MAD

SEPTEMBER 2017

ORDER OF SHEETS

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

TOTAL SHEETS = 94

PROJECT ID: 1690-00-82

COUNTY: GREEN

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

# MONROE - NEW GLARUS

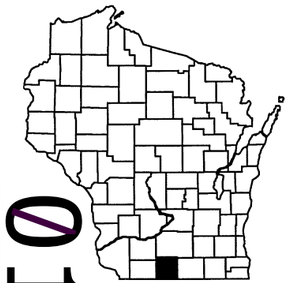
**WITTENWYLER CREEK BRIDGE, B-23-175**

## STH 69

## GREEN COUNTY

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 1690-00-82 | WISC 2017449 | 1 |
| | | |
| | | |
| | | |

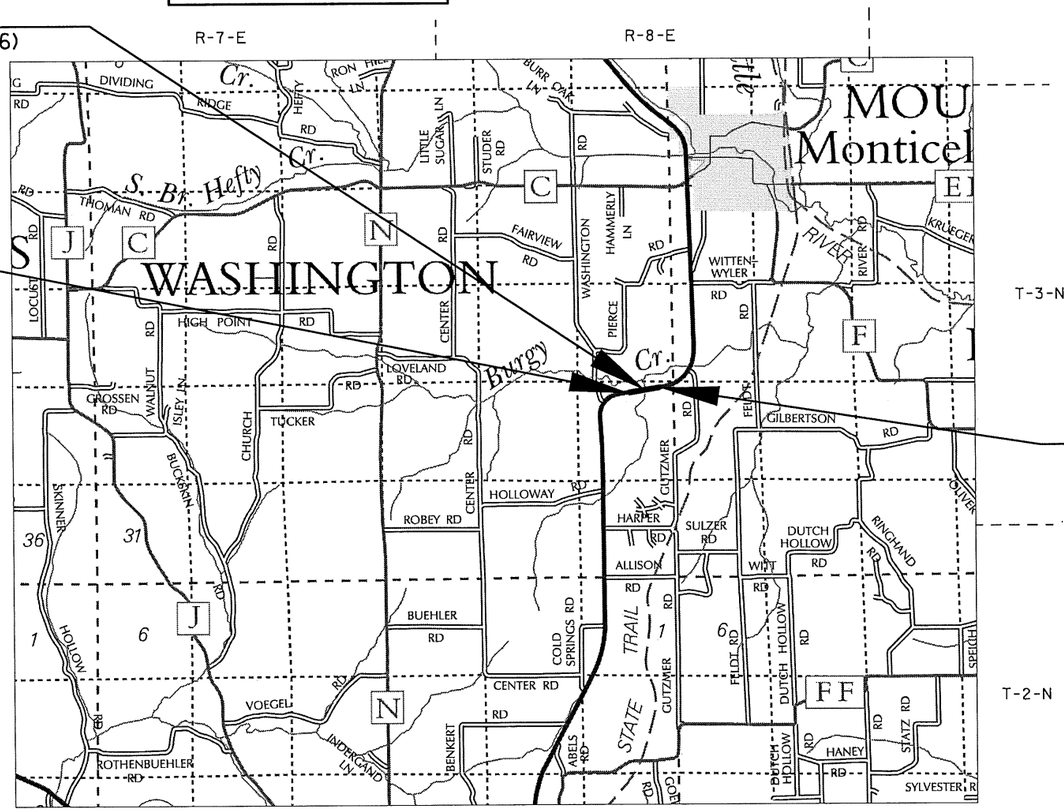
STATE PROJECT NUMBER
1690-00-82



NEW STRUCTURE B-23-0175
(EXISTING STRUCTURE B-23-0006)
STA. 474+00
N 177241.937
E 620019.314

BEGIN PROJECT
STA. 470+00
N 177177.567
E 619624.528

END PROJECT
STA. 478+00
N 177307.322
E 620413.933




LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.152 mile

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

DESIGN DESIGNATION

| | | |
|---|---|---|
| A.A.D.T. | (2013) | = 6,300 |
| A.A.D.T. | (2018) | = 7700 |
| D.H.V. | | = 7.9 |
| D.D. | | = 62/38 |
| T. | | = 9.4% |
| DESIGN SPEED | | = 60 mph |
| ESALS | | = 1,700,000 |

CONVENTIONAL SYMBOLS

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | ROBERT TALARCZYK |
| Designer | EMRAN BHUIYAN |
| Project Manager | CHRIS HAZARD |
| Regional Examiner | |
| Regional Supervisor | KURT JOHNSON |
| C.O. Examiner | CO EXAMINER |

APPROVED FOR THE DEPARTMENT
DATE: 4/24/17 (Signature)

E

## GENERAL NOTES

HMA PAVEMENT WEIGHT CALCULATIONS BASED ON 112 LB/SY/IN. PLACE THE 6" HMA PAVEMENT IN THREE LAYER.

PRIOR TO PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

EPOXY PAVEMENT MARKING SHALL CONSIST OF CENTERLINE AND EDGELINE MARKINGS ON THE FINAL SURFACE COURSE.

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

THE CONTRACTOR IS TO WORK WITH THE UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS.
ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR IS RESPONSIBLE FOR SEEDING & FERTILIZING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

DETAILS OF CONSTRUCTION NOT SHOWN SHALL BE IN ACCORDANCE WITH THE PERTINENT REQUIREMENT OF THE STANDARD SPECIFICATIONS.

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

PLACE SILT FENCE AT LOCATIONS DIRECTED BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

NO TREE OR SHRUBS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING OR PARKING LANE.

UTILITIES CONTACTS

SHERA PURDY
TDS TELECOM - COMMUNICATION LINE
4001 FELLAND RD, SUITE 108
MADISON, WI. 53718
(608) 438-4139
spurdy@mi-tech.us

DNR - CONTACT

LAURA BUB
DNR - SOUTH CENTRAL REGION
3911 FISH HATCHERY ROAD
FITCHBURG, WI. 53711-5397
(608) 275-3485
laura.bub@wisconsin.gov

## LIST OF STANDARD ABBREVIATIONS

| | |
|---|---|
| ABUT | ABUTMENT |
| AC | ACRE |
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ASPH | ASPHALT |
| AVG | AVERAGE |
| BL | BASE LINE |
| BM | BENCH MARK |
| CB | CATCH BASIN |
| C/L | CENTER LINE |
| CC | CENTER TO CENTER |
| CE | COMERCIAL ENTRANCE |
| CONC | CONCRETE |
| CO | COUNTY |
| CTH | COUNTY TRUNK HIGHWAY |
| CY | CUBIC YARD |
| C&G | CURB AND GUTTER |
| CULV | CULVERT |
| CPAS | CONCRETE PAVEMENT APPROACH SLAB |
| DHV | DESIGN HOUR VOLUME |
| DIA | DIAMETER |
| DD | DIRECTIONAL DISTRIBUTION |
| E | EAST |
| X | EAST GRD COORDINATE |
| ELEC | ELECTRIC |
| ELEV | ELEVATION |
| ESALS | EQUIVALENT SINGLE AXLE LOADS |
| EXC | EXCAVATION |
| EBS | EXCAVATION BELOW SUBGRADE |
| EXIST | EXISTING |
| FE | FIELD ENTRANCE |
| FF | FACE TO FACE |
| FG | FINISHED GRADE |
| FL | FLOW LINE |
| FT | FOOT |
| HES | HIGH EARLY STRENGTH |
| CWT | HUNDREDWEIGHT |
| HYD | HYDRANT |
| IN DIA | INCH DIAMETER |
| INL | INLET |
| ID | INSIDE DIAMETER |
| INV | INVERT |
| IP | IRON PIPE |
| JT | JOINT |
| JCT | JUNCTION |
| LT | LEFT |
| L | LENGTH OF CURVE |
| LHF | LEFT HAND FORWARD |
| LF | LENEAR FOOT |
| L | LITER |
| LS | LUMP SUM |
| MH | MANHOLE |
| MB | MESSAGE BOARD |
| MLB | MAILBOX |
| ML | MATCH LINE |
| NC | NORMAL CROWN |
| N | NORTH |
| Y | NORTH GRD COORDINATE |
| NB | NORTHBOUND |
| NO | NUMBER |
| OD | OUTSIDE DIAMETER |
| PAVT | PAVEMENT |
| PERM | PERMANENT |
| PLE | PERMANENT LIMITED EASEMENT |
| PT | POINT |
| PCC | PORTLAND CEMENT CONCRETE |
| PCS | PAVED CONCRETE SHOULDER |
| PE | PRIVATE ENTRANCE |
| PROJ | PROJECT |
| PL | PROPERTY LINE |
| R | RADIUS |
| R/L | REFERENCE LINE |
| REQD | REQUIRED |
| RT | RIGHT |
| RHF | RIGHT HAND FORWARD |
| R/W | RIGHT-OF-WAY |
| RD | ROAD |
| RDWY | ROADWAY |
| SALV | SALVAGED |
| SSS | SANITARY AND STORM SEWER |
| SAN | SANITARY SEWER |
| SEC | SECTION |
| SHLDR | SHOULDER |
| SW | SIDEWALK |
| S | SOUTH |
| SB | SOUTHBOUND |
| SP | SPECIAL |
| SPECS | SPECIFICATIONS |
| SQ | SQUARE |
| SF | SQUARE FEET |
| SY | SQUARE YARD |
| STD | STANDARD |
| SDD | STANDARD DETAILS DRAWINGS |
| STH | STATE TRUNK HIGHWAYS |
| STA | STATION |
| SS | STORM SEWER |
| STR | STRUCTURE OR STRUCTURAL |
| SL | SURVEY LINE |
| TEL | TELEPHONE |
| TEMP | TEMPORARY |
| TLE | TEMPORARY LIMITED EASEMENT |
| T | TON |
| TC | TOP OF CURB |
| T | TRUCKS (PERCENT OF) |
| TYP | TYPICAL |
| UG | UNDERGROUND |
| USH | UNITED STATES HIGHWAY |
| VAR | VARIABLE |
| VERT | VERTICAL |
| W | WATER |
| WM | WATER MAIN |
| WV | WATER VALVE |
| W | WEST |
| WB | WEST BOUND |
| YD | YARD |

WISDOT - CONTACT

CHRIS HAZARD, P.E.
PROJECT MANAGER
PDS- SOUTH, SW REGION
2101 WRIGHT STREET
MADISON, WI 53704
PH: (608) 245-2652

MOHAMMAD EMRAN BHUIYAN, P.E.
PROJECT ENGINEER
PDS-SOUTH, SW REGION
2101 WRIGHT STREET
MADISON, WI 53704
PH: (608)246-7549

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

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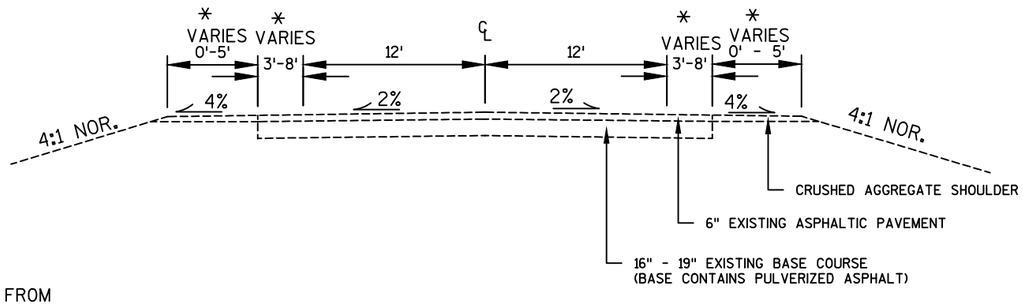
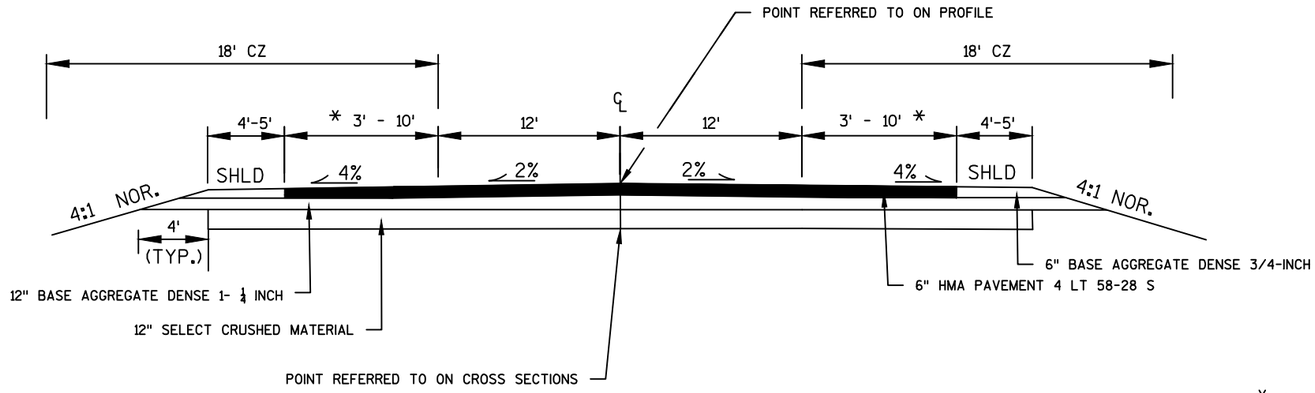



* ASPHALTIC SHOULDERS TAPER FROM 8' WIDE AT ENDS OF E.A.T's TO 3' WIDE AT NORMAL WIDTH SHOULDERS.

## TYPICAL EXISTING SECTION

STA. 470+00 TO STA. 478+00

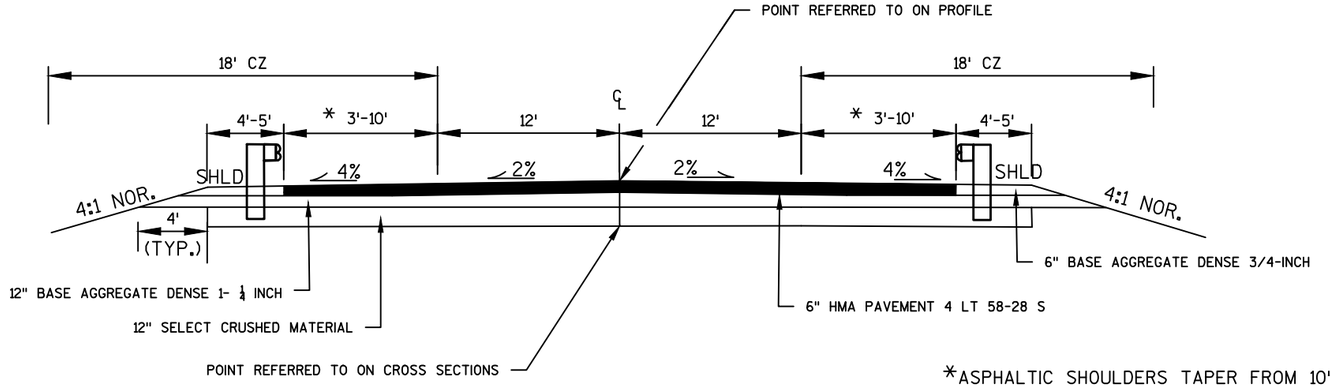



* 10' ASPHALT SHOULDER MATCH WITH 3' EXISTING SHOULDER

## TYPICAL FINISHED SECTION

STA. 470+00 TO STA. 471+50
STA. 477+00 TO STA. 478+00
(WITHOUT GUARDRAIL)

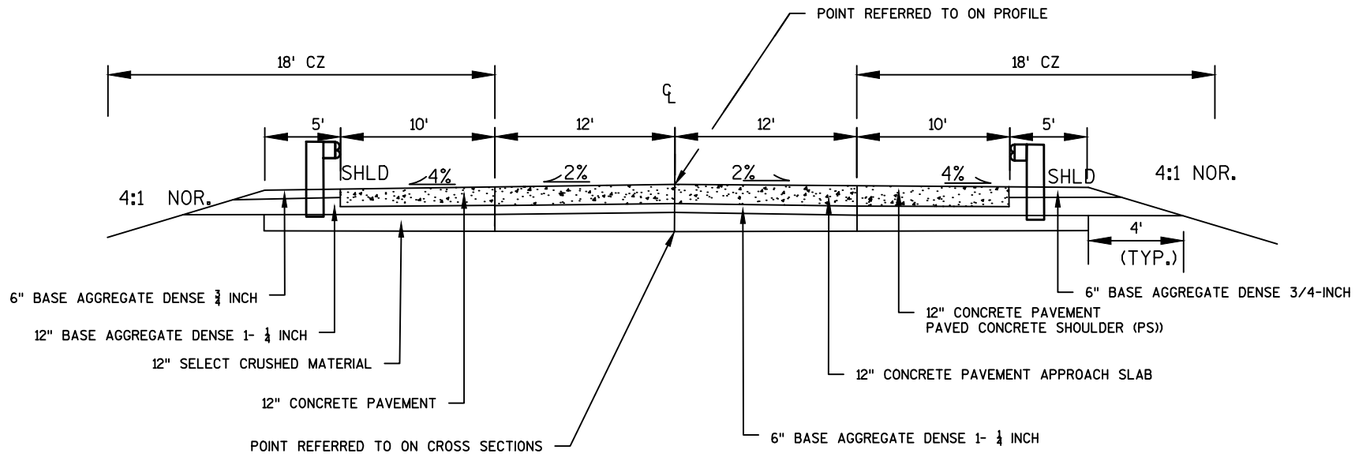
| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | TYPICAL SECTION | SHEET 3 | E |
|---|---|---|---|---|---|




*ASPHALTIC SHOULDERS TAPER FROM 10' (AT BEGINNINGS OF E.A.T. SECTION TO MATCH WITH 3' EXISTING SHOULDER AT MATCHLINE)

## TYPICAL FINISHED SECTION

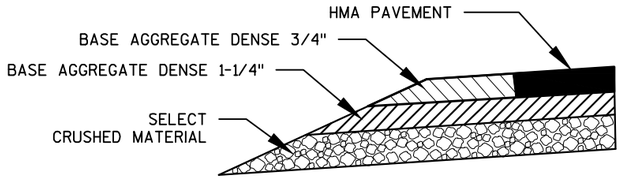
STA. 471+50 TO STA. 473+45.42
STA. 474+52.58 TO STA. 477+00
(WITH GUARDRAIL)



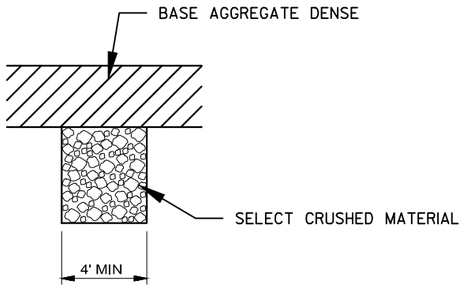

## TYPICAL FINISHED SECTION

STA. 473+45.42 TO STA. 473+60.42
STA. 474+37.58 TO STA. 474+52.58
(CONCRETE PAVEMENT APPROACH SLABS)

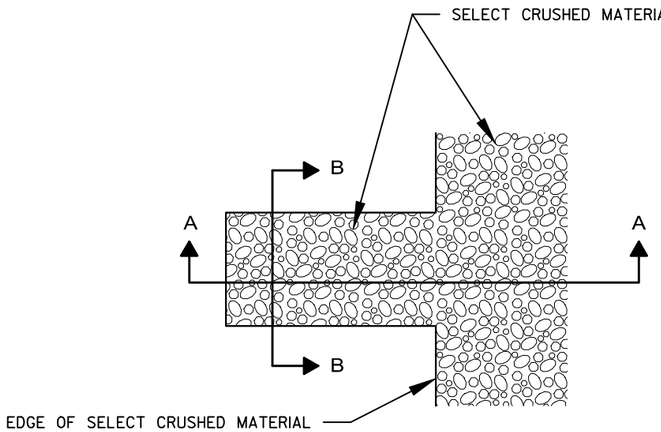
| PROJECT NO:1690-00-92 | HWY: STH 69 | COUNTY: GREEN | TYPICAL SECTION | SHEET 4 | E |
|---|---|---|---|---|---|




SECTION A-A



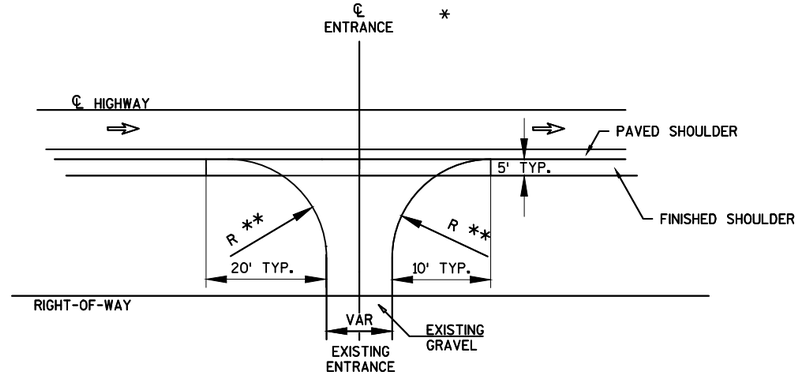

SECTION B-B




## DETAIL FOR FRENCH DRAINS

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL
BE CONSIDERED INCIDENTAL TO THE ITEM SELECT CRUSHED MATERIAL.

STA. 471+00 LT & RT
STA. 473+00 LT & RT
STA. 474+50 LT & RT
STA. 477+50 LT & RT



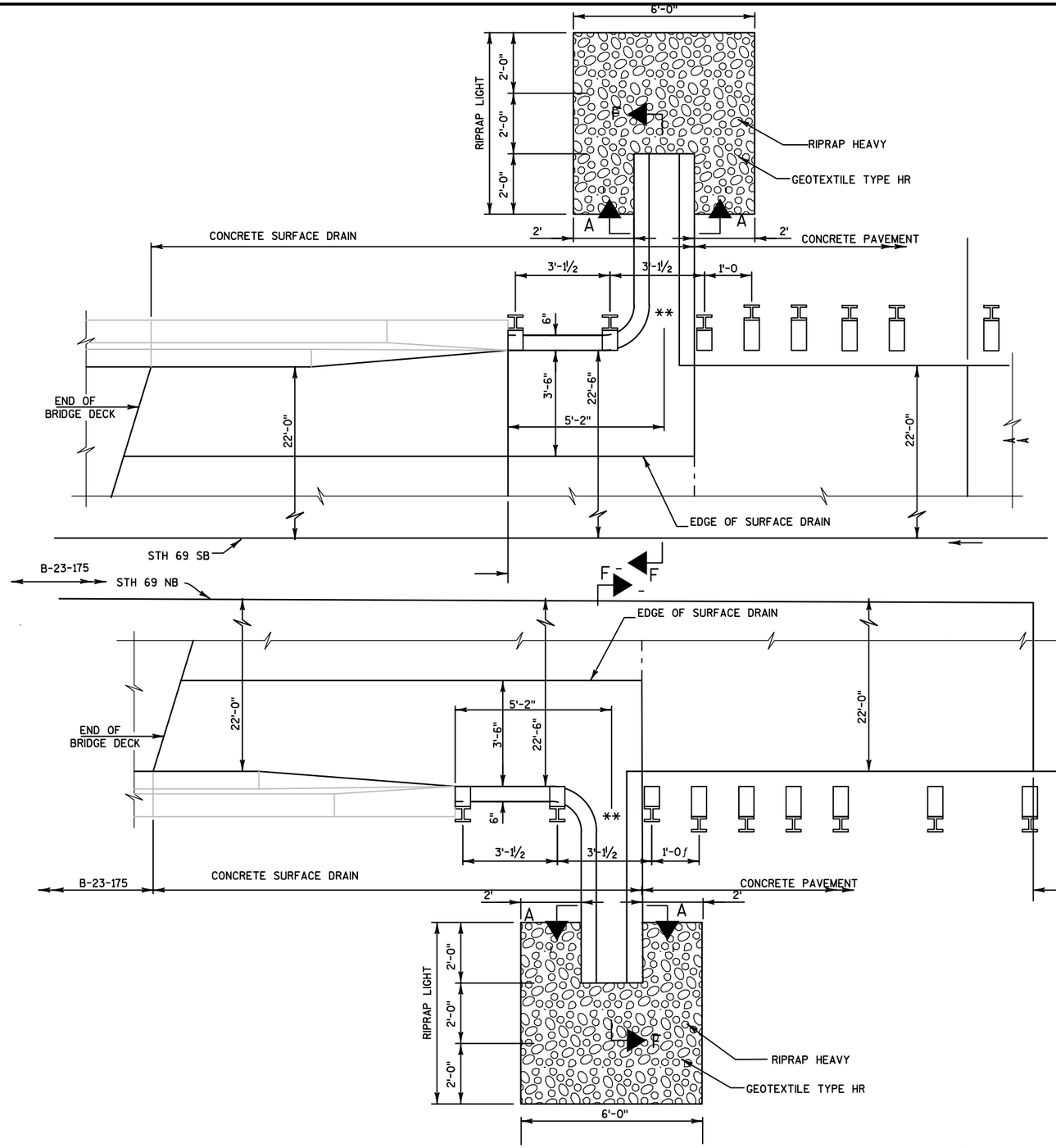

L=VARIABLE, EXACT LENGTH TO BE
DETERMINED IN THE FIELD BY THE ENGINEER

D=DRIVEWAY WIDTH
D=20'TYP(PE & FE) (16'MIN-24'MAX)

** MATCH EXISITING

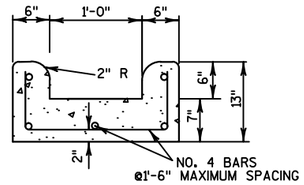
## PLAN VIEW

FIELD ENTRANCES, RURAL DRIVEWAYS,
AND TEE INTERSECTIONS
(PE, FE & CE)
STA. 476+38 RT-FE

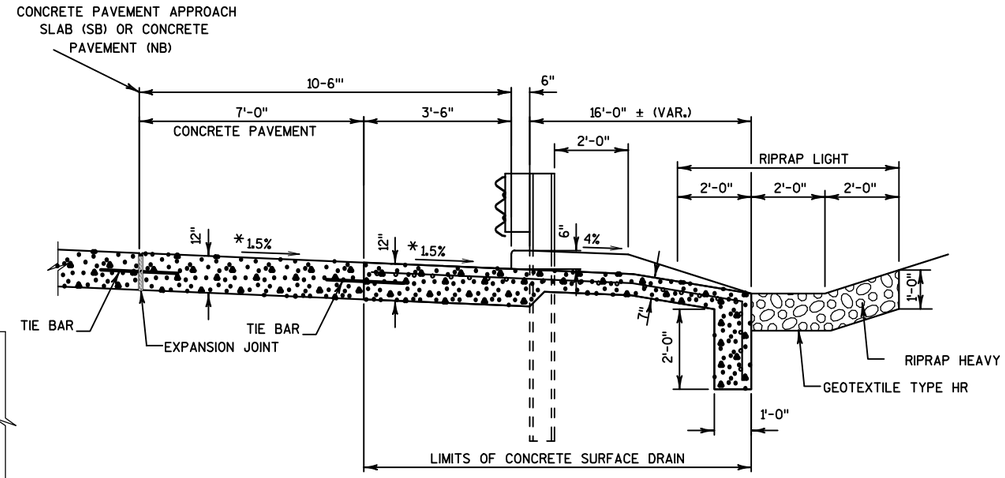



PLAN VIEW AT CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STA. 473+48.30 RT & LT




SECTION A-A




SECTION F-F

* MATCH BRIDGE DECK CROSS SLOPE. DO NOT VARY SLOPE AT FLUME OR PROVIDE 3" DROP.

## GENERAL NOTES

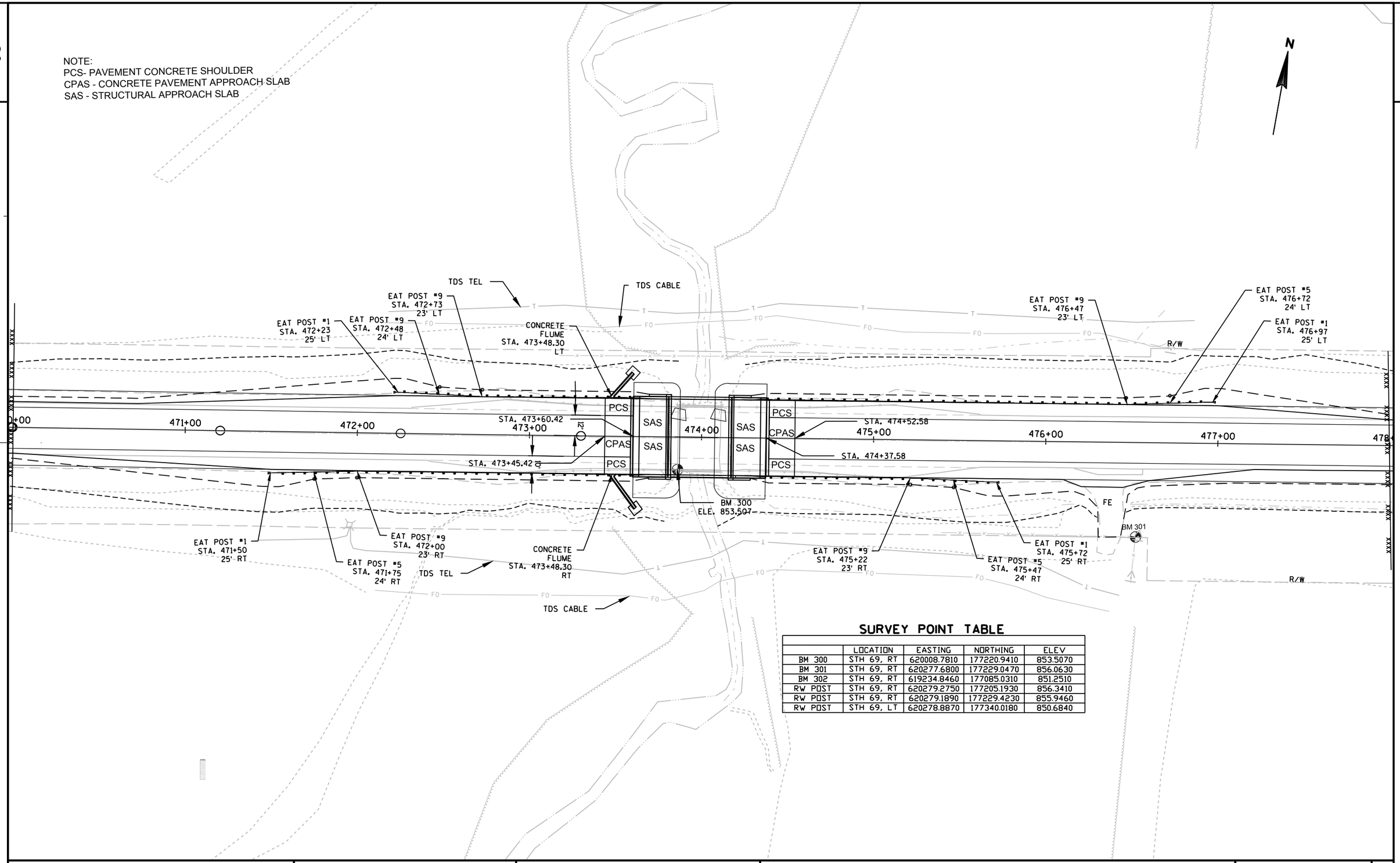
SEE S.D.D. 8 D 2-6 "CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES" FOR ADDITIONAL NOTES AND DETAILS NOT SHOWN.

INFORMATION SHOWN ON THIS SHEET SUPERSEDES STANDARD DETAIL DRAWING.

** REQUIRED FIELD ADJUSTMENT FOR ANGLE CONCRETE SURFACE DRAINS FLUME

| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CONSTRUCTION DETAILS | SHEET 6 | E |
|---|---|---|---|---|---|

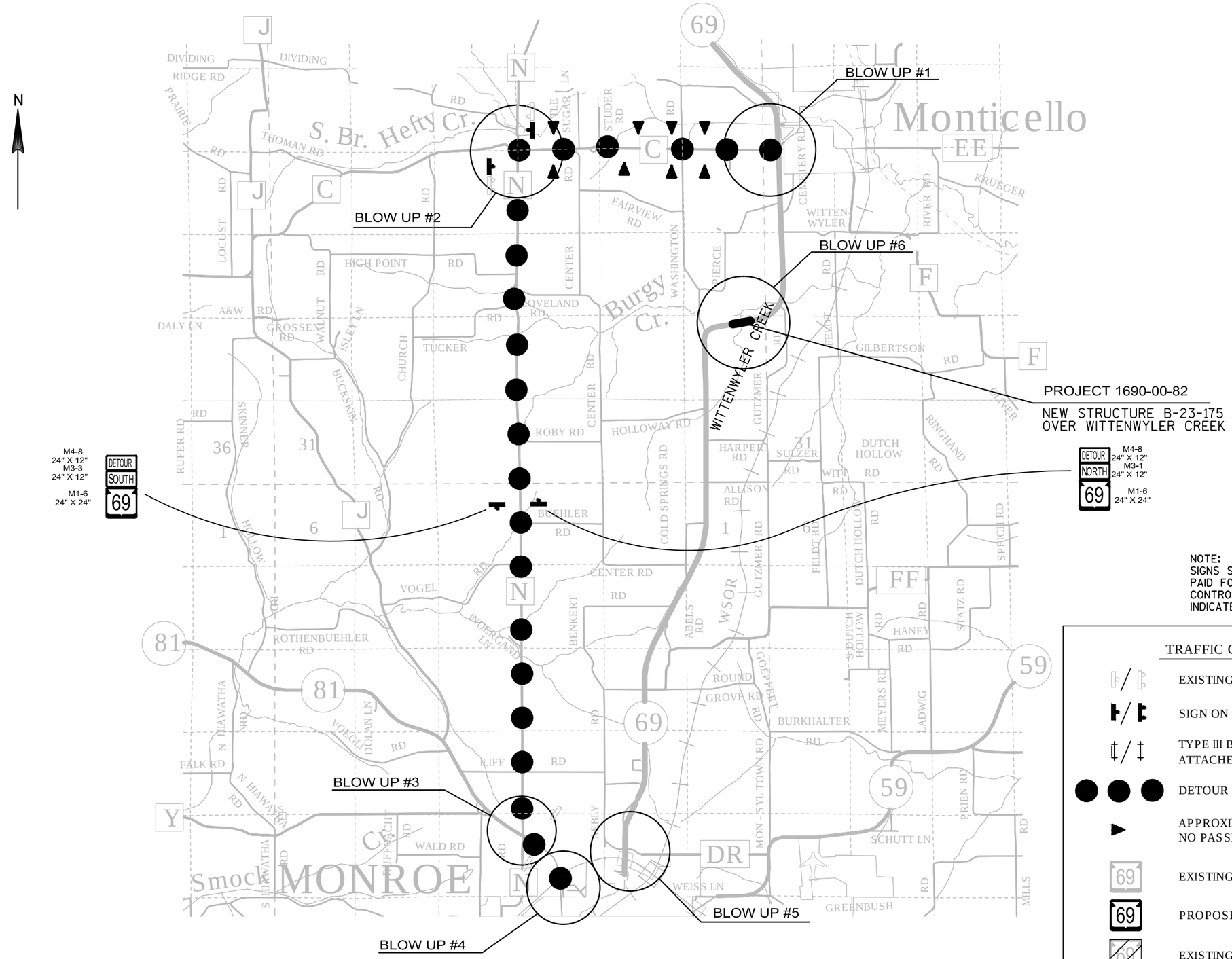
NOTE:
PCS- PAVEMENT CONCRETE SHOULDER
CPAS - CONCRETE PAVEMENT APPROACH SLAB
SAS - STRUCTURAL APPROACH SLAB




## SURVEY POINT TABLE

| | LOCATION | EASTING | NORTHING | ELEV |
|---|---|---|---|---|
| BM 300 | STH 69, RT | 620008.7810 | 177220.9410 | 853.5070 |
| BM 301 | STH 69, RT | 620277.6800 | 177229.0470 | 856.0630 |
| BM 302 | STH 69, RT | 619234.8460 | 177085.0310 | 851.2510 |
| RW POST | STH 69, RT | 620279.2750 | 177205.1930 | 856.3410 |
| RW POST | STH 69, RT | 620279.1890 | 177229.4230 | 855.9460 |
| RW POST | STH 69, LT | 620278.8870 | 177340.0180 | 850.6840 |

| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CONSTRUCTION DETAILS - BRIDGE APPROACHES | SHEET 7 | E |
|---|---|---|---|---|---|

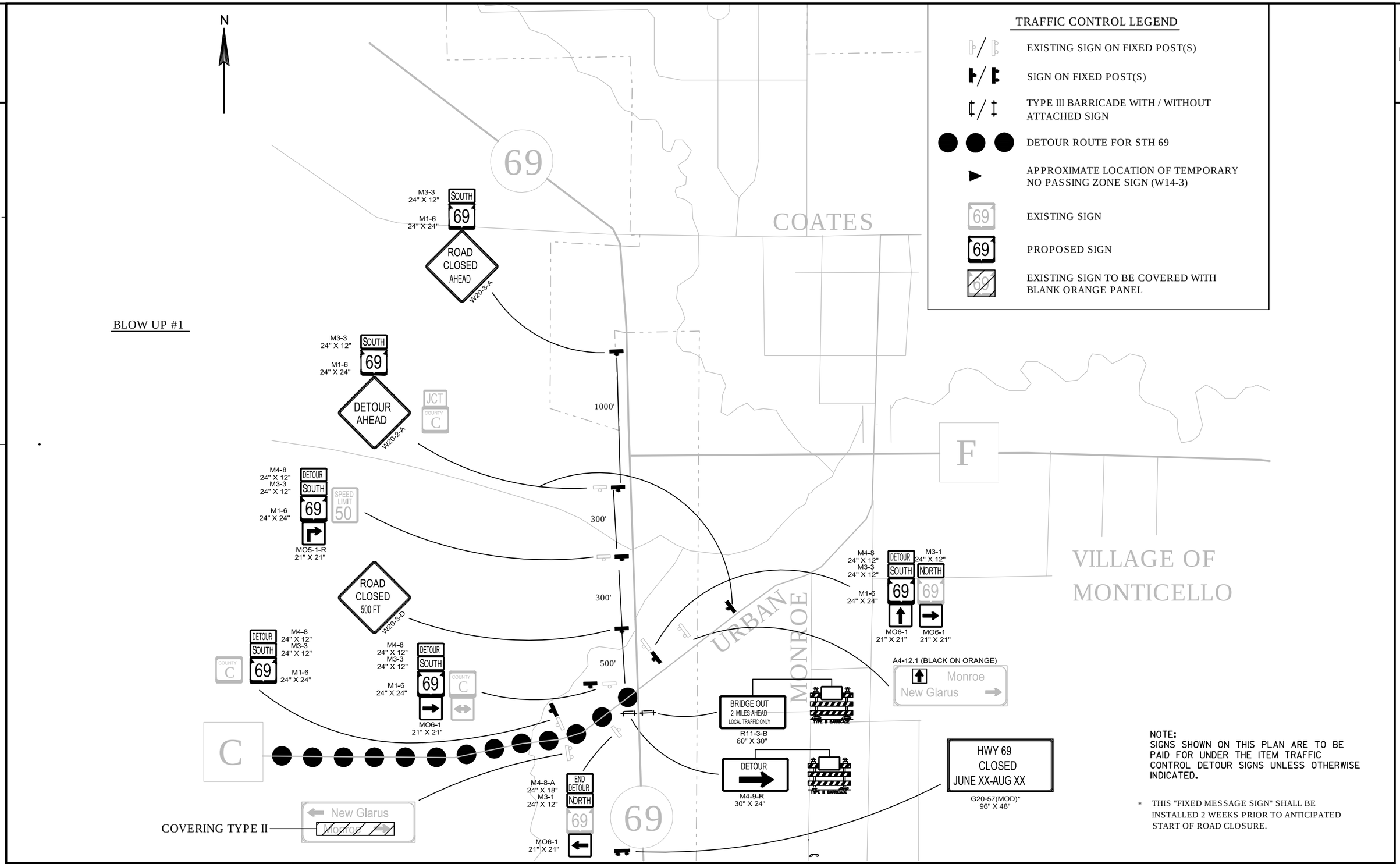



NOTE:
SIGNS SHOWN ON THIS PLAN ARE TO BE PAID FOR UNDER THE ITEM TRAFFIC CONTROL DETOUR SIGNS UNLESS OTHERWISE INDICATED.

## TRAFFIC CONTROL LEGEND

- EXISTING SIGN ON FIXED POST(S)
- SIGN ON FIXED POST(S)
- TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
- DETOUR ROUTE FOR STH 69
- APPROXIMATE LOCATION OF TEMPORARY NO PASSING ZONE SIGN (W14-3)
- EXISTING SIGN (69)
- PROPOSED SIGN (69)
- EXISTING SIGN TO BE COVERED (69)

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - OVERVIEW | SHEET 8 | E |
|---|---|---|---|---|---|

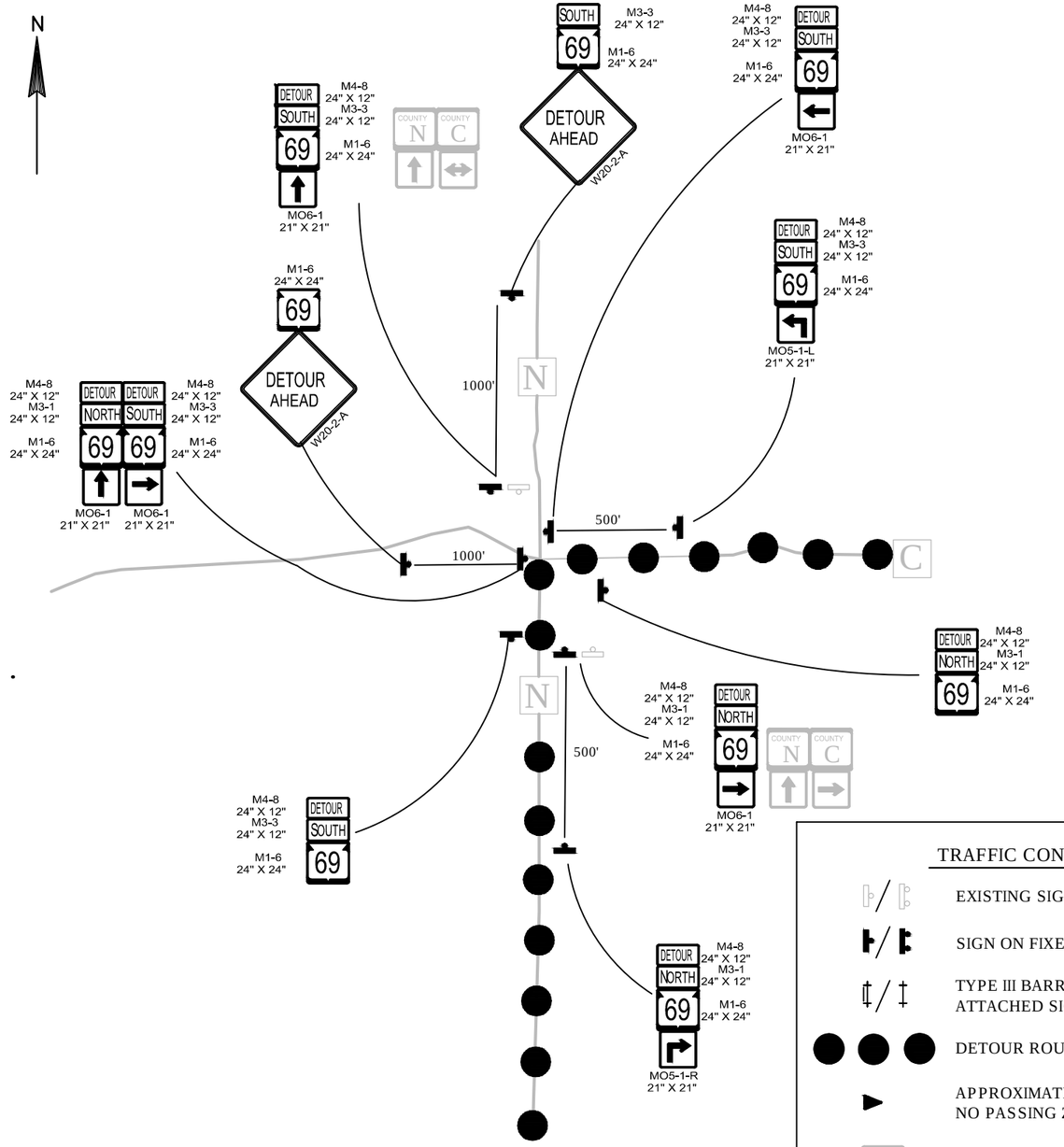



NOTE:
SIGNS SHOWN ON THIS PLAN ARE TO BE PAID FOR UNDER THE ITEM TRAFFIC CONTROL DETOUR SIGNS UNLESS OTHERWISE INDICATED.

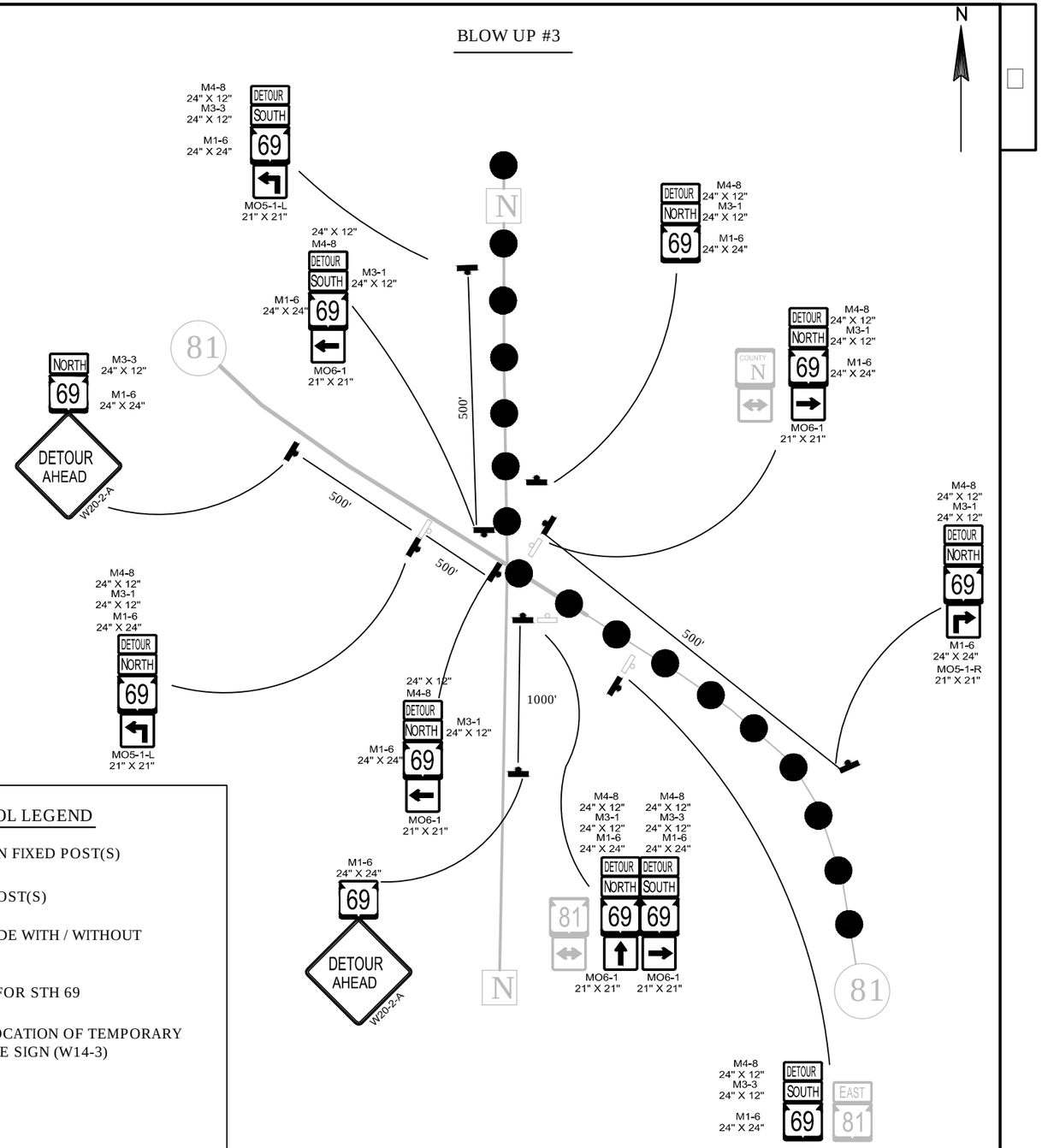
* THIS "FIXED MESSAGE SIGN" SHALL BE INSTALLED 2 WEEKS PRIOR TO ANTICIPATED START OF ROAD CLOSURE.

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - BLOW UP #1 | SHEET 9 | E |
|---|---|---|---|---|---|

## BLOW UP #2




## BLOW UP #3




### TRAFFIC CONTROL LEGEND

- EXISTING SIGN ON FIXED POST(S)
- SIGN ON FIXED POST(S)
- TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
- DETOUR ROUTE FOR STH 69
- APPROXIMATE LOCATION OF TEMPORARY NO PASSING ZONE SIGN (W14-3)
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING SIGN TO BE COVERED

NOTE:
SIGNS SHOWN ON THIS PLAN ARE TO BE PAID FOR UNDER THE ITEM TRAFFIC CONTROL DETOUR SIGNS UNLESS OTHERWISE INDICATED.

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - BLOW UP #2 AND BLOW UP #3 | SHEET 10 | E |
|---|---|---|---|---|---|

## TRAFFIC CONTROL LEGEND

- EXISTING SIGN ON FIXED POST(S)
- SIGN ON FIXED POST(S)
- TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
- DETOUR ROUTE FOR STH 69
- APPROXIMATE LOCATION OF TEMPORARY NO PASSING ZONE SIGN (W14-3)
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING SIGN TO BE COVERED

NOTE:
SIGNS SHOWN ON THIS PLAN ARE TO BE PAID FOR UNDER THE ITEM TRAFFIC CONTROL DETOUR SIGNS UNLESS OTHERWISE INDICATED.

