NWL

DEC 2015

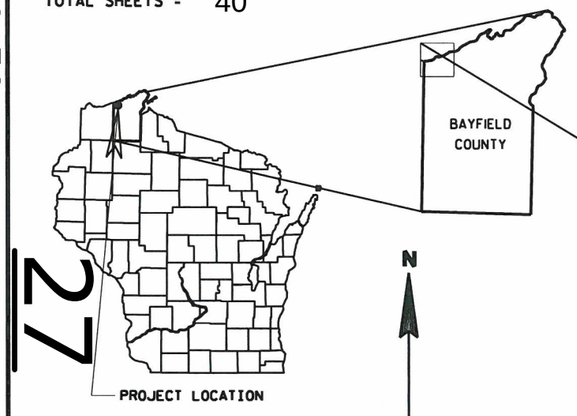
PROJECT ID: 8352-00-70
WITH: 8352-00-71

COUNTY: BAYFIELD

**ORDER OF SHEETS**



TOTAL SHEETS = 40




27

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# T ORIENTA, OLD HIGHWAY 13

FISH CREEK BRIDGE B040112

## TOWN ROAD

## BAYFIELD COUNTY

STATE PROJECT NUMBER
**8352-00-70**

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 8352-00-70 | WISC 2015656 | 1 |
| | | |
| | | |
| | | |

**DESIGN DESIGNATION**

| | | |
|---|---|---|
| A.D.T. (2016) | = | <100 |
| A.D.T. (2036) | = | <100 |
| D.H.V. | = | 10 |
| D. | = | 50/50 |
| T. | = | 5% |
| DESIGN SPEED | = | 20 MPH |
| ESALS | = | N/A |

**CONVENTIONAL SYMBOLS**

**PLAN**

CORPORATE LIMITS
PROPERTY LINE (PL + 58.1)
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SLOPE INTERCEPT
REFERENCE LINE
EXISTING CULVERT
PROPOSED CULVERT (Box or Pipe)
COMBUSTIBLE FLUIDS (CAUTION)
HIGH VOLTAGE (CAUTION)
MARSH AREA
WOODED OR SHRUB AREA

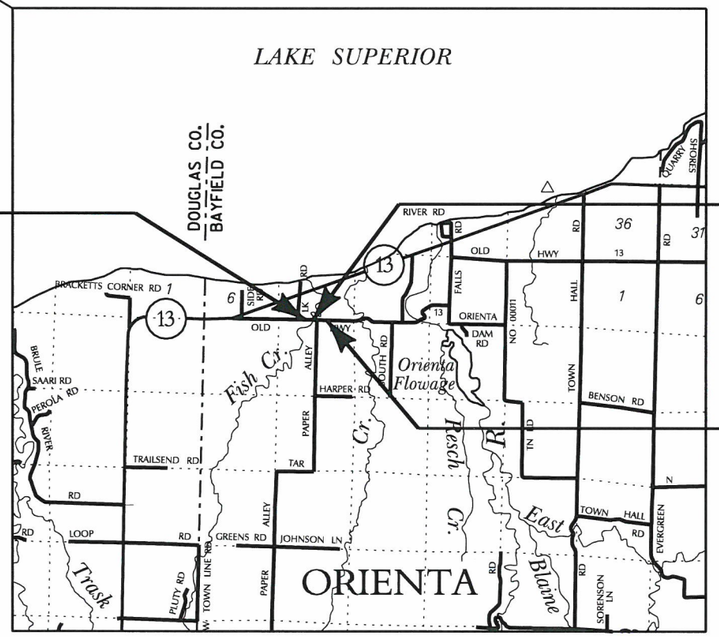
**PROFILE**

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

**UTILITIES**

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

**BEGIN PROJECT**
**STA. 9+00**
Y = 516247.00
X = 657367.54




**STRUCTURE B-04-0112**

**END PROJECT**
**STA. 11+00**
Y = 516242.68
X = 657567.49

**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), BAYFIELD COUNTY.

ACCEPTED FOR
Town of Orienta
6 JULY 2015 — Date — Town Chairman

ORIGINAL PLANS PREPARED BY


AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com


DANIEL N. SYDOW E-38363 WI — PROFESSIONAL ENGINEER — WISCONSIN

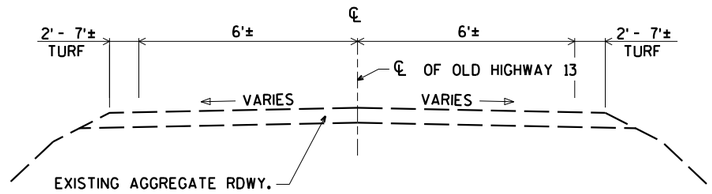
DATE 6/19/2015

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

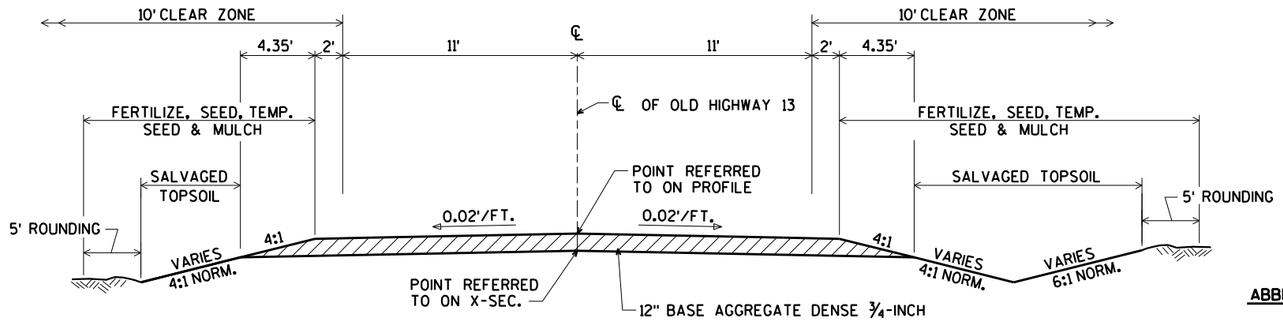
PREPARED BY
Surveyor: AYRES ASSOCIATES INC
Designer: AYRES ASSOCIATES INC
Management Consultant: KNIGHT E/A INC.
C.O. Examiner:

APPROVED FOR THE DEPARTMENT
DATE: 7/23/15 — Management Consultant Signature

E




## TYPICAL EXISTING SECTION




## TYPICAL FINISHED SECTION

(STA. 9+00 TO STA. 9+75.25)
(STA. 10+24.75 TO STA. 11+00)

## GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

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

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND FIELD LOCATING ALL UTILITIES.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

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

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

## ABBREVIATIONS

| | |
|---|---|
| AC | ACRES |
| CHIS | CHISELED |
| ℄ | CENTERLINE |
| COR | CORNER |
| CWT | COUNT |
| CY | CUBIC YARD |
| EL | ELEVATION |
| GAL | GALLON |
| H | HOUSE |
| IP | IRON PIPE |
| LB | POUND |
| LF | LINEAR FEET |
| LS | LUMP SUM |
| LT | LEFT |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| MON | MONUMENT |
| NORM | NORMAL |
| OAL | OVERALL LENGTH |
| PC | POINT OF CURVATURE |
| PD | PEDESTAL |
| PI | POINT OF INTERSECTION |
| PK | PARKER-KALON |
| PL | PROPERTY LINE |
| PLE | PERMANENT LIMITED EASEMENT |
| PP | POWER POLE |
| PT | POINT OF TANGENCY |
| R | RADIUS |
| REQ'D | REQUIRED |
| RT | RIGHT |
| R/W | RIGHT-OF-WAY |
| SF | SQUARE FEET |
| SHLDR | SHOULDER |
| STA | STATION |
| SY | SQUARE YARD |
| TLE | TEMPORARY LIMITED EASEMENT |
| VAR | VARIES |
| WL | WELL |

## UTILITIES

NORVADO
P.O. BOX 67
CABLE, WI 54821
ATTN: GUY FOLSOM
715-798-7123
gfolsom@norvado.com

BAYFIELD ELECTRIC CO-OP INC.
P.O. BOX 67
IRON RIVER, WI 54847
ATTN: GARY TARASEWICZ
715-492-0725
gary.tarasewicz@bayfieldelectric.com

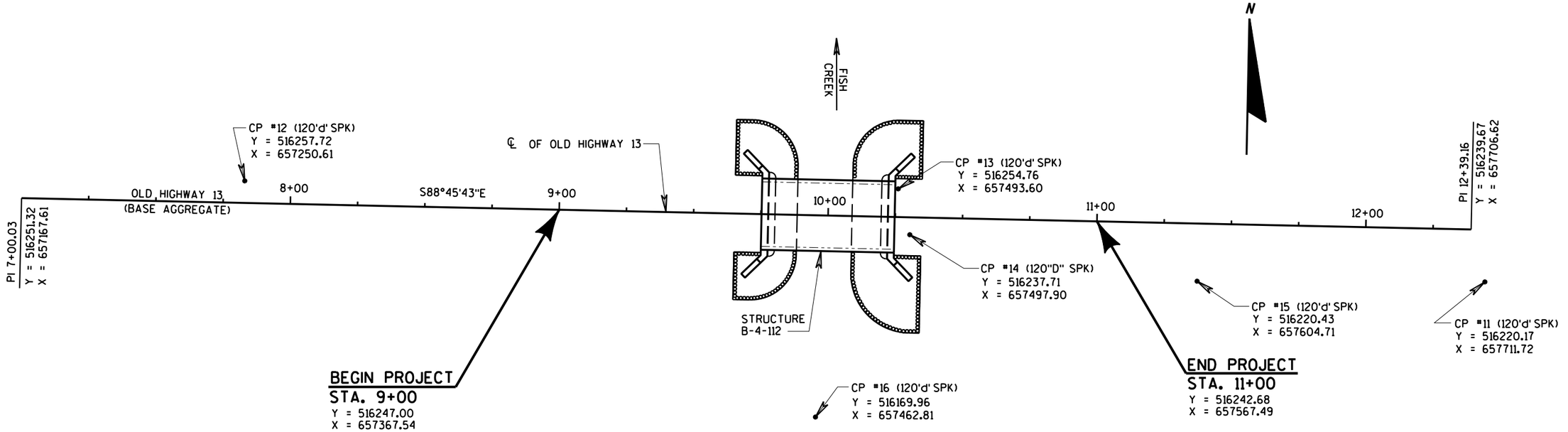
**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

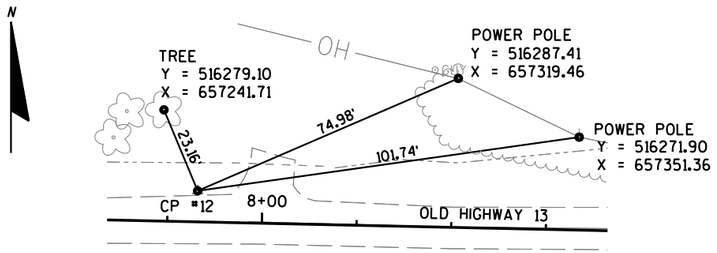
WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:
SHAWN HASELEU
810 WEST MAPLE ST.
SPOONER, WI. 54801
715-635-4228
shawn.haseleu@wisconsin.gov

DESIGNER
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL N. SYDOW
715-834-3161
sydowd@AyresAssociates.com

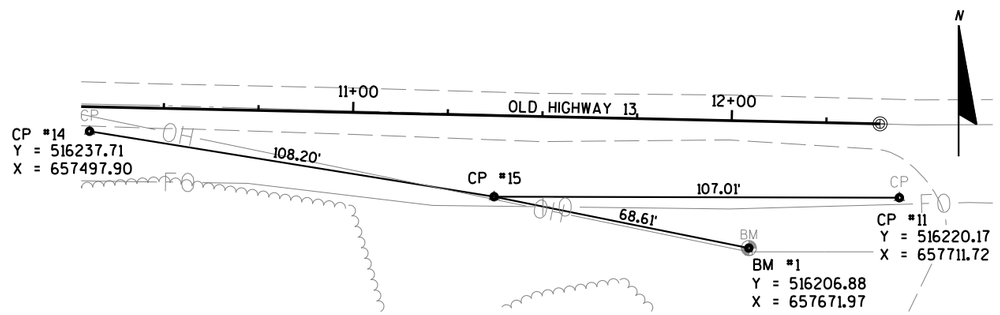
2




## ALIGNMENT CONTROLS



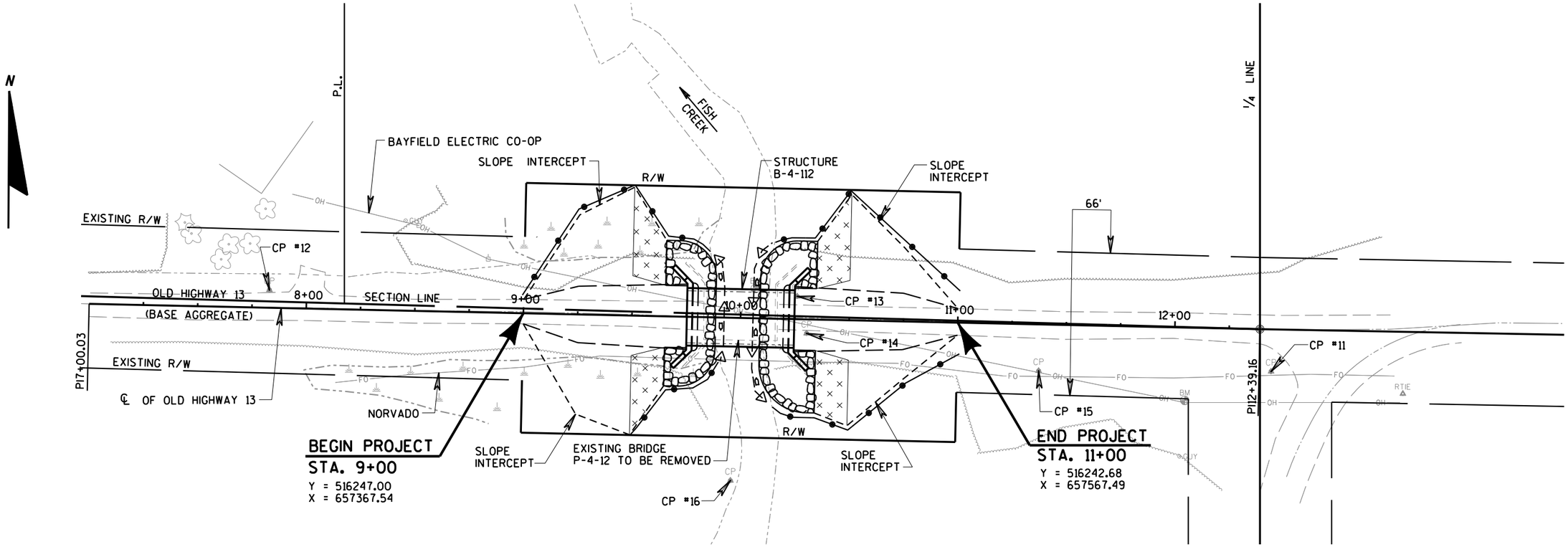

CP #12 (120'd' SPK)
STA. 7+82.87, 8.2' LT.
Y = 516257.72
X = 657250.61




CP #15 (120'd' SPK)
STA. 11+37.70, 21.4' RT.
Y = 516220.43
X = 657604.71

## ALIGNMENT TIES

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | ALIGNMENT CONTROLS | SHEET 3 | E |
|---|---|---|---|---|---|




| | 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 | | | | | | | | | | | |

HIGH WATER ₂ EL. 611.7

LEGEND

- EROSION MAT CLASS II TYPE C
- TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
- SILT FENCE
- RIPRAP HEAVY
- TURBIDITY BARRIERS

TOTAL PROJECT AREA = 0.528 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.302 ACRES

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | EROSION CONTROL | SCALE, FEET 0 25 50 | SHEET 4 | E |
|---|---|---|---|---|---|---|

DATE 01OCT15 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 | 8352-00-70 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 201.0105 | Clearing | STA | 2.000 | 2.000 |
| 0020 | 201.0205 | Grubbing | STA | 2.000 | 2.000 |
| 0030 | 203.0500.S | Removing Old Structure Over Waterway (station) 01. 10+00 | LS | 1.000 | 1.000 |
| 0050 | 205.0100 | Excavation Common | CY | 120.000 | 120.000 |
| 0060 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-4-112 | LS | 1.000 | 1.000 |
| 0080 | 208.0100 | Borrow | CY | 760.000 | 760.000 |
| 0090 | 210.0100 | Backfill Structure | CY | 620.000 | 620.000 |
| 0100 | 213.0100 | Finishing Roadway (project) 01. 8352-00-70 | EACH | 1.000 | 1.000 |
| 0120 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 320.000 | 320.000 |
| 0130 | 502.0100 | Concrete Masonry Bridges | CY | 199.000 | 199.000 |
| 0140 | 502.3200 | Protective Surface Treatment | SY | 180.000 | 180.000 |
| 0150 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 4,640.000 | 4,640.000 |
| 0160 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 22,350.000 | 22,350.000 |
| 0170 | 506.0105 | Structural Steel Carbon | LB | 530.000 | 530.000 |
| 0180 | 513.4061 | Railing Tubular Type M (structure) 01. B-4-112 | LF | 99.000 | 99.000 |
| 0200 | 516.0500 | Rubberized Membrane Waterproofing | SY | 18.000 | 18.000 |
| 0210 | 550.0500 | Pile Points | EACH | 20.000 | 20.000 |
| 0220 | 550.1100 | Piling Steel HP 10-Inch X 42 Lb | LF | 600.000 | 600.000 |
| 0230 | 606.0300 | Riprap Heavy | CY | 260.000 | 260.000 |
| 0240 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 160.000 | 160.000 |
| 0250 | 619.1000 | Mobilization | EACH | 0.500 | 0.500 |
| 0260 | 625.0500 | Salvaged Topsoil | SY | 940.000 | 940.000 |
| 0270 | 627.0200 | Mulching | SY | 1,020.000 | 1,020.000 |
| 0290 | 628.1504 | Silt Fence | LF | 495.000 | 495.000 |
| 0300 | 628.1520 | Silt Fence Maintenance | LF | 990.000 | 990.000 |
| 0310 | 628.1905 | Mobilizations Erosion Control | EACH | 4.000 | 4.000 |
| 0320 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0330 | 628.2027 | Erosion Mat Class II Type C | SY | 265.000 | 265.000 |
| 0340 | 628.6005 | Turbidity Barriers | SY | 220.000 | 220.000 |
| 0350 | 628.7504 | Temporary Ditch Checks | LF | 50.000 | 50.000 |
| 0360 | 629.0210 | Fertilizer Type B | CWT | 1.500 | 1.500 |
| 0370 | 630.0120 | Seeding Mixture No. 20 | LB | 45.000 | 45.000 |
| 0380 | 630.0200 | Seeding Temporary | LB | 45.000 | 45.000 |
| 0390 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 4.000 | 4.000 |
| 0400 | 637.2230 | Signs Type II Reflective F | SF | 12.000 | 12.000 |
| 0410 | 638.2602 | Removing Signs Type II | EACH | 6.000 | 6.000 |
| 0420 | 638.3000 | Removing Small Sign Supports | EACH | 6.000 | 6.000 |
| 0430 | 642.5001 | Field Office Type B | EACH | 0.500 | 0.500 |
| 0440 | 643.0100 | Traffic Control (project) 01.8352-00-70 | EACH | 1.000 | 1.000 |
| 0460 | 645.0120 | Geotextile Fabric Type HR | SY | 500.000 | 500.000 |
| 0470 | 650.4500 | Construction Staking Subgrade | LF | 151.000 | 151.000 |
| 0480 | 650.5000 | Construction Staking Base | LF | 151.000 | 151.000 |
| 0490 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-4-112 | LS | 1.000 | 1.000 |
| 0510 | 650.9910 | Construction Staking Supplemental Control (project) 01. 8352-00-70 | LS | 1.000 | 1.000 |
| 0530 | 650.9920 | Construction Staking Slope Stakes | LF | 151.000 | 151.000 |
| 0540 | 715.0502 | Incentive Strength Concrete Structures | DOL | 1,194.000 | 1,194.000 |
| 0550 | ASP.1T0A | On-the-Job Training Apprentice at $5. 00/HR | HRS | 1,200.000 | 1,200.000 |

DATE 01OCT15 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 | 8352-00-70 QUANTITY |
|---|---|---|---|---|---|
| 0560 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 300.000 | 300.000 |



3

3

## CLEARING AND GRUBBING (CATEGORY 0010)

| STATION TO STATION | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA |
|---|---|---|---|
| Sta. 9+00 to Sta. 11+00 | Old Highway 13 | 2 | 2 |

## EARTHWORK SUMMARY (CATEGORY 0010)

| DIVISION | STATION TO STATION | LOCATION | 205.0100 EXCAVATION COMMON CUT (1) CY | SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY | AVAILABLE MATERIAL (4) CY | UNEXPANDED FILL (3) CY | EXPANDED FILL (5) CY | MASS ORDINATE ±(6) CY | WASTE CY | 208.0100 BORROW CY | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9+00 TO 9+75 | Old Highway 13 | 68 | 0 | 68 | 435 | 566 | -498 | 0 | 498 | |
| | 10+25 TO 11+00 | Old Highway 13 | 50 | 0 | 50 | 239 | 311 | -261 | 0 | 261 | |
| | GRANDTOTAL | | 118 | 0 | 118 | 674 | 876 | -758 | 0 | 758 | |

**TOTAL EXCAVATION COMMON 120 CY**

**TOTAL BORROW 760 CY**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) EXPANDED FILL FACTOR = 1.30
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
6) THE MASS ORDINATE ± QTY CALCUTATED FOR THE DIVISION.
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

## 213.0100 FINISHING ROADWAY (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-70 | 1 |

3

## BASE AGGREGATE DENSE (CATEGORY 0010)

| STATION TO STATION | LOCATION | 305.0110 3/4-INCH TON |
|---|---|---|
| Sta. 9+00 to Sta. 9+25 | Old Highway 13 | 40 |
| Sta. 9+25 to Sta 9+75 | Old Highway 13 | 120 |
| Sta. 10+25 to Sta. 10+75 | Old Highway 13 | 120 |
| Sta. 10+75 to Sta 11+00 | Old Highway 13 | 40 |
| TOTALS | | 320 |

## 619.1000 MOBILIZATION

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-70 (CATEGORY 0010) | 0.1 |
| PROJECT 8352-00-70 (CATEGORY 0020) | 0.4 |
| TOTAL | 0.5 |

## SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

| STATION TO STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 627.0200 MULCHING SY | 629.0210 FERTILIZER TYPE B CWT | 630.0120 SEEDING NO. 20 LB | 630.0200 SEEDING TEMPORARY LB |
|---|---|---|---|---|---|---|
| Sta. 9+00 to Sta. 11+00 | Old Highway 13 | 940 | 925 | 0.9 | 39 | 38 |
| Undistributed | | --- | 95 | 0.6 | 6 | 7 |
| TOTALS | | 940 | 1,020 | 1.5 | 45 | 45 |

## SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

| STATION TO STATION | LOCATION | 628.1504 LF | 628.1520 MAINTENANCE LF |
|---|---|---|---|
| Sta. 9+00 to Sta.9+86 | Old Highway 13, LT | 125 | 250 |
| Sta. 9+50 to Sta. 9+90 | Old Highway 13, RT | 60 | 120 |
| Sta. 10+15 to Sta. 11+00 | Old Highway 13, LT | 110 | 220 |
| Sta. 10+15 to Sta. 11+00 | Old Highway 13, RT | 100 | 200 |
| Undistributed | | 100 | 200 |
| TOTALS | | 495 | 990 |

## MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

| LOCATION | 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|
| PROJECT 8352-00-70 | 4 | 2 |

## 628.2027 EROSION MAT CLASS II TYPE C (CATEGORY 0010)

| STATION TO STATION | LOCATION | SY |
|---|---|---|
| Sta. 9+50 to Sta. 9+65 | Old Highway 13, LT | 55 |
| Sta. 10+35 to Sta. 10+50 | Old Highway 13, RT | 50 |
| Sta. 10+35 to Sta. 10+50 | Old Highway 13, LT | 55 |
| Sta. 10+35 to Sta. 10+50 | Old Highway 13, RT | 55 |
| Undistributed | | 50 |
| TOTAL | | 265 |

## 628.6005 TURBIDITY BARRIER (CATEGORY 0010)

| LOCATION | SY |
|---|---|
| West Abutment | 70 |
| East Abutment | 105 |
| Undistributed | 45 |
| TOTALS | 220 |

### 628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

| LOCATION | LF |
|---|---|
| UNDISTRIBUTED | 50 |

### 634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)

| STATION | LOCATION | EACH |
|---|---|---|
| Sta. 19+75 | Old Highway 13, LT (W5-52L) | 1 |
| Sta. 19+75 | Old Highway 13, RT (W5-52R) | 1 |
| Sta. 20+25 | Old Highway 13, LT (W5-52R) | 1 |
| Sta. 20+25 | Old Highway 13, RT (W5-52L) | 1 |
| TOTAL | | 4 |

### 637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

| STATION | LOCATION | DESCRIPTION | SF |
|---|---|---|---|
| Sta. 19+75 | Old Highway 13, LT | W5-52L (OBJECT MARKER) | 3 |
| Sta. 19+65 | Old Highway 13, RT | W5-52R (OBJECT MARKER) | 3 |
| Sta. 20+25 | Old Highway 13, LT | W5-52R (OBJECT MARKER) | 3 |
| Sta. 20+25 | Old Highway 13, RT | W5-52L (OBJECT MARKER) | 3 |
| TOTAL | | | 12 |

### REMOVING (CATEGORY 0010)

| STATION | LOCATION | DESCRIPTION | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH |
|---|---|---|---|---|
| Sta. 19+82 | Old Highway 13, RT | R12-1 (WEIGHT LIMIT) | 1 | 1 |
| Sta. 19+83 | Old Highway 13, RT | W5-52R (OBJECT MARKER) | 1 | 1 |
| Sta. 19+82 | Old Highway 13, LT | W5-52L (OBJECT MARKER) | 1 | 1 |
| Sta. 10+16 | Old Highway 13, RT | W5-52L (OBJECT MARKER) | 1 | 1 |
| Sta. 10+16 | Old Highway 13, LT | W5-52R (OBJECT MARKER) | 1 | 1 |
| Sta. 10+16 | Old Highway 13, LT | R12-1 (WEIGHT LIMIT) | 1 | 1 |
| TOTAL | | | 6 | 6 |

### 642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-70 | 1 |

### 643.0100 TRAFFIC CONTROL (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-70 | 1 |

### CONSTRUCTION STAKING

| CATEGORY | LOCATION | 650.4500 SUBGRADE LF | 650.5000 BASE LF | 650.6500 STRUCTURE LAYOUT LS | 650.9910 SUPPLEMENTARY CONTROL LS | 650.9920 SLOPE STAKES LF |
|---|---|---|---|---|---|---|
| 0010 | Sta. 9+00 to Sta. 11+00 | 151 | 151 | --- | 1 | 151 |
| 0020 | B-04-0112 | --- | --- | 1 | --- | --- |
| TOTALS | | 151 | 151 | 1 | 1 | 151 |

## SCHEDULE OF LANDS AND INTERESTS REQUIRED

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

| PARCEL NO. | OWNERSHIP | INTEREST REQUIRED | TOTAL ACRES | R/W (ACRES) NEW | R/W (ACRES) EXISTING | R/W (ACRES) TOTAL | TOTAL ACRES REMAINING |
|---|---|---|---|---|---|---|---|
| 1 | ERIC LUEBSTORF, KARE L. MILAS, & KELLY J. LUEBSTORF | FEE | 34.78 | 0.117 | 0.151 | 0.268 | 34.512 |
| 2 | MARY C. GALE, TRUSTEE OF THE MARY C. GALE REVOCABLE TRUST | FEE | 40.00 | 0.108 | 0.152 | 0.260 | 39.740 |
| 50 | NORVADO | RELEASE OF RIGHTS | | | | | |

| PARCEL 1 FEE | | |
|---|---|---|
| COURSE | BEARING | DISTANCE |
| 100-101 | N01°14'17"E | 33.00' |
| 101-102 | N01°14'17"E | 24.82' |
| 102-103 | S88°45'43"E | 200.00' |
| 103-104 | S01°14'17"W | 26.11' |
| 104-105 | S01°14'17"W | 33.00' |
| 105-100 | N88°23'39"W | 200.00' |

| PARCEL 2 FEE | | |
|---|---|---|
| COURSE | BEARING | DISTANCE |
| 100-105 | S88°23'39"E | 200.00' |
| 105-106 | S01°14'17"W | 0.89' |
| 106-107 | S01°14'17"W | 32.11' |
| 107-108 | S01°14'17"W | 22.89' |
| 108-109 | N88°45'43"W | 200.00' |
| 109-110 | N01°14'17"E | 24.18' |
| 110-111 | N01°14'17"E | 30.82' |
| 111-100 | N01°14'17"E | 2.18' |

| POINT TABLE | | |
|---|---|---|
| POINT # | NORTHING | EASTING |
| 100 | 516249.175 | 657367.583 |
| 101 | 516282.168 | 657368.296 |
| 102 | 516306.984 | 657368.832 |
| 103 | 516302.663 | 657568.785 |
| 104 | 516276.563 | 657568.221 |
| 105 | 516243.570 | 657567.508 |
| 106 | 516242.677 | 657567.489 |
| 107 | 516210.577 | 657566.795 |
| 108 | 516187.690 | 657566.300 |
| 109 | 516192.011 | 657366.347 |
| 110 | 516216.182 | 657366.869 |
| 111 | 516246.998 | 657367.535 |

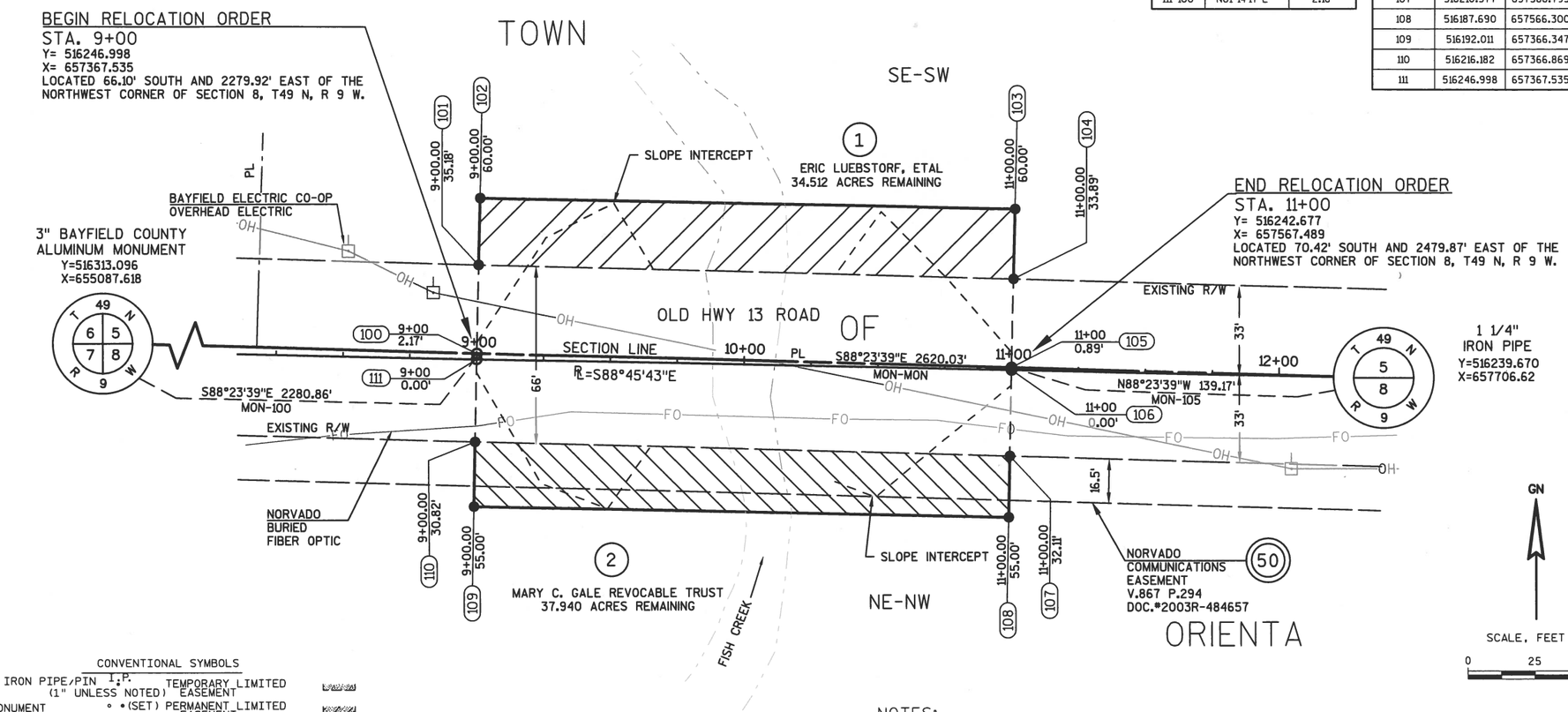
| R/W PROJECT NUMBER | SHEET NUMBER | TOTAL SHEETS |
|---|---|---|
| 8352-00-00 | 4.01 | 1 |
| FEDERAL PROJECT NUMBER ---------- | | |

PLAT OF RIGHT-OF-WAY REQUIRED FOR

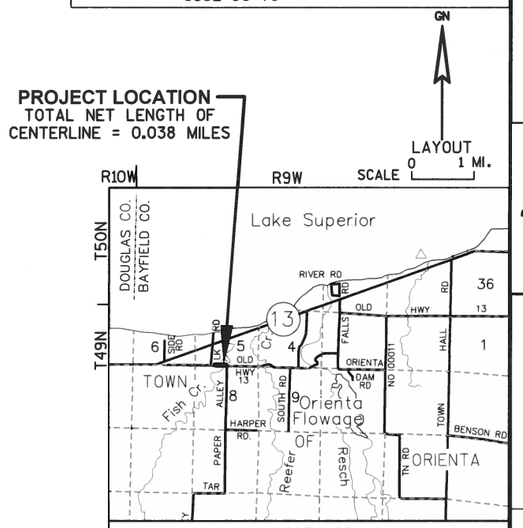
T Orienta, Old Highway 13
(Fish Creek Bridge B-04-0112)

Town Road — Bayfield County

CONSTRUCTION PROJECT NUMBER
8352-00-70




**PROJECT LOCATION**
TOTAL NET LENGTH OF CENTERLINE = 0.038 MILES




APPROVED
FOR
TOWN OF ORIENTA

13 JUNE 2015 — DATE — (Signature)

PLAT PREPARED BY
AYRES ASSOCIATES

THE SURVEY IS PREPARED AT THE REQUEST OF THE TOWN OF ORIENTA. THE TOPOGRAPHY AND UTILITY SURVEY WAS PERFORMED IN NOVEMBER, 2013. THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
JAMES R. CAPPEART
S-3044
COTTAGE GROVE WI
AND SURVEYOR

4/17/2015
JAMES R. CAPPEART, P.L.S. — DATE
S-3044

### CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN I.P. (1" UNLESS NOTED)
R/W MONUMENT ° •(SET)
R/W STANDARD △ ▲(SET)
SIGN ISIGN
SECTION CORNER MONUMENT ⊡
SECTION CORNER SYMBOL
FEE (HATCH VARIES)
TEMPORARY LIMITED EASEMENT
PERMANENT LIMITED EASEMENT
R/W BOUNDARY POINT RWB20
PARCEL NUMBER 102
UTILITY PARCEL NUMBER 32
SIGN NUMBER (OFF PREMISE) 21-2
BUILDING

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE 10
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE P.L.
LOT & TIE
CORPORATE LIMITS (NAME)
TEMPORARY LIMITED EASEMENT
FENCE
SLOPE INTERCEPTS
PERMANENT LIMITED EASEMENT
NO ACCESS (BY STATUTORY AUTHORITY)
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)
NO ACCESS (BY ACQUISITION)

### CONVENTIONAL UTILITY SYMBOLS

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

### CONVENTIONAL ABBREVIATIONS

| | | | |
|---|---|---|---|
| ACCESS POINT/ DRIVEWAY CONNECTION | AP | REFERENCE LINE | R/L |
| ACCESS RIGHTS | AR | RELEASE OF RIGHTS | ROR |
| ACRES | AC. | REMAINING | REM. |
| AND OTHERS | ET.AL. | RIGHT-OF-WAY | R/W |
| CENTERLINE | C/L | SECTION | SEC. |
| CERTIFIED SURVEY MAP | CSM | STATION | STA. |
| CORNER | COR. | TEMPORARY LIMITED EASEMENT | TLE |
| DOCUMENT | DOC. | VOLUME | V. |
| EASEMENT | EASE. | **CURVE DATA** | |
| HIGHWAY EASEMENT | H.E. | LONG CHORD | LCH |
| LAND CONTRACT | LC | LONG CHORD BEARING | LCB |
| MONUMENT | MON. | RADIUS | R |
| PAGE | P. | DEGREE OF CURVE | D |
| PERMANENT LIMITED EASEMENT | PLE | CENTRAL ANGLE OR DELTA | DELTA |
| PROPERTY LINE | PL | LENGTH OF CURVE | L |
| RECORDED AS | (100') | TANGENT | TAN |

### NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, BAYFIELD COUNTY ZONE, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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."

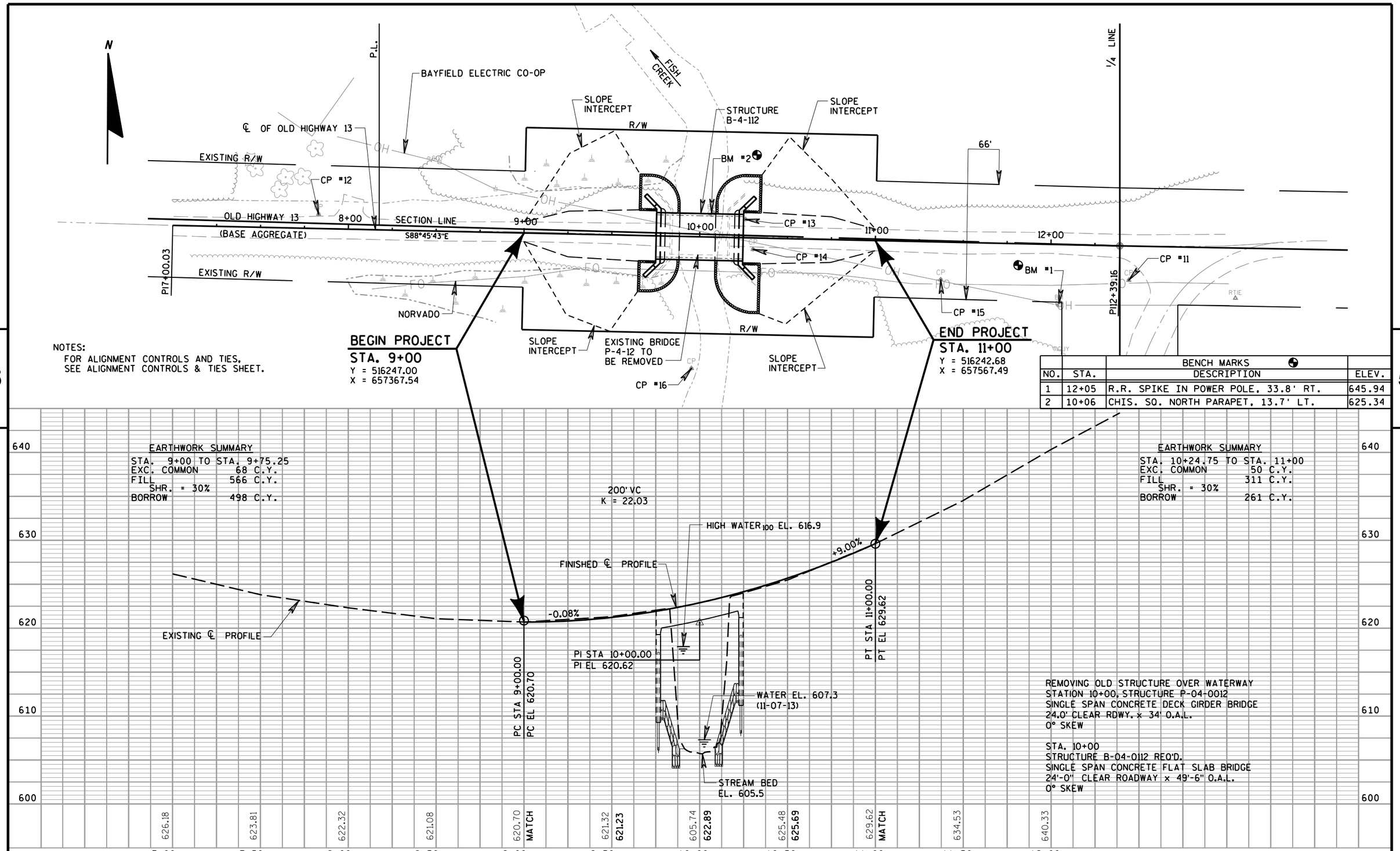
DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON A PRESUMED 66' WIDTH CENTERED ON THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 8 PER STATE STATUTE 82.31(2).

