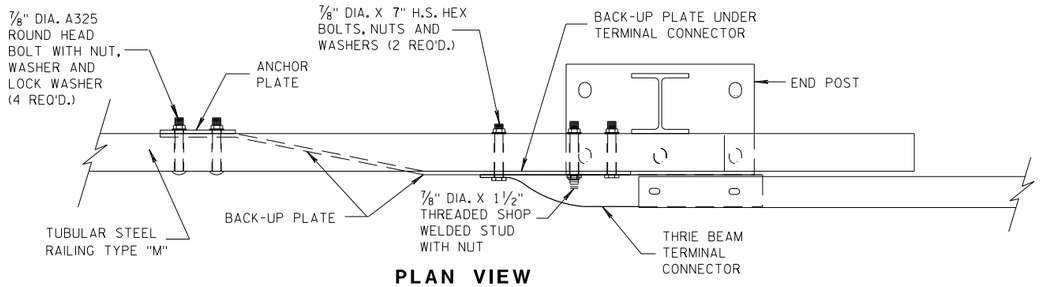



FRONT VIEW

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




FRONT VIEW




PLAN VIEW

## THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

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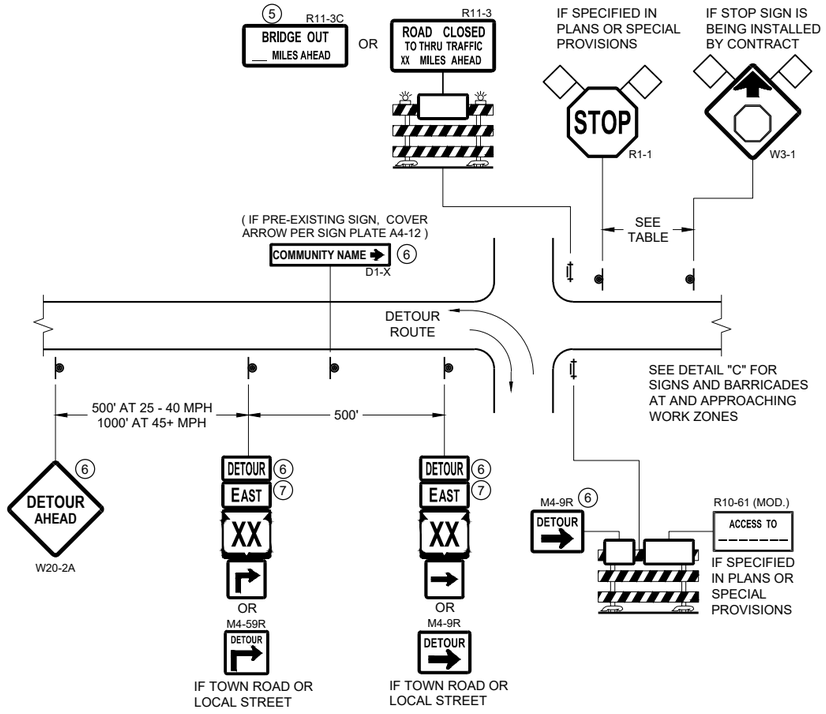
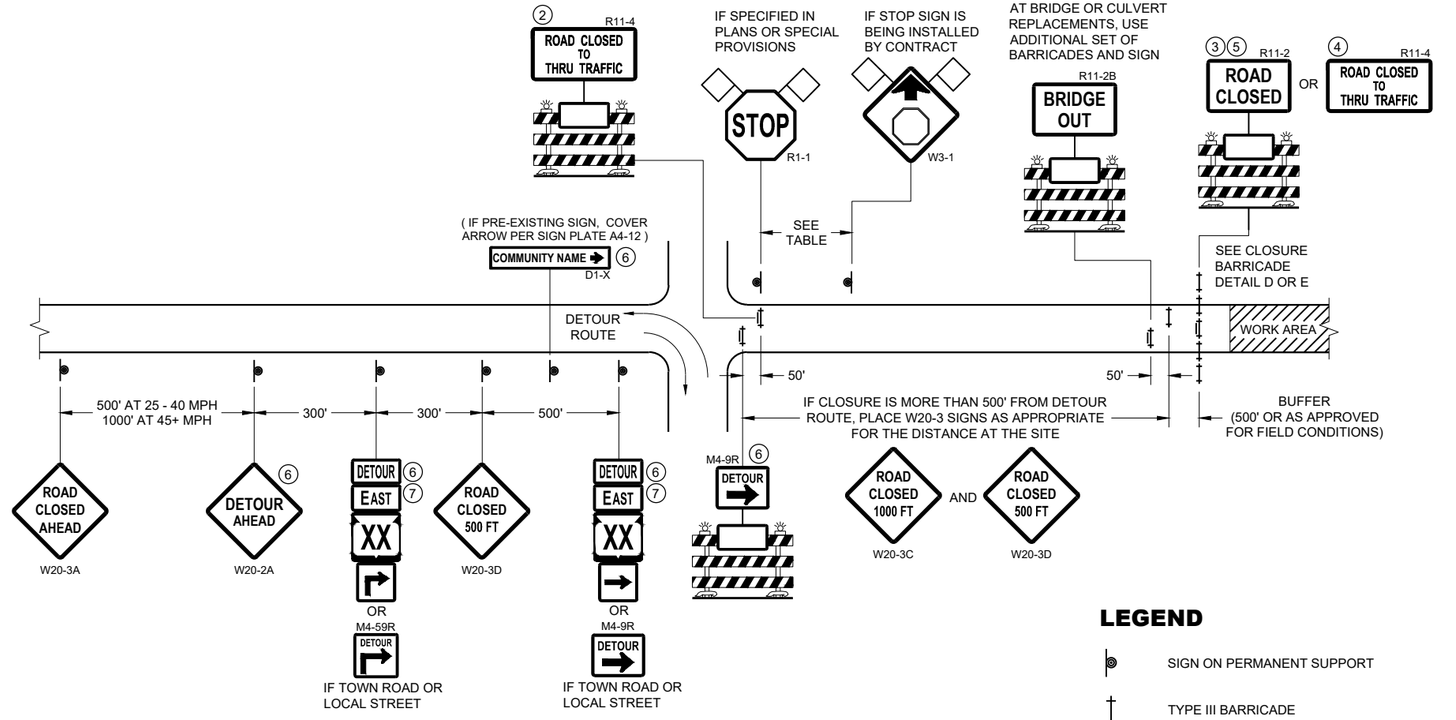
S.D.D. 14 B 45-5h



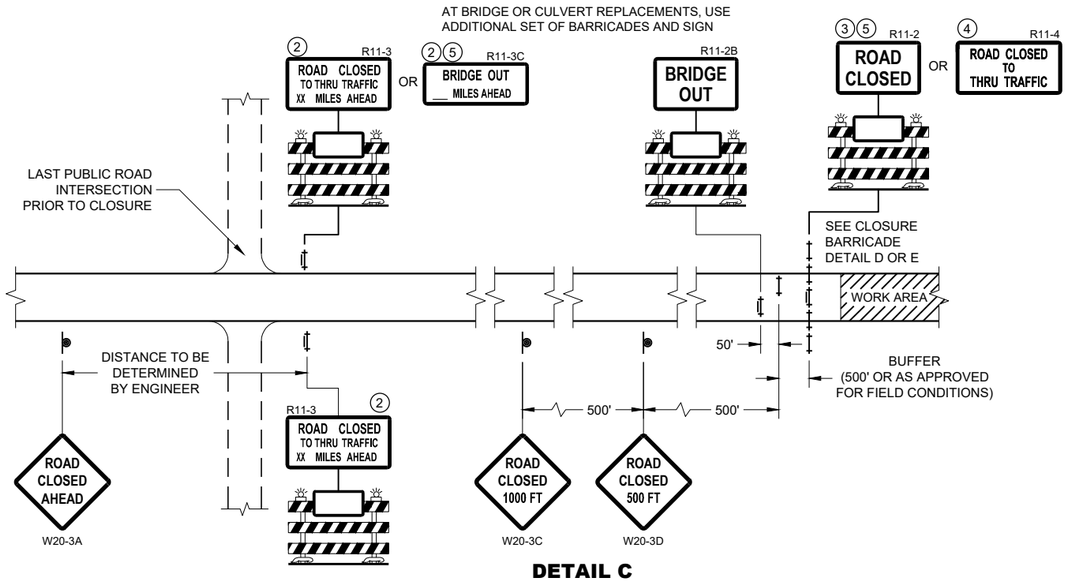




## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

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
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



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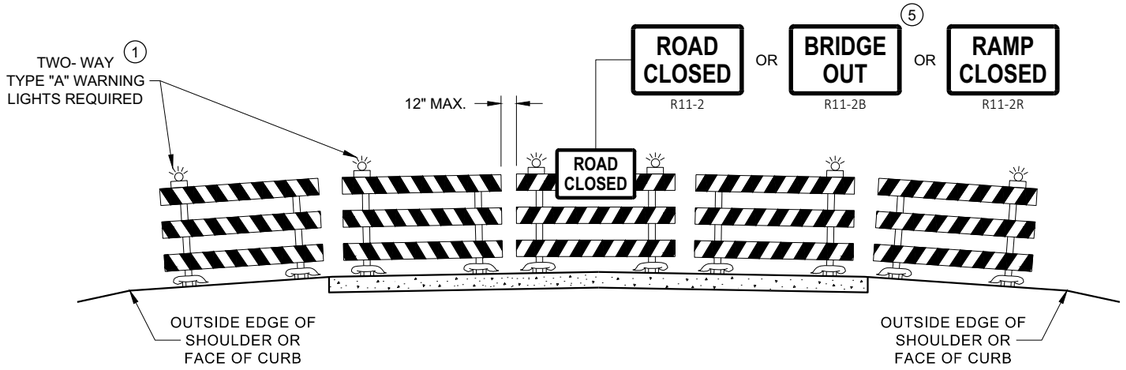
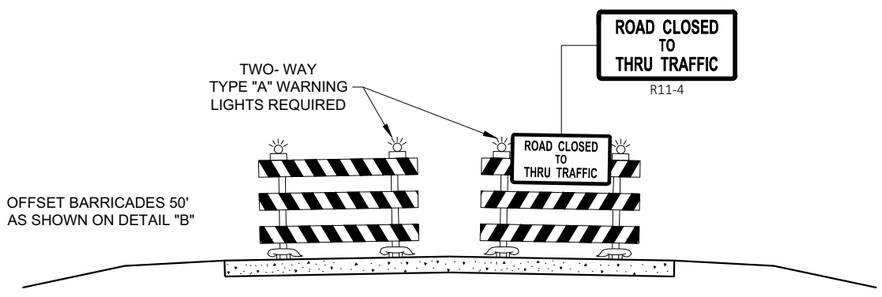
SDD 15C02 - 08a

SDD 15C02 - 08a




**DETAIL D**
**ROAD CLOSURE BARRICADE DETAIL**
**APPROACH VIEW**




**DETAIL E**
**LANE CLOSURE BARRICADE DETAIL**
**APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

## GENERAL NOTES

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

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

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

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

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS FOR VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

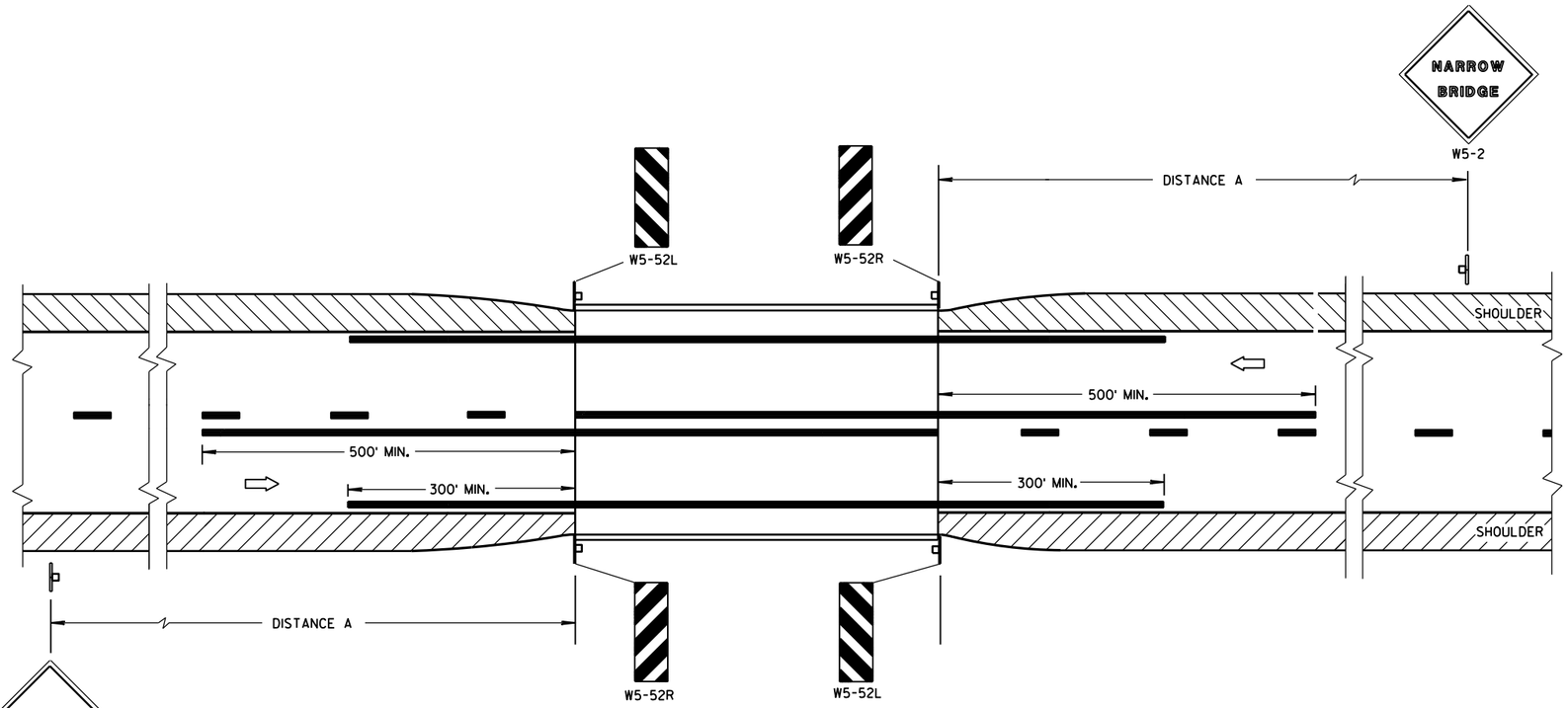


6

SDD 15C02 - 08b

6

SDD 15C02 - 08b




## SITUATION 1

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

### DISTANCE TABLE

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---|---|
| 25 | 150' |
| 30 | 200' |
| 35 | 250' |
| 40 | 300' |
| 45 | 400' |
| 50 | 550' |
| 55 | 750' |

## GENERAL NOTES

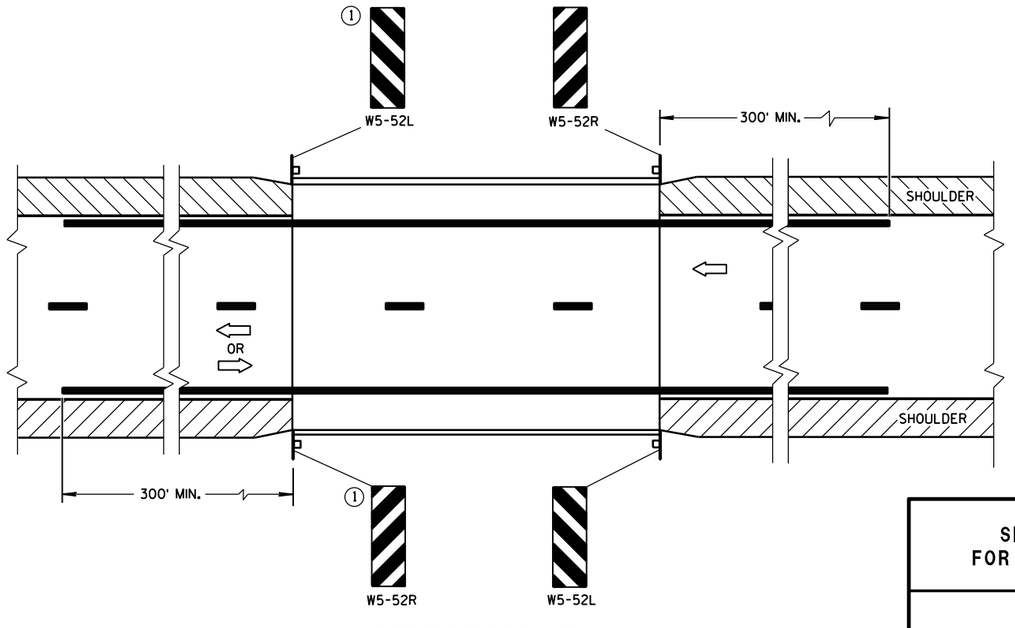
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC




## SITUATION 2

WARRANTING CRITERIA:

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

**SIGNING & MARKING FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

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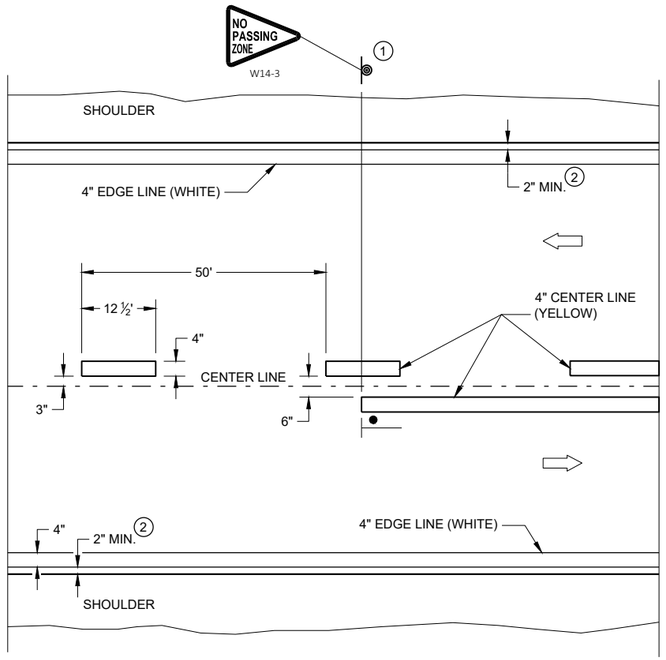
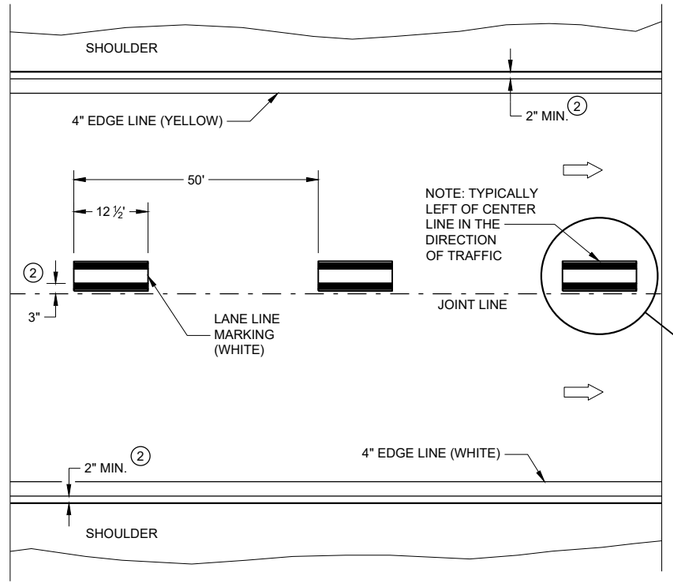
S.D.D. 15 C 6-9

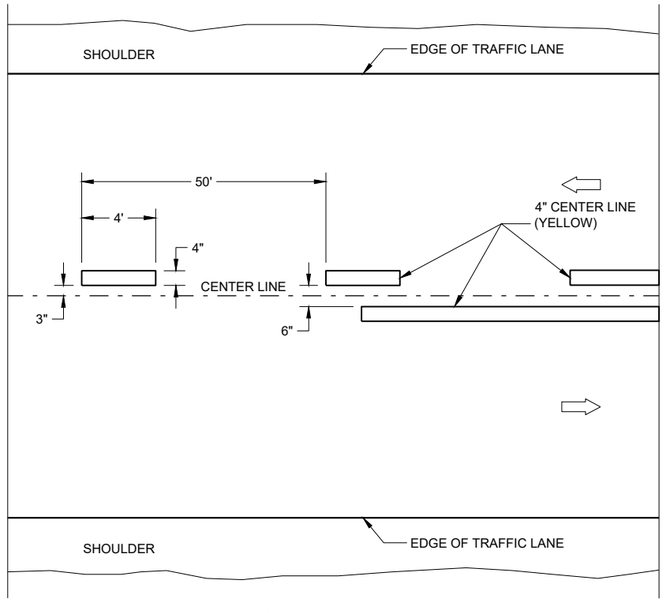



**TWO WAY TRAFFIC**

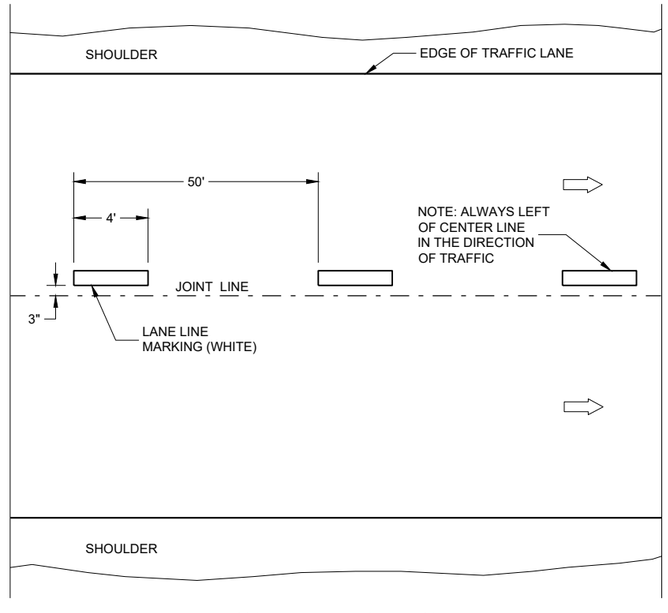



**ONE WAY TRAFFIC**

## PERMANENT PAVEMENT MARKING




**TWO WAY TRAFFIC**




**ONE WAY TRAFFIC**

## TEMPORARY PAVEMENT MARKING

## GENERAL NOTES

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

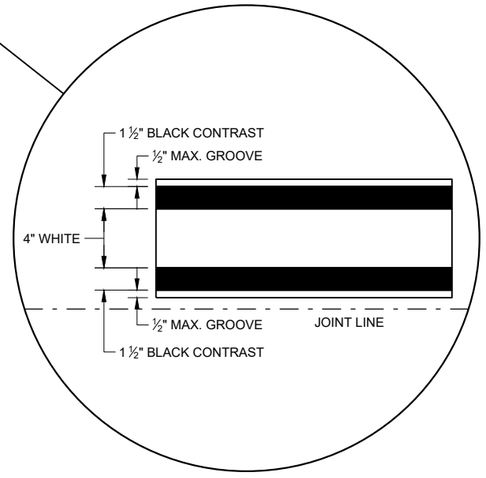
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

## LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC




**LONGITUDINAL MARKING (MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER

FHWA

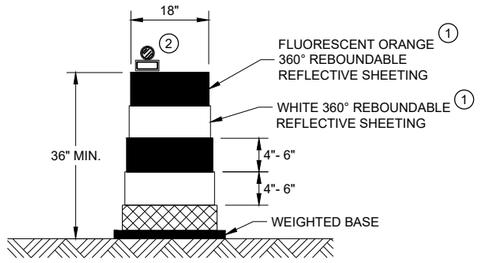


SDD 15C08 - 20a

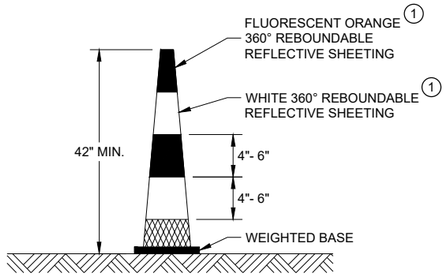
SDD 15C08 - 20a

## GENERAL NOTES

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

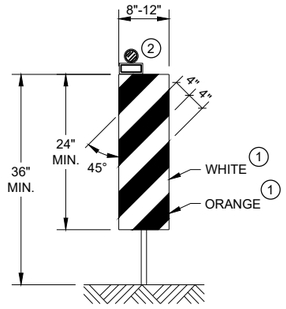



### DRUM



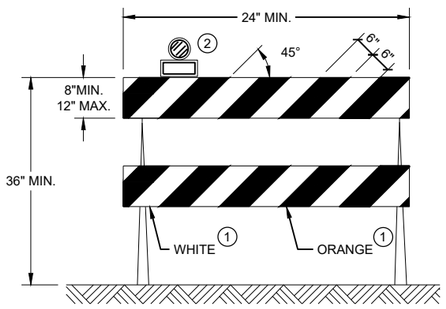

### 42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



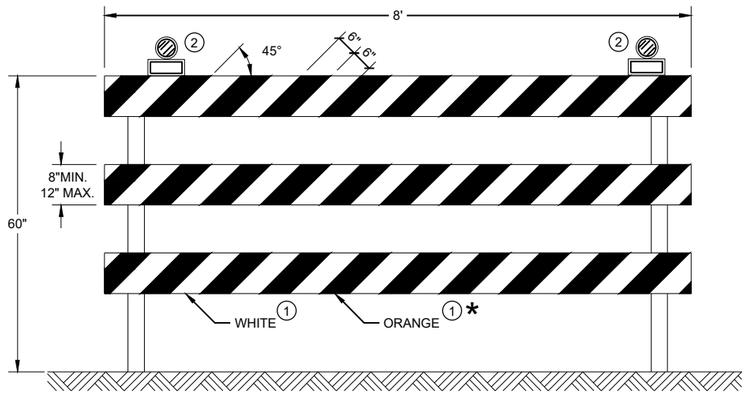

### VERTICAL PANEL

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




### TYPE II BARRICADE

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




### TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**CHANNELIZING DEVICES**
**DRUMS, CONES, BARRICADES**
**AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA



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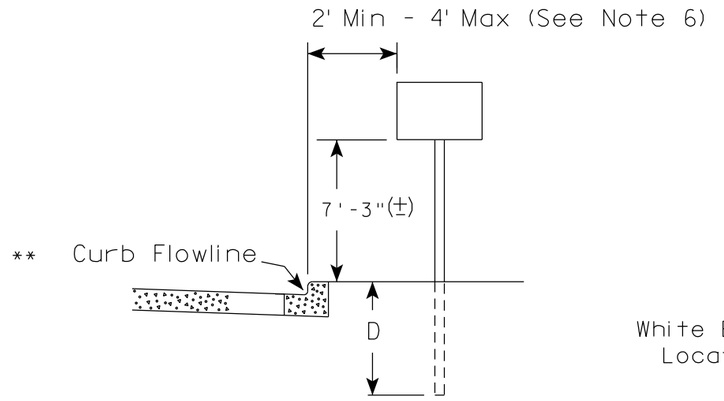
SDD15C11 - 09b

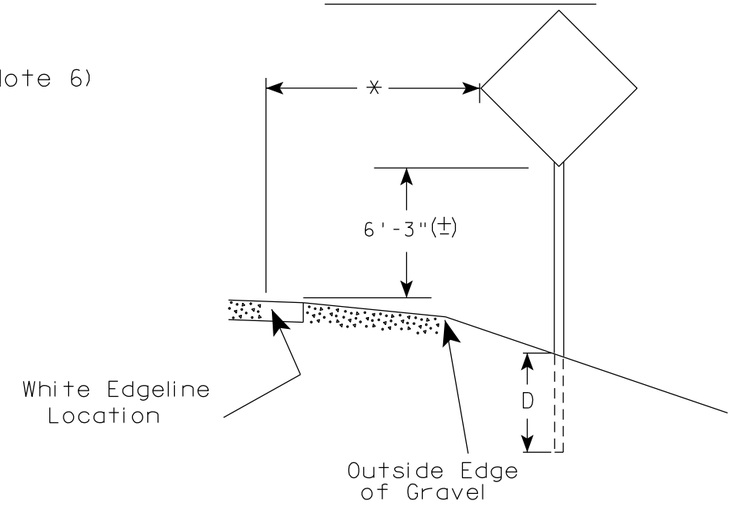
6

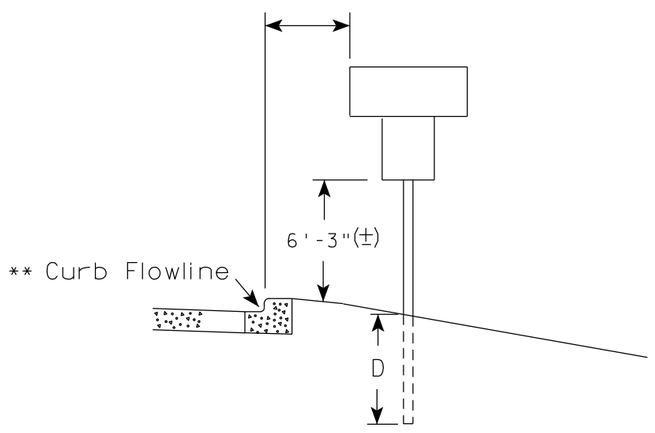
SDD15C11 - 09b

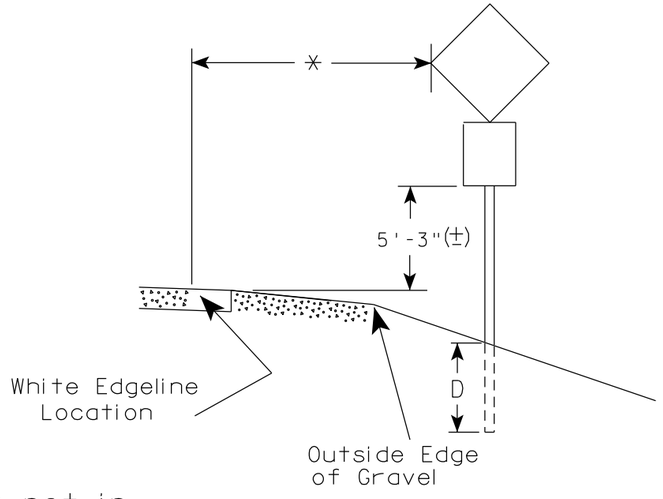
## URBAN AREA




## RURAL AREA (See Note 2)




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

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

### POST EMBEDMENT DEPTH

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

### GENERAL NOTES

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

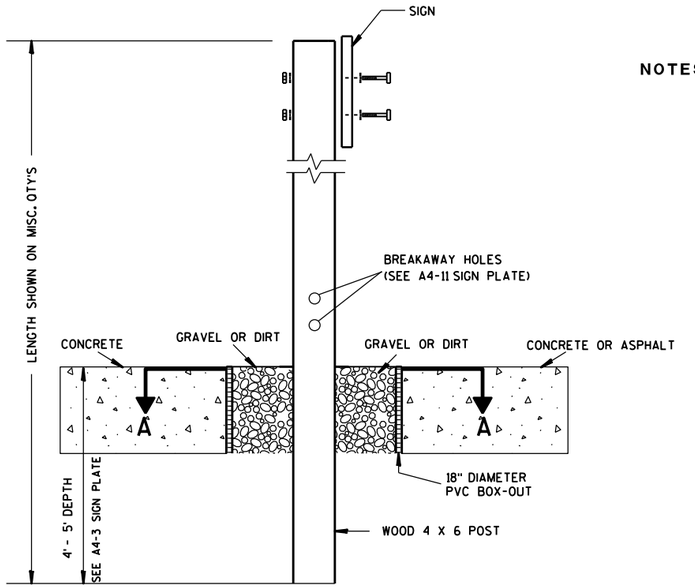
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

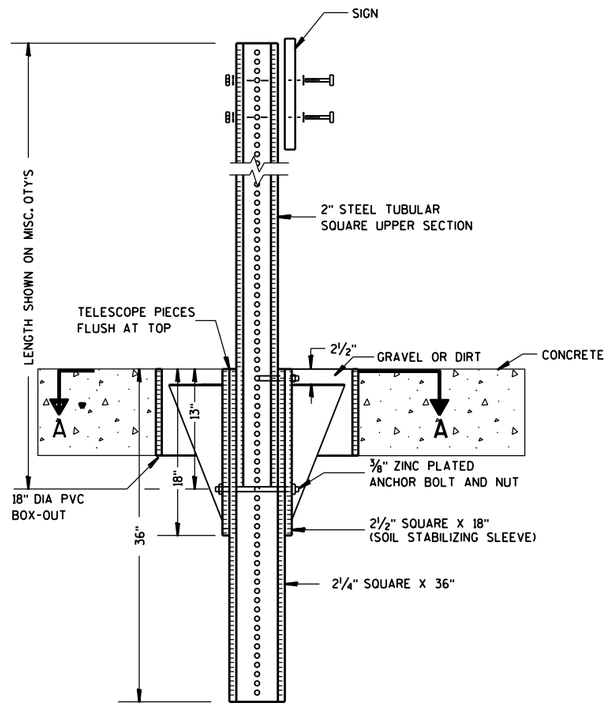
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 29 | E |
|---|---|---|---|---|---|




**ELEVATION VIEW**

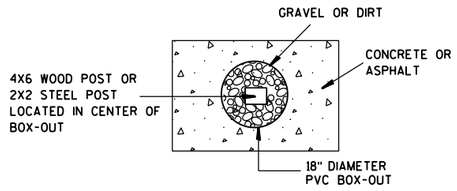
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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




**ELEVATION VIEW**

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




**PLAN VIEW**

**FOR NEW CONCRETE/ASPHALT INSTALLATIONS**

# SIGN POST BOX-OUTS A4-3B

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

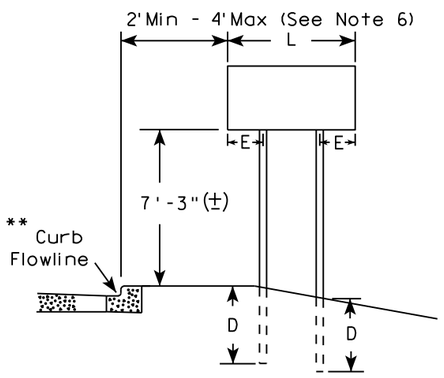
DATE 1/27/14 PLATE NO. A4-3B.1



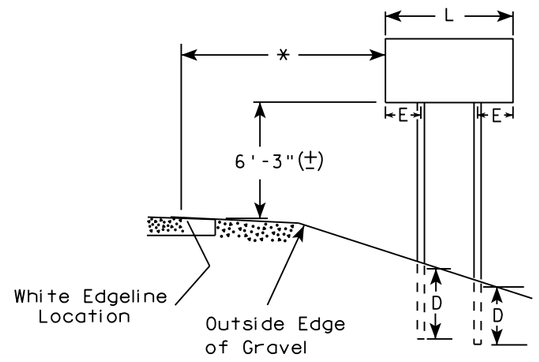
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

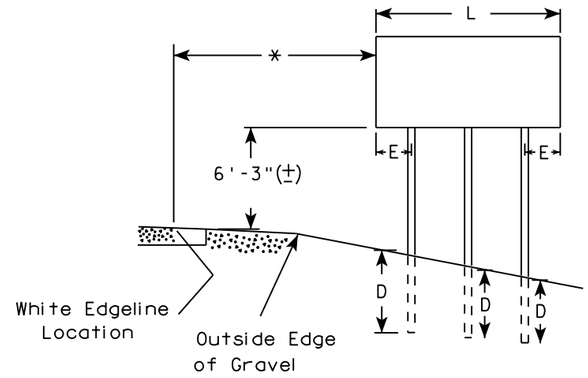
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

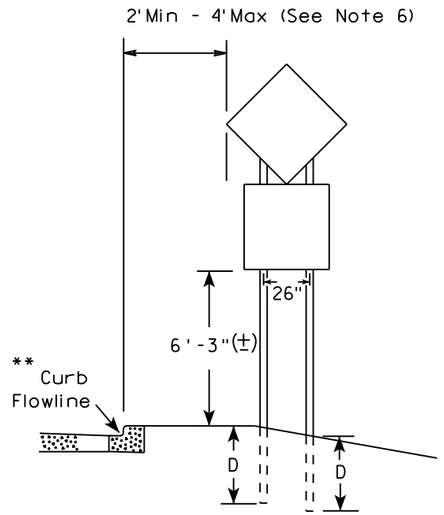
## URBAN AREA



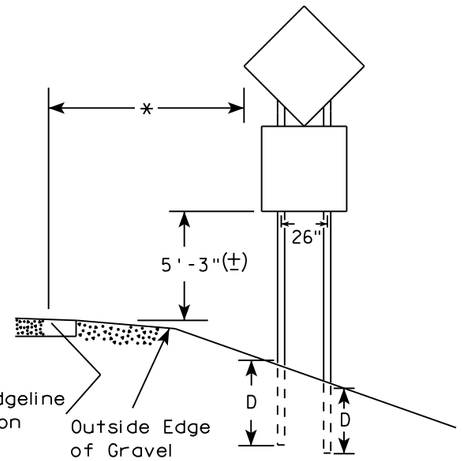

## RURAL AREA (See Note 3)




48" DIAMOND WARNING SIGN




48" DIAMOND WARNING SIGN

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

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

### GENERAL NOTES

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

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

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

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

### POST EMBEDMENT DEPTH

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

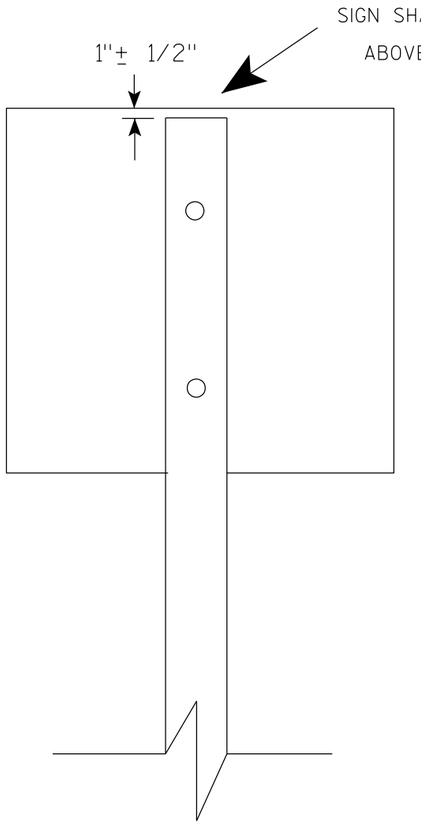
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

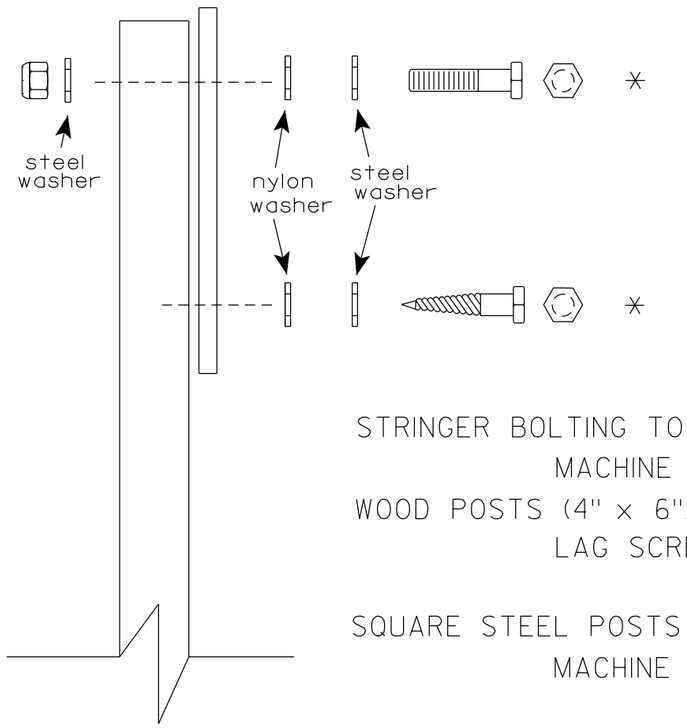
*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
For State Traffic Engineer

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

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 31 | E |
|---|---|---|---|---|---|




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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

# ATTACHMENT OF SIGNS TO POSTS

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

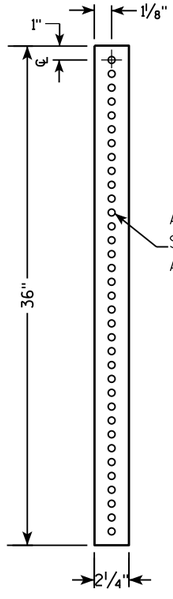
SHEET NO: 32 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 01-APRIL-2020 PLOT BY : dotc4c

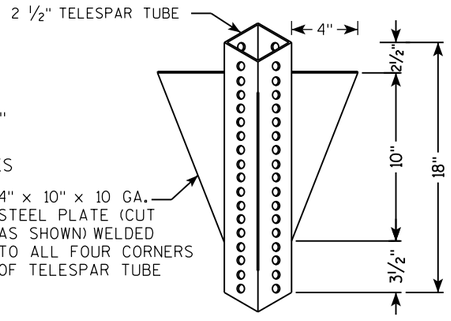
WISDOT/CADDS SHEET 42

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

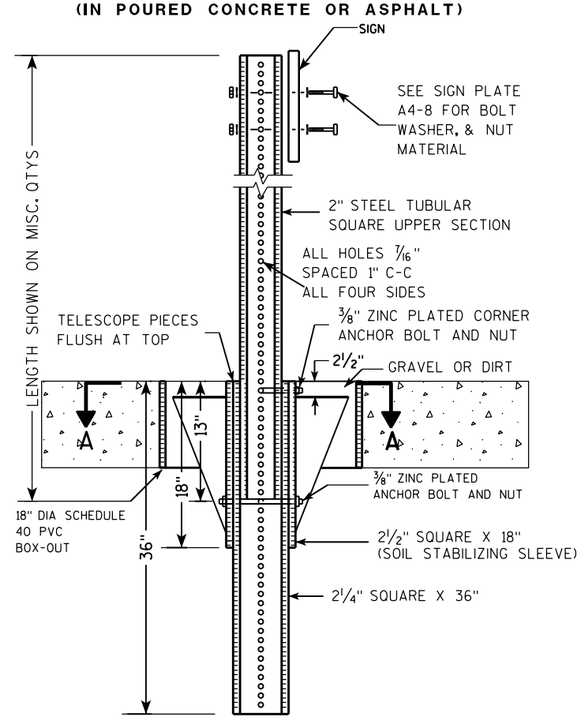
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



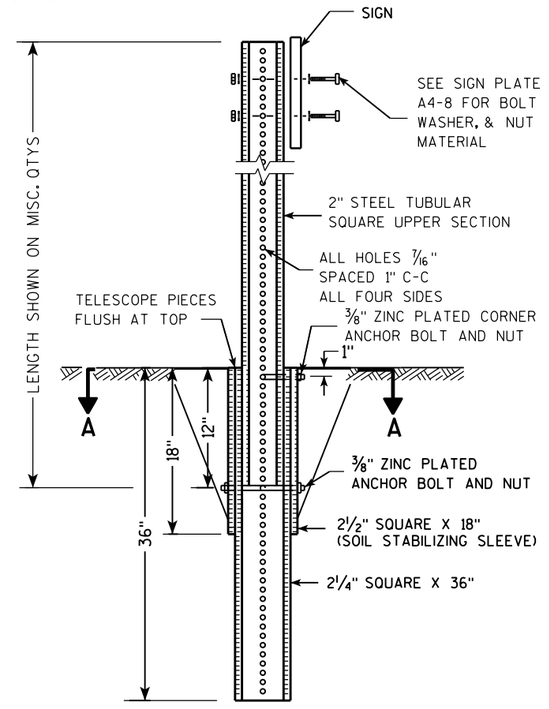

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

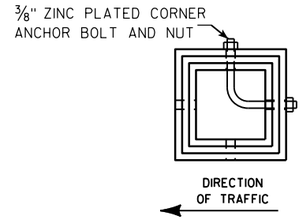



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




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




**SECTION A-A**

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

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

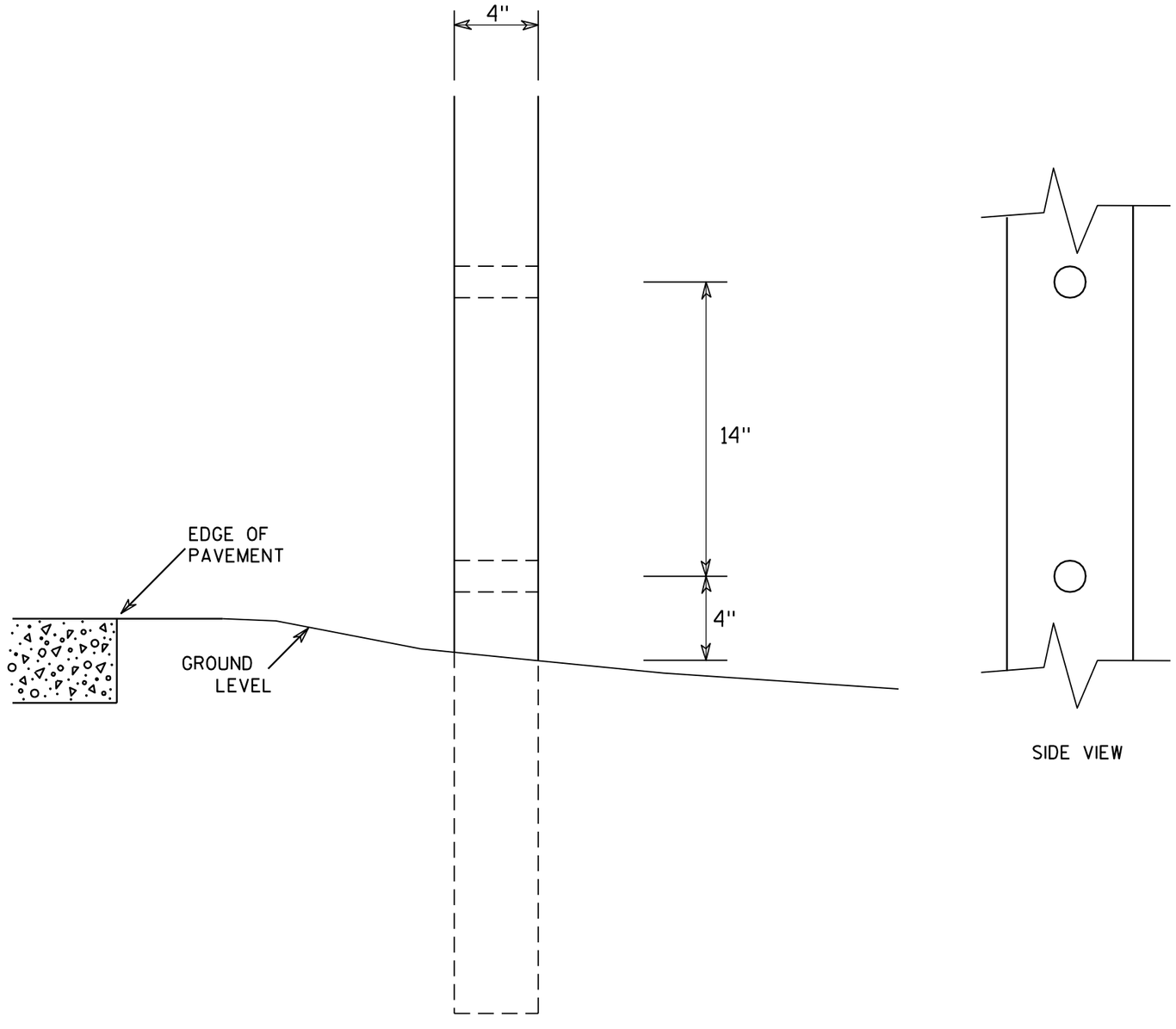
TUBULAR STEEL
SIGN POST
A4-9

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

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






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

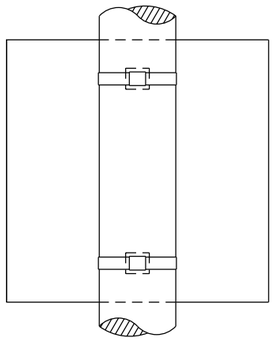
APPROVED Chester J Spang for State Traffic Engineer

