LAX MARCH 2015

PROJECT ID: 5730-01-61

WITH:

COUNTY: VERNON

ORDER OF SHEETS



TOTAL SHEETS = 82

08

N

DESIGN DESIGNATION

| | | |
|---|---|---|
| A.A.D.T. | (2015) | = 900 |
| A.A.D.T. | (2035) | = 1100 |
| D.H.V. | | = 62 |
| D.D. | | = 60/40 |
| T. | | = 6.6% |
| DESIGN SPEED | | = 60 MPH |
| ESALS | | = 150,000 |

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

PLAN OF PROPOSED IMPROVEMENT

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 5730-01-61 | WISC 2015118 | 1 |

# GENOA - VIROQUA

**GENOA TO ROMANCE VARIOUS LOCATIONS**

## STH 56
## VERNON COUNTY

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

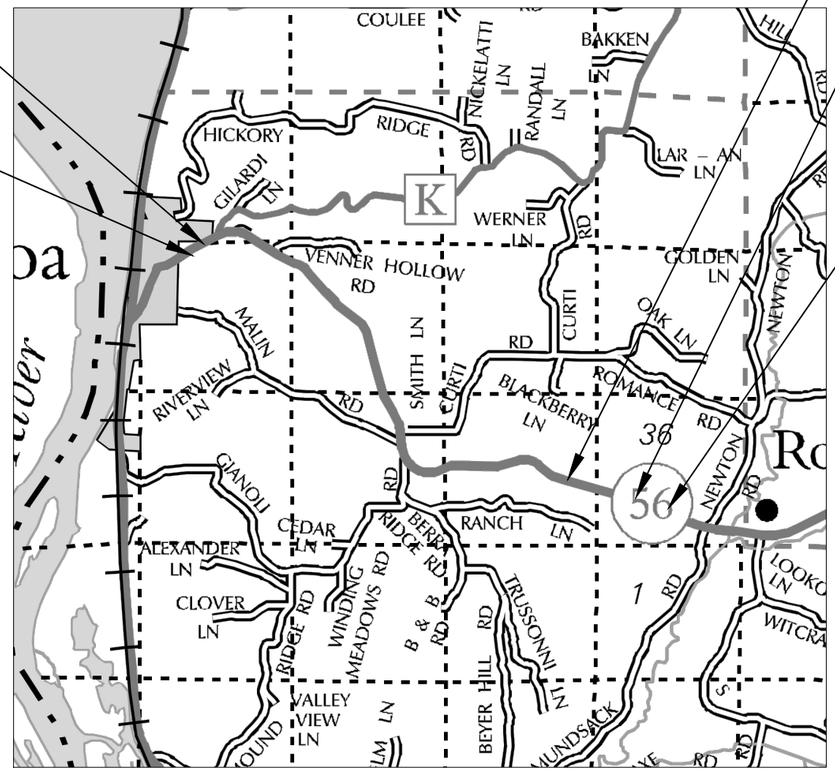
C-62-1509
BEGIN WORK STA: 29+75
END WORK STA: 31+25
X: 614871
Y: 157924

BEGIN PROJECT
C-62-1514
BEGIN PROJECT STA: 14+96
END WORK STA: 16+44
X: 613622
Y: 157186

C-62-1827
BEGIN WORK STA: 208+90
END WORK STA: 211+10
X: 627739
Y: 149566

C-62-1822
BEGIN WORK STA: 227+00
END WORK STA: 232+88
X: 629676
Y: 149065

END PROJECT
C-62-1824
BEGIN WORK STA: 237+40
END PROJECT STA: 238+90
X: 630492
Y: 148807




LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.00 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VERNON 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.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | WISDOT |
| Designer | LEE BALSIGER |
| Project Manager | TODD WALDO |
| Regional Examiner | MIKE RUD |
| Regional Supervisor | REINY YAHNKE |

APPROVED FOR THE DEPARTMENT
DATE: 10/14/2014 Todd Waldo (Signature)

E

## UTILITY COMPANIES & PERSONNEL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## DESIGN CONTACTS


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## DNR LIASON


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Wisconsin Dept. of Natural Resources
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Karen.Kalvelage@wi.gov

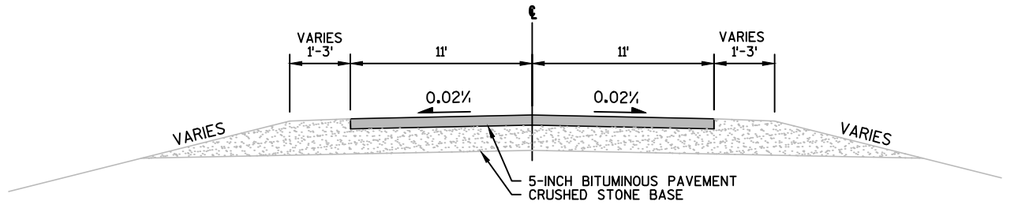

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

## STANDARD ABBREVIATIONS

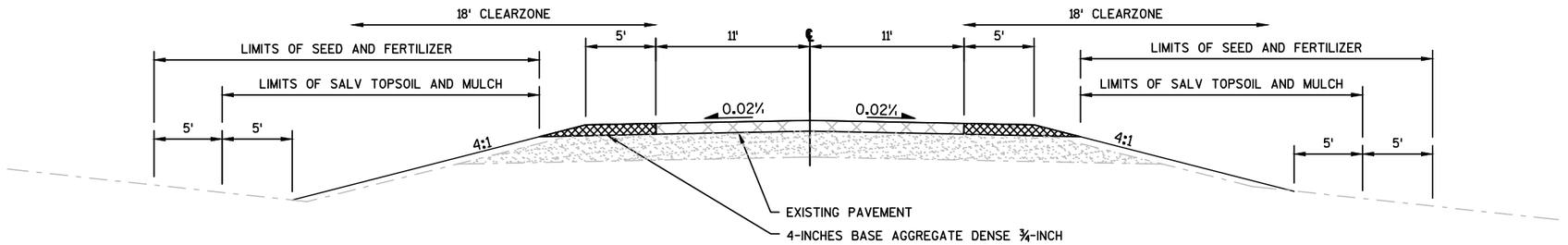
| | | | |
|---|---|---|---|
| AC. | ACRE | MAX. | MAXIMUM |
| AGG. | AGGREGATE | MGAL | 1000 GALLONS |
| AH | AHEAD | MIN. | MINIMUM |
| < | ANGLE | N.C. | NORMAL CROWN OR NO CHANGE |
| AE, AEW | APRON ENDWALL | N | NORTH |
| ASPH. | ASPHALTIC | NO. | NUMBER |
| A.D.T. | AVERAGE DAILY TRAFFIC | PAV'T | PAVEMENT |
| B.F. | BACK FACE | P.L.E. | PERMANENT LIMITED EASEMENT |
| BK. | BACK | P.C. | POINT OF CURVATURE |
| BEG. | BEGIN | P.I. | POINT OF INTERSECTION |
| B.M. | BENCH MARK | P.T. | POINT OF TANGENCY |
| C/L | CENTER LINE | V.P.C. | VERTICAL POINT OF CURVATURE |
| D | CENTRAL ANGLE OR DELTA | V.P.I. | VERTICAL POINT OF INTERSECTION |
| C.M.C.P. | CORRUGATED METAL CULVERT PIPE | V.P.T. | VERTICAL POINT OF TANGENCY |
| C.M.P. | CORRUGATED METAL PIPE | PCC | PORTLAND CEMENT CONCRETE |
| CO. | COUNTY | P.E. | PRIVATE ENTRANCE |
| CTH | COUNTY TRUNK HIGHWAY | P.L. | PROPERTY LINE |
| CR. | CREEK | R | RADIUS OR RANGE |
| C.A.B.C. | CRUSHED AGGREGATE BASE COURSE | R/L | REFERENCE LINE |
| C.Y. | CUBIC YARD | R.C.C.P. | REINFORCED CONCRETE CULVERT PIPE |
| C.P. | CULVERT PIPE | RT | RIGHT |
| C. & G. | CURB AND GUTTER | REQ'D | REQUIRED |
| D | DEGREE OF CURVE | R.H.F. | RIGHT HAND FORWARD |
| D.H.V. | DESIGN HOUR VOLUME | R/W | RIGHT OF WAY |
| DIA. | DIAMETER | R. | RIVER |
| DISCH. | DISCHARGE | RD. | ROAD |
| EA | EACH | SHLD. | SHOULDER(S) |
| E | EAST | SHR. | SHRINKAGE |
| ELEC. | ELECTRIC(AL), ELEC. CABLE | S | SOUTH |
| EL., ELEV. | ELEVATION | S.F. | SQUARE FOOT (FEET) |
| EXC. | EXCAVATION | SDD | STANDARD DETAIL DRAWING(S) |
| F.F. | FACE TO FACE | STH | STATE TRUNK HIGHWAY |
| FERT. | FERTILIZER | STA. | STATION |
| F.E. | FIELD ENTRANCE | S.E. | SUPERELEVATION |
| F/L, F.L. | FLOW LINE | S/L | SURVEY LINE |
| CWT. | HUNDRED WEIGHT | T | TANGENT |
| INL | INLET | TEL. | TELEPHONE |
| INTER. | INTERSECTION | TEMP. | TEMPORARY |
| JT. | JOINT | T.L.E. | TEMPORARY LIMITED EASEMENT |
| LT | LEFT | T.O.C. | TOP OF CURB |
| L.H.F. | LEFT HAND FORWARD | T. | (TRUCKS) PERCENT OF |
| L. | LENGTH OF CURVE | TYP. | TYPICAL |
| L.F. | LINEAR FOOT(FEET) | UNCL. | UNCLASSIFIED |
| LC. | LONG CHORD | U.G. | UNDERGROUND (CABLE) |
| LS | LUMP SUM | V.C. | VERTICAL CURVE |
| M.P. | MARKER POST | W | WEST |

# GENERAL NOTES

- LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.
- DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- RIGHT OF WAY LINES SHOWN ON CROSS SECTIONS AND PLANS ARE APPROXIMATE.
- NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
- WHEN PORTIONS OF EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT JOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW JOINTS AND THE AMOUNT REMOVED AT SIDE ROADS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- EXISTING DRAINAGE DITCHES AND CULVERT PIPES WILL REMAIN FUNCTIONAL DURING EXCAVATION OPERATIONS.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND MULCHED OR SODDED AS DIRECTED BY THE ENGINEER.
- SALVAGED TOPSOIL HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 5 FT BEYOND THE TOE OF SLOPE. SEEDING AND FERTILIZER HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 10 FT.
- TOPSOIL OR SALVAGED TOPSOIL WHERE REQUIRED, IS TO BE PLACED ON ALL CUT AND FILL SLOPES (EXCEPT CHANNEL CHANGE AND MARSH DISPOSAL SLOPES) TO AN APPROXIMATE DEPTH OF 4 INCHES AT THE TIME OF PLACING.
- DIMENSIONS OF RIPRAP PLACEMENT SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- IN THE PERFORMANCE OF THE WORK UNDER THE ITEM "MULCHING", ALL AREAS SEEDED AND FERTILIZED SHALL BE MULCHED AS DIRECTED BY THE ENGINEER.
- PRIOR TO THE PLACEMENT OF MGS OR STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- PRIOR TO PLACING NEW SHOULDER MATERIAL ON EXISTING SHOULDERS, THE EXISTING SHOULDERS SHALL BE SHAPED AND COMPACTED TO PROVIDE A MINIMUM DEPTH OF 4 INCHES OF NEW SHOULDER MATERIAL ADJACENT TO THE SURFACE OF THE NEW PAVEMENT. MATERIAL EXCAVATED FOR THIS PURPOSE SHALL BE DEPOSITED ON THE OUTER PORTION OF THE EXISTING SHOULDER OR AS DIRECTED BY THE ENGINEER.
- SHAPING AND COMPACTING EXISTING SHOULDER MATERIAL PRIOR TO ADDING NEW SHOULDER MATERIAL, SHAPING AND COMPACTING GRAVEL SIDE ROADS, EXCAVATION, SHAPING AND DISPOSAL OF EXCESS MATERIAL AND REMOVAL OF EXISTING ASPHALTIC SURFACE TO THE NECESSARY LENGTHS AND DEPTHS AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN THE BID ITEM OF PREPARATION OF FOUNDATION FOR ASPHALTIC PAVEMENT.
- SHAPING, TRIMMING AND DISPOSAL OF EXISTING SHOULDERS WILL BE INCIDENTAL TO THE BID ITEM OF BASE AGGREGATE DENSE.
- PLAN ELEVATIONS = NAVD 88 (2012) GEOID 12A-WI
- PLAN COORDINATES = WCCS VERNON COUNTY NAD 83 (2011)
- WHEN THE QUANTITIES OF ASPHALTIC CONCRETE PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE MATERIAL THAT IS SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

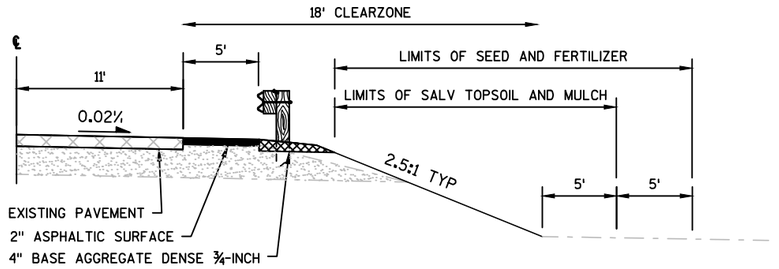



## TYPICAL EXISTING SECTION - STH 56




## TYPICAL FINISHED SECTION - STH 56

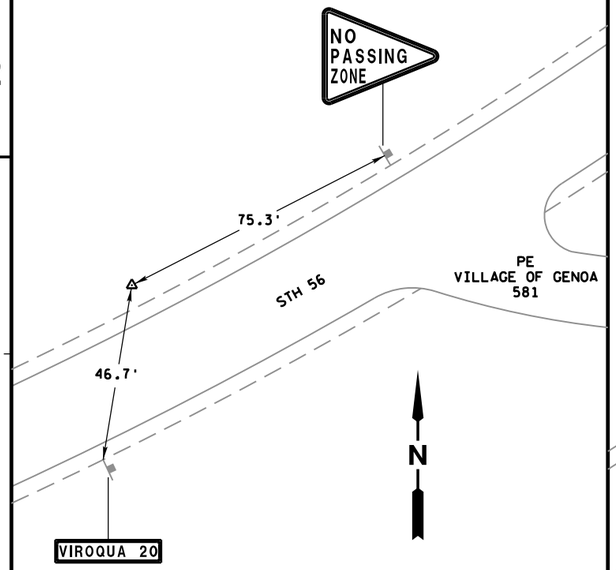
STA: 14+96 - 16+44
STA: 29+75 - 31+25
STA: 208+90 - 211+10
STA: 227+00 - 232+88
STA: 237+40 - 238+90



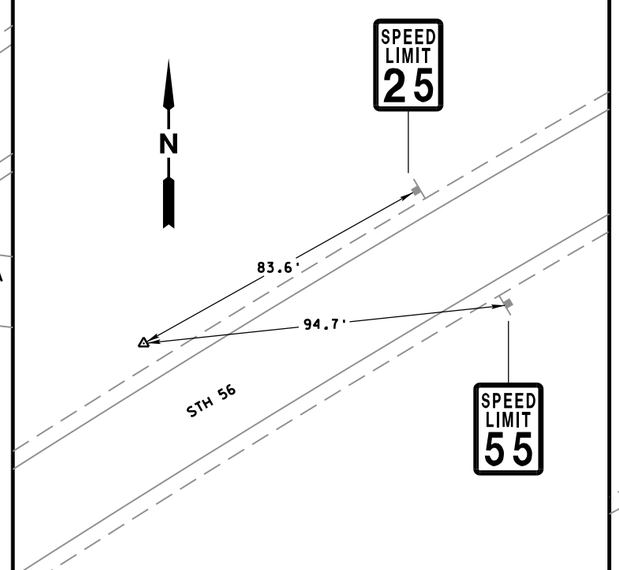

## TYPICAL FINISHED HALF SECTION WITH GUARDRAIL - STH 56

STA: 209+23 - 211+00
STA: 227+93 - 232+00

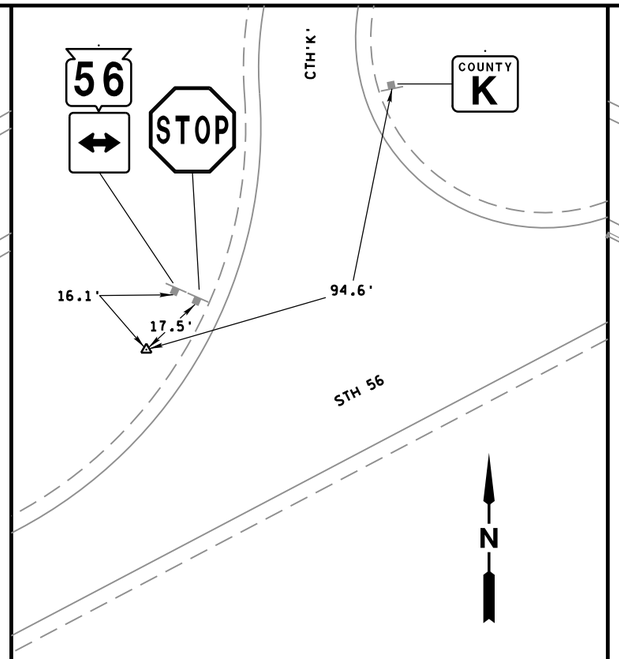
| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | PLAN: TYPICAL SECTIONS | SHEET 4 | E |
|---|---|---|---|---|---|



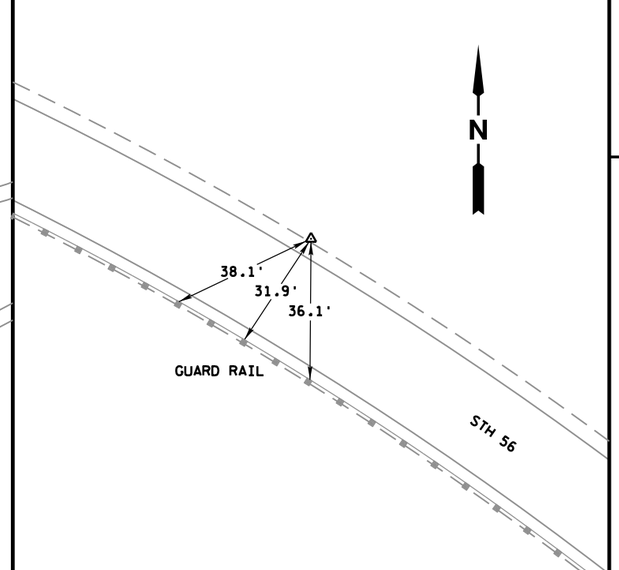

CP 9900
REBAR WITH CAP
X=613427.71, Y=157091.57
± 0.3 MILES WEST OF STH 56 & CTH'K' INTERSECTION




CP 9901
REBAR WITH CAP
X=614057.85, Y=157506.29
± 0.2 MILES WEST OF STH 56 & CTH'K' INTERSECTION

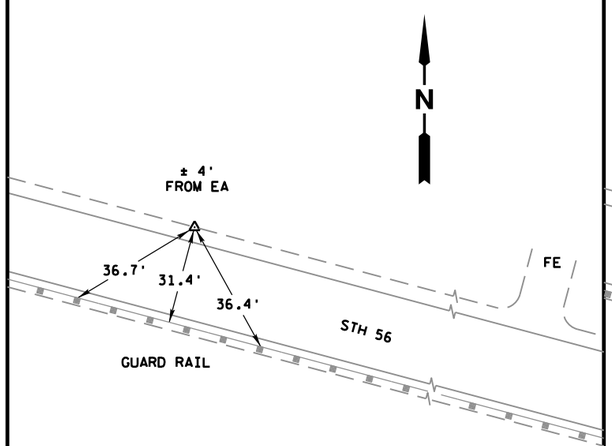



CP 9902
REBAR WITH CAP
X=615123.30, Y=158097.67
NORTHWEST QUADRANT OF STH 56 & CTH'K' INTERSECTION

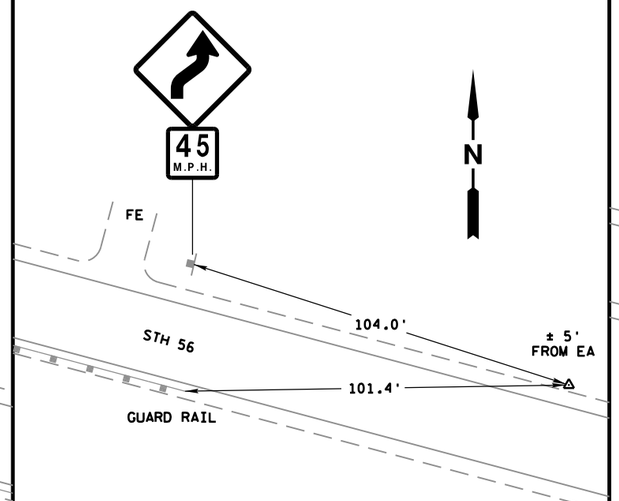



CP 9909
REBAR WITH CAP
X=626300.52, Y=150296.02
± 1.2 MILES WEST OF STH 56 & NEWTON ROAD INTERSECTION

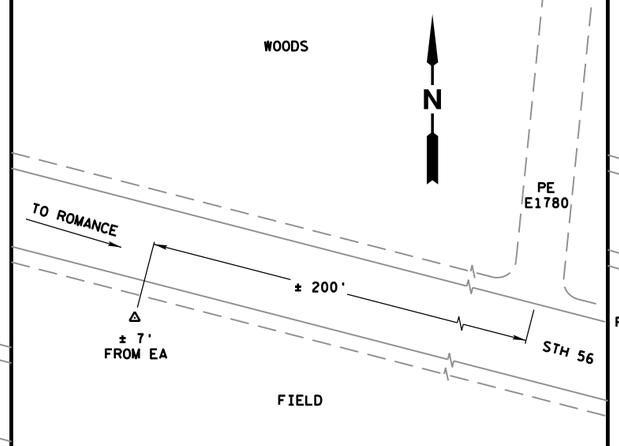
2



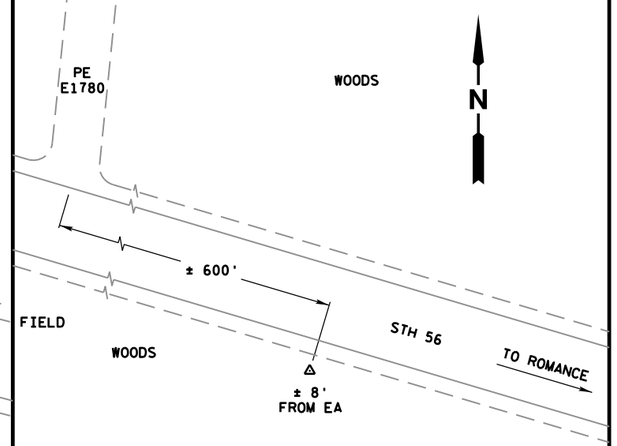

CP 9910
REBAR WITH CAP
X=627626.83, Y=149612.32
± 0.9 MILES WEST OF STH 56 & NEWTON ROAD INTERSECTION




CP 9911
REBAR WITH CAP
X=627870.76, Y=149549.05
± 0.8 MILES WEST OF STH 56 & NEWTON ROAD INTERSECTION

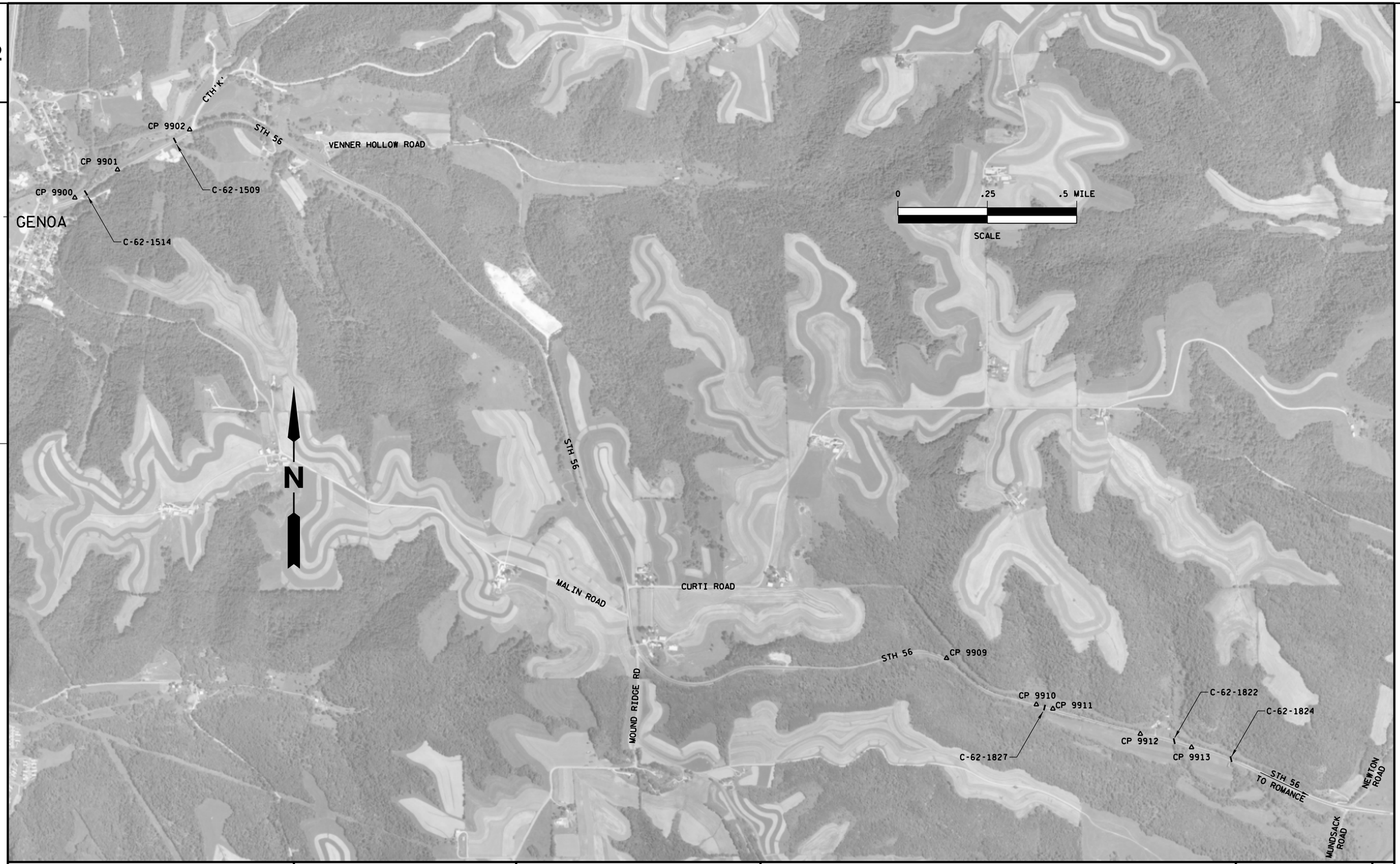



CP 9912
REBAR WITH CAP
X=629162.41, Y=149177.82
± 0.6 MILES WEST OF STH 56 & NEWTON ROAD INTERSECTION




CP 9913
REBAR WITH CAP
X=629918.64, Y=148979.55
± 0.4 MILES WEST OF STH 56 & NEWTON ROAD INTERSECTION

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | ALIGNMENT TIES | SHEET 5 | E |
|---|---|---|---|---|---|




| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CONTROL POINT LOCATION MAP | SHEET 6 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\c3d\57300131\SheetsPlan\027203_ad.dgn PLOT DATE : 09-SEP-2014 14:53 PLOT BY : dotwow PLOT NAME : PLOT SCALE : 1300.000000:1.000000

WISDOT/CADDS SHEET 42

DATE 09DEC14 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 5730-01-61 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 203.0200 | REMOVING OLD STRUCTURE (STATION) 01. 30+50.58 | LS | 1.000 | 1.000 |
| 0020 | 203.0200 | REMOVING OLD STRUCTURE (STATION) 02. 16+00 | LS | 1.000 | 1.000 |
| 0030 | 203.0200 | REMOVING OLD STRUCTURE (STATION) 03. 229+62 | LS | 1.000 | 1.000 |
| 0040 | 203.0200 | REMOVING OLD STRUCTURE (STATION) 04. 238+18 | LS | 1.000 | 1.000 |
| 0050 | 203.0200 | REMOVING OLD STRUCTURE (STATION) 05. 209+61 | LS | 1.000 | 1.000 |
| 0060 | 204.0165 | REMOVING GUARDRAIL | LF | 78.000 | 78.000 |
| 0070 | 205.0100 | EXCAVATION COMMON | CY | 285.000 | 285.000 |
| 0080 | 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-62-1509 | LS | 1.000 | 1.000 |
| 0090 | 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 02. C-62-1514 | LS | 1.000 | 1.000 |
| 0100 | 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 03. C-62-1822 | LS | 1.000 | 1.000 |
| 0110 | 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 04. C-62-1824 | LS | 1.000 | 1.000 |
| 0120 | 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 05. C-62-1827 | LS | 1.000 | 1.000 |
| 0130 | 208.0100 | BORROW | CY | 1,198.000 | 1,198.000 |
| 0140 | 210.0100 | BACKFILL STRUCTURE | CY | 915.000 | 915.000 |
| 0150 | 211.0100 | PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 5730-01-61 | LS | 1.000 | 1.000 |
| 0160 | 213.0100 | FINISHING ROADWAY (PROJECT) 01. 5730-01-61 | EACH | 1.000 | 1.000 |
| 0170 | 305.0110 | BASE AGGREGATE DENSE 3/4-INCH | TON | 170.000 | 170.000 |
| 0180 | 311.0115 | BREAKER RUN | CY | 137.000 | 137.000 |
| 0190 | 465.0105 | ASPHALTIC SURFACE | TON | 70.000 | 70.000 |
| 0200 | 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | EACH | 238.000 | 238.000 |
| 0210 | 504.0100 | CONCRETE MASONRY CULVERTS | CY | 188.000 | 188.000 |
| 0220 | 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | LB | 17,745.000 | 17,745.000 |
| 0230 | 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | LB | 2,975.000 | 2,975.000 |
| 0240 | 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 85.000 | 85.000 |
| 0250 | 606.0300 | RIPRAP HEAVY | CY | 74.000 | 74.000 |
| 0260 | 614.0010 | BARRIER SYSTEM GRADING SHAPING FINISHING | EACH | 1.000 | 1.000 |
| 0270 | 614.0305 | STEEL PLATE BEAM GUARD CLASS A | LF | 33.000 | 33.000 |
| 0280 | 614.0340 | STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A | LF | 94.000 | 94.000 |
| 0290 | 614.0370 | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL | EACH | 1.000 | 1.000 |
| 0300 | 614.2330 | MGS GUARDRAIL 3 K | LF | 300.000 | 300.000 |
| 0310 | 614.2610 | MGS GUARDRAIL TERMINAL EAT | EACH | 2.000 | 2.000 |
| 0320 | 616.0600.S | FENCE TEMPORARY | LF | 30.000 | 30.000 |
| 0330 | 618.0100 | MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 5730-01-61 | EACH | 1.000 | 1.000 |
| 0340 | 619.1000 | MOBILIZATION | EACH | 1.000 | 1.000 |
| 0350 | 625.0500 | SALVAGED TOPSOIL | SY | 4,330.000 | 4,330.000 |
| 0360 | 627.0200 | MULCHING | SY | 5,420.000 | 5,420.000 |
| 0370 | 628.1504 | SILT FENCE | LF | 830.000 | 830.000 |
| 0380 | 628.1520 | SILT FENCE MAINTENANCE | LF | 830.000 | 830.000 |
| 0390 | 628.1905 | MOBILIZATIONS EROSION CONTROL | EACH | 2.000 | 2.000 |
| 0400 | 628.1910 | MOBILIZATIONS EMERGENCY EROSION CONTROL | EACH | 1.000 | 1.000 |

3

DATE 09DEC14 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 5730-01-61 QUANTITY |
|---|---|---|---|---|---|
| 0410 | 628.2004 | EROSION MAT CLASS I TYPE B | SY | 105.000 | 105.000 |
| 0420 | 628.7504 | TEMPORARY DITCH CHECKS | LF | 50.000 | 50.000 |
| 0430 | 629.0210 | FERTILIZER TYPE B | CWT | 6.250 | 6.250 |
| 0440 | 630.0110 | SEEDING MIXTURE NO. 10 | LB | 12.000 | 12.000 |
| 0450 | 630.0300 | SEEDING BORROW PIT | LB | 20.000 | 20.000 |
| 0460 | 642.5001 | FIELD OFFICE TYPE B | EACH | 1.000 | 1.000 |
| 0470 | 643.0100 | TRAFFIC CONTROL (PROJECT) 01. 5730-01-61 | EACH | 1.000 | 1.000 |
| 0480 | 643.0300 | TRAFFIC CONTROL DRUMS | DAY | 2,250.000 | 2,250.000 |
| 0490 | 643.0900 | TRAFFIC CONTROL SIGNS | DAY | 2,100.000 | 2,100.000 |
| 0500 | 645.0105 | GEOTEXTILE FABRIC TYPE C | SY | 490.000 | 490.000 |
| 0510 | 645.0120 | GEOTEXTILE FABRIC TYPE HR | SY | 235.000 | 235.000 |
| 0520 | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. C-62-1509 | LS | 1.000 | 1.000 |
| 0530 | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. C-62-1514 | LS | 1.000 | 1.000 |
| 0540 | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 03. C-62-1822 | LS | 1.000 | 1.000 |
| 0550 | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 04. C-62-1824 | LS | 1.000 | 1.000 |
| 0560 | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 05. C-62-1827 | LS | 1.000 | 1.000 |
| 0570 | 650.9920 | CONSTRUCTION STAKING SLOPE STAKES | LF | 588.000 | 588.000 |
| 0580 | 690.0150 | SAWING ASPHALT | LF | 560.000 | 560.000 |
| 0590 | SPV.0060 | SPECIAL 01. CLEANING BOX CULVERT, C-62-1514 | EACH | 1.000 | 1.000 |
| 0600 | SPV.0060 | SPECIAL 02. CLEANING BOX CULVERT, C-62-1509 | EACH | 1.000 | 1.000 |
| 0610 | SPV.0060 | SPECIAL 03. CLEANING BOX CULVERT, C-62-1824 | EACH | 1.000 | 1.000 |
| 0620 | SPV.0105 | SPECIAL 01. SAFETY GRATE CULVERT | LS | 1.000 | 1.000 |

3

3

## REMOVING GUARDRAIL

| CATEGORY | STATION TO | STATION | LOCATION | 204.0165 LF | REMARKS |
|---|---|---|---|---|---|
| 0010 | 209+23 - | 210+11 | RT | 78 | C-62-1827 |
| | | | TOTAL 0010 | 78 | |

## FENCE TEMPORARY

| CATEGORY | STATION TO | STATION | LOCATION | 616.0600.S LF | REMARKS |
|---|---|---|---|---|---|
| 0010 | 16+10 - | 16+50 | LT | 30 | |
| | | | TOTAL 0010 | 30 | |

## GUARDRAIL

| CATEGORY | STATION TO | STATION | LOCATION | BARRIER SYSTEM GRADING SHAPING FINISHING 614.0010 EACH | STEEL PLATE BEAM GUARD CLASS A 614.0305 LF | STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A 614.0340 LF | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 614.0370 EACH | MGS GUARDRAIL 3 K 614.2330 LF | MGS GUARDRAIL TERMINAL EAT 614.2610 EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 209+23 - | 211+00 | RT | 1 | 33 | 94 | 1 | - | - | C-62-1827 |
| 0010 | 227+93 - | 232+00 | RT | - | - | - | - | 300 | 2 | C-62-1822 |
| | | | TOTAL 0010 | 1 | 33 | 94 | 1 | 300 | 2 | |

## ASPHALTIC SURFACE

| CATEGORY | STATION TO | STATION | LOCATION | 465.0105 TON | REMARKS |
|---|---|---|---|---|---|
| 0010 | 209+80 - | 211+10 | RT | 20 | C-1827 |
| 0010 | 227+90 - | 232+05 | RT | 50 | C-1822 |
| | | | TOTAL 0010 | 70 | |

## BASE AGGREGATE DENSE 3/4-INCH

| CATEGORY | STATION TO | STATION | LOCATION | 305.0110 TON | REMARKS |
|---|---|---|---|---|---|
| 0010 | 14+96 - | 16+44 | SHOULDERS | 20 | |
| 0010 | 29+75 - | 31+25 | SHOULDERS | 20 | |
| 0010 | 208+90 - | 211+10 | SHOULDERS | 30 | |
| 0010 | 227+00 - | 232+88 | SHOULDERS | 80 | |
| 0010 | 237+40 - | 238+90 | SHOULDERS | 20 | |
| | | | TOTAL 0010 | 170 | |

## SPECIAL 01. CLEANING BOX CULVERT (C-62-1514)

| CATEGORY | LOCATION | SPV.0060.01 EACH | REMARKS |
|---|---|---|---|
| 0010 | C-62-1514 | 1 | |
| | TOTAL 0010 | 1 | |

## SPECIAL 02. CLEANING BOX CULVERT (C-62-1509)

| CATEGORY | LOCATION | SPV.0060.02 EACH | REMARKS |
|---|---|---|---|
| 0010 | C-62-1509 | 1 | |
| | TOTAL 0010 | 1 | |

## SPECIAL 03. CLEANING BOX CULVERT (C-62-1824)

| CATEGORY | LOCATION | SPV.0060.03 EACH | REMARKS |
|---|---|---|---|
| 0010 | C-62-1824 | 1 | |
| | TOTAL 0010 | 1 | |

## EROSION CONTROL

| CATEGORY | STATION | TO | STATION | LOCATION | SALVAGED TOPSOIL 625.0500 SY | MULCHING 627.0200 SY | SILT FENCE 628.1504 LF | SILT FENCE MAINTENANCE 628.1520 LF | MOBILIZATIONS EROSION CONTROL 628.1905 EACH | MOBILIZATIONS EMERGENCY EROSION CONTROL 628.1910 EACH | EROSION MAT CLASS 1 TYPE B 628.2004 SY | TEMPORARY DITCH CHECKS 628.7504 LF | FERTILIZER TYPE B 629.0210 CWT | SEEDING MIXTURE NO. 10 630.0110 LB | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 15+00 | - | 16+50 | RT | 450 | 525 | 100 | 100 | - | - | 30 | - | 0.50 | 1.0 | C-62-1514 |
| 0010 | 15+50 | - | 16+50 | LT | 180 | 230 | - | - | - | - | - | - | 0.25 | 1.0 | C-62-1514 |
| 0010 | 29+80 | - | 31+20 | LT | 350 | 500 | 100 | 100 | - | - | - | - | 0.50 | 1.0 | C-62-1509 |
| 0010 | 29+90 | - | 31+15 | RT | 450 | 500 | 100 | 100 | - | - | - | - | 0.50 | 1.0 | C-62-1509 |
| 0010 | 209+00 | | 209+60 | LT | 150 | 200 | 40 | 40 | - | - | - | - | 0.25 | 0.5 | C-62-1827 |
| 0010 | 209+30 | - | 211+00 | RT | 225 | 305 | 100 | 100 | - | - | - | - | 0.25 | 0.5 | C-62-1827 |
| 0010 | 227+00 | - | 233+00 | RT | 1300 | 1700 | - | - | - | - | - | - | 1.00 | 2.5 | C-62-1822 |
| 0010 | 228+00 | - | 230+50 | LT | 775 | 900 | 150 | 150 | - | - | - | - | 0.50 | 1.0 | C-62-1822 |
| 0010 | 237+50 | - | 238+50 | LT | 300 | 350 | 40 | 40 | - | - | - | - | 0.25 | 0.5 | C-62-1824 |
| 0010 | 238+00 | - | 239+00 | RT | 150 | 210 | - | - | - | - | 25 | - | 0.25 | 0.5 | C-62-1824 |
| 0010 | UNDISTRIBUTED | | | | - | - | 200 | 200 | 2 | 1 | 50 | 50 | 2.00 | 2 | |
| | | | | TOTAL 0010 | 4330 | 5420 | 830 | 830 | 2 | 1 | 105 | 50 | 6.25 | 12 | |

## SEEDING BORROW PIT

| CATEGORY | LOCATION | 630.0300 LB | REMARKS |
|---|---|---|---|
| 0010 | BORROW PIT | 20 | |
| | TOTAL 0010 | 20 | |

## TRAFFIC CONTROL DRUMS

| CATEGORY | LOCATION | 643.0300 DAY | REMARKS |
|---|---|---|---|
| 0010 | C-62-1514 | 450 | SHOULDER CLOSURE |
| 0010 | C-62-1509 | 450 | SHOULDER CLOSURE |
| 0010 | C-62-1827 | 450 | SHOULDER CLOSURE |
| 0010 | C-62-1822 | 450 | SHOULDER CLOSURE |
| 0010 | C-62-1824 | 450 | SHOULDER CLOSURE |
| | TOTAL 0010 | 2250 | |

## TRAFFIC CONTROL SIGNS

| CATEGORY | LOCATION | 643.0900 DAY | REMARKS |
|---|---|---|---|
| 0010 | C-62-1514 | 180 | SHOULDER CLOSURE |
| 0010 | C-62-1509 | 180 | SHOULDER CLOSURE |
| 0010 | C-62-1827 | 180 | SHOULDER CLOSURE |
| 0010 | C-62-1822 | 180 | SHOULDER CLOSURE |
| 0010 | C-62-1824 | 180 | SHOULDER CLOSURE |
| 0010 | PROJECT | 1200 | ADVANCED WARNING - 2 LOCATIONS |
| | TOTAL 0010 | 2100 | |

## CONSTRUCTION STAKING SLOPE STAKES

| CATEGORY | STATION | TO | STATION | LOCATION | 650.9920 LF | REMARKS |
|---|---|---|---|---|---|---|
| 0010 | 227+00 | - | 232+88 | RT | 588 | MGS GRADING AT C-62-1822 |
| | | | | TOTAL 0010 | 588 | |

## SAWING ASPHALT

| CATEGORY | STATION | TO | STATION | LOCATION | 690.0150 LF | REMARKS |
|---|---|---|---|---|---|---|
| 0010 | 209+80 | - | 211+10 | SHOULDER | 135 | C-1827 |
| 0010 | 227+90 | - | 232+05 | SHOULDER | 425 | C-1822 |
| | | | | TOTAL 0010 | 560 | |

## EARTHWORK SUMMARY

| Division | From / To Station | Location | Common Excavation (1) (item # 205.0100) Cut (2) | EBS Excavation (3) | Salvaged / Unusable Pavement Material (4) | Available Material (5) | Marsh Excavation (6) (item #205.0500) | Rock Excavation (7) (item #205.0200) | Reduced Marsh in Fill (8) Factor | Reduced EBS in Fill (9) Factor | Expanded Marsh Backfill (10) Factor | Expanded EBS Backfill (11) Factor | Expanded Rock (12) Factor | Unexpanded Fill | Expanded Fill (13) Factor 1.25 | Mass Ordinate + / - (14) | Waste | Borrow (item #208.0100) | Comment: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Division 1 | | | | | | | | | | | | | | | | | | | |
| | 227+00 RT to 232+88 RT | MGS @ C-62-1822 | 53 | | | 53 | | | | | | | | 222 | 278 | -225 | | | |
| Division 1 Subtotal | | | 53 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 222 | 278 | -225 | | 225 | |
| Division 2 | | | | | | | | | | | | | | | | | | | |
| | 14+94 to 16+44 | C-62-1514 | 9 | | | 9 | | | | | | | | 137 | 171 | -162 | | | |
| | 29+75 to 31+20 | C-62-1509 | 174 | | | 174 | | | | | | | | 146 | 182 | -8 | | | |
| | 209+00 to 210+00 | C-62-1827 | 6 | | | 6 | | | | | | | | 246 | 308 | -302 | | | |
| | 227+00 LT to 231+00 LT | C-62-1822 | 23 | | | 23 | | | | | | | | 370 | 462 | -439 | | | |
| | 237+50 to 238+91 | C-62-1824 | 20 | | | 20 | | | | | | | | 66 | 82 | -62 | | | |
| Division 2 Subtotal | | | 232 | 0 | 0 | 232 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 964 | 1,205 | -973 | | 973 | |
| Grand Total | | | 285.00 | 0.00 | 0.00 | 285.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,186.40 | 1,483.00 | -1,198.00 | 0.00 | 1,198.00 | |
| Total Common Exc | | | 285.00 | | | | | | | | | | | | | | | | |

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 20505
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100
12) Expanded Rock - Factor = 1.1
13) 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 - Reduced Marsh) * Fill Factor

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

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Use 111,764 CY of material from Division 1. Borrow Excavation item number 208.0100