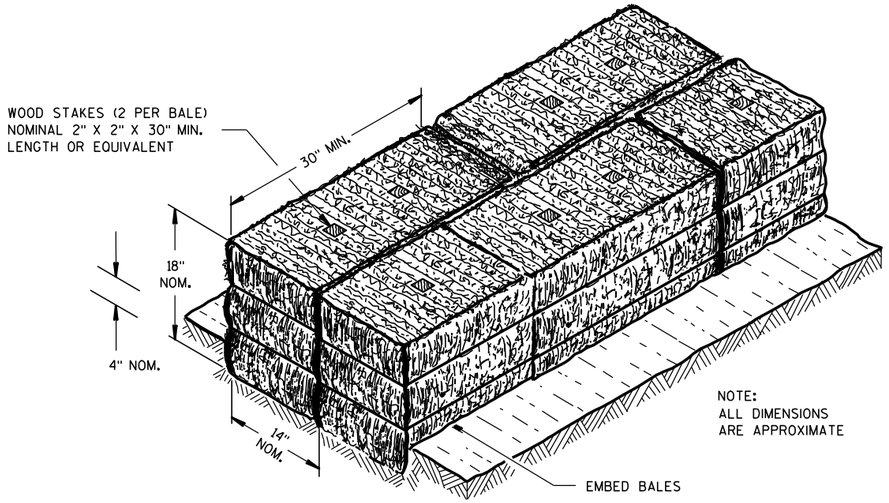
| REVISION DATE |
|---|



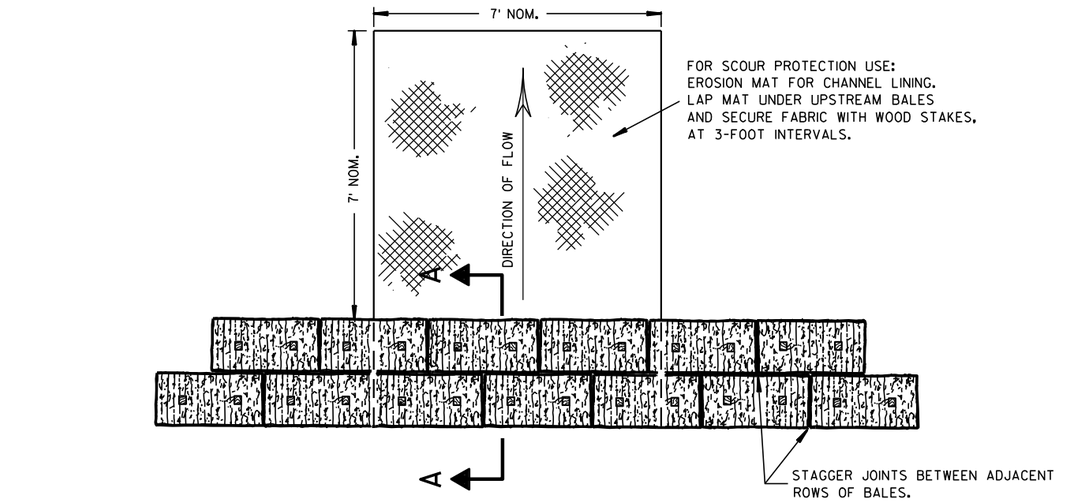

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | PLAN AND PROFILE | SCALE, FEET 0 25 50 | SHEET 11 E |
|---|---|---|---|---|---|

# Standard Detail Drawing List

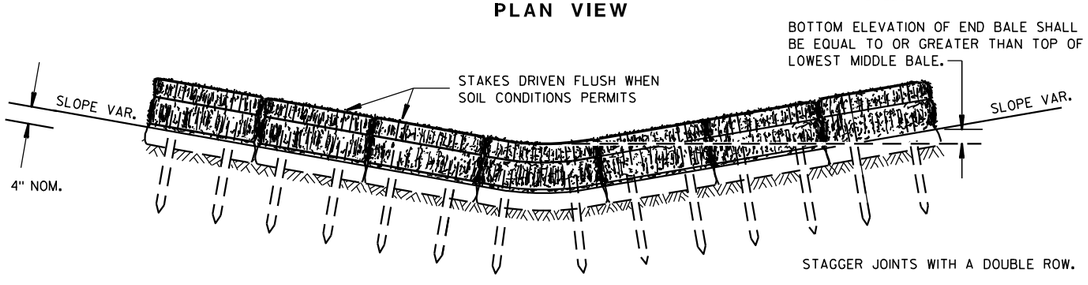
| | |
|---|---|
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-05A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C06-07 | SIGNING & MARKING FOR TWO LANE BRIDGES |




**SECTION A-A**




**PLAN VIEW**



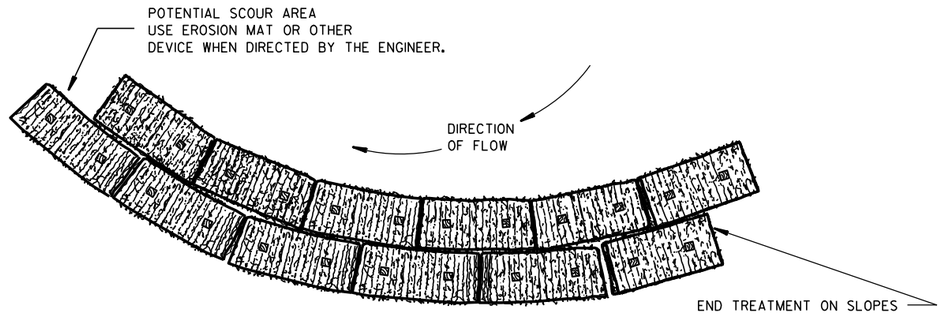

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

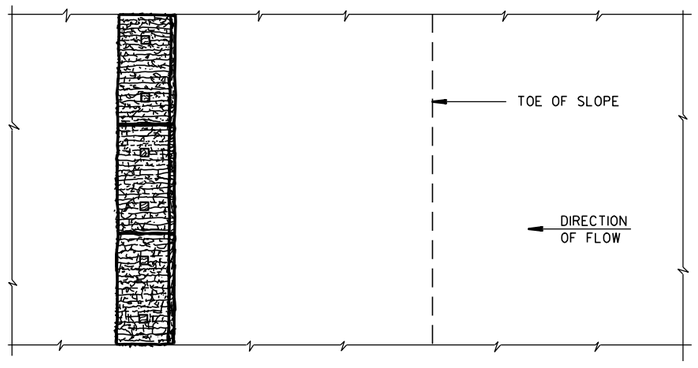
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

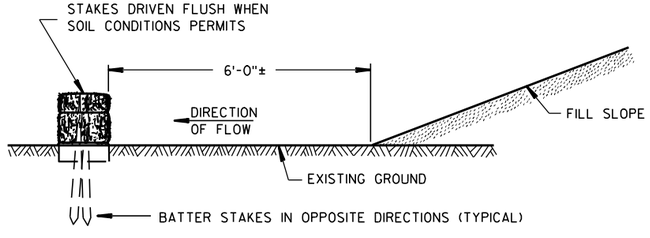



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

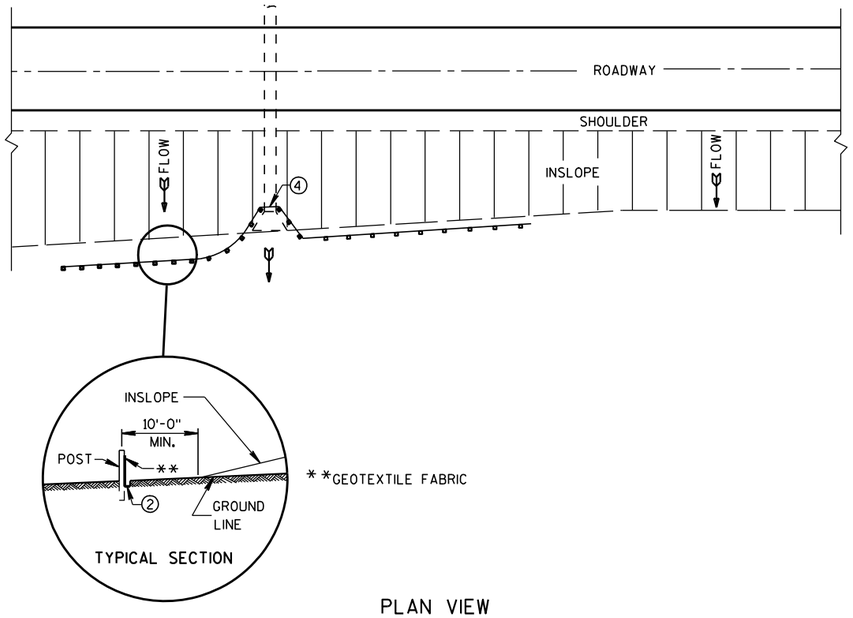


6

S.D.D. 8 E 8-3

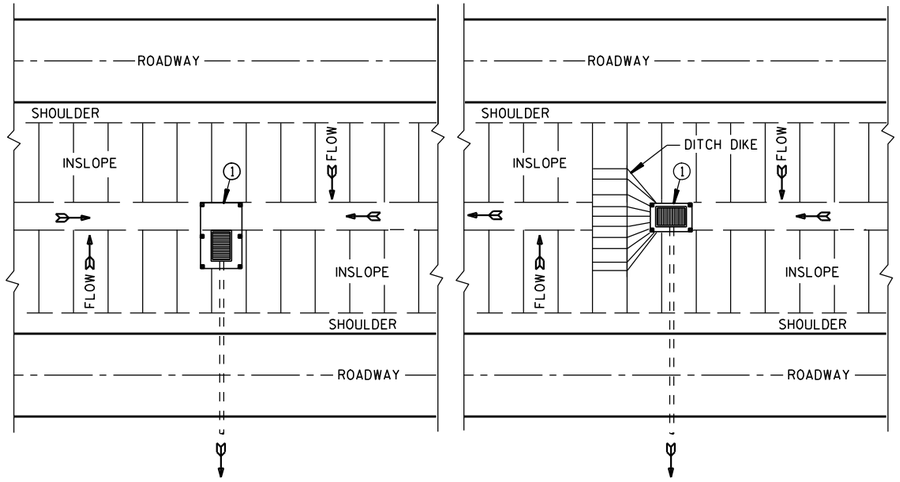
6

S.D.D. 8 E 8-3




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE




PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

## GENERAL NOTES

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

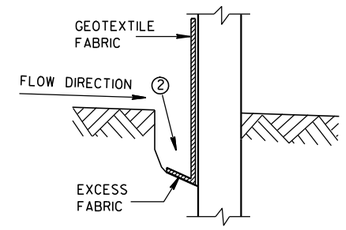
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

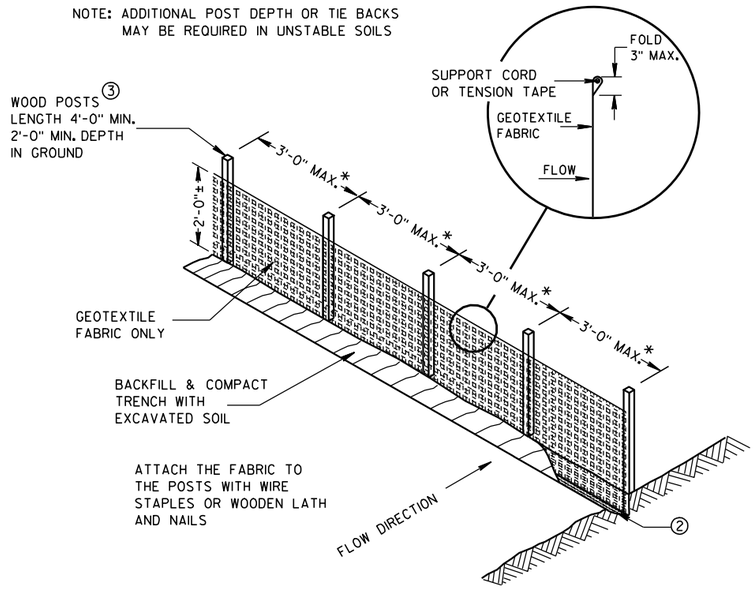
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

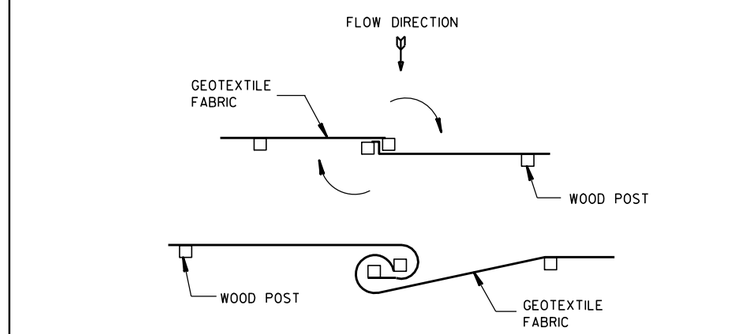
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



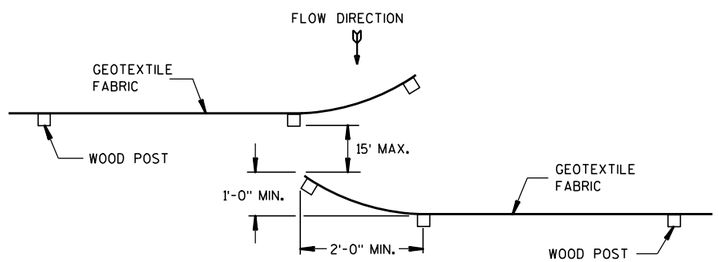

## TRENCH DETAIL




## SILT FENCE

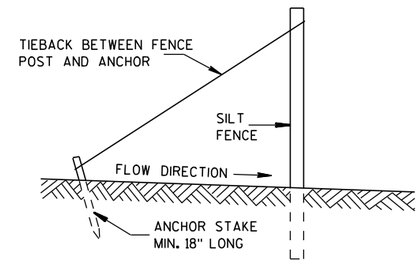



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE ⑤




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

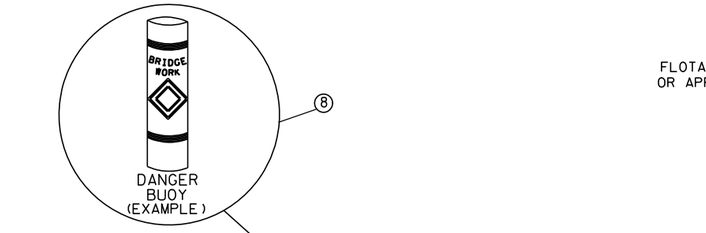


6

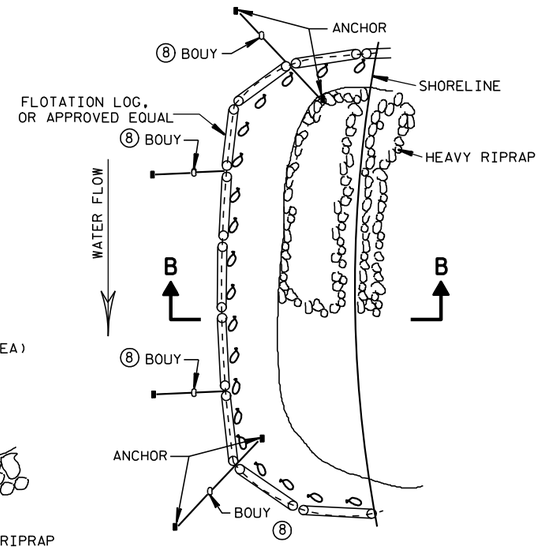
S.D.D. 8 E 9-6

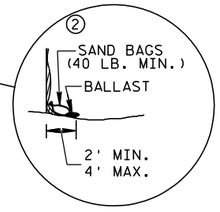
6

S.D.D. 8 E 9-6

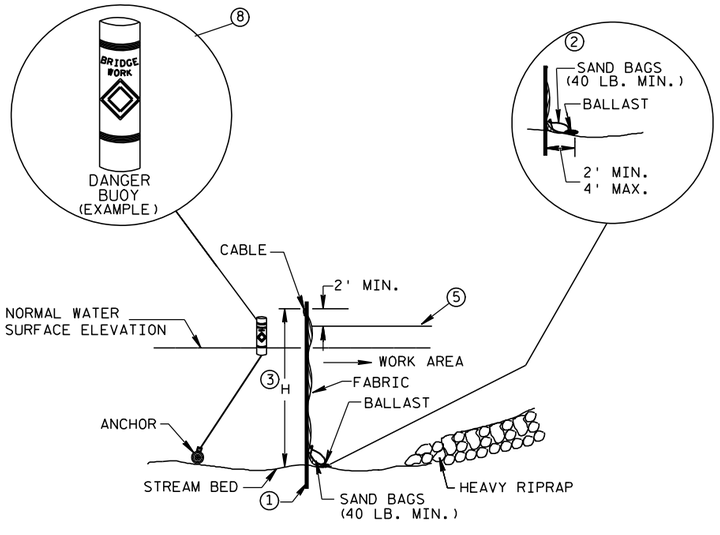



**SECTION B-B**



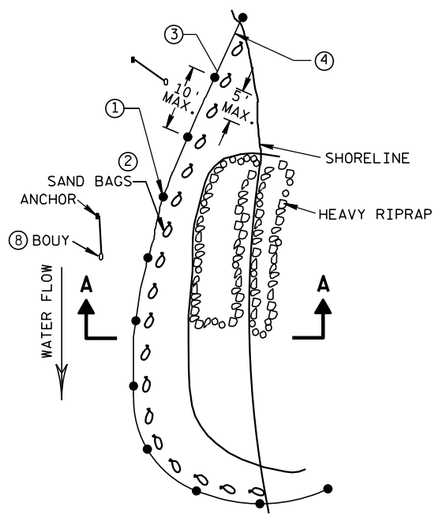




**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**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.

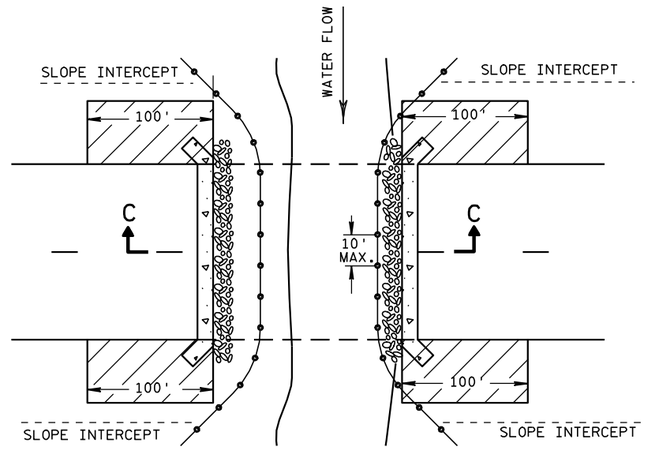
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

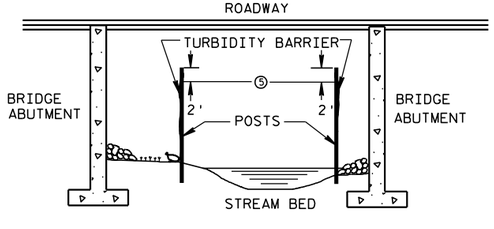
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

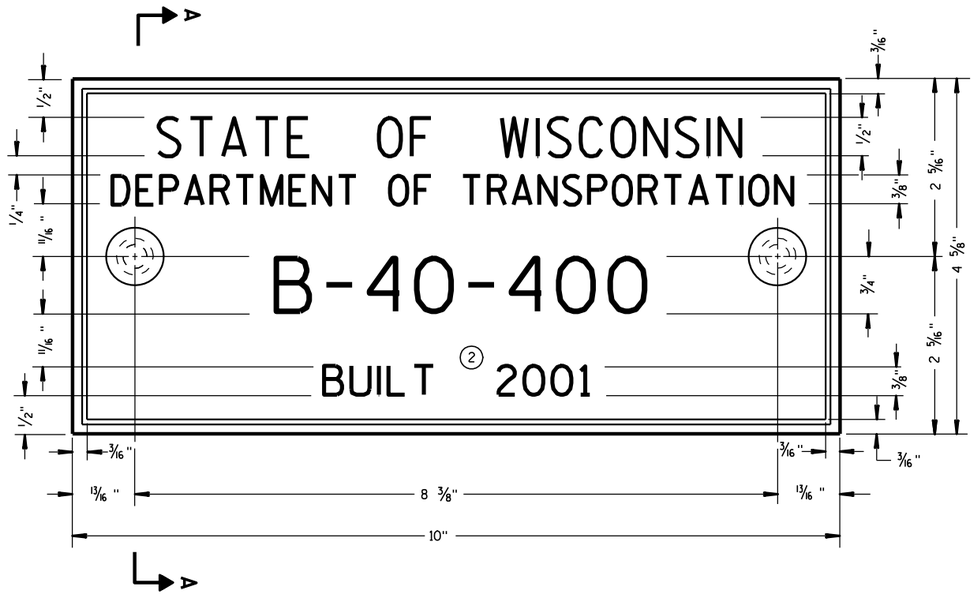
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



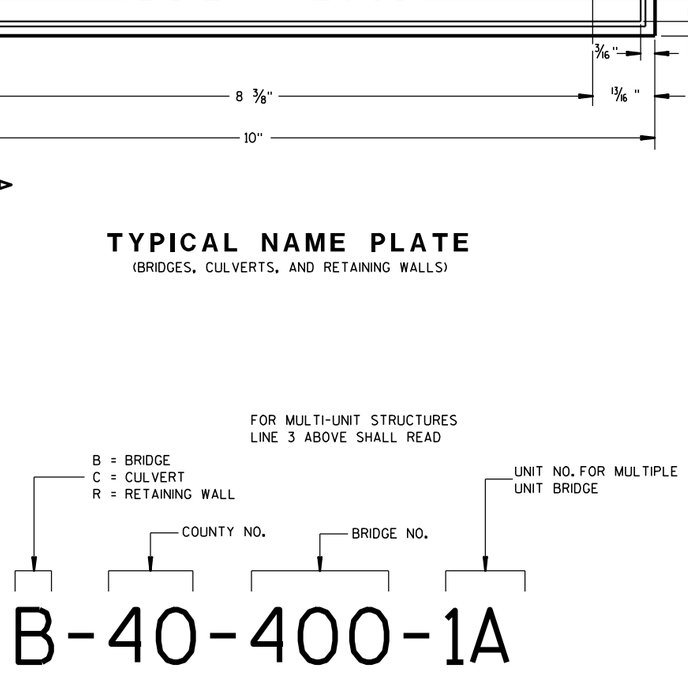
6

S.D.D. 8 E 11-2

S.D.D. 8 E 11-2




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




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

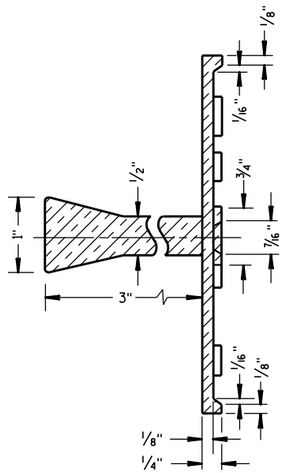
## GENERAL NOTES

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

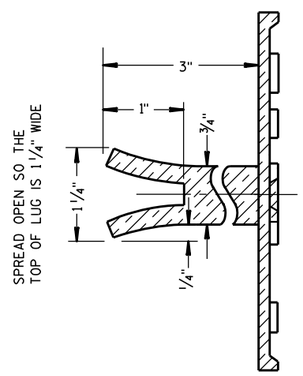
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

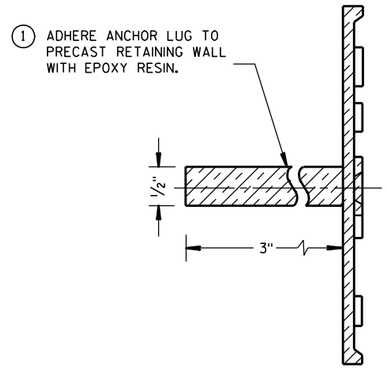
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




**SECTION A-A**




**ALTERNATE LUG**




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

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

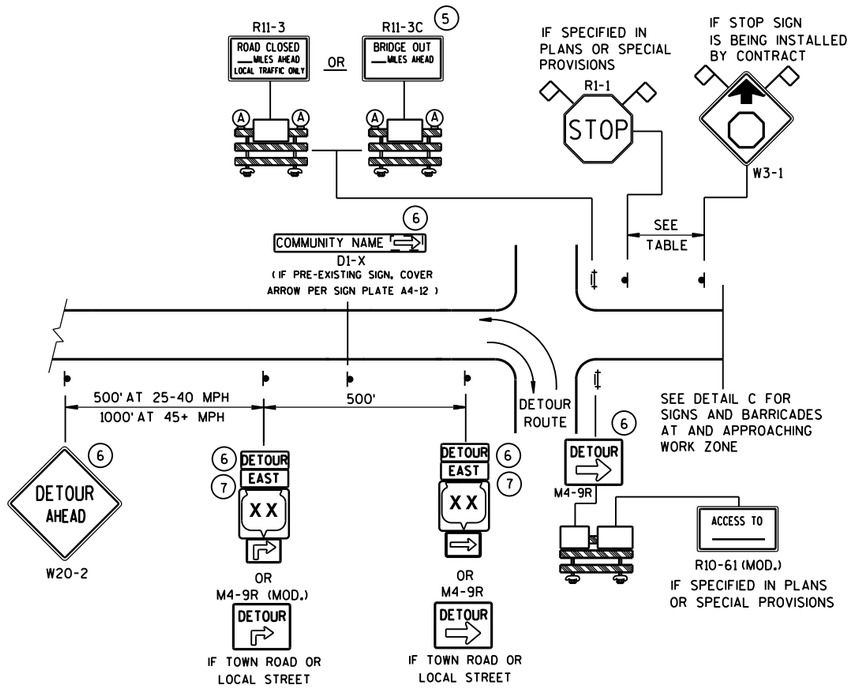


6

S.D.D. 12 A 3-10

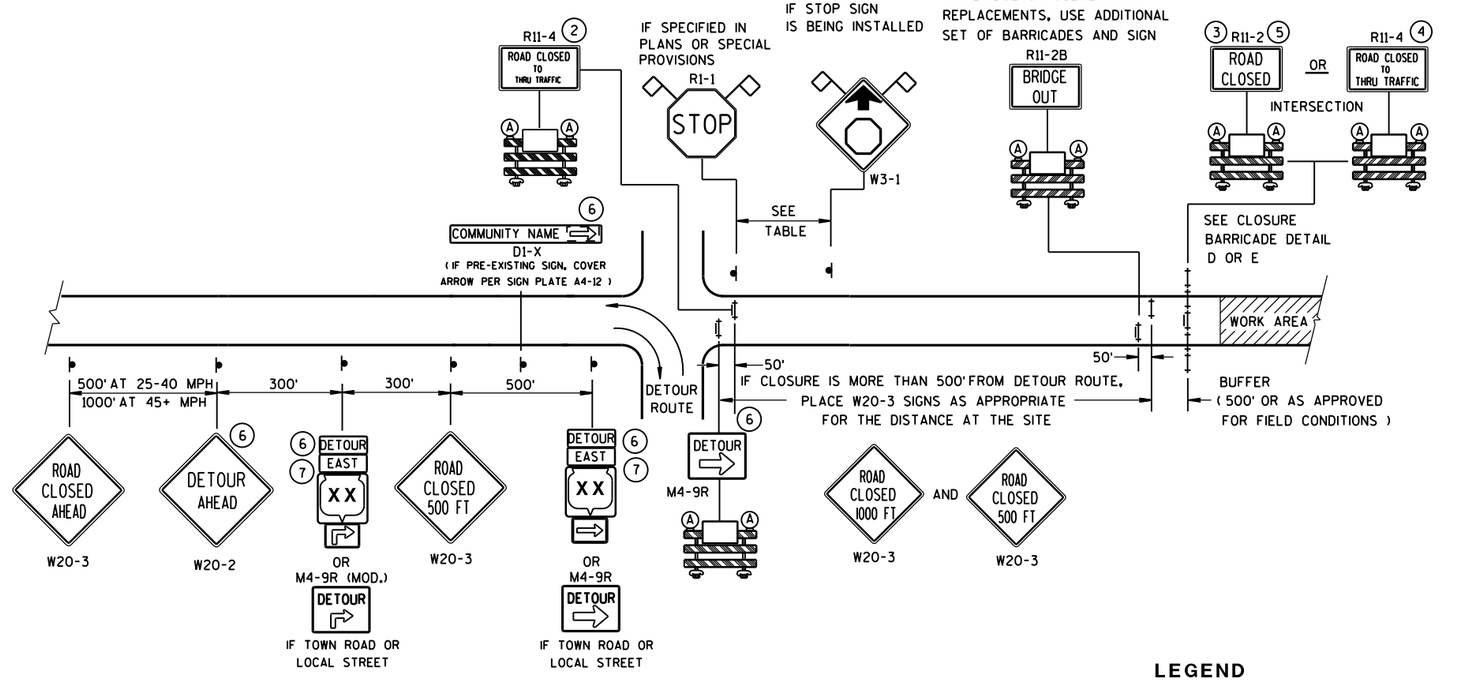
6

S.D.D. 12 A 3-10



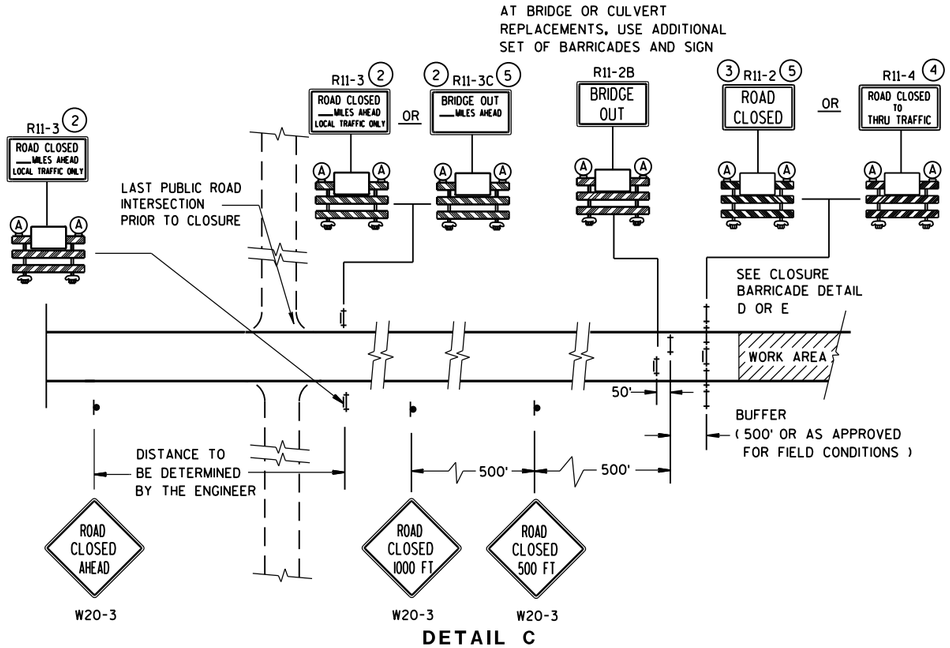

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

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

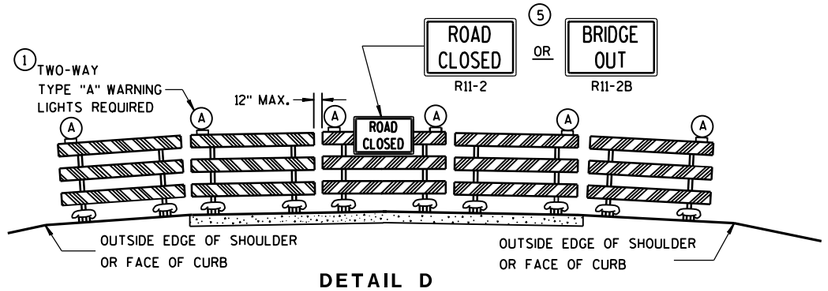
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA




6

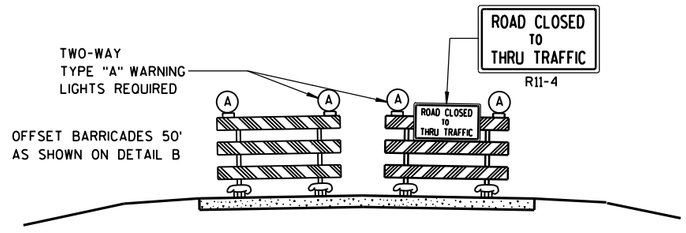
S.D.D. 15 C 2-5a




**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

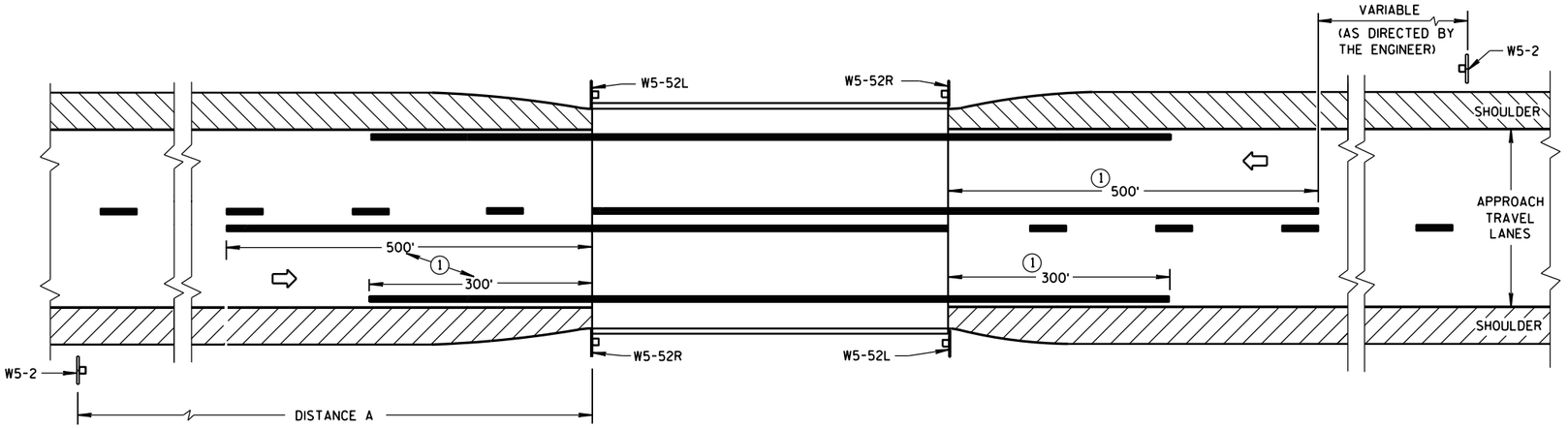




6



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.

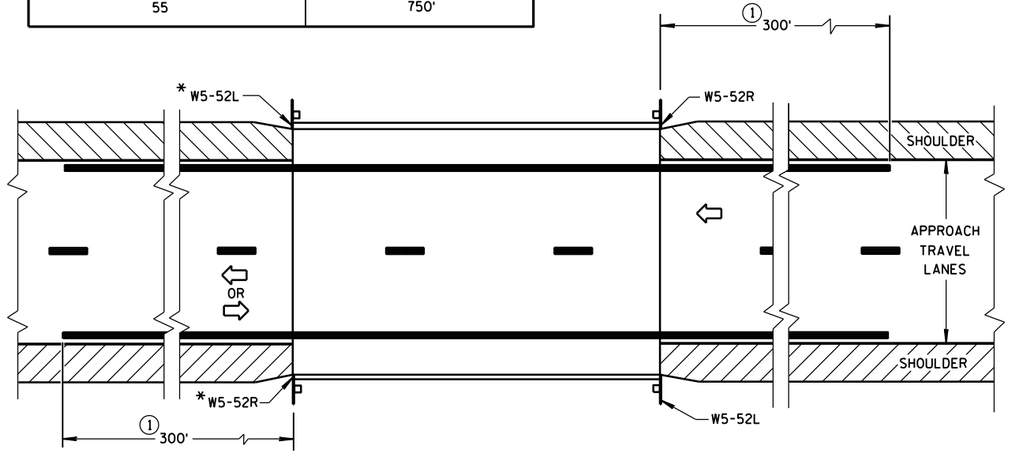
### DISTANCE TABLE

| 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



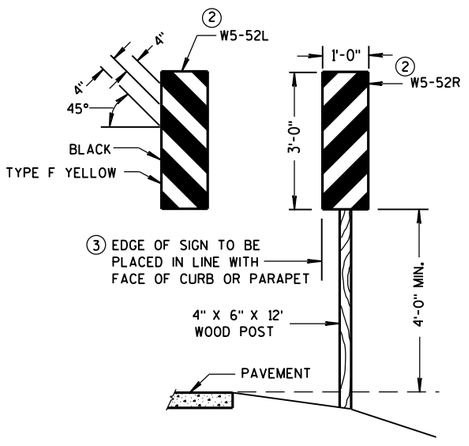

*OMIT ON ONE-WAY TRAVELLED WAYS

## SITUATION 2

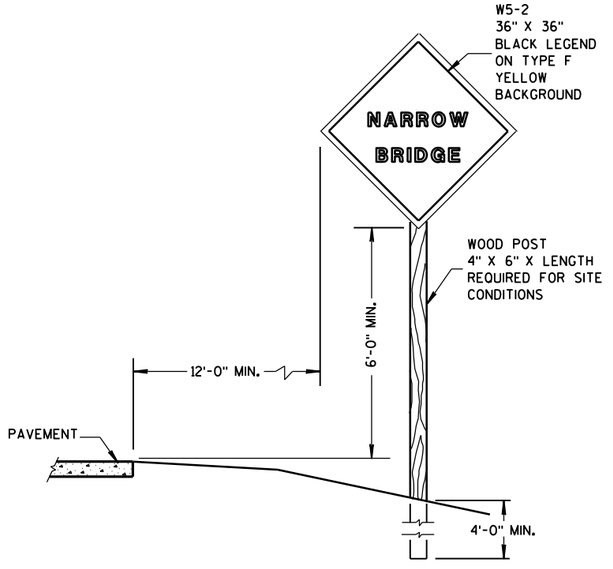
WARRANTING CRITERIA:

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



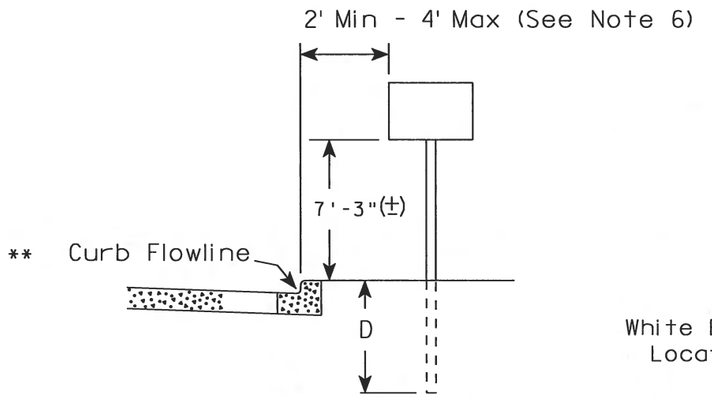


6

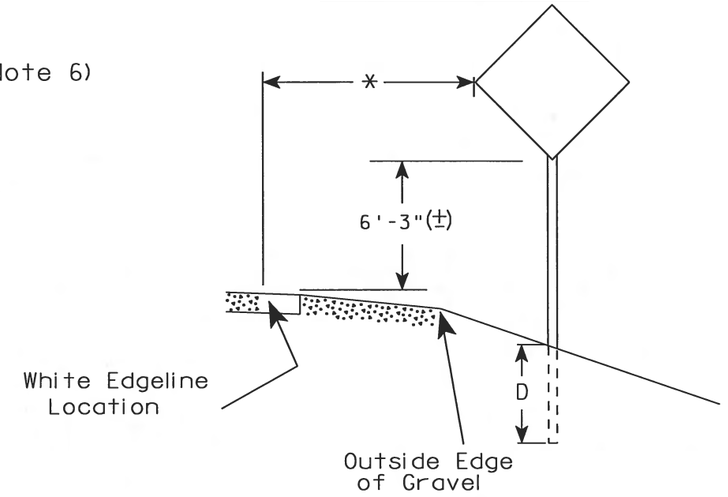


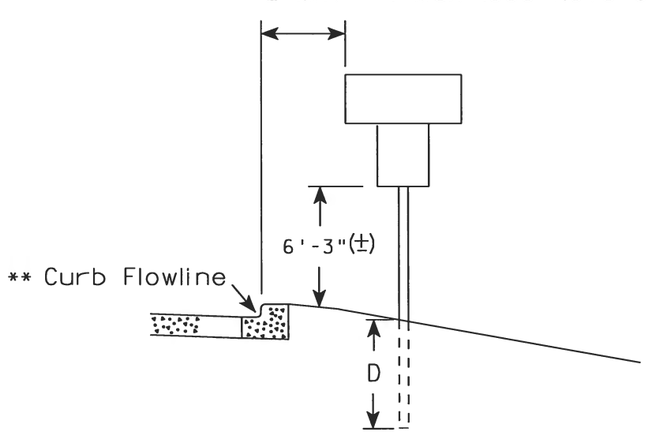
S.D.D. 15 C 6-7

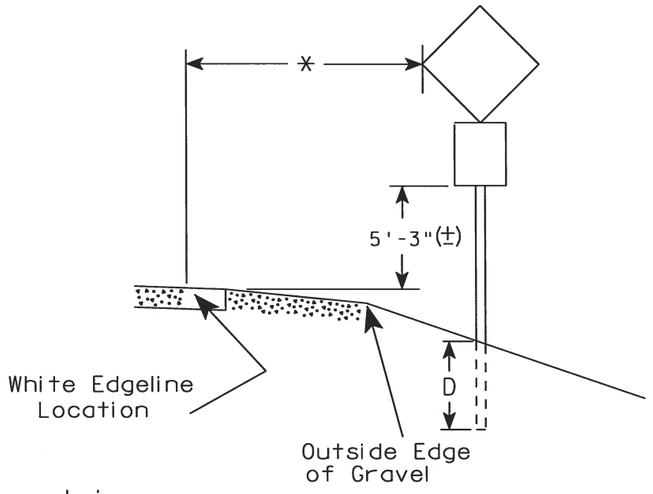
## URBAN AREA




## 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 (A2-1S) 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 signs shall be mounted at a height of 5'-3" (±) or as directd 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

### POST EMBEDMENT DEPTH

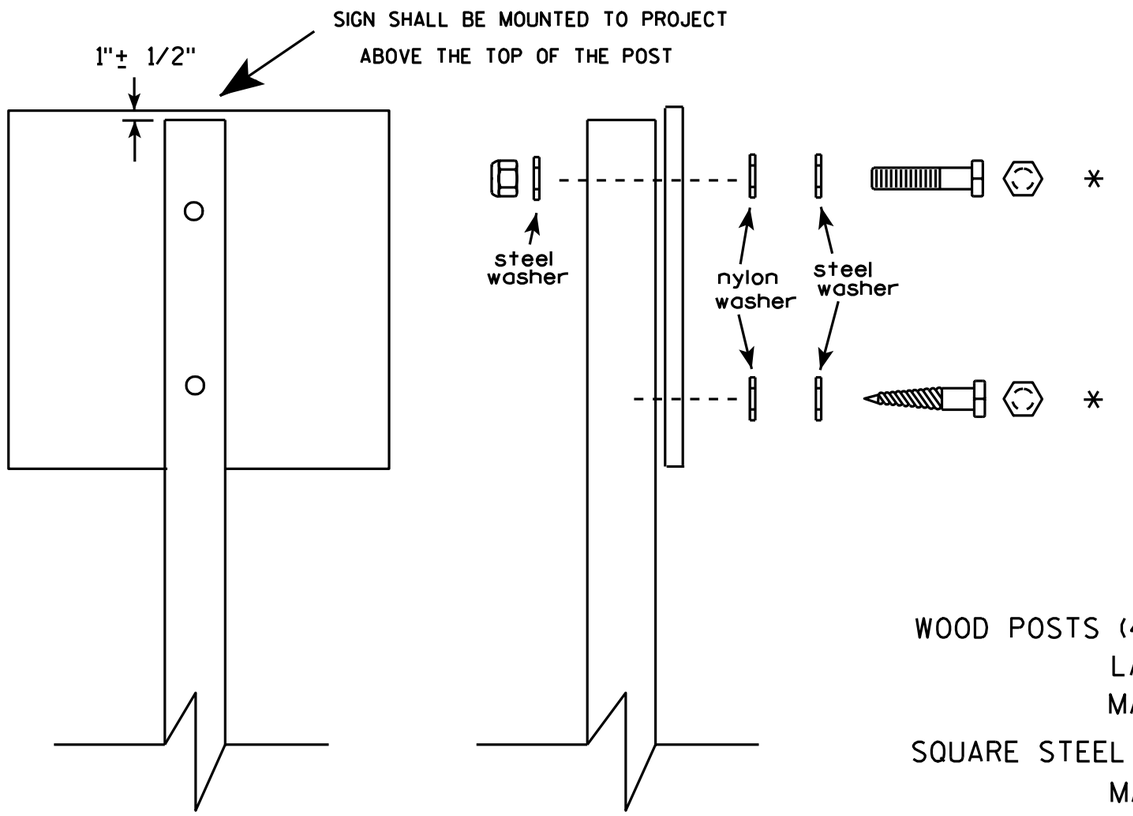
| Area of Sign Installation ( Sq.Ft. ) | D ( Min ) |
|---|---|
| 20 or Less | 4' |
| Greater than 20 | 5' |

# TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19




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

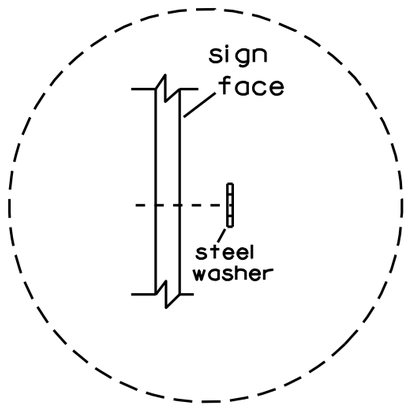
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

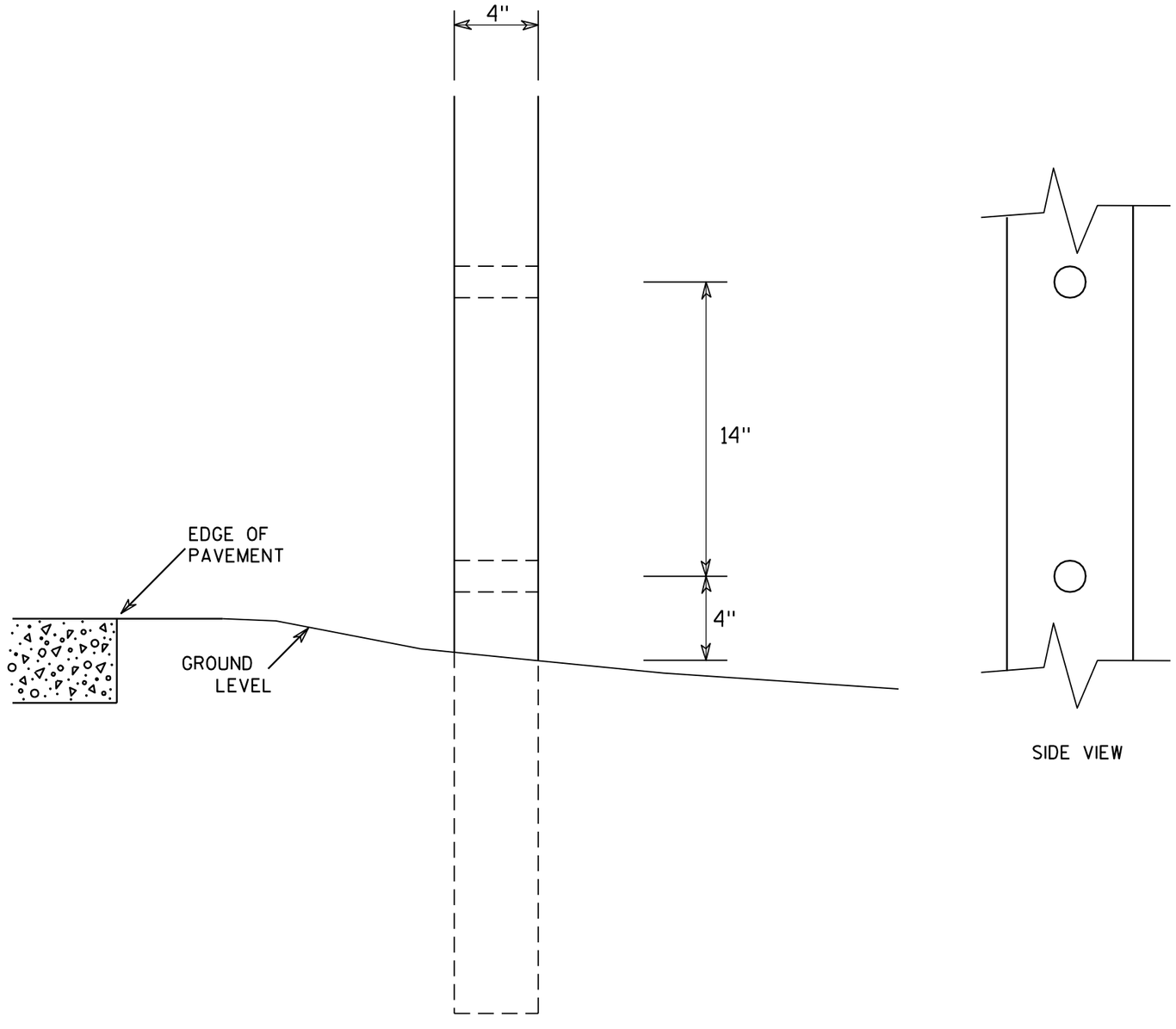
# ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 21 | 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.

