SWL

MAR 2015

ORDER OF SHEETS



TOTAL SHEETS = 50

PROJECT ID: WITH: N/A

5720-00-73

COUNTY: LAFAYETTE

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# TOWN OF WILLOW SPRINGS, FERNDALE ROAD

(PECATONICA RIVER BRIDGE P-33-0144)

## TOWN ROAD
## LAFAYETTE COUNTY

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 5720-00-73 | WISC 2015117 | 1 |
| | | |
| | | |
| | | |

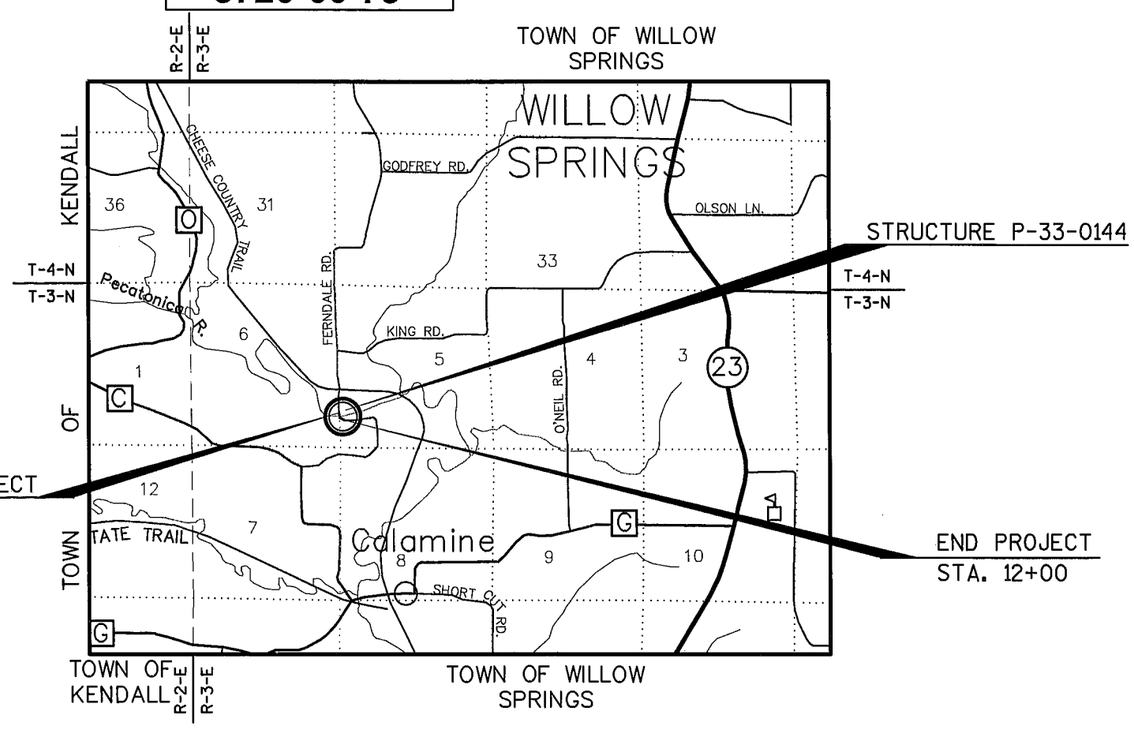
07

DESIGN DESIGNATION

| | | | |
|---|---|---|---|
| A.A.D.T. | 2015 | = | 100 |
| A.A.D.T. | 2035 | = | 150 |
| D.H.V. | 2035 | = | 14 |
| D.D. | | = | 60/40 |
| T. | | = | 10% ASSUMED |
| DESIGN SPEED | | = | <25 M.P.H. |
| ESALS | | = | N/A |

N

STATE PROJECT NUMBER
**5720-00-73**




LAYOUT

SCALE 0 — 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.038 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), LAFAYETTE COUNTY."

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 | | ELECTRIC | E |
| EXISTING CULVERT | | FIBER OPTIC | FO |
| PROPOSED CULVERT (Box or Pipe) | | GAS | G |
| COMBUSTIBLE FLUIDS | CAUTION | SANITARY SEWER | SAN |
| MARSH AREA | | STORM SEWER | SS |
| WOODED OR SHRUB AREA | | TELEPHONE | T |
| | | WATER | W |
| | | UTILITY PEDESTAL | |
| | | POWER POLE | |
| | | TELEPHONE POLE | |

ACCEPTED FOR

TOWN of WILLOW SPRINGS

10/14/14 (Date) James P Achen (Town Chairman)

ACCEPTED FOR

COUNTY of LAFAYETTE

10-14-14 (Date) Thomas R. Ka (Highway Commissioner)

ORIGINAL PLANS PREPARED BY

JEWELL associates engineers, inc.
Engineers - Surveyors - Architects

WISCONSIN
ELLERY A. SCHAFFER
E-41742-6
SPRING GREEN, WI
PROFESSIONAL ENGINEER

10/01/14 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor JEWELL ASSOCIATES ENGINEERS, INC.

Designer JEWELL ASSOCIATES ENGINEERS, INC.

Management Consultant KJOHNSON ENGINEERS, INC.

APPROVED FOR THE DEPARTMENT

DATE: 10/31/14

MANAGEMENT CONSULTANT SIGNATURE

E

2

## LIST OF STANDARD ABBREVIATIONS

| | |
|---|---|
| ABUT | Abutment |
| ADT | Average Daily Traffic |
| AADT | Average Annual Daily Traffic |
| BAD | Base Aggregate Dense |
| BK | Back |
| BF | Back Face |
| BM | Bench Mark |
| C | Chord Length |
| C/L | Center Line |
| CC | Center to Center |
| CTH | County Trunk Highway |
| CY | Cubic Yard |
| CP | Culvert Pipe |
| C & G | Curb and Gutter |
| △ | Delta |
| DA | Degree of Arc |
| DD | Directional Distribution |
| DHV | Design Hourly Volume |
| DIA | Diameter |
| E | East |
| X | East Grid Coordinate |
| EL or ELEV | Elevation |
| ESALS | Equivalent Single Axle Loads |
| EBS | Excavation Below Subgrade |
| FF | Face to Face |
| FE | Field Entrance |
| FG | Finished Grade |
| FT | Foot |
| GN | Grid North |
| CWT | Hundredweight |
| HYD | Hydrant |
| INL | Inlet |
| ID | Inside Diameter |
| INV | Invert |
| IP | Iron Pipe or Pin |
| IRS | Iron Rod Set |
| JCT | Junction |
| LHF | Left-Hand Forward |
| L | Length of Curve |
| LF | Linear Foot |
| MH | Manhole |
| MB | Mailbox |
| ML or M/L | Match Line |
| N | North |
| Y | North Grid Coordinate |
| PLE | Permanent Limited Easement |
| PT | Point |
| PC | Point of Curvature |
| PI | Point of Intersection |
| PRC | Point of Reverse Curvature |
| PT | Point of Tangency |
| POC | Point On Curve |
| POT | Point on Tangent |
| PVC | Polyvinyl Chloride |
| PCC | Portland Cement Concrete |
| LB | Pound |
| PSI | Pounds Per Square Inch |
| PE | Private Entrance |
| R | Radius |
| RR | Railroad |
| R | Range |
| R/L | Reference Line |
| RP | Reference Point |
| RCCP | Reinforced Concrete Culvert Pipe |
| REQD | Required |
| RES | Residence or Residential |
| RT | Right |
| RHF | Right-Hand Forward |
| R/W | Right-of-Way |
| RD | Road |
| SAN S | Salvaged Sanitary Sewer |
| SEC | Section |
| SHLDR | Shoulder |
| SW | Sidewalk |
| S | South |
| SF or SQ FT | Square Feet |
| SY or SQ YD | Square Yard |
| STD | Standard |
| SDD | Standard Detail Drawings |
| STH | State Trunk Highways |
| STA | Station |
| SS | Storm Sewer |
| SG | Subgrade |
| SE | Superelevation |
| TEL | Telephone |
| TEMP | Temporary |
| TI | Temporary Interest |
| TLE | Temporary Limited Easement |
| T | Tangent Length |
| T or TN | Town |
| TRANS | Transition |
| TL or T/L | Transit Line |
| T | Trucks (percent of) |
| TYP | Typical |
| UG | Underground Cable |
| USH | United States Highway |
| VAR | Variable |
| V | Velocity or Design Speed |
| VERT | Vertical |
| VC | Vertical Curve |
| WM | Water Main |
| WV | Water Valve |
| W | West |
| WB | Westbound |

## GENERAL NOTES

COORDINATES AND BEARINGS ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), LAFAYETTE COUNTY.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND MULCHED AS DIRECTED BY THE ENGINEER.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

SILT FENCE, TURBIDITY BARRIER, AND CULVERT PIPE CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE AND TURBIDITY BARRIER SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

MULCH ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

THERE ARE NO KNOWN UTILITY FACILITIES WITHIN THE PROJECT AREA.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

3 1/2-INCHES OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 1 3/4-INCH UPPER LAYER AND 1 3/4-INCH LOWER LAYER. THE NOMINAL SIZE OF AGGREGATE USED FOR THE LOWER LAYER SHALL BE 12.5 MM.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

INLET & OUTLET ELEVATIONS FOR CULVERT PIPES AS SHOWN ON THE PLAN MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS.

ALL RADII DIMENSIONS ARE MEASURED TO EDGE OF AGGREGATE SHOULDER.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

CURVE DATA IS BASED ON THE ARC DEFINITION.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

THERE ARE NO KNOWN UTILITIES IN THE PROJECT AREA.

## CONTACTS


**DESIGN CONSULTANT:**

JEWELL ASSOCIATES ENGINEERS, INC.
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
ATTN: FRED GRUBER, P.E., R.L.S.
PH: (608) 588-7484
FAX: (608) 588-9322
E-MAIL: fred.gruber@jewellassoc.com

**DNR LIAISON:**

STATE OF WISCONSIN
DNR SOUTH CENTRAL REGION
3911 FISH HATCHERY ROAD
MADISON, WI 53711
ATTN: LAURA BUB
PH: (608) 275-3485
E-MAIL: laura.bub@wisconsin.gov

**TOWN OF WILLOW SPRINGS:**

JAMES ACHERMAN, TOWN CHAIRPERSON
17477 COUNTY ROAD G
MINERAL POINT, WI 53565
PH: (608) 776-2973

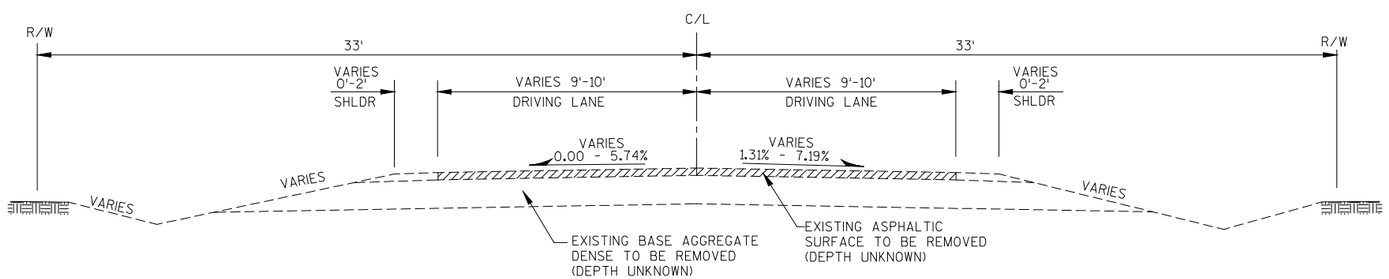
**LAFAYETTE COUNTY HIGHWAY DEPARTMENT:**

TOM JEAN, COMMISSIONER
12016 HILL STREET
PO BOX 100
DARLINGTON, WI 53530
PH: (608) 776-4919
EMAIL: tom.jean@lafayettecountywi.org


## UTILITIES

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

✕DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

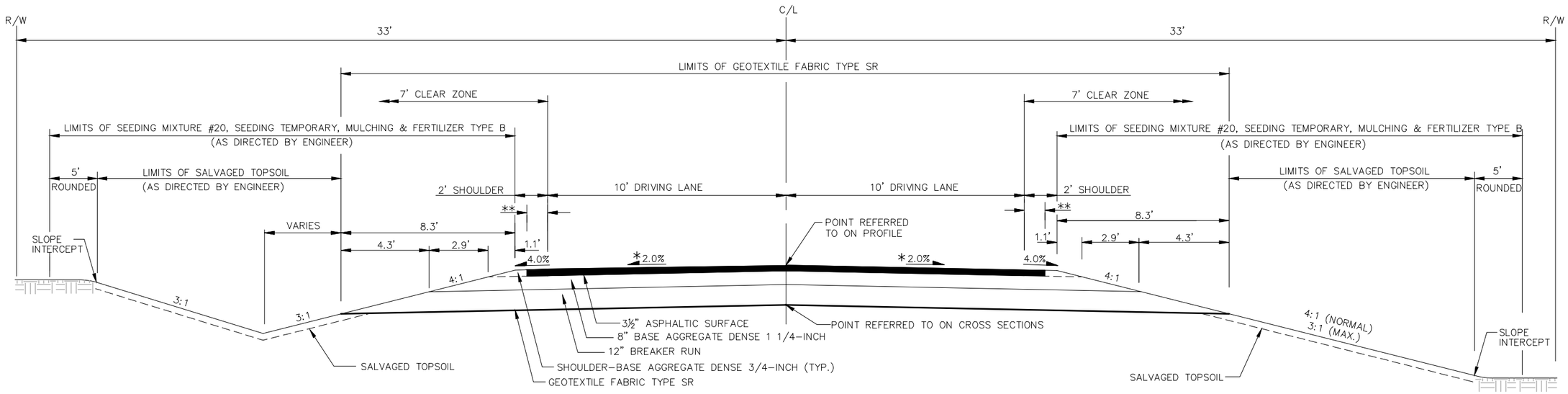



TYPICAL EXISTING SECTION

| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | TYP. EXISTING SECTION, GEN. NOTES, CONTACTS, & UTILITIES | SHEET 2 | E |
|---|---|---|---|---|---|


FILE NAME : S:\Projects\K19240 Ferndale Road Bridge\SheetsPlan\Typicals\K19240-Gen Notes and Existing Typicals.dwg
PLOT DATE : 10/27/2014 8:49 AM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1:2

2




CUT

## TYPICAL FINISHED SECTION

FILL

*NOTE: STA. 10+00 – STA. 10+22 TRANSITION FROM EXISTING SUPERELEVATED SECTION TO NORMAL CROWN.

| STATION | LEFT (%) | RIGHT (%) |
|---|---|---|
| 10+00 | 0.00 | 6.52 |
| 10+22 | N.C. | N.C. |

**1' PAVED SHOULDER

| PROJECT NO:5720-00-73 | HWY:FERNDALE ROAD | COUNTY:LAFAYETTE | TYPICAL FINISHED SECTION | SHEET 3 | E |
|---|---|---|---|---|---|

FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\SHEETSPLAN\TYPICALS\K19240-NEW PROPOSED TYPICAL.DWG
LAYOUT : MODEL

PLOT DATE : 10/27/2014
PLOT TIME : 8:50:28 AM

PLOT BY : STRINE, THERESA

PLOT SCALE : 1" = 1'

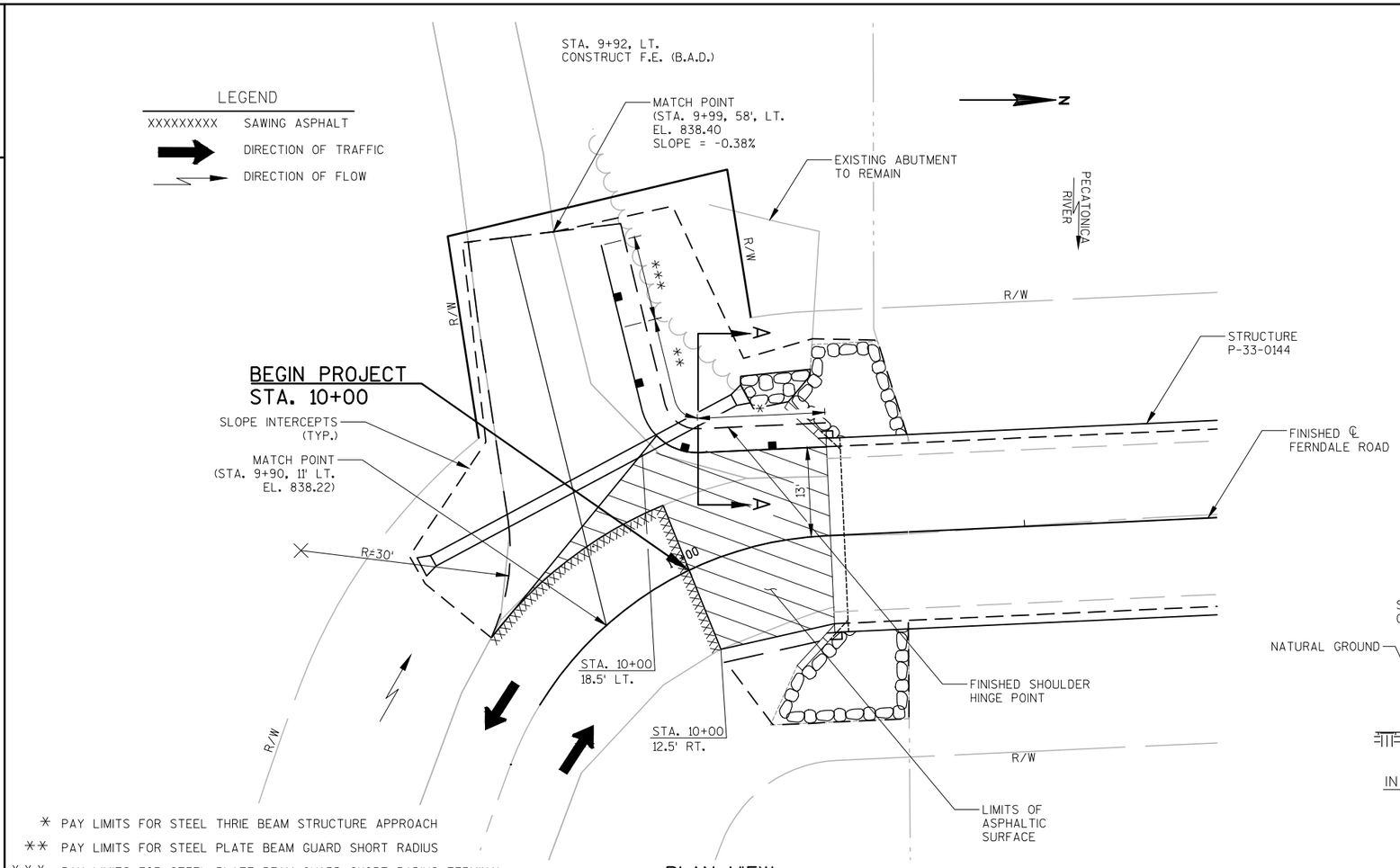
2

LEGEND

XXXXXXXXX SAWING ASPHALT

DIRECTION OF TRAFFIC

DIRECTION OF FLOW

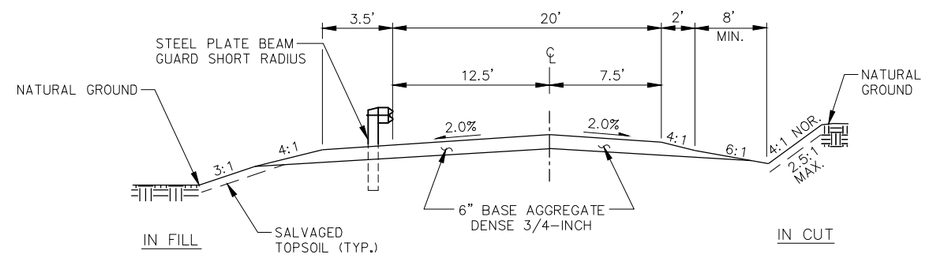



PLAN VIEW

BEAMGUARD LAYOUT DETAIL/

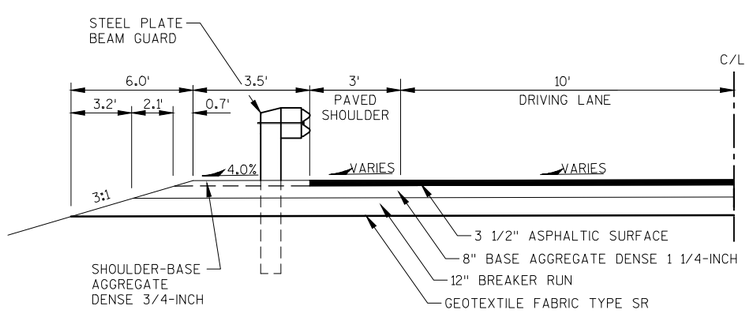
APPROACH AT FIELD ENTRANCE (F.E.) DETAIL

(SW QUADRANT)

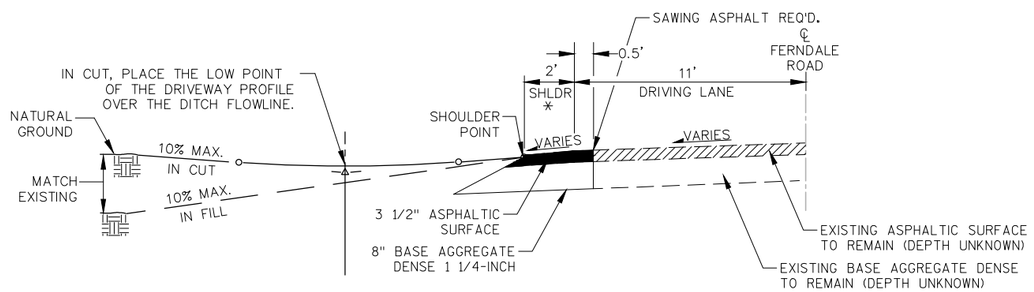



TYPICAL CROSS-SECTION FOR F.E.

F.E. – STA. 9+92, LT.




SECTION A-A

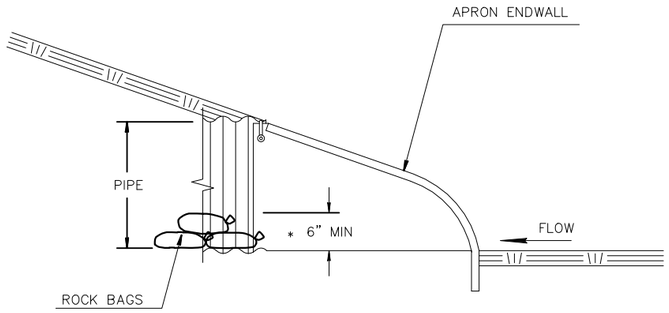



TYPICAL F.E. PROFILE

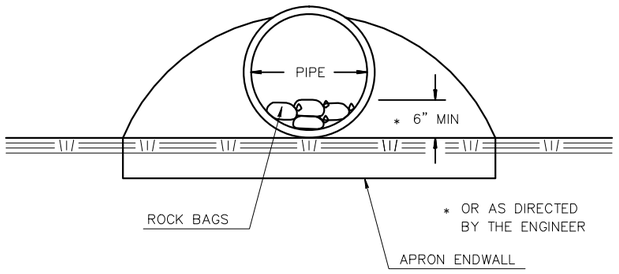
* VARIES 0'-2' PAVED SHOULDER

| PROJECT NO:5720-00-73 | HWY:FERNDALE ROAD | COUNTY:LAFAYETTE | CONSTRUCTION DETAILS | SHEET 4 | E |
|---|---|---|---|---|---|

FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\SHEETSPLAN\DETAILS\CONSTRUCTION DETAILS.DWG
LAYOUT : LAYOUT
PLOT DATE : 1/12/2015
PLOT TIME : 3:40:19 PM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1" = 1'




SIDE VIEW



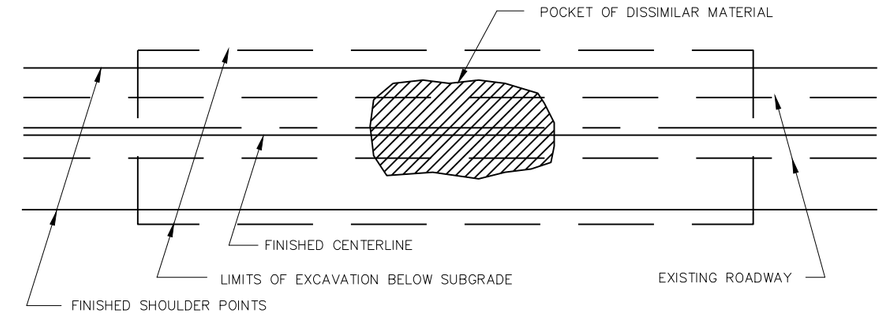

END VIEW

## CULVERT PIPE CHECKS

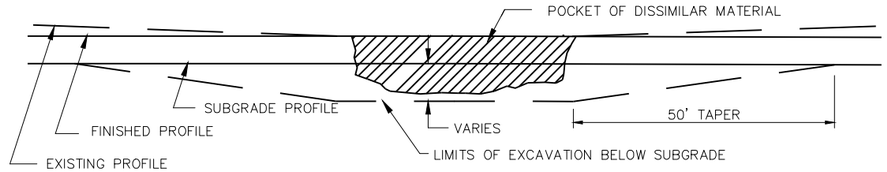
| | HYDROLOGIC SOIL GROUP | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | |
| | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | |
| LAND USE | 0–2 | 2–6 | 6 & OVER | 0–2 | 2–6 | 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–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–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= 0.37 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.25 ACRES

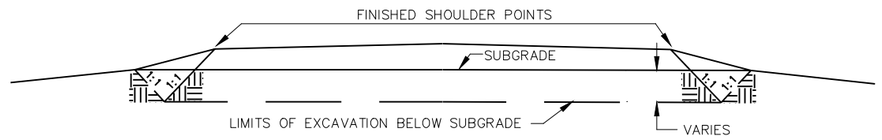
2




PLAN VIEW




PROFILE VIEW




CROSS SECTION VIEW

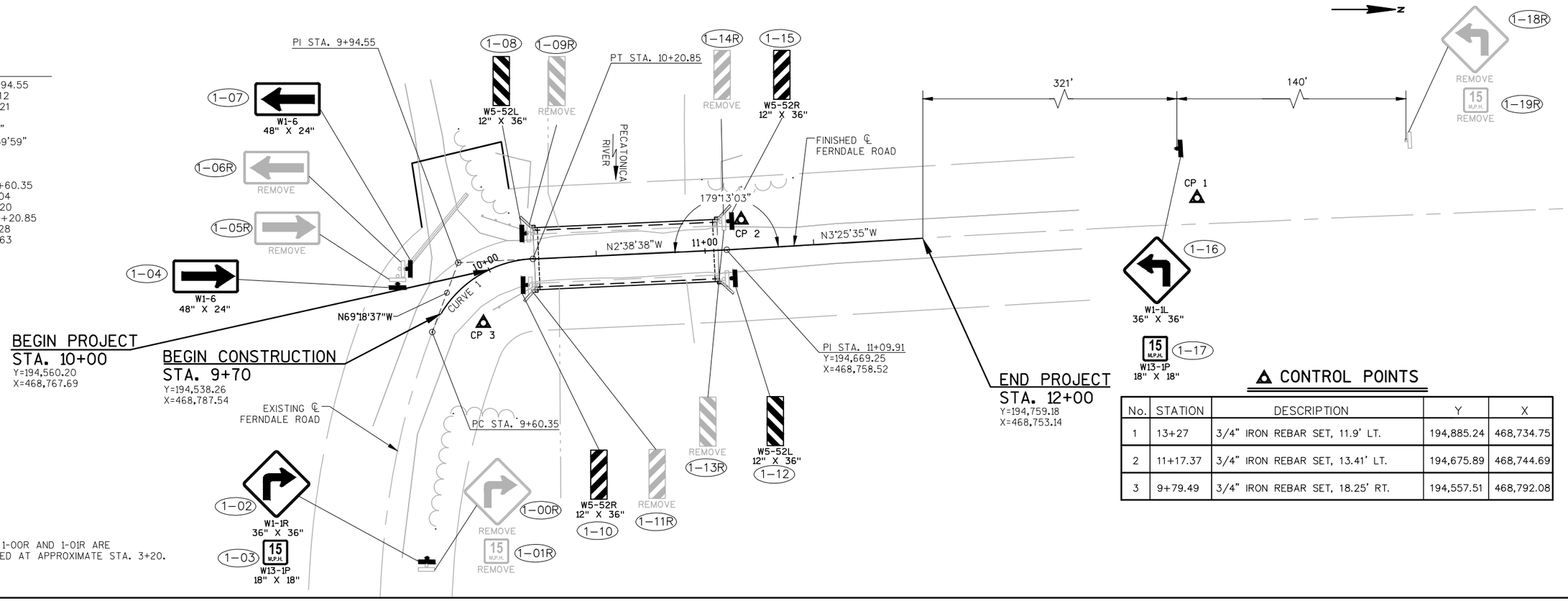
1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

## EXCAVATION BELOW SUBGRADE (E.B.S.)



FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\SHEETSPLAN\DETAILS\CONSTRUCTION DETAILS 2.DWG
LAYOUT : LAYOUT
PLOT DATE : 10/27/2014
PLOT TIME : 8:53:41 AM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1" = 1'

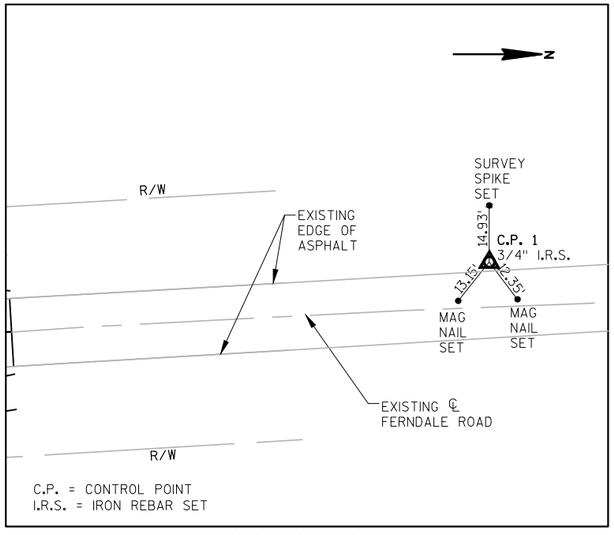
CURVE 1
PI STA. = 9+94.55
Y = 194,546.12
X = 468,764.21
R = 52.00
D = 110°11'03"
DELTA = 66°39'59"
L = 60.50
T = 34.20
C = 57.15
PC STA. = 9+60.35
Y = 194,534.04
X = 468,796.20
PT STA. = 10+20.85
Y = 194,580.28
X = 468,762.63



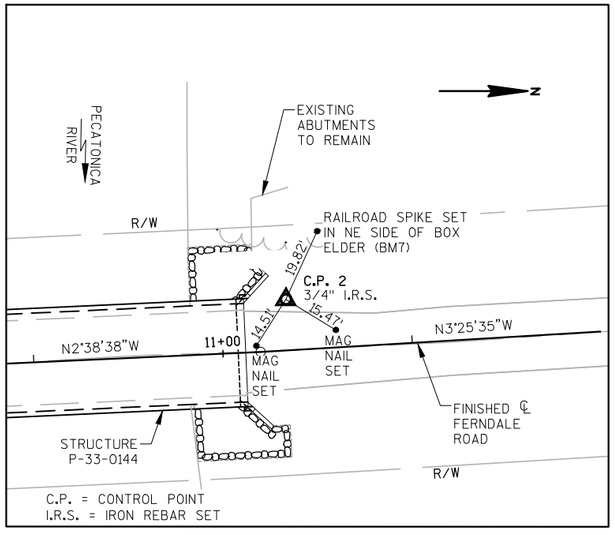

NOTE: SIGNS 1-00R AND 1-01R ARE LOCATED AT APPROXIMATE STA. 3+20.