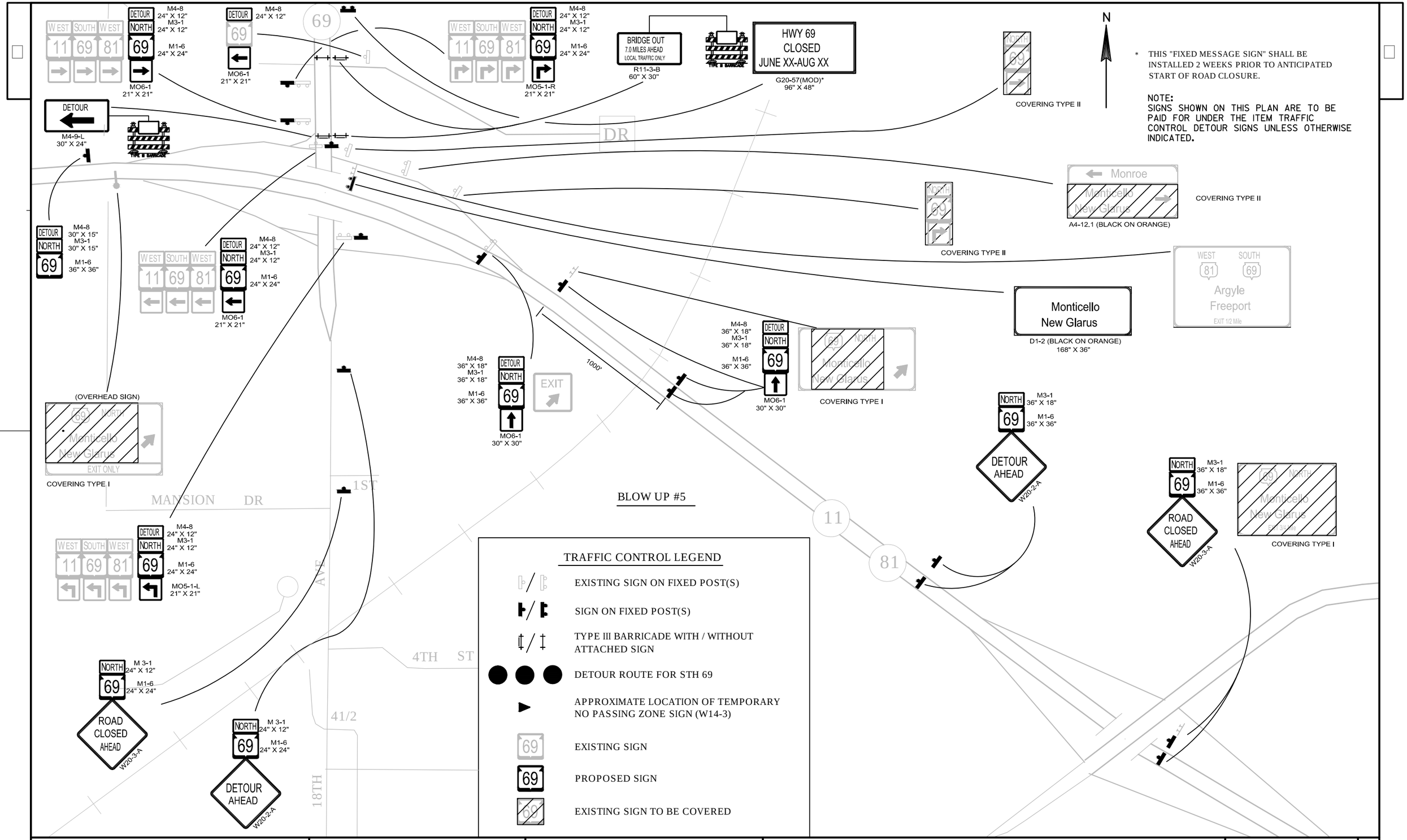
BLOW UP #4

STOP
ONE WAY
DETOUR NORTH 69 M4-8 24" X 12" M3-1 24" X 12" M1-6 24" X 24" MO6-1 21" X 21"
M4-8-A 24" X 18" END DETOUR EAST 11 SOUTH 69 WEST 11
COVERING TYPE II
New Glarus Freeport Dubuque
EAST NORTH 11 69 EAST 81
COVERING TYPE II
New Glarus
SPEED LIMIT 45
EAST NORTH 11 69 EAST 81
72" X 24" D1-2 (BLACK ON ORANGE)
Monticello New Glarus
Monroe Freeport Blackhawk Tech College
NORTH 69 M 3-1 36" X 18" M1-6 36" X 36" DETOUR AHEAD W20-2-A
168" X 36" D1-2 (BLACK ON ORANGE)
Monticello New Glarus
INSTALL BELOW EXISTING SIGN
(EXISTING TYPE I)
1000'
DETOUR NORTH 69 M4-8 36" X 18" M3-1 36" X 18" M1-6 36" X 36" MO5-2-R 30" X 30"
(NEXT TO OVERHEAD SIGN)
DETOUR NORTH 69 M4-8 36" X 18" M3-1 36" X 18" M1-6 36" X 36" MO6-2 30" X 30"
M4-8 24" X 12" M3-1 24" X 12" DETOUR NORTH 69 M1-6 24" X 24" MO5-1-L 21" X 21"
BLOW UP #4
WEST 81 Argyle 14
DETOUR NORTH 69 M4-8 24" X 12" M3-1 24" X 12" M1-6 24" X 24"
SOUTH WEST 69 81 DETOUR NORTH 69 M4-8 24" X 12" M3-1 24" X 12" M1-6 24" X 24" MO5-1-R 21" X 21"
(NEXT TO OVERHEAD SIGN)
DETOUR NORTH 69 M4-8 36" X 18" M3-1 36" X 18" M1-6 36" X 36" MO6-2 30" X 30"
DETOUR NORTH 69 M4-8 36" X 18" M3-1 36" X 18" M1-6 36" X 36" MO5-2-R 30" X 30"
1000'
11 81 69
72" X 24" D1-2 (BLACK ON ORANGE)
Monticello New Glarus
Monroe Freeport Blackhawk Tech College
N
M4-8 24" X 12" M3-1 24" X 12" DETOUR NORTH 69 M1-6 24" X 24" MO6-1 21" X 21"
WEST WEST 11 81 DETOUR NORTH 69 M4-8 24" X 12" M3-1 24" X 12" M1-6 24" X 24" MO6-1 21" X 21"
2ND ST
4TH ST
Dubuque New Glarus Brodhead
A4-12.1 (BLACK ON ORANGE)
M4-8 24" X 12" DETOUR EAST 11 NORTH 69 EAST 81 MO6-1 21" X 21"
NORTH 69 M 3-1 24" X 12" M1-6 24" X 24" ROAD CLOSED AHEAD W20-3-A
NORTH 69 M 3-1 24" X 12" M1-6 24" X 24" DETOUR AHEAD W20-2-A
M4-8 24" X 12" DETOUR EAST 11 NORTH 69 EAST 81 MO6-1 21" X 21"
69

| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - BLOW UP #4 | SHEET | E |
|---|---|---|---|---|---|



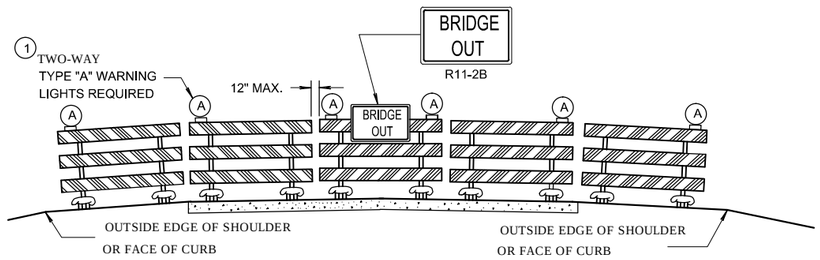
FILE NAME : N:\PDS\C3D\16900082\027001_DETOUR_N.DWG PLOT DATE : 3/28/2017 3:14 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42



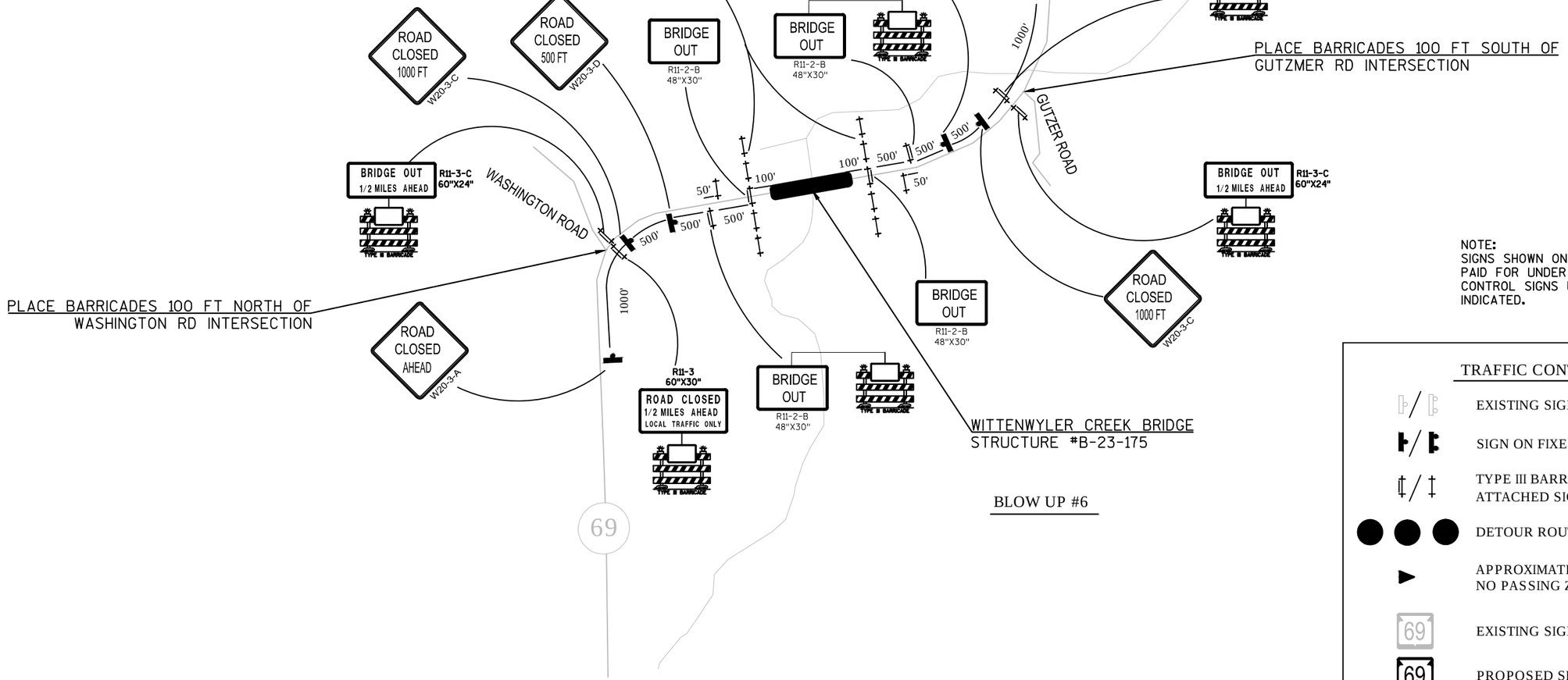

| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - BLOW UP #5 | SHEET 12 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\027001_DETOUR_N.DWG PLOT DATE : 3/28/2017 3:14 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:200 FT

*SEE S.D.D. 15 C 2-6A, "MAINLINE CLOSURE, NO POSTED DETOUR" FOR SIGN AND BARRICADE LAYOUT.




## ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW




BLOW UP #6

NOTE:
SIGNS SHOWN ON THIS PLAN ARE TO BE PAID FOR UNDER THE ITEM TRAFFIC CONTROL SIGNS UNLESS OTHERWISE INDICATED.

### TRAFFIC CONTROL LEGEND

- EXISTING SIGN ON FIXED POST(S)
- SIGN ON FIXED POST(S)
- TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
- DETOUR ROUTE FOR STH 69
- APPROXIMATE LOCATION OF TEMPORARY NO PASSING ZONE SIGN (W14-3)
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING SIGN TO BE COVERED

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | DETOUR - BLOW UP #6 | SHEET 13 | E |
|---|---|---|---|---|---|

# LEGEND

- SILT FENCE
- EROSION MAT CLASS 1, TYPE B
- TURBIDITY BARRIER (TYP.)
- EROSION BALES
- RIPRAP
- SLOPE INTERSECPTS

N

SLOPE INTERCEPTS (TYP.)
EROSION MAT CLASS 1 TYPE B (TYP.)
EROSION BALES
SILT FENCE (TYP.)
CONCRETE FLUME STA. 473+48.30 LT
TURBIDITY BARRIER (TYP.)
EROSION BALES
SILT FENCE (TYP.)
EROSION MAT CLASS 1 TYPE B (TYP.)
SLOPE INTERCEPTS (TYP.)
R/W
FE
BM 301
CONCRETE FLUME STA. 473+48.30 RT
EROSION BALES
TURBIDITY BARRIER (TYP.)
SILT FENCE (TYP.)
EROSION MAT CLASS 1 TYPE B (TYP.)
SLOPE INTERCEPTS (TYP.)
SLOPE INTERCEPTS (TYP.)
EROSION MAT CLASS 1 TYPE B (TYP.)
SILT FENCE (TYP.)
EROSION BALES
EROSION MAT CLASS 1 TYPE B (TYP.)
SLOPE INTERCEPTS (TYP.)
SILT FENCE (TYP.)

471+00 472+00 473+00 474+00 475+00 476+00 477+00

845 850 855 860 865 870

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | EROSION CONTROL PLAN | SHEET 14 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\SHEETSPLAN\EROSION CONTROL.DWG PLOT DATE : 6/8/2017 7:59 AM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 0.019619

WISDOT/CADDS SHEET 42

2

2

N

PAVEMENT MARKING EPOXY 4-INCH (WHITE)

REMOVING SIGN &
SMALL SIGN SUPPORTS
(WITTENWYLER CREEK)

PAVEMENT MARKING EPOXY 4-INCH (WHITE)

470+00 471+00 472+00 473+00 474+00 475+00 476+00 477+00 478+00

R/W

FE

BM 301

R/W

PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | PAVEMENT MARKING & SIGNING | SHEET 15 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\SHEETSPLAN\PAVEMENT MARKING & SIGNING.DWG PLOT DATE : 4/6/2017 8:30 AM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 0.017760

WISDOT/CADDS SHEET 42

1690-00-82

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0002 | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 01. 474+00 | LS | 1.000 | 1.000 |
| 0004 | 204.0165 | Removing Guardrail | LF | 390.000 | 390.000 |
| 0006 | 205.0100 | Excavation Common | CY | 3,645.000 | 3,645.000 |
| 0008 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-23-0175 | LS | 1.000 | 1.000 |
| 0010 | 210.1500 | Backfill Structure Type A | TON | 146.000 | 146.000 |
| 0012 | 213.0100 | Finishing Roadway (project) 01. 1690-00-82 | EACH | 1.000 | 1.000 |
| 0014 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 450.000 | 450.000 |
| 0016 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 3,700.000 | 3,700.000 |
| 0018 | 312.0110 | Select Crushed Material | TON | 2,870.000 | 2,870.000 |
| 0020 | 415.0120 | Concrete Pavement 12-Inch | SY | 72.000 | 72.000 |
| 0022 | 415.0410 | Concrete Pavement Approach Slab | SY | 90.000 | 90.000 |
| 0024 | 416.1010 | Concrete Surface Drains | CY | 5.000 | 5.000 |
| 0026 | 455.0605 | Tack Coat | GAL | 515.000 | 515.000 |
| 0028 | 460.2000 | Incentive Density HMA Pavement | DOL | 1,250.000 | 1,250.000 |
| 0030 | 460.5224 | HMA Pavement 4 LT 58-28 S | TON | 1,050.000 | 1,050.000 |
| 0032 | 502.0100 | Concrete Masonry Bridges | CY | 333.000 | 333.000 |
| 0034 | 502.3200 | Protective Surface Treatment | SY | 378.000 | 378.000 |
| 0036 | 502.3210 | Pigmented Surface Sealer | SY | 70.000 | 70.000 |
| 0038 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 5,760.000 | 5,760.000 |
| 0040 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 47,780.000 | 47,780.000 |
| 0042 | 505.0800.S | Bar Steel Reinforcement HS Stainless Structures | LB | 440.000 | 440.000 |
| 0044 | 516.0500 | Rubberized Membrane Waterproofing | SY | 24.000 | 24.000 |
| 0046 | 550.1100 | Piling Steel HP 10-Inch X 42 Lb | LF | 805.000 | 805.000 |
| 0048 | 606.0300 | Riprap Heavy | CY | 163.000 | 163.000 |
| 0050 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 174.000 | 174.000 |
| 0052 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 4.000 | 4.000 |
| 0054 | 614.2300 | MGS Guardrail 3 | LF | 338.000 | 338.000 |
| 0056 | 614.2500 | MGS Thrie Beam Transition | LF | 158.000 | 158.000 |
| 0058 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 4.000 | 4.000 |
| 0060 | 618.0100 | Maintenance And Repair of Haul Roads (project) 02. 1690-00-82 | EACH | 1.000 | 1.000 |
| 0062 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0064 | 624.0100 | Water | MGAL | 54.000 | 54.000 |
| 0066 | 625.0500 | Salvaged Topsoil | SY | 3,530.000 | 3,530.000 |
| 0068 | 628.1104 | Erosion Bales | EACH | 4.000 | 4.000 |
| 0070 | 628.1504 | Silt Fence | LF | 1,720.000 | 1,720.000 |
| 0072 | 628.1520 | Silt Fence Maintenance | LF | 1,720.000 | 1,720.000 |
| 0074 | 628.1905 | Mobilizations Erosion Control | EACH | 4.000 | 4.000 |

1690-00-82

| Line | Item | Item Description | Unit | Total | Qty |
|---|---|---|---|---|---|
| 0076 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 1.000 | 1.000 |
| 0078 | 628.2004 | Erosion Mat Class I Type B | SY | 2,320.000 | 2,320.000 |
| 0080 | 628.6005 | Turbidity Barriers | SY | 90.000 | 90.000 |
| 0082 | 629.0210 | Fertilizer Type B | CWT | 3.000 | 3.000 |
| 0084 | 630.0130 | Seeding Mixture No. 30 | LB | 100.000 | 100.000 |
| 0086 | 638.2602 | Removing Signs Type II | EACH | 2.000 | 2.000 |
| 0088 | 638.3000 | Removing Small Sign Supports | EACH | 1.000 | 1.000 |
| 0090 | 642.5201 | Field Office Type C | EACH | 1.000 | 1.000 |
| 0092 | 643.0100 | Traffic Control (project) 03. 1690-00-82 | EACH | 1.000 | 1.000 |
| 0094 | 643.0420 | Traffic Control Barricades Type III | DAY | 2,208.000 | 2,208.000 |
| 0096 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 3,680.000 | 3,680.000 |
| 0098 | 643.0900 | Traffic Control Signs | DAY | 6,072.000 | 6,072.000 |
| 0100 | 643.0910 | Traffic Control Covering Signs Type I | EACH | 6.000 | 6.000 |
| 0102 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 16.000 | 16.000 |
| 0104 | 643.1000 | Traffic Control Signs Fixed Message | SF | 64.000 | 64.000 |
| 0106 | 643.2000 | Traffic Control Detour (project) 04. 1690-00-82 | EACH | 1.000 | 1.000 |
| 0108 | 643.3000 | Traffic Control Detour Signs | DAY | 23,092.000 | 23,092.000 |
| 0110 | 645.0120 | Geotextile Type HR | SY | 256.000 | 256.000 |
| 0112 | 646.0106 | Pavement Marking Epoxy 4-Inch | LF | 2,600.000 | 2,600.000 |
| 0114 | 650.4500 | Construction Staking Subgrade | LF | 692.000 | 692.000 |
| 0116 | 650.5000 | Construction Staking Base | LF | 762.000 | 762.000 |
| 0118 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-23-0175 | LS | 1.000 | 1.000 |
| 0120 | 650.9910 | Construction Staking Supplemental Control (project) 05. 1690-00-82 | LS | 1.000 | 1.000 |
| 0122 | 650.9920 | Construction Staking Slope Stakes | LF | 1,500.000 | 1,500.000 |
| 0124 | 690.0150 | Sawing Asphalt | LF | 60.000 | 60.000 |
| 0126 | 715.0415 | Incentive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 0128 | 715.0502 | Incentive Strength Concrete Structures | DOL | 2,000.000 | 2,000.000 |
| 0130 | ASP.1T0A | On-the-Job Training Apprentice at $5.00/HR | HRS | 250.000 | 250.000 |
| 0132 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 150.000 | 150.000 |

3

# EARTHWORK SUMMARY

| Division | From/To Station | Location | 205.0100 Common Excavation Cut (1) | EBS | Available Material (2) | Reduced EBS in Fill (3) | Unexpanded Fill | Expanded Fill (4) | Mass Ordinate +/- (5) | Waste | Comment: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 470+00 - 478+00 | STH 69 | 3,314 | - | 3,314 | 265 | 917 | 1,146 | 1,323 | 1,323 | |
| | Undistributed EBS | | - | 331 | | | | | | | |
| Division 1 Subtotal | | | 3,314 | 331 | 3,314 | 265 | 917 | 1,146 | 1,323 | | |
| Grand Total | | | 3,314 | 331 | 3,314 | 265 | 917 | 1,146 | 1,323 | 1,323 | |
| Total Common Exc | | | 3,645 | | | | | | | | |

Notes:

(1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100

(2) Available Material = Cut - Salvaged/Unusuable Pavement Material

(3) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8

(4) Expanded Fill Factor = 1.25

Depending on selections: Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock * Rock Factor - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock * Rock Factor) * Fill Factor

(5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Di

3

## AGGREGATES

| CATEGORY | STATION | - | STATION | LOCATION | (305.0110) BASE AGGREGATE DENSE 3/4-INCH (TON) | (305.0120) BASE AGGREGATE DENSE 1 1/4-INCH (TON) | (312.0110) SELECT CRUSHED MATERIAL (TON) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 0010 | 470+00 | - | 473+60.42 | RT & LT | 215 | 1690 | 1390 | |
| | 474+37.58 | - | 478+00 | RT & LT | 230 | 1720 | 1480 | |
| | 476+38 | | | FE RT | 5 | - | - | |
| | | | **PROJECT TOTAL:** | | **450** | **3410** | **2870** | |

## CONCRETE PAVEMENT

| CATEGORY | STATION | - | STATION | LOCATION | (415.0120) CONCRETE PAVEMENT 12-INCH (SY) | (415.0410) CONCRETE PAVEMENT APPROACH SLAB (SY) | (416.1010) CONCRETE SURFACE DRAIN (CY) | (715.0415) INCENTIVE STRENGTH CONCRETE PAVEMENT (DOL) | (715.0502) INCENTIVE STRENGTH CONCRETE STRUCTURES (DOL) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 473+45.42 | - | 73+60.42 | CNTR | - | 45 | - | - | - | BEFORE STRUCTURE |
| | 474+37.58 | - | 74+52.58 | CNTR | - | 45 | - | - | - | AFTER STRUCTURE |
| | 473+45.42 | - | 73+60.42 | LT & RT | 36 | - | - | - | - | BEFORE STRUCTURE |
| | 474+37.58 | - | 74+52.58 | LT & RT | 36 | - | - | - | - | AFTER STRUCTURE |
| | 473+48.30 | | - | LT & RT | - | - | 5 | - | - | CONCRETE SURFACE DRAIN |
| | 470+00 | - | 478+00 | STH 69 | - | - | - | 500 | - | CONCRETE PAVEMENT |
| 0020 | 470+00 | - | 478+00 | STH 69 | - | - | - | - | 2000 | MASONRY STRUCTURES |
| | | | **PROJECT TOTAL:** | | **72** | **90** | **5** | **500** | **2000** | |

3

## ASPHALTIC MATERIALS

| CATEGORY | STATION | - | STATION | LOCATION | (455.0605) TACK COAT (GAL) | (460.5224) HMA PAVEMENT 4 LT 58-28 S (TON) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0010 | 470+00 | - | 473+45.42 | LT & RT | 253 | 520 | |
| | 474+52.58 | - | 478+00 | LT & RT | 262 | 530 | |
| | | | | **PROJECT TOTAL:** | **515** | **1050** | |

## MGS GUARDRAIL

| CATEGORY | STATION | - | STATION | LOCATION | (204.0165) REMOVING GUARDRAIL (LF) | (614.2300) MGS GUARDRAIL 3 (LF) | (614.2500) MGS THRIE BEAM TRANSITION (LF) | (614.2610) MGS GUARDRAIL TERMINAL EAT (EACH) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | 471+48.5 | - | - | RT | - | - | - | 1 | |
| | 472+48.5 | - | - | LT | - | - | - | 1 | |
| | 475+37 | - | - | RT | - | - | - | 1 | |
| | 476+99.5 | - | - | LT | - | - | - | 1 | |
| | 473+23.5 | - | 473+62.9 | RT | - | - | 39.4 | - | MGS TRANSITION |
| | 473+23.5 | - | 473+62.9 | LT | - | - | 39.4 | - | MGS TRANSITION |
| | 474+35.1 | - | 474+74.5 | RT | - | - | 39.4 | - | MGS TRANSITION |
| | 474+35.1 | - | 474+74.5 | LT | - | - | 39.4 | - | MGS TRANSITION |
| | 471+98.5 | - | 473+23.5 | RT | - | 125 | - | - | |
| | 472+98.5 | - | 473+23.5 | LT | - | 25 | - | - | |
| | 474+74.5 | - | 474+87 | RT | - | 12.5 | - | - | |
| | 474+74.5 | - | 476+49.5 | LT | - | 175 | - | - | |
| | 472+96 | - | 473+76 | RT | 90 | - | - | - | |
| | 472+96 | - | 473+86 | LT | 100 | - | - | - | |
| | 474+10 | - | 475+10 | RT | 100 | - | - | - | |
| | 474+10 | - | 475+10 | LT | 100 | - | - | - | |
| | | | | **PROJECT TOTAL:** | **390** | **338** | **158** | **4** | |

## LANDSCAPING

| CATEGORY | STATION | - | STATION | LOCATION | (625.0500) SALVAGED TOP SOIL (SY) | (629.0210) FERTILIZER TYPE B (CWT) | (630.0130) SEEDING MIXTURE NO. 30 (LB) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 0010 | 470+00 | - | 473+85 | RT | 780 | 0.49 | 22 | |
| | 470+00 | - | 473+85 | LT | 680 | 0.38 | 20 | |
| | 474+10 | - | 478+00 | RT | 650 | 0.41 | 20 | |
| | 474+10 | - | 478+00 | LT | 920 | 0.58 | 28 | |
| | | | | UNDISTRIBUTED | 500 | 1.14 | 10 | |
| | | | | **PROJECT TOTAL** | **3530** | **3** | **100** | |

## WATER

| CATEGORY | TYPE OF WORK | LOCATION | (624.0100) WATER (MGAL) | REMARKS |
|---|---|---|---|---|
| 0010 | ROADWAY | STH 69 | 54 | |
| | | **PROJECT TOTAL** | **54** | |

3

## EROSION CONTROL

| CATEGORY | STATION | TO | STATION | LOCATION | (606.0300) RIPRAP HEAVY (CY) | (628.1104) EROSION BALES (EACH) | (628.1504) SILT FENCE (LF) | (628.1520) SILT FENCE MAINTENANCE (LF) | (628.1905) MOBILIZATIONS EROSION CONTROL (EACH) | (628.1910) MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH) | (628.2004) EROSION MAT CLASS 1 TYPE B (SY) | (628.6005) TURBIDITY BARRIER (SY) | (645.0120) GEOTEXTILE TYPE HR (SY) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | STH 69 | | | | | | | | | | |
| 0010 | 470+00 | - | 473+85 | LT & RT | - | - | 850 | 850 | - | - | 1130 | - | - | |
| | 474+15 | - | 478+00 | LT & RT | - | - | 870 | 870 | - | - | 1190 | - | - | |
| | 473+80 | - | - | CREEK, LT | - | - | - | - | - | - | - | 45 | - | |
| | 474+15 | - | - | CREEK, RT | - | - | - | - | - | - | - | 45 | - | CONCRETE |
| | 473+48.3 | - | - | LT & RT | 4 | - | - | - | - | - | - | - | 8 | SURFACE DRAIN |
| | | | | BRIDGE | - | 4 | - | - | 4 | 1 | - | - | - | 4-QUADRANTS EROSION BALES |
| | | | | **PROJECT TOTAL** | **4** | **4** | **1720** | **1720** | **4** | **1** | **2320** | **90** | **8** | |

## TRAFFIC CONTROL

| CATEGORY | BLOW UP | (643.0420) TRAFFIC CONTROL BARRICADES TYPE III (DAYS) | (643.0705) TRAFFIC CONTROL WARNING LIGHTS TYPE A (DAYS) | (643.0900) TRAFFIC CONTROL SIGNS (EACH) | NUMBER OF CYCLES | (643.0910) TRAFFIC CONTROL COVERING SIGNS TYPE I (EACH) | NUMBER OF CYCLES | (643.0920) TRAFFIC CONTROL COVERING SIGNS TYPE II (EACH) | (643.1000) TRAFFIC CONTROL SIGNS FIXED MESSAGE (SF) | (643.3000) TRAFFIC CONTROL DETOUR SIGN (DAYS) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | OVERVIEW | - | - | 552 | - | - | - | - | - | 552 | |
| | 1 | 184 | 368 | - | - | - | 2 | 2 | 32 | 2852 | |
| | 2 | - | - | - | - | - | - | - | - | 3588 | |
| | 3 | - | - | - | - | - | - | - | - | 3956 | |
| | 4 | - | - | - | - | - | 2 | 8 | - | 6992 | |
| | 5 | 368 | 736 | - | 2 | 6 | 2 | 6 | 32 | 5152 | |
| | 6 | 1656 | 2576 | 5520 | - | - | - | - | - | - | |
| | **PROJECT TOTAL** | **2208** | **3680** | **6072** | | **6** | | **16** | **64** | **23092** | |

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## PAVEMENT MARKING

| CATEGORY | STATION | TO | STATION | LOCATION | (638.2602) REMOVING SIGNS TYPE II (EACH) | (638.3000) REMOVING SMALL SMALL SIGN SUPPORTS (EACH) | (646.0106) PAVEMENT MARKING EPOXY 4-INCH (LF) | (LF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | 474+14 | - | - | STH 69, LT | 2 | 1 | | | WIITENWYLER CREEK |
| | - | - | - | - | - | - | WHITE | YELLOW | BRIDGE SIGN |
| | 470+00 | - | 478+00 | LT & RT EDGELINE | - | - | 1600 | - | |
| | 470+00 | - | 478+00 | CENTERLINE | - | - | - | 800 | SOLID |
| | | | | CENTERLINE | - | - | - | 200 | GAP |
| | | | | **PROJECT TOTAL** | **2** | **1** | **1600** | **1000** | |
| | | | | | | | **2600** | | |

## CONSTRUCTION STAKING

| CATEGORY | STATION | TO | STATION | LOCATION | (650.4500) CONSTRUCTION STAKING SUBGRADE (LF) | (650.5000) CONSTRUCTION STAKING BASE (LF) | (650.6500) CONSTRUCTION STAKING STRUCTURE LAYOUT (EACH) | (650.9910) CONSTRUCTION STAKING SUPPLIMENTAL CONTROL PROJECT (LS) | (650.9920) CONSTRUCTION STAKING SLOPE STAKES (LF) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | STH 69 | - | - | 1 | 1 | - | |
| 0010 | 470+00 | - | 473+45 | LT & RT | 345 | 345 | - | - | 750 | ROADWAY |
| | 474+53 | - | 478+00 | LT & RT | 347 | 347 | - | - | 750 | ROADWAY |
| | 473+46 | - | 473+81 | CENTER | - | 35 | - | - | - | CONCRETE |
| | 474+18 | - | 474+53 | CENTER | - | 35 | - | - | - | PAVEMENT |
| | | | | | | | | | | REF LINE |
| | | | | **PROJECT TOTAL** | **692** | **762** | **1** | **1** | **1500** | |

## SAWING ASPHALT

| CATEGORY | STATION | TO | STATION | LOCATION | (690.0150) SAWING ASPHALT (LF) | REMARKS |
|---|---|---|---|---|---|---|
| | | | | STH 69 | | |
| 0010 | 470+00 | | - | - | 30 | EAST OF BRIDGE |
| | 478+00 | | - | - | 30 | WEST OF BRIDGE |
| | | | | **PROJECT TOTAL** | **60** | |

STA. 474+00
EXISTING STRUCTURE (B-23-0006) TO BE REMOVED.

N

TDS TEL

TDS CABLE

EAT POST *9
STA. 472+73
23' LT

EAT POST *1
STA. 472+23
25' LT

EAT POST *9
STA. 472+48
24' LT

CONCRETE
FLUME
STA. 473+48.30
LT

EAT POST *9
STA. 476+47
23' LT

EAT POST *5
STA. 476+72
24' LT

EAT POST *1
STA. 476+97
25' LT

RW

SI

XXXX

470+00 | 471+00 | 472+00 | 473+00 | (B-23-0175) 474+00 | 475+00 | 476+00 | 477+00 | 478+00

BEGIN OF CONSTRUCTION
STA. 470+00
(MATCH EXISTING)
SAW CUT REQ'D

EAT POST *1
STA. 471+50
25' RT

EAT POST *5
STA. 471+75
24' RT

EAT POST *9
STA. 472+00
23' RT

CONCRETE
FLUME
STA. 473+48.30
RT

EAT POST *9
STA. 475+22
23' RT

EAT POST *5
STA. 475+47
24' RT

EAT POST *1
STA. 475+72
25' RT

END OF CONSTRUCTION
STA. 478+00
(MATCH EXISTING)
SAW CUT REQ'D

5

VCL = 300.21
K = 167.05

VPC STA 472+53.70
VPC EL 853.42

VPI STA 474+03.80
VPI EL 853.31

VPT STA 475+53.9
VPT EL 855.91

STA 477+50
EL 859.30

860.00

1.73%

END PROJECT
STA. 478+00

PROPOSED PROFILE

-0.07%

EXISTING PROFILE

BEGIN PROJECT
STA. 470+00

HIGH WATER
ELEV. 849.40

850.00

STA. 474+00.
PROPOSED SINGLE SPAN FLAT SLAB STRUCTURE (B-23-0175)
(SEE STRUCTURE DRAWINGS)

WATER
ELEV. 844.71

STREAM BED
ELEV. 843.70

LT ABUTMENT
STA.473+81
ELEV. 853.82

RT ABUTMENT
STA.474+17
ELEV. 854.10

840.00

470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478

| 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 |
|---|---|---|---|---|---|---|---|---|
| 853.57 / 853.59 | 853.53 / 853.56 | 853.50 / 853.52 | 853.44 / 853.49 | 853.32 / 853.45 | 853.23 / 853.42 | 853.14 / 853.45 | 852.97 / 853.63 | 853.12 / 853.96 |
| 853.85 / 854.43 | 854.79 / 855.06 | 855.76 / 855.84 | 856.65 / 856.70 | 857.56 / 857.57 | 858.44 / 858.43 | 859.31 / 859.29 | 860.10 / 860.08 | |

5

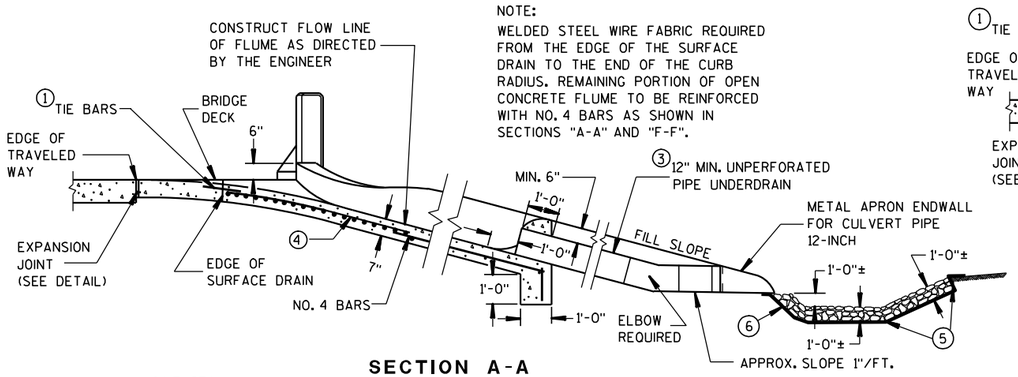
| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | PLAN AND PROFILE: STH 69 | SHEET 24 | E |
|---|---|---|---|---|---|

# Standard Detail Drawing List

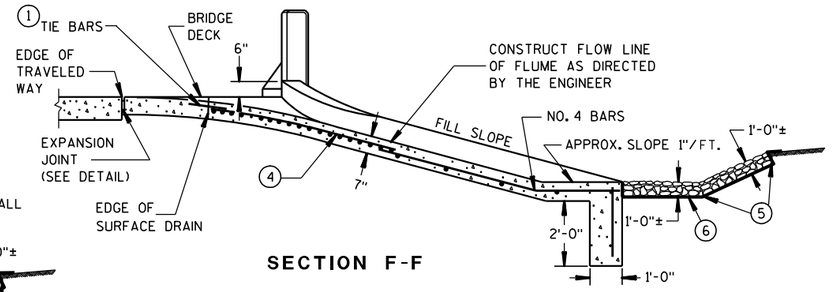
| | |
|---|---|
| 08D02-06 | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 13A03-06 | CONCRETE PAVEMENT SHOULDERS |
| 13B02-08A | CONCRETE PAVEMENT APPROACH SLAB |
| 13B02-08B | STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB |
| 13C01-18 | CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES |
| 13C18-05A | CONCRETE PAVEMENT JOINTING |
| 13C18-05B | CONCRETE PAVEMENT STEEL REINFORCEMENT |
| 13C18-05C | CONCRETE PAVEMENT JOINT TYPES |
| 14B42-04A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-04B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-04C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B43-03A | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) |
| 14B43-03B | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) |
| 14B43-03C | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) |
| 14B44-02A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-02B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-02C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B45-04A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04E | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04F | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04G | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04I | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04J | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04K | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04L | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 15C02-06A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-06B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-06C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C03-03 | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES |
| 15C06-08 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-17A | LONGITUDINAL MARKING (MAINLINE) |



6




SECTION A-A




SECTION F-F

## GENERAL NOTES

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

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

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

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

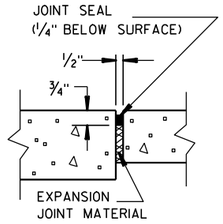
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

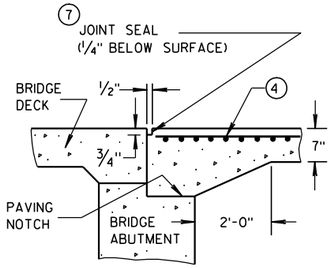
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

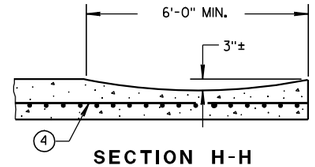
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



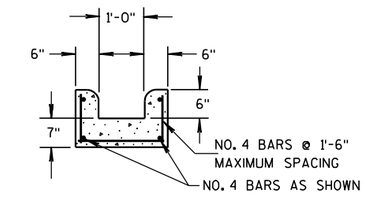

EXPANSION JOINT DETAIL



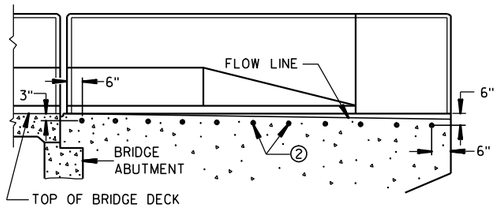

SECTION D-D




SECTION H-H



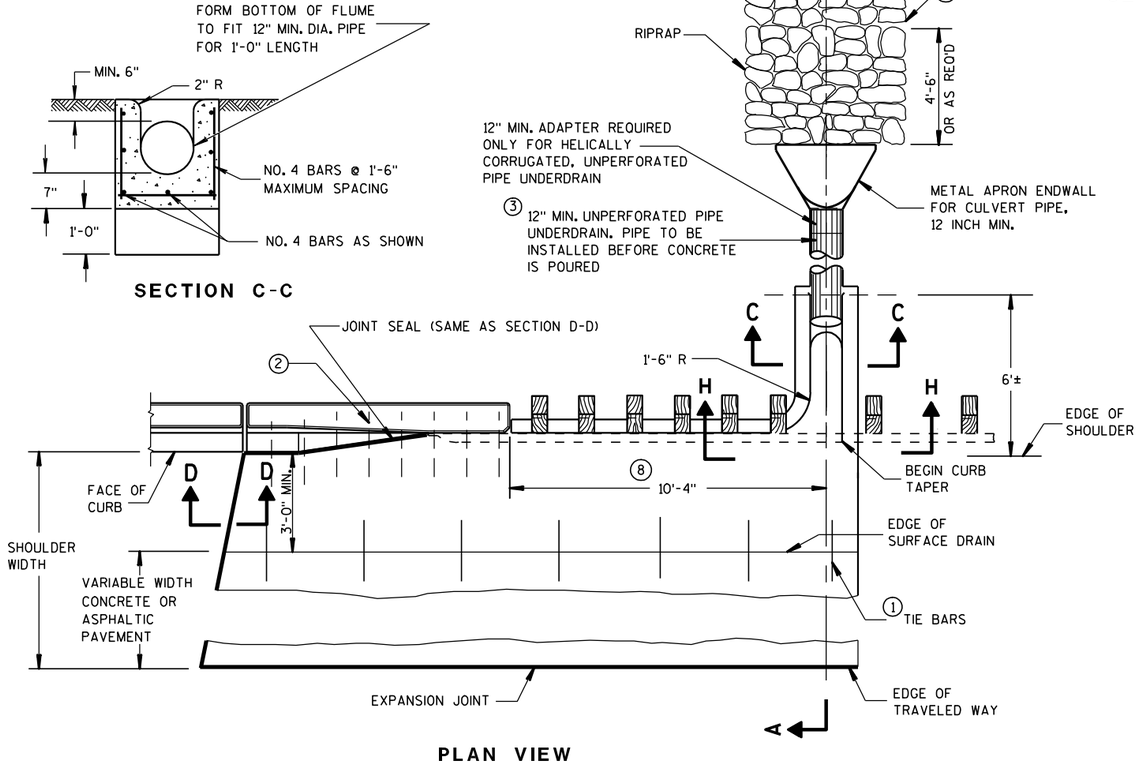

SECTION E-E



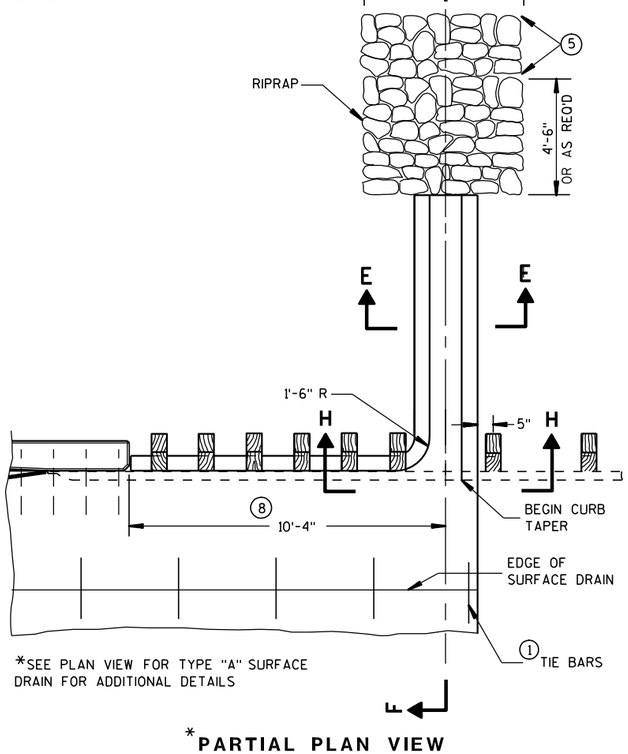

LOCATION OF TIE BARS IN WINGWALL




SECTION C-C




PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"




*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

*PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

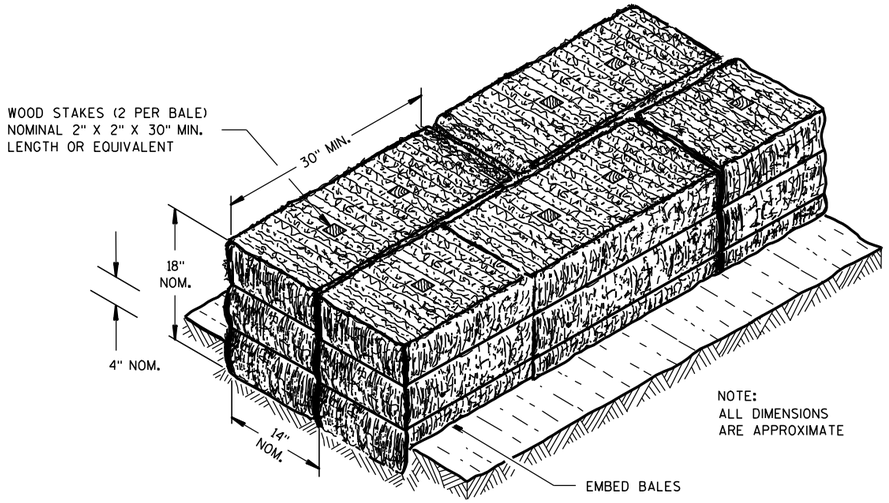
CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

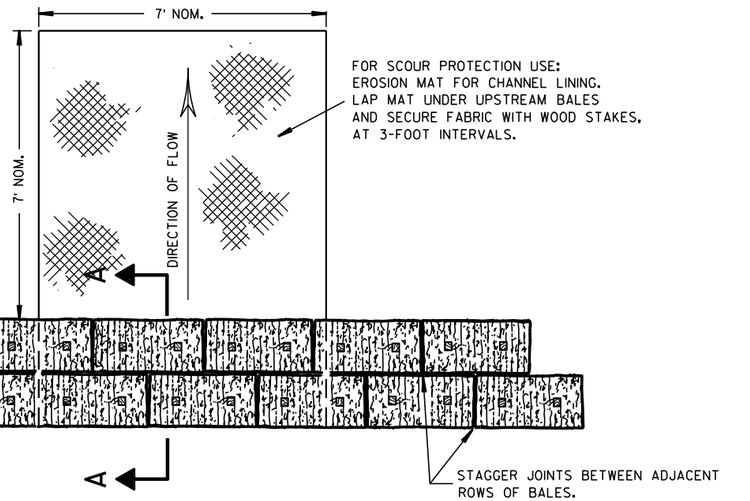
APPROVED
9/4/08
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA



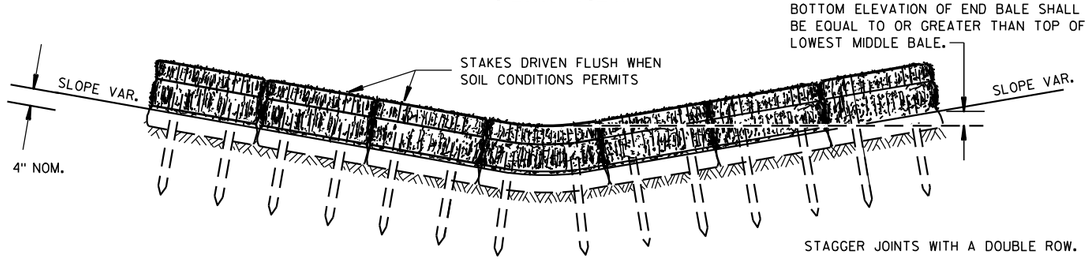

6
S.D.D. 8 D 2-6




**SECTION A-A**




**PLAN VIEW**



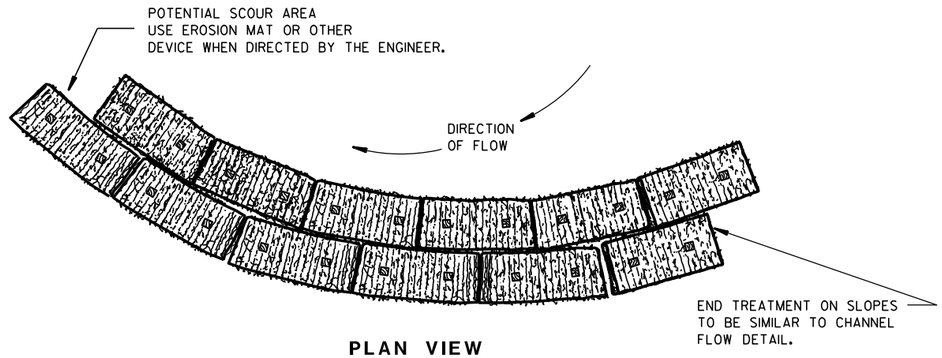

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

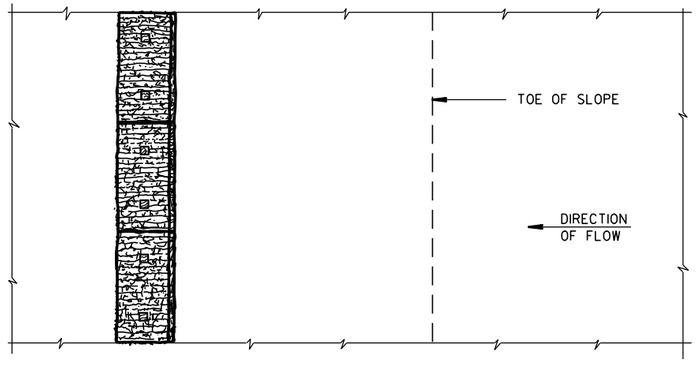
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

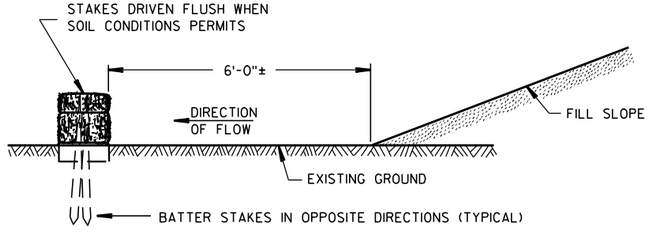



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

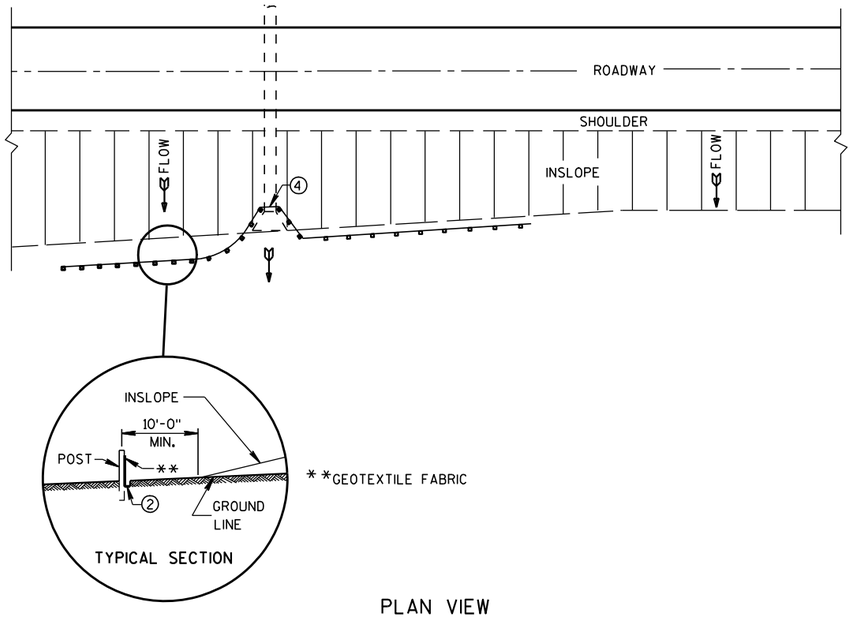
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

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

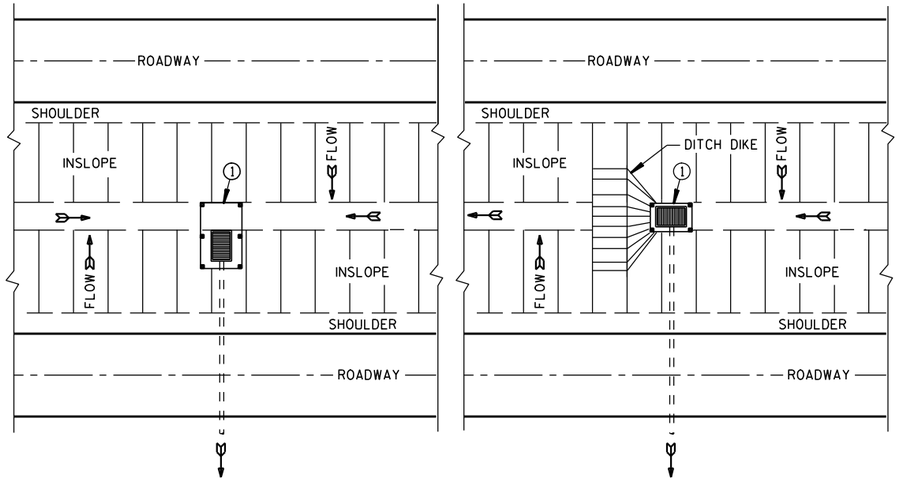
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



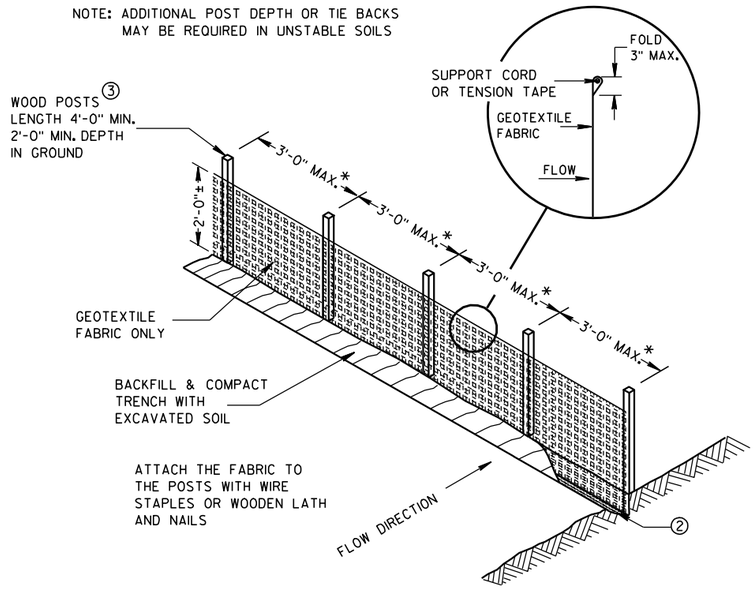

PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



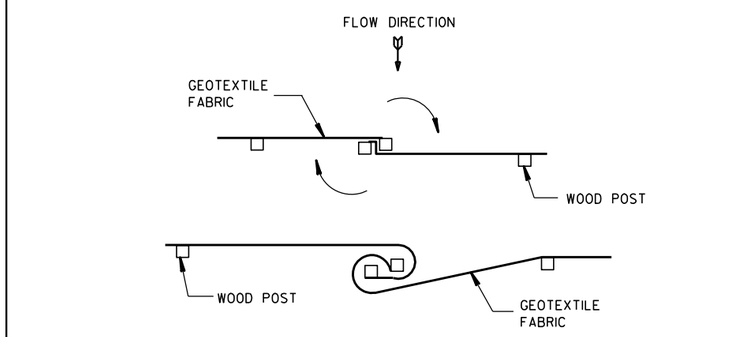

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

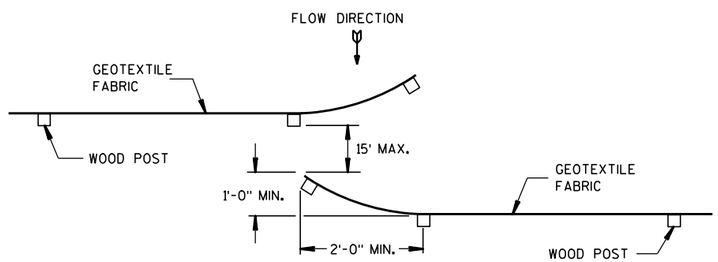



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

## SILT FENCE




TWIST METHOD



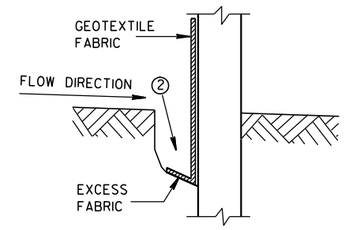

HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5

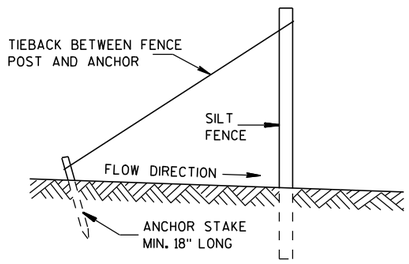
## GENERAL NOTES

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

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




## TRENCH DETAIL




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

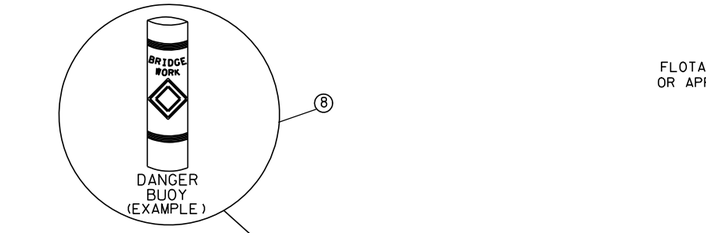
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