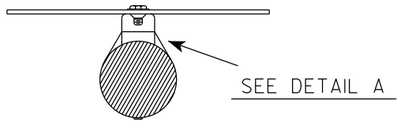
DATE 3/27/97 PLATE NO. A4-11.2

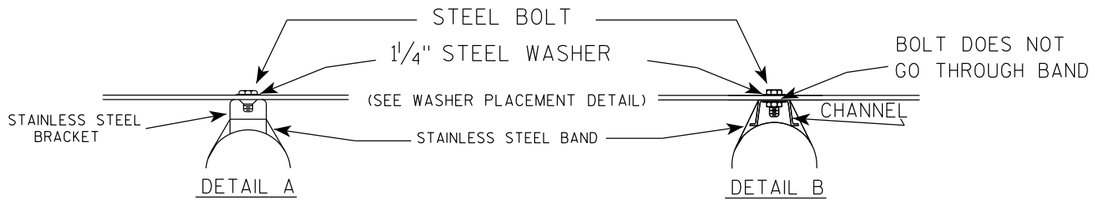
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 34 | E |
|---|---|---|---|---|---|

# BANDING

SINGLE SIGN



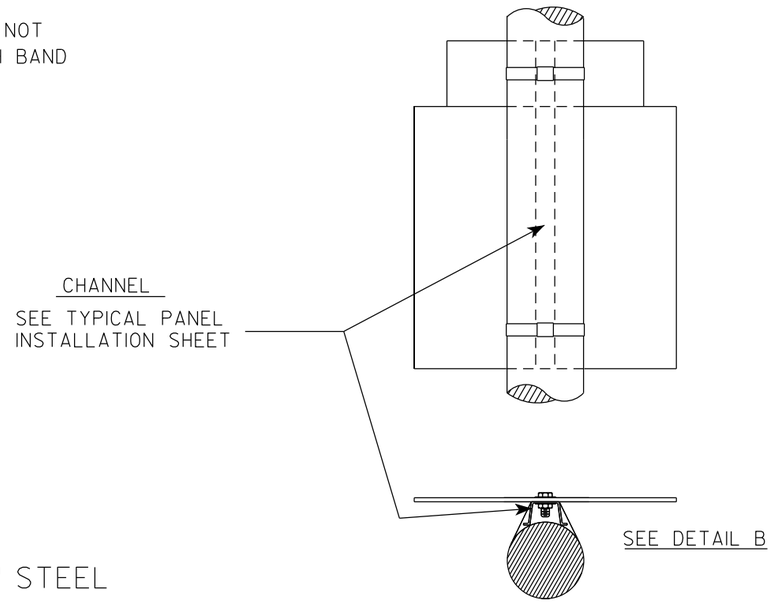


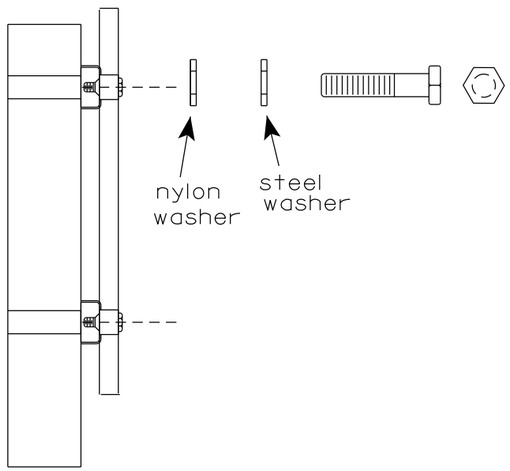

## GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY




WASHER PLACEMENT




WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

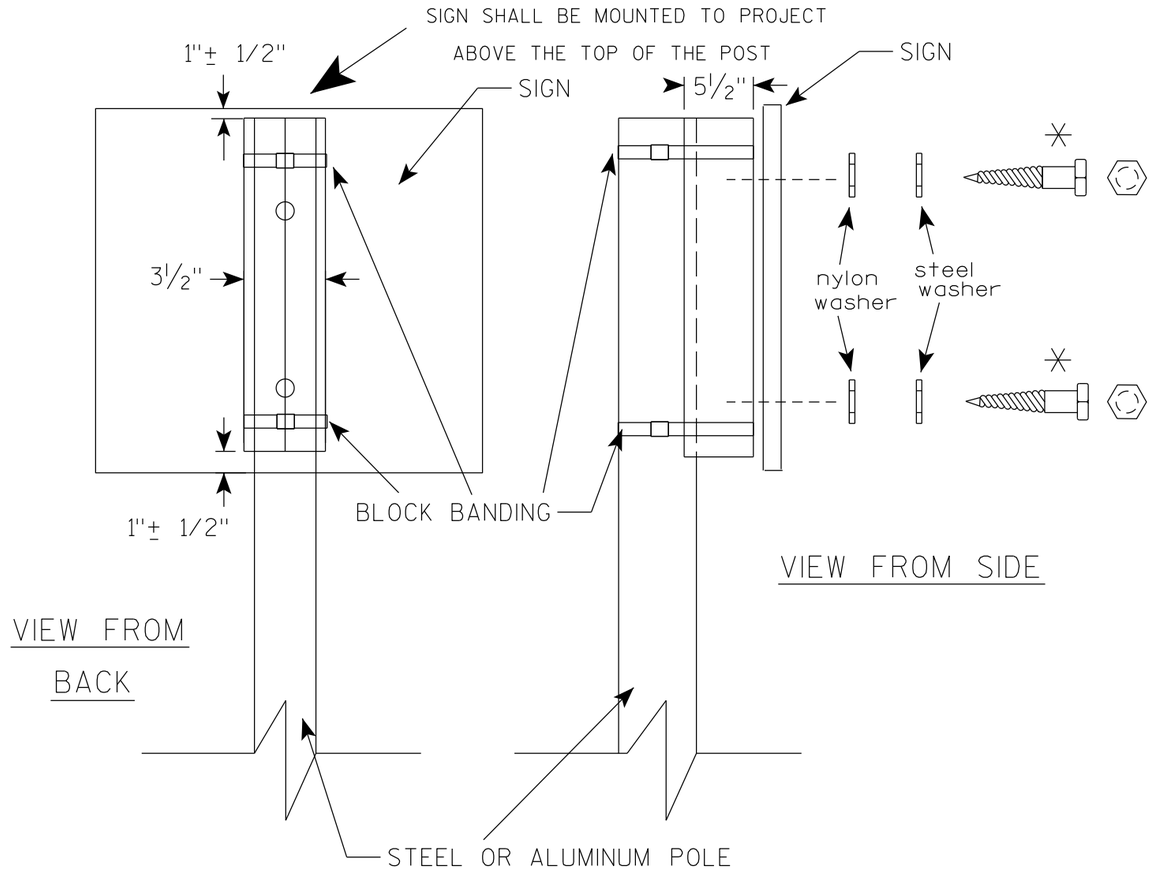
*WISCONSIN DEPT OF TRANSPORTATION*

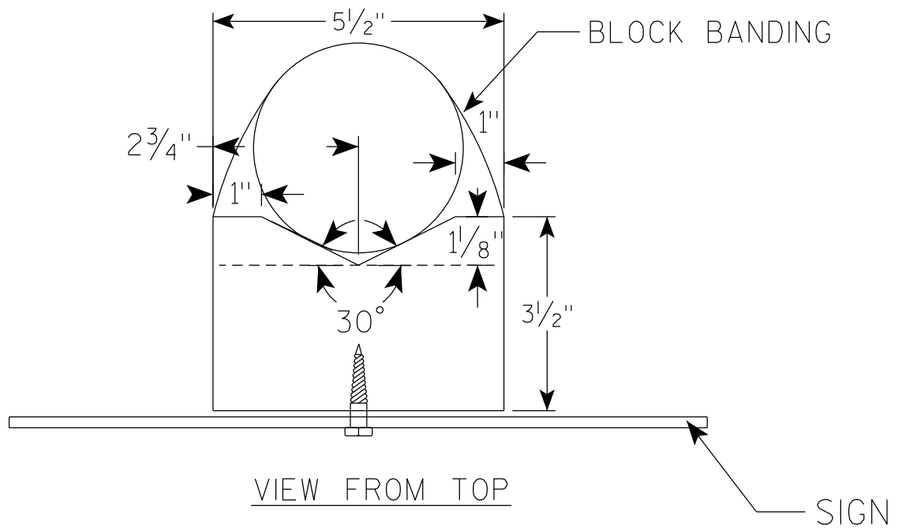
APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 35 | E |
|---|---|---|---|---|---|

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$




## GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

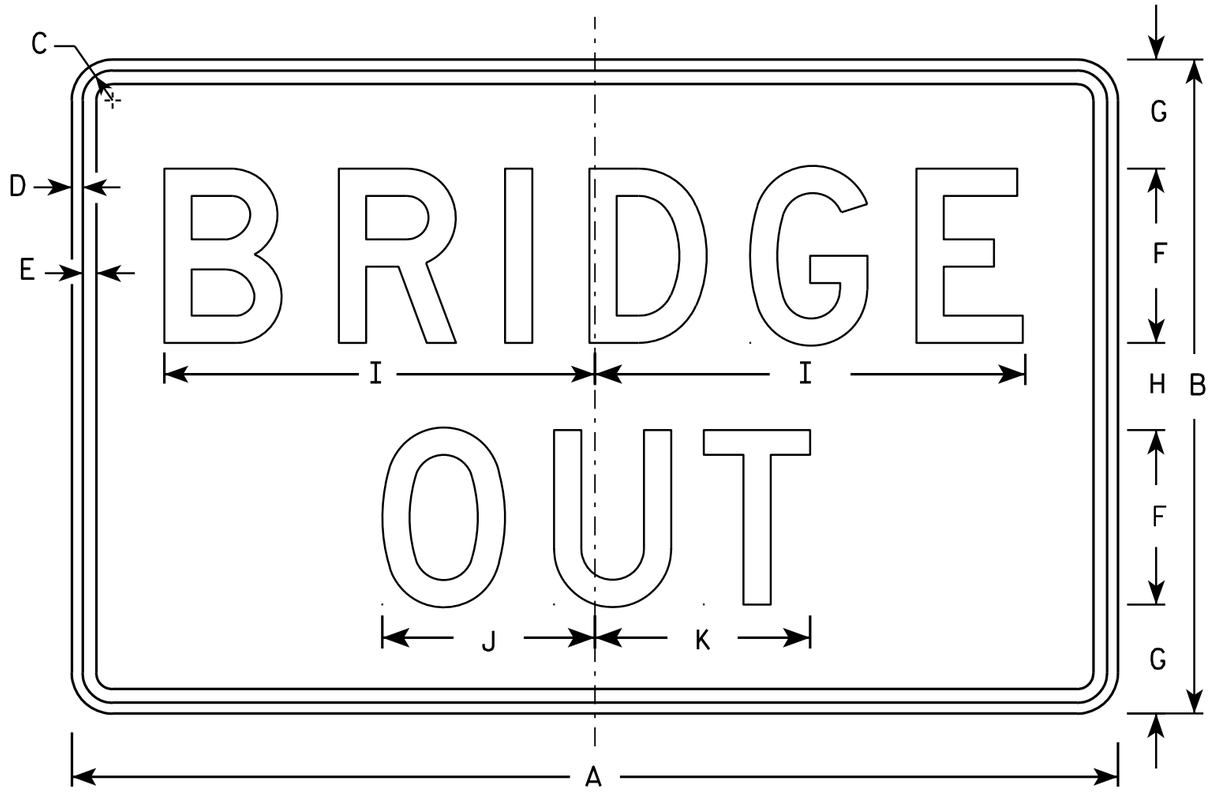
# BLOCK BANDING DETAIL ( V-BLOCK OPTION )

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

| PROJECT NO: | | | | SHEET NO: 36 | E |
|---|---|---|---|---|---|




R11-2B

NOTES

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

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

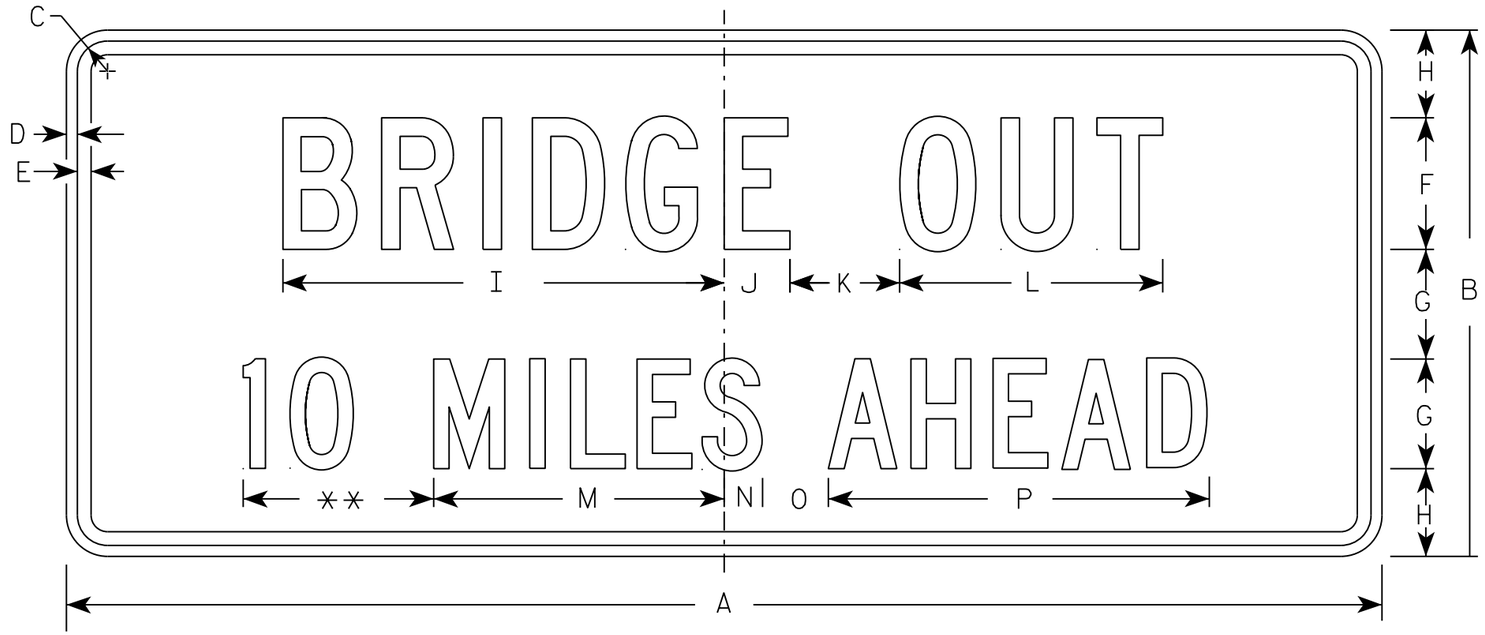
DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO:

SHEET NO: 37 E

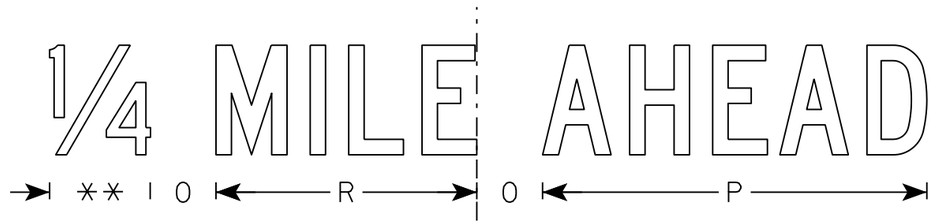
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.




R11-3C

** See Note 5




| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 15 | 1 3/8 | 1/2 | 5/8 | 4 | 3 | 2 1/2 | 13 1/4 | 2 1/4 | 3 | 8 | 8 | 1 1/2 | 2 | 10 3/4 | | 7 1/8 | | | | | | | | | 3.75 |
| 2S | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | | 11 7/8 | | | | | | | | | 10.0 |
| 2M | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | | 11 7/8 | | | | | | | | | 10.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R11-3C

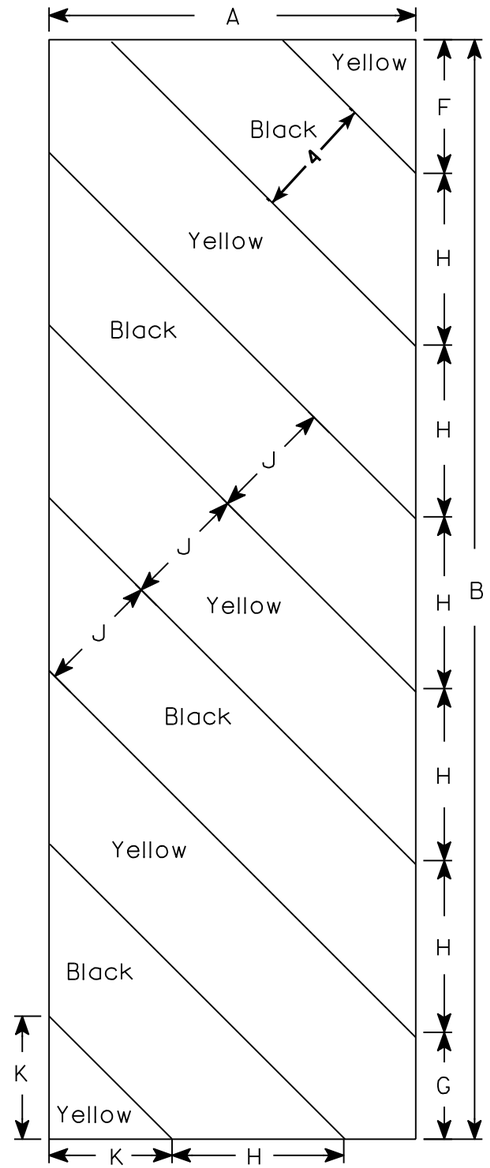
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

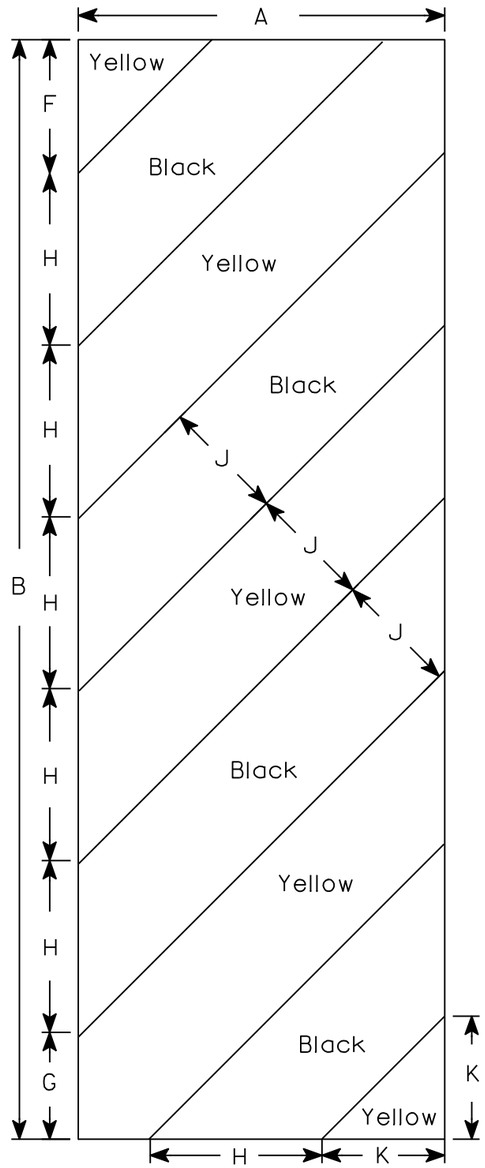
DATE 7/28/16 PLATE NO. R11-3C.3

PROJECT NO:

SHEET NO: 38 E




W5-52L




W5-52R

NOTES

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

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

STANDARD SIGN

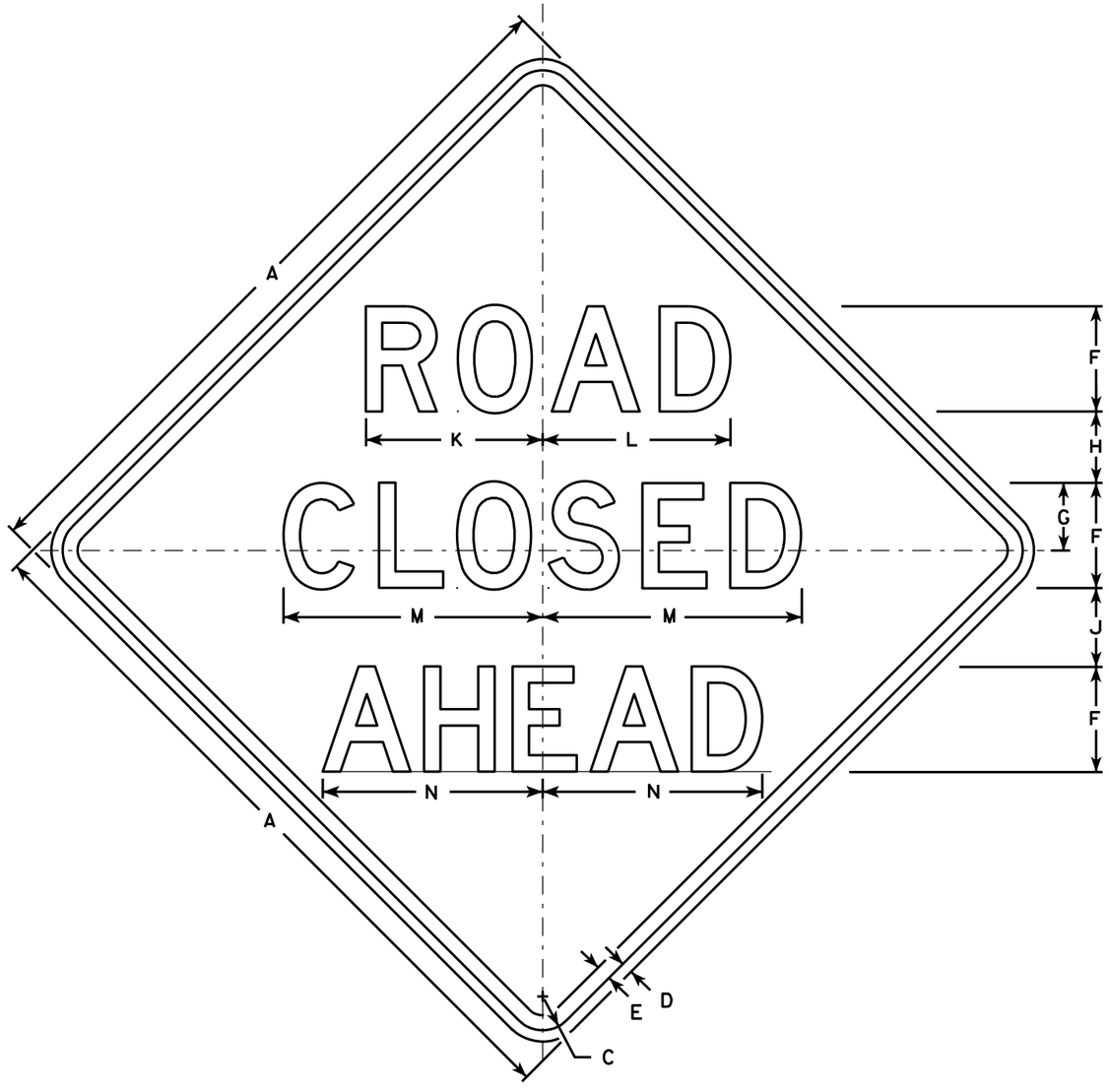
W5-52L & W5-52R

*WISCONSIN DEPT OF TRANSPORTATION*

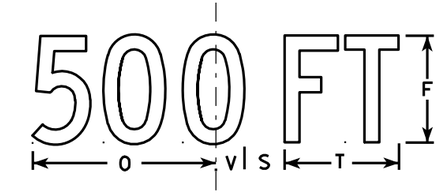
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

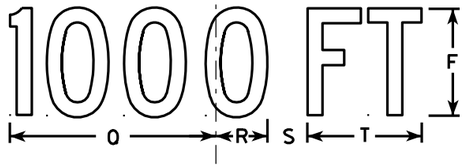
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 39 | E