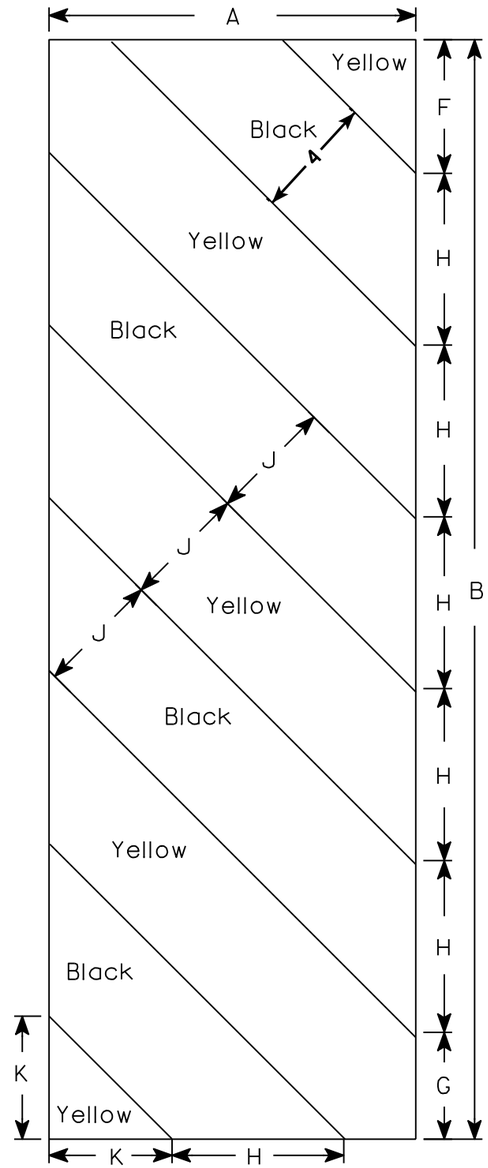
# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

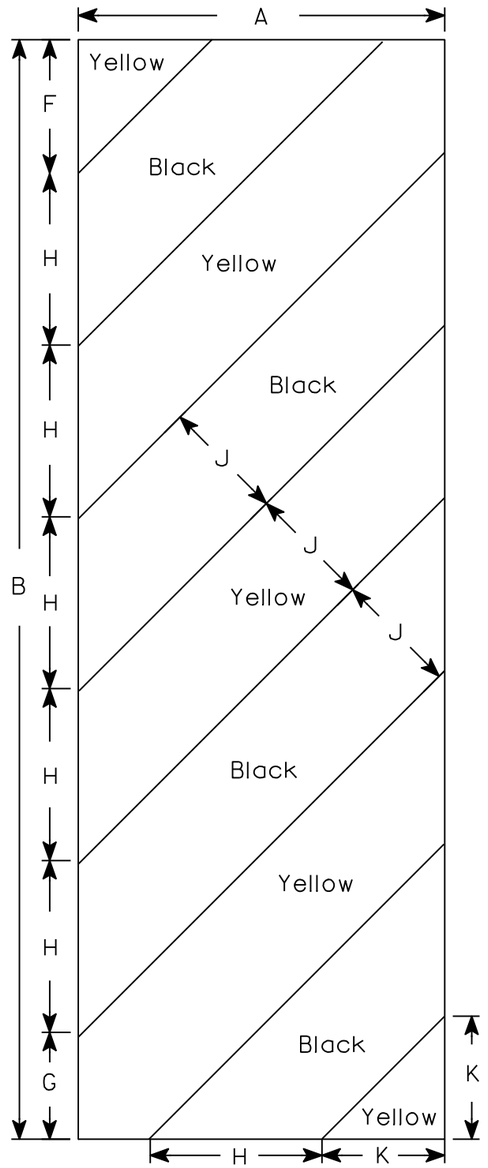
APPROVED Chester J Spang for State Traffic Engineer

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

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 22 | E |
|---|---|---|---|---|---|




W5-52L




W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 23 | E |
|---|---|---|---|---|---|

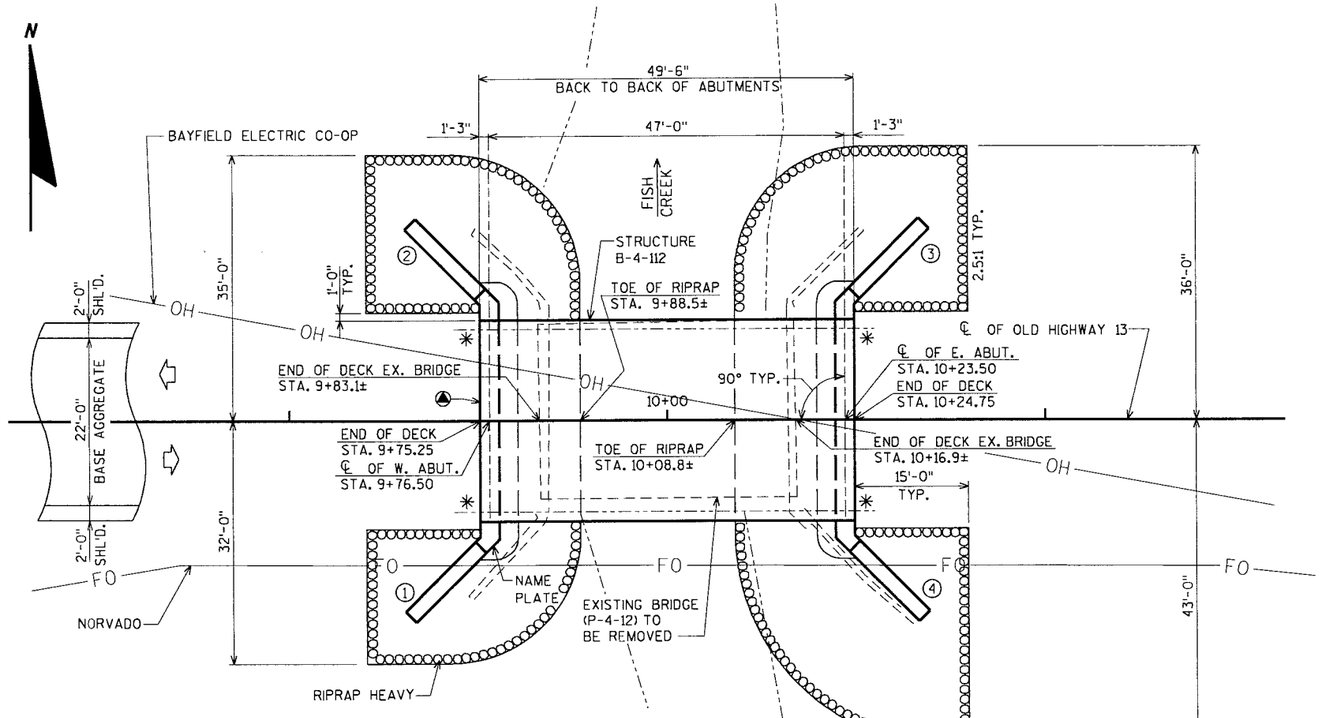
$PRFNAME$
U:\42-0913.00 - Bayfield County, In Orienta, Fish Creek\BRIDGE\420913 gp.dgn

DATE:
DRAWN BY:
DATE:
CHECKED BY:
DATE:
BACK CHECKED BY:
CORRECTED BY:

8

STATE PROJECT NUMBER

**8352-00-70**



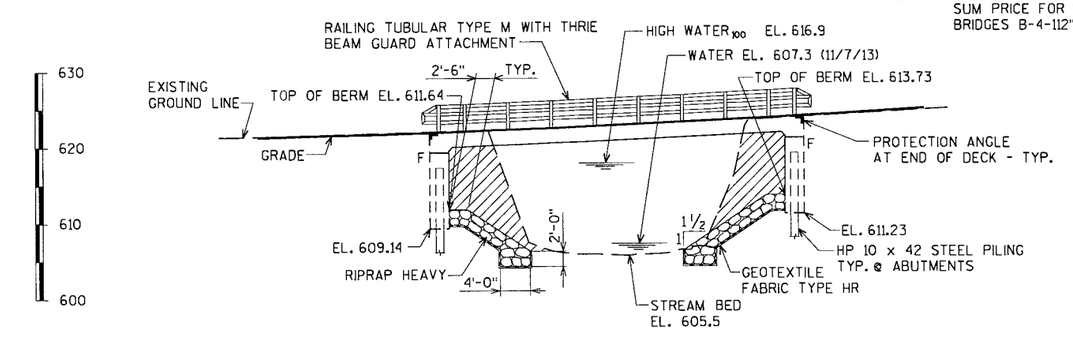

**PLAN**
SINGLE SPAN CONCRETE FLAT SLAB

✱ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.

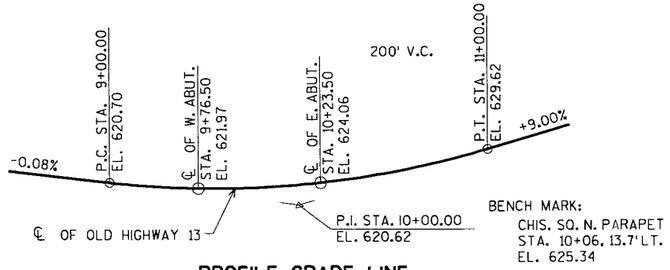
◯ DENOTES WING NUMBER.

▲ PROTECTION ANGLE AT END OF DECK - TYP.

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-4-112".



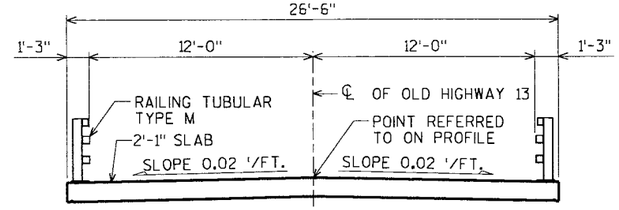

**ELEVATION**




**PROFILE GRADE LINE**
(OLD HIGHWAY 13)

## LIST OF DRAWINGS






**TYPICAL SECTION THRU BRIDGE**

## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.18
OPERATING RATING FACTOR: 1.53
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE ____ $f'_c$ = 4,000 p.s.i.
{ ALL OTHER ____ $f'_c$ = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) ____ $f_y$ = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD
DRAINAGE AREA = 13.4 sq. mi.
WATERWAY AREA = 339 sq. ft.
V = 8.5 f.p.s.
$Q_{100}$ = 2,900 c.f.s.
HIGH $WATER_{100}$ EL. 616.9
HIGH $WATER_2$ EL. 611.7
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2007)

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH OF 30'-0".

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

TRAFFIC DATA:

A.D.T. = <100 (2016)
A.D.T. = <100 (2036)
R.D.S. = 20 M.P.H.

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER
9/21/2015

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

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

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 09/23/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-4-112

OLD HIGHWAY 13 OVER FISH CREEK

COUNTY: BAYFIELD — TOWN/~~CITY/VILLAGE~~: ORIENTA

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| CJM | JCK | CLS/CJM | DNS |

GENERAL PLAN

SHEET 1 OF 11
24

8

PENTABLE:BBreau_shd_util.tbl

## TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | W. ABUT. | E. ABUT. | SUPER. | TOTAL |
|---|---|---|---|---|---|---|
| 203.0500.S | REMOVING OLD STRUCTURE OVER WATERWAY STATION 10+00 | LS | ----- | ----- | ----- | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-4-112 | LS | ----- | ----- | ----- | 1 |
| 210.0100 | BACKFILL STRUCTURE | CY | 310 | 310 | ----- | 620 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 47 | 47 | 105 | 199 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ----- | ----- | 180 | 180 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 2,320 | 2,320 | ----- | 4,640 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 2,030 | 2,030 | 18,290 | 22,350 |
| 506.0105 | STRUCTURAL STEEL CARBON | LB | ----- | ----- | 530 | 530 |
| 513.4061 | RAILING STEEL TYPE M B-4-112 | LF | ----- | ----- | 99 | 99 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 9 | 9 | ----- | 18 |
| 550.0500 | PILE POINTS | EACH | 10 | 10 | ----- | 20 |
| 550.1100 | PILING STEEL HP 10-INCH x 42 LB | LF | 300 | 300 | ----- | 600 |
| 606.0300 | RIPRAP HEAVY | CY | 110 | 150 | ----- | 260 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 80 | 80 | ----- | 160 |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 210 | 290 | ----- | 500 |
| | | | | | | |
| | NON-BID ITEMS | | | | | |
| | FILLER | SIZE | ----- | ----- | ----- | 1/2" & 3/4" |
| | | | | | | |
| | | | | | | |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

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

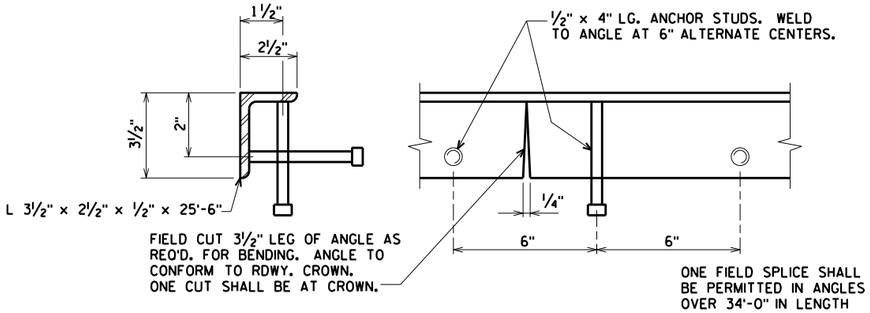
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-4-12, TO BE REMOVED, IS A SINGLE SPAN CONCRETE DECK GIRDER BRIDGE, 34.0 FT. LONG WITH A 24 FT. CLEAR ROADWAY WIDTH.

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

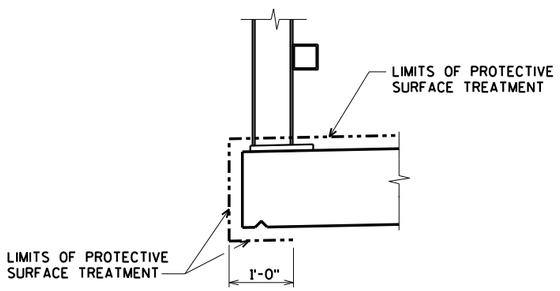
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.



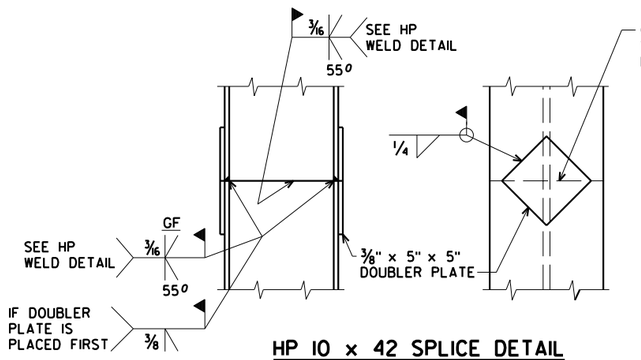

## PROTECTION ANGLE DETAIL

(ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL STEEL CARBON". (NO PAINT REQ'D.)

SANDBLAST PROTECTION ANGLE AFTER FABRICATION. AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.




## PROTECTIVE SURFACE TREATMENT DETAIL




## HP 10 x 42 SPLICE DETAIL

## HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

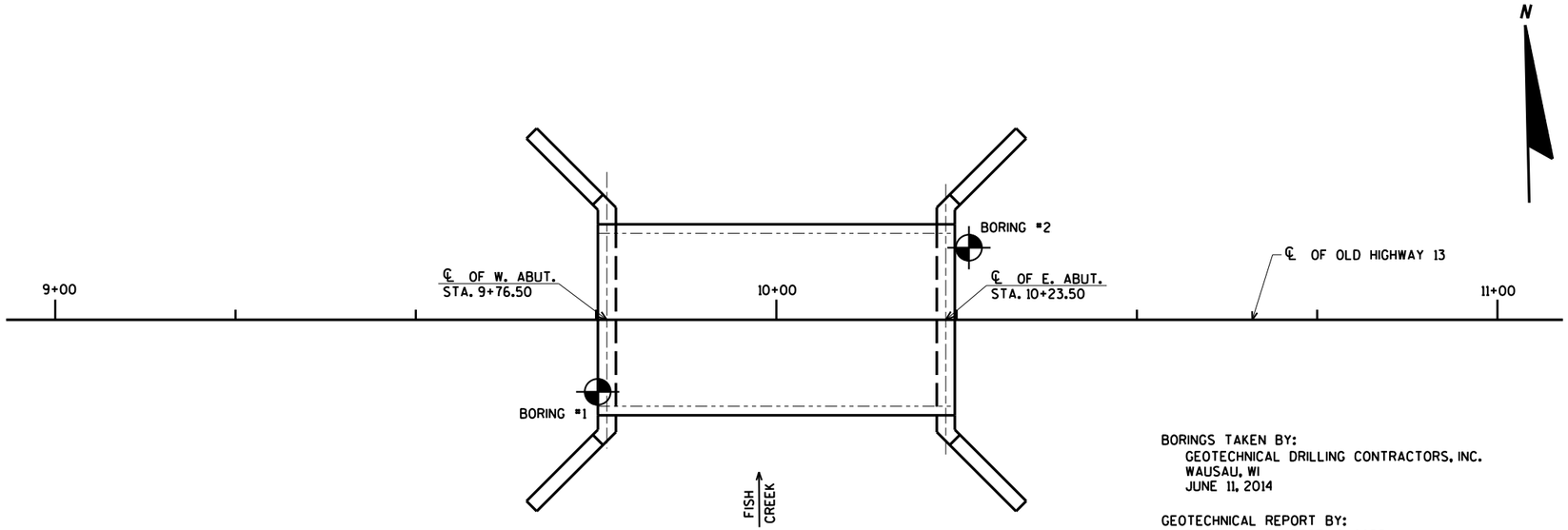
STRUCTURE B-4-112

DRAWN BY CJM | PLANS CK'D. CJM

QUANTITIES AND NOTES

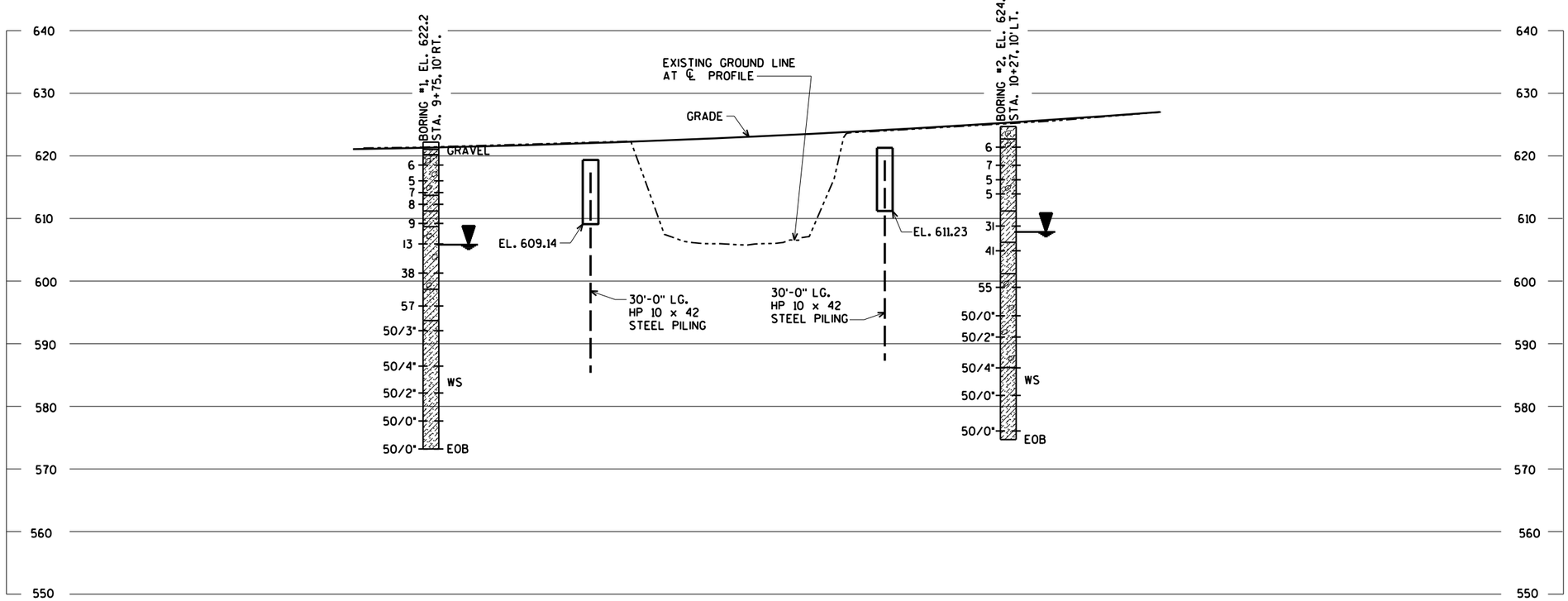
SHEET 2 OF 11
25

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com




BORINGS TAKEN BY:
GEOTECHNICAL DRILLING CONTRACTORS, INC.
WAUSAU, WI
JUNE 11, 2014

GEOTECHNICAL REPORT BY:
RIVER VALLEY TESTING CORP.
NEENAH, WI
JULY 14, 2014




STATE PROJECT NUMBER

8352-00-70

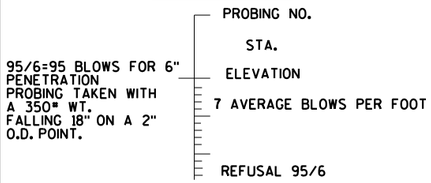
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

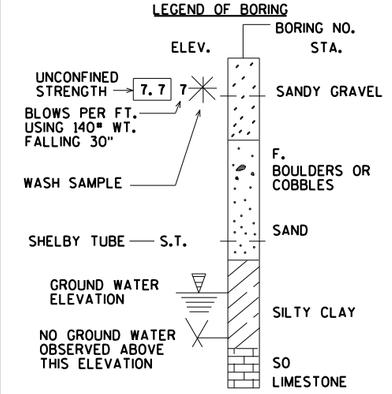
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING




LEGEND OF BORING




UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CJM | PLANS CK'D. CJM

SUBSURFACE EXPLORATION

SHEET 3 OF 11
26

8

8

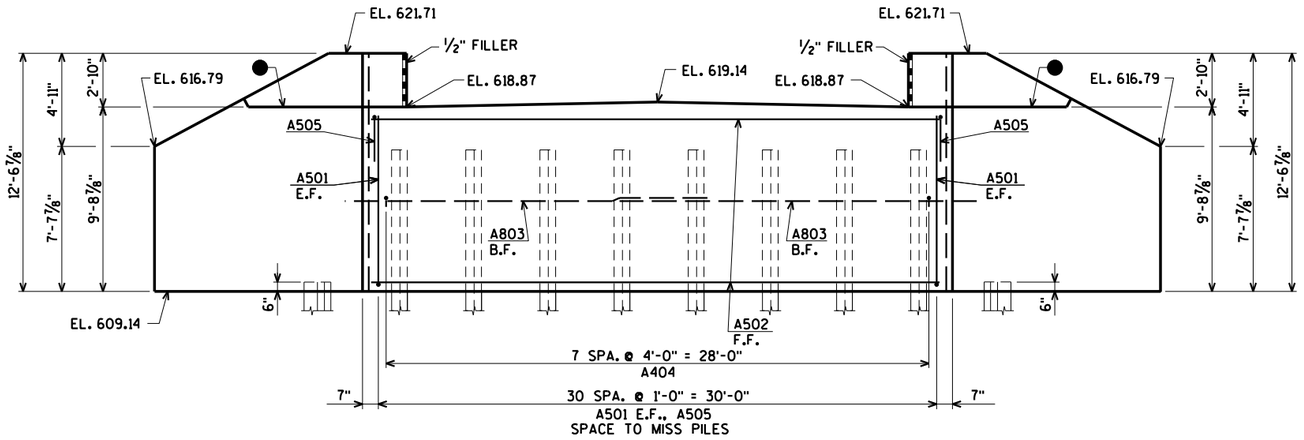
5/27/2015

PENTABLE:BReau_shd_util.tbl

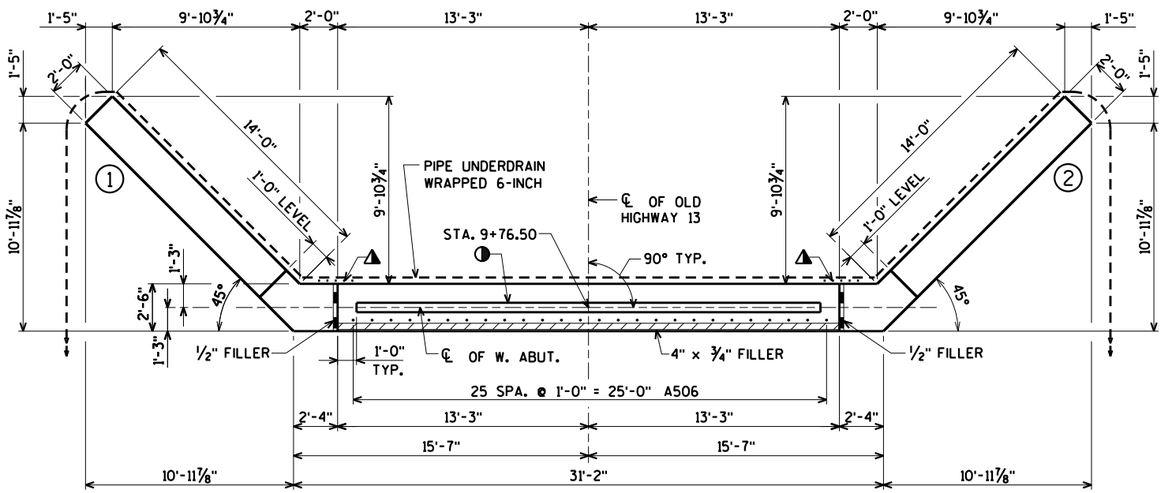
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

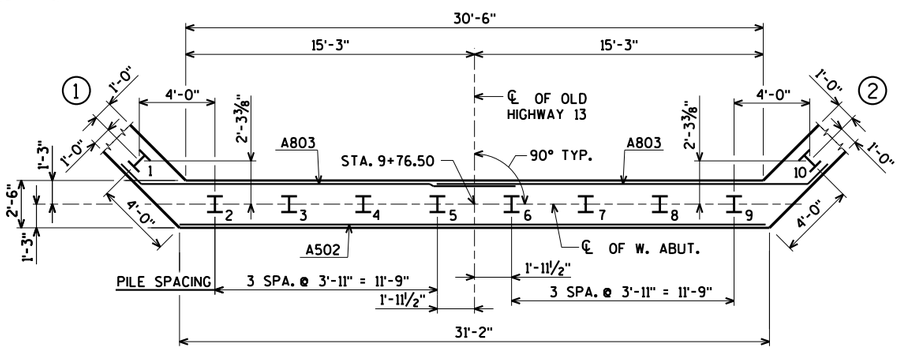
8352-00-70



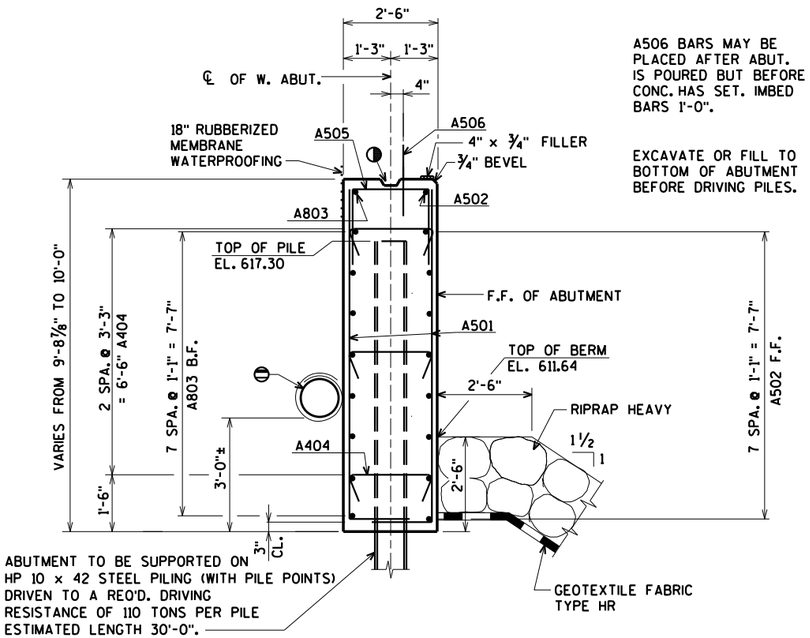

## ELEVATION
(LOOKING WEST)




## PLAN




## PILE LAYOUT




A506 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

## TYPICAL SECTION THRU BODY

NOTES: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 5.
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

WEST ABUTMENT

SHEET 4 OF 11
27

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

8

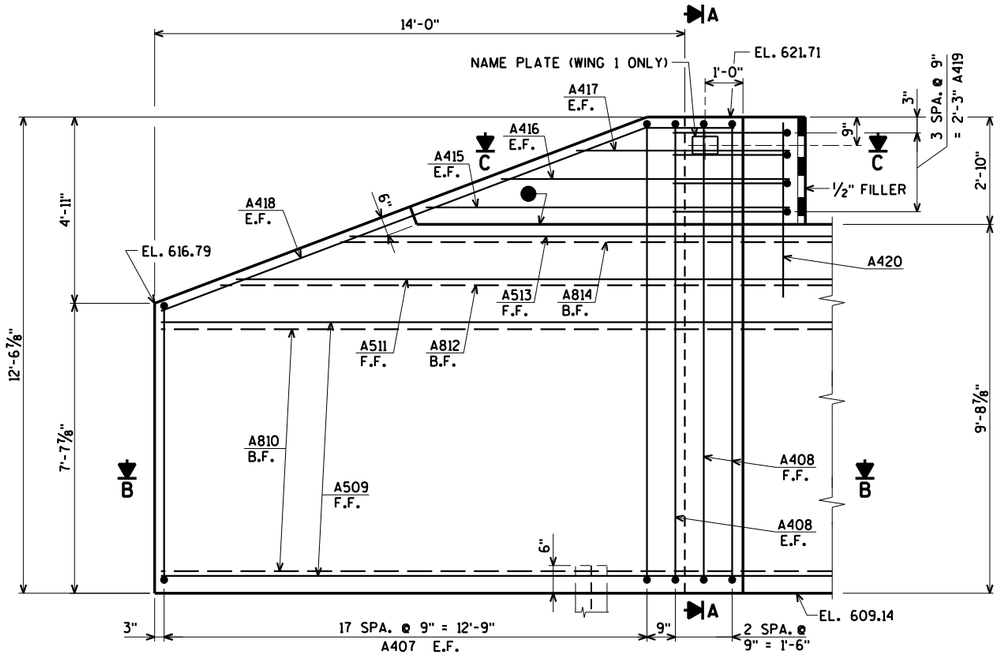
$PRFNAME$
U:\42-0913.00 - Bayfield County, Tn Oriental Fish Creek\BRIDGE\420913 wa.dgn

5/27/2015

PENTABLE:BReau_shd_util.tbl

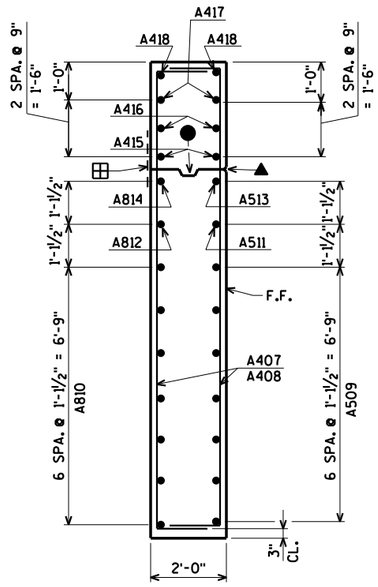
STATE PROJECT NUMBER

8352-00-70

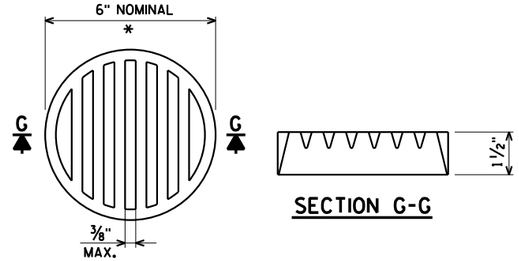



## ELEVATION - WING 1

(WING 1 SHOWN, WING 2 SIMILAR)




## SECTION A



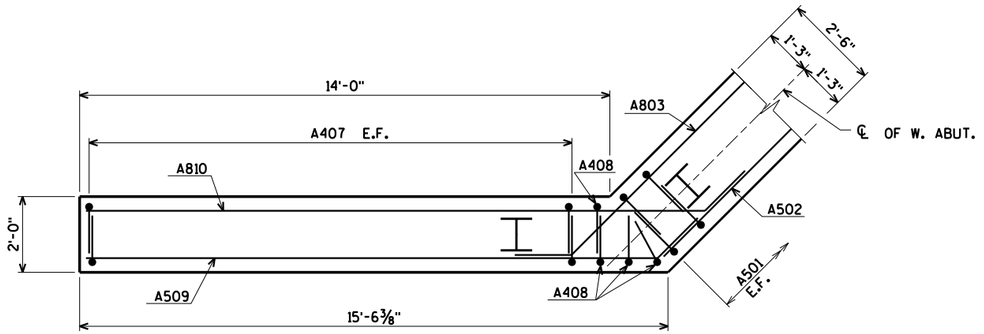

## SECTION G-G

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

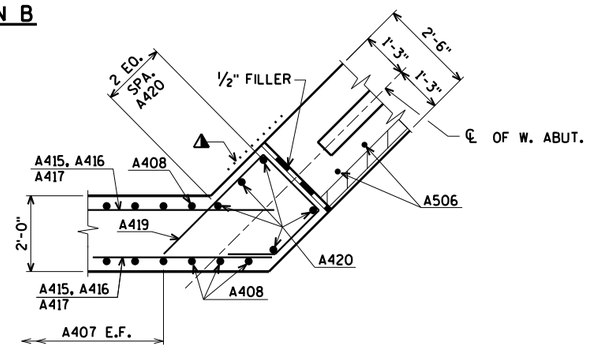
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

## RODENT SHIELD DETAIL




## SECTION B




## SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

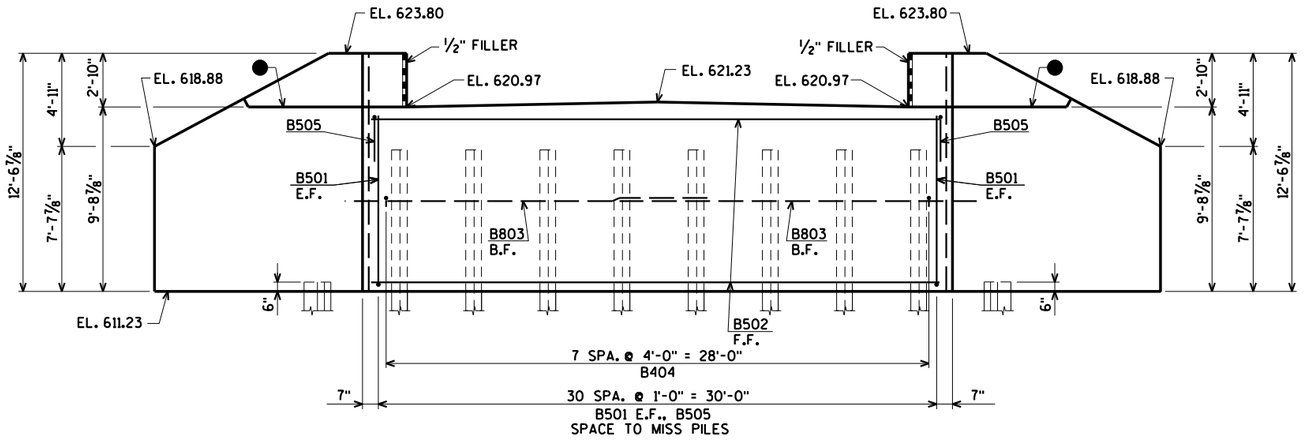
DRAWN BY CLS | PLANS CK'D. CJM

WEST ABUTMENT WING DETAILS

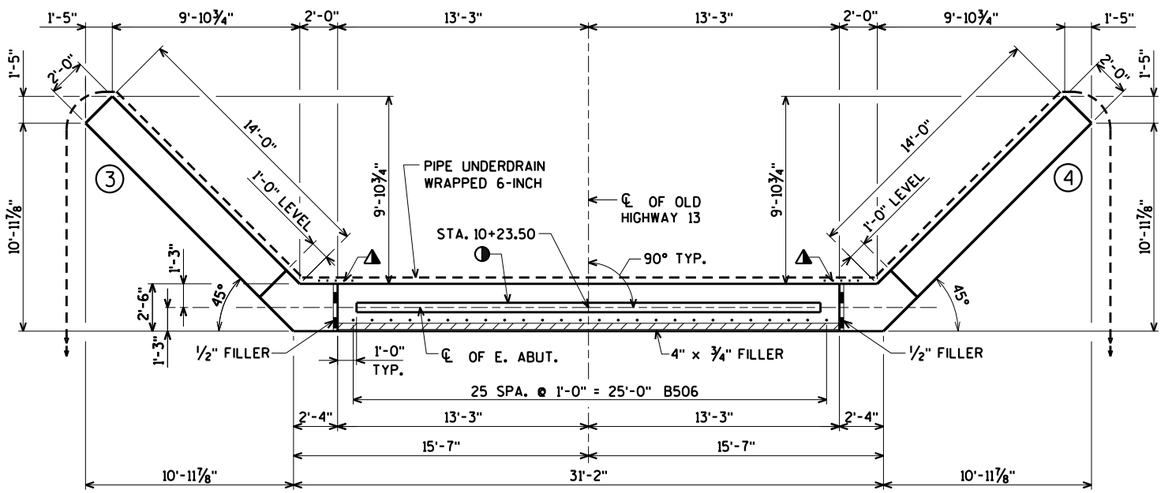
SHEET 5 OF 11
28

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

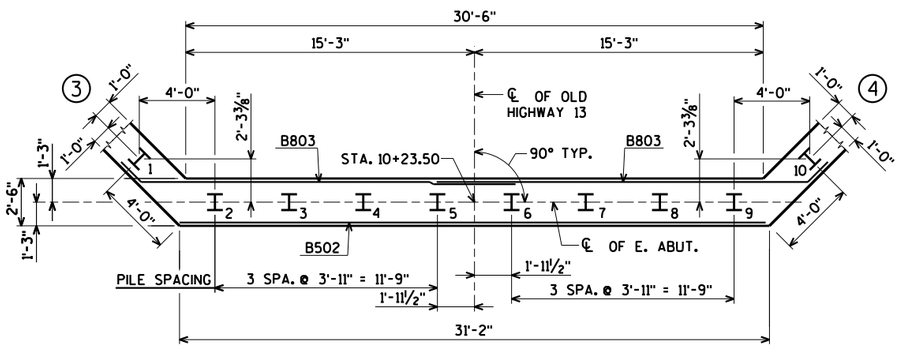
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)