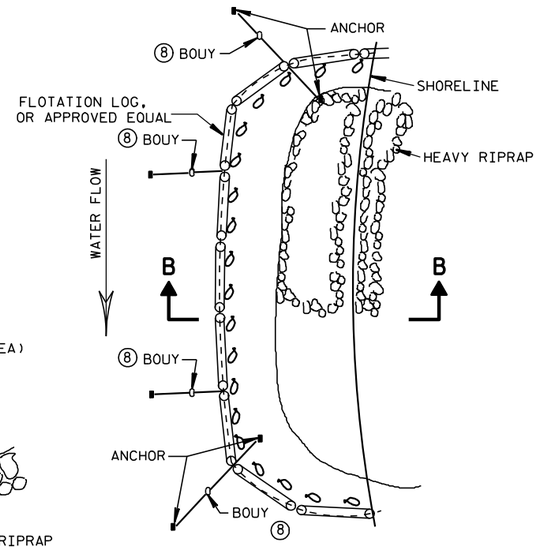


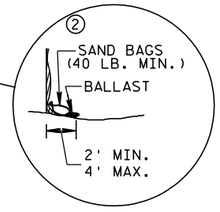
S.D.D. 8 E 9-6

6

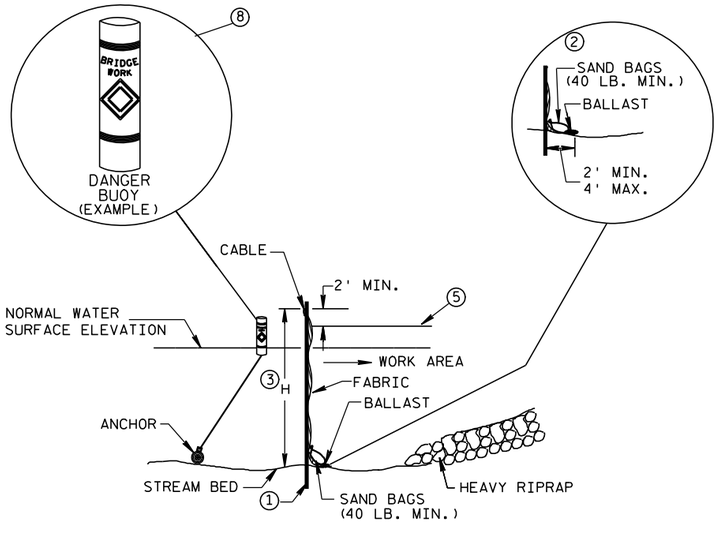



**SECTION B-B**



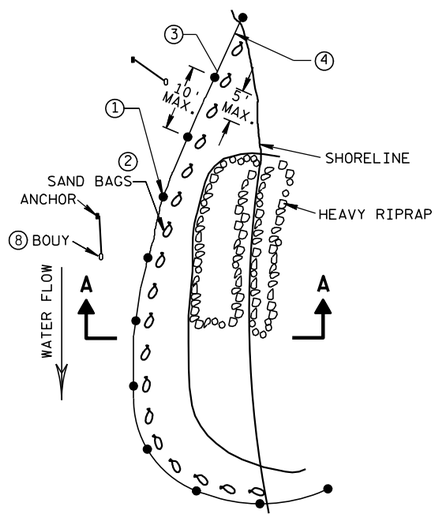




**TURBIDITY BARRIER FLOAT ALTERNATIVE**
**CAUTION - SEE NOTE 6**




**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.

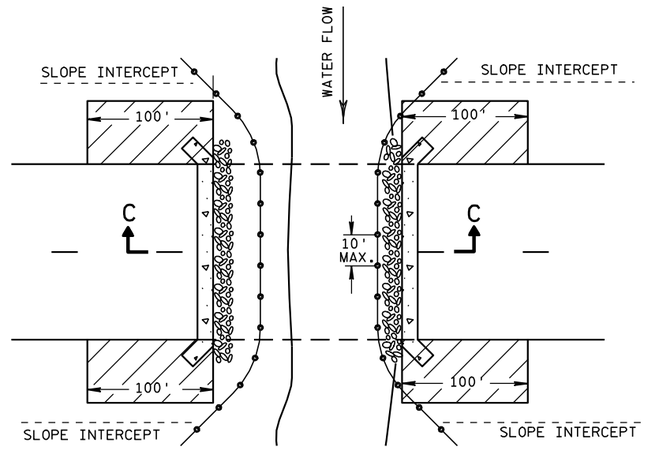
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

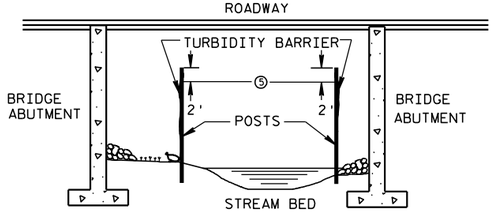
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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**



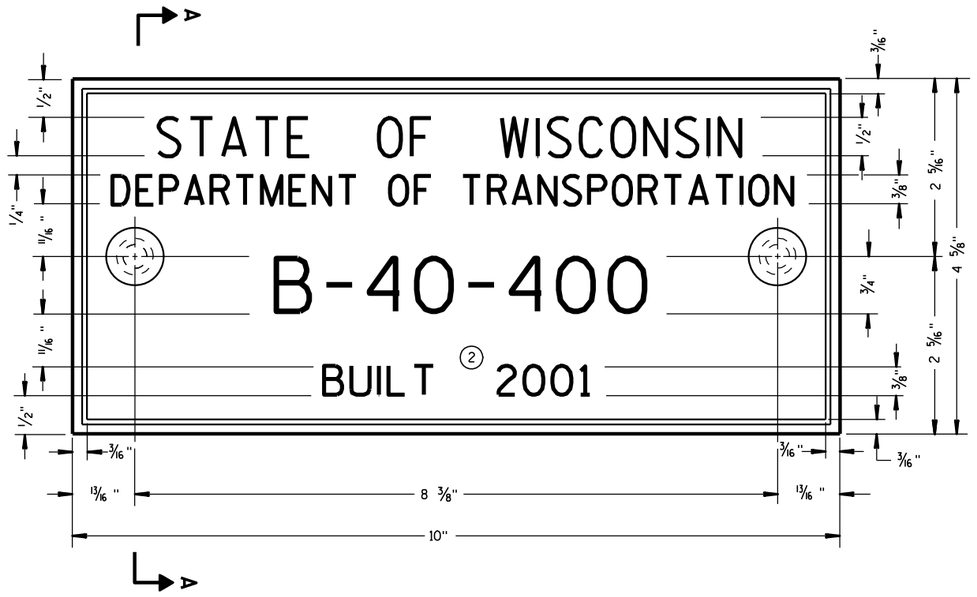

**SECTION C-C**

**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




## TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

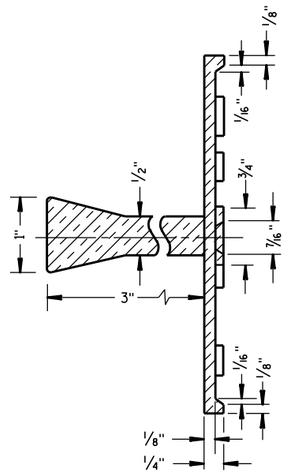
## GENERAL NOTES

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

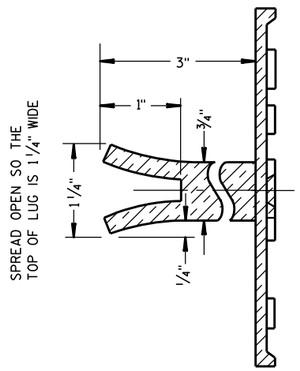
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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




SECTION A-A




ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

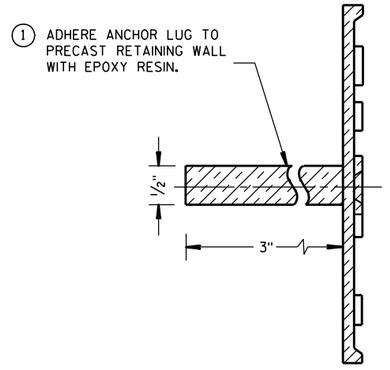
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

## NUMBERING DESIGNATION MULTI-UNIT STRUCTURES




## ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

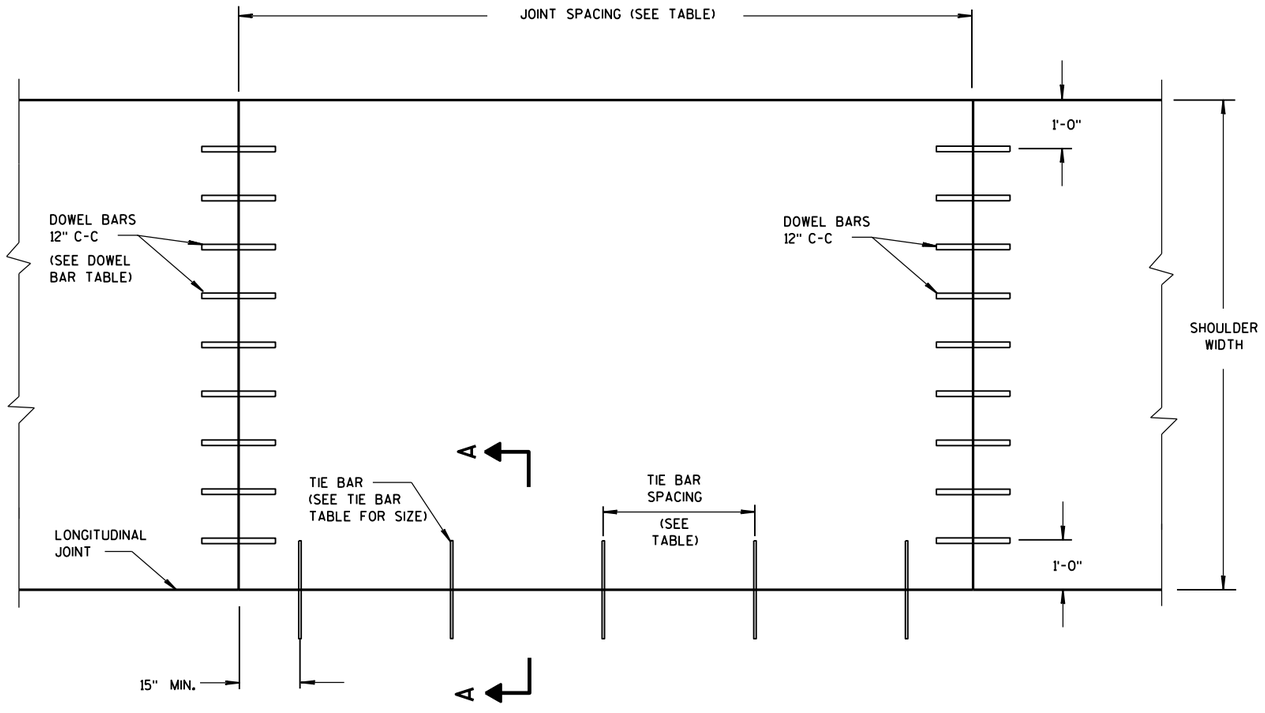


6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10




PLAN VIEW

## CONCRETE PAVEMENT SHOULDER

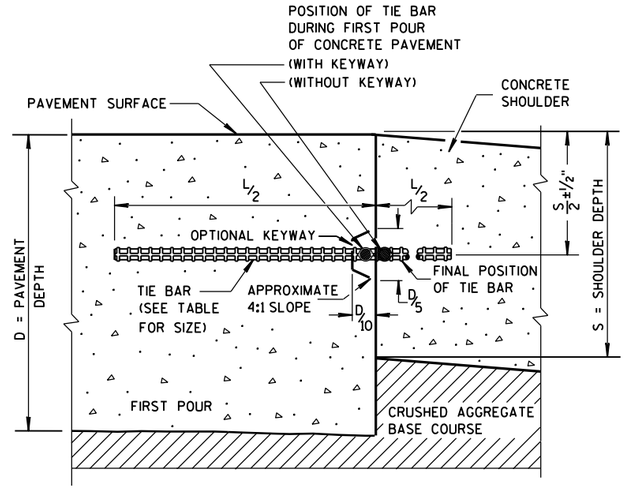
## GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.




SECTION A-A

## LONGITUDINAL CONSTRUCTION JOINT

### TIE BAR TABLE

| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 ½" | NO. 4 | 30" | 36" |
| ≥ 10 ½" | NO. 5 | 36" | 36" |
| | NO. 4* | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

### PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | DOWEL BAR DIAMETER*** | CONTRACTION JOINT SPACING |
|---|---|---|
| 5 ½", 6", 6 ½" | NONE | 12' |
| 7", 7 ½" | 1" | 14' |
| 8", 8 ½" | 1 ¼" | 15' |
| 9", 9 ½" | 1 ¼" | 15' |
| 10" & ABOVE | 1 ½" | 15' |

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPERV
FHWA

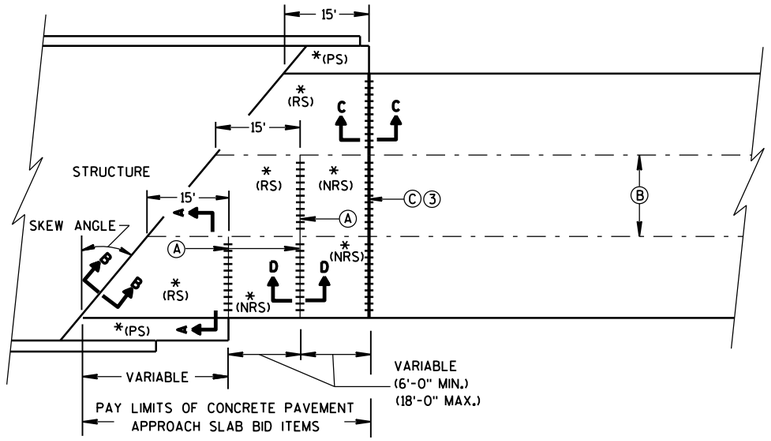


6

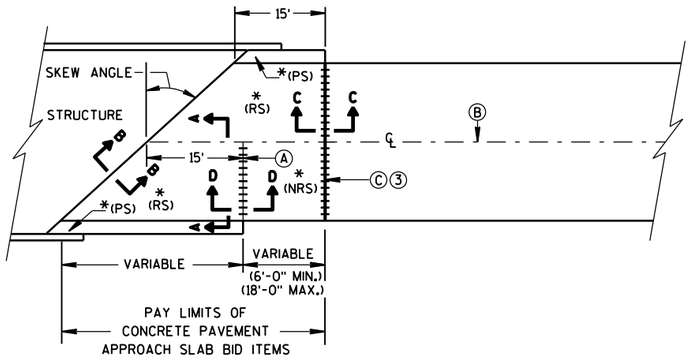
S.D.D. 13 A 3-6

6

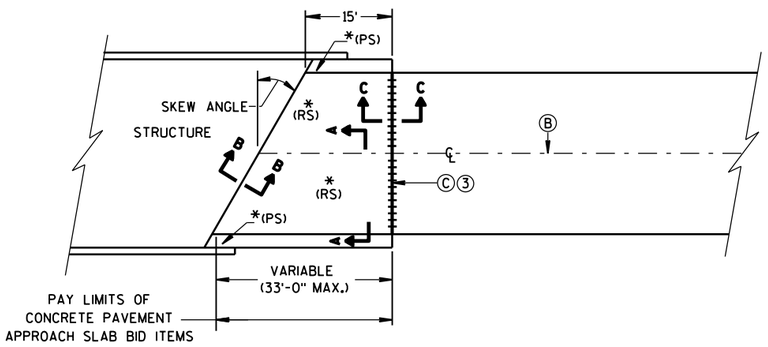
S.D.D. 13 A 3-6




**SKEWED APPROACH**
**(PAVEMENT MORE THAN 2 LANES)**




**SKEWS >20°**
**(PAVEMENT WIDTH ≤30')**




**SKEWS ≤20°**
**(PAVEMENT WIDTH ≤30')**

**APPROACH SLAB AND ADJACENT PAVEMENT**

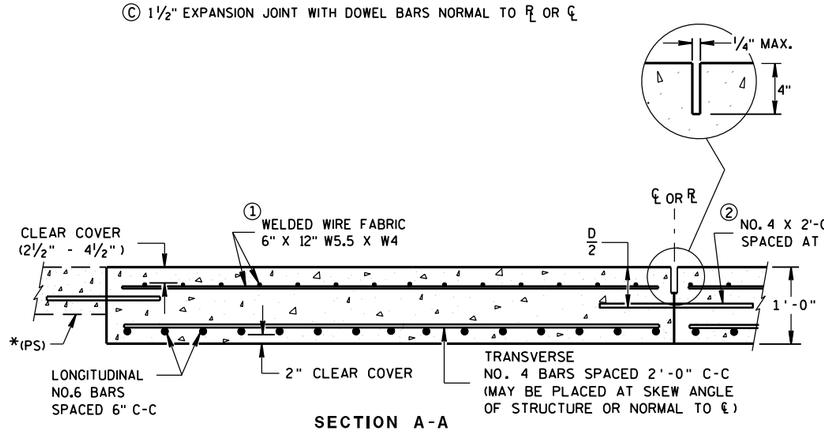
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

***STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

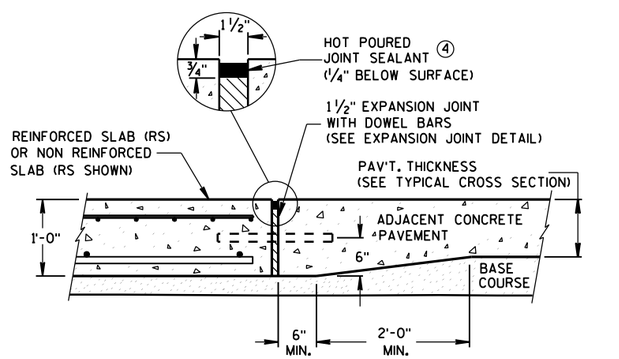
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

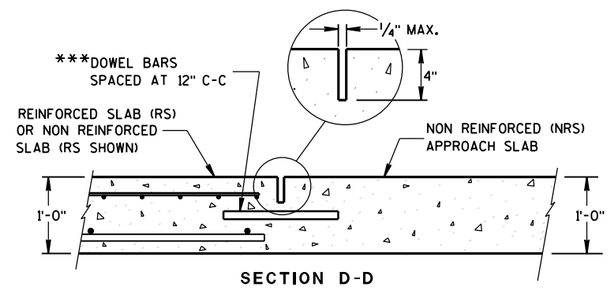
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄




**SECTION A-A**
**REINFORCEMENT POSITIONING DETAIL**




**SECTION C-C**
**TRANSITION DETAIL**
**APPROACH SLAB TO ADJACENT PAVEMENT**




**SECTION D-D**
**CONTRACTION JOINT**

## GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

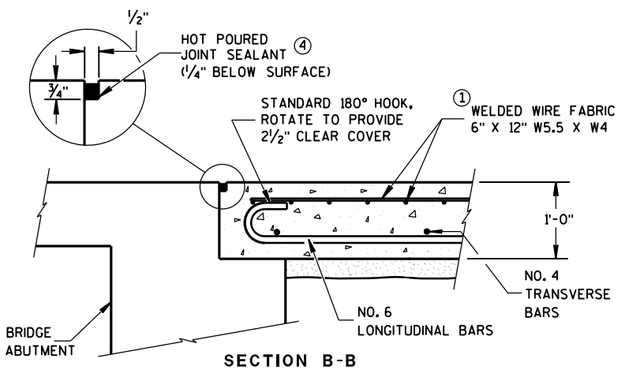
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

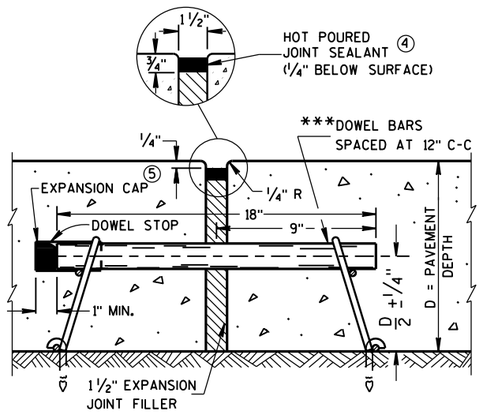
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.




**SECTION B-B**
**BEND DETAIL**
**BOTTOM REINFORCEMENT**




**EXPANSION JOINT DETAIL**

**CONCRETE PAVEMENT APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA



6

S.D.D. 13 B 2-8a

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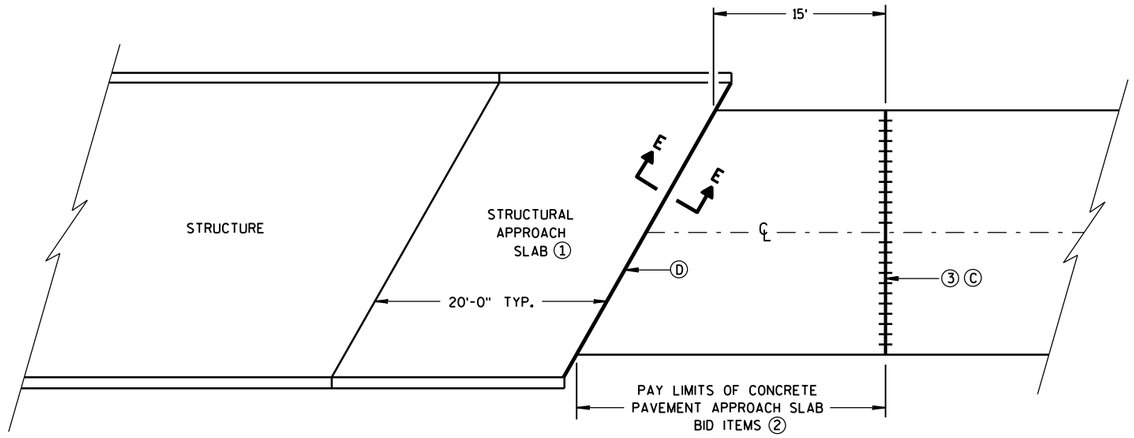
S.D.D. 13 B 2-8a




## GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

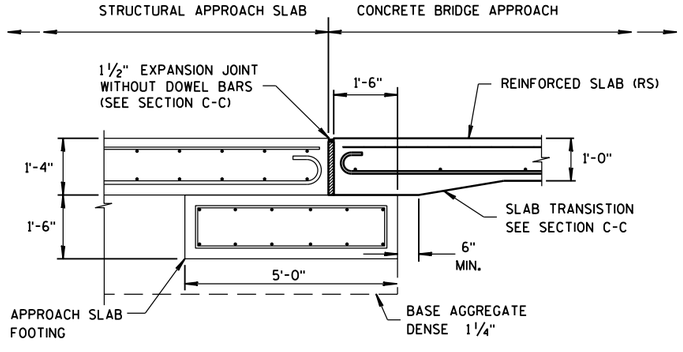
① SEE BRIDGE PLAN.

② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.

③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)




SECTION E-E

## FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

**STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERV

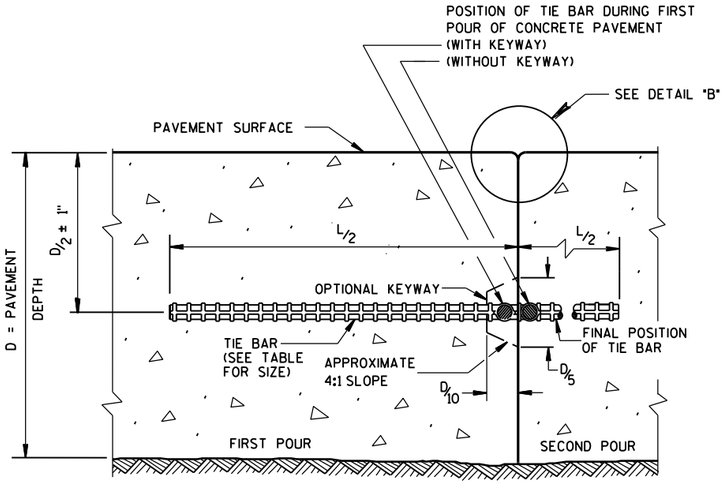
FHWA



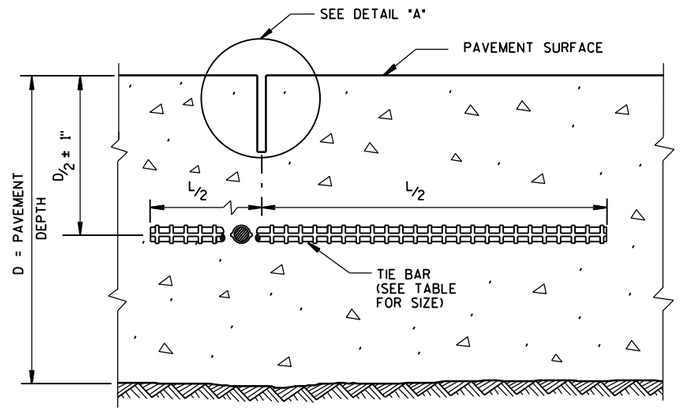


6

S.D.D. 13 B 2-8b




## CONSTRUCTION JOINT




## SAWED JOINT

## GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.




PLAN VIEW




SECTION A-A

## LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT




DETAIL "A"




DETAIL "B"



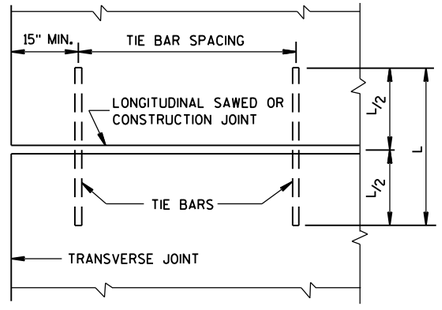

DETAIL "C"

### TIE BAR TABLE

| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4 * | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.




PLAN VIEW
SHOWING LOCATION OF TIE BARS

## CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

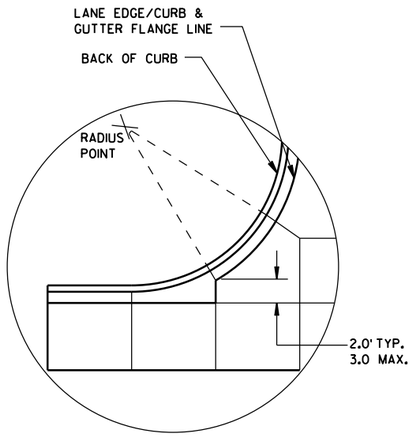
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

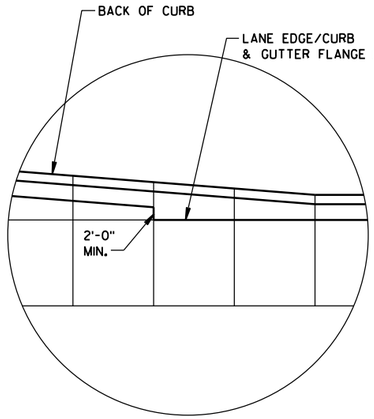



6

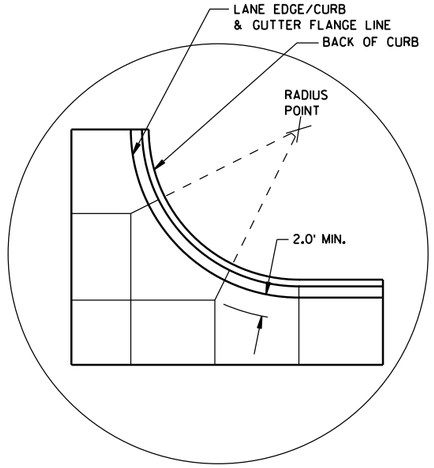
S.D.D. 13 C 1-18



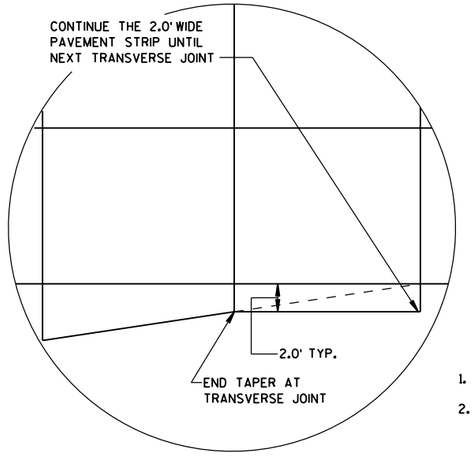

DETAIL "A"




DETAIL "B"




DETAIL "C"




DETAIL "D"

## GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

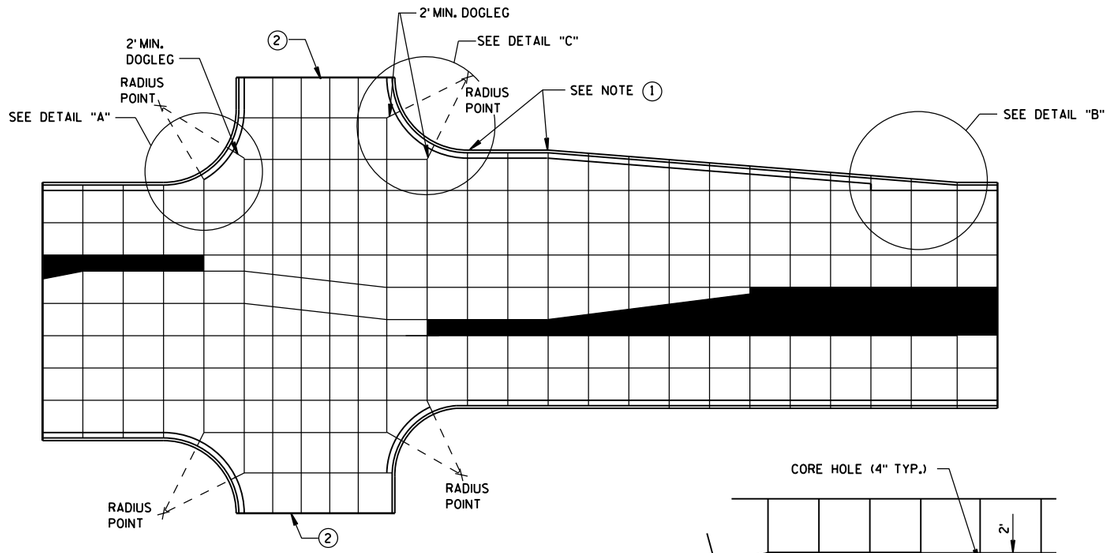
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

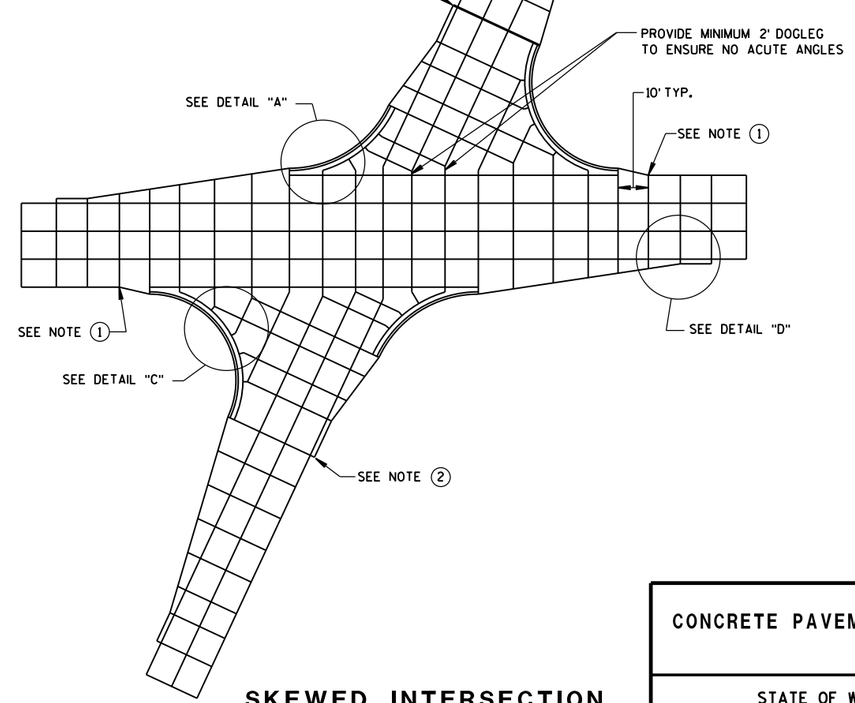
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



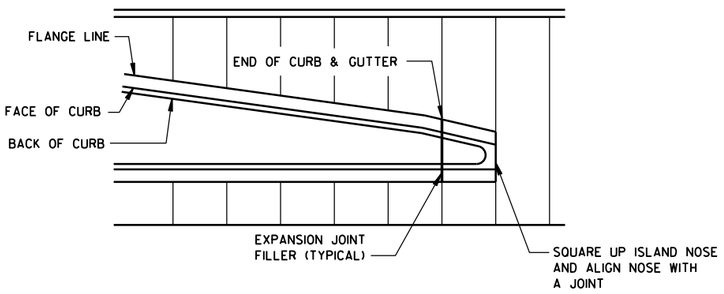

STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

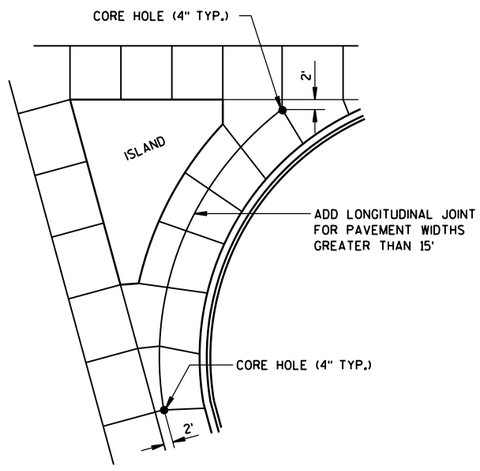
| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|---|---|
| 6", 6½" | 12' |
| 7", 7½" | 14' |
| 8" & ABOVE | 15' |




SKEWED INTERSECTION




APPROACH TO MEDIAN




LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR





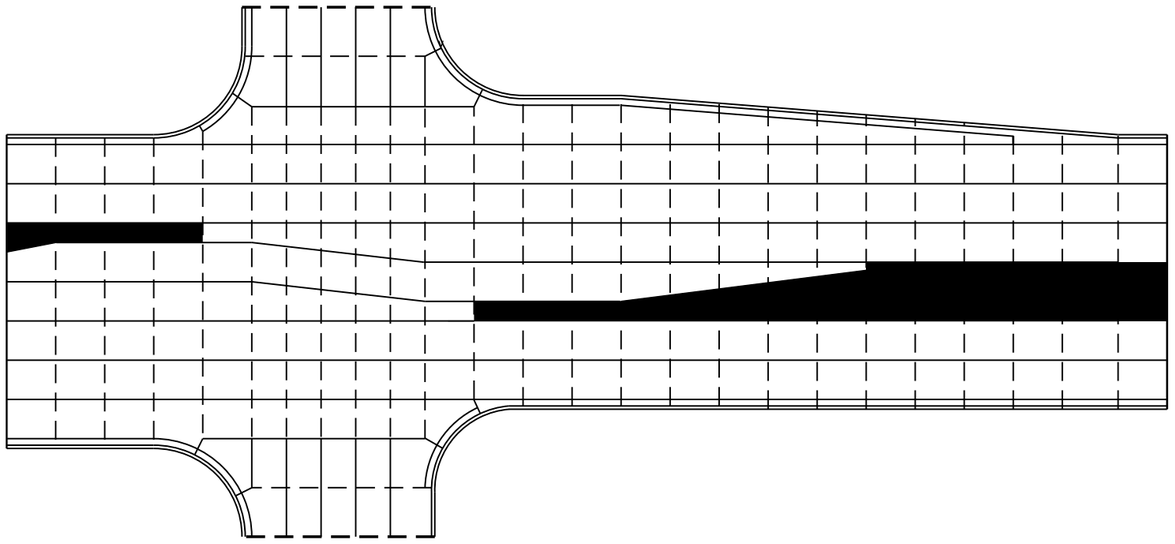
6
S.D.D. 13 C 18-5a

## LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

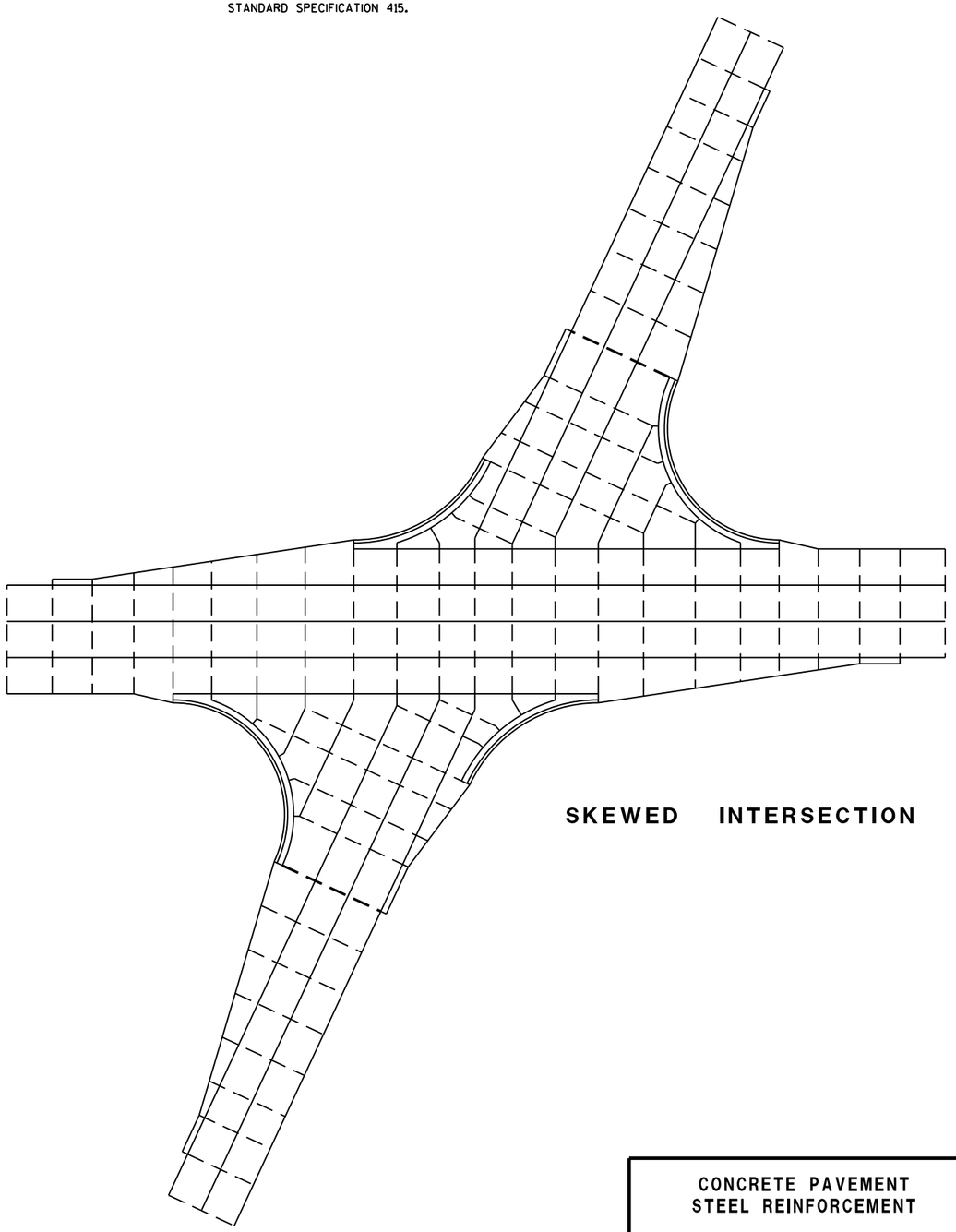
TIED JOINT



STANDARD INTERSECTION

## GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

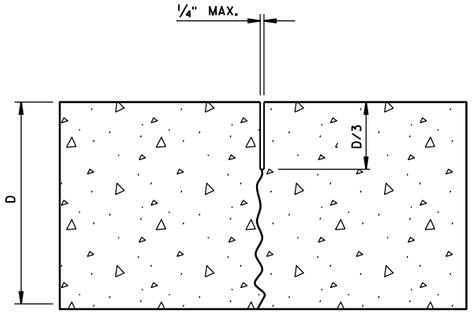


6

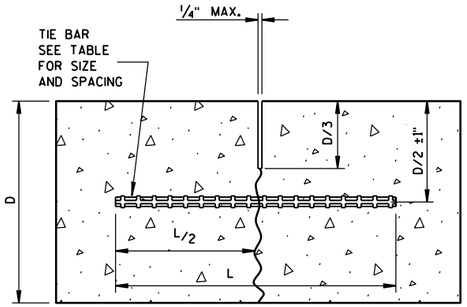
S.D.D. 13 C 18-5b

6

S.D.D. 13 C 18-5b




UNDOWELED-TRANSVERSE




TIED LONGITUDINAL

## TIE BAR TABLE

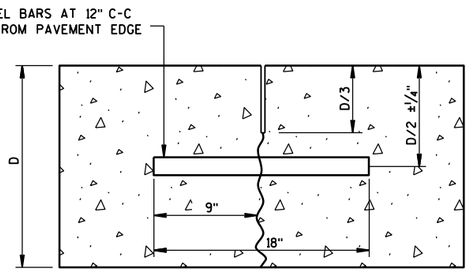
| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4* | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

## GENERAL NOTES

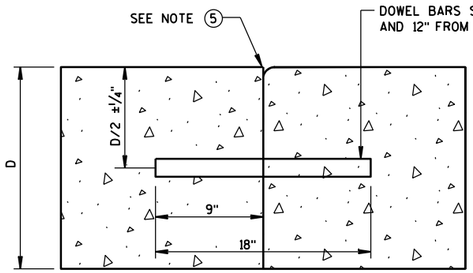
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



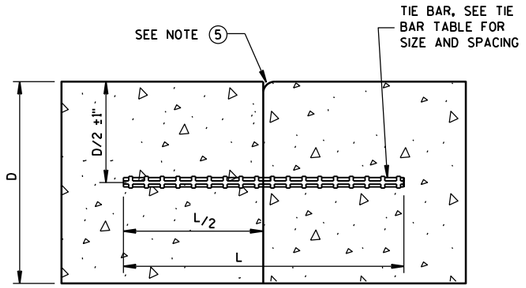

DOWELED-TRANSVERSE

## CONTRACTION JOINTS

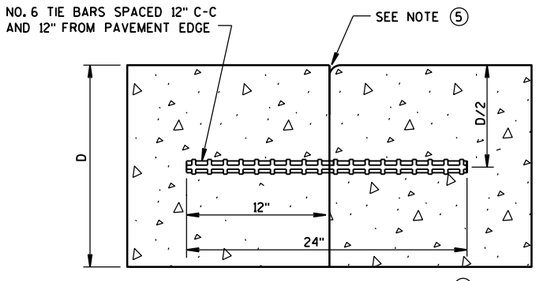
SEE NOTE (2)




DOWELED TRANSVERSE (3)

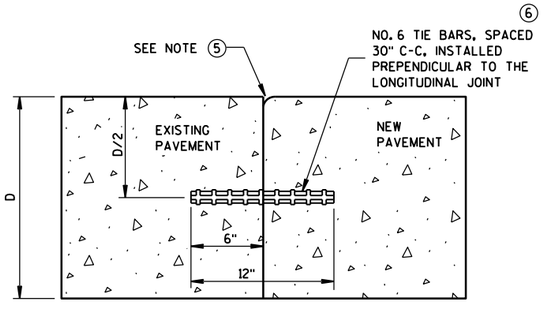



TIED LONGITUDINAL




TIED TRANSVERSE (3)

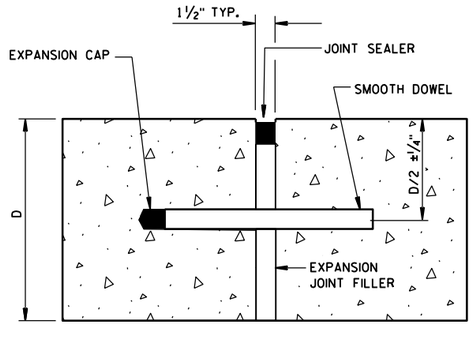
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)




TIED LONGITUDINAL TO EXISTING

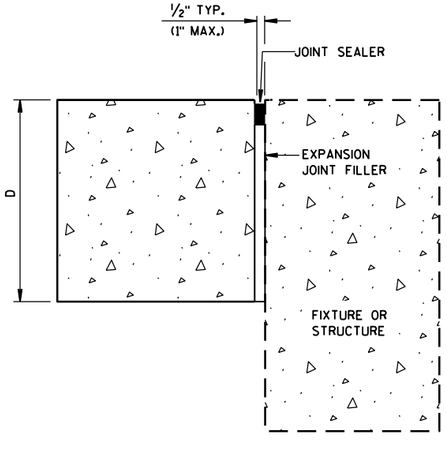
## CONSTRUCTION JOINTS

SEE NOTE (4)




DOWELED-TRANSVERSE

SEE NOTE (1)




UNTIED-LONGITUDINAL

## EXPANSION JOINTS

6

6

S.D.D. 13 C 18-5c

S.D.D. 13 C 18-5c

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

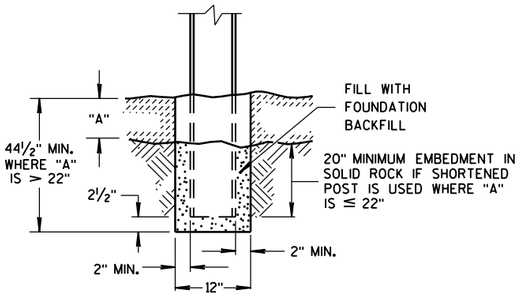
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

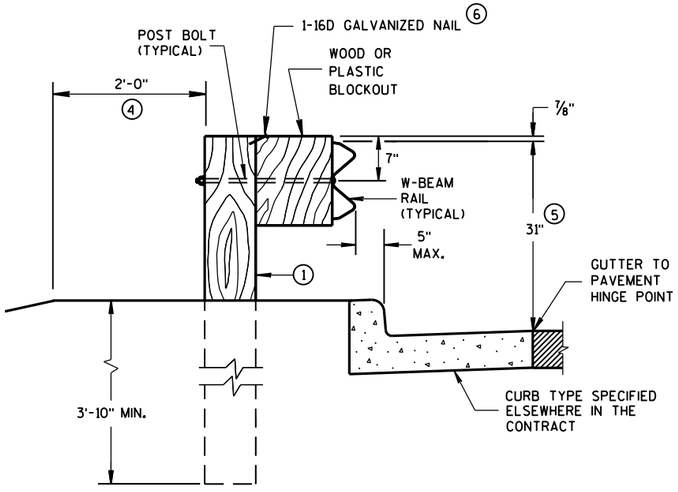
④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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




END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



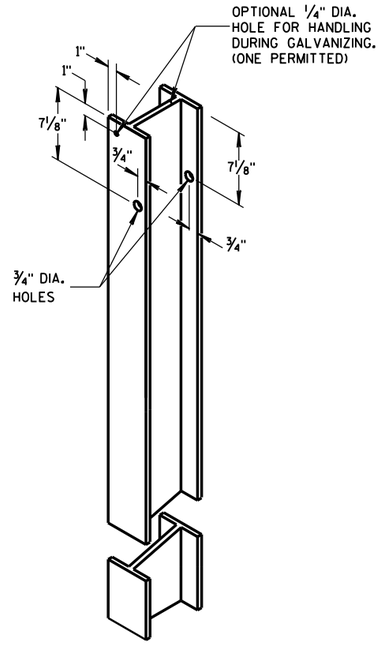

END VIEW
LOCATED ALONG A CURBED ROADWAY



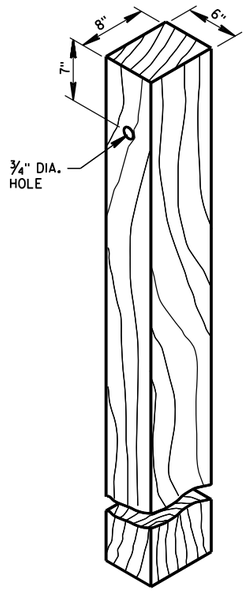

END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



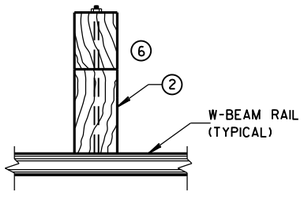

END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



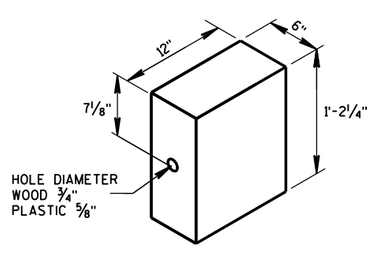

STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



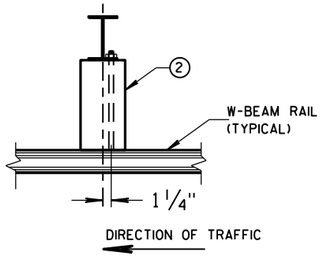

WOOD POST
(6" X 8") NOMINAL ①




PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM




WOOD OR
PLASTIC BLOCKOUT ②




PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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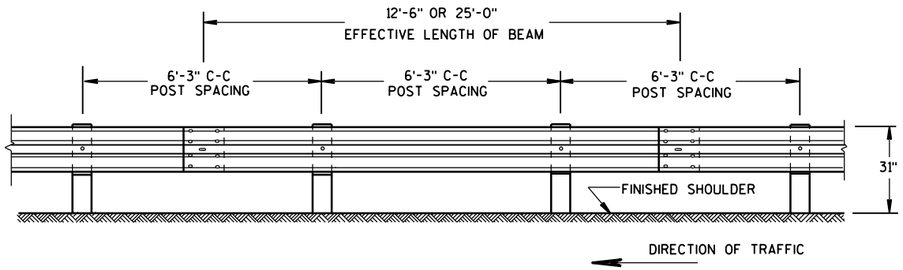
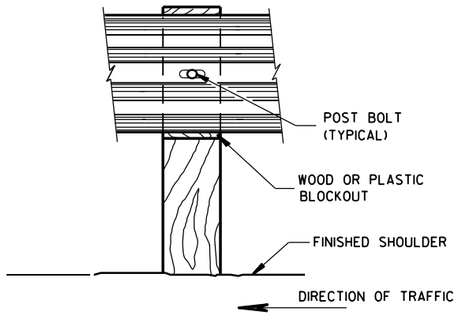
S.D.D. 14 B 42-4a




FRONT VIEW

## POST SPACING STANDARD INSTALLATION




FRONT VIEW AT WOOD POST

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

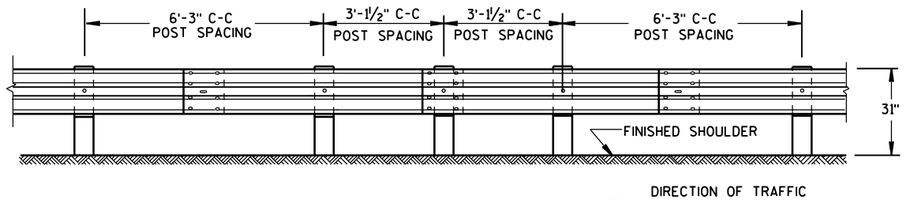
⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

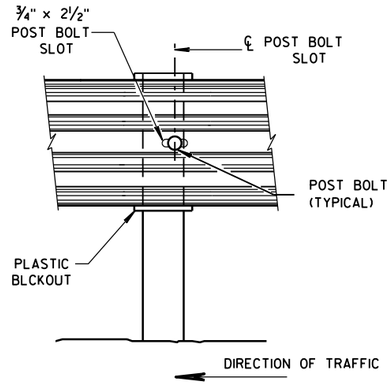
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

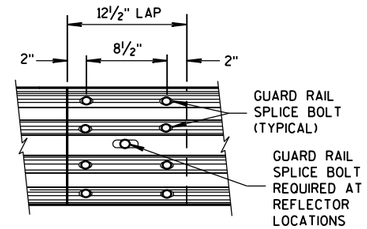



FRONT VIEW

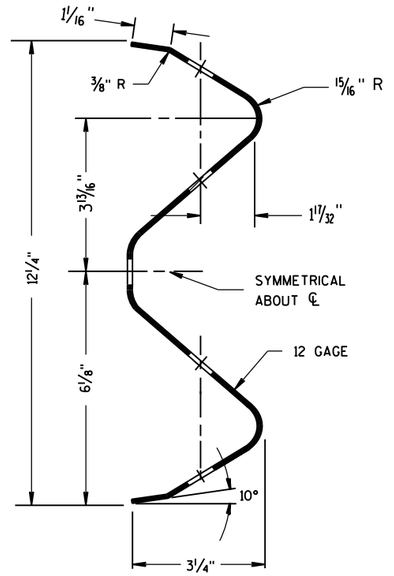
## HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



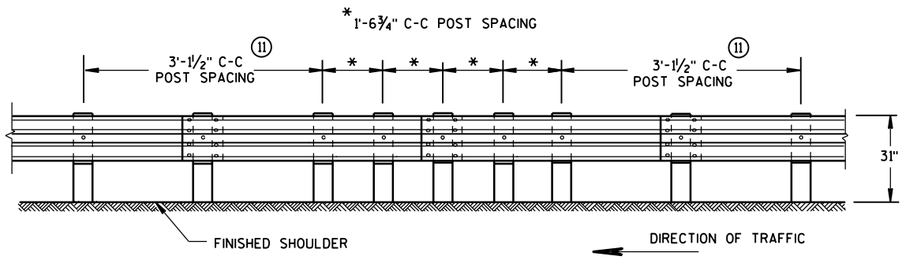

FRONT VIEW AT STEEL POST




FRONT VIEW
MID-SPAN BEAM SPLICE

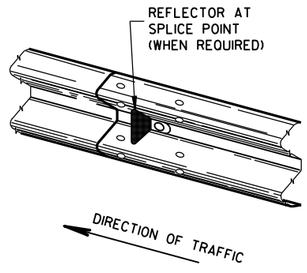


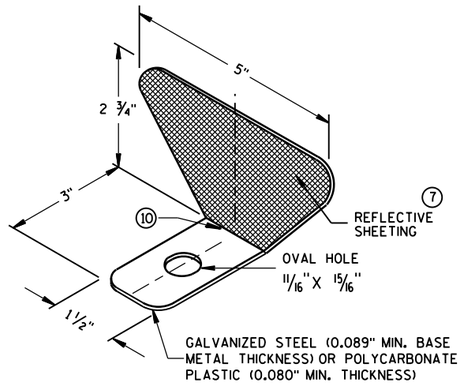

SECTION THRU W-BEAM RAIL




FRONT VIEW

## QUARTER POST SPACING (QS)




## REFLECTOR SPACING ⑧

| | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|---|---|---|---|---|
| ONE WAY TRAFFIC | < 200' | 50' C-C | 1 | 3 |
| | > 200' | 100' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 25' C-C | 1 ⑨ | 6 |
| | > 200' | 50' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 50' C-C | 2 | 3 |
| | > 200' | 100' C-C | 2 ⑩ | |

## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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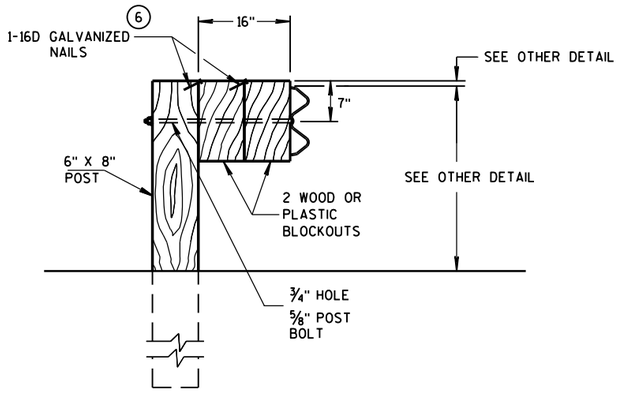
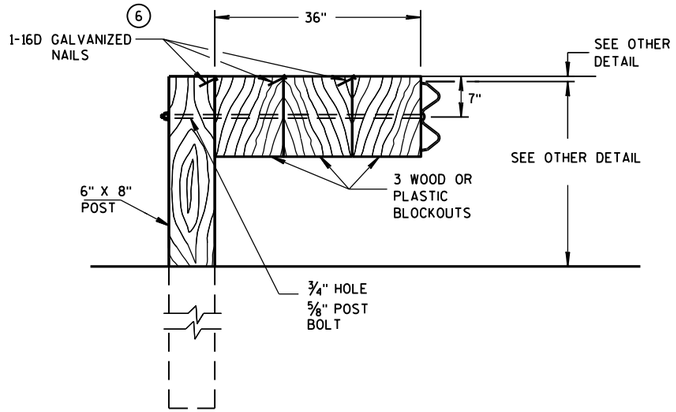
S.D.D. 14 B 42-4b




## DETAIL FOR 16" BLOCKOUT DEPTH

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

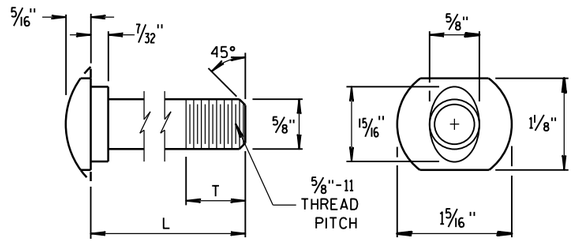



## DETAIL FOR 36" BLOCKOUT DEPTH

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

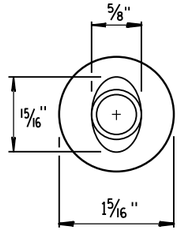
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

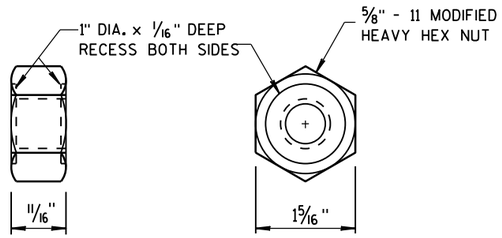



### POST BOLT TABLE

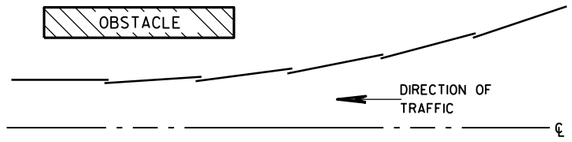
| L | T (MIN.) |
|---|---|
| 1 1/4" | 1 1/8" |
| 2" | 1 3/4" |
| 10" | 4" |
| 14" | 4 1/16" |
| 18" | 4" |
| 21" | 4 1/16" |
| 25" | 4" |




ALTERNATE BOLT HEAD

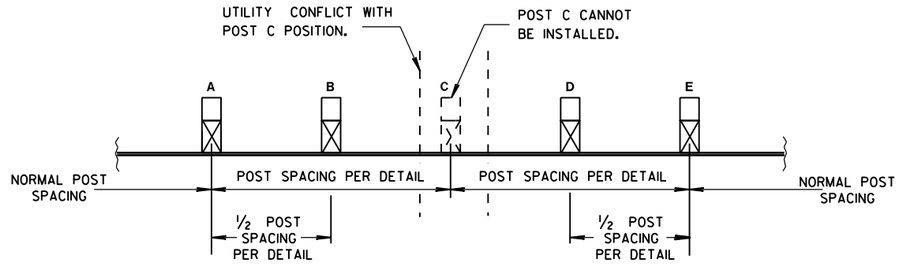



## POST BOLT, SPLICE BOLT AND RECESS NUT

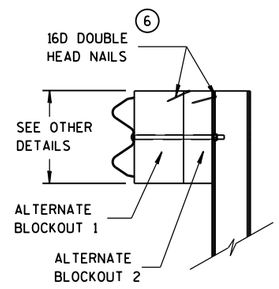



PLAN VIEW

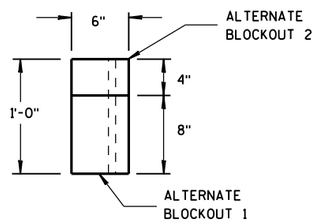
## BEAM LAPPING DETAIL




## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION




SIDE VIEW




TOP VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

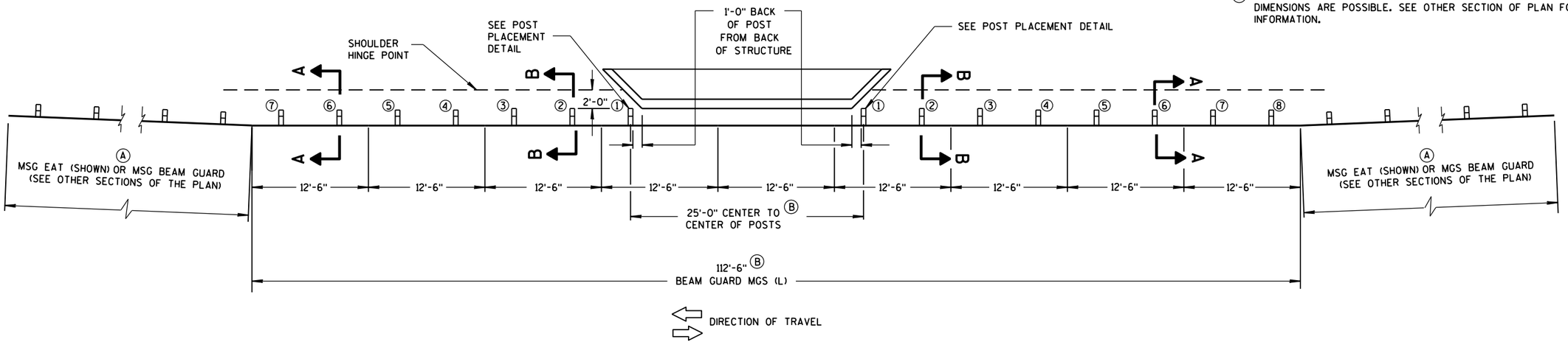
## GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

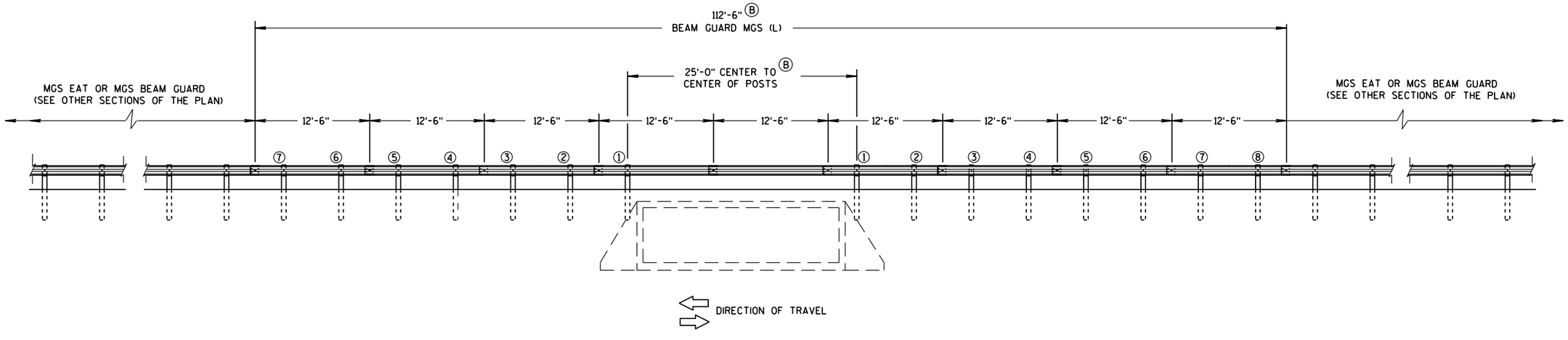
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.