## ▲ CONTROL POINTS

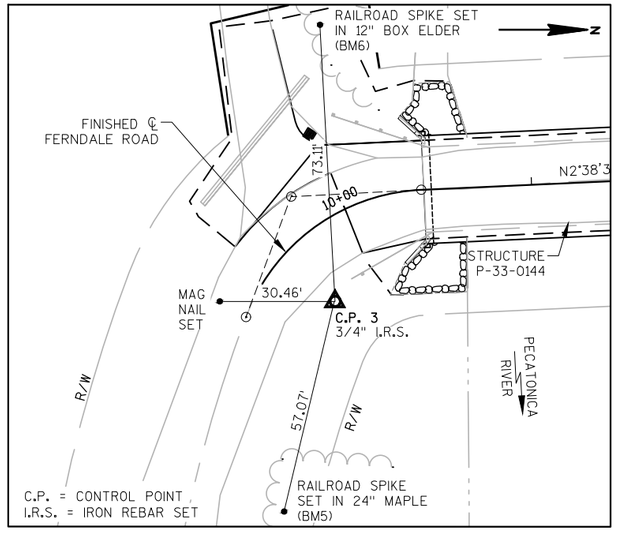
| No. | STATION | DESCRIPTION | Y | X |
|---|---|---|---|---|
| 1 | 13+27 | 3/4" IRON REBAR SET, 11.9' LT. | 194,885.24 | 468,734.75 |
| 2 | 11+17.37 | 3/4" IRON REBAR SET, 13.41' LT. | 194,675.89 | 468,744.69 |
| 3 | 9+79.49 | 3/4" IRON REBAR SET, 18.25' RT. | 194,557.51 | 468,792.08 |




## TIES TO C.P.#1
STA. 13+27; 11.9' LT.
Y = 194,885.24
X = 468,734.75




## TIES TO C.P.#2
STA. 11+17.37; 13.41' LT.
Y = 194,675.89
X = 468,744.69




## TIES TO C.P.#3
STA. 9+79.49, 18.25' RT.
Y = 194,557.51
X = 468,792.08

## FERNDALE ROAD STATION LAYOUT

| STATION | Y | X | COMMENTS |
|---|---|---|---|
| 9+70 | 194,538.26 | 468,787.54 | BEGIN CONSTRUCTION |
| 10+00 | 194,560.20 | 468,767.69 | BEGIN PROJECT |
| 10+21.52 | 194,580.95 | 468,762.60 | END OF DECK |
| 10+50 | 194,609.40 | 468,761.29 | – |
| 11+00 | 194,659.35 | 468,758.98 | – |
| 11+06.02 | 194,665.36 | 468,758.70 | END OF DECK |
| 11+50 | 194,709.27 | 468,756.13 | – |
| 12+00 | 194,759.18 | 468,753.14 | END OF PROJECT |

| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | ALIGNMENT, TIES DETAIL, AND PERMANENT SIGNING | SHEET 6 | E |
|---|---|---|---|---|---|

DATE 21JAN15 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 5720-00-73 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 203.0100 | Removing Small Pipe Culverts | EACH | 1.000 | 1.000 |
| 0020 | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 01. Sta. 10+64 | LS | 1.000 | 1.000 |
| 0030 | 205.0100 | Excavation Common **P** | CY | 150.000 | 150.000 |
| 0040 | 206.1000 | Excavation for Structures Bridges (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0050 | 210.0100 | Backfill Structure | CY | 85.000 | 85.000 |
| 0060 | 213.0100 | Finishing Roadway (project) 01. 5720-00-73 | EACH | 1.000 | 1.000 |
| 0070 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 60.000 | 60.000 |
| 0080 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 200.000 | 200.000 |
| 0090 | 311.0110 | Breaker Run | TON | 360.000 | 360.000 |
| 0100 | 455.0605 | Tack Coat | GAL | 20.000 | 20.000 |
| 0110 | 465.0105 | Asphaltic Surface | TON | 75.000 | 75.000 |
| 0120 | 502.0100 | Concrete Masonry Bridges | CY | 89.000 | 89.000 |
| 0130 | 502.3200 | Protective Surface Treatment | SY | 300.000 | 300.000 |
| 0140 | 502.5005 | Masonry Anchors Type L No. 5 Bars | EACH | 42.000 | 42.000 |
| 0150 | 505.0605 | Bar Steel Reinforcement HS Coated Bridges | LB | 15,690.000 | 15,690.000 |
| 0160 | 506.0605 | Structural Steel HS | LB | 26,850.000 | 26,850.000 |
| 0170 | 506.2605 | Bearing Pads Elastomeric Non-Laminated | EACH | 12.000 | 12.000 |
| 0180 | 506.3015 | Welded Stud Shear Connectors 7/8x6-Inch | EACH | 680.000 | 680.000 |
| 0190 | 509.1500 | Concrete Surface Repair | SF | 5.000 | 5.000 |
| 0200 | 513.4060 | Railing Tubular Type M (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0210 | 516.0500 | Rubberized Membrane Waterproofing | SY | 15.000 | 15.000 |
| 0220 | 517.0600 | Painting Epoxy System (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0230 | 517.0900.S | Preparation and Coating of Top Flanges (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0240 | 517.3000.S | Structure Overcoating Cleaning and Priming (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0250 | 517.4000.S | Containment and Collection of Waste Materials (structure) 01. P-33-0144 | LS | 1.000 | 1.000 |
| 0260 | 517.6001.S | Portable Decontamination Facility | EACH | 1.000 | 1.000 |
| 0270 | 521.0721 | Pipe Arch Corrugated Steel 21x15-Inch | LF | 50.000 | 50.000 |
| 0280 | 521.1221 | Apron Endwalls for Pipe Arch Steel 21x15-Inch | EACH | 2.000 | 2.000 |
| 0290 | 606.0300 | Riprap Heavy | CY | 135.000 | 135.000 |
| 0300 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 150.000 | 150.000 |
| 0310 | 614.0200 | Steel Thrie Beam Structure Approach | LF | 21.000 | 21.000 |
| 0320 | 614.0345 | Steel Plate Beam Guard Short Radius | LF | 25.000 | 25.000 |
| 0330 | 614.0390 | Steel Plate Beam Guard Short Radius Terminal | EACH | 1.000 | 1.000 |
| 0340 | 614.0920 | Salvaged Rail | LF | 52.000 | 52.000 |
| 0350 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0360 | 625.0500 | Salvaged Topsoil **P** | SY | 370.000 | 370.000 |
| 0370 | 627.0200 | Mulching **P** | SY | 800.000 | 800.000 |
| 0380 | 628.1504 | Silt Fence | LF | 530.000 | 530.000 |
| 0390 | 628.1520 | Silt Fence Maintenance | LF | 1,060.000 | 1,060.000 |
| 0400 | 628.1905 | Mobilizations Erosion Control | EACH | 3.000 | 3.000 |
| 0410 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0420 | 628.6005 | Turbidity Barriers | SY | 120.000 | 120.000 |
| 0430 | 628.7555 | Culvert Pipe Checks | EACH | 3.000 | 3.000 |
| 0440 | 629.0210 | Fertilizer Type B **P** | CWT | 1.000 | 1.000 |

3

DATE 21JAN15 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 5720-00-73 QUANTITY |
|---|---|---|---|---|---|
| 0450 | 630.0120 | Seeding Mixture No. 20 **P** | LB | 20.000 | 20.000 |
| 0460 | 630.0200 | Seeding Temporary **P** | LB | 10.000 | 10.000 |
| 0470 | 633.5100 | Markers Row | EACH | 12.000 | 12.000 |
| 0480 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 4.000 | 4.000 |
| 0490 | 634.0614 | Posts Wood 4x6-Inch X 14-FT | EACH | 2.000 | 2.000 |
| 0500 | 634.0618 | Posts Wood 4x6-Inch X 18-FT | EACH | 2.000 | 2.000 |
| 0510 | 637.2230 | Signs Type II Reflective F | SF | 50.500 | 50.500 |
| 0520 | 638.2602 | Removing Signs Type II | EACH | 10.000 | 10.000 |
| 0530 | 638.3000 | Removing Small Sign Supports | EACH | 8.000 | 8.000 |
| 0540 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0550 | 643.0100 | Traffic Control (project) 01. 5720-00-73 | EACH | 1.000 | 1.000 |
| 0560 | 645.0120 | Geotextile Fabric Type HR | SY | 245.000 | 245.000 |
| 0570 | 645.0135 | Geotextile Fabric Type SR | SY | 590.000 | 590.000 |
| 0580 | 650.4500 | Construction Staking Subgrade | LF | 115.000 | 115.000 |
| 0590 | 650.5000 | Construction Staking Base | LF | 115.000 | 115.000 |
| 0600 | 650.6000 | Construction Staking Pipe Culverts | EACH | 1.000 | 1.000 |
| 0610 | 650.9910 | Construction Staking Supplemental Control (project) 01. 5720-00-73 | LS | 1.000 | 1.000 |
| 0620 | 650.9920 | Construction Staking Slope Stakes | LF | 115.000 | 115.000 |
| 0630 | 690.0150 | Sawing Asphalt | LF | 70.000 | 70.000 |
| 0640 | SPV.0105 | Special 01. Cleaning And Painting Girder Ends | LS | 1.000 | 1.000 |

ALL BID ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

3

## EARTHWORK SUMMARY

| CATEGORY | FROM/TO STA | LOCATION | **P** (1) 205.0100 COMMON EXCAVATION CUT (2) (CY) | EBS (3) (CY) | SALVAGED/ UNUSABLE PAVEMENT MATERIAL (CY) (4) | AVAILABLE MATERIAL (CY) (5) | 205.0400 MARSH EXCAVATION (CY) (6) | 205.0200 ROCK EXCAVATION (CY) (7) | REDUCED MARSH IN FILL (CY) FACTOR 0.6 (8) | REDUCED EBS IN FILL (CY) FACTOR 0.8 (9) | EXPANDED MARSH BACKFILL (CY) FACTOR 1.5 (10) | EXPANDED EBS BACKFILL (CY) FACTOR 1.5 (11) | EXPANDED ROCK (CY) FACTOR 1.1 (12) | UNEXPANDED FILL (CY) | EXPANDED FILL (CY) FACTOR 1.25 (13) | MASS ORDINATE +/- (CY) (14) | WASTE (CY) | 208.0100 BORROW (CY) | COMMENT: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 010 | 10+00 - 12+00 | MAINLINE | 130 | - | - | 130 | - | - | - | - | - | - | - | 72 | 90 | 40 | 40 | - | |
| 010 | - | F.E. - STA. 9+92, LT. | 20 | - | - | 20 | - | - | - | - | - | - | - | - | - | 20 | 20 | - | |
| | | TOTALS = | 150 | | | 150 | | | | | | | | 72 | 90 | 60 | 60 | | |

NOTES:
1.) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
2.) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
3.) EBS EXCAVATION TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL.
4.) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5.) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
6.) MARSH EXCAVATION - TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL. ITEM 205.0400
7.) ROCK EXCAVATION. ITEM NUMBER 205.0200
8.) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USABLE IN FILLS OUTISDE THE 1:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = 0.6
9.) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USEABLE IN FILLS OUTISDE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8
10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT CRUSHED MATERIAL. MARSH BACKFILL FACTOR = 1.5. ITEM NUMBER 312.0115
11.)EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT CRUSHED MATERIAL. EBS BACKFILL FACTOR = 1.3. ITEM NUMBER 312.0115
12.) EXPANDED ROCK FACTOR = 1.1
13.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL - REDUCED MARSH IN FILL)*1.25
14.) THE MASS ORDINATE+ OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

**P** PAY PLAN QUANTITY

## REMOVING SMALL PIPE CULVERTS

| STATION | LOCATION | DESCRIPTION | 203.0100 (EACH) |
|---|---|---|---|
| 9+92 | MAINLINE, LT. | 18" CMP, L=43' | 1 |
| | TOTAL = | | 1 |

## BASE AGGREGATE DENSE / BREAKER RUN

| STATION - STATION | LOCATION | 305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON) | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON) | 311.0110 BREAKER RUN (TON) |
|---|---|---|---|---|
| 10+00 - 12+00 | MAINLINE | 13 | 180 | 337 |
| 9+92 | F.E. - MAINLINE, LT. | 42 | - | - |
| - | UNDISTRIBUTED | 5 | 20 | 23 |
| | TOTAL = | 60 | 200 | 360 |

## ASPHALTIC SURFACE

| STATION - STATION | LOCATION | 455.0605 TACK COAT (GAL) | 465.0105 ASPHALTIC SURFACE (TON) |
|---|---|---|---|
| 10+00 - 12+00 | MAINLINE | 16 | 67 |
| - | UNDISTRIBUTED | 4 | 8 |
| | TOTAL = | 20 | 75 |

## CULVERT PIPE

| STATION - STATION | LOCATION | 521.0721 PIPE ARCH CORRUGATED STEEL 21x15-INCH (LF) | 521.1221 APRON ENDWALLS FOR CULVERT PIPE ARCH STEEL 21x15-INCH (EACH) | STAKEOUT INFORMATION | | |
|---|---|---|---|---|---|---|
| | | | | INVERT | STATION/OFFSET | ELEVATION |
| 9+92 | MAINLINE, LT. | 50 | 2 | SOUTH | 9+76.8/25.0' LT. | 837.24 |
| | TOTAL = | 50 | 2 | NORTH | 10+12.0/21.6' LT. | 835.74 |

MINIMUM STEEL THICKNESS = 0.064 INCHES
MINIMUM ALUMINUM THICKNESS = 0.060 INCHES

## RIPRAP HEAVY

| STATION - STATION | LOCATION | *606.0300 RIPRAP HEAVY (CY) | *645.0120 GEOTEXTILE FABRIC TYPE HR (SY) |
|---|---|---|---|
| 10+13 - 10+21 | MAINLINE, LT. | 3 | 12 |
| - | UNDISTRIBUTED | 2 | 3 |
| | TOTAL = | 5 | 15 |

*MORE LISTED ELSEWHERE

## BEAM GUARD

| STATION - STATION | LOCATION | 614.0200 STEEL THRIE BEAM STRUCTURE APPROACH (LF) | 614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS (LF) | 614.0390 STEEL THRIE BEAM GUARD SHORT RADIUS TERMINAL (EACH) | FOR INFORMATIONAL PURPOSES ONLY | | |
|---|---|---|---|---|---|---|---|
| | | | | | RADIUS (FT) | LENGTH OF INSTALLATION (FT) | NO. OF CRT POSTS |
| 10+02 - 10+22 | MAINLINE, LT. | 21 | 25 | 1 | 8 | 25 | 5 |
| | TOTAL = | 21 | 25 | 1 | | | |

ALL BID ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

3

## SALVAGED RAIL

| STATION - STATION | LOCATION | 614.0920 (LF) |
|---|---|---|
| 9+91 - 10+24 | MAINLINE, RT. | 25 |
| 10+05 - 10+24 | MAINLINE, LT. | 27 |
| | TOTAL = | 52 |

## FINISHING ITEMS

| STATION - STATION | LOCATION | **P** 625.0500 SALVAGED TOPSOIL (SY) | **P** 627.0200 MULCHING (SY) | **P** 629.0210 FERTILIZER TYPE B (CWT) | **P** 630.0120 SEEDING MIXTURE NO. 20 (LB) | **P** 630.0200 SEEDING TEMPORARY (LB) |
|---|---|---|---|---|---|---|
| 10+00 - 12+00 | MAINLINE | 299 | 641 | 0.7 | 18 | 9 |
| - | UNDISTRIBUTED | 71 | 159 | 0.3 | 2 | 1 |
| | TOTAL = | 370 | 800 | 1.0 | 20 | 10 |

**P** PAY PLAN QUANTITY

## SILT FENCE

| STATION - STATION | LOCATION | 628.1504 SILT FENCE (LF) | 628.1520 SILT FENCE MAINTENANCE (LF) |
|---|---|---|---|
| 10+02 - 10+33 | MAINLINE, LT. | 93 | 186 |
| 9+93 - 10+33 | MAINLINE, RT. | 58 | 116 |
| 10+92 - 12+00 | MAINLINE, LT. | 139 | 278 |
| 10+92 - 12+00 | MAINLINE, RT. | 138 | 276 |
| - | UNDISTRIBUTED | 102 | 204 |
| | TOTAL = | 530 | 1,060 |

3

## MOBILIZATION EROSION CONTROL

| PROJECT | 628.1905 MOBILIZATION EROSION CONTROL (EACH) | 628.1910 MOBILIZATION EMERGENCY EROSION CONTROL (EACH) |
|---|---|---|
| 5720-00-73 | 3 | 2 |
| TOTAL = | 3 | 2 |

## TURBIDITY BARRIERS

| STATION - STATION | LOCATION | 628.6005 (SY) |
|---|---|---|
| 10+30 - 10+33 | MAINLINE | 57 |
| 10+88 - 10+91 | MAINLINE | 57 |
| . | UNDISTRIBUTED | 6 |
| | TOTAL = | 120 |

## CULVERT PIPE CHECKS

| STATION | LOCATION | 628.7555 (EACH) |
|---|---|---|
| 9+76 | MAINLINE, LT. | 3 |
| | TOTAL = | 3 |

## MARKERS ROW

| PT. NO. | STATION | LOCATION | 633.5100 (EACH) |
|---|---|---|---|
| 1 | 12+00.00 | 33.00 RT | 1 |
| 2 | 11+09.91 | 33.00 RT | 1 |
| 3 | 10+20.85 | 33.00 RT | 1 |
| 4 | 9+70.00 | 33.00 RT | 1 |
| 5 | 9+70.00 | 33.00 LT | 1 |
| 6 | 9+88.00 | 33.00 LT | 1 |
| 7 | 9+95.00 | 60.00 LT | 1 |
| 8 | 10+15.00 | 55.00 LT | 1 |
| 9 | 10+15.00 | 33.00 LT | 1 |
| 10 | 10+20.85 | 33.00 LT | 1 |
| 11 | 11+09.68 | 33.00 LT | 1 |
| 12 | 12+00.00 | 33.00 LT | 1 |
| | TOTAL = | | 12 |

## PERMANENT SIGNING

| SIGN NUMBER | APPROX STATION | POSITION | SITE ID | SIGN CODE | SIGN DESCRIPTION | ORDER LINES | SIGN SIZE (IN X IN) | 634.0612 POSTS WOOD 4X6 INCH 12 FT (EACH) | 634.0614 POSTS WOOD 4X6 INCH 14 FT (EACH) | 634.0618 POSTS WOOD 4X6 INCH 18 FT (EACH) | 637.2230 SIGNS TYPE II REFLECTIVE F (SF) | 638.2602 REMOVING SIGNS TYPE II (EACH) | 638.3000 REMOVING SMALL SIGN SUPPORTS (EACH) | SIGN MOUNTED ON SAME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-00R | 3+20 | Right | Mainline | W1-1R | Road Turns Right | | 30X30 | --- | --- | --- | --- | 1 | 1 | |
| 1-01R | 3+20 | Right | Mainline | W13-1P | ___ MPH | 15 | 18X18 | --- | --- | --- | --- | 1 | --- | 1-00R |
| 1-02 | 4+60 | Right | Mainline | W1-1R | Road Turns Right | | 36X36 | --- | --- | 1 | 9.00 | --- | --- | |
| 1-03 | 4+60 | Right | Mainline | W13-1P | ___ MPH | 15 | 18X18 | --- | --- | --- | 2.25 | --- | --- | 1-02 |
| 1-04 | 9+73 | Left | Mainline | W1-6 | One Direction Large Arrow | | 48X24 | --- | 1 | | 8.00 | --- | --- | |
| 1-05R | 9+73 | Left | Mainline | W1-6 | One Direction Large Arrow | | 48X24 | --- | --- | --- | --- | 1 | 1 | |
| 1-06R | 9+75 | Left | Mainline | W1-6 | One Direction Large Arrow | | 48X24 | --- | --- | --- | --- | 1 | 1 | |
| 1-07 | 9+75 | Left | Mainline | W1-6 | One Direction Large Arrow | | 48X24 | --- | 1 | --- | 8.00 | --- | --- | |
| 1-08 | 10+21 | Left | Mainline | W5-52L | Bridge Hash Marks | | 12X36 | 1 | --- | | 3.00 | --- | --- | |
| 1-09R | 10+21 | Left | Mainline | W5-52L | Bridge Hash Marks | | 12X36 | --- | --- | --- | --- | 1 | 1 | |
| 1-10 | 10+21 | Right | Mainline | W5-52R | Bridge Hash Marks | | 12X36 | 1 | --- | --- | 3.00 | --- | --- | |
| 1-11R | 10+21 | Right | Mainline | W5-52R | Bridge Hash Marks | | 12X36 | --- | --- | --- | --- | 1 | 1 | |
| 1-12 | 11+07 | Right | Mainline | W5-52L | Bridge Hash Marks | | 12X36 | 1 | --- | --- | 3.00 | --- | --- | |
| 1-13R | 11+07 | Right | Mainline | W5-52L | Bridge Hash Marks | | 12X36 | --- | --- | --- | --- | 1 | 1 | |
| 1-14R | 11+07 | Left | Mainline | W5-52R | Bridge Hash Marks | | 12x36 | --- | --- | --- | --- | 1 | 1 | |
| 1-15 | 11+07 | Left | Mainline | W5-52R | Bridge Hash Marks | | 12X36 | 1 | --- | --- | 3.00 | --- | --- | |
| 1-16 | 15+21 | Left | Mainline | W1-1L | Road Turns Left | | 36X36 | --- | --- | 1 | 9.00 | --- | --- | |
| 1-17 | 15+21 | Left | Mainline | W13-1P | ___ MPH | 15 | 18X18 | --- | --- | --- | 2.25 | --- | --- | 1-16 |
| 1-18R | 16+61 | Left | Mainline | W1-1L | Road Turns Left | | 30X30 | --- | --- | --- | --- | 1 | 1 | |
| 1-19R | 16+61 | Left | Mainline | W13-1P | ___ MPH | 15 | 18X18 | --- | --- | --- | --- | 1 | --- | 1-18R |
| | | | | | | | TOTAL = | 4 | 2 | 2 | 50.50 | 10 | 8 | |

## GEOTEXTILE FABRIC TYPE SR

| STATION - STATION | LOCATION | 645.0135 (SY) |
|---|---|---|
| 10+00 - 12+00 | MAINLINE | 567 |
| - | UNDISTRIBUTED | 23 |
| | TOTAL = | 590 |

## CONSTRUCTION STAKING

| STATION -STATION | LOCATION | CONSTRUCTION STAKING 650.4500 SUBGRADE (LF) | 650.5000 BASE (LF) | 650.6000 PIPE CULVERTS (EACH) | 650.9910 SUPPLEMENTAL CONTROL (01.5720-00-73) (LS) | 650.9920 SLOPES STAKES (LF) |
|---|---|---|---|---|---|---|
| 9+92 | F.E. - MAINLINE, LT. | - | - | 1 | - | - |
| 10+00 - 12+00 | MAINLINE | 115 | 115 | - | 1 | 115 |
| | TOTAL = | 115 | 115 | 1 | 1 | 115 |

## SAWING ASPHALT

| STATION - STATION | LOCATION | 690.0150 (LF) |
|---|---|---|
| 9+70 - 10+00 | MAINLINE, LT. | 29 |
| 10+00 | MAINLINE | 23 |
| 12+00 | MAINLINE | 18 |
| | TOTAL = | 70 |




FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\SHEETSPLAN\DETAILS\MQ.DWG
LAYOUT : MODEL
PLOT DATE : 10/27/2014
PLOT TIME : 8:58:34 AM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1" = 1'

| R/W PROJECT NUMBER | SHEET NUMBER | TOTAL SHEETS |
|---|---|---|
| 5720-00-03 | 4.01 | 2 |
| FEDERAL PROJECT NUMBER | | |

PLAT OF RIGHT-OF-WAY REQUIRED FOR

# TOWN OF WILLOW SPRINGS, FERNDALE ROAD

(PECATONICA RIVER BRIDGE P-33-0144)

TOWN ROAD — LAFAYETTE COUNTY

CONSTRUCTION PROJECT NUMBER
5720-00-73

## CONVENTIONAL ABBREVIATIONS

| | | | |
|---|---|---|---|
| ACCESS POINT/ DRIVEWAY CONNECTION | AP | PROPERTY LINE | PL |
| ACCESS RIGHTS | AR | RECORDED AS | (100') |
| ACRES | AC. | REFERENCE LINE | R/L |
| AND OTHERS | ET.AL. | RELEASE OF RIGHTS | ROR |
| BARN | B. | REMAINING | REM. |
| CENTERLINE | C/L | RIGHT-OF-WAY | R/W |
| CERTIFIED SURVEY MAP | CSM | SECTION | SEC. |
| CORNER | COR. | SHED | S. |
| CONVEYANCE OF RIGHTS | CR | STATION | STA. |
| DOCUMENT | DOC. | TEMPORARY LIMITED EASEMENT | TLE |
| EASEMENT | EASE. | VOLUME | V. |
| GARAGE | G. | | |
| HIGHWAY EASEMENT | H.E. | CURVE DATA | |
| HOUSE | H. | LONG CHORD | LCH |
| HOUSE TRAILER | H.T. | LONG CHORD BEARING | LCB |
| LAND CONTRACT | LC | RADIUS | R |
| MONUMENT | MON. | DEGREE OF CURVE | D |
| PAGE | P. | CENTRAL ANGLE OR DELTA | DELTA |
| PERMANENT LIMITED EASEMENT | PLE | LENGTH OF CURVE | L |
| | | TANGENT | TAN |

## CONVENTIONAL SYMBOLS

| | | | |
|---|---|---|---|
| FOUND SURVEY MONUMENT (WITH POINT NUMBER) | IP 1040 | PROPOSED R/W LINE | |
| R/W MONUMENT | ○ ● (SET) | EXISTING H.E. LINE | |
| R/W STANDARD | △ ▲ (SET) | PROPERTY LINE | |
| SIGN | SIGN | LOT & TIE LINES | |
| SECTION CORNER MONUMENT | | SLOPE INTERCEPTS | |
| SECTION CORNER SYMBOL | | CORPORATE LIMITS | |
| FEE (HATCH VARIES) | | NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL) | |
| TEMPORARY LIMITED EASEMENT | | NO ACCESS (BY ACQUISITION) | |
| PERMANENT LIMITED EASEMENT | | NO ACCESS (BY STATUTORY AUTHORITY) | |
| R/W BOUNDARY POINT | RW120 | SECTION LINE | |
| PARCEL NUMBER | 8 | QUARTER LINE | |
| UTILITY PARCEL NUMBER | 92 | SIXTEENTH LINE | |
| SIGN NUMBER (OFF PREMISE) | 21 | EXISTING CENTERLINE | |
| BUILDING | | PROPOSED REFERENCE LINE | |
| | | PARALLEL OFFSET | |
| | | ENCROACHMENT | TYPE |

## CONVENTIONAL UTILITY SYMBOLS

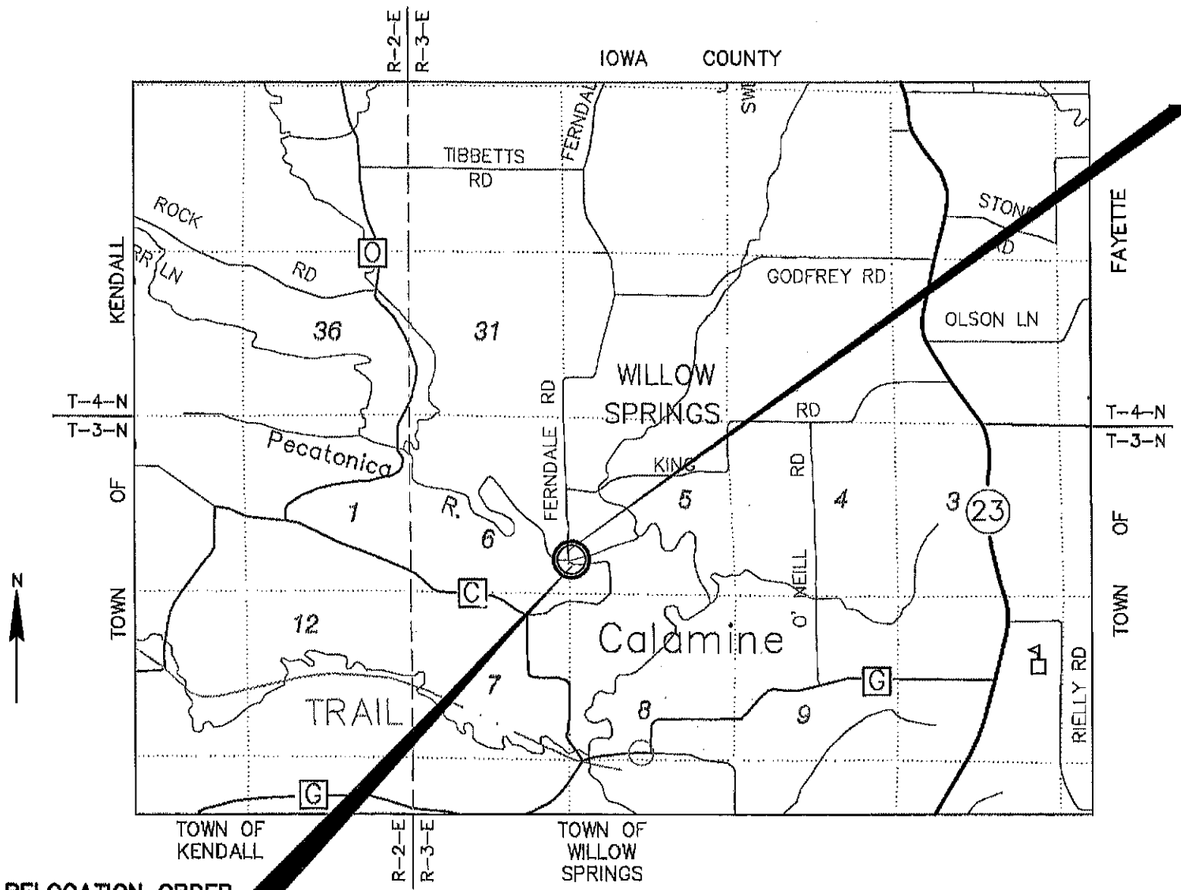
| | | | | |
|---|---|---|---|---|
| WATER | W | SANITARY SEWER | SAN | |
| GAS | G | STORM SEWER | SS | |
| TELEPHONE | T | | NON COMPENSABLE | COMPENSABLE |
| OVERHEAD TRANSMISSION LINES | OH | POWER POLE | | |
| ELECTRIC | E | TELEPHONE POLE | | |
| CABLE TELEVISION | TV | TELEPHONE PEDESTAL | | |
| FIBER OPTIC | FO | ELECTRIC TOWER | | |

## NOTES

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, LAFAYETTE COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES, GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4" X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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




**BEGIN RELOCATION ORDER**
**STA. 9+70.00**
1619.87' SOUTH AND 125.01' EAST OF THE E¼ CORNER OF SECTION 6, T.3N., R.3E., TOWN OF WILLOW SPRINGS, LAFAYETTE COUNTY, WI
Y = 194,538.26
X = 468,787.54

**END RELOCATION ORDER**
**STA. 12+00.00**
1398.96' SOUTH AND 90.60' EAST OF THE E¼ CORNER OF SECTION 6, T.3N., R.3E., TOWN OF WILLOW SPRINGS, LAFAYETTE COUNTY, WI
Y = 194,759.18
X = 468,753.14

LAYOUT
SCALE 0 0.5 MI. 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.044 MI.

REVISION DATE
1/12/2015


**JEWELL**
associates engineers, inc.
Engineers - Surveyors - Architects
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
PHONE : 608.588.7484
FAX : 608.588.9322


I HEREBY CERTIFY THAT THIS PLAT WAS MADE FOR THE TOWN OF WILLOW SPRINGS, LAFAYETTE COUNTY, WISCONSIN AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
WESLEY L KRAEMER
S-3026
SPRING GREEN WIS.
10/6/14
LAND SURVEYOR

APPROVED FOR THE TOWN OF WILLOW SPRINGS
DATE 10/14/14 James P Ache
(NAME & TITLE)




FILE NAME : S:\Projects\y19240 Ferndale Road Bridge\RW\y19240 rw plat.dwg
PLOT DATE : 10/7/2014 12:12 PM PLOT BY : Schaffer, Ellery PLOT NAME : PLOT SCALE : 1:2
WISDOT/CADDS SHEET 80

| COORDINATE TABLE – NEW R/W POINTS | | | | |
|---|---|---|---|---|
| PT.# | STATION | OFFSET | Y | X |
| 1 | 12+00.00 | 33.00 RT | 194761.15 | 468786.08 |
| 2 | 11+09.91 | 33.00 RT | 194670.99 | 468791.48 |
| 3 | 10+20.85 | 33.00 RT | 194581.80 | 468795.59 |
| 4 | 9+70.00 | 33.00 RT | 194566.45 | 468804.70 |
| 5 | 9+70.00 | 33.00 LT | 194510.07 | 468770.38 |
| 6 | 9+88.00 | 33.00 LT | 194529.37 | 468748.37 |
| 7 | 9+95.00 | 60.00 LT | 194524.78 | 468718.70 |
| 8 | 10+15.00 | 55.00 LT | 194565.77 | 468708.92 |
| 9 | 10+15.00 | 33.00 LT | 194569.25 | 468730.64 |
| 10 | 10+20.85 | 33.00 LT | 194578.76 | 468729.66 |
| 11 | 11+09.68 | 33.00 LT | 194667.49 | 468725.57 |
| 12 | 12+00.00 | 33.00 LT | 194757.19 | 468720.20 |

NOTES:
EXISTING C/L OF FERNDALE ROAD BASED ON CENTERLINE OF EXISTING PAVEMENT.