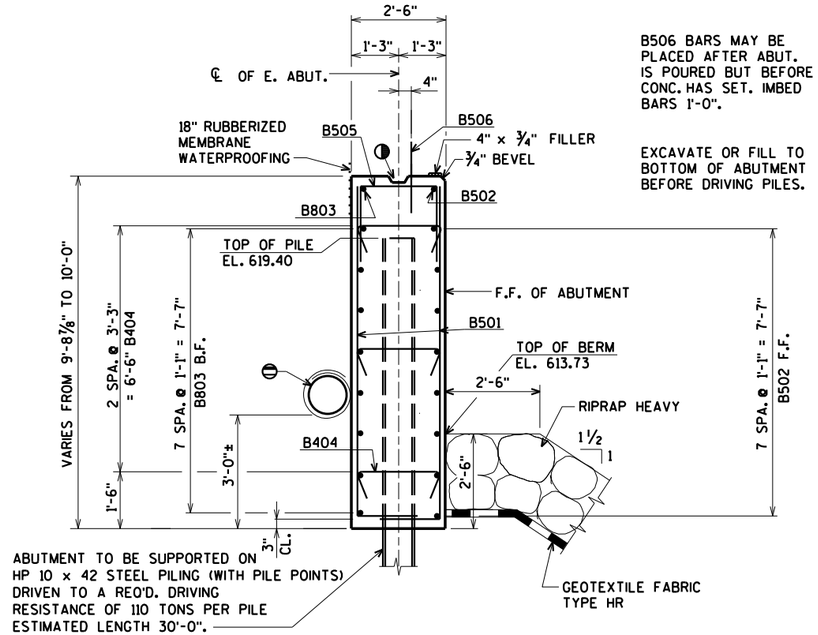

## ELEVATION
(LOOKING EAST)




## PLAN




## PILE LAYOUT




B506 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

## TYPICAL SECTION THRU BODY

NOTES: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 7.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

EAST ABUTMENT

SHEET 6 OF 11
29

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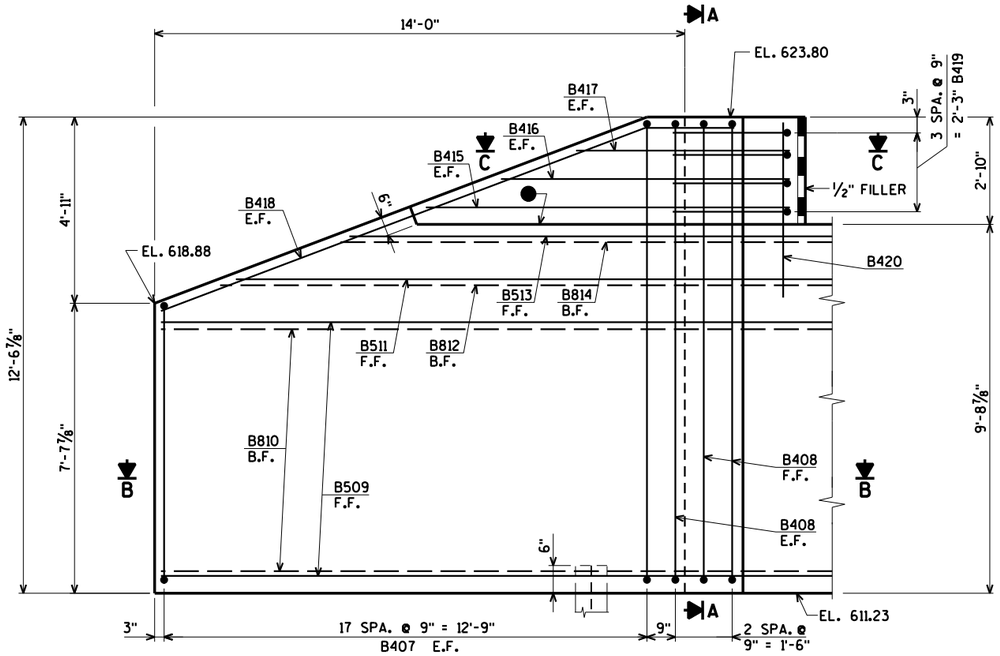
Eau Claire, WI 54701
www.AyresAssociates.com

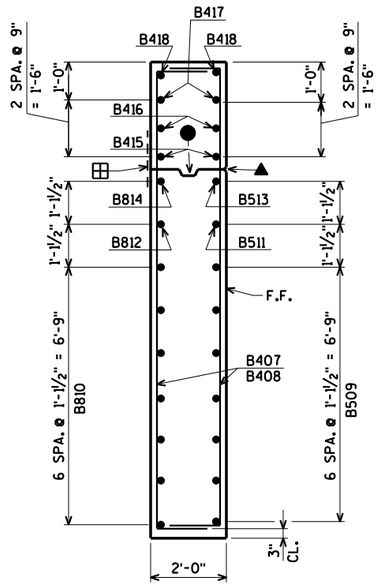
STATE PROJECT NUMBER

8352-00-70

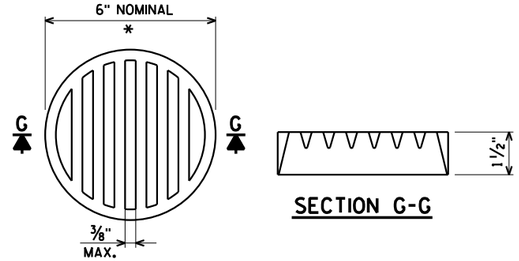



## ELEVATION - WING 3

(WING 3 SHOWN, WING 4 SIMILAR)




## SECTION A




## SECTION G-G

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

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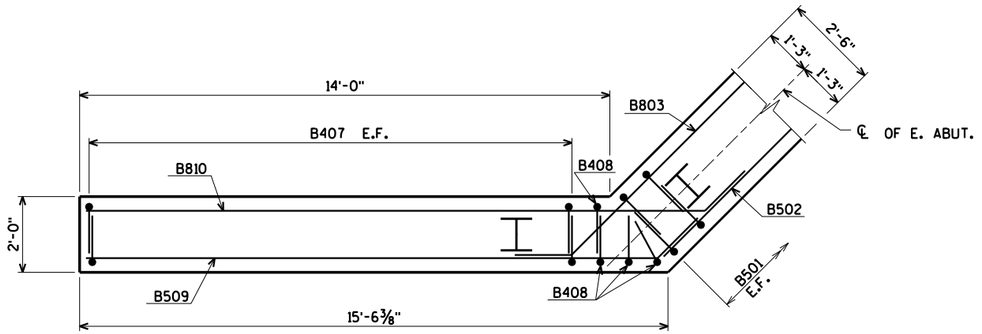
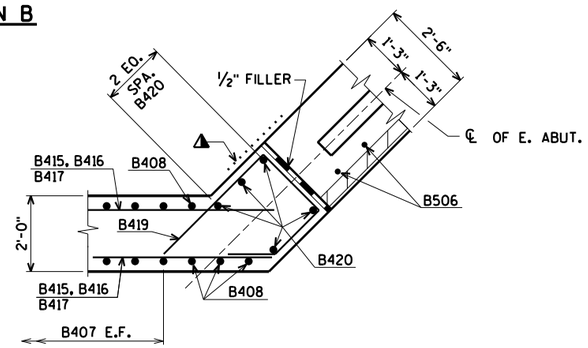
## RODENT SHIELD DETAIL




## SECTION B




## SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

EAST ABUTMENT WING DETAILS

SHEET 7 OF 11
30


ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

8352-00-70

## BILL OF BARS - WEST ABUTMENT

| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR | SERIES | 2,320# UNCOATED 2,030# COATED LOCATION |
|---|---|---|---|---|---|---|---|
| A501 | | 62 | 10-9 | X | | | BODY VERT. E.F. |
| A502 | | 9 | 30-11 | | | | BODY HORIZ. F.F. |
| A803 | | 18 | 21-7 | X | | | BODY HORIZ. B.F. |
| A404 | | 24 | 2-9 | X | | | BODY TIES |
| A505 | | 31 | 7-9 | X | | | BODY VERT. TOP |
| A506 | X | 26 | 2-0 | | | | BODY DOWELS |
| A407 | X | 72 | 12-0 | X | | ⊗ | WING VERT. E.F. |
| A408 | X | 8 | 14-7 | X | | | WING VERT. E.F. |
| A509 | X | 14 | 16-9 | X | | | WING HORIZ. F.F. |
| A810 | X | 14 | 18-3 | X | | | WING HORIZ. B.F. |
| A511 | X | 2 | 15-1 | X | | | WING HORIZ. F.F. |
| A812 | X | 2 | 16-11 | X | | | WING HORIZ. B.F. |
| A513 | X | 2 | 12-1 | X | | | WING HORIZ. F.F. |
| A814 | X | 2 | 14-0 | X | | | WING HORIZ. B.F. |
| A415 | X | 4 | 8-8 | | | | WING HORIZ. E.F. |
| A416 | X | 4 | 6-8 | | | | WING HORIZ. E.F. |
| A417 | X | 4 | 4-8 | | | | WING HORIZ. E.F. |
| A418 | X | 4 | 15-1 | X | | | WING DIAG. E.F. |
| A419 | X | 8 | 8-5 | X | | | WING HORIZ. |
| A420 | X | 10 | 4-4 | | | | WING VERT. |

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

## BILL OF BARS - EAST ABUTMENT

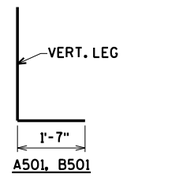
| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR | SERIES | 2,320# UNCOATED 2,030# COATED LOCATION |
|---|---|---|---|---|---|---|---|
| B501 | | 62 | 10-9 | X | | | BODY VERT. E.F. |
| B502 | | 9 | 30-11 | | | | BODY HORIZ. F.F. |
| B803 | | 18 | 21-7 | X | | | BODY HORIZ. B.F. |
| B404 | | 24 | 2-9 | X | | | BODY TIES |
| B505 | | 31 | 7-9 | X | | | BODY VERT. TOP |
| B506 | X | 26 | 2-0 | | | | BODY DOWELS |
| B407 | X | 72 | 12-0 | X | | ⊗ | WING VERT. E.F. |
| B408 | X | 8 | 14-7 | X | | | WING VERT. E.F. |
| B509 | X | 14 | 16-9 | X | | | WING HORIZ. F.F. |
| B810 | X | 14 | 18-3 | X | | | WING HORIZ. B.F. |
| B511 | X | 2 | 15-1 | X | | | WING HORIZ. F.F. |
| B812 | X | 2 | 16-11 | X | | | WING HORIZ. B.F. |
| B513 | X | 2 | 12-1 | X | | | WING HORIZ. F.F. |
| B814 | X | 2 | 14-0 | X | | | WING HORIZ. B.F. |
| B415 | X | 4 | 8-8 | | | | WING HORIZ. E.F. |
| B416 | X | 4 | 6-8 | | | | WING HORIZ. E.F. |
| B417 | X | 4 | 4-8 | | | | WING HORIZ. E.F. |
| B418 | X | 4 | 15-1 | X | | | WING DIAG. E.F. |
| B419 | X | 8 | 8-5 | X | | | WING HORIZ. |
| B420 | X | 10 | 4-4 | | | | WING VERT. |

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

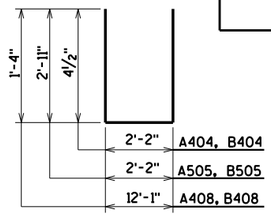
B.F. DENOTES BACK FACE.

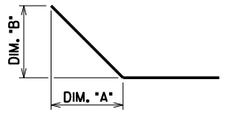
F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

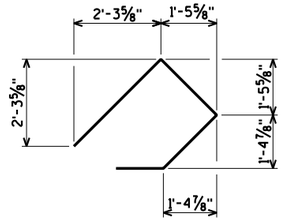



A501, B501




| BAR NO. | DIM. "A" | DIM. "B" |
|---|---|---|
| A803 | 1'-0¾" | 1'-0¾" |
| A509 | 1'-0¾" | 1'-0¾" |
| A810 | 1'-0¾" | 1'-0¾" |
| A511 | 1'-0¾" | 1'-0¾" |
| A812 | 1'-0¾" | 1'-0¾" |
| A513 | 1'-0¾" | 1'-0¾" |
| A814 | 1'-0¾" | 1'-0¾" |
| A418 | 12'-10" | 4'-10" |
| B803 | 1'-0¾" | 1'-0¾" |
| B509 | 1'-0¾" | 1'-0¾" |
| B810 | 1'-0¾" | 1'-0¾" |
| B511 | 1'-0¾" | 1'-0¾" |
| B812 | 1'-0¾" | 1'-0¾" |
| B513 | 1'-0¾" | 1'-0¾" |
| B814 | 1'-0¾" | 1'-0¾" |
| B418 | 12'-10" | 4'-10" |

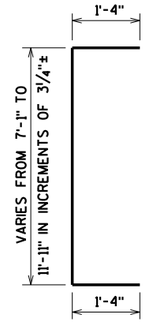



A419, B419

## BAR SERIES TABLE

| BAR MARK | NO REQ'D. | LENGTH |
|---|---|---|
| A407 | 4 SERIES OF 18 | 9'-7" TO 14'-5" |
| B407 | 4 SERIES OF 18 | 9'-7" TO 14'-5" |

BUNDLE AND TAG EACH SERIES SEPARATELY.




A407
B407

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

ABUTMENT
BILL OF BARS

SHEET 8 OF 11
31

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8

8

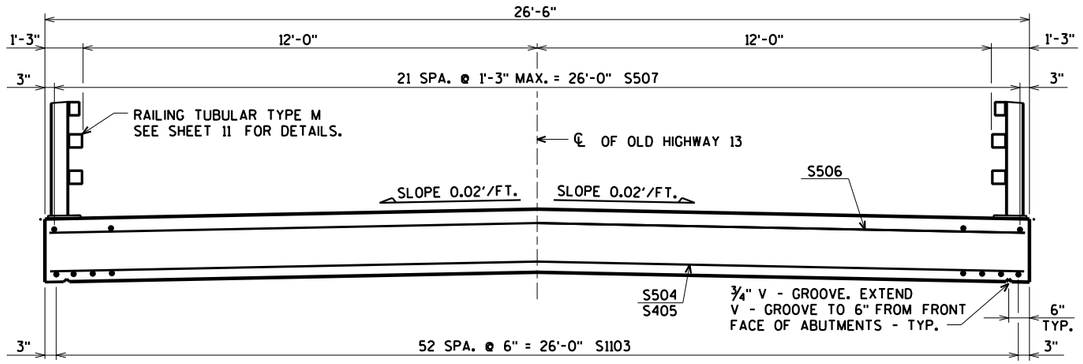
$PRFNAME$
U:\42-0913.00 - Bayfield County, Tn Orienta, Fish Creek\BRIDGE\420913 wa.dgn

5/27/2015

PENTABLE:BRegu_shd_util.tbl

STATE PROJECT NUMBER

8352-00-70




## CROSS SECTION THRU ROADWAY

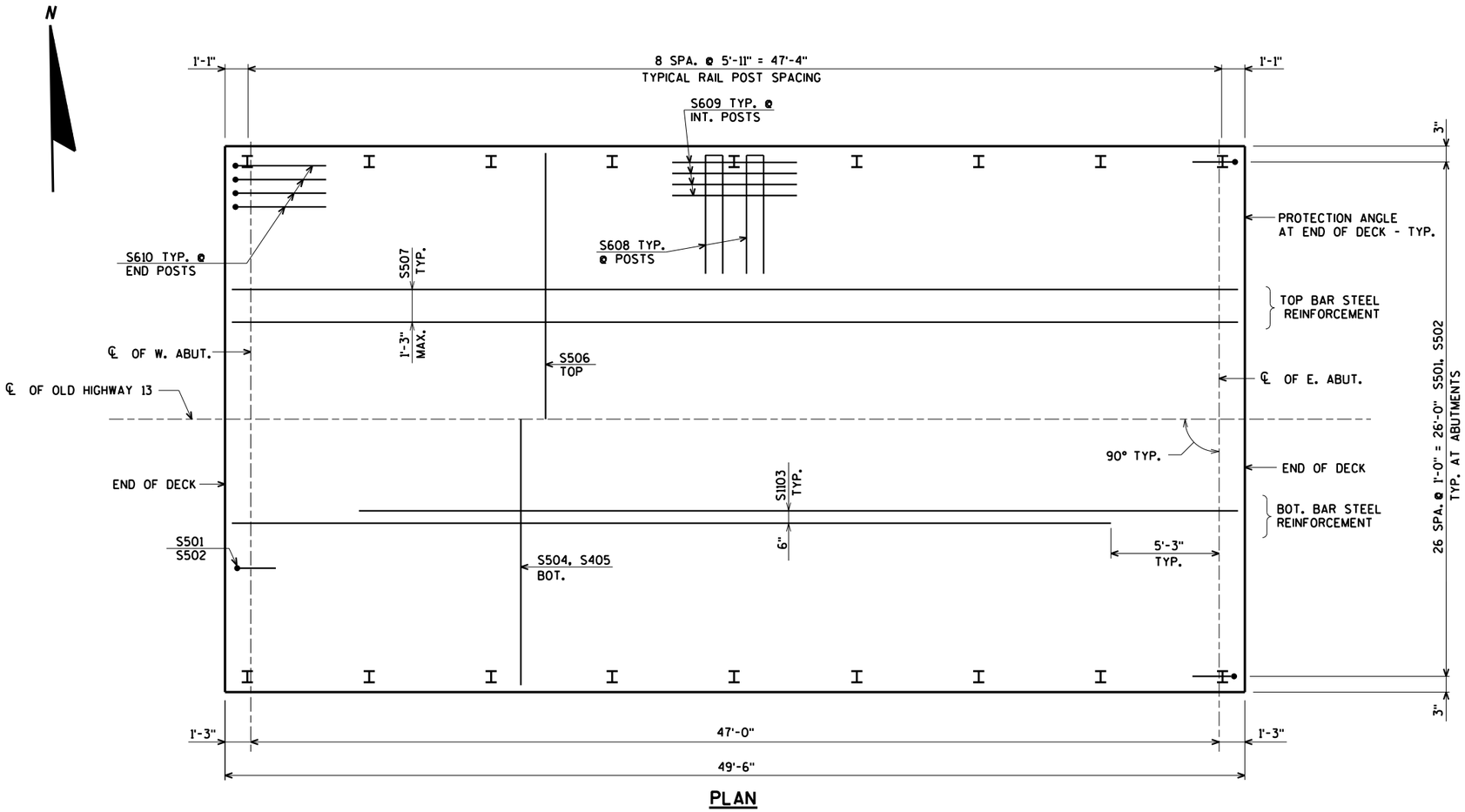
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

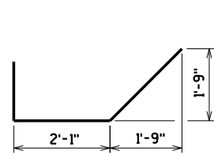
## BILL OF BARS

| BAR. NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR SERIES | 18,290# COATED LOCATION |
|---|---|---|---|---|---|---|
| S501 | X | 54 | 5-11 | X | | SLAB @ ABUT. |
| S502 | X | 54 | 3-10 | X | | SLAB @ ABUT. |
| S1103 | X | 53 | 42-10 | | | SLAB LONG. BOT. |
| S504 | X | 55 | 26-2 | | | SLAB TRANS. BOT. |
| S405 | X | 22 | 26-2 | | | SLAB TRANS. BOT. |
| S506 | X | 50 | 26-2 | | | SLAB TRANS. TOP |
| S507 | X | 22 | 49-2 | | | SLAB LONG. TOP |
| S608 | X | 36 | 12-0 | X | | SLAB @ RAIL POSTS |
| S609 | X | 56 | 6-0 | | | SLAB @ INT. RAIL POSTS |
| S610 | X | 16 | 6-0 | X | | SLAB @ END RAIL POSTS |

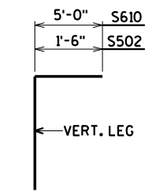
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

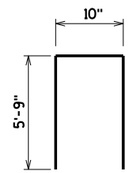



## PLAN




S501




S608

8

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

SUPERSTRUCTURE

SHEET 9 OF 11
32

ORIGINAL PLANS PREPARED BY
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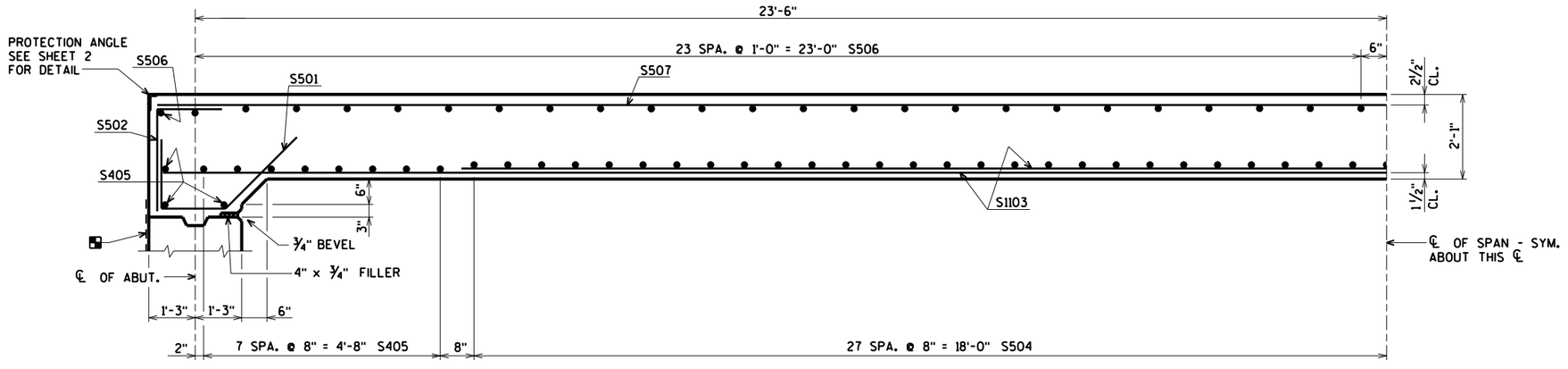
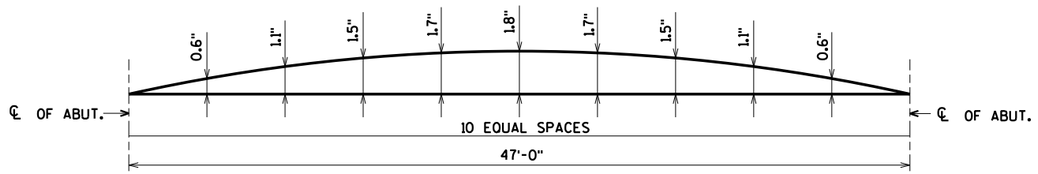



## PART LONGITUDINAL SECTION




## CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄.

## TOP OF DECK ELEVATIONS

| LOCATION | ℄ OF W. ABUT. | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | ℄ OF E. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N. EDGE OF SLAB | 621.70 | 621.87 | 622.04 | 622.23 | 622.42 | 622.63 | 622.84 | 623.06 | 623.30 | 623.54 | 623.80 |
| ℄ OF STRUCTURE | 621.97 | 622.13 | 622.31 | 622.49 | 622.69 | 622.89 | 623.10 | 623.33 | 623.56 | 623.81 | 624.05 |
| S. EDGE OF SLAB | 621.70 | 621.87 | 622.04 | 622.23 | 622.42 | 622.63 | 622.84 | 623.06 | 623.30 | 623.54 | 623.80 |

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

SUPERSTRUCTURE DETAILS

SHEET 10 OF 11
33

ORIGINAL PLANS PREPARED BY
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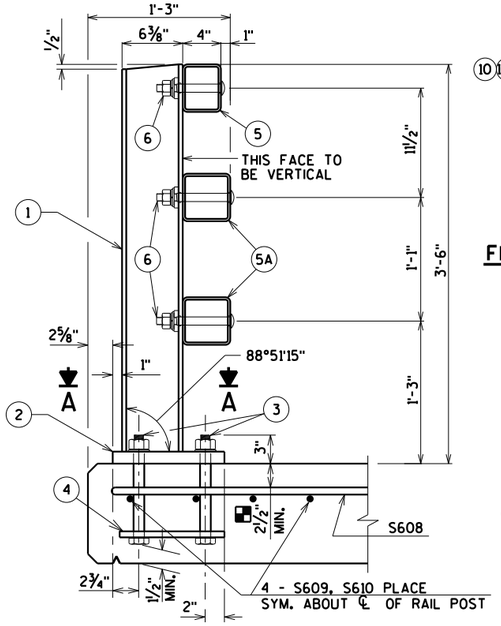
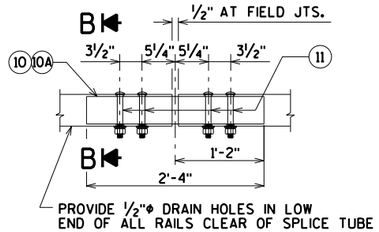
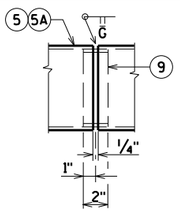



## SECTION THRU RAILING ON DECK

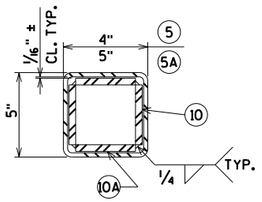



## FIELD ERECTION JOINT DETAIL

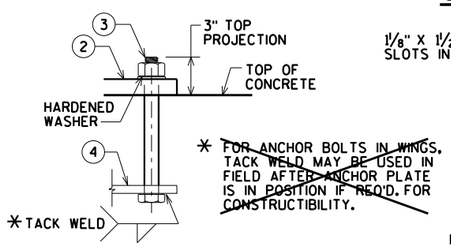



## SHOP RAIL SPLICE DETAIL

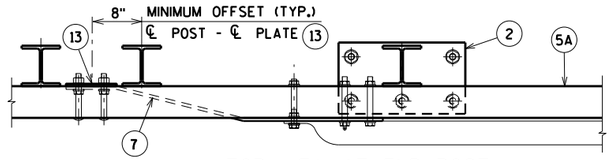
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)




## SECTION B

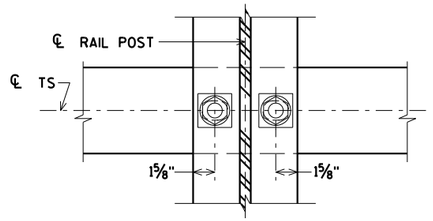



## ANCHOR BOLTS

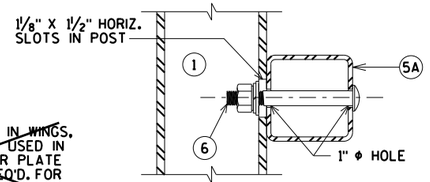



## TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)



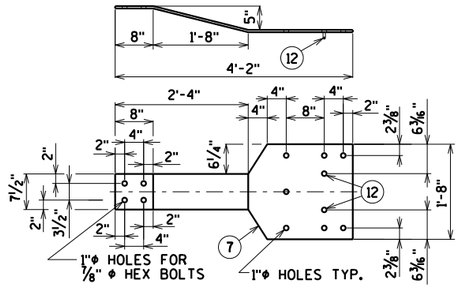

## SECTION THRU POST WEB




## SECTION THRU RAIL

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

## TYPICAL RAIL TO POST CONNECTIONS

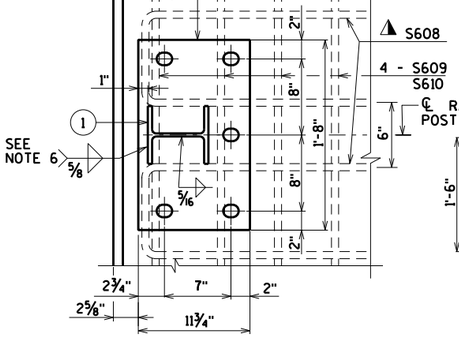



## BACK-UP PLATE DETAIL

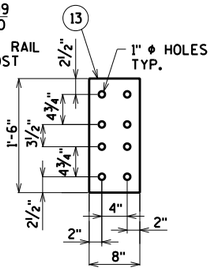
(AT BEAM GUARD ATTACHMENT)

## LEGEND

1. W6 x 25 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" x 11¾" x 1'-8" WITH 1⅝" X 1⅝" 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. ~~USE 1'-9" LONG IN ABUTMENT WINGS.~~ AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10¾" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
4. ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" 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" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" Φ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

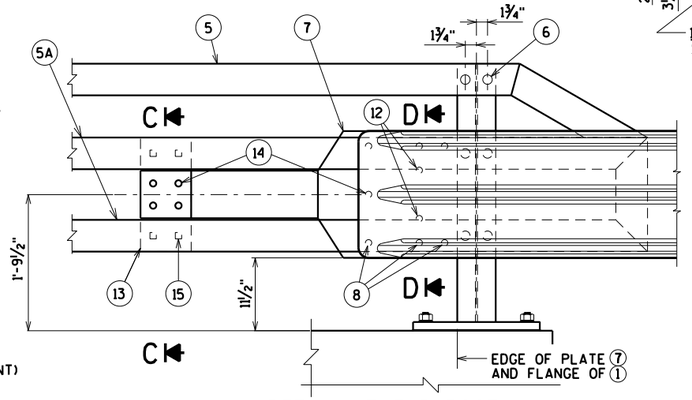



## SECTION A



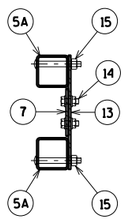

## ANCHOR PLATE

(AT BEAM GUARD ATTACHMENT)

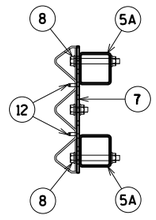



## DETAIL AT END POST

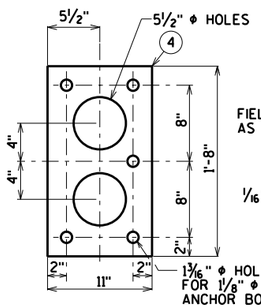
(THRIE BEAM RAIL ATTACHMENT)




## SECTION C

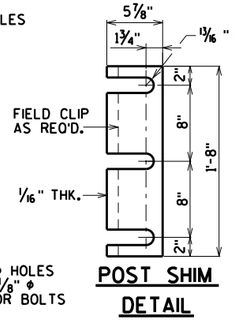



## SECTION D

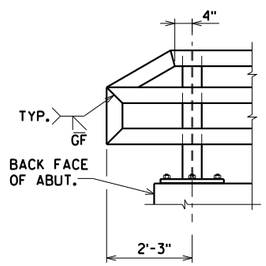



## ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)




## POST SHIM DETAIL




## PART ELEVATION OF RAILING

## GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-4-112" 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. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-112

DRAWN BY CLS | PLANS CK'D. CJM

RAILING TUBULAR TYPE M

SHEET 11 OF 11
34

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

## EARTHWORK SUMMARY (CATEGORY 0010)

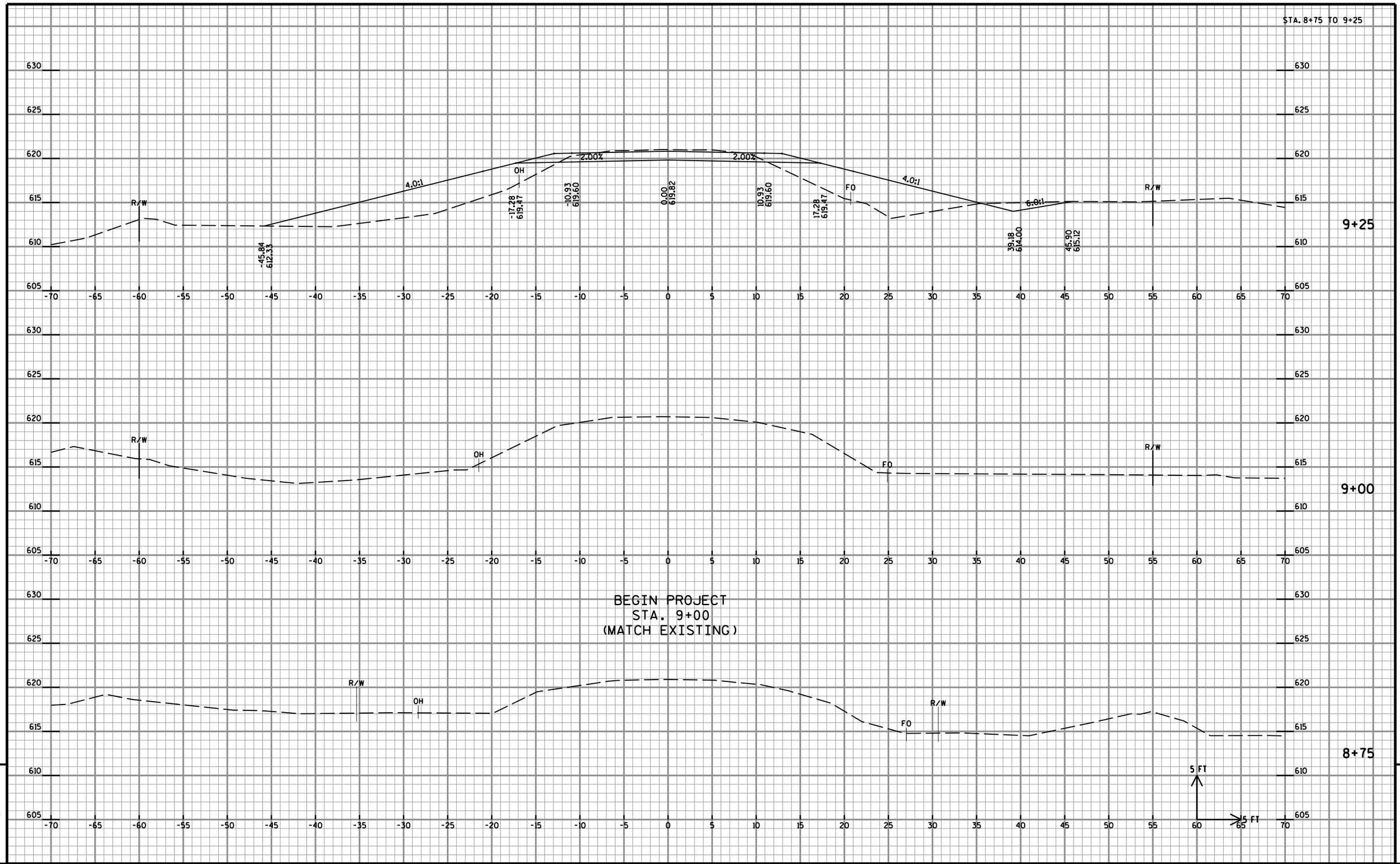
| | | AREA | | | INCREMENTAL VOLUME | | | CUMULATIVE VOLUME | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DIVISION | STATION | CUT SF | SALVAGED/ UNUSABLE PAVEMENT MATERIAL SF | FILL SF | CUT (1) CY | SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY | FILL (3) CY | CUT (1) 1.00 CY | EXPANDED FILL (4) 1.30 CY | MASS ORDINATE ±(5) CY |
| 1 | 9+00 | 0 | 0 | 0 | | | | | | |
| Old Highway 13 | 9+25 | 29 | 0 | 131 | 13 | 0 | 61 | 13 | 79 | -66 |
| | 9+50 | 30 | 0 | 225 | 27 | 0 | 165 | 40 | 294 | -254 |
| | 9+75 | 30 | 0 | 225 | 28 | 0 | 209 | 68 | 566 | -498 |
| | STRUCTURE (B-10-0224) | | | | | | | | | |
| | 10+25 | 18 | 0 | 168 | 16 | 0 | 155 | 16 | 202 | -186 |
| | 10+50 | 18 | 0 | 168 | 21 | 0 | 81 | 37 | 307 | -270 |
| | 10+75 | 29 | 0 | 7 | 13 | 0 | 3 | 50 | 311 | -261 |
| | 11+00 | 0 | 0 | 0 | | 0 | | | | |
| **TOTALS** | | | | | 118 | 0 | 674 | | | -758 |

**205.0100 EXCAVATION COMMON = SAY 120** **208.0100 BORROW = SAY 760**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STA. 8+75 TO 9+25



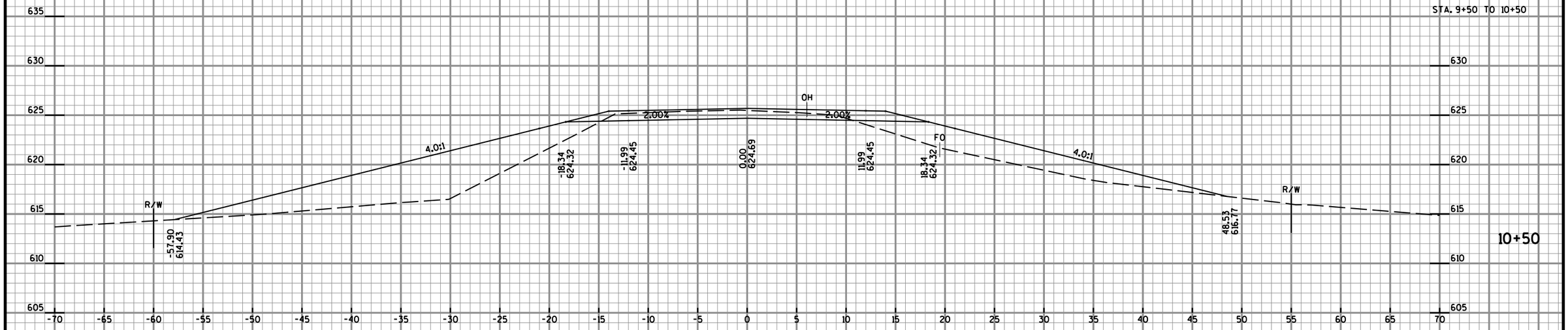

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (FISH CREEK) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : U:\42-0913.00 - Bayfield County, Tn Oriental, Fish Creek\InRoads\420913_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

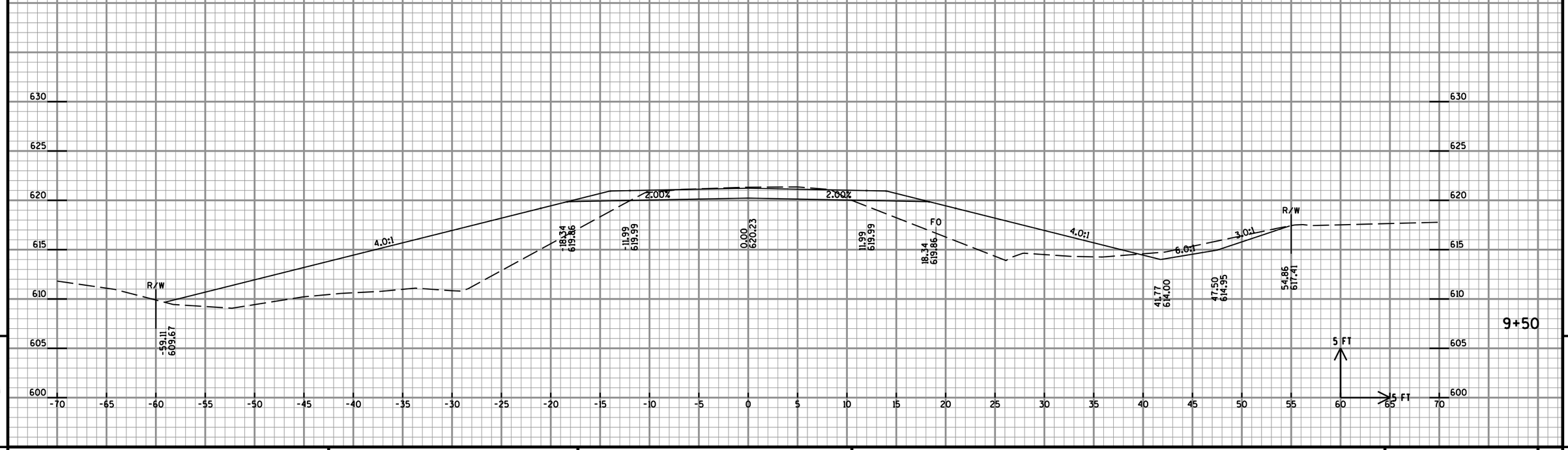
WISDOT/CADDS SHEET 21

STA. 9+50 TO 10+50




10+50

STRUCTURE B-04-0112




9+50

9

9

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (FISH CREEK) | SHEET 37 | E |
|---|---|---|---|---|---|

FILE NAME : U:\42-0913.00 - Bayfield County, Tn Oriental, Fish Creek\InRoads\420913_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+50 TO 11+00

11+25

R/W
OH
FO
R/W

END PROJECT
STA. 11+00
(MATCH EXISTING)

11+00

R/W
OH
FO
R/W

10+75

R/W
2.00%
2.00%
4.0:1
4.0:1
OH
FO
R/W
-33.81
622.05
-17.35
626.16
-11.00
626.29
0.00
626.51
11.00
626.29
17.35
626.16
26.85
623.79
5 FT
5 FT

9

9

| PROJECT NO: 8352-00-70 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (FISH CREEK) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : U:\42-0913.00 - Bayfield County, Tn Orienta, Fish Creek\InRoads\420913_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

NWL

DEC 2015

PROJECT ID: 8352-00-71
WITH: 8352-00-70

COUNTY: BAYFIELD

**ORDER OF SHEETS**



TOTAL SHEETS = 40

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# T ORIENTA, OLD HIGHWAY 13

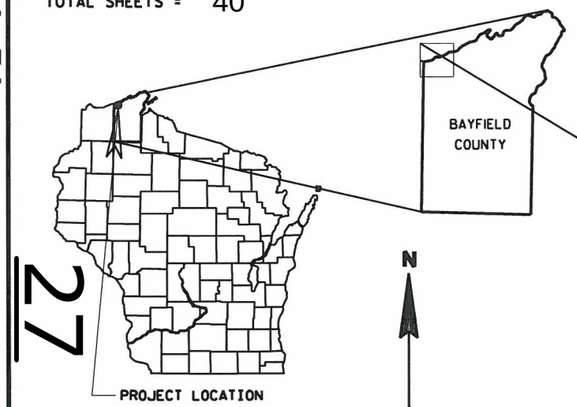
REEFER CREEK BRIDGE B040113

## TOWN ROAD

## BAYFIELD COUNTY

STATE PROJECT NUMBER
**8352-00-71**

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 8352-00-71 | WISC 2015657 | 1 |
| | | |
| | | |
| | | |




27

**DESIGN DESIGNATION**

| | | |
|---|---|---|
| A.D.T. (2016) | = | <100 |
| A.D.T. (2036) | = | <100 |
| D.H.V. | = | 10 |
| D. | = | 50/50 |
| T. | = | 5% |
| DESIGN SPEED | = | 20 MPH |
| ESALS | = | N/A |

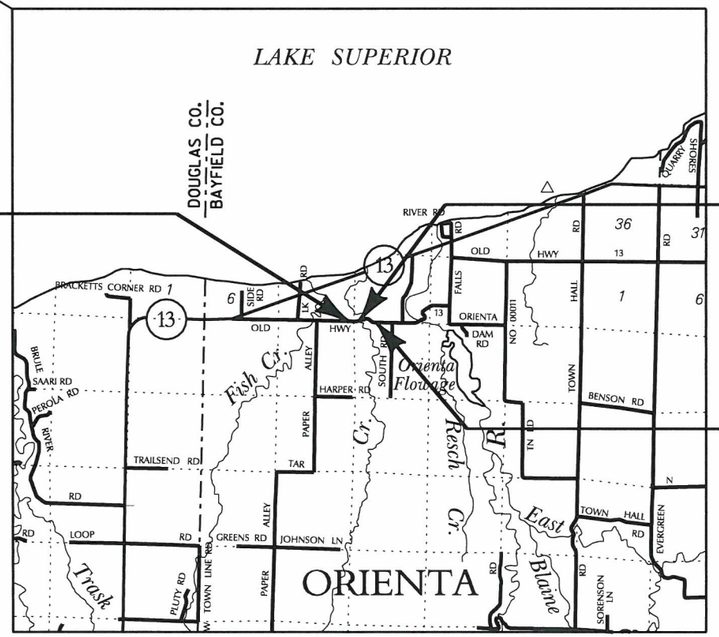
**CONVENTIONAL SYMBOLS**

PLAN
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

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

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

**BEGIN PROJECT**
**STA. 19+00**
Y = 516216.52
X = 660555.47




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), BAYFIELD COUNTY.