R/W

RIPRAP HEAVY
SEE STRUCTURE PLANS

INSTALL FENCE TEMPORARY

PE

BEGIN PROJECT
STA: 14+96

SLOPE INTERCEPT

PT: 15+64.10

5

15+00

16+00

STH 56

17+00

5

CLEANING BOX CULVERT REQ'D

END WORK
STA: 16+44

SLOPE INTERCEPT

DROP INLET WITH SAFETY GRATE
SEE STRUCTURE PLANS

RIPRAP HEAVY
EXTEND TO SLOPE INTERCEPT

REMOVE CONCRETE SLOPE PAVING
TO SLOPE INTERCEPT

CONCRETE MASONRY FLUME

SURFACE WATER FLOW

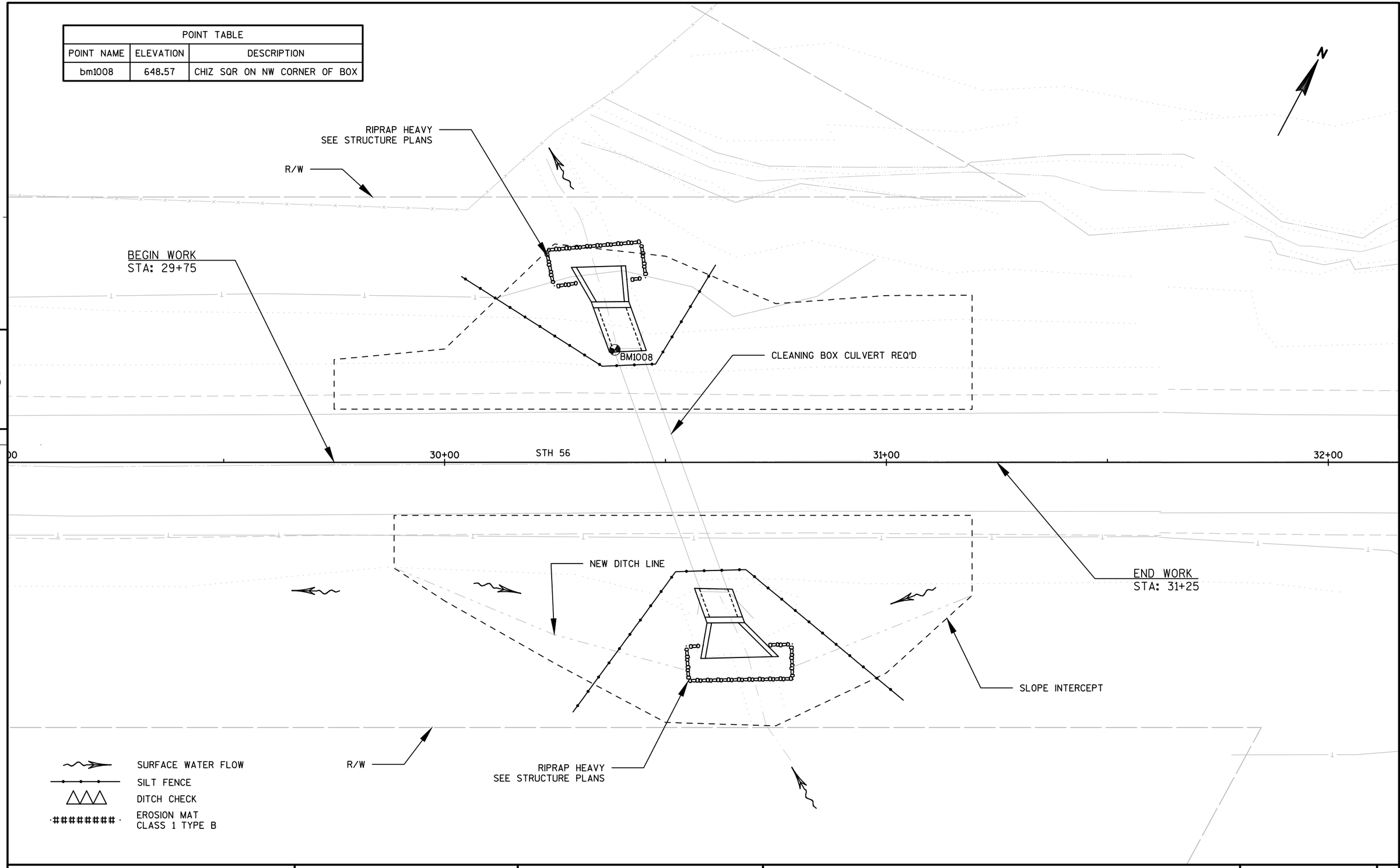
SILT FENCE

DITCH CHECK

EROSION MAT
CLASS 1 TYPE B

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | C-62-1514 PLAN | SHEET 12 | E |
|---|---|---|---|---|---|

| POINT TABLE | | |
|---|---|---|
| POINT NAME | ELEVATION | DESCRIPTION |
| bm1008 | 648.57 | CHIZ SQR ON NW CORNER OF BOX |

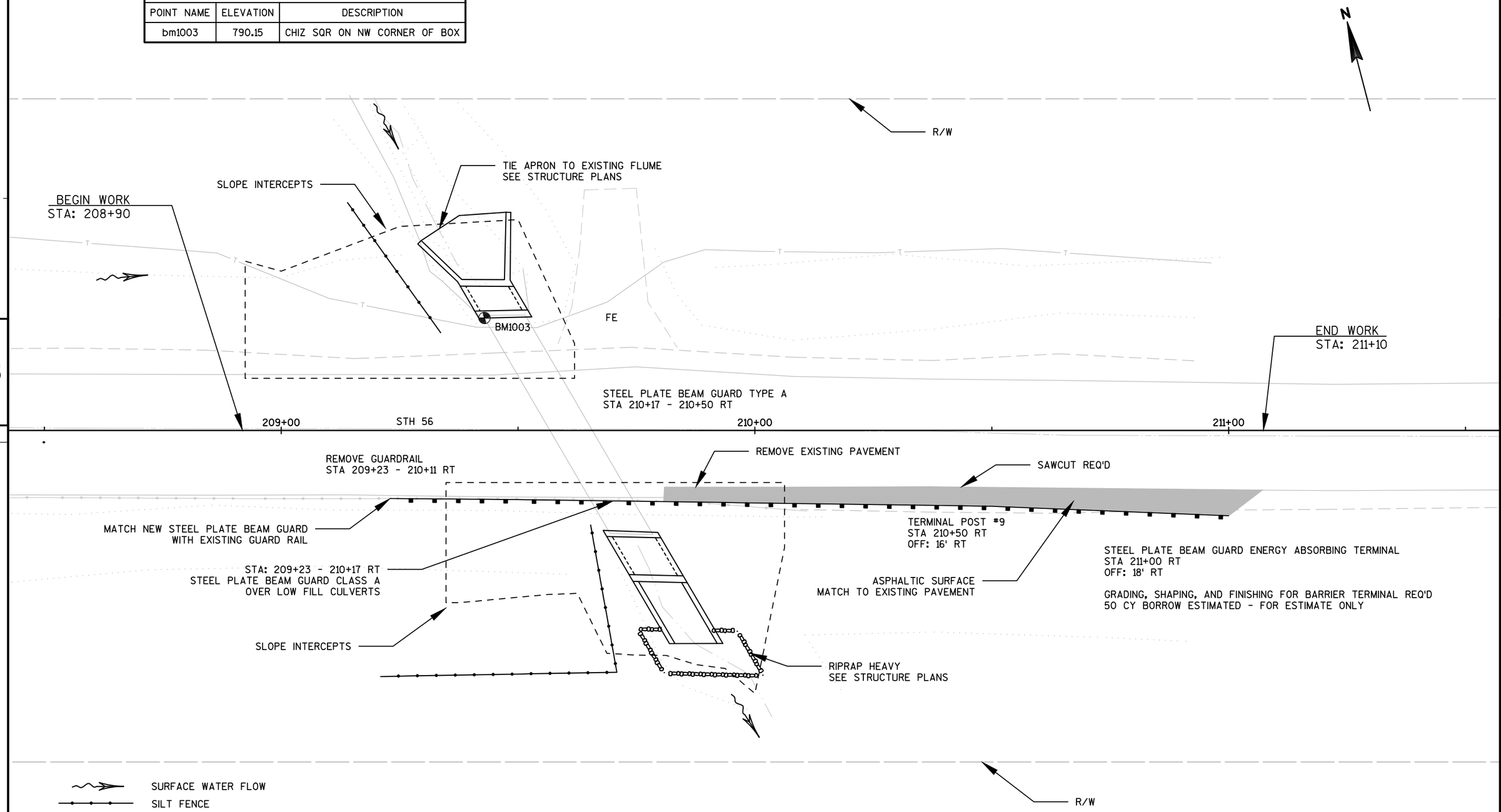



| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | C-62-1509 PLAN | SHEET | E |
|---|---|---|---|---|---|



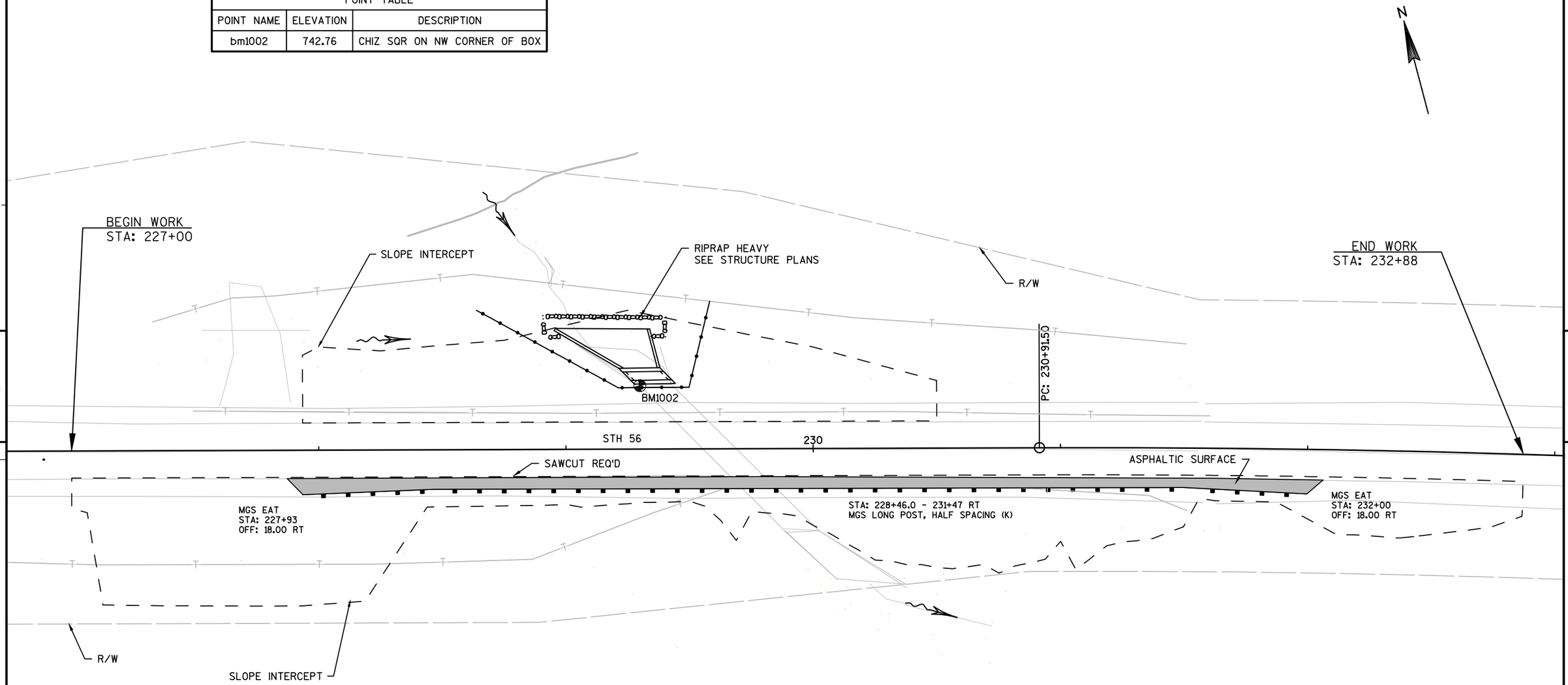
FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1509_050201_PN.DWG PLOT DATE : 10/7/2014 9:12 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

| POINT TABLE | | |
|---|---|---|
| POINT NAME | ELEVATION | DESCRIPTION |
| bm1003 | 790.15 | CHIZ SQR ON NW CORNER OF BOX |




| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | C-62-1827 PLAN | SHEET 14 | E |
|---|---|---|---|---|---|

| POINT TABLE | | |
|---|---|---|
| POINT NAME | ELEVATION | DESCRIPTION |
| bm1002 | 742.76 | CHIZ SQR ON NW CORNER OF BOX |




SURFACE WATER FLOW

SILT FENCE

DITCH CHECK

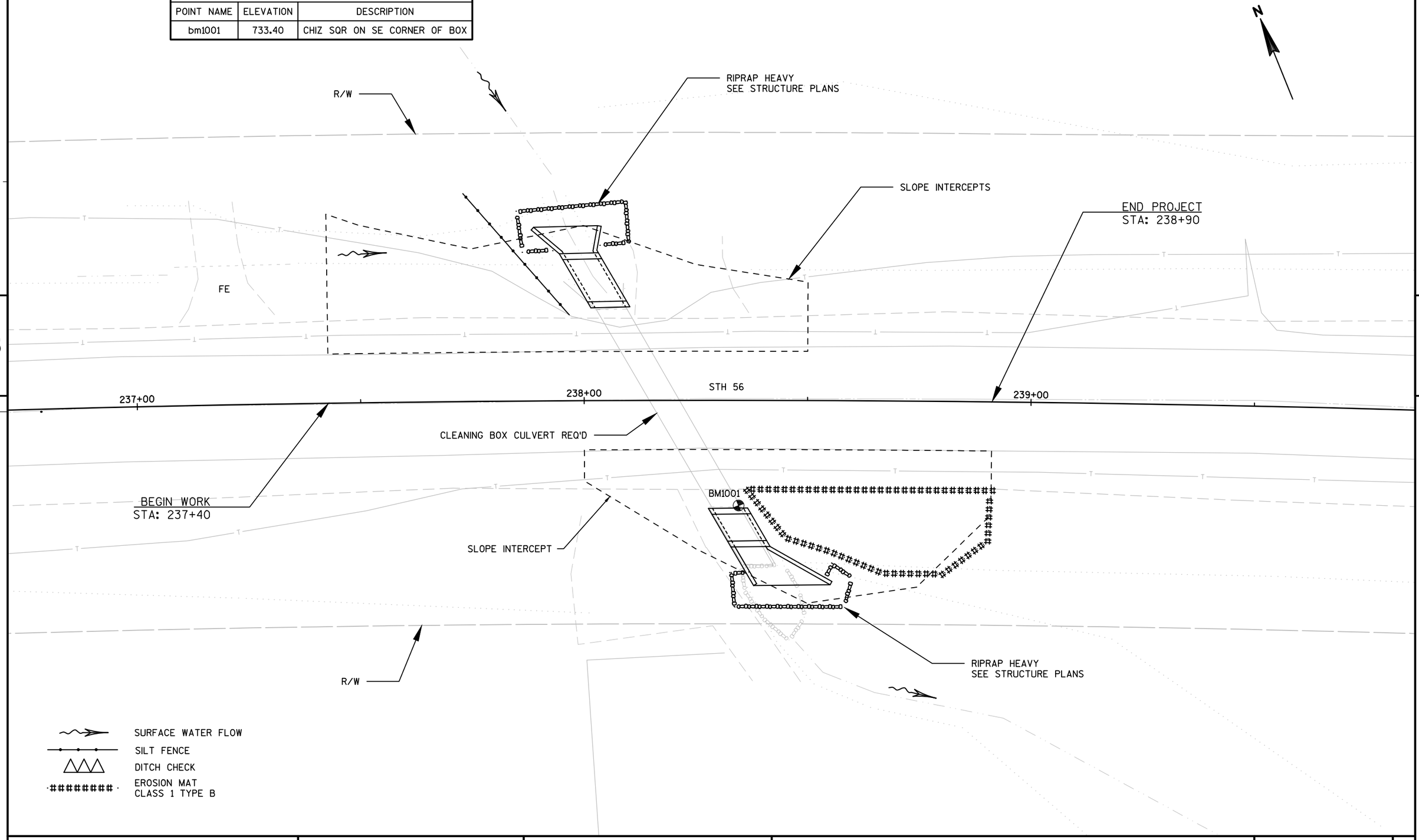
EROSION MAT
CLASS 1 TYPE B

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | C-62-1822 PLAN | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_050201_PN.DWG PLOT DATE : 10/7/2014 9:12 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

| POINT TABLE | | |
|---|---|---|
| POINT NAME | ELEVATION | DESCRIPTION |
| bm1001 | 733.40 | CHIZ SQR ON SE CORNER OF BOX |



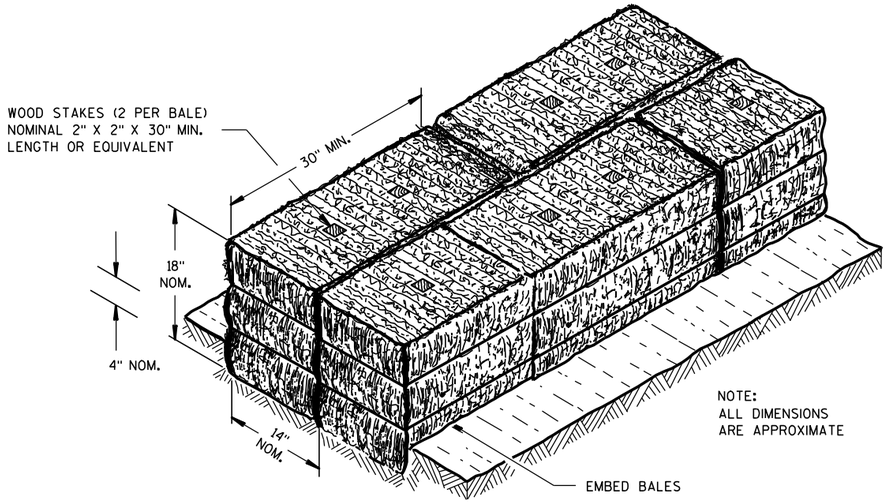

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | C-62-1824 PLAN | SHEET 16 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1824_050201_PN.DWG PLOT DATE : 10/7/2014 9:12 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

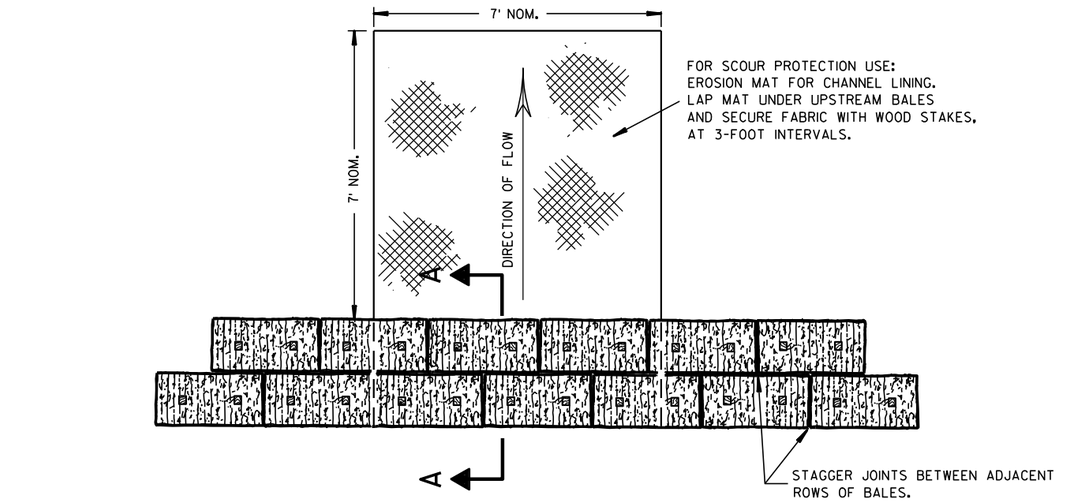
WISDOT/CADDS SHEET 44

# Standard Detail Drawing List

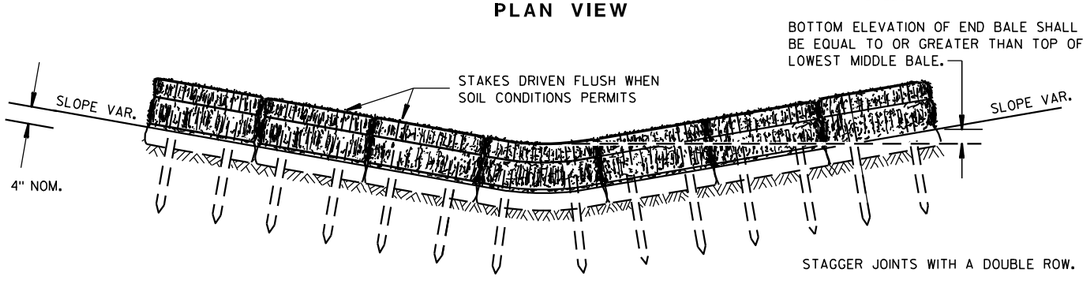
| | |
|---|---|
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 14B15-08A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-08B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-08C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS |
| 14B18-06A | STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS) |
| 14B24-08A | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B24-08B | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B24-08C | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL |
| 14B25-01 | STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS |
| 14B42-03A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-03B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-03C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 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) |
| 15C04-02 | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C12-04 | TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS) |
| 15D28-02 | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |




SECTION A-A




PLAN VIEW



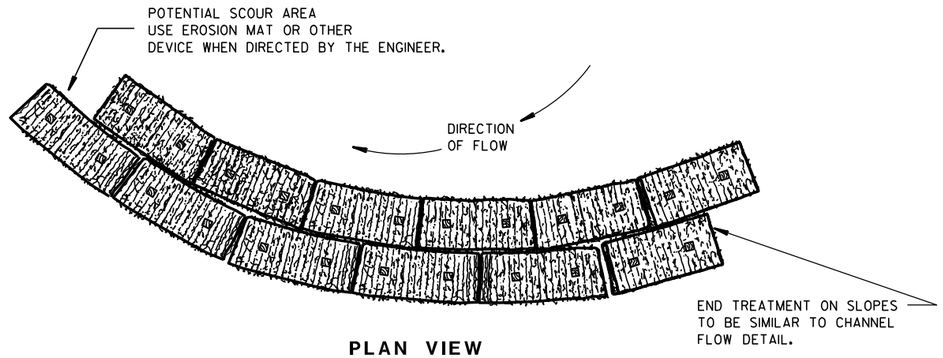

FRONT ELEVATION

## TEMPORARY DITCH CHECK USING EROSION BALES (1)

## GENERAL NOTES

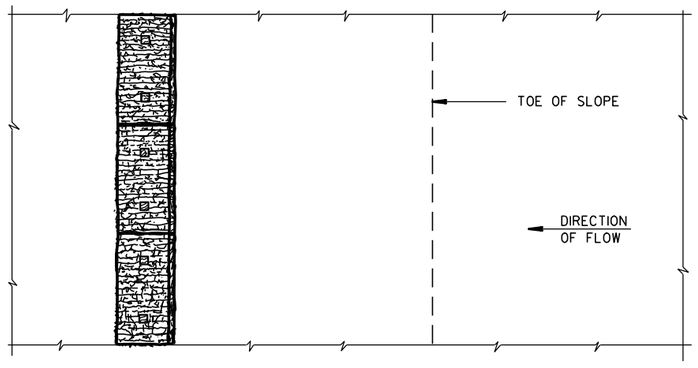
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

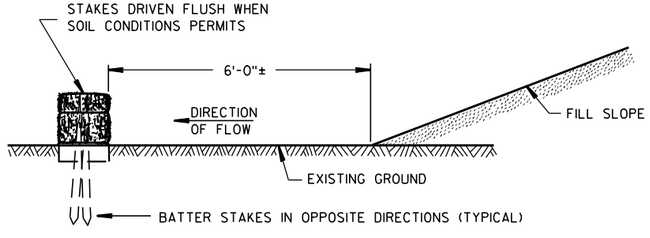



PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW




PLAN VIEW




FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

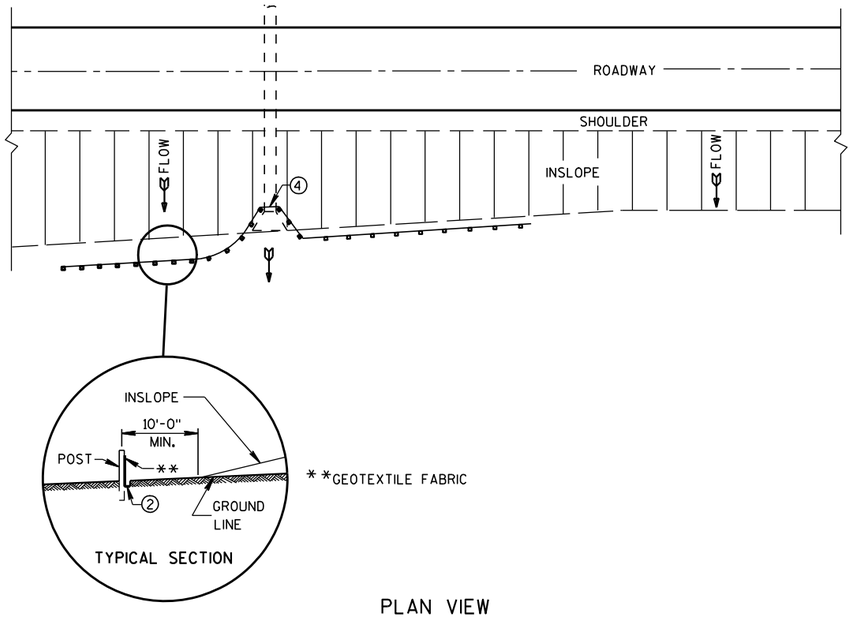


6

S.D.D. 8 E 8-3

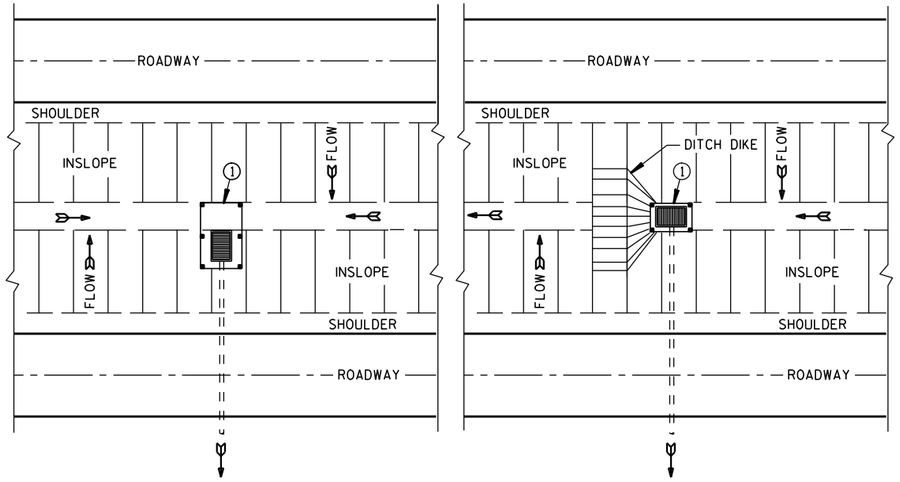
6

S.D.D. 8 E 8-3



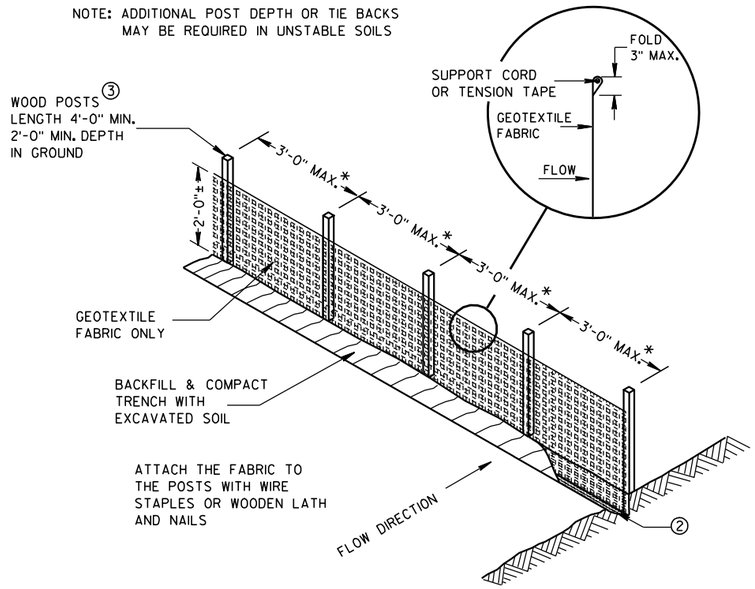

PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



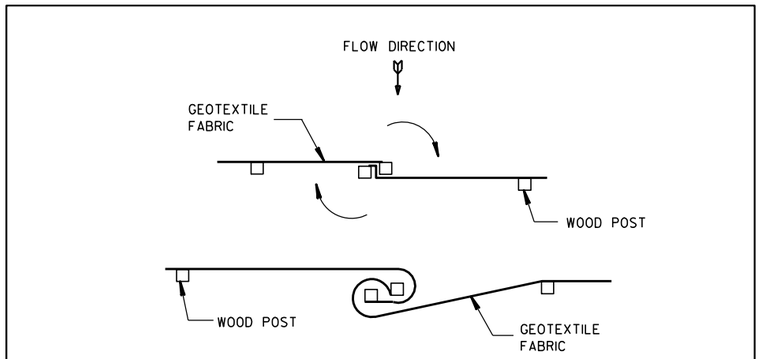

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS




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

## SILT FENCE

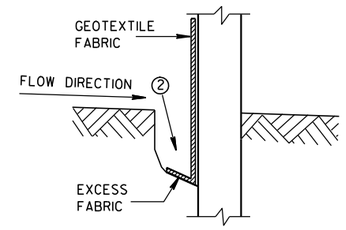



## JOINING TWO LENGTHS OF SILT FENCE 5

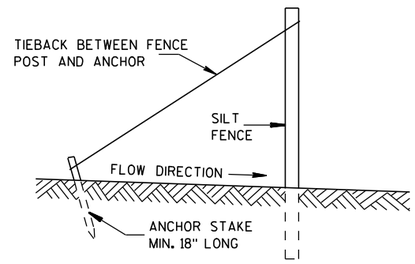
## GENERAL NOTES

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

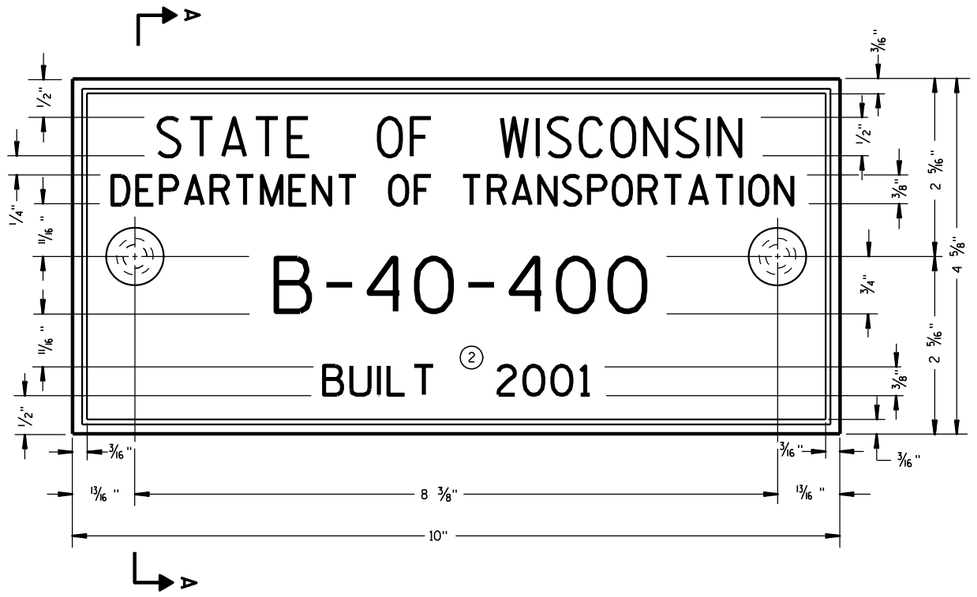


6

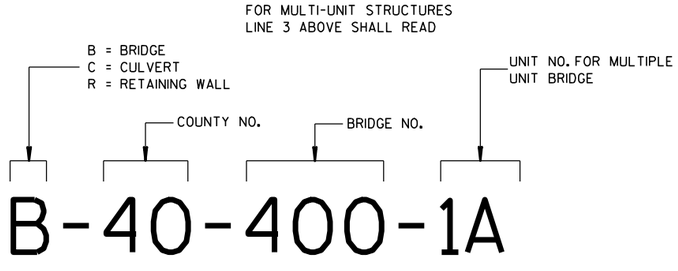
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6




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




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

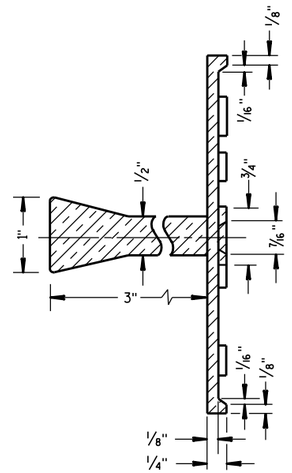
## GENERAL NOTES

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

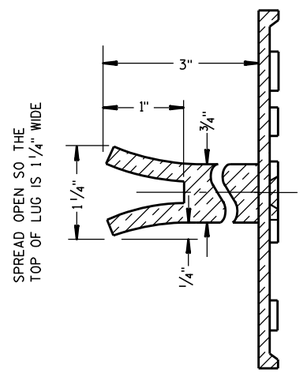
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

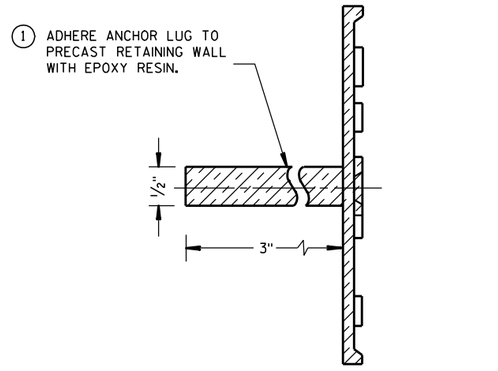
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




**SECTION A-A**




**ALTERNATE LUG**




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

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 — DATE

/S/ Scot Beck — CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA


6
S.D.D. 12 A 3-10

## GENERAL NOTES

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

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

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

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

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

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

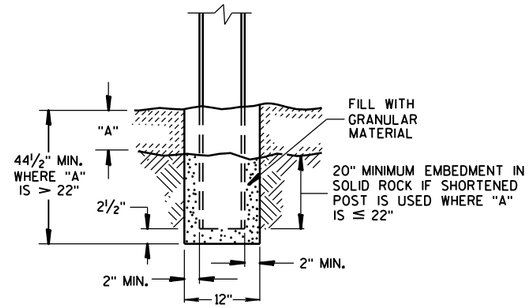
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

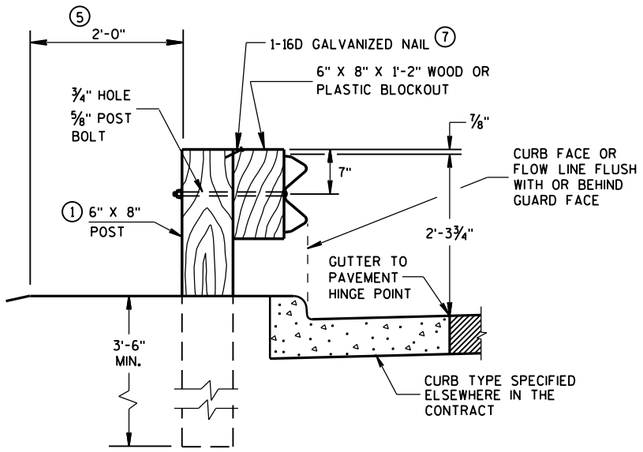
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

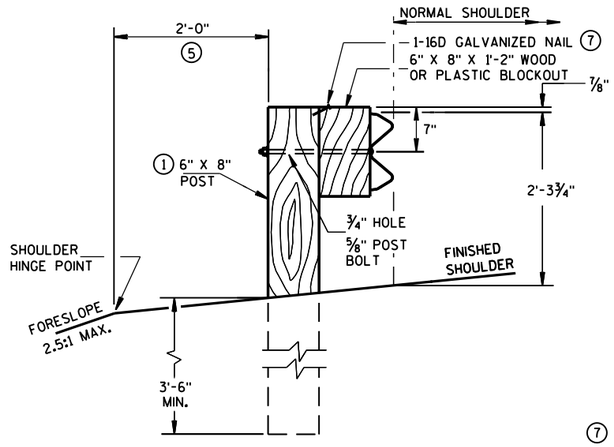
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



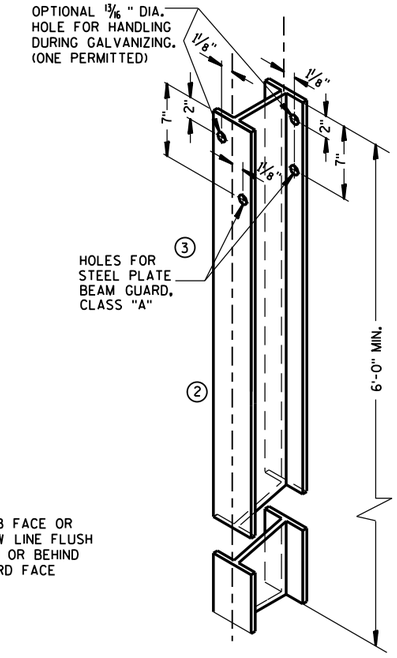

END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)




END VIEW
LOCATED ALONG A CURBED ROADWAY

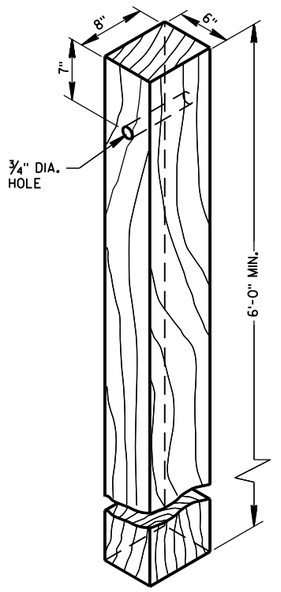



END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

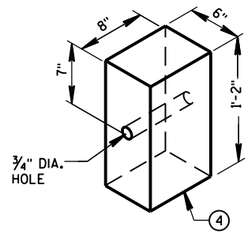



STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

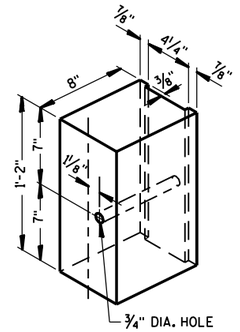
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



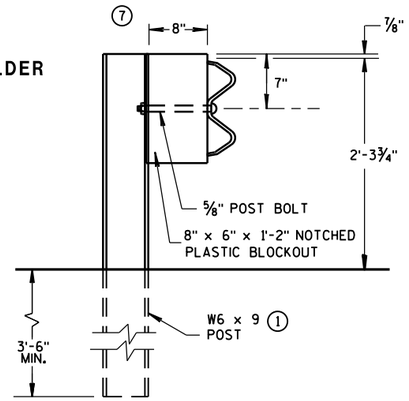

WOOD POST
(6"X8") NOMINAL



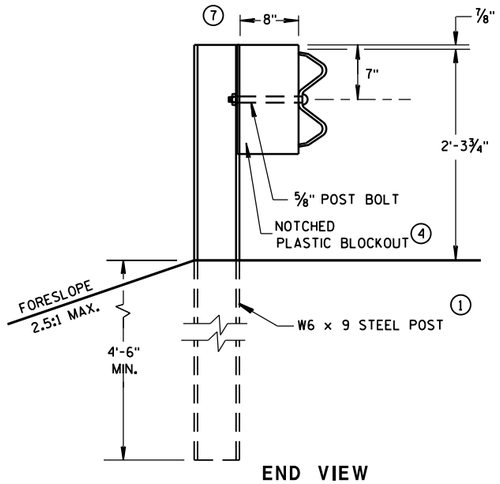

WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



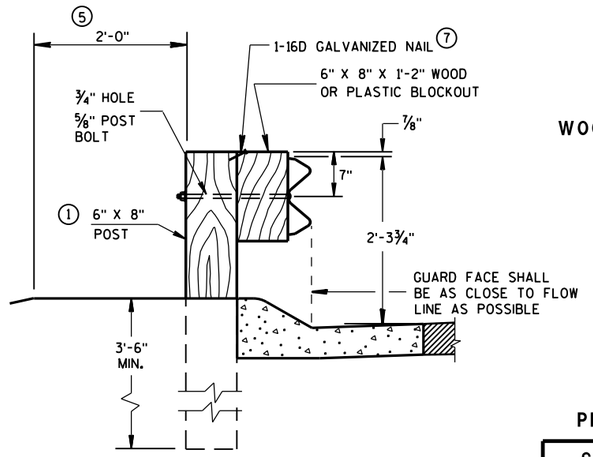

TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



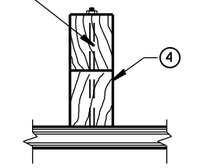

END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



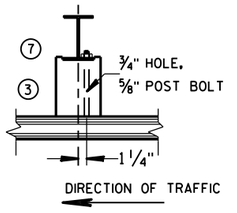

END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)




END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY




PLAN VIEW
WOOD POST, BLOCKOUT & BEAM




PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

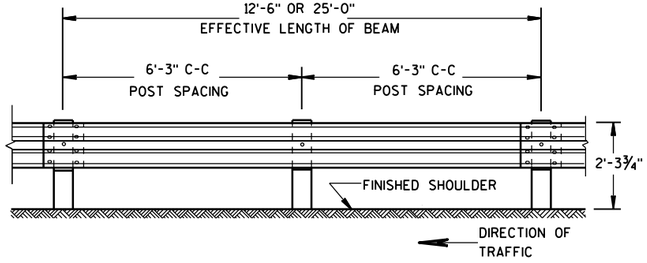
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



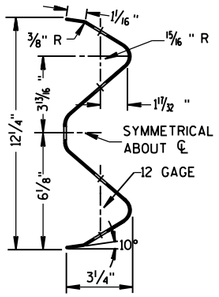


6
S.D.D. 14 B 15-8a

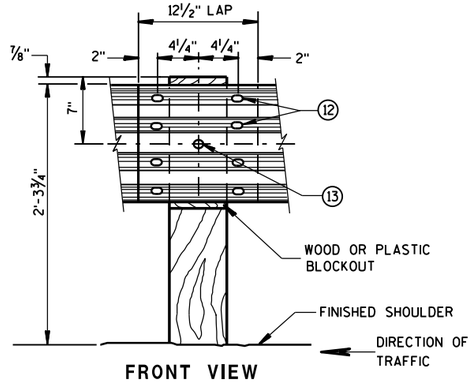



FRONT VIEW

## POST SPACING STANDARD INSTALLATION




## SECTION THRU W BEAM




FRONT VIEW

## BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

## GENERAL NOTES

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

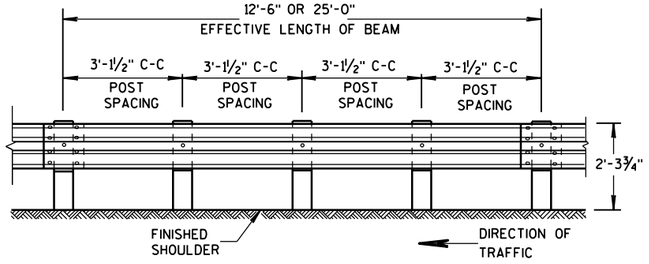
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

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

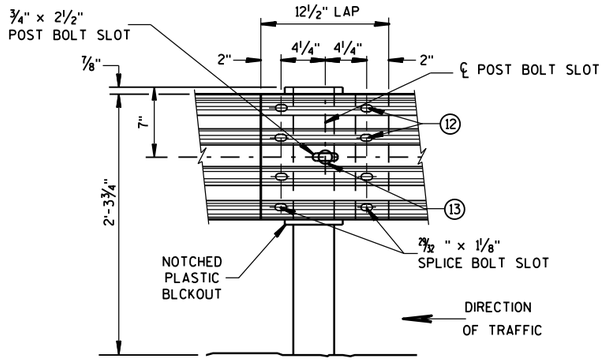
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

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




FRONT VIEW

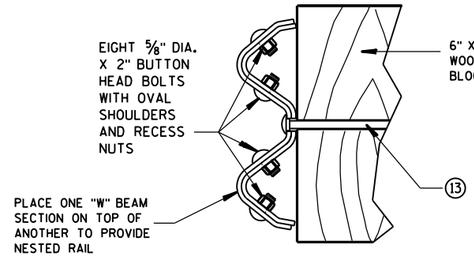
## POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)




FRONT VIEW

## BEAM SPLICE AT STEEL POST

## TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

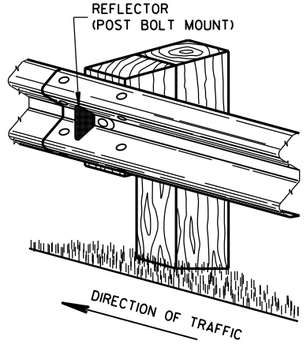


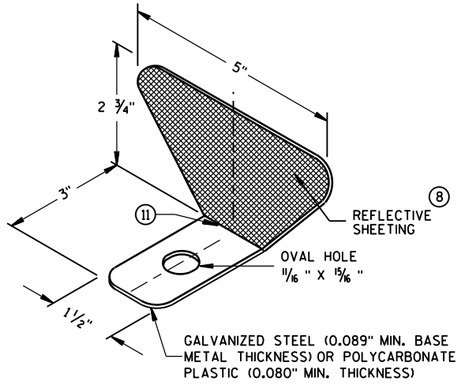

## NESTED W BEAM (NW)

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

REFLECTOR SPACING (9)

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




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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI





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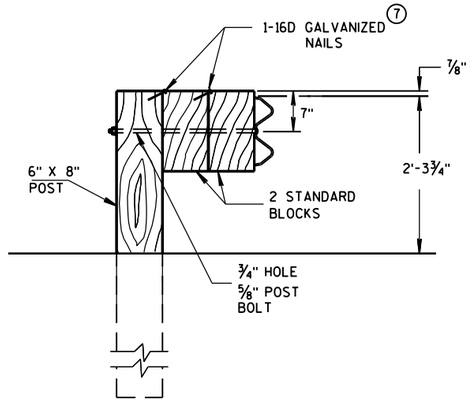
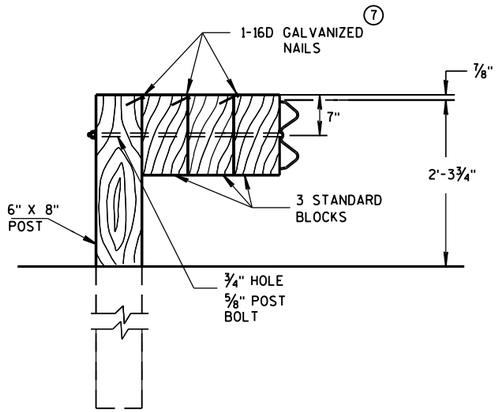
S.D.D. 14 B 15-8b




**DETAIL FOR DOUBLE BLOCKS**

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

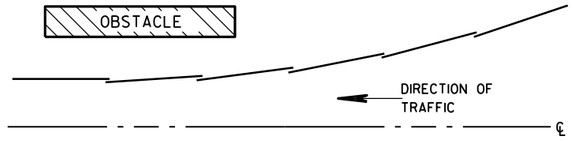



**DETAIL FOR TRIPLE BLOCKS**

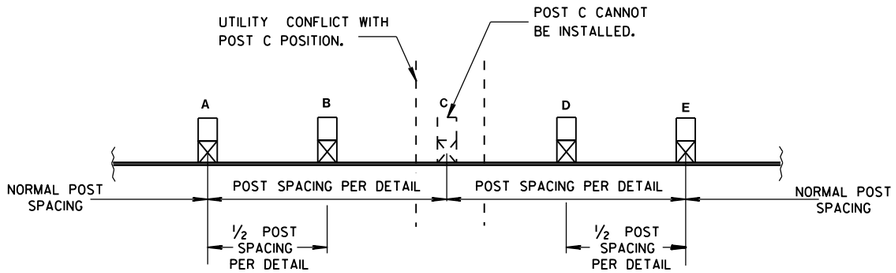
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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




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




**POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION**

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

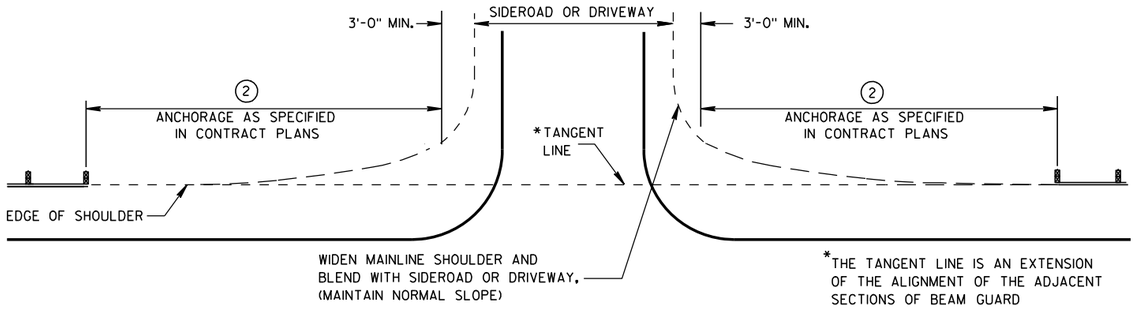
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

