LAX MAY 2014

PROJECT ID: 1023-02-80

COUNTY: MONROE COUNTY

ORDER OF SHEETS

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

TOTAL SHEETS = 218

01

DESIGN DESIGNATION

A.A.D.T.	=
A.A.D.T.	=
D.H.V.	=
D.D.	=
T.	=
DESIGN SPEED	=
ESALS	=

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

BLACK RIVER FALLS - TOMAH

CTH EW TO STH 21/B-41-69

IH 94

MONROE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1023-02-80	WISC 2014175	1

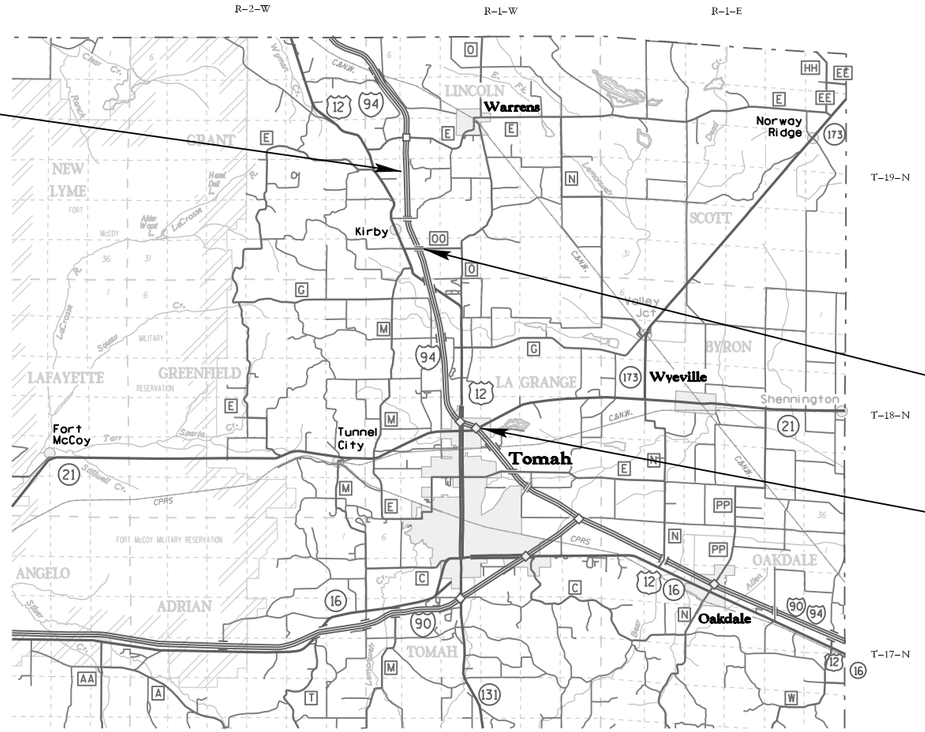
STATE PROJECT NUMBER
1023-02-80

CONST OPS/PREP FOR 1023-02-74

BEGIN PROJECT 1023-02-80

STATION 2589+75 EB
X=699376.568
Y=441209.285

STATION 2589+75A WB
X=699436.667
Y=441209.248



STRUCTURE B-41-0069

END PROJECT 1023-02-80

STATION 2950+00 EB
X=707904.895
Y=407360.733

STATION 2951+00A WB
X=708087.842
Y=407347.616

LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 6.823 MI.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	MIKE GREINER
Project Manager	BRIAN MEYER
Regional Examiner	
Regional Supervisor	JIM SAVOLDELLI
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 01-30-2014 James Savoldelli (Signature)

E

GENERAL NOTES

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.

THE EXPANDED FILL, AS SHOWN ON THE PLAN AND PROFILE SHEETS, INCLUDES THE FILL EXPANDED BY 1.25.

EXISTING DRAINAGE DITCHES AND CULVERT PIPES WILL REMAIN FUNCTIONAL DURING EXCAVATION OPERATIONS.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES ARE APPROXIMATE AND SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND EMATTED AS DIRECTED BY THE ENGINEER WITHIN SEVEN (7) DAYS AS WRITTEN IN THE STANDARD SPECIFICATIONS.

WHEN THE QUANTITIES OF HMA PAVEMENT ARE 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.

ASPHALT MATERIAL FOR PLANT MIXES HAS BEEN ESTIMATED AT 5.5% OF THE HMA PAVEMENT.

DETAILS OF CONSTRUCTION NOT SHOWN IN THE PLAN WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

THE LOCATIONS OF UNDISTRIBUTED QUANTITIES WILL BE DETERMIND IN THE FIELD BY THE ENGINEER.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATED HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

THERE ARE STATE HISTORIC PRESERVATION OFFICE (SHPO) COMMITMENT AREAS WITHIN THE PROJECT LIMITS. ANY WORK OPERATIONS IN THESE AREAS REQUIRE AN APPROVED ARCHEOLOGICAL OR HISTORICAL COORDINATOR.

THE 3.5" AND 5.0" HMA PAVEMENTS ARE TO BE PLACED IN ONE SINGLE LAYER AS ALLOWED BY THE STANDARD SPECIFICATIONS HMA PAVEMENTS SURFACE LAYER CAN BE CONSTRUCTED USING 19.0 MM.

THE ENGINEER SHALL CONFIRM THE LOCATION OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL ME MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. AT THAT TIME, THE CONTRACTOR SHALL REMOVE THE TEMPORARY EROSION CONTROL ITEM AS AN INCEDENTAL COST TO THE RESPECTIVE BID ITEM.

NO EQUIPMENT OR MATERIALS SHALL BE STORED OR IMPACT ANY WETLANDS OR WATERWAYS.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND EMATTED AS DIRECTED BY THE ENGINEER.

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

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

2

FTMS STANDARD ABBREVIATIONS

CCTV	CLOSED CIRCUIT TELEVISION SITE
SDS	SYSTEM DETECTOR STATION
CB	CONTROLLER CABINET
PB	PULL BOX
MH	MANHOLE
CV	COMMUNICATIONS VAULT
MD	MICROWAVE DETECTOR
TMD	TEMPORARY MICROWAVE DETECTOR
PCCTV	PORTABLE CCTV VIDEO SURVEILLANCE SYSTEM

LEGEND

	EXISTING	PROPOSED
CCTV CAMERA AND POLE		
POLE-MOUNT CABINET AND BREAKER		
DISCONNECT BOX		
METER BREAKER PEDESTAL		
24"X36" STEEL PULL BOX		
MICROWAVE DETECTOR		
DETECTION ZONE		
ITS CONDUIT		
SOLAR POWERED MICROWAVE DETECTOR ASSEMBLY		
TYPE 1 COMMUNICATION VAULT	CV	CV

FTMS GENERAL NOTES

THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.

BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.

BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.

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

AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION ARE TO BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER AND SEED, AND MULCH. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION WILL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS. NO PAYMENT WILL BE MADE FOR RESTORING AREAS DISTURBED FOR FTMS CONSTRUCTION OPERATIONS.

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

BE ADVISED THAT DUE TO RAMP, LANE, AND SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.

CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414) 227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.

ALL LOOP DETECTORS STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.

HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.

VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

2

2

N

ITS INSTALLATIONS

ITS INSTALLATIONS

ASPEN AVENUE

UNION PACIFIC
RAILROAD

CTH EW AT WARRENS
(EXIT 135)

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PROJECT OVERVIEW	SHEET	E

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WISDOT/CADDS SHEET 42

2

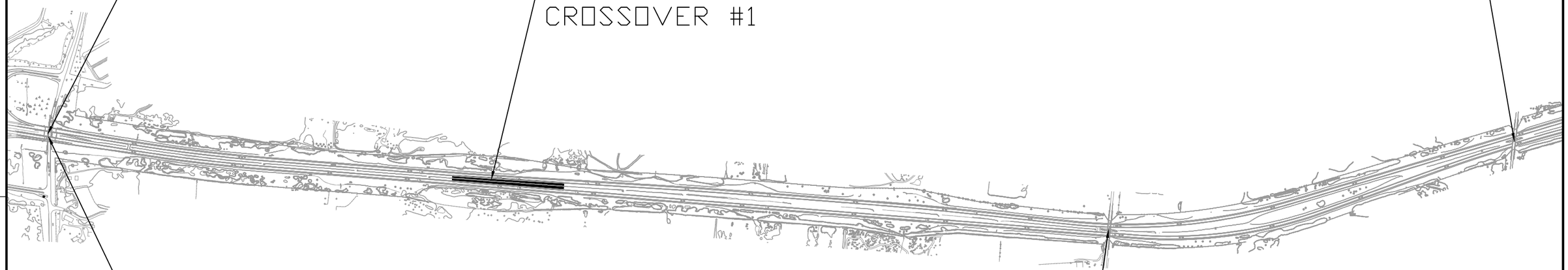
2

N

ITS INSTALLATIONS

NEW MEDIAN CROSSOVER,
CROSSOVER #1

CTH "□□" □VERPASS
REHAB B-41-69
MILE MARKER 138.69



CTH EW AT WARRENS
(EXIT 135)

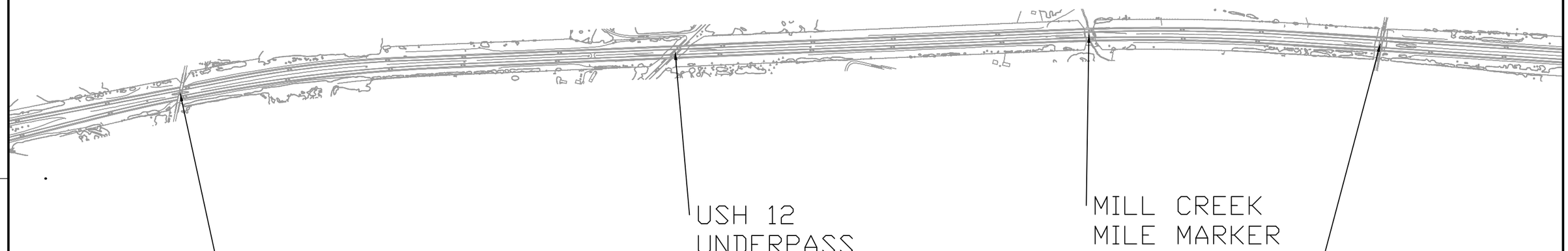
CORTLAND AVENUE
□VERPASS
MILE MARKER 137.89

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PROJECT OVERVIEW	SHEET 6	E

2

2

N



CTH "□□" □VERPASS
REHAB B-41-69
MILE MARKER 138.69

USH 12
UNDERPASS
MILE MARKER 139.64

MILL CREEK
MILE MARKER
140.47

EMPIRE AVENUE
UNDERPASS
MILE MARKER
141.01

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PROJECT OVERVIEW	SHEET 7	E

2

EMPIRE AVENUE
UNDERPASS
MILE MARKER 141.01

USH 21 AT TOMAH
(EXIT 143)

USH 12 AT TOMAH
(EXIT 143)

USH 12 WIDENING

EXISTING CROSSOVER
TO BE UTILIZED
MILE MARKER 142.53

IH 94 EB OFF-RAMP
WIDENING

NEW RAMP CROSSOVER,
CROSSOVER #2

N

2

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PROJECT OVERVIEW	SHEET 8	E

2

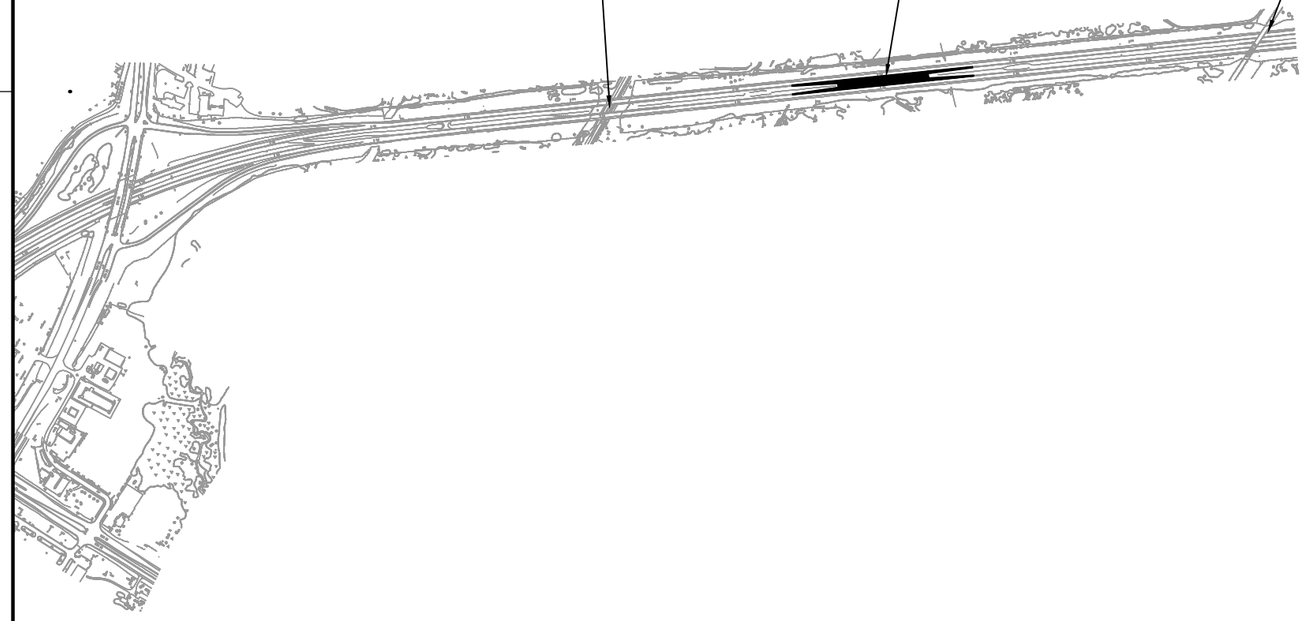
2

N

EXISTING CROSSOVER
TO BE UTILIZED.
MILE MARKER 144.58

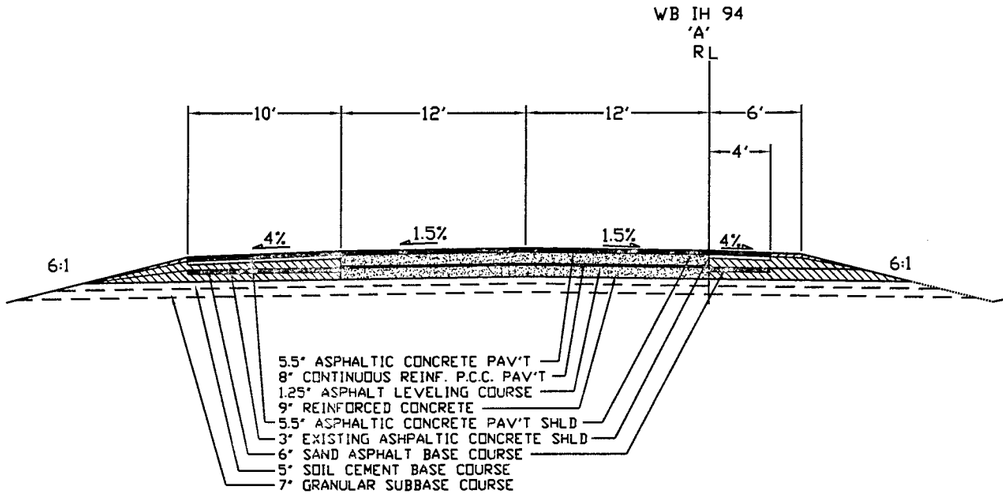
FOLEY AVENUE
MILE MARKER 144.23

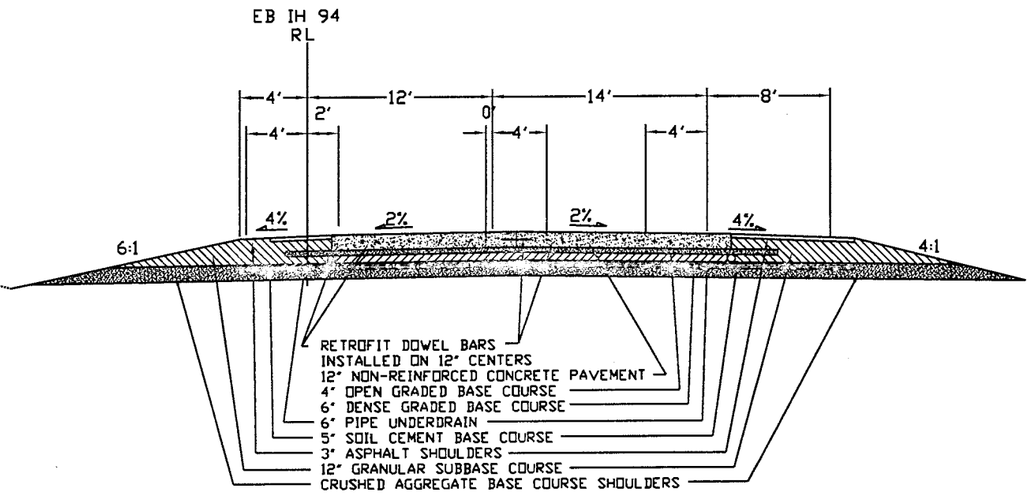
VETERANS STREET
MILE MARKER 145.05



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PROJECT OVERVIEW	SHEET 9	E

2





TYPICAL EXISTING CROWNED TANGENT
SECTION (CROSSOVER #1)
STA. 2589+75 TO STA. 2601+00
STA. 2589+75A TO STA. 2601+00A

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	TYPICAL SECTIONS	SHEET E

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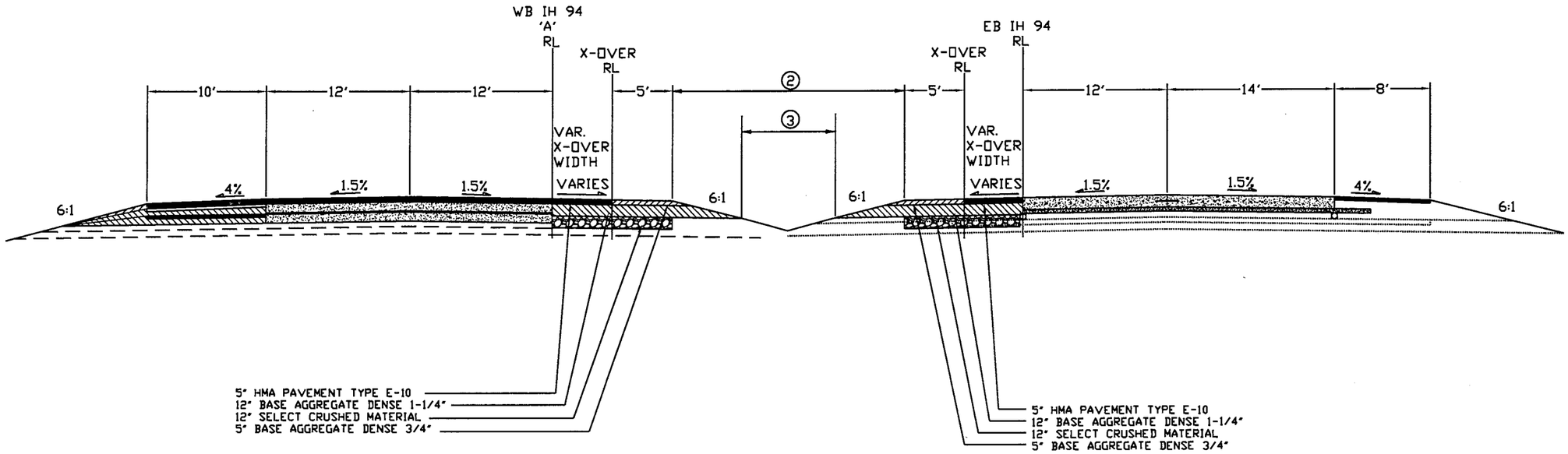
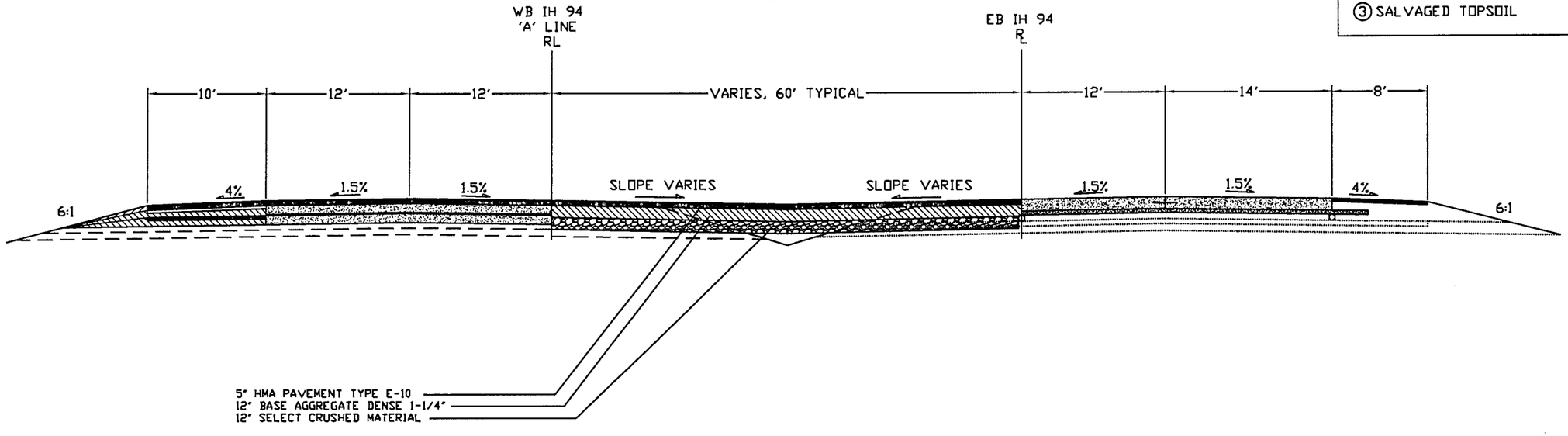


TYPICAL FINISHED CROSSOVER #1 TRANSITION SECTION
STA. 2589+75 TO STA. 2593+22
STA. 2595+66 TO STA. 2601+00
STA. 2589+75A TO 2593+19A
STA. 2595+63A TO STA. 2601+00A

① SLOPE INTERCEPT
② LIMITS OF SEEDING MIXTURE #30 FERTILIZER TYPE B AND EROSION CONTROL MAT CLASS II, TYPE B
③ SALVAGED TOPSOIL



TYPICAL FINISHED CROSSOVER #1 SECTION
STA. 2593+22 TO STA. 2595+66
STA. 2593+19A TO STA. 2595+63A

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	TYPICAL SECTIONS	SHEET	E

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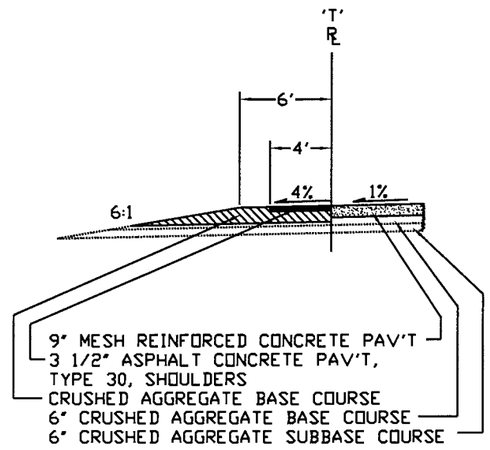
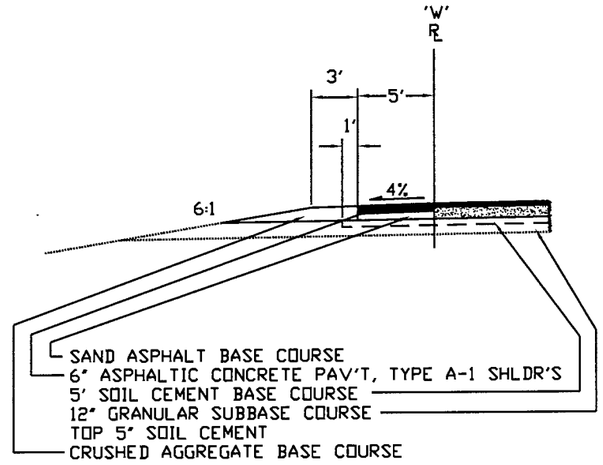
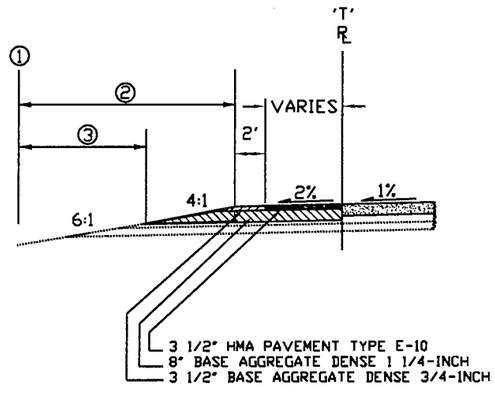


EXISTING TYPICAL USH 12 WB WIDENING
STA. 505+50T TO STA. 509+27T

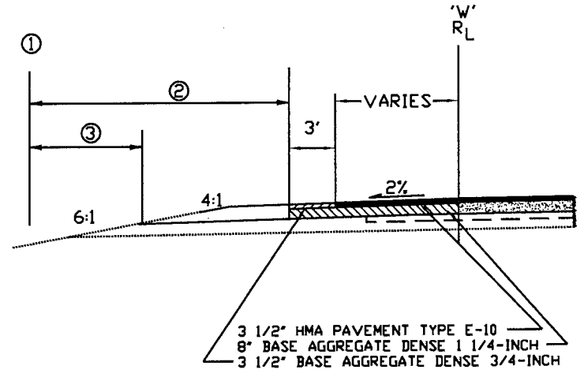


EXISTING TYPICAL IH 94 EB OFF-RAMP WIDENING
STA. 2930+04W TO STA. 2940+00W

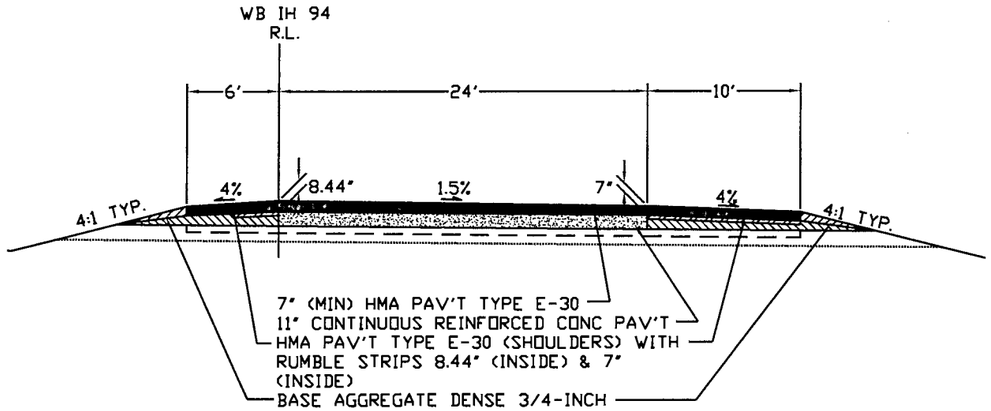


① SLOPE INTERCEPT
② LIMITS OF SEEDING MIXTURE #30 FERTILIZER TYPE B AND EROSION CONTROL MAT CLASS II, TYPE B
③ SALVAGED TOPSOIL

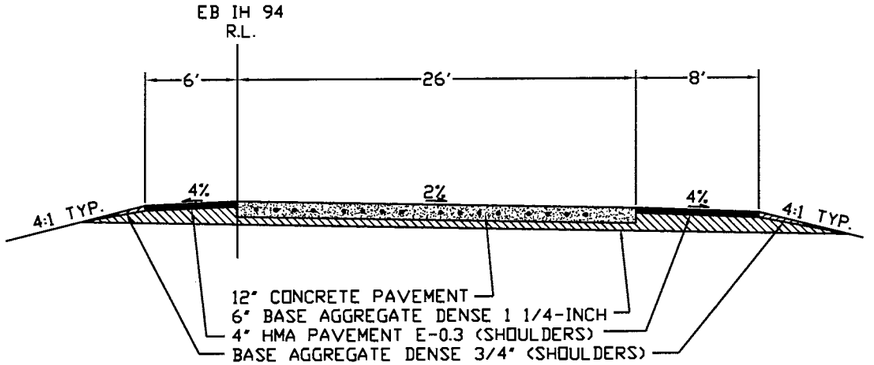
TYPICAL FINISHED USH 12 WB WIDENING
STA. 505+50T TO STA. 509+27T



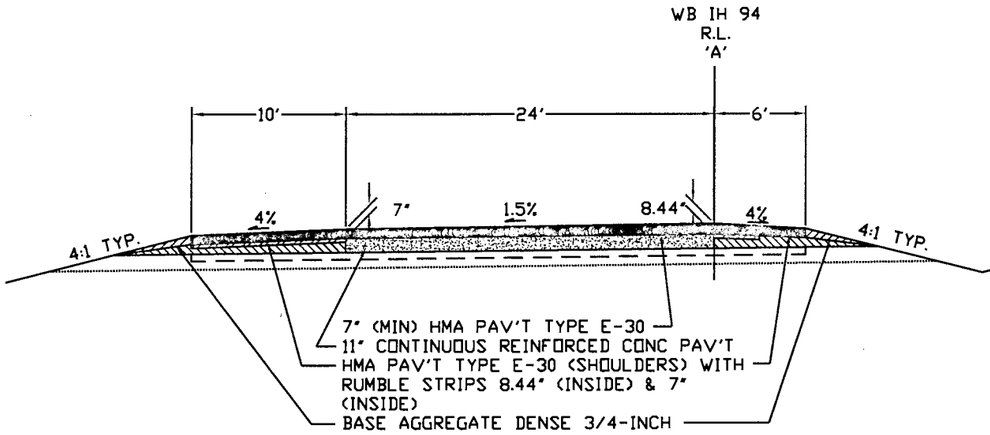
TYPICAL FINISHED IH 94 EB OFF-RAMP WIDENING
STA. 2930+04W TO STA. 2940+00W

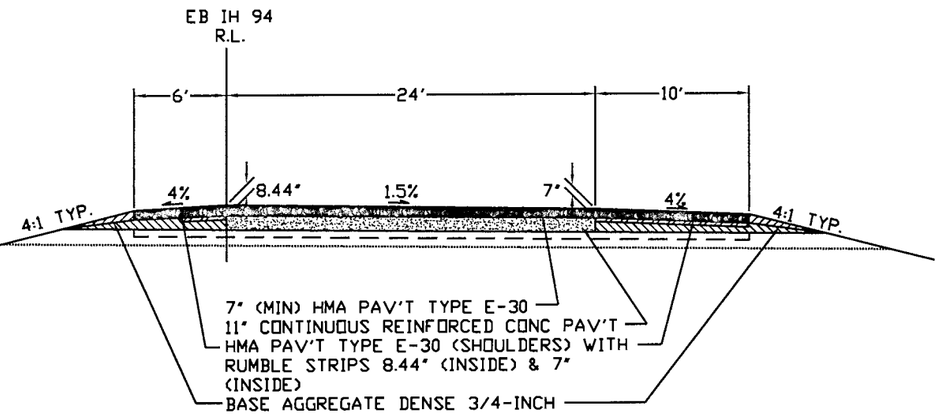


TYPICAL EXISTING UNILATERAL TANGENT
SECTION (CROSSOVER #2)
STA. 2942+00A TO STA. 2945+01A



TYPICAL EXISTING UNILATERAL TANGENT
SECTION (CROSSOVER #2)
STA. 2940+03 TO STA. 2945+75

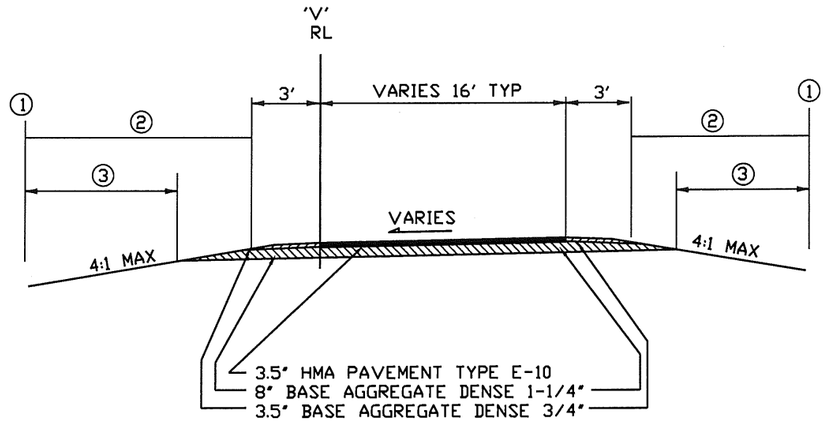




TYPICAL EXISTING UNILATERAL TANGENT
SECTION (CROSSOVER #2)
STA. 2945+75 TO STA. 2951+50
STA. 2945+01A TO STA. 2950+77A

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	TYPICAL SECTIONS	SHEET E

2



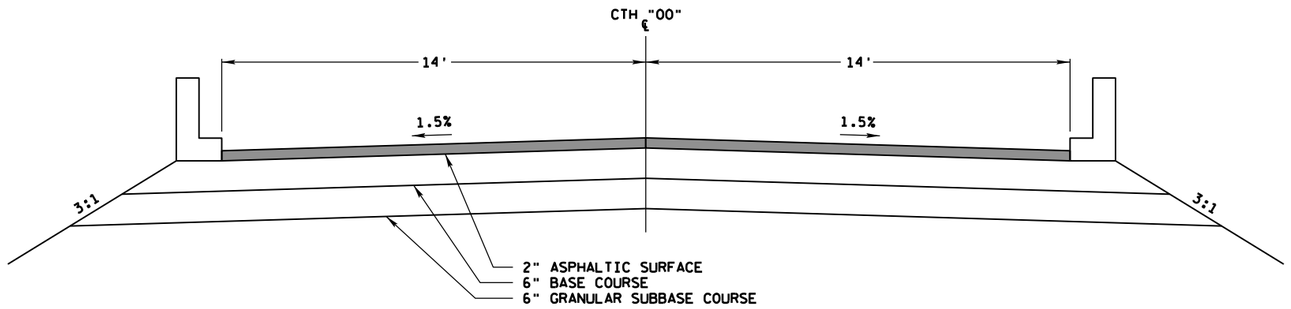
TYPICAL FINISHED CROSSOVER #2
STA. 2942+75V TO STA. 2951+55V

①SLOPE INTERCEPT

②LIMITS OF SEEDING MIXTURE #30 FERTILIZER TYPE B AND EROSION CONTROL MAT CLASS II, TYPE B

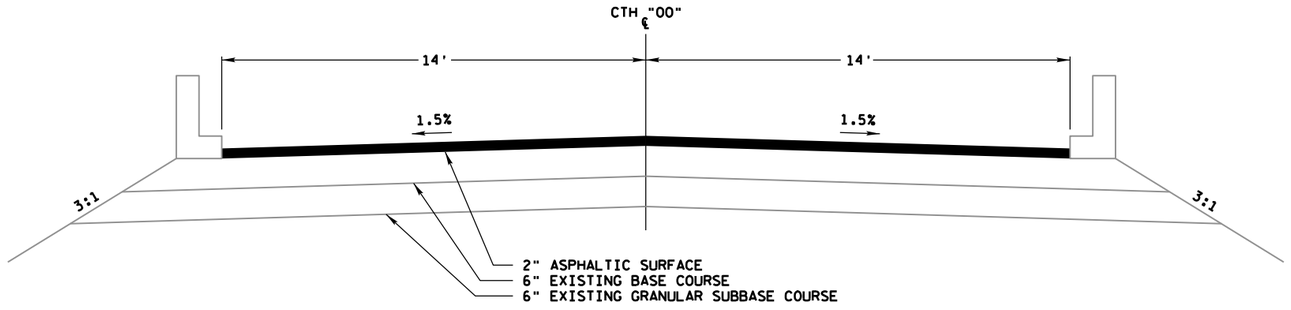
③SALVAGED TOPSOIL

2



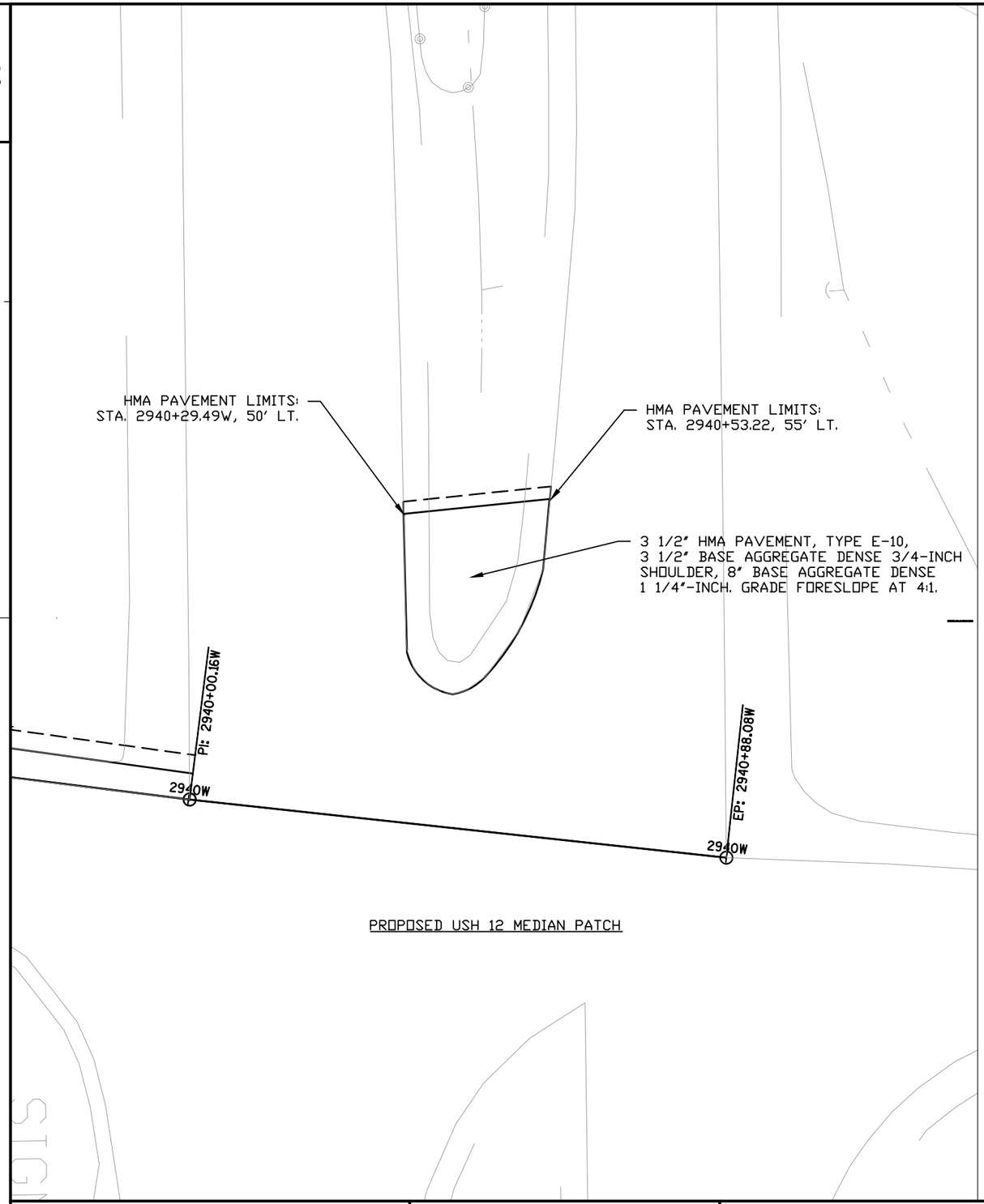
EXISTING TYPICAL SECTION - CTH "00"

STATION 18+94"00" TO 19+11"00"
STATION 21+18"00" TO 21+35"00"



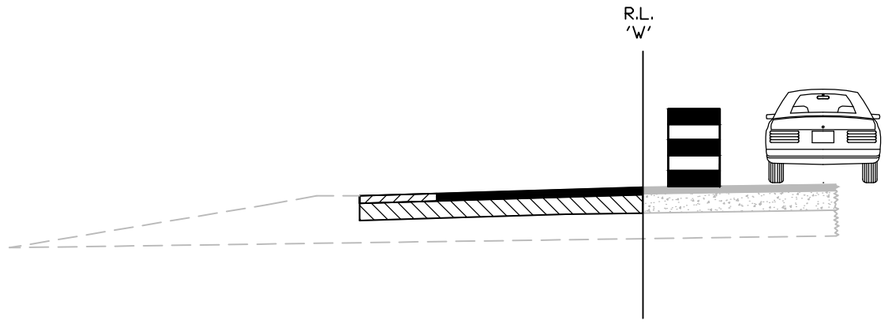
PROPOSED TYPICAL SECTION - CTH "00"

STATION 18+94"00" TO 19+11"00"
STATION 21+18"00" TO 21+35"00"



PROPOSED USH 12 MEDIAN PATCH

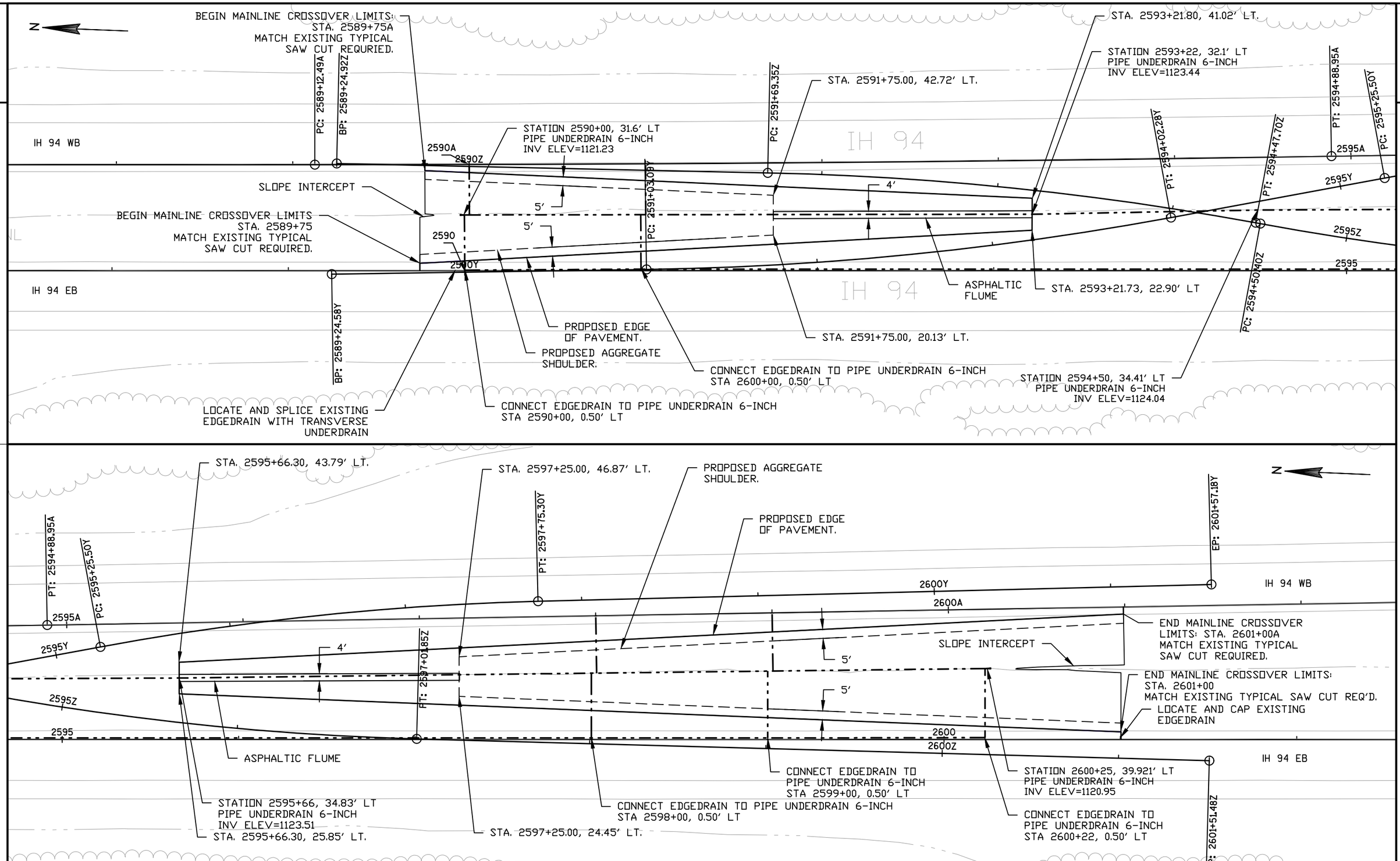
RAMP TRAFFIC CONTROL



PROPOSED IH 94 EB OFF-RAMP WIDENING
AT USH 12 TRAFFIC CONTROL
STA. 2930+04W TO 2940+00W

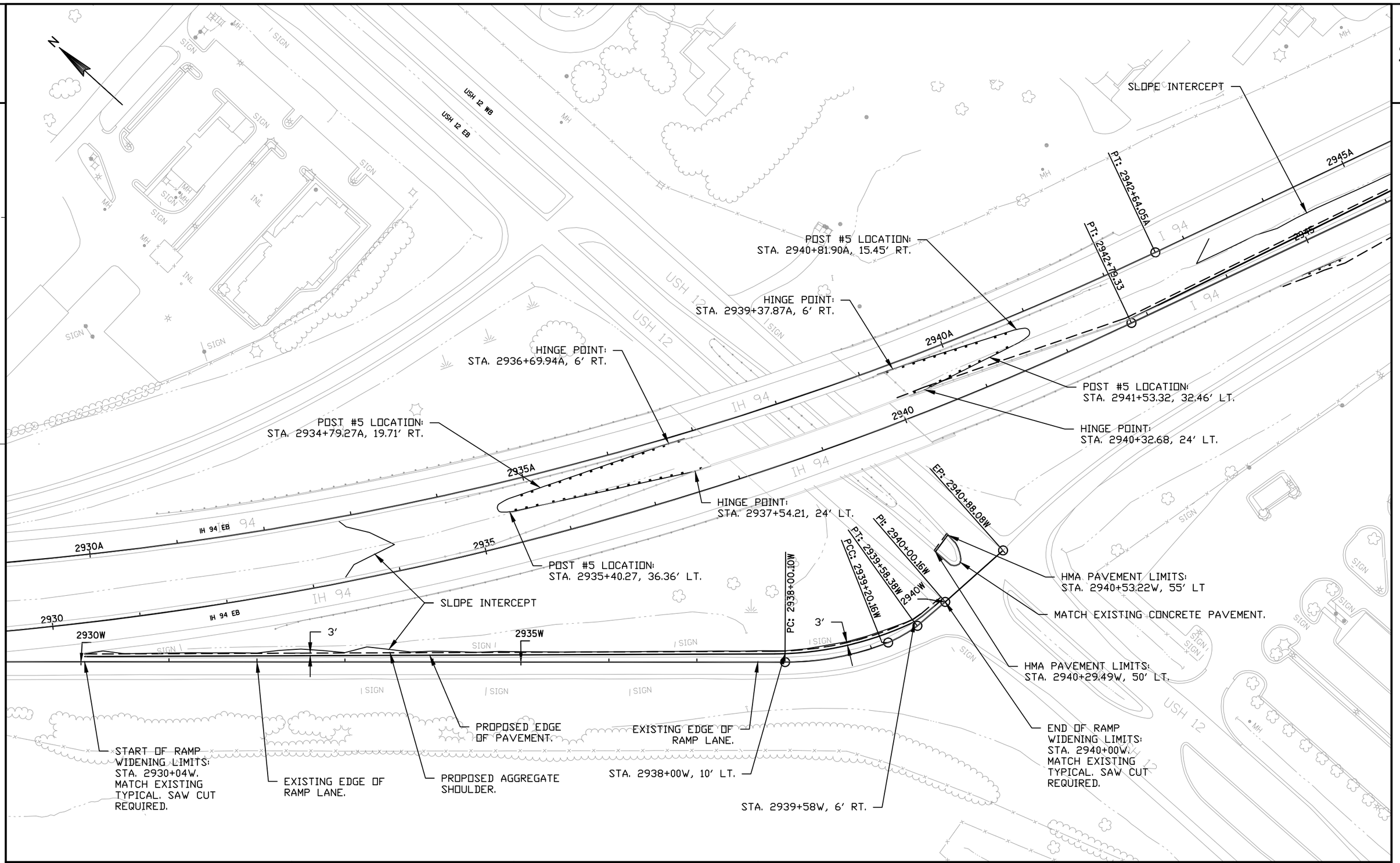
2

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: MEDIAN PATCH & RAMP TRAFFIC CONTROL	SHEET 16	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: MAINLINE CROSSOVER #1	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021002_CD.DWG PLOT DATE : 2/27/2014 3:19 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:50_XREF
WISDOT/CADDS SHEET 44



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: IH 94 EB OFF-RAMP @ USH 12 WIDENING	SHEET 18	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021003_CD.DWG PLOT DATE : 1/23/2014 5:54 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:100_XREF

2

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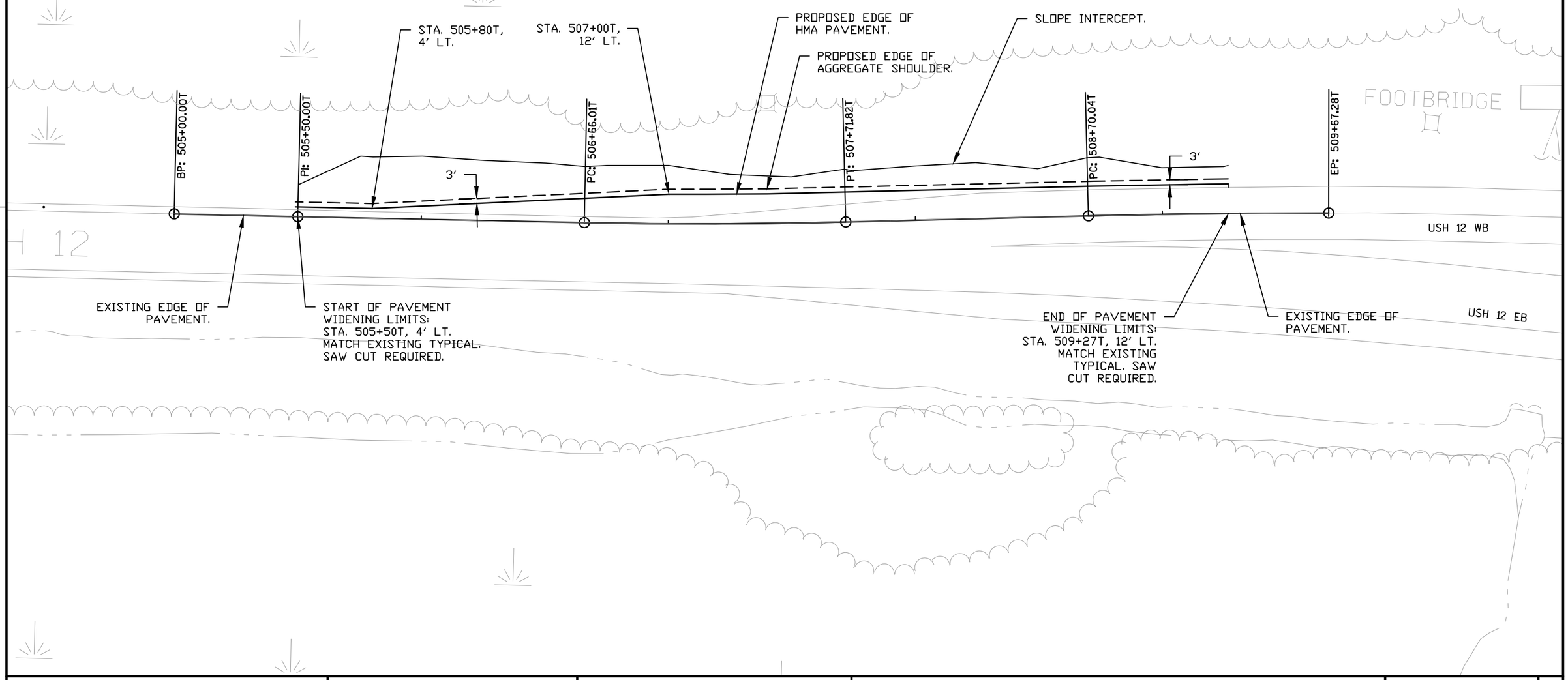
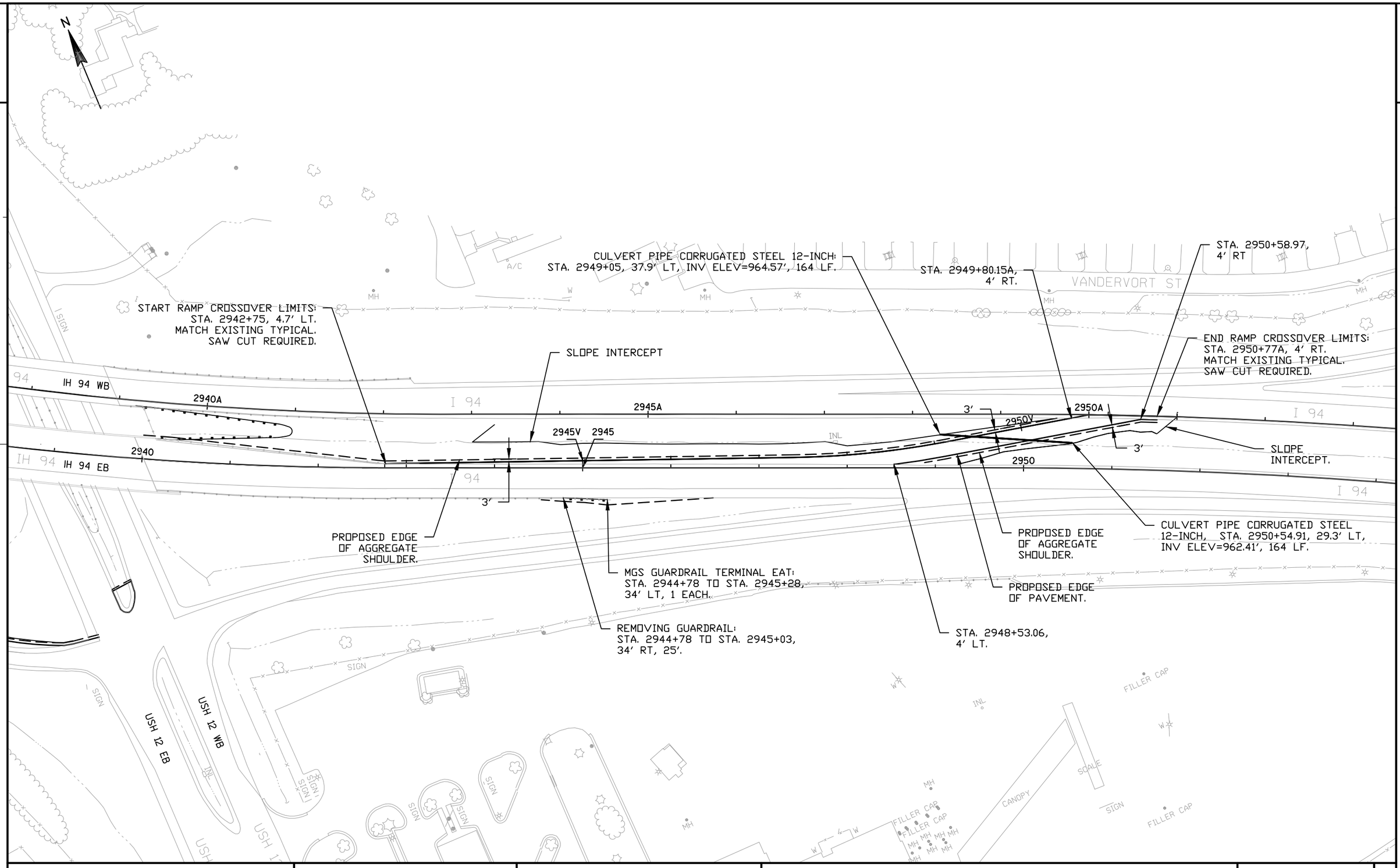


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: USH 12 WB WIDENING	SHEET 19	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021003_CD.DWG PLOT DATE : 1/23/2014 5:55 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF

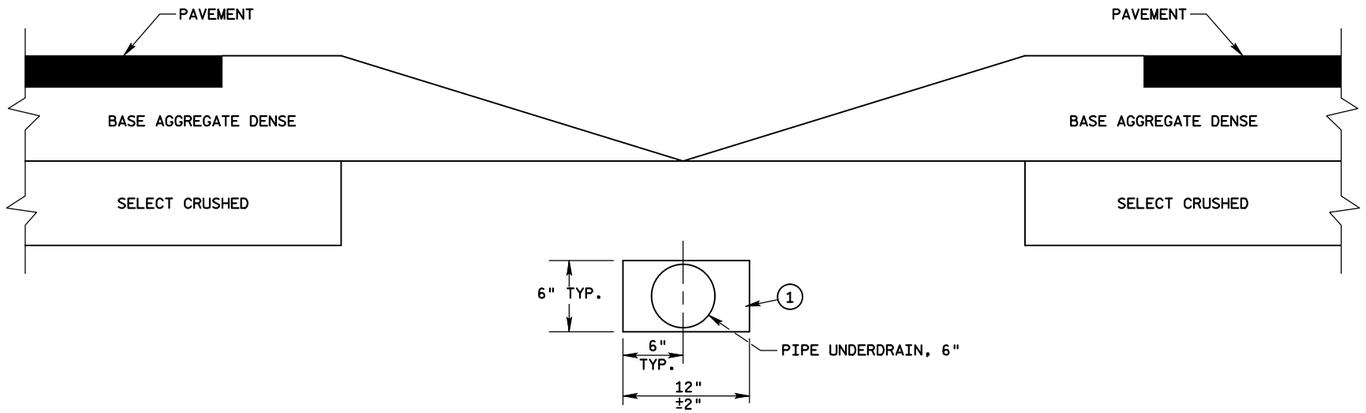
WISDOT/CADDS SHEET 42

2



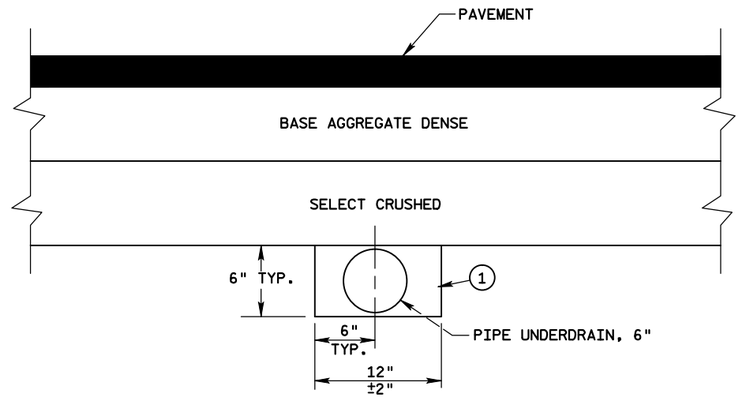
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: CROSSOVER #2	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021004_CD.DWG PLOT DATE : 1/24/2014 7:35 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:100_XREF
WISDOT/CADDS SHEET 42



CROSSOVER CENTERLINE INSTALLATION

STATION 2590+00 TO STATION 2593+22
STATION 2595+66 TO STATION 2600+25



CROSSOVER CENTERLINE INSTALLATION

STATION 2593+22 TO STATION 2595+66

GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY UNLESS SPECIFIED ON THE PLAN.

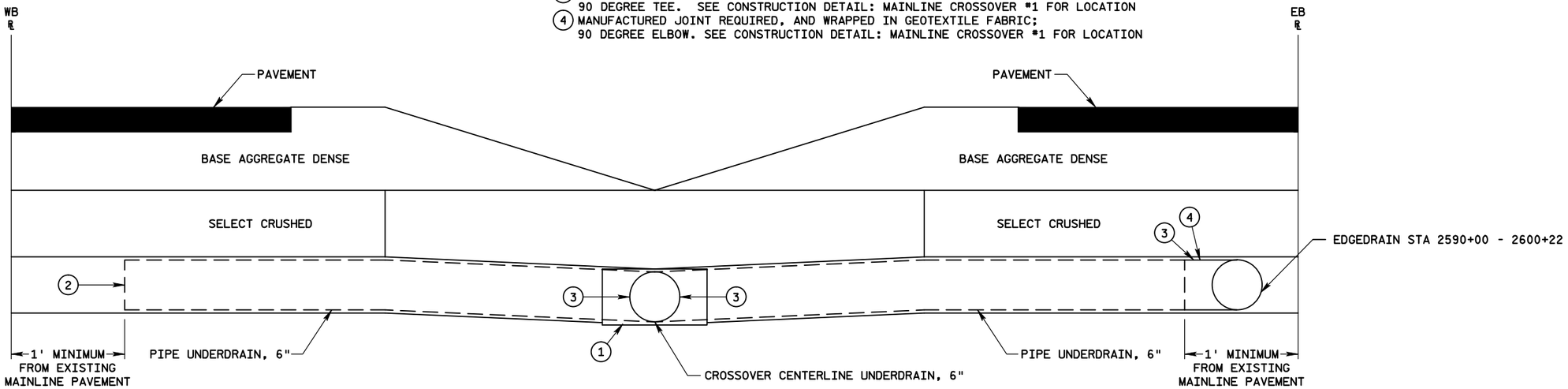
PIPE TRENCH SHALL BE LINED WITH GEOTEXTILE FABRIC TYPE DF. USE 6" LAP.

(1) TRENCH BACKFILL SHALL BE BASE AGGREGATE OPEN GRADED.

(2) DEAD END PLUG REQUIRED.

(3) MANUFACTURED JOINT REQUIRED, AND WRAPPED IN GEOTEXTILE FABRIC; 90 DEGREE TEE. SEE CONSTRUCTION DETAIL: MAINLINE CROSSOVER #1 FOR LOCATION

(4) MANUFACTURED JOINT REQUIRED, AND WRAPPED IN GEOTEXTILE FABRIC; 90 DEGREE ELBOW. SEE CONSTRUCTION DETAIL: MAINLINE CROSSOVER #1 FOR LOCATION

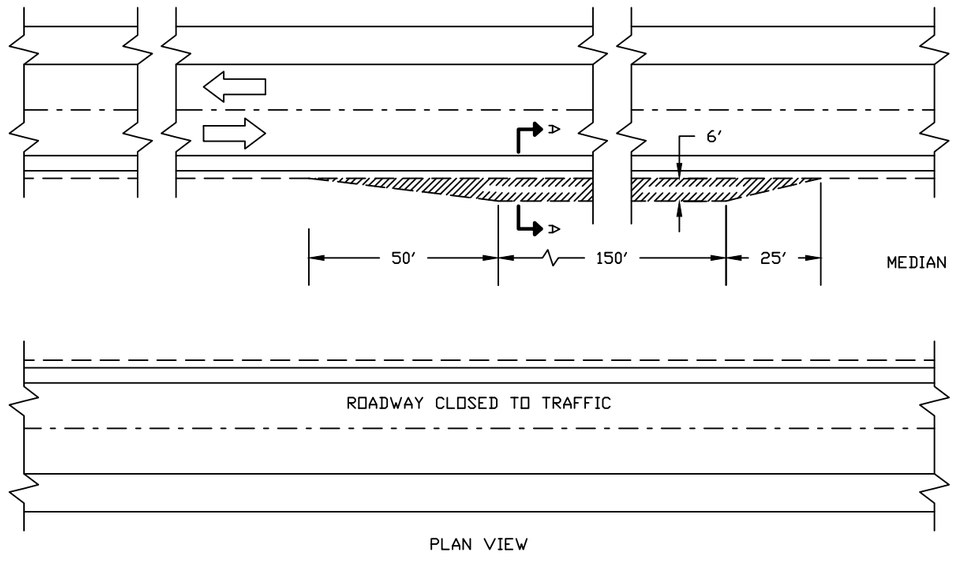


CROSSOVER TRANSVERSE INSTALLATION

STATION 2590+00	STATION 2590'A'+00
STATION 2591+00	STATION 2591'A'+00
STATION 2598+00	STATION 2598'A'+00
STATION 2599+00	STATION 2599'A'+00
STATION 2600+22	

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	UNDERDRAIN DETAIL	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021006_CD.DWG PLOT DATE : 1/24/2014 8:31 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 0.313140
WISDOT/CADDS SHEET 42



PLAN VIEW

EMERGENCY PULLOUTS FOR DIVIDED HIGHWAYS

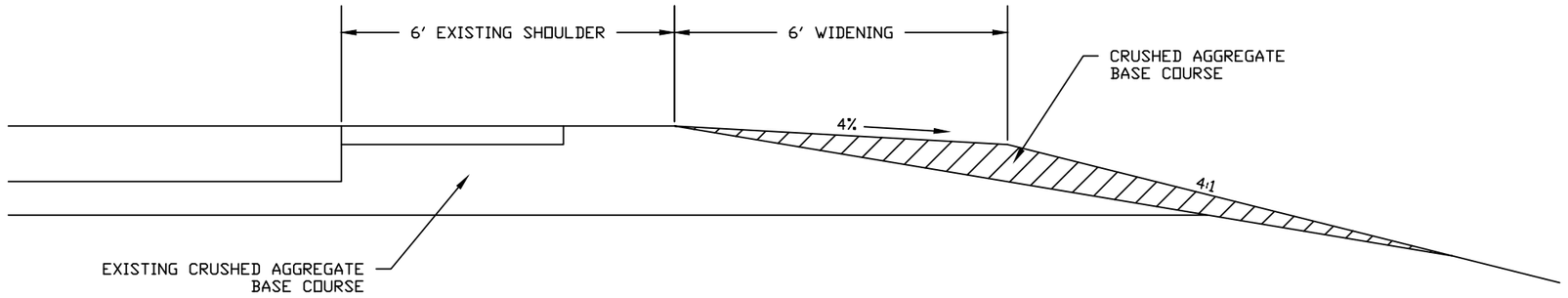
LEGEND

DIRECTION OF TRAFFIC

GENERAL NOTES:

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

SIGNS TO BE PURCHASED AND INSTALLED BY OTHERS.



SECTION A-A

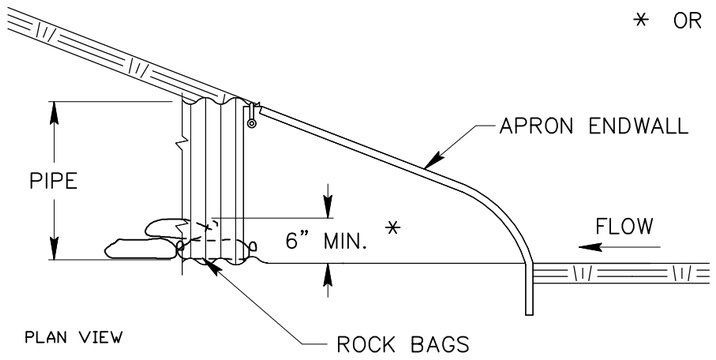
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: EMERGENCY PULLOUT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021005_CD.DWG PLOT DATE : 2/27/2014 3:29 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

GENERAL NOTES:

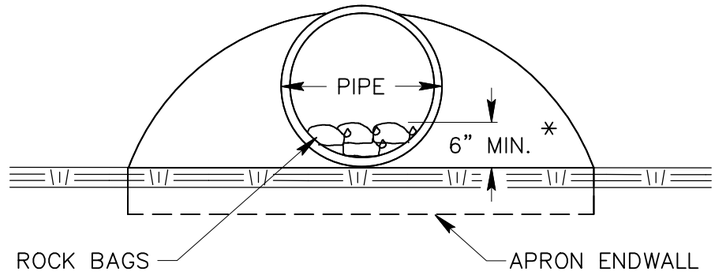
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, APPLICABLE SPECIAL PROVISIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

* OR AS DIRECTED BY THE ENGINEER



PLAN VIEW

SIDE VIEW



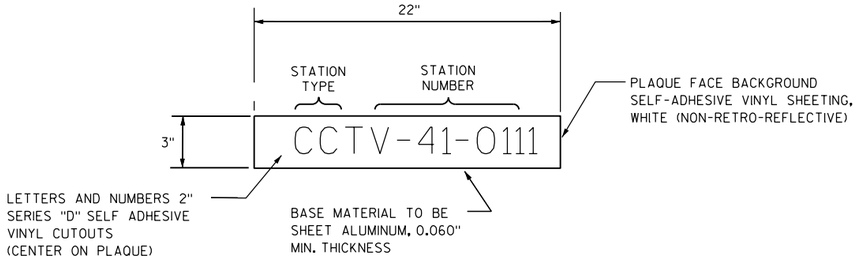
END VIEW

CULVERT PIPE DITCH CHECK

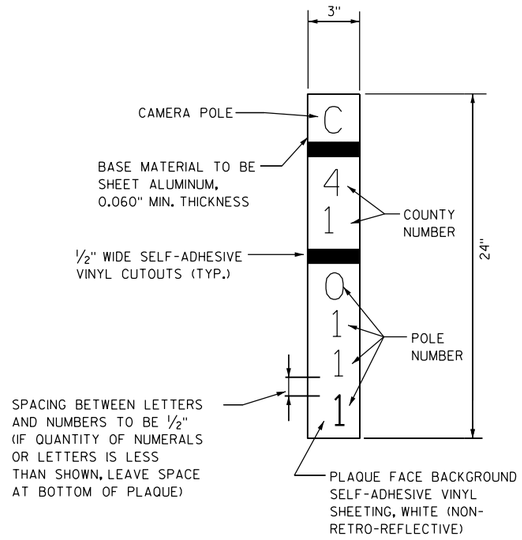
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CONSTRUCTION DETAIL: CULVERT PIPE CHECKS	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\021008.1_CD.DWG PLOT DATE : 2/28/2014 8:18 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 0.081971

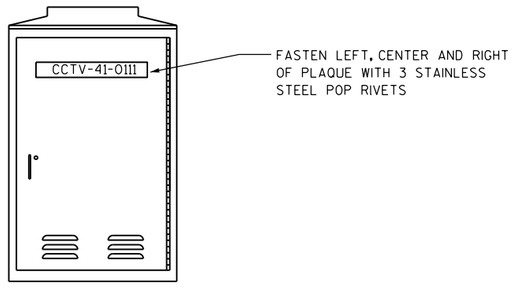
WISDOT/CADDS SHEET 42



ITS FIELD CABINET IDENTIFICATION PLAQUE DETAIL



POLE IDENTIFICATION PLAQUE DETAIL



ITS FIELD CABINET IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

(TYPICAL ALL CONTROL CABINETS)

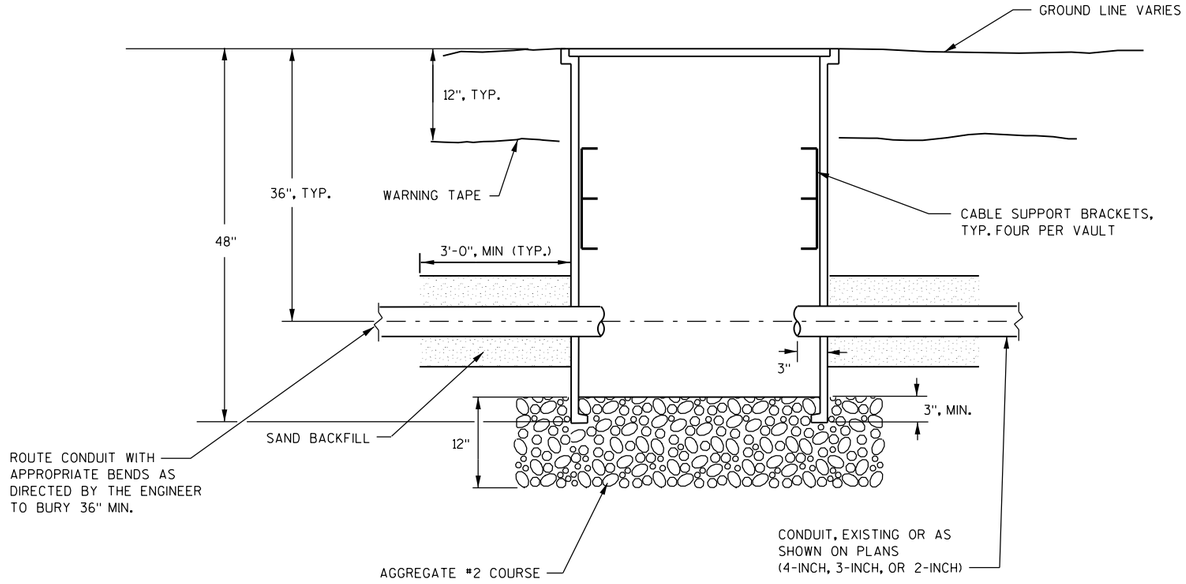
LEGEND STATION TYPE

RM - RAMP METER
CCTV - CLOSED CIRCUIT TELEVISION
ATR - AUTOMATIC TRAFFIC RECORDER
SDS - SYSTEM DETECTOR STATION
MD - MICROWAVE DETECTOR

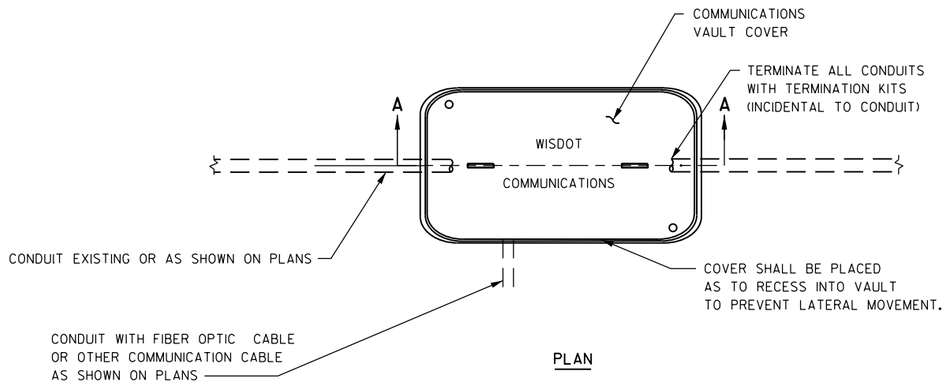
NOTES

1) TWO PLAQUES PER CABINET REQUIRED ON CONTROL CABINET.
2) FASTEN ONE PLAQUE ON FRONT DOOR, UPPER HALF.
3) FASTEN ONE PLAQUE ON SIDE FACING LOCAL STREET. IF NO LOCAL STREET NEARBY, OR IF SUCH LOCATION COINCIDES WITH LOCATION OF PLAQUE IN NOTE 2, FASTEN PLAQUE ON REAR OF CABINET, UPPER HALF.
4) COUNTY NUMBER NOT REQUIRED ON RAMP METER CABINETS.

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	ITS CONSTRUCTION DETAILS	SHEET 24	E

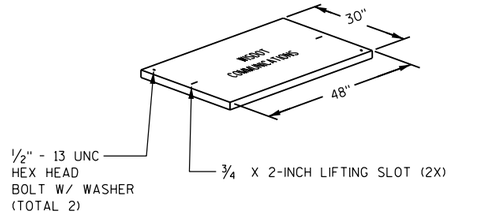


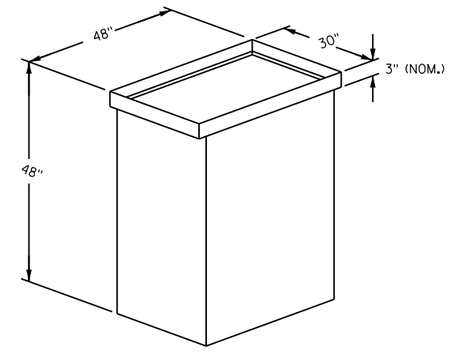
SECTION A-A



PLAN

TYPE 1 COMMUNICATIONS VAULT



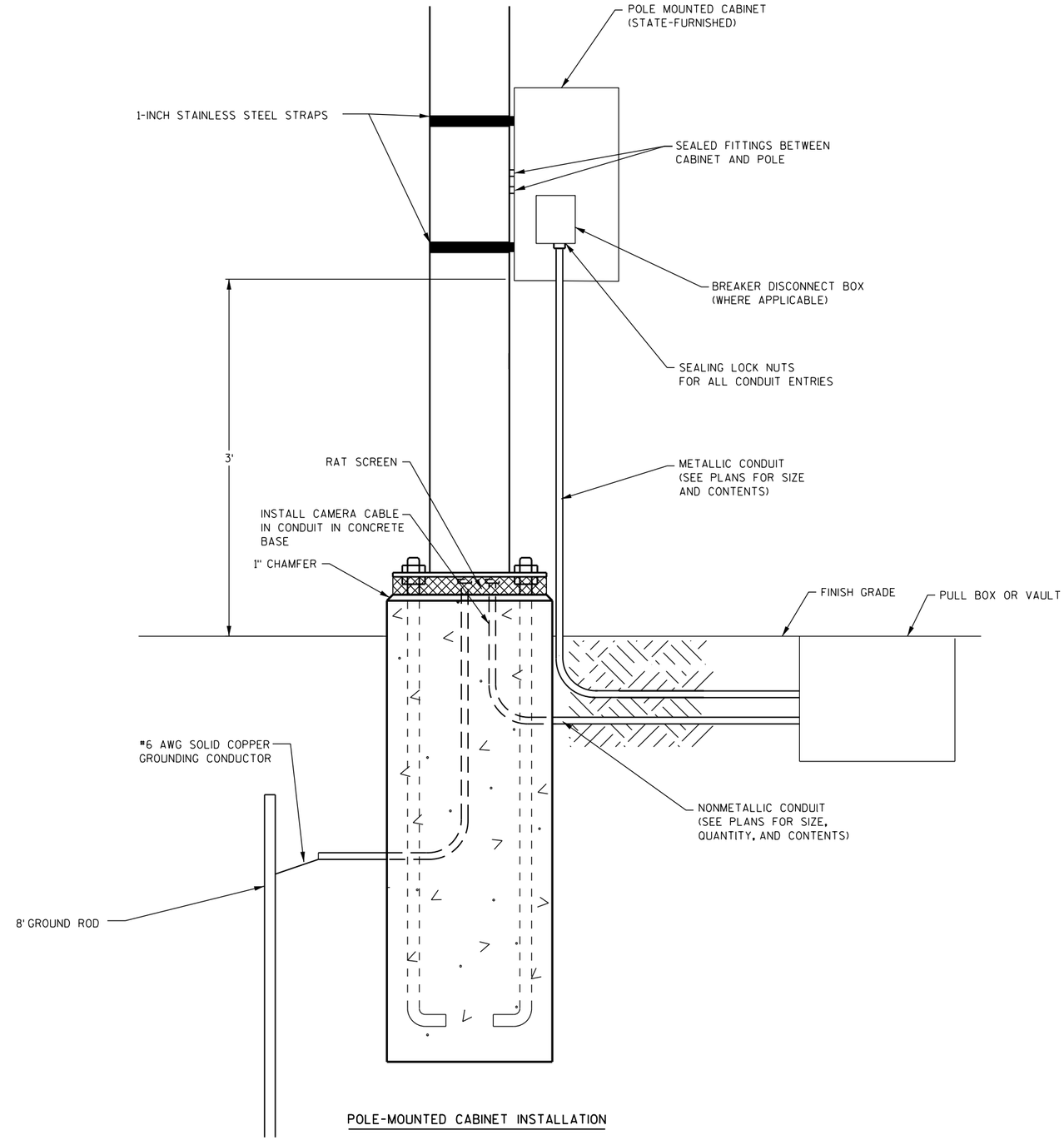


ISOMETRIC

NOTES

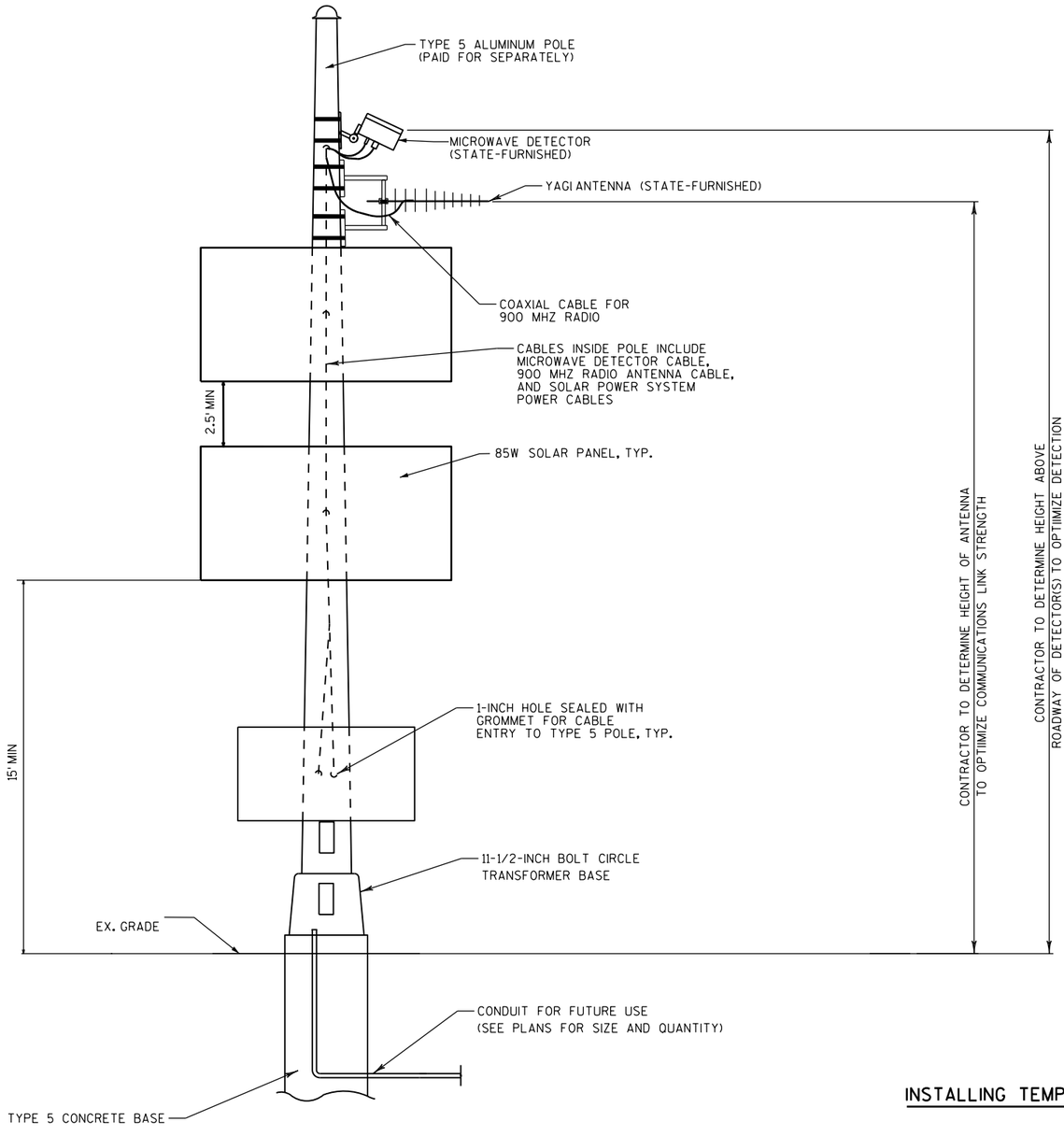
1) BOX SHALL HAVE AN OPEN BASE.
2) COVER SHALL BE DETECTABLE AND HAVE A MINIMUM DESIGN LOAD OF 15,000 LBS AND SHALL LOCK.
3) ALL OPENINGS IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION, OR PUNCH DRIVEN AT TIME OF PLACEMENT.
4) VAULTS SHALL BE OF ONE-PIECE CONSTRUCTION. TWO-PIECE/STACKABLE VAULTS WILL NOT BE PERMITTED.
5) FIELD PLACEMENT OF COMMUNICATIONS VAULTS SHALL BE AS DIRECTED BY THE ENGINEER.

2



POLE-MOUNTED CABINET INSTALLATION

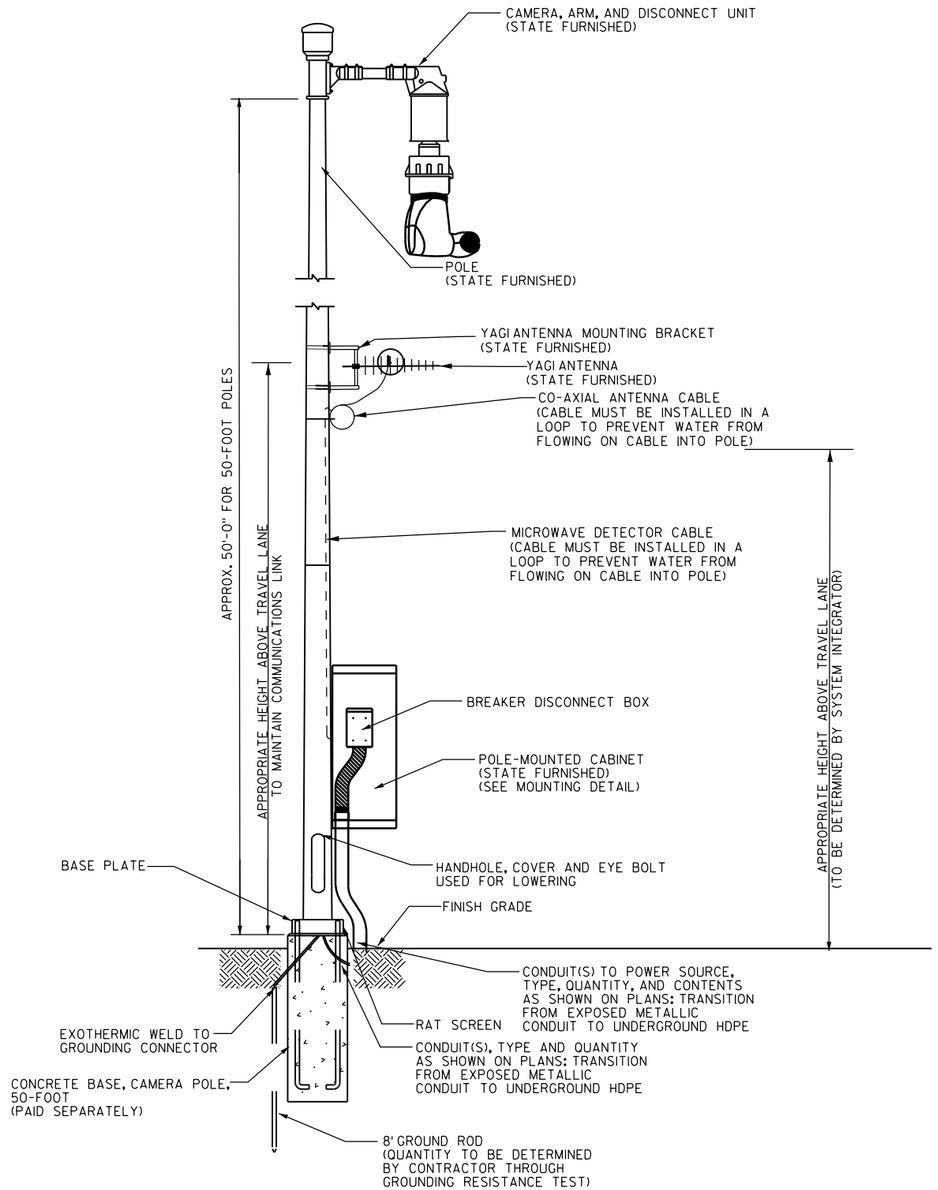
2



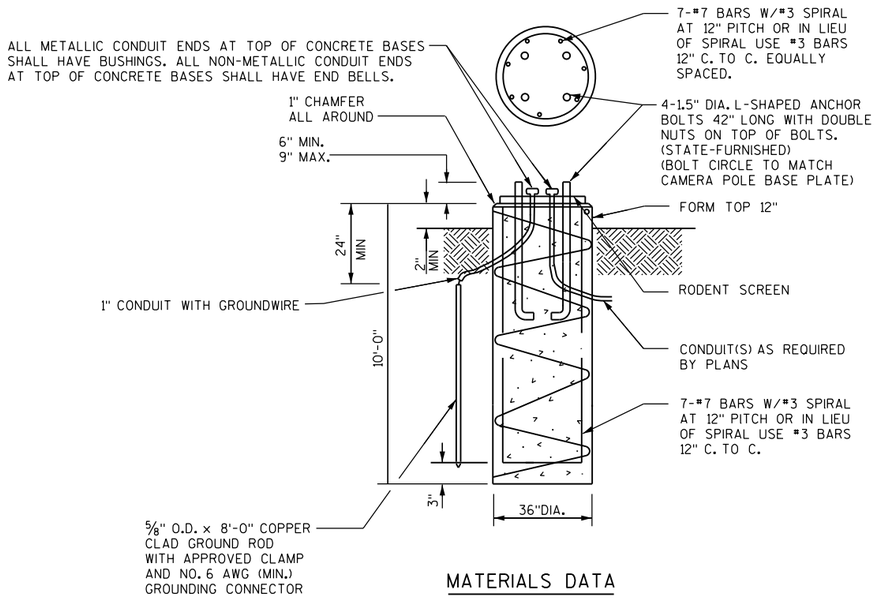
NOTES:

1. ALL WIRES ENTERING CONDUIT, LB'S AND SERVICE CAPS SHALL HAVE AN ESTABLISHED DRIP LOOP TO PREVENT WATER FROM ENTERING CONDUIT.
2. ANY LB OPENINGS THAT ARE NOT ATTACHED TO CONDUIT SHALL BE WEATHERPROOFED USING A SILICONE SEAL.
3. SOLAR PANELS MUST FACE DUE SOUTH.
4. COORDINATE SOLAR PANEL LOCATIONS WITH VEHICLE DETECTORS, GIVING PRIORITY TO VEHICLE DETECTORS.
5. CONTRACTOR TO DETERMINE MOUNTING HEIGHT OF MICROWAVE DETECTOR ABOVE ROADWAY BEING DETECTED. NOMINAL HEIGHT IS APPROXIMATELY 18-FEET ABOVE ROADWAY.

INSTALLING TEMPORARY VEHICLE DETECTOR ASSEMBLY



CAMERA POLE WITH CAMERA LOWERING HARDWARE

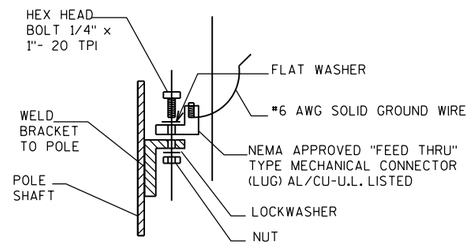


MATERIALS DATA

CONCRETE	f'c=3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT	fy = 60,000 psi

CONCRETE BASE, 50' CAMERA POLE

NOT TO SCALE



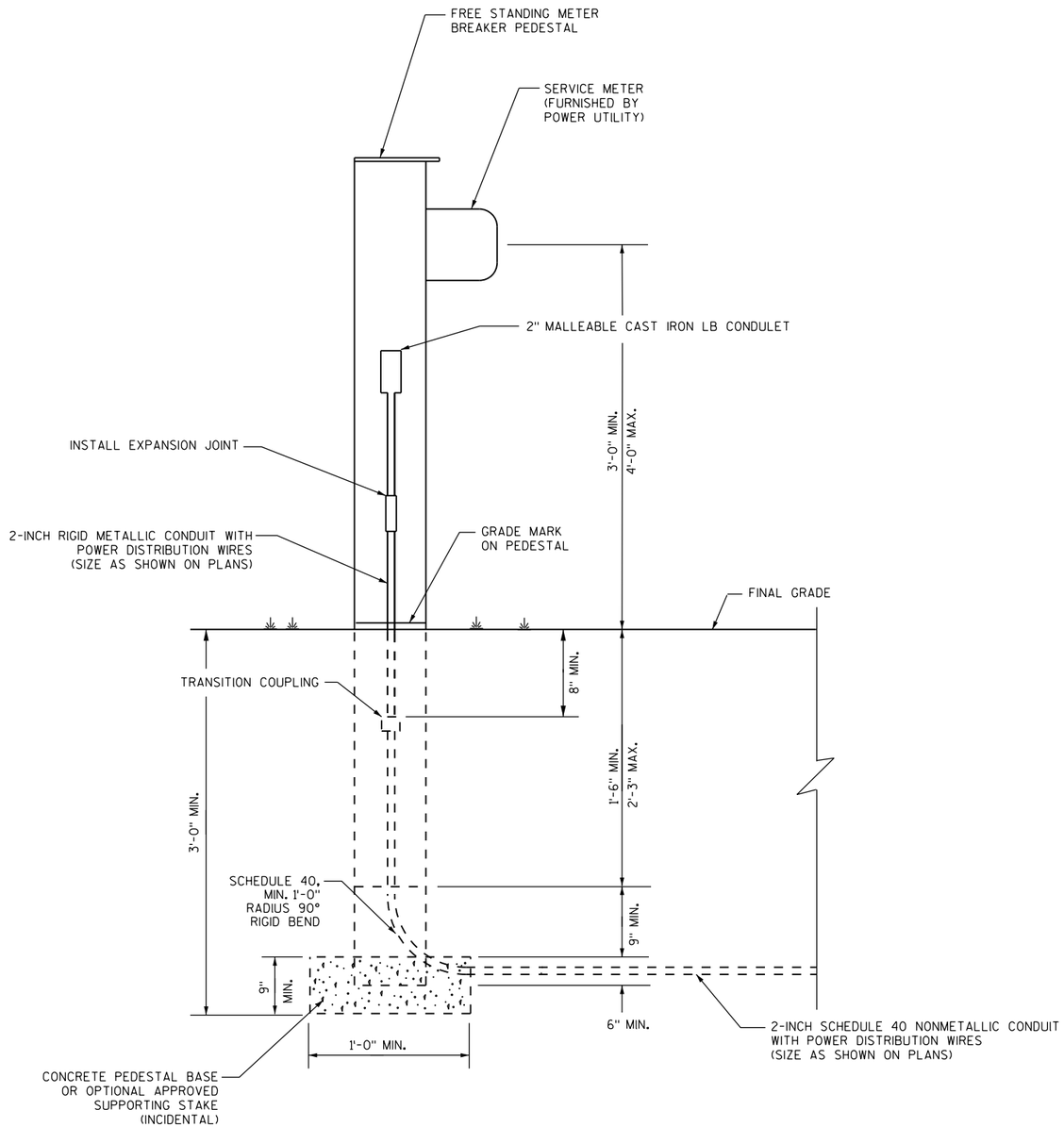
FIELD INSTALLED GROUNDING LUG

NOTES

1) ALL HARDWARE AND FASTENERS SHALL BE STAINLESS STEEL
2) POLE DRAWINGS SHOWN FOR BIDDING INFORMATION PURPOSES ONLY. POLES WILL BE STATE FURNISHED. BASE TO BE CONTRACTOR DESIGNED.
3) CONTRACTOR SHALL CONFIRM BOLT PATTERN OF CAMERA POLE PRIOR TO CONSTRUCTION OF CONCRETE BASE.
4) CONTRACTOR SHALL INSTALL GROUNDING LUG AS SHOWN

CAMERA POLES & FOUNDATIONS

2

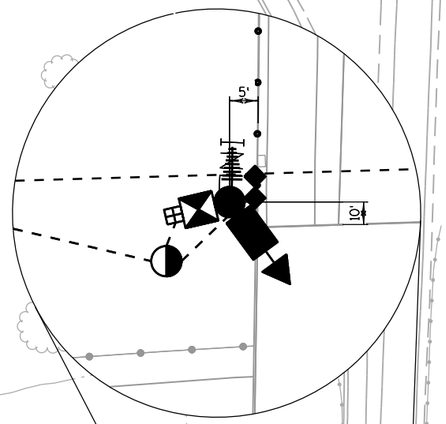


ELECTRICAL SERVICE METER BREAKER PEDESTAL

NOTES

1) MINIMUM REQUIREMENT SHOWN. ADDITIONAL BREAKERS MAY BE REQUIRED.

2



N

(1) 2-INCH NONMETALLIC CONDUIT
WITH (3) NO. 4 AWG LIGHTING WIRES

(1) 2-INCH METALLIC CONDUIT WITH
(3) NO. 4 AWG LIGHTING WIRES

(2) 2-INCH NONMETALLIC CONDUITS, SPECIAL WITH
(3) NO. 4 AWG LIGHTING WIRES

(2) 2-INCH NONMETALLIC CONDUITS
WITH (3) NO. 4 AWG LIGHTING WIRES

CAMERA ORIENTATION

EXCVMD807ECL
EXCAVATE EXISTING WISDOT COMMUNICATIONS VAULT
AND INSTALL PROPOSED CONDUIT INTO EXISTING
VAULT.
SPLICE NEW 6-COUNT FOC (S-F) ONTO EXISTING
36-COUNT (FOC) IN NEW SPLICE ENCLOSURE (S-F)
((15) FO SPLICES).
PLACE NEW TYPE 1 COMMUNICATIONS VAULT ON TOP
OF EXISTING VAULT TO BRING UP TO MATCH
EXISTING GRADE.

MB01
PB01
PB02
PB03
PB04
PB05
CV01

(2) 2-INCH NONMETALLIC CONDUITS, SPECIAL
(1) WITH (1) 6-COUNT FOC (S-F) AND
(1) NO. 12 AWG LIGHTING WIRE

(3) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 6-COUNT FOC (S-F) AND (1) NO. 12 AWG LIGHTING WIRE
(1) WITH (3) NO. 4 AWG LIGHTING WIRES

(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 6-COUNT FOC (S-F)
AND (1) NO. 12 AWG LIGHTING WIRE

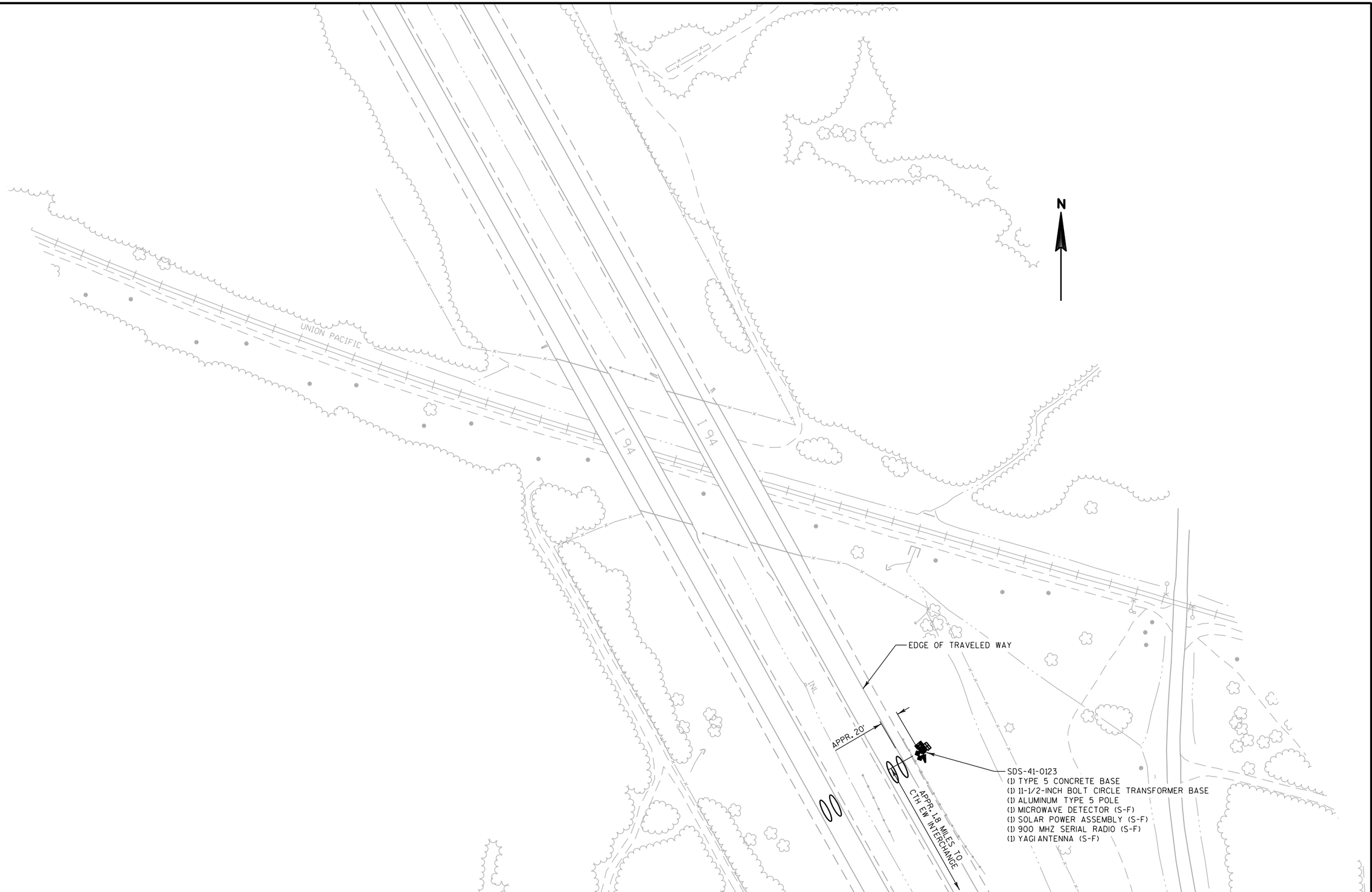
CCTV-41-0111 / SDS-41-0122
(1) 50-FOOT CAMERA POLE BASE
(1) 50-FOOT CAMERA POLE (S-F)
(1) CCTV CAMERA ASSEMBLY (S-F)
(1) YAGI ANTENNA (S-F)
(1) POLE-MOUNTED CABINET (S-F)
(1) 12-CT F.O. TERMINATION PANEL (S-F)
(6) F.O. TERMINATIONS
(1) ETHERNET SWITCH / TERMINAL SERVER (S-F)
(1) ETHERNET VIDEO CODEC (S-F)
(1) 900 MHZ SERIAL RADIO (S-F)
(2) MICROWAVE DETECTORS (S-F)
(1) BREAKER DISCONNECT BOX
(900 MHZ SERIAL RADIO AND YAGI ANTENNA TO
COMMUNICATE WITH SDS-41-0123)

I 94
CTH "EW"
BLANEY RD.

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	ITS DESIGN	SHEET 30	E

2

2



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	ITS DESIGN	SHEET 31	E

LEGEND

- INLET PROTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE #30 & TEMPORARY SEEDING
- ### EROSION MAT CLASS II TYPE B
- SILT FENCE

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED CROSSOVER.
STOCKPILE TOPSOIL NEAR CROSSOVER AT A LOCATION APPROVED BY THE ENGINEER. STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH. CONSTRUCT STOCKPILE WITH 10:1 (MAX) LONGITUDINAL SLOPES AND 6:1 (MAX) TRANSVERSE SLOPES. STOCKPILED TOPSOIL IS INCIDENTAL TO CROSSOVER CONSTRUCTION.

IH 94 WB

2590A

INL

ASPHALTIC FLUME

2590

IH 94 EB
BEGIN MAINLINE CROSSOVER #1
STA 2589+75

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

IH 94

N

ASPHALTIC FLUME

IH 94 WB

2600A

IH 94 WB

2600

IH 94 EB

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

IH 94 EB

END MAINLINE CROSSOVER #1
STA 2601+00

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL: MAINLINE CROSSOVER #1	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022001_EC.DWG PLOT DATE : 1/24/2014 11:17 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 44

LEGEND

- INLET PROTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE #30 & TEMPORARY SEEDING
- ### EROSION MAT CLASS II TYPE B
- SILT FENCE

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED CROSSOVER.
STOCKPILE TOPSOIL NEAR CROSSOVER AT A LOCATION APPROVED BY THE ENGINEER. STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH. CONSTRUCT STOCKPILE WITH 10:1 (MAX) LONGITUDINAL SLOPES AND 6:1 (MAX) TRANSVERSE SLOPES. STOCKPILED TOPSOIL IS INCIDENTAL TO CROSSOVER CONSTRUCTION.

N

IH 94 WB

2600A

2600

2605A

2605

IH 94 EB

END MAINLINE CROSSOVER #1
STA 2601+00

IH 94

IH 94

N

IH 94 WB

2605A

2610A

INL

2605

2610

IH 94 EB

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL: MAINLINE CROSSOVER #1	SHEET 33	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022001_EC.DWG PLOT DATE : 1/24/2014 11:18 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 44

Sawing Pavement Deck Preparation Areas

LEGEND

- INLET PROTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE #30 & TEMPORARY SEEDING
- EROSION MAT CLASS II TYPE B
- SILT FENCE

2930

IH 94 EB

IH 94

2935

N

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

2935W

2930W

IH 94 EB OFF-RAMP @ USH 12

BEGIN EB OFF RAMP WIDENING
STA 2930+04W

SIGN

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED WIDENING.
STOCKPILE TOPSOIL NEAR WIDENING AT A LOCATION APPROVED BY THE ENGINEER. STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH.CONSTRUCT STOCKPILE WITH 10:1 (MAX) LONGITUDINAL SLOPES AND 6:1 (MAX) TRANSVERSE SLOPES. STOCKPILED TOPSOIL IS INCIDENTAL TO WIDENING CONSTRUCTION.

N

2935W

IH 94 EB OFF-RAMP @ USH 12

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

USH 12 WB

USH 12 WB

2940W

2940W

END EB OFF RAMP WIDENING
STA 2940+00W

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022002_EC.DWG PLOT DATE : 1/24/2014 2:54 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF
WISDOT/CADDS SHEET 44

2

LEGEND

- INLET PTOTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE #30 & TEMPORARY SEEDING
- EROSION MAT CLASS II TYPE B
- SILT FENCE

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

BEGIN BULLNOSE GRADING
STA 2933+25

IH 94

2935A

IH 94 WB

2935

IH 94 EB

SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

2940A

I 94

2945A

2945V

2940

2945

END BULLNOSE GRADING
STA 2945+00

BEGIN CROSSOVER #2
STA 2945+00

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022002_EC.DWG PLOT DATE : 1/24/2014 2:54 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF

LEGEND

- INLET PTOTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE #30 & TEMPORARY SEEDING
- EROSION MAT CLASS II TYPE B
- SILT FENCE

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED CROSSOVER.
STOCKPILE TOPSOIL NEAR WIDENING AT A LOCATION APPROVED BY THE ENGINEER. STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH.CONSTRUCT STOCKPILE WITH 10:1 (MAX) LONGITUDINAL SLOPES AND 6:1 (MAX) TRANSVERSE SLOPES. STOCKPILED TOPSOIL IS INCIDENTAL TO CROSSOVER CONSTRUCTION.

SALVAGED TOPSOIL, TEMP. SEEDING, SEEDING # 30, FERT TYPE B & EROSION MAT CLASS II TYPE B ALL DISTURBED AREAS

2945A

2950V

2950A

2951V

IH 94 WB

END CROSSOVER #2
STA 2951+72

2950

IH 94 EB

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED WIDENING.
STOCKPILE TOPSOIL NEAR WIDENING AT A LOCATION APPROVED BY THE ENGINEER. STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH.CONSTRUCT STOCKPILE WITH 10:1 (MAX) LONGITUDINAL SLOPES AND 6:1 (MAX) TRANSVERSE SLOPES. STOCKPILED TOPSOIL IS INCIDENTAL TO WIDENING CONSTRUCTION.

SALVAGED TOPSOIL, TEMP. SEEDING, SEEDING # 30, FERT TYPE B & EROSION MAT CLASS II TYPE B ALL DISTURBED AREAS

505T

506T

508T

509T

H 12

BEGIN USH 12 WB WIDENING
STA 505+50T

USH 12

END USH 12 WB WIDENING
STA 509+29T

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022002_EC.DWG PLOT DATE : 1/24/2014 2:55 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 44

LEGEND

- INLET PTOTECTION TYPE A
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECKS
- SEEDING MIXTURE *30 & TEMPORARY SEEDING
- ### EROSION MAT CLASS II TYPE B
- SILT FENCE

NOTES

STRIP TOPSOIL WITHIN AREA OF PROPOSED GUARDRAIL GRADING.
STOCKPILE TOPSOIL NEAR PROPOSED GUARDRAIL AT A LOCATION APPROVED BY THE ENGINEER.
STOCKPILE SHALL BE LOCATED AS TO NOT OBSTRUCT THE EXISTING DITCH AND OUTSIDE THE CLEARZONE. STOCKPILED TOPSOIL IS INCIDENTAL TO WIDENING CONSTRUCTION.

