RHI

DECEMBER 2016

PROJECT ID: 1009-43-64

WITH: N/A

COUNTY: NC REGION WIDE

ORDER OF SHEETS

TOTAL SHEETS = 70

DESIGN DESIGNATION		STH 23	STH 110	STH 22	STH 66
A.A.D.T.	2017	= 4500	= 1700	= 1400	= 3800
A.A.D.T.	2037	= 5300	= 2100	= 1800	= 4450
D.H.V.		= 720	= 260	= 230	= 560
D.D.		= 61/39	= 60/40	= 60/40	= 60/40
T.		= 27.8%	= 6.2%	= 11.2%	= 6.2%
DESIGN SPEED		= 55	= 55	= 55	= 45
ESALS		= 2,200,000	= 270,000	= 450,000	= 550,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

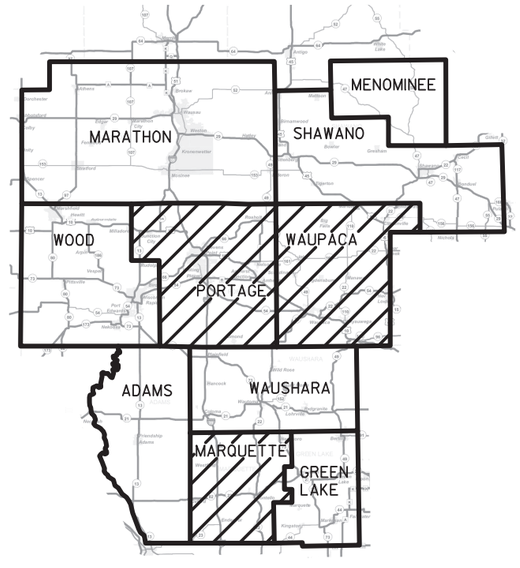
REGION WIDE CULVERT REPLACEMENT

NC REGION WIDE

VARIOUS HIGHWAYS

NC REGION WIDE

STATE PROJECT NUMBER
1009-43-64



LAYOUT

SCALE 0 NTS

TOTAL NET LENGTH OF CENTERLINE = N/A

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (2012).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1009-43-64	—	—

ORIGINAL PLAN PREPARED BY

BECHER HOPPE
330 Fourth Street • PO Box 8000
Wausau, WI • 54402-8000
715.845.8000 • Fax 715.845.8008
becherhoppe.com

WISCONSIN
CHAD D. GRUNDEMANN
E-43616-6
WAUSAU, WI
PROFESSIONAL ENGINEER

10/13/2016
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	BECHER-HOPPE ASSOCIATES, INC.
Designer	BECHER-HOPPE ASSOCIATES, INC.
Project Manager	JED PETERS, PE
Regional Examiner	CHERYL SIMON, PE
Regional Supervisor	ROBIN STAFFORD, PE

APPROVED FOR THE DEPARTMENT

DATE: 10/13/16 (Signature)

E

GENERAL NOTES

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

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

AS-BUILT REFERENCE (YEAR)*

STH 22
PROJECT ID: T 035 (5) (1950)
PROJECT ID: 6260-00-71 (2000)

STH 23
PROJECT ID: 1430-7-72 (1981)
PROJECT ID: 1430-10-71 (1998)

STH 66
PROJECT ID: S1172(2) (1962)
PROJECT ID: S1172(3) (1963)
PROJECT ID: 6763-2-71 (1979)
PROJECT ID: 6280-05-60 (2011)

STH 110
PROJECT ID: 6592-10-67 (1994)

*APPROVAL YEAR (NOT CONSTRUCTION)

SECTION 2 ORDER

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 3.38 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.36 ACRES

UTILITIES

COMMUNICATION
AT&T WISCONSIN
RICK PODOLAK
4TH FLOOR
304 S DEWEY ST
EAU CLAIRE, WI 54701
715-839-5565
RICK.T.PODOLAK@ATT.COM

COMMUNICATION
CHARTER COMMUNICATIONS
RUDI RUDIGER
5024 HEFFRON ST
STEVENS POINT, WI 54481
715-204-5339 MOBILE
RUDI.RUDIGER@CHARTER.COM

COMMUNICATION
FRONTIER COMMUNICATIONS OF WI LLC
JAMES JASKOLSKI
26 W 12TH ST
CLINTONVILLE, WI 54929
715-823-1227
JAMES.JASKOLSKI@FTR.COM

COMMUNICATION
MARQUETTE ADAMS TELEPHONE COOP INC.
JASON SENGBUSCH
113 N OXFORD ST
OXFORD, WI 53952
608-586-7070
608-450-0707 MOBILE
JSENGBUSCH@MAADTELCO.COM

ELECTRIC
ADAMS-COLUMBIA ELECTRIC COOPERATIVE
MR. SHAWN PIETRZAK
W6290 HWY 33
PARDEEVILLE, WI 53954
800-831-8629
608-547-2174 MOBILE
SPIETRZAK@ACECWI.COM

ELECTRIC
ALLIANT ENERGY

SEND ALL ALLIANT CORRESPONDENCE TO:
ALLIANT ENERGY - ELECTRIC
ATTN: JASON HOGAN
SUITE 1000
4902 N BILTMORE LANE
MADISON, WI 53718
608-458-4871
608-395-7395 MOBILE
JASONHOGAN@ALLIANTENERGY.COM

ALLIANT CONSTRUCTION FIELD CONTACT:
BILL BASTIAN
883 W SCOTT ST
FOND DU LAC, WI 54935
920-322-6716
WILLIAMBASTIAN@ALLIANTENERGY.COM

ELECTRIC
WE ENERGIES

SEND ALL WE ENERGIES CORRESPONDENCE TO:
WE ENERGIES - GAS & ELECTRIC
ATTN: LATROY BRUMFIELD
333 W EVERETT ST, A299
MILWAUKEE, WI 53203
414-221-5617
LATROY.BRUMFIELD@WE-ENERGIES.COM

WE ENERGIES CONSTRUCTION FIELD CONTACT:
STEVE ARMSTRONG
800 S LYNNDALE DR
APPLETON, WI 54912-1699
920-380-3563
STEVEN.ARMSTRONG@WE-ENERGIES.COM

ELECTRIC
WISCONSIN PUBLIC SERVICE CORPORATION
DON LUTZOW
PO BOX 1166
WAUSAU, WI 54402
715-848-7487
715-493-7802 MOBILE
DALUTZOW@WISCONSINPUBLICSERVICE.COM

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

DNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
COUNTIES: PORTAGE
MARC HERSHFIELD
473 GRIFFITH AVE
WI RAPIDS, WI 54494
PHONE: (715) 421-7867
marc.hershfield@wisconsin.gov

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
COUNTIES: MARQUETTE & WAUPACA
BOBBI FISCHER
427 E TOWER DR
WAUTOMA, WI 54982
PHONE: (920) 787-3015
bobbi.fischer@wisconsin.gov

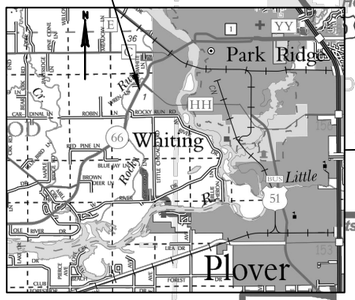
BORING LOG

CULVERT	BORING NO.	STATION	OFFSET FROM ℄	ASPHALT THICKNESS IN INCHES	BASE THICKNESS IN INCHES	UNDERLYING MATERIAL AND DEPTH	UNDERLYING MATERIAL AND DEPTH	UNDERLYING MATERIAL AND DEPTH	UNDERLYING MATERIAL AND DEPTH	OBSERVED WATER DEPTH
C-39-23-041	B-1	509+55	5' RT	7	12	SILTY SAND 1.58' - 3'	SAND 3' - 4'	SILTY SAND 4' - 5.25'	SAND 5.25' - 15'	--
C-39-23-051	B-1	624+83	6' LT	6	8	SILTY SAND 1.17' - 7'	SILT 7' - 8.5'	SAND 8.5' - 15'	--	--
C-39-23-052	B-1	647+50	--	7	10	SILTY SAND 1.42' - 4'	SAND 4' - 15'	--	--	--
C-39-23-057	B-1	772+96	6' LT	6	10	SILTY SAND 1.33' - 5'	PEAT 5' - 6'	SAND 6' - 15'	--	--
C-49-66-240, 241, 242, 243, 244	B-1	686+97	5' LT	8	12	SILTY SAND 1.67' - 3'	SILT 3' - 7'	SAND 7' - 15'	--	5'
C-68-22-089	B-1	240+25	5' RT	5	6	SAND 0.92' - 3'	SILT 3' - 13'	SILTY SAND 13' - 15'	--	--
C-68-110-041	B-1	44+23	5' RT	6	10	SILT 1.33' - 7'	SAND 7' - 9'	CLAY 9' - 15'	--	6.5'

BORINGS TAKEN BY WISDOT NC REGION ON 5-11-16, 5-12-16, AND 5-17-16

2

C 49-66-240, 241, 242, 243 & 244
STH 66
PORTAGE COUNTY



5

1

1

N

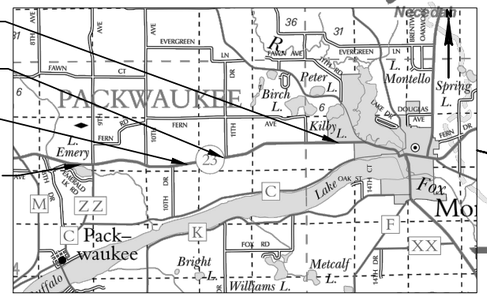
LEGEND
CULVERT LOCATION AND NUMBER OF PIPES

C 39-23-057
STH 23

C 39-23-052
STH 23

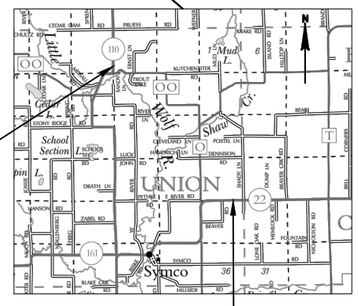
C 39-23-051
STH 23

C 39-23-041
STH 23
MARQUETTE COUNTY



1 1 1 1

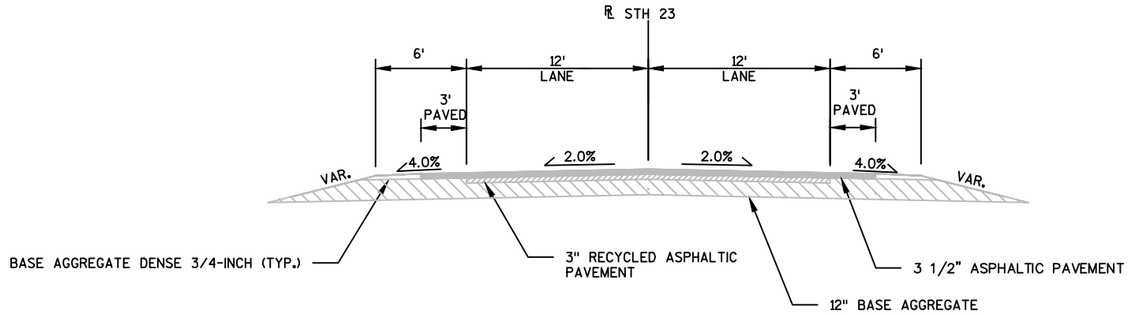
C 68-110-041
STH 110
WAUPACA COUNTY



C 68-22-089
STH 22
WAUPACA
COUNTY

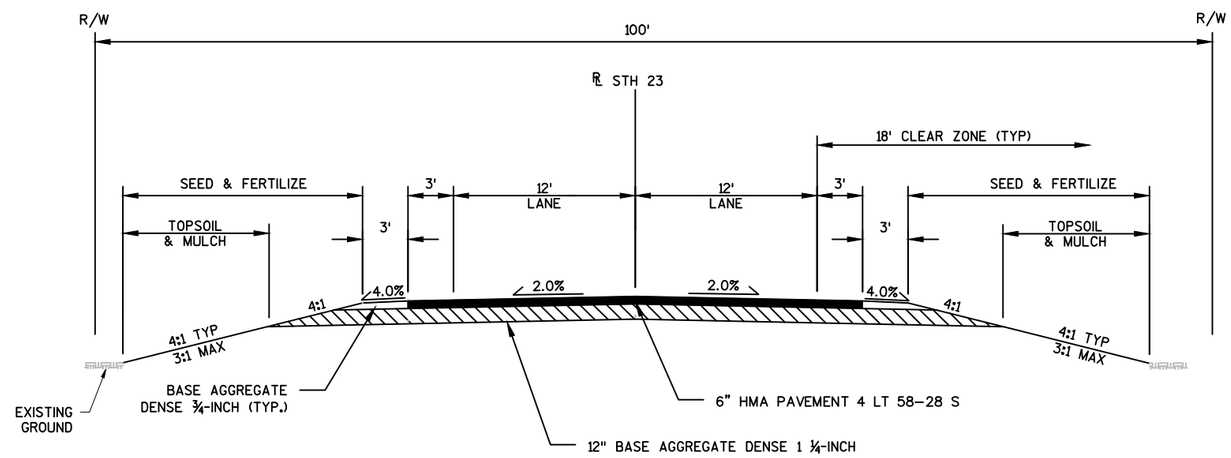
PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\020201-PO.DWG PLOT DATE : 7/26/2016 3:41 PM PLOT BY : DANIEL J. GERLING PLOT NAME : ----------



EXISTING TYPICAL SECTION – STH 23

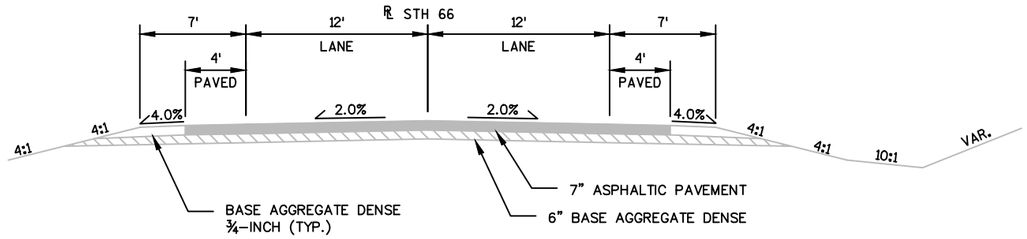
STATION 508+50 – STATION 510+75
STATION 623+50 – STATION 626+00
STATION 646+50 – STATION 648+50
STATION 772+38 – STATION 774+00



PROPOSED TYPICAL SECTION – STH 23

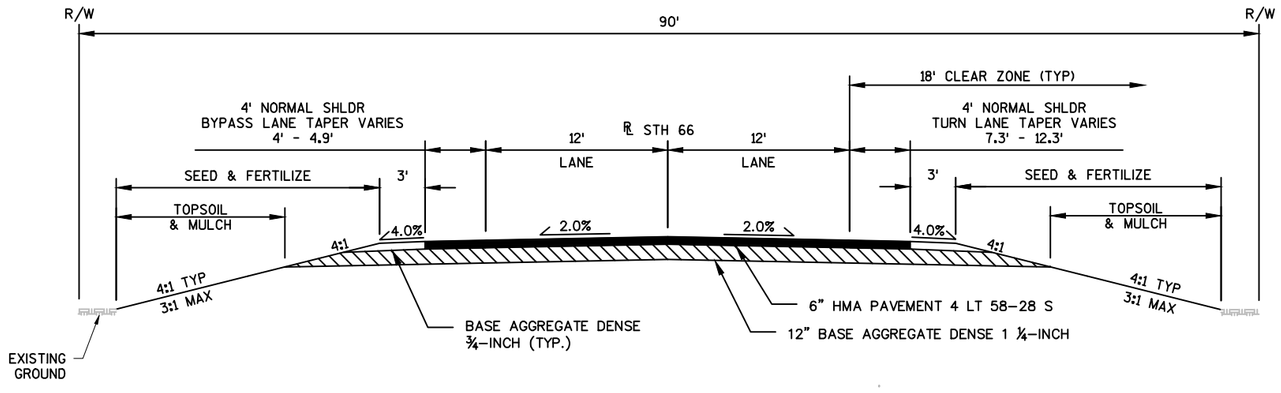
STATION 508+50 – STATION 510+75
STATION 623+50 – STATION 626+00
STATION 646+50 – STATION 648+50
STATION 772+38 – STATION 774+00

NOTES
EXISTING TYPICAL SECTIONS BASED ON AS-BUILTS.



EXISTING TYPICAL SECTION – STH 66

STATION 686+39 – STATION 688+00



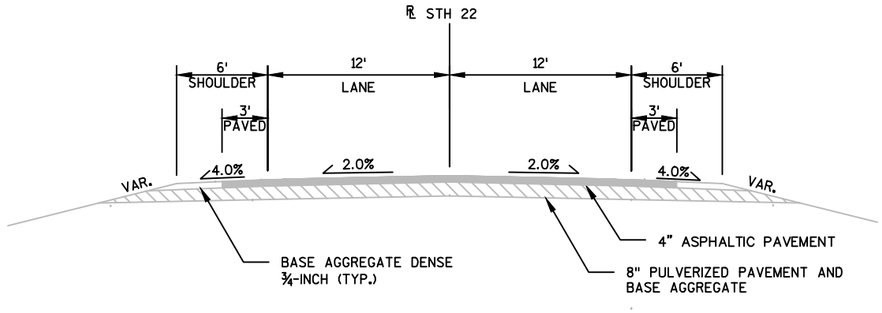
PROPOSED TYPICAL SECTION – STH 66

STATION 686+39 – STATION 688+00

NOTES
EXISTING TYPICAL SECTIONS BASED ON AS–BUILTS.

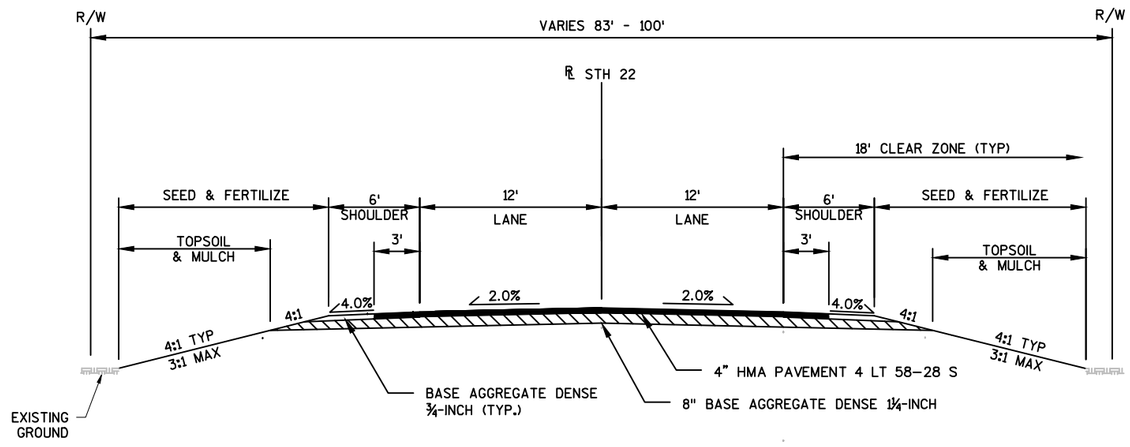
PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	TYPICAL SECTIONS - STH 66	SHEET 5	E

2



EXISTING TYPICAL SECTION – STH 22

STATION 239+00 – STATION 241+50



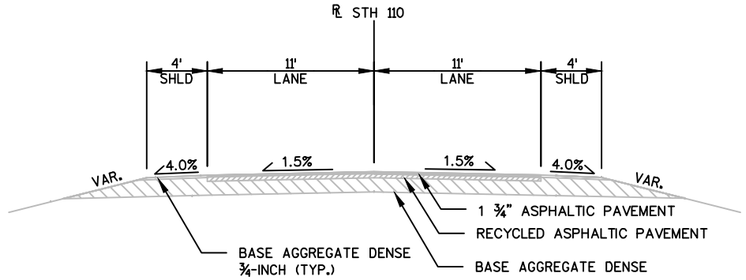
PROPOSED TYPICAL SECTION – STH 22

STATION 239+00 – STATION 241+50

NOTES
EXISTING TYPICAL SECTIONS BASED ON AS-BUILTS.

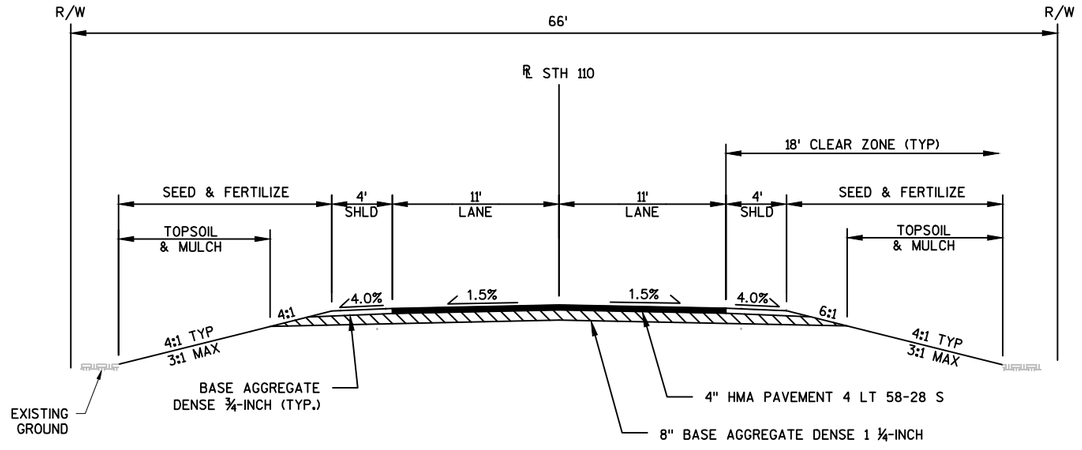
PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	TYPICAL SECTIONS - STH 22	SHEET 6	E

2



EXISTING TYPICAL SECTION – STH 110

STATION 47+00 – STATION 49+00



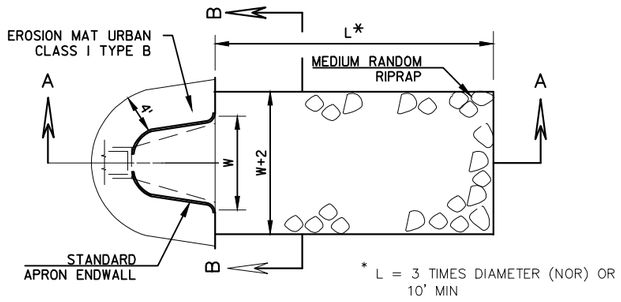
PROPOSED TYPICAL SECTION – STH 110

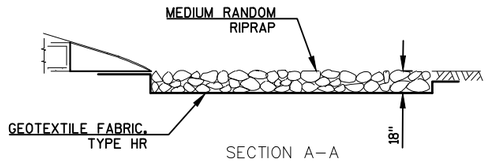
STATION 47+00 – STATION 49+00

NOTES
EXISTING TYPICAL SECTIONS BASED ON AS-BUILTS.

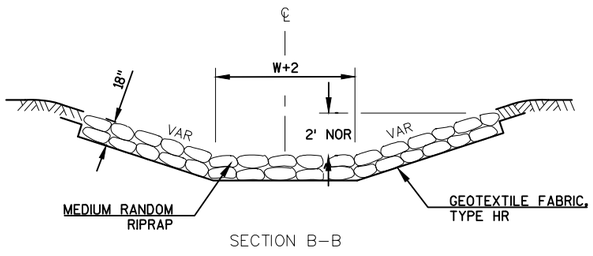
PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	TYPICAL SECTIONS - STH 110	SHEET 7	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - ****
PLOT DATE : 7/26/2016 3:50 PM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : ****
WISDOT/CADDS SHEET 42





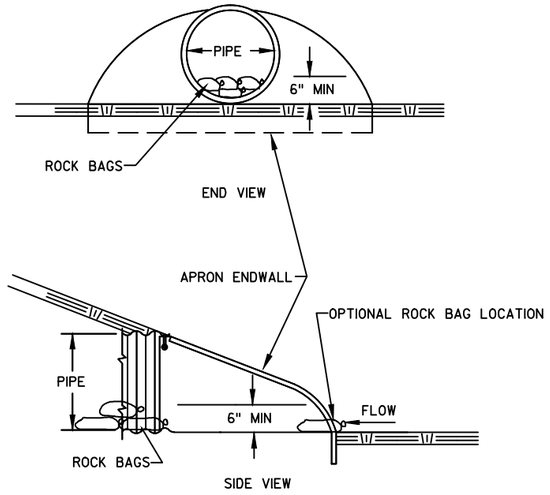
SECTION A–A



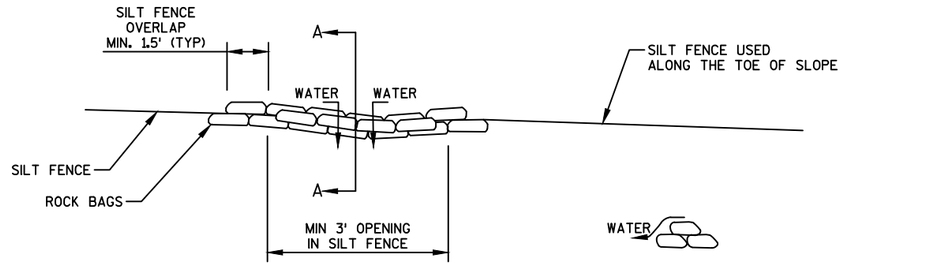
SECTION B–B

E-MAT, MEDIUM RANDOM RIPRAP AND GETEXTILE FABRIC

DETAIL AT APRON ENDWALLS AT DISCHARGE END



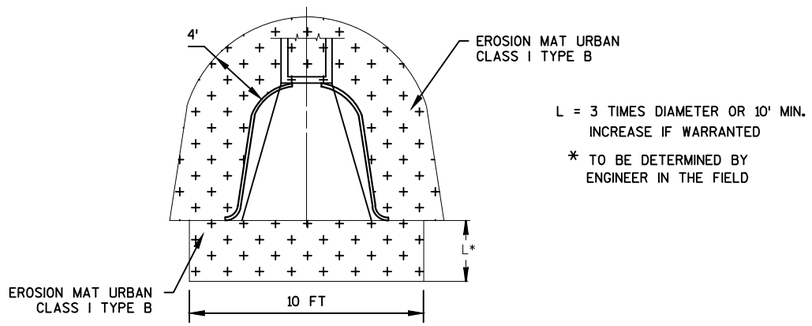
CULVERT PIPE CHECKS



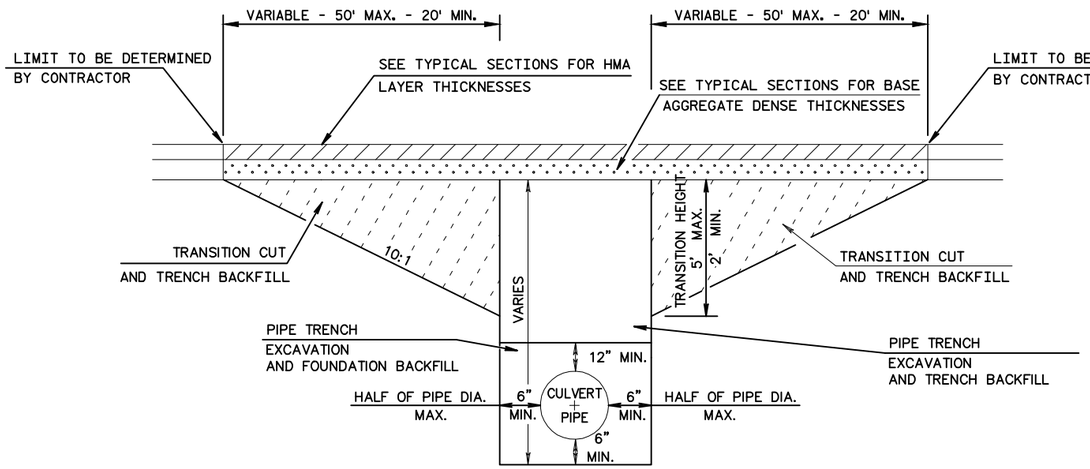
TOP VIEW

SECTION A–A

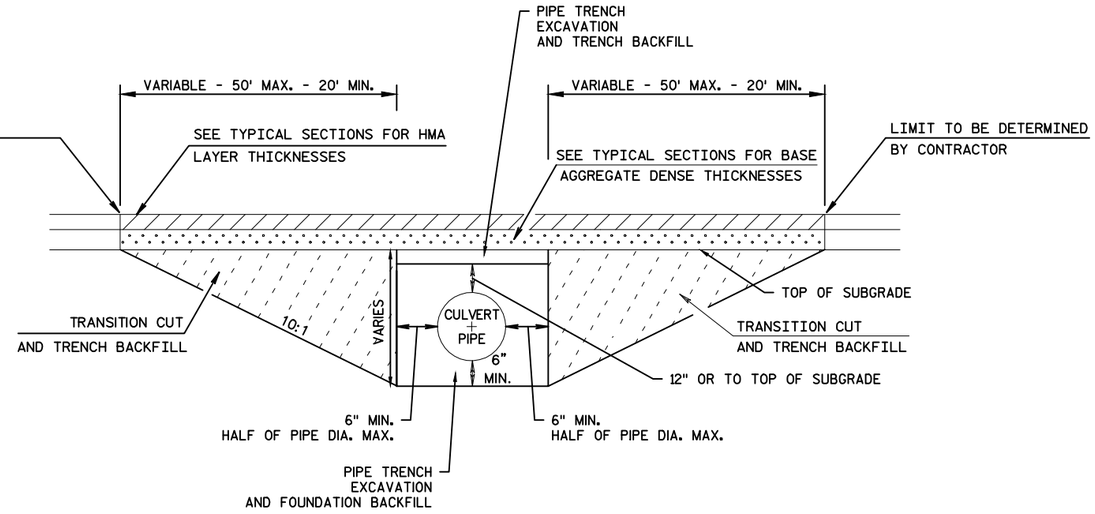
ROCK BAGS USED FOR SILT FENCE RELIEF



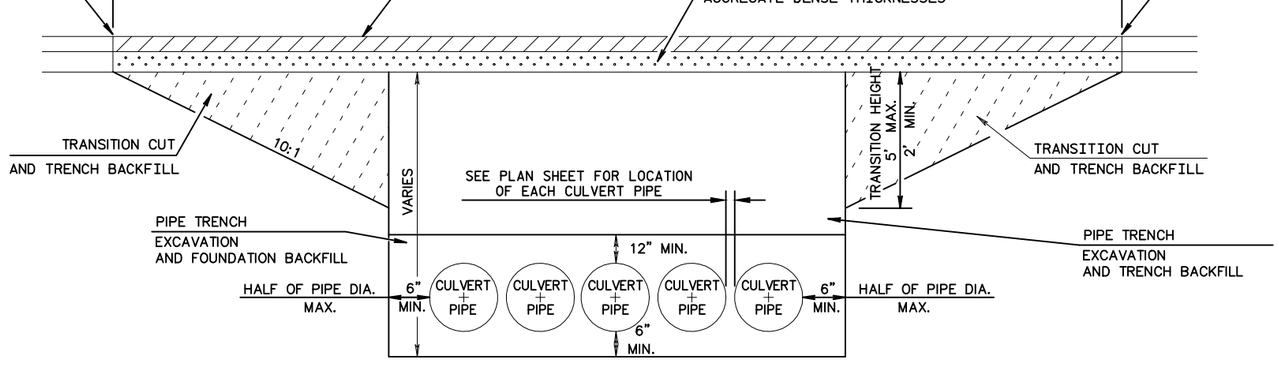
EROSION CONTROL AT PIPE ENDS



CULVERT PIPE TRANSITION – SINGLE PIPE



CULVERT PIPE TRANSITION – SINGLE PIPE (SHALLOW COVER)

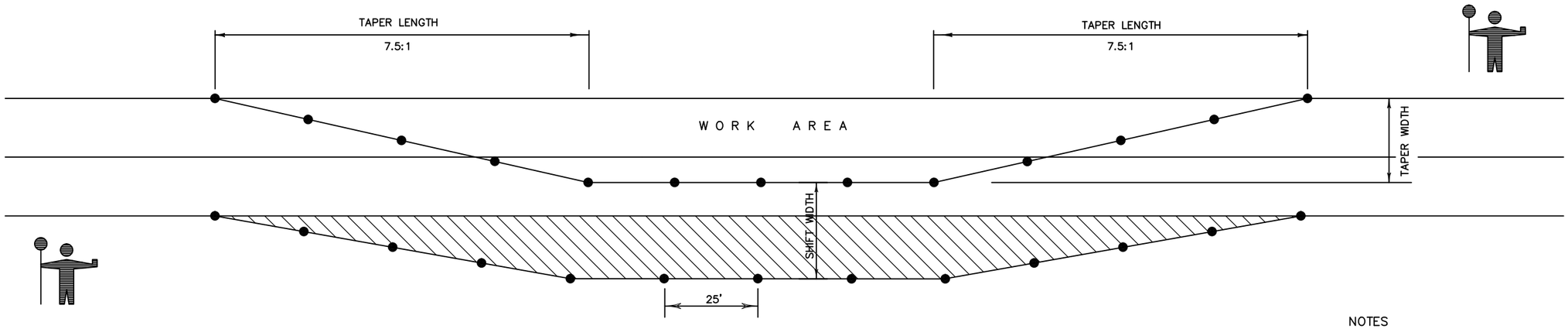


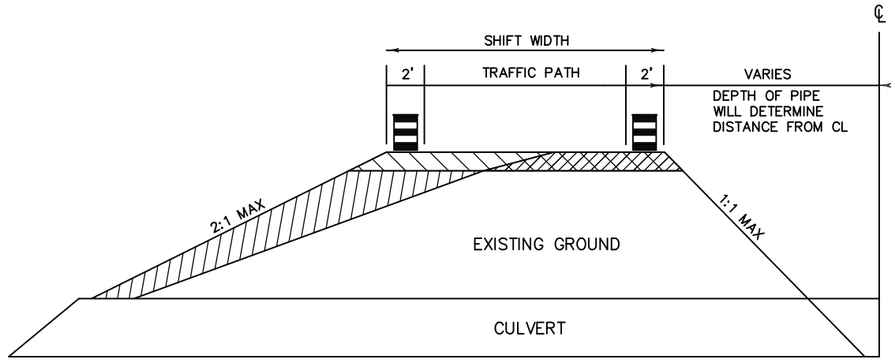
CULVERT PIPE TRANSITION – MULTIPLE PIPES

NOTE: PIPE TRENCH EXCAVATION, EXCLUDING TRANSITION CUT IS CONSIDERED INCIDENTAL TO PIPE INSTALLATION. TRANSITION CUT WILL BE PAID FOR AS EXCAVATION COMMON.