ACCEPTED FOR
Town of Orienta
6 July 2015 Mark P. Hoopis
Date Town Chairman

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER

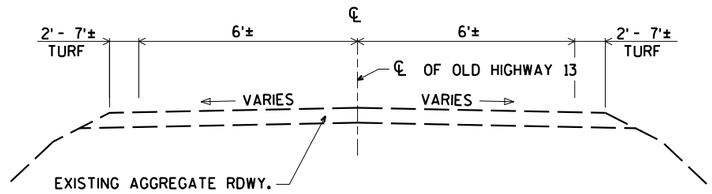
DATE 6/19/2015

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

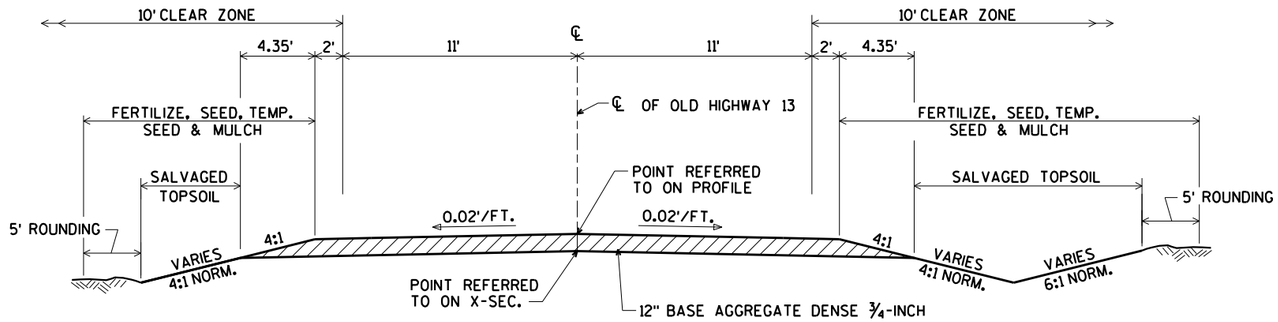
PREPARED BY
Surveyor AYRES ASSOCIATES INC
Designer AYRES ASSOCIATES INC
Management Consultant KNIGHT E/A INC.
C.O. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 7/23/15 Ryan B McKane
Management Consultant Signature

E




## TYPICAL EXISTING SECTION




## TYPICAL FINISHED SECTION

(STA. 19+00 TO STA. 19+75.25)
(STA. 20+24.75 TO STA. 21+00)

### ABBREVIATIONS

| | |
|---|---|
| AC | ACRES |
| CHIS | CHISELED |
| ℄ | CENTERLINE |
| COR | CORNER |
| CWT | COUNT |
| CY | CUBIC YARD |
| EL | ELEVATION |
| GAL | GALLON |
| H | HOUSE |
| IP | IRON PIPE |
| LB | POUND |
| LF | LINEAR FEET |
| LS | LUMP SUM |
| LT | LEFT |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| MON | MONUMENT |
| NORM | NORMAL |
| OAL | OVERALL LENGTH |
| PC | POINT OF CURVATURE |
| PD | PEDESTAL |
| PI | POINT OF INTERSECTION |
| PK | PARKER-KALON |
| PL | PROPERTY LINE |
| PLE | PERMANENT LIMITED EASEMENT |
| PP | POWER POLE |
| PT | POINT OF TANGENCY |
| R | RADIUS |
| REQ'D | REQUIRED |
| RT | RIGHT |
| R/W | RIGHT-OF-WAY |
| SF | SQUARE FEET |
| SHLDR | SHOULDER |
| STA | STATION |
| SY | SQUARE YARD |
| TLE | TEMPORARY LIMITED EASEMENT |
| VAR | VARIES |
| WL | WELL |

### GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

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

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND FIELD LOCATING ALL UTILITIES.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

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

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

### UTILITIES

NORVADO
P.O. BOX 67
CABLE, WI 54821
ATTN: GUY FOLSOM
715-798-7123
gfolsom@norvado.com

BAYFIELD ELECTRIC CO-OP INC.
P.O. BOX 67
IRON RIVER, WI 54847
ATTN: GARY TARASEWICZ
715-492-0725
gary.tarasewicz@bayfieldelectric.com

**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

WISCONSIN DEPARTMENT OF
NATURAL RESOURCES CONTACT:
SHAWN HASELEU
810 WEST MAPLE ST.
SPOONER, WI. 54801
715-635-4228
shawn.haseleu@wisconsin.gov

DESIGNER
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL N. SYDOW
715-834-3161
sydowd@AyresAssociates.com

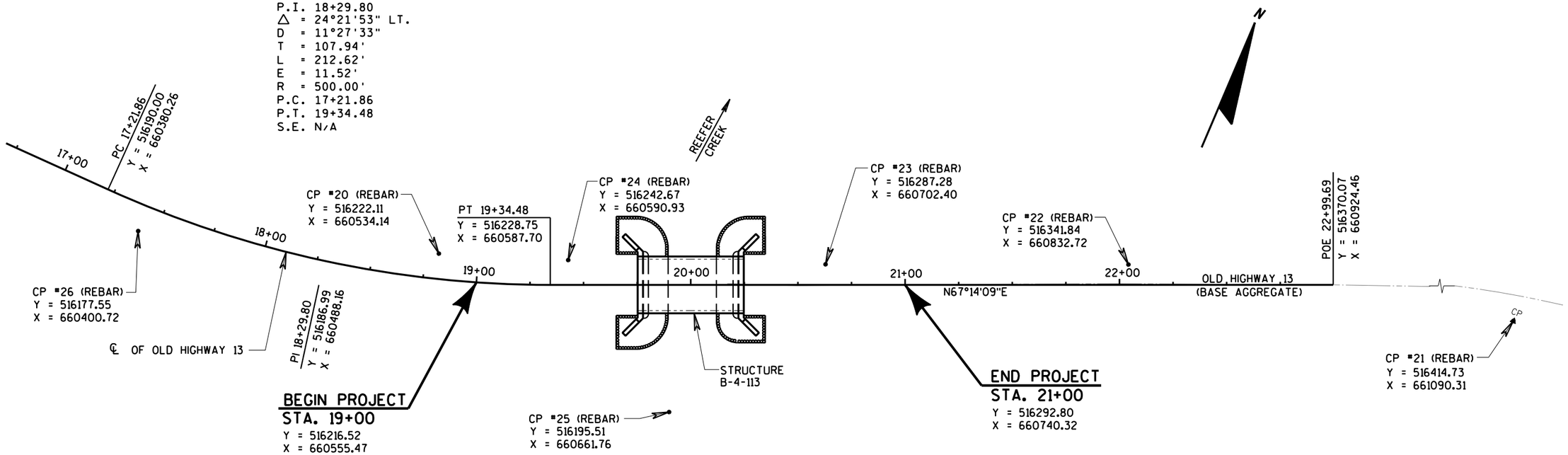
2

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | TYPICAL SECTIONS | SHEET 2 | E |
|---|---|---|---|---|---|

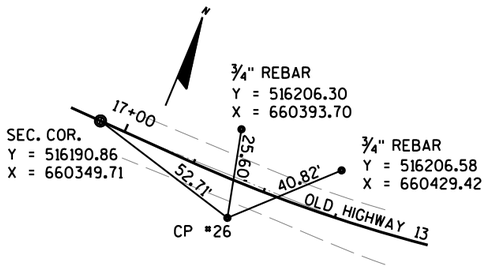
2

CURVE DATA

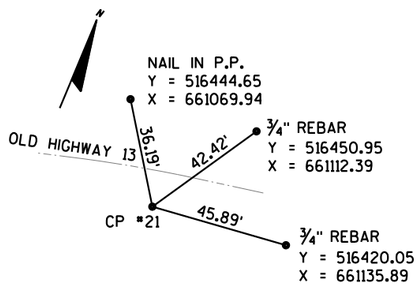
P.I. 18+29.80
△ = 24°21'53" LT.
D = 11°27'33"
T = 107.94'
L = 212.62'
E = 11.52'
R = 500.00'
P.C. 17+21.86
P.T. 19+34.48
S.E. N/A




## ALIGNMENT CONTROLS



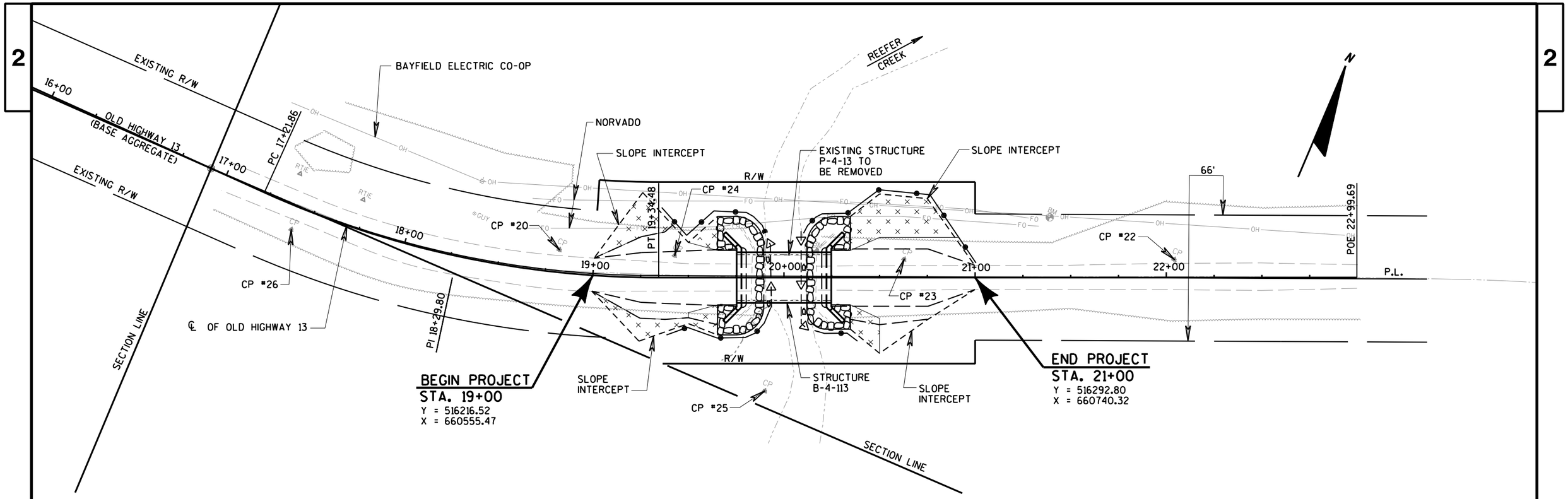

CP #26 (REBAR)
STA. 17+42.16, 12.3' RT.
Y = 516177.55
X = 660400.72




CP #21 (REBAR)
STA. 24+50±, 12' RT.
Y = 516414.73
X = 661090.31

## ALIGNMENT TIES

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | ALIGNMENT CONTROLS | SHEET 3 | E |
|---|---|---|---|---|---|




| | 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 | | | | | | | | | | | |

HIGH WATER $_2$ EL. 626.2

LEGEND

- EROSION MAT CLASS II TYPE C
- TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
- SILT FENCE
- RIPRAP HEAVY
- TURBIDITY BARRIERS

TOTAL PROJECT AREA = 0.436 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.230 ACRES

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | EROSION CONTROL | SCALE, FEET 0 25 50 | SHEET 4 | E |
|---|---|---|---|---|---|---|

DATE 01OCT15 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 | 8352-00-71 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 201.0105 | Clearing | STA | 2.000 | 2.000 |
| 0020 | 201.0205 | Grubbing | STA | 2.000 | 2.000 |
| 0040 | 203.0500.S | Removing Old Structure Over Waterway (station) 02. 20+00 | LS | 1.000 | 1.000 |
| 0050 | 205.0100 | Excavation Common | CY | 250.000 | 250.000 |
| 0070 | 206.1000 | Excavation for Structures Bridges (structure) 02. B-4-113 | LS | 1.000 | 1.000 |
| 0080 | 208.0100 | Borrow | CY | 60.000 | 60.000 |
| 0090 | 210.0100 | Backfill Structure | CY | 620.000 | 620.000 |
| 0110 | 213.0100 | Finishing Roadway (project) 02. 8352-00-71 | EACH | 1.000 | 1.000 |
| 0120 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 350.000 | 350.000 |
| 0130 | 502.0100 | Concrete Masonry Bridges | CY | 199.000 | 199.000 |
| 0140 | 502.3200 | Protective Surface Treatment | SY | 180.000 | 180.000 |
| 0150 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 4,620.000 | 4,620.000 |
| 0160 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 22,370.000 | 22,370.000 |
| 0170 | 506.0105 | Structural Steel Carbon | LB | 530.000 | 530.000 |
| 0190 | 513.4061 | Railing Tubular Type M (structure) 02. B-4-113 | LF | 99.000 | 99.000 |
| 0200 | 516.0500 | Rubberized Membrane Waterproofing | SY | 18.000 | 18.000 |
| 0210 | 550.0500 | Pile Points | EACH | 20.000 | 20.000 |
| 0220 | 550.1100 | Piling Steel HP 10-Inch X 42 Lb | LF | 400.000 | 400.000 |
| 0230 | 606.0300 | Riprap Heavy | CY | 205.000 | 205.000 |
| 0240 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 160.000 | 160.000 |
| 0250 | 619.1000 | Mobilization | EACH | 0.500 | 0.500 |
| 0260 | 625.0500 | Salvaged Topsoil | SY | 475.000 | 475.000 |
| 0270 | 627.0200 | Mulching | SY | 410.000 | 410.000 |
| 0280 | 628.1504 | Silt Fence | LF | 355.000 | 355.000 |
| 0290 | 628.1520 | Silt Fence Maintenance | LF | 710.000 | 710.000 |
| 0300 | 628.1905 | Mobilizations Erosion Control | EACH | 4.000 | 4.000 |
| 0310 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0320 | 628.2027 | Erosion Mat Class II Type C | SY | 355.000 | 355.000 |
| 0330 | 628.6005 | Turbidity Barriers | SY | 155.000 | 155.000 |
| 0340 | 628.7504 | Temporary Ditch Checks | LF | 50.000 | 50.000 |
| 0350 | 629.0210 | Fertilizer Type B | CWT | 0.700 | 0.700 |
| 0360 | 630.0120 | Seeding Mixture No. 20 | LB | 25.000 | 25.000 |
| 0370 | 630.0200 | Seeding Temporary | LB | 15.000 | 15.000 |
| 0380 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 4.000 | 4.000 |
| 0390 | 637.2230 | Signs Type II Reflective F | SF | 12.000 | 12.000 |
| 0400 | 638.2602 | Removing Signs Type II | EACH | 5.000 | 5.000 |
| 0410 | 638.3000 | Removing Small Sign Supports | EACH | 5.000 | 5.000 |
| 0420 | 642.5001 | Field Office Type B | EACH | 0.500 | 0.500 |
| 0440 | 643.0100 | Traffic Control (project) 02. 8352-00-71 | EACH | 1.000 | 1.000 |
| 0450 | 645.0120 | Geotextile Fabric Type HR | SY | 330.000 | 330.000 |
| 0460 | 650.4500 | Construction Staking Subgrade | LF | 151.000 | 151.000 |
| 0470 | 650.5000 | Construction Staking Base | LF | 151.000 | 151.000 |
| 0490 | 650.6500 | Construction Staking Structure Layout (structure) 02. B-4-113 | LS | 1.000 | 1.000 |
| 0510 | 650.9910 | Construction Staking Supplemental Control (project) 02. 8352-00-71 | LS | 1.000 | 1.000 |
| 0520 | 650.9920 | Construction Staking Slope Stakes | LF | 151.000 | 151.000 |
| 0530 | 715.0502 | Incentive Strength Concrete Structures | DOL | 1,194.000 | 1,194.000 |
| 0540 | ASP.1T0A | On-the-Job Training Apprentice at $5. 00/HR | HRS | 1,200.000 | 1,200.000 |

DATE 01OCT15 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 | 8352-00-71 QUANTITY |
|---|---|---|---|---|---|
| 0550 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 300.000 | 300.000 |



3

3

## CLEARING AND GRUBBING (CATEGORY 0010)

| STATION TO STATION | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA |
|---|---|---|---|
| Sta. 19+00 to Sta. 21+00 | Old Highway 13 | 2 | 2 |

## EARTHWORK SUMMARY (CATEGORY 0010)

| DIVISION | STATION TO STATION | LOCATION | 205.0100 EXCAVATION COMMON CUT (1) CY | SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY | AVAILABLE MATERIAL (4) CY | UNEXPANDED FILL (3) CY | EXPANDED FILL (5) CY | MASS ORDINATE ±(6) CY | WASTE CY | 208.0100 BORROW CY | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19+00 TO 19+75 | Old Highway 13 | 159 | 0 | 159 | 8 | 10 | 149 | 149 | 0 | |
| | 20+25 TO 21+00 | Old Highway 13 | 87 | 0 | 87 | 110 | 143 | -56 | 0 | 56 | |
| | GRANDTOTAL | | 246 | 0 | 246 | 118 | 153 | 93 | 149 | 56 | |

**TOTAL EXCAVATION COMMON 250 CY** **TOTAL BORROW 60 CY**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT MATERIAL EXCAVATION VOLUME.
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) EXPANDED FILL FACTOR = 1.30
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
6) THE MASS ORDINATE ± QTY CALCUTATED FOR THE DIVISION.
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

## 213.0100 FINISHING ROADWAY (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-71 | 1 |

3

## BASE AGGREGATE DENSE (CATEGORY 0010)

| STATION TO STATION | LOCATION | 305.0110 3/4-INCH TON |
|---|---|---|
| Sta. 19+00 to Sta. 19+25 | Old Highway 13 | 50 |
| Sta. 19+25 to Sta 19+75 | Old Highway 13 | 120 |
| Sta. 20+25 to Sta. 20+75 | Old Highway 13 | 130 |
| Sta. 20+75 to Sta 21+00 | Old Highway 13 | 50 |
| TOTALS | | 350 |

## 619.1000 MOBILIZATION

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-71 (CATEGORY 0010) | 0.1 |
| PROJECT 8352-00-71(CATEGORY 0020) | 0.4 |
| TOTAL | 0.5 |

## SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

| STATION TO STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 627.0200 MULCHING SY | 629.0210 FERTILIZER TYPE B CWT | 630.0120 SEEDING NO. 20 LB | 630.0200 SEEDING TEMPORARY LB |
|---|---|---|---|---|---|---|
| Sta. 19+00 to Sta. 21+00 | Old Highway 13 | 475 | 370 | 0.5 | 21 | 11 |
| Undistributed | | --- | 40 | 0.2 | 4 | 4 |
| TOTALS | | 475 | 410 | 0.7 | 25 | 15 |

## SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

| STATION TO STATION | LOCATION | 628.1504 LF | 628.1520 MAINTENANCE LF |
|---|---|---|---|
| Sta. 19+36 to Sta. 19+90 | Old Highway 13, LT | 75 | 150 |
| Sta. 19+38 to Sta. 19+93 | Old Highway 13, RT | 65 | 130 |
| Sta. 20+10 to Sta. 21+00 | Old Highway 13, LT | 120 | 240 |
| Sta. 20+16 to Sta. 20+38 | Old Highway 13, RT | 25 | 50 |
| Undistributed | | 70 | 140 |
| TOTALS | | 355 | 710 |

## MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

| LOCATION | 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|
| PROJECT 8352-00-71 | 4 | 2 |

## 628.2027 EROSION MAT CLASS II TYPE C (CATEGORY 0010)

| STATION TO STATION | LOCATION | SY |
|---|---|---|
| Sta. 19+00 to Sta. 19+42 | Old Highway 13, LT | 60 |
| Sta. 19+50 to Sta. 19+65 | Old Highway 13, LT | 20 |
| Sta. 19+00 to Sta. 19+65 | Old Highway 13, RT | 60 |
| Sta. 20+35 to Sta. 20+91 | Old Highway 13, LT | 115 |
| Sta. 20+35 to Sta. 20+50 | Old Highway 13, RT | 30 |
| Undistributed | | 70 |
| TOTAL | | 355 |

3

### 628.6005 TURBIDITY BARRIER (CATEGORY 0010)

| LOCATION | SY |
|---|---|
| West Abutment | 50 |
| East Abutment | 75 |
| Undistributed | 30 |
| TOTALS | 155 |

### 628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

| LOCATION | LF |
|---|---|
| UNDISTRIBUTED | 50 |

### 634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)

| STATION | LOCATION | EACH |
|---|---|---|
| Sta. 19+75 | Old Highway 13, LT (W5-52L) | 1 |
| Sta. 19+75 | Old Highway 13, RT (W5-52R) | 1 |
| Sta. 20+25 | Old Highway 13, LT (W5-52R) | 1 |
| Sta. 20+25 | Old Highway 13, RT (W5-52L) | 1 |
| TOTAL | | 4 |

### 637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

| STATION | LOCATION | DESCRIPTION | SF |
|---|---|---|---|
| Sta. 19+75 | Old Highway 13, LT | W5-52L (OBJECT MARKER) | 3 |
| Sta. 19+75 | Old Highway 13, RT | W5-52R (OBJECT MARKER) | 3 |
| Sta. 20+25 | Old Highway 13, LT | W5-52R (OBJECT MARKER) | 3 |
| Sta. 20+25 | Old Highway 13, RT | W5-52L (OBJECT MARKER) | 3 |
| TOTAL | | | 12 |

### REMOVING (CATEGORY 0010)

| STATION | LOCATION | DESCRIPTION | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH |
|---|---|---|---|---|
| Sta. 19+83 | Old Highway 13, RT | W5-52R (OBJECT MARKER) | 1 | 1 |
| Sta. 19+84 | Old Highway 13, LT | W5-52L (OBJECT MARKER) | 1 | 1 |
| Sta. 20+17 | Old Highway 13, RT | W5-52L (OBJECT MARKER) | 1 | 1 |
| Sta. 20+17 | Old Highway 13, LT | W5-52R (OBJECT MARKER) | 1 | 1 |
| Sta. 20+18 | Old Highway 13, LT | R12-1 (WEIGHT LIMIT) | 1 | 1 |
| TOTAL | | | 5 | 5 |

### 642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-71 | 1 |

### 643.0100 TRAFFIC CONTROL (CATEGORY 0010)

| LOCATION | EACH |
|---|---|
| PROJECT 8352-00-71 | 1 |

### CONSTRUCTION STAKING

| CATEGORY | LOCATION | 650.4500 SUBGRADE LF | 650.5000 BASE LF | 650.6500 STRUCTURE LAYOUT LS | 650.9910 SUPPLEMENTARY CONTROL LS | 650.9920 SLOPE STAKES LF |
|---|---|---|---|---|---|---|
| 0010 | Sta. 19+00 to Sta. 21+00 | 151 | 151 | --- | 1 | 151 |
| 0020 | B-04-0113 | --- | --- | 1 | --- | --- |
| TOTALS | | 151 | 151 | 1 | 1 | 151 |

# SCHEDULE OF LANDS AND INTERESTS REQUIRED

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

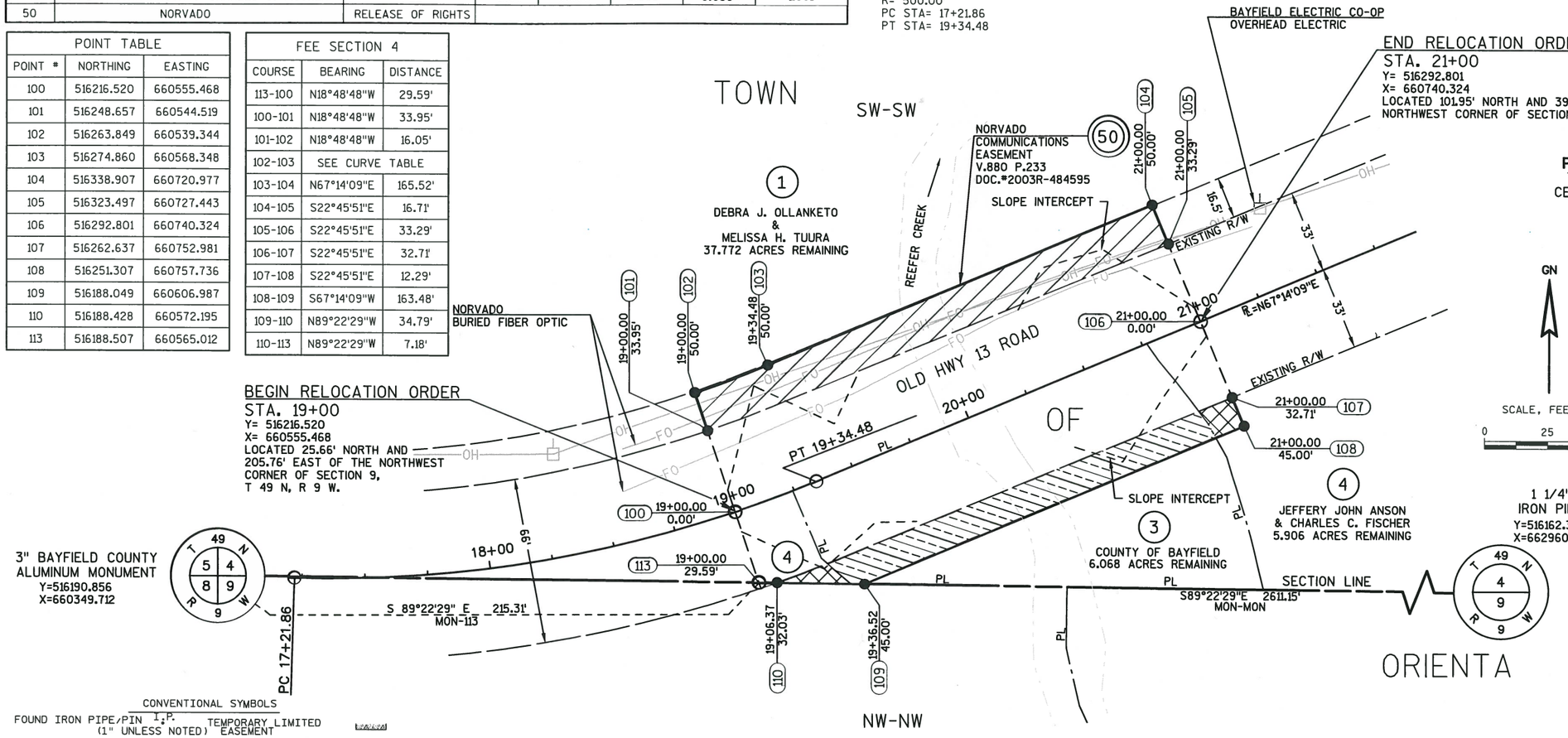
| PARCEL NO. | OWNERSHIP | INTEREST REQUIRED | TOTAL ACRES | R/W (ACRES) NEW | R/W (ACRES) EXISTING | R/W (ACRES) TOTAL | TOTAL ACRES REMAINING |
|---|---|---|---|---|---|---|---|
| 1 | DEBRA J. OLLANKETO & MELISSA H. TUURA | FEE | 38.00 | 0.074 | 0.154 | 0.228 | 37.772 |
| 3 | COUNTY OF BAYFIELD | FEE | 6.068 | 0.046 H.E. | 0.000 | 0.046 H.E. | 6.068 |
| 4 | JEFFERY JOHN ANSON & CHARLES C. FISCHER | FEE | 2.00 | 0.006 | 0.033 | 0.039 | 1.961 |
| 50 | NORVADO | RELEASE OF RIGHTS | | | | | |

| POINT TABLE | | |
|---|---|---|
| POINT # | NORTHING | EASTING |
| 100 | 516216.520 | 660555.468 |
| 101 | 516248.657 | 660544.519 |
| 102 | 516263.849 | 660539.344 |
| 103 | 516274.860 | 660568.348 |
| 104 | 516338.907 | 660720.977 |
| 105 | 516323.497 | 660727.443 |
| 106 | 516292.801 | 660740.324 |
| 107 | 516262.637 | 660752.981 |
| 108 | 516251.307 | 660757.736 |
| 109 | 516188.049 | 660606.987 |
| 110 | 516188.428 | 660572.195 |
| 113 | 516188.507 | 660565.012 |

| FEE SECTION 4 | | |
|---|---|---|
| COURSE | BEARING | DISTANCE |
| 113-100 | N18°48'48"W | 29.59' |
| 100-101 | N18°48'48"W | 33.95' |
| 101-102 | N18°48'48"W | 16.05' |
| 102-103 | SEE CURVE TABLE | |
| 103-104 | N67°14'09"E | 165.52' |
| 104-105 | S22°45'51"E | 16.71' |
| 105-106 | S22°45'51"E | 33.29' |
| 106-107 | S22°45'51"E | 32.71' |
| 107-108 | S22°45'51"E | 12.29' |
| 108-109 | S67°14'09"W | 163.48' |
| 109-110 | N89°22'29"W | 34.79' |
| 110-113 | N89°22'29"W | 7.18' |

PI STA= 18+29.80
Y= 516186.988
X= 660488.161
DELTA= 24°21'53"
D= 11°27'33"
T= 107.94'
L= 212.62'
R= 500.00'
PC STA= 17+21.86
PT STA= 19+34.48

| CURVE TABLE | | | | |
|---|---|---|---|---|
| CURVE | CHORD DISTANCE | CHORD BEARING | RADIUS | ARC LENGTH |
| 102-103 | 31.02' | N69°12'41"E | 450.00' | 31.03' |
| 110-111 | 37.57' | S69°12'41"W | 545.00' | 37.58' |




## CONVENTIONAL SYMBOLS

- FOUND IRON PIPE/PIN (1" UNLESS NOTED) I.P.
- R/W MONUMENT ● (SET) ▲ (SET)
- R/W STANDARD
- SIGN
- SECTION CORNER MONUMENT
- SECTION CORNER SYMBOL
- FEE (HATCH VARIES)
- TEMPORARY LIMITED EASEMENT
- PERMANENT LIMITED EASEMENT
- R/W BOUNDARY POINT (RWB20)
- PARCEL NUMBER (102)
- UTILITY PARCEL NUMBER (22)
- SIGN NUMBER (OFF PREMISE) (21-2)
- BUILDING

- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- NEW REFERENCE LINE
- NEW R/W LINE
- EXISTING R/W LINE
- PROPERTY LINE (P.L.)
- LOT & TIE
- CORPORATE LIMITS (NAME)
- TEMPORARY LIMITED EASEMENT
- FENCE
- SLOPE INTERCEPTS
- PERMANENT LIMITED EASEMENT
- NO ACCESS (BY STATUTORY AUTHORITY)
- NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)
- NO ACCESS (BY ACQUISITION)

## CONVENTIONAL UTILITY SYMBOLS

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

## CONVENTIONAL ABBREVIATIONS

| | | | |
|---|---|---|---|
| ACCESS POINT/ DRIVEWAY CONNECTION | AP | REFERENCE LINE | R/L |
| ACCESS RIGHTS | AR | RELEASE OF RIGHTS | ROR |
| ACRES | AC. | REMAINING | REM. |
| AND OTHERS | ET.AL. | RIGHT-OF-WAY | R/W |
| CENTERLINE | C/L | SECTION | SEC. |
| CERTIFIED SURVEY MAP | CSM | STATION | STA. |
| CORNER | COR. | TEMPORARY LIMITED EASEMENT | TLE |
| DOCUMENT | DOC. | VOLUME | V. |
| EASEMENT | EASE. | **CURVE DATA** | |
| HIGHWAY EASEMENT | H.E. | LONG CHORD | LCH |
| LAND CONTRACT | LC | LONG CHORD BEARING | LCB |
| MONUMENT | MON. | RADIUS | R |
| PAGE | P. | DEGREE OF CURVE | D |
| PERMANENT LIMITED EASEMENT | PLE | CENTRAL ANGLE OR DELTA | DELTA |
| PROPERTY LINE | PL | LENGTH OF CURVE | L |
| RECORDED AS | (100') | TANGENT | TAN |

## NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, BAYFIELD COUNTY ZONE, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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."

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

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON A PRESUMED 66' WIDTH CENTERED ON THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 8 AND THE EXISTING CENTERLINE PER STATE STATUTE 82.31(2).

REVISION DATE

| | |
|---|---|
| R/W PROJECT NUMBER | 8352-00-01 |
| FEDERAL PROJECT NUMBER | ---------- |
| SHEET NUMBER | 4.01 |
| TOTAL SHEETS | 1 |

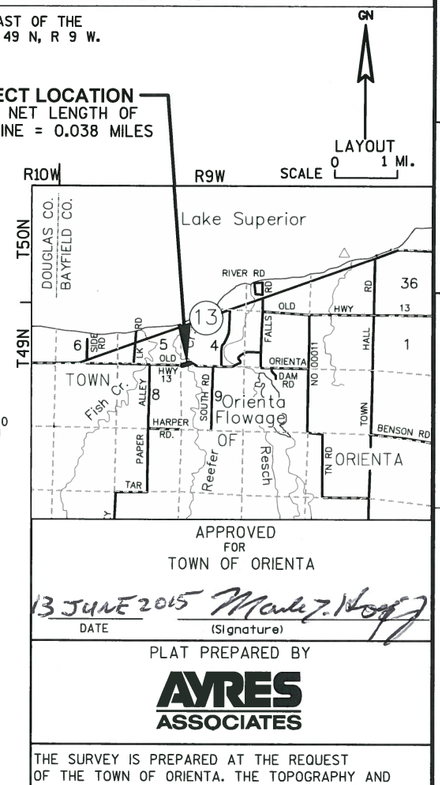
PLAT OF RIGHT-OF-WAY REQUIRED FOR

T Orienta, Old Highway 13
(Reefer Creek Bridge B-04-0113)

Town Road — Bayfield County

CONSTRUCTION PROJECT NUMBER
8352-00-71

**PROJECT LOCATION**
TOTAL NET LENGTH OF CENTERLINE = 0.038 MILES




APPROVED
FOR
TOWN OF ORIENTA

13 JUNE 2015 — Mark J. Hoff
DATE — (Signature)

PLAT PREPARED BY
AYRES ASSOCIATES

THE SURVEY IS PREPARED AT THE REQUEST OF THE TOWN OF ORIENTA. THE TOPOGRAPHY AND UTILITY SURVEY WAS PERFORMED IN NOVEMBER, 2013. THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
JAMES R. CAPPEART
S-3044
COTTAGE GROVE WI
LAND SURVEYOR

04/17/2015
JAMES R. CAPPEART, P.L.S. — DATE
S-3044

10 E

FILE NAME : V:\SURVEY\EC\OSURVEY\ODGN\420914_BAYFIELD COUNTY OLD 13 REEFER CREEK\CADD\83520001RWPL.DWG
APPRAISAL PLAT DATE : 03/01/2015
PLOT DATE : 03/01/2015
PLOT BY : AYRES ASSOCIATES
PLOT NAME : ----------

8352-00-71 / OLD HWY 13 8352-00-01

4

NOTES:
FOR ALIGNMENT CONTROLS AND TIES, SEE ALIGNMENT CONTROLS & TIES SHEET.

EXISTING R/W
16+00
OLD HIGHWAY 13 (BASE AGGREGATE)
17+00
EXISTING R/W
PC 17+21.86
BAYFIELD ELECTRIC CO-OP
NORVADO
SLOPE INTERCEPT
REEFER CREEK
SLOPE INTERCEPT
EXISTING STRUCTURE P-4-13 TO BE REMOVED
R/W
BM #1
66'
BM #2
CP #24
PT 19+34.48
CP #20
18+00
19+00
20+00
CP #23
21+00
CP #22
22+00
POE 22+99.69
P.L.
N67°14'09"E
CP #26
SECTION LINE
℄ OF OLD HIGHWAY 13
PI 18+29.80
SECTION LINE
R/W
SLOPE INTERCEPT
CP #25
STRUCTURE B-4-113
SLOPE INTERCEPT

**BEGIN PROJECT**
**STA. 19+00**
Y = 516216.52
X = 660555.47

**END PROJECT**
**STA. 21+00**
Y = 516292.80
X = 660740.32

| | | BENCH MARKS ⊕ | |
|---|---|---|---|
| NO. | STA. | DESCRIPTION | ELEV. |
| 1 | 21+39 | R.R. SPIKE IN POWER POLE, 31.5 LT. | 634.26 |
| 2 | 20+16 | CHIS. SO. NE CORNER, 13.9' LT. | 636.70 |

**EARTHWORK SUMMARY**
STA. 19+00 TO STA. 19+75.25
EXC. COMMON 159 C.Y.
FILL 10 C.Y.
SHR. = 30%
WASTE 149 C.Y.

**EARTHWORK SUMMARY**
STA. 20+24.75 TO STA. 21+00
EXC. COMMON 87 C.Y.
FILL 143 C.Y.
SHR. = 30%
BORROW 56 C.Y.

FINISHED ℄ PROFILE
200' VC
K = 25.17
-7.88%
+0.07%
HIGH WATER$_{100}$ EL. 631.7
PC STA 19+00.00
PC EL 643.50
PI STA 20+00.00
PI EL 635.62
PT STA 21+00.00
PT EL 635.69
EXISTING ℄ PROFILE
WATER EL. 621.6 (11-07-13)
STREAM BED EL. 620.0

REMOVING OLD STRUCTURE OVER WATERWAY
STATION 20+00, STRUCTURE P-04-0013
SINGLE SPAN CONCRETE DECK GIRDER BRIDGE
24.0' CLEAR RDWY. x 34' O.A.L.
0° SKEW

STA. 20+00
STRUCTURE B-04-0113 REQ'D.
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE
24'-0" CLEAR ROADWAY x 49'-6" O.A.L.
0° SKEW

650 640 630 620 610

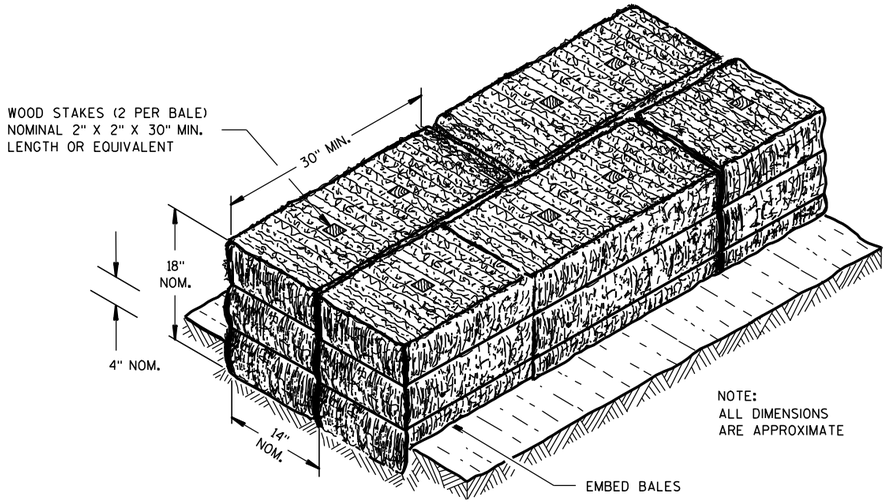
656.74 655.55 652.67 648.04 643.50 MATCH 639.86 640.05 620.47 637.61 636.15 636.15 635.69 MATCH 635.73 635.86 635.93

17+00 17+50 18+00 18+50 19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50 23+00

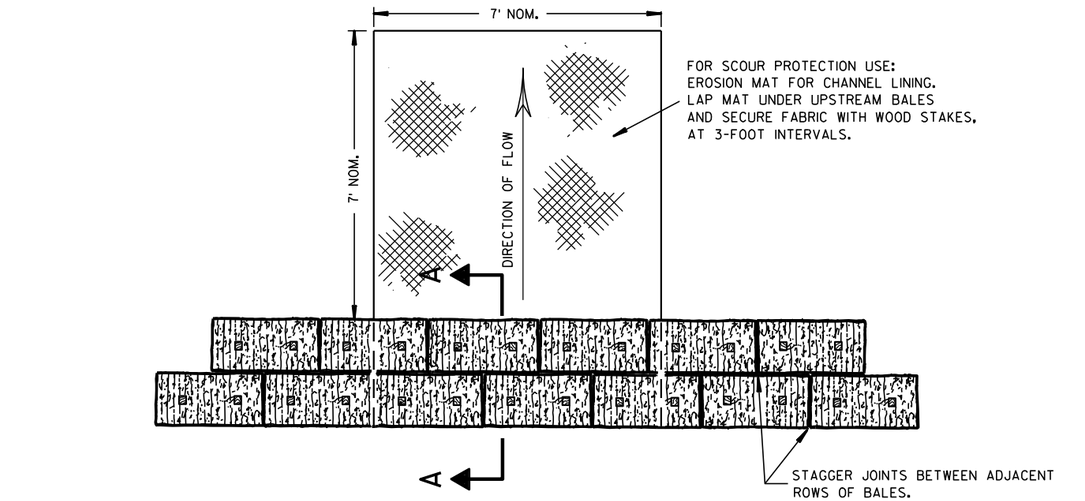
| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | PLAN AND PROFILE | SCALE, FEET 0 25 50 | SHEET 11 | E |
|---|---|---|---|---|---|---|

# Standard Detail Drawing List

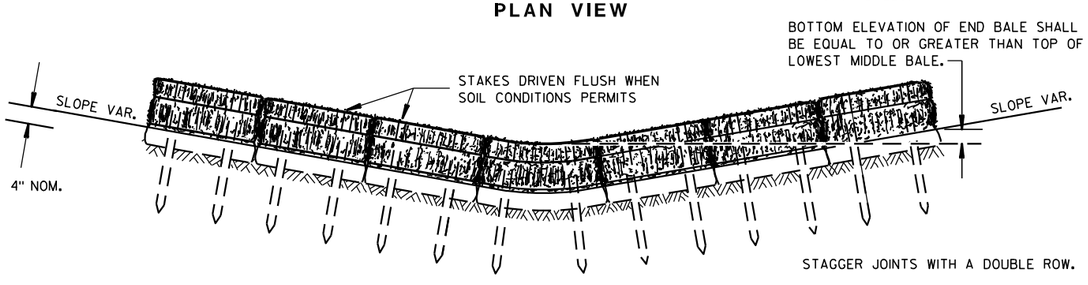
| | |
|---|---|
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-05A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-05B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C06-07 | SIGNING & MARKING FOR TWO LANE BRIDGES |