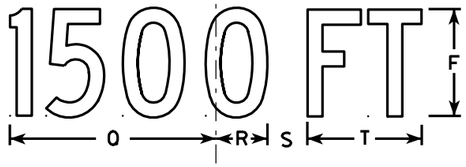

W20-3A



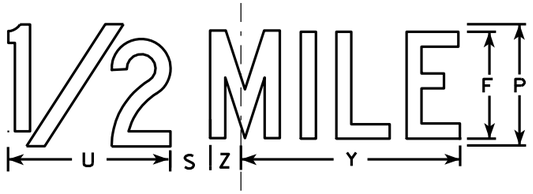

W20-3D



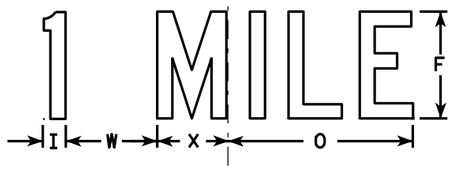

W20-3C




W20-3B




W20-3G




W20-3F

## NOTES

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

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

STANDARD SIGN
W20-3A, B, C, D, F & G

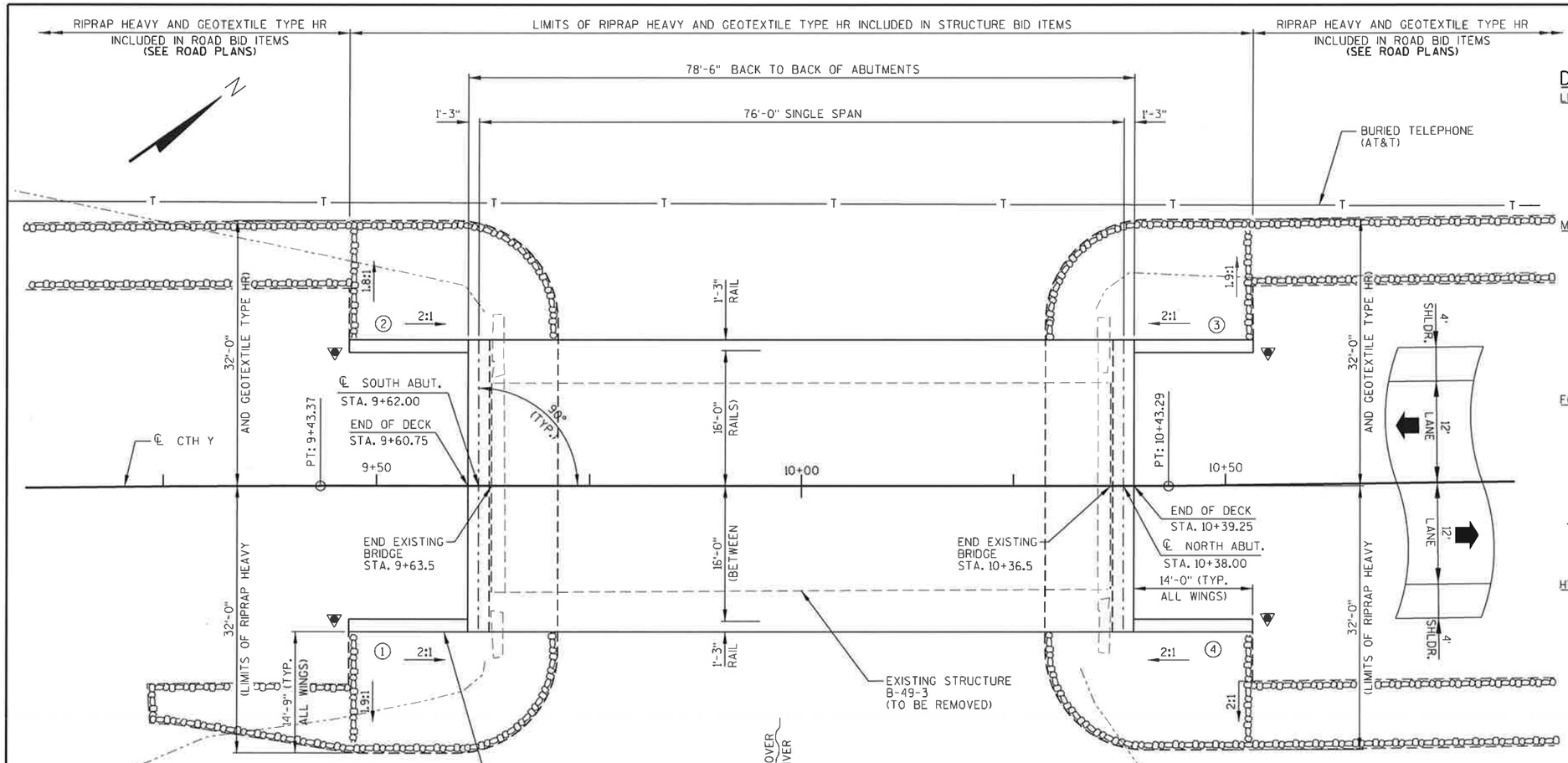
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 40 | E

STATE PROJECT NUMBER

**6794-00-72**

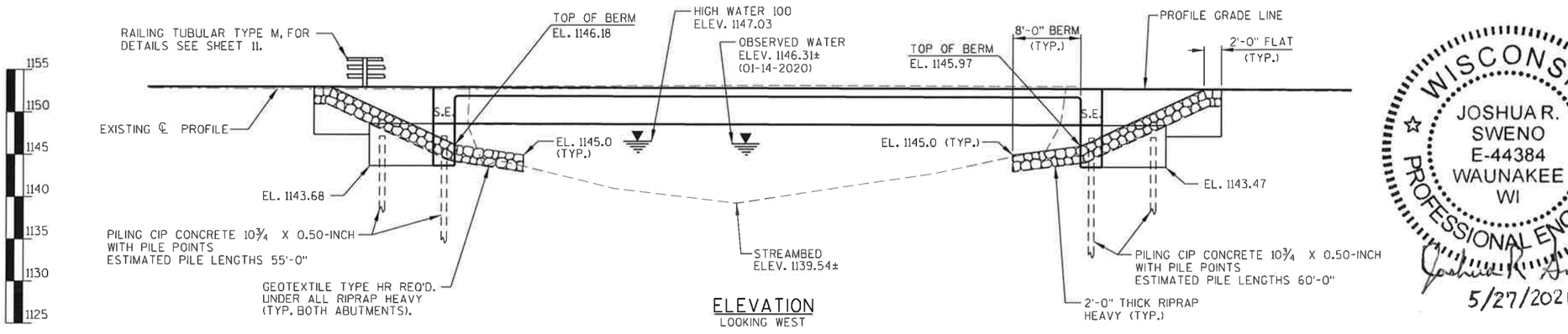



## PLAN

(SINGLE SPAN 36W" PRESTRESSED CONCRETE GIRDER BRIDGE)

▼ - INDICATES LOCATION OF PROVISION FOR THRIE BEAM GUARD ATTACHMENT.

◯ - INDICATES WING NUMBER




## ELEVATION

LOOKING WEST

## DESIGN DATA

**LIVE LOAD:**

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.10
OPERATIONAL RATING FACTOR: 1.61

**TRAFFIC DATA:**

A.A.D.T. (2022) = 1680
A.A.D.T. (2042) = 2040
R.D.S. = 45 MPH

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

**MATERIAL PROPERTIES:**

| | |
|---|---|
| CONCRETE MASONRY, SUPERSTRUCTURE | $f'_c$ = 4,000 P.S.I. |
| ALL OTHER | $f'_c$ = 3,500 P.S.I. |
| HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 | $f_y$ = 60,000 P.S.I. |
| 36W-INCH PRESTRESSED GIRDERS CONCRETE MASONRY | $f'_c$ = 8,000 P.S.I. |
| STRANDS - 0.60" ϕ WITH AN ULTIMATE TENSILE STRENGTH OF | $f_y$ = 270,000 P.S.I. |
| PILING CIP CONCRETE 10¾ x 0.50-INCH | $f_y$ = 45,000 P.S.I. |

**FOUNDATION DATA:**

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 10¾ X 0.50-INCH WITH PILE POINTS DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS ✳ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. AT THE NORTH ABUTMENT ONLY, DRIVE PILES TO 140 TON RESISTANCE OR PILE TIP ELEVATION 1090.6, WHICHEVER IS DEEPER. ESTIMATED PILE LENGTHS ARE 55'-0" FOR THE SOUTH ABUTMENT AND 60'-0" FOR THE NORTH ABUTMENT.

✳ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

**HYDRAULIC DATA:**

100 YEAR FREQUENCY

| | |
|---|---|
| DRAINAGE AREA | 113 SQ. MI. |
| $Q_{100}$ | 1775 C.F.S. |
| VELOCITY | 5.56 FT./SEC. |
| WATERWAY AREA | 320 SQ. FT. |
| SCOUR CRITICAL CODE | 8 |
| HIGH WATER $_{100}$ ELEVATION | 1147.03 |
| $Q_2$ | 650 C.F.S. |
| $Q_2$ ELEVATION | 1146.44 |
| $Q_2$ VELOCITY | 2.20 FT./SEC. |

ROADWAY OVERFLOW DESIGN FREQUENCY

OVERTOPPING FREQUENCY — > 100 YEARS

## LIST OF DRAWINGS




CONSULTANT DESIGN CONTACT:
JOSH SWENO
(608) 355-8852

BRIDGE OFFICE CONTACT:
AARON BONK
(608) 261-0261


WISCONSIN
JOSHUA R. SWENO
E-44384
WAUNAKEE
WI
PROFESSIONAL ENGINEER
5/27/2021

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |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FUNDING | PLANNING | ENVIRONMENTAL
1702 PANKRATZ STREET, MADISON WI 53704
(608) 242-7779 www.msa-ps.com



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ SDR 08/25/21
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-49-192

CTH Y OVER PLOVER RIVER

| COUNTY | TOWN ~~/CITY/VILLAGE~~ |
|---|---|
| PORTAGE | SHARON |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| JFM | JRS | RLR | JRS |

GENERAL PLAN

SHEET 41 OF 12

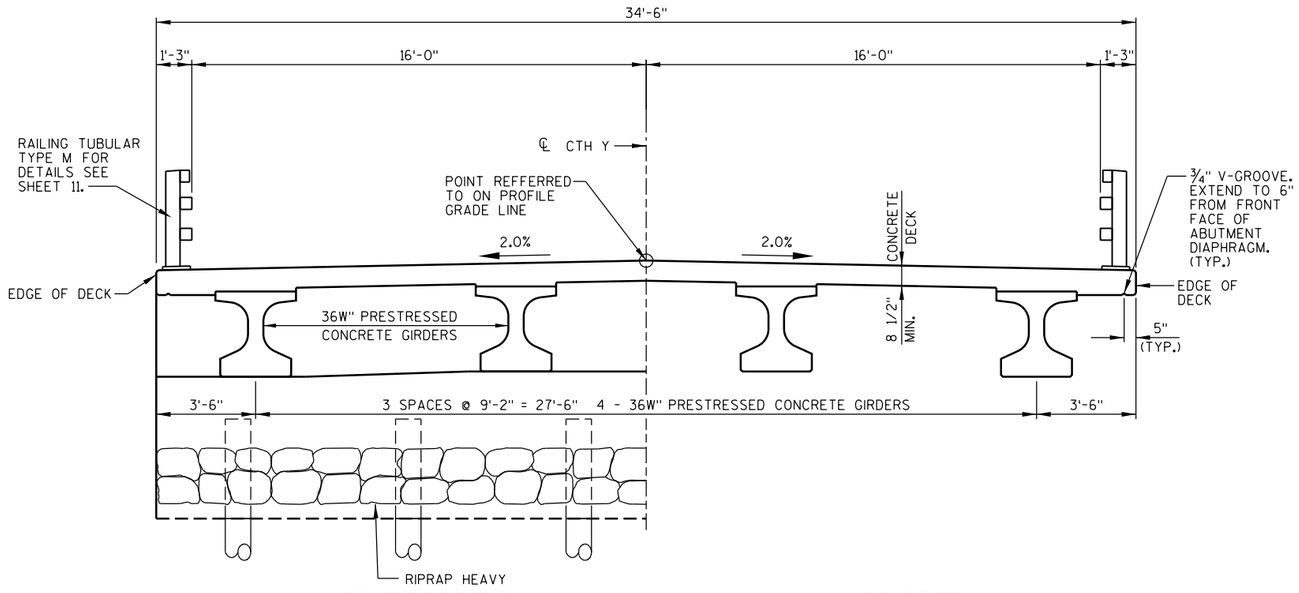
8

8

FILE= 11512013_01.DGN
DATE= 5-25-2021

STATE PROJECT NUMBER

6794-00-72




AT ABUTMENTS IN SPAN

## CROSS SECTION THRU BRIDGE

(LOOKING NORTH)

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS, OR AS DIRECTED BY THE ENGINEER.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGE B-49-192" FOR THE ABUTMENTS.

THIS STRUCTURE WILL REPLACE THE EXISTING STRUCTURE, B-49-3, A 73.0 FT. LONG, SINGLE SPAN STEEL DECK GIRDER BRIDGE ON CONCRETE ABUTMENTS, WITH A 24.0 FT. CLEAR ROADWAY WIDTH.

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

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 3'-0" ABOVE BOTTOM OF ABUTMENT.

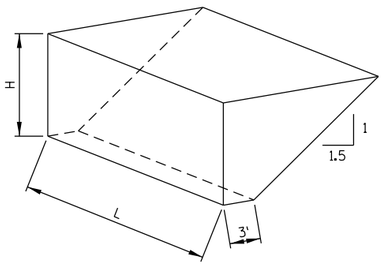
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF DECK, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF DECK, TO THE TOP AND EXTERIOR EXPOSED FACES OF WINGS, AND TO THE END 1'-0" OF THE FRONT FACE OF ABUTMENTS.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARK REFERENCES AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.

CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

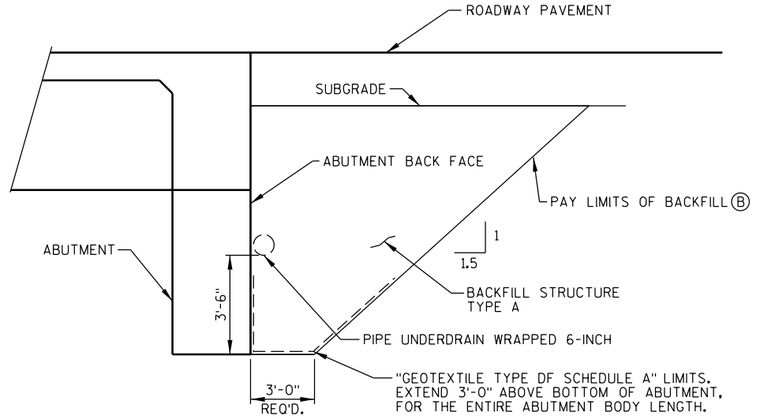
## TOTAL ESTIMATED QUANTITIES

| | ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUT. | NORTH ABUT. | SUPER | TOTAL |
|---|---|---|---|---|---|---|---|
| | 203.0260.01 | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-49-3 | EACH | - | - | - | 1 |
| | 206.1000.01 | EXCAVATION FOR STRUCTURES BRIDGES B-49-192 | LS | - | - | - | 1 |
| Ⓑ - | 210.1500 | BACKFILL STRUCTURE TYPE A | TON | 176 | 176 | - | 352 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | 33 | 33 | 100 | 166 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 16 | 16 | 333 | 365 |
| | 503.0137 | PRESTRESSED GIRDER TYPE I 36W-INCH | LF | - | - | 308 | 308 |
| | 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 2,110 | 2,110 | - | 4,220 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 1,635 | 1,635 | 17,960 | 21,230 |
| | 506.2605 | BEARING PADS ELASTOMERIC NON-LAMINATED | EACH | - | - | 8 | 8 |
| | 506.4000.01 | STEEL DIAPHRAGMS B-49-192 | EACH | - | - | 3 | 3 |
| | 513.4061 | RAILING TUBULAR TYPE M | LF | - | - | 218 | 218 |
| | 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 9 | 9 | - | 18 |
| | 550.0500 | PILE POINTS | EACH | 8 | 8 | - | 16 |
| | 550.0600 | PILE REDRIVING | EACH | 8 | 8 | - | 16 |
| | 550.2108 | PILING CIP CONCRETE 10 3/4 X 0.50-INCH | LF | 440 | 480 | - | 920 |
| | 606.0300 | RIPRAP HEAVY | CY | 75 | 75 | - | 150 |
| | 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 70 | 70 | - | 140 |
| | 645.0111 | GEOTEXTILE TYPE DF SCHEDULE A | SY | 44 | 44 | - | 88 |
| | 645.0120 | GEOTEXTILE TYPE HR | SY | 150 | 150 | - | 300 |
| | | | | | | | |
| | | **NON-BID ITEMS** | | | | | |
| | | PREFORMED FILLER | SIZE | | | | ½" & ¾" |

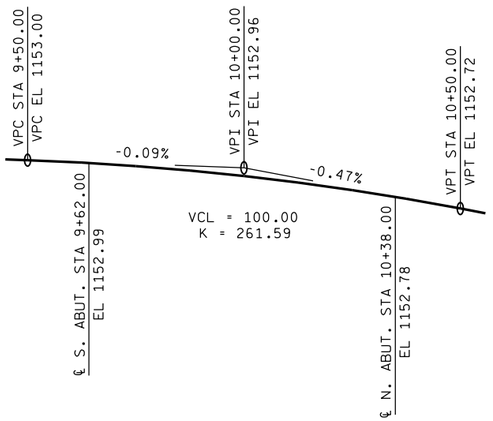



## ABUTMENT BACKFILL DIAGRAM

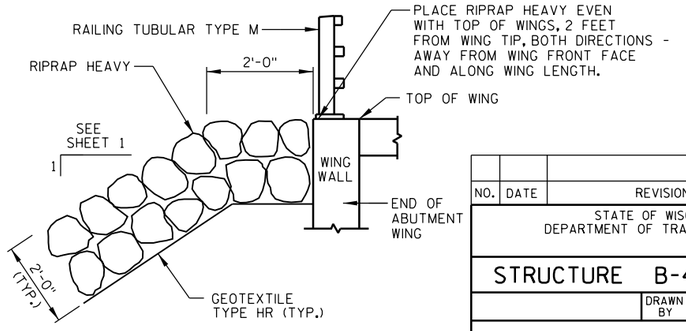
L = OUT-TO-OUT OF ABUTMENT, INCLUDING WINGS
H = AVERAGE ABUTMENT FILL HEIGHT
$V_{CF}$ = (L)(3.0')(H)+(L)(0.5)(1.5H)(H)
$V_{TON}$ = $V_{CF}$ (2.0)/27




## STRUCTURE BACKFILL DETAIL




## PROFILE GRADE LINE - CTH Y




## TYPICAL FILL SECTION AT WING TIPS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

CROSS SECTION, QUANTITIES & NOTES

SHEET 2 OF 12

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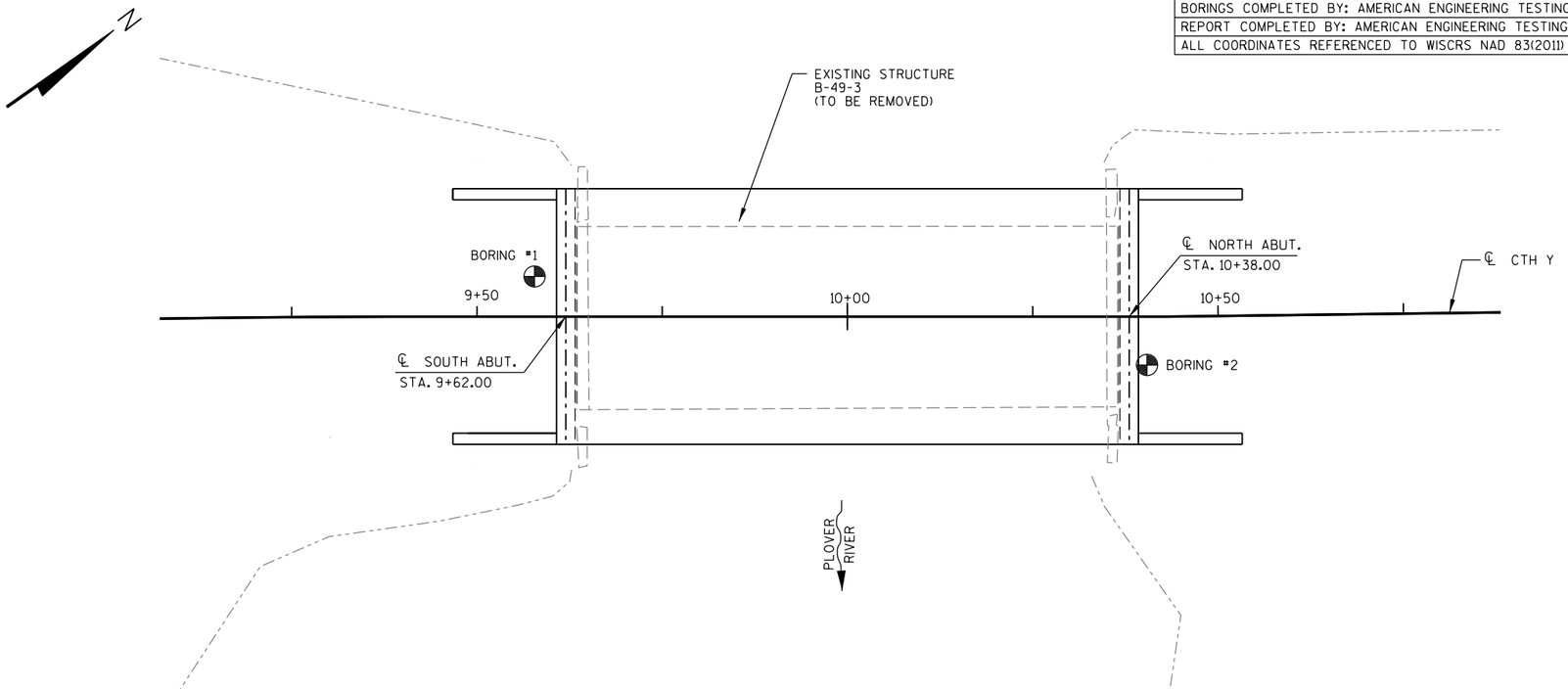
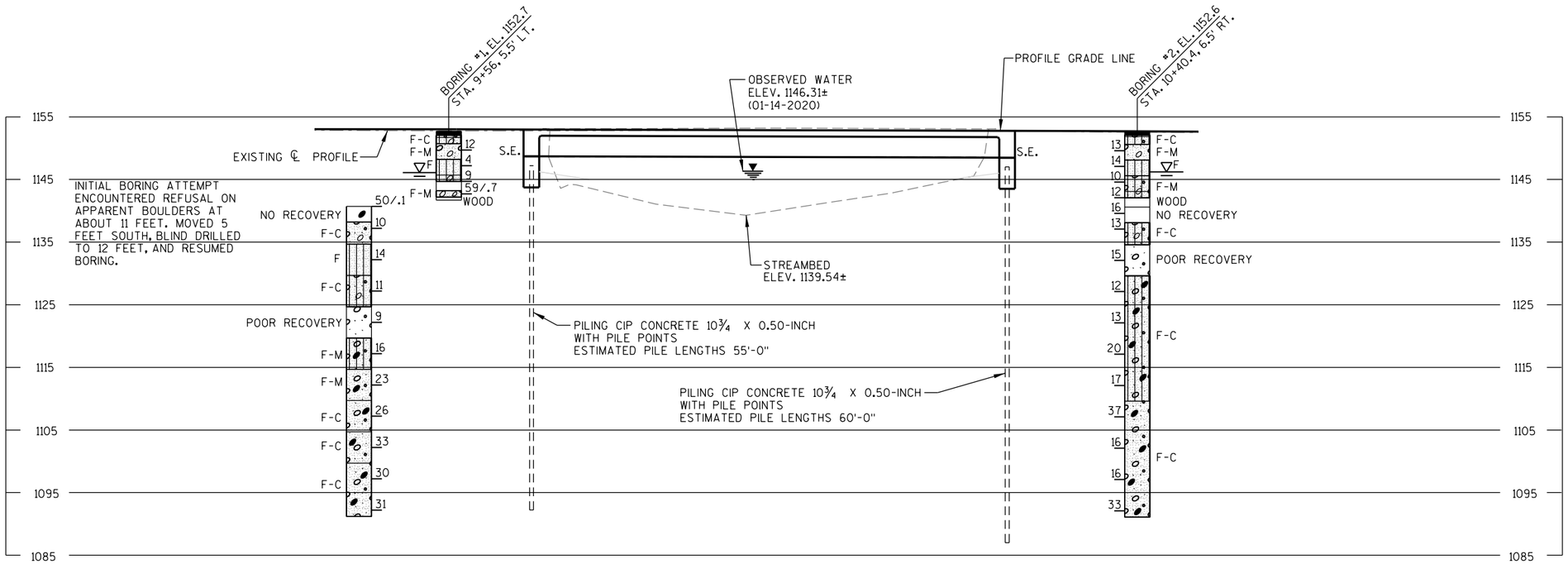
FILE= 11512013_02.DGN
DATE= 5/27/2021