PLAN VIEW




ELEVATION VIEW

# MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

| |
|---|
| MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPOI |

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S.D.D. 14 B 43-3a

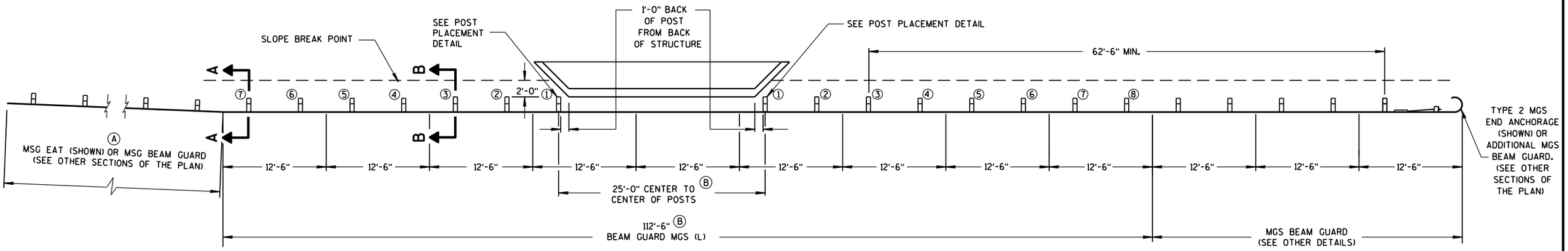
## GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

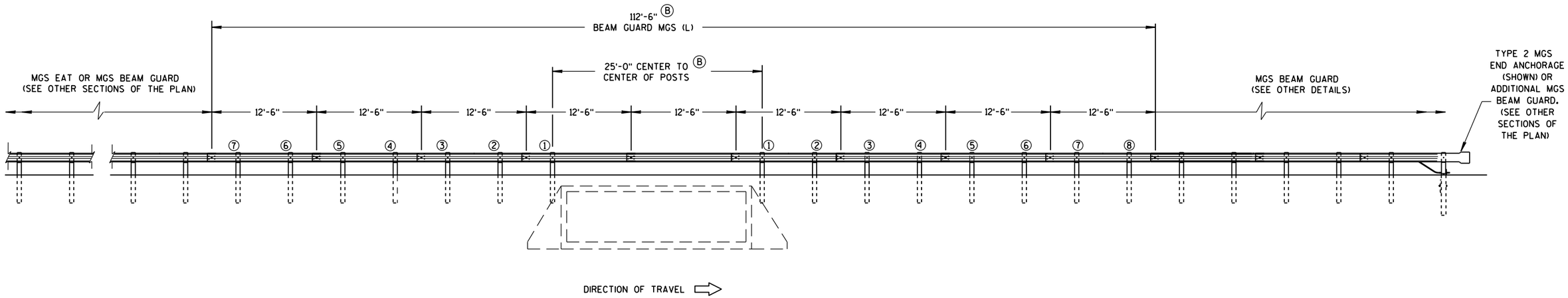
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.




PLAN VIEW



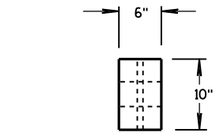

ELEVATION VIEW

# MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

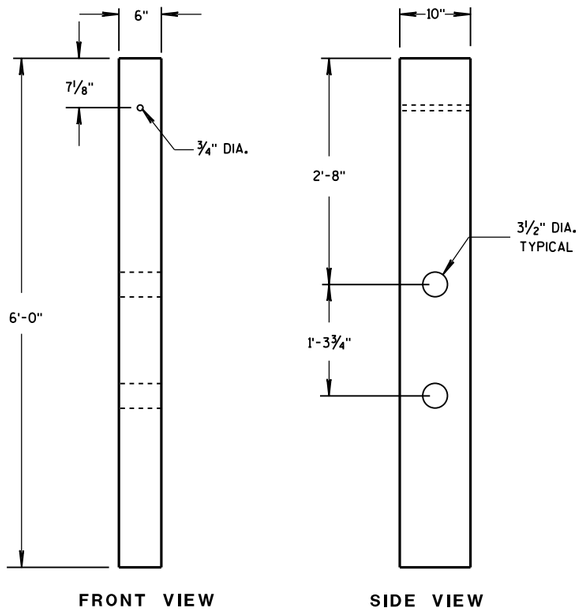
| MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPOI | 42 |


6

S.D.D. 14 B 43-3b

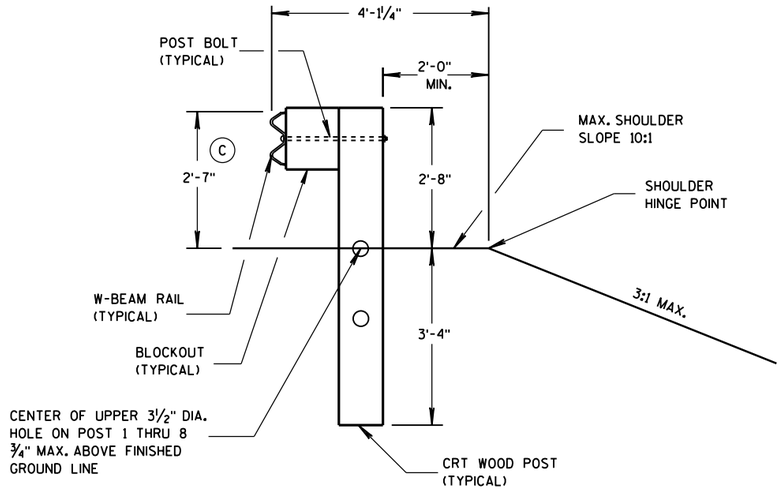



PLAN VIEW




FRONT VIEW SIDE VIEW

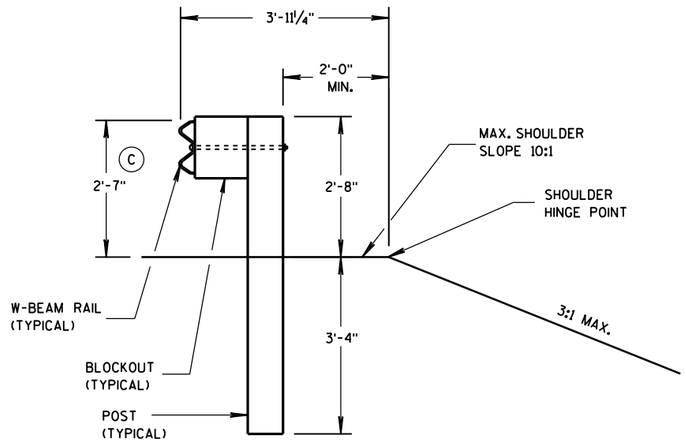
CRT WOOD POST




SECTION B-B

**POSTS NO. 1-3**

SEE OTHER DETAILS



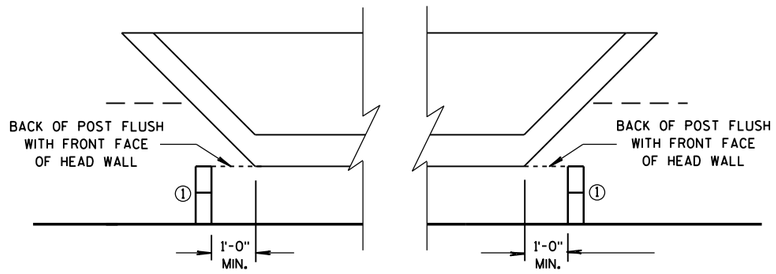

SECTION A-A

**POSTS NO. 4-8**

SEE OTHER DETAILS

## GENERAL NOTES

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




POST PLACEMENT DETAIL

**MIDWEST GUARDRAIL SYSTEM**
**LONG SPAN MGS (L)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/10/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 43-3c

## GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

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

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

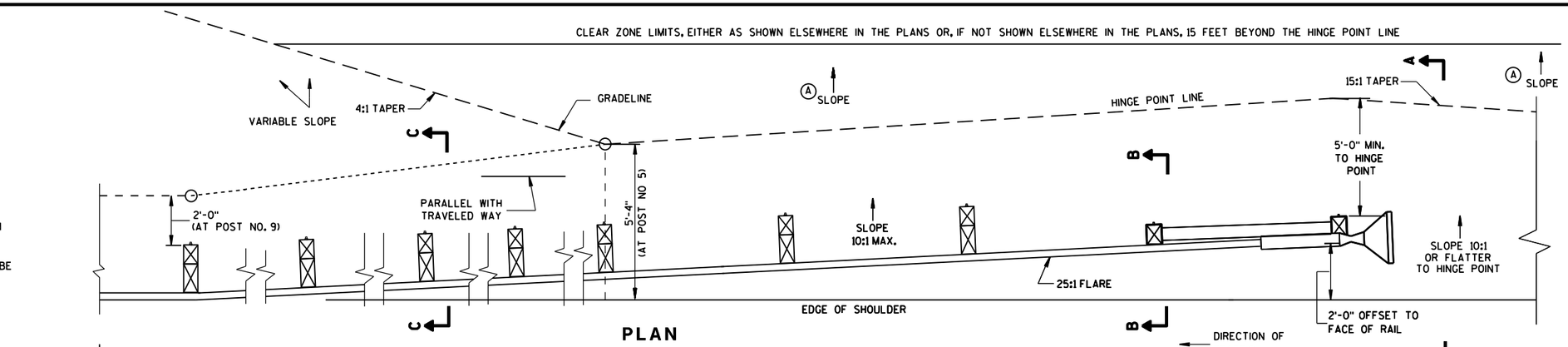
SEE SDD 14B42 FOR MORE INFORMATION.

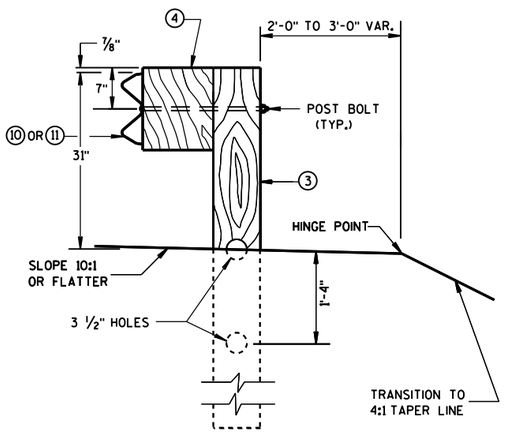
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

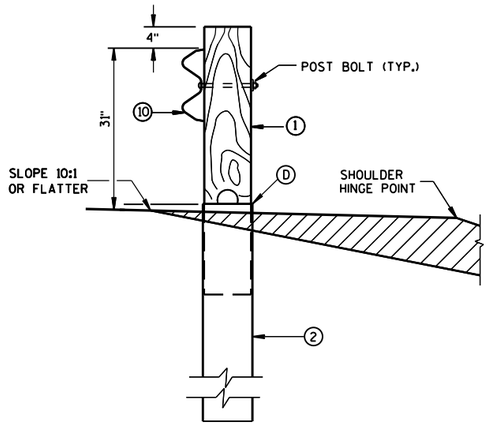
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

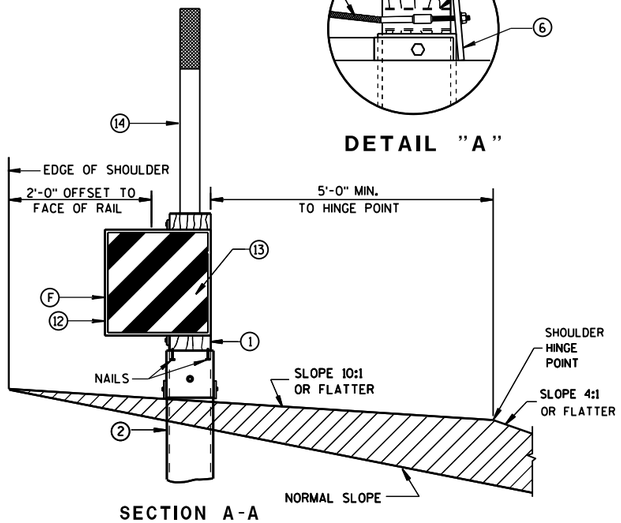


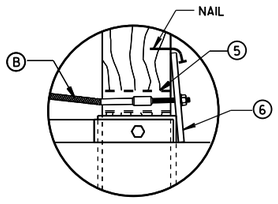

SECTION C-C
TYPICAL AT POST NOS. 3-9



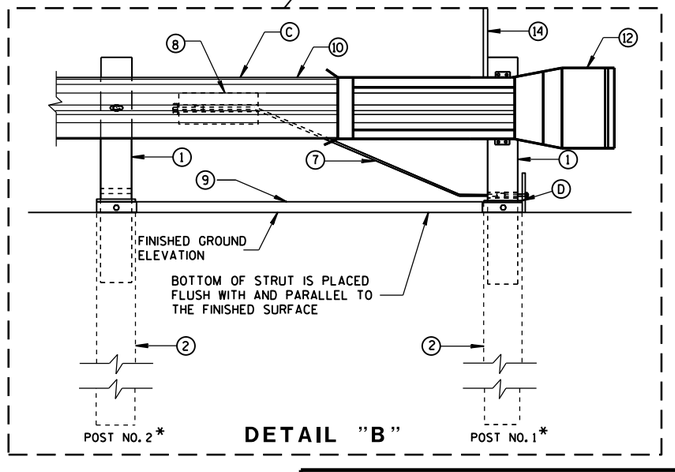

SECTION B-B
TYPICAL AT POST NO. 2*




SECTION A-A
TYPICAL AT POST NO. 1*




DETAIL "A"



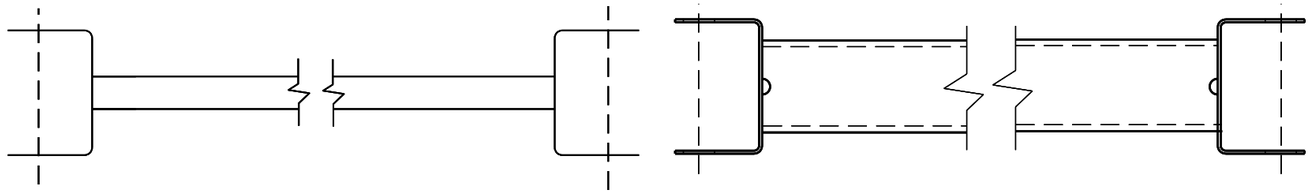

DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO



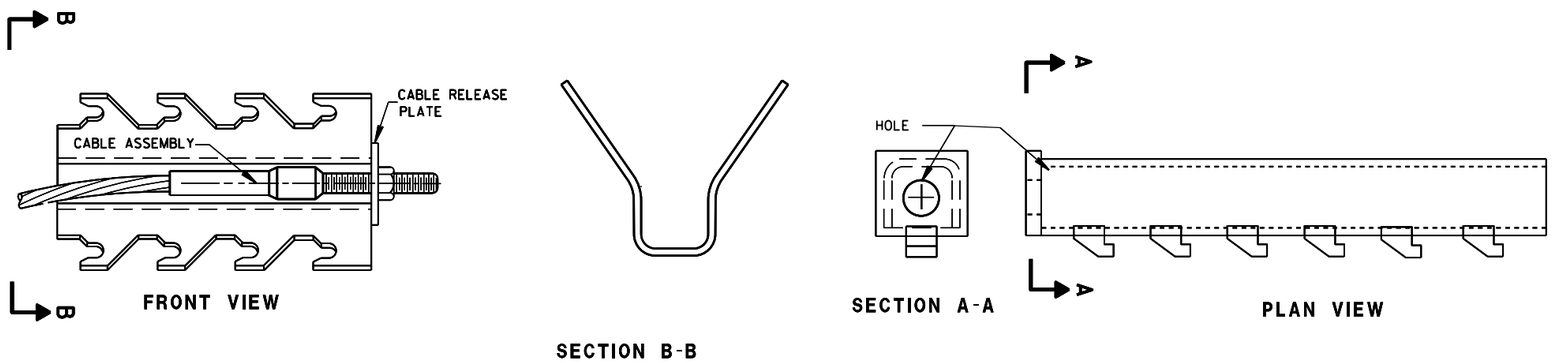

S.D.D. 14 B 44-2a



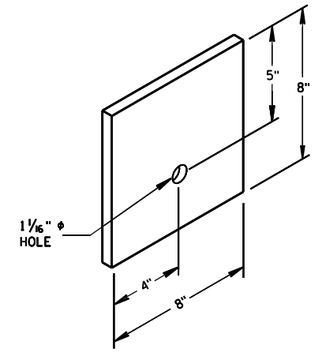
GENERIC GROUND STRUT (9) (H)

## BILL OF MATERIALS

| PART NO. | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
|---|---|
| (1) | WOOD BREAKAWAY POST |
| (2) | 6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE<br>AT POSTS 1 AND 2 |
| (3) | WOOD CRT |
| (4) | WOOD BLOCKOUT |
| (5) | PIPE SLEEVE |
| (6) | BEARING PLATE |
| (7) | BCT CABLE ASSEMBLY |
| (8) | ANCHOR CABLE BOX |
| (9) | GROUND STRUT |
| (10) | PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG. |
| (11) | STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED.<br>SECTIONS VARY IN LENGTH. |
| (12) | END SECTION EAT |
| (13) | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING<br>TYPE F PER SECTION 637 OF THE STANDARD<br>SPECIFICATIONS |
| (14) | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST) |




GENERIC ANCHOR CABLE BOX (8) (H)




BEARING PLATE (6)

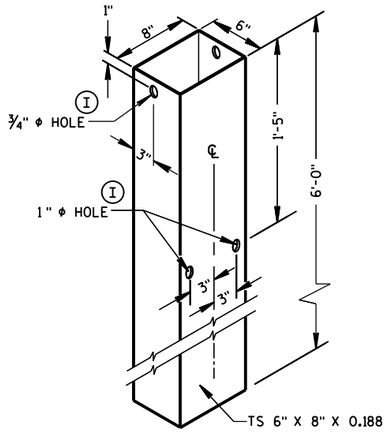
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

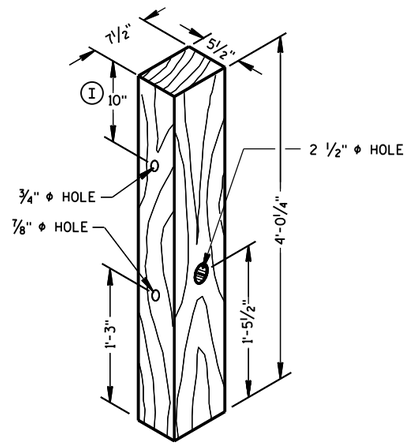




6
S.D.D. 14 B 44-2b

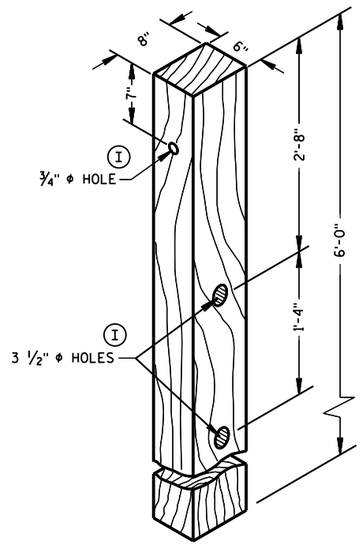



FOUNDATION TUBE (2)



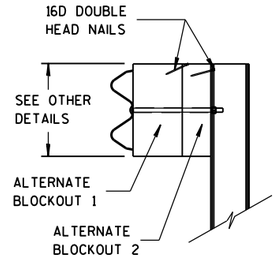

POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

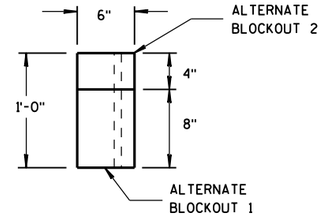



POSTS NUMBER 3-9

WOOD CRT POST (3)

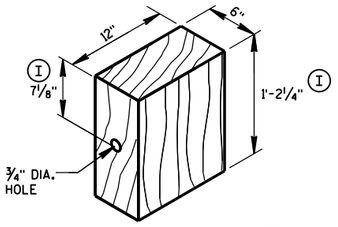



SIDE VIEW



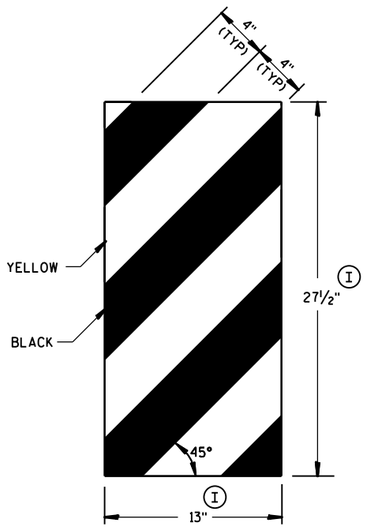

TOP VIEW

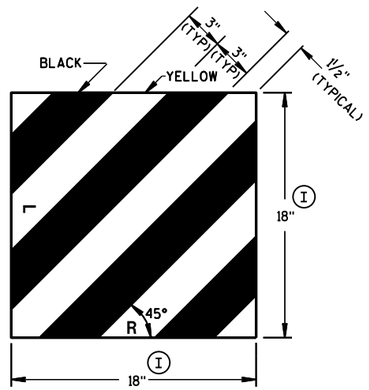
ALTERNATE WOOD BLOCKOUT DETAIL



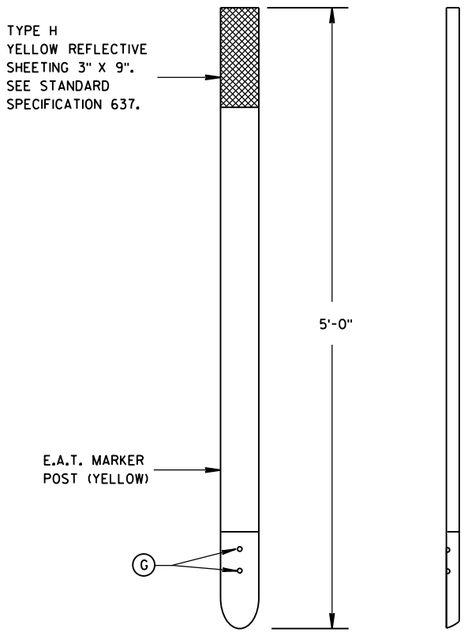

WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



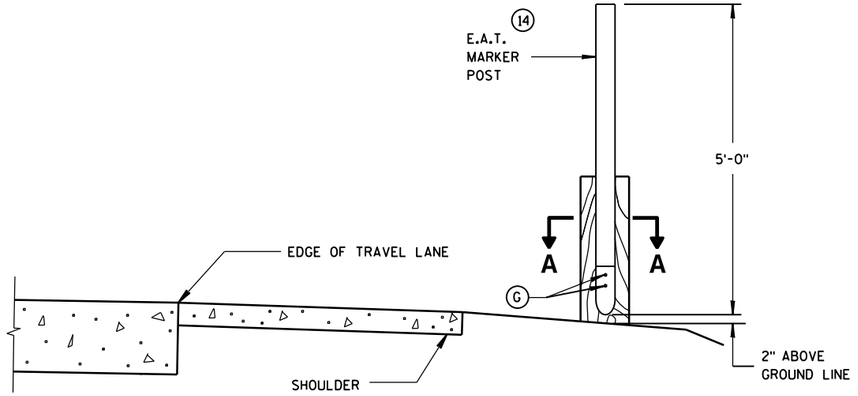

GENERIC REFLECTIVE SHEETING (13) (H)




FRONT VIEW

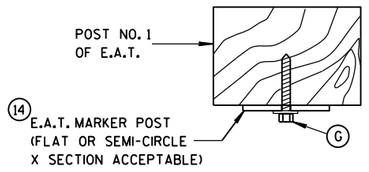
SIDE VIEW

E.A.T. MARKER POST (14)




TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)




SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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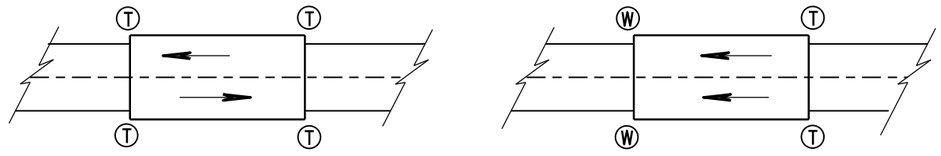
S.D.D. 14 B 44-2c




TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

## GENERAL NOTES

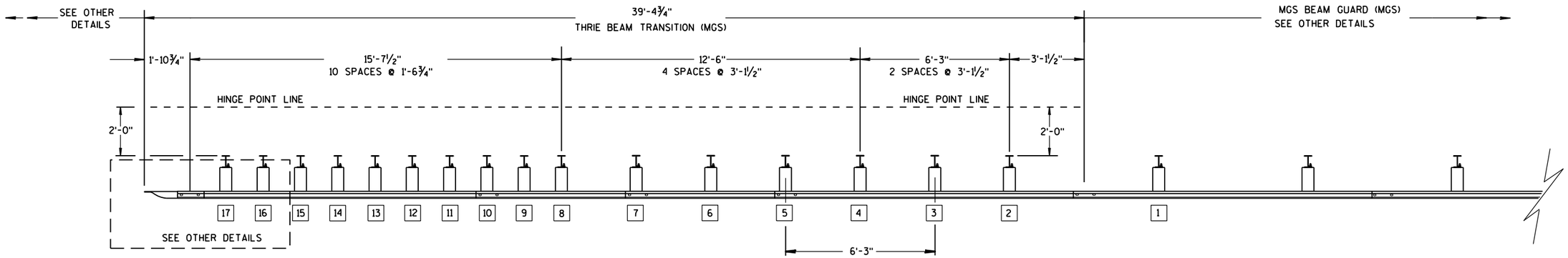
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

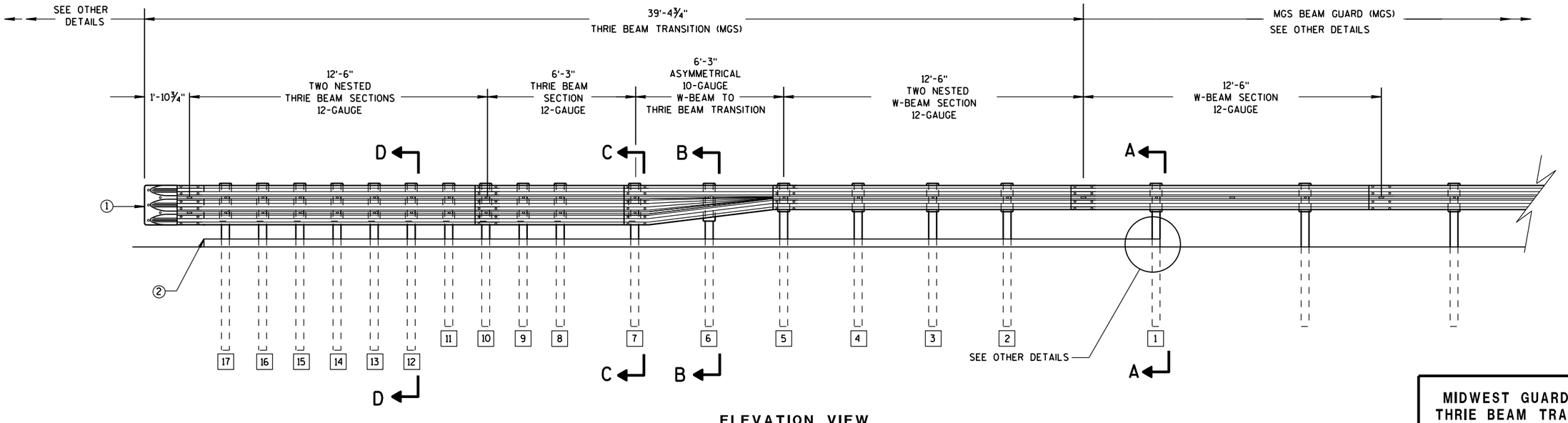
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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




PLAN VIEW




ELEVATION VIEW

## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



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S.D.D. 14 B 45-4a

6

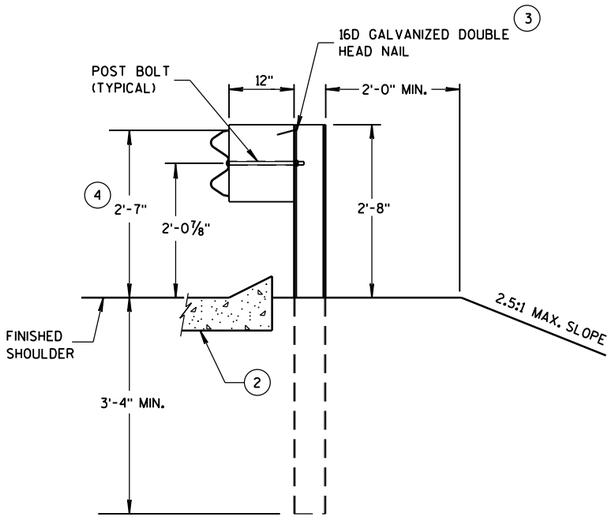
S.D.D. 14 B 45-4a

## GENERAL NOTES

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

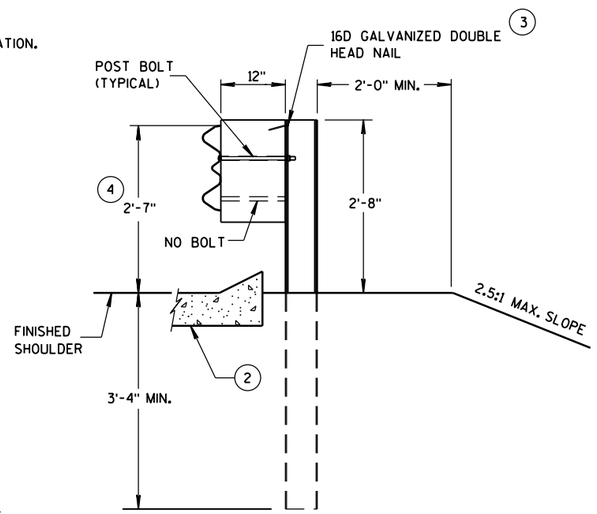
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



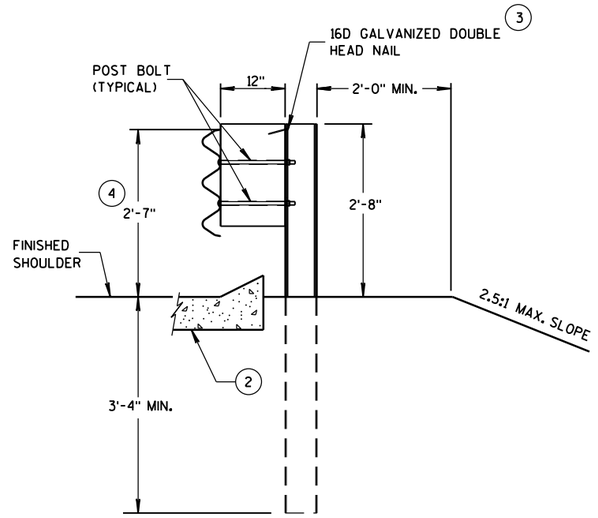

SECTION A-A

**POSTS 1-5**



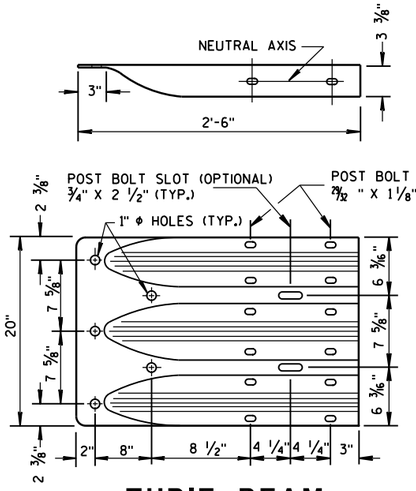

SECTION B-B

**POST 6**




SECTION C-C

**POSTS 7-11**




**THRIE BEAM TERMINAL CONNECTOR**

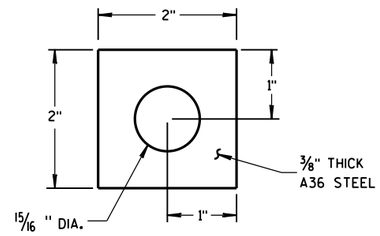
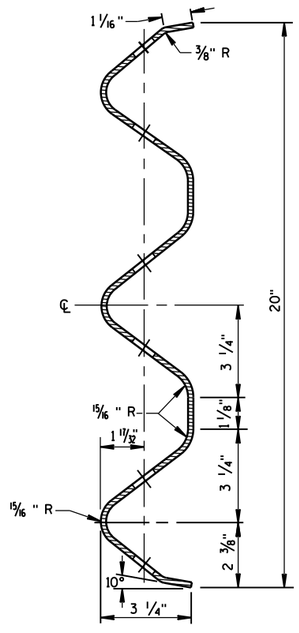
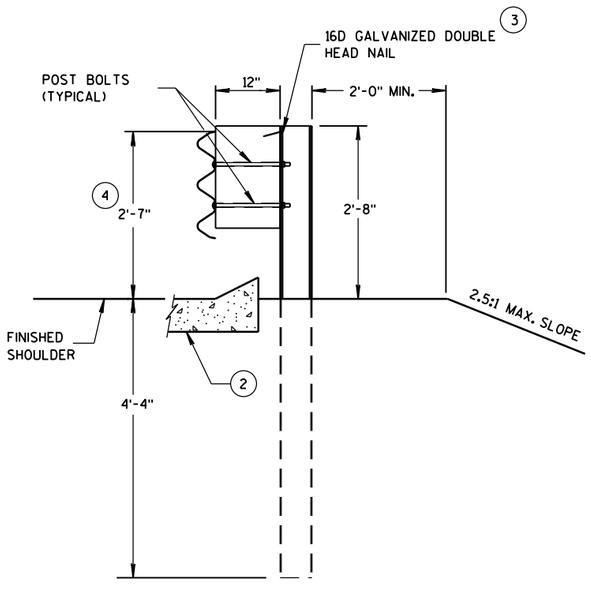



**PLATE WASHER DETAIL**

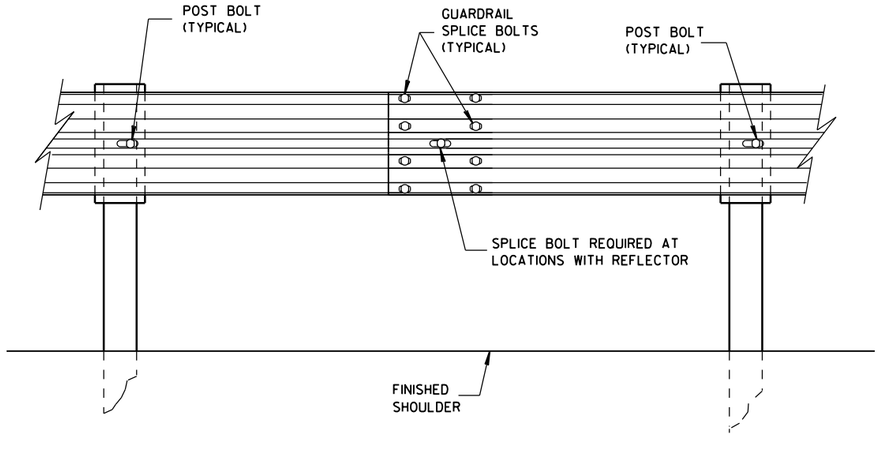



**SECTION THRU THRIE BEAM RAIL ELEMENT**




SECTION D-D

**POSTS 12-17**




**SPLICE DETAIL**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO





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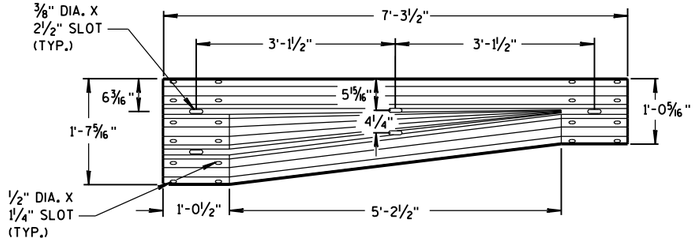
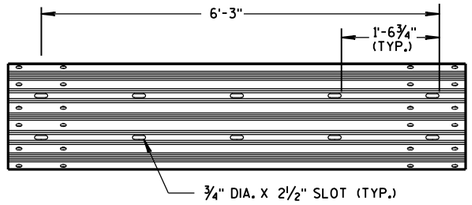
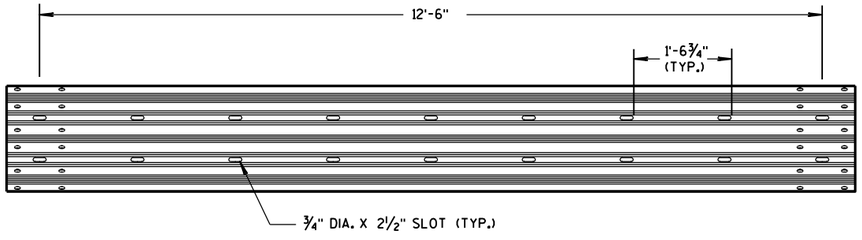
S.D.D. 14 B 45-4b



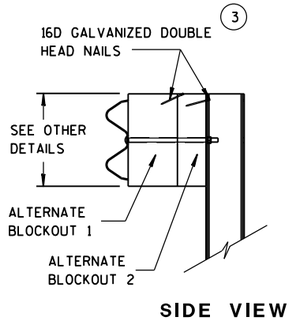

## W-BEAM TO THRIE BEAM TRANSITION SECTION



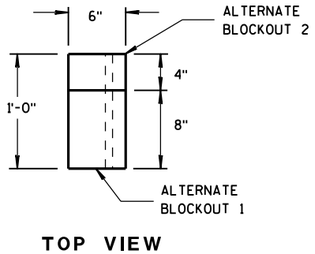

## 6'-3" THRIE BEAM SECTION




## 12'-6" THRIE BEAM SECTION

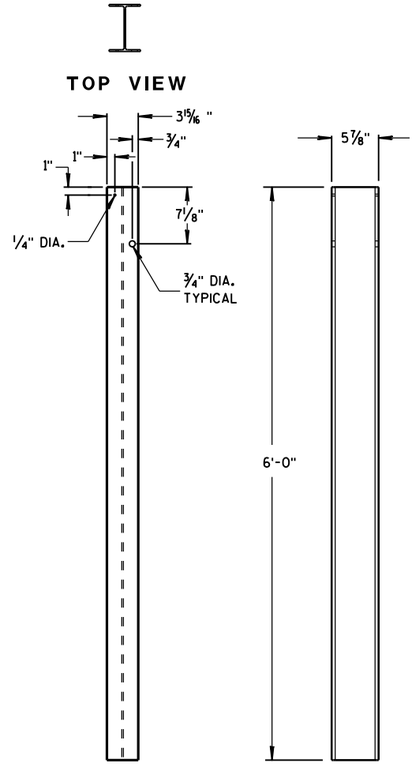



SIDE VIEW

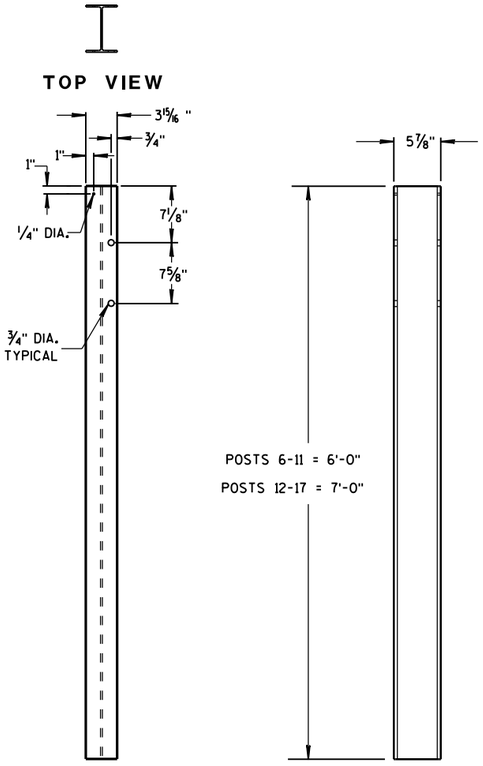



TOP VIEW

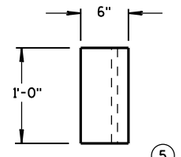
## ALTERNATE WOOD BLOCKOUT DETAIL



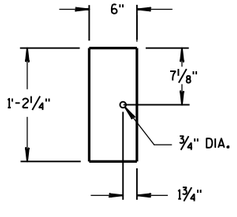

## STEEL POSTS 1-5




## STEEL POSTS 6-17

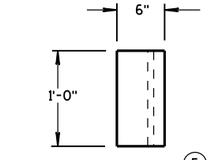



TOP VIEW

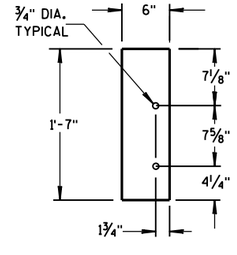



FRONT VIEW

## BLOCKOUT POSTS 1-5




TOP VIEW




FRONT VIEW

## BLOCKOUT POSTS 6-17

## GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

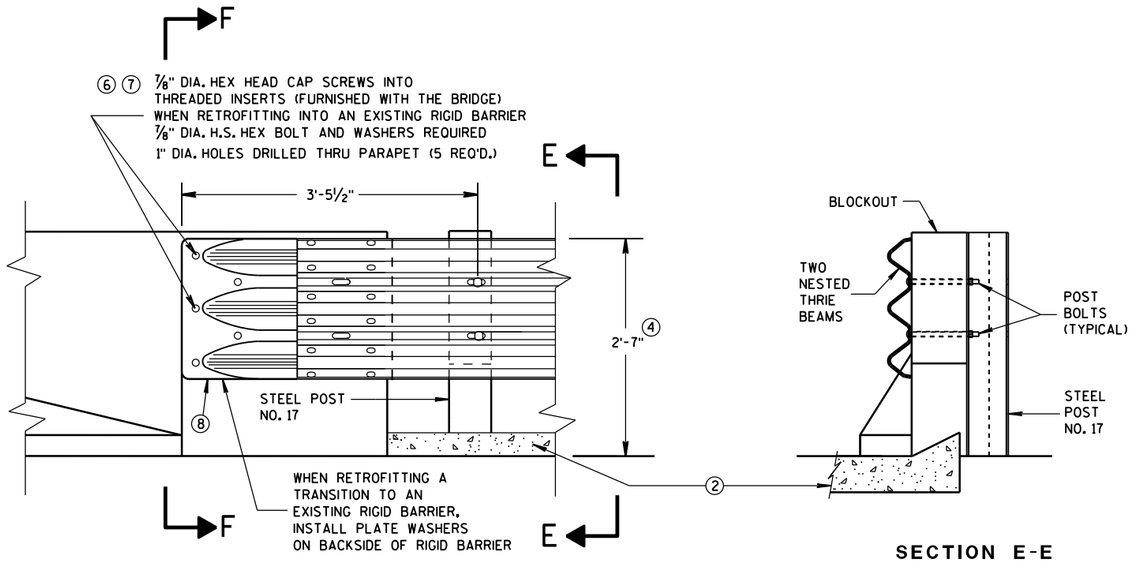
**MIDWEST GUARDRAIL SYSTEM**
**THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR




6

S.D.D. 14 B 45-4c
S.D.D. 14 B 45-4c




FRONT VIEW

SECTION E-E

# THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

## GENERAL NOTES

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

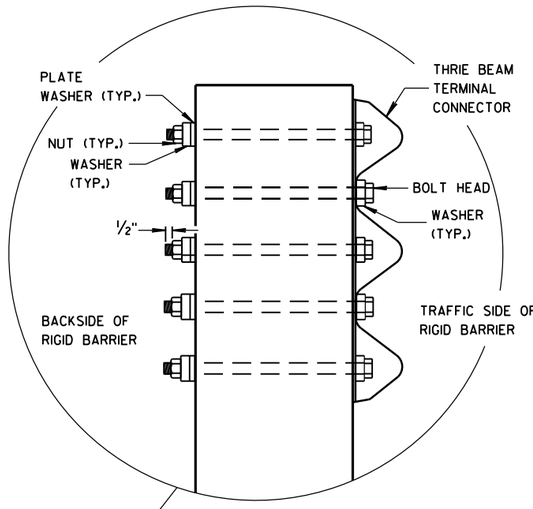
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

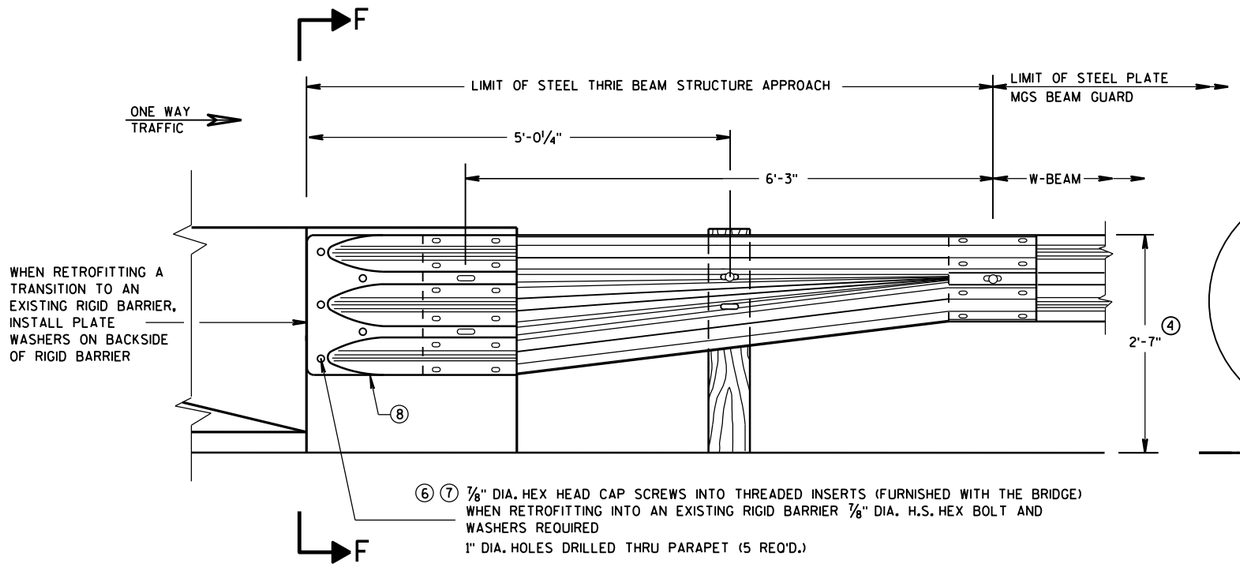
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

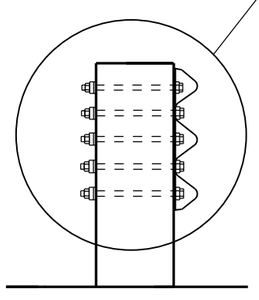
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