BACKFILL IN ACCORDANCE WITH STANDARD SPEC 520.2.5.
BACKFILL WITHIN PIPE TRENCH IS INCIDENTAL TO PIPE ITEM.
BACKFILL WITHIN TRANSITION CUT IS INCIDENTAL TO EXCAVATION COMMON ITEM.

2





LANE SHIFT DETAIL

STA 509+55	C39-23-041
STA 624+83	C39-23-051
STA 772+96	C39-23-057
STA 240+25	C68-22-089

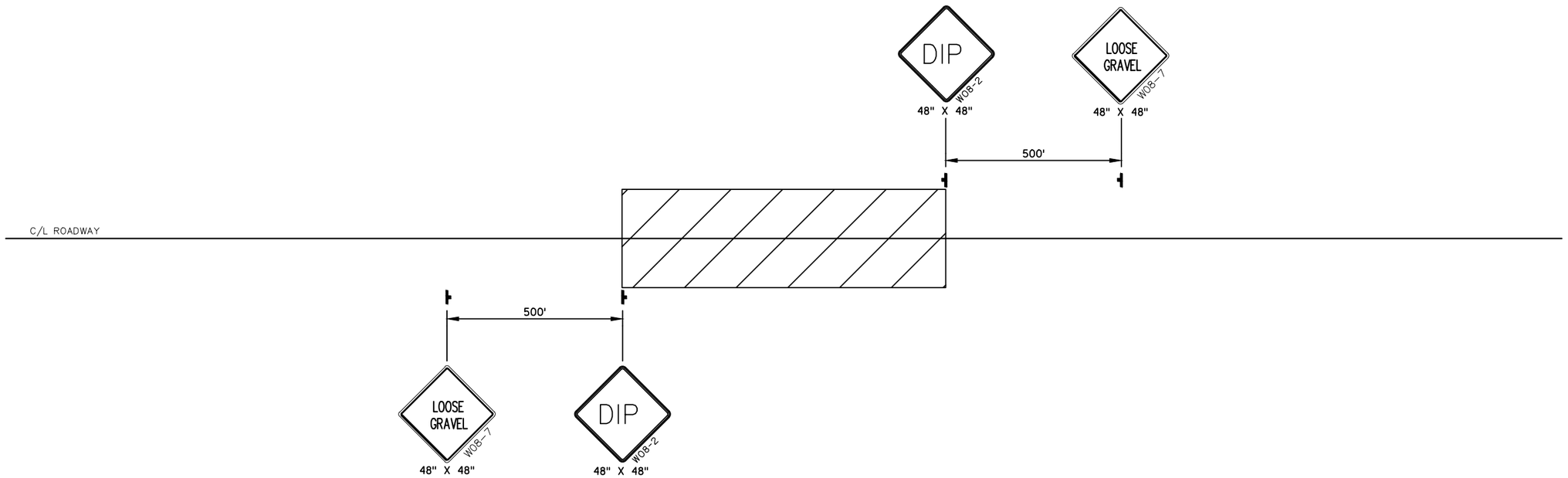
NOTES

1. USE WITH SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".
2. FLAGGERS ARE SPECIFIC TO THIS OPERATION.
3. THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.
4. ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO ORIGINAL CONFIGURATION.
5. CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED AWAY FROM TRAVEL LANE WHEN FLAGGING OPERATIONS ARE NOT IN USE.

KEY

- ● TRAFFIC CONTROL DRUM
- FILL – INCIDENTAL TO LANE SHIFT ITEM
- EXISTING PAVED SURFACE OR 6" BASE AGGREGATE DENSE 1 1/4-INCH – INCIDENTAL TO LANE SHIFT ITEM
- 6" BASE AGGREGATE DENSE 1 1/4-INCH – INCIDENTAL TO LANE SHIFT ITEM

2



AREA OF GRAVEL SURFACE

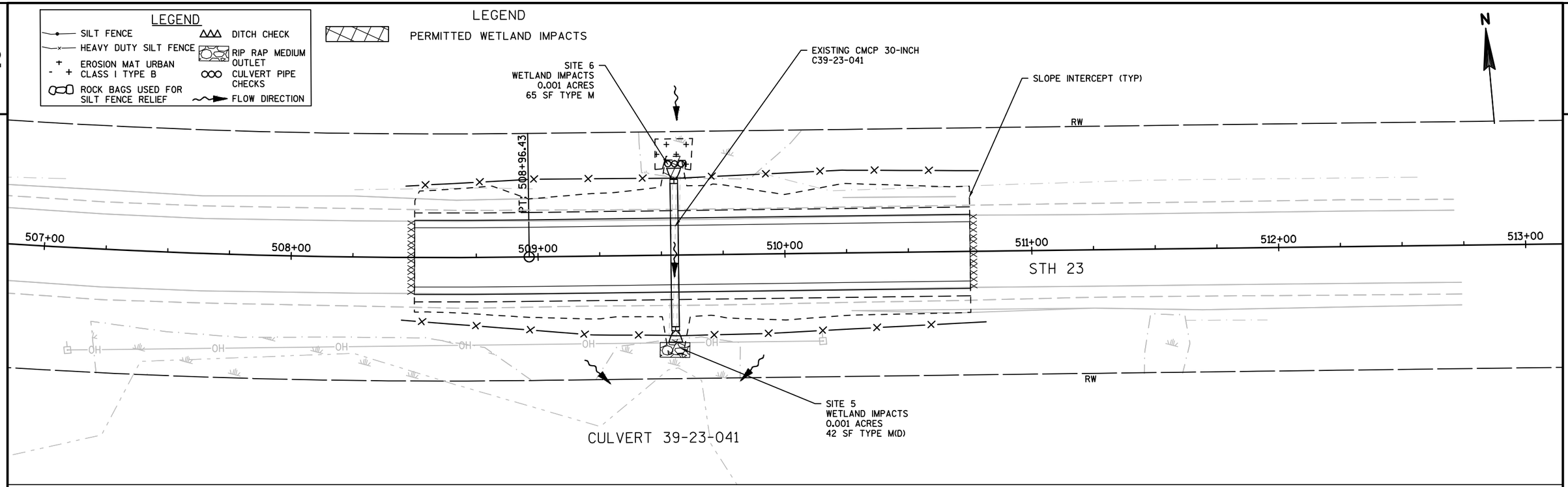
TEMPORARY SIGNING AT CULVERT PIPE REPLACEMENT LOCATIONS

LEGEND

- SILT FENCE
- HEAVY DUTY SILT FENCE
- EROSION MAT URBAN CLASS I TYPE B
- ROCK BAGS USED FOR SILT FENCE RELIEF
- DITCH CHECK
- RIP RAP MEDIUM OUTLET
- CULVERT PIPE CHECKS
- FLOW DIRECTION

LEGEND

PERMITTED WETLAND IMPACTS

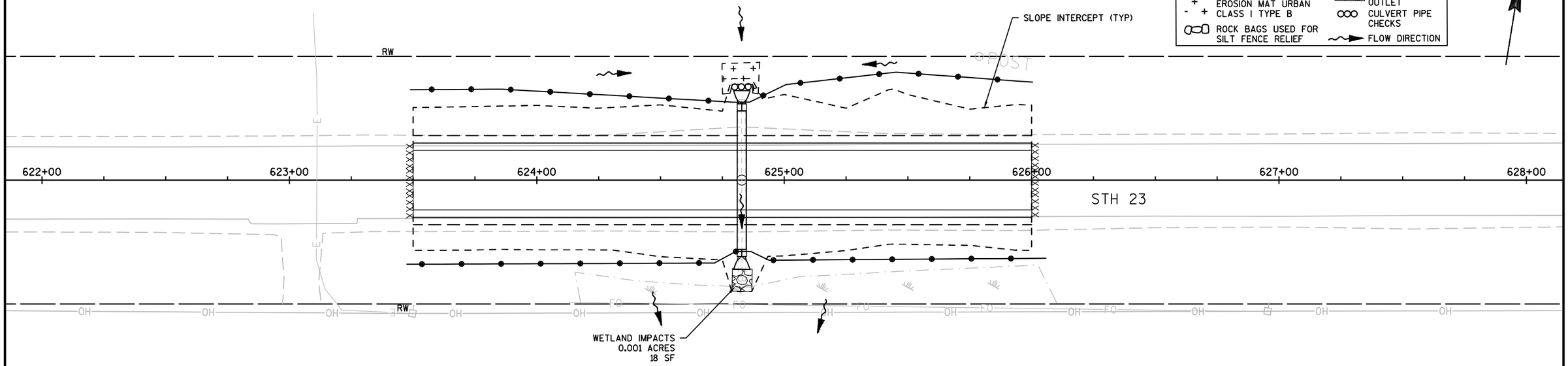


LEGEND

PERMITTED WETLAND IMPACTS

LEGEND

- SILT FENCE
- HEAVY DUTY SILT FENCE
- EROSION MAT URBAN CLASS I TYPE B
- ROCK BAGS USED FOR SILT FENCE RELIEF
- DITCH CHECK
- RIP RAP MEDIUM OUTLET
- CULVERT PIPE CHECKS
- FLOW DIRECTION



PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	EROSION CONTROL: CULVERTS 39-23-041/051	SHEET 12	E

LEGEND

PERMITTED WETLAND IMPACTS

SITE 8
WETLAND IMPACTS
0.003 ACRES
119 SF TYPE SS

SLOPE INTERCEPT (TYP)

RW

645+00 646+00 647+00 648+00 649+00 650+00

STH 23

RW

SITE 9
WETLAND IMPACTS
0.002 ACRES
68 SF TYPE M

CULVERT 39-23-052

LEGEND

SILT FENCE
HEAVY DUTY SILT FENCE
EROSION MAT URBAN CLASS I TYPE B
ROCK BAGS USED FOR SILT FENCE RELIEF
DITCH CHECK
RIP RAP MEDIUM OUTLET
CULVERT PIPE CHECKS
FLOW DIRECTION

N

LEGEND

PERMITTED WETLAND IMPACTS

SITE 10
WETLAND IMPACTS
0.002 ACRES
88 SF TYPE M(D)

SLOPE INTERCEPT (TYP)

RW

PI: 772+30.16

770+00 771+00 772+00 773+00 774+00 775+00 776+00

STH 23

RW

SITE 11
WETLAND IMPACTS
0.002 ACRES
85 SF TYPE M(D)

CULVERT 39-23-057

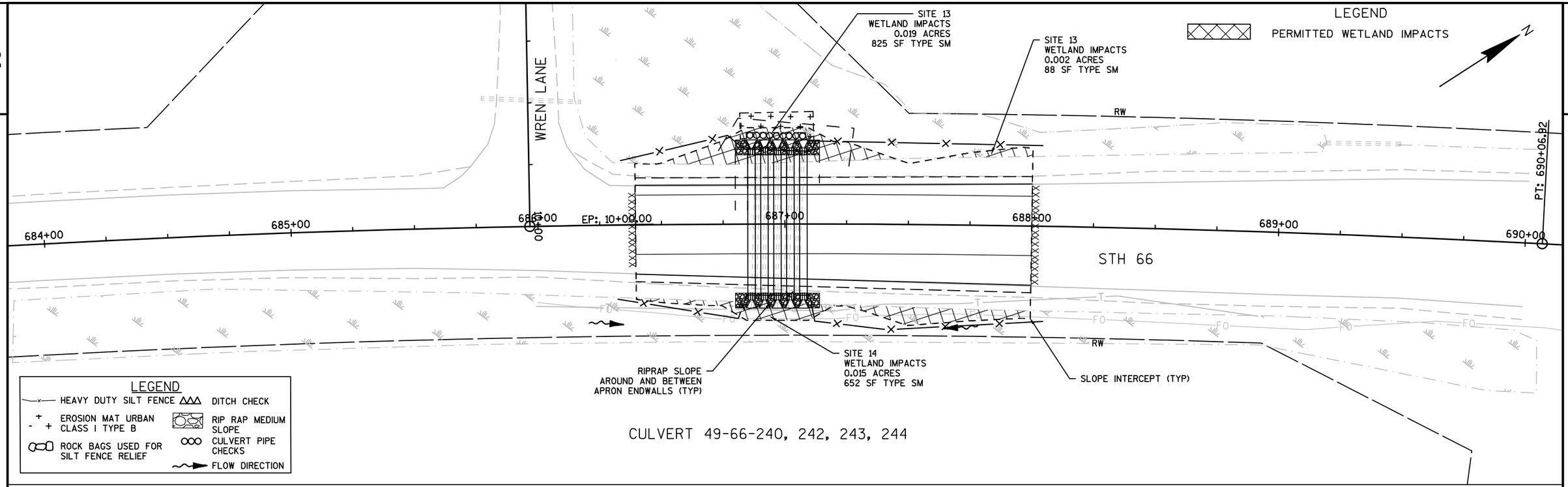
LEGEND

SILT FENCE
HEAVY DUTY SILT FENCE
EROSION MAT URBAN CLASS I TYPE B
ROCK BAGS USED FOR SILT FENCE RELIEF
DITCH CHECK
RIP RAP MEDIUM OUTLET
CULVERT PIPE CHECKS
FLOW DIRECTION

N

PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	EROSION CONTROL: CULVERTS 39-23-052/057	SHEET 13	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\022001-EC-MARQUETTE.DWG
LAYOUT NAME - ****
PLOT DATE : 7/28/2016 4:06 PM PLOT BY : CHAD D. GRUNDEMANN PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 42



CULVERT 49-66-240, 242, 243, 244

PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	EROSION CONTROL: CULVERTS 49-66-240, 241, 242, 243, & 244	SHEET 14	E

2

LEGEND

PERMITTED WETLAND IMPACTS

LEGEND

SILT FENCE
EROSION MAT URBAN CLASS I TYPE B
ROCK BAGS USED FOR SILT FENCE RELIEF
DITCH CHECK
RIP RAP MEDIUM OUTLET
CULVERT PIPE CHECKS
FLOW DIRECTION

N

SITE 20
WETLAND IMPACTS
0.014 ACRES
608 SF TYPE M(D)

RW

42+00 43+00 44+00 45+00 46+00 47+00

STH 110

SLOPE INTERCEPT (TYP)

CULVERT 68-110-041

LEGEND

PERMITTED WETLAND IMPACTS

LEGEND

SILT FENCE
EROSION MAT URBAN CLASS I TYPE B
ROCK BAGS USED FOR SILT FENCE RELIEF
DITCH CHECK
RIP RAP MEDIUM OUTLET
CULVERT PIPE CHECKS
FLOW DIRECTION

N

RW

238+00 239+00 240+00 241+00 242+00 243+00 244+00

STH 22

SITE 19
WETLAND IMPACTS
0.001 ACRES
49 SF TYPE M(D)

SLOPE INTERCEPT (TYP)

CULVERT 68-22-089

PROJECT NO: 1009-43-64	HWY: VARIOUS	COUNTY: VARIOUS	EROSION CONTROL	SHEET 15	E

1009-43-64

Line	Item	Item Description	Unit	Total	Qty
0010	203.0100	Removing Small Pipe Culverts	EACH	11.000	11.000
0020	204.0110	Removing Asphaltic Surface	SY	500.000	500.000
0030	204.0180	Removing Delineators and Markers	EACH	14.000	14.000
0040	205.0100	Excavation Common	CY	4,910.000	4,910.000
0050	209.2100	Backfill Granular Grade 2	CY	100.000	100.000
0060	213.0100	Finishing Roadway (project) 01. 1009-43-64	EACH	1.000	1.000
0070	305.0110	Base Aggregate Dense 3/4-Inch	TON	410.000	410.000
0080	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	4,205.000	4,205.000
0090	455.0605	Tack Coat	GAL	571.000	571.000
0100	460.2000	Incentive Density HMA Pavement	DOL	940.000	940.000
0110	460.5224	HMA Pavement 4 LT 58-28 S	TON	1,461.000	1,461.000
0120	465.0125	Asphaltic Surface Temporary	TON	60.000	60.000
0130	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	161.000	161.000
0140	522.0330	Culvert Pipe Reinforced Concrete Class IV 30-Inch	LF	117.000	117.000
0150	522.0336	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	56.000	56.000
0160	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	4.000	4.000
0170	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0180	523.0419	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	430.000	430.000
0190	523.0519	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	16.000	16.000
0200	606.0200	Riprap Medium	CY	38.000	38.000
0210	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1009-43-64	EACH	1.000	1.000
0220	619.1000	Mobilization	EACH	1.000	1.000
0230	624.0100	Water	MGAL	92.000	92.000
0240	625.0100	Topsoil	SY	3,490.000	3,490.000
0250	627.0200	Mulching	SY	3,490.000	3,490.000
0260	628.1504	Silt Fence	LF	1,840.000	1,840.000
0270	628.1520	Silt Fence Maintenance	LF	325.000	325.000
0280	628.1905	Mobilizations Erosion Control	EACH	14.000	14.000
0290	628.1910	Mobilizations Emergency Erosion Control	EACH	7.000	7.000
0300	628.2008	Erosion Mat Urban Class I Type B	SY	160.000	160.000
0310	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0320	628.7555	Culvert Pipe Checks	EACH	49.000	49.000
0330	628.7570	Rock Bags	EACH	50.000	50.000
0340	629.0210	Fertilizer Type B	CWT	2.300	2.300
0350	630.0130	Seeding Mixture No. 30	LB	65.000	65.000
0360	633.5200	Markers Culvert End	EACH	14.000	14.000

1009-43-64

Line	Item	Item Description	Unit	Total	Qty
0370	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	4.000	4.000
0380	637.2210	Signs Type II Reflective H	SF	10.000	10.000
0390	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0400	638.2602	Removing Signs Type II	EACH	4.000	4.000
0410	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0420	642.5001	Field Office Type B 01. STH 66	EACH	1.000	1.000
0430	642.5001	Field Office Type B 02. STH 23	EACH	1.000	1.000
0440	642.5001	Field Office Type B 03. STH 110	EACH	1.000	1.000
0450	642.5001	Field Office Type B 04. STH 22	EACH	1.000	1.000
0460	643.0100	Traffic Control (project) 01. 1009-43-64	EACH	1.000	1.000
0470	643.0300	Traffic Control Drums	DAY	1,984.000	1,984.000
0480	643.0900	Traffic Control Signs	DAY	620.000	620.000
0490	645.0120	Geotextile Type HR	SY	194.000	194.000
0500	646.0106	Pavement Marking Epoxy 4-Inch	LF	2,796.000	2,796.000
0510	646.0406	Pavement Marking Same Day Epoxy 4-Inch	LF	1,009.000	1,009.000
0520	650.6000	Construction Staking Pipe Culverts	EACH	11.000	11.000
0530	650.9910	Construction Staking Supplemental Control (project) 01. 1009-43-64	LS	1.000	1.000
0540	650.9920	Construction Staking Slope Stakes	LF	2,796.000	2,796.000
0550	690.0150	Sawing Asphalt	LF	421.000	421.000
0560	SPV.0060	Special 01. Lane Shift C 39-23-041	EACH	2.000	2.000
0570	SPV.0060	Special 02. Lane Shift C 39-23-051	EACH	2.000	2.000
0580	SPV.0060	Special 03. Lane Shift C 39-23-057	EACH	2.000	2.000
0590	SPV.0060	Special 04. Lane Shift C 68-22-089	EACH	2.000	2.000
0600	SPV.0090	Special 01. Heavy Duty Silt Fence	LF	1,165.000	1,165.000
0610	SPV.0090	Special 02. Ditch Cleaning	LF	200.000	200.000

204.0110 REMOVING ASPHALTIC SURFACE

LOCATION	HWY	STATION	TO	STATION	SY
UNDISTRIBUTED					500
				TOTAL	**500**

CULVERT PIPE EXCAVATION

		205.0100 EXCAVATION COMMON	**209.2100** BACKFILL GRANULAR GRADE 2
LOCATION	HWY	CY	CY
C 39-23-041	STH 23	600	-
C 39-23-051	STH 23	1,300	-
C 39-23-052	STH 23	750	-
C 39-23-057	STH 23	430	-
C 49-66-240, 241, 242, 243, & 244	STH 66	650	-
C 68-22-089	STH 22	800	-
C 68-110-041	STH 110	380	-
UNDISTRIBUTED		-	100
	TOTALS	**4,910**	**100**

BASE AGGREGATE DENSE

					305.0110 3/4-INCH	**305.0120** 1 1/4-INCH	**624.0100** WATER
LOCATION	HWY	STATION	TO	STATION	TON	TON	MGAL
C 39-23-041	STH 23	508+50	-	510+75	61	740	16
C 39-23-051	STH 23	623+50	-	626+00	68	820	18
C 39-23-052	STH 23	646+50	-	648+50	55	655	14
C 39-23-057	STH 23	772+38	-	774+00	44	530	11
C 49-66-240, 241, 242, 243, & 244	STH 66	686+39	-	688+00	50	620	13
C 68-22-089	STH 22	239+00	-	241+50	47	485	11
C 68-110-041	STH 110	43+50	-	45+00	35	255	6
UNDISTRIBUTED					50	100	3
				TOTALS	**410**	**4,205**	**92**

HMA PAVEMENT

					455.0605 TACK COAT	**460.5224** HMA PAVEMENT 4 LT 58-28 S	**465.0125** ASPHALTIC SURFACE TEMPORARY	
LOCATION	HWY	STATION	TO	STATION	GAL	TON	TON	COMMENT
C 39-23-041	STH 23	508+50	-	510+75	105	255	-	2.25" LOWER, 2" LOWER, 1.75" UPPER LIFTS
C 39-23-051	STH 23	623+50	-	626+00	115	285	-	2.25" LOWER, 2" LOWER, 1.75" UPPER LIFTS
C 39-23-052	STH 23	646+50	-	648+50	94	226	-	2.25" LOWER, 2" LOWER, 1.75" UPPER LIFTS
C 39-23-057	STH 23	772+38	-	774+00	76	185	-	2.25" LOWER, 2" LOWER, 1.75" UPPER LIFTS
C 49-66-240, 241, 242, 243, & 244	STH 66	686+39	-	688+00	96	235	-	2.25" LOWER, 2" LOWER, 1.75" UPPER LIFTS
C 68-22-089	STH 22	239+00	-	241+50	60	190	-	2.25" LOWER, 1.75" UPPER LIFTS
C 68-110-041	STH 110	43+50	-	45+00	25	85	-	2.25" LOWER, 1.75" UPPER LIFTS
UNDISTRIBUTED					-	-	60	TEMPORARY LANE SHIFTS
				TOTALS	**571**	**1,461**	**60**	

ASPHALTIC CENTERLINE RUMBLE STRIPS

				465.0475 2-LANE RURAL
STATION	TO	STATION	LOCATION	LF
686+39	-	688+00	STH 66	161

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CULVERT PIPE ITEMS

LOCATION	HWY	CULVERT PIPE THICKNESS	203.0100 REMOVING SMALL PIPE CULVERTS	204.0180 REMOVING DELINEATORS AND MARKERS	522.0330 CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH	522.0336 CULVERT PIPE REINFORCED CONCRETE CLASS IV 36-INCH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	523.0419 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 19x30-INCH	523.0519 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 19x30-INCH	633.5200 MARKERS CULVERT END
		IN	EACH	EACH	LF	LF	EACH	EACH	LF	EACH	EACH
C 39-23-041	STH 23	3.5	1	2	58	-	2	-	-	-	2
C 39-23-051	STH 23	4.0	1	2	-	56	-	2	-	-	2
C 39-23-052	STH 23	3.25	1	2	-	-	-	-	56	2	2
C 39-23-057	STH 23	3.25	1	2	-	-	-	-	56	2	2
C 49-66-240	STH 66	3.25	1	-	-	-	-	-	56	2	-
C 49-66-241	STH 66	3.25	1	-	-	-	-	-	56	2	-
C 49-66-242	STH 66	3.25	1	2	-	-	-	-	56	2	2
C 49-66-243	STH 66	3.25	1	-	-	-	-	-	56	2	-
C 49-66-244	STH 66	3.25	1	-	-	-	-	-	56	2	-
C 68-22-089	STH 22	3.5	1	2	59	-	2	-	-	-	2
C 68-110-041	STH 110	3.25	1	2	-	-	-	-	38	2	2
		TOTALS	**11**	**14**	**117**	**56**	**4**	**2**	**430**	**16**	**14**

EROSION CONTROL AND LANDSCAPING ITEMS

LOCATION	HWY	606.0200 RIPRAP MEDIUM	625.0100 TOPSOIL	627.0200 MULCHING	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.1905 MOBILIZATIONS	628.1910 MOBILIZATIONS EMERGENCY	628.2008 EROSION MAT URBAN CLASS TYPE B	628.7504 TEMPORARY DITCH CHECKS	628.7555 CULVERT PIPE CHECKS	628.7570 ROCK BAGS	629.0210 FERTILIZER TYPE B	630.0130 SEEDING MIXTURE NO. 30	645.0120 GEOTEXTILE FABRIC TYPE HR	SPV.0090.01 HEAVY DUTY SILT FENCE
		CY	SY	SY	LF	LF	EACH	EACH	SY	LF	EACH	EACH	CWT	LB	SY	LF
C 39-23-041	STH 23	4	420	420	-	50	2	1	20	-	5	-	0.3	8	24	470
C 39-23-051	STH 23	4	690	690	520	50	2	1	25	-	6	-	0.4	13	24	-
C 39-23-052	STH 23	4	590	590	425	45	2	1	20	-	6	-	0.4	11	24	-
C 39-23-057	STH 23	4	420	420	-	40	2	1	25	-	7	-	0.3	8	24	350
C 49-66-240, 241, 242, 243, & 244	STH 66	14	420	420	-	40	2	1	30	-	15	-	0.3	8	50	345
C 68-22-089	STH 22	4	450	450	570	60	2	1	20	-	5	-	0.3	8	24	-
C 68-110-041	STH 110	4	350	350	325	40	2	1	20	-	5	-	0.2	6	24	-
UNDISTRIBUTED		-	150	150	-	-	-	-	-	50	-	50	0.1	3	-	-
	TOTALS	**38**	**3,490**	**3,490**	**1,840**	**325**	**14**	**7**	**160**	**50**	**49**	**50**	**2.3**	**65**	**194**	**1,165**

PERMANENT SIGNING SCHEDULE

LOCATION	HWY	STATION	OFFSET	SIGN NO.	CODE NO.	DESCRIPTION	SIZE	634.0616 POSTS WOOD 4X6-INCH 16-FT	637.2210 SIGNS TYPE II REFLECTIVE H	637.2230 SIGNS TYPE II REFLECTIVE F	638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS
							IN X IN	EACH	SF	SF	EACH	EACH
C 39-23-051	STH 23	625+90	RT	2-1	W14-3	No Passing Zone	48 x 36	1	-	6.00	1	1
C 49-66-240, 241, 242, 243, & 244	STH 66	686+84	LT	5-1	R2-1	Speed Limit 55	24 x 30	1	5.00	-	1	1
C 49-66-240, 241, 242, 243, & 244	STH 66	686+84	RT	5-2	R2-1	Speed Limit 45	24 x 30	1	5.00	-	1	1
C 68-22-089	STH 22	240+25	LT	6-1	W14-3	No Passing Zone	48 x 36	1	-	6.00	1	1
							TOTALS	**4**	**10.00**	**12.00**	**4**	**4**

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL

		643.0100 PROJECT 01. 1009-43-64	643.0300 DRUMS		643.0900 SIGNS	
LOCATION	HWY	EACH	EACH	DAY	EACH	DAY
C 39-23-041, 051, 052, & 057	STH 23	-	32	992	10	310
C 49-66-240, 241, 242, 243, & 244	STH 66	-	32	416	10	130
C 68-22-089	STH 22	-	32	288	10	90
C 68-110-041	STH 110	-	32	288	10	90
PROJECT 1009-43-64		1		-	-	-
	TOTALS	**1**		**1,984**		**620**

ASSUMED 31 CALENDAR DAYS FOR C 39-23-041, 051, 052, & 057
ASSUMED 13 CALENDAR DAYS FOR C 49-66-240, 241, 242, 243, & 244
ASSUMED 9 CALENDAR DAYS FOR C 68-22-089
ASSUMED 9 CALENDAR DAYS FOR C 68-110-041

PAVEMENT MARKING

					646.0106 EPOXY 4-INCH (WHITE EDGE LINES)	646.0406 SAME DAY EPOXY 4-INCH (YELLOW CENTER LINE)
LOCATION	HWY	STATION	TO	STATION	LF	LF
C 39-23-041	STH 23	508+50	-	510+75	450	57
C 39-23-051	STH 23	623+50	-	626+00	500	313
C 39-23-052	STH 23	646+50	-	648+50	400	50
C 39-23-057	STH 23	772+38	-	774+00	324	41
C 49-66-240, 241, 242, 243, & 244	STH 66	686+39	-	688+00	322	322
C 68-22-089	STH 22	239+00	-	241+50	500	188
C 68-110-041	STH 110	43+50	-	45+00	300	38
				TOTALS	**2,796**	**1,009**

CONSTRUCTION STAKING

					650.6000 PIPE CULVERTS	650.9910 SUPPLEMENTAL CONTROL 01. 1009-43-64	650.9920 SLOPE STAKES
LOCATION	HWY	STATION	TO	STATION	EACH	LS	LF
C 39-23-041	STH 23	508+50	-	510+75	1	-	450
C 39-23-051	STH 23	623+50	-	626+00	1	-	500
C 39-23-052	STH 23	646+50	-	648+50	1	-	400
C 39-23-057	STH 23	772+38	-	774+00	1	-	324
C 49-66-240, 241, 242, 243, & 244	STH 66	686+39	-	688+00	5	-	322
C 68-22-089	STH 22	239+00	-	241+50	1	-	500
C 68-110-041	STH 110	43+50	-	45+00	1	-	300
PROJECT 1009-43-64					-	1	-
				TOTALS	**11**	**1**	**2,796**