11512013_02.dgn 5/27/2021 7:24:21 AM rrabska

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|---|---|---|---|
| 1 | 4-20-2020 | 253,685.9 | 194,392.4 |
| 2 | 4-21-2020 | 253,743.6 | 194,452.7 |
| BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC. | | | |
| REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC. | | | |
| ALL COORDINATES REFERENCED TO WISCRS NAD 83(2011) PORTAGE COUNTY | | | |



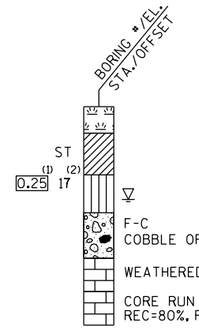

STATE PROJECT NUMBER

**6794-00-72**

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 |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

SUBSURFACE EXPLORATION

SHEET 3 OF 12
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FILE= 11512013_03.DGN

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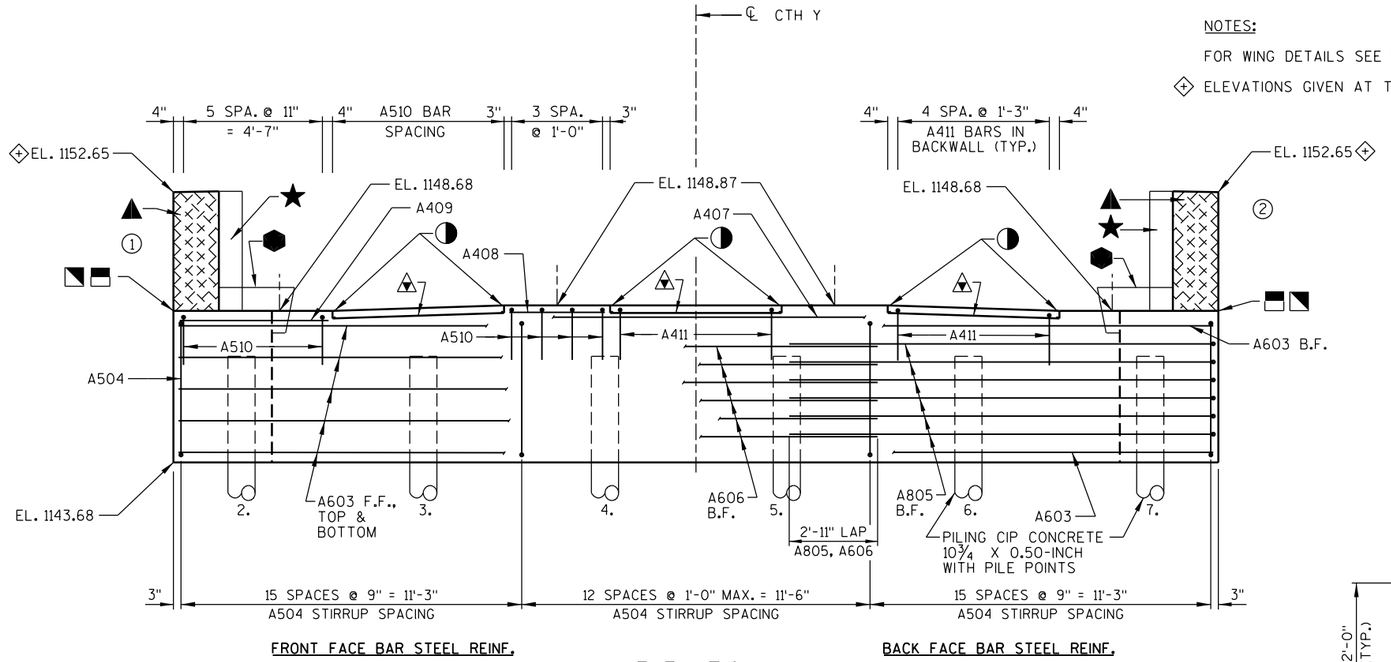
| STATE PROJECT NUMBER |
|---|
| 6794-00-72 |

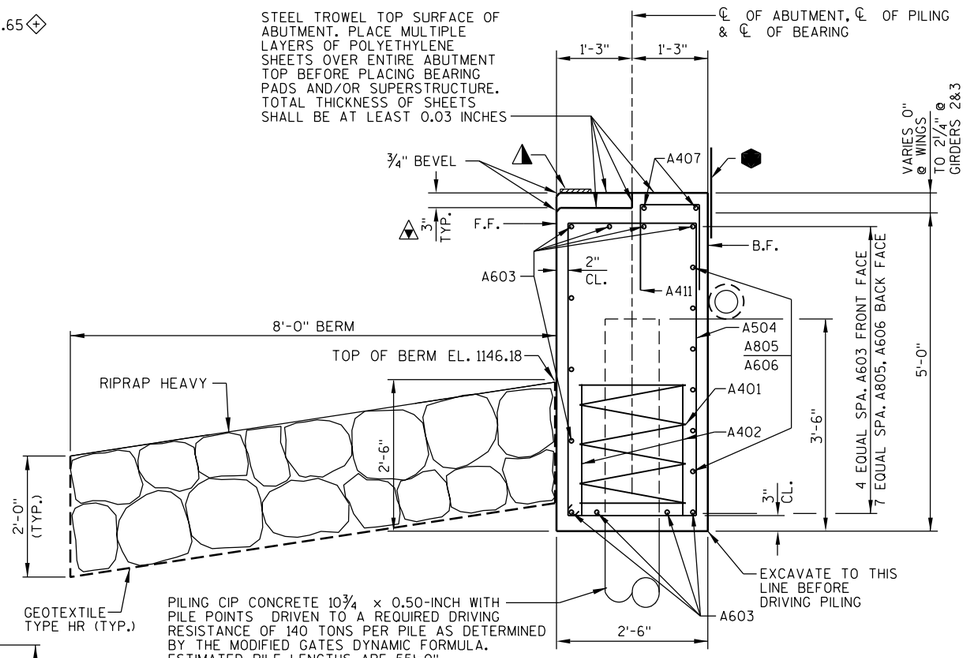
NOTES:

FOR WING DETAILS SEE SHEET 5.

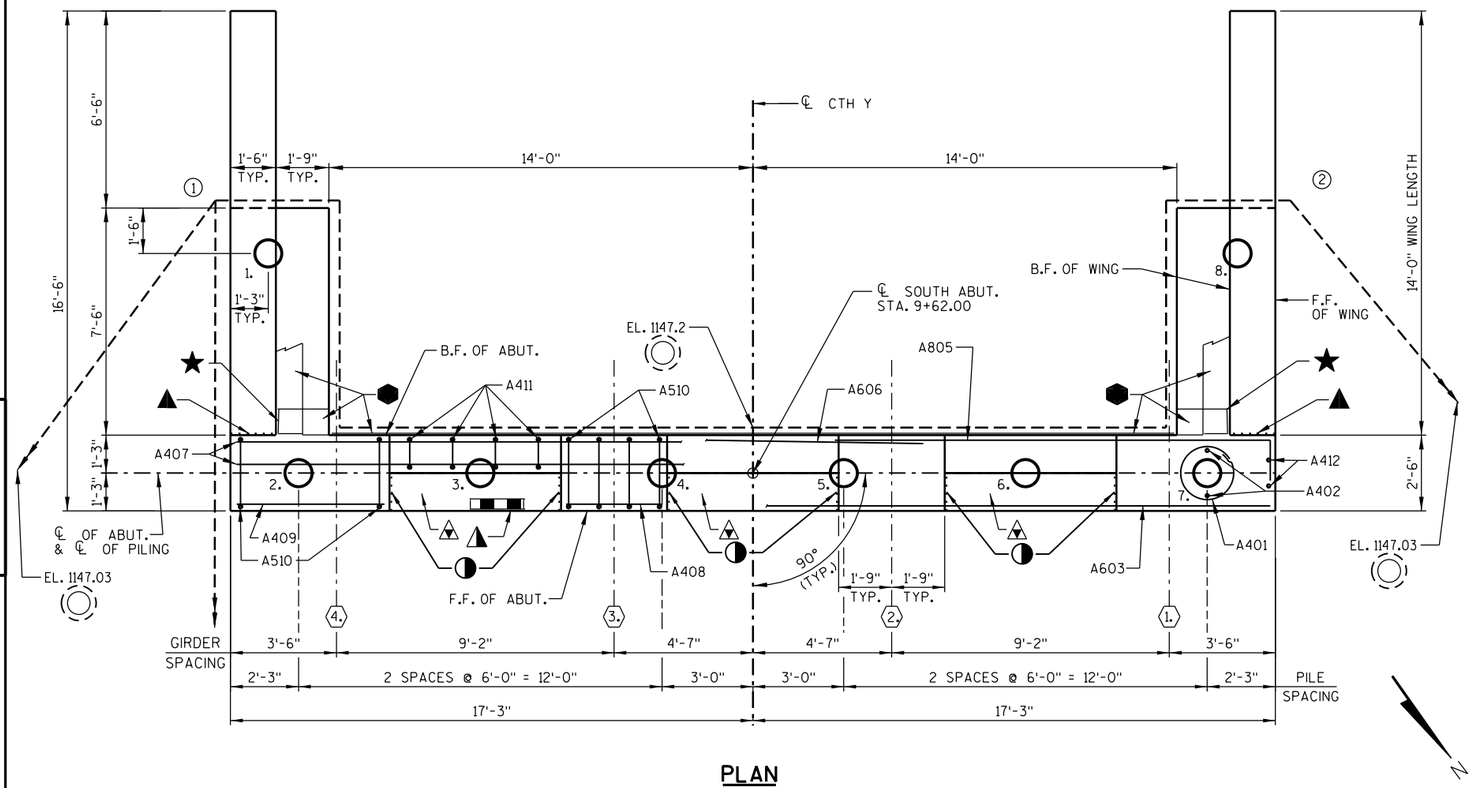
⊕ ELEVATIONS GIVEN AT THE B.F. OF ABUTMENT.




## ELEVATION
(LOOKING SOUTH)




## TYPICAL SECTION THRU ABUTMENT

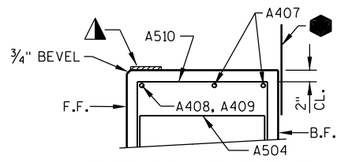



## PLAN

## LEGEND

- ◯ – INDICATES WING NUMBER.
- ⬡ – INDICATES GIRDER NUMBER.
- ◨ – CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2x6. PLACE ⬢ ON B.F. OF WING. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE.
- ◹ – ¾" "V" GROOVE ON FRONT FACE OF WING WALL AT CONSTRUCTION JOINT
- ⧋ – SEMI-EXPANSION POCKET. CONSTRUCT 3" DEEPER THAN SURROUNDING BEAM SEATS AND BACKWALL.
- ◑ – ¾" CORK FILLER AT SIDES OF EXPANSION POCKETS (SIDE VERTICAL FACES ONLY).
- ▲ – ½" PREFORMED JOINT FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONC.). FILLER INCLUDED IN WING LENGTH.
- ◭ – 4"x ½" PREFORMED JOINT FILLER, EXTEND FULL LENGTH OF ABUTMENT.
- ★ – VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOP OF WINGS.
- ⬢ – HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WING TOPS AND ALONG WING CONSTRUCTION JOINT.
- ◎ – PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU RIPRAP HEAVY AND GEOTEXTILE TYPE HR. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE, SEE RODENT SHIELD DETAIL, SHEET 5.

F.F.– FRONT FACE B.F. – BACK FACE CL.– CLEAR




## TOP OF ABUTMENT AT BEARING SEATS
SEE ELEVATION FOR REINF. SPACING

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

SOUTH ABUTMENT

SHEET 4 OF 12
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FILE= 11512013_04.DGN
DATE= 5/26/2021

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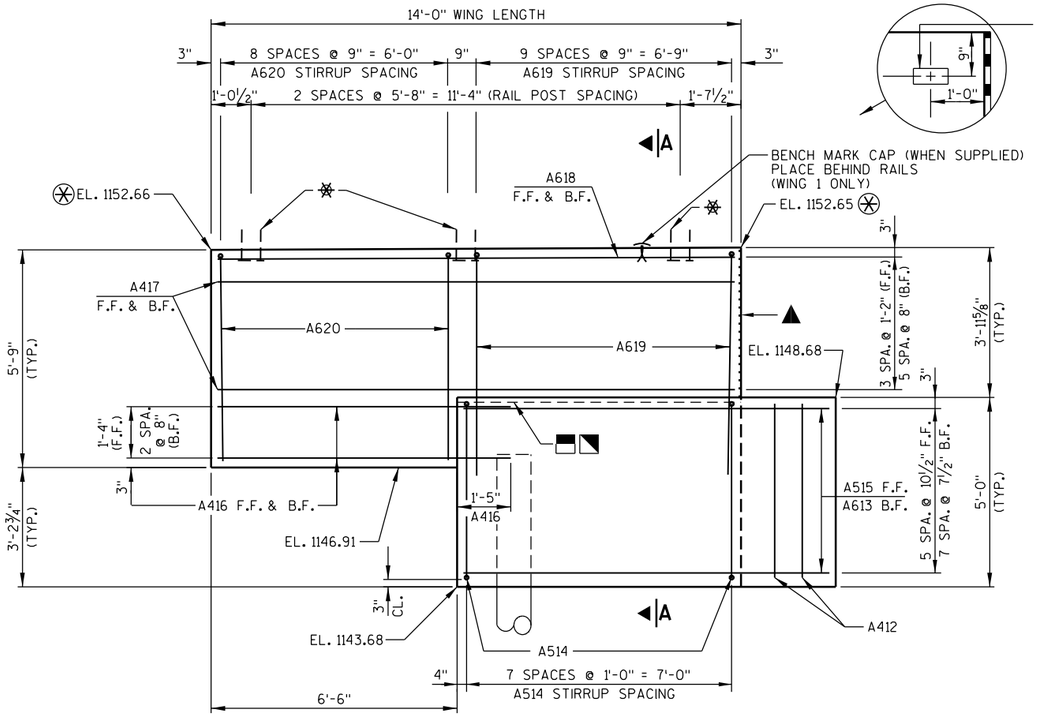
STATE PROJECT NUMBER

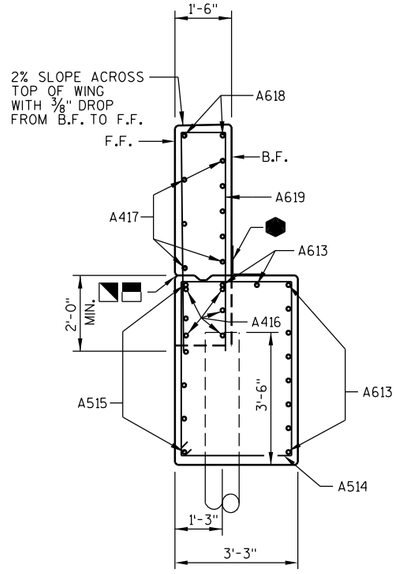
6794-00-72

⊛ — ELEVATIONS AND DIMENSIONS ARE GIVEN AT THE F.F. OF WING.

✲ — FOR RAIL POST ANCHOR DETAILS, SEE SHEET 11.




ELEVATION - WING 1



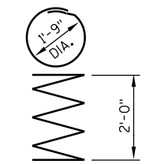

SECTION A-A THRU WING 1

## BILL OF BARS (SOUTH ABUTMENT)

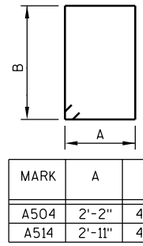
UNCOATED 2,110 LBS.
COATED 1,635 LBS.

| MARK | NUMBER REQUIRED COATED | NUMBER REQUIRED UNCOATED | LENGTH | BENT | LOCATION |
|---|---|---|---|---|---|
| A401 | - | 6 | 28'-0" | X | ABUT. BODY PILES - 1 SPIRAL WRAP PER PILE |
| A402 | - | 12 | 2'-3" | | ABUT. BODY PILES - 2 PER PILE - VERT. |
| A603 | - | 11 | 34'-2" | | ABUT. BODY - F.F., TOP & BOTTOM - HORIZ. |
| A504 | - | 43 | 13'-8" | X | ABUT. BODY - STIRRUPS - VERT. |
| A805 | - | 12 | 15'-2" | X | ABUT. BODY - B.F. @ WINGS - HORIZ. |
| A606 | - | 6 | 12'-0" | | ABUT. BODY - B.F. - CENTER - HORIZ. |
| A407 | - | 2 | 34'-2" | | ABUT. TOP - B.F. SEMI-EXP. POCKET - HORIZ. |
| A408 | - | 2 | 3'-2" | | ABUT. TOP - F.F. - GIRDERS 2 & 3 - HORIZ. |
| A409 | - | 2 | 4'-10" | | ABUT. TOP - F.F. - GIRDERS 1 & 4 - HORIZ. |
| A510 | - | 20 | 4'-11" | X | ABUT. TOP - GIRDER SEATS - VERT. |
| A411 | - | 15 | 3'-9" | X | ABUT. TOP - B.F. SEMI-EXP. POCKET - VERT. |
| A412 | - | 4 | 4'-7" | | ABUT. BODY - ENDS - VERT. |
| A613 | 20 | - | 9'-5" | | WINGS - BOTTOM - B.F. & TOP - HORIZ. |
| A514 | 16 | - | 15'-8" | X | WINGS - BOTTOM - STIRRUP - VERT. |
| A515 | 12 | - | 9'-8" | | WINGS - BOTTOM - F.F. - HORIZ. |
| A416 | 10 | - | 7'-9" | | WINGS - TIP - F.F. & B.F. - HORIZ. |
| A417 | 16 | - | 13'-7" | | WINGS - TOP - F.F. & B.F. - HORIZ. |
| A618 | 4 | - | 13'-7" | | WINGS - TOP - F.F. & B.F. - HORIZ. |
| A619 | 20 | - | 12'-6" | X | WINGS - TOP - TIES - VERT. |
| A620 | 18 | - | 11'-8" | X | WINGS - TIP - TIES - VERT. |

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

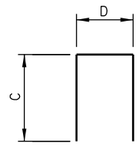



A401




| MARK | A | B |
|---|---|---|
| A504 | 2'-2" | 4'-4" |
| A514 | 2'-11" | 4'-7" |

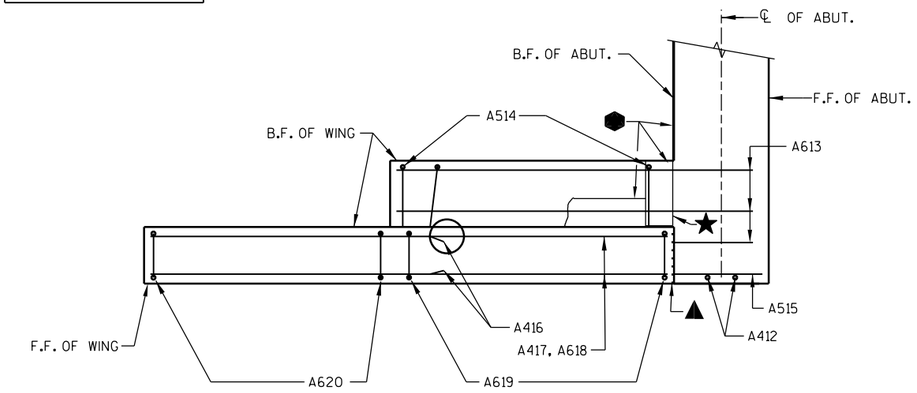

A805



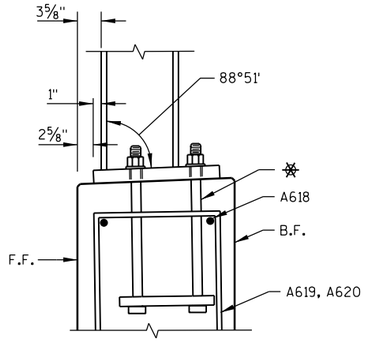

| MARK | C | D |
|---|---|---|
| A510 | 1'-6" | 2'-2" |
| A411 | 1'-6" | 11" |
| A619 | 5'-10" | 1'-2" |
| A620 | 5'-5" | 1'-2" |

SEE SHEET 4 LEGEND
FOR DESCRIPTION OF

NOTE:
WING 1 SHOWN
WING 2 SIMILAR




PLAN - WING 1

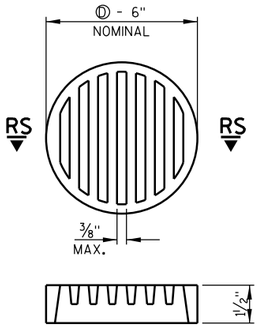



SECTION AT TOP OF WING

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

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. THE RODENT SHIELD, PIPE COUPLING AND SCREWS, SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".