**SECTION A-A**




**PLAN VIEW**



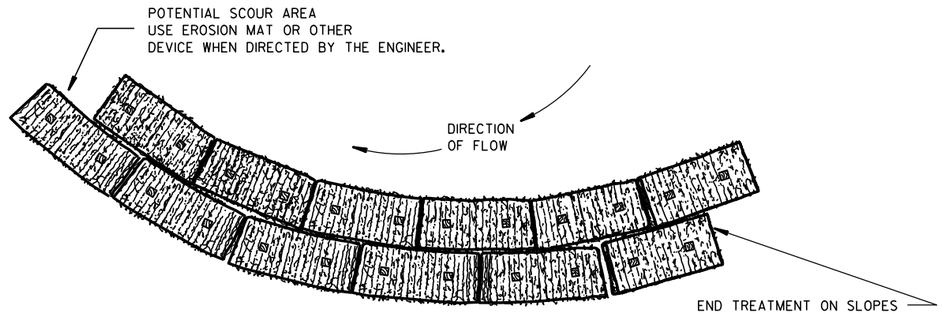

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

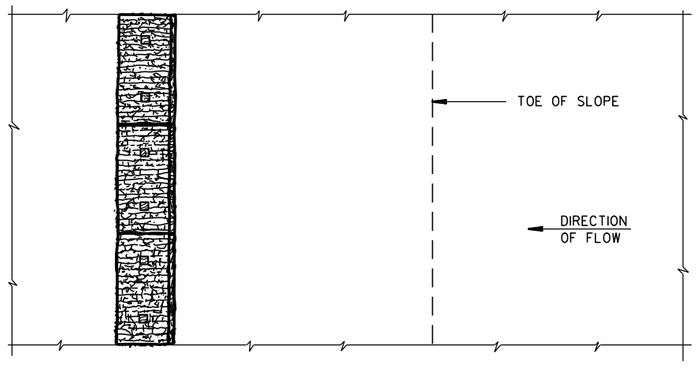
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

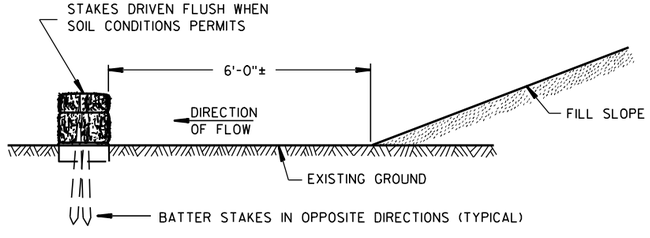



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

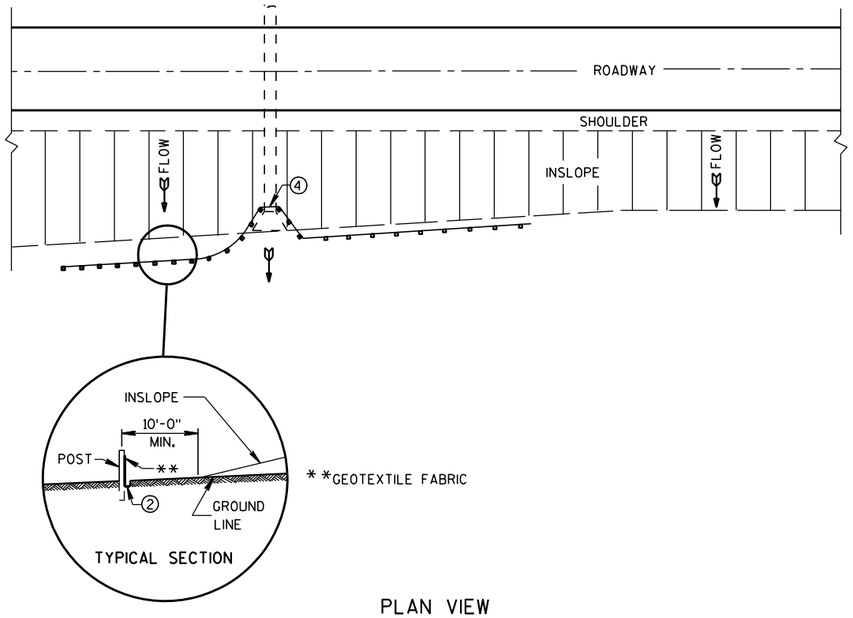


6

S.D.D. 8 E 8-3

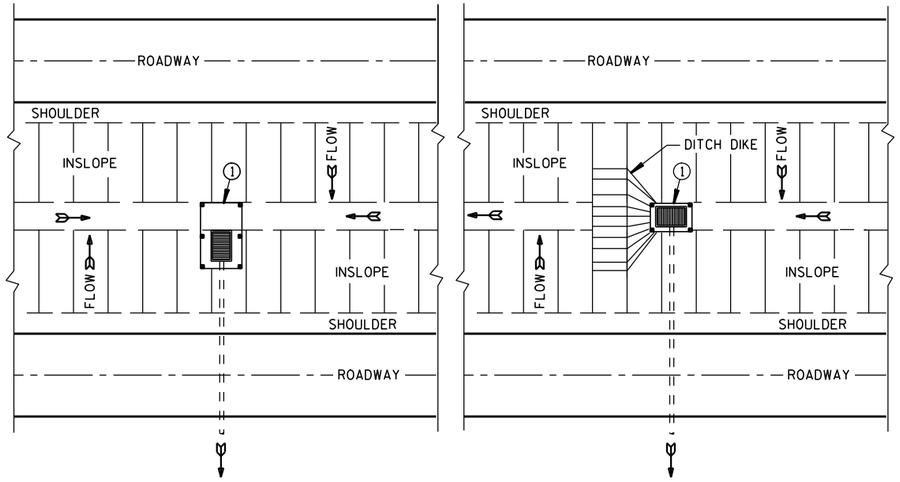
6

S.D.D. 8 E 8-3




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE




PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

## GENERAL NOTES

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

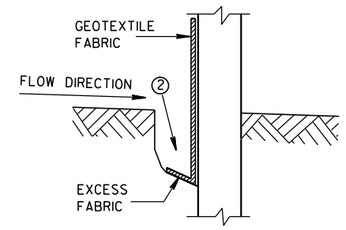
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

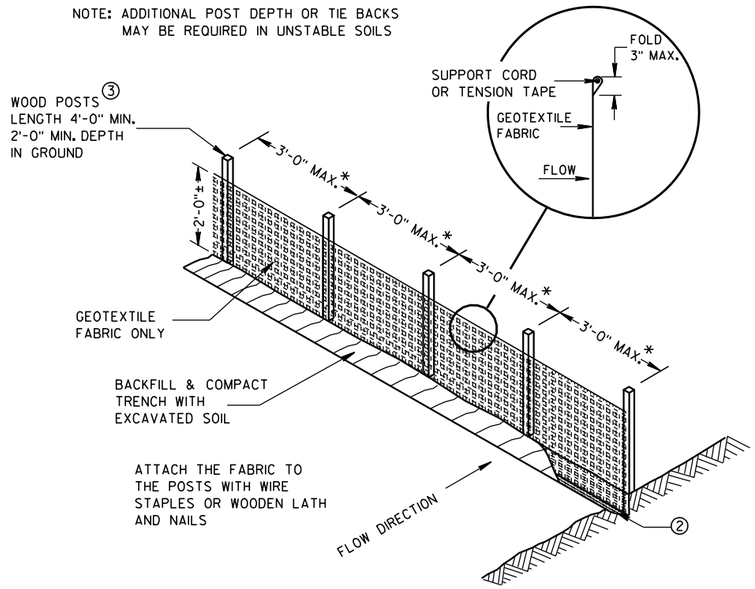
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

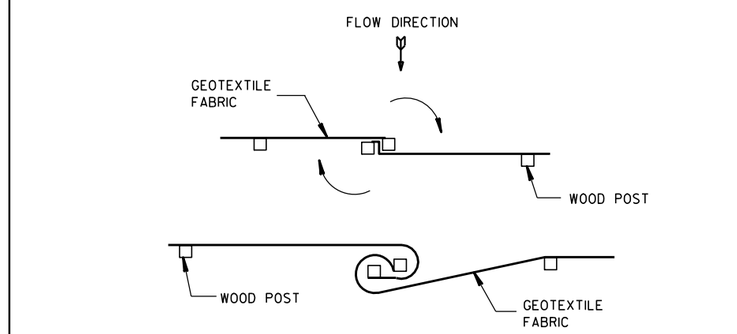
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



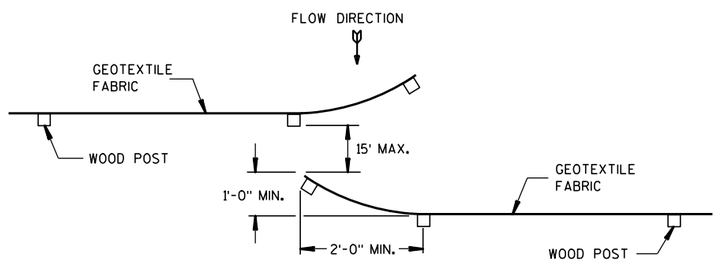

## TRENCH DETAIL




## SILT FENCE

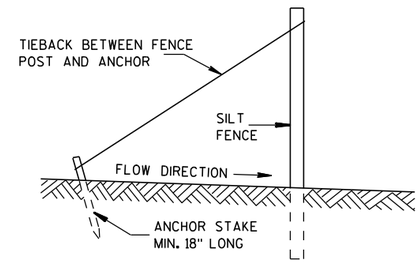



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE ⑤




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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S.D.D. 8 E 9-6

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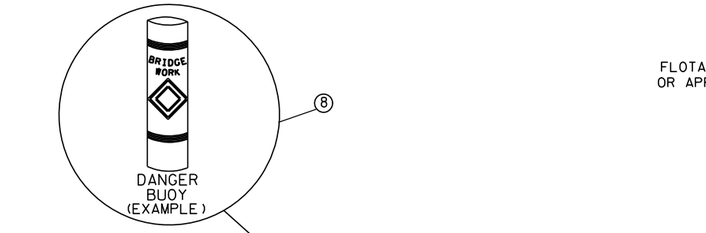
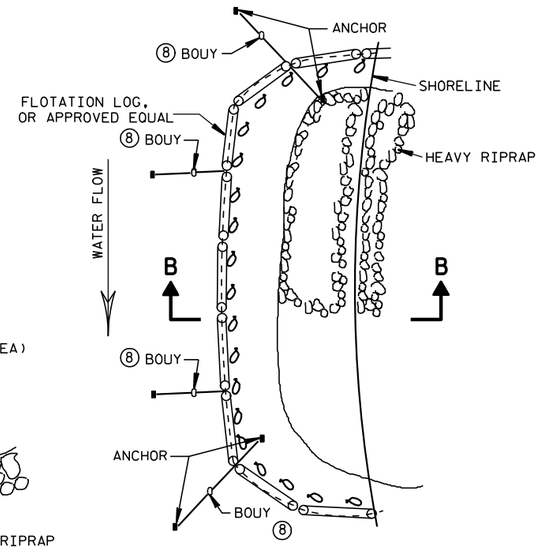
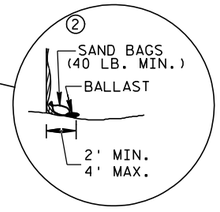
S.D.D. 8 E 9-6

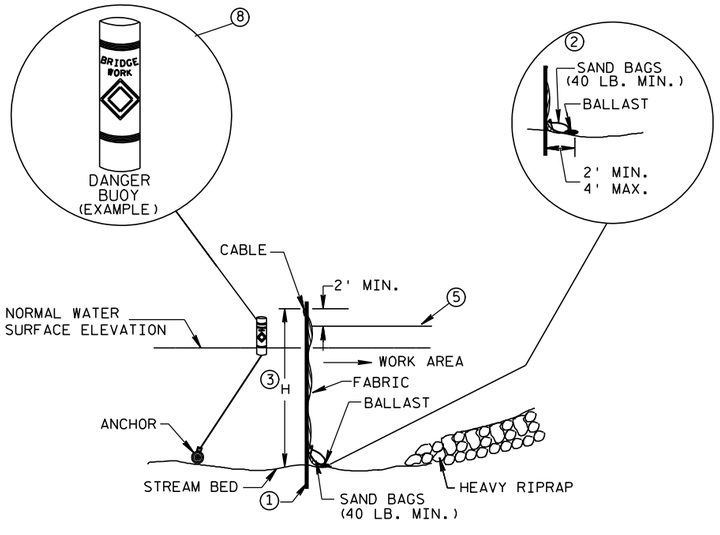



**SECTION B-B**



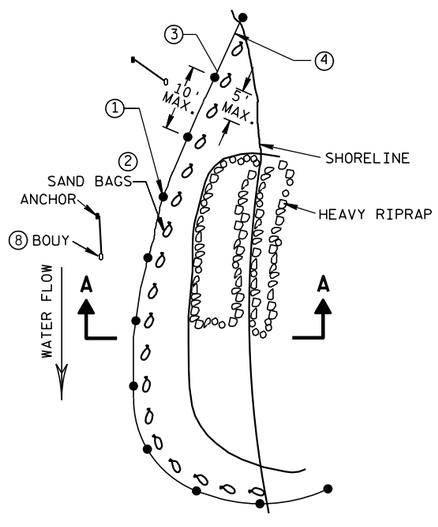




**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**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.

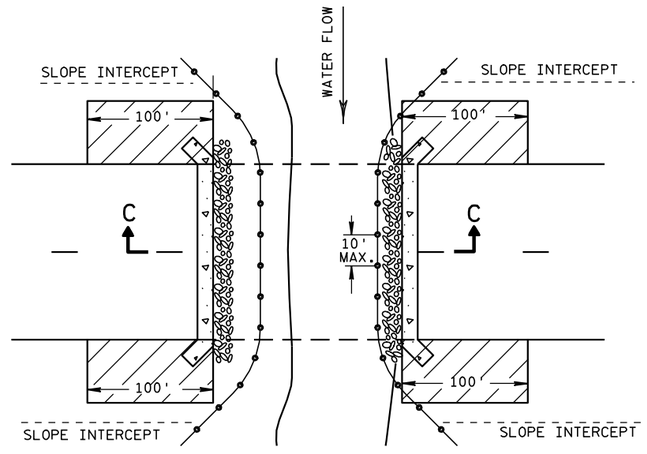
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

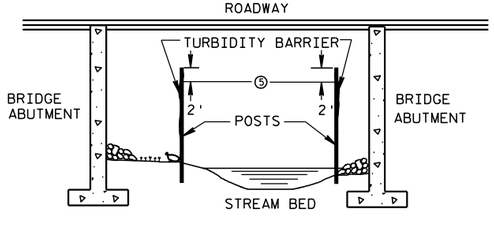
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

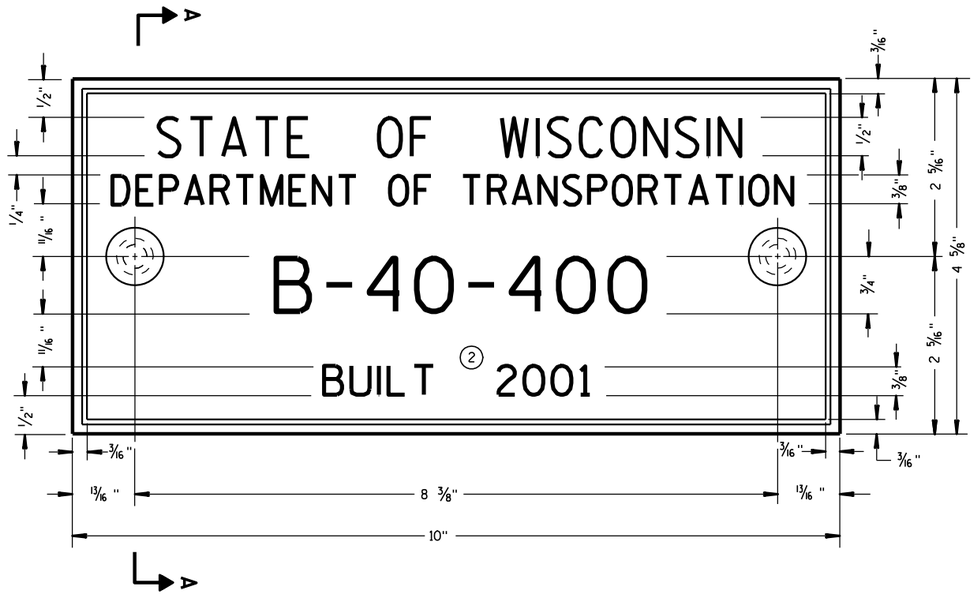
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



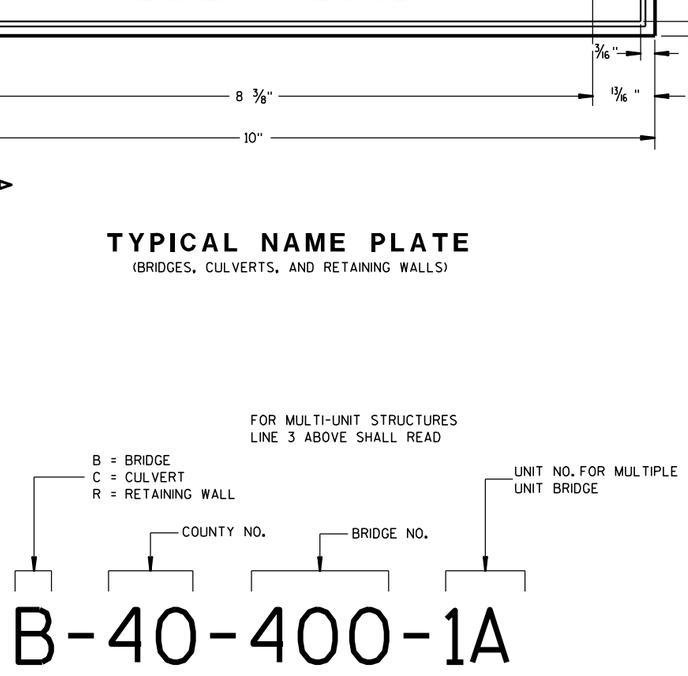
6

S.D.D. 8 E 11-2

S.D.D. 8 E 11-2




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




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

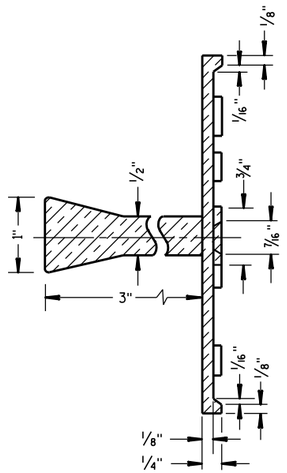
## GENERAL NOTES

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

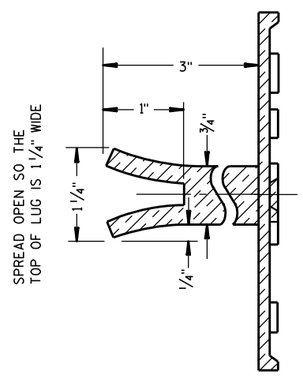
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

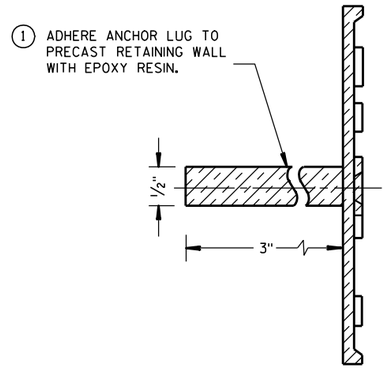
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




**SECTION A-A**




**ALTERNATE LUG**




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

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

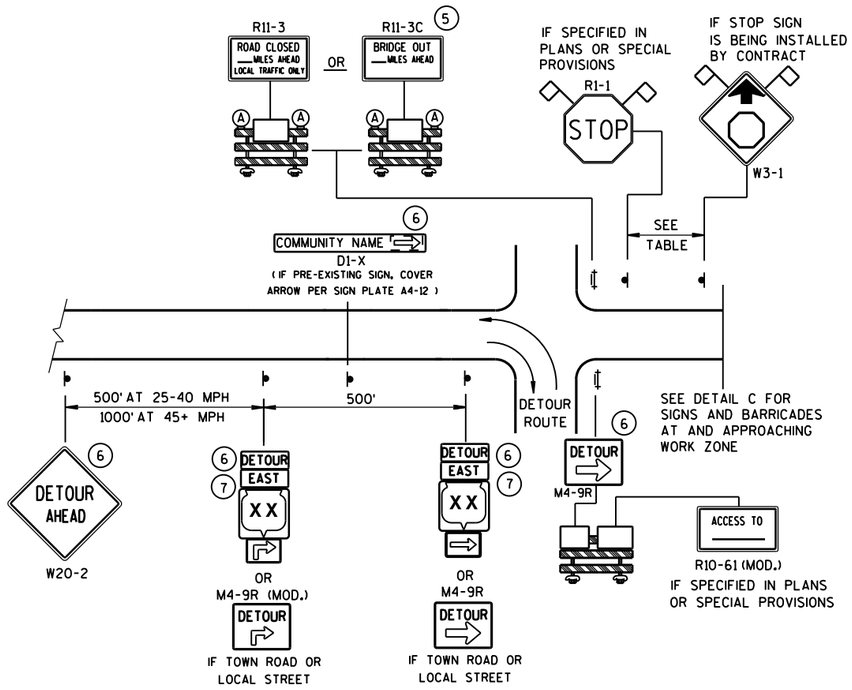


6

S.D.D. 12 A 3-10

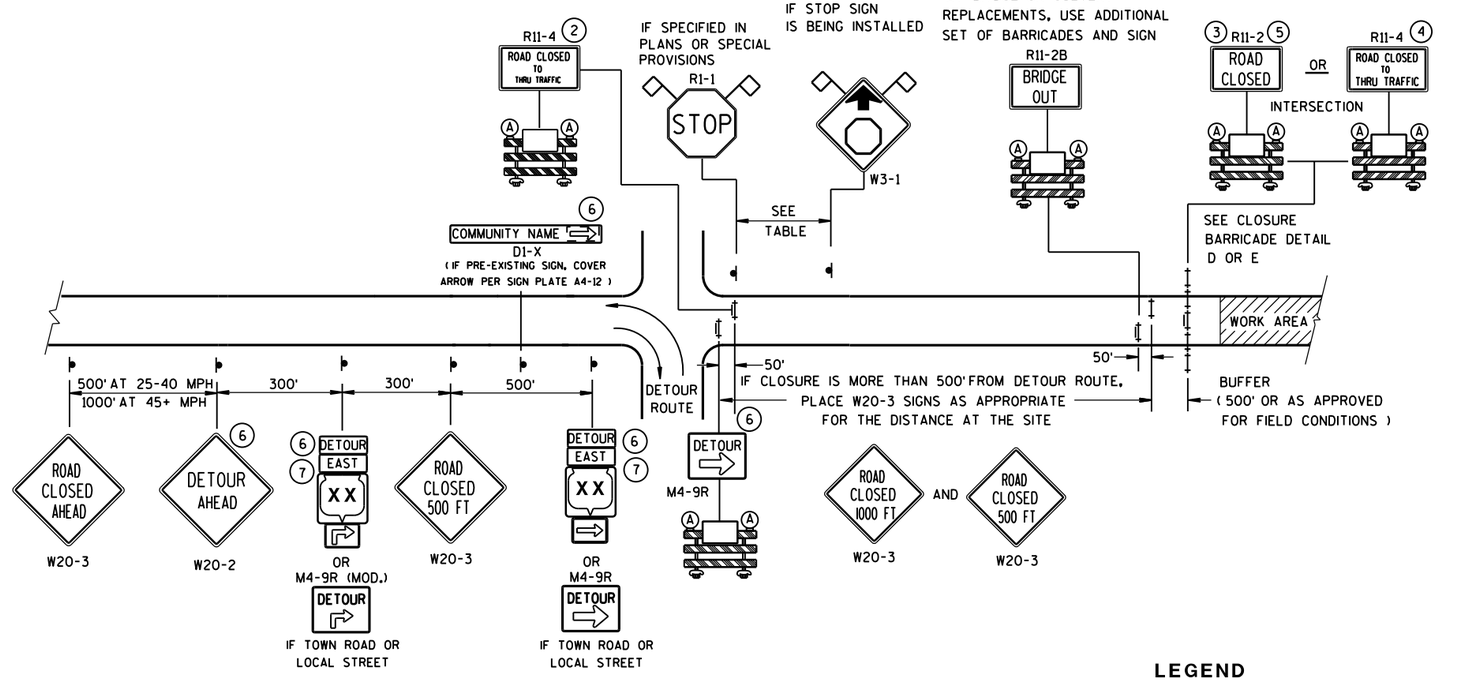
6

S.D.D. 12 A 3-10



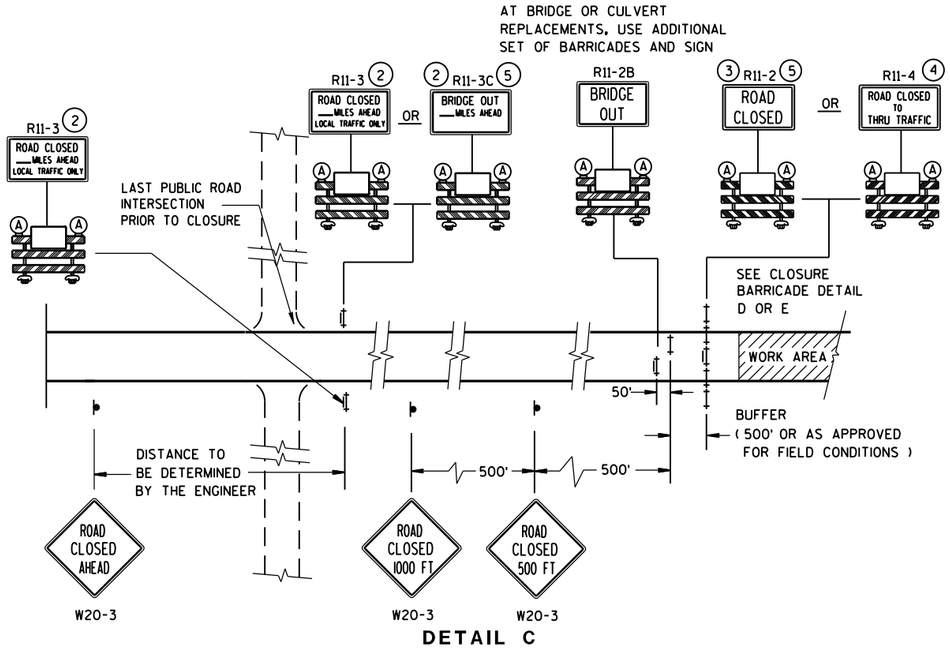

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

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

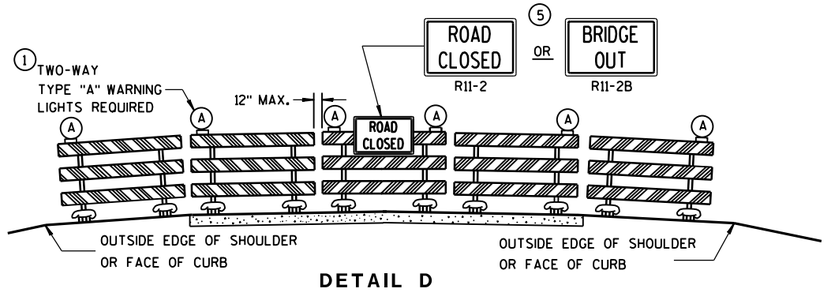
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA




6

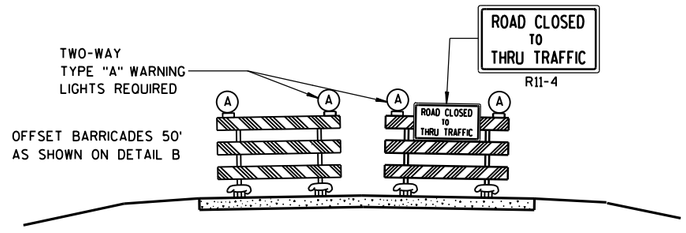
S.D.D. 15 C 2-5a




**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

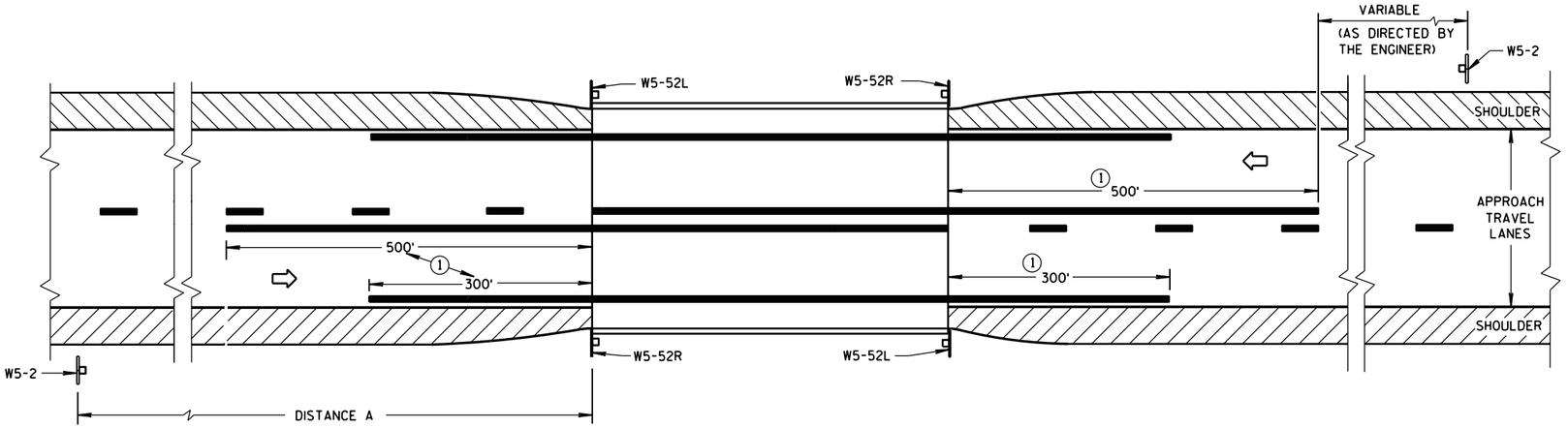




6



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.

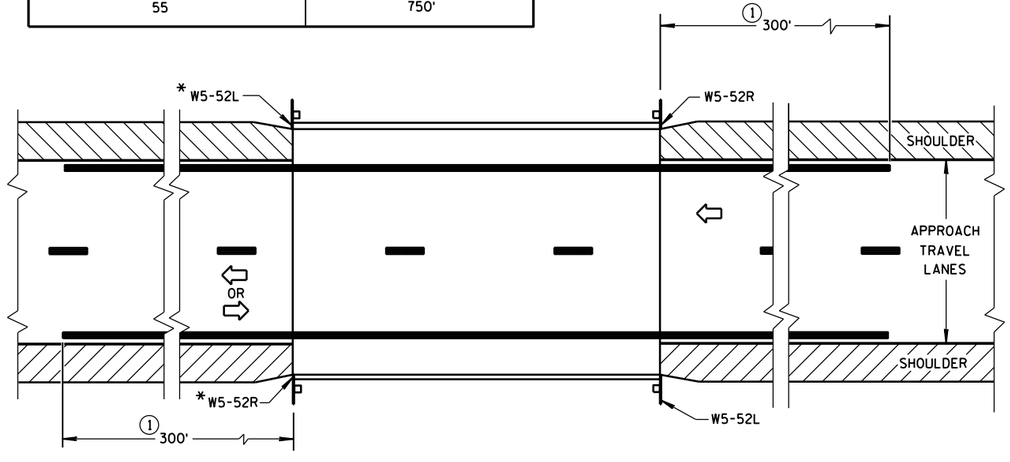
### DISTANCE TABLE

| 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



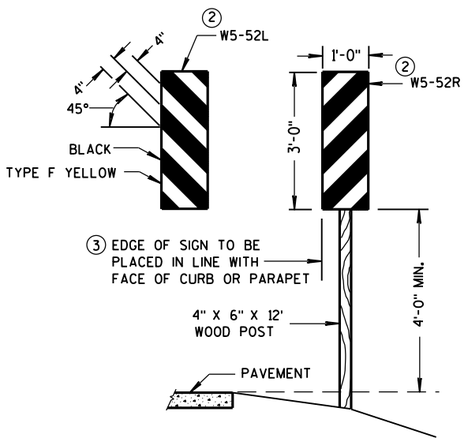

*OMIT ON ONE-WAY TRAVELLED WAYS

## SITUATION 2

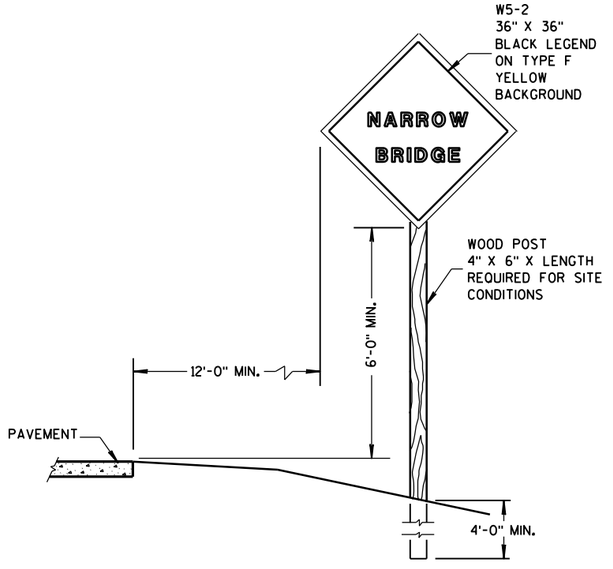
WARRANTING CRITERIA:

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



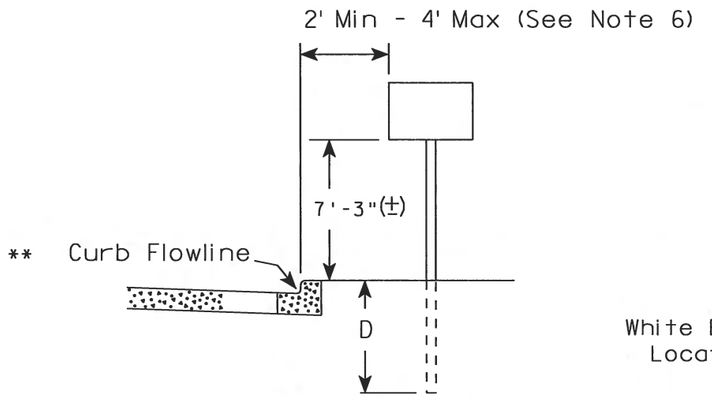


6

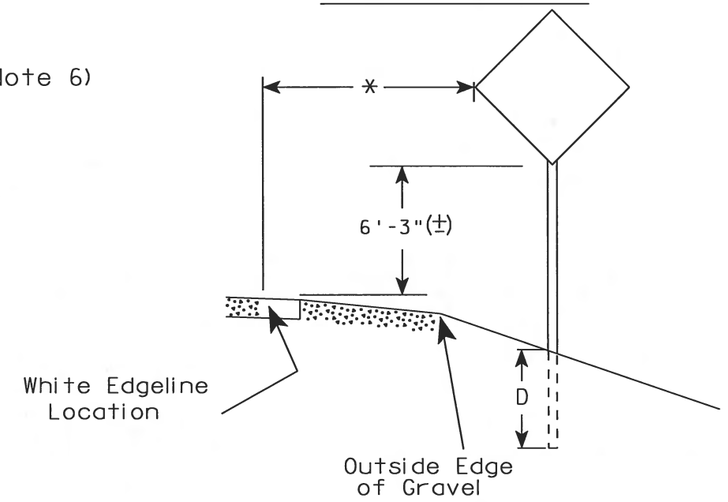


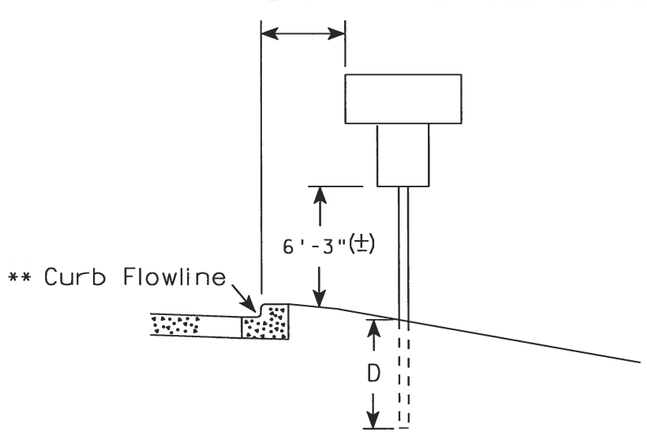
S.D.D. 15 C 6-7

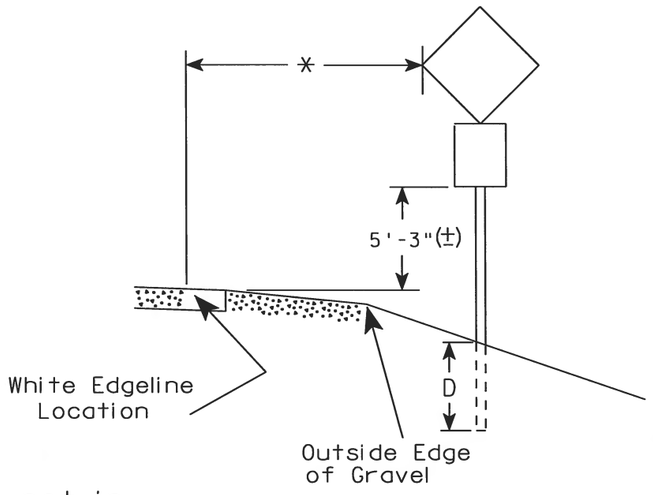
## URBAN AREA




## 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 (A2-1S) 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 signs shall be mounted at a height of 5'-3" (±) or as directd 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

### POST EMBEDMENT DEPTH

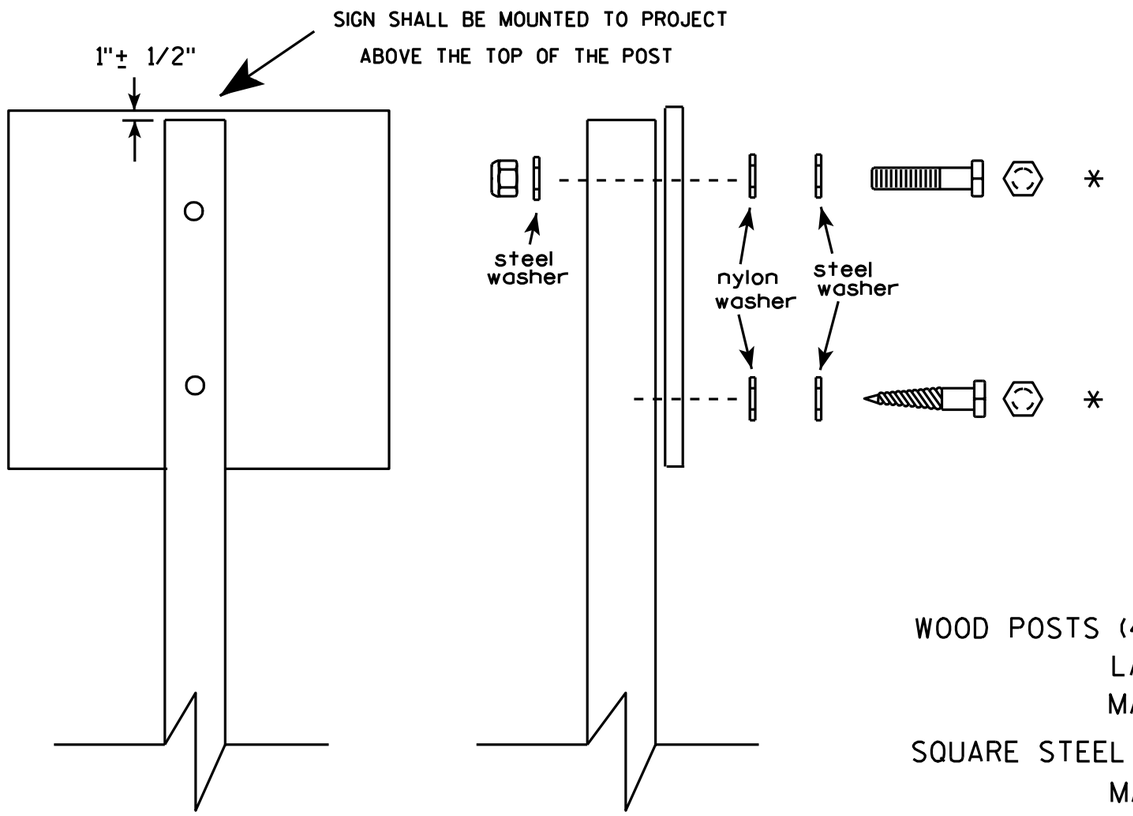
| Area of Sign Installation ( Sq.Ft. ) | D ( Min ) |
|---|---|
| 20 or Less | 4' |
| Greater than 20 | 5' |

**TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19




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

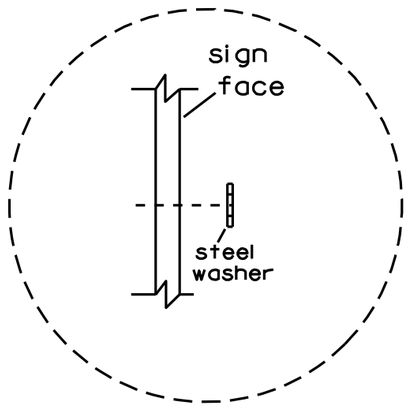
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

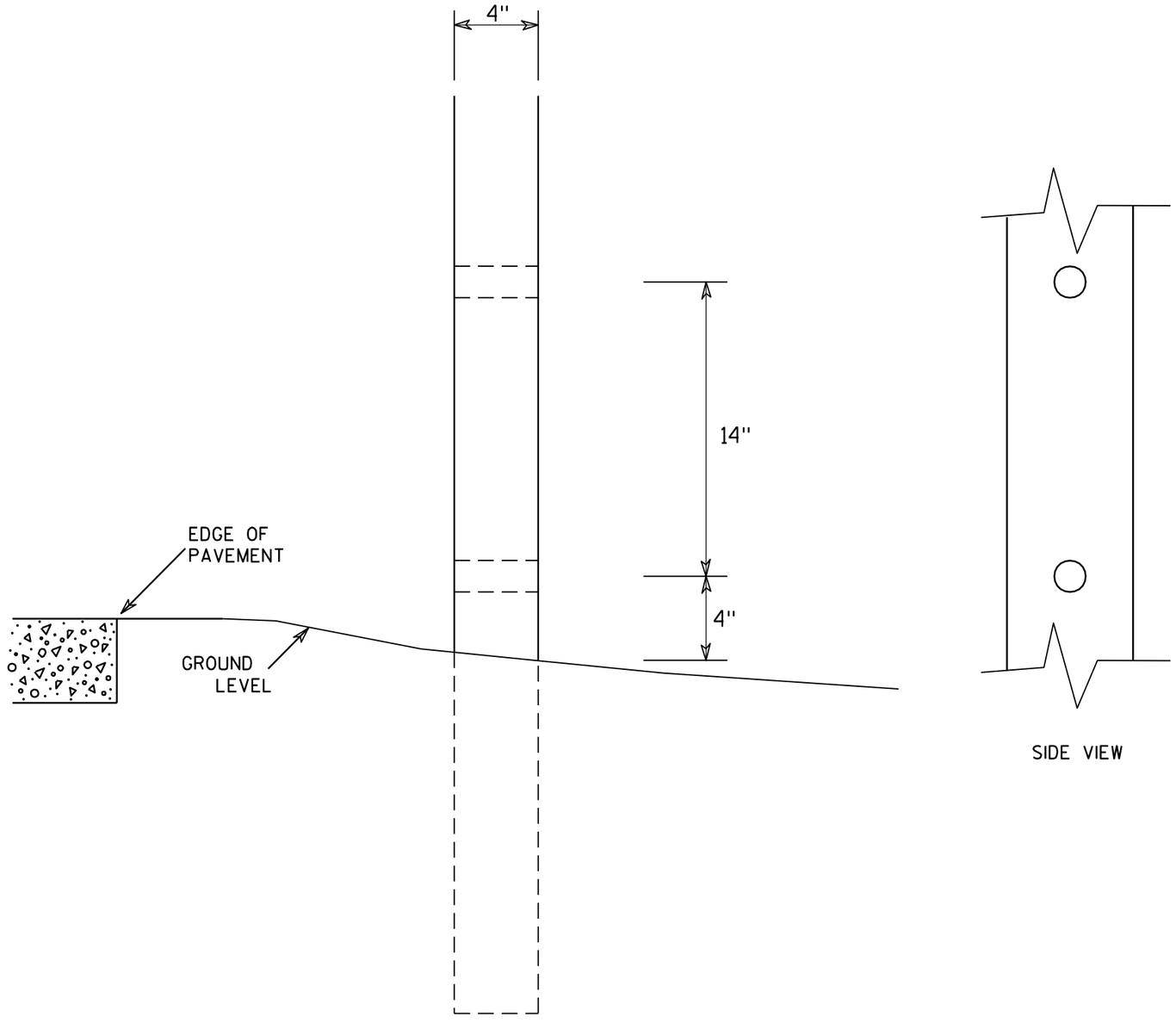
# ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 21 | 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.