3000

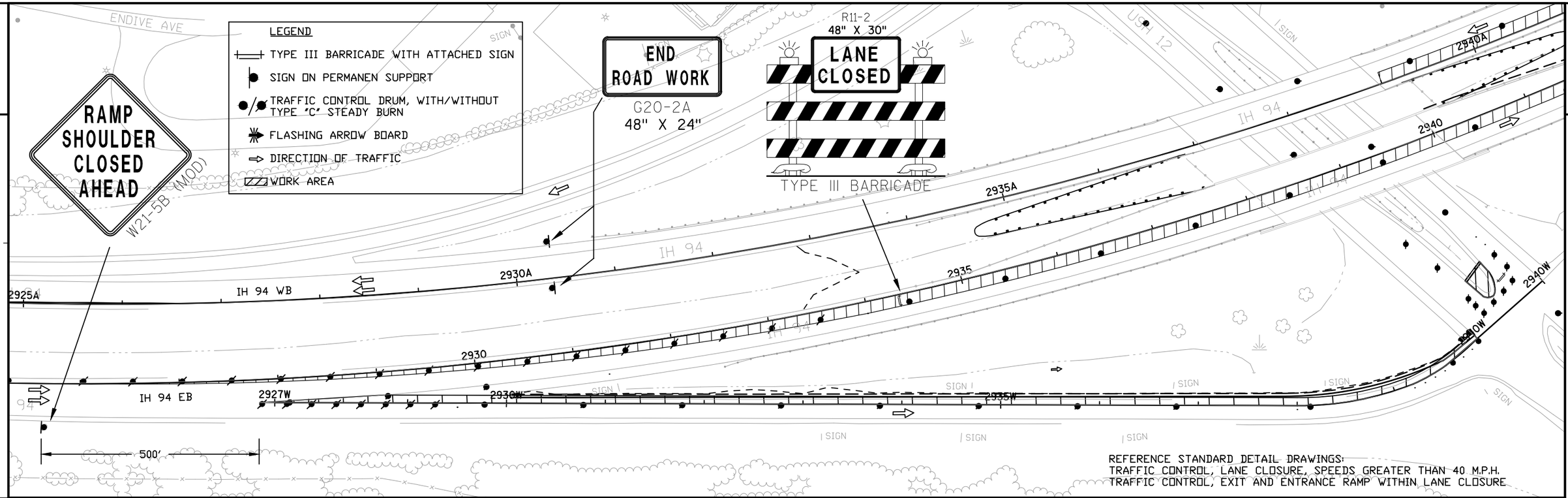
BEGIN GUARDRAIL GRADING
STA 2997+79

END GUARDRAIL GRADING
STA 3000+15

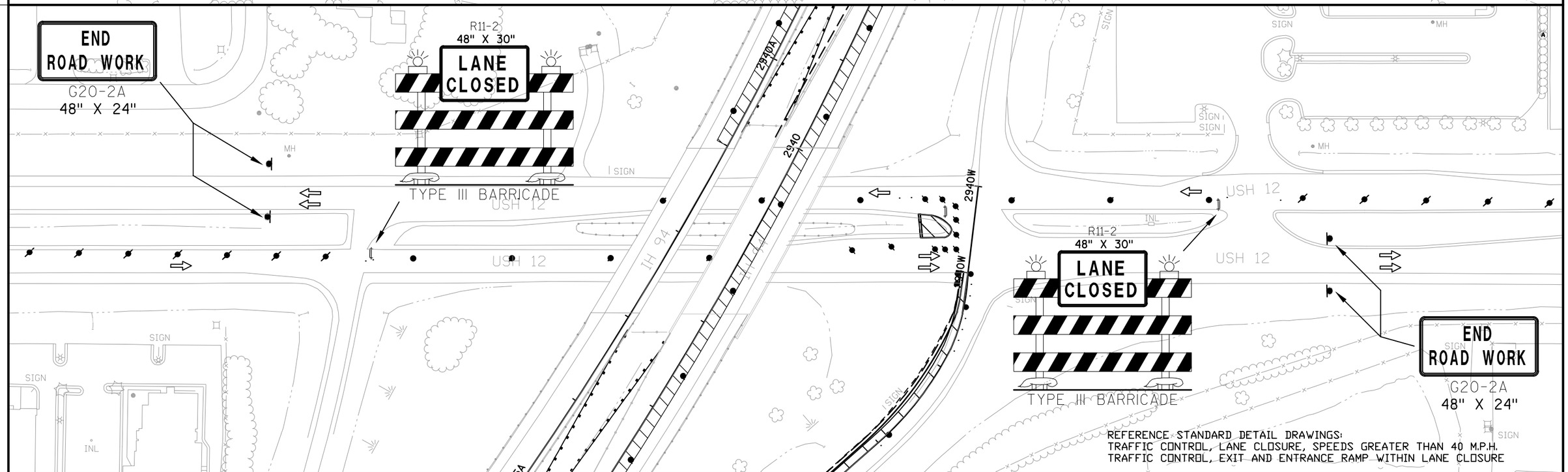
SALVAGED TOPSOIL, TEMP. SEEDING,
SEEDING # 30, FERT TYPE B & EROSION
MAT CLASS II TYPE B ALL DISTURBED AREAS

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\022003_EC.DWG PLOT DATE : 3/3/2014 11:19 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:20_XREF
WISDOT/CADDS SHEET 42



REFERENCE STANDARD DETAIL DRAWINGS:
TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE



REFERENCE STANDARD DETAIL DRAWINGS:
TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL	SHEET 38	E

DATE 05MAR14 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	1023-02-80 QUANTITY
0010	203.0225.S	DEBRIS CONTAINMENT (STRUCTURE) 01. B-41-0069	LS	1.000	1.000
0020	204.0110	REMOVING ASPHALTIC SURFACE	SY	104.000	104.000
0030	204.0165	REMOVING GUARDRAIL	LF	1,285.000	1,285.000
0040	205.0100	EXCAVATION COMMON	CY	3,386.000	3,386.000
0050	213.0100	FINISHING ROADWAY (PROJECT) 01. 1023-02-80	EACH	1.000	1.000
0060	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	584.000	584.000
0070	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	7,189.000	7,189.000
0080	310.0110	BASE AGGREGATE OPEN GRADED	TON	76.000	76.000
0090	312.0110	SELECT CRUSHED MATERIAL	TON	3,130.000	3,130.000
0100	415.6000.S	ROUT AND SEAL	LF	1,125.000	1,125.000
0110	455.0105	ASPHALTIC MATERIAL PG58-28	TON	95.000	95.000
0120	460.1110	HMA PAVEMENT TYPE E-10	TON	1,732.000	1,732.000
0130	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	810.000	810.000
0140	465.0105	ASPHALTIC SURFACE	TON	12.000	12.000
0150	465.0315	ASPHALTIC FLUMES	SY	135.000	135.000
0160	502.3100	EXPANSION DEVICE (STRUCTURE) 01. B-41-0069	LS	1.000	1.000
0170	502.3215.S	PROTECTIVE SURFACE TREATMENT RESEAL	SY	750.000	750.000
0180	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	60.000	60.000
0190	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,380.000	1,380.000
0200	509.0301	PREPARATION DECKS TYPE 1	SY	11.000	11.000
0210	509.0302	PREPARATION DECKS TYPE 2	SY	2.000	2.000
0220	509.1000	JOINT REPAIR	SY	26.000	26.000
0230	509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	10.000	10.000
0240	521.0112	CULVERT PIPE CORRUGATED STEEL 12-INCH	LF	164.000	164.000
0250	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	EACH	2.000	2.000
0260	612.0106	PIPE UNDERDRAIN 6-INCH	LF	2,338.000	2,338.000
0270	612.0806	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH	EACH	2.000	2.000
0280	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	5.000	5.000
0290	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	83.000	83.000
0300	614.0220	STEEL THRIE BEAM BULLNOSE TERMINAL	EACH	2.000	2.000
0310	614.0230	STEEL THRIE BEAM	LF	538.000	538.000
0320	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	726.000	726.000
0330	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	4.000	4.000
0340	614.2300	MGS GUARDRAIL 3	LF	813.000	813.000
0350	614.2500	MGS THRIE BEAM TRANSITION	LF	200.000	200.000
0360	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	5.000	5.000
0370	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1023-02-80	EACH	1.000	1.000
0380	619.1000	MOBILIZATION	EACH	1.000	1.000
0390	624.0100	WATER	MGAL	18.000	18.000
0400	625.0500	SALVAGED TOPSOIL	SY	12,360.000	12,360.000
0410	628.1504	SILT FENCE	LF	1,285.000	1,285.000
0420	628.1520	SILT FENCE MAINTENANCE	LF	1,285.000	1,285.000
0430	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	7.000	7.000
0440	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	7.000	7.000
0450	628.2023	EROSION MAT CLASS II TYPE B	SY	15,160.000	15,160.000
0460	628.7005	INLET PROTECTION TYPE A	EACH	4.000	4.000

3

DATE 05MAR14 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	1023-02-80 QUANTITY
0470	628.7504	TEMPORARY DITCH CHECKS	LF	163.000	163.000
0480	628.7555	CULVERT PIPE CHECKS	EACH	12.000	12.000
0490	629.0210	FERTILIZER TYPE B	CWT	11.000	11.000
0500	630.0130	SEEDING MIXTURE NO. 30	LB	412.000	412.000
0510	630.0200	SEEDING TEMPORARY	LB	206.000	206.000
0520	633.1100	DELINEATORS TEMPORARY	EACH	65.000	65.000
0530	633.5200	MARKERS CULVERT END	EACH	2.000	2.000
0540	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0550	643.0200	TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 01. 1023-02-80	DAY	30.000	30.000
0560	643.0300	TRAFFIC CONTROL DRUMS	DAY	8,606.000	8,606.000
0570	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	395.000	395.000
0580	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	EACH	61.000	61.000
0590	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	61.000	61.000
0600	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	790.000	790.000
0610	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	1,663.000	1,663.000
0620	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	182.000	182.000
0630	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,311.000	1,311.000
0640	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	90.000	90.000
0650	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	1,559.000	1,559.000
0660	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	3,349.000	3,349.000
0670	650.5000	CONSTRUCTION STAKING BASE	LF	3,349.000	3,349.000
0680	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000	1.000
0690	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 1023-02-80	LS	1.000	1.000
0700	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1023-02-80	LS	1.000	1.000
0710	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	4,160.000	4,160.000
0720	652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	10.000	10.000
0730	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	1,095.000	1,095.000
0740	652.0605	CONDUIT SPECIAL 2-INCH	LF	1,920.000	1,920.000
0750	652.0700.S	INSTALL CONDUIT INTO EXISTING ITEM	EACH	1.000	1.000
0760	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	5.000	5.000
0770	654.0105	CONCRETE BASES TYPE 5	EACH	1.000	1.000
0780	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	960.000	960.000
0790	655.0630	ELECTRICAL WIRE LIGHTING 4 AWG	LF	1,980.000	1,980.000
0800	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. CCTV-41-0111	LS	1.000	1.000
0810	656.0500	ELECTRICAL SERVICE BREAKER DISCONNECT BOX (LOCATION) 01. CCTV-41-0111	LS	1.000	1.000
0820	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	1.000	1.000
0830	657.0322	POLES TYPE 5-ALUMINUM	EACH	1.000	1.000
0840	662.6030.S	RAMP CLOSURE BARRICADE RACK 3-UNIT	EACH	2.000	2.000
0850	670.0100	FIELD SYSTEM INTEGRATOR	LS	1.000	1.000
0860	670.0200	ITS DOCUMENTATION	LS	1.000	1.000
0870	672.0250	BASE CAMERA POLE 50-FT	EACH	1.000	1.000
0880	673.0105	COMMUNICATION VAULT TYPE 1	EACH	1.000	1.000
0890	673.0225.S	INSTALL POLE MOUNTED CABINET	EACH	1.000	1.000
0900	675.0300	INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY	EACH	3.000	3.000
0910	675.0400.S	INSTALL ETHERNET SWITCH	EACH	1.000	1.000

3

DATE 05MAR14 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	1023-02-80 QUANTITY
0920	677.0100	INSTALL CAMERA POLE	EACH	1.000	1.000
0930	677.0200	INSTALL CAMERA ASSEMBLY	EACH	1.000	1.000
0940	677.0300.S	INSTALL VIDEO ENCODER	EACH	1.000	1.000
0950	678.0006	INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT	LF	1,140.000	1,140.000
0960	678.0300	FIBER OPTIC SPLICE	EACH	15.000	15.000
0970	678.0400	FIBER OPTIC TERMINATION	EACH	6.000	6.000
0980	678.0500	COMMUNICATION SYSTEM TESTING	LS	1.000	1.000
0990	690.0150	SAWING ASPHALT	LF	2,858.000	2,858.000
1000	SPV.0060	SPECIAL 01. CLEANING AND PAINTING BEARINGS	EACH	8.000	8.000
1010	SPV.0060	SPECIAL 02. INSTALL SPREAD SPECTRUM RADIO	EACH	2.000	2.000
1020	SPV.0060	SPECIAL 03. INSTALL ANTENNA	EACH	2.000	2.000
1030	SPV.0060	SPECIAL 04. INSTALL SOLAR POWER SYSTEM	EACH	1.000	1.000
1040	SPV.0060	SPECIAL 05. GROUND ROD	EACH	2.000	2.000
1050	SPV.0060	SPECIAL 06. INSTALLATION OF TEMPORARY EMERGENCY PULLOUTS	EACH	11.000	11.000
1060	SPV.0060	SPECIAL 07. PERMANENT BARRICADE TYPE III	EACH	3.000	3.000
1070	SPV.0090	SPECIAL 01. SAWING PAVEMENT DECK PREPARATION AREAS	LF	90.000	90.000
1080	SPV.0090	SPECIAL 02. DECK CRACK SEALING	LF	100.000	100.000

EARTHWORK SUMMARY

Division	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Rock Excavation (7)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Select Borrow	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	(item #205.0200)		Factor			(item #208.1100)	
Division 1														
	2589+53/2601+25	CROSSOVER #1	2524	0	-	-	-	-	1226	1532	992	992	-	
	2930+04W/2940+00W	EB OFF-RAMP WIDENING	392	0	-	-	-	-	1	2	390	390	-	
	505+50T/509+27T	USH 12 WB WIDENING	160	0	-	-	-	-	15	19	141	141	-	
	2933+50/2942+75	BULLNOSE GRADING	32	0	-	-	-	-	573	716	-684	-684	-	
	2942+75/2951+56	CROSSOVER #2	273	0	-	-	-	-	318	398	-125	-125	-	
	2998+04/2999+54	IH 94 EB RT	5	0	-	-	-	-	323	404	-399	-399	-	
Division 1 Subtotal													-	
Grand Total			3386	0	0	0	0	0	2449	3071	315	315	-	
		Total Common Exc		3386										

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.

3

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 SY	REMARKS
0010	18+94"OO"	-	19+11"OO"	CTH OO	52	
0010	21+18"OO"	-	21+35"OO"	CTH OO	52	
				TOTAL 0010	104	

3

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON	624.0100 WATER MGAL	REMARKS
0010	2589+75	-	2601+00	CROSSOVER #1	225	4620	3130	11	
0010	2930+04W	-	2940+00W	EB OFF-RAMP WIDENING	65	388	-	3	
0010	505+50T	-	509+27T	USH 12 WB WIDENING	22	280	-	1	
0010	2940+00W	-	2940+53W	MEDIAN PATCH	1	31	-	0	
0010	2942+79	-	2950+77A	CROSSOVER #2	68	770	-	2	
0010	2637+41	-	2638+66	IH 94 EB RT	4	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2669+70	-	2671+20	IH 94 EB RT	6	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2749+97	-	2753+25	IH 94 EB LT	34	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2750+32	-	2754+95	IH 94 EB RT	20	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2791+89	-	2795+16	IH 94 EB LT	14	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2791+96	-	2793+36	IH 94 EB RT	14	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2821+26	-	2822+66	IH 94 EB RT	4	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2821+30	-	2824+57	IH 94 EB LT	10	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2834+00	-	3835+38	IH 94 EB RT	14	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2944+78	-	2945+28	IH 94 EB RT	10	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2997+66	-	2998+16	IH 94 EB LT	29	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
0010	2998+04	-	2999+54	IH 94 EB RT	4	-	-	-	BEAM GUARD E.A.T. ANCHOR MATERIAL
				UNDISTRIBUTED (TEMP SHOULDER)	-	500	-	1	
				UNDISTRIBUTED	40	600	-	1	
				TOTAL 0010	584	7189	3130	18	

3

PAVEMENT SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	415.6000.S ROUTE AND SEAL LF	455.0105 ASPHALTIC MATERIAL PG58-28 TON	460.1110 HMA PAVEMENT TYPE E-10 TON	465.0315 ASPHALTIC FLUMES SY	465.0105 ASPHALTIC SURFACE TON	REMARKS
0010	2589+75	-	2601+00	CROSSOVER #1	1125	69	1258	135	-	
0010	2930+04W	-	2940+00W	EB OFF-RAMP WIDENING	-	9	169	-	-	
0010	505+50T	-	509+27T	USH 12 WB WIDENING	-	5	82	-	-	
0010	2940+00W	-	2940+53W	MEDIAN PATCH	-	1	13	-	-	
0010	2942+79	-	2950+77A	CROSSOVER #2	-	12	210	-	-	
0010	18+94"OO"	-	19+11"OO"	CTH OO	-	-	-	-	6	
0010	21+18"OO"	-	21+35"OO"	CTH OO	-	-	-	-	6	
				TOTAL 0010	1125	95	1732	135	12	

GUARDRAIL SUMMARY

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.0150 ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD EACH	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0220 STEEL THRIE BEAM BULLNOSE TERMINAL EACH	614.0230 STEEL THRIE BEAM LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	REMARKS
2637+41	-	2638+66	RT	25.0	-	-	-	-	125.0	1	-	-	-	
2669+70	-	2671+20	RT	25.0	-	-	-	-	100.0	1	-	-	-	
2749+97	-	2753+25	LT	-	1	-	-	-	-	-	237.5	40.0	1	
2750+32	-	2754+95	RT	25.0	-	-	-	-	413.0	1	-	-	-	
2791+89	-	2795+16	LT	-	1	-	-	-	-	-	237.5	40.0	1	
2791+96	-	2793+36	RT	-	1	-	-	-	-	-	50.0	40.0	1	
2821+26	-	2822+66	RT	-	1	-	-	-	-	-	50.0	40.0	1	
2821+30	-	2824+57	LT	-	1	-	-	-	-	-	237.5	40.0	1	
2834+00	-	2835+38	RT	25.0	-	-	-	-	88.0	1	-	-	-	
2935+25	-	2937+73	LT	624.0	-	41.5	1	337.5	-	-	-	-	-	
2939+88	-	2941+69	LT	561.0	-	41.5	1	200.0	-	-	-	-	-	
2944+78	-	2945+28	RT	25.0	-	-	-	-	-	1	-	-	-	
2997+66	-	2998+16	LT	12.5	-	-	-	-	-	1	-	-	-	
2998+04	-	2999+54	RT	12.5	-	-	-	-	100.0	1	-	-	-	
TOTAL				1285	5	83	2	538	726	4	813	200	5	

CROSSOVER PROTECTION SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	633.1100 DELINEATORS TEMPORARY EACH	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES EACH	REMARKS
0010	2593+22	-	2595+66	IH 94 EB LT	-	49	49	CROSSOVER #1
0010	2949+40	-	2950+00	IH 94 EB LT	-	12	12	CROSSOVER #2
0010	2591+75	-	2593+22	IH 94 EB LT	29	-	-	CROSSOVER #1
0010	2595+66	-	2597+25	IH 94 EB LT	32	-	-	CROSSOVER #1
0010	2949+28	-	2949+40	IH 94 EB LT	2	-	-	CROSSOVER #2
0010	2950+00		2950+12	IH 94 EB LT	2	-	-	CROSSOVER #2
				TOTAL 0010	65	61	61	

** DELINEATORS TEMPORARY, TRAFFIC CONTROL FLEXIBLE TUBULAR AND TRAFFIC CONTROL FLEXIBLE TUBULAR BASE SHALL BECOME PROPERTY OF THE STATE ONCE INSTALLATION IS ACCEPTABLY COMPLETE.

EROSION CONTROL SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2023 EROSION MAT CLASS II TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	REMARKS
0010	2589+75	-	2591+75	IH 94 MEDIAN	890	-	-	-	-	890	-	-	-	1	24	12	CROSSOVER #1
0010	2597+20	-	2601+00	IH 94 MEDIAN	1900	-	-	-	-	1900	-	-	-	1	51	26	CROSSOVER #1
0010	2930+10W	-	2939+90W	IH 94 EB RT	1090	-	-	-	-	1090	-	-	-	1	29	15	EB OFF-RAMP WIDENING
0010	2933+25	-	2937+65	IH 94 MEDIAN	2690	-	-	-	-	2690	-	-	-	2	73	36	BULLNOSE GRADING
0010	2940+00	-	2944+00	IH 94 MEDIAN	2225	-	-	-	-	2225	-	-	-	1	60	30	BULLNOSE GRADING
0010	505+50T	-	509+30T	USH 12 WB RT	845	305	305	-	-	845	-	-	-	1	23	11	USH 12 WB WIDENING
0010	2940+00W	-	2940+53W	USH 12 MEDIAN	60	470	470	-	-	60	-	-	-	0	2	1	MEDIAN PATCH
0010	2944+00V	-	2950+45V	IH 94 MEDIAN	1430	-	-	-	-	1430	-	-	-	1	39	19	CROSSOVER #2
0010	2948+75V	-	2951+00V	IH 94 MEDIAN	375	-	-	-	-	375	-	-	-	0	10	5	CROSSOVER #2
0010	2589+50		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #1
0010	2591+50		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #1
0010	2598+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #1
0010	2600+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #1
0010	2602+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #1
0010	2935+00W		-	IH 94 EB RT	-	-	-	-	-	-	-	10	-	-	-	-	EB OFF-RAMP WIDENING
0010	2932+75		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	BULLNOSE GRADING
0010	2942+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	BULLNOSE GRADING
0010	2943+50		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	BULLNOSE GRADING
0010	2945+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #2
0010	2946+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #2
0010	2947+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #2
0010	2952+00		-	IH 94 EB LT	-	-	-	-	-	-	-	10	-	-	-	-	CROSSOVER #2
0010	2587+35		-	IH 94 EB LT	-	-	-	-	-	-	1	-	-	-	-	-	CROSSOVER #1
0010	2607+05		-	IH 94 EB LT	-	-	-	-	-	-	1	-	-	-	-	-	CROSSOVER #1
0010	2947+80		-	IH 94 EB LT	-	-	-	-	-	-	1	-	-	-	-	-	CROSSOVER #2
0010	2937+60W		-	IH 94 EB RT	-	-	-	-	-	-	-	-	3	-	-	-	EB OFF-RAMP WIDENING
0010	2940+40		-	USH 12 MEDIAN	-	-	-	-	-	-	-	-	3	-	-	-	MEDIAN PATCH
0010	2949+00V		-	IH 94 EB LT	-	-	-	-	-	-	-	-	3	-	-	-	CROSSOVER #2
0010	2997+79	-	3000+25	IH 94 EB RT	855	310	310	-	-	855	-	-	-	1	23	12	GUARDRAIL GRADING
0010	-		-	UNDISTRIBUTED	-	200	200	-	-	-	-	-	-	-	-	-	-
0010	-		-	1023-02-80	-	-	-	7	7	2800	1	33	3	2	78	39	-
				TOTAL 0010	12360	1285	1285	7	7	15160	4	163	12	11	412	206	

MARKERS CULVERT END

CATEGORY	STATION	TO	STATION	LOCATION	633.5200 EACH	REMARKS
0010	2949+05	-	2950+55	IH 94 EB LT	2	
				TOTAL 0010	2	

TRAFFIC CONTROL SUMMARY

LOCATION	DURATION	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (1023-02-80)	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARDS		643.0900 TRAFFIC CONTROL SIGNS		643.1050 TRAFFIC CONTROL SIGNS PCMS		662.6030.S RAMP CLOSURE BARRICADE RACK , 3-UNIT	SPV.0060.07 PERMANENT BARRICADE TYPE III
	DAYS	DAYS	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	EACH	EACH
ITS INSTALLATION																		
1.8 MILES NORTH OF CTH EW	5	-	235	47	5	1	10	2	85	17	10	2	55	11	-	-	0	0
CTH EW INTERCHANGE	5	-	430	86	10	2	20	4	135	27	10	2	80	16	-	-	0	0
CTH EW ONRAMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3
CROSSOVER #1																		
IH 94 EASTBOUND	14	-	777	56	14	1	28	2	238	17	28	2	154	11	-	-	0	0
IH 94 WESTBOUND	14	-	777	56	14	1	28	2	238	17	28	2	154	11	-	-	0	0
B-41-0069																		
CTH OO	10		0	0	60	6	120	12	0	0	0	0	60	6	-	-	0	0
IH 94 EB OFF-RAMP WIDENING:																		
OFF-RAMP	6	-	222	37	0	0	0	0	48	8	0	0	18	3	-	-	0	0
CROSSOVER #2																		
IH 94 EASTBOUND	18	-	1332	74	36	2	72	4	306	17	36	2	270	15	-	-	0	0
IH 94 WESTBOUND	18	-	1350	75	36	2	72	4	306	17	36	2	324	18	-	-	0	0
USH 12 WB WIDENING																		
WIDENING	8	-	232	29	8	1	16	2	88	11	8	1	72	9	-	-	0	
MEDIAN PATCH	2		108	54	4	2	8	4	44	22	4	2	36	18	-	-	0	0
USH 12 ON RAMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3
GUARDRAIL GRADING																		
IH 94 EASTBOUND	3	-	123	41	3	1	6	2	45	15	6	2	24	8	-	-	-	-
GUARDRAIL IMPROVEMENTS																		
IH 94 EB-MEDIAN	4		1460	365	100	25	200	50	60	15	8	2	32	8	-	-	-	-
IH 94 EB-OUTSIDE SHOULDER	4		1460	365	100	25	200	50	60	15	8	2	32	8	-	-	-	-
IH 94 WB-USH 21 INTERCHANGE	40	-	-	-	-	-	-	-	-	-	-	-	-	-	40	1	-	-
IH 94 EB-CTH 21 INTERCHANGE	40	-	-	-	-	-	-	-	-	-	-	-	-	-	40	1	-	-
UNDISTRIBUTED	0	30	100	-	5	-	10	-	10	-	0	-	-	-	10	-	0	0
TOTAL		30	8606	1284	395	69	790	138	1663	198	182	21	1311	142	90	2	2	3

CONSTRUCTION STAKING SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	2589+75	-	2601+00	CROSSOVER #1	1125	1125	-	-	-	1125	
0010	2930+04W	-	2940+00W	EB OFF-RAMP WIDENING	996	996	-	-	-	996	
0010	505+50T	-	509+27T	USH 12 WB WIDENING	377	377	-	-	-	377	
0010	2940+00W	-	2940+53W	MEDIAN PATCH	53	53	-	-	-	53	
0010	2942+79	-	2950+77A	CROSSOVER #2	798	798	1	-	-	798	
0010	2637+41	-	2638+66	IH 94 EB RT	-	-	-	-	-	50	
0010	2669+70	-	2671+20	IH 94 EB RT	-	-	-	-	-	50	
0010	2749+97	-	2753+25	IH 94 EB LT	-	-	-	-	-	53	
0010	2750+32	-	2754+95	IH 94 EB RT	-	-	-	-	-	50	
0010	2791+89	-	2795+16	IH 94 EB LT	-	-	-	-	-	53	
0010	2791+96	-	2793+36	IH 94 EB RT	-	-	-	-	-	53	
0010	2821+26	-	2822+66	IH 94 EB RT	-	-	-	-	-	53	
0010	2821+30	-	2824+57	IH 94 EB LT	-	-	-	-	-	53	
0010	2834+00	-	2835+38	IH 94 EB RT	-	-	-	-	-	50	
0010	2944+78	-	2945+28	IH 94 EB RT	-	-	-	-	-	50	
0010	2997+66	-	2998+16	IH 94 EB LT	-	-	-	-	-	50	
0010	2998+04	-	2999+54	IH 94 EB RT	-	-	-	-	-	246	
				1023-02-80	-	-	-	1	1	-	
				TOTAL 0010	3349	3349	1	1	1	4160	

DRAINAGE SUMMARY

Culvert pipe corrugated steel thickness: 0.064

CATEGORY	STATION	TO	STATION	LOCATION	310.0110 BASE AGGREGATE OPEN GRADED TON	521.0112 CULVERT PIPE CORRUGATED STEEL 12-INCH LF	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	612.0106 PIPE UNDERDRAIN 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN EACH	645.0111 GEOTEXTILE FABRIC TYPE DF SCHEDULE A SY	REMARKS
0010	2949+05	-	2950+55	CROSSOVER #2	-	164	2	-	-	-	SEE CONSTRUCTION DETAIL
0010	2590+00	-	2600+25	CROSSOVER #1	33	-	-	1025	2	683	SEE CONSTRUCTION DETAIL
0010	2590+00	-	2590+00	CROSSOVER #1	1	-	-	31	-	21	SEE CONSTRUCTION DETAIL
0010	2591+00	-	2591+00	CROSSOVER #1	1	-	-	30	-	20	SEE CONSTRUCTION DETAIL
0010	2598+00	-	2598+00	CROSSOVER #1	1	-	-	36	-	24	SEE CONSTRUCTION DETAIL
0010	2599+00	-	2599+00	CROSSOVER #1	1	-	-	38	-	25	SEE CONSTRUCTION DETAIL
0010	2600+22	-	2600+22	CROSSOVER #1	1	-	-	38	-	25	SEE CONSTRUCTION DETAIL
0010	259000	-	2600+22	CROSSOVER #1	33	-	-	1022	-	681	SEE CONSTRUCTION DETAIL
0010	2590+00A	-	2590+00A	CROSSOVER #1	1	-	-	27	-	18	SEE CONSTRUCTION DETAIL
0010	2591+00A	-	2591+00A	CROSSOVER #1	1	-	-	28	-	19	SEE CONSTRUCTION DETAIL
0010	2598+00A	-	2598+00A	CROSSOVER #1	1	-	-	31	-	21	SEE CONSTRUCTION DETAIL
0010	2599+00A	-	2599+00A	CROSSOVER #1	1	-	-	32	-	21	SEE CONSTRUCTION DETAIL
				TOTAL 0010	76	164	2	2338	2	1559	

SAWING ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	2589+75A	-	2601+00A	IH 94 WB LT	1,133	CROSSOVER #1
0010	2930+04W	-	2940+00W	IH 94 EB RT	1,004	IH 94 EB OFF-RAMP WIDENING
0010	2942+75	-	2948+53	IH 94 EB LT	586	CROSSOVER #2
0010	2949+80A	-	2950+77A	IH 94 WB LT	105	CROSSOVER #2
0010	18+88"OO"	-	19+00"OO"	CTH OO	31	STRUCTURE APPROACH
0010	21+29"OO"		21+41"OO"	CTH OO	31	STRUCTURE APPROACH
				TOTAL	2,858	

TEMPORARY EMERGENCY PULLOUTS

CATEGORY	LOCATION STATION	TO	STATION	SPV.0060.06 TEMPORARY EMERGENCY PULLOUTS EACH	*TON
	EASTBOUND				
0010	2619+75	-	2622+00	1	58
0010	2649+75	-	2652+00	1	65
0010	2675+75	-	2678+00	1	50
0010	2701+75	-	2704+00	1	53
0010	2727+75	-	2730+00	1	6
0010	2753+75	-	2756+00	1	25
0010	2779+75	-	2782+00	1	23
0010	2805+75	-	2808+00	1	30
0010	2831+75	-	2834+00	1	20
0010	2857+75	-	2860+00	1	52
0010	2883+75	-	2886+00	1	42
	TOTAL			11	424

* THIS QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY

ITS PULL BOXES AND VAULTS

CATEGORY	LOCATION	ITEM ID	652.0700.S INSTALL PROPOSED CONDUIT INTO EXISTING ITEM EACH	653.0135 PULL BOXES STEEL 24 X 36 EACH	673.0105 COMMUNICATION VAULT TYPE 1 EACH	678.0300 FIBER OPTIC SPLICE EACH
0030	IH 94 AND CR EW					
		PB01	--	1	--	--
		PB02	--	1	--	--
		PB03	--	1	--	--
		PB04	--	1	--	--
		PB05	--	1	--	--
		EXCVMC807ECL	1	--	--	15
		CV01	--	--	1	
		TOTAL	1	5	1	15

ITS LUMP SUM ITEMS

CATEGORY	LOCATION	ITEM ID ID	656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL (CCTV-41-0111) LS	656.0500.01 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (CCTV-41-0111) LS	670.0100 FIELD SYSTEM INTEGRATOR L.S.	670.0200 ITS DOCUMENTATION L.S.	678.0500 COMMUNICATION SYSTEM TESTING LS
0030	IH 94 AND CR EW						
		MB01	1	--	--	--	--
		CCTV-41-0111	--	1	--	--	--
		PROJECT	--	--	1	1	1
	TOTAL		1	1	1	1	1

ITS CONDUIT AND CABLE ITEMS

CATEGORY	LOCATION	ITEM I.D.	652.0125 CONDUIT RIGID METALLIC 2-INCH LF	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0605 CONDUIT SPECIAL 2-INCH LF	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG LF	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF
0030	IH 94 AND CR EW							
		MB01 - PB01	--	80	--	--	255	--
		PB01 - PB02	--	--	220	--	330	--
		PB02 - PB03	--	710	--	--	1065	--
		PB03	--	--	--	--	--	25
		PB03 - PB04	--	285	--	95	285	95
		PB04	--	--	--	--	--	25
		PB03 - PB05	--	--	670	335	--	335
		PB05	--	--	--	--	--	25
		PB04 - CCTV-41-0111	10	20	--	15	45	20
		PB05 - EXCVMD807ECL	--	--	1030	515	--	515
		EXCVMD807ECL	--	--	--	--	--	100
		TOTAL	10	1095	1920	960	1980	1140

3

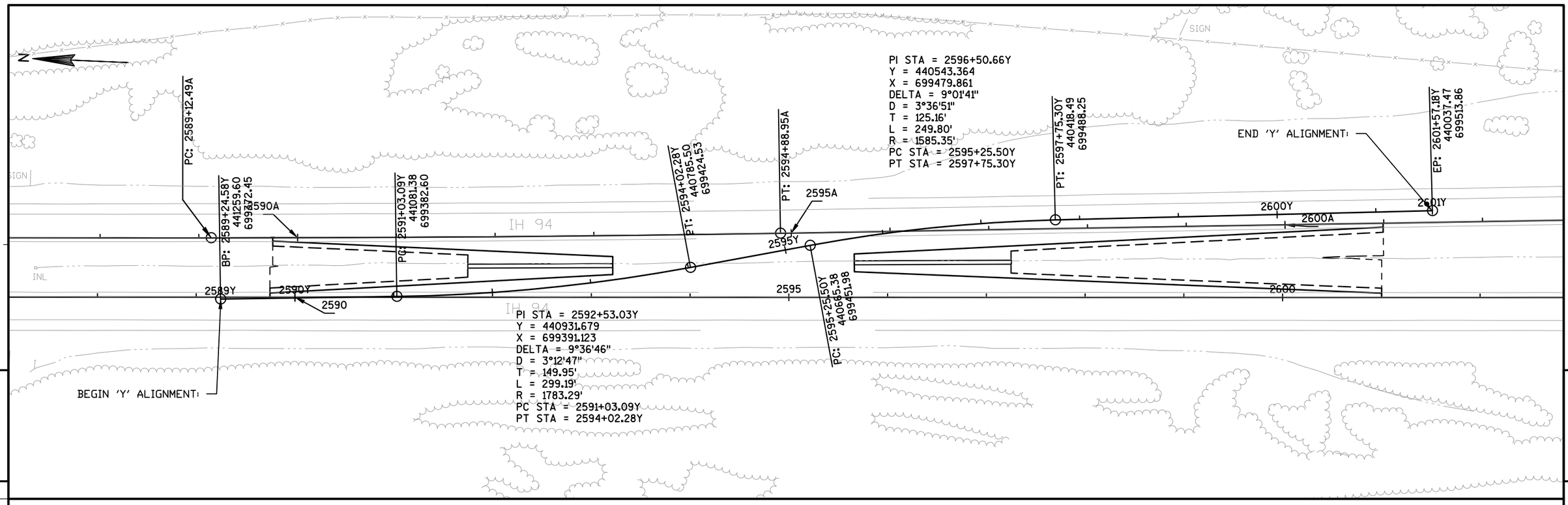
3

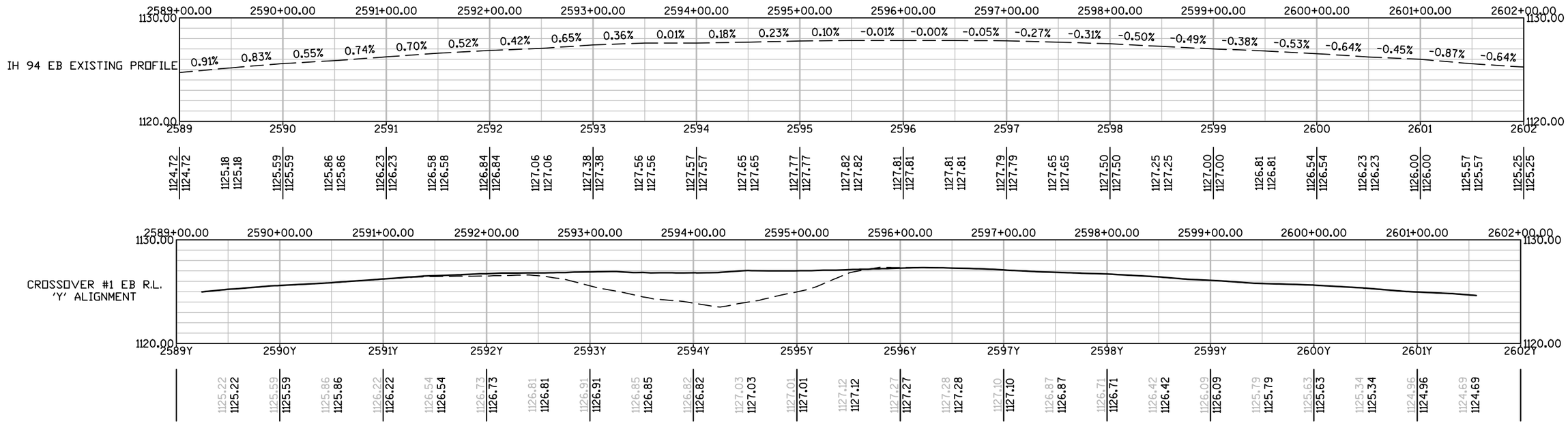
ITS MICROWAVE DETECTORS

CATEGORY	LOCATION	ITEM I.D.	654.0105 CONCRETE BASE TYPE 5 EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY EACH	SPV.0060.02 INSTALL SPREAD SPECTRUM RADIO EACH	SPV.0060.03 INSTALL ANTENNA EACH	SPV.0060.04 INSTALL SOLAR POWER SYSTEM EACH	SPV.0060.05 GROUND ROD EACH
0030	IH 94 AND CR EW									
		CCTV-41-0111	--	--	--	2	1	1	--	1
		SDS-41-0123	1	1	1	1	1	1	1	1
		TOTAL	1	1	1	3	2	2	1	2

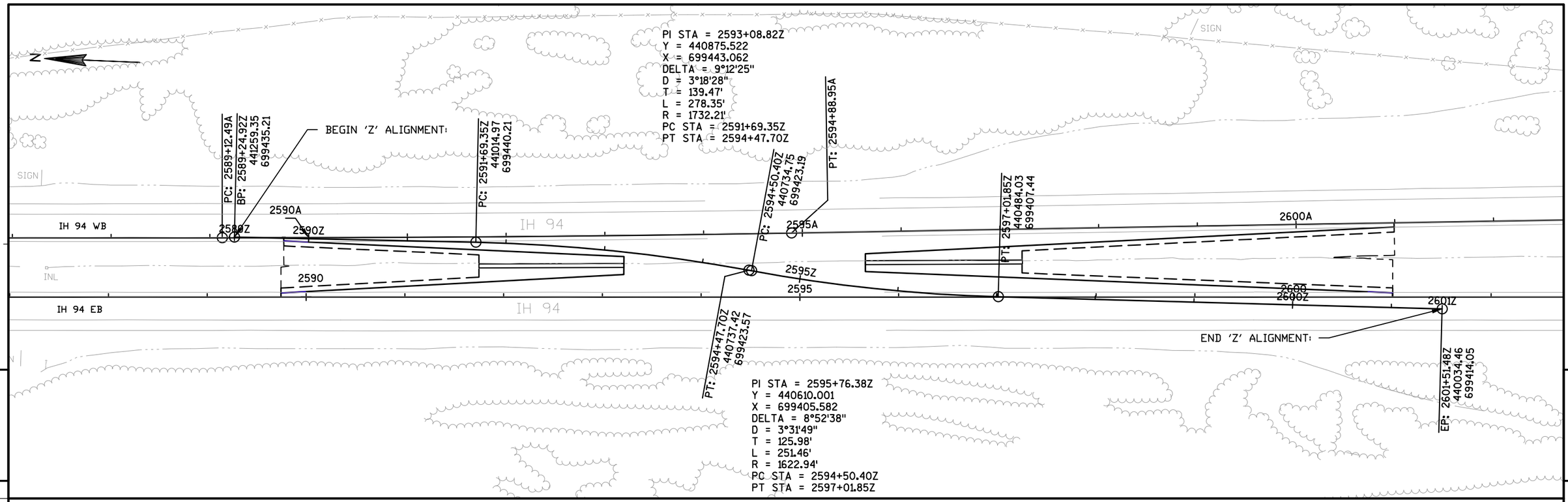
ITS CAMERA AND CABINET ITEMS

CATEGORY	LOCATION	ITEM I.D.	672.0250 BASE CAMERA POLE 50-FT EACH	673.0225.S INSTALL POLE MOUNTED CABINET EACH	675.0400.S INSTALL ETHERNET SWITCH EACH	677.0100 INSTALL CAMERA POLE EACH	677.0200 INSTALL CAMERA ASSEMBLY EACH	677.0300.S INSTALL VIDEO ENCODER EACH	678.0400 FIBER OPTIC TERMINATION EACH
0030	IH 94 AND CR EW								
		CCTV-41-0111	1	1	1	1	1	1	6
		TOTAL	1	1	1	1	1	1	6

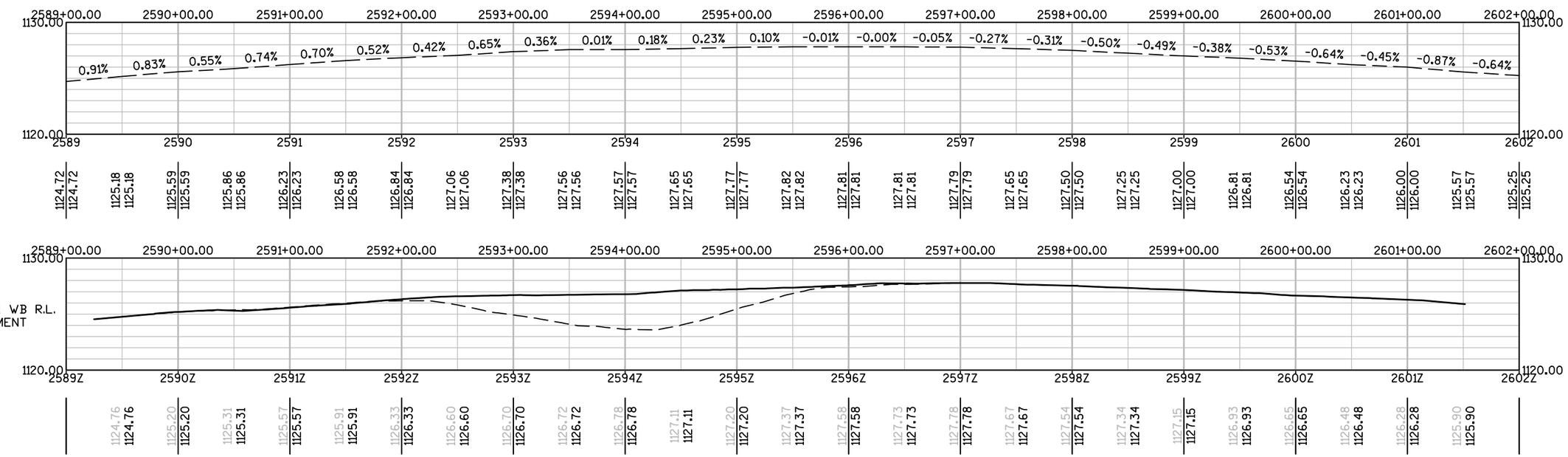




PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: CROSSOVER #1 - 'Y' ALIGNMENT	SHEET	E



IH 94 EB EXISTING PROFILE



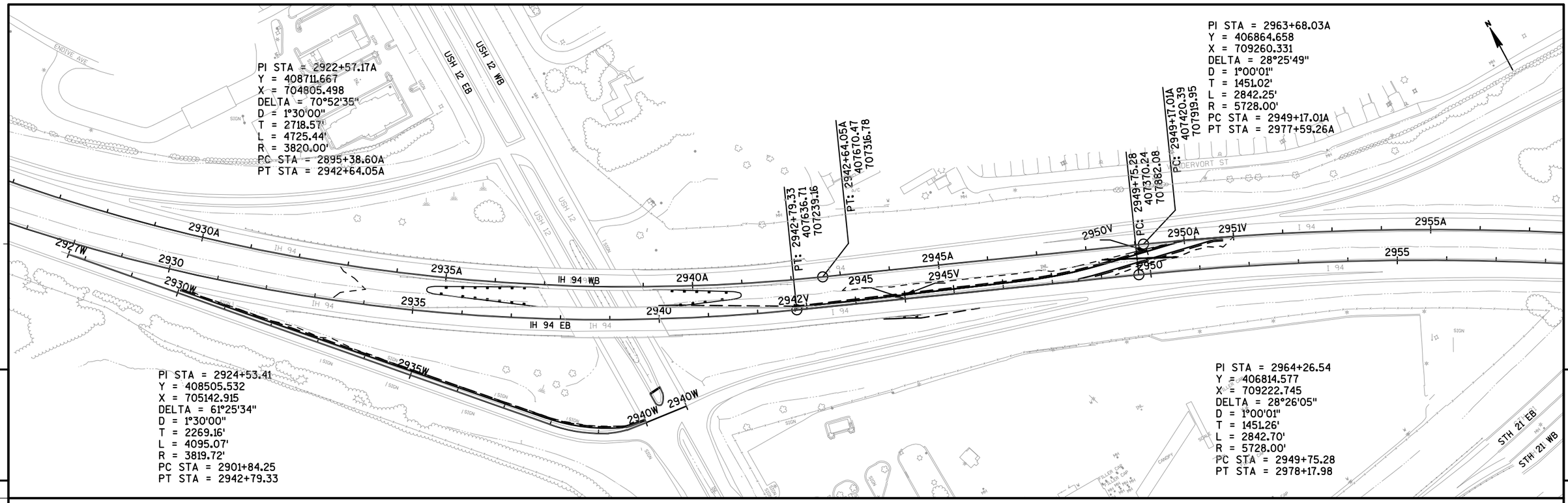
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: CROSSOVER #1 - 'Z' ALIGNMENT	SHEET	E

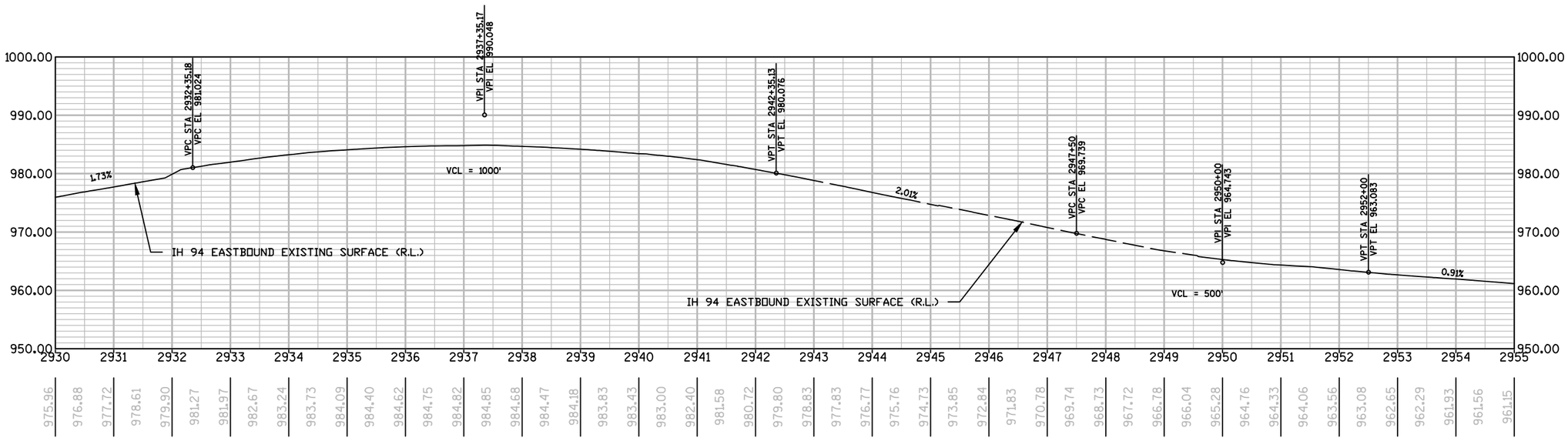
PI STA = 2922+57.17A
Y = 408711.667
X = 704805.498
DELTA = 70°52'35"
D = 1°30'00"
T = 2718.57'
L = 4725.44'
R = 3820.00'
PC STA = 2895+38.60A
PT STA = 2942+64.05A

PI STA = 2963+68.03A
Y = 406864.658
X = 709260.331
DELTA = 28°25'49"
D = 1°00'01"
T = 1451.02'
L = 2842.25'
R = 5728.00'
PC STA = 2949+17.01A
PT STA = 2977+59.26A

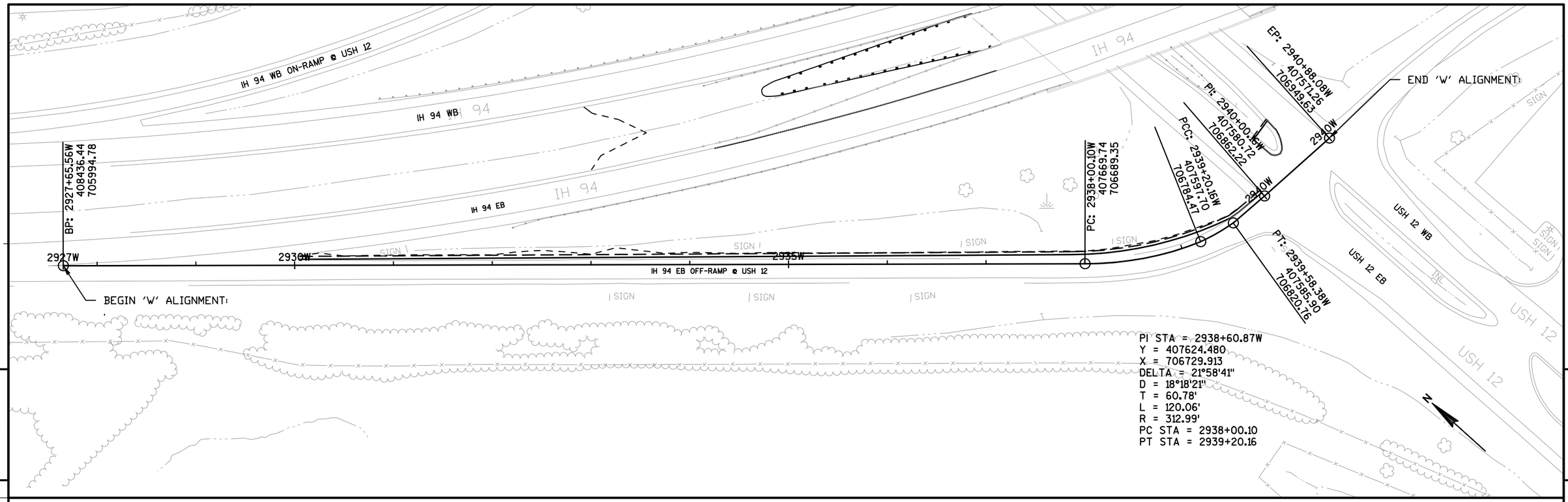
PI STA = 2924+53.41
Y = 408505.532
X = 705142.915
DELTA = 61°25'34"
D = 1°30'00"
T = 2269.16'
L = 4095.07'
R = 3819.72'
PC STA = 2901+84.25
PT STA = 2942+79.33

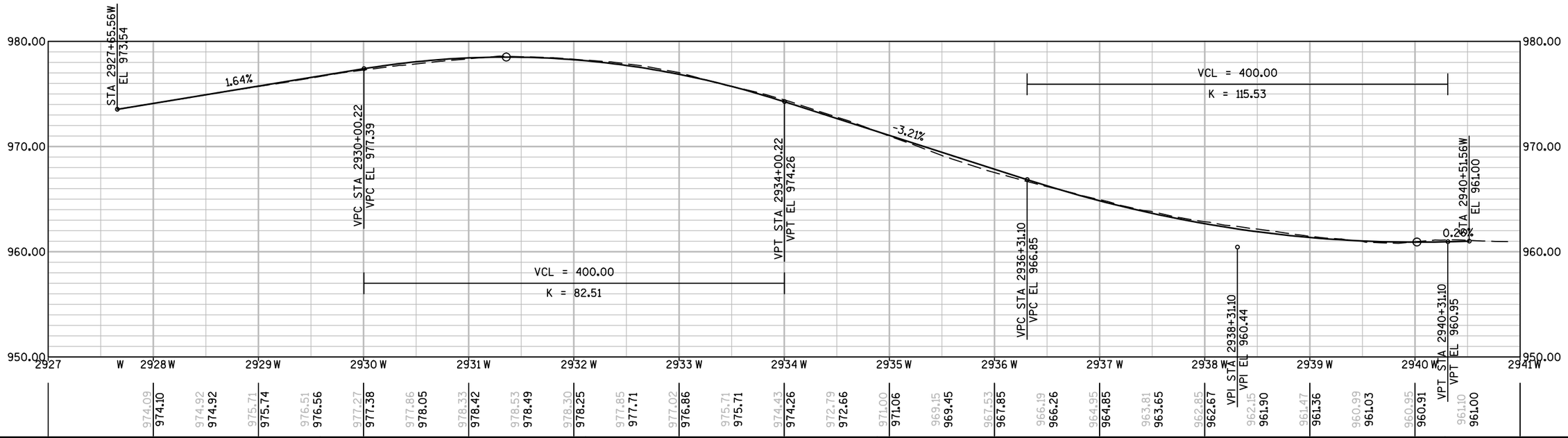
PI STA = 2964+26.54
Y = 406814.577
X = 709222.745
DELTA = 28°26'05"
D = 1°00'01"
T = 1451.26'
L = 2842.70'
R = 5728.00'
PC STA = 2949+75.28
PT STA = 2978+17.98



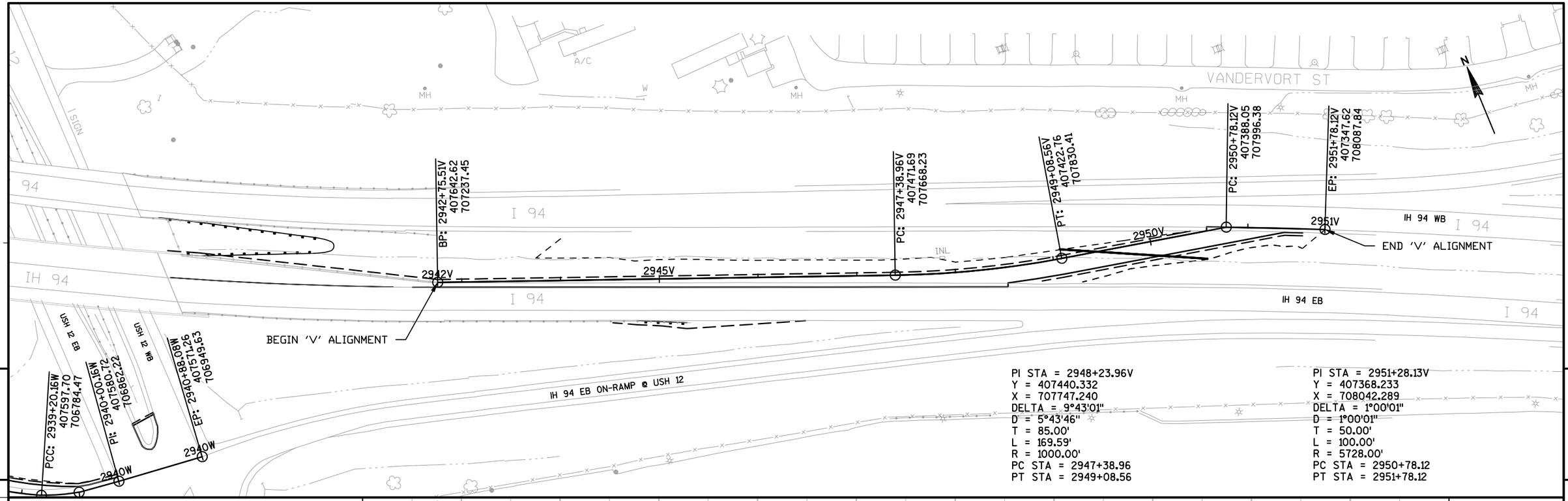


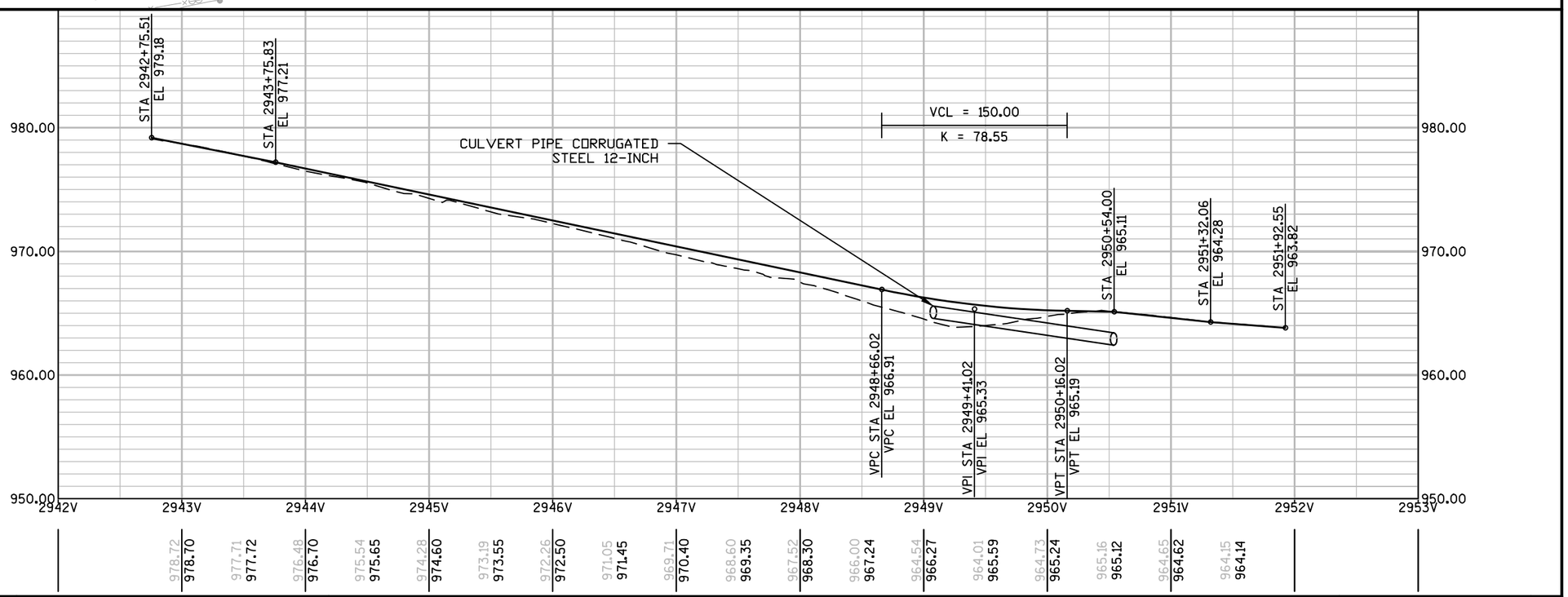
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: IH 94 MAINLINE	SHEET	E





PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 55	E





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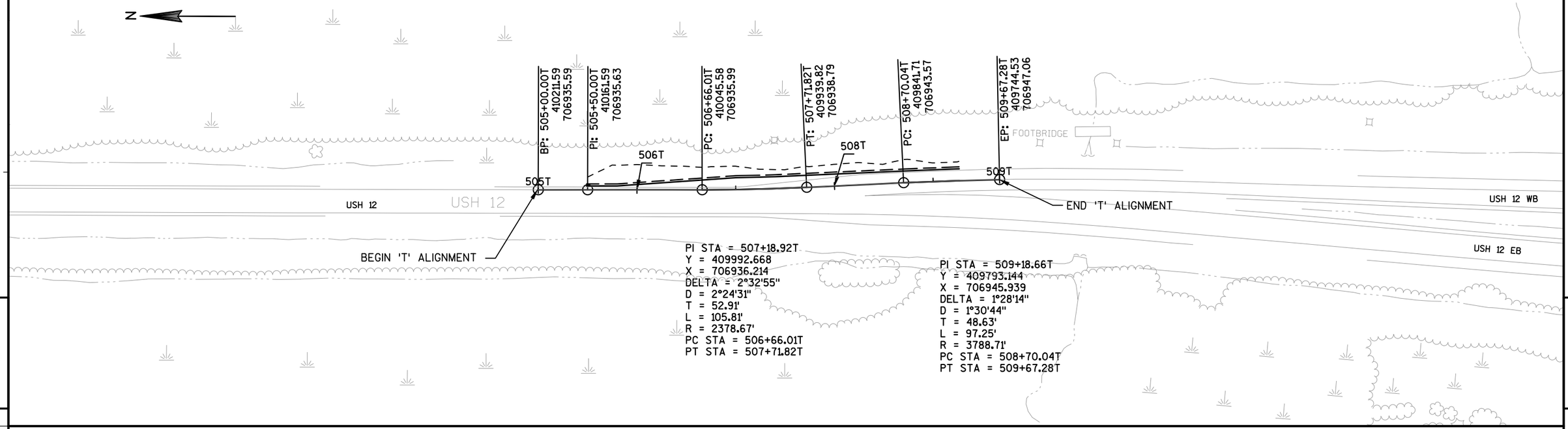
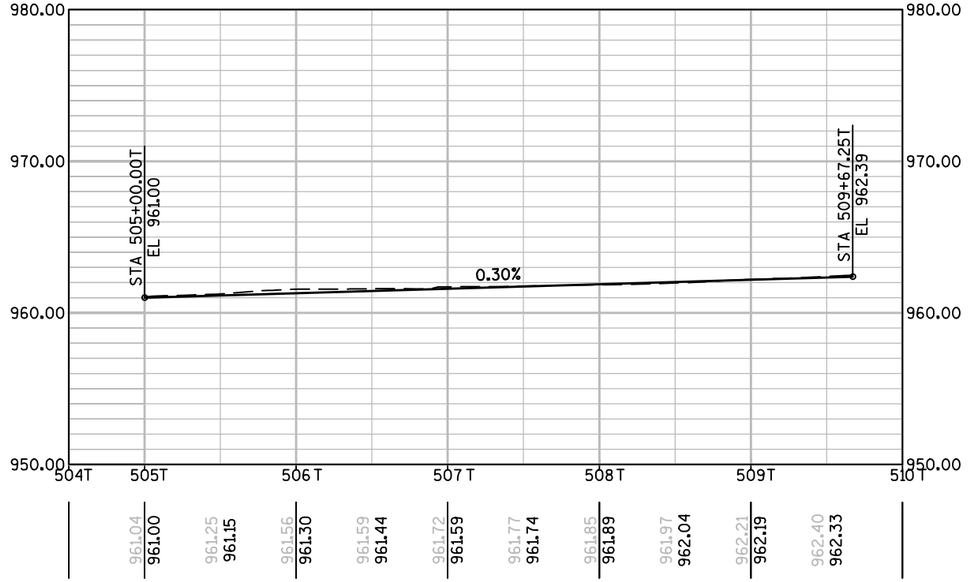
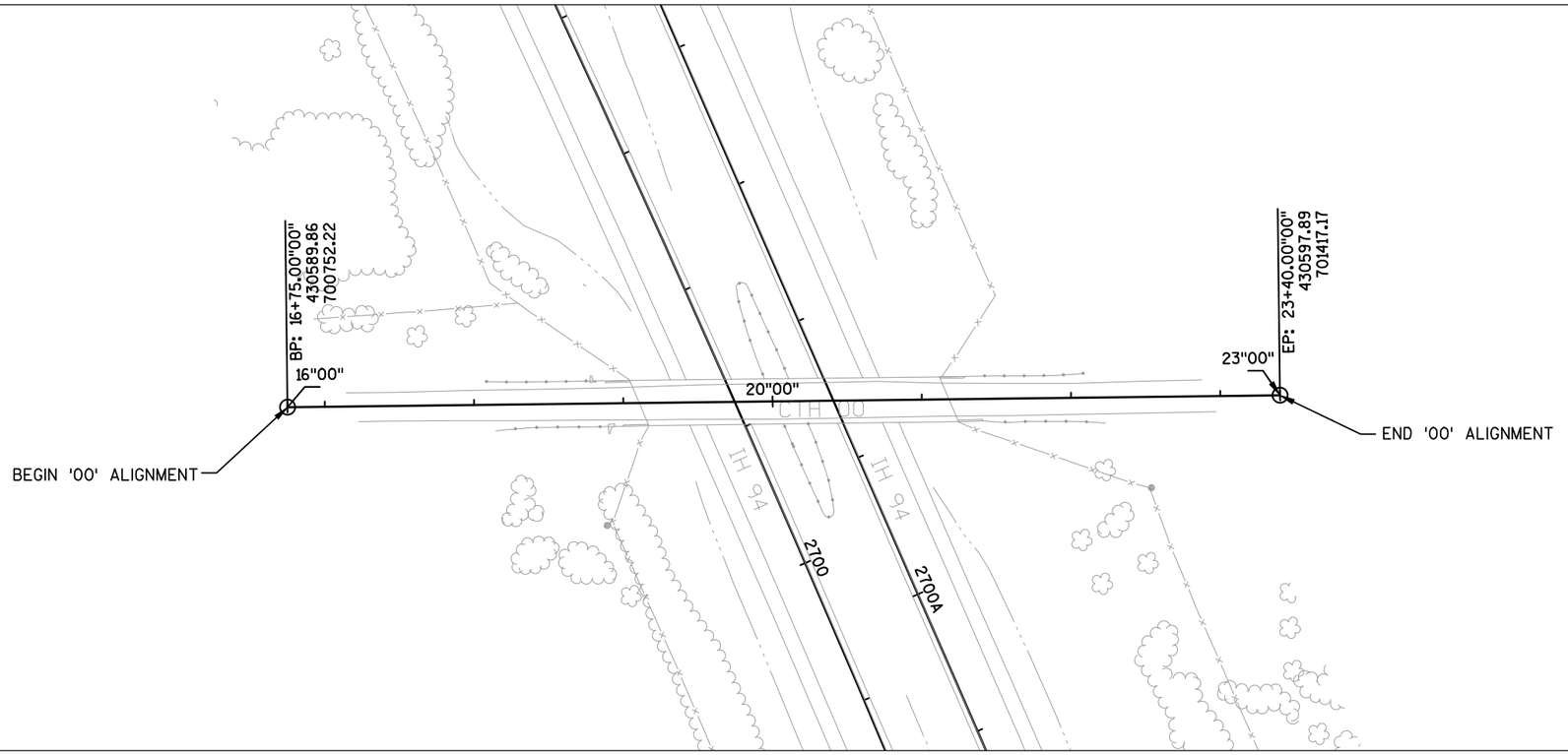
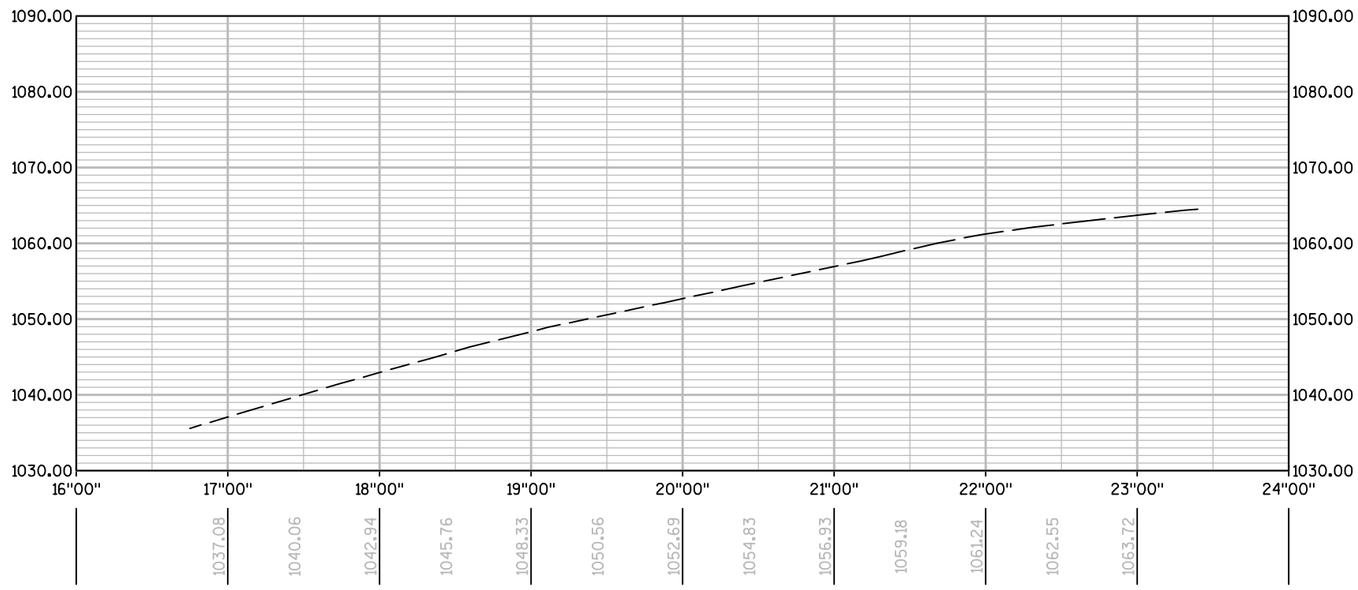


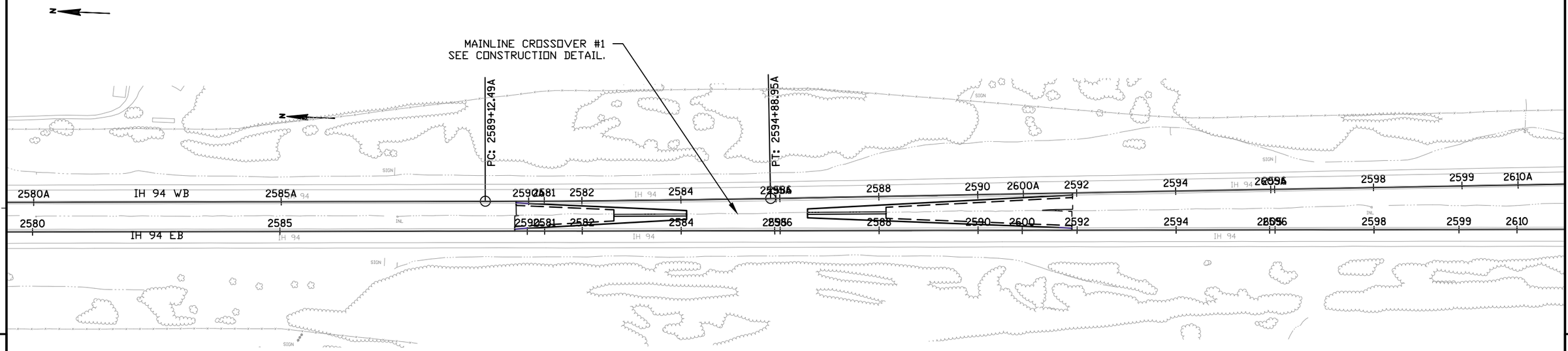


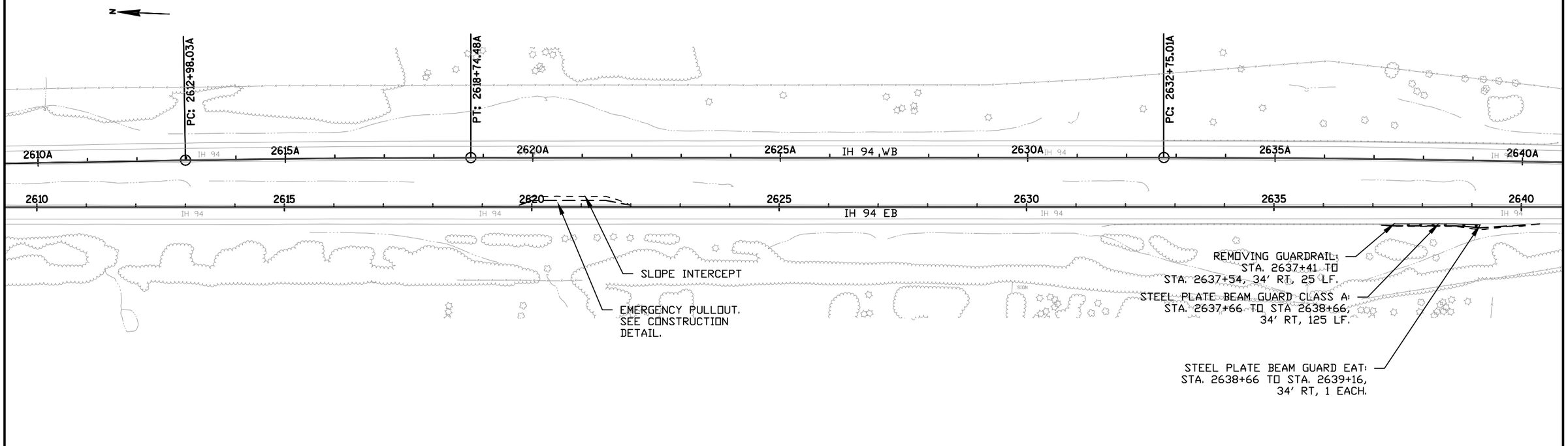
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E





PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN AND PROFILE: CTH "00"	SHEET 58	E





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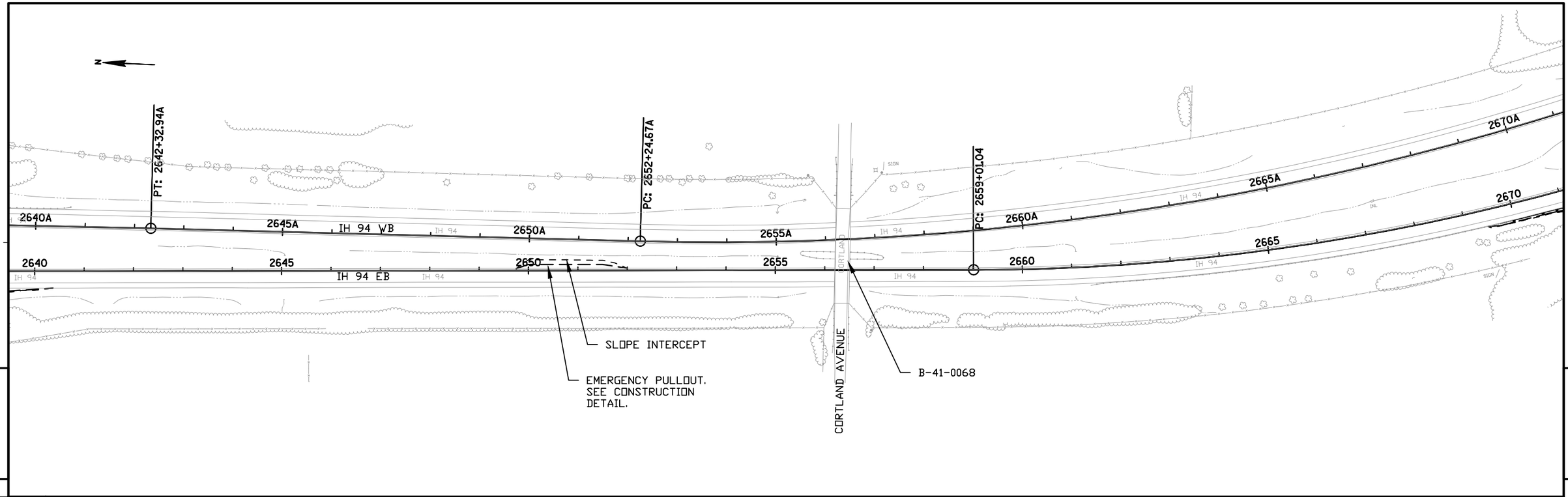

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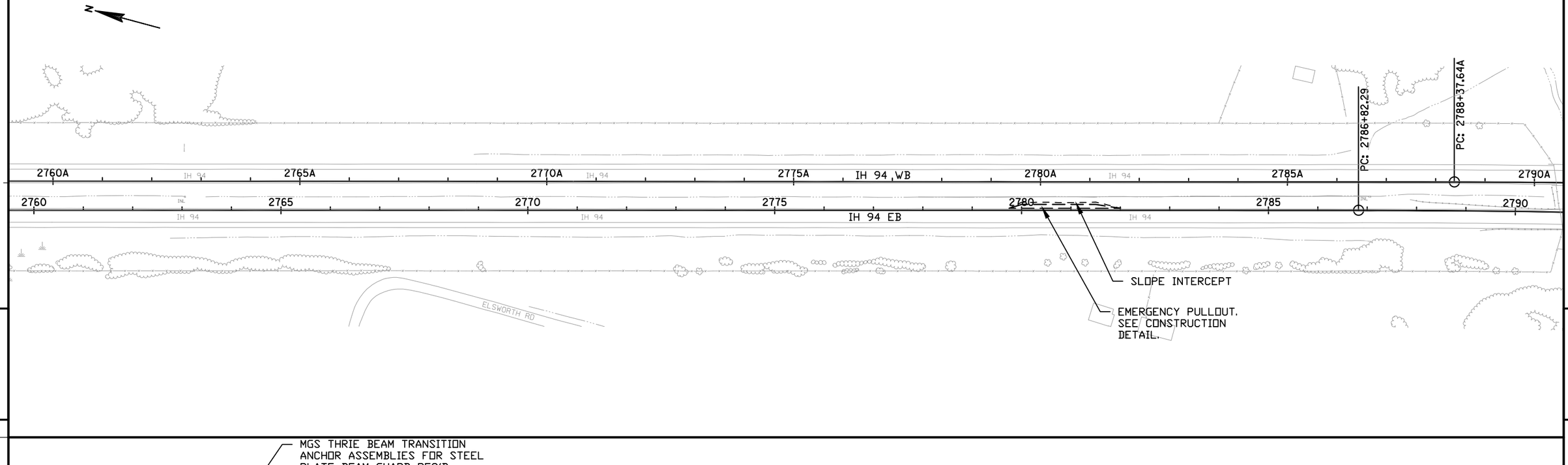

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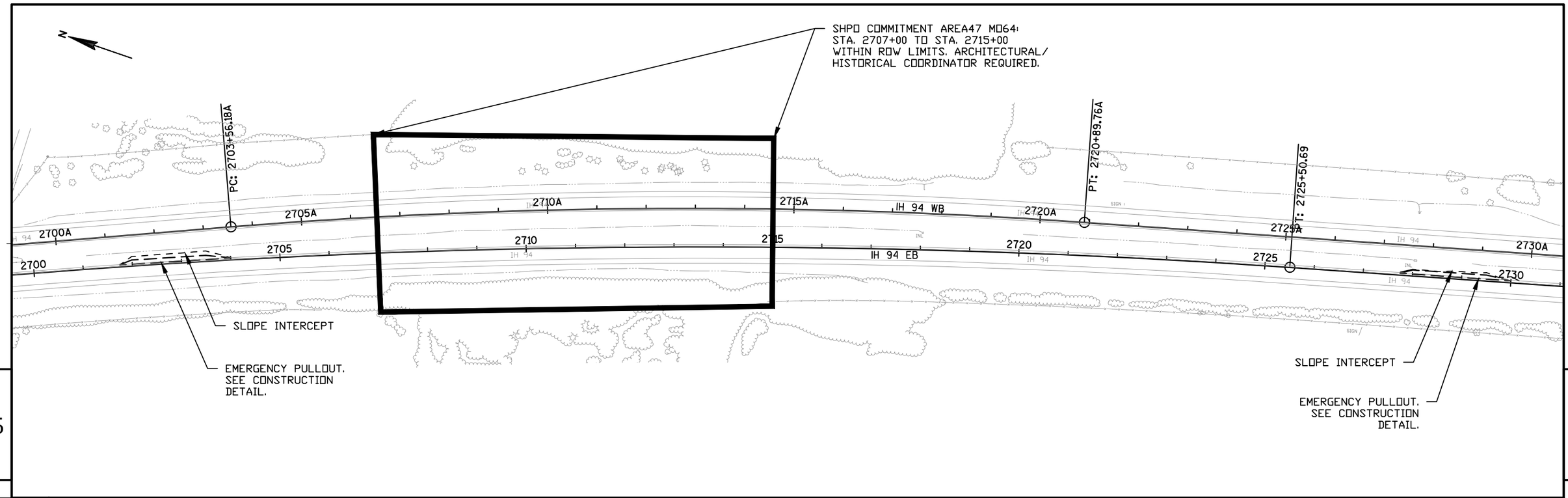
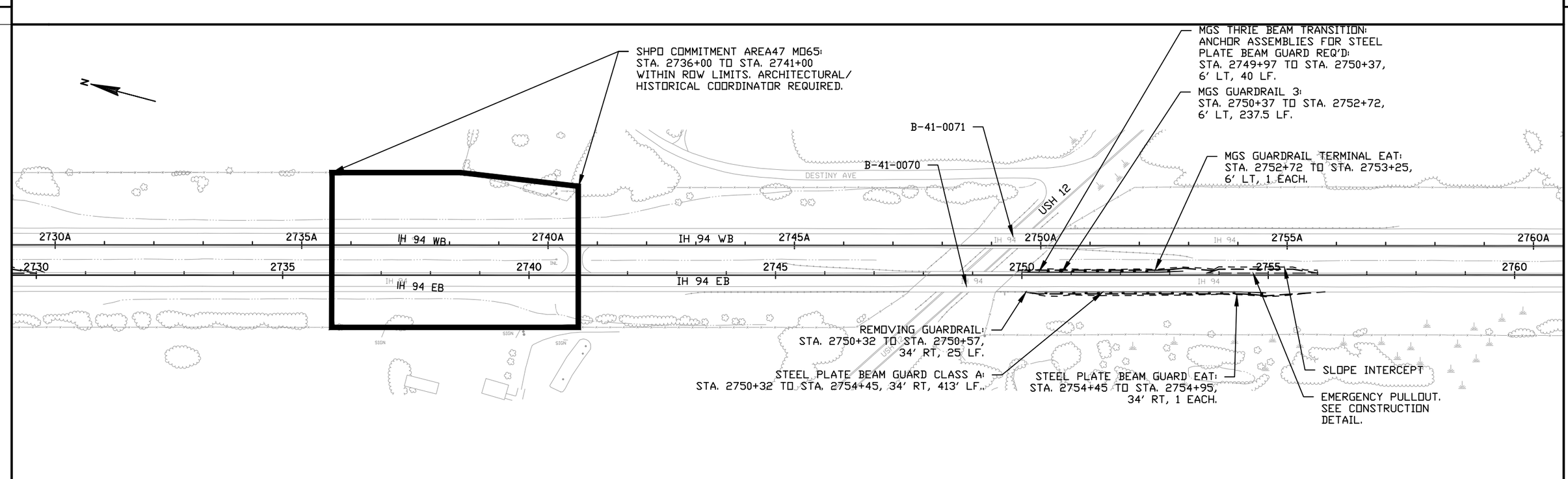
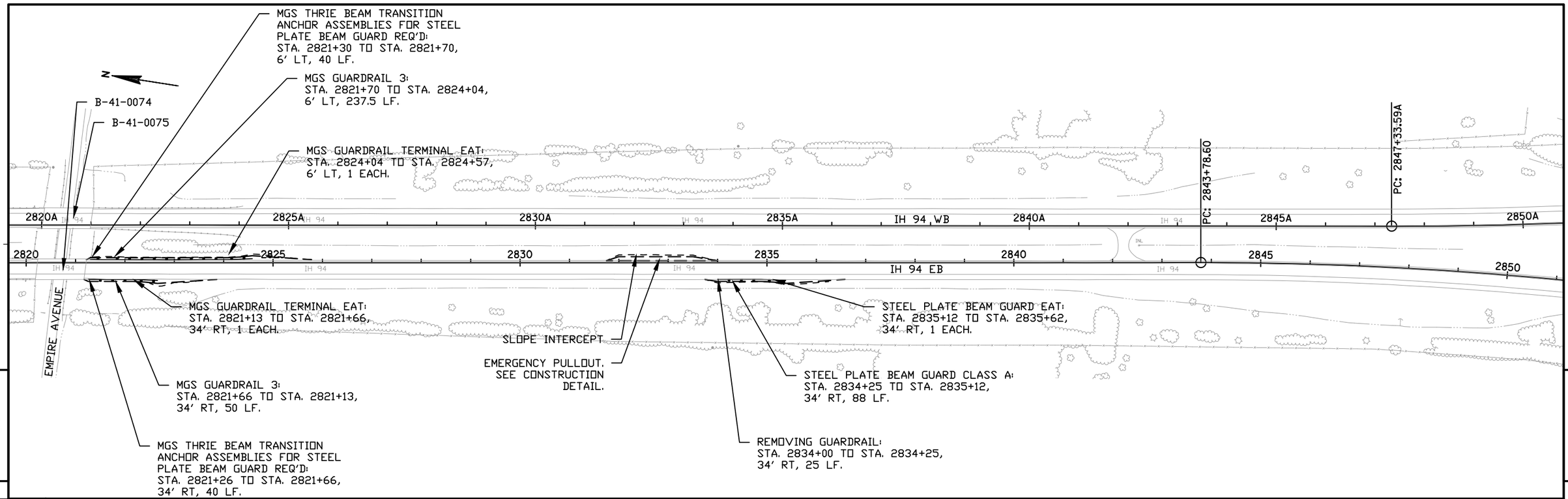




PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN	SHEET 62	E



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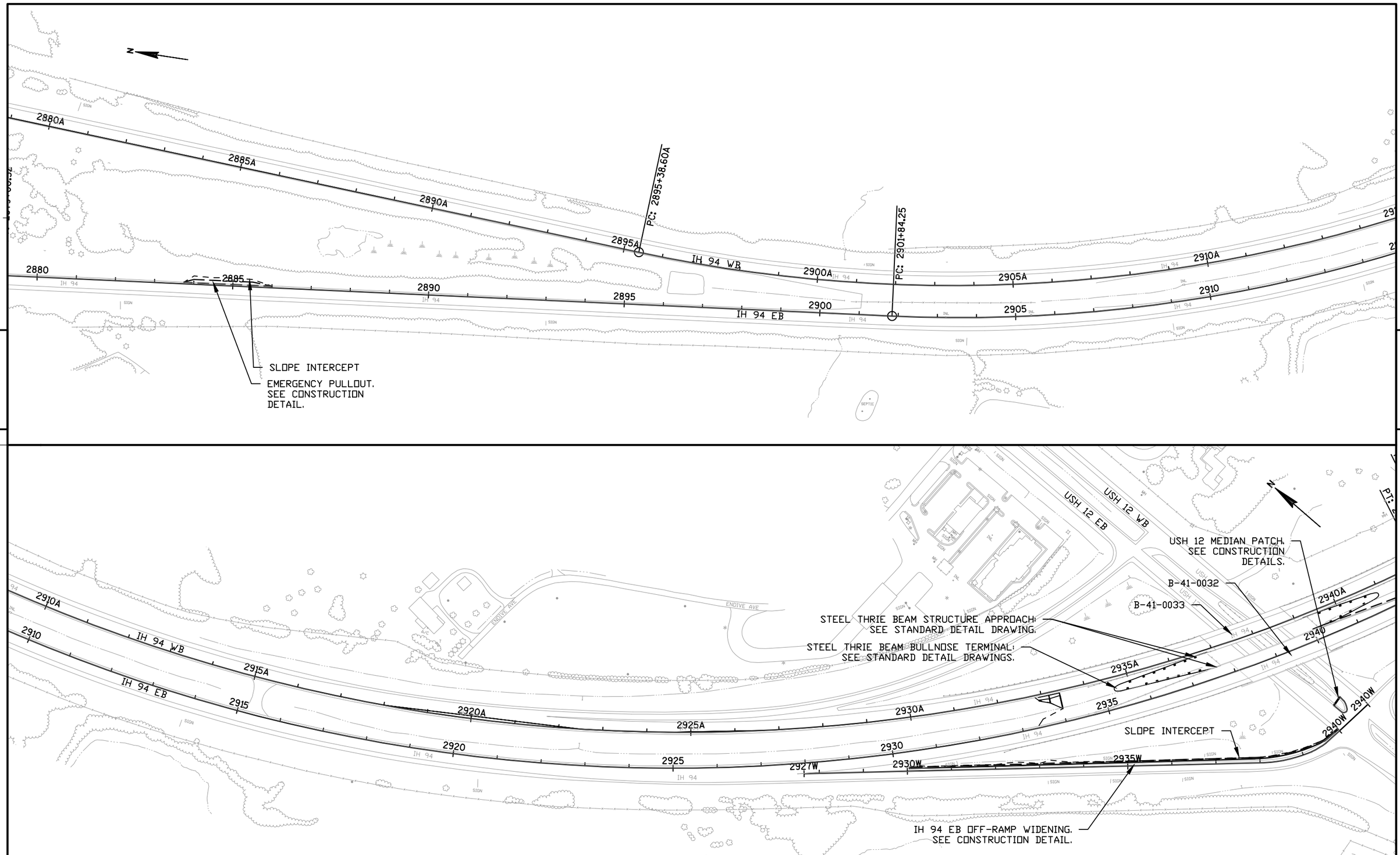
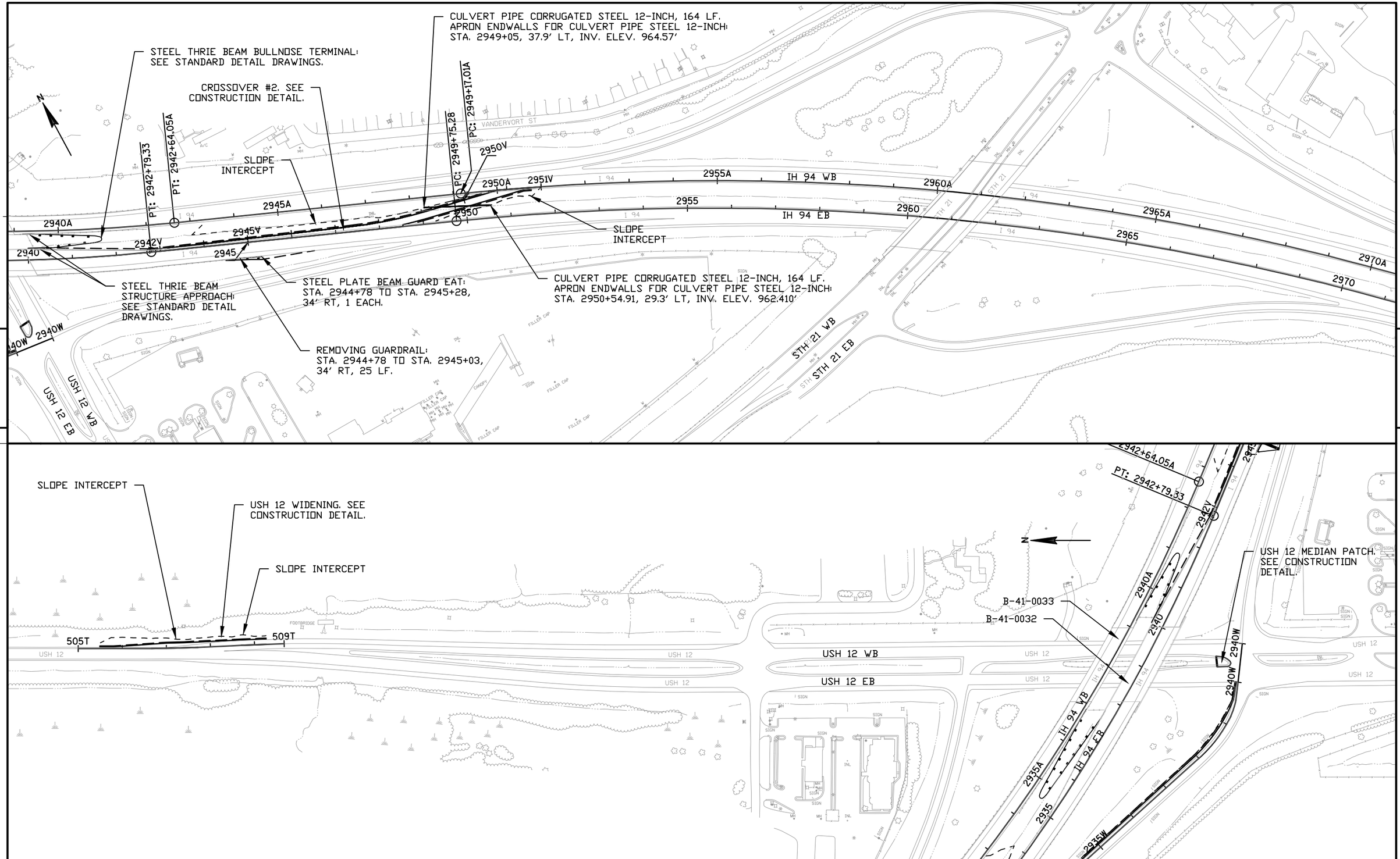


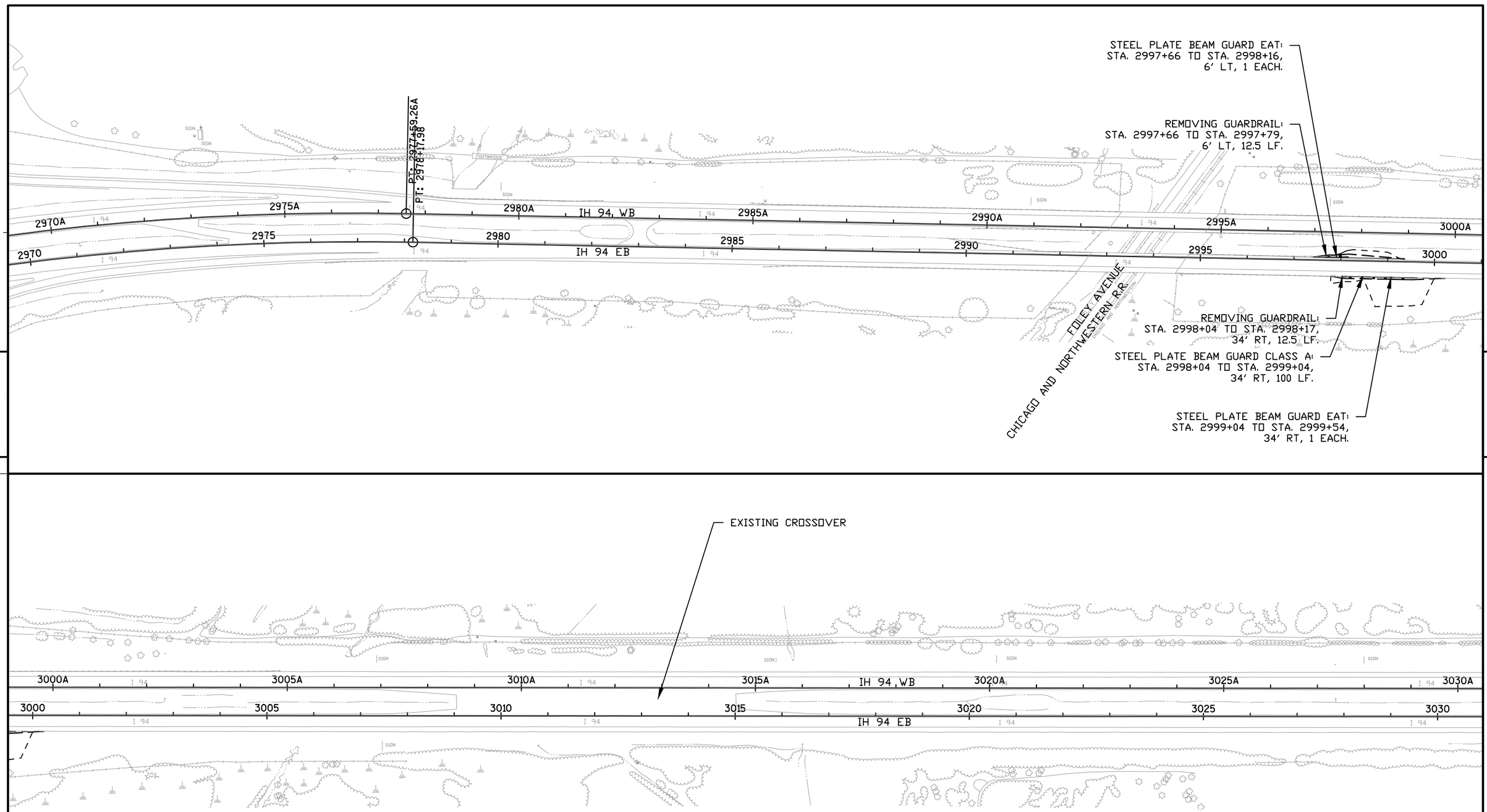
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN	SHEET 64	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\050202_PN.DWG PLOT DATE : 1/27/2014 11:25 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 0.004443

WISDOT/CADDS SHEET 44

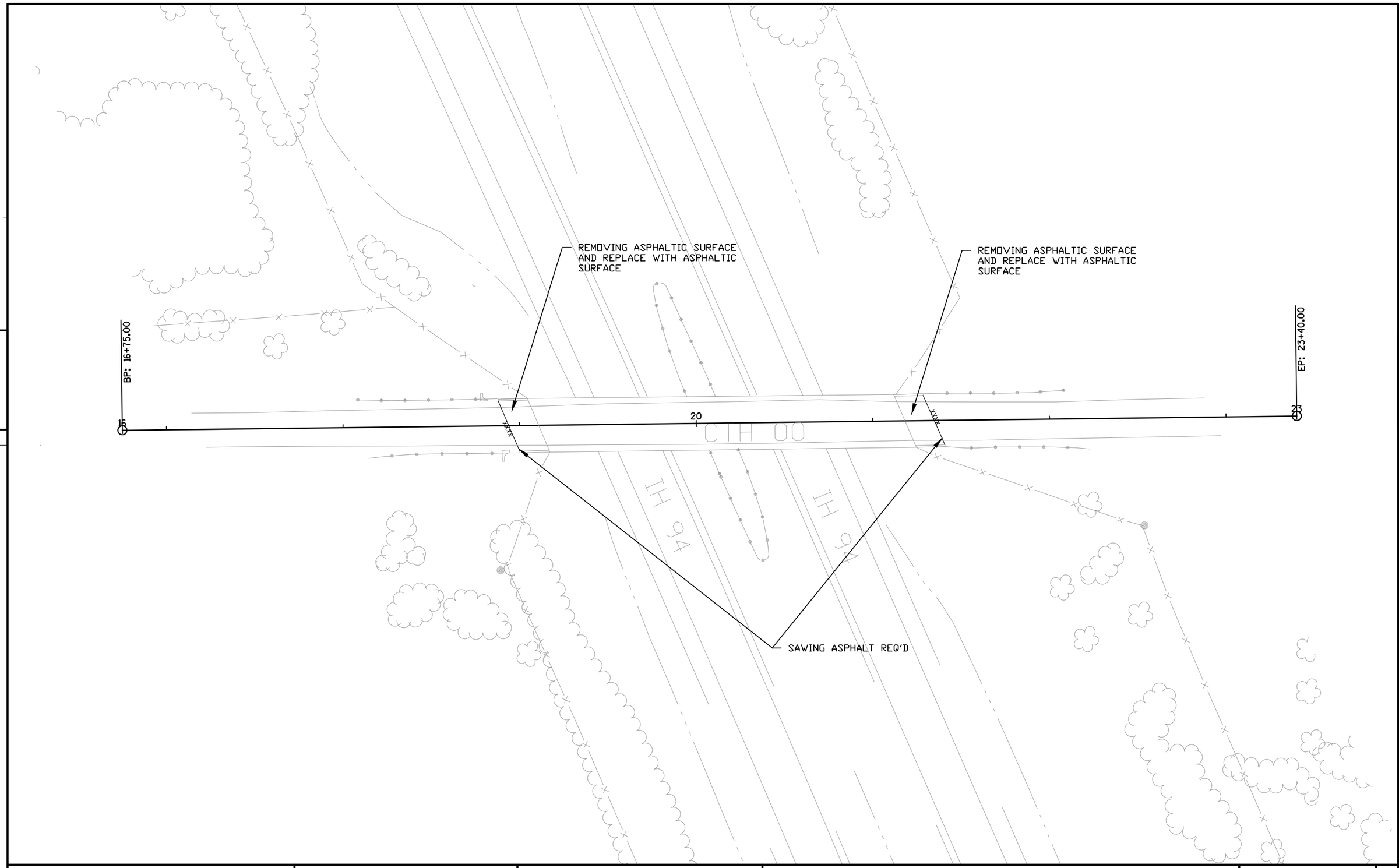


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN	SHEET 65	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\050202_PN.DWG PLOT DATE : 3/3/2014 1:45 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1 IN:200 FT



5

PROJECT NO:1023-02-80	HWY: IH 94	COUNTY: MONROE	PLAN	SHEET	E

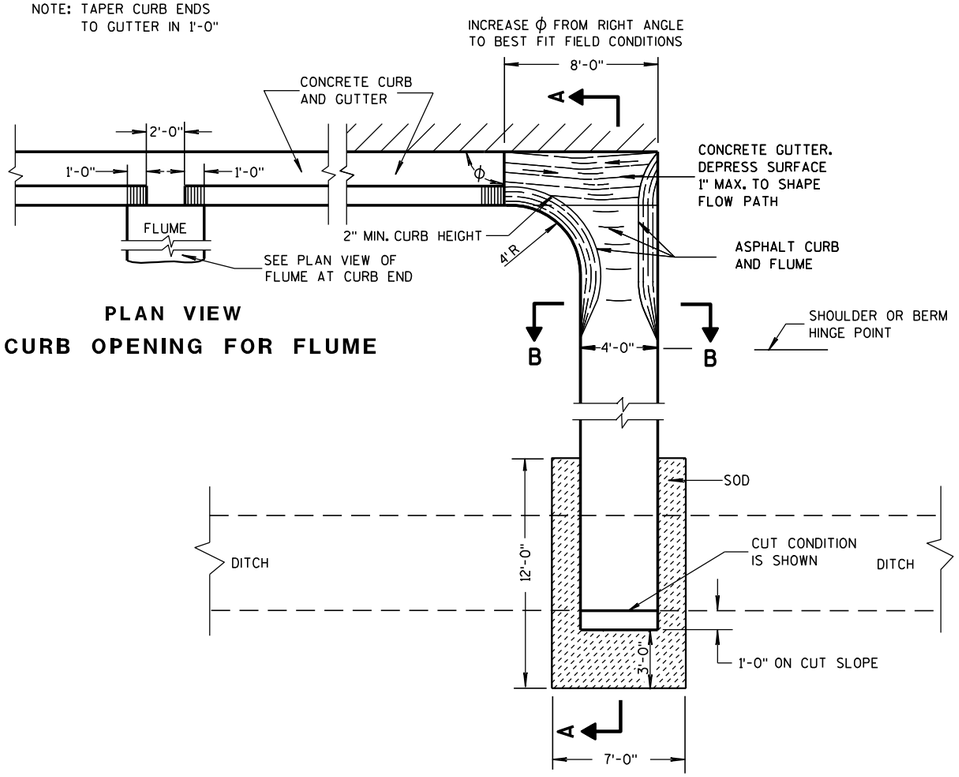
FILE NAME : N:\PDS\C3D\10230204\SHEETSPLAN\10230280\050203_PN.DWG PLOT DATE : 3/3/2014 11:23 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D15-04B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B18-06B	STEEL PLATE BEAM GUARD, CLASS "A" AT MEDIAN APPROACH TO BRIDGES
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B26-02A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-02E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A02-08	DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C11-05	FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES
15D11-04	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D12-03	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D36-01	BARRICADE RACK

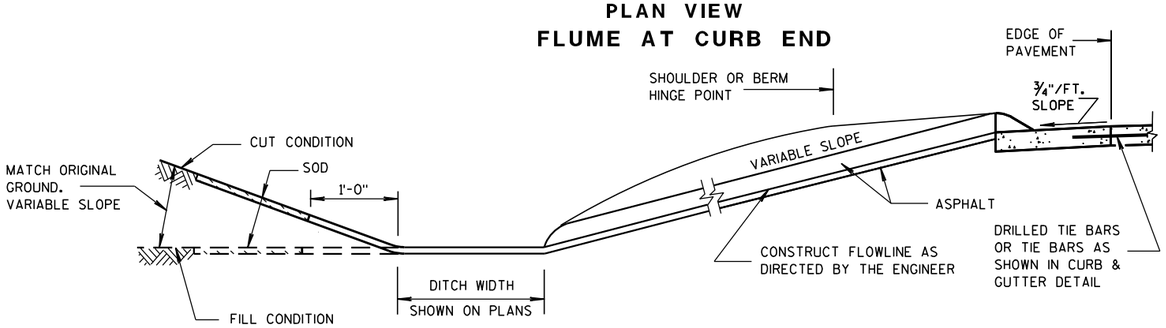
6

ASPHALTIC FLUME

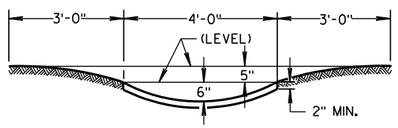


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

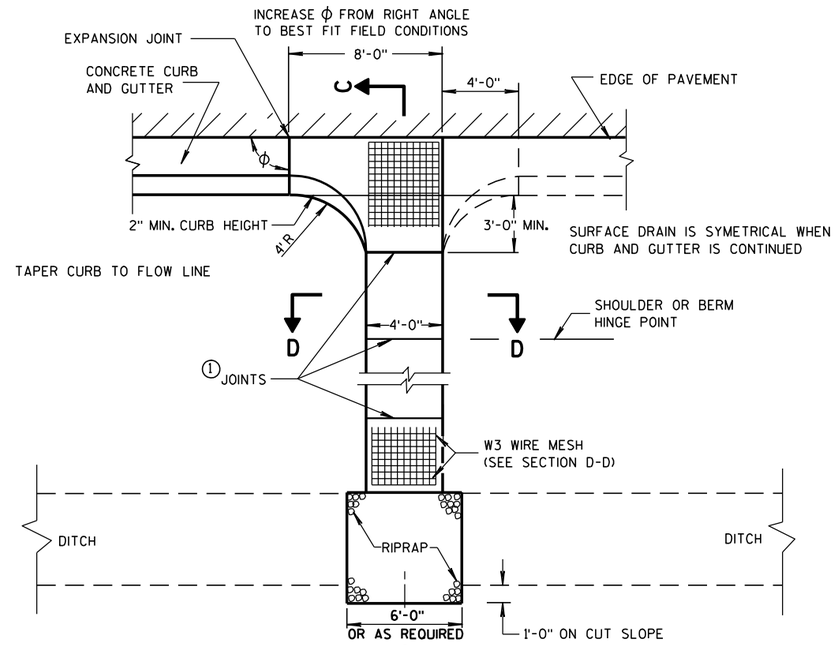
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

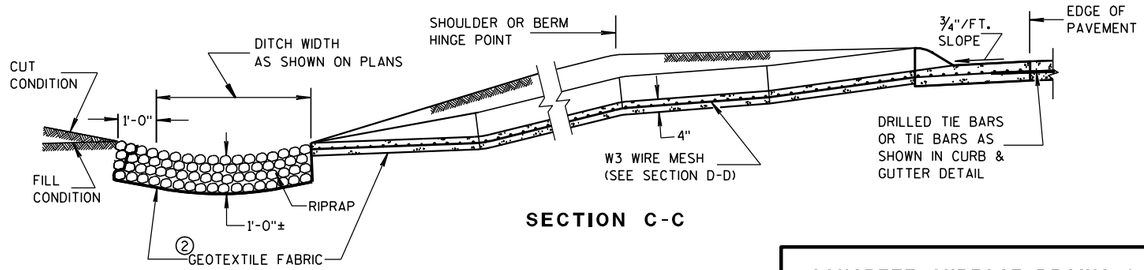
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

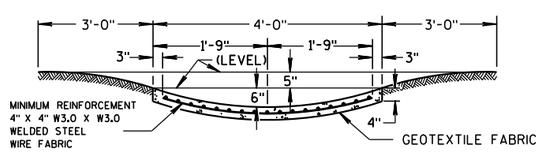
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



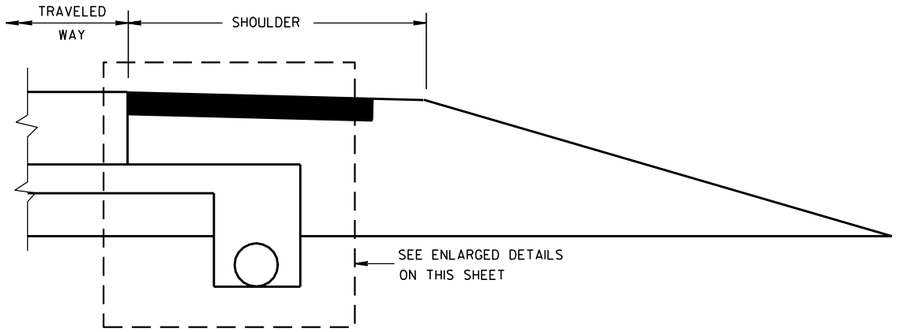
SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 D 4-5



RURAL CROSS SECTION

GENERAL NOTES

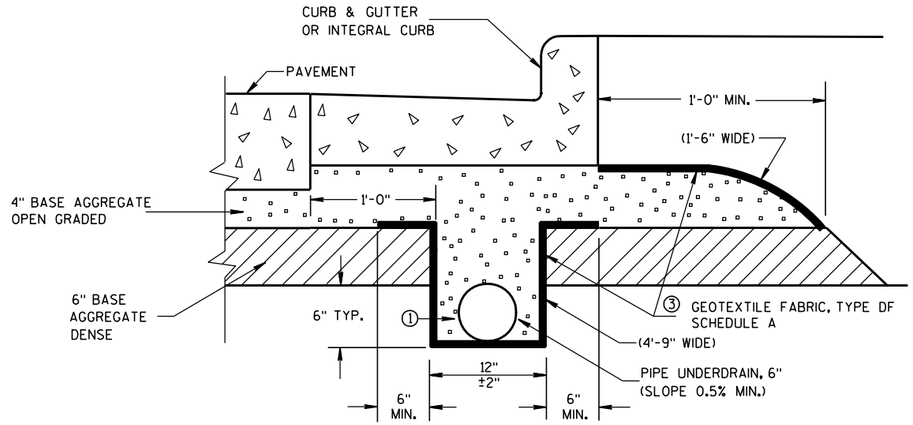
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

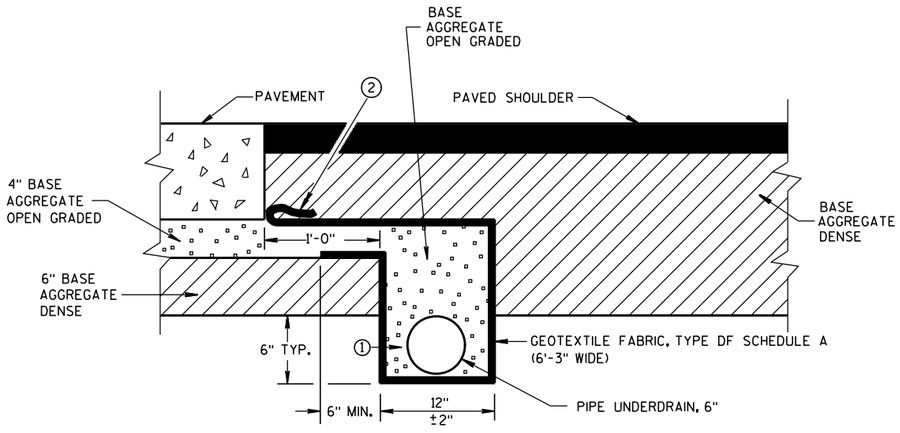
① TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.

② FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

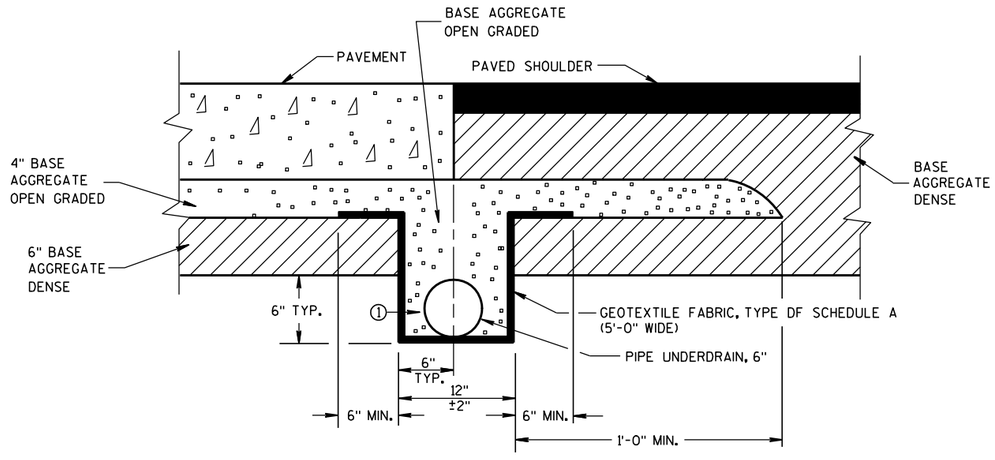
③ TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

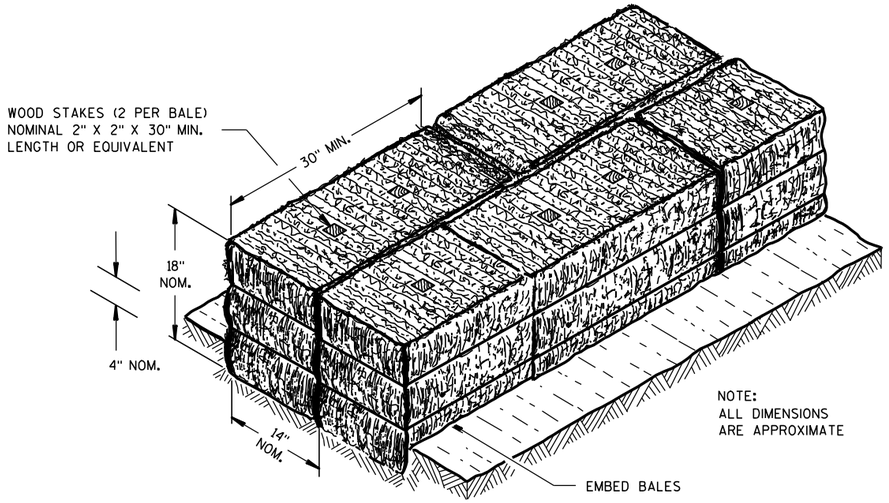
APPROVED

3/21/07 DATE — /S/ Steven W. [illegible] CHIEF MATERIALS MANAGER

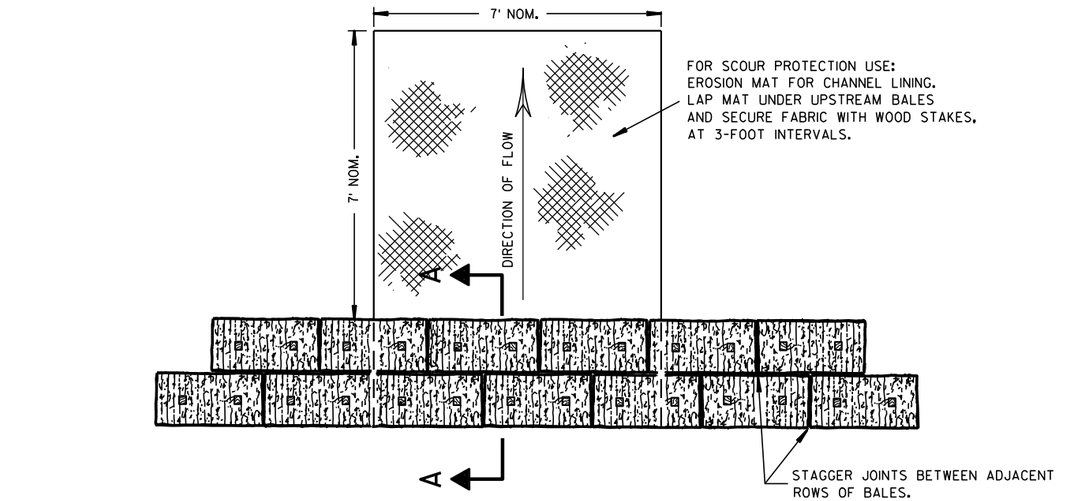
FHWA

6

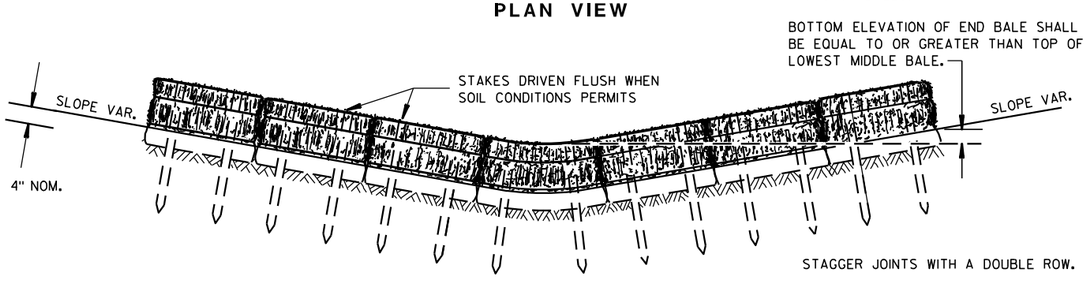
S.D.D. 8 D 15-4b



SECTION A-A



PLAN VIEW



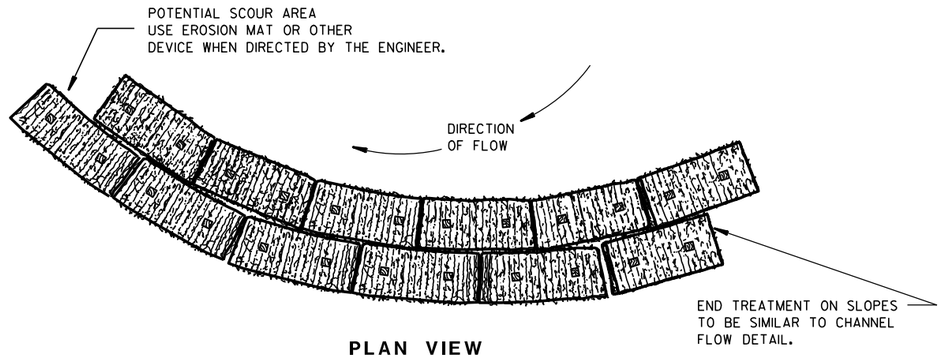
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

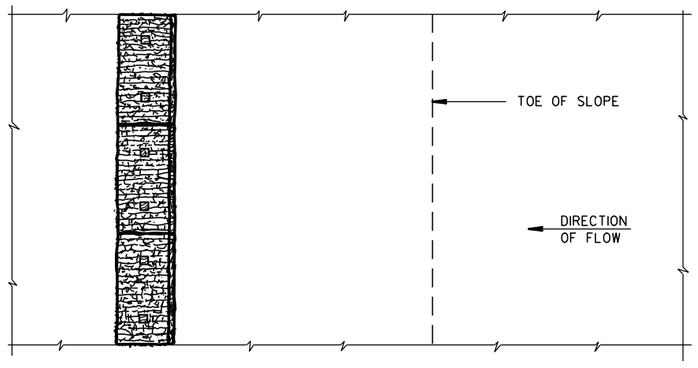
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

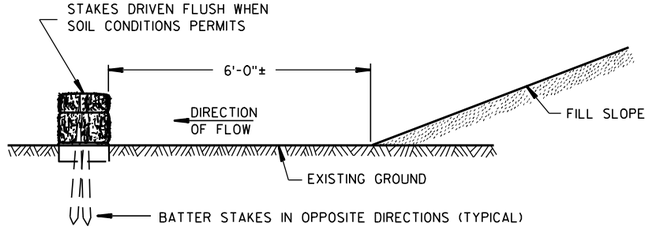


PLAN VIEW

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

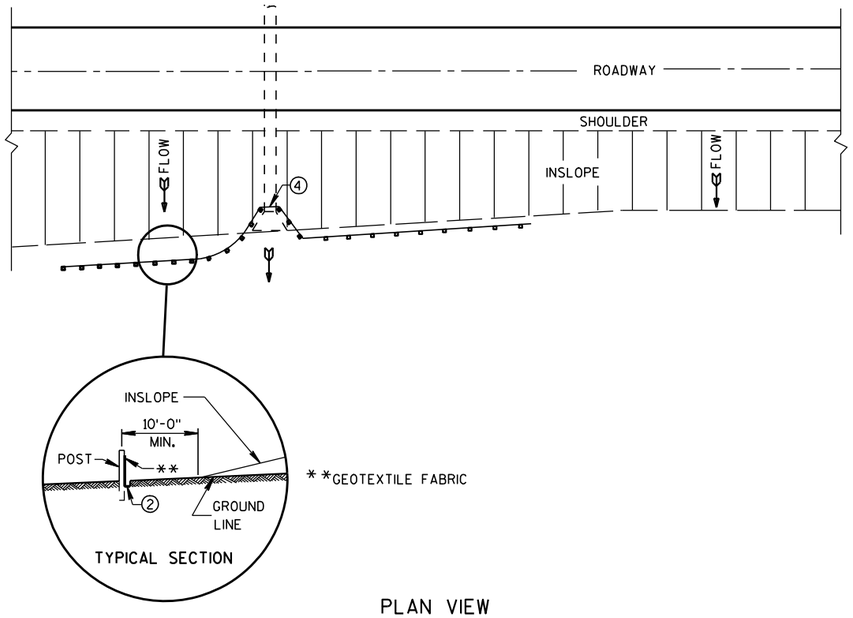
APPROVED

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

FHWA

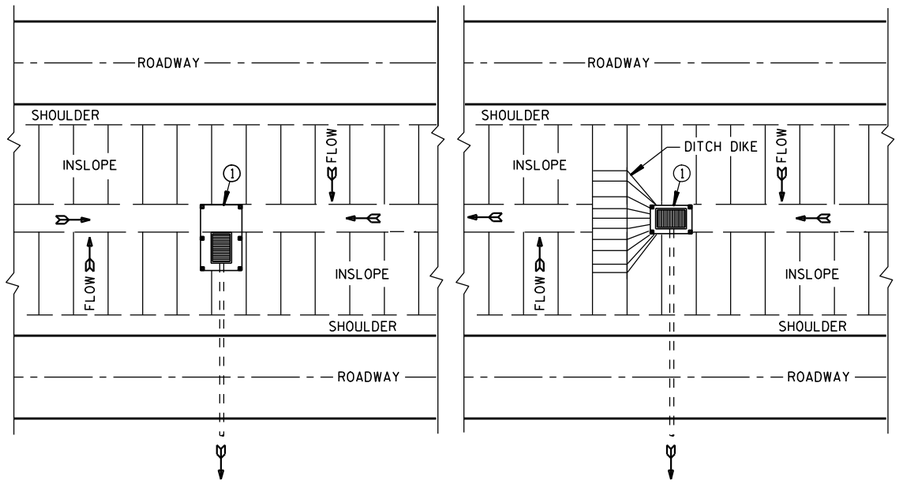
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

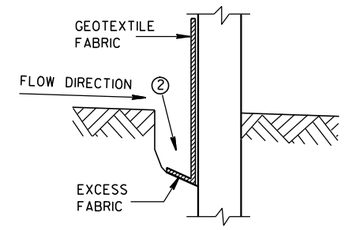
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

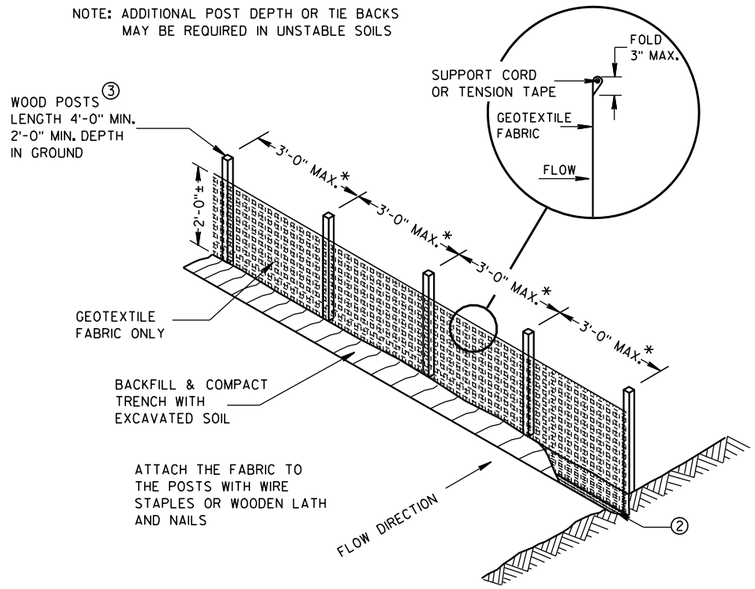
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

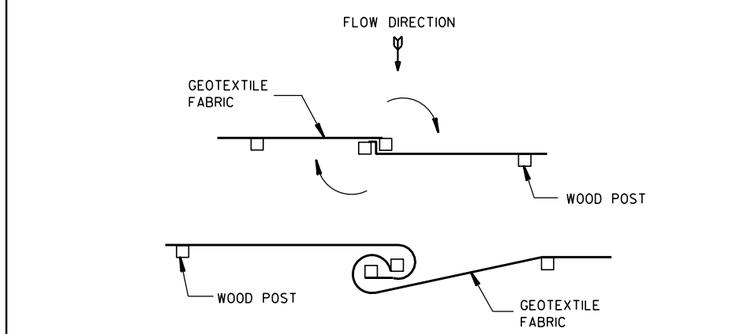
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



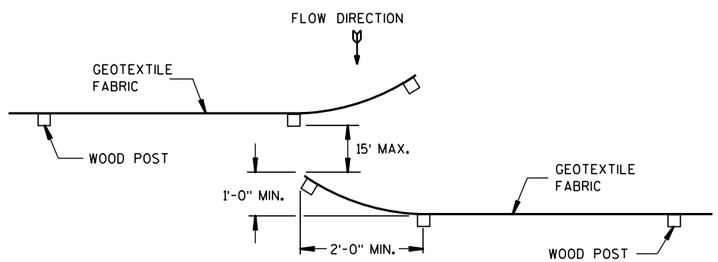
TRENCH DETAIL



SILT FENCE

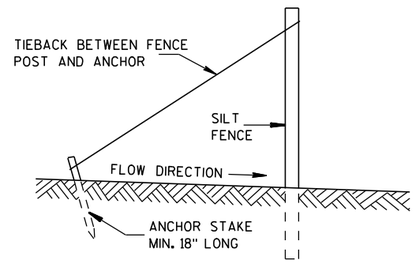


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

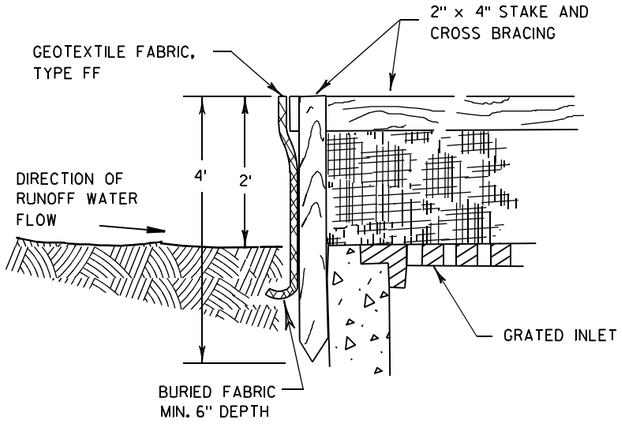
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

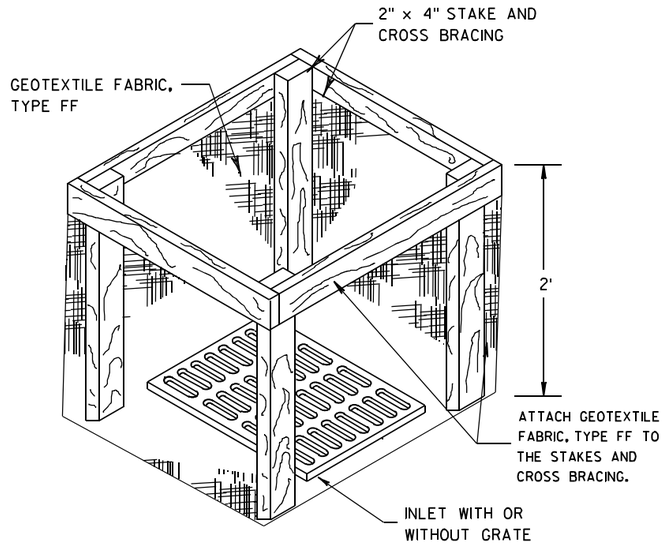
6

S.D.D. 8 E 9-6

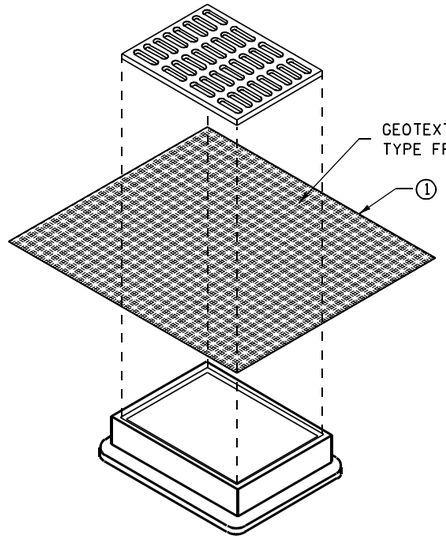
6

S.D.D. 8 E 9-6



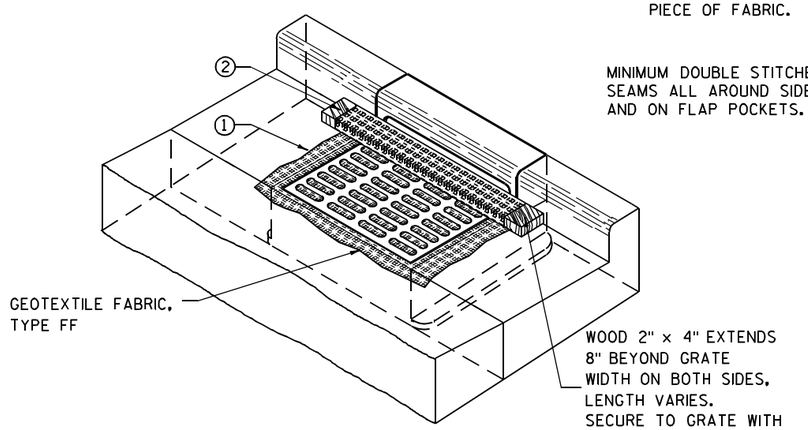


INLET PROTECTION, TYPE A

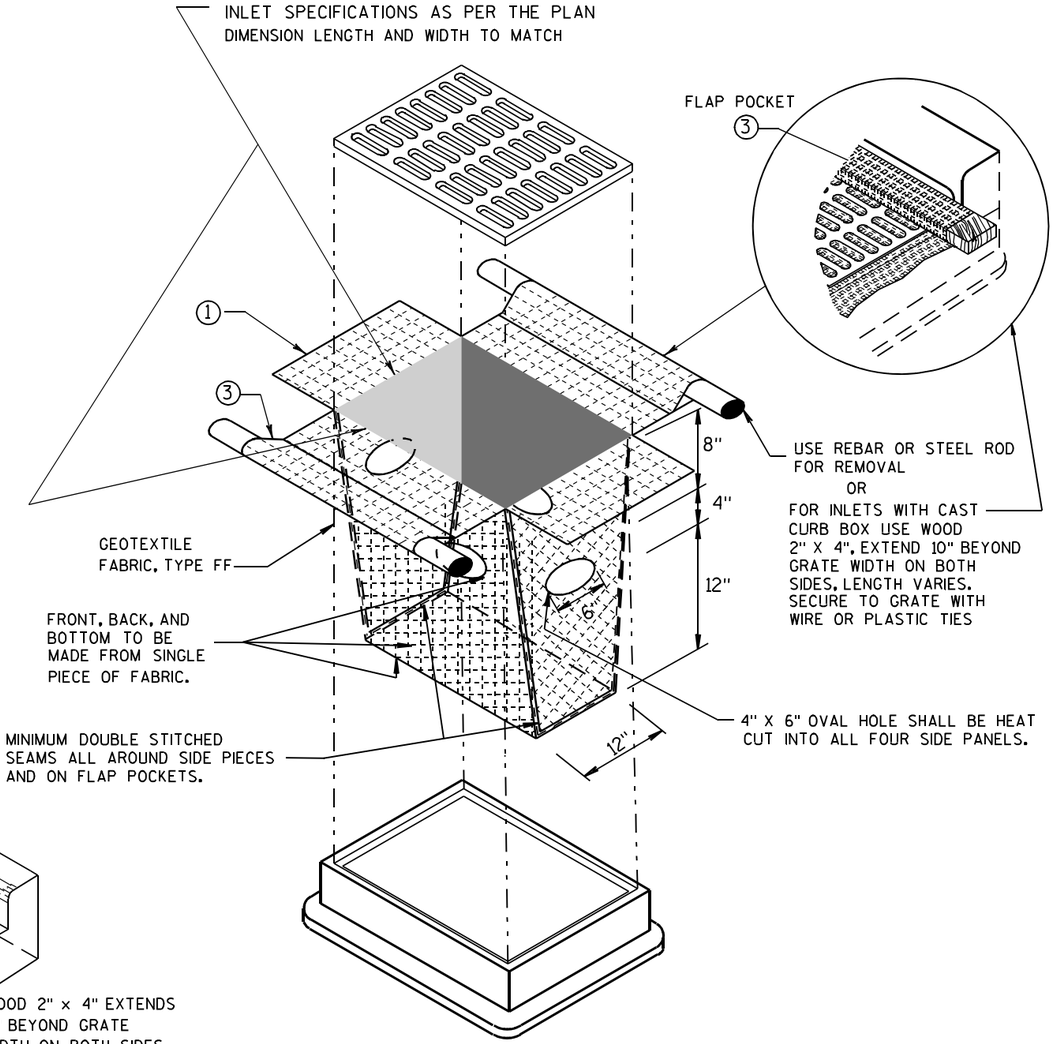


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 8 E 10-2

METAL APRON ENDWALLS

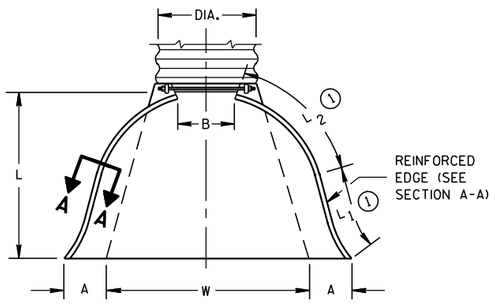
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

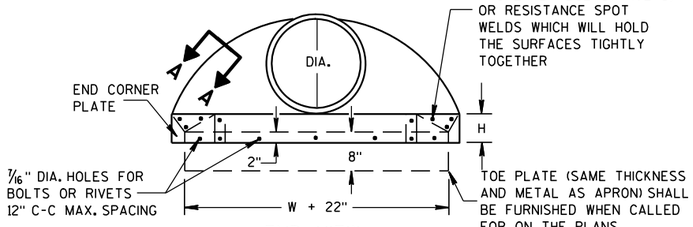
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

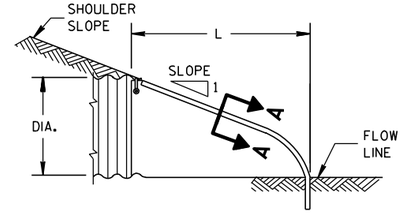
* MINIMUM
** MAXIMUM



PLAN VIEW

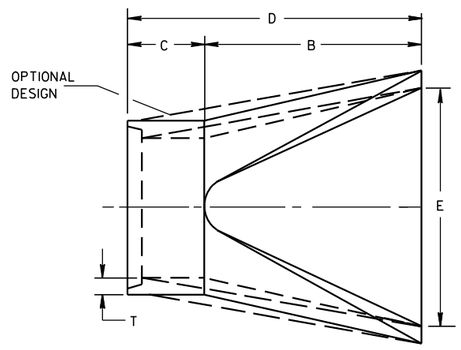


END VIEW

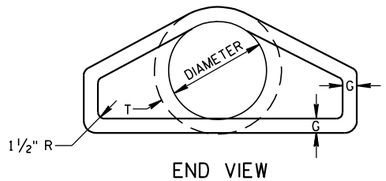


SIDE ELEVATION

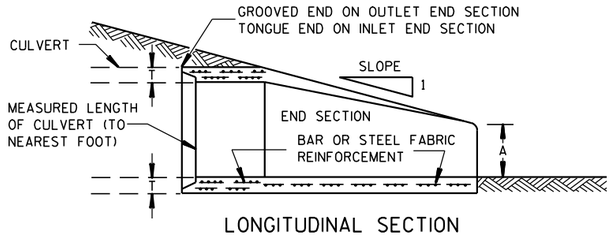
METAL ENDWALLS



PLAN

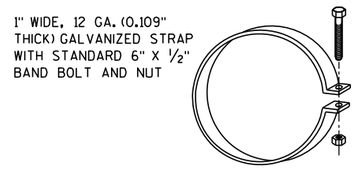


END VIEW



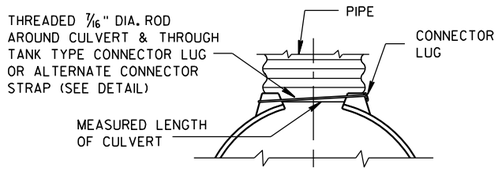
LONGITUDINAL SECTION

CONCRETE ENDWALLS

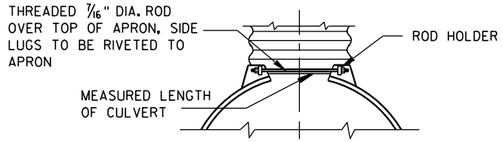


ALTERNATE FOR TYPE 1 CONNECTION

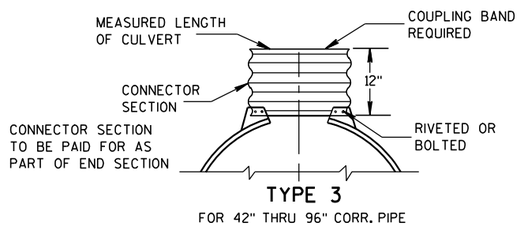
END SECTION CONNECTOR STRAP



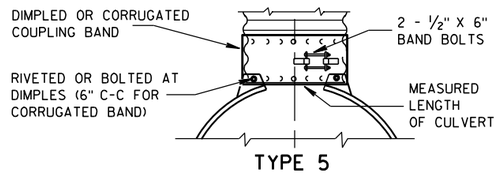
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

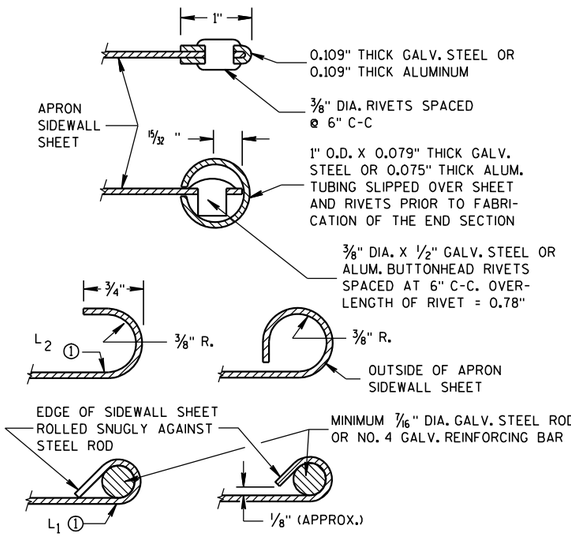
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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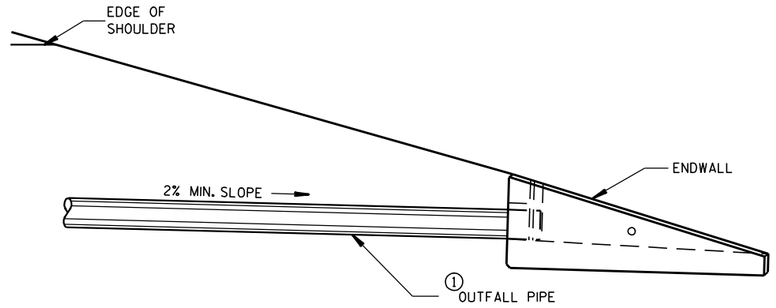
S.D.D. 8 F 1-11

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

**APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION DETAIL

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

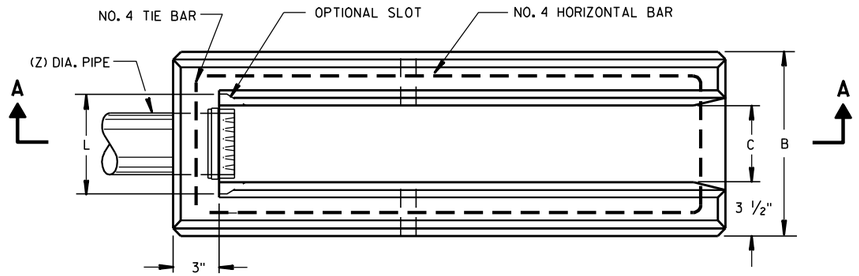
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

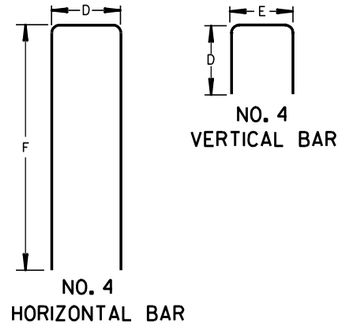
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

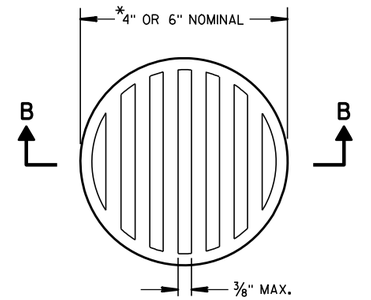
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



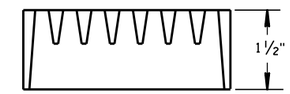
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS



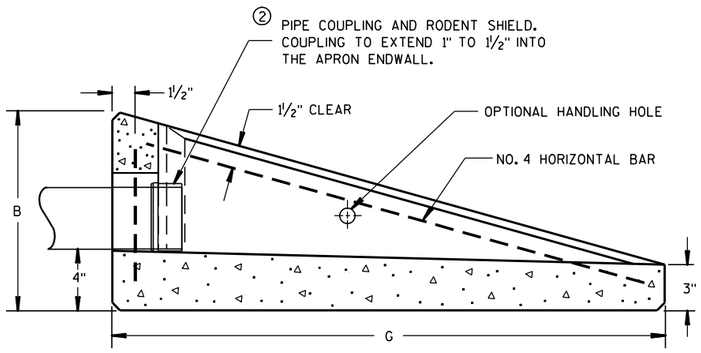
NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



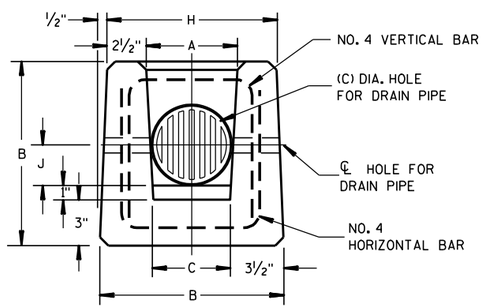
SECTION B-B

② RODENT SHIELD

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



SECTION A-A



END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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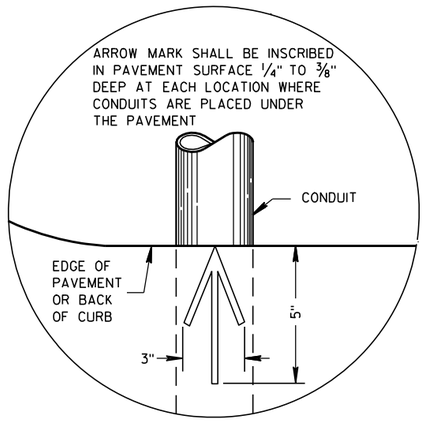
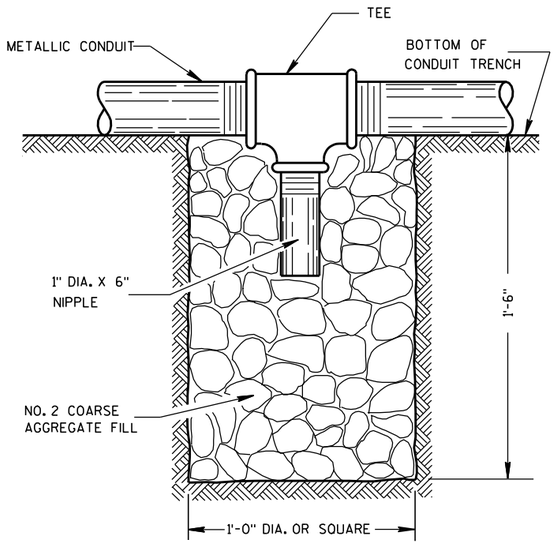
S.D.D. 8 F 6-4



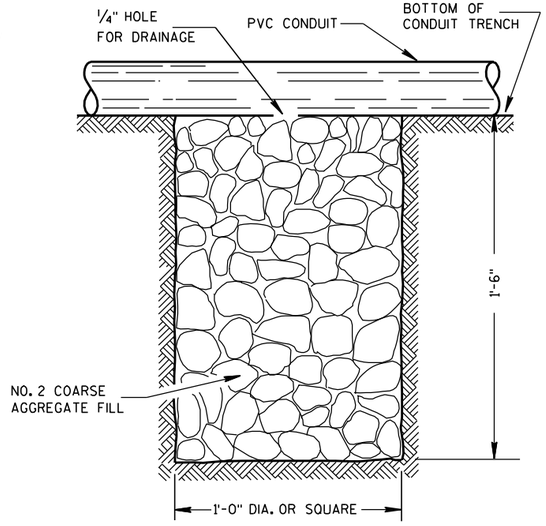
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

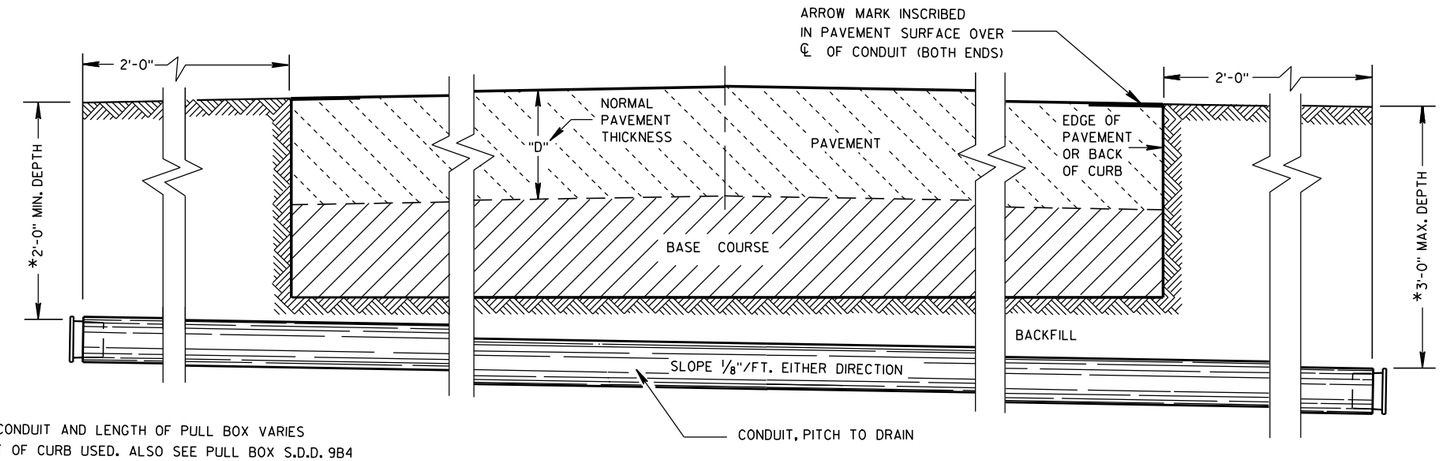
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI

FHWA

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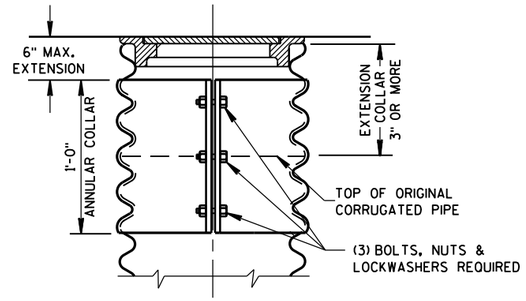
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

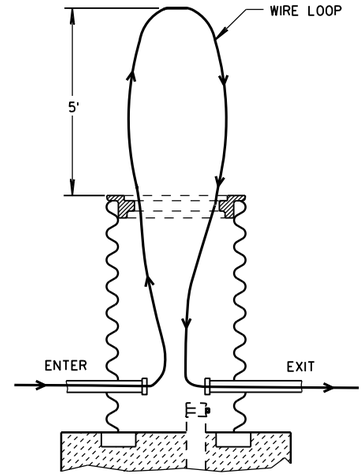
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

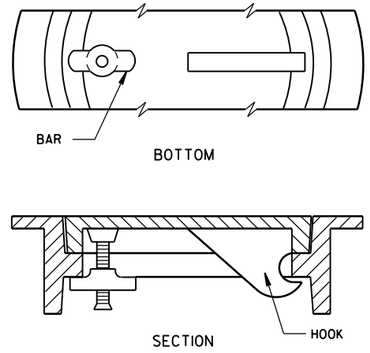
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

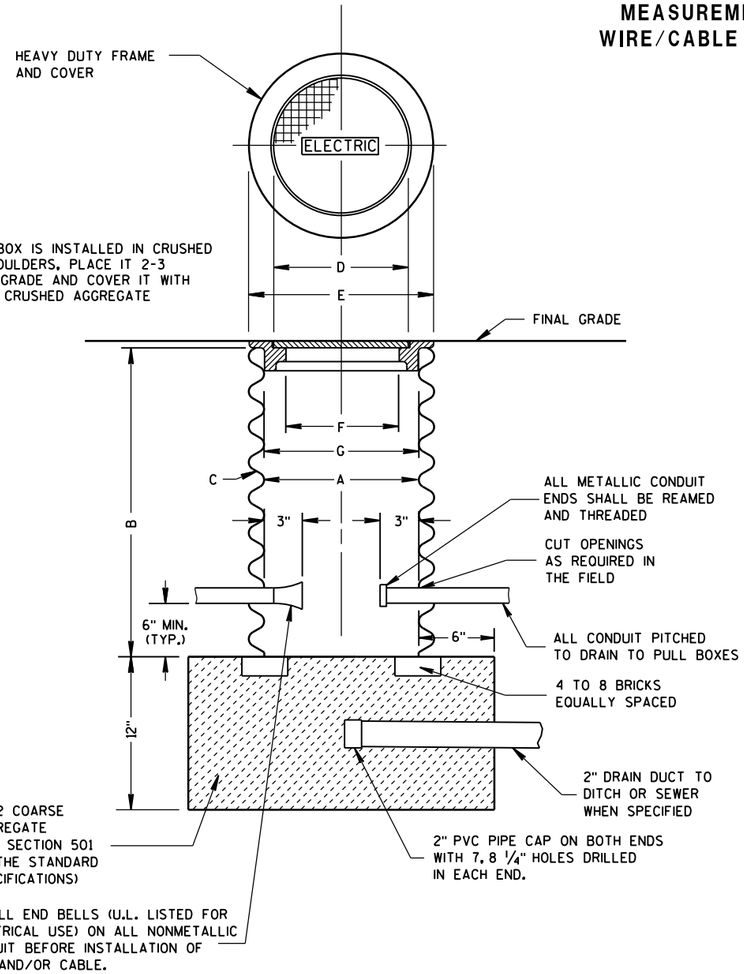


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

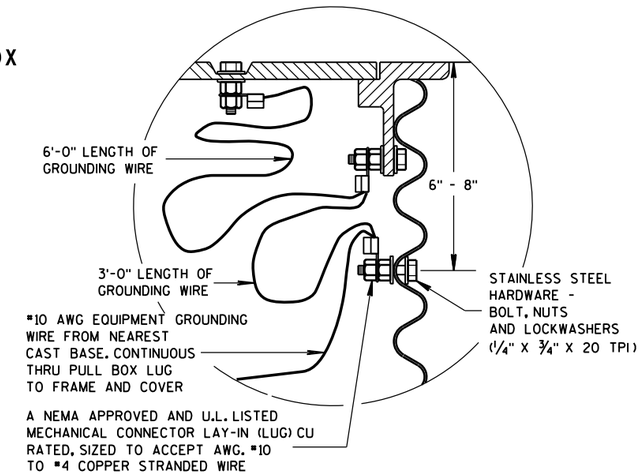


ALTERNATE COVER (LOCKING)

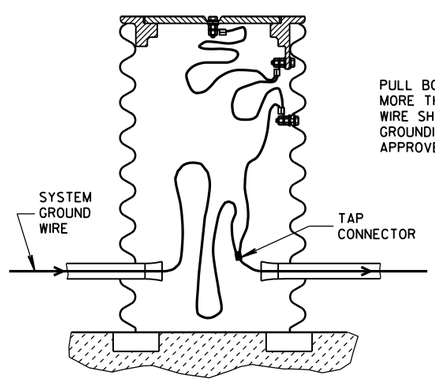
TIGHTENING BAR TYPE



PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-7-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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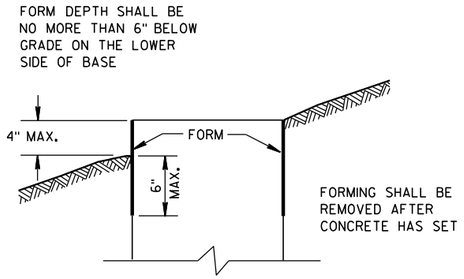
S.D.D. 9 B 4-10



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

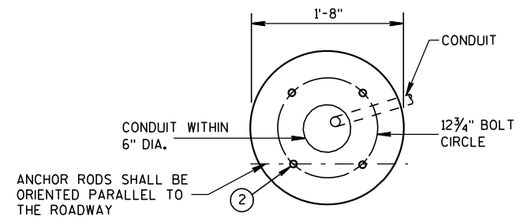
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

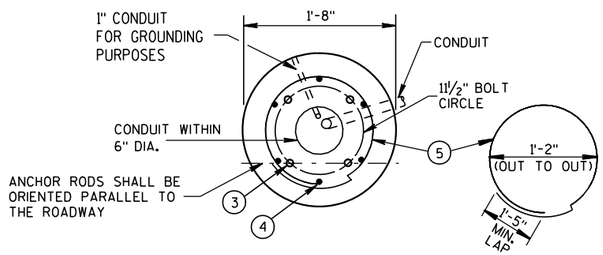
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

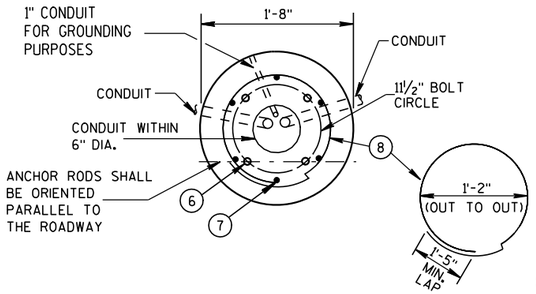
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



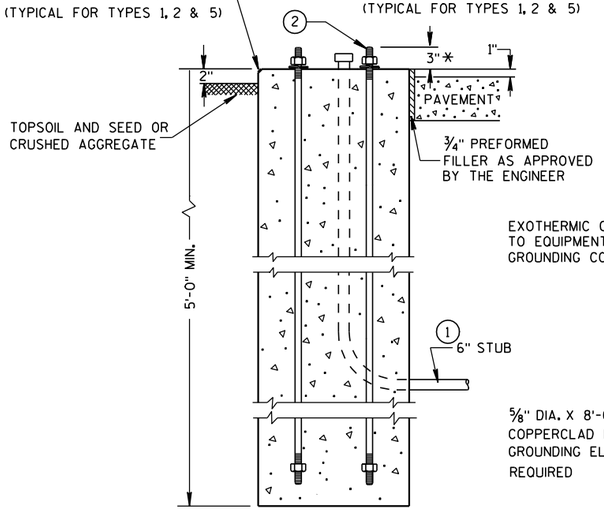




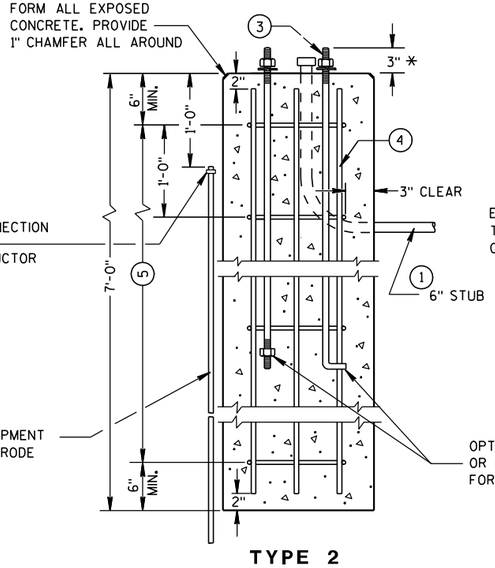
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2 & 5)

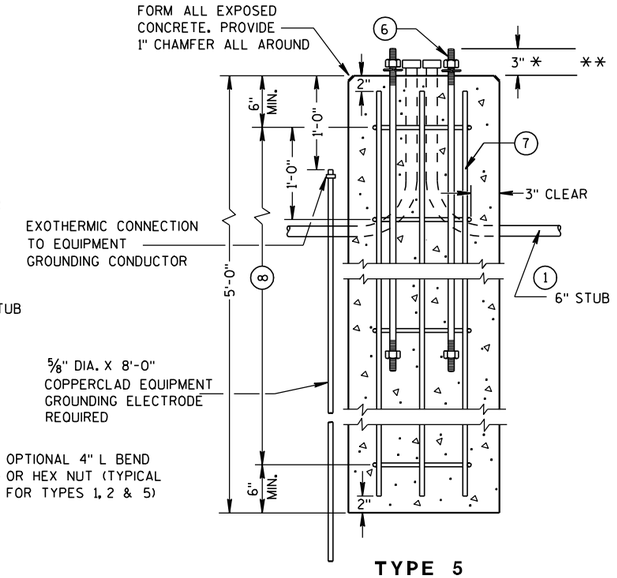
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2 & 5)



TYPE 1



TYPE 2



TYPE 5

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10 — DATE
/S/ Joanna L. Rush — STATE ELECTRICAL ENGI
78
HWYS
FHWA

6

S.D.D. 9 C 2-6

6

S.D.D. 9 C 2-6

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

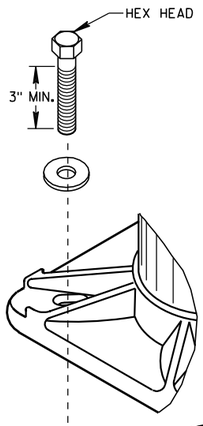
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

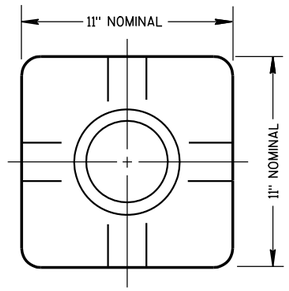
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

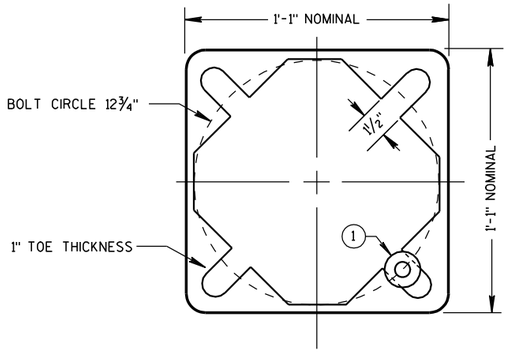
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

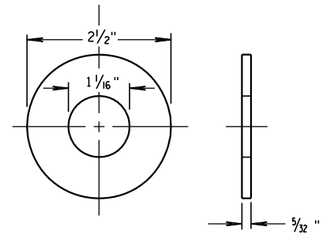




TOP VIEW
(PEDESTAL BASE)

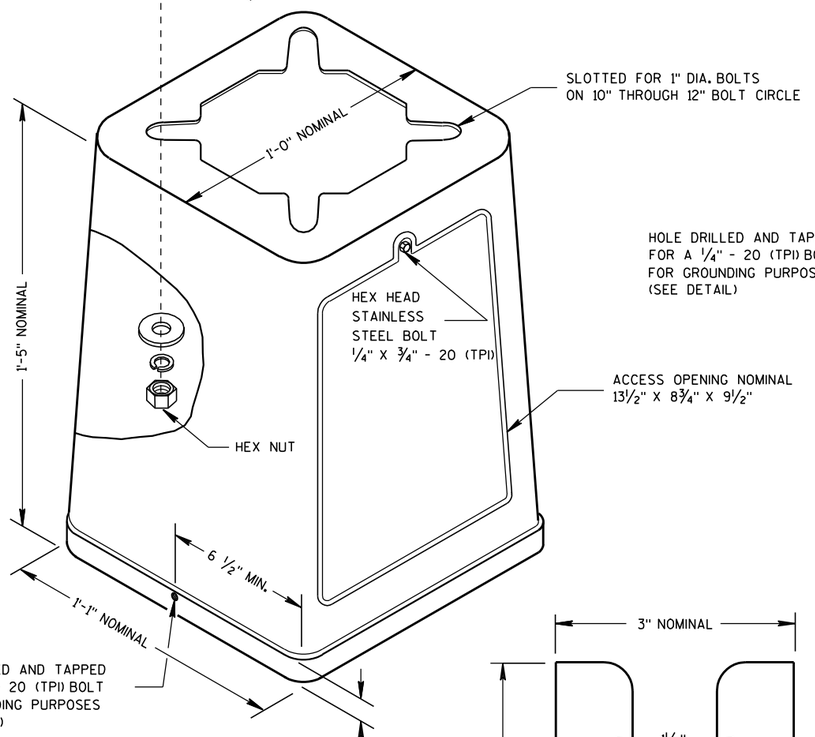


BOTTOM VIEW
(PEDESTAL BASE)

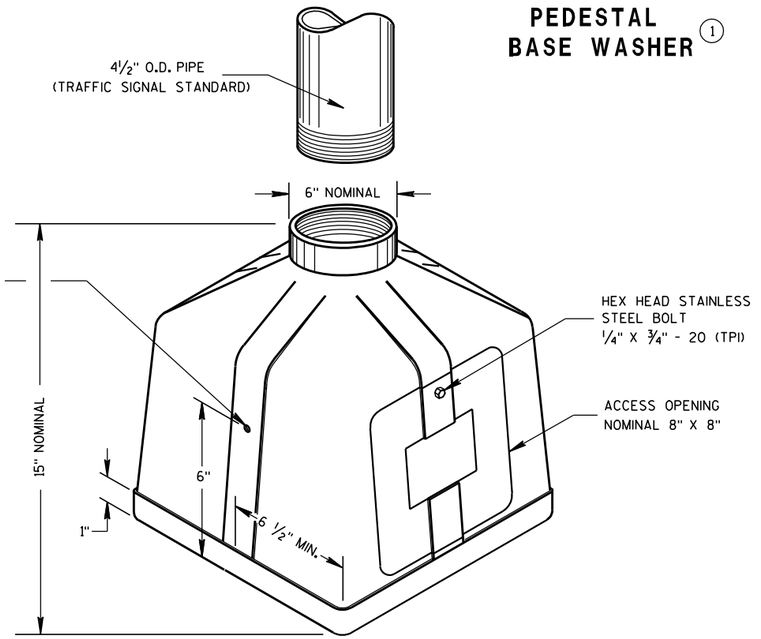


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

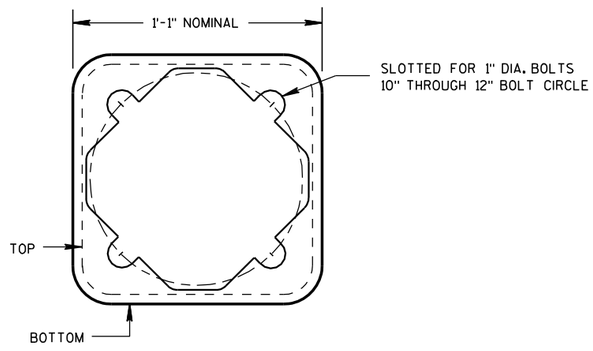


ISOMETRIC VIEW

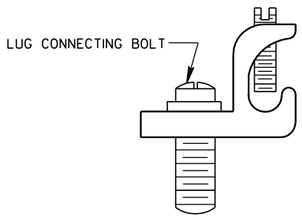


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

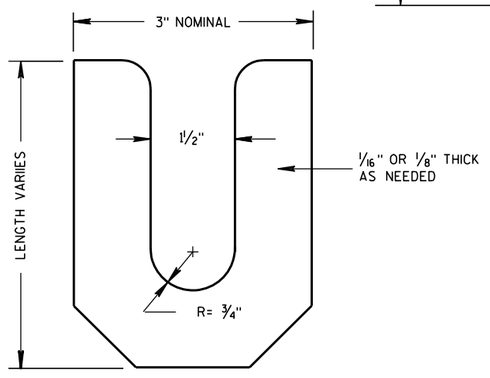


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/27/09 — DATE
/S/ Joanna L. Rich — STATE ELECTRICAL ENGI
79
HWYS
FHWA

6

S.D.D. 9 C 3-3

6

S.D.D. 9 C 3-3

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.

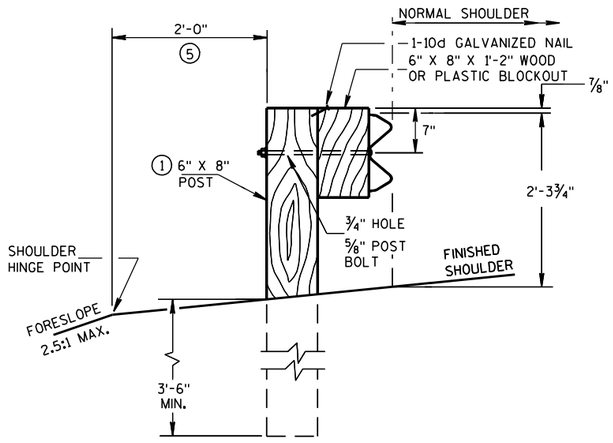
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(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).

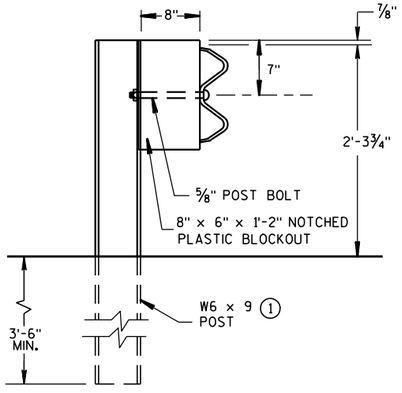
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED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

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

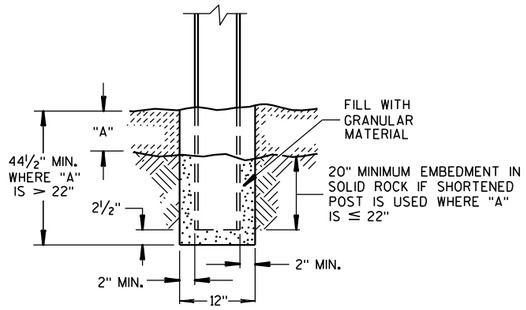
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



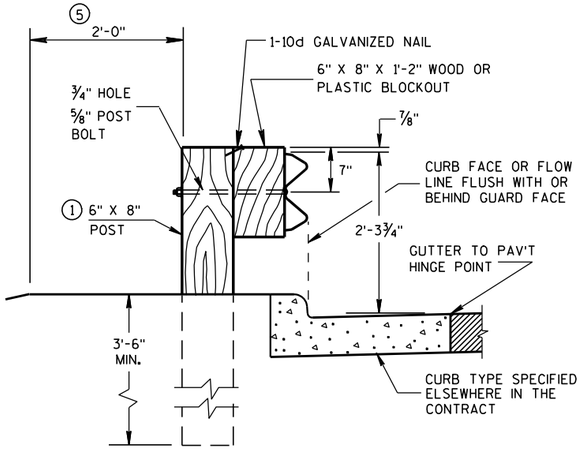
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



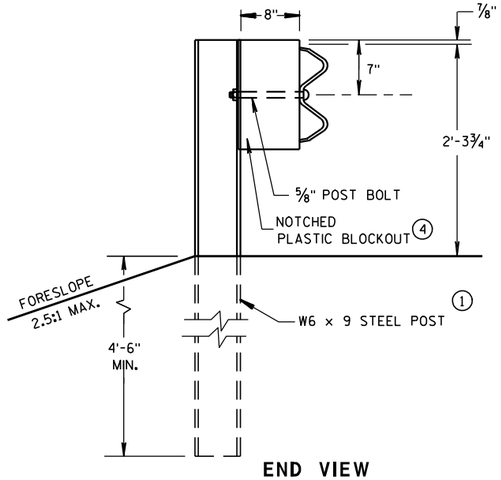
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



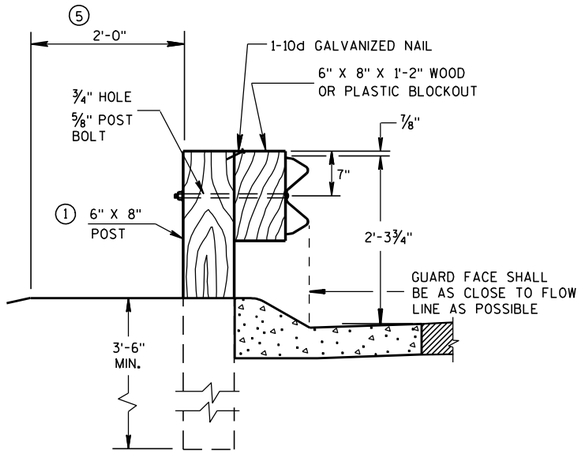
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



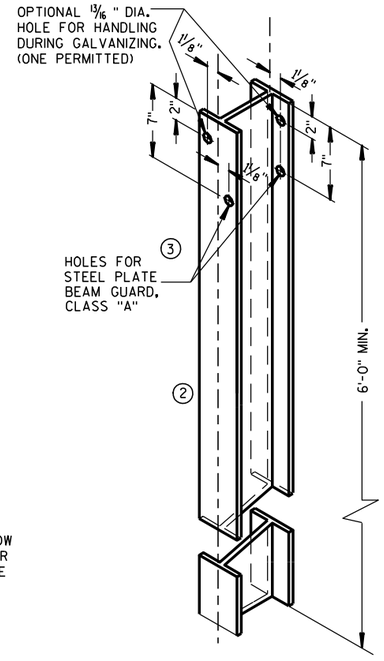
END VIEW
LOCATED ALONG A CURBED ROADWAY



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

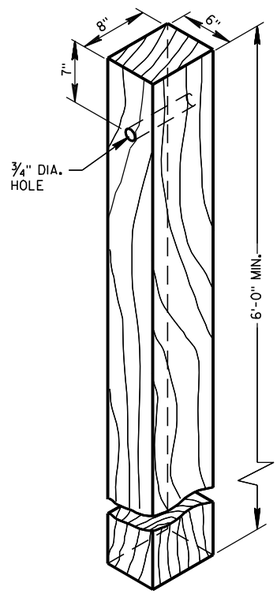


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

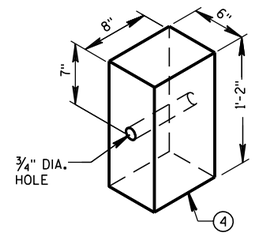


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

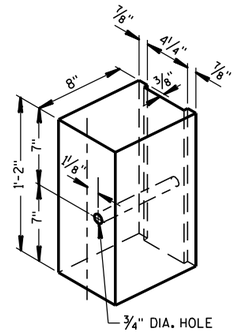
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



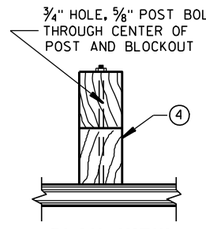
WOOD POST
(6"X8") NOMINAL



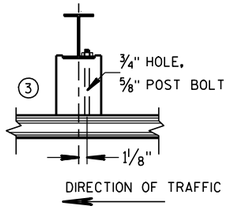
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



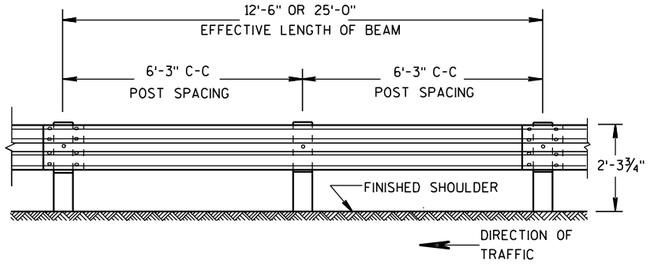
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

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

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

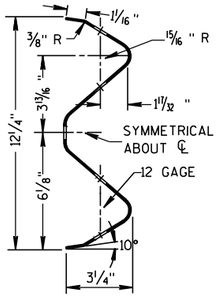
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7a

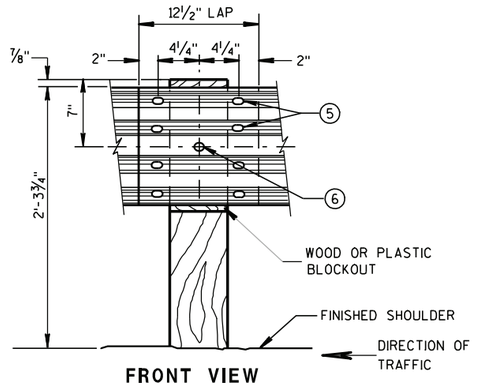


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

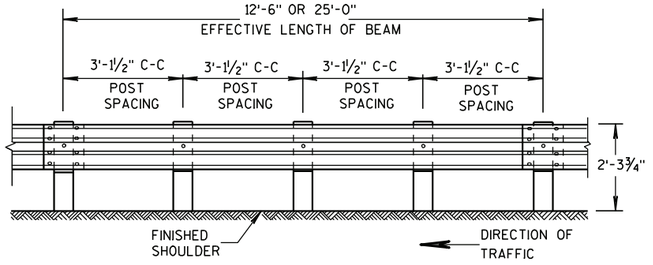


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

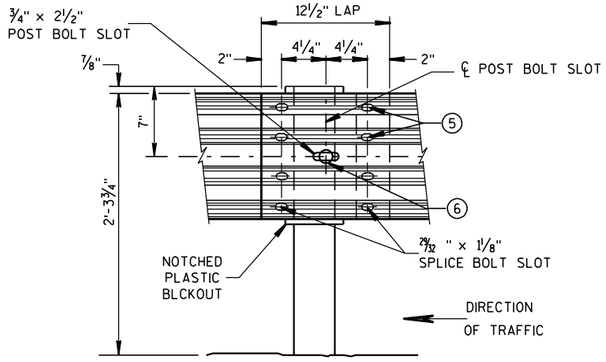
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

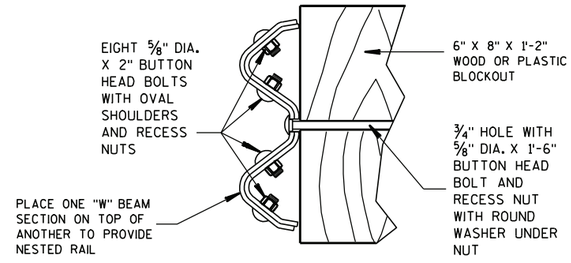
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

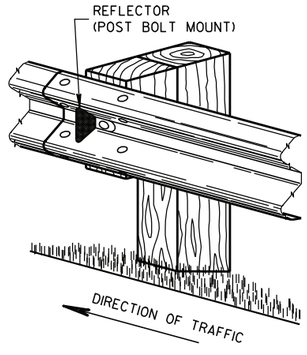


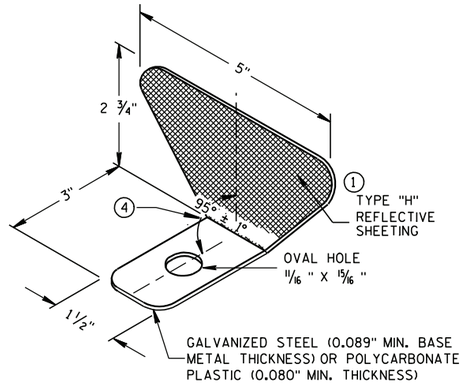
NESTED W BEAM (NW)

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

REFLECTOR SPACING (2)

	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 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	



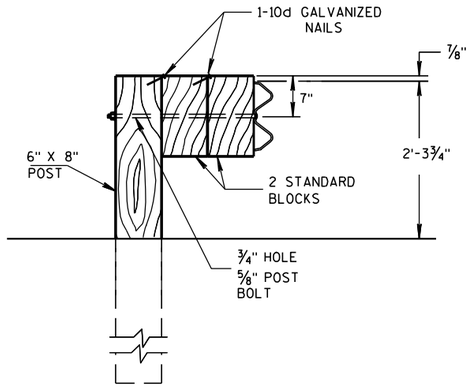


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

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

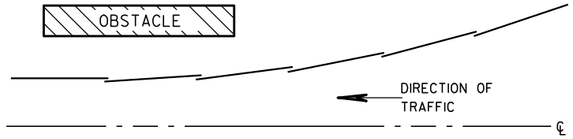
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6
S.D.D. 14 B 15-7b

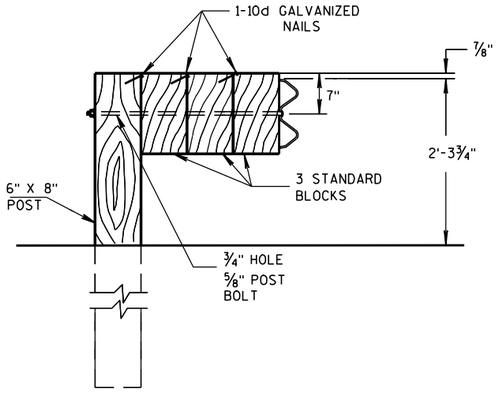


DETAIL FOR DOUBLE BLOCKS

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

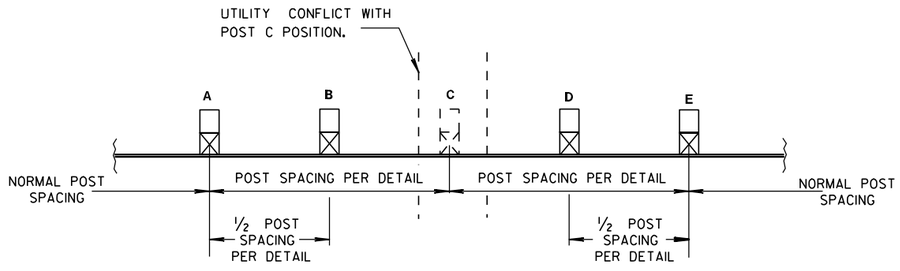


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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.

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

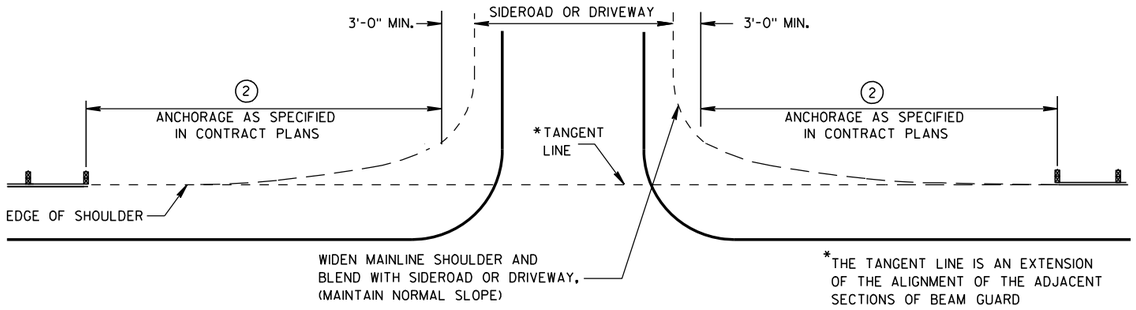
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

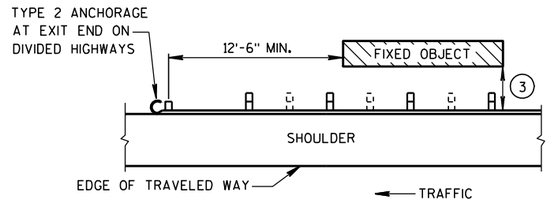
5/23/11	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

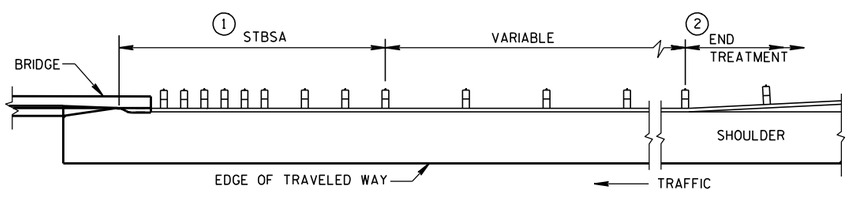
6
S.D.D. 14 B 15-7c



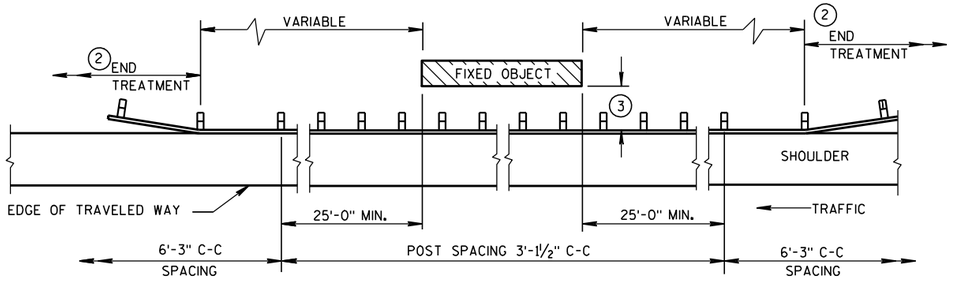
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

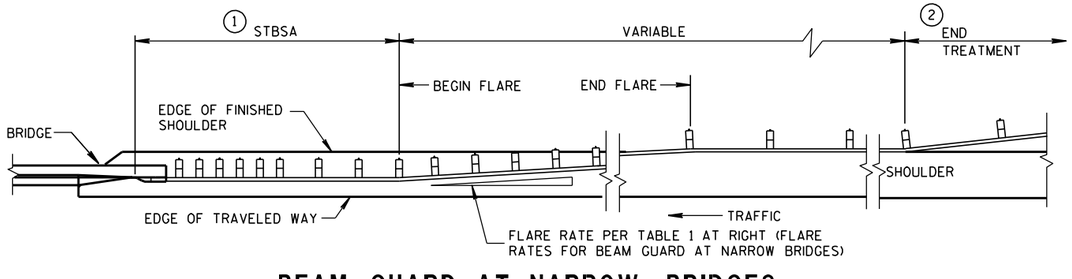


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES

(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

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

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"

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

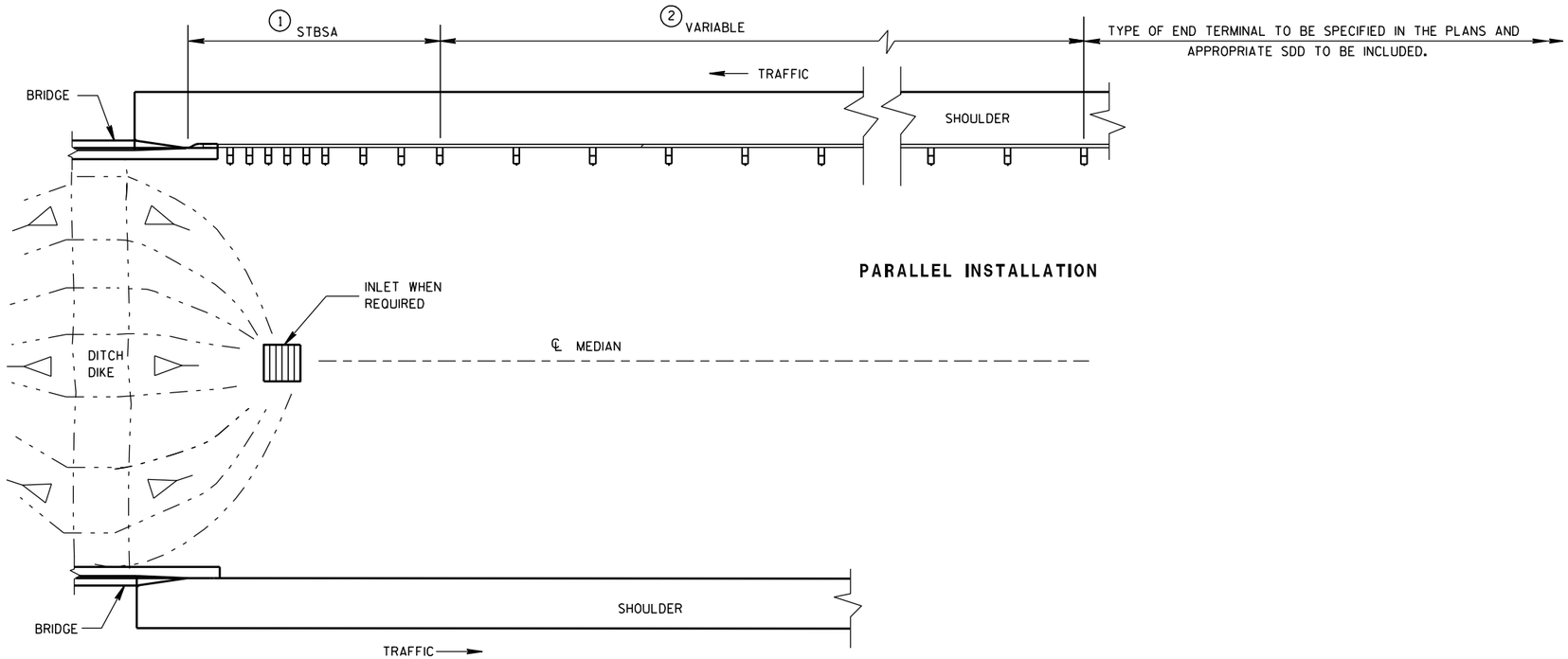
6

S.D.D. 14 B 18-6a

GENERAL NOTES

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

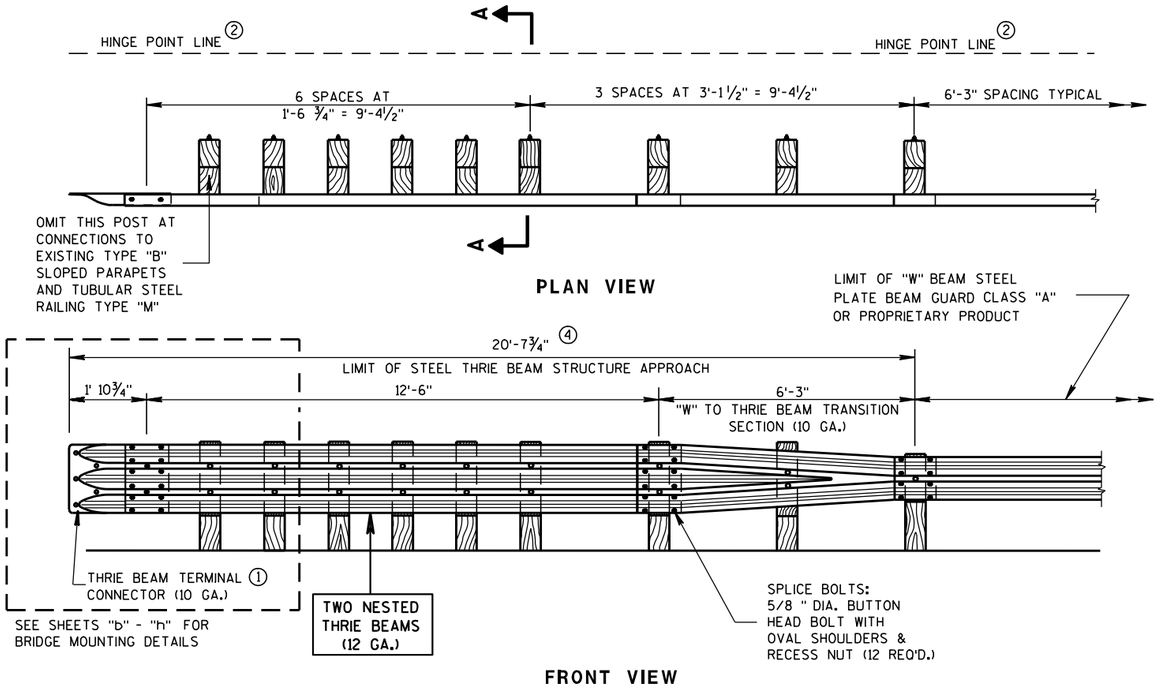
(2) LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.



PARALLEL INSTALLATION

BEAM GUARD AT MEDIAN APPROACH TO BRIDGES

STEEL PLATE BEAM GUARD CLASS "A" AT MEDIAN APPROACH TO BRIDGES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8-21-07 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



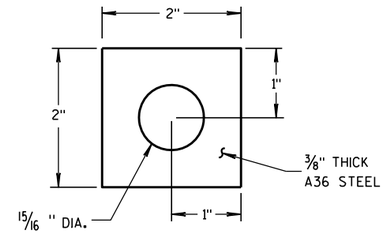


PLATE WASHER DETAIL

GENERAL NOTES

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

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

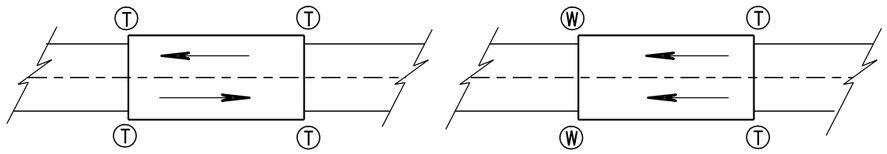
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

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

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

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



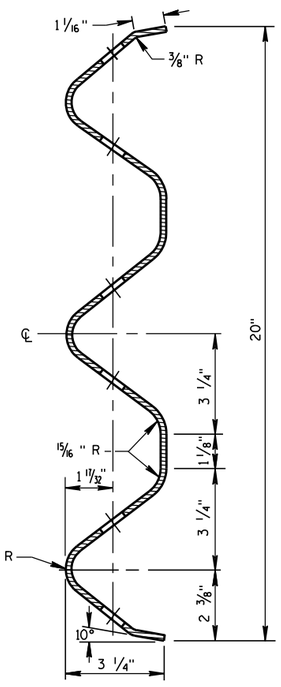
TWO WAY TRAFFIC

ONE WAY TRAFFIC

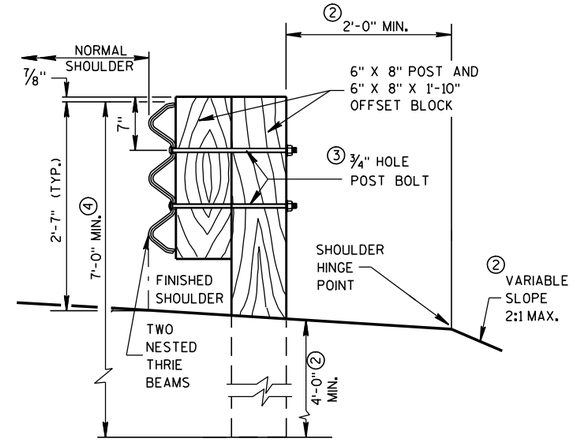
(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

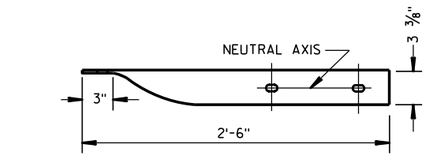
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

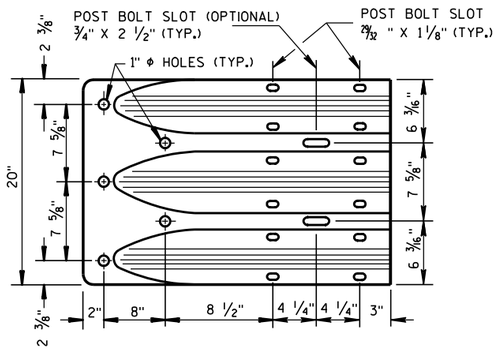


SECTION THRU THRIE BEAM RAIL ELEMENT

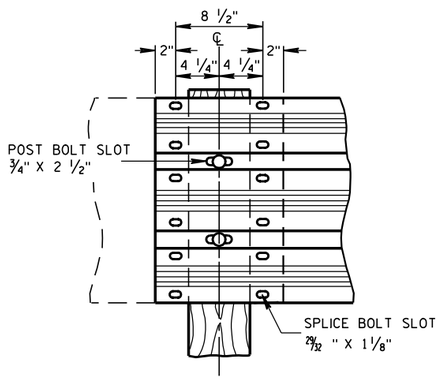


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

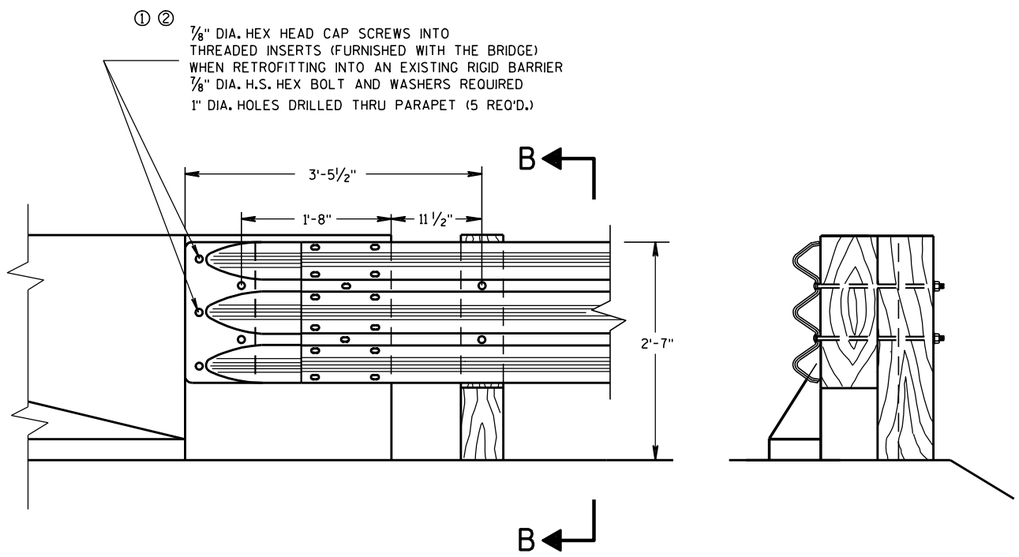
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

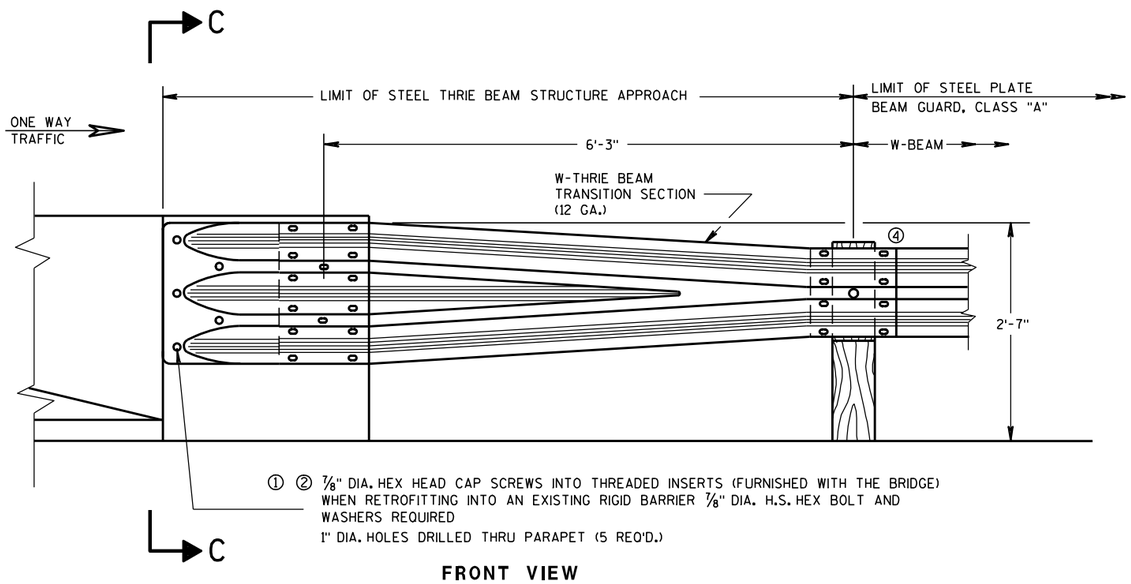
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

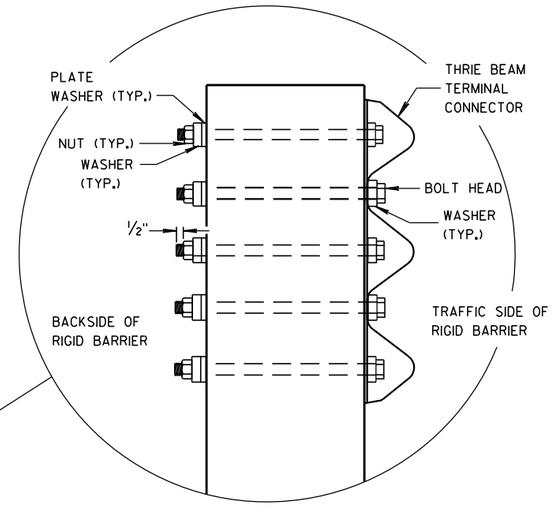
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

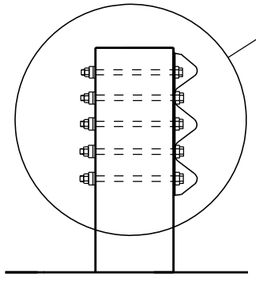
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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





SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

GENERAL NOTES

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

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① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

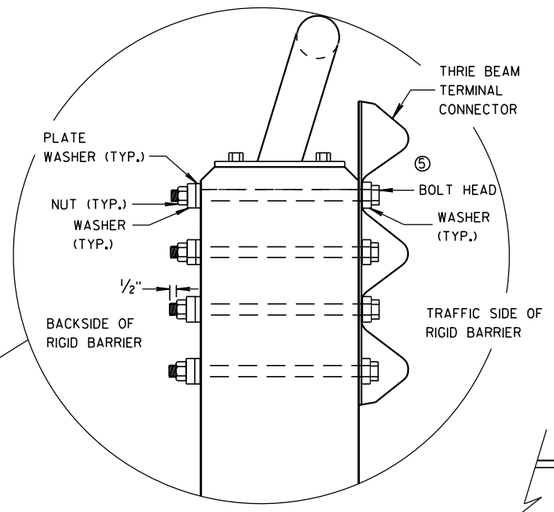
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

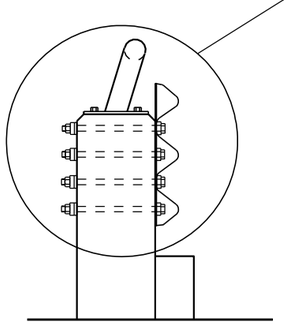
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

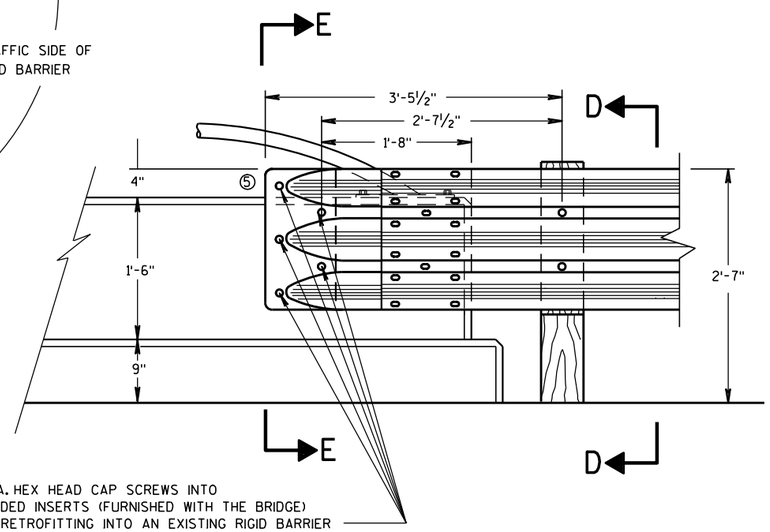
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

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





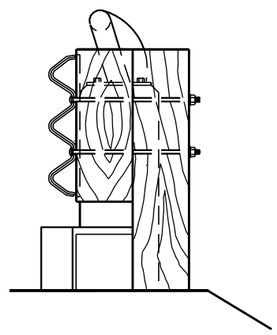
SECTION E-E



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

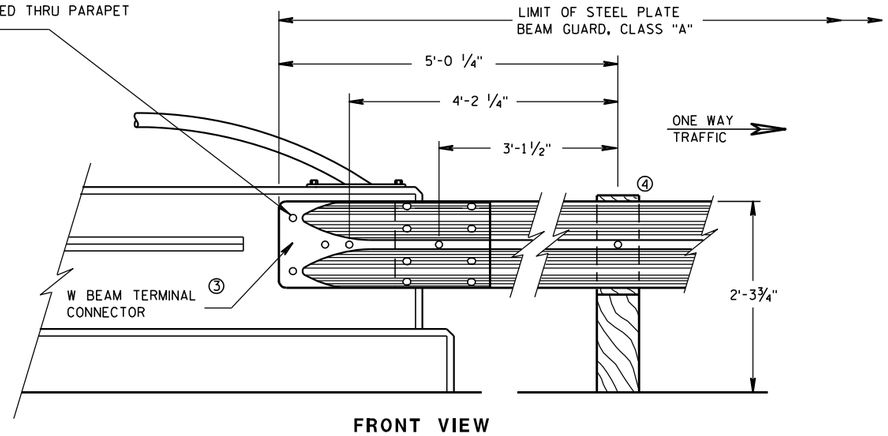


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zaa
ROADWAY STANDARDS [87 ENT
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	REFLECTIVE SHEETING TYPE H: 18" X 18"
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

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

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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.

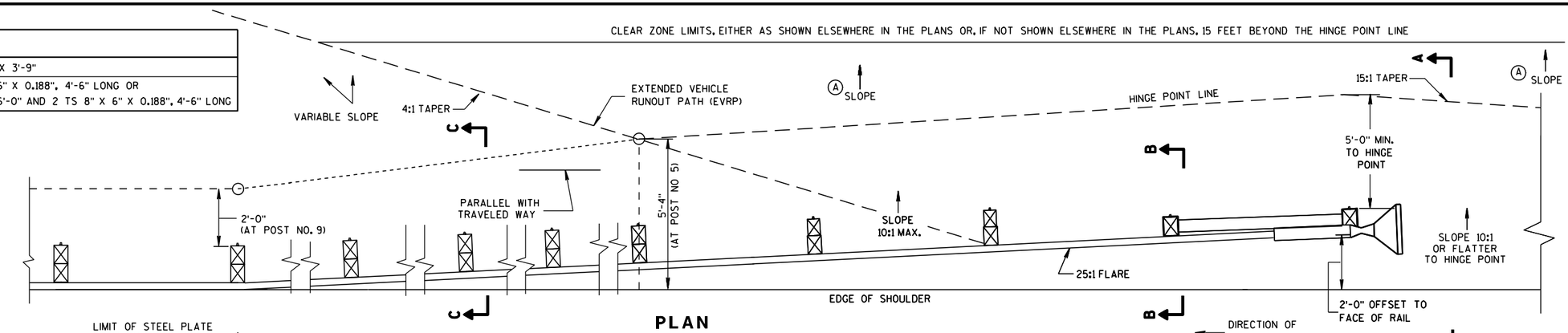
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

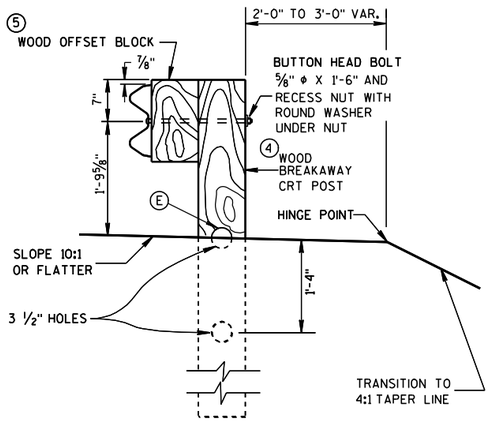
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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.

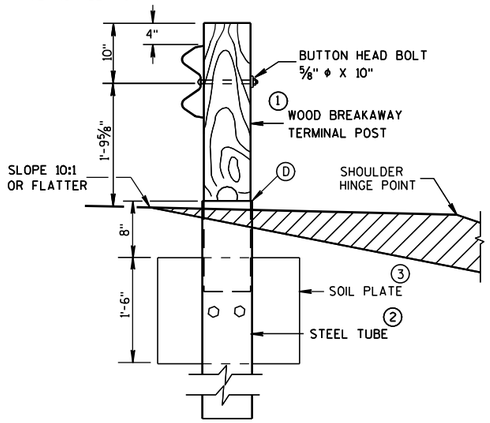
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE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





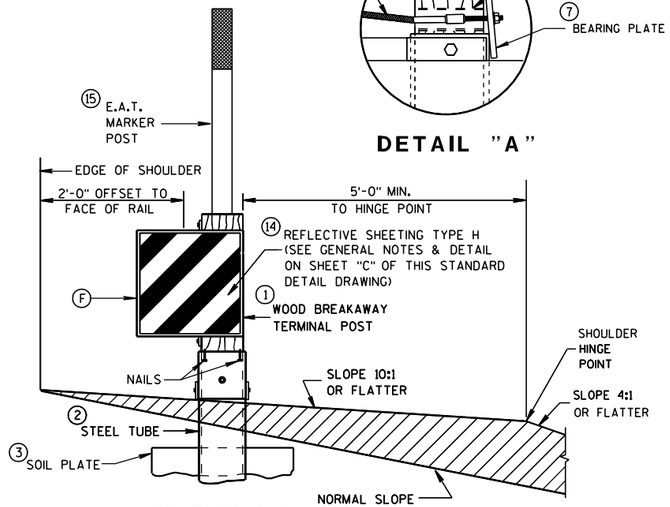
SECTION C-C

TYPICAL AT POST NOS. 6, 8



SECTION B-B

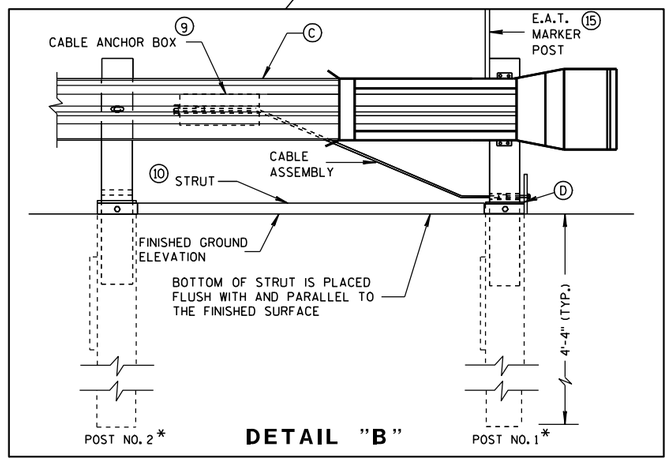
TYPICAL AT POST NO. 2*



DETAIL "A"

SECTION A-A

TYPICAL AT POST NO. 1*

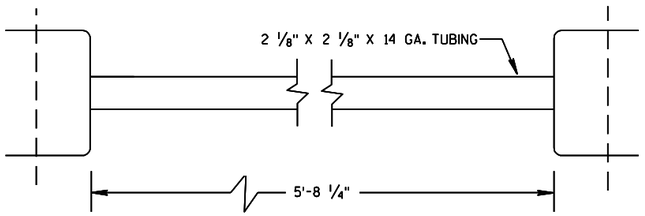


DETAIL "B"

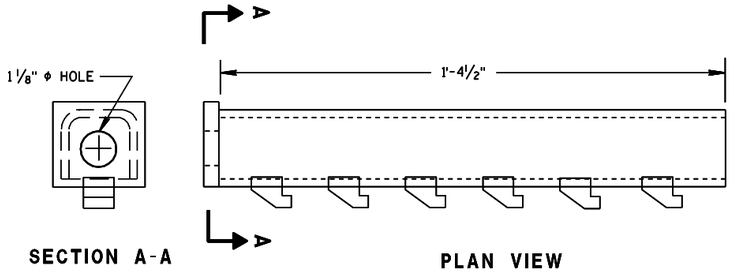
STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

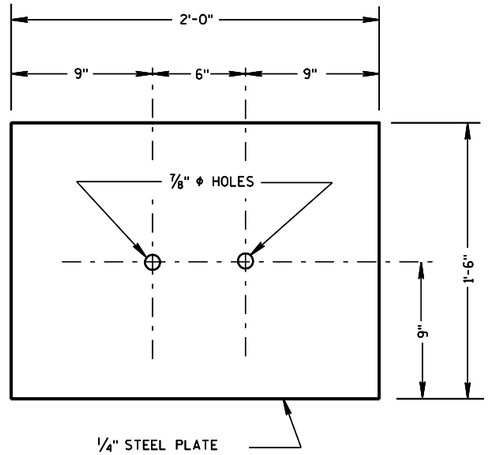
6
S.D.D. 14 B 24-7a



⑩ STRUT DETAIL (SKT-350)

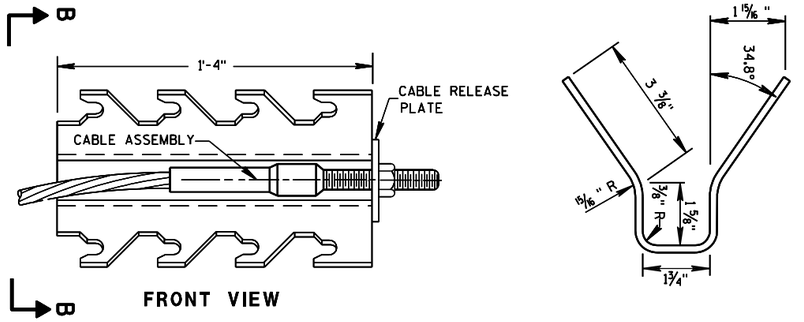


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



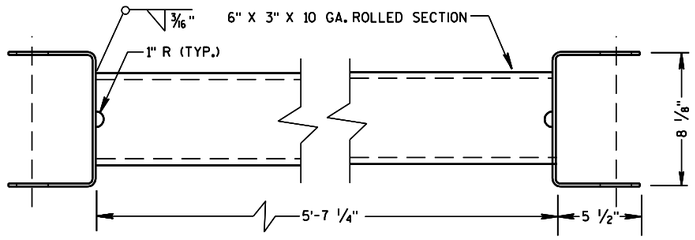
③ SOIL PLATE

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



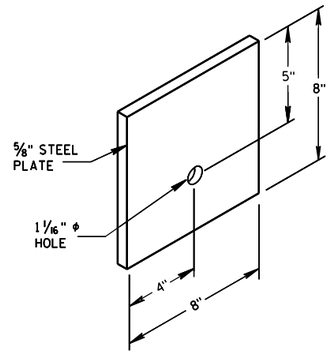
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



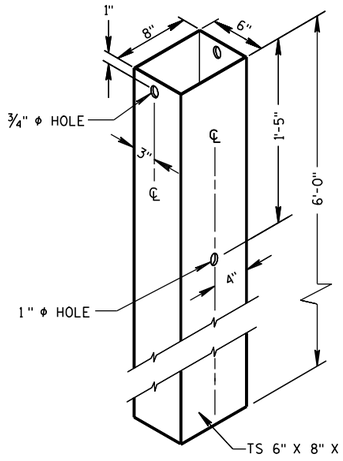
⑦ STEEL BEARING PLATE

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

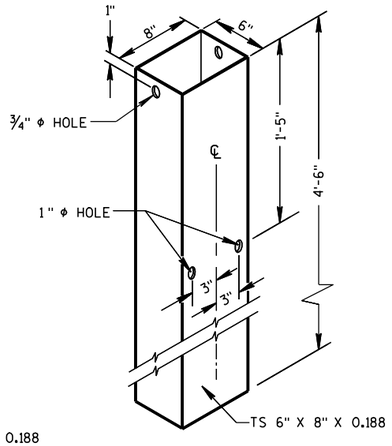
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

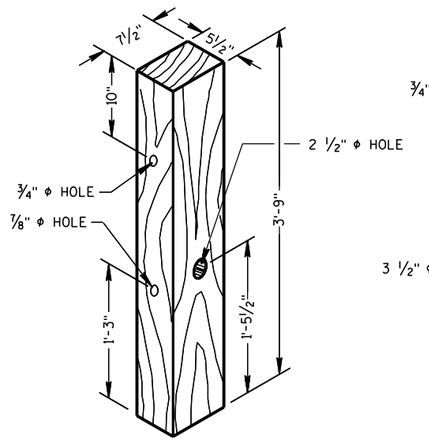
6
S.D.D. 14 B 24-7b



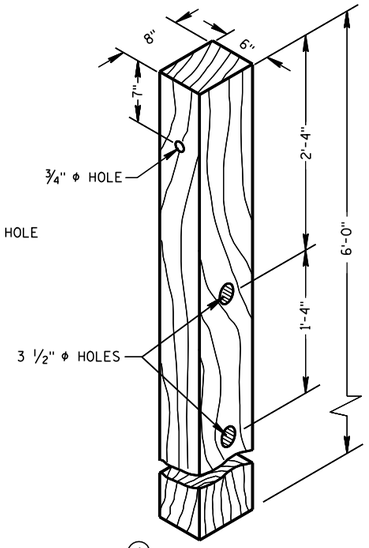
② 72" STEEL TUBE
(POSTS NO. 1-4



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

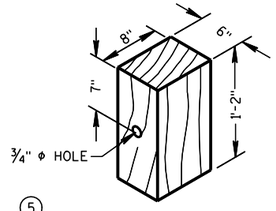
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

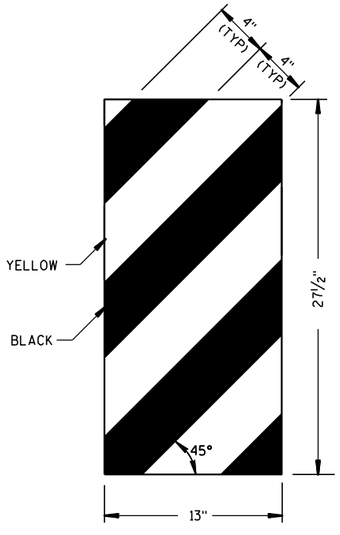
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

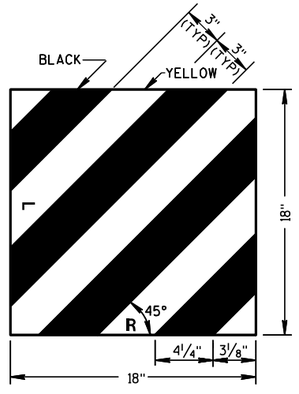
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



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

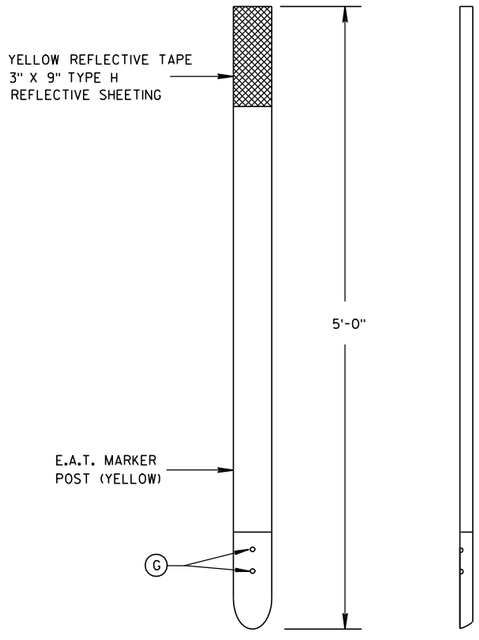


ET-2000 PLUS ONLY

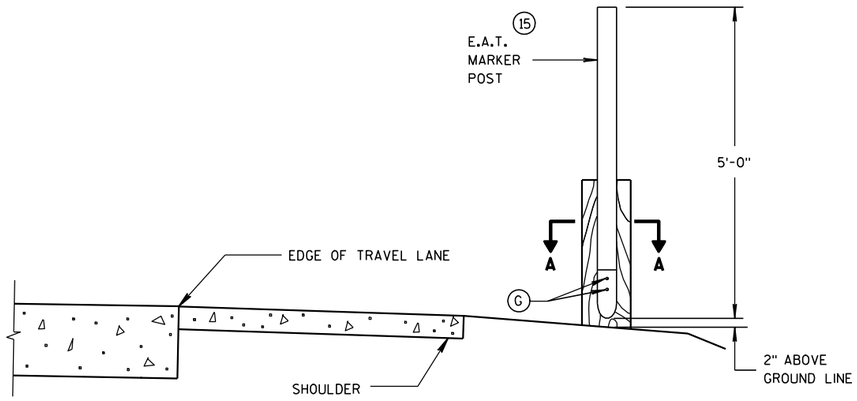


ET-2000 AND SKT-350

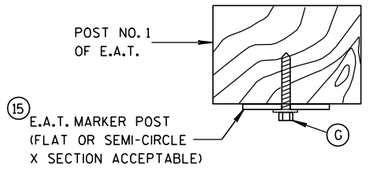
⑭ REFLECTIVE SHEETING DETAILS



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

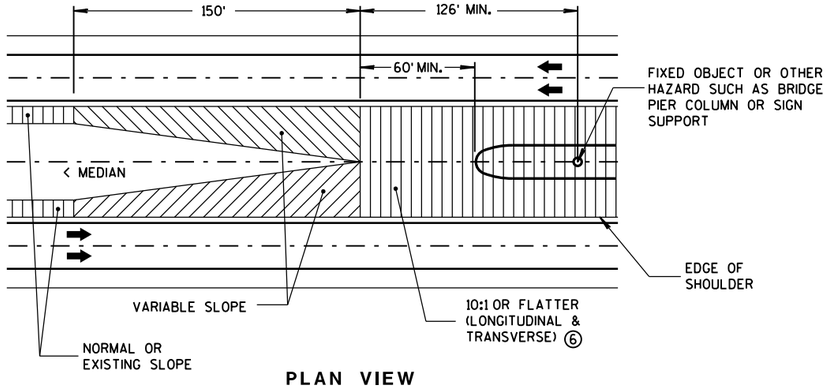
APPROVED
4-12-10
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
90
FHWA

6

S.D.D. 14 B 24-7c

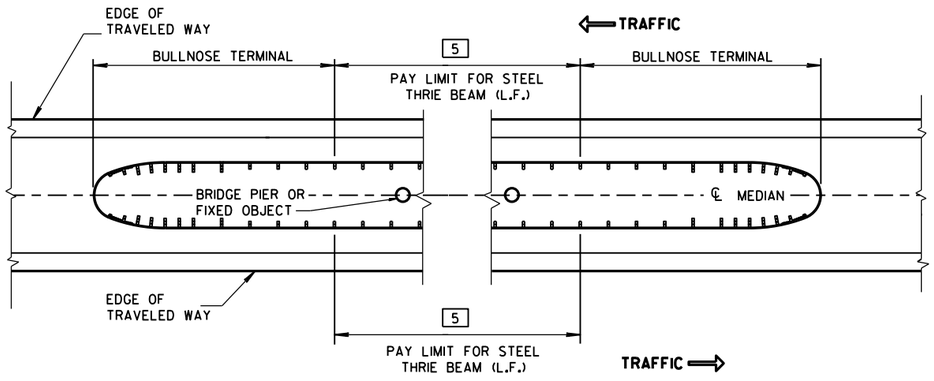
6

S.D.D. 14 B 24-7c

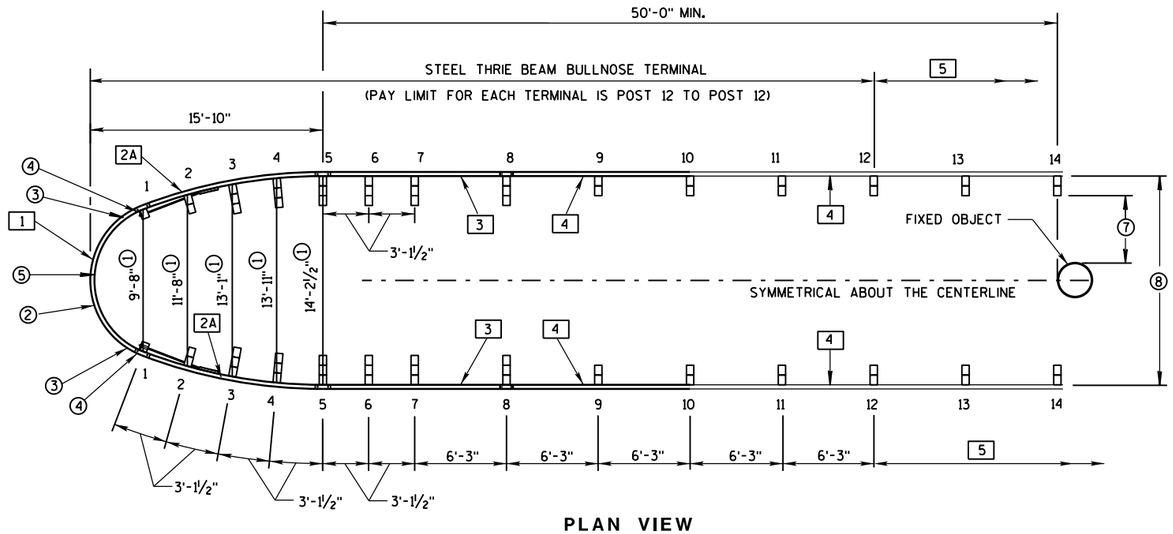


PLAN VIEW

GRADING AT BULLNOSE
(ALL INSTALLATIONS)

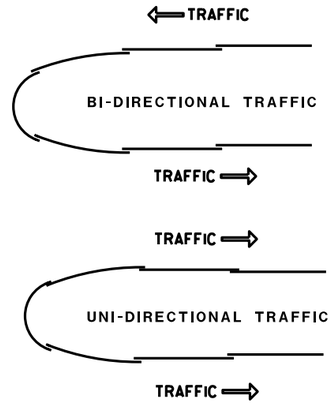


MEDIAN HAZARD PROTECTION PAY LIMITS



PLAN VIEW

TYPICAL BULLNOSE LAYOUT



LAPPING DETAIL
(ALL INSTALLATIONS)

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

PUNCHING, DRILLING, CUTTING OR WELDING IS NOT PERMITTED ON ANY GALVANIZED THRIE BEAM ACCESSORY OR TERMINAL ACCESSORY.