SECTION RS-RS

RODENT SHIELD

Ⓓ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

SOUTH ABUTMENT DETAILS

SHEET 5 OF 12
45

FILE= 11512013_05.DGN
DATE=5/26/2021

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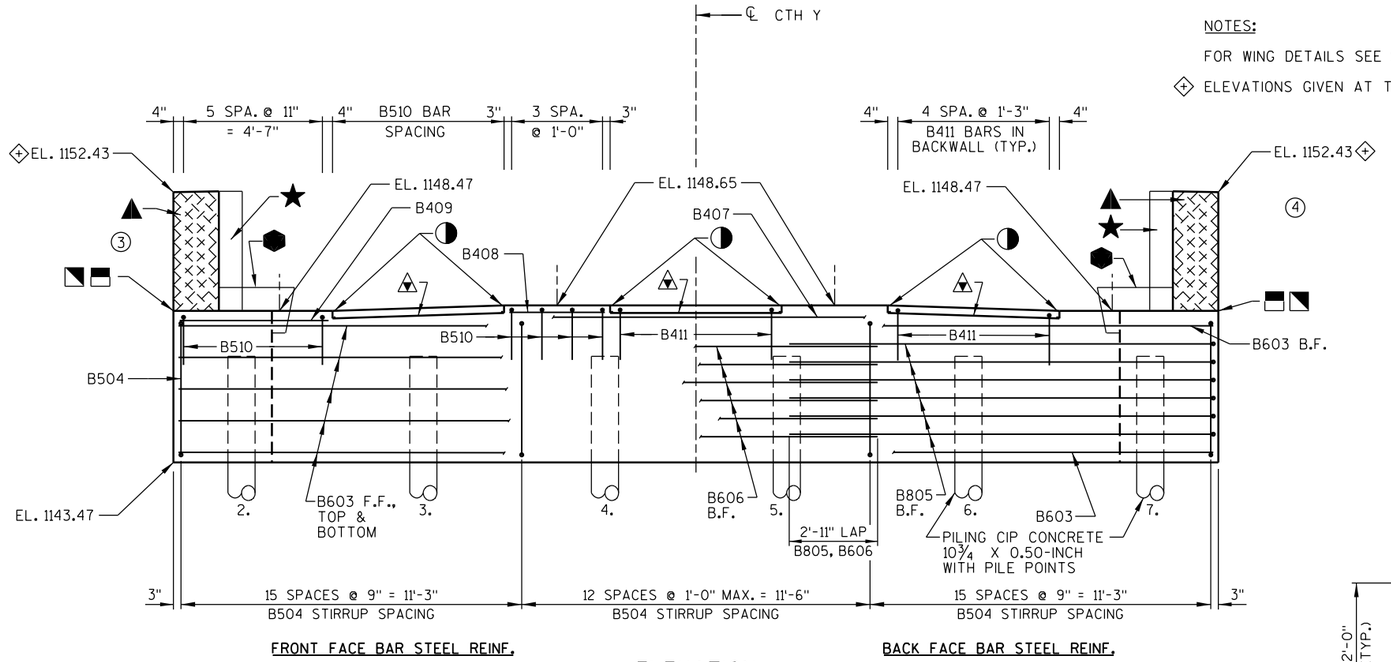
11512013_05.dgn 5/26/2021 11:16:59 AM lrabska

| STATE PROJECT NUMBER |
|---|
| 6794-00-72 |

NOTES:

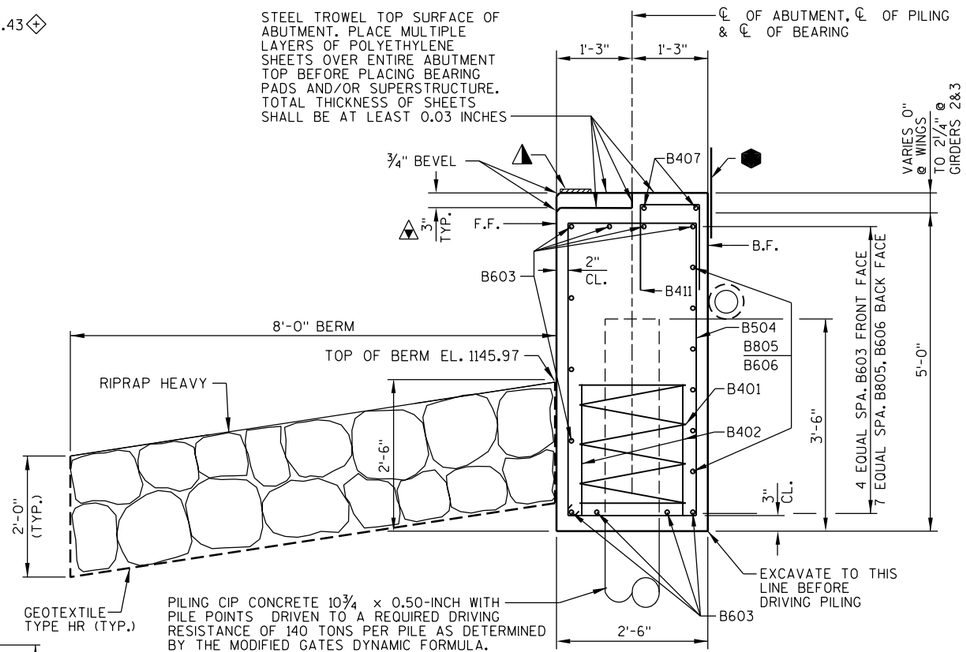
FOR WING DETAILS SEE SHEET 7.

⊕ ELEVATIONS GIVEN AT THE B.F. OF ABUTMENT.

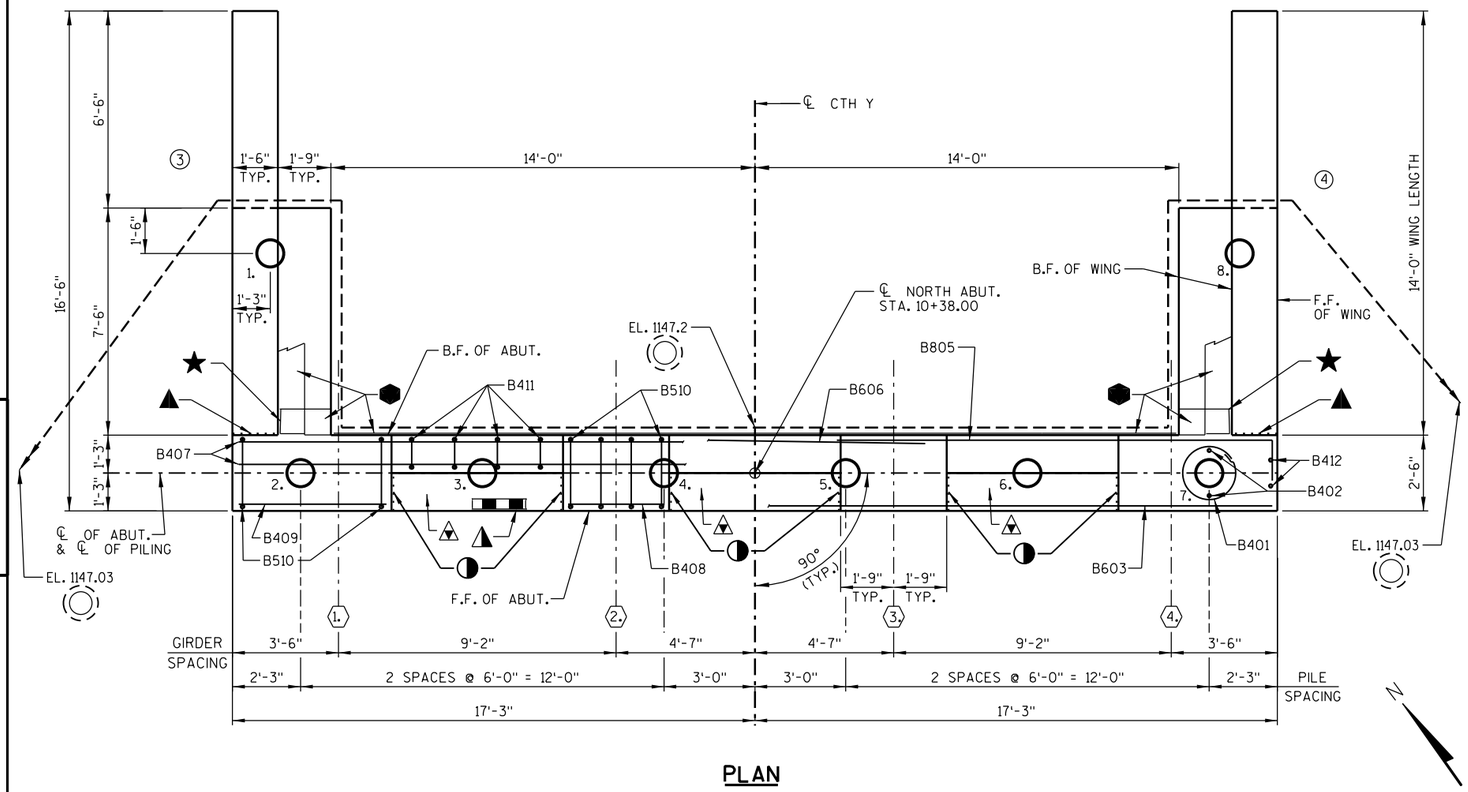



FRONT FACE BAR STEEL REINF. BACK FACE BAR STEEL REINF.

## ELEVATION
(LOOKING NORTH)




## TYPICAL SECTION THRU ABUTMENT

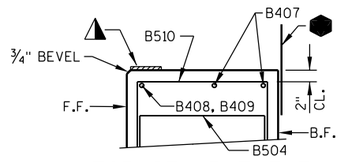



## PLAN

## LEGEND

- ◯ – INDICATES WING NUMBER. ⬡ – INDICATES GIRDER NUMBER.
- ▬ – CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2x6. PLACE ⬢ ON B.F. OF WING. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE.
- ◥ – ¾" "V" GROOVE ON FRONT FACE OF WING WALL AT CONSTRUCTION JOINT
- ⧋ – SEMI-EXPANSION POCKET. CONSTRUCT 3" DEEPER THAN SURROUNDING BEAM SEATS AND BACKWALL.
- ◑ – ¾" CORK FILLER AT SIDES OF EXPANSION POCKETS (SIDE VERTICAL FACES ONLY).
- ▲ – ½" PREFORMED JOINT FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONC.). FILLER INCLUDED IN WING LENGTH.
- ◭ – 4"x ½" PREFORMED JOINT FILLER, EXTEND FULL LENGTH OF ABUTMENT.
- ★ – VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOP OF WINGS.
- ⬢ – HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WING TOPS AND ALONG WING CONSTRUCTION JOINT.
- ◯ – PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU RIPRAP HEAVY AND GEOTEXTILE TYPE HR. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE, SEE RODENT SHIELD DETAIL, SHEET 5.

F.F.– FRONT FACE B.F. – BACK FACE CL.– CLEAR




## TOP OF ABUTMENT AT BEARING SEATS
SEE ELEVATION FOR REINF. SPACING

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

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NORTH ABUTMENT

SHEET 8 OF 12
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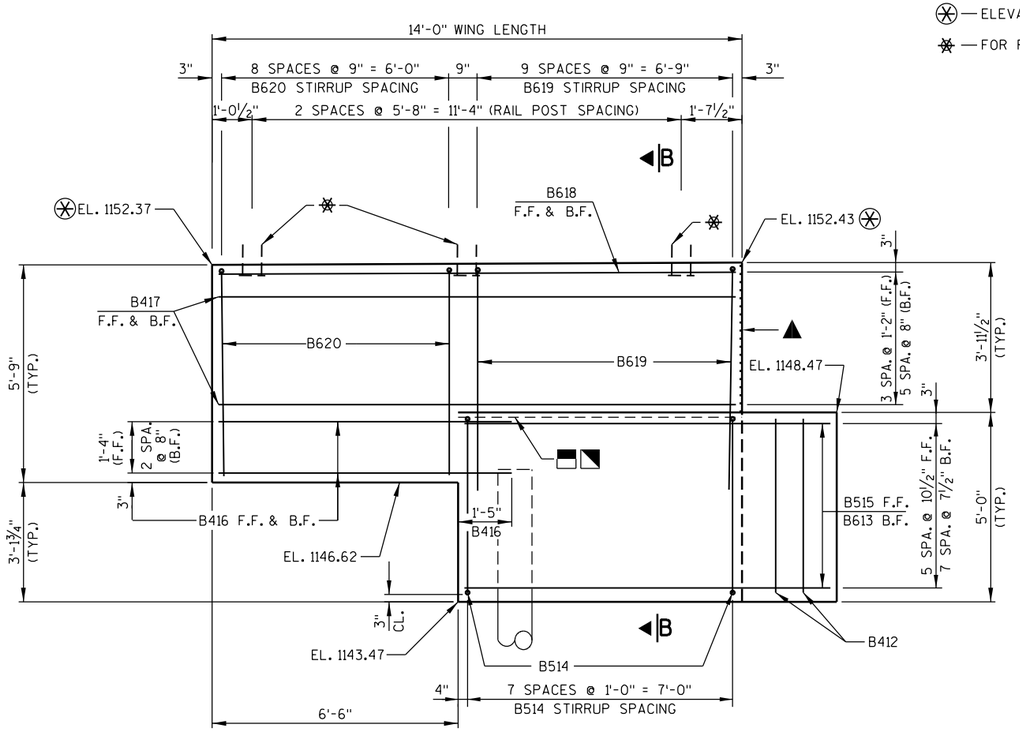
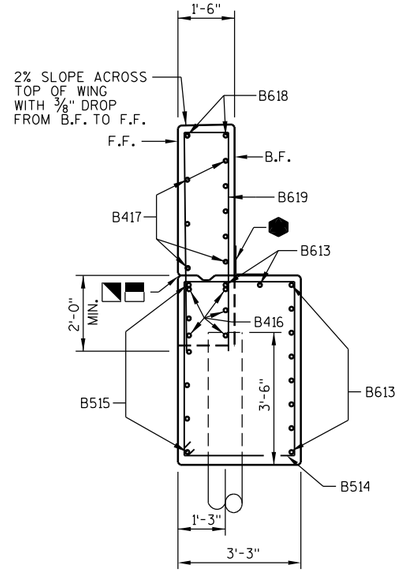
⊛ — ELEVATIONS AND DIMENSIONS ARE GIVEN AT THE F.F. OF WING.

✲ — FOR RAIL POST ANCHOR DETAILS, SEE SHEET 11.




ELEVATION - WING 3



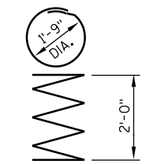

SECTION B-B THRU WING 3

## BILL OF BARS (NORTH ABUTMENT)

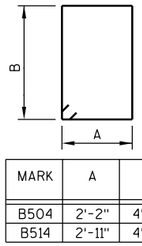
UNCOATED 2,110 LBS.
COATED 1,635 LBS.

| MARK | NUMBER REQUIRED COATED | NUMBER REQUIRED UNCOATED | LENGTH | BENT | LOCATION |
|---|---|---|---|---|---|
| B401 | - | 6 | 28'-0" | X | ABUT. BODY PILES - 1 SPIRAL WRAP PER PILE |
| B402 | - | 12 | 2'-3" | | ABUT. BODY PILES - 2 PER PILE - VERT. |
| B603 | - | 11 | 34'-2" | | ABUT. BODY - F.F., TOP & BOTTOM - HORIZ. |
| B504 | - | 43 | 13'-8" | X | ABUT. BODY - STIRRUPS - VERT. |
| B805 | - | 12 | 15'-2" | X | ABUT. BODY - B.F. @ WINGS - HORIZ. |
| B606 | - | 6 | 12'-0" | | ABUT. BODY - B.F. - CENTER - HORIZ. |
| B407 | - | 2 | 34'-2" | | ABUT. TOP - B.F. SEMI-EXP. POCKET - HORIZ. |
| B408 | - | 2 | 3'-2" | | ABUT. TOP - F.F. - GIRDERS 2 & 3 - HORIZ. |
| B409 | - | 2 | 4'-10" | | ABUT. TOP - F.F. - GIRDERS 1 & 4 - HORIZ. |
| B510 | - | 20 | 4'-11" | X | ABUT. TOP - GIRDER SEATS - VERT. |
| B411 | - | 15 | 3'-9" | X | ABUT. TOP - B.F. SEMI-EXP. POCKET - VERT. |
| B412 | - | 4 | 4'-7" | | ABUT. BODY - ENDS - VERT. |
| B613 | 20 | - | 9'-5" | | WINGS - BOTTOM - B.F. & TOP - HORIZ. |
| B514 | 16 | - | 15'-8" | X | WINGS - BOTTOM - STIRRUP - VERT. |
| B515 | 12 | - | 9'-8" | | WINGS - BOTTOM - F.F. - HORIZ. |
| B416 | 10 | - | 7'-9" | | WINGS - TIP - F.F. & B.F. - HORIZ. |
| B417 | 16 | - | 13'-7" | | WINGS - TOP - F.F. & B.F. - HORIZ. |
| B618 | 4 | - | 13'-7" | | WINGS - TOP - F.F. & B.F. - HORIZ. |
| B619 | 20 | - | 12'-6" | X | WINGS - TOP - TIES - VERT. |
| B620 | 18 | - | 11'-8" | X | WINGS - TIP - TIES - VERT. |

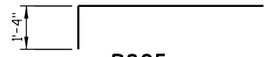
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



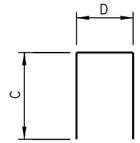

B401




| MARK | A | B |
|---|---|---|
| B504 | 2'-2" | 4'-4" |
| B514 | 2'-11" | 4'-7" |




B805

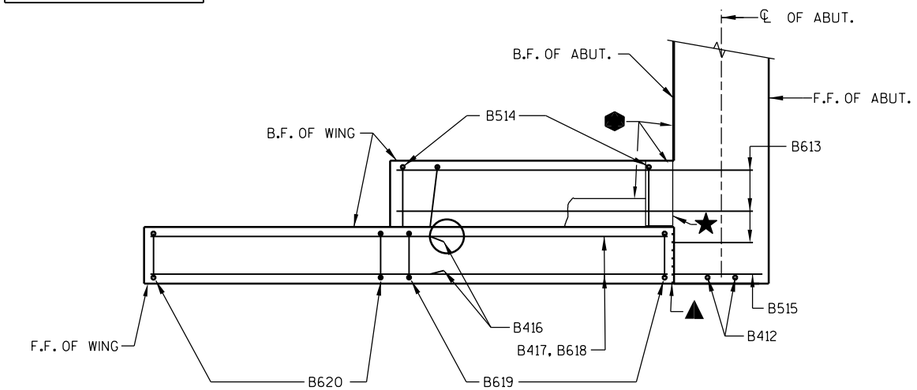



| MARK | C | D |
|---|---|---|
| B510 | 1'-6" | 2'-2" |
| B411 | 1'-6" | 11" |
| B619 | 5'-10" | 1'-2" |
| B620 | 5'-5" | 1'-2" |

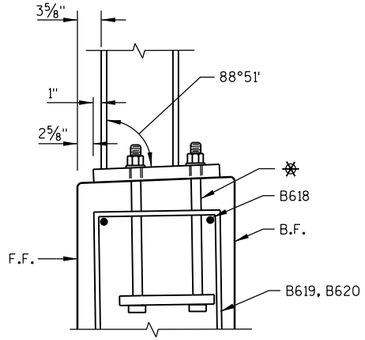
SEE SHEET 6 LEGEND FOR DESCRIPTION OF

◥ ▬ ▲ ⬢

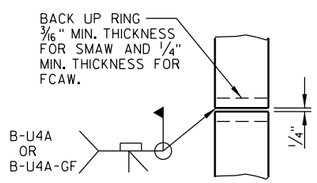
**NOTE:**
WING 3 SHOWN
WING 4 SIMILAR



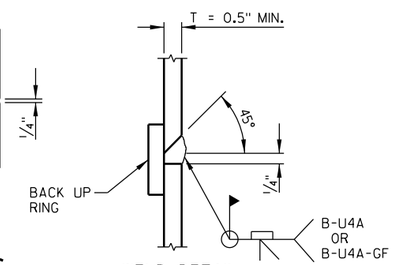

PLAN - WING 3




SECTION AT TOP OF WING




PILE SPLICE DETAILS




WELD DETAIL

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NORTH ABUTMENT DETAILS

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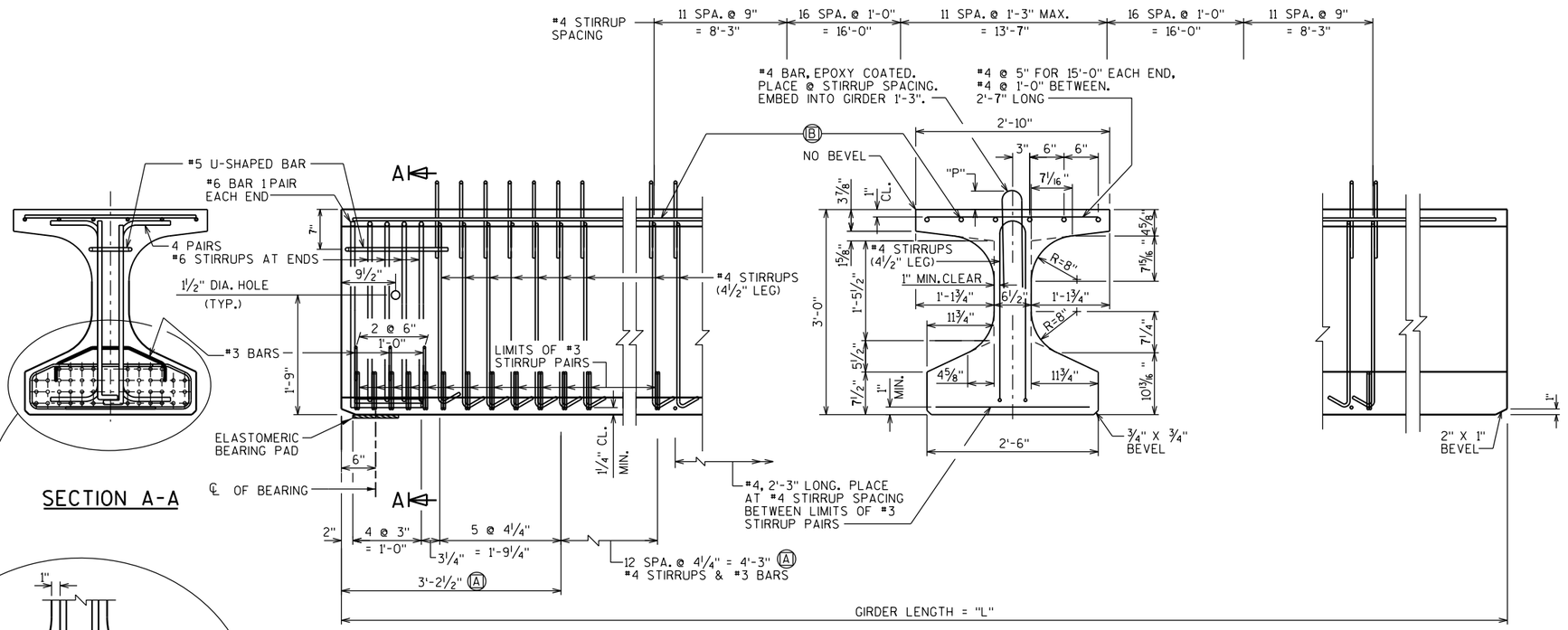
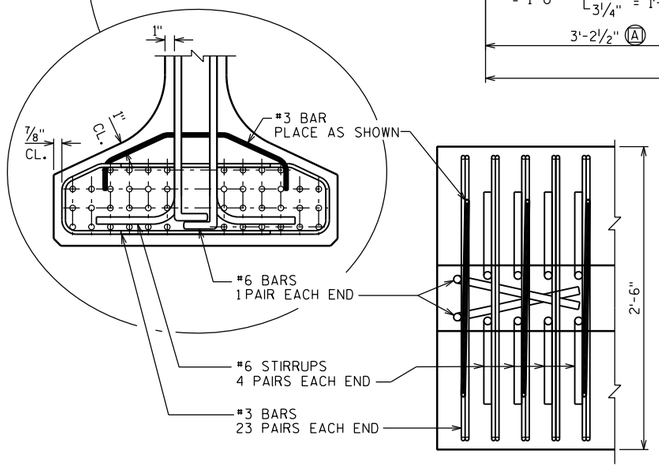



## SECTION A-A

## SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-5"

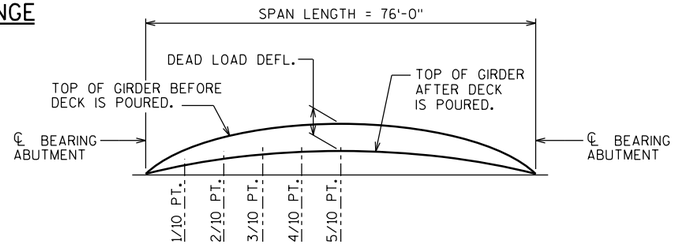



## BOTTOM FLANGE

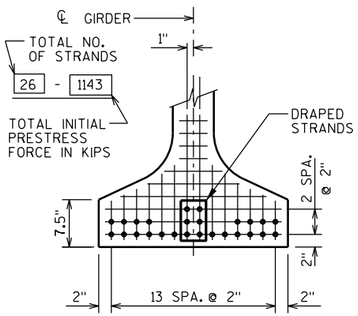
THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN. VALUES INCLUDE A MAGNIFICATION FACTOR OF 1.4 TO ACCOUNT FOR CREEP BETWEEN RELEASE AND INSTALLATION.

| SPAN | CAMBER (IN.) |
|---|---|
| 1 | 2 5/8" |
| | |
| | |
| | |
| | |

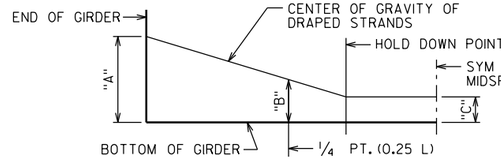
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.




## DEAD LOAD DEFLECTION DIAGRAM

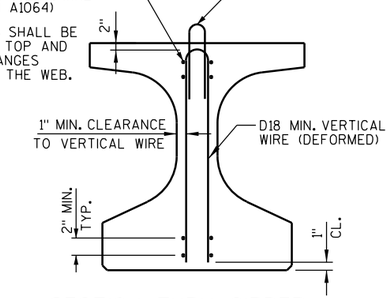



## TYP. STRAND PATTERN



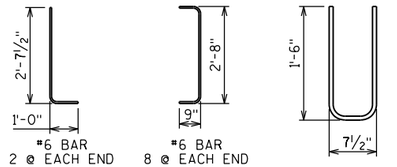

## DRAPED STRAND PROFILE

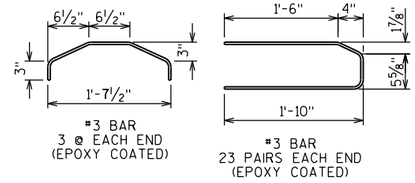
NO. 4 BAR, EPOXY COATED. PLACE AT STIRRUP SPACING REQUIRED FOR NON WWF STIRRUPS. EMBED INTO GIRDER 1'-3".