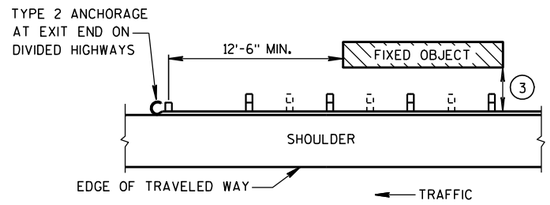



6

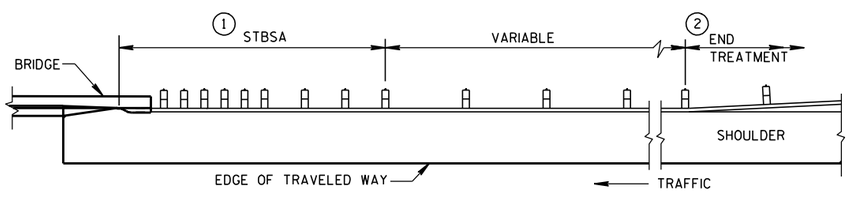
S.D.D. 14 B 15-8c



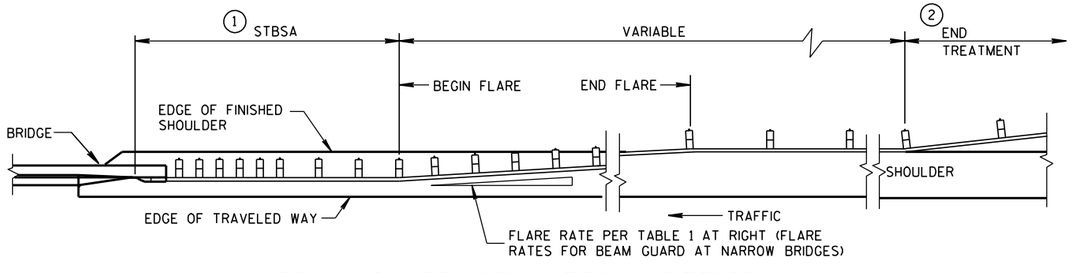

## BEAM GUARD AT SIDEROADS OR DRIVEWAYS



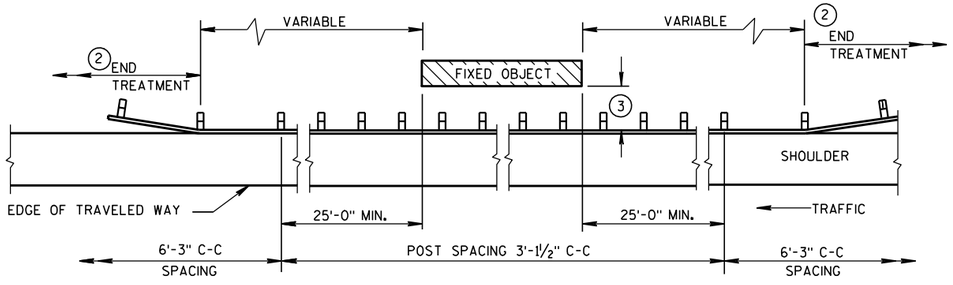

## BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC




## BEAM GUARD AT FULL WIDTH BRIDGES




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




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

## GENERAL NOTES

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

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

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

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

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

(3)

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

## BILL OF MATERIALS

| NOTE NO. | QTY. | DESCRIPTION |
|---|---|---|
| (1) | 4 | WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9" |
| (2) | ** | STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG |
| (3) | 2 | SOIL PLATE: 2'-0" X 1'-6" X ¼" ** |
| (4) | 4 | WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0" |
| (5) | 6 | WOOD OFFSET BLOCKS: 6' X 8" X 1'-2" |
| (6) | 1 | PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE |
| (7) | 1 | BEARING PLATE |
| (8) | 1 | BCT CABLE ASSEMBLY |
| (9) | 1 | CABLE ANCHOR BOX |
| (10) | 1 | STRUT & YOKE |
| (11) | 1 | STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS |
| (12) | 3 | STEEL PLATE BEAM: 12 GA. 13'-6½" |
| (13) | 1 | ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER |
| (14) | 1 | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS |
| (15) | 1 | E.A.T. MARKER POST |

## GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ø X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(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) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

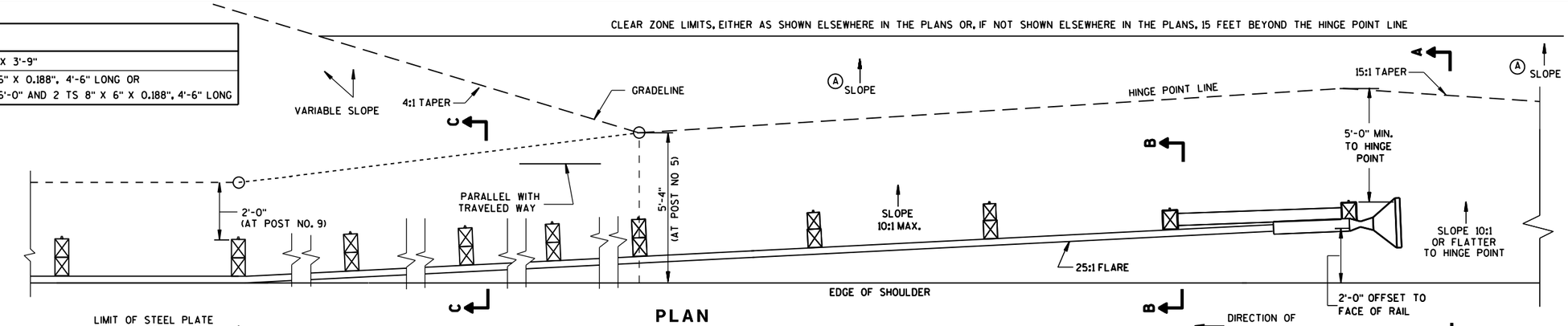
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

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

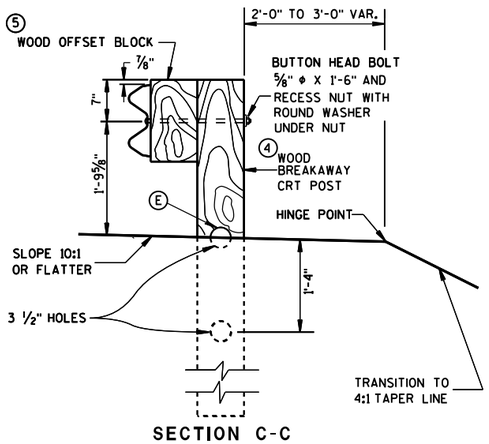
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

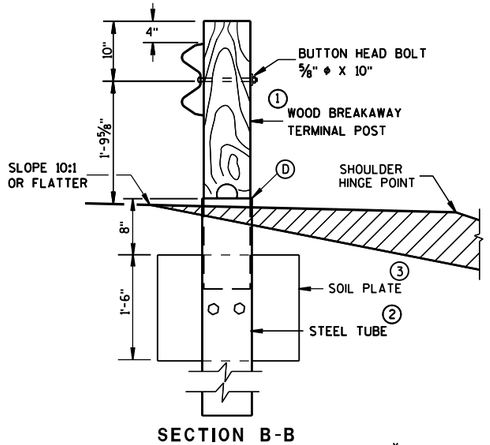
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



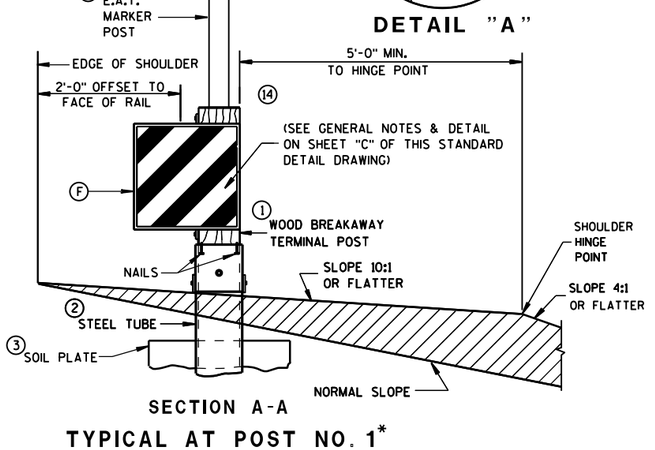

## ELEVATION



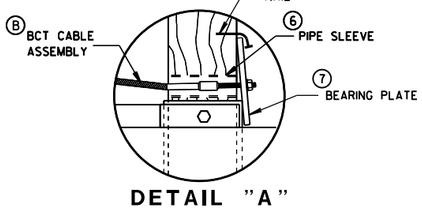

SECTION C-C
TYPICAL AT POST NOS. 6, 8



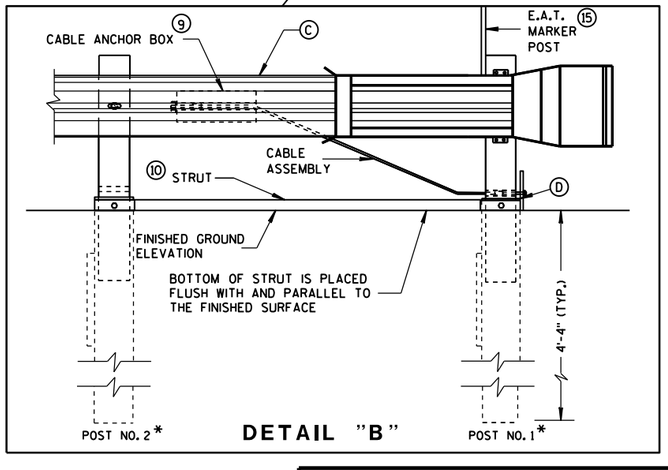

SECTION B-B
TYPICAL AT POST NO. 2*




SECTION A-A
TYPICAL AT POST NO. 1*




DETAIL "A"




DETAIL "B"

**STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

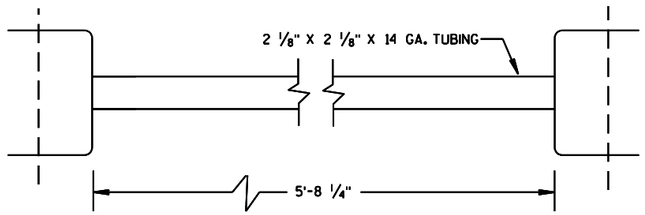




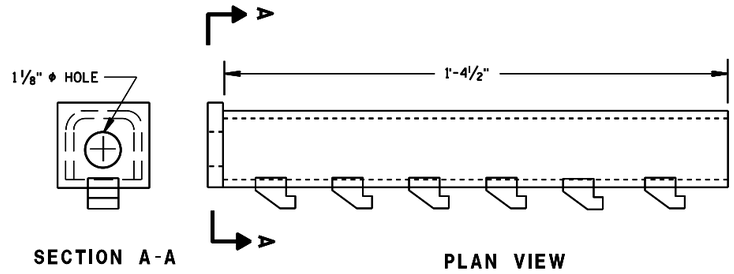


6

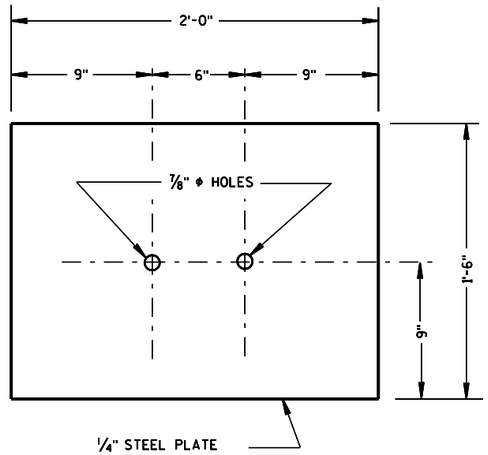
S.D.D. 14 B 24-8a




⑩ STRUT DETAIL (SKT-350)

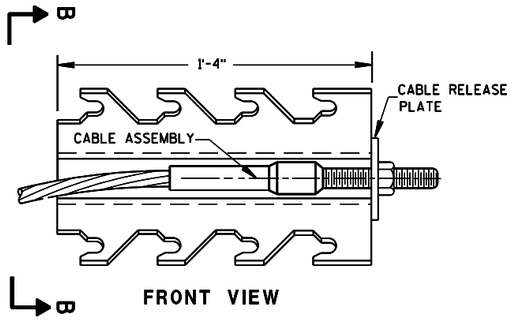


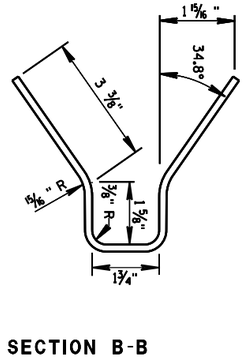

⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)




③ SOIL PLATE

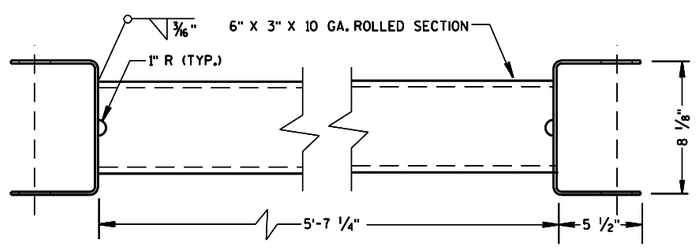
(SKT-350, ET-2000/ET-2000 PLUS)



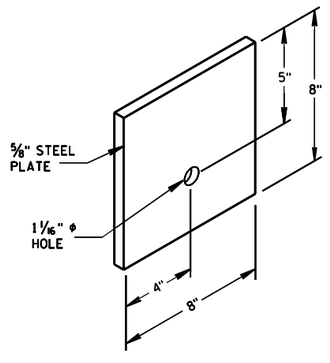

⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)




⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)




⑦ STEEL BEARING PLATE

(SKT-350, ET-2000/ET-2000 PLUS)

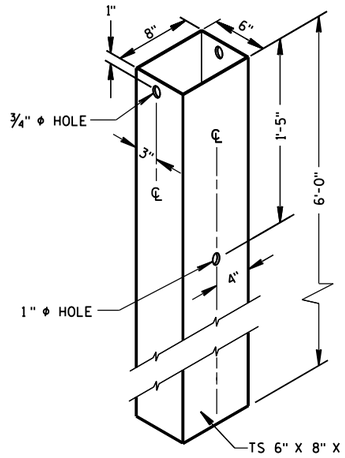
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

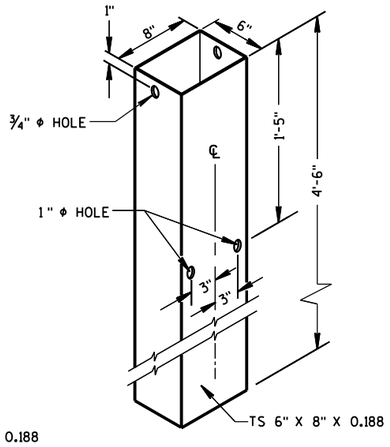



6

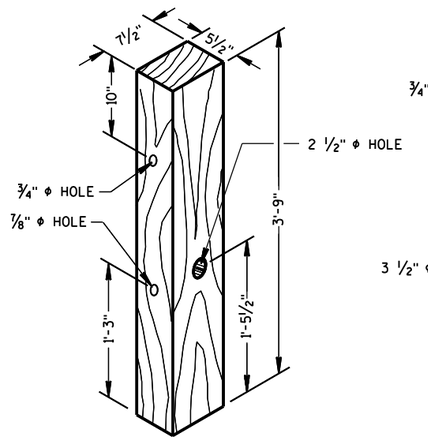

S.D.D. 14 B 24-8b



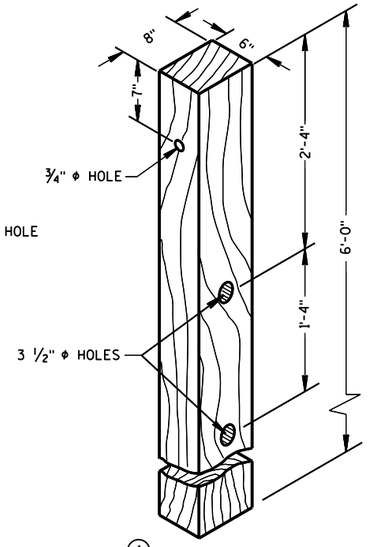

② 72" STEEL TUBE
(POSTS NO. 1-4




② 54" STEEL TUBE
(POSTS NO. 1-4




① TERMINAL POST
(POSTS NO. 1-4




④ CRT POST
(POSTS NO'S 5-8

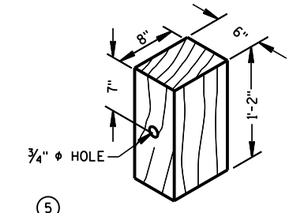
## WOOD BREAKAWAY POSTS

## GENERAL NOTES

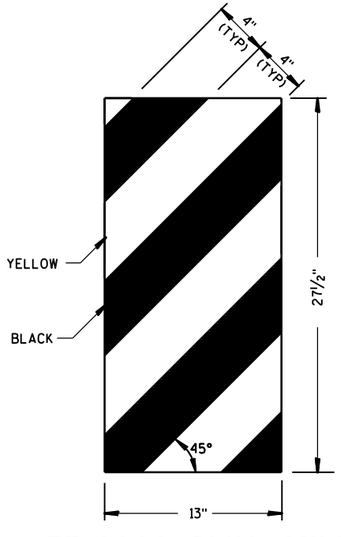
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

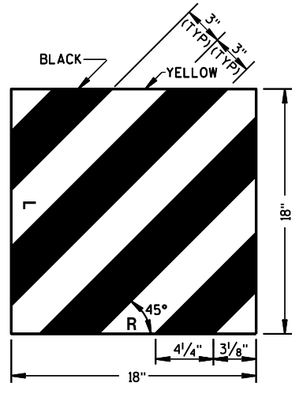
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.




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

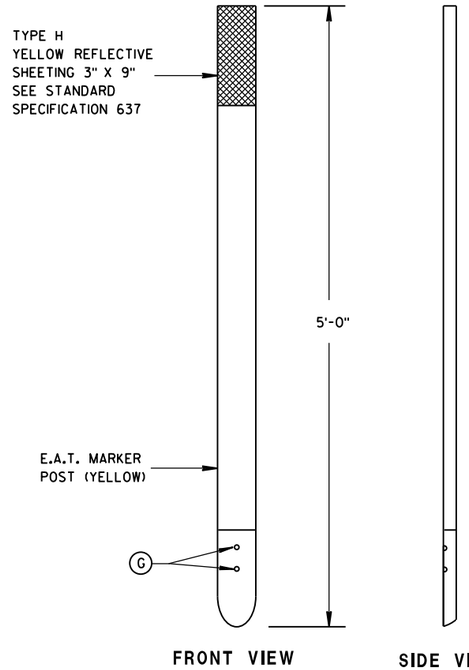



ET-2000 PLUS ONLY



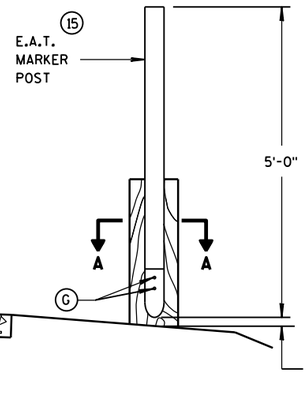

ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

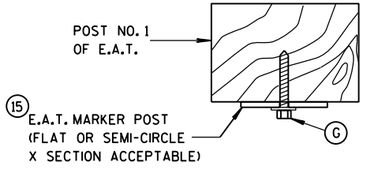



FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST




TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)




SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

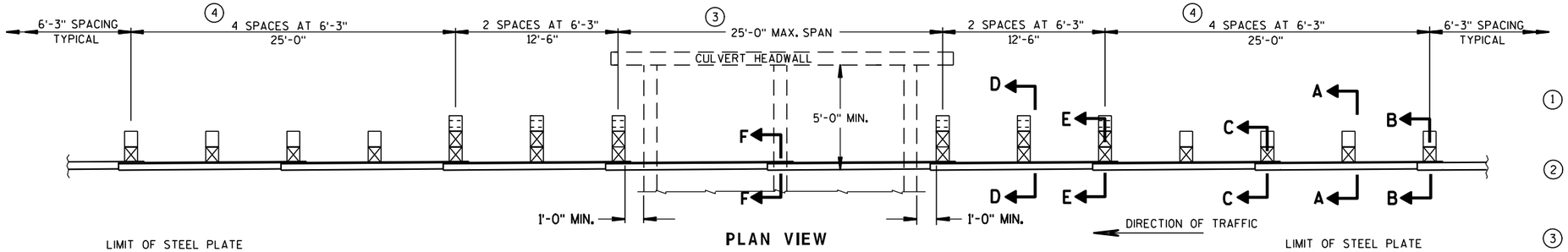


6

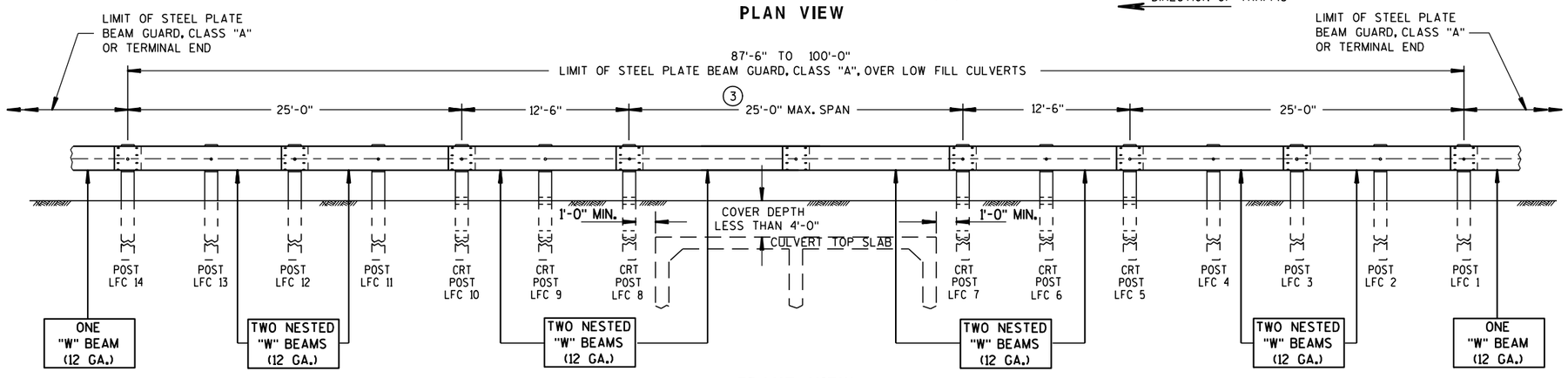
S.D.D. 14 B 24-8c

6

S.D.D. 14 B 24-8c




PLAN VIEW




FRONT VIEW

# TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS

## 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.

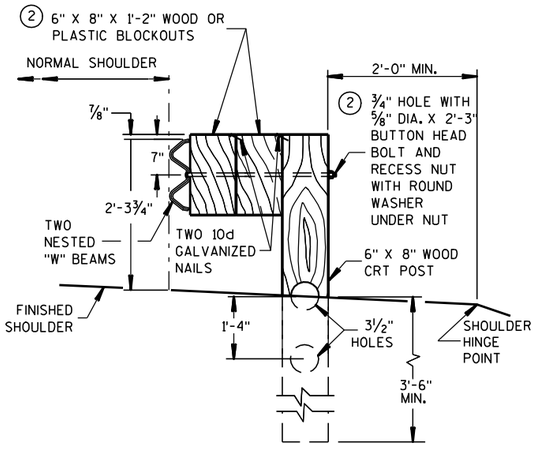
(1) MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.

(2) THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.

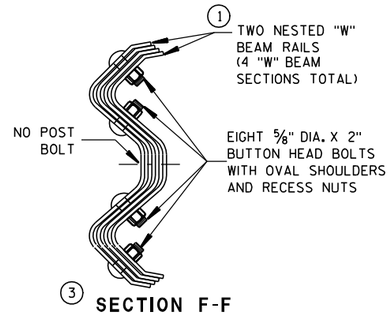
(3) PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.

(4) IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.

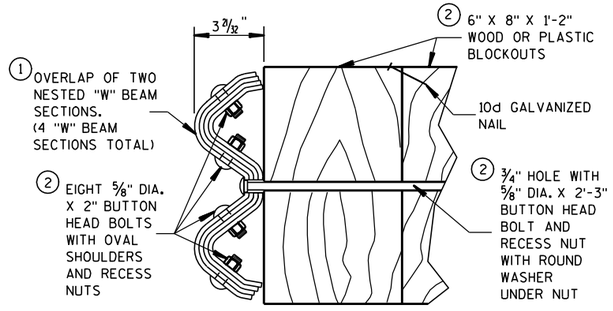
(5) WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



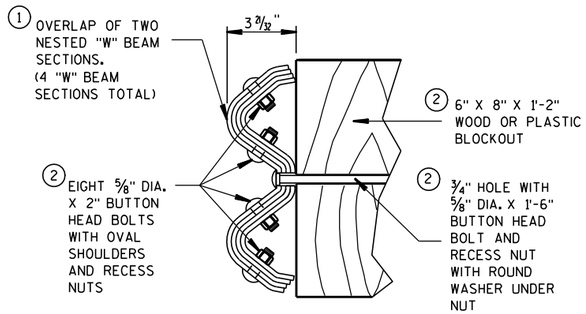

SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



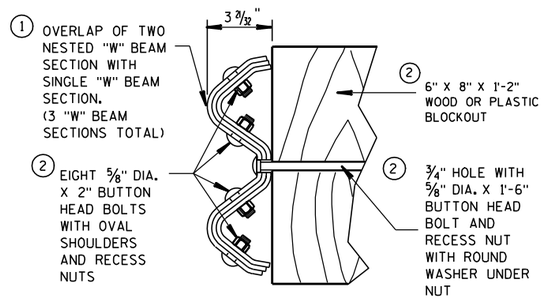

(3) SECTION F-F
BEAM SPLICE IN SPAN OVER CULVERT



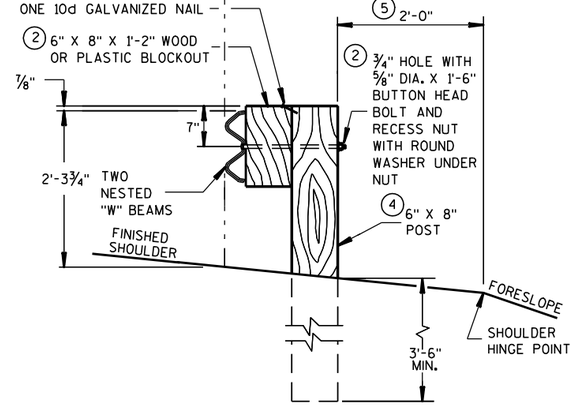

SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10




SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12




SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14




SECTION A-A
TYPICAL AT POST LFC 2,4,11,13

**STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/8/00 DATE
/S/ John Have... CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA




6

S.D.D. 14 B 25-1

## GENERAL NOTES

(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.

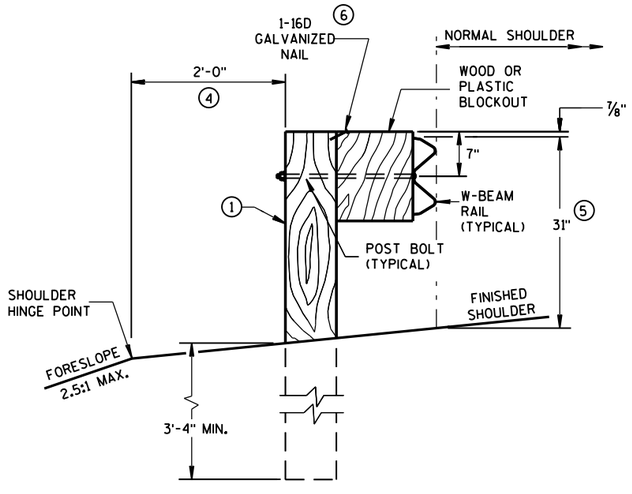
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(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).

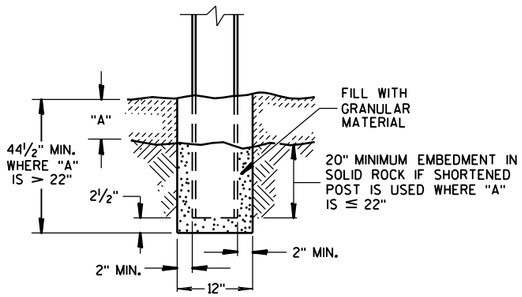
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



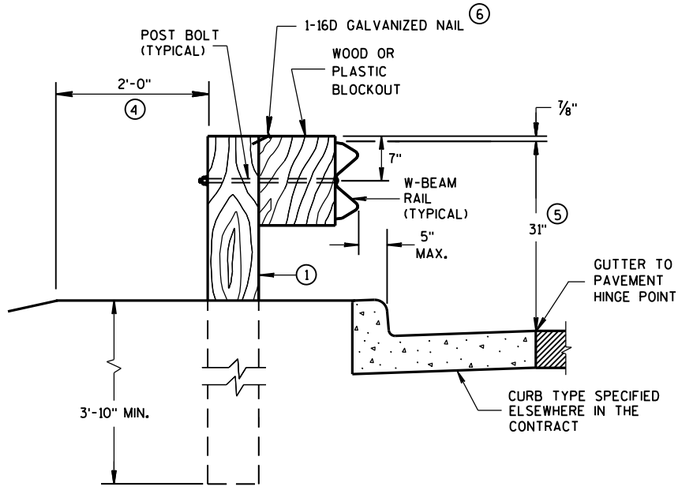

END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



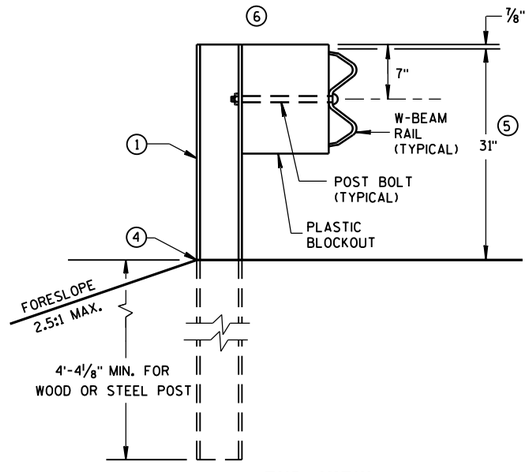

END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



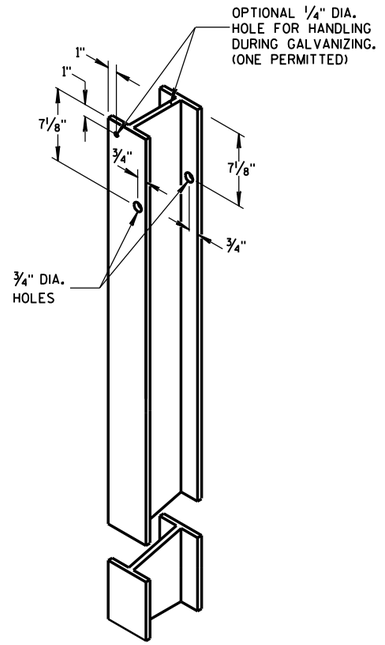

END VIEW

LOCATED ALONG A CURBED ROADWAY

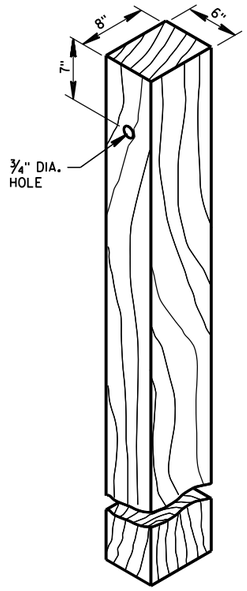



END VIEW

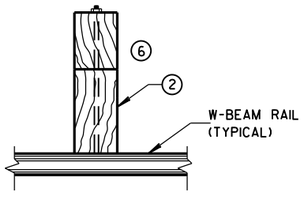
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



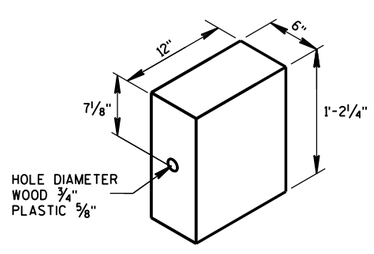

STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



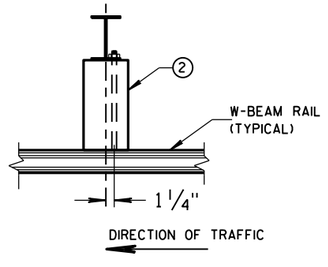

WOOD POST
(6" X 8") NOMINAL (1)




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
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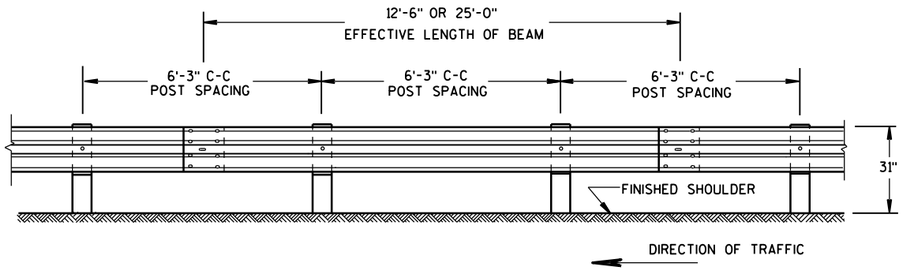
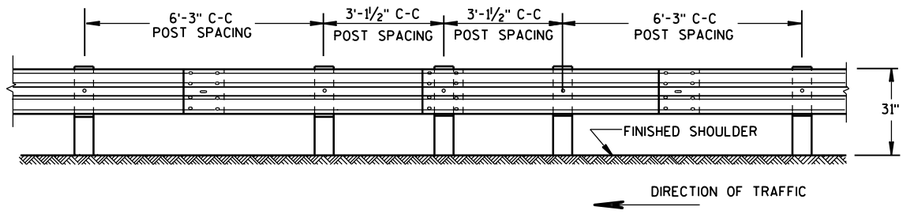


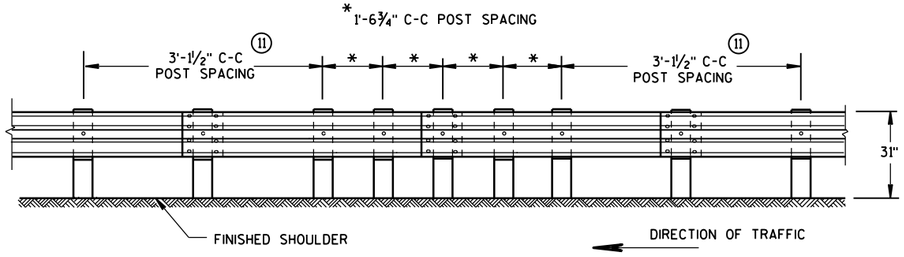

FRONT VIEW

## POST SPACING STANDARD INSTALLATION



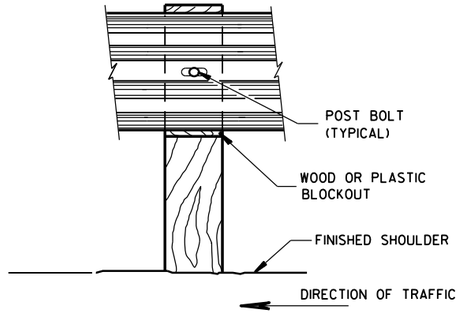

FRONT VIEW

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

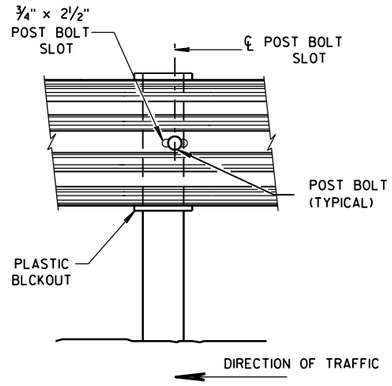



FRONT VIEW

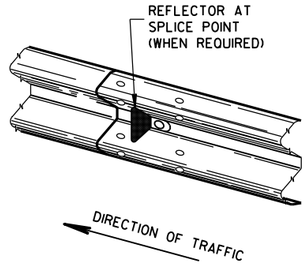
## QUARTER POST SPACING (QS)

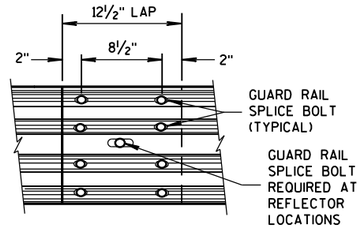



FRONT VIEW AT WOOD POST



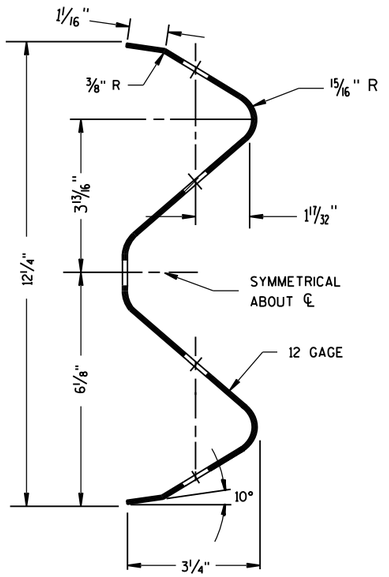

FRONT VIEW AT STEEL POST



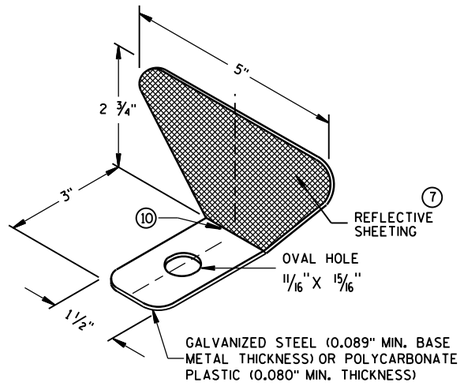




FRONT VIEW

MID-SPAN BEAM SPLICE




SECTION THRU W-BEAM RAIL




## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

## GENERAL NOTES

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 ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

### REFLECTOR SPACING ⑧

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
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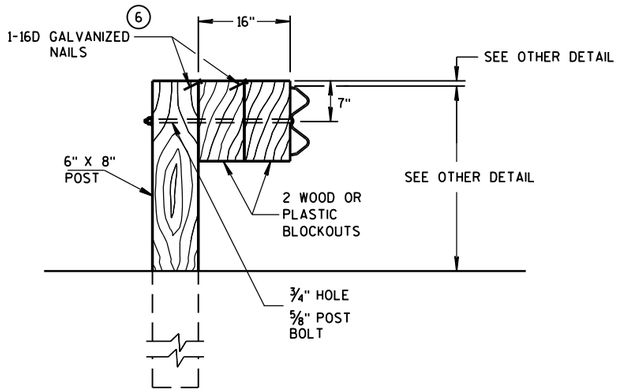
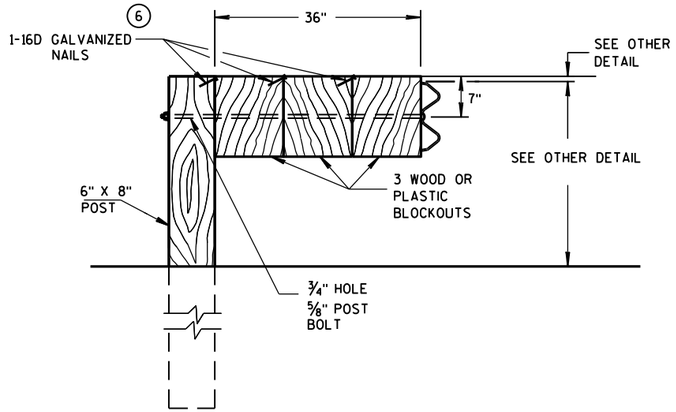



## DETAIL FOR 16" BLOCKOUT DEPTH

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.

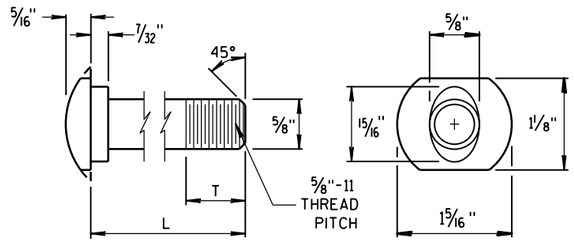



## DETAIL FOR 36" BLOCKOUT DEPTH

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.

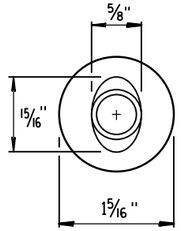
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

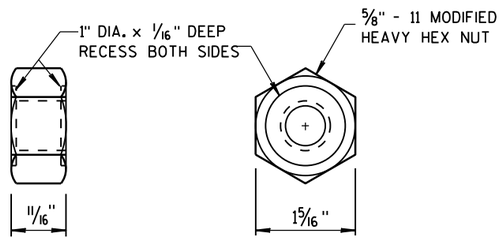



### POST BOLT TABLE

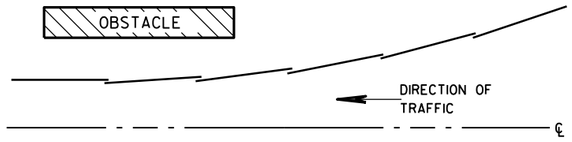
| L | T (MIN.) |
|---|---|
| 1 1/4" | 1 1/8" |
| 2" | 1 3/4" |
| 10" | 4" |
| 14" | 4 1/16" |
| 18" | 4" |
| 21" | 4 1/16" |
| 25" | 4" |




ALTERNATE BOLT HEAD

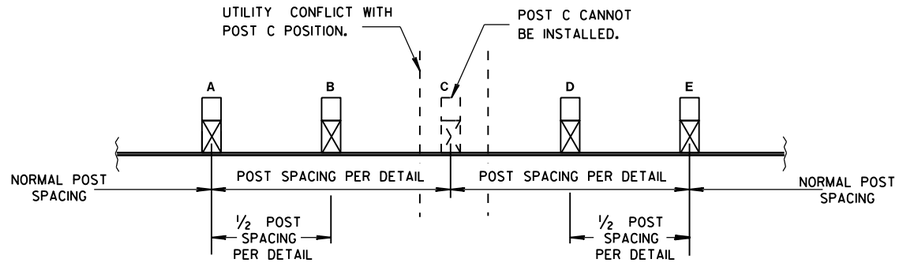



## POST BOLT AND RECESS NUT

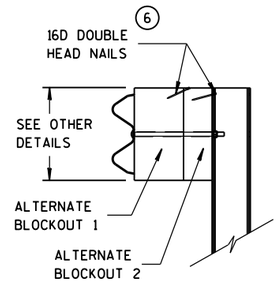



PLAN VIEW

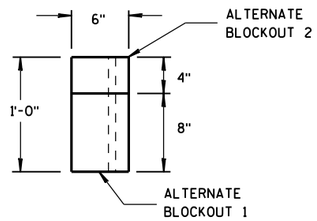
## BEAM LAPPING DETAIL




## 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 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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## 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.