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

THE USE OF STEEL POSTS ON THE BULLNOSE IS NOT ALLOWED.

BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

ALL THRIE BEAM SHALL BE 12-GAUGE.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A. (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

[4] UNBENT STANDARD THRIE-BEAM RAIL NO.4. (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.

② U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

③ NOSE CABLE W/SWAGGED END BUTTONS.

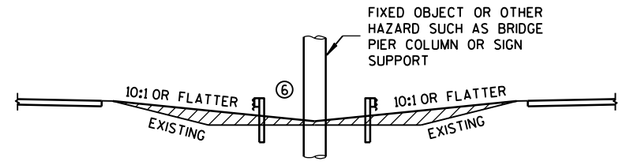
④ NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

⑤ THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

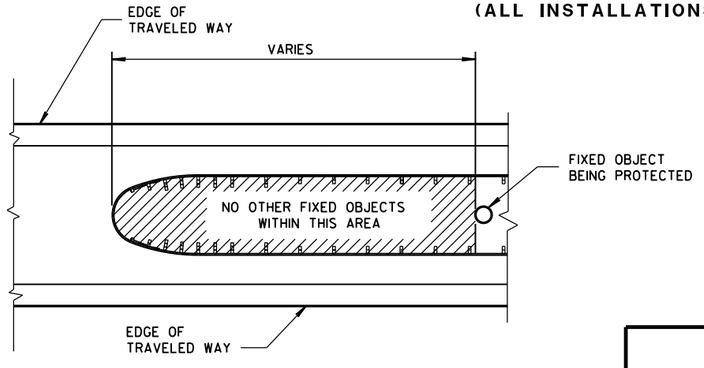
⑥ PROVIDE SUITABLE DRAINAGE WHEN MEDIAN GRADING IMPEDES NORMAL FLOW.

⑦ 2'-6" MINIMUM LATERAL DISTANCE BETWEEN BACK OF POST AND FACE OF FIXED OBJECT.

⑧ MAXIMUM WIDTH OF SYSTEM IS 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



MEDIAN GRADING SECTION
(ALL INSTALLATIONS)



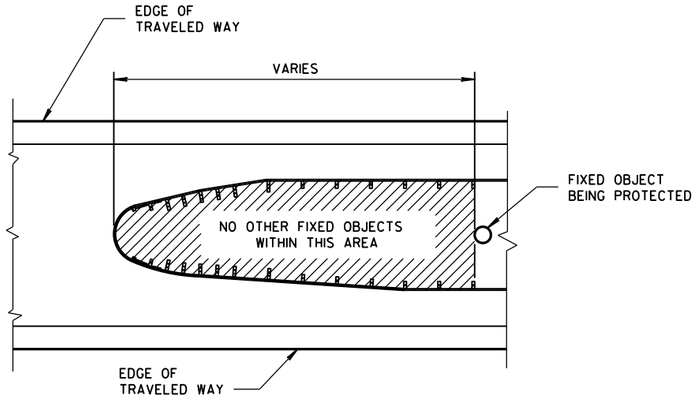
HAZARD FREE AREA INSIDE BULLNOSE

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 26-2a



HAZARD FREE
AREA INSIDE BULLNOSE

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A, (POST 1 TO POST 5)

[2B] SLOTTED THRIE BEAM RAIL NO. 2B, (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

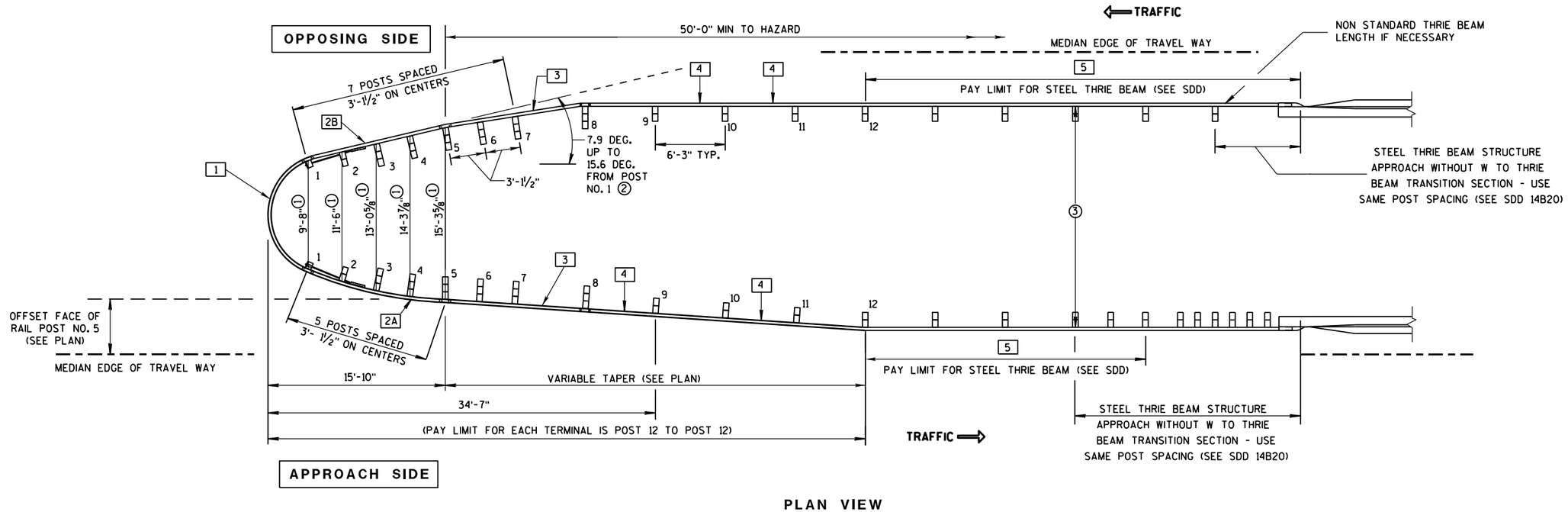
[4] UNBENT STANDARD THRIE-BEAM RAIL NO. 4, (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST.

② TAPER BEGINNING AT POST NO. 1 MUST CONTINUE TO POST NO. 5. PAST POST NO. 5 TAPER MAY END OR BE EXTENDED UP TO 15.6 DEGREES TO FIT VARIABLE MEDIAN WIDTHS. (SEE PLAN)

③ FOR MEDIANS WIDER THAN 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



PLAN VIEW

WIDENED BULLNOSE DESIGN

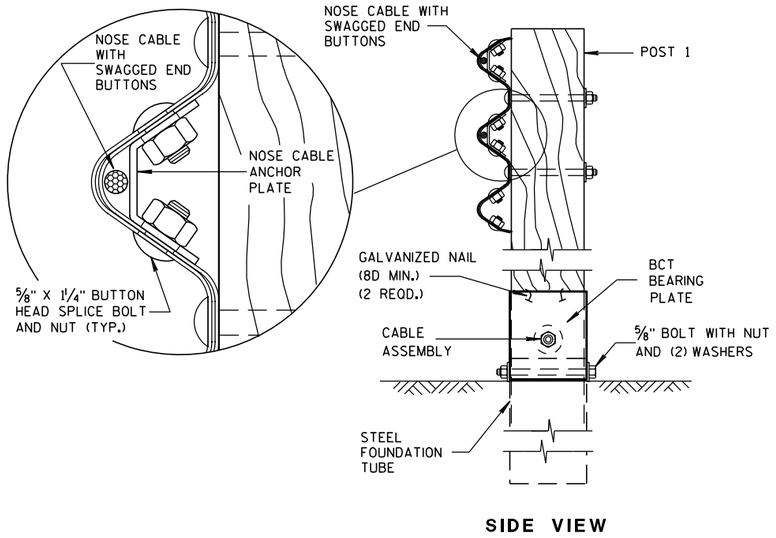
(INSTALLATION AT TWIN BRIDGES WITH BI-DIRECTIONAL TRAFFIC SHOWN)

STEEL THRIE BEAM
BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

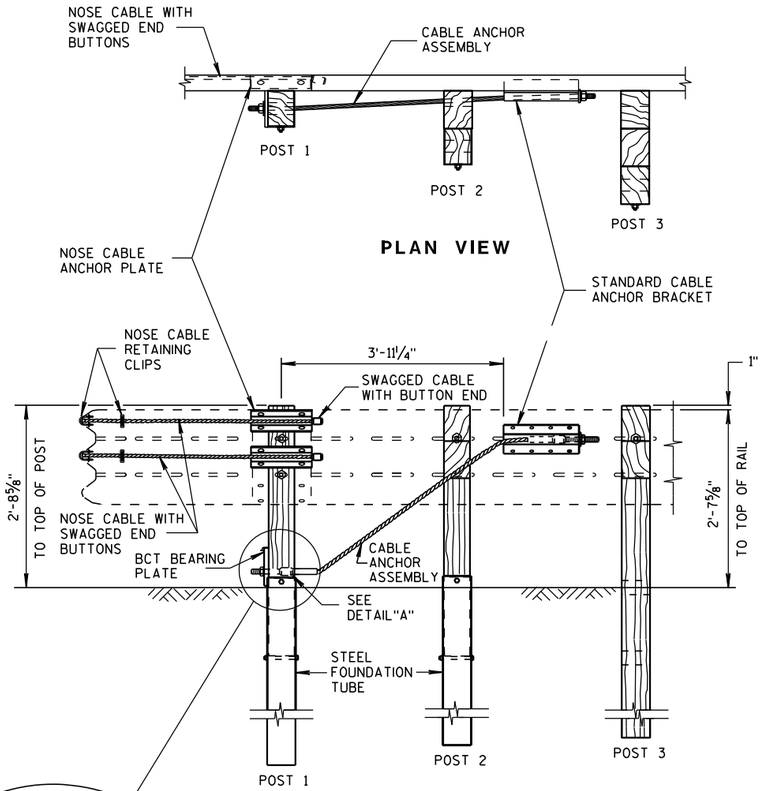
6

S.D.D. 14 B 26-2b



SIDE VIEW

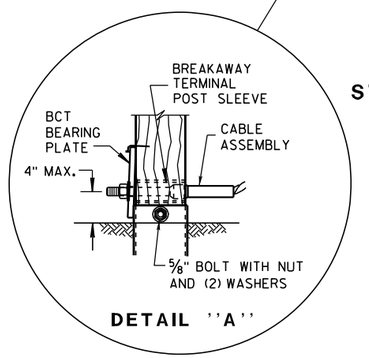
NOSE CABLE ASSEMBLY AT POST NO. 1



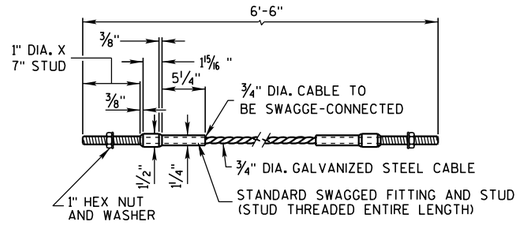
PLAN VIEW

FRONT VIEW

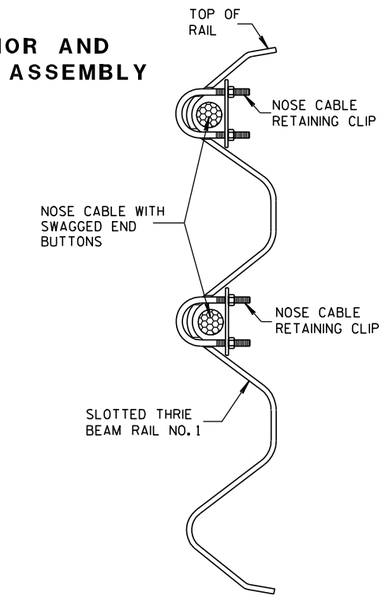
NOSE CABLE ANCHOR AND STANDARD BRACKET ASSEMBLY



DETAIL ''A''



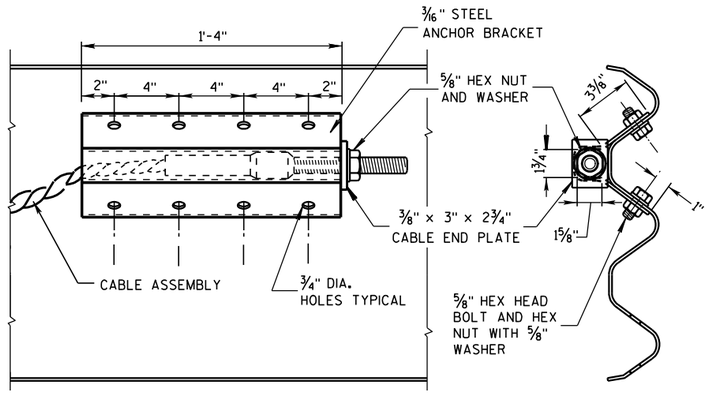
DETAILS OF CABLE ANCHOR ASSEMBLY



PLACEMENT OF NOSE CABLE RETAINING CLIP

GENERAL NOTES

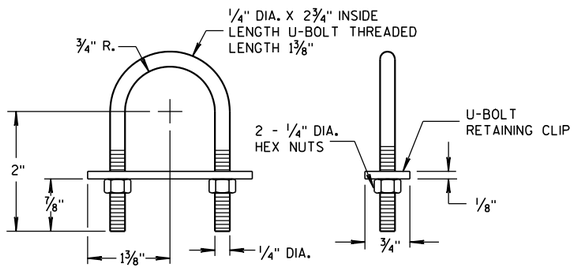
SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



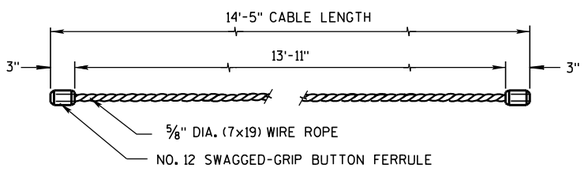
FRONT VIEW

END VIEW

DETAILS OF CABLE ANCHOR BRACKET

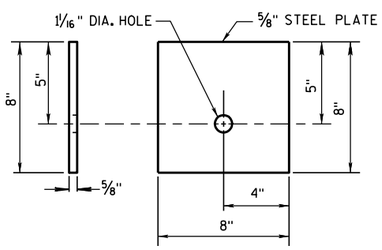


NOSE CABLE RETAINING CLIP

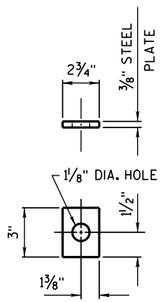


NOSE CABLE WITH SWAGGED END BUTTONS

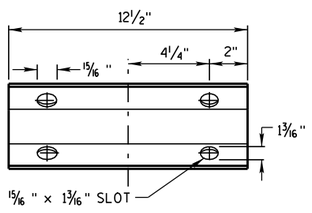
TO PULL OFF SWAGGED GRIP BUTTON FERRULE FROM WIRE ROPE REQUIRES A FORCE EQUAL TO 98% OF THE WIRE ROPE'S BREAKING STRENGHT.



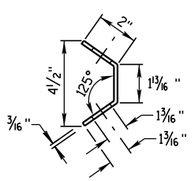
BCT BEARING PLATE



CABLE END PLATE



ELEVATION VIEW



END VIEW

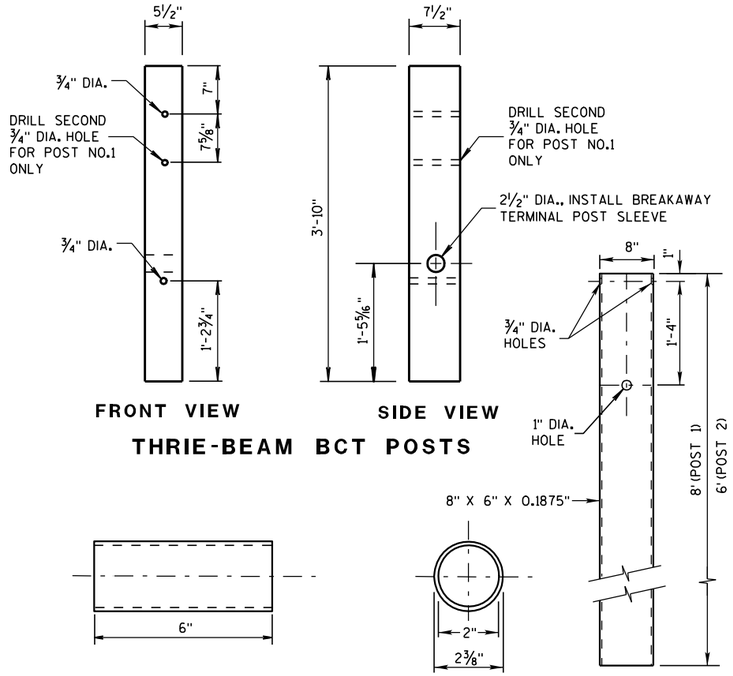
NOSE CABLE ANCHOR PLATE

NOTE: 12 1/2" x 5 13/16" x 3/16" STEEL PLATE (A306)

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

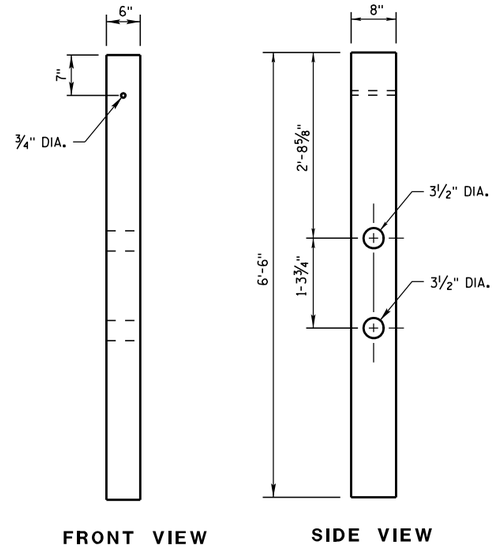
6
S.D.D. 14 B 26-2c



THRIE-BEAM BCT POSTS

BREAKAWAY TERMINAL POST SLEEVE

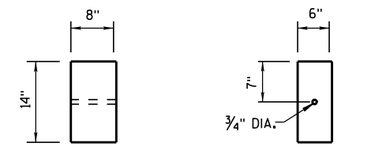
STEEL FOUNDATION TUBE



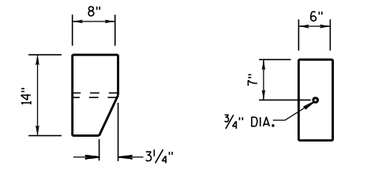
THRIE-BEAM CRT WOOD POSTS

GENERAL NOTES

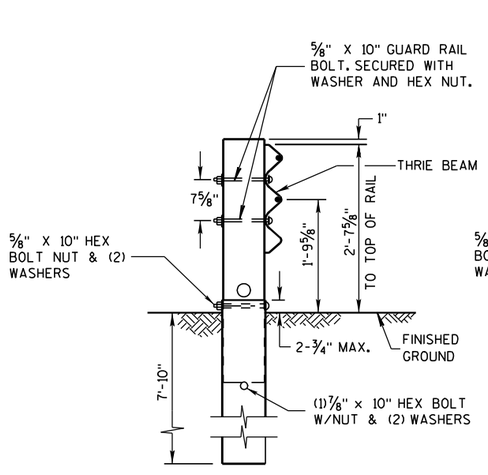
SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



STANDARD WOOD BLOCK

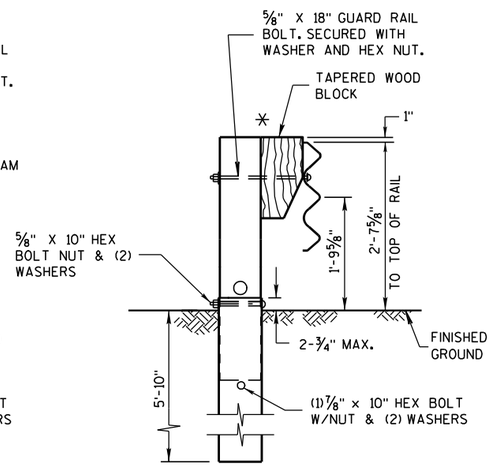


TAPERED WOOD BLOCK



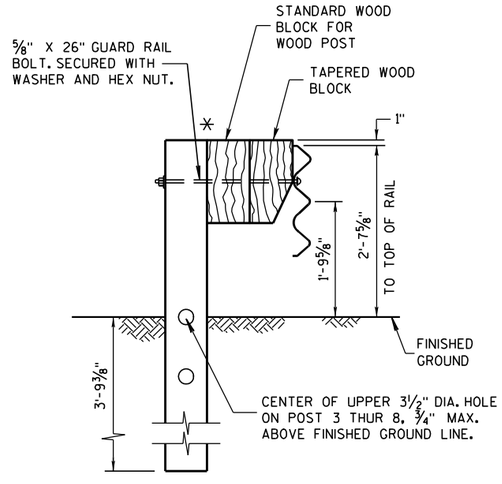
THRIE-BEAM BCT POST
(WITH 8'-0" FOUNDATION TUBE)

POST NO. 1



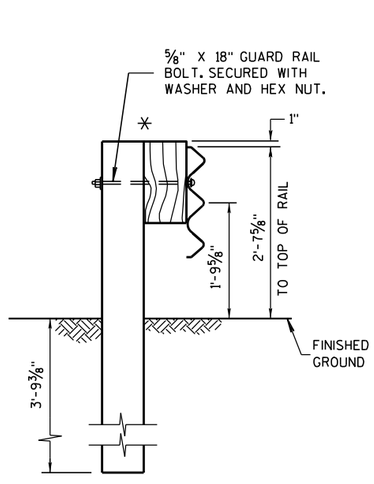
THRIE-BEAM BCT POST
(WITH 6'-0" FOUNDATION TUBE AND 1'-2" TAPERED BLOCK)

POST NO. 2



THRIE-BEAM CRT POST
(6'-6" LONG POST WITH 1'-2" BLOCK AND 1'-2" TAPERED BLOCK)

POST NO. 3,4,5,6,7, & 8



THRIE-BEAM POST
(6'-6" LONG POST WITH 1'-2" BLOCK)

POST NO. 9,10,11,& 12
(ALSO USE FOR STEEL THRIE BEAM BEYOND POST 12)

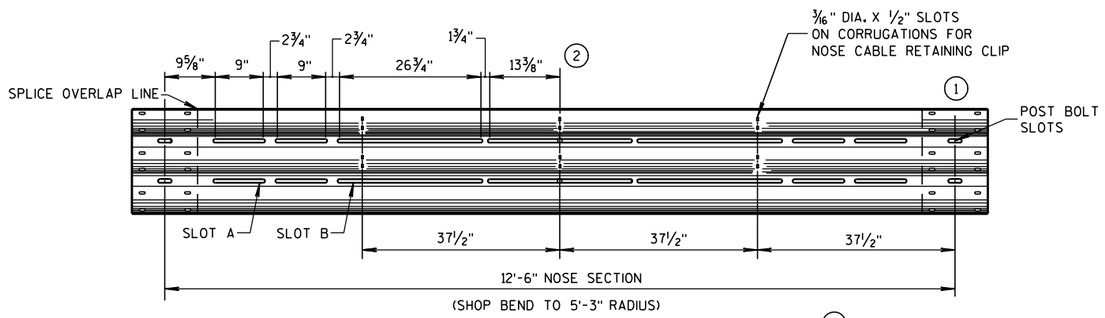
✳ IF NEEDED DUE TO AN UNDERGROUND OBSTACLE ADD 1 ADDITIONAL STANDARD BLOCKOUT TO POST.

STEEL THRIE BEAM BULLNOSE TERMINAL

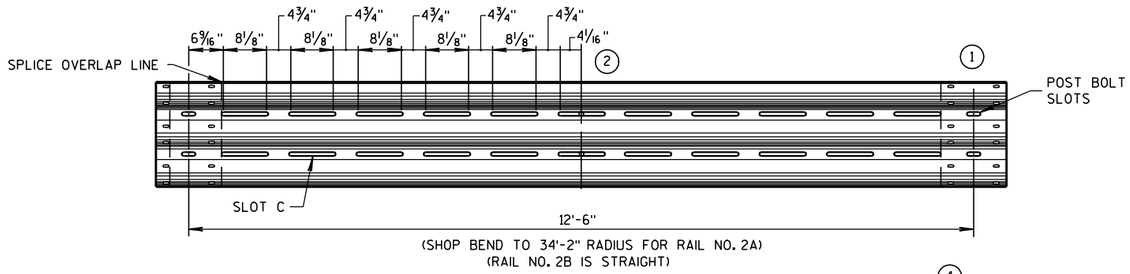
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

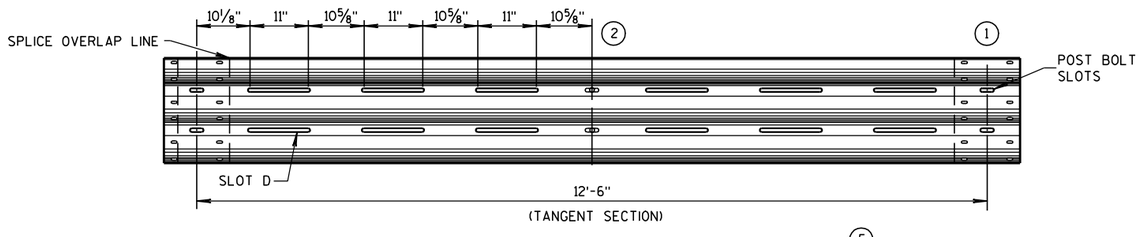
S.D.D. 14 B 26-2d



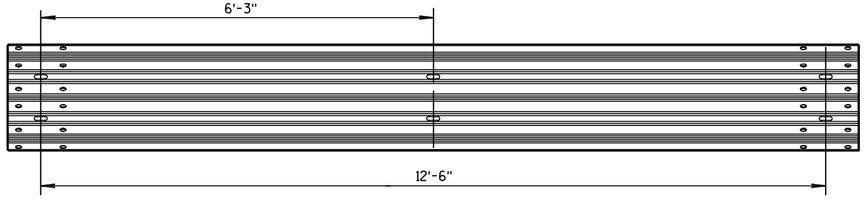
SLOTTED THRIE BEAM RAIL NO. 1 (3)



SLOTTED THRIE BEAM RAILS NO. 2A AND NO. 2B (4)



SLOTTED THRIE BEAM RAIL NO. 3 (5)



UNBENT STANDARD THRIE BEAM RAIL NO. 4 AND NO. 5

GENERAL NOTES

SEE STANADRD DETAIL DRAWINGS 14 B 26a-e.

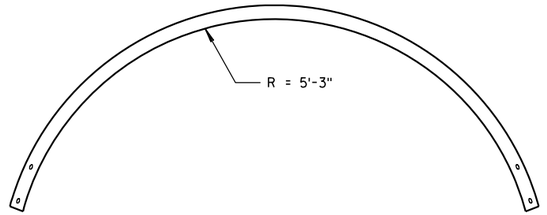
(1) SLOTTED THRIE BEAM RAIL DIMENSIONS SHOWN ARE BEFORE BENDING TO THE RADIUS SHOWN.

(2) SLOT SIZE AND SPACING SYMMETRIC.

(3) SLOTTED THRIE BEAM RAIL NO. 1, 12'-6", SHOP BEND TO R=5'-3".

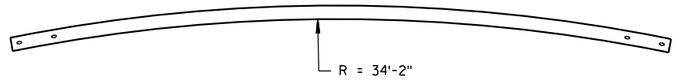
(4) SLOTTED THRIE BEAM RAIL NO. 2A, 12'-6", SHOP BEND TO R=34'-2".
SLOTTED THRIE BEAM RAIL NO. 2B, 12'-6", RAIL IS STRAIGHT.

(5) SLOTTED THRIE BEAM RAIL NO. 3, 12'-6", TANGENT.



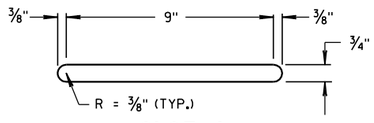
PLAN VIEW

SLOTTED THRIE BEAM RAIL NO. 1

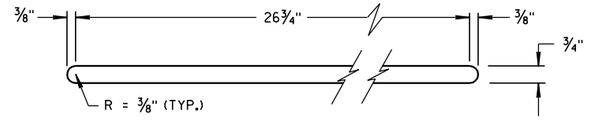


PLAN VIEW

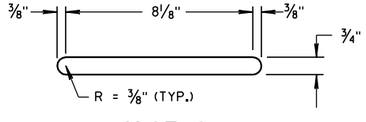
SLOTTED THRIE BEAM RAIL NO. 2A



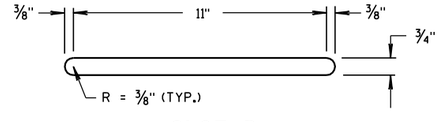
SLOT A



SLOT B



SLOT C



SLOT D

SLOT DETAILS

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-16-2010
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 26-2e

GENERAL NOTES

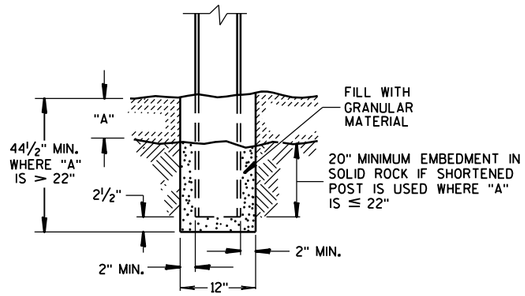
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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.

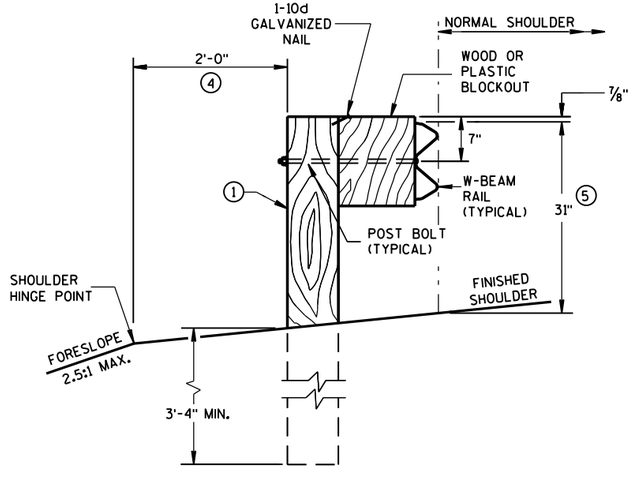
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO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

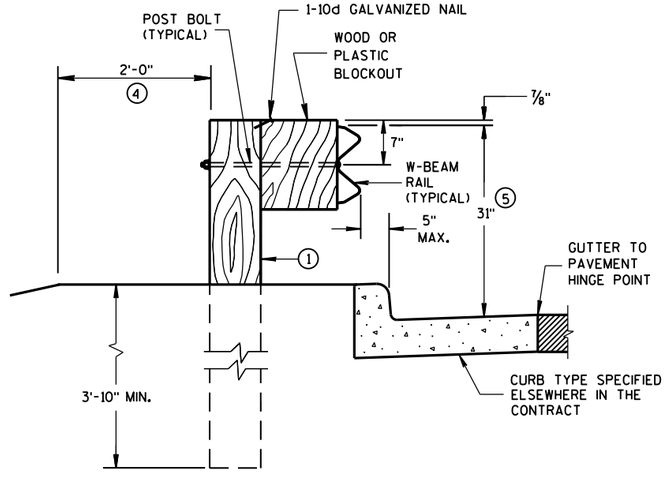
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



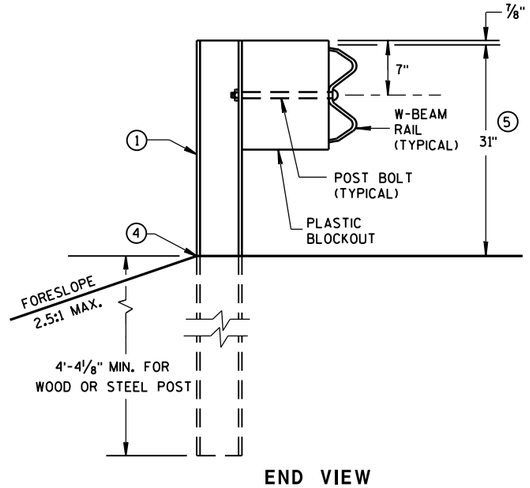
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



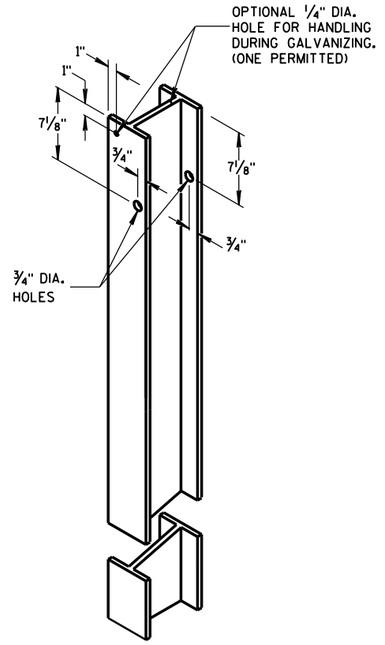
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



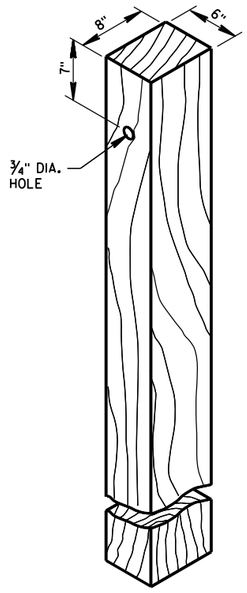
END VIEW
LOCATED ALONG A CURBED ROADWAY



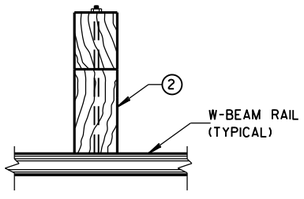
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



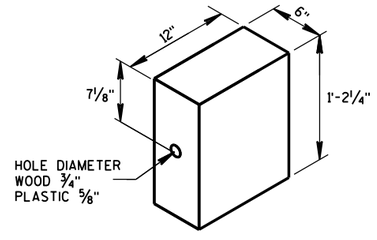
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



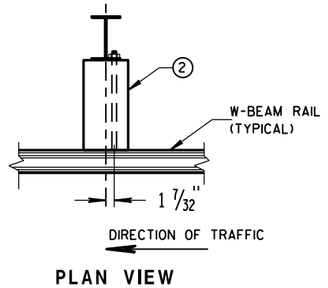
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

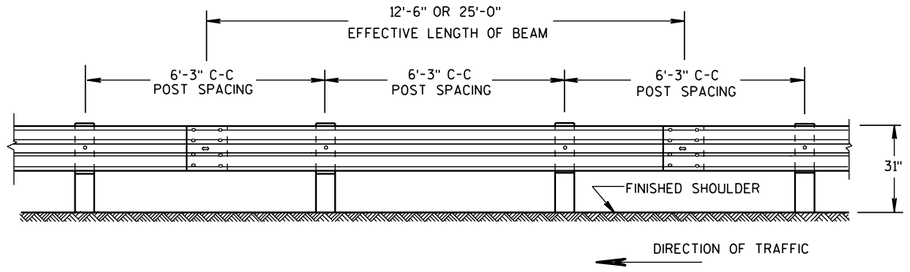


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

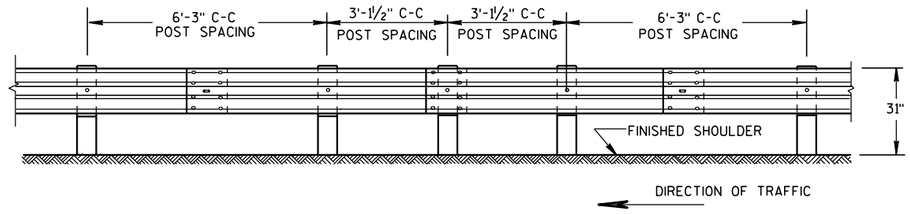
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 42-2a



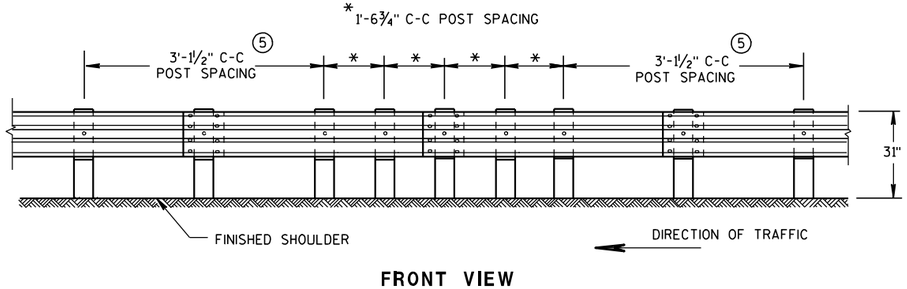
FRONT VIEW

POST SPACING STANDARD INSTALLATION



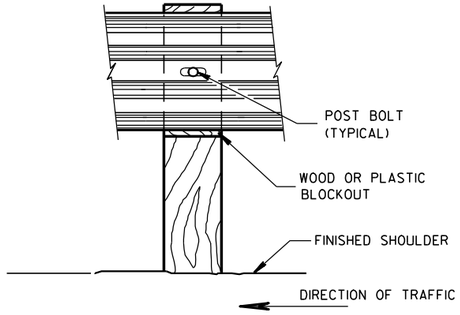
FRONT VIEW

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

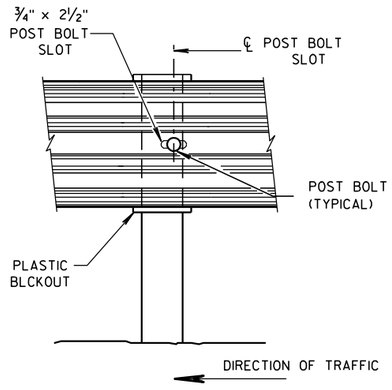


FRONT VIEW

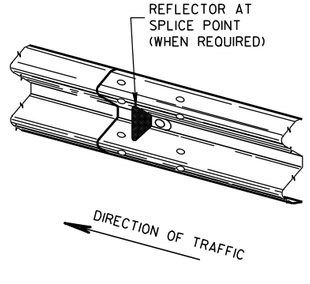
QUARTER POST SPACING (QS)

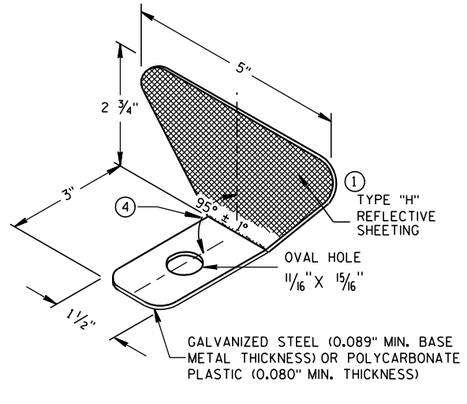


FRONT VIEW AT WOOD POST

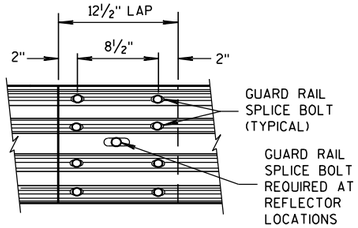


FRONT VIEW AT STEEL POST



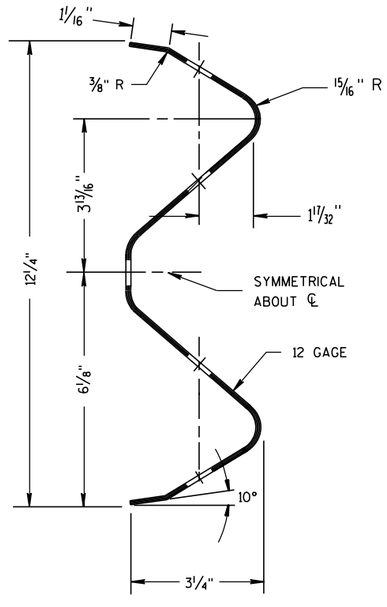


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② 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.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 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 ②

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

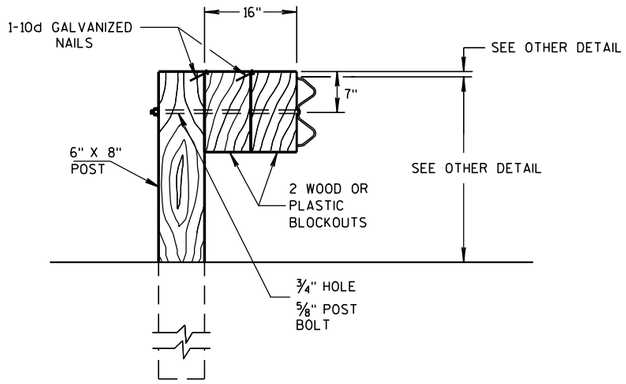
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

97

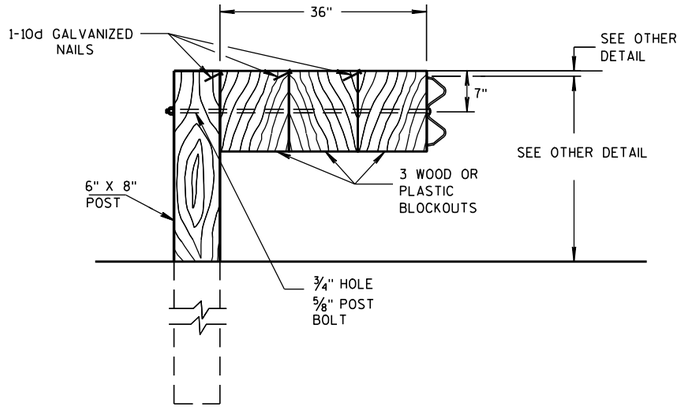
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



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.

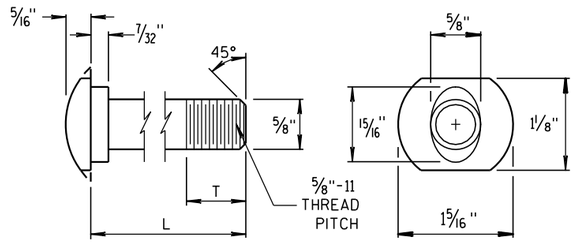


DETAIL FOR 36" BLOCKOUT DEPTH

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.

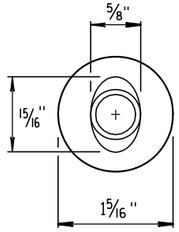
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

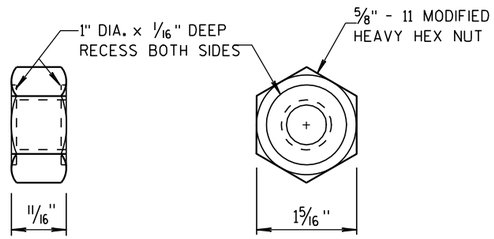


POST BOLT TABLE

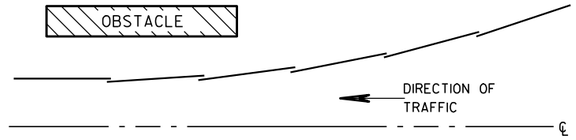
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

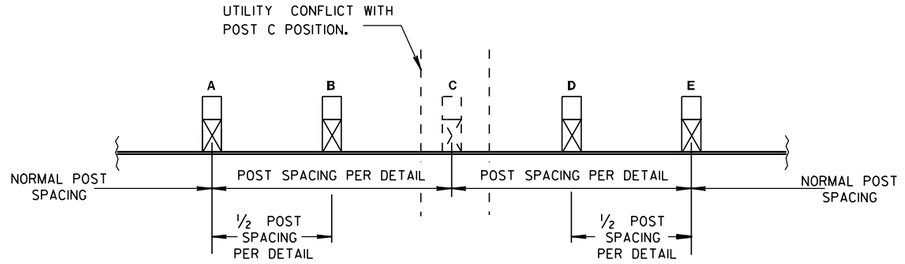


POST BOLT AND RECESS NUT

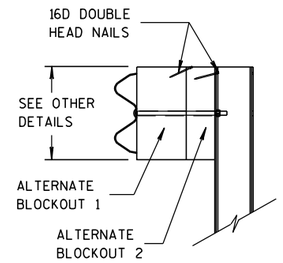


PLAN VIEW

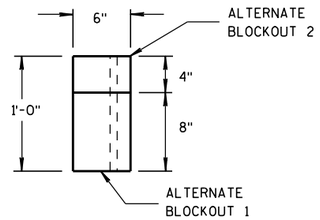
BEAM LAPPING DETAIL



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

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

ENT

6

S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(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.

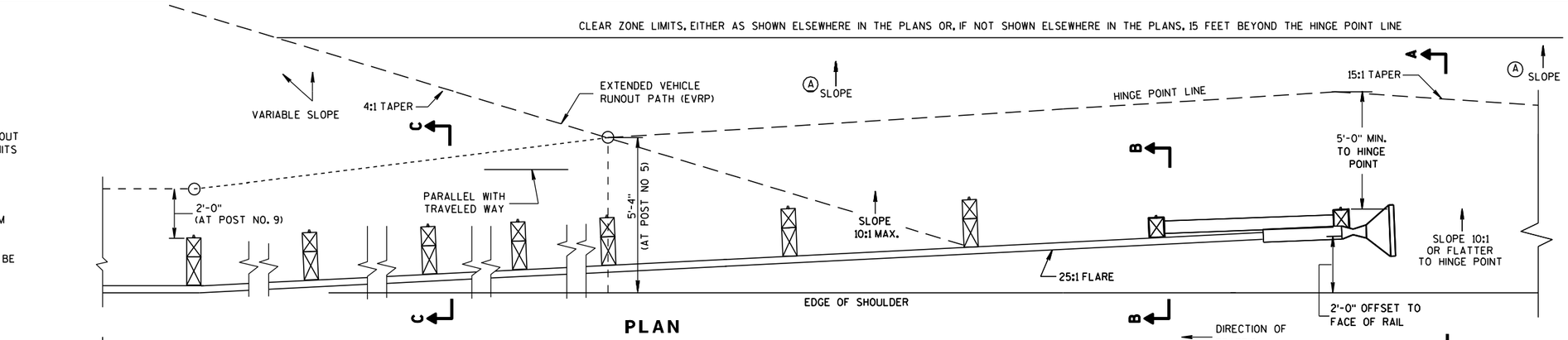
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

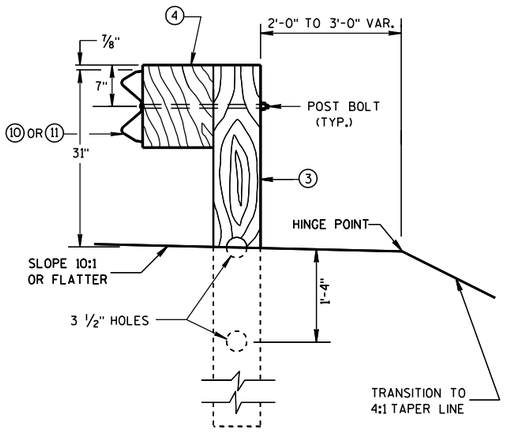
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

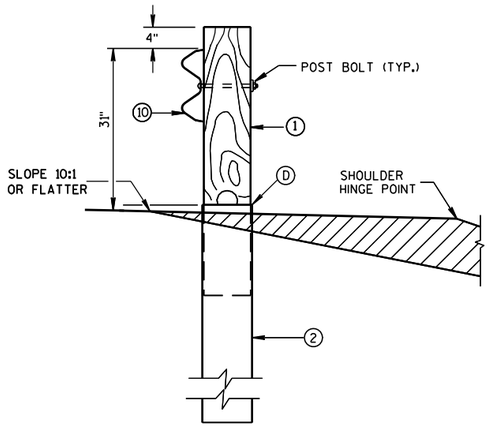
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

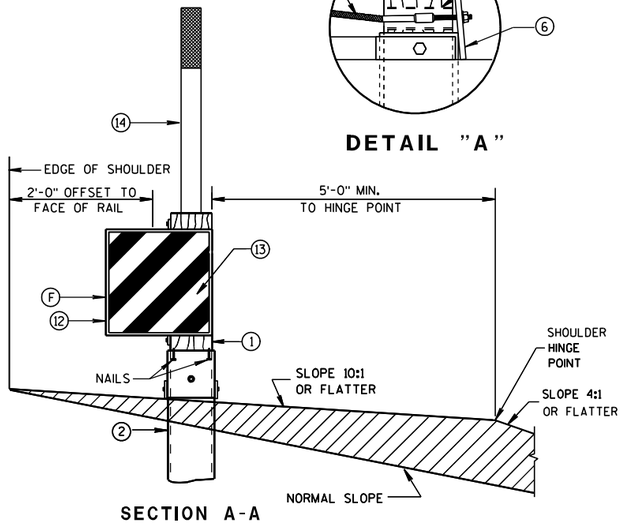




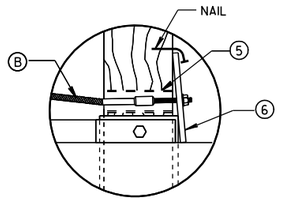
SECTION C-C
TYPICAL AT POST NOS. 3-9



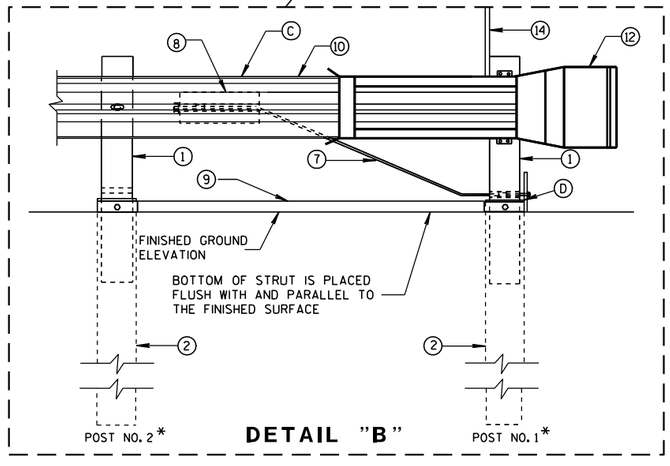
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

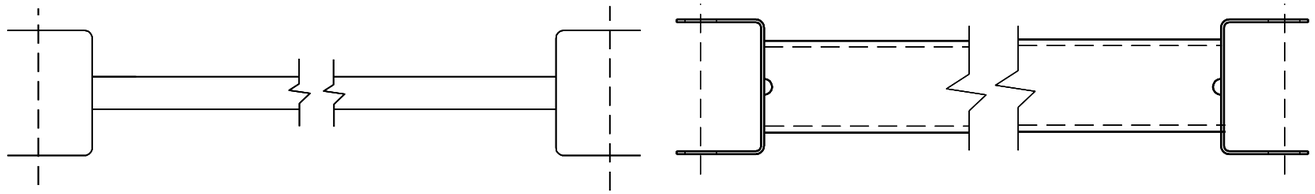


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

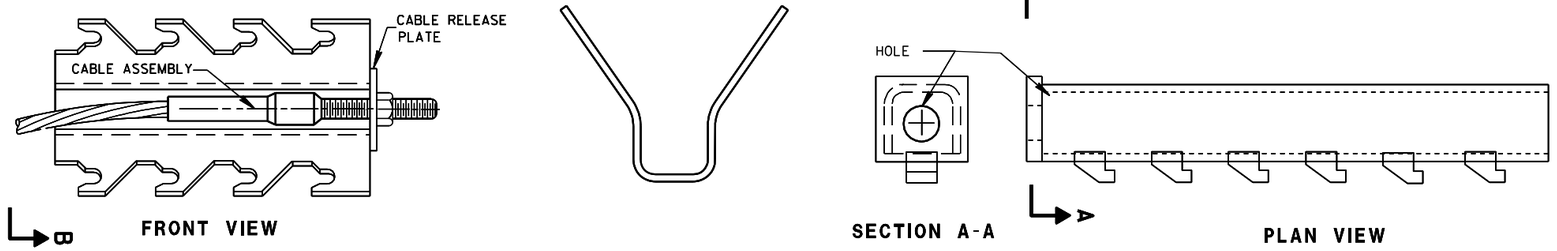
6
S.D.D. 14 B 44-1a



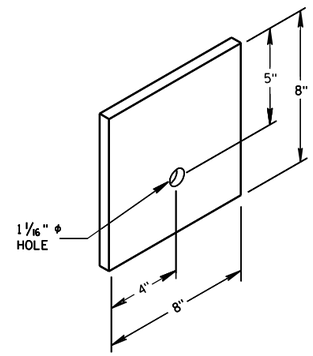
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE 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. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



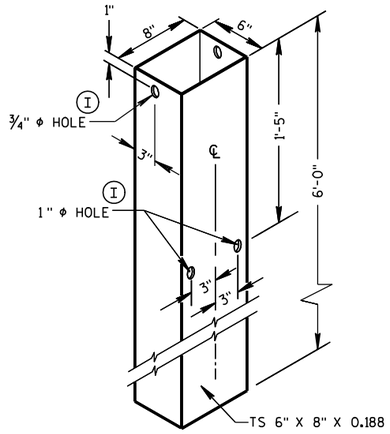
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

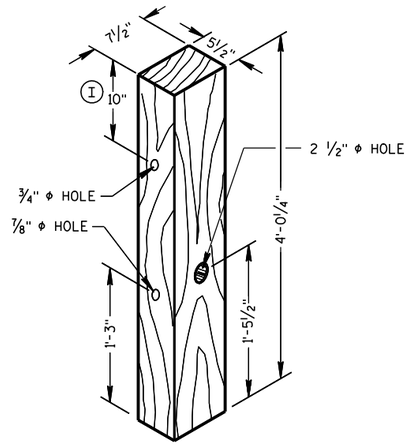
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

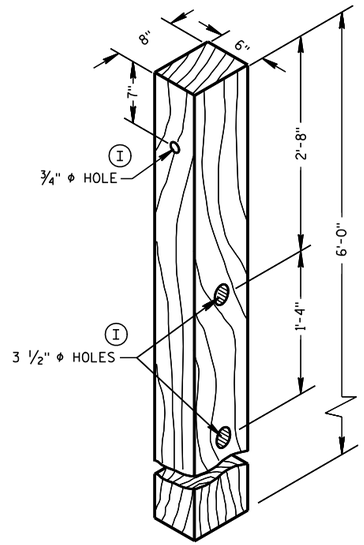


FOUNDATION TUBE (2)



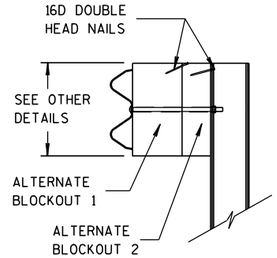
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

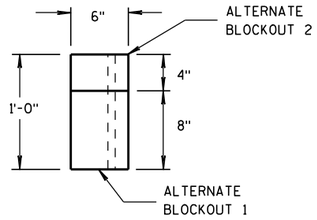


POSTS NUMBER 3-9

WOOD CRT POST (3)

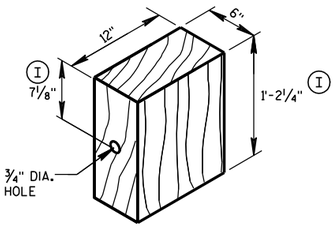


SIDE VIEW



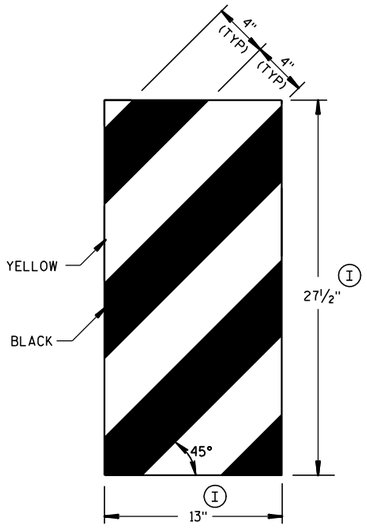
TOP VIEW

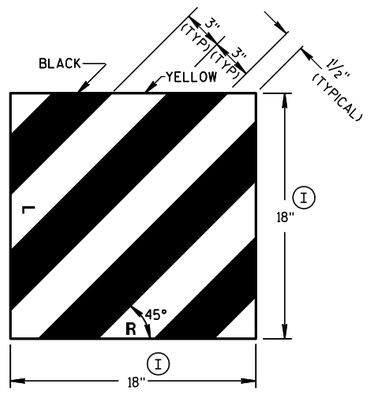
ALTERNATE WOOD BLOCKOUT DETAIL



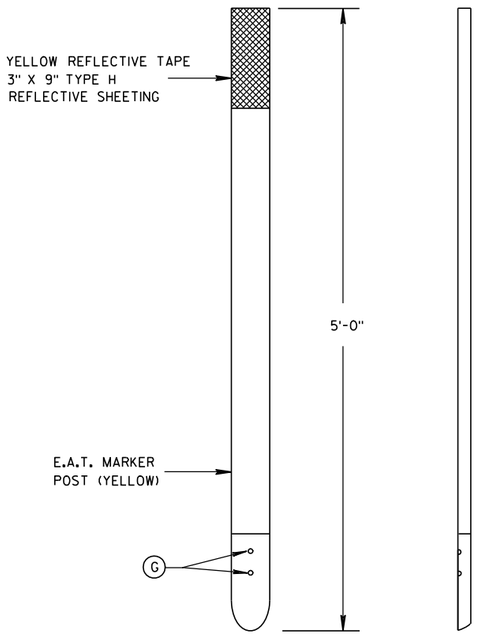
WOOD BLOCKOUT (4)

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





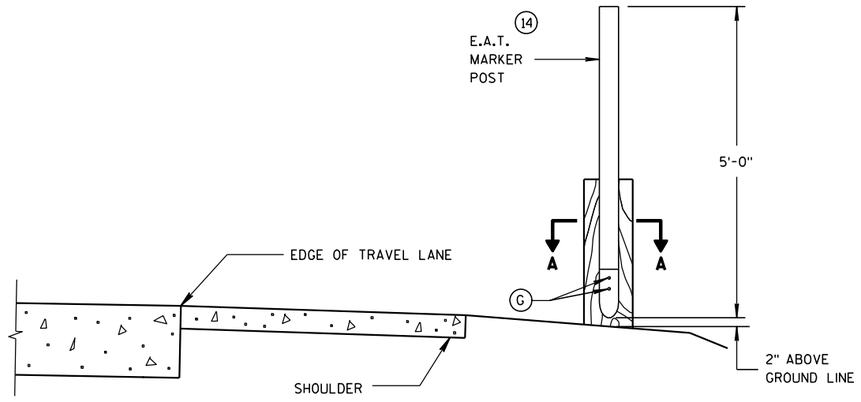
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

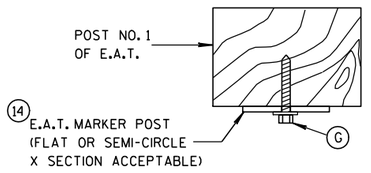
SIDE VIEW

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

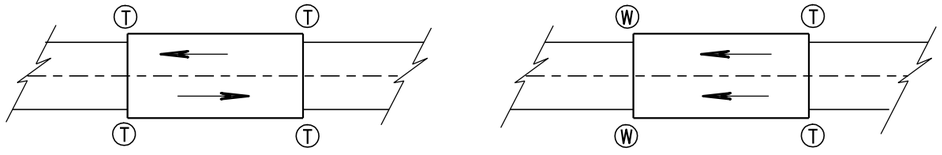
APPROVED
5/23/2011
DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
101
FHWA

6

S.D.D. 14 B 44-1c

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

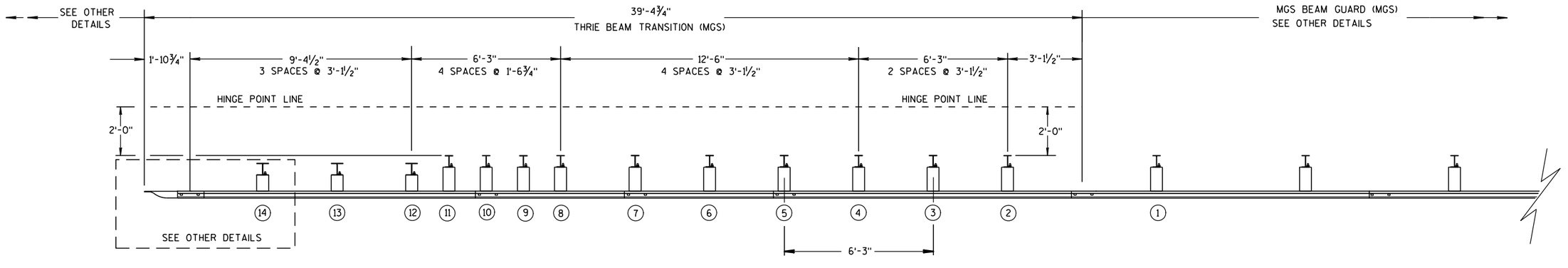
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

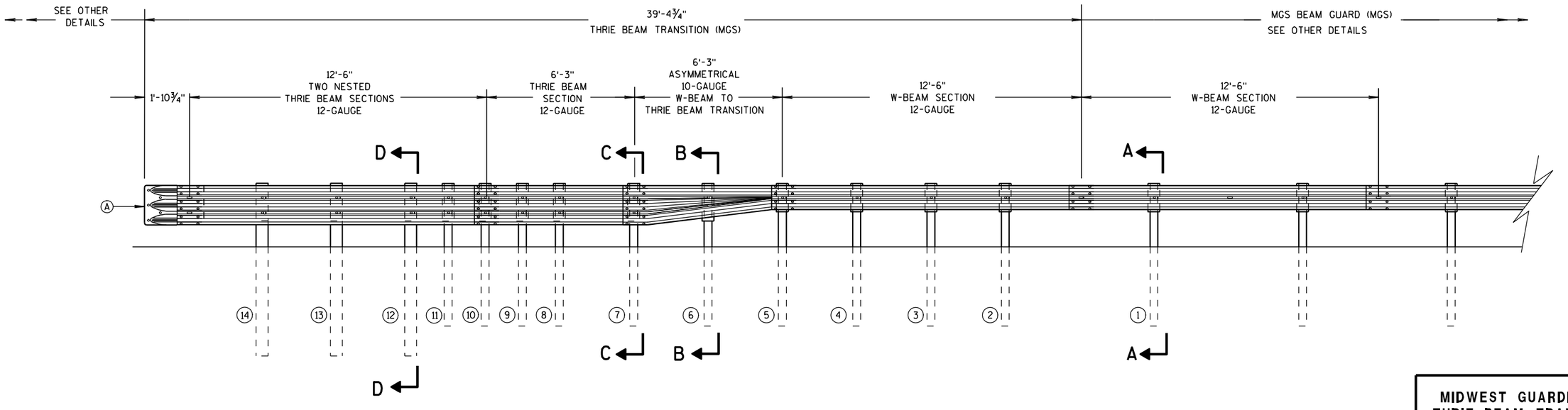
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

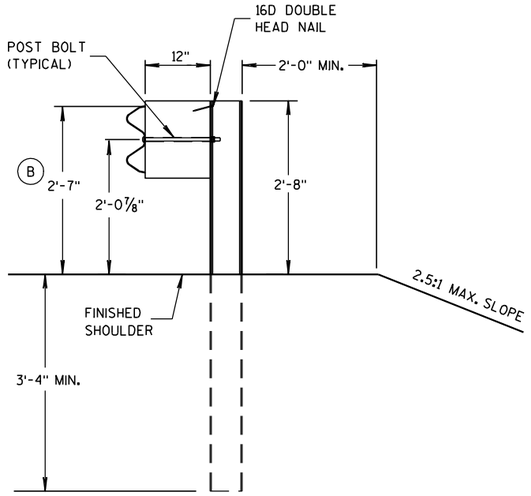
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

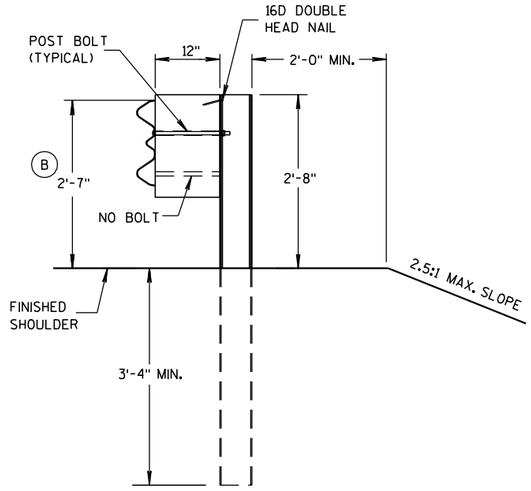
GENERAL NOTES

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



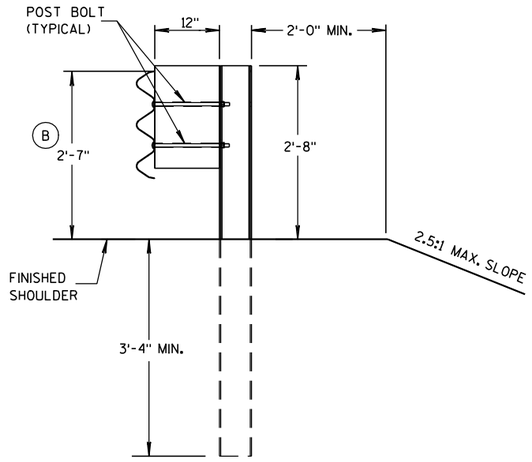
SECTION A-A

POSTS 1-5



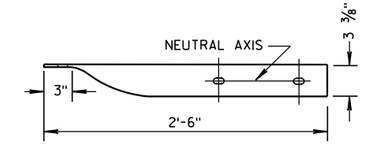
SECTION B-B

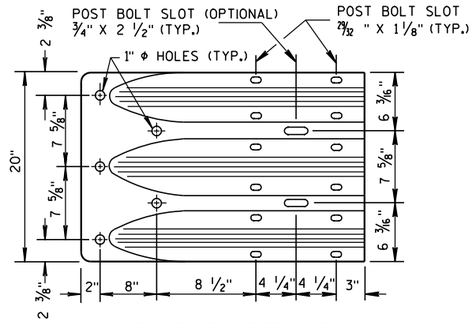
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

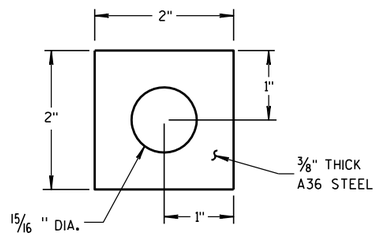
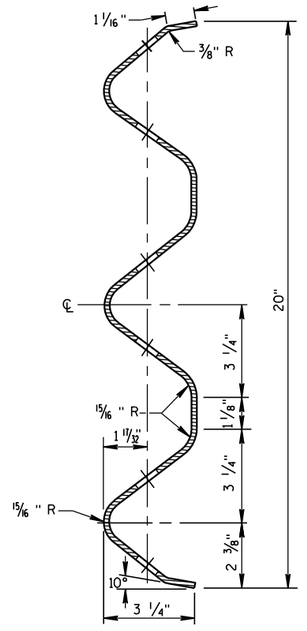
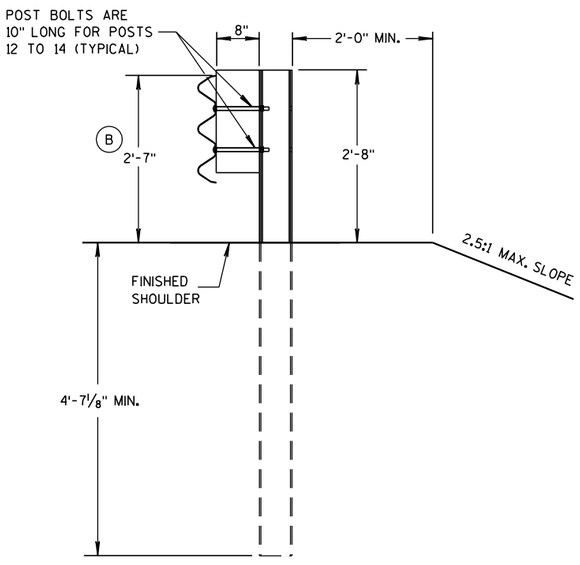


PLATE WASHER DETAIL

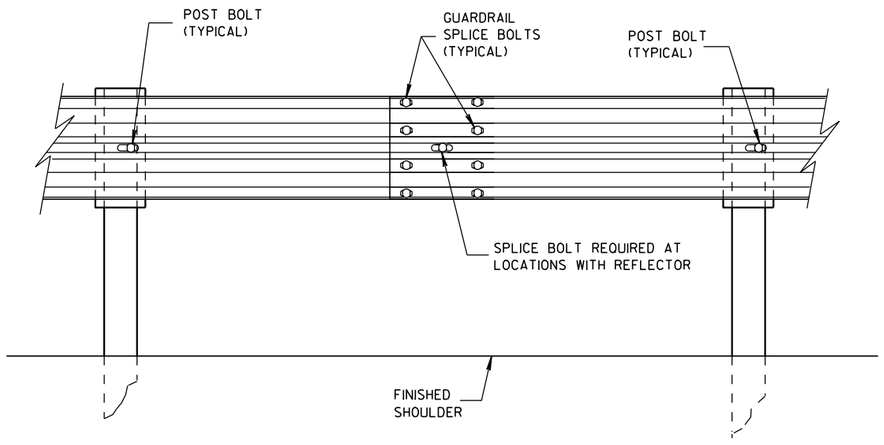


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

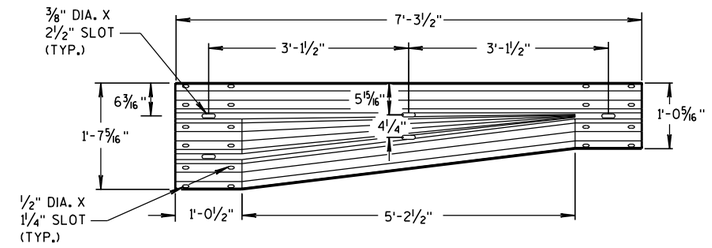
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

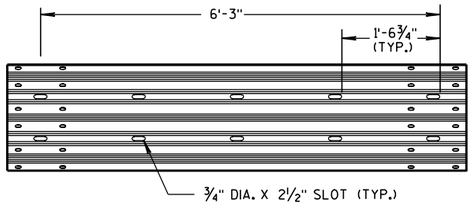
S.D.D. 14 B 45-3b

6

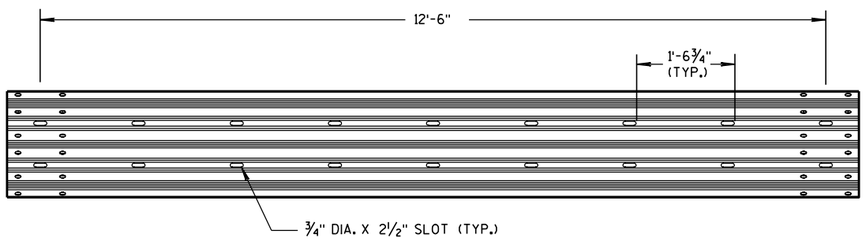
S.D.D. 14 B 45-3b



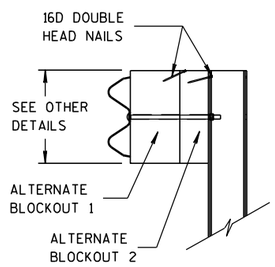
W-BEAM TO THRIE BEAM TRANSITION SECTION



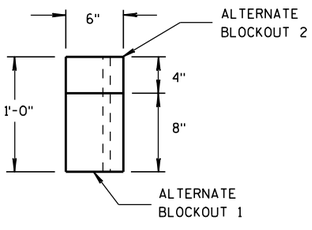
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

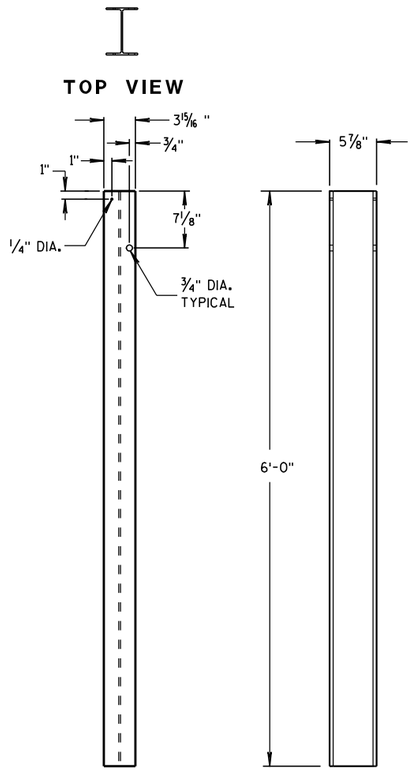


SIDE VIEW

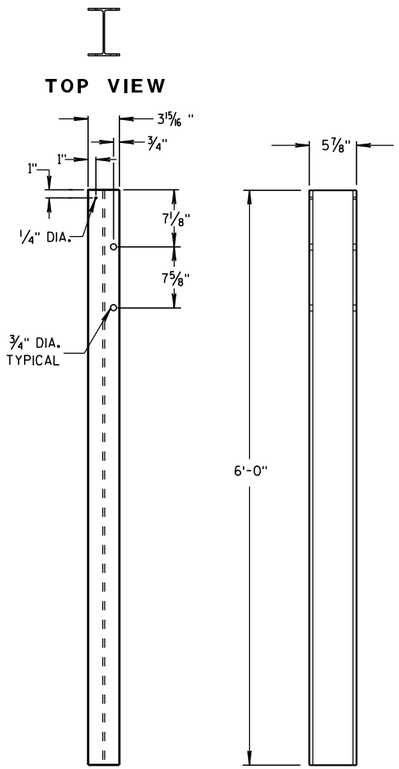


TOP VIEW

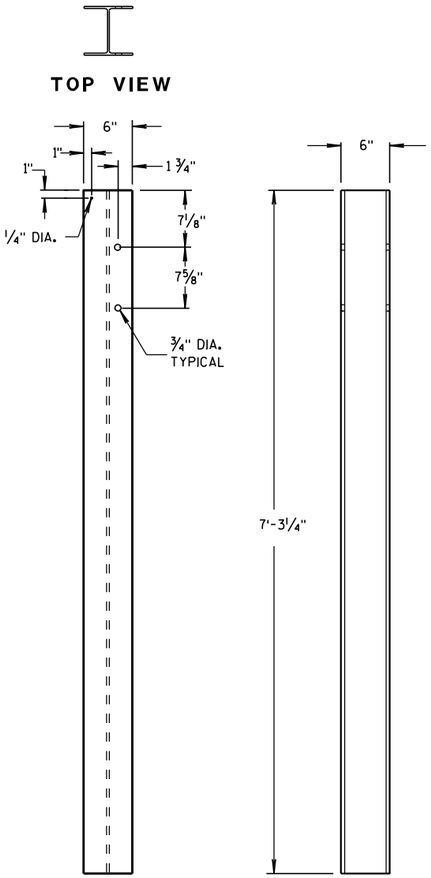
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

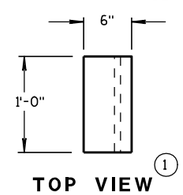


STEEL POSTS 6-11

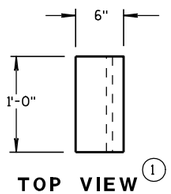


STEEL POSTS 12-14

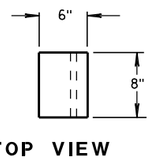
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



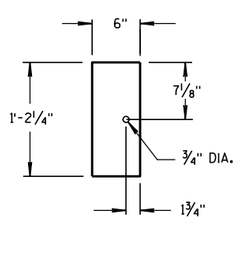
TOP VIEW (1)



TOP VIEW (1)

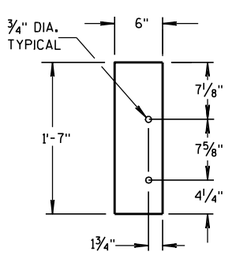


TOP VIEW



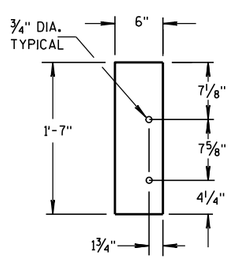
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

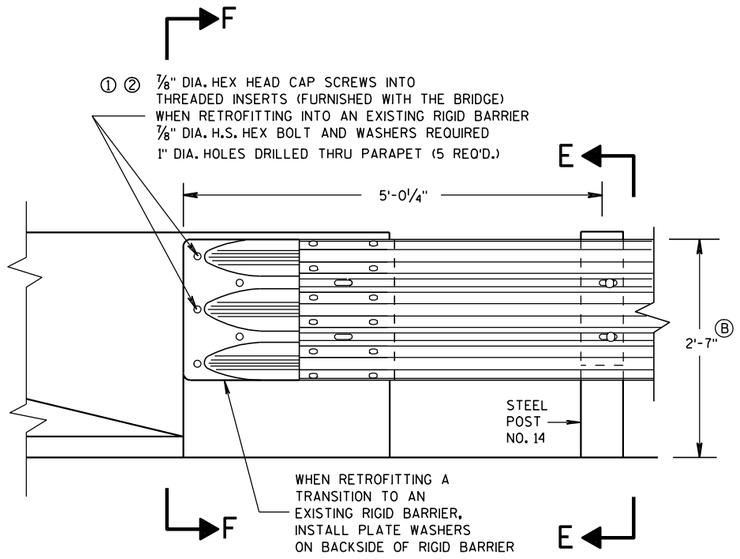
POST NUMBER	SECTION TYPE	LENGTH
(1)	W6x9	72"
(2)	W6x9	72"
(3)	W6x9	72"
(4)	W6x9	72"
(5)	W6x9	72"
(6)	W6x9	72"
(7)	W6x9	72"
(8)	W6x9	72"
(9)	W6x9	72"
(10)	W6x9	72"
(11)	W6x9	72"
(12)	W6x15	87 1/8"
(13)	W6x15	87 1/8"
(14)	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

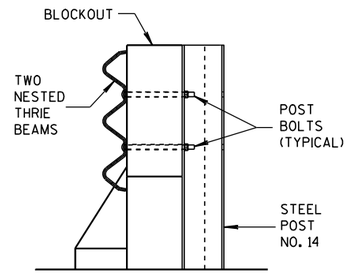
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

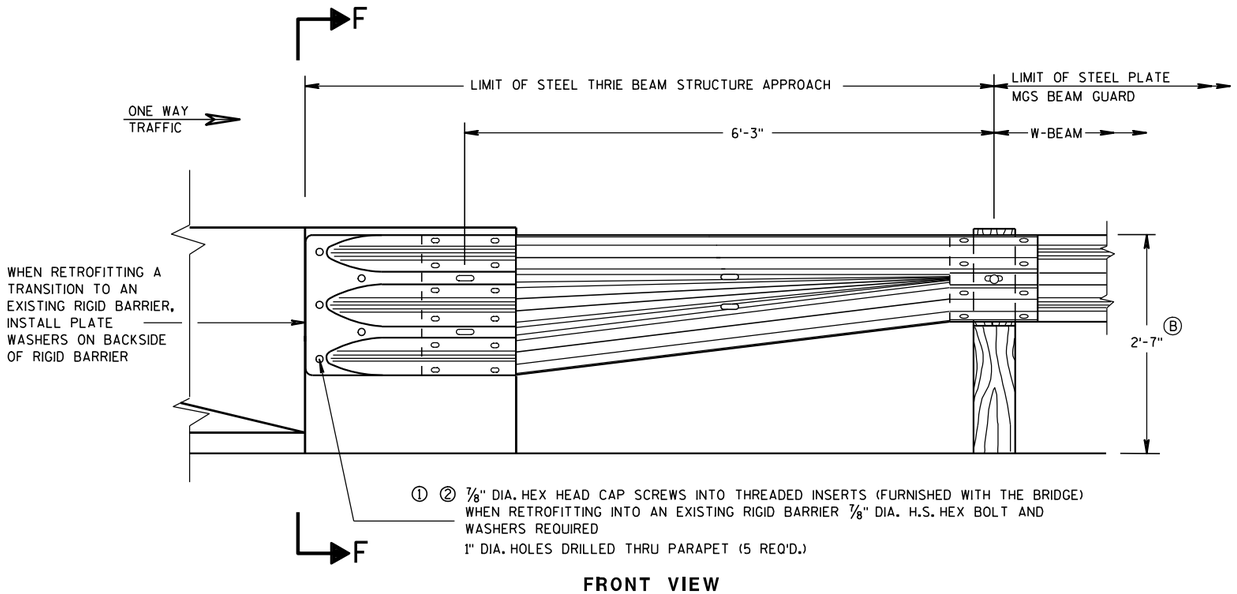
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

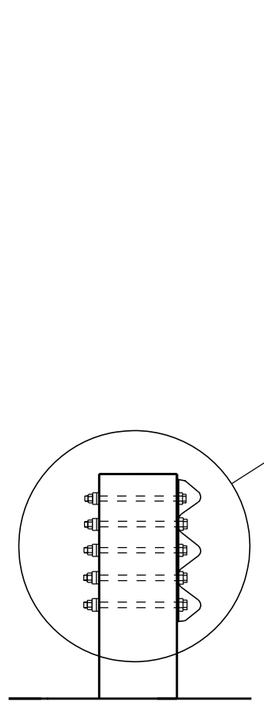
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

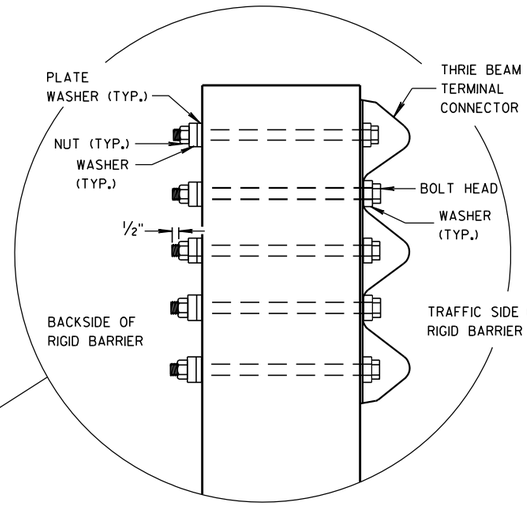
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 45-3d

GENERAL NOTES

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

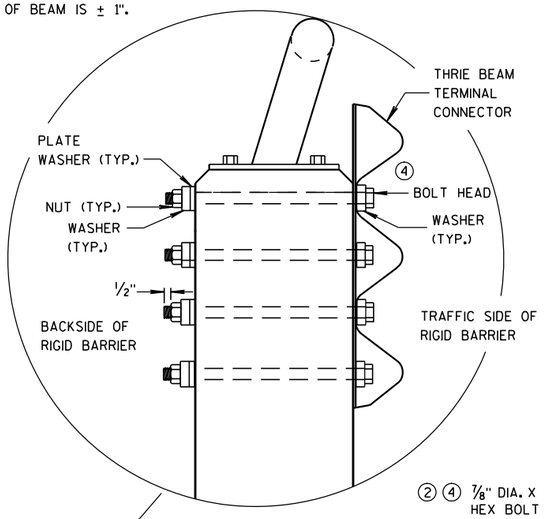
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

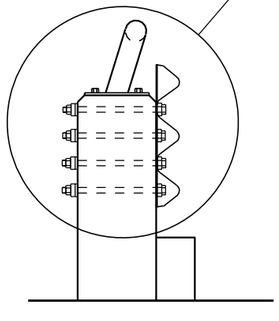
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

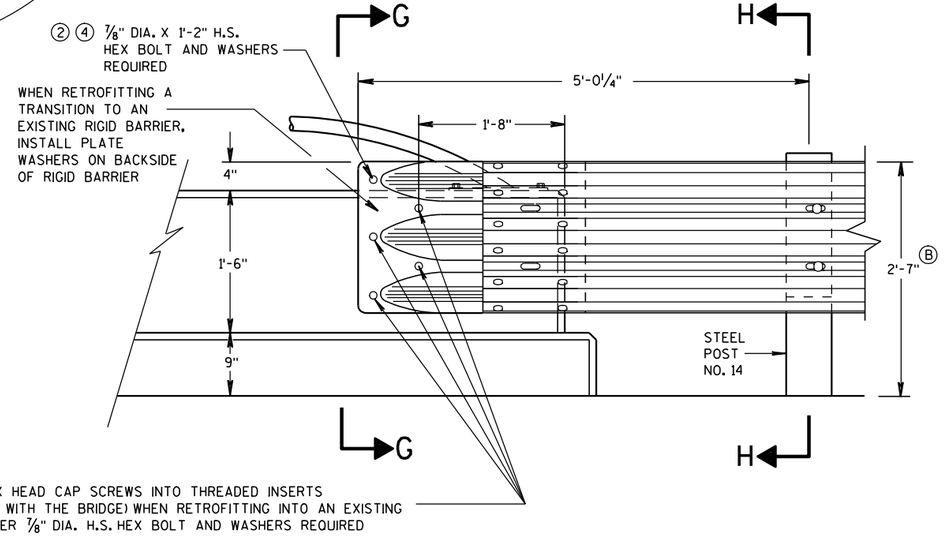
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

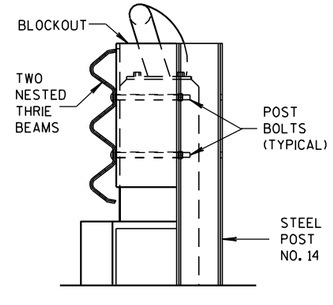




SECTION G-G

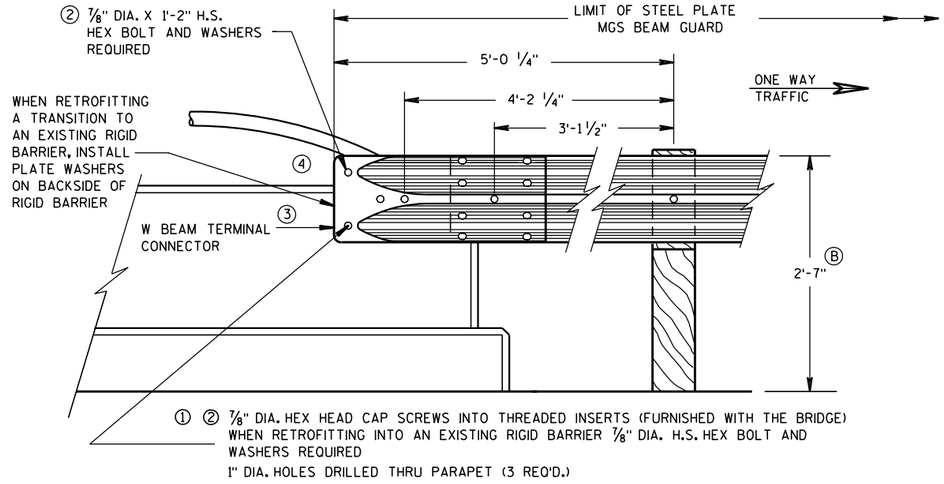


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

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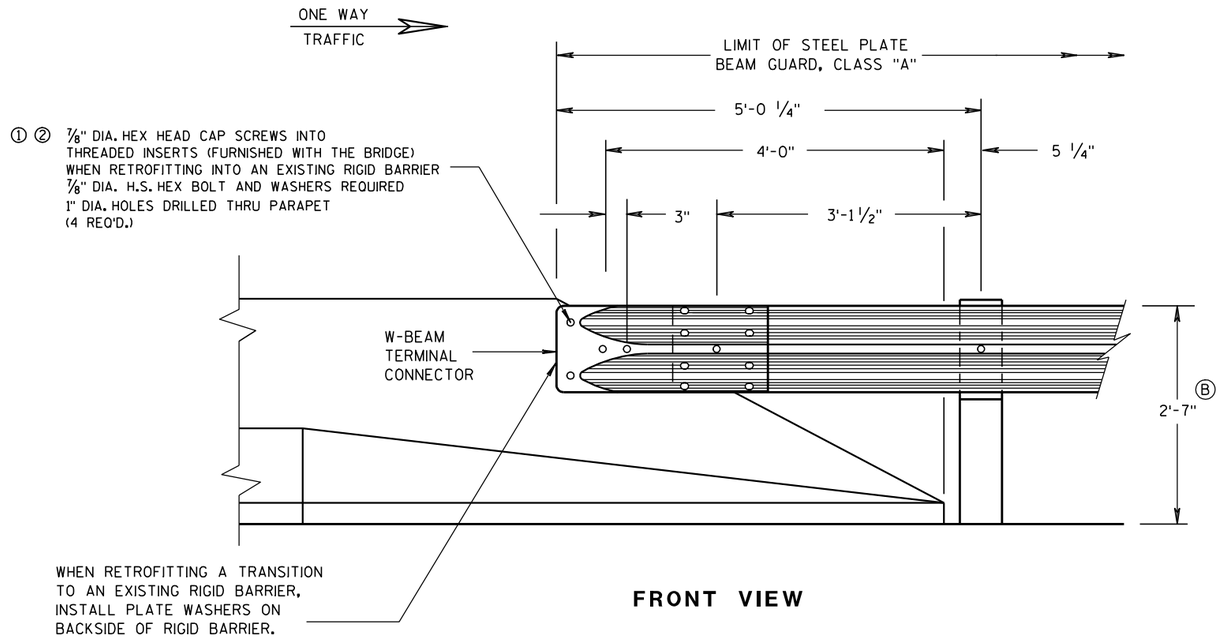
S.D.D. 14 B 45-3e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

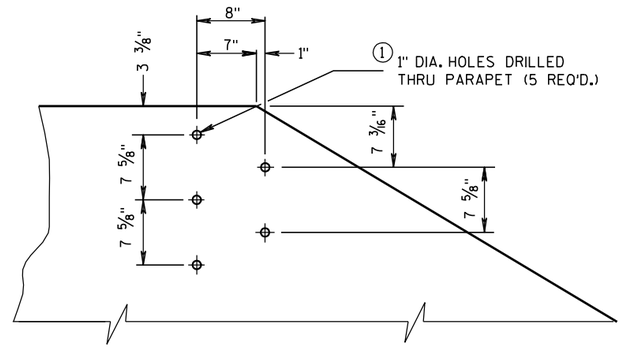
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

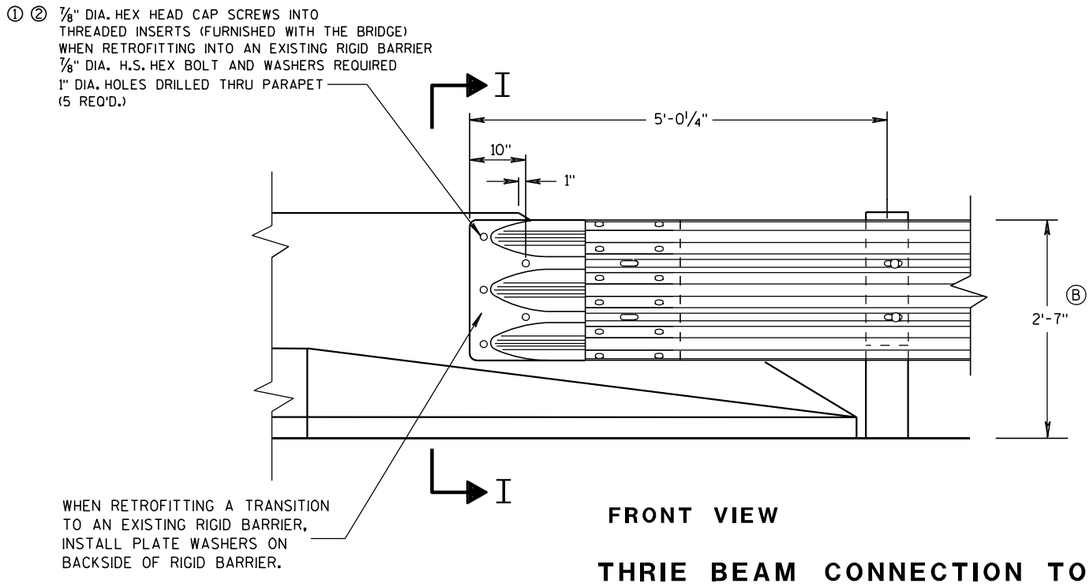
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

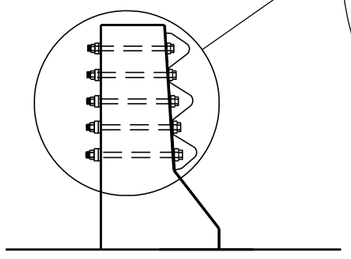
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



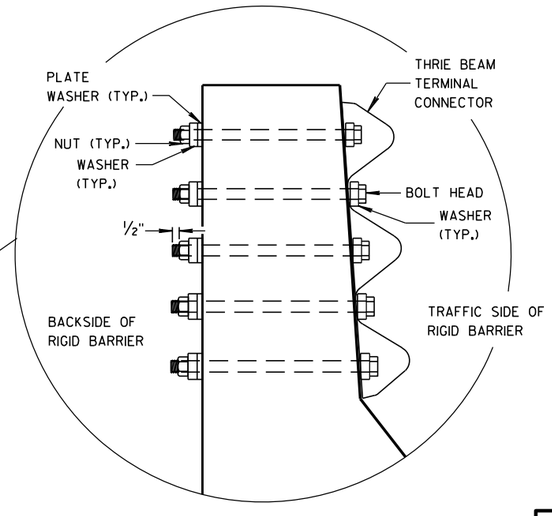
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

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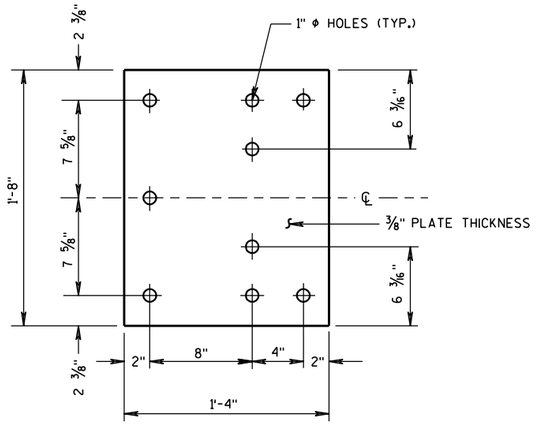
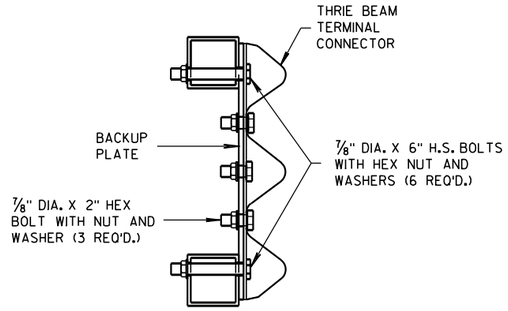


BACK-UP PLATE DETAIL

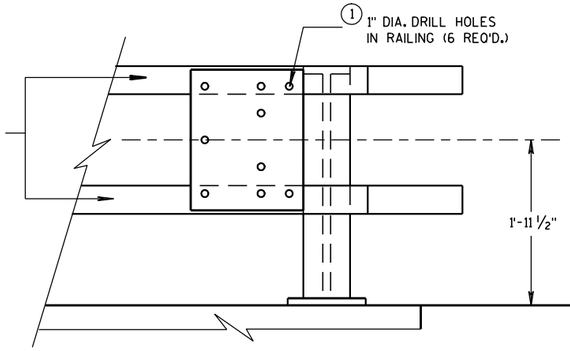


SECTION J-J

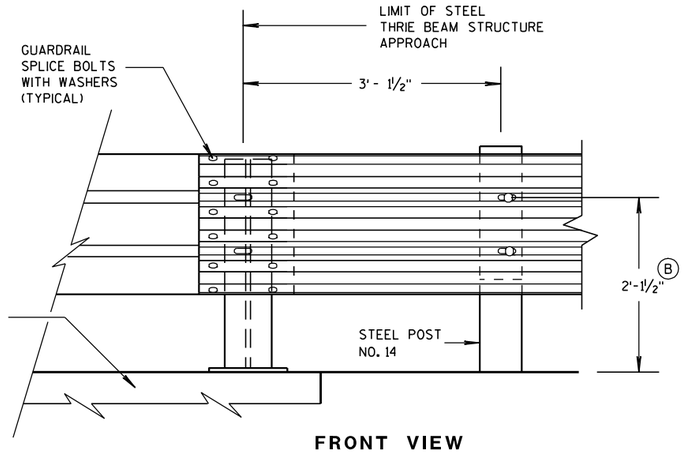
GENERAL NOTES

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

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

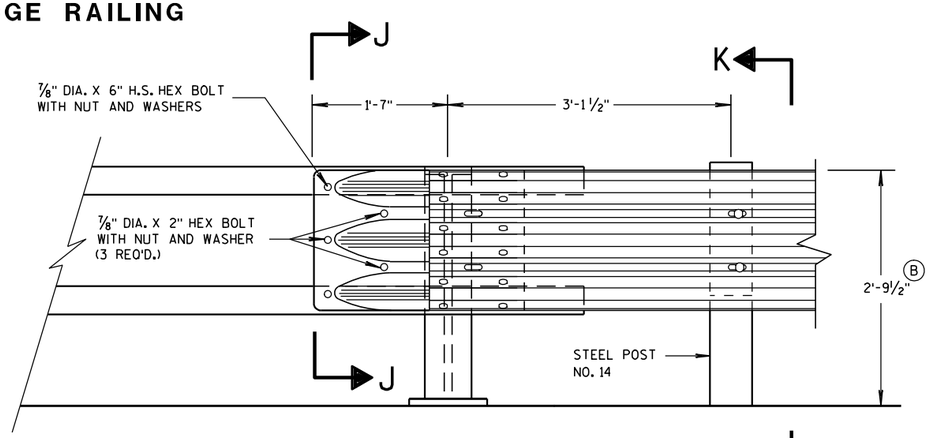


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

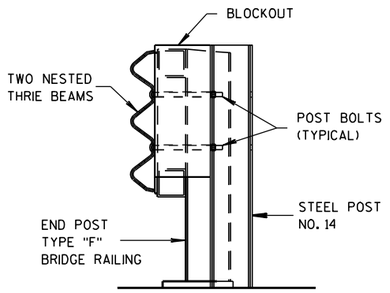


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

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S.D.D. 14 B 45-3g

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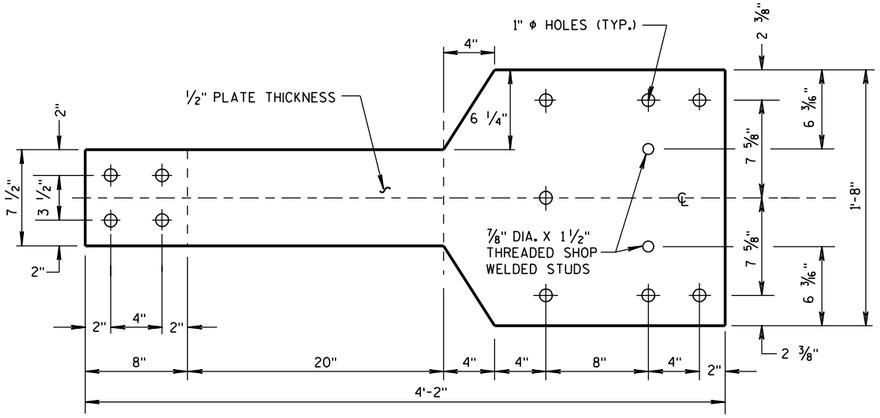
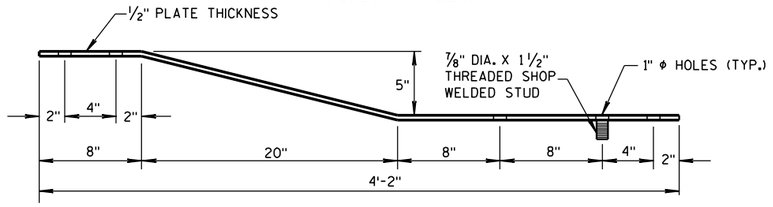
S.D.D. 14 B 45-3g