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

SAWING

			690.0150 ASPHALT
LOCATION	HWY	STATION	LF
C 39-23-041	STH 23	508+50	30
		510+75	30
C 39-23-051	STH 23	623+50	30
		656+00	30
C 39-23-052	STH 23	646+50	30
		648+50	30
C 39-23-057	STH 23	772+38	30
		774+00	30
C 49-66-240, 241, 242, 243, & 244	STH 66	686+39	36
		688+00	41
C 68-22-089	STH 22	239+00	30
		241+50	30
C 68-110-041	STH 110	43+50	22
		45+00	22
			421

LANE SHIFT ITEM

			SPV.0060.01 - .04 LANE SHIFT	ESTIMATE OF QUANTITIES** BORROW**	BASE AGGREGATE DENSE 1 1/4 INCH**	ASPHALTIC SURFACE TEMPORARY**
LOCATION	HWY	EACH		CY	TON	TON
C 39-23-041	STH 23	2		650	180	60
C 39-23-051	STH 23	2		640	180	60
C 39-23-057	STH 23	2		640	180	60
C 68-22-089	STH 22	2		600	180	60
	TOTALS	**8**		**2,530**	**720**	**240**
				**	**	**

**NOTE: QUANTITIES SHOWN FOR INFORMATIONAL PURPOSES ONLY, NOT A BID ITEM.

DITCH CLEANING

			SPV.0090.02 DITCH CLEANING
LOCATION	HWY	LF	COMMENT
C 39-23-052	STH 23	100	LT, RT
C 68-110-041	STH 110	50	RT
C 68-22-089	STH 22	50	RT
	TOTALS	**200**	

PI STA = 506+08.11
Y = 253721.441
X = 438897.941
DELTA = 11°52'37"
D = 2°03'08"
T = 290.40'
L = 578.71'
R = 2791.78'
PC STA = 503+17.72
PT STA = 508+96.43

LEGEND

PERMITTED WETLAND IMPACTS

SITE 6
WETLAND IMPACTS
0.001 ACRES
65 SF TYPE M

INV EL = 786.56
+55.36
29.00' LT

STA 509+55.36 C39-023-041
REMOVING SMALL PIPE CULVERTS (EXISTING CPCM 30-INCH)
1 CPRC CL IV 30-INCH REQ'D
2 AEW REQ'D

DELINEATED WETLAND

SLOPE INTERCEPT (TYP)

PROPOSED BASE AGGREGATE SHOULDER

PROPOSED HMA SHOULDER

N

RW

PT: 508+96.43

3'

3'

12'

12'

3'

3'

50'

50'

507+00 508+00 509+00 510+00 511+00 512+00 513+00

STH 23

RW

5

BEGIN CONSTRUCTION
STA 508+50
SAWCUT REQ'D

ADAMS-COLUMBIA ELECTRIC COOPERATIVE

DELINEATED WETLAND

INV EL = 786.00
+55.36
29.00' RT

SITE 5
WETLAND IMPACTS
0.001 ACRES
42 SF TYPE M(D)

END CONSTRUCTION
STA 510+75
SAWCUT REQ'D

5

800 798 796 794 792 790 788 786 785

MATCH EXISTING PROFILE AT ℄ STH 23

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

507+00	507+50	508+00	508+50	509+00	509+50	510+00	510+50	511+00	511+50	512+00	512+50	513+00
792.55	792.62	792.62	792.60	792.59	792.56	792.62	792.62	792.67	792.66	792.64	792.54	792.47	792.52	792.57	792.43	792.32	792.29	792.25	792.16	792.08	792.06	792.05	792.18
						792.62	792.67	792.66	792.64	792.54	792.47	792.52	792.57	792.43	792.32								

PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	PLAN AND PROFILE: CULVERT 39-23-041	SHEET 21	E

LEGEND

PERMITTED WETLAND IMPACTS

(X-X) REMOVE AND REPLACE SIGN

STA 624+82.84 C39-023-051
REMOVING SMALL PIPE CULVERTS (EXISTING CPCM 36-INCH)
1 CPRC CL IV 36-INCH REQ'D
2 AEW REQ'D

INV EL = 794.56
+82.84
28.00' LT

PROPOSED BASE AGGREGATE SHOULDER

PROPOSED HMA SHOULDER

SLOPE INTERCEPT (TYP)

RW

622+00 623+00 624+00 625+00 626+00 627+00 628+00

STH 23

3' 3' 12' 12' 3' 3'

50' 50'

RW

ADAMS-COLUMBIA
ELECTRIC COOPERATIVE

WETLAND IMPACTS
0.001 ACRES
18 SF

INV EL = 793.37
+82.84
28.00' RT

DELINEATED WETLAND

NO PASSING ZONE
W14-3
48"X36"
(2-1)

MARQUETTE ADAMS TELEPHONE COOP INC.
COMMUNICATION

BEGIN CONSTRUCTION
STA 623+50
SAWCUT REQ'D

END CONSTRUCTION
STA 626+00
SAWCUT REQ'D

MATCH EXISTING PROFILE
AT ℄ STH 23

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

806 804 802 800 798 796 794 792 790

622+00 622+50 623+00 623+50 624+00 624+50 625+00 625+50 626+00 626+50 627+00 627+50 628+00

800.40 800.34 800.27 800.18 800.13 800.14 800.11 800.11 800.08 800.08 800.10 800.10 800.18 800.18 800.10 800.10 799.98 799.98 799.96 799.96 799.97 799.97 799.99 799.99 800.00 800.00 800.01 800.01 799.99 799.98 800.06 800.14 800.14 800.13 800.13 800.13

PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	PLAN AND PROFILE: CULVERT 39-23-051	SHEET 22	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\050101-PP-MARQUETTE.DWG
LAYOUT NAME - ****

PLOT DATE : 7/26/2016 4:10 PM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

LEGEND

PERMITTED WETLAND IMPACTS

INV EL = 793.67
+49.59
28.00' LT

STA 647+49.59 C39-023-052
REMOVING SMALL PIPE CULVERTS (EXISTING CPCM 24-INCH)
1 CPRC CL HE-IV 19X30-INCH REQ'D
2 AEW REQ'D

SITE 8
WETLAND IMPACTS
0.003 ACRES
119 SF TYPE SS

DELINEATED WETLAND

SLOPE INTERCEPT (TYP)

N

RW

DITCH CLEANING

3'

3'

12'

12'

3'

3'

50'

50'

645+00 646+00 647+00 648+00 649+00 650+00

STH 23

DITCH CLEANING

RW

ADAMS-COLUMBIA
ELECTRIC COOPERATIVE

SITE 9
WETLAND IMPACTS
0.002 ACRES
68 SF TYPE M

INV EL = 793.40
+49.59
28.00' RT

PROPOSED HMA SHOULDER

PROPOSED BASE AGGREGATE SHOULDER

BEGIN CONSTRUCTION
STA 646+50
SAWCUT REQ'D

END CONSTRUCTION
STA 648+50
SAWCUT REQ'D

5

5

806
804
802
800
798
796
794
792
790

MATCH EXISTING PROFILE
AT ℄ STH 23

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

644+50 645+00 645+50 646+00 646+50 647+00 647+50 648+00 648+50 649+00 649+50 650+00 650+50

797.08 797.04 797.04 797.03 797.03 797.01 796.97 797.04 797.13 797.13 797.21 797.21 797.29 797.29 797.29 797.29 797.28 797.28 797.28 797.28 797.29 797.29 797.30 797.30 797.32 797.32 797.33 797.32 797.30 797.29 797.36 797.42 797.41 797.39

PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	PLAN AND PROFILE: CULVERT 39-23-052	SHEET 23	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\050101-PP-MARQUETTE.DWG
LAYOUT NAME - ****
PLOT DATE : 7/28/2016 4:17 PM
PLOT BY : CHAD D. GRUNDEMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

LEGEND

PERMITTED WETLAND IMPACTS

N

INV EL = 783.16
+95.59
28.00' LT

SITE 10
WETLAND IMPACTS
0.002 ACRES
88 SF TYPE M(D)

STA 772+95.59 C39-023-057
REMOVING SMALL PIPE CULVERTS (EXISTING CPCME 19X30-INCH)
1 CPRC CL HE-IV 19X30-INCH REQ'D
2 AEW REQ'D

DELINEATED WETLAND

SLOPE INTERCEPT (TYP)

EXISTING CMCP 18-INCH

FRONTIER
COMMUNICATIONS

RW

PI: 772+30.16

786.65

3'
3'
12'
12'
3'
3'
50'
50'

770+00 771+00 772+00 773+00 774+00 775+00 776+00

STH 23

785.29

ALLIANT ENERGY

785.32

RW

FRONTIER COMMUNICATIONS

PROPOSED HMA SHOULDER

PROPOSED BASE AGGREGATE SHOULDER

SITE 11
WETLAND IMPACTS
0.002 ACRES
85 SF TYPE M(D)

INV EL = 783.37
+95.59
28.00' RT

BEGIN CONSTRUCTION
STA 772+38.11
SAWCUT REQ'D

END CONSTRUCTION
STA 774+00
SAWCUT REQ'D

EXISTING CMCP 12-INCH

5

5

796 794 792 790 788 786 784 782 780

MATCH EXISTING PROFILE AT ℄ STH 23

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

770+00 770+50 771+00 771+50 772+00 772+50 773+00 773+50 774+00 774+50 775+00 775+50 776+00

789.33 789.10 788.92 788.77 788.68 788.66 788.63 788.61 788.60 788.59 788.58 **788.58** 788.57 **788.57** 788.58 **788.58** 788.61 **788.61** 788.57 **788.57** 788.51 **788.51** 788.48 **788.48** 788.48 788.45 788.40 788.30 788.20 788.23 788.26 788.29

PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	PLAN AND PROFILE: CULVERT 39-23-057	SHEET 24	E

PI STA = 685+43.31
Y = 197051.585
X = 155443.969
DELTA = 9°17'34"
D = 1°00'00"
T = 465.66'
L = 929.28'
R = 5729.58'
PC STA = 680+77.64
Y = 196635.255
X = 155235.380
PT STA = 690+06.92
Y = 197428.769
X = 155717.049
BK = N26°36'42.0"E
AH = N35°54'16.1"E

EXISTING CPCP 18-INCH
IE 1075.86
IE 1074.76
WREN LANE
RW

SPEED LIMIT 55
R2-1 24"X30"
5-1

C49-66-240, 241, 242, 243, 244
REMOVING SMALL PIPE CULVERTS (5 EXISTING CPCM 24-INCH)
5 CPRC CL HE-IV 19X30-INCH REQ'D
10 AEW REQ'D

DELINEATED WETLAND BOUNDARY (TYP)

SITE 13
WETLAND IMPACTS
0.019 ACRES
825 SF TYPE SM

INV EL = 1075.84
+91.78
28.00' LT

INV EL = 1075.84
+86.55
28.01' LT

INV EL = 1075.84
+91.00
28.00' LT

INV EL = 1075.84
+02.22
28.00' LT

INV EL = 1075.84
+07.45
28.01' LT

VARIES

SITE 13
WETLAND IMPACTS
0.002 ACRES
88 SF TYPE SM

LEGEND
PERMITTED WETLAND IMPACTS
X-X REMOVE AND REPLACE SIGN

N

EXISTING CPCM 18-INCH
IE 1076.10
IE 1076.26

RW

PT: 690+06.92

3'
12'
12'
3'
45'
45'

684+00
685+00
686+00
687+00
688+00
689+00
690+00

STH 66

RW

BEGIN CONSTRUCTION
STA 686+39.52
SAWCUT REQ'D

SPEED LIMIT 45
R2-1 24"X30"
5-2

INV EL = 1075.84
+86.45
27.99' RT

INV EL = 1075.84
+91.72
28.00' RT

SITE 14
WETLAND IMPACTS
0.015 ACRES
652 SF TYPE SM

INV EL = 1075.84
+02.28
28.00' RT

INV EL = 1075.84
+97.00
28.00' RT

INV EL = 1075.84
+07.55
27.99' RT

VARIES

SLOPE INTERCEPT (TYP)

EDGE OF PROPOSED BASE AGGREGATE SHOULDER (TYP)

EDGE OF PROPOSED ASPHALT (TYP)

AT&T WISCONSIN
COMMUNICATION

CHARTER
COMMUNICATIONS

RW

END CONSTRUCTION
STA 688+00
SAWCUT REQ'D

MATCH EXISTING PROFILE
AT ℄ STH 66

EXISTING PROFILE AT ℄
PROPOSED PROFILE AT ℄

1086
1084
1082
1080
1078
1076
1074
1072
1070

684+00 1080.01
684+50 1080.04
685+00 1080.06
685+50 1080.04
686+00 1080.02
686+50 1079.98
687+00 1079.89 1079.89
687+50 1079.87 1079.87
688+00 1079.84 1079.84
688+50 1079.88 1079.88
689+00 1079.92 1079.92
689+50 1079.92 1079.92
690+00 1079.92 1079.92
1080.00
1080.08
1080.08
1080.07
1080.05
1080.02
1080.00

PROJECT NO: 1009-43-64	HWY: STH 66	COUNTY: PORTAGE	PLAN AND PROFILE: CULVERT 49-66-240, 241, 242, 243, 244	SHEET 25	E

LEGEND

PERMITTED WETLAND IMPACTS

(X-X) REMOVE AND REPLACE SIGN

NO PASSING ZONE
W14-3
48"X36"
(6-1)

STA 240+25.23 C68-022-089
REMOVING SMALL PIPE CULVERTS (EXISTING CPCM 30-INCH)
1 CPRC CL IV 30-INCH REQ'D
2 AEW REQ'D

INV EL = 877.50
+16.30
30.00' LT

PROPOSED HMA SHOULDER

PROPOSED BASE AGGREGATE SHOULDER

EXISTING CMCP 12-INCH

IE 879.47

IE 880.05

IE 880.53

EXISTING CMCP 15-INCH

IE 881.27

WE ENERGIES ELECTRIC

BLDG BLDG

N

RW

50'

3'

12'

12'

3'

3'

33'

50'

238+00 239+00 240+00 241+00 242+00 243+00 244+00

STH 22

DITCH CLEANING

DELINEATED WETLAND

SITE 19
WETLAND IMPACTS
0.001 ACRES
49 SF TYPE M(D)

INV EL = 877.00
+21.96
28.85' RT

SLOPE INTERCEPT (TYP)

FRONTIER COMMUNICATIONS

BEGIN CONSTRUCTION
STA 239+00
SAWCUT REQ'D

END CONSTRUCTION
STA 241+50
SAWCUT REQ'D

MATCH EXISTING PROFILE
AT ℄ STH 22

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

890 888 886 884 882 880 878 876 875

238+00	238+50	239+00	239+50	240+00	240+50	241+00	241+50	242+00	242+50	243+00	243+50	244+00
883.73	883.44	883.25	883.06	882.87 / 882.87	882.69 / 882.69	882.55 / 882.55	882.42 / 882.42	882.30 / 882.30	882.19 / 882.19	882.37 / 882.29	882.40 / 882.40	882.61 / 882.61	882.81 / 882.81	882.96 / 882.96	883.14	883.59	884.04	884.60	885.16	885.76	886.37	887.07

PROJECT NO: 1009-43-64	HWY: STH 22	COUNTY: WAUPACA	PLAN AND PROFILE: CULVERT 68-22-089	SHEET 26	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\050107-PP-WAUPACA.DWG
LAYOUT NAME - ****

PLOT DATE : 7/28/2016 5:01 PM PLOT BY : CHAD D. GRUNDEMANN PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

LEGEND

PERMITTED WETLAND IMPACTS

N

INV EL = 906.63
+22.86
21.28' LT

STA 44+22.85 C68-110-041
REMOVING SMALL PIPE CULVERTS (EXISTING CPCM 12-INCH)
1 CPRC CL HE-IV 19X30-INCH REQ'D
2 AEW REQ'D

SITE 20
WETLAND IMPACTS
0.014 ACRES
608 SF TYPE M(D)

DELINEATED WETLAND

RW
33'
33'
RW

4'
11'
11'
4'

42+00
43+00
44+00
45+00
46+00
47+00

STH 110

DITCH CLEANING

INV EL = 908.50
+22.86
16.72' RT

PROPOSED
EDGE OF
ASPHALT

PROPOSED BASE
AGGREGATE SHOULDER

SLOPE INTERCEPT (TYP)

FRONTIER COMMUNICATIONS

ALLIANT ENERGY ELECTRIC

BEGIN CONSTRUCTION
STA 43+50
SAWCUT REQ'D

END CONSTRUCTION
STA 45+00
SAWCUT REQ'D

MATCH EXISTING PROFILE
AT ℄ STH 110

EXISTING PROFILE AT ℄

PROPOSED PROFILE AT ℄

920
918
916
914
912
910
908
906
905

41+50 42+00 42+50 43+00 43+50 44+00 44+50 45+00 45+50 46+00 46+50 47+00 47+50

911.73 911.83 911.85 911.81 911.73 911.62 911.51 911.37 911.23 911.15 911.07 911.10 911.18 911.17 911.13 911.10 911.08 911.06 911.04 911.03 911.01 910.91 910.76 910.69 910.66

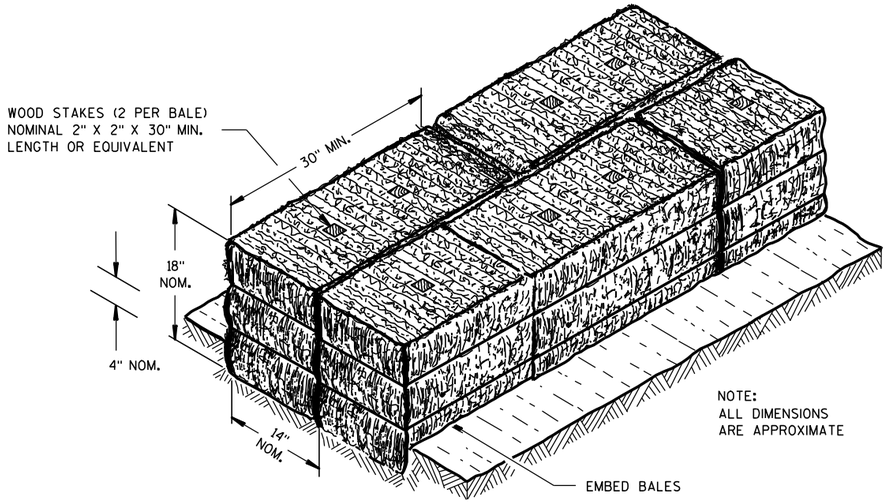
PROJECT NO: 1009-43-64	HWY: STH 110	COUNTY: WAUPACA	PLAN AND PROFILE: CULVERT 68-110-041	SHEET 27	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\050107-PP-WAUPACA.DWG
LAYOUT NAME - ****

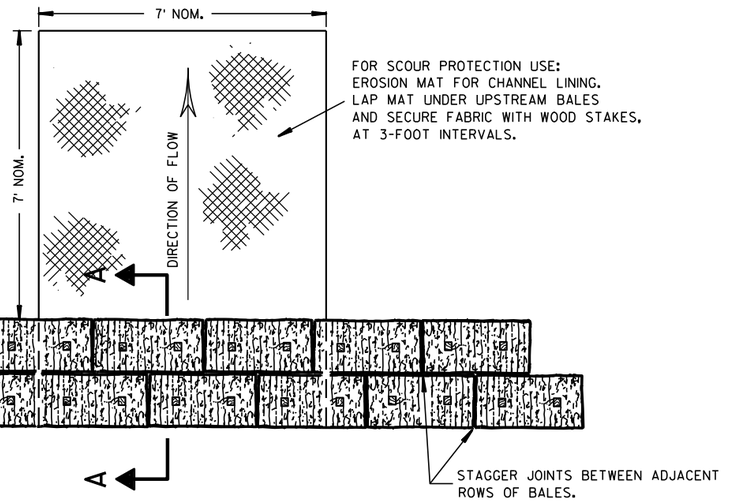
PLOT DATE : 7/28/2016 4:24 PM PLOT BY : CHAD D. GRUNDEMANN PLOT NAME : PLOT SCALE : 1 IN:40 FT

Standard Detail Drawing List

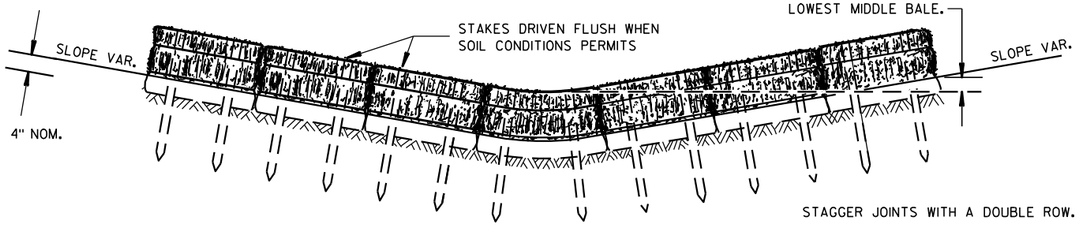
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



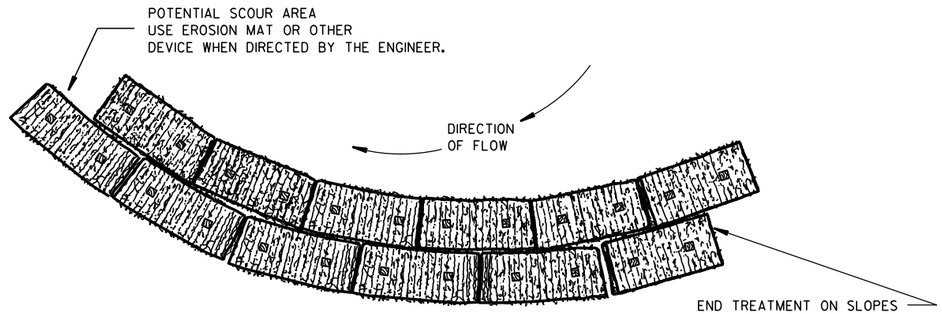
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

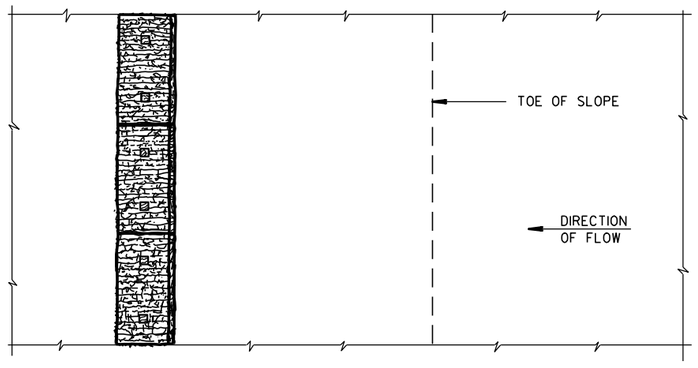
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

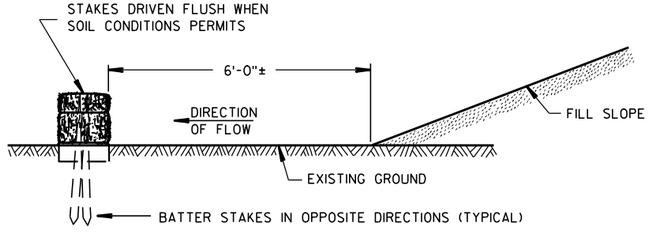


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

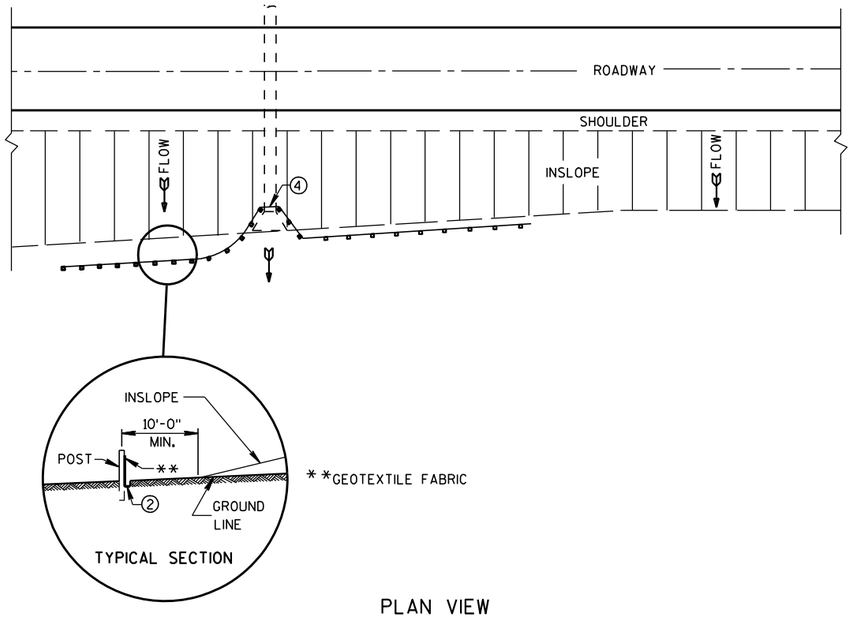
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

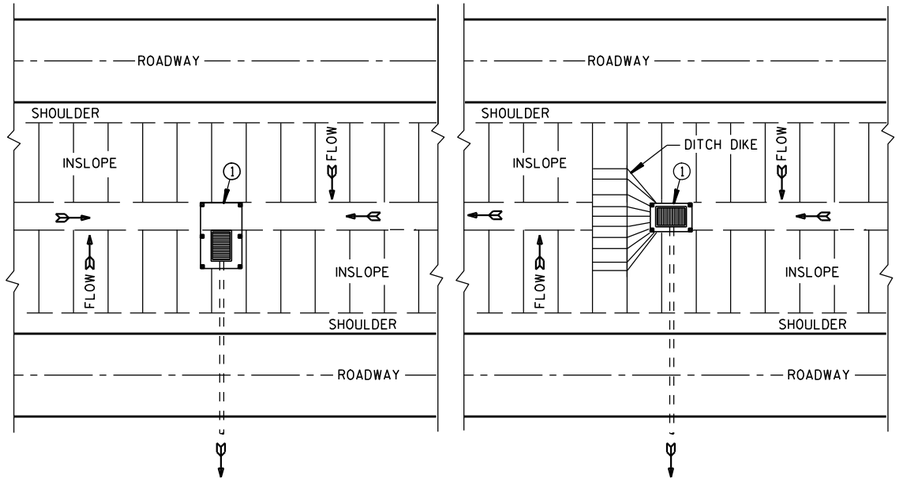
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



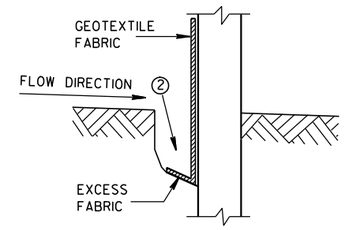
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

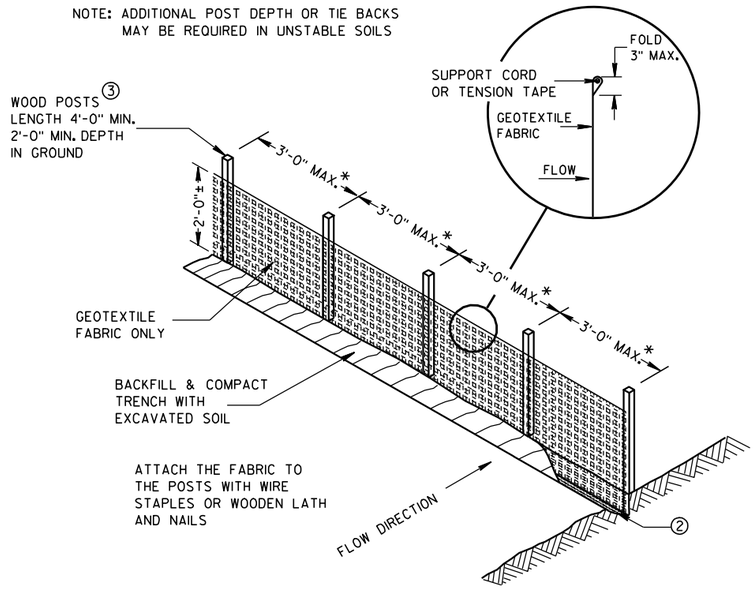
GENERAL NOTES

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

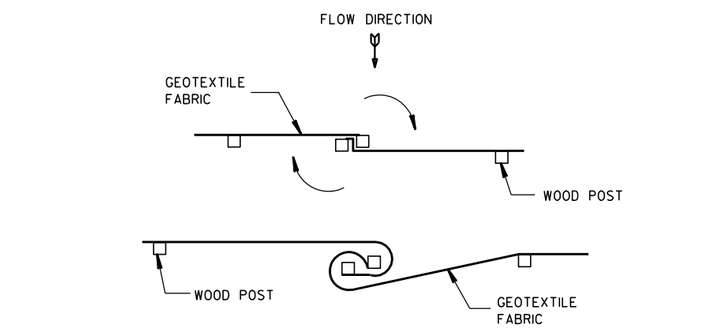
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



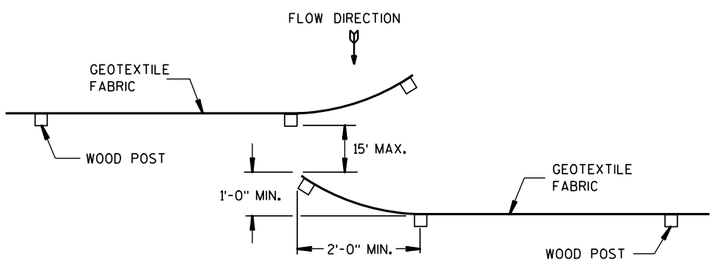
TRENCH DETAIL



SILT FENCE

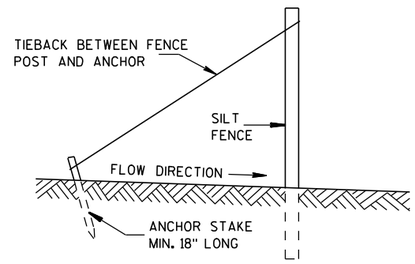


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 9-6

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S.D.D. 8 E 9-6

METAL APRON ENDWALLS

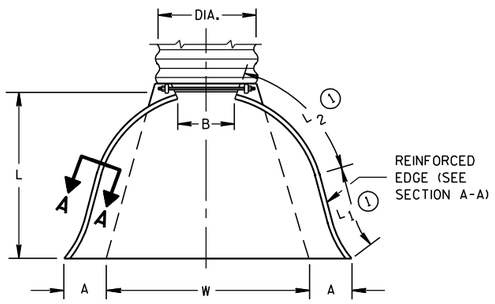
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

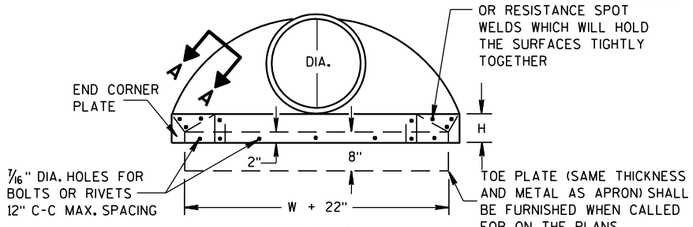
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
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