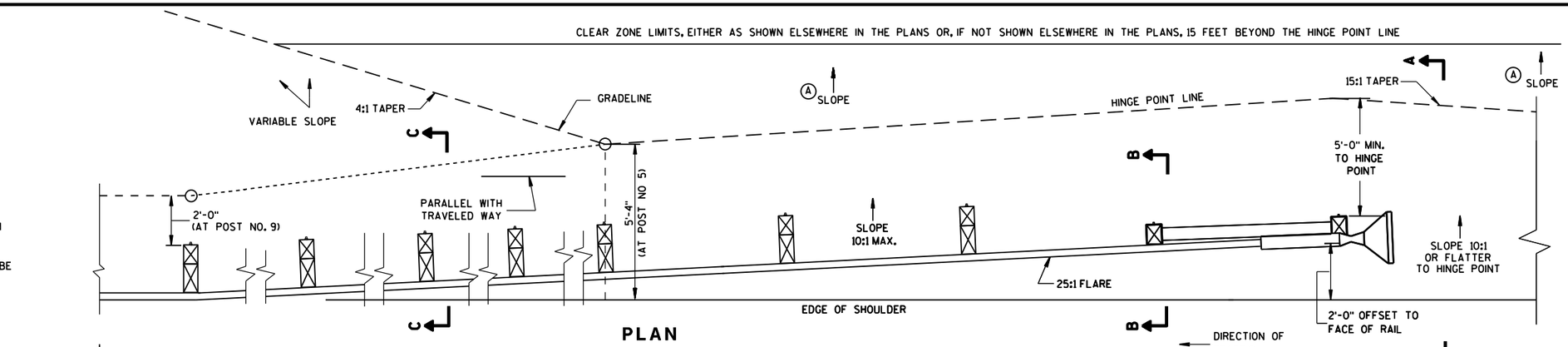
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

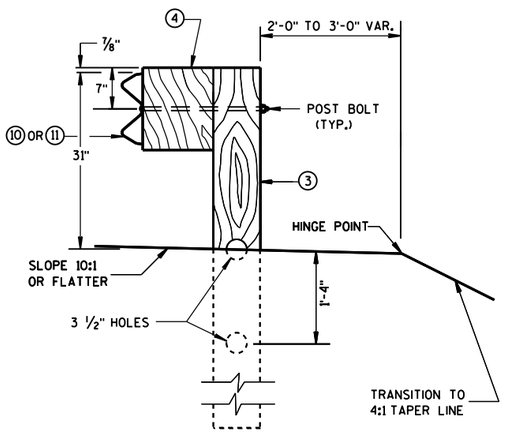
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

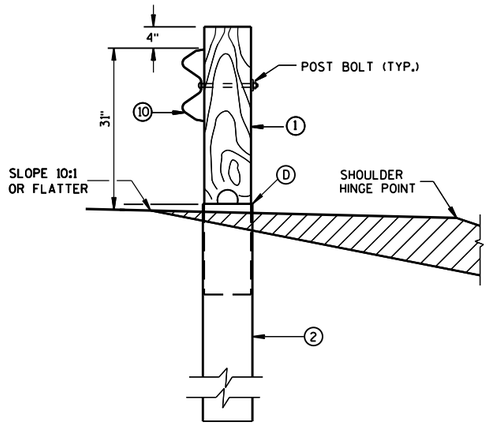
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



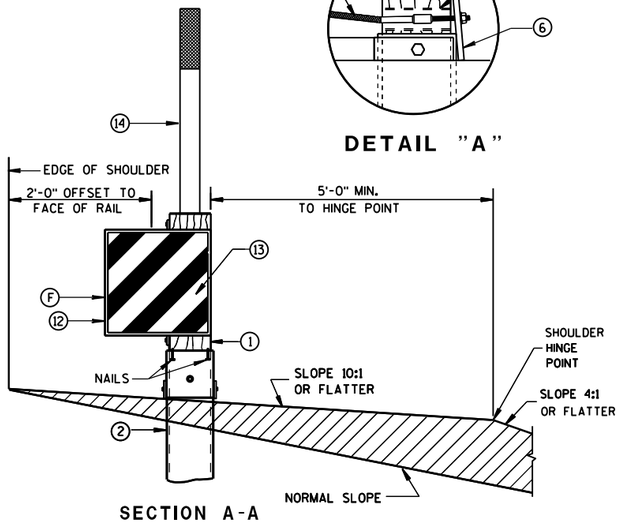

ELEVATION



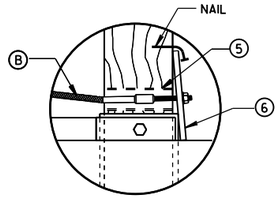

SECTION C-C
TYPICAL AT POST NOS. 3-9



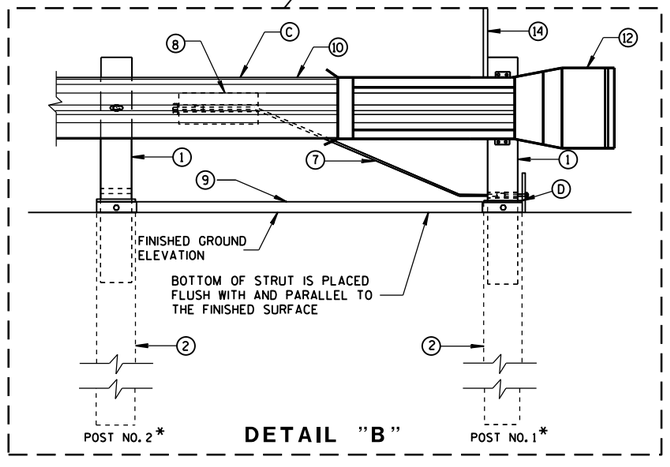

SECTION B-B
TYPICAL AT POST NO. 2*




SECTION A-A
TYPICAL AT POST NO. 1*




DETAIL "A"




DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO



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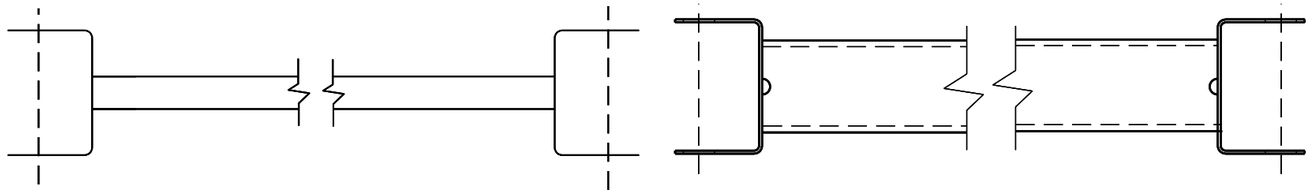
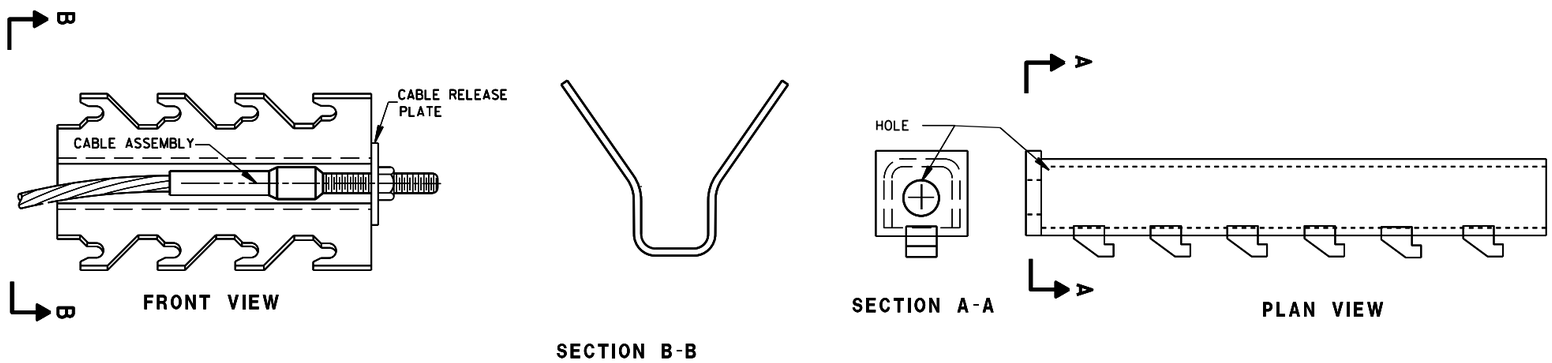
S.D.D. 14 B 44-2a



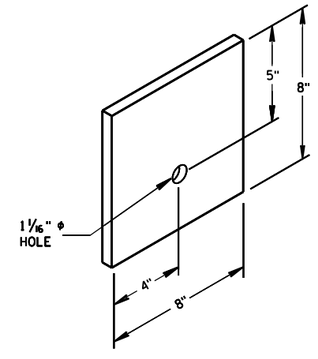
GENERIC GROUND STRUT (9) (H)

## 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 TRANSPOI





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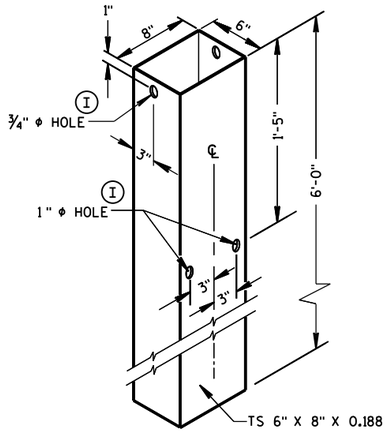
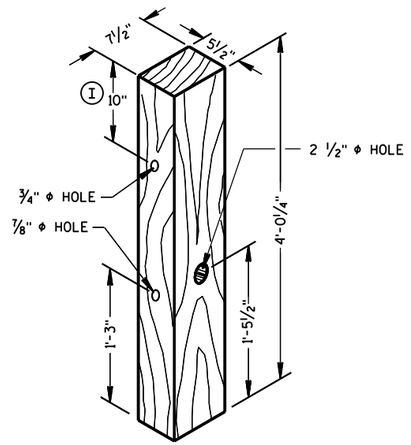
S.D.D. 14 B 44-2b

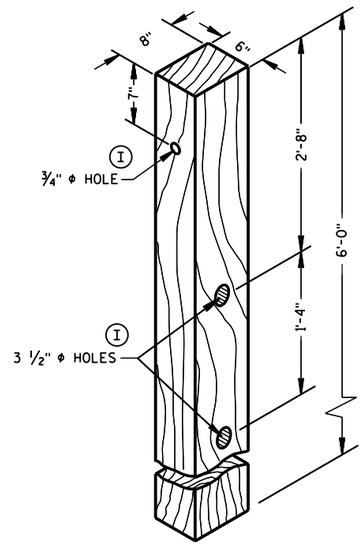



## FOUNDATION TUBE (2)



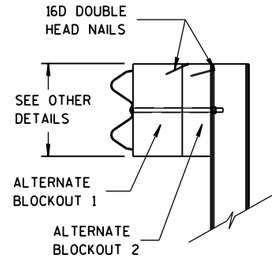

POSTS NUMBER 1 AND 2

## WOOD BREAKAWAY POST (1)

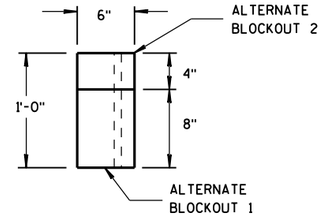



POSTS NUMBER 3-9

## WOOD CRT POST (3)

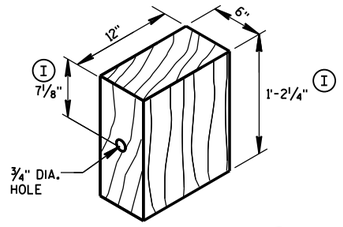



SIDE VIEW



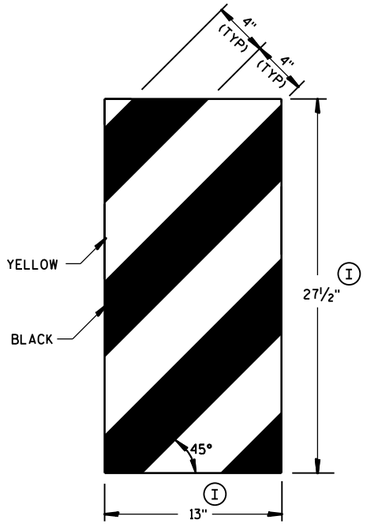

TOP VIEW

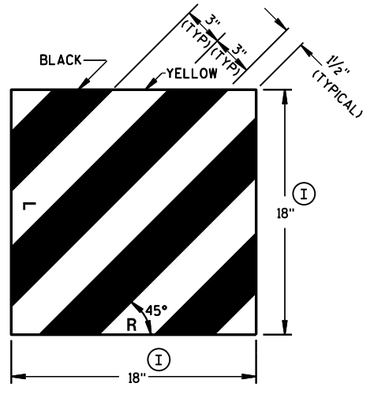
## ALTERNATE WOOD BLOCKOUT DETAIL



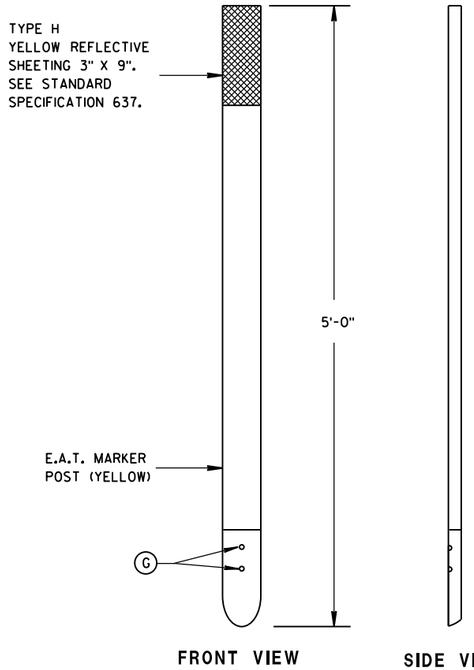

## WOOD BLOCKOUT (4)

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



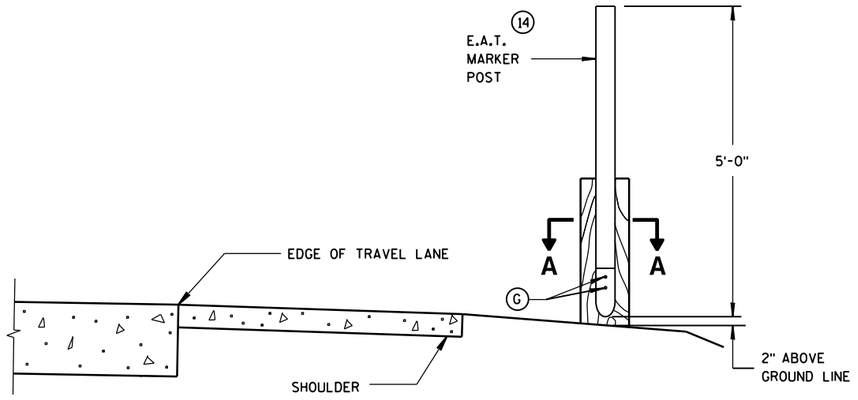

## GENERIC REFLECTIVE SHEETING (13) (H)




FRONT VIEW

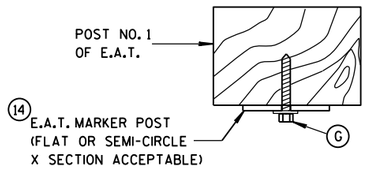
SIDE VIEW

## 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)**

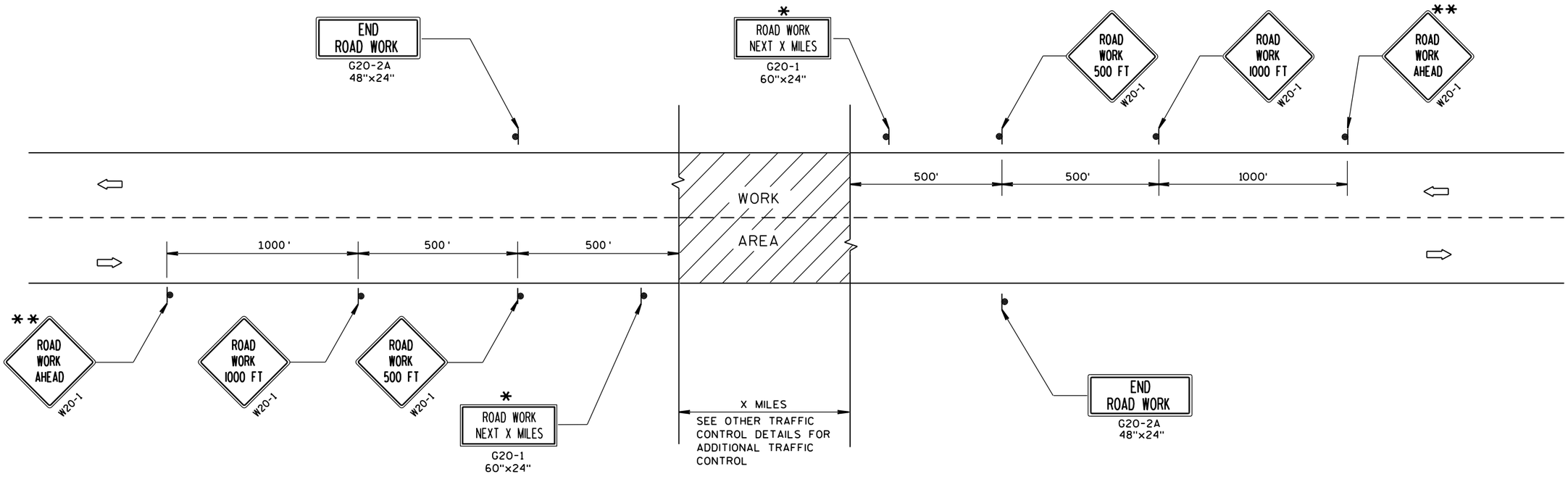
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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




6

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




# TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

## GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

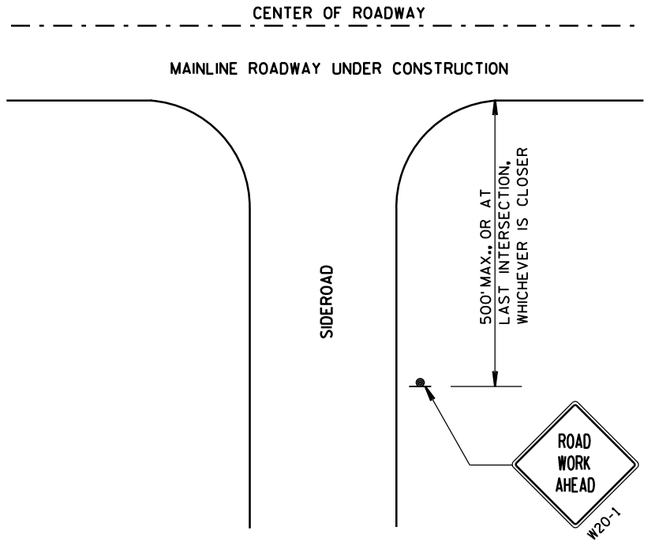
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.




## LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA



6

S.D.D. 15 C 4-2

6

S.D.D. 15 C 4-2

## LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

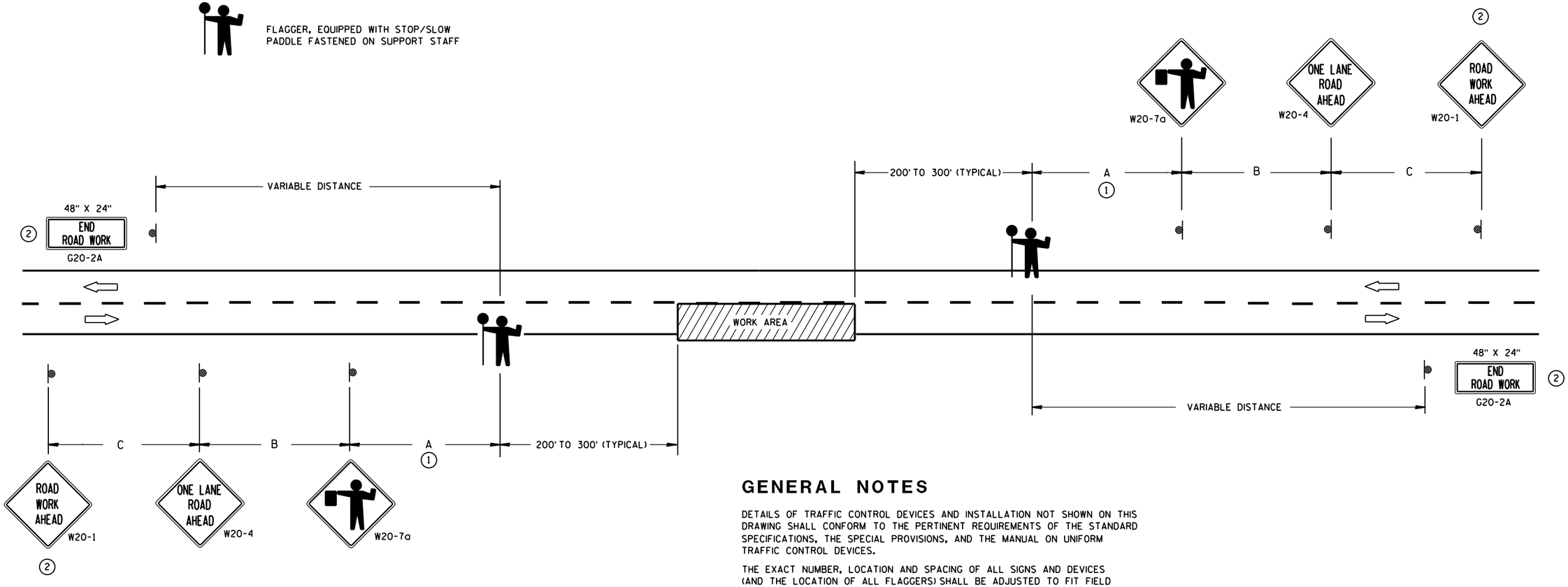
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

## SIGN SPACING TABLE

| SPEED LIMIT | SIGN SPACING A,B,C |
|---|---|
| 25-35 MPH | 200' |
| 35-40 MPH | 350' |
| 45-55 MPH | 500' |


W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.




(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

## 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.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

# TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA



6

S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4

## GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

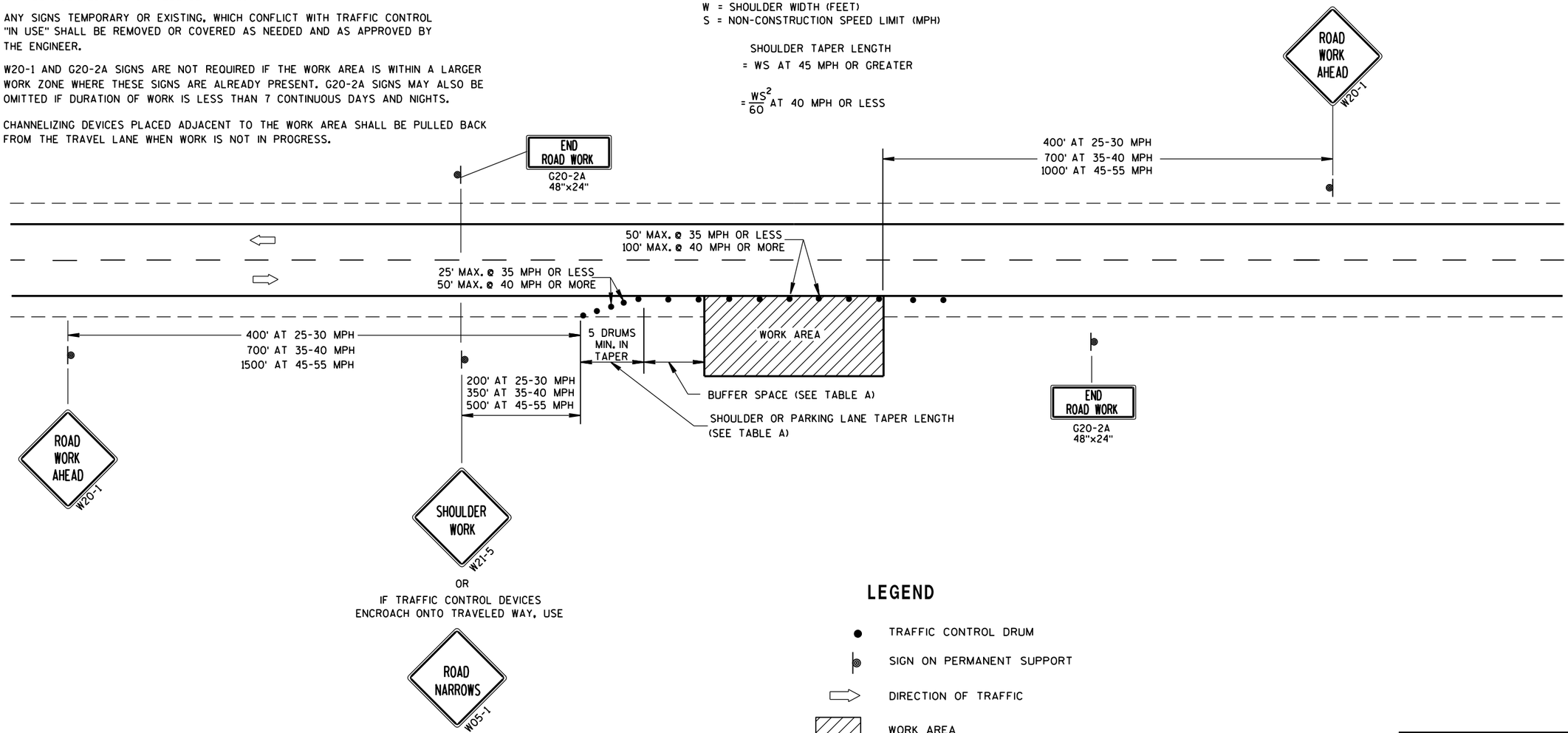
## TABLE A

| S \ W | SHOULDER TAPER LENGTH (FEET) 4 | 6 | 8 | 10 | BUFFER SPACE (FEET) |
|---|---|---|---|---|---|
| 30 | 20 | 30 | 40 | 50 | 85 |
| 35 | 30 | 45 | 55 | 70 | 120 |
| 40 | 40 | 55 | 75 | 90 | 170 |
| 45 | 60 | 90 | 120 | 150 | 220 |
| 50 | 70 | 100 | 135 | 170 | 280 |
| 55 | 75 | 110 | 150 | 185 | 335 |

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

$= \frac{WS^2}{60}$ AT 40 MPH OR LESS




## LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

**TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA



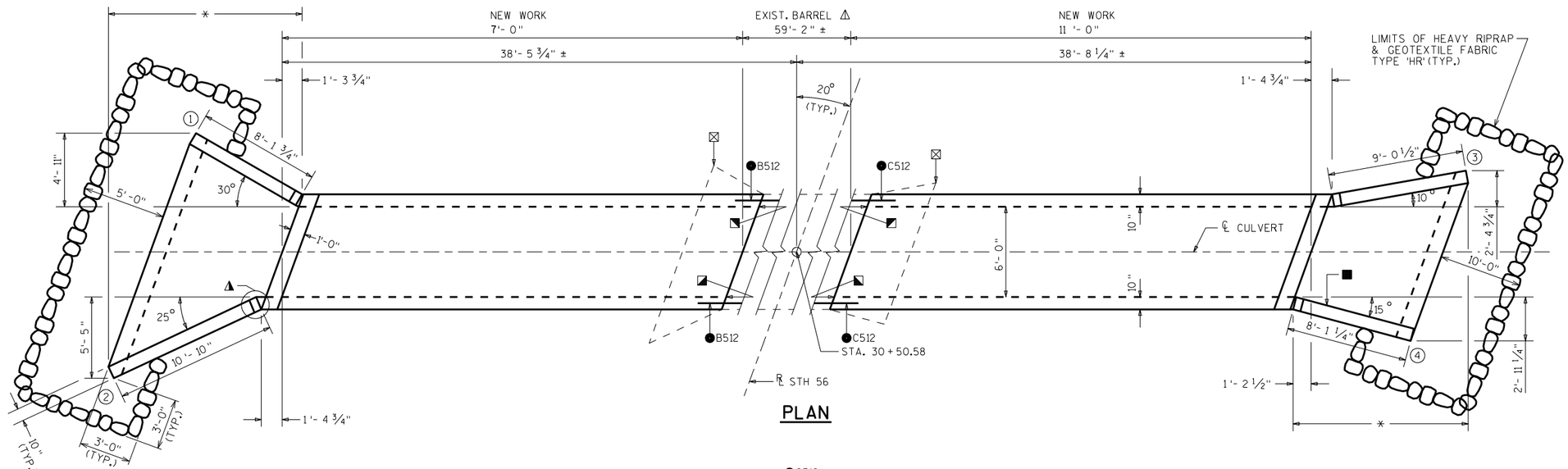

6


S.D.D. 15 D 28-2

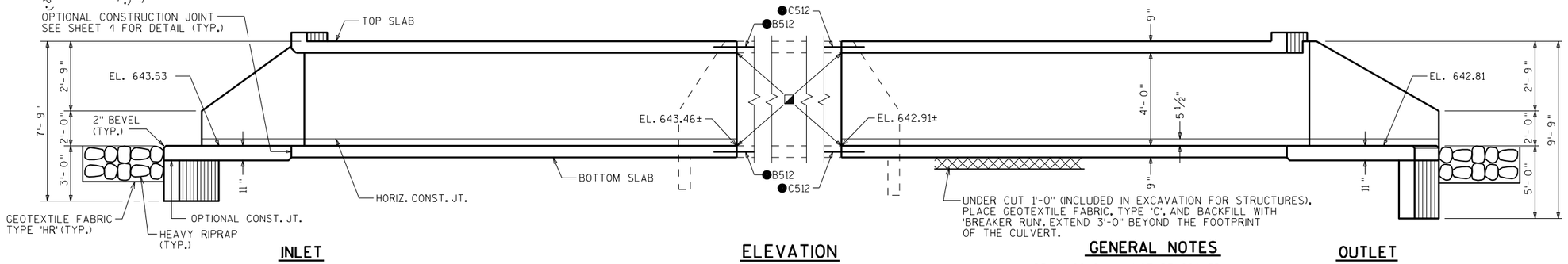
NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

- ◭ SEE CORNER DETAILS (SEE SHT 4)
- ■ NAME PLATE LOCATION (SEE SHT 4)
- ⚠ EXIST. BARREL TO REMAIN IN PLACE
- * BUILD APRON AND END OF BOX LEVEL
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK. (TYP. BOTH SIDES)
- ◯ INDICATES WING NUMBER
- ● MASONRY ANCHORS TYPE S 5/8-INCH EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).




## PLAN




INLET — ELEVATION — OUTLET

## LIST OF DRAWINGS



## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 5.0 FT. - 6.0 FT. OF FILL.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, GRADE A-FA — $f'_c$ = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y$ = 60000 P.S.I.

### TRAFFIC VOLUME

STH 56
A.D.T. = 1,100 (2031)
R.D.S. = 60 M.P.H.

### HYDRAULIC DATA

100 YEAR FREQUENCY
$Q_{100}$ = 130 C.F.S.
VEL. = 11.50 F.P.S.
HW. = EL. 647.31
DRAINAGE AREA = 0.19 SQ. MI.
OVERTOPPING RDWY. = N/A
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY
$Q_2$ = 10 C.F.S.
$HW._2$ = EL. 644.17

## TOTAL ESTIMATED QUANTITIES

BID ITEMS

| | | | |
|---|---|---|---|
| 203.0200 | REMOVING OLD STRUCTURE STA. 30+50.58 | 1 | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-62-1509 | 1 | LS |
| 210.0100 | BACKFILL STRUCTURE | 110 | CY |
| 311.0115 | BREAKER RUN | 20 | CY |
| 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | 48 | EACH |
| 504.0100 | CONCRETE MASONRY CULVERTS | 26 | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | 2025 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | 415 | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | 16 | SY |
| 606.0300 | RIPRAP HEAVY | 25 | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C | 75 | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | 70 | SY |

NON-BID ITEMS

| | | |
|---|---|---|
| FILLER | 3/4" | SIZE |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

EXISTING CULVERT SEDIMENT TO BE REMOVED AND SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES CULVERTS C-62-1509". EXCAVATION TO MATCH INTO EXISTING GROUND.


STRUCTURE DESIGN CONTACTS:
NICK RICE (608) 266-5092
AARON BONK (608) 261-0261


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

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
ACCEPTED William C. Dreher 10/9/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE C-62-1509

STH 56 OVER UNNAMED OVERLAND FLOW

| COUNTY | ~~TOWN/CITY~~/VILLAGE |
|---|---|
| VERNON | GENOA |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

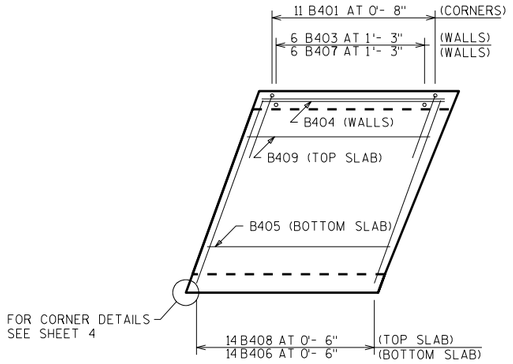
| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| MWL | NAR | NAR | JJS |

LAYOUT — SHEET 1 OF 4 — 38

I.D. 5730-01-31B

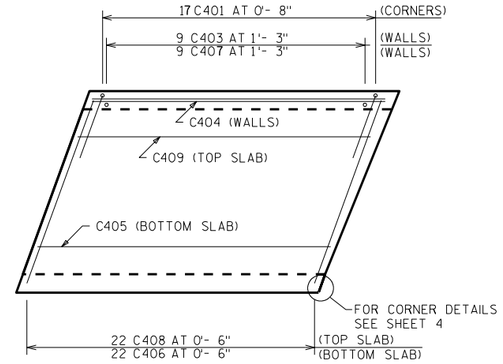
DATE: JULY 2014

SCALE = 4




## PLAN VIEW OF INLET EXTENSION PANEL

APRON AND HEADER ARE NOT SHOWN.



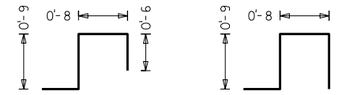

## PLAN VIEW OF OUTLET EXTENSION PANEL

APRON AND HEADER ARE NOT SHOWN.

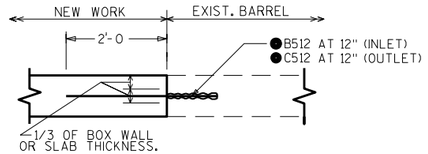
## BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

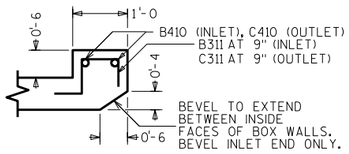
| MARK | NUMBER REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|
| B401 | 44 | 5-3 | 2-1 | NO | CORNERS |
| NOT | USED | | | | |
| B403 | 12 | 2-1 | NO | NO | WALLS-DOWELS VERT. |
| B404 | 18 | 6-6 | NO | NO | TOP&BOTTOM SLAB & WALL |
| B405 | 4 | 6-6 | NO | NO | BOTTOM SLAB LONGIT. |
| B406 | 14 | 7-9 | NO | NO | BOTTOM SLAB TRANS. |
| B407 | 12 | 4-1 | NO | NO | WALLS VERT. |
| B408 | 14 | 7-9 | NO | NO | TOP SLAB TRANS. |
| B409 | 4 | 6-6 | NO | NO | TOP SLAB LONGIT. |
| B410 | 2 | 7-9 | NO | NO | HEADERS HORIZ. |
| B311 | 11 | 2-2 | YES | NO | HEADER STIRRUPS VERT. |
| ● B512 | 22 | 3-0 | NO | NO | VERT.CONST.JT |
| C401 | 68 | 5-3 | 2-1 | NO | CORNERS |
| NOT | USED | | | | |
| C403 | 18 | 2-1 | NO | NO | WALLS-DOWELS VERT. |
| C404 | 18 | 10-6 | NO | NO | TOP&BOTTOM SLAB & WALL |
| C405 | 4 | 10-6 | NO | NO | BOTTOM SLAB LONGIT. |
| C406 | 22 | 7-9 | NO | NO | BOTTOM SLAB TRANS. |
| C407 | 18 | 4-1 | NO | NO | WALLS VERT. |
| C408 | 22 | 7-9 | NO | NO | TOP SLAB TRANS. |
| C409 | 4 | 10-6 | NO | NO | TOP SLAB LONGIT. |
| C410 | 2 | 7-9 | NO | NO | HEADERS HORIZ. |
| C311 | 11 | 2-5 | YES | NO | HEADER STIRRUPS VERT. |
| ● C512 | 22 | 3-0 | NO | NO | VERT.CONST.JT |




B311 C311

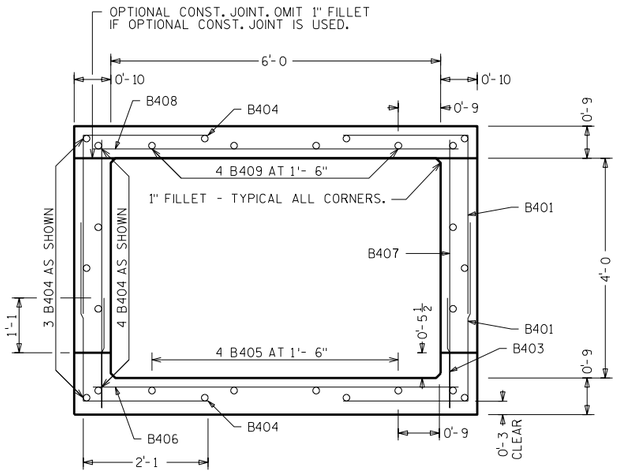



VERTICAL CONSTRUCTION JOINT

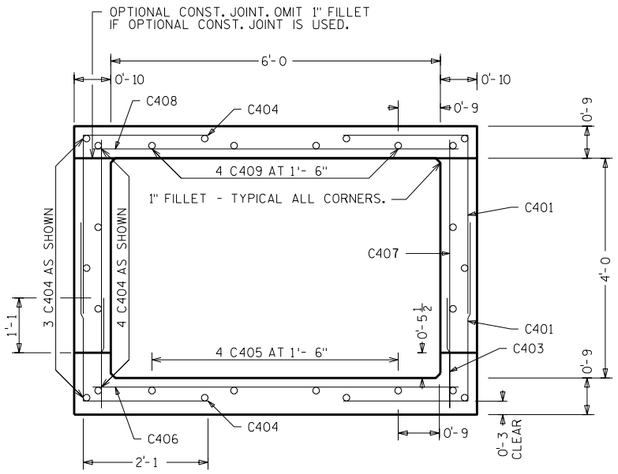



SECTION THRU TOP HEADER

● MASONRY ANCHORS TYPE S 5/8-INCH EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).




## TYPICAL SECTION THRU INLET EXTENSION




## TYPICAL SECTION THRU OUTLET EXTENSION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1509

DRAWN BY NAR | PLANS CK'D. JJS

EXTENSION DETAILS

SHEET 2

39

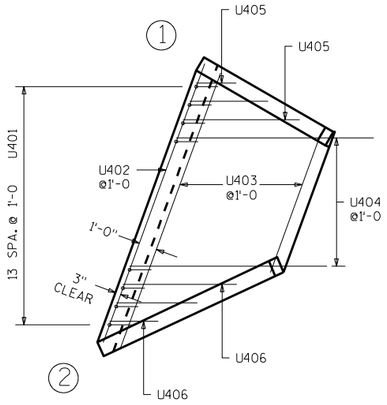
SCALE = 4

8

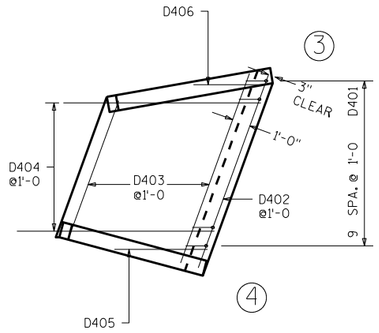
8

STATE PROJECT NUMBER

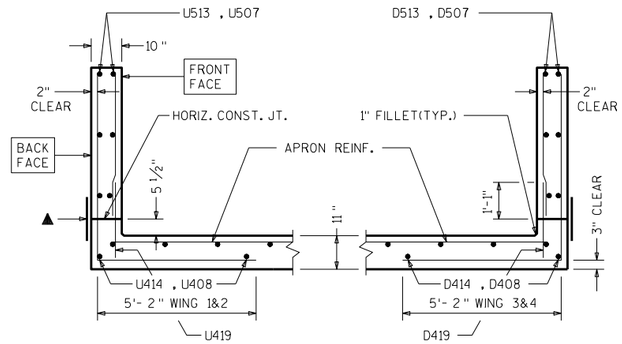
5730-01-61




## APRON REINF.

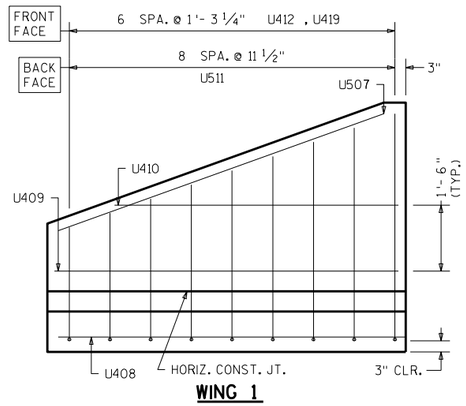



▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).

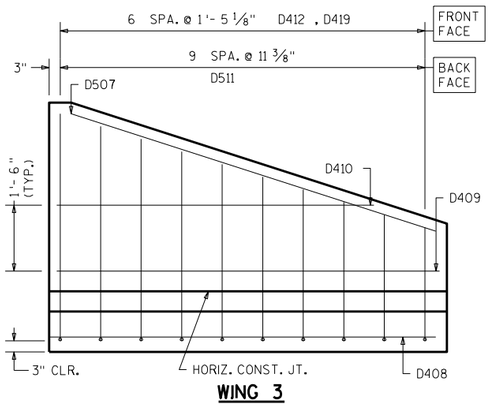



## SECTION THRU WINGS

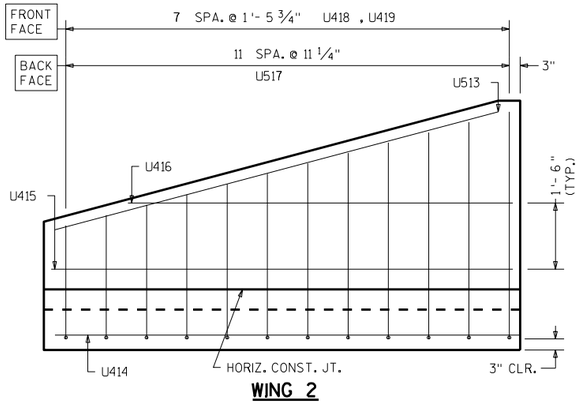
AT RIGHT ANGLES TO WING WALLS



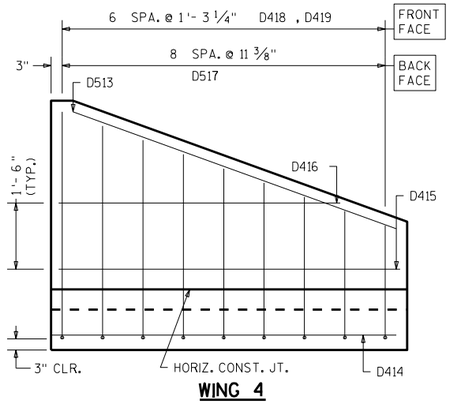

## WING 1




## WING 3




## WING 2

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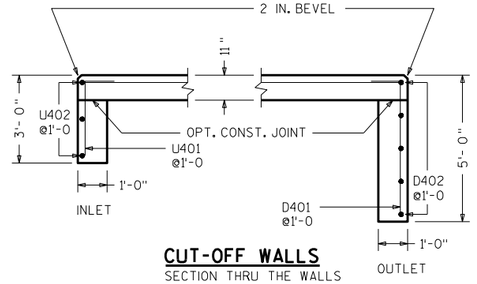
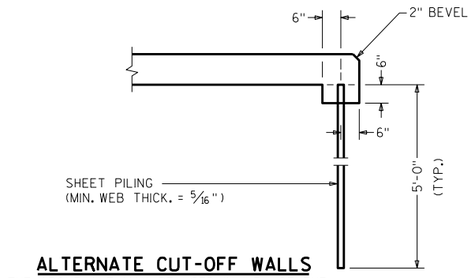



## CUT-OFF WALLS

SECTION THRU THE WALLS




## ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1509

DRAWN BY NAR | PLANS CK'D. JJS

APRON DETAILS

SHEET 3

40

SCALE = 4

8

8

STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

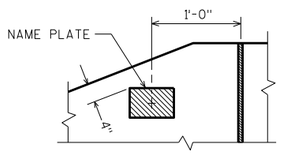
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| U401 | | 14 | 3 - 6 | 1 - 0 | | INLET APRON AND CUTOFF WALL |
| U402 | | 3 | 16 - 0 | | | INLET APRON AND CUTOFF WALL |
| U403 | | 8 | 12 - 0 | | * | " APRON |
| U404 | | 8 | 10 - 9 | | | " APRON |
| U405 | | 3 | 4 - 3 | | * | " APRON |
| U406 | | 3 | 4 - 5 | | * | " APRON |
| U507 | | 2 | 8 - 2 | | | WING 1 -HORIZONTAL - BOTH FACES |
| U408 | | 2 | 7 - 10 | | | WING "-HORIZONTAL -APRON BOTT. SLAB |
| U409 | | 2 | 7 - 10 | | | WING "-HORIZONTAL - BOTH FACES |
| U410 | | 2 | 6 - 5 | | | WING "-HORIZONTAL - BOTH FACES |
| U511 | X | 9 | 8 - 11 | 5 - 2 | * | WING "-VERTICAL - BACK FACE |
| U412 | | 7 | 2 - 9 | | * | WING "-VERTICAL - FRONT FACE |
| U513 | | 2 | 10 - 8 | | | WING 2 -HORIZONTAL - BOTH FACES |
| U414 | | 2 | 10 - 6 | | | WING "-HORIZONTAL -APRON BOTT. SLAB |
| U415 | | 2 | 10 - 6 | | | WING "-HORIZONTAL - BOTH FACES |
| U416 | | 2 | 8 - 9 | | | WING "-HORIZONTAL - BOTH FACES |
| U517 | X | 12 | 8 - 11 | 5 - 2 | * | WING "-VERTICAL - BACK FACE |
| U418 | | 8 | 2 - 9 | | * | WING "-VERTICAL - FRONT FACE |
| U419 | X | 15 | 2 - 2 | | | WINGS 1 AND 2 - DOWELS - FRONT FACE |
| D401 | | 10 | 5 - 6 | 1 - 0 | | OUTLET APRON AND CUTOFF WALL |
| D402 | | 5 | 11 - 0 | | | OUTLET APRON AND CUTOFF WALL |
| D403 | | 8 | 9 - 5 | | * | " APRON |
| D404 | | 8 | 10 - 9 | | | " APRON |
| D405 | | 1 | 5 - 1 | | | " APRON |
| D406 | | 1 | 4 - 1 | | | " APRON |
| D507 | | 2 | 9 - 0 | | | WING 3 -HORIZONTAL - BOTH FACES |
| D408 | | 2 | 8 - 9 | | | WING "-HORIZONTAL -APRON BOTT. SLAB |
| D409 | | 2 | 8 - 9 | | | WING "-HORIZONTAL - BOTH FACES |
| D410 | | 2 | 7 - 3 | | | WING "-HORIZONTAL - BOTH FACES |
| D511 | X | 10 | 8 - 11 | 5 - 2 | * | WING "-VERTICAL - BACK FACE |
| D412 | | 7 | 2 - 9 | | * | WING "-VERTICAL - FRONT FACE |
| D513 | | 2 | 8 - 1 | | | WING 4 -HORIZONTAL - BOTH FACES |
| D414 | | 2 | 7 - 9 | | | WING "-HORIZONTAL -APRON BOTT. SLAB |
| D415 | | 2 | 7 - 9 | | | WING "-HORIZONTAL - BOTH FACES |
| D416 | | 2 | 6 - 5 | | | WING "-HORIZONTAL - BOTH FACES |
| D517 | X | 9 | 8 - 11 | 5 - 2 | * | WING "-VERTICAL - BACK FACE |
| D418 | | 7 | 2 - 9 | | * | WING "-VERTICAL - FRONT FACE |
| D419 | X | 14 | 2 - 2 | | | WINGS 3 AND 4 - DOWELS - FRONT FACE |

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

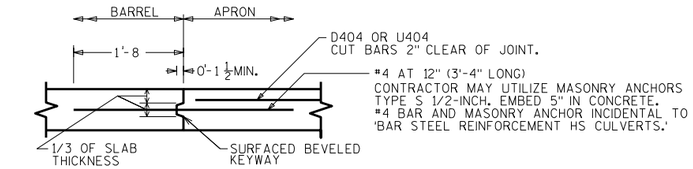
## BAR SERIES TABLE

--- BUNDLE AND TAG EACH SERIES SEPARATELY

| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| U403 | 1 SERIES OF 8 | 8 - 1 TO 16 - 0 |
| U405 | 1 SERIES OF 3 | 2 - 2 TO 6 - 5 |
| U406 | 1 SERIES OF 3 | 2 - 8 TO 6 - 3 |
| U511 | 1 SERIES OF 9 | 7 - 6 TO 10 - 3 |
| U412 | 1 SERIES OF 7 | 1 - 5 TO 4 - 1 |
| U517 | 1 SERIES OF 12 | 7 - 6 TO 10 - 3 |
| U418 | 1 SERIES OF 8 | 1 - 5 TO 4 - 1 |
| D403 | 1 SERIES OF 8 | 7 - 10 TO 11 - 0 |
| D511 | 1 SERIES OF 10 | 7 - 6 TO 10 - 3 |
| D412 | 1 SERIES OF 7 | 1 - 5 TO 4 - 1 |
| D517 | 1 SERIES OF 9 | 7 - 6 TO 10 - 3 |
| D418 | 1 SERIES OF 7 | 1 - 5 TO 4 - 1 |

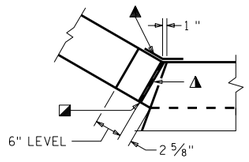



NAME PLATE LOCATION
WING 4

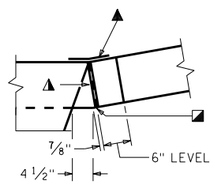



OPTIONAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

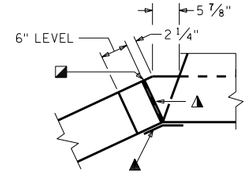



▲ 3/4" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.