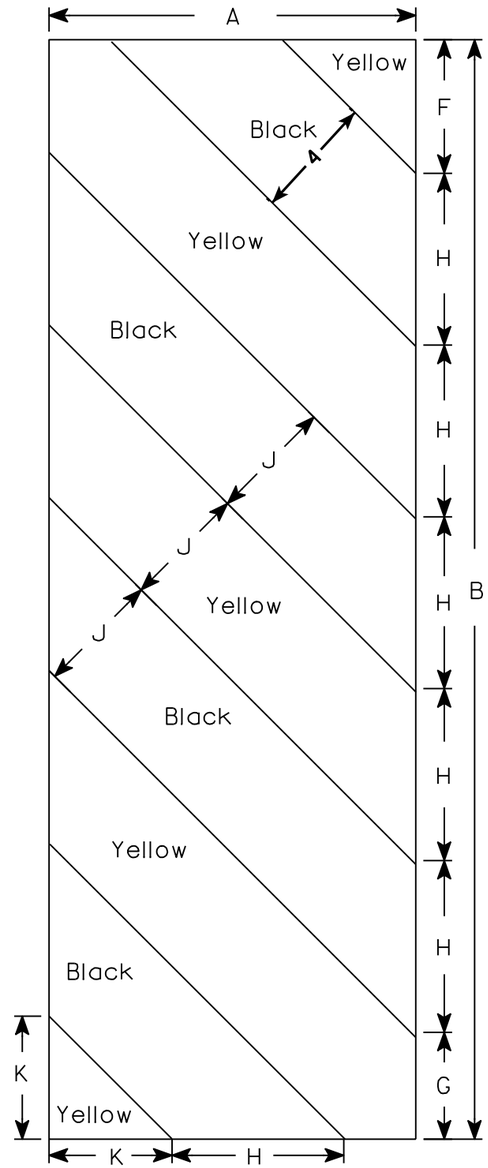
# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

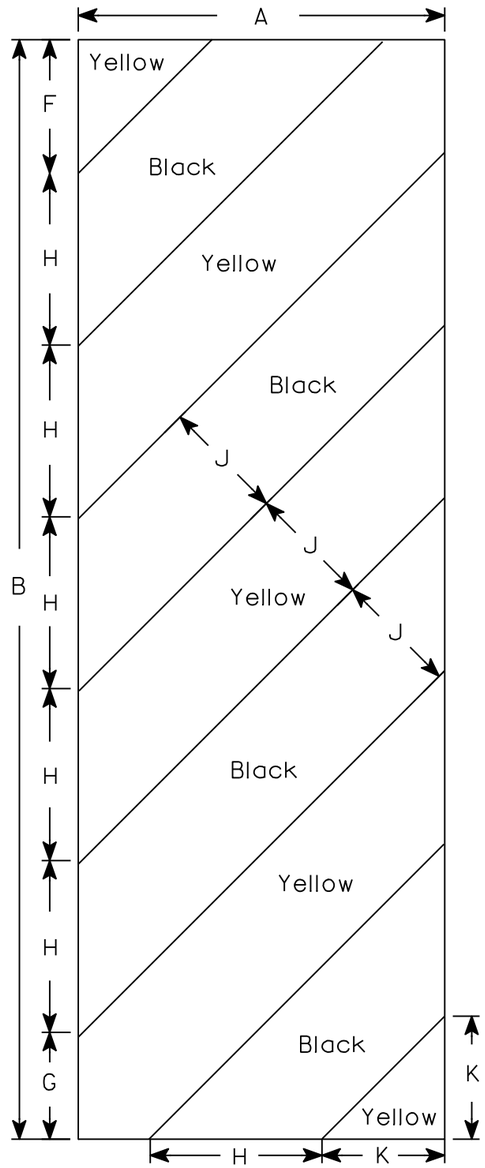
APPROVED Chester J Spang for State Traffic Engineer

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

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 22 | E |
|---|---|---|---|---|---|




W5-52L




W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

*WISCONSIN DEPT OF TRANSPORTATION*

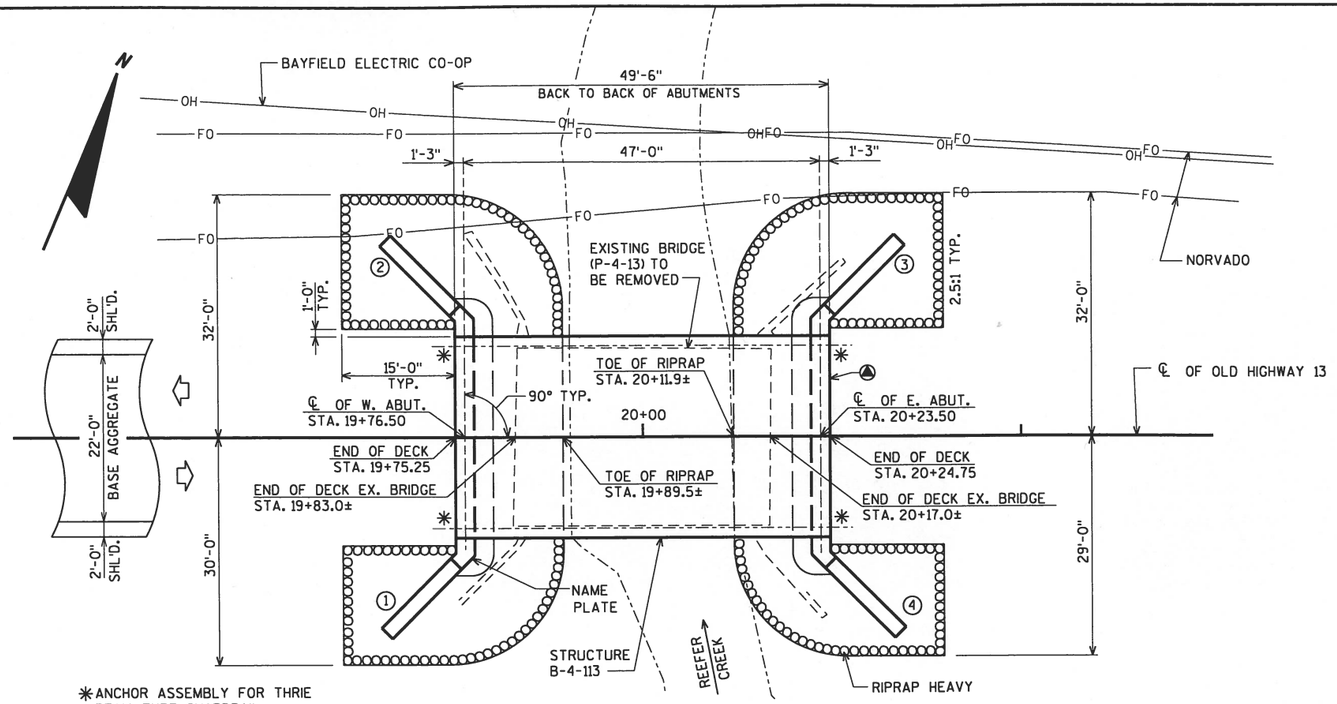
APPROVED Matthew R Rauch
for State Traffic Engineer

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

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | | SHEET NO: 23 | E |
|---|---|---|---|---|---|

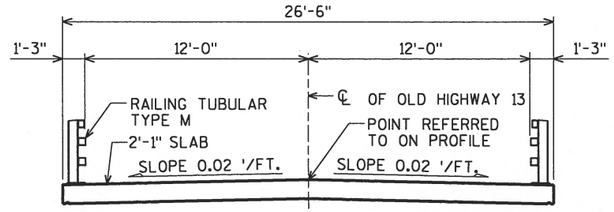
STATE PROJECT NUMBER

**8352-00-71**




## PLAN

SINGLE SPAN CONCRETE FLAT SLAB




## TYPICAL SECTION THRU BRIDGE

## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.18
OPERATING RATING FACTOR: 1.53
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE ____ f'c = 4,000 p.s.i.
ALL OTHER ____ f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) ____ $f_y$ = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD
DRAINAGE AREA = 11.6 sq. mi.
WATERWAY AREA = 373 sq. ft.
V = 6.2 f.p.s.
$Q_{100}$ = 2,300 c.f.s.
HIGH $WATER_{100}$ EL. 631.7
HIGH $WATER_{2}$ EL. 626.2
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2012)

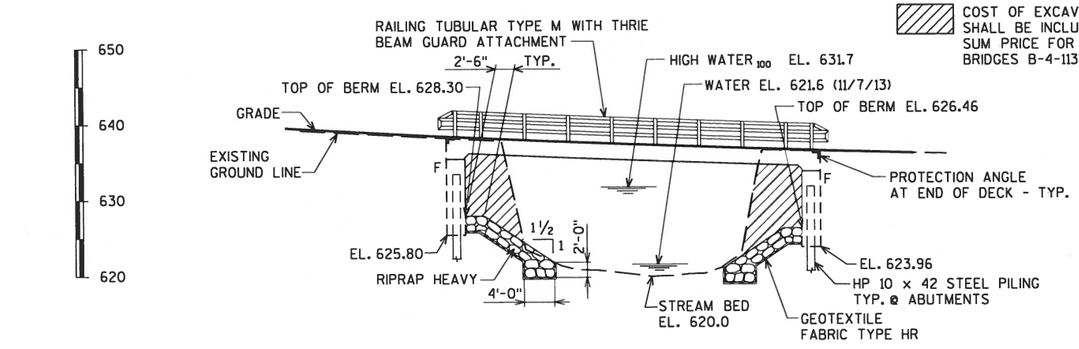
FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH OF 20'-0".

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

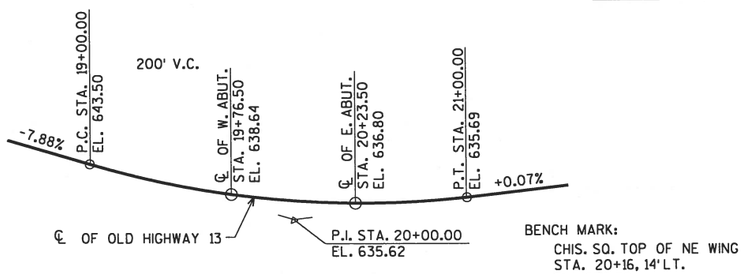
TRAFFIC DATA:

A.D.T. = <100 (2016)
A.D.T. = <100 (2036)
R.D.S. = 20 M.P.H.




COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-4-113".

## ELEVATION




## PROFILE GRADE LINE

(OLD HIGHWAY 13)

BENCH MARK:
CHIS. SQ. TOP OF NE WING
STA. 20+16, 14'LT.
EL. 636.70

## LIST OF DRAWINGS



WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER
7/13/2015

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

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

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/04/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

# STRUCTURE B-4-113

OLD HIGHWAY 13 OVER REEFER CREEK

| COUNTY | TOWN ~~CITY/VILLAGE~~ |
|---|---|
| BAYFIELD | ORIENTA |

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | CJM | DESIGN CK'D. | JCK | DRAWN BY | CLS/CJM | PLANS CK'D. | DNS |
|---|---|---|---|---|---|---|---|

GENERAL PLAN

SHEET 1 OF 11
24

DATE: DATE: DATE:
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8 8

7/9/2015 PENTABLE:BReau_shd_util.tbl I.D. DATE:

STATE PROJECT NUMBER

8352-00-71

## TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | W. ABUT. | E. ABUT. | SUPER. | TOTAL |
|---|---|---|---|---|---|---|
| 203.0500.S | REMOVING OLD STRUCTURE OVER WATERWAY STATION 20+00 | LS | ----- | ----- | ----- | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-4-113 | LS | ----- | ----- | ----- | 1 |
| 210.0100 | BACKFILL STRUCTURE | CY | 310 | 310 | ----- | 620 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 47 | 47 | 105 | 199 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ----- | ----- | 180 | 180 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 2,310 | 2,310 | ----- | 4,620 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 2,040 | 2,040 | 18,290 | 22,370 |
| 506.0105 | STRUCTURAL STEEL CARBON | LB | ----- | ----- | 530 | 530 |
| 513.4061 | RAILING STEEL TYPE M B-4-113 | LF | ----- | ----- | 99 | 99 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 9 | 9 | ----- | 18 |
| 550.0500 | PILE POINTS | EACH | 10 | 10 | ----- | 20 |
| 550.1100 | PILING STEEL HP 10-INCH x 42 LB | LF | 200 | 200 | ----- | 400 |
| 606.0300 | RIPRAP HEAVY | CY | 105 | 100 | ----- | 205 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 80 | 80 | ----- | 160 |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 170 | 160 | ----- | 330 |
| | | | | | | |
| | NON-BID ITEMS | | | | | |
| | FILLER | SIZE | ----- | ----- | ----- | 1/2" & 3/4" |
| | | | | | | |
| | | | | | | |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

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

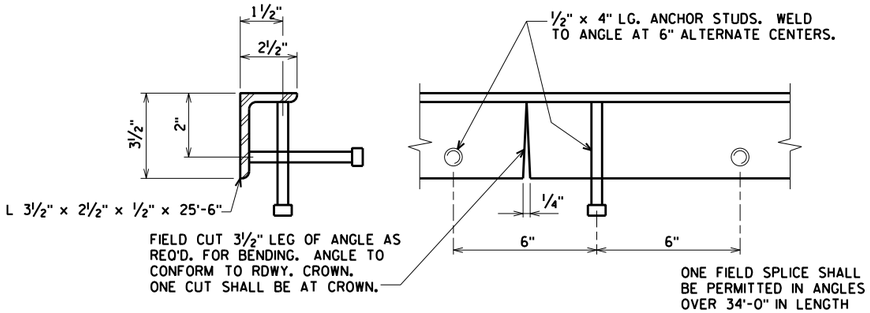
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-4-113, TO BE REMOVED, IS A SINGLE SPAN CONCRETE DECK GIRDER BRIDGE, 34.0 FT. LONG WITH A 24 FT. CLEAR ROADWAY WIDTH.

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

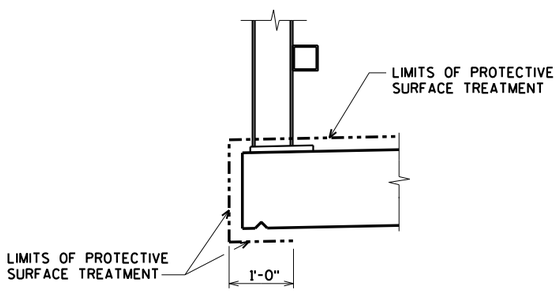
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.



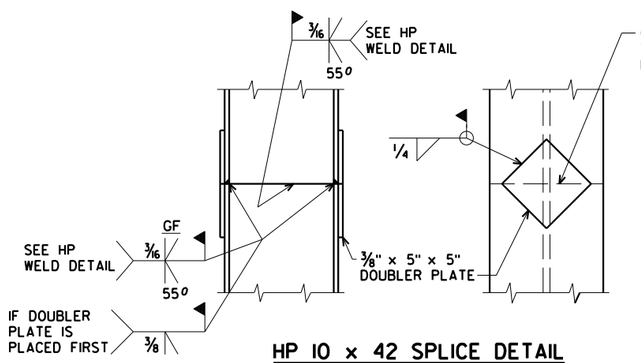

### PROTECTION ANGLE DETAIL

(ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL STEEL CARBON". (NO PAINT REQ'D.)

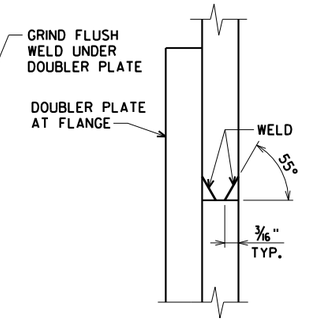
SANDBLAST PROTECTION ANGLE AFTER FABRICATION. AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.




### PROTECTIVE SURFACE TREATMENT DETAIL




### HP 10 x 42 SPLICE DETAIL




### HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

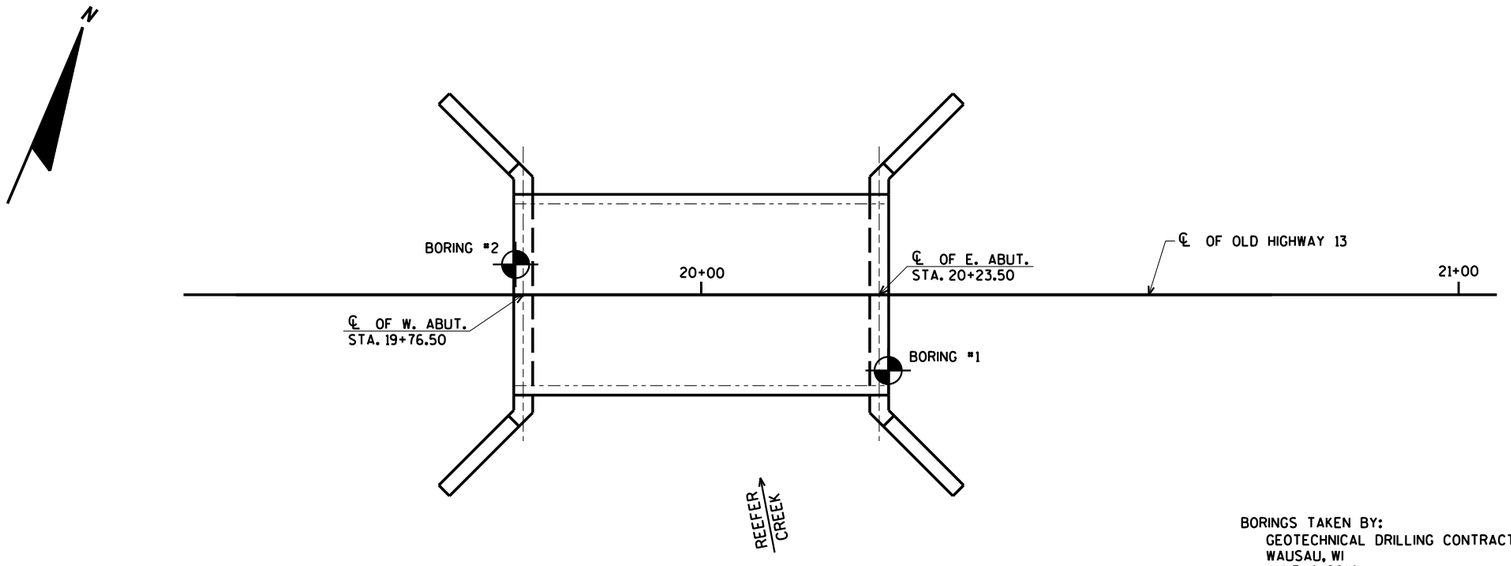
STRUCTURE B-4-113

DRAWN BY CLS/CJM | PLANS CK'D. CJM

QUANTITIES AND NOTES

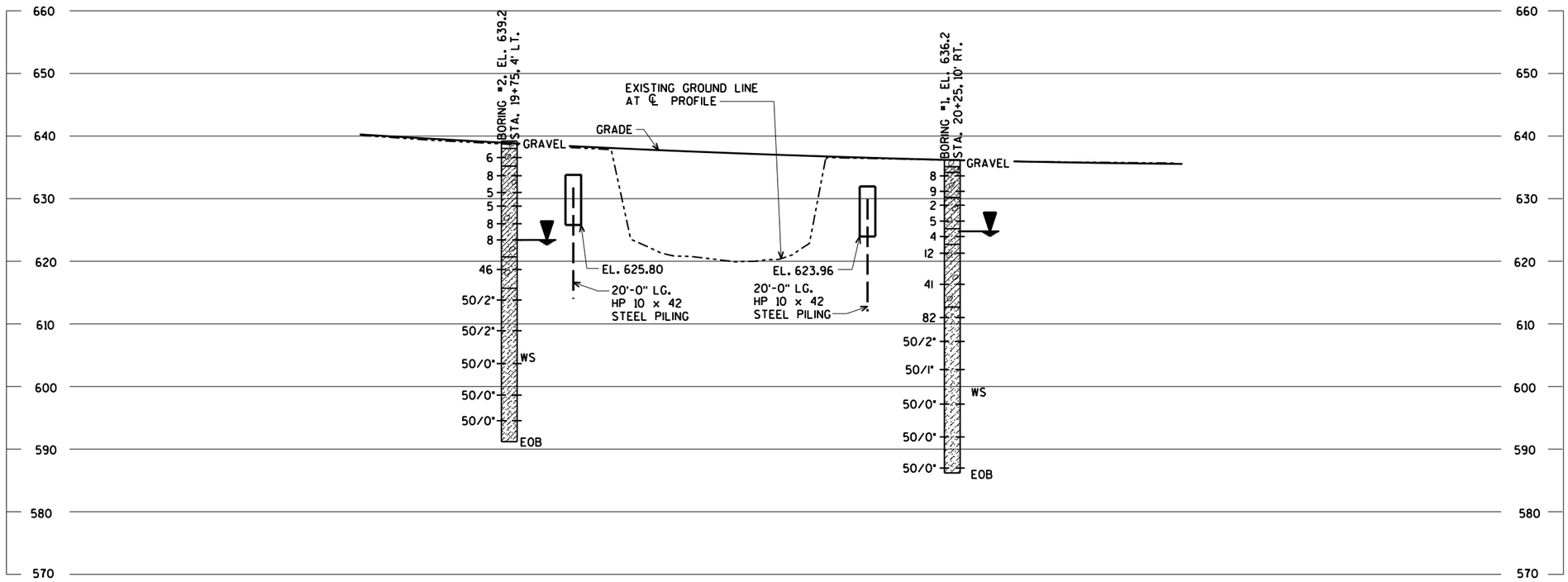
SHEET 2 OF 11
25

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com




BORINGS TAKEN BY:
GEOTECHNICAL DRILLING CONTRACTORS, INC.
WAUSAU, WI
JUNE 4, 2014

GEOTECHNICAL REPORT BY:
RIVER VALLEY TESTING CORP.
NEENAH, WI
JULY 7, 2014




STATE PROJECT NUMBER

8352-00-71

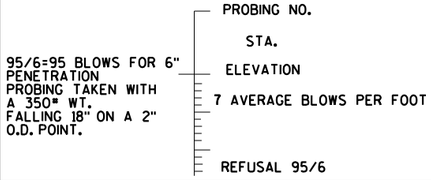
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

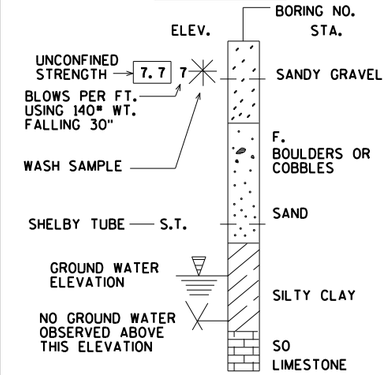
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING




LEGEND OF BORING




UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

DRAWN BY CJM | PLANS CK'D. CJM

SUBSURFACE EXPLORATION

SHEET 3 OF 11
26

8

8

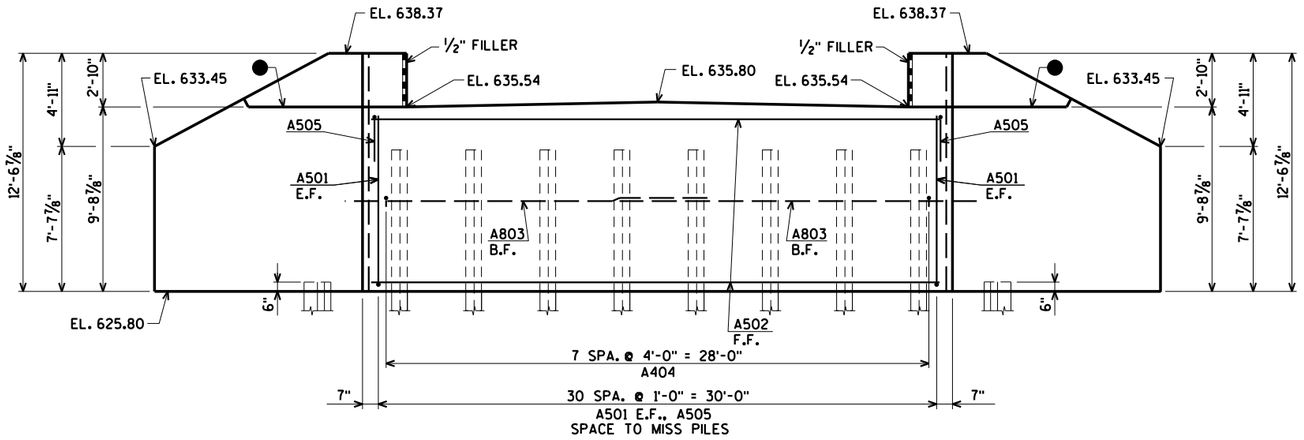
5/27/2015

PENTABLE:BReau_shd_util.tbl

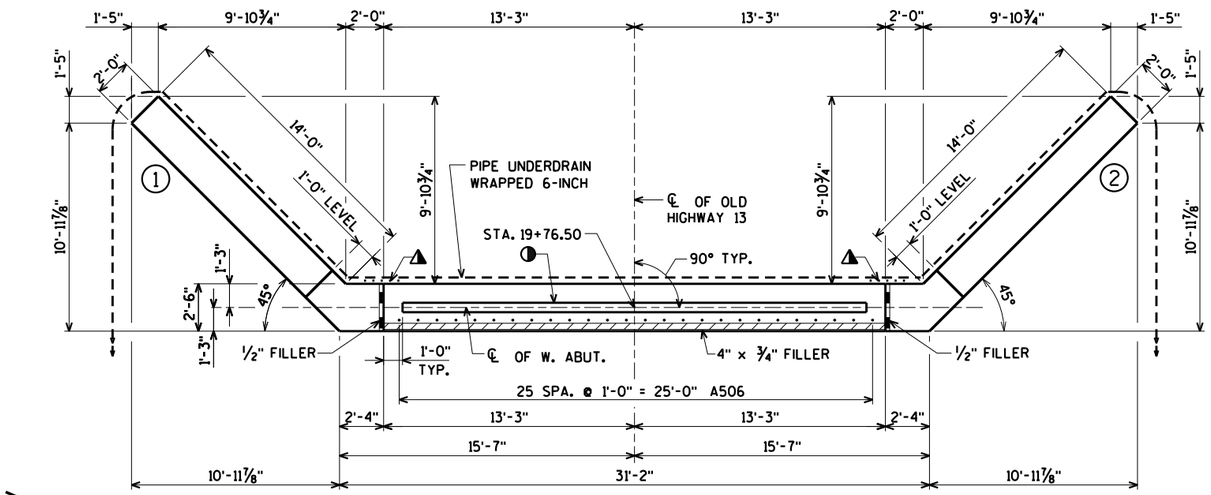
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

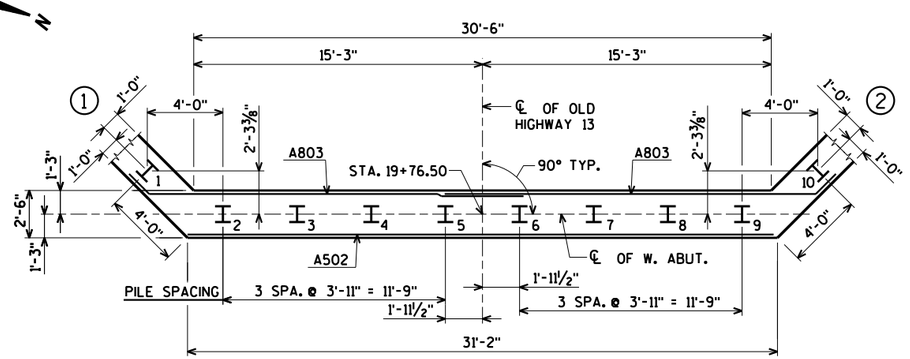
8352-00-71



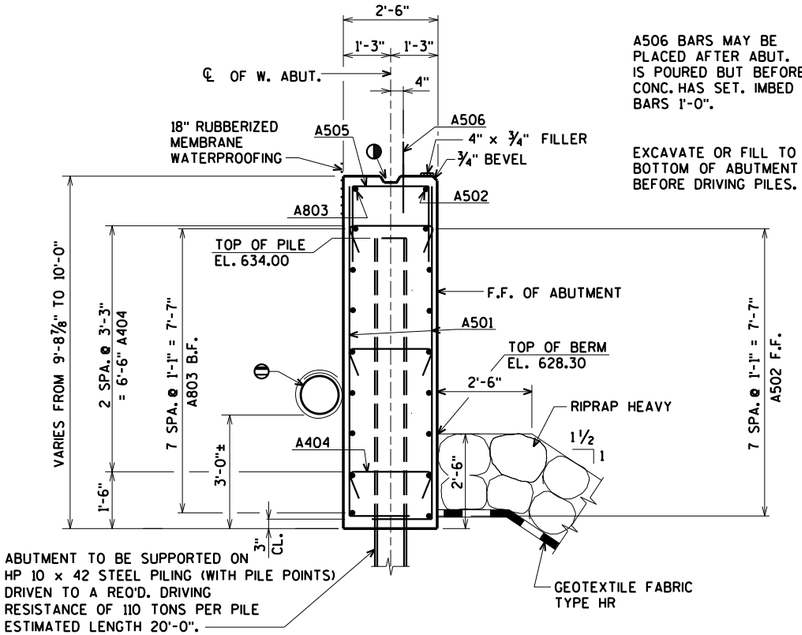

## ELEVATION
(LOOKING WEST)




## PLAN




## PILE LAYOUT




A506 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

## TYPICAL SECTION THRU BODY

NOTES: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 5.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

| DRAWN BY | CLS | PLANS CK'D. | CJM |
|---|---|---|---|

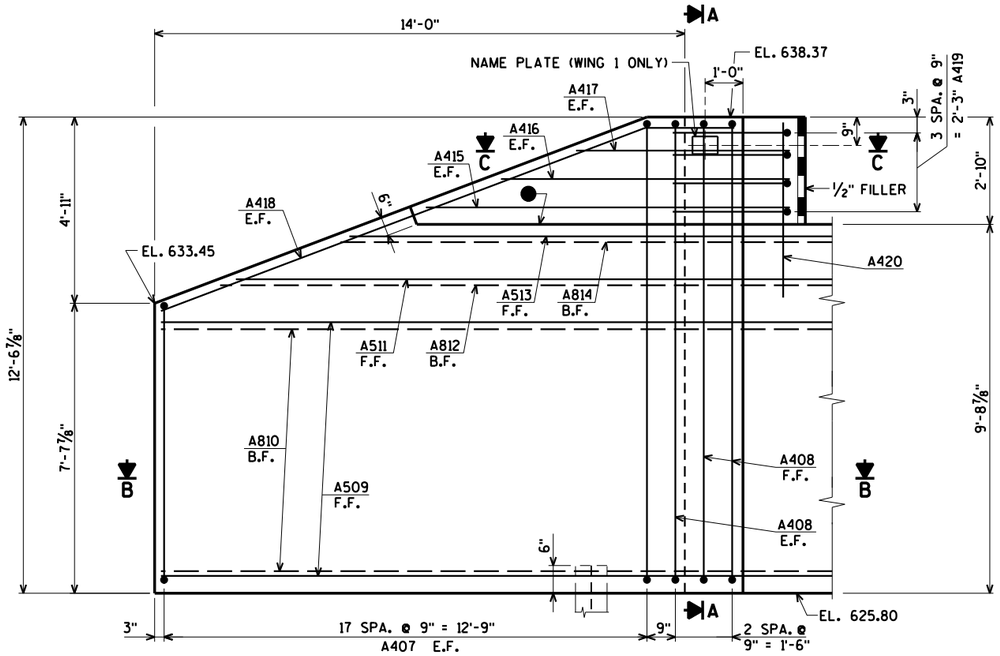
WEST ABUTMENT

SHEET 4 OF 11
27

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

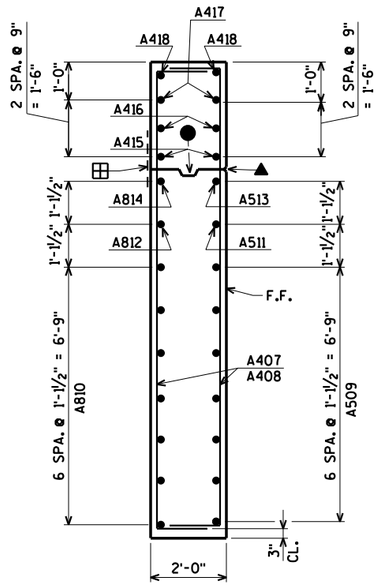
STATE PROJECT NUMBER

8352-00-71

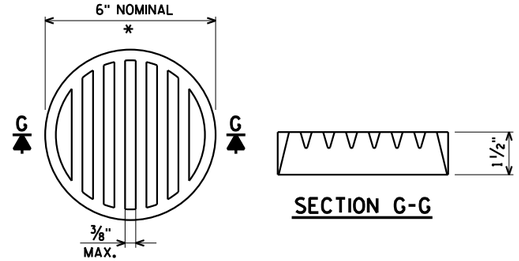



## ELEVATION - WING 1

(WING 1 SHOWN, WING 2 SIMILAR)




## SECTION A



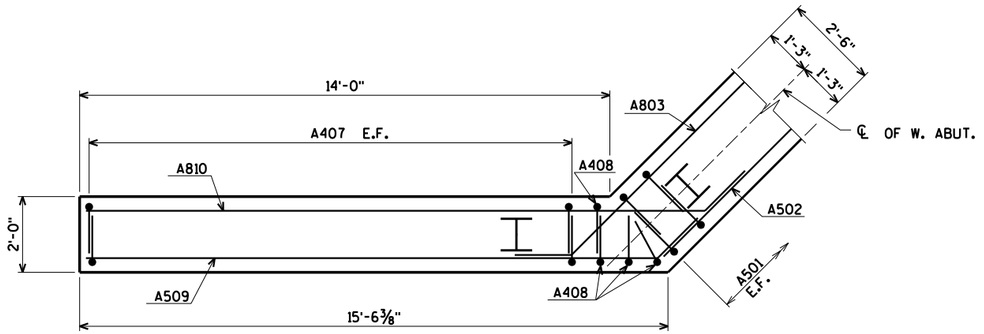

## SECTION G-G

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

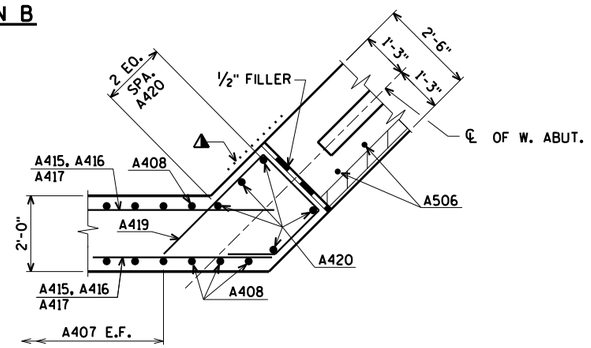
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

## RODENT SHIELD DETAIL




## SECTION B




## SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

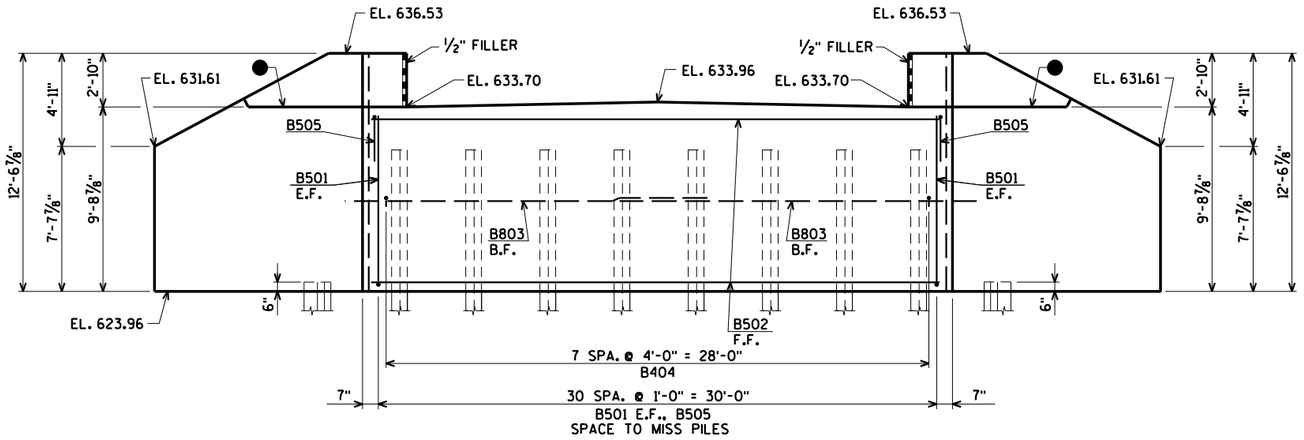
DRAWN BY CLS | PLANS CK'D. CJM

WEST ABUTMENT WING DETAILS

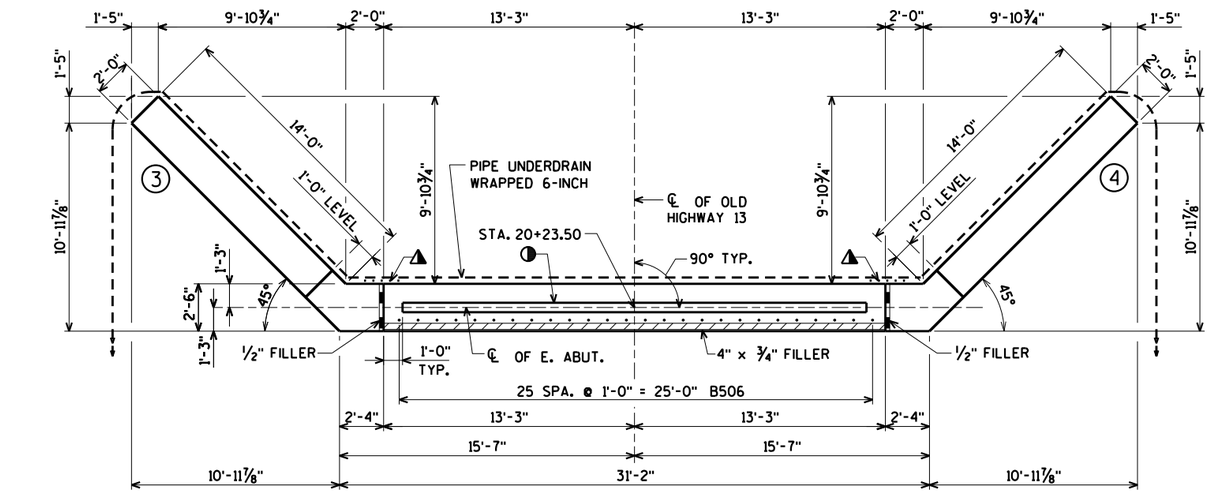
SHEET 5 OF 11
28

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

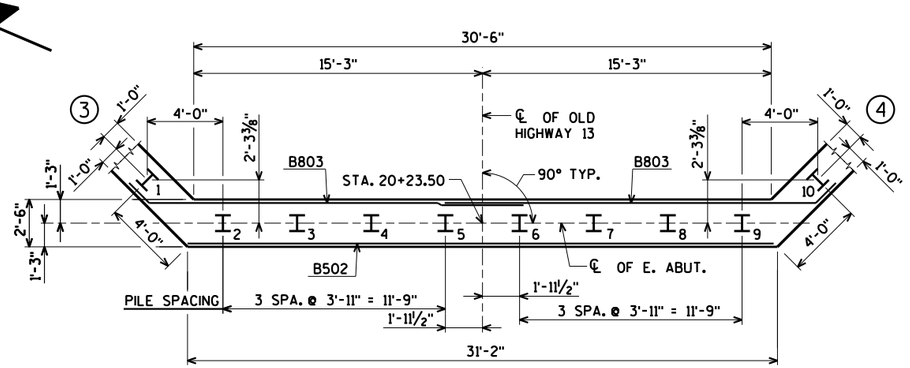
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)