BASIS OF EXISTING R/W OF FERNDALE ROAD BASED ON CENTERLINE OF EXISTING PAVEMENT, WIS. STATUE 82.31(2)

## CURVE 1 DATA

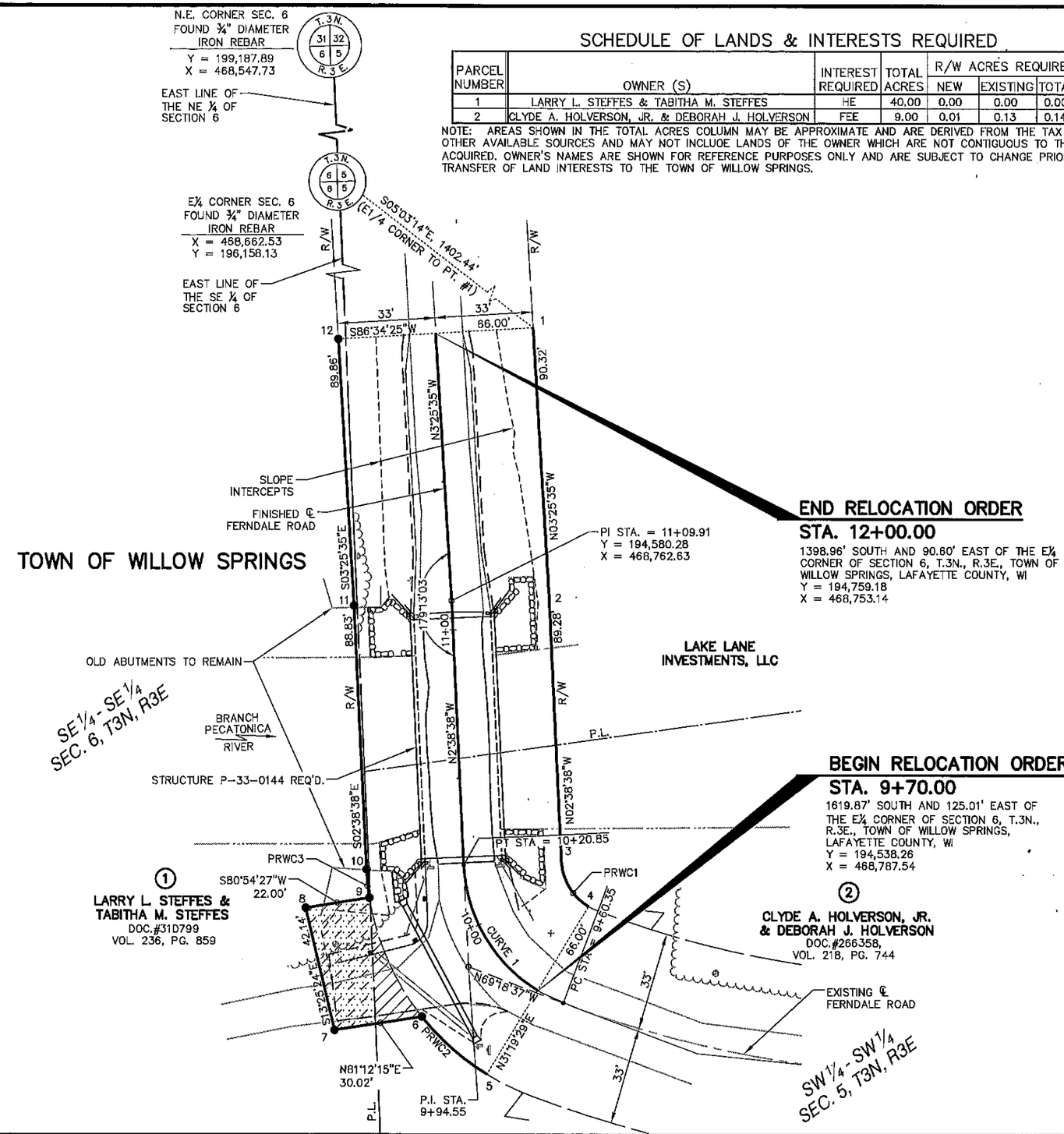
| |
|---|
| PI STA. = 9+94.55 |
| Y = 194,546.12 |
| X = 468,764.21 |
| Δ = 66°39'59" |
| D.A. = 110°11'03" |
| T = 34.20' |
| R = 52.00' |
| L = 60.50' |
| PC STA. = 9+60.35 |
| Y = 194,534.04 |
| X = 468,796.20 |
| PT STA. = 10+20.85 |
| Y = 194,580.28 |
| X = 468,762.63 |
| SE = NORMAL CROWN |

| PROPOSED RIGHT-OF-WAY CURVE TABLE | | | | | | |
|---|---|---|---|---|---|---|
| CURVE | ARC LENGTH | RADIUS | DELTA ANGLE | CHORD BEARING | CHORD LENGTH | TANGENT |
| PRWC1 | 18.58' | 19.00' | 56°01'53" | S30°39'35"E | 17.85' | 10.11' |
| PRWC2 | 29.42' | 85.00' | 19°49'59" | N48°45'31"W | 29.28' | 14.86' |
| PRWC3 | 9.57' | 85.00' | 06°26'54" | N05°52'06"W | 9.56' | 4.79' |

## SCHEDULE OF LANDS & INTERESTS REQUIRED

| PARCEL NUMBER | OWNER (S) | INTEREST REQUIRED | TOTAL ACRES | R/W ACRES REQUIRED NEW | EXISTING | TOTAL | TOTAL ACRES REM. | H.E. |
|---|---|---|---|---|---|---|---|---|
| 1 | LARRY L. STEFFES & TABITHA M. STEFFES | HE | 40.00 | 0.00 | 0.00 | 0.00 | 40.00 | 0.02 |
| 2 | CLYDE A. HOLVERSON, JR. & DEBORAH J. HOLVERSON | FEE | 9.00 | 0.01 | 0.13 | 0.14 | 8.86 | -- |

NOTE: AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM THE TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUOE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED. OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN OF WILLOW SPRINGS.




| | | | | | | |
|---|---|---|---|---|---|---|
| REVISION DATE 1/12/2015 | DATE 10/14/14 | SCALE, FEET 0 20 40 | HWY: FERNDALE ROAD | STATE R/W PROJECT NUMBER: 5720-00-03 | PLAT SHEET 4.02 | |
| | GRID FACTOR N/A | | COUNTY: LAFAYETTE | CONSTRUCTION PROJECT NUMBER: 5720-00-73 | PS&E SHEET 12 | E |

FILE NAME : S:\Projects\K19240 Ferndale Road Bridge\RW\K19240 rw plat.dwg PLOT DATE : 1/12/2015 2:54 PM PLOT BY : Schaffer, Ellery PLOT NAME : PLOT SCALE : 1:2

WISDOT/CADDS SHEET 75

LEGEND

- RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR
- DIRECTION OF FLOW
- XXXXXXXXX SAWING ASPHALT REQ'D
- SILT FENCE
- CULVERT PIPE CHECKS
- WETLANDS
- TURBIDITY BARRIER

CURVE 1
PI STATION = 9+94.55
Y = 194546.12
X = 468764.21
D = 110°11'03"
DELTA = 66°39'59"
T = 34.20
L = 60.50
R = 52.00
PC STATION = 9+60.35
Y = 194534.04
X = 468796.20
PT STATION = 10+20.85
Y = 194580.28
X = 468762.63

PI STA. 11+09.91
Y=194,669.25
X=468,758.52
P.L.

STA. 9+92 LT.
CONSTRUCT F.E. (B.A.D)
(1) PIPE ARCH CORRUGATED STEEL 21 X 15-INCH
(2) APRON ENDWALLS FOR PIPE ARCH STEEL 21 X 15-INCH
SOUTH INV.=837.24
NORTH INV.=835.74

STA. 9+92 LT.
(1) REMOVING SMALL PIPE CULVERTS REQ'D

LARRY L. STEFFES & TABITHA M. STEFFES

EXISTING ABUTMENTS TO REMAIN

FINISHED SHOULDER HINGE POINT (TYP.)

PECATONICA RIVER

BM 6

STEEL PLATE BEAM GUARD SHORT RADIUS AND STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL THRIE BEAM STRUCTURE APPROACH

BM 7

FINISHED ℄ FERNDALE ROAD

EDGE OF ASPHALT (TYP.)

CENTERLINE OF EXISTING DRAINAGEWAY

SECTION LINE

BM 8

R/W

10:1

25:1

1'

11'

33'

179°13'3"

N2°38'38"W

11+00

N3°25'35"W

(ASPHALT)

PT STA = 10+20.85

PI STA = 11+09.91

N69°18'

CURVE 1

BEGIN PROJECT
STA. 10+00
Y=194,560.20
X=468,767.69

BEGIN CONSTRUCTION
STA. 9+70
Y=194,538.26
X=468,787.54

CLYDE A. HOLVERSON JR. & DEBORAH J. HOLVERSON

EXISTING ℄ FERNDALE ROAD

(ASPHALT)

PC STA = 9+60.35

SLOPE INTERCEPTS

LIMITS OF WETLANDS

CENTERLINE OF EXISTING DRAINAGEWAY

REMOVING OLD STRUCTURE OVER WATERWAY
WITH MINIMAL DEBRIS STA. 10+64 (P-33-0144)
SINGLE SPAN STEEL GIRDER STRUCTURE
22.0' CLEAR ROADWAY WIDTH
84.5' OVERALL LENGTH

LAKE LANE INVESTMENTS, LLC

END PROJECT
STA. 12+00
Y=194,759.18
X=468,753.14

BM 5

PI STA 10+06.29
EL 836.85
K = 3.37'
L = 12.00'

VPT STA = 10+12.29
EL = 836.84

VPC STA = 10+00.29
EL = 837.07

3.70%

FINISHED ℄ PROFILE FERNDALE ROAD

VPC STA = 11+09.03
EL = 836.71

-0.14%

PI STA 11+34.03
EL 836.67
K = 8.10'
L = 50.00'

VPC STA = 11+64.03
EL = 834.78

6.31%

VPT STA = 11+59.03
EL = 835.09

VPT STA = 11+94.03
EL = 833.29

6.64%

PI STA 11+79.03
EL 833.83
K = 11.18'
L = 30.00'

MATCH EXISTING
STA. 10+00
EL = 837.08

MATCH EXISTING
STA. 12+00
EL = 833.07

EXISTING ℄ PROFILE FERNDALE ROAD

STA. 10+63.86
STRUCTURE P-33-0144 TO REMAIN
SEE STRUCTURE PLANS FOR DETAILS
OBSERVED WATER EL = 822.24 (11/14/2013)
STREAMBED EL = 820.24

STA. 10+00

STA. 12+00

EXISTING ℄ ELEVATION

FINISHED ℄ ELEVATION

840 838 836 834 832 830 828 826 824

842.63 840.68 838.48 837.08 837.08 836.67 836.83 836.39 836.80 836.40 836.77 836.32 836.75 836.23 836.72 835.72 836.62 835.10 836.07 834.47 835.03 833.76 833.88 833.07 833.07

8+00 8+20 8+40 8+60 8+80 9+00 9+20 9+40 9+60 9+80 10+00 10+20 10+40 10+60 10+80 11+00 11+20 11+40 11+60 11+80 12+00 12+20 12+40 12+60 12+80 13+00 13+20 13+40 13+60

## BENCH MARKS

| NO. | STA. | DESCRIPTION | ELEV. |
|---|---|---|---|
| 5 | 9+12 | RR SPIKE SET IN N SIDE OF 24 IN. DIA. SUGAR MAPLE, 24.8' RT. | 844.06 |
| 6 | 10+08 | RR SPIKE SET IN S SIDE OF 12 IN. DIA. BOX ELDER, 47.9' LT. | 838.25 |
| 7 | 11+26 | RR SPIKE SET IN THE NE SIDE OF 7 IN. DIA. BOX ELDER, 30.9' LT. | 834.94 |
| 8 | 11+05 | FOUND CHISELED ☐ ON NW WING OF P-33-0144, 13.1' LT. | 835.98 |

EARTHWORK SUMMARY

| | | F.E. STA. MAINLINE | F.E. STA. 9+92, LT. | TOTALS |
|---|---|---|---|---|
| EXCAVATION COMMON | (C.Y.) = | 130 | 20 | 150 |
| FILL | (C.Y.) = | 72 | - | 72 |
| FILL EXPANSION | (25%) = | 90 | - | 90 |
| WASTE | (C.Y.) = | 40 | 20 | 60 |

| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | PLAN & PROFILE: FERNDALE ROAD | SHEET 13 E |
|---|---|---|---|---|

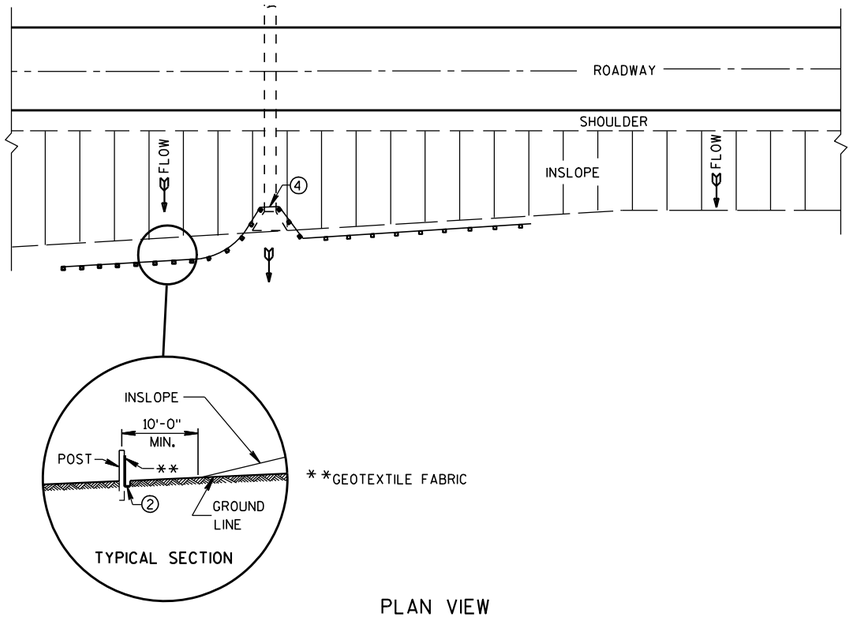
FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\SHEETSPLAN\PLAN & PROFILE SHEETS\PLAN AND PROFILE SHORTENED ALINGMENT.DWG
LAYOUT : LAYOUT
PLOT DATE : 1/12/2015
PLOT TIME : 1:37:12 PM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1:2_XREF

# Standard Detail Drawing List

| | |
|---|---|
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 08F02-01 | APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 14B15-08A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-08B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-08C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS |
| 14B18-06A | STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS) |
| 14B20-11A | STEEL THRIE BEAM STRUCTURE APPROACH |
| 14B20-11F | STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M" |
| 14B27-01A | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B27-01B | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 14B27-01C | STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL |
| 15A01-11 | MARKER POST FOR RIGHT-OF-WAY |
| 15C02-05A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C06-07 | SIGNING & MARKING FOR TWO LANE BRIDGES |

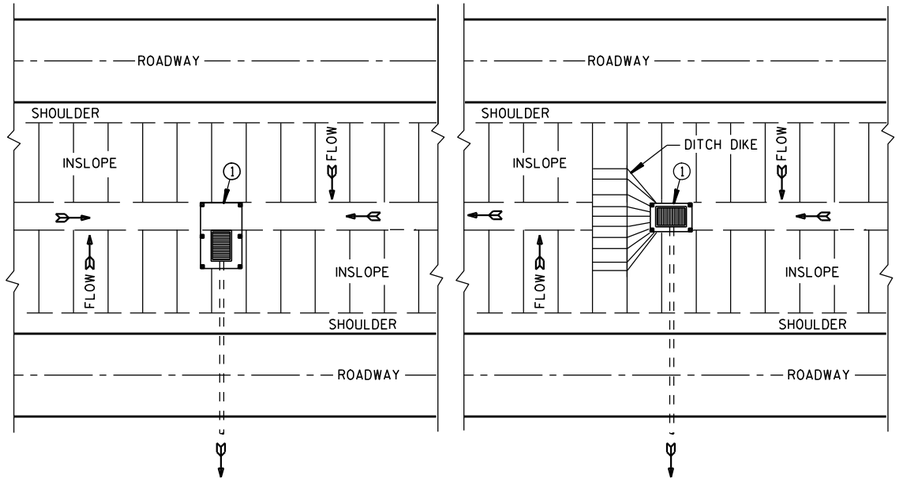
6

6



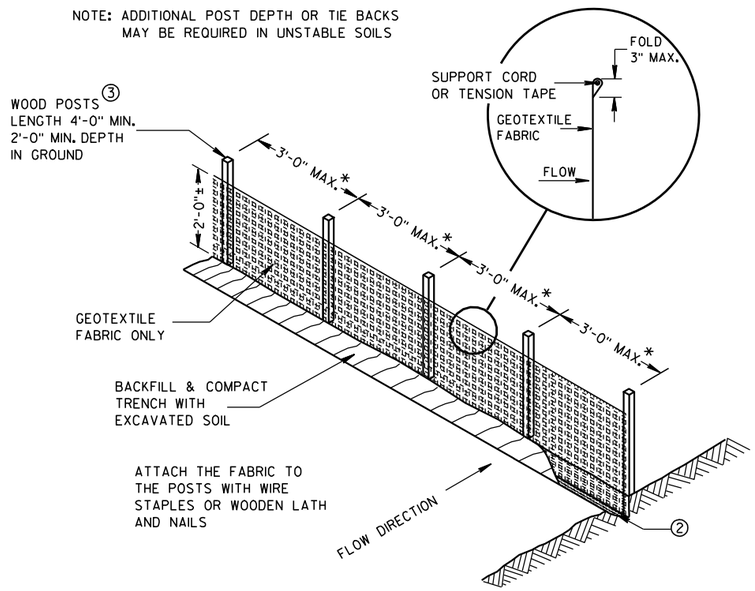

PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE

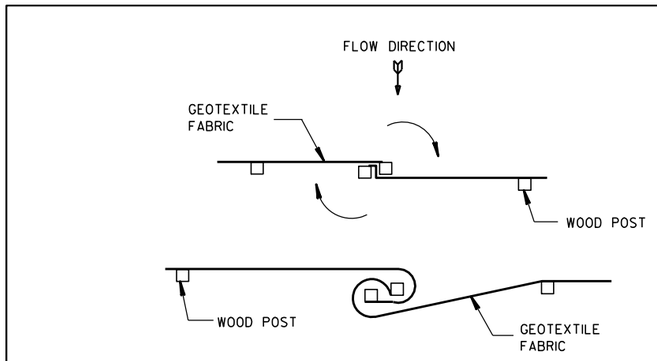



PLAN VIEW

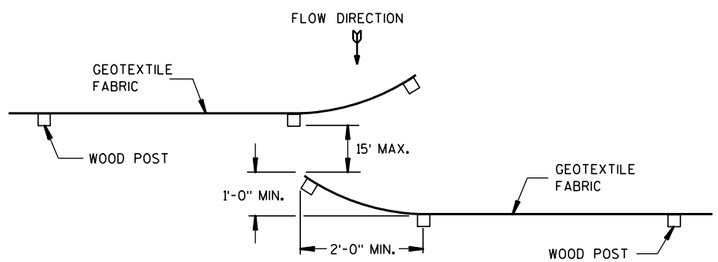
## SILT FENCE AT MEDIAN SURFACE DRAINS




## SILT FENCE




TWIST METHOD



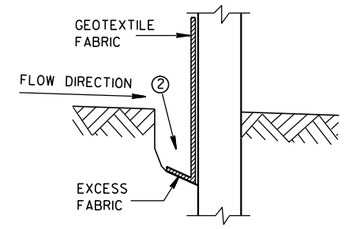

HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5

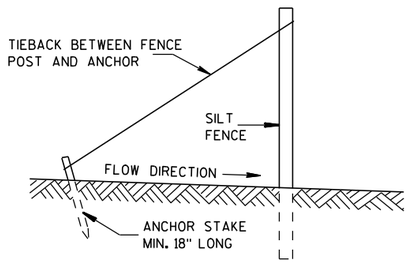
## GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

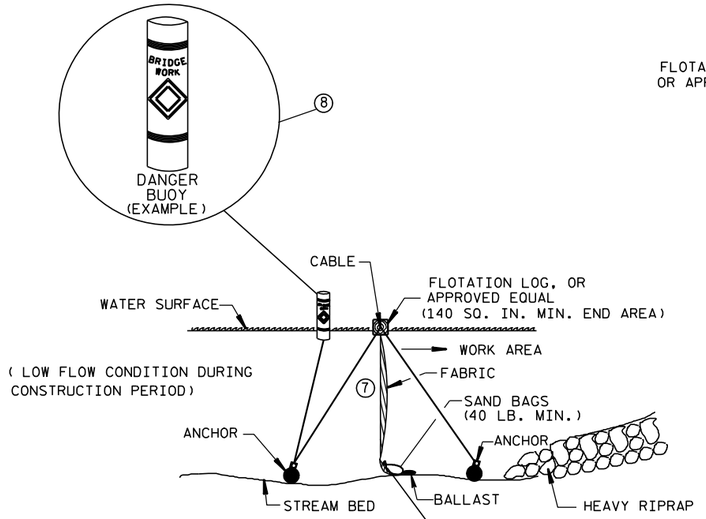
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

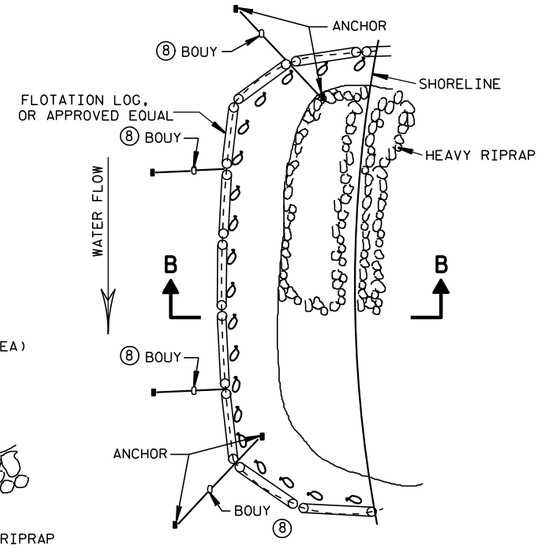


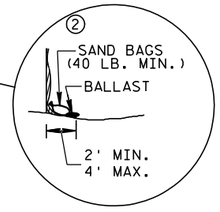
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6

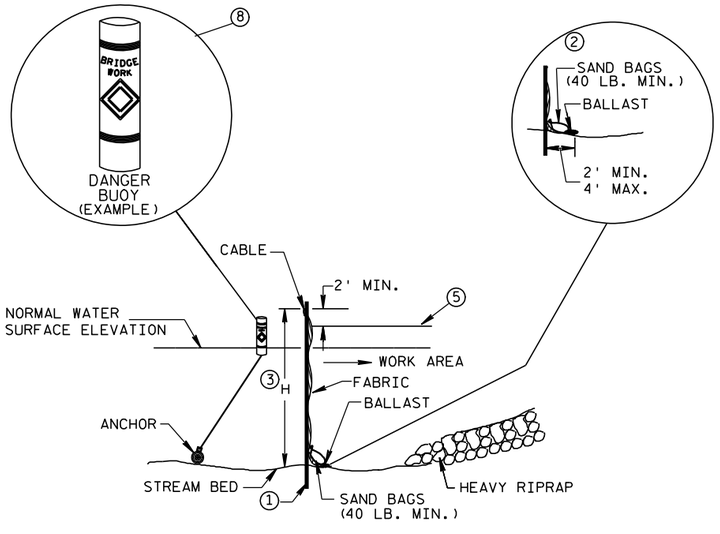



**SECTION B-B**

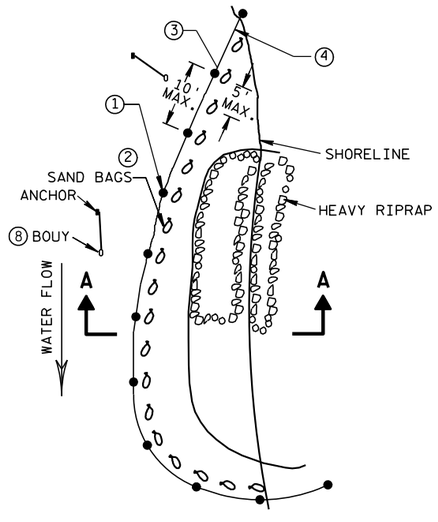



**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**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 SANDBAGS 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 FT., POST SPACING MAY NEED TO BE DECREASED.

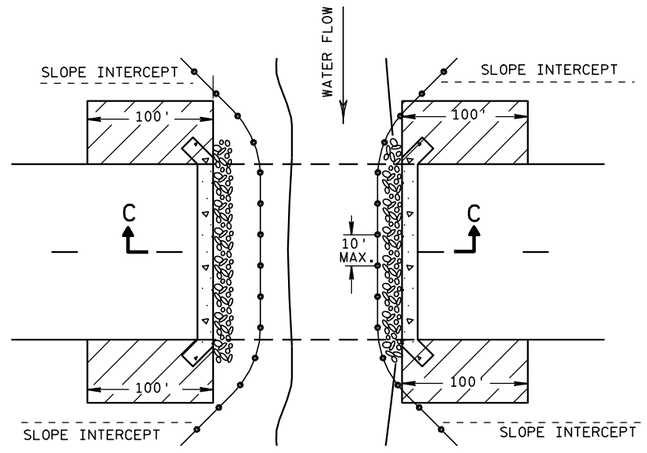
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

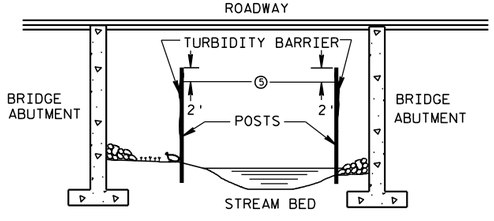
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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**



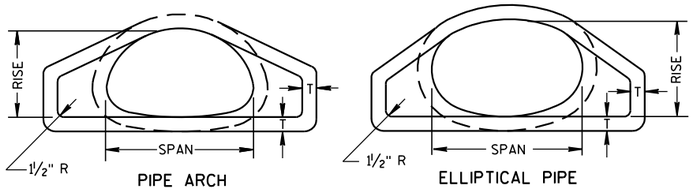

**SECTION C-C**

**TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES**

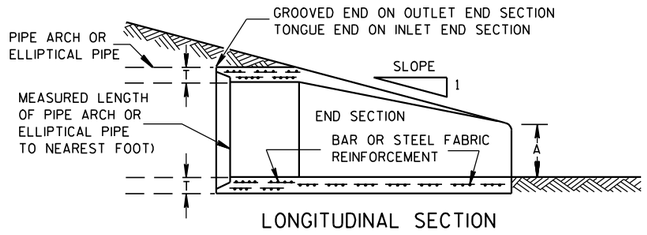
**TURBIDITY BARRIER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

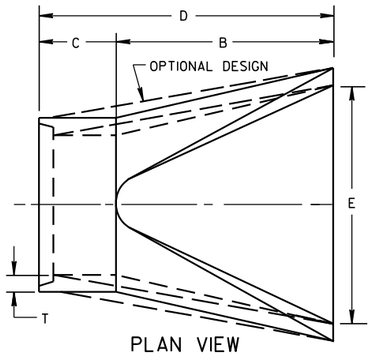
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA




END VIEW

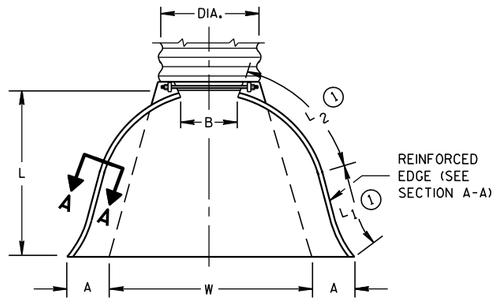



LONGITUDINAL SECTION

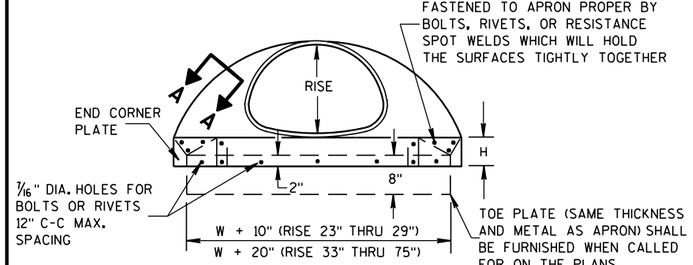



PLAN VIEW

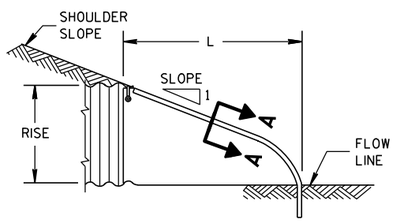
## CONCRETE ENDWALLS




PLAN VIEW

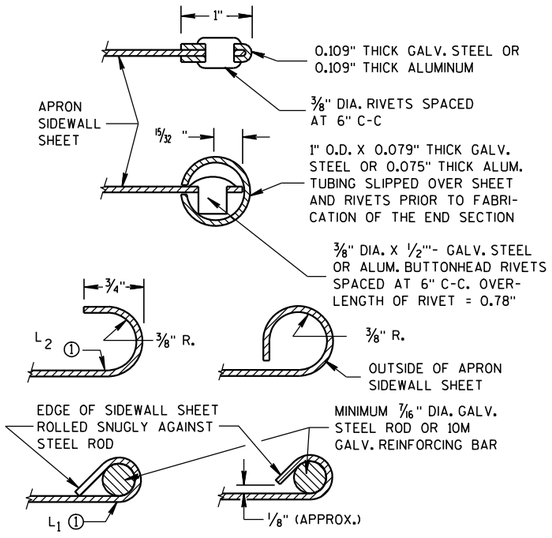



END VIEW




SIDE ELEVATION

## METAL ENDWALLS




## SECTION A-A

### 2- 2/3" X 1/2" CORRUGATIONS

| EQUIV. DIA. (Inches) | (Inches) SPAN | (Inches) RISE | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 17 | 13 | .064 | .060 | 7 | 9 | 6 | 19 | 14 | 16 | 30 | 2½ to 1 | 1 Pc. |
| 18 | 21 | 15 | .064 | .060 | 7 | 10 | 6 | 23 | 14 | 19 3/8 | 36 | 2½ to 1 | 1 Pc. |
| 21 | 24 | 18 | .064 | .060 | 8 | 12 | 6 | 28 | 18 | 21¾ | 42 | 2½ to 1 | 1 Pc. |
| 24 | 28 | 20 | .064 | .060 | 9 | 14 | 6 | 32 | 18 | 27½ | 48 | 2½ to 1 | 1 Pc. |
| 30 | 35 | 24 | .079 | .075 | 10 | 16 | 6 | 39 | 18 | 37 5/8 | 60 | 2½ to 1 | 1 Pc. |
| 36 | 42 | 29 | .079 | .075 | 12 | 18 | 8 | 46 | 24 | 45 5/8 | 75 | 2½ to 1 | 1 Pc. |
| 42 | 49 | 33 | .109 | .105 | 13 | 21 | 9 | 53 | 24 | 54¾ | 85 | 2½ to 1 | 2 Pc. |
| 48 | 57 | 38 | .109 | .105 | 18 | 26 | 12 | 63 | 24 | 68 | 90 | 2½ to 1 | 3 Pc. |
| 54 | 64 | 43 | .109 | .105 | 18 | 30 | 12 | 70 | 24 | 72¾ | 102 | 2¼ to 1 | 3 Pc. |
| 60 | 71 | 47 | .109* | .105* | 18 | 33 | 12 | 77 | 30 | 82¼ | 114 | 2¼ to 1 | 3 Pc. |
| 66 | 77 | 52 | .109* | .105* | 18 | 36 | 12 | 77 | — | — | 126 | 2 to 1 | 3 Pc. |
| 72 | 83 | 57 | .109* | .105* | 18 | 39 | 12 | 77 | — | — | 138 | 2 to 1 | 3 Pc. |

### 3" X 1" CORRUGATIONS

| EQUIV. DIA. (Inches) | (Inches) SPAN | (Inches) RISE | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | 53 | 41 | .109 | .105 | 18 | 26 | 12 | 63 | 24 | 72¾ | 90 | 2½ to 1 | 2 Pc. |
| 54 | 60 | 46 | .109 | .105 | 18 | 30 | 12 | 70 | 30 | 82¼ | 102 | 2 to 1 | 2 Pc. |
| 60 | 66 | 51 | .109* | .105* | 18 | 33 | 12 | 77 | — | — | 114 | 1½ to 1 | 3 Pc. |
| 66 | 73 | 55 | .109* | .105* | 18 | 36 | 12 | 77 | — | — | 126 | 1½ to 1 | 3 Pc. |
| 72 | 81 | 59 | .109* | .105* | 18 | 39 | 12 | 77 | — | — | 138 | 2 to 1 | 3 Pc. |
| 78 | 87 | 63 | .109* | .105* | 22 | 38 | 12 | 77 | — | — | 148 | 1½ to 1 | 3 Pc. |
| 84 | 95 | 67 | .109* | .105* | 22 | 34 | 12 | 77 | — | — | 162 | 1½ to 1 | 3 Pc. |
| 90 | 103 | 71 | .109* | .105* | 22 | 38 | 12 | 77 | — | — | 174 | 1½ to 1 | 3 Pc. |
| 96 | 112 | 75 | .109* | .105* | 24 | 40 | 12 | 77 | — | — | 174 | 1½ to 1 | 3 Pc. |

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

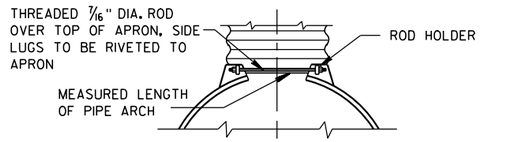
### REINFORCED CONCRETE PIPE ARCH

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) ** SPAN | ** RISE | T | A | B | C | D | E | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 29 | 18 | 3 | 8½ | 39 | 33 | 72 | 48 | 3 to 1 |
| 30 | 36 | 22 | 3½ | 9½ | 50 | 46 | 96 | 60 | 3 to 1 |
| 36 | 44 | 27 | 4 | 11⅛ | 60 | 36 | 96 | 72 | 3 to 1 |
| 42 | 51 | 31 | 4½ | 15 13/16 | 60 | 36 | 96 | 78 | 3 to 1 |
| 48 | 58 | 36 | 5 | 21 | 60 | 36 | 96 | 84 | 3 to 1 |
| 54 | 65 | 40 | 5½ | 25½ | 60 | 36 | 96 | 90 | 3 to 1 |
| 60 | 73 | 45 | 6 | 31 | 60 | 36 | 96 | 96 | 3 to 1 |
| 72 | 88 | 54 | 7 | 31 | 60 | 39 | 99 | 120 | 2 to 1 |
| 84 | 102 | 62 | 8 | 28½ | 83 | 19 | 102 | 144 | 2 to 1 |