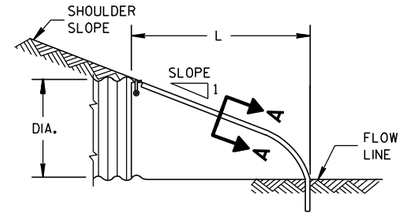
*MINIMUM
**MAXIMUM



PLAN VIEW

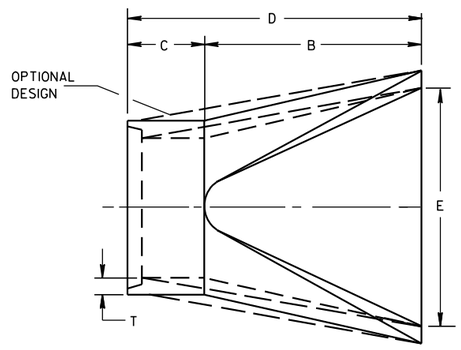


END VIEW

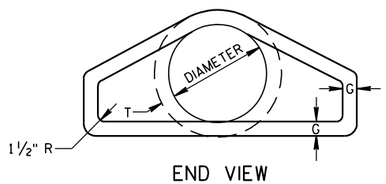


SIDE ELEVATION

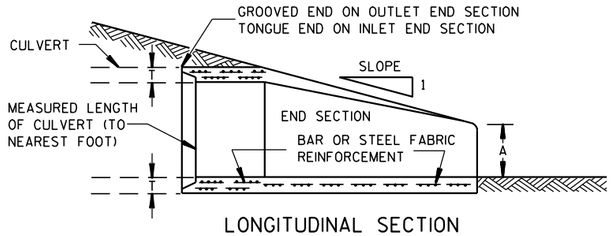
METAL ENDWALLS



PLAN

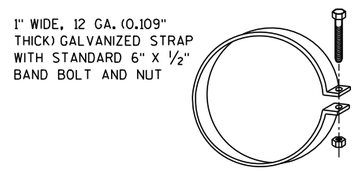


END VIEW



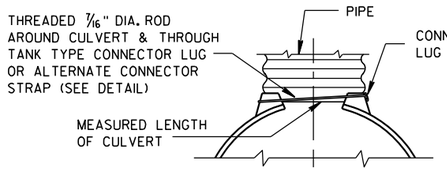
LONGITUDINAL SECTION

CONCRETE ENDWALLS

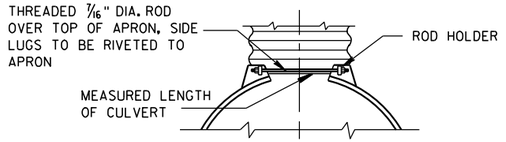


ALTERNATE FOR TYPE 1 CONNECTION

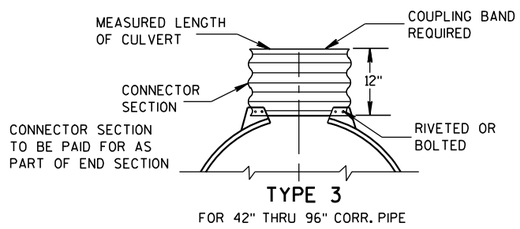
END SECTION CONNECTOR STRAP



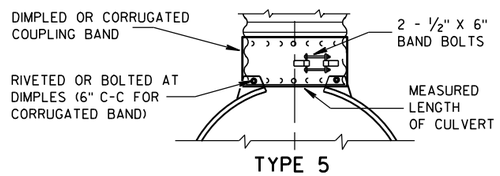
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

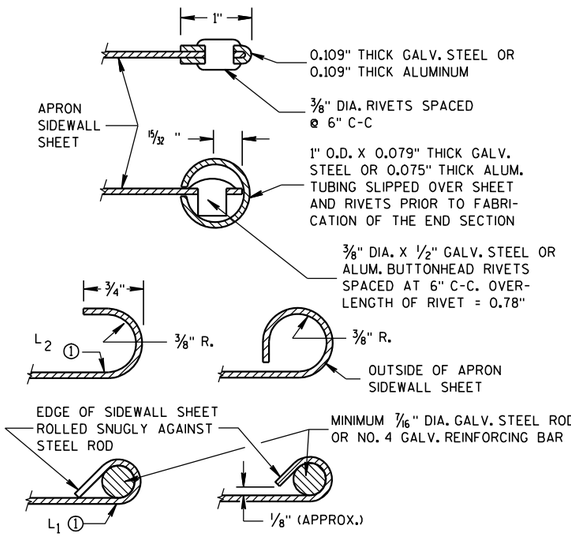
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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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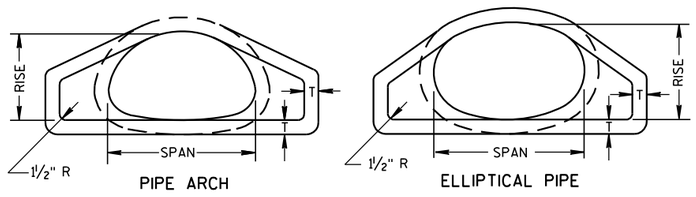
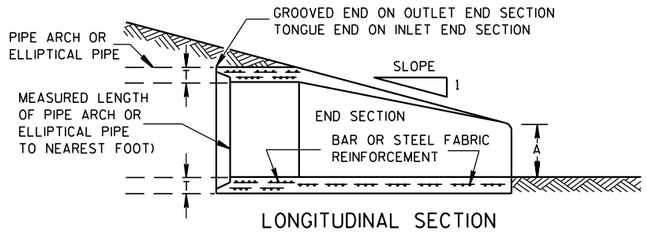
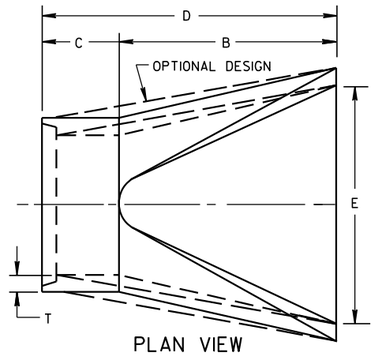


END VIEW

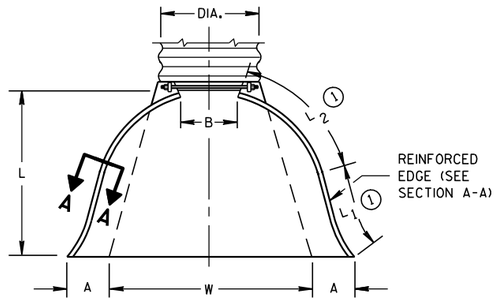


LONGITUDINAL SECTION

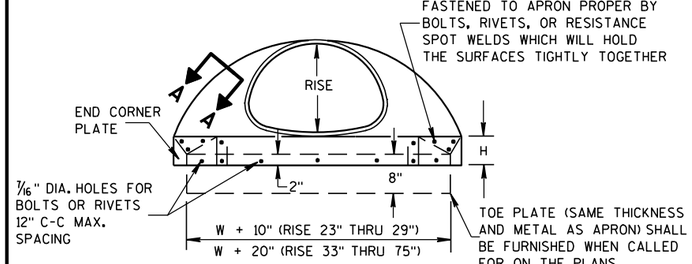


PLAN VIEW

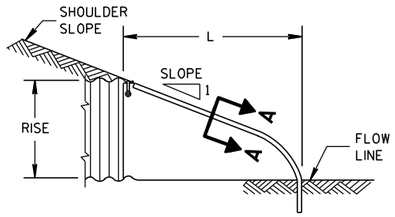
CONCRETE ENDWALLS



PLAN VIEW

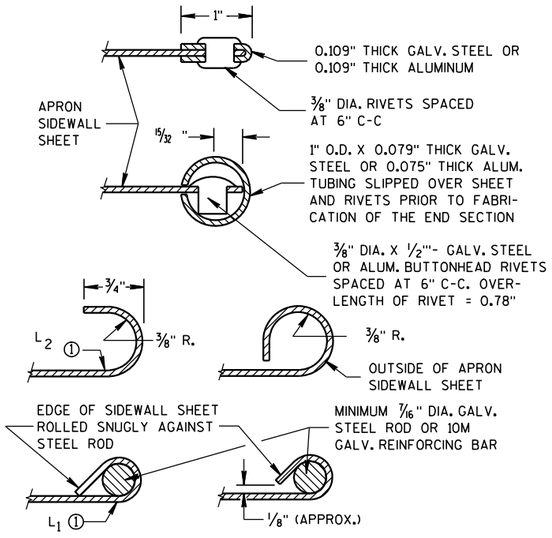


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

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

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS

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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

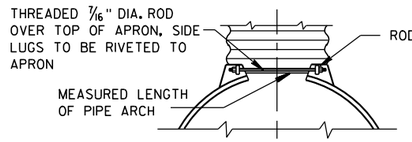
REINFORCED CONCRETE PIPE ARCH

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

REINFORCED CONCRETE ELLIPTICAL PIPE

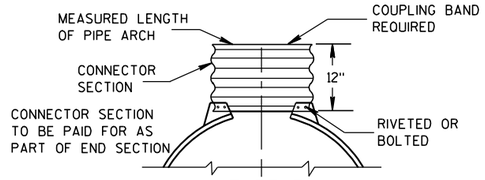
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48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

**NOMINAL SIZE



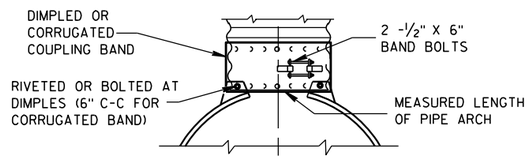
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

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

CONNECTION DETAILS

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

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

FHWA

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S.D.D. 8 F 2-1

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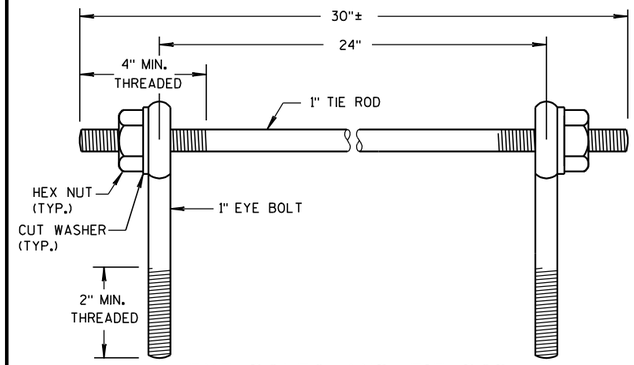
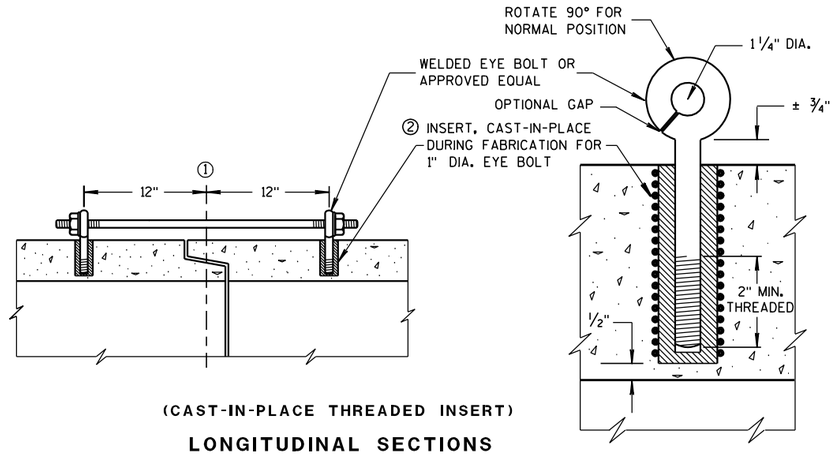
S.D.D. 8 F 2-1



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

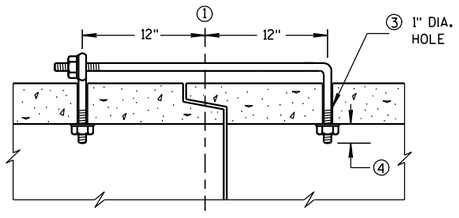
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

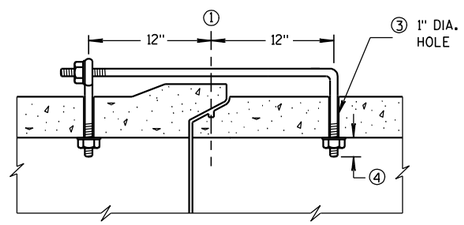
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

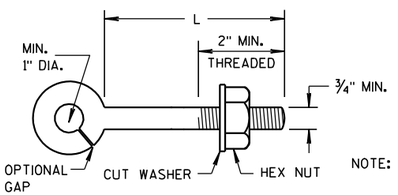


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

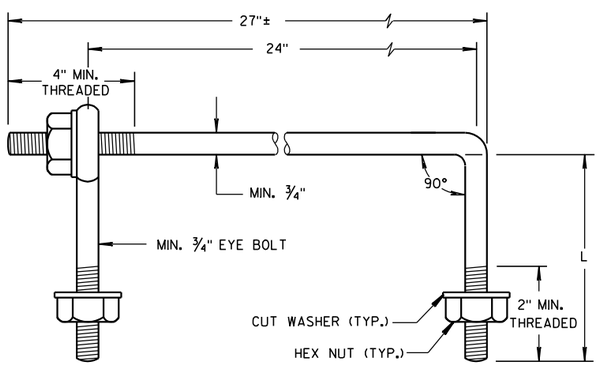
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

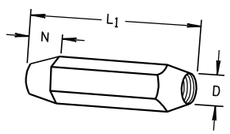
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



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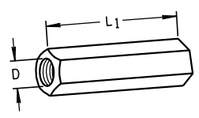
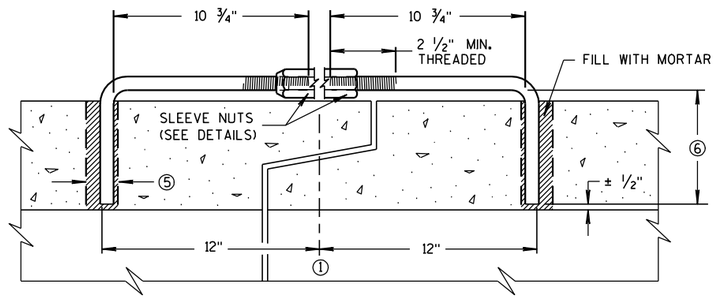


PLAIN

RIGHT AND LEFT THREADS

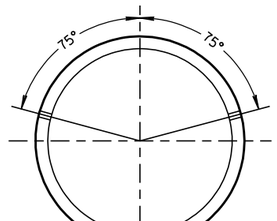
SLEEVE NUTS



LONGITUDINAL SECTION

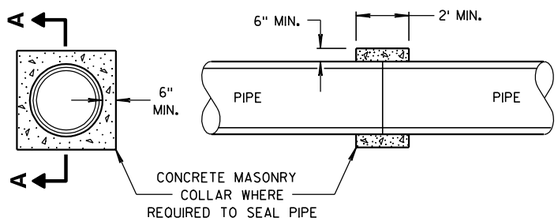
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
33
FHWA

6

S.D.D. 8 F 4-7

GENERAL NOTES

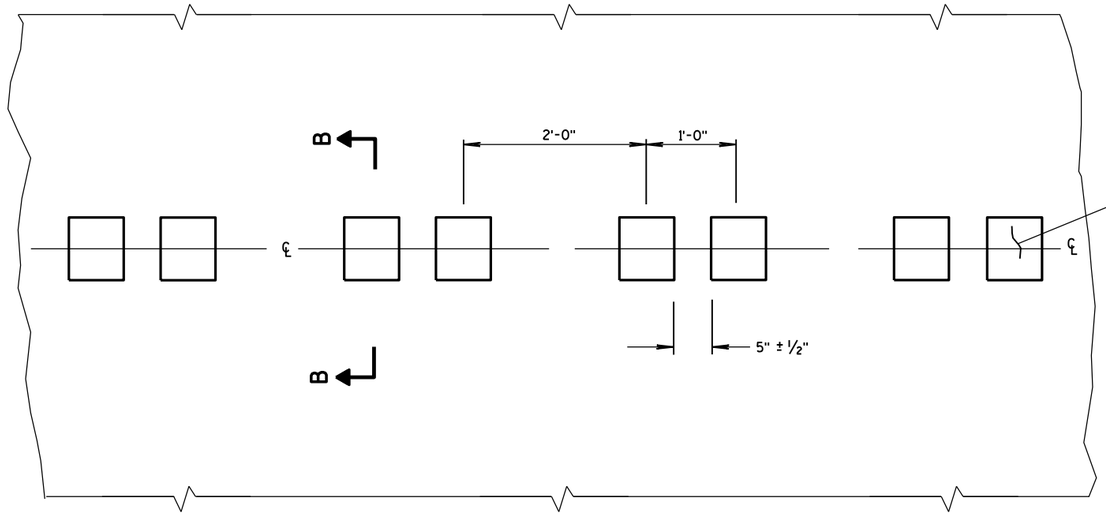
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

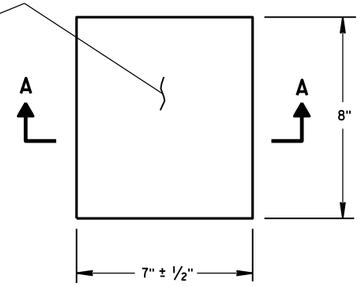
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

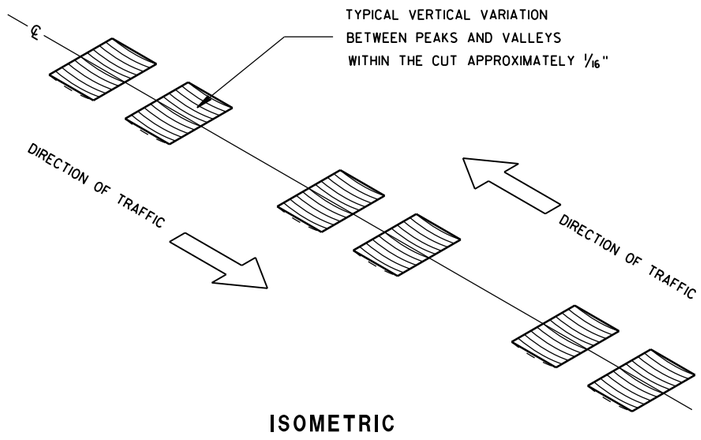


PLAN VIEW
CENTER LINE WITH GROOVES

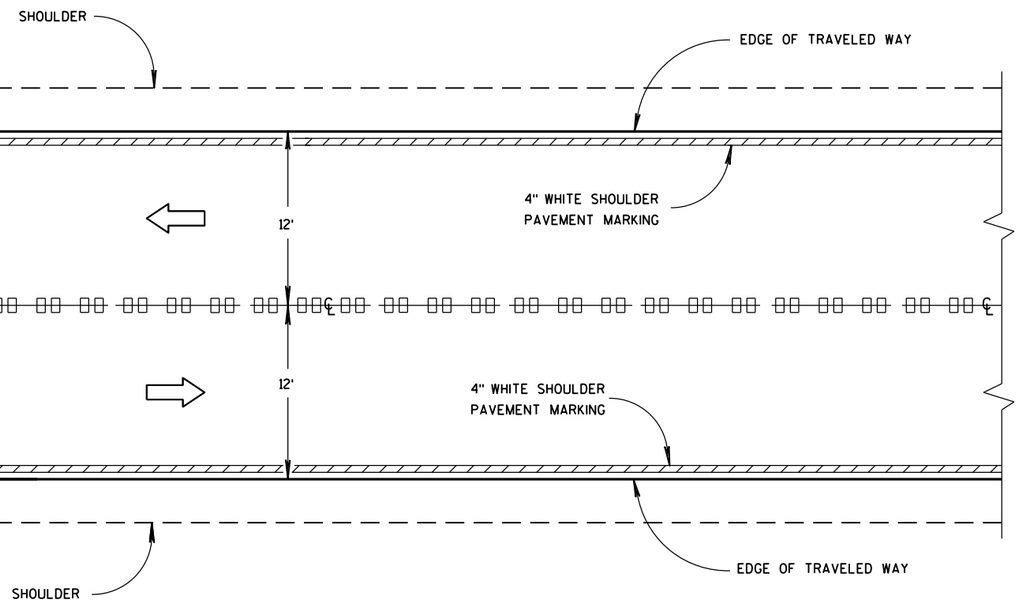


PLAN VIEW
(SINGLE GROOVE)

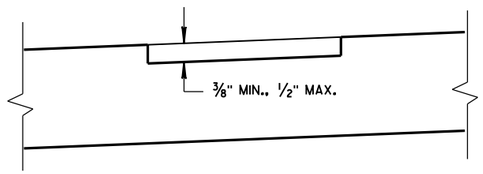
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



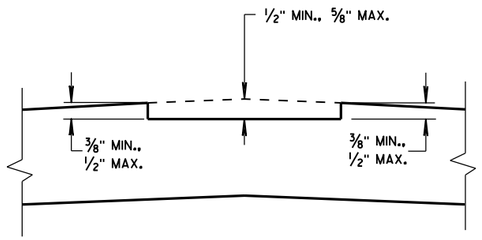
ISOMETRIC



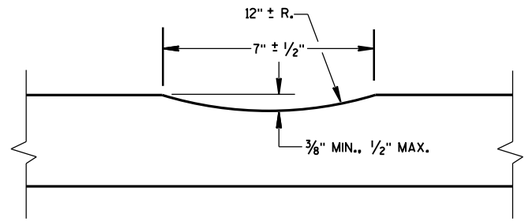
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

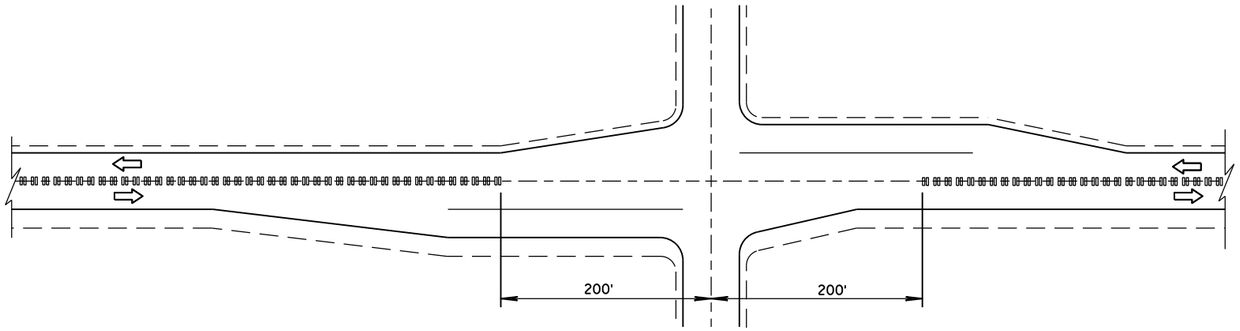
S.D.D. 13 A 11-2a

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

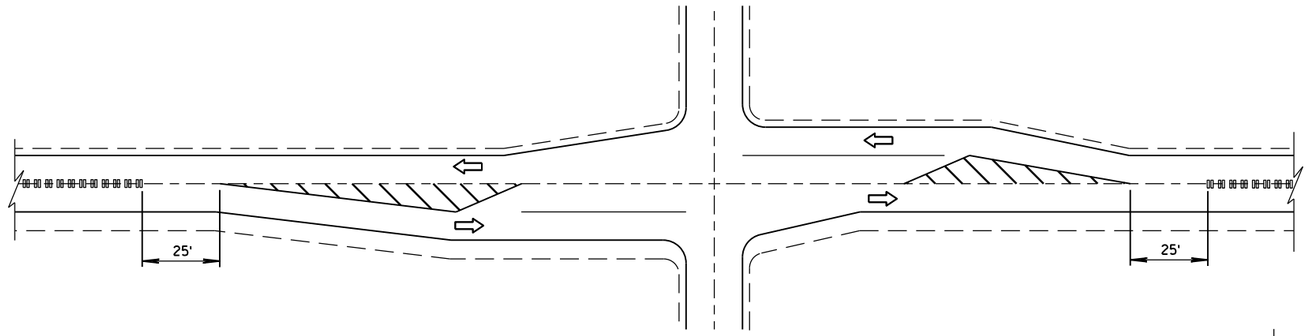
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

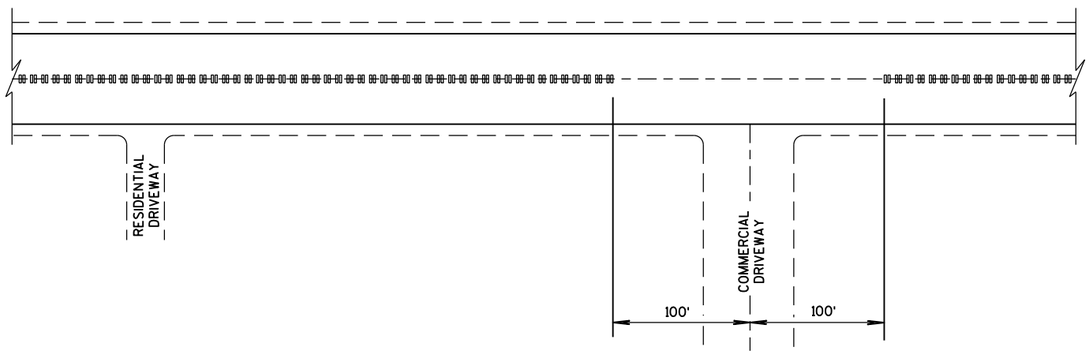
S.D.D. 13 A 11-2a



CENTER LINE GROOVES AT INTERSECTIONS

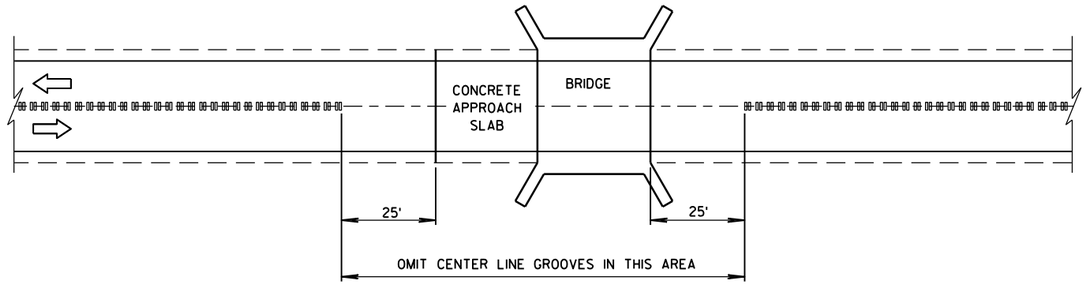


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

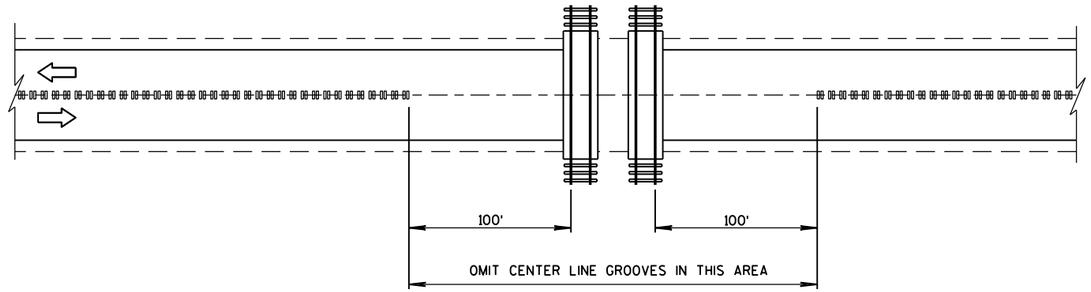


CENTER LINE GROOVES AT DRIVEWAYS (1)

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



CENTER LINE GROOVES AT BRIDGES



CENTER LINE GROOVES AT RAILROADS

6

S.D.D. 13 A 11-2b

6

S.D.D. 13 A 11-2b

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

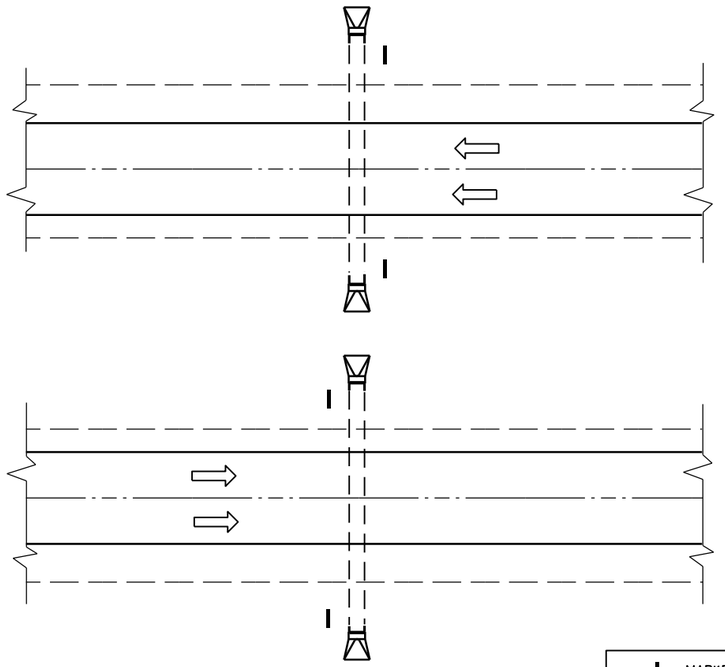
APPROVED

5/15/2013 DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

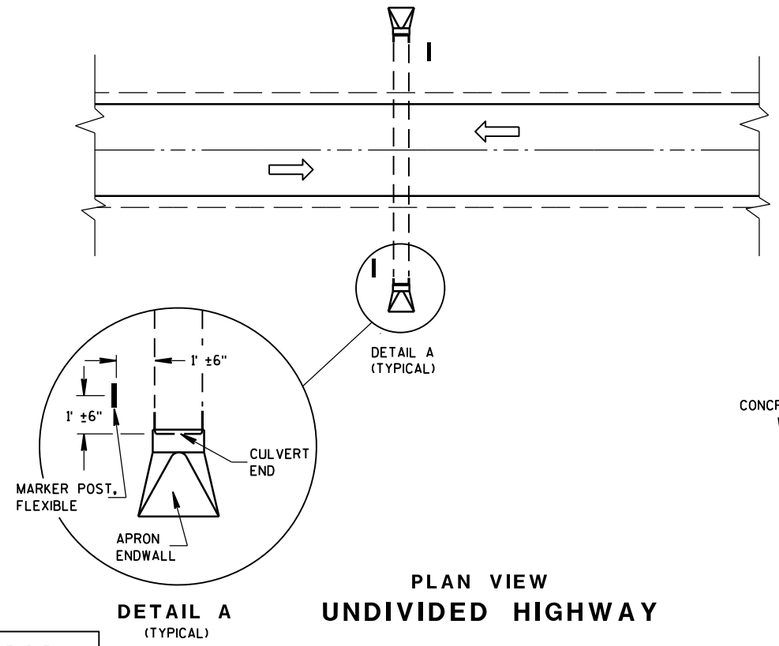
NT

FHWA



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

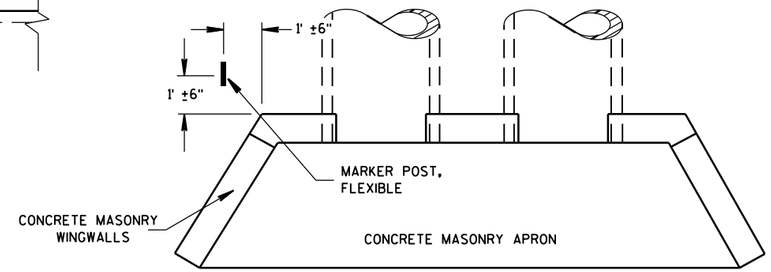
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

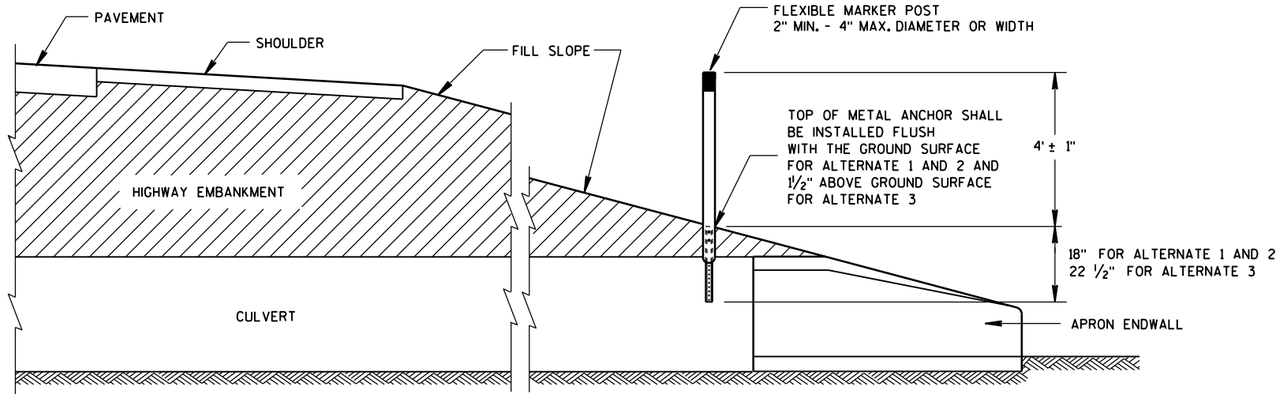
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