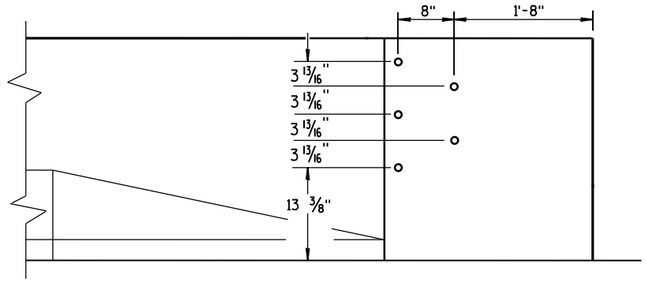



FRONT VIEW



SECTION F-F




DRILL HOLE LOCATION

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA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# GENERAL NOTES

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

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

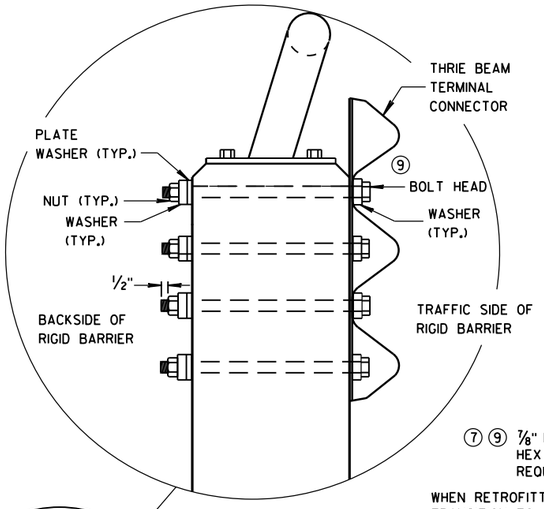
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

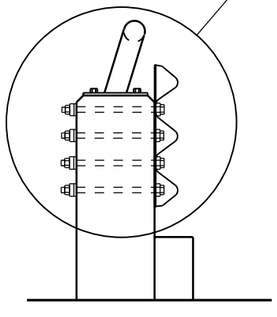
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

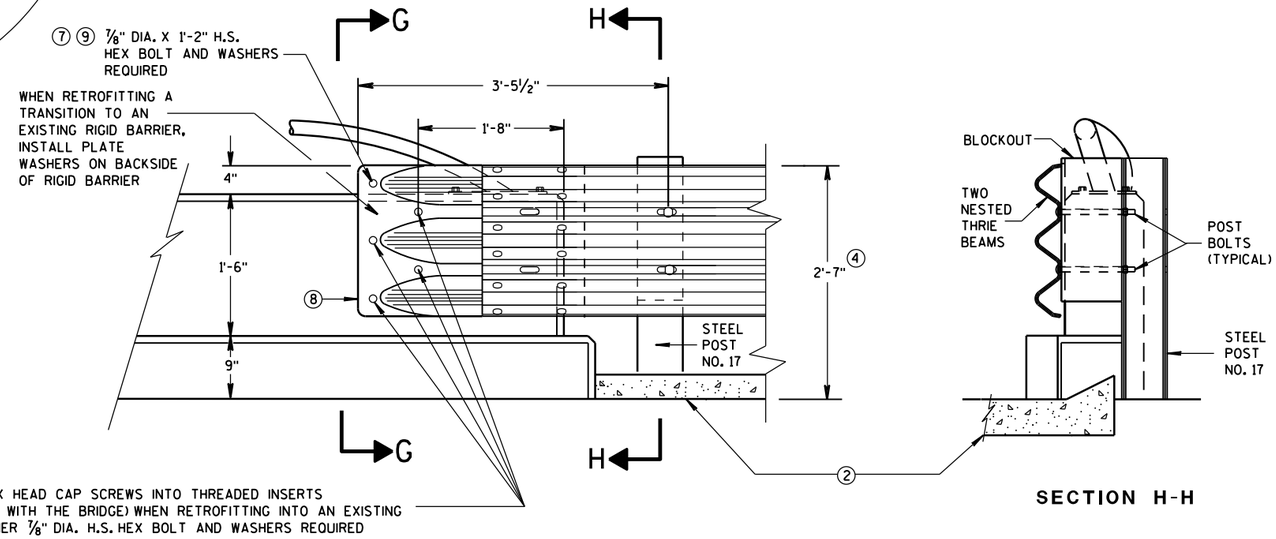
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



SECTION G-G

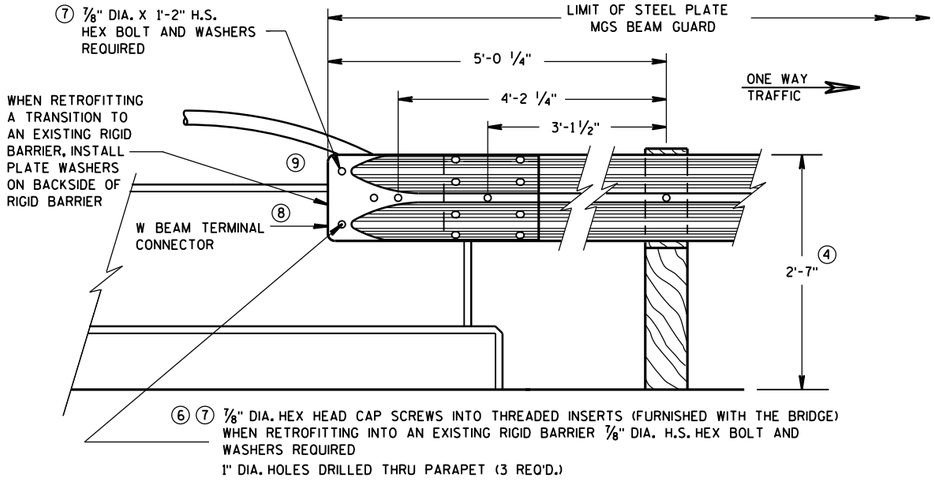



FRONT VIEW




SECTION H-H

## THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS




FRONT VIEW

## W BEAM CONNECTION TO VERTICAL FACE PARAPET

### (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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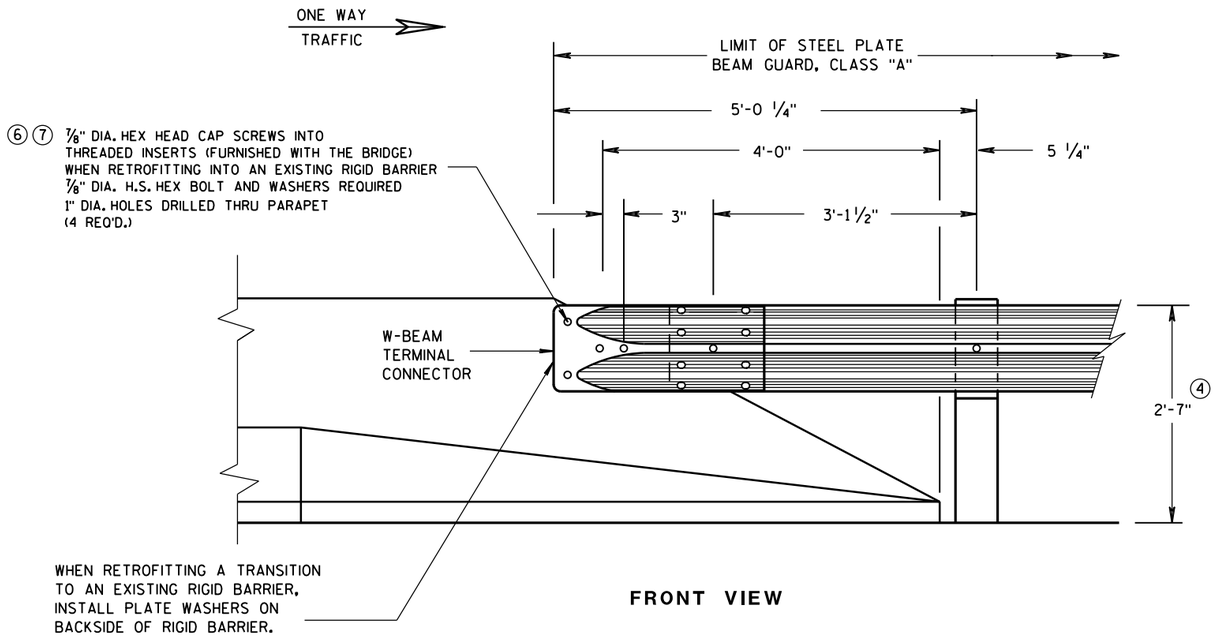


FRONT VIEW

## W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

## GENERAL NOTES

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

④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

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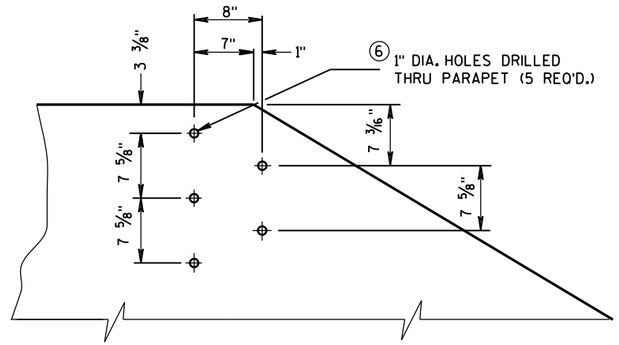
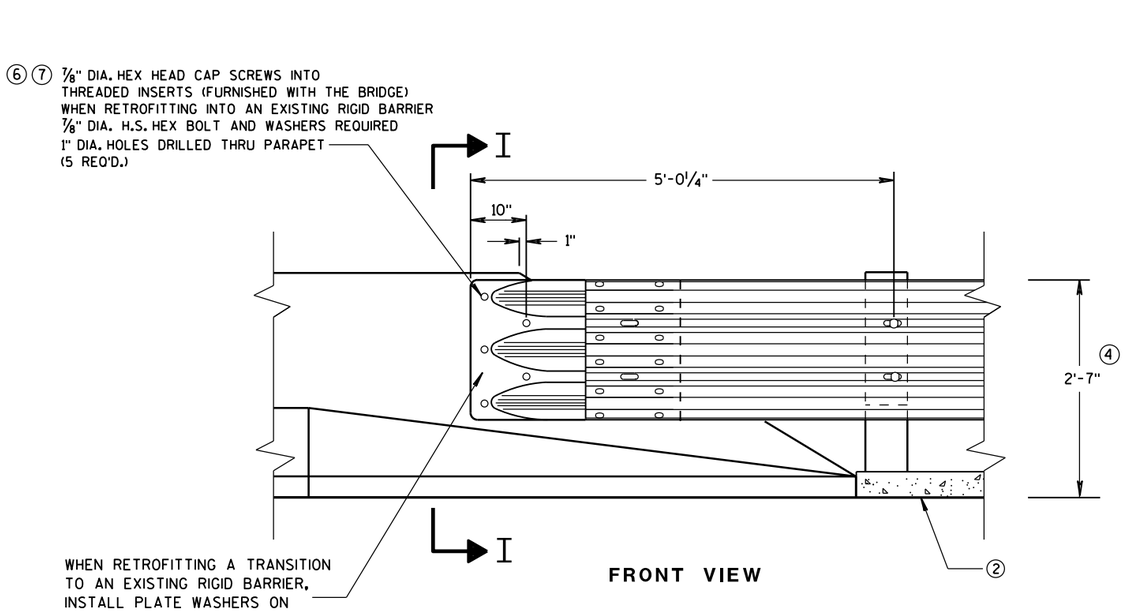
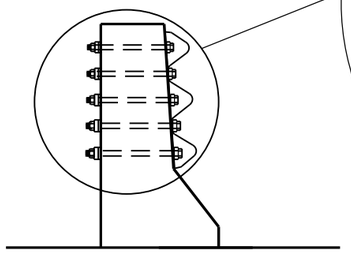


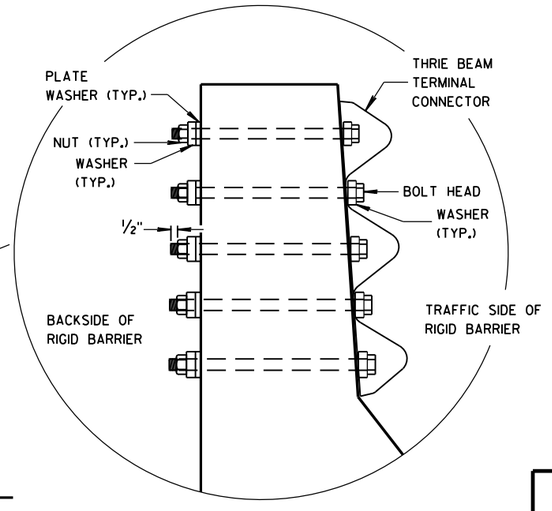

DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION




FRONT VIEW



SECTION I-I




## THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

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

STATE OF WISCONSIN
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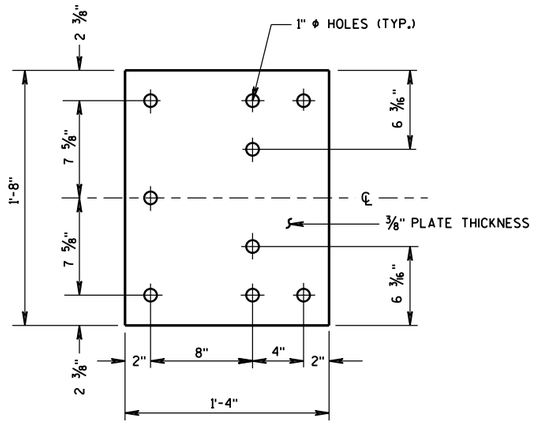
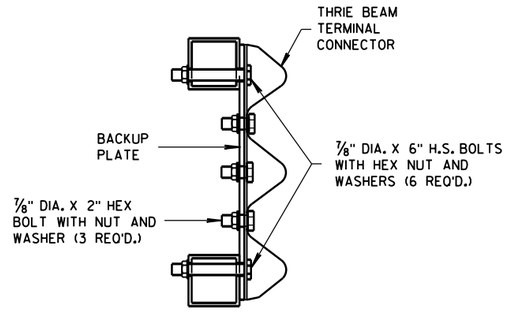
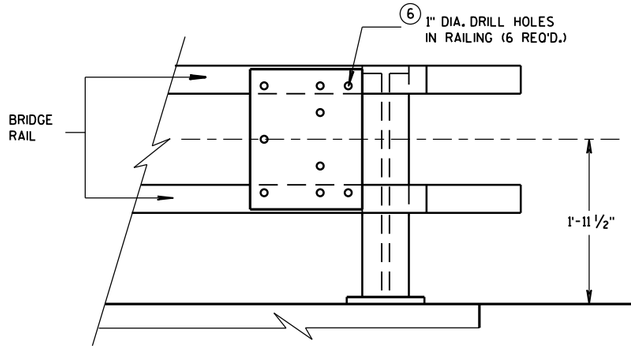



## BACK-UP PLATE DETAIL




## SECTION J-J

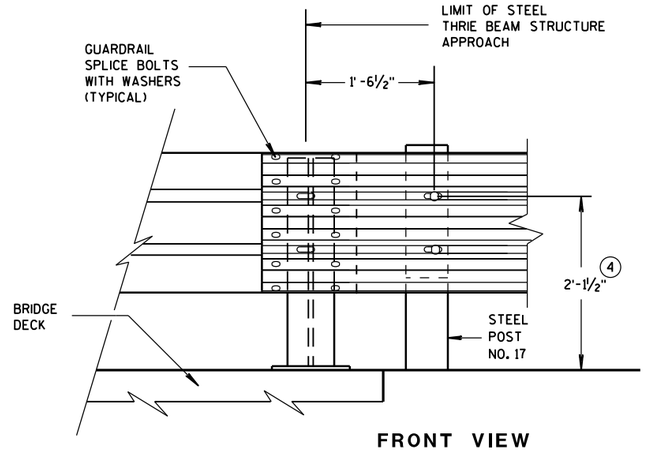



## BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

## GENERAL NOTES

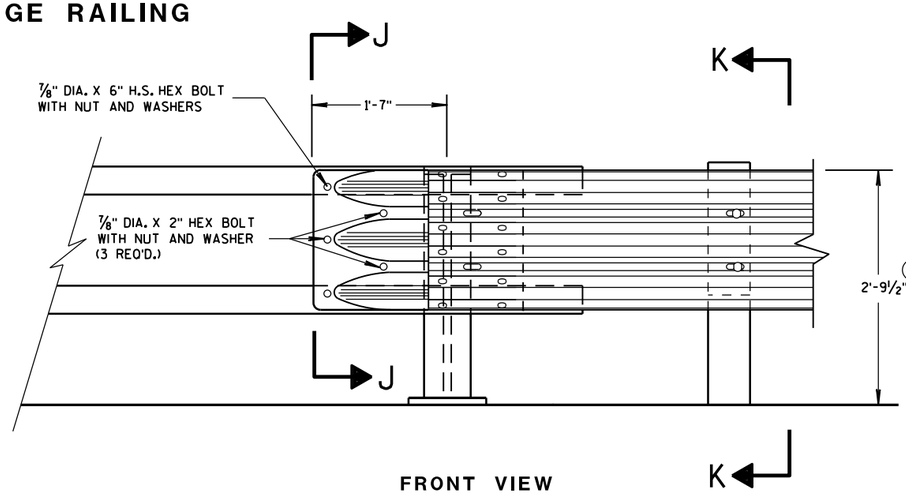
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

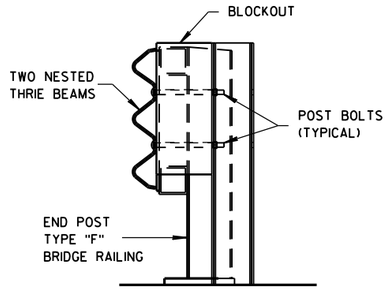



FRONT VIEW

## THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"




FRONT VIEW




SECTION K-K

## THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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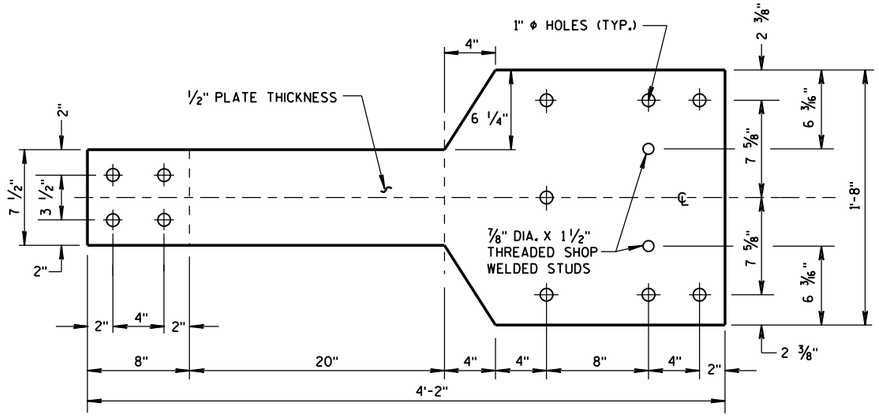
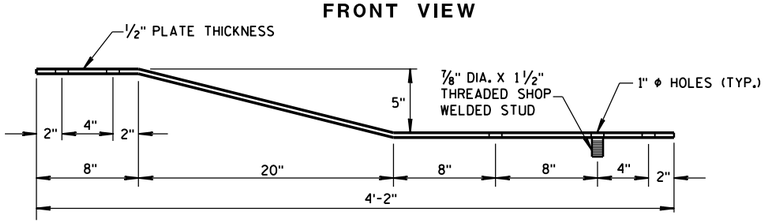
## GENERAL NOTES

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

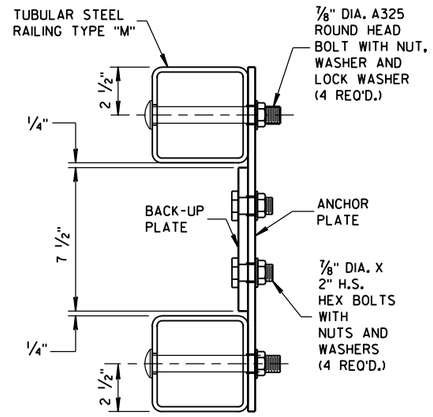



FRONT VIEW

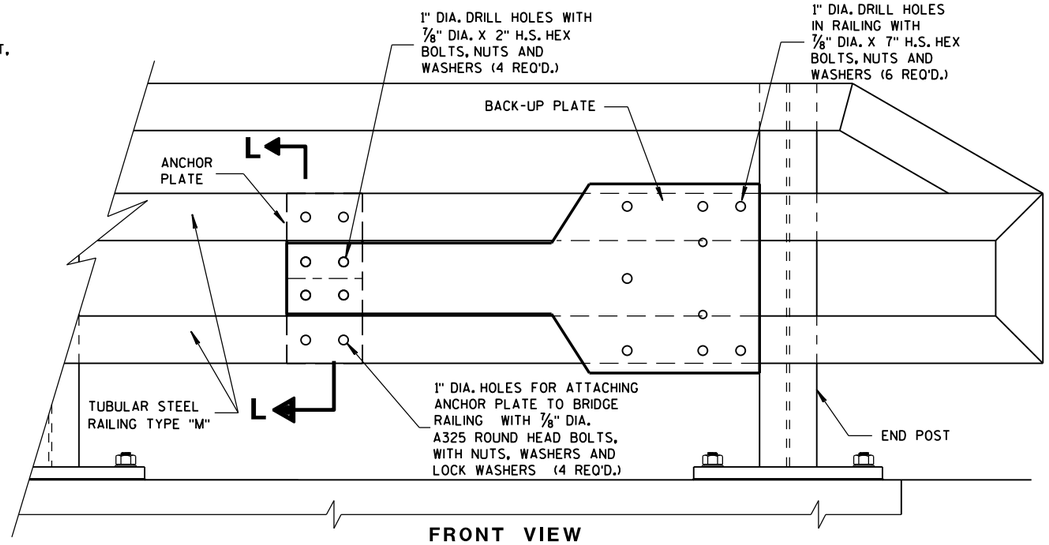



PLAN VIEW

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

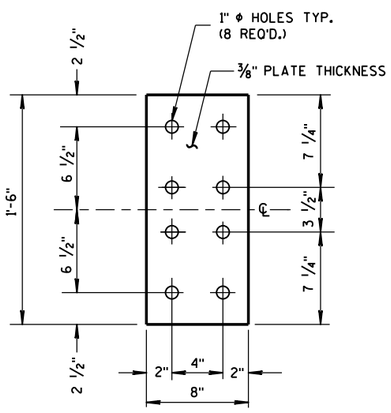



SECTION L-L



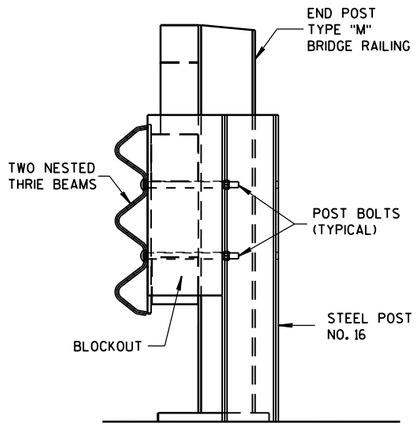

FRONT VIEW

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

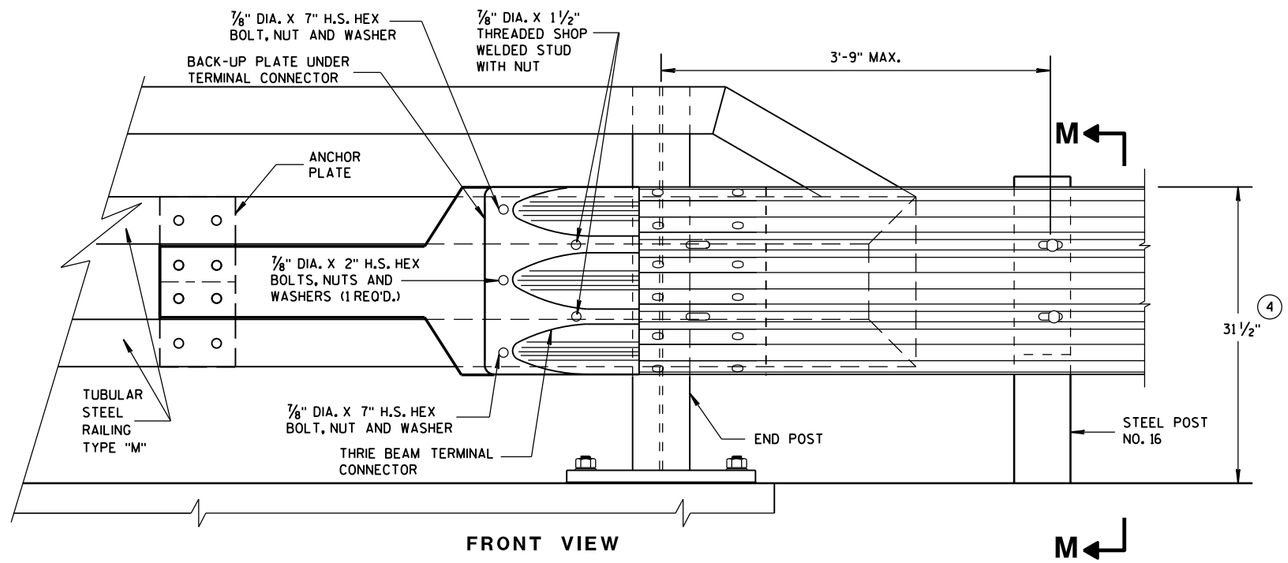



FRONT VIEW

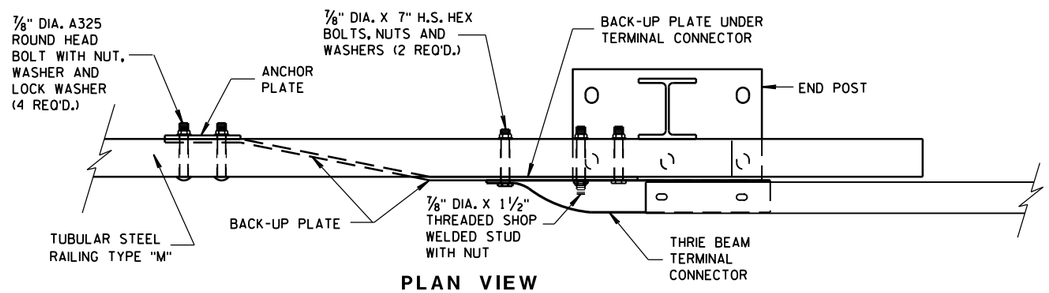
## ANCHOR PLATE DETAIL, TYPE "M"




SECTION M-M




FRONT VIEW




PLAN VIEW

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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APPROVED
June, 2015 — DATE
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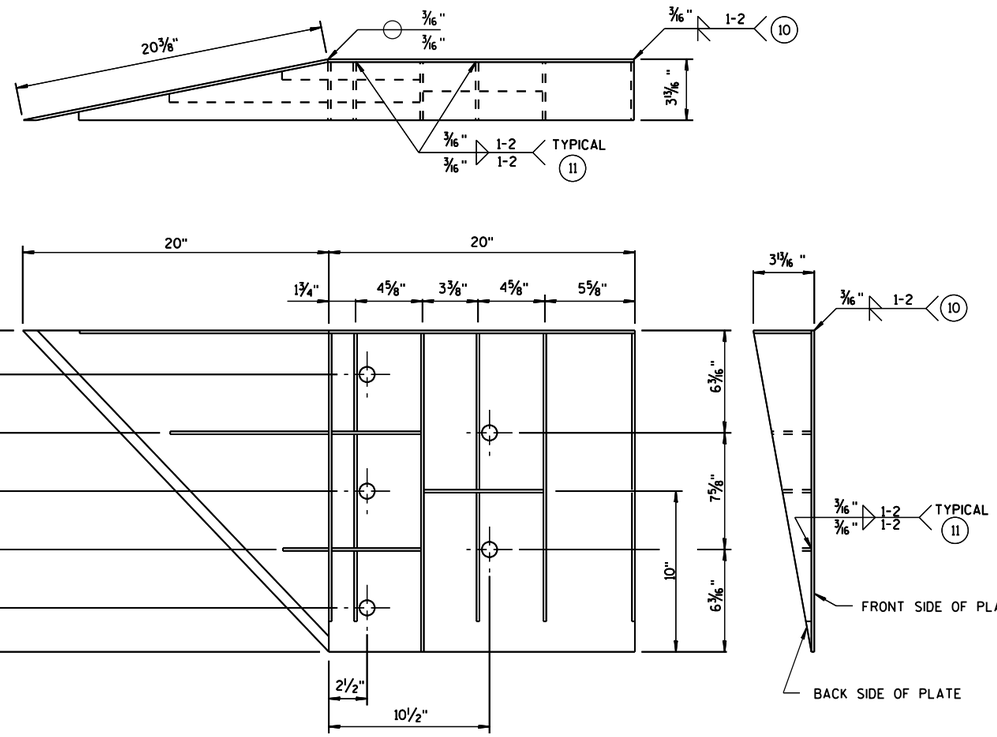



## WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

## GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

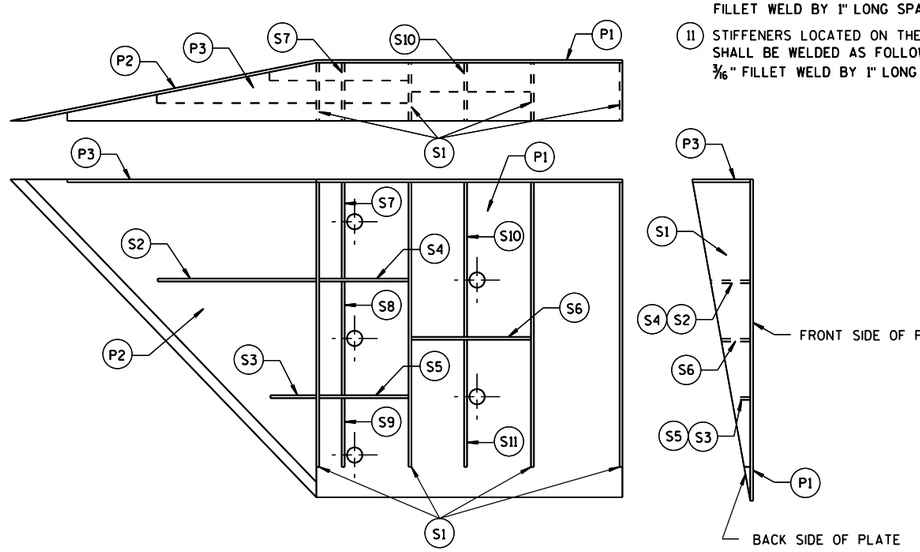
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".




## PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

**CONNECTOR PLATE DIMENSION (PER ASSEMBLY)**

| PLATE | QUANTITY | SHAPE | SIZE (A x B x C x D) | THICKNESS |
|---|---|---|---|---|
| P1 | 1 | | 20" x 20" | 3/16" |
| P2 | 1 | | 20" x 20" x 28 9/16" | 3/16" |
| P3 | 1 | | 39" x 3 5/8" x 20" x 19 5/16" | 3/16" |
| S1 | 4 | | 18 7/16" x 3 3/8" x 18 3/4" | 1/4" |
| S2 | 1 | | 10 1/4" x 2 7/16" x 10 3/8" x 1/2" | 1/4" |
| S3 | 1 | | 3" x 1 1/16" x 3 1/8" x 1/2" | 1/4" |
| S4 | 1 | | 6 1/8" x 2 7/16" | 1/4" |
| S5 | 1 | | 6 1/8" x 1 1/16" | 1/4" |
| S6 | 1 | | 7 3/4" x 1 3/4" | 1/4" |
| S7 | 1 | | 2 9/16" x 6" x 3 5/8" x 5 7/8" | 1/4" |
| S8 | 1 | | 1 5/32" x 7 1/2" x 2 1/2" x 7 3/8" | 1/4" |
| S9 | 1 | | 6 1/16" x 6 3/16" x 1 1/32" | 1/4" |
| S10 | 1 | | 1 7/8" x 9 7/8" x 3 5/8" x 9 11/16" | 1/4" |
| S11 | 1 | | 8 1/2" x 8 3/4" x 1 13/16" | 1/4" |

## SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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S.D.D. 14 B 45-4i

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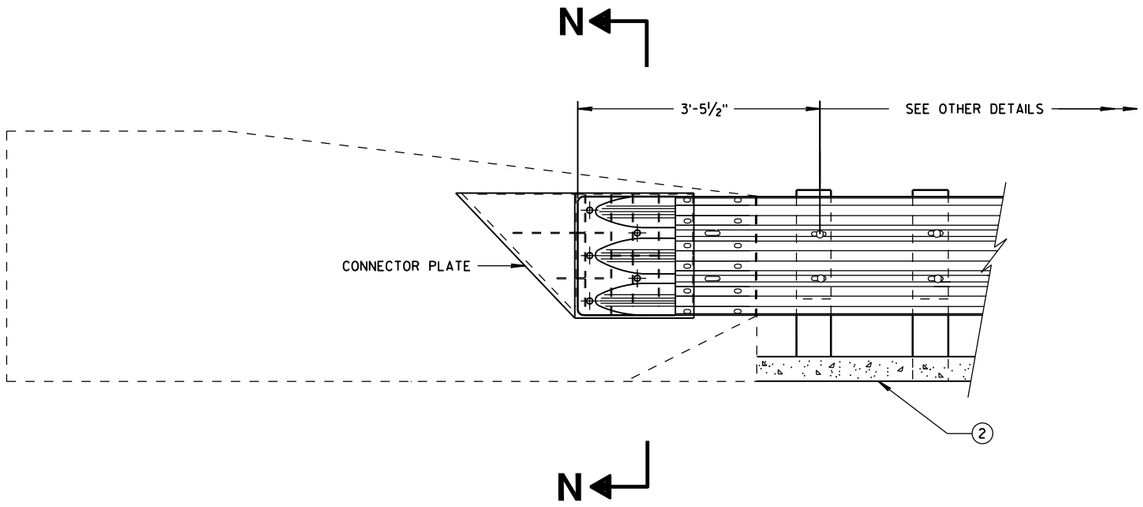
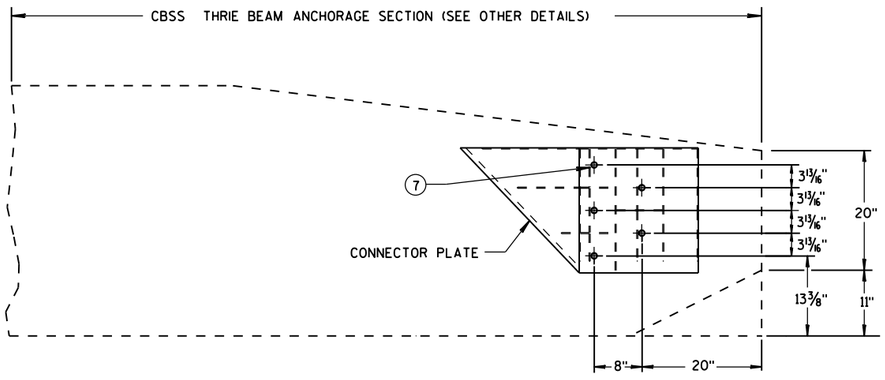
S.D.D. 14 B 45-4i




## THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



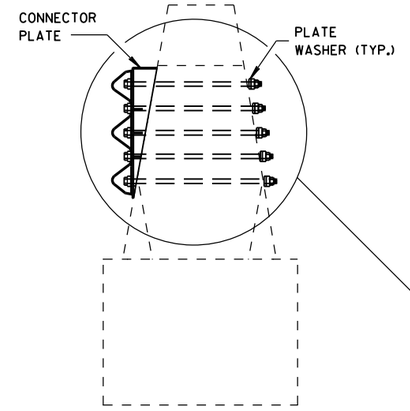

## SINGLE SLOPE CONNECTION PLATE PLACEMENT

## GENERAL NOTES

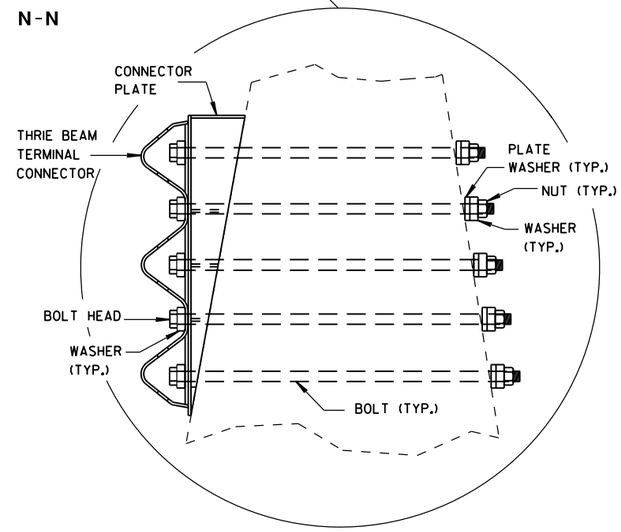
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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




SECTION N-N




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

STATE OF WISCONSIN
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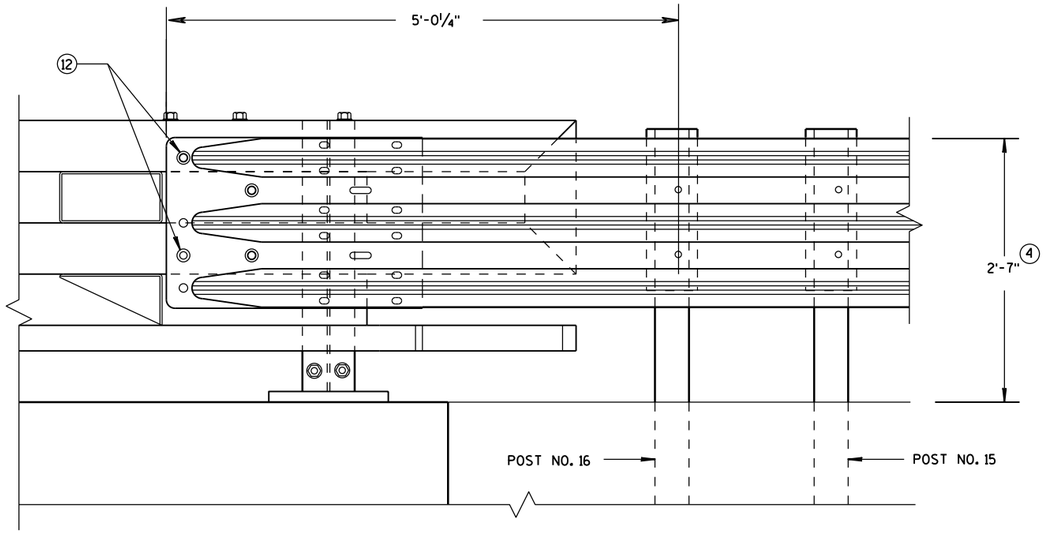
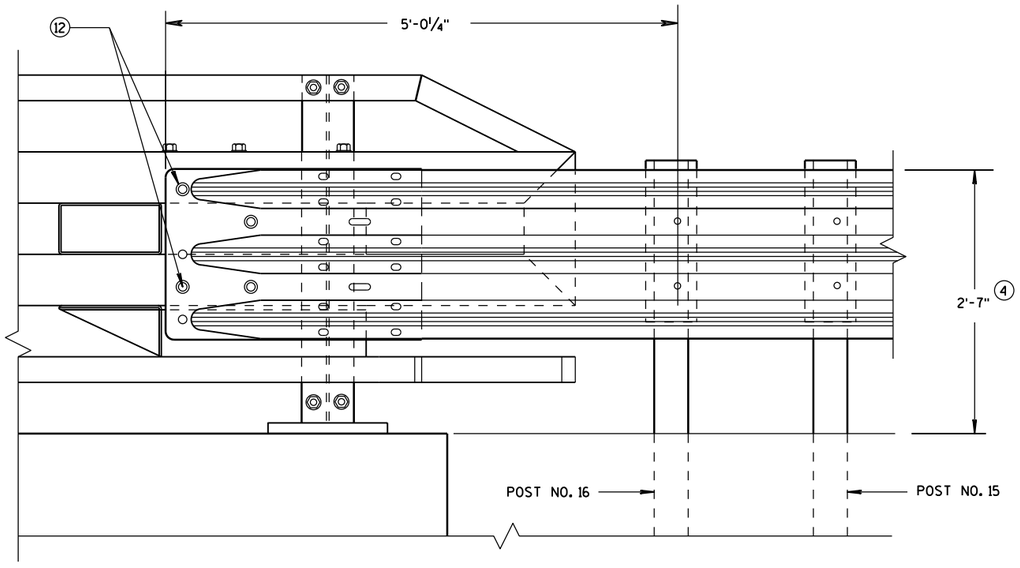
S.D.D. 14 B 45-4j




## ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT




## ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

## GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS D 57 NT
ENGINEER

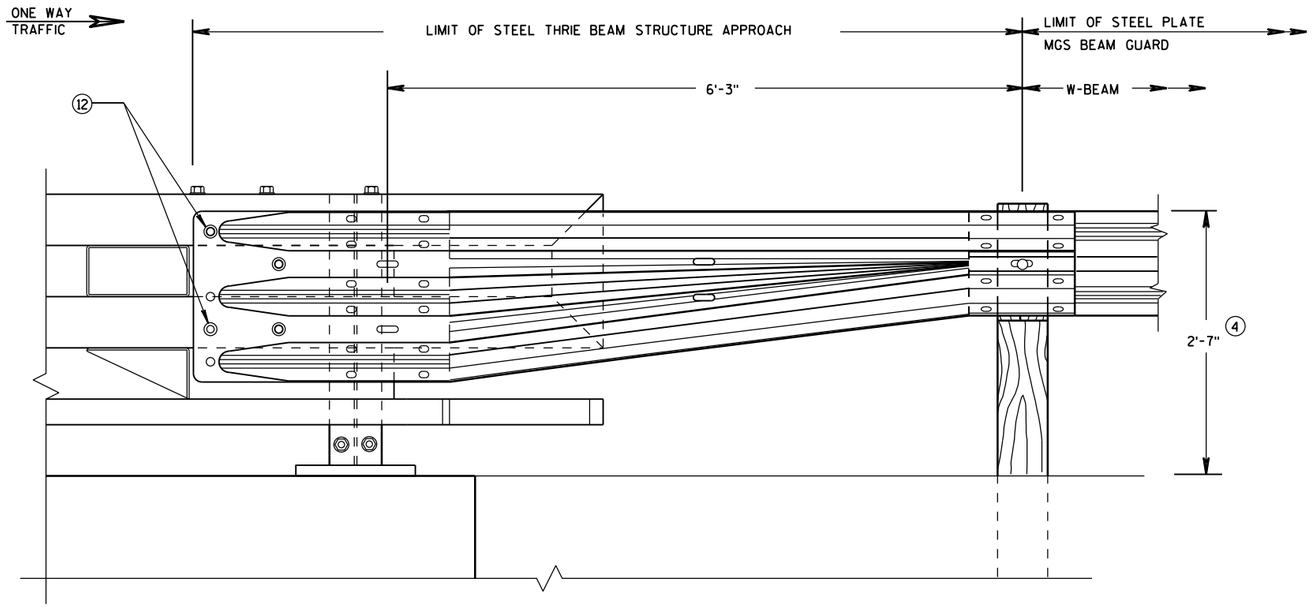
FHWA

6

S.D.D. 14 B 45-4k

6

S.D.D. 14 B 45-4k




FRONT VIEW

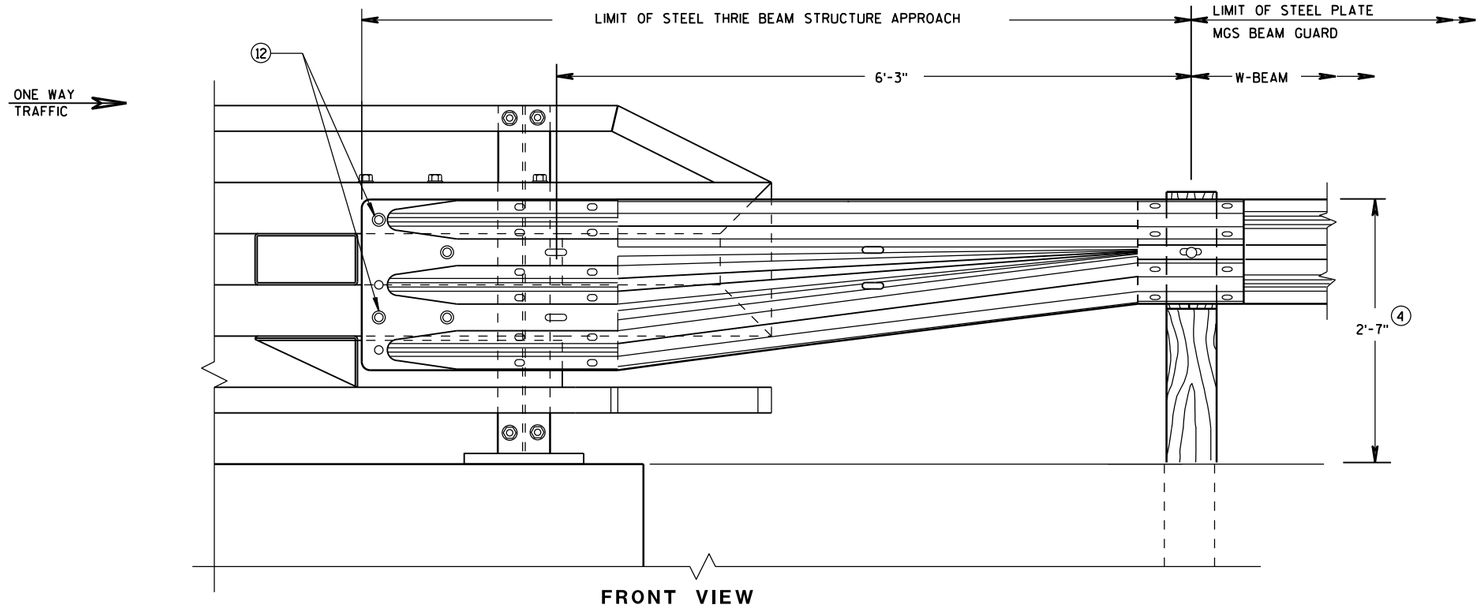
## W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

## GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.




FRONT VIEW

## W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



NT

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S.D.D. 14 B 45-4L

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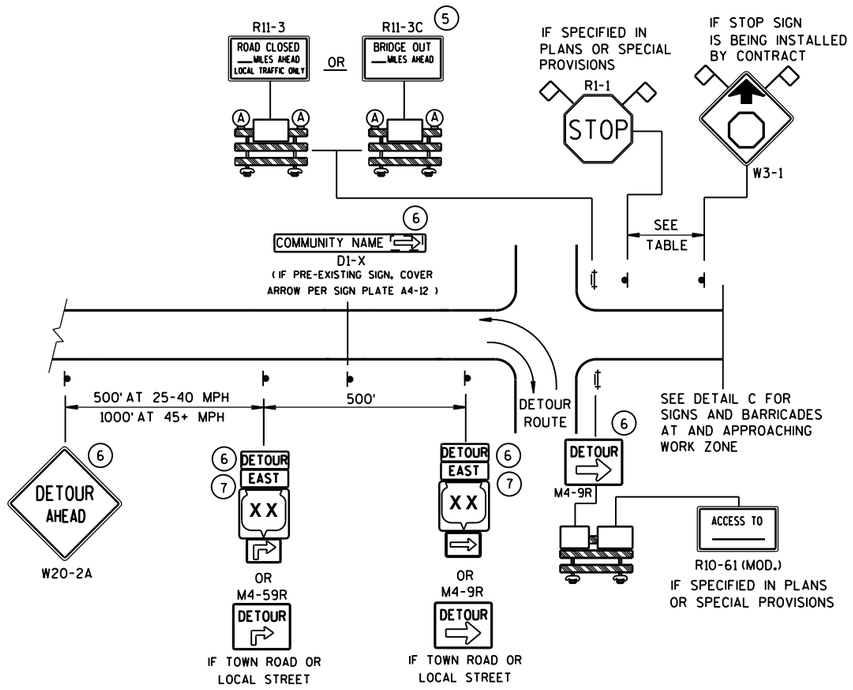
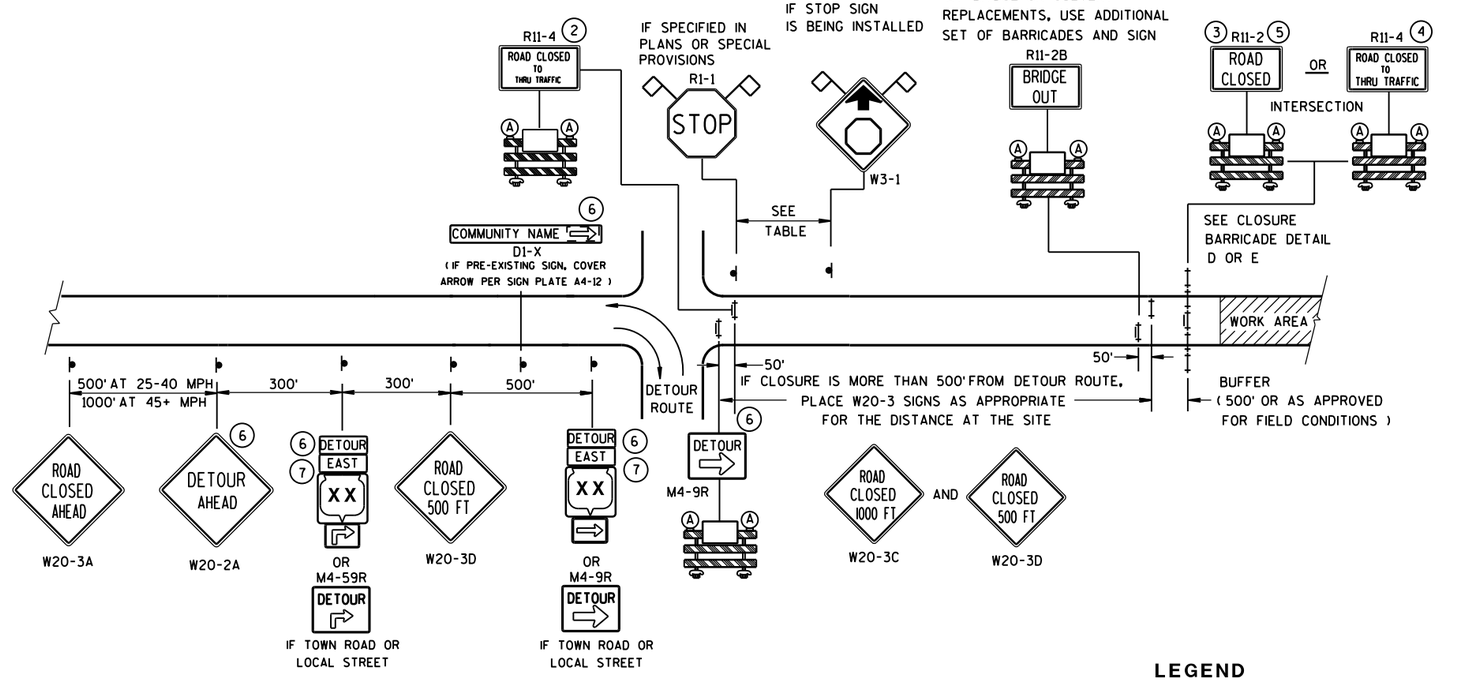
S.D.D. 14 B 45-4L



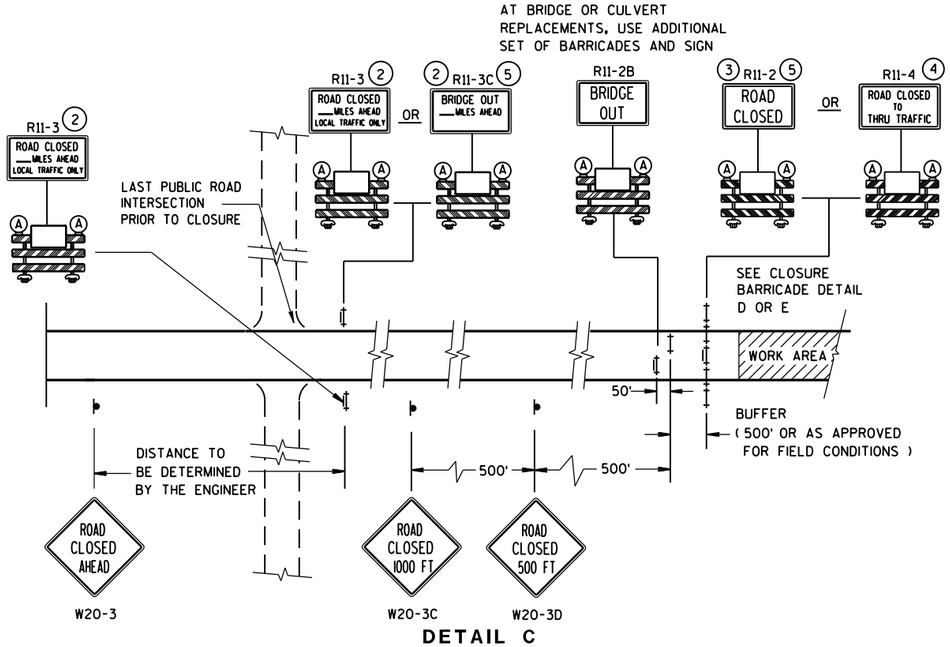

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

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 |

### 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)

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

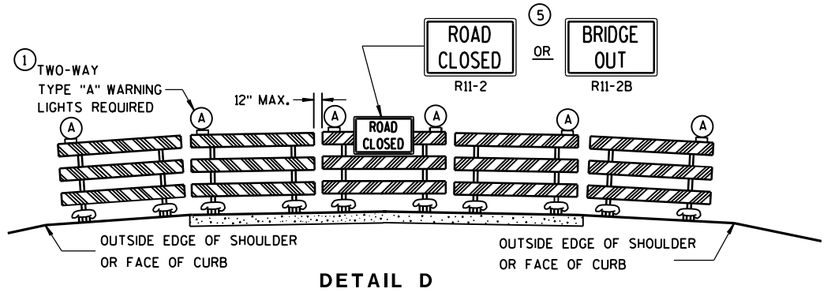
**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA



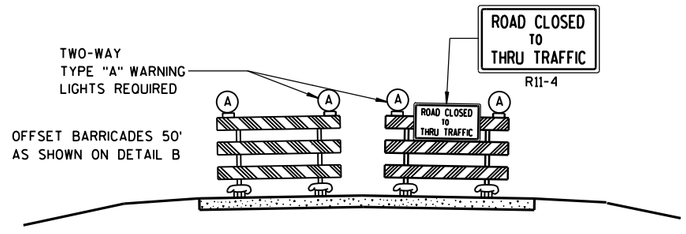
S.D.D. 15 C 2-6a




**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

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FHWA — FIC




6


S.D.D. 15 C 2-6b

**THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.**

## GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

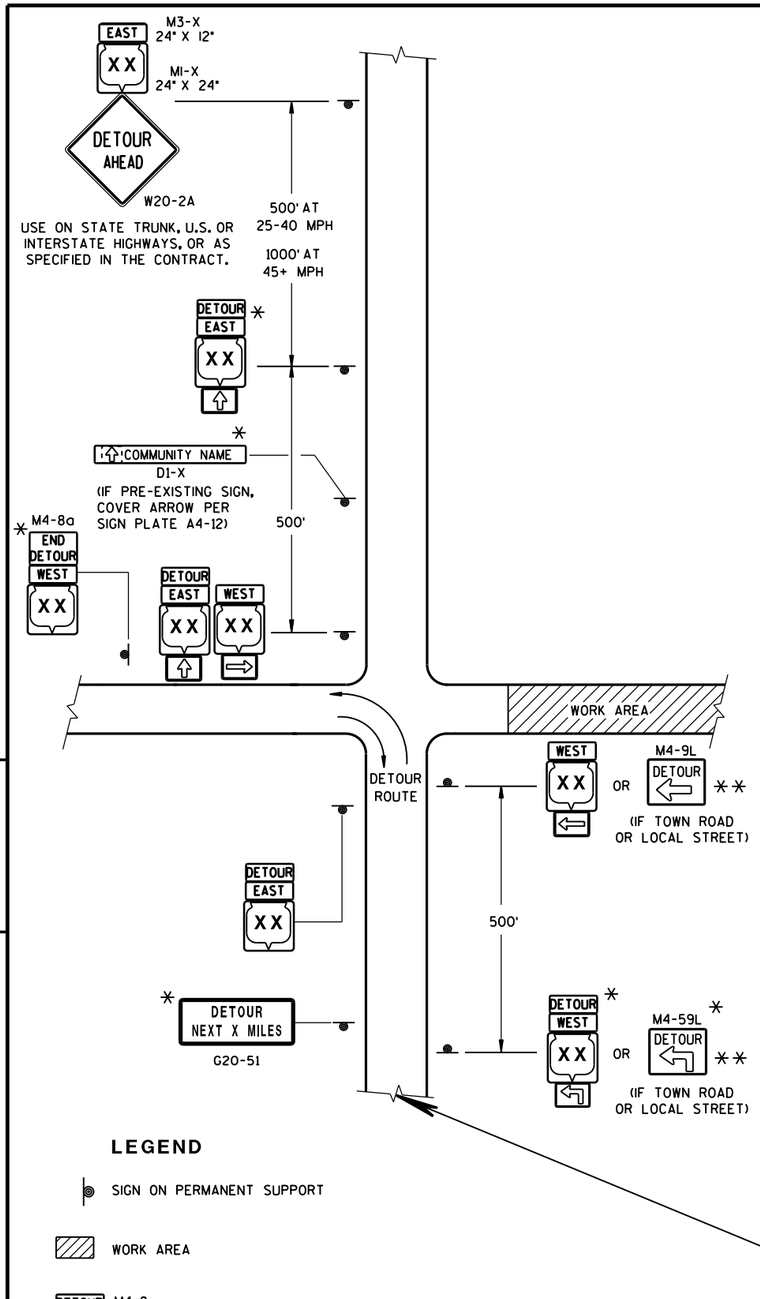
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (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.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

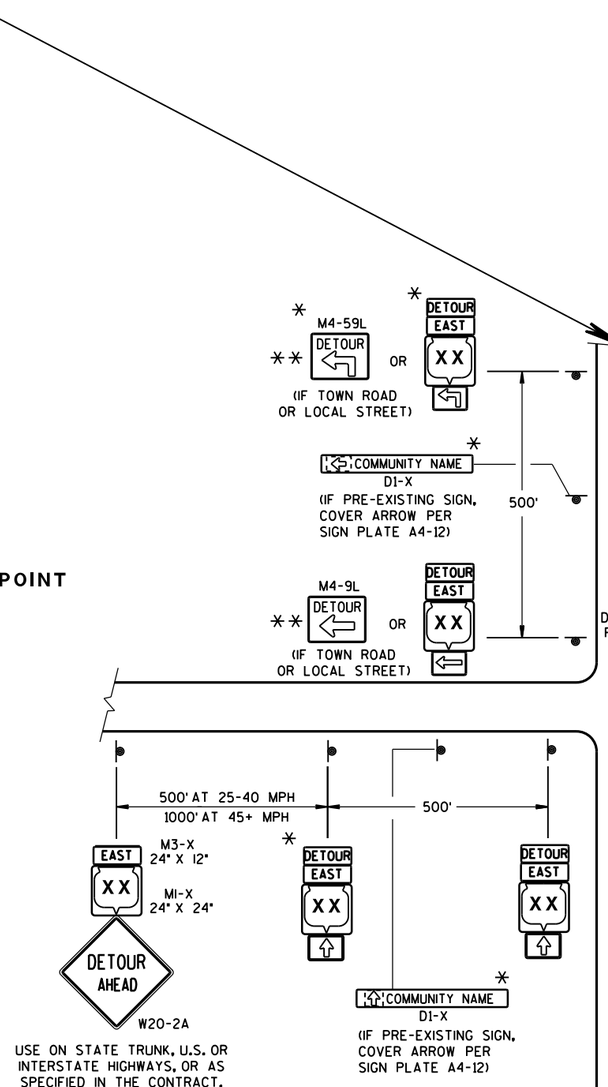


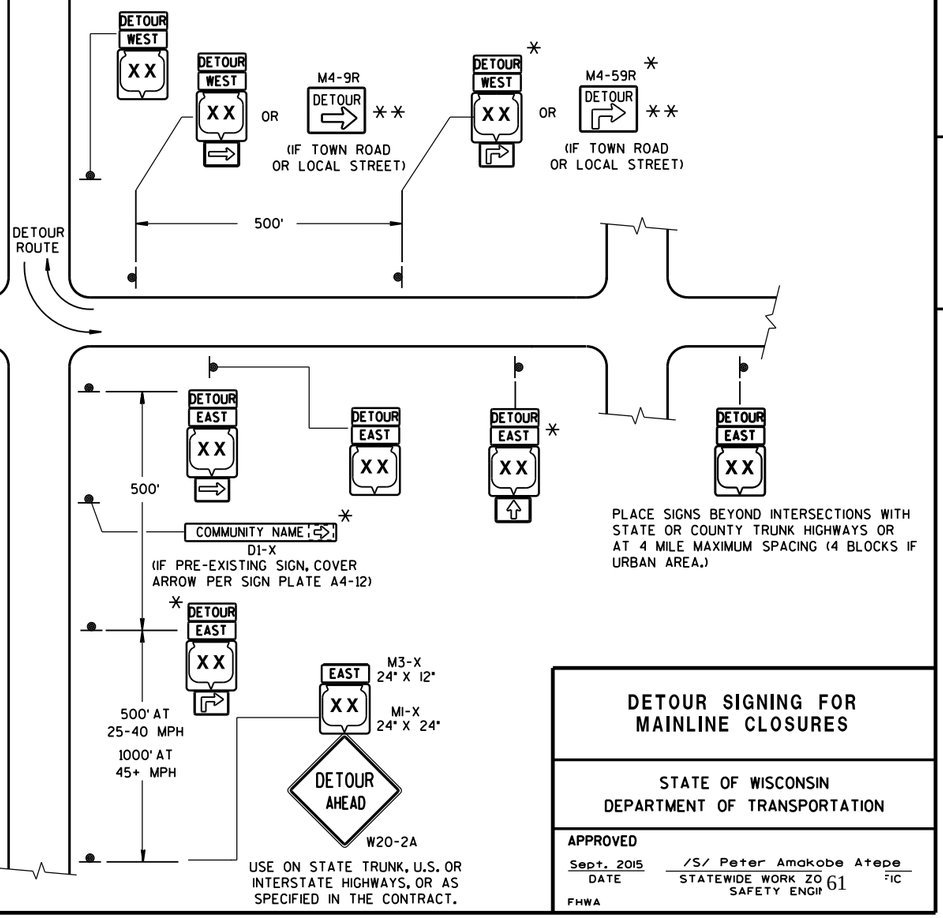

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- M05-1 OR M06-1 OR M06-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

**MATCH POINT**




**DETAIL F**

**DETOUR SIGNING**

**DETOUR SIGNING FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible] FIC

FHWA

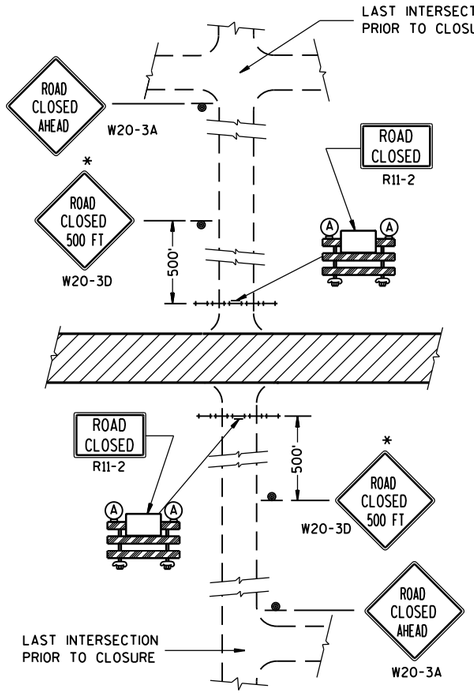


6

S.D.D. 15 C 2-6c

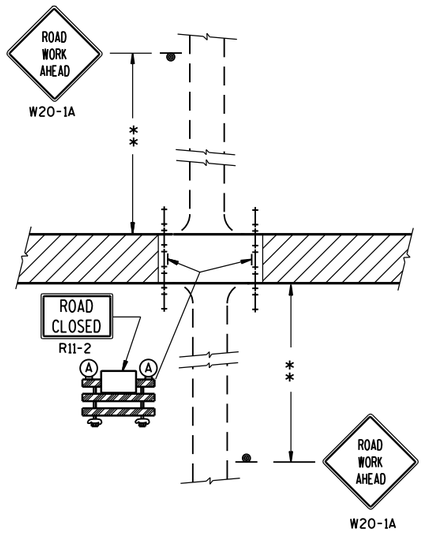
6

S.D.D. 15 C 2-6c



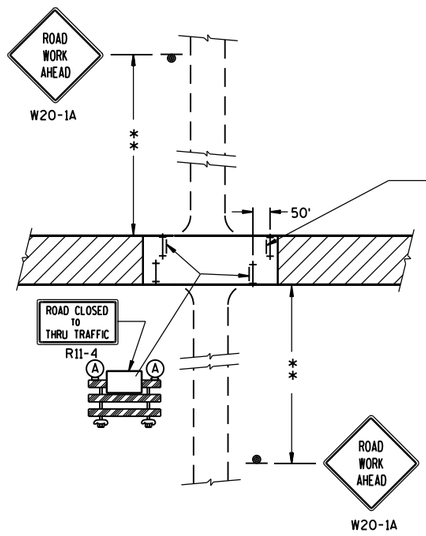

**DETAIL 1**

(NO ACCESS TO PROJECT)



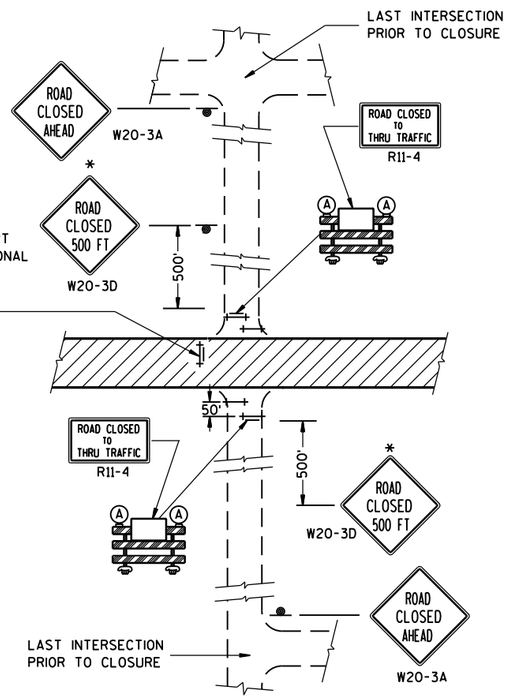

**DETAIL 2**

(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).




**DETAIL 3**

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).




**DETAIL 4**

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

## GENERAL NOTES

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

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

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

## LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

**BARRICADES AND SIGNS FOR SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible]FIC SAFETY ENGI[illegible]
FHWA

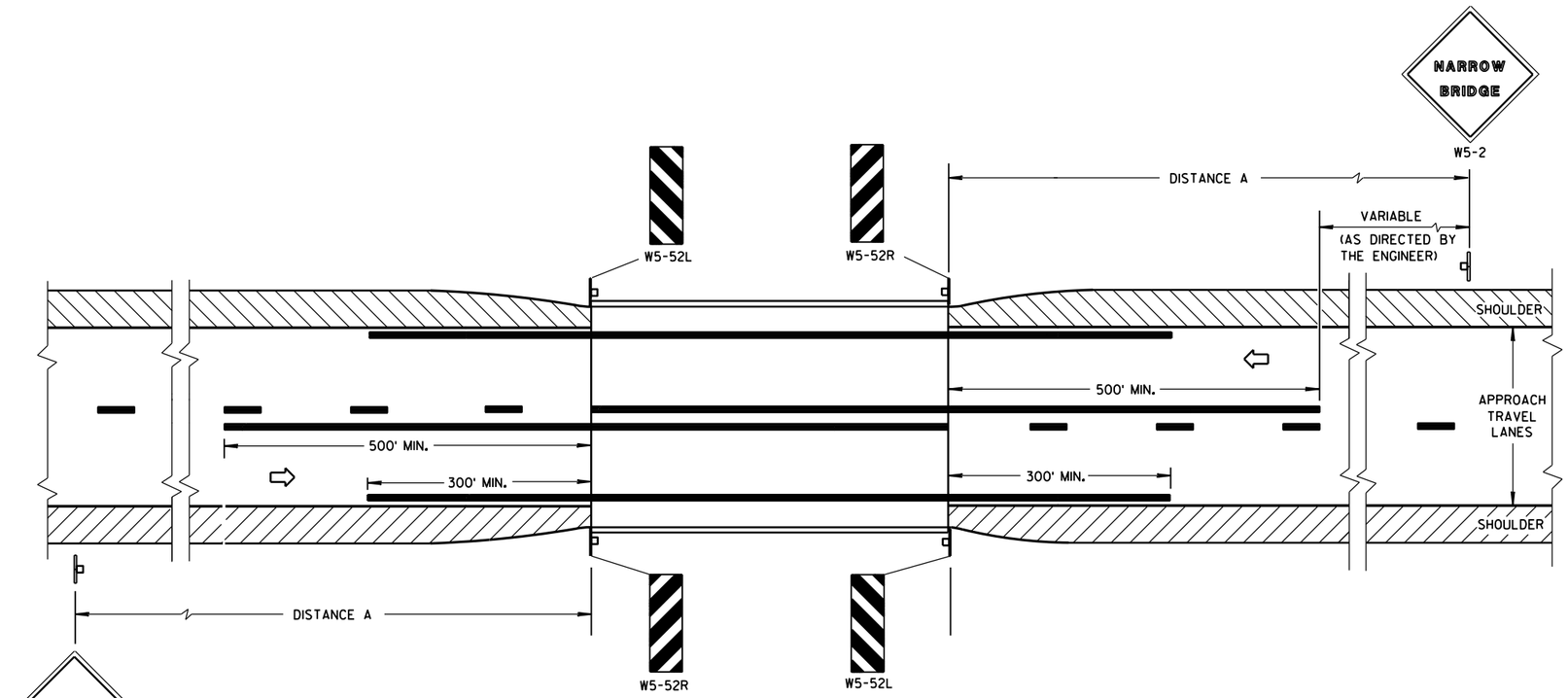


6

S.D.D. 15 C 3-3

6

S.D.D. 15 C 3-3



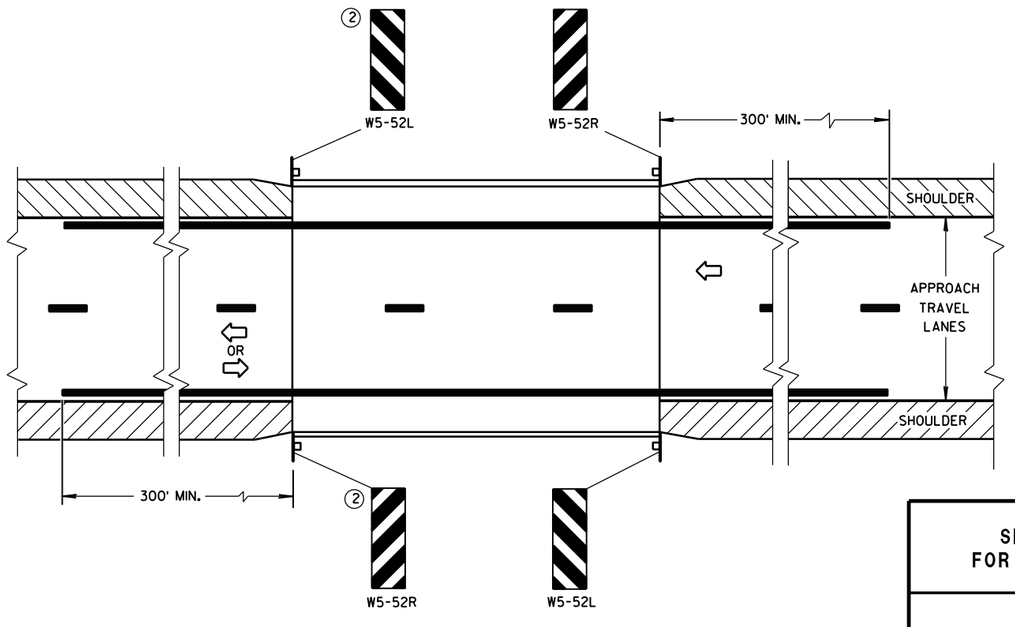

## SITUATION 1

WARRANTING CRITERIA:

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

### DISTANCE TABLE

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




## SITUATION 2

WARRANTING CRITERIA:

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

## GENERAL NOTES

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

① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

② OMIT ON ONE-WAY TRAVELLED WAYS.

③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

# SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

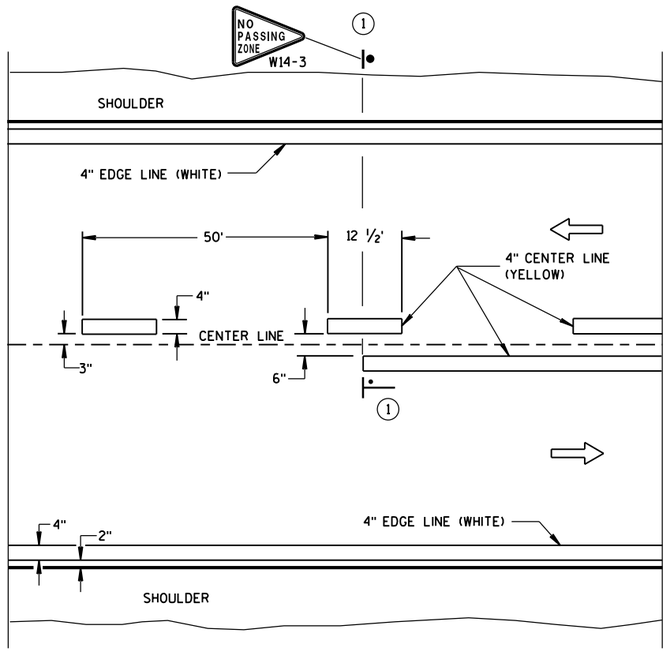


6

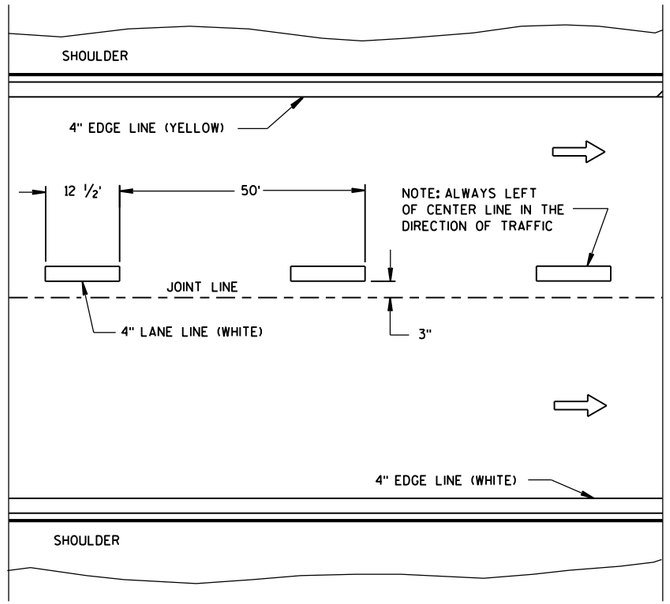
S.D.D. 15 C 6-8

6

S.D.D. 15 C 6-8




TWO WAY TRAFFIC




ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING

## GENERAL NOTES

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

(1) NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

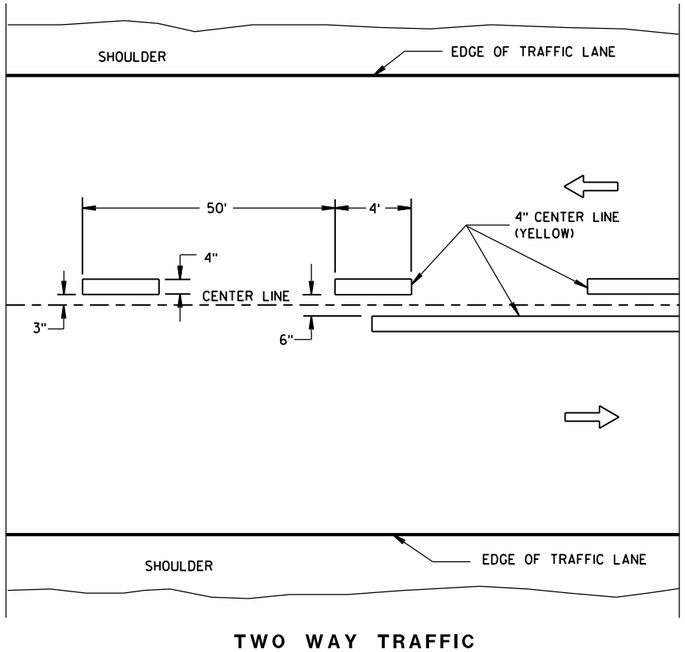
## NOTE

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL

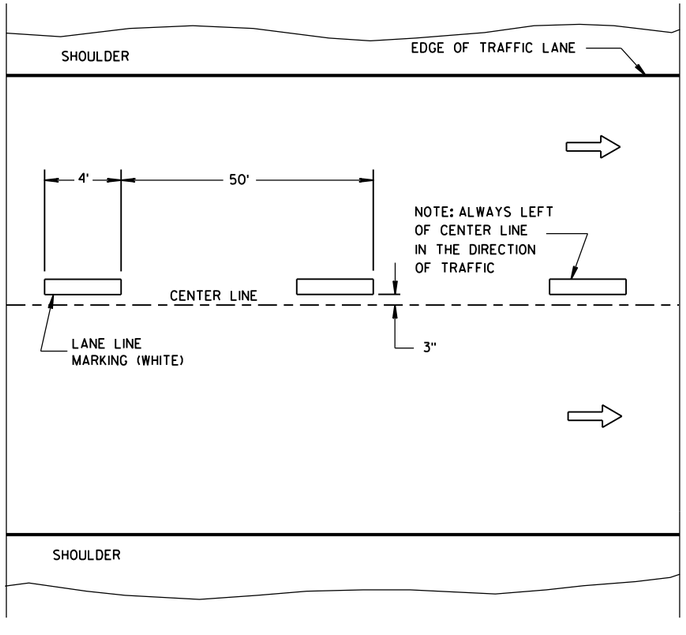
## LEGEND

"T" MARKING

POST MOUNTED SIGN




TWO WAY TRAFFIC




ONE WAY TRAFFIC

## TEMPORARY PAVEMENT MARKING

| LONGITUDINAL MARKING (MAINLINE) | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED | |
| Sept., 2016 | /S/ Matthew R. Rauch |
| DATE | STATE SIGNING AND MAR[illegible]INEER |
| FHWA | |



6

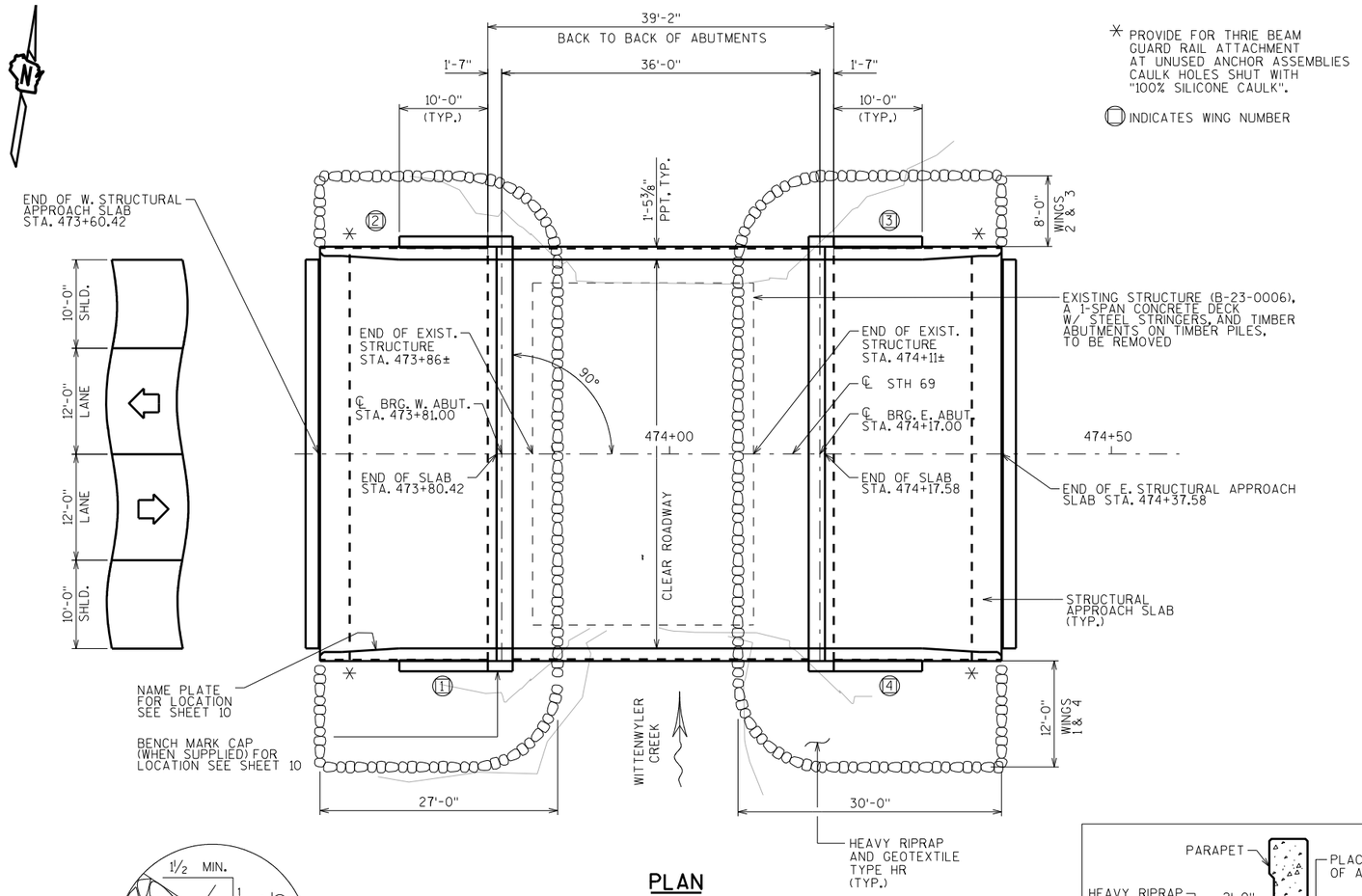
S.D.D. 15 C 8-17a

6

S.D.D. 15 C 8-17a

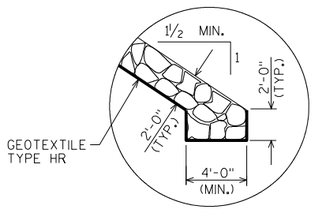
STATE PROJECT NUMBER

1690-00-82

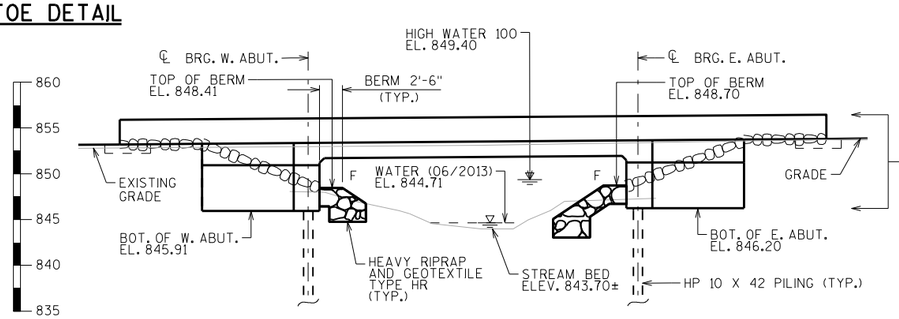



## PLAN

SINGLE SPAN FLAT SLAB

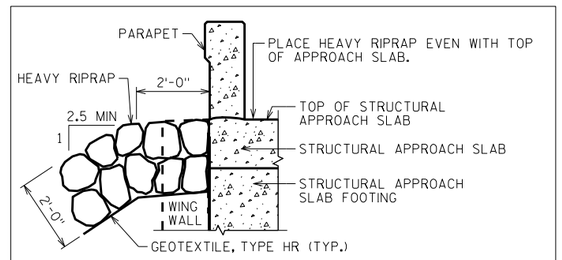



## RIPRAP TOE DETAIL




## ELEVATION

NORMAL TO WITTTENWYLER CREEK




## TYPICAL FILL SECTION AT WING TIPS

END RIPRAP AT WING TIPS. CONTINUE 2.5:1 SLOPE THROUGH ROADWAY EMBANKMENT AT STRUCTURAL APPROACH SLABS.

## DESIGN DATA

**LIVE LOAD:**

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.16
OPERATING RATING FACTOR: RF = 1.50
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250(KIPS)

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

**MATERIAL PROPERTIES:**

CONCRETE MASONRY:
SLAB, PARAPETS & APPROACH SLAB ——— f'c = 4,000 P.S.I.
ALL OTHER, INCLUDING APPROACH SLAB FOOTING ——— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.
STAINLESS, GRADE 60 ——— fy = 60,000 P.S.I.

## FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ✱✱ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 60'-0" (WEST) AND 55'-0" (EAST) LONG.

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

## HYDRAULIC DATA

**100 YEAR FREQUENCY**

$Q_{100}$ = 400 C.F.S.
VEL. = 5.9 F.P.S.
$HW._{100}$ = EL. 849.40
WATERWAY AREA = 68 SQ. FT.
DRAINAGE AREA = 2.6 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

**2 YEAR FREQUENCY**

$Q_2$ = 84 C.F.S.
$HW._2$ = EL. 847.24

## TRAFFIC VOLUME

ADT = 6300 (2018)
R.D.S. = 60 M.P.H.

## LIST OF DRAWINGS




**STRUCTURE DESIGN CONTACTS:**

CARLA PRINCIPE (608) 261-6110
LAURA SHADEWALD (608) 267-9592


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

WISCONSIN DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 5/11/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-23-175

STH 69 OVER WITTENWYLER CREEK

| COUNTY | TOWN/~~CITY/VILLAGE~~ |
|---|---|
| GREEN | WASHINGTON |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGNED CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| CSP | DFD | CSP | MWB |

GENERAL PLAN

SHEET 1 OF 12

65

I.D. 1690-00-02A DATE: MAR 2017

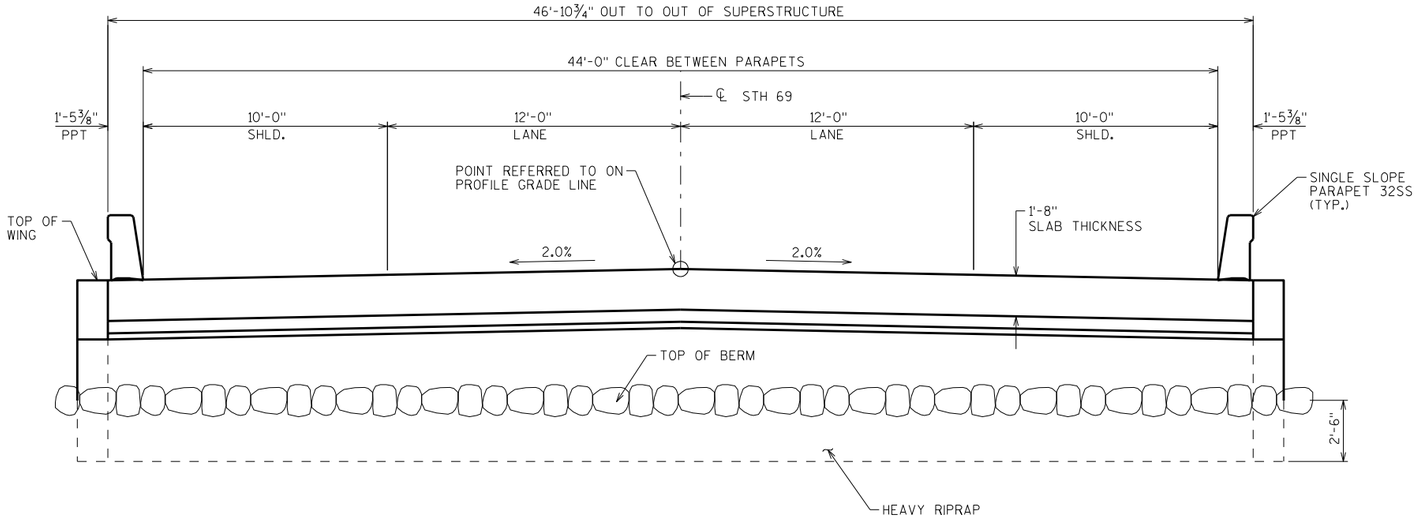
SCALE = 8.00

8

8

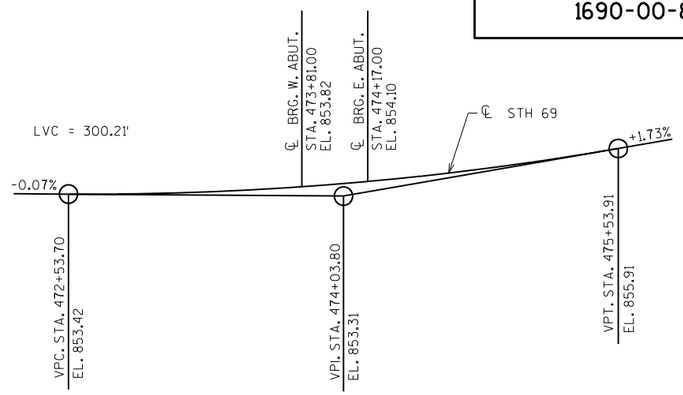
STATE PROJECT NUMBER

1690-00-82




## CROSS SECTION THRU ROADWAY

(LOOKING EAST)




## PROFILE GRADE LINE - ℄ STH 69

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL. ALSO EXCLUDED IS THE "BASE AGREGGATE DENSE 1¼-INCH AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

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

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

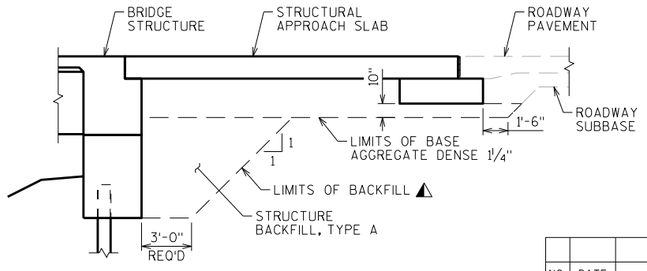
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND TOP OF APPROACH SLAB SURFACE.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLAB.

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

## TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | WEST APP. | WEST ABUT. | SUPER | EAST APP. | EAST ABUT. | TOTALS |
|---|---|---|---|---|---|---|---|---|
| 203.0600.S | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 474+00 | LS | ——— | ——— | ——— | ——— | ——— | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-23-175 | LS | ——— | ——— | ——— | ——— | ——— | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | ——— | 73 | ——— | ——— | 73 | 146 |
| 305.0120 | BASE AGGREGATE DENSE 1 1/4-INCH | TON | ——— | 145 | ——— | ——— | 145 | 290 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 63 | 41 | 125 | 63 | 41 | 333 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 98 | ——— | 182 | 98 | ——— | 378 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 18 | ——— | 34 | 18 | ——— | 70 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | ——— | 2,880 | ——— | ——— | 2880 | 5,760 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 10,450 | 1,110 | 24,660 | 10,450 | 1,110 | 47,780 |
| 505.0800.S | BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES | LB | ——— | 220 | ——— | ——— | 220 | 440 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | ——— | 12 | ——— | ——— | 12 | 24 |
| 550.1100 | PILING STEEL HP 10-INCH X 42 LB | LF | ——— | 420 | ——— | ——— | 385 | 805 |
| 606.0300 | RIPRAP HEAVY | CY | ——— | 72 | ——— | ——— | 87 | 159 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | ——— | 87 | ——— | ——— | 87 | 174 |
| 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | 2 | ——— | ——— | 2 | ——— | 4 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | ——— | 112 | ——— | ——— | 136 | 248 |
| | NON-BID ITEMS | | | | | | | |
| | FILLER | SIZE | ——— | ——— | ——— | ——— | ——— | ½",¾",1½" |




## TYPICAL SECTION THRU ABUTMENT

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

CROSS SECTION & QUANTITIES

SHEET 2

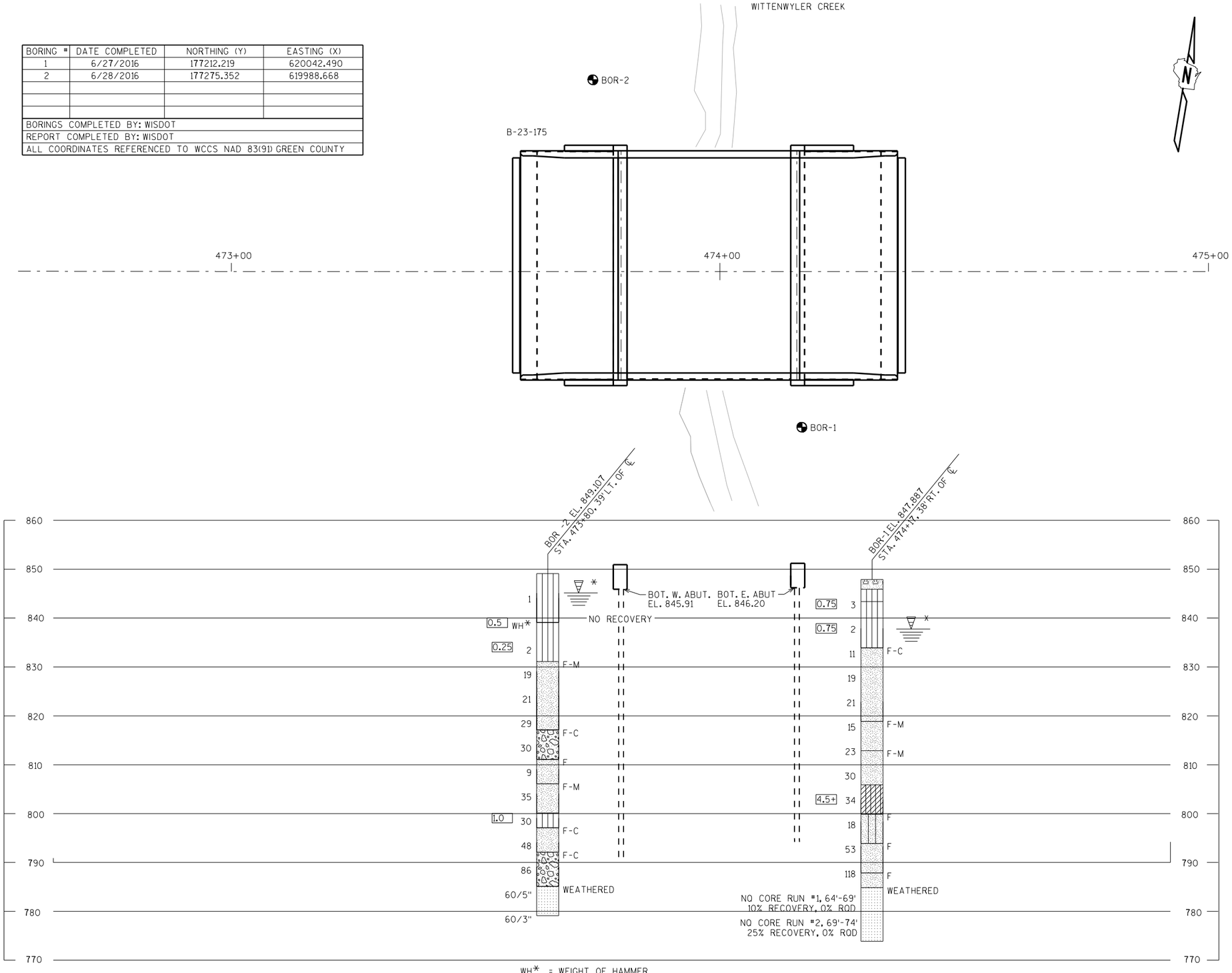
66

SCALE = 3.00

8

8

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|---|---|---|---|
| 1 | 6/27/2016 | 177212.219 | 620042.490 |
| 2 | 6/28/2016 | 177275.352 | 619988.668 |
| | | | |
| | | | |
| | | | |
| BORINGS COMPLETED BY: WISDOT | | | |
| REPORT COMPLETED BY: WISDOT | | | |
| ALL COORDINATES REFERENCED TO WCCS NAD 83(91) GREEN COUNTY | | | |



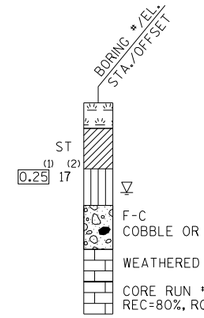

STATE PROJECT NUMBER

**1690-00-82**

MATERIAL SYMBOLS

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

LEGEND OF BORING




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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY TLP/CSP | PLANS CK'D. MWB

SUBSURFACE EXPLORATION

SHEET 3

67

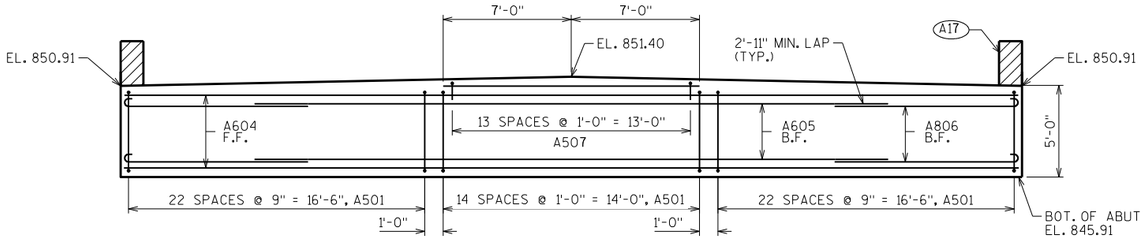
SCALE = 10.00

8

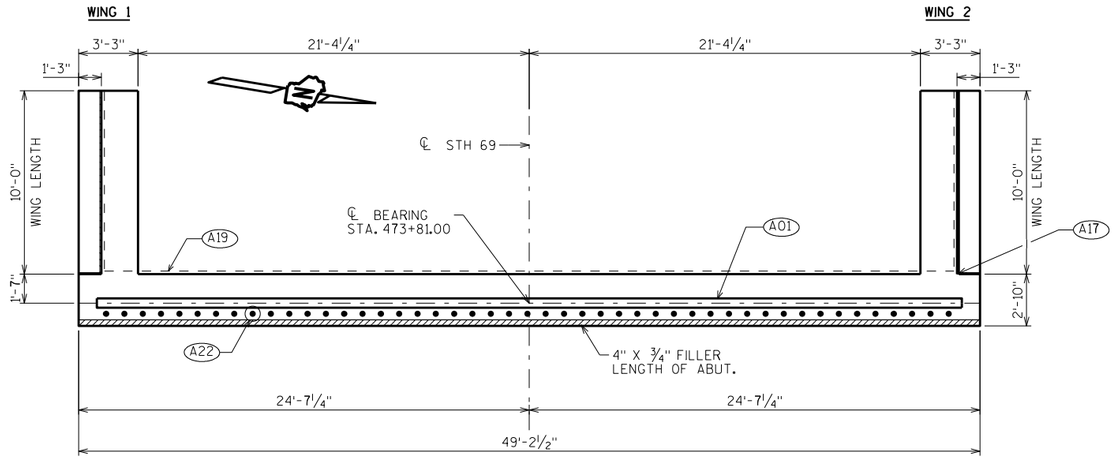
8

STATE PROJECT NUMBER

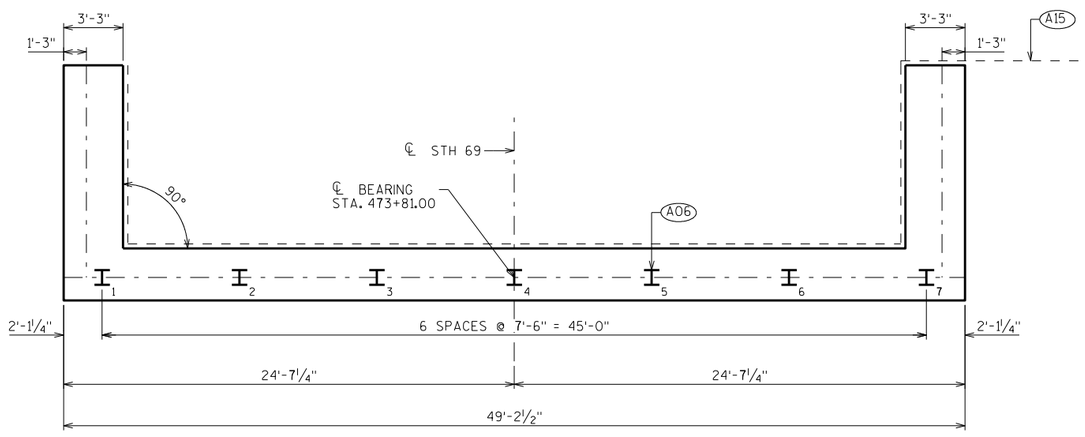
1690-00-82



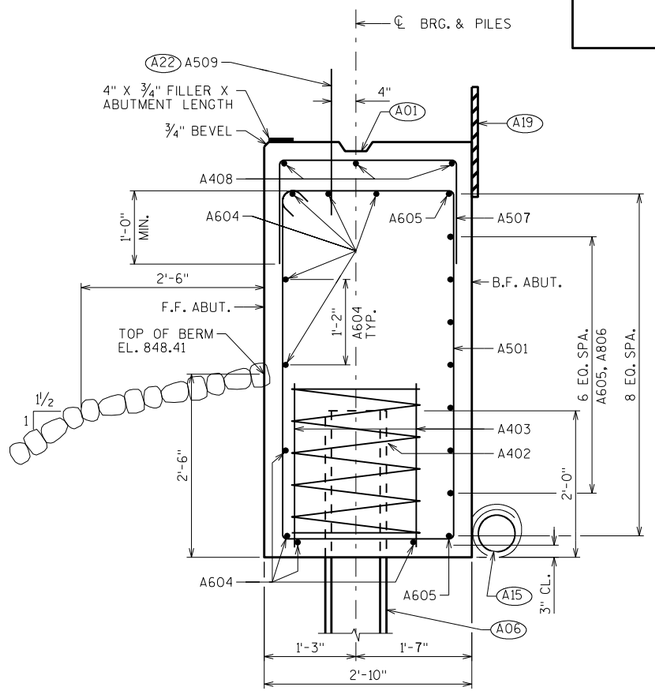

## ELEVATION
(LOOKING WEST)



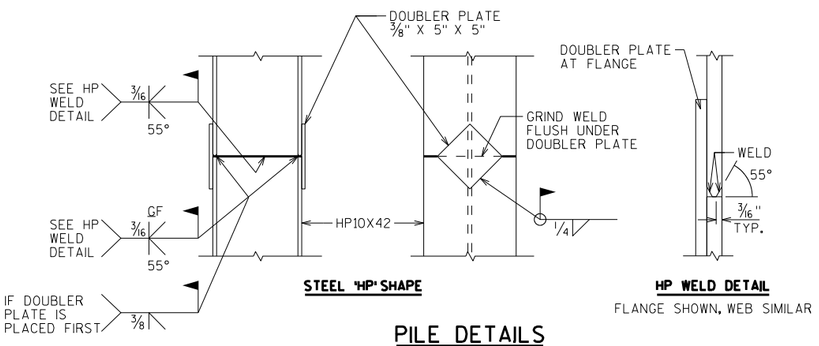

## PLAN




## PILE PLAN




## SECTION THRU BODY




**STEEL "HP" SHAPE**

**HP WELD DETAIL**
FLANGE SHOWN, WEB SIMILAR

## PILE DETAILS

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

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

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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

(A22) A509 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

WEST ABUTMENT

SHEET 4

68

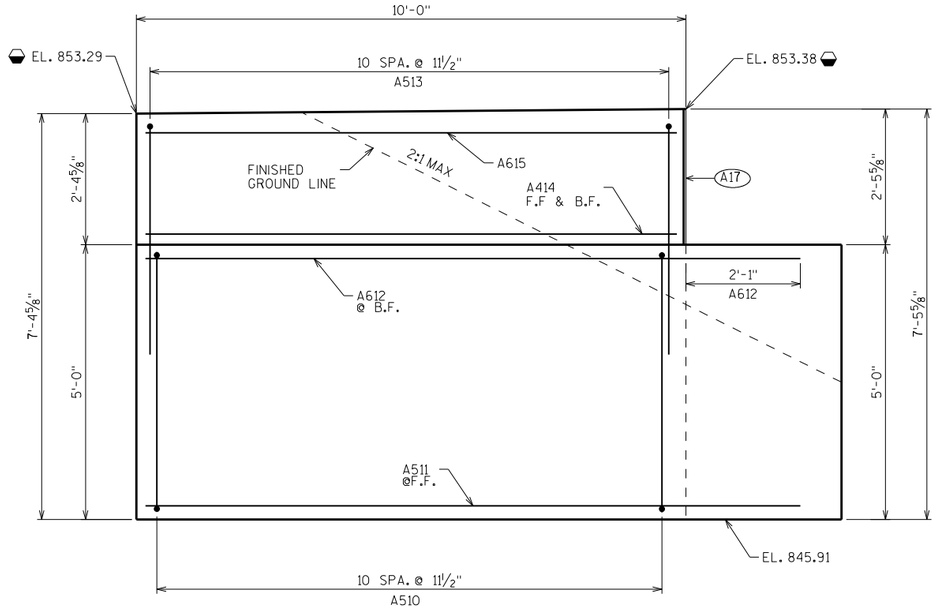
SCALE = 4.00

8

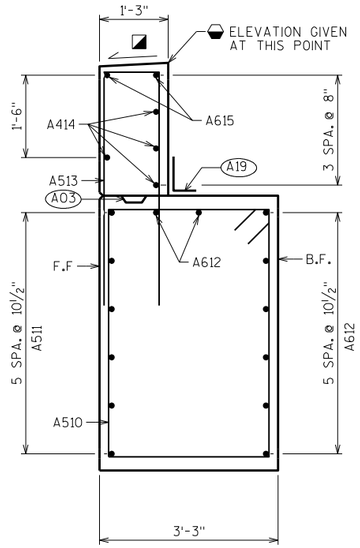
8

STATE PROJECT NUMBER

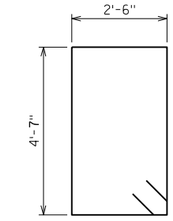
1690-00-82



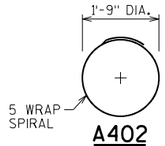

WING 1 ELEVATION




WING 1 SECTION




A501

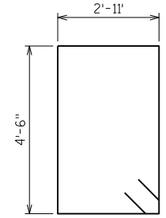



A402

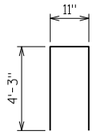
## BILL OF BARS

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

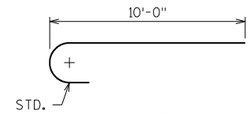
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| A501 | | 61 | 14'-10" | X | | BODY - VERT. STIRRUP |
| A402 | | 8 | 28'-0" | X | | BODY - SPIRAL - PILES |
| A403 | | 16 | 2'-3" | | | BODY - VERT. - PILES |
| A604 | | 11 | 48'-10" | | | BODY - HORZ. F.F. |
| A605 | | 7 | 34'-9" | | | BODY - HORZ. B.F. |
| A806 | | 14 | 10'-11" | X | | BODY - HORZ. B.F. |
| A507 | | 14 | 4'-11" | X | | BODY - VERT. TOP |
| A408 | | 3 | 14'-0" | | | BODY - HORZ. TOP |
| A509 | | 48 | 2'-0" | | | BODY - VERT. DOWELS |
| A510 | X | 22 | 15'-6" | X | | WING BODY 1& 2 - VERT. STIRRUP |
| A511 | X | 12 | 11'-11" | | | WING BODY 1& 2 - HORZ. F.F. |
| A612 | X | 16 | 11'-11" | | | WING BODY 1& 2 - HORZ. B.F. |
| A513 | X | 22 | 9'-2" | X | | WINGWALL 1& 2 - VERT. |
| A414 | X | 8 | 9'-8" | | | WINGWALL 1&2 - HORZ. |
| A615 | X | 4 | 9'-8" | | | WINGWALL 1&2 - HORZ. |