### REINFORCED CONCRETE ELLIPTICAL PIPE

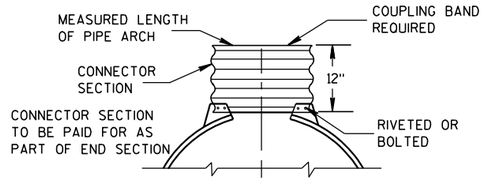
| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) ** SPAN | ** RISE | T | A | B | C | D | E | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 30 | 19 | 3¼ | 8½ | 39 | 33 | 72 | 48 | 3 to 1 |
| 30 | 38 | 24 | 3¾ | 9½ | 54 | 18 | 72 | 60 | 3 to 1 |
| 36 | 45 | 29 | 4½ | 11⅛ | 60 | 24 | 84 | 72 | 2½ to 1 |
| 42 | 53 | 34 | 5 | 15¾ | 60 | 36 | 96 | 78 | 2½ to 1 |
| 48 | 60 | 38 | 5½ | 21 | 60 | 36 | 96 | 84 | 2½ to 1 |
| 54 | 68 | 43 | 6 | 25½ | 60 | 36 | 96 | 90 | 2½ to 1 |
| 60 | 76 | 48 | 6½ | 30 | 60 | 36 | 96 | 96 | 2½ to 1 |

**NOMINAL SIZE



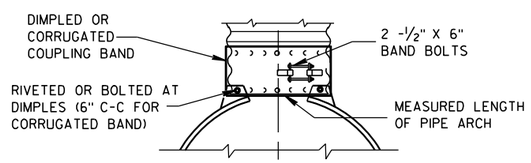

TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH




TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH




TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

## CONNECTION DETAILS

## GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

**APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE**

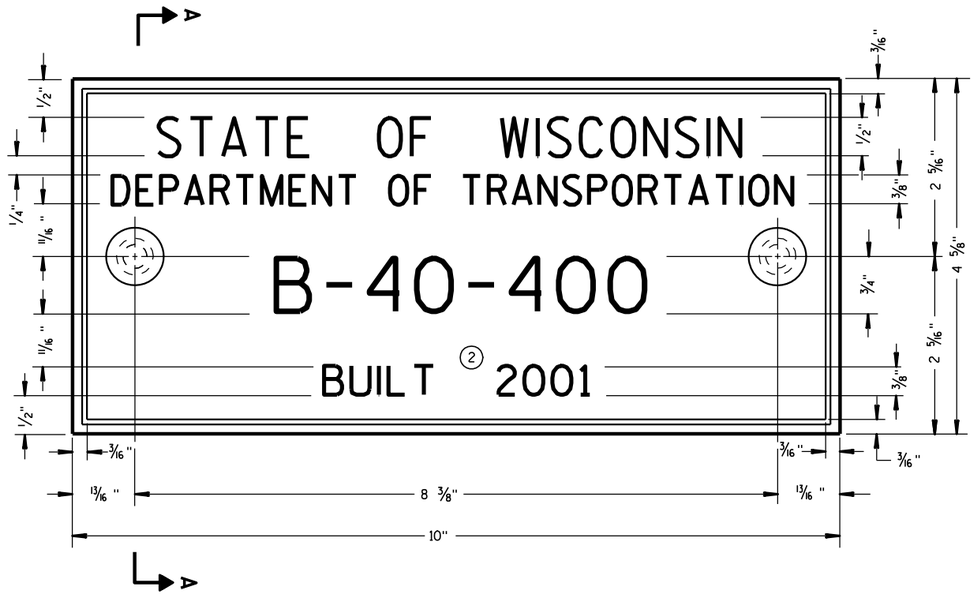
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

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

FHWA




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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

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

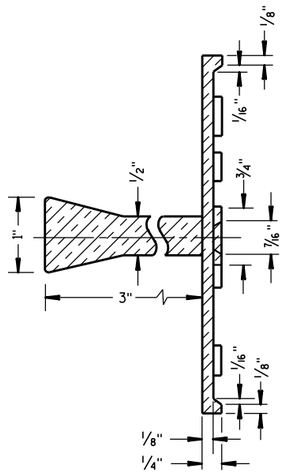
## GENERAL NOTES

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

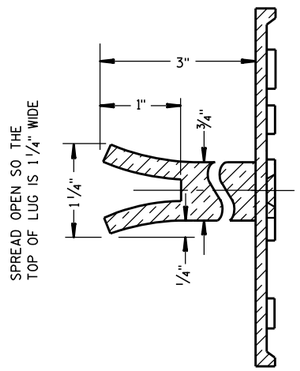
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

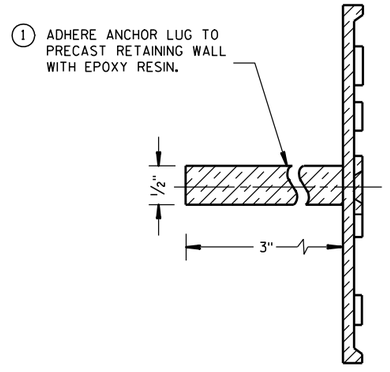
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




**SECTION A-A**




**ALTERNATE LUG**




**ALTERNATE LUG**
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA





6



S.D.D. 12 A 3-10

# GENERAL NOTES

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

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

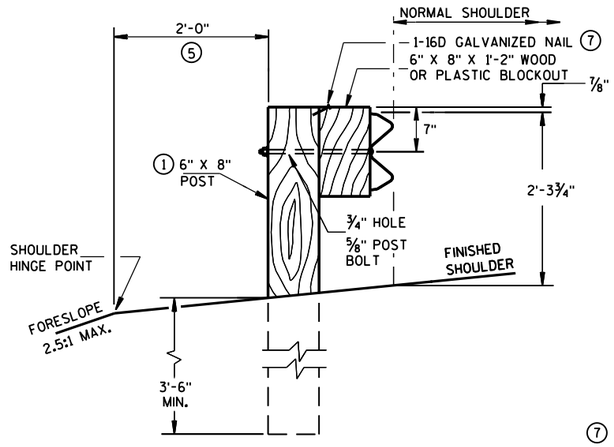
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

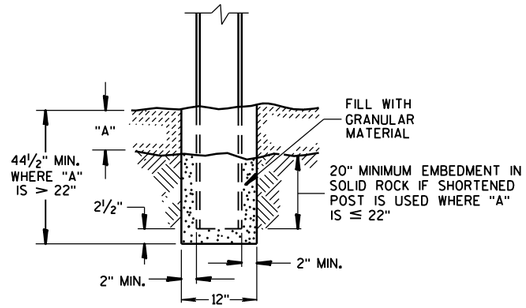
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

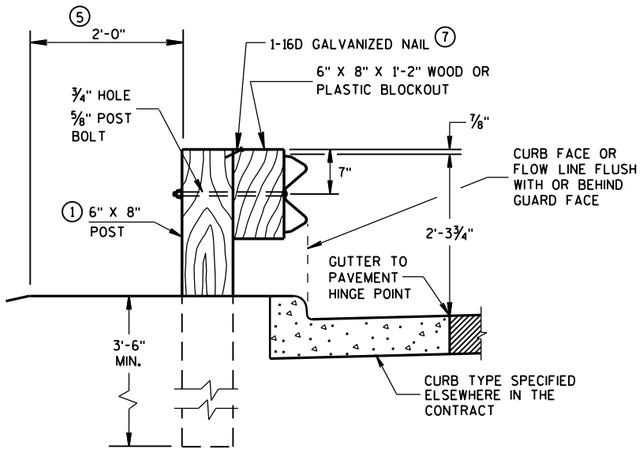
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



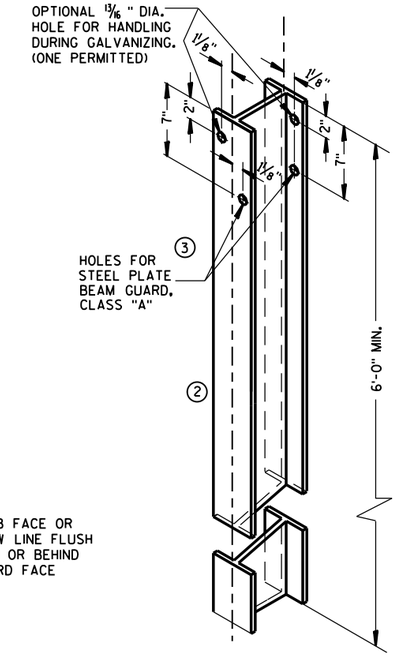

END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION




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

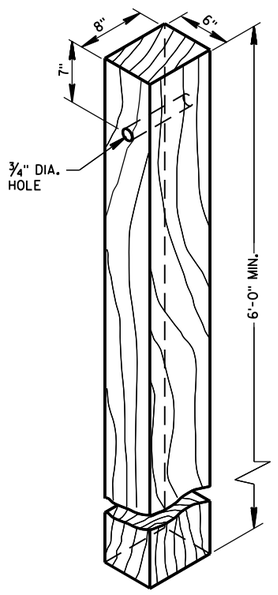



END VIEW
LOCATED ALONG A CURBED ROADWAY

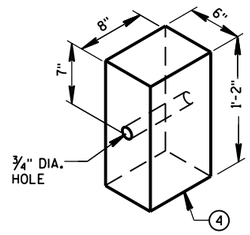



STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

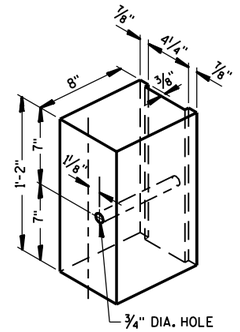
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



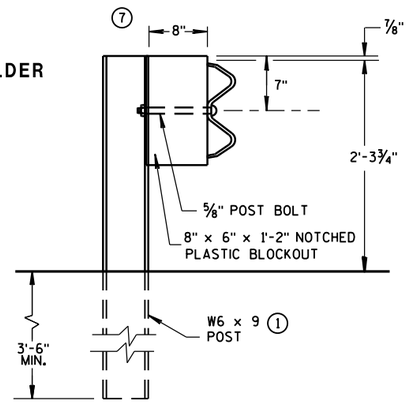

WOOD POST
(6"X8") NOMINAL



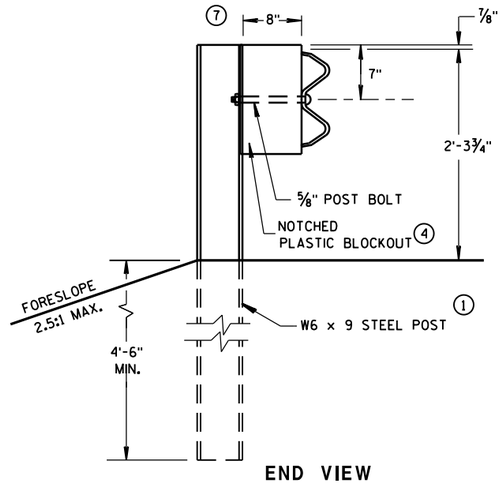

WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



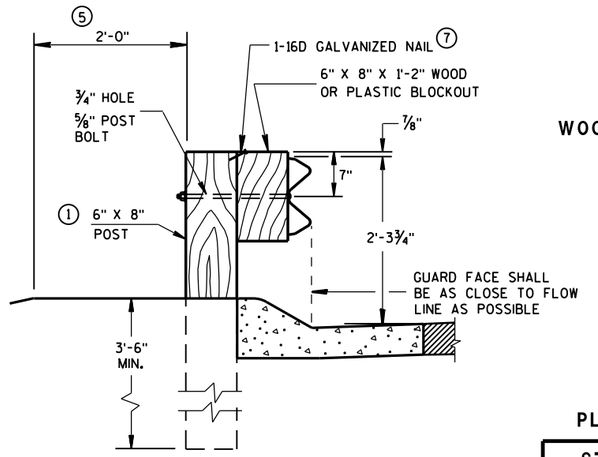

TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



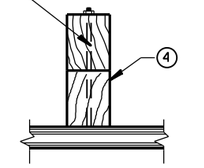

END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



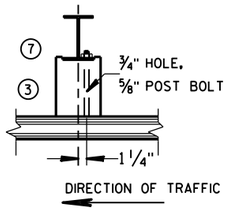

END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)




END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY




PLAN VIEW
WOOD POST, BLOCKOUT & BEAM




PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

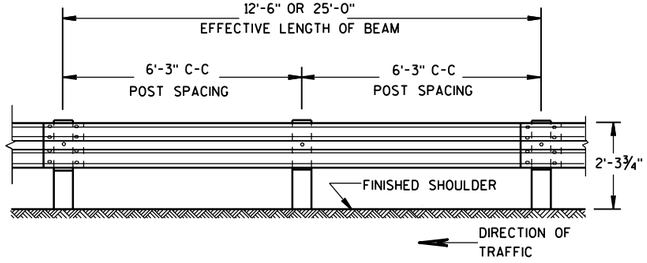
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



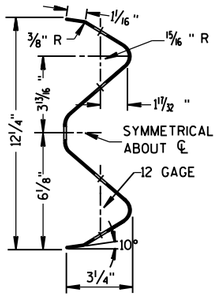


6
S.D.D. 14 B 15-8a

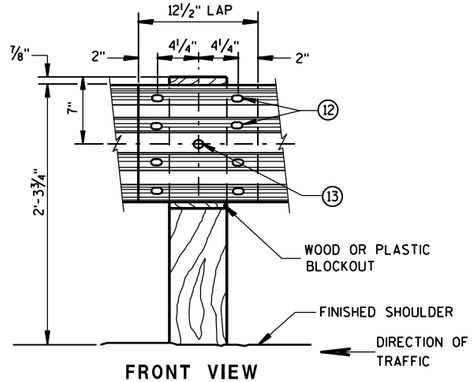



FRONT VIEW

## POST SPACING STANDARD INSTALLATION




## SECTION THRU W BEAM




FRONT VIEW

## BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

## GENERAL NOTES

(8) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

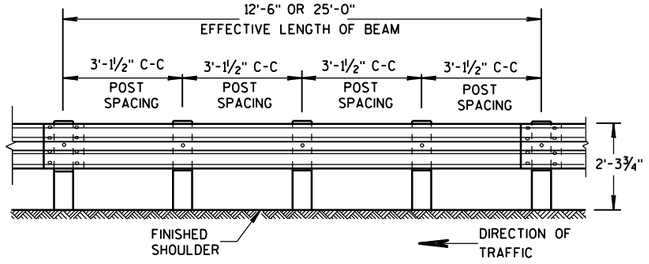
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

(10) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

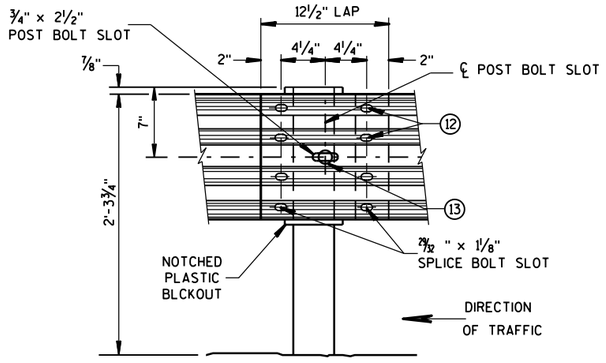
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.




FRONT VIEW

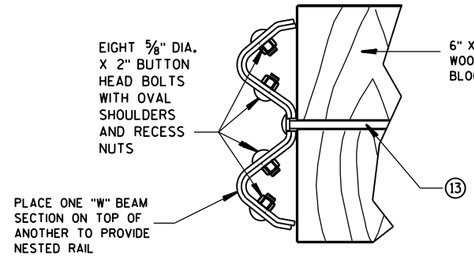
## POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)




FRONT VIEW

## BEAM SPLICE AT STEEL POST

## TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

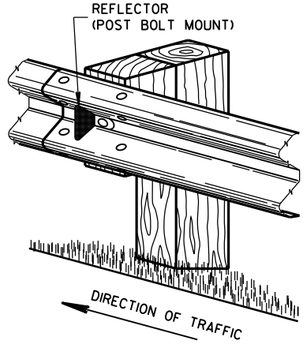


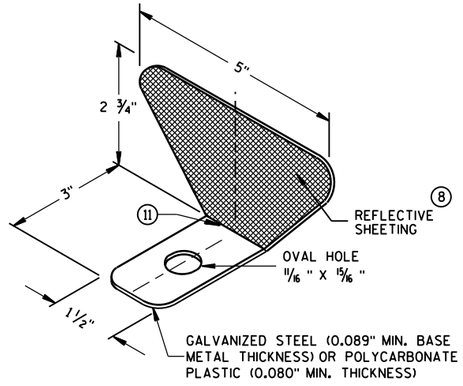

## NESTED W BEAM (NW)

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

REFLECTOR SPACING (9)

| | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|---|---|---|---|---|
| ONE WAY TRAFFIC | < 200' | 50' C-C | 1 | 3 |
| | > 200' | 100' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 25' C-C | 1 (10) | 6 |
| | > 200' | 50' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 50' C-C | 2 (11) | 3 |
| | > 200' | 100' C-C | 2 | |




## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI





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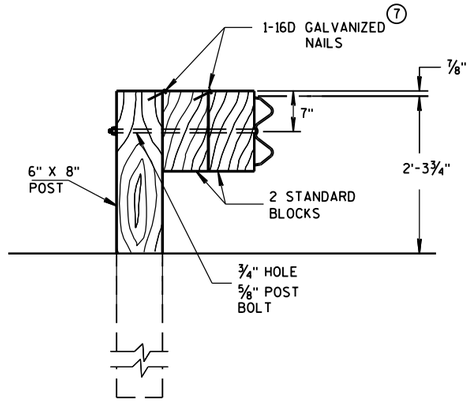
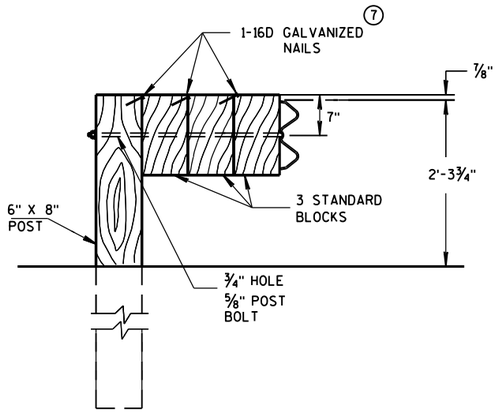
S.D.D. 14 B 15-8b




**DETAIL FOR DOUBLE BLOCKS**

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

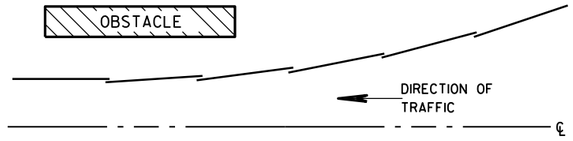



**DETAIL FOR TRIPLE BLOCKS**

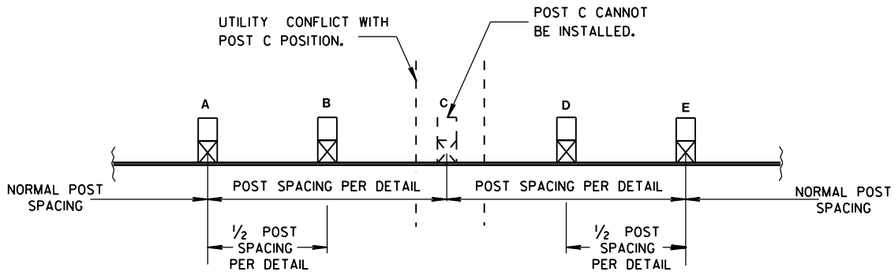
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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




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




**POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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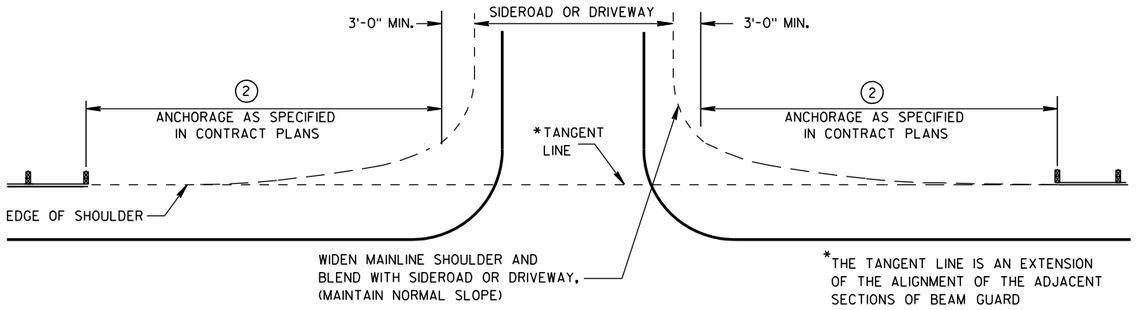
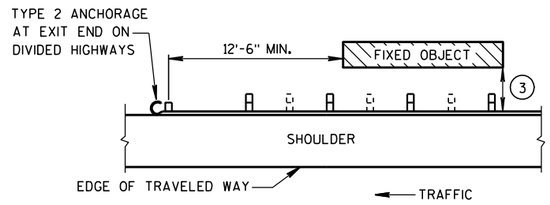
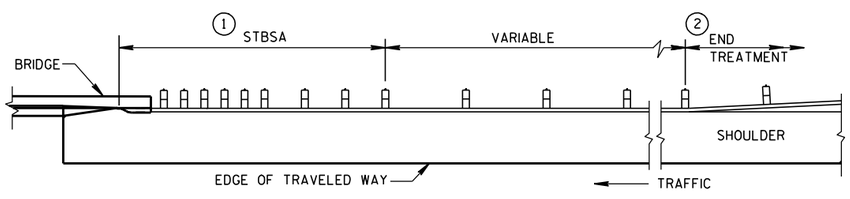
S.D.D. 14 B 15-8c



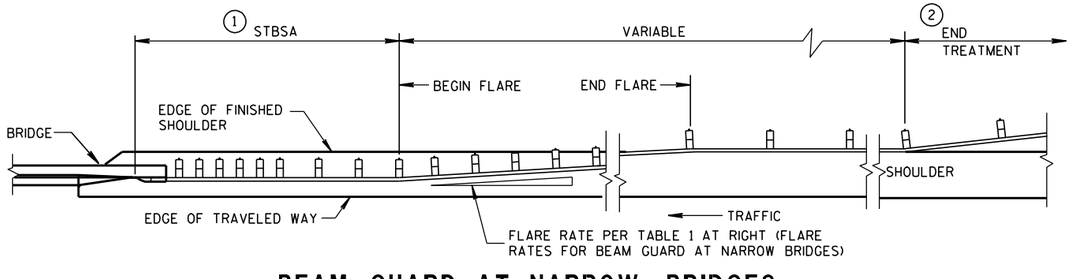

## BEAM GUARD AT SIDEROADS OR DRIVEWAYS



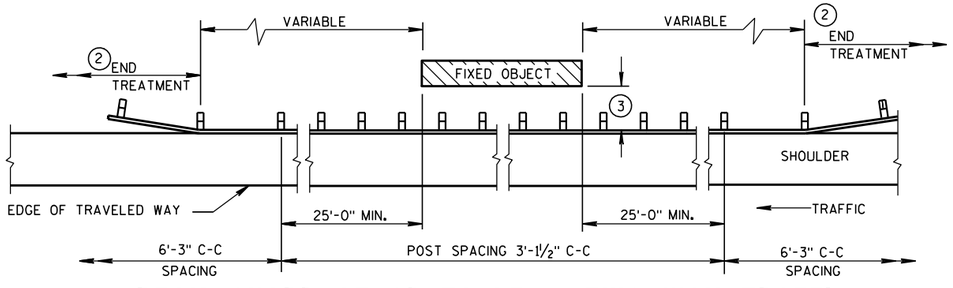

## BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC




## BEAM GUARD AT FULL WIDTH BRIDGES




## BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)




## BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC
(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

| MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT | POST SPACING |
|---|---|
| 3'-6" | 3' - 1½" |
| 4'-6" | 6' - 3" |

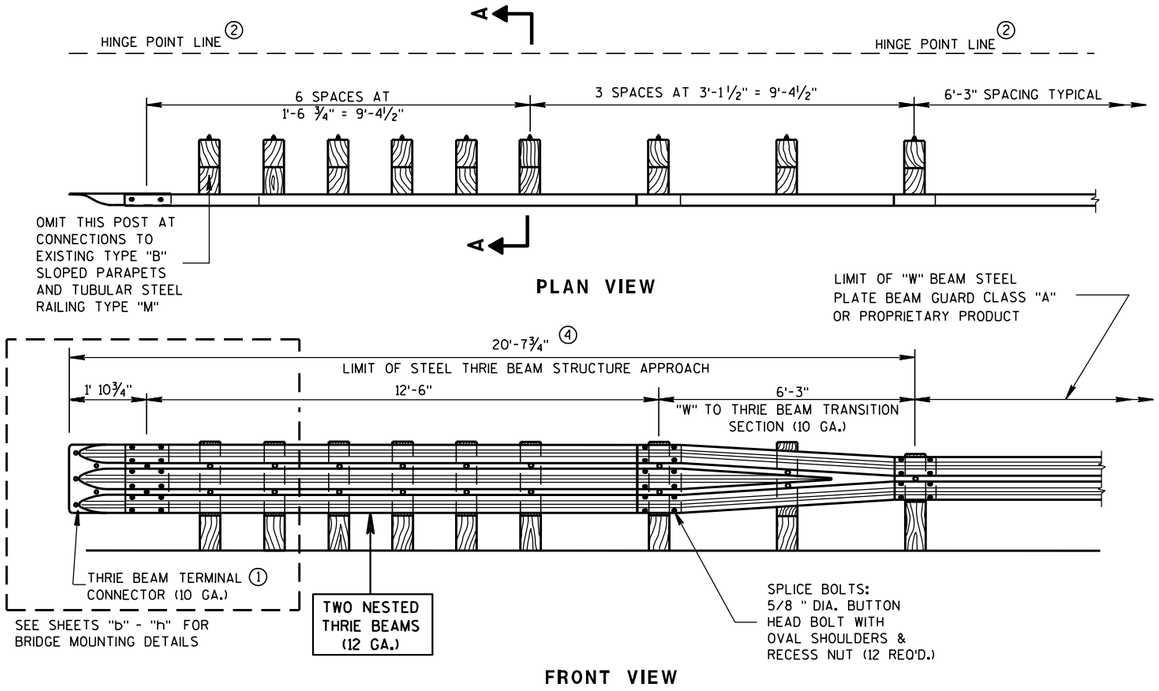
**TABLE 1**
**FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES**

| POSTED SPEED (MPH) | FLARE RATE |
|---|---|
| 25 | 13:1 |
| 30 | 15:1 |
| 35 | 16:1 |
| 40 | 18:1 |
| 45 | 21:1 |
| 50 | 24:1 |
| 55 | 26:1 |
| 65 | 30:1 |

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



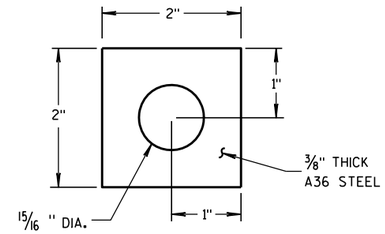




PLATE WASHER DETAIL

## GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

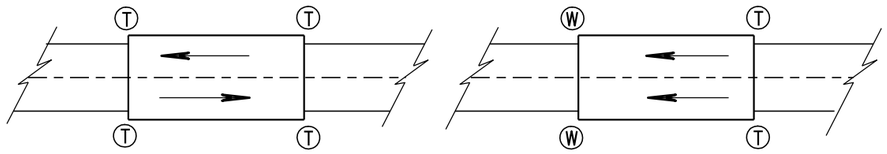
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



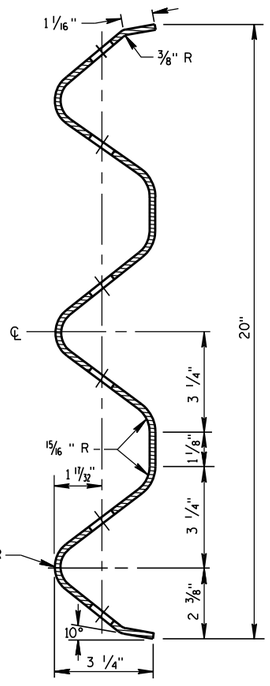

TWO WAY TRAFFIC

ONE WAY TRAFFIC

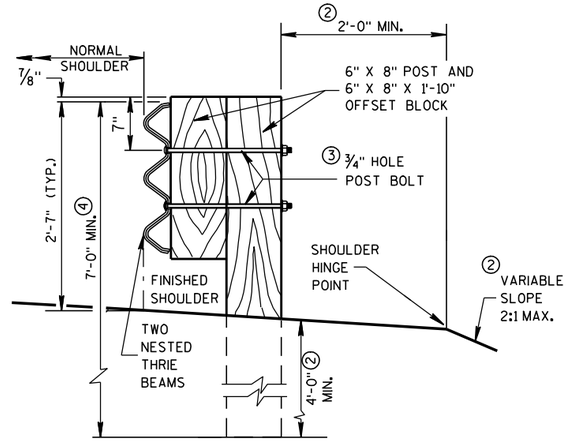
(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

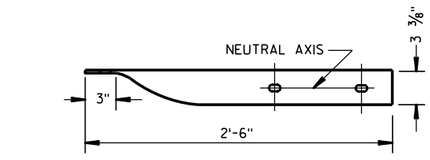
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

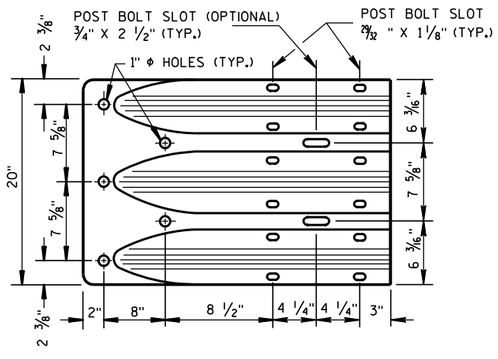



SECTION THRU THRIE BEAM RAIL ELEMENT

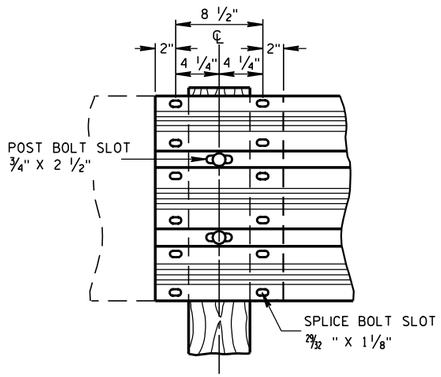



SECTION A-A




THRIE BEAM TERMINAL CONNECTOR




THRIE BEAM SPLICE

**STEEL THRIE BEAM STRUCTURE APPROACH**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

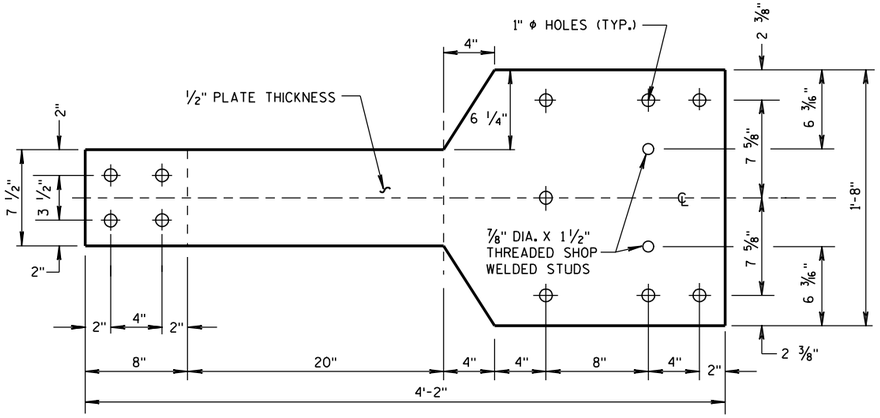
8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

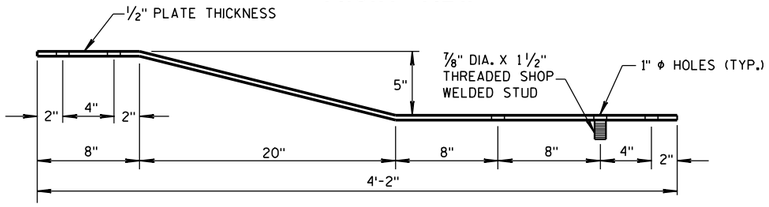
FHWA

## GENERAL NOTES

① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.