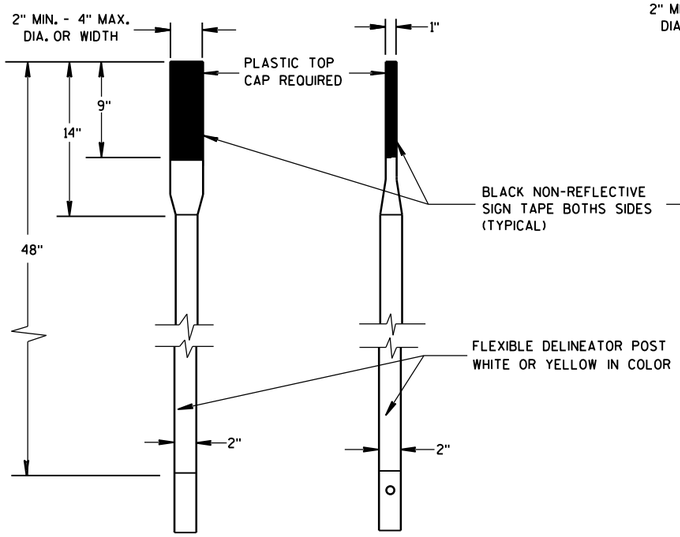
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

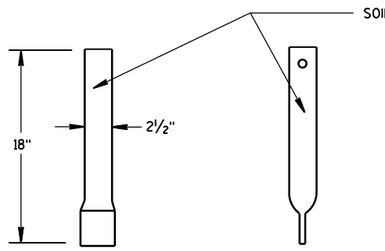
6

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

6

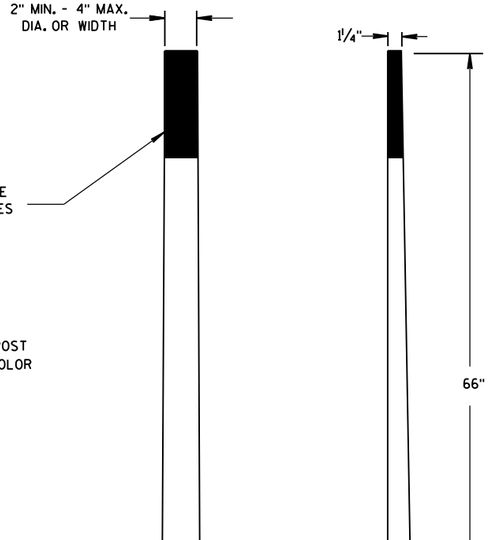
S.D.D. 15 A 3-2a





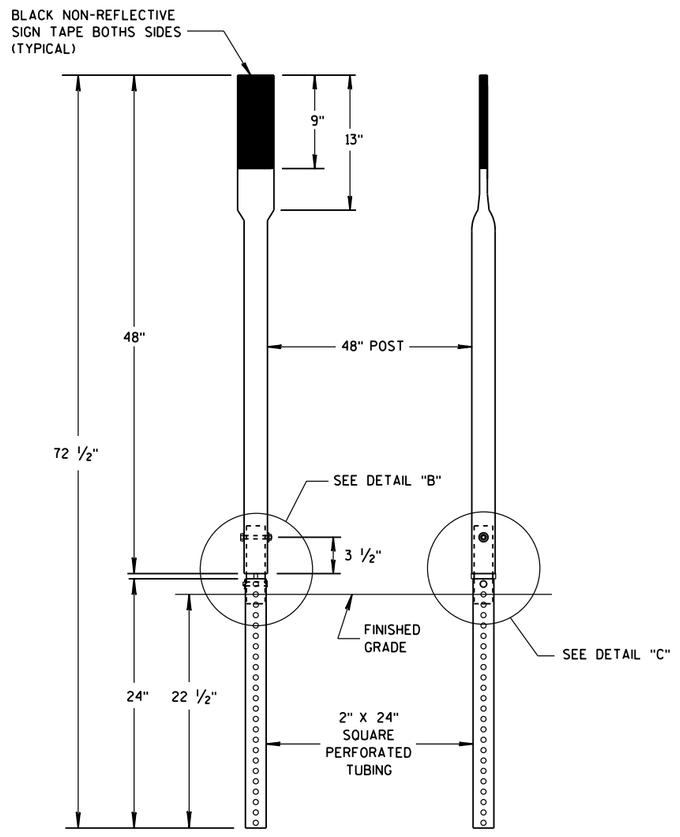
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

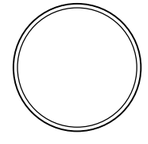
ALTERNATE 2



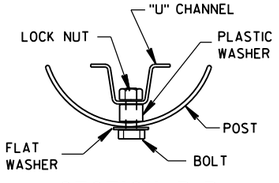
FRONT VIEW SIDE VIEW

ALTERNATE 3

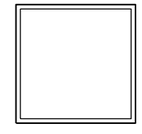
FLEXIBLE MARKER POSTS



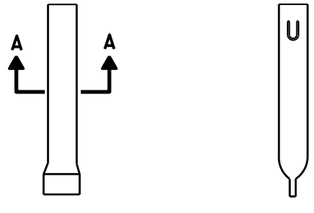
SECTION A-A



SECTION B-B

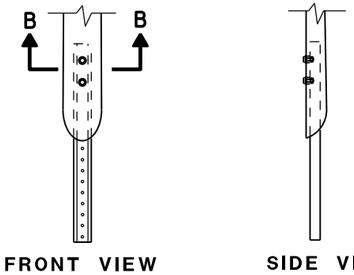


SECTION C-C



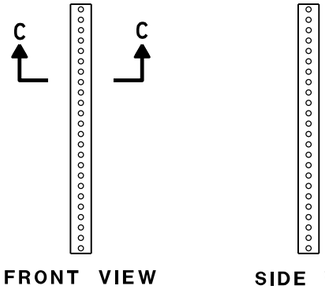
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

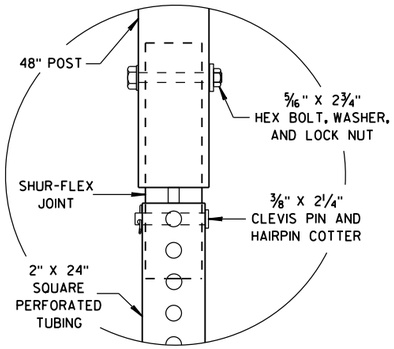
ALTERNATE 2



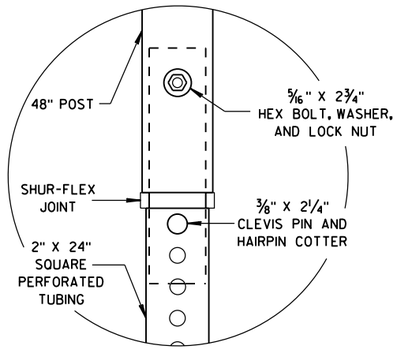
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

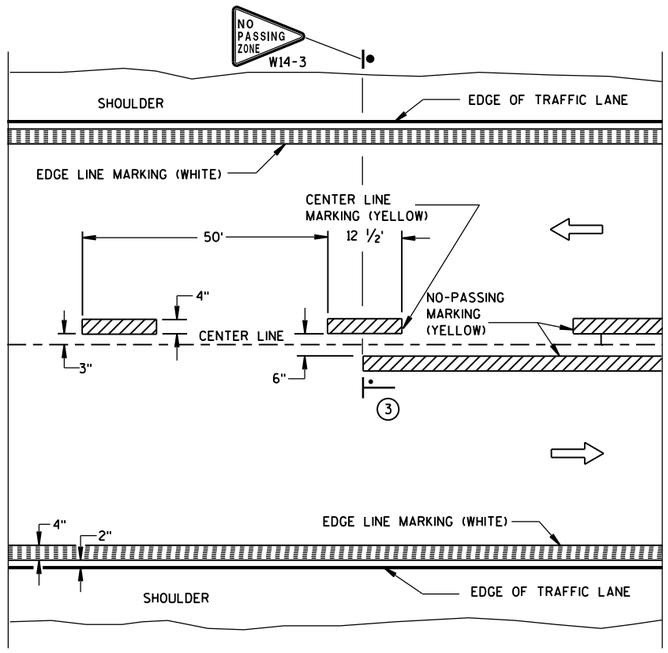
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

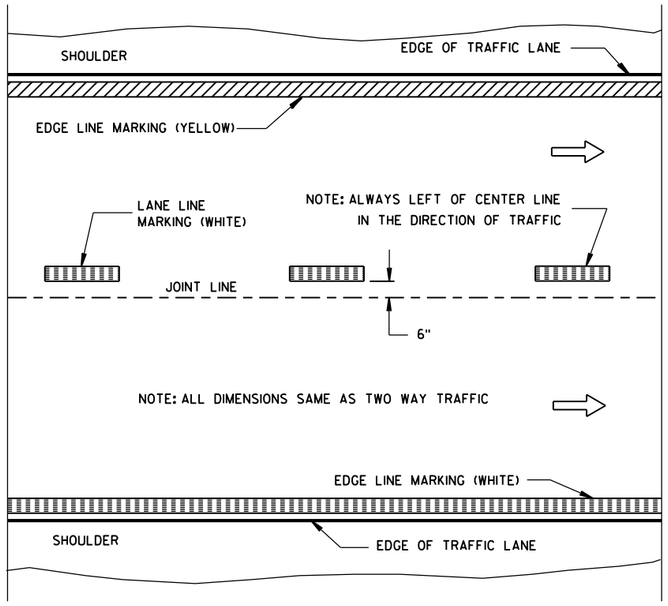
S.D.D. 15 A 3-2b

6

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

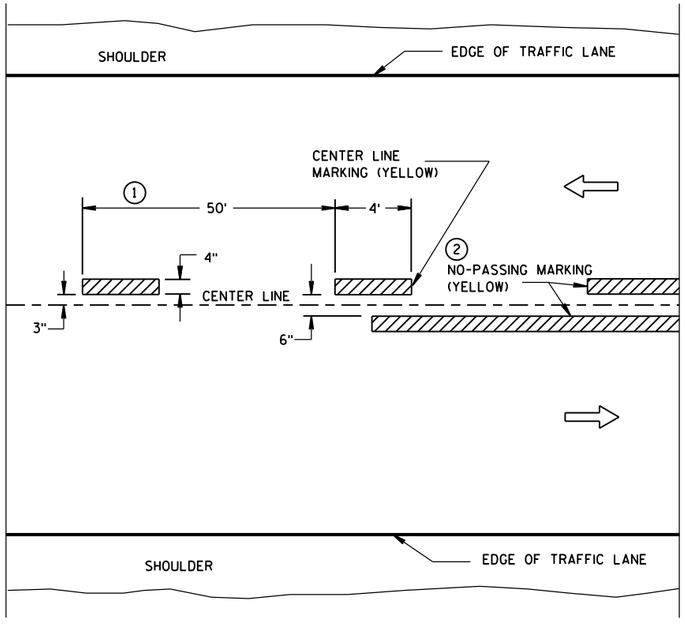


TWO WAY TRAFFIC

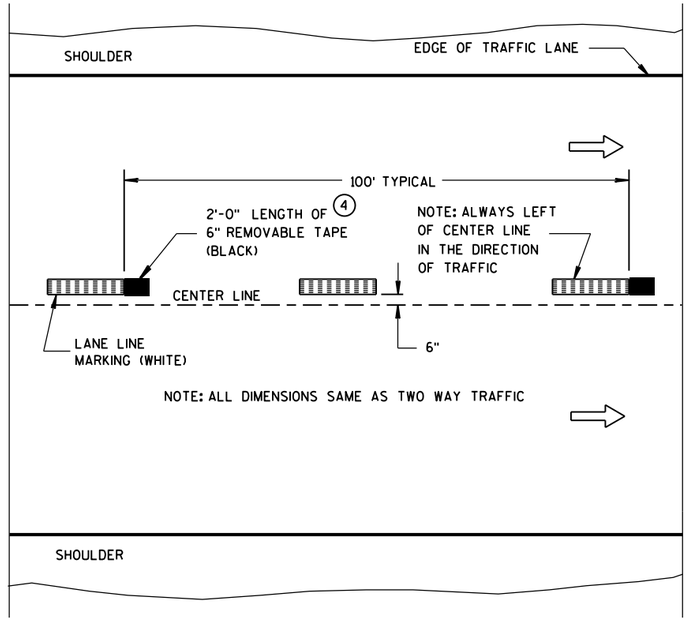


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

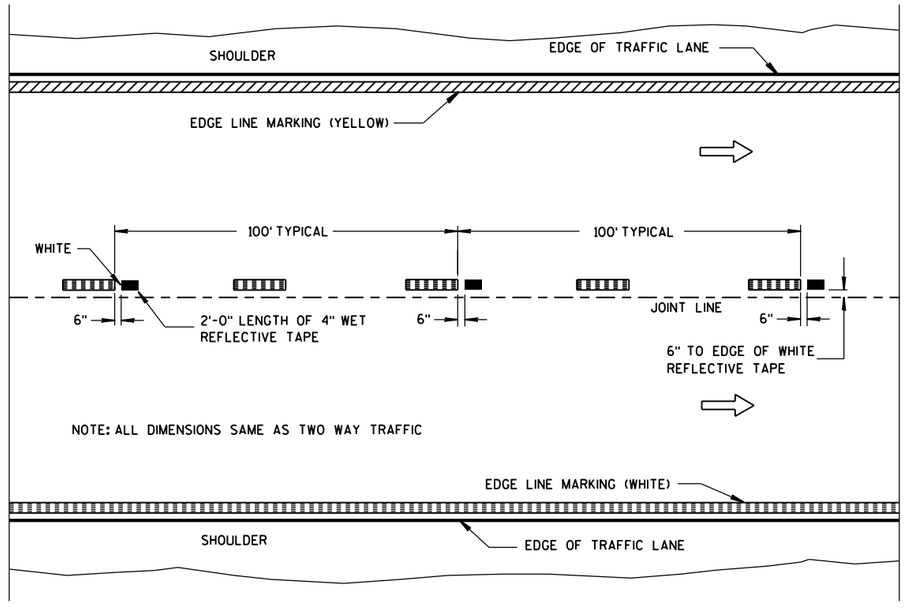
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

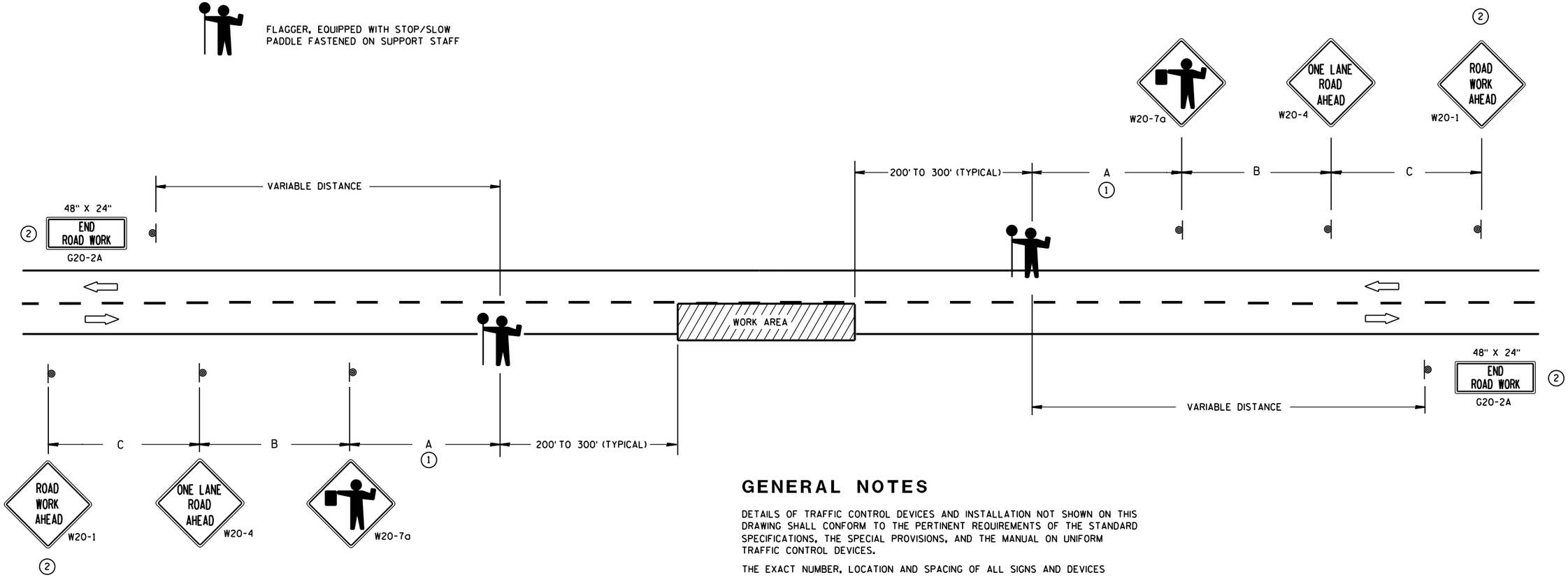
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

BE PREPARED TO STOP
W3-4

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



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

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

GENERAL NOTES

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

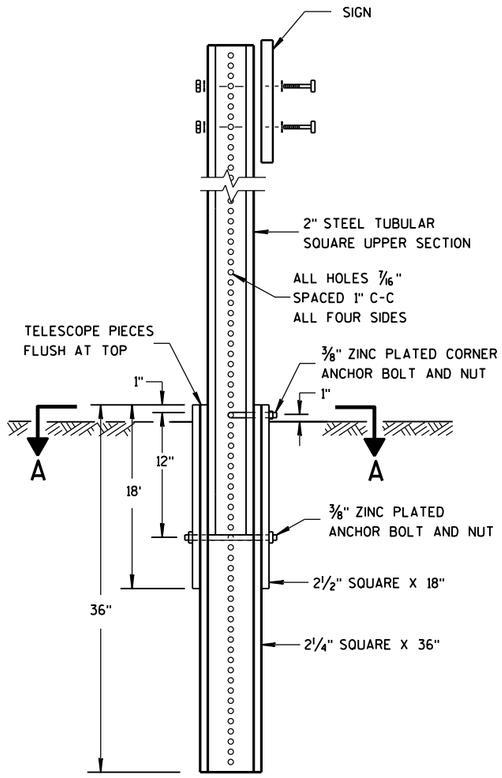
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

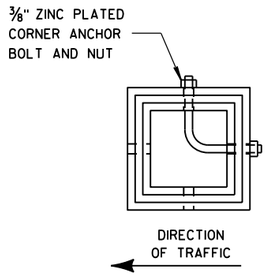
S.D.D. 15 C 12-4

6

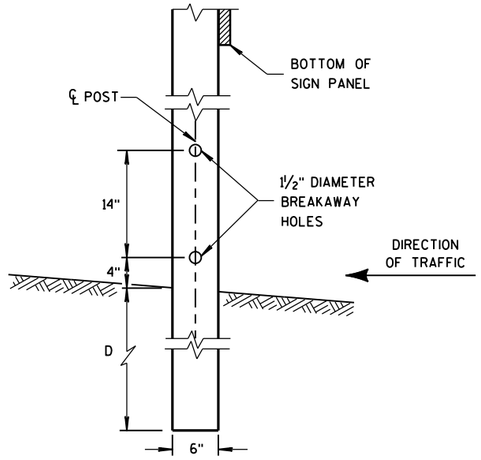
S.D.D. 15 C 12-4



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



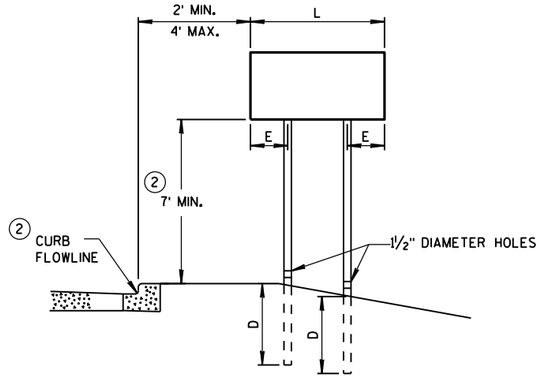
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

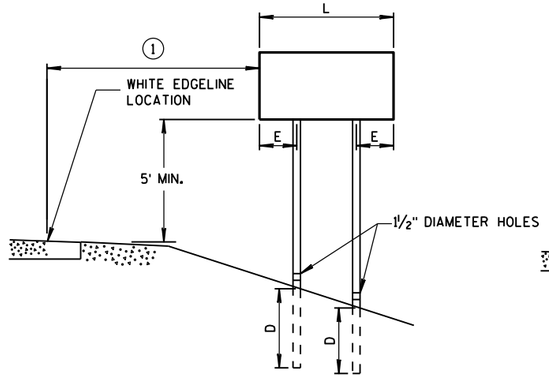
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

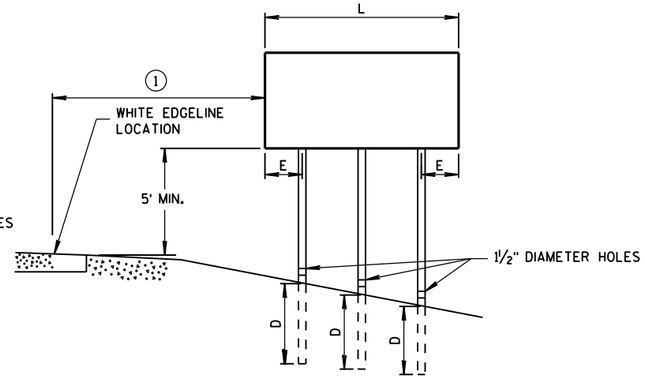
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

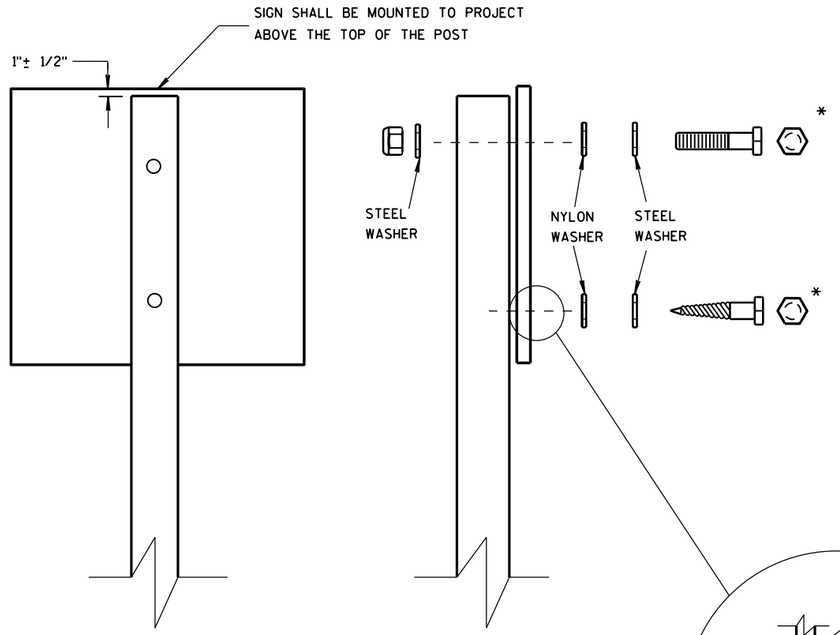
SEE NOTE (3)

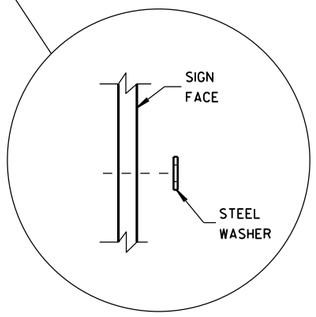
TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

STATE OF WISCONSIN DEPARTMENT OF TRANSPO

6

S.D.D. 15 D 38-1a





WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-1b

S.D.D. 15 D 38-1b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

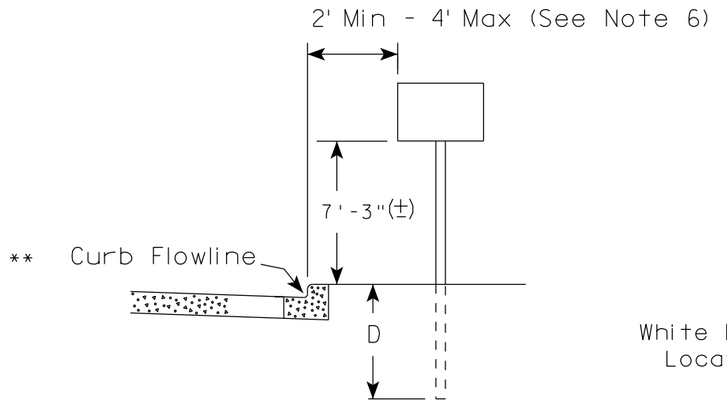
Feb. 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

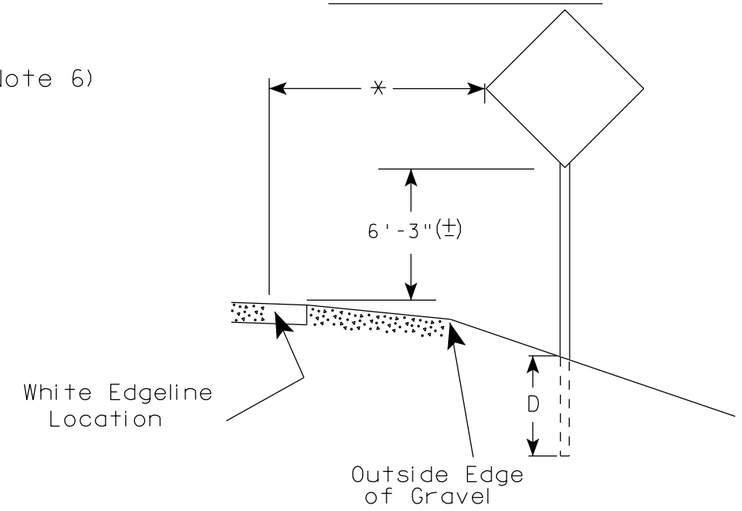
FHWA

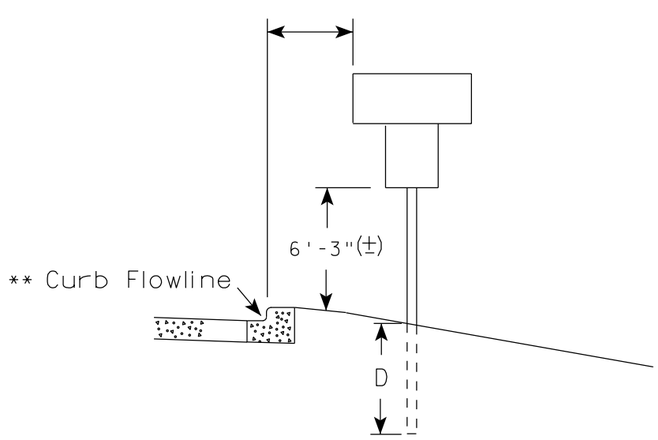
SIGN

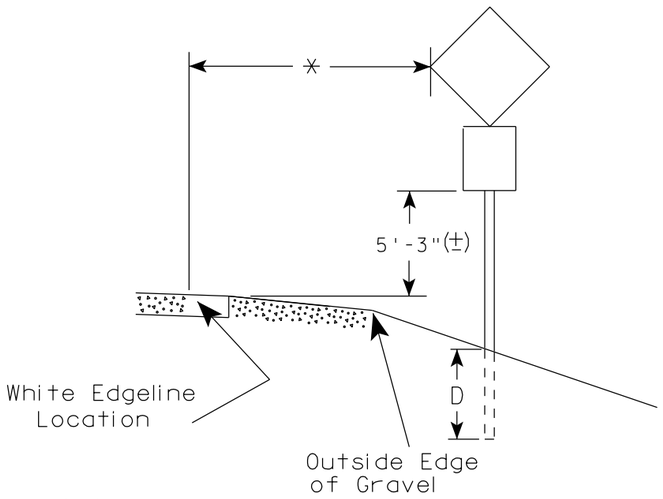
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

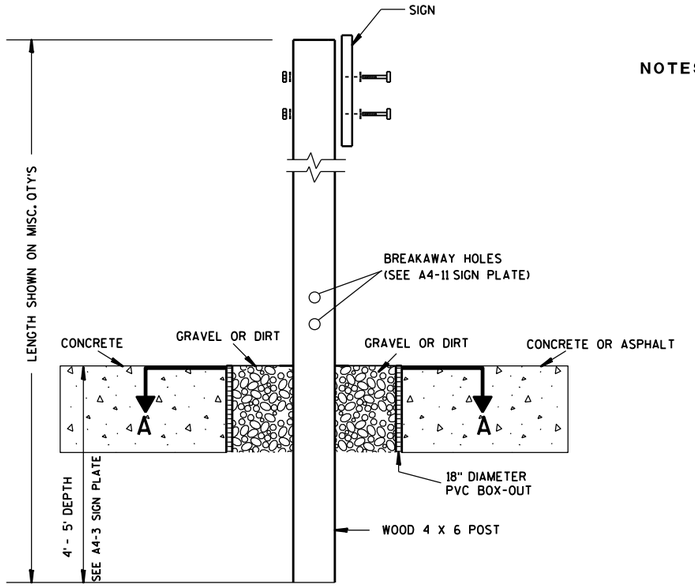
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

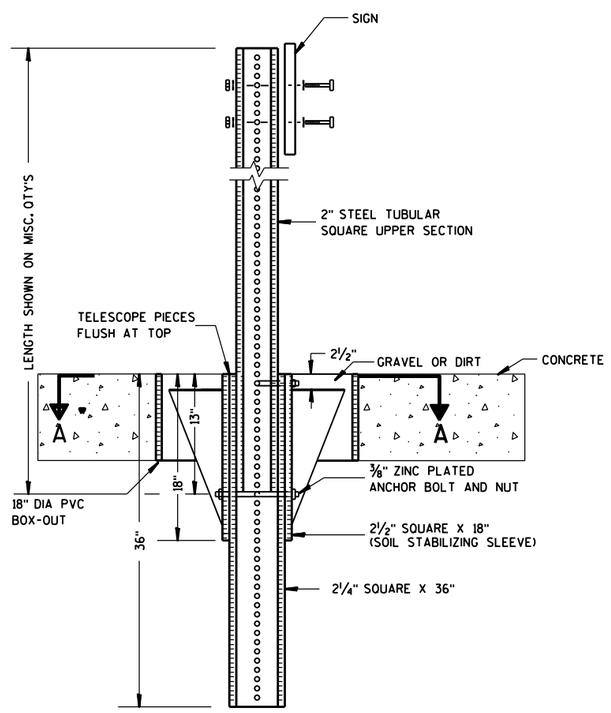
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

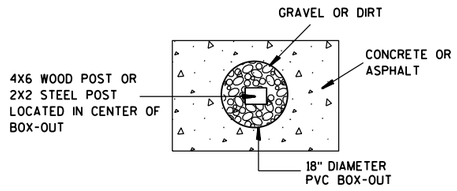
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

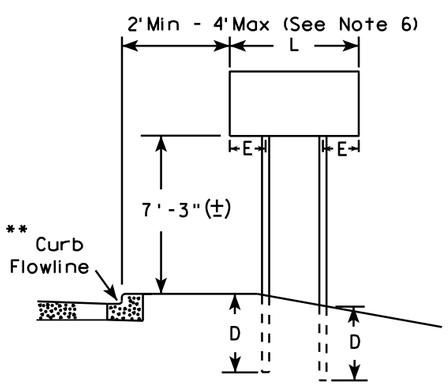
APPROVED Matthew R Rauch
for State Traffic Engineer