GENERAL NOTES

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

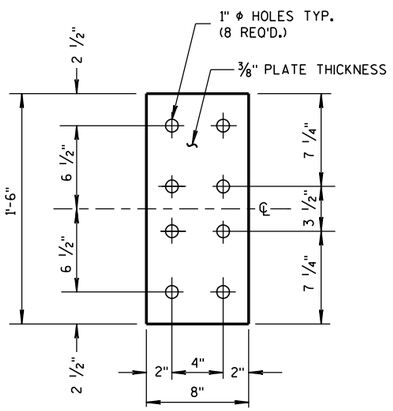


FRONT VIEW



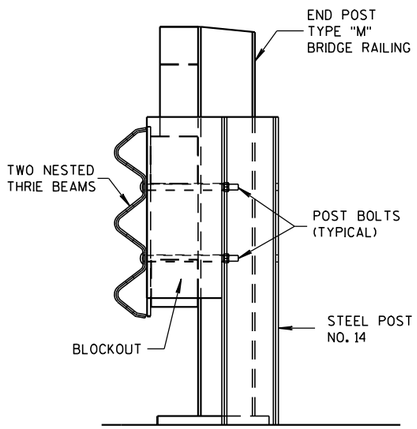
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

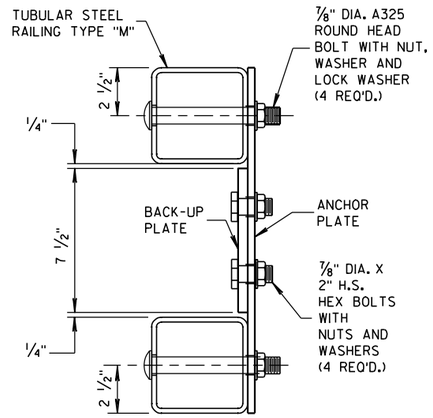


FRONT VIEW

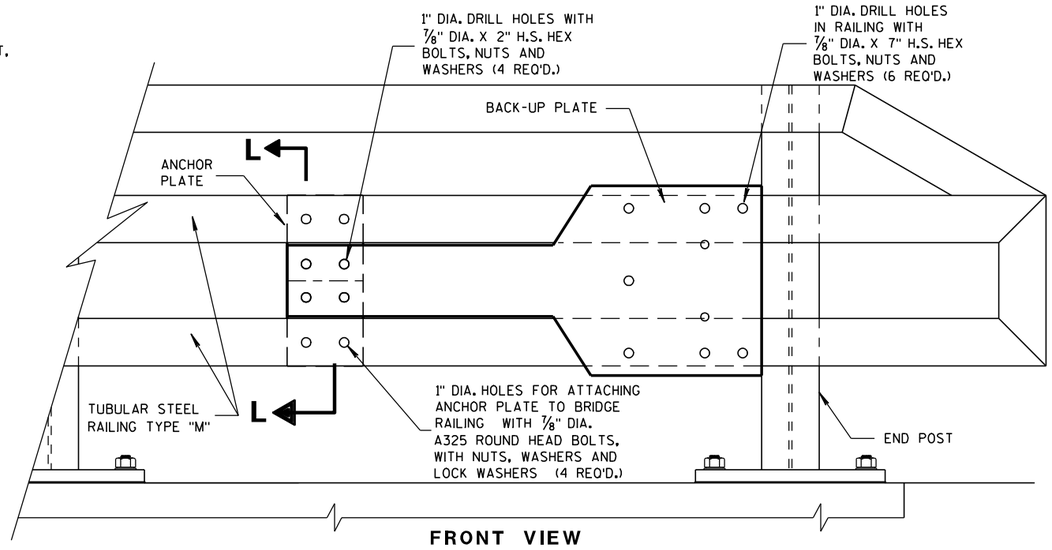
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

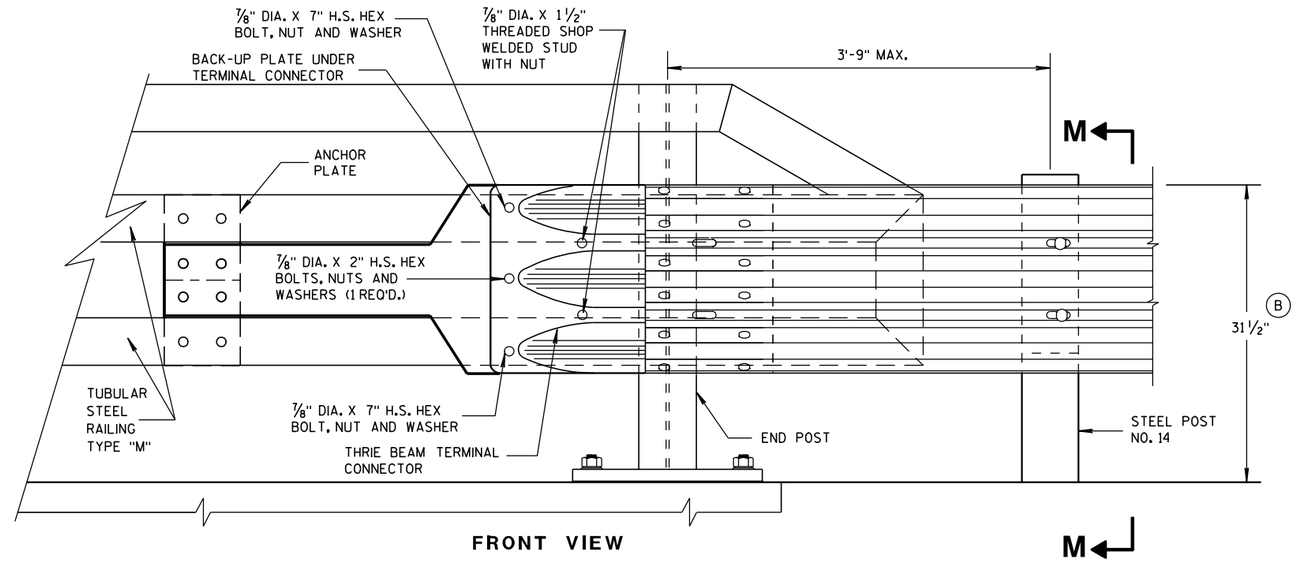


SECTION L-L

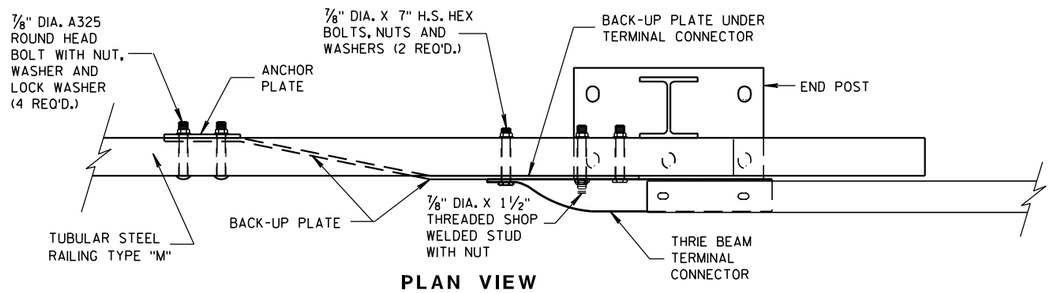


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 45-3h

6

S.D.D. 14 B 45-3h

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

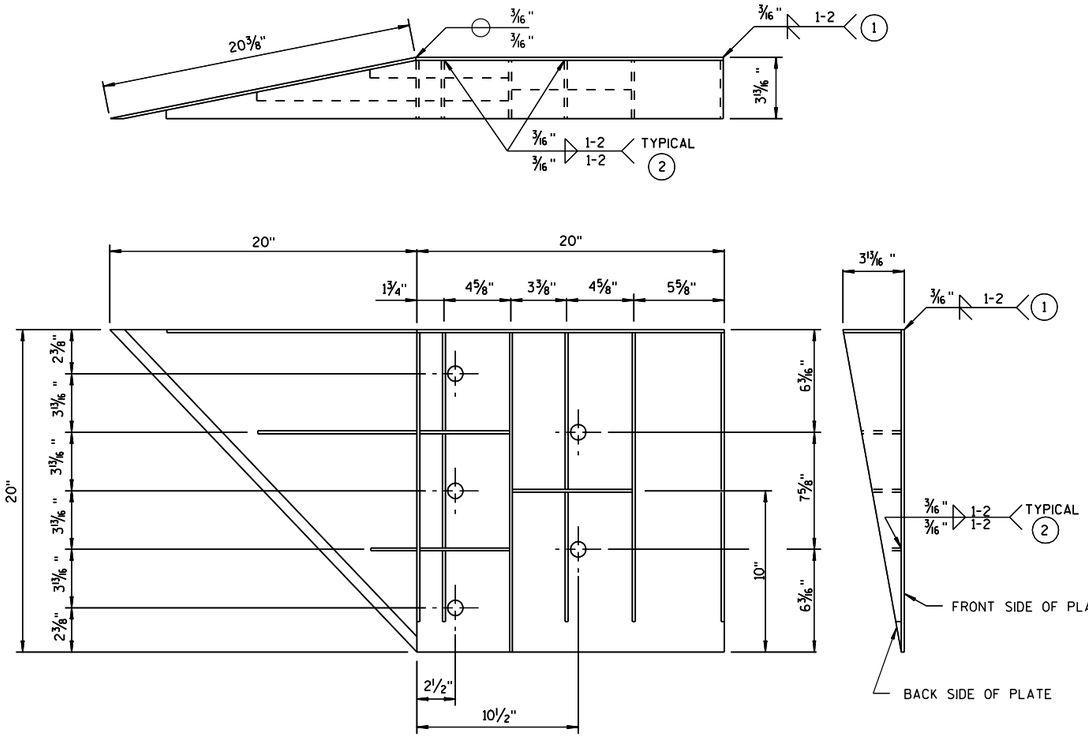
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

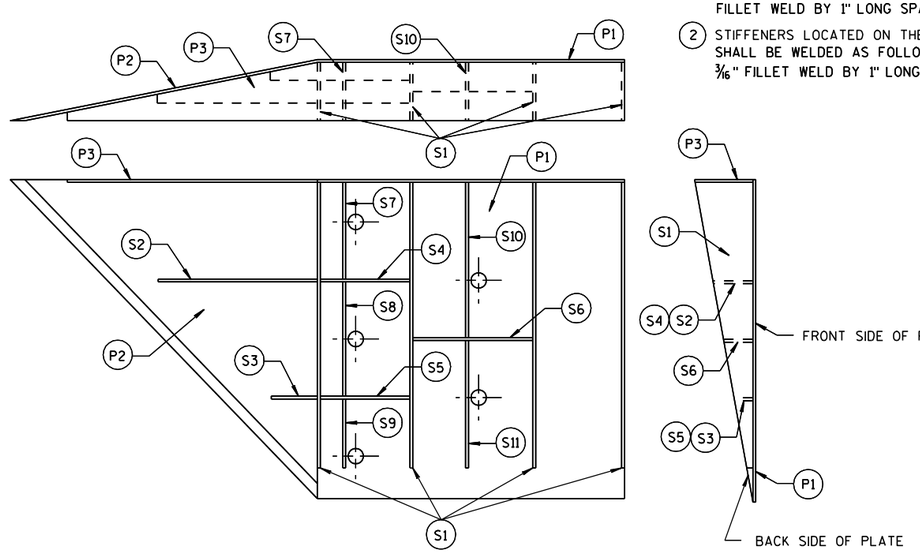


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H ____
ROADWAY STANDARDS ENGINEER
FHWA

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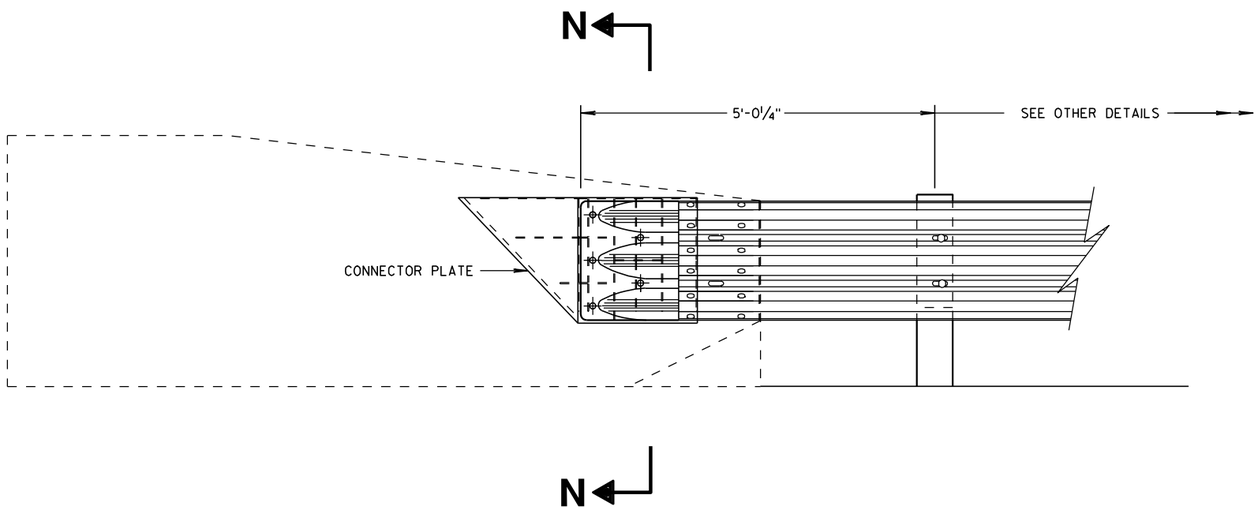
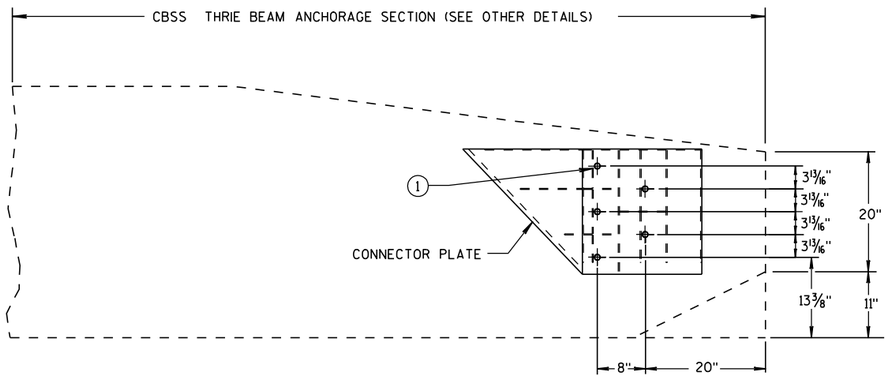
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

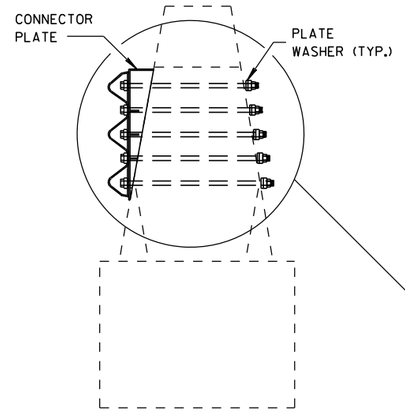


SINGLE SLOPE CONNECTION PLATE PLACEMENT

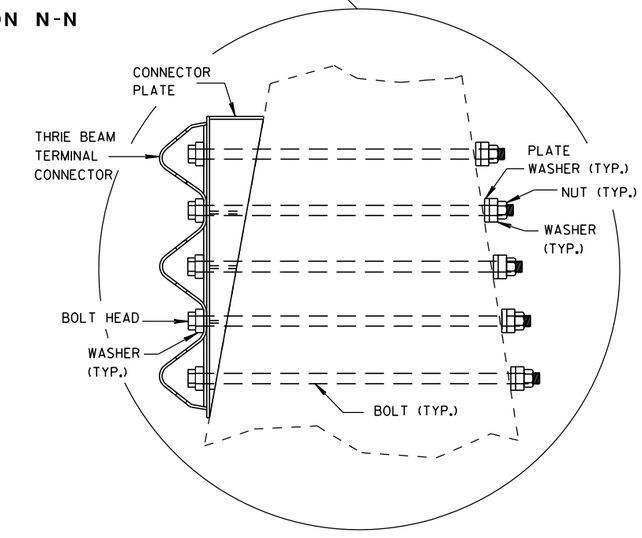
GENERAL NOTES

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

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 14 B 45-3j

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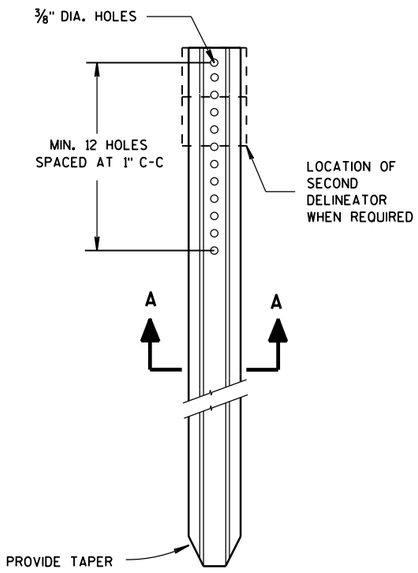
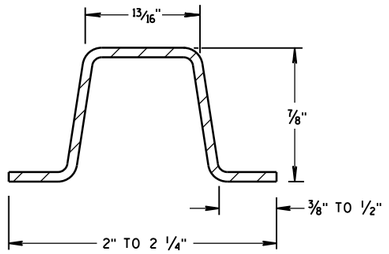
S.D.D. 14 B 45-3j

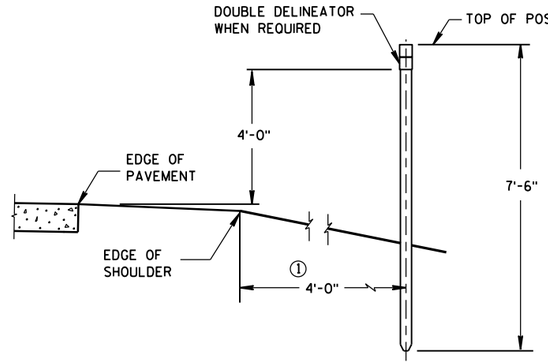


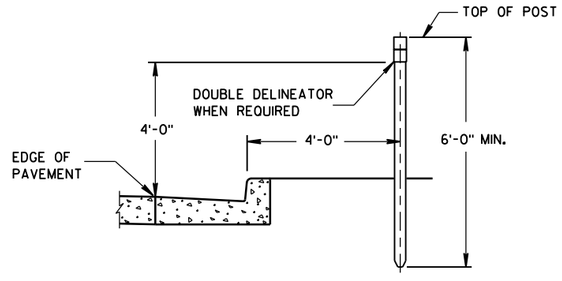
DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



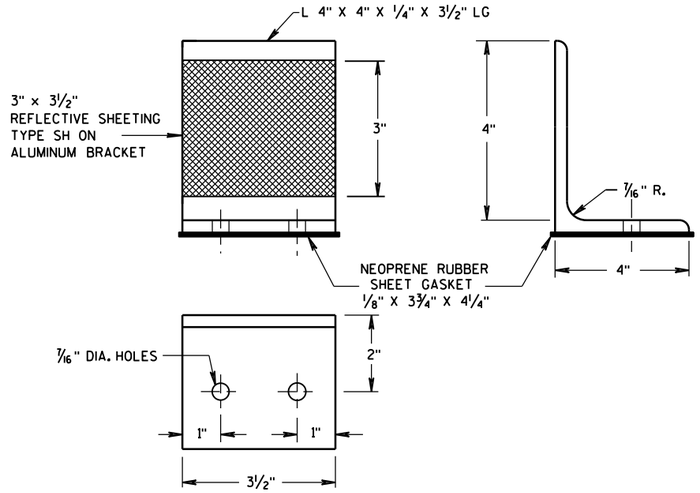


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

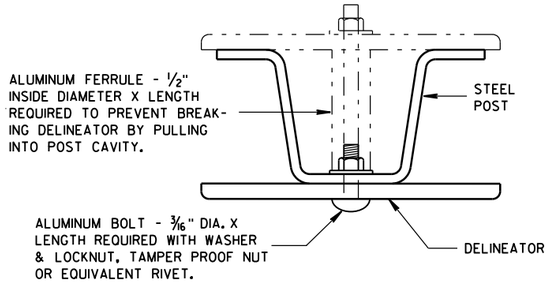
GENERAL NOTES

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

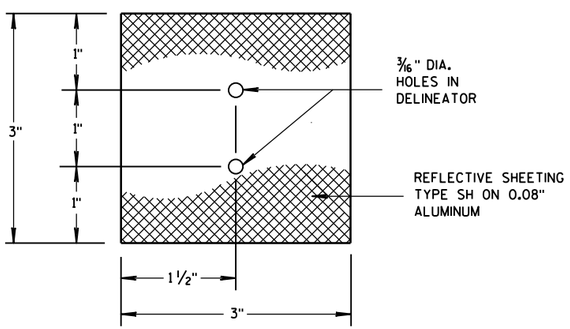
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



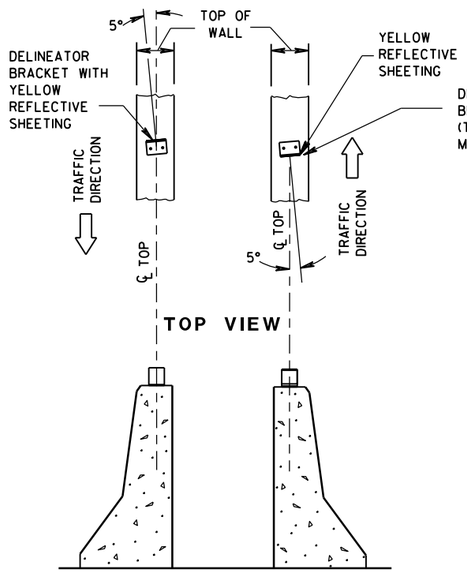
DELINEATOR BRACKET



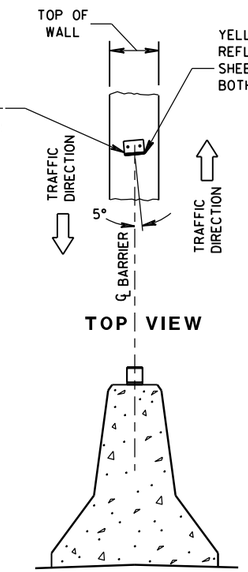
MOUNTING DETAIL FOR DELINEATOR



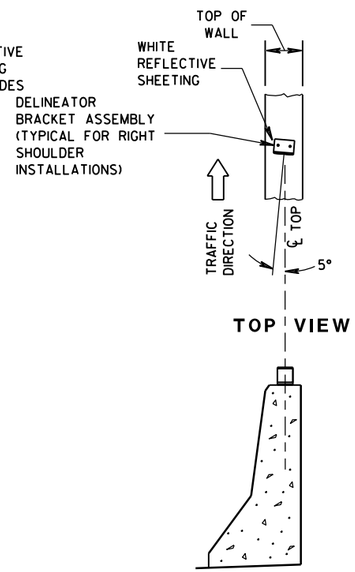
3"x 3" DELINEATOR



DOUBLE BARRIERS IN MEDIAN

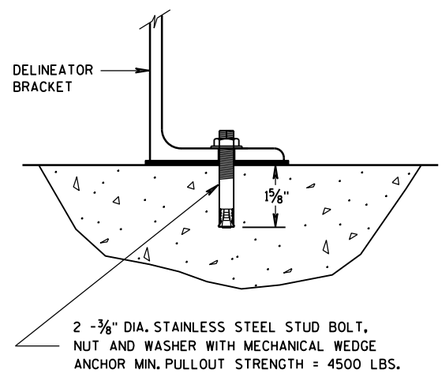


MEDIAN BARRIER



BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC E
FHWA

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S.D.D. 15 A 2-8

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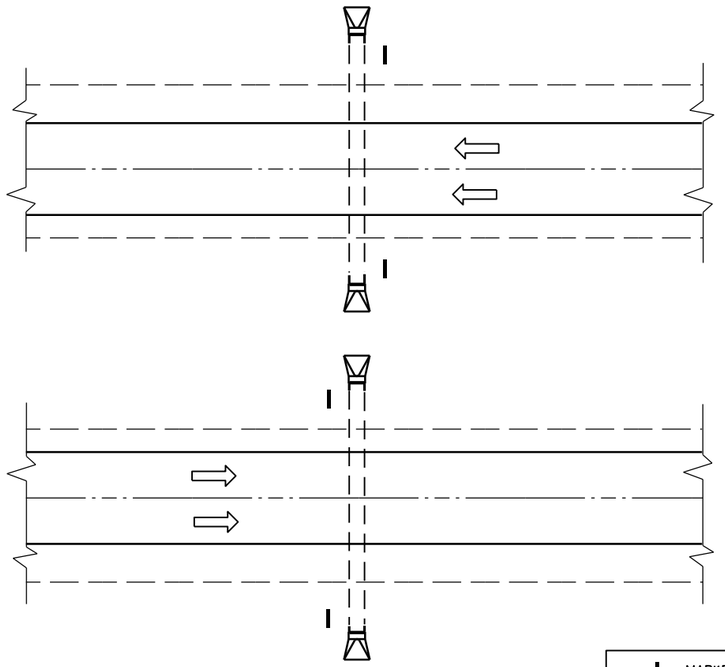
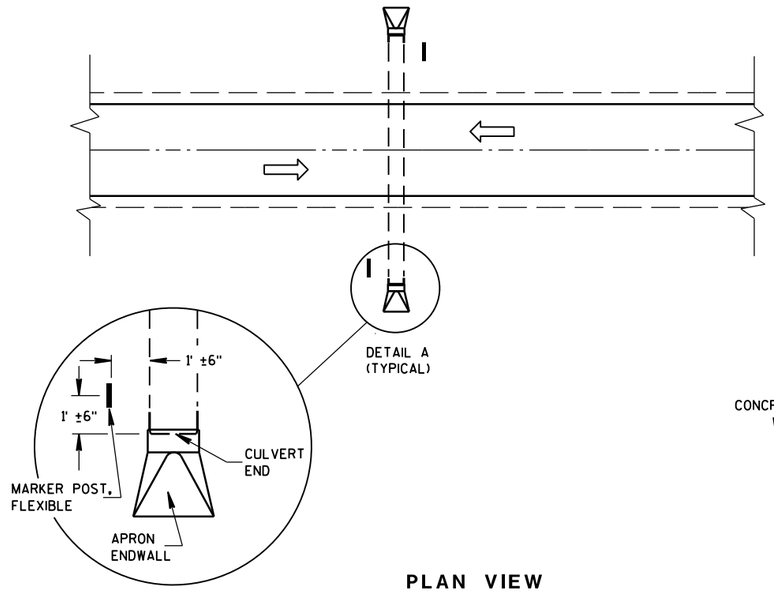
S.D.D. 15 A 2-8



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

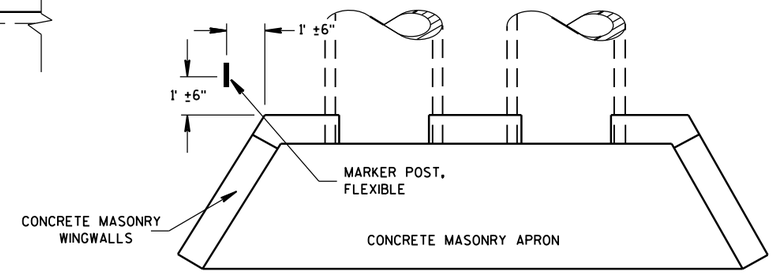
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

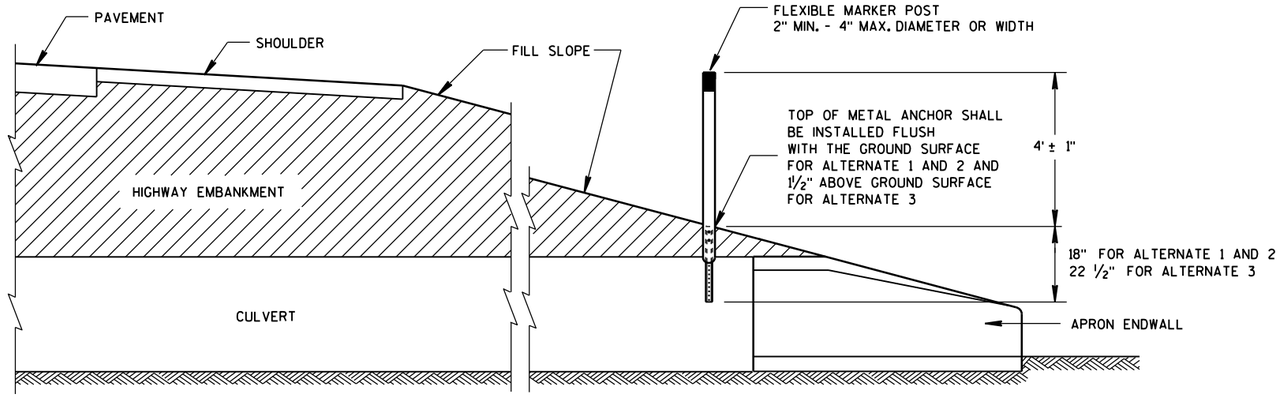
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 A 3-2a

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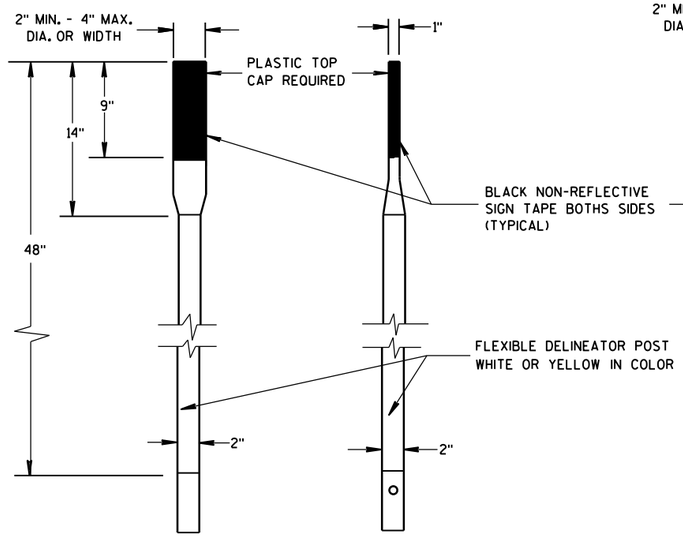
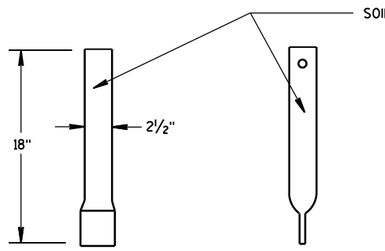
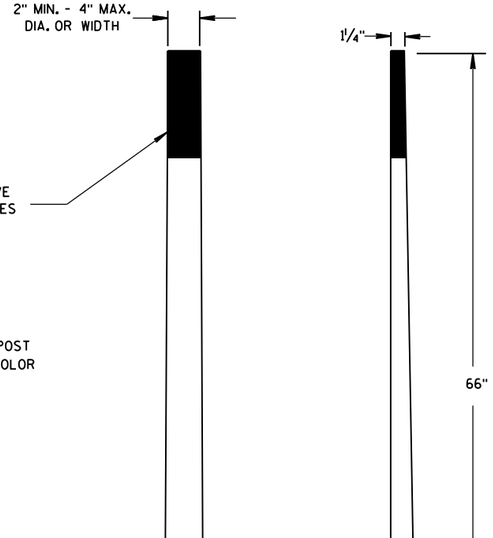
S.D.D. 15 A 3-2a





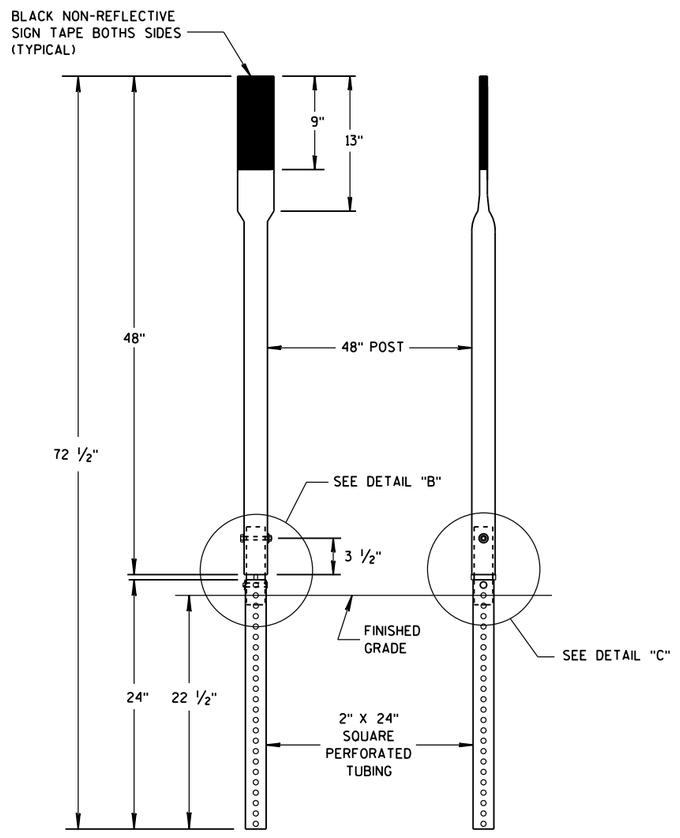
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

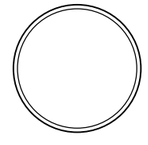
ALTERNATE 2



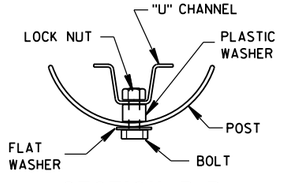
FRONT VIEW SIDE VIEW

ALTERNATE 3

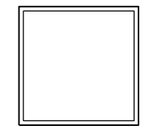
FLEXIBLE MARKER POSTS



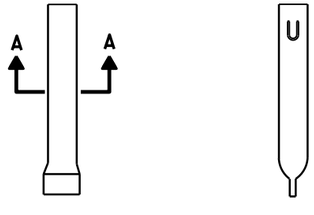
SECTION A-A



SECTION B-B

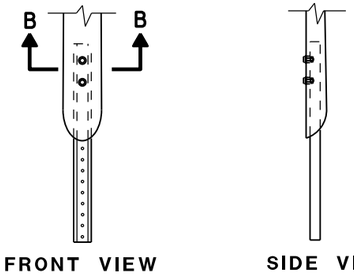


SECTION C-C



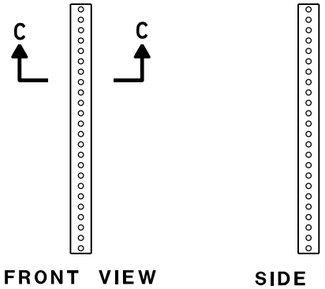
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

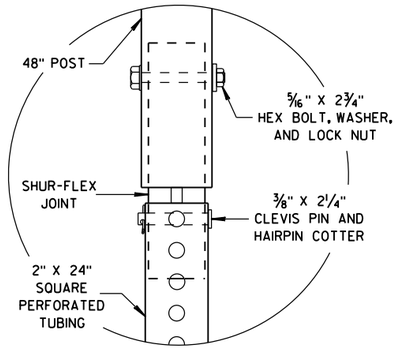
ALTERNATE 2



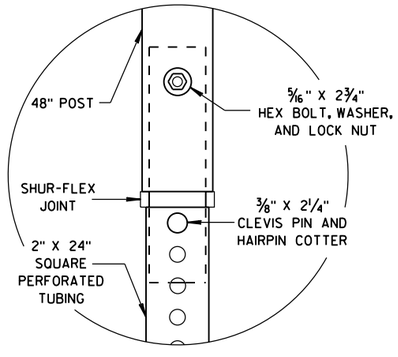
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 A 3-2b

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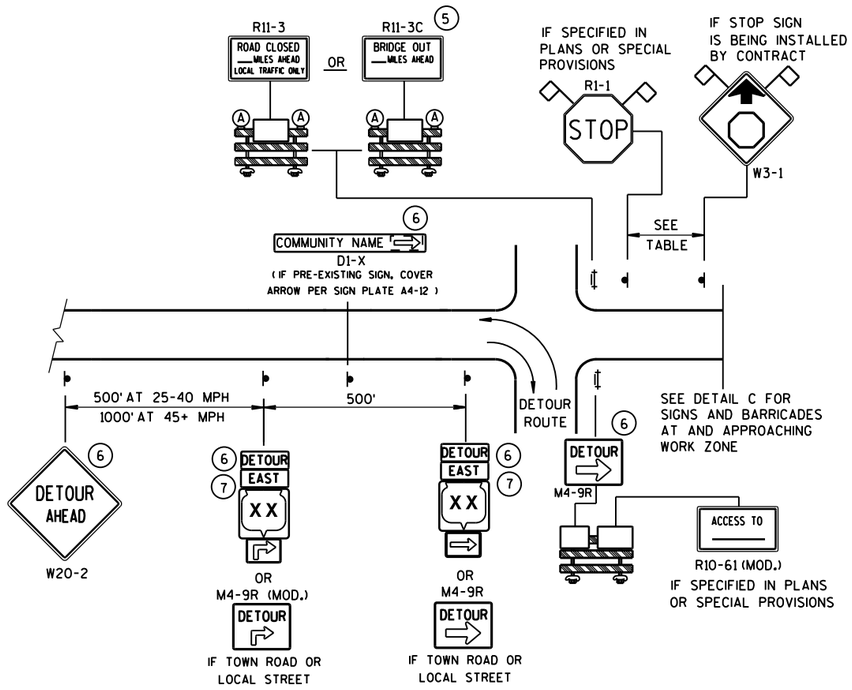
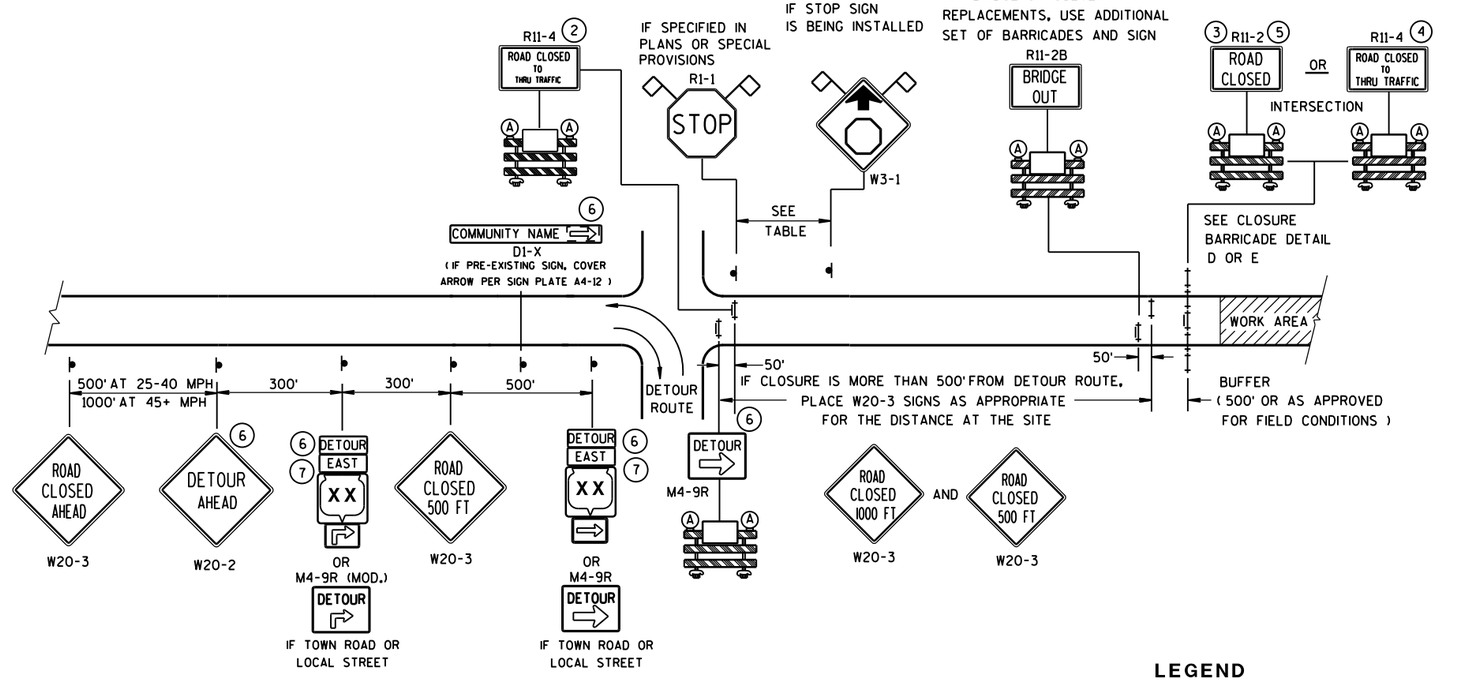
S.D.D. 15 A 3-2b



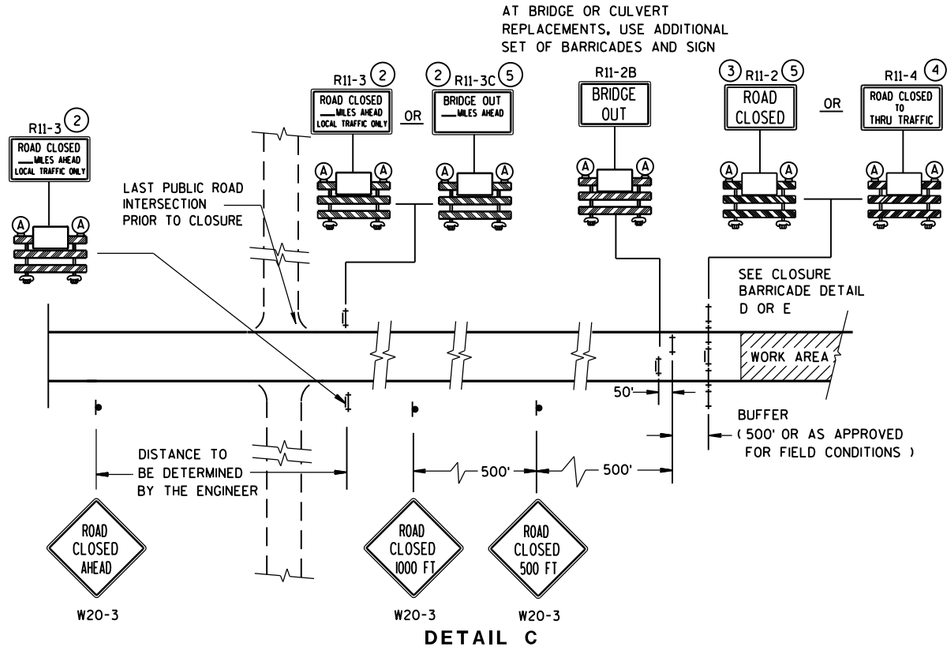
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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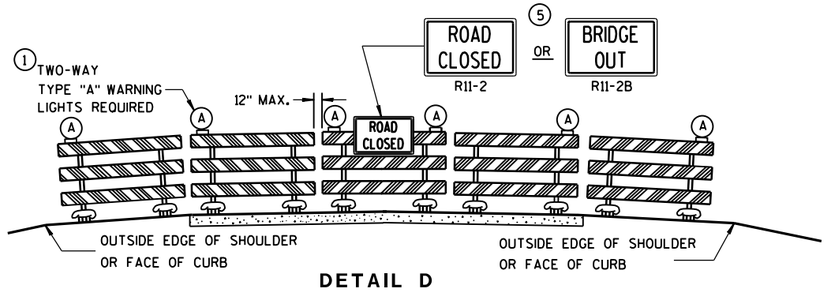
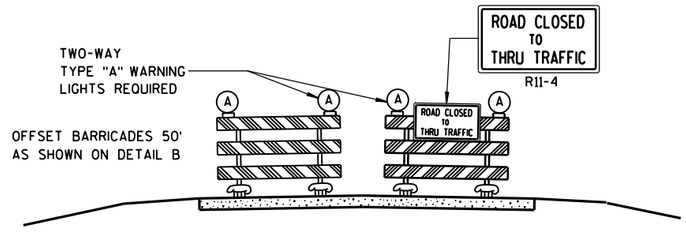
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

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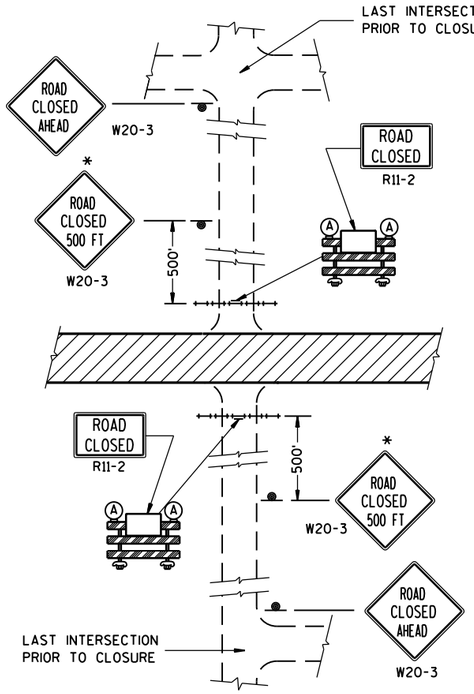
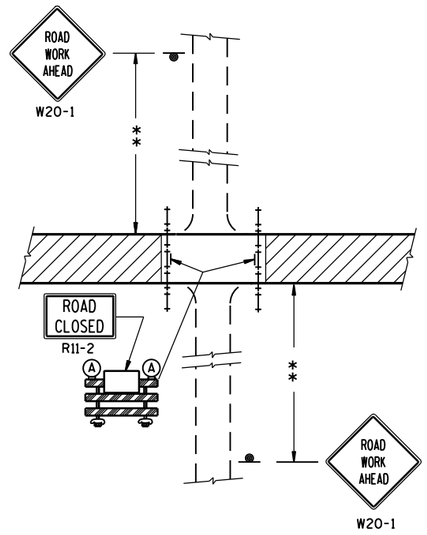
S.D.D. 15 C 2-5b



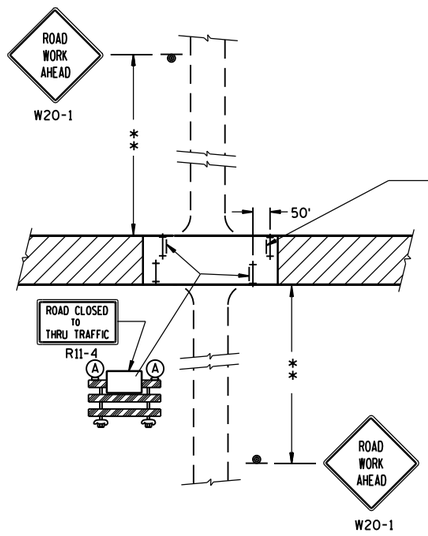
DETAIL 1

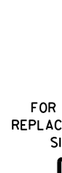
(NO ACCESS TO PROJECT)



DETAIL 2

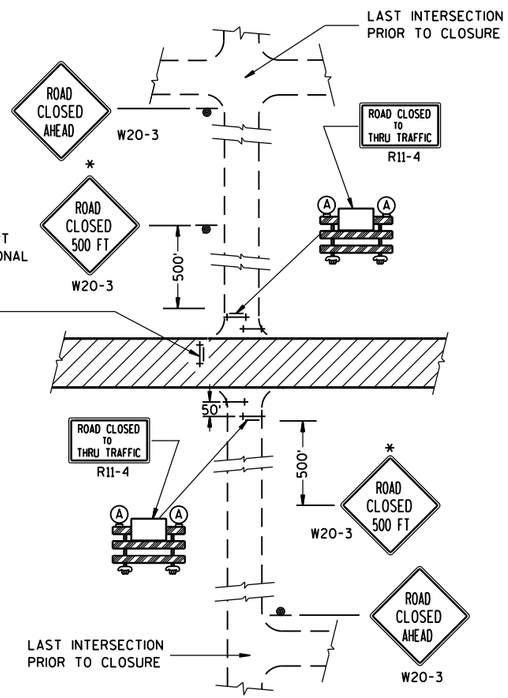
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

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



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 15 C 3-2

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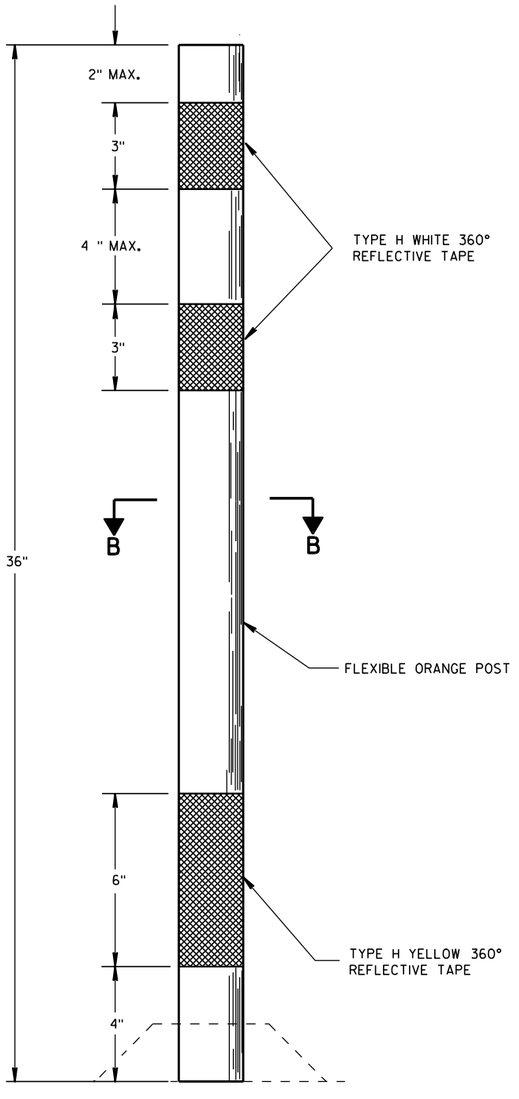
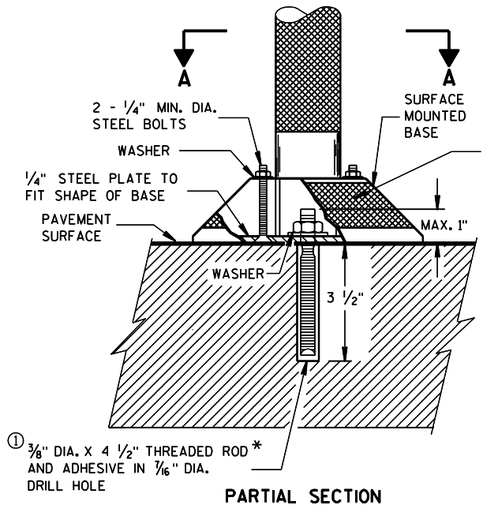
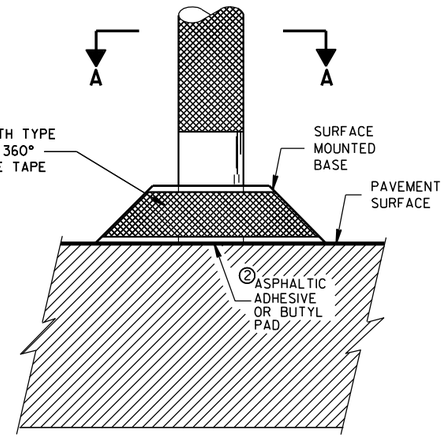
S.D.D. 15 C 3-2



FLEXIBLE TUBULAR MARKER POST



PARTIAL SECTION TO SHOW BOLTS



POST BASES ON NEW OR EXISTING PAVEMENT

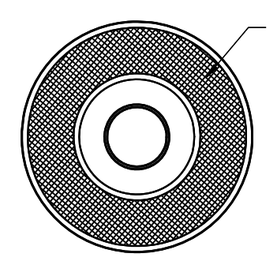
GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

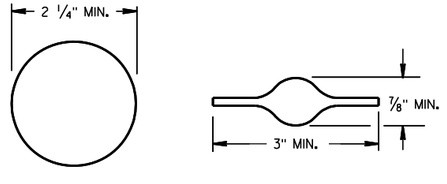
① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1 1/4 INCHES FROM THE TOP.

② THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



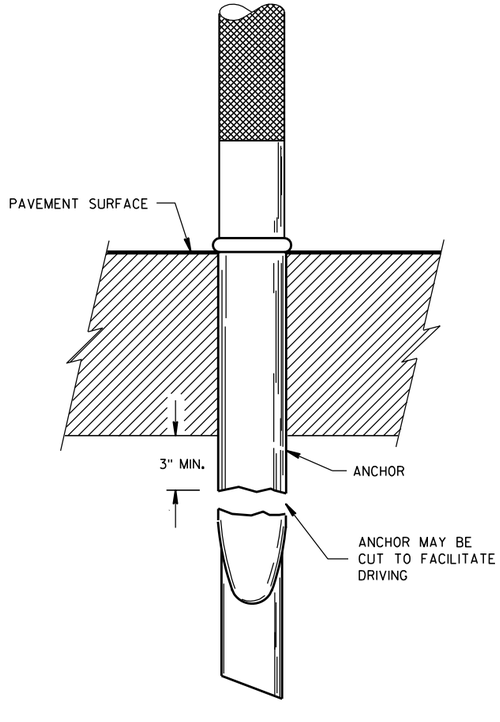
SECTION A-A

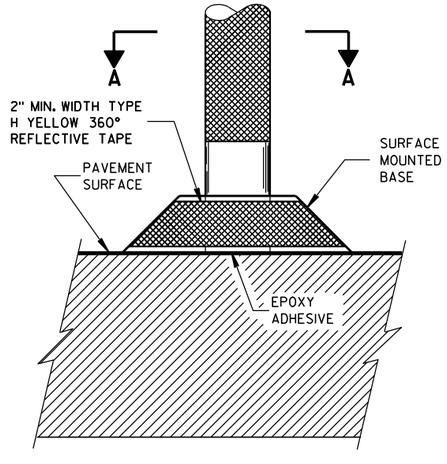
SURFACE MOUNTED BASE



SECTION B-B

ALTERNATIVE SHAPES





POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED

FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/17/94 DATE

/S/ Chester J. [illegible] DIRECTOR, OFFICE O

FHWA

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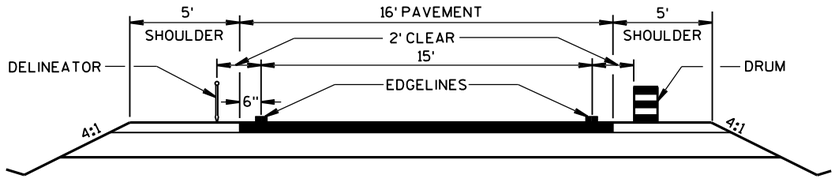
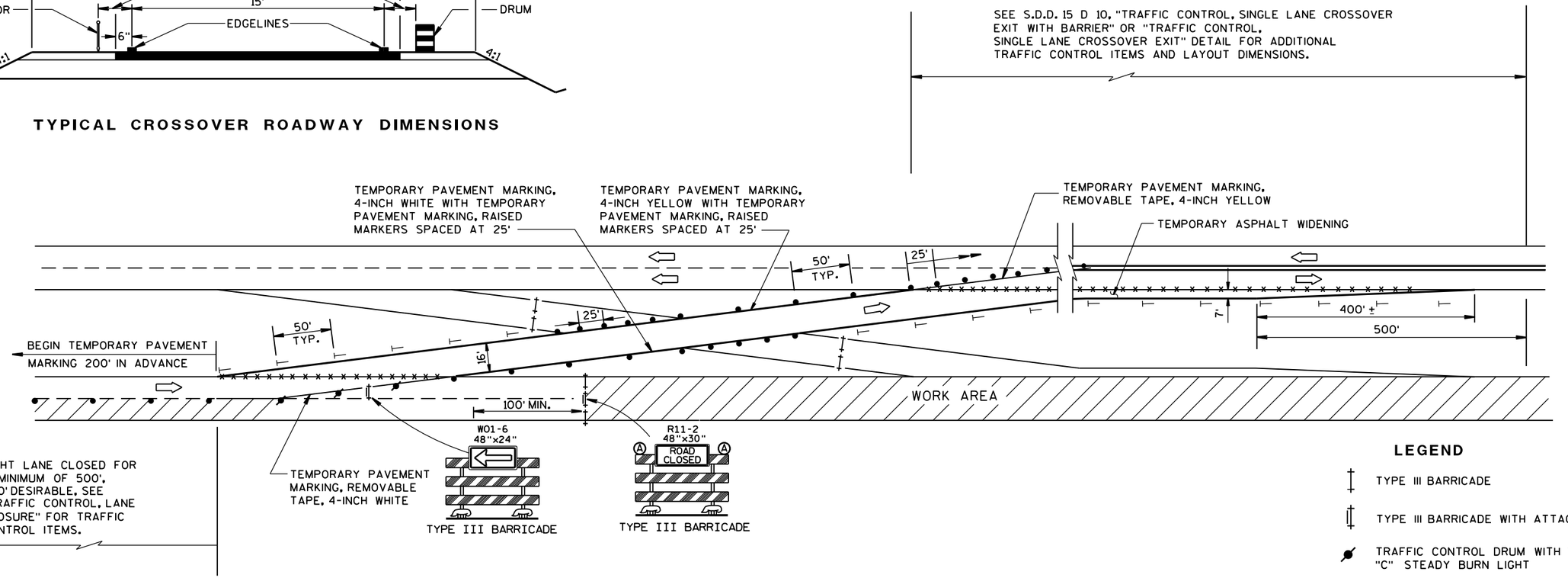


TYPICAL CROSSOVER ROADWAY DIMENSIONS



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE MARKING
- TYPE "A" WARNING LIGHT (FLASHING)
- TEMPORARY DELINEATOR (DOUBLE SIDED)
- REMOVING PAVEMENT MARKINGS
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- DIRECTION OF TRAFFIC
- WORK AREA

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.

THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

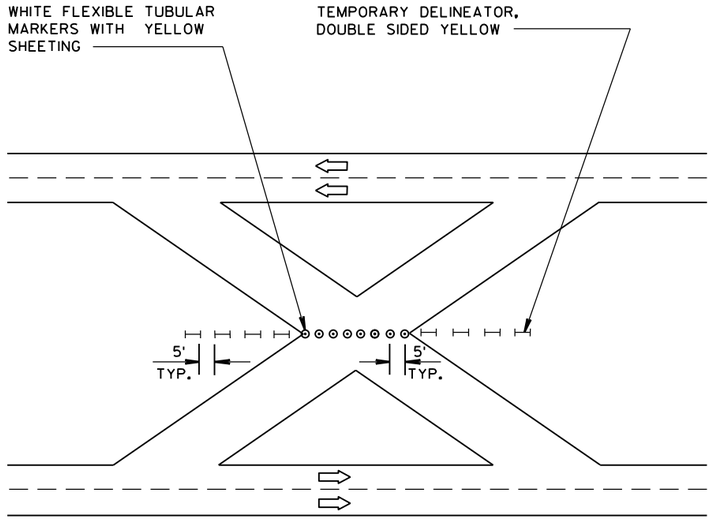
TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.



PROTECTION OF CROSSOVER NOT IN USE WHEN CONSTRUCTION IS NOT TAKING PLACE

TRAFFIC CONTROL, SINGLE LANE CROSSOVER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 D 11-4

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S.D.D. 15 D 11-4

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- POST WITH ATTACHED SIGN IN DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

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.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

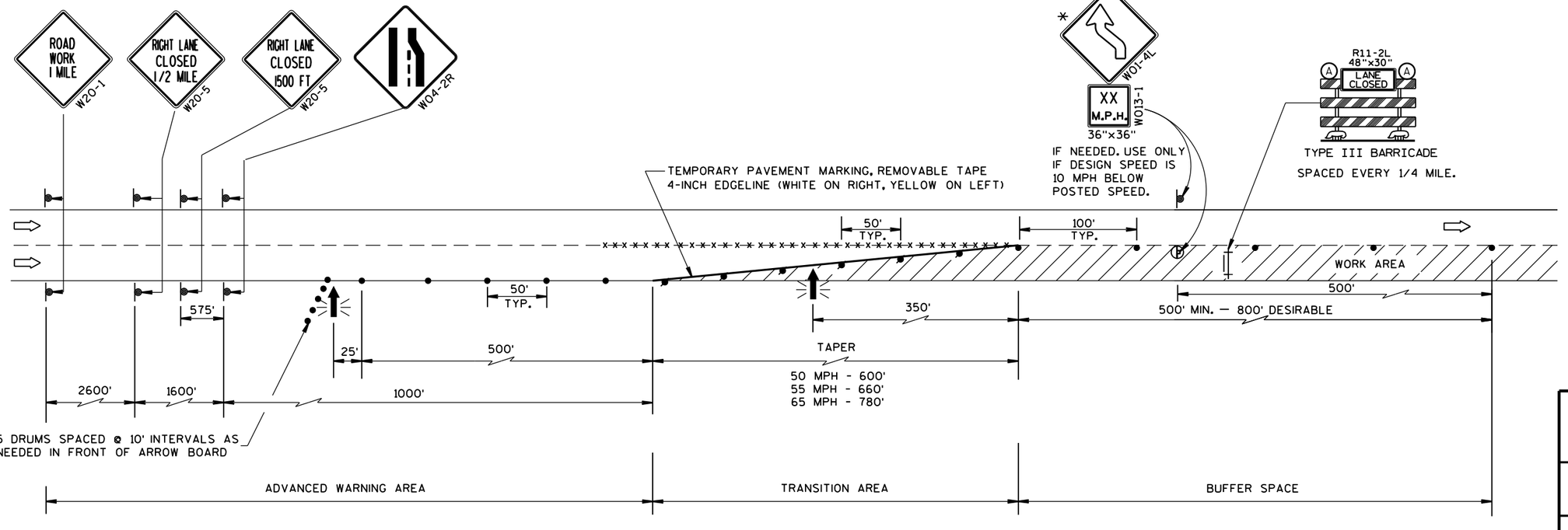
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

R2-1
48"×60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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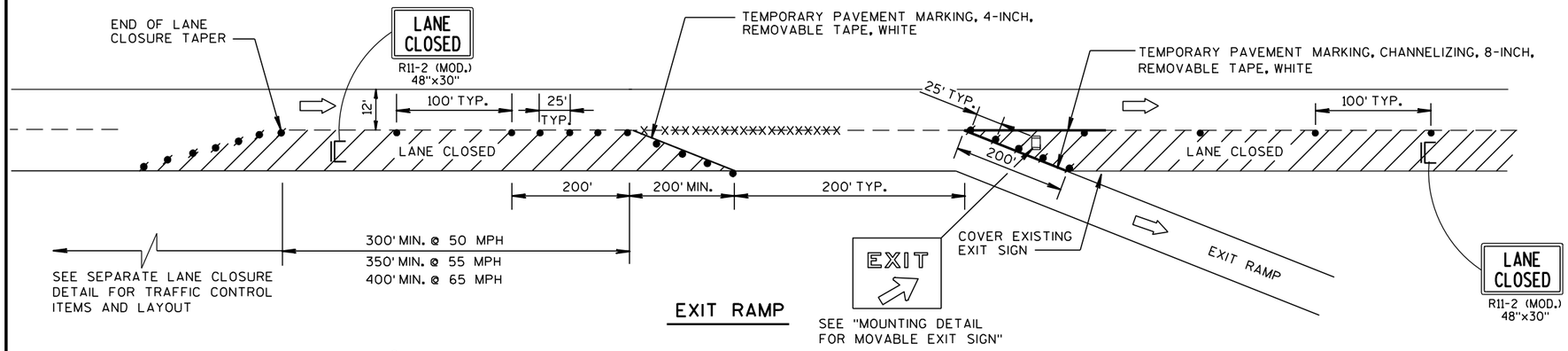
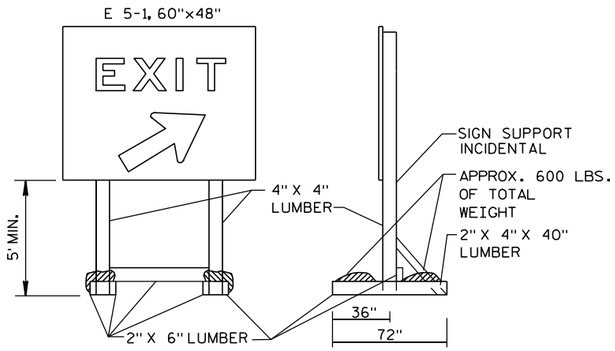
S.D.D. 15 D 12-3

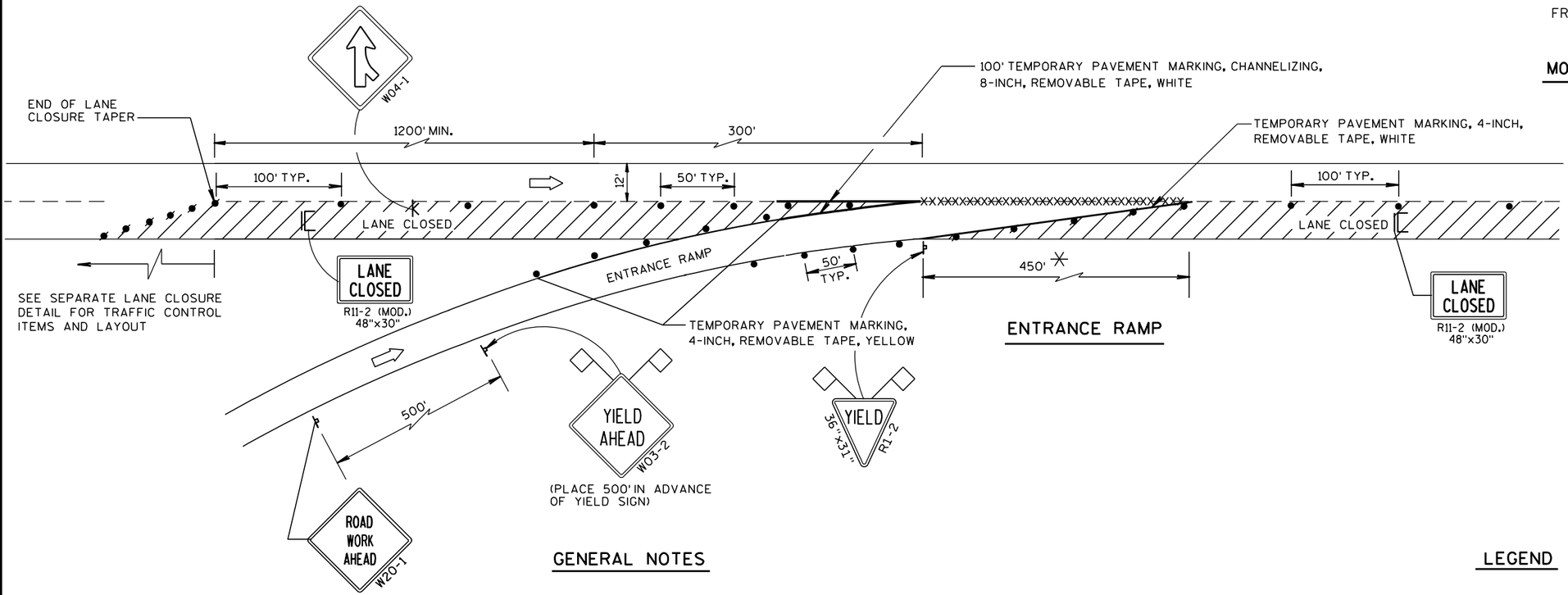


EXIT RAMP



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL

MOUNTING DETAIL FOR MOVABLE EXIT SIGN



ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

✳ LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

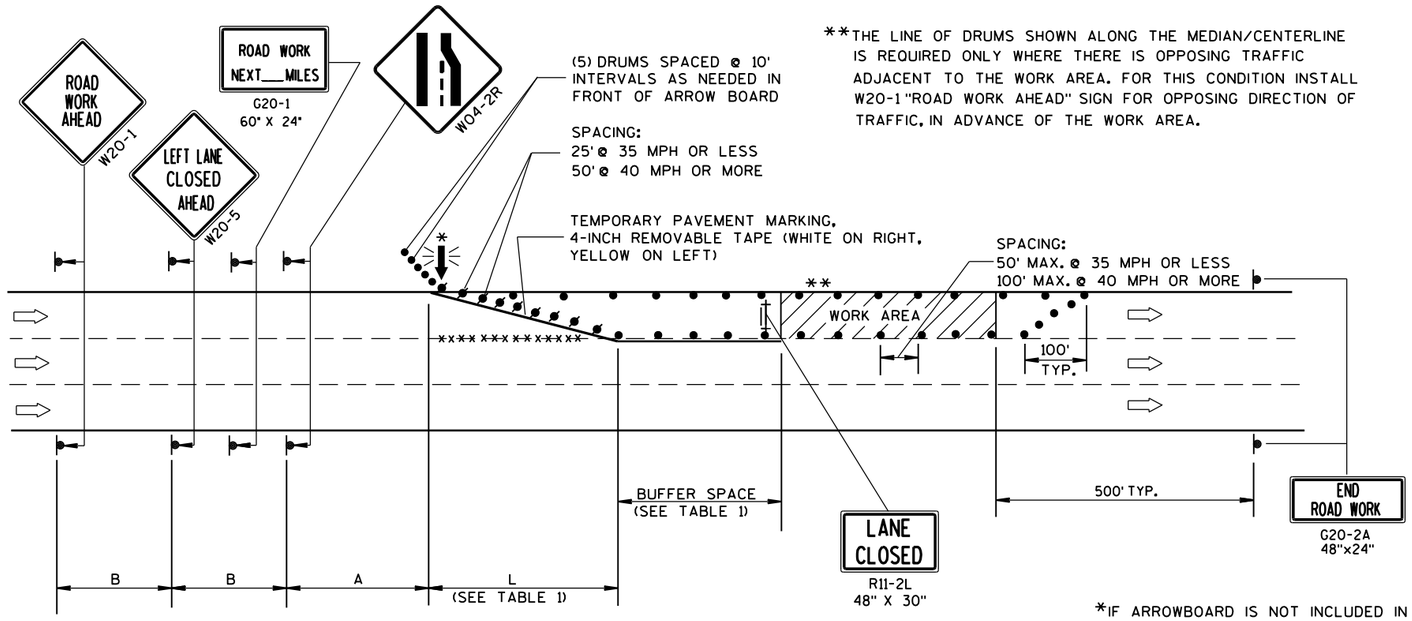
TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKING ENGINEER
FHWA

S.D.D. 15 D 15-1

S.D.D. 15 D 15-1



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

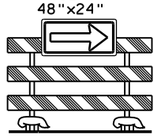


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

ALL SIGNS ARE 48"x48" 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, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

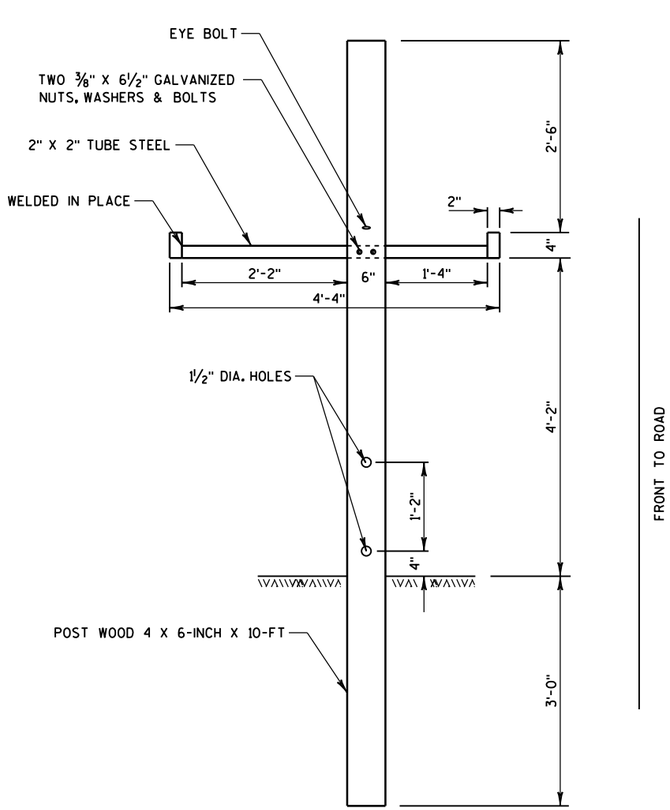
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

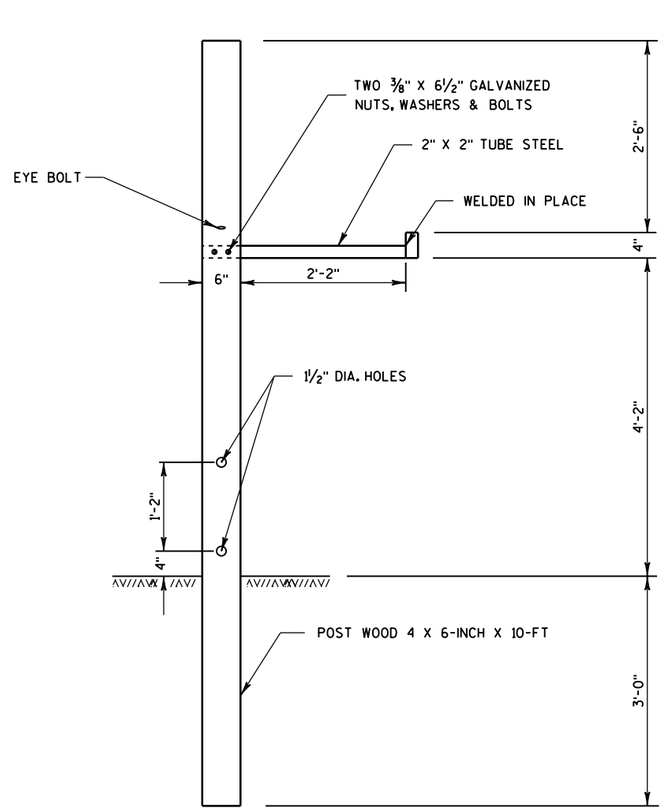
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

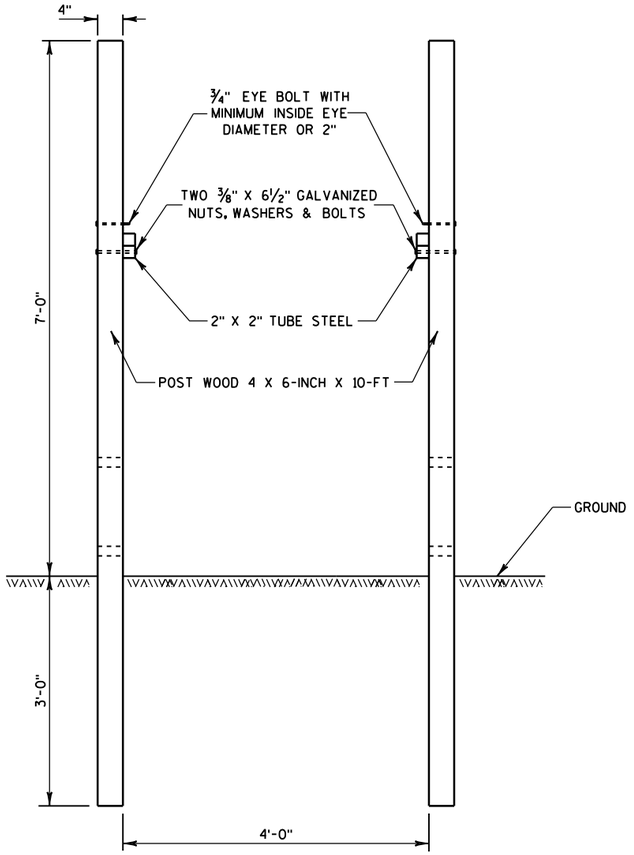
S.D.D. 15 D 20-2



SIDE VIEW
(3 BARRICADE SYSTEM)



SIDE VIEW
(2 BARRICADE SYSTEM)



FRONT VIEW

BARRICADE RACK

* LOCATE OUTSIDE CLEAR ZONE AS DIRECTED BY ENGINEER

BARRICADE RACK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-30-2013 DATE FHWA	/S/ Bill Wondrachek STATE TRAFFIC I MANAGEMENT EN

6

S.D.D. 15 D 36-1

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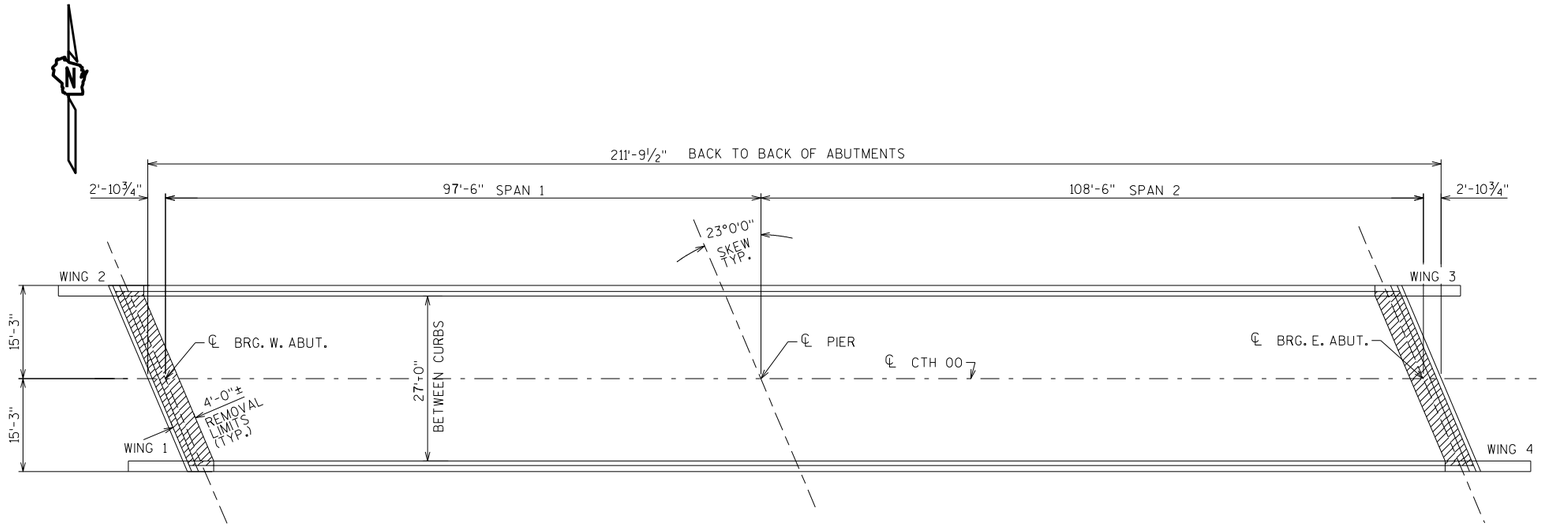
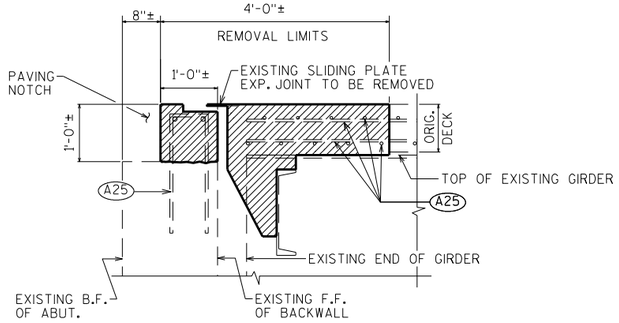
S.D.D. 15 D 36-1

STATE PROJECT NUMBER
1023-02-80



PLAN



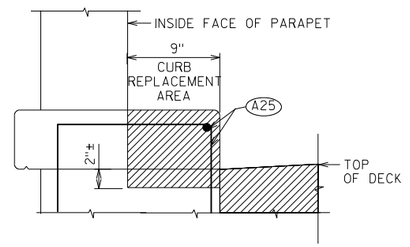
EXISTING SECTION THRU JOINT REPAIR

SHOWING REMOVAL

TOTAL ESTIMATED QUANTITIES

	BID ITEMS	QTY	UNIT
203.0225.S	DEBRIS CONTAINMENT B-41-69	1	LS
502.5005	MASONRY ANCHORS TYPE L NO. 5	60	EACH
502.3100	EXPANSION DEVICE B-41-69	1	LS
502.3215.S	PROTECTIVE SURFACE TREATMENT RESEAL	750	SY
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	1,380	LB
509.0301	PREPARATION DECKS TYPE 1	11	SY
509.0302	PREPARATION DECKS TYPE 2	2	SY
509.1000	JOINT REPAIR	26	SY
** 509.2500	CONCRETE MASONRY OVERLAY DECKS	10	CY
SPV.0060	CLEANING AND PAINTING BEARINGS	8	EACH
SPV.0090.01	SAWING PAVEMENT DECK PREPARATION AREAS	90	LF
SPV.0090.02	DECK CRACK SEALING	100	LF

** BID ITEM INCLUDES CONCRETE FOR:
JOINT REPAIR (INCLUDING CURB);
PREPARATION DECKS TYPE 1 & TYPE 2.



SECTION THRU EXISTING CURB AT JOINT

SHOWING REMOVAL

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
TRIM REBAR AS NECESSARY TO ACCOMMODATE NEW JOINT OPENING.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSION SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLAN.

THE EXISTING DECK REQUIRES CONCRETE SURFACE REPAIR, AREAS SHOULD BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL CRACKS IN THE DECK SHALL BE SEALED WITH A TWO PART EPOXY PER 502.0717.S

PROTECTIVE SURFACE TREATMENT RESEAL TO BE APPLIED TO THE ENTIRE TOP OF DECK, CURBS, AND THE INSIDE FACES OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

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

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

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "JOINT REPAIR".

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 503.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES. POWER WASH AND ADEQUATELY DRY SURFACES BEFORE APPLICATION. WORK TO BE INCIDENTAL TO "JOINT REPAIR".

REPAINT ALL BEARING ASSEMBLIES AT ABUTMENTS ONLY.

THE COLOR OF EPOXY SHALL BE WHITE AND THE URETHANE COATING MATERIAL SHALL BE GRAY, MATCHING COLOR NO. 26293.

DESIGN DATA

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY SLAB ——— f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 —— fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. JOINT REPAIR
2. JOINT REPAIR DETAILS
3. EXPANSION DEVICE
4. COVER PLATE DETAILS

BRIDGE OFFICE CONTACTS:
MAY LIU (608)266-5163
AARON BONK (608)261-0261

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C Dreher 1/24/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-41-69

BRIDGE REHABILITATION-JOINT REPAIR

COUNTY	TOWN/CITY/VILLAGE
MONROE	LINCOLN
DESIGN SPEC. REHABILITATION	N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
MWL	EMK	MWL	EMK

JOINT REPAIR

SHEET 1 OF 4

124

I.D. 1023-02-04

DATE: JAN. 2014

SCALE = 12

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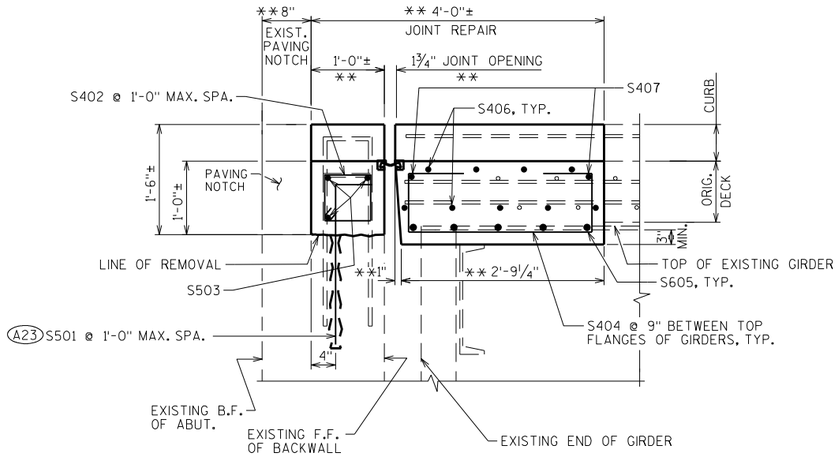
STATE PROJECT NUMBER
1023-02-80

** DIMENSION IS TAKEN NORMAL TO ℄ GIRDER



SECTION THRU JOINT AT SUBSTRUCTURE

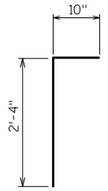
NORMAL TO ℄ SUBSTRUCTURE - SHOWING CURB

BILL OF BARS

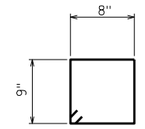
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A23	S501	X	60	3'-1"	X		PAVING BLOCK ANCHORS-VERTICAL
	S402	X	60	3'-4"	X		PAVING BLOCK-STIRRUP
	S503	X	12	15'-0"			PAVING BLOCK-HORIZ.
	S404	X	60	4'-9"	X		DECK JOINT-ABUT-DIAPH.-STIRRUP
	S605	X	30	8'-3"			DECK JOINT-BOT.-BTWN. GIRDERS
	S406	X	36	15'-0"			DECK-HORIZ.
	S407	X	12	8'-3"			DECK JOINT-TOP-BTWN. GIRDERS
	S408	X	12	8'-3"			EXPANSION DEVICE-HORIZ. BTWN. GIRDERS

A23 MASONRY ANCHORS TYPE L NO. 5 BARS. HAVING A PULLOUT CAPACITY OF 19 KIPS. EMBED A MINIMUM 1'-6" INTO EXIST. CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. EPOXY COATED.



S501



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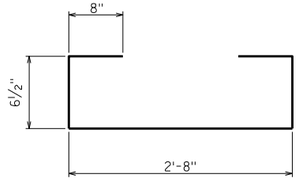
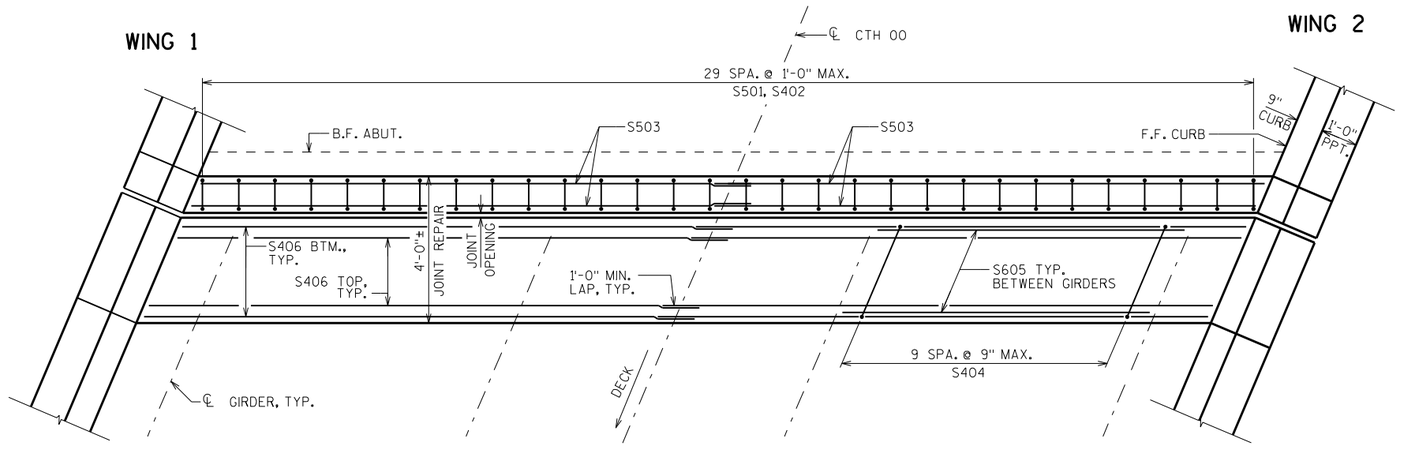


S404



PLAN - JOINT REPAIR

WEST ABUTMENT SHOWN
EAST ABUTMENT SIMILAR

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-69

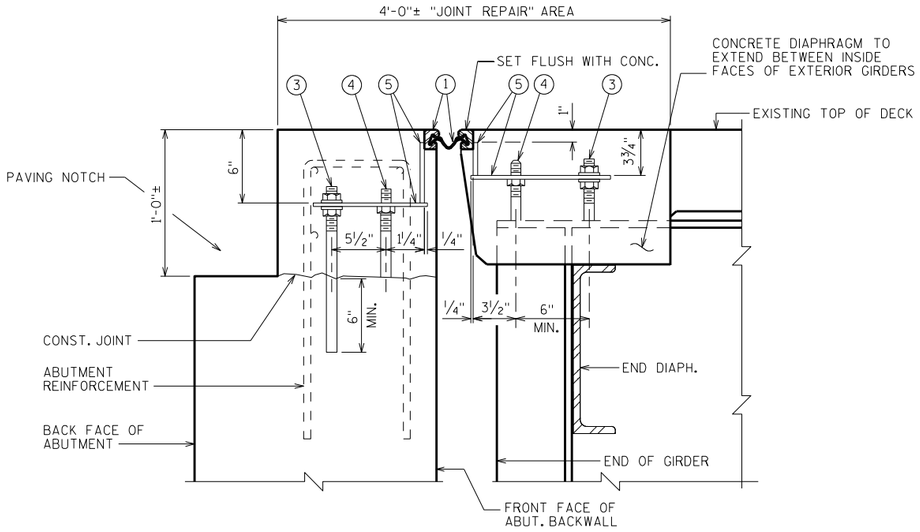
DRAWN BY MWL | PLANS CK'D. EMK

JOINT REPAIR DETAILS

SHEET 2

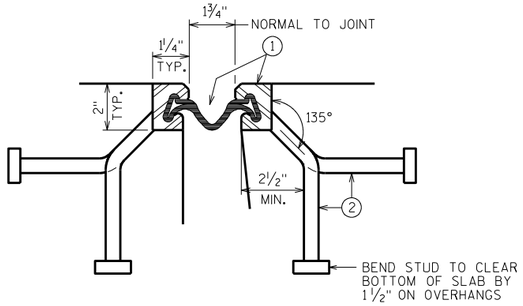
125

SCALE = 2.88



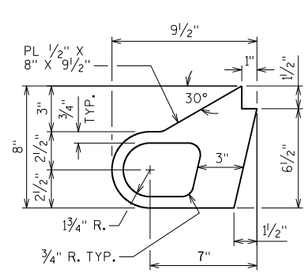
SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

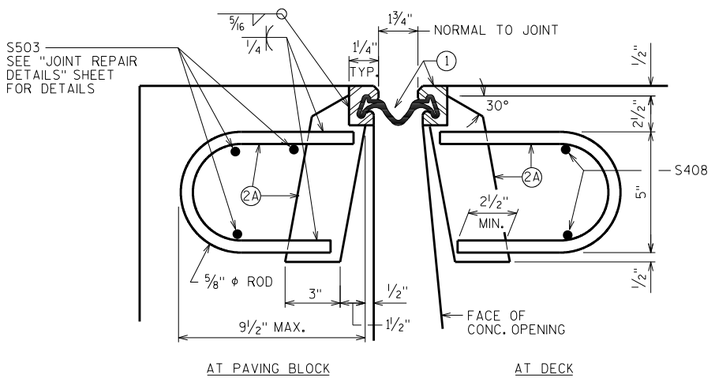


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS.

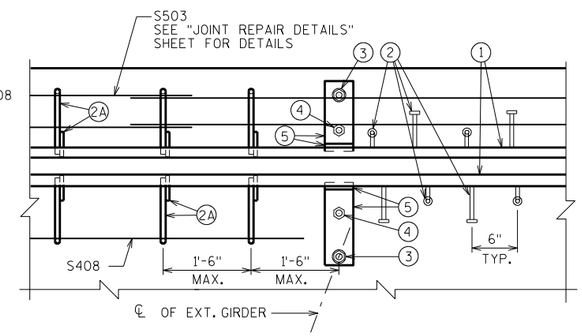


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

LEGEND

1. NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
2. STUDS 5/8"ϕ X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH 5/8"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
7. ¾"ϕ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾"ϕ X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-41-69".

STATE PROJECT NUMBER

1023-02-80

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-69

DRAWN BY MWL | PLANS CK'D. EMK

EXPANSION DEVICE

SHEET 3

126

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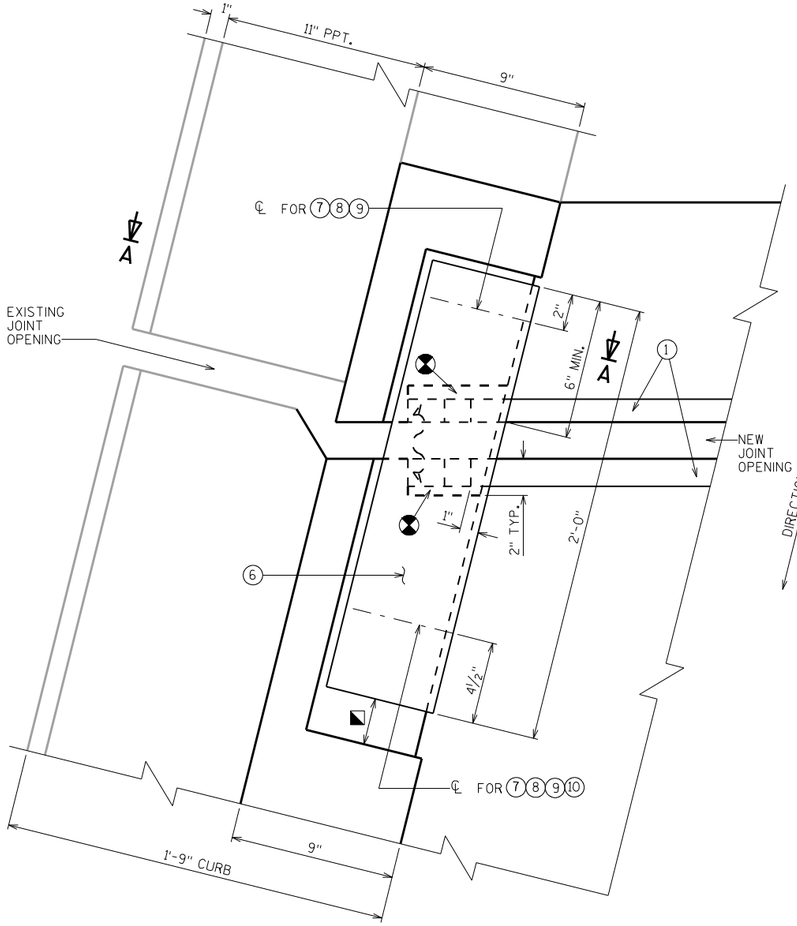
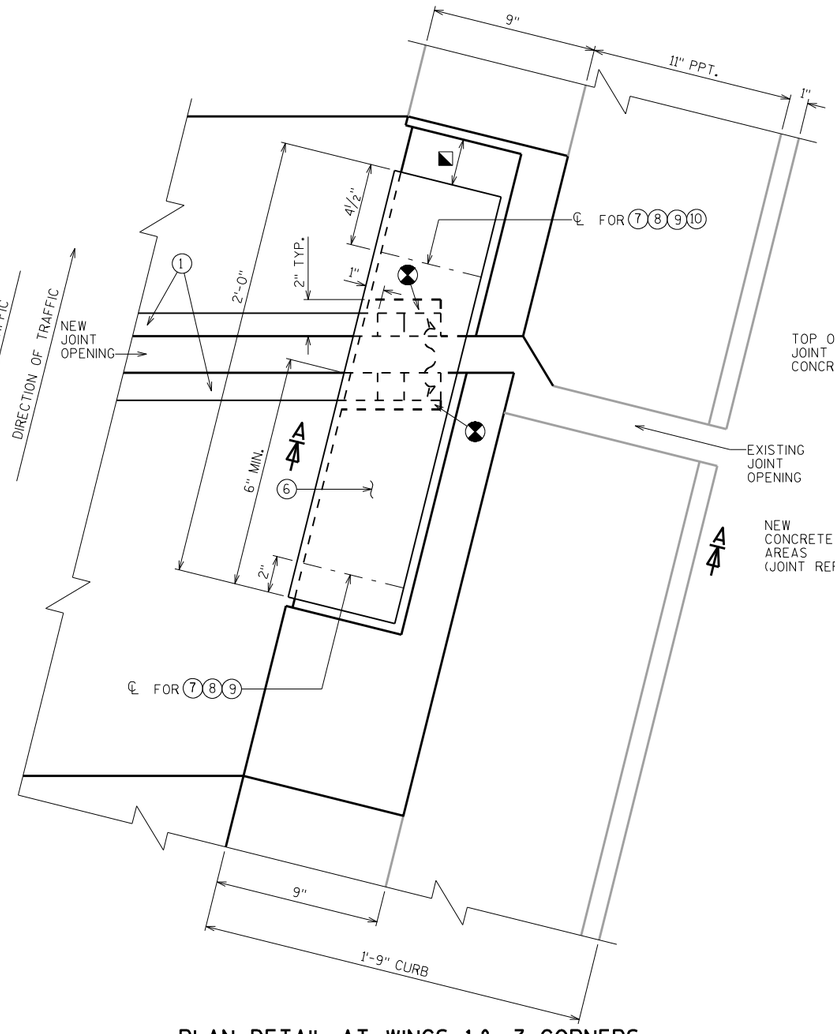
SCALE = 1

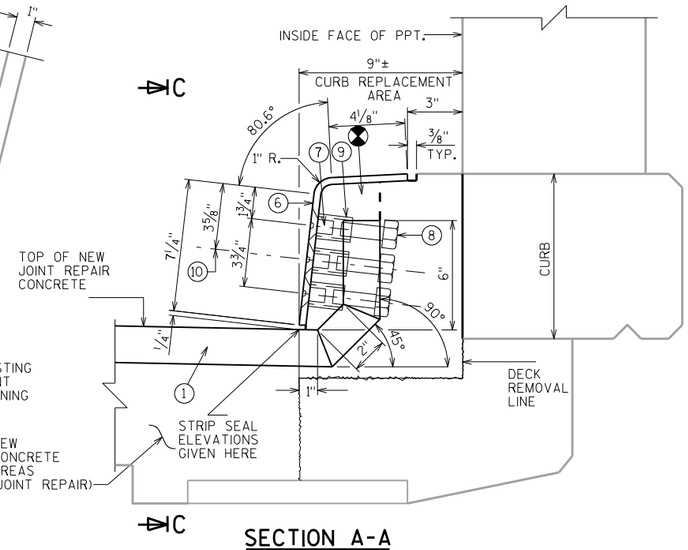
STATE PROJECT NUMBER
1023-02-80



PLAN DETAIL AT WINGS 2 & 4 CORNERS



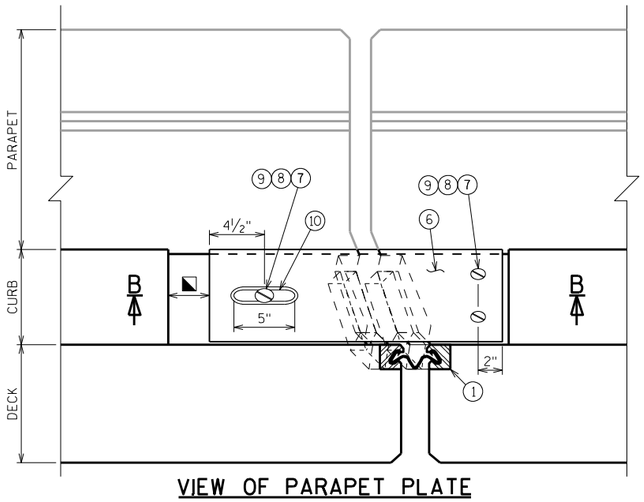
PLAN DETAIL AT WINGS 1& 3 CORNERS



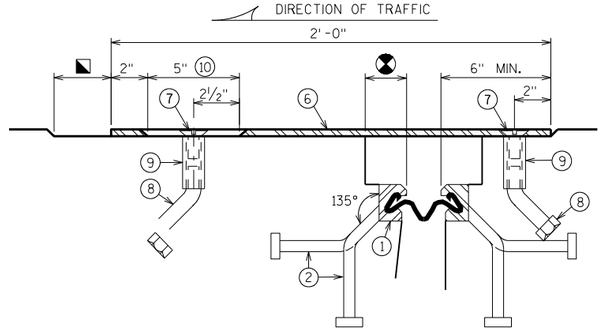
SECTION A-A

NOTES:
REBUILD NEW CURB, WING AND DECK AREAS TO MATCH THE EXISTING CURB, WING AND DECK.

#6 GALVANIZED PLATE BENDS SHALL MATCH THE EXTERIOR EDGES OF CURB SURFACES.



VIEW OF PARAPET PLATE FROM ROADWAY (SECTION C-C)



SECTION B-B

LEGEND

1. NEOPRENE STRIP SEAL (4 INCH) & STEEL EXTRUSIONS.
2. STUDS ⅝"Φ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
6. GALVANIZED PLATE ⅜" X LIMITS SHOWN WITH HOLES FOR #7. BEND AS SHOWN.
7. ¾"Φ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾"Φ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾"Φ X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED CSK. HOLE FOR #7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.

⊠ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS ½".