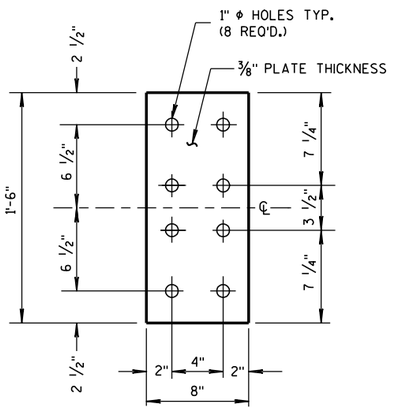



FRONT VIEW



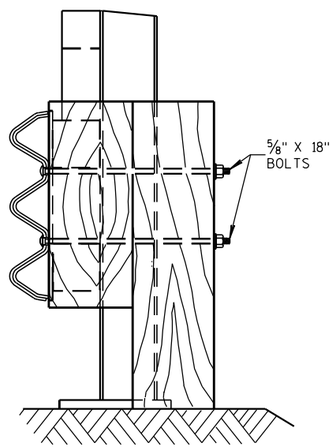

PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

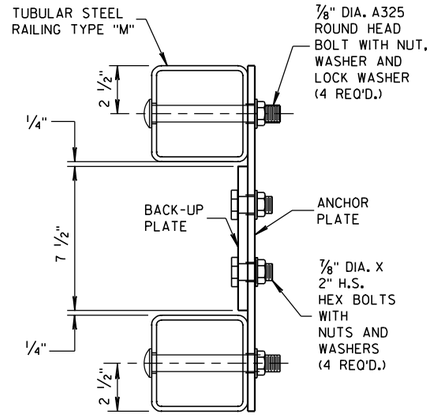



FRONT VIEW

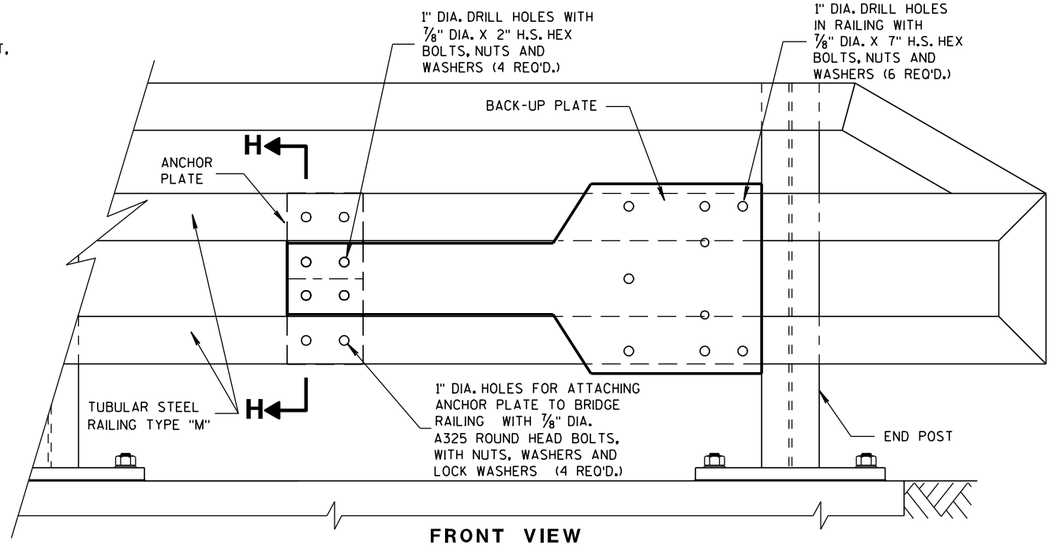
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I

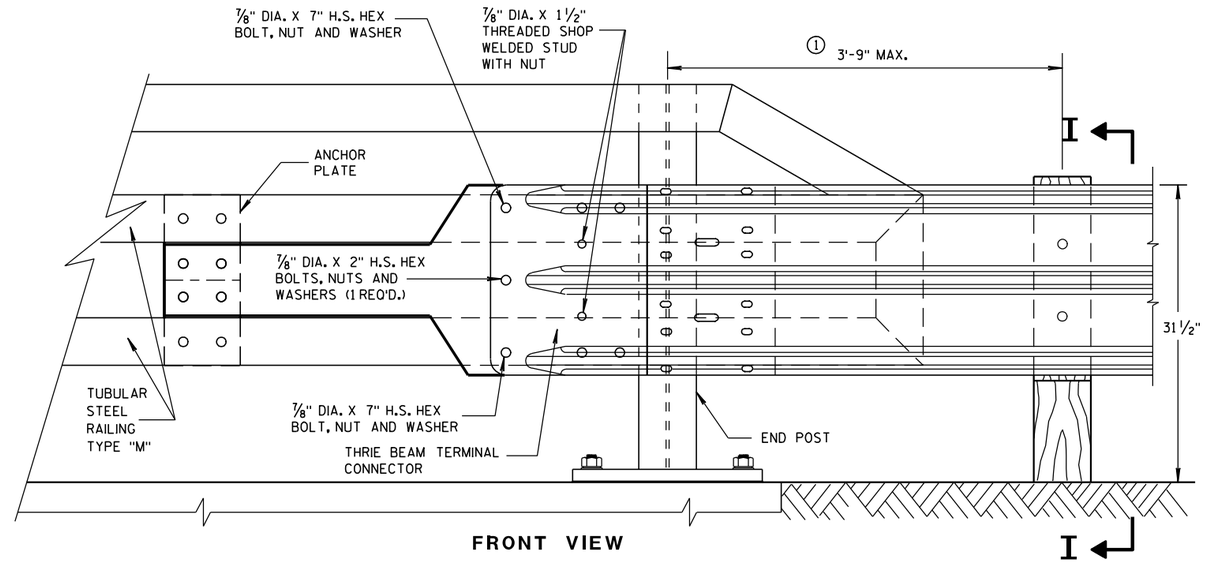



SECTION H-H

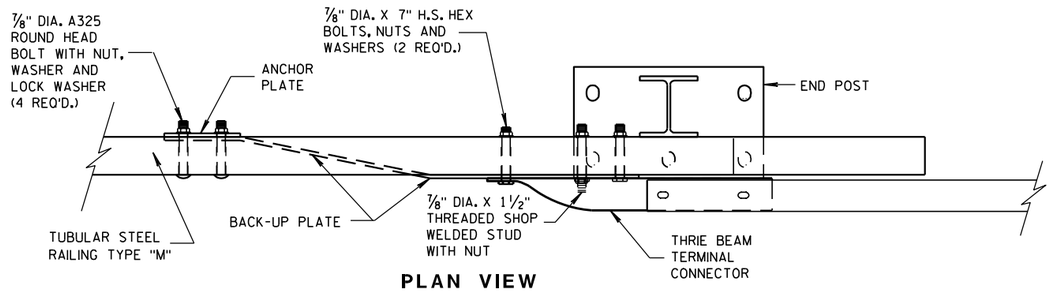



FRONT VIEW

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




FRONT VIEW




PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

# STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA



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S.D.D. 14 B 20-11f

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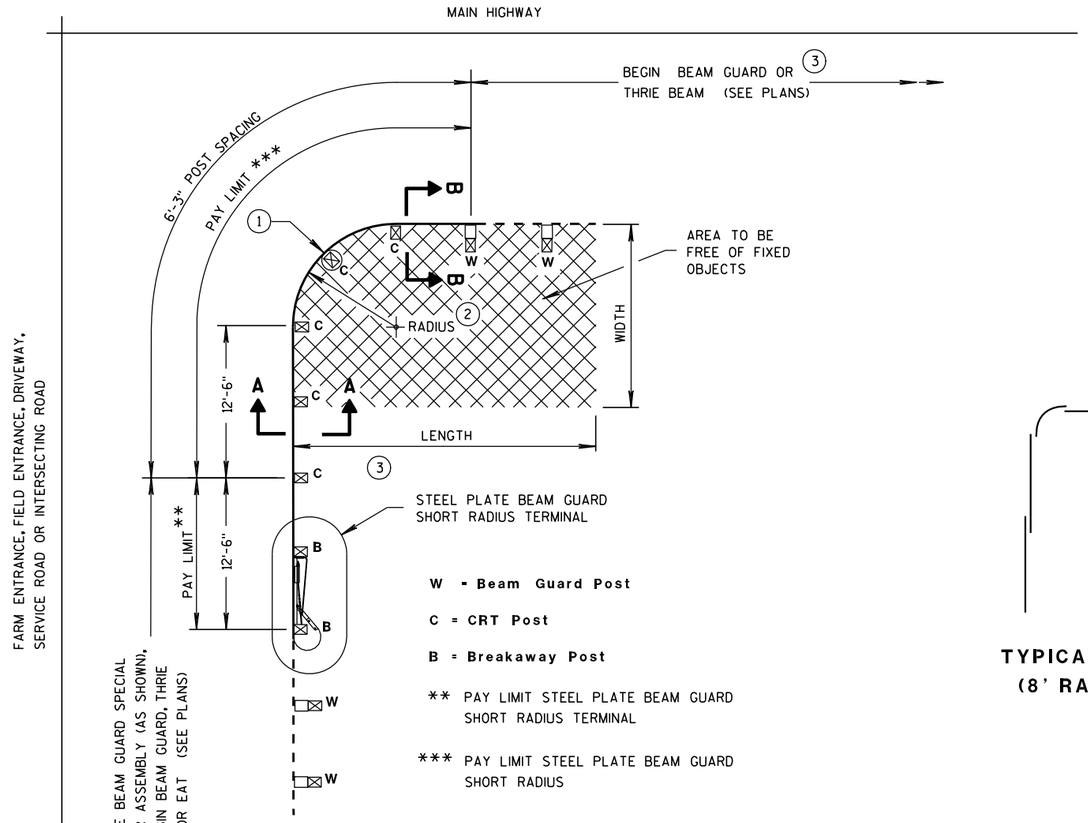
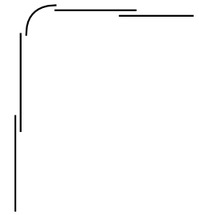
S.D.D. 14 B 20-11f




**TYPICAL LAYOUT**
**(8' RADIUS SHOWN)**



**TYPICAL LAP SPLICES**
**(8' RADIUS SHOWN)**

## GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

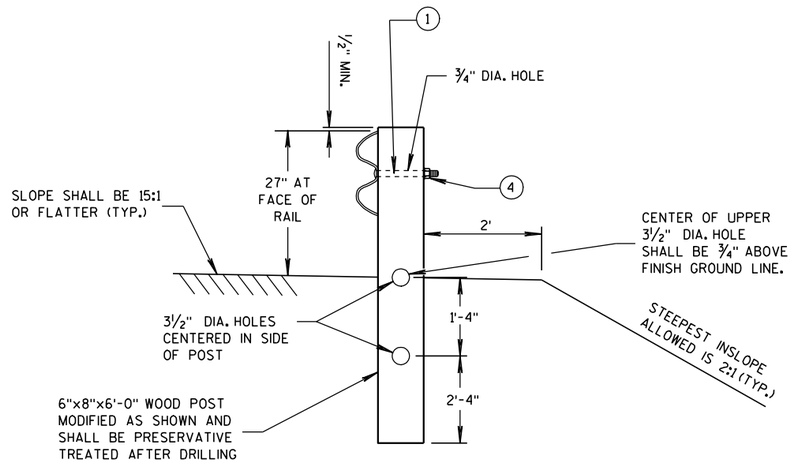
(2) RADIUS FROM 8' - 36'. SEE PLAN.

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

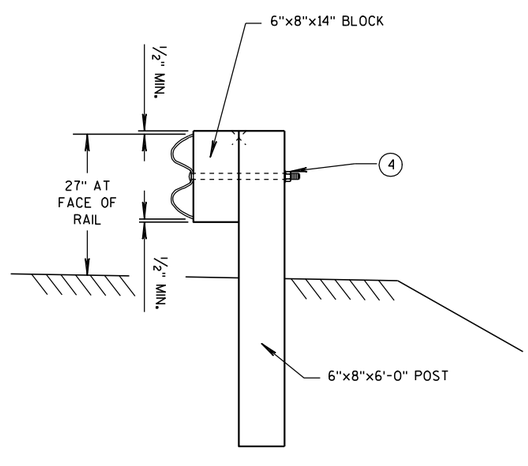
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

| RADIUS | NUMBER OF CRT POSTS | *NUMBER AND LENGTH OF CURVED RAILS | REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH) |
|---|---|---|---|
| 8' | 5 | 1 at 12.5' | 25' x 15' |
| 16' | 7 | 1 at 25' | 30' x 15' |
| 24' | 9 | 1 at 25' and 1 at 12.5' | 40' x 20' |
| 32' | 11 | 2 at 25' | 50' x 20' |

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.




**SECTION A-A**
**(CRT POST)**




**SECTION B-B**
**(BEAM GUARD POST)**

# STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

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

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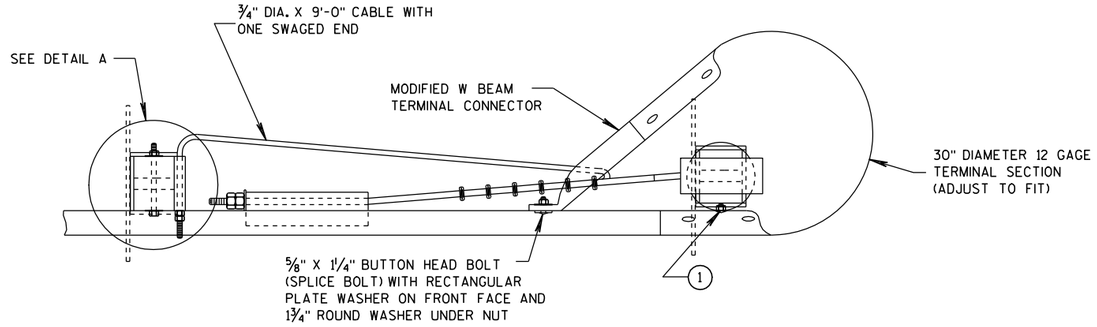
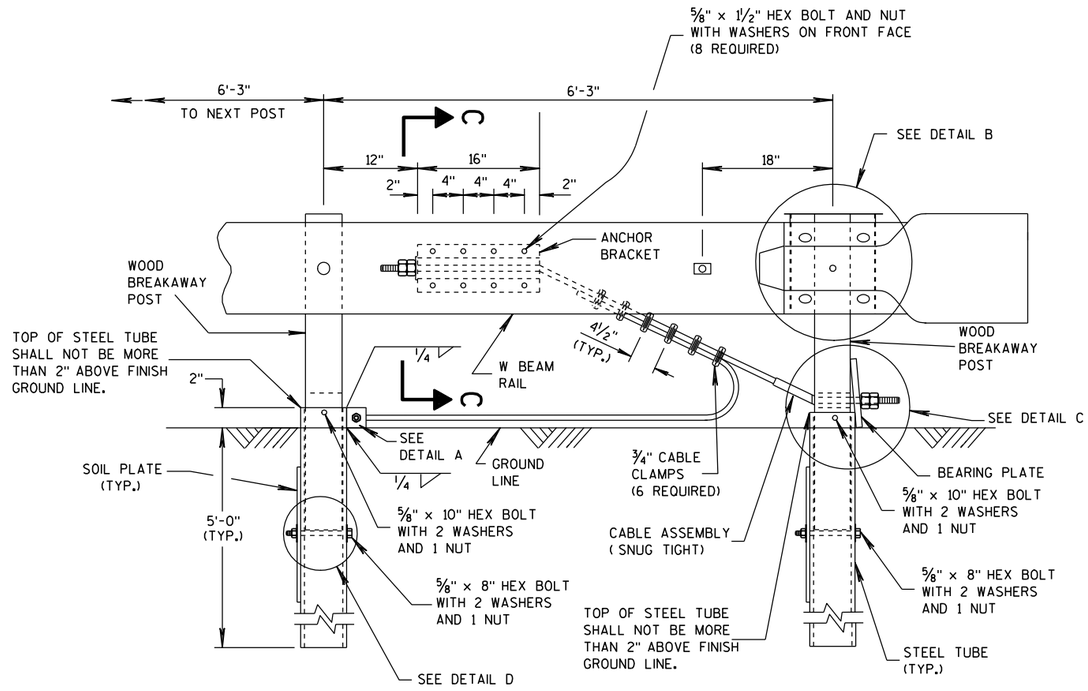
S.D.D. 14 B 27-1a




**PLAN VIEW**



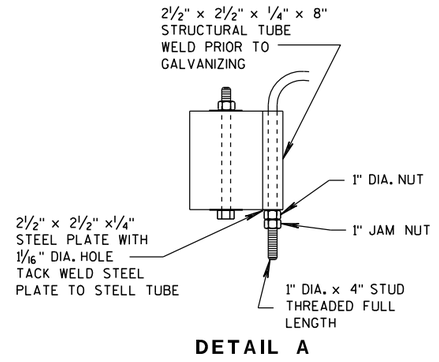

**ELEVATION VIEW**

# STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

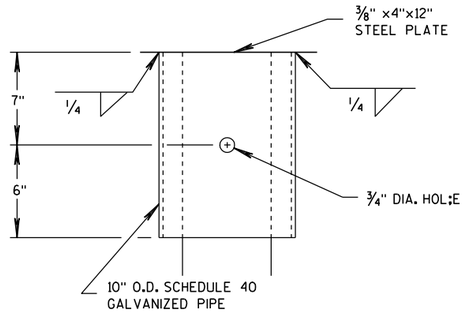
## GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.




**DETAIL A**




**DETAIL B**

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

**STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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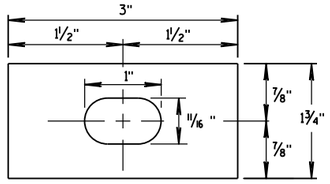
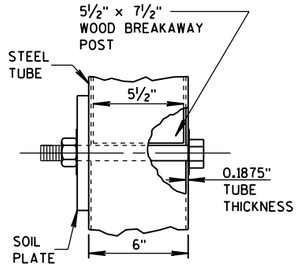
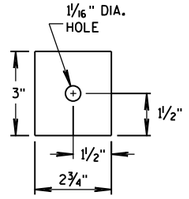
S.D.D. 14 B 27-1b



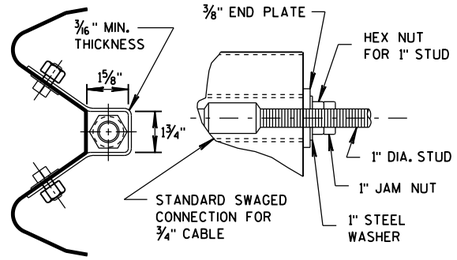

**RECTANGULAR PLATE WASHER**



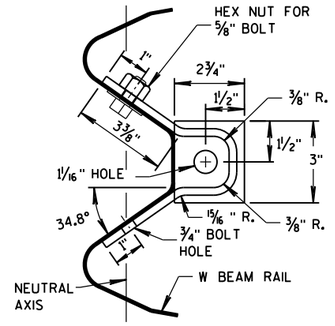

**DETAIL D**



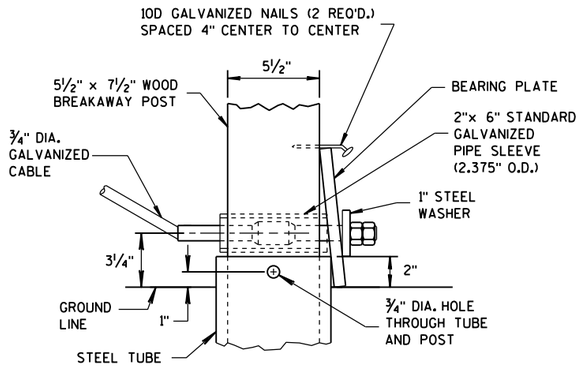

**END PLATE**



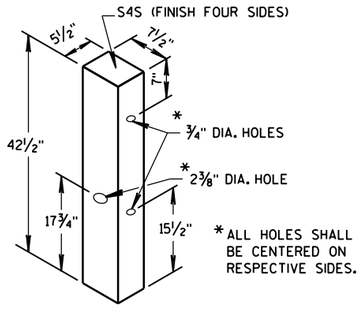

**SECTION C-C**
**(END PLATE REMOVED)**



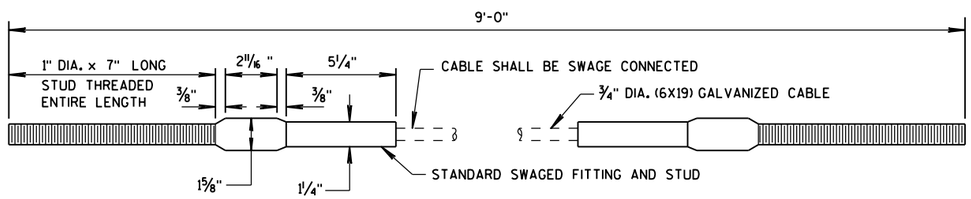

**ANCHOR BRACKET**



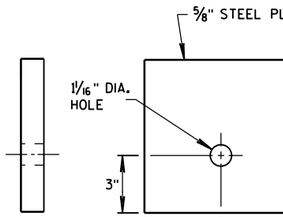

**DETAIL C**



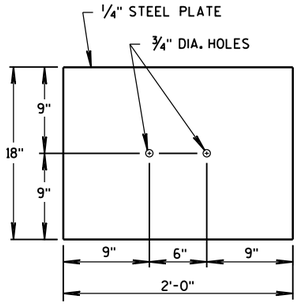

**WOOD BREAKAWAY POST**



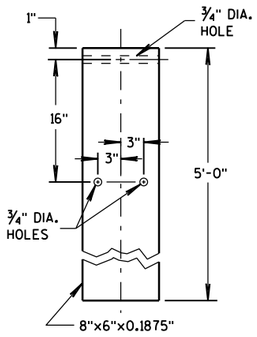

**CABLE ASSEMBLY**




**BEARING PLATE**




**SOIL PLATE**




**STEEL TUBE**

**STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

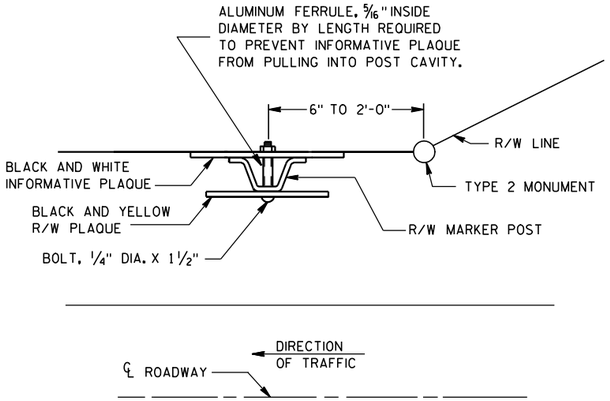


6

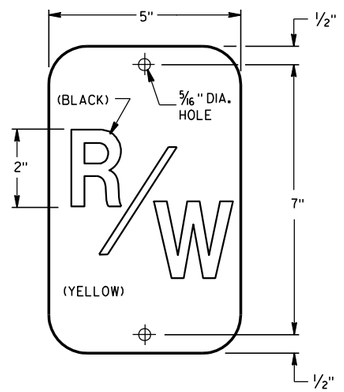
S.D.D. 14 B 27-1c

6

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

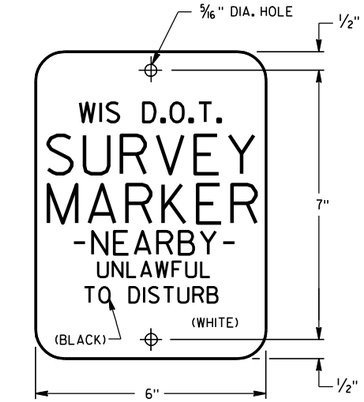



**PLAN VIEW**




**R/W PLAQUE**

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.




**INFORMATIVE PLAQUE**

## GENERAL NOTES

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

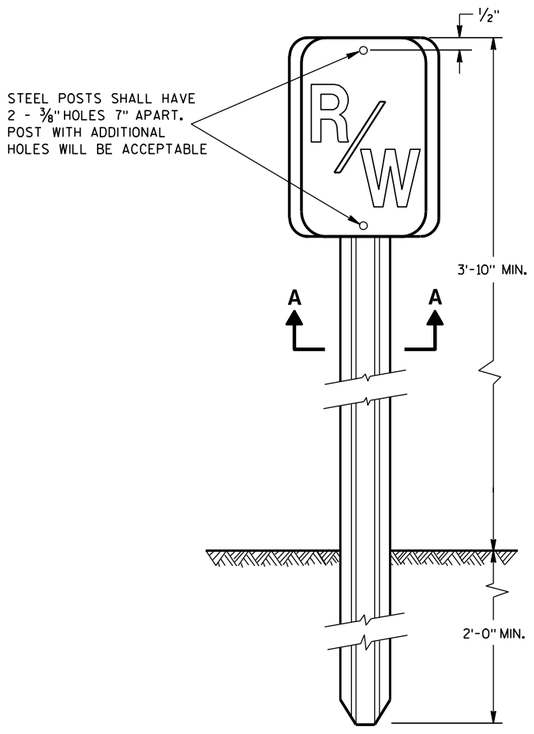
A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

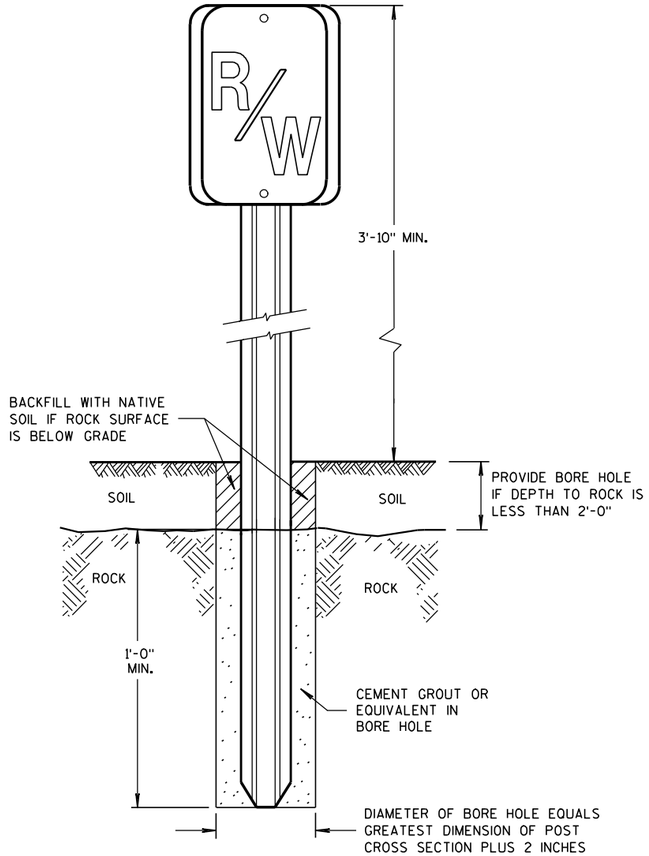
STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

(1) IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

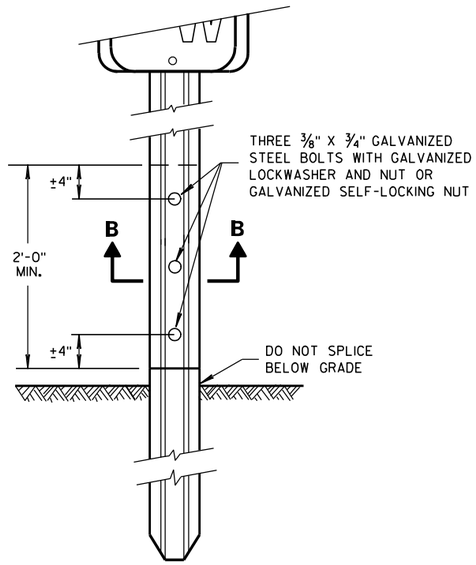
FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.



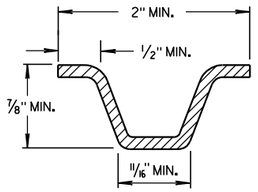

**FRONT VIEW**
**STEEL MARKER POST**




**FRONT VIEW**
**ROCK INSTALLATION** (1)

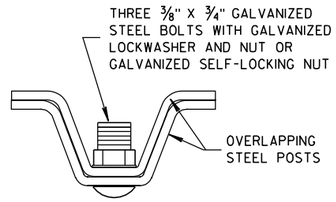



**FRONT VIEW**
**SPLICE DETAIL**




MIN. WEIGHT 1.12 LB./FT.

**SECTION A-A**




**SECTION B-B**

**MARKER POST FOR RIGHT-OF-WAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/27/09 — DATE
/S/ Ray Kumapayi — CHIEF SURVEYING AND MA[illegible] ENGINEER
FHWA

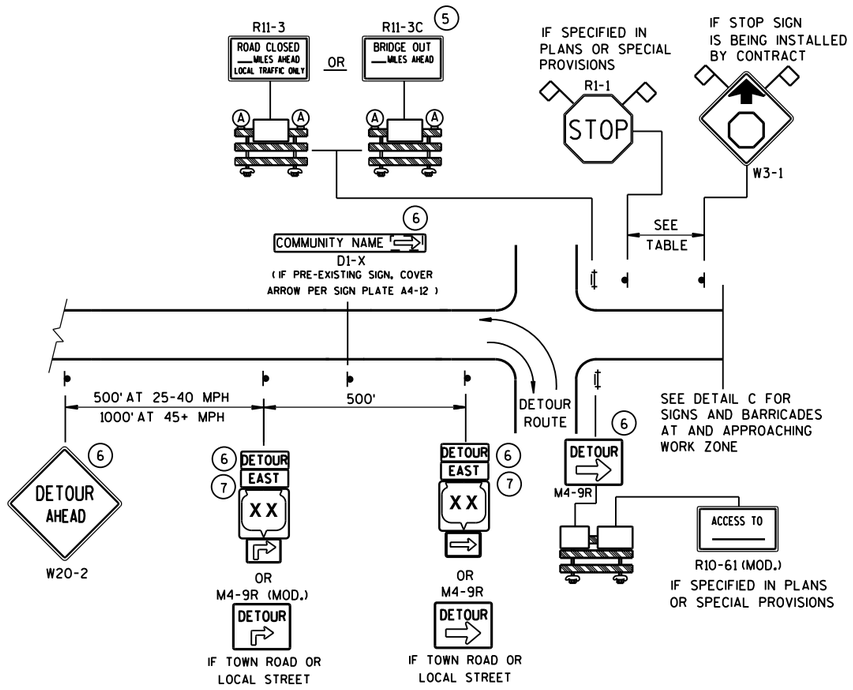


6

S.D.D. 15 A 1-11

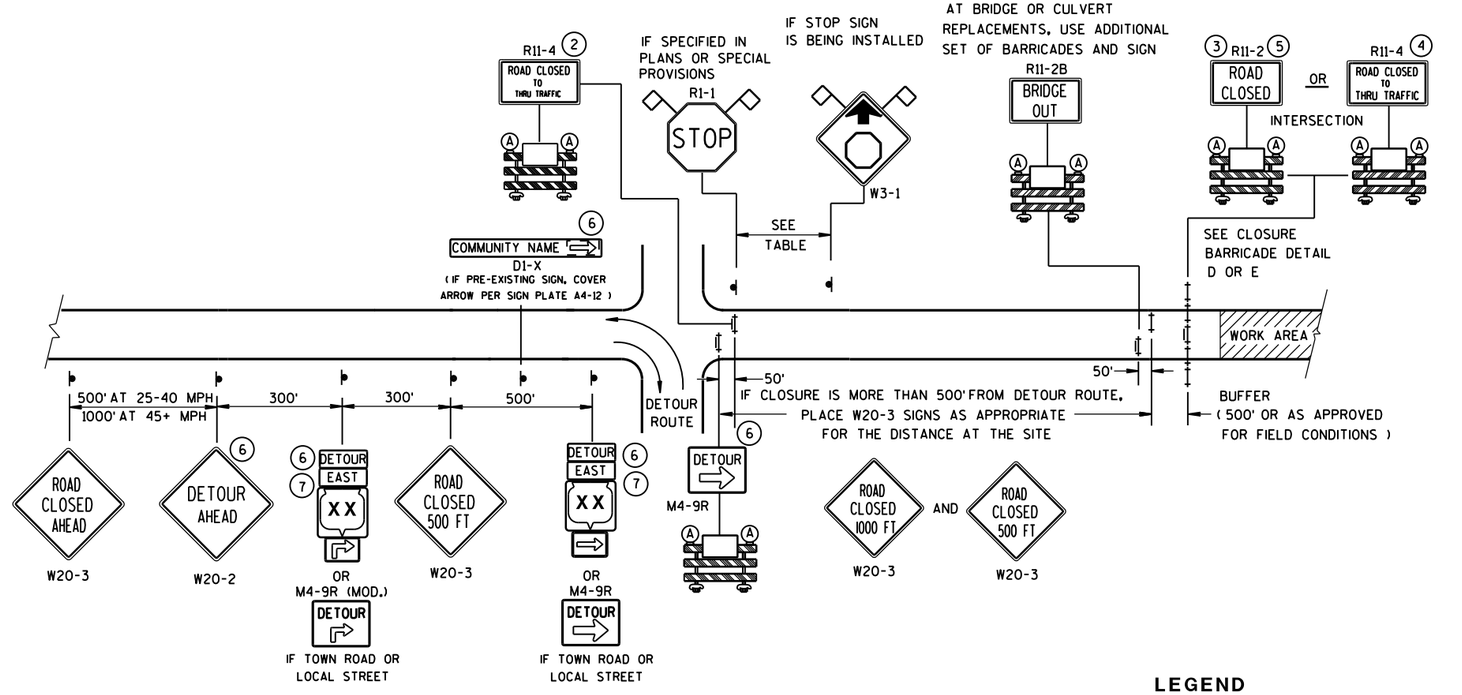
6

S.D.D. 15 A 1-11



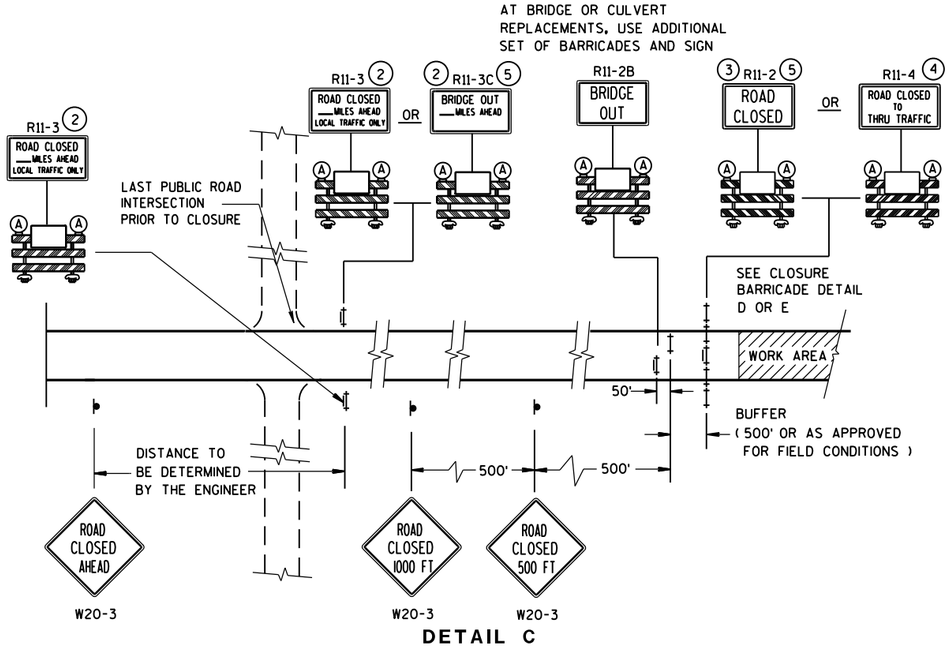

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 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
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