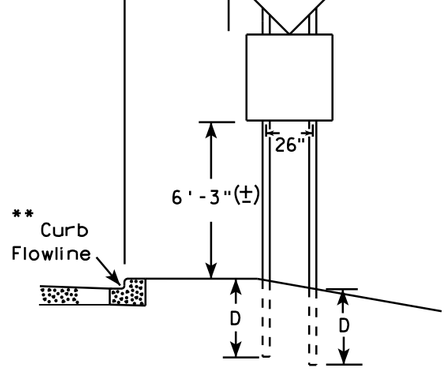
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

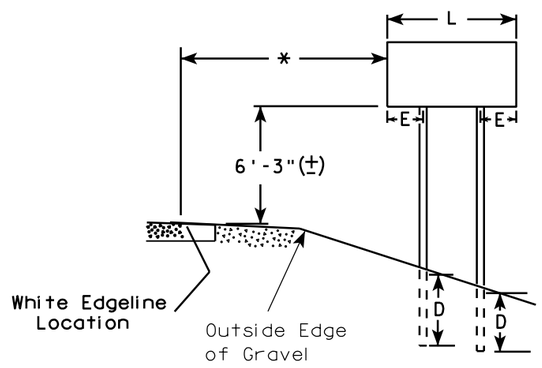
URBAN AREA

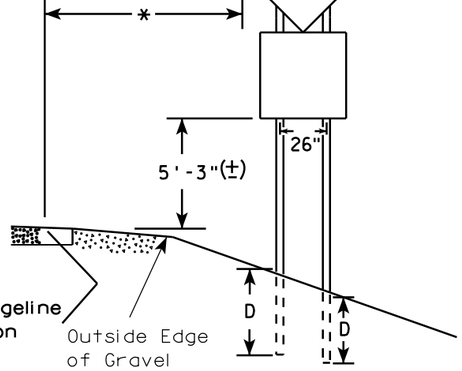




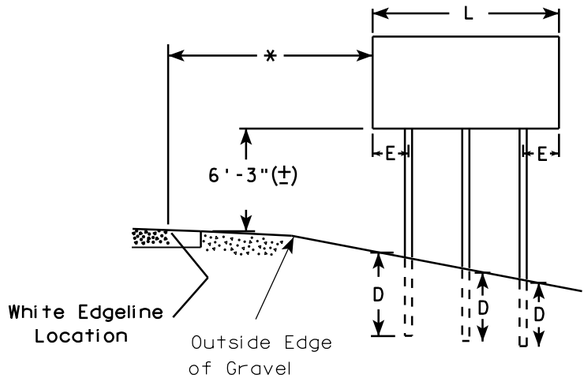
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

***

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

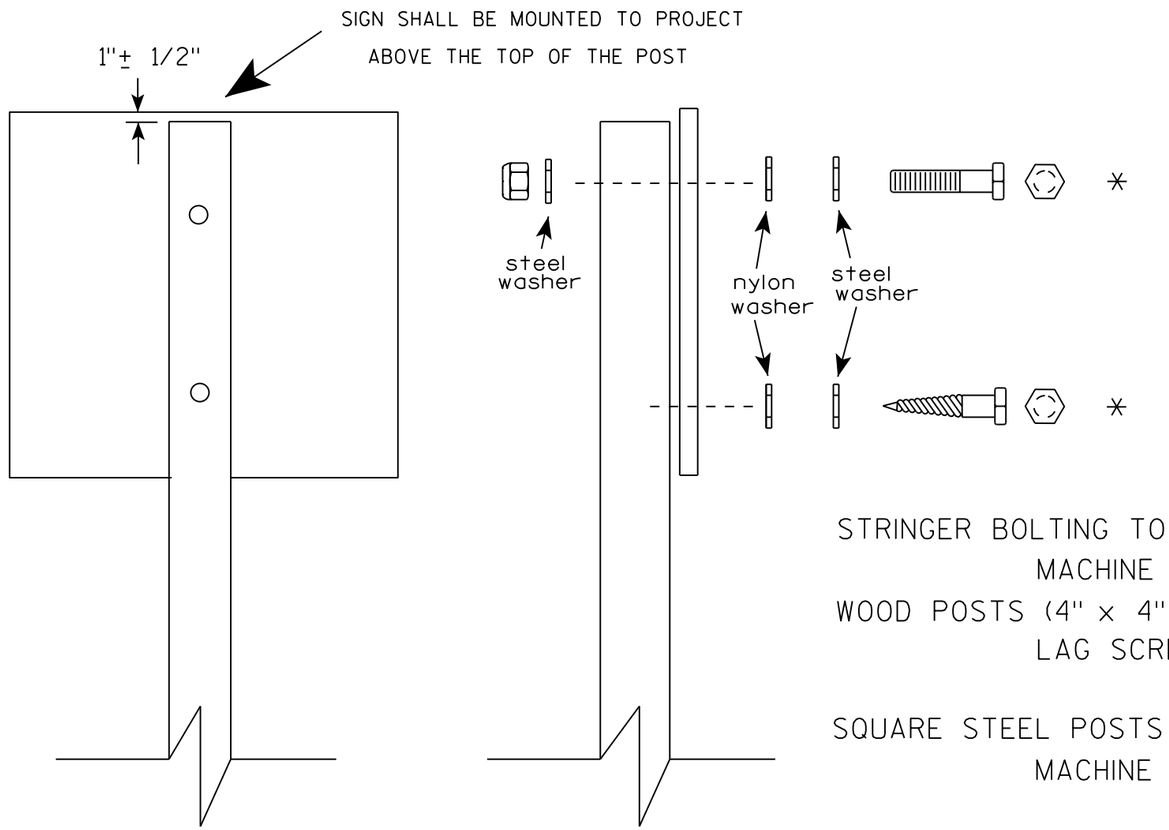
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 44 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

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

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

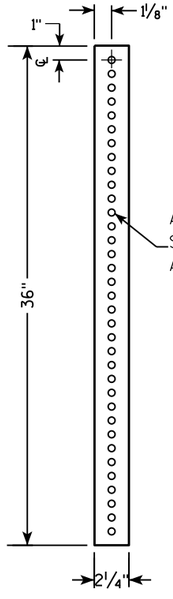
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

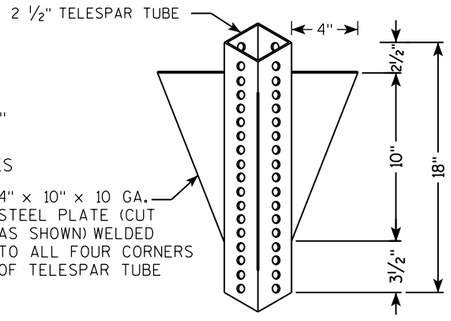
PROJECT NO: SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

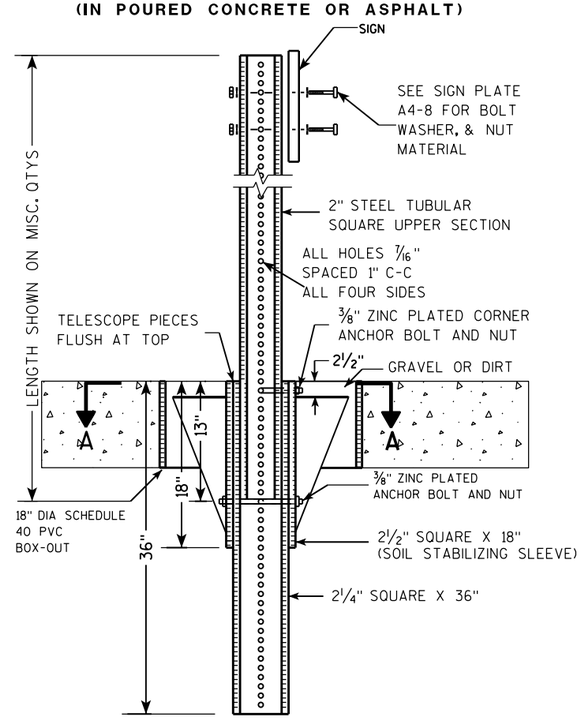
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



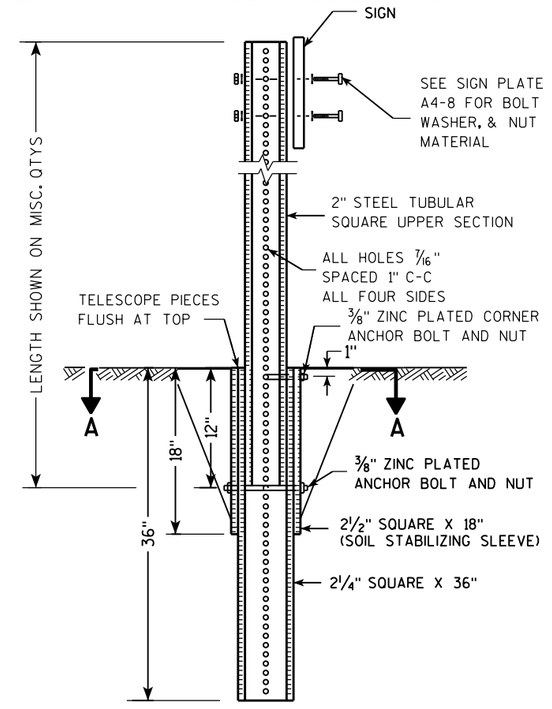
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

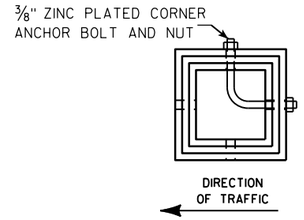


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

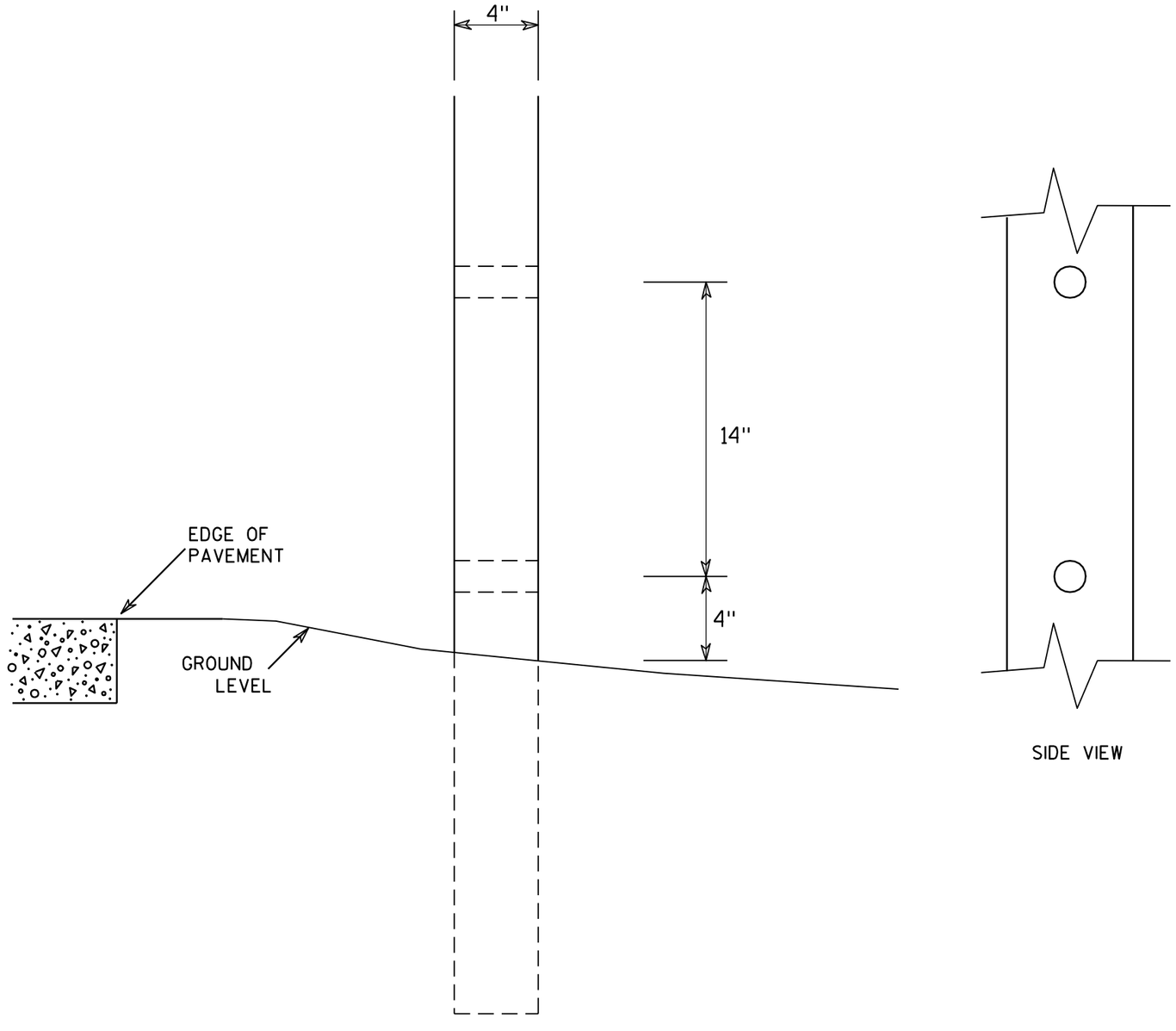
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

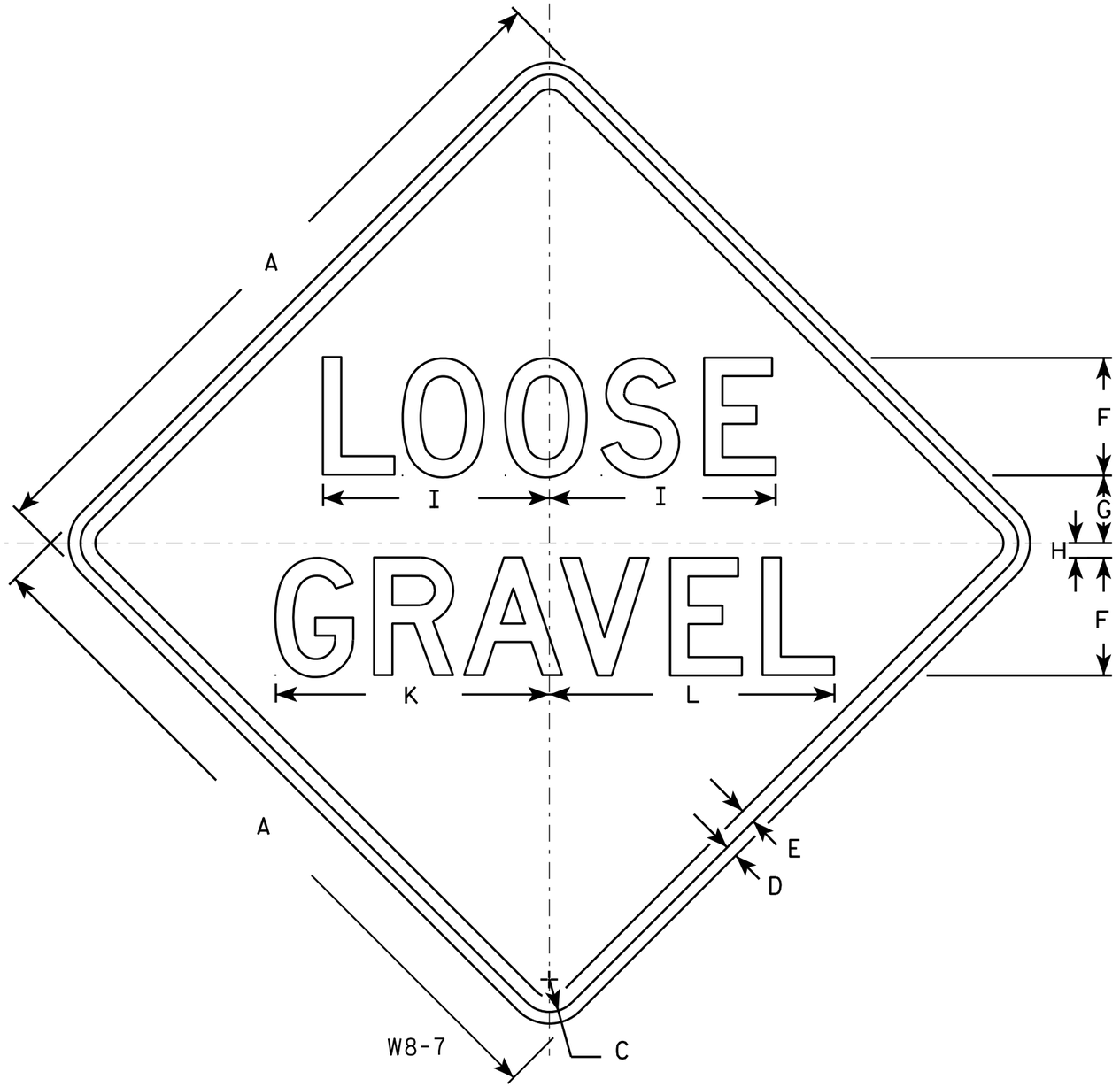
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 3/4	1/2	7 3/4		9 1/4	9 3/4															4.0
2S	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2M	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
3	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
4	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
5	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

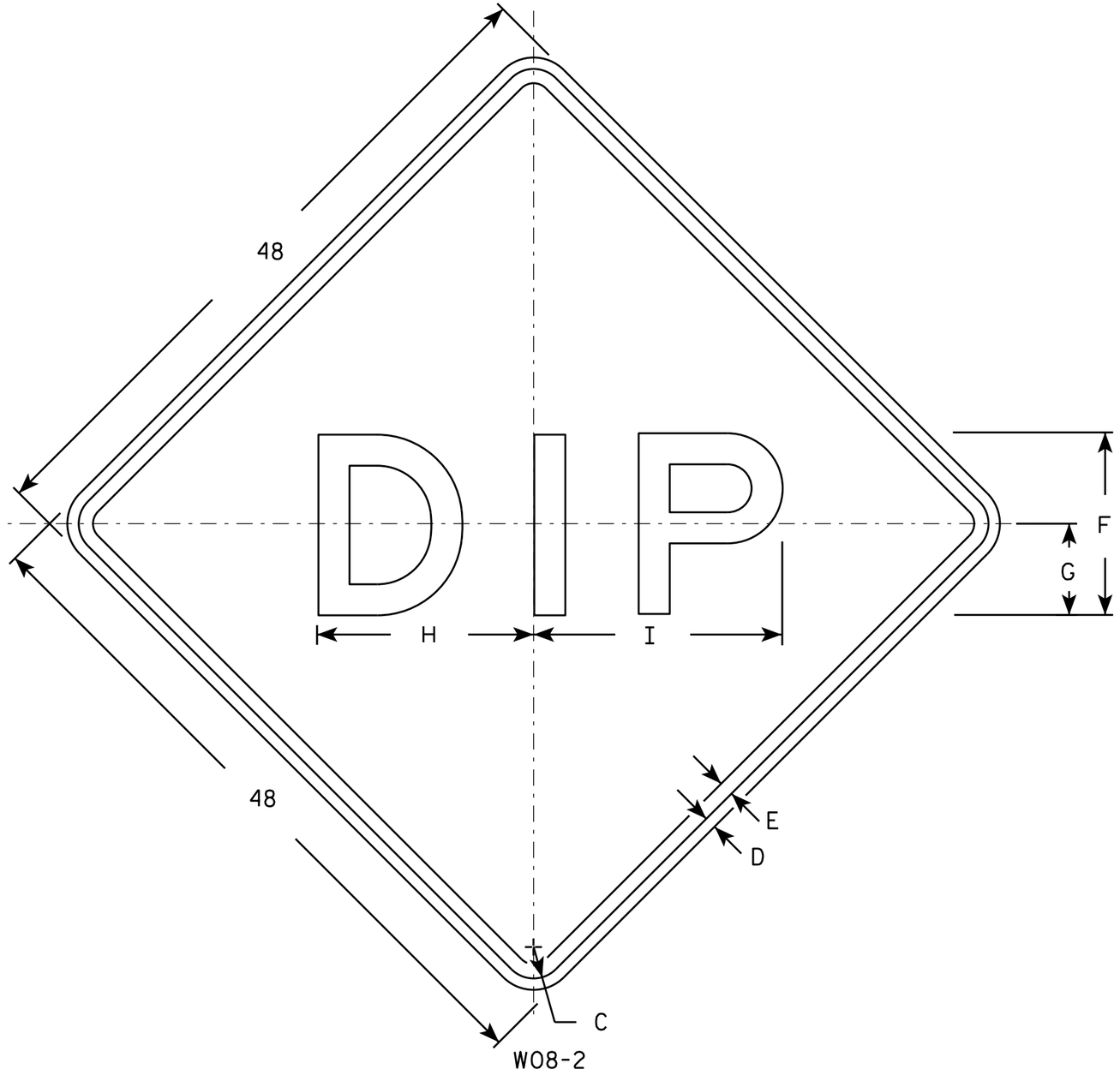
STANDARD SIGN
W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/30/12 PLATE NO. W8-7.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 48	E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	10	5	11 7/8	13 1/2																		9.0
2S	48		2 1/4	3/4	1	12	6	14 1/4	16 1/4																		16.0
2M	48		2 1/4	3/4	1	12	6	14 1/4	16 1/4																		16.0
3	48		2 1/4	3/4	1	12	6	14 1/4	16 1/4																		16.0
4	48		2 1/4	3/4	1	12	6	14 1/4	16 1/4																		16.0
5	48		2 1/4	3/4	1	12	6	14 1/4	16 1/4																		16.0

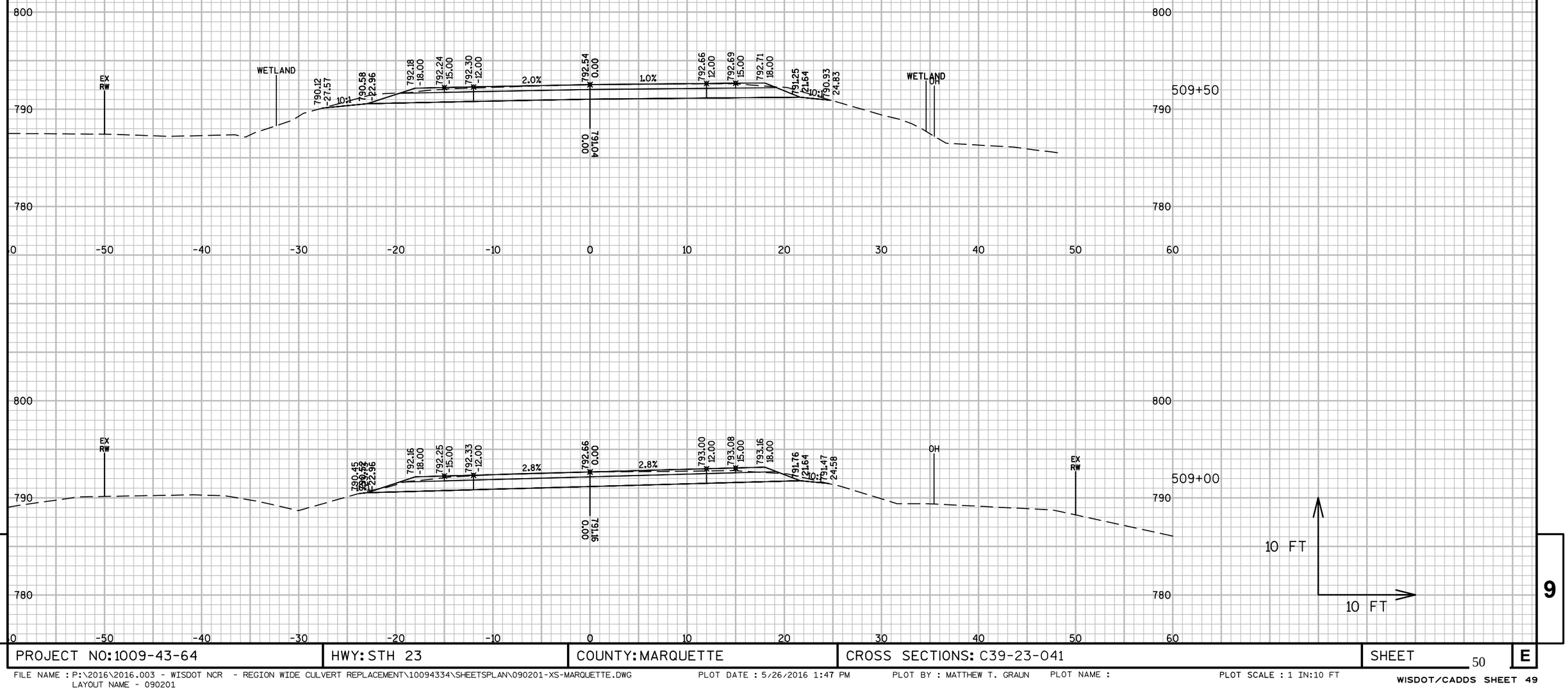
STANDARD SIGN
W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 149 3-2.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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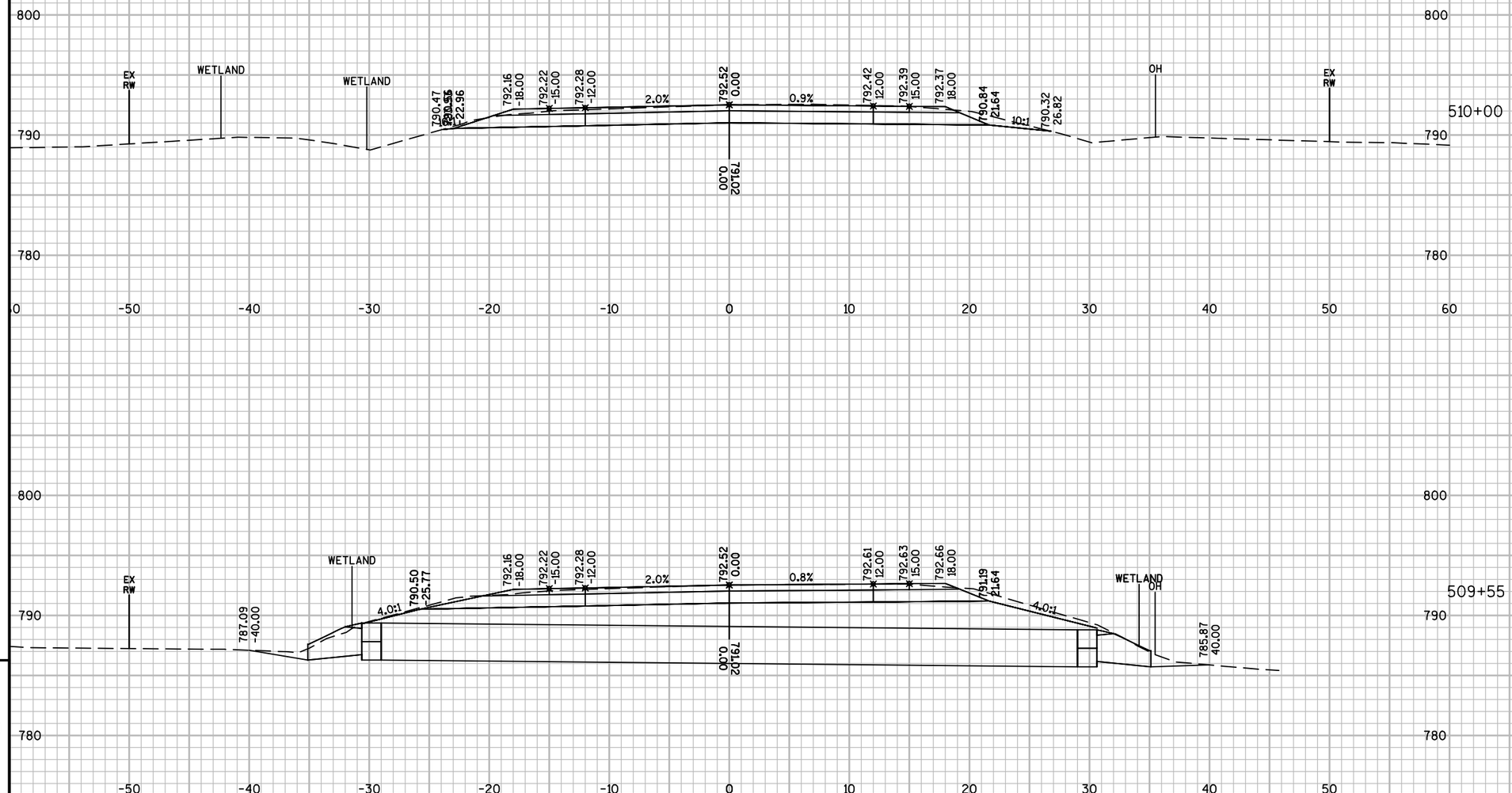
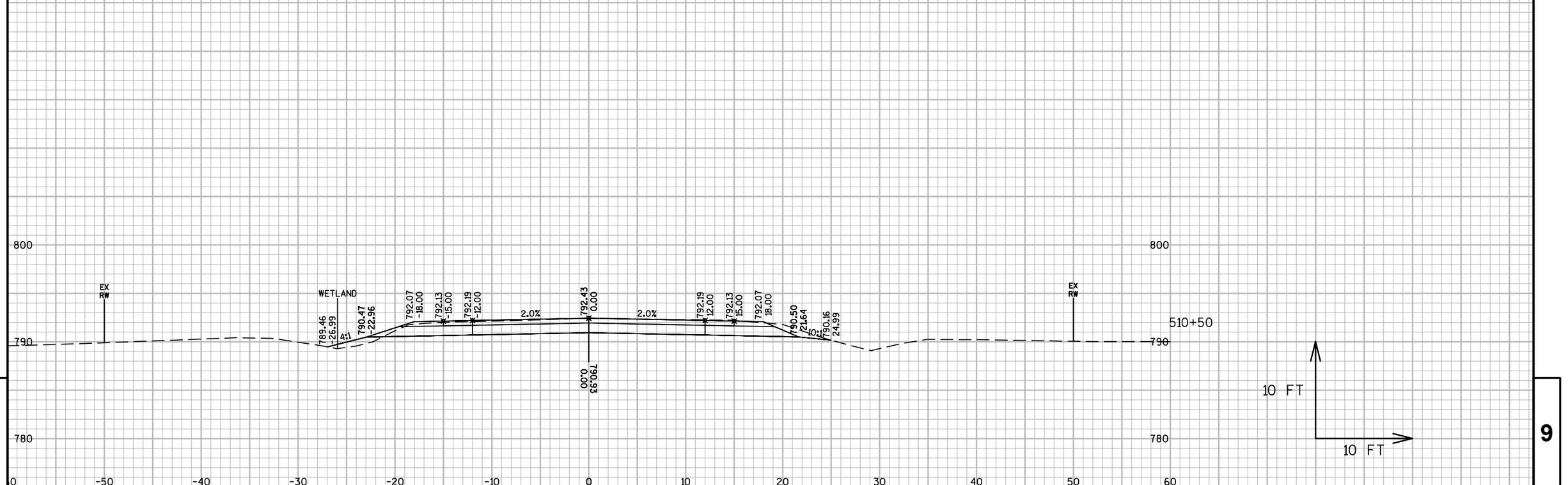
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-041	SHEET 50	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-MARQUETTE.DWG
LAYOUT NAME - 090201

PLOT DATE : 5/26/2016 1:47 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-041	SHEET 51	E