NOTE:
ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-69

DRAWN BY MWL | PLANS CK'D. EMK

COVER PLATE DETAILS

SHEET 4

127

SCALE = 1

8

8

CROSSOVER #1

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut 205.0100 Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Cumulative Vol (CY) Expanded Marsh Backfill 1.50 Note 4	Cumulative Vol (CY) Expanded Rock 1.10	Cumulative Vol (CY) Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
2589+53.69	258953.69	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
2589+75.21	258975.21	21.52	24.45	0.00	5.91	10	0	2	10	3	0	0	0	0.00	0.00	6.80
2590+00.01	259000.01	24.80	44.16	0.00	24.27	32	0	14	41	20	0	0	0	0.00	0.00	20.99
2590+25	259025.00	24.99	47.54	0.00	27.41	42	0	24	84	50	0	0	0	0.00	0.00	33.52
2590+50	259050.00	25.00	53.88	0.00	23.83	47	0	24	131	80	0	0	0	0.00	0.00	50.82
2590+75	259075.00	25.00	58.06	0.00	24.34	52	0	22	182	108	0	0	0	0.00	0.00	74.77
2591+00	259100.00	25.00	60.27	0.00	26.12	55	0	23	237	137	0	0	0	0.00	0.00	100.34
2591+25	259125.00	25.00	62.21	0.00	27.34	57	0	25	294	168	0	0	0	0.00	0.00	126.10
2591+50	259150.00	25.00	63.10	0.00	28.35	58	0	26	352	200	0	0	0	0.00	0.00	151.89
2591+75	259175.00	25.00	64.06	0.00	29.56	59	0	27	411	234	0	0	0	0.00	0.00	177.25
2592+00	259200.00	25.00	63.65	0.00	27.46	59	0	26	470	267	0	0	0	0.00	0.00	203.37
2592+25	259225.00	25.00	63.26	0.00	26.37	59	0	25	529	298	0	0	0	0.00	0.00	230.98
2592+50	259250.00	25.00	63.36	0.00	24.57	59	0	24	587	327	0	0	0	0.00	0.00	260.13
2592+75	259275.00	25.00	63.21	0.00	22.02	59	0	22	646	354	0	0	0	0.00	0.00	291.76
2593+00	259300.00	25.00	61.53	0.00	20.73	58	0	20	704	379	0	0	0	0.00	0.00	324.77
2593+25	259325.00	25.00	62.20	0.00	11.54	57	0	15	761	398	0	0	0	0.00	0.00	363.38
2593+50	259350.00	25.00	60.87	0.00	10.58	57	0	10	818	410	0	0	0	0.00	0.00	407.55
2593+75	259375.00	25.00	61.39	0.00	9.57	57	0	9	875	422	0	0	0	0.00	0.00	452.49
2594+00	259400.00	25.00	61.72	0.00	10.43	57	0	9	932	434	0	0	0	0.00	0.00	497.92
2594+25	259425.00	25.00	62.84	0.00	13.51	58	0	11	989	447	0	0	0	0.00	0.00	541.73
2594+50	259450.00	25.00	63.13	0.00	15.54	58	0	13	1,048	464	0	0	0	0.00	0.00	583.24
2594+75	259475.00	25.00	63.56	0.00	13.83	59	0	14	1,106	481	0	0	0	0.00	0.00	624.90
2595+00	259500.00	25.00	65.28	0.00	13.09	60	0	12	1,166	497	0	0	0	0.00	0.00	668.97
2595+25	259525.00	25.00	66.75	0.00	11.88	61	0	12	1,227	511	0	0	0	0.00	0.00	715.64
2595+50	259550.00	25.00	69.36	0.00	10.65	63	0	10	1,290	524	0	0	0	0.00	0.00	765.62
2595+66.48	259566.48	16.48	71.73	0.00	17.35	43	0	9	1,333	535	0	0	0	0.00	0.00	798.00
2595+75	259575.00	8.52	71.94	0.00	18.91	23	0	6	1,356	542	0	0	0	0.00	0.00	813.52
2596+00	259600.00	25.00	68.24	0.00	23.27	65	0	20	1,421	567	0	0	0	0.00	0.00	854.01
2596+25	259625.00	25.00	65.80	0.00	27.68	62	0	24	1,483	596	0	0	0	0.00	0.00	886.58
2596+50	259650.00	25.00	64.28	0.00	33.35	60	0	28	1,543	631	0	0	0	0.00	0.00	911.49
2596+75	259675.00	25.00	62.16	0.00	37.04	59	0	33	1,601	672	0	0	0	0.00	0.00	929.29
2597+00	259700.00	25.00	62.63	0.00	40.28	58	0	36	1,659	717	0	0	0	0.00	0.00	942.32
2597+25	259725.00	25.00	61.45	0.00	44.91	57	0	39	1,717	766	0	0	0	0.00	0.00	950.47
2597+50	259750.00	25.00	60.97	0.00	47.25	57	0	43	1,773	819	0	0	0	0.00	0.00	953.81
2597+75	259775.00	25.00	60.94	0.00	47.69	56	0	44	1,830	874	0	0	0	0.00	0.00	955.31
2598+00	259800.00	25.00	60.55	0.00	49.11	56	0	45	1,886	930	0	0	0	0.00	0.00	955.53
2598+25	259825.00	25.00	60.43	0.00	51.41	56	0	47	1,942	989	0	0	0	0.00	0.00	953.37
2598+50	259850.00	25.00	59.90	0.00	52.91	56	0	48	1,998	1,049	0	0	0	0.00	0.00	948.72
2598+75	259875.00	25.00	59.58	0.00	53.75	55	0	49	2,053	1,111	0	0	0	0.00	0.00	942.31
2599+00	259900.00	25.00	59.44	0.00	53.25	55	0	50	2,108	1,173	0	0	0	0.00	0.00	935.50
2599+25	259925.00	25.00	59.22	0.00	51.09	55	0	48	2,163	1,233	0	0	0	0.00	0.00	930.05
2599+28.41	259928.41	3.41	59.10	0.00	50.55	7	0	6	2,171	1,241	0	0	0	0.00	0.00	929.49
2599+50	259950.00	21.59	57.88	0.00	45.62	47	0	38	2,217	1,289	0	0	0	0.00	0.00	928.20
2599+75	259975.00	25.00	54.87	0.00	38.94	52	0	39	2,270	1,338	0	0	0	0.00	0.00	931.47
2600+00	260000.00	25.00	53.27	0.00	36.15	50	0	35	2,320	1,381	0	0	0	0.00	0.00	938.09
2600+25	260025.00	25.00	51.80	0.00	34.69	49	0	33	2,368	1,422	0	0	0	0.00	0.00	945.74
2600+50	260050.00	25.00	49.45	0.00	30.05	47	0	30	2,415	1,460	0	0	0	0.00	0.00	955.15
2600+75	260075.00	25.00	47.14	0.00	27.13	45	0	26	2,460	1,493	0	0	0	0.00	0.00	966.77
2600+98.9	260098.90	23.90	47.11	0.00	20.90	42	0	21	2,502	1,520	0	0	0	0.00	0.00	981.91
2601+25	260125.00	26.10	0.00	0.00	0.00	23	0	10	2,524	1,532	0	0	0	0.00	0.00	992.06
TOTAL:						2,524		1,226		1,532						

EB OFF-RAMP WIDENING

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut 205.0100 Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Cumulative Vol (CY) Expanded Marsh Backfill 1.50 Note 4	Cumulative Vol (CY) Expanded Rock 1.10	Cumulative Vol (CY) Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
2930+04.16	293004.16	0.00	8.83	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
2930+25	293025.00	20.84	9.65	0.00	0.00	7	0	0	7	0	0	0	0	0.00	0.00	7.13
2930+50	293050.00	25.00	8.58	0.00	0.00	8	0	0	16	0	0	0	0	0.00	0.00	15.57
2930+75	293075.00	25.00	7.95	0.00	0.04	8	0	0	23	0	0	0	0	0.00	0.00	23.20
2931+00	293100.00	25.00	7.73	0.00	0.08	7	0	0	30	0	0	0	0	0.00	0.00	30.38
2931+25	293125.00	25.00	7.78	0.00	0.10	7	0	0	38	0	0	0	0	0.00	0.00	37.45
2931+50	293150.00	25.00	9.12	0.00	0.04	8	0	0	45	0	0	0	0	0.00	0.00	45.19
2931+75	293175.00	25.00	9.01	0.00	0.05	8	0	0	54	0	0	0	0	0.00	0.00	53.52
2932+00	293200.00	25.00	9.18	0.00	0.01	8	0	0	62	0	0	0	0	0.00	0.00	61.91
2932+25	293225.00	25.00	9.53	0.00	0.00	9	0	0	71	0	0	0	0	0.00	0.00	70.57
2932+50	293250.00	25.00	10.12	0.00	0.00	9	0	0	80	0	0	0	0	0.00	0.00	79.66
2932+75	293275.00	25.00	9.49	0.00	0.08	9	0	0	89	0	0	0	0	0.00	0.00	88.70
2933+00	293300.00	25.00	9.33	0.00	0.01	9	0	0	98	0	0	0	0	0.00	0.00	97.35
2933+25	293325.00	25.00	10.89	0.00	0.00	9	0	0	107	1	0	0	0	0.00	0.00	106.71
2933+50	293350.00	25.00	11.60	0.00	0.00	10	0	0	118	1	0	0	0	0.00	0.00	117.12
2933+75	293375.00	25.00	10.92	0.00	0.00	10	0	0	128	1	0	0	0	0.00	0.00	127.55
2934+00	293400.00	25.00	11.04	0.00	0.00	10	0	0	138	1	0	0	0	0.00	0.00	137.72
2934+25	293425.00	25.00	11.26	0.00	0.00	10	0	0	149	1	0	0	0	0.00	0.00	148.04
2934+50	293450.00	25.00	11.24	0.00	0.00	10	0	0	159	1	0	0	0	0.00	0.00	158.46
2934+75	293475.00	25.00	10.56	0.00	0.12	10	0	0	169	1	0	0	0	0.00	0.00	168.48
2935+00	293500.00	25.00	10.79	0.00	0.04	10	0	0	179	1	0	0	0	0.00	0.00	178.28
2935+25	293525.00	25.00	11.01	0.00	0.01	10	0	0	189	1	0	0	0	0.00	0.00	188.34
2935+50	293550.00	25.00	11.26	0.00	0.00	10	0	0	199	1	0	0	0	0.00	0.00	198.64
2935+75	293575.00	25.00	11.35	0.00	0.00	10	0	0	210	1	0	0	0	0.00	0.00	209.11
2936+00	293600.00	25.00	11.47	0.00	0.00	11	0	0	220	1	0	0	0	0.00	0.00	219.67
2936+25	293625.00	25.00	11.58	0.00	0.00	11	0	0	231	1	0	0	0	0.00	0.00	230.34
2936+50	293650.00	25.00	12.05	0.00	0.00	11	0	0	242	1	0	0	0	0.00	0.00	241.28
2936+75	293675.00	25.00	12.21	0.00	0.00	11	0	0	253	1	0	0	0	0.00	0.00	252.51
2937+00	293700.00	25.00	12.68	0.00	0.00	12	0	0	265	1	0	0	0	0.00	0.00	264.04
2937+25	293725.00	25.00	13.42	0.00	0.00	12	0	0	277	1	0	0	0	0.00	0.00	276.12
2937+50	293750.00	25.00	12.66	0.00	0.00	12	0	0	289	1	0	0	0	0.00	0.00	288.19
2937+75	293775.00	25.00	12.67	0.00	0.00	12	0	0	301	1	0	0	0	0.00	0.00	299.92
2938+00	293800.00	25.00	12.28	0.00	0.01	12	0	0	312	1	0	0	0	0.00	0.00	311.46
2938+25	293825.00	25.00	12.16	0.00	0.07	11	0	0	323	1	0	0	0	0.00	0.00	322.73
2938+50	293850.00	25.00	11.96	0.00	0.21	11	0	0	335	1	0	0	0	0.00	0.00	333.74
2938+75	293875.00	25.00	12.52	0.00	0.12	11	0	0	346	1	0	0	0	0.00	0.00	344.88
2939+00	293900.00	25.00	11.75	0.00	0.14	11	0	0	357	1	0	0	0	0.00	0.00	355.97
2939+25	293925.00	25.00	10.93	0.00	0.15	11	0	0	368	1	0	0	0	0.00	0.00	366.30
2939+50	293950.00	25.00	9.62	0.00	0.03	10	0	0	377	2	0	0	0	0.00	0.00	375.71
2939+58.38	293958.38	8.38	8.52	0.00	0.02	3	0	0	380	2	0	0	0	0.00	0.00	378.51
2939+75	293975.00	16.62	7.63	0.00	0.00	5	0	0	385	2	0	0	0	0.00	0.00	383.48
2940+00	294000.00	25.00	6.99	0.00	0.00	7	0	0	392	2	0	0	0	0.00	0.00	390.25
TOTAL:						392		1		2						

USH 12 WB WIDENING

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut 205.0100 Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Cumulative Vol (CY) Expanded Marsh Backfill 1.50 Note 4	Cumulative Vol (CY) Expanded Rock 1.10	Cumulative Vol (CY) Expanded EBS Backfill 1.30 Note 5	Cumulative Vol (CY) Reduced Marsh in Fill 0.60 Note 6	Cumulative Vol (CY) Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
505+50.1	50550.10	0.00	7.30	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
505+75	50575.00	24.90	6.91	0.00	3.58	7	0	2	7	2	0	0	0	0.00	0.00	4.49
505+80.01	50580.01	5.01	7.13	0.00	3.25	1	0	1	8	3	0	0	0	0.00	0.00	5.00
506+00	50600.00	19.99	7.59	0.00	1.39	5	0	2	13	5	0	0	0	0.00	0.00	8.30
506+25	50625.00	25.00	8.24	0.00	4.07	7	0	3	21	8	0	0	0	0.00	0.00	12.47
506+50	50650.00	25.00	8.47	0.00	2.73	8	0	3	28	12	0	0	0	0.00	0.00	16.28
506+66.01	50666.01	16.01	8.74	0.00	1.86	5	0	1	33	14	0	0	0	0.00	0.00	19.68
506+75	50675.00	8.99	9.11	0.00	3.29	3	0	1	36	15	0	0	0	0.00	0.00	21.58
507+00	50700.00	25.00	8.71	0.00	1.86	8	0	2	45	18	0	0	0	0.00	0.00	26.85
507+25	50725.00	25.00	11.71	0.00	0.14	9	0	1	54	19	0	0	0	0.00	0.00	35.15
507+50	50750.00	25.00	13.06	0.00	0.00	11	0	0	66	19	0	0	0	0.00	0.00	46.54
507+71.82	50771.82	21.82	13.42	0.00	0.00	11	0	0	76	19	0	0	0	0.00	0.00	57.24
507+75	50775.00	3.18	13.28	0.00	0.00	2	0	0	78	19	0	0	0	0.00	0.00	58.81
508+00	50800.00	25.00	14.09	0.00	0.00	13	0	0	91	19	0	0	0	0.00	0.00	71.49
508+25	50825.00	25.00	15.06	0.00	0.00	13	0	0	104	19	0	0	0	0.00	0.00	84.98
508+50	50850.00	25.00	15.02	0.00	0.00	14	0	0	118	19	0	0	0	0.00	0.00	98.91
508+70.04	50870.04	20.04	15.96	0.00	0.00	11	0	0	129	19	0	0	0	0.00	0.00	110.40
508+75	50875.00	4.96	15.87	0.00	0.00	3	0	0	132	19	0	0	0	0.00	0.00	113.33
509+00	50900.00	25.00	14.03	0.00	0.02	14	0	0	146	19	0	0	0	0.00	0.00	127.16
509+25	50925.00	25.00	14.20	0.00	0.02	13	0	0	159	19	0	0	0	0.00	0.00	140.20
509+26.78	50926.78	1.78	14.19	0.00	0.10	1	0	0	160	19	0	0	0	0.00	0.00	141.13
TOTAL:						160		15		19						

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STATE PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

BULLNOSE GRADING

STATION	Real Station	Distance	AREA (SF)					Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)							Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Rock Exc	EBS	Cut 205.0100 Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Note 8
2933+50	293350.00	0.00	0.02	0.00	0.48	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
2933+75	293375.00	25.00	0.02	0.00	4.07	0.00	0.00	0	0	2	0	3	0	0	0	0.00	0.00	-2.61
2934+00	293400.00	25.00	0.28	0.00	14.30	0.00	0.00	0	0	9	0	13	0	0	0	0.00	0.00	-13.10
2934+25	293425.00	25.00	0.37	0.00	14.51	0.00	0.00	0	0	13	0	30	0	0	0	0.00	0.00	-29.47
2934+50	293450.00	25.00	1.02	0.00	17.08	0.00	0.00	1	0	15	1	48	0	0	0	0.00	0.00	-47.11
2934+64.35	293464.35	14.35	2.23	0.00	24.58	0.00	0.00	1	0	11	2	62	0	0	0	0.00	0.00	-60.09
2934+75	293475.00	10.65	2.17	0.00	26.62	0.00	0.00	1	0	10	3	75	0	0	0	0.00	0.00	-71.84
2935+00	293500.00	25.00	0.93	0.00	24.73	0.00	0.00	1	0	24	4	104	0	0	0	0.00	0.00	-100.12
2935+25	293525.00	25.00	0.47	0.00	27.36	0.00	0.00	1	0	24	5	135	0	0	0	0.00	0.00	-129.62
2935+27.64	293527.64	2.64	0.40	0.00	26.54	0.00	0.00	0	0	3	5	138	0	0	0	0.00	0.00	-132.87
2935+40.26	293540.26	12.62	0.31	0.00	24.96	0.00	0.00	0	0	12	5	153	0	0	0	0.00	0.00	-147.75
2935+50	293550.00	9.74	0.24	0.00	23.48	0.00	0.00	0	0	9	5	164	0	0	0	0.00	0.00	-158.57
2935+75	293575.00	25.00	0.40	0.00	19.36	0.00	0.00	0	0	20	6	189	0	0	0	0.00	0.00	-183.07
2936+00	293600.00	25.00	0.65	0.00	22.27	0.00	0.00	0	0	19	6	213	0	0	0	0.00	0.00	-206.68
2936+25	293625.00	25.00	0.97	0.00	22.91	0.00	0.00	1	0	21	7	239	0	0	0	0.00	0.00	-232.07
2936+50	293650.00	25.00	1.05	0.00	17.77	0.00	0.00	1	0	19	8	262	0	0	0	0.00	0.00	-254.68
2936+75	293675.00	25.00	0.97	0.00	14.35	0.00	0.00	1	0	15	9	281	0	0	0	0.00	0.00	-272.33
2937+00	293700.00	25.00	0.97	0.00	13.20	0.00	0.00	1	0	13	10	297	0	0	0	0.00	0.00	-287.38
2937+25	293725.00	25.00	1.39	0.00	6.42	0.00	0.00	1	0	9	11	308	0	0	0	0.00	0.00	-297.64
2937+50	293750.00	25.00	8.29	0.00	1.45	0.00	0.00	4	0	4	15	313	0	0	0	0.00	0.00	-297.71
2937+60	293760.00	10.00	8.88	0.00	1.45	0.00	0.00	3	0	1	18	313	0	0	0	0.00	0.00	-295.20
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2940+04.86	294004.86	0.00	17.01	0.00	0.00	0.00	0.00	0	0	0	0	313	0	0	0	0.00	0.00	-295.20
2940+25	294025.00	20.14	1.50	0.00	16.18	0.00	0.00	7	0	6	7	321	0	0	0	0.00	0.00	-295.84
2940+50	294050.00	25.00	0.11	0.00	17.80	0.00	0.00	1	0	16	8	341	0	0	0	0.00	0.00	-314.77
2940+75	294075.00	25.00	0.15	0.00	29.58	0.00	0.00	0	0	22	8	368	0	0	0	0.00	0.00	-342.07
2941+00	294100.00	25.00	0.24	0.00	28.03	0.00	0.00	0	0	27	8	401	0	0	0	0.00	0.00	-375.22
2941+25	294125.00	25.00	0.37	0.00	30.53	0.00	0.00	0	0	27	8	435	0	0	0	0.00	0.00	-408.83
2941+50	294150.00	25.00	0.25	0.00	38.40	0.00	0.00	0	0	32	9	475	0	0	0	0.00	0.00	-448.44
2941+53.33	294153.33	3.33	0.24	0.00	39.13	0.00	0.00	0	0	5	9	481	0	0	0	0.00	0.00	-454.38
2941+66	294166.00	12.67	0.27	0.00	41.96	0.00	0.00	0	0	19	9	505	0	0	0	0.00	0.00	-478.05
2941+75	294175.00	9.00	0.31	0.00	41.33	0.00	0.00	0	0	14	9	522	0	0	0	0.00	0.00	-495.30
2942+00	294200.00	25.00	0.19	0.00	43.32	0.00	0.00	0	0	39	9	571	0	0	0	0.00	0.00	-544.06
2942+25	294225.00	25.00	0.47	0.00	44.07	0.00	0.00	0	0	40	9	622	0	0	0	0.00	0.00	-594.32
2942+30.37	294230.37	5.37	0.64	0.00	44.75	0.00	0.00	0	0	9	9	633	0	0	0	0.00	0.00	-605.26
2942+50	294250.00	19.63	1.86	0.00	42.81	0.00	0.00	1	0	32	10	673	0	0	0	0.00	0.00	-644.14
2942+75	294275.00	25.00	5.53	0.00	30.25	0.00	0.00	3	0	34	14	715	0	0	0	0.00	0.00	-683.00
2942+75.48	294275.48	0.48	5.50	0.00	30.16	0.00	0.00	0	0	1	14	716	0	0	0	0.00	0.00	-683.57

TOTAL:	32		573		716

CROSSOVER #2

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	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	
												1.00	1.25	1.50	1.10	1.30	0.60	0.80	
									Note 1	Note 2	Note 3	Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
2942+75.49	294275.49	0.00	14.72	0.00	32.83	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
2943+00	294300.00	24.51	13.88	0.00	27.73	0.00	0.00	0.00	13	0	27	13	34	0	0	0	0.00	0.00	-21.38
2943+25	294325.00	25.00	14.03	0.00	16.81	0.00	0.00	0.00	13	0	21	26	60	0	0	0	0.00	0.00	-34.24
2943+50	294350.00	25.00	11.71	0.00	18.81	0.00	0.00	0.00	12	0	16	38	81	0	0	0	0.00	0.00	-42.94
2943+75	294375.00	25.00	9.17	0.00	7.33	0.00	0.00	0.00	10	0	12	47	96	0	0	0	0.00	0.00	-48.40
2944+00	294400.00	25.00	8.11	0.00	13.58	0.00	0.00	0.00	8	0	10	55	108	0	0	0	0.00	0.00	-52.50
2944+25	294425.00	25.00	8.46	0.00	15.78	0.00	0.00	0.00	8	0	14	63	125	0	0	0	0.00	0.00	-61.82
2944+50	294450.00	25.00	8.82	0.00	9.43	0.00	0.00	0.00	8	0	12	71	140	0	0	0	0.00	0.00	-68.41
2944+75	294475.00	25.00	7.87	0.00	7.19	0.00	0.00	0.00	8	0	8	79	149	0	0	0	0.00	0.00	-70.30
2945+00	294500.00	25.00	8.27	0.00	7.64	0.00	0.00	0.00	7	0	7	86	158	0	0	0	0.00	0.00	-71.41
2945+25	294525.00	25.00	9.02	0.00	7.48	0.00	0.00	0.00	8	0	7	94	167	0	0	0	0.00	0.00	-72.16
2945+50	294550.00	25.00	8.30	0.00	7.38	0.00	0.00	0.00	8	0	7	102	175	0	0	0	0.00	0.00	-72.74
2945+75	294575.00	25.00	9.38	0.00	7.43	0.00	0.00	0.00	8	0	7	111	184	0	0	0	0.00	0.00	-73.12
2946+00	294600.00	25.00	8.49	0.00	5.60	0.00	0.00	0.00	8	0	6	119	191	0	0	0	0.00	0.00	-72.39
2946+25	294625.00	25.00	8.77	0.00	6.24	0.00	0.00	0.00	8	0	5	127	198	0	0	0	0.00	0.00	-71.24
2946+50	294650.00	25.00	8.31	0.00	6.41	0.00	0.00	0.00	8	0	6	135	205	0	0	0	0.00	0.00	-70.65
2946+75	294675.00	25.00	7.91	0.00	6.81	0.00	0.00	0.00	8	0	6	142	213	0	0	0	0.00	0.00	-70.80
2947+00	294700.00	25.00	8.23	0.00	7.76	0.00	0.00	0.00	7	0	7	150	221	0	0	0	0.00	0.00	-71.76
2947+25	294725.00	25.00	8.46	0.00	7.07	0.00	0.00	0.00	8	0	7	157	230	0	0	0	0.00	0.00	-72.62
2947+50	294750.00	25.00	8.87	0.00	8.91	0.00	0.00	0.00	8	0	7	165	239	0	0	0	0.00	0.00	-73.84
2947+75	294775.00	25.00	8.74	0.00	12.86	0.00	0.00	0.00	8	0	10	174	252	0	0	0	0.00	0.00	-78.29
2948+00	294800.00	25.00	10.27	0.00	3.62	0.00	0.00	0.00	9	0	8	182	261	0	0	0	0.00	0.00	-79.03
2948+25	294825.00	25.00	10.21	0.00	4.60	0.00	0.00	0.00	9	0	4	192	266	0	0	0	0.00	0.00	-74.30
2948+49.44	294849.44	24.44	10.12	0.00	6.48	0.00	0.00	0.00	9	0	5	201	272	0	0	0	0.00	0.00	-71.37
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2948+51.06	294851.06	0.00	10.88	0.00	5.79	0.00	0.00	0.00	0	0	0	201	272	0	0	0	0.00	0.00	-71.37
2948+51.56	294851.56	0.50	7.11	0.00	5.52	0.00	0.00	0.00	0	0	0	201	272	0	0	0	0.00	0.00	-71.33
2948+75	294875.00	23.44	5.28	0.00	8.09	0.00	0.00	0.00	5	0	6	207	280	0	0	0	0.00	0.00	-73.34
2949+00	294900.00	25.00	3.84	0.00	10.29	0.00	0.00	0.00	4	0	9	211	290	0	0	0	0.00	0.00	-79.75
2949+08.56	294908.56	8.56	3.74	0.00	12.01	0.00	0.00	0.00	1	0	4	212	295	0	0	0	0.00	0.00	-82.97
2949+25	294925.00	16.44	4.13	0.00	16.44	0.00	0.00	0.00	2	0	9	214	305	0	0	0	0.00	0.00	-91.40
2949+50	294950.00	25.00	1.22	0.00	16.39	0.00	0.00	0.00	2	0	15	217	324	0	0	0	0.00	0.00	-107.92
2949+75	294975.00	25.00	1.86	0.00	14.46	0.00	0.00	0.00	1	0	14	218	342	0	0	0	0.00	0.00	-124.35
2950+00	295000.00	25.00	2.97	0.00	13.34	0.00	0.00	0.00	2	0	13	221	358	0	0	0	0.00	0.00	-138.20
2950+25	295025.00	25.00	5.31	0.00	11.63	0.00	0.00	0.00	4	0	12	224	373	0	0	0	0.00	0.00	-148.82
2950+50	295050.00	25.00	8.64	0.00	10.46	0.00	0.00	0.00	6	0	10	231	386	0	0	0	0.00	0.00	-155.15
2950+57.94	295057.94	7.94	6.92	0.00	9.02	0.00	0.00	0.00	2	0	3	233	389	0	0	0	0.00	0.00	-156.45
2950+58.68	295058.68	0.74	10.77	0.00	8.82	0.00	0.00	0.00	0	0	0	233	389	0	0	0	0.00	0.00	-156.51
2950+75	295075.00	16.32	11.13	0.00	4.15	0.00	0.00	0.00	7	0	4	240	394	0	0	0	0.00	0.00	-154.79
2950+78.12	295078.12	3.12	11.25	0.00	3.45	0.00	0.00	0.00	1	0	0	241	395	0	0	0	0.00	0.00	-154.05
2951+00	295100.00	21.88	11.30	0.00	0.85	0.00	0.00	0.00	9	0	2	250	397	0	0	0	0.00	0.00	-147.09
2951+25	295125.00	25.00	11.04	0.00	0.00	0.00	0.00	0.00	10	0	0	261	398	0	0	0	0.00	0.00	-137.24
2951+37.08	295137.08	12.08	11.11	0.00	0.00	0.00	0.00	0.00	5	0	0	266	398	0	0	0	0.00	0.00	-132.28
2951+50	295150.00	12.92	11.28	0.00	0.00	0.00	0.00	0.00	5	0	0	271	398	0	0	0	0.00	0.00	-126.92
2951+55.56	295155.56	5.56	11.21	0.00	0.00	0.00	0.00	0.00	2	0	0	273	398	0	0	0	0.00	0.00	-124.61

TOTAL:

273		318		398

GUARDRAIL GRADING

STATION	Real Station	Distance	AREA (SF) Cut	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material	Fill	Cumulative Vol (CY) Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	Mass Ordinate
						205.010			1.00	1.25	1.50	1.10	1.30	0.60	0.80	
						Note 1	Note 2	Note 3	Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
2997+79.23	299779.23	0.00	6.13	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00	0.00
2998+00	299800.00	20.77	2.16	0.00	0.00	3	0	0	3	0	0	0	0	0.00	0.00	3.19
2998+25	299825.00	25.00	1.36	0.00	0.00	2	0	0	5	0	0	0	0	0.00	0.00	4.82
2998+50	299850.00	25.00	0.04	0.00	0.23	1	0	0	5	0	0	0	0	0.00	0.00	5.33
2998+75	299875.00	25.00	0.00	0.00	66.03	0	0	31	5	38	0	0	0	0.00	0.00	-33.00
2999+00	299900.00	25.00	0.00	0.00	75.27	0	0	65	5	120	0	0	0	0.00	0.00	-114.76
2999+25	299925.00	25.00	0.00	0.00	72.09	0	0	68	5	206	0	0	0	0.00	0.00	-200.04
2999+50	299950.00	25.00	0.00	0.00	78.00	0	0	69	5	292	0	0	0	0.00	0.00	-286.90
2999+75	299975.00	25.00	0.00	0.00	57.17	0	0	63	5	371	0	0	0	0.00	0.00	-365.12
3000+00	300000.00	25.00	0.00	0.00	0.00	0	0	26	5	404	0	0	0	0.00	0.00	-398.20
3000+25	300025.00	25.00	0.00	0.00	0.00	0	0	0	5	404	0	0	0	0.00	0.00	-398.21

TOTAL:	5		323		404

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9

STATE PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

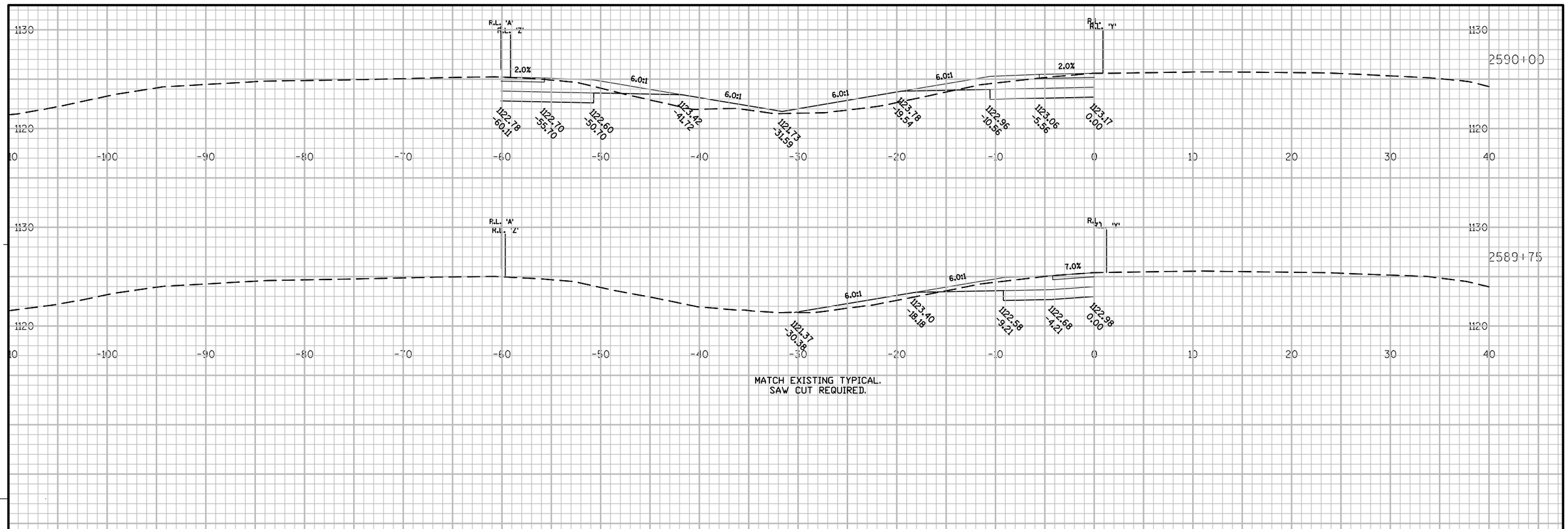
1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable 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 selectio**n** **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

9

9

STATE PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1



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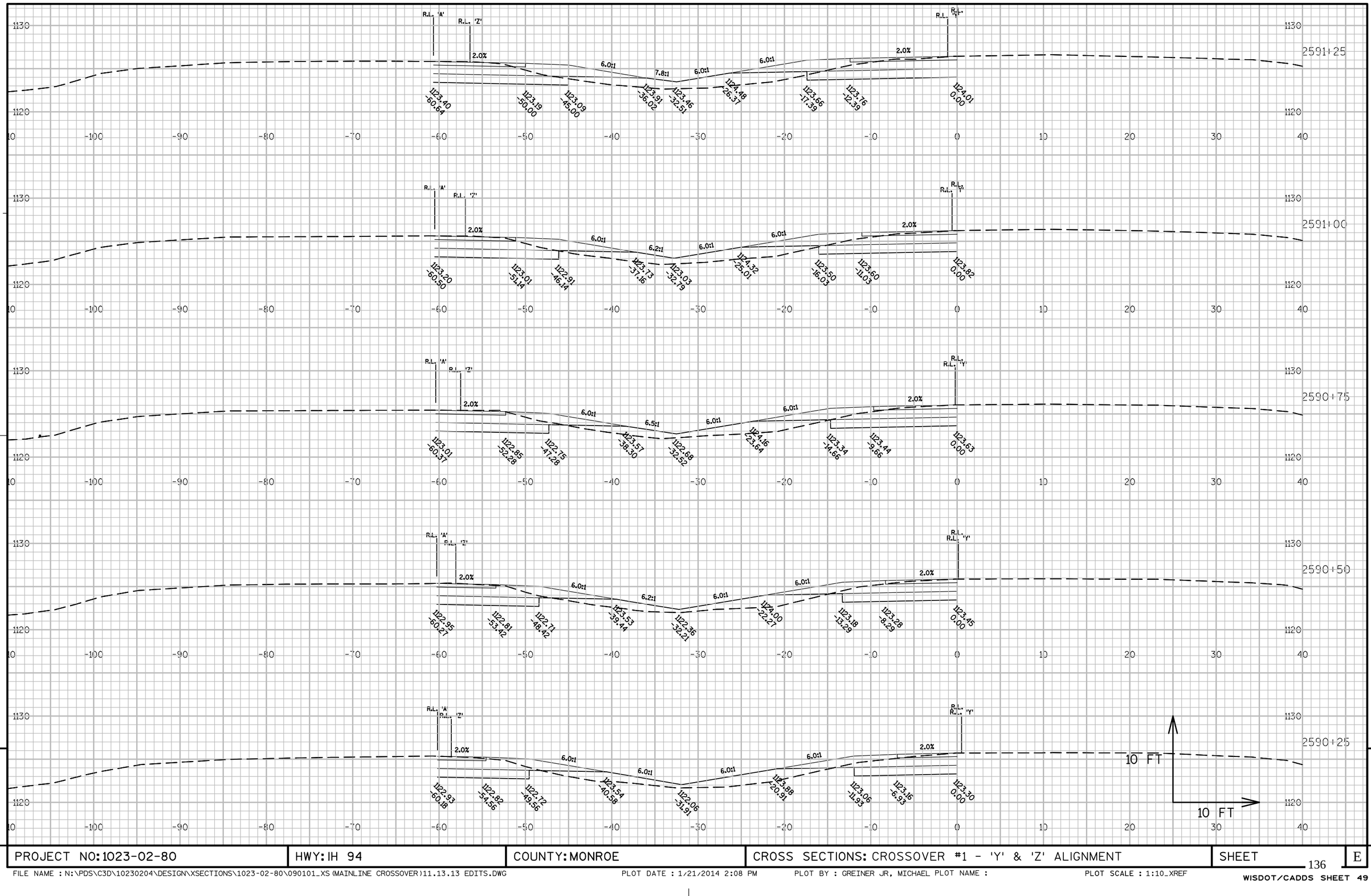
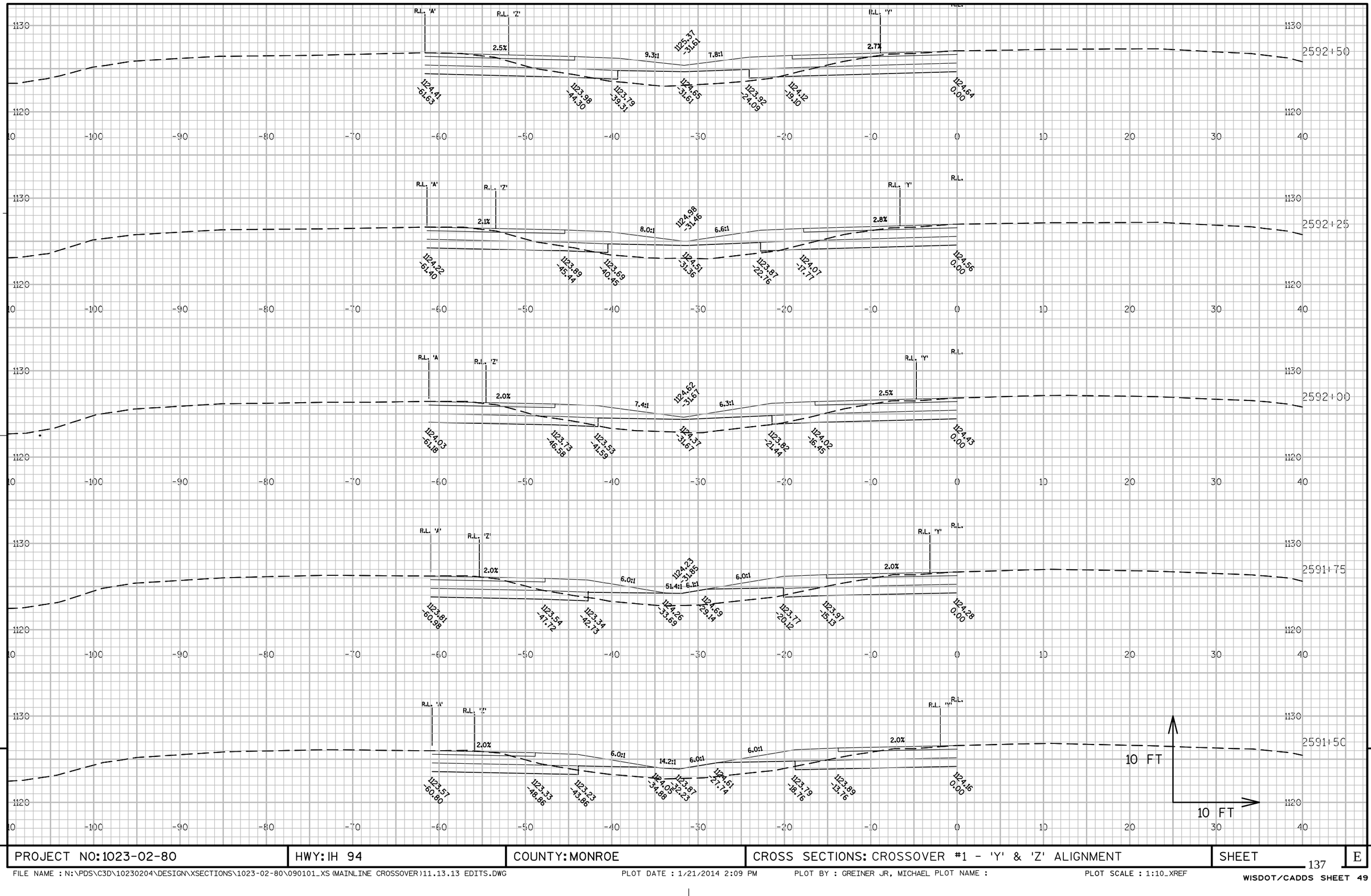
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:08 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:08 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



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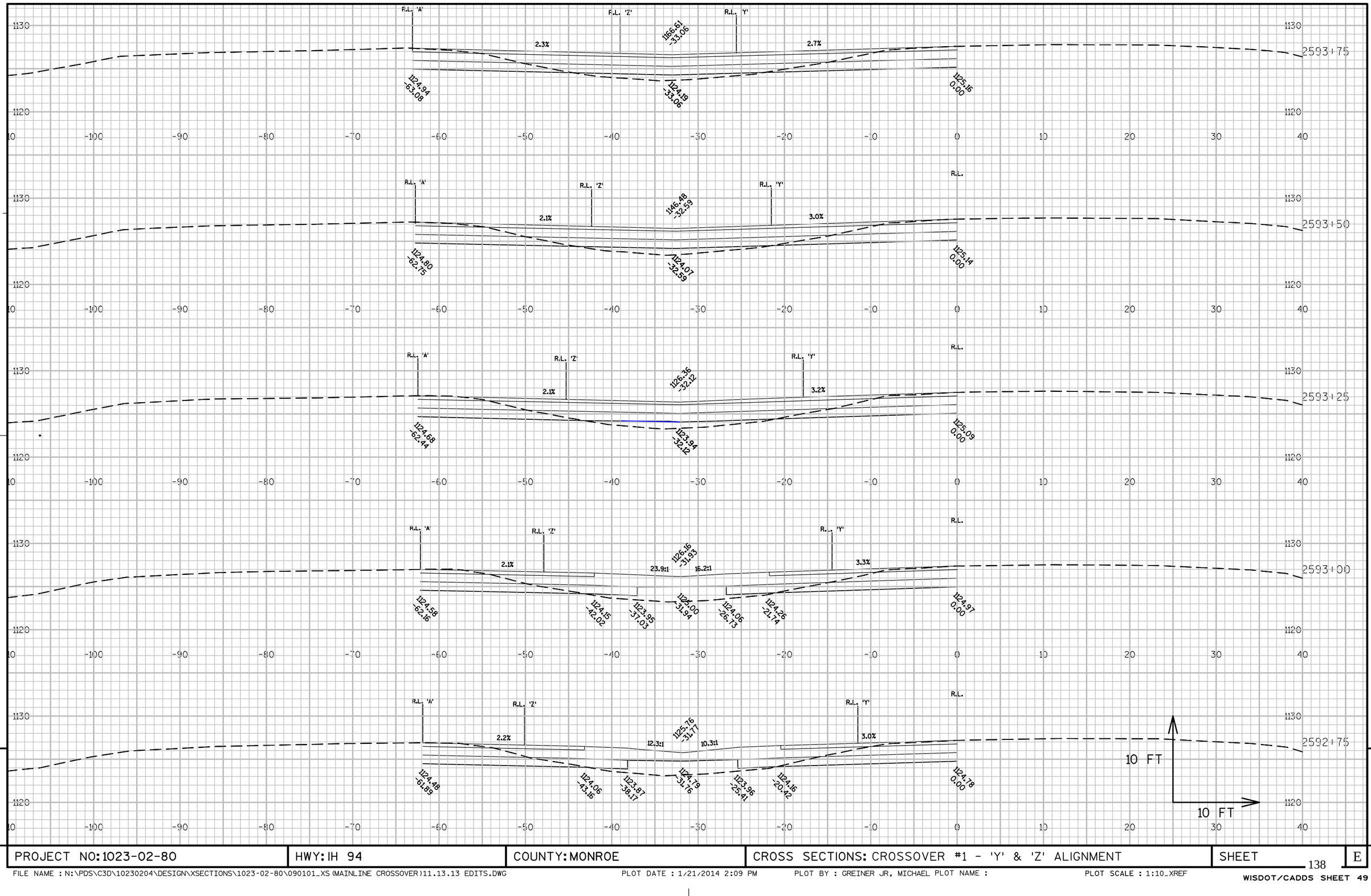
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:09 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

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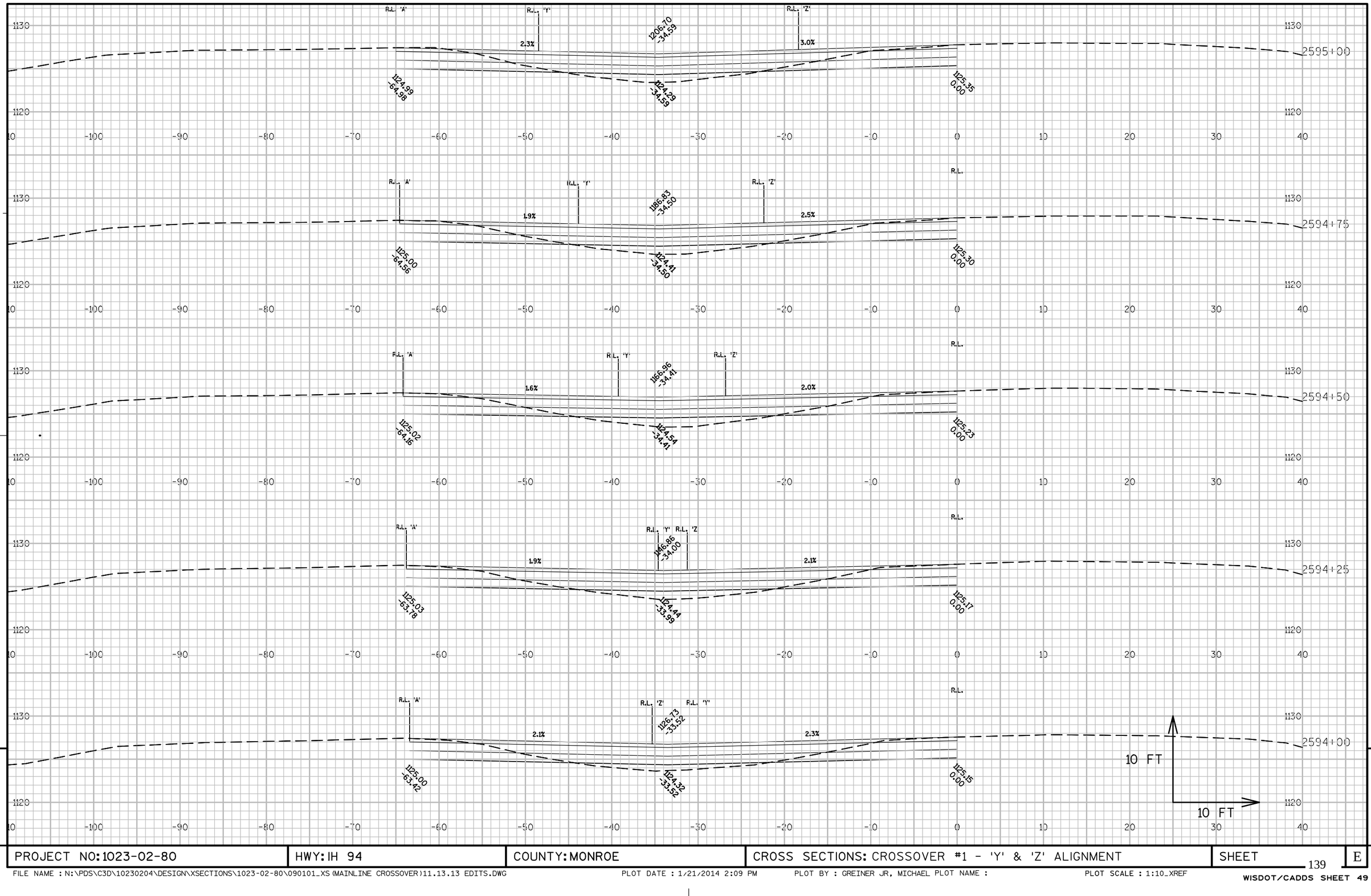
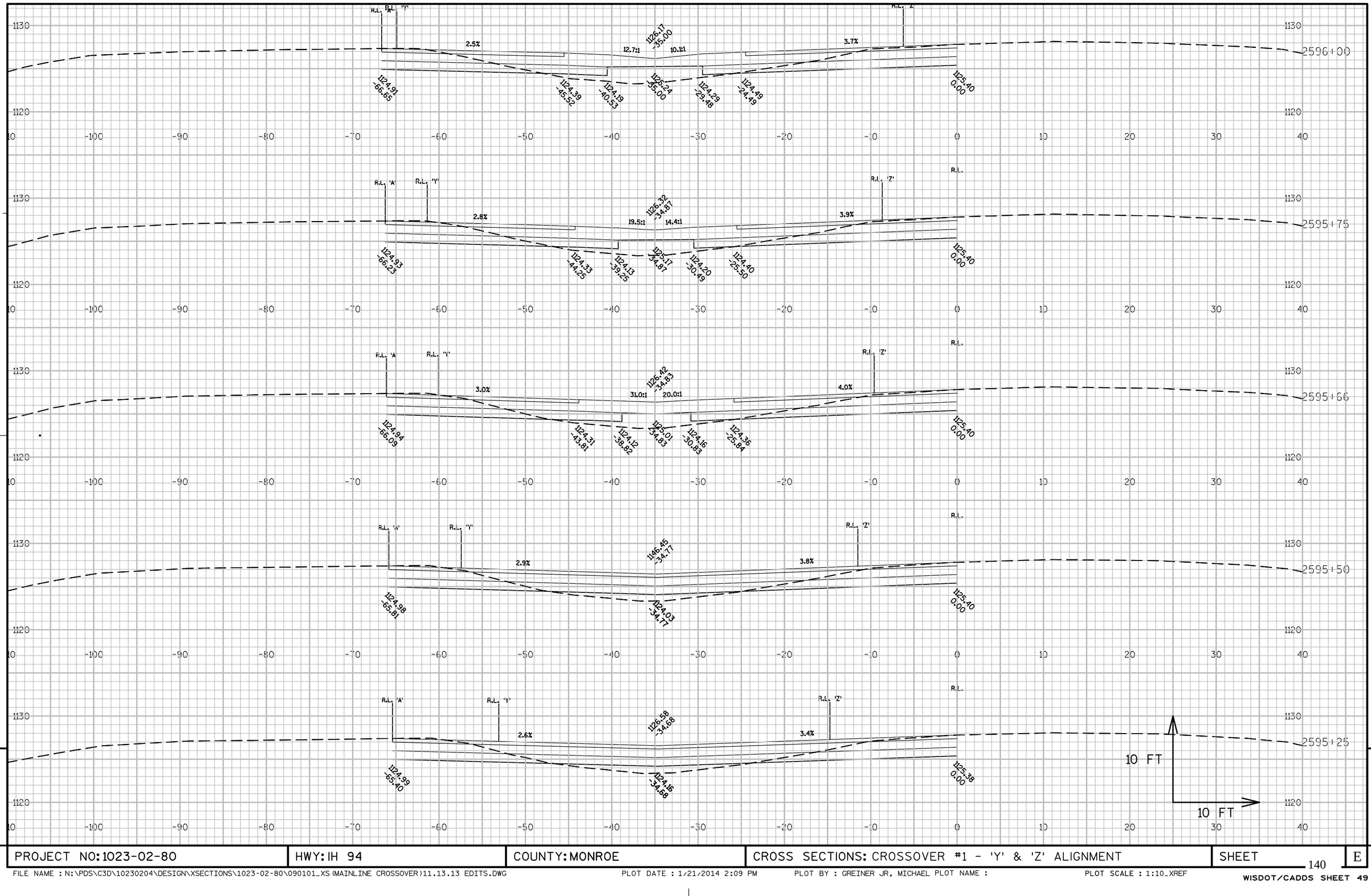
WISDOT/CADDS SHEET 49



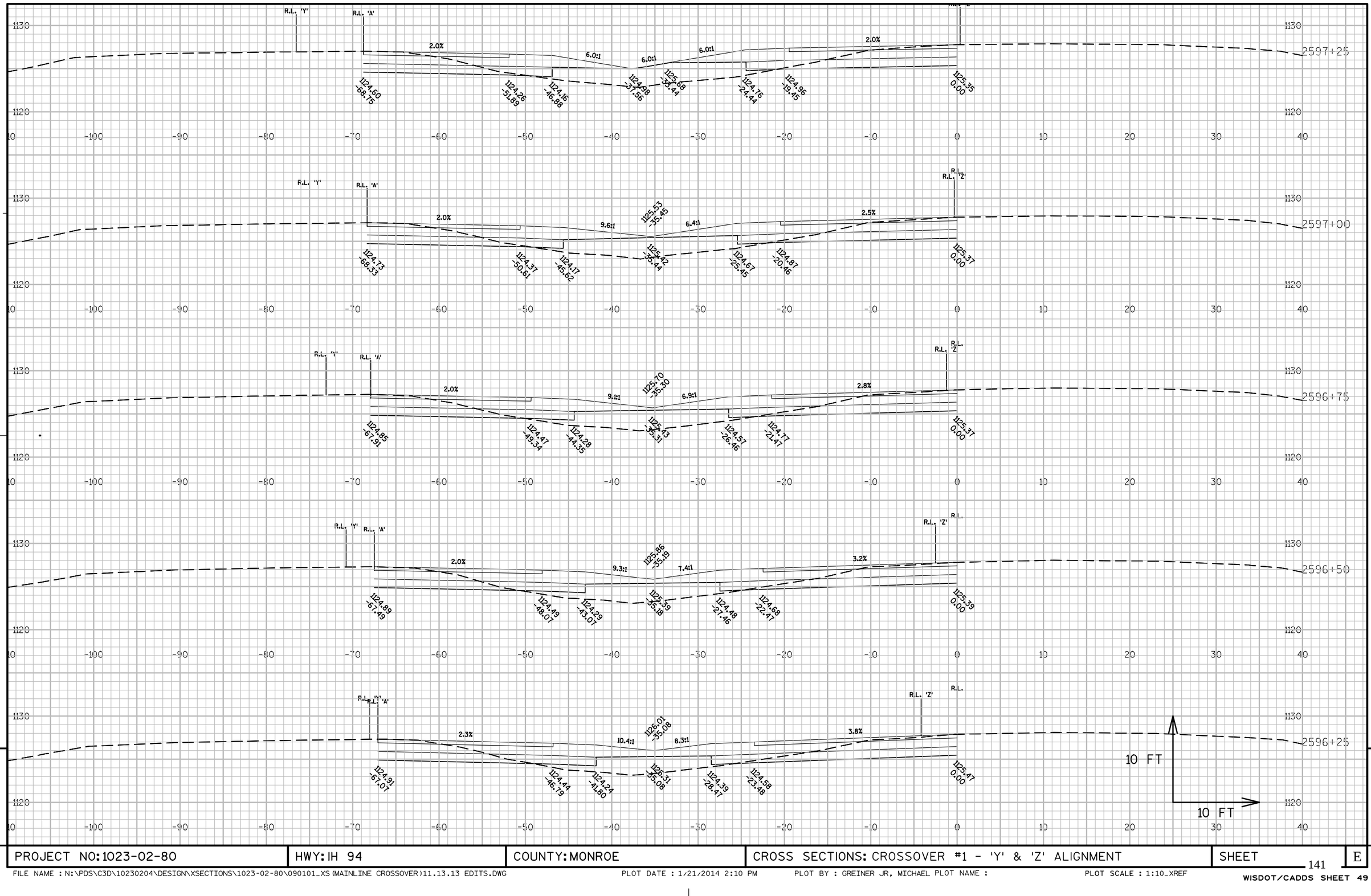
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET 140	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:09 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET 141	E

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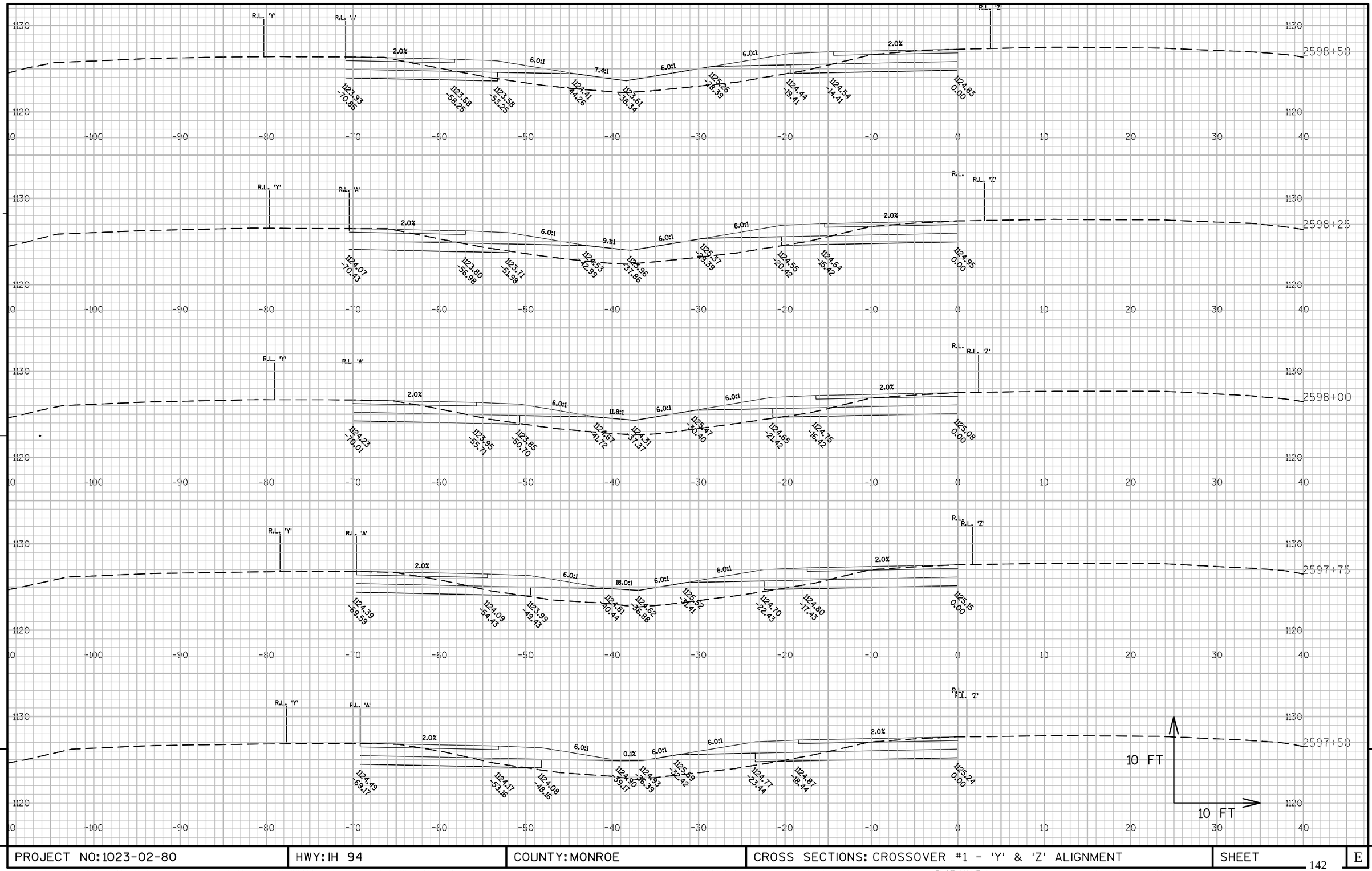
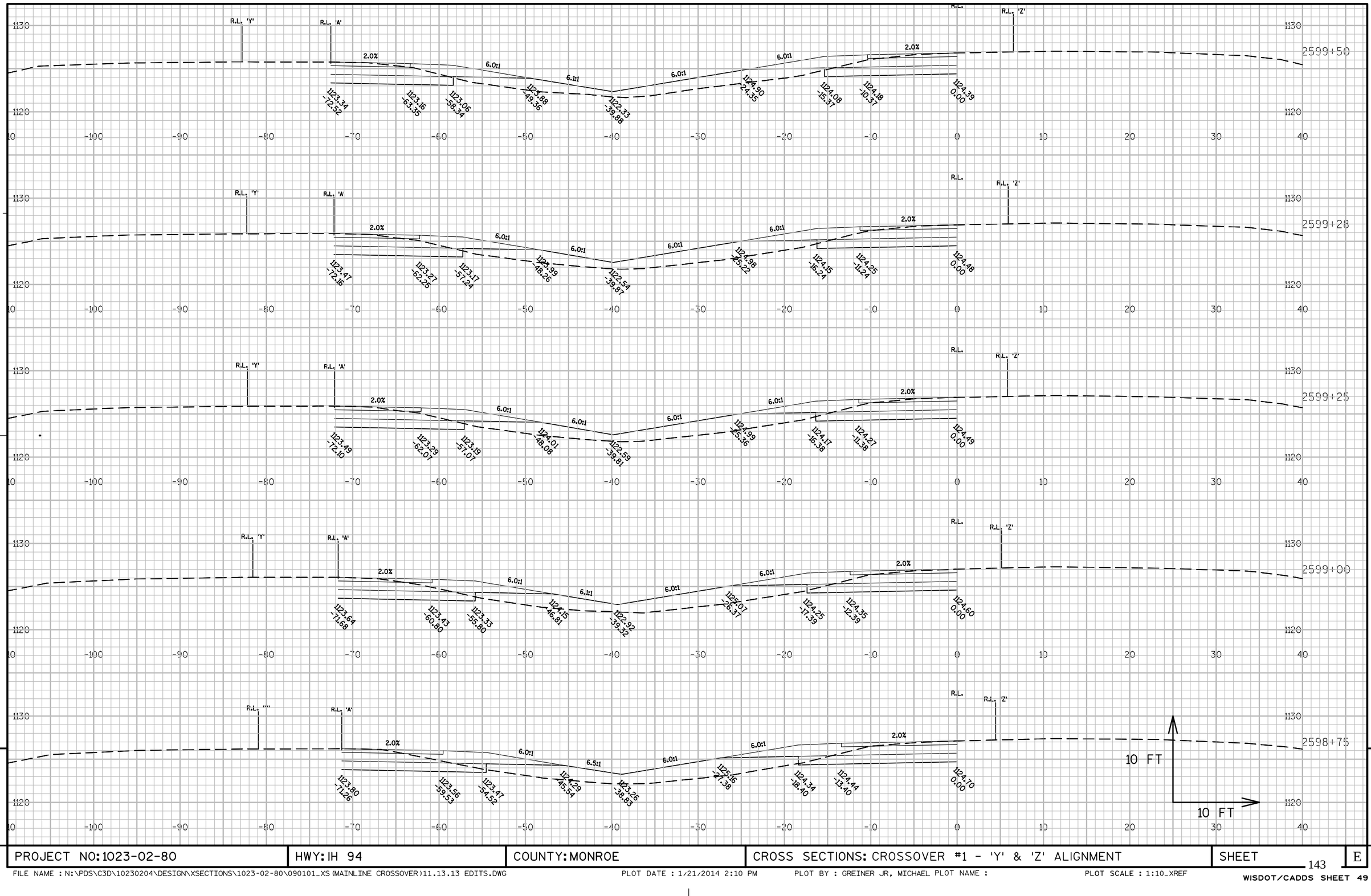
WISDOT/CADDS SHEET 49



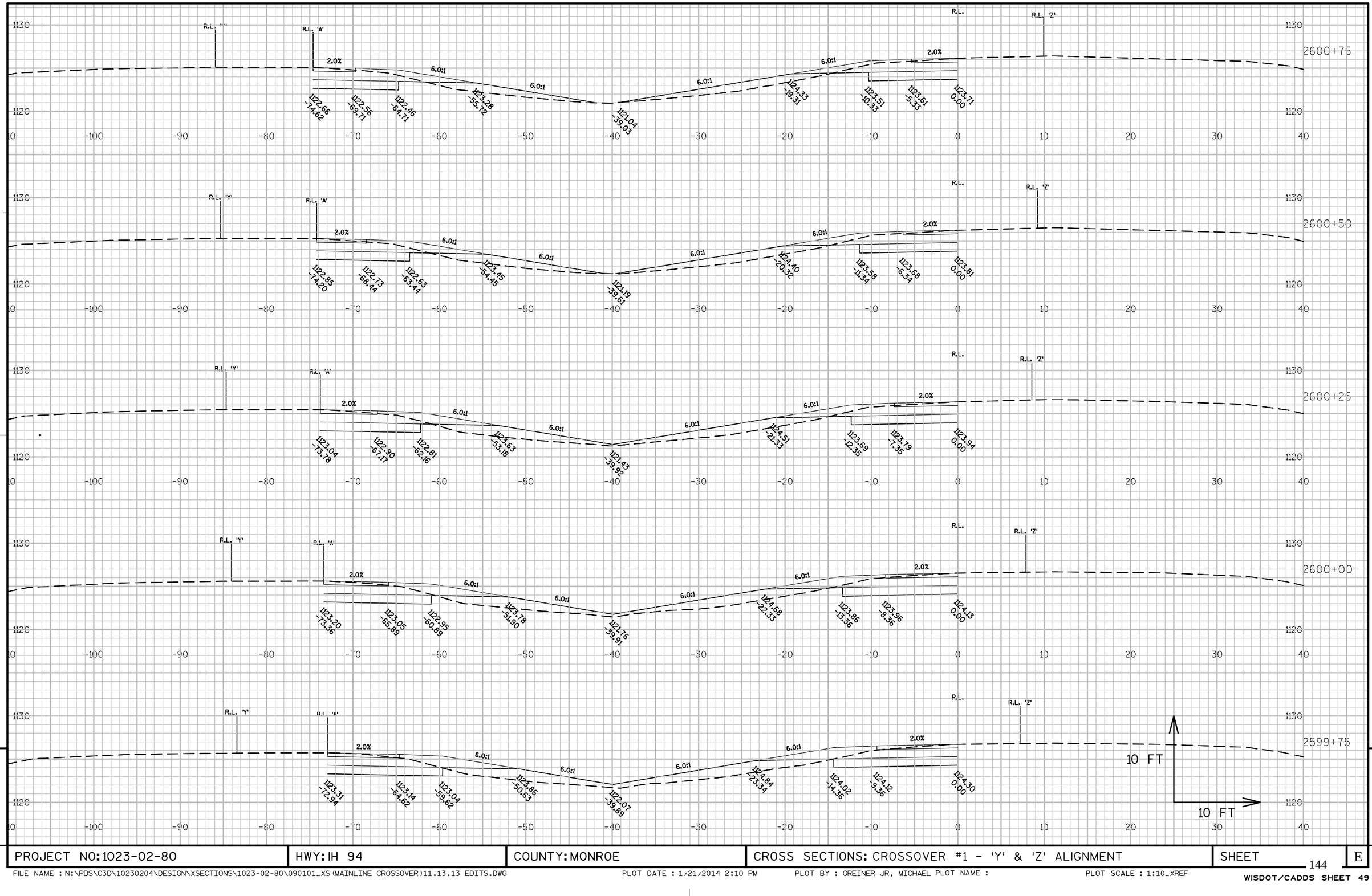
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:10 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



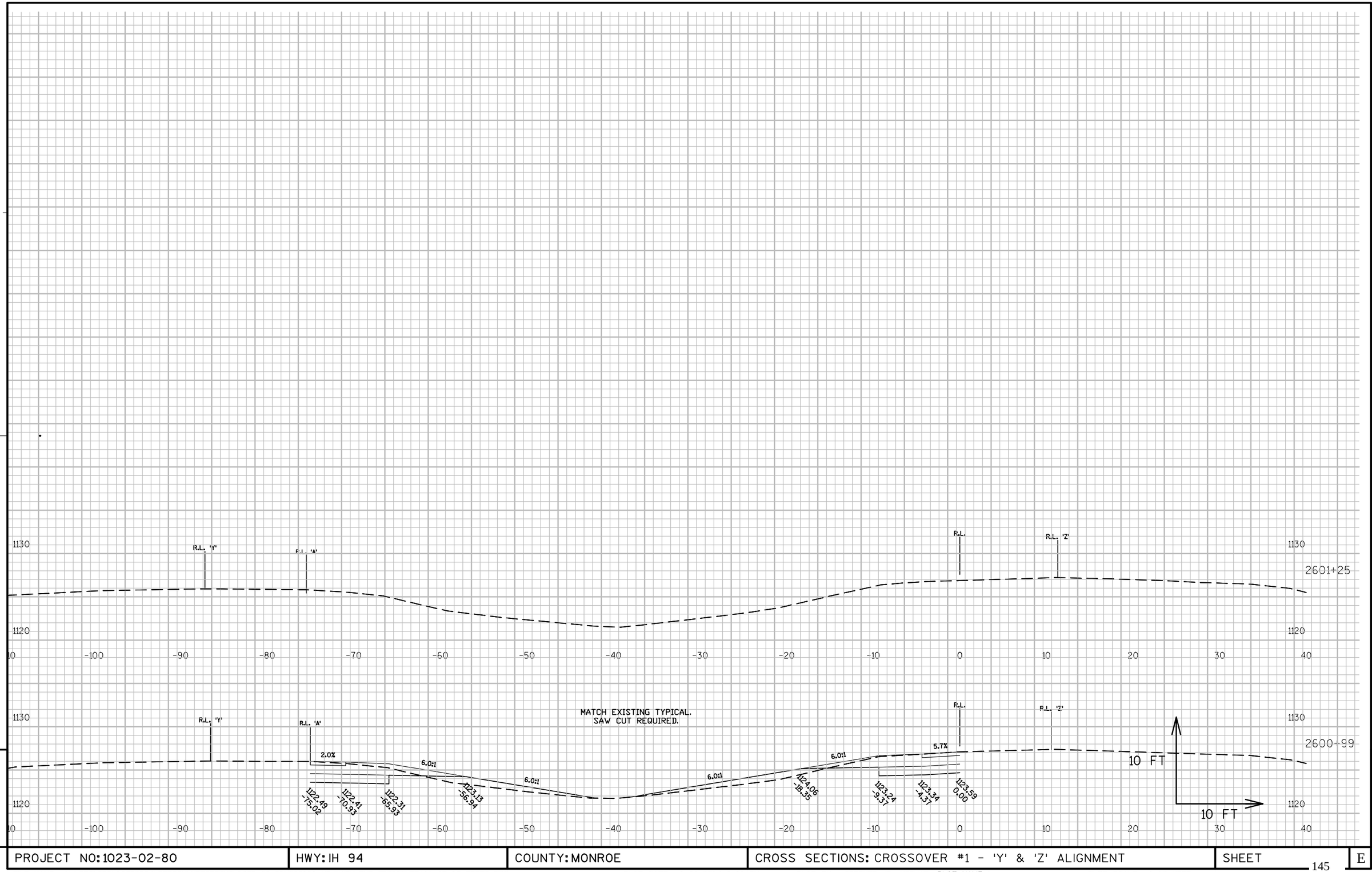
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:10 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090101_XS (MAINLINE CROSSOVER)11.13.13 EDITS.DWG PLOT DATE : 1/21/2014 2:10 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #1 - 'Y' & 'Z' ALIGNMENT	SHEET	E

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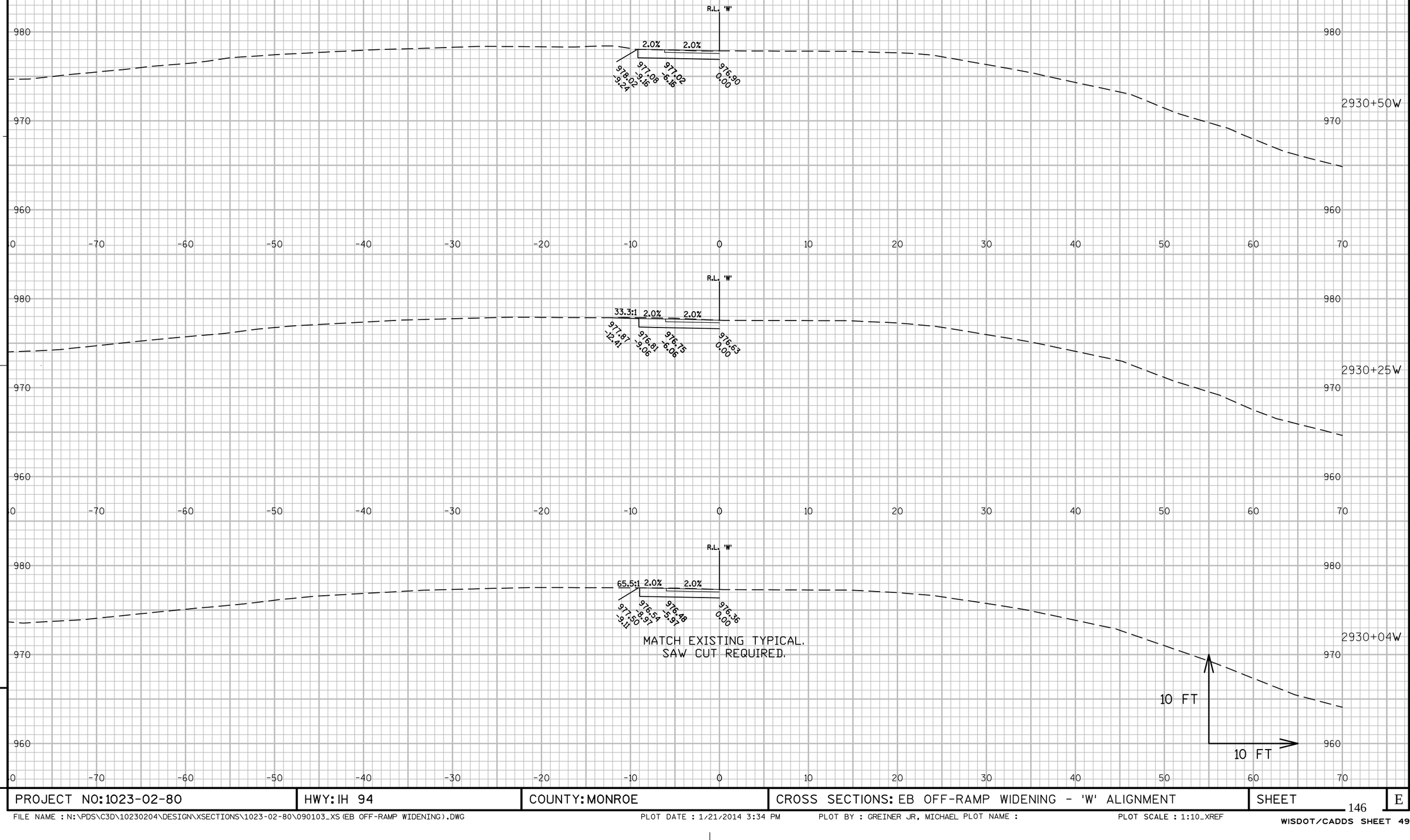
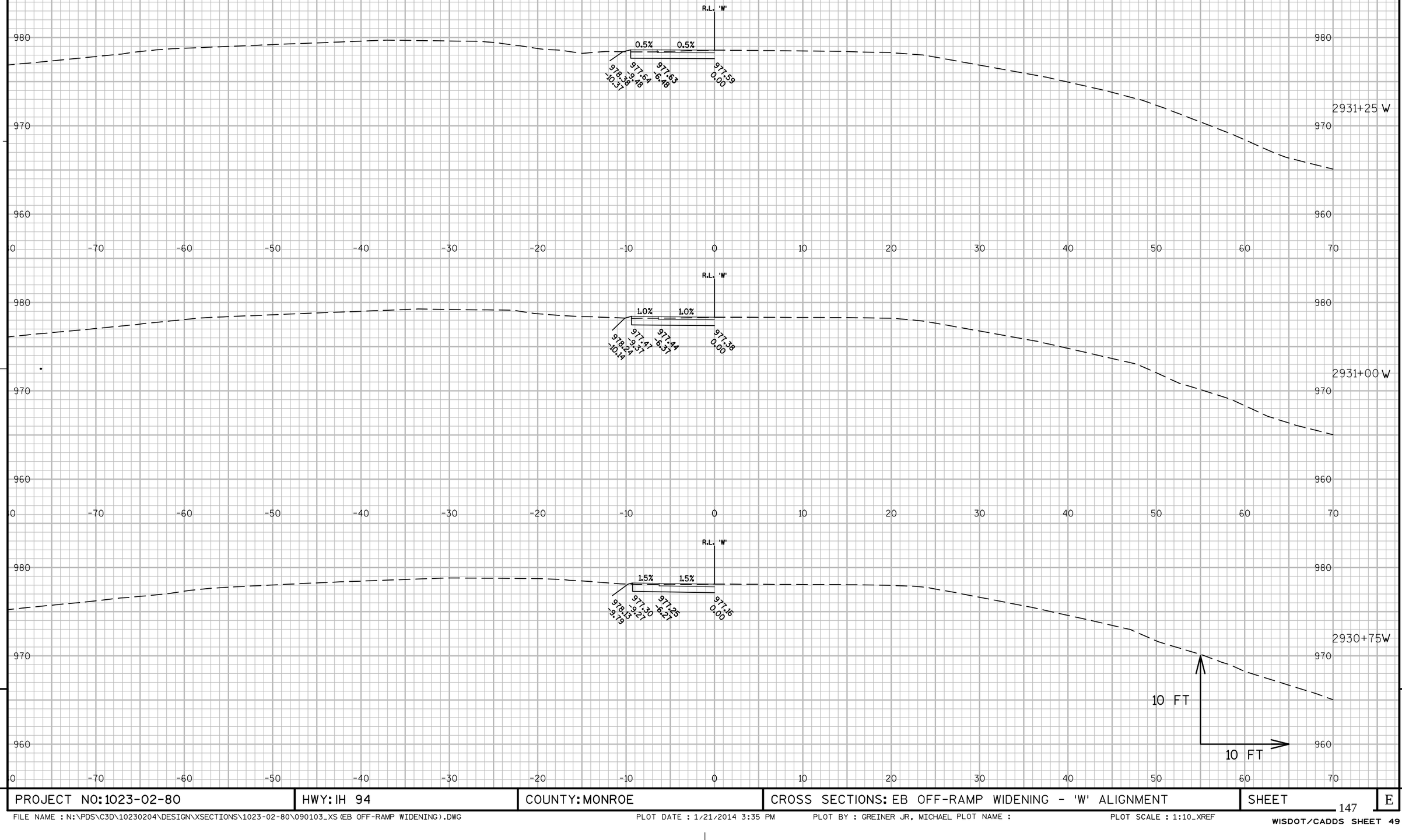
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:34 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 147	E

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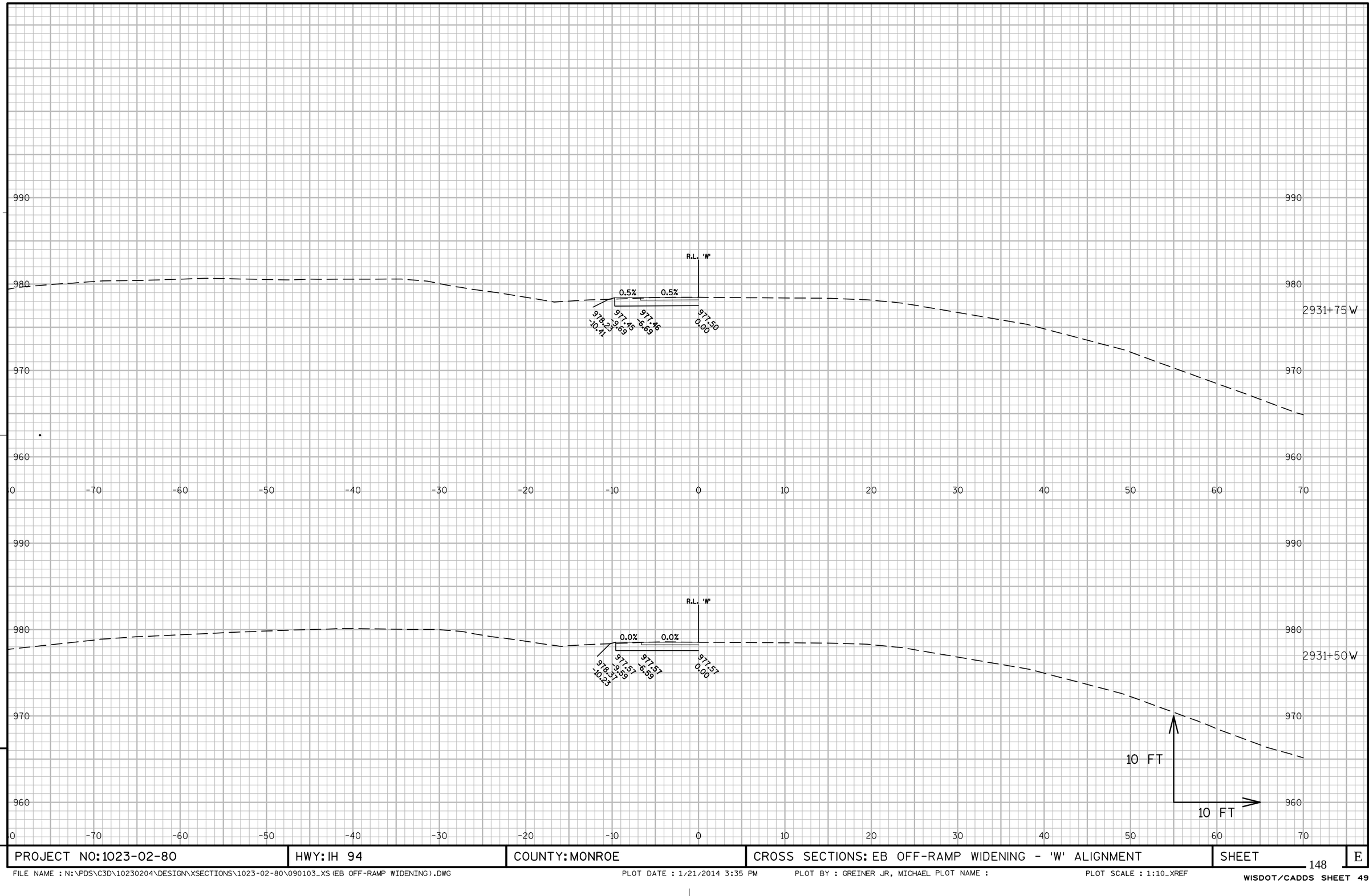
WISDOT/CADDS SHEET 49



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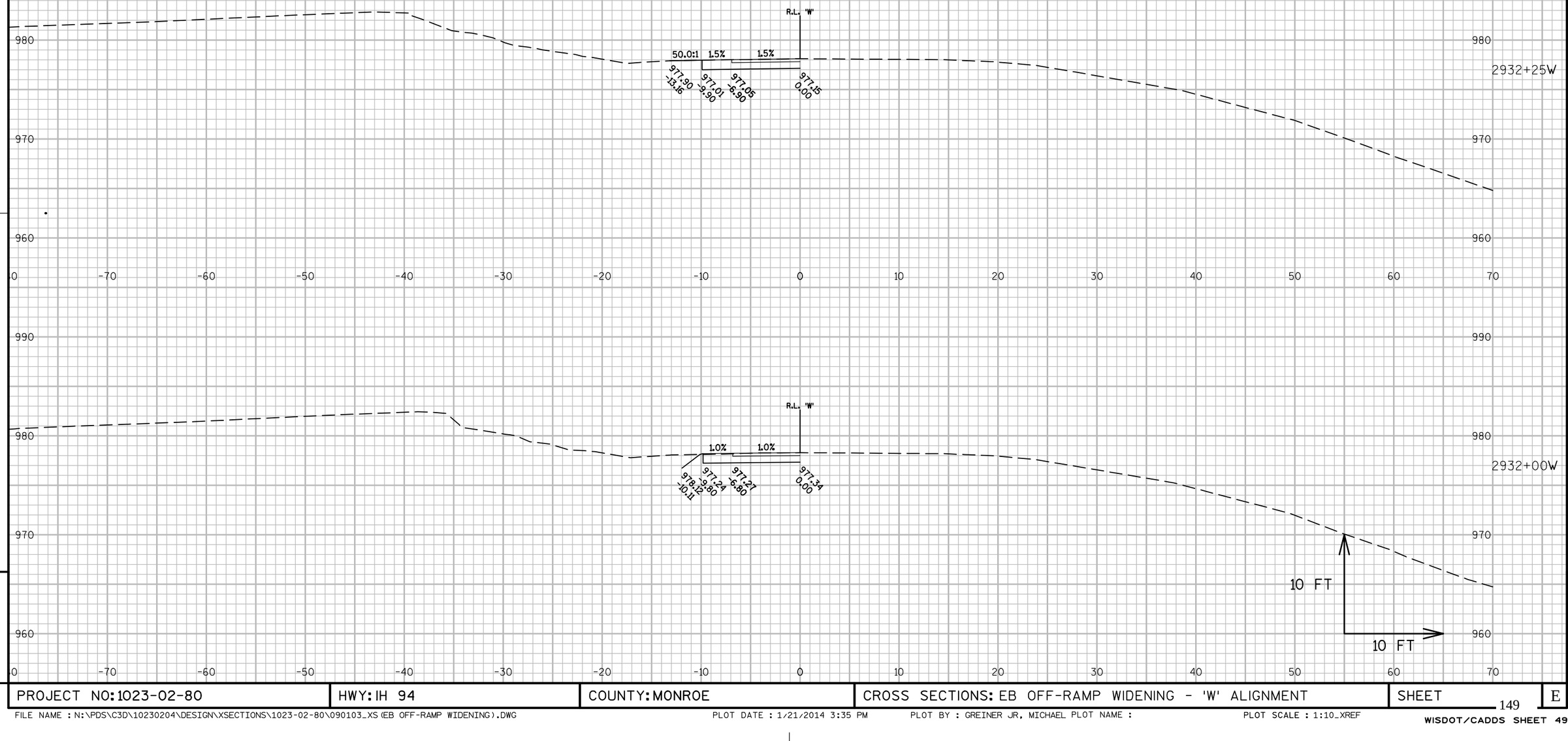
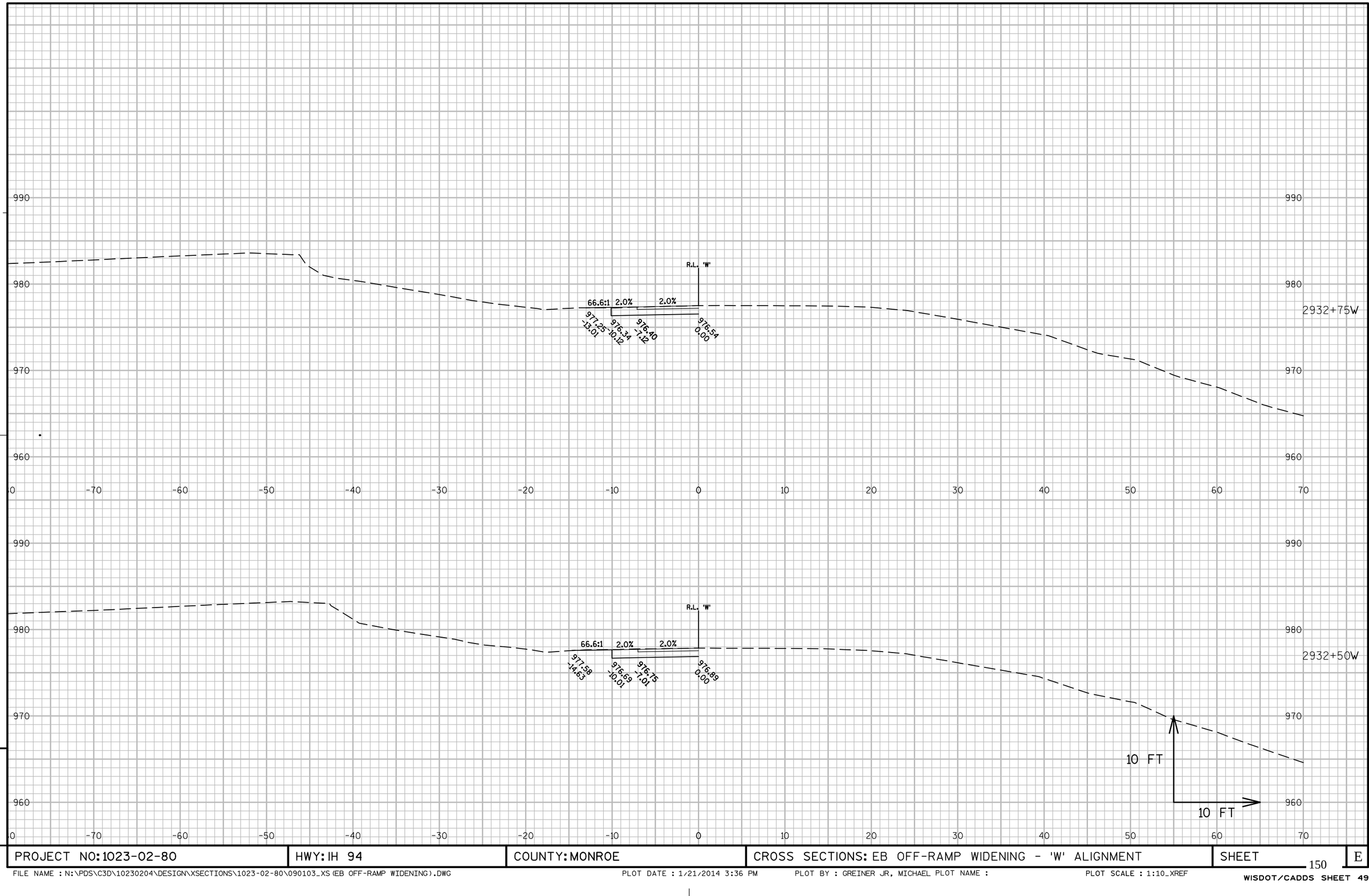
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:35 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:35 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 150	E

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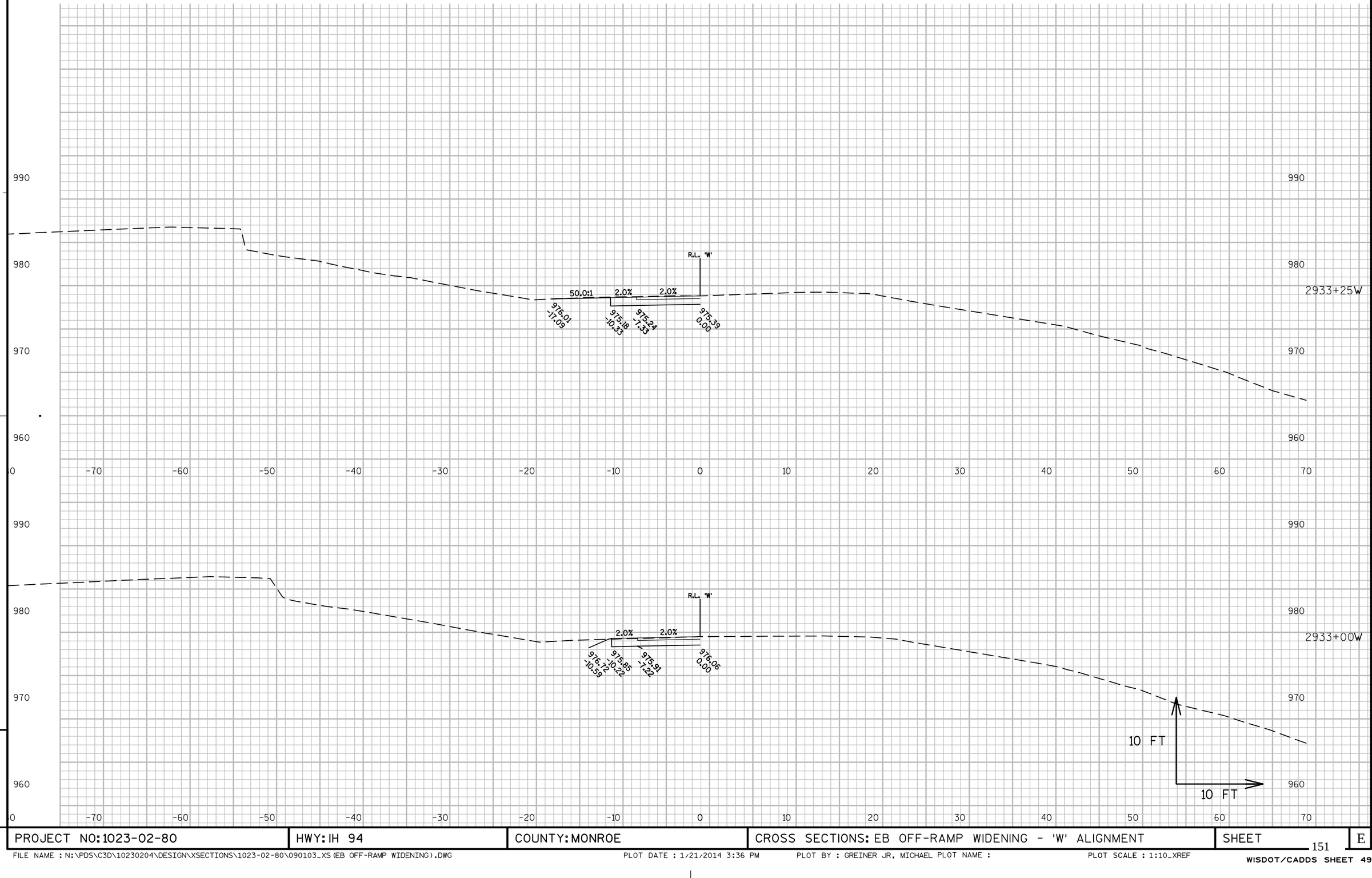
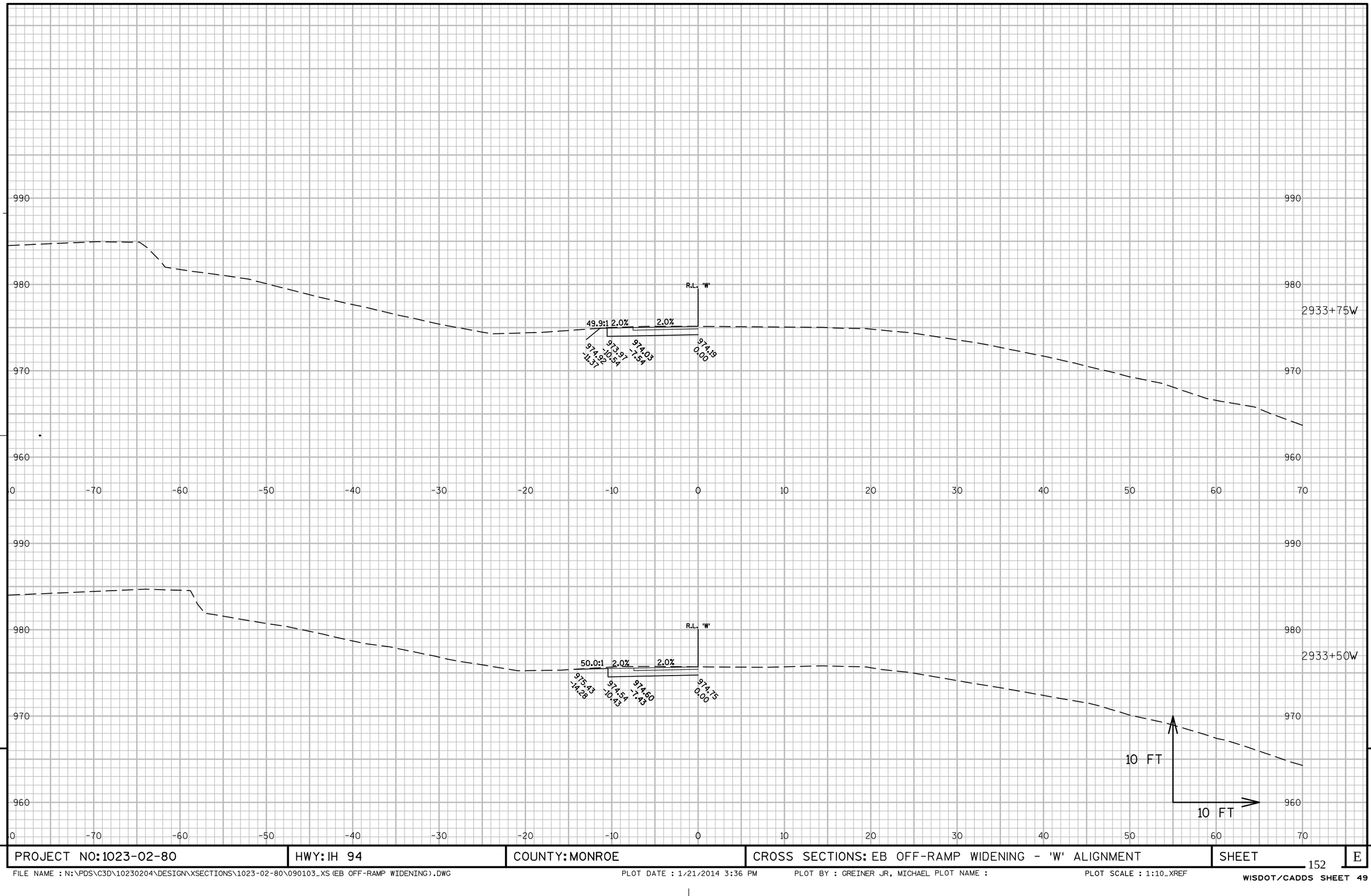
FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:36 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

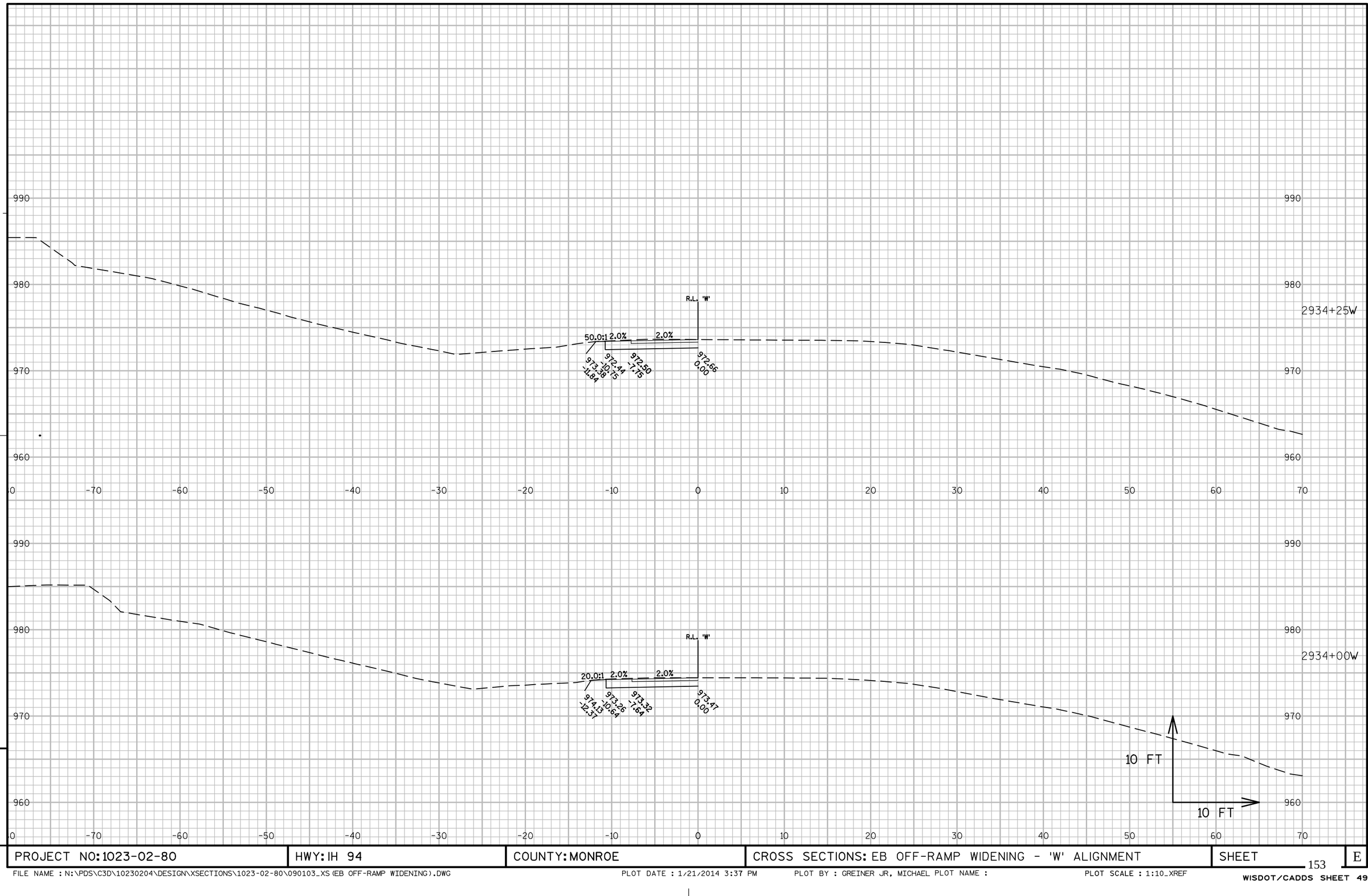


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:36 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 153	E

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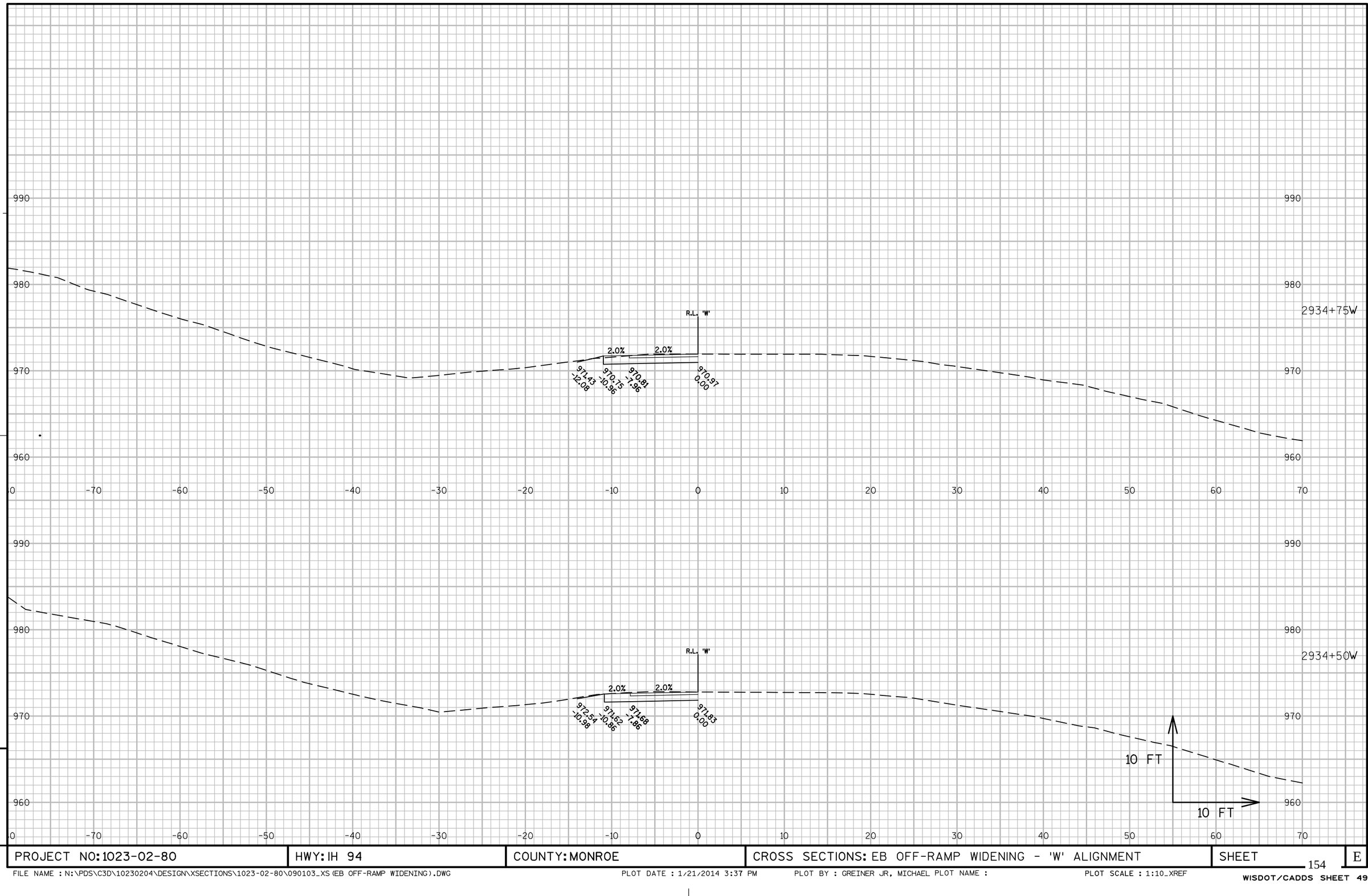
WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 154	E

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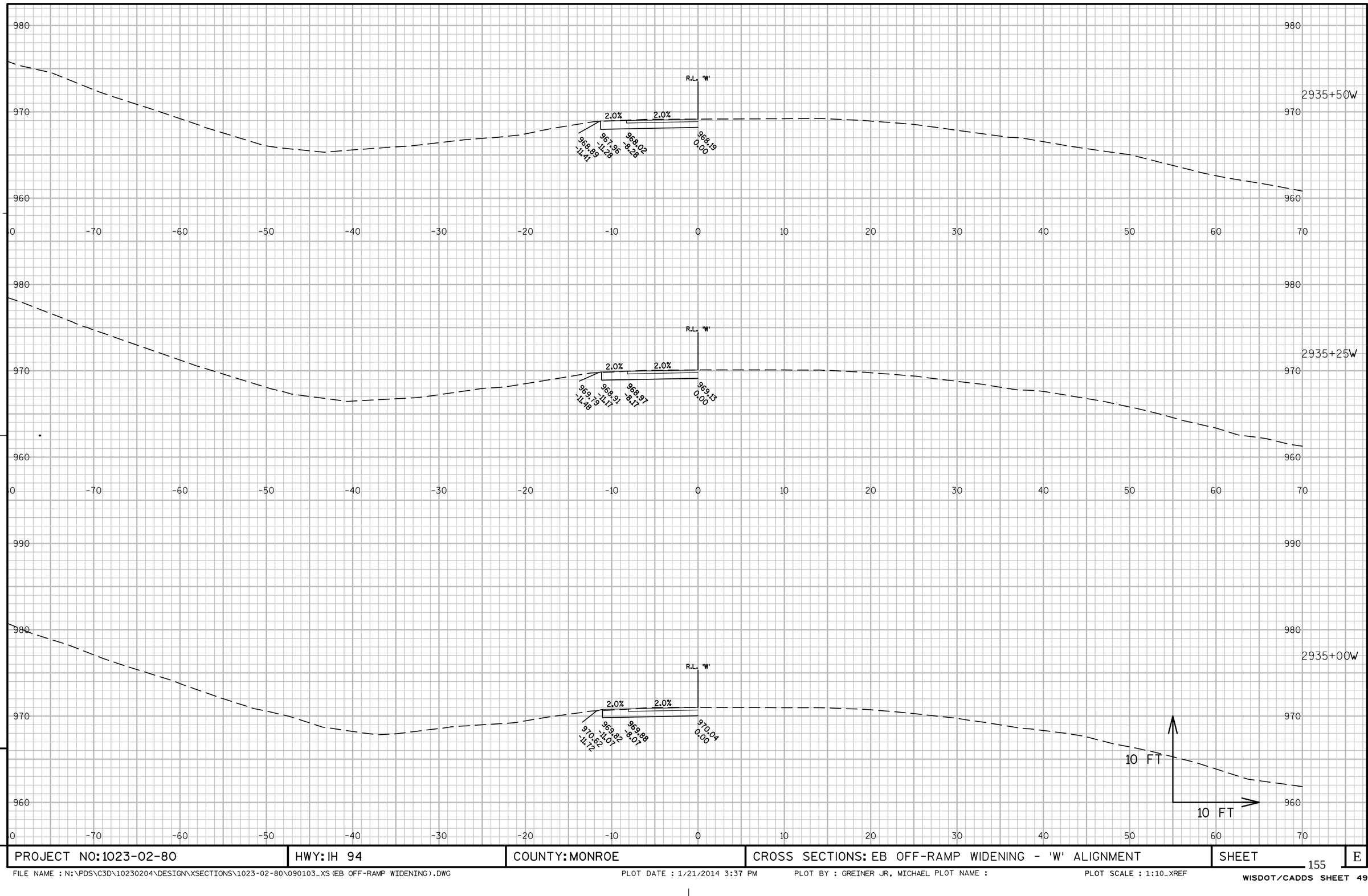
FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:37 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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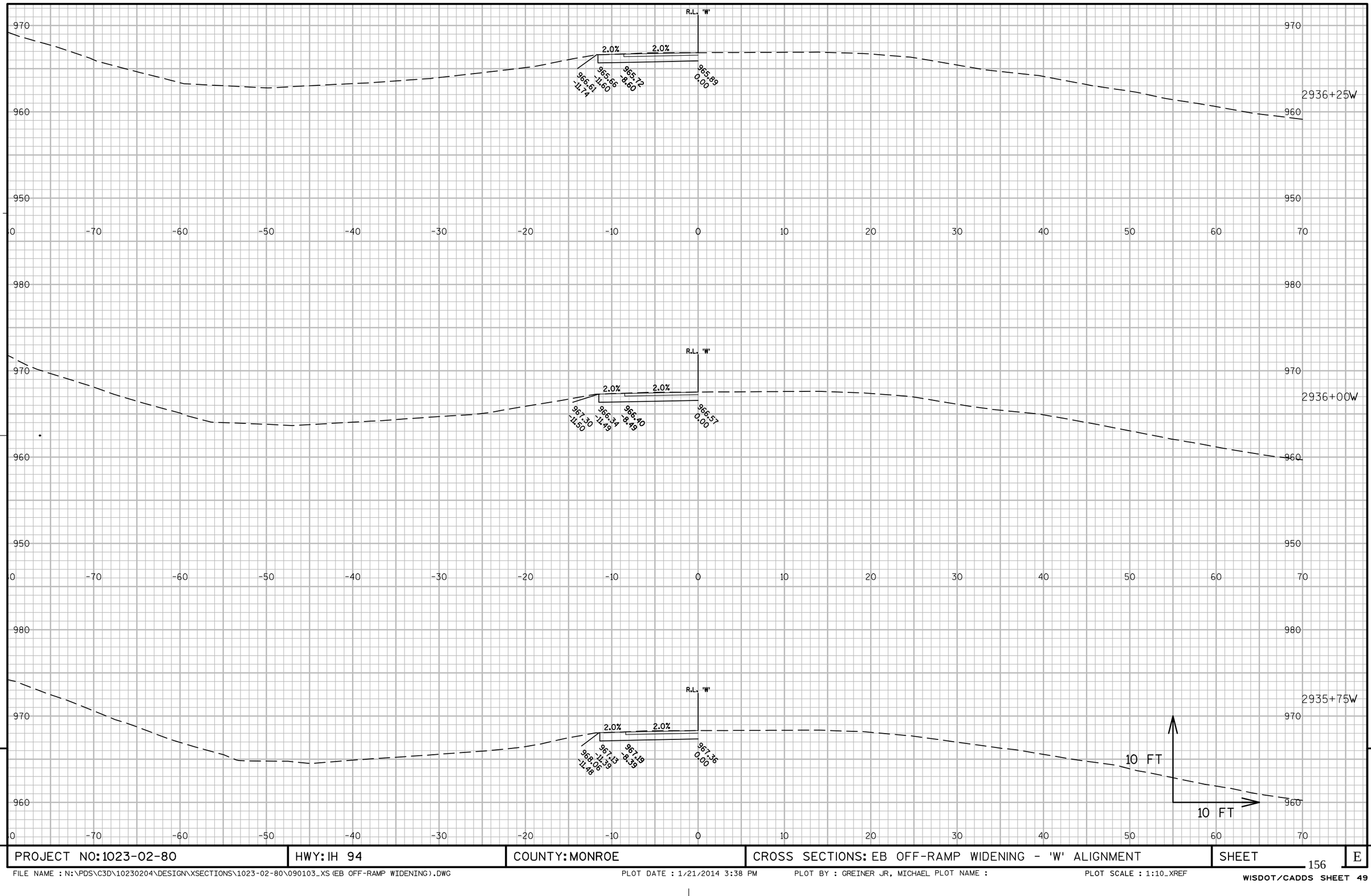
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 155	E