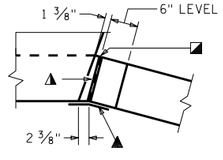

CORNER 1

CORNER 3




◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.




CORNER 2

CORNER 4

CORNER DETAILS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1509

DRAWN BY NAR | PLANS CK'D. JJS

DETAILS

SHEET 4

41

SCALE = 4

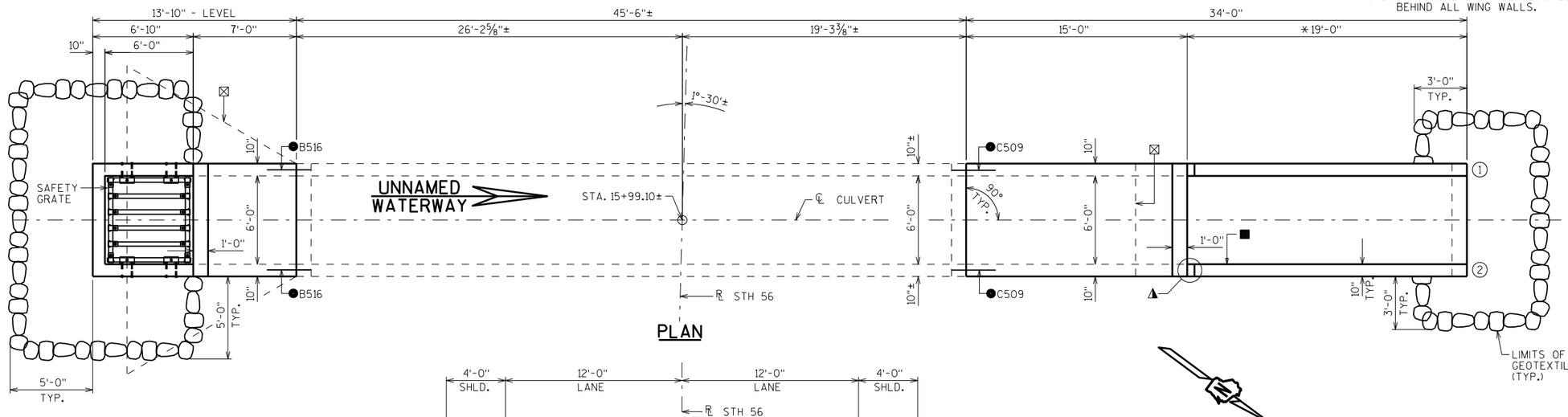
8

8

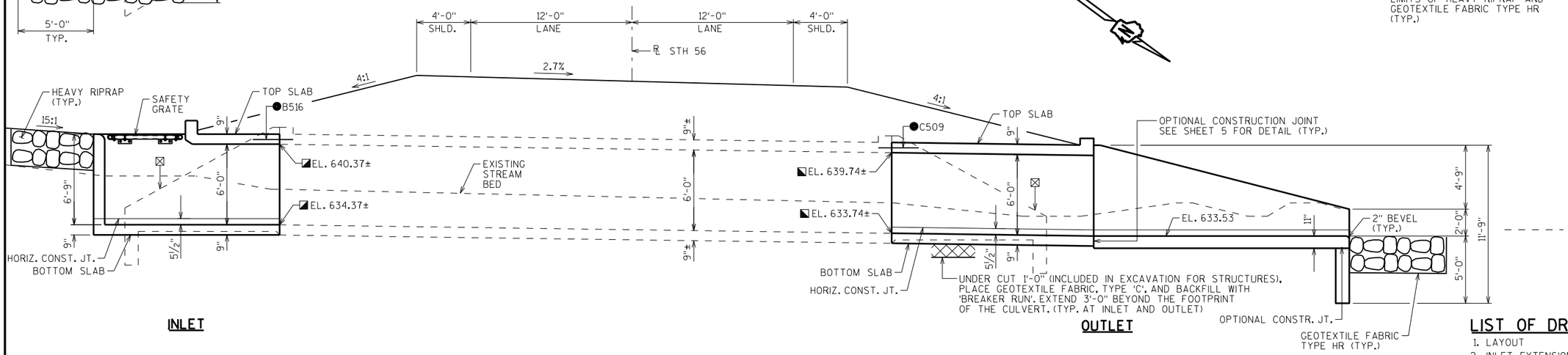
NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

- ◭ SEE CORNER DETAILS SHEET 5
- ◯ INDICATES WING NUMBER
- * BUILD APRON AND END OF BOX LEVEL
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK.
- ● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).
- ■ NAME PLATE LOCATION (SEE SHT 5)




PLAN




INLET

OUTLET

ELEVATION
LOOKING DOWNSTATION

## LIST OF DRAWINGS



## DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 4 FT. TO 5 FT. OF FILL.

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY, GRADE A-FA ——— $f'_c$ = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y$ = 60000 P.S.I.

## TRAFFIC VOLUME

STH 56
A.D.T. = 1,100 (2031)
R.D.S. = 60 M.P.H.

## HYDRAULIC DATA

100 YEAR FREQUENCY
$Q_{100}$ = 60 C.F.S.
VEL. = 3.1 F.P.S.
HW.= EL. 640.95

2 YEAR FREQUENCY
$Q_2$ =5 C.F.S.
$HW._2$ = EL. 640.76

WATERWAY AREA= 36 SQ. FT.
DRAINAGE AREA= 0.06 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

## TOTAL ESTIMATED QUANTITIES

BID ITEMS

| | | | |
|---|---|---|---|
| 203.0200 | REMOVING OLD STRUCTURE STA. 16+00 | 1 | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-62-1514 | 1 | LS |
| 210.0100 | BACKFILL STRUCTURE | 295 | CY |
| 311.0115 | BREAKER RUN | 25 | CY |
| 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | 36 | EACH |
| 504.0100 | CONCRETE MASONRY CULVERTS | 35 | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | 3275 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | 555 | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | 15 | SY |
| 606.0300 | RIPRAP HEAVY | 12 | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C | 85 | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | 40 | SY |
| SPV.0105 | SAFETY GRATE CULVERT | 1 | LS |

NON-BID ITEMS

| | | |
|---|---|---|
| FILLER | 3/4" | SIZE |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.


STRUCTURE DESIGN CONTACTS:
NICK RICE (608) 266-5092
AARON BONK (608) 261-0261


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

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
ACCEPTED William C. Dreher 10/9/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-62-1514

STH 56 OVER UNNAMED WATERWAY

COUNTY VERNON
~~TOWN/CITY~~/VILLAGE GENOA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| NAR | DFD | NAR | DFD |

LAYOUT

SHEET 1 OF 6

42

I.D. 5730-01-31A

DATE: JULY 2014

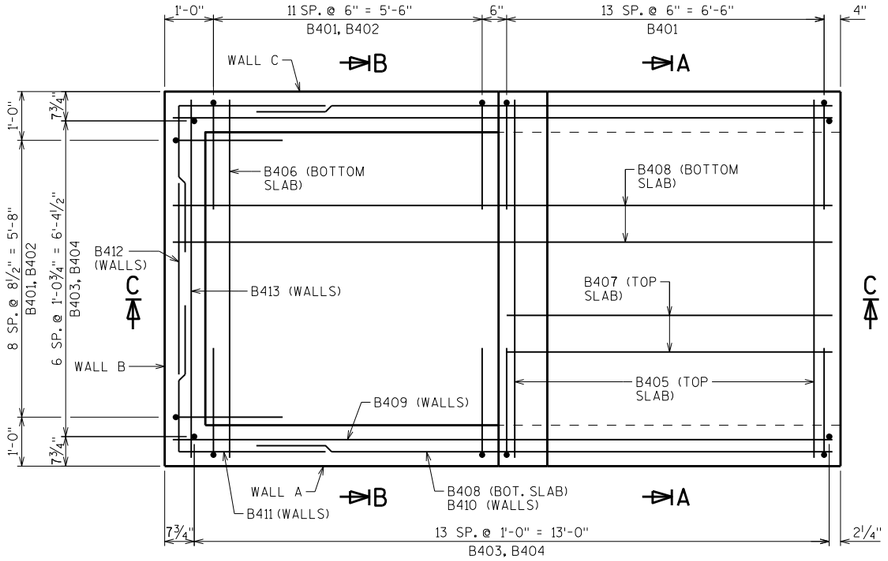
SCALE = 4

8

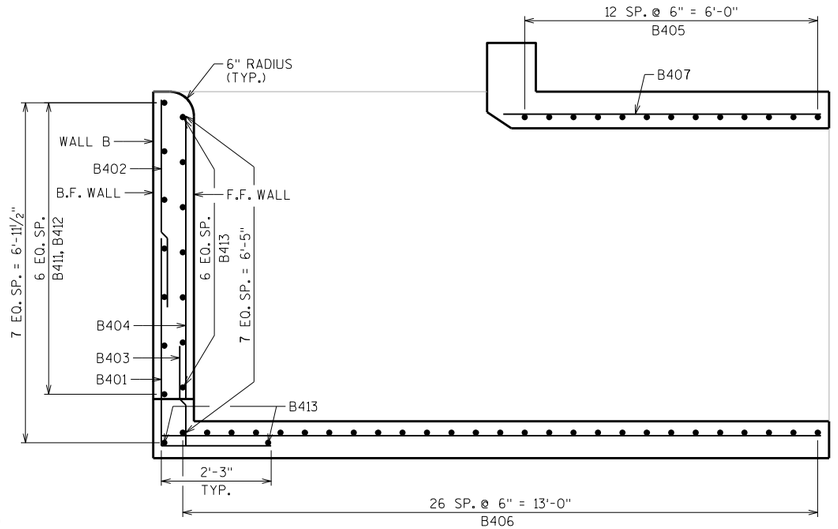
8

STATE PROJECT NUMBER

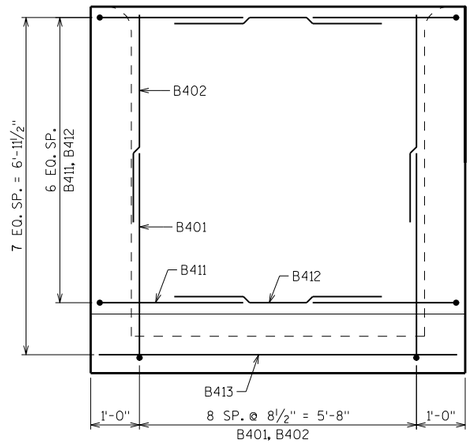
5730-01-61




PLAN VIEW OF INLET EXTENSION PANEL

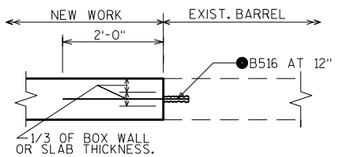



SECTION C-C

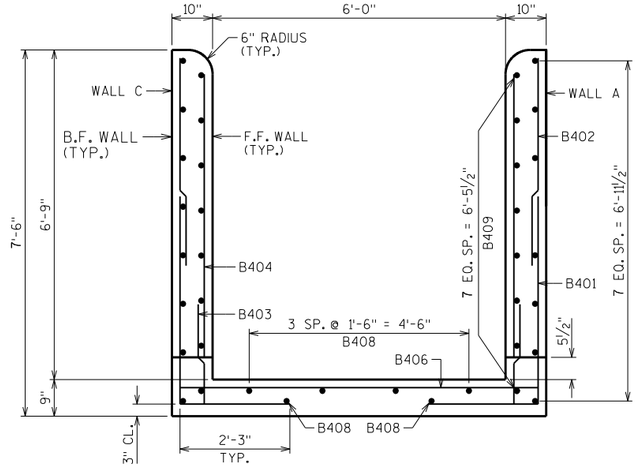



ELEVATION VIEW - WALL B

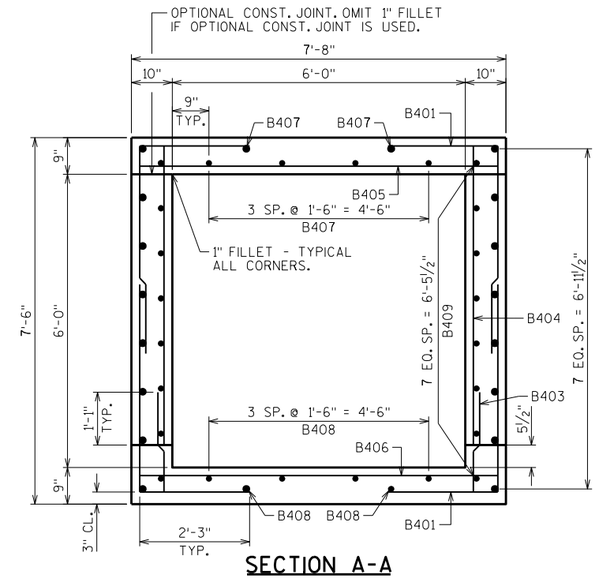
SHOWING EXTERIOR WALL - B.F. REINFORCEMENT



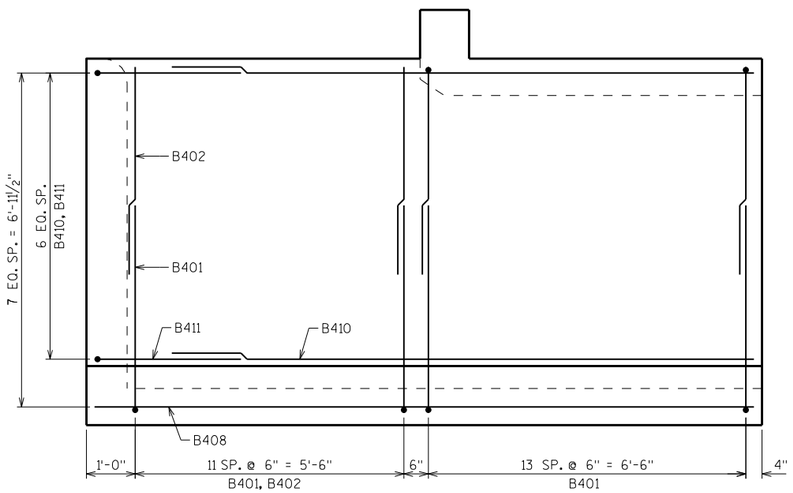

VERTICAL CONSTRUCTION JOINT




SECTION B-B

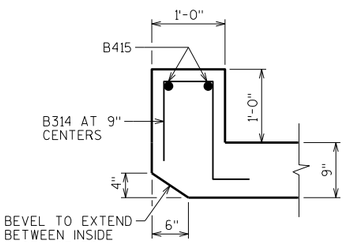



SECTION A-A




ELEVATION VIEW - WALL A

SHOWING EXTERIOR WALL - B.F. REINFORCEMENT
WALL C IS SIMILAR




SECTION THRU TOP HEADER

(AT INLET)

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1514

DRAWN BY NAR | PLANS CK'D. DFD

INLET EXTENSION DETAILS

SHEET 2

43

SCALE = 1:5

8

8

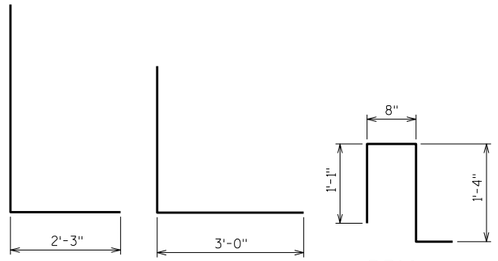
STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

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

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| B401 | | 89 | 6'-5" | X | | CORNERS |
| B402 | | 33 | 4'-3" | | | EXTERIOR WALL - B.F. - VERT. |
| B403 | | 33 | 2'-1" | | | EXTERIOR WALL - F.F. - VERT. - DOWEL |
| B404 | | 33 | 5'-9" | | | EXTERIOR WALL - F.F. - VERT. |
| B405 | | 13 | 7'-4" | | | TOP SLAB - TRANS. |
| B406 | | 27 | 7'-4" | | | BOTTOM SLAB - TRANS. |
| B407 | | 6 | 6'-6" | | | TOP SLAB - LONGIT. |
| B408 | | 8 | 13'-6" | | | BOTTOM SLAB - LONGIT. |
| B409 | | 16 | 13'-6" | | | EXTERIOR WALL - F.F. - HORIZ. |
| B410 | | 14 | 12'-0" | | | EXTERIOR WALL - B.F. - HORIZ. |
| B411 | | 14 | 5'-11" | X | | EXTERIOR WALL - B.F. - HORIZ. |
| B412 | | 7 | 4'-3" | | | EXTERIOR WALL - B.F. - HORIZ. |
| B413 | | 9 | 7'-4" | | | EXTERIOR WALL - F.F. - HORIZ. |
| B314 | | 10 | 3'-4" | X | | HEADER - STIRRUPS |
| B415 | | 2 | 7'-4" | | | HEADER - HORIZ. |
| ● B516 | | 18 | 2'-6" | | | VERT. CONST. JT. |




B401 B411




B314

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

8

8

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1514

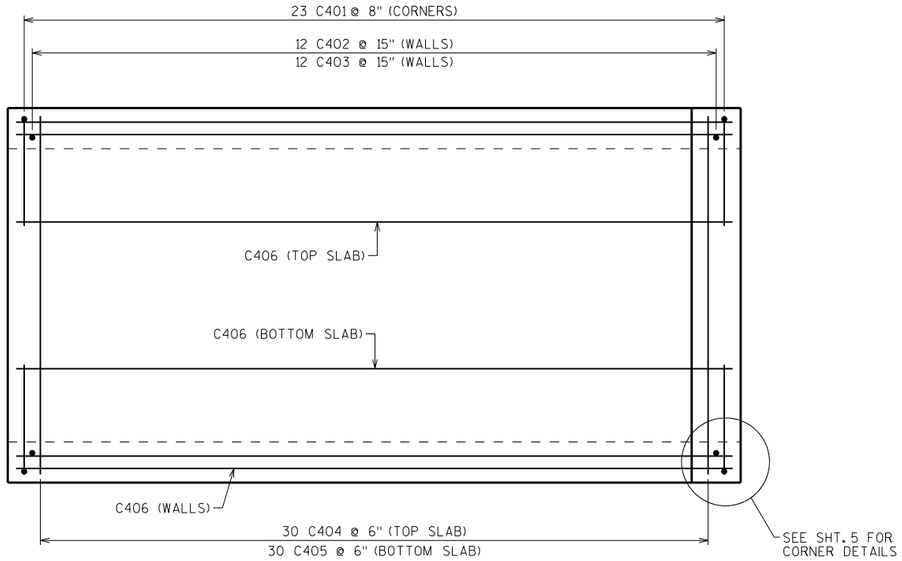
DRAWN BY NAR | PLANS CK'D. DFD

INLET EXTENSION BAR TABLES

SHEET 3

44

SCALE = 1.5




PLAN VIEW OF OUTLET EXTENSION PANEL

STATE PROJECT NUMBER

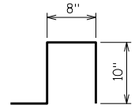
5730-01-61

## BILL OF BARS

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

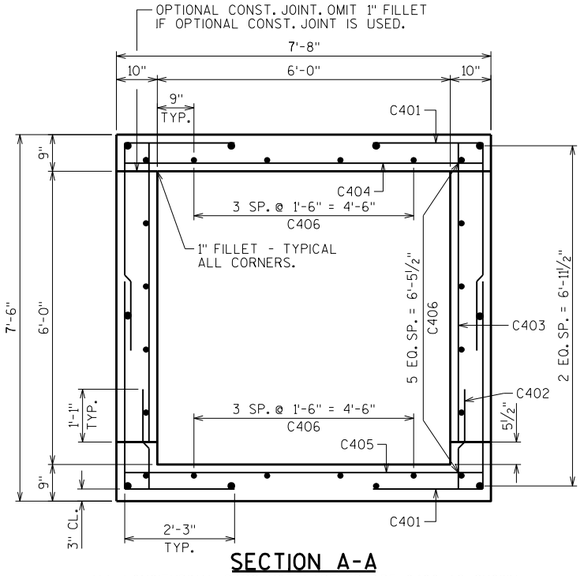
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| C401 | | 92 | 6'-5" | X | | CORNERS |
| C402 | | 24 | 2'-1" | | | EXTERIOR WALL - F.F. - VERT. - DOWEL |
| C403 | | 24 | 6'-1" | | | EXTERIOR WALL - F.F. - VERT. |
| C404 | | 30 | 7'-4" | | | TOP SLAB - TRANS. |
| C405 | | 30 | 7'-4" | | | BOTTOM SLAB - TRANS. |
| C406 | | 30 | 14'-8" | | | WALLS AND SLABS - HORIZ. |
| C307 | | 10 | 2'-7" | | | HEADER - STIRRUPS |
| C408 | | 2 | 7'-4" | | | HEADER - HORIZ. |
| ● C509 | | 18 | 3'-0" | | | VERT.CONST.JT. |


C401



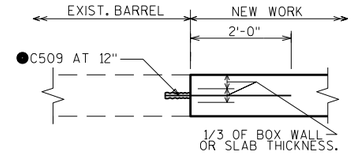

C307

8



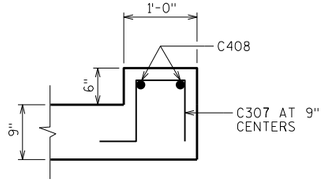

SECTION A-A

ALL LONGITUDINAL BARS NOT LABELED ARE C406 AS SHOWN




VERTICAL CONSTRUCTION JOINT

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).




SECTION THRU TOP HEADER (AT OUTLET)

8

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1514

DRAWN BY NAR | PLANS CK'D. DFD

OUTLET EXTENSION DETAILS

SHEET 4

45

SCALE = 1:5

## BILL OF BARS

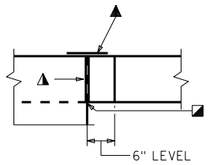
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| D401 | | 8 | 5 - 6 | 1 - 0 | | OUTLET APRON AND CUTOFF WALL |
| D402 | | 5 | 7 - 2 | | | OUTLET APRON AND CUTOFF WALL |
| D403 | | 18 | 7 - 2 | | | " APRON |
| D404 | | 8 | 21 - 0 | | | " APRON |
| D505 | | 4 | 19 - 3 | | | WINGS 3 AND 4 -HORIZONTAL -BOTH FACES |
| D406 | | 4 | 18 - 8 | | | WING "-HORIZONTAL -APRON BOTT. SLAB |
| D407 | | 4 | 18 - 8 | | | WING "-HORIZONTAL - BOTH FACES |
| D408 | | 12 | 11 - 0 | | * | WING "-HORIZONTAL - BOTH FACES |
| D509 | X | 20 | 10 - 4 | 6 - 1 | * | WING "-VERTICAL - BACK FACE |
| D510 | | 20 | 5 - 0 | | | WING "-VERTICAL - BACK FACE |
| D511 | X | 28 | 10 - 2 | 6 - 1 | * | WING "-VERTICAL - BACK FACE |
| D412 | | 28 | 3 - 9 | | * | WING "-VERTICAL - FRONT FACE |
| D413 | X | 28 | 2 - 1 | | | WINGS 3 AND 4 - DOWELS - FRONT FACE |

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

## BAR SERIES TABLE --- BUNDLE AND TAG EACH SERIES SEPARATELY

| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| D408 | 4 SERIES OF 3 | 5 - 1 TO 16 - 10 |
| D509 | 2 SERIES OF 10 | 9 - 9 TO 10 - 10 |
| D511 | 2 SERIES OF 14 | 8 - 6 TO 11 - 10 |
| D412 | 2 SERIES OF 14 | 1 - 5 TO 6 - 1 |

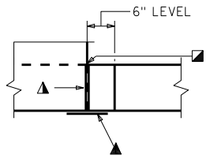



▲ ¾" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.

◪ 1" BEVEL TYPICAL

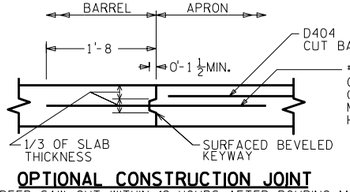
▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

### CORNER 3



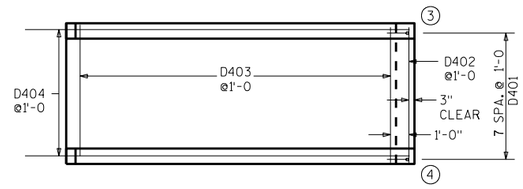

### CORNER 4

### CORNER DETAILS

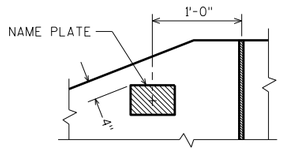



### OPTIONAL CONSTRUCTION JOINT

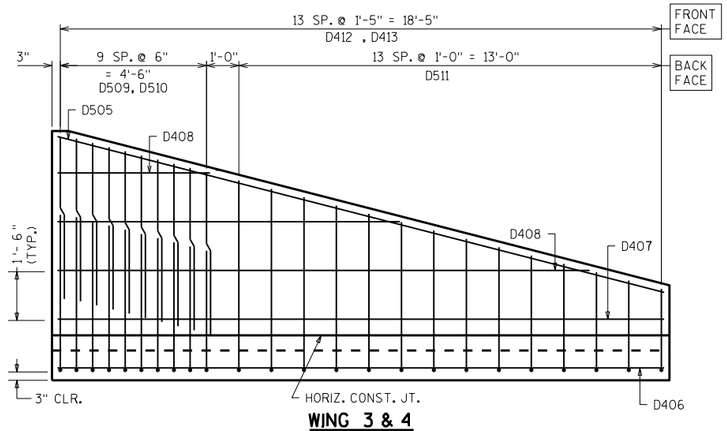
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.




### APRON REINF.

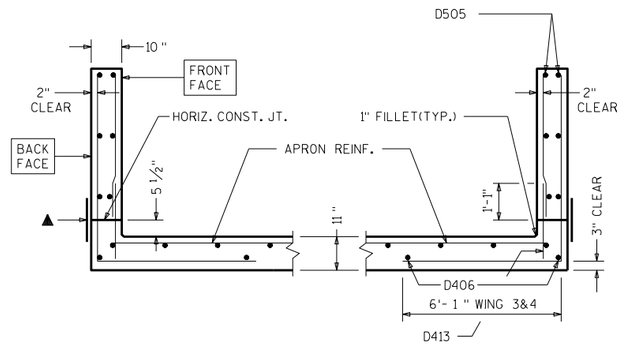



### NAME PLATE LOCATION WING 2



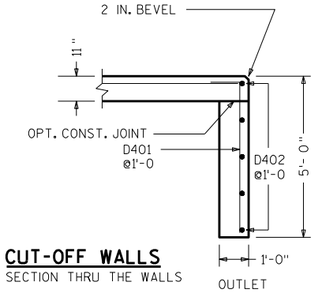

### WING 3 & 4

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).



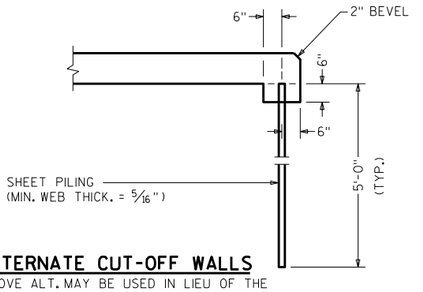

### SECTION THRU WINGS

AT RIGHT ANGLES TO WING WALLS




### CUT-OFF WALLS

SECTION THRU THE WALLS




### ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

STATE PROJECT NUMBER

5730-01-61

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1514

DRAWN BY NAR | PLANS CK'D. DFD

APRON DETAILS

SHEET 5

46

8

8

SCALE = 4

STATE PROJECT NUMBER

5730-01-61

## GENERAL NOTES

ALL GRATE BARS AND CROSS BARS TO BE 3" DIA. NOMINAL PIPE, 3½" O.D.

BOLTS AND LOCK NUTS SHALL BE AT ALL LOCATIONS AS SHOWN. THE BOLTS AND NUTS SHALL CONFORM TO REQUIREMENTS OF ASTM-A307 AND SHALL BE GALVANIZED IN COMPLIANCE WITH ASTM A-153. ANGLES SHALL COMPLY WITH ASTM A709 GRADE 36 AND SHALL BE GALVANIZED PER ASTM A-123.

WASHERS SHALL BE MADE OF STEEL AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF A.N.S.I. B. 18.22 TABLE 2 PLAIN WASHERS.

CONTRACTOR MAY ENCOUNTER REINFORCING STEEL WHEN DRILLING HOLES THROUGH THE EXISTING STRUCTURE WALLS.

PIPE FURNISHED SHALL MEET THE REQUIREMENTS OF ASTM A53, SCHEDULE 40, GRADE B, INCLUDING GALVANIZING.

ALL MATERIALS INCLUDING ANCHORS, WASHERS, NUTS, BOLTS, PIPES, FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER CUTTING, WELDING, DRILLING AND FABRICATION. PRIOR TO GALVANIZING ALL STEEL SHALL BE GIVEN A NO. 6 BLAST CLEAN BY S.S.P.C. SPECIFICATIONS.

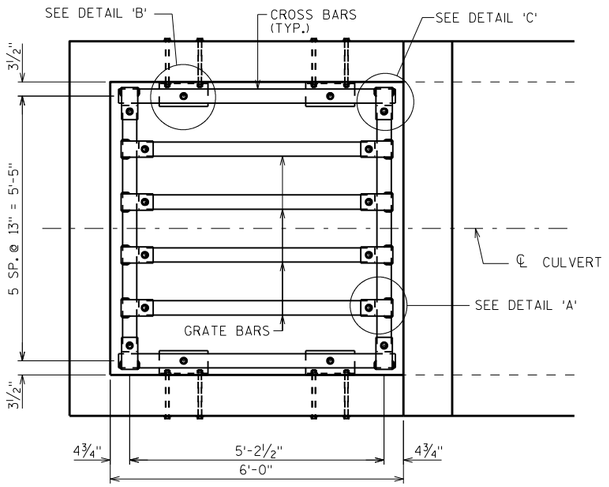
PRICE BID FOR "SAFETY GRATE, CULVERT" SHALL BE CONSIDERED FULL COMPENSION FOR FURNISHING ALL MATERIALS AND WORK NECESSARY TO FABRICATE AND INSTALL THE GRATE SYSTEM AS REQUIRED.

## LEGEND

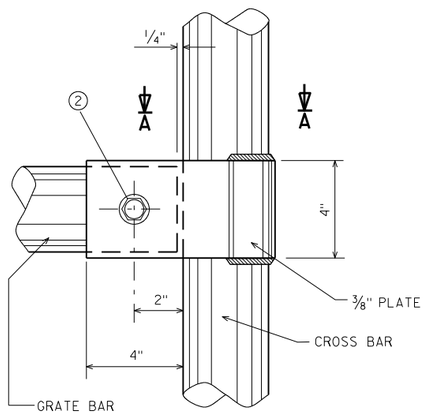
① ALL BENDING OF PLATES SHALL BE ACCOMPLISHED WITHOUT CRACKING MATERIAL.

② 3/4-INCH BOLT, LOCK NUT AND WASHERS. ALL HOLES SHALL BE 7/8-INCH DIAMETER.

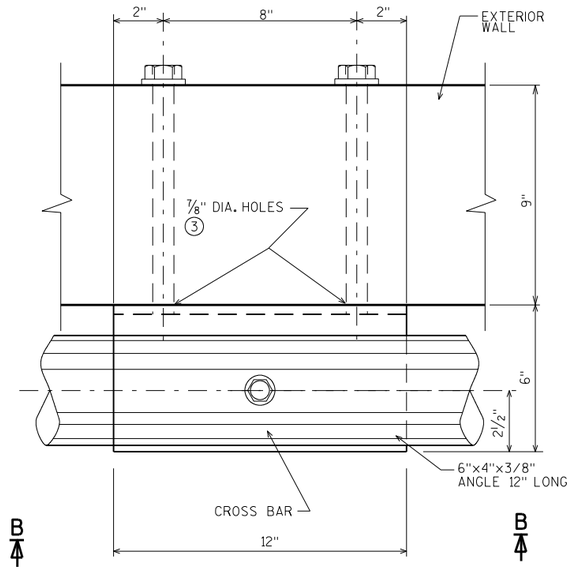
③ HOLES ARE TO BE MADE WITH EQUIPMENT DESIGNED TO CUT THROUGH CONCRETE AND REINFORCING STEEL.



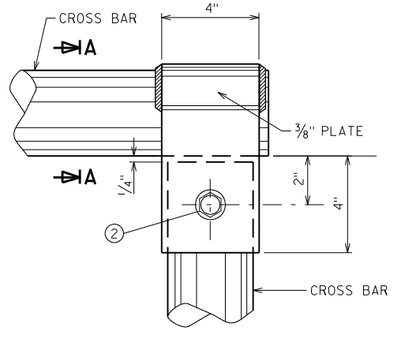

DROP INLET PLAN



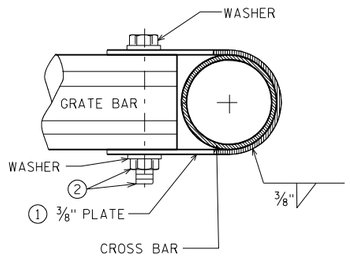

DETAIL A



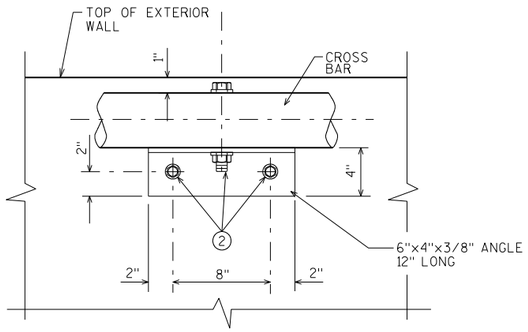

DETAIL B




DETAIL C




SECTION A-A




SECTION B-B

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1514

DRAWN BY NAR | PLANS CK'D. DFD

SAFETY GRATE DETAILS

SHEET 6

47

SCALE = 3

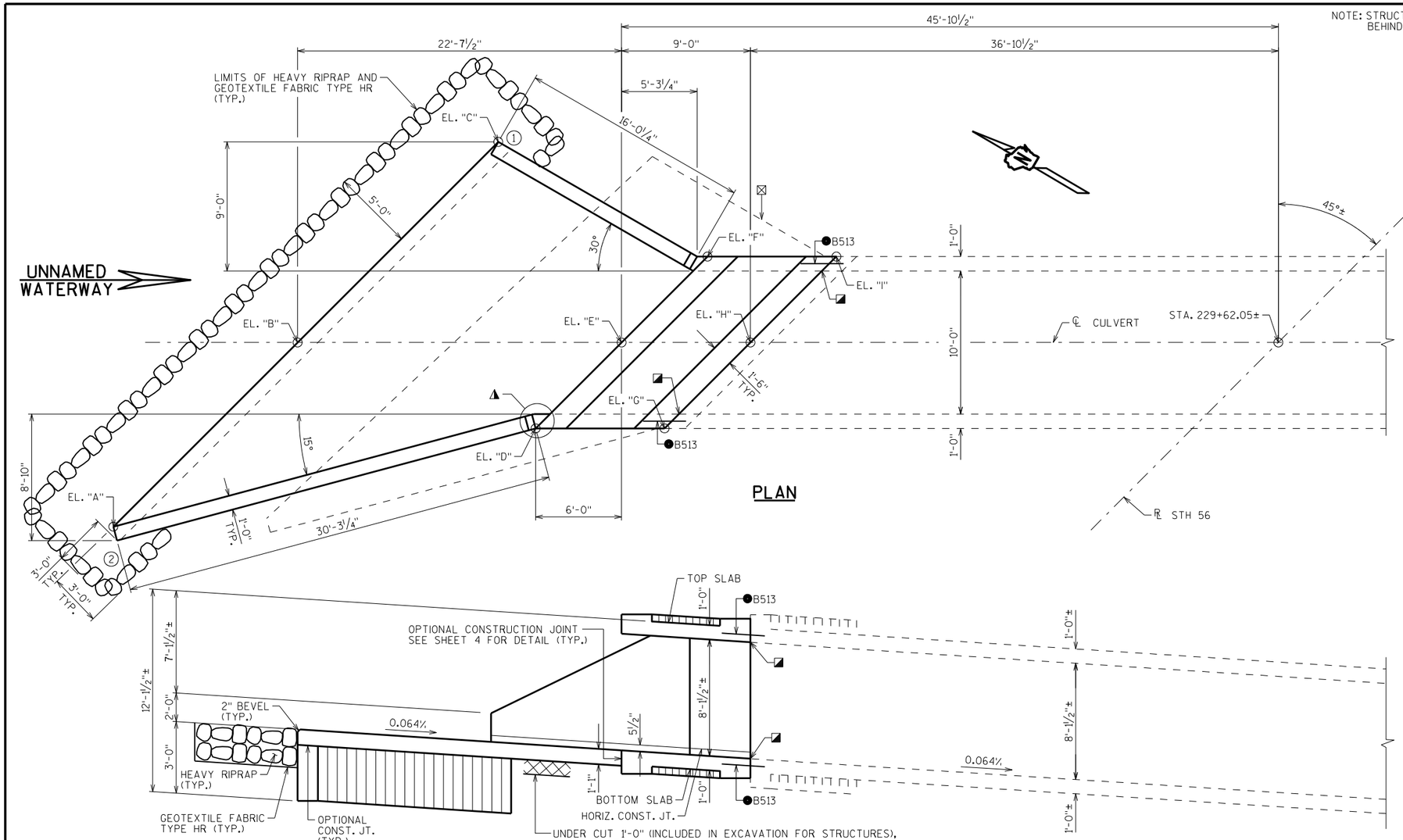
8

8

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

- SEE CORNER DETAILS ON SHEET 4
- INDICATES WING NUMBER
- INSIDE WALLS TO MATCH EXISTING (TYP.)
- REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK.
- MASONRY ANCHORS TYPE S 5/8-INCH. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).




INLET

ELEVATION

## TOP OF APRON/BOTTOM SLAB ELEVATIONS

| LOCATION | ELEVATION |
|---|---|
| "A" | 735.63 |
| "B" | 734.80 |
| "C" | 733.91 |
| "D" | 733.74 |
| "E" | 733.36 |
| "F" | 732.97 |
| "G" | 733.16 |
| "H" | 732.78 |
| "I" | 732.40 |

VERIFY ELEVATIONS "C", "H", & "I" IN THE FIELD. ADJUST ELEVATIONS "A", "B", "C", "D", "E", & "F" AS NECESSARY TO ACCOUNT FOR DIFFERENCES IN ELEVATIONS.

## LIST OF DRAWINGS



## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 4 FT. TO 8 FT. OF FILL.

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY, GRADE A-FA — $f'_c$ = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y$ = 60000 P.S.I.

## TRAFFIC VOLUME

STH 56
A.D.T. = 1,100 (2031)
R.D.S. = 60 M.P.H.

## TOTAL ESTIMATED QUANTITIES

BID ITEMS

| | | | |
|---|---|---|---|
| 203.0200 | REMOVING OLD STRUCTURE STA. 229+62 | 1 | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-62-1822 | 1 | LS |
| 210.0100 | BACKFILL STRUCTURE | 220 | CY |
| 311.0115 | BREAKER RUN | 28 | CY |
| 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | 42 | EACH |
| 504.0100 | CONCRETE MASONRY CULVERTS | 46 | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | 4420 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | 990 | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | 17 | SY |
| 606.0300 | RIPRAP HEAVY | 18 | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C | 100 | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | 55 | SY |

NON-BID ITEMS

| | | |
|---|---|---|
| FILLER | 3/4" | SIZE |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.


STRUCTURE DESIGN CONTACTS:
NICK RICE (608) 266-5092
AARON BONK (608) 261-0261


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

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
ACCEPTED William C. Dreher 10/9/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE C-62-1822

STH 56 OVER UNNAMED WATERWAY

| COUNTY | TOWN/~~CITY/VILLAGE~~ |
|---|---|
| VERNON | GENOA |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | CK'D. | DRAWN BY | CK'D. |
|---|---|---|---|
| NAR | JJS | NAR | JJS |

LAYOUT

SHEET 1 OF 4

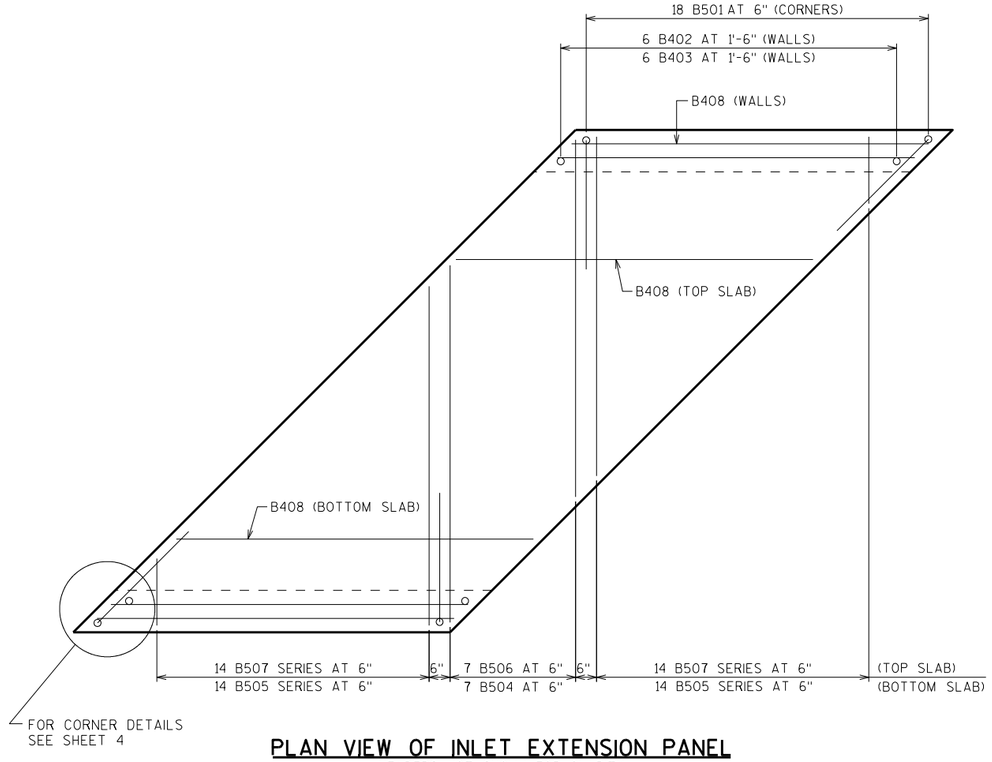
48

I.D. 5730-01-31H

DATE: JULY 2014

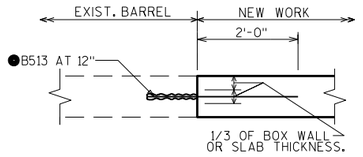
SCALE = 4

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |




## PLAN VIEW OF INLET EXTENSION PANEL

HEADERS NOT SHOWN FOR CLARITY




## VERTICAL CONSTRUCTION JOINT

## BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE.

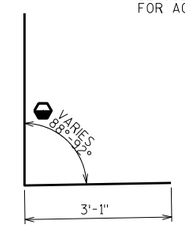
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| B501 | | 72 | 8'-9" | X | | CORNERS |
| B402 | | 12 | 2'-4" | | | WALLS-DOWELS-VERT. |
| B403 | | 12 | 8'-6" | | | WALLS-VERT. |
| B504 | | 7 | 8'-6" | | | BOTTOM SLAB-TRANS. |
| ⚠ B505 | | 28 | 4'-10" | | X | BOTTOM SLAB-TRANS. |
| B506 | | 7 | 8'-6" | | | TOP SLAB-TRANS. |
| ⚠ B507 | | 28 | 4'-10" | | X | TOP SLAB-TRANS. |
| B408 | | 36 | 8'-8" | | | BOT. SLAB, TOP SLAB, & WALLS-VERT. |
| B309 | | 21 | 4'-10" | X | | HEADER STIRRUPS-VERT. |
| B310 | | 21 | 4'-11" | X | | HEADER STIRRUPS-VERT. |
| B311 | | 42 | 4'-5" | X | | HEADER STIRRUPS-VERT. |
| B912 | | 24 | 16'-6" | | | HEADERS-HORIZ. |
| ● B513 | | 42 | 3'-0" | | | VERT.CONST.JOINT. |

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

## BAR SERIES TABLE

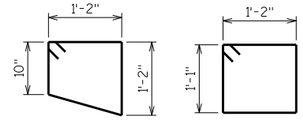
| MARK | NO. REQD. | LENGTH |
|---|---|---|
| B505 | 2 SERIES OF 14 | 1'-7" TO 8'-1" |
| B507 | 2 SERIES OF 14 | 1'-7" TO 8'-1" |

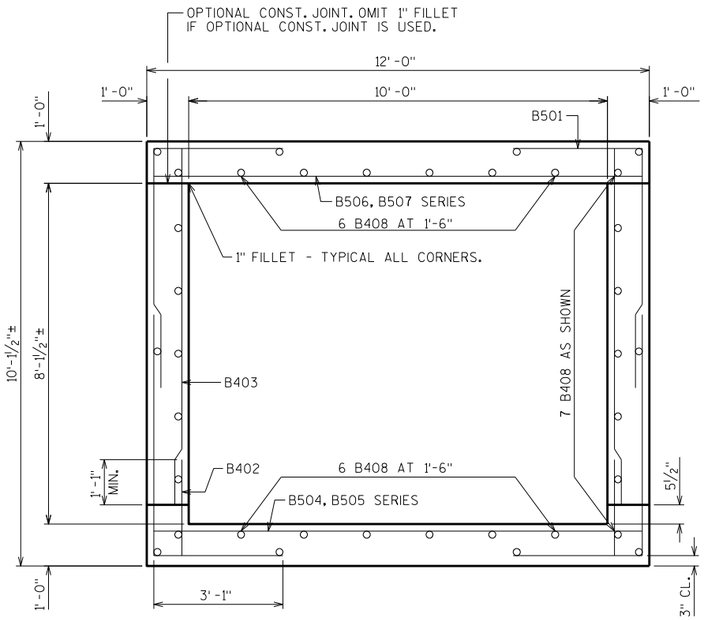
BUNDLE AND TAG EACH SERIES SEPARATELY.




## B501

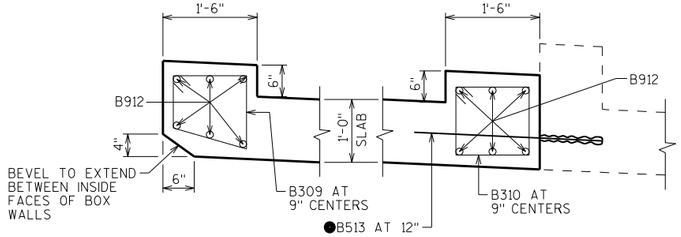
⬣ FIELD BEND HORIZONTAL LEG AS NECESSARY TO MAINTAIN 3" CL. FROM BOTTOM OF BOTTOM SLAB.