## SECTION THRU GIRDER

SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS ASTM A497 (Fy = 70 Ksi)




* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

## GIRDER DATA

| SPAN | GIRDER | GIRDER LENGTH "L" (FEET) | DEAD LOAD DEFL. (IN.) 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 | CONC. STRGTH. f'c (P.S.I.) | "P" (IN.) 1ST 1/3 OF GIRDER | MID 1/3 OF GIRDER | END 1/3 OF GIRDER | DIA. OF STRAND (IN.) | DRAPED PATTERN TOTAL NO. OF STRANDS | f'ci (P.S.I.) * | ( IN.) "A" | "B" MIN. | "B" MAX. | "C" | UNDRAPED PATTERN TOTAL NO. OF STRANDS | f'ci (P.S.I.) * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 - 4 | 77'-0" | 0.4 | 0.8 | 1.0 | 1.2 | 1.3 | 1.2 | 1.0 | 0.8 | 0.4 | 8000 | 8" | 7" | 8" | 0.6 | 26 | 6800 | 28 | 10 | 12 | 4 | - | - |

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

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36W" PRESTRESSED GIRDER DETAILS

SHEET 8 OF 12
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## NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE SHEET 12.

8

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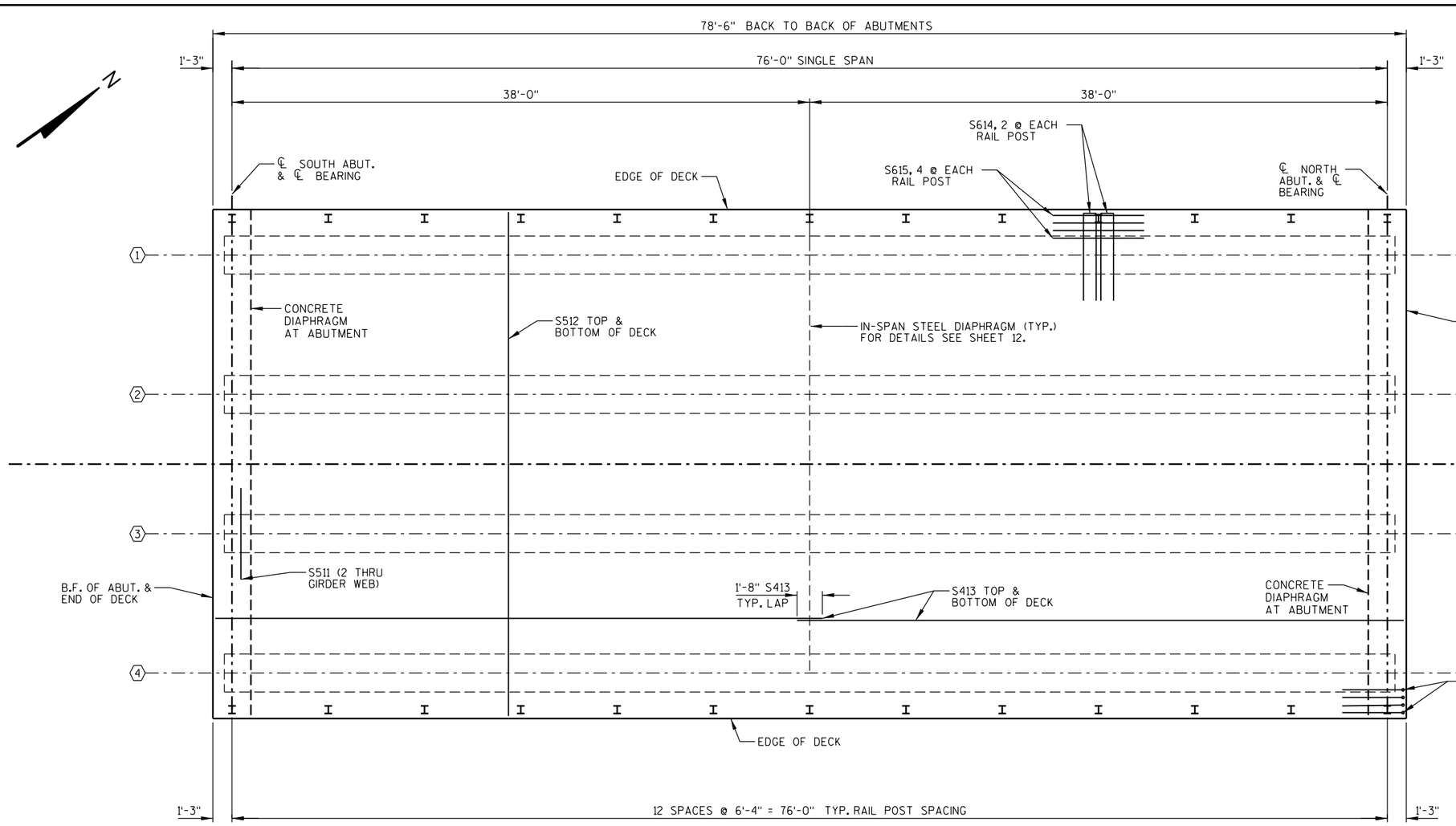



## PLAN

## GENERAL NOTES

⬡ - INDICATES GIRDER NUMBER

SEE SHEET 10 FOR TRANSVERSE AND LONGITUDINAL BAR SPACING.

SEE SHEET 12 FOR LOCATION OF DIAPHRAGM INSERTS ON GIRDERS.

TO DETERMINE '+', ELEV. OF TOP OF GIRDERS AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF THE SPAN SHALL BE TAKEN. TO DETERMINE THE TOP OF DECK ELEVATION FOR POINT REFERRED USE TABLE ON THIS SHEET AND ADJUST FOR CROSS SLOPE OVER GIRDER. THEN FOLLOW THIS PROCESS:

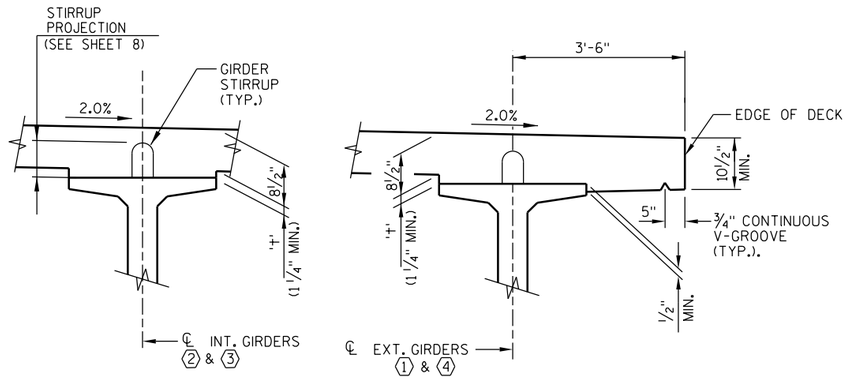
TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION (SEE SHEET 8)
- DECK THICKNESS
---
= HAUNCH HEIGHT '+'

IF 1 1/4" MINIMUM HAUNCH HEIGHT '+' CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN AND PROFILE BY MORE THAN ½" OR IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

NOTE: AN AVERAGE HAUNCH ("+") OF 2 7/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES."

## TOP OF DECK ELEVATIONS

| LOCATION | SPAN POINT | EAST DECK EDGE | C/L GIRDER 4 | C/L GIRDER 3 | C/L CTH Y | C/L GIRDER 2 | C/L GIRDER 1 | WEST DECK EDGE |
|---|---|---|---|---|---|---|---|---|
| S. ABUT. | 1 | 1152.65 | 1152.72 | 1152.90 | 1152.99 | 1152.90 | 1152.72 | 1152.65 |
| | 1.1 | 1152.63 | 1152.70 | 1152.89 | 1152.98 | 1152.89 | 1152.70 | 1152.63 |
| | 1.2 | 1152.62 | 1152.69 | 1152.87 | 1152.97 | 1152.87 | 1152.69 | 1152.62 |
| | 1.3 | 1152.61 | 1152.68 | 1152.86 | 1152.95 | 1152.86 | 1152.68 | 1152.61 |
| | 1.4 | 1152.59 | 1152.66 | 1152.84 | 1152.93 | 1152.84 | 1152.66 | 1152.59 |
| | 1.5 | 1152.57 | 1152.64 | 1152.82 | 1152.91 | 1152.82 | 1152.64 | 1152.57 |
| | 1.6 | 1152.54 | 1152.61 | 1152.80 | 1152.89 | 1152.80 | 1152.61 | 1152.54 |
| | 1.7 | 1152.52 | 1152.59 | 1152.77 | 1152.87 | 1152.77 | 1152.59 | 1152.52 |
| | 1.8 | 1152.49 | 1152.56 | 1152.75 | 1152.84 | 1152.75 | 1152.56 | 1152.49 |
| | 1.9 | 1152.46 | 1152.53 | 1152.72 | 1152.81 | 1152.72 | 1152.53 | 1152.46 |
| N. ABUT. | 2 | 1152.43 | 1152.50 | 1152.69 | 1152.78 | 1152.69 | 1152.50 | 1152.43 |




## DECK HAUNCH DETAIL

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STRUCTURE B-49-192

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SUPERSTRUCTURE

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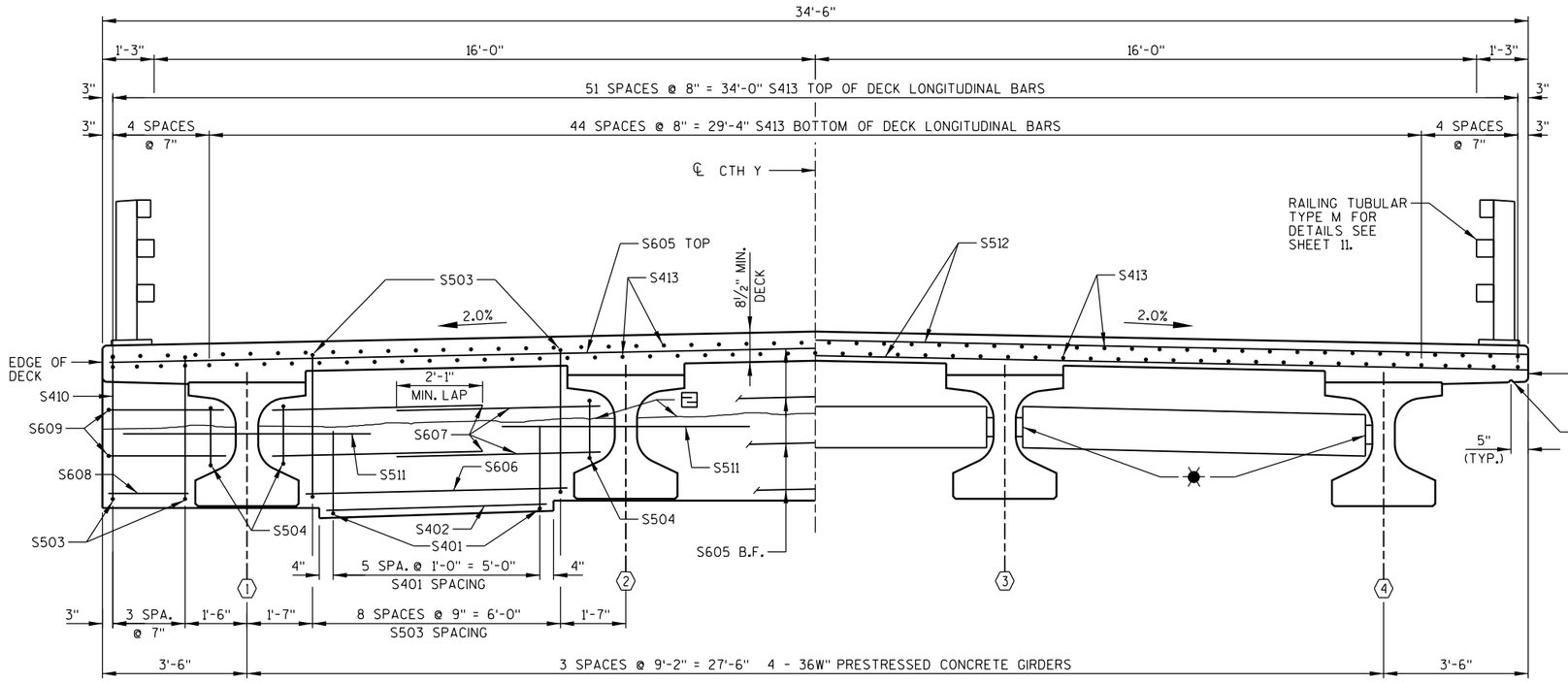



AT ABUTMENTS

## CROSS SECTION THRU BRIDGE

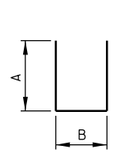
(LOOKING NORTH)

IN SPAN

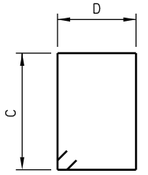
## BILL OF BARS (COATED) 17,960 LBS.

| MARK | NUMBER REQ'D. | LENGTH | BENT | DESCRIPTION |
|---|---|---|---|---|
| S401 | 36 | 3'-9" | X | DIAPH. @ ABUT. - S.E. POCKET - STIRRUP - VERT. |
| S402 | 12 | 5'-4" | | DIAPH. @ ABUT. - S.E. POCKET - HORIZ. |
| S503 | 70 | 12'-0" | X | DIAPH. @ ABUT. - STIRRUP - VERT. |
| S504 | 16 | 7'-8" | X | DIAPH. @ ABUT. - STIRRUP - VERT. |
| S605 | 10 | 34'-2" | | DIAPH. @ ABUT. - B.F. & TOP - HORIZ. |
| S606 | 6 | 6'-4" | | DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ. |
| S607 | 24 | 5'-1" | | DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ. |
| S608 | 4 | 1'-10" | | DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ. |
| S609 | 8 | 7'-4" | X | DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ. |
| S410 | 8 | 3'-6" | | DIAPH. @ ABUT. - ENDS - VERT. |
| S511 | 16 | 6'-0" | | DIAPH. @ ABUT. - THRU GIRDER WEB - HORIZ. |
| S512 | 235 | 34'-2" | | DECK - TOP & BOTTOM - TRANS. |
| S413 | 210 | 39'-11" | | DECK - TOP & BOTTOM - LONGIT. |
| S614 | 52 | 12'-0" | X | DECK - 2 PER RAIL POST - TRANS. |
| S615 | 88 | 6'-0" | | DECK - 4 PER RAIL POST - LONGIT. |
| S616 | 16 | 6'-0" | X | DECK - 4 PER END RAIL POST AS NOTED |

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR REINFORCEMENT.

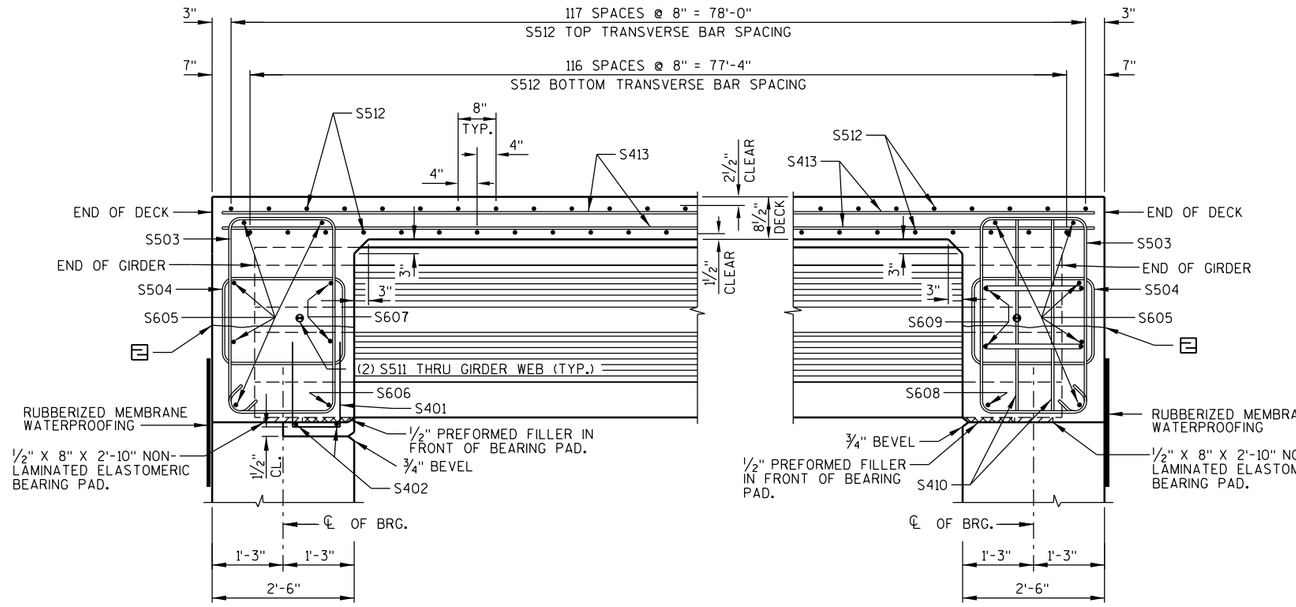



| MARK | A | B |
|---|---|---|
| S401 | 1'-6" | 11" |
| S609 | 2'-10" | 2'-0" |
| S614 | 5'-9" | 10" |




| MARK | C | D |
|---|---|---|
| S503 | 3'-6" | 2'-2" |
| S504 | 1'-4" | 2'-2" |

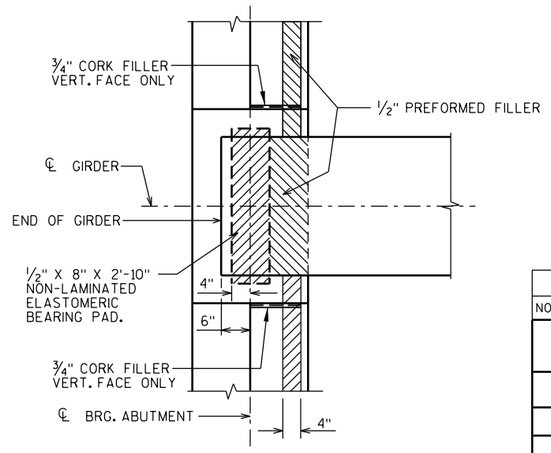

S616




AT ABUTMENT INTERIOR BAYS

## PART LONGITUDINAL SECTION

AT ABUTMENT ENDS




BEARING PAD DETAIL

## LEGEND

⬡ - INDICATES GIRDER NUMBER

⊟ - OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDERS. IF USED DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR. HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING SHALL BE PLACED ALONG JOINT AT BACK FACE IF CONTRUCTION JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES").

✷ - FOR DETAILS OF STEEL DIAPHRAGMS AND DIAPHRAGM INSERTS, SEE SHEET 12. FOR LAYOUT OF STEEL DIAPHRAGMS, SEE PLAN SHEET 9.

F.F. - FRONT FACE

B.F. - BACK FACE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

SUPERSTRUCTURE SECTIONS & DETAILS

SHEET 10 OF 12
50

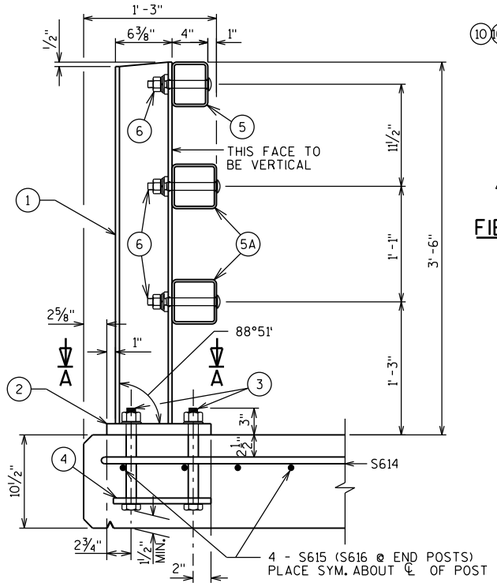
FILE= 11512013_10.DGN
DATE= 5/26/2021

8

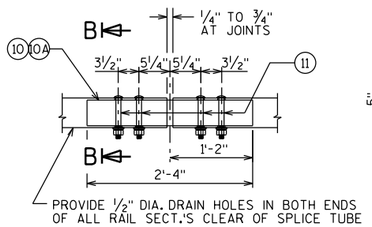
8

STATE PROJECT NUMBER

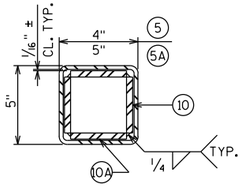
6794-00-72



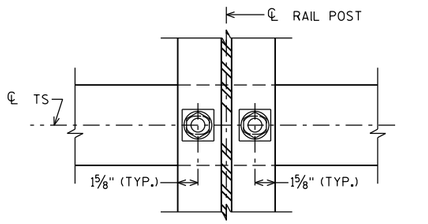

SECTION THRU RAILING ON DECK



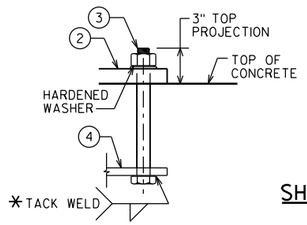

FIELD ERECTION JOINT DETAIL




SECTION B-B

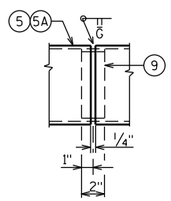



SECTION THRU POST WEB



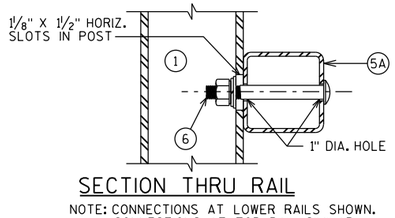

ANCHOR BOLTS

* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.




SHOP RAIL SPLICE DETAIL

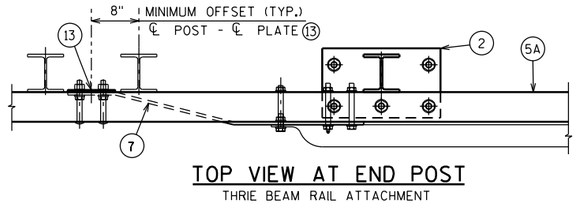
LOCATION MUST BE SHOWN ON SHOP DRAWINGS




SECTION THRU RAIL

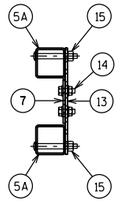
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

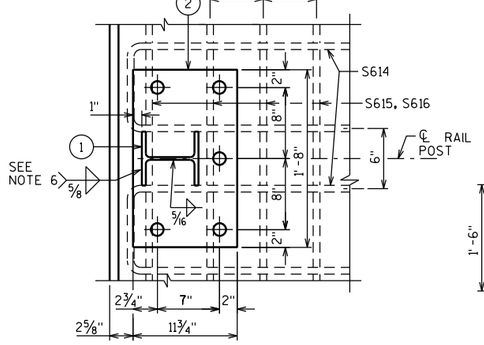



TOP VIEW AT END POST

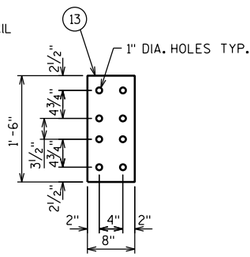
THRIE BEAM RAIL ATTACHMENT




SECTION C-C

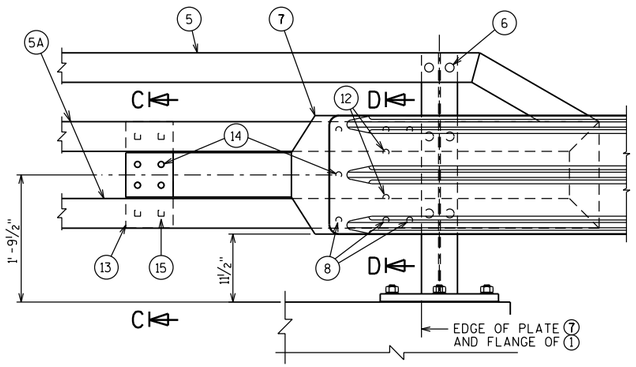



SECTION A-A



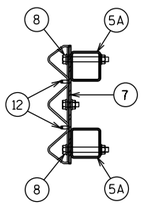

ANCHOR PLATE

AT BEAM GUARD ATTACHMENT




DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT




SECTION D-D

## LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.

(3) ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 10 3/4" LONG ON CONCRETE SUPERSTRUCTURE, USE 1'-9" LONG ON WINGS.