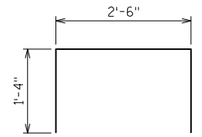

A510



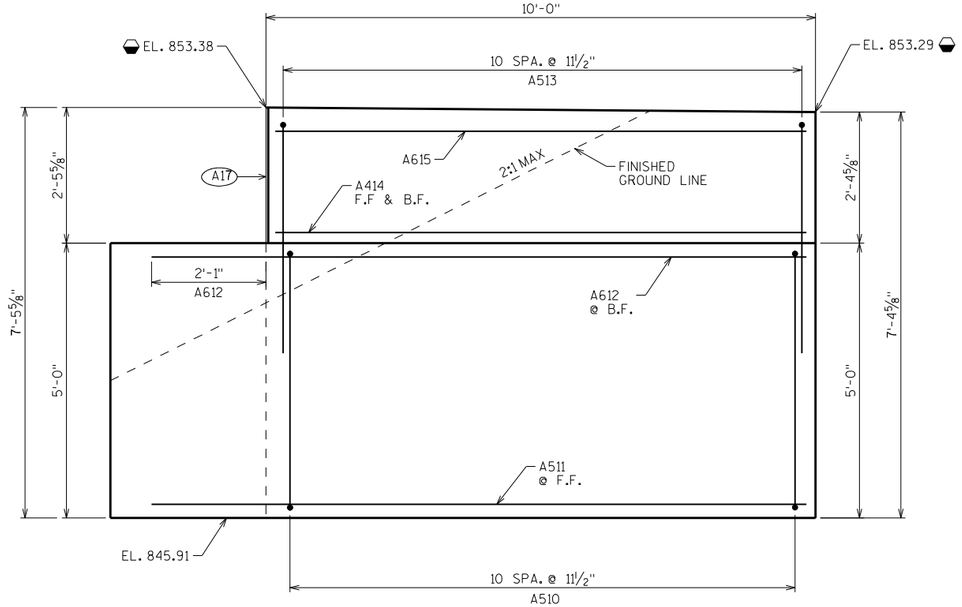

A513



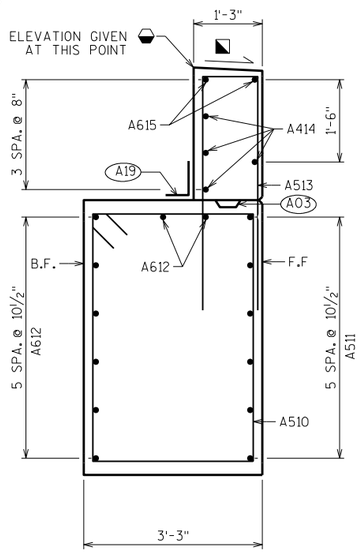

A806



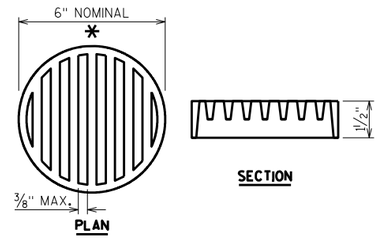

A507




WING 2 ELEVATION




WING 2 SECTION




RODENT SHIELD DETAIL

SLOPE TO DRAIN

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 × 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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

* 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 ATTACHEMENT 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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

WEST ABUTMENT DETAILS

SHEET 5

69

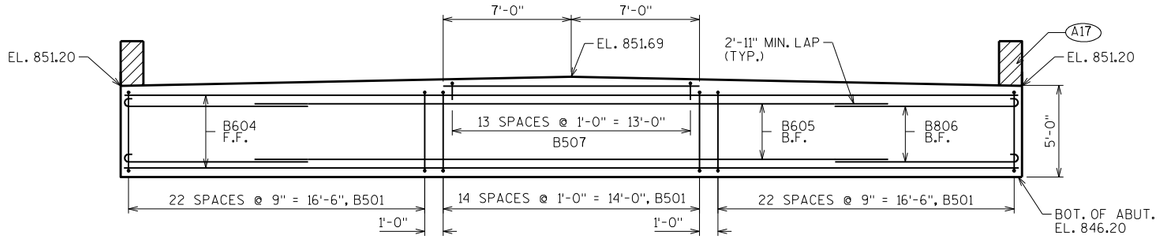
SCALE = 1.33

8

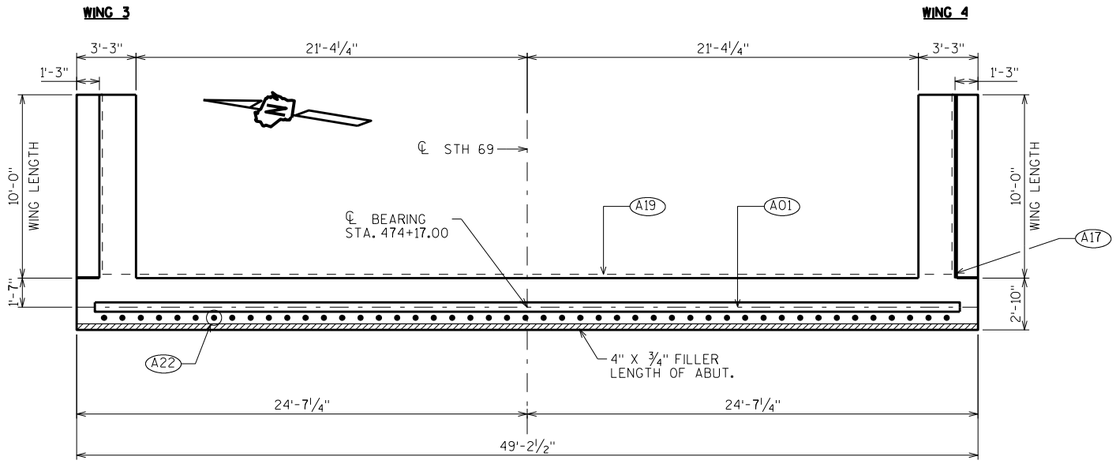
8

STATE PROJECT NUMBER

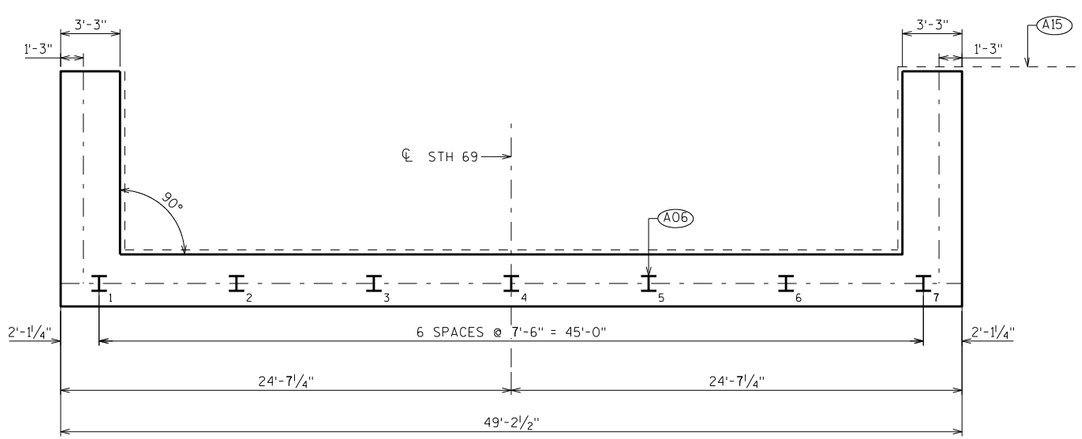
1690-00-82



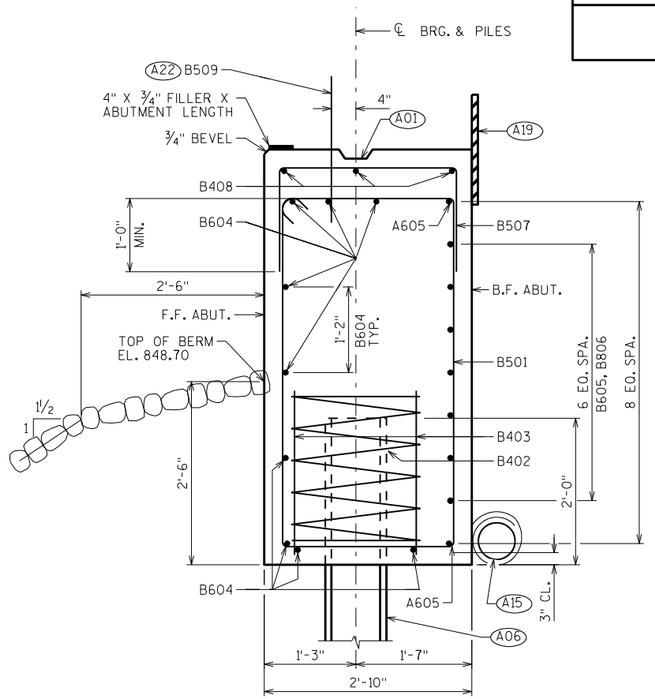

## ELEVATION
(LOOKING EAST)



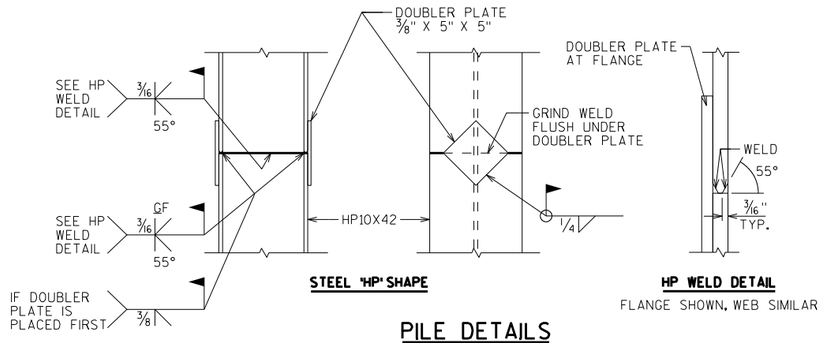

## PLAN




## PILE PLAN




## SECTION THRU BODY




**STEEL "HP" SHAPE**

**HP WELD DETAIL**
FLANGE SHOWN, WEB SIMILAR

## PILE DETAILS

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 55'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

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

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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

(A22) B509 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

EAST ABUTMENT

SHEET 6

70

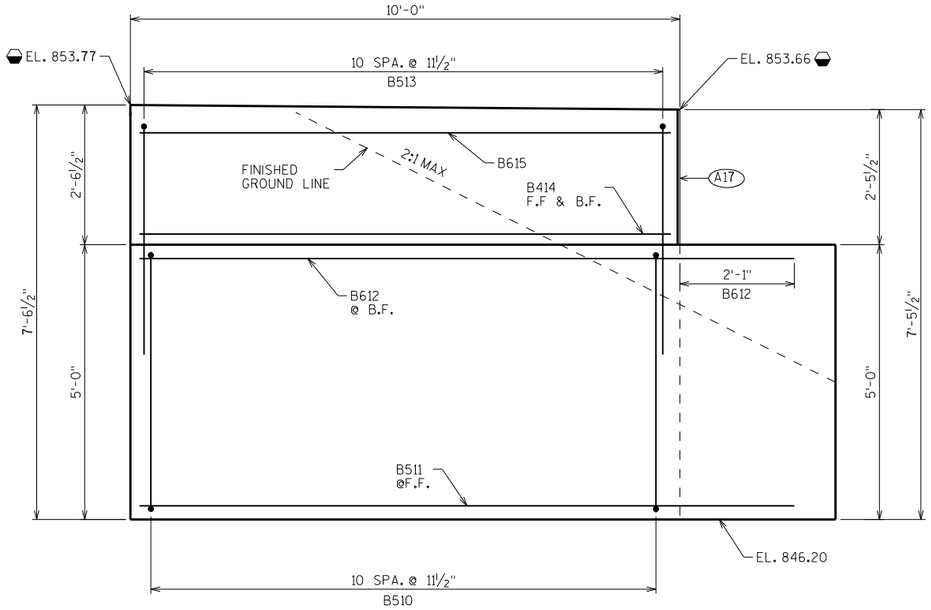
SCALE = 4.00

8

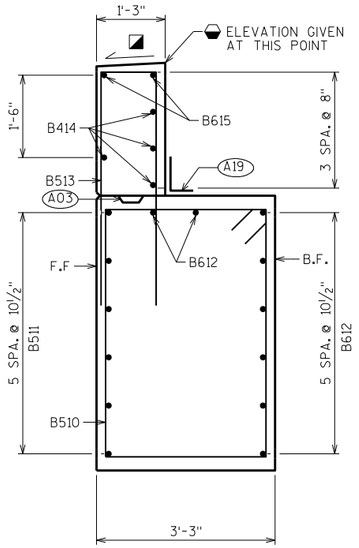
8

STATE PROJECT NUMBER

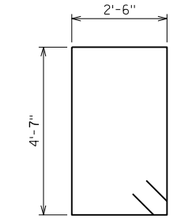
1690-00-82



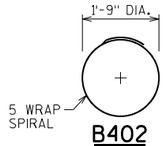

WING 3 ELEVATION




WING 3 SECTION




B501

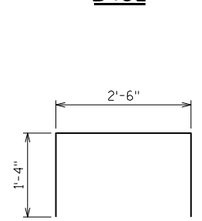



B402

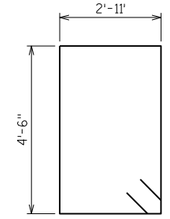
## BILL OF BARS

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

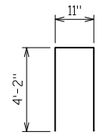
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| B501 | | 61 | 14'-10" | X | | BODY - VERT. STIRRUP |
| B402 | | 8 | 28'-0" | X | | BODY - SPIRAL - PILES |
| B403 | | 16 | 2'-3" | | | BODY - VERT. - PILES |
| B604 | | 11 | 48'-10" | | | BODY - HORZ. F.F. |
| B605 | | 7 | 34'-9" | | | BODY - HORZ. B.F. |
| B806 | | 14 | 10'-11" | X | | BODY - HORZ. B.F. |
| B507 | | 14 | 4'-11" | X | | BODY - VERT. TOP |
| B408 | | 3 | 14'-0" | | | BODY - HORZ. TOP |
| B509 | | 48 | 2'-0" | | | BODY - VERT. DOWELS |
| B510 | X | 22 | 15'-6" | X | | WING BODY 3 & 4 - VERT. STIRRUP |
| B511 | X | 12 | 11'-11" | | | WING BODY 3 & 4 - HORZ. F.F. |
| B612 | X | 16 | 11'-11" | | | WING BODY 3 & 4 - HORZ. B.F. |
| B513 | X | 22 | 9'-0" | X | | WINGWALL 3 & 4 - VERT. |
| B414 | X | 8 | 9'-8" | | | WINGWALL 3 & 4 - HORZ. |
| B615 | X | 4 | 9'-8" | | | WINGWALL 3 & 4 - HORZ. |



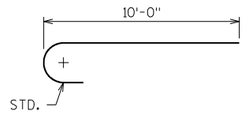

B507



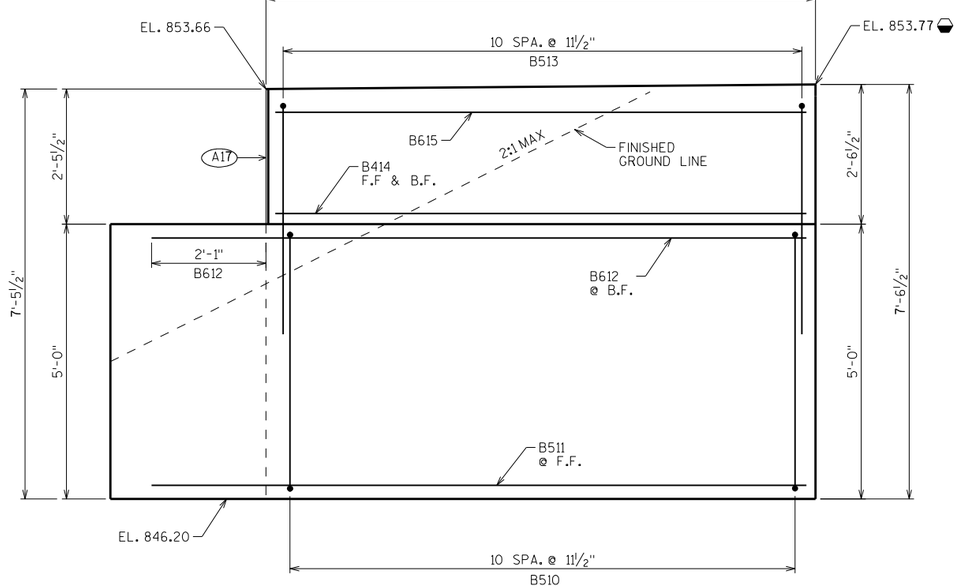

B510



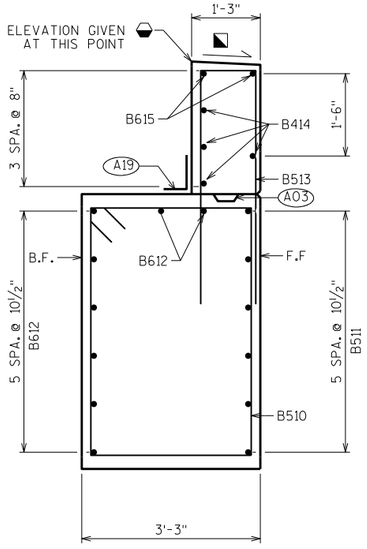

B513



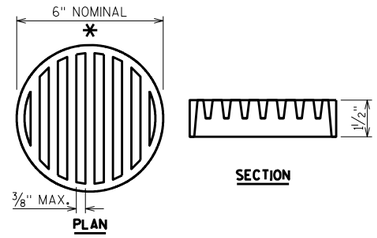

B806




WING 4 ELEVATION




WING 4 SECTION




## RODENT SHIELD DETAIL

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

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

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHEMENT 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.

◪ SLOPE TO DRAIN

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 × 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

EAST ABUTMENT DETAILS

SHEET 7

71

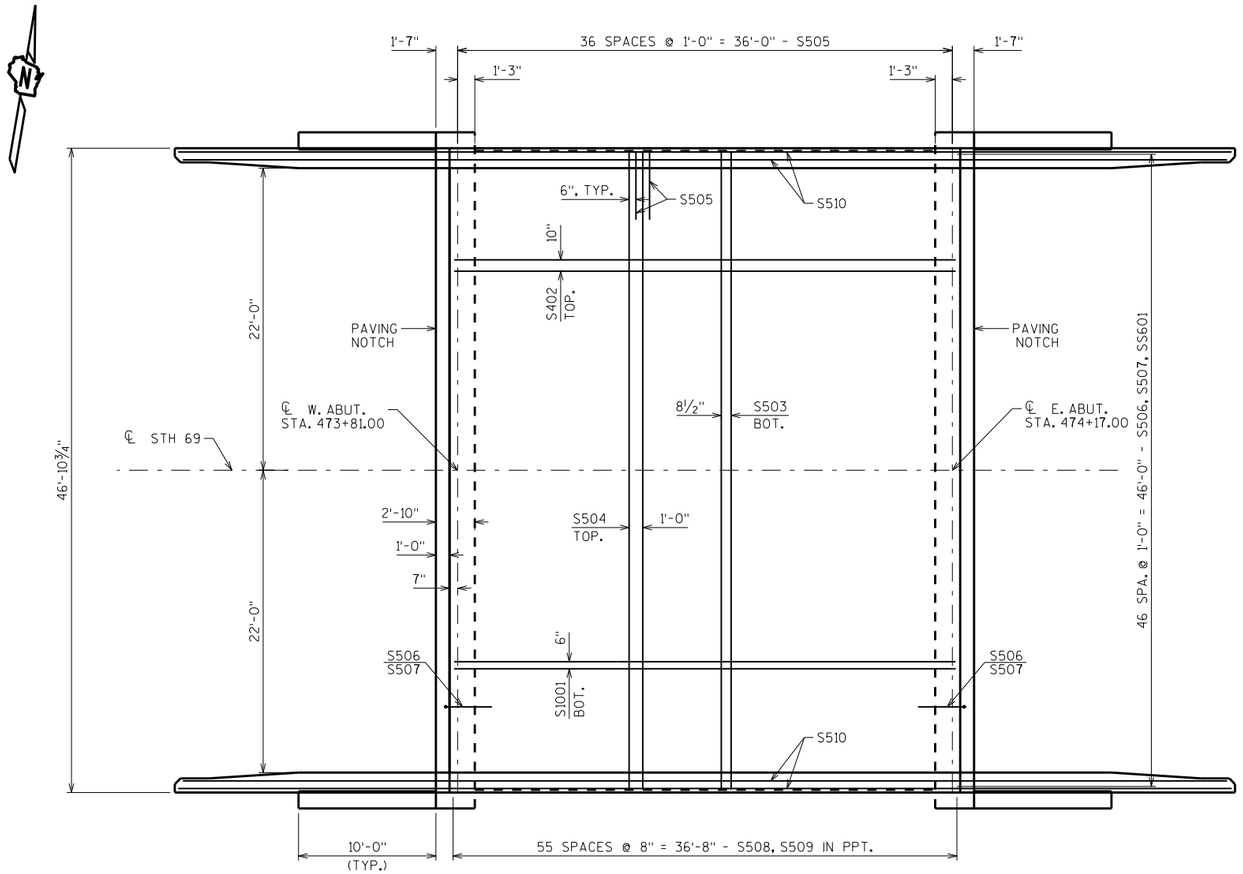
SCALE = 1.33

8

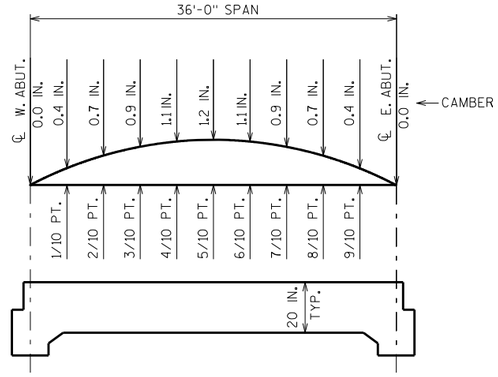
8

STATE PROJECT NUMBER

1690-00-82




SUPERSTRUCTURE PLAN




## CAMBER AND SLAB THICKNESS DIAGRAM

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

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

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

## TOP OF DECK ELEVATIONS

| | ℄ BRG. W. ABUT. | 1/10 PT. | 2/10 PT. | 3/10 PT. | 4/10 PT. | 5/10 PT. | 6/10 PT. | 7/10 PT. | 8/10 PT. | 9/10 PT. | ℄ BRG. E. ABUT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N. GUTTER | 853.38 | 853.40 | 853.43 | 853.46 | 853.48 | 853.51 | 853.54 | 853.57 | 853.60 | 853.63 | 853.66 |
| CROWN | 853.82 | 853.84 | 853.87 | 853.90 | 853.92 | 853.95 | 853.98 | 854.01 | 854.04 | 854.07 | 854.10 |
| S. GUTTER | 853.38 | 853.40 | 853.43 | 853.46 | 853.48 | 853.51 | 853.54 | 853.57 | 853.60 | 853.63 | 853.66 |
| CAMBER | 0.0 | 0.4 | 0.7 | 0.9 | 1.1 | 1.2 | 1.1 | 0.9 | 0.7 | 0.4 | 0.0 |

8

8

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

SUPERSTRUCTURE PLAN

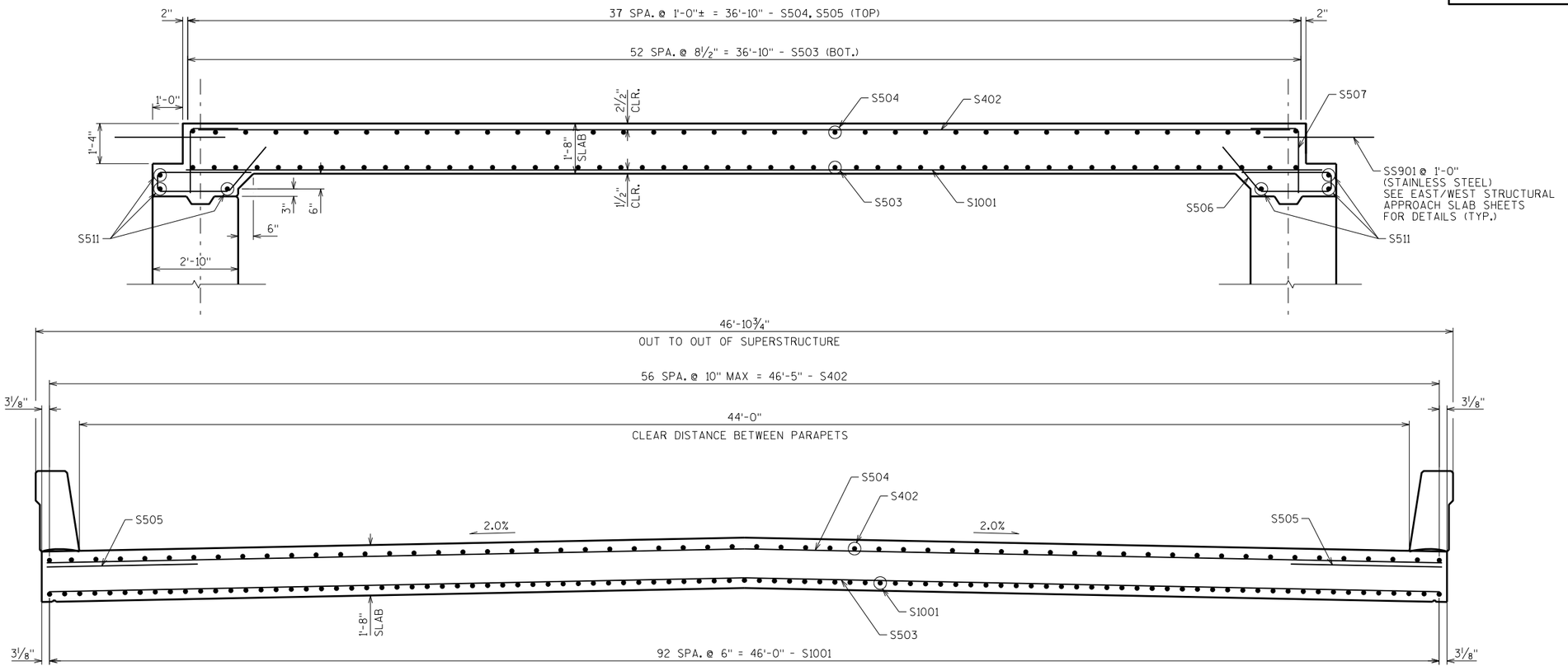
SHEET 8

72

SCALE = 5.33

STATE PROJECT NUMBER

1690-00-82

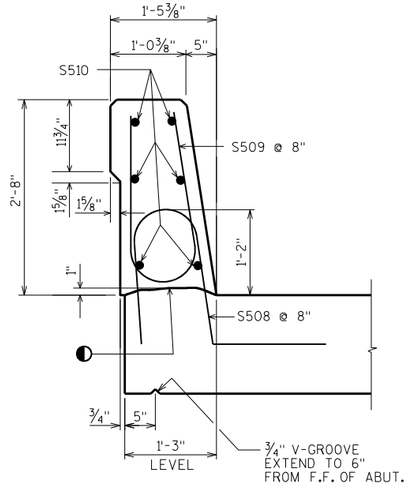



## BILL OF BARS

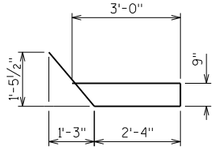
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| S1001 | X | 93 | 38'-10" | | | BOTTOM LONGITUDINAL |
| S402 | X | 57 | 36'-10" | | | TOP LONGITUDINAL |
| S503 | X | 53 | 46'-2" | | | BOTTOM TRANSVERSE |
| S504 | X | 38 | 46'-2" | | | TOP TRANSVERSE |
| S505 | X | 74 | 5'-0" | | | END OF SLAB - TRANSVERSE |
| S506 | X | 94 | 7'-7" | X | | END OF SLAB @ ABUTMENTS |
| S507 | X | 94 | 3'-4" | X | | END OF SLAB @ ABUTMENTS |
| S508 | X | 112 | 4'-5" | X | | PARAPET - VERT. |
| S509 | X | 112 | 5'-0" | X | | PARAPET - VERT. |
| S510 | X | 12 | 38'-10" | | | PARAPET - LONGITUDINAL |
| S511 | X | 6 | 46'-2" | | | END OF SLAB @ ABUTMENTS |
| SS601 | | 94 | 3'-0" | | | STRUCTURAL APPROACH SLAB |

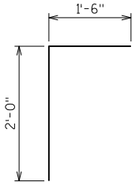
→ STAINLESS STEEL



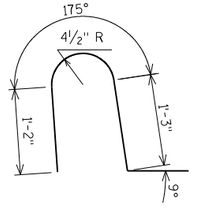

SECTION THRU PARAPET ON BRIDGE



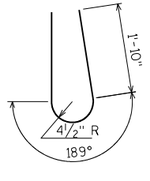

S506




S507




S508




S509

◐ CONSTRUCTION JOINT - STRIKE OFF AS SHOWN

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

SUPERSTRUCTURE DETAILS

SHEET 9

73

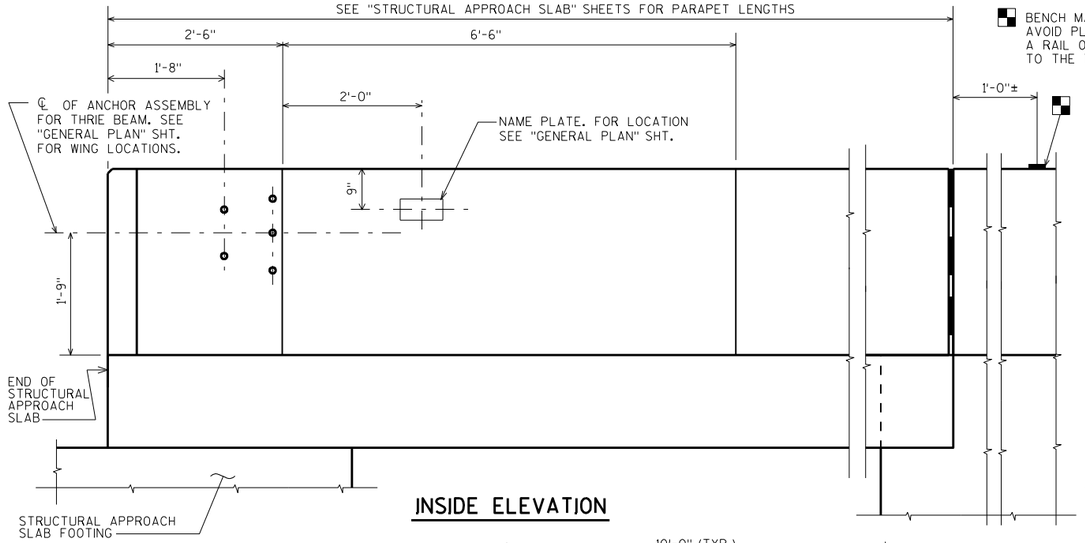
SCALE = 2.00

8

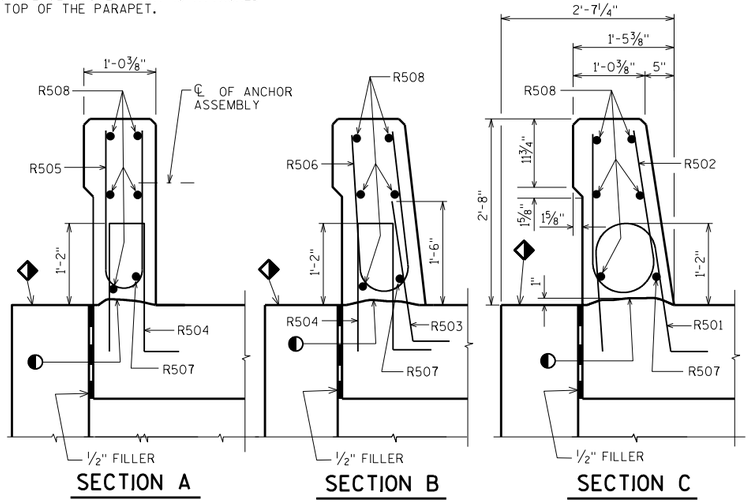
8

STATE PROJECT NUMBER

1690-00-82




## INSIDE ELEVATION




## SECTION A




## SECTION B

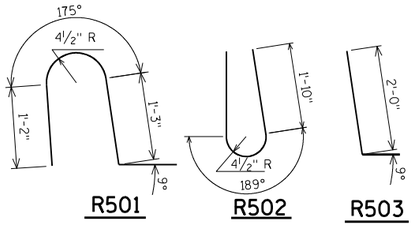



## SECTION C

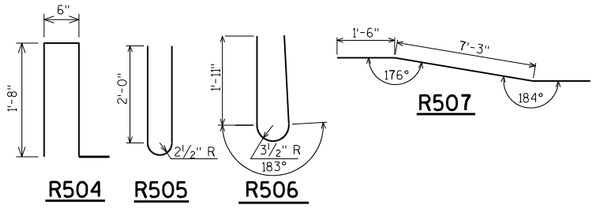
## BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

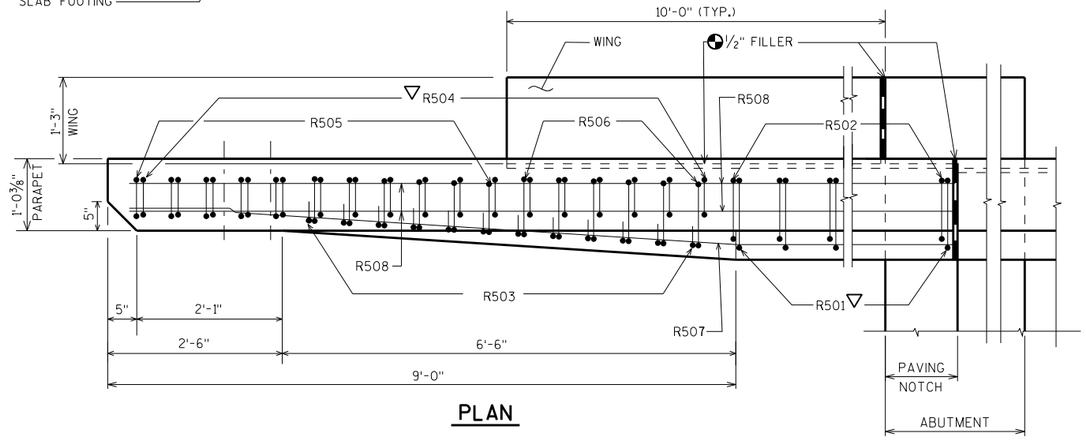
| BAR MARK | COAT | WEST APP. | EAST APP. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 34 | 34 | 4-5 | X | | PARAPET VERT. |
| R502 | X | 34 | 34 | 5-0 | X | | PARAPET VERT. |
| R503 | X | 24 | 24 | 2-9 | X | | PARAPET VERT. |
| R504 | X | 34 | 34 | 4-4 | X | | PARAPET VERT. |
| R505 | X | 22 | 22 | 4-9 | X | | PARAPET VERT. |
| R506 | X | 12 | 12 | 4-10 | X | | PARAPET VERT. |
| R507 | X | 2 | 2 | 19-7 | X | | PARAPET HORIZ. |
| R508 | X | 10 | 10 | 19-7 | | | PARAPET HORIZ. |



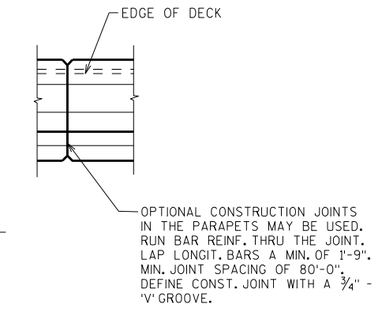

R501 R502 R503

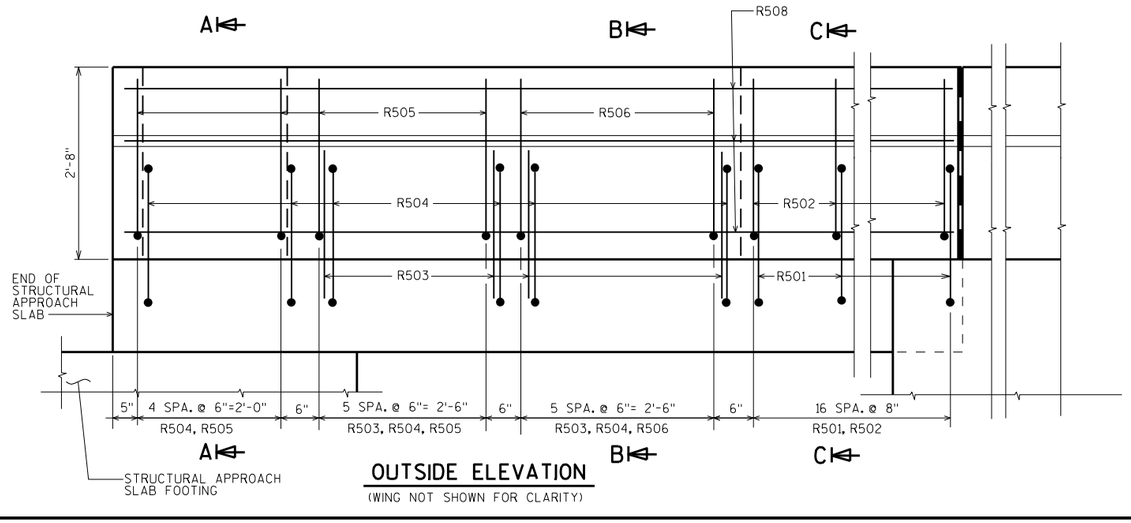



R504 R505 R506 R507



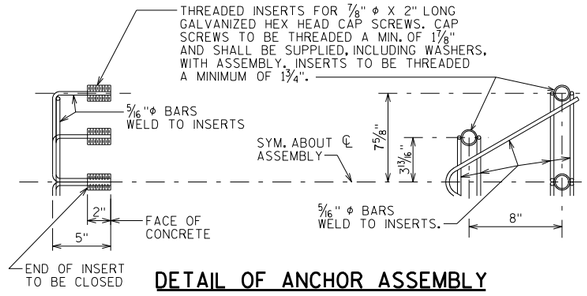

## PLAN




## OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)




## DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

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

◆ SLOPE FOR DRAINAGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

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

1"2" FILLER PLACED BETWEEN ABUT. WINGWALL AND APPROACH SLAB. SEAL ALL EXPOSED HORZ. & VERT. SURFACES OF 1"2" FILLER WITHNON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1"8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOWGUTTER LINE AT INSIDE FACE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

SINGLE SLOPE PARAPET 32SS

SHEET 10

74

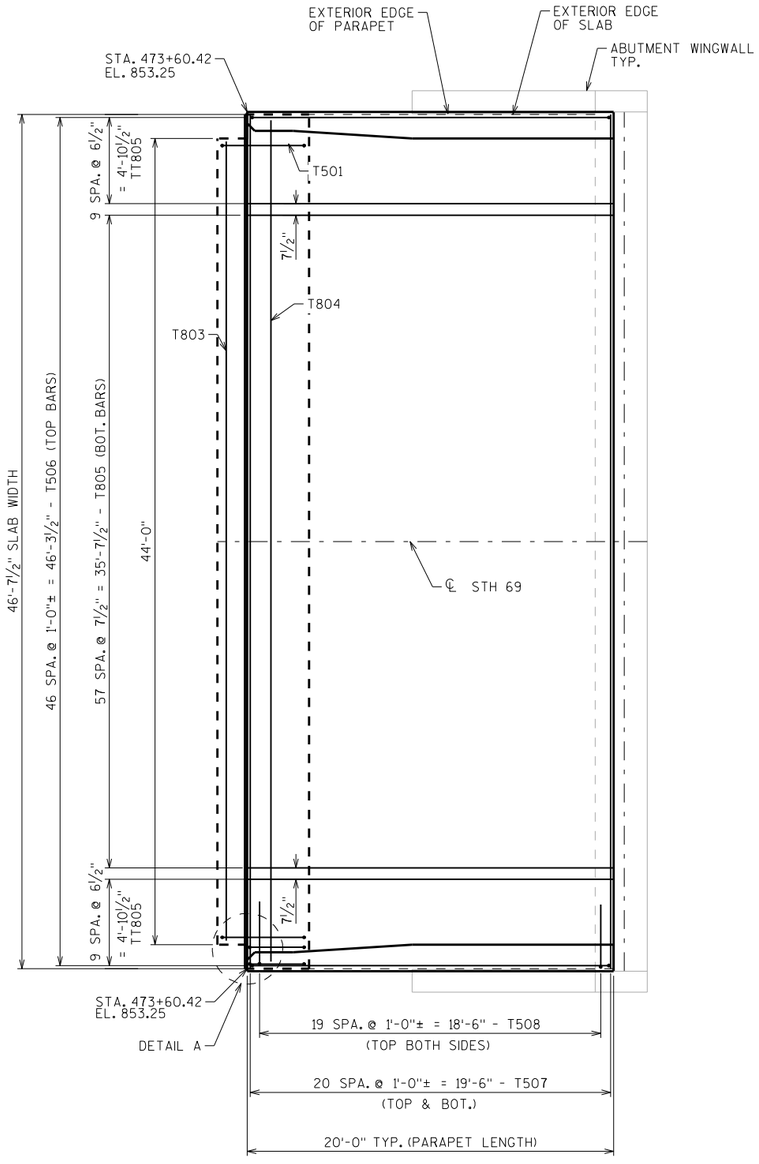
SCALE = 1.05

8

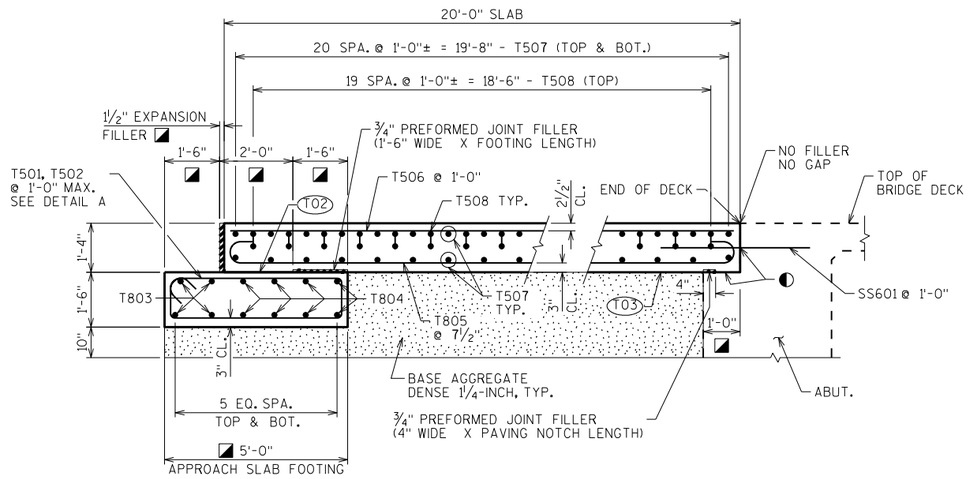
8

STATE PROJECT NUMBER

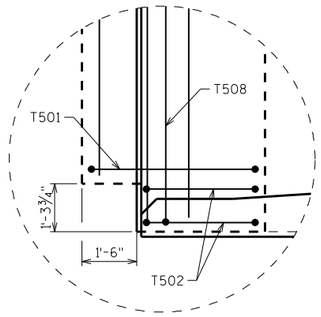
1690-00-82




APPROACH SLAB PLAN




SECTION THRU APPROACH SLAB




DETAIL A

(T805 NOT SHOWN FOR CLARITY)

## BILL OF BARS

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

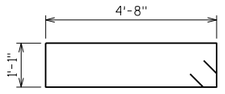
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| T501 | X | 47 | 12'-2" | X | | APPROACH SLAB FTG. - STIRRUP |
| T502 | X | 4 | 8'-10" | X | | APPROACH SLAB FTG. - STIRRUP |
| T803 | X | 4 | 43'-5" | | | APPROACH SLAB FTG. - TRANS. |
| T804 | X | 8 | 46'-3" | | | APPROACH SLAB FTG. - TRANS. |
| T805 | X | 78 | 21'-4" | X | | APPROACH SLAB - LONG. - BOT. |
| T506 | X | 47 | 19'-8" | | | APPROACH SLAB - LONG. - TOP |
| T507 | X | 38 | 46'-3" | | | APPROACH SLAB - TRANS. - TOP & BOT. |
| T508 | X | 36 | 4'-1" | X | | APPROACH SLAB - TRANS. - TOP |

◐ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.

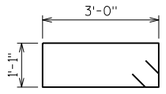
◪ MEASURED NORMAL TO ABUTMENT

(T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.

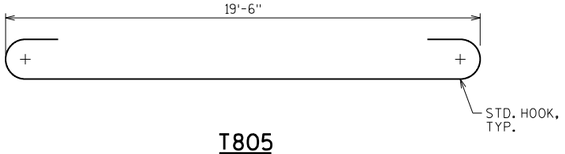
(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.



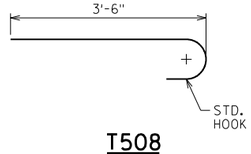

T501




T502




T805




T508

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

WEST STRUCTURAL APPROACH SLAB

SHEET 11

75

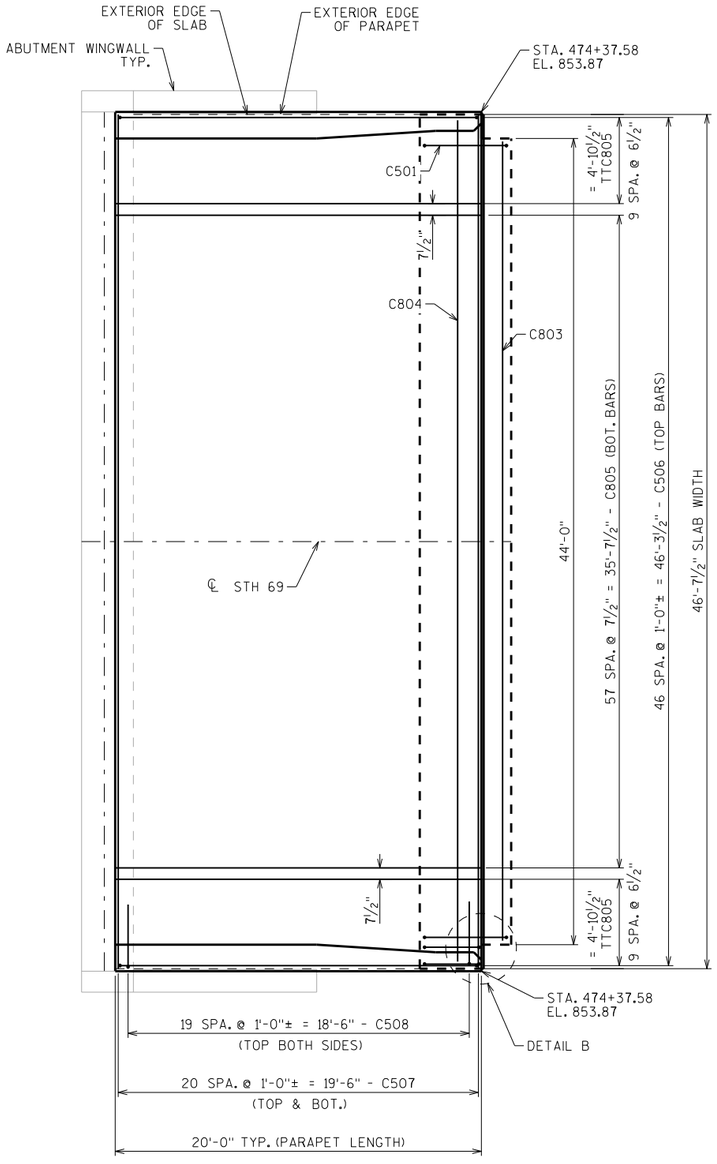
SCALE = 4.00

8

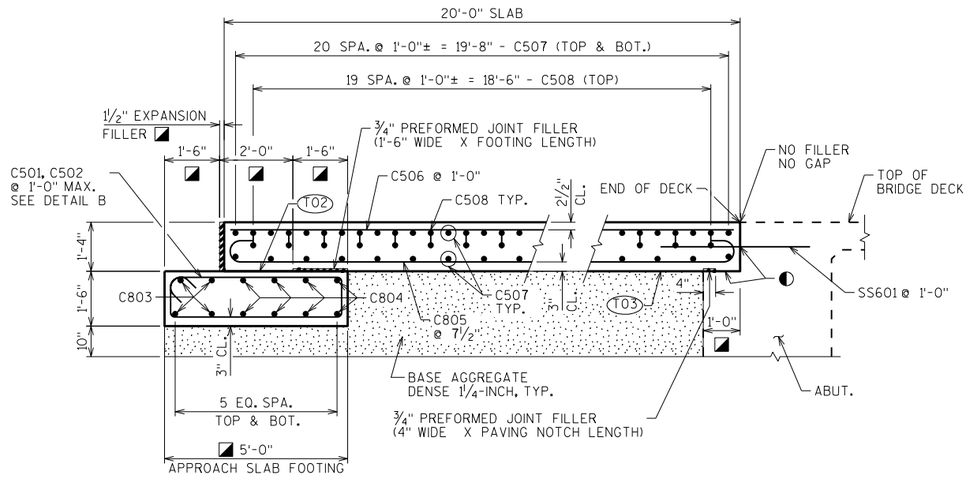
8

STATE PROJECT NUMBER

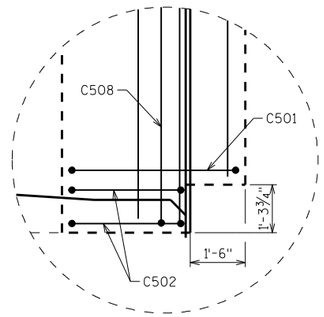
1690-00-82




APPROACH SLAB PLAN




SECTION THRU APPROACH SLAB




DETAIL B

(C805 NOT SHOWN FOR CLARITY)

## BILL OF BARS

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

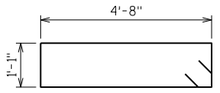
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| C501 | X | 47 | 12'-2" | X | | APPROACH SLAB FTG. - STIRRUP |
| C502 | X | 4 | 8'-10" | X | | APPROACH SLAB FTG. - STIRRUP |
| C803 | X | 4 | 43'-5" | | | APPROACH SLAB FTG. - TRANS. |
| C804 | X | 8 | 46'-3" | | | APPROACH SLAB FTG. - TRANS. |
| C805 | X | 78 | 21'-4" | X | | APPROACH SLAB - LONG. - BOT. |
| C506 | X | 47 | 19'-8" | | | APPROACH SLAB - LONG. - TOP |
| C507 | X | 38 | 46'-3" | | | APPROACH SLAB - TRANS. - TOP & BOT. |
| C508 | X | 36 | 4'-1" | X | | APPROACH SLAB - TRANS. - TOP |

◐ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.

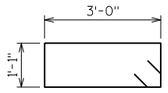
◪ MEASURED NORMAL TO ABUTMENT

(T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.

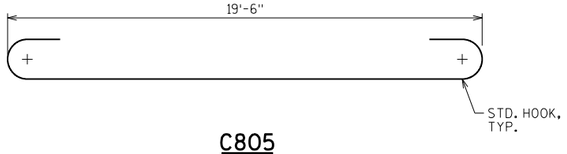
(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.