## TYPICAL SECTION THRU BOX

ALL LONGITUDINAL BARS NOT IDENTIFIED ARE B408 BARS AS SHOWN

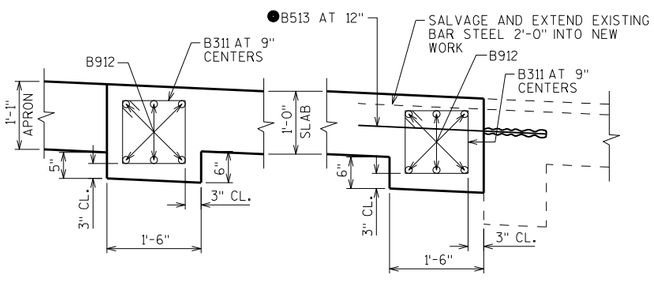



## SECTION THRU TOP HEADER

(AT INLET)

## SECTION THRU TOP HEADER

(AT EXISTING HEADER)




## SECTION THRU BOTTOM HEADER

(AT INLET)

## SECTION THRU BOTTOM HEADER

(AT EXISTING HEADER)

● MASONRY ANCHORS TYPE S ⅝-INCH. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1822

DRAWN BY NAR | PLANS CK'D. JJS

EXTENSION DETAILS

SHEET 2

49

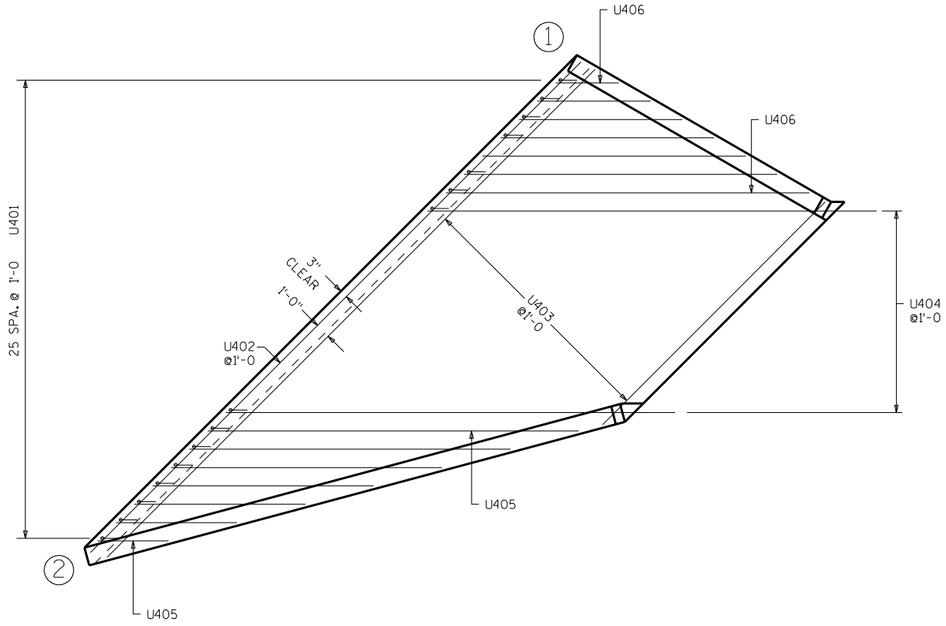
SCALE = 1.75

8

8

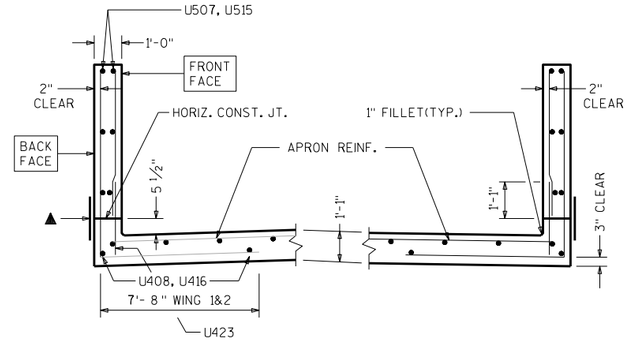
STATE PROJECT NUMBER

5730-01-61



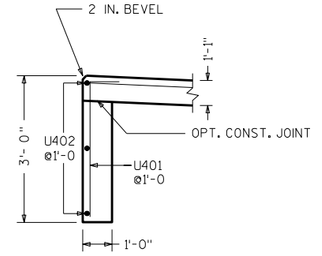

**APRON REINF.**

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).



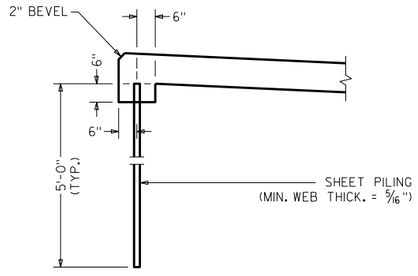

**SECTION THRU WINGS**

AT RIGHT ANGLES TO WING WALLS



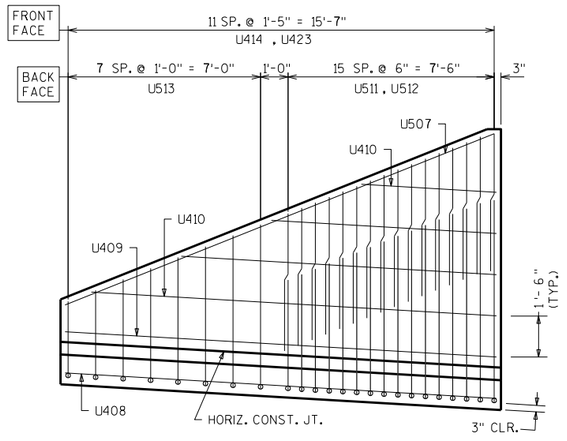

**CUT-OFF WALL**

SECTION THRU THE WALL

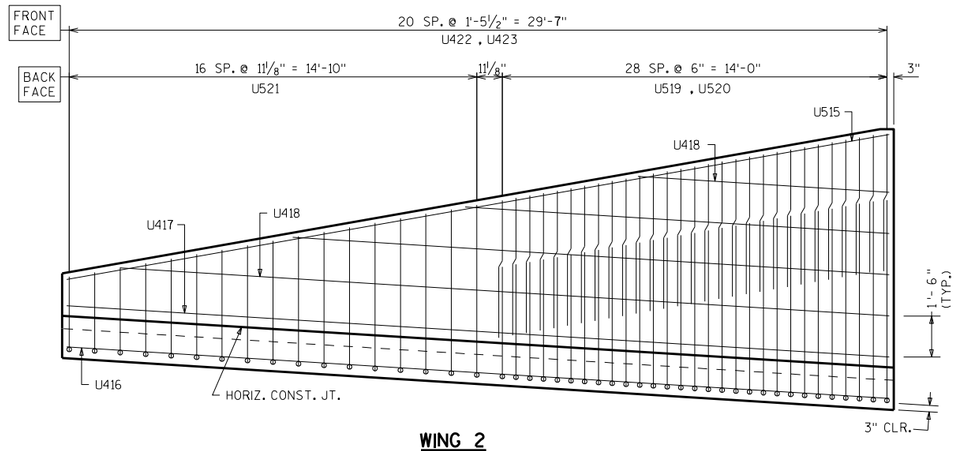



**ALTERNATE CUT-OFF WALLS**

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.




**WING 1**




**WING 2**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1822

DRAWN BY NAR | PLANS CK'D. JJS

APRON DETAILS

SHEET 3

50

8

8

SCALE = 4

STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

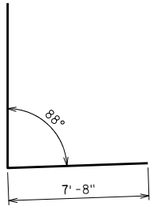
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| U401 | | 26 | 3 - 6 | 1 - 0 | | INLET APRON AND CUTOFF WALL - VERT. |
| U402 | | 3 | 37 - 10 | | | INLET APRON AND CUTOFF WALL - HORIZ. |
| U403 | | 15 | 27 - 5 | | * | " APRON |
| U404 | | 12 | 24 - 6 | | | " APRON |
| U405 | | 7 | 12 - 1 | | * | " APRON |
| U406 | | 7 | 11 - 8 | | * | " APRON |
| U507 | | 2 | 16 - 9 | | | WING 1 -HORIZONTAL - BOTH FACES |
| U408 | | 2 | 15 - 8 | | | WING "-HORIZONTAL -APRON BOT. SLAB |
| U409 | | 2 | 15 - 8 | | | WING "-HORIZONTAL - BOTH FACES |
| U410 | | 8 | 9 - 10 | | * | WING "-HORIZONTAL - BOTH FACES |
| U511 | | 16 | 5 - 0 | | | WING "-VERTICAL - BACK FACE |
| U512 | X | 16 | 13 - 3 | 7 - 8 | * | WING "-VERTICAL - BACK FACE |
| U513 | X | 8 | 11 - 11 | 7 - 8 | * | WING "-VERTICAL - BACK FACE |
| U414 | | 12 | 5 - 0 | | * | WING "-VERTICAL - FRONT FACE |
| U515 | | 2 | 30 - 4 | | | WING 2 -HORIZONTAL - BOTH FACES |
| U416 | | 2 | 30 - 0 | | | WING "-HORIZONTAL -APRON BOT. SLAB |
| U417 | | 2 | 30 - 0 | | | WING "-HORIZONTAL - BOTH FACES |
| U418 | | 8 | 18 - 7 | | * | WING "-HORIZONTAL - BOTH FACES |
| U519 | | 29 | 5 - 0 | | | WING "-VERTICAL - BACK FACE |
| U520 | X | 29 | 13 - 4 | 7 - 8 | * | WING "-VERTICAL - BACK FACE |
| U521 | X | 17 | 12 - 1 | 7 - 8 | * | WING "-VERTICAL - BACK FACE |
| U422 | | 21 | 5 - 0 | | * | WING "-VERTICAL - FRONT FACE |
| U423 | X | 33 | 2 - 5 | | | WINGS 1 AND 2 - DOWELS - FRONT FACE |

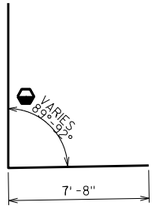
* LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

## BAR SERIES TABLE --- BUNDLE AND TAG EACH SERIES SEPARATELY

| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| U403 | 1 SERIES OF 15 | 17 - 2 TO 37 - 8 |
| U405 | 1 SERIES OF 7 | 3 - 10 TO 20 - 3 |
| U406 | 1 SERIES OF 7 | 3 - 5 TO 19 - 10 |
| U410 | 2 SERIES OF 4 | 4 - 11 TO 14 - 9 |
| U512 | 1 SERIES OF 16 | 11 - 7 TO 14 - 11 |
| U513 | 1 SERIES OF 8 | 10 - 3 TO 13 - 7 |
| U414 | 1 SERIES OF 12 | 1 - 6 TO 8 - 6 |
| U418 | 2 SERIES OF 4 | 9 - 2 TO 28 - 0 |
| U520 | 1 SERIES OF 29 | 11 - 8 TO 14 - 11 |
| U521 | 1 SERIES OF 17 | 10 - 4 TO 13 - 10 |
| U422 | 1 SERIES OF 21 | 1 - 6 TO 8 - 6 |

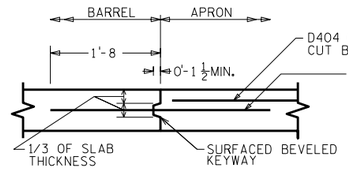



U512, U513



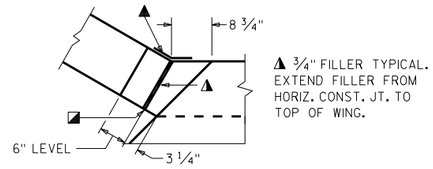

U520, U521

◆ FIELD BEND HORIZONTAL LEG AS NECESSARY TO MAINTAIN 3" CL. FROM BOTTOM OF APRON SLAB.

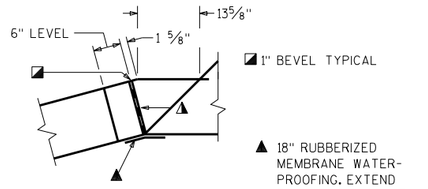



### OPTIONAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.




### CORNER 1




### CORNER 2

## CORNER DETAILS

8

8

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1822

DRAWN BY NAR | PLANS CK'D. JJS

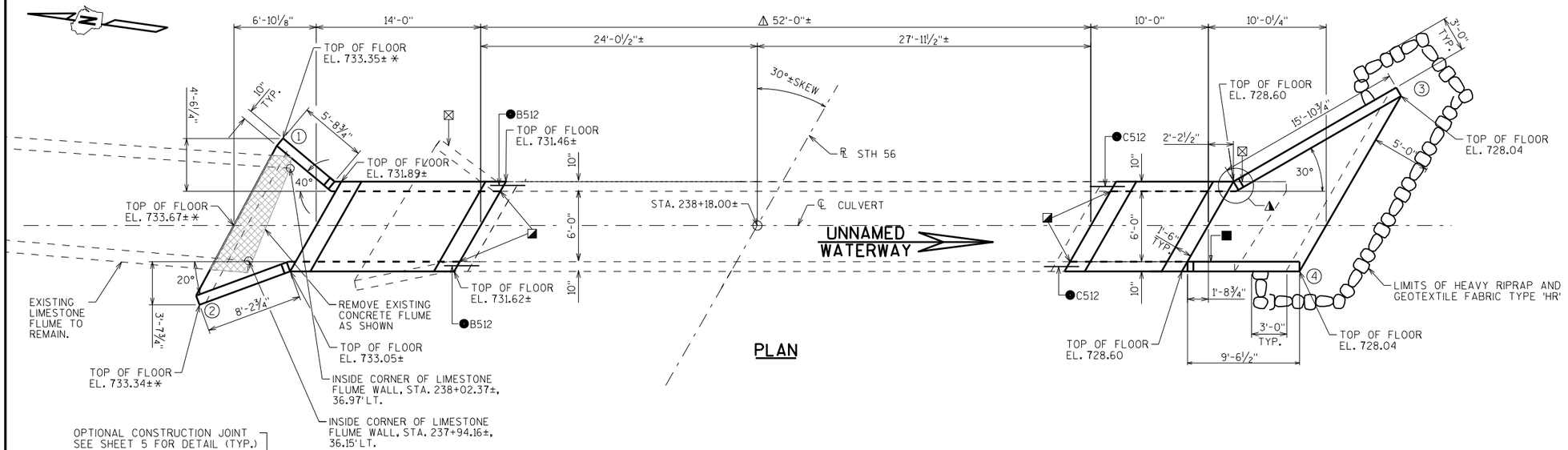
DETAILS

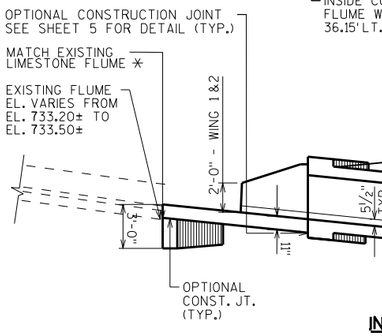
SHEET 4

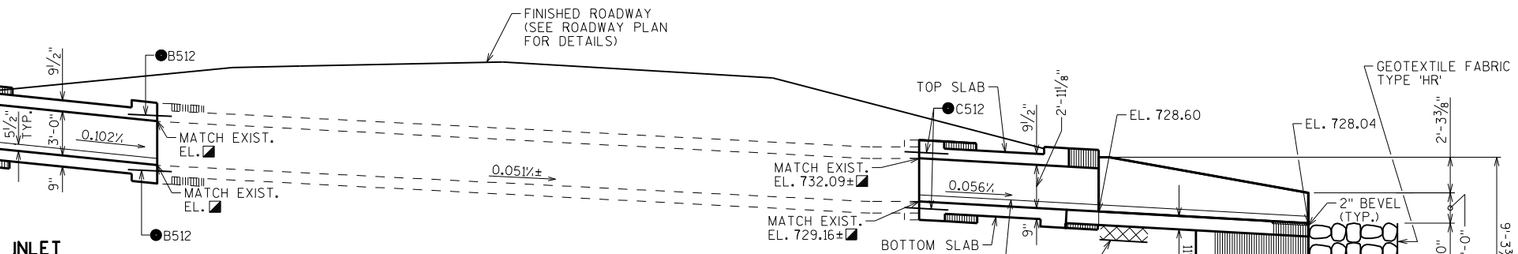
51

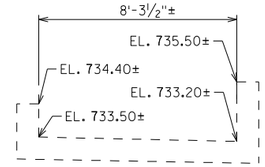
SCALE = 4

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.




SECTION THRU EXISTING LIMESTONE FLUME
(LOOKING UPSTREAM AT END OF FLUME)

* ADJUST TOP OF APRON ELEVATIONS AS NECESSARY TO MATCH FLOOR ELEVATIONS OF EXISTING LIMESTONE FLUME.

STATE PROJECT NUMBER

5730-01-61

- ◭ SEE CORNER DETAILS ON SHEET 5
- ◯ INDICATES WING NUMBER
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK.
- ● MASONRY ANCHORS TYPE S 5/8-INCH. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).
- ◭ EXIST. BARREL TO REMAIN IN PLACE
- ■ NAME PLATE LOCATION (SEE SHT 5)

## LIST OF DRAWINGS



## DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 2.0 FT. TO 4.0 FT. OF FILL.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, GRADE A-FA — $f'_c$ = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y$ = 60000 P.S.I.

## TRAFFIC VOLUME

STH 56
A.D.T. = 1100 (2031)
R.D.S. = 60 M.P.H.

## TOTAL ESTIMATED QUANTITIES

BID ITEMS

| | | | |
|---|---|---|---|
| 203.0200 | REMOVING OLD STRUCTURE STA. 238+18 | 1 | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-62-1824 | 1 | LS |
| 210.0100 | BACKFILL STRUCTURE | 105 | CY |
| 311.0115 | BREAKER RUN | 26 | CY |
| 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | 52 | EACH |
| 504.0100 | CONCRETE MASONRY CULVERTS | 31 | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | 3205 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | 360 | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | 15 | SY |
| 606.0300 | RIPRAP HEAVY | 15 | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C | 95 | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | 45 | SY |

NON-BID ITEMS

| | | |
|---|---|---|
| FILLER | 3/4" | SIZE |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.


STRUCTURE DESIGN CONTACTS:
JOHN SENDOR (608) 266-5163
AARON BONK (608) 261-0261


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

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 10/9/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE C-62-1824

STH 56 OVER UNNAMED WATERWAY

| COUNTY | TOWN/~~CITY/VILLAGE~~ |
|---|---|
| VERNON | GENOA |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| JJS | NAR | JJS | NAR |

LAYOUT

SHEET 1 OF 5

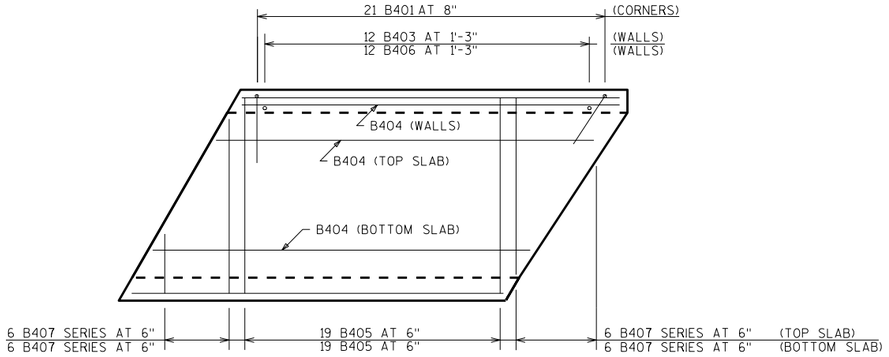
52

I.D. 5730-01-31J

DATE: AUG. 2014

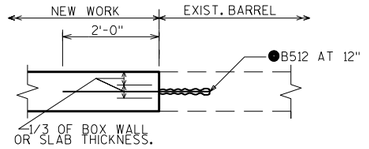
SCALE = 5

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |




## PLAN VIEW OF INLET EXTENSION PANEL

APRON AND HEADER NOT SHOWN FOR CLARITY




## VERTICAL CONSTRUCTION JOINT

## BILL OF BARS

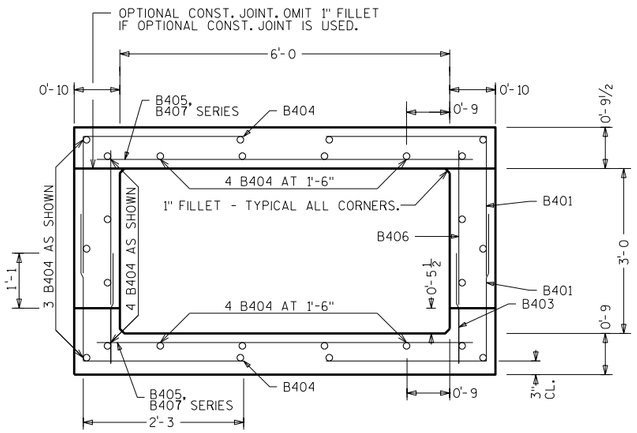
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

| BAR MARK | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|
| B401 | 84 | 5-0 | 2-3 | NO | CORNERS |
| NOT | USED | | | | |
| B403 | 24 | 2-3 | NO | NO | WALLS-DOWELS VERT. |
| B404 | 26 | 13-8 | NO | NO | TOP&BOTTOM SLAB & WALL |
| B405 | 38 | 7-4 | NO | NO | TOP & BOT. SLAB TRANS. |
| B406 | 24 | 3-2 | NO | NO | WALLS VERT. |
| B407 | 24 | 4-7 | NO | YES | TOP&BOTTOM SLAB TRANS. |
| B708 | 24 | 8-5 | NO | NO | HEADERS HORIZ. |
| B309 | 12 | 4-3 | YES | NO | HEADER STIRRUPS VERT. |
| B310 | 12 | 4-5 | YES | NO | HEADER STIRRUPS VERT. |
| B311 | 24 | 3-11 | YES | NO | HEADER STIRRUPS VERT. |
| ● B512 | 26 | 3-0 | NO | NO | VERT. CONST. JOINT. |

## BAR SERIES TABLE

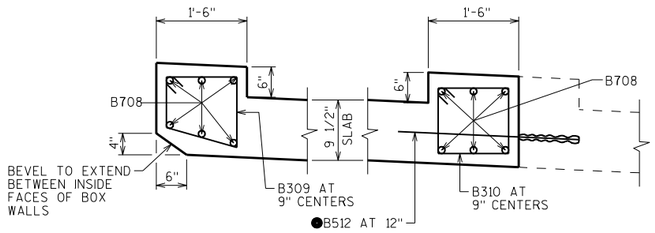
| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| B407 | 4 SERIES OF 6 | 2 - 5 TO 6 - 9 |

BUNDLE AND TAG EACH SERIES SEPARATELY




## TYPICAL SECTION THRU INLET EXTENSION

ALL LONGITUDINAL BARS NOT IDENTIFIED ARE B404 AS SHOWN

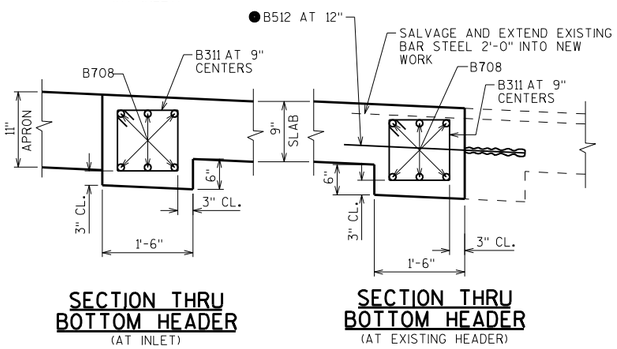



## SECTION THRU TOP HEADER

(AT INLET)

## SECTION THRU TOP HEADER

(AT EXISTING HEADER)

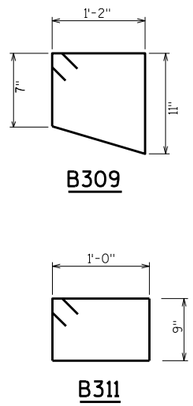



## SECTION THRU BOTTOM HEADER

(AT INLET)

## SECTION THRU BOTTOM HEADER

(AT EXISTING HEADER)




## B309

## B310

## B311

● MASONRY ANCHORS TYPE S 5/8-INCH. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1824

DRAWN BY JJS | PLANS CK'D. NAR

INLET EXTENSION DETAILS

SHEET 2

53

SCALE = 4.0

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

## BILL OF BARS

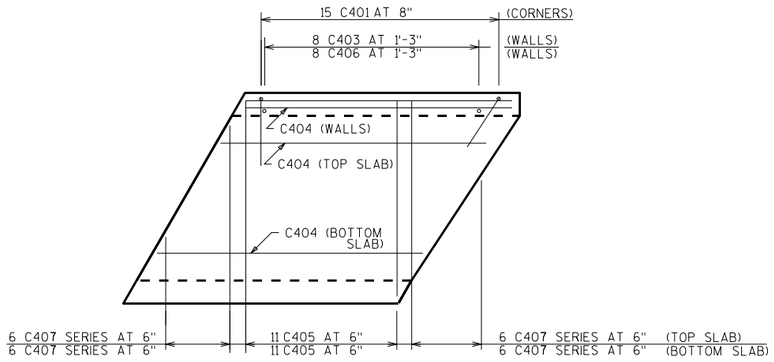
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

| BAR MARK | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|
| C401 | 30 | 5-0 | 2-3 | NO | CORNERS |
| NOT | USED | | | | |
| C403 | 16 | 2-3 | NO | NO | WALLS-DOWELS VERT. |
| C404 | 26 | 9-8 | NO | NO | TOP&BOTTOM SLAB & WALL |
| C405 | 22 | 7-4 | NO | NO | TOP & BOT. SLAB TRANS. |
| C406 | 16 | 3-1 | NO | NO | WALLS VERT. |
| C407 | 24 | 4-7 | NO | YES | TOP & BOT. SLAB TRANS. |
| C708 | 24 | 8-5 | NO | NO | HEADERS HORIZ. |
| NOT | USED | | | | |
| C310 | 24 | 4-7 | YES | NO | HEADER STIRRUPS VERT. |
| C311 | 24 | 4-1 | YES | NO | HEADER STIRRUPS VERT. |
| ● C512 | 26 | 3-0 | NO | NO | VERT. CONST. JOINT. |

## BAR SERIES TABLE

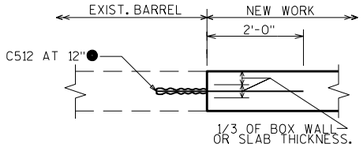
| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| C407 | 4 SERIES OF 6 | 2 - 5 TO 6 - 9 |

BUNDLE AND TAG EACH SERIES SEPARATELY

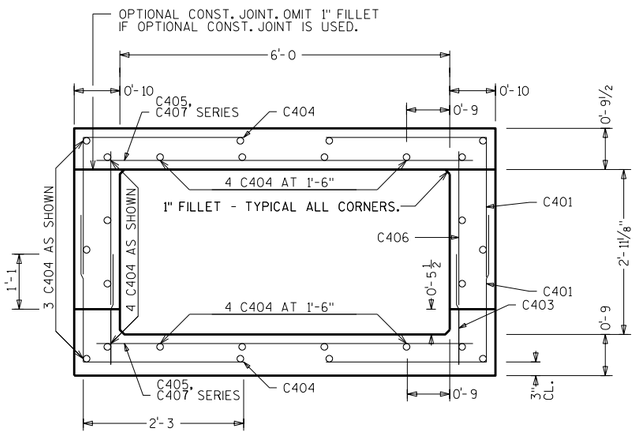



## PLAN VIEW OF OUTLET EXTENSION PANEL

APRON AND HEADER NOT SHOWN FOR CLARITY

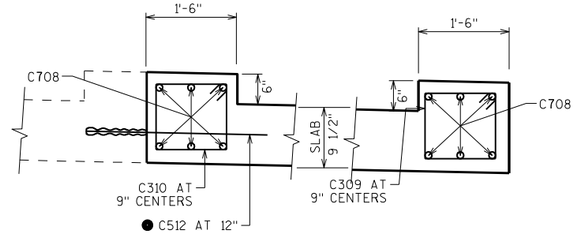



## VERTICAL CONSTRUCTION JOINT




## TYPICAL SECTION THRU OUTLET EXTENSION

ALL LONGITUDINAL BARS NOT IDENTIFIED ARE C404 AS SHOWN

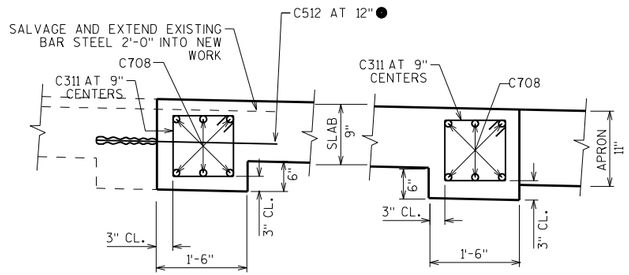



## SECTION THRU TOP HEADER

(AT EXISTING HEADER)

## SECTION THRU TOP HEADER

(AT OUTLET)

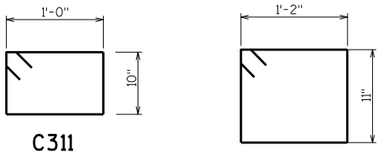



## SECTION THRU BOTTOM HEADER

(AT EXISTING HEADER)

## SECTION THRU BOTTOM HEADER

(AT EXISTING OUTLET)




C311

C310

● MASONRY ANCHORS TYPE S 5/8-INCH. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1824

DRAWN BY JJS | PLANS CK'D. NAR

OUTLET EXTENSION DETAILS

SHEET 3

54

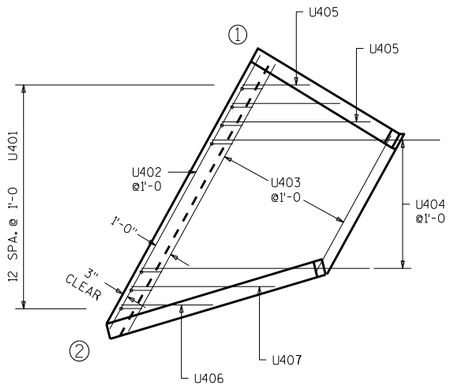
SCALE = 4.0

8

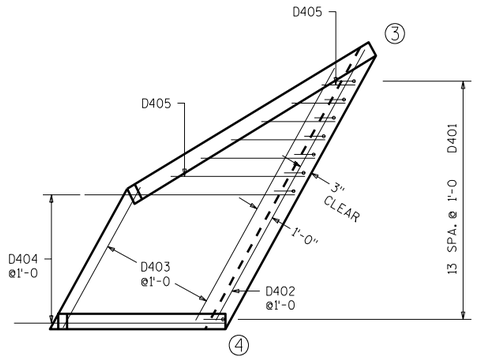
8

STATE PROJECT NUMBER

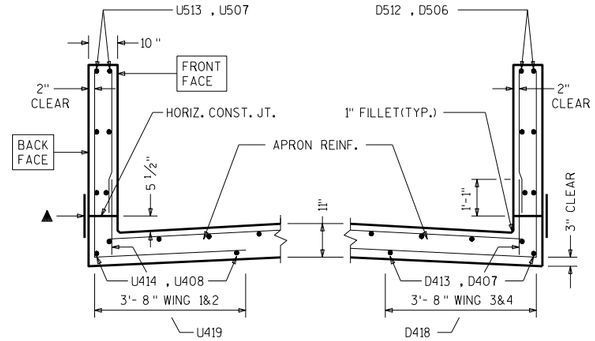
5730-01-61




## APRON REINF.

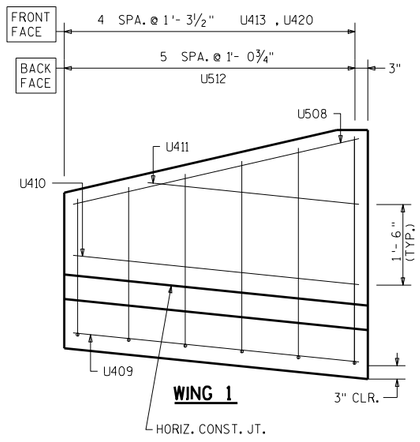



▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).

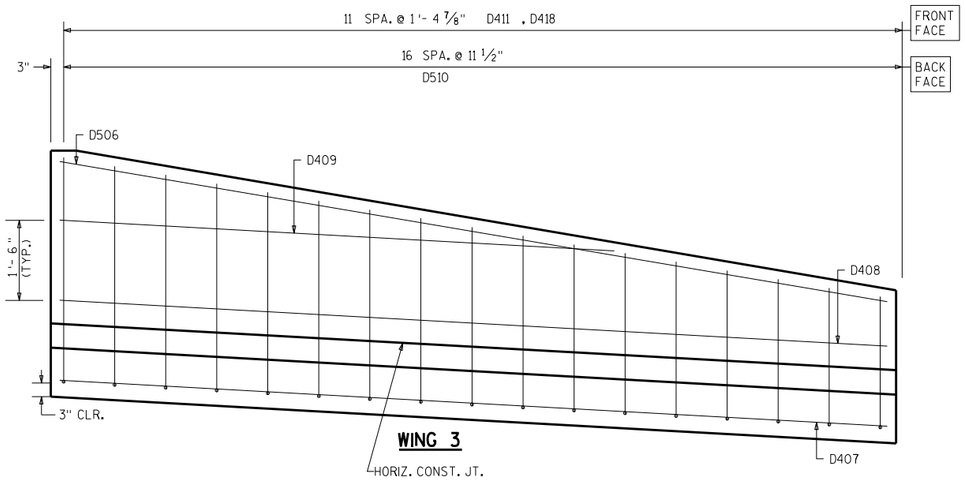



## SECTION THRU WINGS

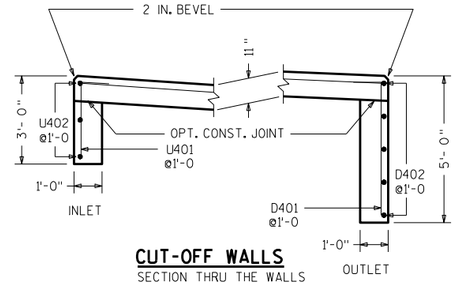
AT RIGHT ANGLES TO WING WALLS




## WING 1

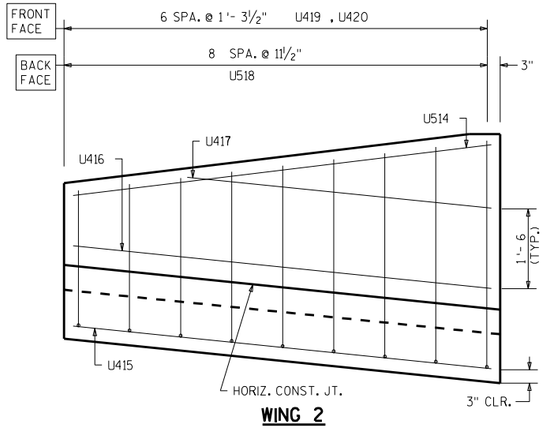



## WING 3

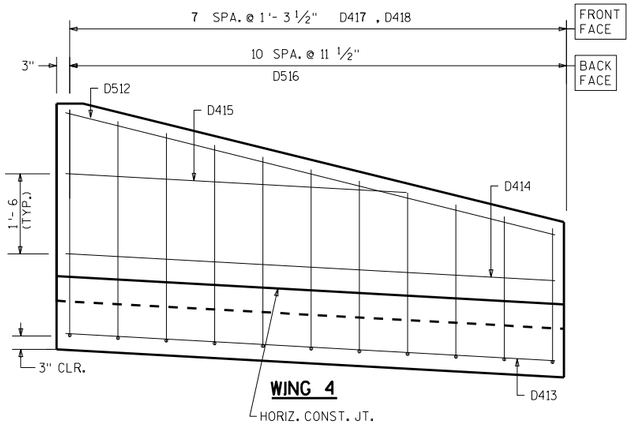



## CUT-OFF WALLS

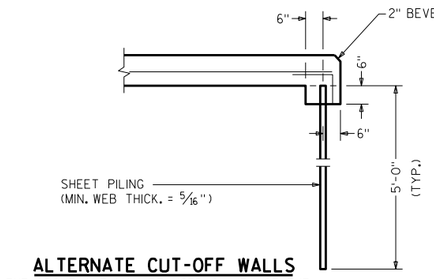
SECTION THRU THE WALLS




## WING 2




## WING 4




## ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1824

DRAWN BY JJS | PLANS CK'D. NAR

APRON DETAILS

SHEET 4

55

8

8

1" = 1.31

STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

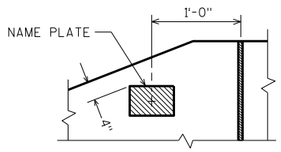
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| U401 | | 13 | 3 - 6 | 1 - 0 | | INLET APRON AND CUTOFF WALL-VERT. |
| U402 | | 3 | 14 - 11 | | | INLET APRON AND CUTOFF WALL-HORIZ. |
| U403 | | 5 | 11 - 10 | | * | " APRON |
| U404 | | 8 | 8 - 11 | | | " APRON |
| U405 | | 3 | 3 - 3 | | * | " APRON |
| U406 | | 1 | 2 - 4 | | | " APRON |
| U407 | | 1 | 4 - 6 | | | " APRON |
| U508 | | 2 | 5 - 6 | | | WING 1 -HORIZONTAL - BOTH FACES |
| U409 | | 2 | 5 - 5 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| U410 | | 2 | 5 - 5 | | | WING " -HORIZONTAL - BOTH FACES |
| U411 | | 2 | 4 - 0 | | | WING " -HORIZONTAL - BOTH FACES |
| U512 | X | 6 | 6 - 11 | 3 - 8 | * | WING " -VERTICAL - BACK FACE |
| U413 | | 5 | 2 - 4 | | * | WING " -VERTICAL - FRONT FACE |
| U514 | | 2 | 7 - 11 | | | WING 2 -HORIZONTAL - BOTH FACES |
| U415 | | 2 | 7 - 11 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| U416 | | 2 | 7 - 11 | | | WING " -HORIZONTAL - BOTH FACES |
| U417 | | 2 | 5 - 9 | | | WING " -HORIZONTAL - BOTH FACES |
| U518 | X | 9 | 6 - 11 | 3 - 8 | * | WING " -VERTICAL - BACK FACE |
| U419 | | 7 | 2 - 4 | | * | WING " -VERTICAL - FRONT FACE |
| U420 | X | 12 | 2 - 3 | | | WINGS 1 AND 2 - DOWELS - FRONT FACE |
| D401 | | 14 | 5 - 6 | 1 - 0 | | OUTLET APRON AND CUTOFF WALL-VERT. |
| D402 | | 5 | 17 - 2 | | | OUTLET APRON AND CUTOFF WALL-HORIZ. |
| D403 | | 8 | 12 - 11 | | * | " APRON |
| D404 | | 8 | 12 - 1 | | | " APRON |
| D405 | | 7 | 5 - 3 | | * | " APRON |
| D506 | | 2 | 15 - 9 | | | WING 3 -HORIZONTAL - BOTH FACES |
| D407 | | 2 | 15 - 7 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| D408 | | 2 | 15 - 7 | | | WING " -HORIZONTAL - BOTH FACES |
| D409 | | 2 | 10 - 5 | | | WING " -HORIZONTAL - BOTH FACES |
| D510 | X | 17 | 7 - 0 | 3 - 8 | * | WING " -VERTICAL - BACK FACE |
| D411 | | 12 | 2 - 3 | | * | WING " -VERTICAL - FRONT FACE |
| D512 | | 2 | 9 - 7 | | | WING 4 -HORIZONTAL - BOTH FACES |
| D413 | | 2 | 9 - 3 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| D414 | | 2 | 9 - 3 | | | WING " -HORIZONTAL - BOTH FACES |
| D415 | | 2 | 6 - 5 | | | WING " -HORIZONTAL - BOTH FACES |
| D516 | X | 11 | 6 - 7 | 3 - 8 | * | WING " -VERTICAL - BACK FACE |
| D417 | | 8 | 2 - 3 | | * | WING " -VERTICAL - FRONT FACE |
| D418 | X | 20 | 2 - 3 | | | WINGS 3 AND 4 - DOWELS - FRONT FACE |

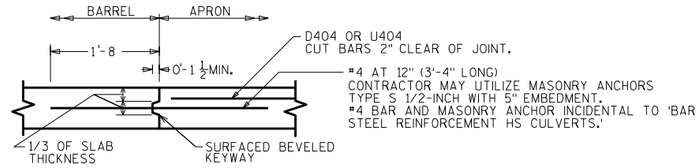
* LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

## BAR SERIES TABLE --- BUNDLE AND TAG EACH SERIES SEPARATELY

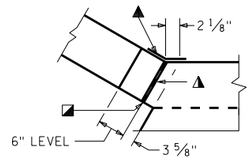
| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| U403 | 1 SERIES OF 5 | 9 - 2 TO 14 - 6 |
| U405 | 1 SERIES OF 3 | 1 - 5 TO 5 - 0 |
| U512 | 1 SERIES OF 6 | 6 - 1 TO 7 - 9 |
| U413 | 1 SERIES OF 5 | 1 - 5 TO 3 - 2 |
| U518 | 1 SERIES OF 9 | 6 - 1 TO 7 - 9 |
| U419 | 1 SERIES OF 7 | 1 - 5 TO 3 - 2 |
| D403 | 1 SERIES OF 8 | 8 - 10 TO 16 - 11 |
| D405 | 1 SERIES OF 7 | 1 - 9 TO 8 - 8 |
| D510 | 1 SERIES OF 17 | 6 - 1 TO 7 - 9 |
| D411 | 1 SERIES OF 12 | 1 - 4 TO 3 - 1 |
| D516 | 1 SERIES OF 11 | 6 - 1 TO 7 - 9 |
| D417 | 1 SERIES OF 8 | 1 - 4 TO 3 - 1 |




NAME PLATE LOCATION
WING 4

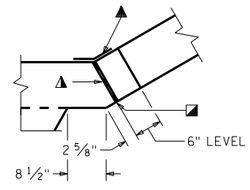



OPTIONAL CONSTRUCTION JOINT
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

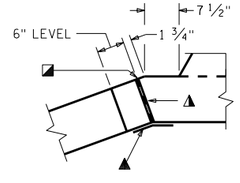



CORNER 1

▲ ¾" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.



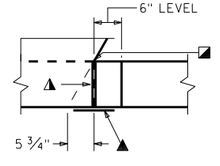

CORNER 3




CORNER 2

◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.




CORNER 4

CORNER DETAILS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1824

DRAWN BY JJS | PLANS CK'D. NAR

DETAILS

SHEET 5

56

SCALE = 4.8

8

8

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

| STATE PROJECT NUMBER |
|---|
| 5730-01-61 |

△ SEE CORNER DETAILS ON SHEET 5

◯ INDICATES WING NUMBER

◪ INSIDE WALLS TO MATCH EXISTING (TYP.)

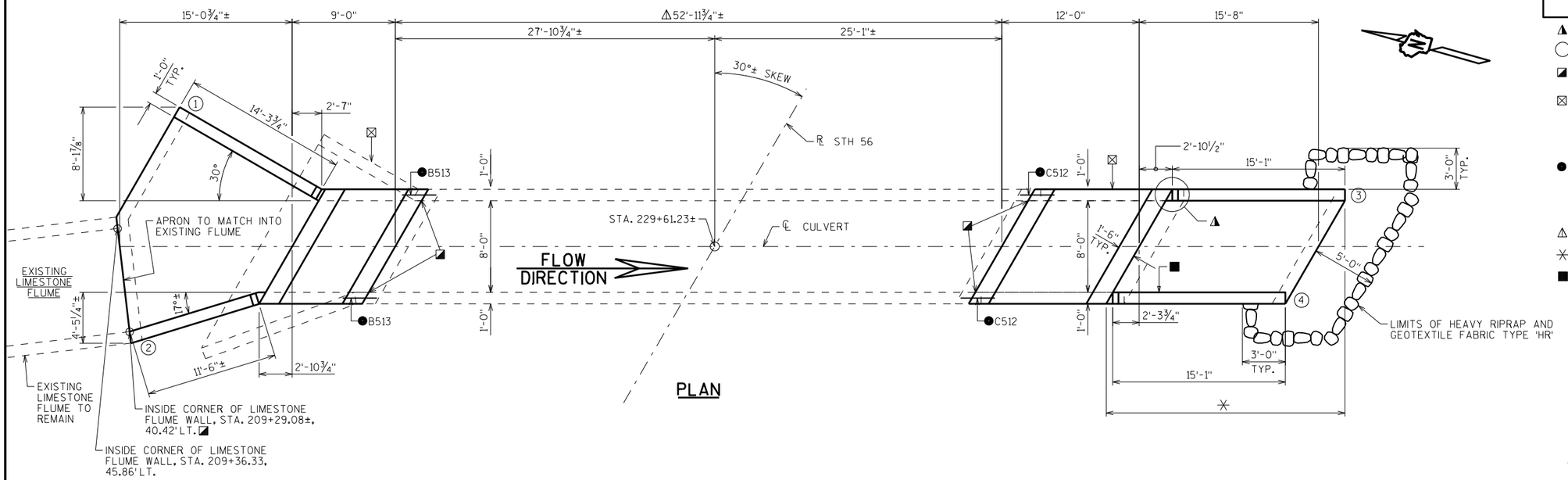
⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK.

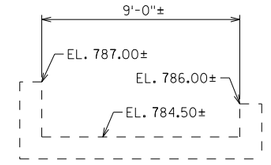
● MASONRY ANCHORS TYPE S 5/8-INCH EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

△ EXIST. BARREL TO REMAIN IN PLACE

✳ BUILD APRON AND END OF BOX LEVEL

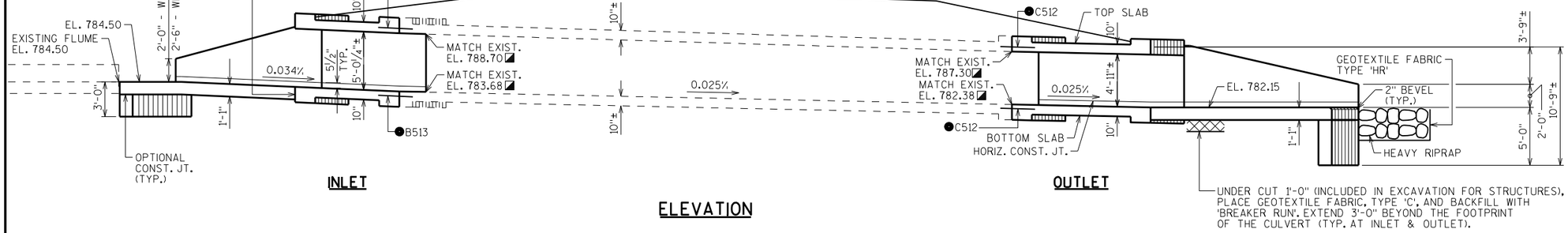
■ NAME PLATE LOCATION (SEE SHT 5)




## SECTION THRU EXISTING LIMESTONE FLUME

(LOOKING UPSTREAM AT END OF FLUME)




**INLET** **OUTLET**

## ELEVATION

## LIST OF DRAWINGS



## DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 2.5 FT. TO 3.5 FT. OF FILL.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, GRADE A-FA ——— $f'_c$ = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — $f_y$ = 60000 P.S.I.

## TRAFFIC VOLUME

STH 56
A.D.T. = 1,100 (2031)
R.D.S. = 60 M.P.H.