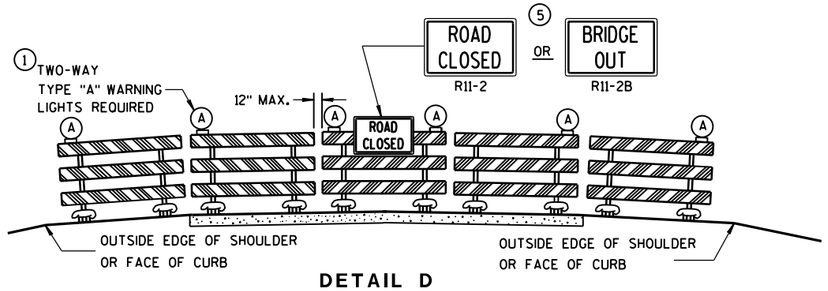
8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA




6

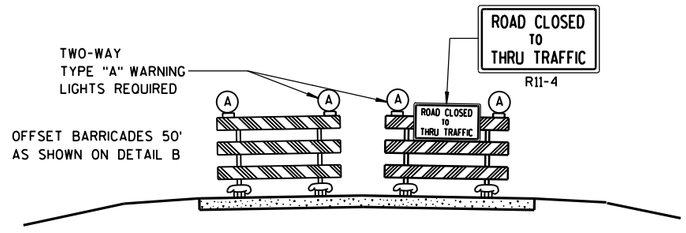
S.D.D. 15 C 2-5a




**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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

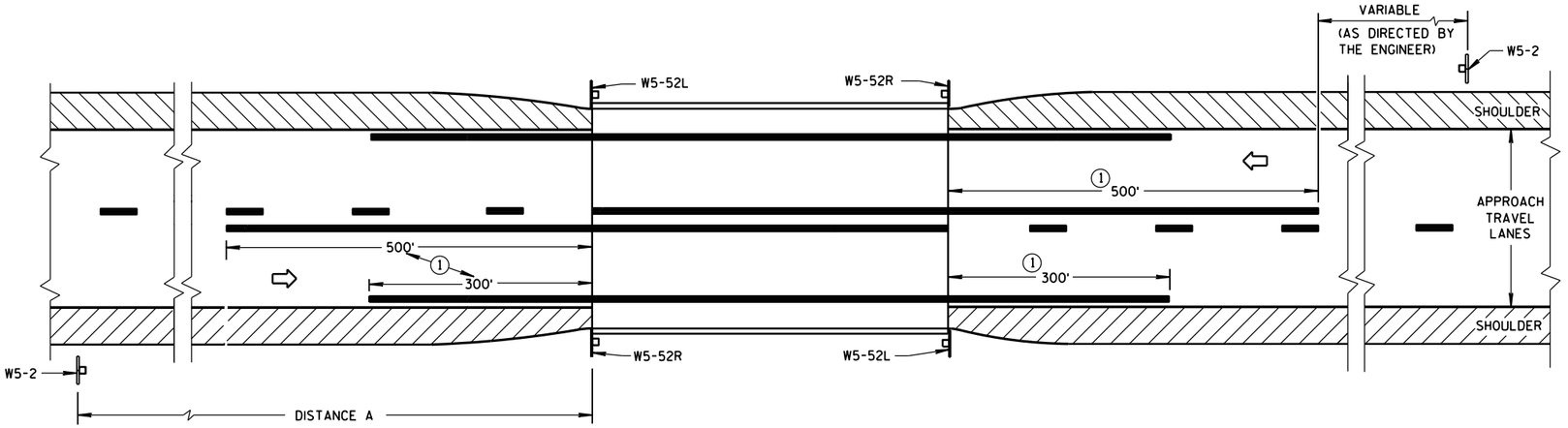




6



S.D.D. 15 C 2-5b




## 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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

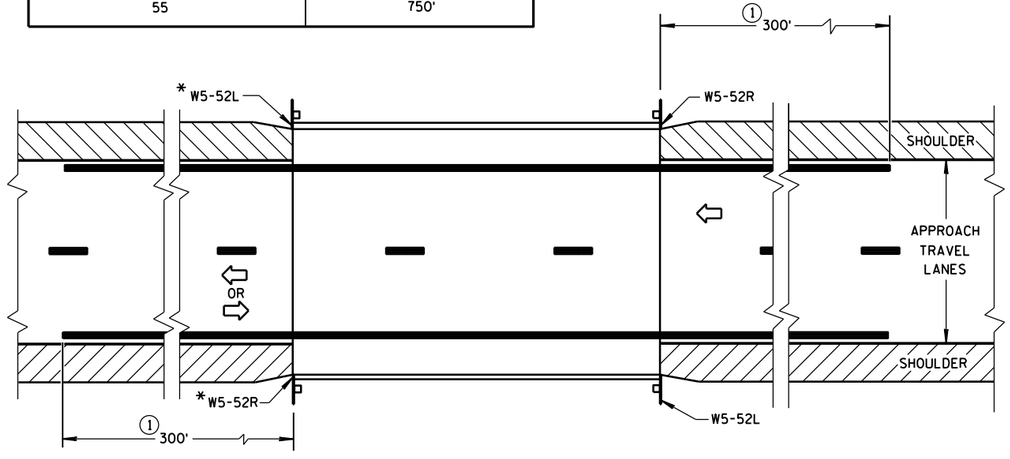
### DISTANCE TABLE

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

## SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

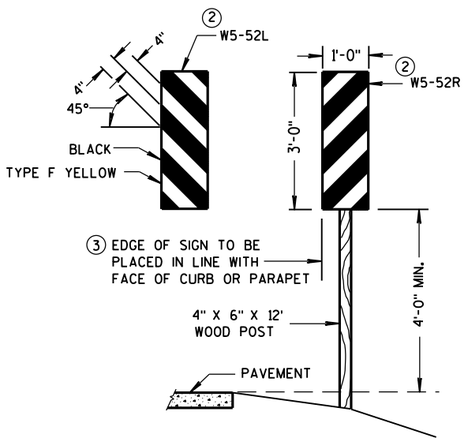



*OMIT ON ONE-WAY TRAVELLED WAYS

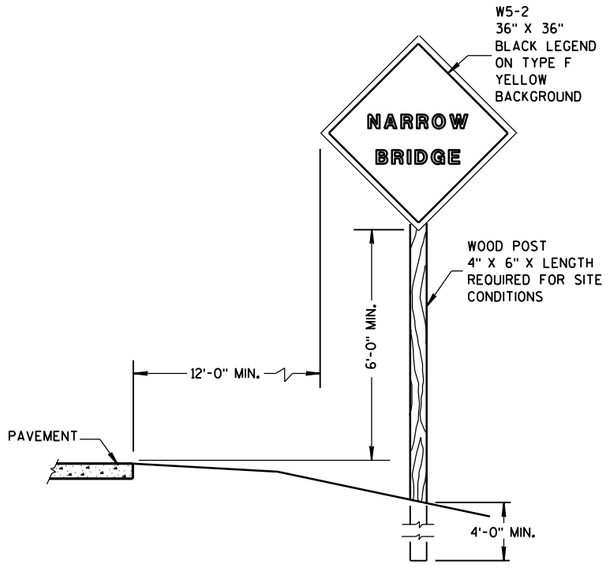
## SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.




## OBJECT MARKER PLACEMENT




## SIGN PLACEMENT

**SIGNING & MARKING FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA



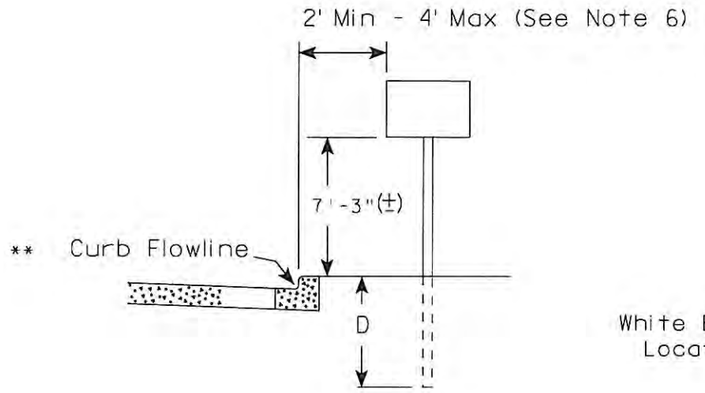


6

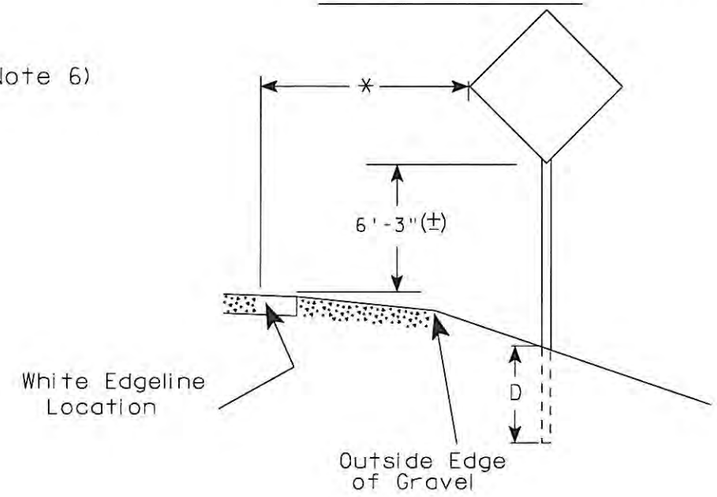


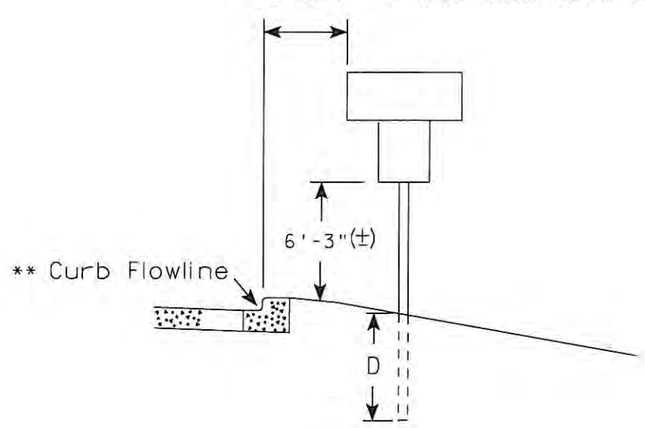
S.D.D. 15 C 6-7

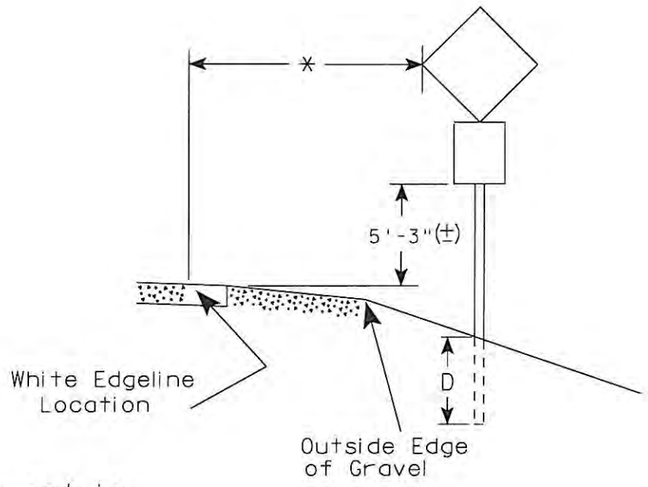
## URBAN AREA




## 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.

## GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

## POST EMBEDMENT DEPTH

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

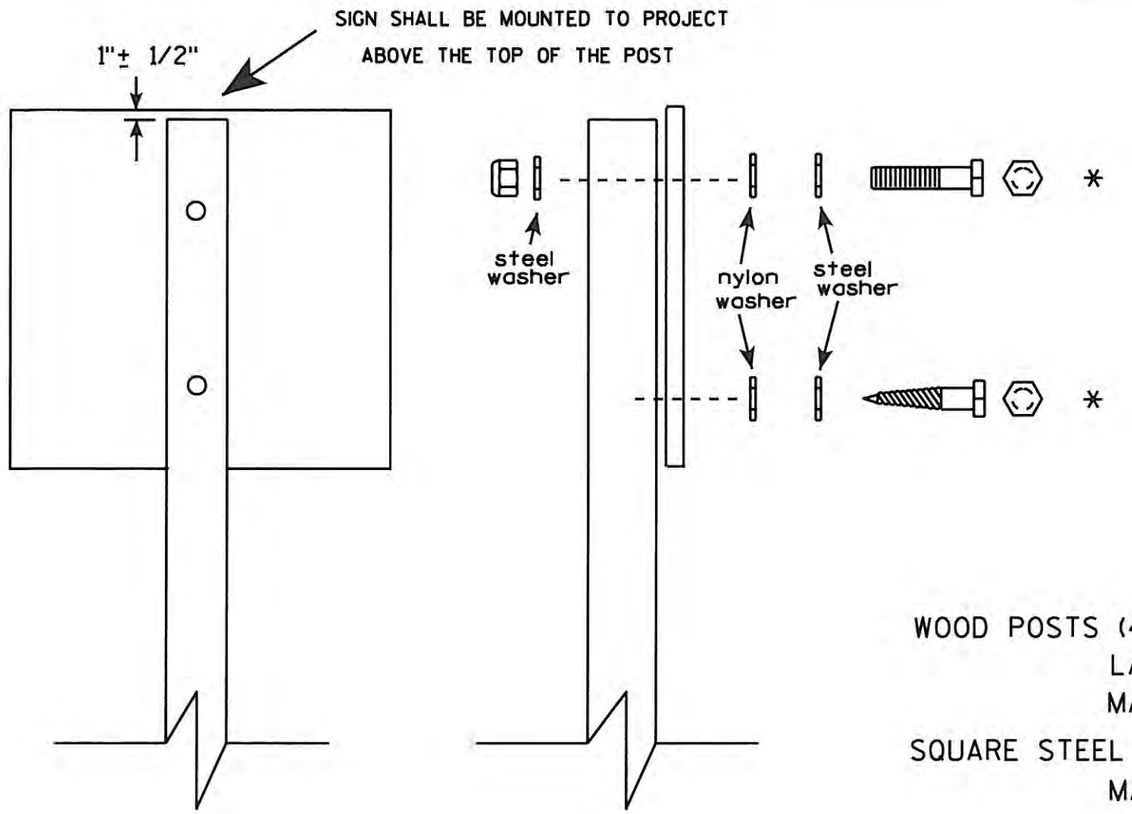
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 32 E |
|---|---|---|---|---|




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

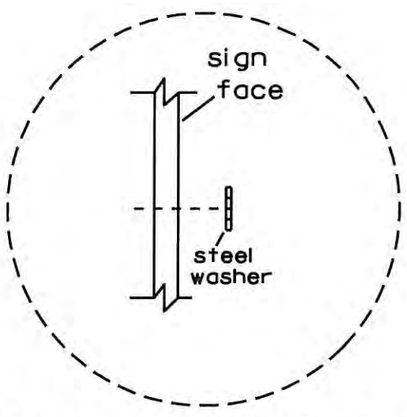
a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

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

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.




Washer Placement when Sign Has Other Than Type H or Type F Face

* 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

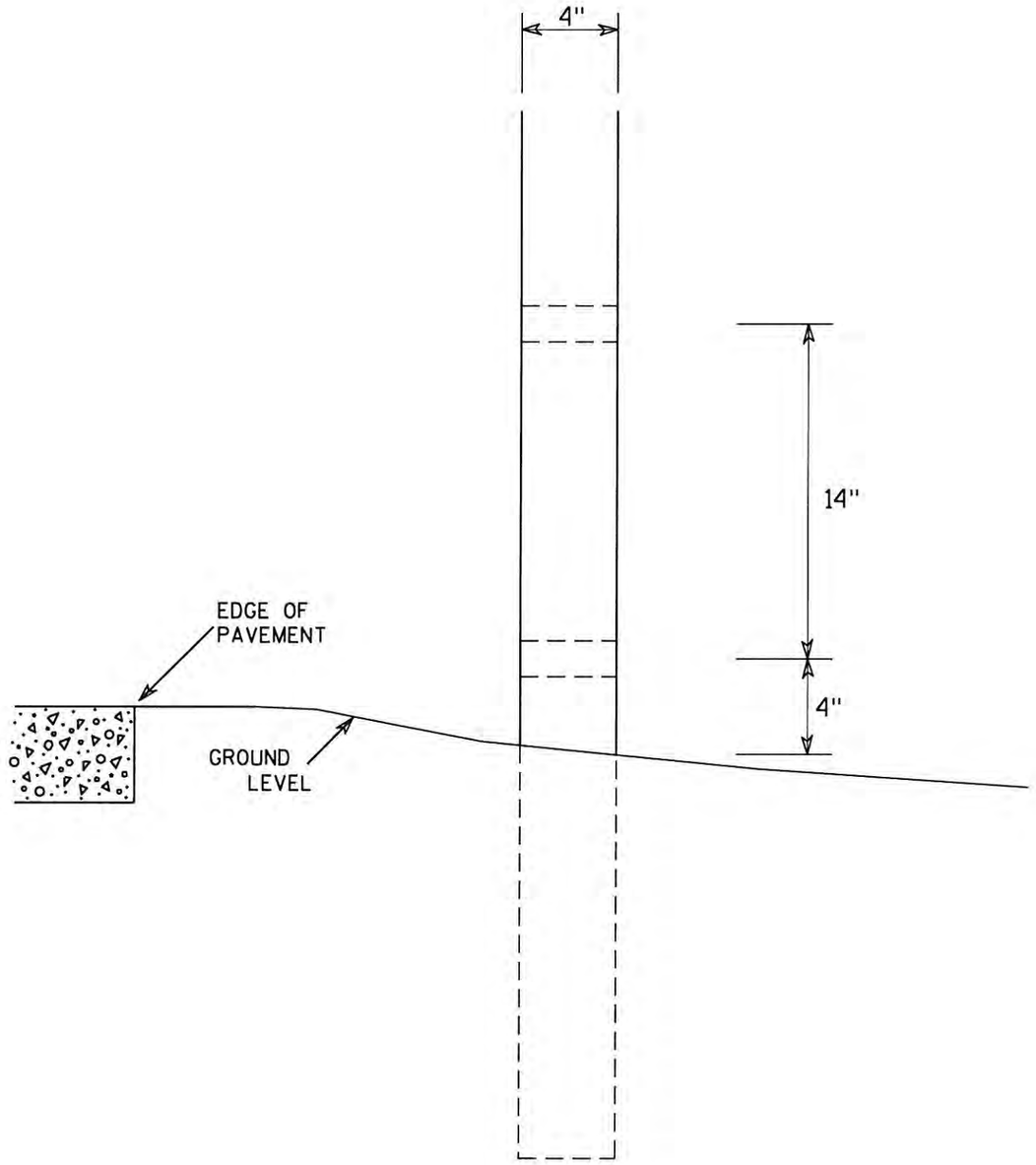
APPROVED Matthew R Rauch
for State Traffic Engineer

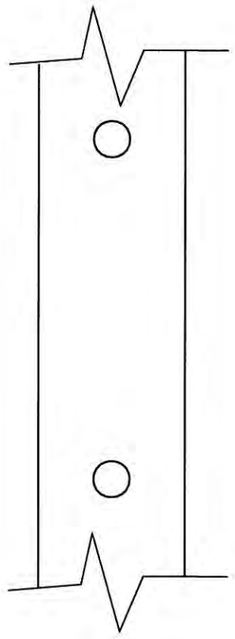
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO: | SHEET NO: 33 | 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

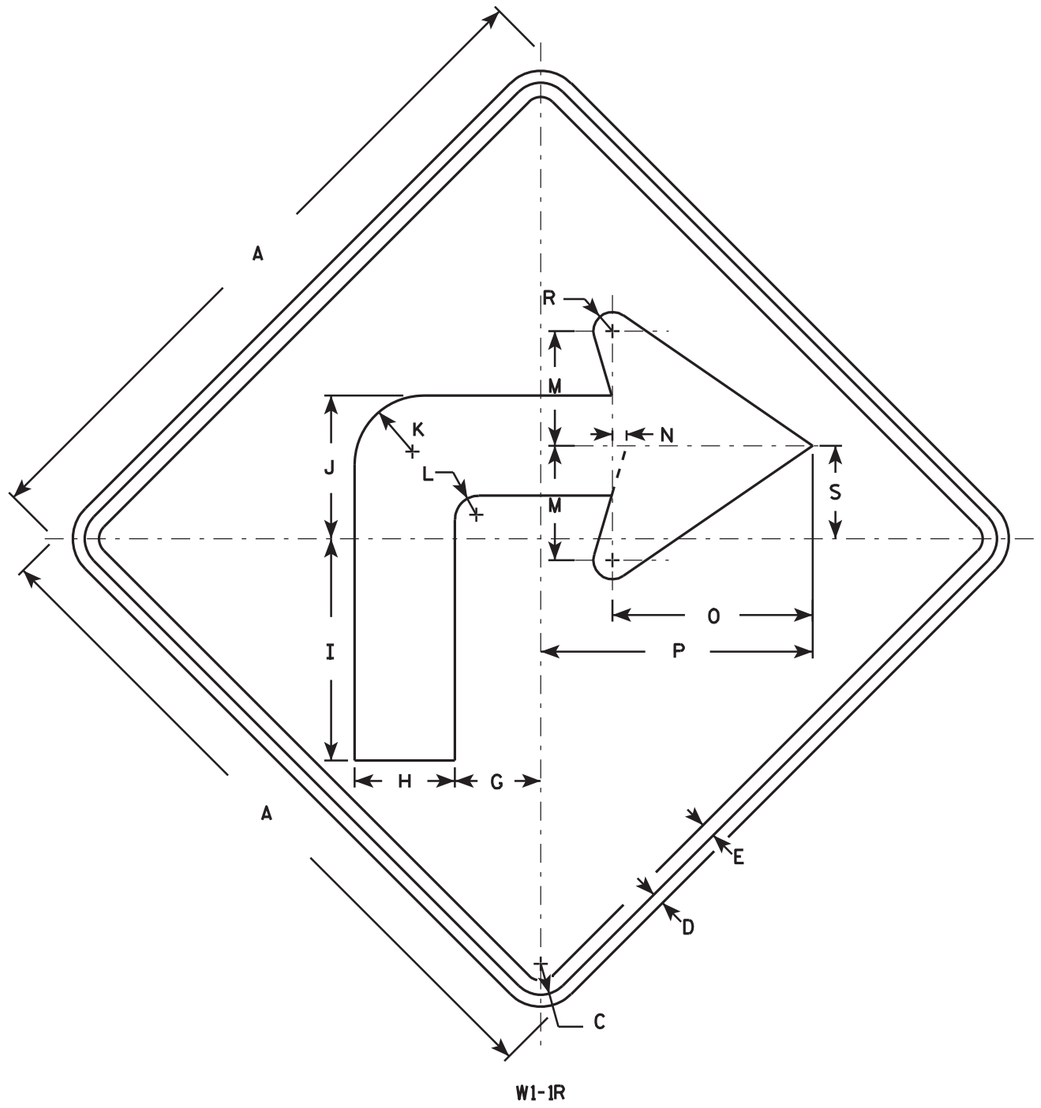
# 4 X 6 WOOD POST MODIFICATIONS

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 |
|---|---|---|---|---|---|




W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | | 3 | 3 1/2 | 7 3/4 | 5 | 2 1/2 | 7/8 | 4 | 1/2 | 7 | 9 1/2 | | 5/8 | 3 1/4 | | | | | | | | 4.0 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | | 16.0 |

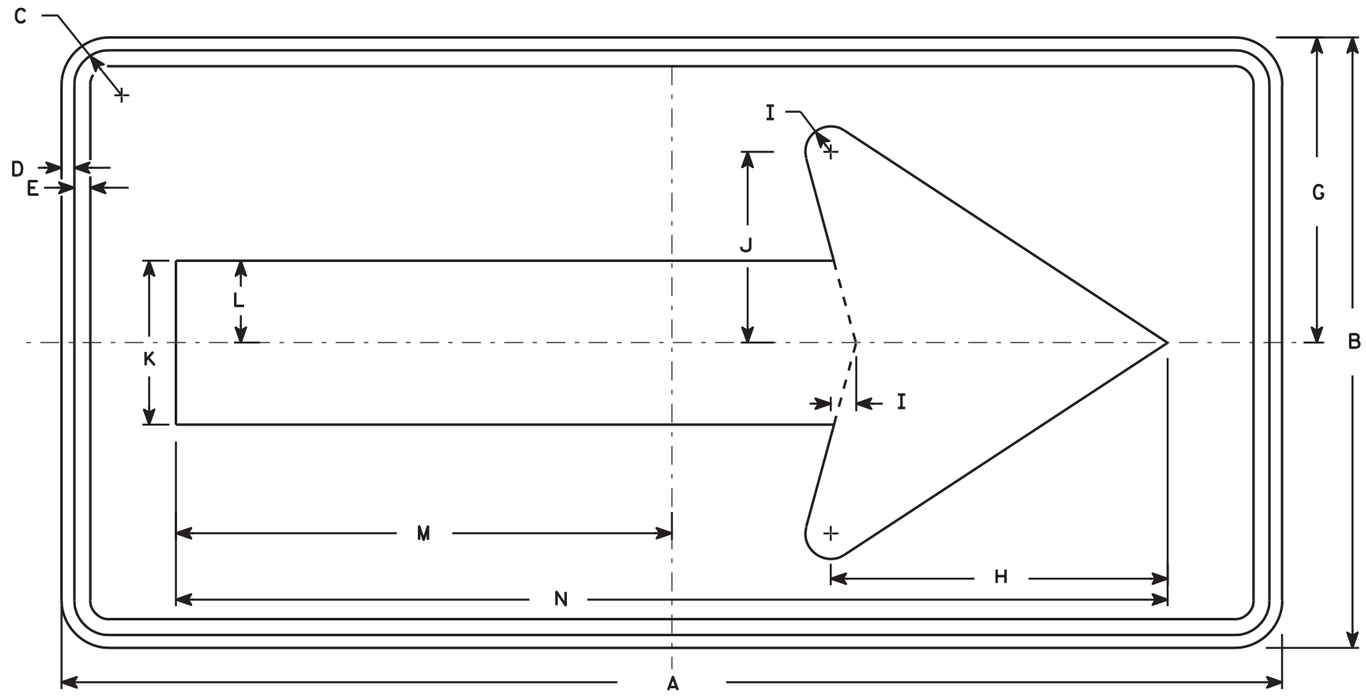
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

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




W1-6

## NOTES

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

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 18 | 1 1/8 | 3/8 | 3/8 | | 9 | 10 | 3/4 | 5 5/8 | 4 3/4 | 2 3/8 | 14 5/8 | 29 1/4 | | | | | | | | | | | | | 4.5 |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 96 | 48 | 2 1/4 | 3/4 | 1 | | 24 | 26 1/2 | 2 | 15 | 13 | 6 1/2 | 39 | 78 | | | | | | | | | | | | | 32.0 |

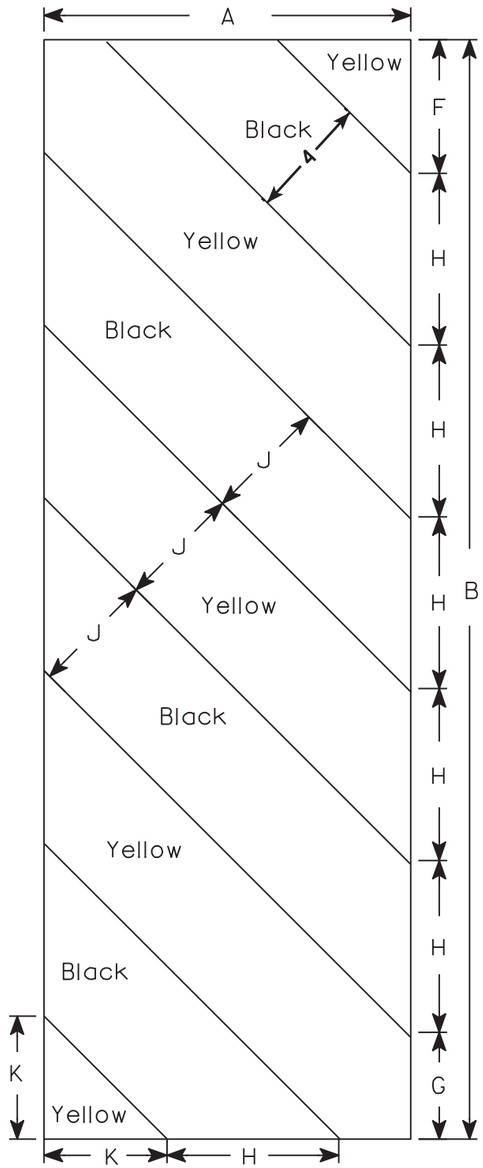
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

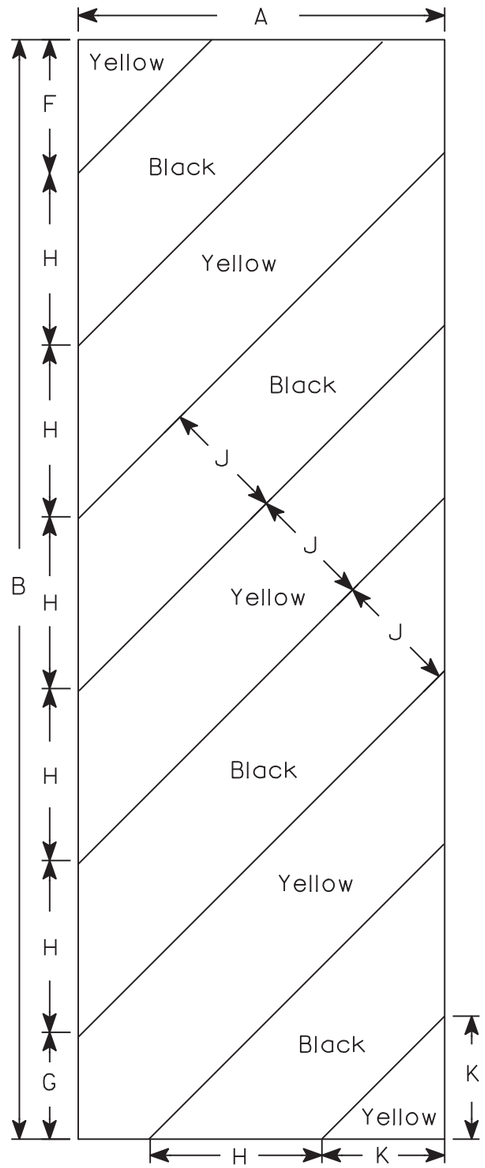
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 36 |
|---|---|---|---|---|