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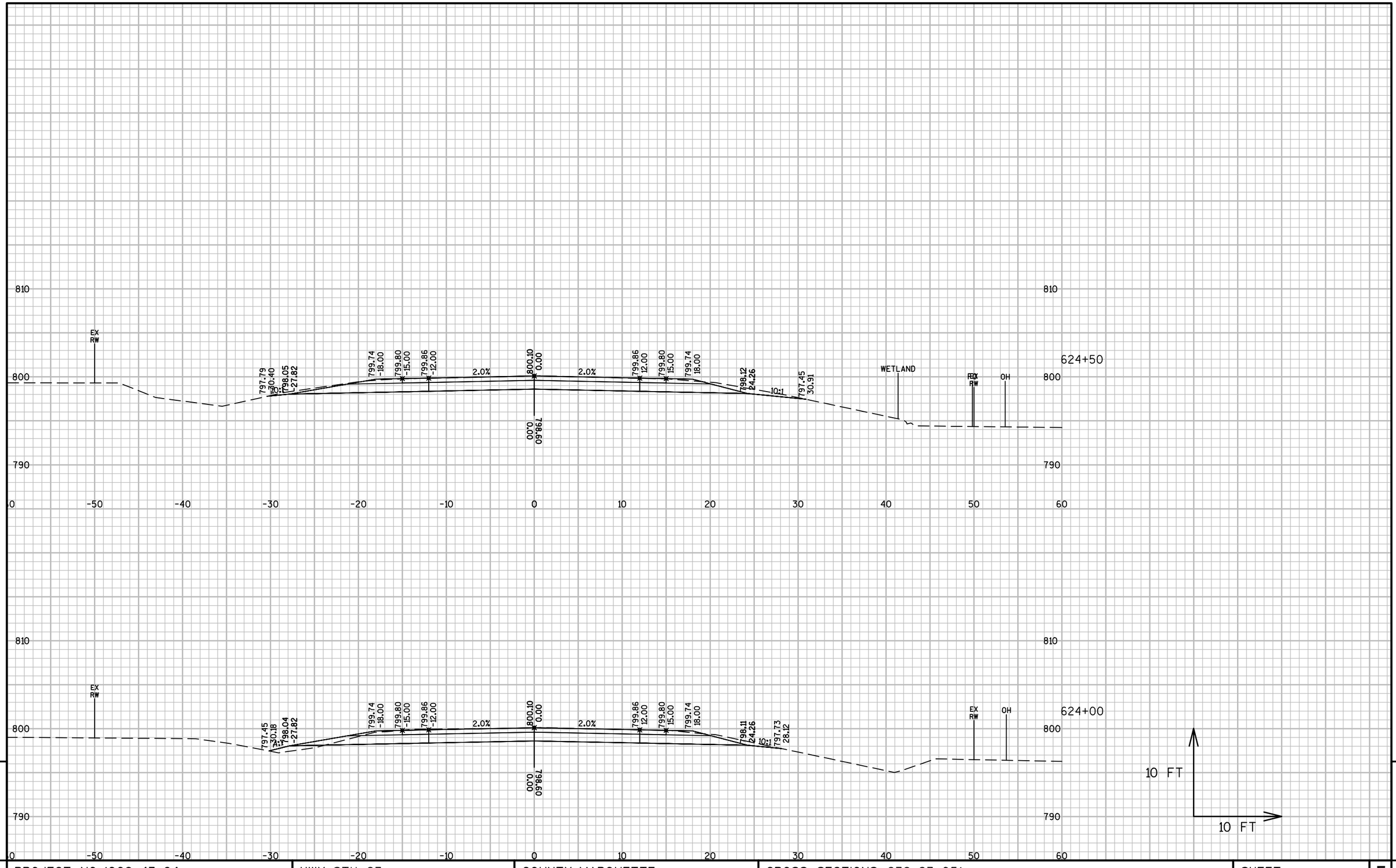
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-041	SHEET 52	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-MARQUETTE.DWG
LAYOUT NAME - 090203
PLOT DATE : 5/26/2016 1:47 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT



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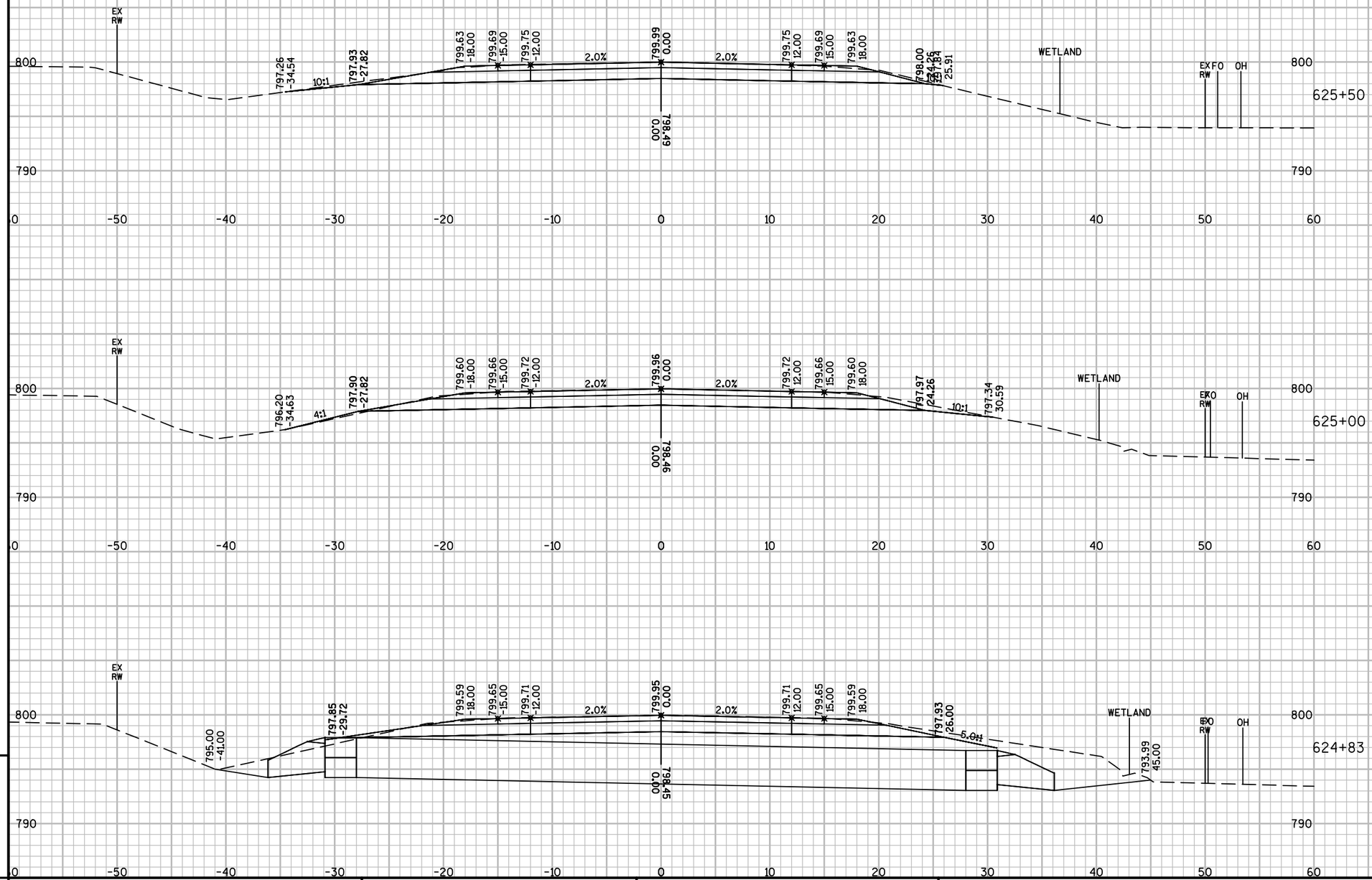
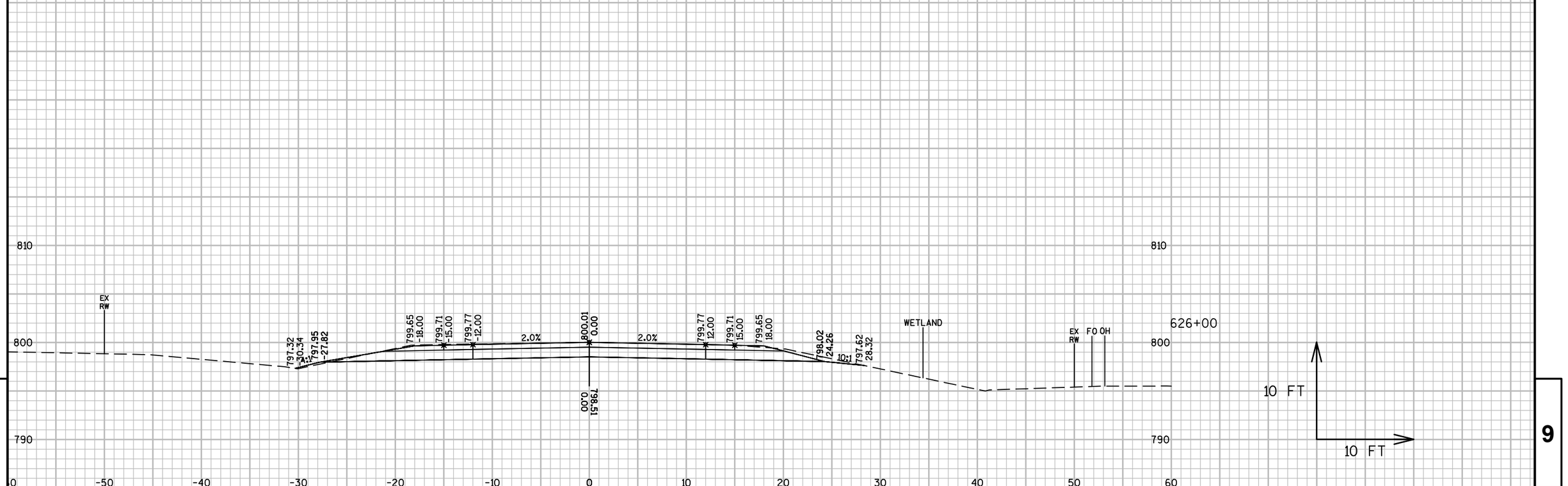
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-051	SHEET 53	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-MARQUETTE.DWG
LAYOUT NAME - 090204
PLOT DATE : 5/26/2016 1:47 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-051	SHEET 54	E



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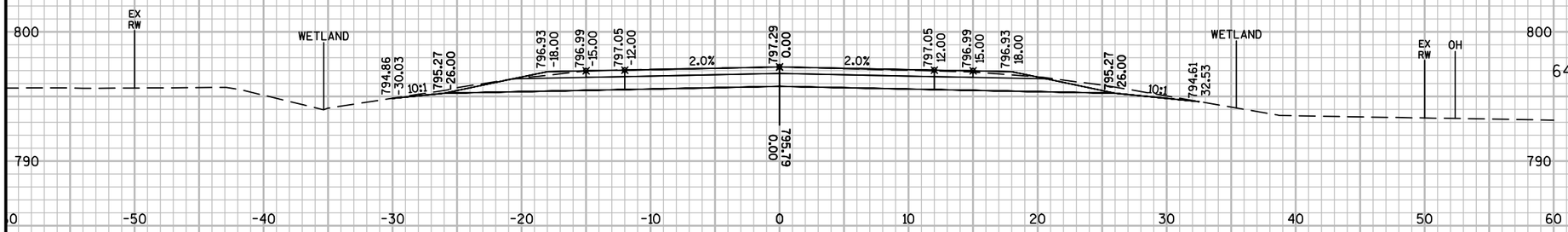
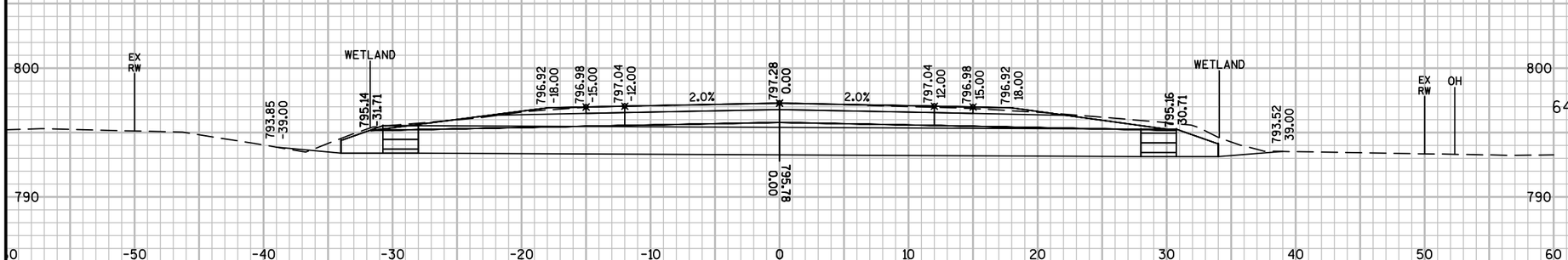
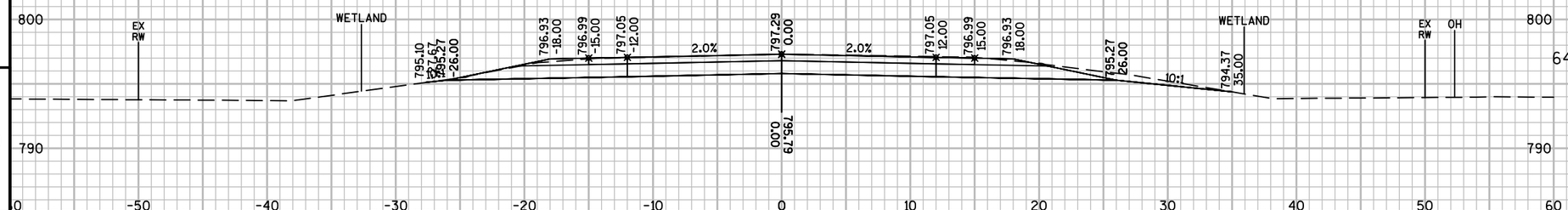
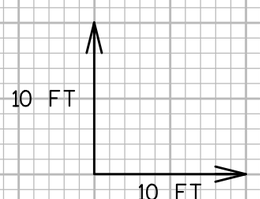
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-051	SHEET 55	E









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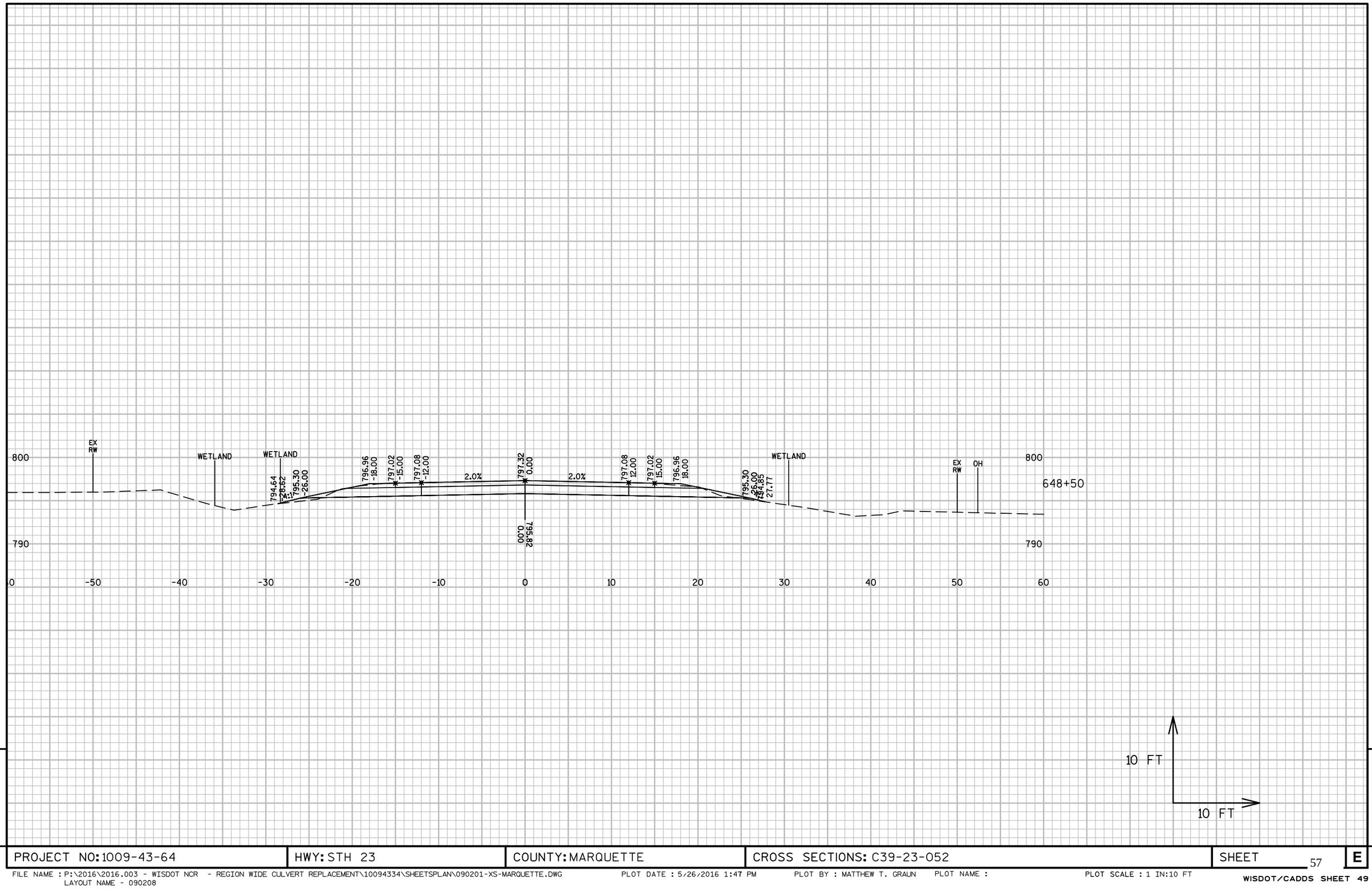
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-052	SHEET 56	E



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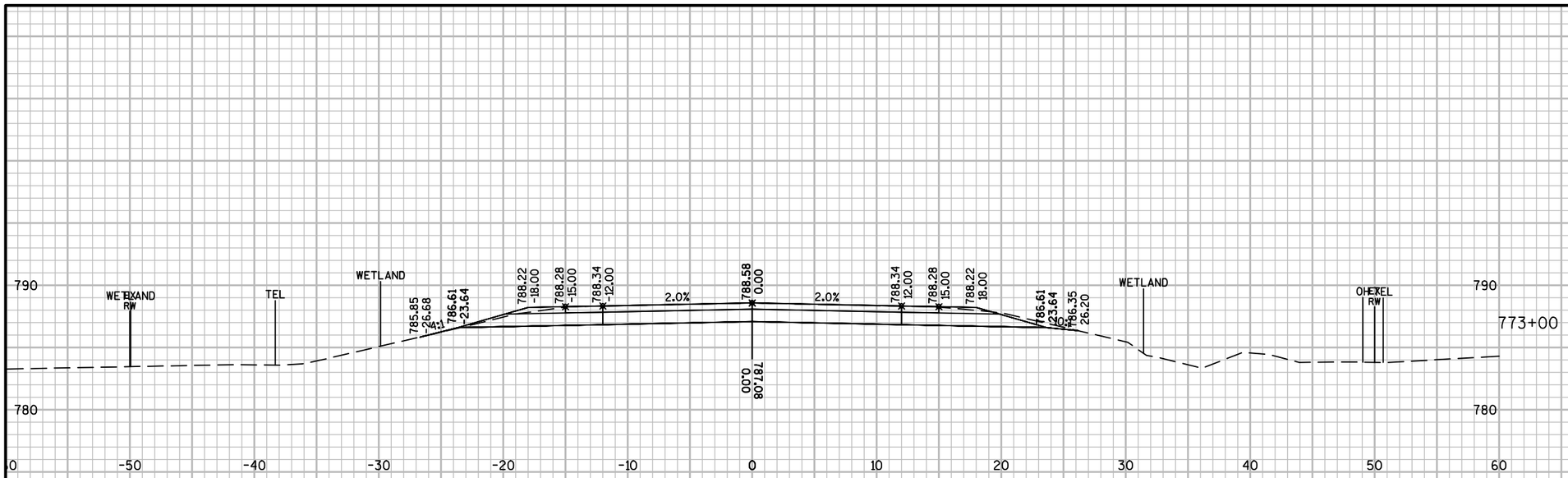
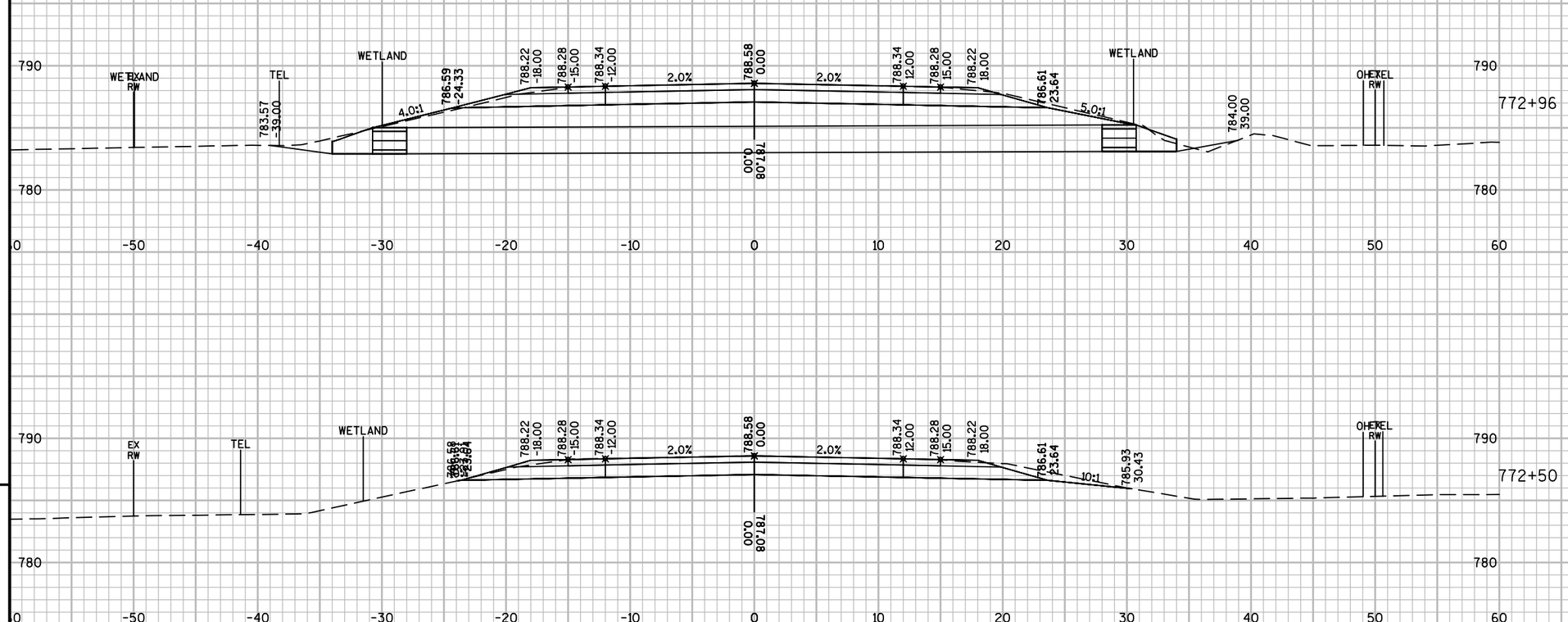
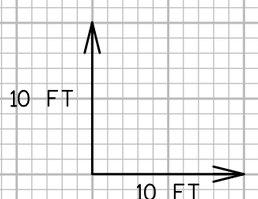
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-052	SHEET 57	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-MARQUETTE.DWG
LAYOUT NAME - 090208
PLOT DATE : 5/26/2016 1:47 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49







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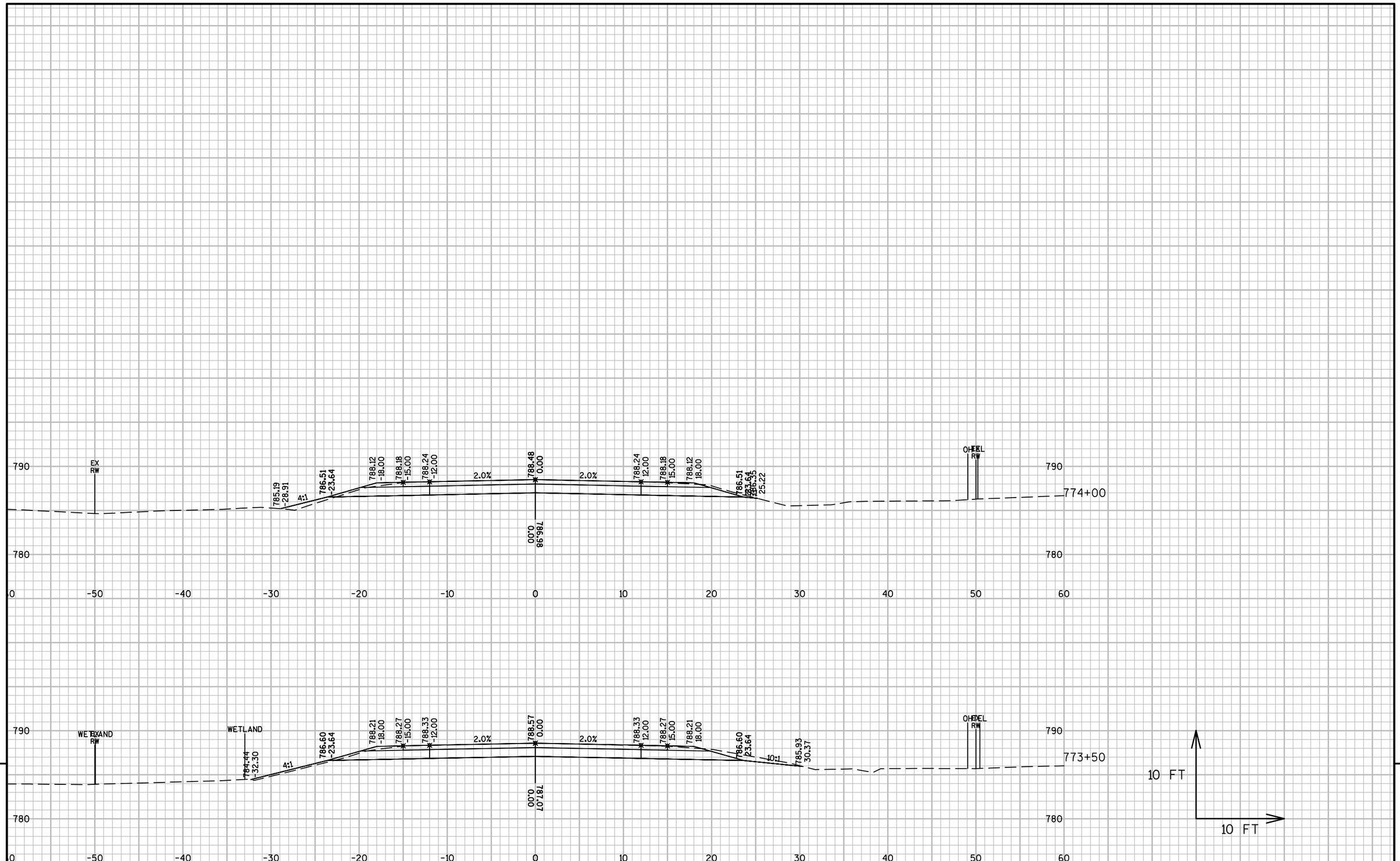
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-057	SHEET 58	E



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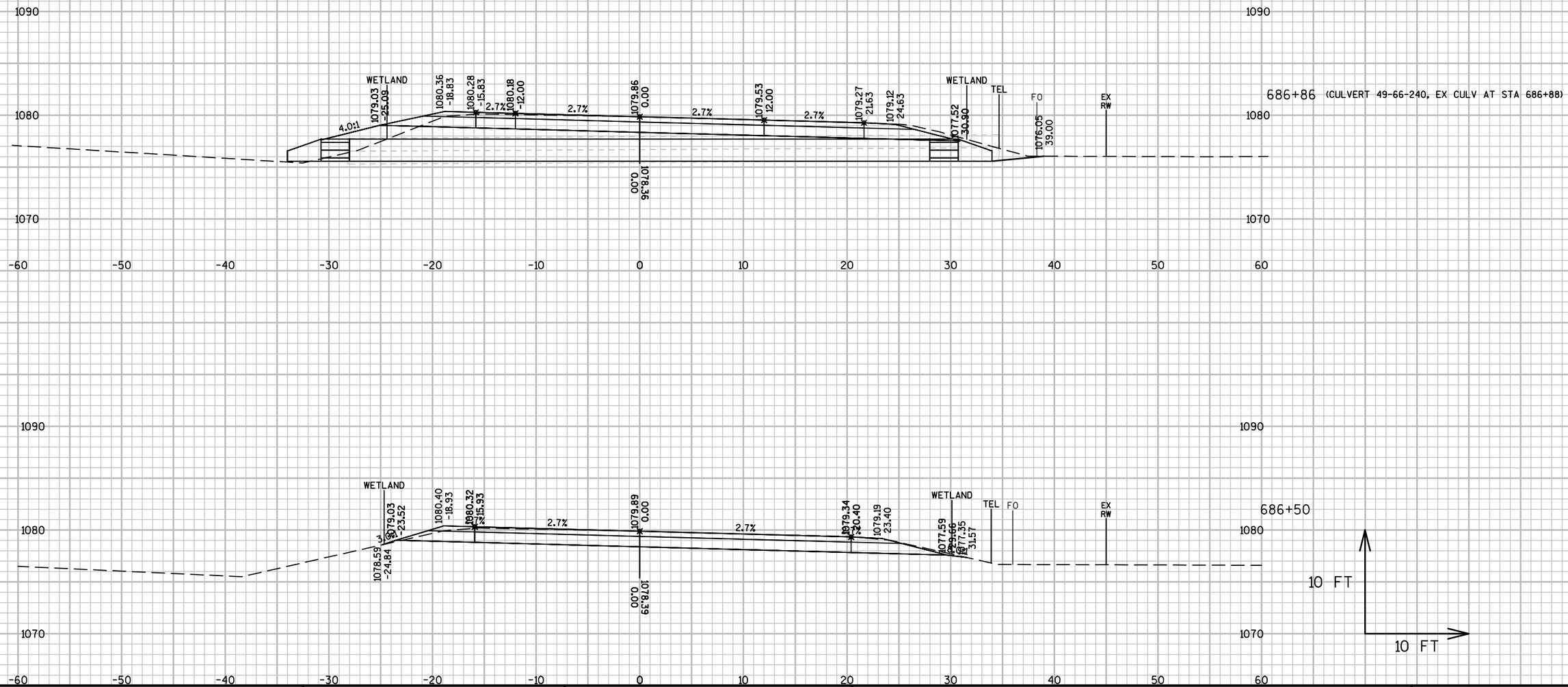
PROJECT NO: 1009-43-64	HWY: STH 23	COUNTY: MARQUETTE	CROSS SECTIONS: C39-23-057	SHEET 59	E

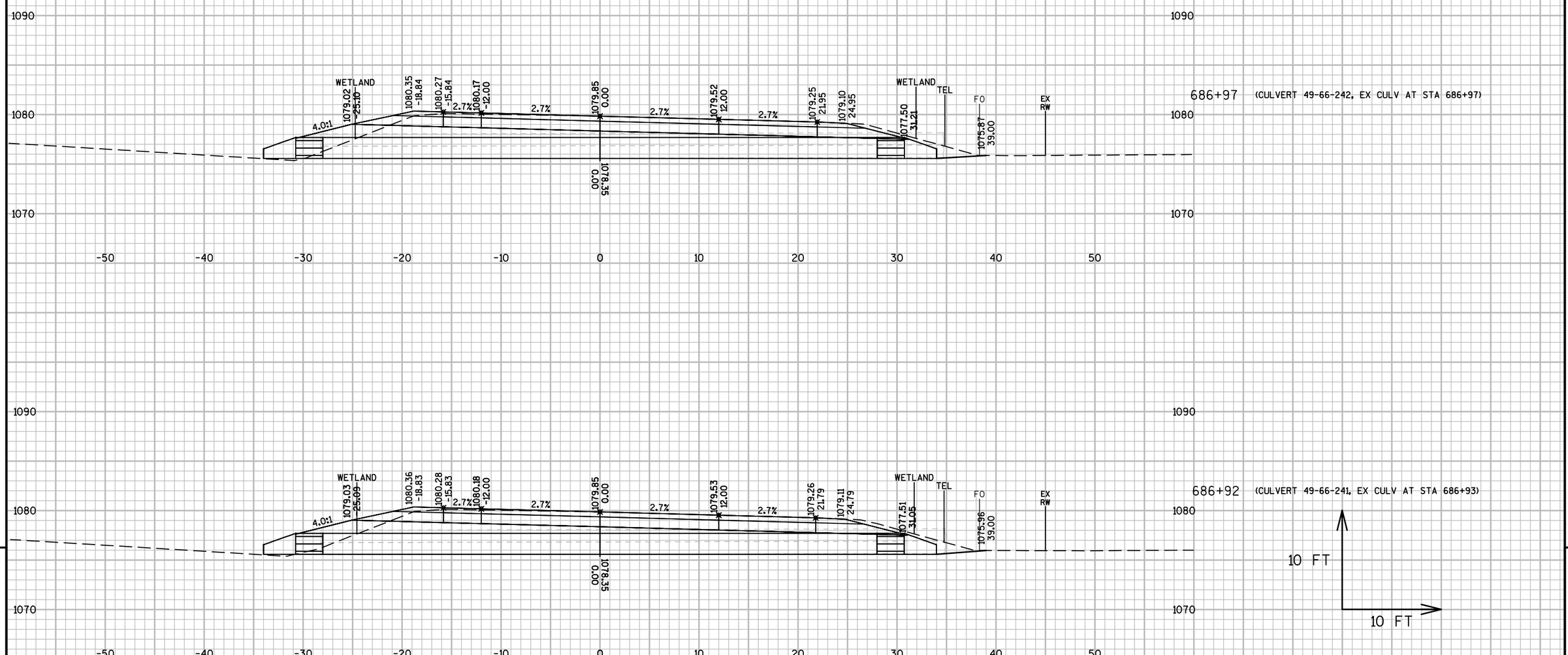
FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-MARQUETTE.DWG
LAYOUT NAME - 090210
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



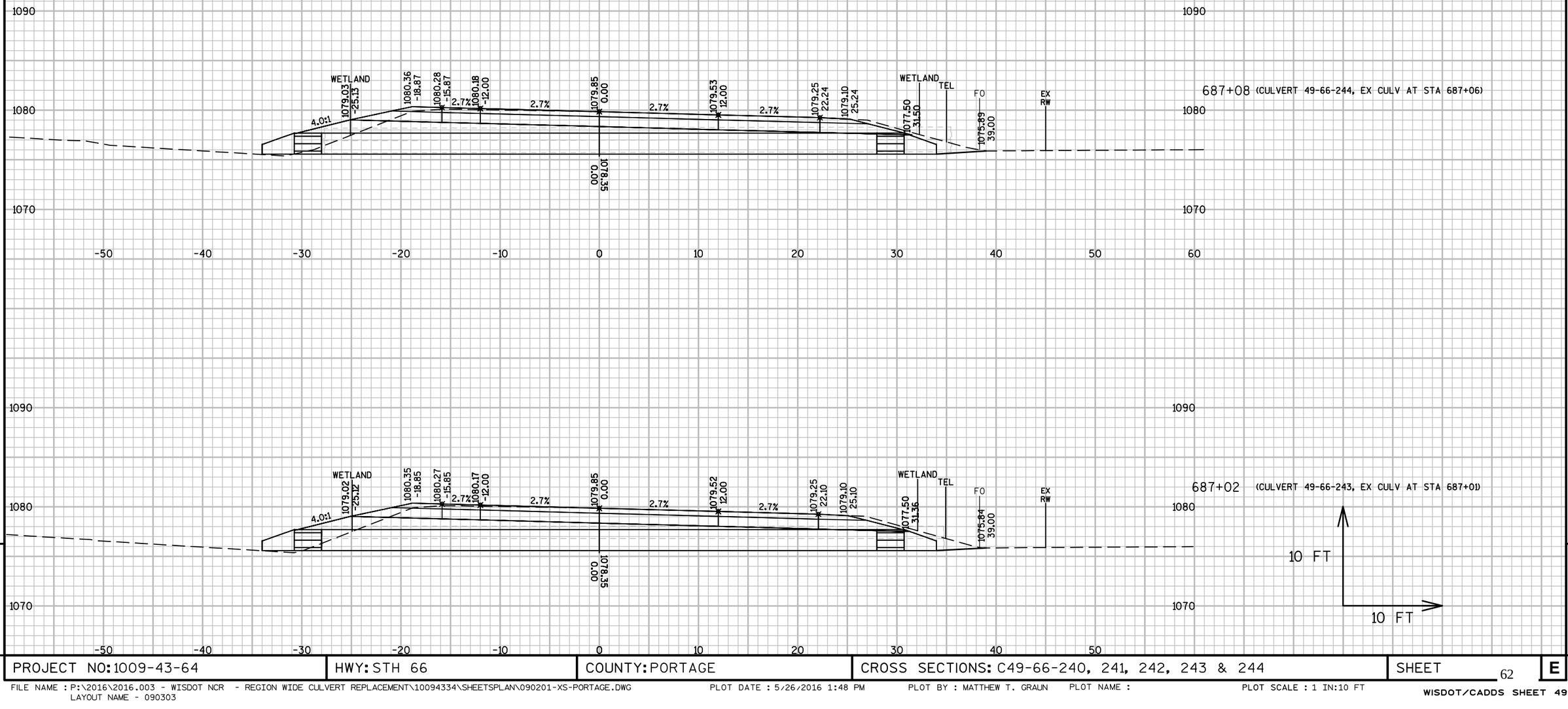
PROJECT NO: 1009-43-64	HWY: STH 66	COUNTY: PORTAGE	CROSS SECTIONS: C49-66-240, 241, 242, 243 & 244	SHEET 60	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-PORTAGE.DWG
LAYOUT NAME - 090301
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 1009-43-64	HWY: STH 66	COUNTY: PORTAGE	CROSS SECTIONS: C49-66-240, 241, 242, 243 & 244	SHEET 61	E



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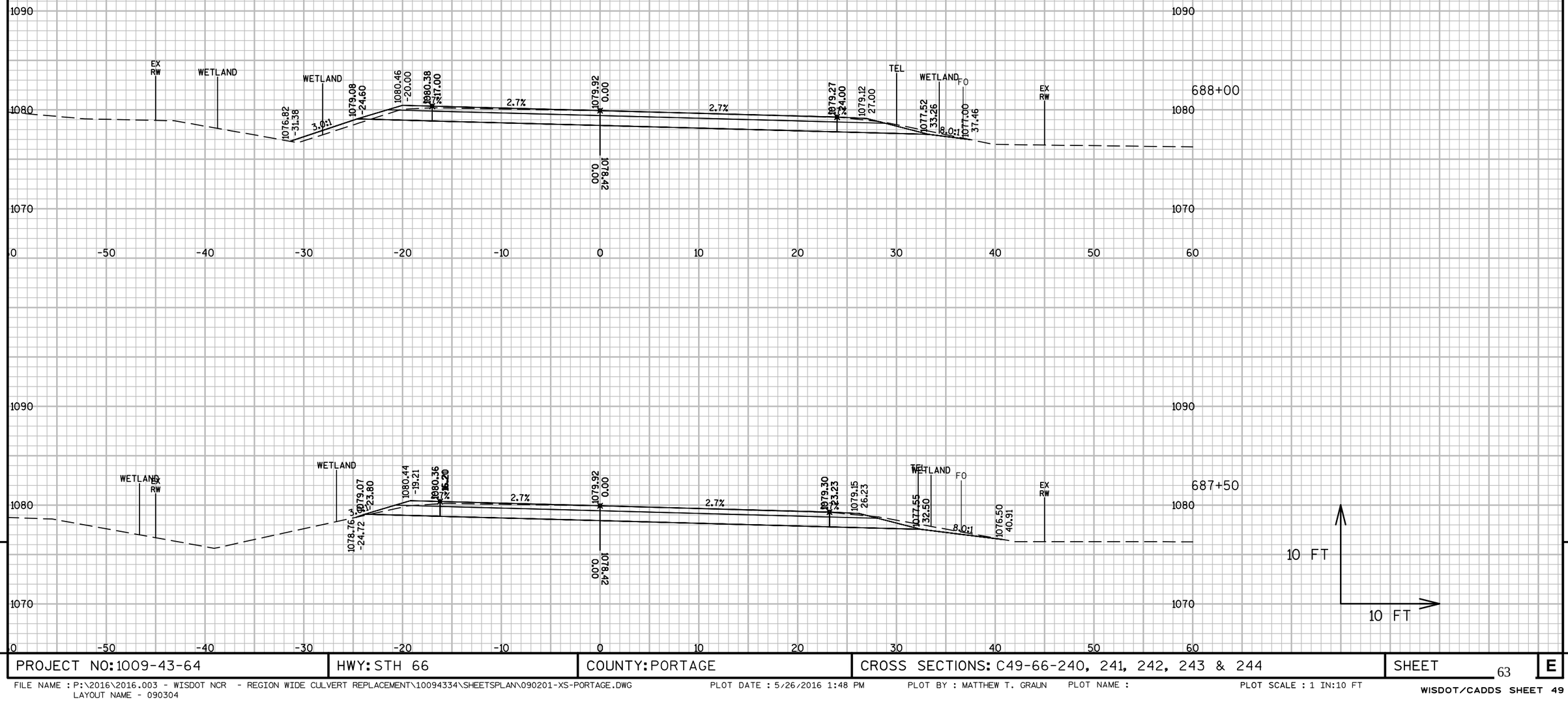
PROJECT NO: 1009-43-64	HWY: STH 66	COUNTY: PORTAGE	CROSS SECTIONS: C49-66-240, 241, 242, 243 & 244	SHEET 62	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-PORTAGE.DWG
LAYOUT NAME - 090303
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



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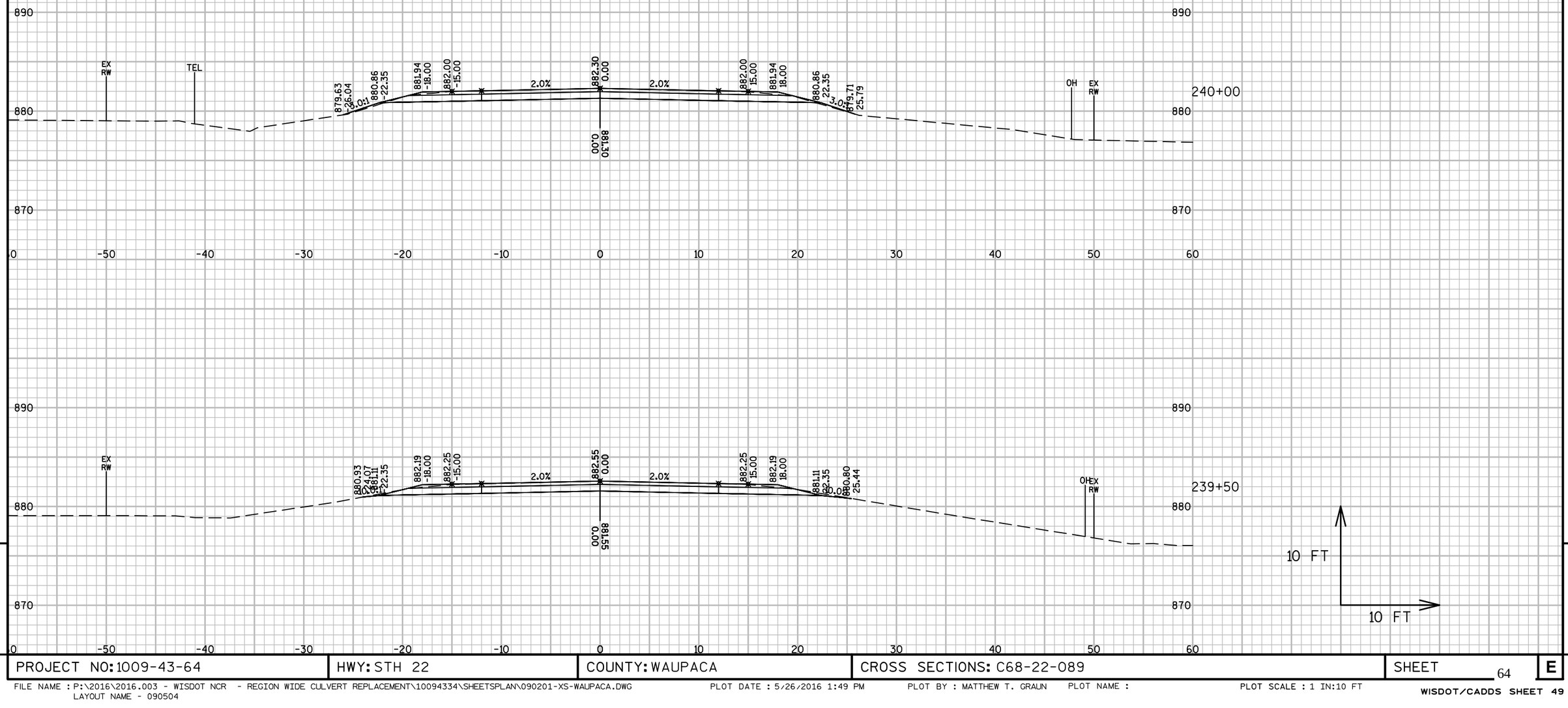
PROJECT NO: 1009-43-64	HWY: STH 66	COUNTY: PORTAGE	CROSS SECTIONS: C49-66-240, 241, 242, 243 & 244	SHEET 63	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-PORTAGE.DWG
LAYOUT NAME - 090304
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



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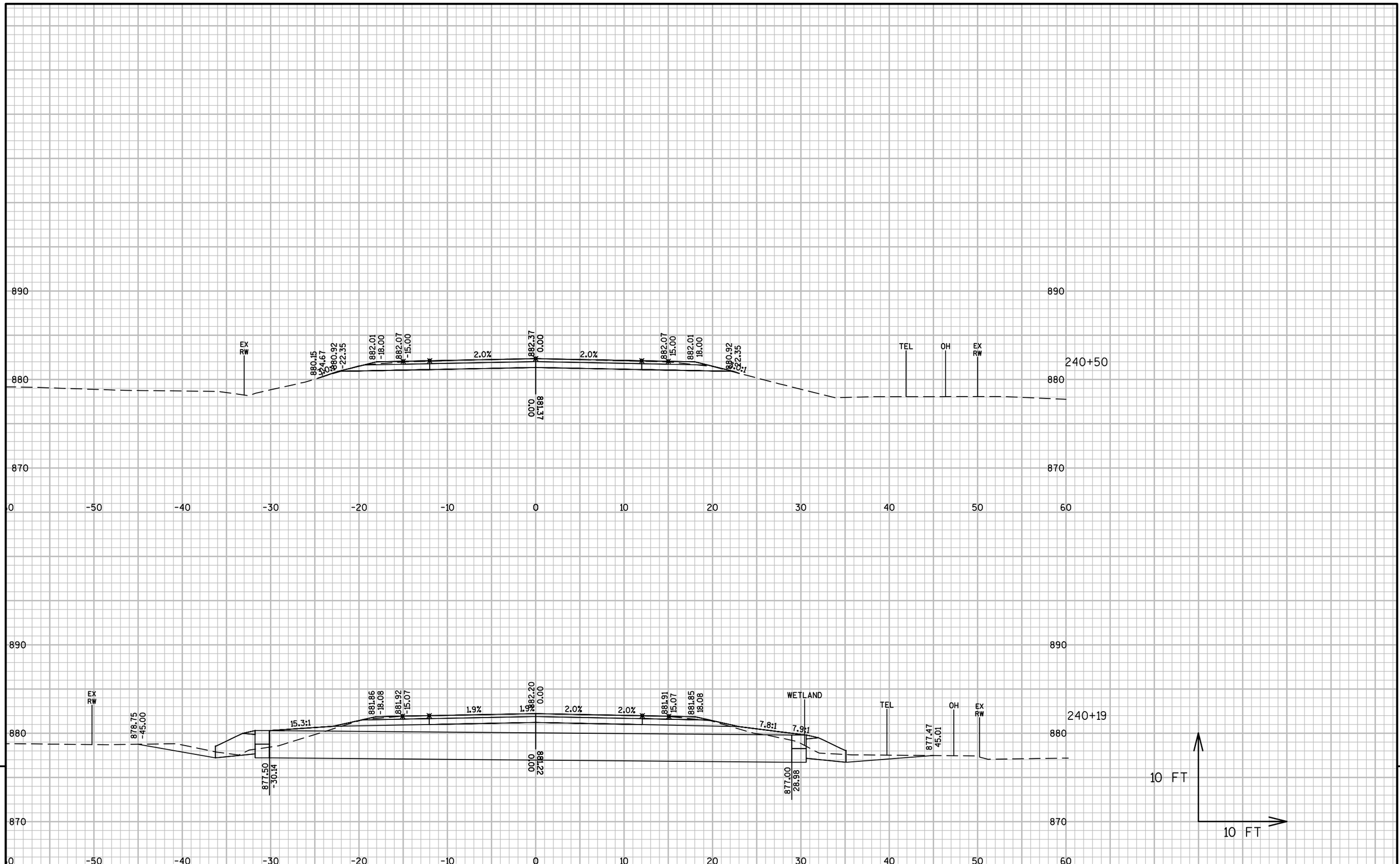
PROJECT NO: 1009-43-64	HWY: STH 22	COUNTY: WAUPACA	CROSS SECTIONS: C68-22-089	SHEET 64	E

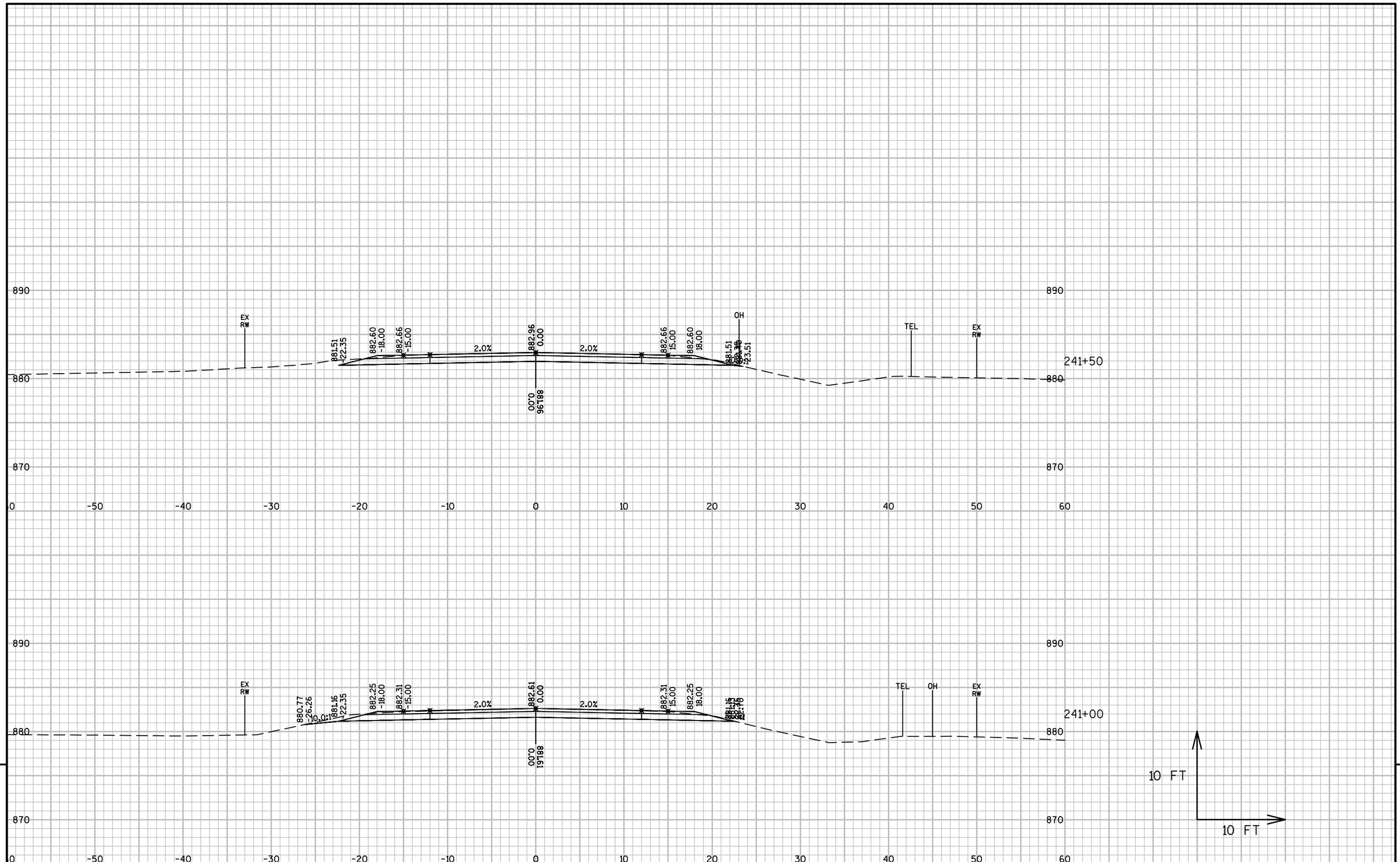
FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-WAUPACA.DWG
LAYOUT NAME - 090504

PLOT DATE : 5/26/2016 1:49 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1009-43-64	HWY: STH 22	COUNTY: WAUPACA	CROSS SECTIONS: C68-22-089	SHEET 65	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-WAUPACA.DWG
LAYOUT NAME - 090505
PLOT DATE : 5/26/2016 1:49 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



9

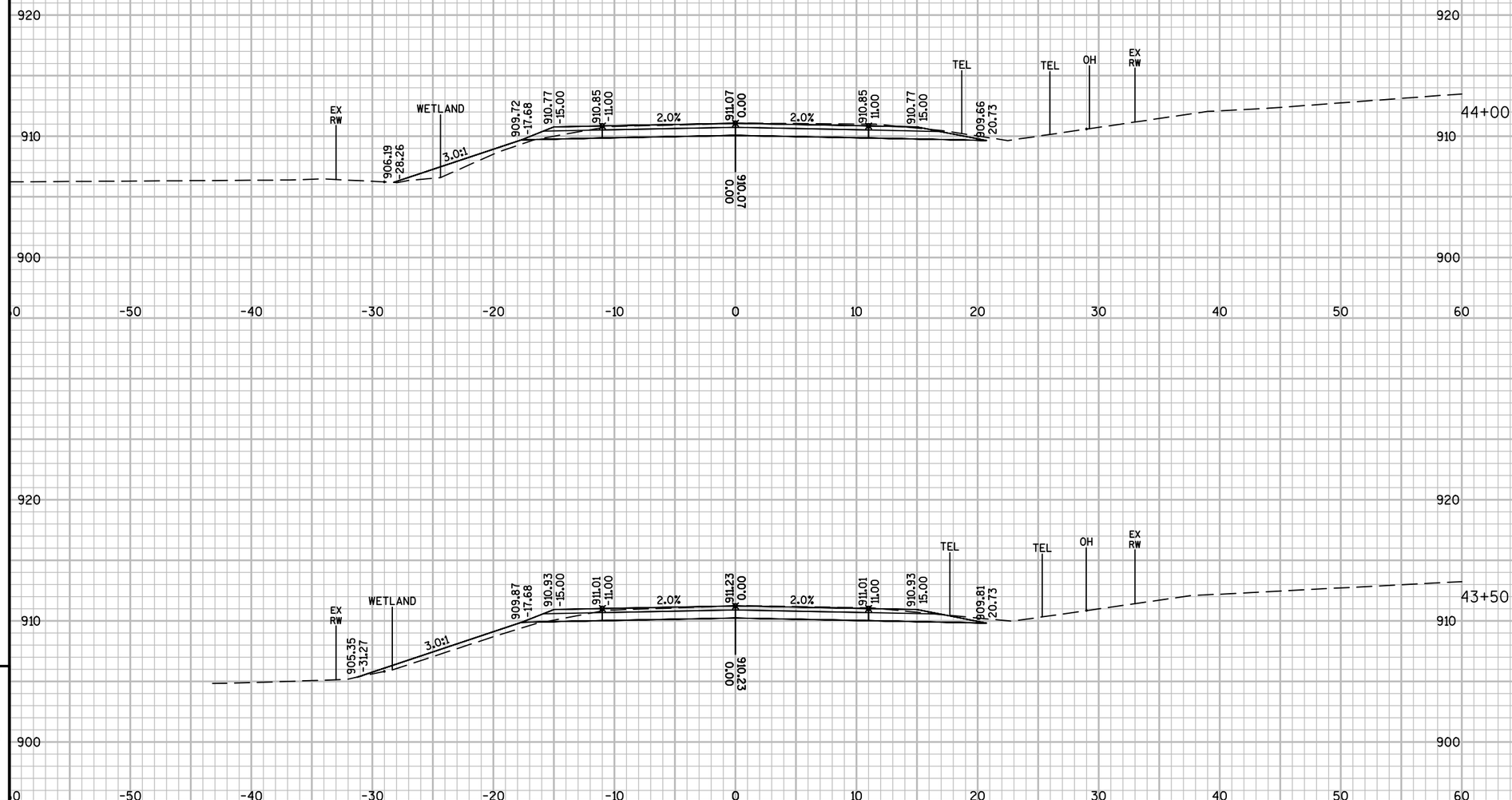
9

PROJECT NO: 1009-43-64	HWY: STH 22	COUNTY: WAUPACA	CROSS SECTIONS: C68-22-089	SHEET 66	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-WAUPACA.DWG
LAYOUT NAME - 090506

PLOT DATE : 5/26/2016 1:49 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT

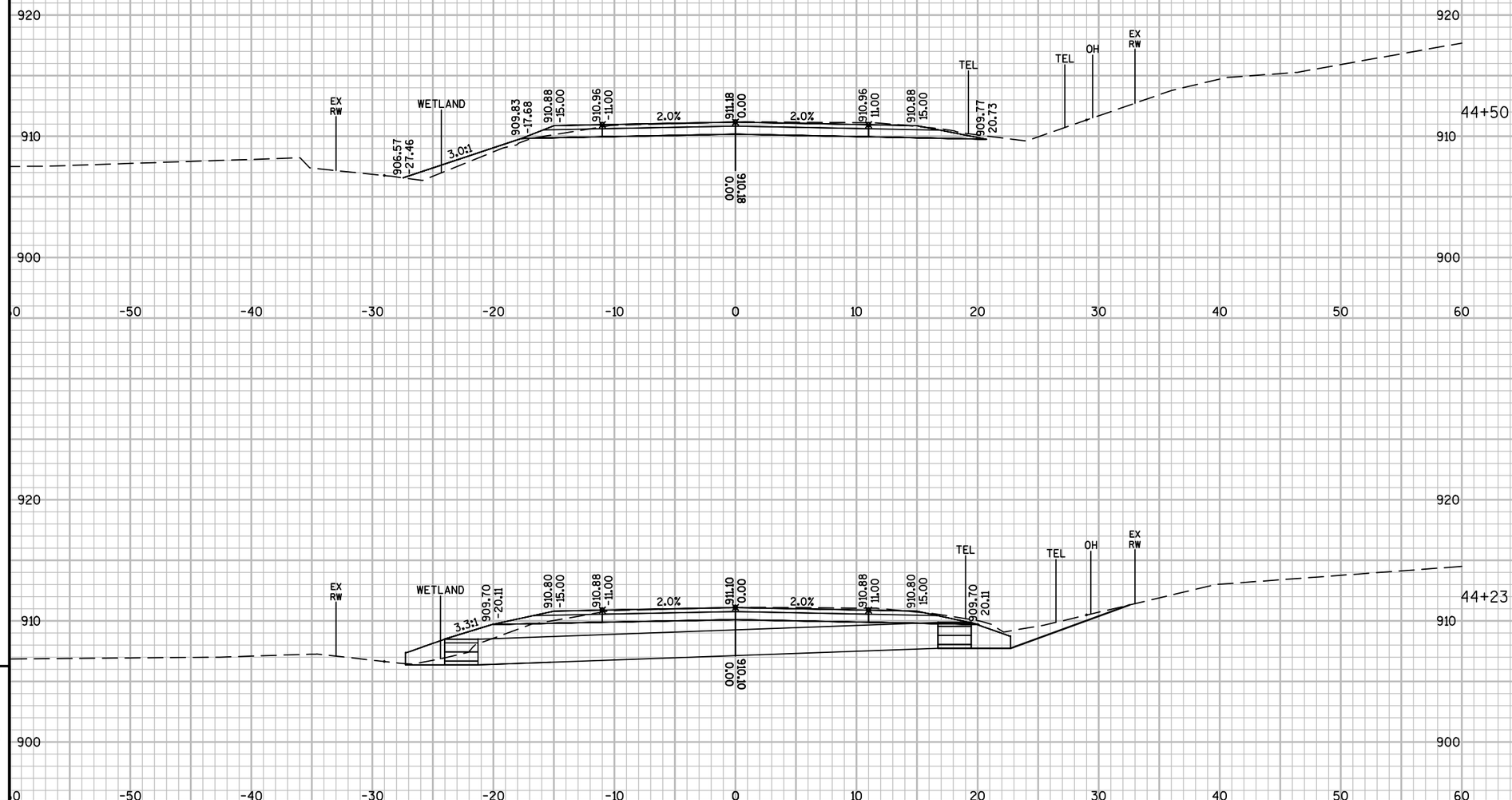
WISDOT/CADDS SHEET 49



9 9

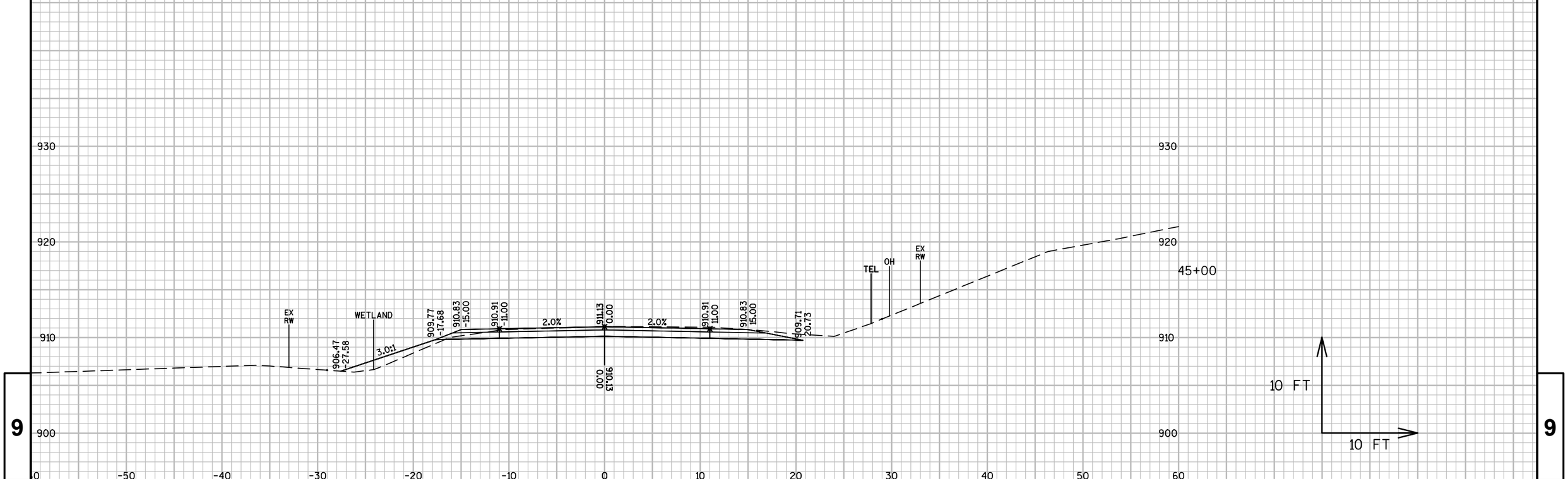
PROJECT NO: 1009-43-64	HWY: STH 110	COUNTY: WAUPACA	CROSS SECTIONS: C68-110-041	SHEET 67	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-WAUPACA.DWG
LAYOUT NAME - 090501
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 1009-43-64	HWY: STH 110	COUNTY: WAUPACA	CROSS SECTIONS: C68-110-041	SHEET 68	E

FILE NAME : P:\2016\2016.003 - WISDOT NCR - REGION WIDE CULVERT REPLACEMENT\10094334\SHEETSPLAN\090201-XS-WAUPACA.DWG
LAYOUT NAME - 090502
PLOT DATE : 5/26/2016 1:48 PM PLOT BY : MATTHEW T. GRAUN PLOT NAME : PLOT SCALE : 1 IN:10 FT



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9

PROJECT NO: 1009-43-64	HWY: STH 110	COUNTY: WAUPACA	CROSS SECTIONS: C68-110-041	SHEET 69	E

Wisconsin Department of Transportation

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