## TOTAL ESTIMATED QUANTITIES

BID ITEMS

| | | | |
|---|---|---|---|
| 203.0200 | REMOVING OLD STRUCTURE STA. 209+61 | 1 | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-62-1827 | 1 | LS |
| 210.0100 | BACKFILL STRUCTURE | 185 | CY |
| 311.0115 | BREAKER RUN | 38 | CY |
| 502.6105 | MASONRY ANCHORS TYPE S 5/8-INCH | 60 | EACH |
| 504.0100 | CONCRETE MASONRY CULVERTS | 50 | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS | 4820 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS | 655 | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | 22 | SY |
| 606.0300 | RIPRAP HEAVY | 4 | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C | 135 | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR | 25 | SY |

NON-BID ITEMS

| | | |
|---|---|---|
| FILLER | 3/4" | SIZE |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.


STRUCTURE DESIGN CONTACTS:

NICK RICE (608) 266-5092
AARON BONK (608) 261-0261


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

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 10/9/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-62-1827

STH 56 OVER UNNAMED WATERWAY

| COUNTY | TOWN/~~CITY/VILLAGE~~ |
|---|---|
| VERNON | GENOA |

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

| DESIGNED BY | NAR | DESIGN CK'D. | JJS | DRAWN BY | NAR | PLANS CK'D. | JJS |
|---|---|---|---|---|---|---|---|

LAYOUT

SHEET 1 OF 5

57

SCALE = 5

I.D. 5730-01-31G

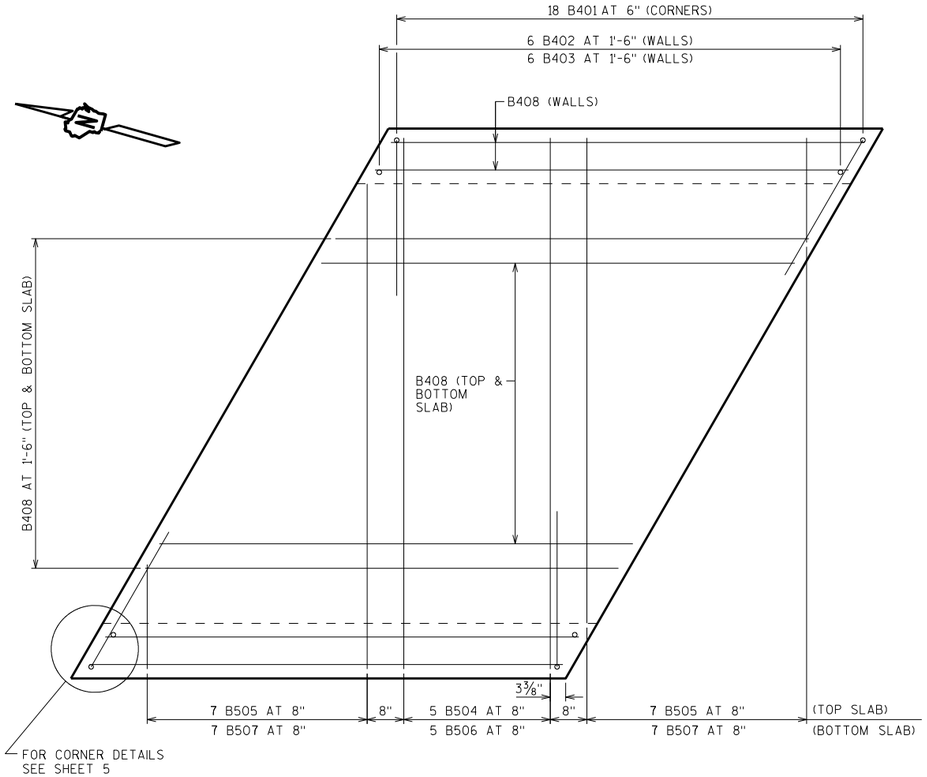
DATE: JULY 2014

8

8

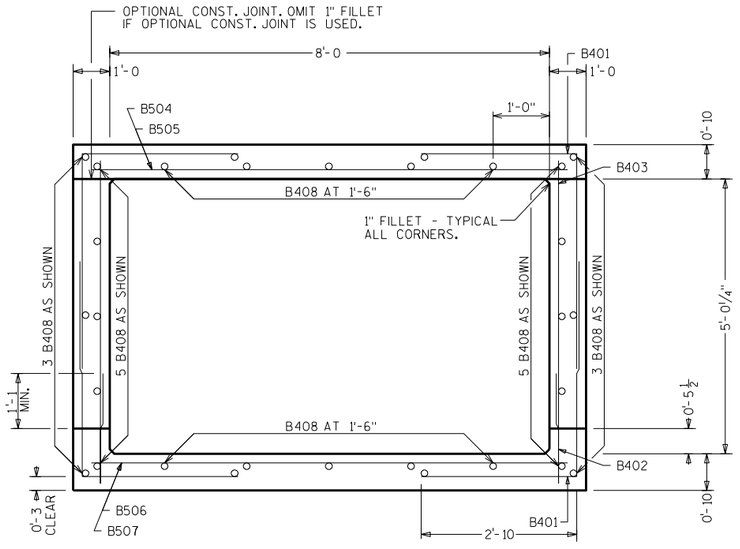
STATE PROJECT NUMBER

5730-01-61



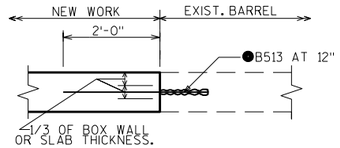

## PLAN VIEW OF INLET EXTENSION PANEL

HEADERS NOT SHOWN FOR CLARITY

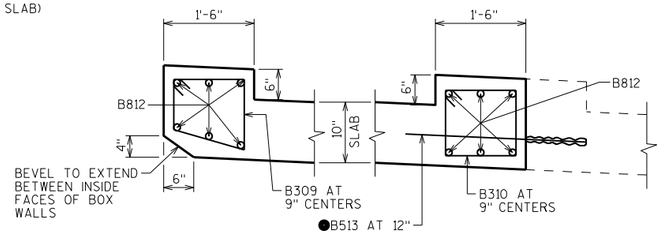



## TYPICAL SECTION THRU INLET BOX

ALL LONGITUDINAL BARS NOT IDENTIFIED ARE B408 BARS AS SHOWN




## VERTICAL CONSTRUCTION JOINT

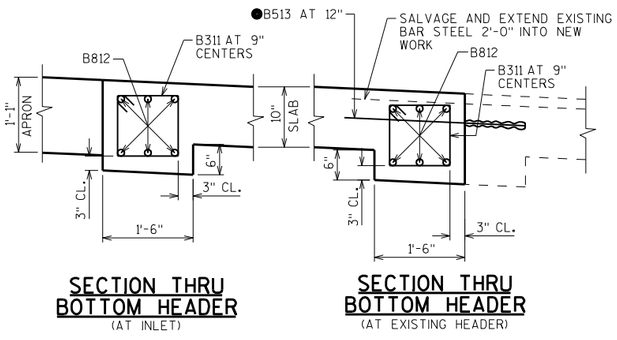



## SECTION THRU TOP HEADER

(AT INLET)

## SECTION THRU TOP HEADER

(AT EXISTING HEADER)




## SECTION THRU BOTTOM HEADER

(AT INLET)

## SECTION THRU BOTTOM HEADER

(AT EXISTING HEADER)

## BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

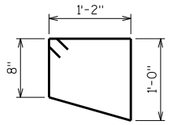
| MARK | NUMBER REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|
| B401 | 72 | 6-7 | 2-10 | NO | CORNERS |
| B402 | 12 | 2-2 | NO | NO | WALLS-DOWELS VERT. |
| B403 | 12 | 5-2 | NO | NO | WALLS VERT. |
| B504 | 5 | 9-8 | NO | NO | TOP SLAB TRANS. |
| B505 | 14 | 5-4 | NO | YES | TOP SLAB TRANS. |
| B506 | 5 | 9-8 | NO | NO | BOTTOM SLAB TRANS. |
| B507 | 14 | 5-4 | NO | YES | BOTTOM SLAB TRANS. |
| B408 | 30 | 8-7 | NO | NO | TOP&BOTTOM SLAB & WALL |
| B309 | 14 | 4-5 | YES | NO | HEADER STIRRUPS VERT. |
| B310 | 14 | 4-9 | YES | NO | HEADER STIRRUPS VERT. |
| B311 | 28 | 4-3 | YES | NO | HEADER STIRRUPS VERT. |
| B812 | 24 | 11 -1 | NO | NO | HEADERS HORIZ. |
| ● B513 | 30 | 3-0 | NO | NO | VERT.CONST.JOINT |

LENGTH SHOWN FOR BAR SERIES IN "BILL OF BARS" IS AVERAGE LENGTH.

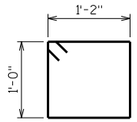
## BAR SERIES TABLE

| MARK | LENGTH | NO.OF BARS/SERIES | NO.OF EACH SERIES |
|---|---|---|---|
| B505 | 1-10 TO 8-9 | 7 | 2 |
| B507 | 1-10 TO 8-9 | 7 | 2 |

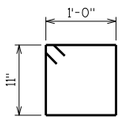
BUNDLE AND TAG EACH SERIES SEPARATELY




B309




B310




B311

● MASONRY ANCHORS TYPE S ⅝-INCH EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1827

DRAWN BY NAR | PLANS CK'D. JJS

INLET BOX DETAILS

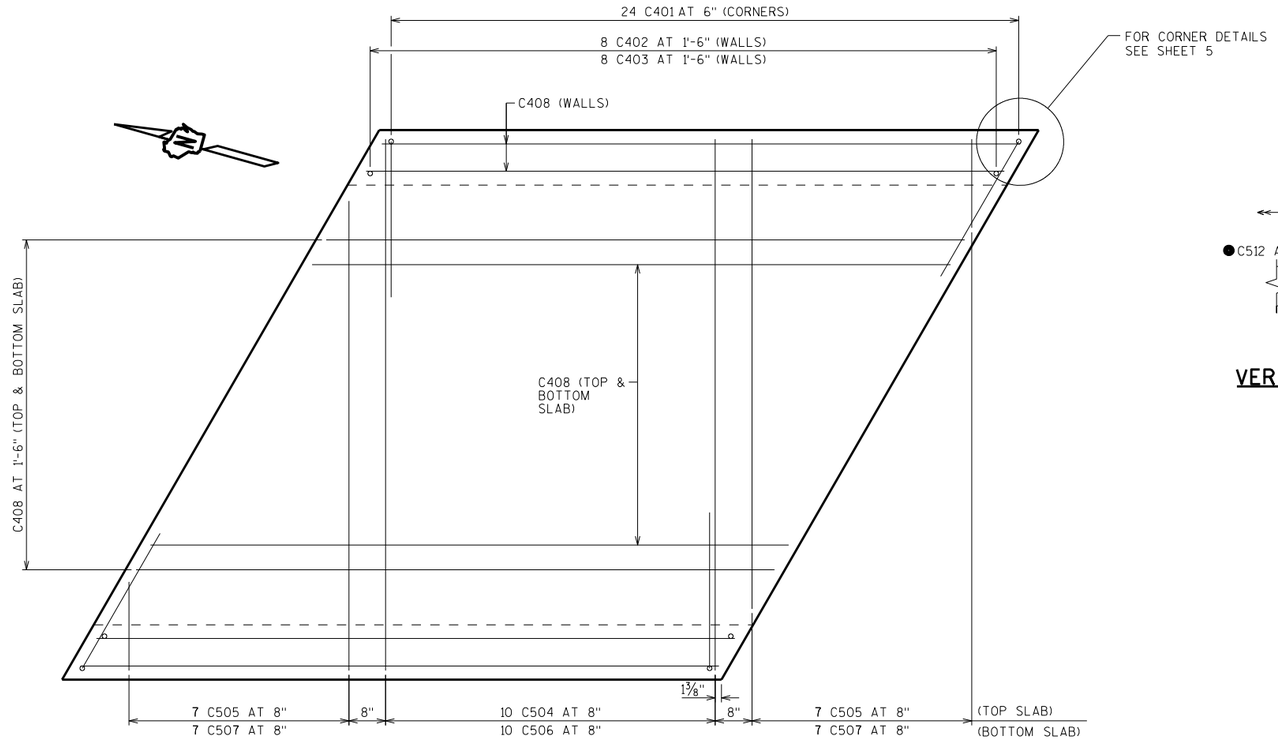
SHEET 2

58

SCALE = 3.83

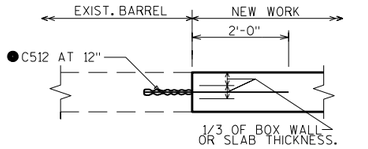
8

8




## PLAN VIEW OF OUTLET EXTENSION PANEL

HEADERS NOT SHOWN FOR CLARITY




## VERTICAL CONSTRUCTION JOINT

STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

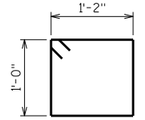
| MARK | NUMBER REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|
| C401 | 96 | 6-7 | 2-10 | NO | CORNERS |
| C402 | 16 | 2-2 | NO | NO | WALLS-DOWELS VERT. |
| C403 | 16 | 4-9 | NO | NO | WALLS VERT. |
| C504 | 10 | 9-8 | NO | NO | TOP SLAB TRANS. |
| C505 | 14 | 5-1 | NO | YES | TOP SLAB TRANS. |
| C506 | 10 | 9-8 | NO | NO | BOTTOM SLAB TRANS. |
| C507 | 14 | 5-1 | NO | YES | BOTTOM SLAB TRANS. |
| C408 | 30 | 11-7 | NO | NO | TOP&BOTTOM SLAB & WALL |
| C309 | 28 | 4-9 | YES | NO | HEADER STIRRUPS VERT. |
| C310 | 28 | 4-3 | YES | NO | HEADER STIRRUPS VERT. |
| C811 | 24 | 11 -1 | NO | NO | HEADERS HORIZ. |
| ● C512 | 30 | 3-0 | NO | NO | VERT.CONST.JOINT |

LENGTH SHOWN FOR BAR SERIES IN "BILL OF BARS" IS AVERAGE LENGTH.

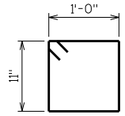
## BAR SERIES TABLE

| MARK | LENGTH | NO.OF BARS/SERIES | NO.OF EACH SERIES |
|---|---|---|---|
| C505 | 1-7 TO 8-6 | 7 | 2 |
| C507 | 1-7 TO 8-6 | 7 | 2 |

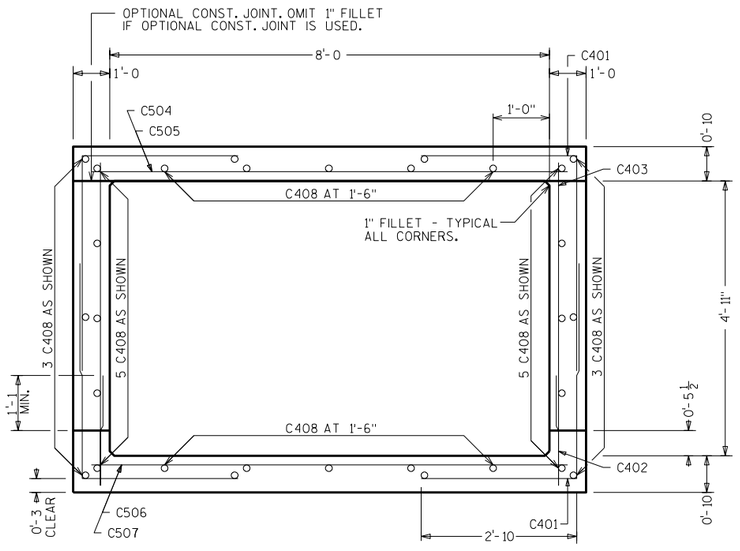
BUNDLE AND TAG EACH SERIES SEPARATELY




C309

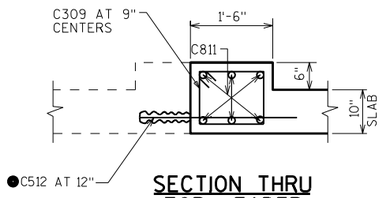



C310



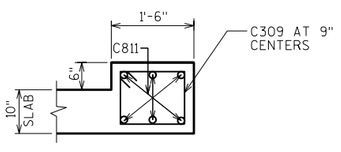

## TYPICAL SECTION THRU OUTLET BOX

ALL LONGITUDINAL BARS NOT IDENTIFIED ARE C408 BARS AS SHOWN



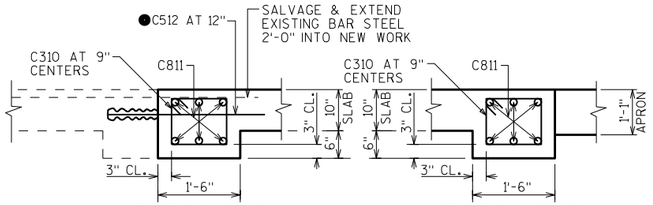

## SECTION THRU TOP HEADER

(AT EXISTING HEADER)




## SECTION THRU TOP HEADER

(AT OUTLET)




## SECTION THRU BOTTOM HEADER

(AT EXISTING HEADER)




## SECTION THRU BOTTOM HEADER

(AT OUTLET)

● MASONRY ANCHORS TYPE S ⅝-INCH EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS, TOP SLAB, AND BOTTOM SLAB).

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1827

DRAWN BY NAR | PLANS CK'D. JJS

OUTLET BOX DETAILS

SHEET 3

59

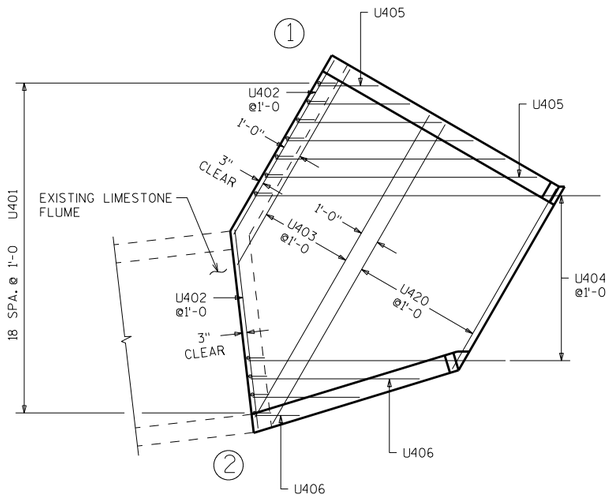
SCALE = 3.83

8

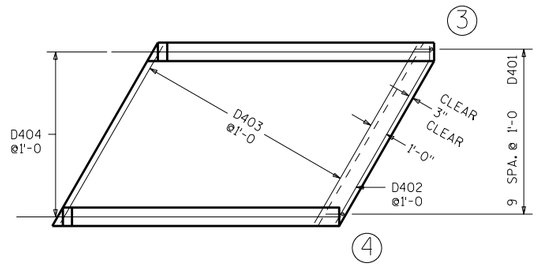
8

STATE PROJECT NUMBER

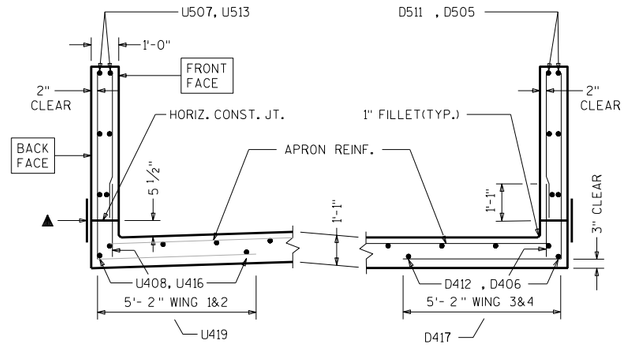
5730-01-61




## APRON REINF.

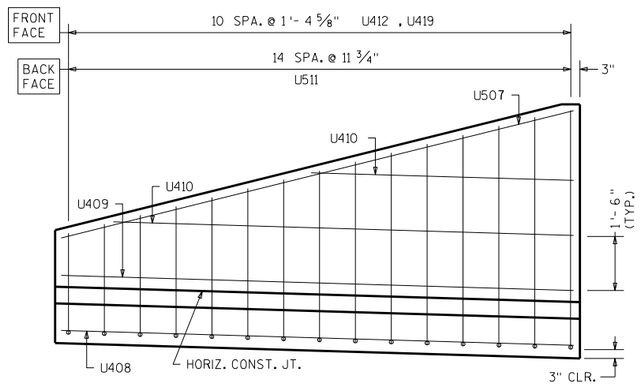



▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).

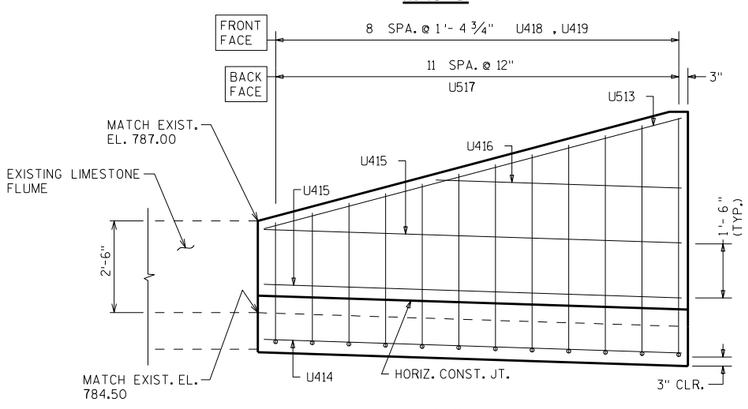



## SECTION THRU WINGS

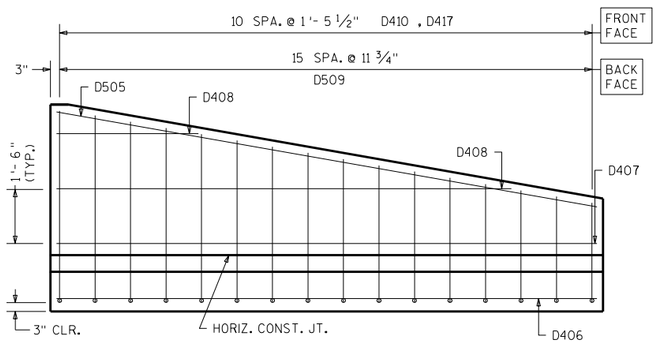
AT RIGHT ANGLES TO WING WALLS



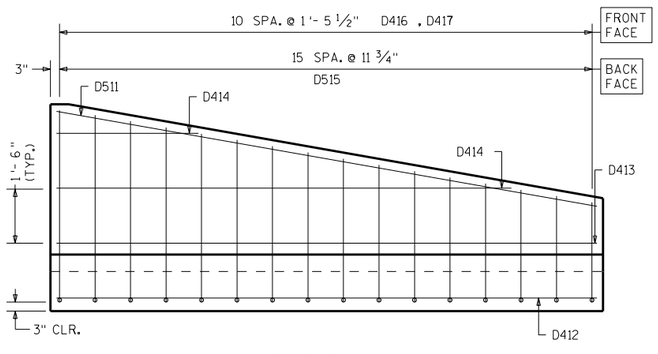

## WING 1



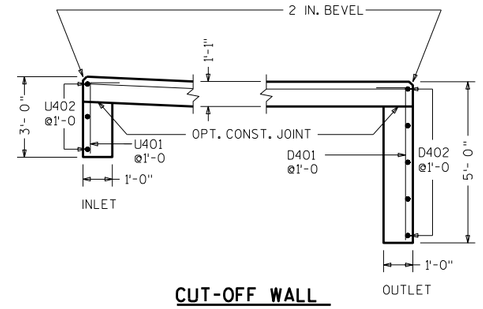

## WING 2




## WING 3

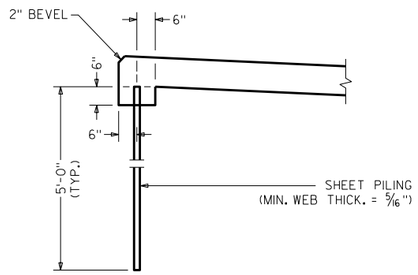



## WING 4




## CUT-OFF WALL

SECTION THRU THE WALL




## ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1827

DRAWN BY NAR | PLANS CK'D. JJS

APRON DETAILS

SHEET 4

60

8

8

SCALE = 4

STATE PROJECT NUMBER

5730-01-61

## BILL OF BARS

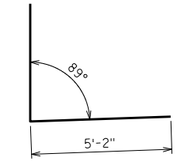
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|
| U401 | | 19 | 3 - 6 | 1 - 0 | | INLET APRON AND CUTOFF WALL |
| U402 | | 6 | 10 - 2 | | | INLET APRON AND CUTOFF WALL |
| U403 | | 6 | 15 - 8 | | * | " APRON |
| U404 | | 10 | 18 - 11 | | | " APRON |
| U405 | | 6 | 9 - 1 | | * | " APRON |
| U406 | | 3 | 5 - 10 | | * | " APRON |
| U507 | | 2 | 14 - 5 | | | WING 1 -HORIZONTAL - BOTH FACES |
| U408 | | 2 | 14 - 0 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| U409 | | 2 | 14 - 0 | | | WING " -HORIZONTAL - BOTH FACES |
| U410 | | 4 | 9 - 10 | | * | WING " -HORIZONTAL - BOTH FACES |
| U511 | X | 15 | 9 - 8 | 5 - 2 | * | WING " -VERTICAL - BACK FACE |
| U412 | | 11 | 3 - 4 | | * | WING " -VERTICAL - FRONT FACE |
| U513 | | 2 | 11 - 9 | | | WING 2 -HORIZONTAL - BOTH FACES |
| U414 | | 2 | 11 - 5 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| U415 | | 4 | 11 - 5 | | | WING " -HORIZONTAL - BOTH FACES |
| U416 | | 2 | 6 - 8 | | | WING " -HORIZONTAL - BOTH FACES |
| U517 | X | 12 | 10 - 0 | 5 - 2 | * | WING " -VERTICAL - BACK FACE |
| U418 | | 9 | 3 - 7 | | * | WING " -VERTICAL - FRONT FACE |
| U419 | X | 20 | 2 - 5 | | | WINGS 1 AND 2 - DOWELS - FRONT FACE |
| U420 | | 8 | 15 - 1 | | * | INLET APRON |
| D401 | | 10 | 5 - 6 | 1 - 0 | | OUTLET APRON AND CUTOFF WALL |
| D402 | | 5 | 11 - 1 | 0 - 9 | | OUTLET APRON AND CUTOFF WALL |
| D403 | | 13 | 11 - 2 | | | " APRON |
| D404 | | 10 | 17 - 9 | | | " APRON |
| D505 | | 2 | 15 - 0 | | | WING 3 -HORIZONTAL - BOTH FACES |
| D406 | | 2 | 14 - 9 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| D407 | | 2 | 14 - 9 | | | WING " -HORIZONTAL - BOTH FACES |
| D408 | | 4 | 8 - 11 | | * | WING " -HORIZONTAL - BOTH FACES |
| D509 | X | 16 | 9 - 2 | 5 - 2 | * | WING " -VERTICAL - BACK FACE |
| D410 | | 11 | 2 - 10 | | * | WING " -VERTICAL - FRONT FACE |
| D511 | | 2 | 15 - 0 | | | WING 4 -HORIZONTAL - BOTH FACES |
| D412 | | 2 | 14 - 9 | | | WING " -HORIZONTAL -APRON BOTT. SLAB |
| D413 | | 2 | 14 - 9 | | | WING " -HORIZONTAL - BOTH FACES |
| D414 | | 4 | 8 - 11 | | * | WING " -HORIZONTAL - BOTH FACES |
| D515 | X | 16 | 9 - 2 | 5 - 2 | * | WING " -VERTICAL - BACK FACE |
| D416 | | 11 | 2 - 10 | | * | WING " -VERTICAL - FRONT FACE |
| D417 | X | 22 | 2 - 5 | | | WINGS 3 AND 4 - DOWELS - FRONT FACE |

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

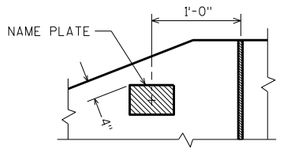
## BAR SERIES TABLE --- BUNDLE AND TAG EACH SERIES SEPARATELY

| BAR MARK | NO. REQ'D. | LENGTHS FOR EACH SERIES |
|---|---|---|
| U403 | 1 SERIES OF 6 | 12 - 3 TO 19 - 0 |
| U405 | 1 SERIES OF 6 | 3 - 3 TO 14 - 10 |
| U406 | 1 SERIES OF 3 | 2 - 5 TO 9 - 2 |
| U410 | 2 SERIES OF 2 | 7 - 2 TO 12 - 6 |
| U511 | 1 SERIES OF 15 | 7 - 8 TO 11 - 7 |
| U412 | 1 SERIES OF 11 | 1 - 5 TO 5 - 2 |
| U517 | 1 SERIES OF 12 | 8 - 4 TO 11 - 7 |
| U418 | 1 SERIES OF 9 | 1 - 11 TO 5 - 2 |
| U420 | 1 SERIES OF 8 | 11 - 4 TO 18 - 10 |
| D408 | 2 SERIES OF 2 | 5 - 2 TO 12 - 8 |
| D509 | 1 SERIES OF 16 | 7 - 9 TO 10 - 7 |
| D410 | 1 SERIES OF 11 | 1 - 5 TO 4 - 3 |
| D414 | 2 SERIES OF 2 | 5 - 2 TO 12 - 8 |
| D515 | 1 SERIES OF 16 | 7 - 9 TO 10 - 7 |
| D416 | 1 SERIES OF 11 | 1 - 5 TO 4 - 3 |

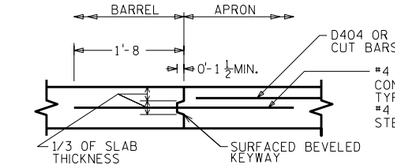



U511, U517

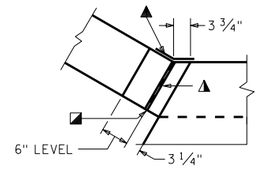

D402




NAME PLATE LOCATION
WING 4

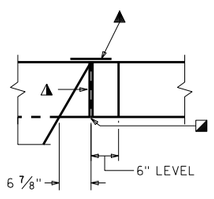



OPTIONAL CONSTRUCTION JOINT
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

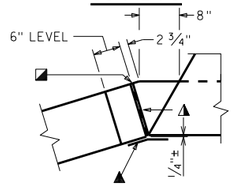



CORNER 1

▲ 3/4" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.



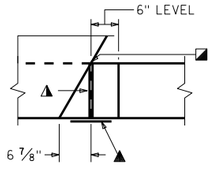

CORNER 3




CORNER 2

◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.




CORNER 4

CORNER DETAILS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-1827

DRAWN BY NAR | PLANS CK'D. JJS

DETAILS

SHEET 5

61

SCALE = 4

8

8

## C-62-1514 CONSTRUCTION

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | Mass Ordinate |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 14+96.08 | 1496.08 | 0.00 | 2.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 15+00 | 1500.00 | 3.92 | 3.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.40 |
| 15+25 | 1525.00 | 25.00 | 0.79 | 0.00 | 9.68 | 0.00 | 0.00 | 0.00 | 2 | 0 | 4 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 0.00 | 0.00 | -3.40 |
| 15+50 | 1550.00 | 25.00 | 0.87 | 0.00 | 11.16 | 0.00 | 0.00 | 0.00 | 1 | 0 | 10 | 0 | 0 | 0 | 3 | 18 | 0 | 0 | 0 | 0.00 | 0.00 | -14.69 |
| 15+75 | 1575.00 | 25.00 | 1.74 | 0.00 | 53.45 | 0.00 | 0.00 | 0.00 | 1 | 0 | 30 | 0 | 0 | 0 | 4 | 55 | 0 | 0 | 0 | 0.00 | 0.00 | -50.87 |
| 16+25 | 1625.00 | 50.00 | 1.71 | 0.00 | 32.07 | 0.00 | 0.00 | 0.00 | 3 | 0 | 79 | 0 | 0 | 0 | 7 | 154 | 0 | 0 | 0 | 0.00 | 0.00 | -146.66 |
| 16+43.87 | 1643.87 | 18.87 | 2.04 | 0.00 | 7.53 | 0.00 | 0.00 | 0.00 | 1 | 0 | 14 | 0 | 0 | 0 | 9 | 171 | 0 | 0 | 0 | 0.00 | 0.00 | -162.65 |

## C-62-1509 CONSTRUCTION

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | Mass Ordinate |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 29+75 | 2975.00 | 0.00 | 0.65 | 0.00 | 2.11 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 30+00 | 3000.00 | 25.00 | 7.75 | 0.00 | 5.66 | 0.00 | 0.00 | 0.00 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0.00 | 0.00 | -0.61 |
| 30+25 | 3025.00 | 25.00 | 33.44 | 0.00 | 42.94 | 0.00 | 0.00 | 0.00 | 19 | 0 | 23 | 0 | 0 | 0 | 23 | 33 | 0 | 0 | 0 | 0.00 | 0.00 | -9.66 |
| 30+50 | 3050.00 | 25.00 | 67.40 | 0.00 | 66.69 | 0.00 | 0.00 | 0.00 | 47 | 0 | 51 | 0 | 0 | 0 | 70 | 96 | 0 | 0 | 0 | 0.00 | 0.00 | -26.42 |
| 30+75.5 | 3075.50 | 25.50 | 55.84 | 0.00 | 15.85 | 0.00 | 0.00 | 0.00 | 58 | 0 | 39 | 0 | 0 | 0 | 128 | 145 | 0 | 0 | 0 | 0.00 | 0.00 | -16.94 |
| 31+00 | 3100.00 | 24.50 | 25.50 | 0.00 | 14.90 | 0.00 | 0.00 | 0.00 | 37 | 0 | 14 | 0 | 0 | 0 | 165 | 162 | 0 | 0 | 0 | 0.00 | 0.00 | 2.52 |
| 31+19.39 | 3119.39 | 19.39 | 1.60 | 0.00 | 30.07 | 0.00 | 0.00 | 0.00 | 10 | 0 | 16 | 0 | 0 | 0 | 174 | 182 | 0 | 0 | 0 | 0.00 | 0.00 | -7.93 |

## C-62-1827 CONSTRUCTION

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | Mass Ordinate |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 209+00 | 20900.00 | 0.00 | 0.66 | 0.00 | 8.98 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 209+25 | 20925.00 | 25.00 | 0.65 | 0.00 | 34.90 | 0.00 | 0.00 | 0.00 | 1 | 0 | 20 | 0 | 0 | 0 | 1 | 25 | 0 | 0 | 0 | 0.00 | 0.00 | -24.79 |
| 209+50 | 20950.00 | 25.00 | 2.59 | 0.00 | 105.90 | 0.00 | 0.00 | 0.00 | 2 | 0 | 65 | 0 | 0 | 0 | 2 | 107 | 0 | 0 | 0 | 0.00 | 0.00 | -104.77 |
| 209+75 | 20975.00 | 25.00 | 1.66 | 0.00 | 89.32 | 0.00 | 0.00 | 0.00 | 2 | 0 | 90 | 0 | 0 | 0 | 4 | 220 | 0 | 0 | 0 | 0.00 | 0.00 | -215.77 |
| 210+00 | 21000.00 | 25.00 | 1.60 | 0.00 | 63.83 | 0.00 | 0.00 | 0.00 | 2 | 0 | 71 | 0 | 0 | 0 | 6 | 308 | 0 | 0 | 0 | 0.00 | 0.00 | -302.89 |

## C-62-1822 CONSTRUCTION

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | Mass Ordinate |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 227+00 LT | 22700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 227+50 LT | 22750.00 | 50.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 228+00 LT | 22800.00 | 50.00 | 1.60 | 0.00 | 19.43 | 0.00 | 0.00 | 0.00 | 1 | 0 | 18 | 0 | 0 | 0 | 1 | 22 | 0 | 0 | 0 | 0.00 | 0.00 | -21.01 |
| 228+50 LT | 22850.00 | 50.00 | 4.15 | 0.00 | 17.97 | 0.00 | 0.00 | 0.00 | 5 | 0 | 35 | 0 | 0 | 0 | 7 | 66 | 0 | 0 | 0 | 0.00 | 0.00 | -58.98 |
| 229+00 LT | 22900.00 | 50.00 | 4.05 | 0.00 | 65.46 | 0.00 | 0.00 | 0.00 | 8 | 0 | 77 | 0 | 0 | 0 | 14 | 162 | 0 | 0 | 0 | 0.00 | 0.00 | -147.95 |
| 229+50 LT | 22950.00 | 50.00 | 0.93 | 0.00 | 76.24 | 0.00 | 0.00 | 0.00 | 5 | 0 | 131 | 0 | 0 | 0 | 19 | 326 | 0 | 0 | 0 | 0.00 | 0.00 | -307.35 |
| 230+00 LT | 23000.00 | 50.00 | 1.00 | 0.00 | 15.19 | 0.00 | 0.00 | 0.00 | 2 | 0 | 85 | 0 | 0 | 0 | 21 | 432 | 0 | 0 | 0 | 0.00 | 0.00 | -411.39 |
| 230+50 LT | 23050.00 | 50.00 | 0.90 | 0.00 | 5.43 | 0.00 | 0.00 | 0.00 | 2 | 0 | 19 | 0 | 0 | 0 | 23 | 456 | 0 | 0 | 0 | 0.00 | 0.00 | -433.49 |
| 231+00 LT | 23100.00 | 50.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1 | 0 | 5 | 0 | 0 | 0 | 23 | 462 | 0 | 0 | 0 | 0.00 | 0.00 | -438.94 |

## C-62-1824 CONSTRUCTION

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | Mass Ordinate |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 237+50 | 23750.00 | 0.00 | 1.23 | 0.00 | 24.63 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 237+75 | 23775.00 | 25.00 | 2.63 | 0.00 | 3.43 | 0.00 | 0.00 | 0.00 | 2 | 0 | 13 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 | 0.00 | 0.00 | -14.46 |
| 238+00 | 23800.00 | 25.00 | 2.18 | 0.00 | 42.75 | 0.00 | 0.00 | 0.00 | 2 | 0 | 21 | 0 | 0 | 0 | 4 | 43 | 0 | 0 | 0 | 0.00 | 0.00 | -38.96 |
| 238+25 | 23825.00 | 25.00 | 8.23 | 0.00 | 0.67 | 0.00 | 0.00 | 0.00 | 5 | 0 | 20 | 0 | 0 | 0 | 9 | 68 | 0 | 0 | 0 | 0.00 | 0.00 | -59.27 |
| 238+50 | 23850.00 | 25.00 | 5.12 | 0.00 | 8.21 | 0.00 | 0.00 | 0.00 | 6 | 0 | 4 | 0 | 0 | 0 | 15 | 73 | 0 | 0 | 0 | 0.00 | 0.00 | -58.23 |
| 238+75 | 23875.00 | 25.00 | 2.93 | 0.00 | 3.77 | 0.00 | 0.00 | 0.00 | 4 | 0 | 6 | 0 | 0 | 0 | 19 | 80 | 0 | 0 | 0 | 0.00 | 0.00 | -61.43 |
| 238+91.28 | 23891.28 | 16.28 | 2.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2 | 0 | 1 | 0 | 0 | 0 | 20 | 82 | 0 | 0 | 0 | 0.00 | 0.00 | -61.23 |

GRADING FOR MGS AT C-62-1822

| STATION | Real Station | Distance | AREA (SF) | | | | | | Incremental Vol (CY) (Unadjusted) | | | | | | Cumulative Vol (CY) | | | | | | | Mass Ordinate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Salvaged / Unusable Pavement Material | Fill | Marsh Exc | Rock Exc | EBS | Cut | Expanded Fill | Expanded Marsh Backfill | Expanded Rock | Expanded EBS Backfill | Reduced Marsh in Fill | Reduced EBS In Fill | |
| | | | | | | | | | Note 1 | Note 2 | Note 3 | | | | 1.00 Note 1 | 1.25 | 1.50 Note 4 | 1.10 | 1.30 Note 5 | 0.60 Note 6 | 0.80 Note 7 | Note 8 |
| 227+00 RT | 22700.00 | 0.00 | 1.42 | 0.00 | 1.36 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| 227+50 RT | 22750.00 | 50.00 | 1.42 | 0.00 | 30.06 | 0.00 | 0.00 | 0.00 | 3 | 0 | 29 | 0 | 0 | 0 | 3 | 36 | 0 | 0 | 0 | 0.00 | 0.00 | -33.73 |
| 228+00 RT | 22800.00 | 50.00 | 4.84 | 0.00 | 31.49 | 0.00 | 0.00 | 0.00 | 6 | 0 | 57 | 0 | 0 | 0 | 8 | 108 | 0 | 0 | 0 | 0.00 | 0.00 | -99.17 |
| 228+50 RT | 22850.00 | 50.00 | 1.34 | 0.00 | 1.97 | 0.00 | 0.00 | 0.00 | 6 | 0 | 31 | 0 | 0 | 0 | 14 | 146 | 0 | 0 | 0 | 0.00 | 0.00 | -132.18 |
| 229+00 RT | 22900.00 | 50.00 | 1.41 | 0.00 | 1.24 | 0.00 | 0.00 | 0.00 | 3 | 0 | 3 | 0 | 0 | 0 | 17 | 150 | 0 | 0 | 0 | 0.00 | 0.00 | -133.34 |
| 229+50 RT | 22950.00 | 50.00 | 3.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5 | 0 | 1 | 0 | 0 | 0 | 21 | 151 | 0 | 0 | 0 | 0.00 | 0.00 | -130.20 |
| 230+00 RT | 23000.00 | 50.00 | 1.87 | 0.00 | 6.80 | 0.00 | 0.00 | 0.00 | 5 | 0 | 6 | 0 | 0 | 0 | 26 | 159 | 0 | 0 | 0 | 0.00 | 0.00 | -133.08 |
| 230+50 RT | 23050.00 | 50.00 | 1.44 | 0.00 | 23.20 | 0.00 | 0.00 | 0.00 | 3 | 0 | 28 | 0 | 0 | 0 | 29 | 194 | 0 | 0 | 0 | 0.00 | 0.00 | -164.73 |
| 231+00 RT | 23100.00 | 50.00 | 1.60 | 0.00 | 11.00 | 0.00 | 0.00 | 0.00 | 3 | 0 | 32 | 0 | 0 | 0 | 32 | 234 | 0 | 0 | 0 | 0.00 | 0.00 | -201.51 |
| 231+50 RT | 23150.00 | 50.00 | 2.37 | 0.00 | 2.62 | 0.00 | 0.00 | 0.00 | 4 | 0 | 13 | 0 | 0 | 0 | 36 | 249 | 0 | 0 | 0 | 0.00 | 0.00 | -213.60 |
| 232+00 RT | 23200.00 | 50.00 | 5.44 | 0.00 | 4.71 | 0.00 | 0.00 | 0.00 | 7 | 0 | 7 | 0 | 0 | 0 | 43 | 258 | 0 | 0 | 0 | 0.00 | 0.00 | -214.85 |
| 232+50 RT | 23250.00 | 50.00 | 1.82 | 0.00 | 7.33 | 0.00 | 0.00 | 0.00 | 7 | 0 | 11 | 0 | 0 | 0 | 50 | 272 | 0 | 0 | 0 | 0.00 | 0.00 | -222.07 |
| 232+87.5 RT | 23287.50 | 37.50 | 3.06 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 3 | 0 | 5 | 0 | 0 | 0 | 53 | 278 | 0 | 0 | 0 | 0.00 | 0.00 | -225.32 |

9

9

660
650
640
630

RW

6.0:1
10.0:1
644.94
17.35
643.56
31.66
643.60
38.00

15+50

660
650
640
630

-150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

660
650
640
630

6.0:1
10.0:1
644.96
17.31
643.51
28.04
644.37
34.64

15+25

20 FT
20 FT

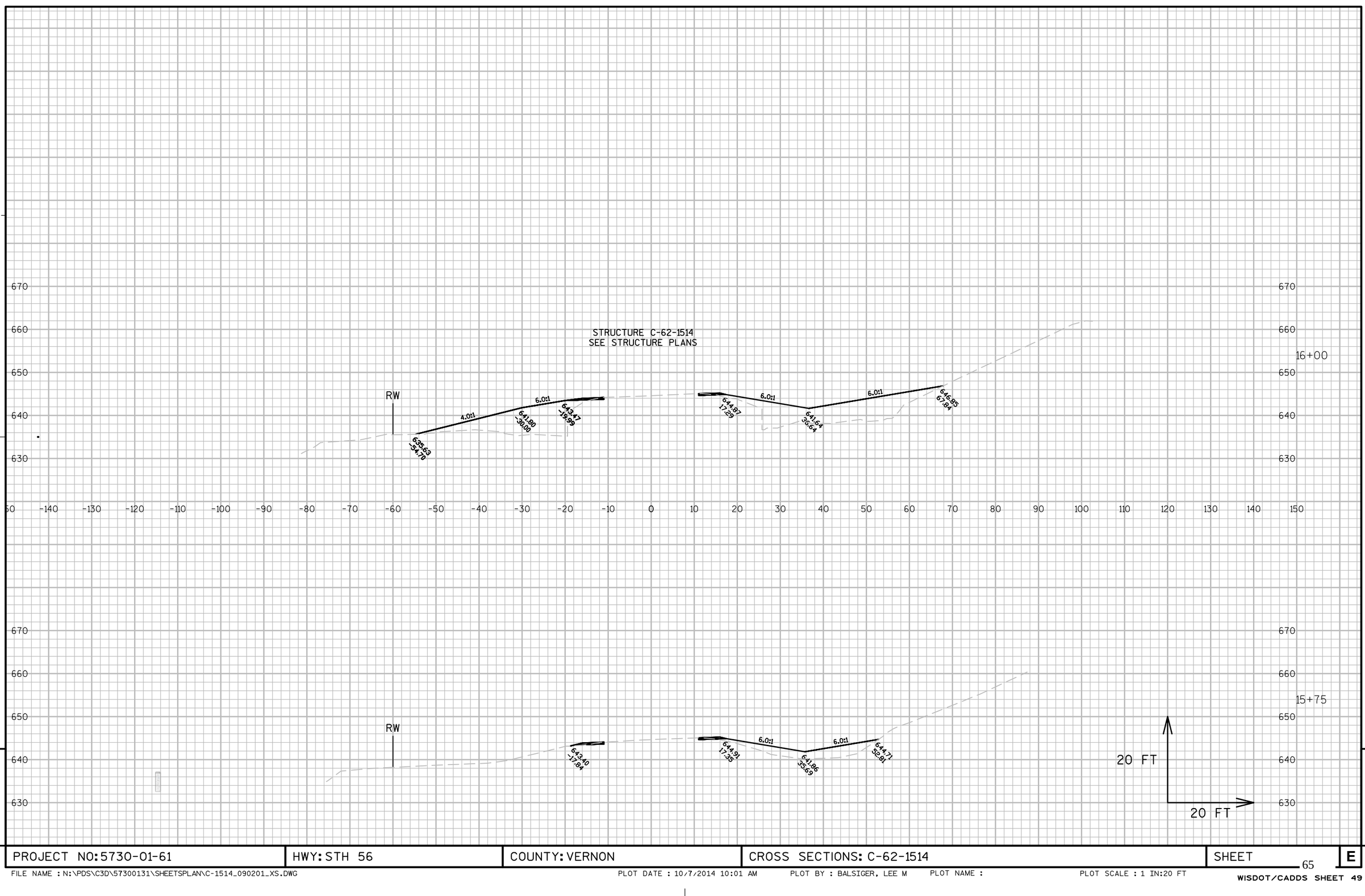
9

9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1514 | SHEET 64 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1514_090201_XS.DWG PLOT DATE : 10/7/2014 10:01 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