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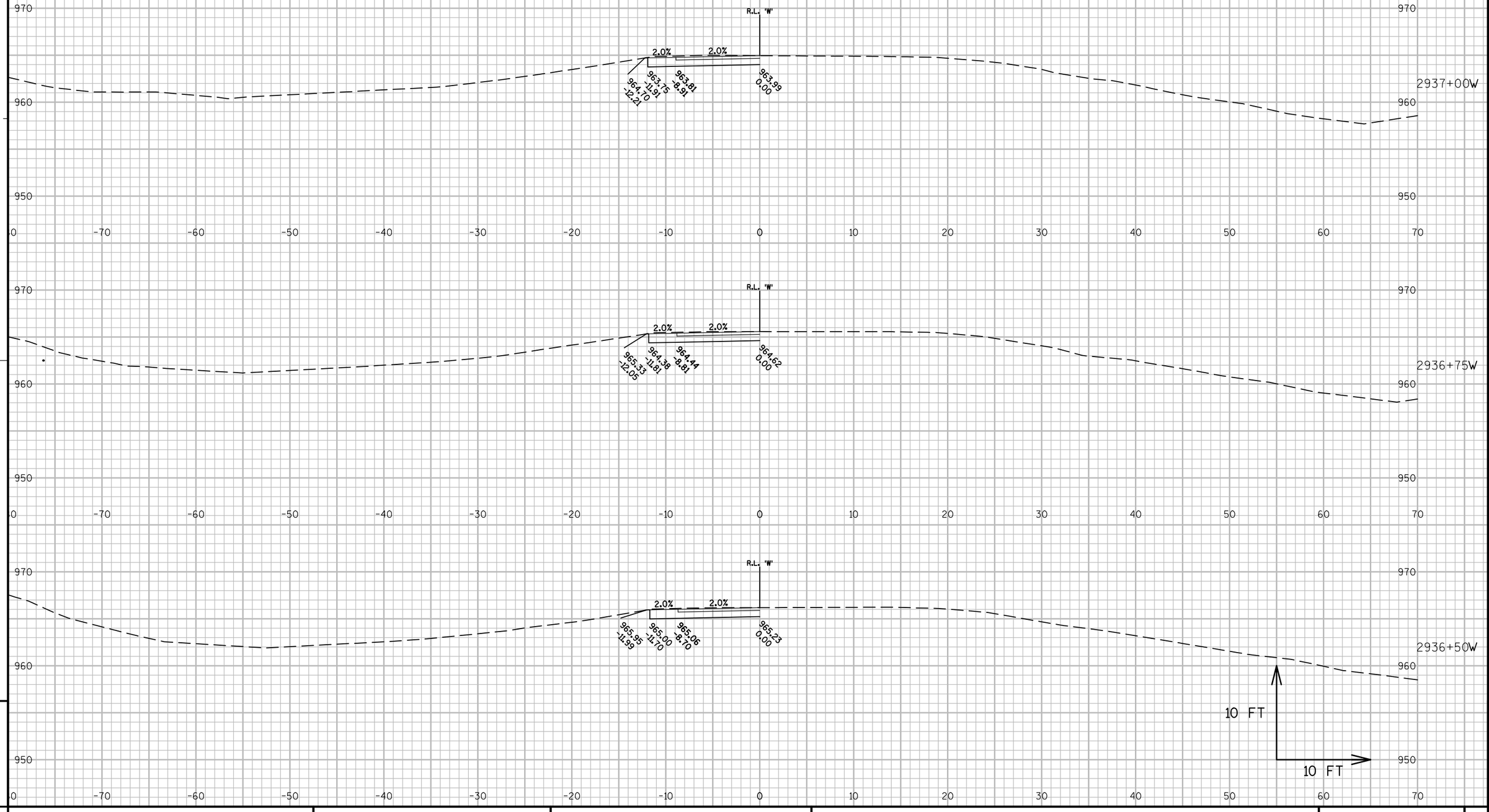
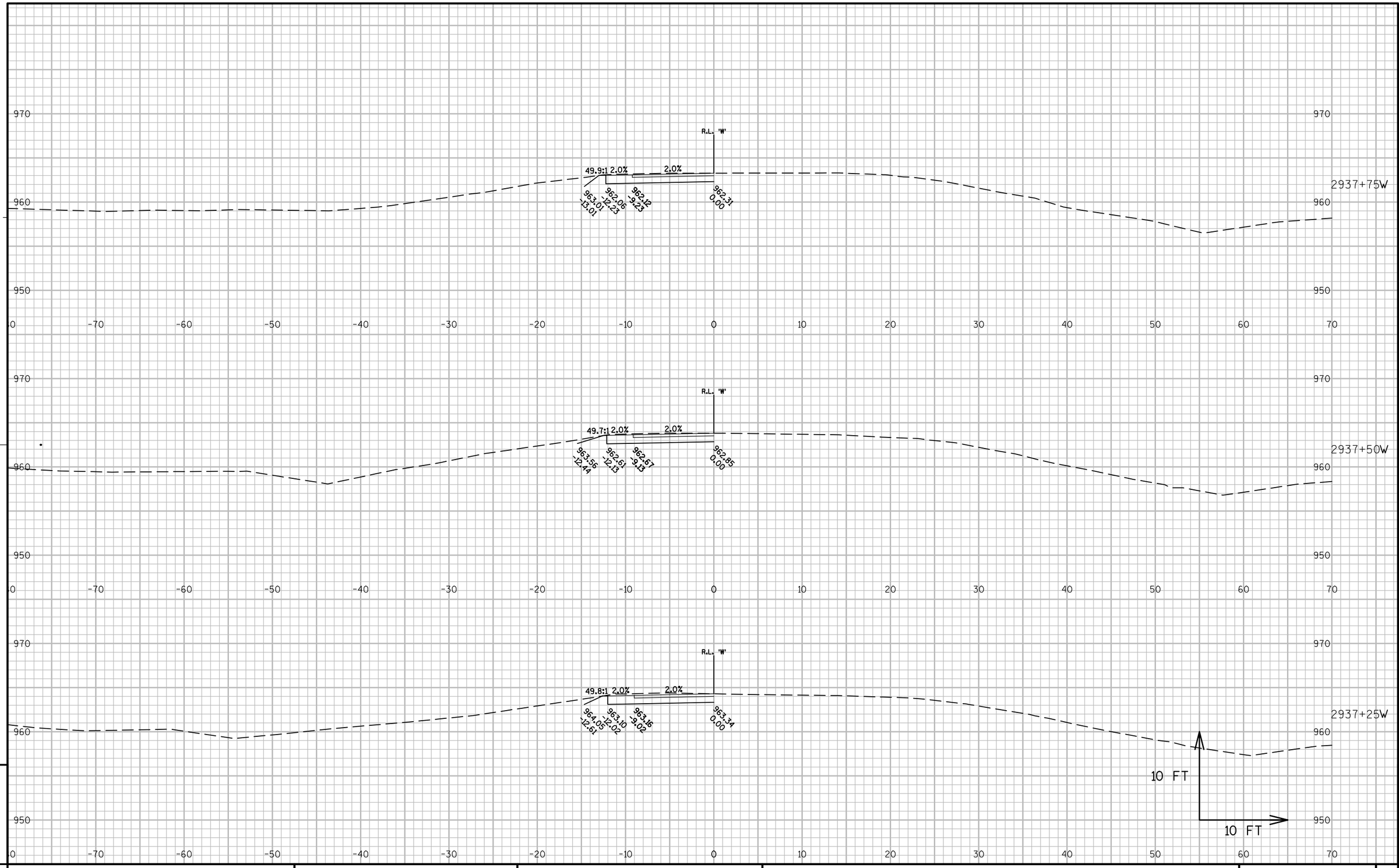
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET 156	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090103_XS(EB OFF-RAMP WIDENING).DWG PLOT DATE : 1/21/2014 3:38 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

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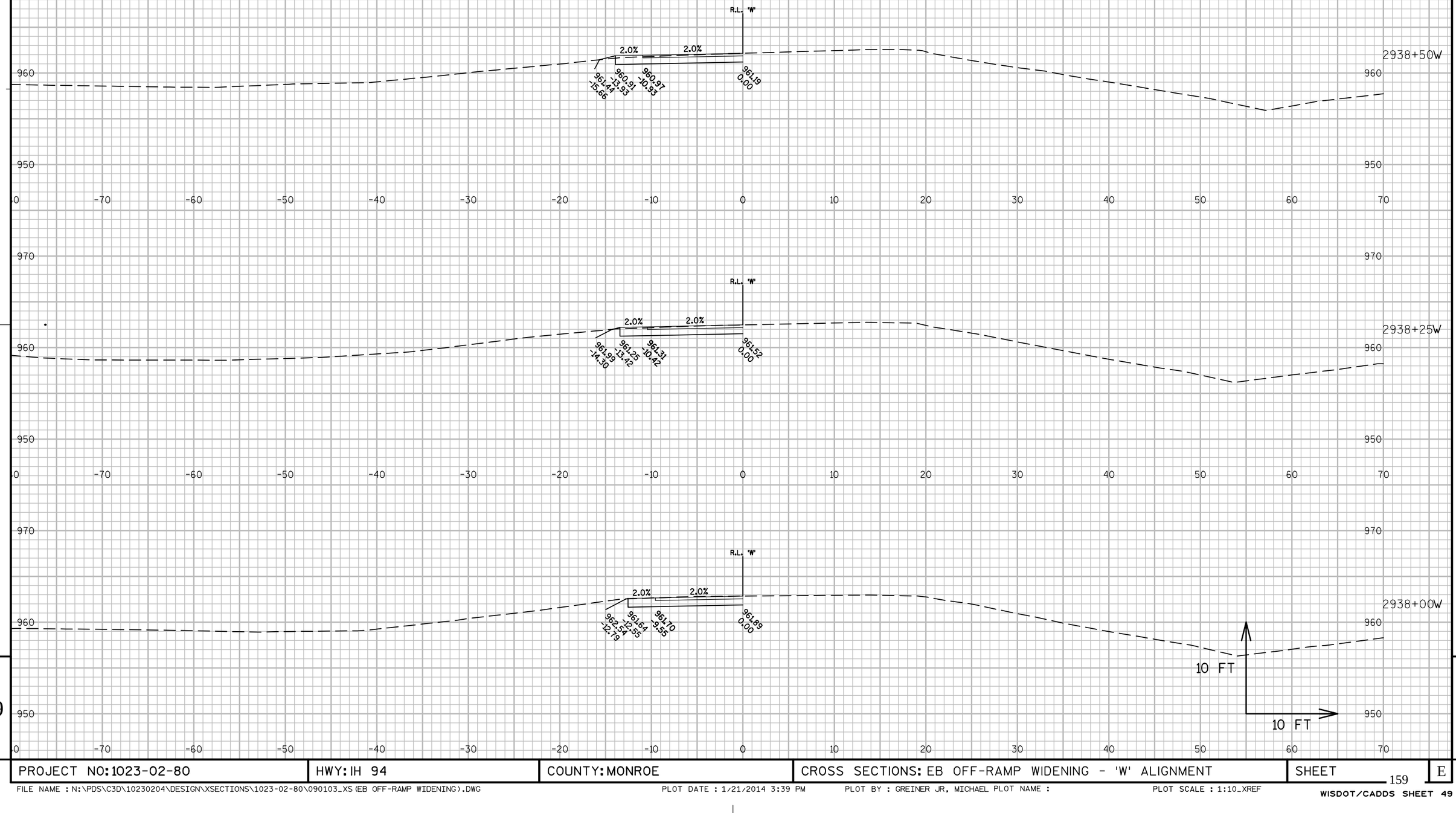
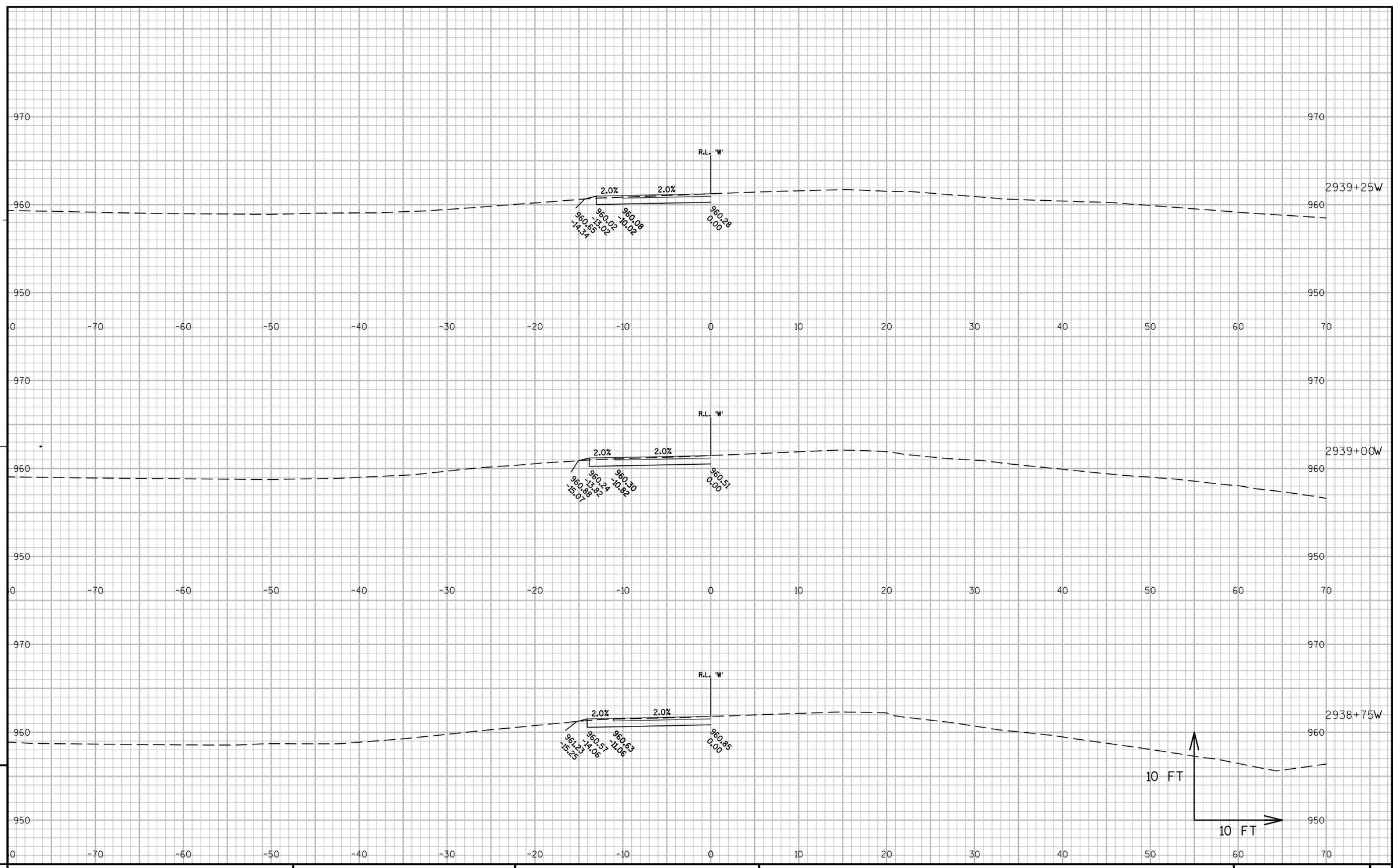
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

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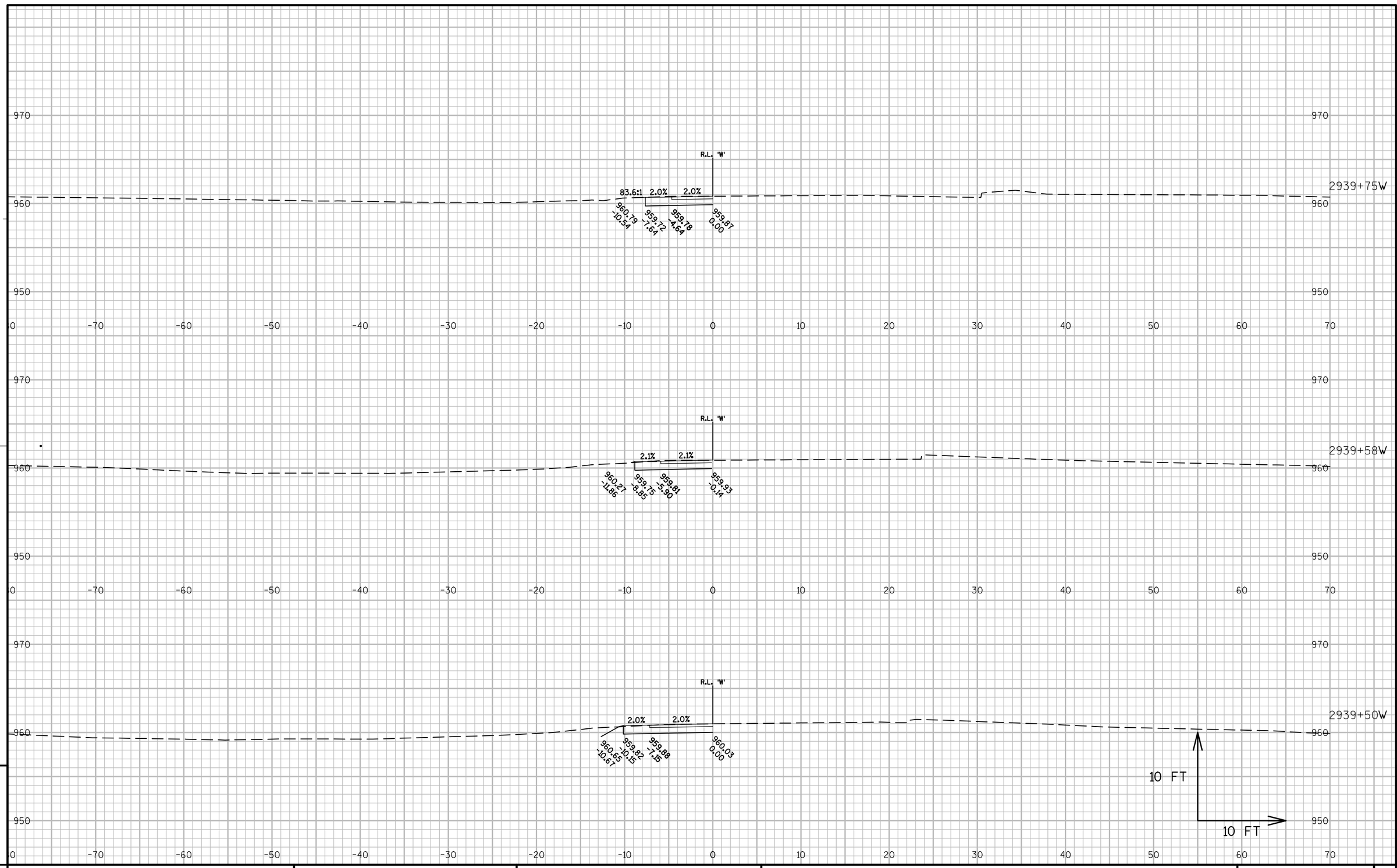

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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

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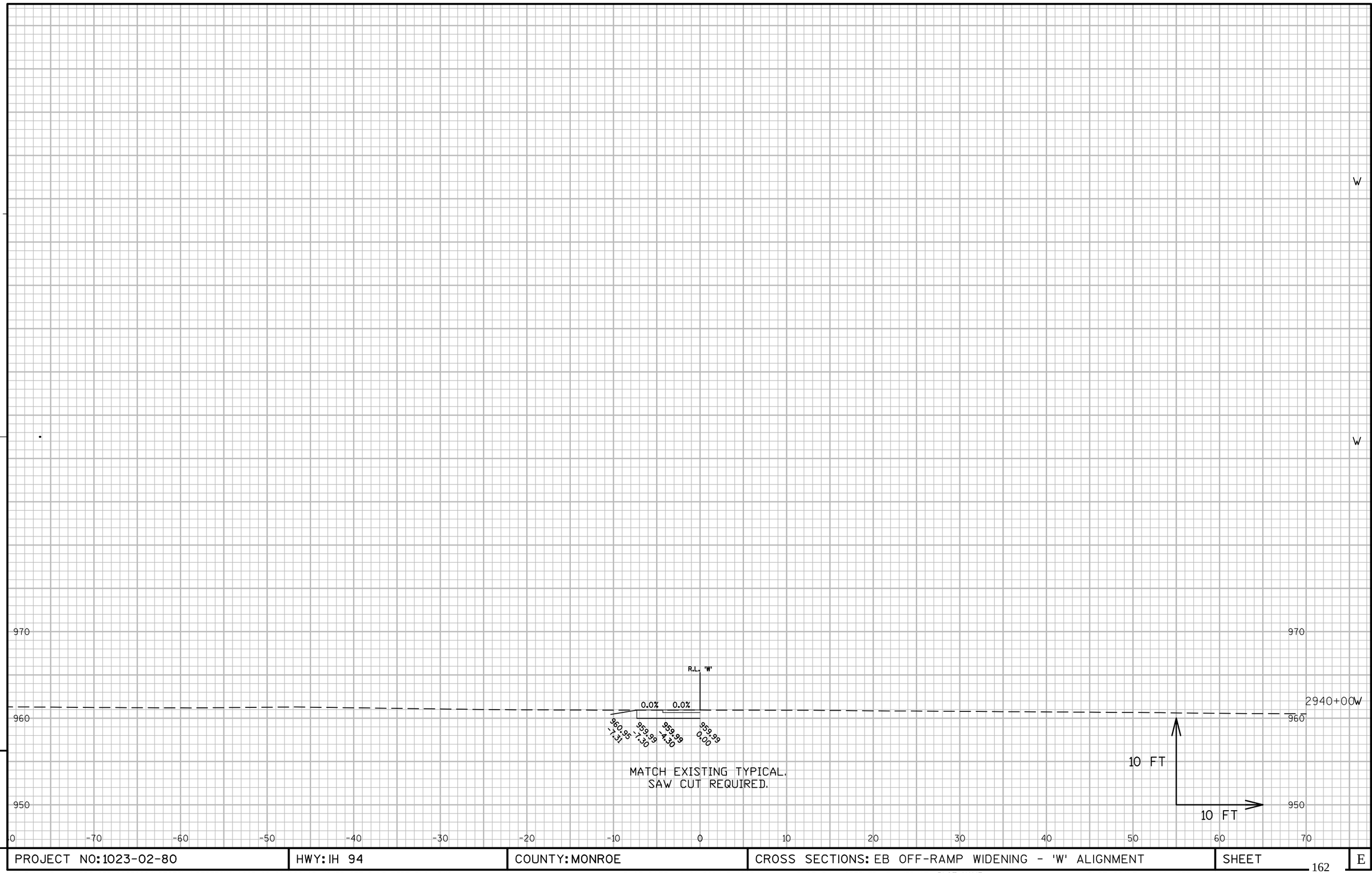

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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: EB OFF-RAMP WIDENING - 'W' ALIGNMENT	SHEET	E

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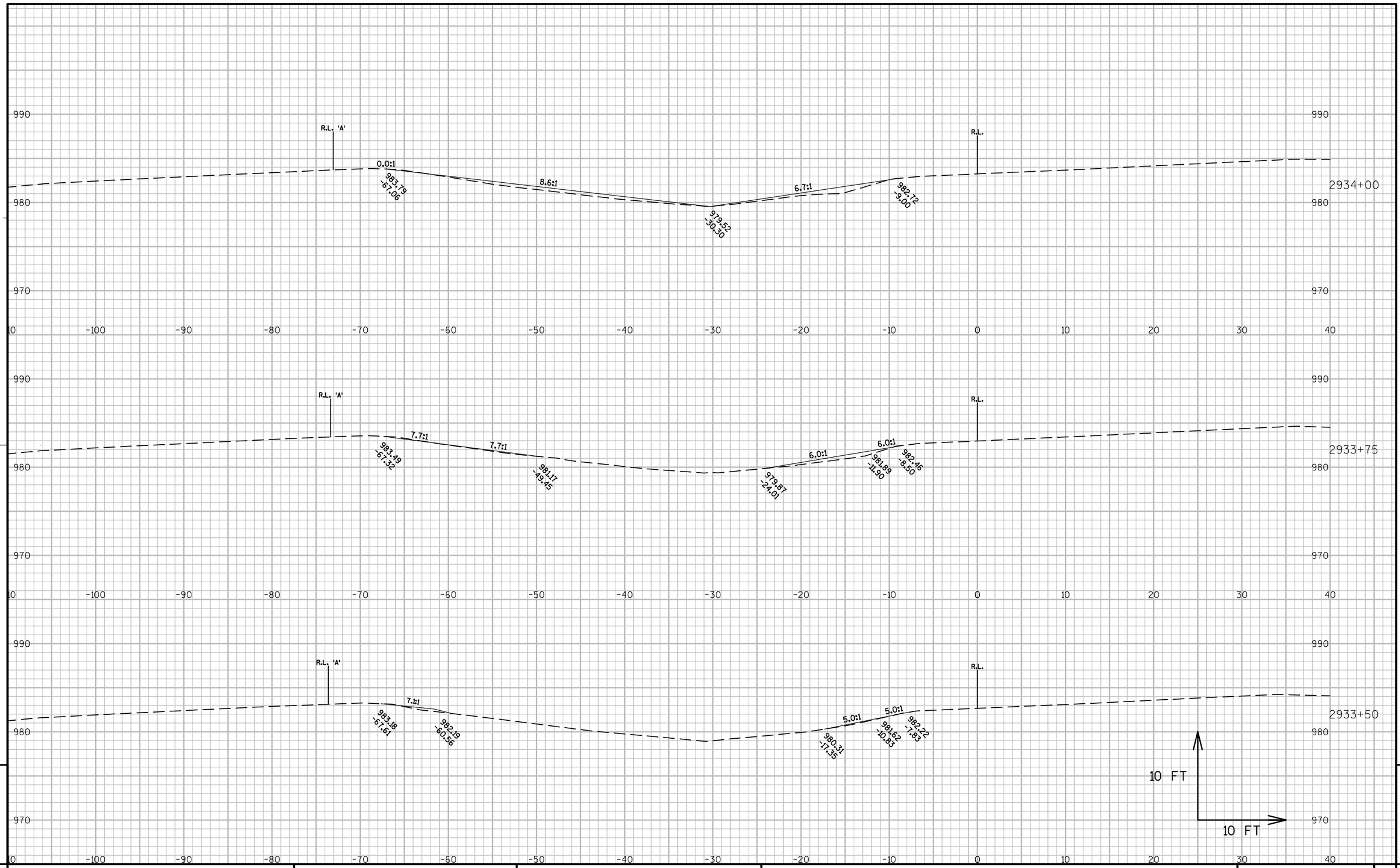
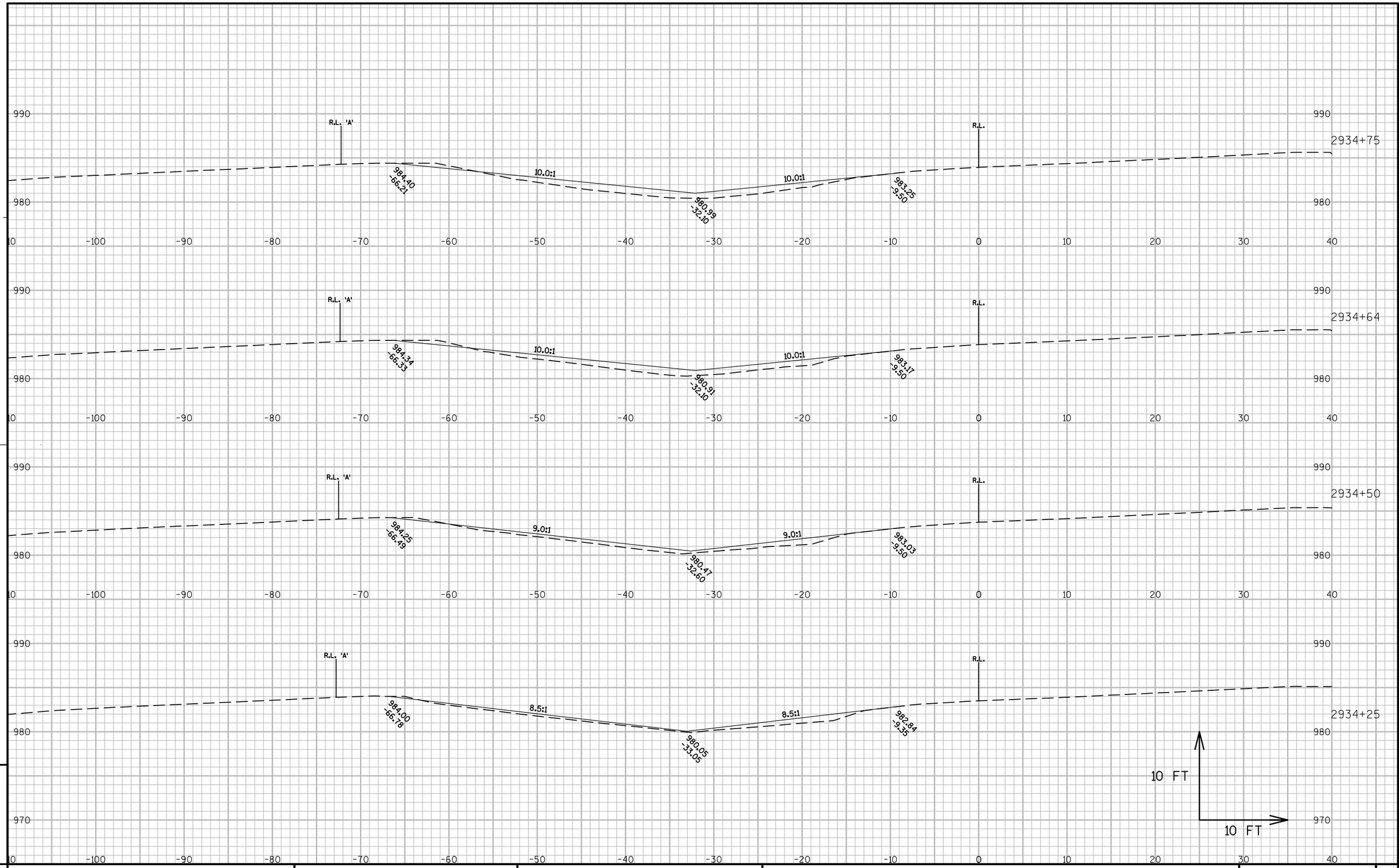
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (NW BULLNOSE AT USH 12).DWG PLOT DATE : 1/29/2014 12:22 PM PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME : PLOT SCALE : 1:10_XREF



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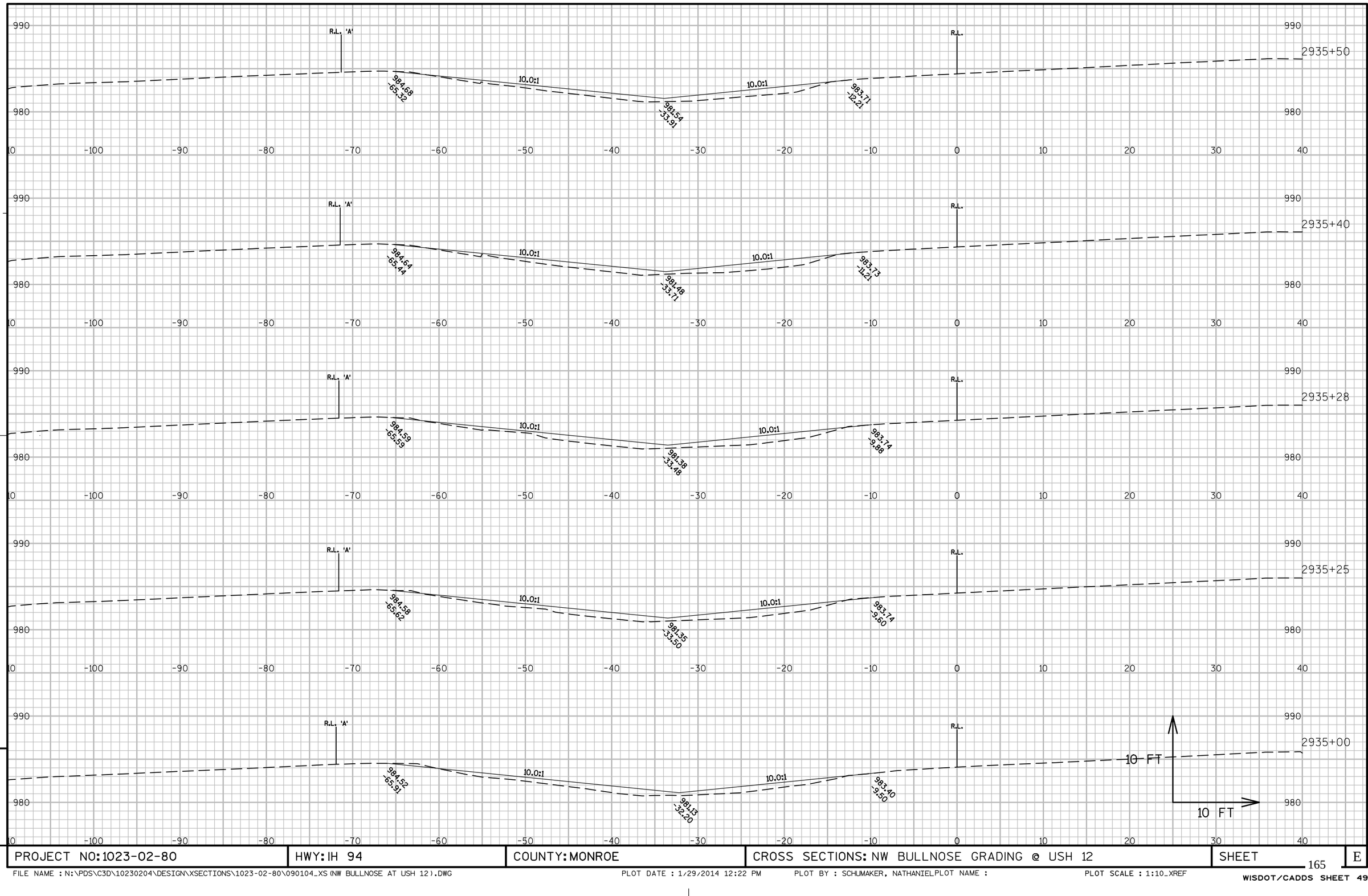
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (NW BULLNOSE AT USH 12).DWG PLOT DATE : 1/29/2014 12:22 PM PLOT BY : SCHUMAKER, NATHANIELPLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

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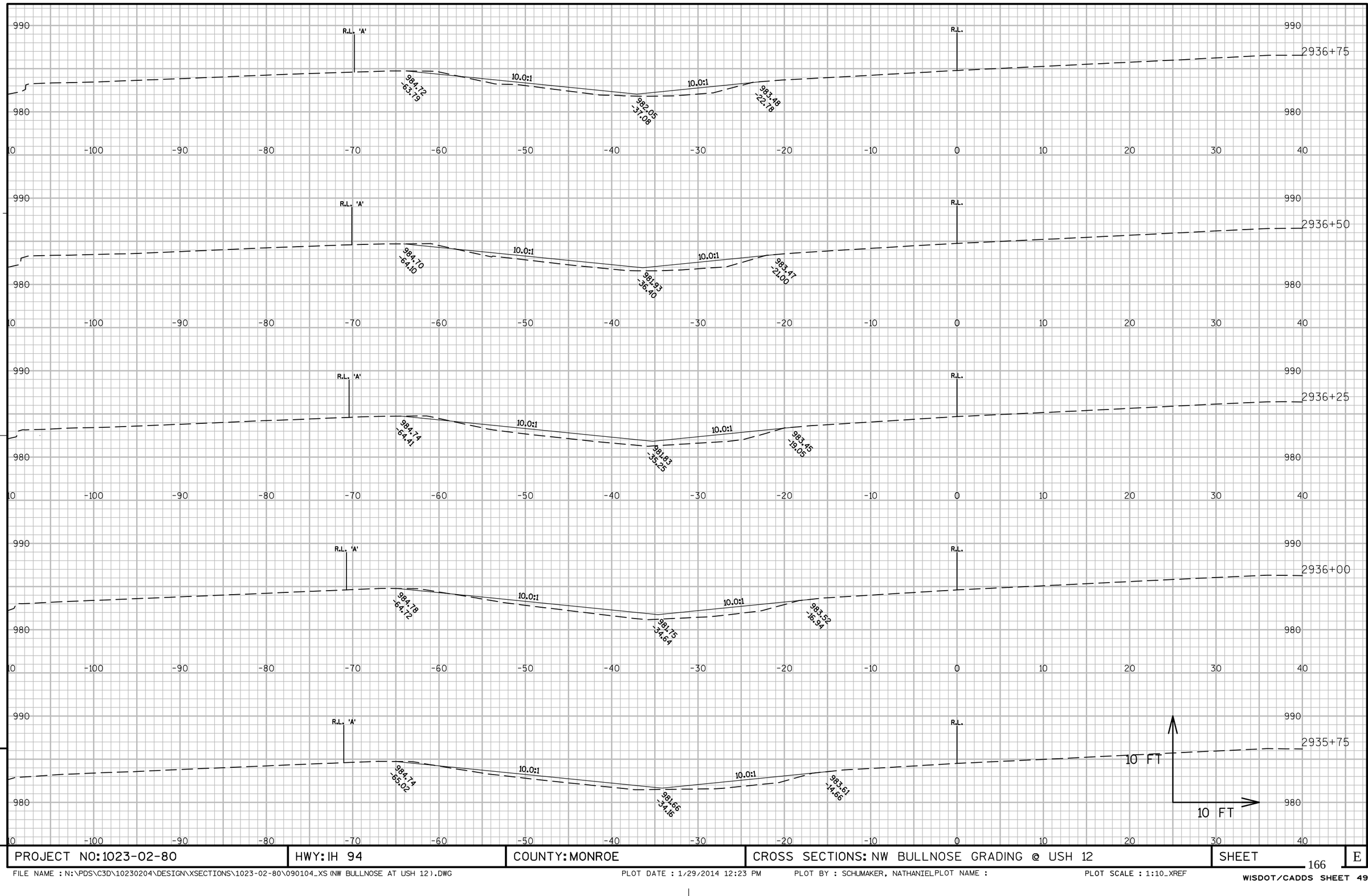

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

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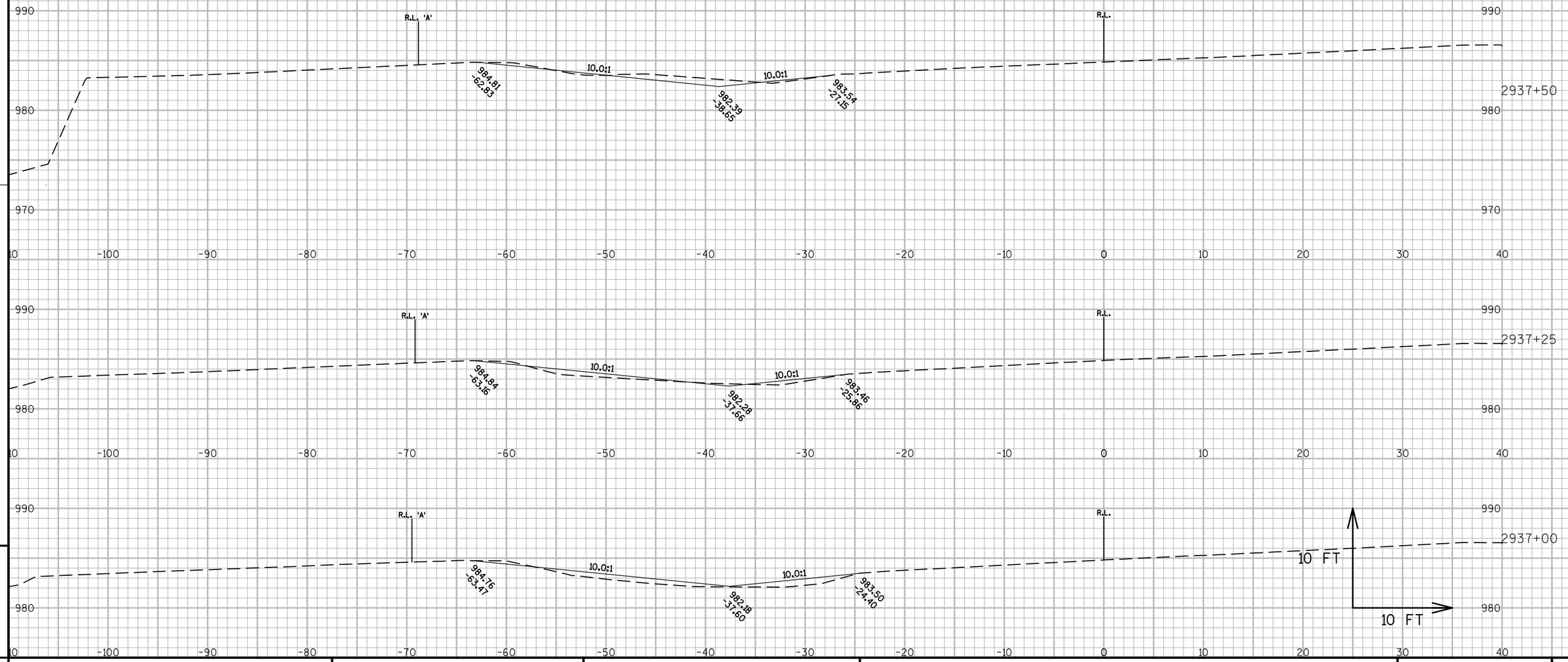
WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

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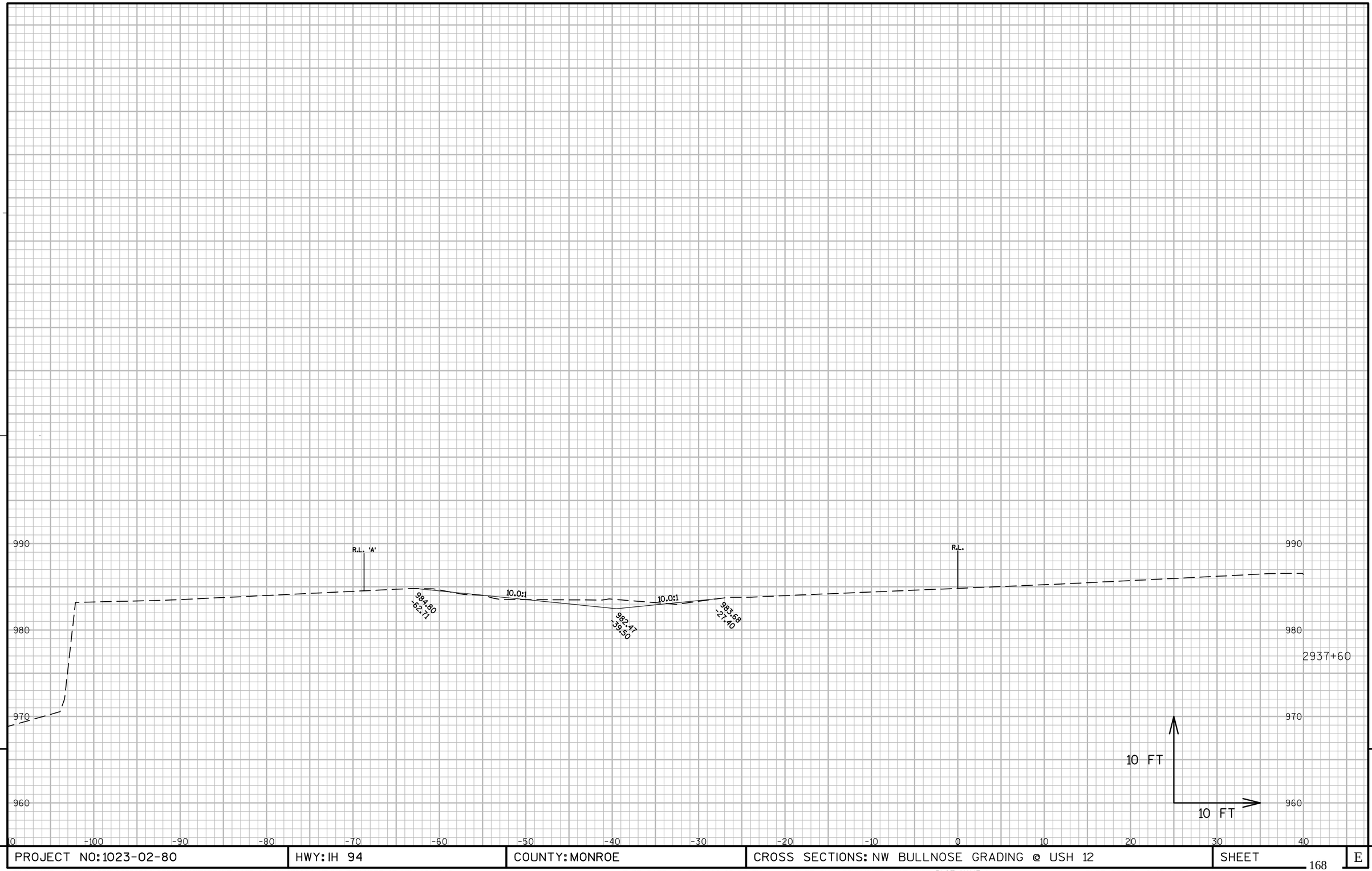
WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: NW BULLNOSE GRADING @ USH 12	SHEET	E

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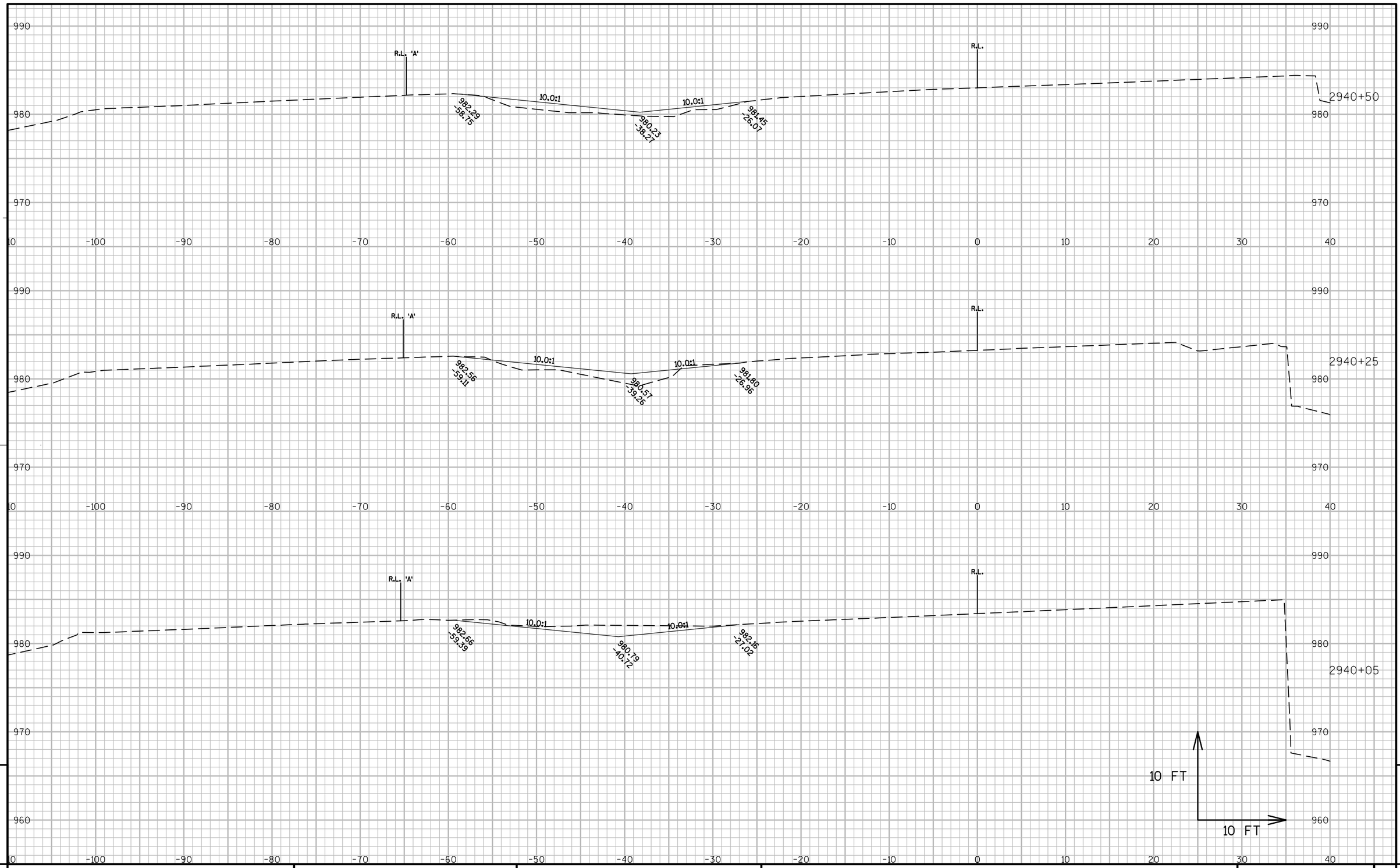
FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (NW BULLNOSE AT USH 12).DWG PLOT DATE : 1/29/2014 12:23 PM PLOT BY : SCHUMAKER, NATHANIELPLOT NAME : PLOT SCALE : 1:10_XREF

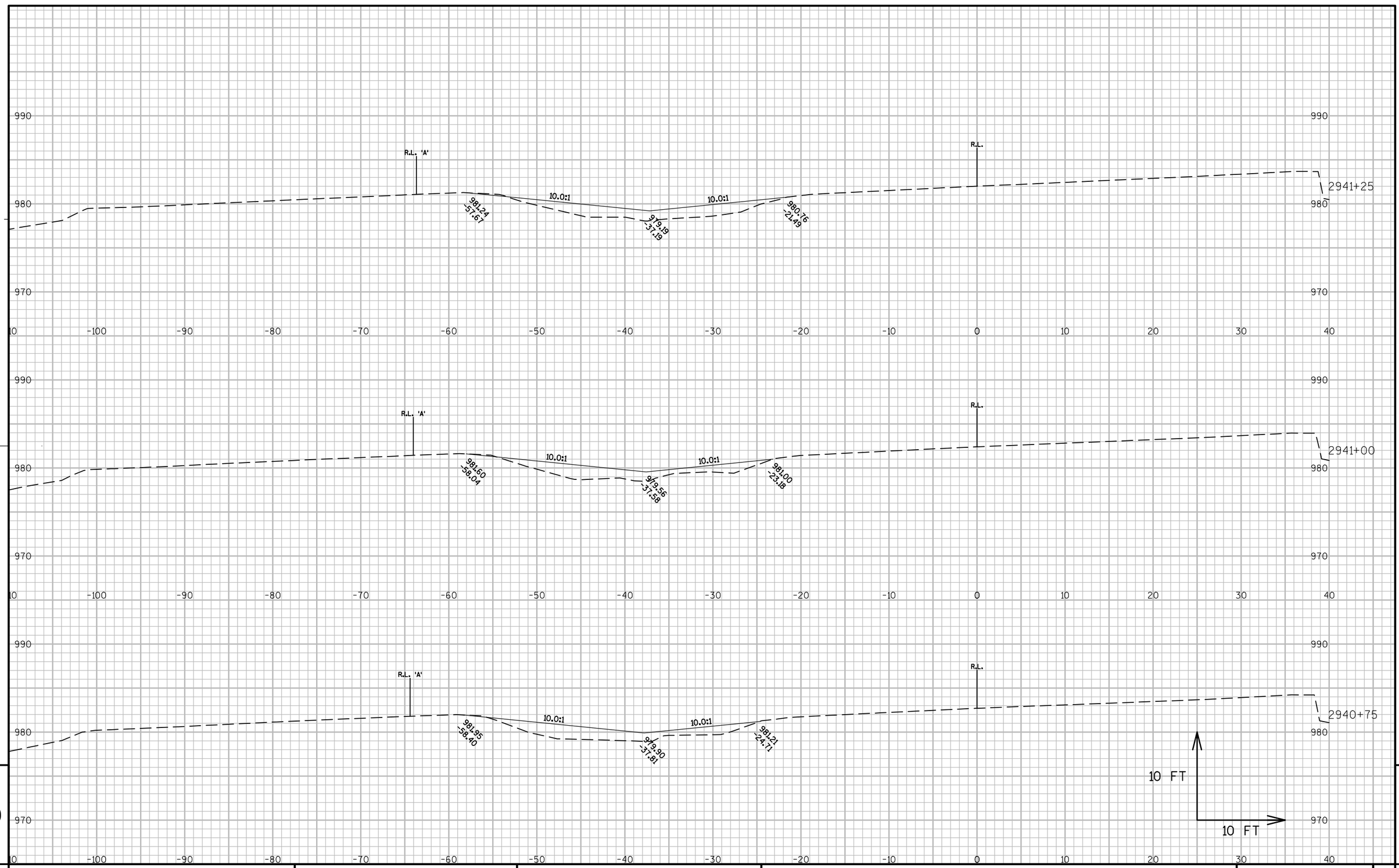
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: SE BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:10 AM PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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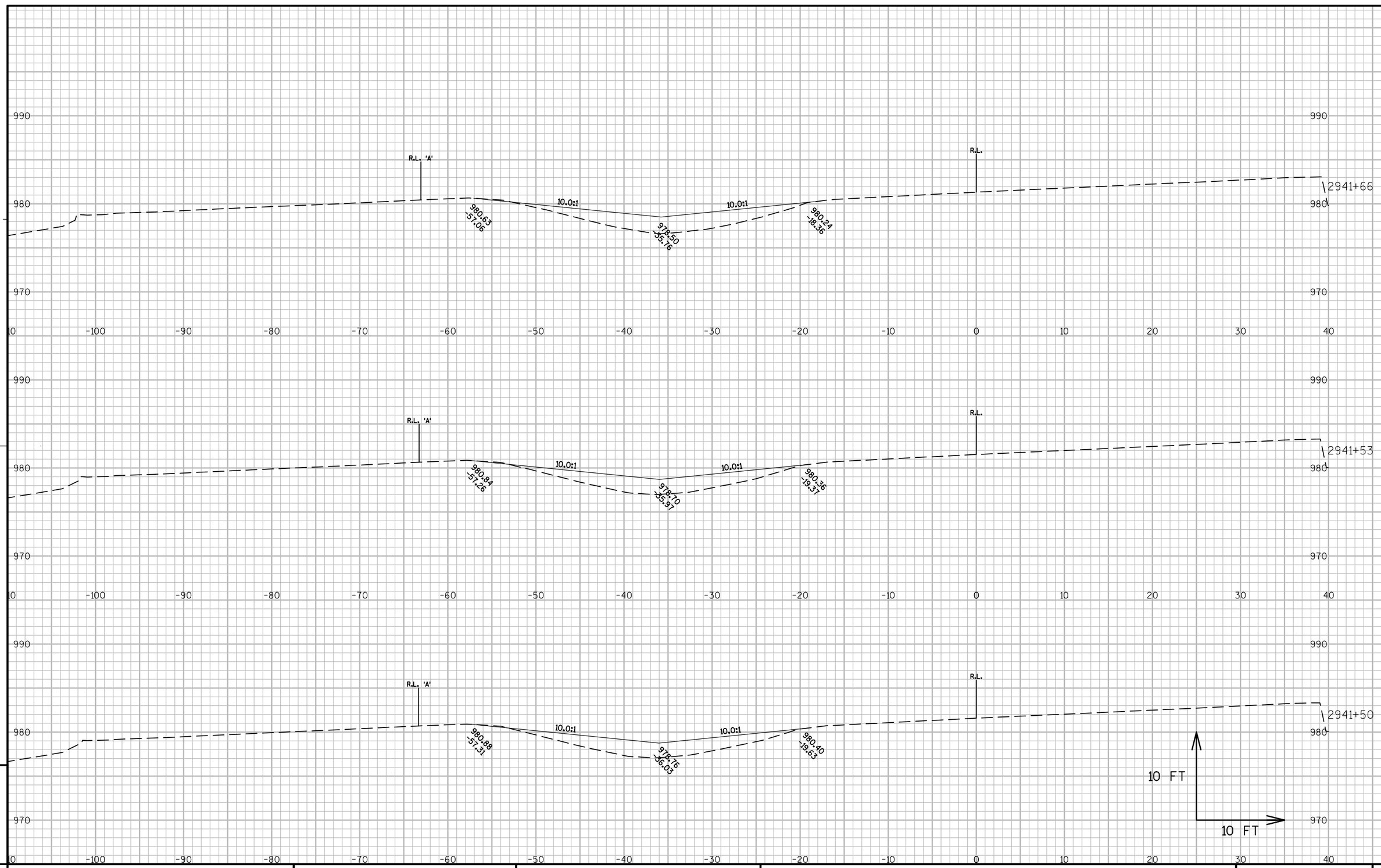
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: SE BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG
PLOT DATE : 1/30/2014 8:11 AM
PLOT BY : SCHUMAKER, NATHANIEL
PLOT NAME :
PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



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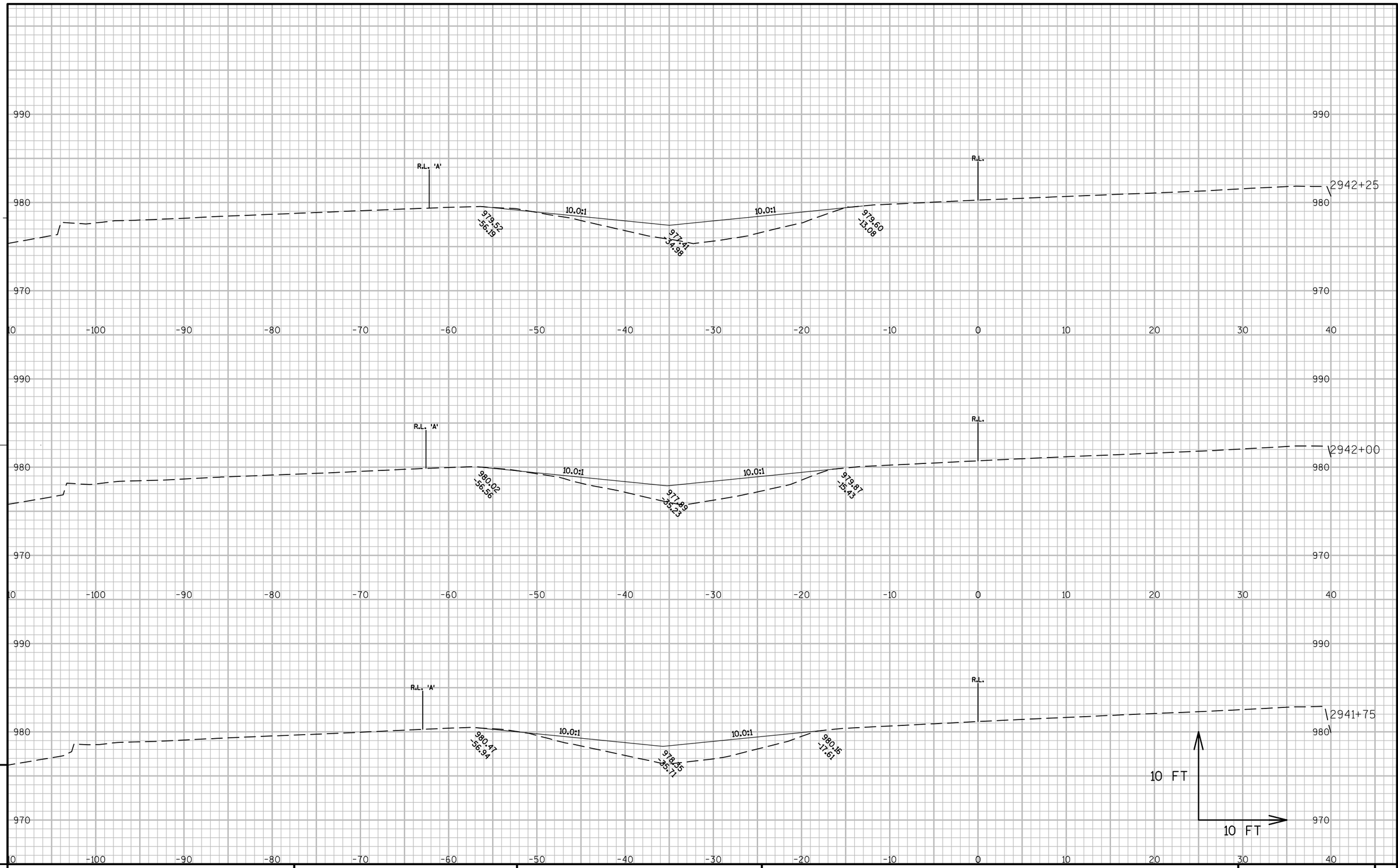
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: SE BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:11 AM PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME : PLOT SCALE : 1:10_XREF



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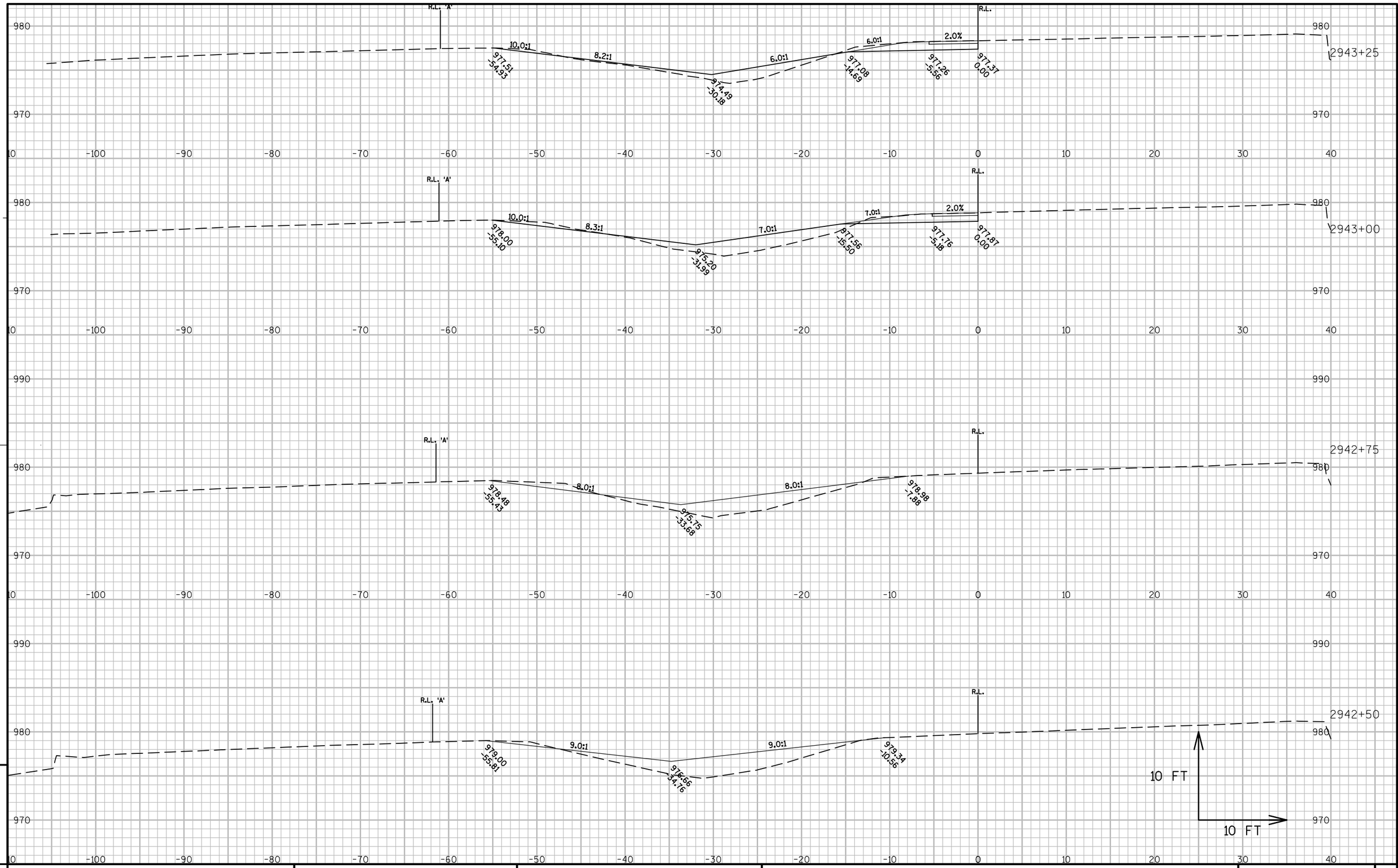
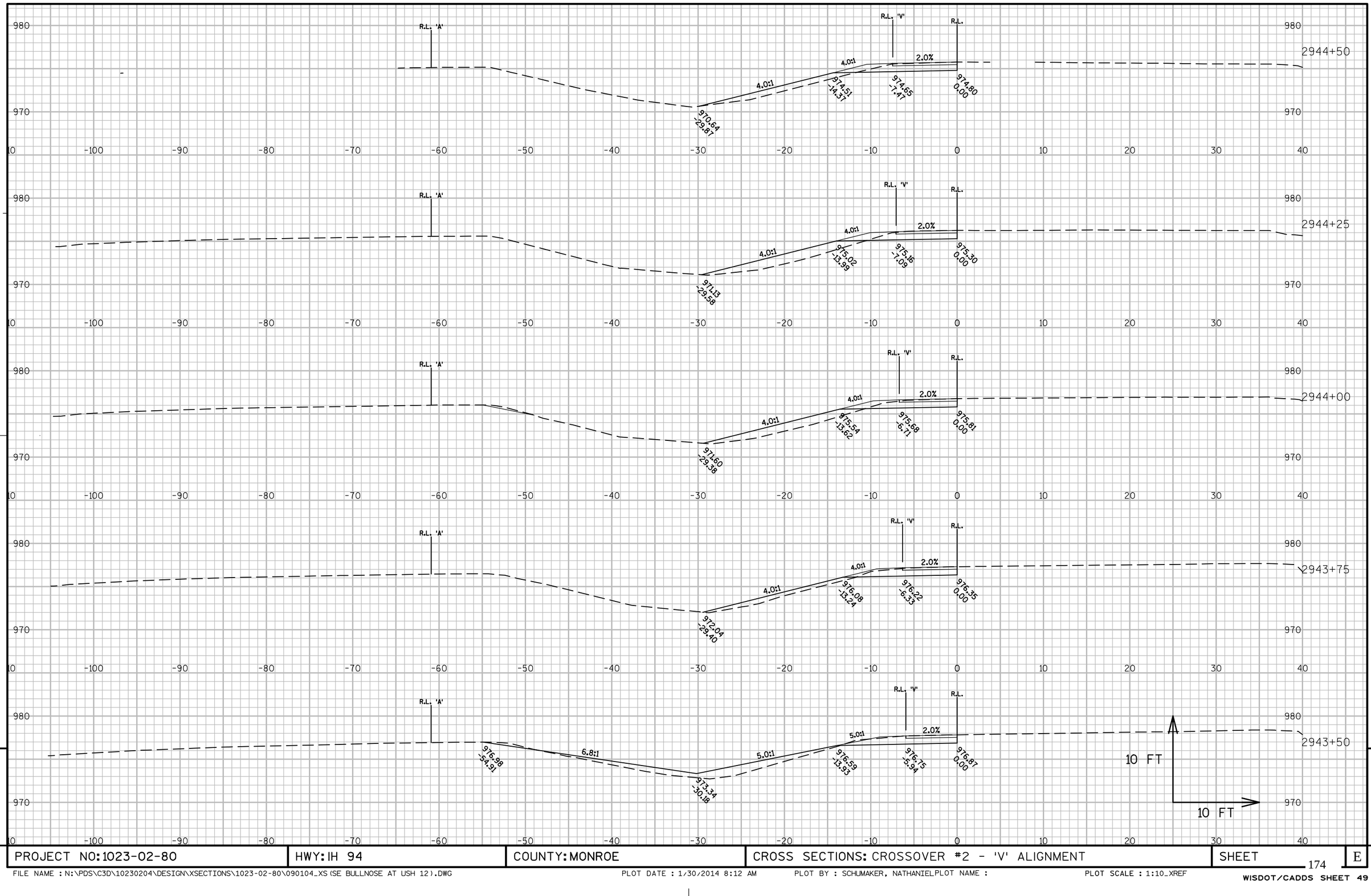
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: SE BULLNOSE GRADING @ USH 12	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:11 AM PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME : PLOT SCALE : 1:10_XREF

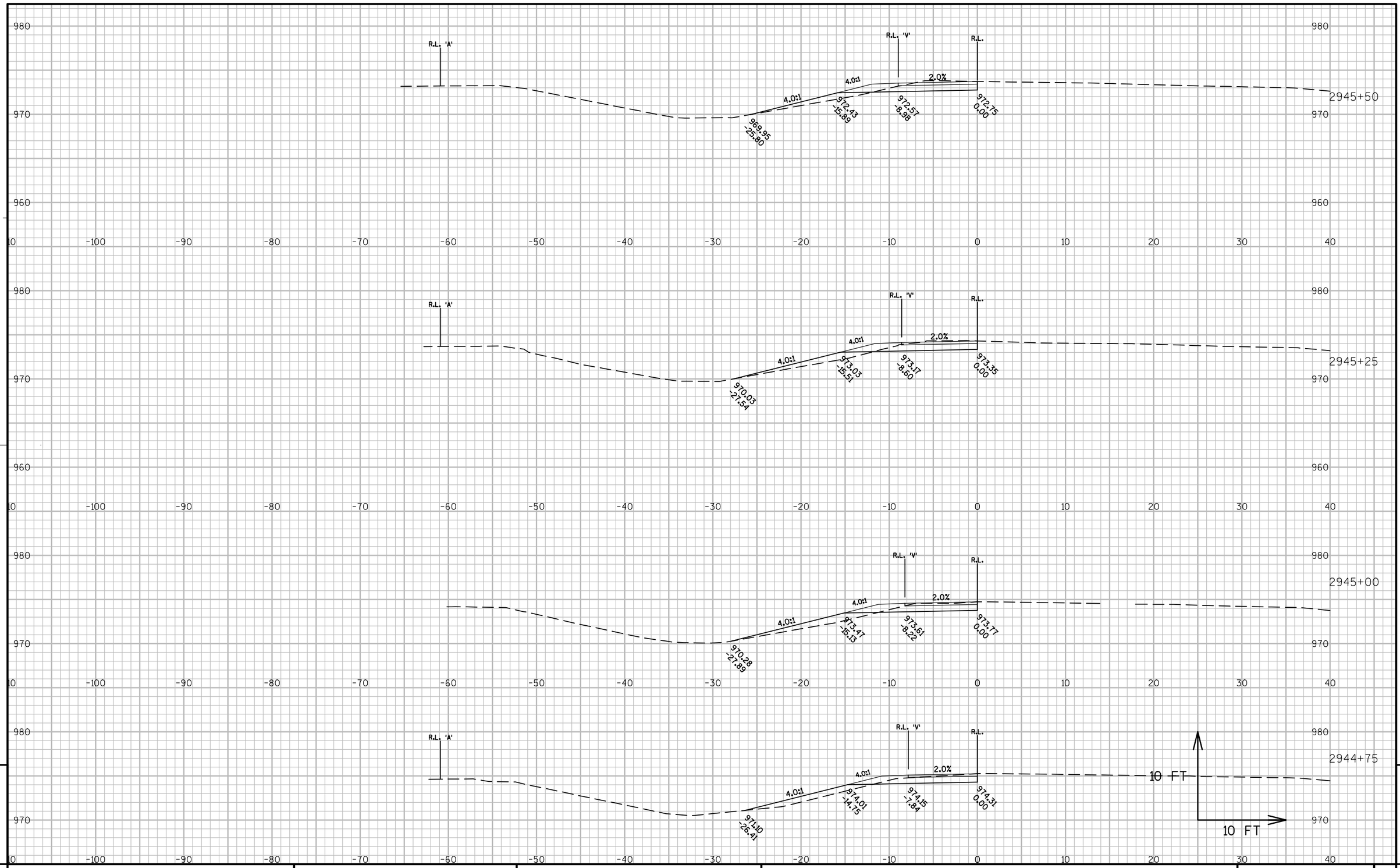
WISDOT/CADDS SHEET 49



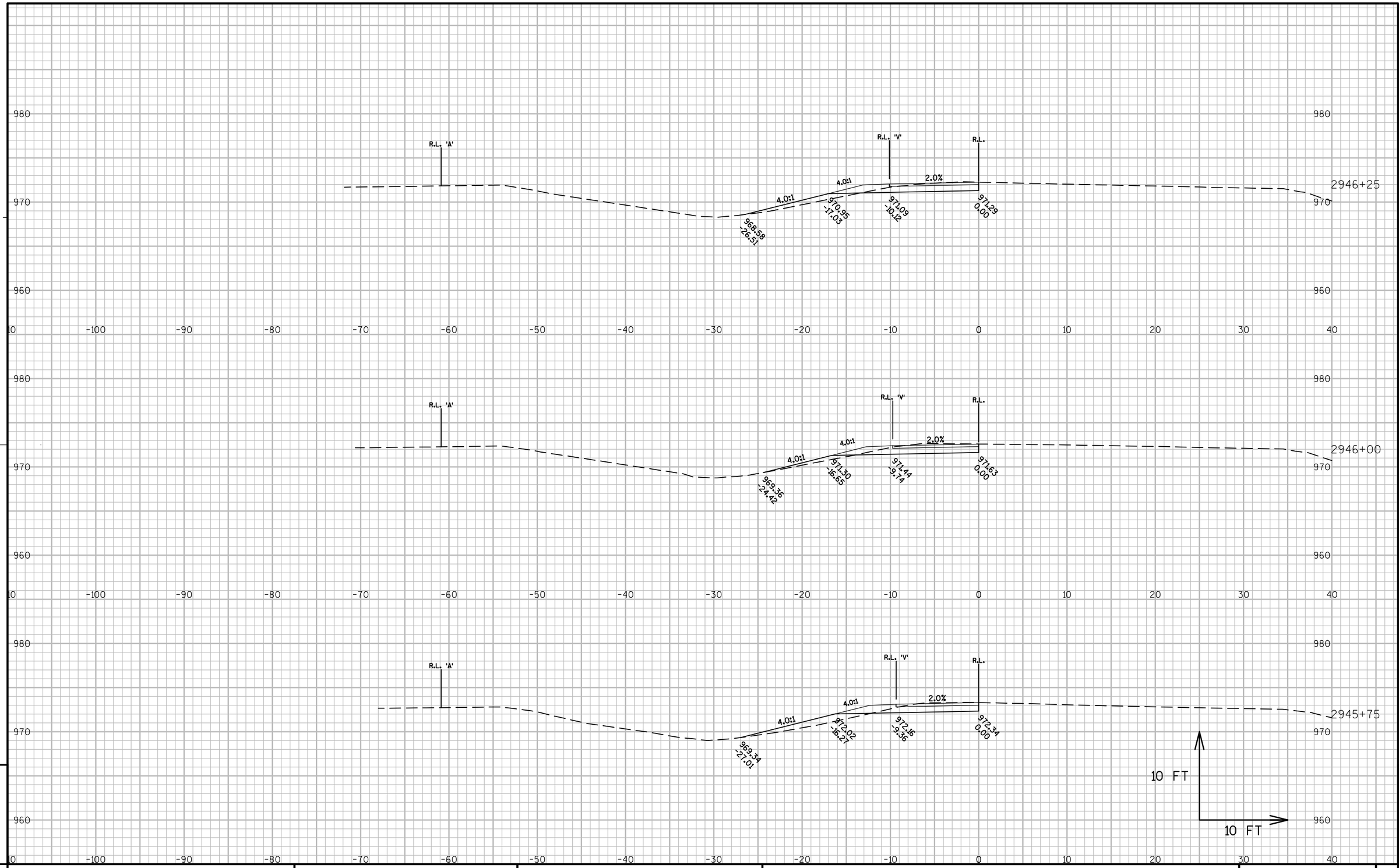
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET 174	E

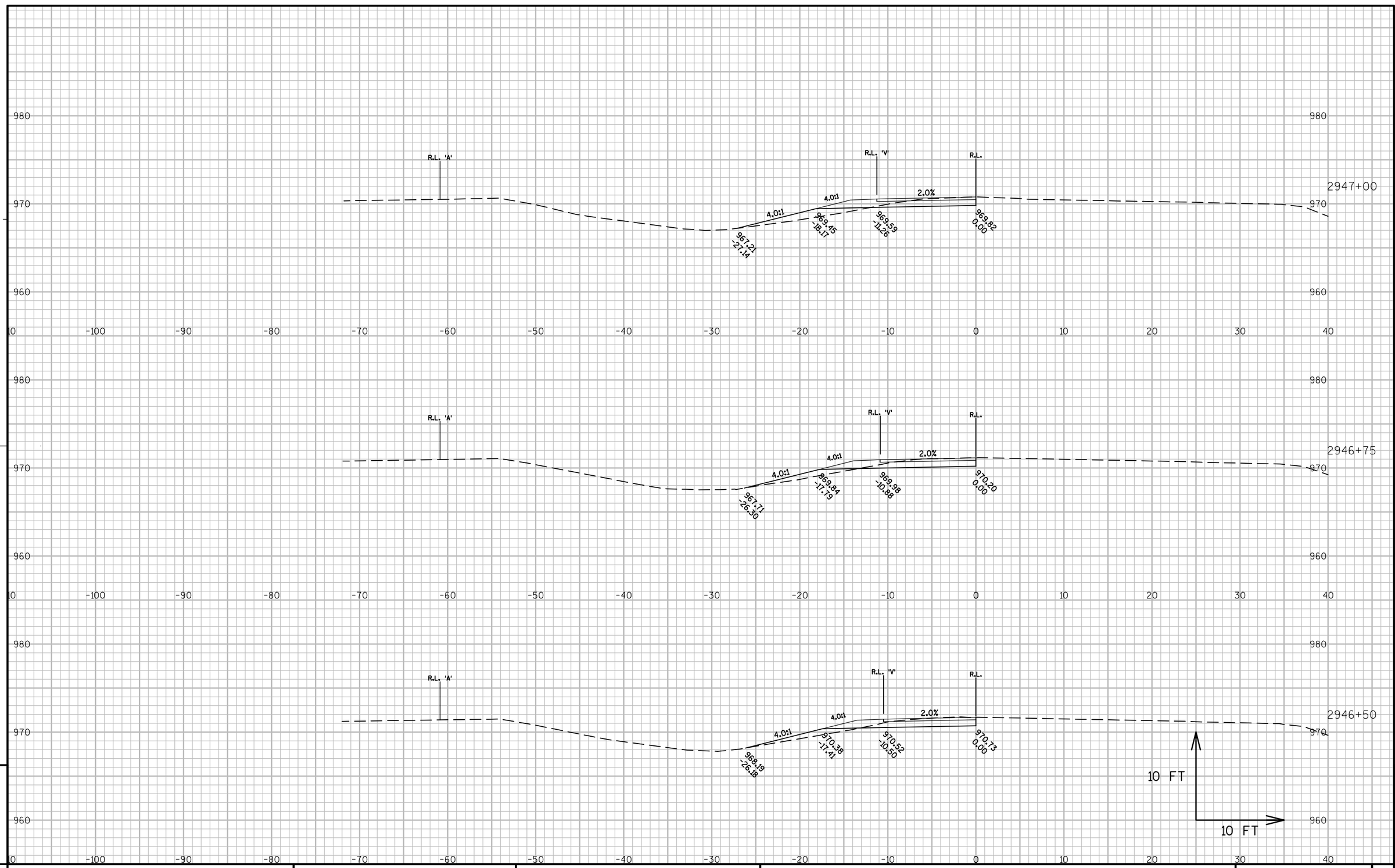


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E



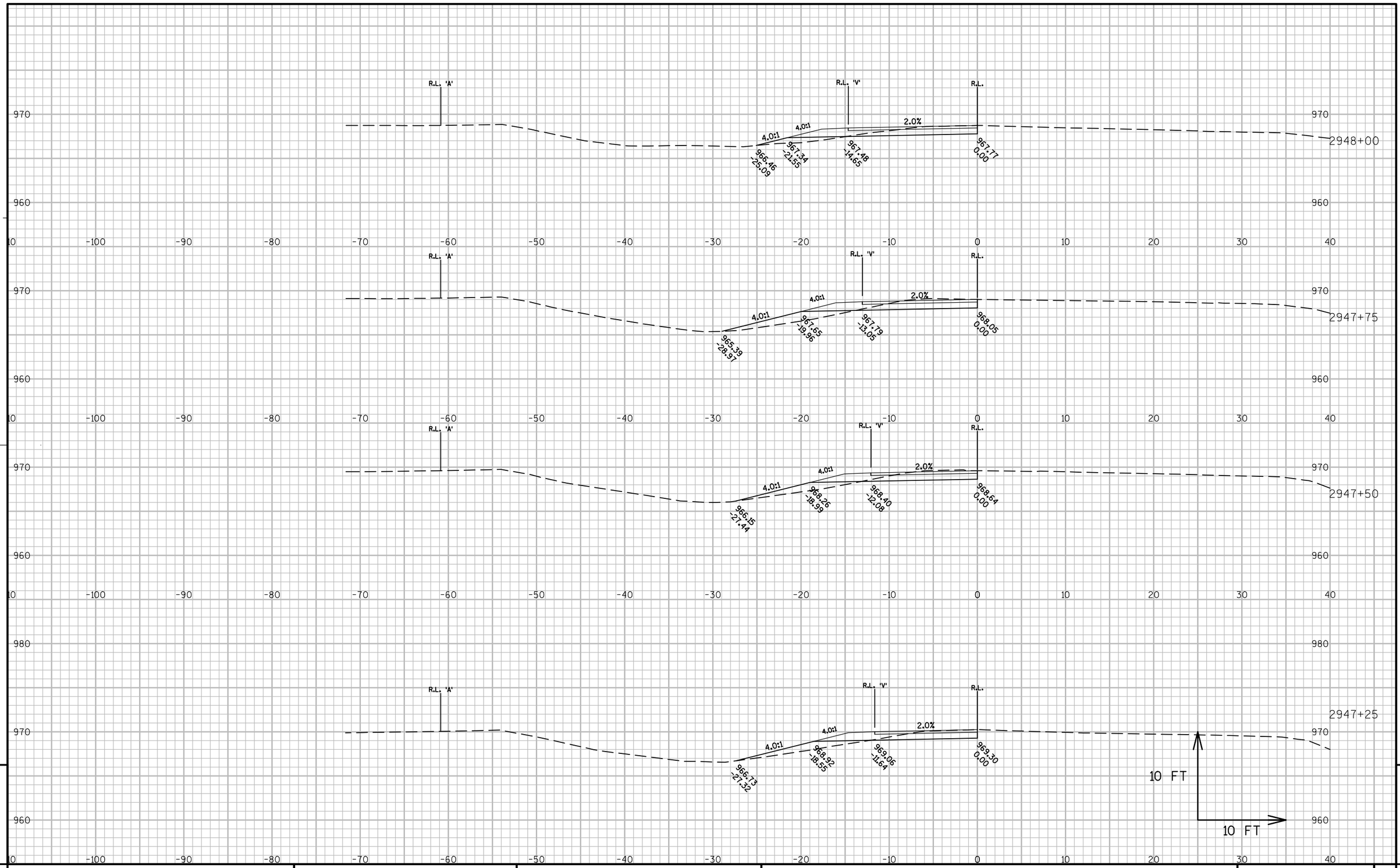
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS(SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:13 AM PLOT BY : SCHUMAKER, NATHANIELPLOT NAME : PLOT SCALE : 1:10_XREF

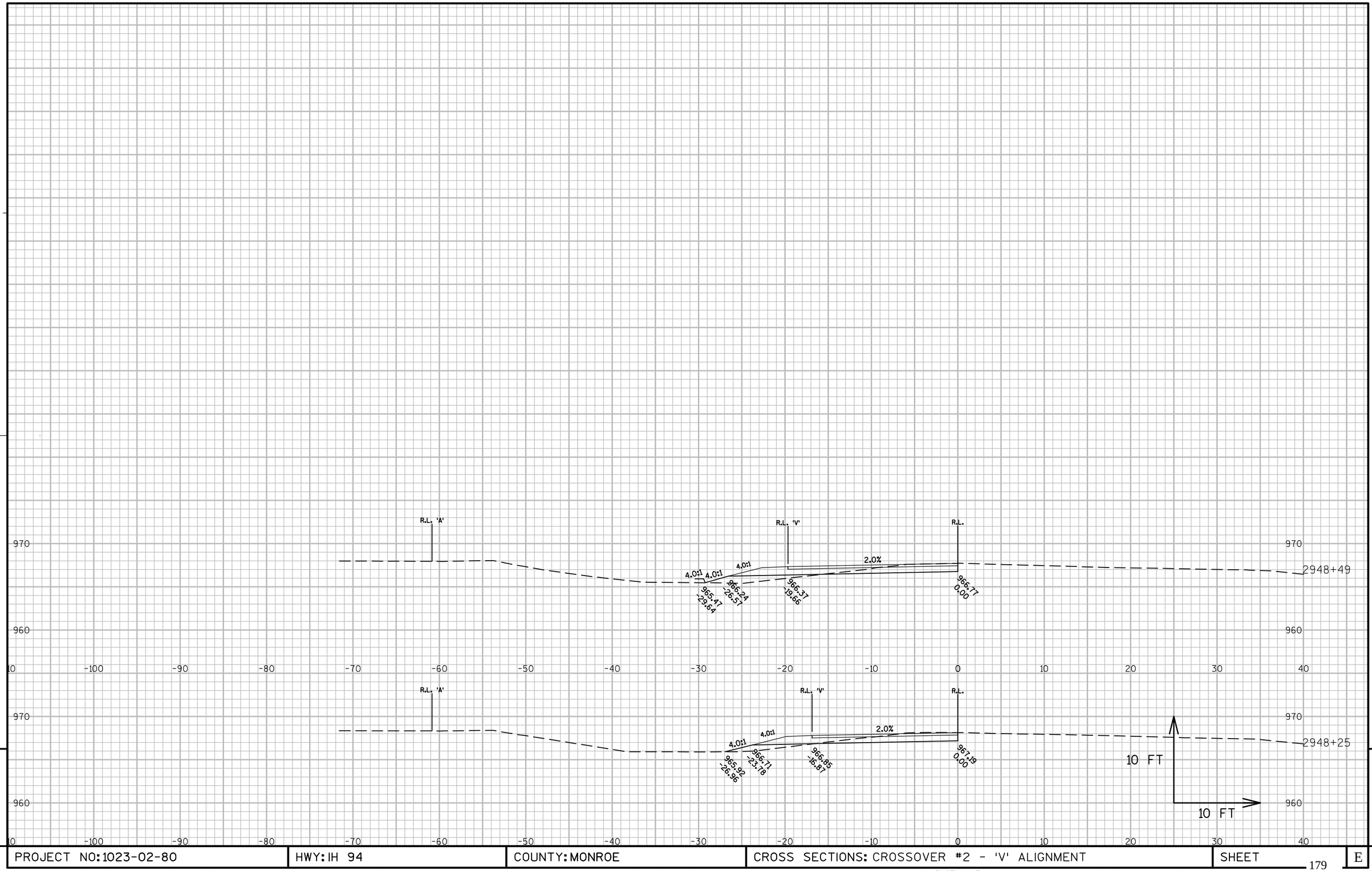


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:13 AM PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME : PLOT SCALE : 1:10_XREF

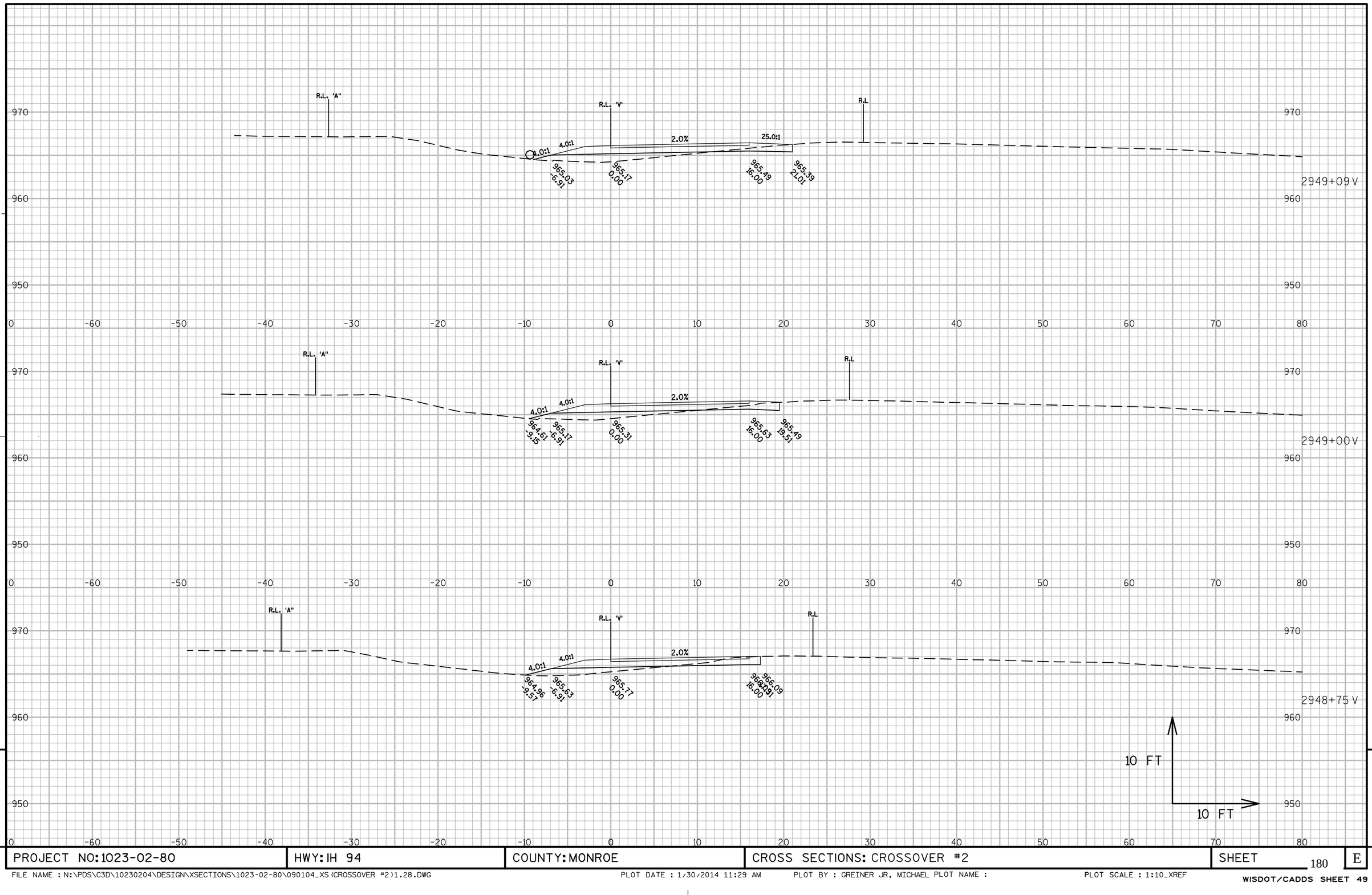


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2 - 'V' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (SE BULLNOSE AT USH 12).DWG PLOT DATE : 1/30/2014 8:14 AM PLOT BY : SCHUMAKER, NATHANIELPLOT NAME : PLOT SCALE : 1:10_XREF



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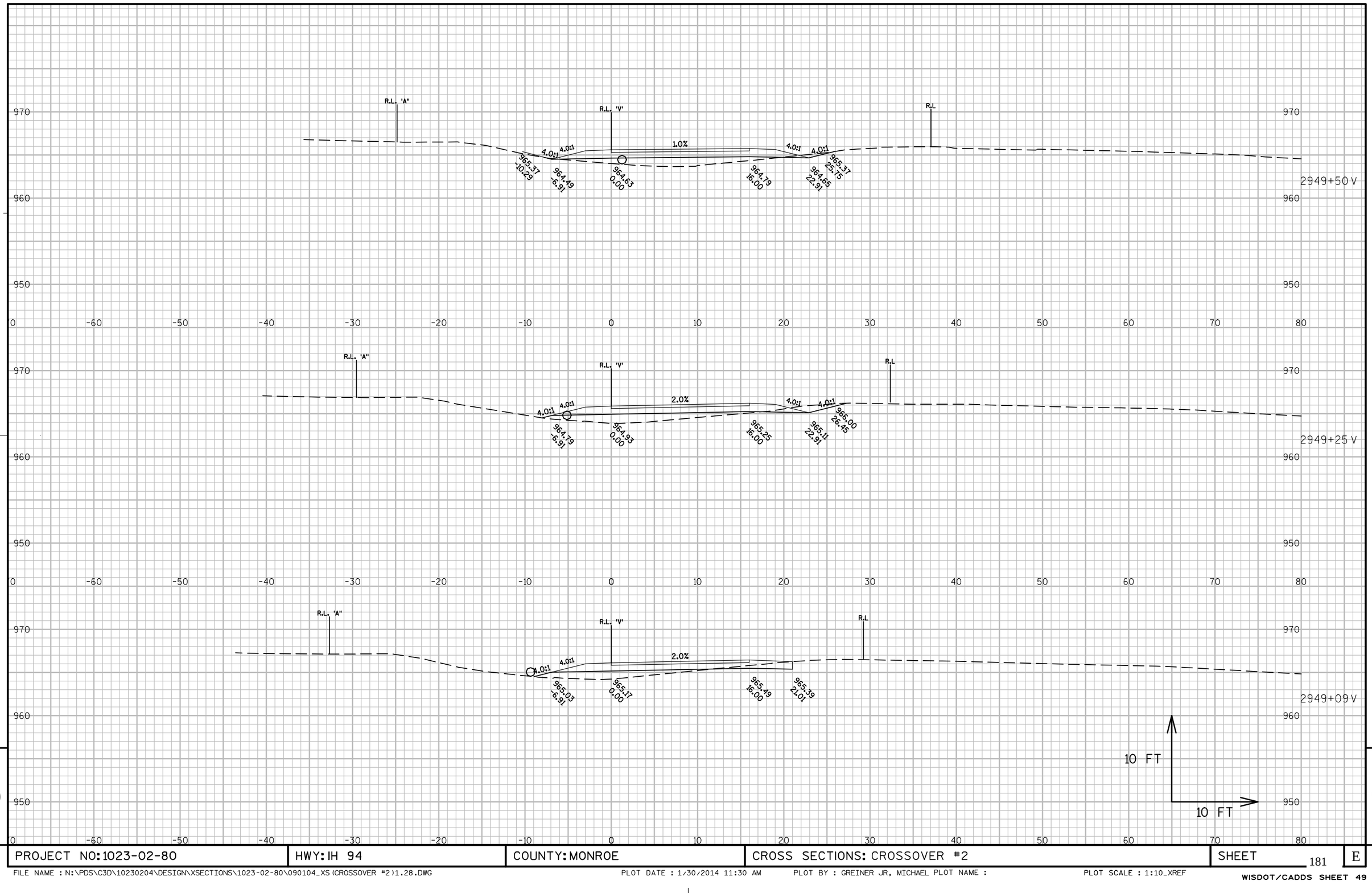
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 180	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS(CROSSOVER #2)1.28.DWG PLOT DATE : 1/30/2014 11:29 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



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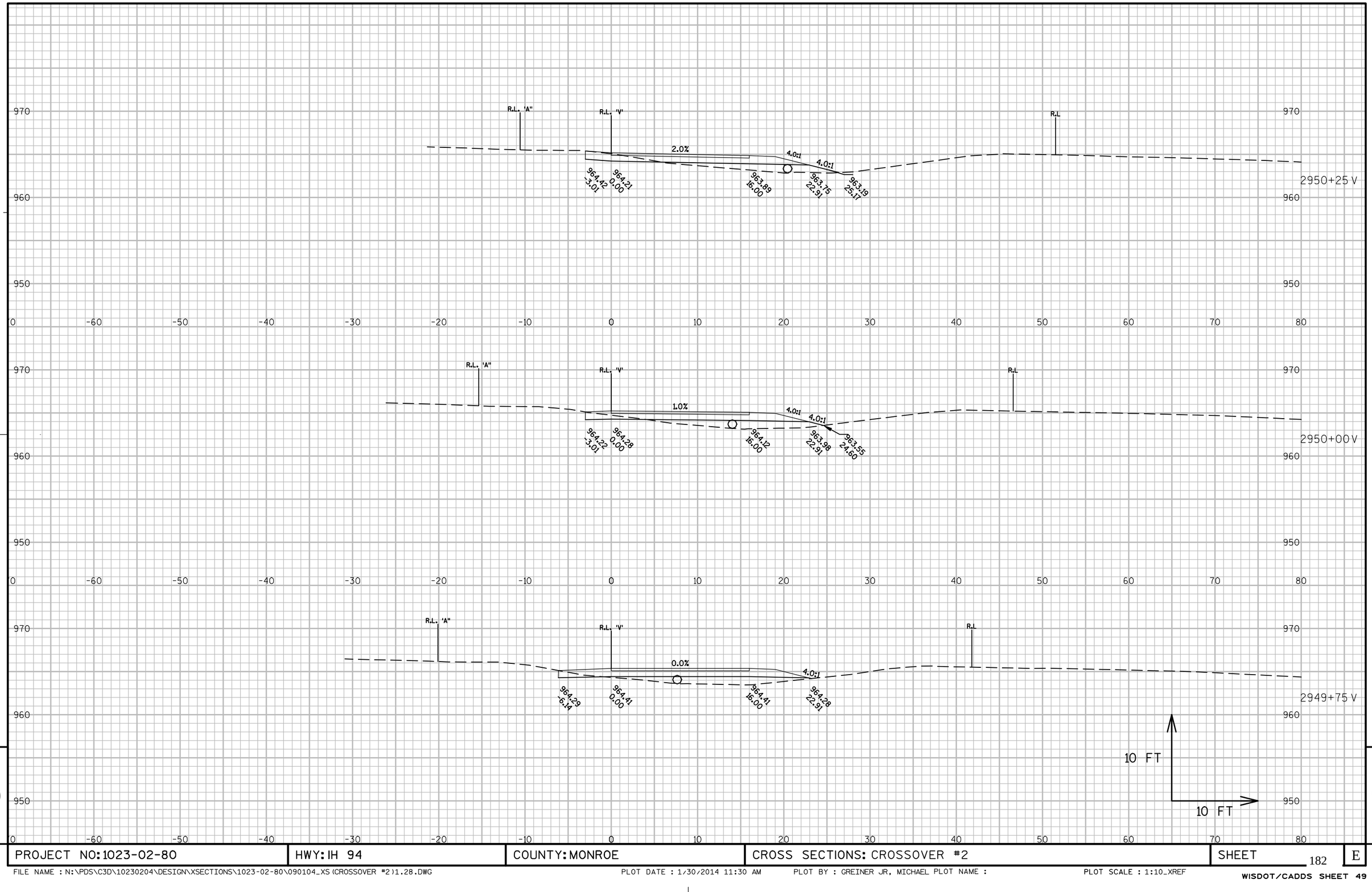
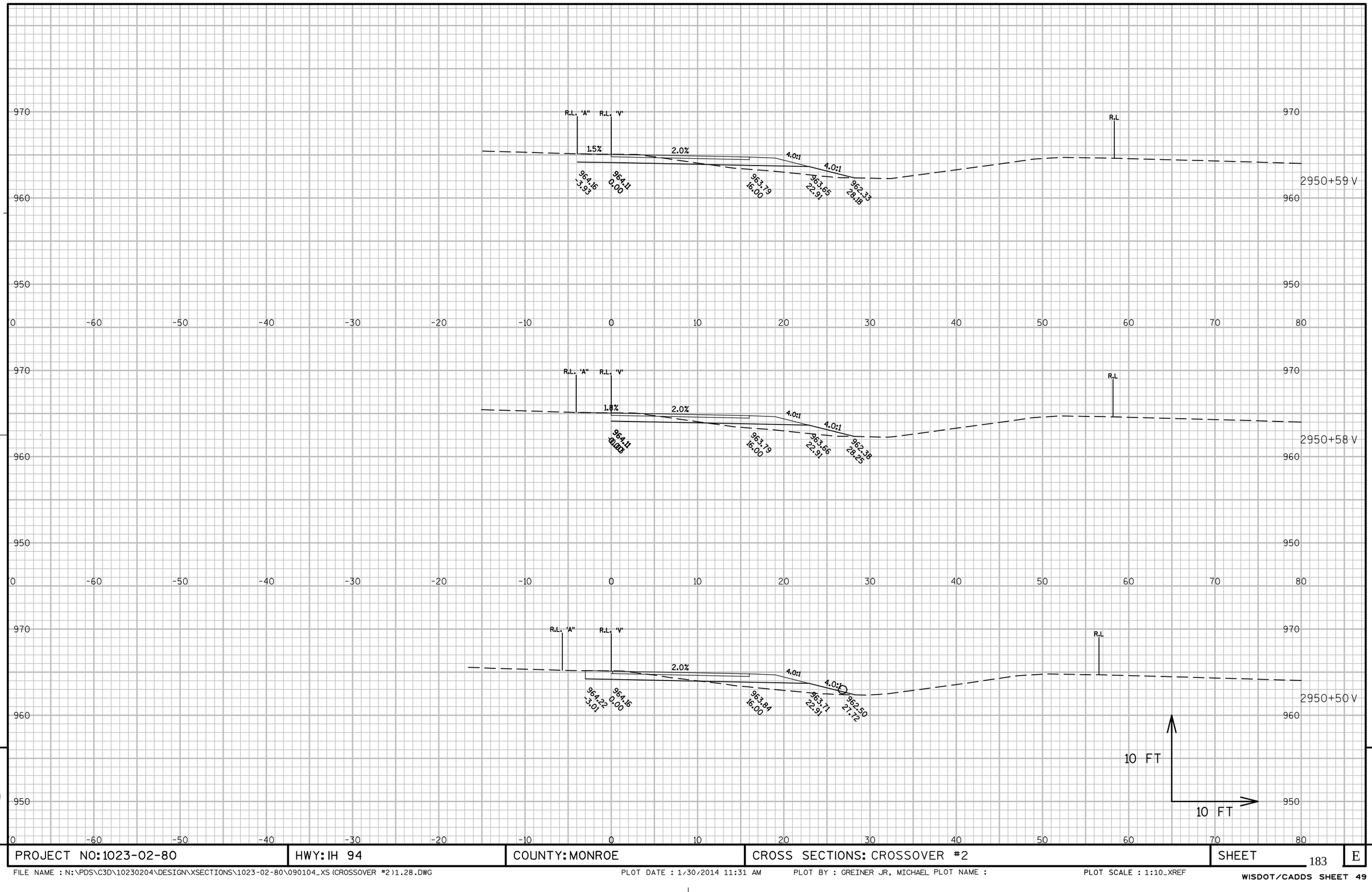
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 181	E



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 182	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS(CROSSOVER #2)1.28.DWG PLOT DATE : 1/30/2014 11:30 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

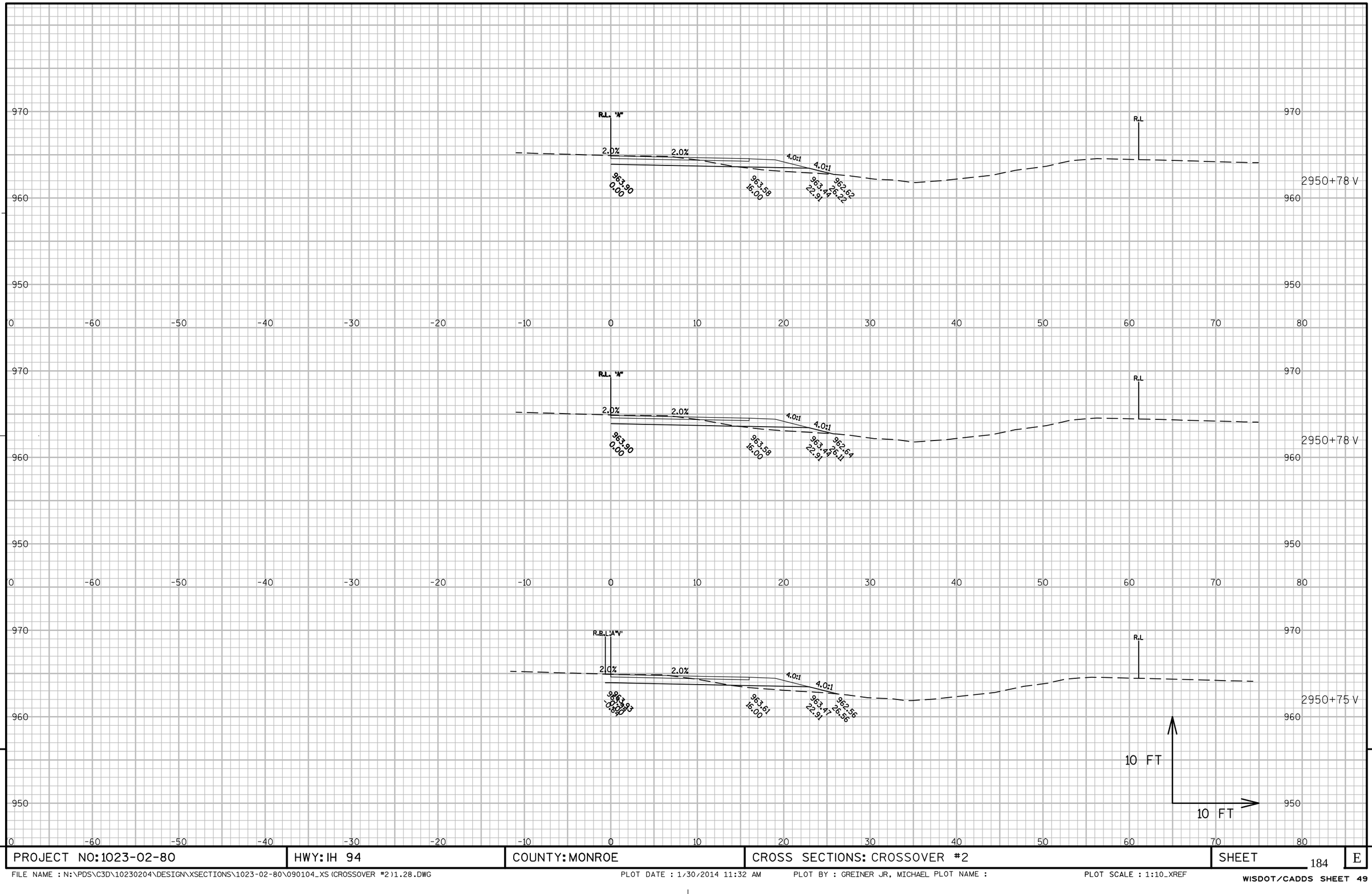
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 183	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS(CROSSOVER #2)1.28.DWG PLOT DATE : 1/30/2014 11:31 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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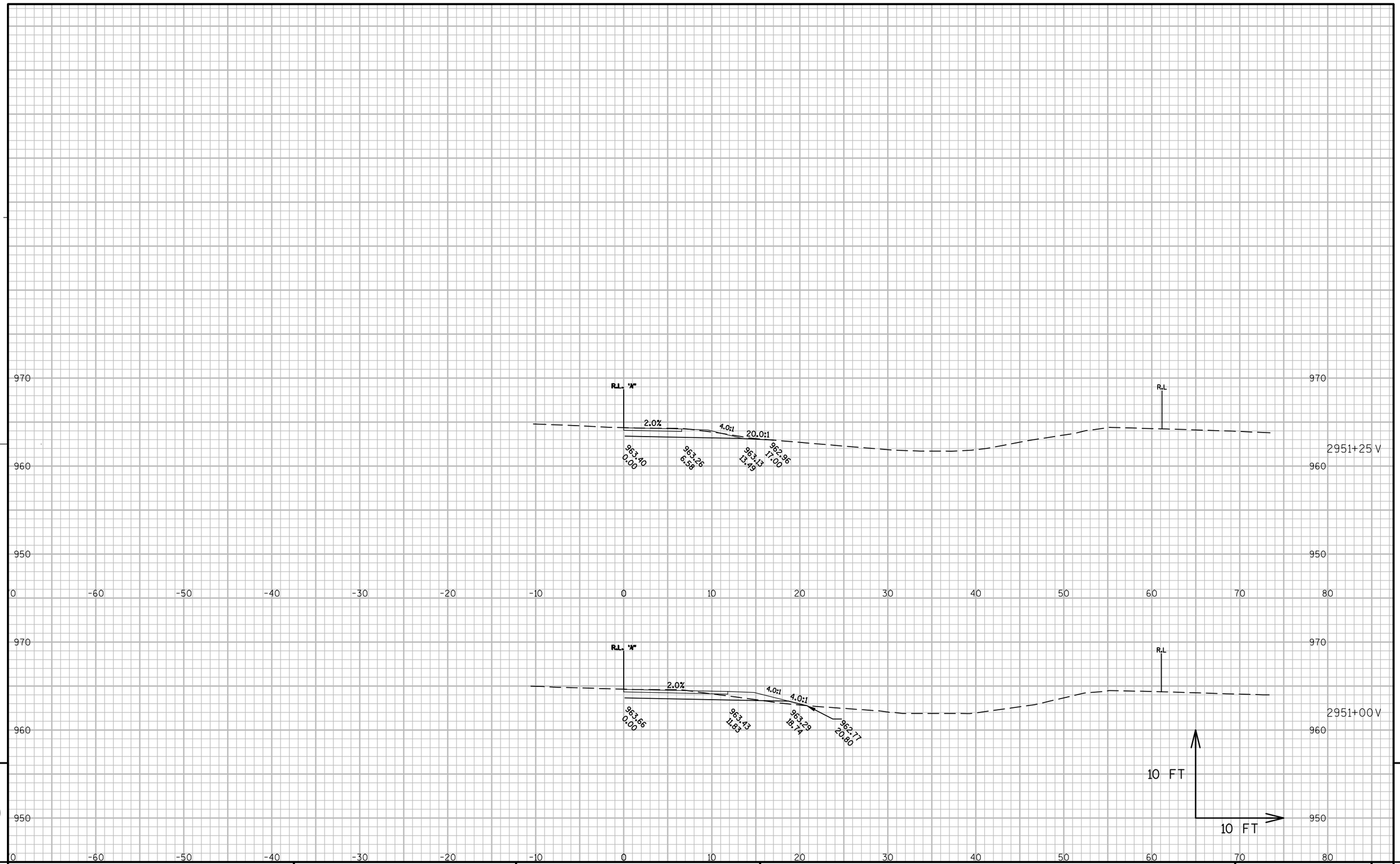
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 184	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS (CROSSOVER #2)1.28.DWG PLOT DATE : 1/30/2014 11:32 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