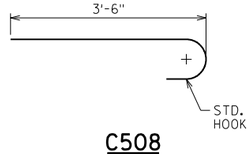

C501




C502




C805




C508

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-23-175

DRAWN BY CSP | PLANS CK'D. MWB

EAST STRUCTURAL APPROACH SLAB

SHEET 12

76

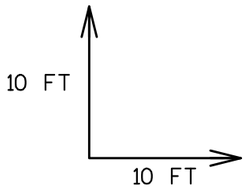
SCALE = 4.00

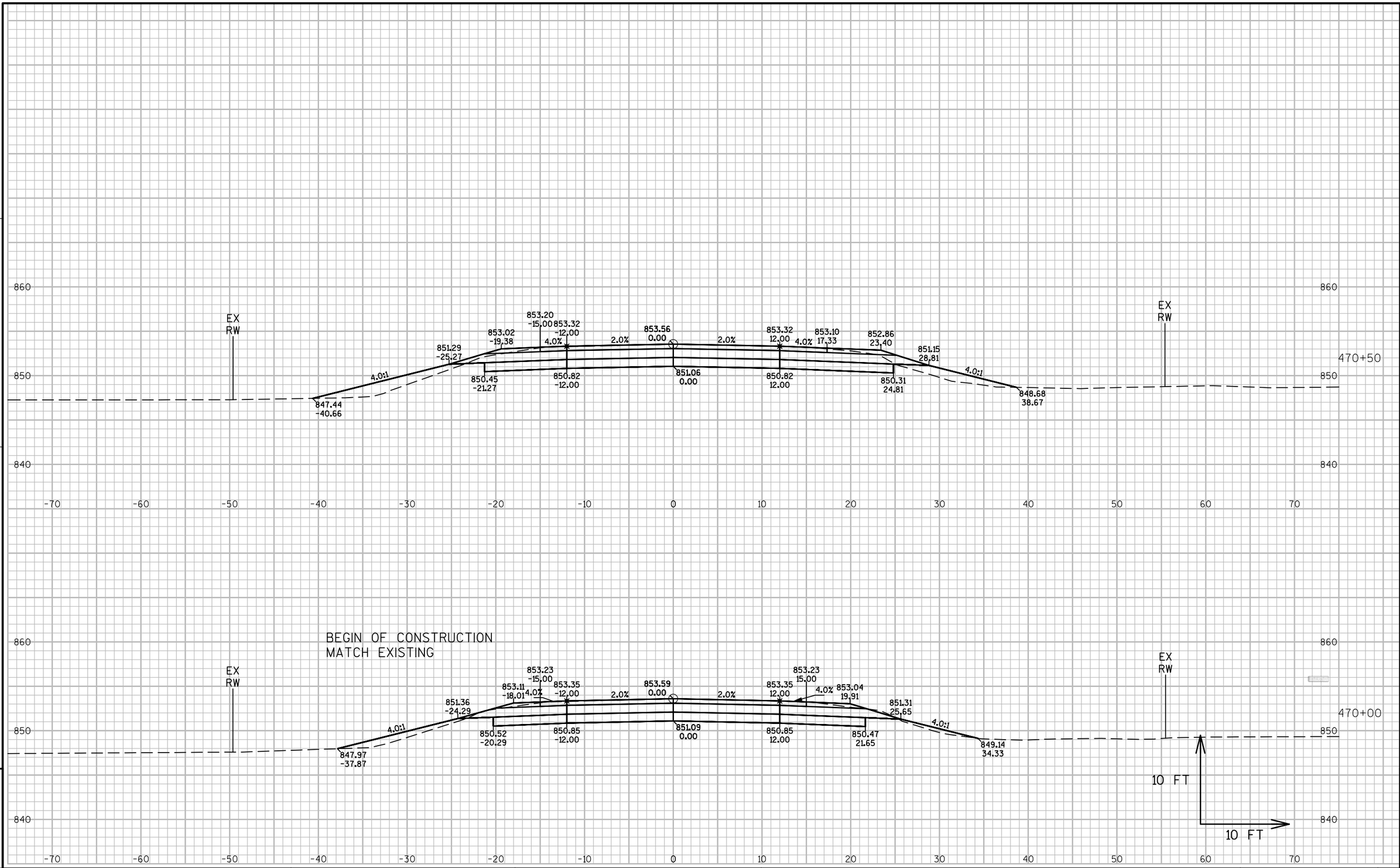
8

8

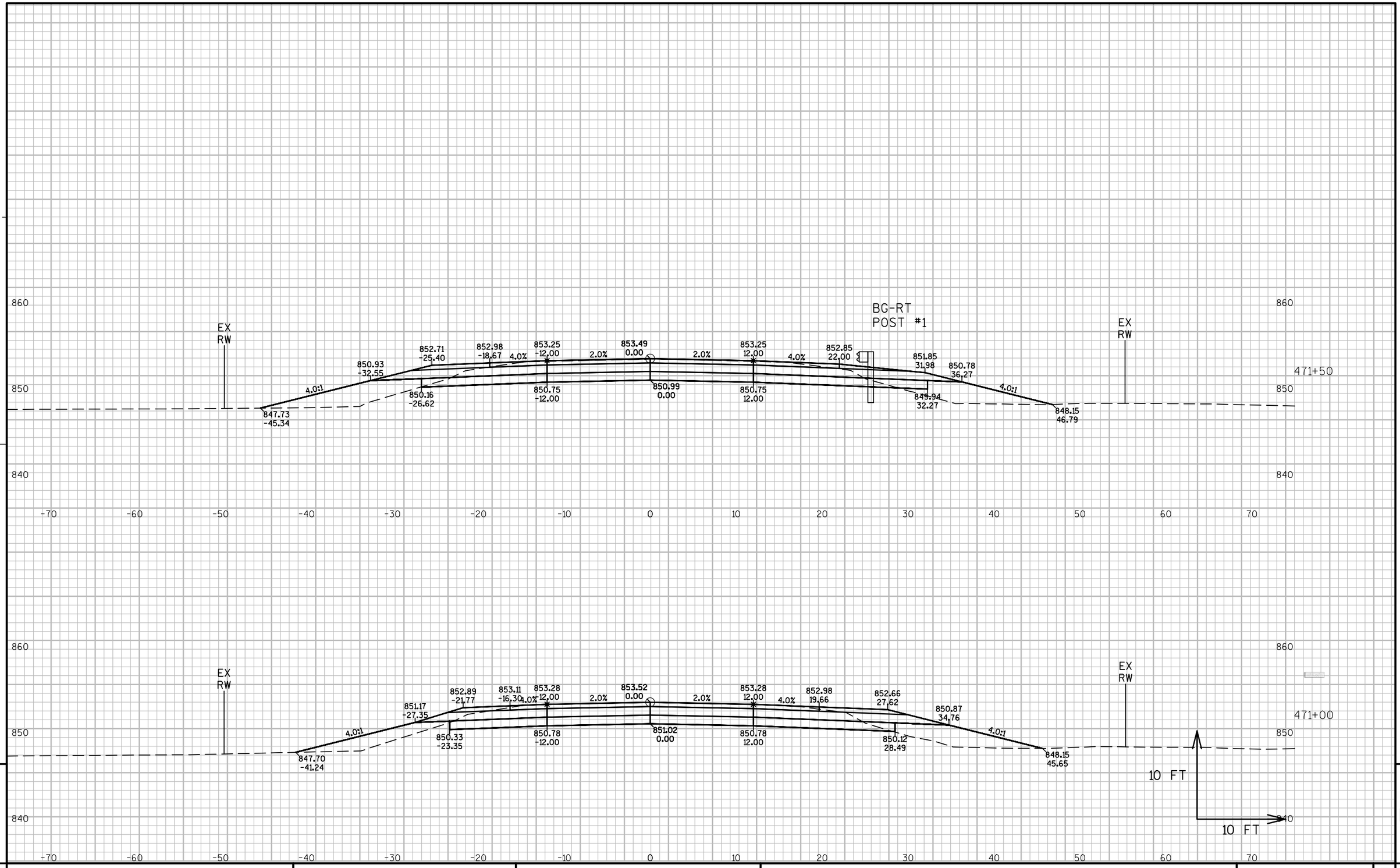
# EARTHWORK TABLE

| STATION | Real Station | Distance | AREA (SF) Cut | AREA (SF) Salvaged/Unusable Pavement Material | AREA (SF) Fill | AREA (SF) EBS | Incremental Vol (CY) (Unadjusted) Cut | Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material | Incremental Vol (CY) (Unadjusted) Fill | Incremental Vol (CY) (Unadjusted) EBS | Cumulative Vol (CY) Cut | Expanded Fill | Expanded EBS Backfill | Reduced EBS in Fill | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | 1.00 | 1.25 | 1.30 | 0.80 | |
| | | | | | | | Note 1 | Note 2 | Note 3 | | Note 1 | | Note 5 | Note 7 | Note 8 |
| 470+00 | 47000.00 | 0.00 | 104.61 | 0.00 | 10.28 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 470+50 | 47050.00 | 50.00 | 109.15 | 0.00 | 24.38 | 0.00 | 198 | 0 | 32 | 0 | 198 | 40 | 0 | 0 | 158 |
| 471+00 | 47100.00 | 50.00 | 112.11 | 0.00 | 38.56 | 0.00 | 205 | 0 | 58 | 0 | 403 | 113 | 0 | 0 | 290 |
| 471+50 | 47150.00 | 50.00 | 112.72 | 0.00 | 47.55 | 0.00 | 208 | 0 | 80 | 0 | 611 | 213 | 0 | 0 | 398 |
| 472+00 | 47200.00 | 50.00 | 116.33 | 0.00 | 37.57 | 0.00 | 212 | 0 | 79 | 0 | 823 | 311 | 0 | 0 | 512 |
| 472+50 | 47250.00 | 50.00 | 128.00 | 0.00 | 16.80 | 0.00 | 226 | 0 | 50 | 0 | 1,049 | 374 | 0 | 0 | 675 |
| 473+00 | 47300.00 | 50.00 | 123.41 | 0.00 | 12.74 | 0.00 | 233 | 0 | 27 | 0 | 1,282 | 408 | 0 | 0 | 874 |
| 473+50 | 47350.00 | 50.00 | 96.78 | 0.00 | 32.53 | 0.00 | 204 | 0 | 42 | 0 | 1,486 | 461 | 0 | 0 | 1,025 |
| 473+81 | 47381.00 | 31.00 | 60.08 | 0.00 | 25.00 | 0.00 | 127 | 0 | 26 | 0 | 1,613 | 493 | 0 | 0 | 1,120 |
| 474+18 | 47418.00 | 0.00 | 101.22 | 0.00 | 10.30 | 0.00 | 0 | 0 | 0 | 0 | 1,613 | 493 | 0 | 0 | 1,120 |
| 474+50 | 47450.00 | 32.00 | 102.33 | 0.00 | 26.92 | 0.00 | 121 | 0 | 22 | 0 | 1,734 | 521 | 0 | 0 | 1,213 |
| 475+00 | 47500.00 | 50.00 | 124.25 | 0.00 | 13.35 | 0.00 | 210 | 0 | 37 | 0 | 1,943 | 567 | 0 | 0 | 1,376 |
| 475+50 | 47550.00 | 50.00 | 135.32 | 0.00 | 36.98 | 0.00 | 240 | 0 | 47 | 0 | 2,184 | 626 | 0 | 0 | 1,558 |
| 476+00 | 47600.00 | 50.00 | 125.12 | 0.00 | 42.73 | 0.00 | 241 | 0 | 74 | 0 | 2,425 | 718 | 0 | 0 | 1,707 |
| 476+50 | 47650.00 | 50.00 | 128.68 | 0.00 | 40.11 | 0.00 | 235 | 0 | 77 | 0 | 2,660 | 814 | 0 | 0 | 1,846 |
| 477+00 | 47700.00 | 50.00 | 116.97 | 0.00 | 55.29 | 0.00 | 227 | 0 | 88 | 0 | 2,887 | 924 | 0 | 0 | 1,963 |
| 477+50 | 47750.00 | 50.00 | 115.77 | 0.00 | 54.10 | 0.00 | 215 | 0 | 101 | 0 | 3,103 | 1,051 | 0 | 0 | 2,052 |
| 478+00 | 47800.00 | 50.00 | 112.17 | 0.00 | 27.91 | 0.00 | 211 | 0 | 76 | 0 | 3,314 | 1,146 | 0 | 0 | 2,168 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | 3,314 | 0 | 917 | 0 | | | | | |
| | | | | | | | | | | | | | | | |





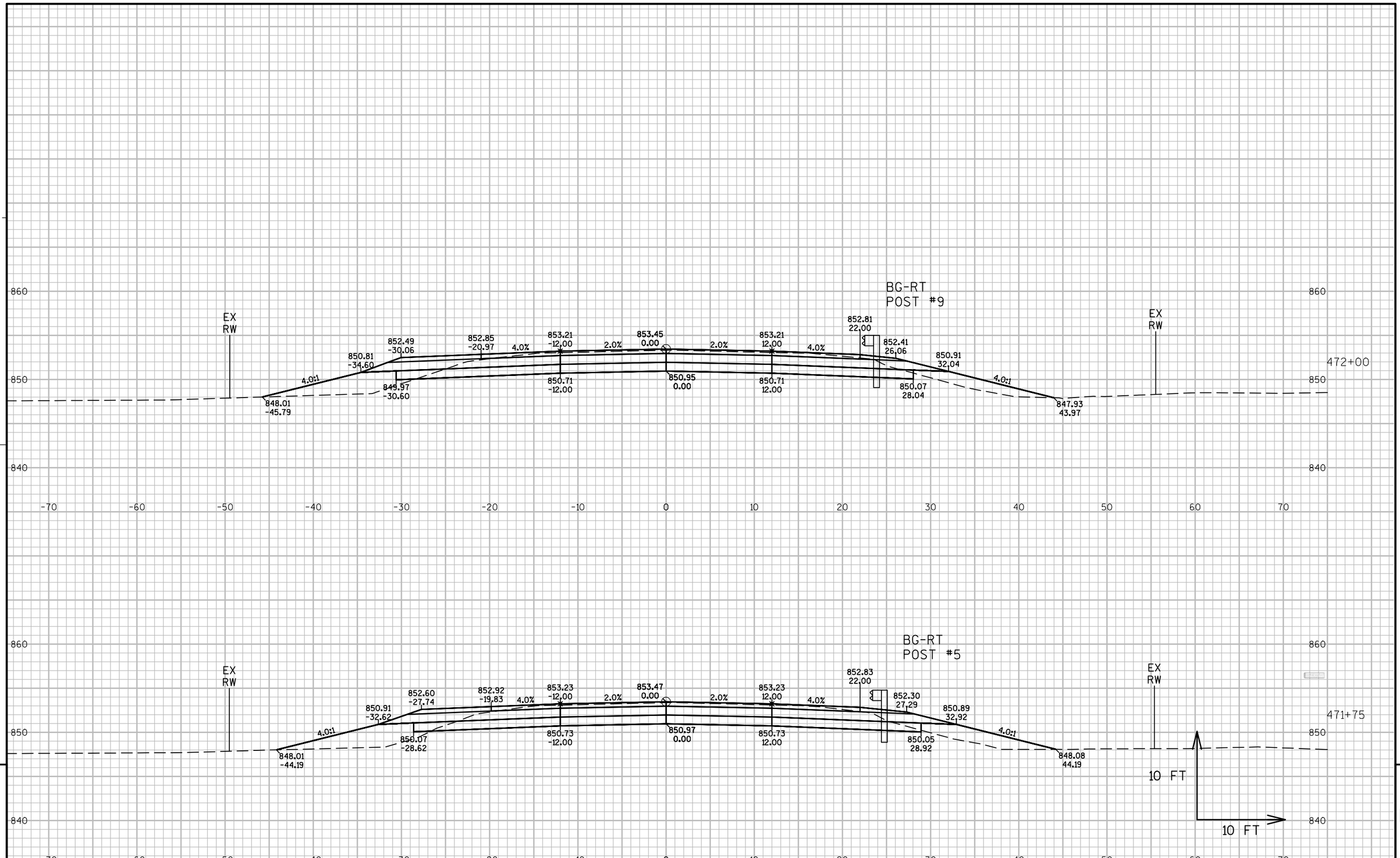

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 78 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 79 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (8)

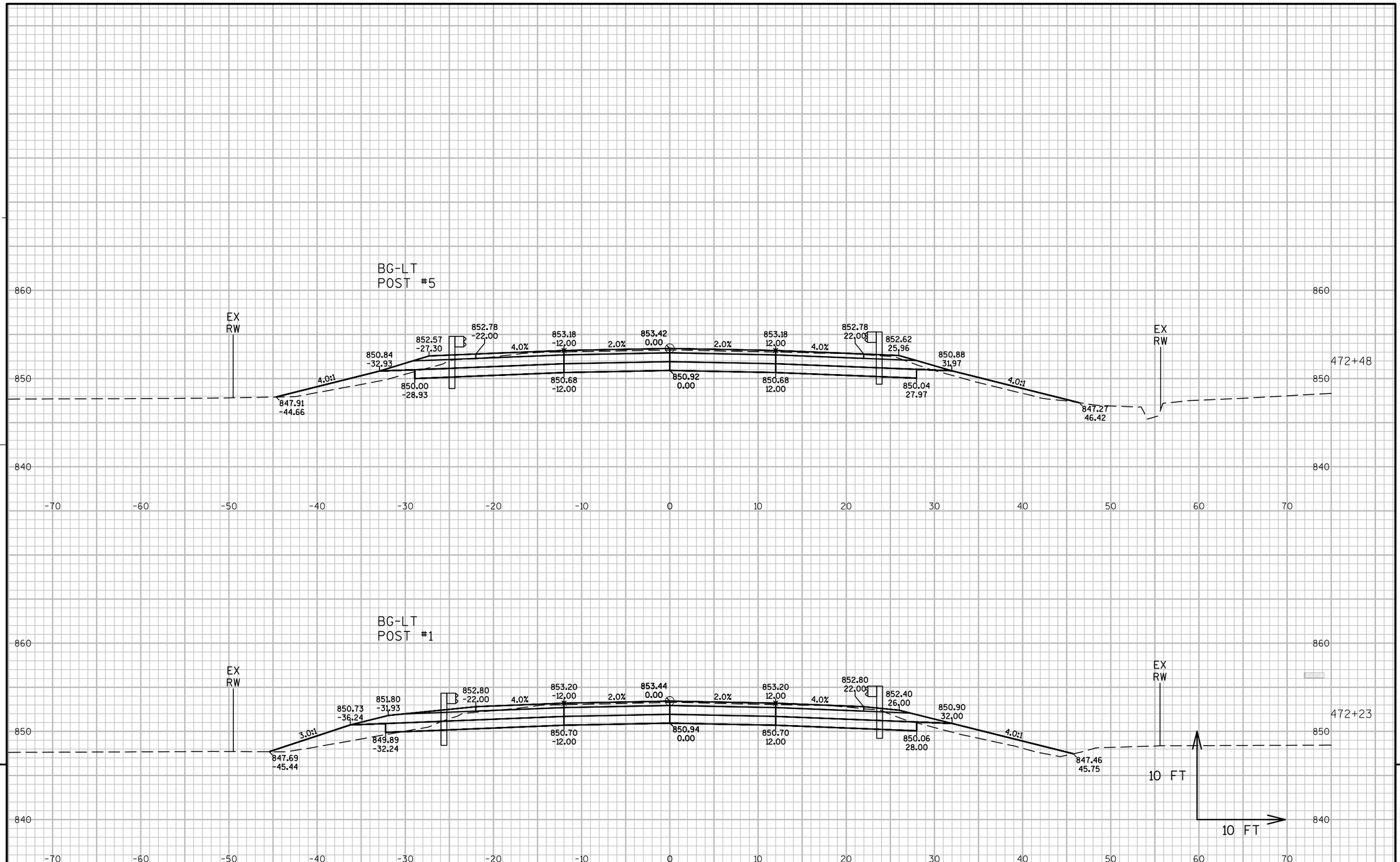
PLOT DATE : 4/6/2017 12:58 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : Custom




| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 80 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (9)

PLOT DATE : 4/6/2017 12:58 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:10 FT

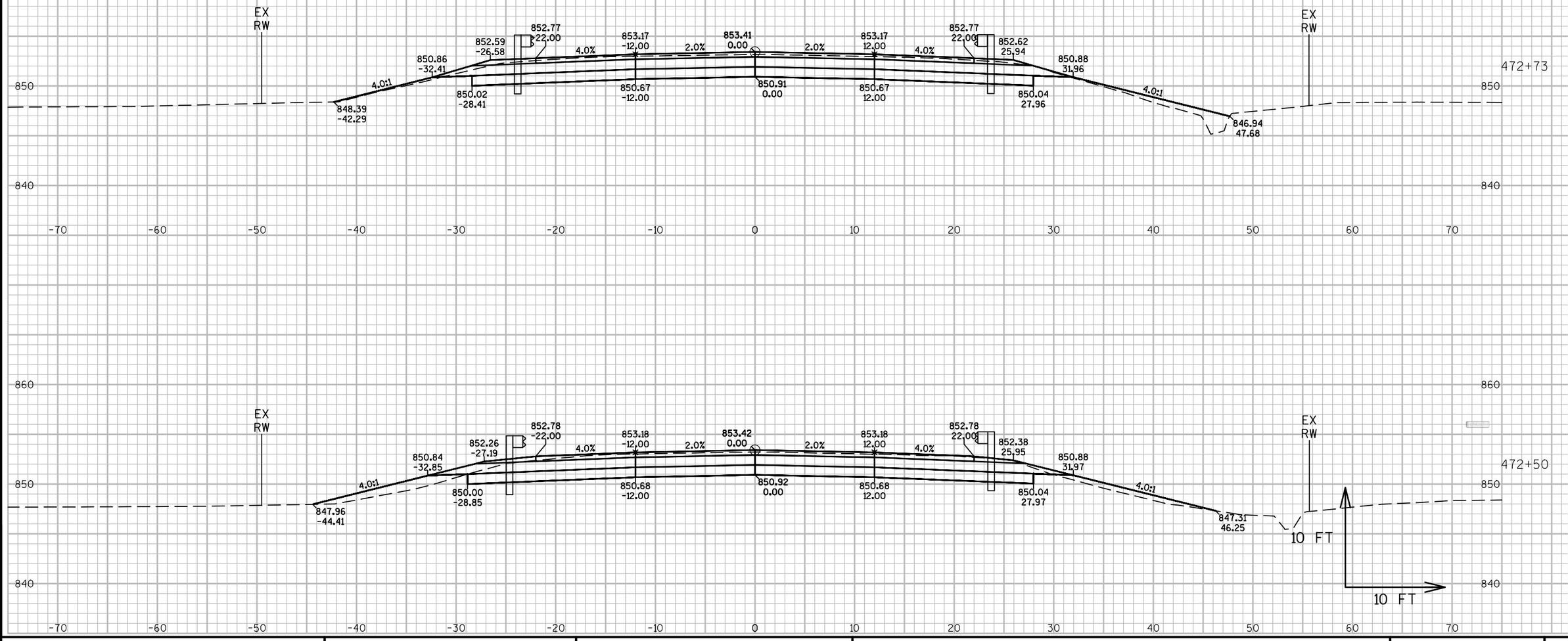



| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 81 E |
|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (10)

PLOT DATE : 4/6/2017 12:58 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:10 FT

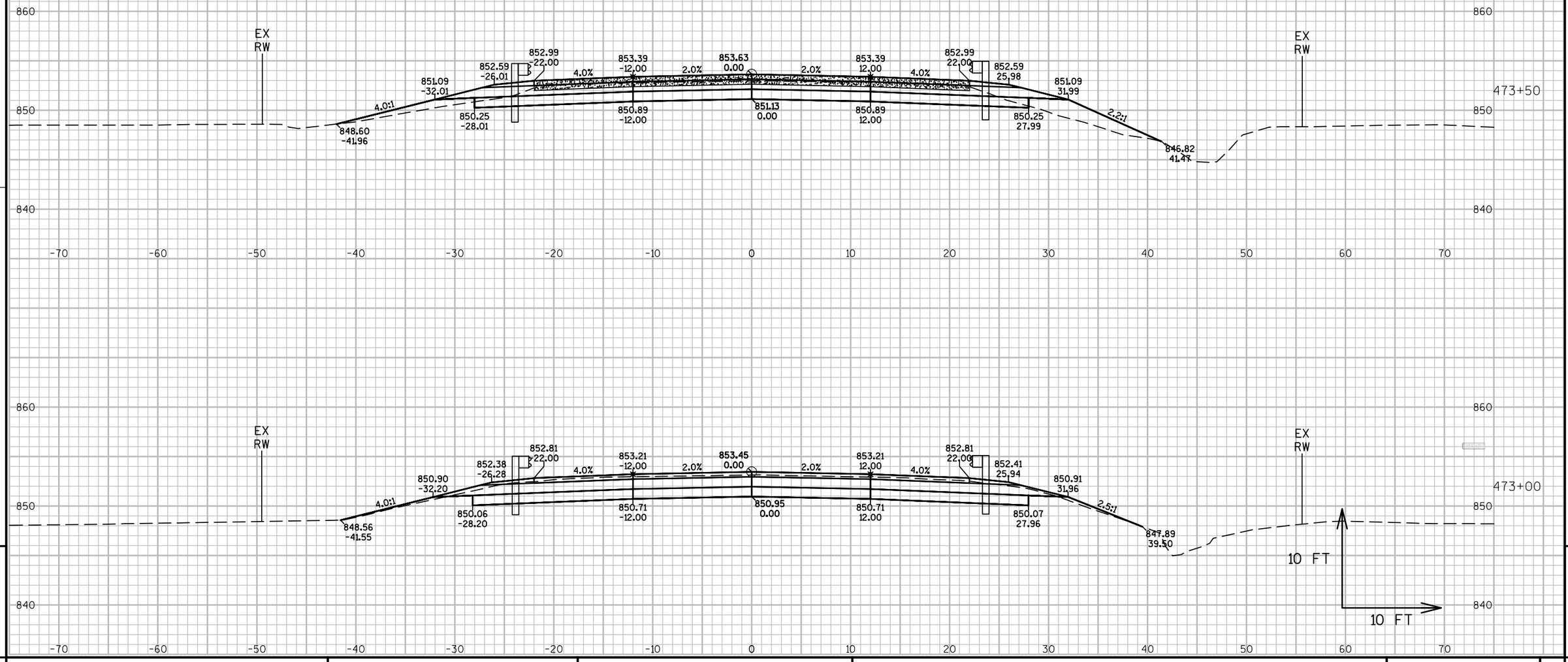
BG-LT
POST #9



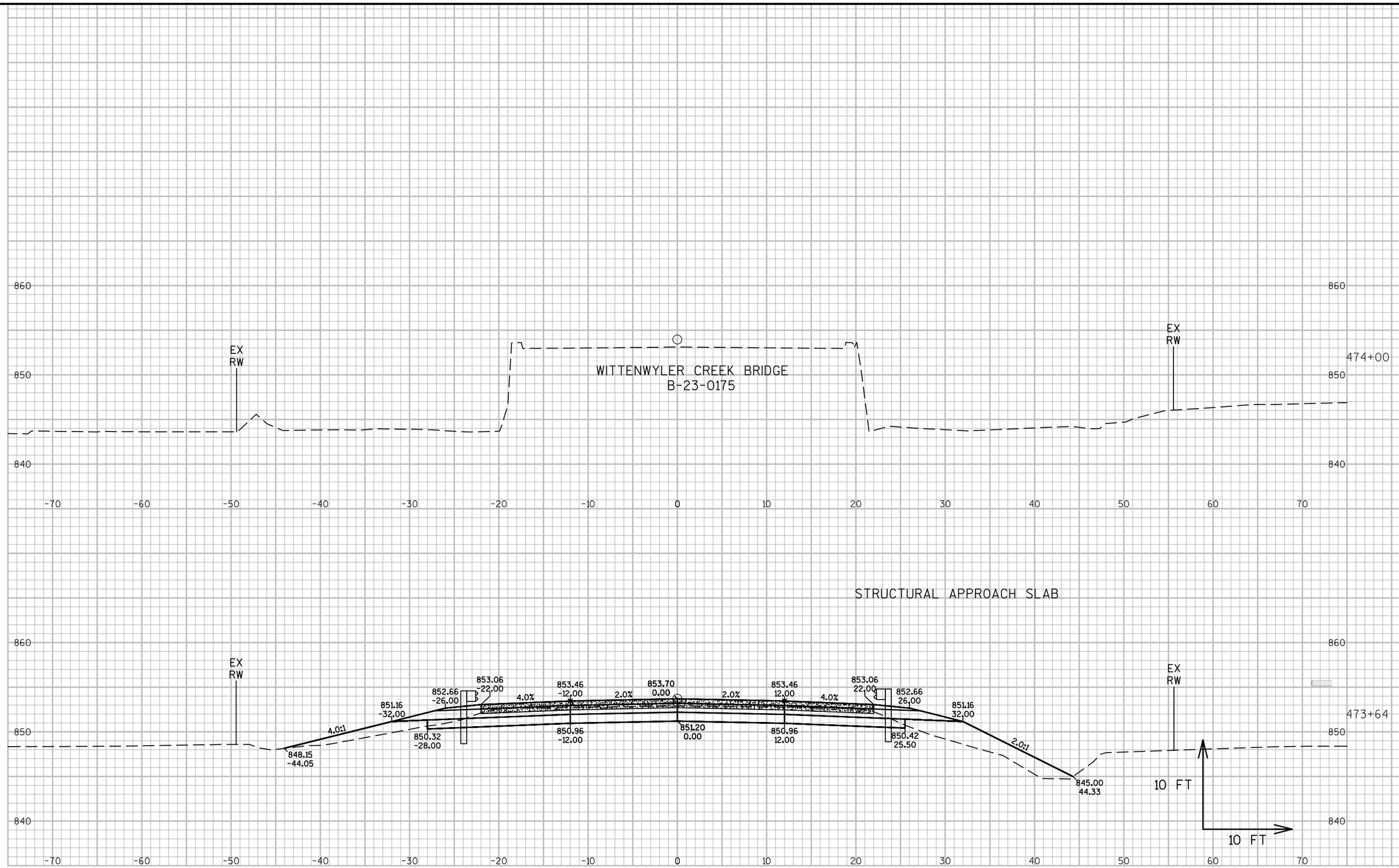

| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 82 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (11)
PLOT DATE : 4/6/2017 12:58 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

STRUCTURAL APPROACH SLAB

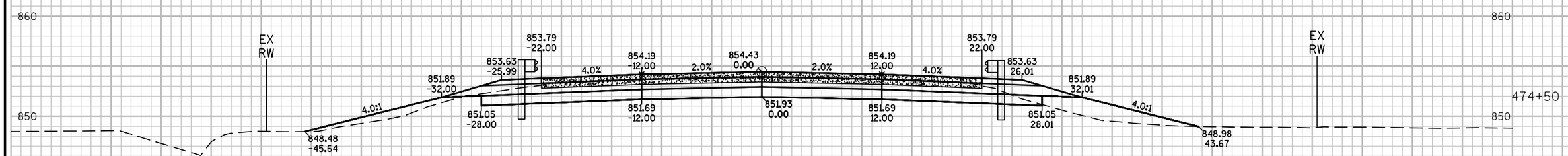



| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 83 | E |
|---|---|---|---|---|---|

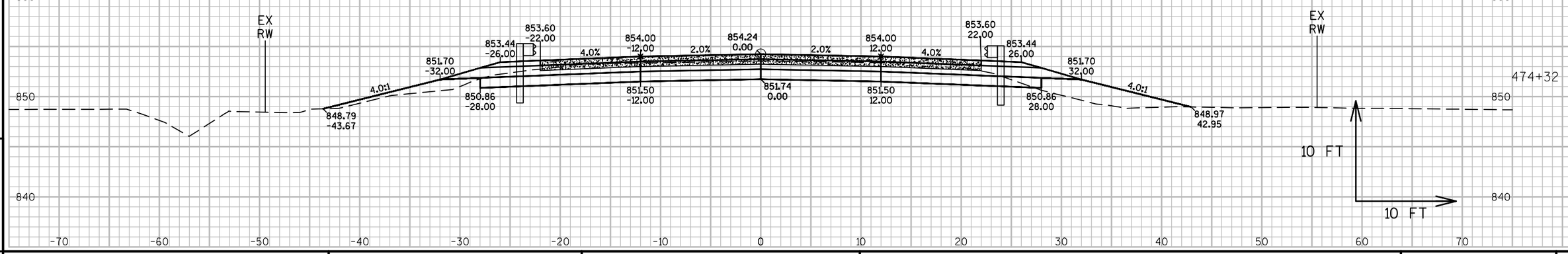



| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 84 | E |
|---|---|---|---|---|---|

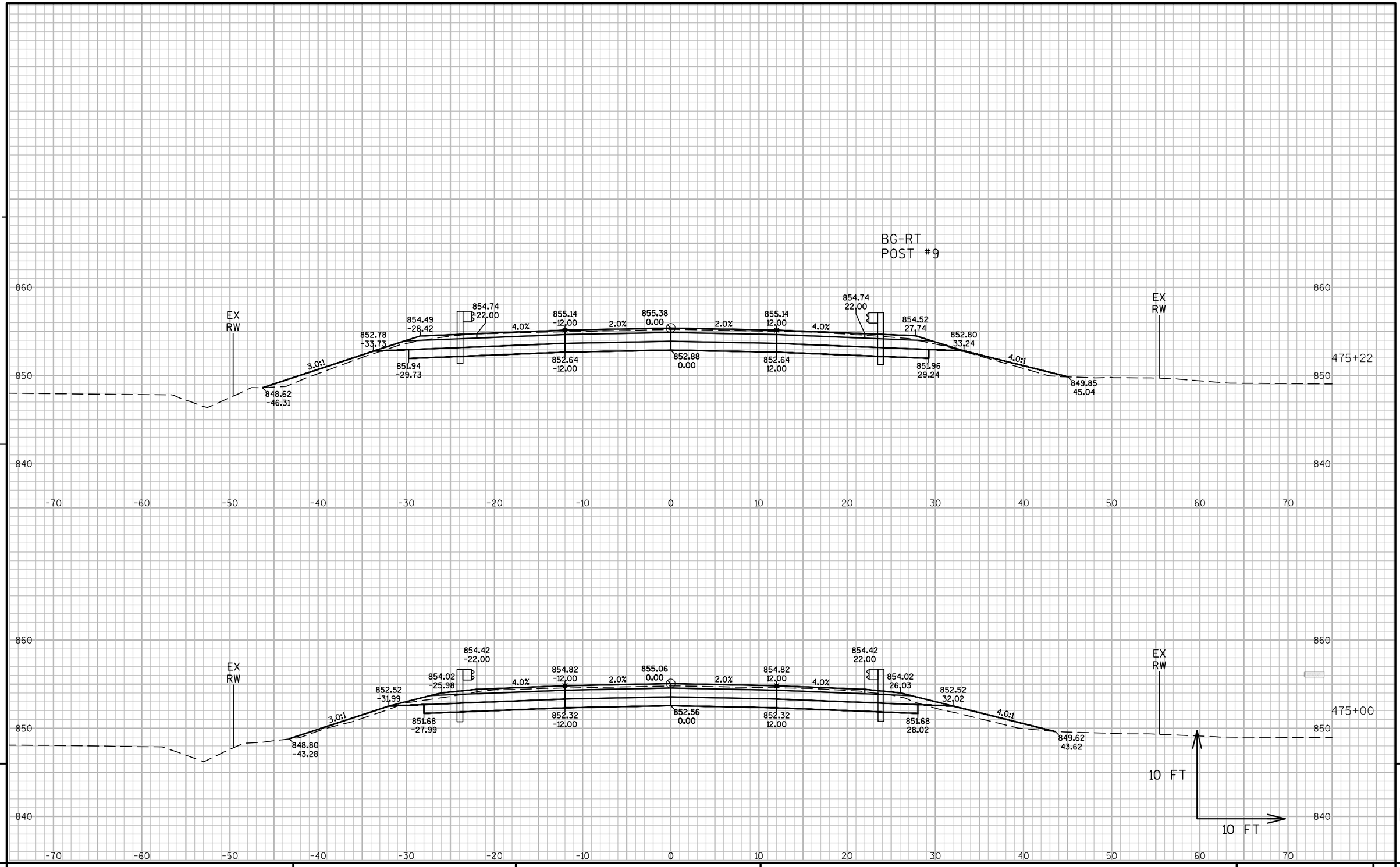
CONCRETE PAVEMENT APPROACH SLAB



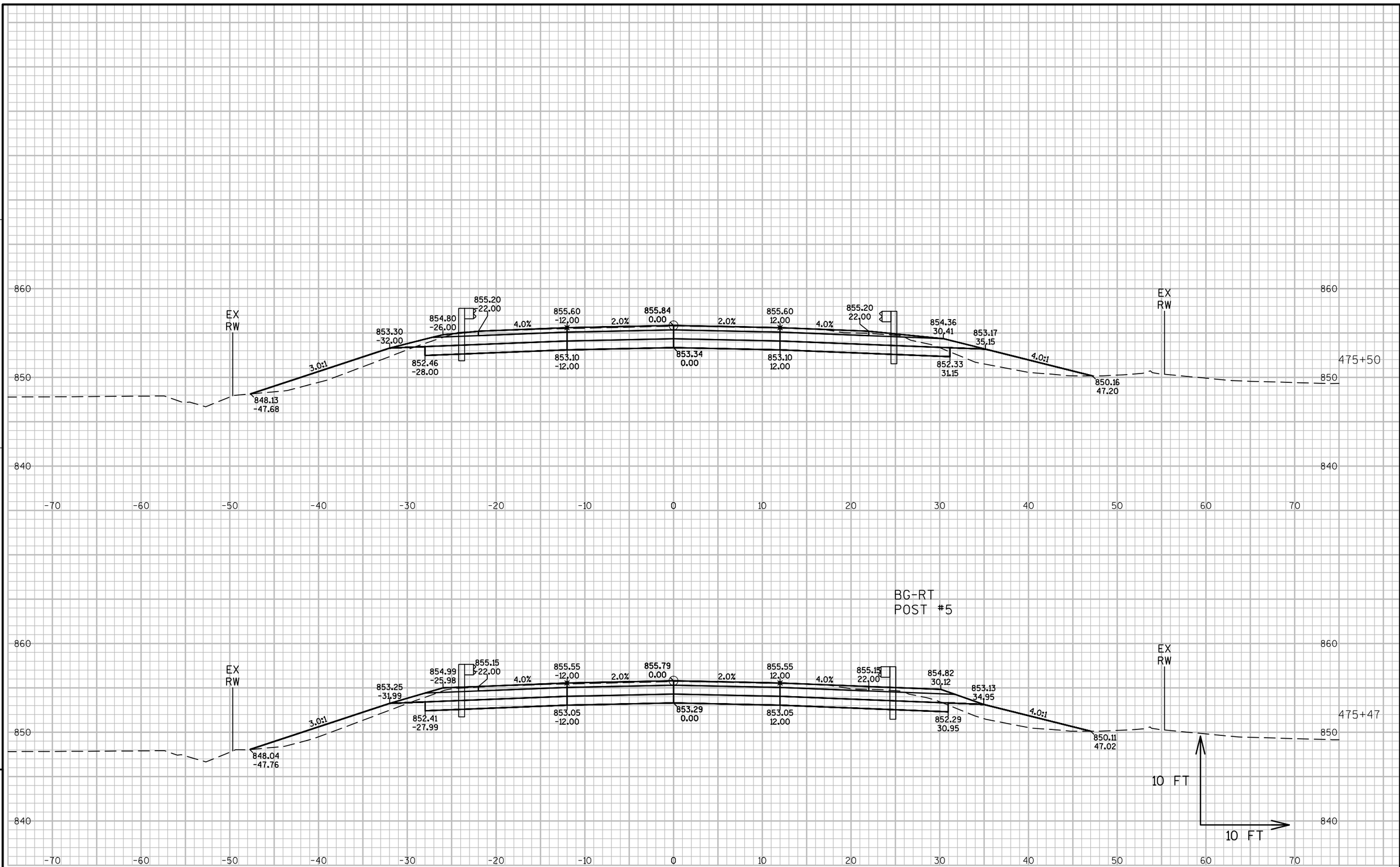

STRUCTURAL APPROACH SLAB




| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 85 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 86 | E |
|---|---|---|---|---|---|

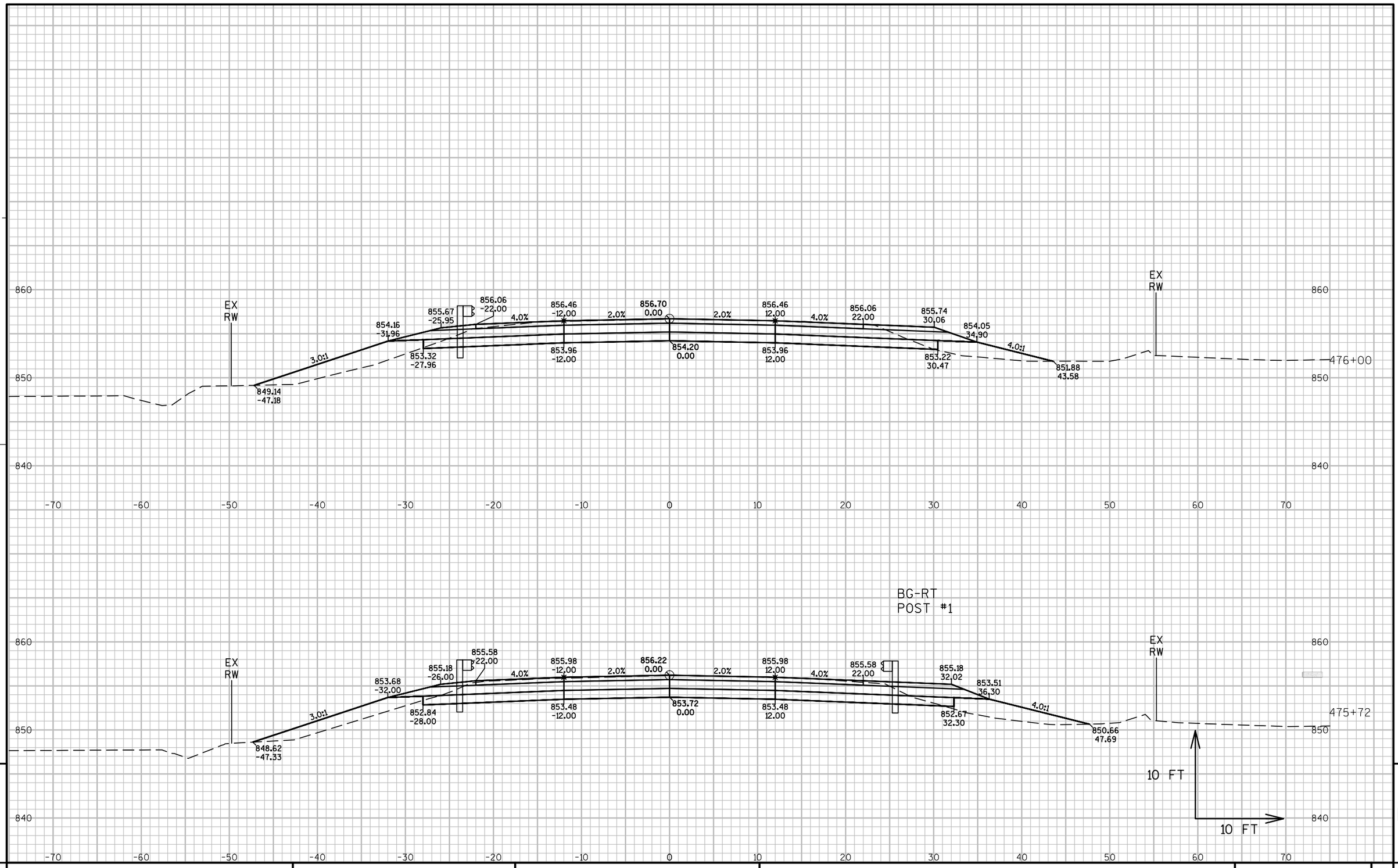



| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 87 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (16)

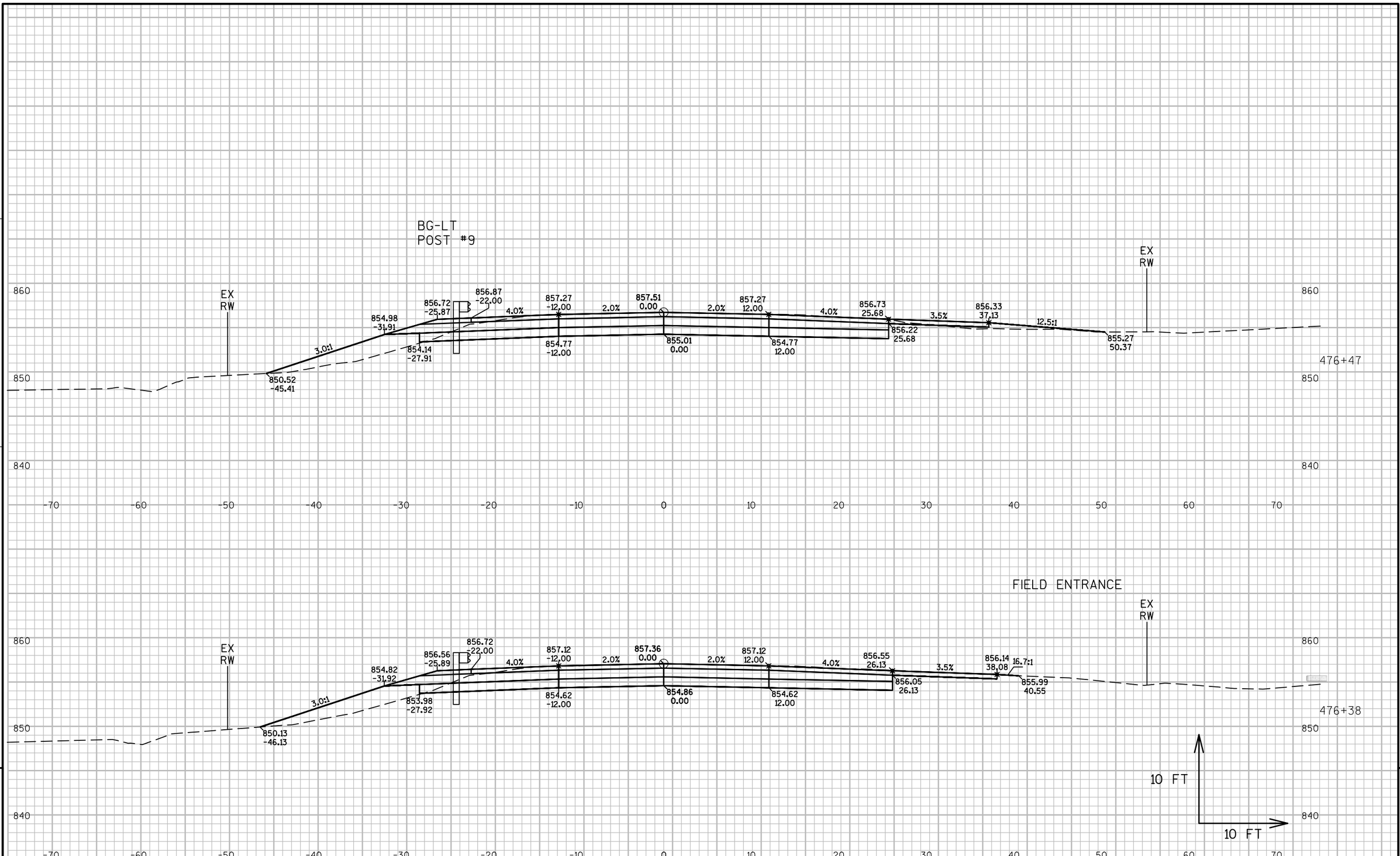
PLOT DATE : 4/6/2017 1:00 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49




| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 88 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (16)
PLOT DATE : 4/6/2017 1:00 PM
PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

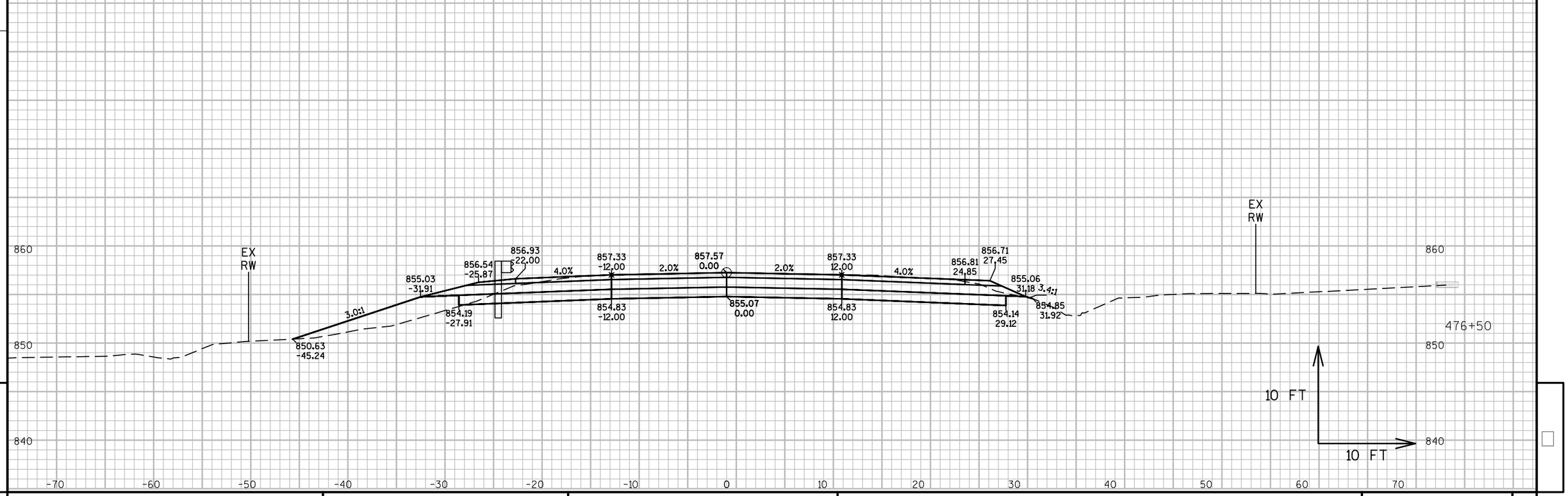



| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 89 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (18)

PLOT DATE : 4/6/2017 1:00 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : Custom

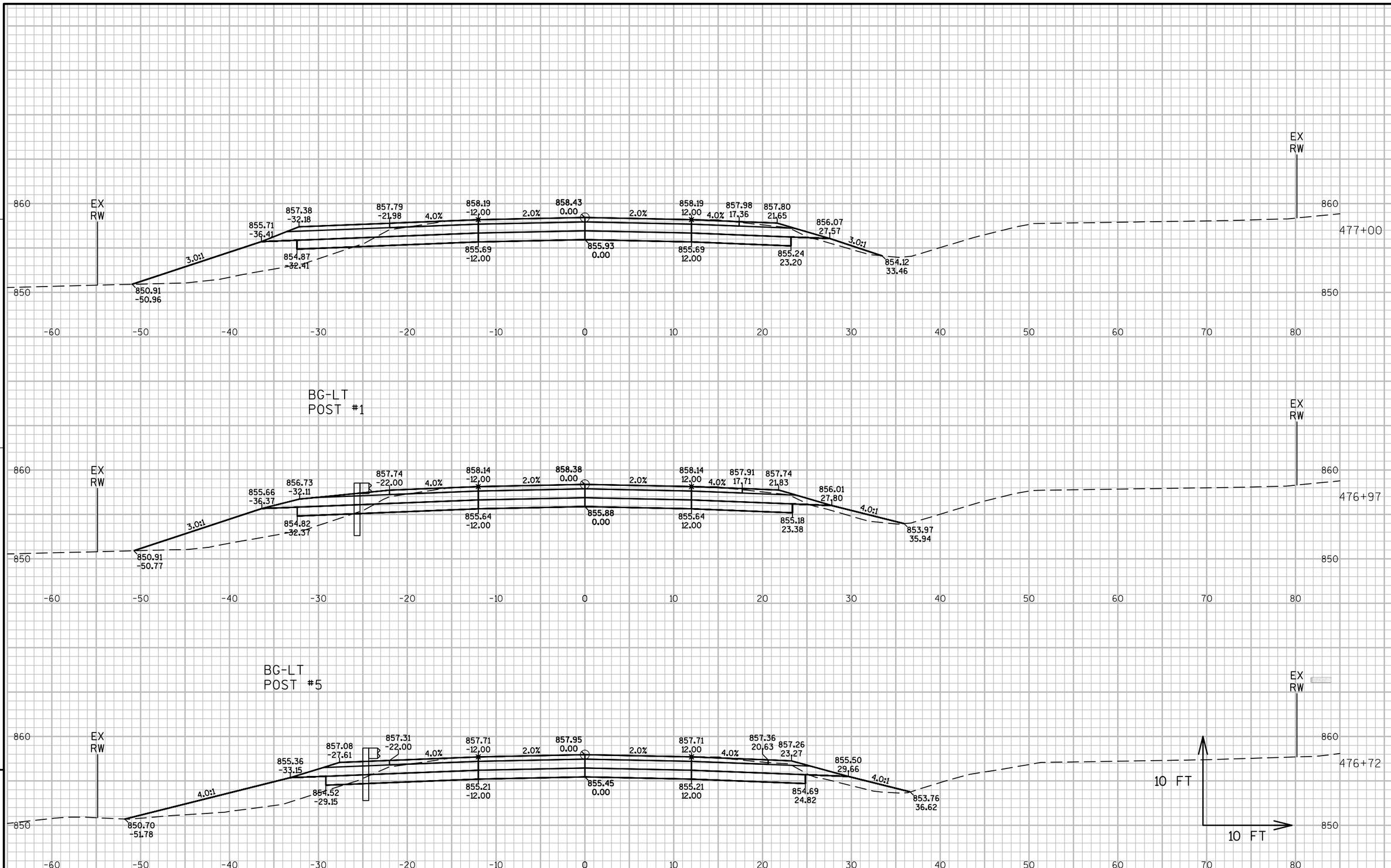
WISDOT/CADDS SHEET 49




| PROJECT NO: 1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 90 | E |
|---|---|---|---|---|---|

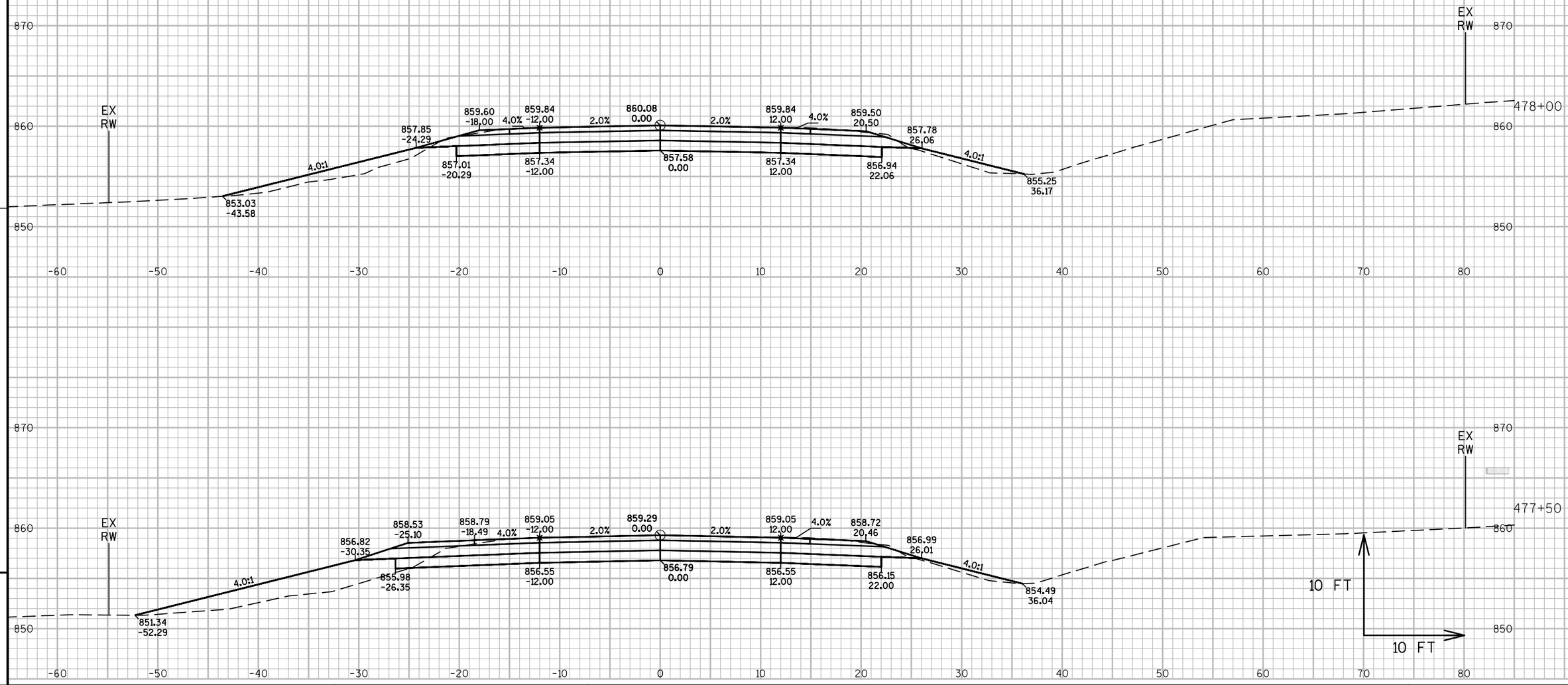
FILE NAME : N:\PDS\C3D\16900082\DESIGN\SECTIONS\STH69_XSECTIONS - 90%_FINAL.DWG
LAYOUT NAME - SECTION SHEET - (18)

PLOT DATE : 4/6/2017 1:00 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : Custom




| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 91 | E |
|---|---|---|---|---|---|

END OF CONSTRUCTION
MATCH EXISTING




| PROJECT NO:1690-00-82 | HWY: STH 69 | COUNTY: GREEN | CROSS SECTIONS: BRIDGE APPROACH B-23-175 | SHEET 92 | E |
|---|---|---|---|---|---|

Notes

**Wisconsin Department of Transportation**

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