STRUCTURE C-62-1514
SEE STRUCTURE PLANS




9

9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1514 | SHEET | E |
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FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1514_090201_XS.DWG PLOT DATE : 10/7/2014 10:01 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

660
650
640
630
670
660
650
640
630

-150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

RW

4.0:1
643.63
17.99
642.97
21.03

6.0:1
644.92
17.25
643.56
29.43
643.94
67.72

16+44

RW

4.0:1
643.73
17.59
643.13
19.96

6.0:1
644.87
17.25
642.78
29.85
6.0:1
643.94
35.89

16+25

20 FT
20 FT

9

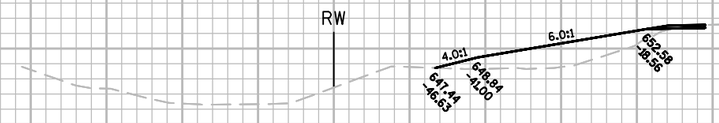
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1514 | SHEET | E |
|---|---|---|---|---|---|

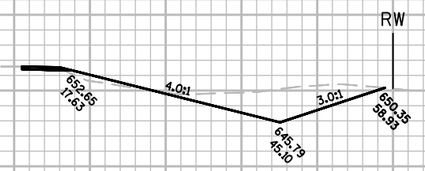


FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1514_090201_XS.DWG PLOT DATE : 10/7/2014 10:01 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

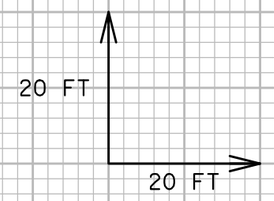
C-62-1509 OUTLET APRON CENTERED AT STA: 30+35
SEE STRUCTURE PLANS




C-62-1509 INLET APRON CENTERED AT STA: 30+65
SEE STRUCTURE PLANS





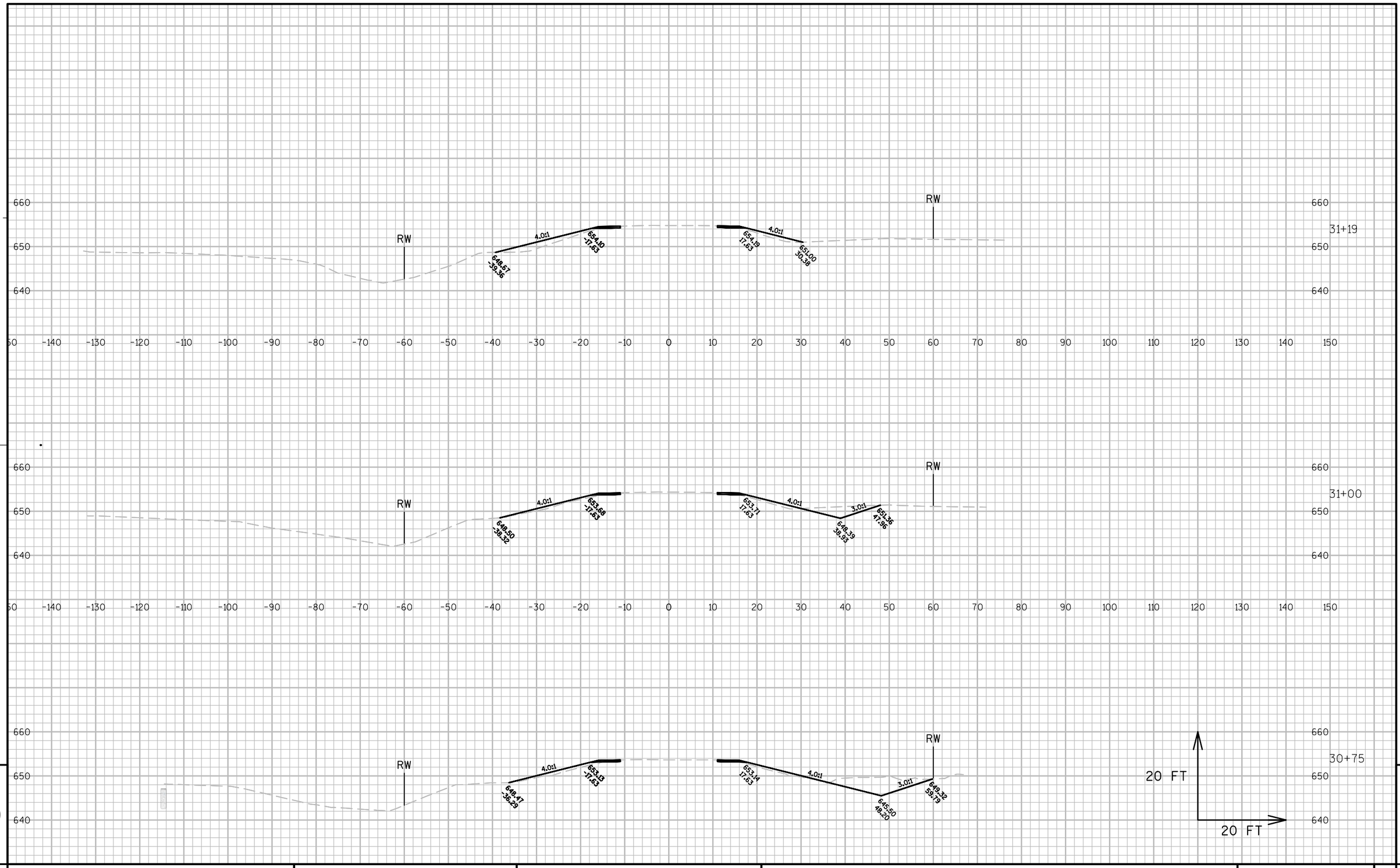




| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1509 | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1509_090201_XS.DWG PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49




9

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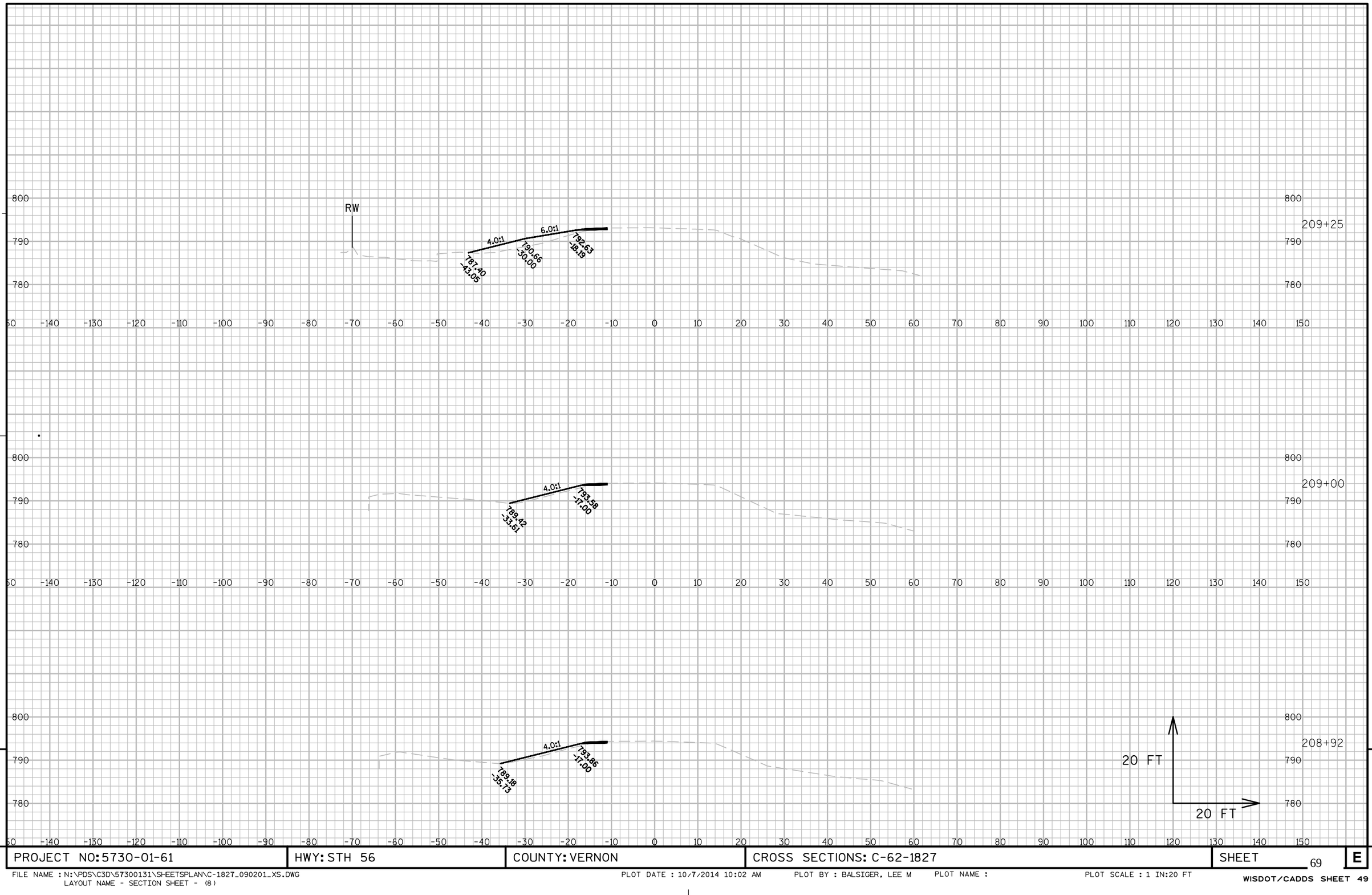
| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1509 | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1509_090201_XS.DWG PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT




9

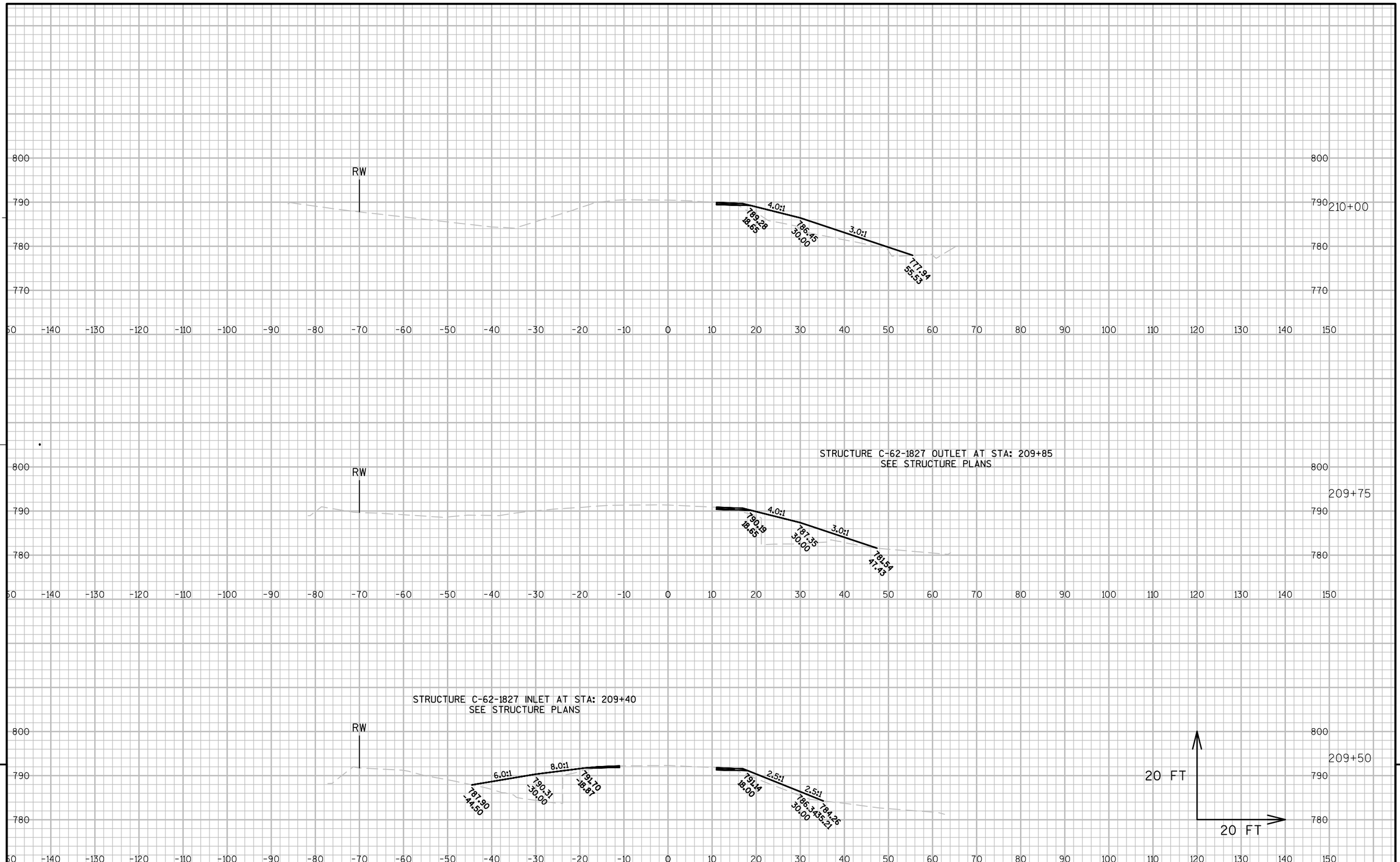
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1827 | SHEET 69 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1827_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (8)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49




9

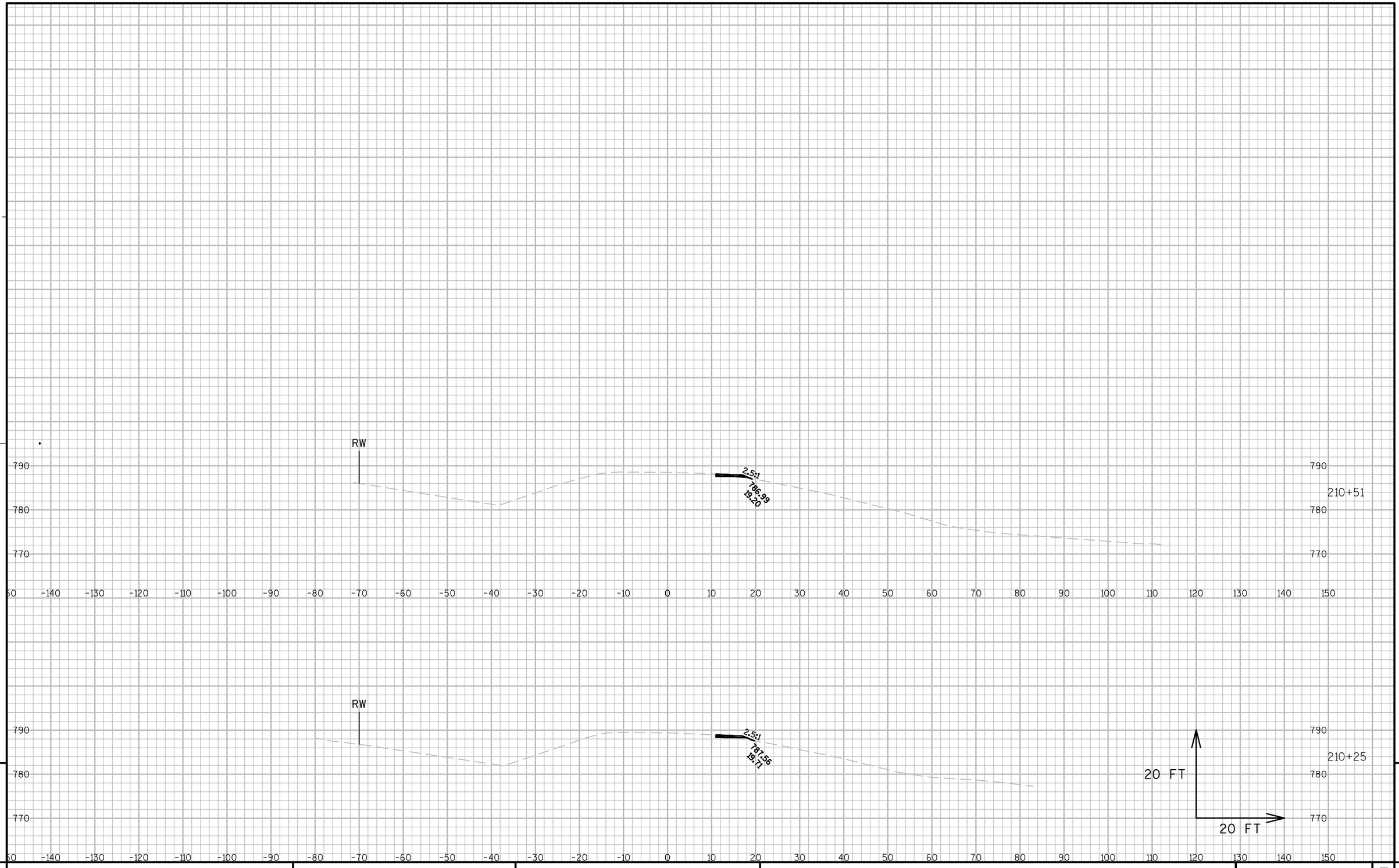
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1827 | SHEET 70 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1827_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (9)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



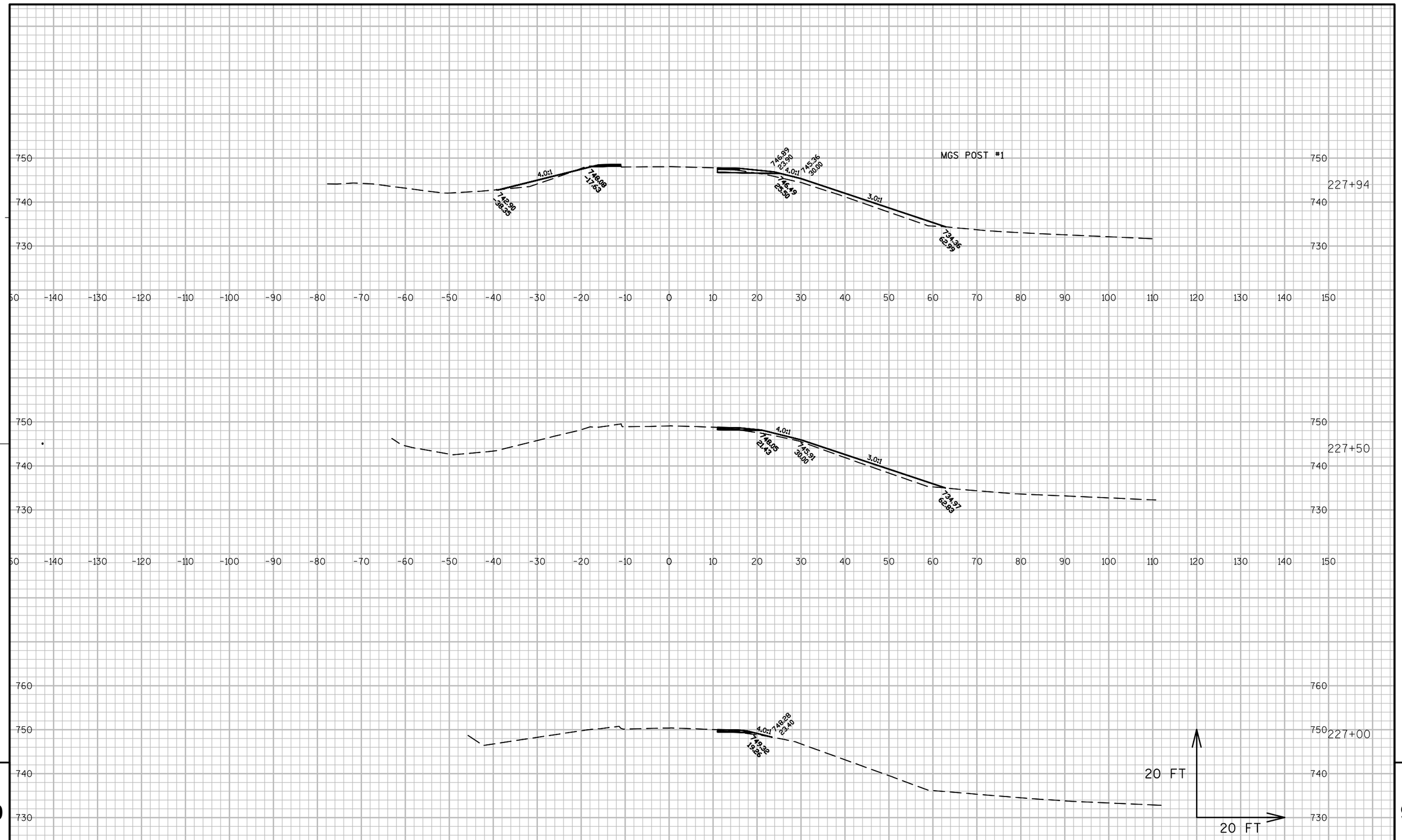

9

9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1827 | SHEET 71 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1827_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (10)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT




9

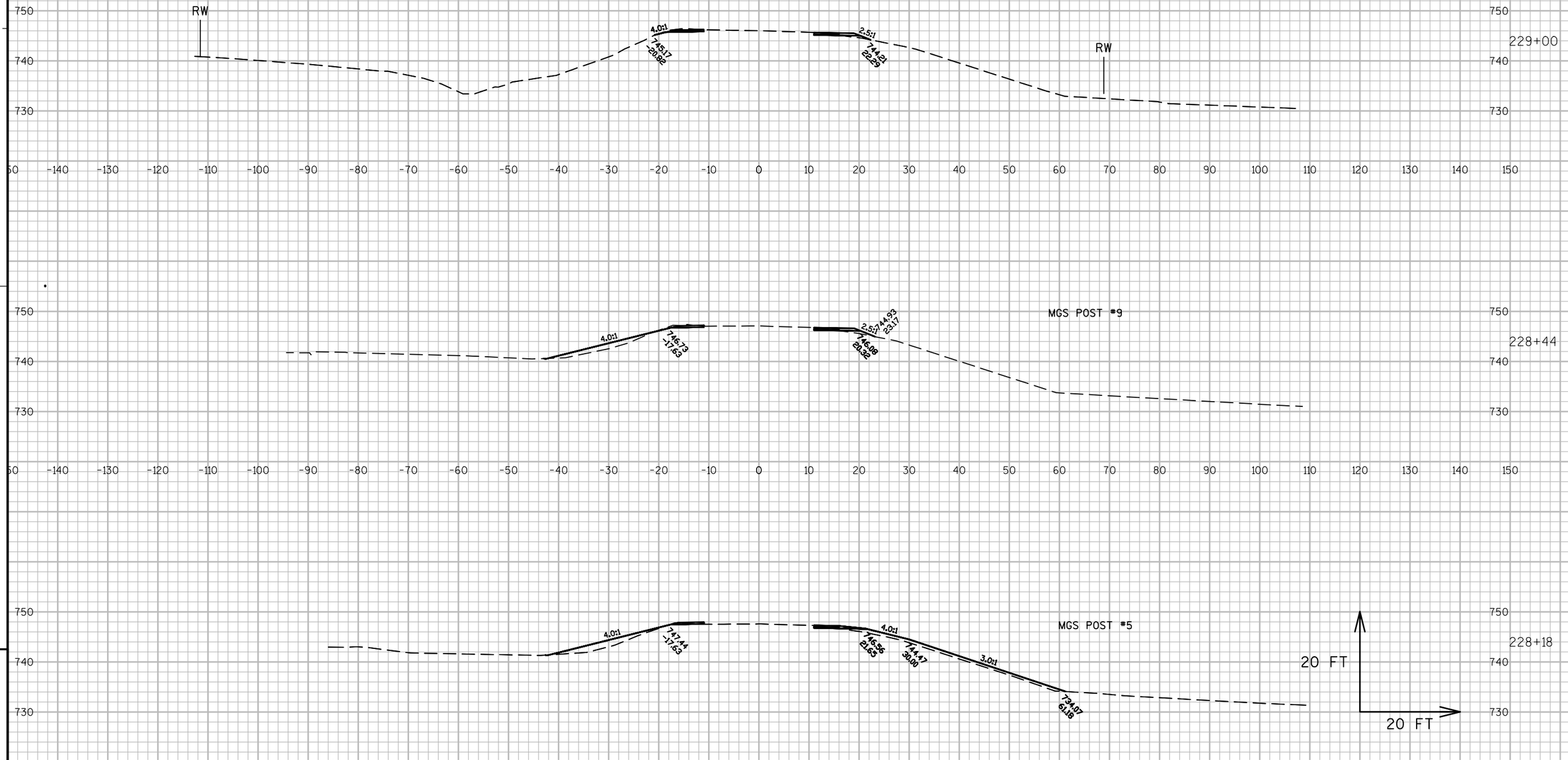
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 72 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (21)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

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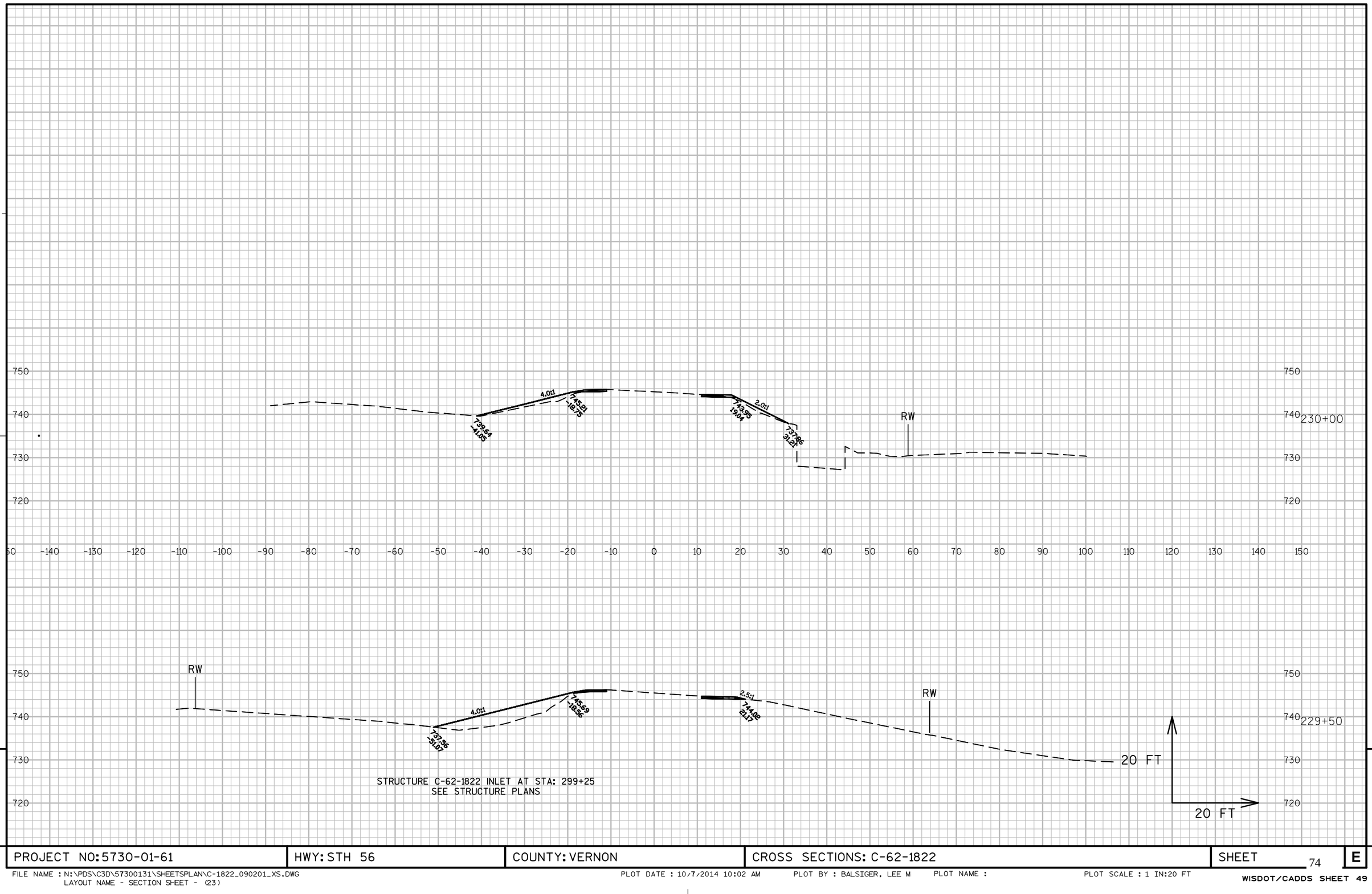
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 73 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (22)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



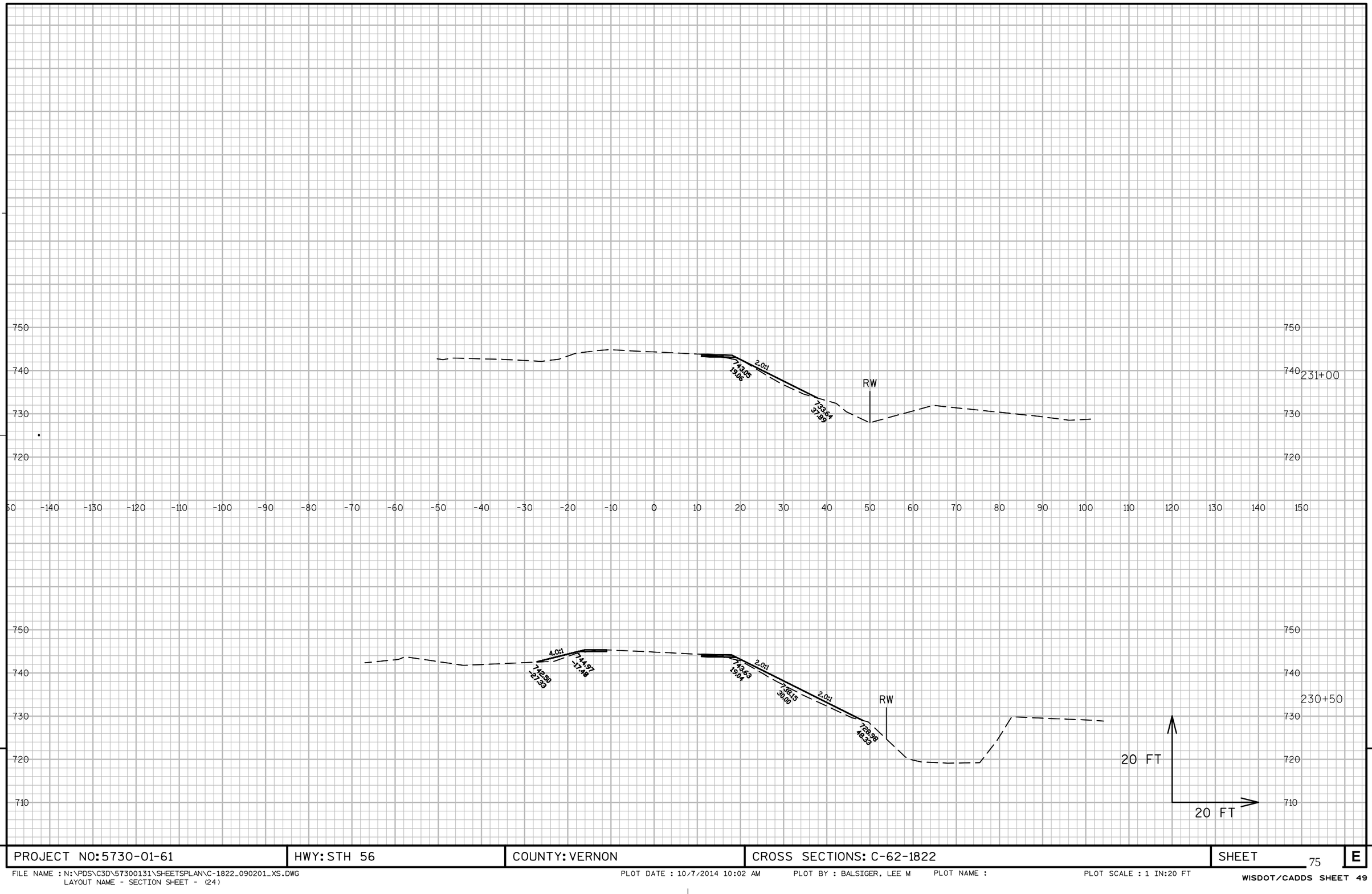

STRUCTURE C-62-1822 INLET AT STA: 299+25
SEE STRUCTURE PLANS

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 74 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (23)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

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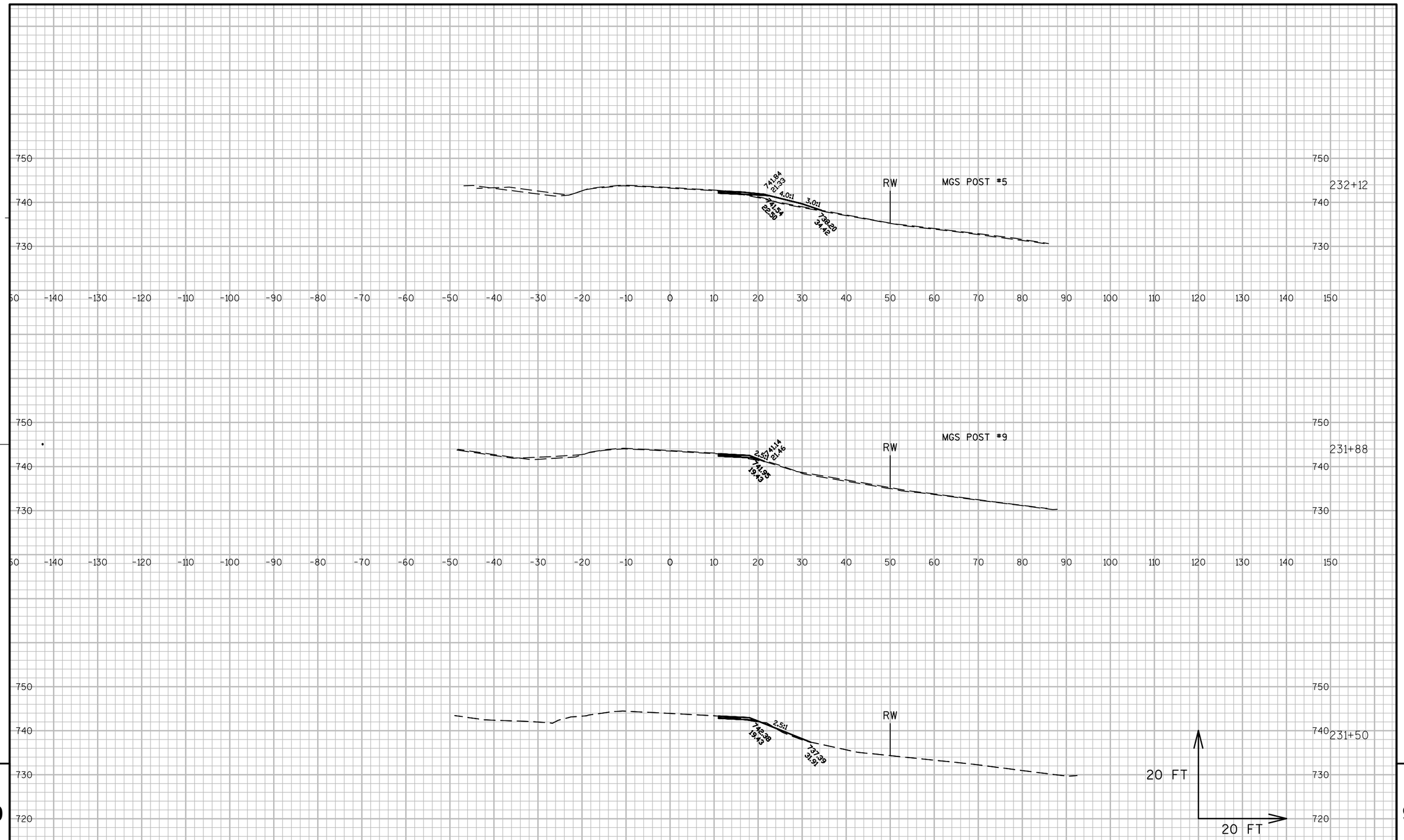
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 75 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (24)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

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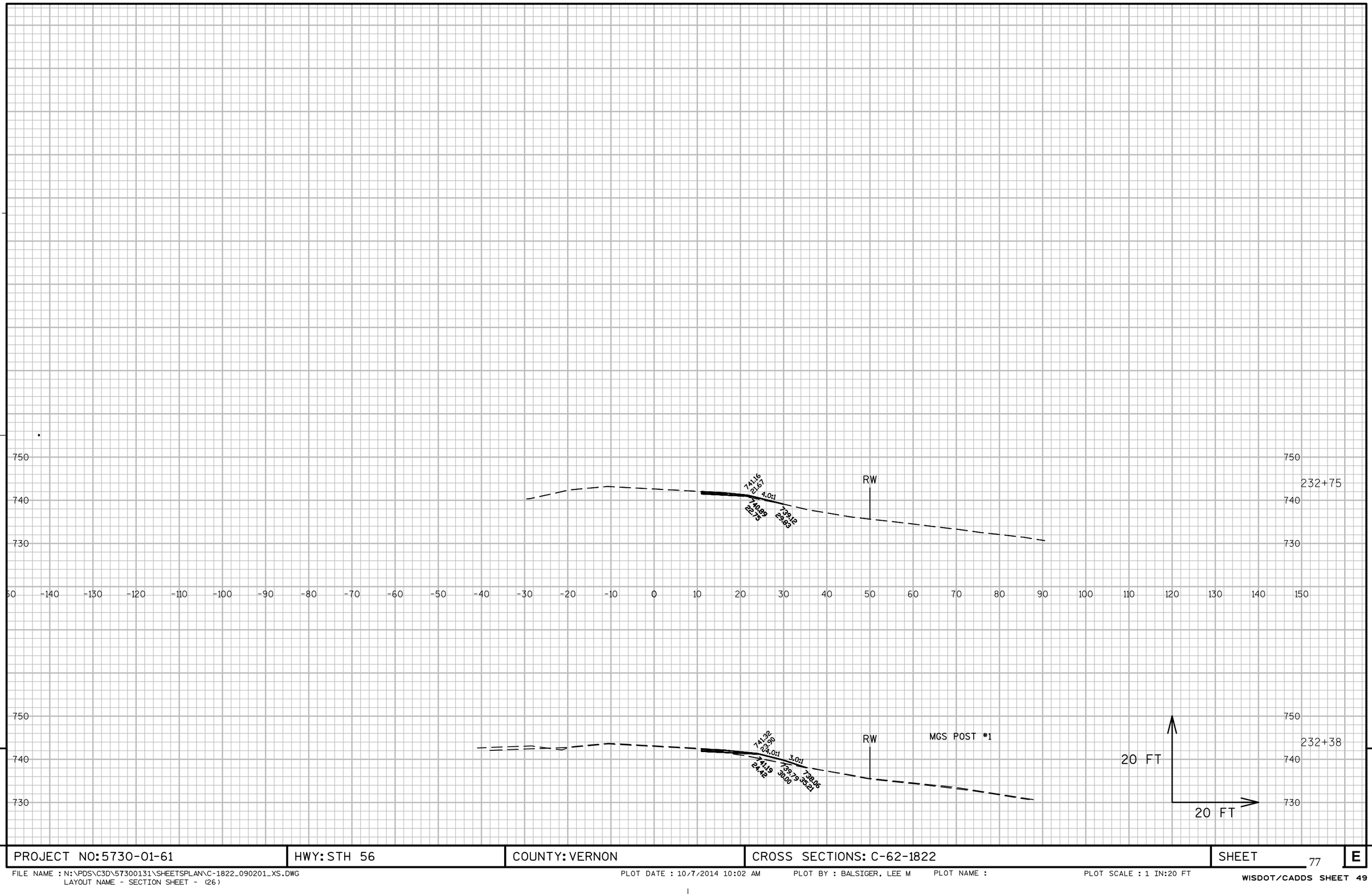
| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 76 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1822_090201_XS.DWG
LAYOUT NAME - SECTION SHEET - (25)

PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

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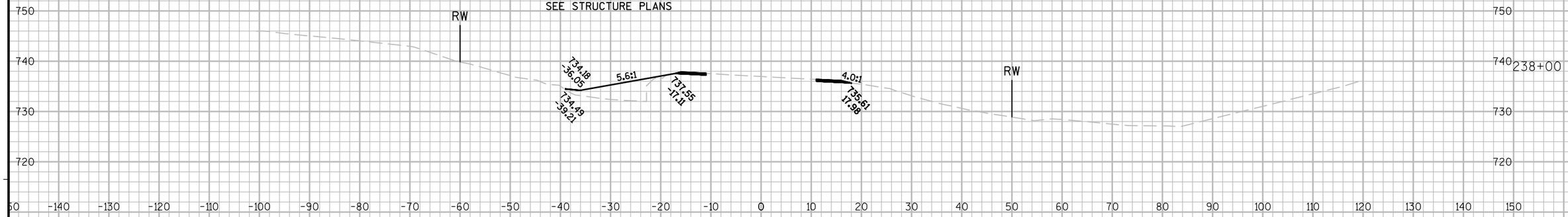
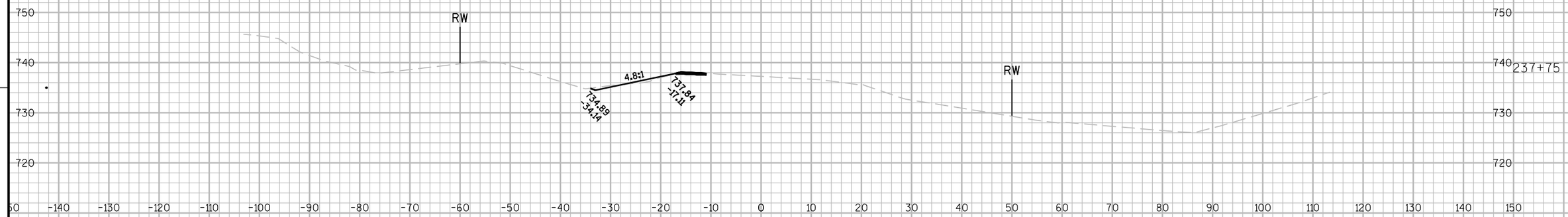
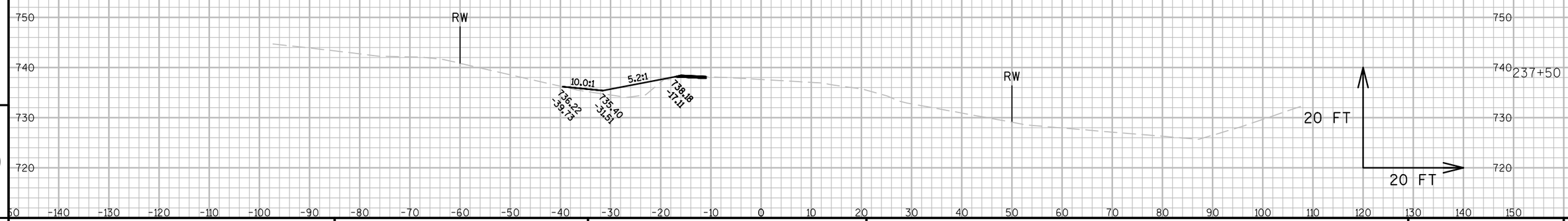
| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1822 | SHEET 77 | E |
|---|---|---|---|---|---|

STRUCTURE C-62-1824 INLET AT STA 238+00
SEE STRUCTURE PLANS

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| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1824 | SHEET 78 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1824_090201_XS.DWG PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

STRUCTURE C-62-1824 OUTLET AT STA 238+40
SEE STRUCTURE PLANS

RW
RW
734.92
17.65
4.0:1
729.00
41.34
238+75

RW
9.2:1
735.92
26.51
736.99
17.11
RW
735.17
17.65
4.0:1
728.35
45.36
238+50

RW
4.0:1
6.2:1
736.48
30.42
735.63
27.02
737.24
17.11
RW
735.40
17.65
4.0:1
731.60
33.24
238+25

20 FT
20 FT

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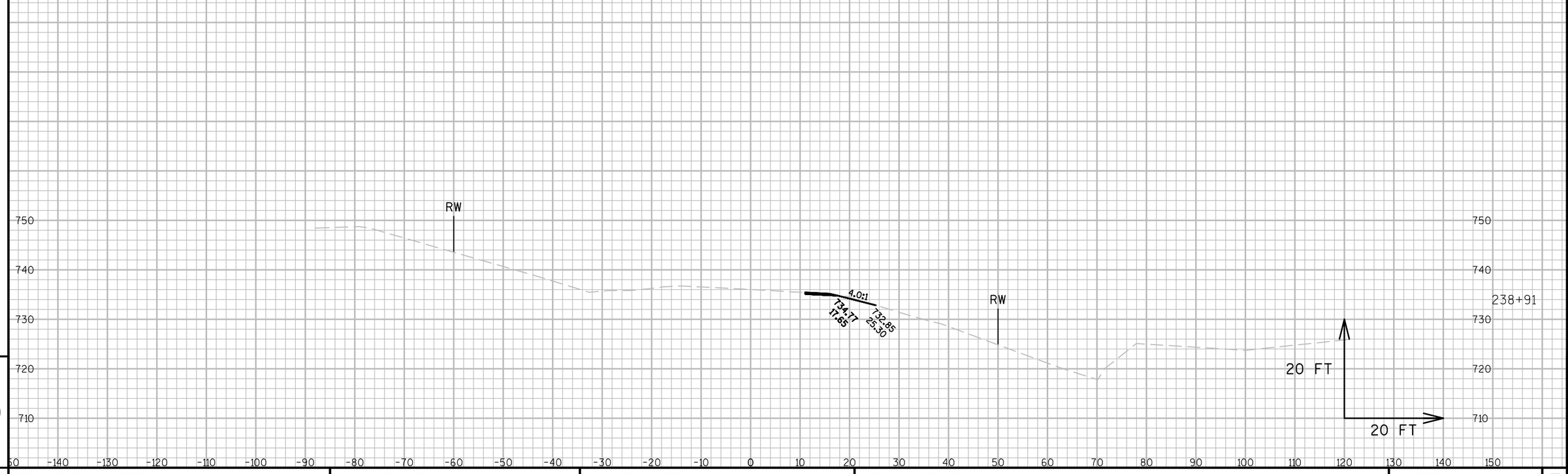
9

| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1824 | SHEET 79 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1824_090201_XS.DWG PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

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| PROJECT NO: 5730-01-61 | HWY: STH 56 | COUNTY: VERNON | CROSS SECTIONS: C-62-1824 | SHEET 80 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\57300131\SHEETSPLAN\C-1824_090201_XS.DWG PLOT DATE : 10/7/2014 10:02 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

Notes

**Wisconsin Department of Transportation**

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