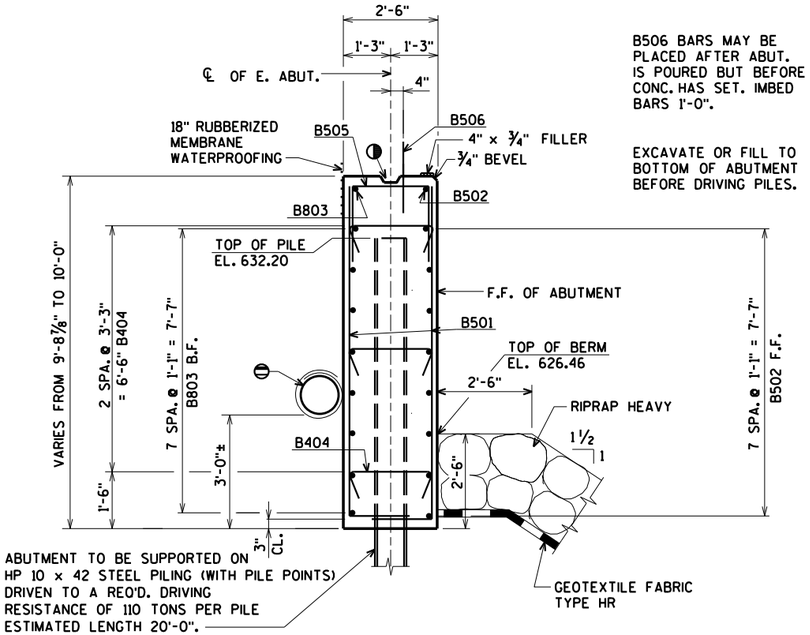

## ELEVATION
(LOOKING EAST)




## PLAN




## PILE LAYOUT




B506 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

## TYPICAL SECTION THRU BODY

NOTES: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 7.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

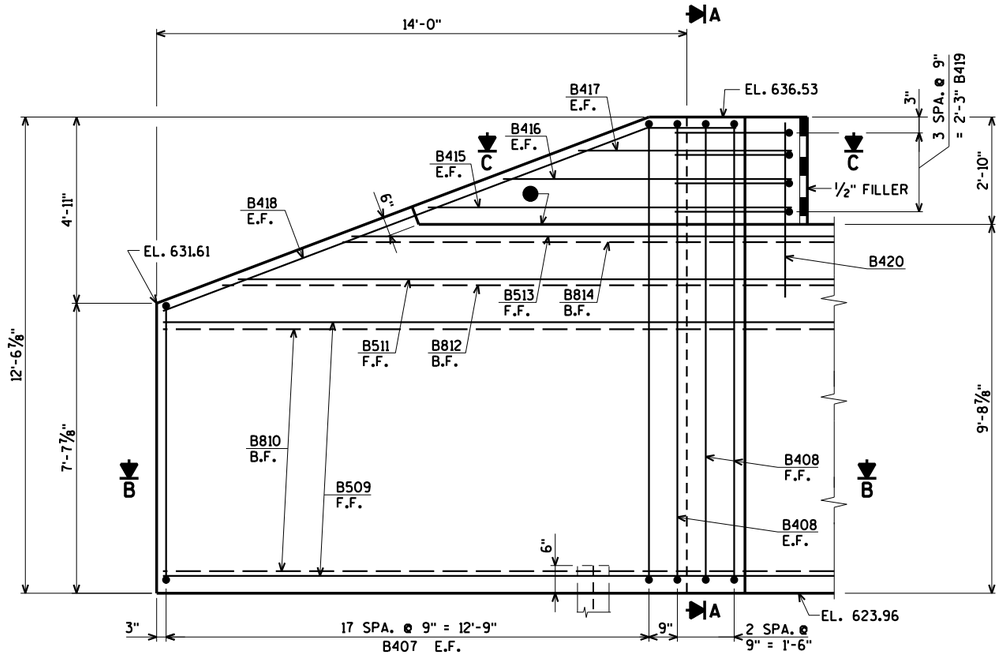
STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

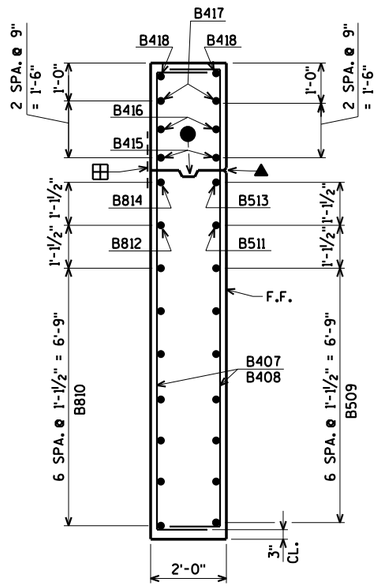
EAST ABUTMENT

SHEET 6 OF 11
29

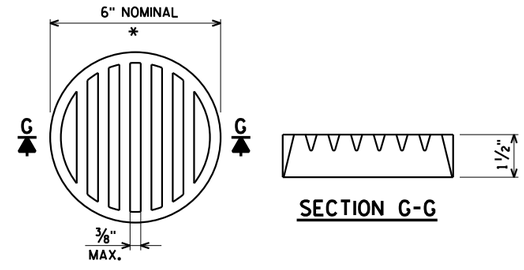
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com




## ELEVATION - WING 3
(WING 3 SHOWN, WING 4 SIMILAR)




## SECTION A



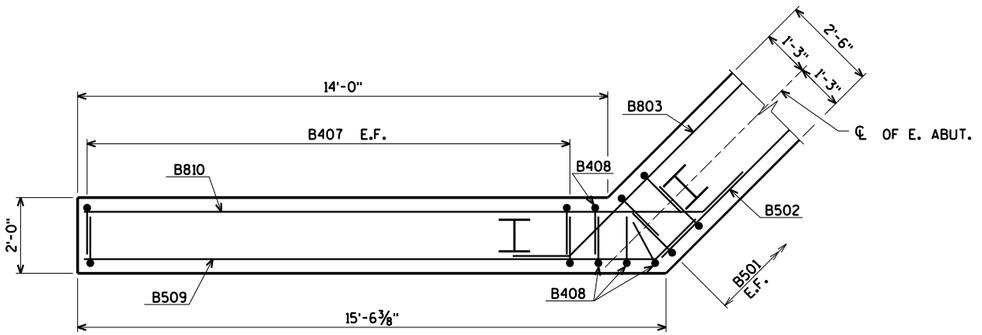

## SECTION G-G

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

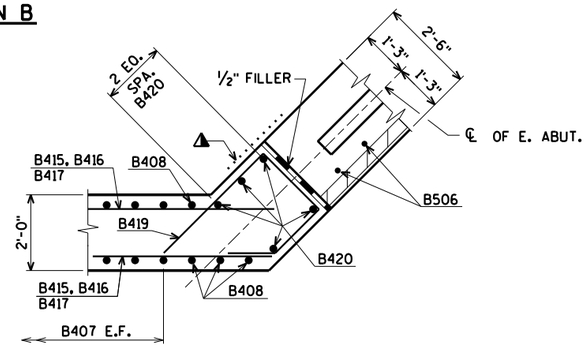
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

## RODENT SHIELD DETAIL




## SECTION B




## SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

EAST ABUTMENT WING DETAILS

SHEET 7 OF 11
30

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

8352-00-71

## BILL OF BARS - WEST ABUTMENT

| BAR. NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR | SERIES | 2,310# UNCOATED 2,040# COATED LOCATION |
|---|---|---|---|---|---|---|---|
| A501 | | 62 | 10-9 | X | | | BODY VERT. E.F. |
| A502 | | 9 | 30-11 | | | | BODY HORIZ. F.F. |
| A803 | | 18 | 21-7 | X | | | BODY HORIZ. B.F. |
| A404 | | 24 | 2-9 | X | | | BODY TIES |
| A505 | | 31 | 7-5 | X | | | BODY VERT. TOP |
| A506 | X | 26 | 2-0 | | | | BODY DOWELS |
| A407 | X | 72 | 12-0 | X | | ⊗ | WING VERT. E.F. |
| A408 | X | 8 | 14-7 | X | | | WING VERT. E.F. |
| A509 | X | 14 | 16-9 | X | | | WING HORIZ. F.F. |
| A810 | X | 14 | 18-3 | X | | | WING HORIZ. B.F. |
| A511 | X | 2 | 15-1 | X | | | WING HORIZ. F.F. |
| A812 | X | 2 | 16-11 | X | | | WING HORIZ. B.F. |
| A513 | X | 2 | 12-1 | X | | | WING HORIZ. F.F. |
| A814 | X | 2 | 14-0 | X | | | WING HORIZ. B.F. |
| A415 | X | 4 | 8-8 | | | | WING HORIZ. E.F. |
| A416 | X | 4 | 6-8 | | | | WING HORIZ. E.F. |
| A417 | X | 4 | 4-8 | | | | WING HORIZ. E.F. |
| A418 | X | 4 | 15-1 | X | | | WING DIAG. E.F. |
| A419 | X | 8 | 8-5 | X | | | WING HORIZ. |
| A420 | X | 10 | 4-4 | | | | WING VERT. |

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

## BILL OF BARS - EAST ABUTMENT

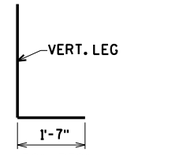
| BAR. NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR | SERIES | 2,310# UNCOATED 2,040# COATED LOCATION |
|---|---|---|---|---|---|---|---|
| B501 | | 62 | 10-9 | X | | | BODY VERT. E.F. |
| B502 | | 9 | 30-11 | | | | BODY HORIZ. F.F. |
| B803 | | 18 | 21-7 | X | | | BODY HORIZ. B.F. |
| B404 | | 24 | 2-9 | X | | | BODY TIES |
| B505 | | 31 | 7-5 | X | | | BODY VERT. TOP |
| B506 | X | 26 | 2-0 | | | | BODY DOWELS |
| B407 | X | 72 | 12-0 | X | | ⊗ | WING VERT. E.F. |
| B408 | X | 8 | 14-7 | X | | | WING VERT. E.F. |
| B509 | X | 14 | 16-9 | X | | | WING HORIZ. F.F. |
| B810 | X | 14 | 18-3 | X | | | WING HORIZ. B.F. |
| B511 | X | 2 | 15-1 | X | | | WING HORIZ. F.F. |
| B812 | X | 2 | 16-11 | X | | | WING HORIZ. B.F. |
| B513 | X | 2 | 12-1 | X | | | WING HORIZ. F.F. |
| B814 | X | 2 | 14-0 | X | | | WING HORIZ. B.F. |
| B415 | X | 4 | 8-8 | | | | WING HORIZ. E.F. |
| B416 | X | 4 | 6-8 | | | | WING HORIZ. E.F. |
| B417 | X | 4 | 4-8 | | | | WING HORIZ. E.F. |
| B418 | X | 4 | 15-1 | X | | | WING DIAG. E.F. |
| B419 | X | 8 | 8-5 | X | | | WING HORIZ. |
| B420 | X | 10 | 4-4 | | | | WING VERT. |

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

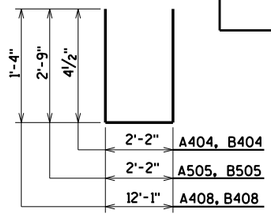
B.F. DENOTES BACK FACE.

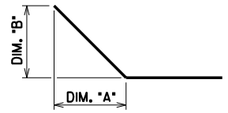
F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

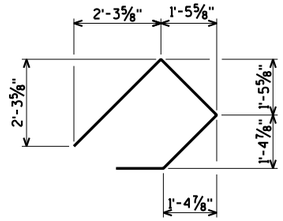



A501, B501




| BAR NO. | DIM. "A" | DIM. "B" |
|---|---|---|
| A803 | 1'-0¾" | 1'-0¾" |
| A509 | 1'-0¾" | 1'-0¾" |
| A810 | 1'-0¾" | 1'-0¾" |
| A511 | 1'-0¾" | 1'-0¾" |
| A812 | 1'-0¾" | 1'-0¾" |
| A513 | 1'-0¾" | 1'-0¾" |
| A814 | 1'-0¾" | 1'-0¾" |
| A418 | 12'-10" | 4'-10" |
| B803 | 1'-0¾" | 1'-0¾" |
| B509 | 1'-0¾" | 1'-0¾" |
| B810 | 1'-0¾" | 1'-0¾" |
| B511 | 1'-0¾" | 1'-0¾" |
| B812 | 1'-0¾" | 1'-0¾" |
| B513 | 1'-0¾" | 1'-0¾" |
| B814 | 1'-0¾" | 1'-0¾" |
| B418 | 12'-10" | 4'-10" |

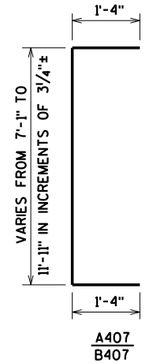



A419, B419

## BAR SERIES TABLE

| BAR MARK | NO REQ'D. | LENGTH |
|---|---|---|
| A407 | 4 SERIES OF 18 | 9'-7" TO 14'-5" |
| B407 | 4 SERIES OF 18 | 9'-7" TO 14'-5" |

BUNDLE AND TAG EACH SERIES SEPARATELY.




A407
B407

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

ABUTMENT
BILL OF BARS

SHEET 8 OF 11
31

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

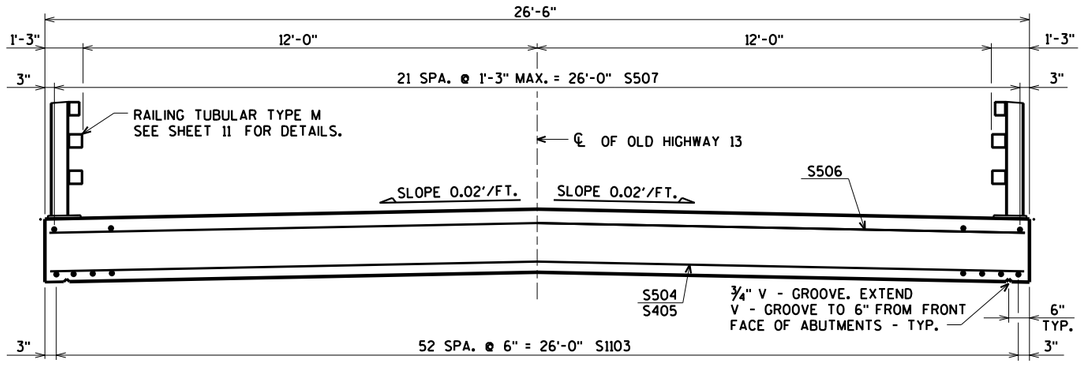
8

8

$PRFNAME$
U:±42-0914.00 - Bayfield County, Tn Orienta, Reefer Creek±BRIDGE±420914 wa.dgn

5/27/2015

PENTABLE:BRegu_shd_util.tbl




## CROSS SECTION THRU ROADWAY

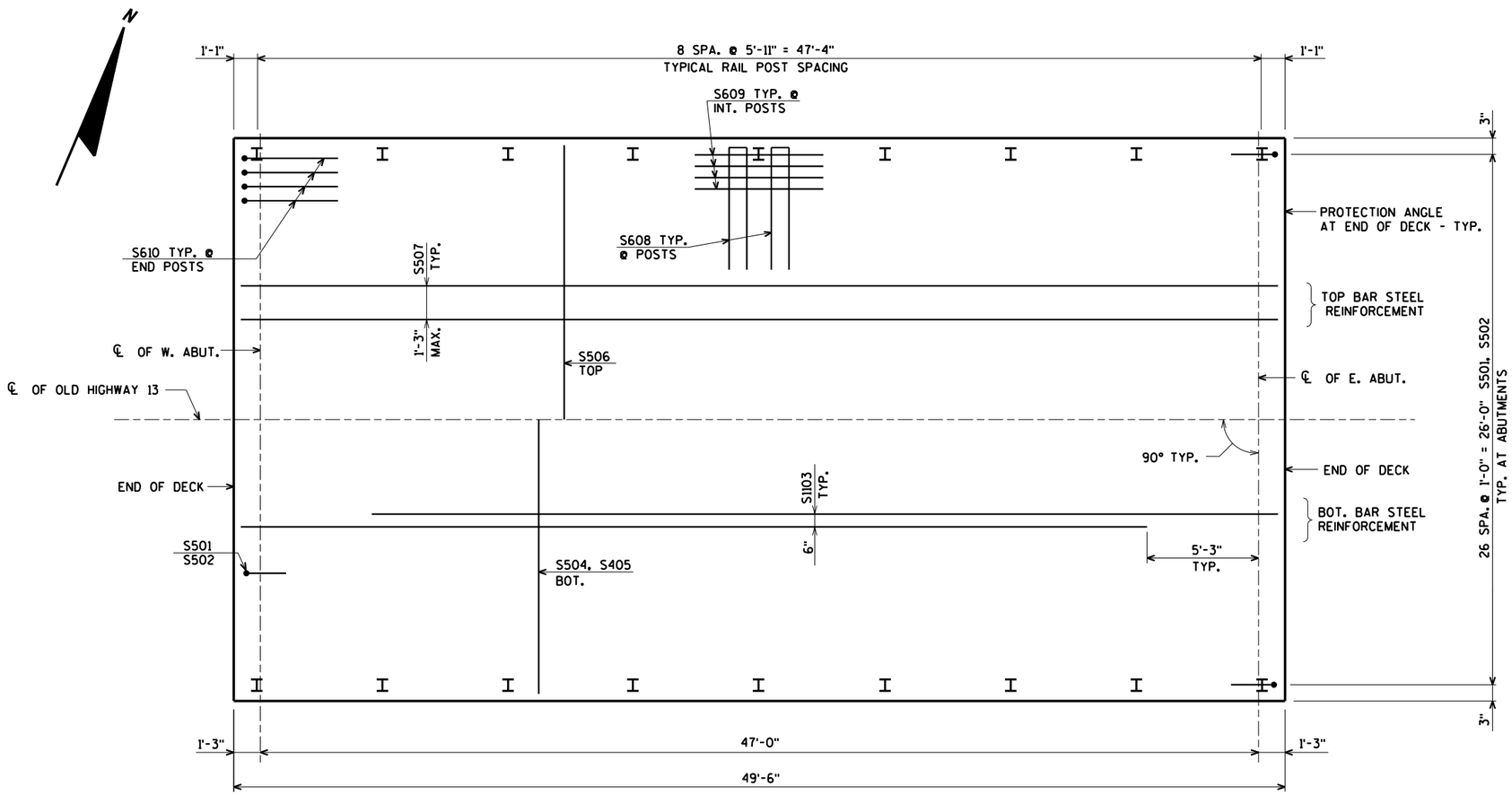
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

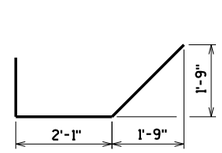
## BILL OF BARS

| BAR. NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED BAR SERIES | 18,290# COATED LOCATION |
|---|---|---|---|---|---|---|
| S501 | X | 54 | 5-11 | X | | SLAB @ ABUT. |
| S502 | X | 54 | 3-10 | X | | SLAB @ ABUT. |
| S1103 | X | 53 | 42-10 | | | SLAB LONG. BOT. |
| S504 | X | 55 | 26-2 | | | SLAB TRANS. BOT. |
| S405 | X | 22 | 26-2 | | | SLAB TRANS. BOT. |
| S506 | X | 50 | 26-2 | | | SLAB TRANS. TOP |
| S507 | X | 22 | 49-2 | | | SLAB LONG. TOP |
| S608 | X | 36 | 12-0 | X | | SLAB @ RAIL POSTS |
| S609 | X | 56 | 6-0 | | | SLAB @ INT. RAIL POSTS |
| S610 | X | 16 | 6-0 | X | | SLAB @ END RAIL POSTS |

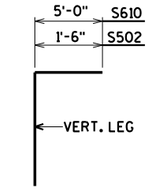
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

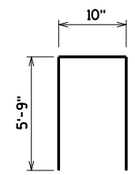



## PLAN




S501




S608

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

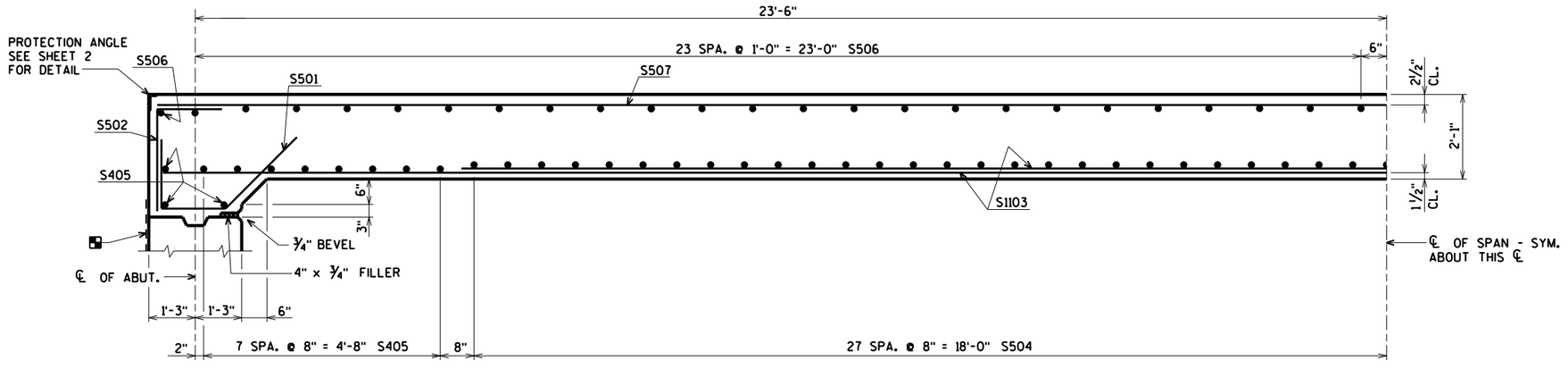
STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

SUPERSTRUCTURE

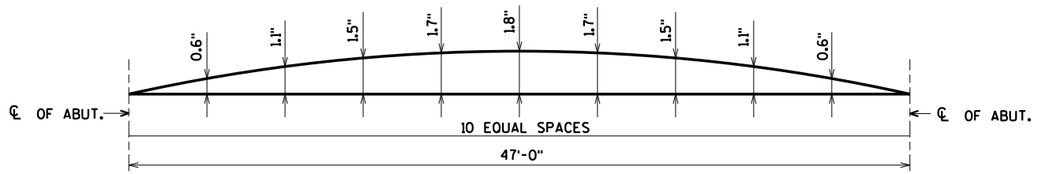
SHEET 9 OF 11
32

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com




■ 18" RUBBERIZED MEMBRANE WATERPROOFING

## PART LONGITUDINAL SECTION




## CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄.

## TOP OF DECK ELEVATIONS

| LOCATION | ℄ OF W. ABUT. | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | ℄ OF E. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N. EDGE OF SLAB | 638.37 | 638.15 | 637.93 | 637.73 | 637.53 | 637.34 | 637.16 | 636.99 | 636.83 | 636.68 | 636.53 |
| ℄ OF STRUCTURE | 638.63 | 638.41 | 638.20 | 637.99 | 637.80 | 637.61 | 637.43 | 637.26 | 637.10 | 636.94 | 636.80 |
| S. EDGE OF SLAB | 638.37 | 638.15 | 637.93 | 637.73 | 637.53 | 637.34 | 637.16 | 636.99 | 636.83 | 636.68 | 636.53 |

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

SUPERSTRUCTURE DETAILS

SHEET 10 OF 11
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ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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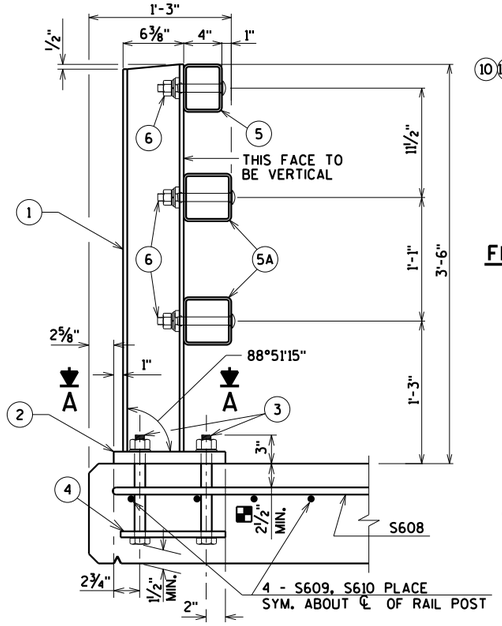
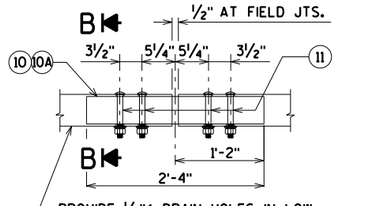
STATE PROJECT NUMBER

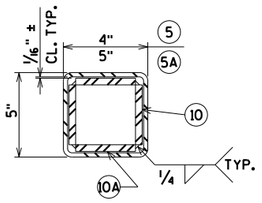
8352-00-71



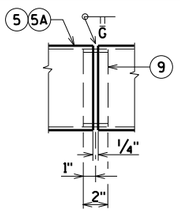

## SECTION THRU RAILING ON DECK




## FIELD ERECTION JOINT DETAIL

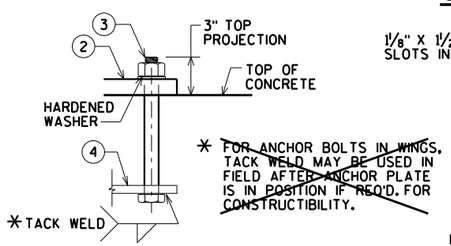



## SECTION B

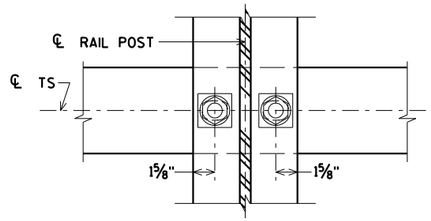



## SHOP RAIL SPLICE DETAIL

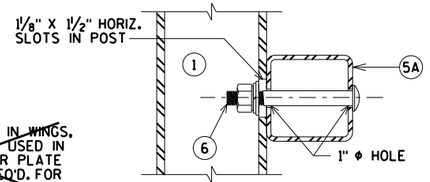
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)




## ANCHOR BOLTS



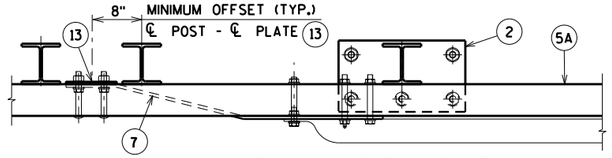

## SECTION THRU POST WEB




## SECTION THRU RAIL

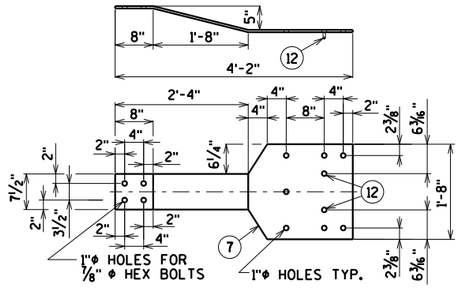
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

## TYPICAL RAIL TO POST CONNECTIONS




## TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)

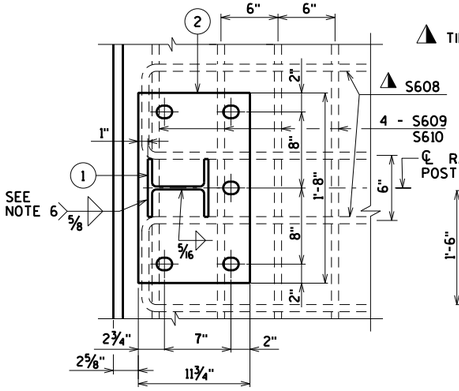



## BACK-UP PLATE DETAIL

(AT BEAM GUARD ATTACHMENT)

PLACE BELOW TOP MAT SLAB REINFORCEMENT.

TIE TO TOP MAT OF STEEL.




## SECTION A



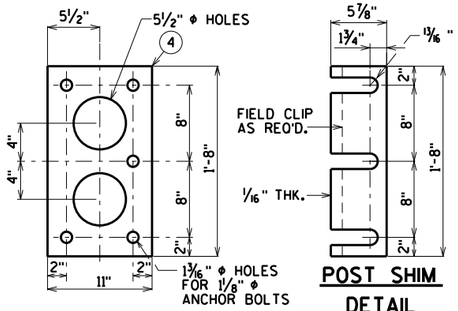

## ANCHOR PLATE

(AT BEAM GUARD ATTACHMENT)




## DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

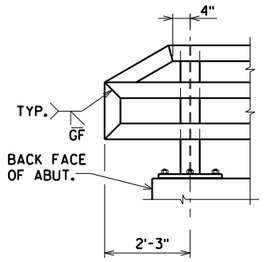



## ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)




## POST SHIM DETAIL




## PART ELEVATION OF RAILING

## LEGEND

① W6 x 25 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" x 11¾" x 1'-8" WITH 1⅝" X 1⅝" 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. ~~USE 1'-9" LONG IN ABUTMENT WINGS.~~ AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10¾" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾" DIA. HOLES FOR ANCHOR BOLTS NO. 3

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

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

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" 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" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.

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

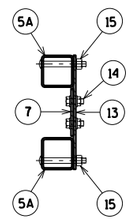
⑬ ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

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

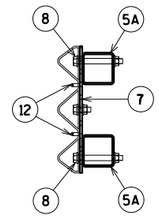
⑮ 1" Φ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

## GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-4-113" 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. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.




## SECTION C




## SECTION D

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-4-113

DRAWN BY CLS | PLANS CK'D. CJM

RAILING TUBULAR TYPE M

SHEET 11 OF 11
34

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

## EARTHWORK SUMMARY (CATEGORY 0010)

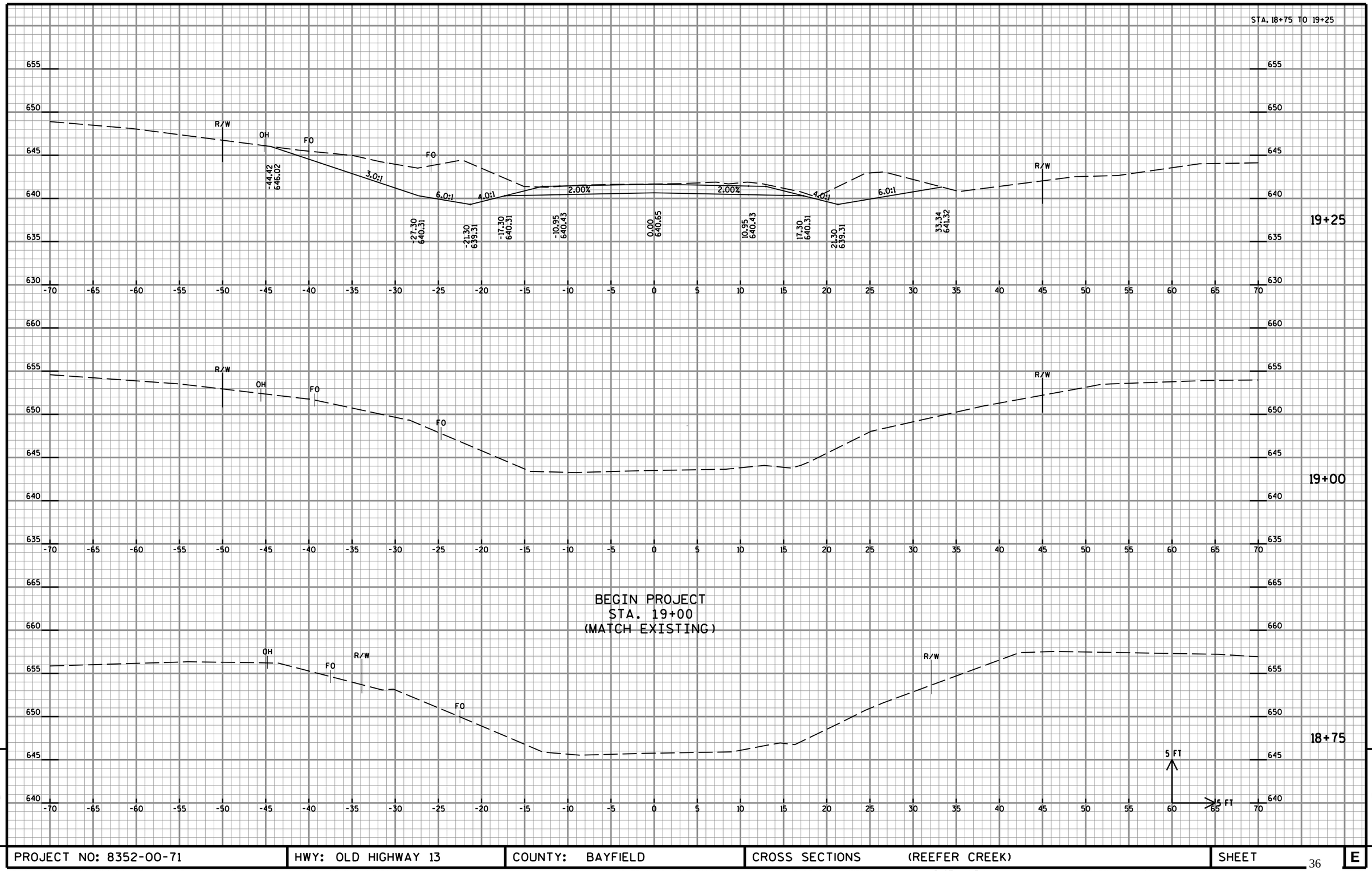
| | | AREA | | | INCREMENTAL VOLUME | | | CUMULATIVE VOLUME | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DIVISION | STATION | CUT SF | SALVAGED/ UNUSABLE PAVEMENT MATERIAL SF | FILL SF | CUT (1) CY | SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY | FILL (3) CY | CUT (1) 1.00 CY | EXPANDED FILL (4) 1.30 CY | MASS ORDINATE ±(5) CY |
| 1 | 19+00 | 0 | 0 | 0 | | | | | | |
| Old Highway 13 | 19+25 | 135 | 0 | 0 | 62 | 0 | 0 | 62 | 0 | 62 |
| | 19+50 | 25 | 0 | 6 | 74 | 0 | 3 | 136 | 4 | 132 |
| | 19+75 | 25 | 0 | 6 | 23 | 0 | 5 | 159 | 10 | 149 |
| | STRUCTURE (B-10-0224) | | | | | | | | | |
| | 20+25 | 42 | 0 | 57 | 39 | 0 | 52 | 39 | 68 | -29 |
| | 20+50 | 42 | 0 | 57 | 34 | 0 | 42 | 73 | 122 | -49 |
| | 20+75 | 31 | 0 | 34 | 14 | 0 | 16 | 87 | 143 | -56 |
| | 21+00 | 0 | 0 | 0 | | 0 | | | | |
| **TOTALS** | | | | | 246 | 0 | 118 | | | |

**205.0100 EXCAVATION COMMON = SAY 250 CY** **208.0100 BORROW = SAY 60 CY**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STA. 18+75 TO 19+25



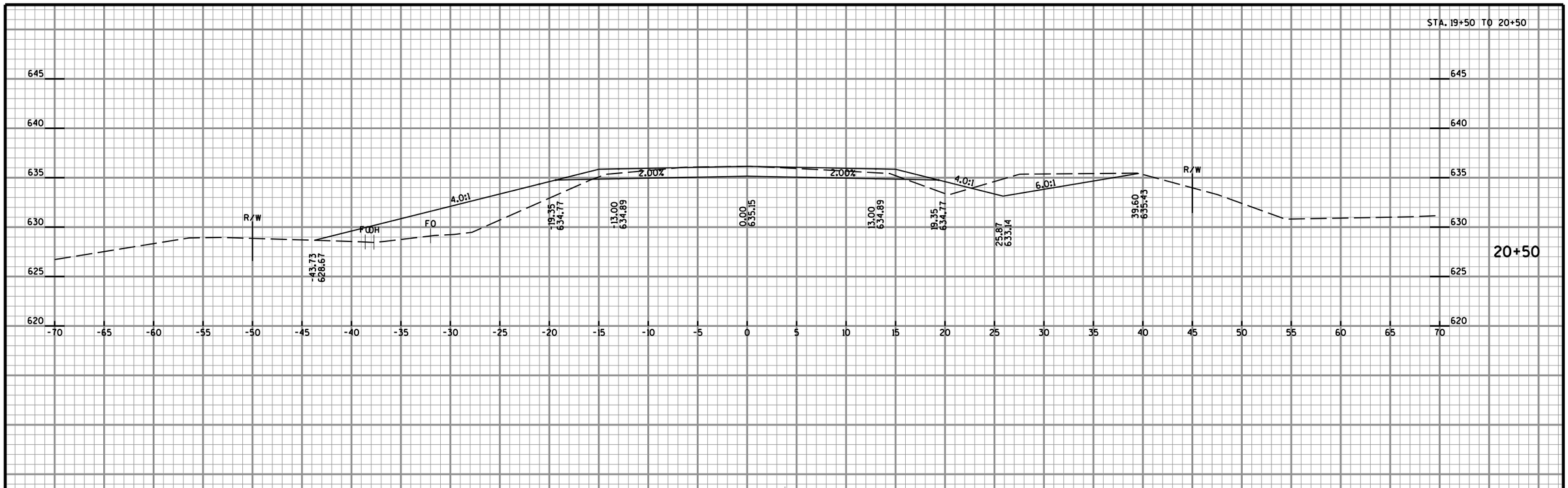

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (REEFER CREEK) | SHEET | E |
|---|---|---|---|---|---|



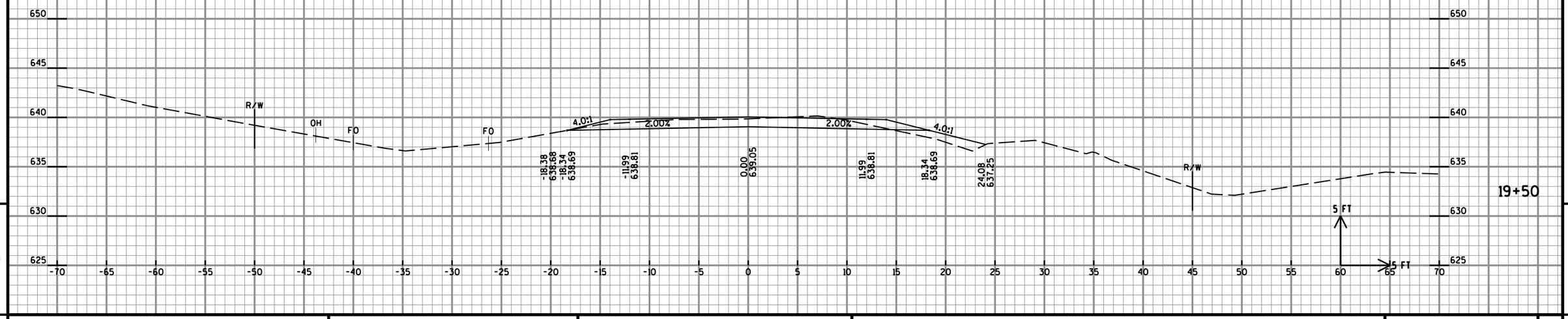
FILE NAME : U:\42-0914.00 - Bayfield County, Tn Oriental, Reefer Creek\InRoads\420914_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 19+50 TO 20+50




STRUCTURE B-04-0113



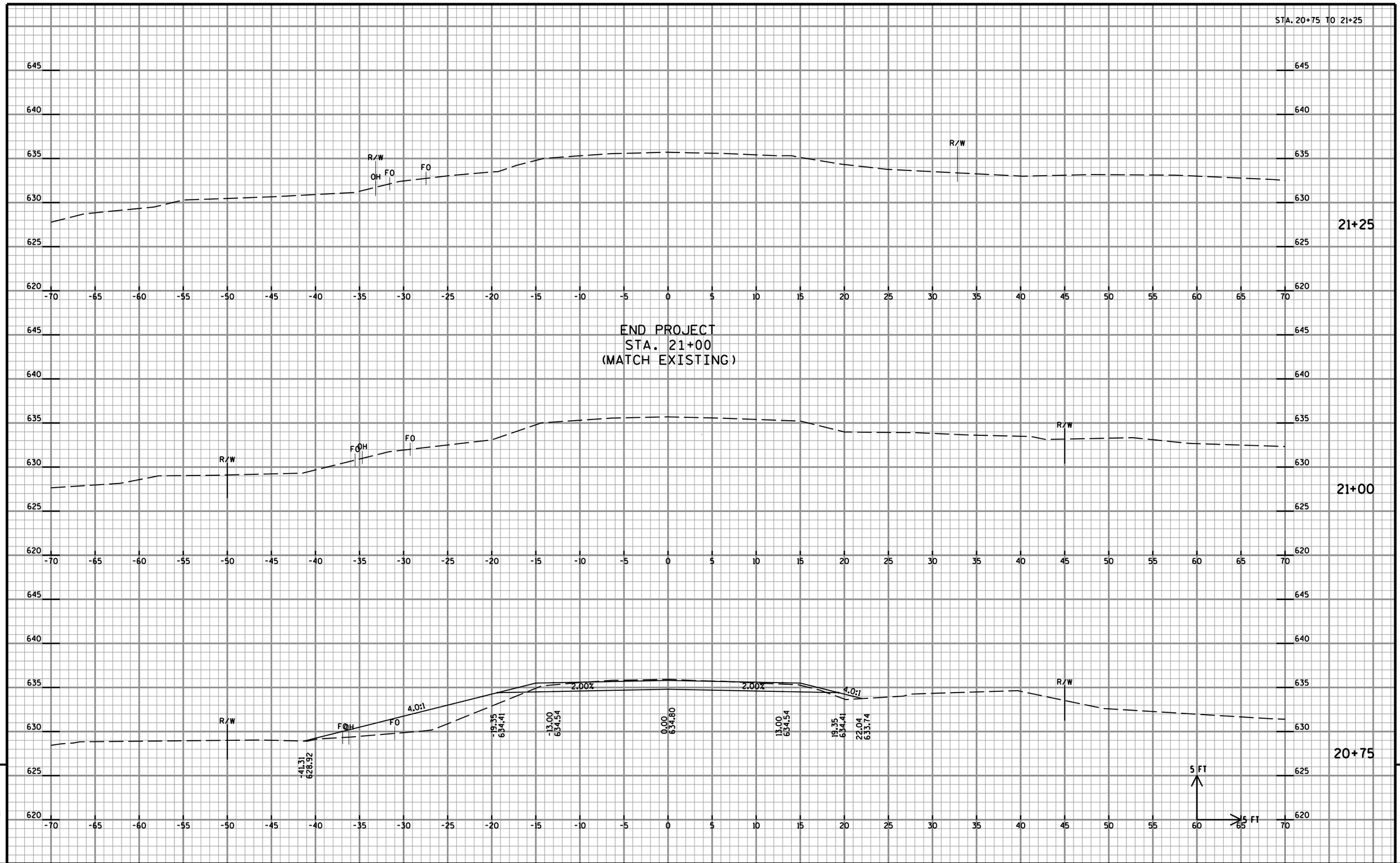

9 9

| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (REEFER CREEK) | SHEET 37 | E |
|---|---|---|---|---|---|

FILE NAME : U:\42-0914.00 - Bayfield County, Tn Oriental, Reefer Creek\InRoads\420914_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 20+75 TO 21+25




9

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| PROJECT NO: 8352-00-71 | HWY: OLD HIGHWAY 13 | COUNTY: BAYFIELD | CROSS SECTIONS (REEFER CREEK) | SHEET 38 | E |
|---|---|---|---|---|---|

FILE NAME : U:\42-0914.00 - Bayfield County, Tn Oriental, Reefer Creek\InRoads\420914_xs.dgn PLOT DATE : 7/9/2015 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

**Wisconsin Department of Transportation**

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