(4) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

(5) TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(5A) TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(6) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

(8) 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

(9) SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".

(10) 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

(10A) 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

(11) 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS. PROVIDE 15/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.

(12) 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

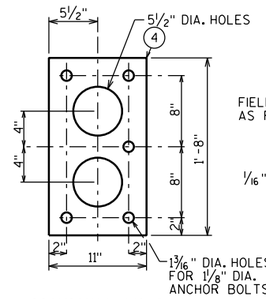
(13) 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

(14) 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

(15) 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

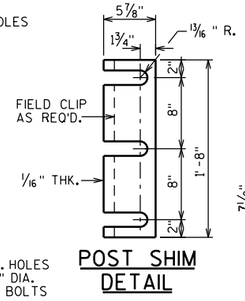
## GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. PAINTING IS NOT REQUIRED.
11. THIS RAILING MEETS AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR TEST LEVEL 2 (TL-2).

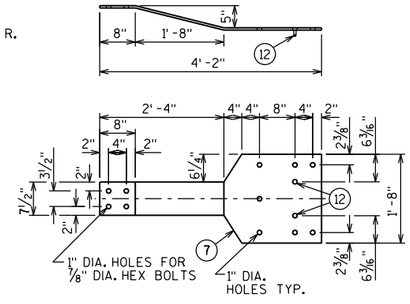



ANCHOR PLATE

AT RAIL TO DECK CONNECTION

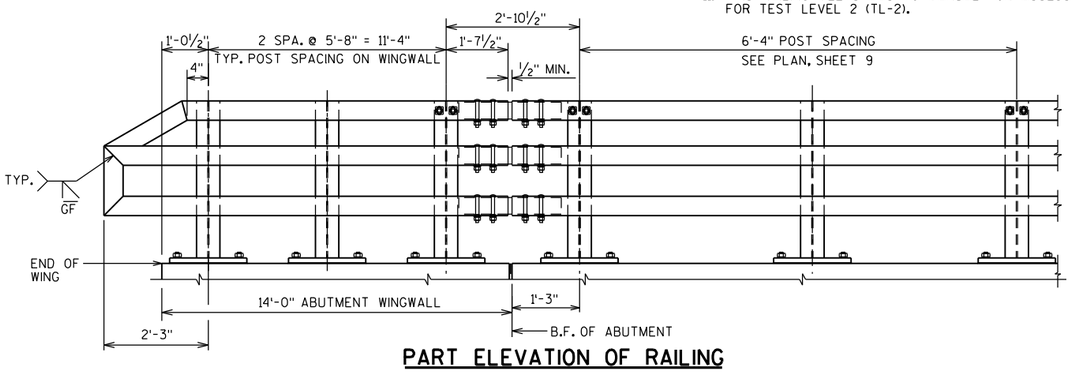



POST SHIM DETAIL




BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT




PART ELEVATION OF RAILING

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

RAILING TUBULAR TYPE M

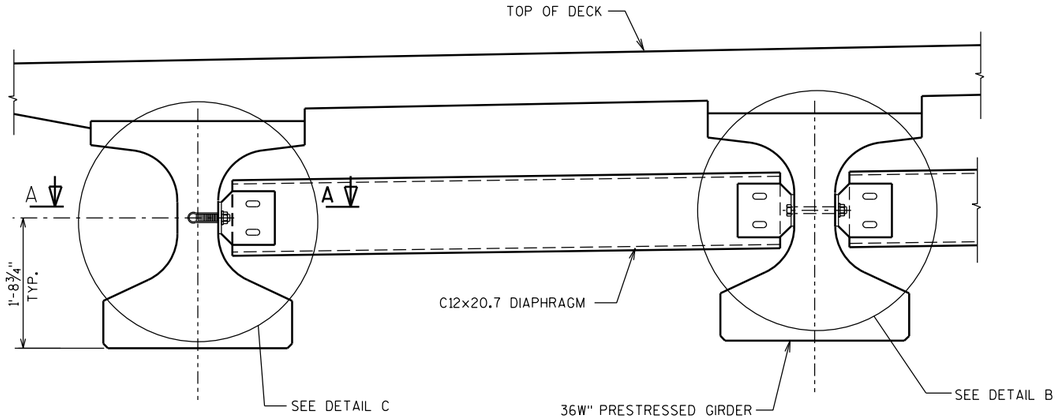
SHEET 11 OF 12
51

FILE= 11512013_11.DGN
DATE= 5/26/2021

11512013_11.dgn 5/26/2021 11:44:52 AM rrabska

STATE PROJECT NUMBER

6794-00-72




EXTERIOR GIRDER

INTERIOR GIRDER

## PART TRANSVERSE SECTION AT DIAPHRAGM

## NOTES

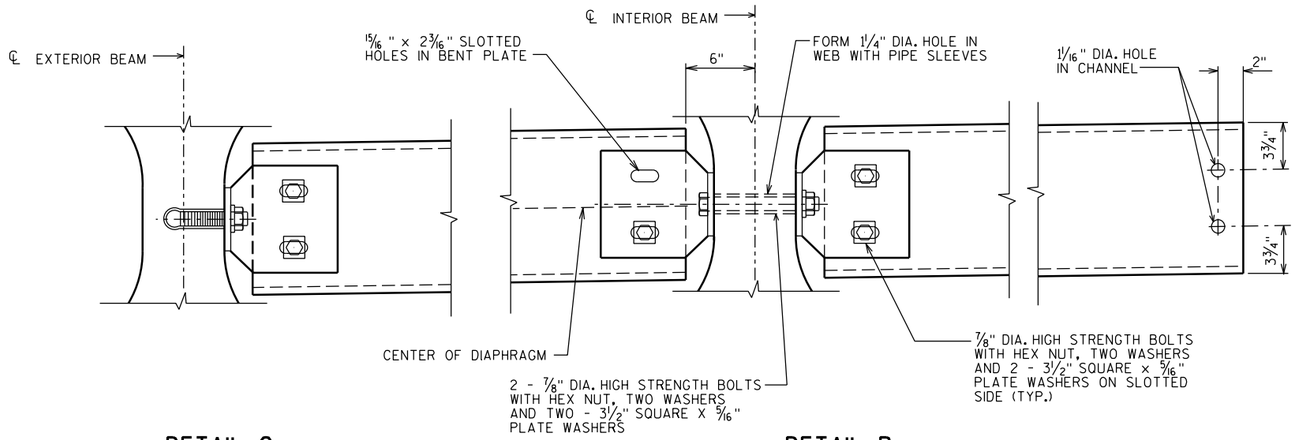
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-49-192", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

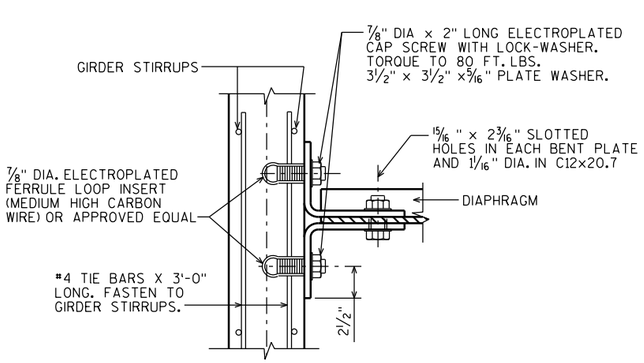
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



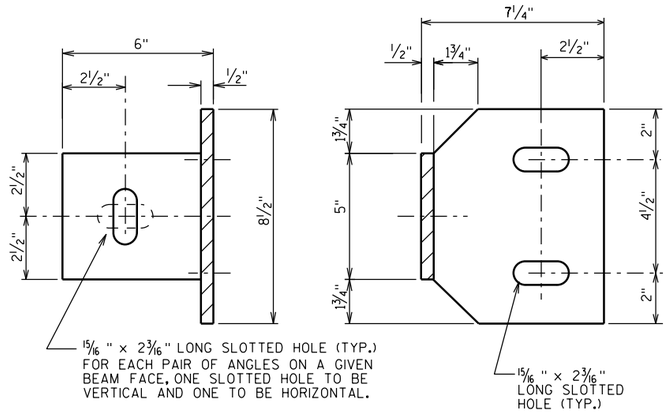

DETAIL C

DETAIL B




SECTION A-A

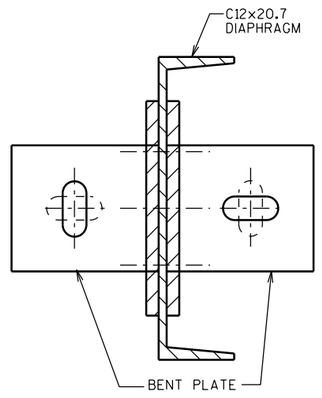
(FOR EXTERIOR ATTACHMENT)




BEAM FACE




DIAPHRAGM FACE




ATTACHMENT TO CHANNEL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-49-192

DRAWN BY RLR | PLANS CK'D. JRS

STEEL DIAPHRAGM

SHEET 12 OF 12

52

8

8

FILE= 11512013_12.DGN
DATE= 5/25/2021

11512013_12.dgn 5/25/2021 7:28:20 AM rrabska

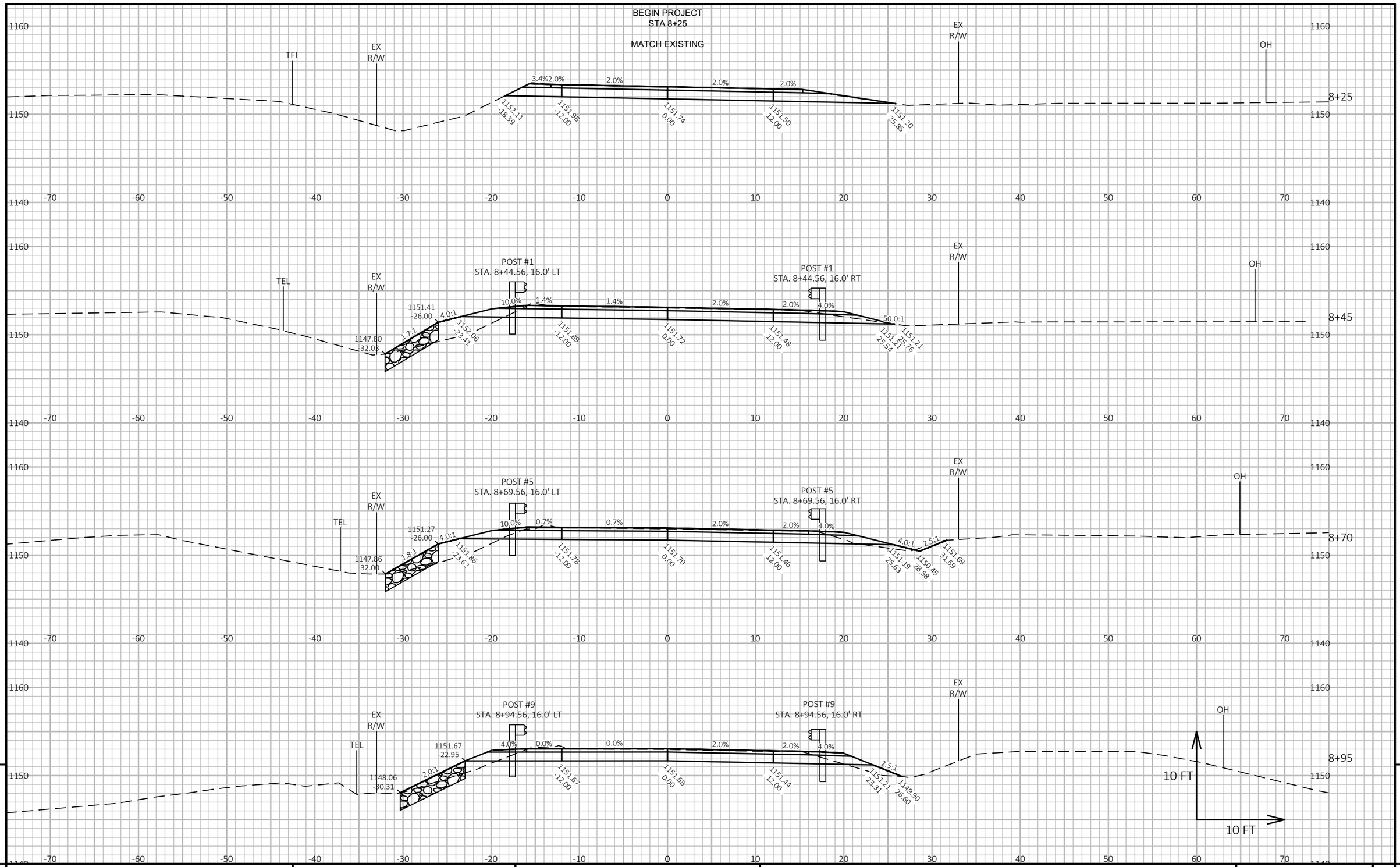
EARTHWORK SUMMARY

| STA | EXCAVATION COMMON CY | EXCAVATION ROCK CY | FILL (1) CY | EXPANDED FILL (2) CY | WASTE CY | BORROW CY |
|---|---|---|---|---|---|---|
| 8+25.00 | - | - | - | - | - | - |
| | 38.00 | 0.00 | 4.00 | 5.00 | 33.00 | -33.00 |
| 8+45.00 | - | - | - | - | - | - |
| | 46.00 | 0.00 | 11.00 | 14.00 | 32.00 | -32.00 |
| 8+70.00 | - | - | - | - | - | - |
| | 44.00 | 0.00 | 8.00 | 10.00 | 34.00 | -34.00 |
| 8+95.00 | - | - | - | - | - | - |
| | 80.00 | 0.00 | 14.00 | 18.00 | 62.00 | -62.00 |
| 9+47.00 | - | - | - | - | - | - |
| STRUCTURE B-49-0192 | | | | | | |
| 10+53.00 | - | - | - | - | - | - |
| | 74.00 | 0.00 | 21.00 | 27.00 | 47.00 | -47.00 |
| 11+05.00 | - | - | - | - | - | - |
| | 34.00 | 0.00 | 28.00 | 36.00 | -2.00 | 2.00 |
| 11+30.00 | - | - | - | - | - | - |
| | 37.00 | 0.00 | 41.00 | 53.00 | -16.00 | 16.00 |
| 11+55.00 | - | - | - | - | - | - |
| | 32.00 | 0.00 | 16.00 | 21.00 | 11.00 | -11.00 |
| 11+75.00 | - | - | - | - | - | - |
| SUBTOTALS | | | | | | |
| S. APPROACH | 208.00 | 0.00 | 37.00 | 47.00 | 161.00 | -161.00 |
| N. APPROACH | 177.00 | 0.00 | 106.00 | 137.00 | 40.00 | -40.00 |
| UNUSABLE PAVEMENT (3) | | | | | | 150.64 |
| TOTALS | 385.00 | 0.00 | 143.00 | 184.00 | 201.00 | -201.00 |

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION 30%
(3) - EXISTING PAVEMENT BASED ON AVE THK OF 7"

9

9



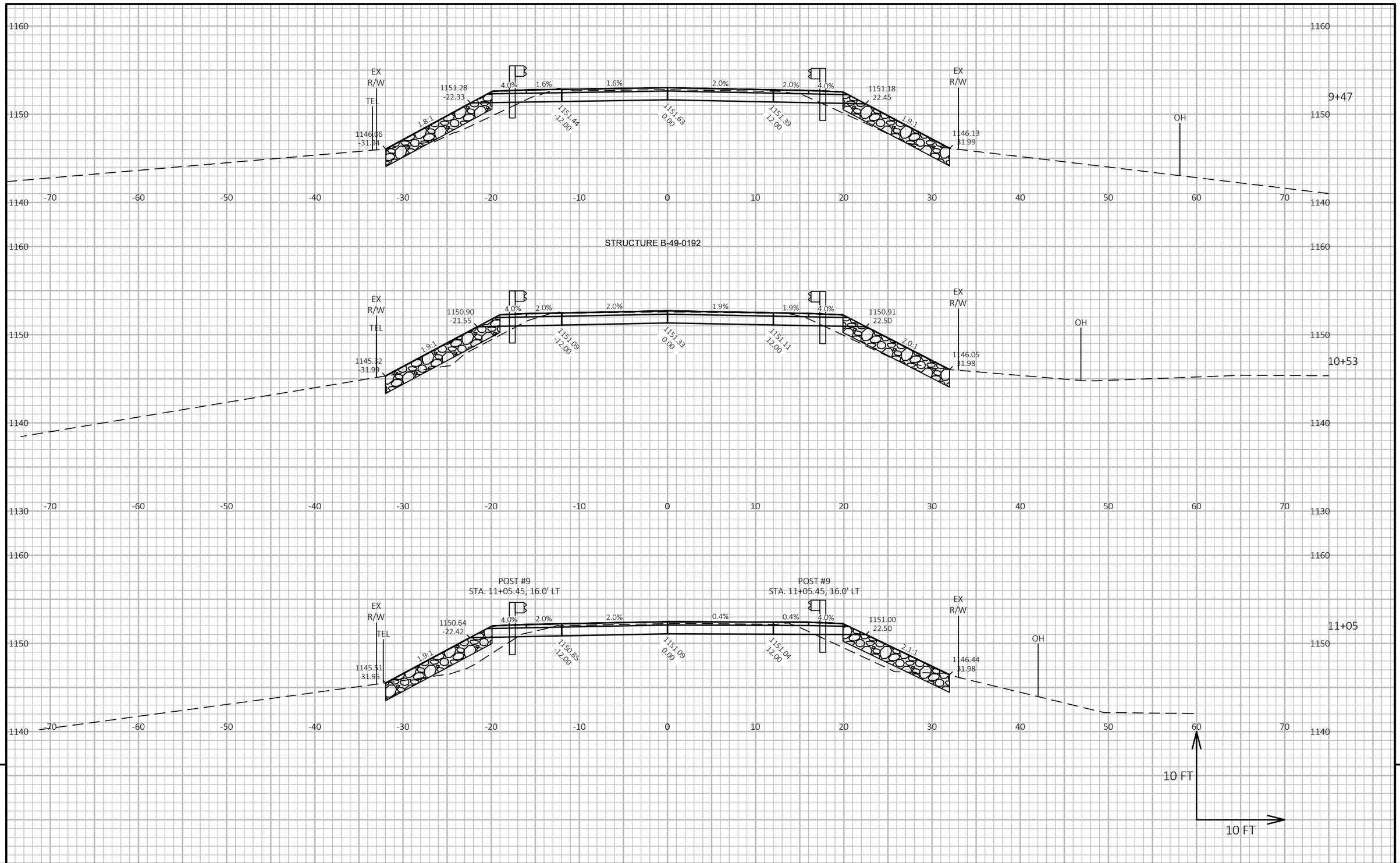

9

9

| PROJECT NO: 6794-00-72 | HWY: CTH Y | COUNTY: PORTAGE | CROSS SECTIONS: | SHEET 54 | E |
|---|---|---|---|---|---|

FILE NAME : P:\11500S\11510S\11512\11512013\CADD\DESIGN\CORRIDORS\CORRIDOR-CTH Y.DWG
LAYOUT NAME - 090201

PLOT DATE : 5/19/2021 10:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



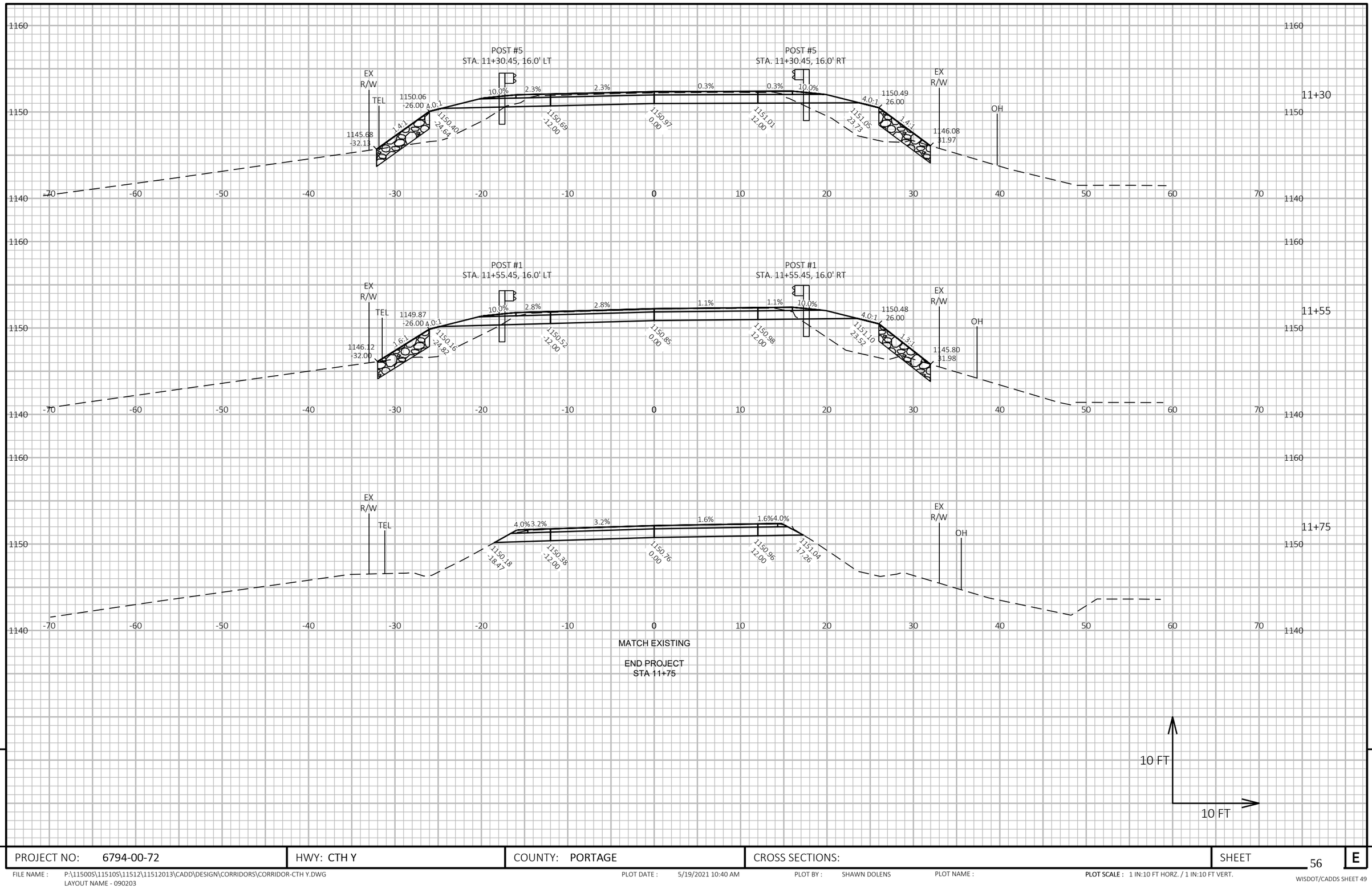

| PROJECT NO: 6794-00-72 | HWY: CTH Y | COUNTY: PORTAGE | CROSS SECTIONS: | SHEET 55 | E |
|---|---|---|---|---|---|

FILE NAME : P:\11500S\11510S\11512\11512013\CADD\DESIGN\CORRIDORS\CORRIDOR-CTH Y.DWG
LAYOUT NAME - 090202

PLOT DATE : 5/26/2021 6:24 AM PLOT BY : COURTNEY ROOYAKKERS PLOT NAME :

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

WISDOT/CADDS SHEET 49




| PROJECT NO: 6794-00-72 | HWY: CTH Y | COUNTY: PORTAGE | CROSS SECTIONS: | SHEET 56 | E |
|---|---|---|---|---|---|

FILE NAME : P:\11500S\11510S\11512\11512013\CADD\DESIGN\CORRIDORS\CORRIDOR-CTH Y.DWG
LAYOUT NAME - 090203

PLOT DATE : 5/19/2021 10:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

**Wisconsin Department of Transportation**

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