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

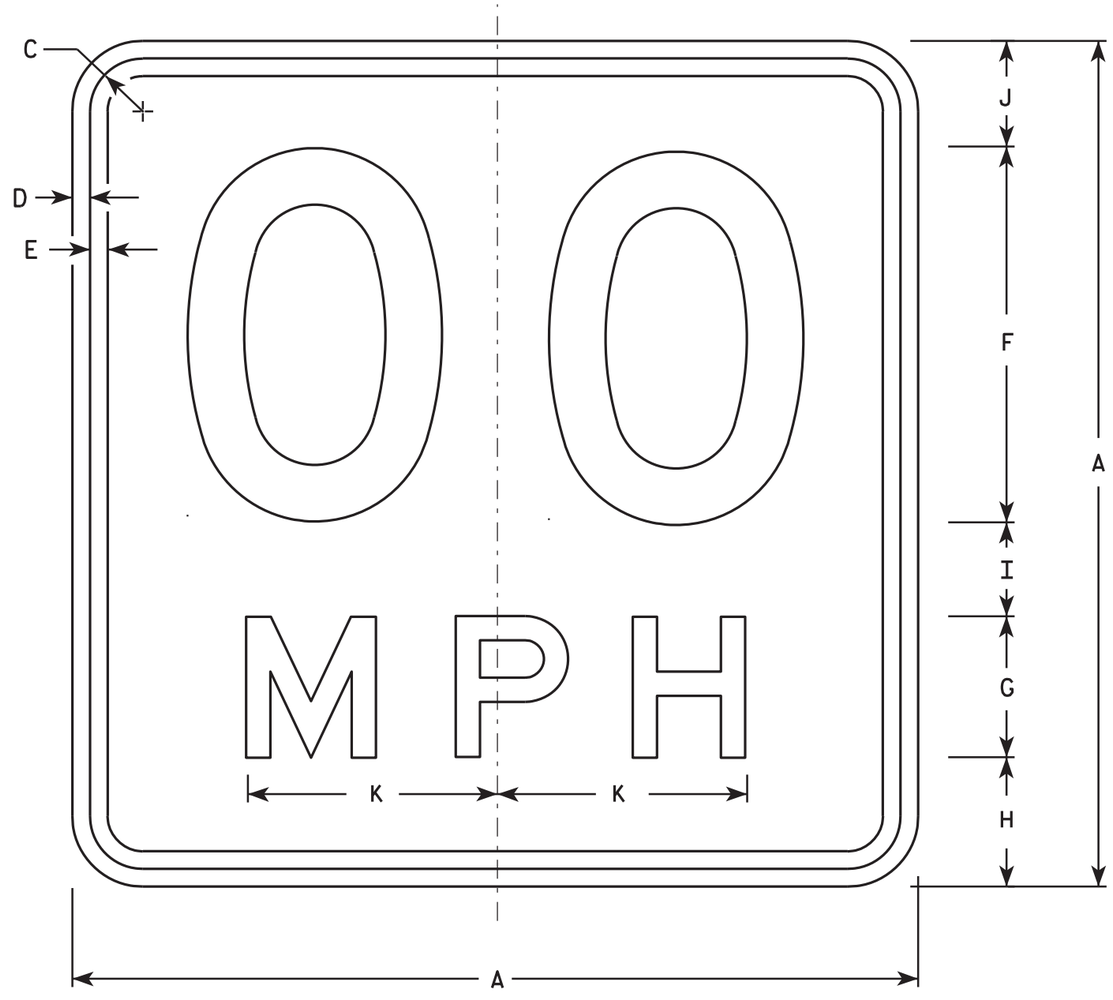
W5-52L & W5-52R

*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: 37 | E




W13-1

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

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

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

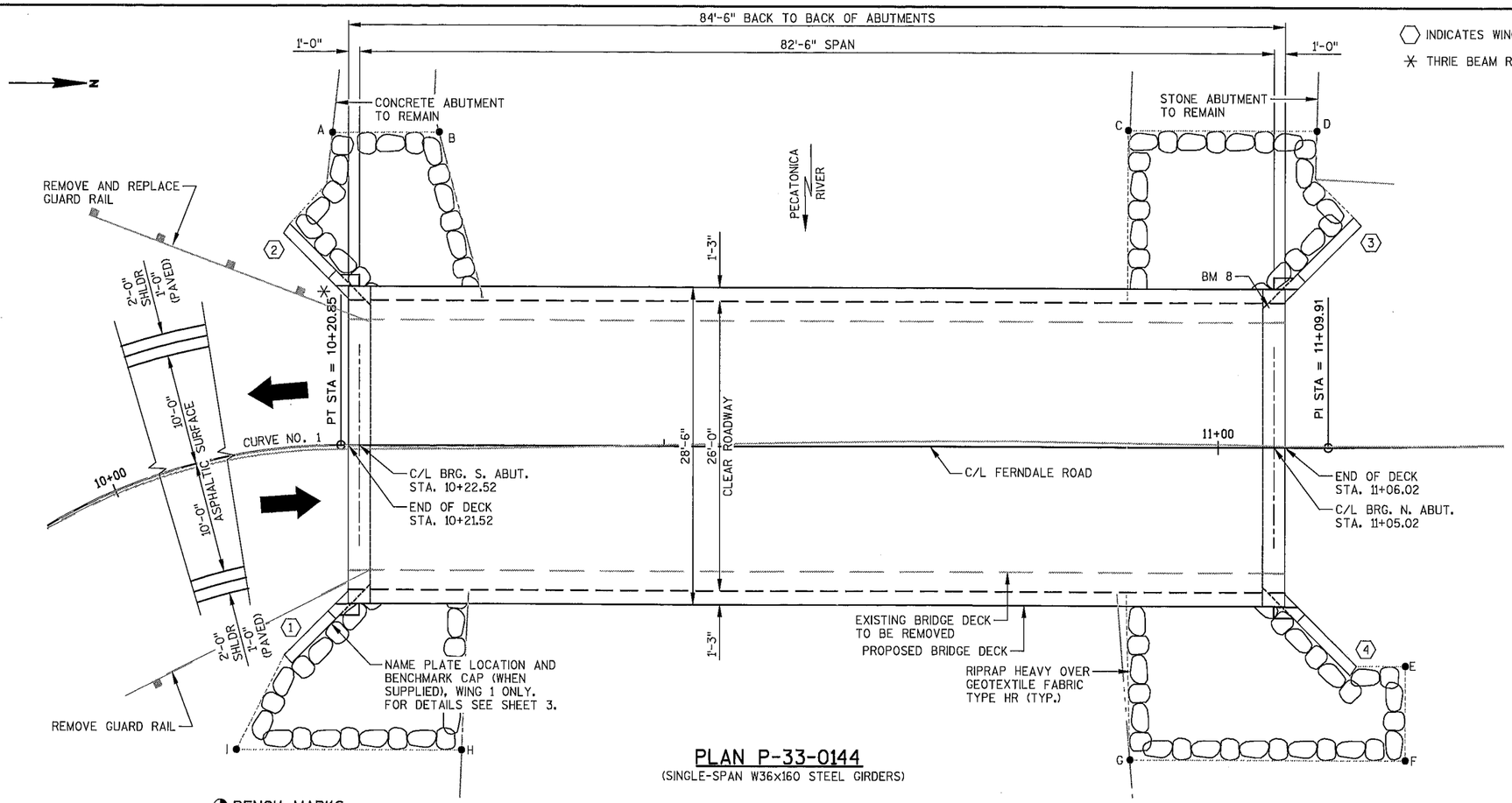
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 38 | E




## PLAN P-33-0144

(SINGLE-SPAN W36x160 STEEL GIRDERS)

STATE PROJECT NUMBER

5720-00-73

## DESIGN DATA

### LIVE LOAD:

| | |
|---|---|
| DESIGN LOADING | HS20 |
| INVENTORY RATING FACTOR | HS31 |
| OPERATING RATING FACTOR | HS53 |
| WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) | 250 KIPS |

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 P.S.F.

### ULTIMATE DESIGN STRESSES:

| | |
|---|---|
| CONCRETE MASONRY, SLAB | f'c = 4,000 P.S.I. |
| ALL OTHER | f'c = 3,500 P.S.I. |
| HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 | fy = 60,000 P.S.I. |
| HIGH-STRENGTH STEEL NEW EXTERIOR GIRDERS (ASTM A709, GRADE 50) | fy = 50,000 P.S.I. |

## TRAFFIC DATA

| | |
|---|---|
| A.D.T. (2015) | 100 |
| A.D.T. (2035) | 150 |
| DESIGN SPEED | < 25 M.P.H. |

## HYDRAULIC DATA

100 YEAR DESIGN FREQUENCY

SCOUR CRITICAL CODE 7

## LIST OF DRAWINGS



### RIPRAP HEAVY LAYOUT

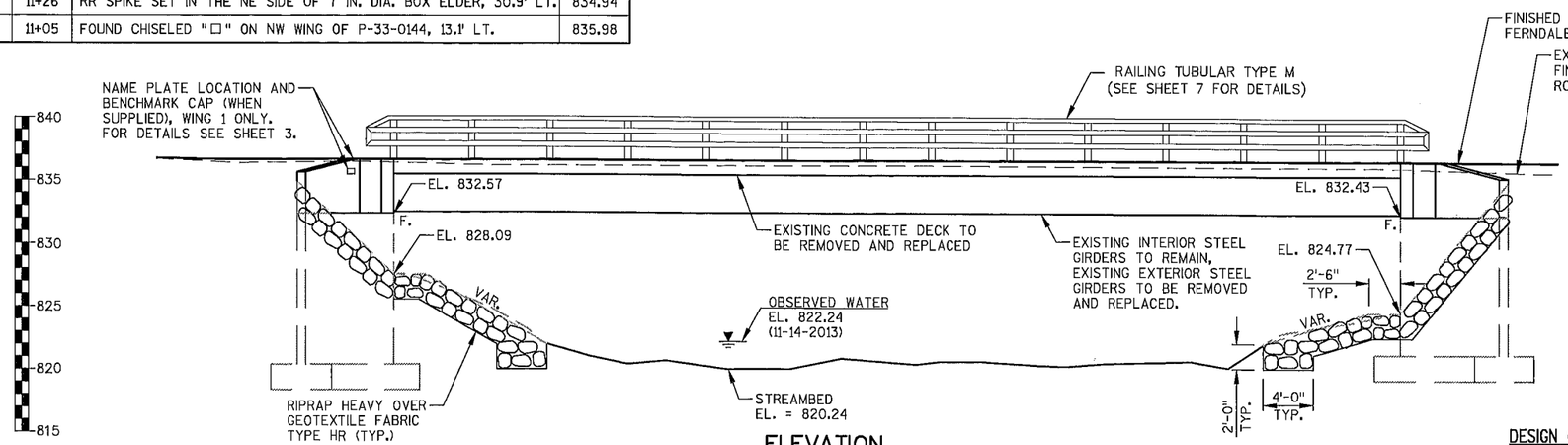
| POINT | STATION | OFFSET |
|---|---|---|
| A | 10+20 | 28' LT. |
| B | 10+30 | 28' LT. |
| C | 10+92 | 28' LT. |
| D | 11+09 | 28' LT. |
| E | 11+17 | 20' RT. |
| F | 11+17 | 28' RT. |
| G | 10+92 | 28' RT. |
| H | 10+32 | 27' RT. |
| I | 10+05 | 26' RT. |

### CURVE NO. 1

PI STA. = 9+94.55
Y = 194,546.12
X = 468,764.21
R = 52.00
D = 110°11'03"
DELTA = 66°39'59"
L = 60.50
T = 34.20
C = 57.15
PC STA. = 9+60.35
Y = 194,534.04
X = 468,796.20
PT STA. = 10+20.85
Y = 194,580.28
X = 468,762.63

### BENCH MARKS

| NO. | STA. | DESCRIPTION | ELEV. |
|---|---|---|---|
| 5 | 9+12 | RR SPIKE SET IN N SIDE OF 24 IN. DIA. SUGAR MAPLE, 24.8' RT. | 844.06 |
| 6 | 10+08 | RR SPIKE SET IN S SIDE OF 12 IN. DIA. BOX ELDER, 47.9' LT. | 838.25 |
| 7 | 11+26 | RR SPIKE SET IN THE NE SIDE OF 7 IN. DIA. BOX ELDER, 30.9' LT. | 834.94 |
| 8 | 11+05 | FOUND CHISELED "□" ON NW WING OF P-33-0144, 13.1' LT. | 835.98 |




## ELEVATION

(NORMAL TO THE PECATONICA RIVER)

WISCONSIN PROFESSIONAL ENGINEER
PATRICK T. BOLAND
E-36303
SPRING GREEN WIS
Patrick T. Boland 10-29-14

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


JEWELL associates engineers, inc.
Engineers - Surveyors - Architects
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
PHONE: (608) 588-7484
FAX: (608) 588-9322


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 10/30/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE P-33-0144

FERNDALE ROAD OVER THE PECATONICA RIVER

| | |
|---|---|
| COUNTY | LAFAYETTE |
| TOWN/~~CITY/VILLAGE~~ | WILLOW SPRINGS |
| DESIGN SPEC. | AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS |
| DESIGNED BY | PTB |
| DESIGN CK'D. | MEM |
| DRAWN BY | RBH |
| PLANS CK'D. | PTB |

GENERAL PLAN

SHEET 1 OF 7

39


DESIGN CONSULTANT
PATRICK BOLAND, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
WILLIAM DREHER, PE
(608) 266-8489


FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\01 GENERAL PLAN.DWG
LAYOUT : LAYOUT

PLOT DATE : 10/27/2014
PLOT TIME : 3:53:43 PM

PLOT BY : BOLAND, PATRICK

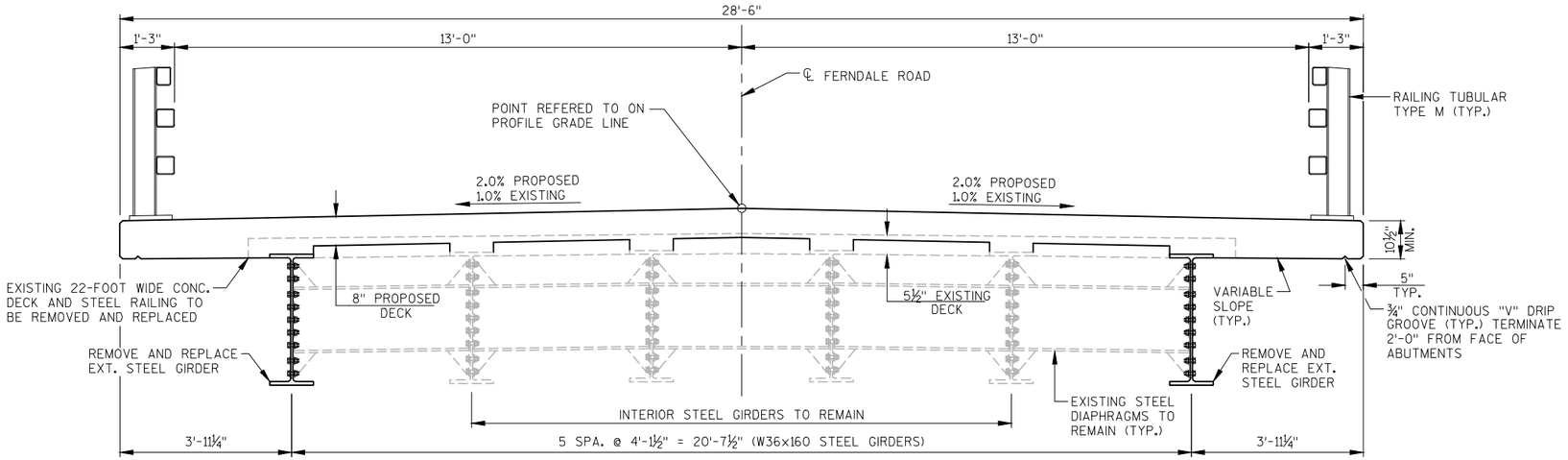
PLOT SCALE : 1" = 1'

8

8

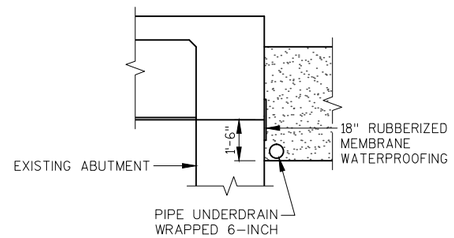
STATE PROJECT NUMBER

5720-00-73



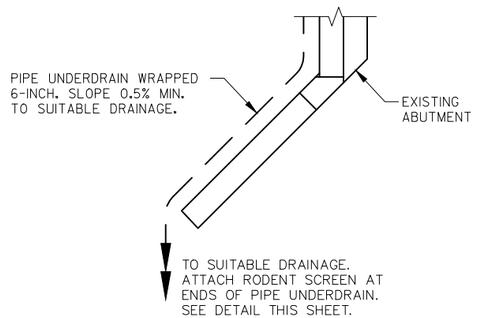

## CROSS SECTION THROUGH ROADWAY

(LOOKING NORTH)

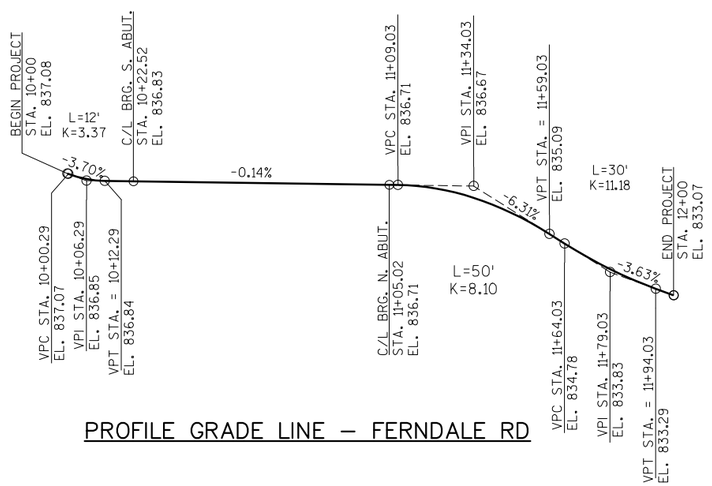



## ABUTMENT DETAIL

(TYPICAL AT BOTH ABUTMENTS)




## PIPE UNDERDRAIN DETAIL




## PROFILE GRADE LINE – FERNDALE RD

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

DIMENSIONS SHOWN ARE BASED ON INSPECTION REPORTS AND FIELD SURVEY.

"REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 10+64" INCLUDES REMOVAL OF THE EXISTING CONCRETE DECK, THE EXISTING CONCRETE DIAPHRAGMS AND THE UPPER PORTIONS OF THE EXISTING CONCRETE WING WALLS, THE REMOVAL OF THE EXISTING BEARINGS AND THE PLACEMENT OF THE NEW NON-LAMINATED ELASTOMERIC BEARING PADS AT ALL GIRDERS.

ALL CONCRETE REMOVAL AT THE WINGWALLS SHALL BE DEFINED BY A 1" DEEP SAW CUT.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

CONCRETE SURFACE REPAIR REQUIRED AS DIRECTED BY THE ENGINEER IN THE FIELD.

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

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

JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M153. TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M213.

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

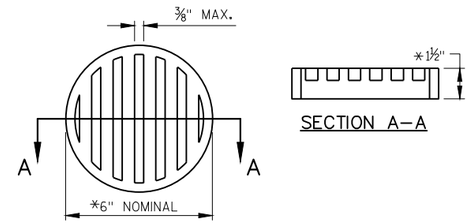
AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR (1958).

## TOTAL ESTIMATED QUANTITIES

| ITEM NUMBER | ITEM DESCRIPTION | UNIT | S. ABUT. | SUPER | N. ABUT. | TOTALS |
|---|---|---|---|---|---|---|
| 203.0600.S | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 10+64 | LS | -- | -- | -- | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES P-33-0144 | LS | -- | -- | -- | 1 |
| 210.0100 | BACKFILL STRUCTURE | CY | 43 | -- | 42 | 85 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 3 | 83 | 3 | 89 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | -- | 300 | -- | 300 |
| 502.5005 | MASONRY ANCHORS TYPE L NO. 5 BARS | EACH | -- | 42 | -- | 42 |
| 505.0605 | BAR STEEL REINFORCEMENT HS COATED BRIDGES | LB | 255 | 15,180 | 255 | 15,690 |
| 506.0605 | STRUCTURAL STEEL HS | LB | -- | 26,850 | -- | 26,850 |
| 506.2605 | BEARING PADS ELASTOMERIC NON-LAMINATED | EACH | -- | 12 | -- | 12 |
| 506.3015 | WELDED STUD SHEAR CONNECTORS ⅞x6-INCH | EACH | -- | 680 | -- | 680 |
| 509.1500 | CONCRETE SURFACE REPAIR | SF | -- | -- | -- | 5 |
| 513.4060 | RAILING TUBULAR TYPE M P-33-0144 | LS | -- | -- | -- | 1 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 7.5 | -- | 7.5 | 15 |
| 517.0600 | PAINTING EPOXY SYSTEM P-33-0144 | LS | -- | -- | -- | 1 |
| 517.0900.S | PREPARATION AND COATING OF TOP FLANGES P-33-0144 | LS | -- | -- | -- | 1 |
| 517.3000.S | STRUCTURE OVERCOATING CLEANING AND PRIMING P-33-0144 | LS | -- | -- | -- | 1 |
| 517.4000.S | CONTAINMENT AND COLLECTION OF WASTE MATERIALS P-33-0144 | LS | -- | -- | -- | 1 |
| 517.6001.S | PORTABLE DECONTAMINATION FACILITY | EACH | -- | -- | -- | 1 |
| 606.0300 | RIPRAP HEAVY | CY | 56 | -- | 74 | 130 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 75 | -- | 75 | 150 |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 95 | -- | 135 | 230 |
| SPV.0105.01 | CLEANING AND PAINTING GIRDER ENDS | LS | -- | -- | -- | 1 |
| | | | | | | |
| | NON-BID ITEMS | | | | | |
| | FILLER | SIZE | -- | -- | -- | ¾",1",1½" |
| | | | | | | |




## RODENT SCREEN

NOTES:

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

ORIENT SCREEN SO SLOTS ARE VERTICAL.

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED ENDS OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1–INCH STAINLESS STEEL SHEET METAL SCREWS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE P–33–0144

DRAWN BY RBH PLANS CK'D. PTB

CROSS SECTION AND QUANTITIES

SHEET 2 OF 7

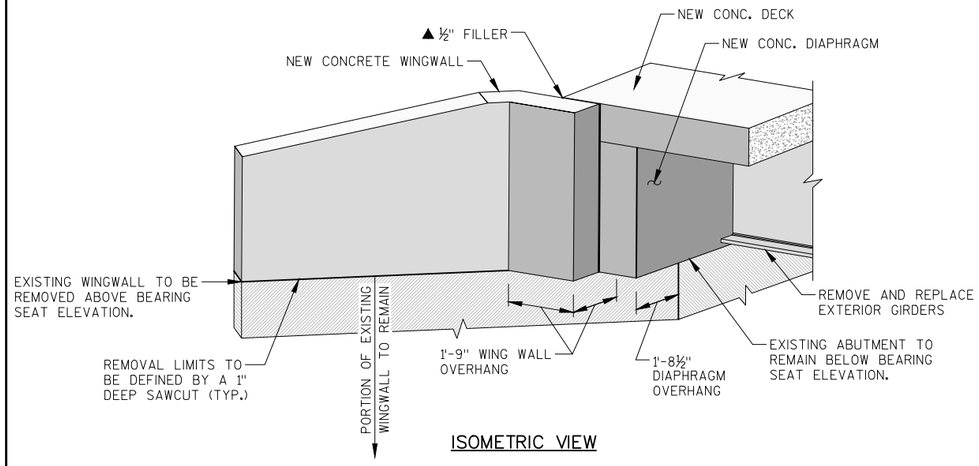
40

8

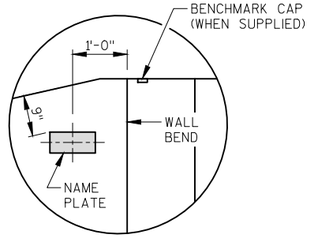
8

STATE PROJECT NUMBER

5720-00-73




ISOMETRIC VIEW




NAME PLATE AND BENCHMARK CAP DETAIL

## BILL OF BARS
## FOUR WINGS SHOWN

510 LB (COATED)

| BAR MARK | NO. REQ'D. | LENGTH | BENT | COAT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| A401 | 32 | 7-10 | X | X | * | WINGS - VERT. - F.F. & B.F. |
| A402 | 28 | 3-8 | | X | | WINGS - VERT. - F.F. & B.F. |
| A403 | 32 | 6-3 | | X | | WINGS - HORIZ. - F.F. & B.F. |
| A404 | 8 | 3-6 | | X | | WINGS - HORIZ. - F.F. & B.F. |
| A405 | 8 | 6-5 | X | X | | WINGS - HORIZ. - TOP |
| A406 | 24 | 5-5 | X | X | | WINGS - HORIZ. |

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

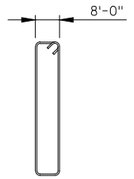
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

* LENGTH SHOWN IS AN AVERAGE LENGTH ONLY. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

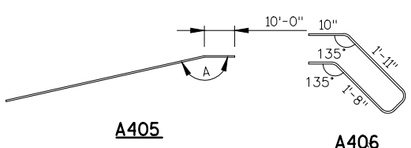
### BAR SERIES TABLE

| BAR MARK | NO. REQ'D. | LENGTH |
|---|---|---|
| A401 | 4 SERIES OF 8 | 6-8 TO 9-0 |

BUNDLE AND TAG EACH SERIES SEPARATELY.



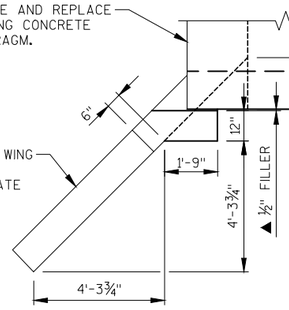

A401




A405

| MARK | 'A' |
|---|---|
| A405 | 167°26' |

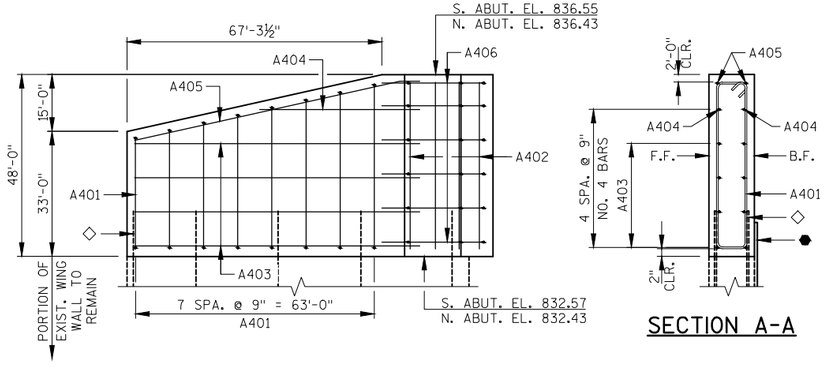
A406




PLAN VIEW

## WINGWALL ADJUSTMENT DETAIL

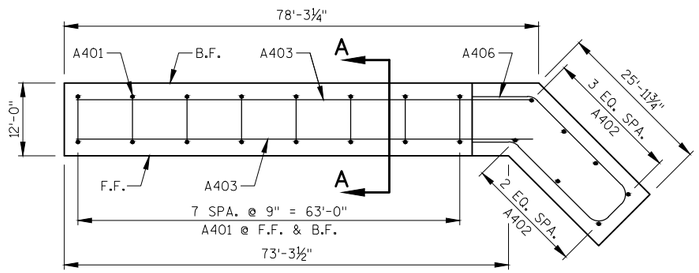
WING 1 SHOWN, OTHER WINGS SIMILAR




F.F. ELEVATION - WINGS




SECTION A-A




PLAN VIEW – WINGS

## NOTES

SEE THIS SHEET FOR BILL OF BARS.

## LEGEND

◇ SAVE EXISTING VERTICAL BAR STEEL REINFORCEMENT AT LOCATIONS OF WING WALL REMOVAL AND EXTEND 12" MIN. INTO NEW WORK.

⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)

▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE P-33-0144

DRAWN BY RBH | PLANS CK'D. PTB

WING WALL DETAILS

SHEET 3 OF 7

41

8

8

FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\03 WING WALL DETAILS.DWG
LAYOUT : LAYOUT

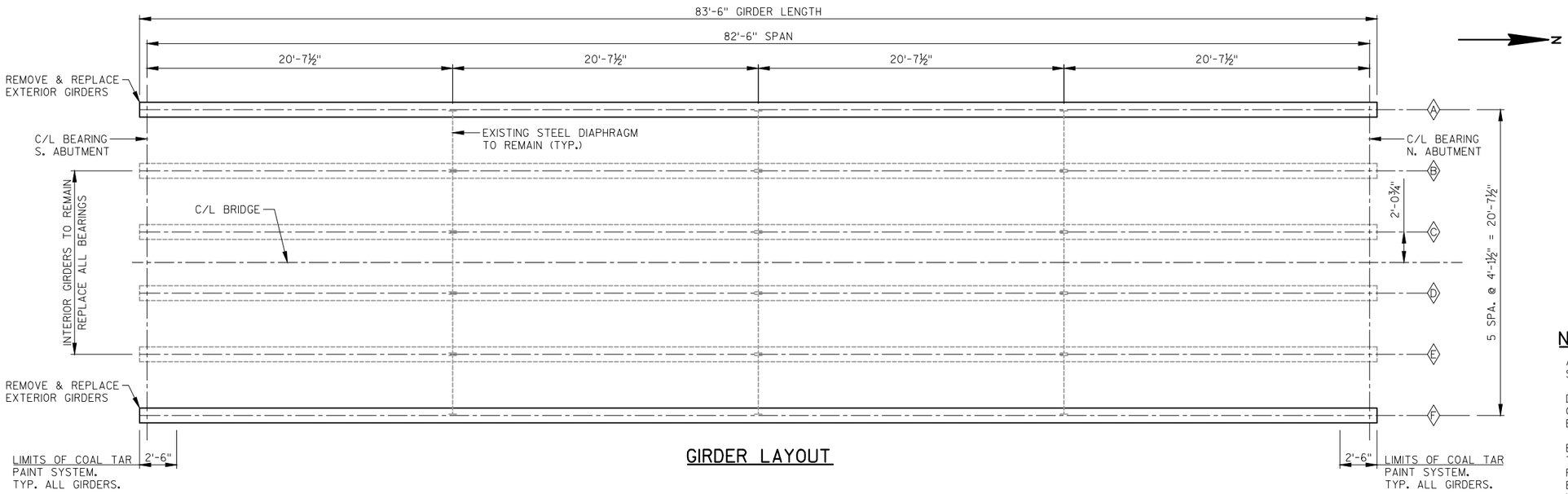
PLOT DATE : 10/27/2014
PLOT TIME : 3:53:56 PM

PLOT BY : BOLAND, PATRICK

PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER

5720-00-73




GIRDER LAYOUT

## *TABLE OF FILLET WELD SIZES

| MATERIAL THICKNESS OF THICKER PART JOINED | ǂ MIN. SIZE OF FILLET WELD |
|---|---|
| TO ½" INCLUSIVE | 3/16" |
| OVER ½" TO ¾" | ¼" |
| OVER ¾" TO 1½" | △5/16" |
| OVER 1½" TO 2¼" | △⅜" |
| OVER 2¼" TO 6" | △½" |

ǂ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"

## NOTES

ALL BOLTED CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS (ASTM A325).

DISCONNECT EXISTING STEEL DIAPHRAGMS FROM EXTERIOR GIRDERS PRIOR TO GIRDER REMOVAL AND BOLT TO NEW EXTERIOR GIRDRES USING A325 BOLTS.

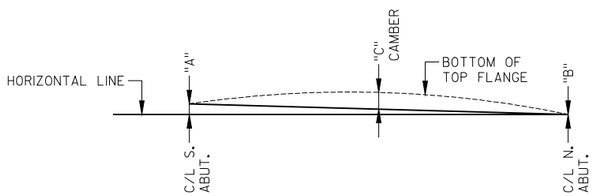
BOLT PATTERN SHOWN IS BASED ON FIELD MEASUREMENTS TAKEN AT ONE INDIVIDUAL CONNECTION. CONTRACTOR TO FIELD DRILL HOLES AT ALL DIAPHRAGM LOCATIONS IN NEW EXTERIOR BEAMS TO INSURE PROPER FIT. COST IS INCIDENTAL TO BID ITEM "STRUCTURAL STEEL HS". FIELD REPAIR AND RECOAT PAINT SURFACES DAMAGED DURING DRILLING.

APPLY A 3-COAT COAL TAR PAINT SYSTEM DIRECTLY TO BARE METAL AT THE END 30 INCHES OF ALL GIRDERS AS SPECIFIED UNDER BID ITEM "CLEANING AND PAINTING GIRDER ENDS". PAINT THE REMAINING SURFACES OF THE STEEL GIRDERS BY APPLYING TWO OR THREE COATS OF AN APPROVED COATING SYSTEM AS SPECIFIED IN SECTION 517 OF THE STANDARD SPECIFICATIONS.

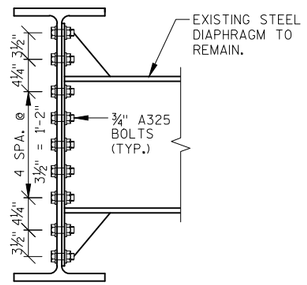
THE COLOR OF THE FINAL COAT OF PAINT FOR THE GIRDERS SHALL BE NO. 24260 IN ACCORDANCE WITH FEDERAL STANDARD NO. 595B.