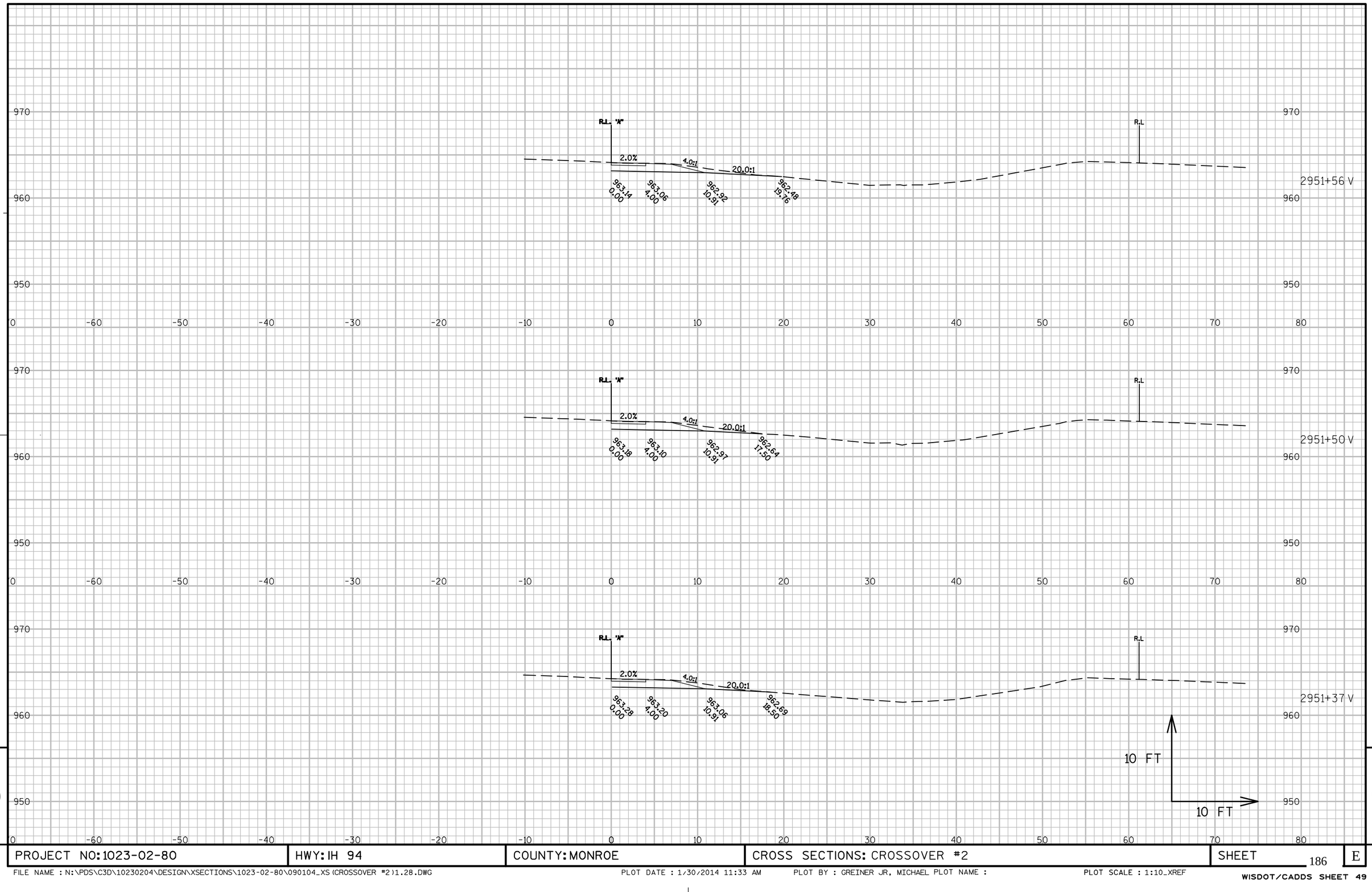
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 185	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090104_XS(CROSSOVER #2)1.28.DWG PLOT DATE : 1/30/2014 11:32 AM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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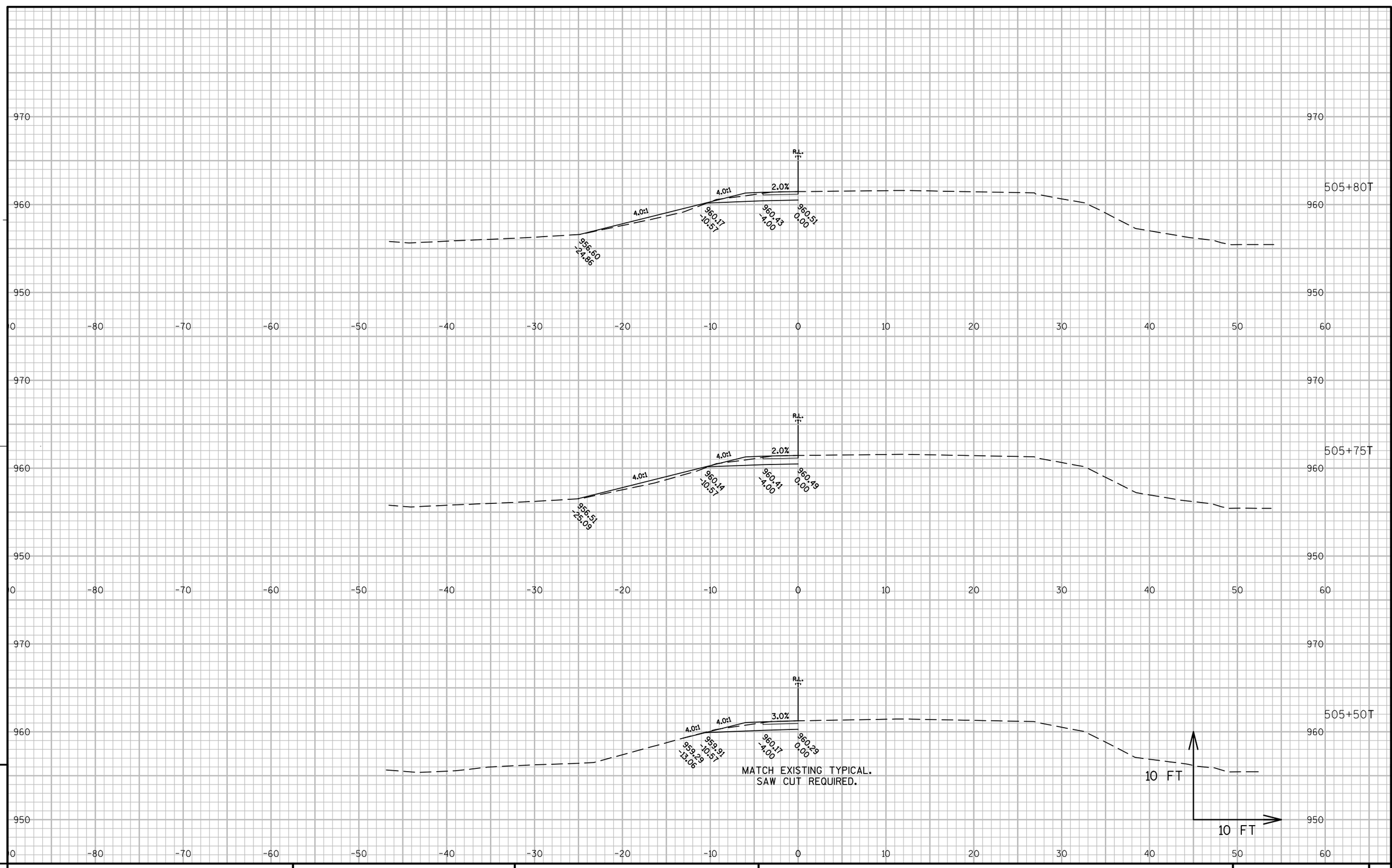
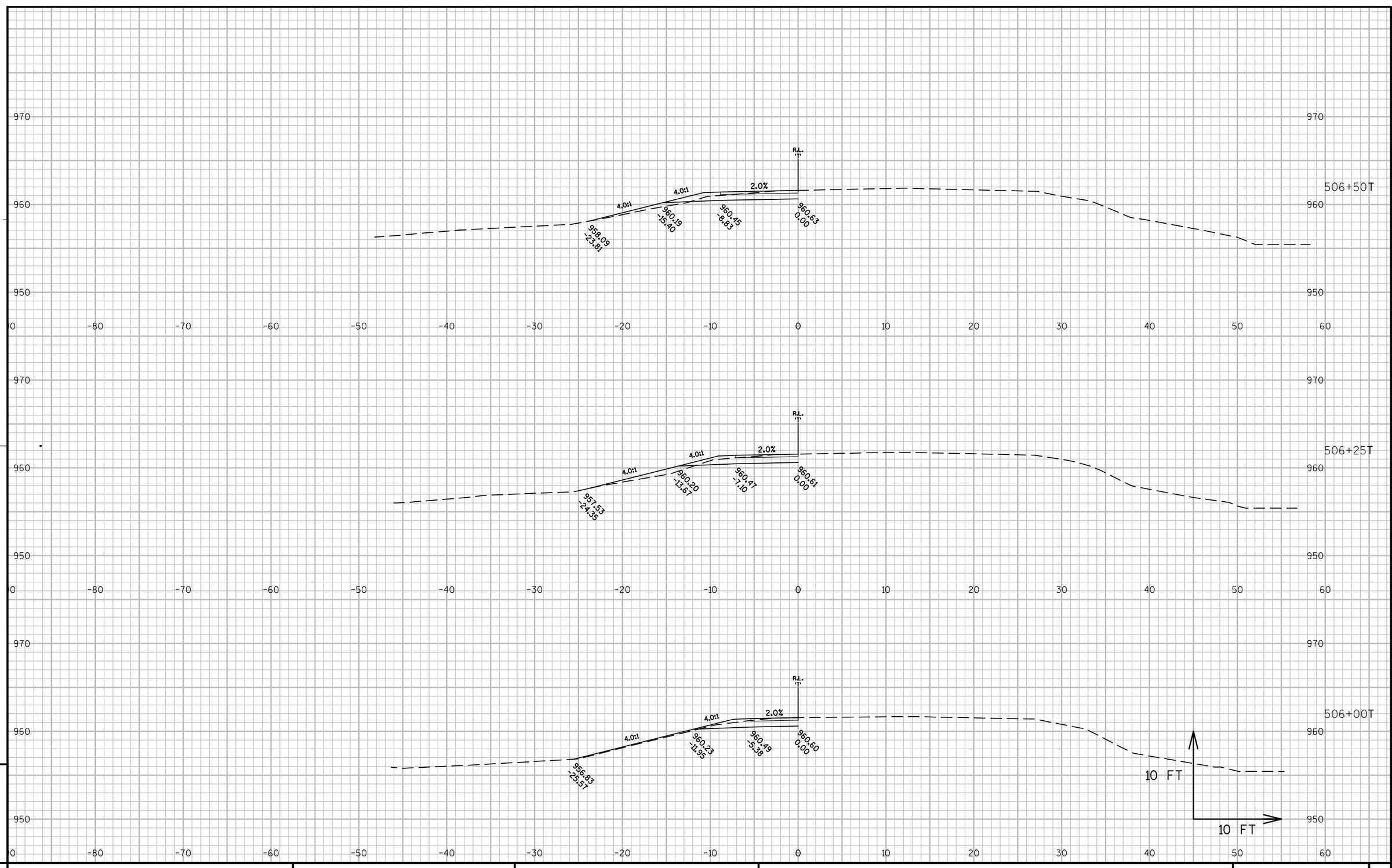
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: CROSSOVER #2	SHEET 186	E

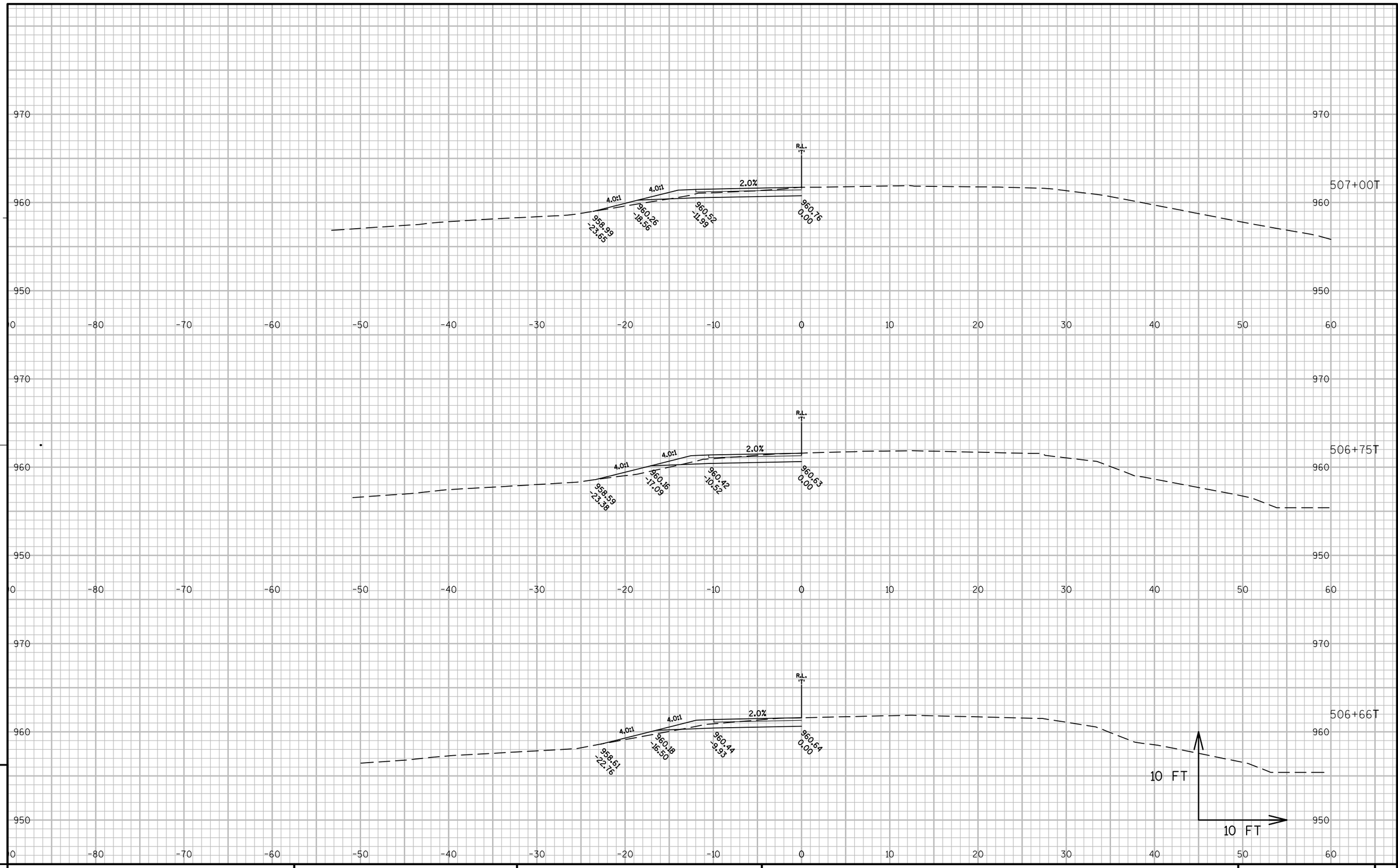


PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET 187	E



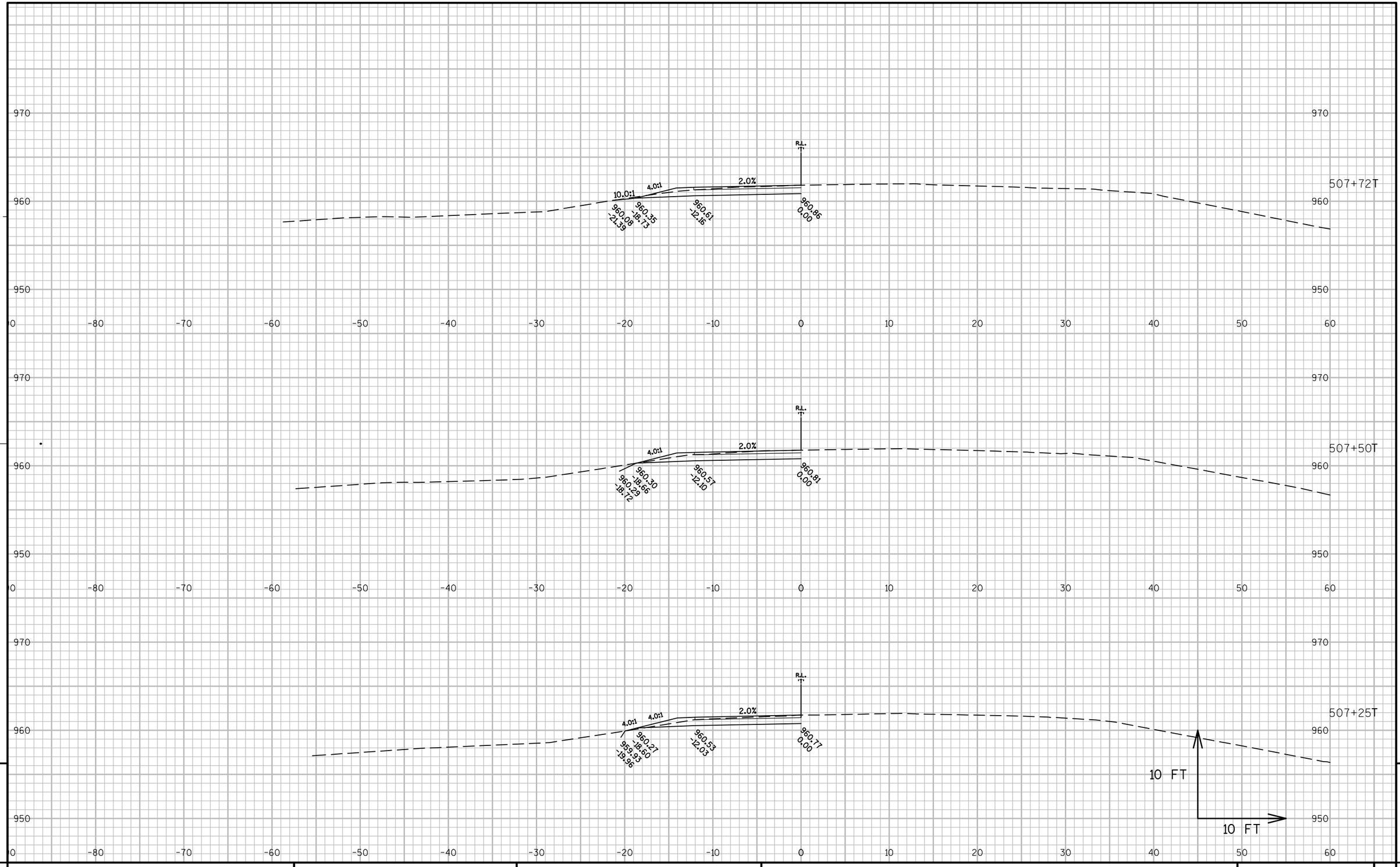
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



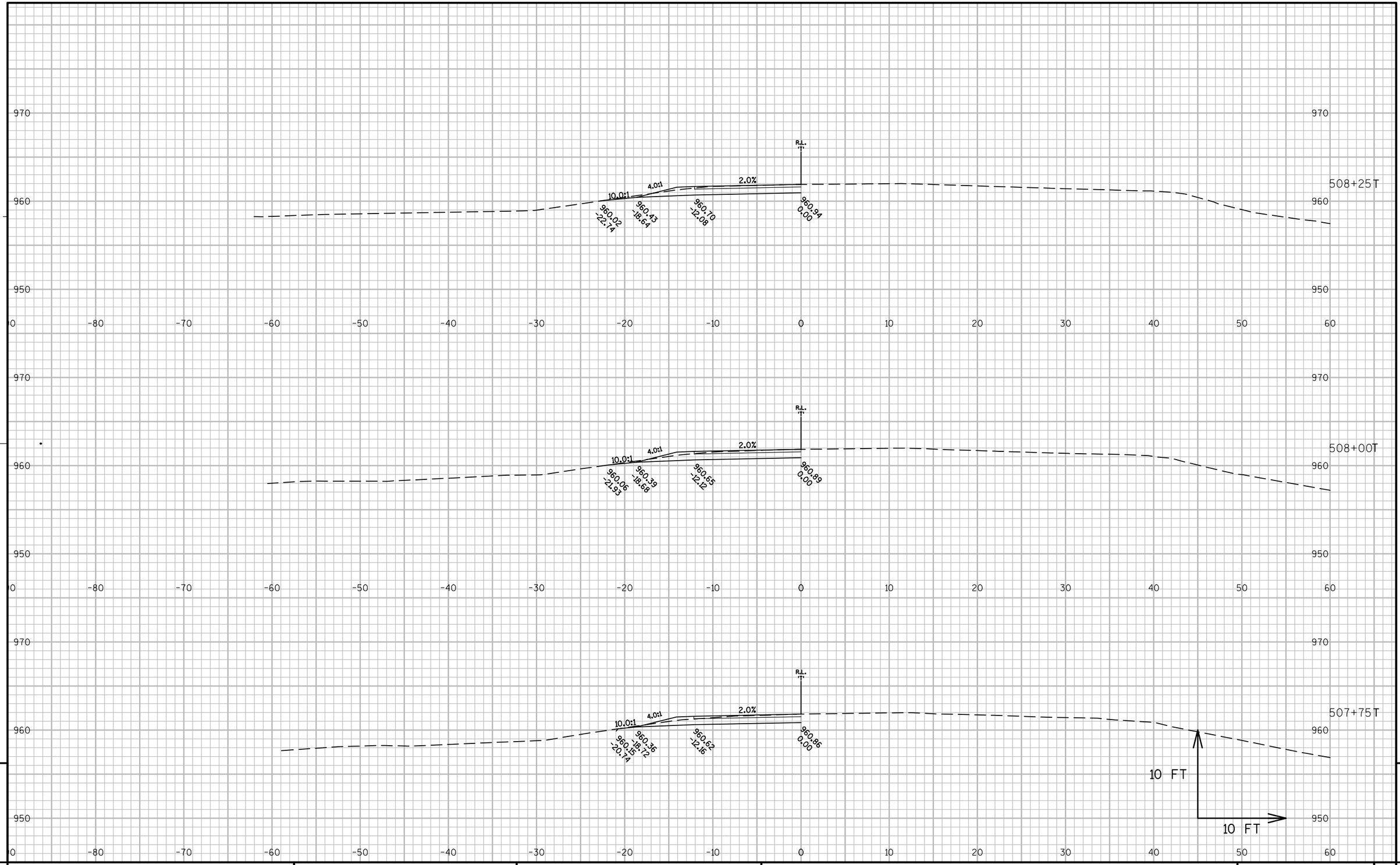
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



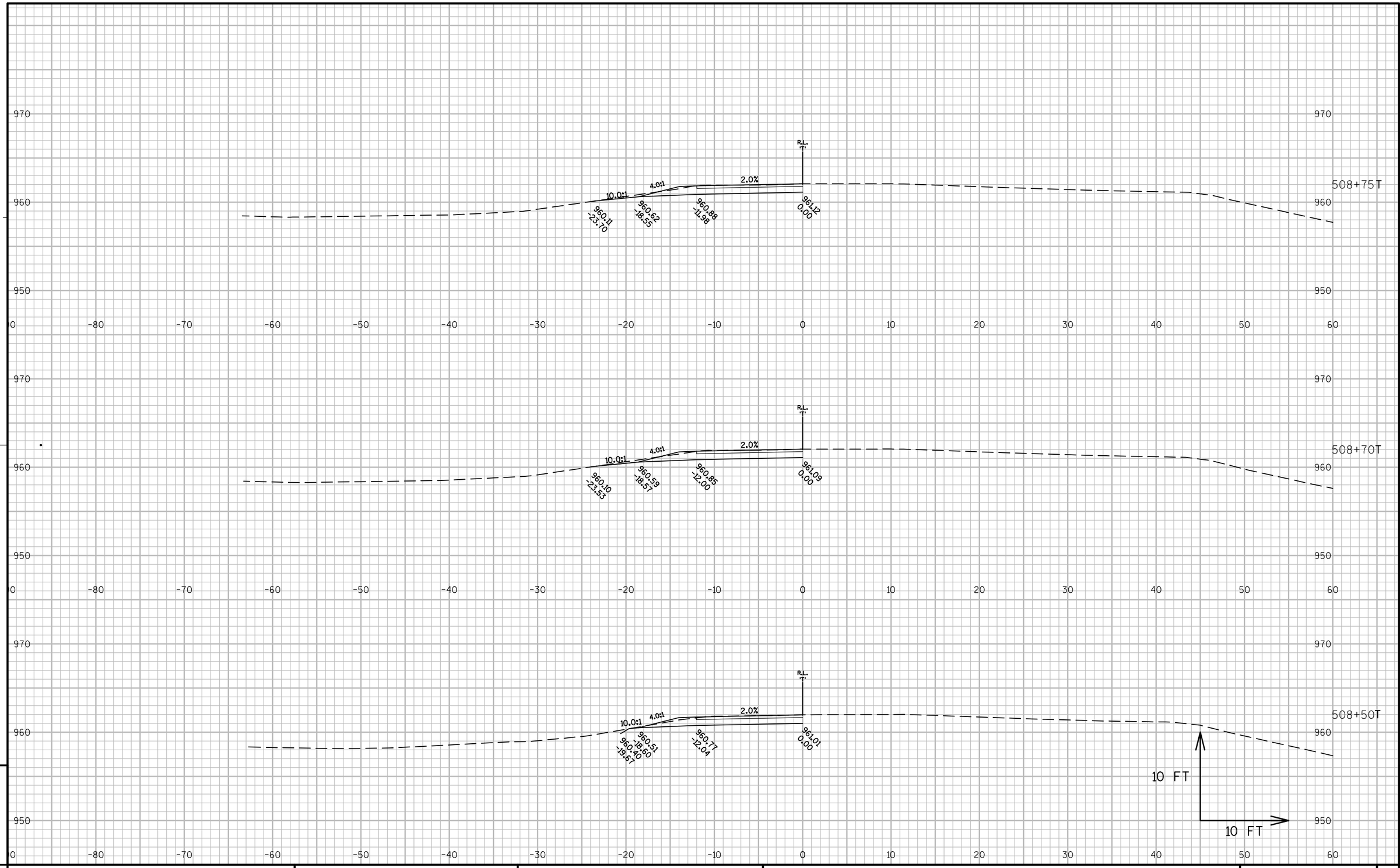
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

509+27T

4.0:1 4.0:1 2.0%

960.61 -19.46 | 960.84 -18.57 | 961.10 -12.00 | 961.34 0.00

MATCH EXISTING TYPICAL.
SAW CUT REQUIRED.

509+25T

4.0:1 4.0:1 2.0%

960.72 -19.02 | 960.83 -18.57 | 961.09 -12.00 | 961.33 0.00

509+00T

4.0:1 4.0:1 2.0%

960.63 -18.93 | 960.75 -18.49 | 961.01 -11.92 | 961.25 0.00

10 FT

10 FT

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: USH 12 WB WIDENING - 'T' ALIGNMENT	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090105_XS (USH 12 WB WIDENING).DWG PLOT DATE : 1/21/2014 12:56 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

980

970

960

950

940

R.L.

970.87
34.00

3.0%

965.55
50.00

MATCH EXISTING TYPICAL.

2997+79

10 FT

10 FT

-40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100

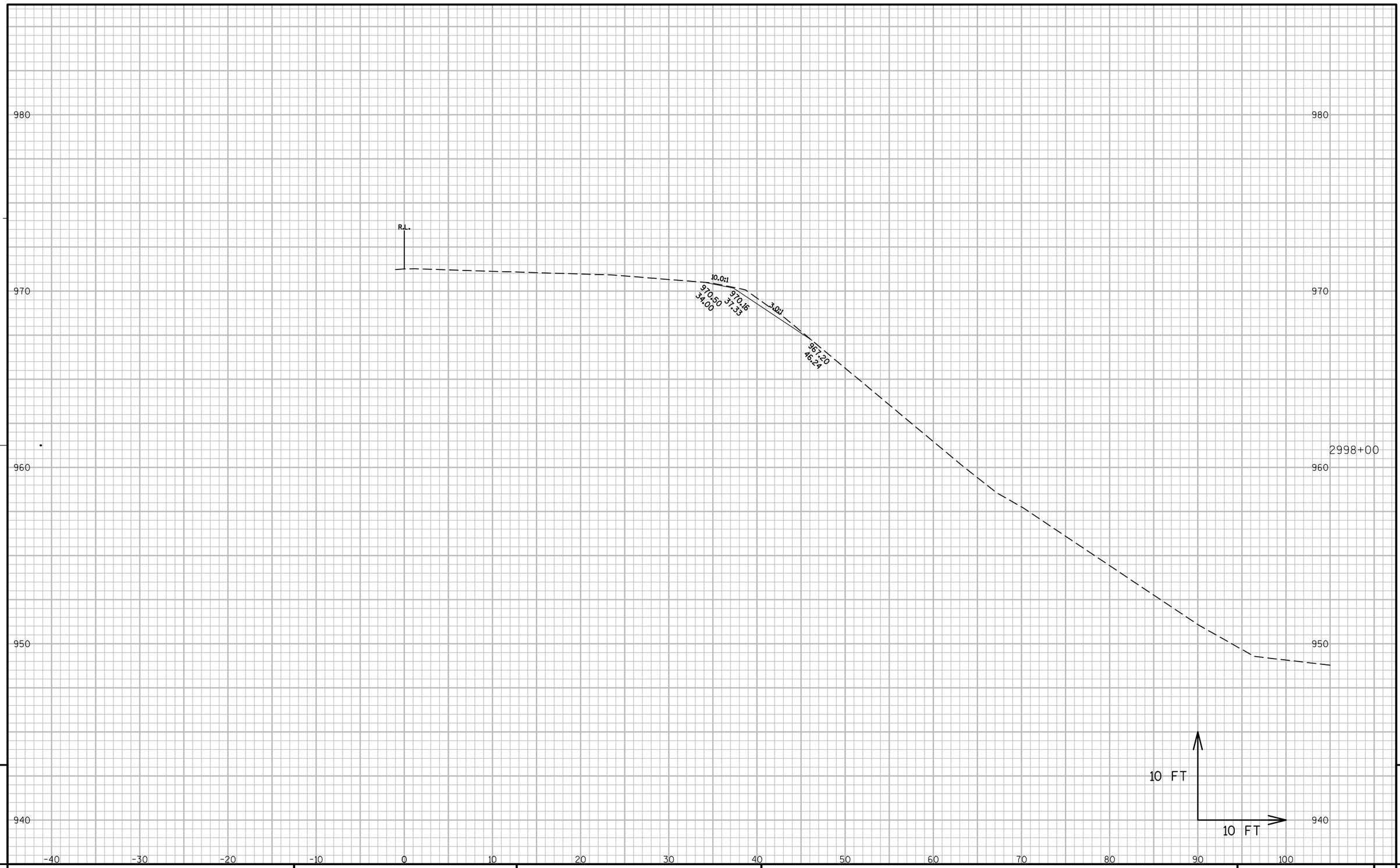
9

9

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:24 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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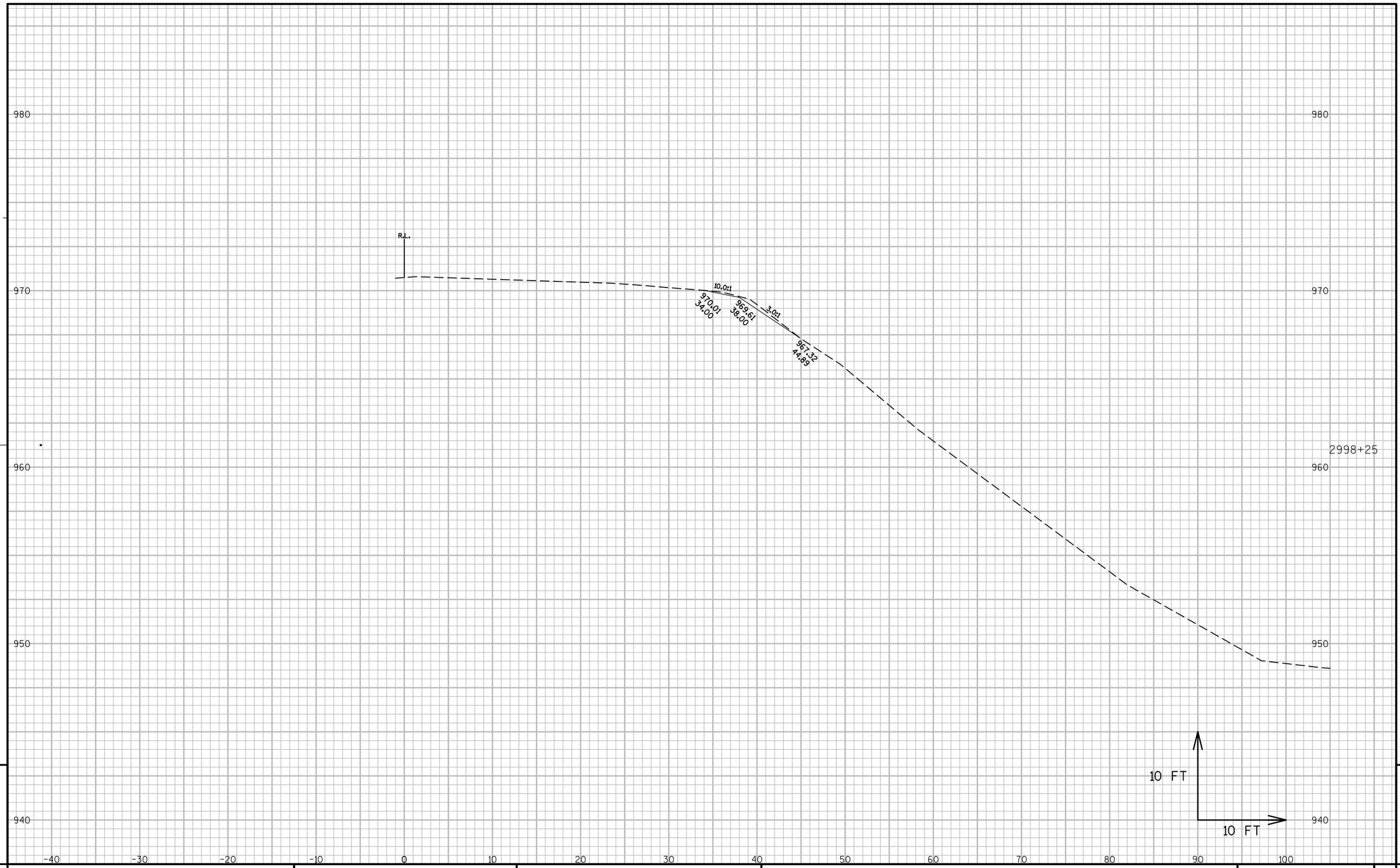
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

9

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:24 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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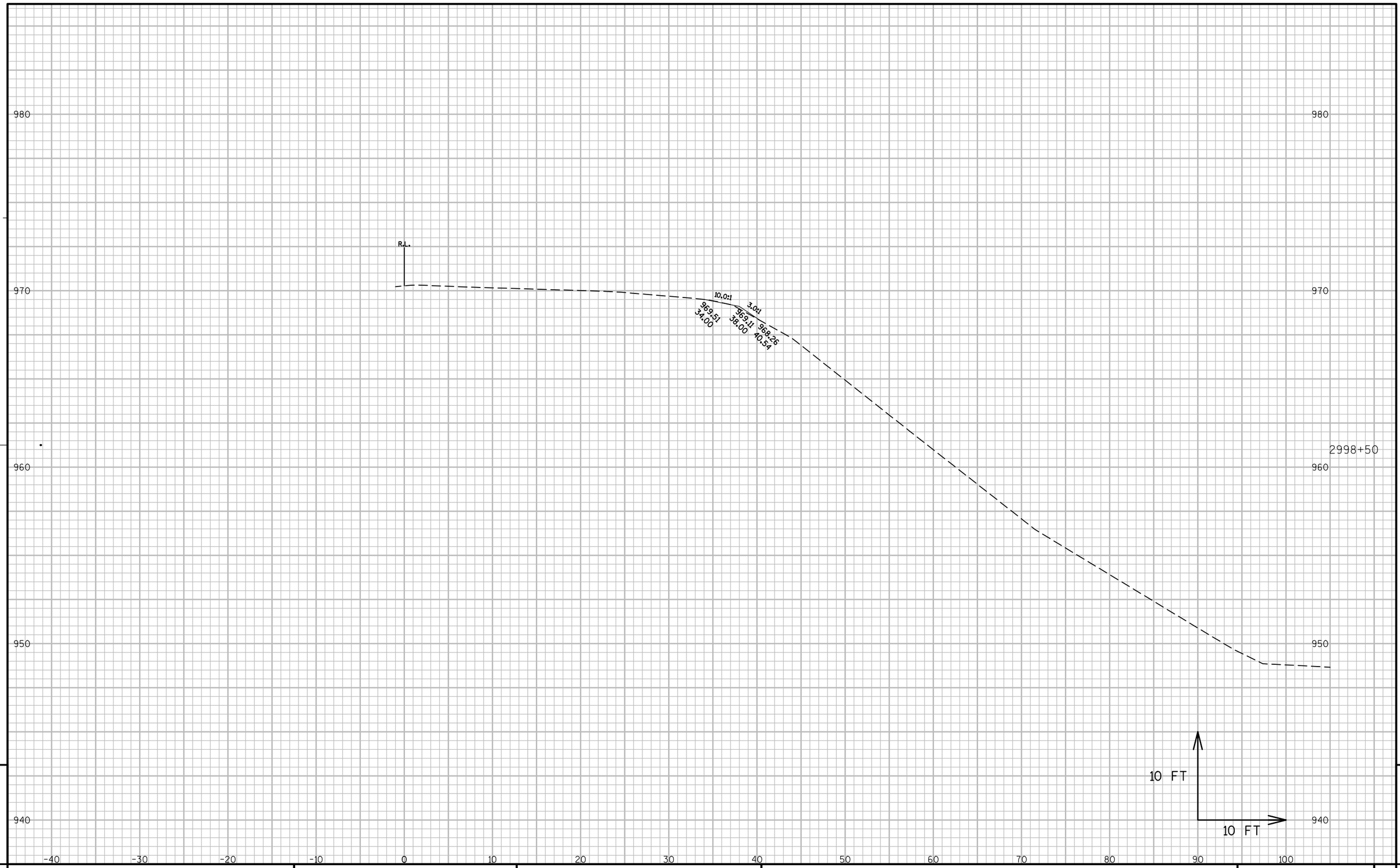
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

9

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:24 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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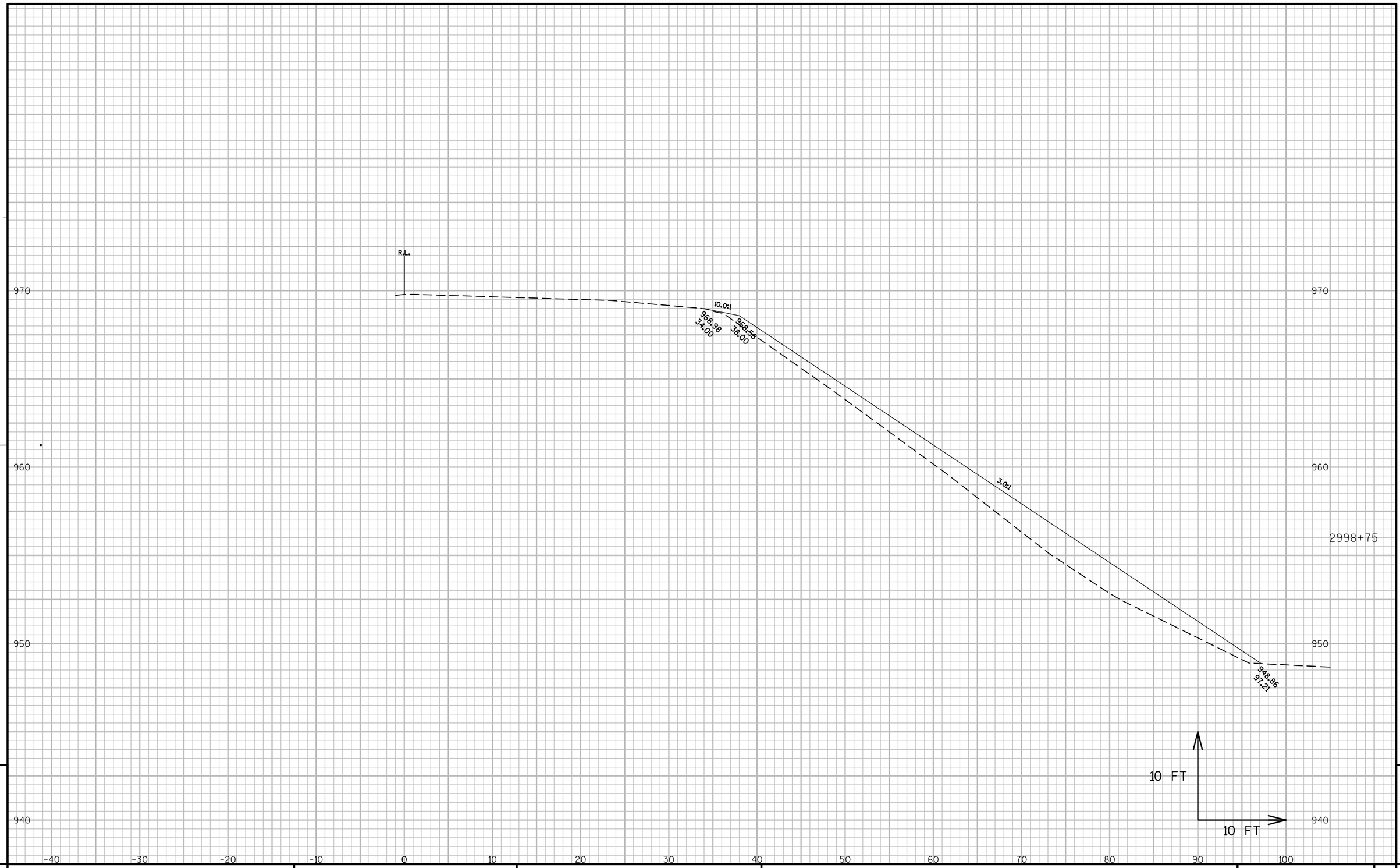
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

9

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:24 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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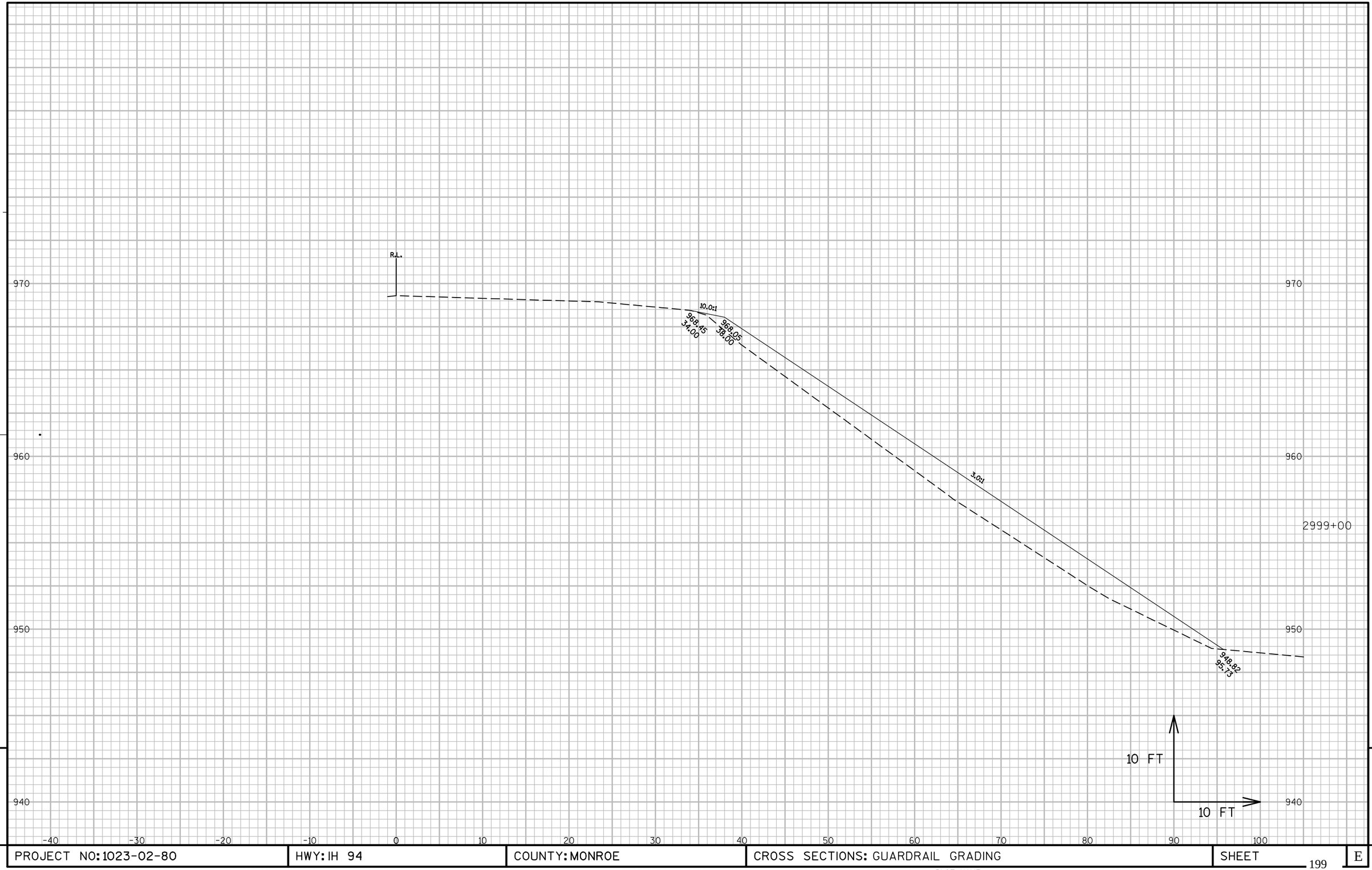
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

9

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:25 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET 199	E

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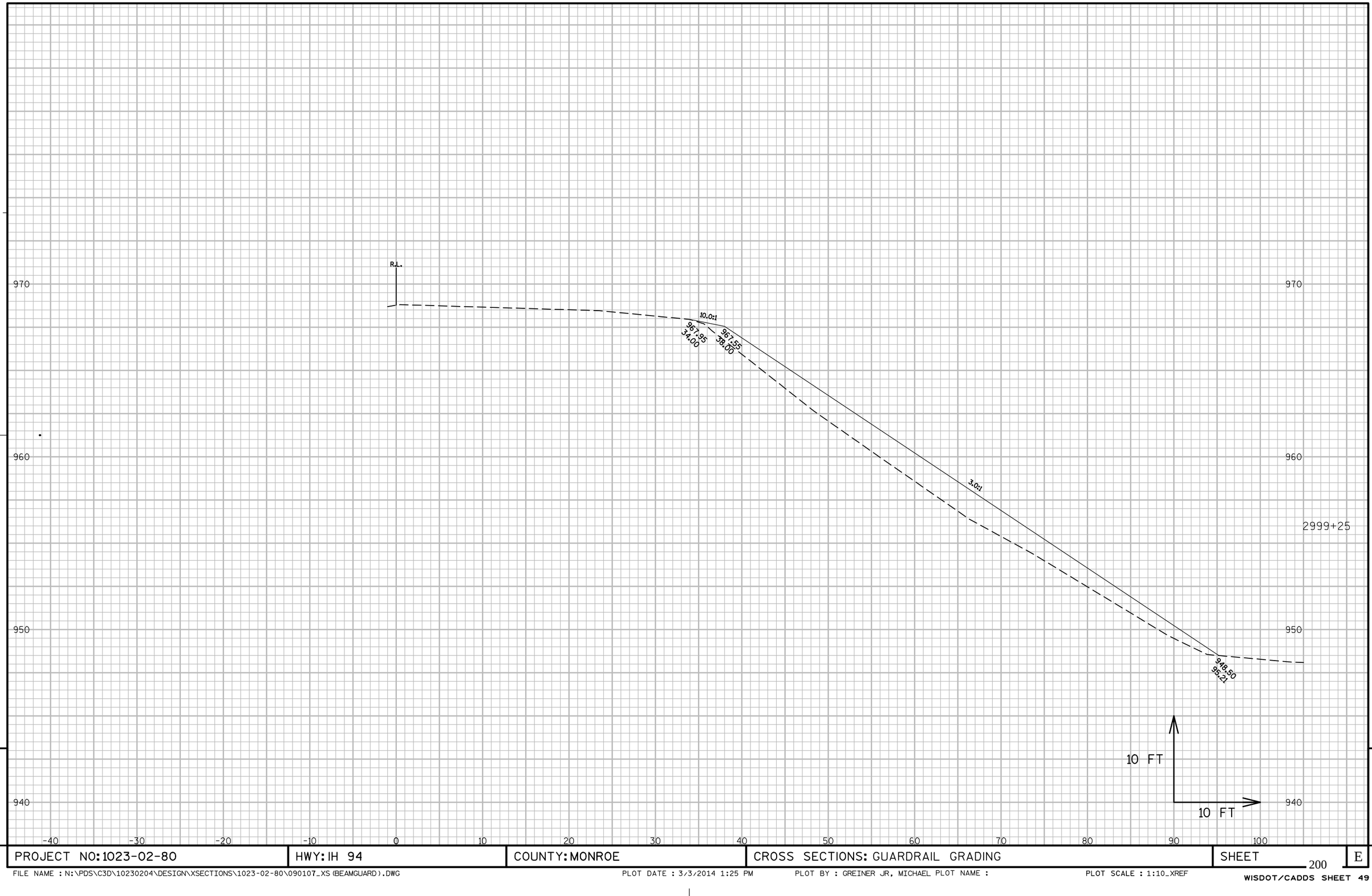
WISDOT/CADDS SHEET 49



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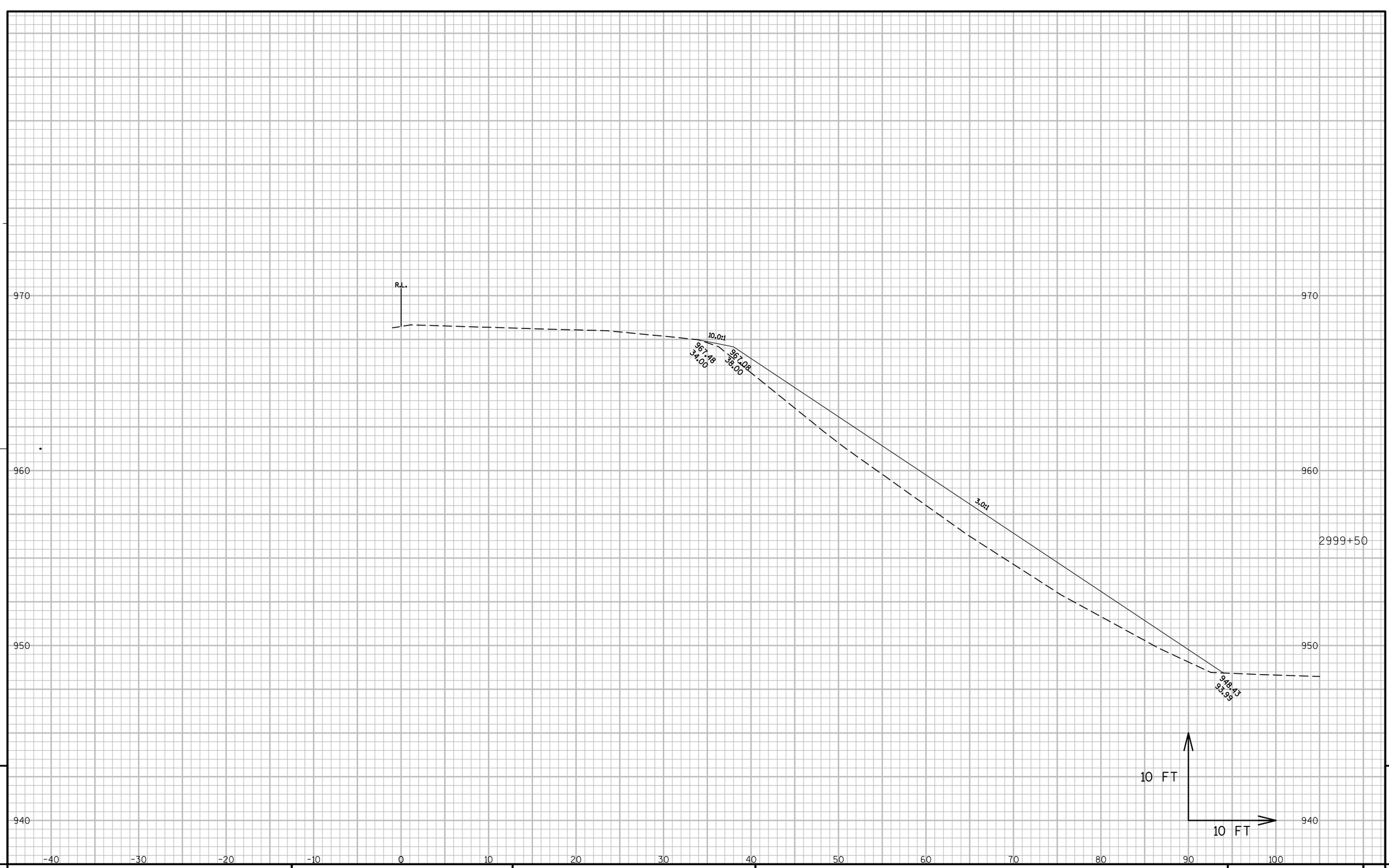
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

9

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:25 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

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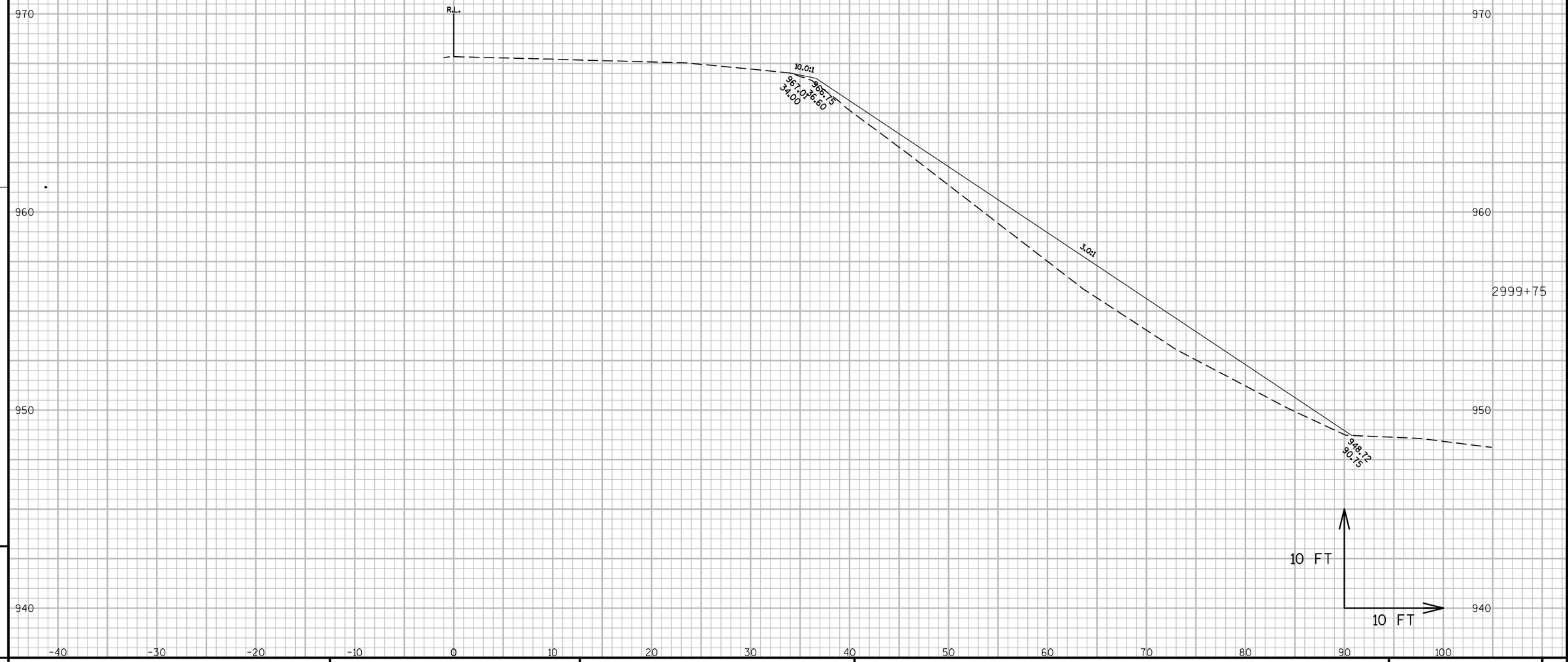
FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS (BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:25 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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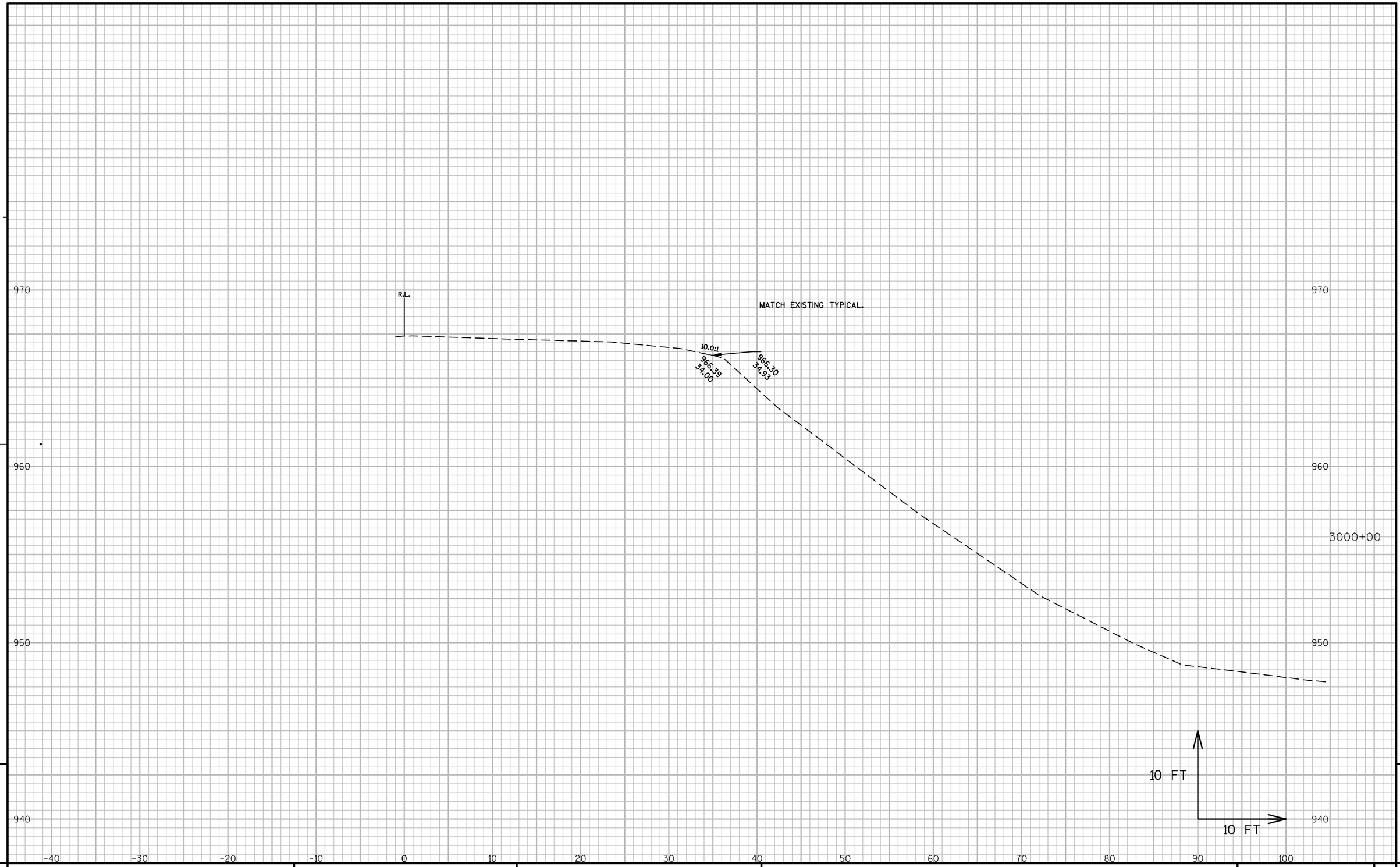
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 3/3/2014 1:26 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL GRADING	SHEET 203	E

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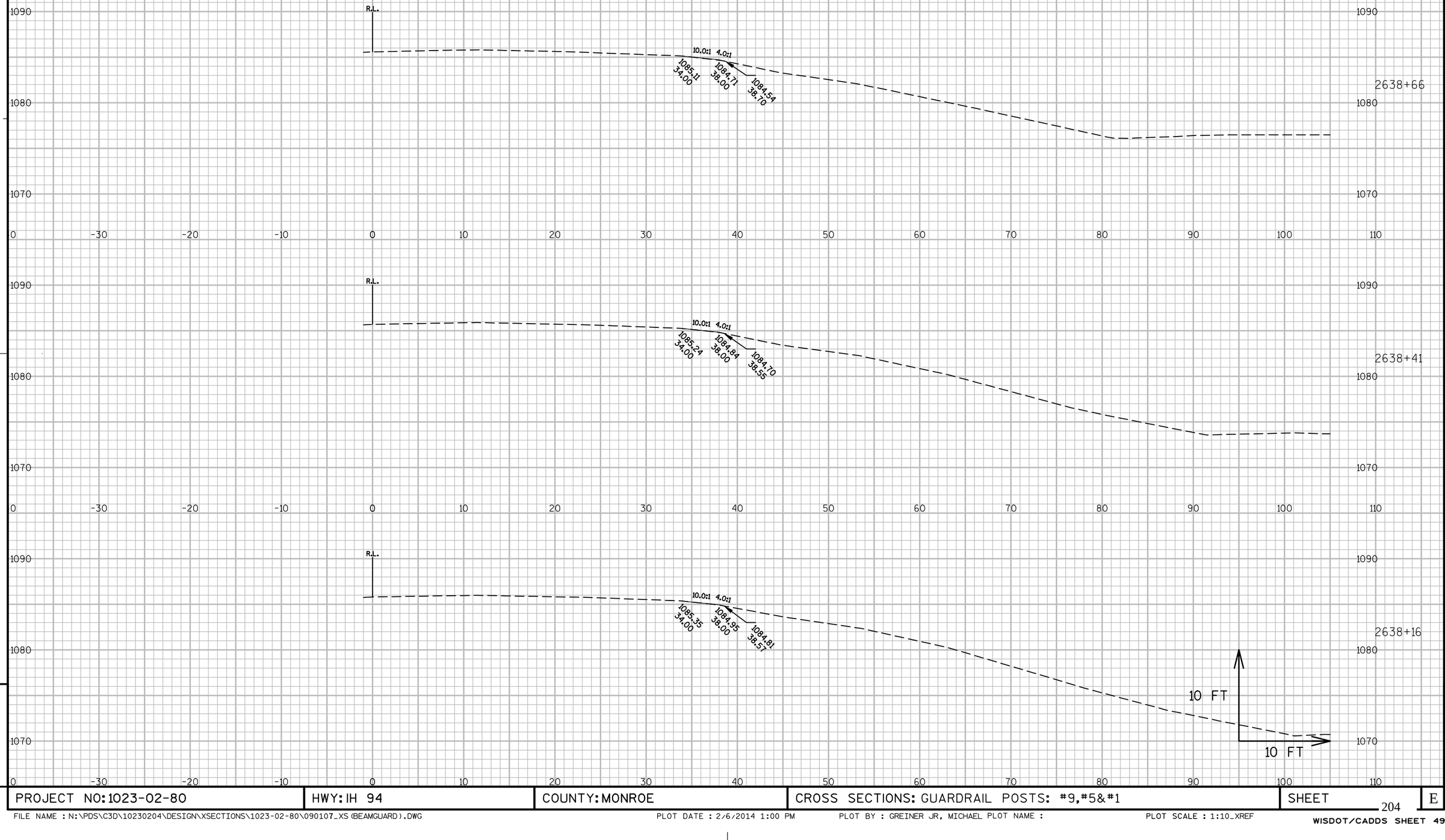

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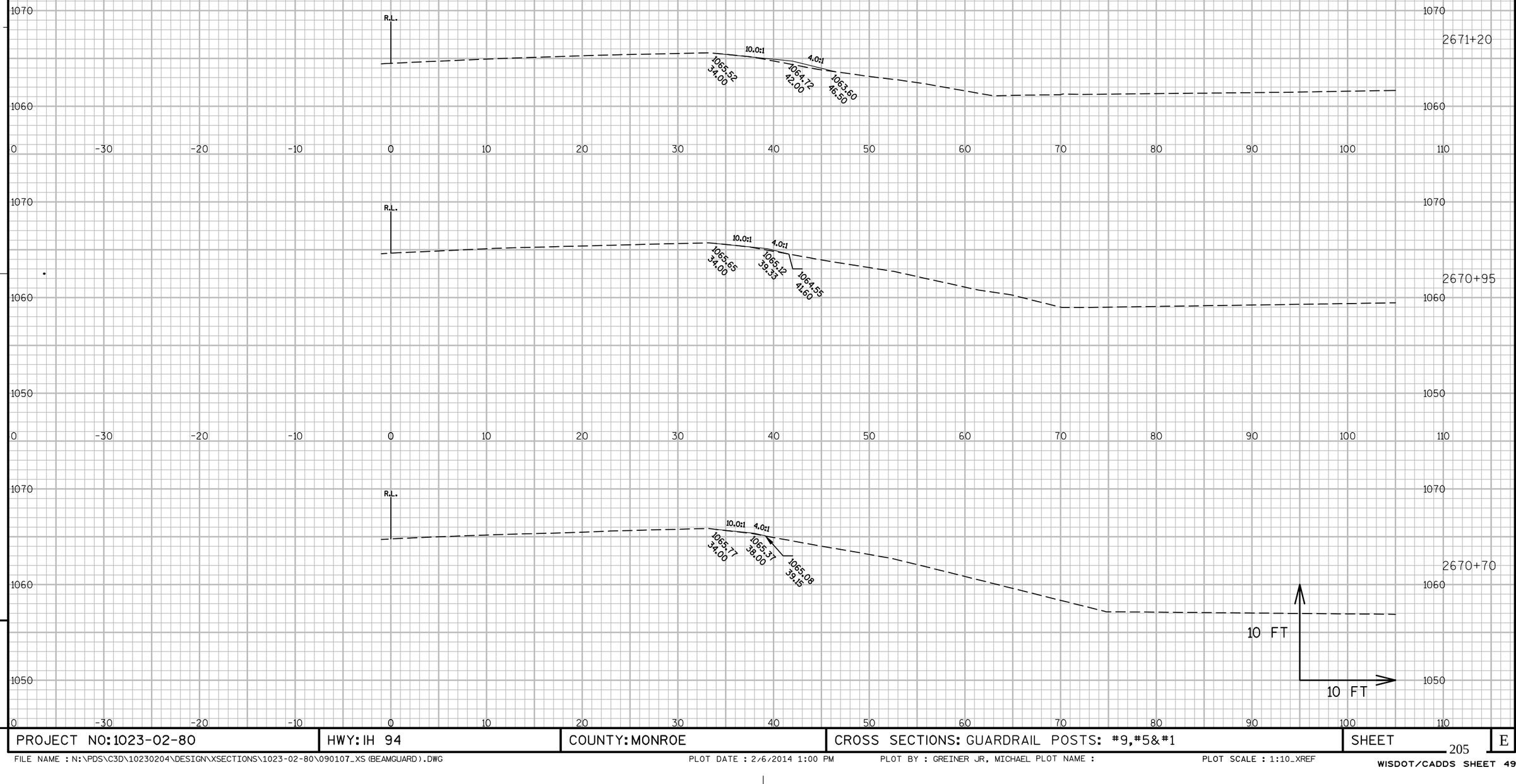
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 204	E



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 205	E

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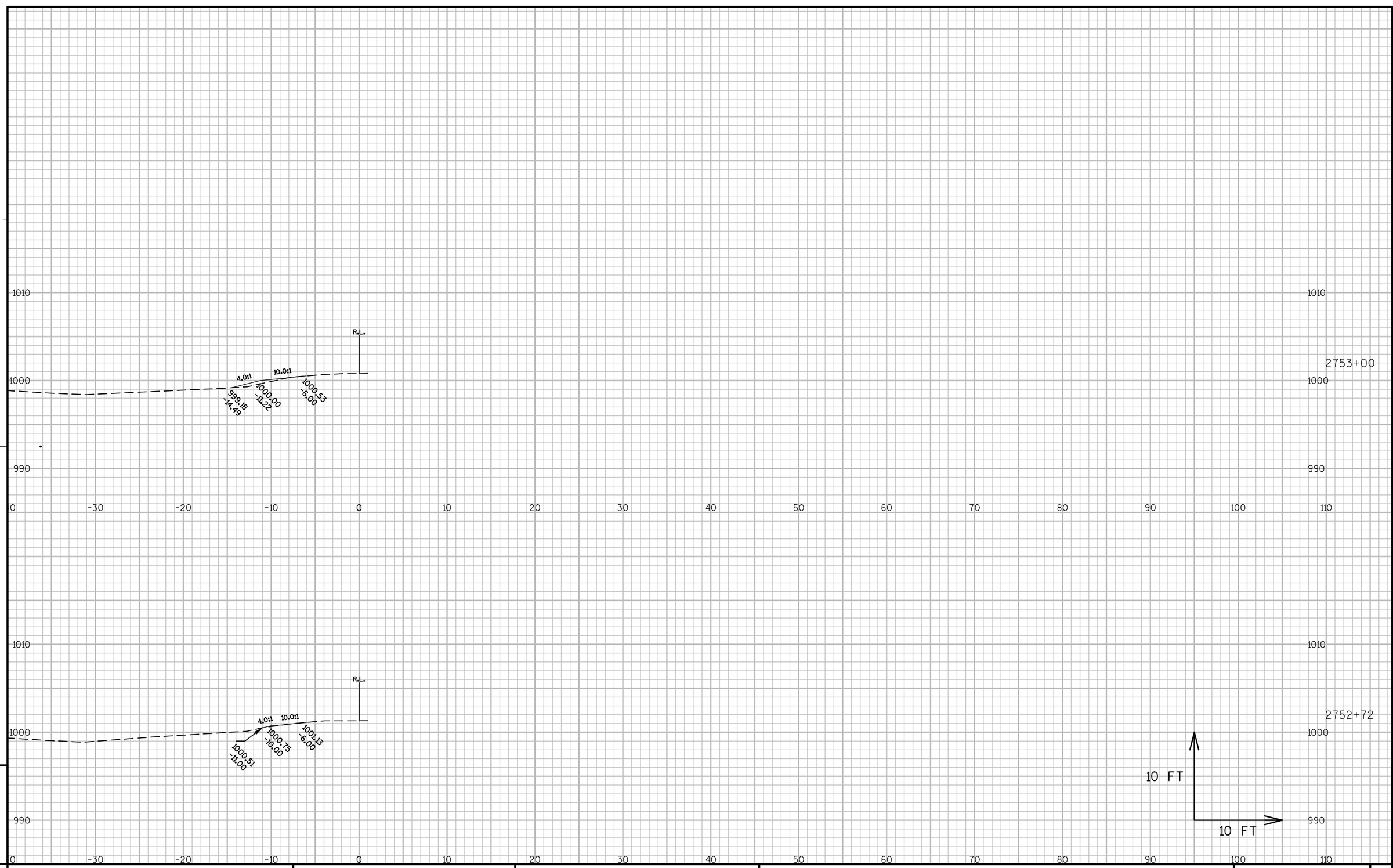

PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 206	E

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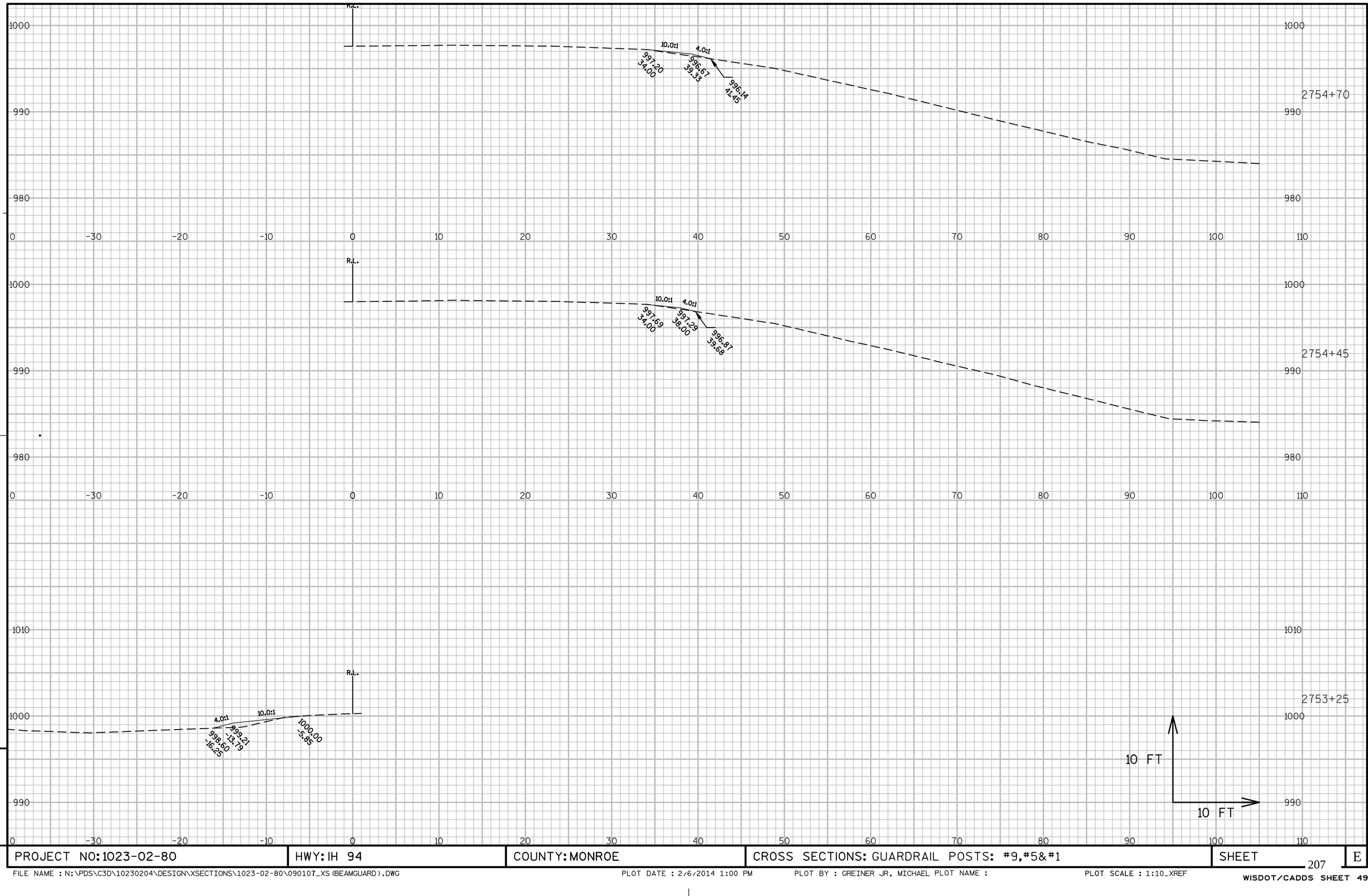
WISDOT/CADDS SHEET 49



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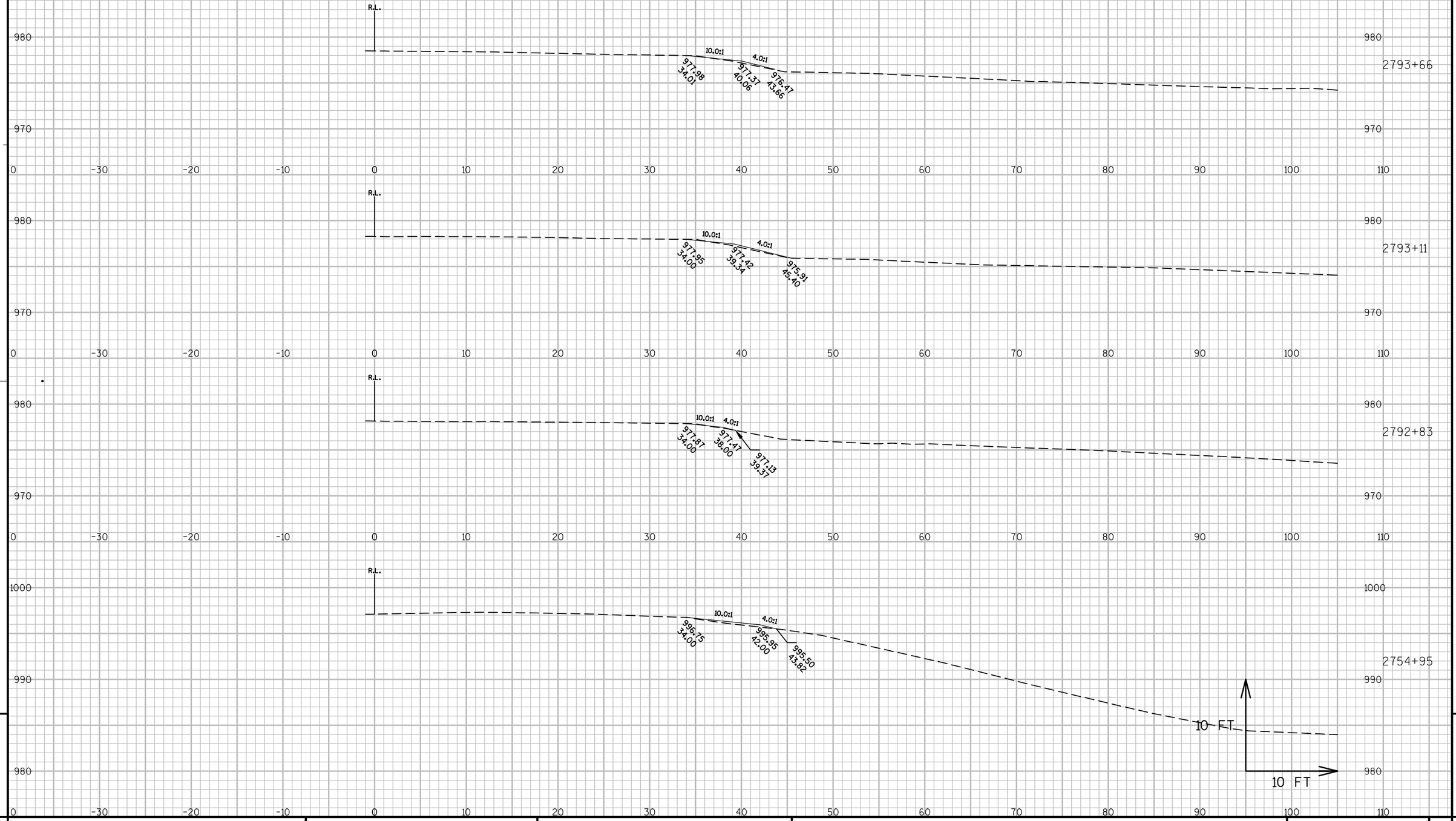
WISDOT/CADDS SHEET 49



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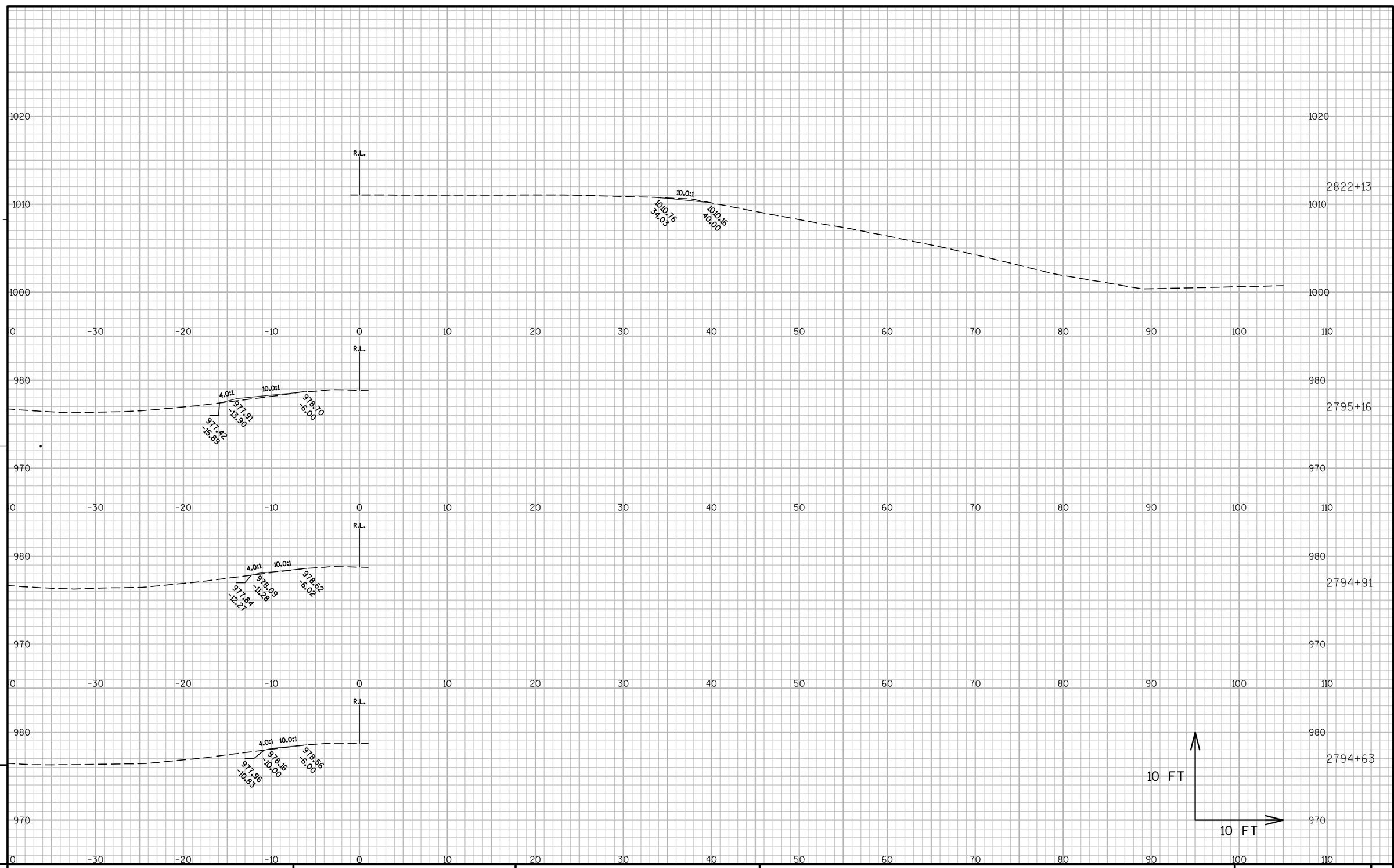
PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS (BEAMGUARD).DWG PLOT DATE : 2/6/2014 1:01 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

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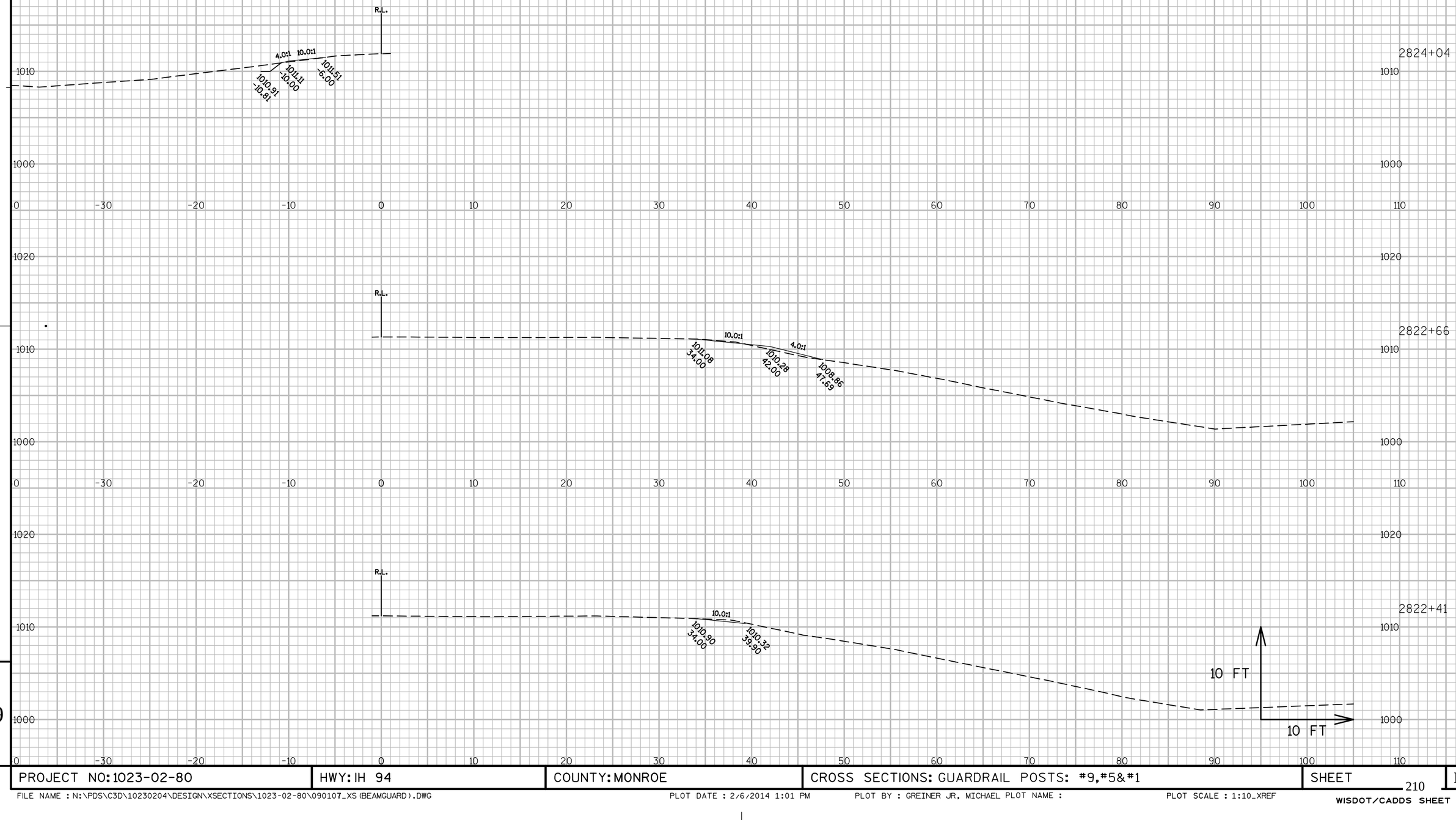
FILE NAME : N:\PDS\C3D\10230204\DESIGN\XSECTIONS\1023-02-80\090107_XS(BEAMGUARD).DWG PLOT DATE : 2/6/2014 1:01 PM PLOT BY : GREINER JR, MICHAEL PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 210	E

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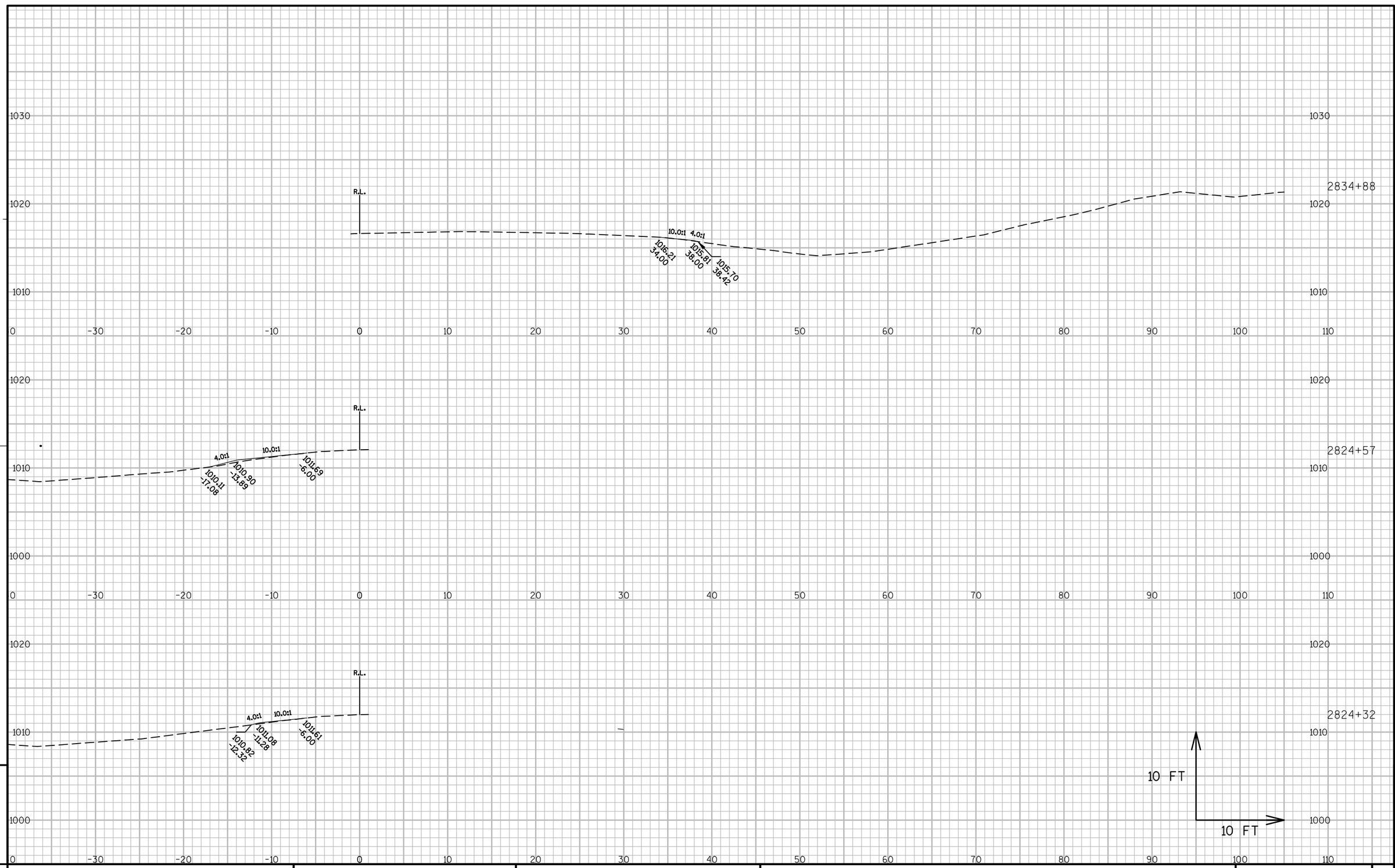

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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

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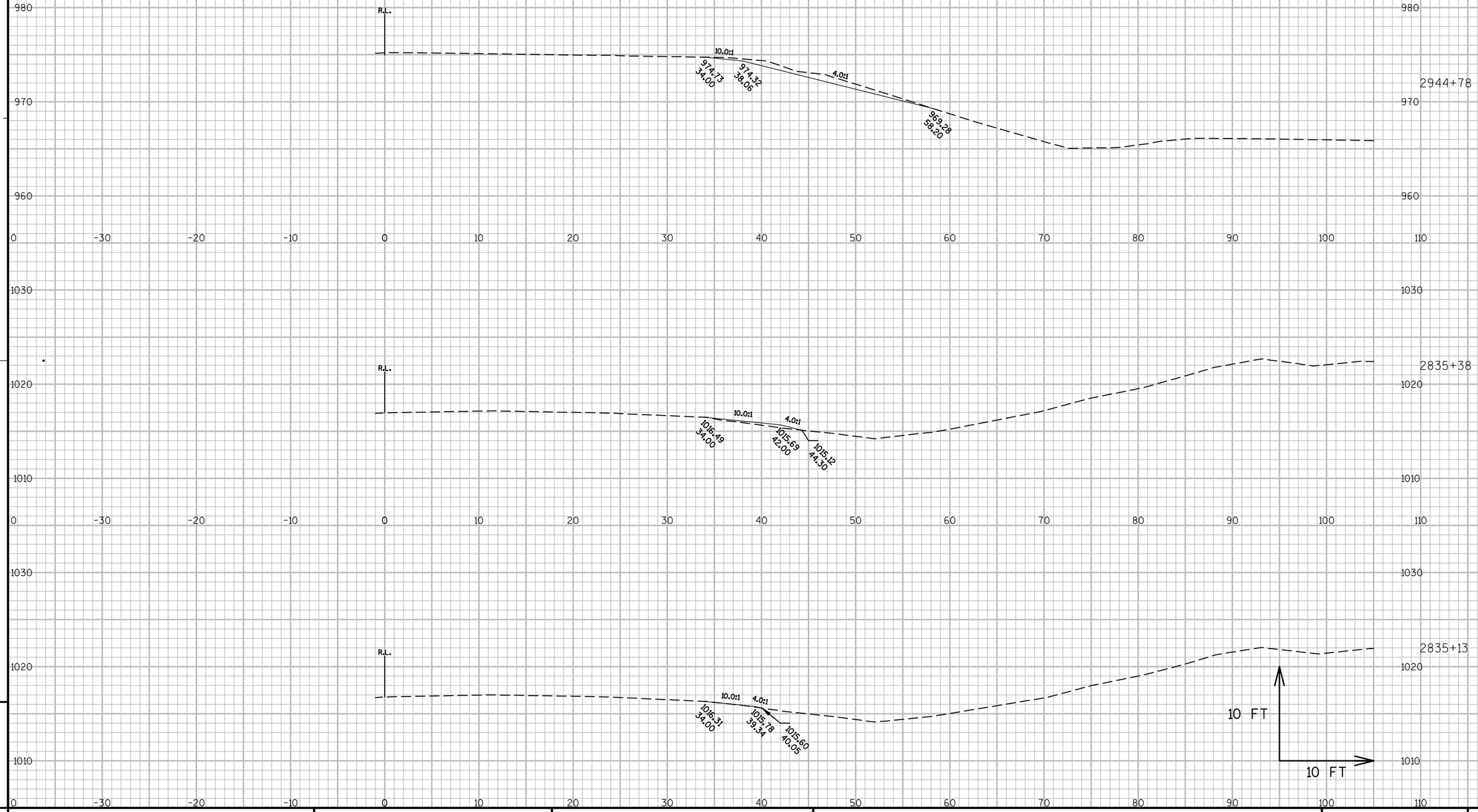

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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

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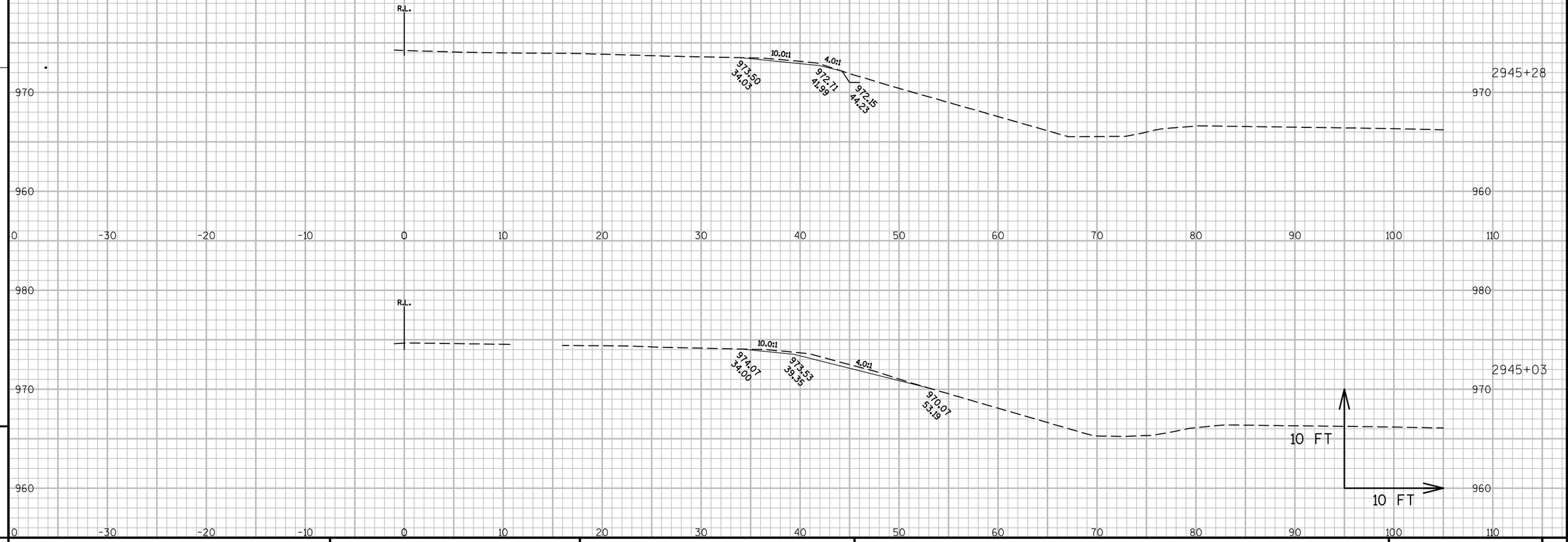
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

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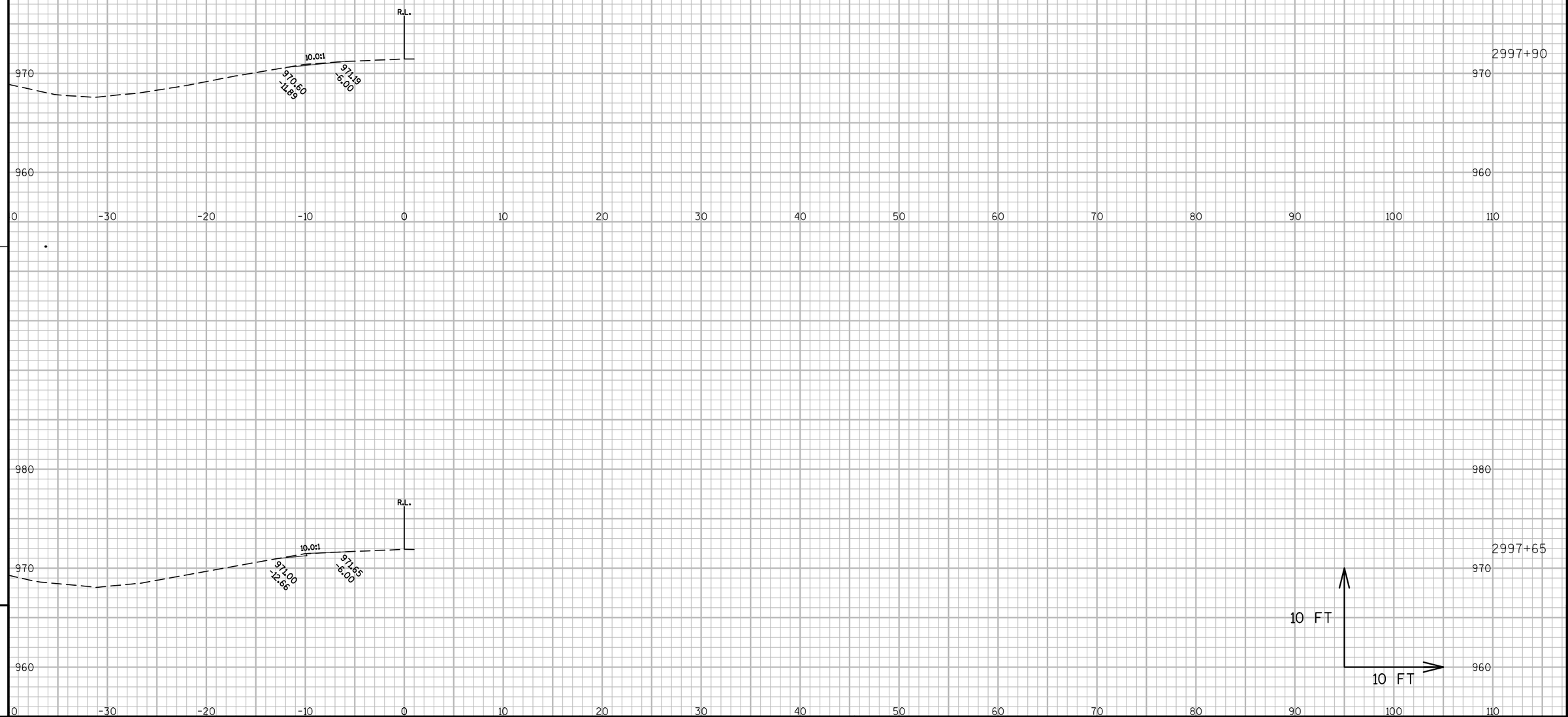

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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 214	E

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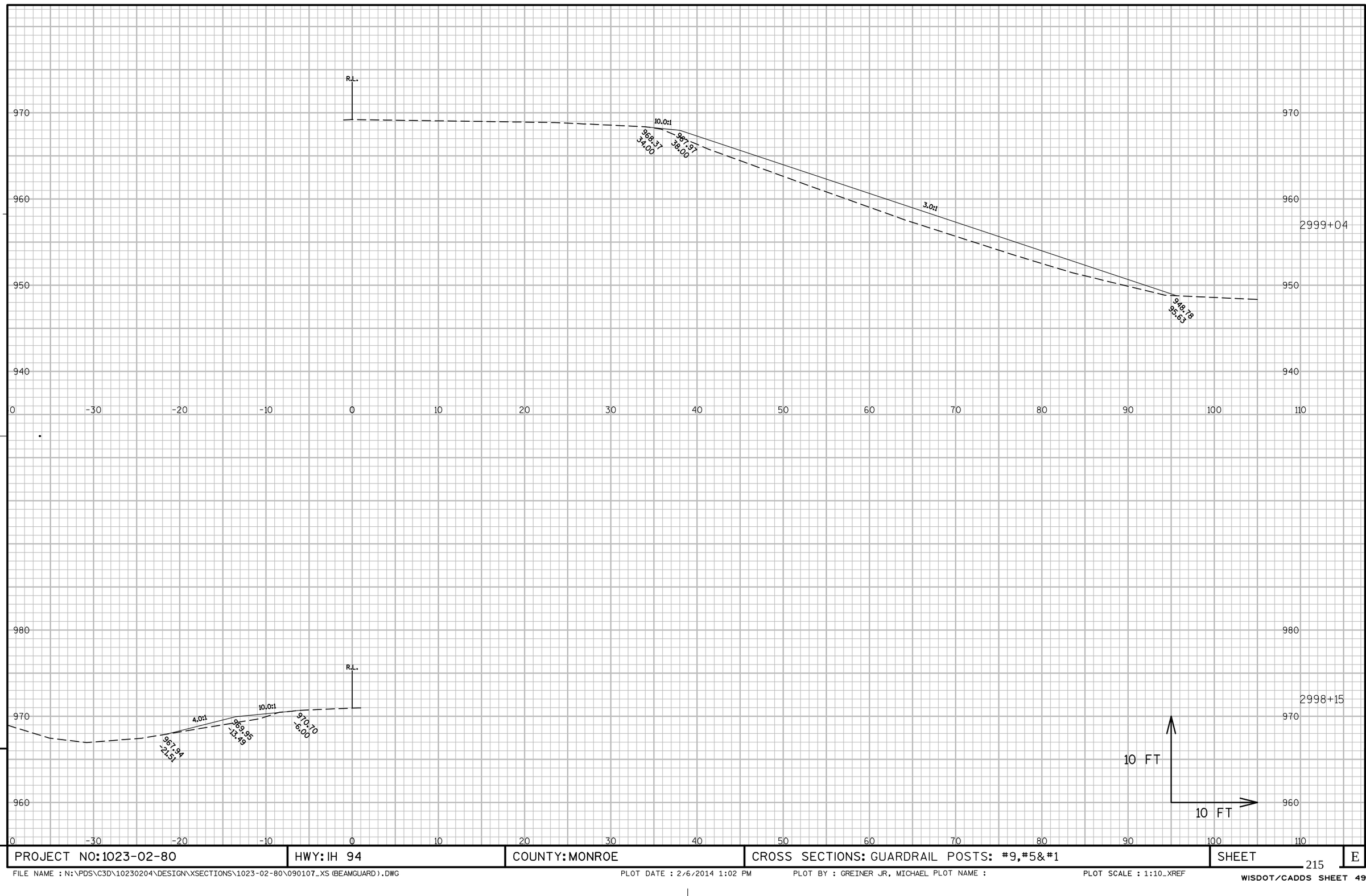
WISDOT/CADDS SHEET 49



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PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET 215	E

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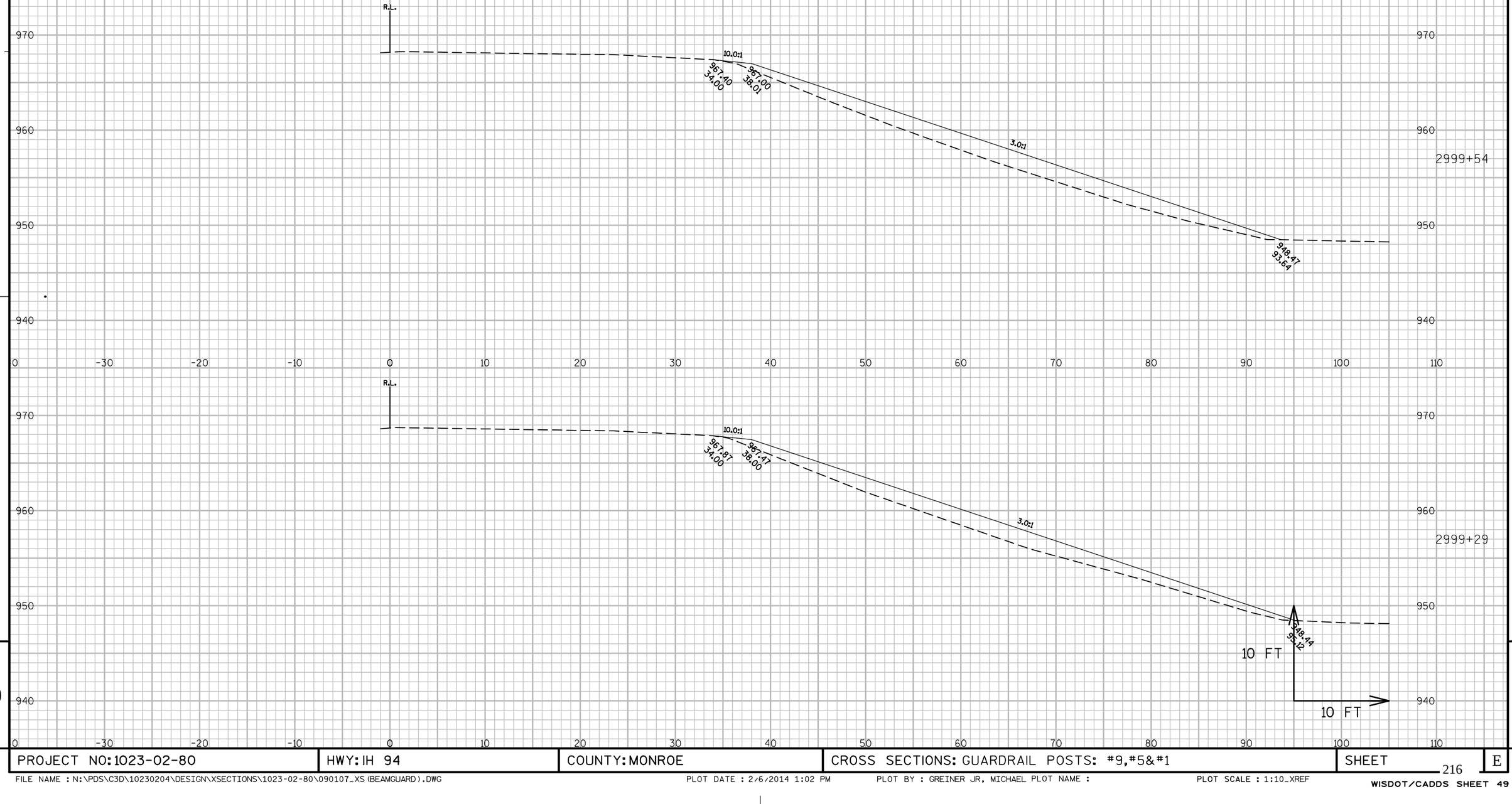
WISDOT/CADDS SHEET 49



PROJECT NO: 1023-02-80	HWY: IH 94	COUNTY: MONROE	CROSS SECTIONS: GUARDRAIL POSTS: #9,#5&#1	SHEET	E

Notes

Wisconsin Department of Transportation

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