## BLOCKING DIAGRAM TABLE

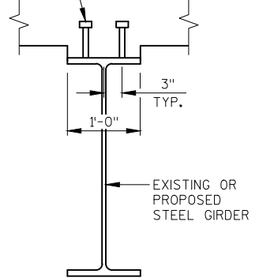
| GIRDER LINE | C/L S. ABUT. | C/L N. ABUT. | CAMBER (INCHES) |
|---|---|---|---|
| DIMENSION [FT] | "A" | "B" | "C" |
| GIRDER A | 0.14 | 0.00 | 2.10 |
| GIRDER F | 0.14 | 0.00 | 2.10 |



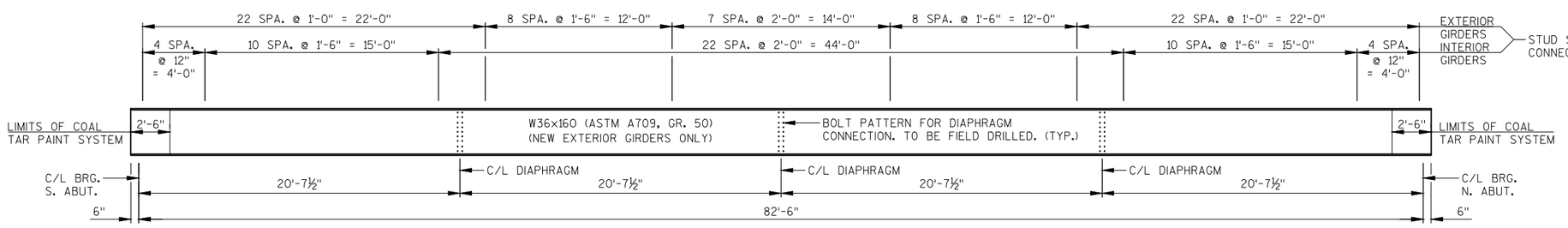

CAMBER AND BLOCKING DIAGRAM




DIAPHRAGM DETAIL




STUD SHEAR CONNECTOR DETAIL




ELEVATION OF GIRDER

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

STATE OF WISCONSIN
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STRUCTURE P-33-0144

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GIRDER DETAILS

SHEET 4 OF 7

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FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\04 GIRDER LAYOUT.DWG
LAYOUT : LAYOUT

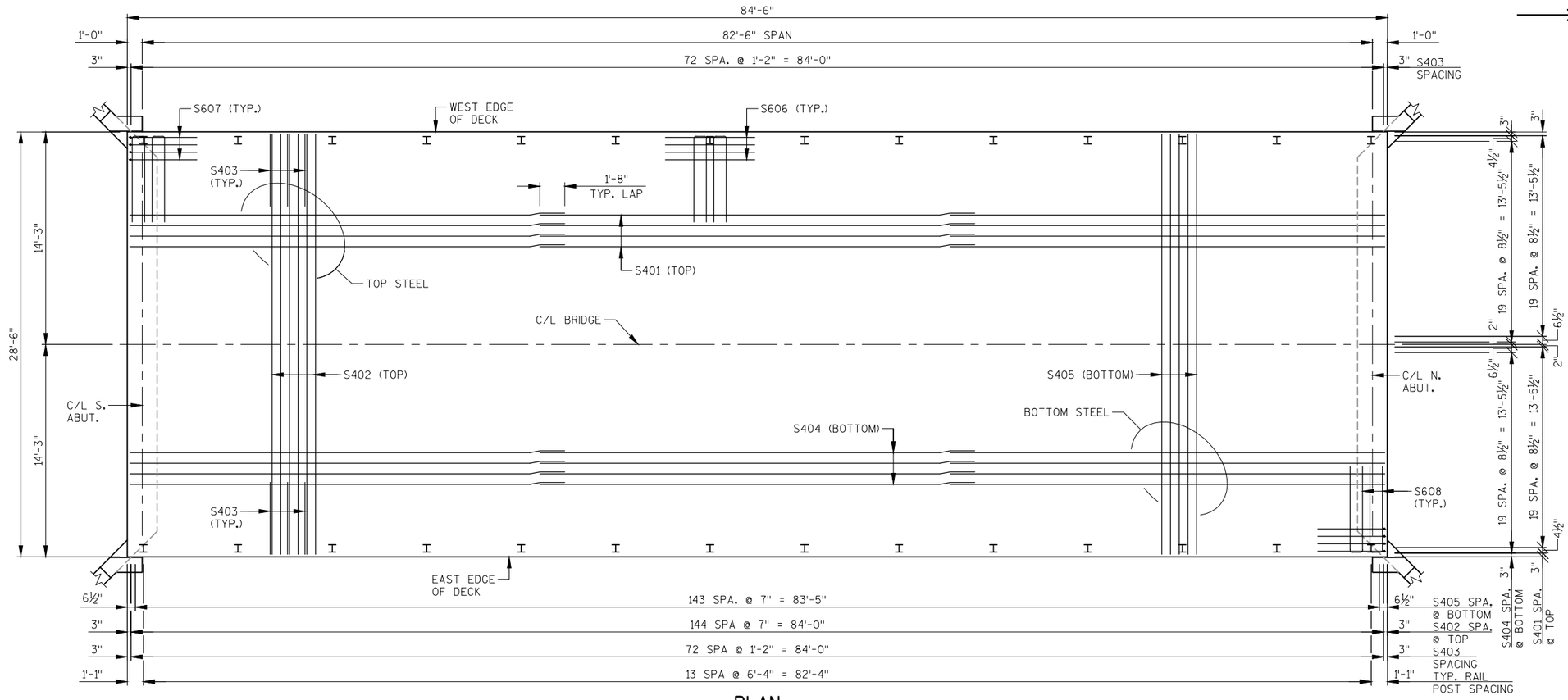
PLOT DATE : 10/27/2014
PLOT TIME : 3:54:05 PM

PLOT BY : BOLAND, PATRICK

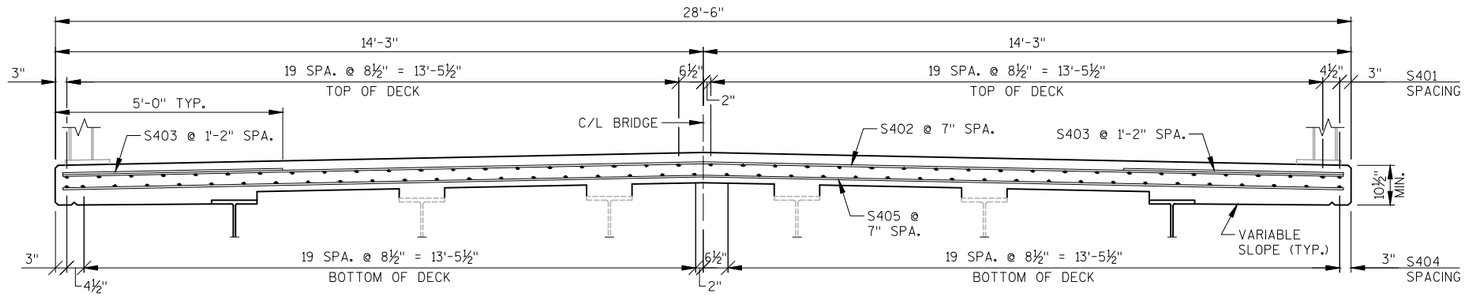
PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER

5720-00-73




PLAN




CROSS SECTION THROUGH ROADWAY

(LOOKING NORTH)

## NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY.

SEE SHEET 6 FOR BILL OF BARS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE P-33-0144

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SUPERSTRUCTURE

SHEET 5 OF 7

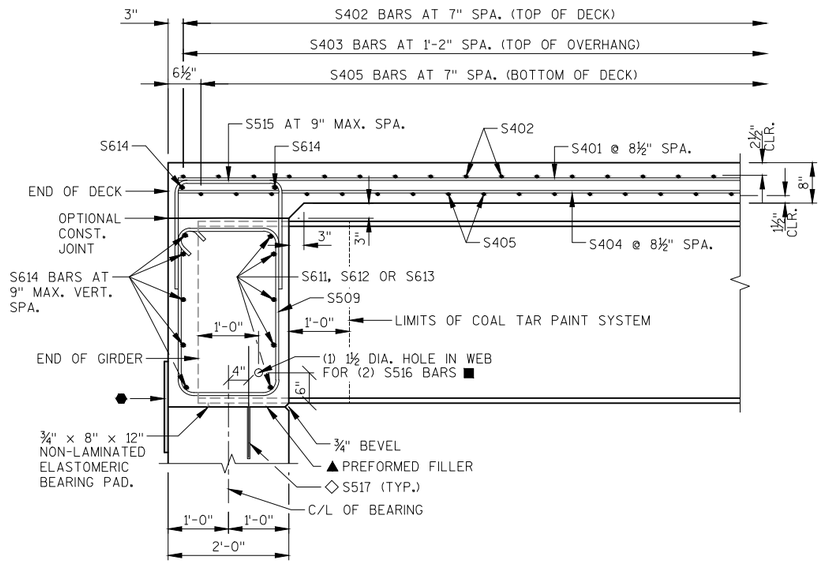


FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\05 DECK.DWG
LAYOUT : LAYOUT

PLOT DATE : 10/27/2014
PLOT TIME : 3:54:10 PM

PLOT BY : BOLAND, PATRICK

PLOT SCALE : 1" = 1'



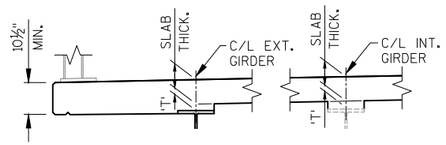

## PARTIAL LONGITUDINAL SECTION




## GIRDER SEAT DETAIL




## TRANSVERSE SECTION AT ABUTMENT DIAPHRAGM




## CONCRETE HAUNCH DETAILS

TO DETERMINE 'T': AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED. ELEVATIONS OF THE TOP OF FLANGES SHALL BE TAKEN AT CENTERLINE OF BEARINGS AND AT TENTH POINTS.

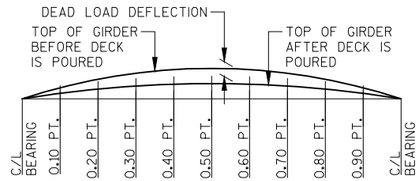
| | |
|---|---|
| TOP OF DECK ELEV. AT FINAL GRADE | |
| -TOP OF STEEL ELV. AFTER PLACEMENT | |
| +DEFLECTION (CONCRETE ONLY) | |
| -SLAB THICKNESS (8") | |
| ='T' VALUE FOR SETTING HAUNCH | |

## TOP OF DECK ELEVATIONS

| GIRDER LINE | C/L S. ABUT. | 0.10 PNT. | 0.20 PNT. | 0.30 PNT. | 0.40 PNT. | 0.50 PNT. | 0.60 PNT. | 0.70 PNT. | 0.80 PNT. | 0.90 PNT. | C/L N. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W. EDGE | 836.55 | 836.53 | 836.52 | 836.51 | 836.50 | 836.49 | 836.48 | 836.46 | 836.45 | 836.44 | 836.43 |
| A | 836.62 | 836.60 | 836.59 | 836.58 | 836.57 | 836.56 | 836.55 | 836.53 | 836.52 | 836.51 | 836.50 |
| B | 836.71 | 836.69 | 836.68 | 836.67 | 836.66 | 836.65 | 836.64 | 836.62 | 836.61 | 836.60 | 836.59 |
| C | 836.79 | 836.77 | 836.76 | 836.75 | 836.74 | 836.73 | 836.72 | 836.70 | 836.69 | 836.68 | 836.67 |
| C/L | 836.83 | 836.81 | 836.80 | 836.79 | 836.78 | 836.77 | 836.76 | 836.74 | 836.73 | 836.72 | 836.71 |
| D | 836.79 | 836.77 | 836.76 | 836.75 | 836.74 | 836.73 | 836.72 | 836.70 | 836.69 | 836.68 | 836.67 |
| E | 836.71 | 836.69 | 836.68 | 836.67 | 836.66 | 836.65 | 836.64 | 836.62 | 836.61 | 836.60 | 836.59 |
| F | 836.62 | 836.60 | 836.59 | 836.58 | 836.57 | 836.56 | 836.55 | 836.53 | 836.52 | 836.51 | 836.50 |
| E. EDGE | 836.55 | 836.53 | 836.52 | 836.51 | 836.50 | 836.49 | 836.48 | 836.46 | 836.45 | 836.44 | 836.43 |

## DEAD LOAD DEFLECTIONS

| | C/L S. ABUT. | 0.10 PNT. | 0.20 PNT. | 0.30 PNT. | 0.40 PNT. | 0.50 PNT. | 0.60 PNT. | 0.70 PNT. | 0.80 PNT. | 0.90 PNT. | C/L N. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONCRETE ONLY [IN.] | 0.0 | 0.6 | 1.2 | 1.6 | 1.9 | 2.0 | 1.9 | 1.6 | 1.2 | 0.6 | 0.0 |
| TOTAL [IN.] | 0.0 | 0.7 | 1.3 | 1.7 | 2.0 | 2.1 | 2.0 | 1.7 | 1.3 | 0.7 | 0.0 |




## DEAD LOAD DEFLECTION DIAGRAM

## LEGEND

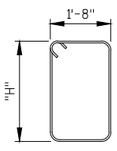
- ⬢ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ¾" x 4" PREFORMED FILLER. EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB AND EDGES OF GIRDERS. USE 1" FILLER UNDER ALL GIRDER FLANGES IN FRONT OF BEARING PAD.
- ■ PLACE (2) S516 BARS THROUGH 1½" DIA. HOLE IN WEB. PLACE BARS SYMMETRICALLY ABOUT C/L GIRDER. COST OF DRILLING HOLES AT INTERIOR GIRDERS IS INCIDENTAL TO THE BID ITEM "STRUCTURAL STEEL HS".
- ◇ S517 BARS WITH MASONRY ANCHOR TYPE L NO. 5 BARS. SPA AT 12" AND EMBED ANCHOR 10" INTO EXISTING ABUTMENT.
- ◑ ¾"×8"×1'-0" ELASTOMERIC BEARING PAD. REQUIRED AT ALL GIRDER LOCATIONS.

## BILL OF BARS SUPERSTRUCTURE — 15,180 LB (COATED)

| | BAR MARK | NO. REQ'D. | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|
| | S401 | 123 | 29-2 | | X | SLAB - TOP - LONGIT. |
| | S402 | 145 | 28-2 | | X | SLAB - TOP - TRANS. |
| | S403 | 146 | 4-10 | | X | SLAB - TOP - OVERHANG |
| | S404 | 123 | 29-2 | | X | SLAB - BOTTOM - LONGIT. |
| | S405 | 144 | 28-2 | | X | SLAB - BOTTOM - TRANS. |
| | S606 | 96 | 6-0 | | X | RAIL POSTS - INTERIOR |
| | S607 | 16 | 6-0 | X | X | RAIL POSTS - ENDS |
| | S608 | 56 | 12-0 | X | X | RAIL POSTS |
| | S509 | 70 | 9-6 | X | X | DIAPHRAGM - VERT. - |
| | S510 | 24 | 9-0 | X | X | DIAPHRAGM - VERT. - @ GIRDERS |
| | S611 | 16 | 3-7 | | X | DIAPHRAGM - HORIZ. - ENDS |
| | S612 | 40 | 3-9 | | X | DIAPHRAGM - HORIZ. |
| | S613 | 10 | 2-9 | | X | DIAPHRAGM - HORIZ. - TOP |
| | S614 | 14 | 28-2 | | X | DIAPHRAGM - HORIZ. - BACK & TOP |
| | S515 | 70 | 5-0 | X | X | DIAPHRAGM - HORIZ. - TOP |
| ■ | S516 | 24 | 6-0 | | X | DIAPHRAGM - HORIZ. AT WEB |
| ◇ | S517 | 42 | 1-10 | | X | DOWEL BARS AT ABUTMENTS |

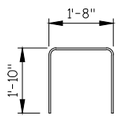
NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

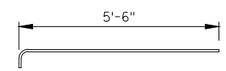



## S509 & S510

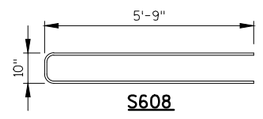
| MARK | "H" |
|---|---|
| S509 | 2'-9" |
| S510 | 2'-6" |




## S515




## S607




## S608

STATE PROJECT NUMBER

5720-00-73

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE P-33-0144

DRAWN BY PTB | PLANS CK'D. RBH

SUPERSTRUCTURE DETAILS

SHEET 6 OF 7

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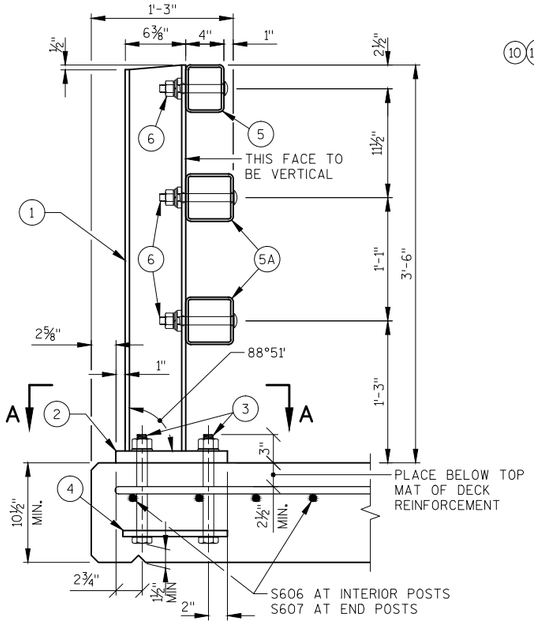
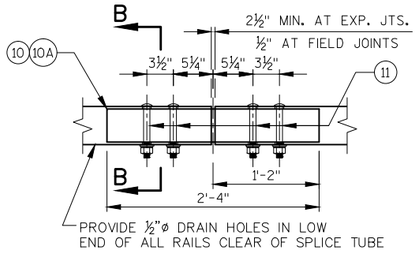
8

8

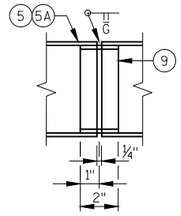
FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\06 DECK DETAILS.DWG
LAYOUT : LAYOUT
PLOT DATE : 10/27/2014
PLOT TIME : 3:54:15 PM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'




## SECTION THROUGH RAILING ON DECK

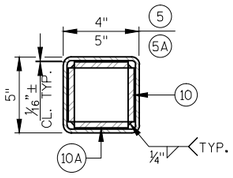



## FIELD ERECTION JOINT DETAIL

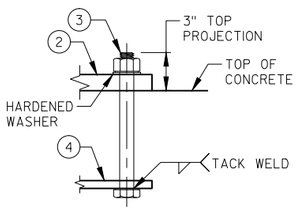



## SHOP RAIL SPLICE DETAIL

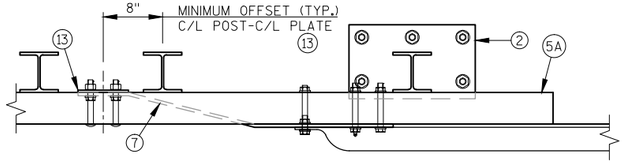
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)




## SECTION B-B

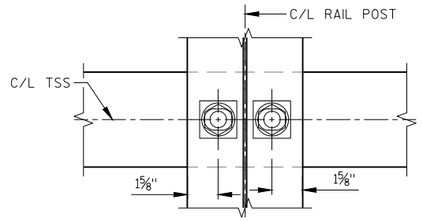



## ANCHOR BOLTS

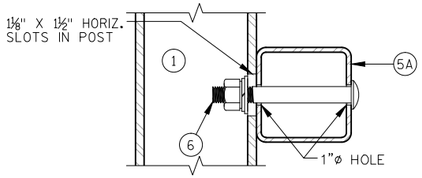



## TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)



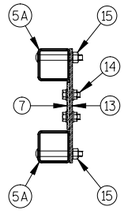

## SECTION THROUGH POST WEB



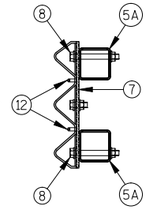

## SECTION THROUGH RAIL

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

## TYPICAL RAIL TO POST CONNECTIONS



## SECTION C-C



## SECTION D-D

## LEGEND

① W6x25 WITH 1⅛" x 1½" 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 1¼"x11¾"x1'-8" WITH 1⅝"x1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" 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. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS.

④ ⅜"x11"x1'-8" ANCHOR PLATE (GALVANIZED) WITH 13/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TSS 5x4x¼ STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TSS 5x5x¼ STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16"x1⅝"x1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).

⑦ ½" THK. BACK-UP PLATE WITH 2 -⅞"x1½" 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 ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜"x3⅝"x2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜"x2⅝"x2'-4" PLATE USED IN NO. 5, ⅜"x3⅝"x2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16"x1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16"x2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

⑫ ⅞" DIA. BY 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

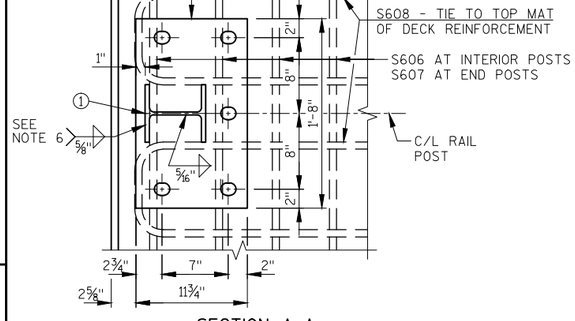
⑬ ⅜"x8"x1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

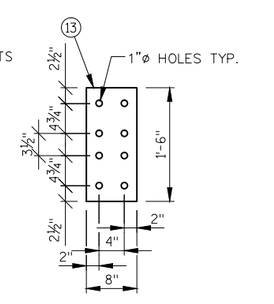
⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

## GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M P-33-0144" 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 ⅛ 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 S.S.P.C. SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

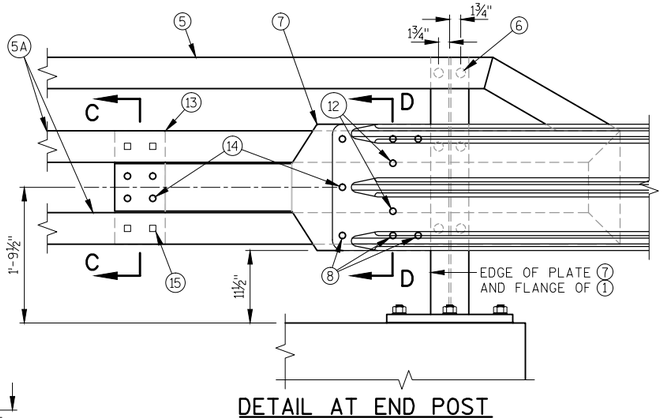



## SECTION A-A



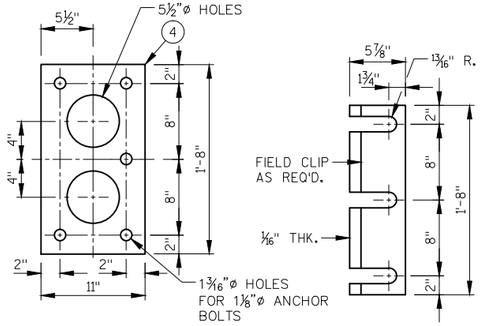

## ANCHOR PLATE

AT BEAM GUARD ATTACHMENT




## DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

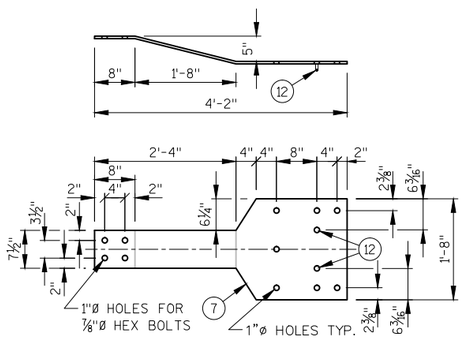



## ANCHOR PLATE

AT RAIL TO DECK CONNECTION

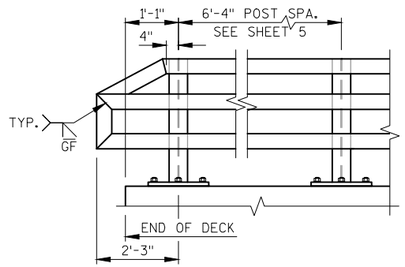



## POST SHIM DETAIL




## BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT




## PART ELEVATION OF RAILING

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE PROJECT NUMBER
5720-00-73

STRUCTURE P-33-0144

DRAWN BY PTB | PLANS CK'D. RBH

TUBULAR RAILING TYPE M

SHEET 7 OF 7

45

8

8

FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\STRUCTURE\CAD FILES\FINALS\07 TUBULAR RAILING TYPE M.DWG
LAYOUT : LAYOUT
PLOT DATE : 10/27/2014
PLOT TIME : 3:54:20 PM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'

# EARTHWORK-MAINLINE

| | AREA (SF) | | | | | INCREMENTAL VOL (CY) | | | | | | | | CUMMULATIVE VOLUME (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION | CUT | SALVAGED/ UNUSABLE PAV'T MATERIAL | FILL | MARSH EX | EBS | CUT | SALVAGED/ UNUSABLE PAV'T MATERIAL | FILL | MARSH EX | REDUCED MARSH IN FILL (0.6) | FILL (25%) | SELECT CRUSHED MATERIAL (1.5) | EBS | CUT | FILL | MARSH EX | REDUCED MARSH IN FILL (0.6) | FILL (25%) | SELECT CRUSHED MATERIAL (1.5) | EBS | MASS ORDINATE |
| 10+00 | 64.0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10+22 | 64.0 | 0 | 45.0 | 0 | 0 | 53 | 0 | 18 | 0 | 0 | 23 | 0 | 0 | 53 | 18 | 0 | 0 | 23 | 0 | 0 | 30 |
| 10+22 | 0.0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 18 | 0 | 0 | 23 | 0 | 0 | 30 |
| 11+00 | 0.0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 18 | 0 | 0 | 23 | 0 | 0 | 30 |
| 11+06 | 0.0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 18 | 0 | 0 | 23 | 0 | 0 | 30 |
| 11+06 | 6.0 | 0 | 28.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 18 | 0 | 0 | 23 | 0 | 0 | 30 |
| 11+50 | 6.0 | 0 | 17.4 | 0 | 0 | 10 | 0 | 38 | 0 | 0 | 47 | 0 | 0 | 63 | 56 | 0 | 0 | 70 | 0 | 0 | -7 |
| 12+00 | 64.0 | 0 | 0.0 | 0 | 0 | 67 | 0 | 16 | 0 | 0 | 20 | 0 | 0 | 130 | 72 | 0 | 0 | 90 | 0 | 0 | 40 |
| | | | | COLUMN SUBTOTALS = | | 130 | 0 | 72 | 0 | 0 | 90 | 0 | 0 | | | | | | | | |
| | | | | F.E. - STA. 9+92, LT. = | | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 72 | 0 | 0 | 90 | 0 | 0 | 60 |
| | | | | COLUMN TOTALS = | | 150 | 0 | 72 | 0 | 0 | 90 | 0 | 0 | | | | | | | | |

| NOTES: | |
|---|---|
| 1 - CUT | CUT INCLUDES SALVAGED/UNUSABLE MATERIAL |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS |
| 3 - FILL | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME |
| 4 - REDUCED MARSH IN FILL | REDUCED MARSH THAT CAN BE USED IN FILL |
| 5 - FILL (25%) | FILL 25%: (FILL -REDUCED MARSH IN FILL)*1.25 |
| 6 - MASS ORDINATE | (CUT - FILL (25%)) |

9

9

| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | EARTHWORK | SHEET NO. 46 | E |
|---|---|---|---|---|---|

FILE NAME : S:±Projects±K19240 Ferndale Road Bridge±SheetsPlan±Details±Earthwork.dwg

EXISTING STRUCTURE
P-33-0144 TO REMAIN

EXISTING BRIDGE ABUTMENT TO BE REMAIN

R/W

VARIES

-28.00
829.38

-47.01
826.43

RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR (TYP.)

26.50
829.84

R/W

VARIES

10+22

EXISTING ABUTMENTS TO REMAIN (TYP.)

840
830
820

−70 −60 −50 −40 −30 −20 −10 0 10 20 30 40 50 60 70

S = -0.38%

VARIES

R/W

R/W

STA 9+92, LT.
F.E. REQ'D.

STA 9+92, LT.
(1) PIPE ARCH CORRUGATION STEEL 21 X 15-INCH
(2) APRON ENDWALLS FOR PIPE ARCH 21 X 15-INCH

BEGIN PROJECT 5720-00-73
STA. 10+00
MATCH EXISTING

10+00

9

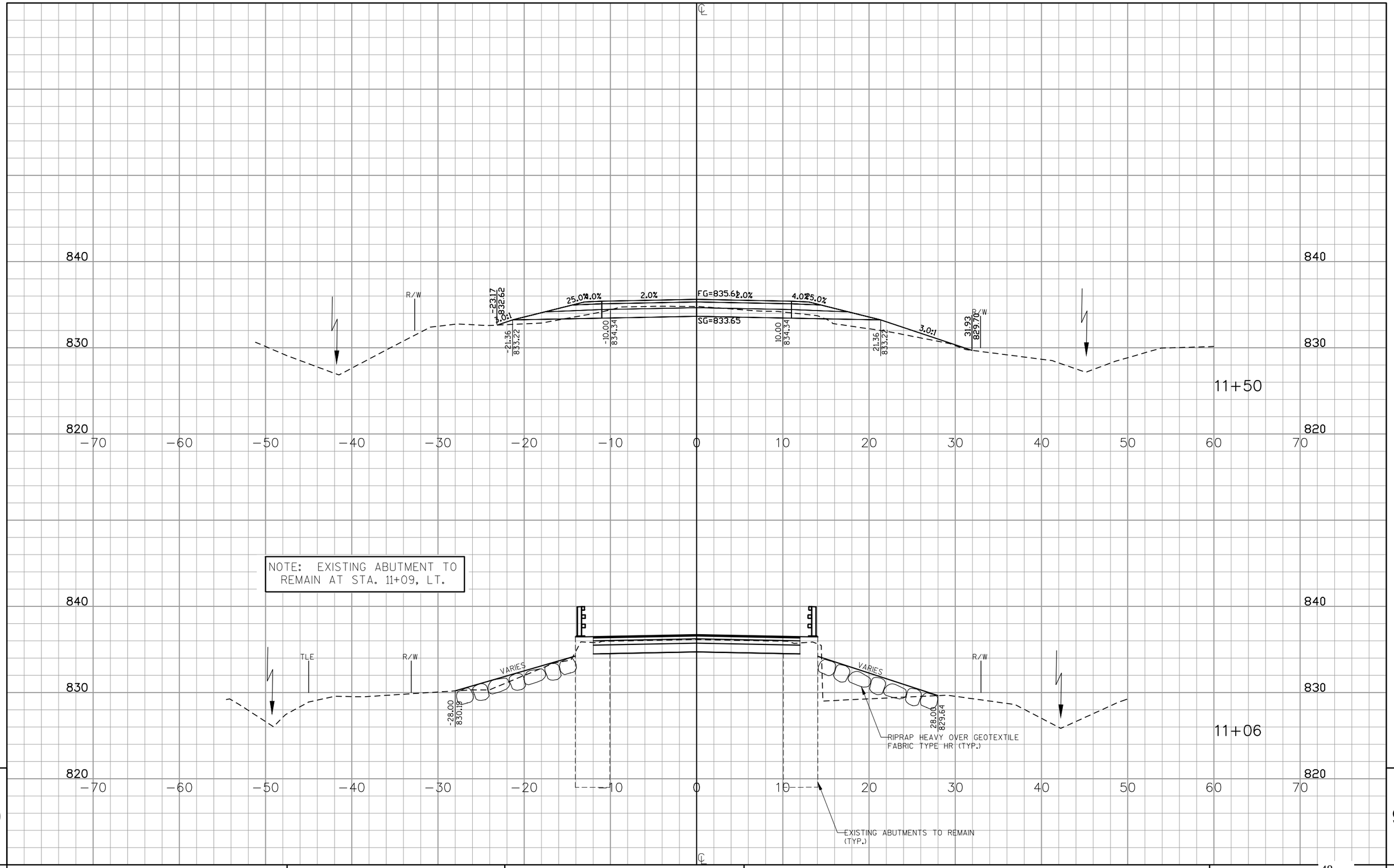
| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | CROSS SECTIONS: FERNDALE ROAD | SHEET 47 |
|---|---|---|---|---|

FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\DESIGN\CORRIDORS\CORRIDOR SHORTENED.DWG
LAYOUT : MODEL

PLOT DATE : 1/12/2015
PLOT TIME : 3:41:37 PM

PLOT BY : STRINE, THERESA

PLOT SCALE : 1 IN:10 FT

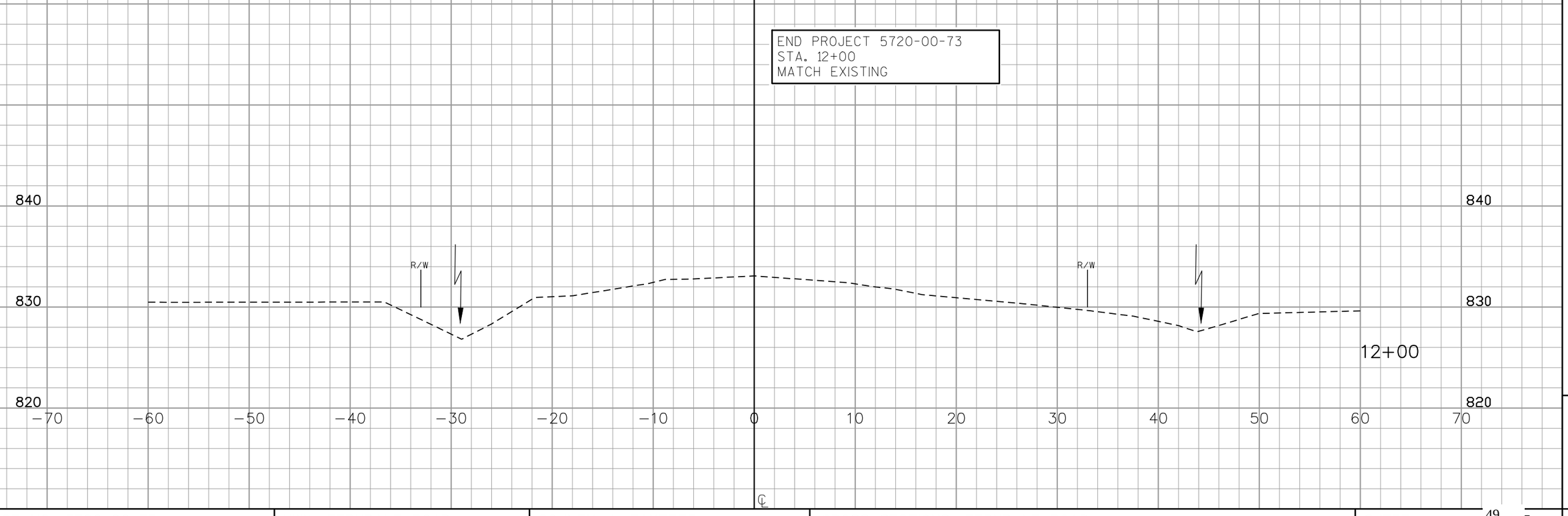



| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | CROSS SECTIONS: FERNDALE ROAD | SHEET |
|---|---|---|---|---|



FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\DESIGN\CORRIDORS\CORRIDOR SHORTENED.DWG
LAYOUT : MODEL
PLOT DATE : 10/27/2014
PLOT TIME : 9:02:39 AM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1 IN:10 FT

END PROJECT 5720-00-73
STA. 12+00
MATCH EXISTING




9

9

| PROJECT NO: 5720-00-73 | HWY: FERNDALE ROAD | COUNTY: LAFAYETTE | CROSS SECTIONS: FERNDALE ROAD | SHEET |
|---|---|---|---|---|



FILE NAME : S:\PROJECTS\K19240 FERNDALE ROAD BRIDGE\DESIGN\CORRIDORS\CORRIDOR SHORTENED.DWG
LAYOUT : MODEL
PLOT DATE : 10/27/2014
PLOT TIME : 9:02:53 AM
PLOT BY : STRINE, THERESA
PLOT SCALE : 1 IN:10 FT

*Wisconsin Department of Transportation*

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov