RHI APR 2014

PROJECT ID: 1170-21-60, 1170-21-61
WITH: 1170-21-70

COUNTY: VILAS

ORDER OF SHEETS

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

TOTAL SHEETS = 170



36

DESIGN DESIGNATION

A.A.D.T.	2014	=	4090
A.A.D.T.	2034	=	5290
D.H.V.		=	645
D.D.		=	61/39
T.		=	18.3%
DESIGN SPEED		=	60
ESALS		=	1,715,500

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1170-21-60		
1170-21-61		

MINOCQUA - MANITOWISH

CTH H TO CTH W

USH 51

VILAS

STATE PROJECT NUMBER
1170-21-60

MINOCQUA - MANITOWISH

B-63-18 SPIDER LAKE BRIDGE

USH 51

VILAS

STATE PROJECT NUMBER
1170-21-61

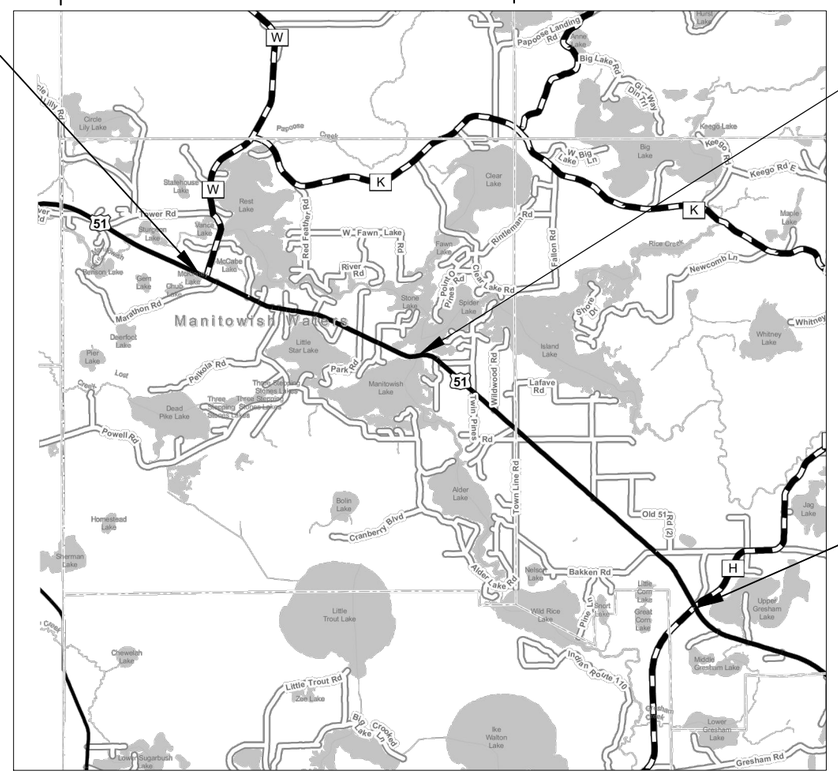
R 4 E | R 5 E | R 6 E

T 43 N

T 42 N

T 41 N

END PROJECT
STA 970+00



B-63-18 SPIDER LAKE BRIDGE
USH 51
VILAS
1170-21-61

BEGIN PROJECT
STA 549+80

LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 7.958

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VILAS COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JEFF BROCK
Designer	ANN RISE
Project Manager	DAN ERVA
Regional Examiner	CHERYL SIMON
Regional Supervisor	ANNA WISNER

APPROVED FOR THE DEPARTMENT

DATE: 2/25/14 Anna Wisner (Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS OUTSIDE THE GRADING
LIMITS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

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

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

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

DEPARTMENT OF NATURAL RESOURCES
NORTH CENTRAL DISTRICT
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
JON SIMONSEN
715-365-8916

UTILTIES

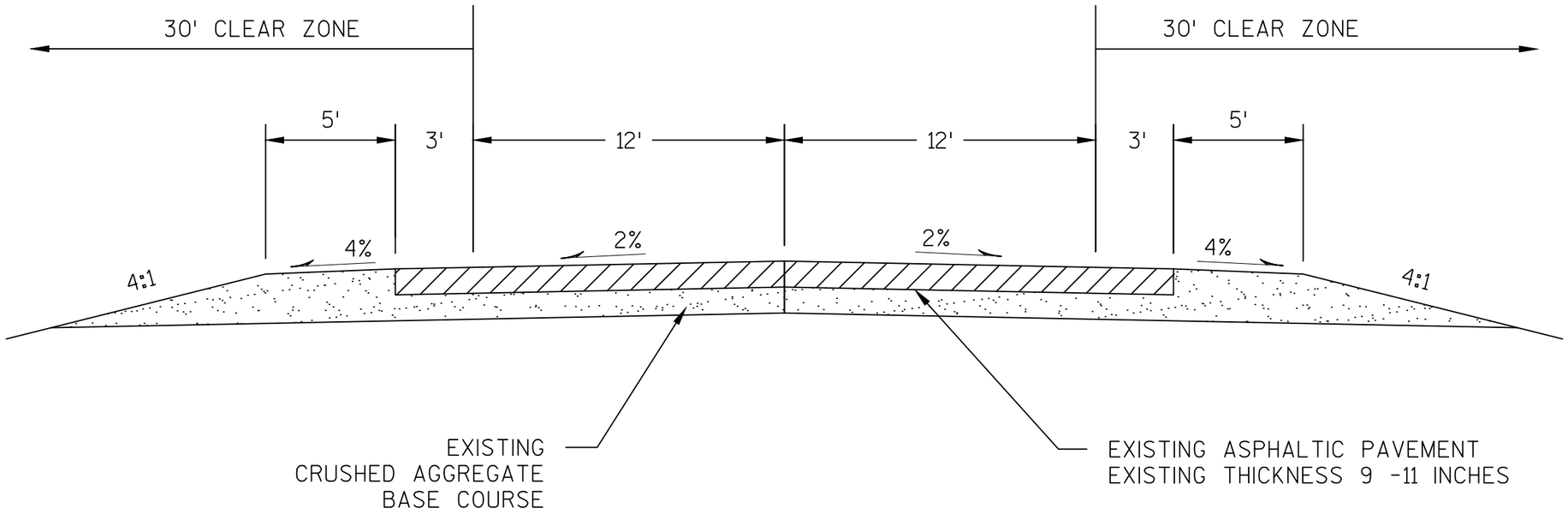
We Energies - Gas
4222 County Rd B
Land O' Lakes, WI 54540
(906) 250-4044
(906) 250-1044 (Mobile)
Jim Schofield

Century Link - Communications Line
400 West 9th St. N, Ste. 5
Ladysmith, WI 54848
(715) 532-0023
(715) 563-8294 (Mobile)
Brian Huhn

Wisconsin Public Service Corporation - Electricity
2027 Navajo Street, P.O. Box 160
Rhinelander, WI 54501
(715) 369-7117
(715) 209-0085 (Mobile)
Zane Hagstrom

Xcel Energy - Electricity
101 Alfred Wright Blvd.
Ironwood, MI 49938
(906) 932-2848
(715) 492-4775 (Mobile)
Stacey Westeen

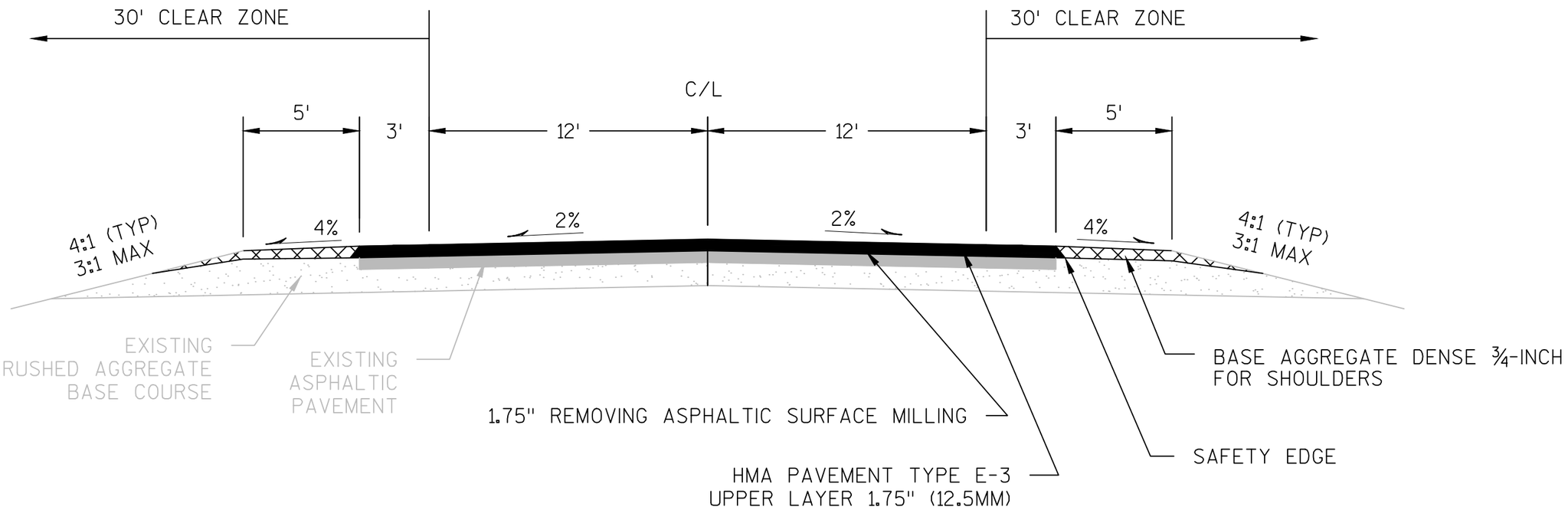
DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com



EXISTING TYPICAL SECTION

STATION 549+80 - STA 970+00

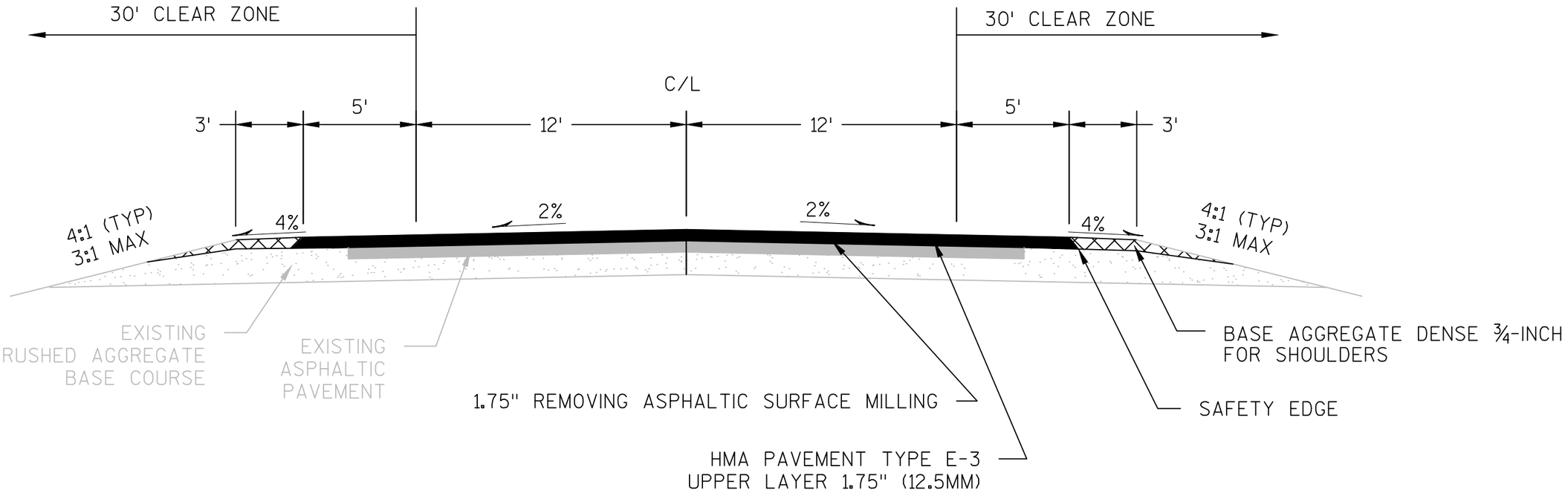
PROJECT NO: 1170-19-60	HWY: USH 51	COUNTY: VILAS	TYPICAL SECTIONS TS-60-6	SHEET 3	E



PROPOSED TYPICAL SECTION

STATION 549+80 - STA 711+00

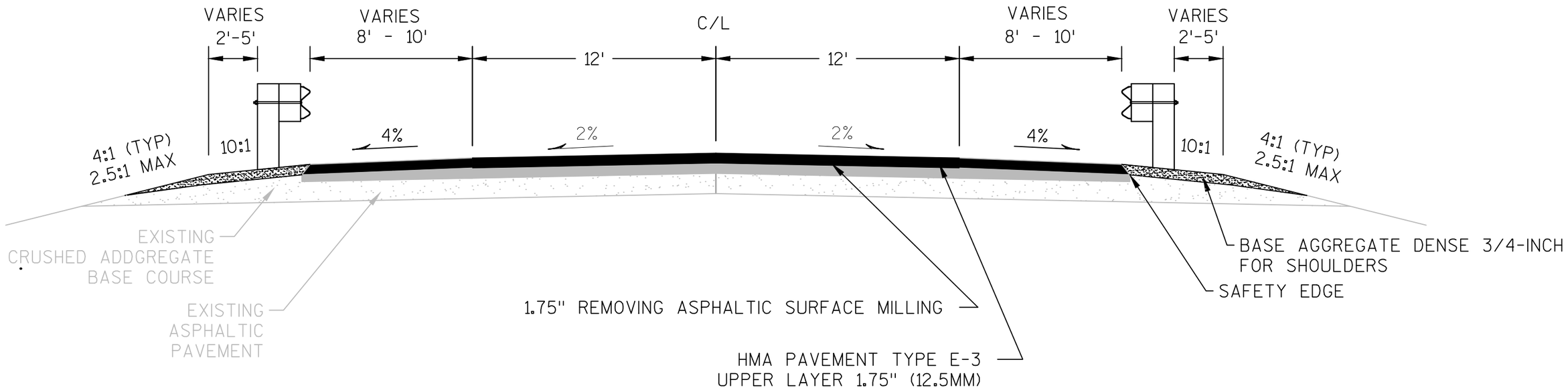
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PROPOSED TYPICAL SECTIONS TS-60-7	SHEET 4	E



PROPOSED TYPICAL SECTION

STATION 711+00 - STA 806+93
STATION 812+02 - STA 970+00

PROJECT NO: 1170-19-60	HWY: USH 51	COUNTY: VILAS	PROPOSED TYPICAL SECTIONS TS-60-8	SHEET 5	E



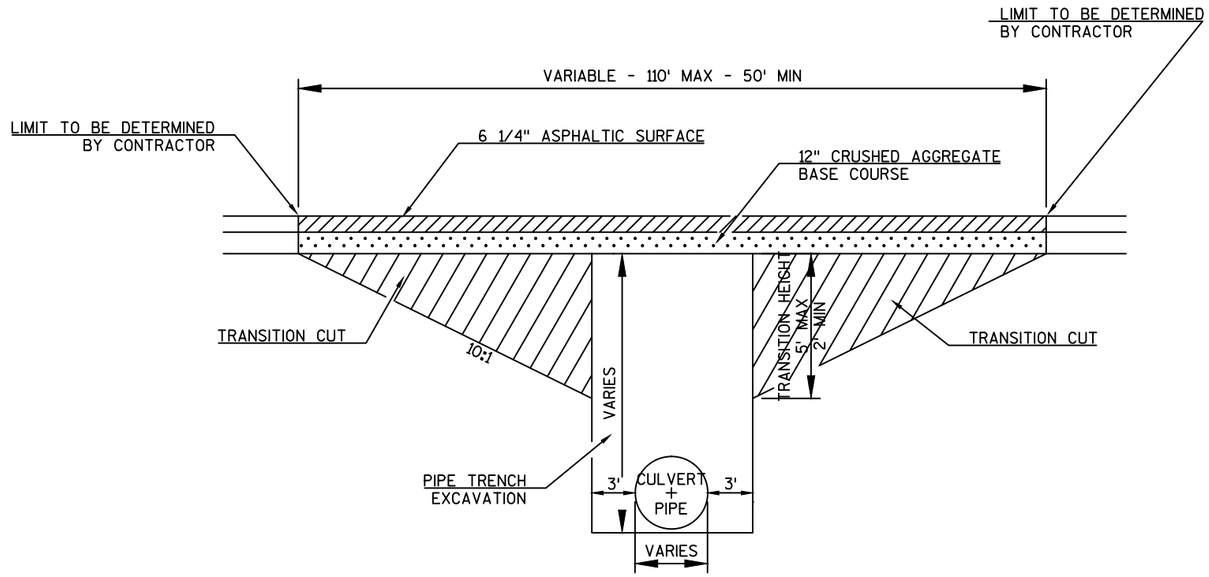
PROPOSED TYPICAL SECTION

STA 806+93 - 812+02

PROJECT NO: 1170-19-60	HWY: USH 51	COUNTY: VILAS	PROPOSED TYPICAL SECTIONS	TS-60-9	SHEET 6	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\020301_TS_6-9.DWG PLOT DATE : 1/30/2014 7:44 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:5 FT

WISDOT/CADDS SHEET 42



QUANTITIES FOR INFORMATIONAL PURPOSE

TRANSITIONAL HEIGHT FT	CUT VOL CY
2	44
3	100
4	178
5	278

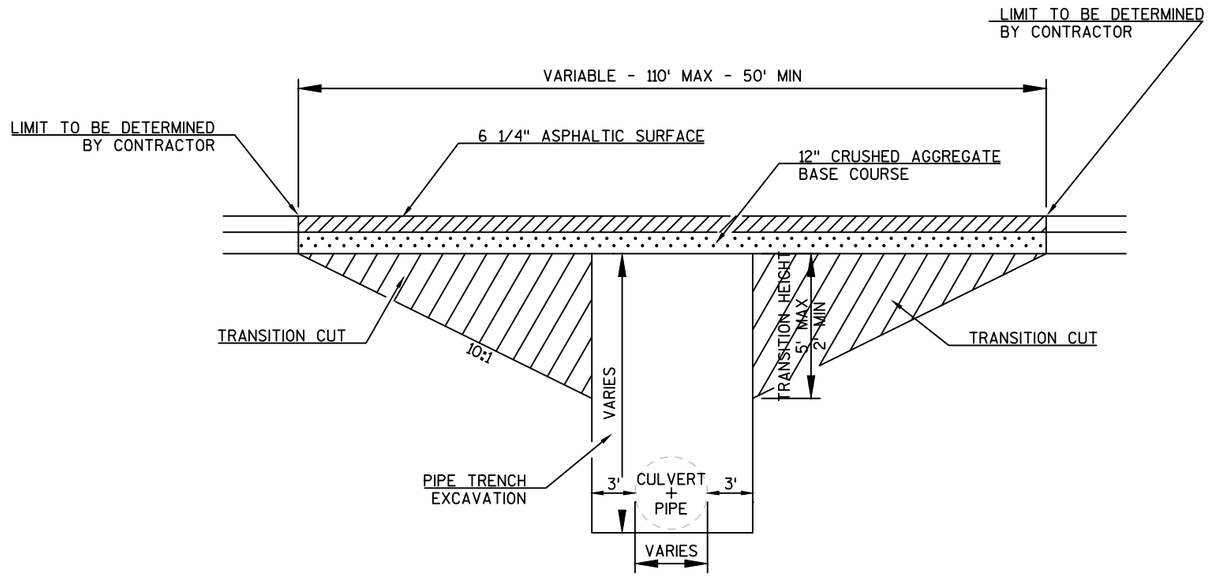
CULVERT PIPE TRANSITION

710+00

NOTE: REUSE MATERIAL REMOVED IN TRANSITION CUT AND PIPE TRENCH EXCAVATIONS AS BACKFILL UNLESS OTHERWISE DIRECTED BY THE ENGINEER TO USE BACKFILL GRANULAR

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

TRANSITION CUT WILL BE SHOULDER POINT TO SHOULDER POINT, HALF OF SHOULDER POINT TO SHOULDER POINT EACH SIDE OF CENTERLINE.



QUANTITIES FOR INFORMATIONAL PURPOSE

TRANSITIONAL HEIGHT FT	CUT VOL CY
2	44
3	100
4	178
5	278

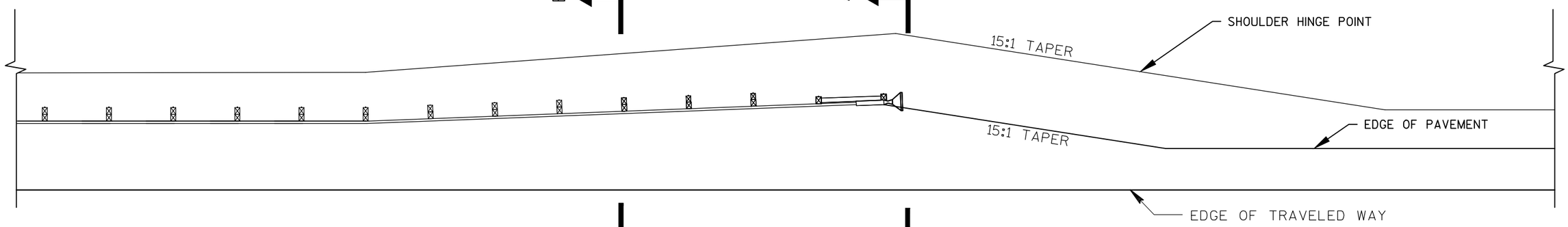
CULVERT PIPE TRANSITION

710+50 (PIPE REMOVAL ONLY)

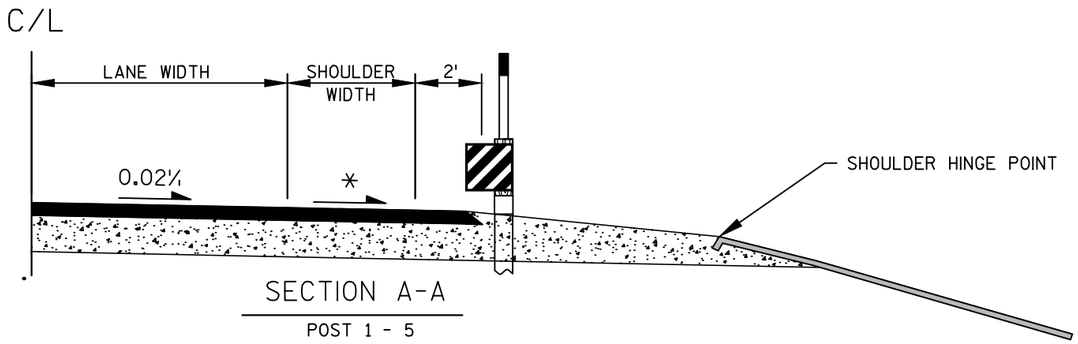
NOTE: REUSE MATERIAL REMOVED IN TRANSITION CUT AND PIPE TRENCH EXCAVATIONS AS BACKFILL UNLESS OTHERWISE DIRECTED BY THE ENGINEER TO USE BACKFILL GRANULAR

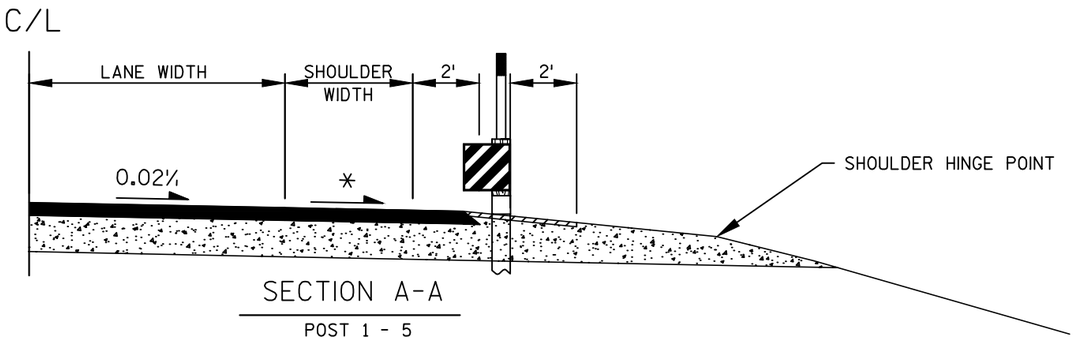
PIPE TRENCH EXCAVATION, EXCLUDING TRANSITION CUT IS CONSIDERED INCIDENTAL TO PIPE INSTALLATION. TRANSITION CUT WILL BE PAID FOR AS CULVERT PIPE TRANSITION.

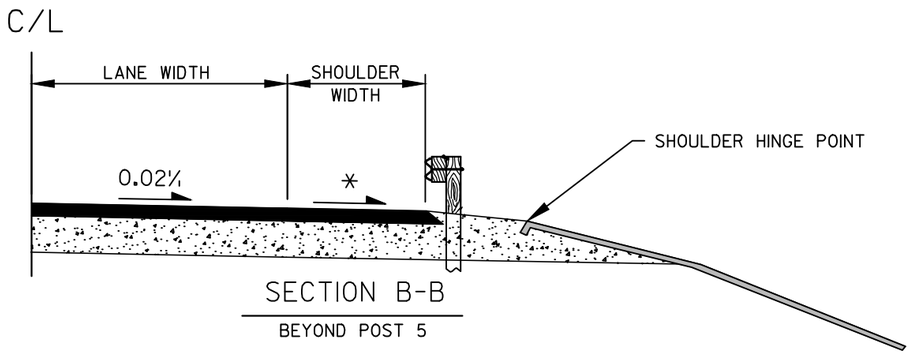
TRANSITION CUT WILL BE SHOULDER POINT TO SHOULDER POINT, HALF OF SHOULDER POINT TO SHOULDER POINT EACH SIDE OF CENTERLINE.



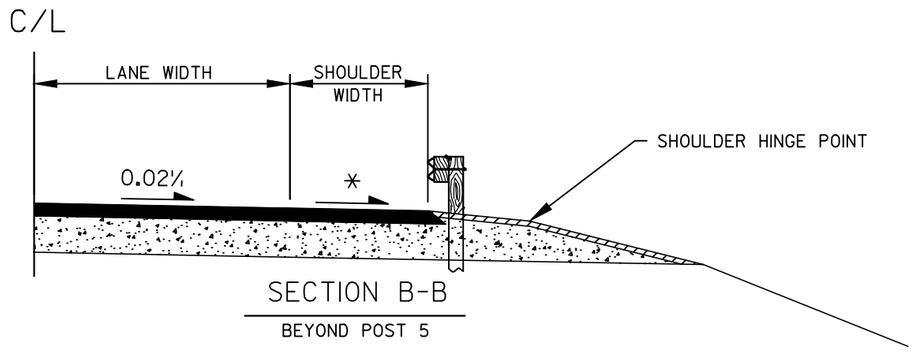
SHOULDER PAVING AT GUARDRAIL DETAIL







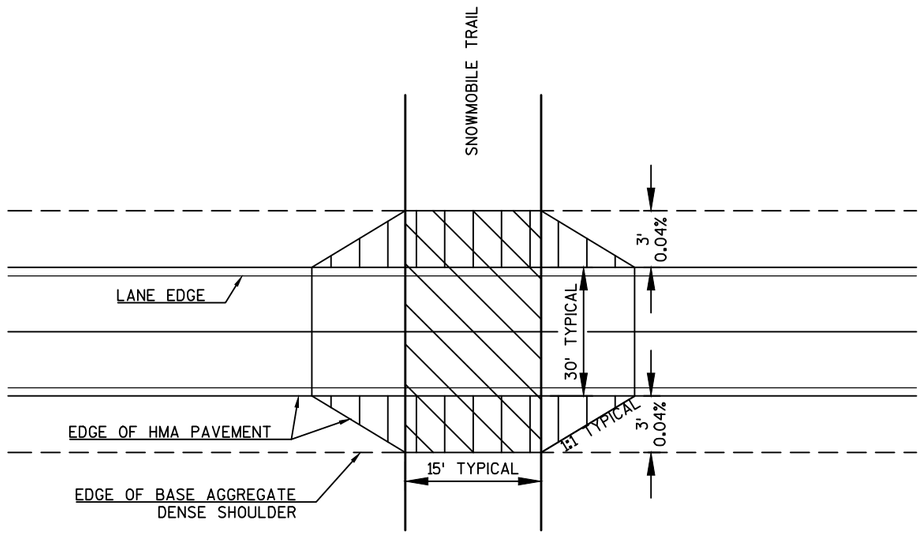
SHOULDER TREATMENT AT GUARDRAIL - "EROSION MAT"
STA 806+93 - 809+05 RT
STA 809+88 - 811+90 LT



SHOULDER TREATMENT AT GUARDRAIL - SPRAYED ASPHALT
STA 807+26 - 809+05 LT
STA 809+88 - 812+02 RT

NOTE: SEE STANDARD DETAIL DRAWINGS
MIDWEST GUARDRAIL SYSTEM SYSTEM (MGS) GUARDRAIL
MIDWEST GUARDRAIL SYSTEM LONG SPAN (MGS L)
MIDWEST GUARDRAIL SYSTEM (MGS) EAT
MIDWEST GUARDRAIL SYSTEM (MGS) THRIE BEAM TRANSITION

HMA PAVEMENT
BASE
EROSION MAT AND SEED
SPRAYED ASPHALTIC SURFACE TREATMENT



PROTECTIVE THERMOPLASTIC COATING
AT SNOWMOBILE TRAIL CROSSING

HMA TYPE E-3 PAVEMENT WIDENING
4-INCHES FOR SNOWMOBILE TRAIL CROSSING

NOTE: PREPARATION FOR PAVEMENT WIDENING FALLS UNDER PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS.

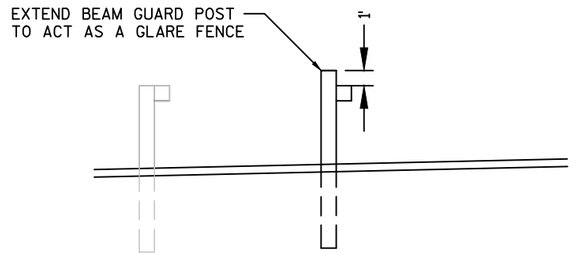
EXACT LOCATIONS TO BE MARKED IN THE FIELD BY THE PROJECT PERSONAL.

SNOWMOBILE TRAIL CROSSING

STA 782+60
STA 803+20
STA 919+90
STA 959+50

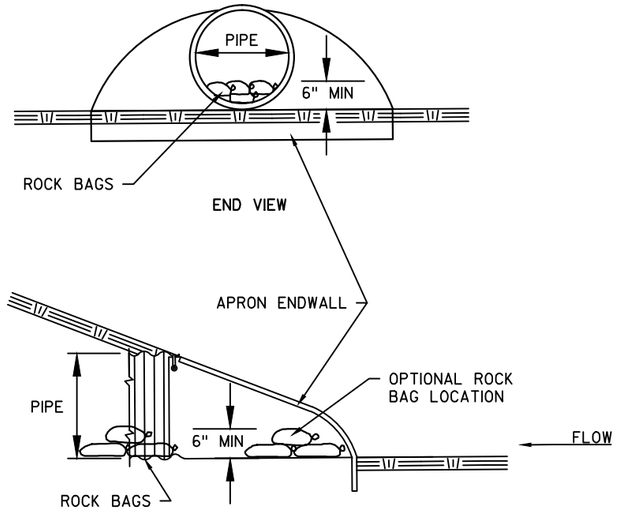
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET 10	E

2



BEAM GUARD POST EXTENSION AREA

STA 806+93 RT - STA 812+02 RT



CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)



1-3/4" HMA PAVEMENT TYPE E-3

REMOVING ASPHALTIC SURFACE, MILLING

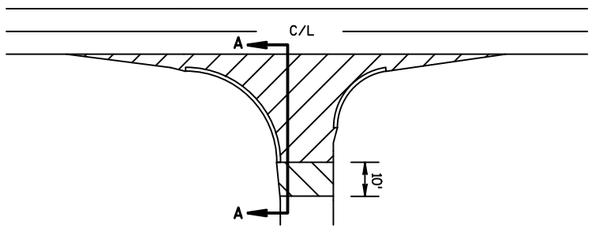
REMOVING ASPHALTIC SURFACE, BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

MAINLINE BUTT JOINT DETAIL

STA 549+80 - STA 549+90

STA 969+90 - STA 970+00



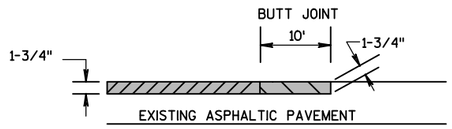
REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

BUTT JOINT DETAIL

CTH W



1-3/4" HMA PAVEMENT TYPE E-3

REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

SECTION A - A

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET 12	E

LEGEND

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 558+00 AND 608+00

BEGIN PROJECT 1170-21-60
STATION 549+80

WETLAND BOUNDARY

WETLAND BOUNDARY

STA 552+86 C/L
1-24" CPRC 54' EXTEND

WETLAND BOUNDARY

STA 557+44 C/L
1-24" LINED CMCP EXTEND

CTH H

544 546 548 550 552 554 556 558 560

608 610 612 614 616 618 620 622

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 558+00 AND 608+00

DRIVEWAY KEY

ASPHALT

BAD

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 609+00 AND 709+00

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 13	E

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 609+00 AND 709+00

STA 710+00 C/L
1 24" CPRC REQ'D

STA 710+50 C/L
1 24" CMCP REMOVE

OLD 51

N

CE

704 706 708 710 712 714 716

INLET PROTECTION TYPE A

LEGEND

- ###### EROSION MAT CLASS I, TYPE A
- SILT FENCE
- CULVERT PIPE CHECK
- SLOPE INTERCEPT
- SURFACE WATER FLOW

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 712+00 AND 805+00

S TOWNLINE ROAD

N TOWNLINE ROAD

CE PE PE PE PE PE

718 720 722 724 726 728 730 732

CE CE PE

DRIVEWAY KEY

- ASPHALT
- BAD

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\022001_EC.DWG PLOT DATE : 2/6/2014 11:30 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

SPIDER LAKE BRIDGE B-63-0018
REPLACE BEAMGUARD AT ALL APPROACHES
ADD POLYMER OVERLAY SURFACE TO BRIDGE

THERE ARE NO EROSION CONTROL ITEMS BETWEEN STA 712+00 AND 805+00

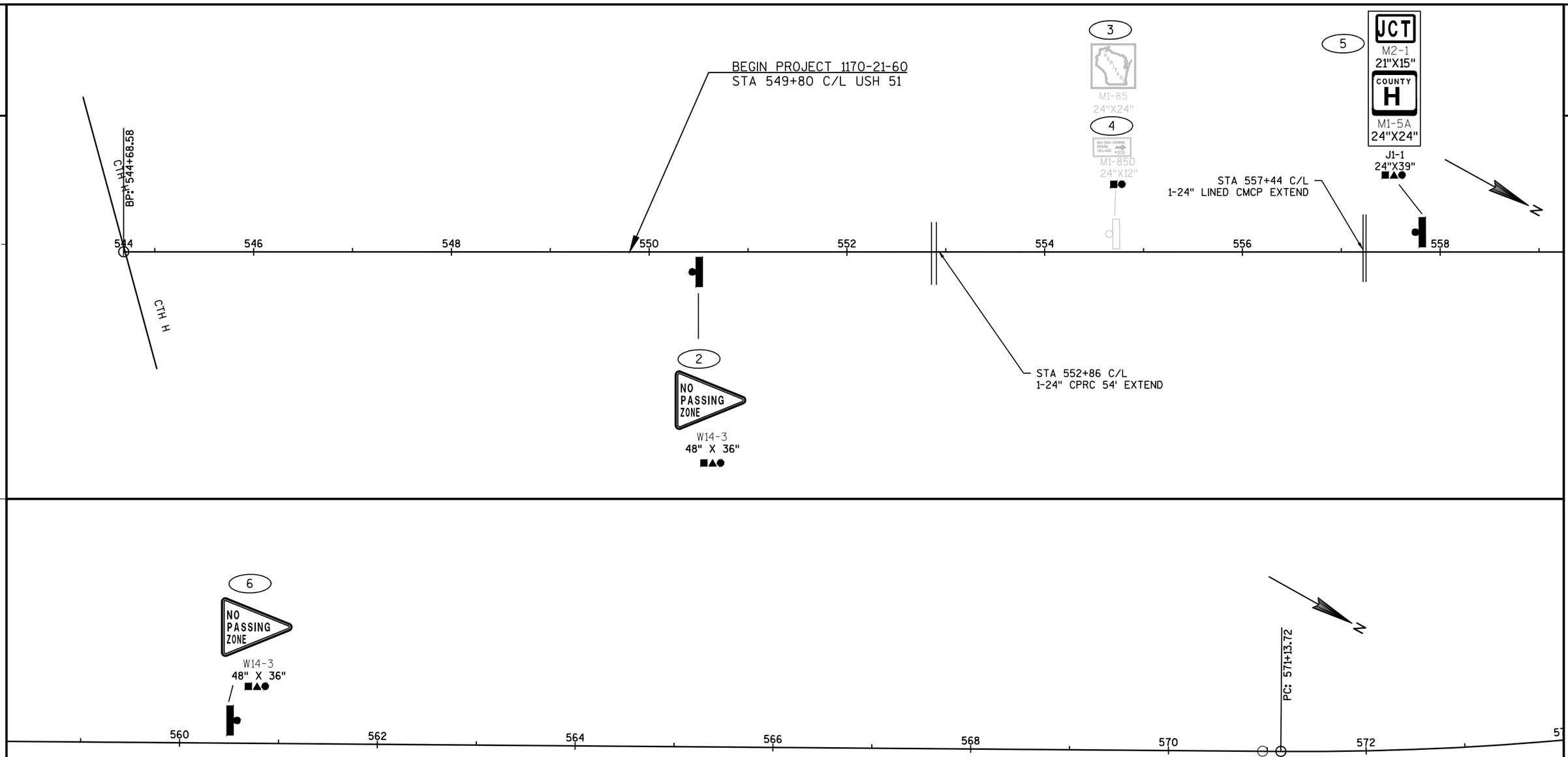
THERE ARE NO EROSION CONTROL ITEMS BEYOND STA 814+00

DRIVEWAY KEY

ASPHALT

BAD

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 15	E



NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

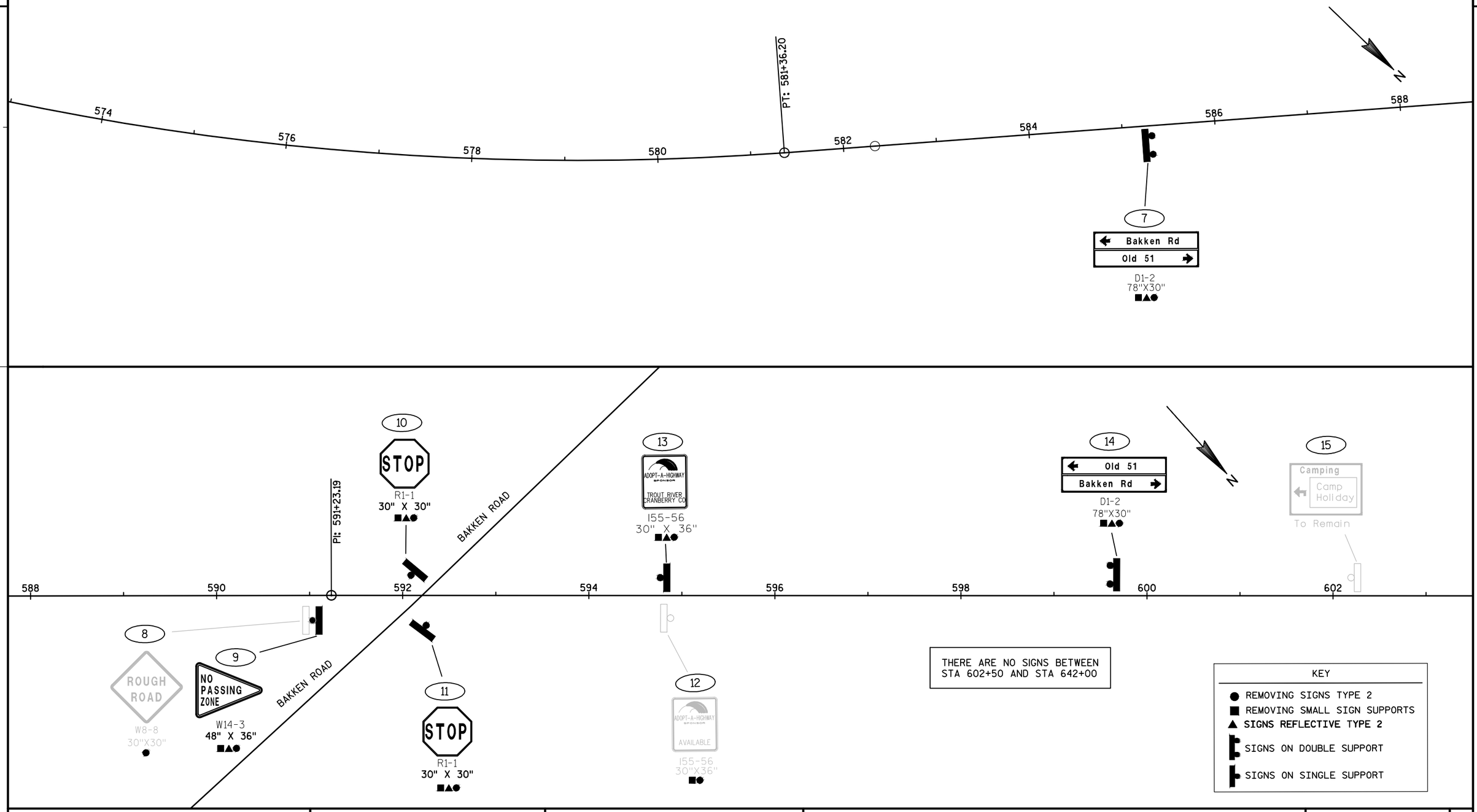
KEY

- ● REMOVING SIGNS TYPE 2
- ■ REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:42 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

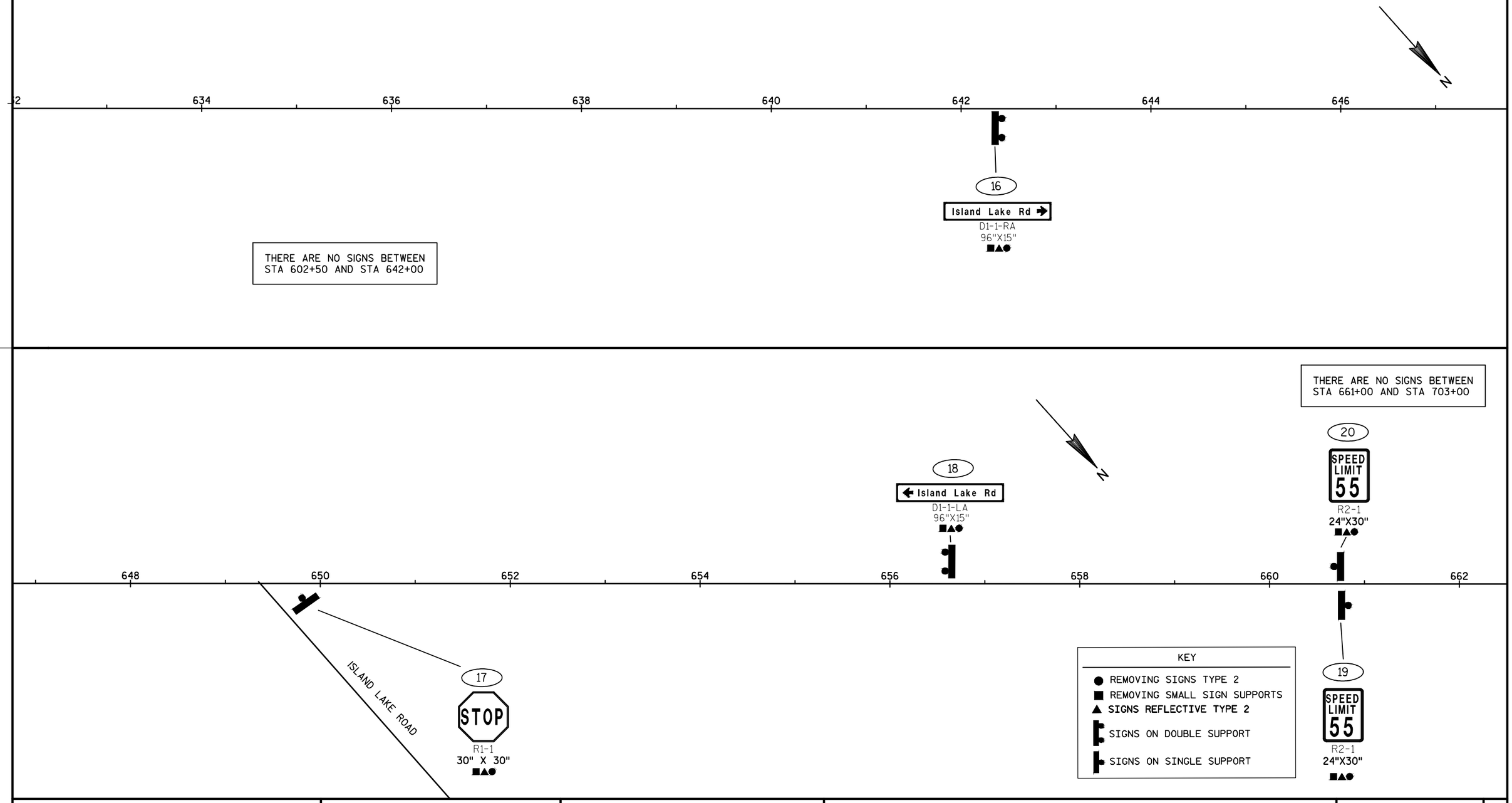
NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:42 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 18	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:42 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

692 694 696 698 700 702 704 706

THERE ARE NO SIGNS BETWEEN
STA 661+00 AND STA 703+00

21
Old 51
D1-61-DA
42"X24"

706 708 710 712 714 716 718 720

STA 710+00 C/L
1 24" CPRC REQ'D

STA 710+50 C/L
1 24" CMCP REMOVE

22
STOP
R1-1
30" X 30"

OLD 51

23
STOP
R1-1
30" X 30"

OLD 51

24
N Townline Rd
S Townline Rd
D1-2
96"X30"

25
Old 51
D1-61-DA
42"X24"

27
ADOPT-A-HIGHWAY SPONSOR AVAILABLE
155-56
30"X36"

N TOWNLINE ROAD

26
ADOPT-A-HIGHWAY SPONSOR
MANITOWISH WATERS ALLIANCE LTD
155-56
30" X 36"

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:42 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

28
STOP
R1-1
30" X 30"

30
STOP
R1-1
30" X 30"

31
S Townline Rd
N Townline Rd
D1-2
96"X30"

N TOWNLINE ROAD

722 724 726 728 730 732 734 736

29
STOP
R1-1
30" X 30"

S TOWNLINE ROAD

Wildwood Dr
D1-1-RA
84"X15"
32

Wildwood Dr
D1-1
33

N

35
Wildwood Dr
D1-1-LA
84"X15"

736 738 740 742 744 746 748 750

34
STOP
R1-1
30" X 30"

WILDWOOD ROAD

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:42 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

37

STOP

R1-1

30" X 30"

■▲●

TWIN PINE ROAD

N

752 754 756 758 760 762 764

36

Twin Pines Rd

Spider Lake Rd

D1-2

96"X30"

■▲●

38

STOP

R1-1

30" X 30"

■▲●

SPIDER LAKE ROAD

39

Spider Lake Rd

Twin Pines Rd

D1-2

96"X30"

■▲●

N

PI: 776+10.90

766 768 770 772 774 776 778 780

KEY

- ● REMOVING SIGNS TYPE 2
- ■ REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

NOTE:
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 21	E

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

42
NO PASSING ZONE
W14-3
48" X 36"
■▲●

45
Voss Rd
D1-1-LA
66"X15"
■▲●

PC: 794+49.91

780 782 784 786 788 790 792 794

40A
S3-1
36"X36"
■▲●

40B
NEXT 1 MILES
REMOVE
■▲●

41
Voss Rd
D1-1-RA
66"X15"
■▲●

VOSS ROAD

43
STOP
R1-1
30" X 30"
■▲●

44
W11-6
30" X 30"
■▲●

N

794 PC: 794+49.91 DEER PARK ROAD

47
STOP
R1-1
30" X 30"
■▲●

48
STOP
R1-1
30" X 30"
■▲●

53
W2-2
30" X 30"
■▲●

PT: 807+79.04

796 798 800 802 804 806 808 810

46 TO REMAIN
49 TO REMAIN
50 TO REMAIN
51 TO REMAIN
52 TO REMAIN
54 TO REMAIN
55 TO REMAIN
56 TO REMAIN

KEY
- ● REMOVING SIGNS TYPE 2
- ■ REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

57
TO REMAIN

58
TO REMAIN

59
TO REMAIN

60
TO REMAIN

61
TO REMAIN

62
W11-6
30" X 30"

PC: 811+18.63

PI: 818+93.33

PI: 821+67.30

810 812 814 816 818 820 822 824

N

63B
S3-1
36"X36"

63A
NEXT
1/2 MILES
REMOVE

824 826 828 830 832 834 836 838

64
NO PASSING ZONE
W14-3
48" X 36"

65
Manitowish Rd
Deer Path Rd
D1-2
96"X30"

N

67
STOP
R1-1
30" X 30"

MANITOWISH ROAD

66
STOP
R1-1
30" X 30"

DEER PATH ROAD

NOTE:
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KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

NOTE:
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68
ADOPT-A-HIGHWAY SPONSOR
MANITOWISH WATERS ALLIANCE LTD
I55-56
30" X 36"

PI: 839+81.07

69
ADOPT-A-HIGHWAY SPONSOR
AVAILABLE
I55-56
30"X36"

DEER PATH ROAD

70
Deer Path Rd
Manitowish Rd
D1-2
96"X30"

71
Park Hill Rd
Birch Hill Rd
D1-2
90"X30"

72
STOP
R1-1
30" X 30"

PARK HILL ROAD

73
STOP
R1-1
30" X 30"

BIRCH HILL ROAD

840 842 844 846 848 850 852 854

75
Birch Hill Rd
Park Hill Rd
D1-2
90"X30"

74
Nazdar Dr
D1-1-LA
72"X15"

76
STOP
R1-1
30" X 30"

NAZDAR ROAD

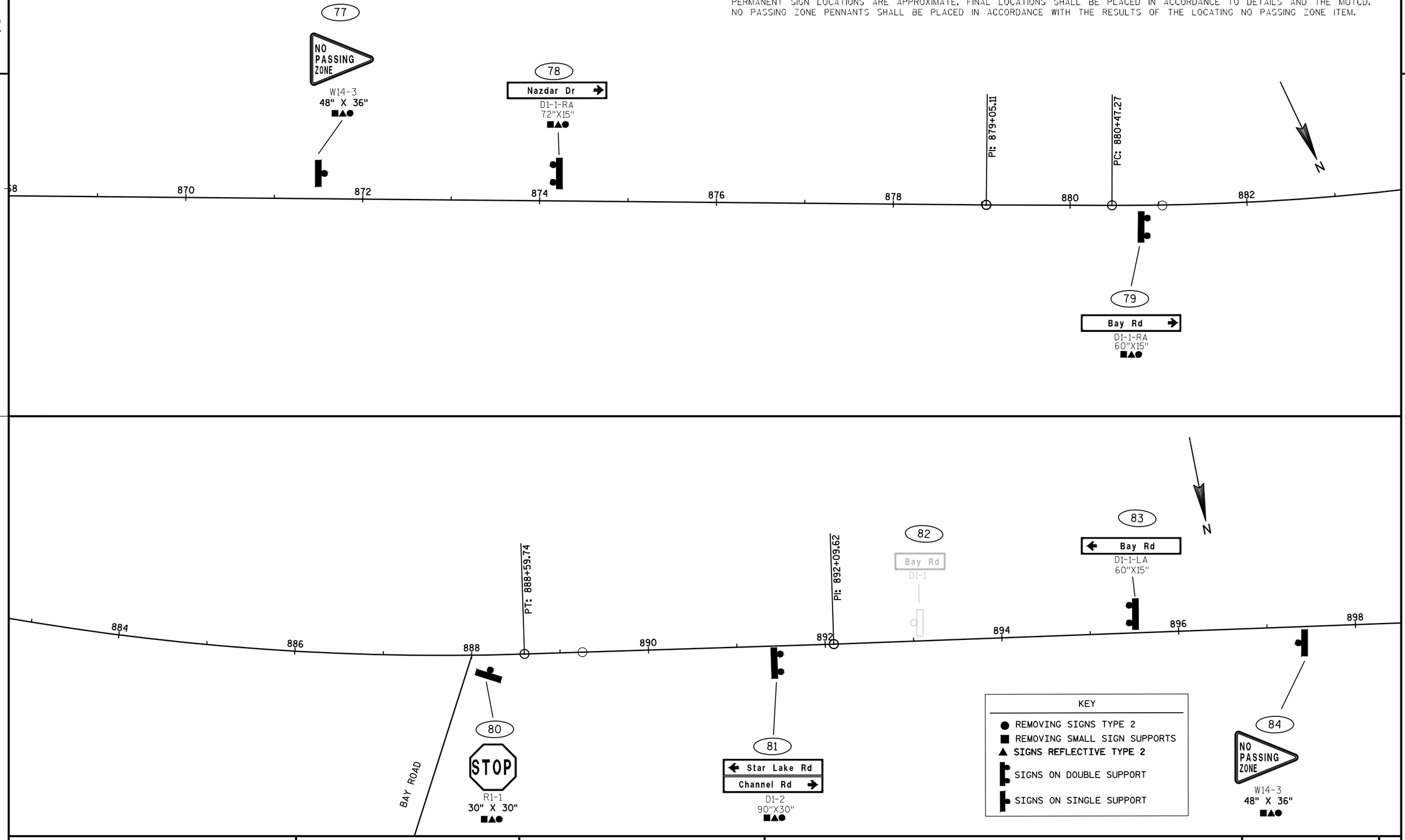
854 856 858 860 862 864 866 868

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

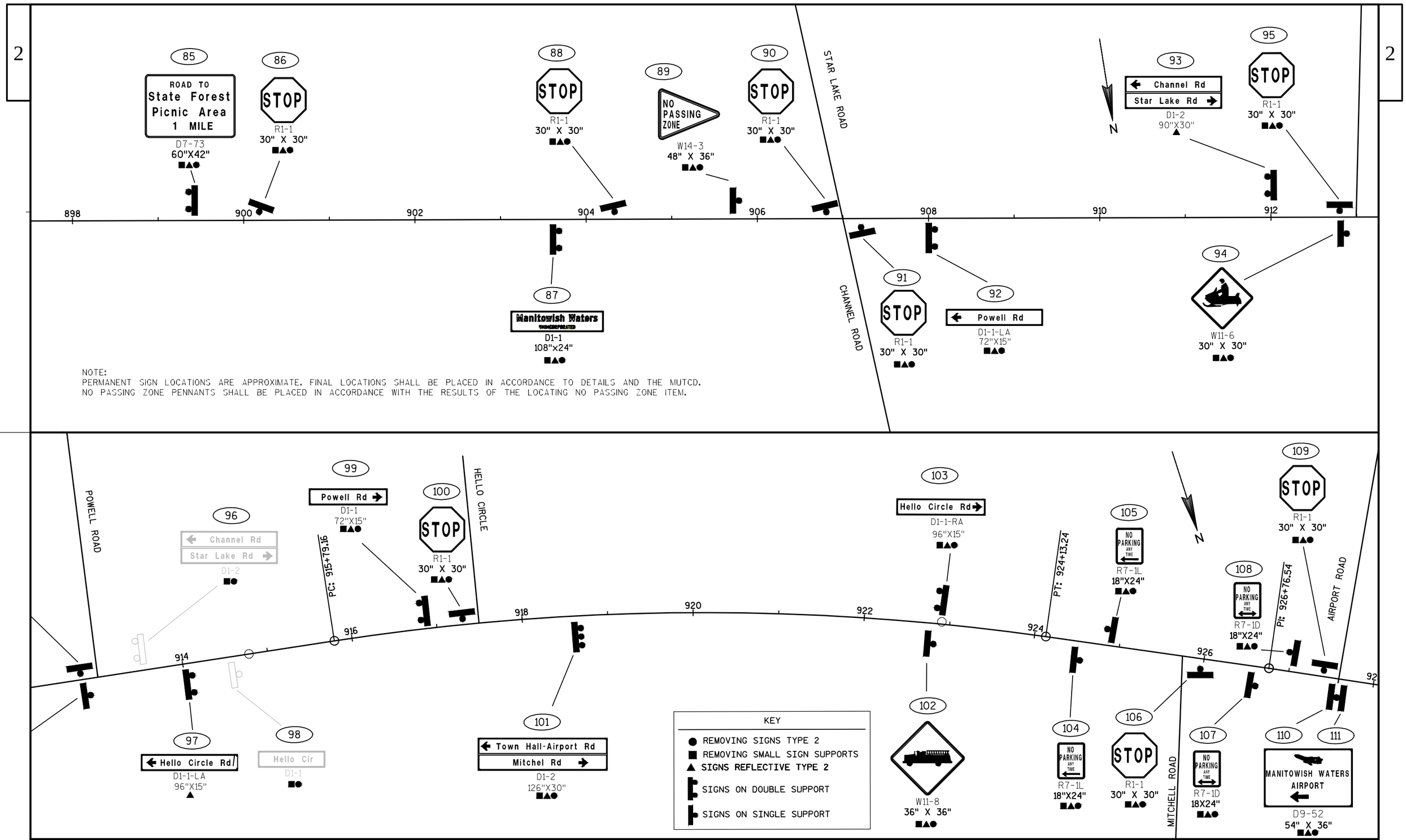
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

112
NO PARKING ANY TIME
R7-1D
18"X24"

113
W11-6
30" X 30"

117
NO PARKING ANY TIME
R7-1D
18"X24"

119
NO PARKING ANY TIME
R7-1L
18"X24"

121
Mitchel Rd
Town Hall-Airport Rd
D1-2
126"X30"

123
W11-8
36" X 36"

N

928 930 932 934 936 938 940 942

114
NO PARKING ANY TIME
R7-1D
18"X24"

115
Rest Lake Rd
D1-1-RA
90"X15"

116
NO PARKING ANY TIME
R7-1D
18"X24"

118
NO PASSING ZONE
W14-3
48" X 36"

120
NO PARKING ANY TIME
R7-1R
18"X24"

REST LAKE ROAD

122
STOP
R1-1
30" X 30"

124
Rest Lake Rd
D1-1-LA
90"X15"

PI: 946+20.35

PI: 951+95.55

PI: 955+77.48

N

942 944 946 948 950 952 954 956

125
Marathon Rd
D1-1-LA
84"X15"

126
JCT
M2-1
21"X15"
COUNTY W
M1-5A
24"X24"
J1-1
24"X39"

127
ADOPT-A-HIGHWAY SPONSOR
MANITOWISH WATERS LIONS & LIONESSES
I55-56
30" X 36"

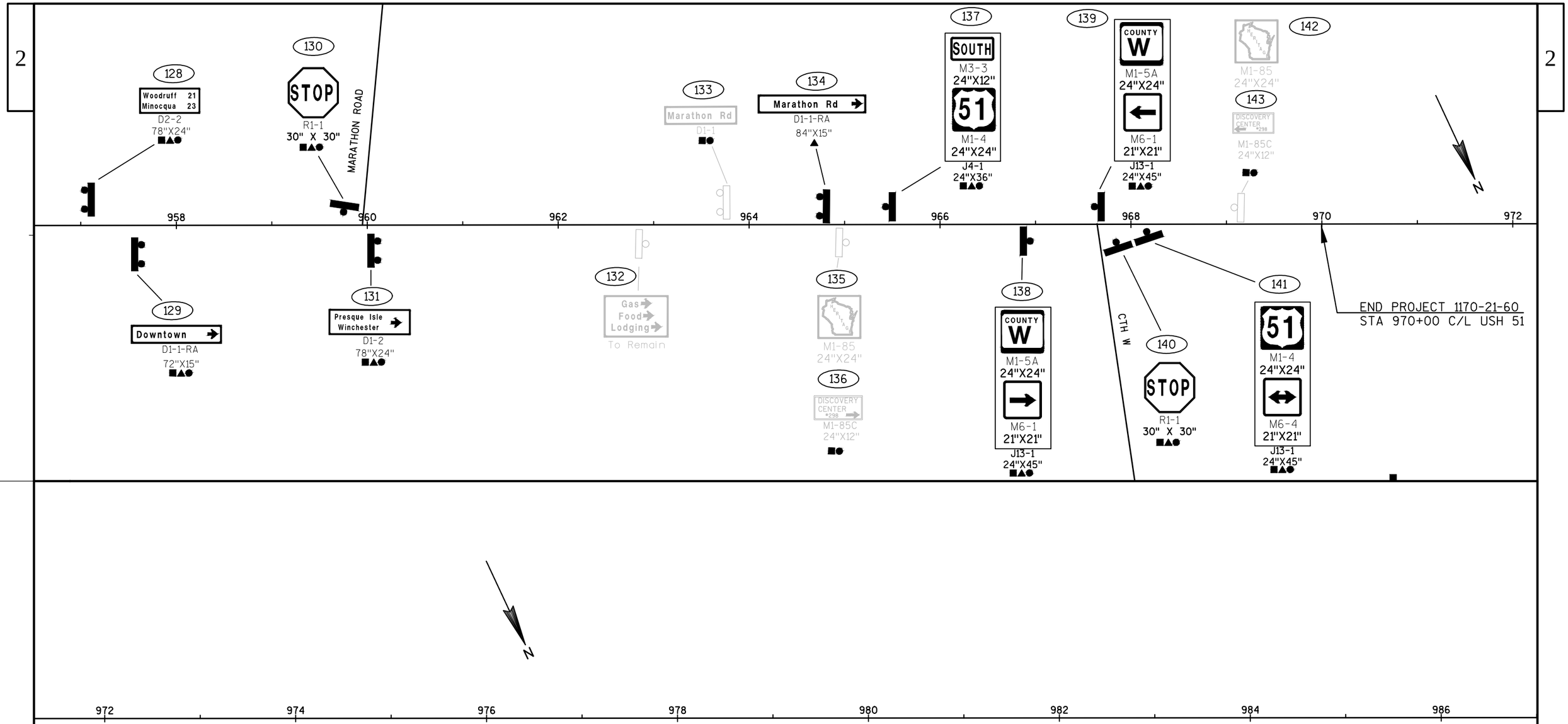
KEY

- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

NOTE:
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



NOTE:
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KEY

- ● REMOVING SIGNS TYPE 2
- ■ REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\023201_PS.DWG PLOT DATE : 2/13/2014 11:43 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

2





PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	TRAFFIC CONTROL SHEET	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025001_TC.DWG PLOT DATE : 1/27/2014 11:38 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

USH 51
VILAS COUNTY
note: stop bar placement at 720 FT spacing

Temporary Signal Timing #1 6:00 am to 8:00 pm

NB	SB	Yellow	All Red	Green
red	red		26. sec	
green	red			30.0 sec
yellow	red	4.0 sec		
red	red		26.0 sec	
red	green			30.0 sec
red	yellow	4.0 sec		
Total cycle length		8.0 sec	52.0 sec	60. sec = **120.0 sec**

ANN

Temporary Signal Timing #2 8:00 pm to 6:00 am

NB	SB	Yellow	All Red	Green
red	red		26. sec	
green	red			24.0 sec
yellow	red	4.0 sec		
red	red		26.0 sec	
red	green			24.0 sec
red	yellow	4.0 sec		
Total cycle length		8.0 sec	52.0 sec	48.0 sec = **108.0 sec**

2

2

N

779+00 780+00 781+00 782+00 783+00 784+00

785+50.00, 0.00'

N

790+50.00, 0.00'

785+00 786+00 787+00 788+00 789+00 790+00 791+00

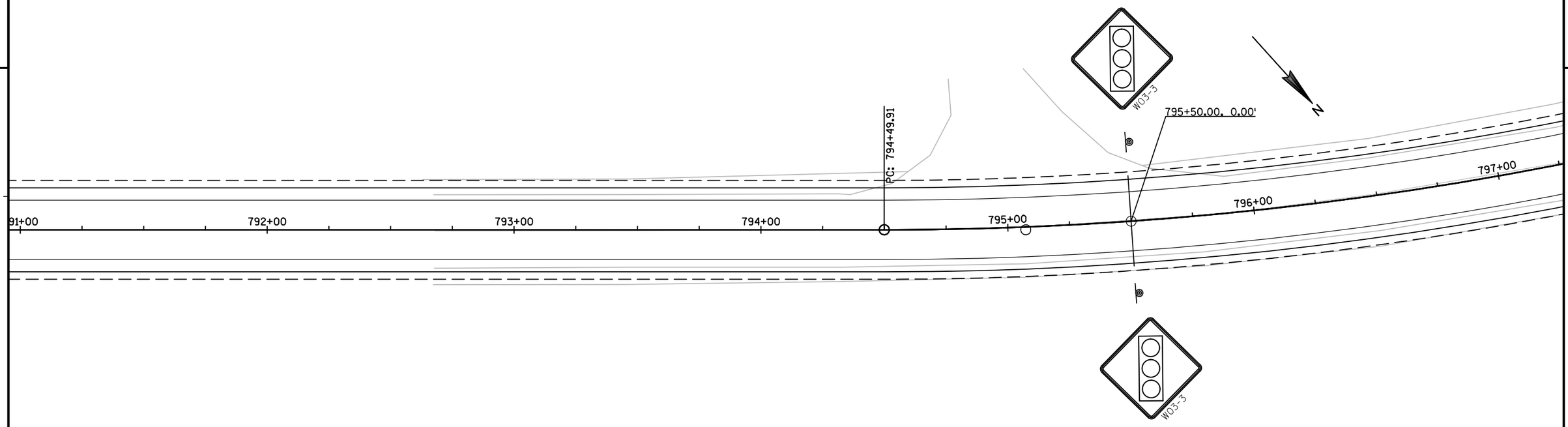


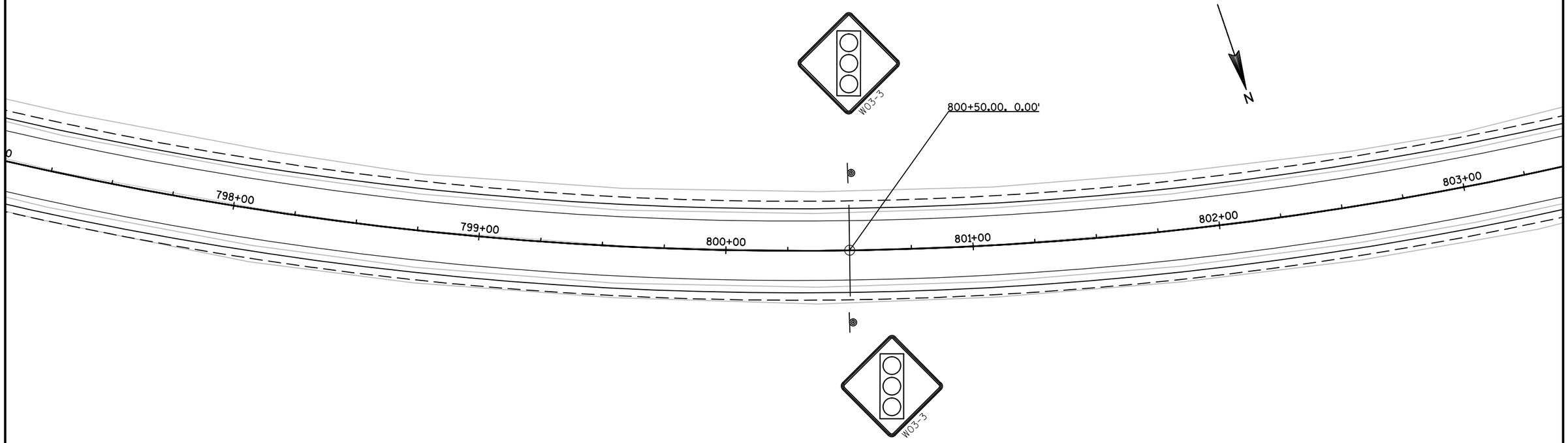


PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	NB LANE CLOSURE - SPIDER LAKE BRIDGE	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025003_TC.DWG PLOT DATE : 1/30/2014 1:32 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

2





PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	NB LANE CLOSURE - SPIDER LAKE BRIDGE	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025003_TC.DWG PLOT DATE : 1/30/2014 1:32 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

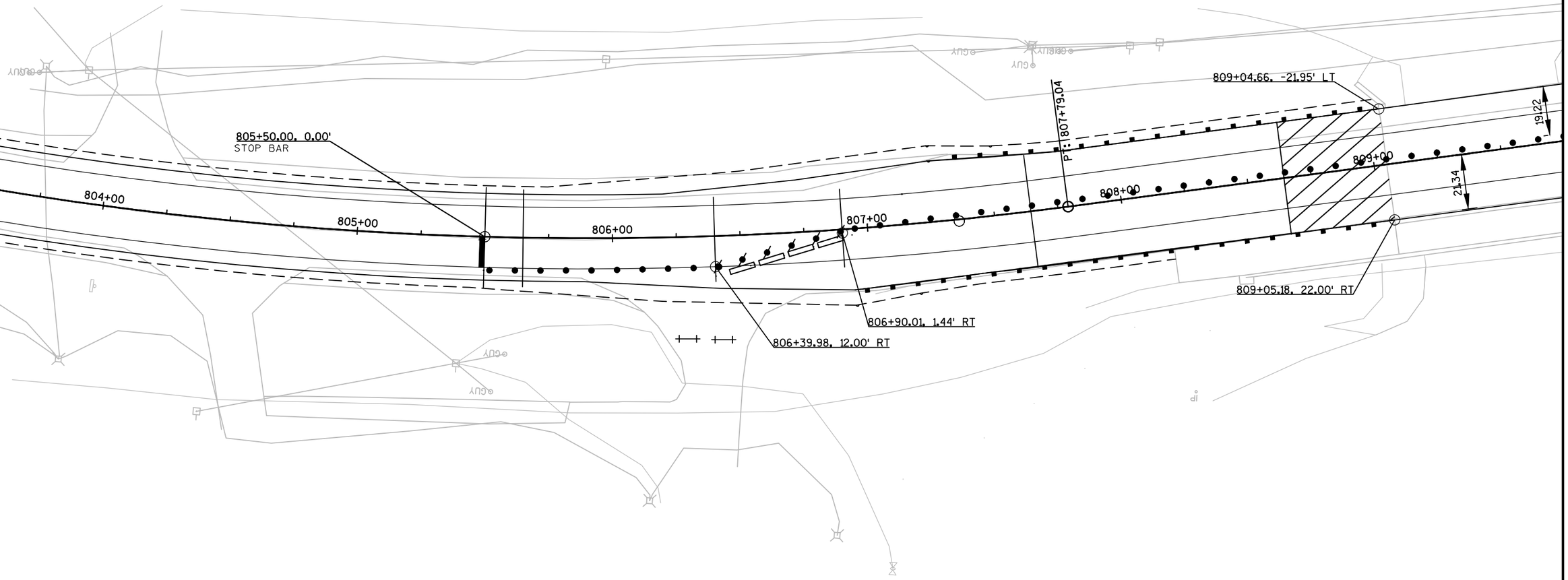
2

LEGEND

CONCRETE BARRIER TEMPORARY PRECAST
TRAFFIC CONTROL DRUM
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
APPROACH SLAB
TYPE III BARRICADE

SEE SDD 15D33: TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

N



PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	NB LANE CLOSURE - SPIDER LAKE BRIDGE	SHEET 33	E

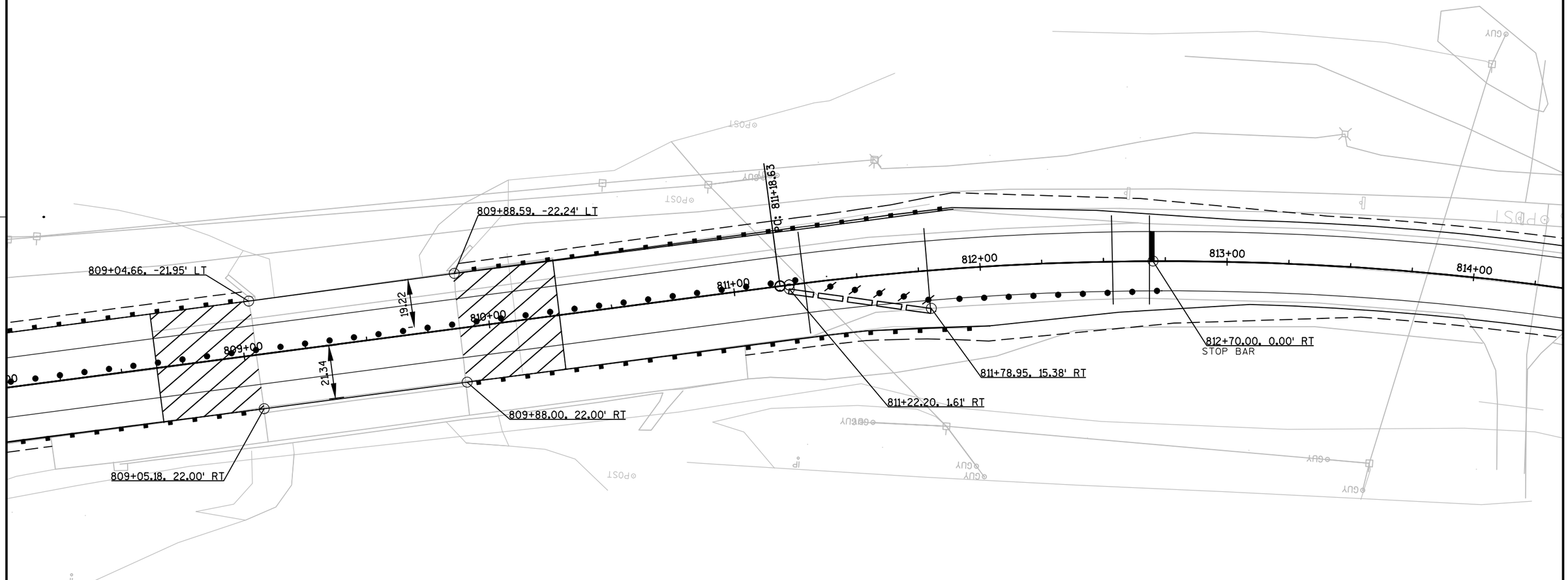
2

2

LEGEND

CONCRETE BARRIER TEMPORARY PRECAST
TRAFFIC CONTROL DRUM
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
APPROACH SLAB
SEE SDD 15D33: TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

N



PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	NB LANE CLOSURE - SPIDER LAKE BRIDGE	SHEET 34	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025003_TC.DWG PLOT DATE : 1/30/2014 1:32 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

2

2

779+00

780+00

781+00

782+00

783+00

784+00

00

786+00

787+00

788+00

789+00

790+00

791+00

790+50.00, 0.00'

785+50.00, 0.00'

ROAD WORK AHEAD

W20-1

ONE LANE ROAD AHEAD

W20-4

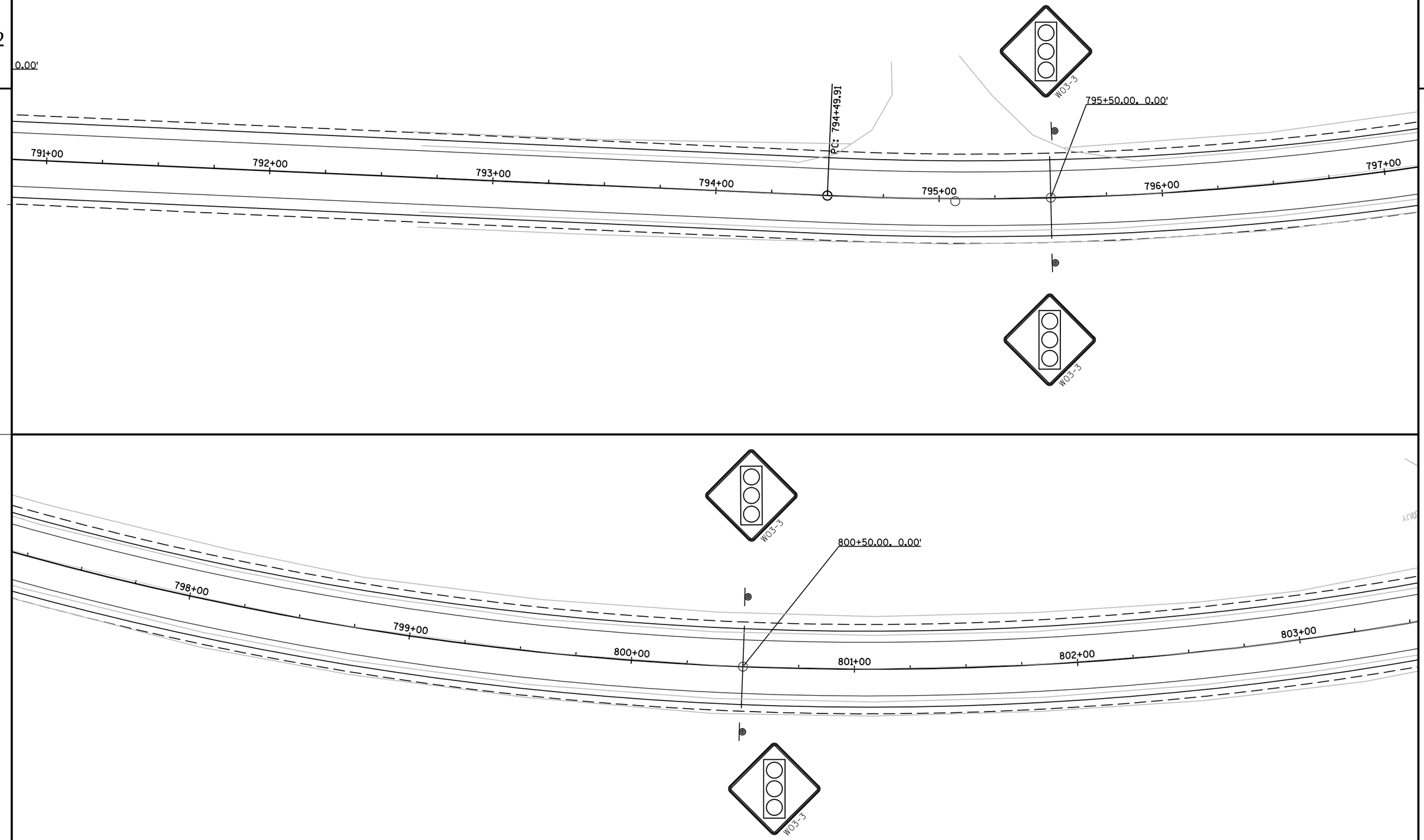
PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	SB LANE CLOSURE SPIDER LAKE BRIDGE	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025002_TC.DWG PLOT DATE : 1/30/2014 1:29 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

2

0.00'



2

PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	SB LANE CLOSURE SPIDER LAKE BRIDGE	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025002_TC.DWG PLOT DATE : 1/30/2014 1:29 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

2

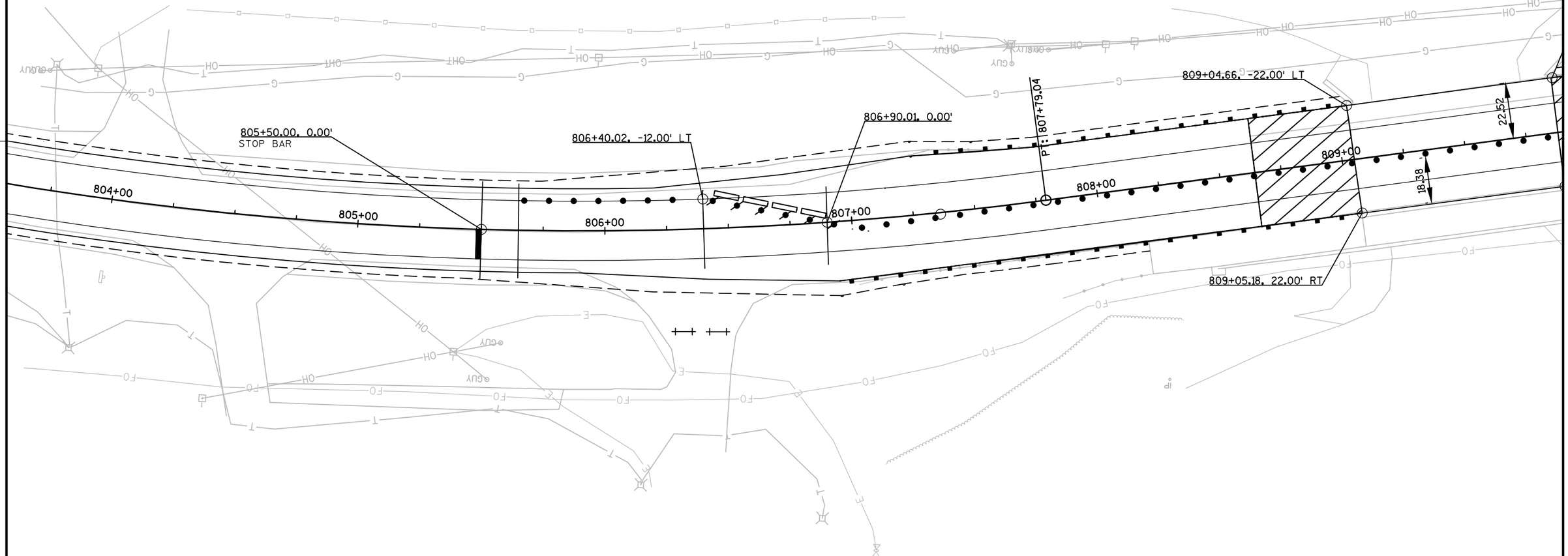
2

LEGEND

CONCRETE BARRIER TEMPORARY PRECAST
TRAFFIC CONTROL DRUM
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
APPROACH SLAB
TYPE III BARRICADE

SEE SDD 15D33: TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

N



PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	SB LANE CLOSURE SPIDER LAKE BRIDGE	SHEET 37	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-60\025002_TC.DWG PLOT DATE : 2/4/2014 11:25 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44

2

2

LEGEND

CONCRETE BARRIER TEMPORARY PRECAST
TRAFFIC CONTROL DRUM
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
APPROACH SLAB
SEE SDD 15D33: TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

N

809+04.66, -22.00' LT
809+88.59, -22.24' LT
811+17.25, -1.08' LT
811+73.35, -14.25' LT
P.C.: 811+18.63
809+00
810+00
811+00
812+00
813+00
814+00
22.52
18.38
809+88.00, 22.00' RT
809+05.18, 22.00' RT
812+70.00, 0.00' RT
STOP BAR

PROJECT NO: 1170-21-61	HWY: USH 51	COUNTY: VILAS	SB LANE CLOSURE SPIDER LAKE BRIDGE	SHEET 38	E

DATE 27FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-21-60 QUANTITY	1170-21-61 QUANTITY
0010	201.0105	CLEARING	STA	6.000	6.000	
0020	201.0205	GRUBBING	STA	6.000	6.000	
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000	
0040	204.0100	REMOVING PAVEMENT	SY	398.000		398.000
0050	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	93.000	93.000	
0060	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	140,998.000	140,998.000	
0070	204.0165	REMOVING GUARDRAIL	LF	776.000	776.000	
0080	205.0100	EXCAVATION COMMON	CY	92.250	92.250	
0090	208.0100	BORROW	CY	736.630	736.630	
0100	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	8.000	8.000	
0110	213.0100	FINISHING ROADWAY (PROJECT) 01. 1170-21-60	EACH	1.000	1.000	
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	10,626.000	10,626.000	
0140	305.0500	SHAPING SHOULDERS	STA	840.000	840.000	
0150	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	398.000		398.000
0160	440.4410.S	INCENTIVE IRI RIDE	DOL	15,920.000	15,920.000	
0170	455.0105	ASPHALTIC MATERIAL PG58-28	TON	813.000	813.000	
0180	455.0605	TACK COAT	GAL	3,904.000	3,904.000	
0190	460.1103	HMA PAVEMENT TYPE E-3	TON	14,780.000	14,780.000	
0200	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	10,100.000	10,100.000	
0210	460.4110.S	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	LF	42,020.000	42,020.000	
0220	465.0110	ASPHALTIC SURFACE PATCHING	TON	60.000	60.000	
0230	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	100.000	100.000	
0240	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	100.000	100.000	
0260	465.0425	ASPHALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL	LF	51,738.000	51,738.000	
0270	465.0475	ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL	LF	42,020.000	42,020.000	
0280	509.5100.S	POLYMER OVERLAY	SY	926.000		926.000
0320	520.9700.S	CULVERT PIPE LINERS (SIZE) 04. 48-INCH	LF	174.000	174.000	
0330	520.9750.S	CLEANING CULVERT PIPES FOR LINER VERIFICATION	EACH	1.000	1.000	
0340	521.0124	CULVERT PIPE CORRUGATED STEEL 24-INCH	LF	24.000	24.000	
0360	521.0728	PIPE ARCH CORRUGATED STEEL 28X20-INCH	LF	22.000	22.000	
0370	521.1024	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	EACH	2.000	2.000	
0400	521.1228	APRON ENDWALLS FOR PIPE ARCH STEEL 28X20-INCH	EACH	2.000	2.000	
0410	522.0324	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	114.000	114.000	
0420	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	4.000	4.000	
0440	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	100.000		100.000
0450	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	200.000		200.000
0460	611.0642	INLET COVERS TYPE MS	EACH	4.000	4.000	
0470	611.3904	INLETS MEDIAN 4 GRATE	EACH	1.000	1.000	
0480	614.2300	MGS GUARDRAIL 3	LF	425.000	425.000	
0490	614.2500	MGS THRIE BEAM TRANSITION	LF	157.600	157.600	
0500	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000	
0510	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1170-21-60	EACH	1.000	1.000	

3

DATE 27FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-21-60 QUANTITY	1170-21-61 QUANTITY
0530	619.1000	MOBILIZATION	EACH	0.550	0.500	0.050
0540	625.0100	TOPSOIL	SY	1,613.000	1,613.000	
0550	628.1504	SILT FENCE	LF	1,725.000	1,725.000	
0560	628.1520	SILT FENCE MAINTENANCE	LF	1,725.000	1,725.000	
0570	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000	
0580	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000	
0590	628.2002	EROSION MAT CLASS I TYPE A	SY	1,313.000	1,313.000	
0600	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	300.000	300.000	
0610	628.7005	INLET PROTECTION TYPE A	EACH	1.000	1.000	
0620	628.7555	CULVERT PIPE CHECKS	EACH	24.000	24.000	
0630	628.7570	ROCK BAGS	EACH	40.000	40.000	
0640	629.0210	FERTILIZER TYPE B	CWT	1.020	1.020	
0650	630.0120	SEEDING MIXTURE NO. 20	LB	43.500	43.500	
0660	633.5200	MARKERS CULVERT END	EACH	8.000	8.000	
0670	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	113.000	113.000	
0680	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	40.000	40.000	
0690	637.2210	SIGNS TYPE II REFLECTIVE H	SF	813.080	813.080	
0700	637.2230	SIGNS TYPE II REFLECTIVE F	SF	121.250	121.250	
0710	638.2602	REMOVING SIGNS TYPE II	EACH	124.000	124.000	
0720	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	153.000	153.000	
0730	642.5201	FIELD OFFICE TYPE C	EACH	0.550	0.500	0.050
0740	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1170-21-60	EACH	1.000	1.000	
0750	643.0100	TRAFFIC CONTROL (PROJECT) 02. 1170-21-61	EACH	1.000		1.000
0770	643.0300	TRAFFIC CONTROL DRUMS	DAY	2,720.000	130.000	2,590.000
0780	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	111.000		111.000
0790	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	444.000		444.000
0800	643.0900	TRAFFIC CONTROL SIGNS	DAY	3,613.000	2,799.000	814.000
0810	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	109,247.000	109,247.000	
0820	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	250.000	250.000	
0830	648.0100	LOCATING NO-PASSING ZONES	MI	7.960	7.960	
0840	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	39,610.000	39,610.000	
0850	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	24.000		24.000
0880	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	4.000	4.000	
0890	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	42,020.000	42,020.000	
0900	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1170-21-60	LS	1.000	1.000	
0920	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. B-63-18	LS	1.000		1.000
0930	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000		500.000
0940	SPV.0060	SPECIAL 01. REFLECTIVE TABS YELLOW	EACH	843.000	843.000	
0950	SPV.0060	SPECIAL 02. CULVERT PIPE TRANSITIONS	EACH	2.000	2.000	
0960	SPV.0090	SPECIAL 01. FOG SEAL CENTER LINE RUMBLE STRIPS	LF	42,020.000	42,020.000	
0970	SPV.0120	SPECIAL 01. WATER FOR SEEDED AREAS	MGAL	50.000	50.000	
0980	SPV.0165	SPECIAL 01. SPRAYED ASPHALTIC SHOULDER TREATMENT	SF	1,965.000	1,965.000	
0990	SPV.0180	SPECIAL 01. THERMOPLASTIC COATING AT SNOWMOBILE CROSSINGS	SY	268.000	268.000	

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ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

CLEARING & GRUBBING

STATION	LOCATION	201.0105 CLEARING STATIONS	201.0205 GRUBBING STATIONS	REMARKS
552+85 LT	USH 51	1	1	ENDWALL
557+22 RT	USH 51	1	1	ENDWALL
608+30 LT	USH 51	1	1	ENDWALL
812+00 LT	USH 51	1	1	GUARDRAIL
987+27 LT & RT	USH 51	2	2	ENDWALLS
	TOTALS	6	6	

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	REMARKS
710+50	USH 51	1	24 INCH CMCP
	TOTAL	1	

REMOVING ASPHALTIC SURFACE BUTT JOINT

STATION - STATION	LOCATION	204.0115 SY	REMARKS
549+80	USH 51	33	
970+00	USH 51	33	
CTH W		27	
	TOTAL	93	

REMOVING ASPHALTIC SURFACE MILLING

STATION - STATION	LOCATION	204.0120 SY	REMARKS
549+80 - 970+00	USH 51	140,067	
CTH W		431	
UNDISTRIBUTED		500	SIDE ROADS
	TOTAL	140,998	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF	REMARKS
807+35 - 809+05	USH 51 LT	170	
807+01 - 809+05	USH 51 RT	204	
809+87 - 811+82	USH 51 LT	195	
809+87 - 811+94	USH 51 RT	207	
	TOTAL	776	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

Division	From / To Station	Common Excavation (1)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow	Comment:
		Cut (2)			Factor				
Division 1		(item #205.0100)			1.25			(item #208.0100)	
	552+86	0	0	111	138	-138	0	-138	Culvert Extension
	557+44	0	0	194	243	-243	0	-243	Culvert Extension
	608+33	0	0	108	135	-135	0	-135	Culvert Extension
	709+00 - 711+00	49	49	84	105	-56	0	-56	New Culvert
	805+45 - 813+56	43	43	166	207	-164	0	-164	Beamguard area
Division 1 Subtotal		92	92	663	829	-737	0	-737	
Grand Total		92.25	92.25	663.11	828.89	-736.63	0.00	-736.63	
Total Common Exc									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
13) Expanded Fill. Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION	LOCATION	211.0400 STA
782+60	USH 51 LT AND RT	2
803+20	USH 51 LT AND RT	2
919+90	USH 51 LT AND RT	2
959+50	USH 51 LT AND RT	2
	TOTAL	8

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	REMARKS
549+80 - 866+50	LT	4,267	
549+80 - 866+50	RT	4,267	
866+50 - 970+00	LT	1,047	
866+50 - 970+00	RT	1,047	
	TOTAL	10,626	

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SHAPING SHOULDERS

STATION - STATION	LOCATION	305.0500 STATION	REMARKS
549+80 -970+00	LT	420	
549+80 -970+00	RT	420	
	TOTAL	840	

TACK COAT

STATION - STATION	LOCATION	455.0605 GALLONS	REMARKS
549+80 - 866+50	USH 51	2,639	1 PASS ONLY
866+50 - 970+00	USH 51	1,265	1 PASS ONLY
	TOTAL	3,904	

HMA PAVEMENT TYPE & ASPHALTIC MATERIAL

STATION - STATION	LOCATION	460.1103 HMA PAVEMENT TYPE E-3 TON	455.0105 ASPHALTIC MATERIAL PG58-28 MIX @ 5.5% TON	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS* LF
549+80 - 866+50	USH 51	10,639	585	31,670
866+50 - 970+00	USH 51	3,941	217	10,350
UNDISTRIBUTED	SIDE RDS/SNOMO XINGS	200	11	-
	TOTALS	14,780	813	42,020

*1 PASS

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

ASPHALTIC SURFACE PATCHING

STATION	LOCATION	465.0110 TON	REMARKS
UNDISTRIBUTED		60	SPOT REPAIRS
	TOTAL	60	

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

STATION	LOCATION	465.0120 TON	REMARKS
UNDISTRIBUTED		100	SPOT LOCATIONS
	TOTAL	100	

ASPHALTIC SURFACE TEMPORARY

STATION - STATION	LOCATION	465.0125 TON	REMARKS
UNDISTRIBUTED		100	AT CULVERTS
	TOTAL	100	

ASPHALTIC RUMBLE STRIPS 2-LANE RURAL

STATION - STATION	LOCATION	465.0425 SHOULDER LF	465.0475 CENTERLINE LF	REMARKS
549+80 - 970+00	USH 51 CL	-	42,020	
711+31 - 970+00	USH 51 LT	25,869	-	TYPE 1
711+31 - 970+00	USH 51 RT	25,869	-	TYPE 1
	TOTALS	51,738	42,020	

CULVERT PIPE LINERS

STATION	LOCATION	CULVERT PIPE LINERS 520.9700.S LF	CLEANING CULVERT PIPES FOR LINER VERIFICATION 520.9750.S EACH	DIA	CULVERT SLOPE FT/FT
987+27	USH 51	174	1	48 - INCH CMCP	0.0091
	TOTALS	174	1		

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

CROSS DRAINS & SIDE ROAD CULVERT PIPES

STATION	LOCATION	CPRC CLASS IV 522.0324 24-INCH LF	APRON ENDWALLS FOR CULVERT PIPE RC 522.1024 24-INCH EACH	CUVERT PIPE CORRUGATED STEEL 521.0124 24-INCH LF	CUVERT PIPE CORRUGATED STEEL MIN.THICK 24-INCH INCHES	PIPE ARCH CORRUGATED STEEL 521.0728 28X20-INCH LF	PIPE ARCH CORRUGATED STEEL MIN.THICK 28X20-INCH INCHES	APRON ENDWALLS CPS 521.1024 24-INCH EACH	APRON ENDWALLS PAS 521.1228 28X20-INCH EACH	** JOINT TIES EACH	633.5200 MARKERS CULVERT END EACH	REMARKS
552+85	USH 51	12	1	-	-	-	-	-	-	4	1	EXTEND LEFT
552+85	USH 51	12	1	-	-	-	-	-	-	4	1	EXTENED RIGHT
557+22	USH 51	-	-	12	0.064	-	-	1	-	-	1	EXTENED LEFT
557+22	USH 51	-	-	12	0.064	-	-	1	-	-	1	EXTENED RIGHT
608+30	USH 51	-	-	-	-	10	0.064	-	1	-	1	EXTENED LEFT
608+30	USH 51	-	-	-	-	12	0.064	-	1	-	1	EXTENED RIGHT
710+50	USH 51	90	2	-	-	-	-	-	-	12	2	NEW LOCATION
	TOTALS	114	4	24		22		2	2	20	8	

** FOR INFORMATIONAL PURPOSES ONLY. NOT A BID ITEM.

INLETS

STATION	LOCATION	611.3904 MEDIAN 4 GRATE EACH	611.0642 COVER TYPE MS EACH
710+00	USH 51 RT	1	4
	TOTALS	1	4

BEAM GUARD

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
807+25 - 809+05 LT	USH 51	87.5	39.4	1
806+93 - 808+95 RT	USH 51	112.5	39.4	1
809+87- 811+90 LT	USH 51	112.5	39.4	1
809+98 - 812+02 RT	USH 51	112.5	39.4	1
	TOTALS	425.0	157.6	4

FILE NAME : N:\pds\project_id\1170-21-30_USH51\Quantities\11702160\030202_mq.ppt PLOT DATE : December 18, 2013 PLOT BY : Ann Rise PLOT NAME : _____ PLOT SCALE : 1:1

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

WATER FOR SEEDED AREAS

LOCATION	SPV.0120.01 MGAL	REMARKS
SEEDED AREAS	50	
TOTAL	50	

TOPSOIL, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	REMARKS
552+85	USH 51 LT	50	0.03	1.4	
552+85	USH 51 RT	44	0.03	1.2	
557+44	USH 51 LT	48	0.03	1.3	
557+44	USH 51 RT	50	0.03	1.4	
608+34	USH 51 LT	60	0.04	1.6	
608+34	USH 51 RT	48	0.03	1.3	
709+28 - 711+00	USH 51 LT	333	0.21	9.0	
709+49 - 710+49	USH 51 RT	117	0.07	3.2	
805+44 - 808+85	USH 51 LT	62	0.04	1.7	
805+46 - 807+56	USH 51 RT	236	0.15	6.4	
809+91 - 813+91	USH 51 LT	493	0.31	13.3	
811+01 - 813+86	USH 51 RT	72	0.05	1.9	
	TOTALS	1,613	1.02	43.5	

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
549+80 - 970+00	3	2	
TOTALS	3	2	

SILT FENCE

STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF
552+85	USH 51 LT	80	80
557+44	USH 51 RT	95	95
608+34	USH 51 RT	110	110
709+28 - 711+25	USH 51 LT	190	190
709+49 - 710+59	USH 51 RT	120	120
805+44 - 808+95	USH 51 LT	375	375
805+60 - 807+75	USH 51 RT	190	190
810+00 - 813+55	USH 51 LT	325	325
810+95 - 813+40	USH 51 RT	240	240
	TOTALS	1,725	1,725

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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EROSION MAT

STATION	LOCATION	628.2002 CLASS I TYPE A SY	628.2006 URBAN CLASS I TYPE A* SY	REMARKS
552+85	USH 51 LT	0	50	CULVERT EXTENSION
552+85	USH 51 RT	0	44	CULVERT EXTENSION
557+44	USH 51 LT	0	48	CULVERT EXTENSION
557+44	USH 51 RT	0	50	CULVERT EXTENSION
608+34	USH 51 LT	0	60	CULVERT EXTENSION
608+34	USH 51 RT	0	48	CULVERT EXTENSION
709+28 - 711+00	USH 51 LT	333	0	CULVERT REPLACEMENT
709+49 - 710+49	USH 51 RT	117	0	CULVERT REPLACEMENT
805+44 - 808+85	USH 51 LT	62	0	BEAM GUARD
805+46 - 807+56	USH 51 RT	236	0	BEAM GUARD
809+91 - 813+91	USH 51 LT	493	0	BEAM GUARD
811+01 - 813+86	USH 51 RT	72	0	BEAM GUARD
	TOTALS	1,313	300	

*USE IN WETLAND AREAS

INLET PROTECTION

STATION	LOCATION	628.7005 INLET PROTECTION TYPE A EACH
710+00	USH 51 RT	1
	TOTAL	1

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CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
552+85	USH 51	6
557+44	USH 51	6
608+34	USH 51	6
710+00	USH 51	6
	TOTAL	24

ROCK BAGS

STATION	LOCATION	628.7570 ROCK BAGS EACH
UNDISTRIBUTED	USH 51	40
	TOTAL	40

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

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STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
550+55	RT	2	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
554+77	LT	3	M1-85	24"X24"	1	1	-	-	-	1	4	MARKER SIGN	WISCONSIN HERITAGE SIGN
554+77	LT	4	M1-85D	24"X12"	1		-	-	-	-	3	MARKER SIGN	WA-SWA-GONING INDIAN VILLAGE
557+94	LT	5	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"	-	-	-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	COUNTY M
560+54	RT	6	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
585+35	RT	7	D1-2	78"X30"	1	2	16.25	-	2	-	-	DESTINATION SIGN	BAKKEN RD LA, OLD 51 RA
591+20	RT	8	W8-8	30"X30"	1	1	-	-	-	-	-	WARNING SIGN	ROUGH ROAD
591+20	RT	9	W14-3	48"X36"	1	-	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
592+22	LT	10	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
592+26	RT	11	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
594+90	RT	12	I55-56	30"X36"	1	1	-	-	-	-	-	ADOPT-A-HIGHWAY	AVAILABLE
594+90	LT	13	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	TROUT RIVER CRANBERRY CO
599+65	LT	14	D1-2	78"X30"	1	2	16.25	-	2	-	-	DESTINATION SIGN	OLD 51 LA, BAKKEN RD RA
602+29	LT	15	-	-	-	-	-	-	-	-	-	SPECIFIC INFO SIGN	CAMP HOLIDAY
642+38	RT	16	D1-1	96"X15"	1	2	10.00	-	2	-	-	DESTINATION SIGN	ISLAND LAKE RD RA
649+77	RT	17	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
656+66	LT	18	D1-1	96"X15"	1	2	10.00	-	2	-	-	DESTINATION SIGN	ISLAND LAKE RD LA
660+86	RT	19	R2-1	24"X30"	1	1	5.00	-	1	-	-	REGULATORY SIGN	SPEED LIMIT 55
660+90	LT	20	R2-1	24"X30"	1	1	5.00	-	1	-	-	REGULATORY SIGN	SPEED LIMIT 55
703+67	RT	21	D1-61	42"X24"	1	2	7.00	-	1	-	-	DESTINATION SIGN	OLD 51 DA
711+02	LT	22	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
711+06	RT	23	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
715+25	RT	24	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	LA N TOWNLINE RD, S TOWNLINE RD RA
717+89	LT	25	D1-61	42"X24"	1	2	7.00	-	1	-	-	DESTINATION SIGN	OLD 51 DA
720+00	RT	26	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	MANITOWISH WATERS ALLIANCE LTD
720+00	LT	27	I55-56	30"X36"	1	1	-	-	-	-	-	ADOPT-A-HIGHWAY	AVAILABLE
721+62	LT	28	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
722+10	RT	29	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
723+73	LT	30	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
729+01	LT	31	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	LA S TOWNLINE RD, N TOWNLINE RD RA
733+50	RT	32	D1-1	84"X15"	-	-	8.75	-	2	-	-	DESTINATION SIGN	WILDWOOD DR RA
734+78	RT	33	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	WILDWOOD DR
741+64	RT	34	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
749+07	LT	35	D1-1	84"X15"	1	2	8.75	-	2	-	-	DESTINATION SIGN	WILDWOOD DR LA
			SHEET 1	SUB-TOTALS:	32	40	202.12	18.00	29	7			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
754+30	RT	36	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	LA TWIN PINES RD, SPIDER LAKE RD RA
760+69	LT	37	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
761+70	RT	38	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
768+40	LT	39	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	TWIN PINES RD RA, SPIDER LAKE RD LA
781+77	RT	40A	S3-1	36"X36"	1	1	-	9.00	-	1	-	SCHOOL SIGN	SCHOOL BUS STOP AHEAD
781+77	RT	40B	S57-51	30"X15"	1	-	-	-	-	-	-	WARNING SIGN	NEXT 1 MILES
783+36	RT	41	D1-1	66"X15"	1	1	6.88	-	2	-	-	DESTINATION SIGN	VOSS RD RA
783+36	LT	42	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
789+69	RT	43	R1-1	30"X30"	1	1	5.18	-	-	1	-	REGULATORY SIGN	STOP SIGN
793+92	RT	44	W11-6	30"X30"	1	1	-	6.25	-	-	-	WARNING SIGN	SNOWMOBILE CROSSING
793+92	LT	45	D1-1	66"X15"	1	1	6.88	-	2	-	-	DESTINATION SIGN	VOSS RD LA
795+50	RT	46	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
795+80	LT	47	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
795+90	LT	48	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
797+00	RT	49	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
798+50	RT	50	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
800+00	RT	51	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
801+50	RT	52	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
802+41	LT	53	W2-2	30"X30"	1	1	-	6.25	1	-	-	WARNING SIGN	SIDE RD RIGHT ANGLE
803+00	RT	54	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
803+84	RT	55	W1-6	-	-	-	-	-	-	-	-	WARNING SIGN	ONE DIRECTION LARGE ARROW TO REMAIN
804+50	RT	56	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
813+00	LT	57	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
814+00	LT	58	W1-6	-	-	-	-	-	-	-	-	WARNING SIGN	ONE DIRECTION LARGE ARROW TO REMAIN
814+50	LT	59	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
817+00	LT	60	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
818+50	LT	61	W1-8	-	-	-	-	-	-	-	-	WARNING SIGN	CHEVRON LA, TO REMAIN
824+05	LT	62	W11-6	30"X30"	1	1	-	6.25	-	1		WARNING SIGN	SNOWMOBILE CROSSING
826+69	LT	63A	S57-51	36"X18"	1	1	-	-	-	-	-	WARNING SIGN	NEXT 1/2 MILES
826+69	LT	63B	S3-1	36"X36"	1	-	-	9.00	-	1	-	SCHOOL SIGN	SCHOOL BUS STOP AHEAD
826+69	RT	64	W14-3	48"X36"	1	1	-	6.00	-	1		WARNING SIGN	NO PASSING ZONE
831+44	RT	65	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	MANITOWISH RD LA, DEER PATH RD RA
838+80	RT	66	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
838+84	LT	67	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
839+89	RT	68	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	MANITOWISH WATERS ALLIANCE LTD
839+89	LT	69	I55-56	30"X36"	1	1	-	-	-	-	-	ADOPT-A-HIGHWAY	AVAILABLE
845+70	LT	70	D1-2	96"X30"	1	2	20.00	-	2	-	-	DESTINATION SIGN	DEER PATH RD LA, MANITWOISH RD RA
846+00	RT	71	D1-2	90"X30"	1	2	18.75	-	2	-	-	DESTINATION SIGN	PARK HILL RD LA, BIRCH HILL RD RA
			SHEET 2	SUB-TOTALS:	25	28	156.26	48.75	21	7			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
852+57	LT	72	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
853+05	RT	73	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
859+92	RT	74	D1-1	72"X15"	1	2	7.50	-	2	-	-	DESTINATION SIGN	NAZDAR DR LA
859+95	LT	75	D1-2	90"X30"	1	2	18.75	-	2	-	-	DESTINATION SIGN	BIRCH HILL RD LA, PARK HILL RD RA
866+82	LT	76	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
871+53	LT	77	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
874+21	LT	78	D1-1	72"X15"	1	2	7.50	-	2	-	-	DESTINATION SIGN	NAZDAR DR RA
880+75	RT	79	D1-1	60"X15"	1	1	6.25	-	2	-	-	DESTINATION SIGN	BAY RD RA
888+27	RT	80	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
891+60	RT	81	D1-2	90"X30"	1	2	18.75	-	2	-	-	DESTINATION SIGN	STAR LAKE RD LA CHANNEL RD RA
893+10	LT	82	D1-1	-	1	1	-	-	-	-	-	DESTINATION SIGN	BAY RD
895+50	LT	83	D1-1	60"X15"	-	-	6.25	-	2	-	-	DESTINATION SIGN	BAY RD LA
897+45	RT	84	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
899+55	LT	85	D7-73	60"X42"	1	2	17.50	-	-	2	-	DESTINATION SIGN	ROAD TO STATE FOREST PICNIC AREA
900+61	LT	86	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
903+74	RT	87	D1-1	108"x24"	1	2	18.00	-	2	-	-	DESTINATION SIGN	MANITOWISH WATERS UNINCORPORATED
904+31	LT	88	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
905+85	LT	89	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
906+95	LT	90	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
907+44	RT	91	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
907+96	RT	92	D1-1	72"X15"	1	2	7.50	-	2	-	-	DESTINATION SIGN	POWELL RD LA
912+00	LT	93	D1-2	90"x30"	-	-	18.75	-	2	-	-	DESTINATION SIGN	CHANNEL RD LA, STAR LAKE RD RA
912+76	RT	94	W11-6	30"X30"	1	1	-	6.25	-	1	-	WARNING SIGN	SNOWMOBILE CROSSING
912+98	LT	95	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
913+55	LT	96	D1-1	90"X30"	1	2	-	-	-	-	-	DESTINATION SIGN	STAR LAKE RD, CHANNEL RD
914+00	RT	97	D1-1	96"X15"	-	-	10.00	-	2	-	-	DESTINATION SIGN	HELLO CIRCLE RD LA
914+56	RT	98	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	HELLO CIR
917+00	LT	99	D1-1	72"X15"	1	2	7.50	-	2	-	-	DESTINATION SIGN	POWELL RD RA
917+55	LT	100	R1-1	30"X30"	1	1	5.18	-	1	-		REGULATORY SIGN	STOP SIGN
918+53	RT	101	D1-2	126"X30"	1	2	26.25	-	-	3	-	DESTINATION SIGN	TOWN HALL-AIRPORT RD LA, MITCHEL RD RA
922+75	RT	102	W11-8	36"X36"	1	1	-	9.00	-	1		WARNING SIGN	FIRE TRUCK CROSSING
922+89	LT	103	D1-1	96"X15"	1	2	10.00	-	2	-	-	DESTINATION SIGN	HELLO CIRCLE RD RA
924+44	RT	104	R7-1L	18"X24"	1	1	3.00	-	1	-		REGULATORY SIGN	NO PARKING LA
924+90	LT	105	R7-1L	18"X24"	1	1	3.00	-	1	-		REGULATORY SIGN	NO PARKING LA
925+92	RT	106	R1-1	30"X30"	1	1	5.18	-	1	-		REGULATORY SIGN	STOP SIGN
926+66	RT	107	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
927+01	LT	108	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
927+50	LT	109	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
			SHEET 3	SUB-TOTALS:	35	47	254.66	33.25	40	10			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
927+54	RT	110	D9-52	54"X36"	1	2	13.50	-	-	2	71	DESTINATION SIGN	MANITOWISH WATERS AIRPORT LA
927+54	RT	111	D9-52	54"X36"	1	-	13.50	-	-	2	70	DESTINATION SIGN	MANITOWISH WATERS AIRPORT RA
928+56	LT	112	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
928+56	LT	113	W11-6	30"X30"	1	1	-	6.25	-	1	-	WARNING SIGN	SNOWMOBILE CROSSING
928+60	RT	114	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
929+61	RT	115	D1-1	90"X15"	1	2	9.38	-	2	-	-	DESTINATION SIGN	REST LAKE RD RA
930+15	RT	116	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
930+71	LT	117	R7-1D	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING DA
932+80	RT	118	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
933+50	LT	119	R7-1L	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING LA
933+80	RT	120	R7-1R	18"X24"	1	1	3.00	-	1	-	-	REGULATORY SIGN	NO PARKING RA
934+98	LT	121	D1-2	126"X30"	1	2	26.25	-	-	3	-	DESTINATION SIGN	MITCHEL RD LA, TOWN HALL-AIRPORT RD RA
935+95	RT	122	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
940+74	LT	123	W11-8	36"X36"	1	1	-	9.00	-	1	-	WARNING SIGN	FIRE TRUCK CROSSING
943+64	LT	124	D1-1	90"X15"	1	2	9.38	-	2	-	-	DESTINATION SIGN	REST LAKE RD LA
952+27	RT	125	D1-1	84"X15"	1	2	8.75	-	2	-	-	DESTINATION SIGN	MARATHON RD LA
954+43	RT	126	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"			-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"			-	-	-	-	-	CTH ROUTE MARKER SIGN	W
956+01	RT	127	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	MANITOWISH WATERS LIONS AND LIONESSES
957+11	LT	128	D2-2	78"X24"	1	2	13.00	-	2	-	-	DESTINATION SIGN	WOODRUFF 21, MINOCQUA 23
957+60	RT	129	D1-1	72"X15"	1	2	7.50	-	2	-	-	DESTINATION SIGN	DOWNTOWN RA
959+75	LT	130	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
960+24	RT	131	D1-2	84"X24"	1	2	14.00	-	2	-	-	DESTINATION SIGN	PRESQUE ISLE RA, WINCHESTER RA
962+88	RT	132	D9-51C	-	-	-	-	-	-	-	-	DESTINATION SIGN	GAS RA, FOOD RA, LODGING RA
963+78	LT	133	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	MARATHON RD
964+80	LT	134	D1-1	84"X15"	-	-	8.75	-	2	-	-	DESTINATION SIGN	MARATHON RD RA
964+99	RT	135	M1-85	24"X24"	1	1	-	-	-	-	-	MARKER SIGN	WISCONSIN HERITAGE SIGN
964+99	RT	136	M1-85C	24"X12"	1	-	-	-	-	-	-	MARKER SIGN	DISCOVERY CENTER RA
965+56	LT	137	J13-1	24"X36"	1	1	6.00	-	-	1	-	REASSURANCE ASSEMBLY	
			M1-5A	24"X12"	-	-	-	-	-	-	-	CARDINAL DIRECTION MARKER	SOUTH
			M6-1	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
966+84	RT	138	J13-1	24"X45"	1	1	7.50	-	-	1	-	REASSURANCE ASSEMBLY	
			M3-3	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	W
			M1-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	RA
967+63	LT	139	J13-1	24"X45"	1	1	7.50	-	-	1	-	REASSURANCE ASSEMBLY	
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	W
			M6-1	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	LA
			SHEET 4	SUB-TOTALS:	28	35	187.36	21.25	22	15			

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ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
967+63	RT	140	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
967+67	RT	141	J13-1	24"X45"	1	1	7.50	-	-	1	-	REASSURANCE ASSEMBLY	
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
969+25	LT	142	M1-85	24"X24"	1	1	-	-	-	-	-	MARKER SIGN	WISCONSIN HERITAGE SIGN
969+25	LT	143	M1-85C	24"X12"	1	-	-	-	-	-	-	MARKER SIGN	DISCOVERY CENTER LA
			SHEET 5	SUB-TOTALS:	4	3	12.68	0	1	1			
			PROJECT	TOTALS	124	153	813.08	121.25	113	40			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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TRAFFIC CONTROL

LOCATION	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0300 DRUMS DAYS	643.0900 SIGNS DAYS
ADVANCED WARNING	1	130	2435
SIGNS IN LIEU OF CENTERLINE TRAFFIC CONTROL	-	-	364
TOTALS	1	130	2799

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH EDGELINE WHITE LF	646.0106 4-INCH CENTERLINE YELLOW LF	646.0106 4-INCH WHITE LF	646.0126 8 INCH TURNLINE WHITE LF
549+80 - 971+08	USH 51 RT	41,350	-	-	-
549+80 - 971+08	USH 51 LT	41,236	-	-	-
549+80 - 971+08	USH 51	-	26,598	-	-
964+55 - 967+07	USH 51 RT	-	-	-	250
967+25 - 969+75	USH 51 LT	-	-	63	-
	SUB TOTALS	82,586	26,598	63	250
	PROJECT TOTAL	109,247			

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LOCATING NO PASSING ZONES

STATION - STATION	648.0100 MI	REMARKS
549+80 - 970+00	7.96	
TOTALS	7.96	

TEMPORARY PAVEMENT MARKING

STATION - STATION	LOCATION	649.0100 TEMPOARY PAVEMENT MARKING YELLOW 4-INCH LF	SPV.0060.01 REFLECTIVE TABS YELLOW EACH	REMARKS
549+80- 971+08	USH 51	19,805	-	AFTER MILLING
549+80 - 971+08	USH 51	19,805	-	AFTER PAVING*
549+80 - 971+08	USH 51	-	843	AFTER FOG SEAL
	TOTALS	39,610	843	

*PLACED AFTER PAVING AND BEFORE FOG SEALING
REFLECTIVE YELLOW TABS ARE PLACED AT 50 FT INTERVALS

FILE NAME : N:\pds\project_id\1170-21-30_USH51\Quantities\11702160\030202_mq.ppt PLOT DATE : December 18, 2013 PLOT BY : Ann Rise PLOT NAME : _____ PLOT SCALE : 1:1

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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CONSTRUCTION STAKING

STATION - STATION	650.6000 PIPE CULVERTS EACH	650.8000 RESURFACING REFERENCE LF	REMARKS
552+85	1	-	
557+22	1	-	
608+30	1	-	
710+00	1	-	
549+80 - 970+00	-	42,020	
TOTALS	4	42,020	

CULVERT PIPE TRANSITIONS

STATIOIN	LOCATION	SPV .0060.02 EACH	REMARKS
710+00	USH 51	1	4 FEET DEEP
710+50	USH 51	1	4 FEET DEEP
	TOTAL	2	

FOG SEAL CENTER LINE RUMBLE STRIPS

STATION TO STATION	LOCATION	SPV .0090.01 LF	REMARKS
549+80 - 970+00	USH 51	42,020	
	TOTAL	42,020	

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SPRAYED ASPHALTIC SHOULDER TREATMENT

STATION TO STATION	LOCATION	SPV .0165.01 SF	REMARKS
807+26 - 809+05	USH 51 LT	895	
809+88 - 812+02	USH 51 RT	1070	
	TOTAL	1,965	

THEMROPLASTIC COATING AT SNOWMOBILE CROSSINGS

STATION	LOCATION	SPV .0180.01 SY	REMARKS
782+60	USH 51	67	
803+20	USH 51	67	
919+90	USH 51	67	
959+50	USH 51	67	
	TOTAL	268	

FILE NAME : N:\pds\project_id\1170-21-30_USH51\Quantities\11702160\030202_mq.ppt PLOT DATE : December 18, 2013 PLOT BY : Ann Rise PLOT NAME : _____ PLOT SCALE : 1:1

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REMOVING PAVEMENT

LOCATION	STRUCTURE	204.0100 SY
SOUTH ABUTMENT	B-63-18	198
NORTH ABUTMENT	B-63-18	200
	TOTAL	398

CONCRETE PAVEMENT APPROACH SLAB

LOCATION	STRUCTURE	415.0140 SY
SOUTH ABUTMENT	B-63-18	198
NORTH ABUTMENT	B-63-18	200
	TOTAL	398

POLYMER OVERLAY

LOCATION	STRUCTURE	509.5100.S SY	REMARKS
SOUTH ABUTMENT	B-63-18	198	1 LAYER
NORTH ABUTMENT	B-63-18	202	1 LAYER
	TOTAL	400	

ADDITIONAL QUANTITY IN STRUCTURE PLAN

3

CONCRETE BARRIER TEMPORARY PRECAST

STATION TO STATION	LOCATION	603.8000 DELIVERED LF	603.8125 INSTALLED LF	REMARKS
807+25 - 807+75	USH 51 SB	50	50	
811+17 - 811+72	USH 51 SB	50	50	
807+19 - 807+74	USH 51 NB	-	50	
811+22 - 811+77	USH 51 NB	-	50	
	TOTALS	100	200	

TRAFFIC CONTROL

	643.0100 TRAFFIC CONTROL 1170-21-61 EACH	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0715 WARNING LIGHTS TYPE C DAYS	643.0900 SIGNS DAYS
	1	2590	111	444	814
TOTALS	1	2590	111	444	814

FILE NAME : N:\pds\project_id\1170-21-30_ush51\Quantities\11702161\030202_mq.ppt PLOT DATE : December 18, 2013 PLOT BY : Ann Rise PLOT NAME : _____ PLOT SCALE : 1:1

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

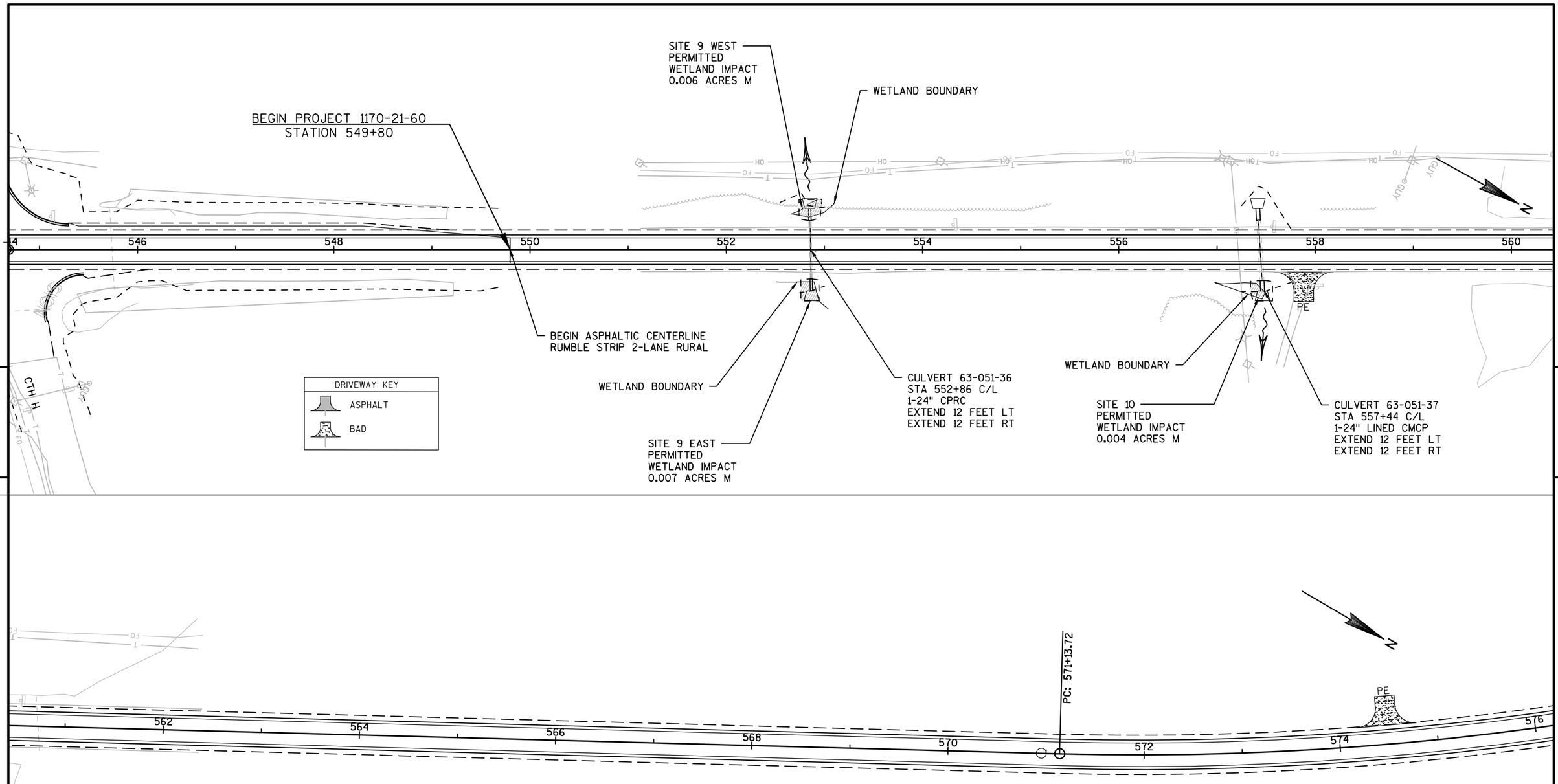
TEMPORARY PAVEMENT MARKING

STATION	LOCATION	649.1400 STOP LINE REMOVABLE TAPE 24-INCH LF
805+50	USH 51 NB	12
812+68	USH 51 SB	12
	TOTAL	24

TEMPORARY TRAFFIC SIGNAL FOR BRIDGES

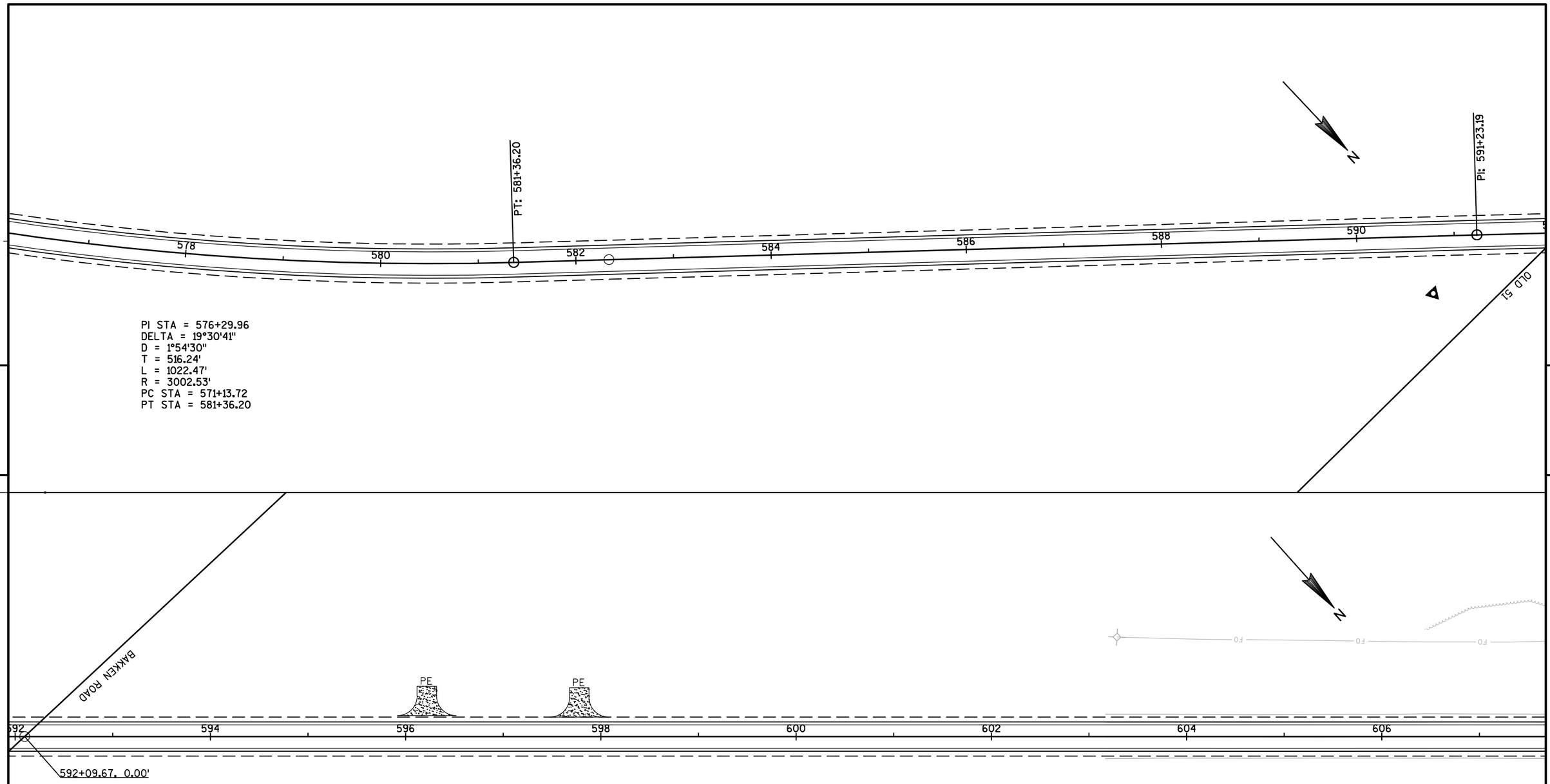
STRUCTURE	LOCATION	661.0100 B-63-18 LS
B-63-18	USH 51	1
	TOTAL	1

3



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 57	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF



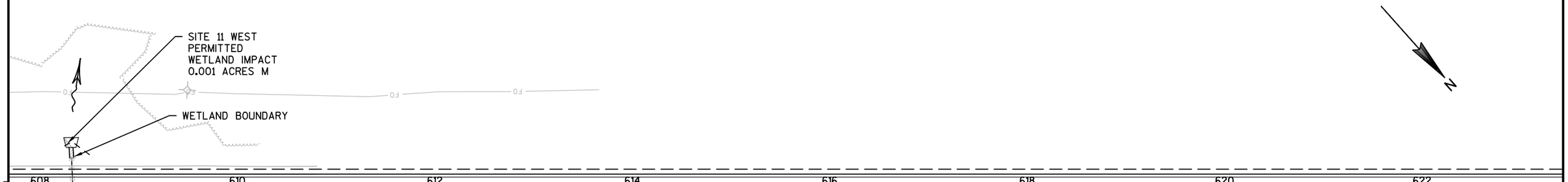
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF

SENSITIVE WETLAND AREA

SITE 11 WEST
PERMITTED
WETLAND IMPACT
0.001 ACRES M

WETLAND BOUNDARY

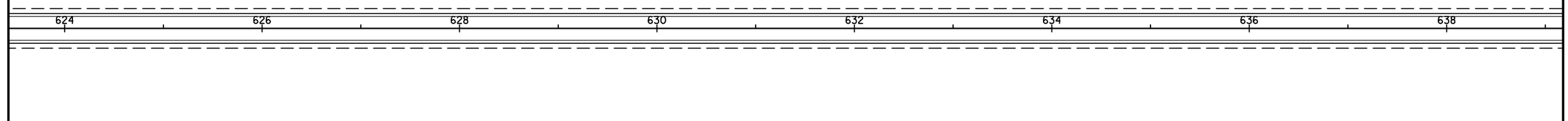


SITE 11 EAST
PERMITTED
WETLAND IMPACT
0.004 ACRES M

VILAS COUNTY CONTROL POINT
ID 324206
DO NOT DISTURB

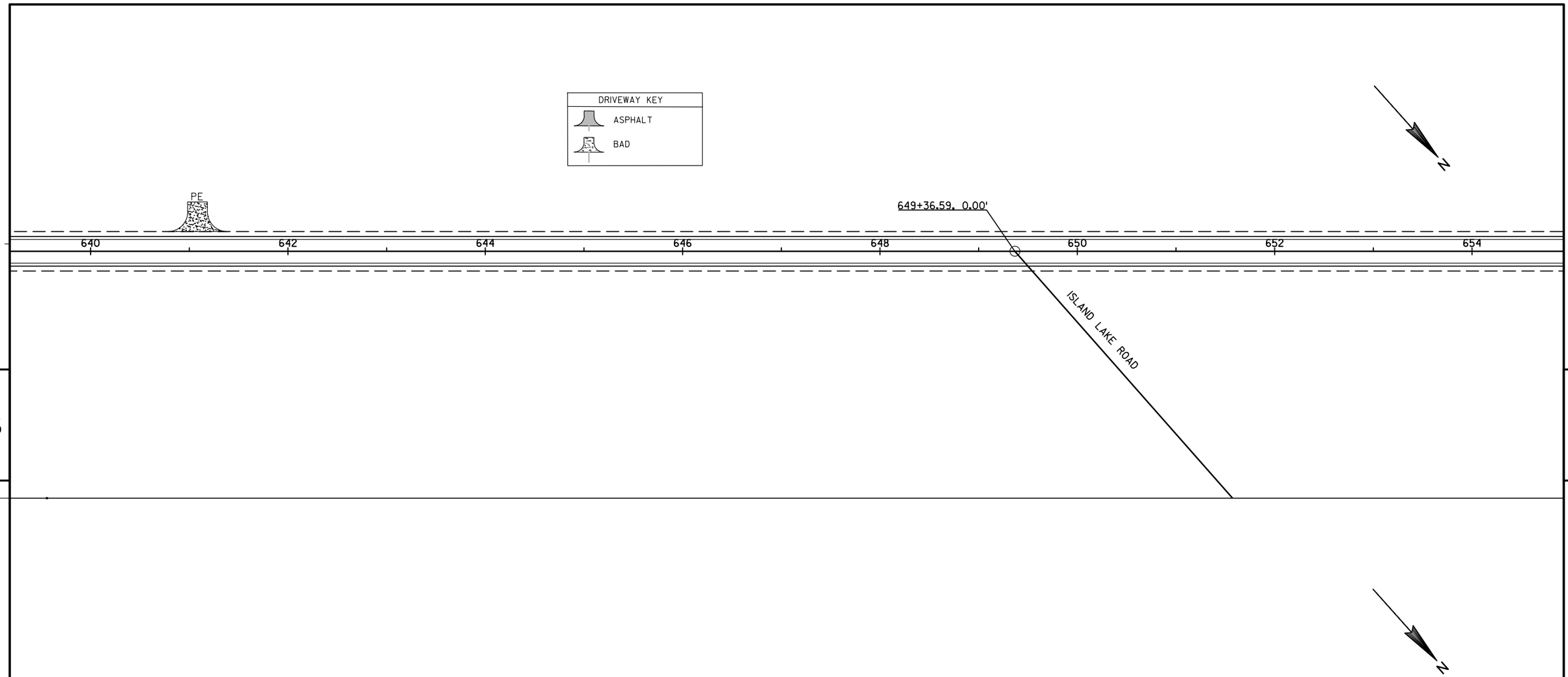
CULVERT 63-051-38
STA 608+33 C/L
1 20"X30" ALUMINUM CMCP
EXTEND 10 FEET LT
EXTEND 12 FEET RT

WETLAND BOUNDARY



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

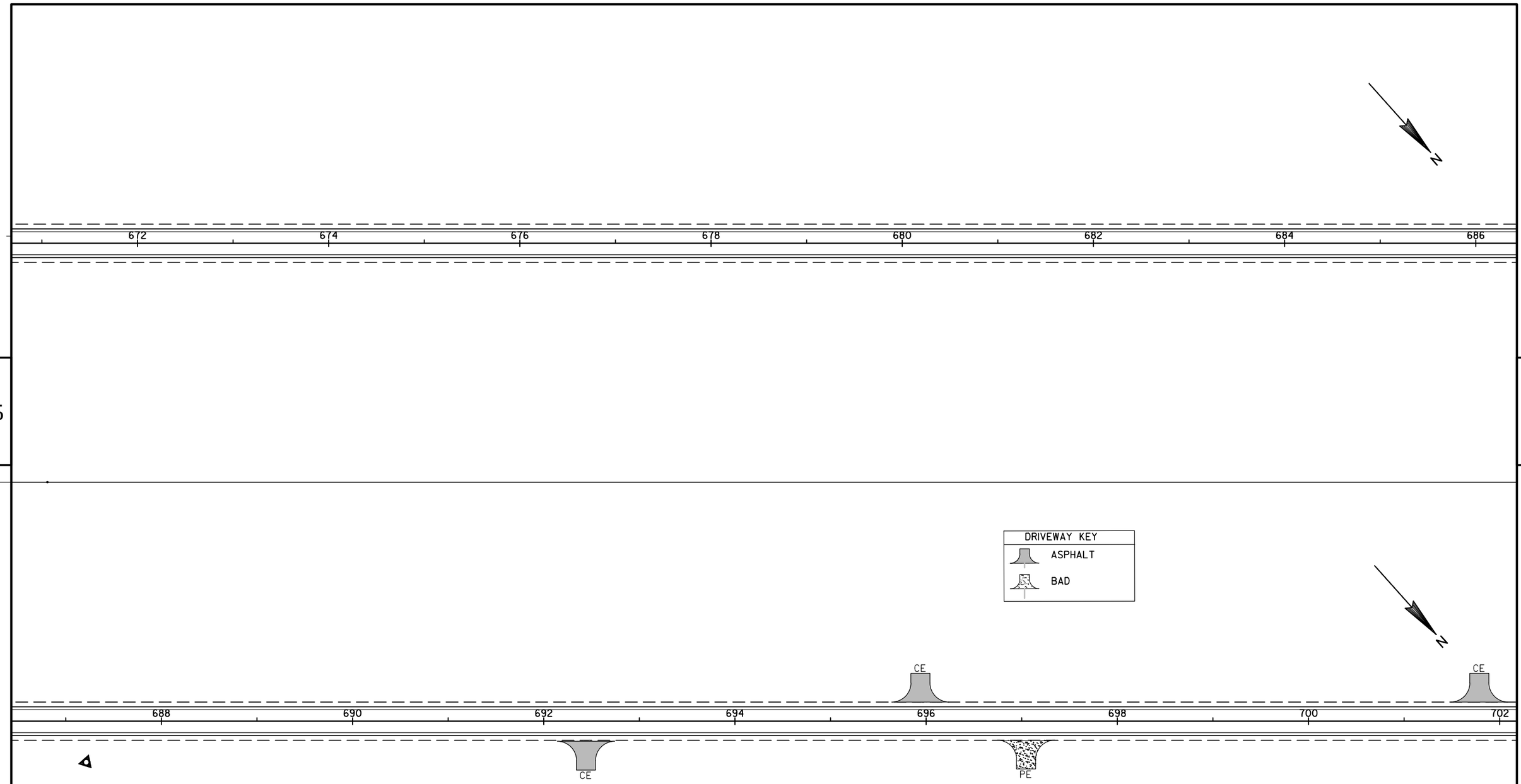
FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF



5

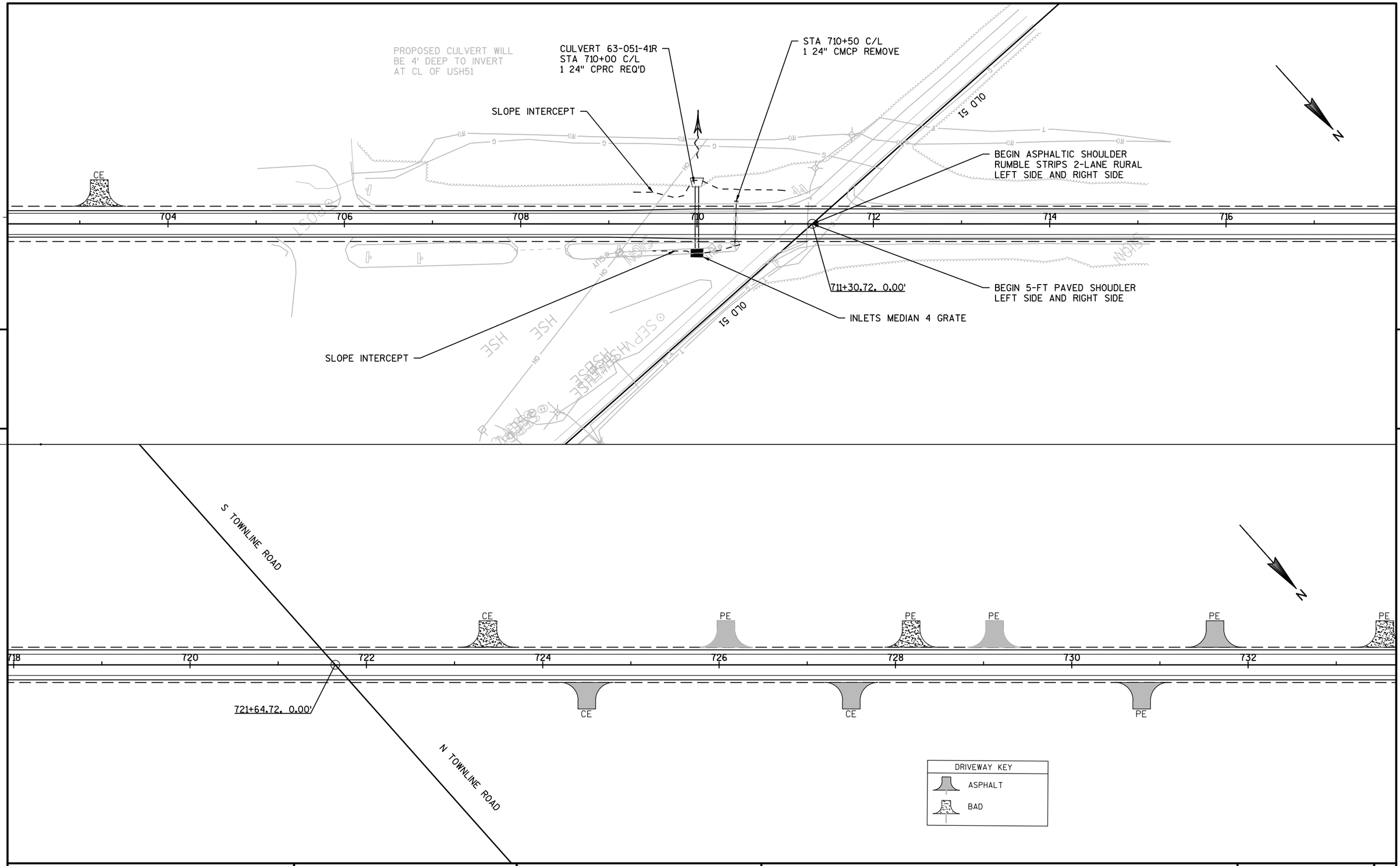
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 60	E

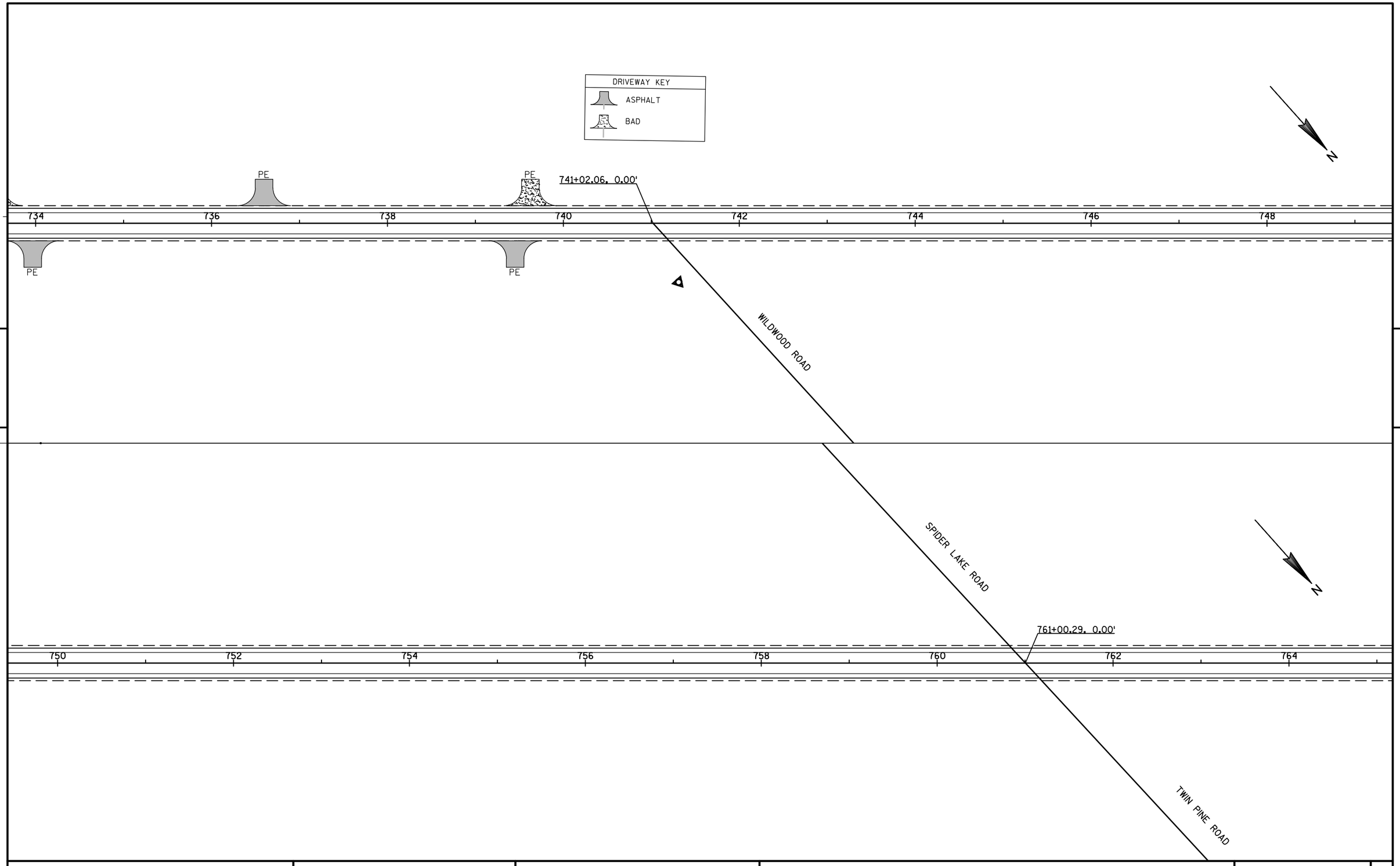


PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF

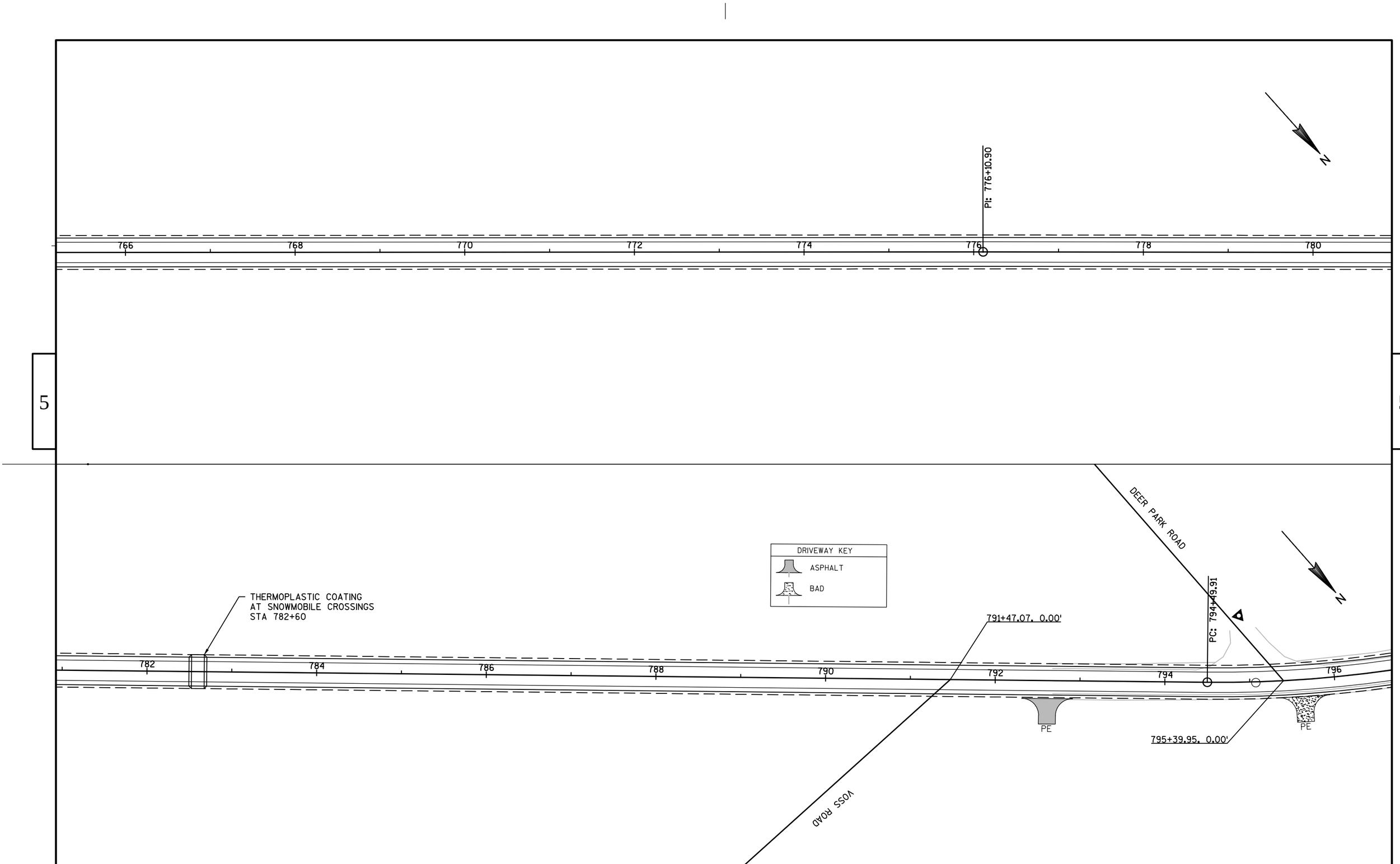


PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E



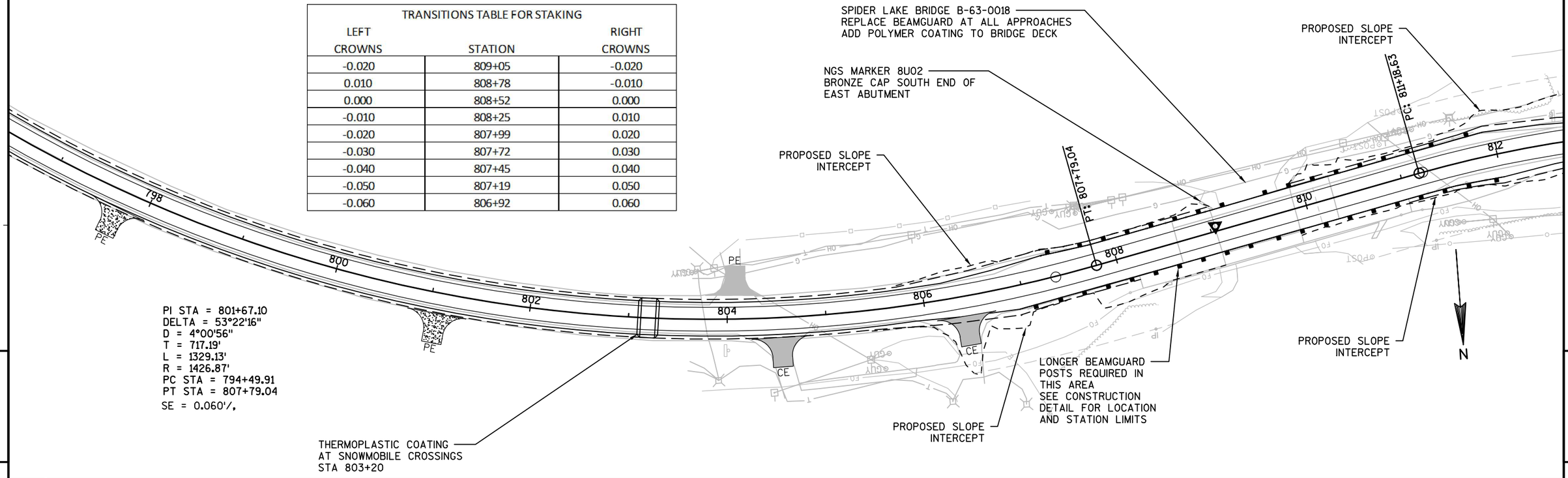
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 64	E

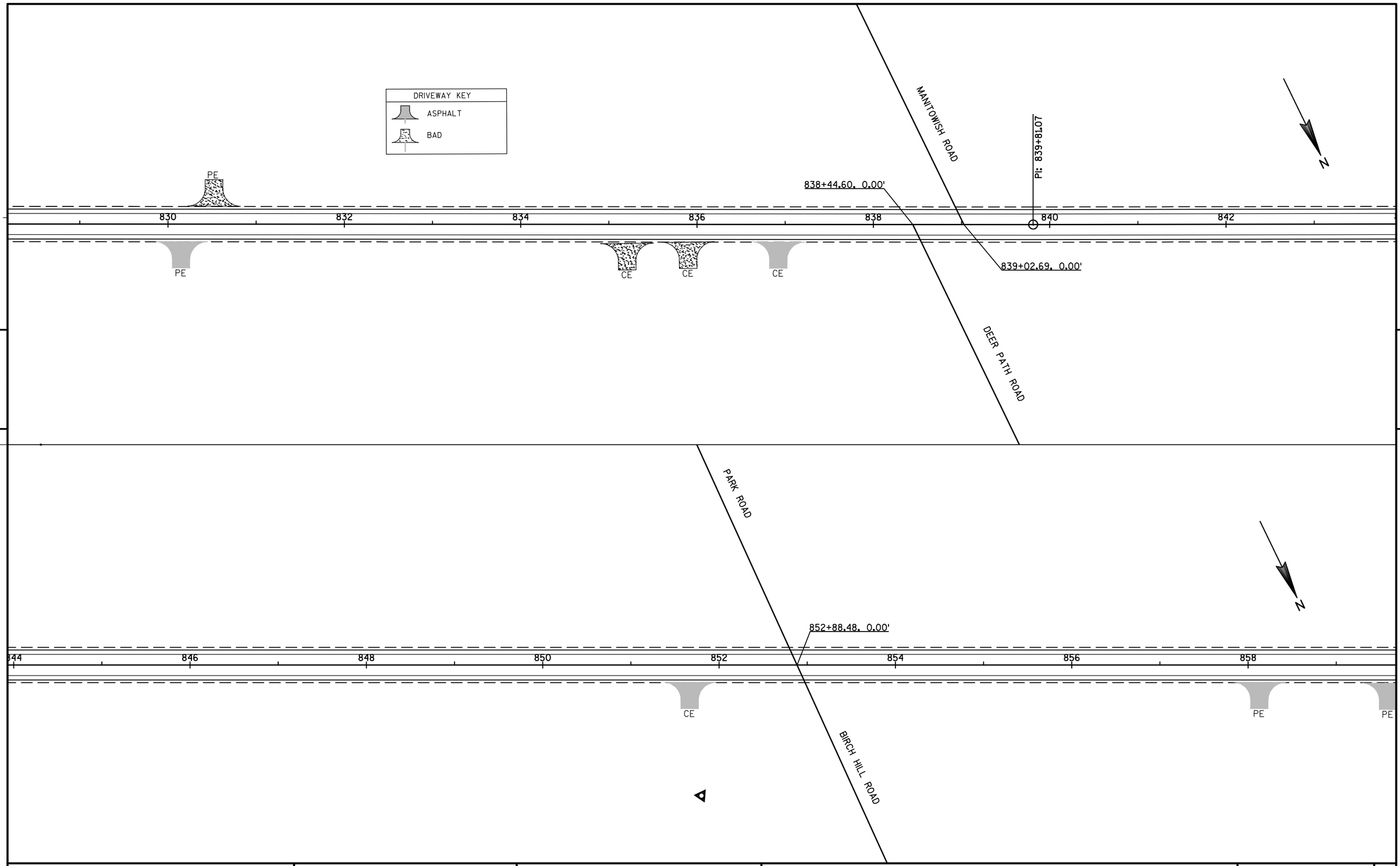
TRANSITIONS TABLE FOR STAKING		
LEFT CROWNS	STATION	RIGHT CROWNS
-0.020	809+05	-0.020
0.010	808+78	-0.010
0.000	808+52	0.000
-0.010	808+25	0.010
-0.020	807+99	0.020
-0.030	807+72	0.030
-0.040	807+45	0.040
-0.050	807+19	0.050
-0.060	806+92	0.060



TRANSITIONS TABLE FOR STAKING		
LEFT CROWNS	STATION	RIGHT CROWNS
0.060	811+94	-0.060
0.050	811+71	-0.050
0.040	811+44	-0.040
0.030	811+18	-0.030
0.020	810+91	-0.020
0.010	810+64	-0.010
0.000	810+38	0.000
-0.010	810+11	0.010
-0.020	809+88	-0.020

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:52 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF
WISDOT/CADDS SHEET 44



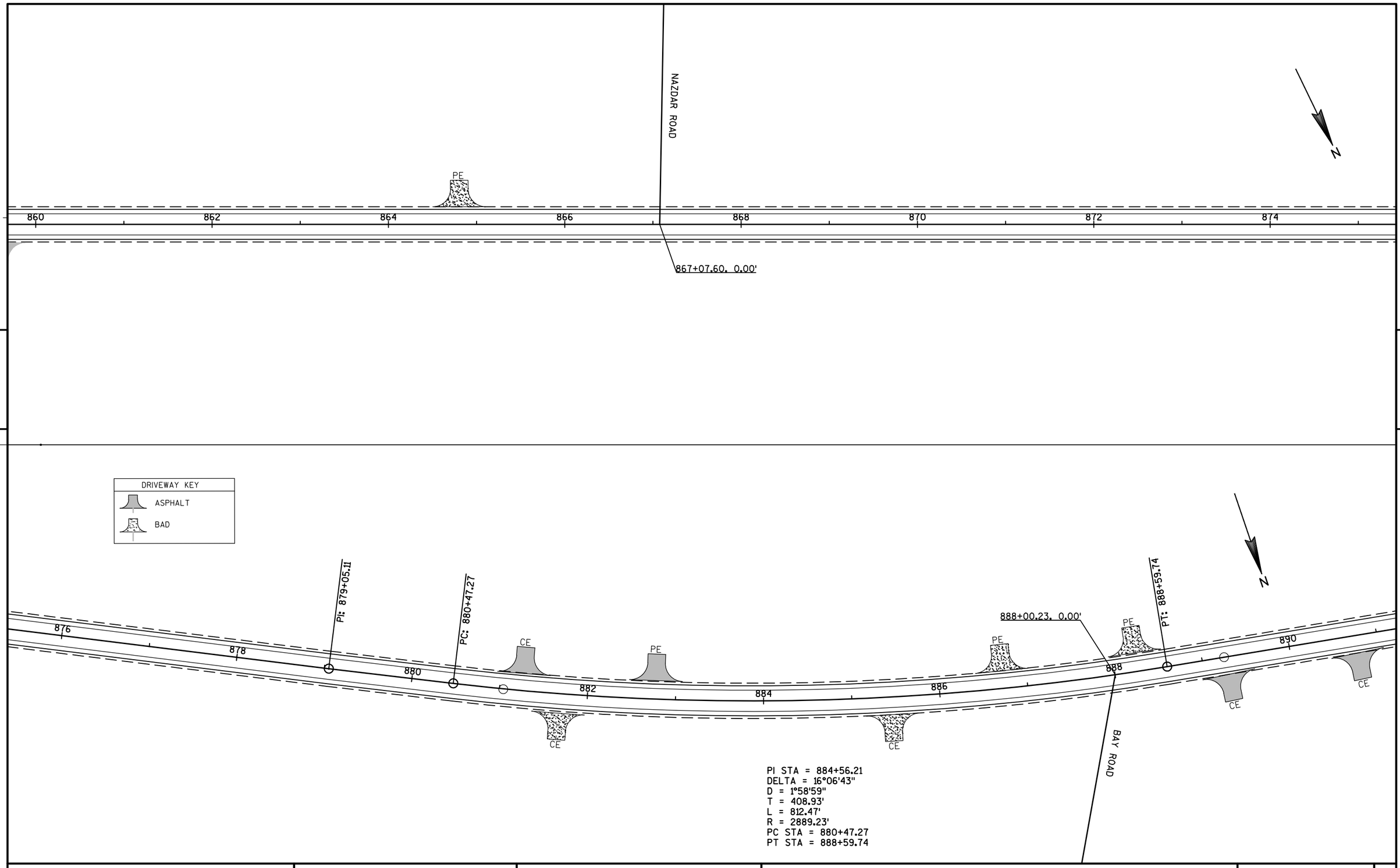
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

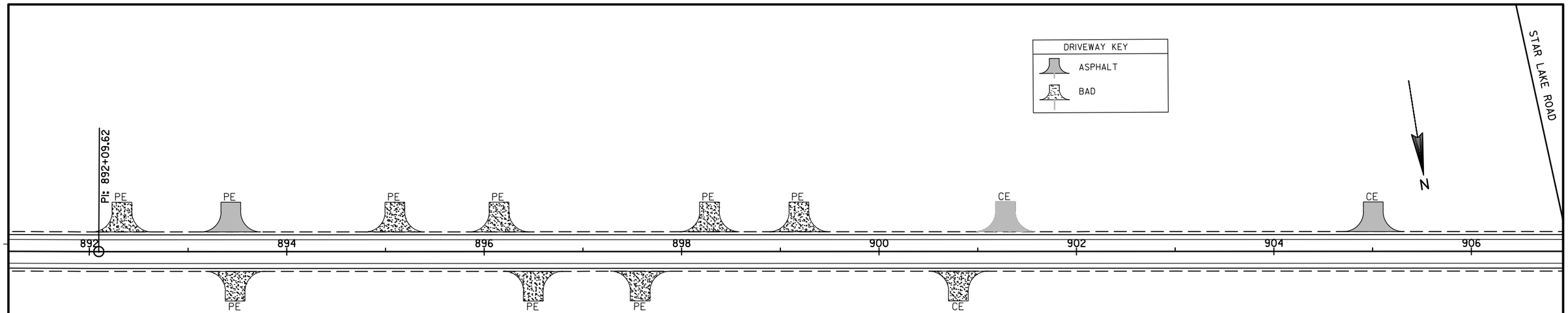
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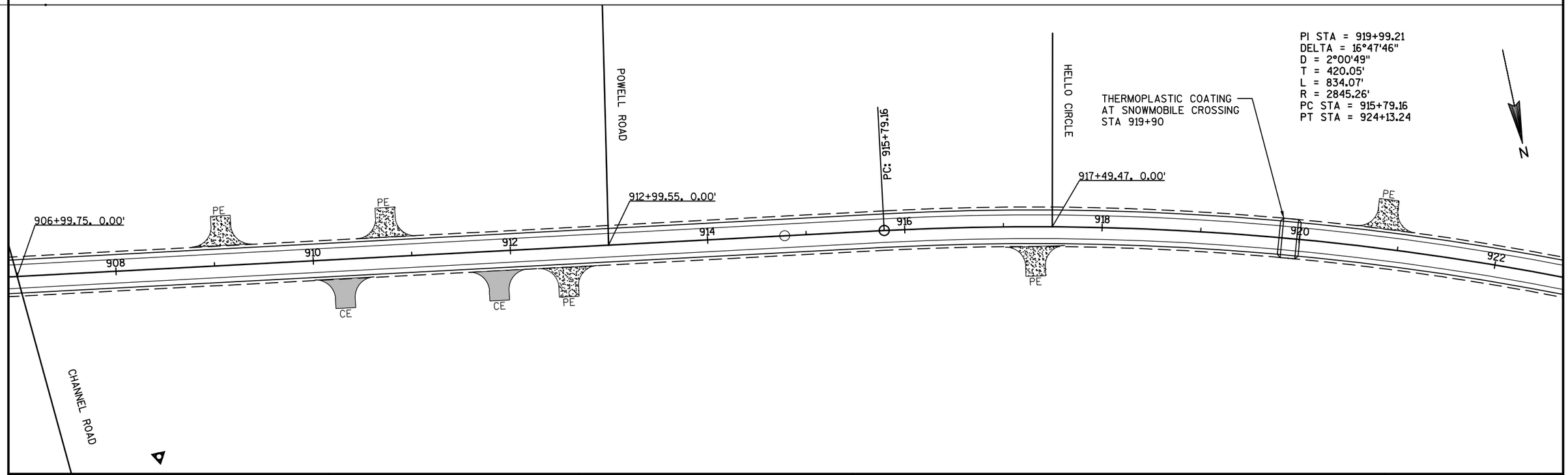
WISDOT/CADDS SHEET 44



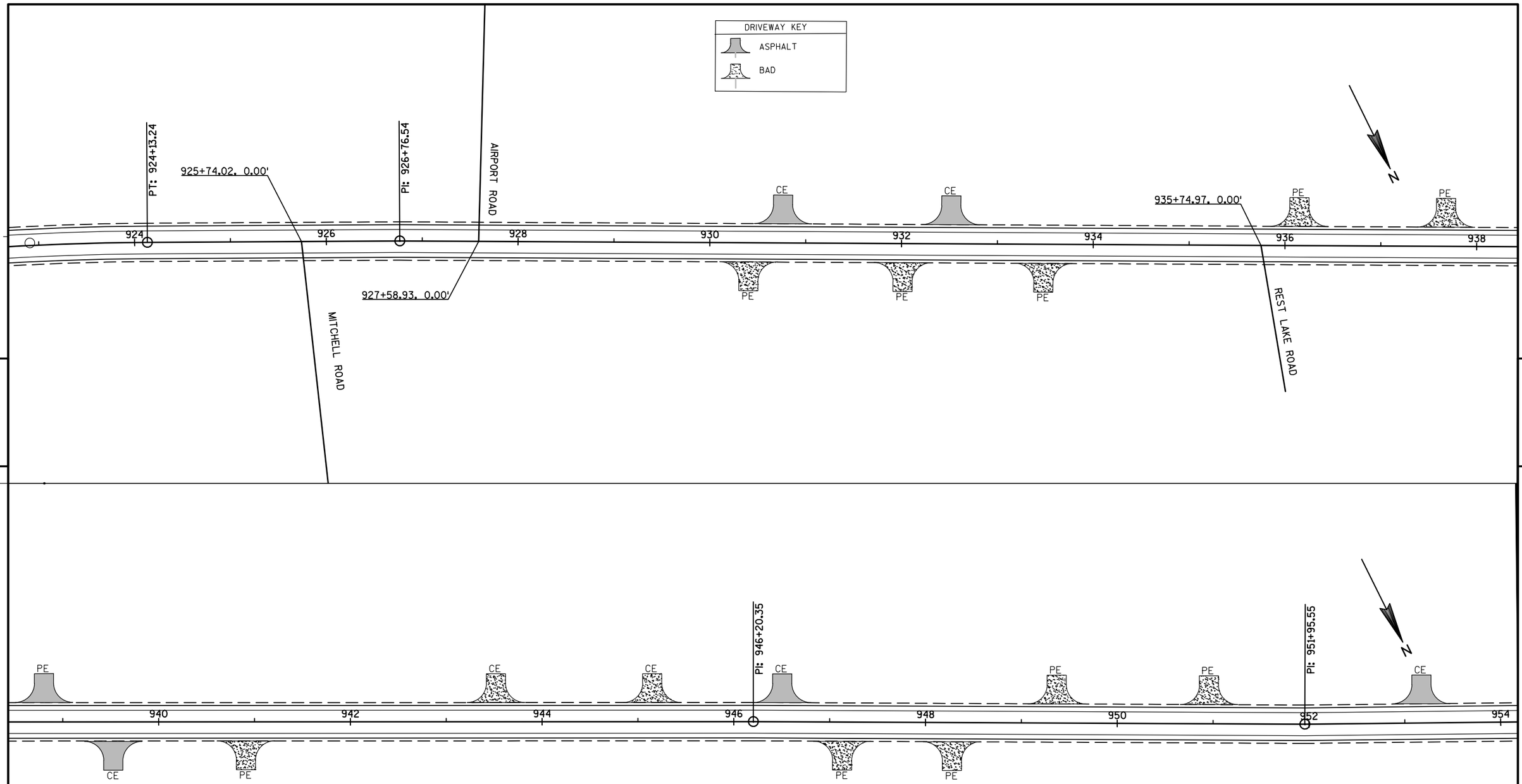
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:53 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF

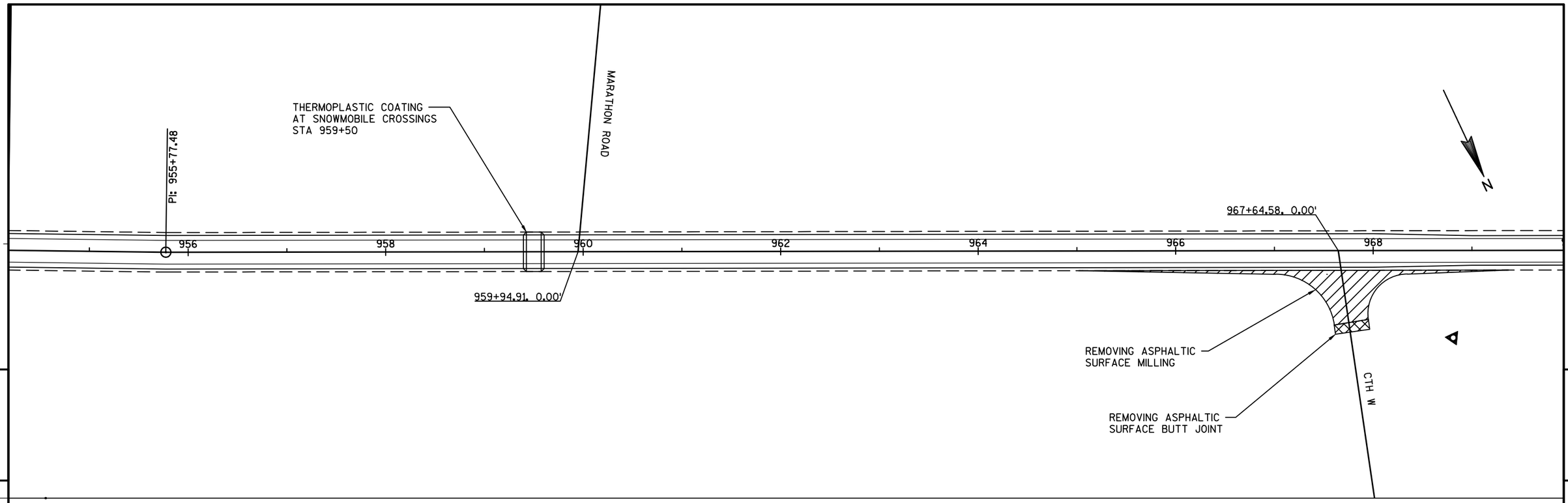


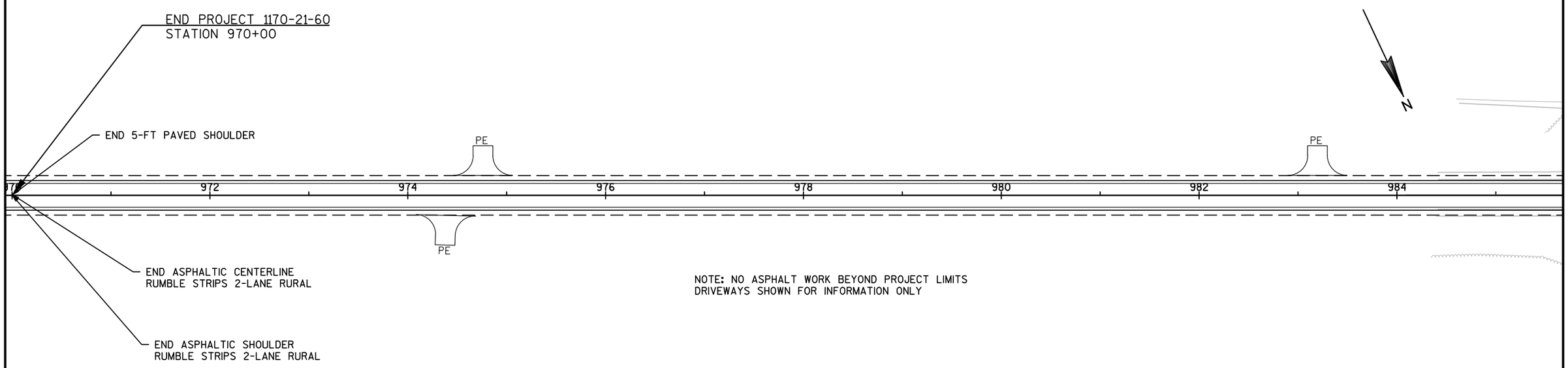


PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 68	E



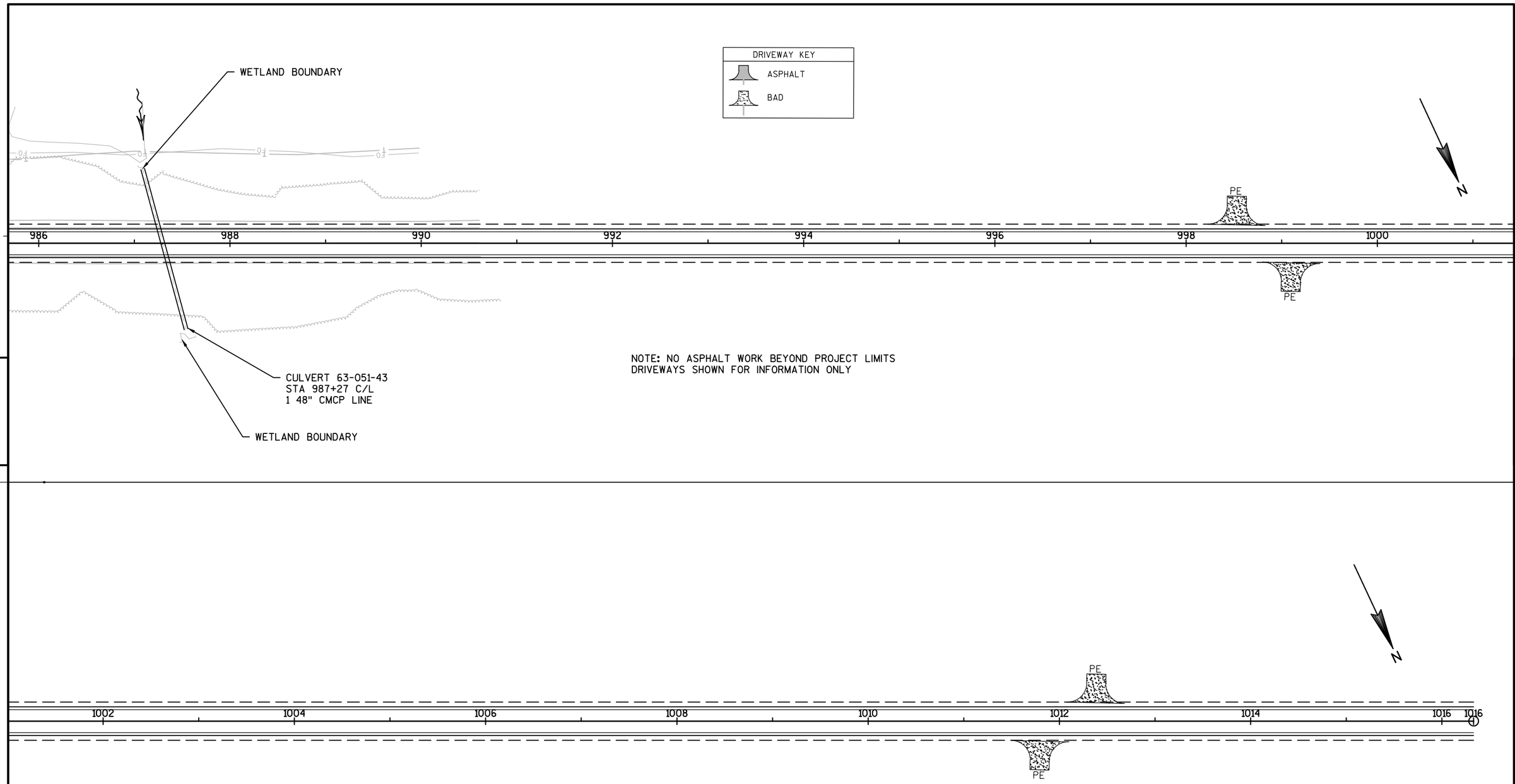
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 69	E





PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\050401_LD.DWG PLOT DATE : 2/6/2014 12:53 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:100_XREF
WISDOT/CADDS SHEET 44



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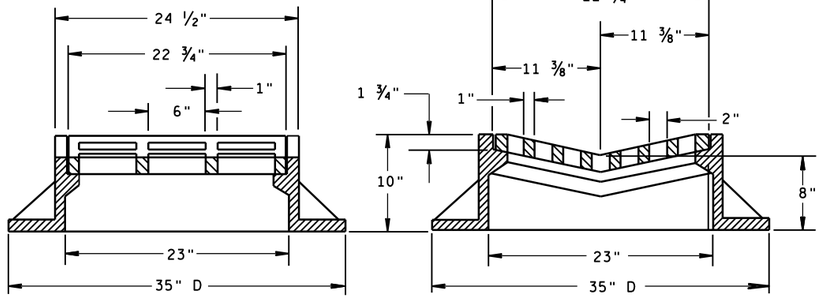
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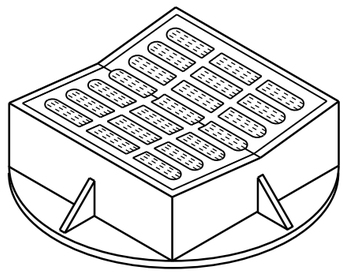
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 71	E

Standard Detail Drawing List

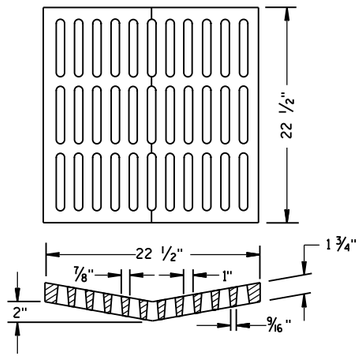
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C09-01	INLETS MEDIAN 3 AND 4 GRATE
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

6



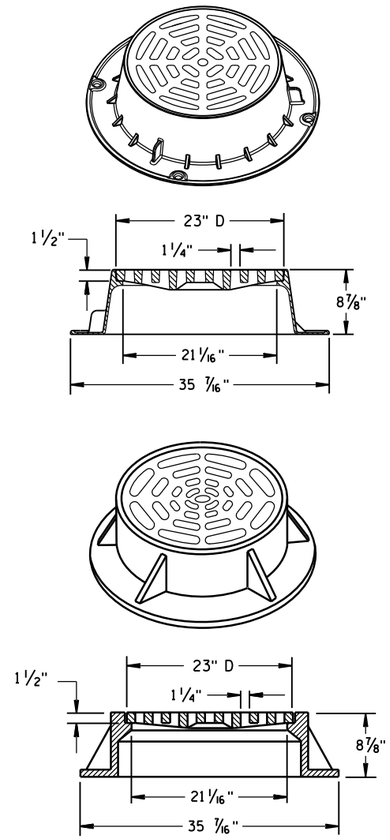


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

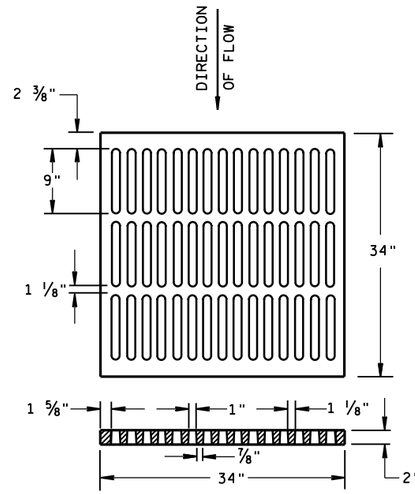
NOTE: EITHER CASTING IS ACCEPTABLE

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.

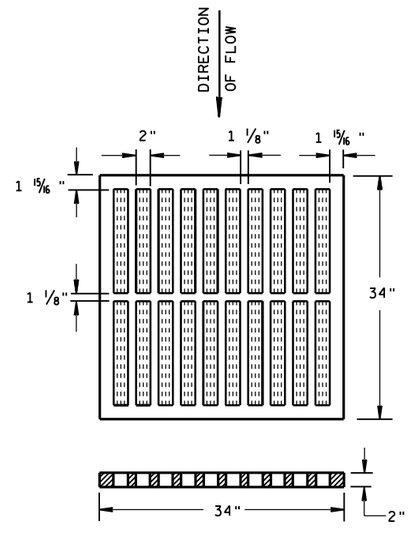
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



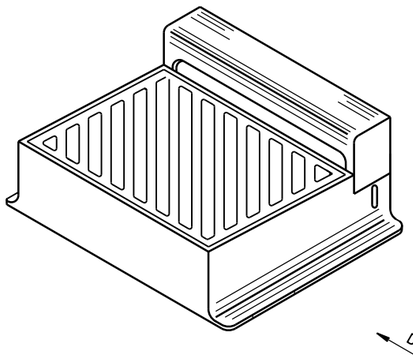
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



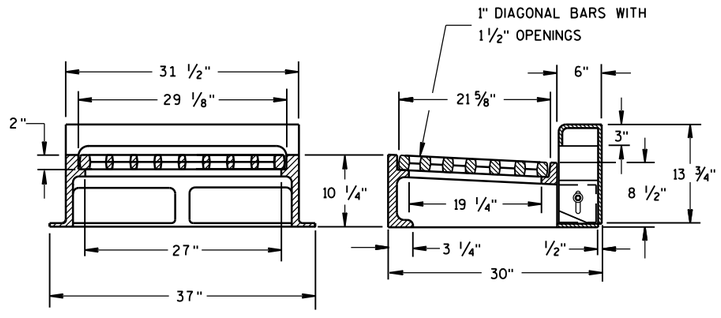
TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE



DIRECTION OF FLOW

DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

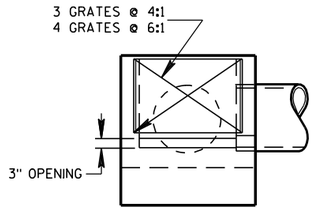
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

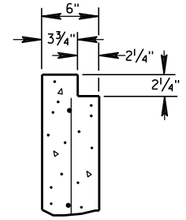
APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 A 5-19b



SECTION B-B



SECTION C-C

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.

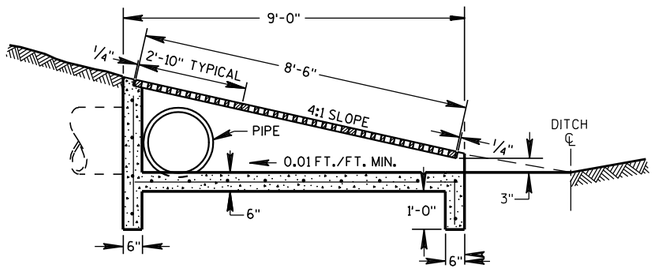
UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

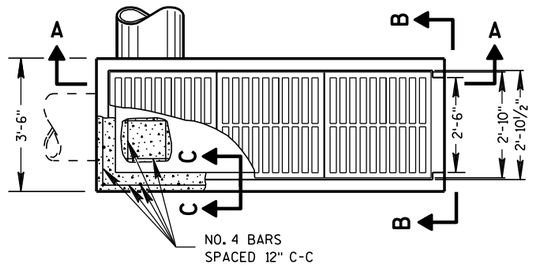
ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 3G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

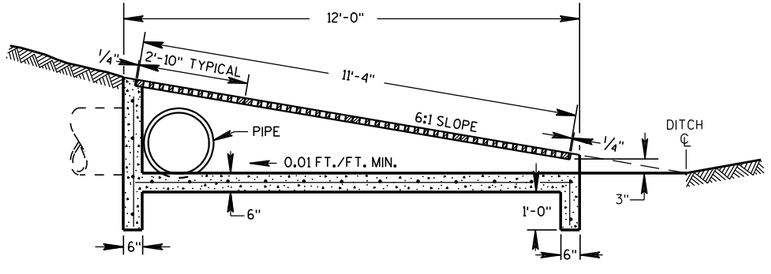


SECTION A-A

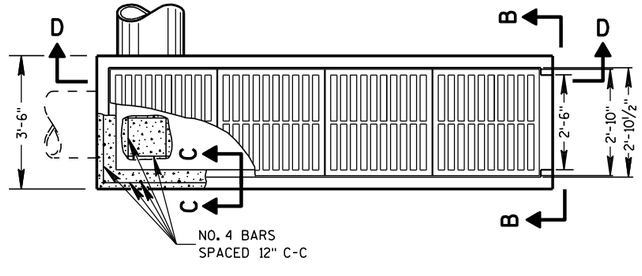


PLAN VIEW

INLETS MEDIAN 3 GRATE



SECTION D-D



PLAN VIEW

INLETS MEDIAN 4 GRATE

INLETS MEDIAN 3 AND 4 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

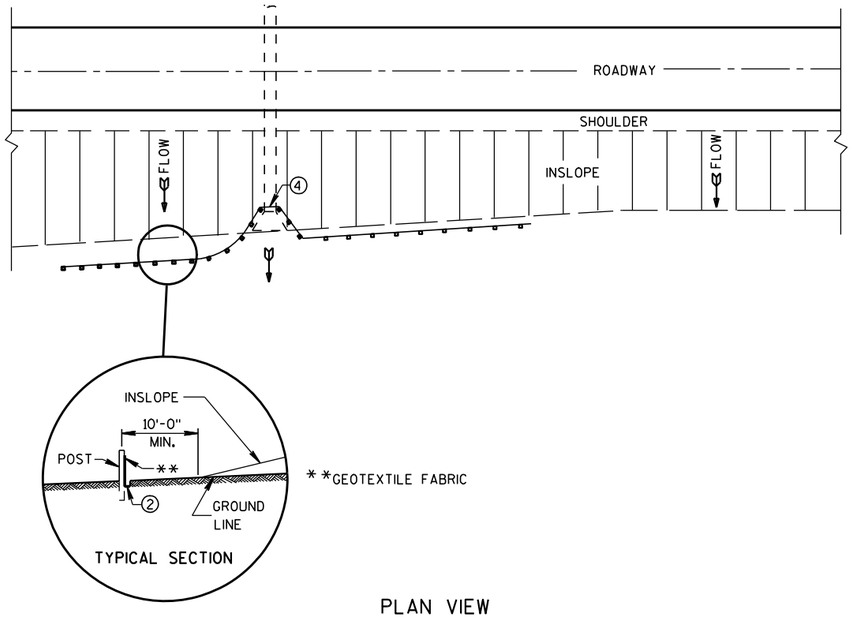
6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEV ENGINEER

FHWA

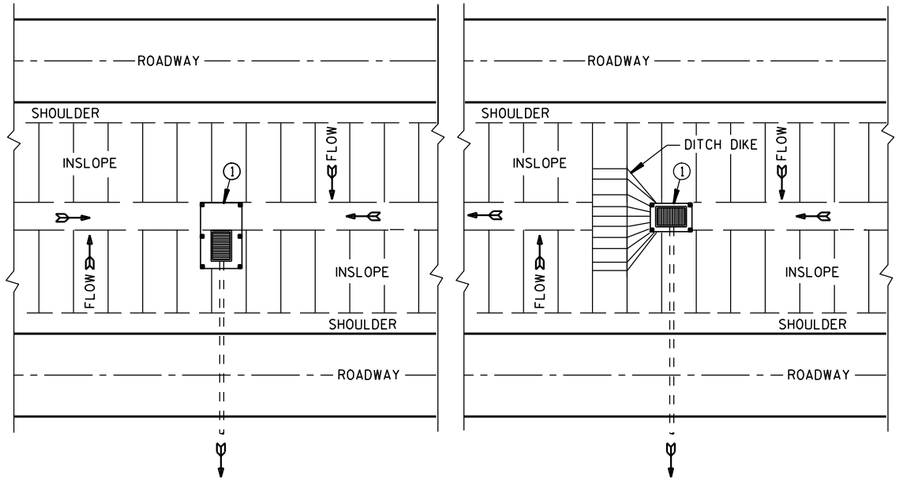
6

S.D.D. 8 C 9-1



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



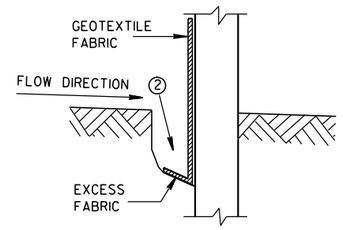
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

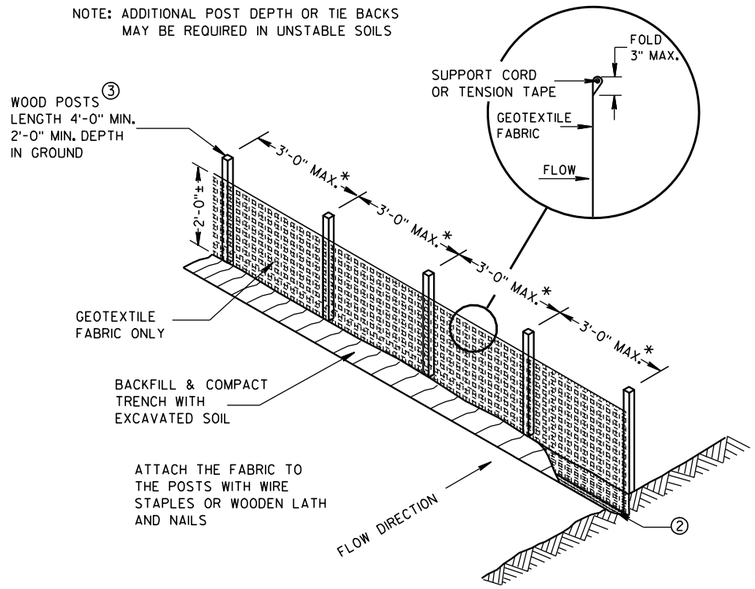
GENERAL NOTES

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

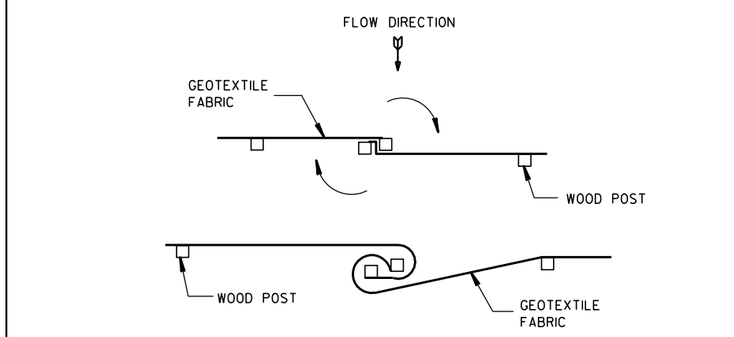
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



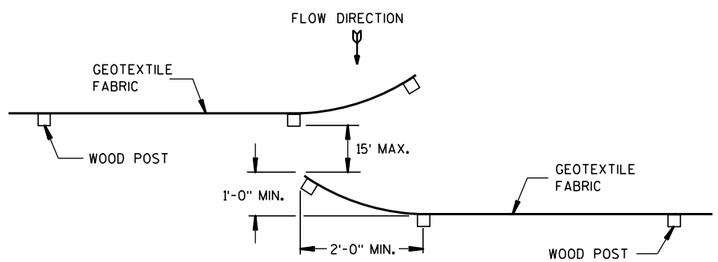
TRENCH DETAIL



SILT FENCE

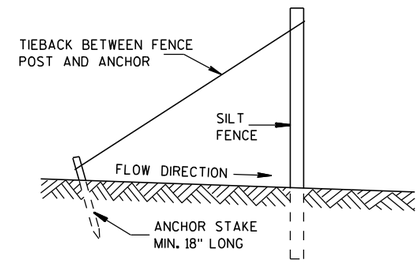


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

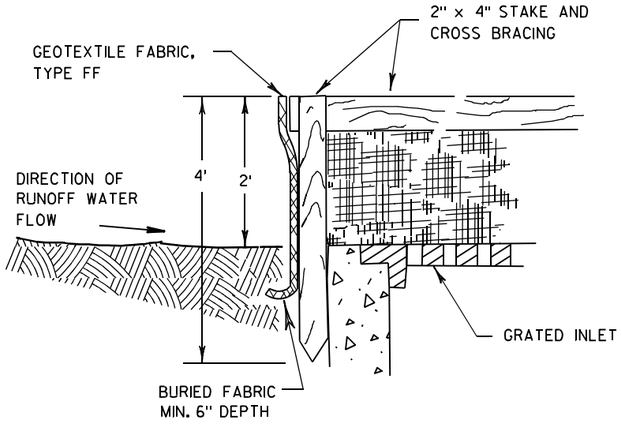
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

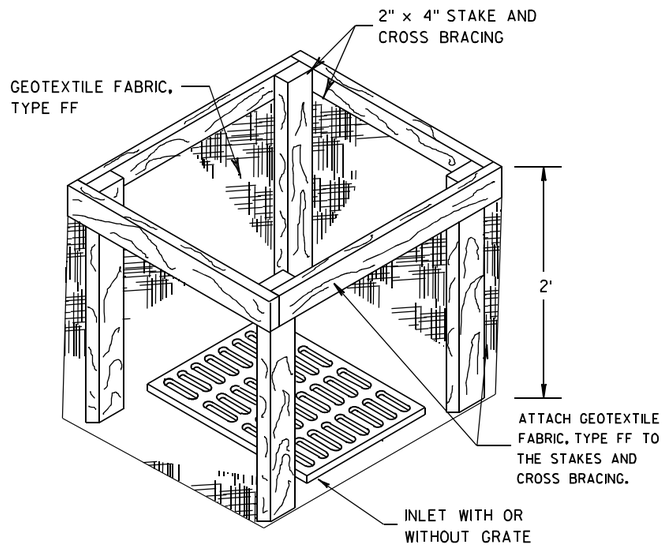
6

S.D.D. 8 E 9-6

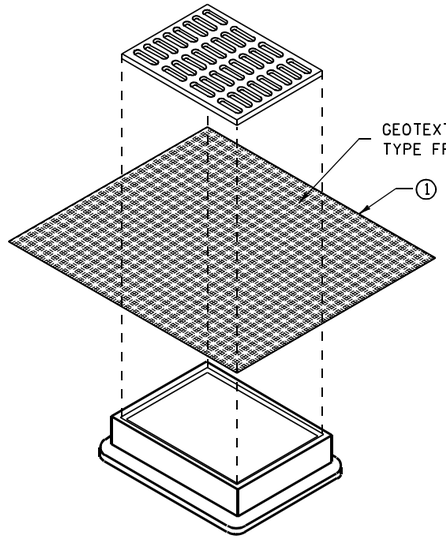
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S.D.D. 8 E 9-6



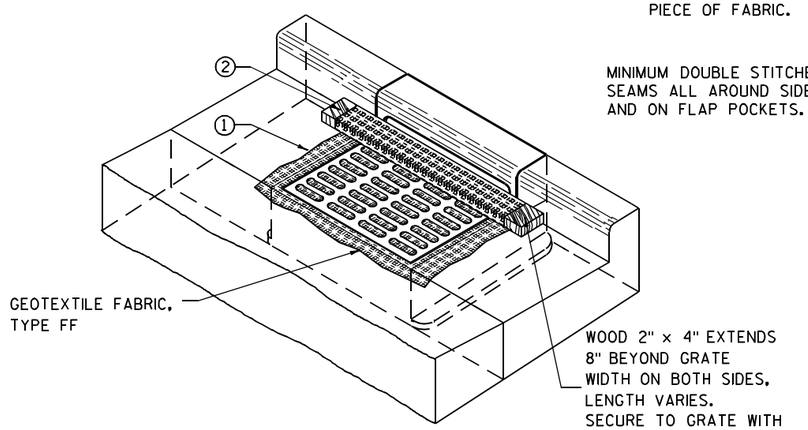


INLET PROTECTION, TYPE A

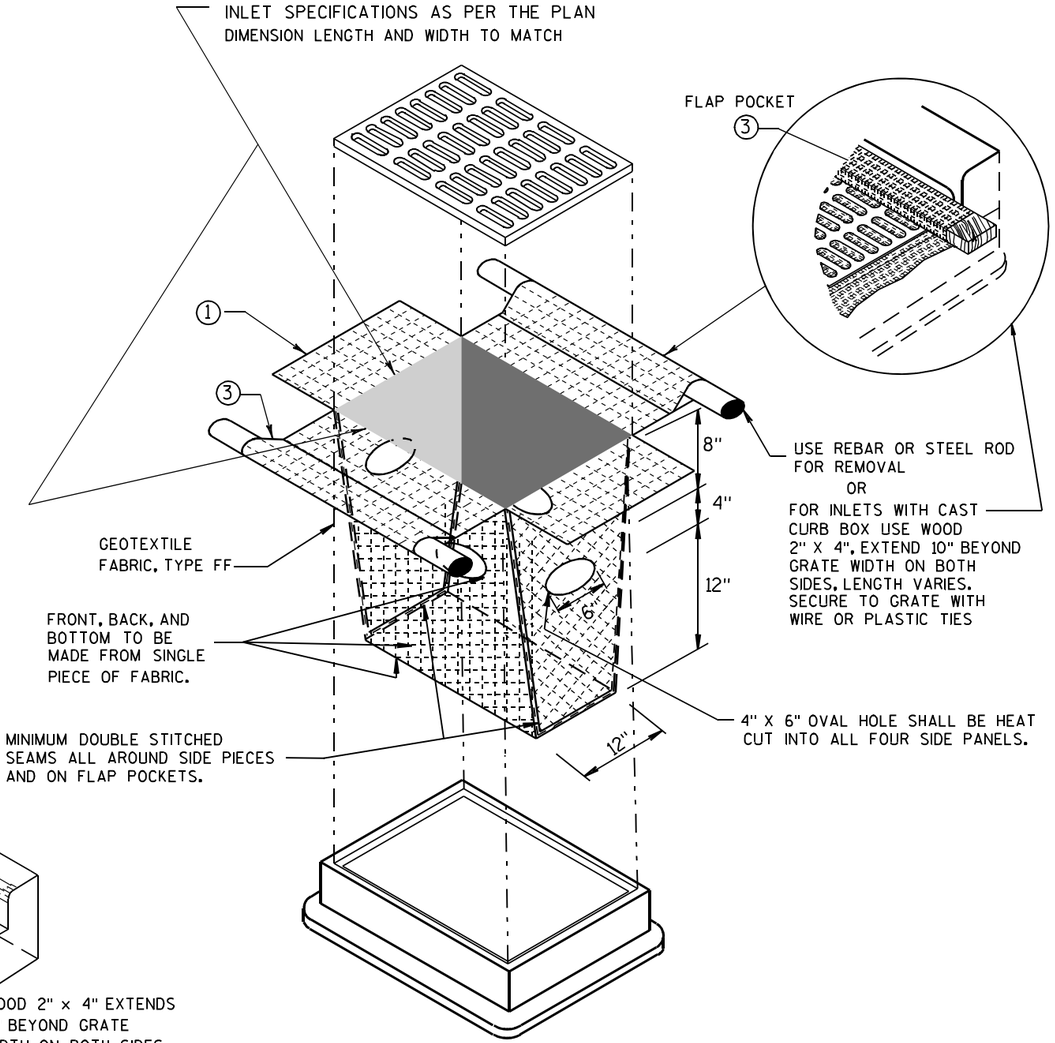


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 E 10-2

METAL APRON ENDWALLS

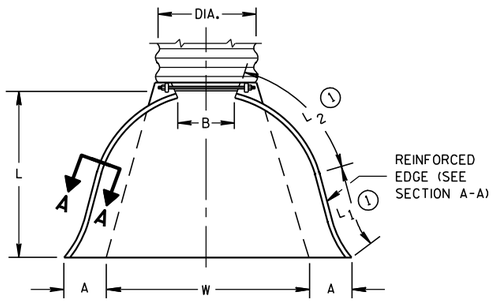
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

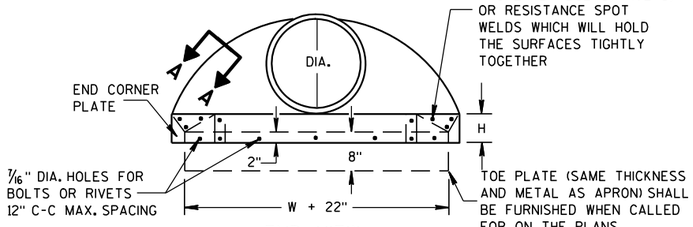
REINFORCED CONCRETE APRON ENDWALLS

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

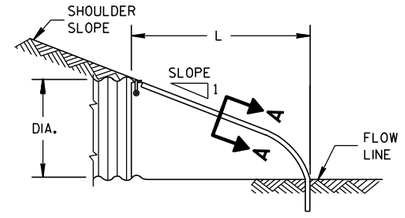
*MINIMUM
**MAXIMUM



PLAN VIEW

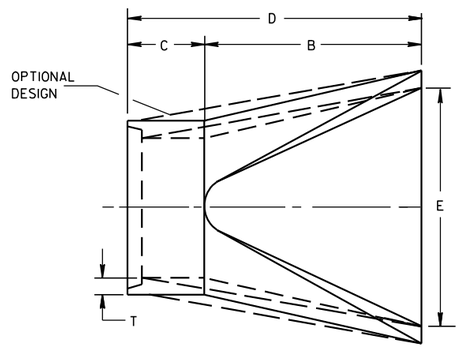


END VIEW

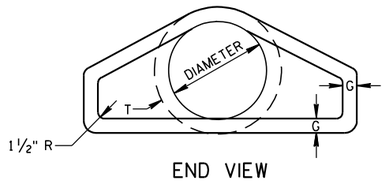


SIDE ELEVATION

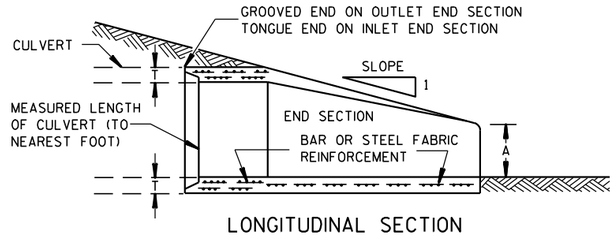
METAL ENDWALLS



PLAN

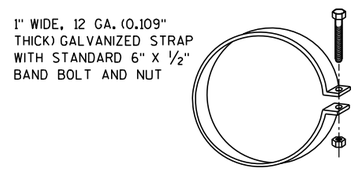


END VIEW



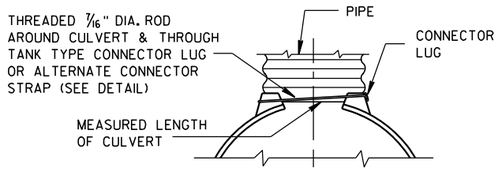
LONGITUDINAL SECTION

CONCRETE ENDWALLS

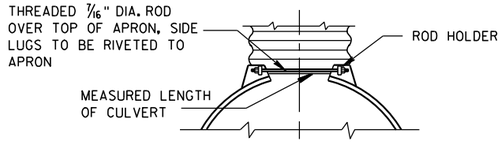


ALTERNATE FOR TYPE 1 CONNECTION

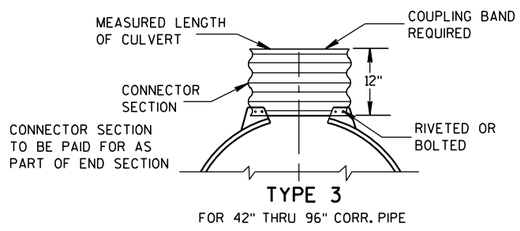
END SECTION CONNECTOR STRAP



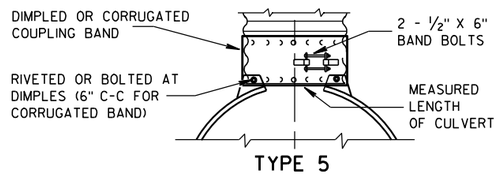
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

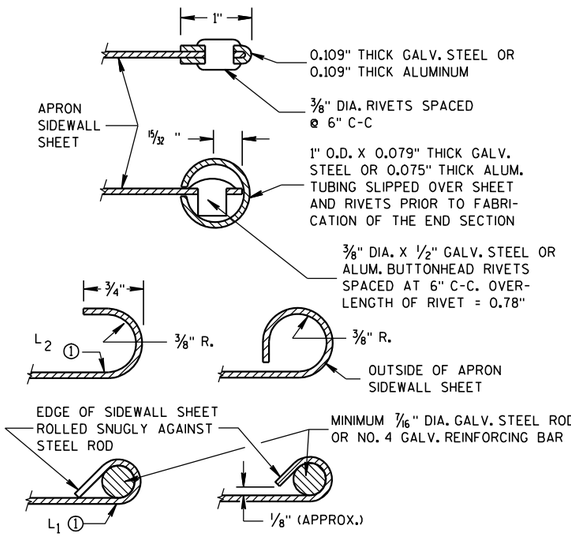
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

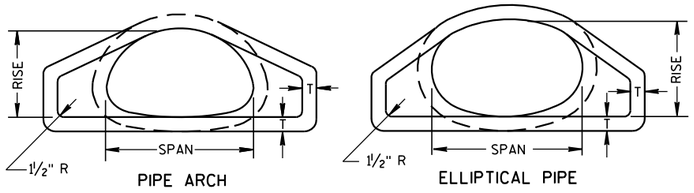
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

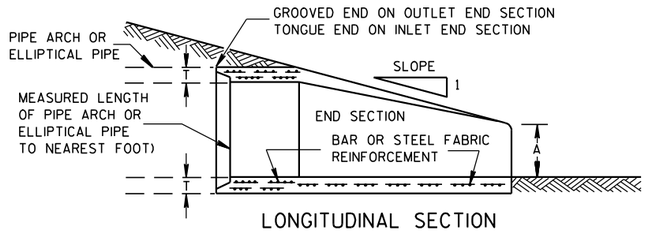
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

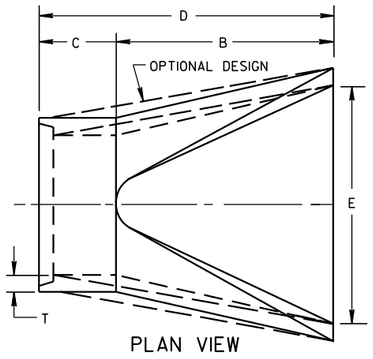
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S.D.D. 8 F 1-11



END VIEW

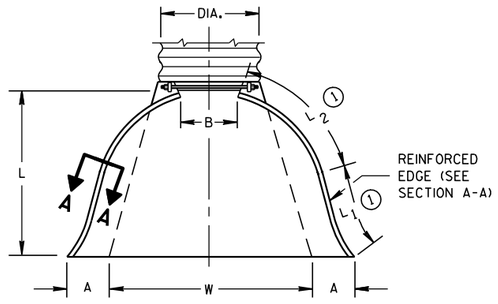


LONGITUDINAL SECTION

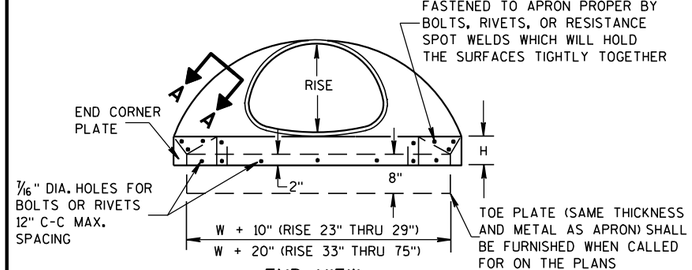


PLAN VIEW

CONCRETE ENDWALLS

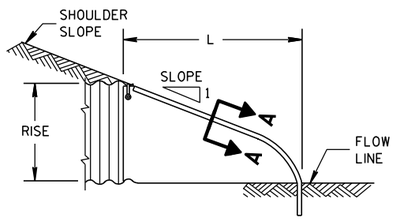


PLAN VIEW



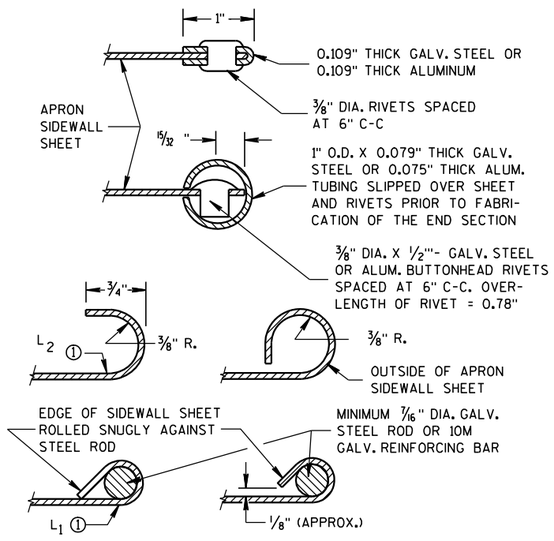
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

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

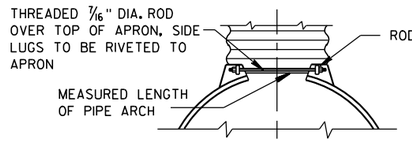
REINFORCED CONCRETE PIPE ARCH

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

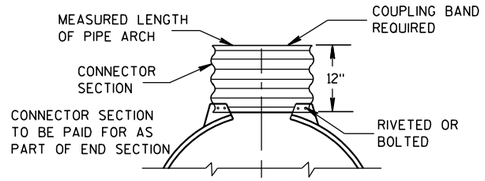
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48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

**NOMINAL SIZE



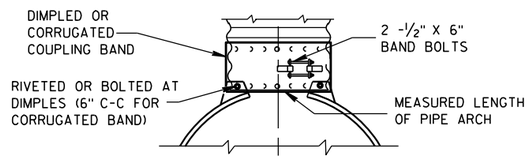
TYPE 2

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

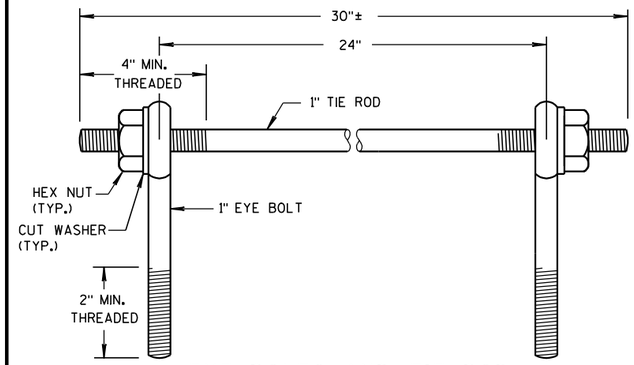
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

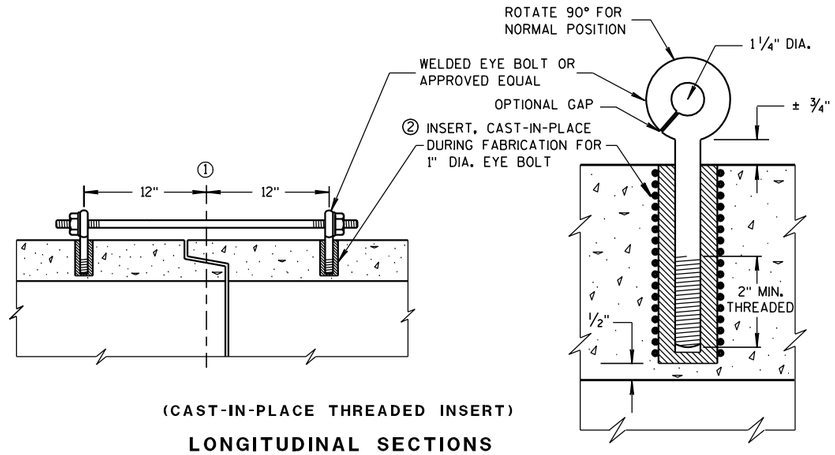
11/30/94 — DATE

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

FHWA



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.

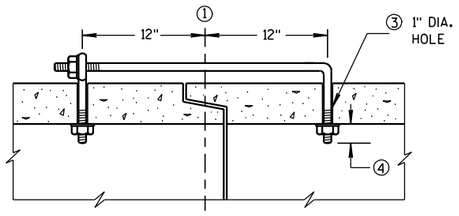
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

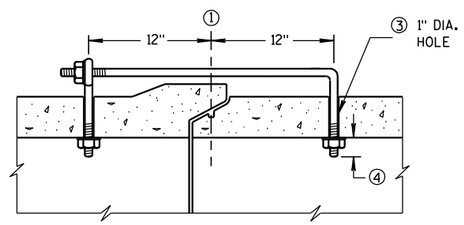
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

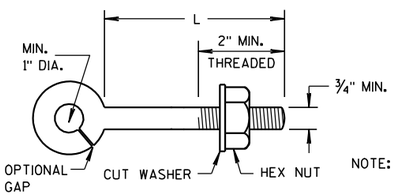


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

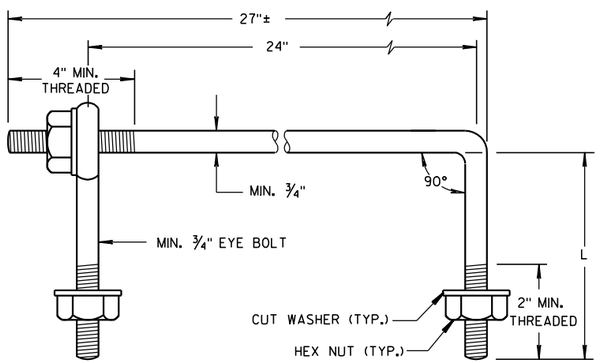
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

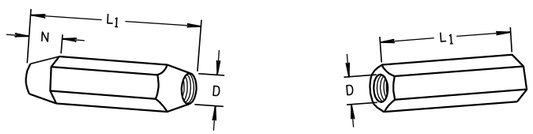
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

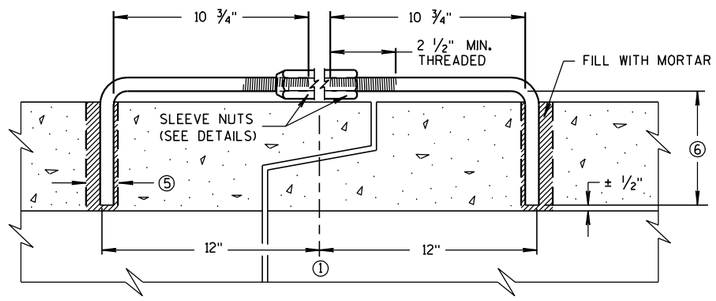
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

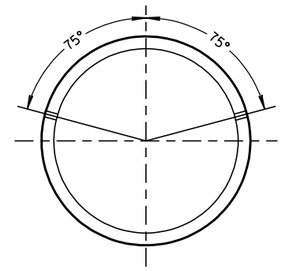
SLEEVE NUTS



LONGITUDINAL SECTION

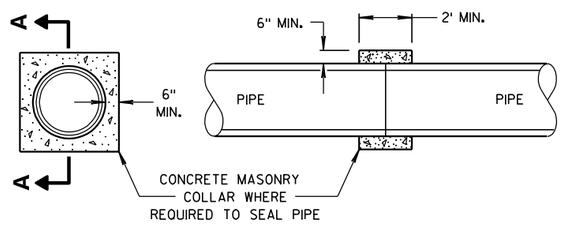
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

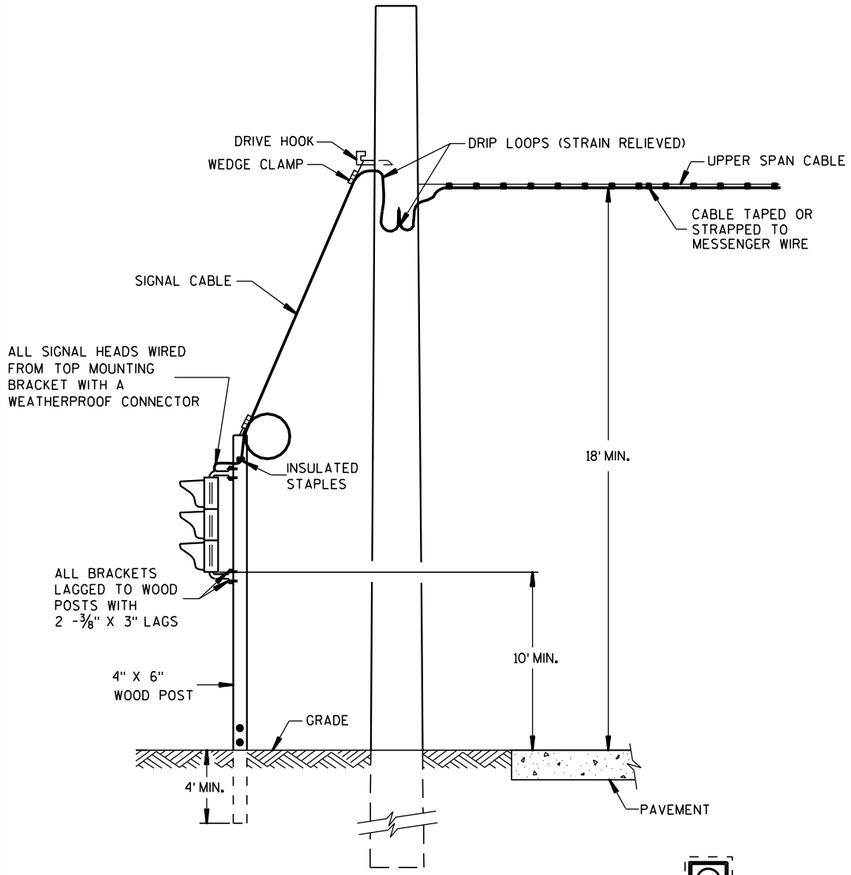
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

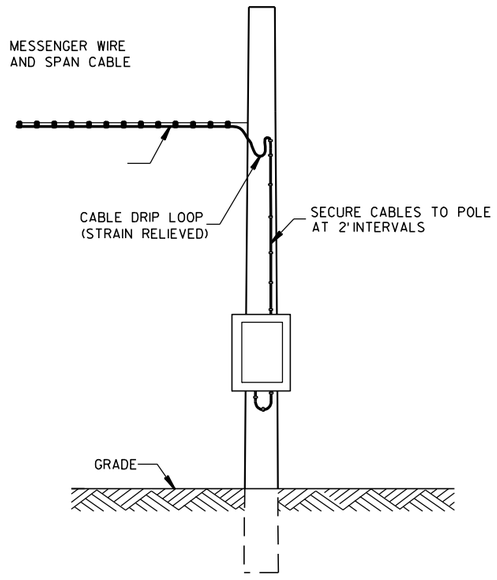
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
79
FHWA

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S.D.D. 8 F 4-7



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY PLOLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

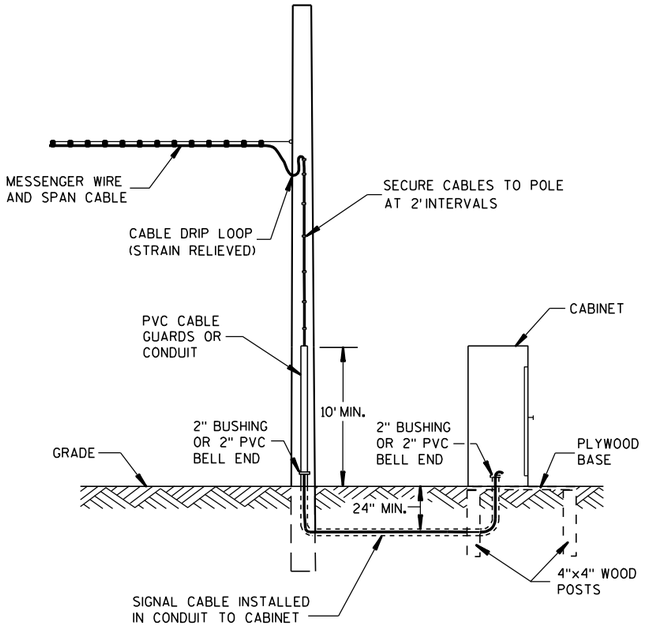
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

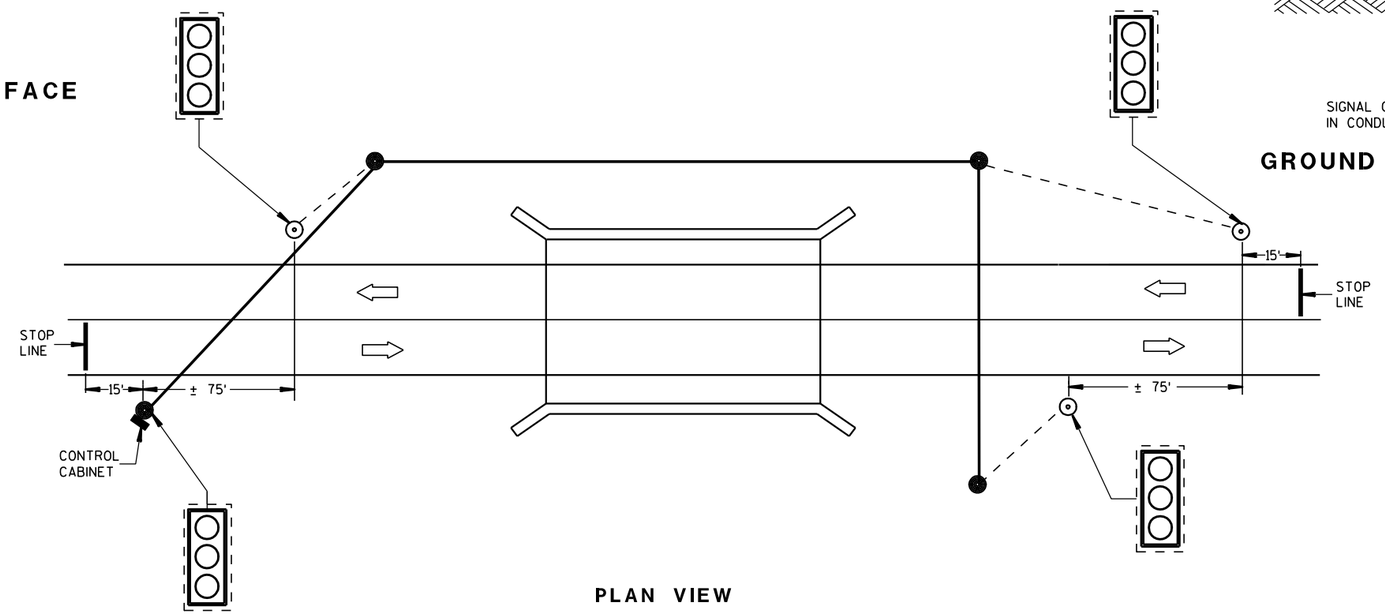
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGHTS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. Gosling STATE ELECTRICAL ENGI

80 HWYS

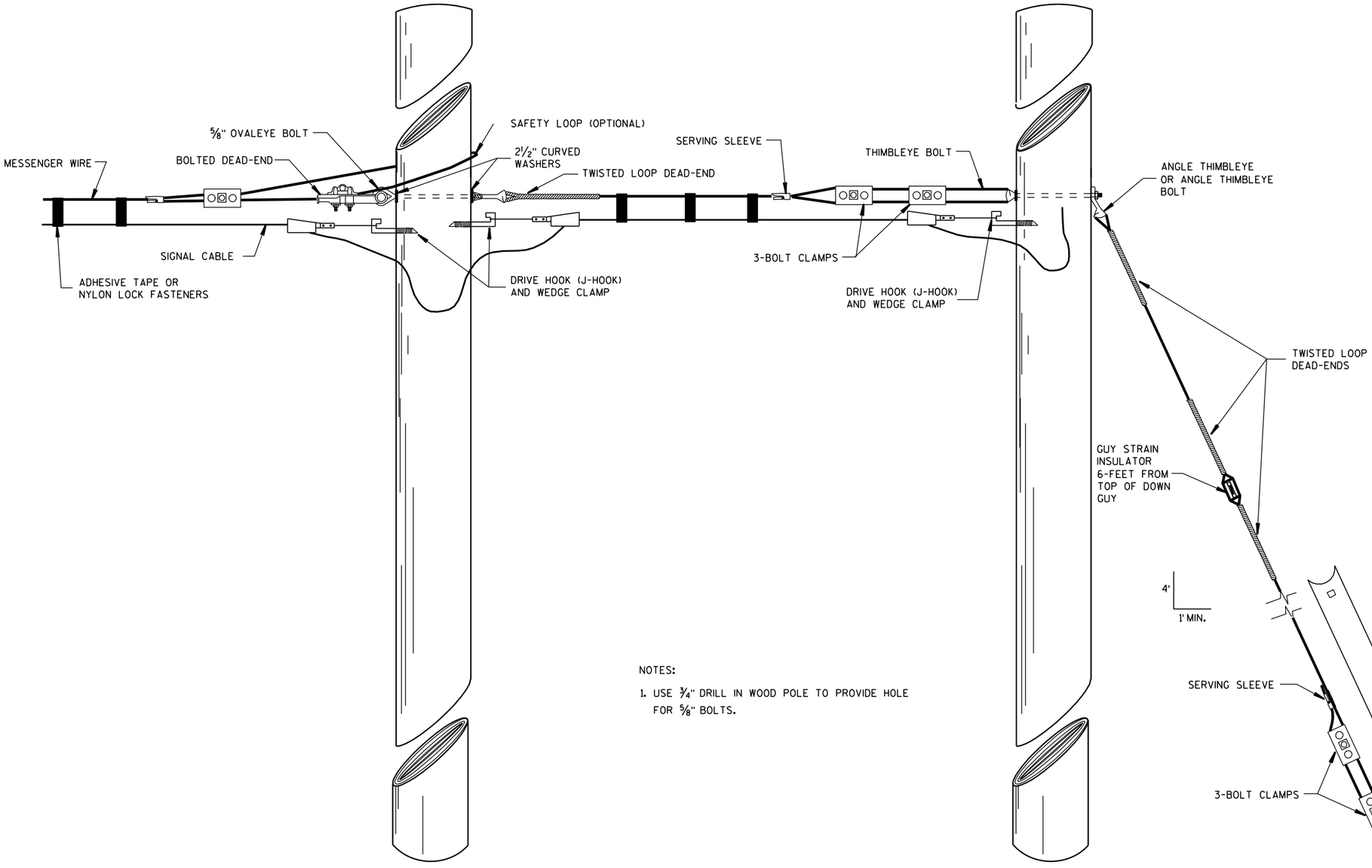
FHWA

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S.D.D. 9 G 2-3a

6

S.D.D. 9 G 2-3a



SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. G... STATE ELECTRICAL ENGI

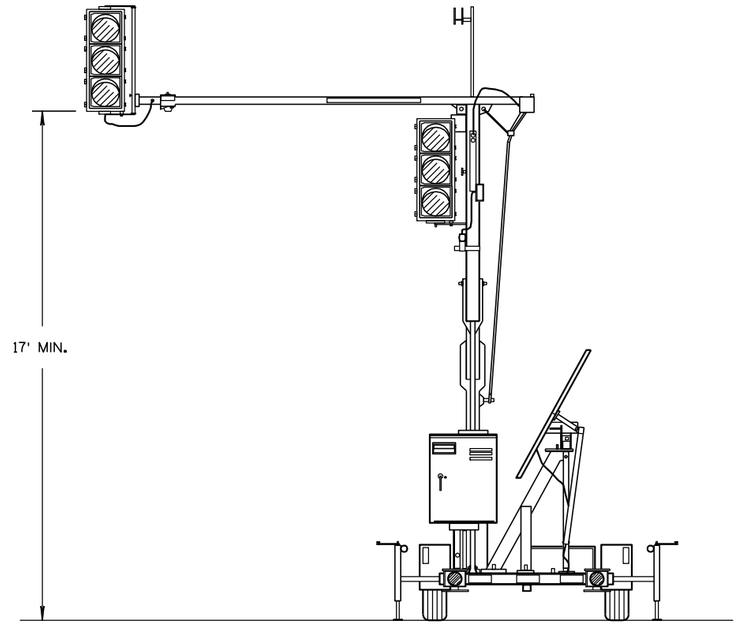
81

HWYS

FHWA

6

S.D.D. 9 G 2-3b

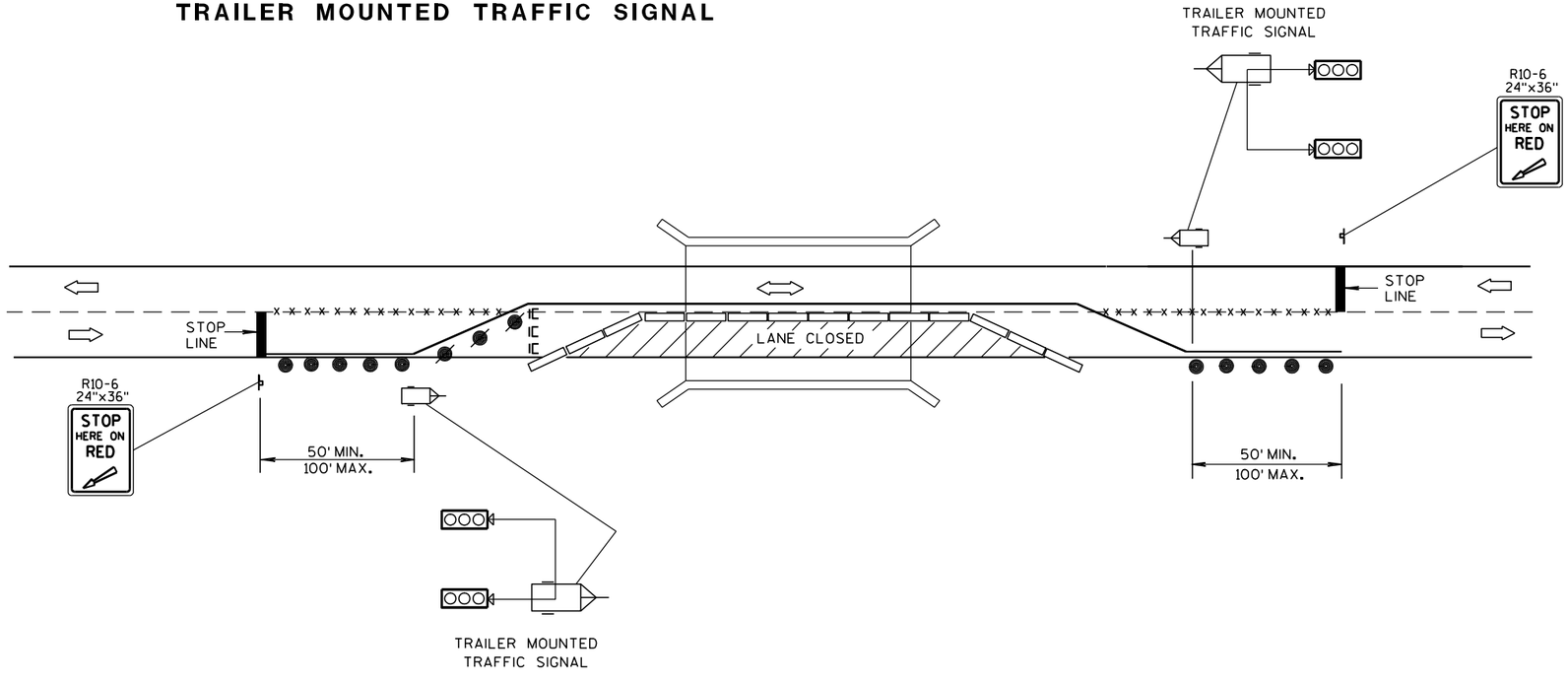


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 — DATE

/S/ Thomas J. Gosling — STATE ELECTRICAL ENGI

82

HWYS

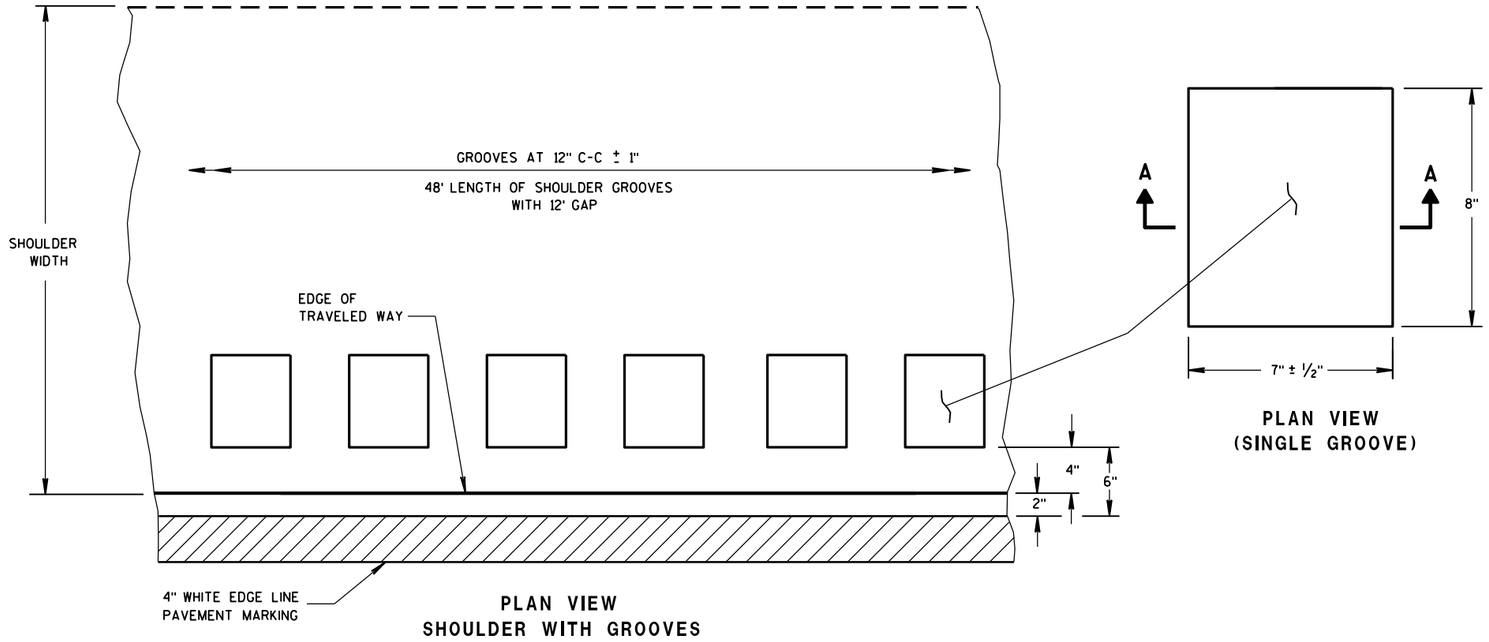
FHWA

6

S.D.D. 9 G 2-3c

6

S.D.D. 9 G 2-3c



PLAN VIEW
SHOULDER WITH GROOVES

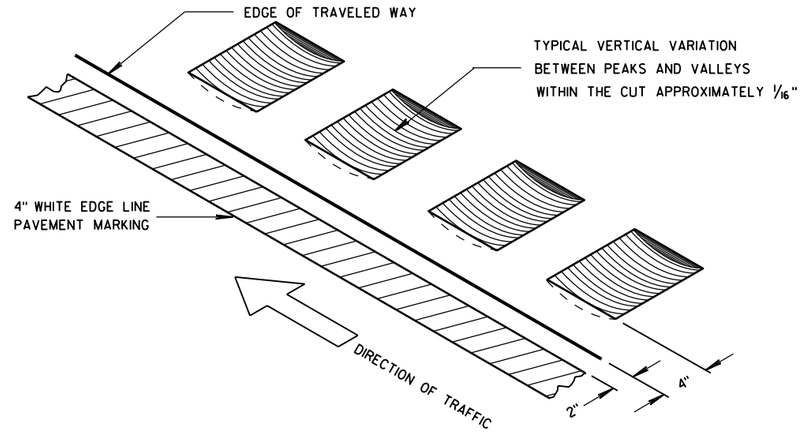
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

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

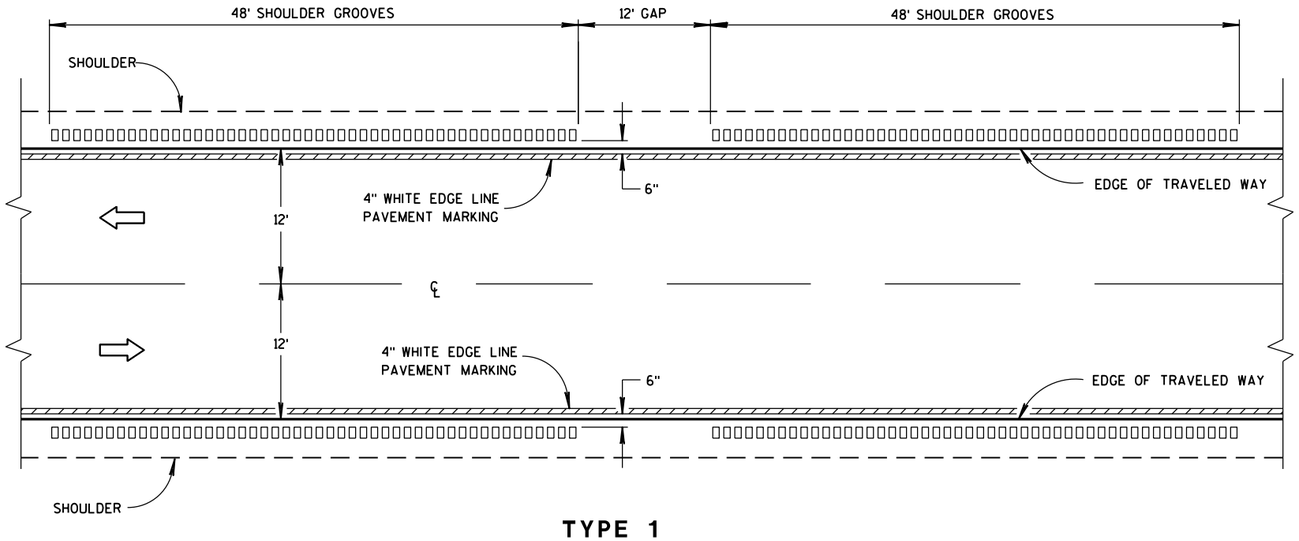
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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

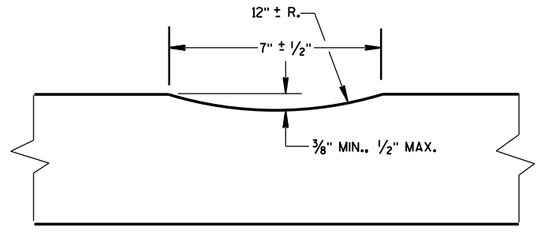


ISOMETRIC

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



TYPE 1
2-LANE SHOULDER RUMBLE STRIP



SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

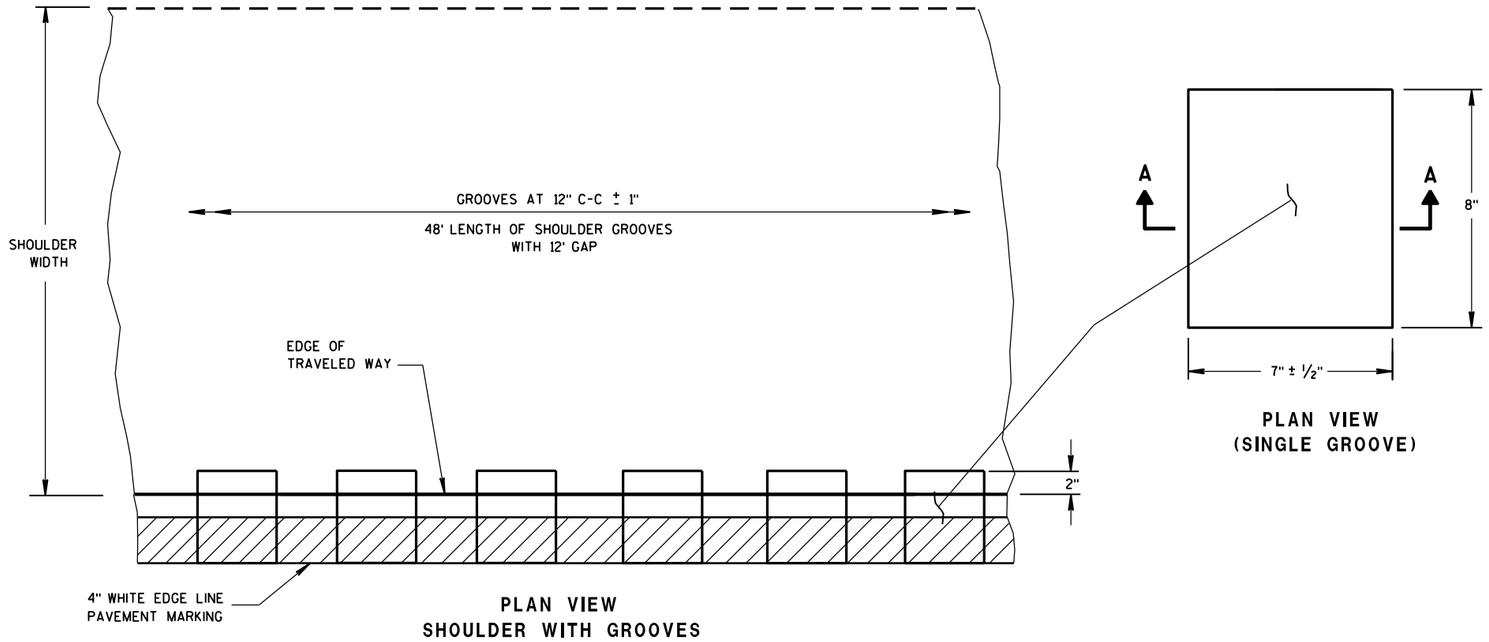
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

S.D.D. 13 A 10-1a

6

S.D.D. 13 A 10-1a



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

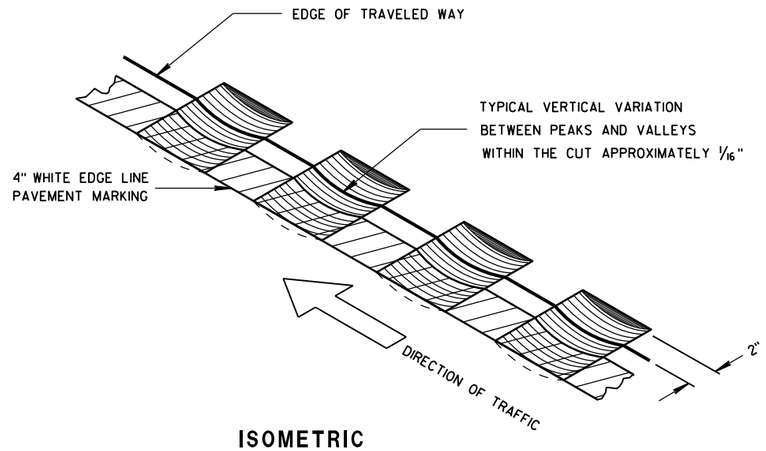
PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

GENERAL NOTES

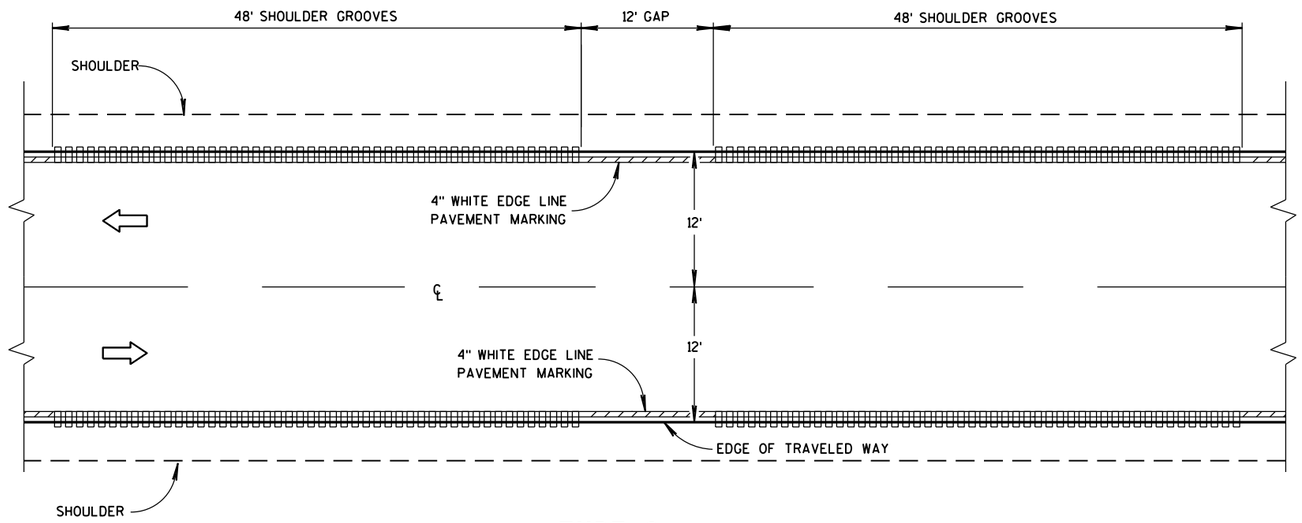
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

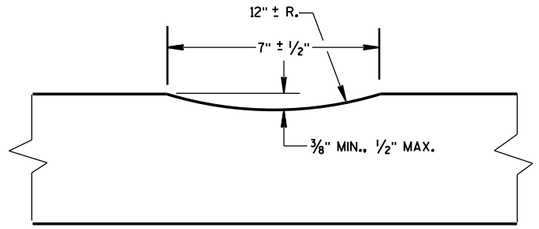
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



TYPE 2
2-LANE SHOULDER RUMBLE STRIP



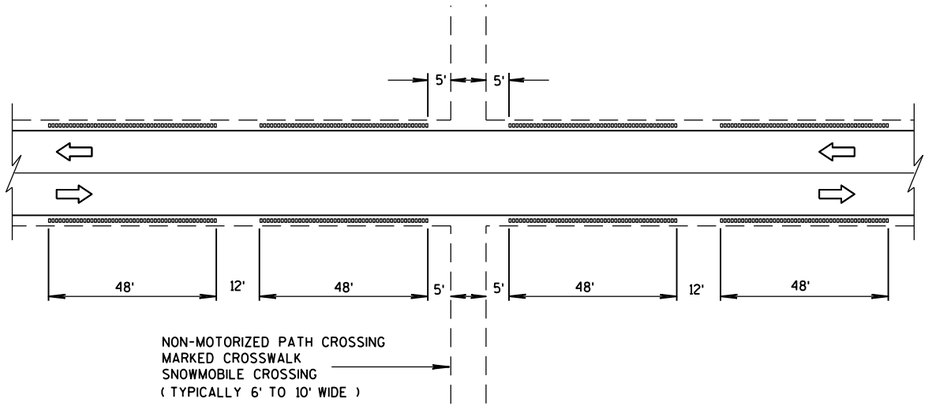
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

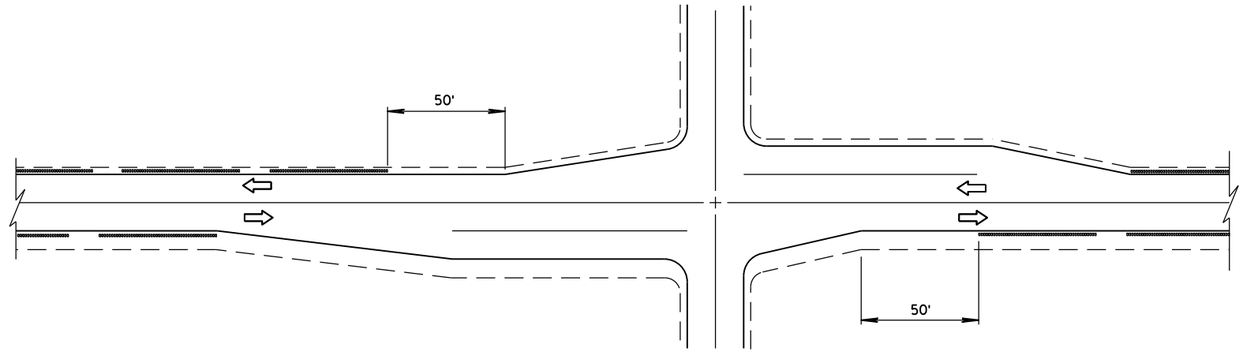
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

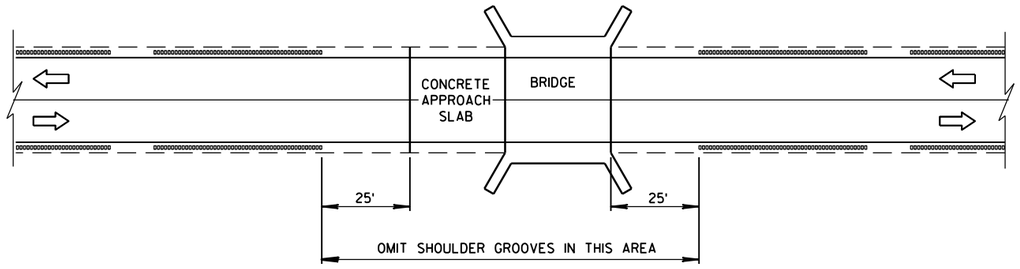
S.D.D. 13 A 10-1b



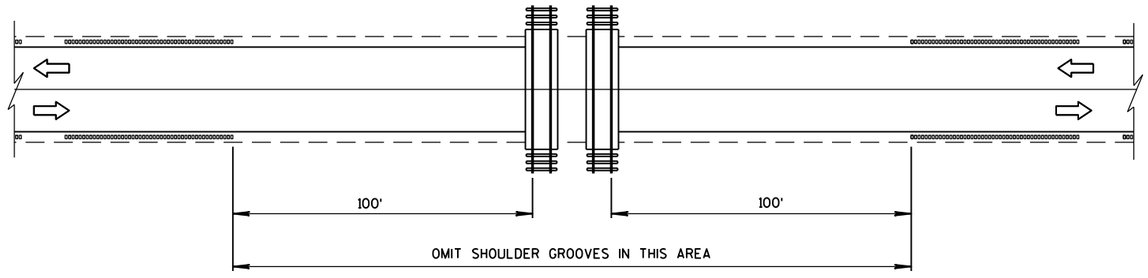
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



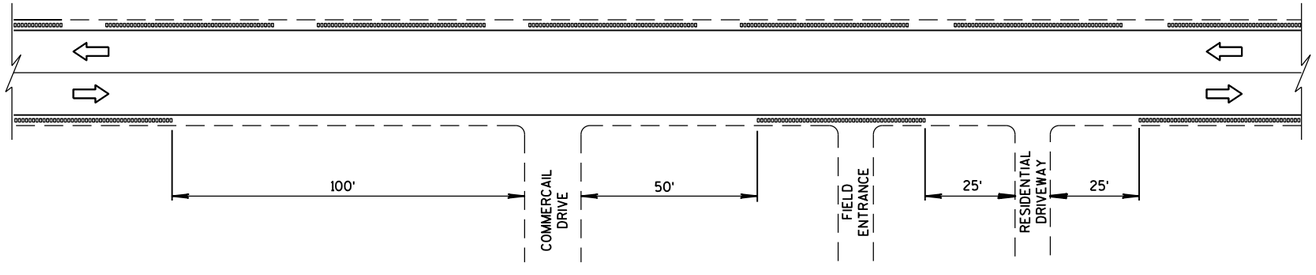
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT DRIVEWAYS (1)

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

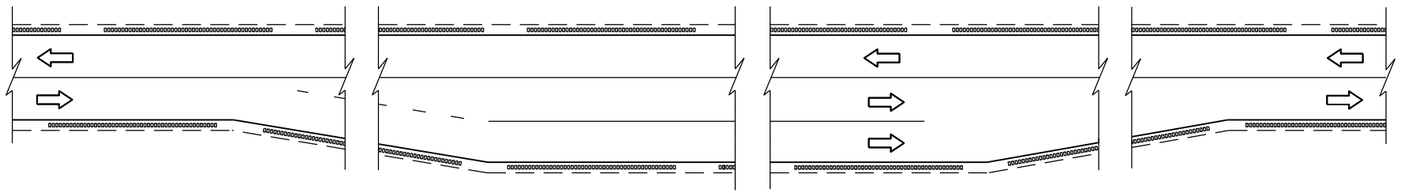
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

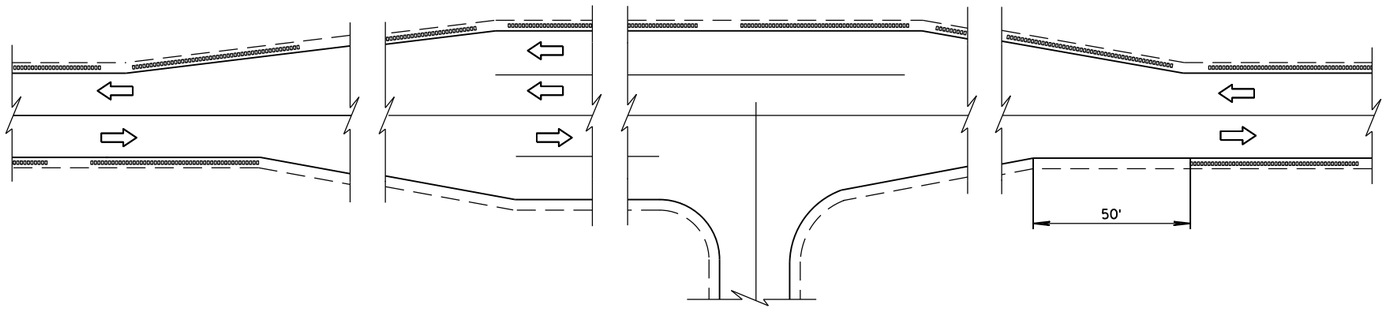
S.D.D. 13 A 10-1c

6

S.D.D. 13 A 10-1c



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

6

6

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

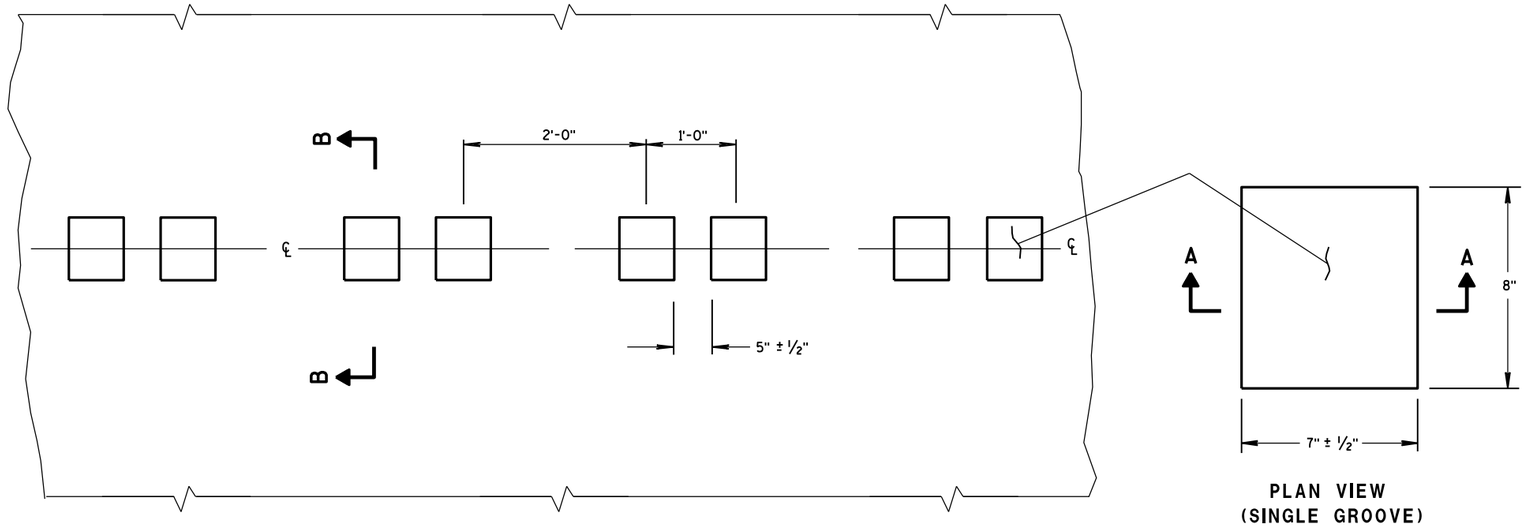
12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA

S.D.D. 13 A 10-1d

S.D.D. 13 A 10-1d



PLAN VIEW
CENTER LINE WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

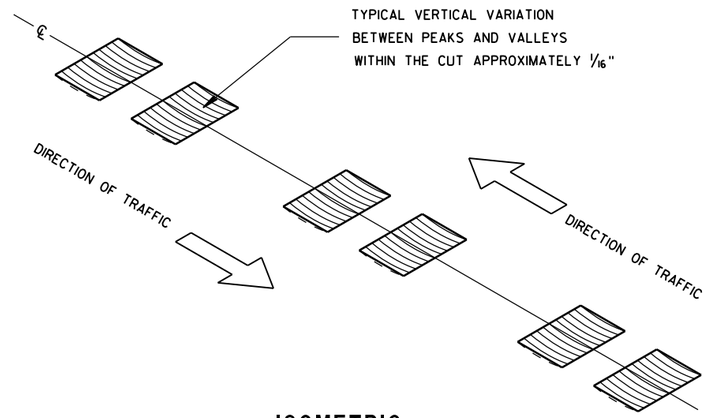
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

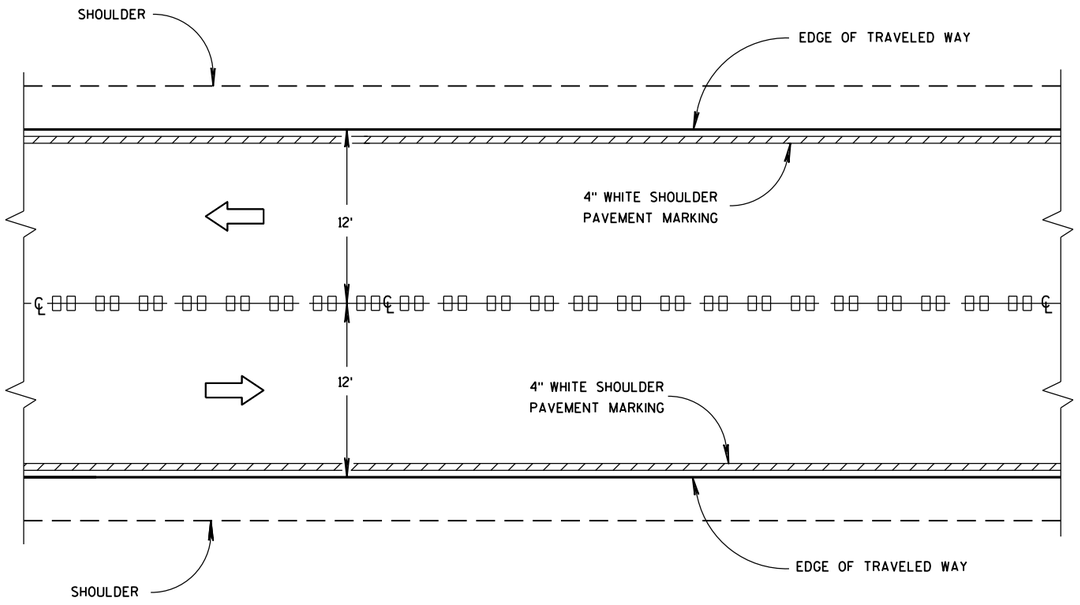
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

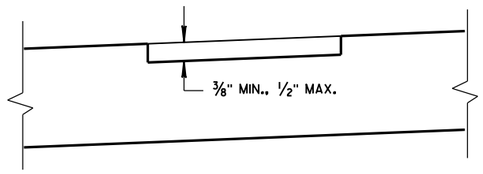
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



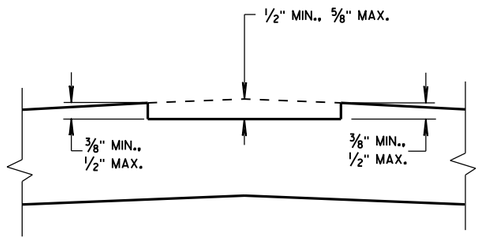
ISOMETRIC



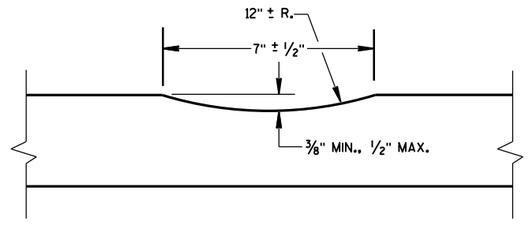
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

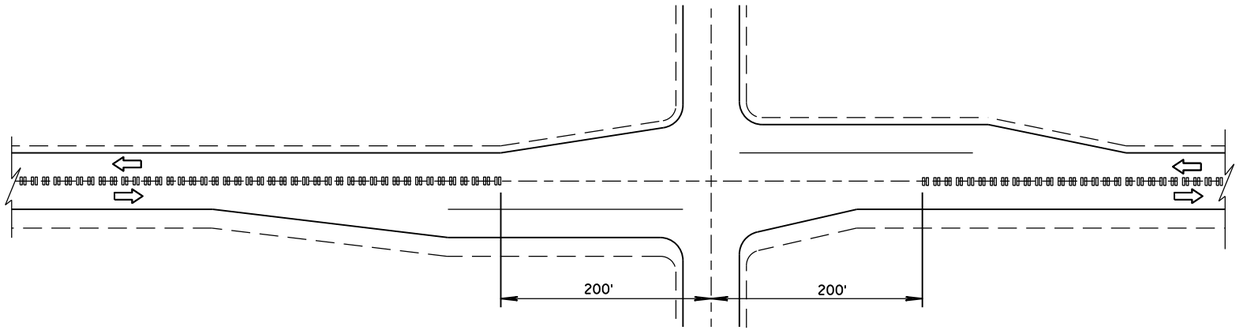
S.D.D. 13 A 11-2a

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

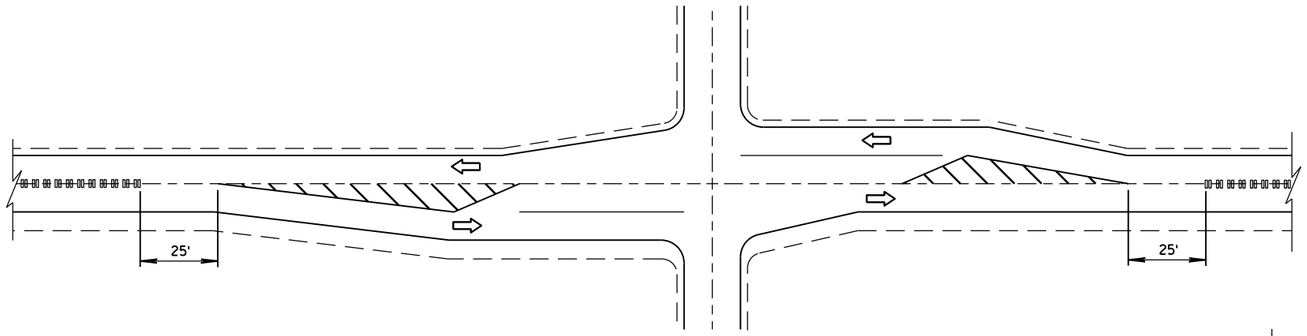
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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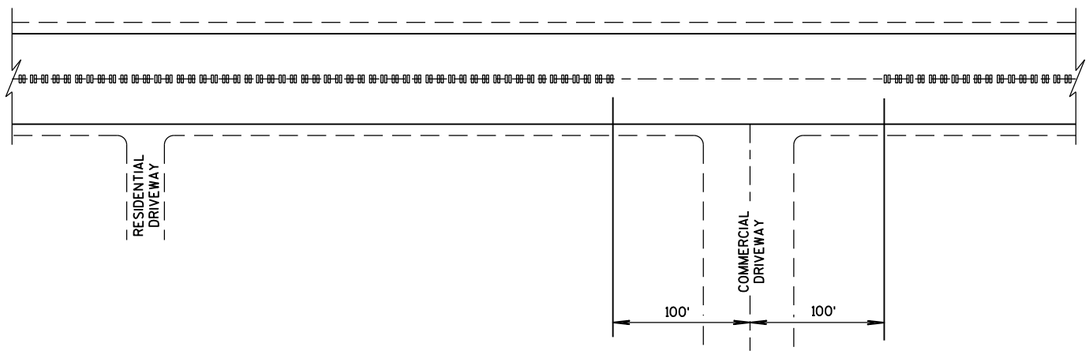
S.D.D. 13 A 11-2a



CENTER LINE GROOVES AT INTERSECTIONS

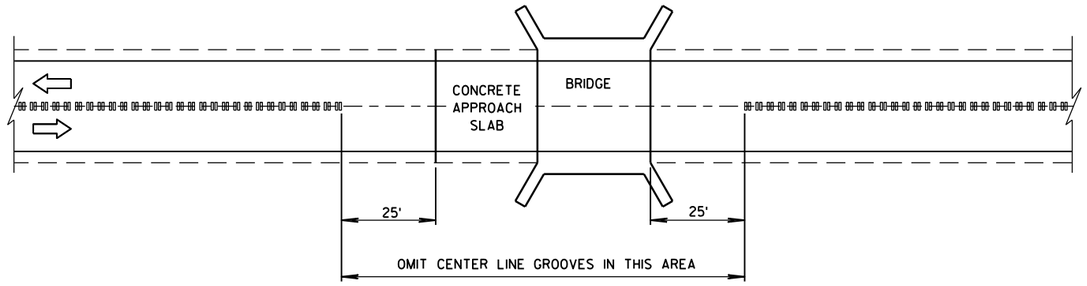


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

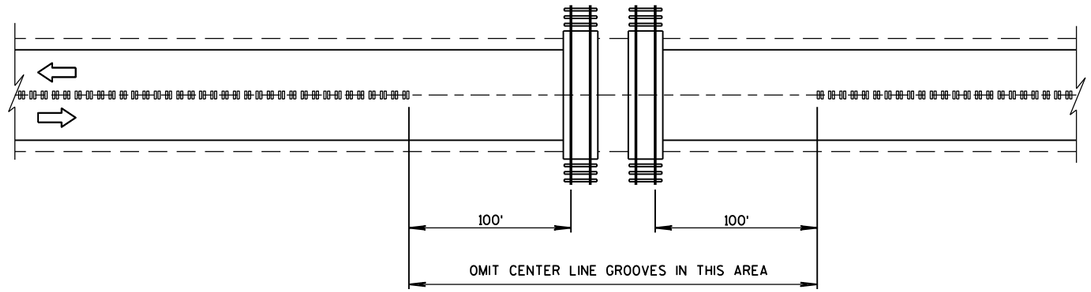


CENTER LINE GROOVES AT DRIVEWAYS (1)

(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

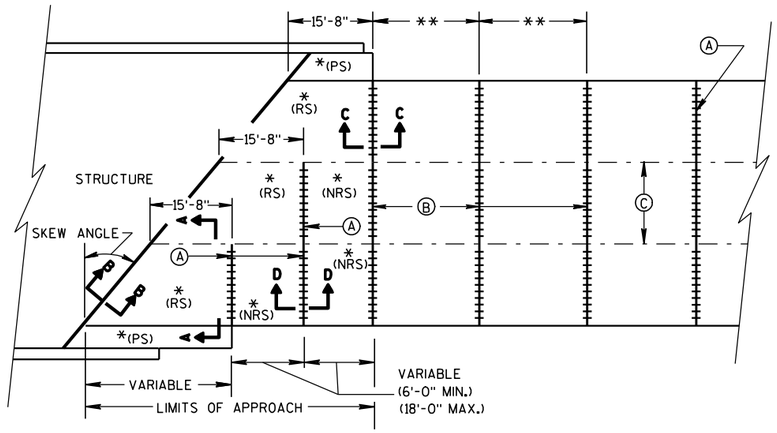
APPROVED

5/15/2013
DATE

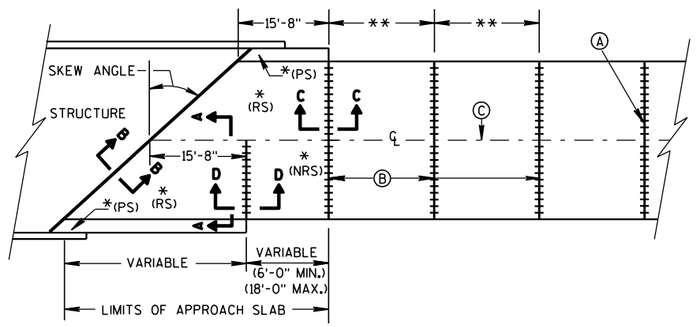
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

NT

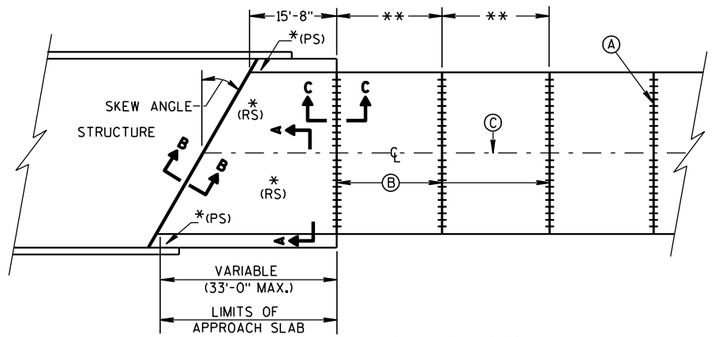
FHWA



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



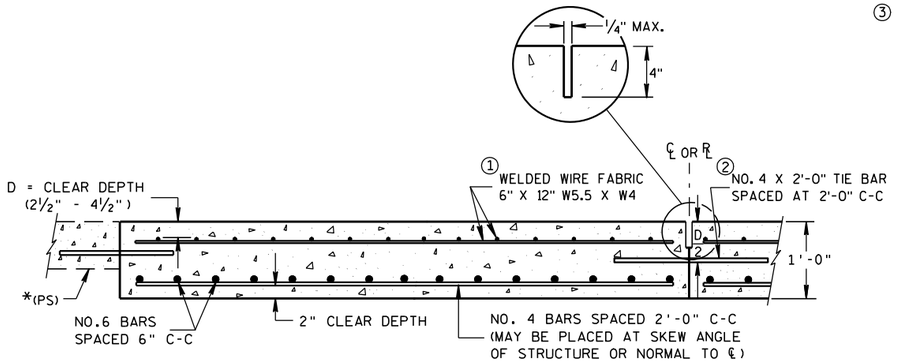
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

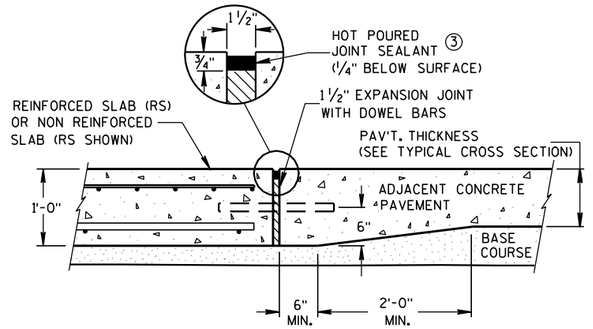
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

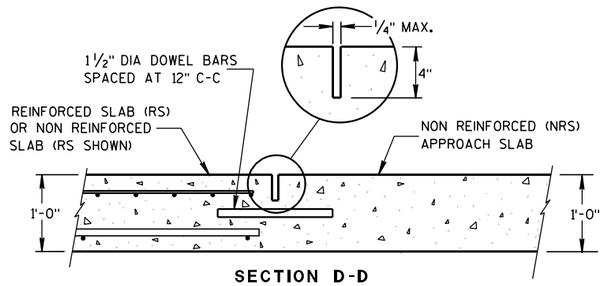
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

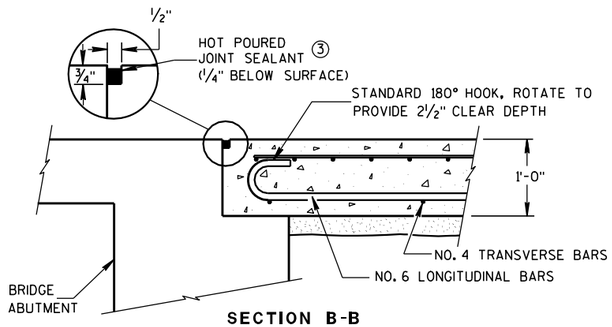
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

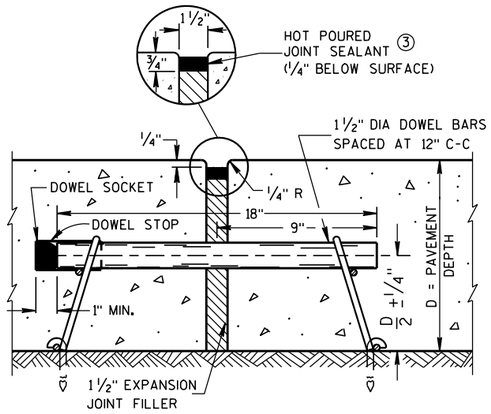
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



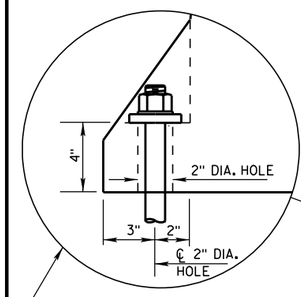
EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

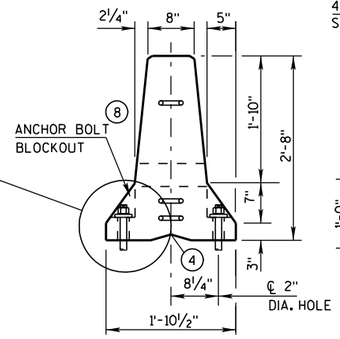
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE — NEER
FHWA

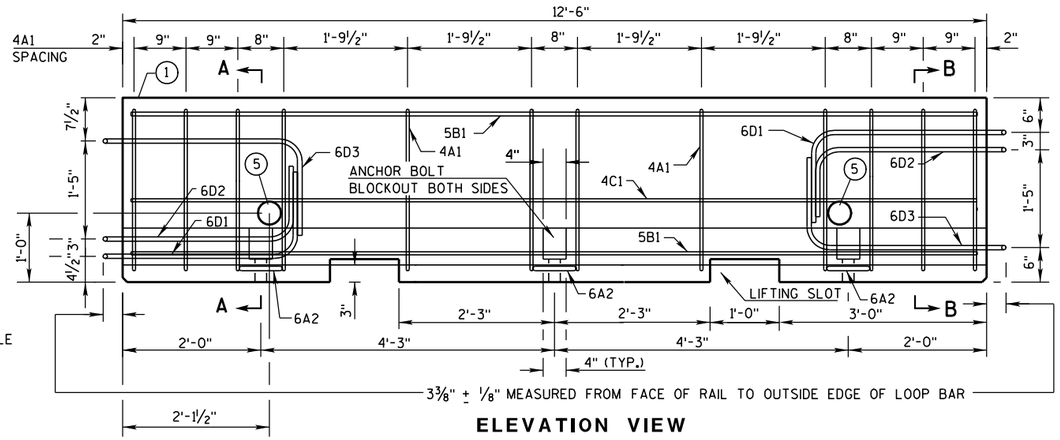
6
S.D.D. 13 B 2-6



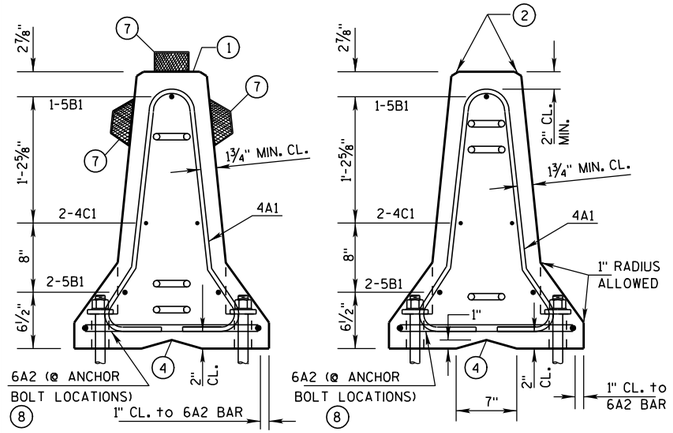
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



END VIEW

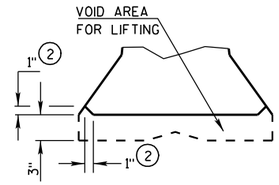


ELEVATION VIEW

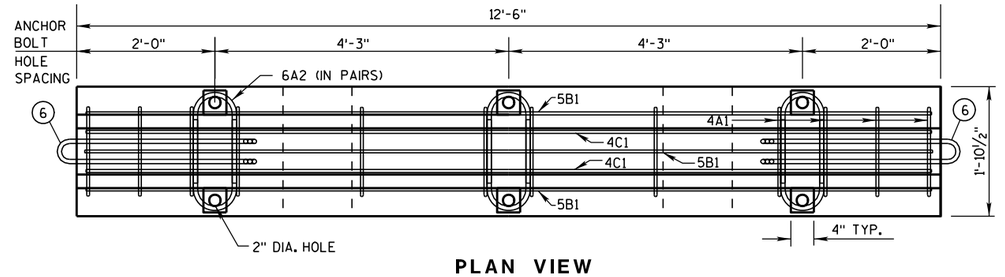


SECTION A-A
(STIRRUP PLACEMENT)

SECTION B-B
(STIRRUP PLACEMENT)

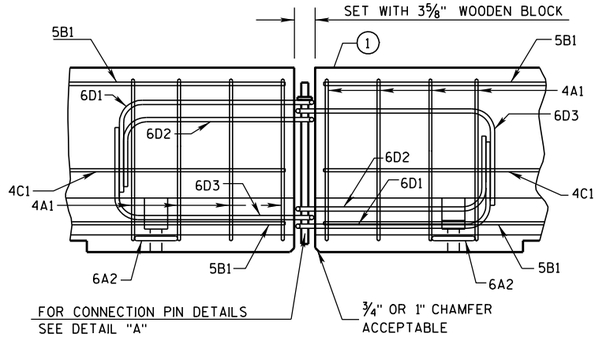


DETAIL "B"
LIFTING SLOT DETAIL

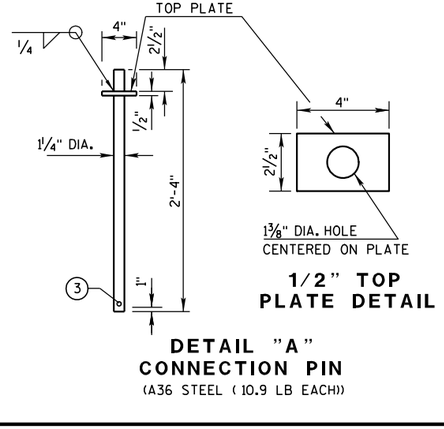


PLAN VIEW

DETAILS OF BARRIER SECTION

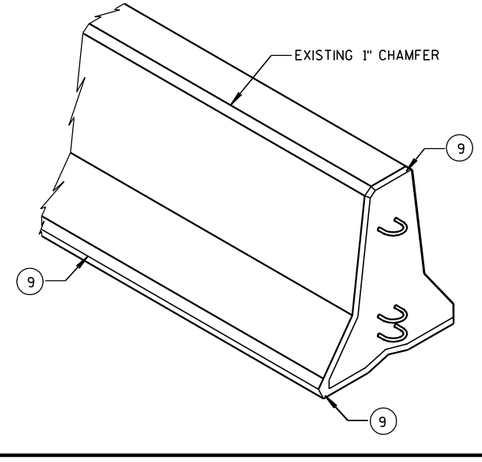


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WICBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

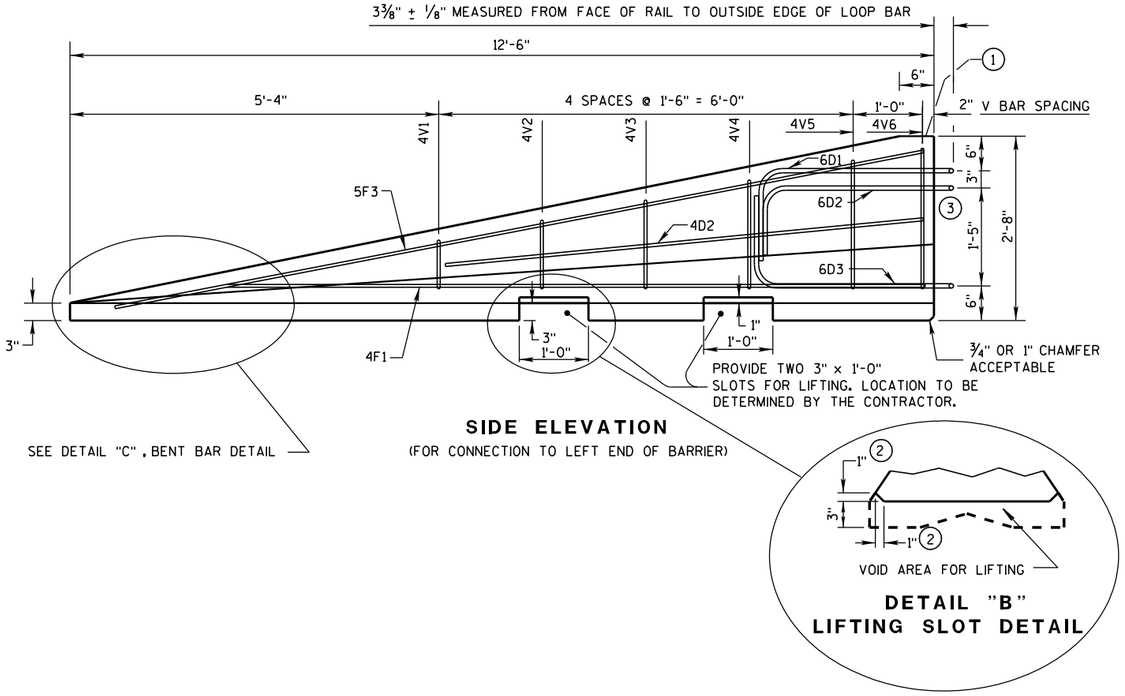
(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....

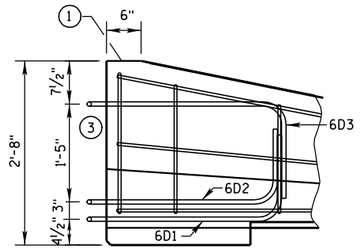
6
S.D.D. 14 B 7-13a



SIDE ELEVATION

(FOR CONNECTION TO LEFT END OF BARRIER)

DETAIL "B"
LIFTING SLOT DETAIL

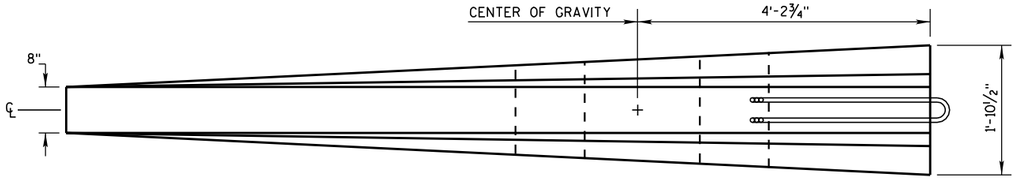


SIDE ELEVATION

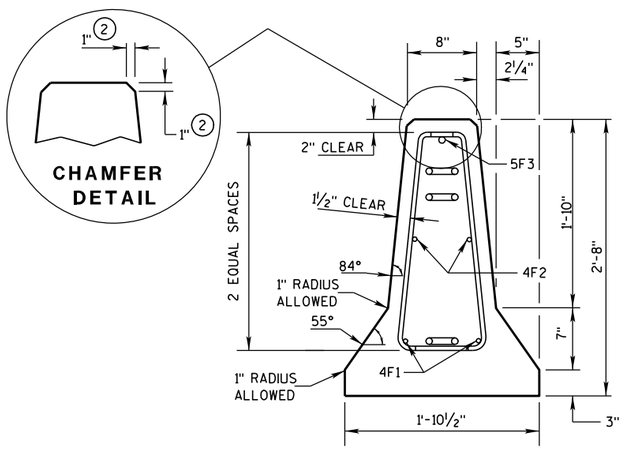
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

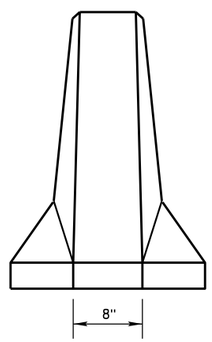
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



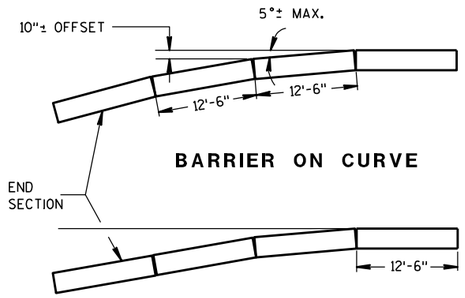
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

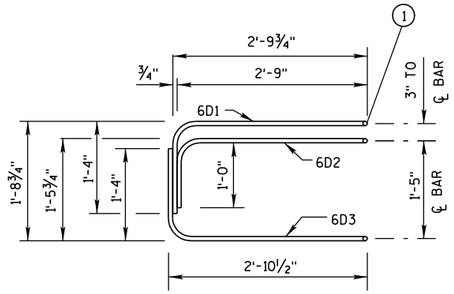
6

S.D.D. 14 B 7-13b

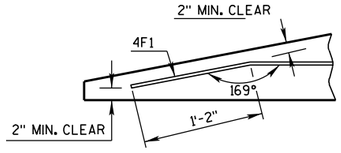
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

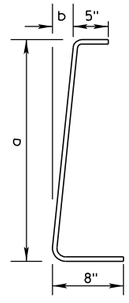
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

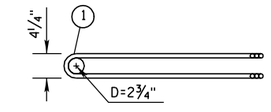
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

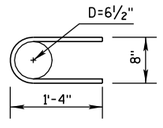
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

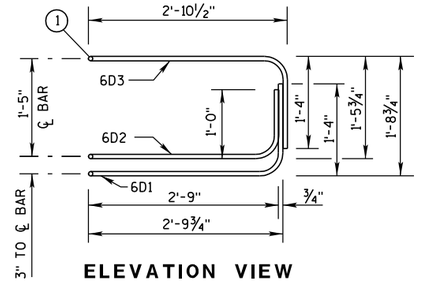
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



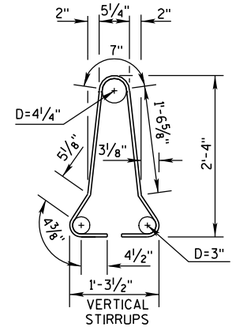
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



ELEVATION VIEW



4A1

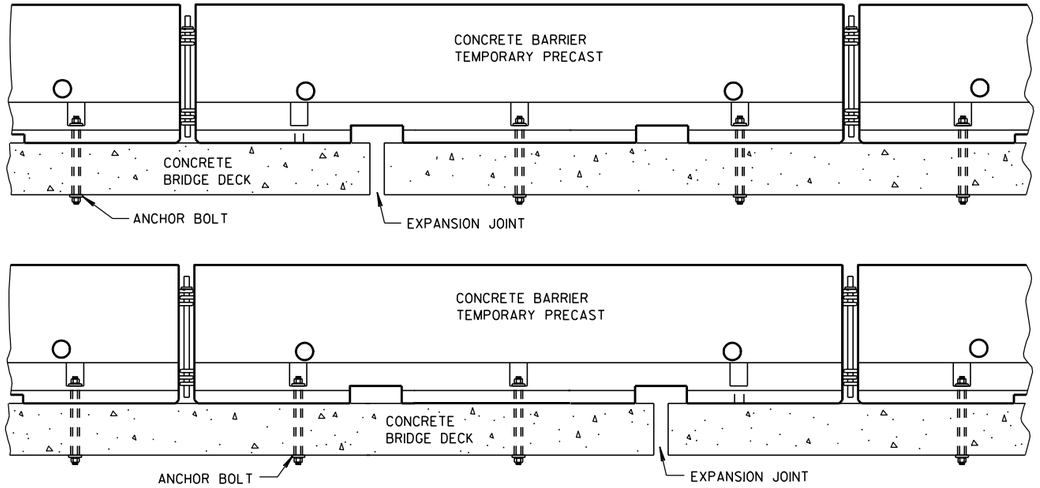
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

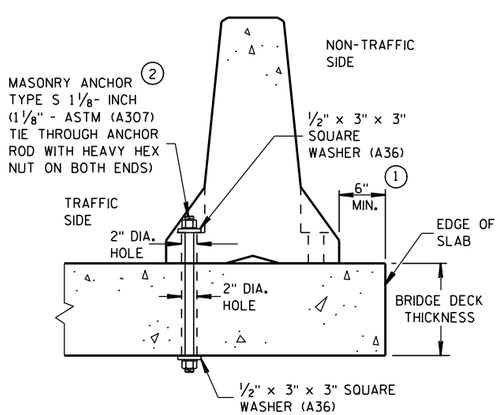
6

S.D.D. 14 B 7-13c



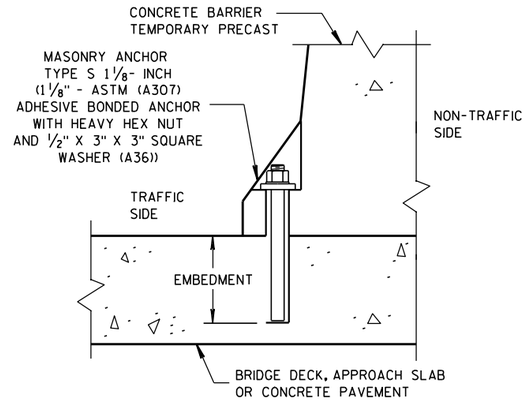
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

2

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

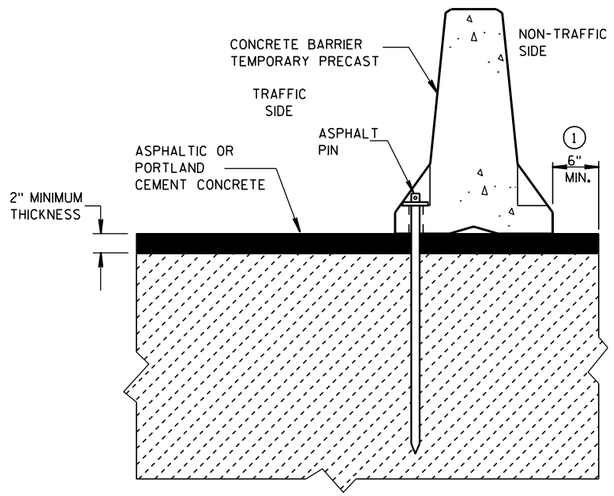
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

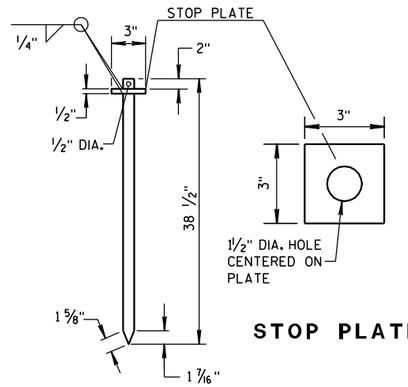
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

   UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

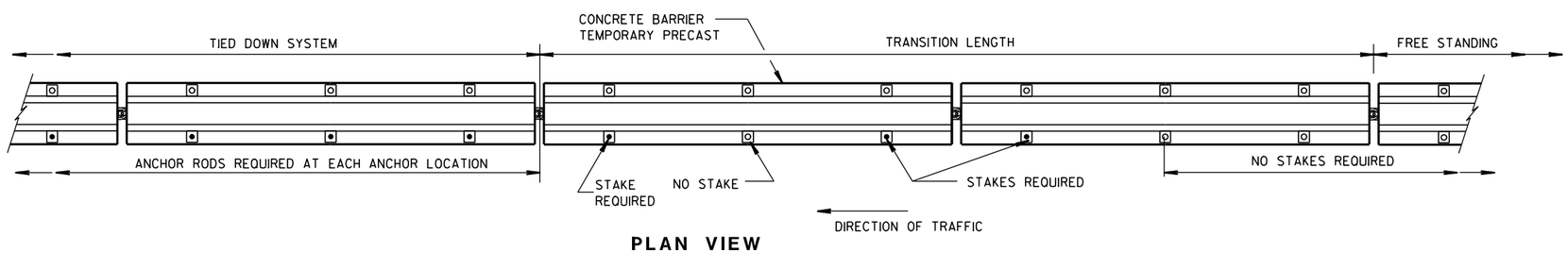
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



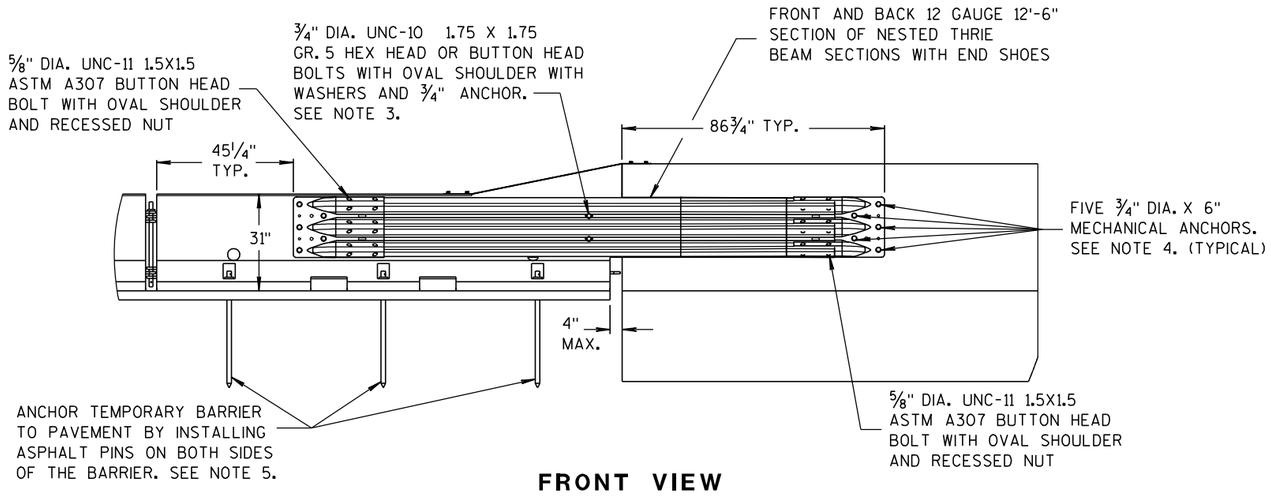
PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

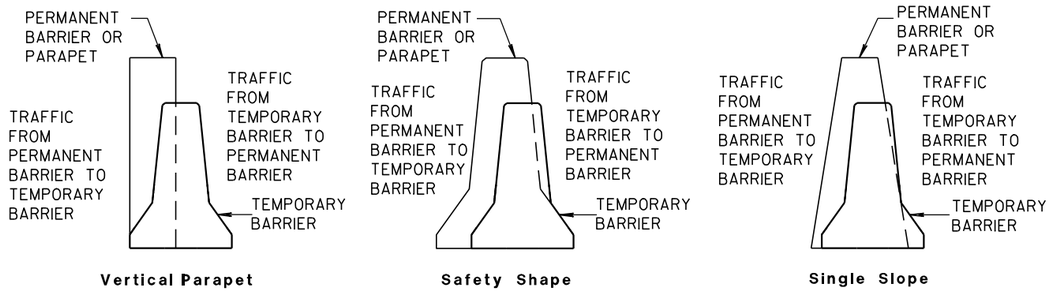
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

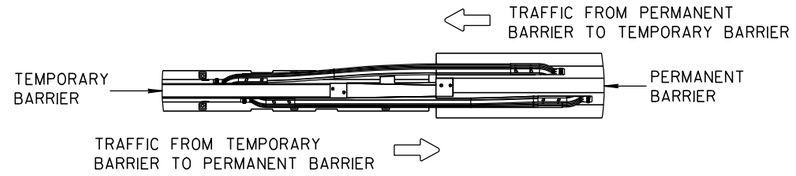


FRONT VIEW

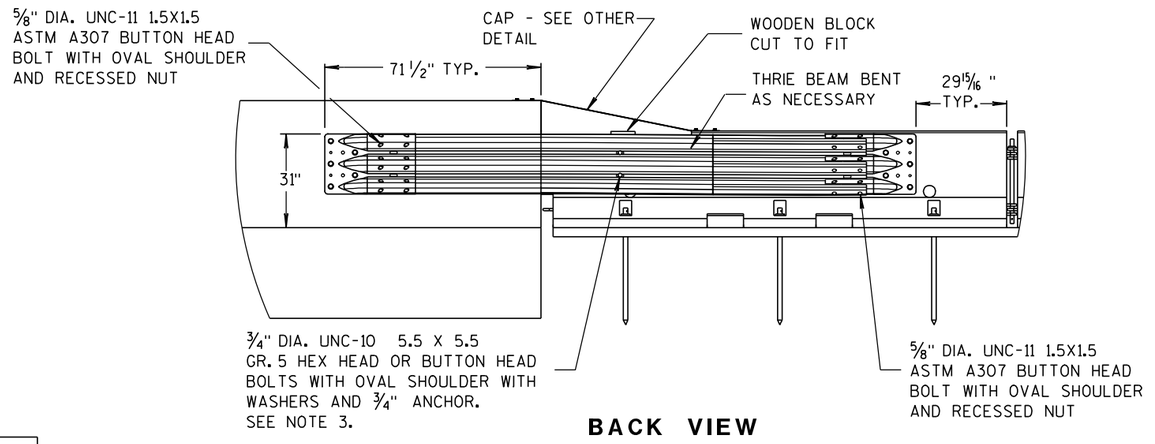
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15¼" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

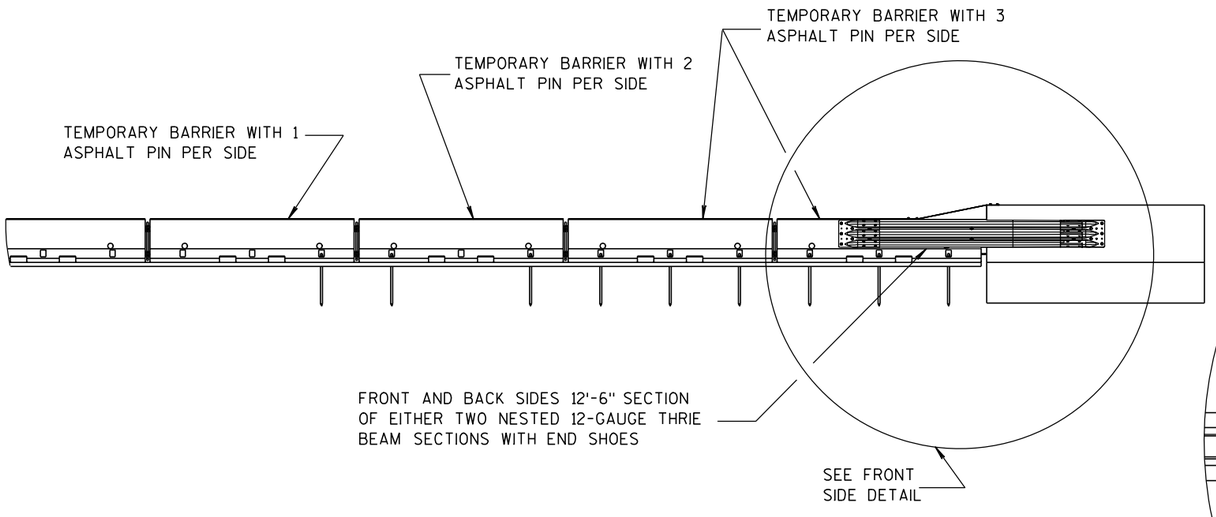




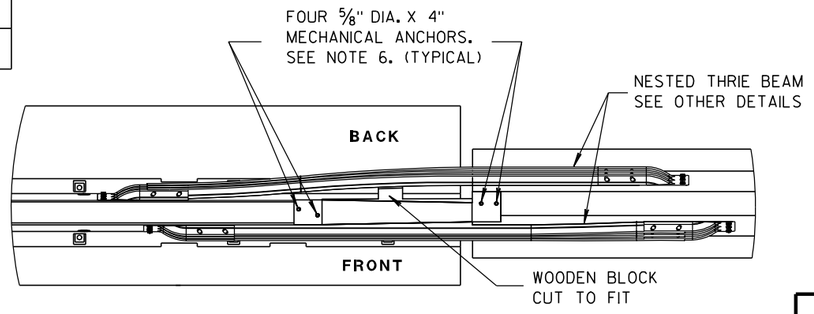
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



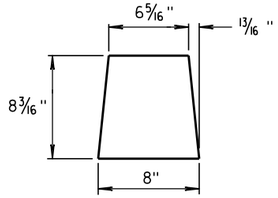
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

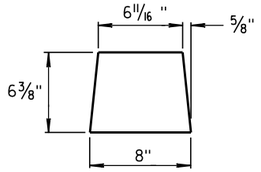
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

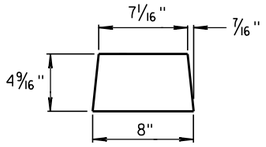
6
S.D.D. 14 B 7-13e



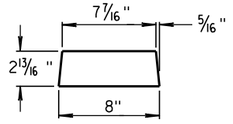
GUSSET 1



GUSSET 2

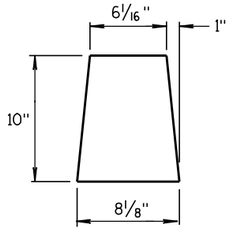


GUSSET 3

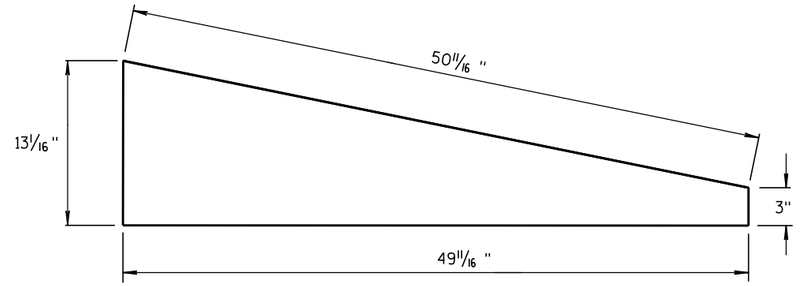


GUSSET 4

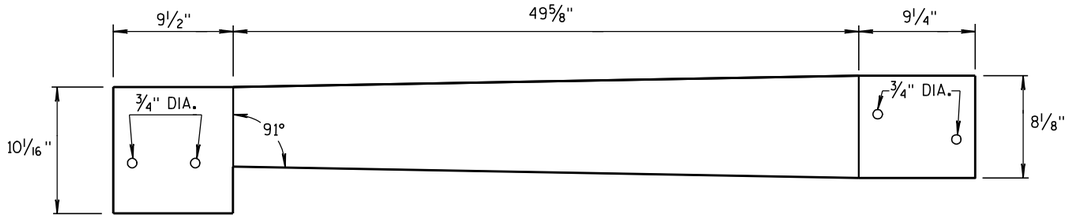
GUSSETS

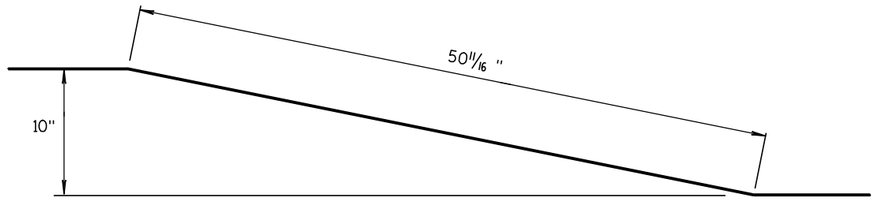


END PLATE

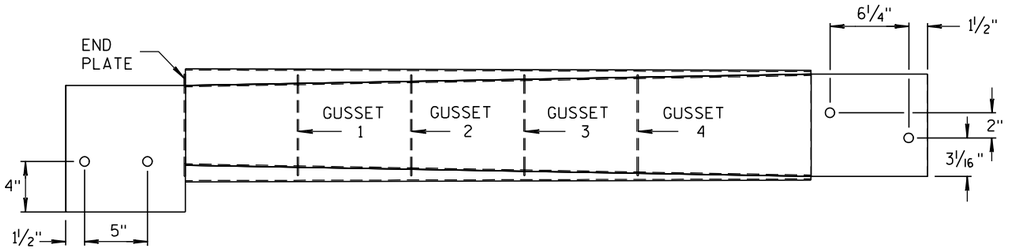


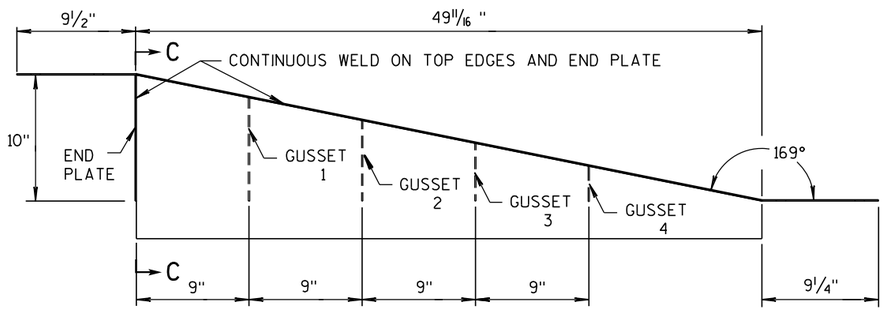
SIDE PLATE

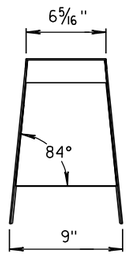




TOP PLATE







SECTION C-C

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

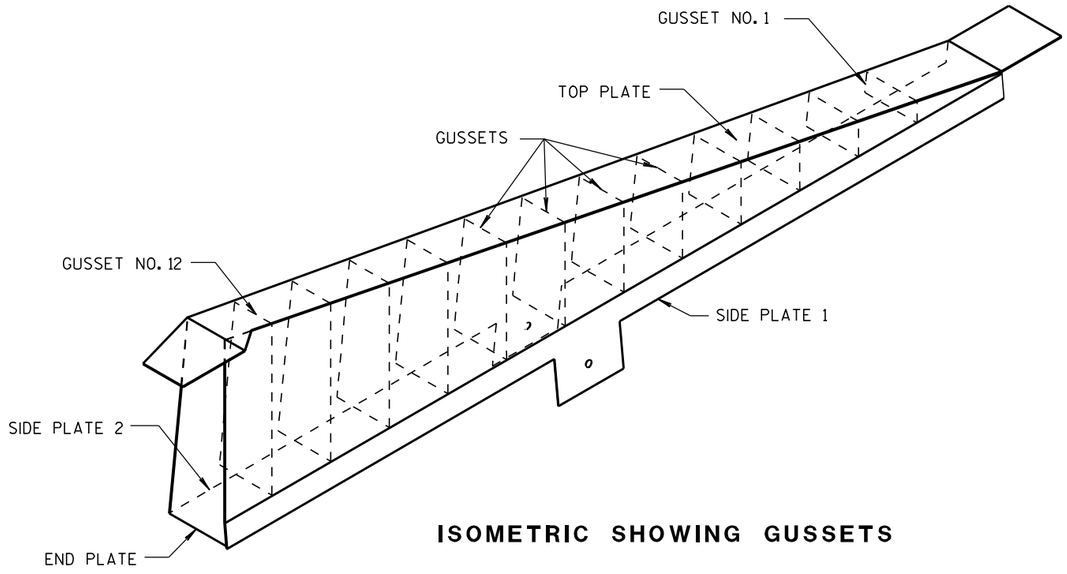
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

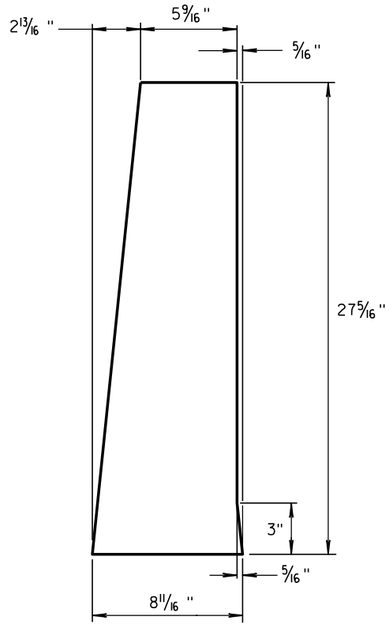
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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S.D.D. 14 B 7-13f

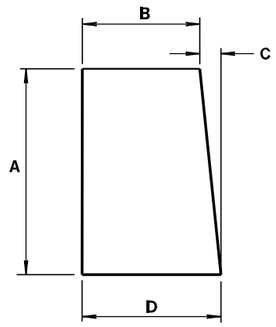


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

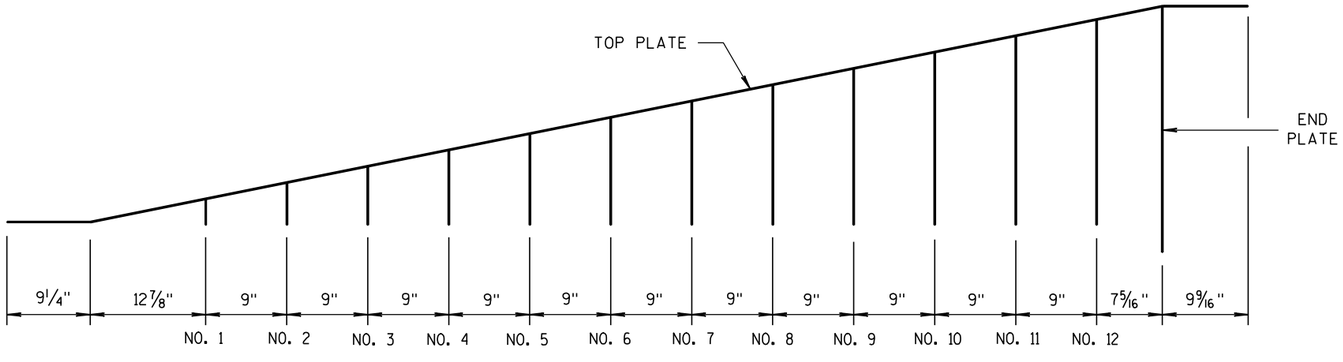
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

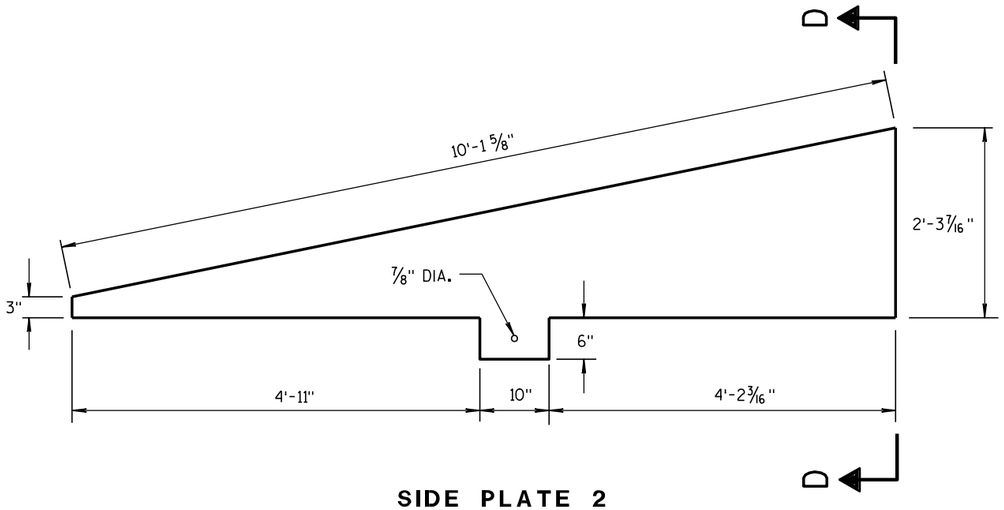
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

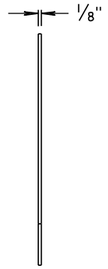
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

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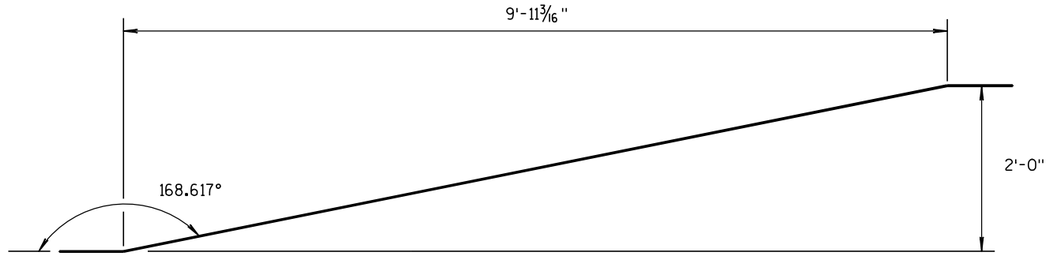
S.D.D. 14 B 7-13g



SIDE PLATE 2

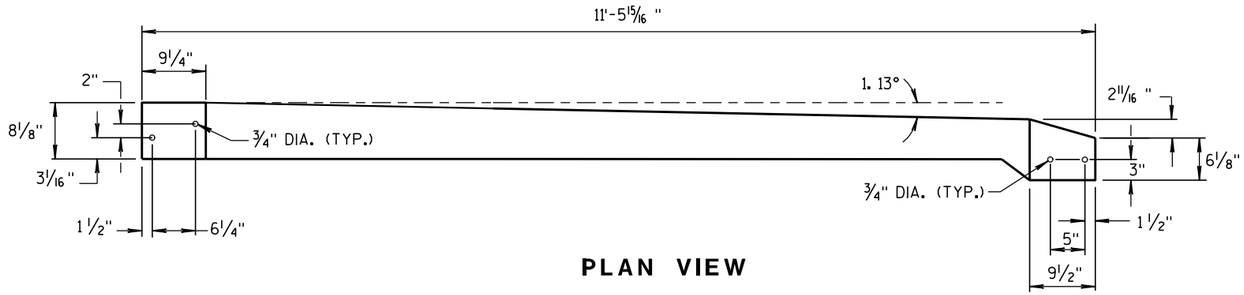


END VIEW



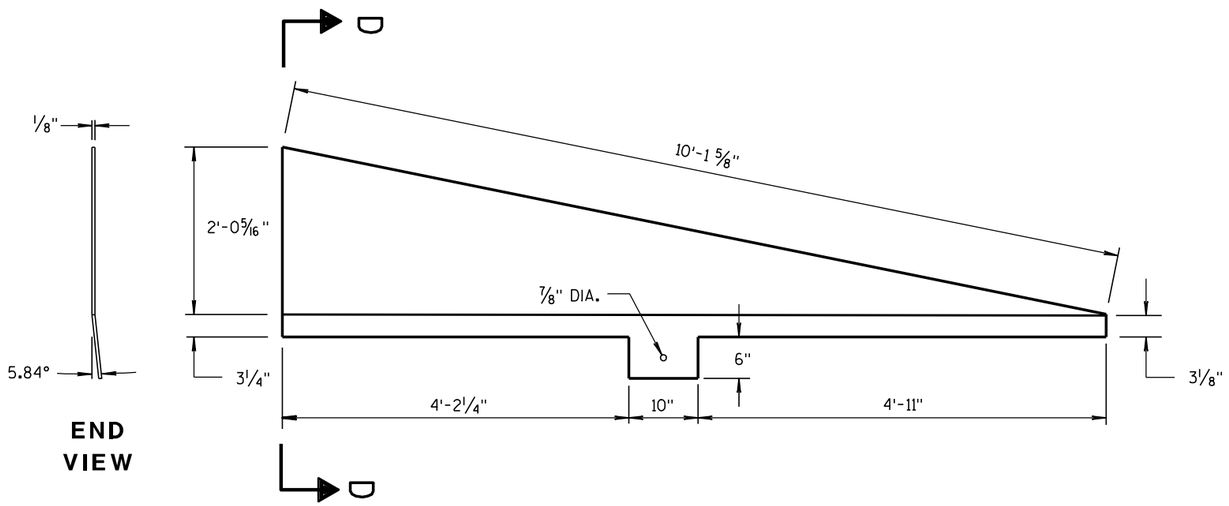
SIDE VIEW

TOP PLATE



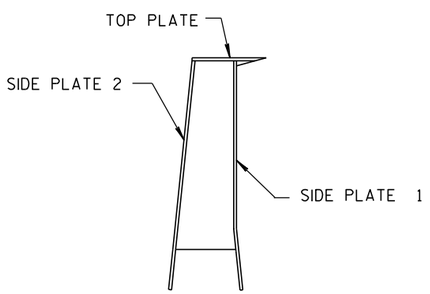
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

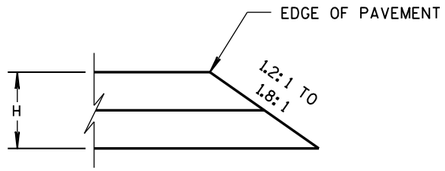
APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
97
ENT
FHWA

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S.D.D. 14 B 7-13h

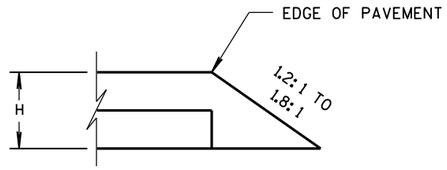
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S.D.D. 14 B 7-13h



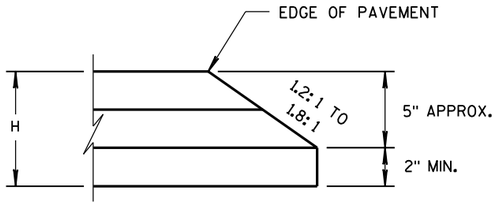
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



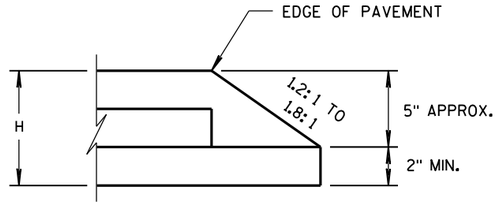
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

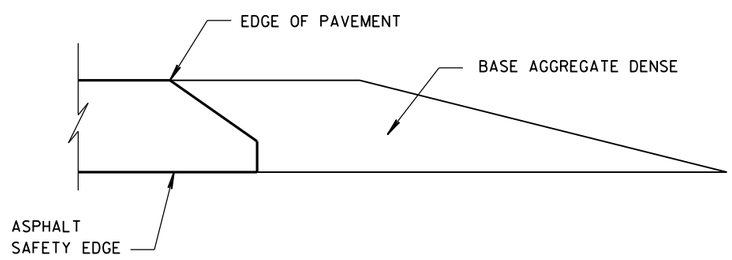
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

GENERAL NOTES

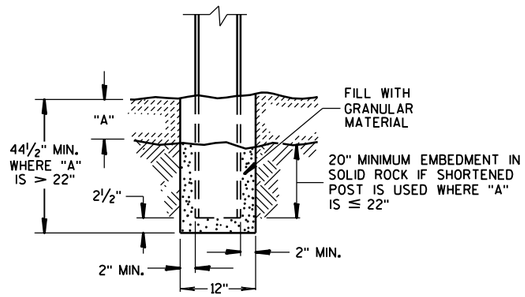
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

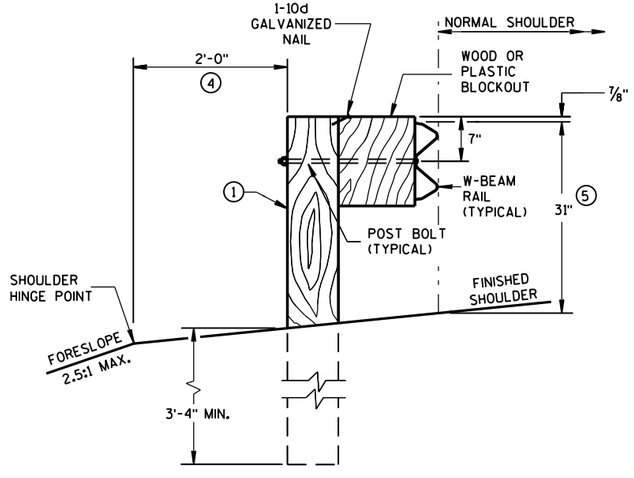
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO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

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

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

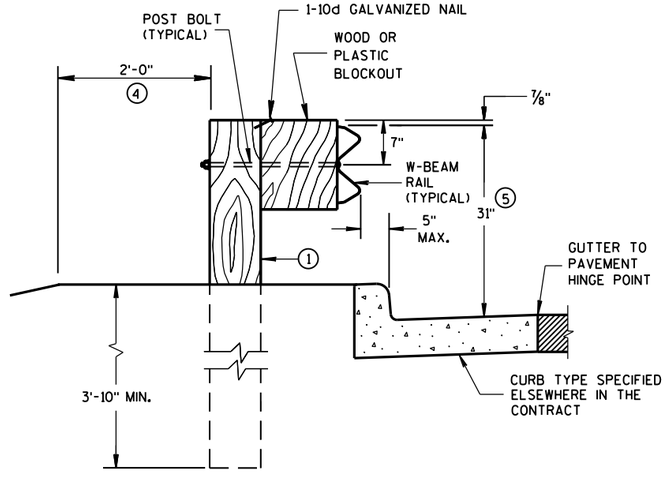


END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



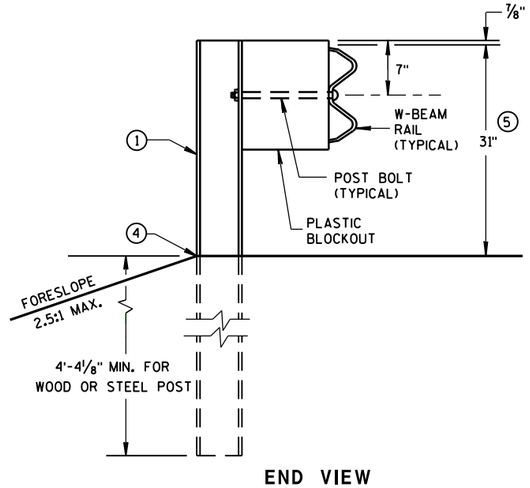
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



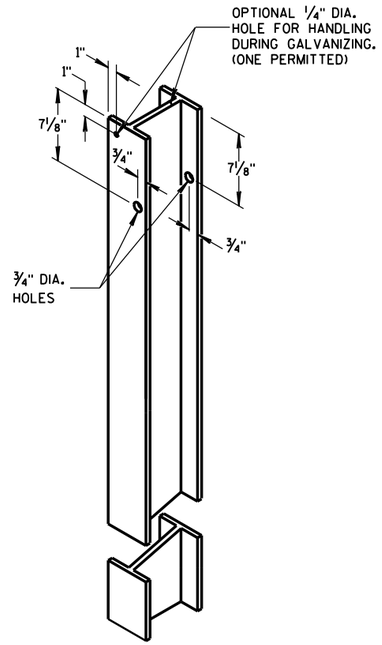
END VIEW

LOCATED ALONG A CURBED ROADWAY

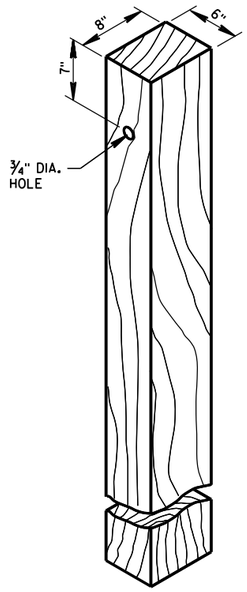


END VIEW

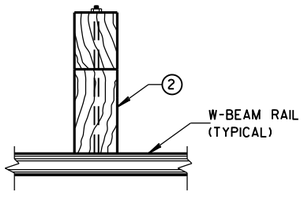
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



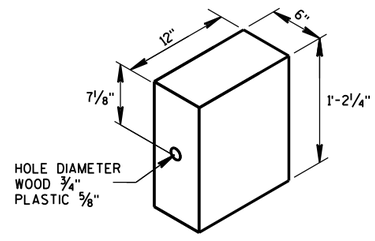
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



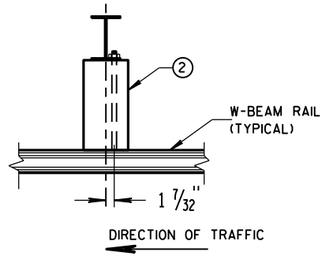
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

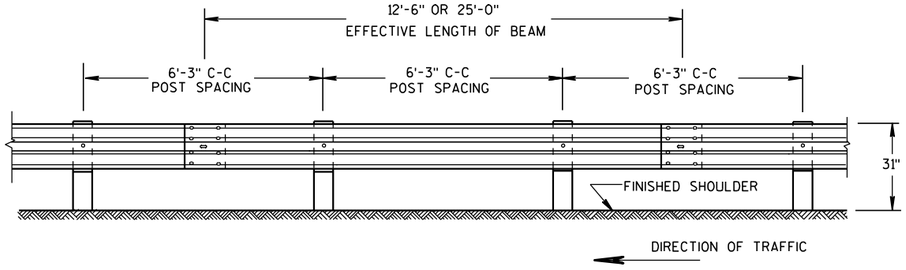


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

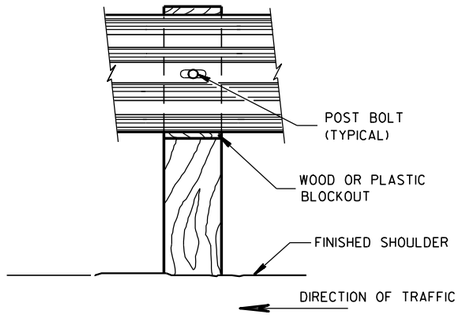
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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



FRONT VIEW

POST SPACING STANDARD INSTALLATION



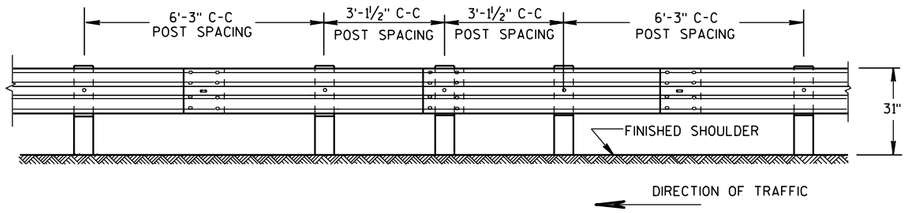
FRONT VIEW AT WOOD POST

GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

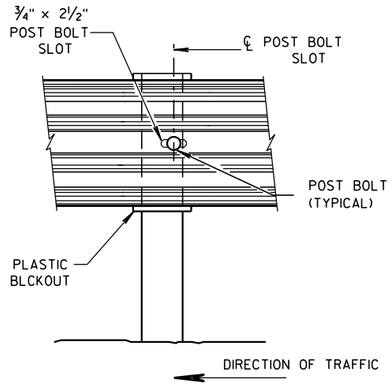
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

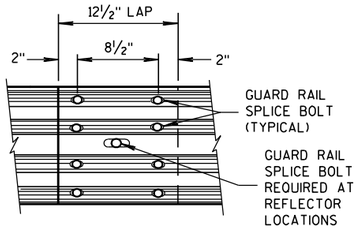


FRONT VIEW

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

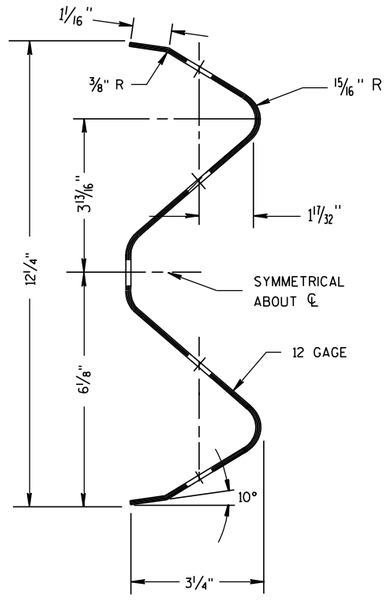


FRONT VIEW AT STEEL POST

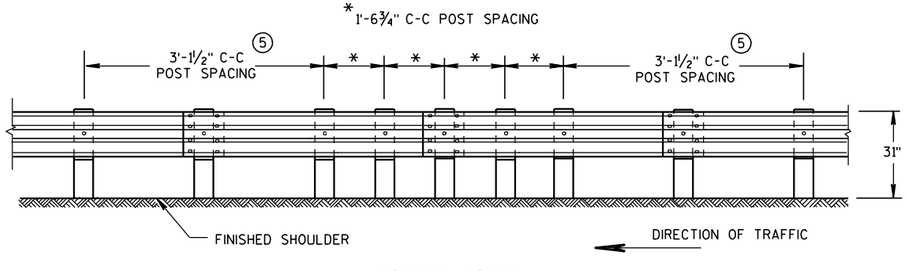


FRONT VIEW

MID-SPAN BEAM SPLICE

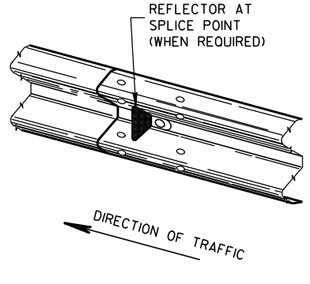


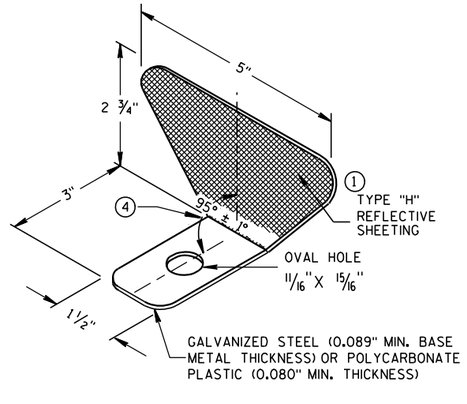
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

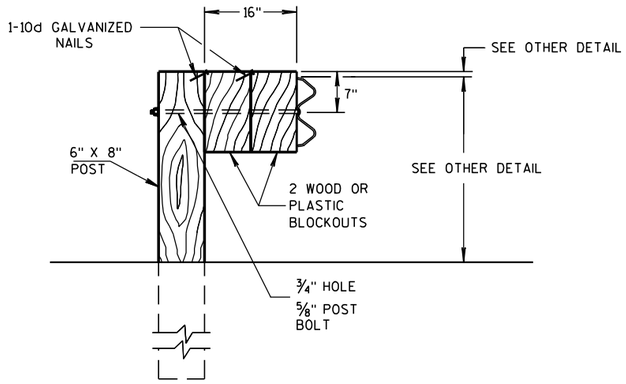
REFLECTOR SPACING ②

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

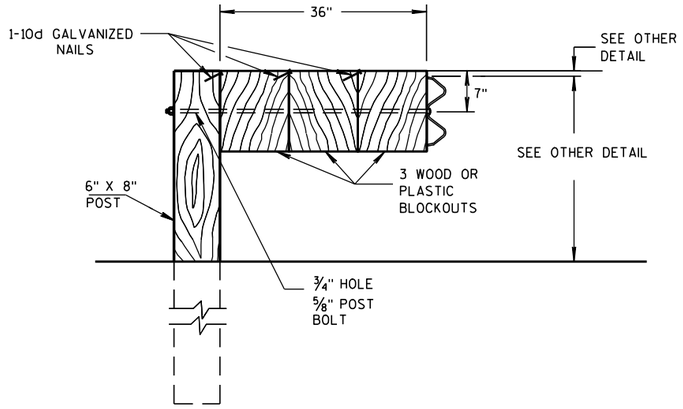
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DETAIL FOR 16" BLOCKOUT DEPTH

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

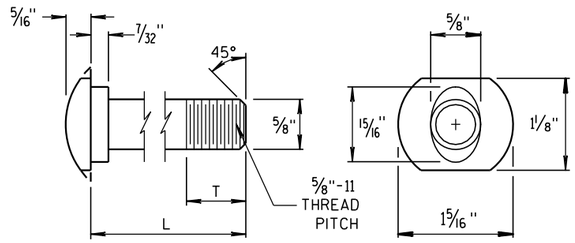


DETAIL FOR 36" BLOCKOUT DEPTH

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

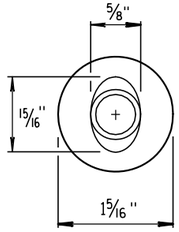
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

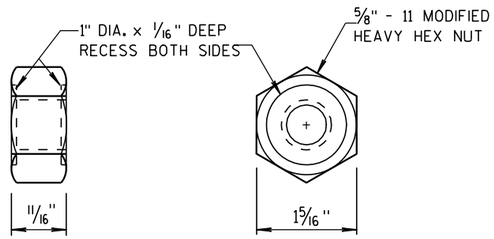


POST BOLT TABLE

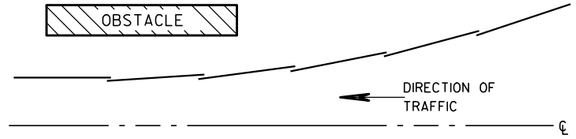
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

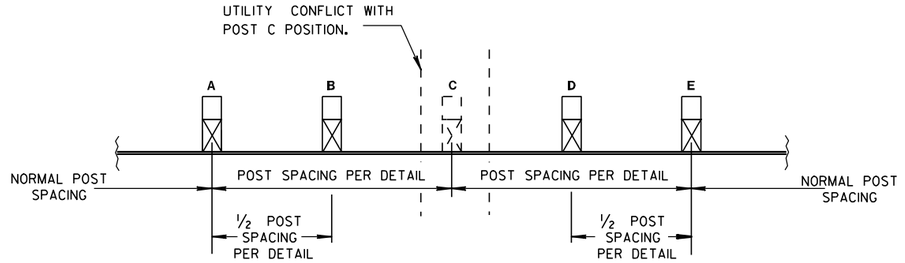


POST BOLT AND RECESS NUT

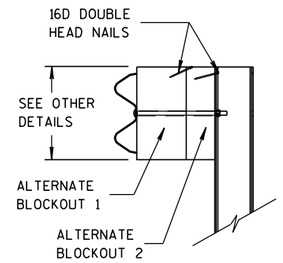


PLAN VIEW

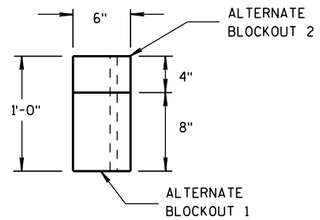
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

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

FHWA

ENT

6

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

6

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

GENERAL NOTES

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

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

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

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

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

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

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

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

SEE SDD 14B42 FOR MORE INFORMATION.

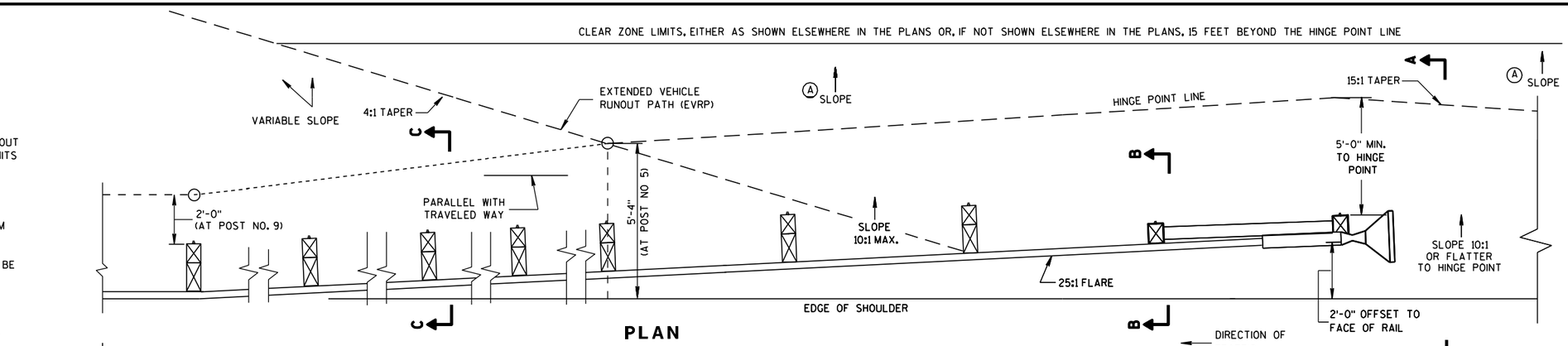
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

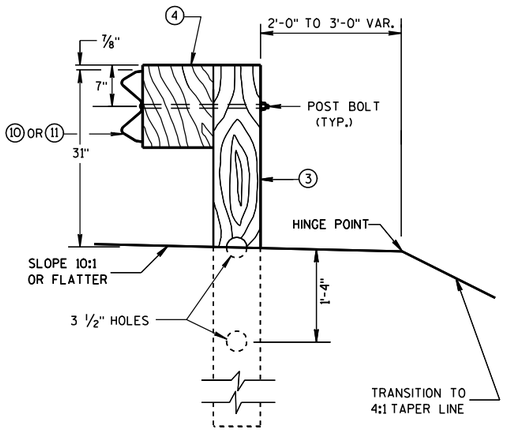
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

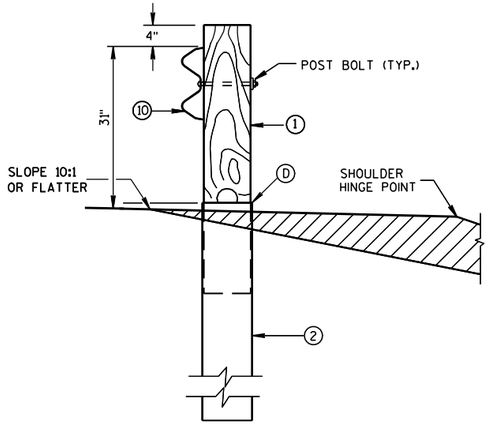
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

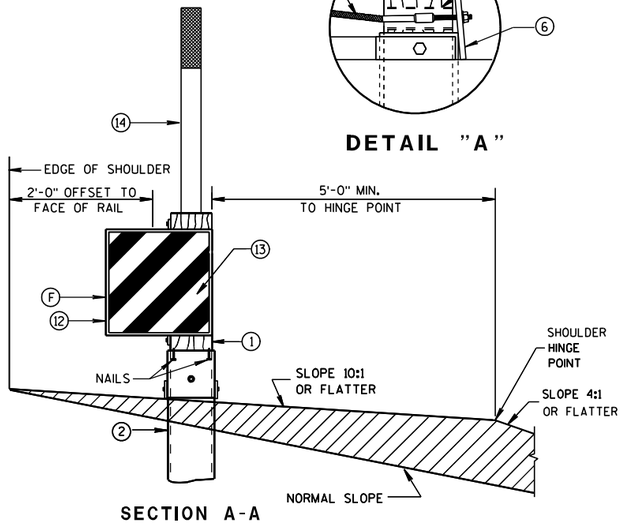




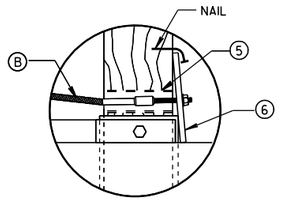
SECTION C-C
TYPICAL AT POST NOS. 3-9



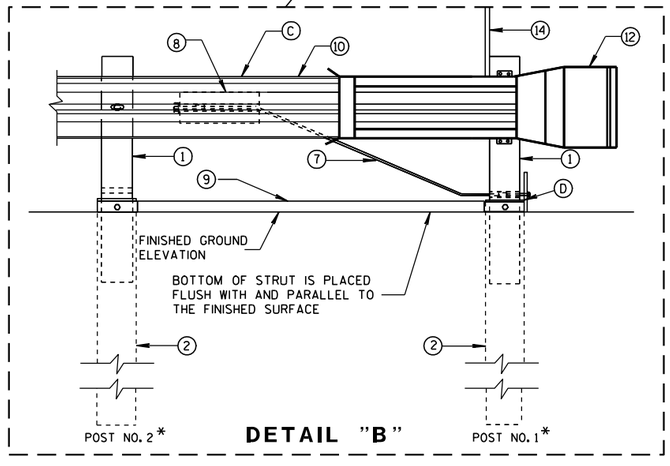
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

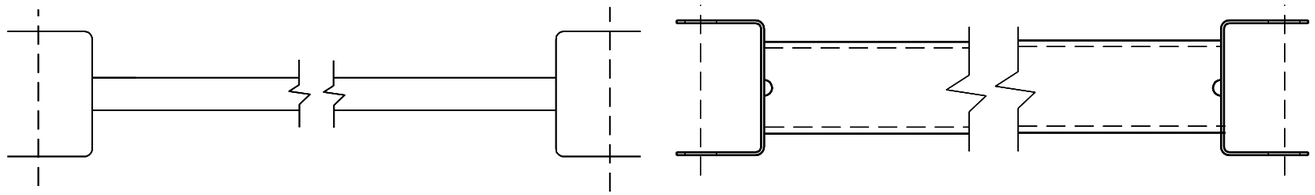


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

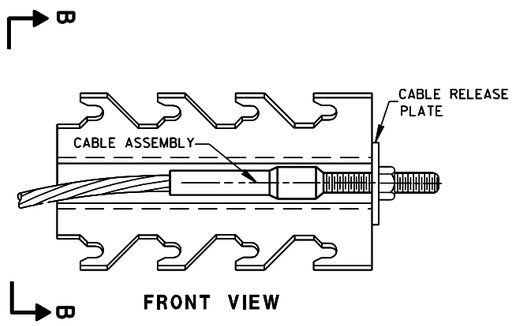
6
S.D.D. 14 B 44-1a



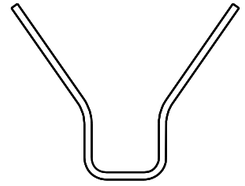
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

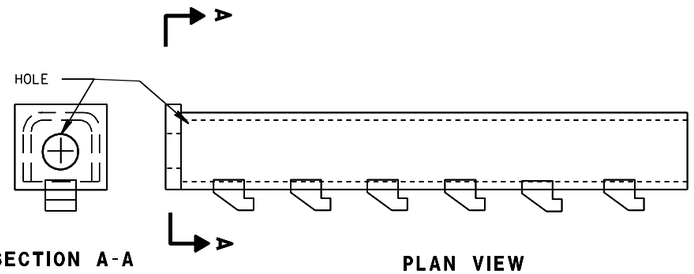
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



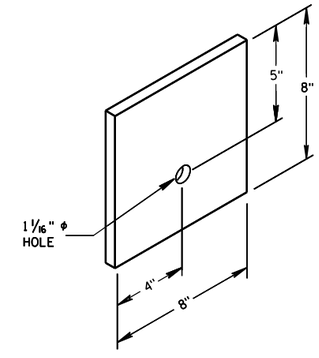
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



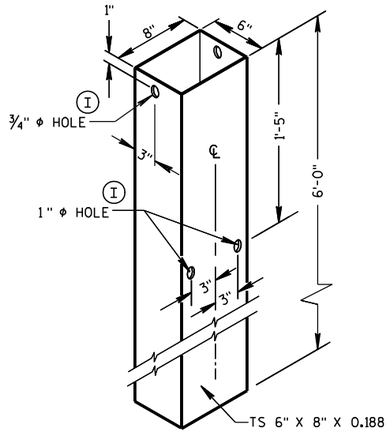
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

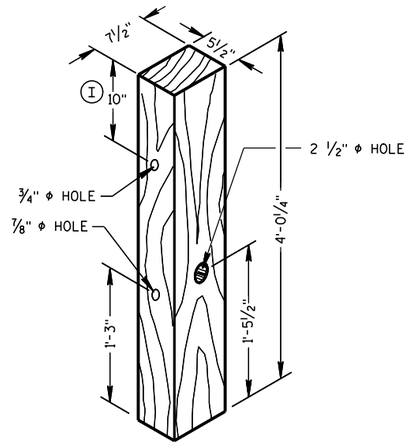
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

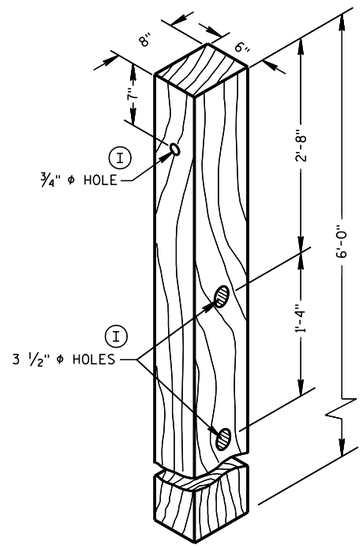


FOUNDATION TUBE (2)



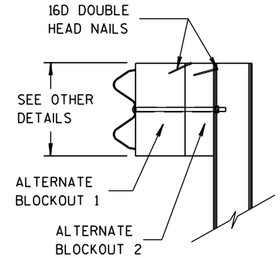
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

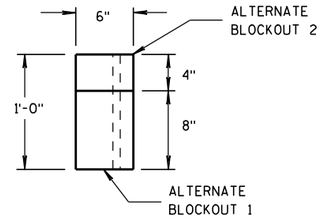


POSTS NUMBER 3-9

WOOD CRT POST (3)

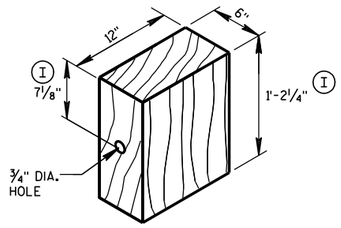


SIDE VIEW



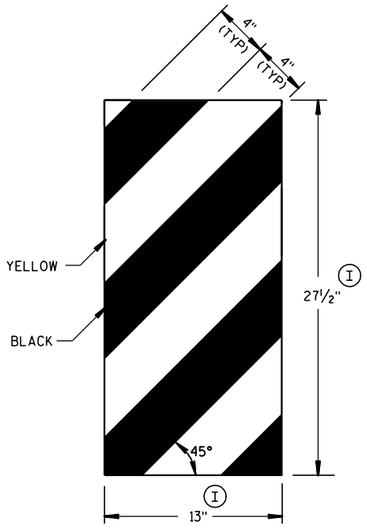
TOP VIEW

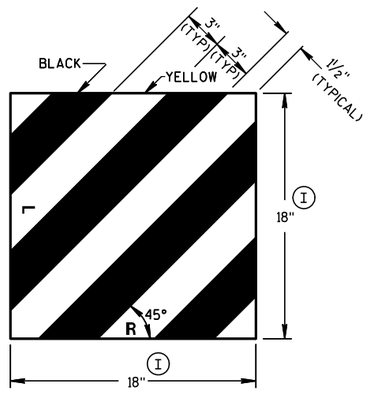
ALTERNATE WOOD BLOCKOUT DETAIL



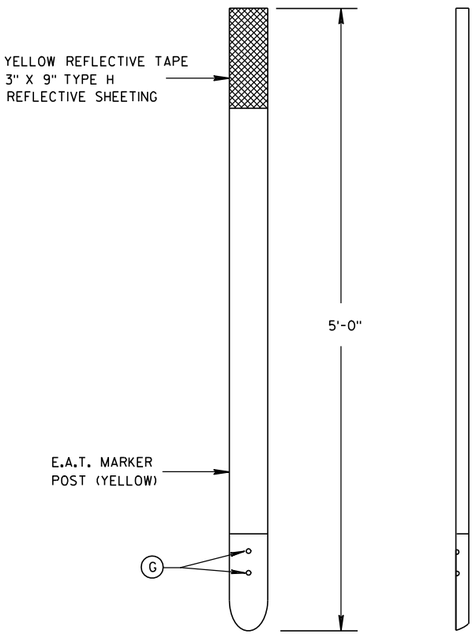
WOOD BLOCKOUT (4)

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





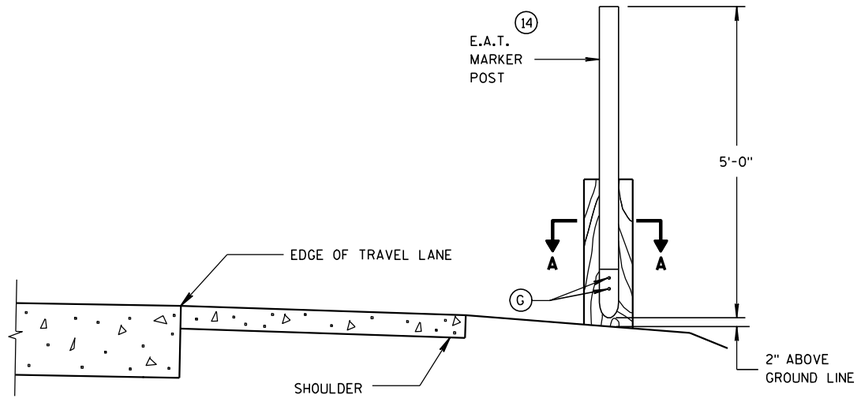
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

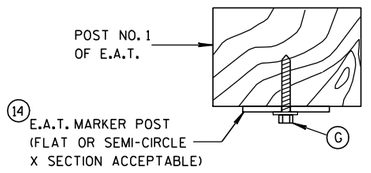
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

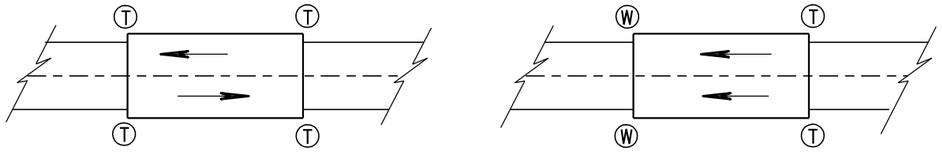
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

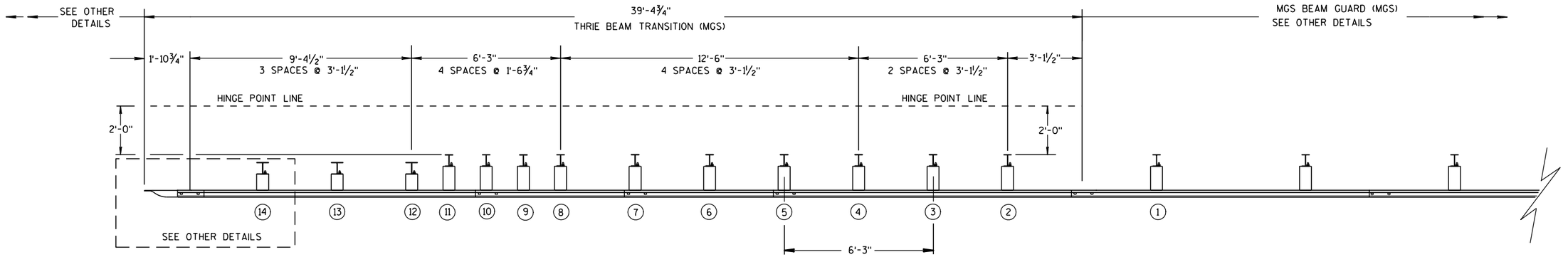
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

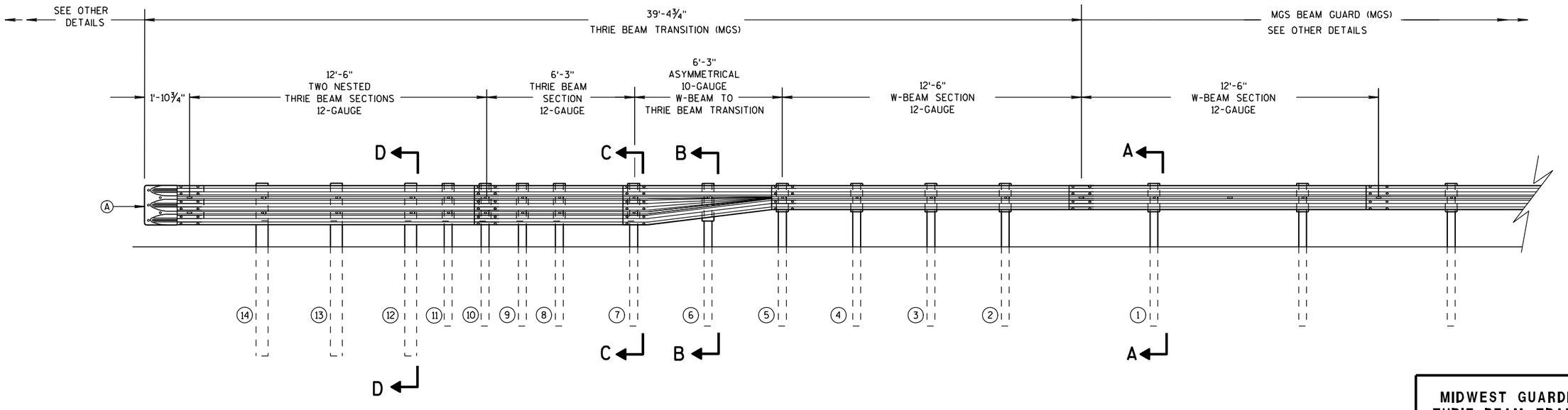
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

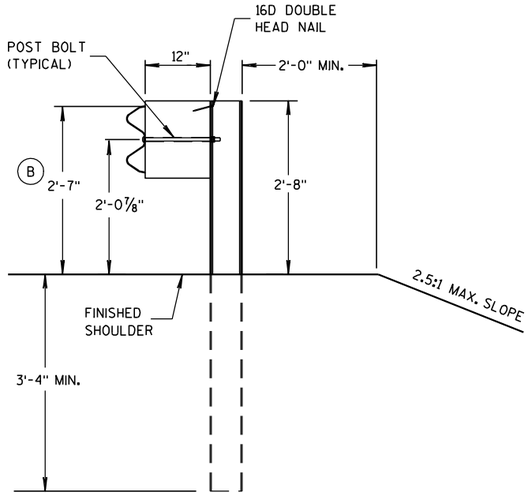
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

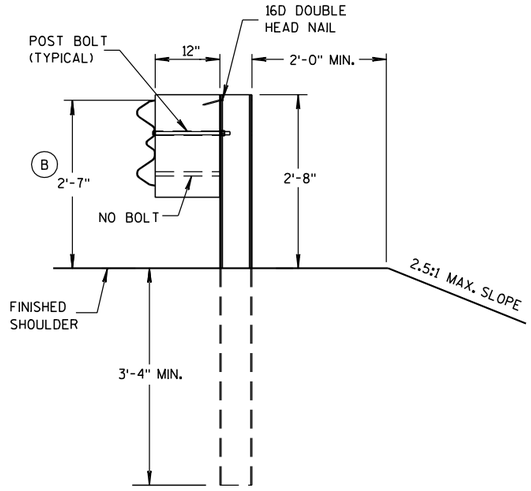
GENERAL NOTES

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



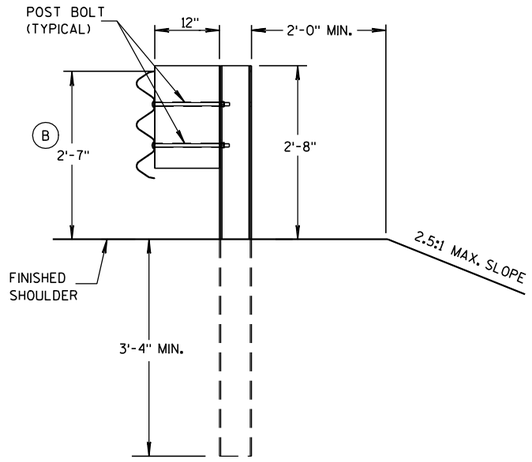
SECTION A-A

POSTS 1-5



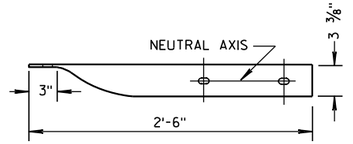
SECTION B-B

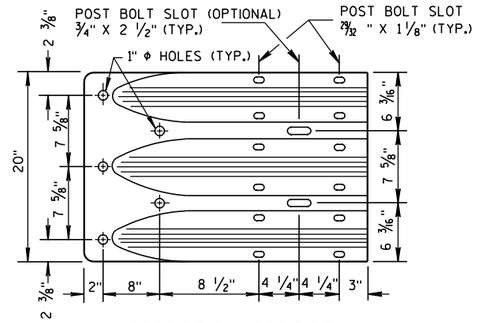
POST 6



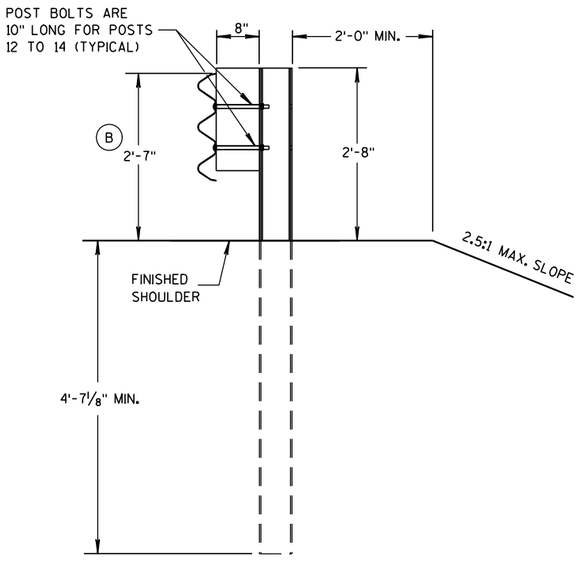
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

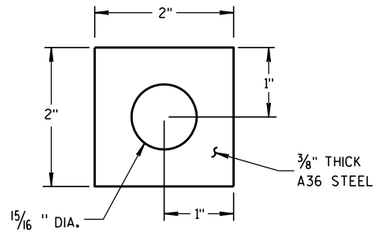
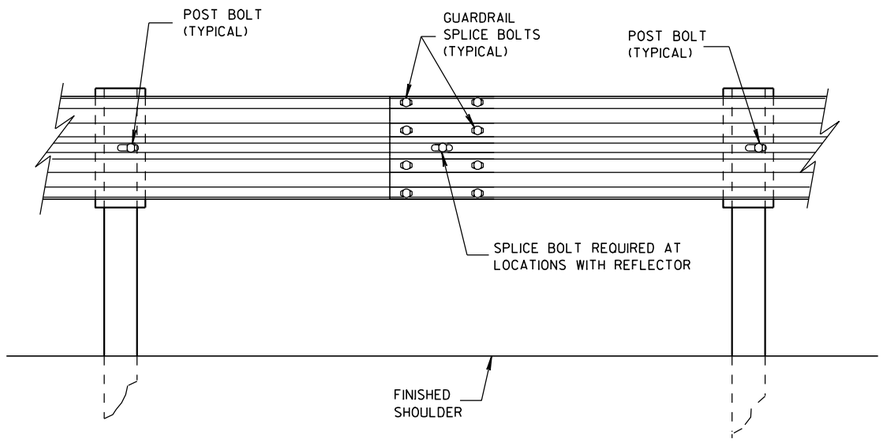
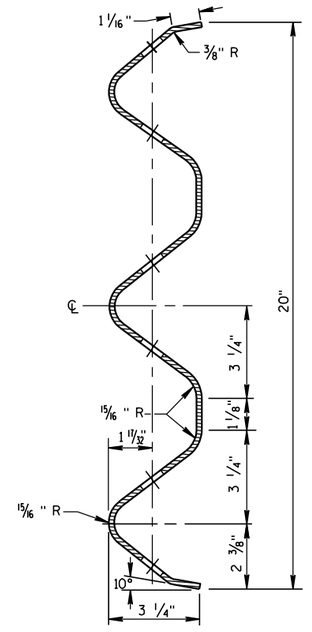


PLATE WASHER DETAIL



SPLICE DETAIL



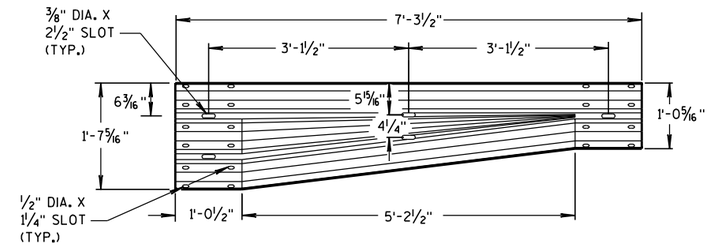
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

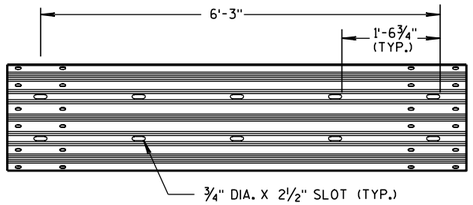
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

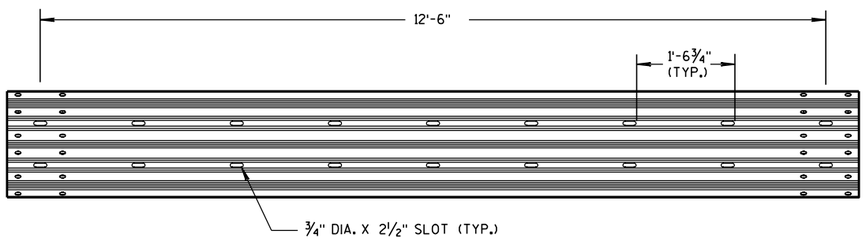
S.D.D. 14 B 45-3b



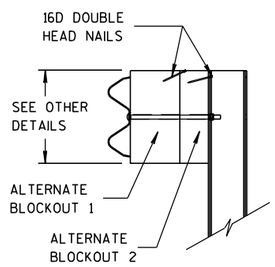
W-BEAM TO THRIE BEAM TRANSITION SECTION



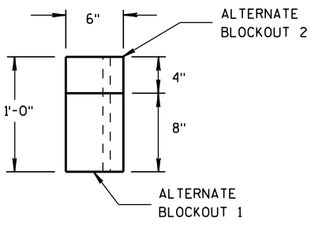
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

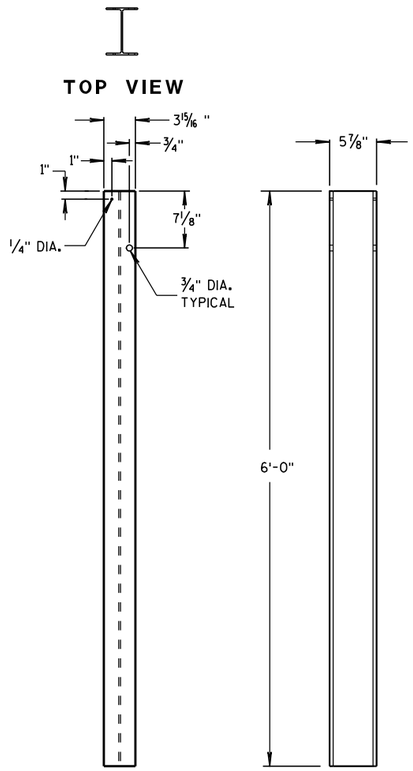


SIDE VIEW



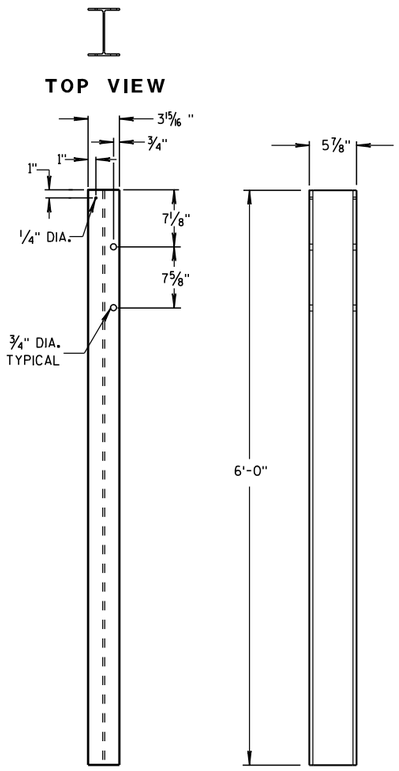
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



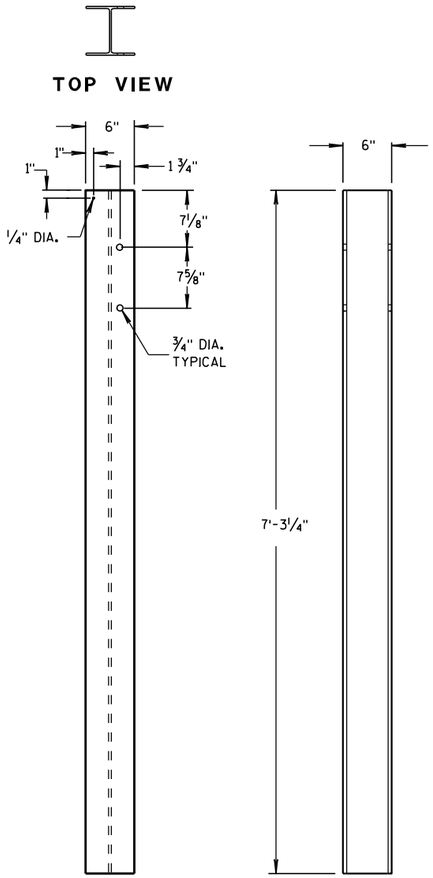
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

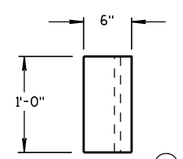
STEEL POSTS 6-11



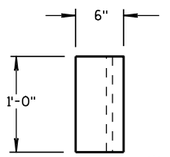
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

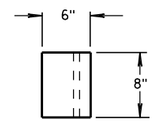
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



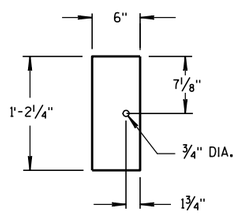
TOP VIEW (1)



TOP VIEW (1)

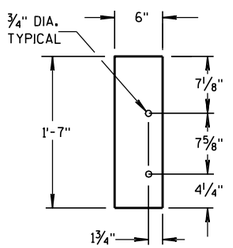


TOP VIEW



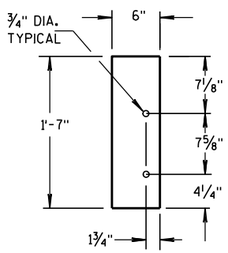
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

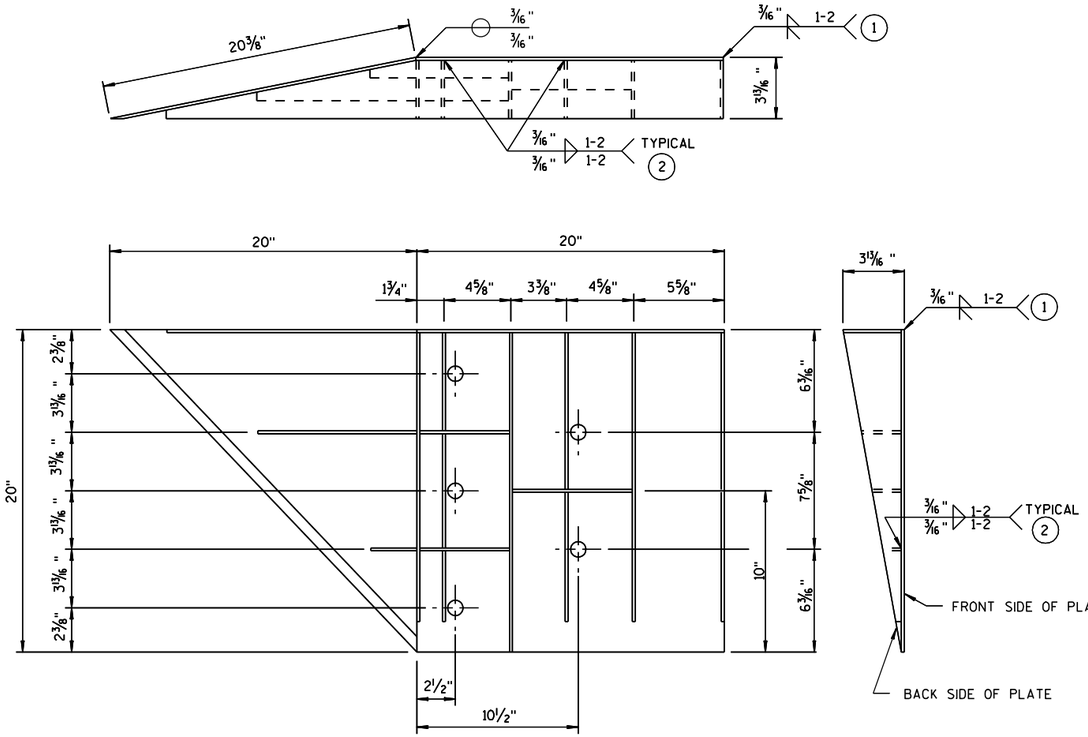
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

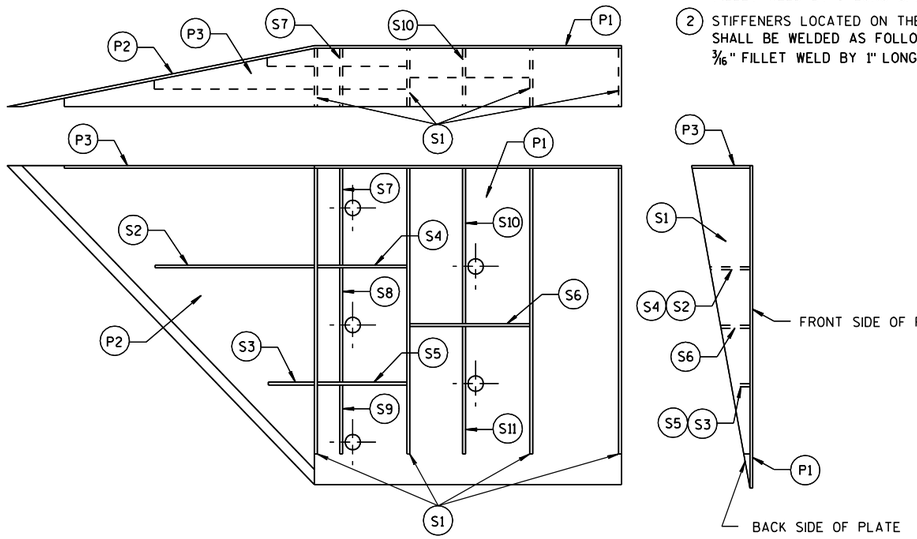


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

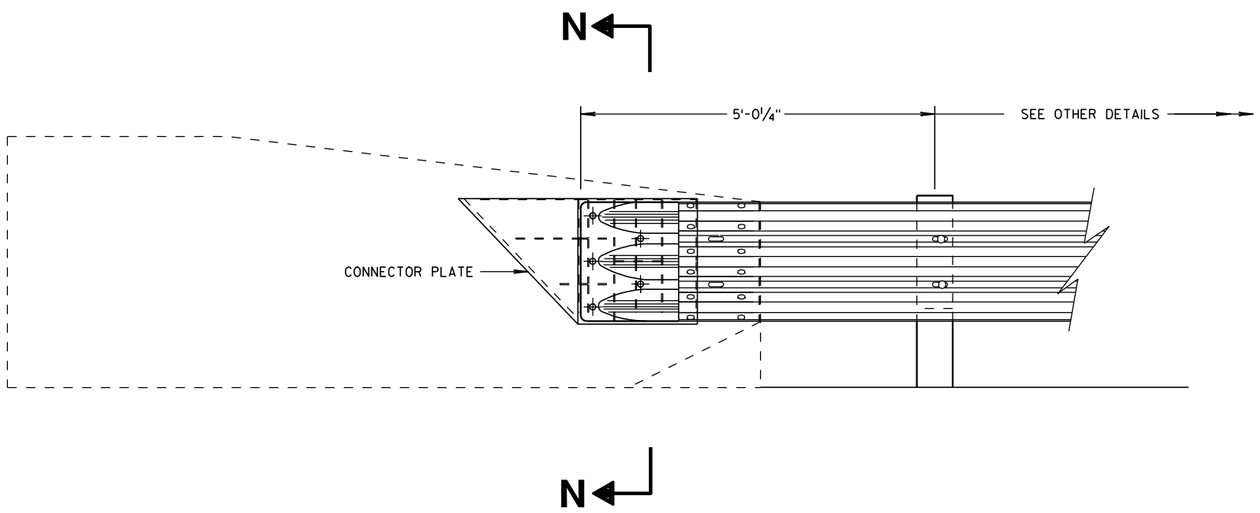
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

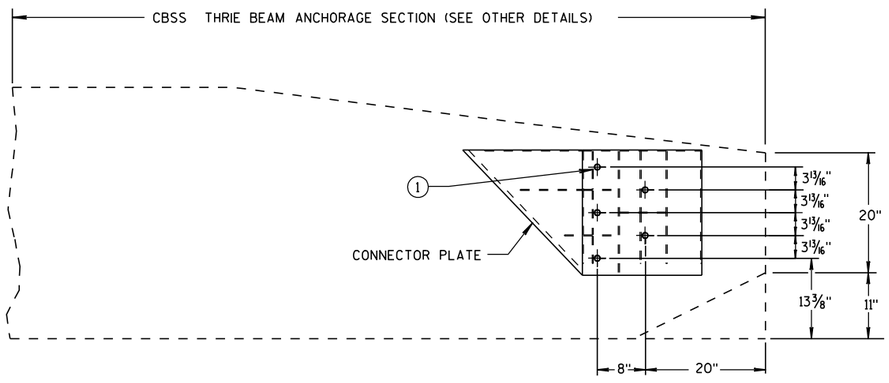
APPROVED
8/31/2012
DATE
/S/ Jerry H ...
ROADWAY STANDARDS ENGINEER
FHWA

6

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



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

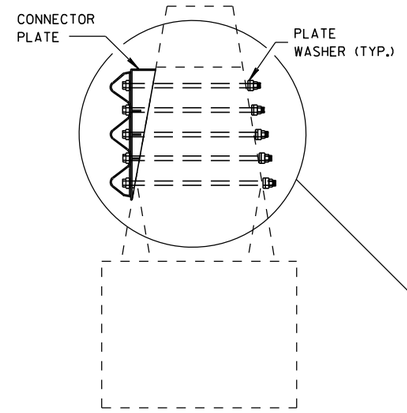


SINGLE SLOPE CONNECTION PLATE PLACEMENT

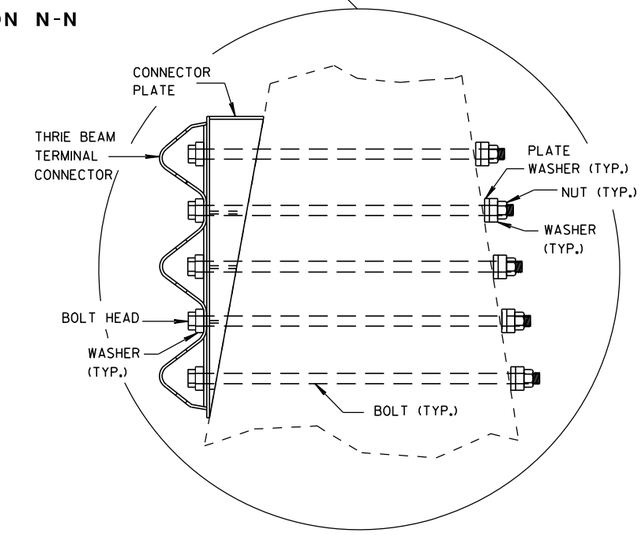
GENERAL NOTES

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8/31/2012
DATE

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

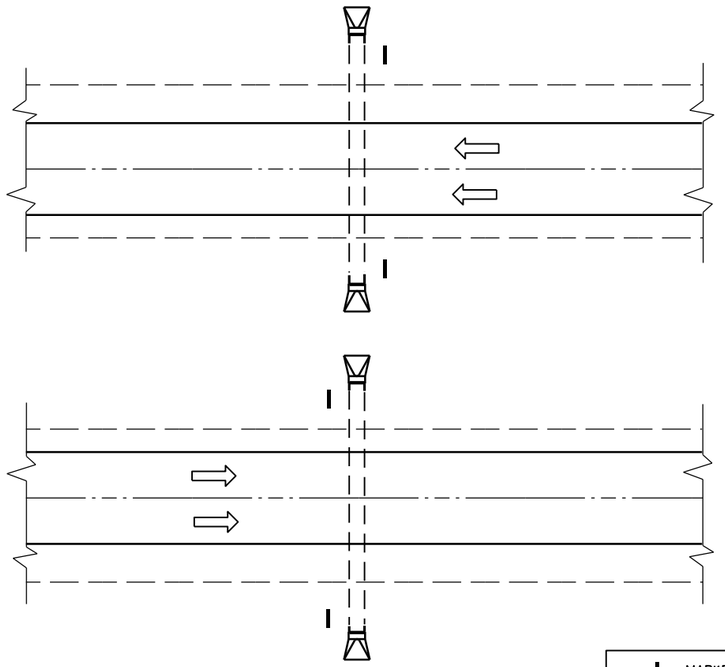
FHWA

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

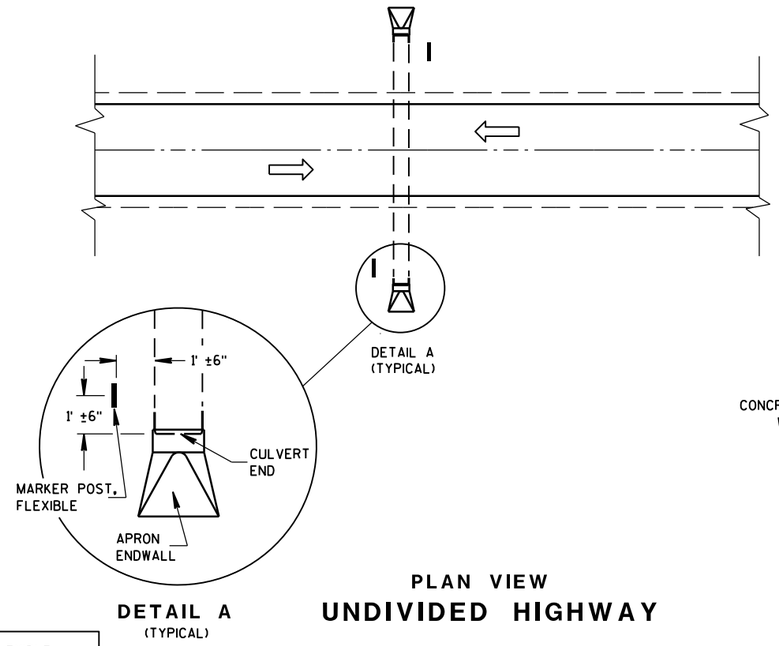
6

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



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

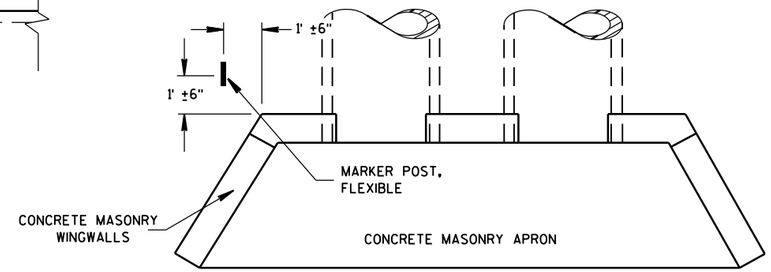
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

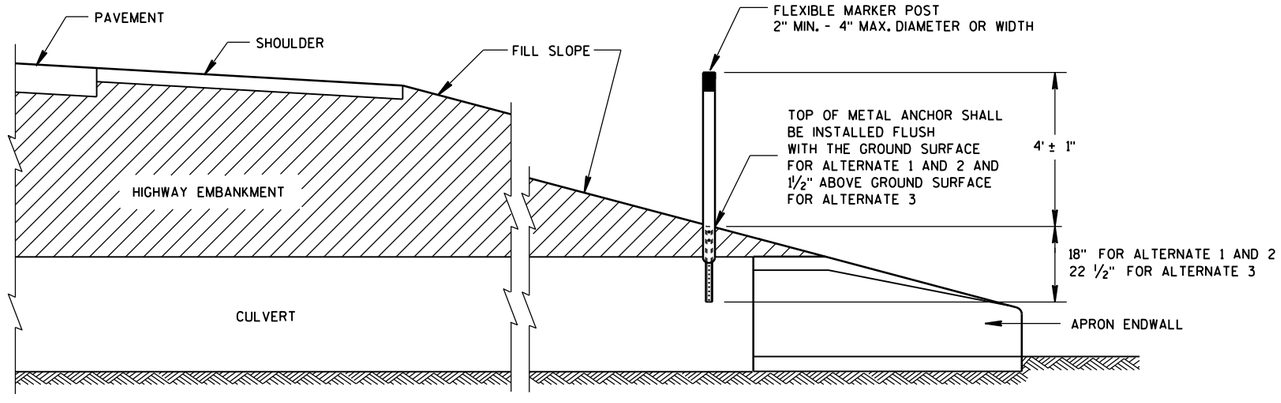
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

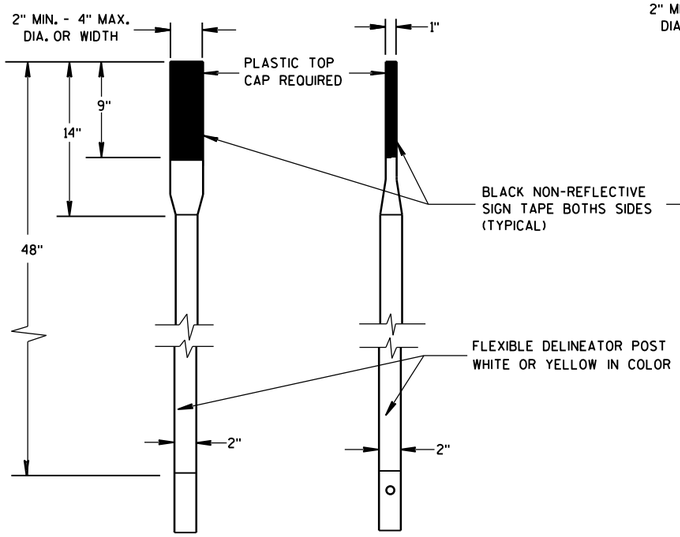
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

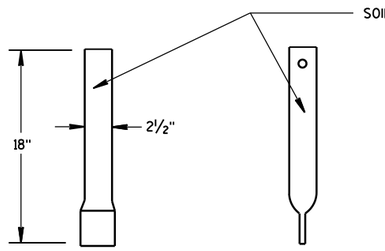
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S.D.D. 15 A 3-2a

6

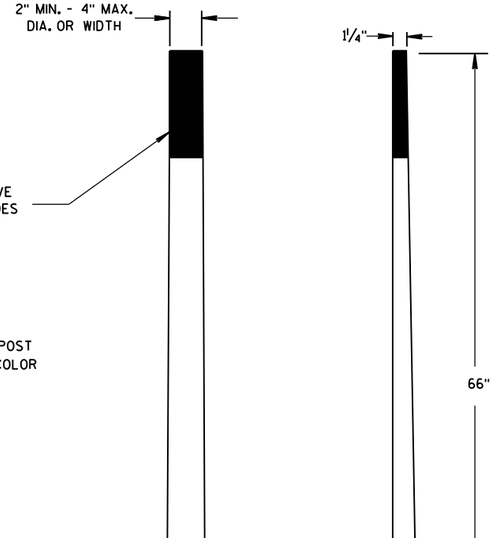
S.D.D. 15 A 3-2a





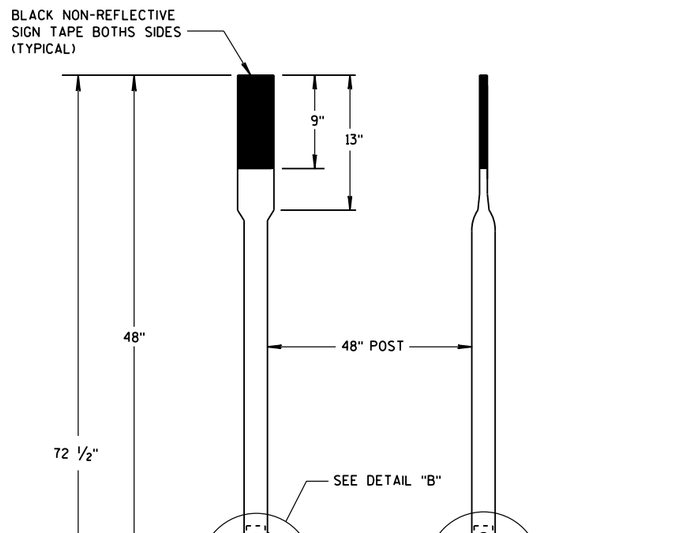
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

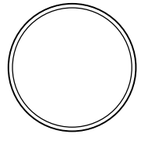
ALTERNATE 2



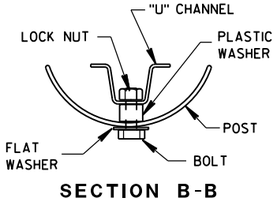
FRONT VIEW SIDE VIEW

ALTERNATE 3

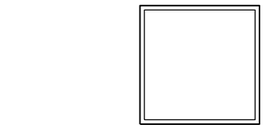
FLEXIBLE MARKER POSTS



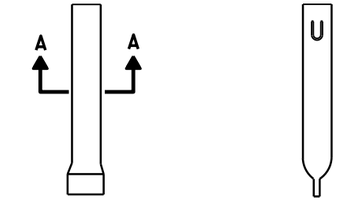
SECTION A-A



SECTION B-B

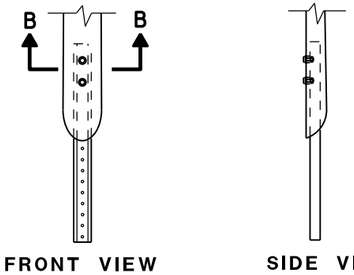


SECTION C-C



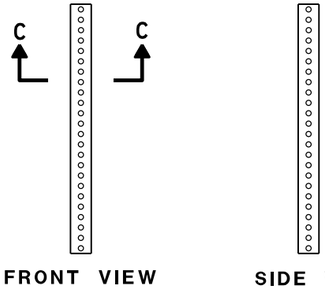
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

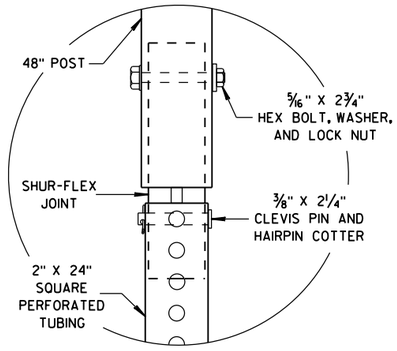
ALTERNATE 2



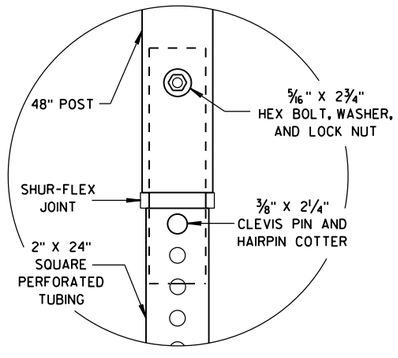
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

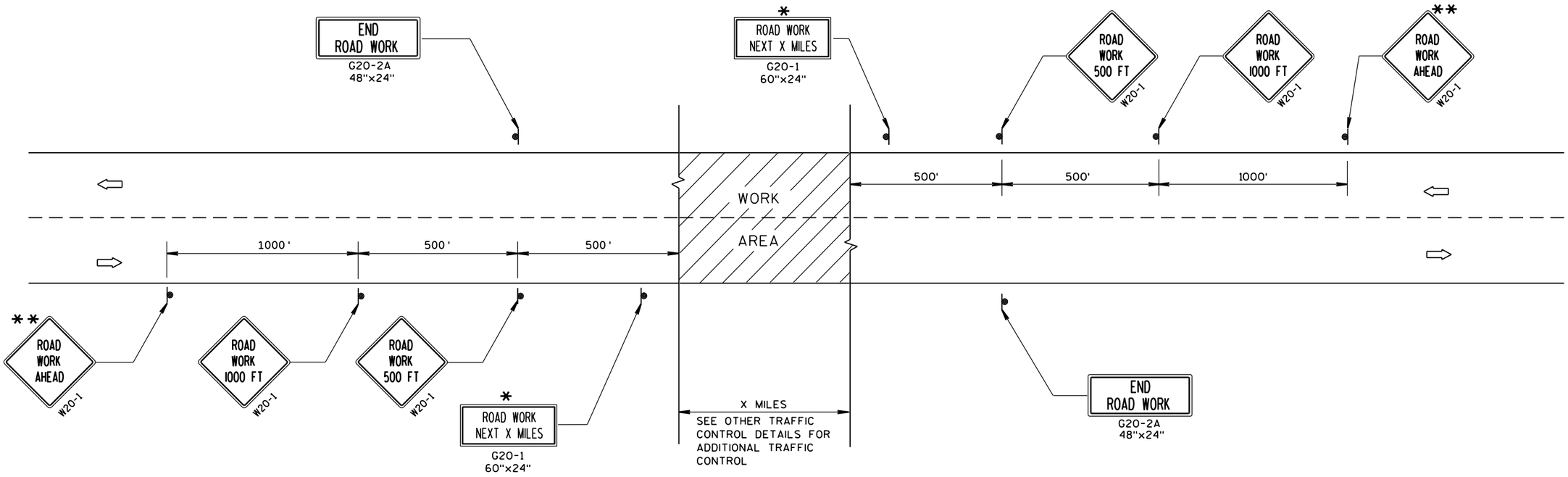
APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
FHWA

6

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

6

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



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

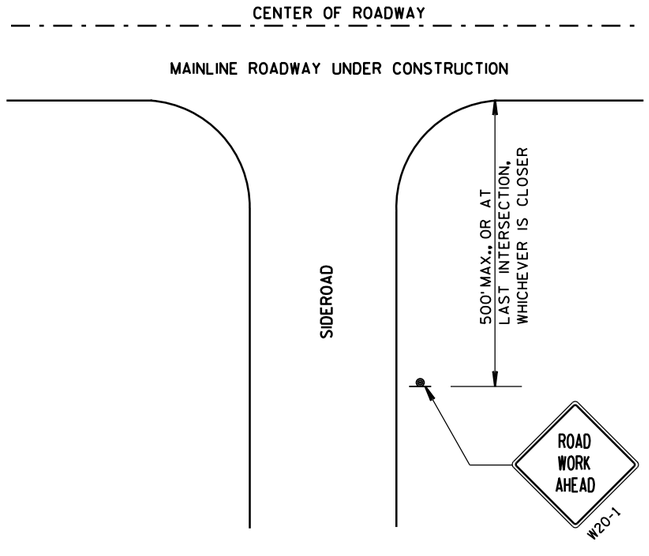
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

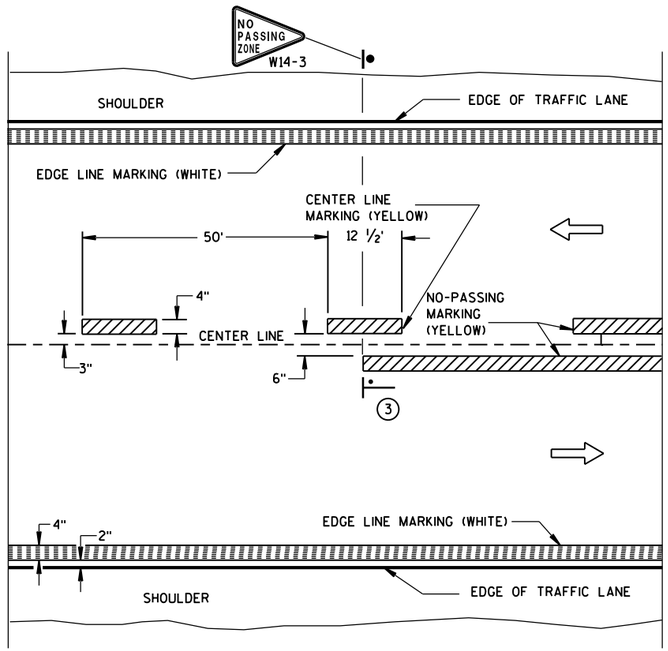
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

SIGN

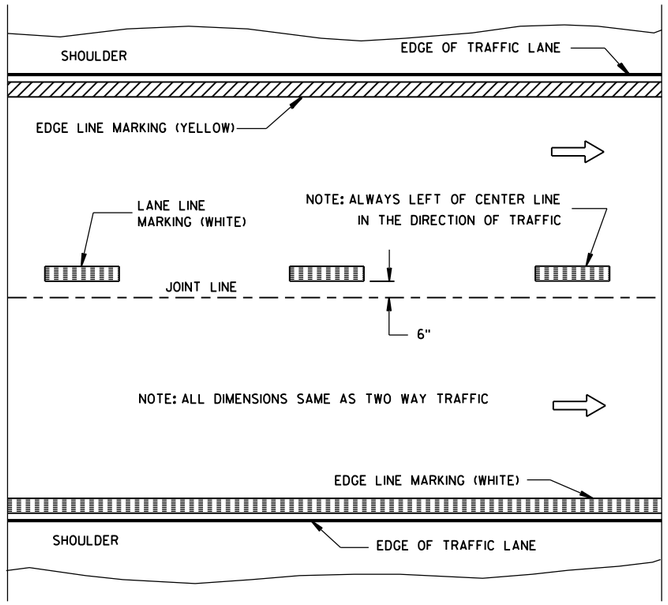
FHWA

6

S.D.D. 15 C 4-2

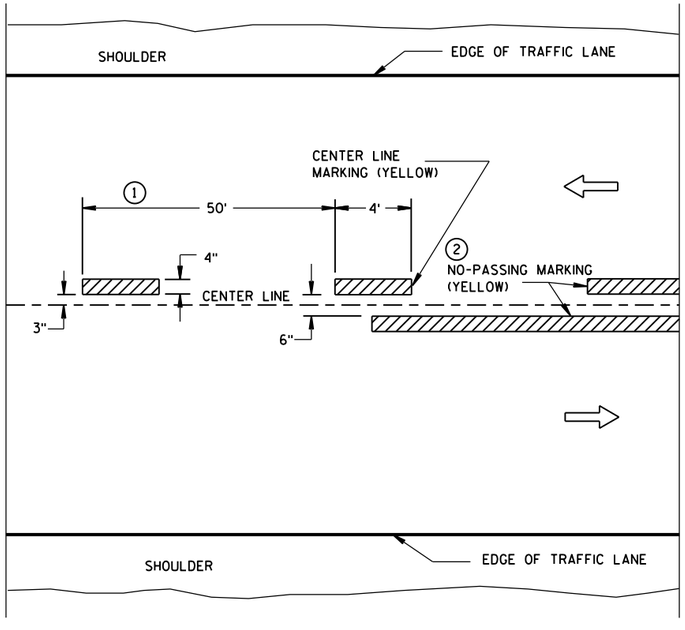


TWO WAY TRAFFIC

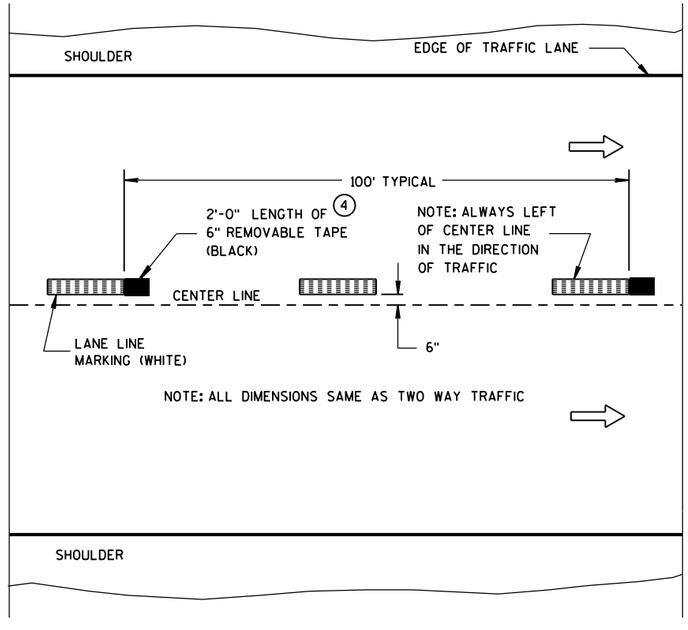


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

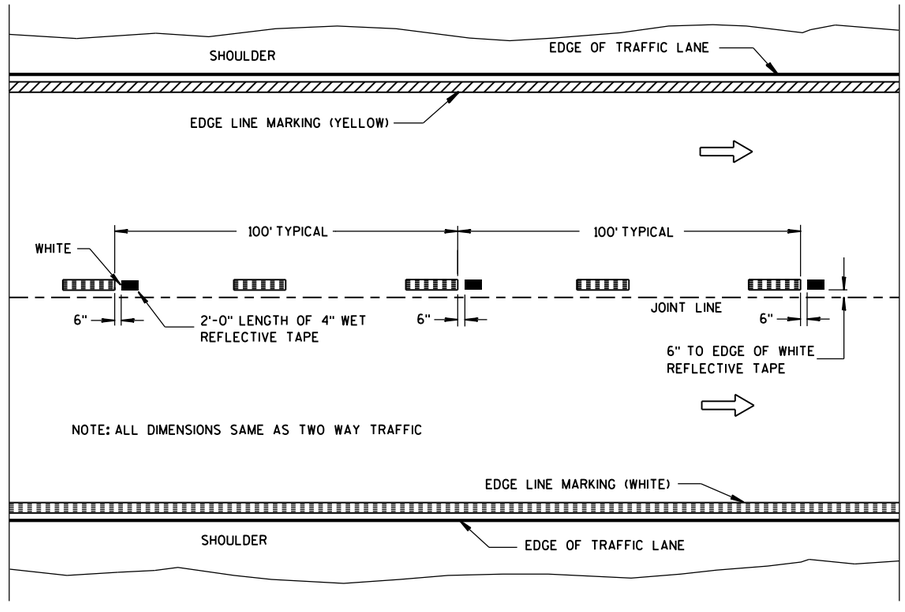
GENERAL NOTES

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

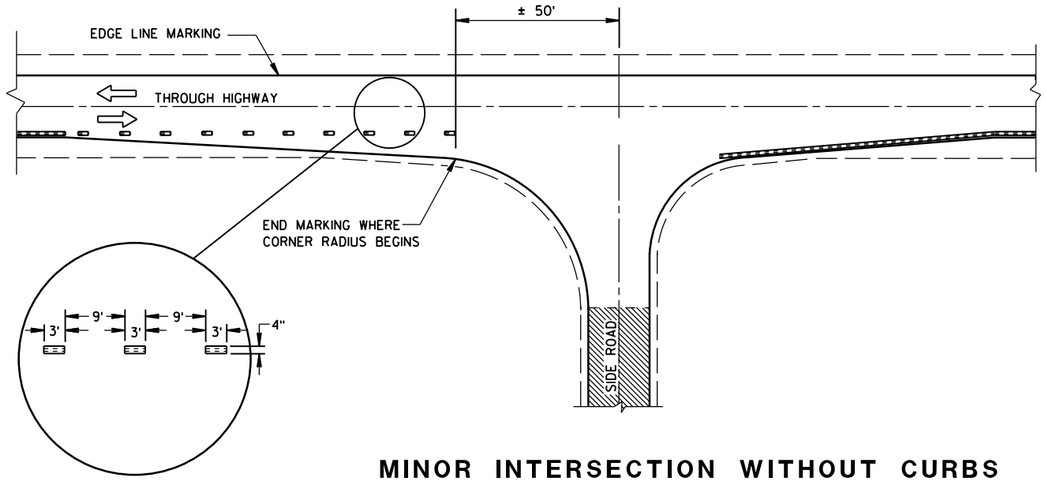
FHWA

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

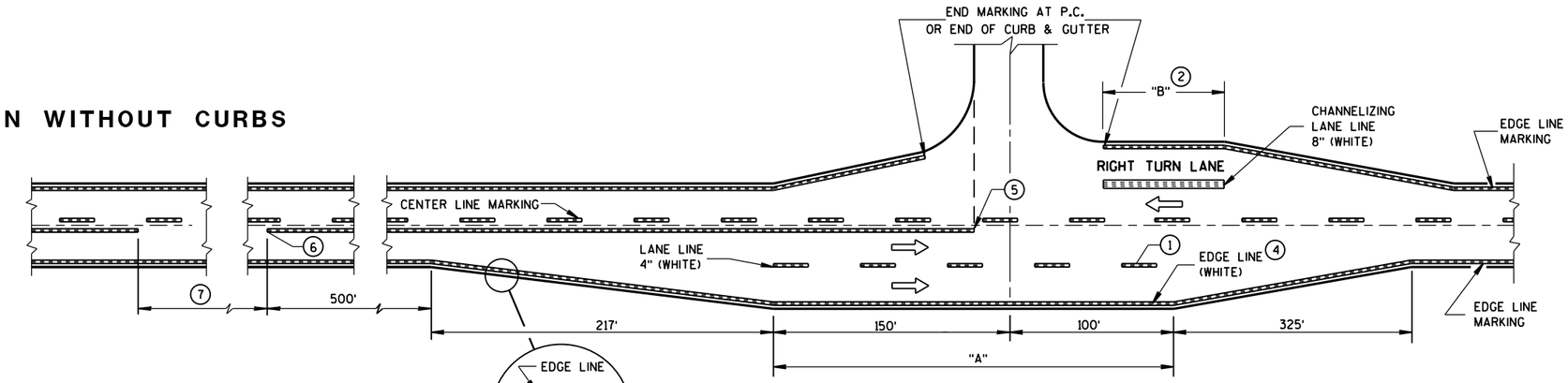
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

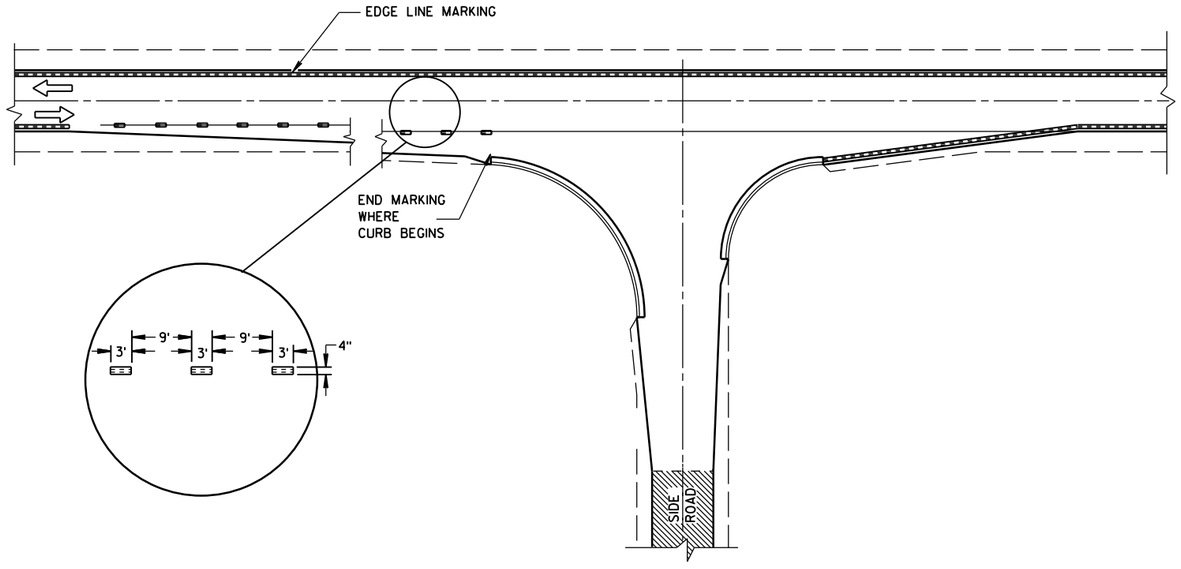
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



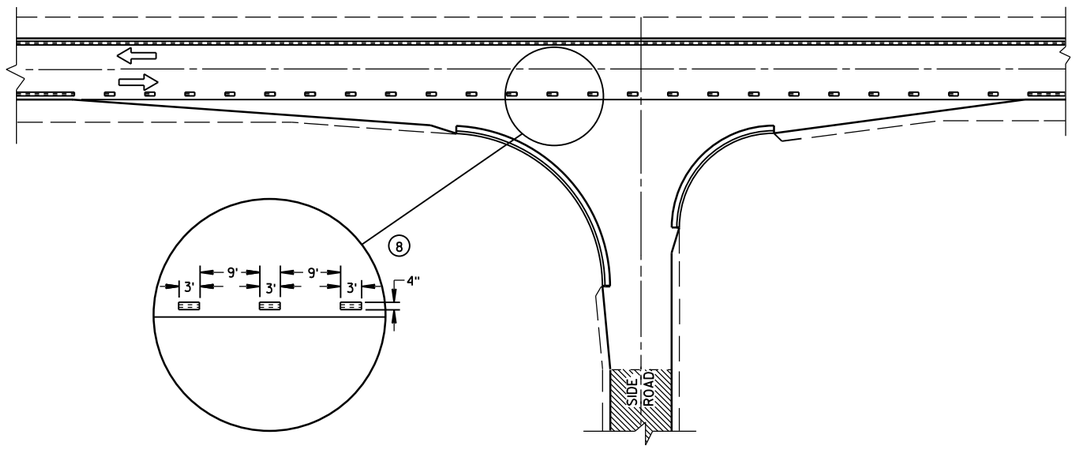
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

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

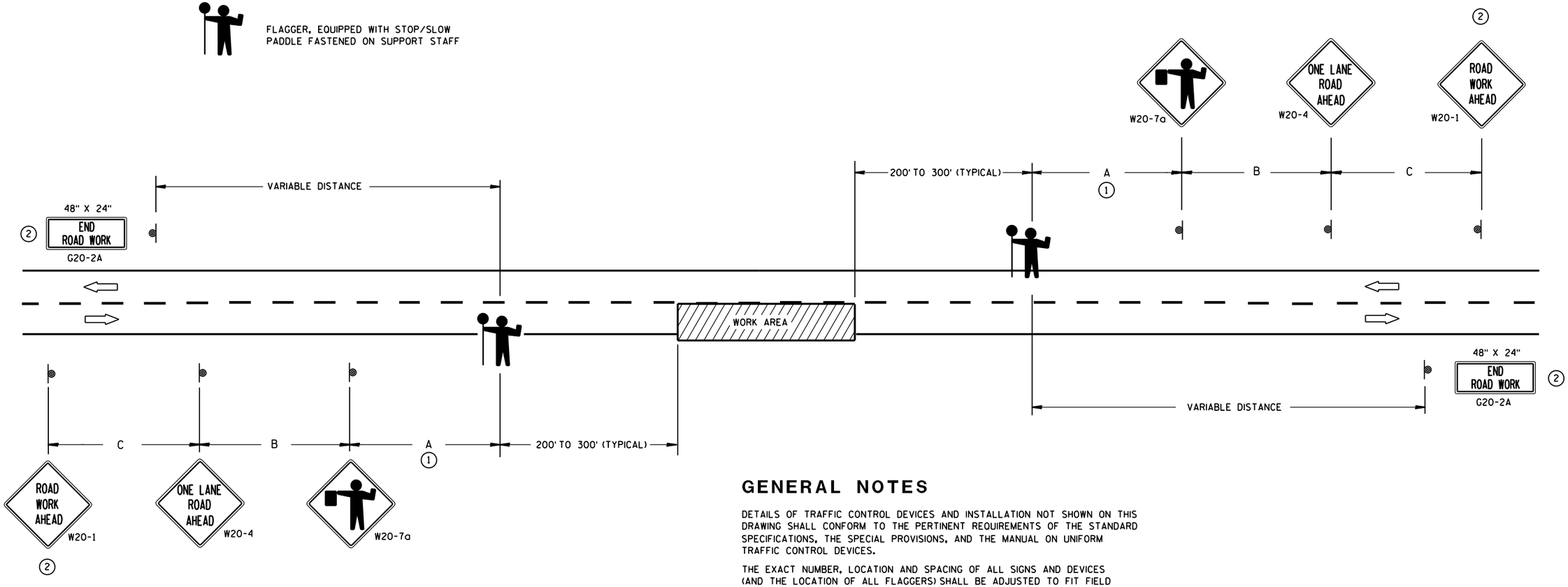
SIGN SPACING TABLE

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



W3-4

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



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

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

GENERAL NOTES

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

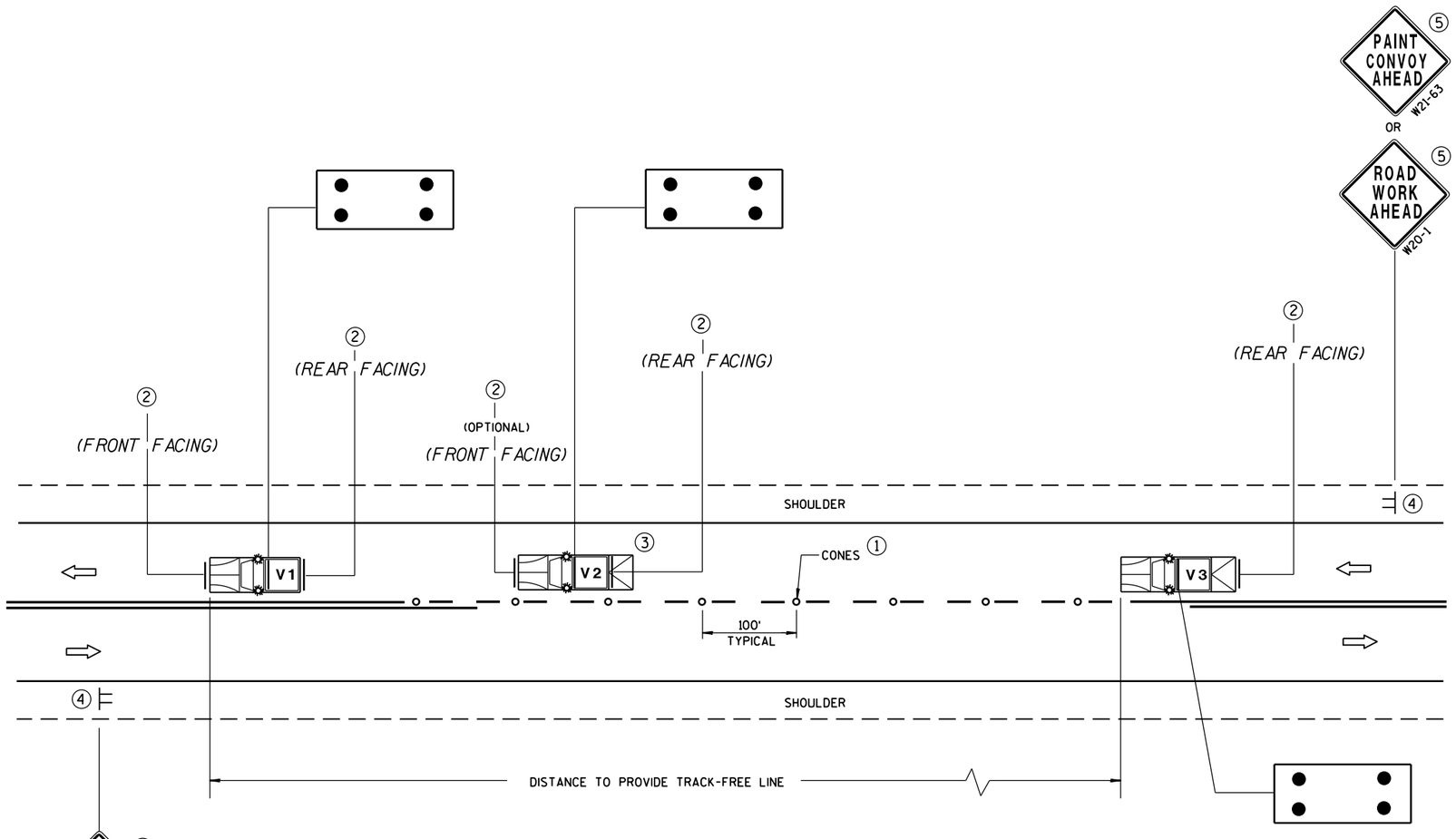
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(5) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- **V1** LEAD VEHICLE
- **V2** SHADOW VEHICLE
- **V3** TRAIL VEHICLE WITH TMA
- **TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/3/2013 DATE FHWA	/S/ Travis Feltes STATE TRAFFIC E

6

S.D.D. 15 C 19-2a

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE



W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

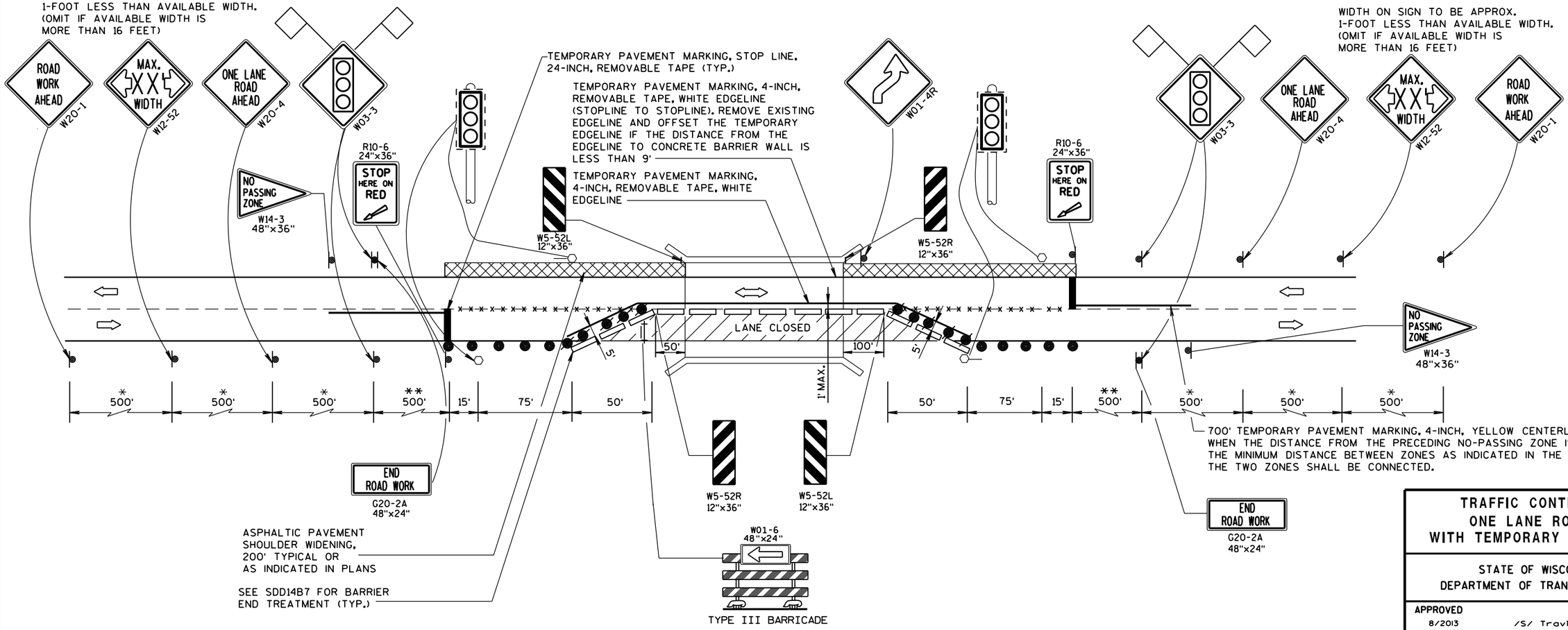
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



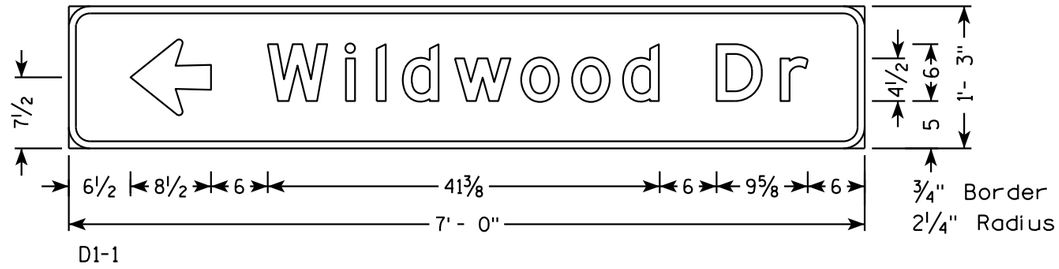
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

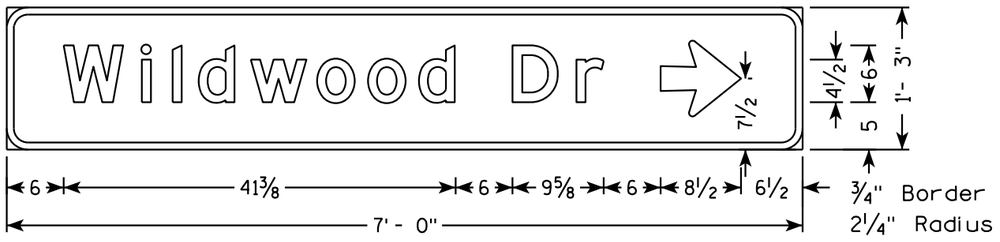
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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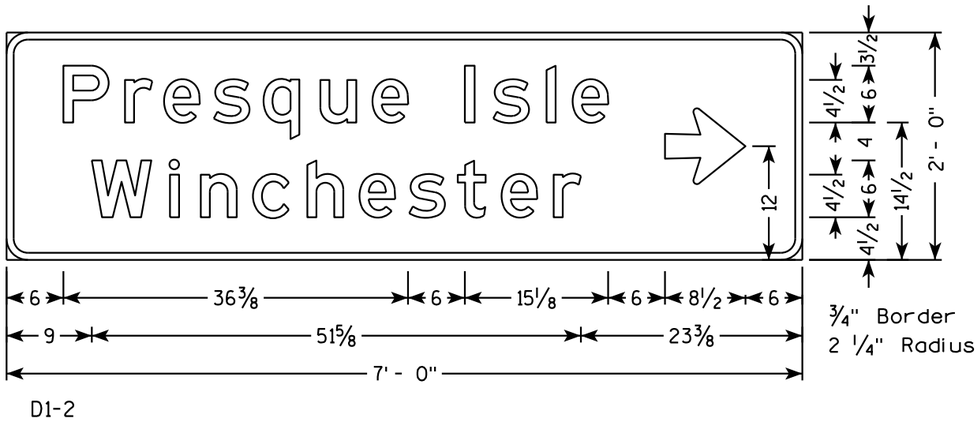
S.D.D. 15 D 33-3



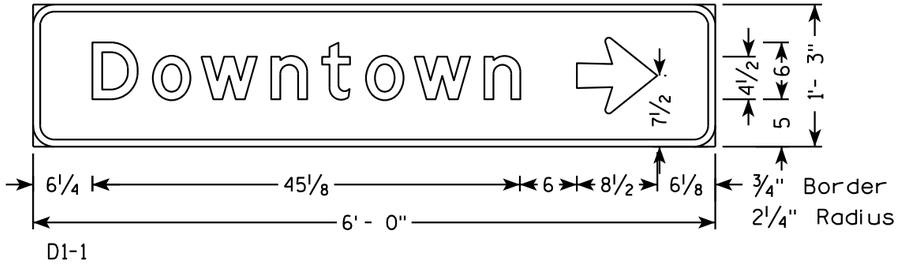
D1-1



D1-1



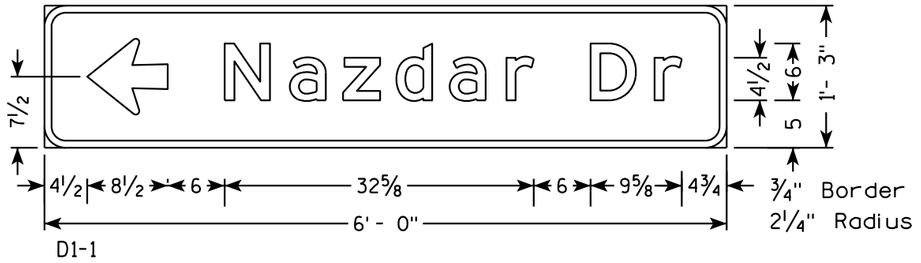
D1-2



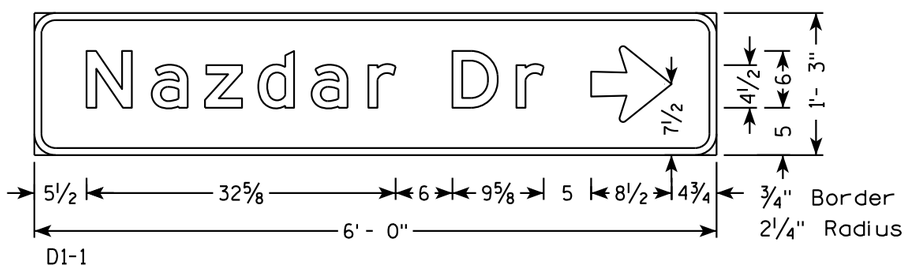
D1-1

NOTES

1. All Sign Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



D1-1



D1-1

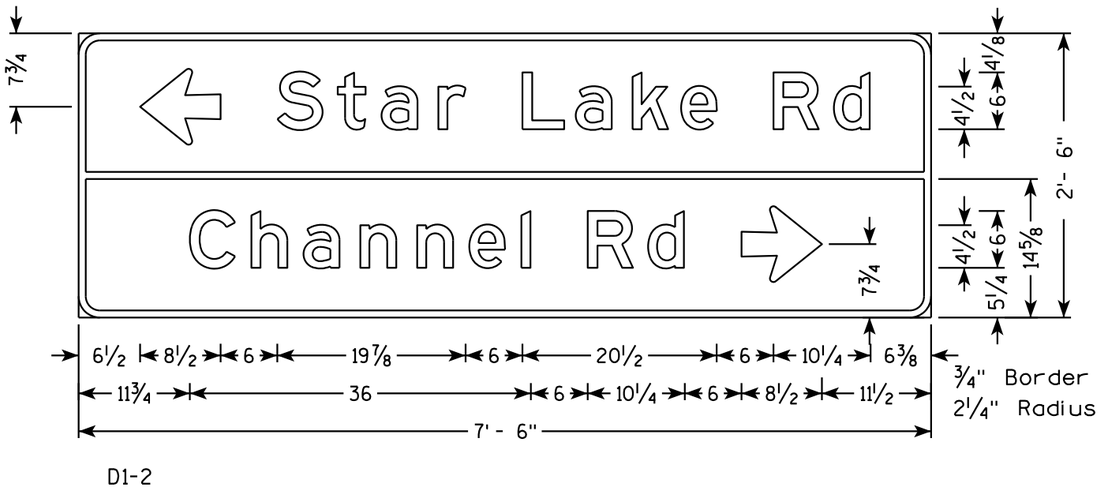
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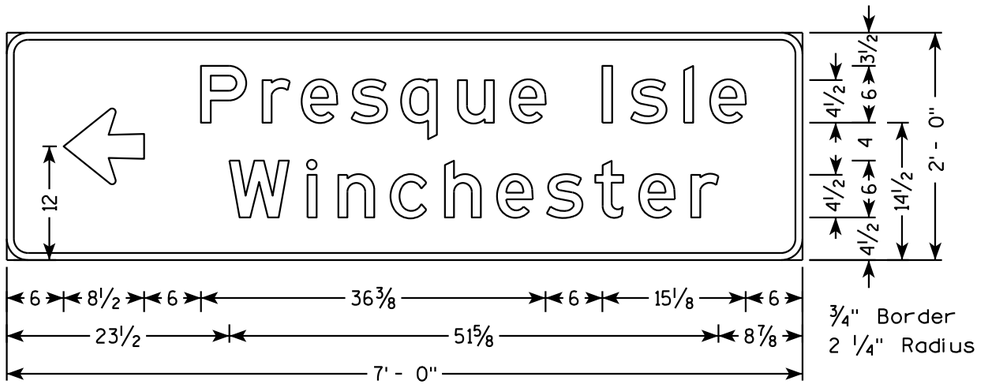
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO: E

NOTES

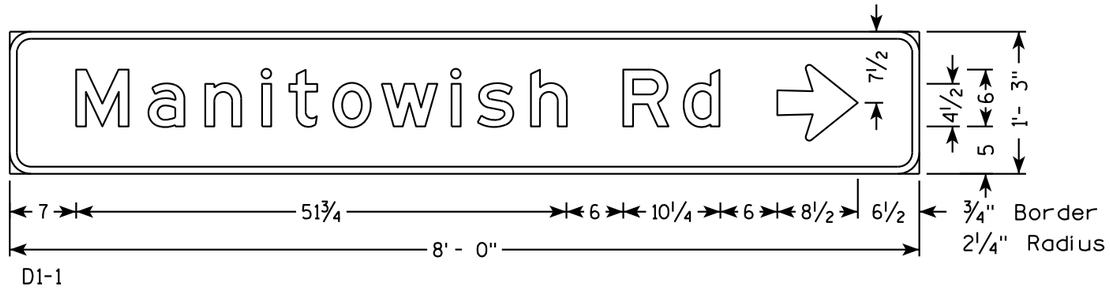
1. All Sign Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E except as Shown



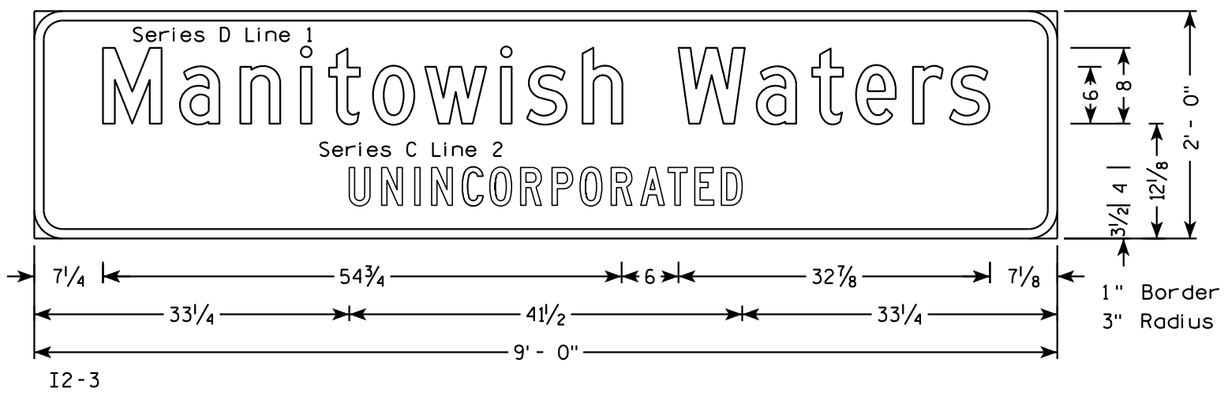
D1-2



D1-2



D1-1



I2-3

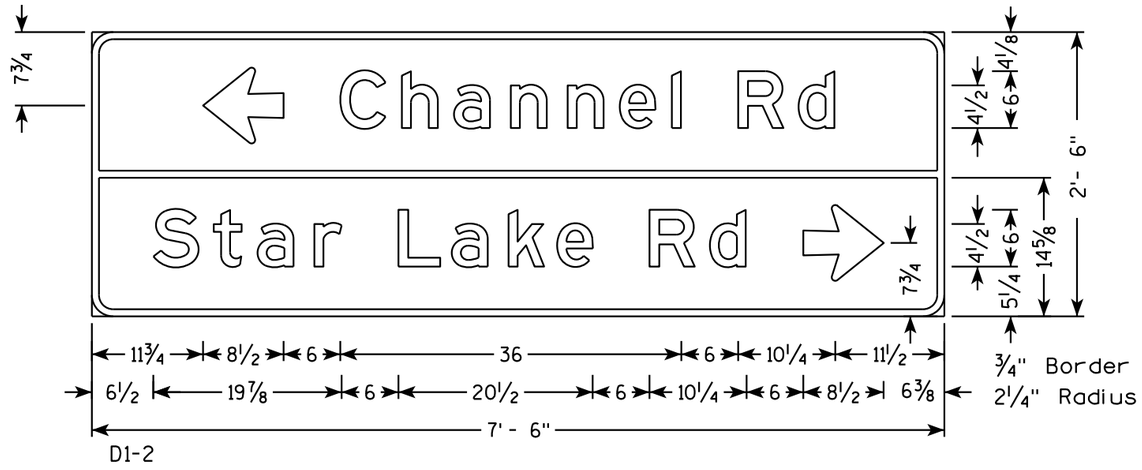
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7

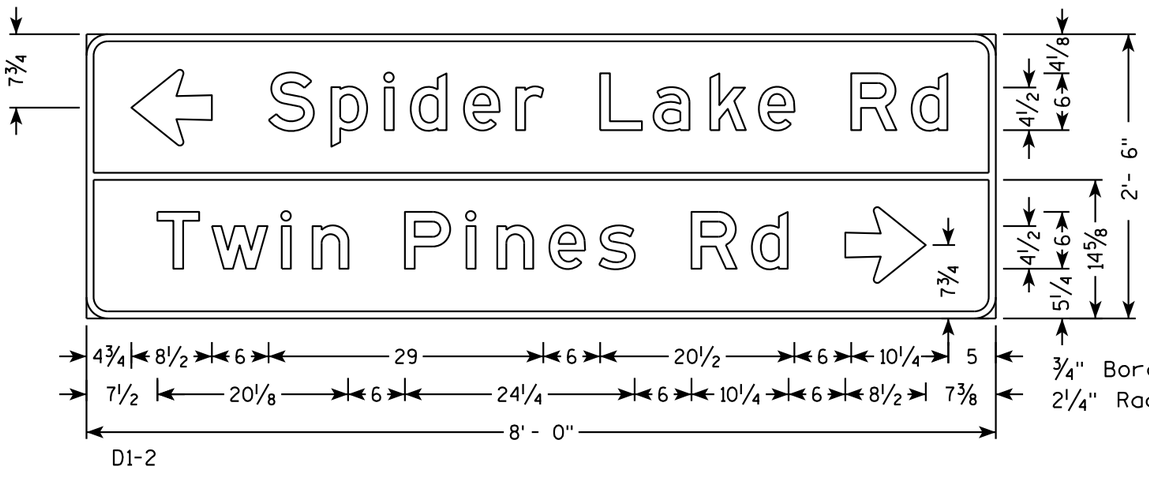
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO: E

NOTES

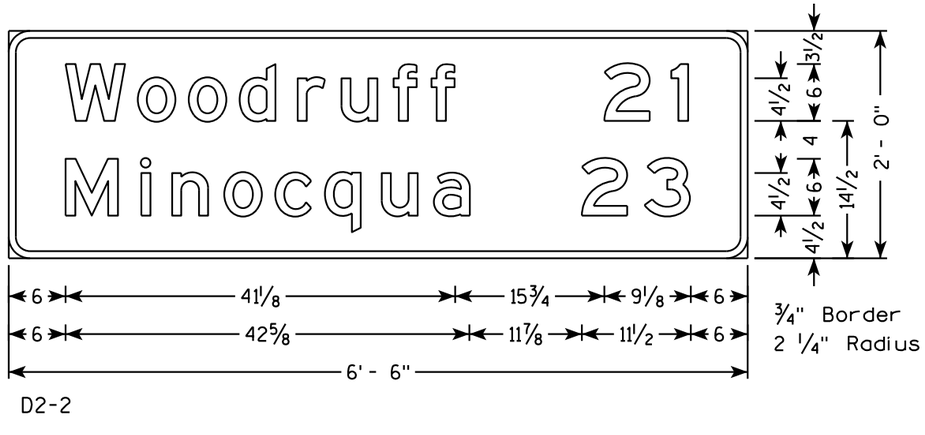
1. All Sign Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



D1-2

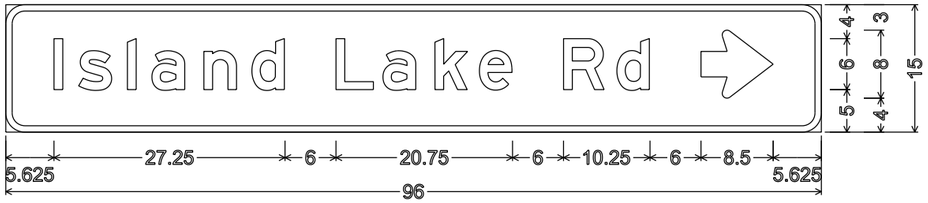


D1-2

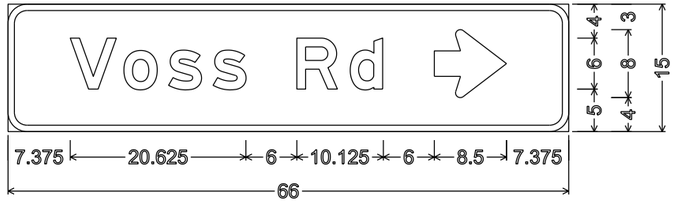


D2-2

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO: E



2.250" Radius, 0.750" Border, White on Green;



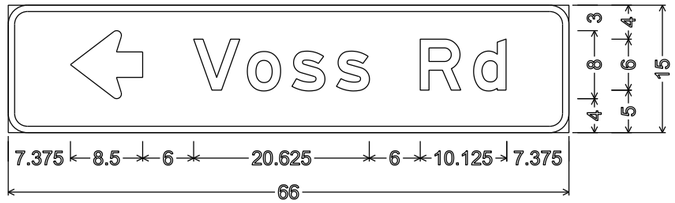
2.250" Radius, 0.750" Border, White on Green;

NOTES

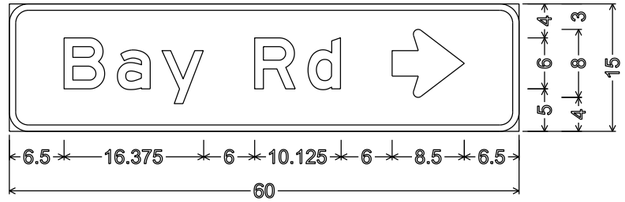
1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



2.250" Radius, 0.750" Border, White on Green;



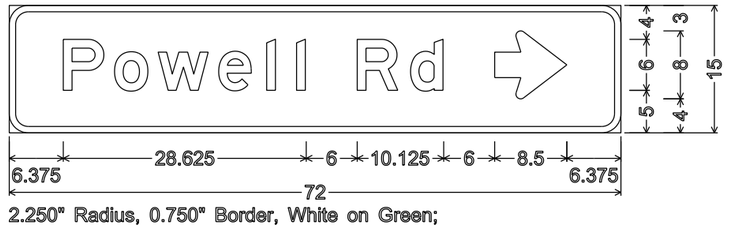
2.250" Radius, 0.750" Border, White on Green;



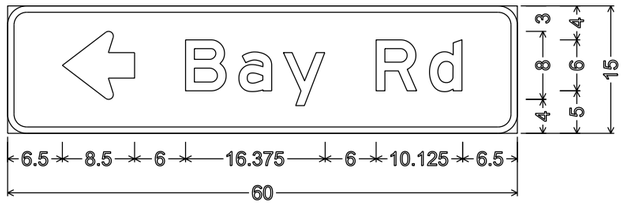
2.250" Radius, 0.750" Border, White on Green;



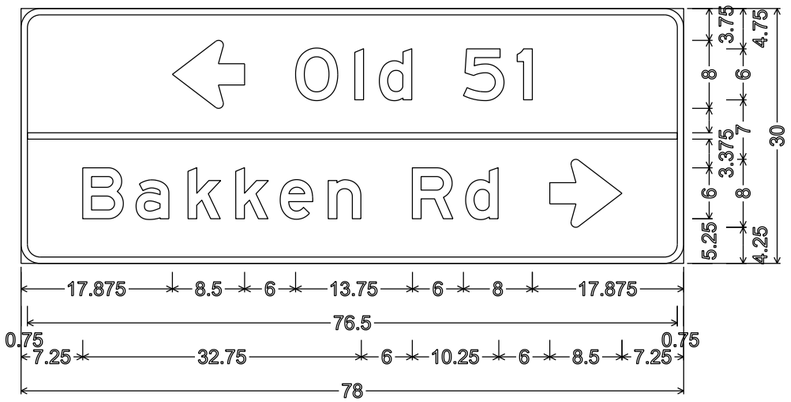
2.250" Radius, 0.750" Border, White on Green;



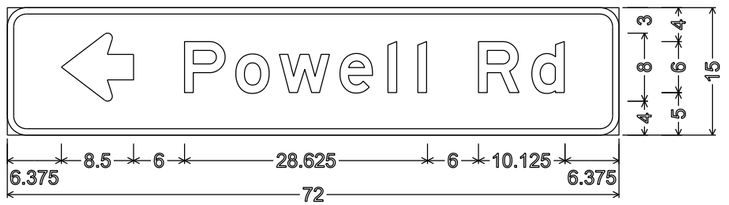
2.250" Radius, 0.750" Border, White on Green;



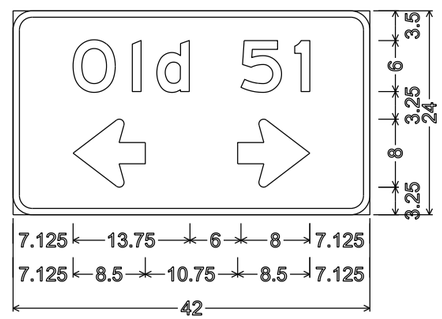
2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;

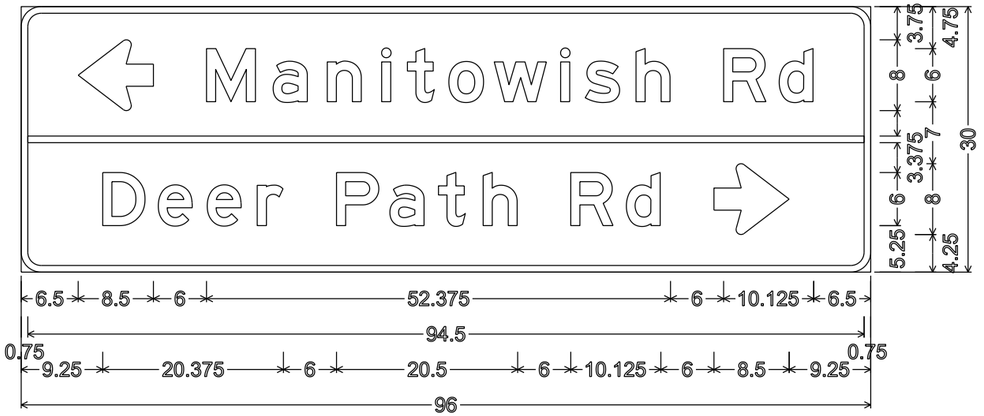


2.250" Radius, 0.750" Border, White on Green;

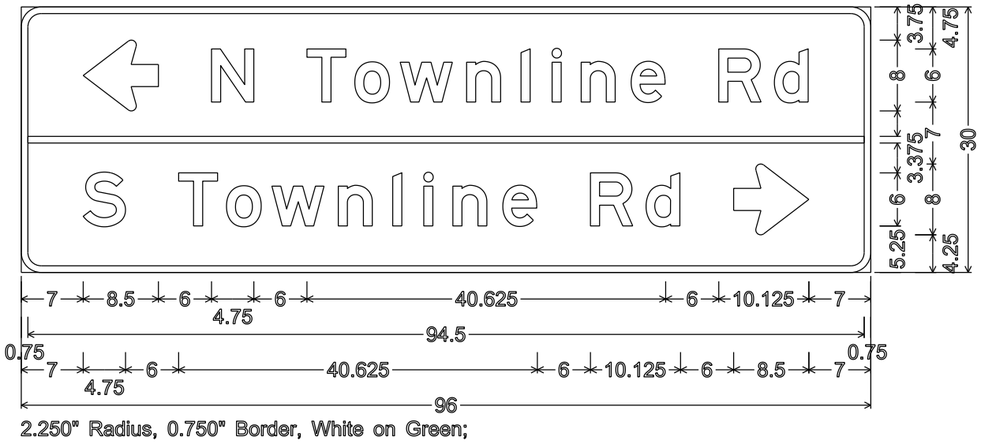
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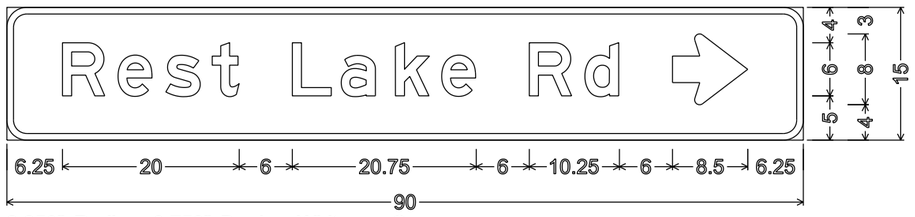
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E



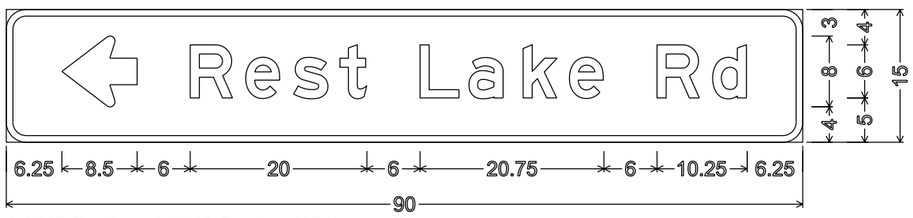
2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;

NOTES

1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



2.250" Radius, 0.750" Border, White on Green;



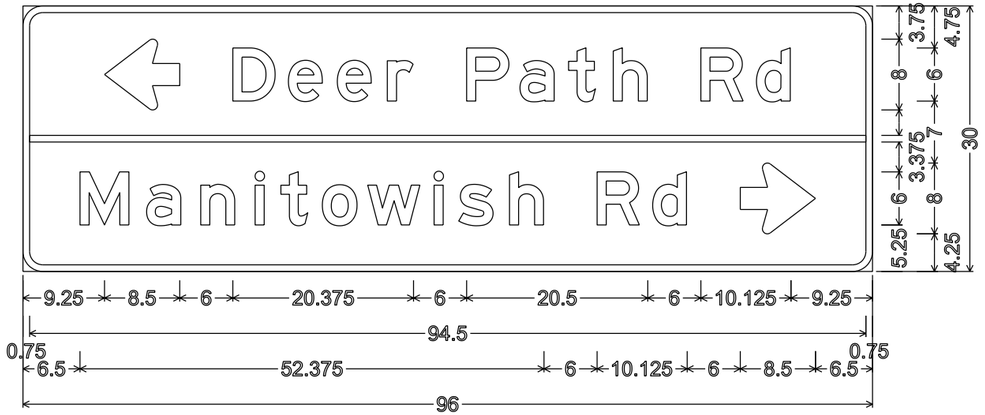
2.250" Radius, 0.750" Border, White on Green;

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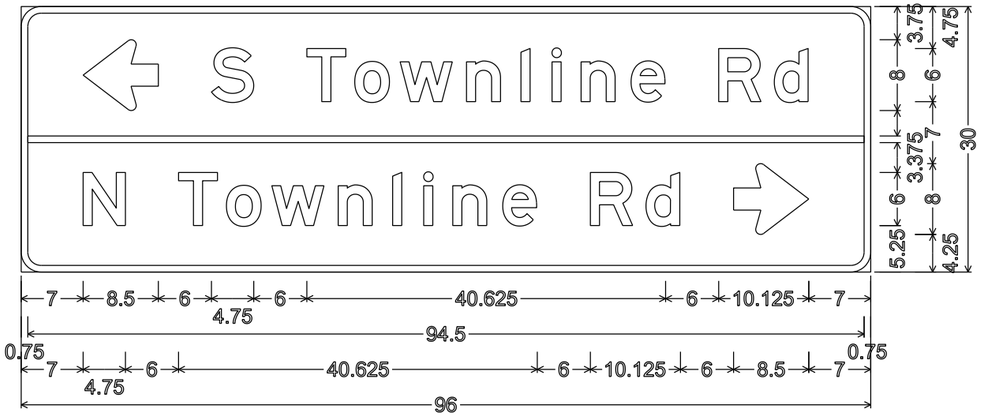
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E

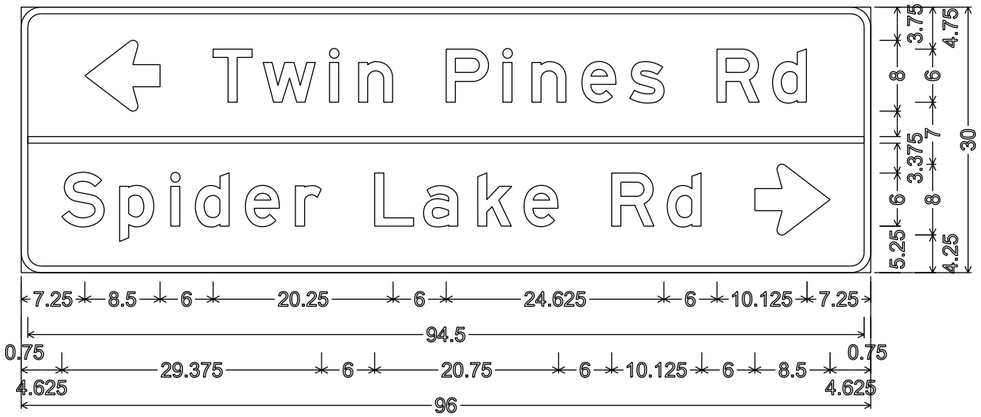
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2.250" Radius, 0.750" Border, White on Green;



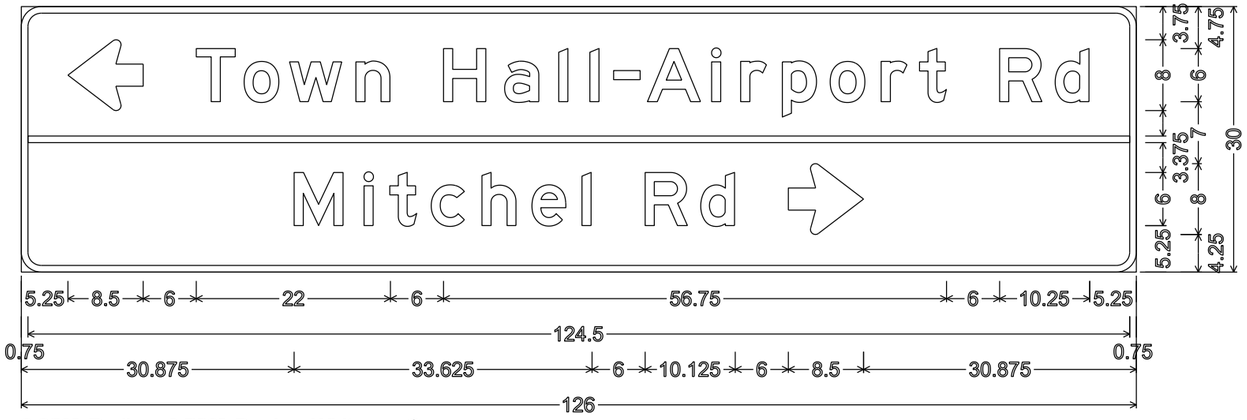
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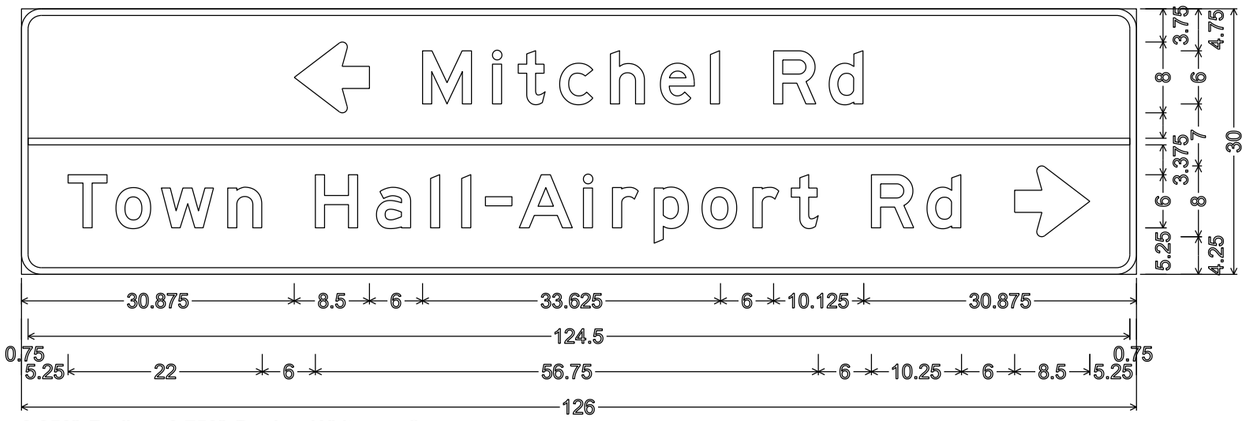
2.250" Radius, 0.750" Border, White on Green;

NOTES

1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;

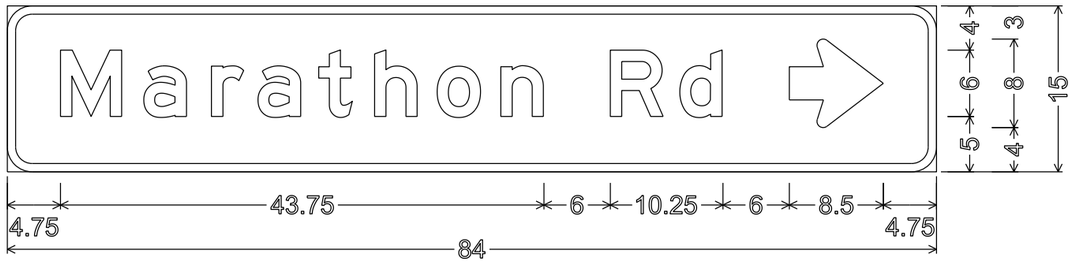
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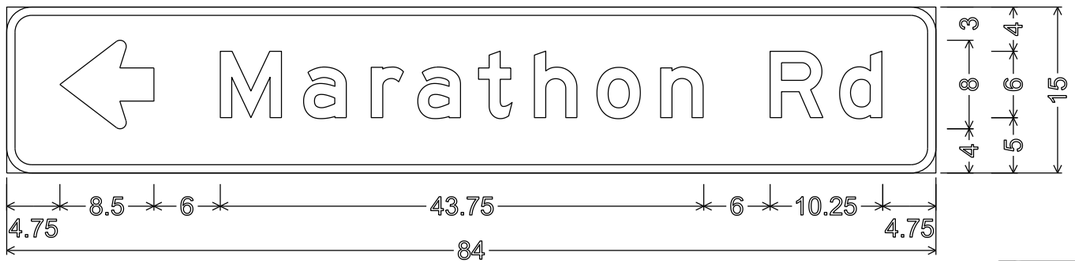
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E

NOTES

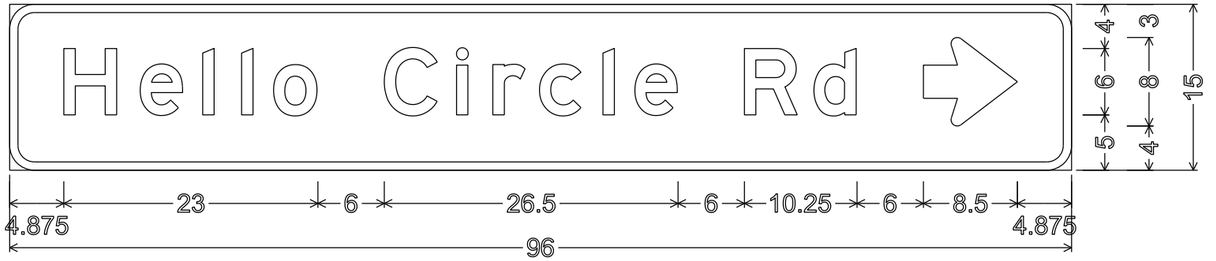
1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



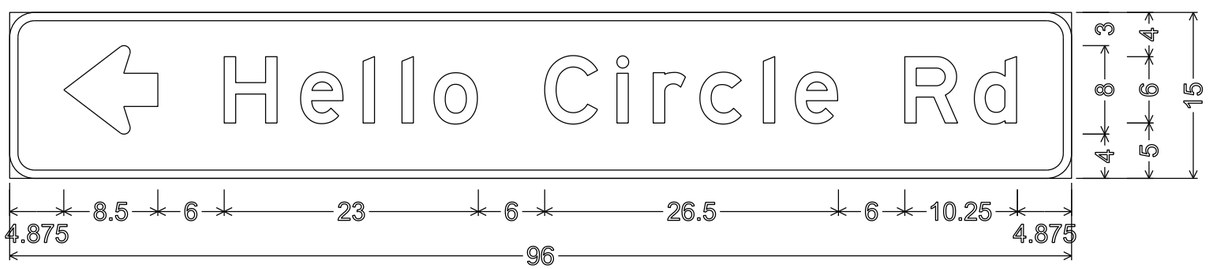
2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;

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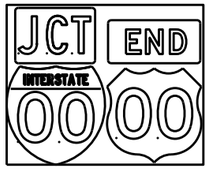
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E

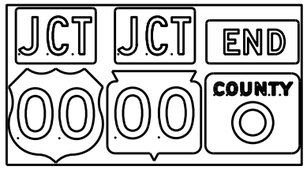
TYPICAL ASSEMBLIES



J1-1



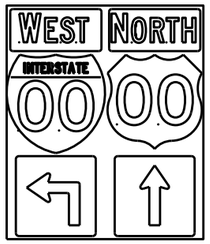
J1-2



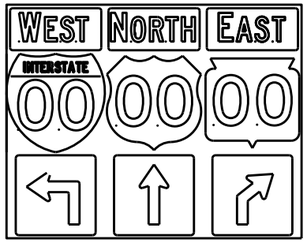
J1-3



J2-1



J2-2

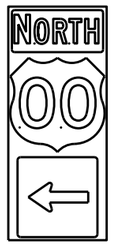


J2-3

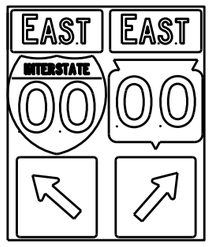


JV

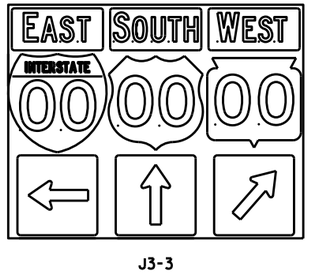
(Typical Vertical J-Assembly
See Note 10 and 11)



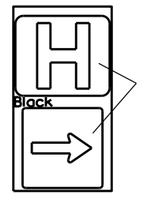
J3-1



J3-2



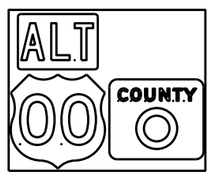
J3-3



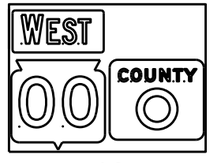
JH-1



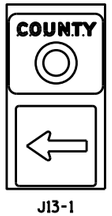
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

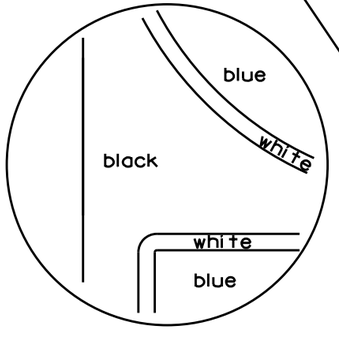


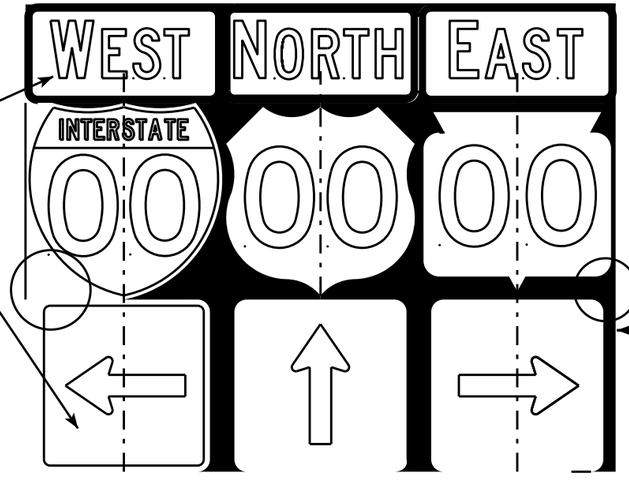
J23-1

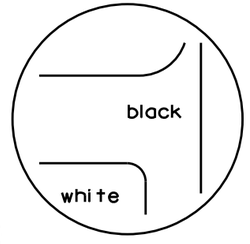


J22-1

[blue background with interstate]







[black background]

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

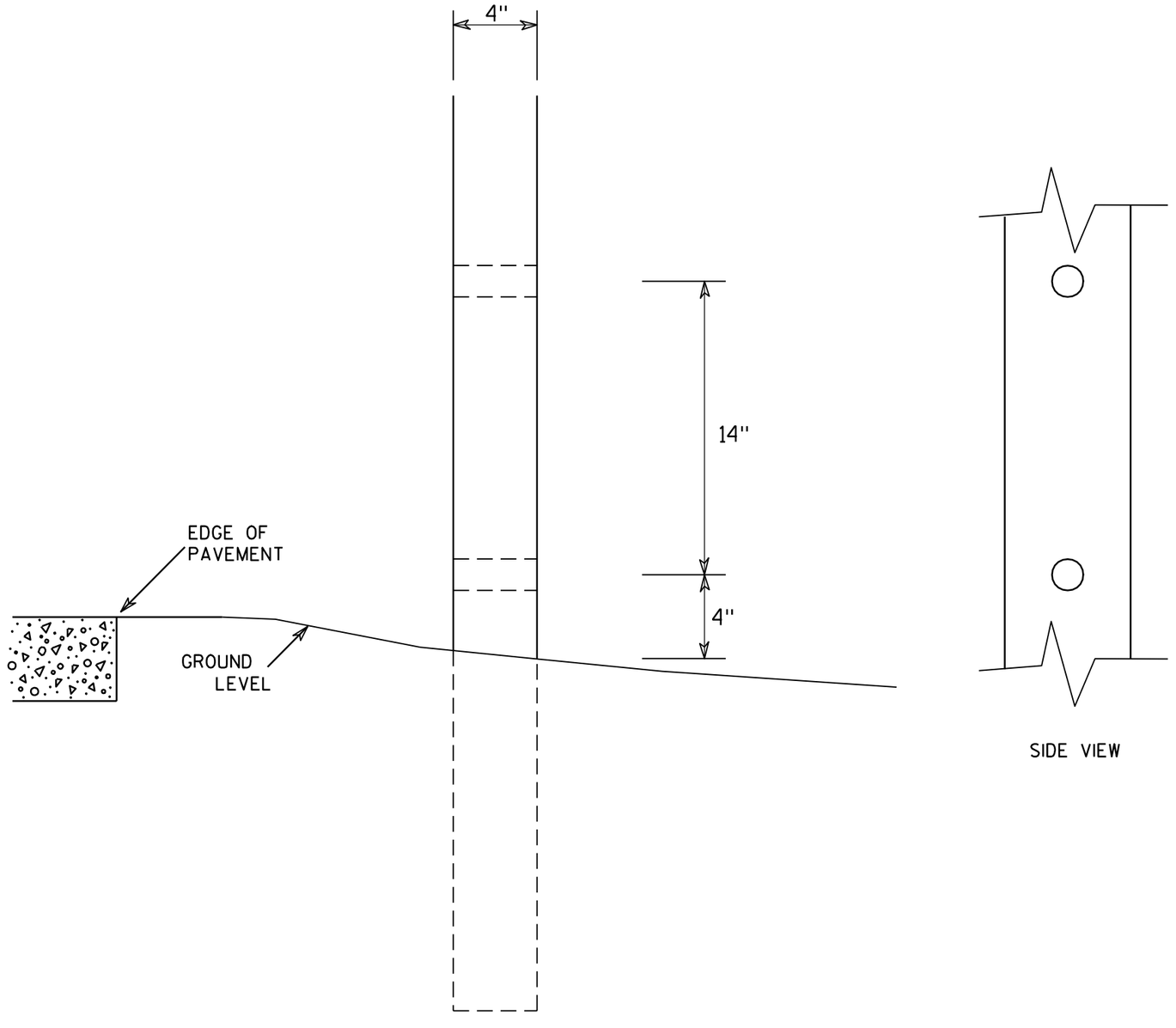
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
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.

7

7

4 X 6 WOOD POST MODIFICATIONS

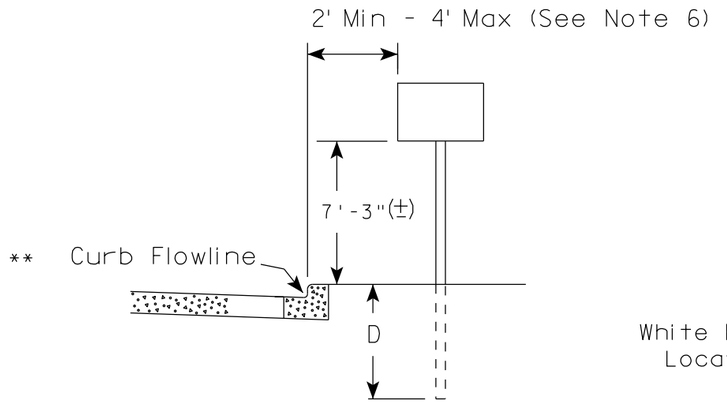
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

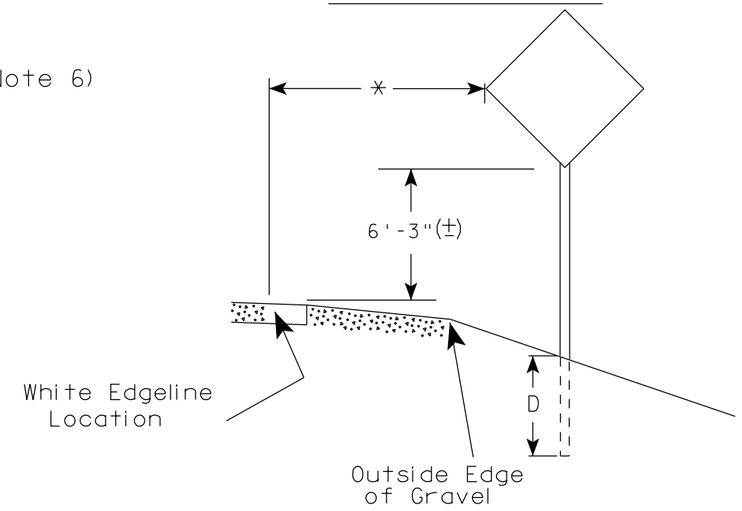
DATE 3/27/97 PLATE NO. A4-11.2

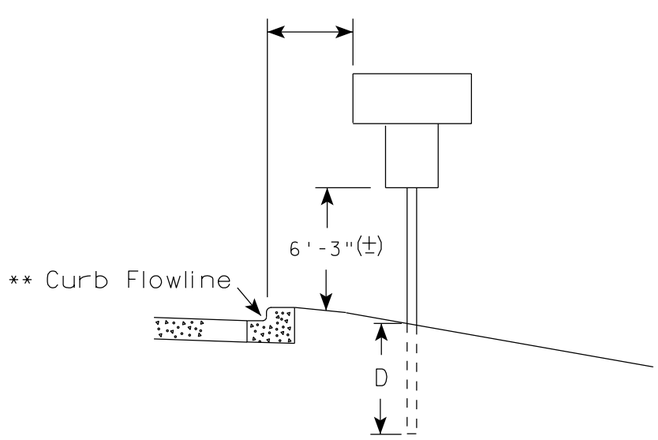
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 126	E

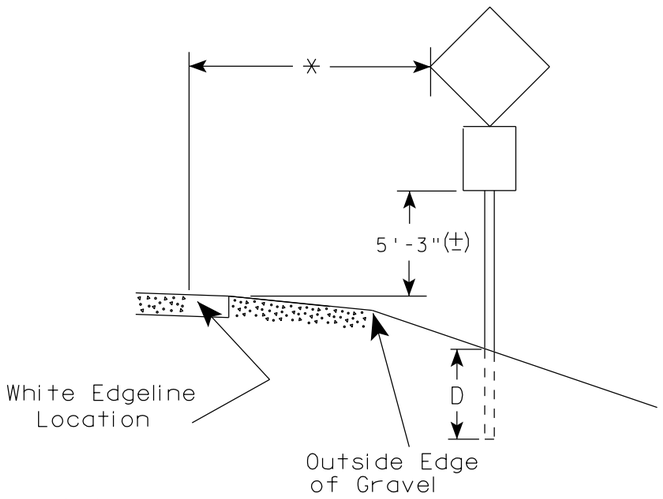
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) 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 stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed 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) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

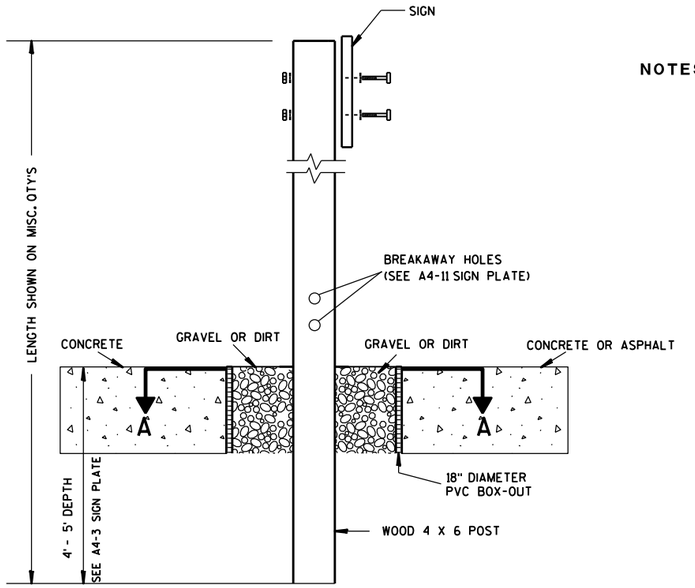
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

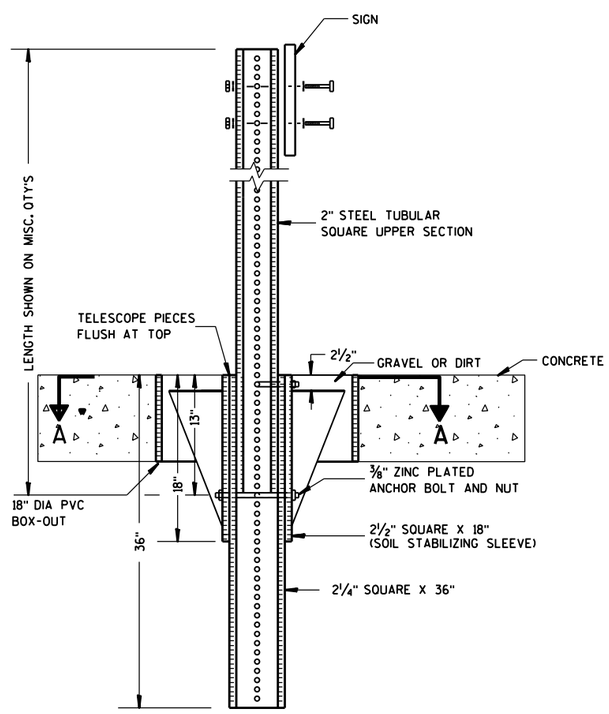
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

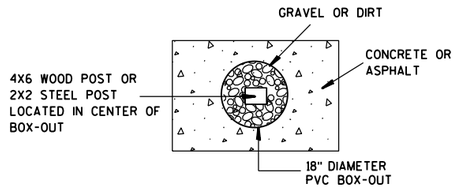
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

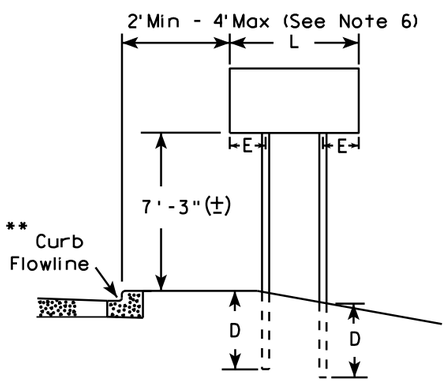
APPROVED Matthew R Rauch
for State Traffic Engineer

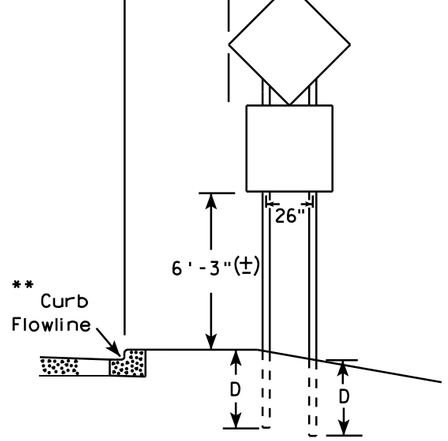
DATE 1/27/14 PLATE NO. A4-3B.1

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

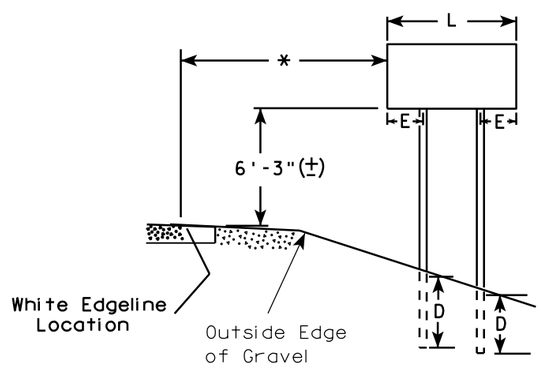
URBAN AREA

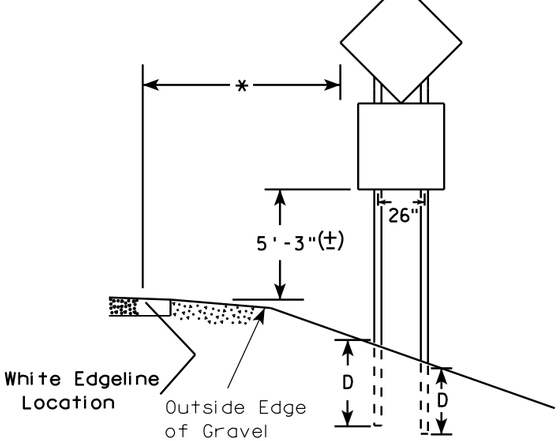




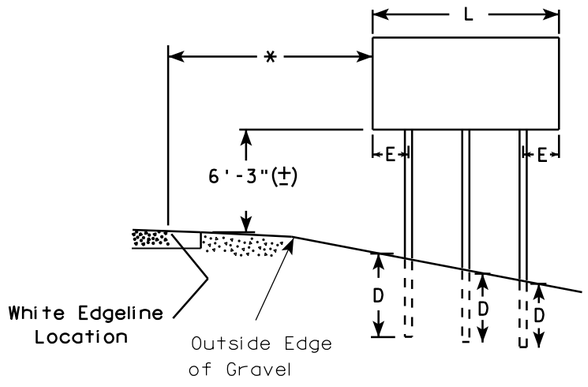
48" DIAMOND WARNING SIGN

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 (A4-5) 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 stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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 or 20 S.F. or less 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'

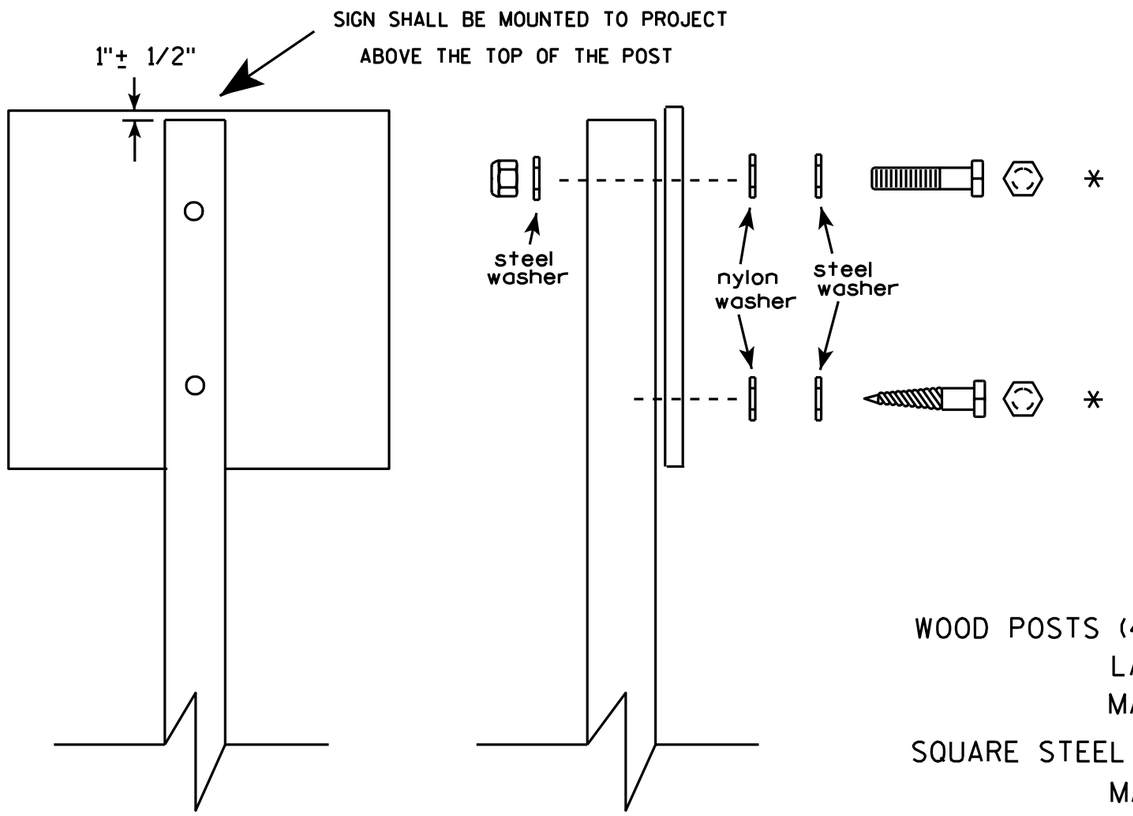
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-4 12

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

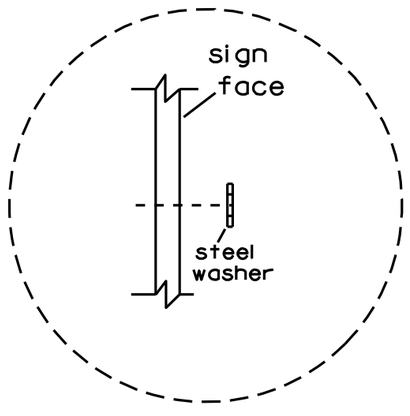
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

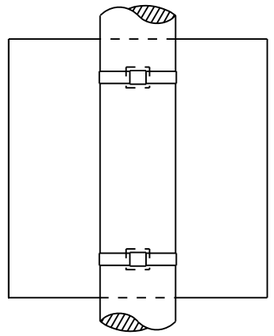
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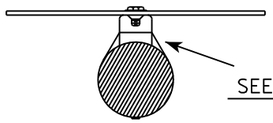
PROJECT NO:

SHEET NO: 130 E

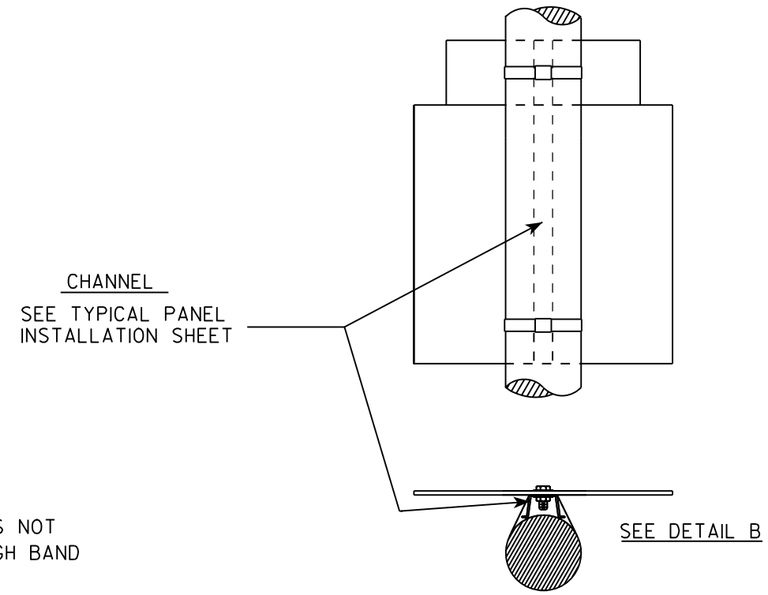
BANDING

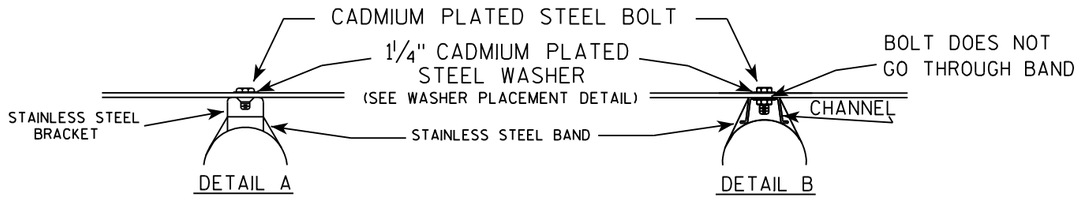
SINGLE SIGN



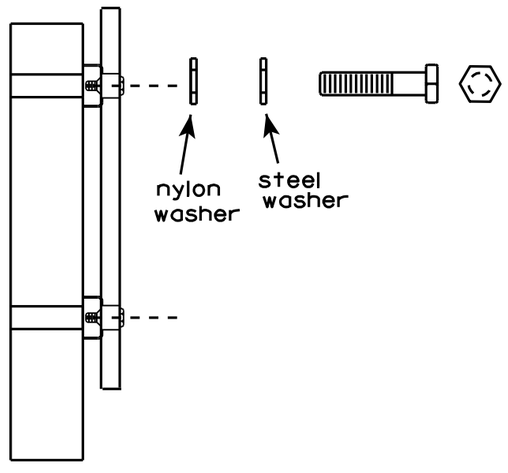


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 131	E



D7-73

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
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, corners and borders shall be rounded.

Metric equivalent for this sign is:

SIZE	
1	
2	1500 mm X 1050 mm
3	
4	
5	

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.	Area m²
1																												
2	60	42	2 1/4		3/4	4 1/2	6	4	5	4 3/4	3 1/4	4 1/4	11 1/2	2 3/4	3	5 7/8	20 5/8	4 1/8	7/8	24	23	5/8	17 3/8	1 1/4	4 3/8	10 5/8	17.5	1.58
3																												
4																												
5																												

STANDARD SIGN
D7-73

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Christa J Sprey for State Traffic Engineer

DATE 1/14/02 PLATE NO. D7-73.5

STATE PROJECT NUMBER:

SHEET NO: 132 E

FILE NAME : C:\Users\Projects\tr_stdplate\D773.DGN PLOT DATE : 22-JAN-2002 12:48 ORG DATE : 7/03/97 Originator : Don Kluever

WISDOT/CADDS SHEET 42

58,59,60,61,62,63

LEVELS ON - 2,3, 5,6, 10,

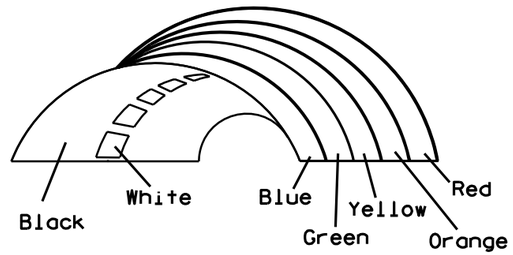
7

7



* VARIES

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
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.
5. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

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																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

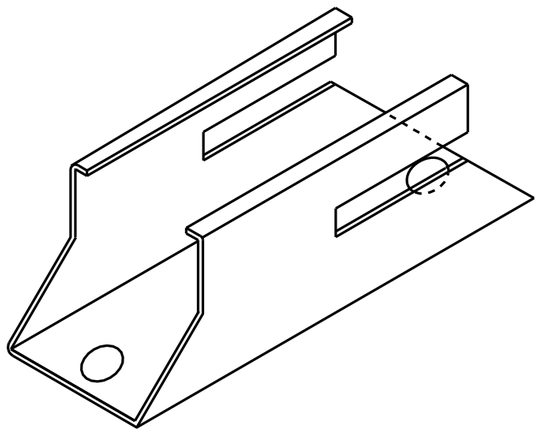
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

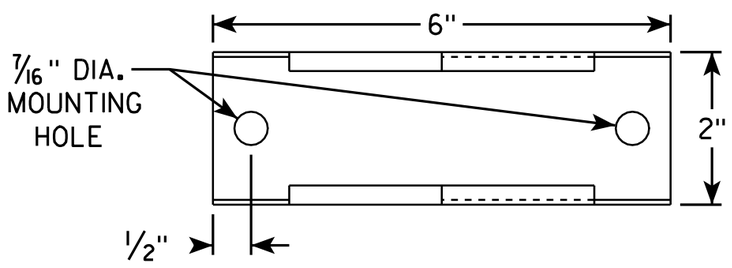
DATE 4/27/11 PLATE NO. 155-56.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 133

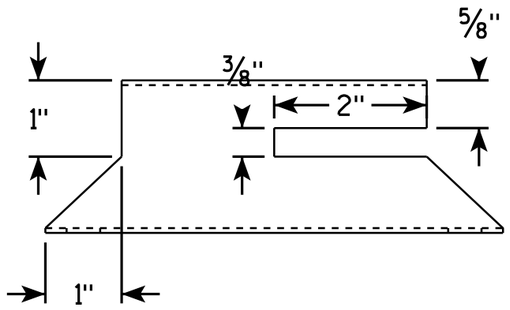
ISOMETRIC VIEW



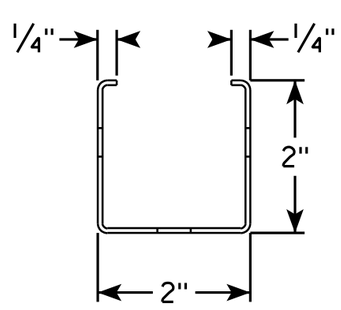
TOP VIEW



SIDE VIEW



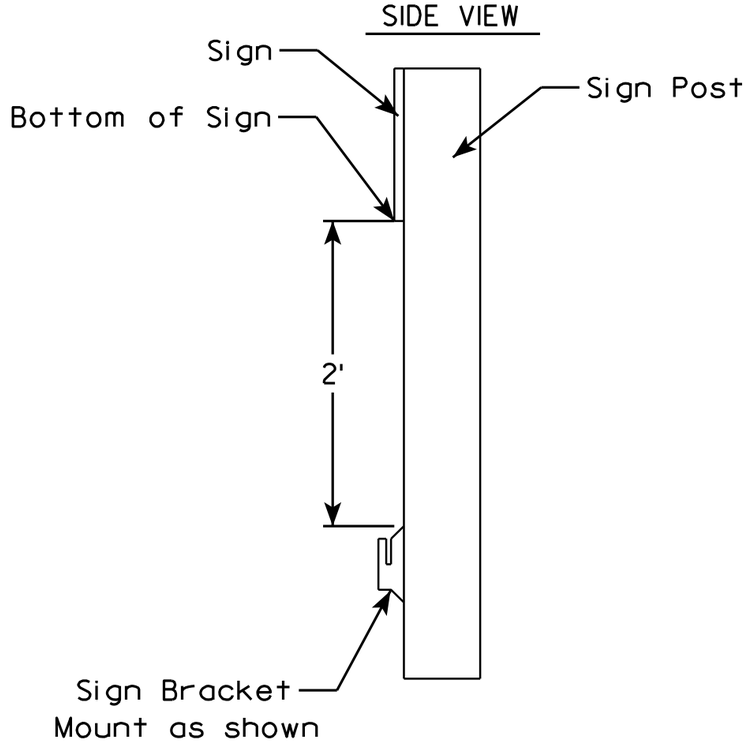
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW



ROLLUP SIGN BRACKET I55-56B

WISCONSIN DEPT OF TRANSPORTATION

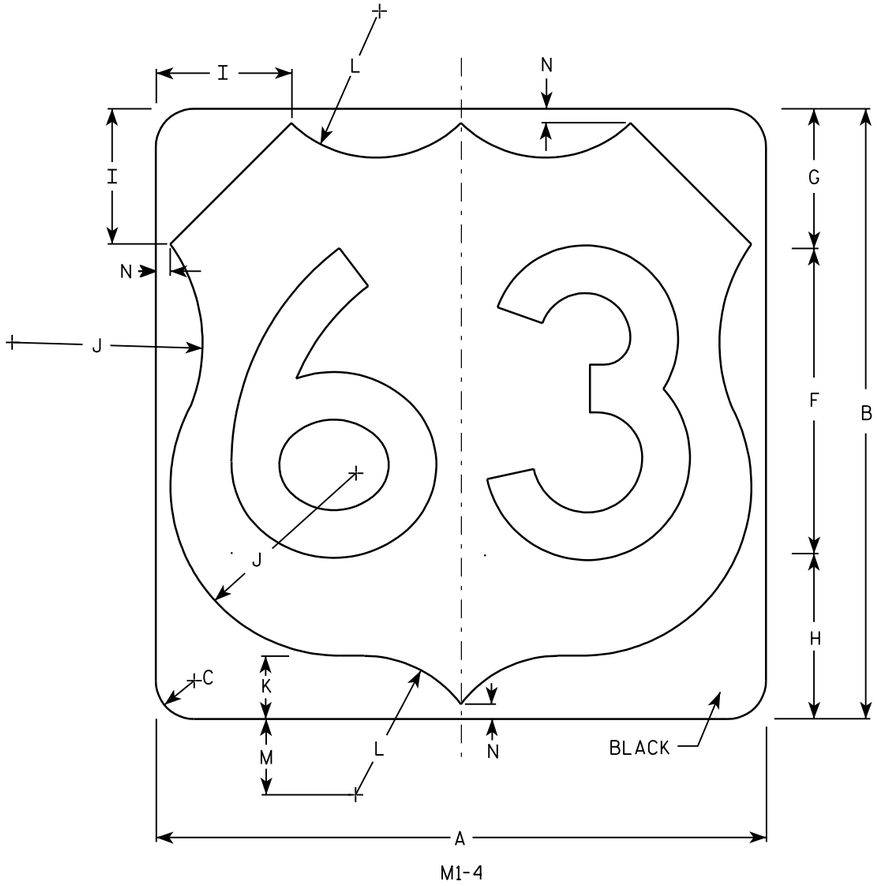
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

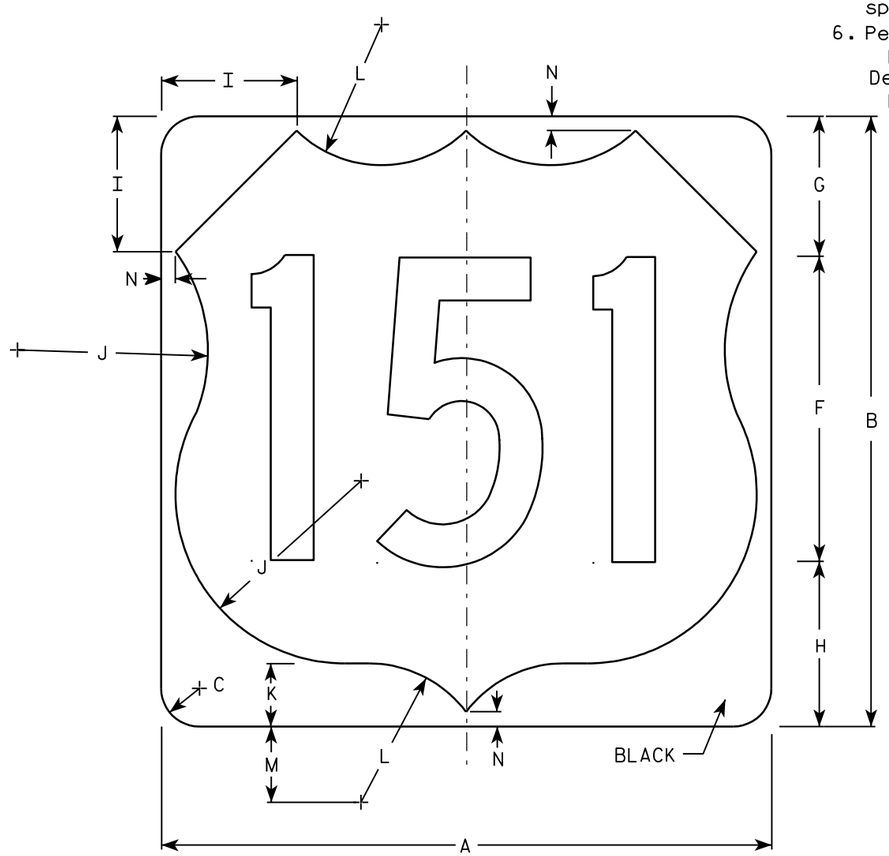
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 134	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
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.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

7

7

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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.	Area m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

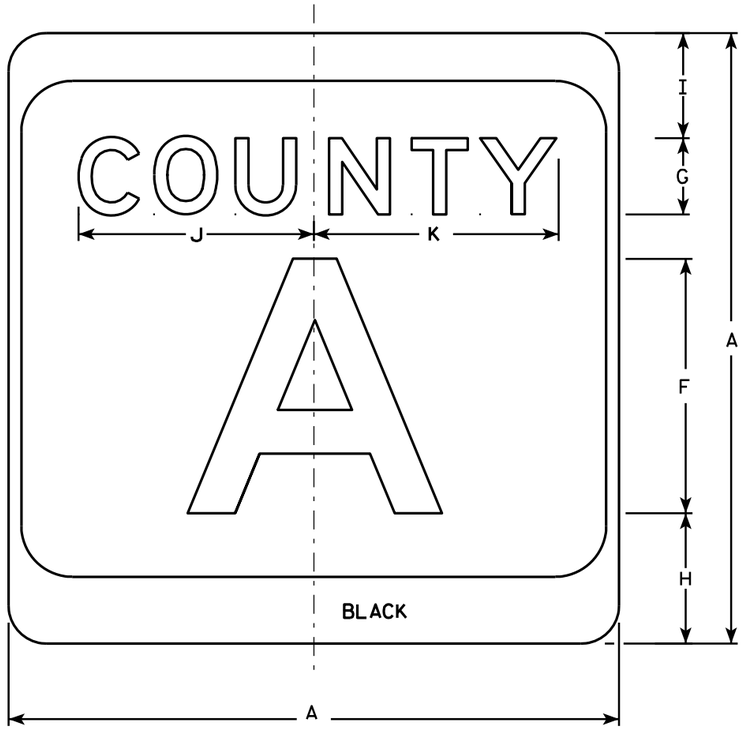
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

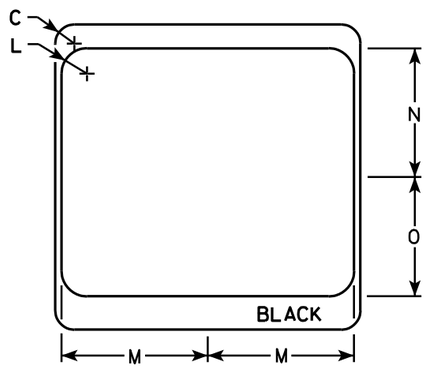
APPROVED Matthew R Rauch
for State Traffic Engineer

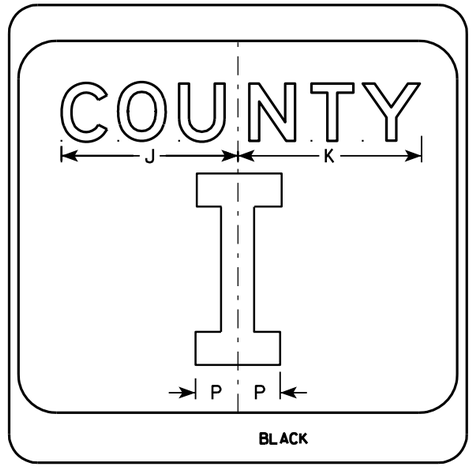
DATE 08/25/05 PLATE NO. M1-4.9

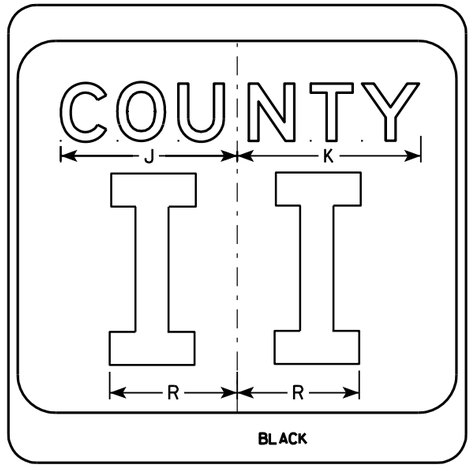
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 135	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
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.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

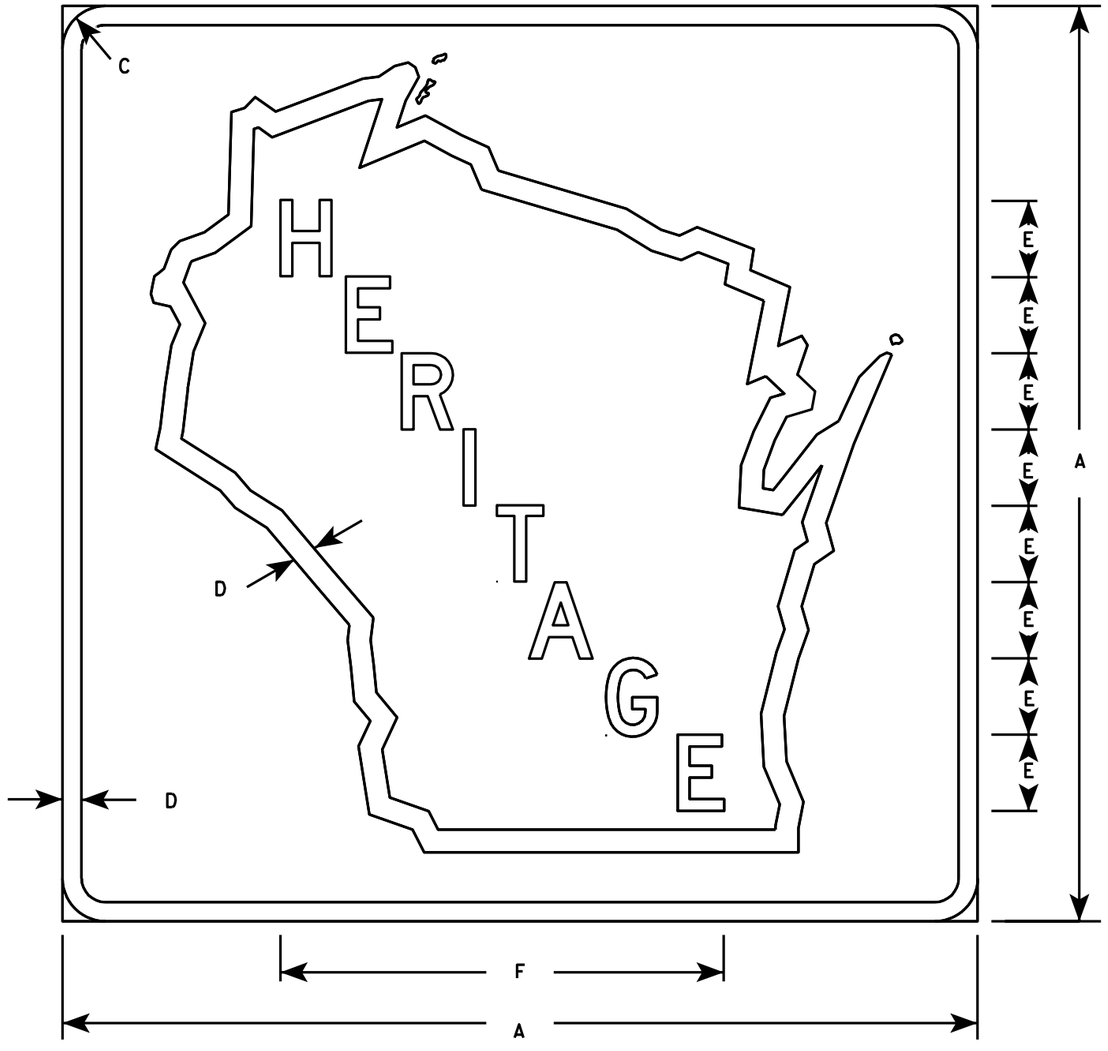
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 136 | E



M1-85

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
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.

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm x 600 mm
3	
4	
5	

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.	Area m2
1																												
2	24		1 1/8	1/2	2	11 3/4																					4.0	0.36
3																												
4																												
5																												

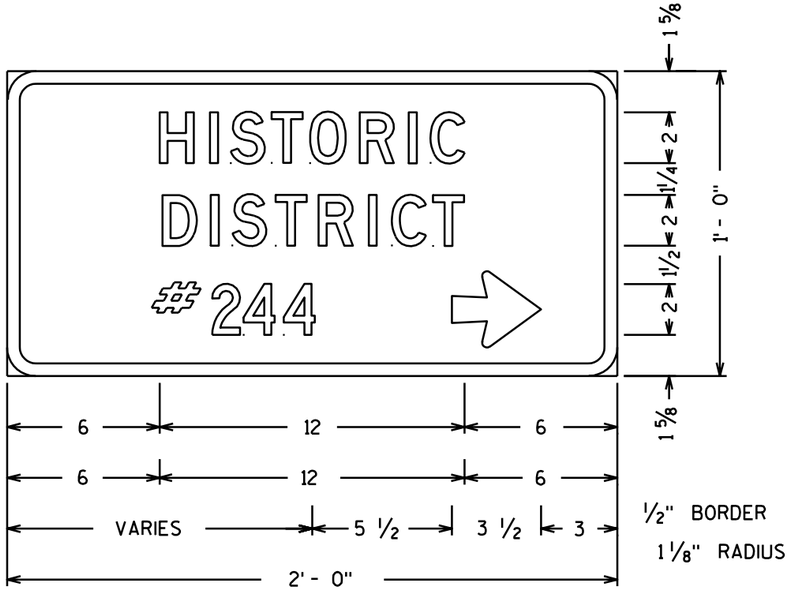
STANDARD SIGN
M1-85

WISCONSIN DEPT OF TRANSPORTATION

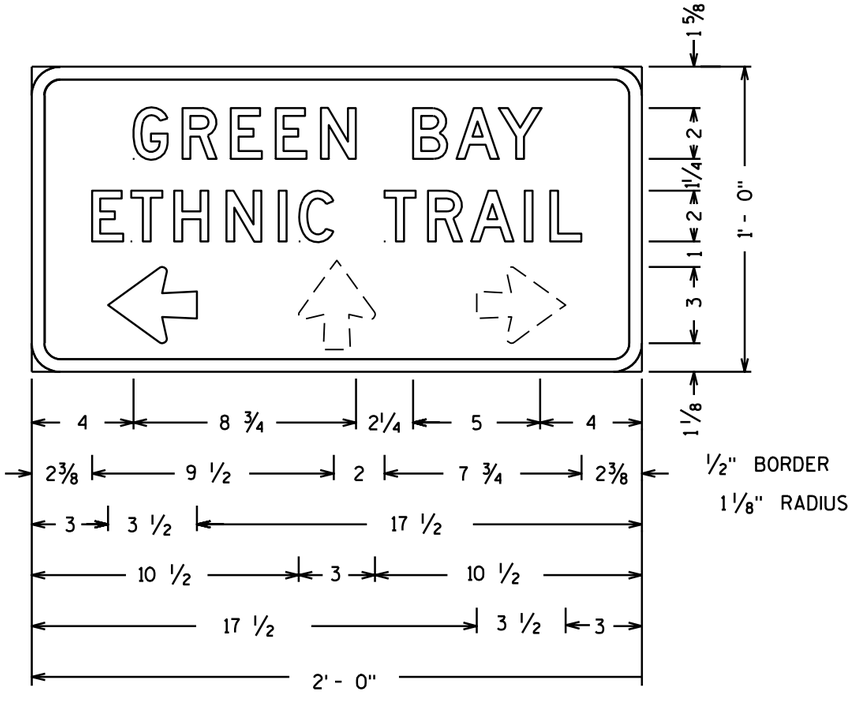
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-85.2

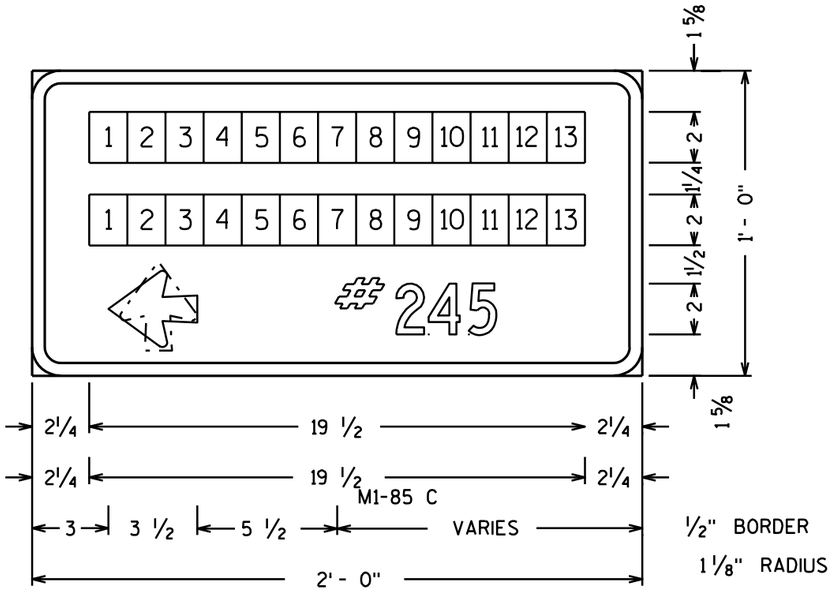
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 137	E



M1-85 D



M1-85 B



M1-85 C

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
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.

Metric equivalent for this sign is:

300 mm x 150 mm

For good legibility, 2" Series D copy will allow approximately 13 letters/characters per message line. The message shall be opitically balanced about the centerline of the sign.

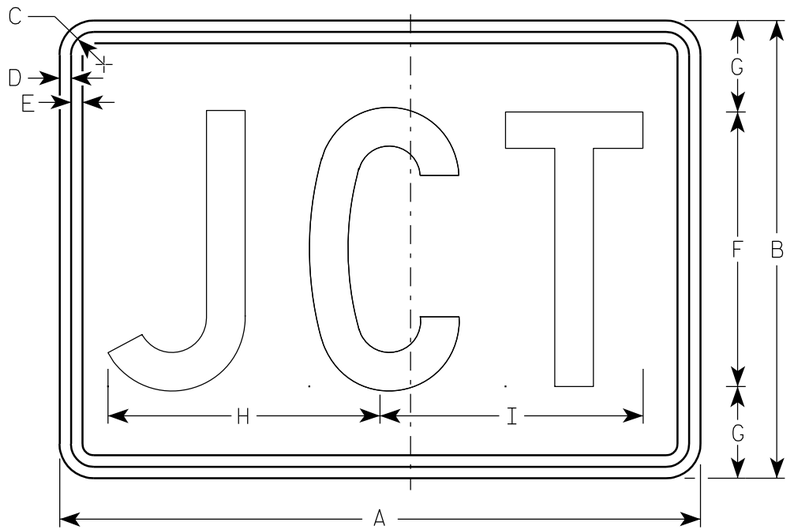
STANDARD SIGN
M1-85 B, C & D

WISCONSIN DEPT OF TRANSPORTATION

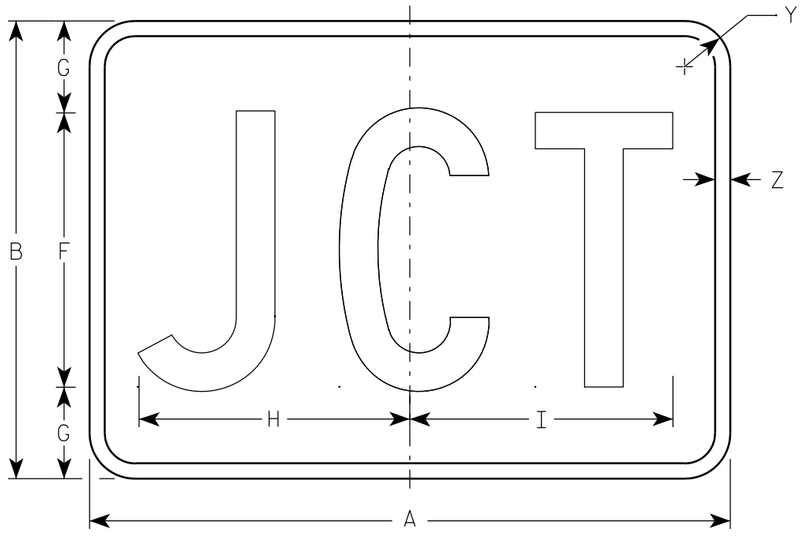
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-85B.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 138	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

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.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

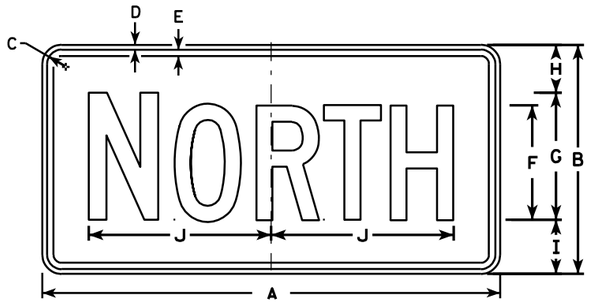
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

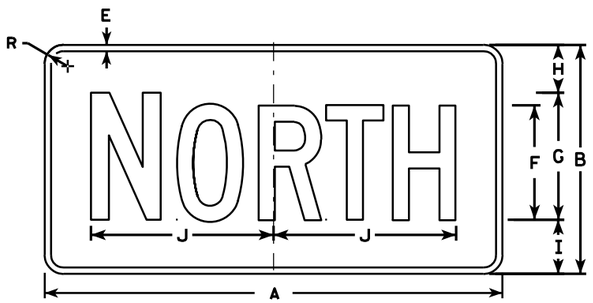
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

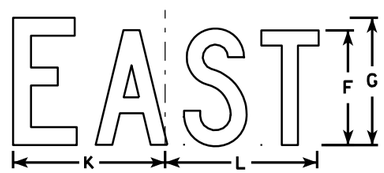
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 139	E



M3-1
MK3-1
MO3-1



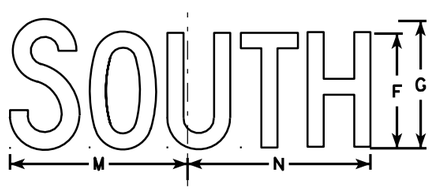
MB3-1
MG3-1
MM3-1
MN3-1



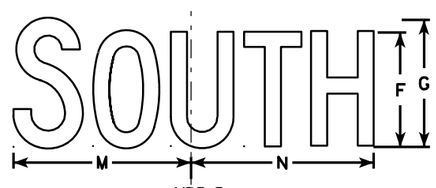
M3-2
MK3-2
MO3-2



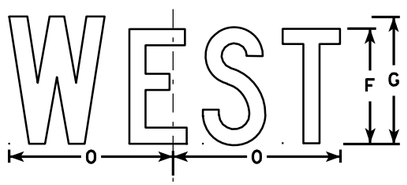
MB3-2
MG3-2
MM3-2
MN3-2



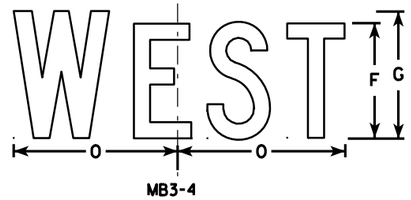
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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.
5. M3-1 thru M3-4 Background - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green
   Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green
   Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective
   Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

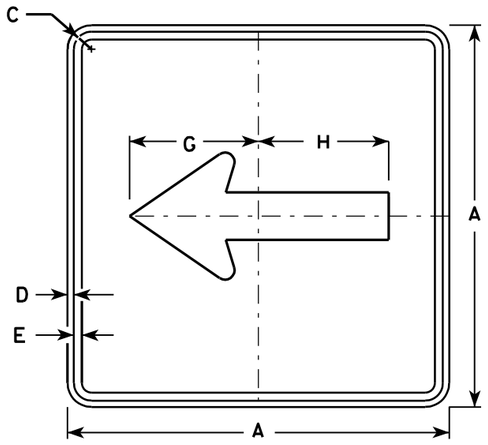
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

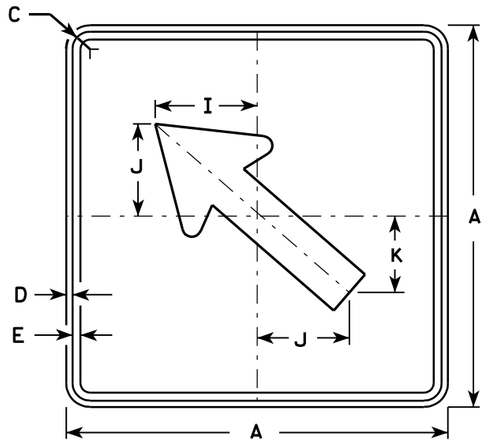
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

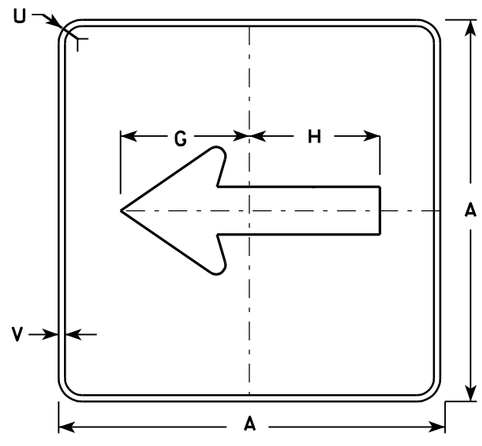
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 140	E



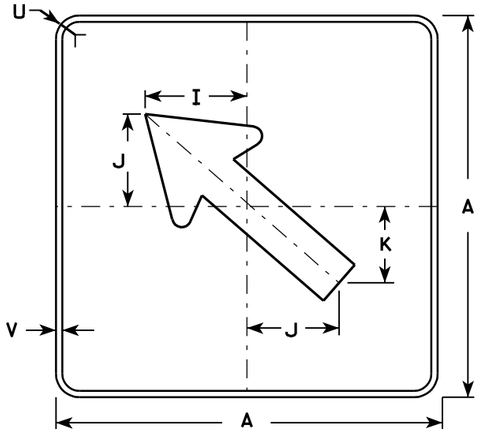
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective
   Message - Black

   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H Reflective

   MG6-1 and MG6-2 Background - Green
   Message - White - Type H Reflective

   MK6-1 and MK6-2 Background - Green
   Message - White - Type H Reflective

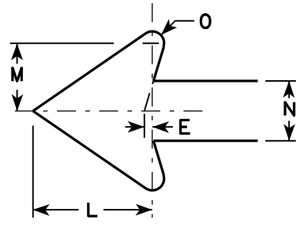
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green

   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective

   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black

   MP6-1 and MP6-2 Background - White - Type H Reflective
   Message - Blue

   MR6-1 and MR6-2 Background - Brown
   Message - Yellow - Type H Reflective



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																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

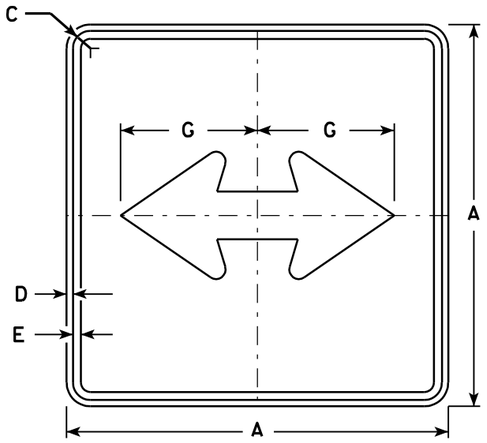
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

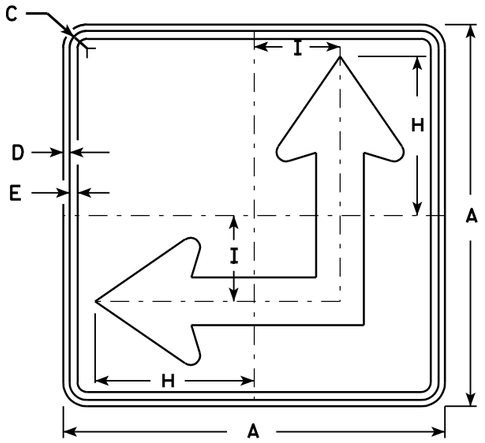
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

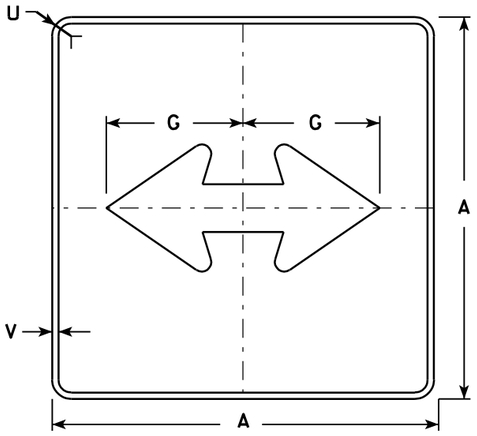
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E



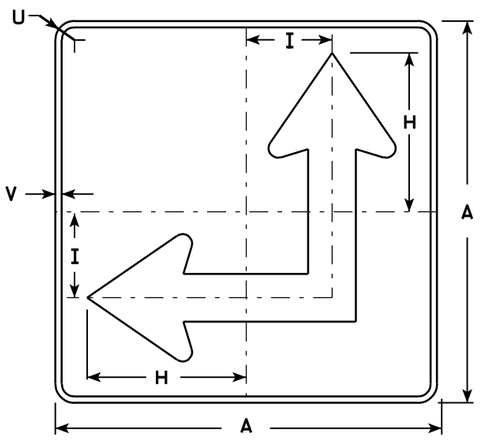
M6-4
MK6-4
MM6-4
MO6-4
MP6-4
MR6-4



M6-6
MK6-6
MM6-6
MO6-6
MP6-6
MR6-6



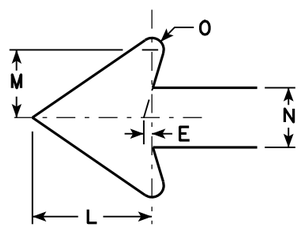
MB6-4
MG6-4
MN6-4



MB6-6
MG6-6
MN6-6

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White - Type H Reflective
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White - Type H Reflective
   MG6-4 and MG6-6 Background - Green
   Message - White - Type H Reflective
   MK6-4 and MK6-6 Background - Green
   Message - White - Type H Reflective
   MM6-4 and MM6-6 Background - White - Type H Reflective
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White - Type H Reflective
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White - Type H Reflective
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow - Type H Reflective
5. M6-6R same as M6-6L except arrow points ahead and right.



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																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

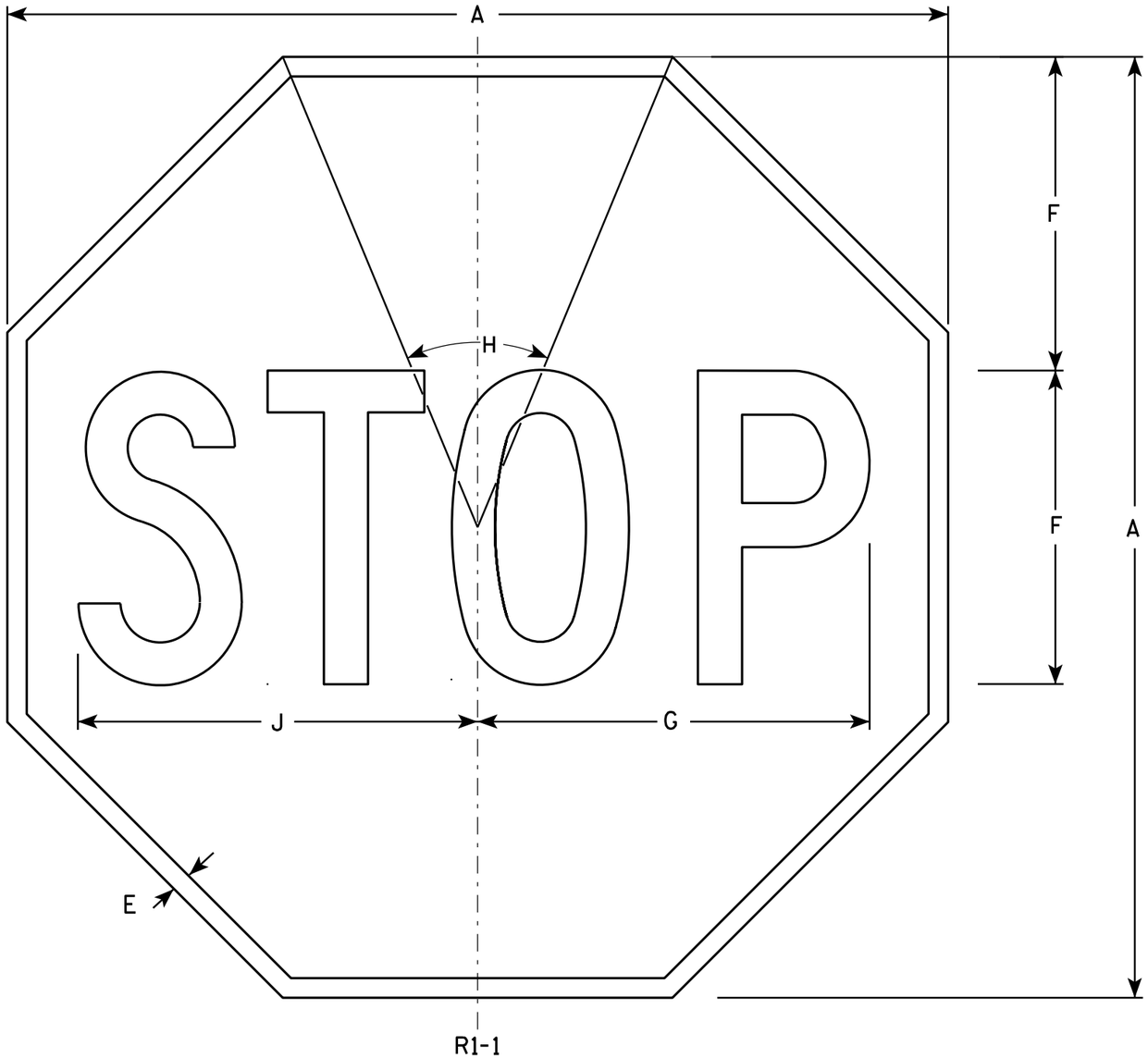
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-4.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 142 | E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

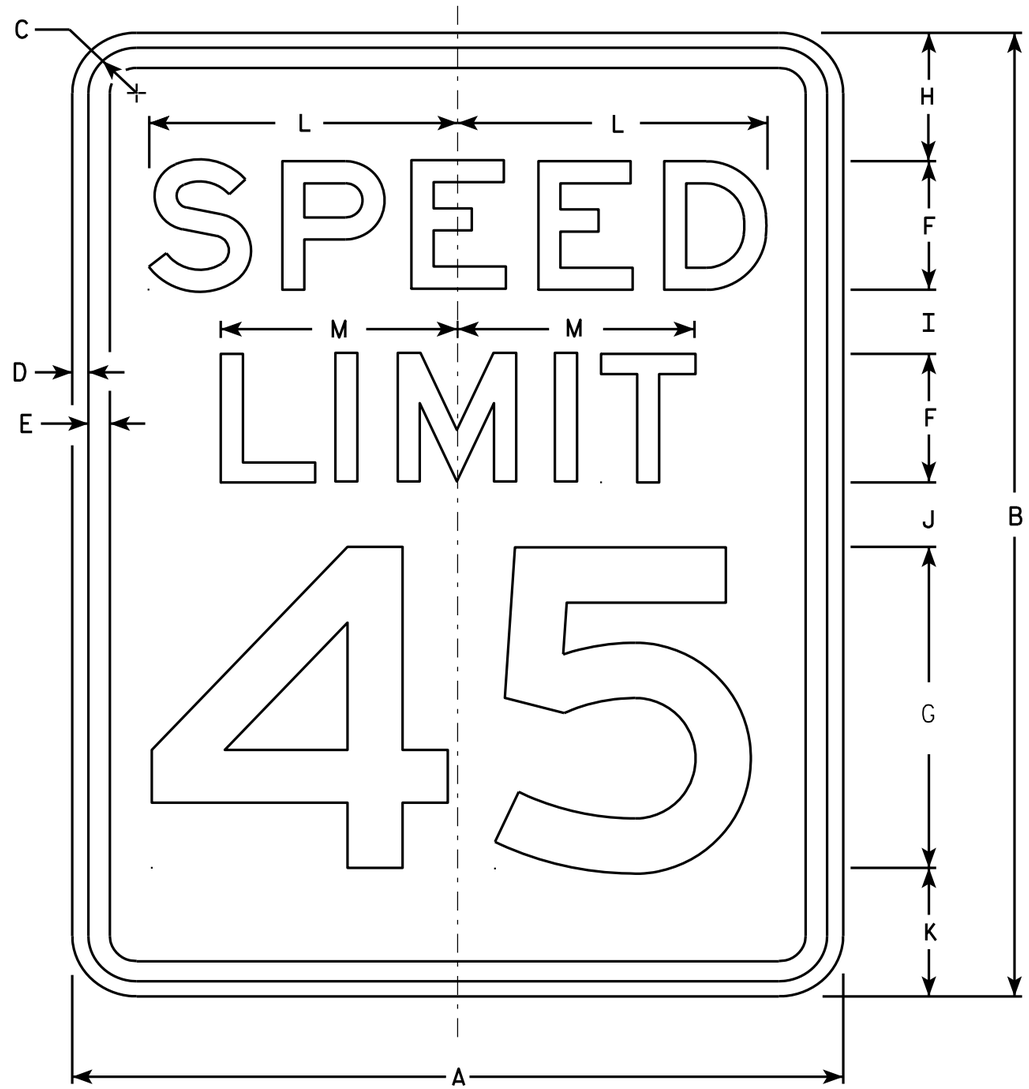
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 143	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

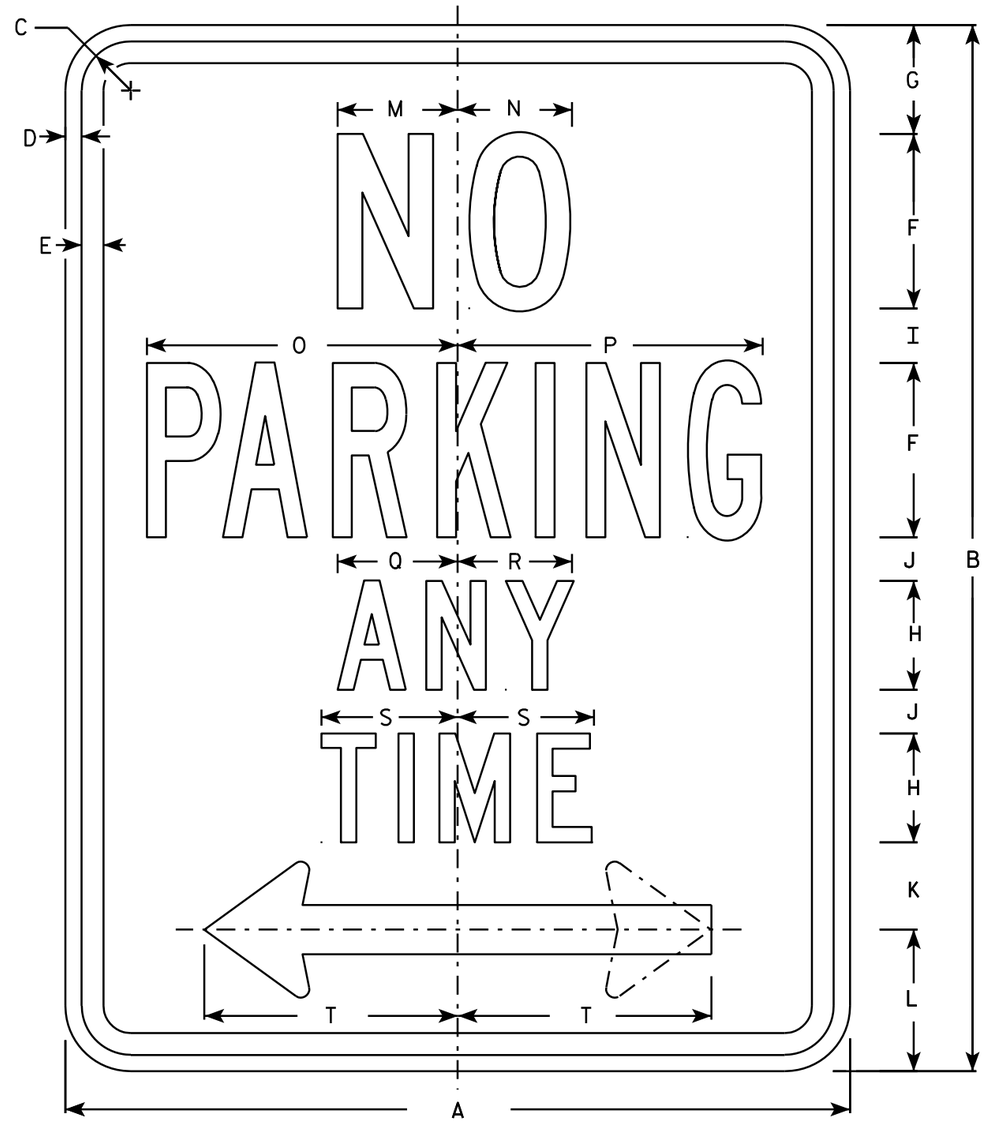
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

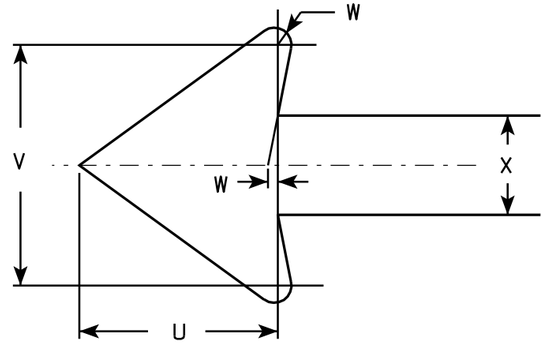
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 144	E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
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.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

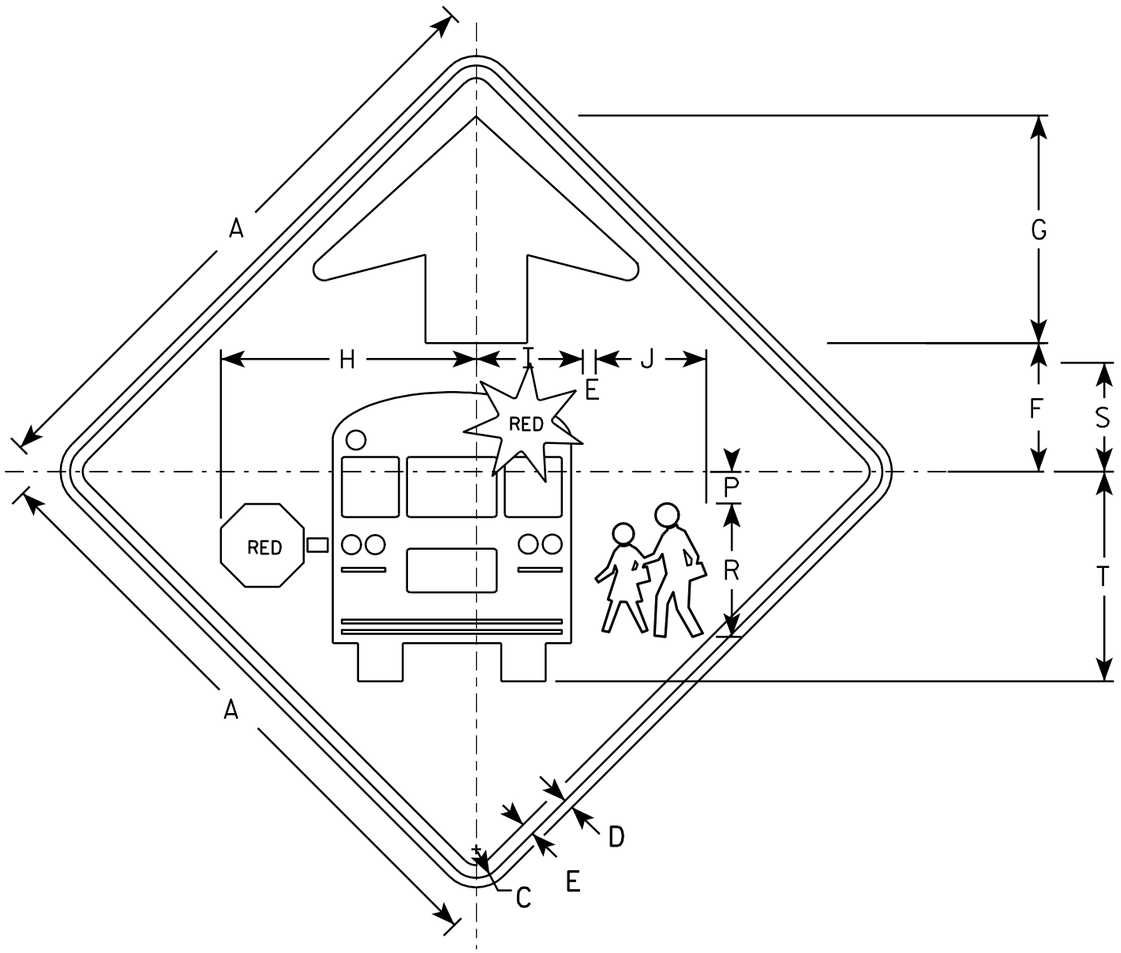
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

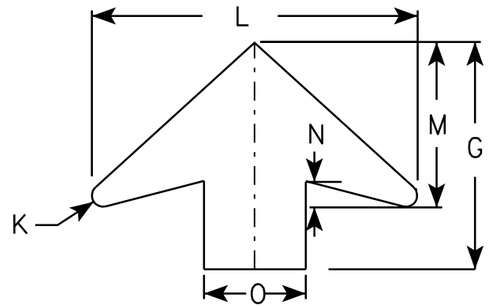
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E



S3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW-GREEN
   Message - BLACK except as noted
   Circles except PEDS- RED BACKGROUND
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	12 1/2	5 1/4	5 1/2	1/2	16	8	1 1/4	5	1 1/2		6 5/8	5 3/8	10 3/8							6.25
2	36		1 5/8	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
3	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
4	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
5																											

STANDARD SIGN
S3-1

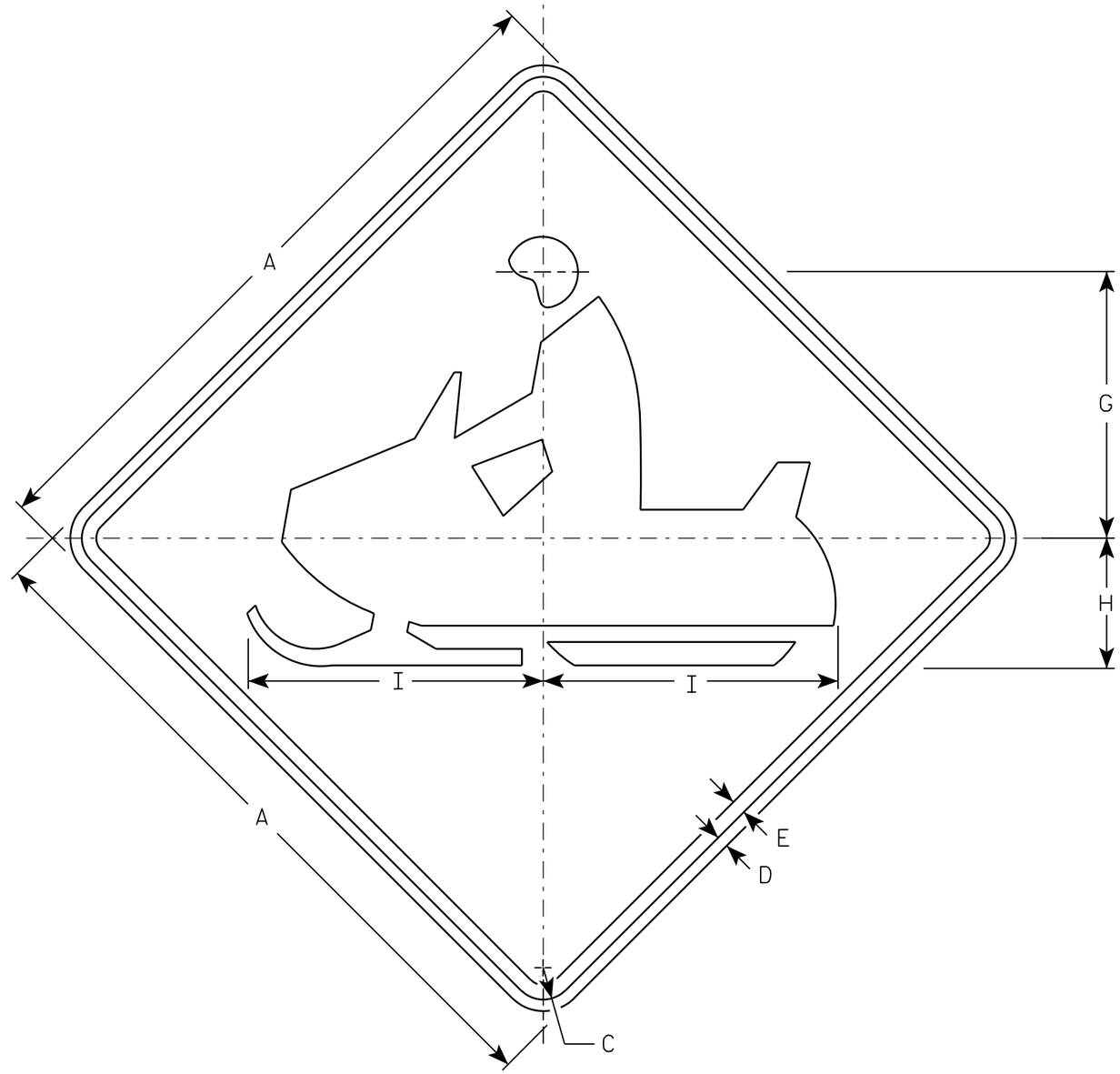
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/8/10 PLATE NO. S3-1.6

PROJECT NO:

SHEET NO: 146 E



W11-6

NOTES

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

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		9 1/2	4 1/2	10 1/4																		4.0
2S	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
2M	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
3	36		1 5/8	5/8	3/4		14 1/8	6 3/4	15 1/4																		9.0
4	48		2 1/4	3/4	1		19	9	20 1/2																		16.0
5																											

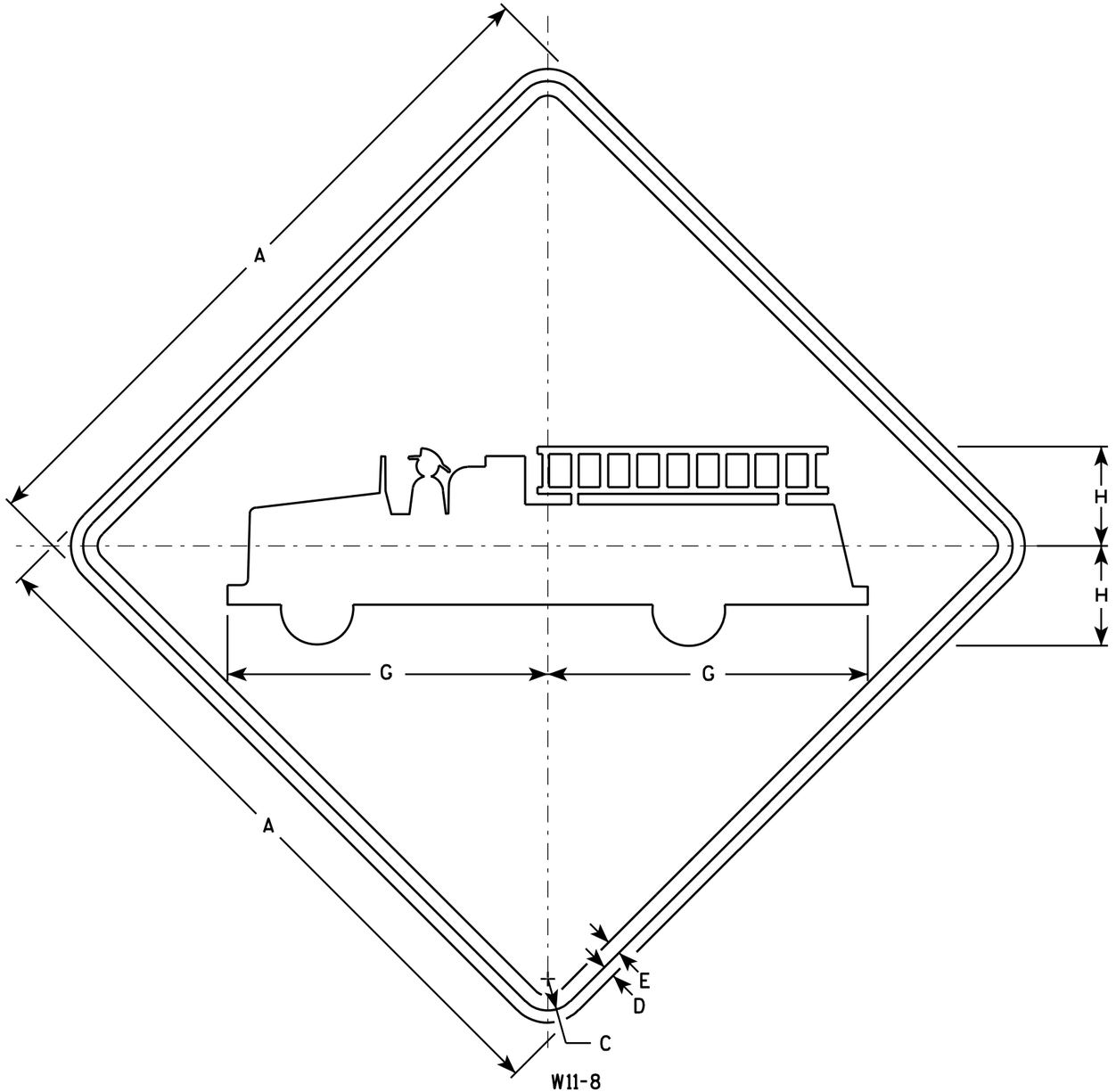
STANDARD SIGN
W11-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W11-6.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 147	E



W11-8

NOTES

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

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		11	3 3/8																			4.0
2S	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
2M	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
3	36		1 5/8	5/8	3/4		16 1/2	5 1/4																			9.0
4	48		2 1/4	3/4	1		22	7																			16.0
5																											

STANDARD SIGN
W11-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W11-8.7

PROJECT NO:

SHEET NO: 148 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W118.DGN PLOT DATE : 13-MAR-2013 12:58 PLOT BY : mscj9h

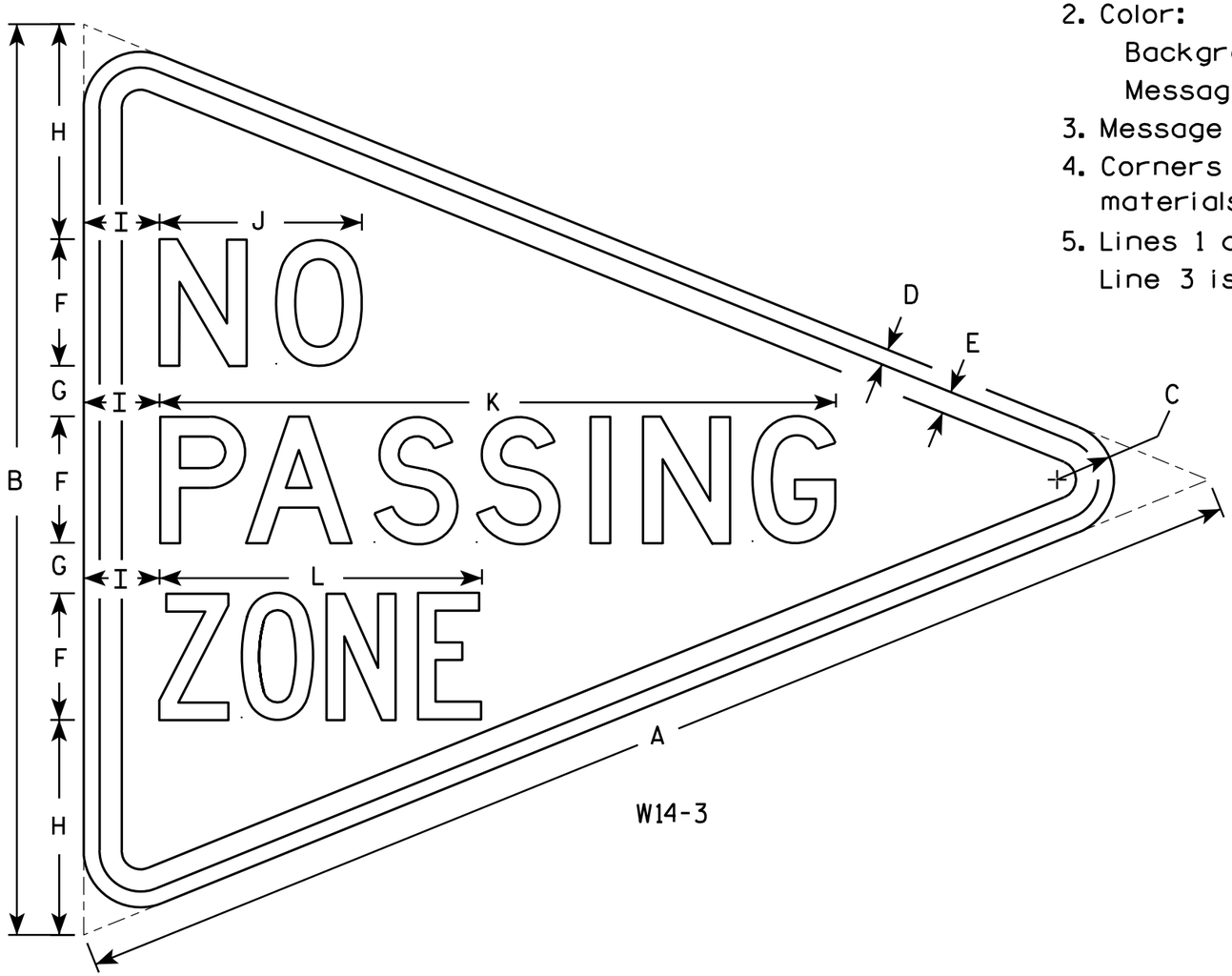
WISDOT/CADDS SHEET 42

7

7

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 - See note 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

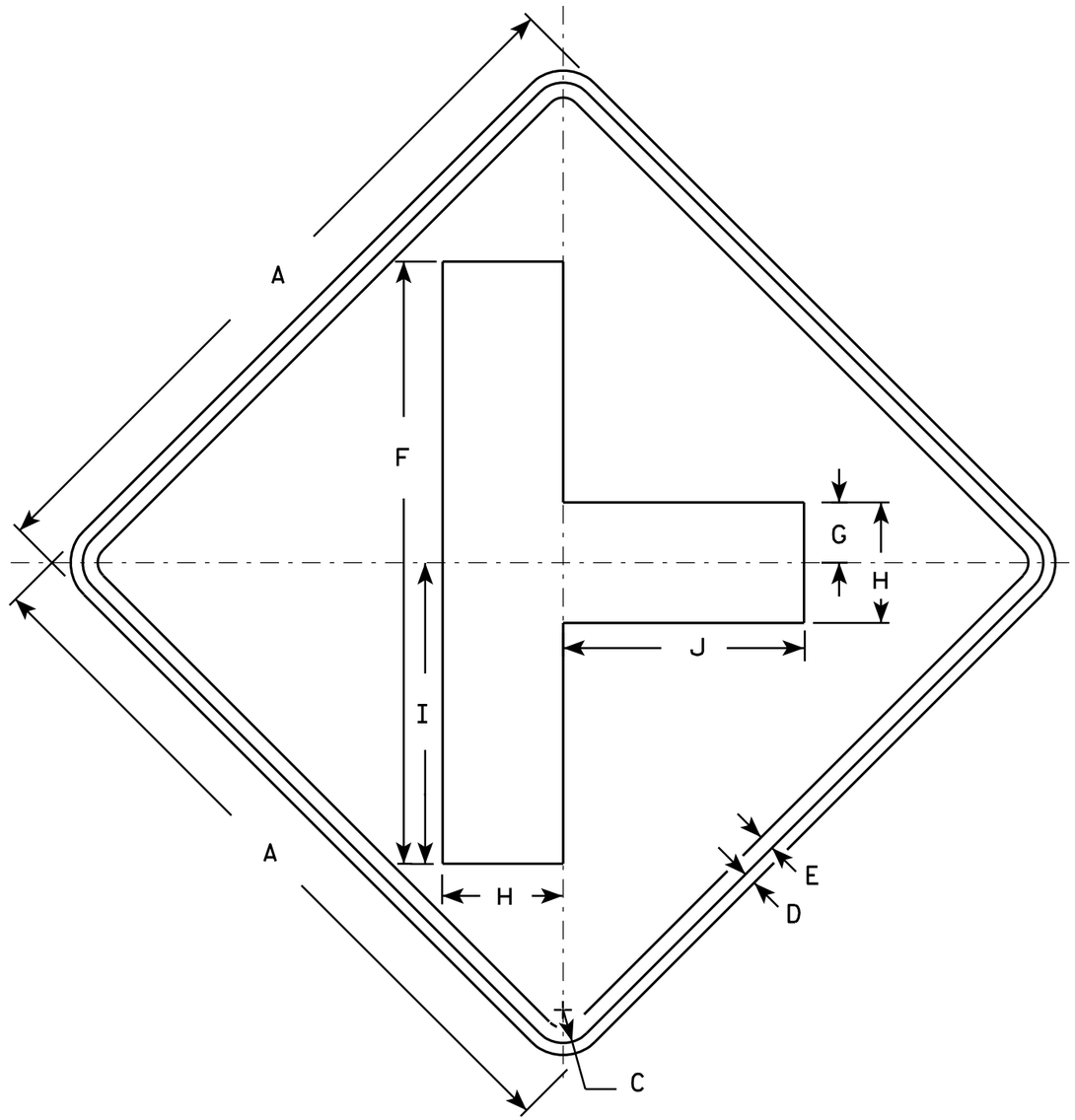
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 149	E



W2-2

NOTES

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

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	20	2	4	10	8																	4.0
2S	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
2M	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
3	36		1 5/8	5/8	3/4	30	3	6	15	12																	9.0
4	48		2 1/4	3/4	1	40	4	8	20	16																	16.0
5																											

STANDARD SIGN
W2-2

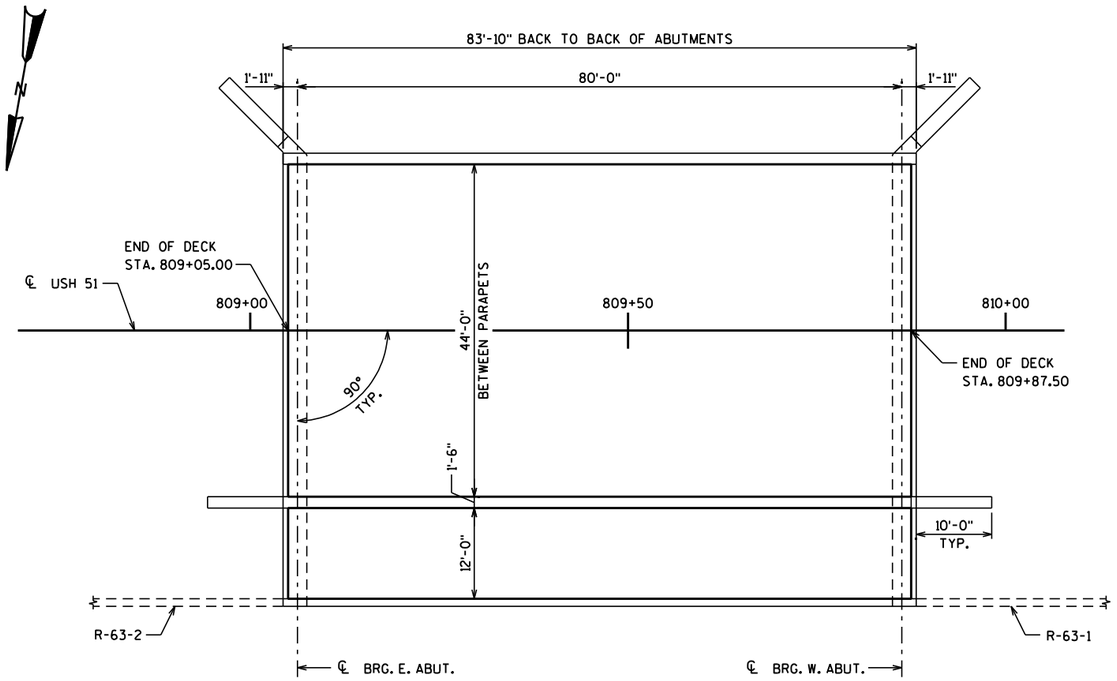
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-2.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 150	E

STATE PROJECT NUMBER
1170-21-61



PLAN

SINGLE SPAN - 45" PRESTRESSED GIRDERS

ESTIMATE OF QUANTITIES

509.5100.S POLYMER OVERLAY ——— 513 SY

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS ARE BASED ON EXISTING PLANS.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING	HS-20
INVENTORY RATING FACTOR	RF = HS-21
OPERATING RATING FACTOR	RF = HS-44
WISCONSIN STD. PERMIT VEHICLE (Wis-SPV)	250 KIPS

BRIDGE OFFICE CONTACT

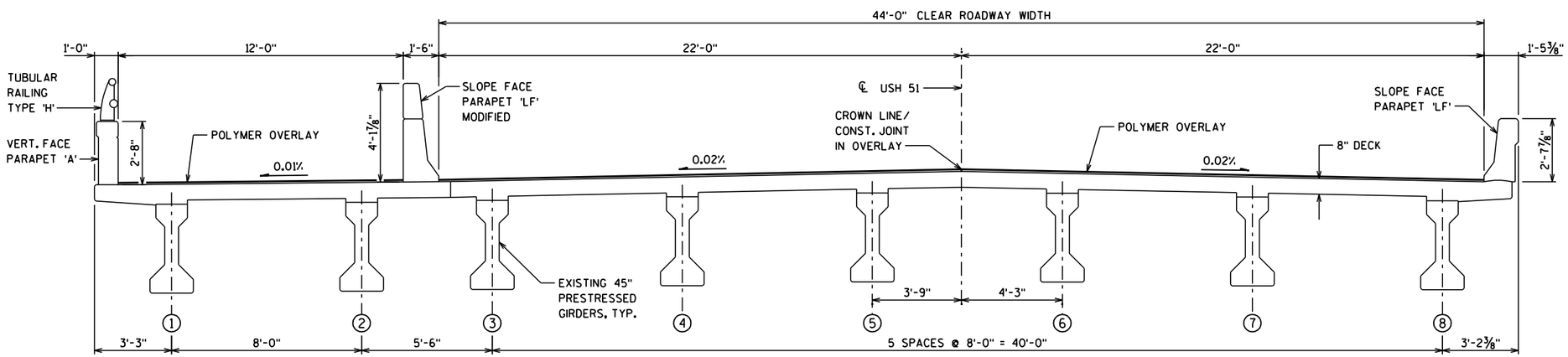
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT

KRISTOFER OLSON
OMNNI ASSOCIATES
(920) 735-6900

WISCONSIN
KRISTOFER R. OLSON
E-35236
APPLETON, WI
PROFESSIONAL ENGINEER

1/28/14



CROSS SECTION THRU ROADWAY

(LOOKING EAST)

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher KAR 02/19/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-63-18

USH 51 OVER SPIDER LAKE

COUNTY	TOWN
VILAS	MANITOWISH WATERS

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
BRE	KRO	BRE	KRO

GENERAL PLAN

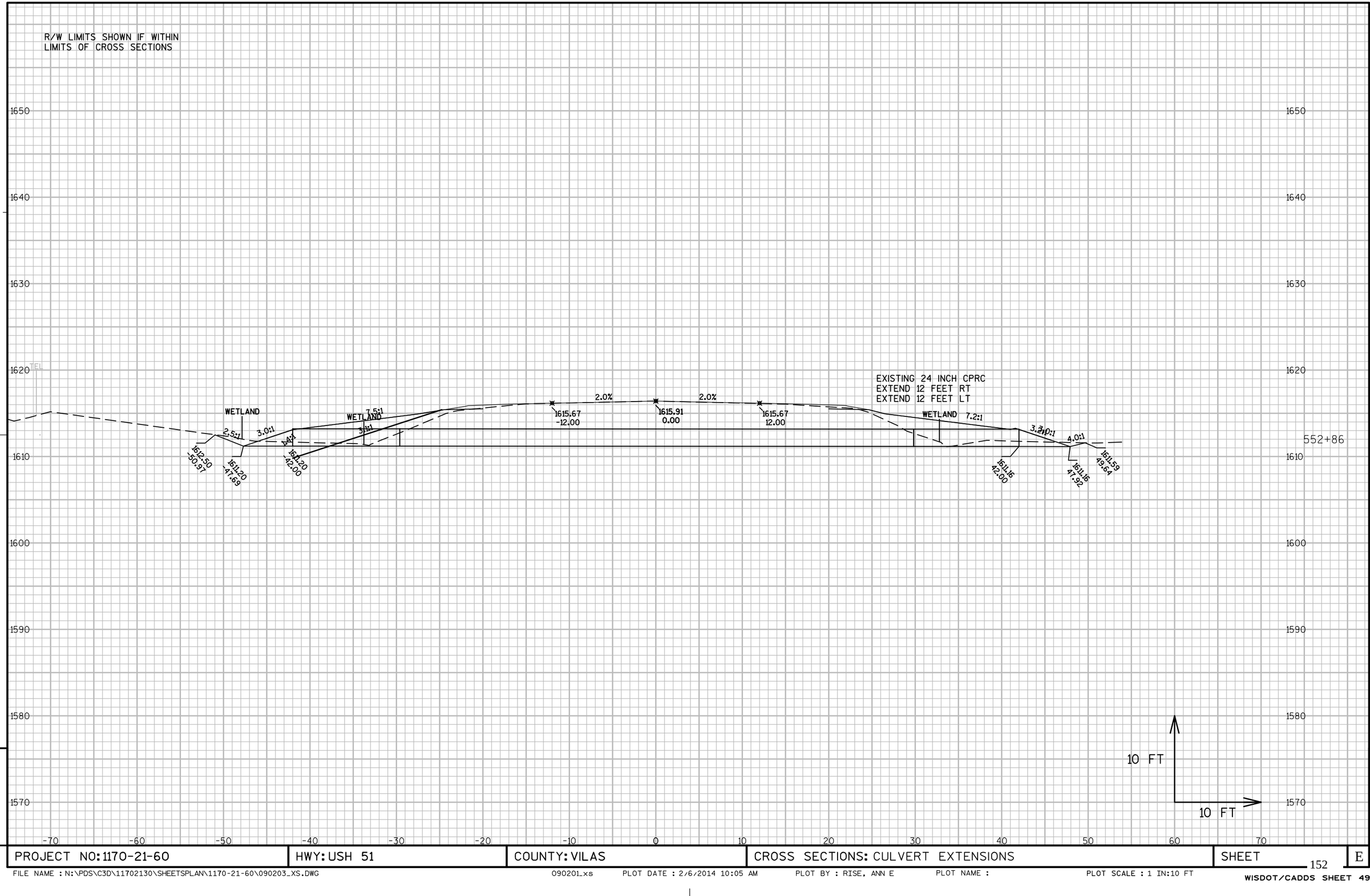
SHEET 1 OF 1

151

8

8

R/W LIMITS SHOWN IF WITHIN
LIMITS OF CROSS SECTIONS



9

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT EXTENSIONS	SHEET 152	E

9

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090203_XS.DWG 090201_xs PLOT DATE : 2/6/2014 10:05 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

EXISTING 24 INCH CMCP LINED
EXTEND 12 FEET RT
EXTEND 12 FEET LT

557+44

1650
1640
1630
1620
1610
1600
1590
1580

2.0%
2.0%
6.0%
6.0%
3.0:1
3.0:1
2.5:1
2.5:1
WETLAND
WETLAND

1617.23 -59.52
1612.57 -48.00
1612.57 -42.00
1617.69 -22.04
1617.49 -12.02
1617.73 0.00
1617.49 12.02
1617.81 20.00
1614.00 22.92
1611.32 42.07
1611.20 50.54
1612.53 53.85

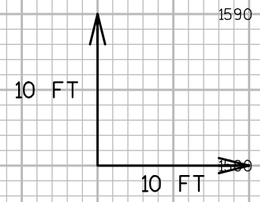
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

10 FT
10 FT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT EXTENSIONS	SHEET	E

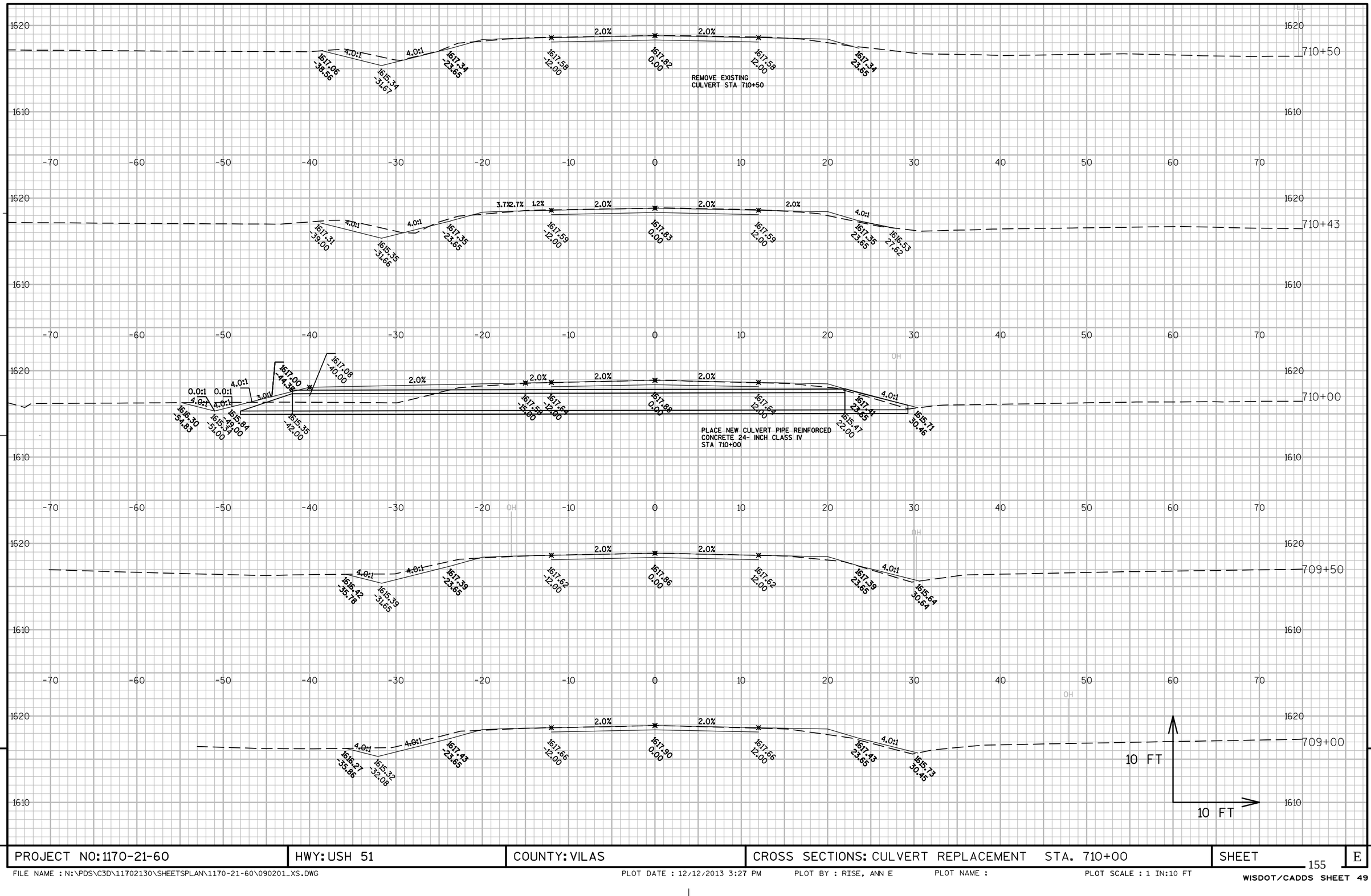
FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090203_XS.DWG 090202_xs PLOT DATE : 2/6/2014 10:05 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

EXISTING 20 INCH X 30 INCH
ALUMINUM CMCP
EXTEND 12 FEET RT
EXTEND 10 FEET LT

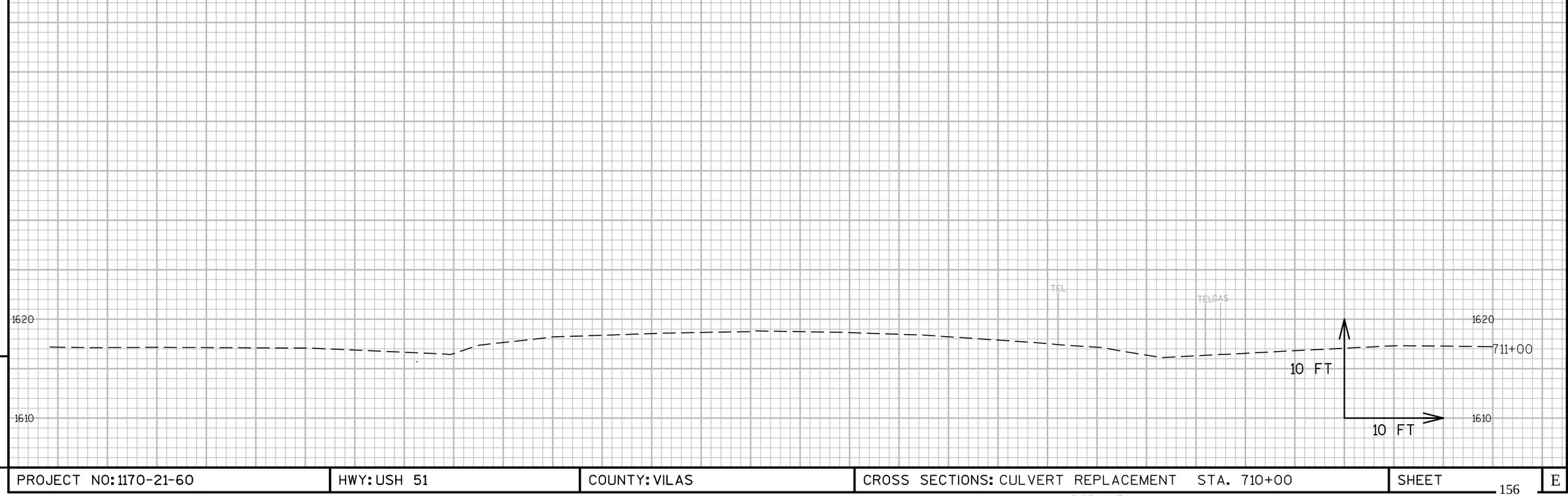


PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT EXTENSIONS	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090203_XS.DWG 090203_xs PLOT DATE : 2/6/2014 10:05 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



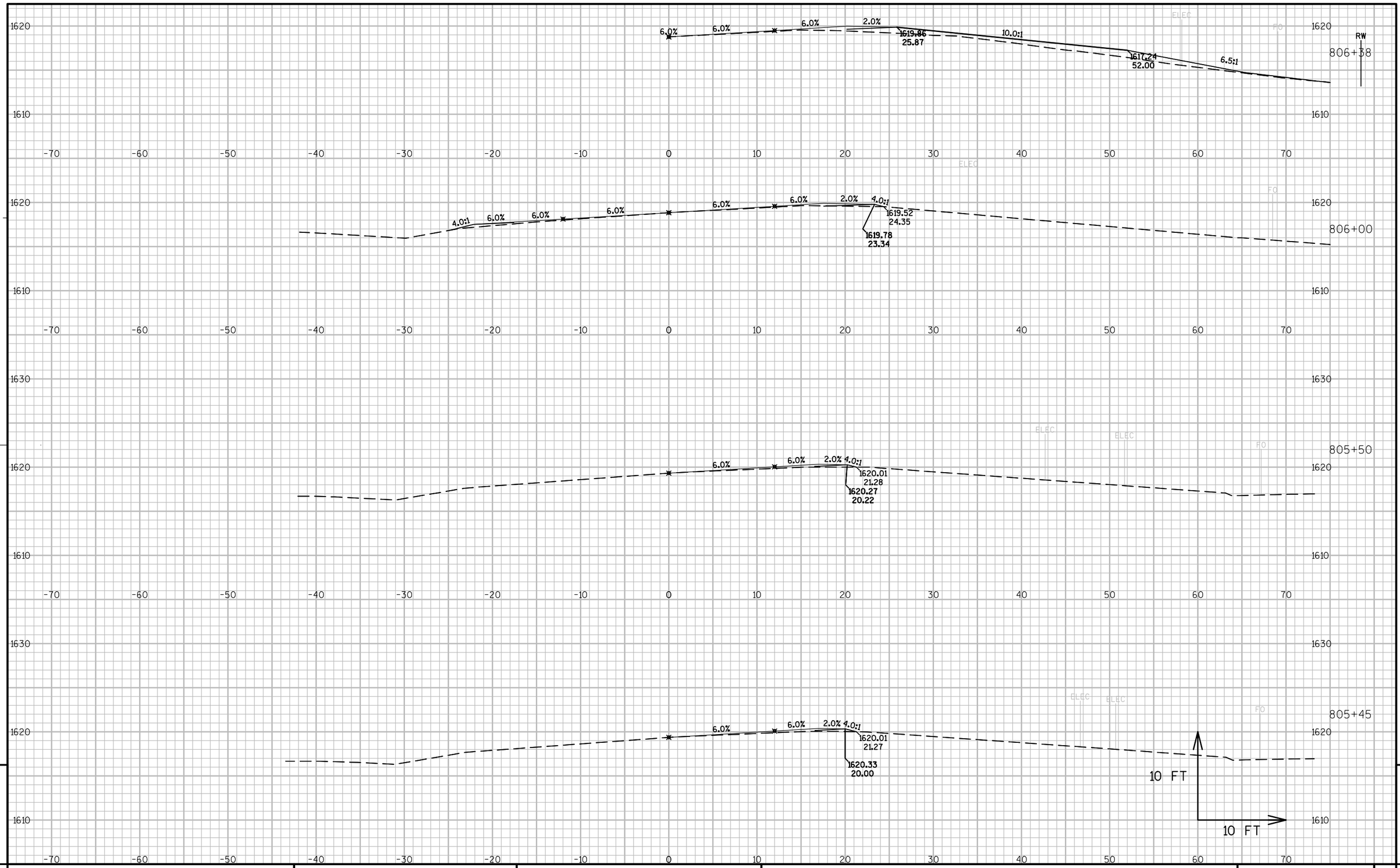
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT REPLACEMENT STA. 710+00	SHEET	E



9

9

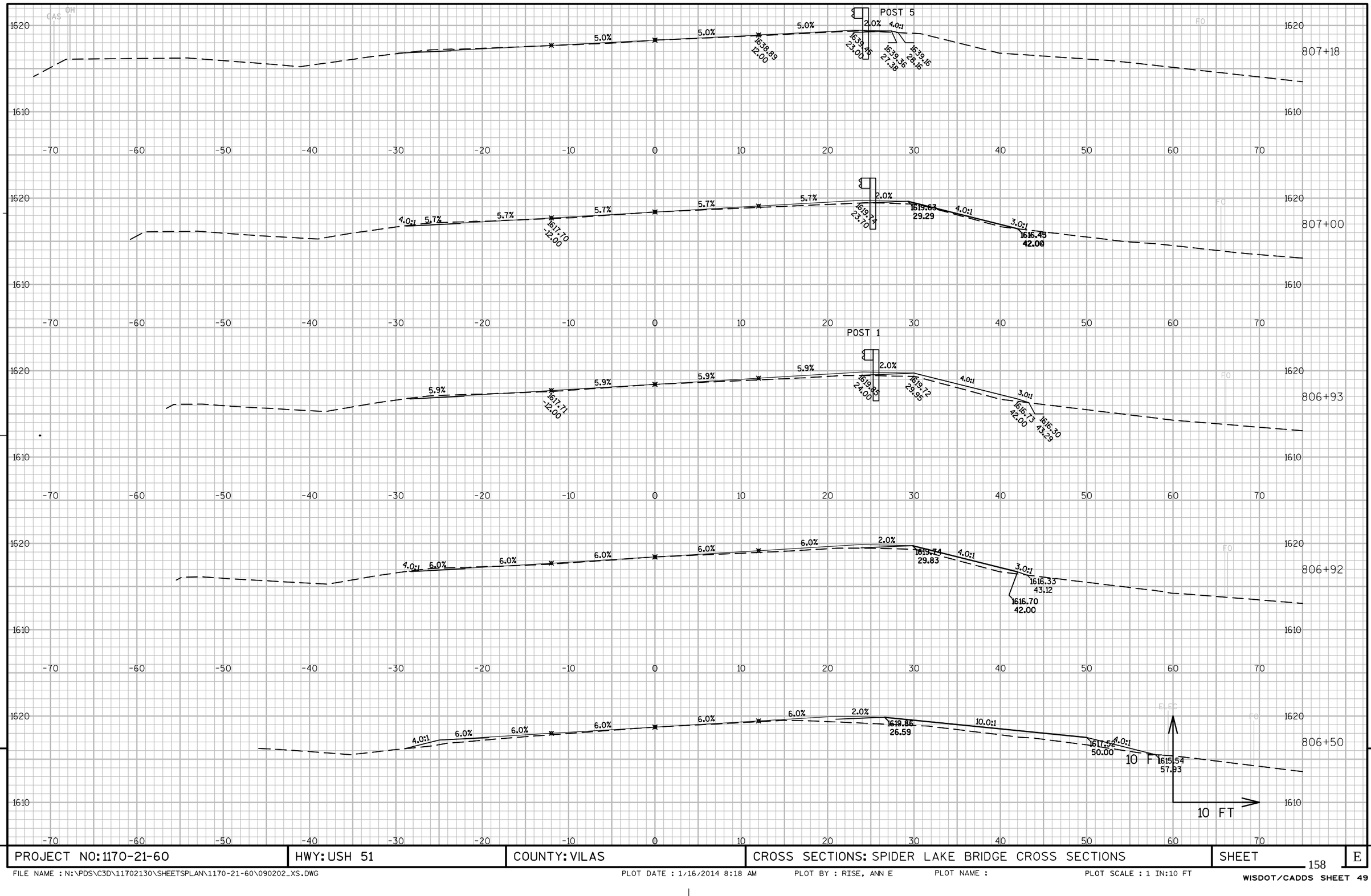
PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT REPLACEMENT STA. 710+00	SHEET 156	E



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 10:38 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET 158	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 8:18 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

POST 5

807+51

3.8% 3.9% 3.8% 3.8% 3.9% 5.0%

1617.07 -27.38 | 1617.24 -23.00 | 1617.66 -12.00 | 1618.57 12.00 | 1618.96 22.00 | 1618.76 25.89

807+50

4.0% 3.9% 3.9% 3.9% 3.9% 3.9% 5.0% 2:1

1617.23 -23.29 | 1618.59 12.00 | 1618.97 22.00 | 1618.76 25.93 | 1618.78 25.89

807+46

4.0% 4.0% 4.0% 4.0% 4.0% 4.0% 5.0% 2:1

1617.03 -27.84 | 1617.21 -23.21 | 1618.02 22.00 | 1618.81 25.92 | 1618.82 25.89

POST 9

807+43

4.1% 4.1% 4.1% 4.1% 4.1% 2.0%

1616.99 -28.23 | 1617.19 -23.38 | 1617.66 -12.00 | 1618.65 12.00 | 1619.06 22.00 | 1618.99 25.91

POST 1

807+26

4.8% 4.8% 4.8% 4.8% 4.8% 2.0% 4.0:1

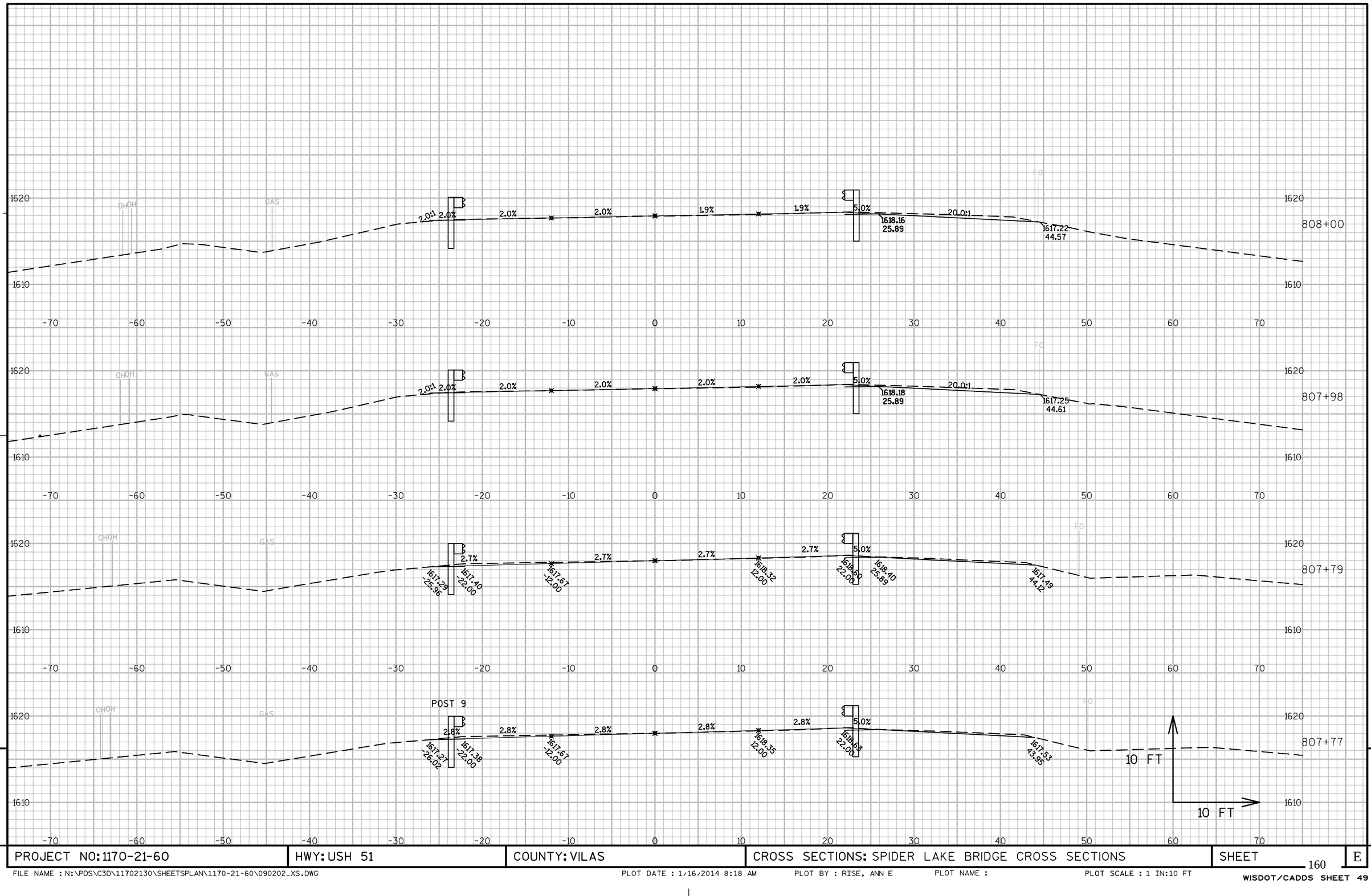
1616.81 -30.01 | 1616.64 -30.69 | 1617.10 -24.00 | 1617.67 -12.00 | 1619.32 22.66 | 1619.23 25.89 | 1619.03 27.68

10 FT

10 FT

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

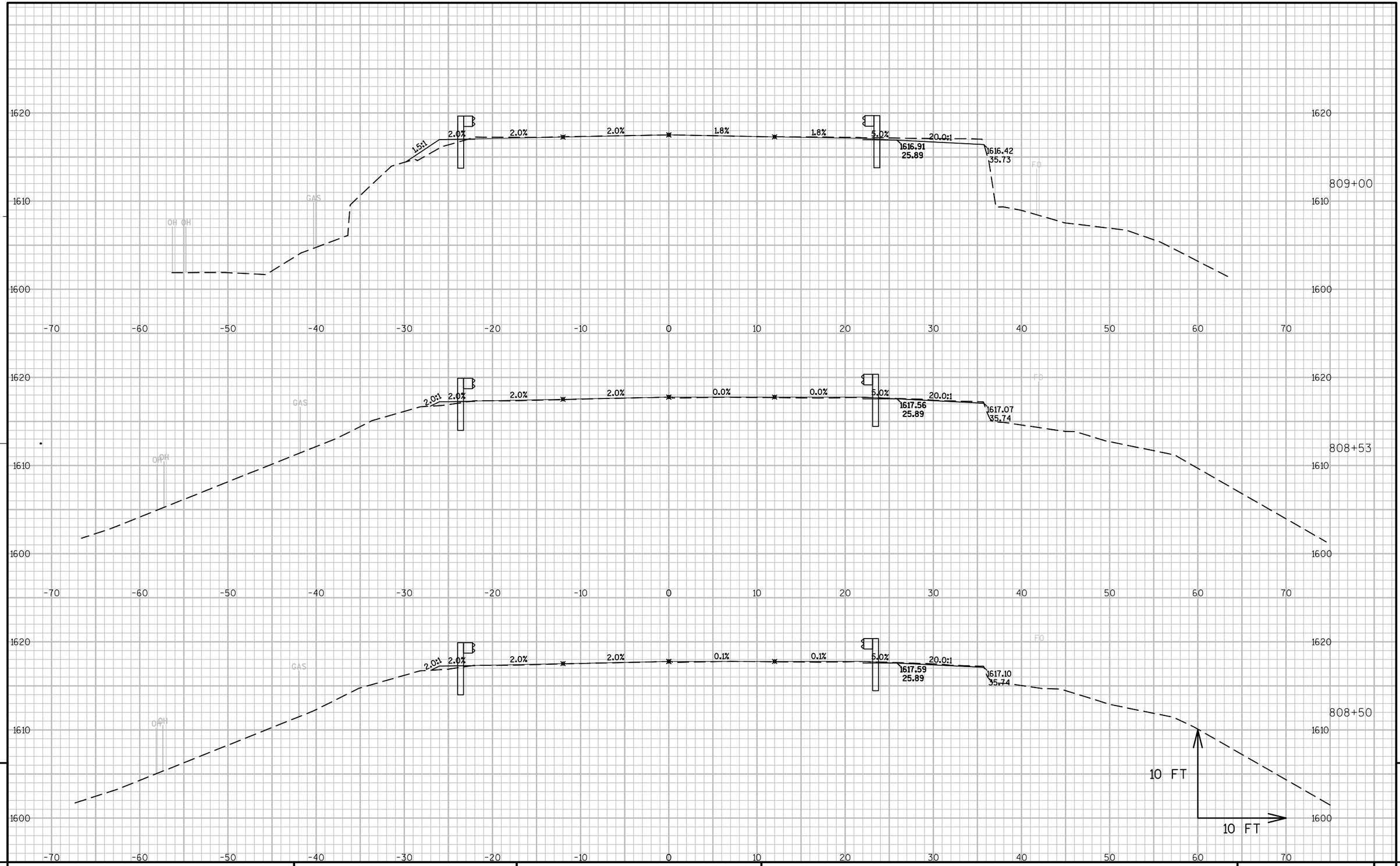
FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 8:18 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET 160	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 8:18 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

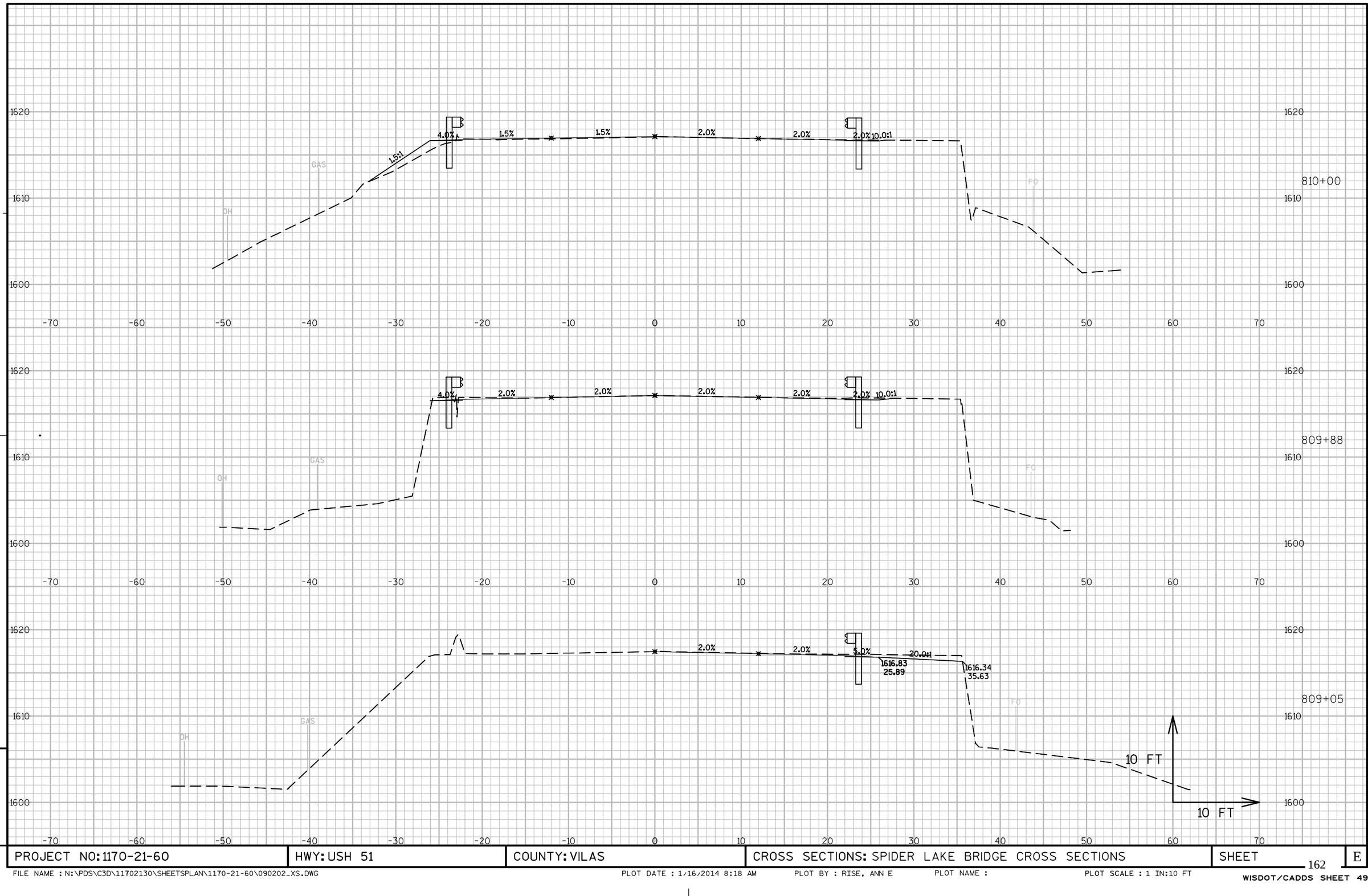


9

9

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

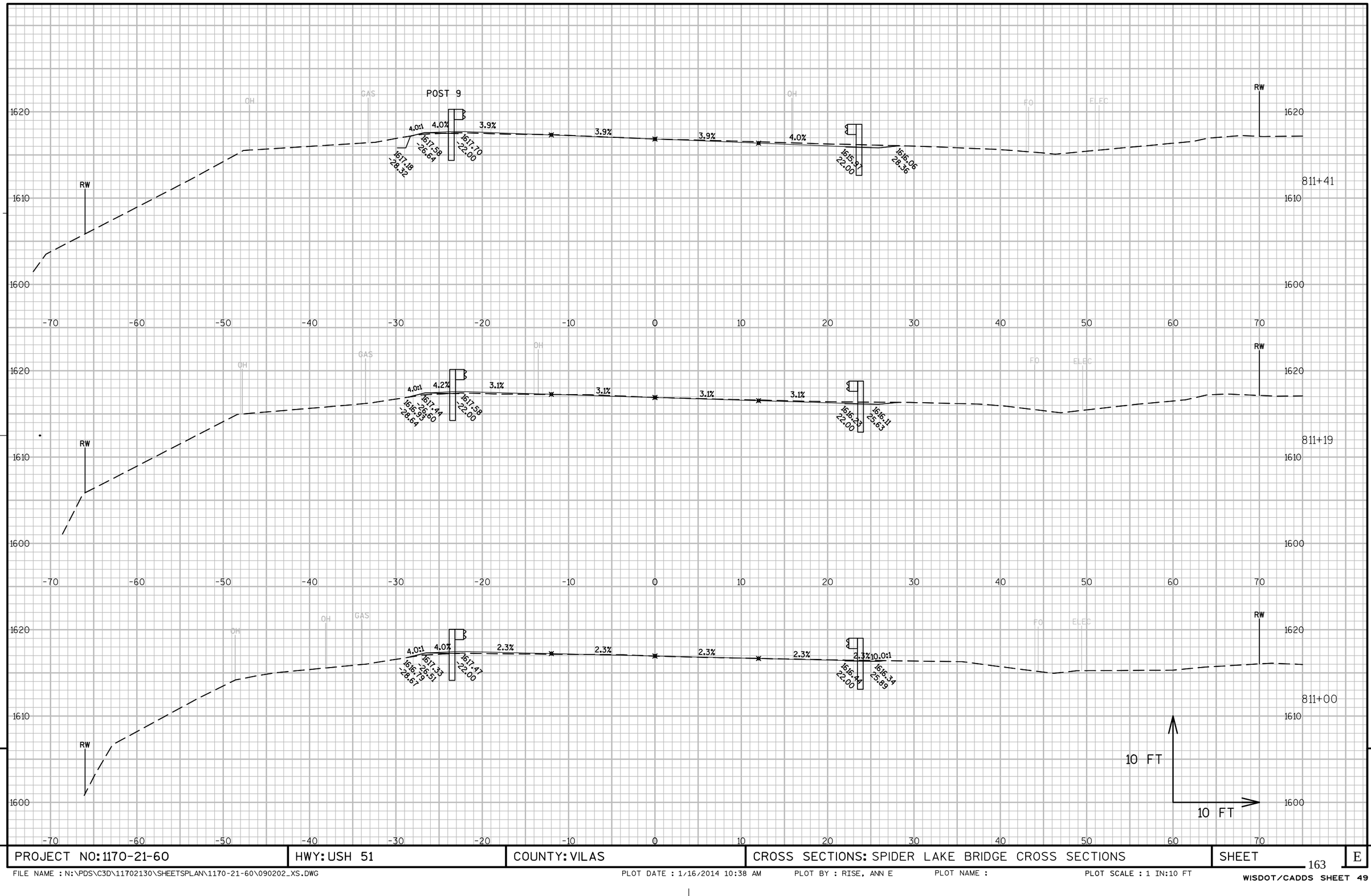
FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 8:18 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET 162 E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 8:18 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



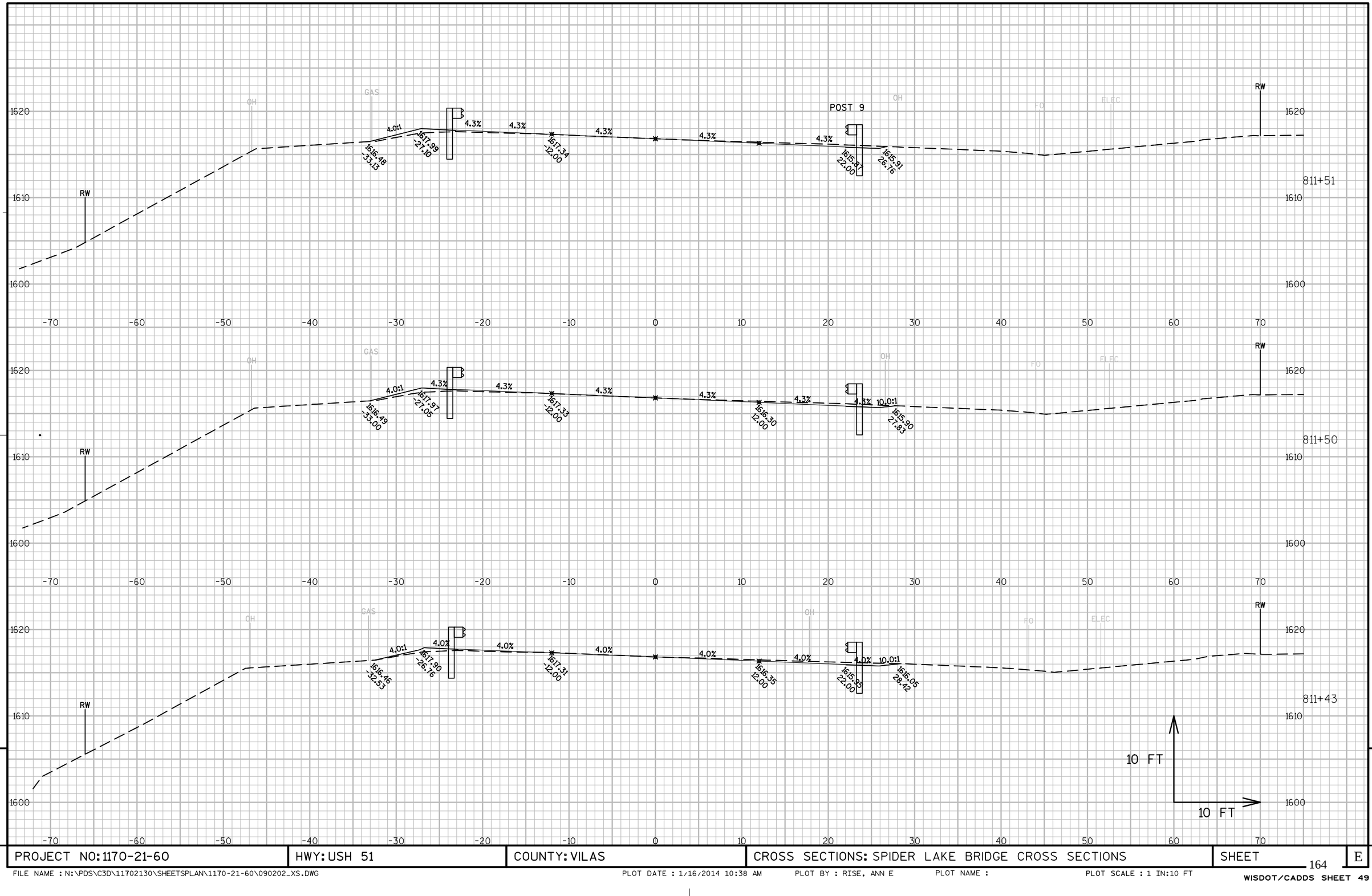
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

9

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 10:38 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



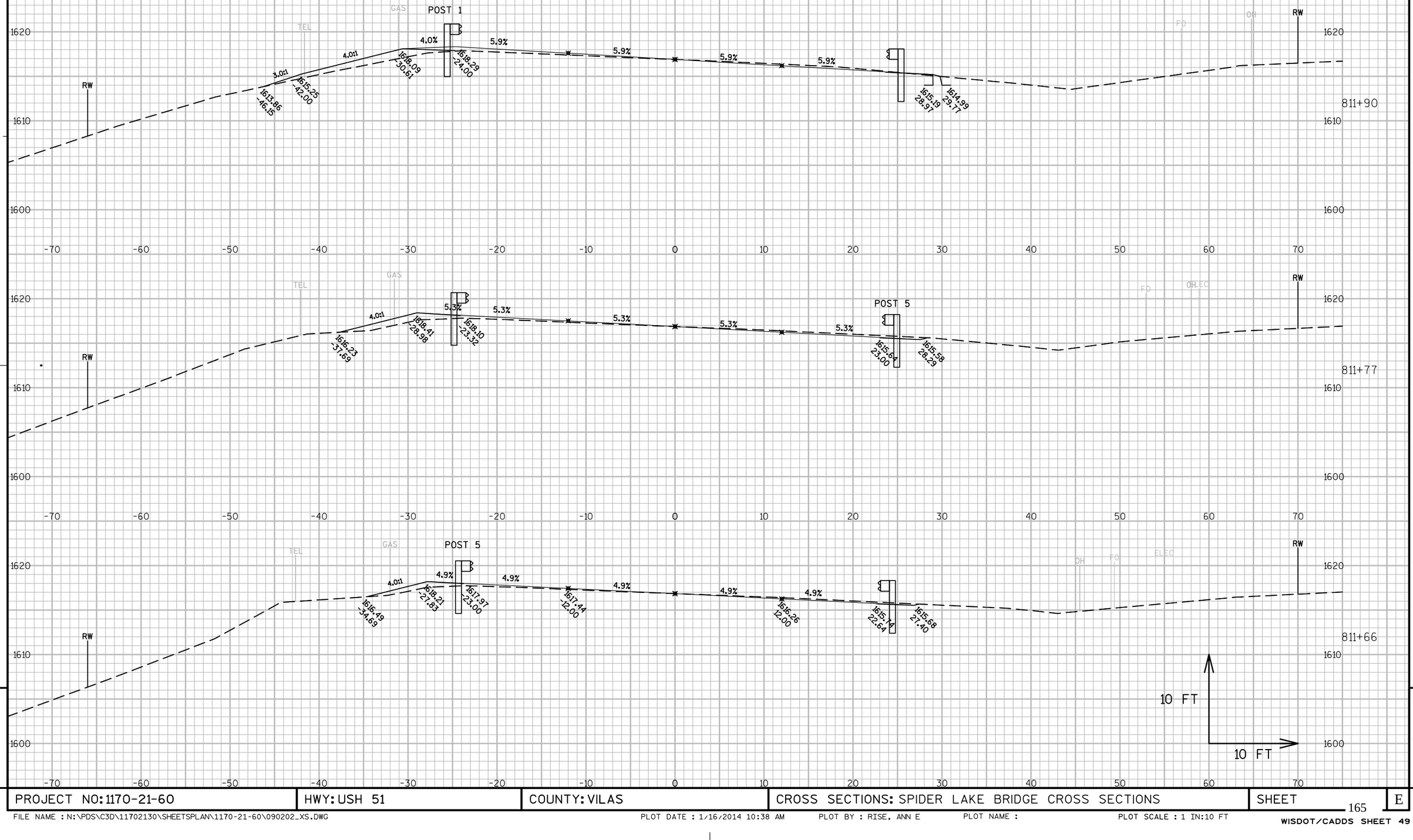
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

9

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 10:38 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

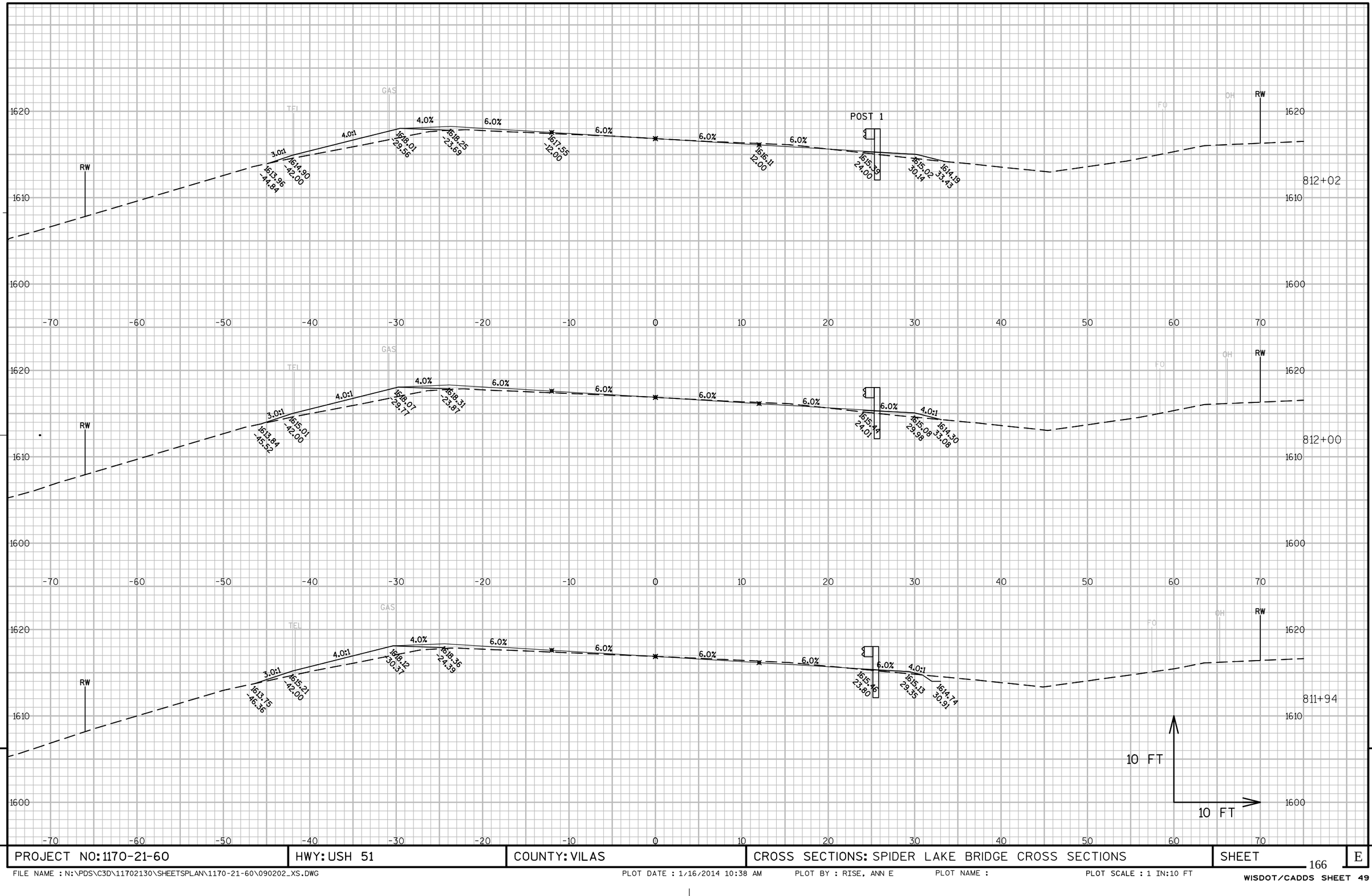
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-60\090202_XS.DWG PLOT DATE : 1/16/2014 10:38 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



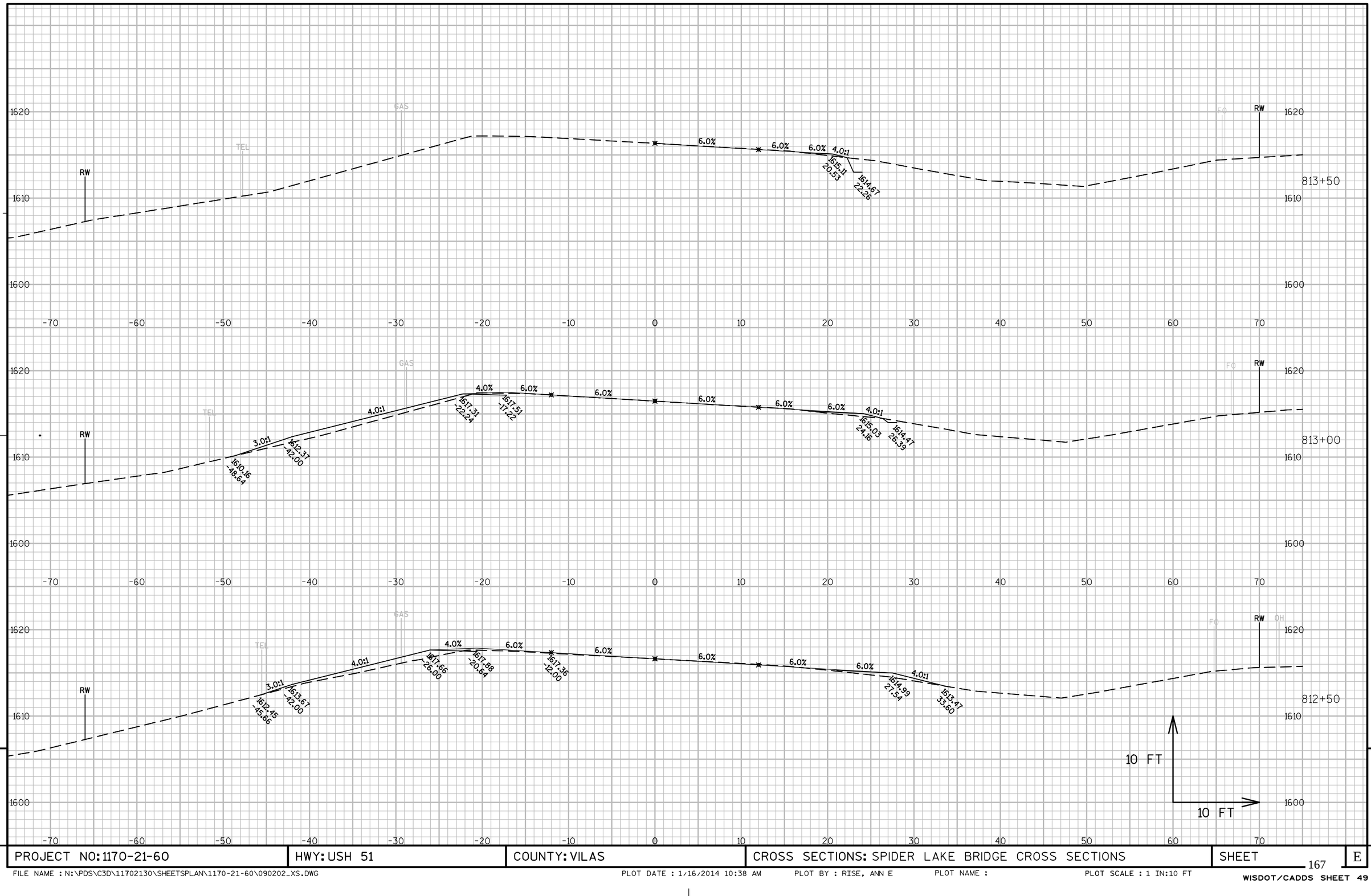
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

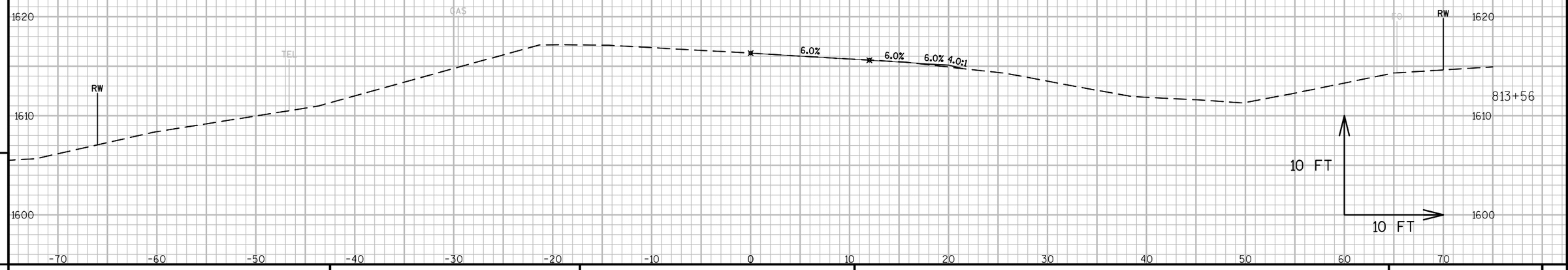
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E



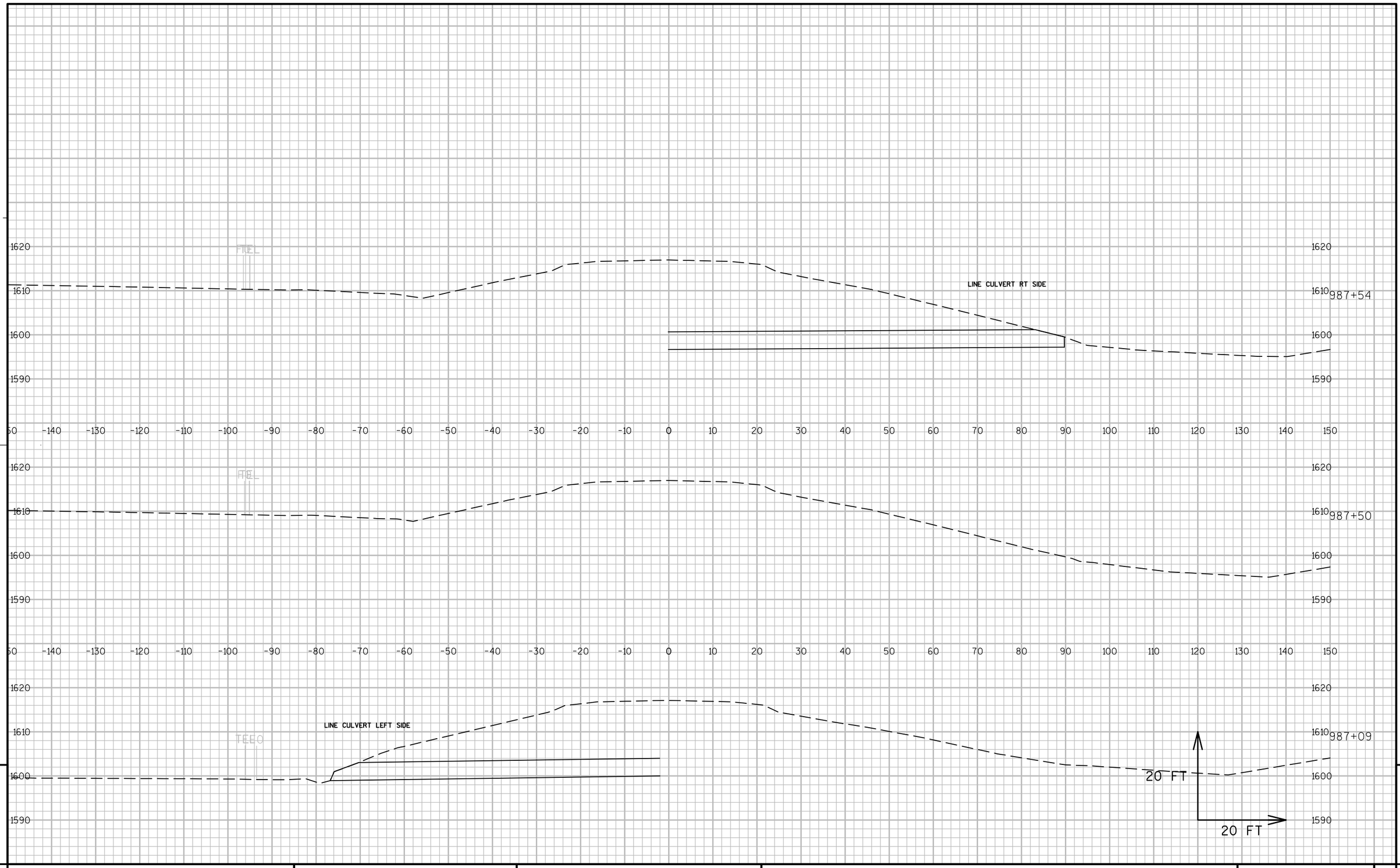
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PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: SPIDER LAKE BRIDGE CROSS SECTIONS	SHEET	E

9

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WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1170-21-60	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT LINING STA 987+30	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\DESIGN\CORRIDORS\CORRIDOR-USH51NORTH-CULEXT.DWG PLOT DATE : 11/20/2013 12:36 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

RHI

APR 2014

PROJECT ID: 1170-21-70
WITH: 1170-21-60, 1170-21-61

COUNTY: VILAS

ORDER OF SHEETS

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

TOTAL SHEETS = 206



36

N

DESIGN DESIGNATION

A.A.D.T.	2014	=	4090
A.A.D.T.	2034	=	5290
D.H.V.		=	645
D.D.		=	61/39
T.		=	18.3%
DESIGN SPEED		=	60
ESALS		=	1,715,500

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

MINOCQUA - MANITOWISH

CTH M TO CTH H

USH 51

VILAS

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1170-21-70		

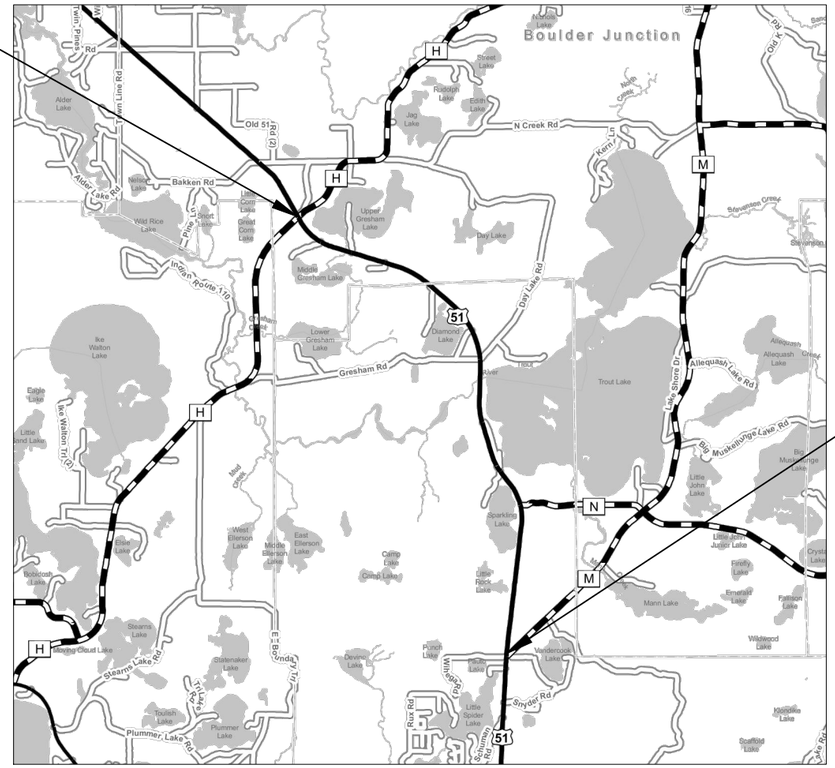
STATE PROJECT NUMBER
1170-21-70

R 6 E | R 7 E

T 42 N

T 41 N

END PROJECT
STA 549+80



BEGIN PROJECT
STA 163+00

LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 7.326 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VILAS COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JEFF BROCK
Designer	ANN RISE
Project Manager	DAN ERVA
Regional Examiner	CHERYL SIMON
Regional Supervisor	ANNA WISNER

APPROVED FOR THE DEPARTMENT

DATE: 1/31/14 Anna Wisner (Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS OUTSIDE THE GRADING LIMITS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

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

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

UTILTIES

We Energies - Gas
4222 County Rd B
Land O' Lakes, WI 54540
(906) 250-4044
(906) 250-1044 (Mobile)
Jim Schofield

Century Link - Communications Line
400 West 9th St. N, Ste. 5
Ladysmith, WI 54848
(715) 532-0023
(715) 563-8294 (Mobile)
Brian Huhn

Wisconsin Public Service Corporation - Electricity
2027 Navajo Street, P.O. Box 160
Rhinelander, WI 54501
(715) 369-7117
(715) 209-0085 (Mobile)
Zane Hagstrom

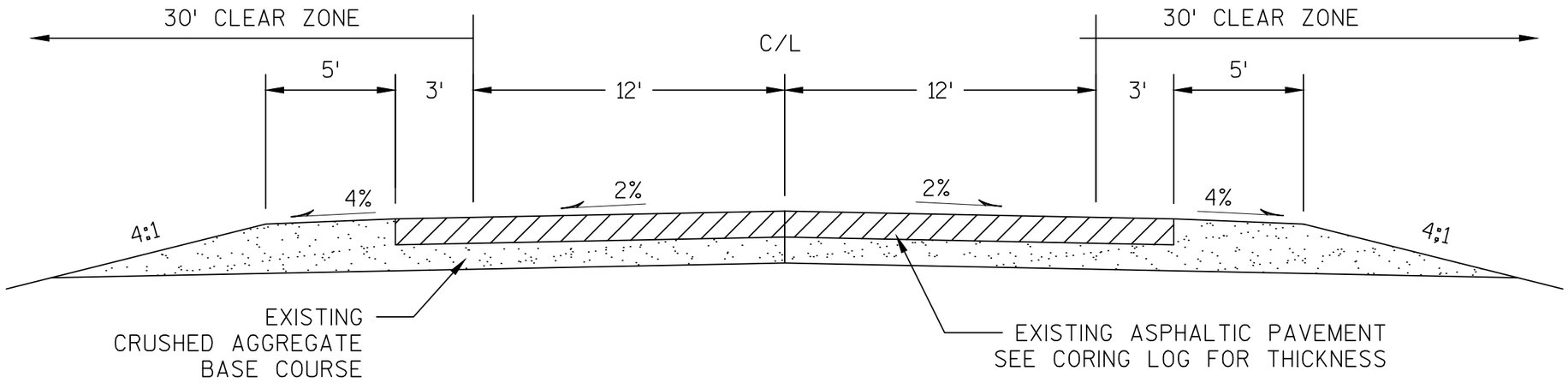
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

DEPARTMENT OF NATURAL RESOURCES
NORTH CENTRAL DISTRICT
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
JON SIMONSEN
715-365-8916

CORING LOG

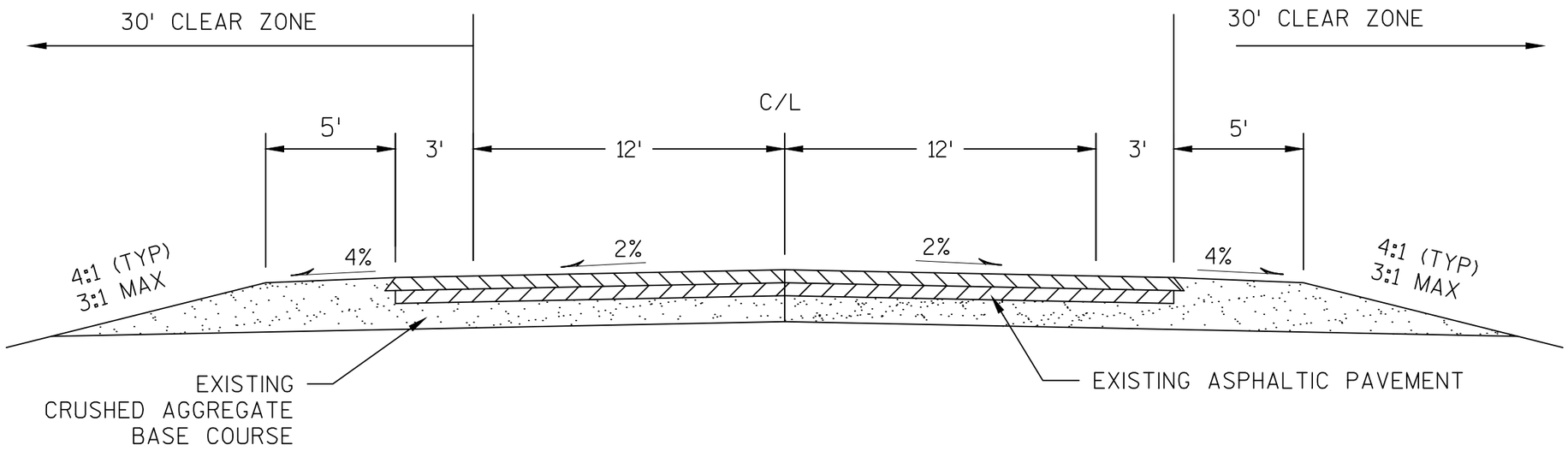
CORE NO.	STATION	OFFSET FROM CENTERLINE (FEET)	ASPHALT DEPTH (INCHES)
1	165+00	11 R	9 1/2
2	180+75	CENTER LINE	7
3	196+50	10 L	10 3/4
4	212+25	10.5 R	11
5	228+00	1.5 R	9 1/2
6	243+75	1.5 L	10 1/2
7	259+50	10.5 L	13
8	275+25	12 R	7
9	291+00	CENTER LINE	10 1/4
10	306+75	11.5 L	12
11	322+50	9.5 R	10 3/4
12	338+25	2 R	9 1/2
13	354+00	9 L	13
14	369+75	11 R	12
15	385+50	2 L	11
16	401+25	9 L	11
17	417+00	11.5 R	7 1/2
18	432+75	1 R	10
19	448+50	10 L	11 3/8
20	464+25	10.5 R	11 1/2
21	480+00	2 R	11
22	495+75	10 L	10 1/2
23	511+50	11.5 R	10 1/2
24	527+25	2 R	10
25	543+00	9.5 L	11 1/2

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



EXISTING TYPICAL SECTION

STATION 163+00 - STA 269+61

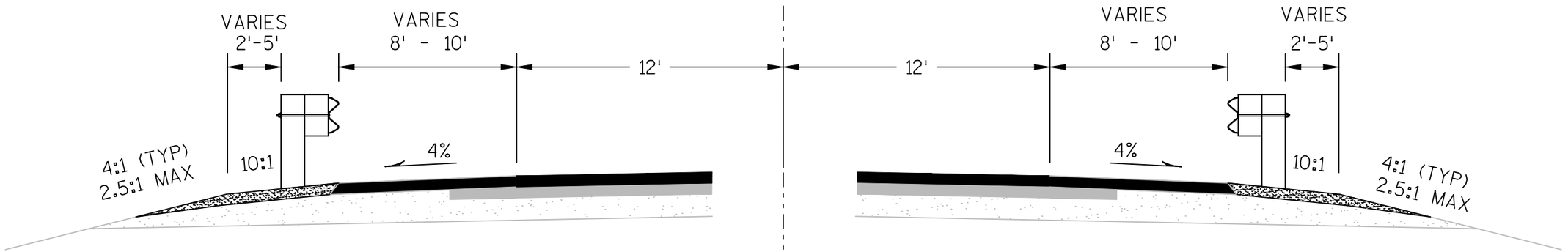


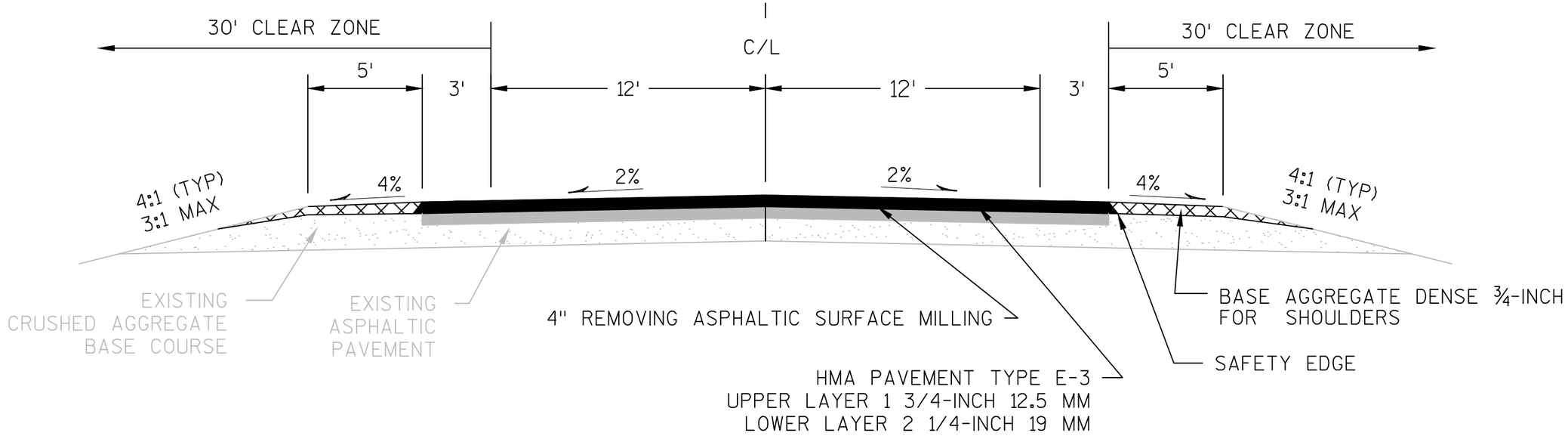
EXISTING TYPICAL SECTION

STATION 269+61 - STA 549+80

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	TYPICAL SECTIONS	TS-70-1	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\020301_TS_1-3.DWG PLOT DATE : 2/13/2014 10:24 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:5 FT
WISDOT/CADDS SHEET 42

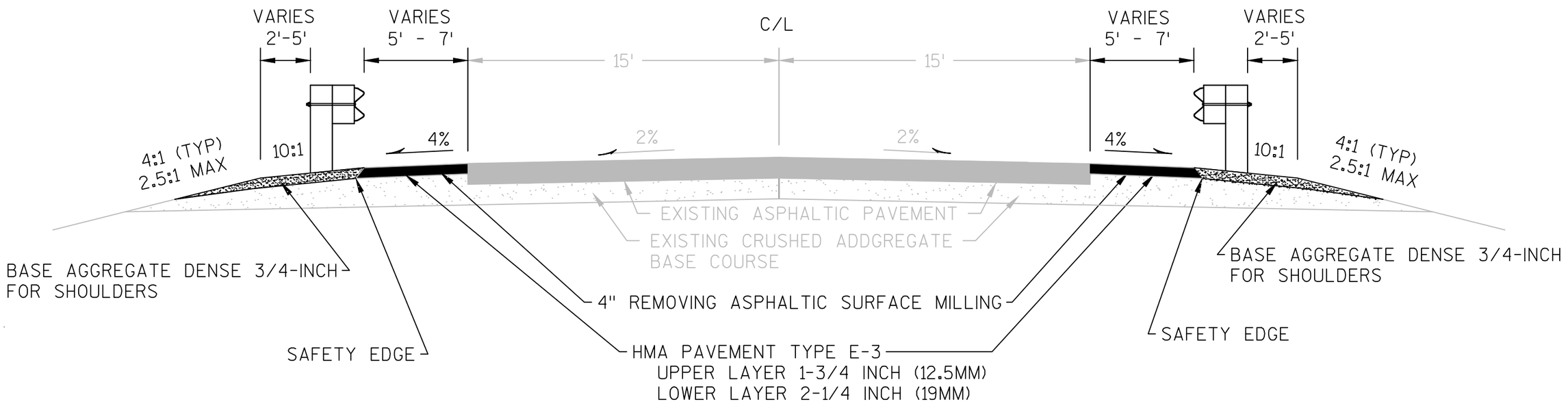




PROPOSED TYPICAL SECTION

STATION 163+00 - STA 269+61
STATION 539+56 - STA 549+80

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PROPOSED TYPICAL SECTIONS	TS-70-2	SHEET 4	E

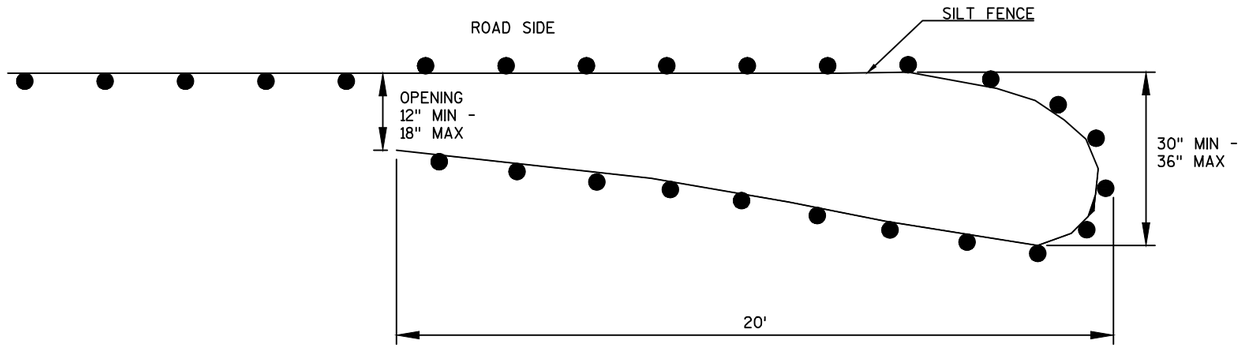


PROPOSED TYPICAL SECTION

STA 357+99 - 361+81
STA 396+12 - 404+87
STA 501+81 - 503+68

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PROPOSED TYPICAL SECTIONS	TS-70-3	SHEET 5	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\020301_TS_1-3.DWG PLOT DATE : 1/30/2014 7:47 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:5 FT

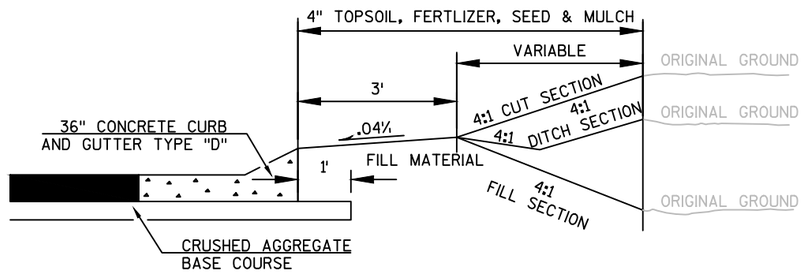


PLAN VIEW

GENERAL NOTES:

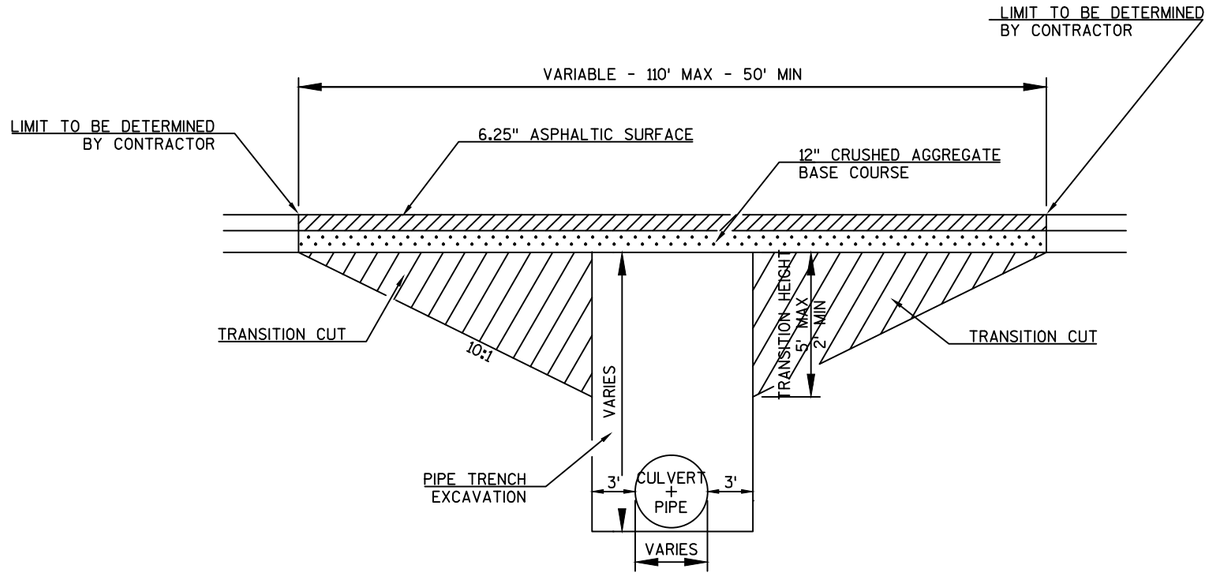
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

TEMPORARY SMALL ANIMAL TURN-AROUND



TYPICAL FOR SLOPE TREATMENT BEHIND CURB AND GUTTER AT RURAL SIDEROAD INTERSECTIONS

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET 6	E



QUANTITIES FOR INFORMATIONAL PURPOSE

TRANSITIONAL HEIGHT FT	CUT VOL CY
2	44
3	100
4	178
5	278

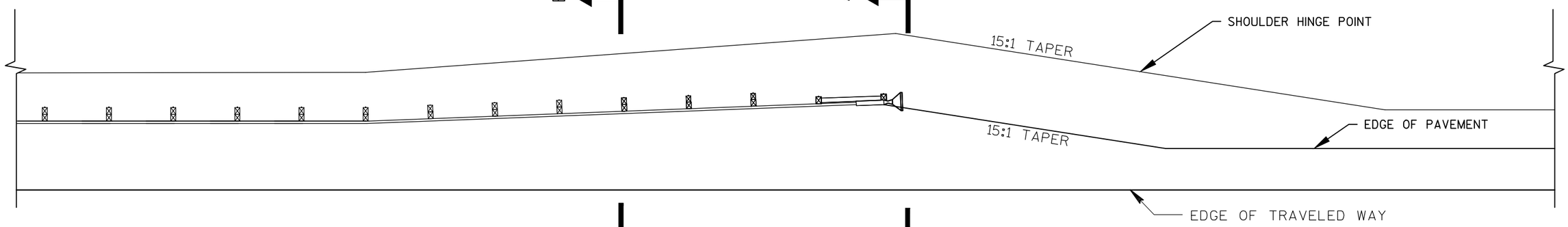
CULVERT PIPE TRANSITION

STA 246+37

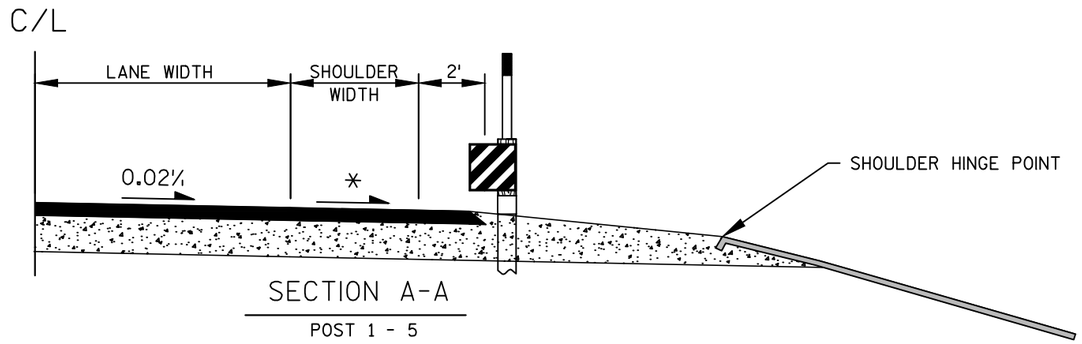
NOTE: REUSE MATERIAL REMOVED IN TRANSITION CUT AND PIPE TRENCH EXCAVATIONS AS BACKFILL UNLESS OTHERWISE DIRECTED BY THE ENGINEER TO USE BACKFILL GRANULAR

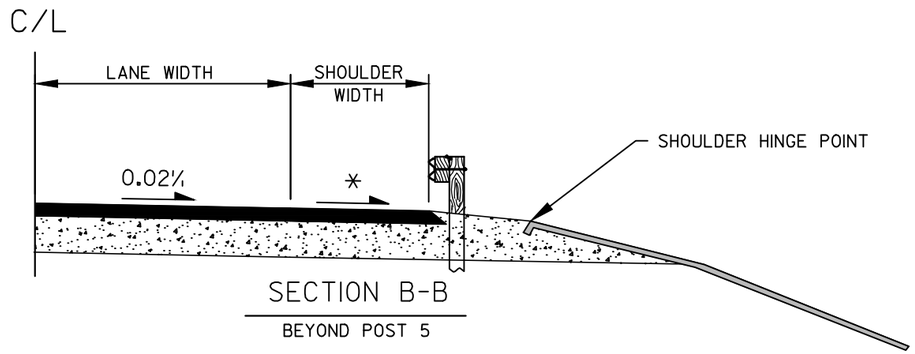
PIPE TRENCH EXCAVATION, EXCLUDING TRANSITION CUT IS CONSIDERED INCIDENTAL TO PIPE INSTALLATION. TRANSITION CUT WILL BE PAID FOR AS CULVERT PIPE TRANSITION.

TRANSITION CUT WILL BE SHOULDER POINT TO SHOULDER POINT, HALF OF SHOULDER POINT TO SHOULDER POINT EACH SIDE OF CENTERLINE.



SHOULDER PAVING AT GUARDRAIL DETAIL





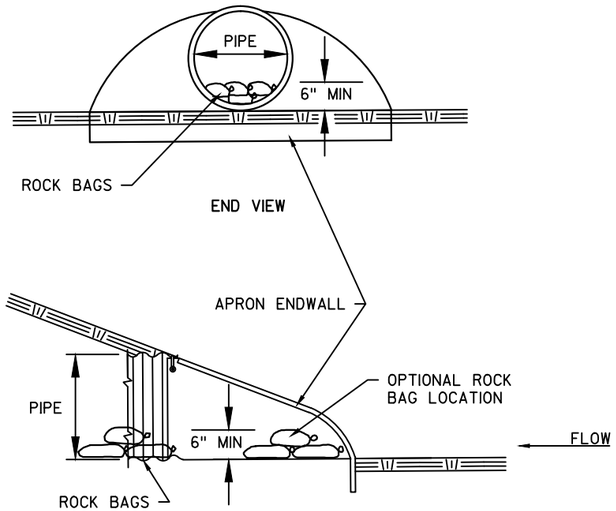
SHOULDER TREATMENT AT GUARDRAIL - "EROSION MAT"

NOTE: SEE STANDARD DETAIL DRAWINGS
MIDWEST GUARDRAIL SYSTEM SYSTEM (MGS) GUARDRAIL
MIDWEST GUARDRAIL SYSTEM LONG SPAN (MGS L)
MIDWEST GUARDRAIL SYSTEM (MGS) EAT
MIDWEST GUARDRAIL SYSTEM (MGS) THRIE BEAM TRANSITION

HMA PAVEMENT
BASE
EROSION MAT AND SEED

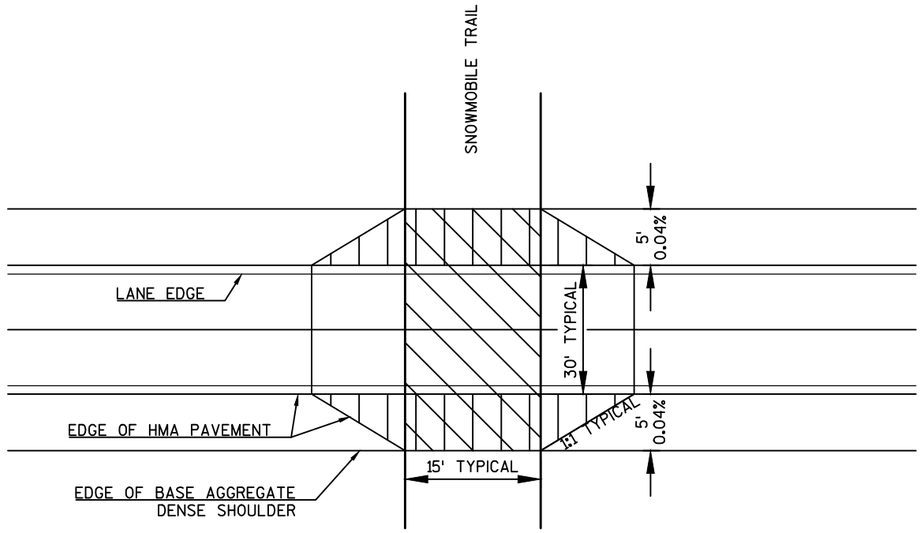
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\021000_CD.DWG PLOT DATE : 1/30/2014 9:09 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)



PROTECTIVE THERMOPLASTIC COATING
AT SNOWMOBILE TRAIL CROSSING

HMA TYPE E-3 PAVEMENT WIDENING
4-INCHES FOR SNOWMOBILE TRAIL CROSSING

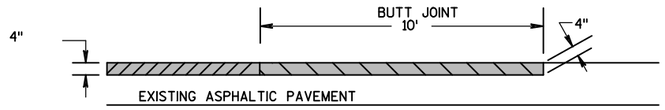
NOTE: PREPARATION FOR PAVEMENT WIDENING FALLS UNDER PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS.

EXACT LOCATIONS TO BE MARKED IN THE FIELD BY THE PROJECT PERSONAL.

SNOWMOBILE TRAIL CROSSING

STA 173+60
STA 217+60
STA 374+10

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET 9	E



4" HMA PAVEMENT TYPE E-3

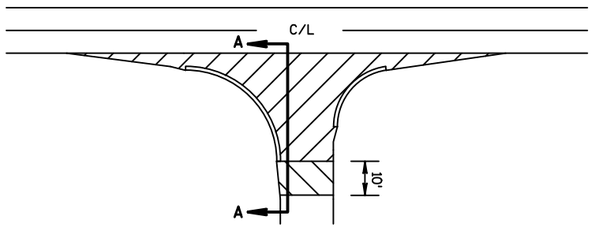
REMOVING ASPHALTIC SURFACE, MILLING

REMOVING ASPHALTIC SURFACE, BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

MAINLINE BUTT JOINT DETAIL

STA 163+00 - STA 163+10
STA 269+51 - STA 269+61
STA 542+65 - STA 542+75
STA 549+70 - STA 549+80



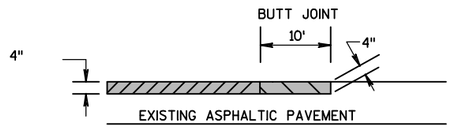
REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

BUTT JOINT DETAIL

SIDE ROADS WITH CURB AND GUTTER



4" HMA PAVEMENT TYPE E-3

REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINT

NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

SECTION A - A

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CONSTRUCTION DETAILS	SHEET 10	E

REFER TO SDD 8D5-4 CONCRETE SURFACE
DRAINS AND ASPHALTIC FLUMES
USE EMAT INSTEAD OF SOD

N

EDGE OF PAVEMENT
BY-PASS LANE

261+65.10, -15.00' LT

264+91.13, -27.00' LT

267+43.03, -27.00' LT

262+00 263+00 264+00 265+00 266+00 267+00

261+78.99, 15.00' RT

263+14.65, 26.00' RT

265+13.21, 24.00' RT

1635.053

1634.543

1634.033

1633.523

1633.013

55'

265+13.21, 79.00' RT
Y=140883.903
X=388801.357

INSTALL CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

ASPHALTIC
FLUME

10+93.21, 15.00' RT

11+00

1634.493

1634.780

1634.207

1633.792

1633.350

50'

267+27.65, 15.00' RT

266+49.23, 24.00' RT

266+49.23, 74.00' RT
X=388765.188
Y=141017.946

INSTALL CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

ASPHALTIC
FLUME

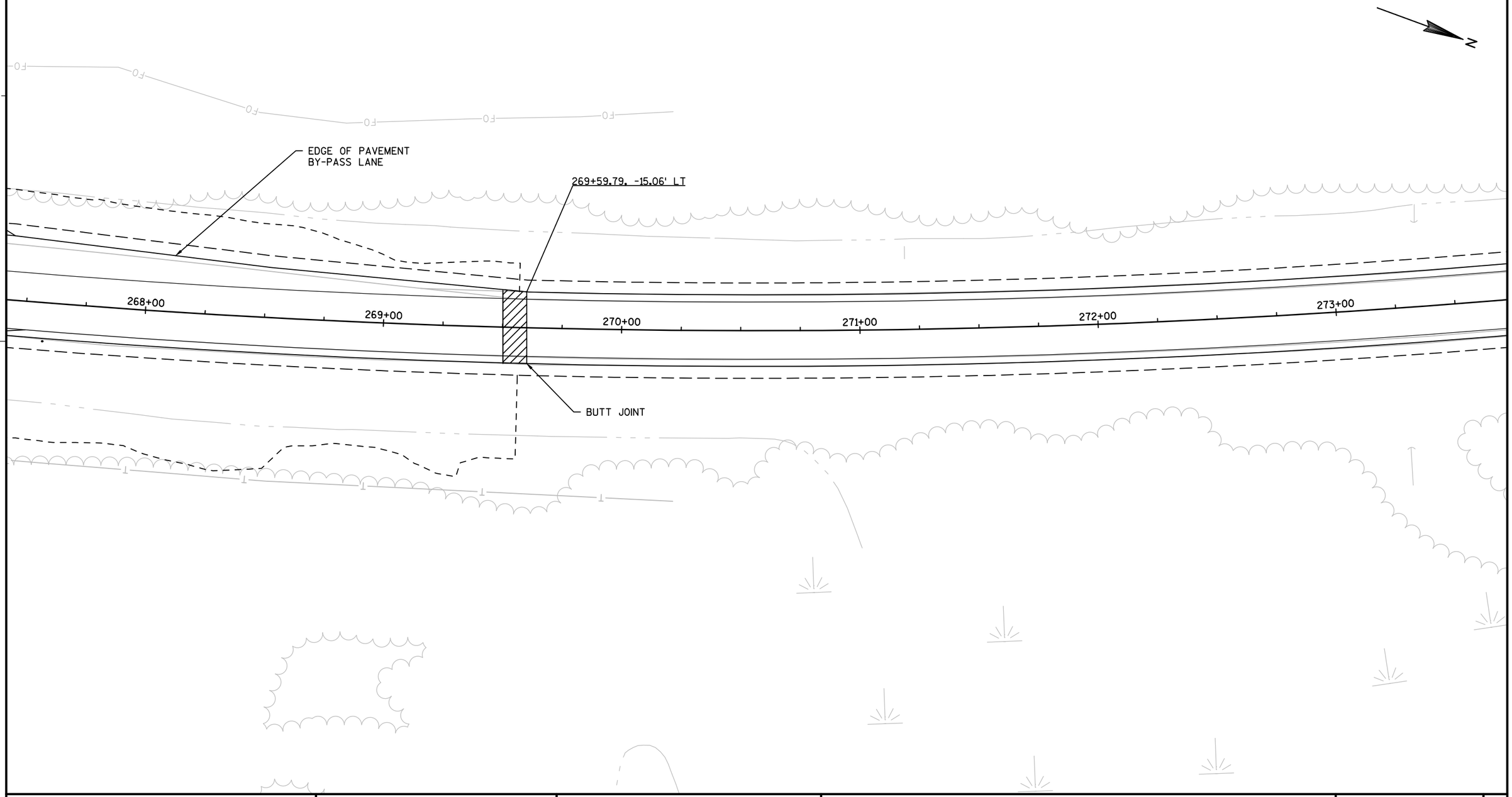
10+61.41, -15.00' LT

BUTT JOINT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	INTERSECTION DETAIL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\021101_ID.DWG PLOT DATE : 2/14/2014 1:42 PM PLOT BY : RISE, ANN E PLOT NAME : 021101_Id PLOT SCALE : 1" = 40'
WISDOT/CADDS SHEET 42

2



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	INTERSECTION DETAIL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\021101_ID.DWG PLOT DATE : 2/14/2014 1:42 PM PLOT BY : RISE, ANN E PLOT NAME : 021102_ld PLOT SCALE : 1" = 40'

REFER TO SDD 8D5-4 CONCRETE SURFACE
DRAINS AND ASPHALTIC FLUMES
USE EMAT INSTEAD OF SOD

BUTT JOINT

539+66.82, 15.00' RT

541+07.64, 26.00' RT

PT: 541+56.79

543+13.56, -15.00' LT

543+93.56, -24.00' LT

543+93.56, -64.00' LT
Y=160993.961
X=373343.492

11+20.34, 15.00' RT

CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

ASPHALTIC
FLUME

544+08.02, 24.00' RT

544+08.02, 94.00' RT
Y=161082.925
X=373474.863

ASPHALTIC FLUME

CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

10+75.33, 15.00' RT

BUTT JOINT

CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

11+24.30, -15.00' LT

CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D

545+30.37, -94.00' LT
Y=161099.266
X=373251.153

ASPHALTIC
FLUME

545+29.65, -24.00' LT

545+44.85, 24.00' RT

545+44.85, 64.00' RT
Y=161188.252
X=373382.512

10+80.07, -15.00' LT

1616.565	1616.327	1615.979	1615.722	1615.831	1615.820
1615.817	1615.664	1615.972	1616.004		
1616.478	1616.290	1616.011	1615.991	1616.368	1616.415
1615.746	1615.885	1615.951	1615.948		

540+00	541+00	542+00	543+00	544+00
545+00	10+00	11+00		

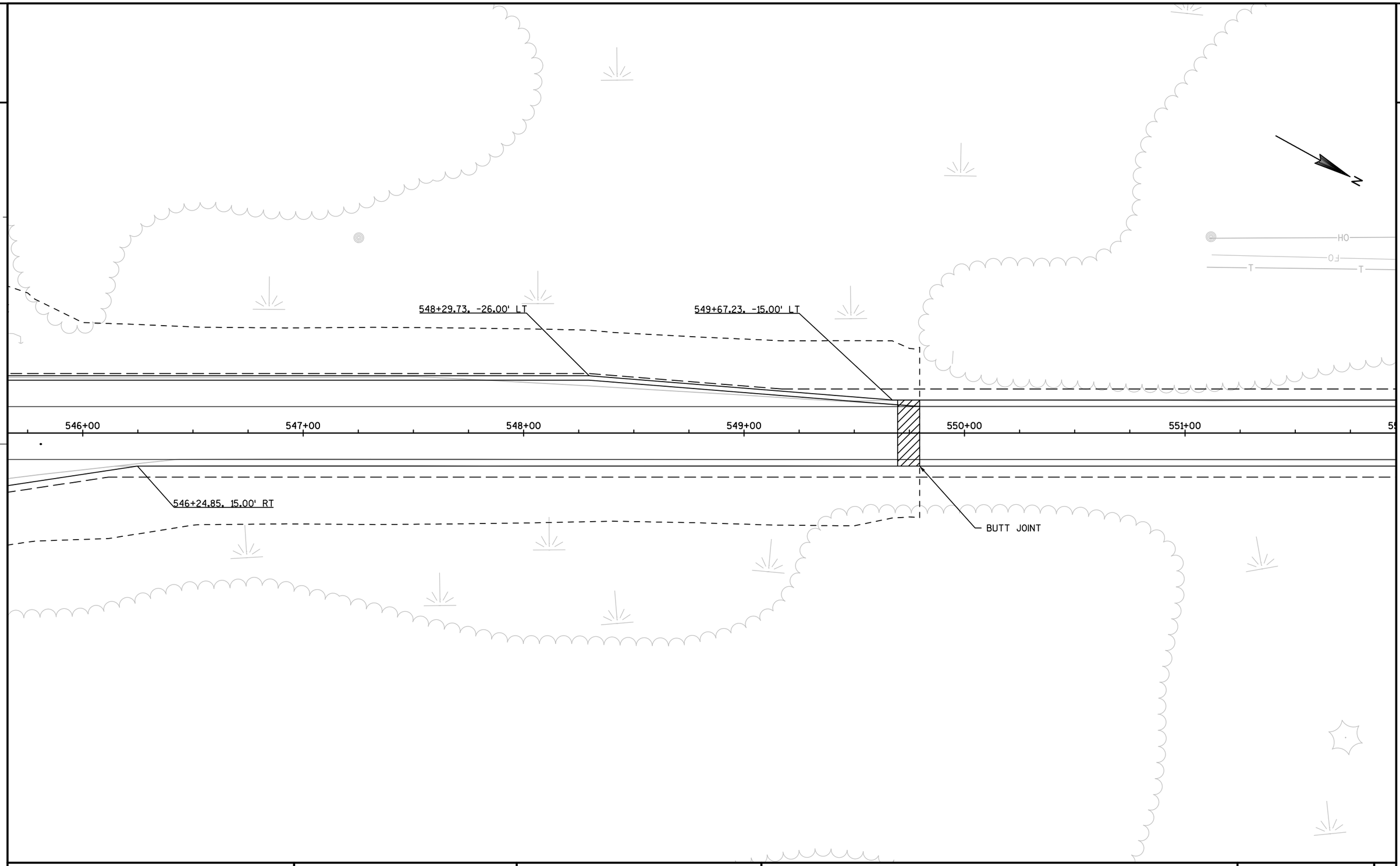
40' 70' 70' 40'

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	INTERSECTION DETAIL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\021101_ID.DWG PLOT DATE : 2/14/2014 1:49 PM PLOT BY : RISE, ANN E PLOT NAME : 021103_Id PLOT SCALE : 1" = 40'
WISDOT/CADDS SHEET 42

2

2



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	INTERSECTION DETAIL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\021101_ID.DWG PLOT DATE : 2/14/2014 1:43 PM PLOT BY : RISE, ANN E PLOT NAME : 021104_Id PLOT SCALE : 1" = 40'

2

LEGEND

- ###### EROSION MAT CLASS I, TYPE A
- SILT FENCE
- CULVERT PIPE CHECK
- SLOPE INTERCEPT
- SURFACE WATER FLOW

PT: 167+88.82

N

160 162 164 166 168 170 172 174

BEGIN PROJECT 1170-12-70
STA 163+00 C/L USH 51

N

176 178 180 182 184 186 188 19

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:57 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

LEGEND

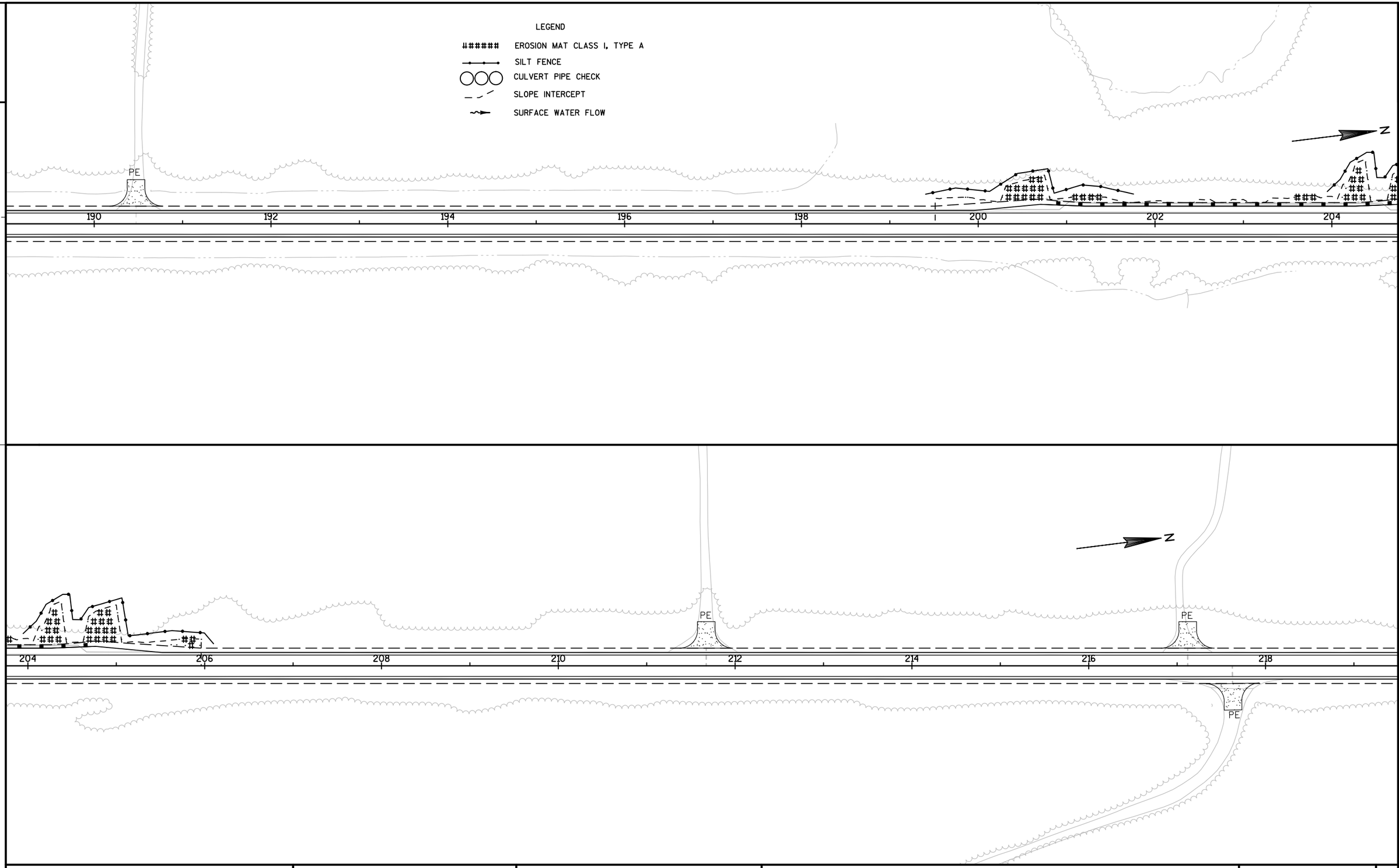
EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:57 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

N

220 222 224 226 228 230 232 234

N

234 236 238 240 242 244 246 248

EROSION MAT URBAN CLASS 1, TYPE A

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:58 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

N

PC: 252+43.80

248 250 252 254 256 258 260 262

REFER TO SDD 8D5-4
CONCRETE SURFACE DRAINS
AND ASPHALT FLUMES
USE EMAT INSTEAD OF SOD

N

BP: 10+00.00

EC: 10+34.40

PT: 10+63.51

ASPHALT FLUME

ASPHALT FLUME

CTH N

264 266 268 270 272 274 276 278

CE CE

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:58 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

SPARKLING L

PT: 282+58.38

PC: 291+87.95

SHUCHA ROAD

PE

CE

278 280 282 284 286 288 290 292

PE

N

SHUCHA ROAD

294 296 298 300 302 304 306

PT: 306+55.91

CE

TROUT LAKE ROAD

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 19	E

2

2

LEGEND

EROSION MAT CLASS I, TYPE A

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

EROSION MAT URBAN CLASS 1, TYPE A

PE

308 310 312 314 316 318 320 322

N

PE

322 324 326 328 330 332 334 336

PC: 331+70.93

TROUT LAKE ROAD

SIGN

CE

N

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 20	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:58 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

PT: 344+11.94

N

SIGN

338 340 342 344 346 348 350 352

CE PE SIGN CE PE

W W T T

TROUT R

INSTALL TEMPORARY SMALL ANIMAL TURNAROUNDS AT ENDS OF SILT FENCE

EROSION MAT URBAN CLASS 1, TYPE A

TROUT R

N

352 354 356 358 360 362 364 366

CE PE

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:58 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

PC: 367+34.95

PE

366

368

370

372

374

376

378

380

382

384

386

388

390

392

394

396

SIGN

GRESHAM LAKE ROAD

DAY LAKE ROAD

DIAMOND LAKE ROAD

N

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 22	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:58 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

DIAMOND LAKE ROAD

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

N

396 398 400 402 404 406 408 410

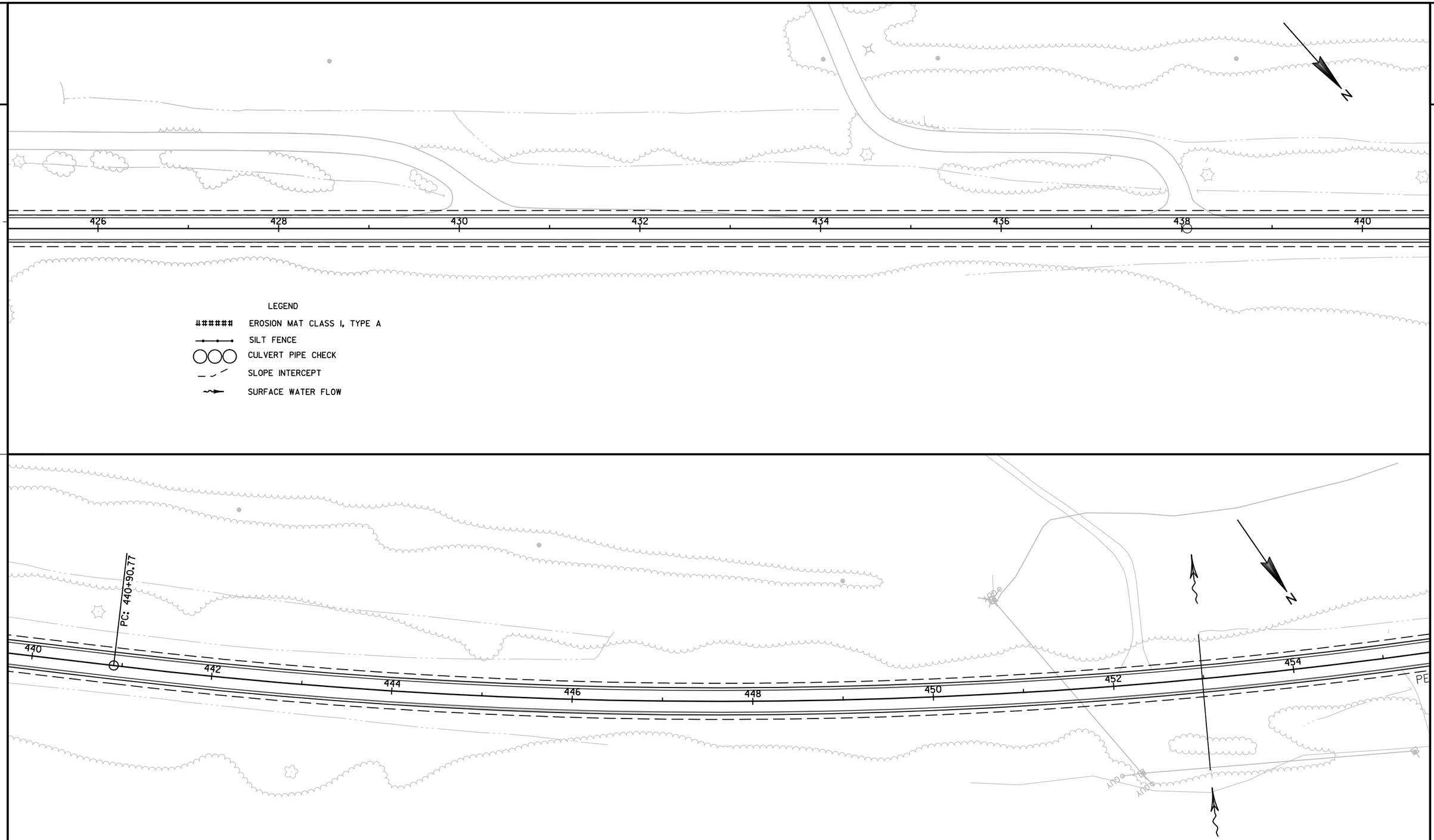
412 414 416 418 420 422 424

PT: 418+15.59

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:59 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

2



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:59 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

N

PT: 464+82.36

PE

PE

456 458 460 462 464 466 468 470

470 472 474 476 478 480 482 484

N

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 25	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:59 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

N

PE

HARMONY POINT LANE

EROSION MAT URBAN CLASS 1, TYPE A

INSTALL TEMPORARY SMALL ANIMAL TURNAROUNDS AT ENDS OF SILT FENCE

PC: 512+36.08

CE

FOOTBRIDGE

GRESHAM CREEK

FLAG

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:59 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

LEGEND

EROSION MAT CLASS I, TYPE A

SILT FENCE

CULVERT PIPE CHECK

SLOPE INTERCEPT

SURFACE WATER FLOW

MIDDLE GRESHAM LANE

N

514 516 518 520 522 524 526 528

PE

CE

530 532 534 536 538 540 542

PT: 541+56.79

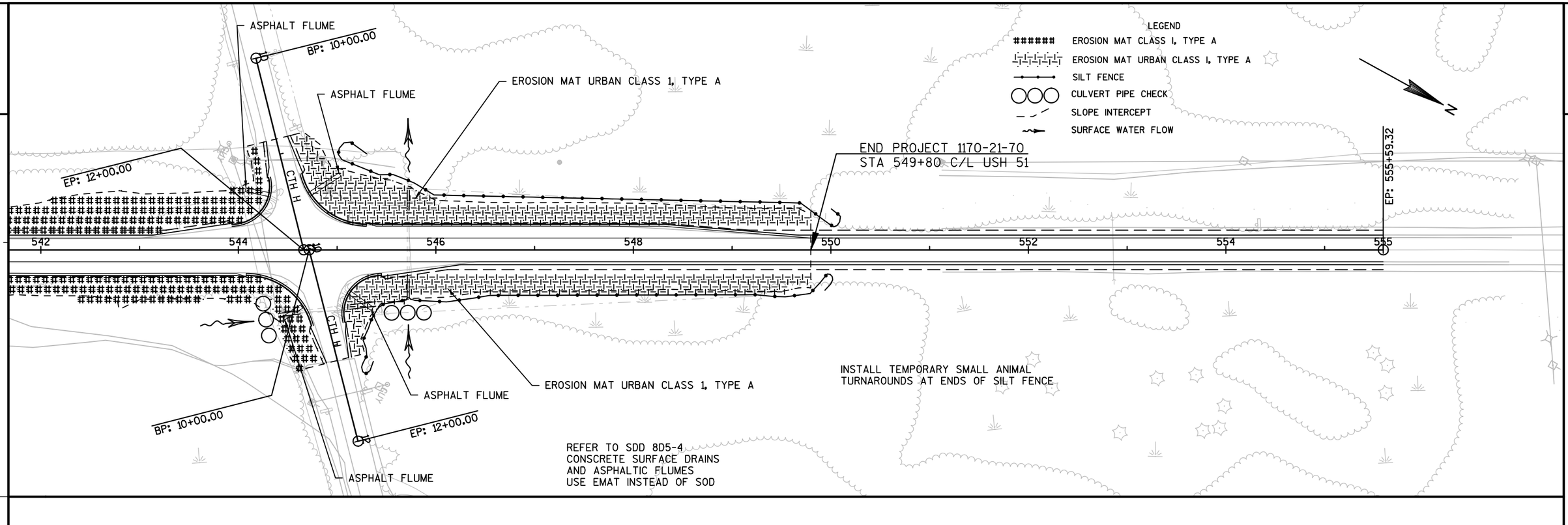
EP: 12+00.00

BP: 10+00.00

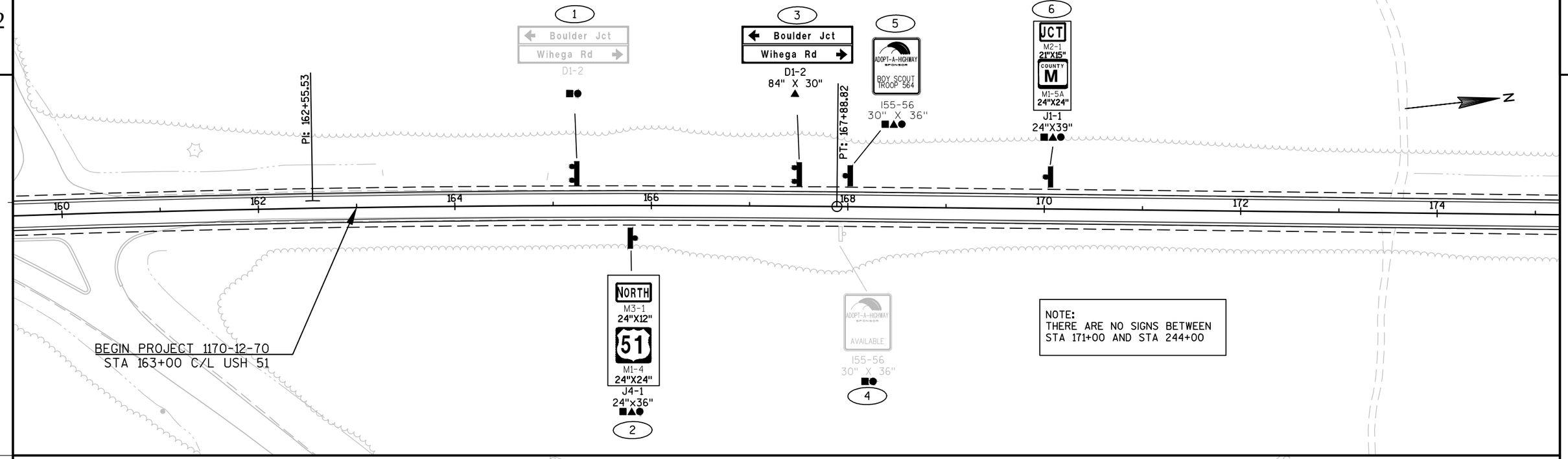
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET	E

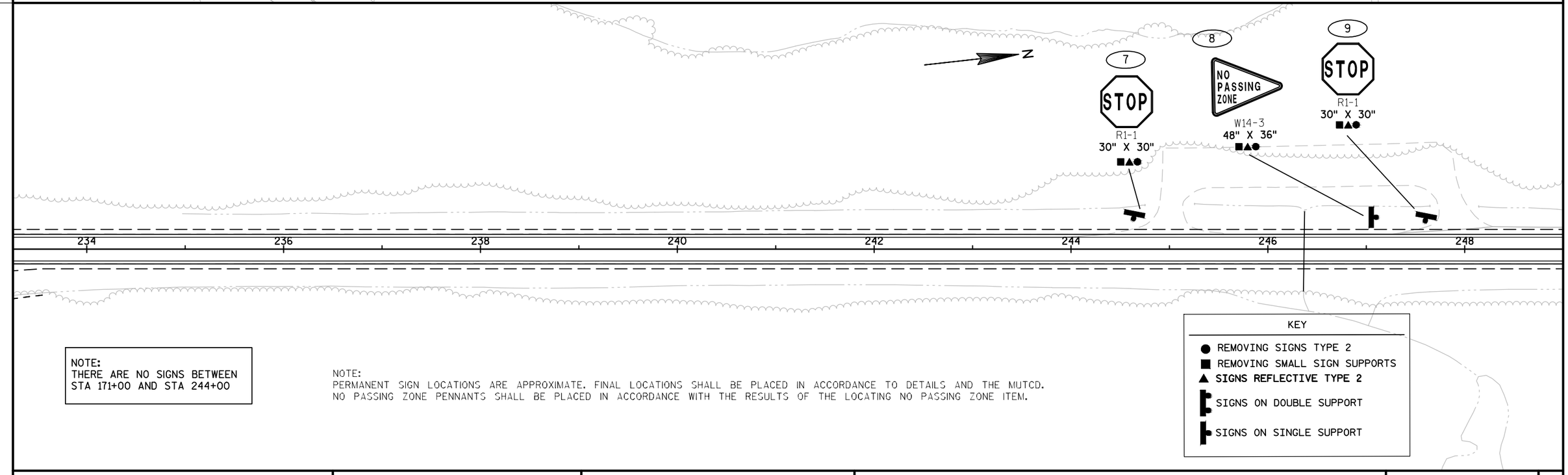
FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\022001_EC.DWG PLOT DATE : 2/14/2014 2:59 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	EROSION CONTROL	SHEET 28	E





PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:10 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

N

PC: 252+43.80

48 250 252 254 256 258 260 262

10 JCT M2-1 21"X15" / COUNTY N M1-5A 24"X24" / J1-1 24"X39"

Sayner D1-1-RA 60"X15"
11

12 ADOPT-A-HIGHWAY SPONSOR AVAILABLE I55-56 30" X 36"

14 SOUTH M3-3 24"X12" / 51 M1-4 24"X24" / J4-1 24"X36"

16 COUNTY N M1-5A 24"X24" / M6-1 21"X21" / J13-1 24"X45"

20 Sayner D1-1

21A WILDLIFE VIEWING AREA M1-86 18"X36"

21B M1-88A 12"X12"

22 Sayner D1-1-LA 60"X15"

23 JCT M2-1 21"X15" / COUNTY N M1-5A 24"X24" / J1-1 24"X39"

264 266 268 270 272 274 276 278

13 ADOPT-A-HIGHWAY SPONSOR LHHS STUDENT COUNCIL I55-56 30" X 36"

15 COUNTY N M1-5A 24"X24" / M6-1 21"X21" / J13-1 24"X45"

CTH N

17 STOP R1-1 30" X 30"

18 51 M1-4 24"X24" / M6-4 21"X21" / J13-1 24"X45"

19 NORTH M3-1 24"X12" / 51 M1-4 24"X24" / J4-1 24"X36"

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 30	E

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

SHUCHA ROAD

PT: 282+58.38

PC: 291+87.95

25
NO PASSING ZONE
W14-3
48" X 36"

24
Shucha Rd
D1-1-LA
78"X15"

26
NO PASSING ZONE
W14-3
48" X 36"

27
Trout Lake Rd
D1-1-RA
96"X15"

28
STOP
R1-1
30" X 30"

29
Trout Lake Rd
D1-1

PI: 299+31.07

31
Shucha Rd
D1-1-RA
78"X15"

32
Trout Lake Rd
D1-1-LA
96"X15"

PT: 306+55.91

30
STOP
R1-1
30" X 30"

TROUT LAKE ROAD

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 31	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:10 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

2

2

N

308 310 312 314 316 318 320 322

NO PASSING ZONE
W14-3
48" X 36"
33

35
NO PASSING ZONE
W14-3
48" X 36"

PC: 331+70.93

322 324 326 328 330 332 334 336

SIGN

Trout Lake Rd
D1-1-RA
96"X15"
34

STOP
R1-1
30" X 30"
36

TROUT LAKE ROAD

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:10 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

2

PI: 337+96.88

37

Trout Lake Rd

D1-1-LA
96"X15"

SIGN

338 340 342 344 346 348 350 352

PT: 344+11.94

SIGN

SIGN

NO PASSING ZONE

W14-3
48" X 36"

38

N

352 354 356 358 360 362 364 366

39

NO PASSING ZONE

W14-3
48" X 36"

N

KEY

- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

Gresham Rd
Day Lake Rd

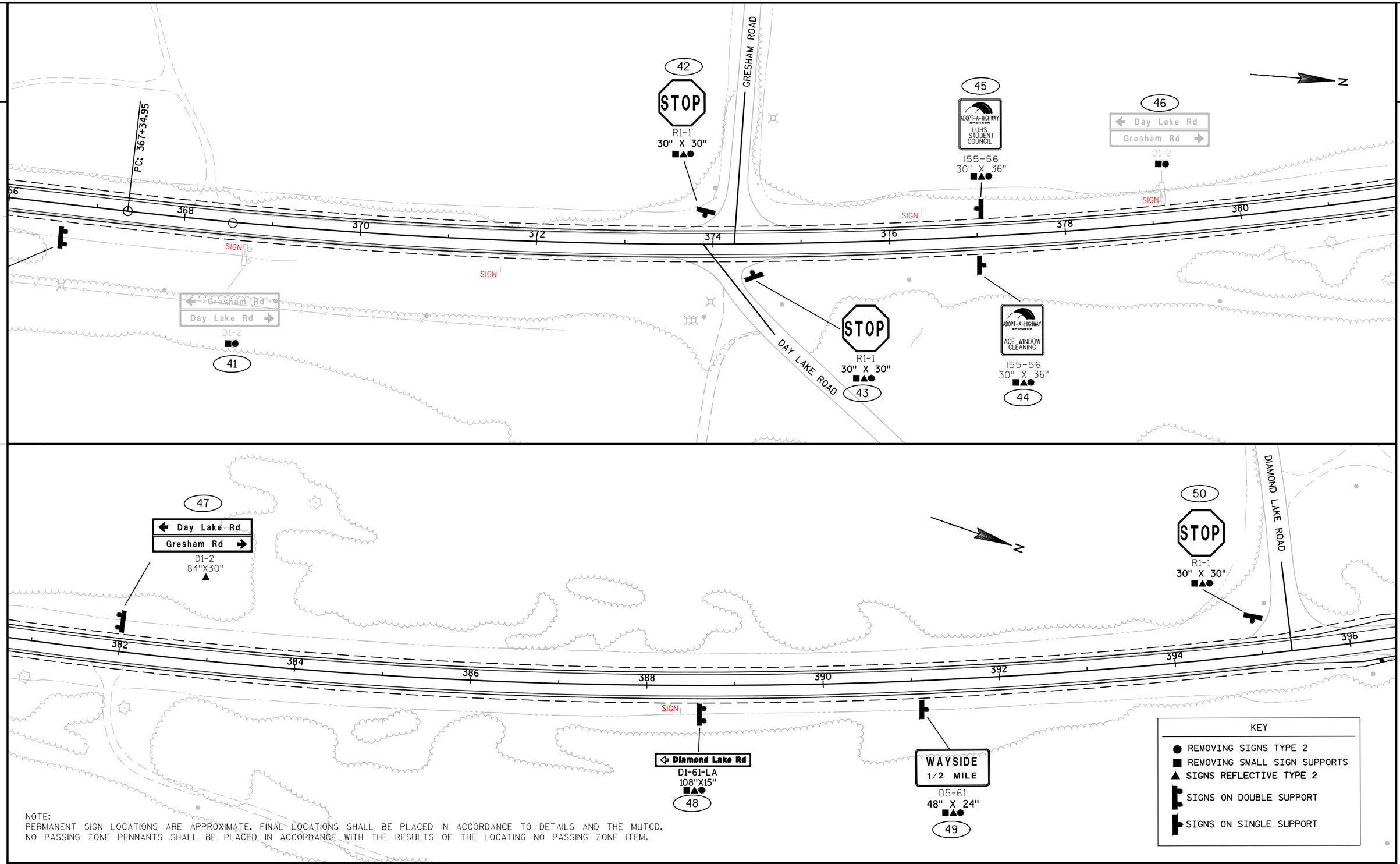
D1-2
84"X30"

40

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:11 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

51
Diamond Lake Rd
D1-1-RA

52
Diamond Lake Rd
D1-1-RA
108"X15"

SIGN

396 398 400 402 404 406 408 410

54
STOP
R1-1
30" X 30"

PT: 418+15.59

DIAMOND LAKE WAYSIDE

412 414 416 418 420 422 424

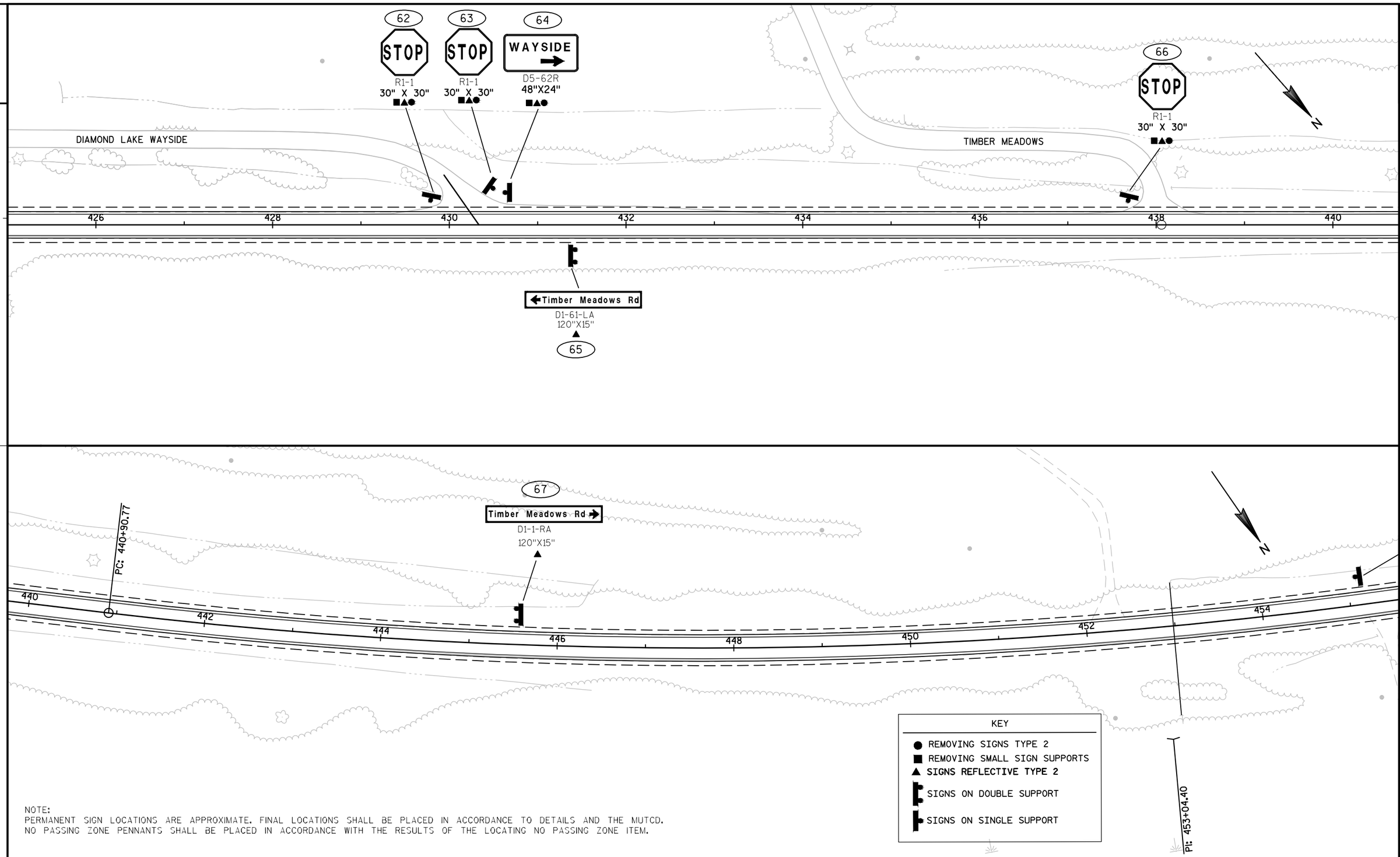
WAYSIDE
D5-62L
48"X24"
53

NO PASSING ZONE
W14-3
48" X 36"
55

KEY
- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:11 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

2

68

WAYSIDE
1/2 MILE

D5-61
48" X 24"

PT: 464+82.36

456 458 460 462 464 466 468 470

Charlotte Pl
D1-1-LA
84"X15"

69

Charlotte Pl
D1-1

70

CHARLOTTE PL

71

STOP

R1-1
30" X 30"

72

Charlotte Pl
D1-1

73

Charlotte Pl
D1-1-RA
84"X15"

470 472 474 476 478 480 482 484

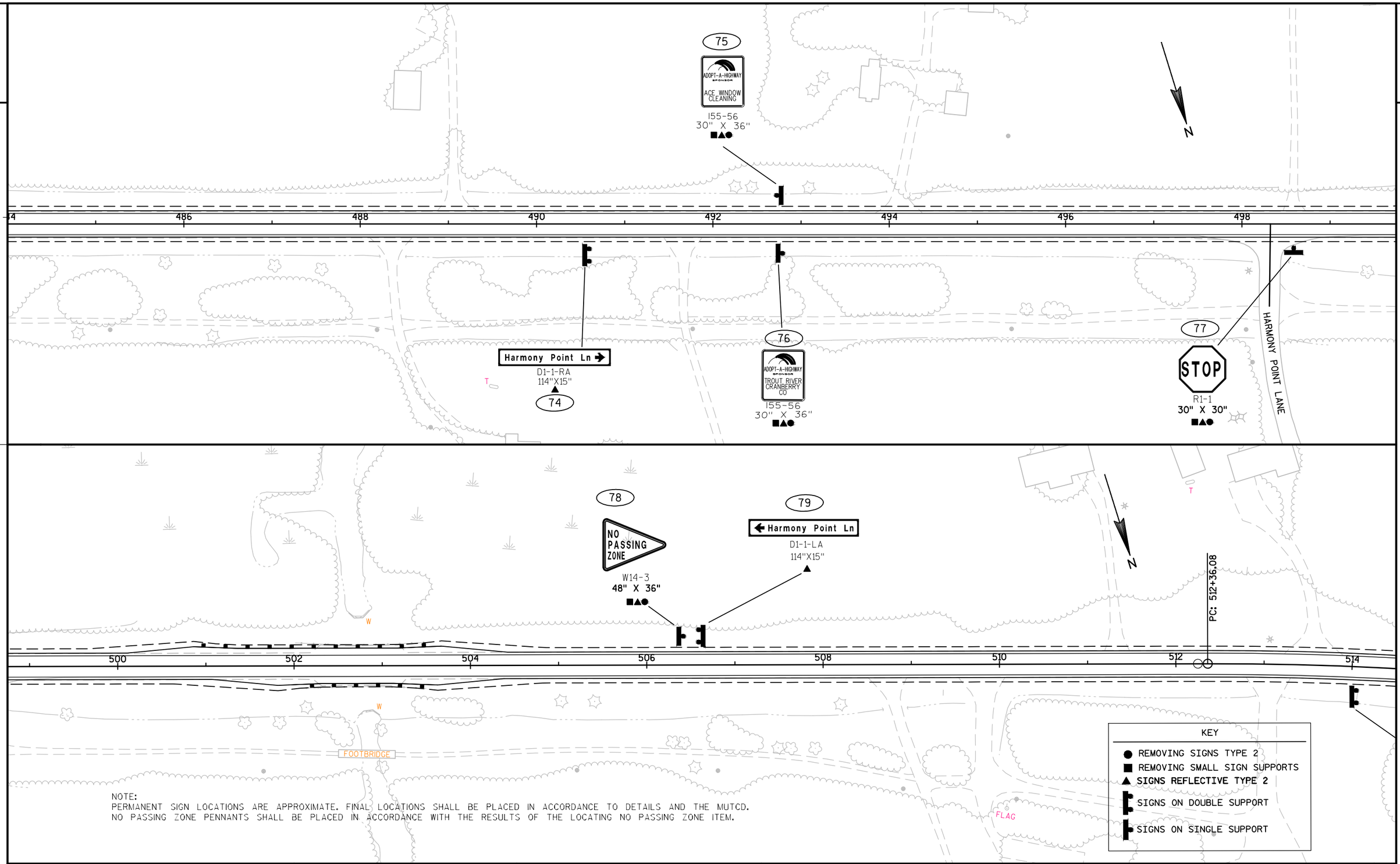
KEY

- REMOVING SIGNS TYPE 2
- REMOVING SMALL SIGN SUPPORTS
- SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
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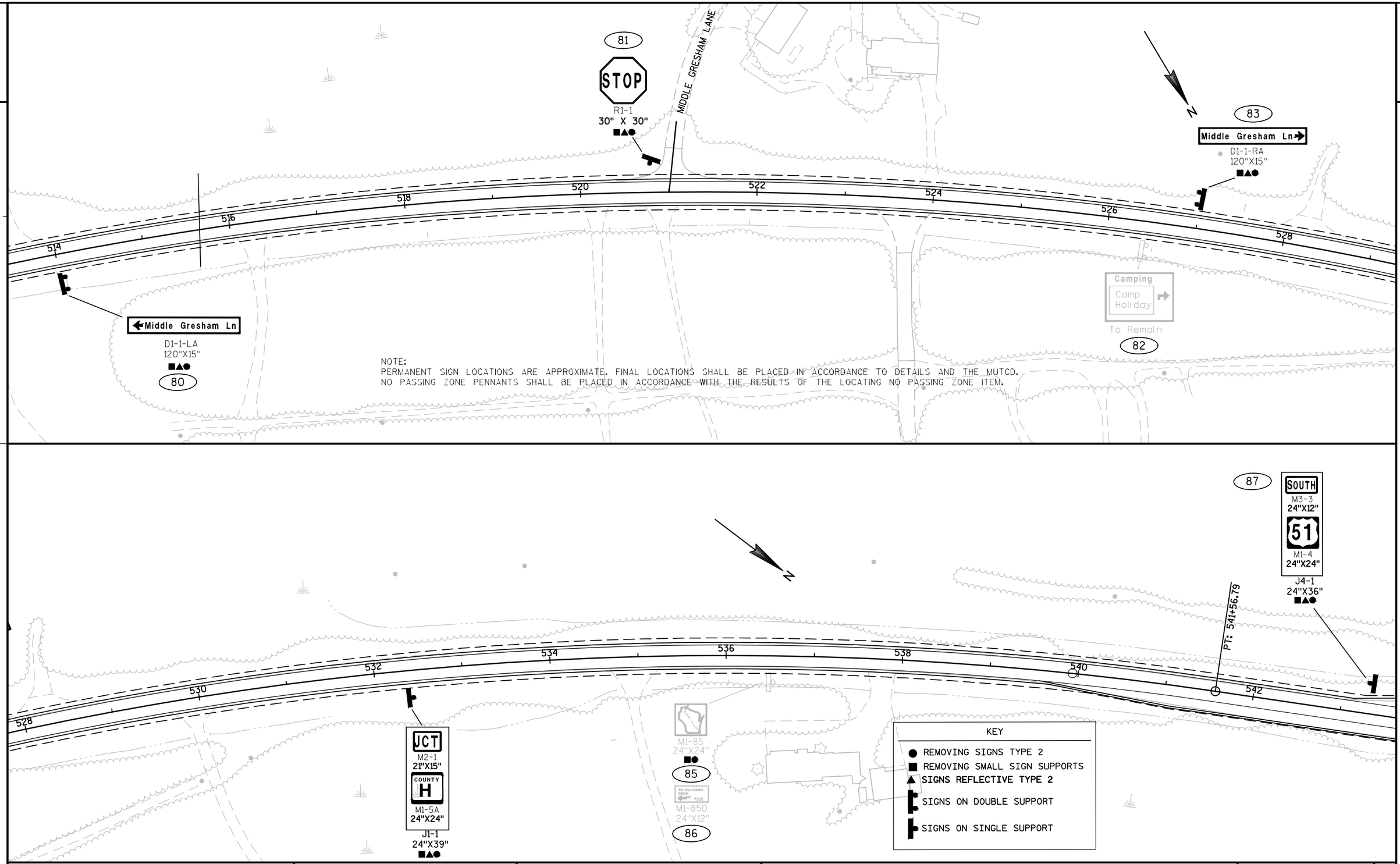
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:11 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44



NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.

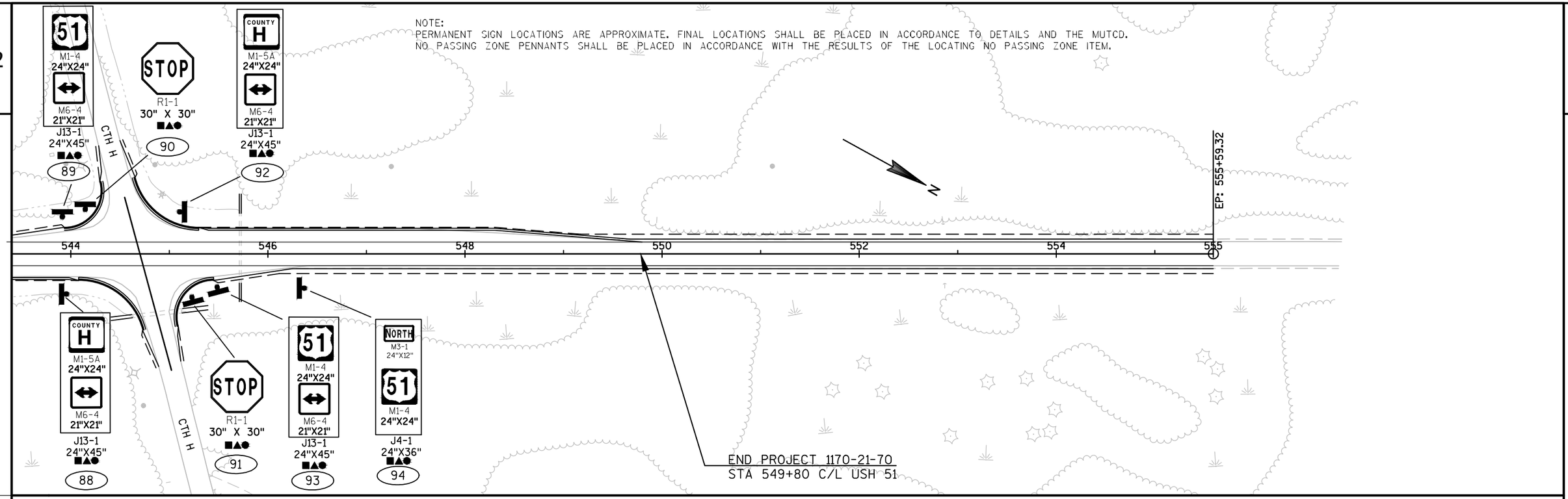
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 38	E



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:12 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

NOTE:
PERMANENT SIGN LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE PLACED IN ACCORDANCE TO DETAILS AND THE MUTCD.
NO PASSING ZONE PENNANTS SHALL BE PLACED IN ACCORDANCE WITH THE RESULTS OF THE LOCATING NO PASSING ZONE ITEM.



KEY

- ● REMOVING SIGNS TYPE 2
- ■ REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE 2
- SIGNS ON DOUBLE SUPPORT
- SIGNS ON SINGLE SUPPORT

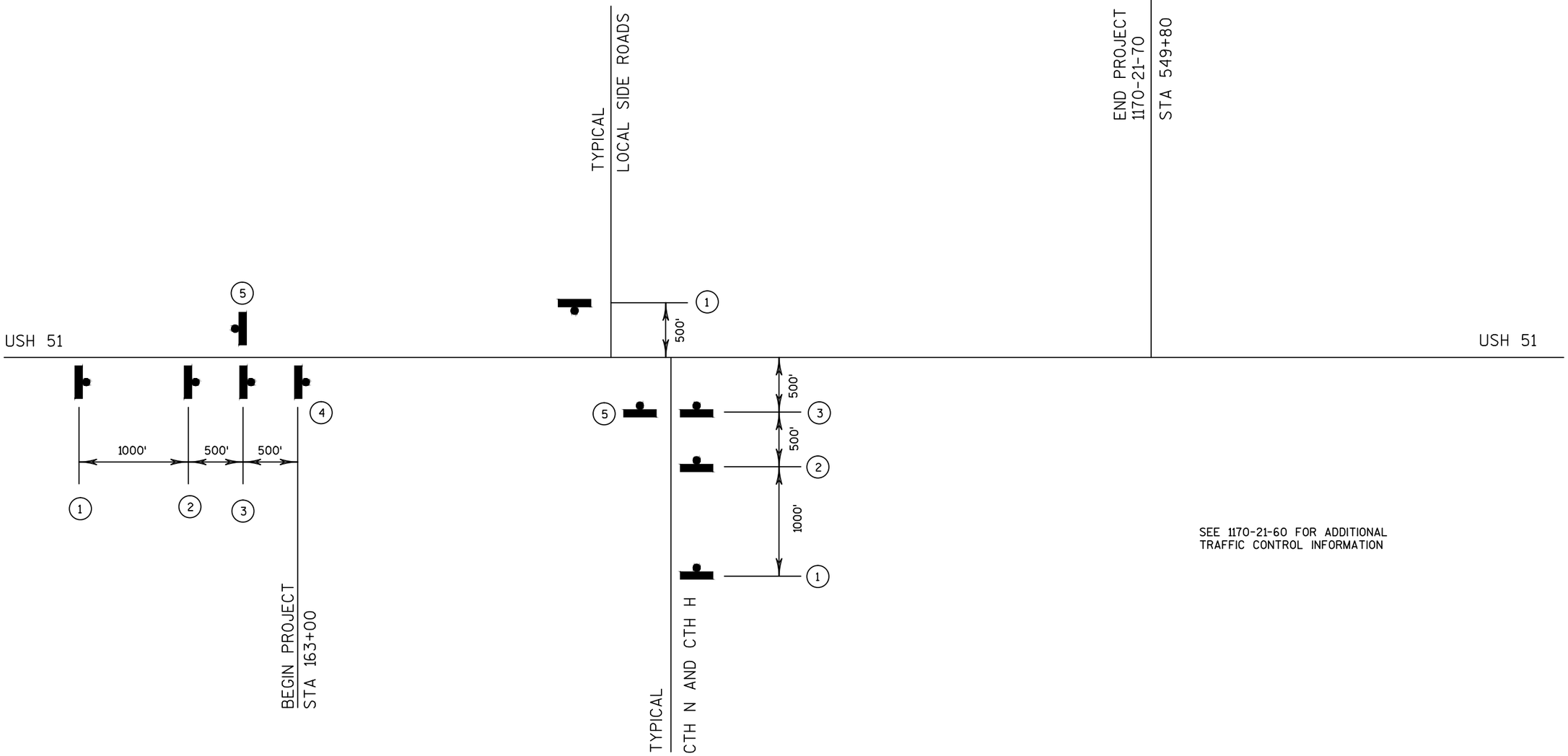
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET 40	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\023201_PS.DWG PLOT DATE : 2/13/2014 1:12 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

2







SEE 1170-21-60 FOR ADDITIONAL
TRAFFIC CONTROL INFORMATION

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	TRAFFIC CONTROL SHEET	SHEET 41	E

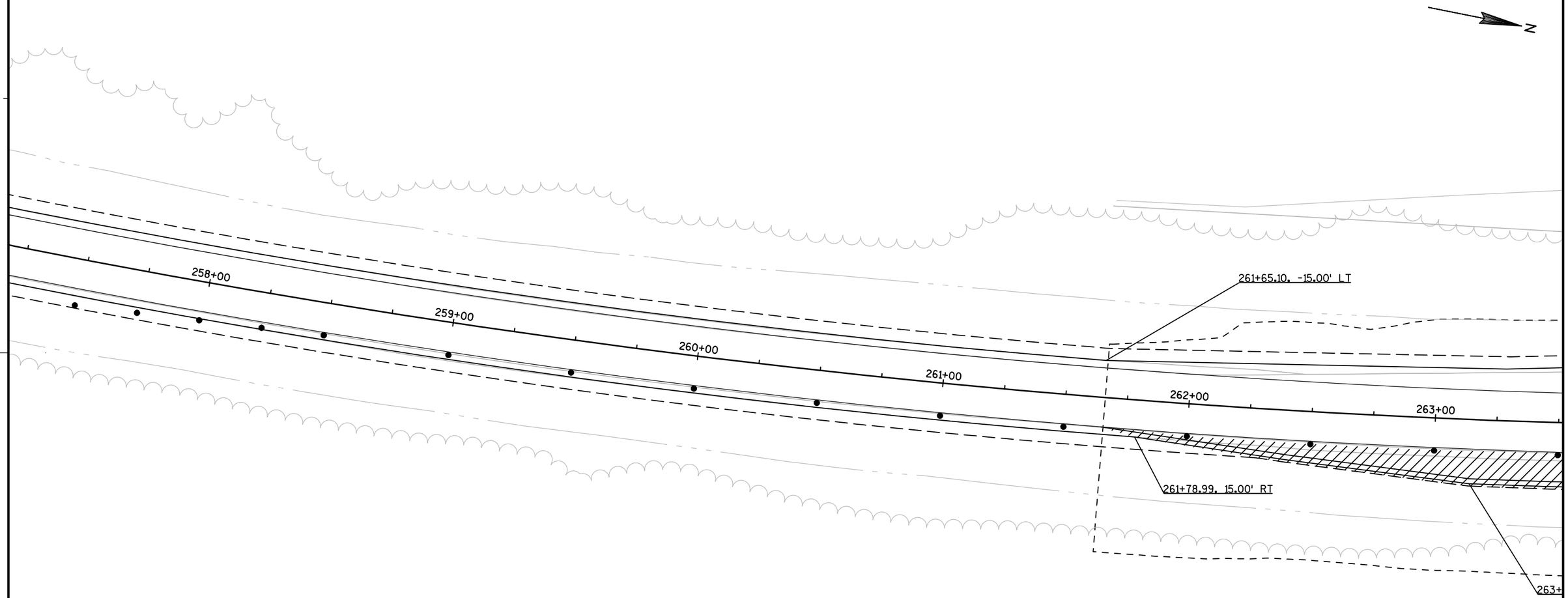
2

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURE AT CTH N	SHEET 42	E

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

261+65.10, -15.00' LT

264+91.13, -27.00' LT

267+43.03, -27.00' LT

0' RT

263+00

264+00

265+00

266+00

267+00

268+00

263+14.65, 26.00' RT

265+13.21, 24.00' RT

55'

265+13.21, 79.00' RT

267+27.65, 15.00' RT

50'

266+49.23, 24.00' RT

266+49.23, 74.00' RT

11+00

12+00

MOVE TRAFFIC CONTROL DRUMS AWAY FROM LINE OF SITE FOR TRAFFIC ENTERING USH 51 FROM CTH N AT THE END OF THE WORKING DAY

N

2

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURE AT CTH N	SHEET 43	E

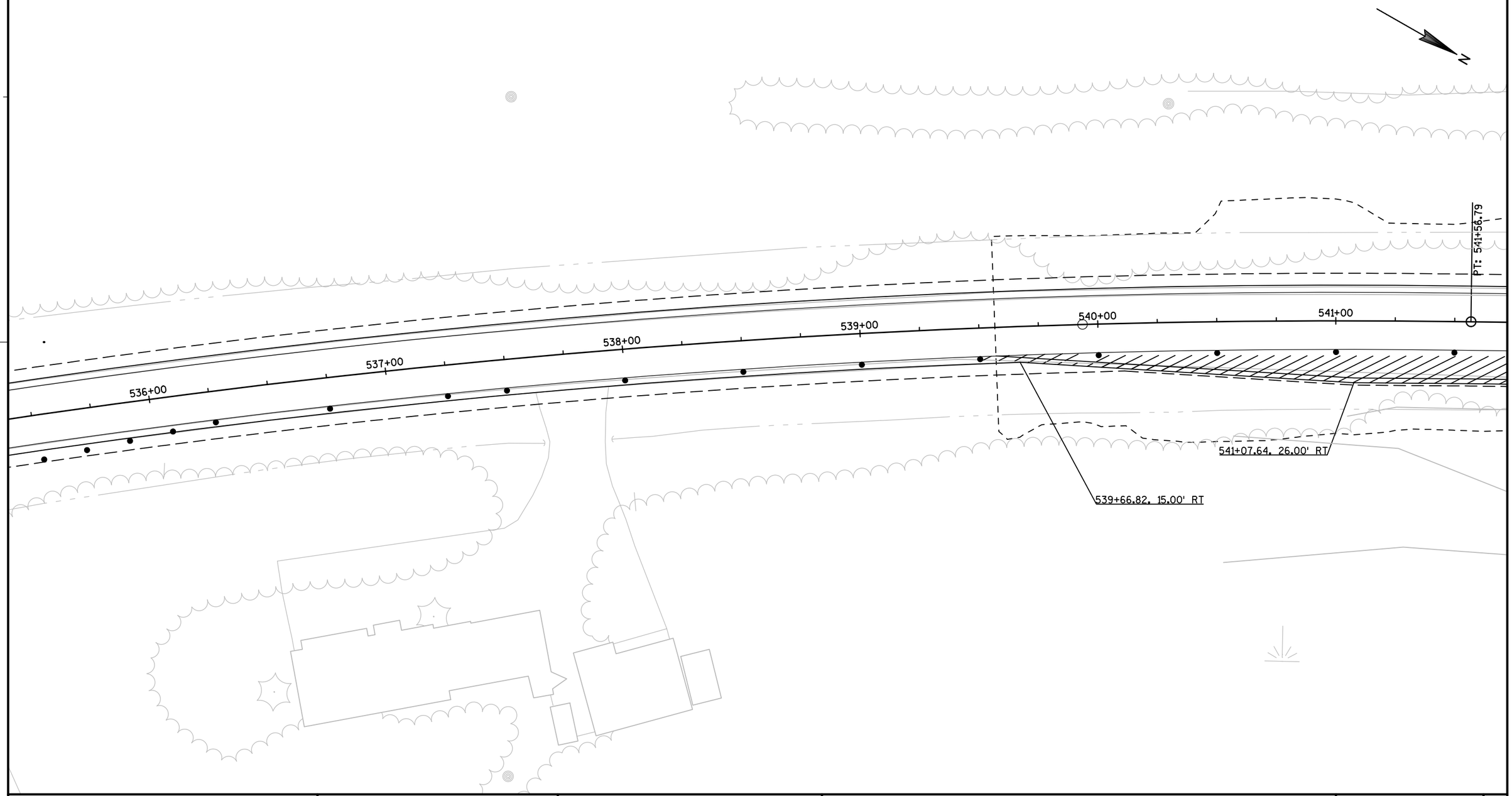
2

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURES AT CTH H	SHEET 44	E

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

N

11+00

545+30.37, -94.00' LT

70'

543+93.56, -64.00' LT

40'

545+29.65, -24.00' LT

543+13.56, -15.00' LT

543+93.56, -24.00' LT

PT: 541+56.79

541+00 542+00 543+00 544+00 545+00 546+00

546+24.85, 15.0

545+44.85, 24.00' RT

40'

545+44.85, 64.00' RT

541+07.64, 26.00' RT

544+08.02, 24.00' RT

70'

544+08.02, 94.00' RT

11+00

175°

MOVE TRAFFIC CONTROL DRUMS AWAY FROM LINE OF SITE FOR TRAFFIC ENTERING USH 51 FROM CTH H AT THE END OF THE WORKING DAY

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURES AT CTH H	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSOTHER\1170-21-70\025001_ID_TC.DWG PLOT DATE : 1/23/2014 1:04 PM PLOT BY : RISE, ANN E PLOT NAME : 025004_H PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

N

545+30.37, -94.00' LT

548+29.73, -26.00' LT

549+67.23, -15.00' LT

-64.00' LT

545+29.65, -24.00' LT

11+00

70'

40'

544+00 545+00 546+00 547+00 548+00 549+00 550

546+24.85, 15.00' RT

545+44.85, 24.00' RT

545+44.85, 64.00' RT

, 24.00' RT

08.02, 94.00' RT

MOVE TRAFFIC CONTROL DRUMS AWAY FROM LINE OF SITE FOR TRAFFIC ENTERING USH 51 FROM CTH H AT THE END OF THE WORKING DAY

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURES AT CTH H	SHEET 46	E

2

2

TRAFFIC CONTROL DRUM

WORK AREA

SEE SDD 15D28: TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

549+67.23, -15.00' LT

549+00 550+00 551+00 552+00 553+00 554+00

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	SHOULDER CLOSURES AT CTH H	SHEET 47	E

DATE 27FEB14 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-21-70 QUANTITY
0010	201.0105	CLEARING	STA	48.000	48.000
0020	201.0205	GRUBBING	STA	48.000	48.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000
0050	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	207.000	207.000
0060	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	44,674.000	44,674.000
0070	204.0165	REMOVING GUARDRAIL	LF	3,319.000	3,319.000
0080	205.0100	EXCAVATION COMMON	CY	1,688.000	1,688.000
0090	208.0100	BORROW	CY	14,636.000	14,636.000
0100	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	6.000	6.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 02. 1170-21-70	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	3,850.000	3,850.000
0140	305.0500	SHAPING SHOULDERS	STA	234.000	234.000
0160	440.4410.S	INCENTIVE IRI RIDE	DOL	14,660.000	14,660.000
0170	455.0105	ASPHALTIC MATERIAL PG58-28	TON	564.000	564.000
0180	455.0605	TACK COAT	GAL	2,118.000	2,118.000
0190	460.1103	HMA PAVEMENT TYPE E-3	TON	10,263.000	10,263.000
0200	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	6,930.000	6,930.000
0210	460.4110.S	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	LF	23,370.000	23,370.000
0220	465.0110	ASPHALTIC SURFACE PATCHING	TON	60.000	60.000
0230	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	50.000	50.000
0240	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	100.000	100.000
0250	465.0315	ASPHALTIC FLUMES	SY	71.200	71.200
0270	465.0475	ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL	LF	11,685.000	11,685.000
0290	520.9700.S	CULVERT PIPE LINERS (SIZE) 01. 24-INCH	LF	68.000	68.000
0300	520.9700.S	CULVERT PIPE LINERS (SIZE) 02. 30-INCH	LF	349.000	349.000
0310	520.9700.S	CULVERT PIPE LINERS (SIZE) 03. 36-INCH	LF	95.000	95.000
0330	520.9750.S	CLEANING CULVERT PIPES FOR LINER VERIFICATION	EACH	4.000	4.000
0340	521.0124	CULVERT PIPE CORRUGATED STEEL 24-INCH	LF	70.000	70.000
0350	521.0130	CULVERT PIPE CORRUGATED STEEL 30-INCH	LF	14.000	14.000
0370	521.1024	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	EACH	4.000	4.000
0380	521.1030	APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH	EACH	4.000	4.000
0390	521.1036	APRON ENDWALLS FOR CULVERT PIPE STEEL 36-INCH	EACH	2.000	2.000
0410	522.0324	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	91.000	91.000
0420	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	4.000	4.000
0430	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	511.000	511.000
0480	614.2300	MGS GUARDRAIL 3	LF	2,825.000	2,825.000
0500	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	16.000	16.000
0520	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 02. 1170-21-70	EACH	1.000	1.000
0530	619.1000	MOBILIZATION	EACH	0.450	0.450
0540	625.0100	TOPSOIL	SY	30,536.000	30,536.000
0550	628.1504	SILT FENCE	LF	5,905.000	5,905.000
0560	628.1520	SILT FENCE MAINTENANCE	LF	5,905.000	5,905.000
0570	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000

3

DATE 27FEB14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-21-70 QUANTITY
0580	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0590	628.2002	EROSION MAT CLASS I TYPE A	SY	22,494.000	22,494.000
0600	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	8,042.000	8,042.000
0620	628.7555	CULVERT PIPE CHECKS	EACH	37.000	37.000
0630	628.7570	ROCK BAGS	EACH	40.000	40.000
0640	629.0210	FERTILIZER TYPE B	CWT	19.000	19.000
0650	630.0120	SEEDING MIXTURE NO. 20	LB	824.000	824.000
0660	633.5200	MARKERS CULVERT END	EACH	14.000	14.000
0670	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	67.000	67.000
0680	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	31.000	31.000
0690	637.2210	SIGNS TYPE II REFLECTIVE H	SF	519.240	519.240
0700	637.2230	SIGNS TYPE II REFLECTIVE F	SF	54.000	54.000
0710	638.2602	REMOVING SIGNS TYPE II	EACH	71.000	71.000
0720	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	79.000	79.000
0730	642.5201	FIELD OFFICE TYPE C	EACH	0.450	0.450
0760	643.0100	TRAFFIC CONTROL (PROJECT) 03. 1170-21-70	EACH	1.000	1.000
0770	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,542.000	1,542.000
0800	643.0900	TRAFFIC CONTROL SIGNS	DAY	2,159.000	2,159.000
0810	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	30,051.000	30,051.000
0820	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	800.000	800.000
0830	648.0100	LOCATING NO-PASSING ZONES	MI	2.210	2.210
0840	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	21,066.000	21,066.000
0860	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	30.000	30.000
0870	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	511.000	511.000
0880	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	3.000	3.000
0890	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	11,685.000	11,685.000
0910	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 1170-21-70	LS	1.000	1.000
0940	SPV.0060	SPECIAL 01. REFLECTIVE TABS YELLOW	EACH	234.000	234.000
0950	SPV.0060	SPECIAL 02. CULVERT PIPE TRANSITIONS	EACH	1.000	1.000
0960	SPV.0090	SPECIAL 01. FOG SEAL CENTER LINE RUMBLE STRIPS	LF	11,685.000	11,685.000
0970	SPV.0120	SPECIAL 01. WATER FOR SEEDED AREAS	MGAL	715.000	715.000
0990	SPV.0180	SPECIAL 01. THERMOPLASTIC COATING AT SNOWMOBILE CROSSINGS	SY	200.000	200.000

3

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

3

CLEARING & GRUBBING

STATION	LOCATION	201.0105 CLEARING STATIONS	201.0205 GRUBBING STATIONS	REMARKS
204+00 - 206+00	LT	2	2	
223+00 - 225+00	RT	2	2	
231+50 - 232+50	RT	1	1	
262+00 - 266+00	RT	4	4	
267+00 - 268+00	LT	1	1	
268+00 - 269+00	RT	1	1	
312+00 - 313+00	LT	1	1	
358+00 - 362+00	RT	4	4	
360+00 - 362+00	LT	2	2	
395+00 - 403+00	RT	8	8	
395+00 - 406+00	LT	11	11	
500+00 - 502+00	LT	2	2	
501+00 - 505+00	RT	4	4	
541+00 - 544+00	RT	3	3	
546+00	LT	1	1	
11+00	LT	1	1	CTH H
	TOTALS	48	48	

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	REMARKS
246+37	USH 51	1	24 - INCH CMCP
	TOTAL	1	

3

REMOVING ASPHALTIC SURFACE MILLING

STATION - STATION	LOCATION	204.0120 SY	REMARKS
163+00 - 269+61	USH 51	35,537	
357+24 - 362+55	USH 51 LT	281	
358+20 - 361+76	USH 51 RT	184	
395+38 - 405+62	USH 51 LT	541	
395+65 - 404+16	USH 51 RT	477	
501+11 - 504+38	USH 51 LT	170	
501+07 - 504+42	USH 51 RT	170	
539+56 - 549+80	USH 51	6,813	CTH H
UNDISTRIBUTED		500	DRIVEWAYS, CTH N
	TOTAL	44,674	

REMOVING ASPHALTIC SURFACE BUTT JOINT

STATION	LOCATION	204.0115 SY	REMARKS
163+00	USH 51	33	
269+61	USH 51	33	
539+56	USH 51	33	
549+80	USH 51	33	
11+58	CTH N	24	
10+84	CTH H	24	WEST
11+16	CTH H	24	EAST
	TOTAL	207	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF	REMARKS
200+76.5 - 204+76.5	USH 51 LT	400	
224+35 - 232+29	USH 51 RT	794	
359+12 - 360+60	USH 51 RT	148	
359+15 - 360+63	USH 51 LT	148	
396+30 - 403+30	USH 51 RT	700	
396+46.5 - 404+81	USH 51 LT	835	
502+02 - 503+50	USH 51 RT	148	
502+02 - 503+48	USH 51 LT	146	
	TOTAL	3,319	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

Division	From / To Station	Location	Common Excavation (1)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow	Comment:
			Cut (2)			Factor				
Division 1			(item #205.0100)			1.25			(item #208.0100)	
	199+50 - 206+00 LT		10	10	111	138	-129	0	-129	BEAMGUARD
	223+00 - 234+00 RT		5	5	85	106	-101	0	-101	BEAMGUARD
	312+36		0	0	87	108	-108	0	-108	CULVERT EXTENSION
	356+50 - 363+50 LT AND RT		6	6	878	1,097	-1,091	0	-1,091	BEAMGUARD
	394+50 - 406+50 LT AND RT		107	107	9,143	11,428	-11,322	0	-11,322	BEAMGUARD
	499+50 - 505+00 LT AND RT		15	15	1,036	1,295	-1,280	0	-1,280	BEAMGUARD
	USH 51 AT CTH N		364	364	775	969	-605	0	-605	INTERSECTION
	USH 51 AT CTH H		1,088	1,088	273	341	747	747	0	INTERSECTION
	CTH H WEST		66	66	7	9	57	57	0	INTERSECTION
	CTH H EAST		27	27	4	5	22	22	0	INTERSECTION
Division 1 Subtotal			1,688	1,688	12,398	15,497	-13,809	826	-14,636	
Grand Total			1,688.03	1,688.03	12,397.99	15,497.48	-13,809.45	826.41	-14,635.86	
Total Common Exc										

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
13) Expanded Fill. Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the division.

FILE NAME : N:\pds\project_id\1170-21-30_USH51\Quantities\11702160\030202_mq.ppt PLOT DATE : January 23, 2014 PLOT BY : Ann Rise PLOT NAME : _____ PLOT SCALE : 1:1

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION	LOCATION	211.0400 STA
173+60	USH 51 LT AND RT	2
217+60	USH 51 LT AND RT	2
374+10	USH 51 LT AND RT	2
	TOTAL	6

TACK COAT

STATION - STATION	LOCATION	455.0605 GALLONS	REMARKS
163+00 - 269+61	USH 51	1,777	2 PASSES
539+56 - 549+80	CTH H	341	2 PASSES
	TOTAL	2,118	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	REMARKS
163+00 - 269+61	LT	1,756	
163+00 - 269+61	RT	1,756	
539+56 - 549+80	LT	169	CTH H INTERSECTION
539+56 - 549+80	RT	169	CTH H INTERSECTION
	TOTAL	3,850	

HMA PAVEMENT TYPE & ASPHALTIC MATERIAL

STATION - STATION	LOCATION	460.1103 HMA PAVEMENT TYPE E-3 TON	455.0105 ASPHALTIC MATERIAL PG58-28 MIX @ 5.5% TON	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS* LF
163+00 - 269+61	USH 51	8,173	450	21,322
357+24 - 362+55	USH 51 LT	65	4	-
358+20 - 361+76	USH 51 RT	42	2	-
395+38 - 405+62	USH 51 LT	124	7	-
395+65 - 404+16	USH 51 RT	110	6	-
501+11 - 504+38	USH 51 LT	39	2	-
501+07 - 504+42	USH 51 RT	39	2	-
539+56 - 549+80	CTH H	1,570	86	2,048
UNDISTRIB	SIDE RDS/SNOMO XINGS	100	6	-
	TOTALS	10,263	564	23,370

*2 PASSES

SHAPING SHOULDERS

STATION - STATION	LOCATION	305.0500 STATION	REMARKS
163+00 - 269+61	LT	107	
163+00 - 269+61	RT	107	
539+56 - 549+80	LT	10	CTH H INTERSECTION
539+56 - 549+80	RT	10	CTH H INTERSECTION
	TOTAL	234	

ASPHALTIC SURFACE PATCHING

STATION	LOCATION	465.0110 TON	REMARKS
UNDISTRIBUTED		60	SPOT REPAIRS
	TOTAL	60	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

STATION	LOCATION	465.0120 TON	REMARKS
UNDISTRIBUTED		50	SPOT LOCATIONS
	TOTAL	50	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY	REMARKS
10+70	LEFT	9.4	CTH N
11+00	RIGHT	10.6	CTH N
11+35	RIGHT	11.6	CTH H WEST
11+48	LEFT	16.7	CTH H WEST
10+50	LEFT	13.3	CTH H EAST
10+58	RIGHT	9.6	CTH H EAST
	TOTAL	71.2	

3

ASPHALTIC SURFACE TEMPORARY

STATION - STATION	LOCATION	465.0125 TON	REMARKS
UNDISTRIBUTED		100	CULVERTS AND ENTRANCES
	TOTAL	100	

ASPHALTIC CENTERLINE RUMBLE STRIP 2-LANE RURAL

STATION - STATION	LOCATION	465.0475 LF	REMARKS
163+00 - 269+61	CL	10,661	CTH M TO CTH N
539+56 - 549+80	CL	1,024	GAP CTH H INTERSECTION
	TOTAL	11,685	

CROSS DRAINS & SIDE ROAD CULVERT PIPES

STATION	LOCATION	CPRC CLASS IV 522.0324 24-INCH LF	APRON ENDWALLS FOR CULVERT PIPE RC 522.1024 24-INCH EACH	CULVERT PIPE CORRUGATED STEEL 521.0124 24-INCH LF	MIN THICK. 24-INCH INCHES	521.0130 30-INCH LF	MIN THICK. 30-INCH INCHES	APRON ENDWALLS FOR CULVERT PIPE STEEL 521.1024 24-INCH EACH	521.1030 30-INCH EACH	521.1036 36-INCH EACH	MIN THICK. 36-INCH INCHES	** JOINT TIES EACH	633.5200 MARKERS CULVERT END EACH	REMARKS
246+37	USH 51	81	2	0	-	0	-	0	0	0	-	12	2	
280+80	USH 51	0	0	0	-	0	-	0	0	2	0.079	-	2	
312+36	USH 51	0	0	14	0.064	0	-	2	0	0	-	-	2	EXTEND 6 FT LT AND 8 FT RT
400+35	USH 51	0	0	0	-	14	0.079	0	2	0	-	-	2	EXTEND 6 FT LT AND 8 FT RT
452+98	USH 51	0	0	0	-	0	0.079	0	2	0	-	-	2	
545+71	USH 51	10	2	0	-	0	-	0	0	0	-	10	2	EXTEND 2 FT LT AND 8 FT RT
10+62	CTH H	0	0	56	0.064	0	-	2	0	0	-	-	2	EXTEND 30 FT LT AND 26 FT RT
	TOTALS	91	4	70		14		4	4	2		22	14	

** FOR INFORMATIONAL PURPOSES ONLY. NOT A BID ITEM.

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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CULVERT PIPE LINERS

STATION	LOCATION	520.9700.S CULVERT PIPE LINERS 24-INCH LF	520.9700.S CULVERT PIPE LINERS 30-INCH LF	520.9700.S CULVERT PIPE LINERS 36-INCH LF	520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION EACH	CULVERT SLOPES FT/FT
280+80	USH 51	-	-	95	1	0.0053
312+36	USH 51	68	-	-	1	0.0161
400+35	USH 51	-	200	-	1	0.0439
452+98	USH 51	-	149	-	1	0.0764
	TOTALS	68	349	95	4	

GUARDRAIL

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
200+70 - 204+76 LT	USH 51	300	2
224+29 - 232+36 RT	USH 51	675	2
359+07 - 360+63 RT	USH 51	100	2
359+12 - 360+68 LT	USH 51	275	2
396+24 - 403+41 RT	USH 51	625	2
396+30 - 404+87 LT	USH 51	750	2
501+94 - 503+53 RT	USH 51	50	2
501+99 - 503+55 LT	USH 51	50	2
	TOTALS	2,825	16

CONCRETE CURB & GUTTER 6-INCH

STATION - STATION	LOCATION	601.0557 SLOPED 36-INCH TYPE D LF	REMARKS
265+00 - 265+55	USH 51	86	CTH N SOUTHEAST QUADRANT
266+20 - 266+70	USH 51	79	CTH N NORTHEAST QUADRANT
543+50 - 544+20	USH 51	110	CTH H SOUTHEAST QUADRANT
545+20 - 545+60	USH 51	63	CTH H NORTHEAST QUADRANT
543+50 - 544+20	USH 51	110	CTH H SOUTHWEST QUADRANT
545+20 - 545+60	USH 51	63	CTH H NORTHWEST QUADRANT
	TOTAL	511	

3

WATER FOR SEEDED AREAS

LOCATION	SPV.0120.01 MGAL	REMARKS
SEEDED AREAS	715	
TOTAL	715	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

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TOPSOIL, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	REMARKS
199+50 - 206+00	USH 51 LT	601	0.38	16	
223+00 - 233+50	USH 51 RT	735	0.46	20	
246+37	USH 51 LT	411	0.26	11	
246+37	USH 51 RT	142	0.09	4	
261+75 - 265+60	USH 51 RT	1,772	1.12	48	
261+75 - 269+60	USH 51 LT	1,134	0.71	31	
265+75 - 269+60	USH 51 RT	1,423	0.90	38	
312+36	USH 51 LT	91	0.06	2	
312+36	USH 51 RT	70	0.04	2	
356+80 - 363+00	USH 51 LT	1,121	0.71	30	
357+80 - 362+15	USH 51 RT	1,261	0.79	34	
395+00 - 406+10	USH 51 LT	6,882	4.34	186	
395+00 - 404+60	USH 51 RT	6,238	3.93	168	
500+05 - 504+80	USH 51 LT	1,274	0.80	34	
500+60 - 504+80	USH 51 RT	1,306	0.82	35	
539+40 - 544+40	USH 51 LT	1,654	1.04	45	
539+40 - 544+80	USH 51 RT	1,573	0.99	42	
545+00 - 549+80	USH 51 LT	1,581	1.00	43	
545+00 - 549+80	USH 51 RT	1,265	0.80	34	
	TOTALS	30,536	19	824	

SILT FENCE

STATION - STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF	REMARKS
199+40 - 201+90	USH 51 LT	266	266	
204+15 - 206+10	USH 51 LT	312	312	
223+00 - 233+80	USH 51 RT	1,110	1,110	
246+00 - 246+45	USH 51 RT	85	85	
265+90 - 267+10	USH 51 LT	130	130	
280+60 - 281+00	USH 51 LT	39	39	
312+10 - 312+50	USH 51 LT	49	49	
356+50 - 363+10	USH 51 LT	794	794	
357+95 - 362+50	USH 51 RT	561	561	
403+10 - 404+80	USH 51 LT	174	174	
499+90 - 505+10	USH 51 LT	614	614	
500+30 - 505+05	USH 51 RT	604	604	
545+00 - 550+05	USH 51 LT	587	587	
545+15 - 550+00	USH 51 RT	580	580	
	TOTALS	5,905	5,905	

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
163+00 - 549+80	3	2	
TOTALS	3	2	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

3

EROSION MAT

STATION	LOCATION	628.2002 CLASS I TYPE A SY	628.2006 URBAN CLASS I TYPE A* SY	REMARKS
199+50 - 206+00	USH 51 LT	601	-	
223+00 - 233+50	USH 51 RT	735	-	
246+37	USH 51 LT	411	-	
246+37	USH 51 RT		142	
261+75 - 269+60	USH 51 LT	1,772	-	
261+75 - 265+60	USH 51 RT	1,134	-	
265+75 - 269+60	USH 51 RT	1,423	-	
312+36	USH 51 LT	-	91	
312+36	USH51 RT	70	-	
356+80 - 363+00	USH 51 LT	-	1,121	
357+80 - 362+15	USH 51 RT	-	1,261	
395+00 - 406+10	USH 51 LT	6,882	-	
395+00 - 404+60	USH 51 RT	6,238	-	
500+05 - 504+80	USH 51 LT	-	1,274	
500+60 - 504+80	USH 51 RT	-	1,306	
539+40 - 544+40	USH 51 LT	1,654	-	
539+40 - 544+80	USH 51 RT	1,573	-	
545+00 - 549+80	USH 51 LT	-	1,581	
545+00 - 549+80	USH 51 RT	-	1,265	
	TOTALS	22,494	8,042	

*USE IN WETLAND AREAS

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
246+38	USH 51	7
312+36	USH 51	7
400+35	USH 51	9
545+71	USH 51	7
10+62	CTH H	7
	TOTAL	37

ROCK BAGS

LOCATION	628.7570 EACH	REMARKS
UNDISTRIBUTED	40	
TOTAL	40	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
165+35	LT	1	D1-2	-	2	2	-	-	2	-	-	DESTINATION SIGN	LA BOULDER JCT, RA WIHEGA RD
165+88	RT	2	J4-1	24"X36"	1	1	6.00	-	-	1	-	REASSURANCE ASSEMBLY	
			M3-1	24"X12"	-	-	-	-	-	-	-	CARDINAL DIRECTION MARKER	NORTH
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
167+50	LT	3	D1-2	84"X30"	-	-	17.50	-	2		-	DESTINATION SIGN	LA BOULDER JCT, RA WIHEGA RD
167+72	RT	4	I55-56	30"X36"	1	1	-	-	-	-	-	ADOPT-A-HIGHWAY	AVAILABLE
167+99	LT	5	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	BOY SCOUT TROOP 564
170+10	LT	6	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"	-	-	-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	M
244+70	LT	7	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
247+19	LT	8	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
247+72	LT	9	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
255+11	RT	10	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"	-	-	-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	N
258+50	RT	11	D1-1	60"X15"	-	-	6.25	-	2	-	-	DESTINATION SIGN	SAYNER RA
264+09	LT	12	I55-56	30"X36"	1	1	-	-	-	-	-	ADOPT-A-HIGHWAY	AVAILABLE
264+09	RT	13	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	LUHS STUDENT COUNCIL
265+14	LT	14	J4-1	24"X36"	1	1	6.00	-	-	1	-	REASSURANCE ASSEMBLY	
			M3-3	24"X12"	-	-	-	-	-	-	-	CARDINAL DIRECTION MARKER	SOUTH
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
265+67	RT	15	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	N
			M6-1	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	RA
266+20	LT	16	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	N
			M6-1	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	LA
266+20	RT	17	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
266+20	RT	18	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
266+80	RT	19	J4-1	24"X36"	-	-	6.00	-	-	1	-	REASSURANCE ASSEMBLY	
			M3-1	24"X12"	-	-	-	-	-	-	-	CARDINAL DIRECTION MARKER	NORTH
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
270+95	LT	20	D1-1	-	1	1	-	-	-	-	-	DESTINATION SIGN	SAYNER
272+54	LT	21A	M1-86	18'X36"	1	1	4.50	-	-	1	21B	MARKER SIGN	WILDLIFE VIEWING AREA
272+54	LT	21B	M1-88A	12"X12"	1	-	1.00	-	-	-	21A	MARKER SIGN	LA
			SHEET 1	SUB-TOTALS:	20	19	113.29	6.00	9	12			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
273+50	LT	22	D1-1	60"X15"	-	-	6.25	-	2	-	-	DESTINATION SIGN	SAYNER LA
275+70	LT	23	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"	-	-	-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	N
287+40	RT	24	D1-1	78"X15"	-	-	8.13	-	2	-	-	DESTINATION SIGN	SHUCHA RD LA
287+32	LT	25	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
288+90	RT	26	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
290+50	RT	27	D1-1	96"X15"	-	-	10.00	-	2	-	-	DESTINATION SIGN	TROUT LAKE RD RA
293+13	LT	28	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
294+13	RT	29	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	TROUT LAKE RD
297+88	RT	30	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
301+00	LT	31	D1-1	78"X15"	-	-	8.13	-	2	-	-	DESTINATION SIGN	SHUCHA RD RA
305+40	LT	32	D1-1	96"X15"	1	2	10.00	-	2	-	-	DESTINATION SIGN	TROUT LAKE RD LA
310+02	RT	33	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
322+50	RT	34	D1-1	96"X15"	-	-	10.00	`-	2	-	-	DESTINATION SIGN	TROUT LAKE RD RA
326+92	LT	35	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
330+35	RT	36	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
337+55	LT	37	D1-1	96"X15"	-	-	10.00	-	2	-	-	DESTINATION SIGN	TROUT LAKE RD LA
347+05	RT	38	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
360+71	LT	39	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
366+50	RT	40	D1-2	84"X30"	-	-	17.50	-	2	-	-	DESTINATION SIGN	LA GRESHAM RD, DAY LAKE RD RA
368+63	RT	41	D1-2	-	1	2	-	-	-	-	-	DESTINATION SIGN	LA GRESHAM RD, DAY LAKE RD RA
373+91	LT	42	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
374+44	RT	43	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
377+08	RT	44	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	ACE WINDOW CLEANING
377+08	LT	45	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	LUHS STUDENT COUNCIL
379+19	LT	46	D1-2	-	1	2	-	-	-	-	-	DESTINATION SIGN	LA DAY LAKE RD, RA GRESHAM RD
382+00	LT	47	D1-2	84"X30"	-	-	17.50	-	2	-	-	DESTINATION SIGN	LA DAY LAKE RD, RA GRESHAM RD
388+70	RT	48	D1-1	108"X15"	1	2	11.25	-	2	-	-	DESTINATION SIGN	DIAMOND LAKE RD LA
391+34	RT	49	D5-61	48"X24"	1	1	8.00	-	1	-	-	DESTINATION SIGN	WAYSIDE 1/2 MILE
395+03	LT	50	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
400+83	LT	51	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	DIAMOND LAKE RD RA
402+80	LT	52	D1-1	108"X15"	-	-	11.25	-	2	-	-	DESTINATION SIGN	DIAMOND LAKE RD RA
415+10	RT	53	D5-62L	48"X24"	1	1	8.00	-	1	-	-	DESTINATION SIGN	WAYSIDE LA
415+10	LT	54	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
416+14	RT	55	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
			SHEET 2 SUB-TOTALS:		25	31	193.76	42.00	31	10			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
429+85	LT	62	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
430+40	LT	63	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
430+70	LT	64	D5-62R	48"X24"	1	1	8.00	-	1	-	-	DESTINATION SIGN	WAYSIDE RA
431+30	RT	65	D1-1	120"X15"	-	-	12.50	-	2	-	-	DESTINATION SIGN	TIMBER MEADOWS RD LA
437+80	LT	66	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
445+50	LT	67	D1-1	120"X15"	-	-	12.50	-	2	-	-	DESTINATION SIGN	TIMBER MEADOWS RD RA
455+22	LT	68	D5-61	48"X24"	1	1	8.00	-	1	-	-	DESTINATION SIGN	WAYSIDE 1/2 MILE
466+40	RT	69	D1-1	84"X15"	-	-	8.75	-	2	-	-	DESTINATION SIGN	CHARLOTTE PL LA
468+90	RT	70	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	CHARLOTTE PL
473+70	LT	71	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
479+18	LT	72	D1-1	-	1	2	-	-	-	-	-	DESTINATION SIGN	CHARLOTTE PL
481+50	LT	73	D1-1	84"X15"	-	-	8.75	-	2	-	-	DESTINATION SIGN	CHARLOTTE PL RA
490+50	RT	74	D1-1	114"X15"	-	-	11.88	-	2	-	-	DESTINATION SIGN	HARMONY POINT LN RA
492+71	RT	75	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	TROUT RIVER CRANBERRY CO
492+71	LT	76	I55-56	30"X36"	1	1	7.50	-	-	1	-	ADOPT-A-HIGHWAY	ACE WINDOW CLEANING
498-+52	RT	77	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
506+44	LT	78	W14-3	48"X36"	1	1	-	6.00	-	1	-	WARNING SIGN	NO PASSING ZONE
506+50	LT	79	D1-1	114"X15"	-	-	11.88	-	2	-	-	DESTINATION SIGN	HARMONY POINT LN LA
514+00	RT	80	D1-1	120"X15"	1	2	12.50	-	2	-	-	DESTINATION SIGN	MIDDLE GRESHAM LN LA
520+70	LT	81	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
526+20	RT	82	-	-	-	-	-	-	-	-	-	SPECIFIC INFO SIGN	CAMP HOLIDAY, TO REMAIN
527+00	LT	83	D1-1	120"X15"	1	2	12.50	-	2	-	-	DESTINATION SIGN	MIDDLE GRESHAM LN RA
532+31	RT	84	J1-1	24"X39"	1	1	6.50	-	-	1	-	JUNCTION ASSEMBLY	
			M2-1	21"X15"	-	-	-	-	-	-	-	MARKER SIGN	JCT
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	H
536+54	RT	85	M1-85	24"X24"	1	1	-	-	-	-	-	MARKER SIGN	WISCONSIN HERITAGE SITE
536+54	RT	86	M1-85D	24"X12"	1	-	-	-	-	-	-	MARKER SIGN	WA-SWA-GONING INDIAN VILLIAGE LA
543+40	LT	87	J4-1	24"X36"	1	1	6.00	-	-	1	-	REASSURANCE ASSEMBLY	
			M3-3	24"X12"	-	-	-	-	-	-	-	CARDINAL DIRECTION MARKER	SOUTH
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
543+93	RT	88	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	H
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
			SHEET 3	SUB-TOTALS:	20	23	173.33	6.00	24	6			

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING

STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE (IN x IN)	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0616 WOOD POSTS 4X6 INCH 16 F00T EACH	634.0618 WOOD POSTS 4X6 INCH 18 F00T EACH	MOUNT ON SAME POST AS SIGN #	DESCRIPTION	COMMENTS
544+46	LT	89	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
544+46	LT	90	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
544+98	RT	91	R1-1	30"X30"	1	1	5.18	-	1	-	-	REGULATORY SIGN	STOP SIGN
545+10	LT	92	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-5A	24"X24"	-	-	-	-	-	-	-	CTH ROUTE MARKER SIGN	H
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
545+20	RT	93	J13-1	24'X45"	1	1	7.50	-	-	1	-	JUNCTION ASSEMBLY	
			M1-4	24"X24"	-	-	-	-	-	-	-	STH ROUTE MARKER SIGN	51
			M6-4	21"X21"	-	-	-	-	-	-	-	MARKER SIGN	DA
546+28	RT	94	J4-1	24"X36"	1	1	6.00	-	1	-	–	REASSURANCE ASSEMBLY	
			M3-1	24"X12"	-	-	-	-	-	-	–	CARDINAL DIRECTION MARKER	NORTH
			M1-4	24"X24"	-	-	-	-	-	-	–	STH ROUTE MARKER SIGN	51
			SHEET 4 SUB-TOTALS:		6	6	38.86	0.00	3	3			
			PROJECT TOTALS:		71	79	519.24	54.00	67	31			

3

TRAFFIC CONTROL

LOCATION	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0300 DRUMS DAYS	643.0900 SIGNS DAYS
ADVANCED WARNING	1	1542	1725
SIGNS IN LIEU OF			
CENTERLINE TRAFFIC CONTROL	-	-	434
TOTALS	1	1542	2159

LOCATING NO PASSING ZONES

STATION - STATION	648.0100 MI	REMARKS
163+00 - 269+61	2.02	
539+56 - 549+80	0.19	
TOTAL	2.21	

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH EDGELINE WHITE LF	646.0106 4-INCH LANE LINE WHITE LF	646.0106 4-INCH YELLOW LF	646.0126 8-INCH TURNLINE WHITE LF
163+00 - 269+61	USH 51 RT	10,586	-	-	-
163+00 - 269+61	USH 51 LT	10,564	-	-	-
163+00 - 269+61	USH 51	-	-	5,702	-
263+15 - 265+15	USH 51 RT	-	-	-	200
264+91 - 267+43	USH 51 LT	-	63	-	-
539+57 - 549+80	USH 51 RT	1,056	-	-	-
539+57 - 549+80	USH 51 LT	1,056	-	-	-
539+56 - 549+80	USH 51	-	-	1,024	-
541+08 - 544+08	USH 51 RT	-	-	-	300
545+30 - 548+30	USH 51 LT	-	-	-	300
	SUB TOTALS	23,262	63	6,726	
	TOTALS		30,051		800

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

TEMPORARY PAVEMENT MARKING

STATION - STATION	LOCATION	649.0100 TEMPORARY PAVEMENT MARKING YELLOW LF	SPV.0060.01 REFLECTIVE TABS YELLOW EACH	REMARKS
163+00 - 269+61	USH 51	5,702	-	AFTER MILLING
539+56 - 549+80	USH 51	1,320	-	AFTER MILLING
163+00 - 269+61	USH 51	5,702	-	AFTER LOWER LAYER
539+56 - 549+80	USH 51	1,320	-	AFTER LOWER LAYER
163+00 - 269+61	USH 51	5,702	-	AFTER UPPER LAYER*
539+56 - 549+80	USH 51	1,320	-	AFTER UPPER LAYER*
163+00 - 269+61	USH 51	-	213	AFTER FOG SEAL
539+56 - 549+80	USH 51	-	20	AFTER FOG SEAL
	TOTALS	21,066	234	

*PLACED AFTER PAVING AND BEFORE FOG SEALING
REFLECTIVE YELLOW TABS ARE PLACED AT 50 FT INTERVALS

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5500 CURB & GUTTER LF	650.6000 PIPE CULVERTS EACH	650.8000 RESURFACING REFERENCE LF	REMARKS
246+37	30	0	1	0	
265+00 - 265+55	0	86	0	0	CTH N
266+20 -266+70	0	79	0	0	CTH N
312+36	0	0	1	0	
400+35	0	0	1	0	
543+50 - 544+20	0	110	0	0	CTH H
545+20 - 545+60	0	63	0	0	CTH H
543+50 - 544+20	0	110	0	0	CTH H
545+20 - 545+60	0	63	0	0	CTH H
163+00 - 269+61	0	0	0	10,661	
539+56 - 549+80	0	0	0	1,024	
TOTALS	30	511	3	11,685	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED

3

CULVERT PIPE TRANSITIONS

STATION	SPV.0060.02 EACH	REMARKS
246+37	1	7 FEET DEEP
TOTAL	1	

FOG SEAL CENTER LINE RUMBLE STRIPS

STATION - STATION	SPV.0090.01 LF	REMARKS
163+00 - 269+61	10,661	
539+56 - 549+80	1,024	
TOTAL	11,685	

3

THEMROPLASTIC COATING AT SNOWMOBILE CROSSINGS

STATION	LOCATION	SPV.0180.01 SY	REMARKS
173+60	USH 51	67	
217+60	USH 51	67	
374+10	USH 51	67	
	TOTAL	200	

PI STA = 162+55.53
DELTA = 3°16'40"
D = 0°18'26"
T = 533.58
L = 1066.87
R = 18649.16
PC STA = 157+21.95
PT STA = 167+88.82

BEGIN CENTERLINE
FOG SEAL

BEGIN CENTERLINE
RUMBLE STRIPS

PI: 162+55.53

PT: 167+88.82

THERMOPLASTIC COATING
AT SNOWMOBILE CROSSING
STA 173+80

N

160 162 164 166 168 170 172 174

BEGIN PROJECT 1170-12-70
STA 163+00 C/L USH 51

N

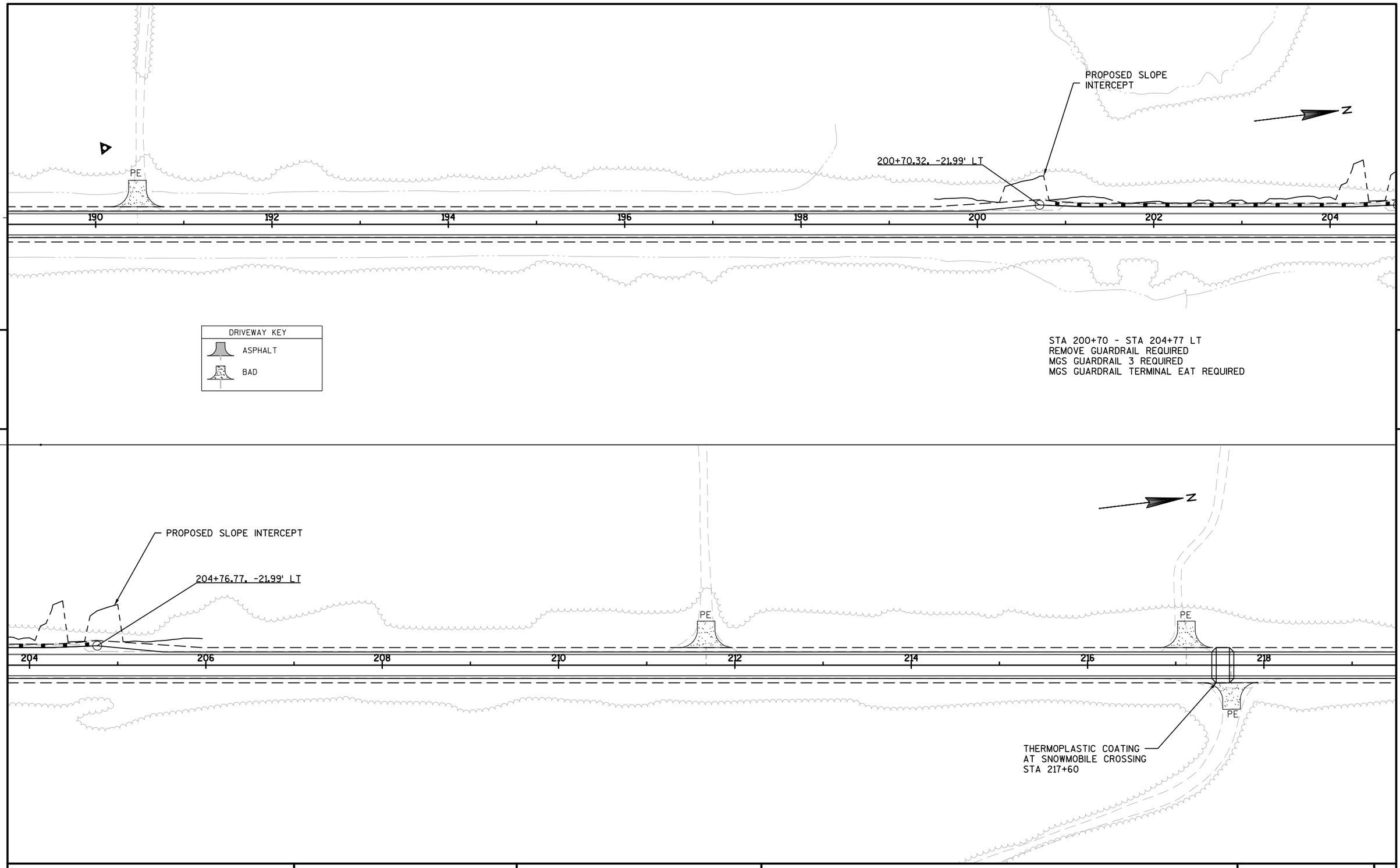
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5

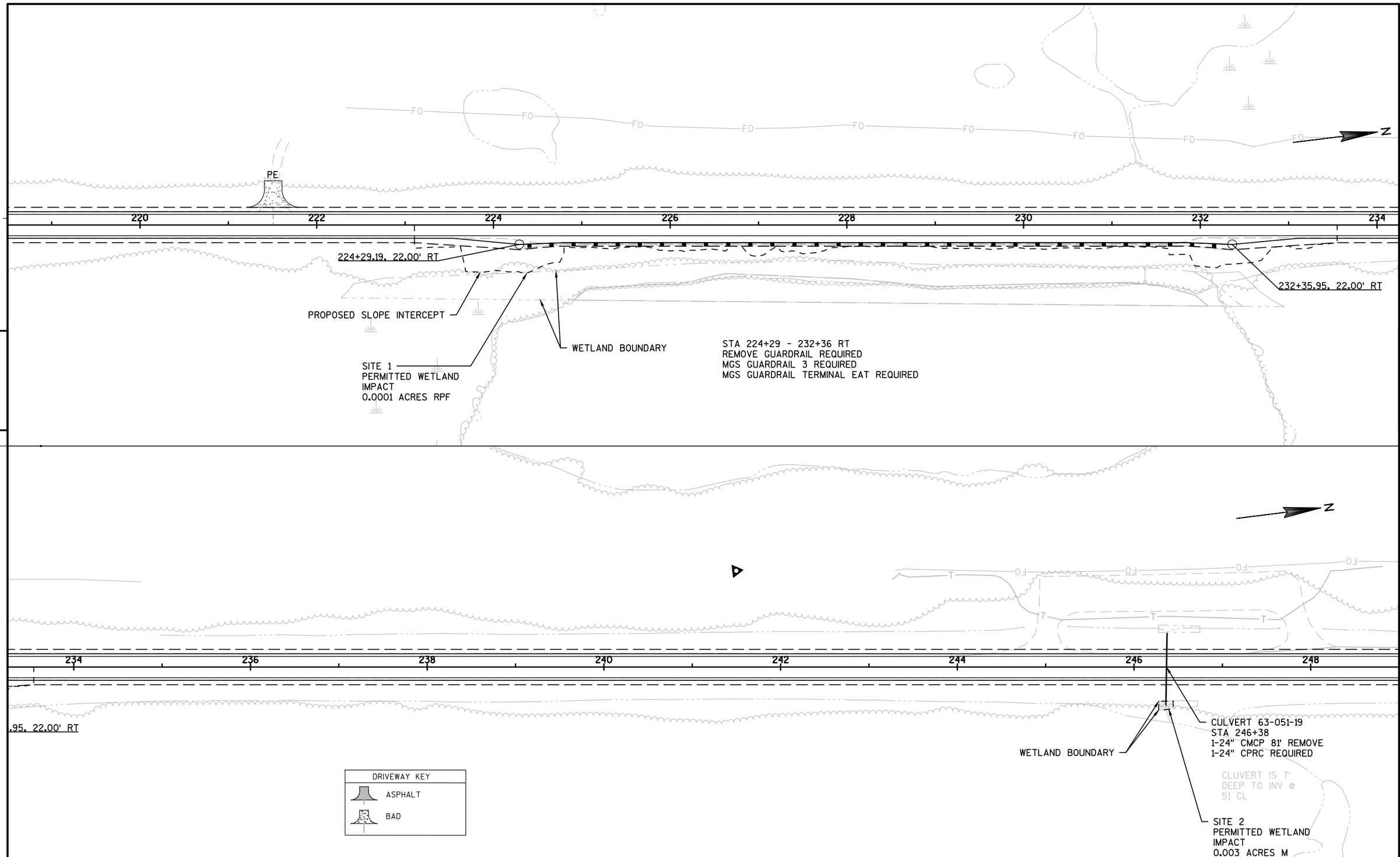
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

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WISDOT/CADDS SHEET 44



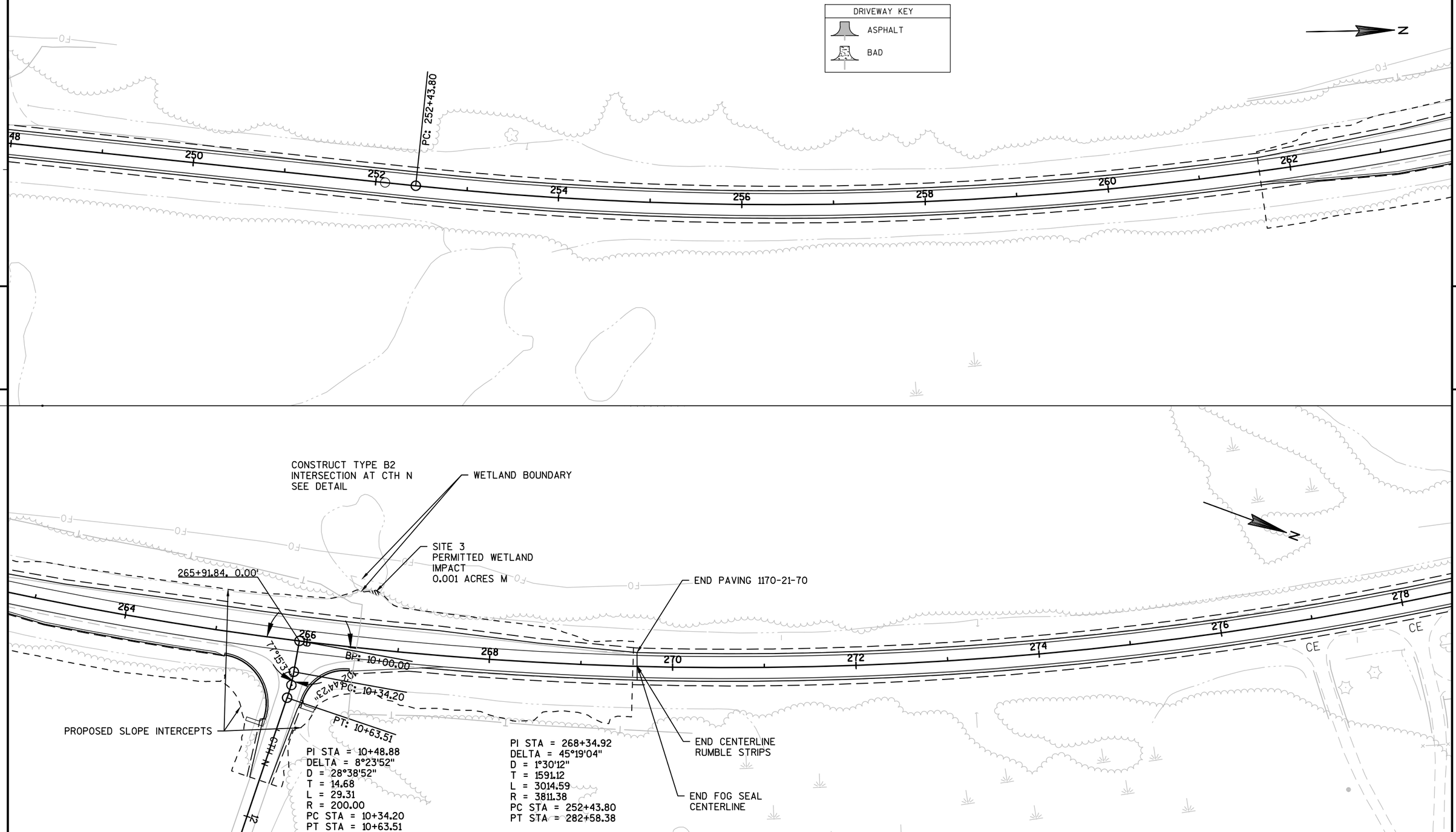
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 65	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:41 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

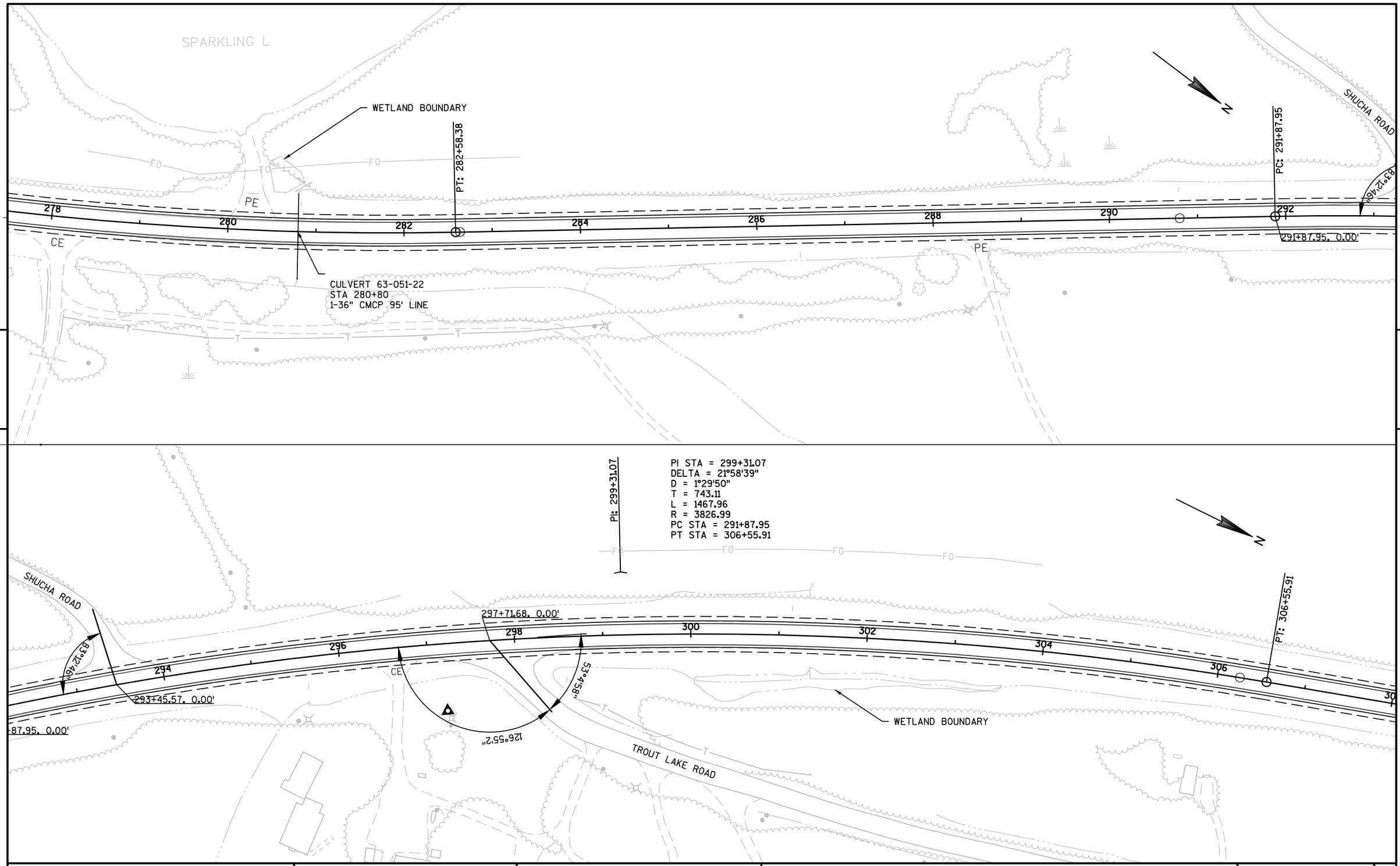
WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 66	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:41 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

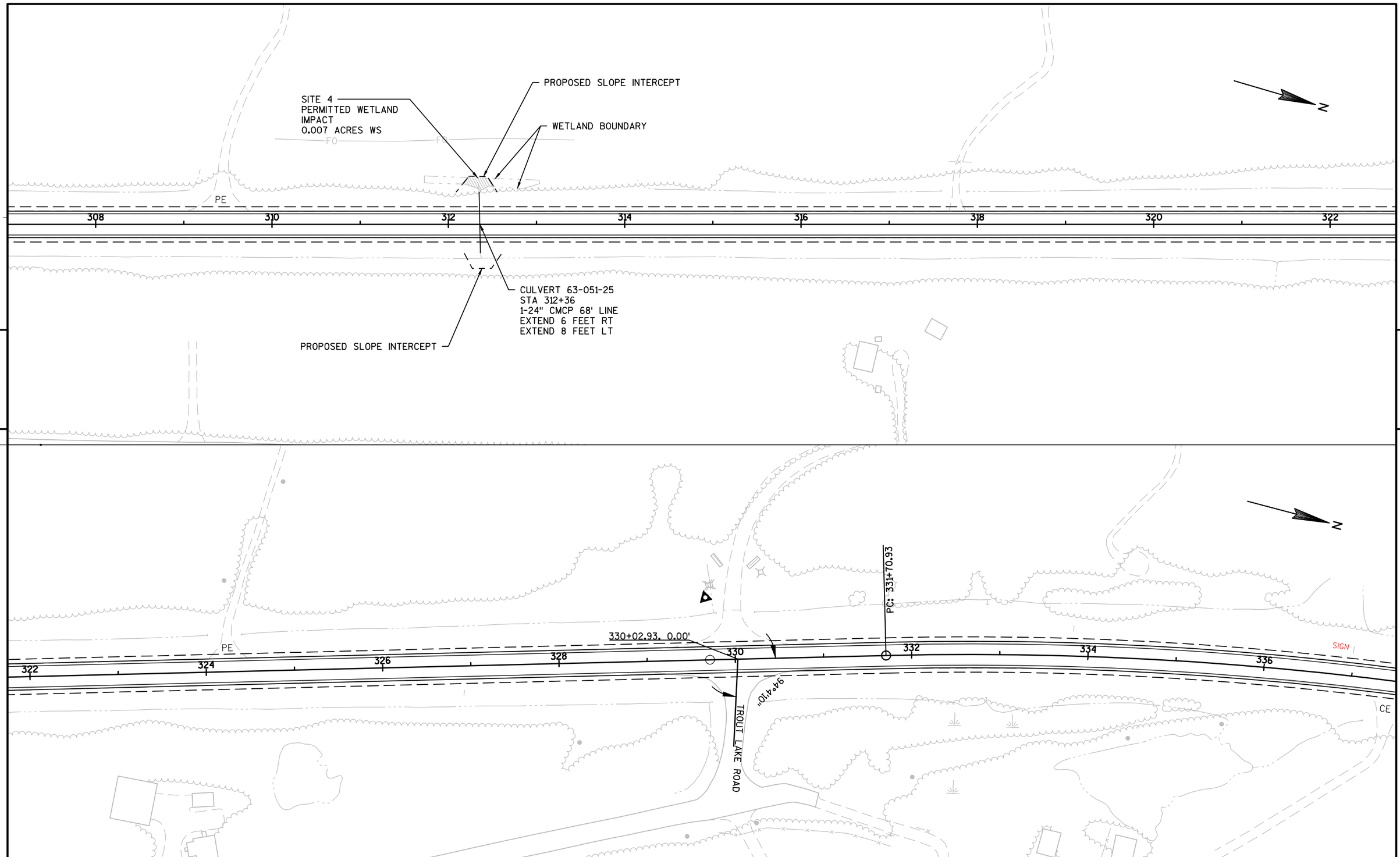
WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:41 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 68	E

PI STA = 337+96.88
DELTA = 18°29'06"
D = 1°29'22"
T = 625.94
L = 1241.01
R = 3846.61
PC STA = 331+70.93
PT STA = 344+11.94

PI: 337+96.88

PT: 344+11.94

N

SIGN

338 340 342 344 346 348 350 352

CE PE SIGN CE PE

5

5

NOTE:
DO NOT GO PAST SLOPE
INTERCEPT IN THE RED
ARROW ARCHEOLOGICAL SITE

SITE 5 WEST
PERMITTED WETLAND
IMPACT
0.015 ACRES RPF

PROPOSED SLOPE INTERCEPT

WETLAND BOUNDARY

STA 357+99 - 361+81 LT
REMOVE GUARDRAIL REQUIRED
MGS GUARDRAIL 3 REQUIRED
MGS GUARDRAIL TERMINAL EAT REQUIRED

N

RED ARROW
ARCHEOLOGICAL SITE

357+98.99, -22.00' LT

361+80.76, -22.00' LT

PC: 367+34.95

356 358 360 362 364 366

PE

358+94.68, 22.00' RT

361+01.16, 22.00' RT

RED ARROW
ARCHEOLOGICAL SITE

SITE 5 EAST
PERMITTED WETLAND
IMPACT
0.007 ACRES RPF

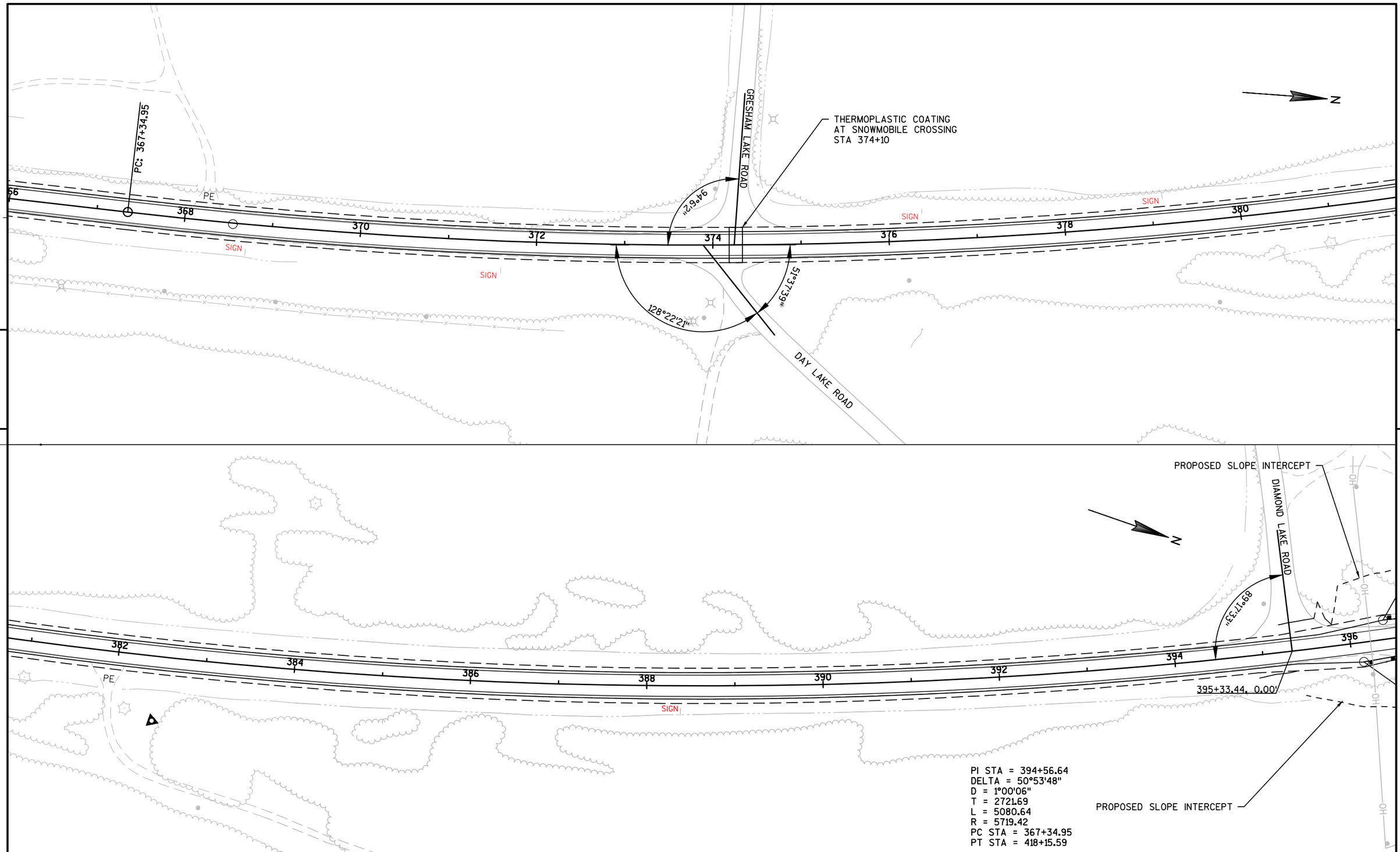
WETLAND BOUNDARY

WETLAND BOUNDARY

PROPOSED SLOPE INTERCEPT

STA 358+95 - 361+01 RT
REMOVE GUARDRAIL REQUIRED
MGS GUARDRAIL 3 REQUIRED
MGS GUARDRAIL TERMINAL EAT REQUIRED

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 70	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:42 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

DIAMOND LAKE ROAD

STA 396+40 - 404+87 LT
REMOVE GUARDRAIL REQUIRED
MGS GUARDRAIL 3 REQUIRED
MGS GUARDRAIL TERMINAL EAT REQUIRED

PROPOSED SLOPE INTERCEPT

WETLAND BOUNDARY

SITE 6
PERMITTED WETLAND
IMPACT
0.041 ACRES M

396+40.06, -22.01' LT

404+87.31, -22.01' LT

396+12.50, 22.00' RT

403+41.36, 22.00' RT

STA 396+12 - 403+41 RT
REMOVE GUARDRAIL REQUIRED
MGS GUARDRAIL 3 REQUIRED
MGS GUARDRAIL TERMINAL EAT REQUIRED

CULVERT 63-051-30
STA 400+35
1-30" CMCP 212' LINE
EXTEND 6 FEET LT
EXTEND 8 FEET RT

PROPOSED SLOPE INTERCEPT

SIGN

396 398 400 402 404 406 408 410

DIAMOND LAKE WAYSIDE

PT: 418+15.59

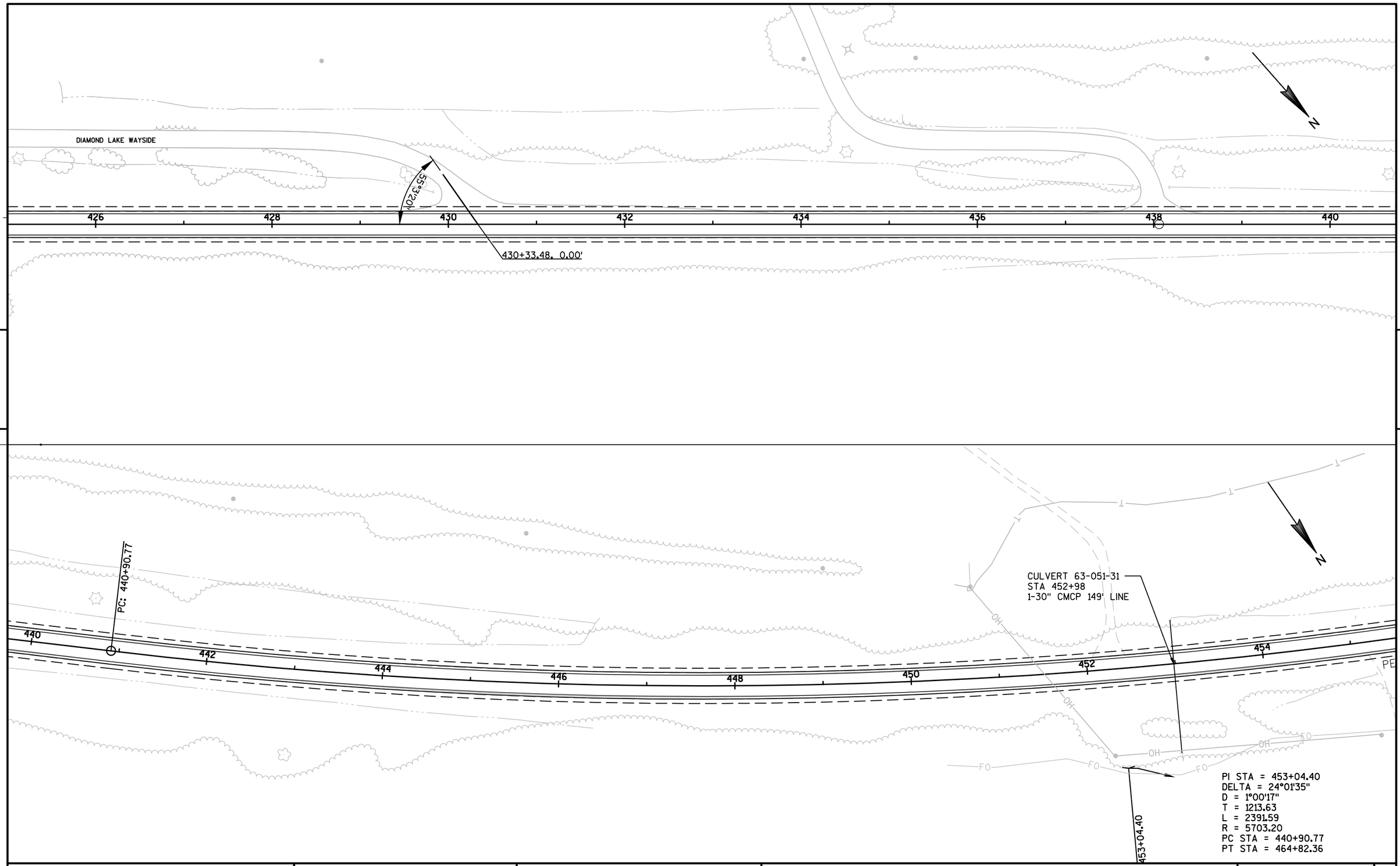
125°40'48"

412 414 416 418 420 422 424

415+21.89, 0.00'

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

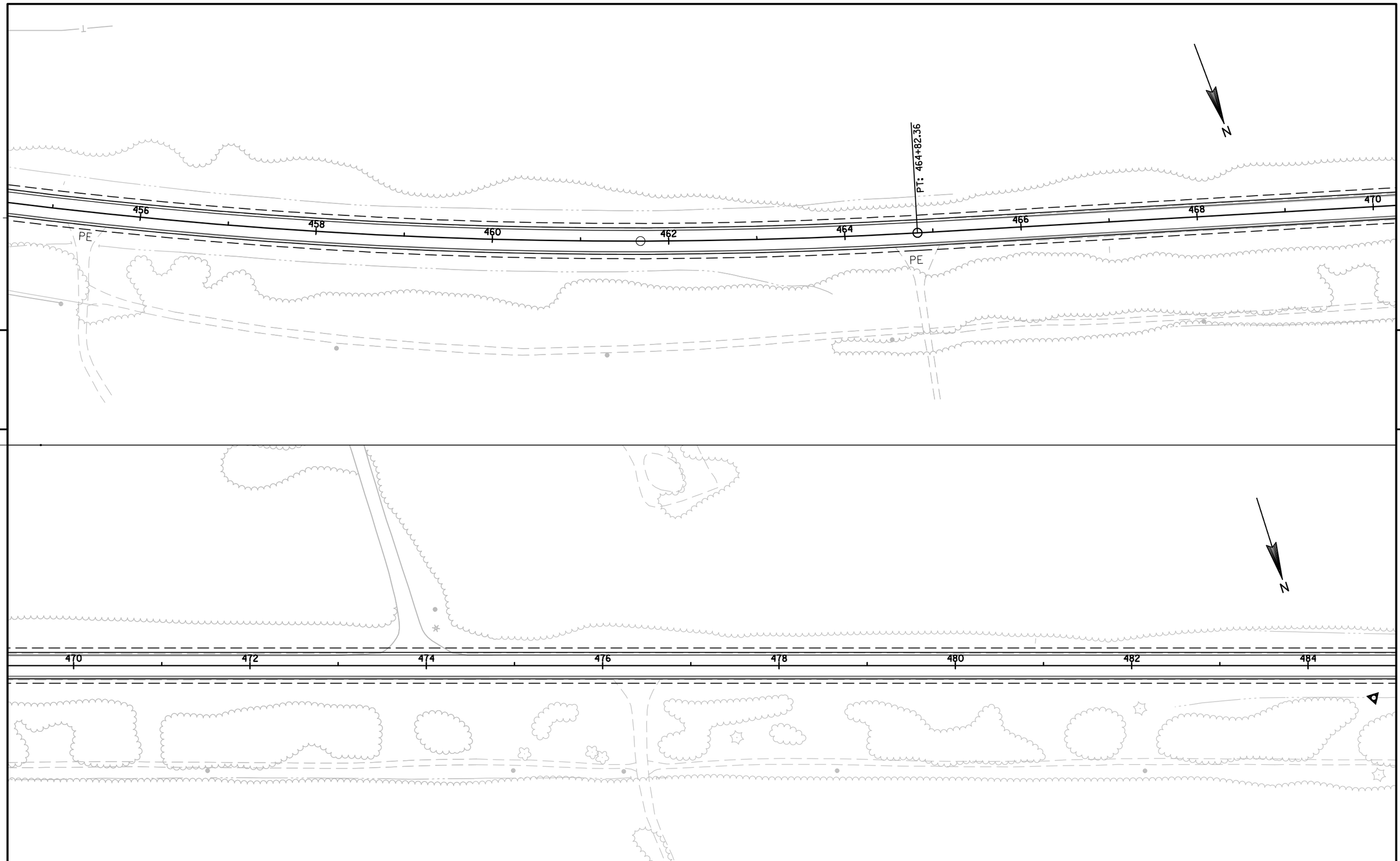
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WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 72	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:42 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



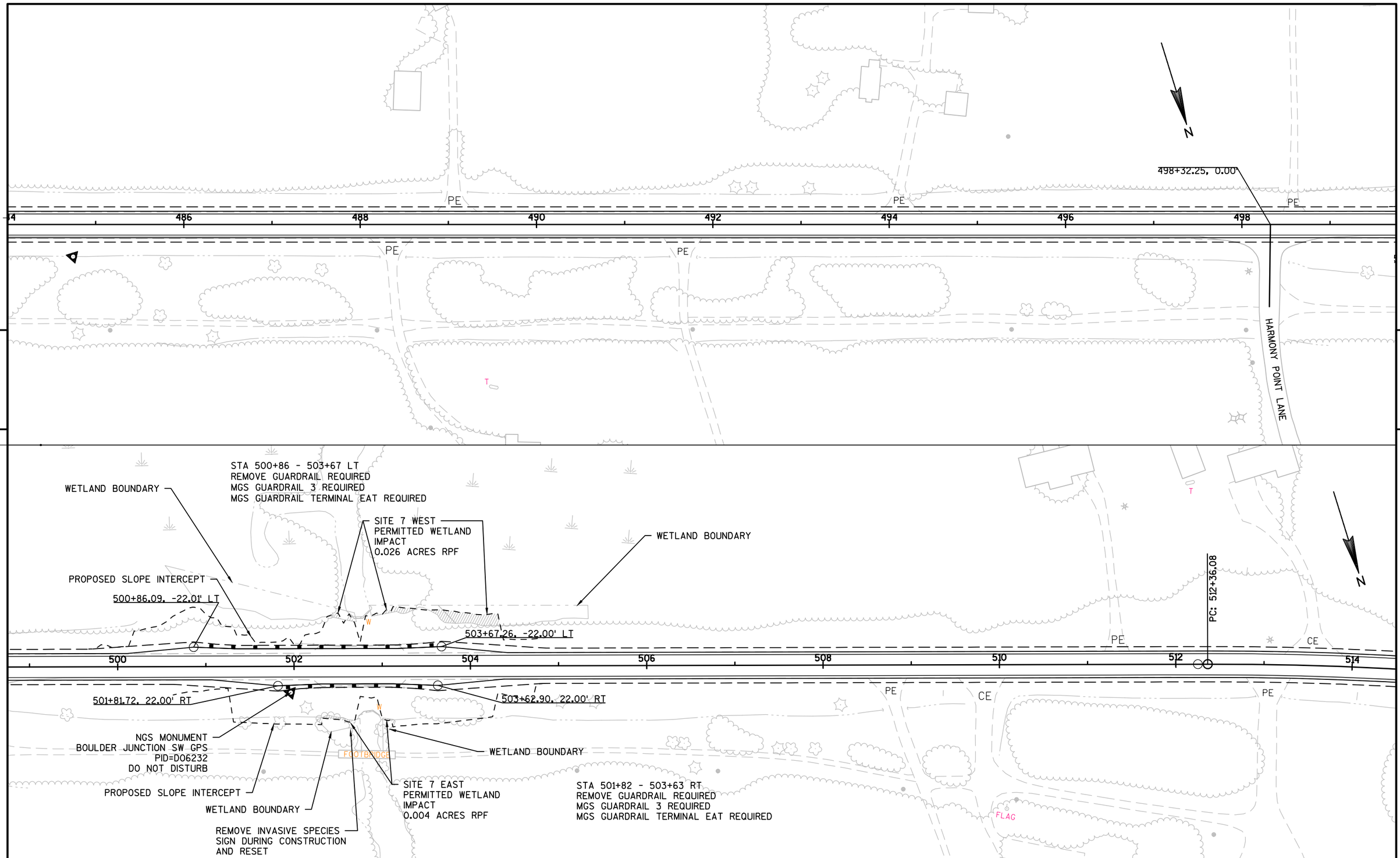
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5

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 1/27/2014 12:43 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 74	E

PI STA = 527+72.09
DELTA = 43°49'55"
D = 1°30'03"
T = 1536.01
L = 2920.71
R = 3817.87
PC STA = 512+36.08
PT STA = 541+56.79

MIDDLE GRESHAM LANE

96°56'33"

514 516 518 520 522 524 526 528

PE

521+00.00, 0.00'

N

530 532 534 536 538 540 542

CE

PT: 541+56.79

EP: 12+00.00

BEGIN CENTERLINE
RUMBLE STRIPS

BEGIN CENTERLINE
FOG SEAL

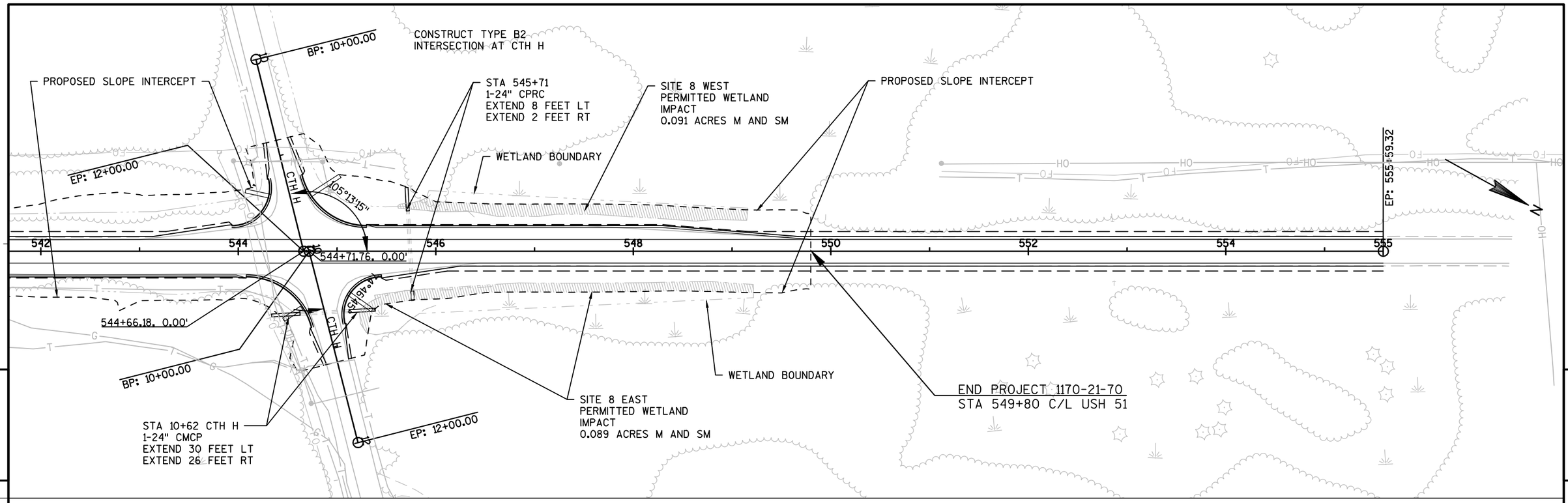
PROPOSED SLOPE INTERCEPT

544+66.18, 0.00'

BP: 10+00.00

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET 75	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 2/4/2014 9:12 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT



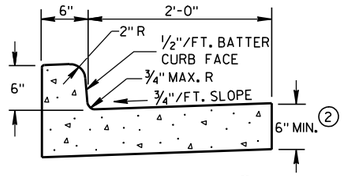
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PLAN: LINE DIAGRAM	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\050401_LD.DWG PLOT DATE : 2/3/2014 8:01 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:100 FT

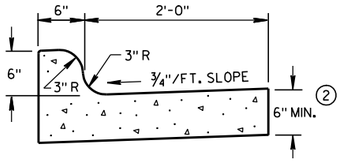
Standard Detail Drawing List

08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

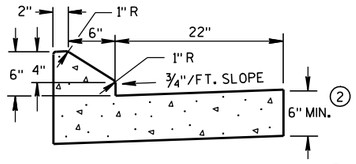
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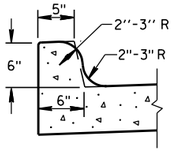
TYPES A & D (1)



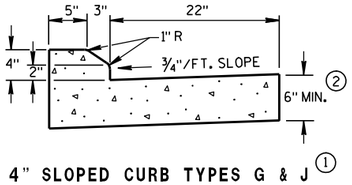
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

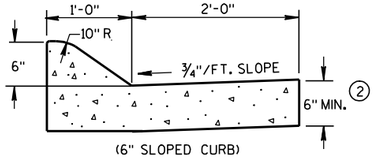


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

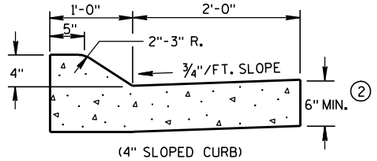


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

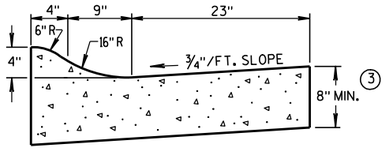


(6" SLOPED CURB)



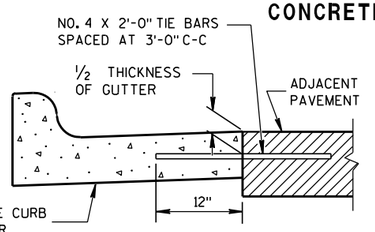
(4" SLOPED CURB)

TYPES A & D (1)

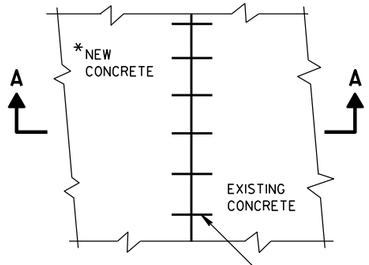


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

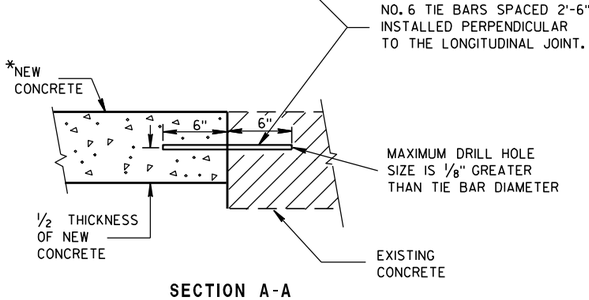


TYPICAL TIE BAR LOCATION (1)



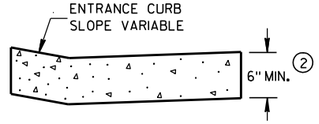
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW



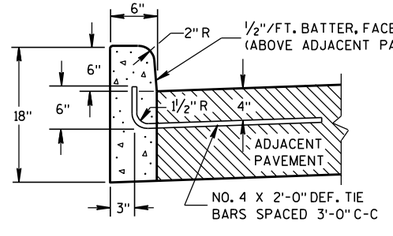
SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



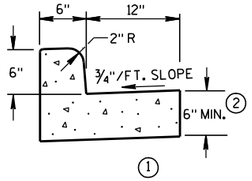
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



(1)

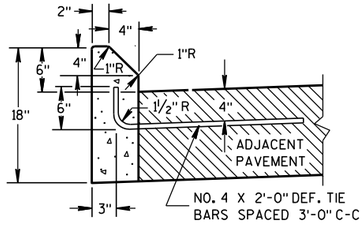
TYPES A & D



(1)

TYPES A & D

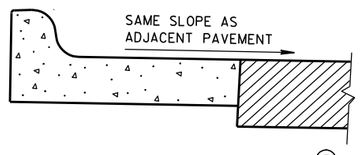
CONCRETE CURB & GUTTER 18"



(1)

TYPES G & J

CONCRETE CURB



(5)

REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

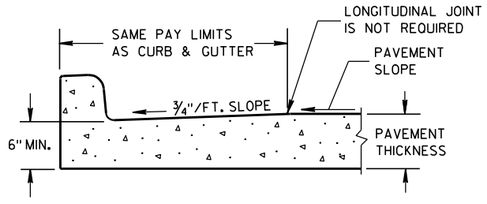
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

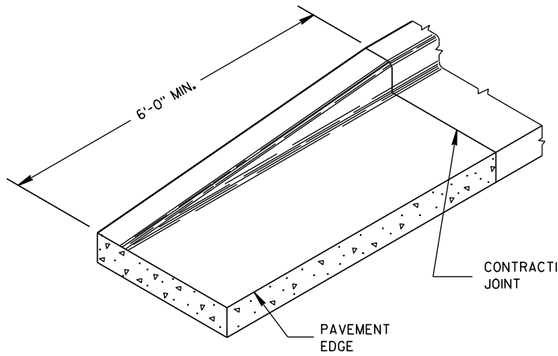
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

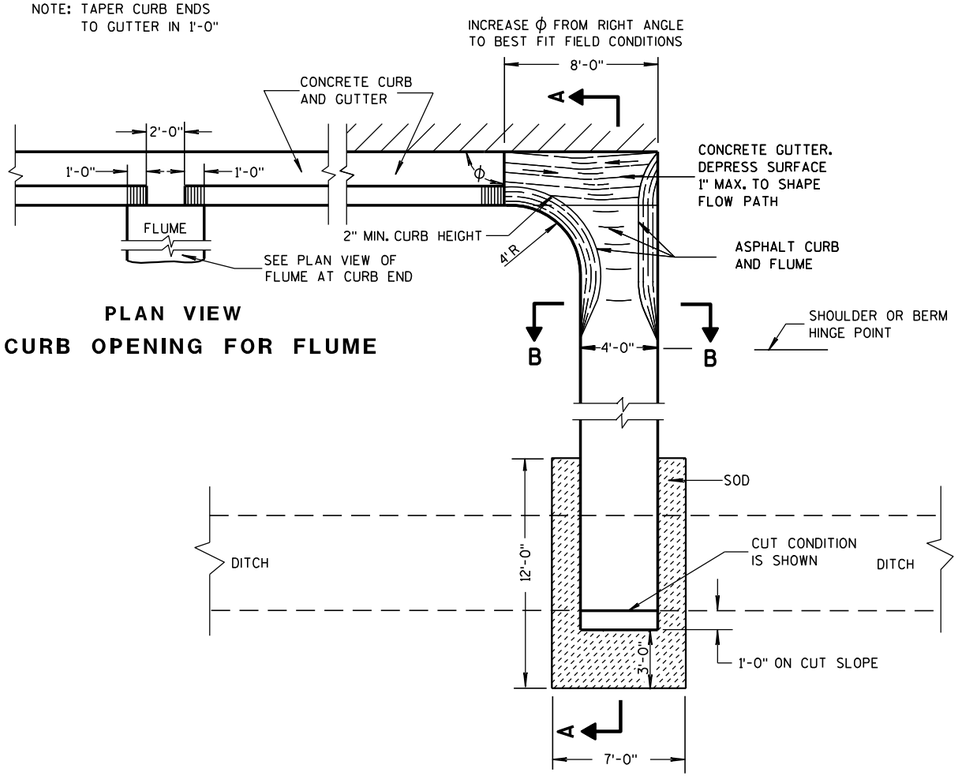
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6

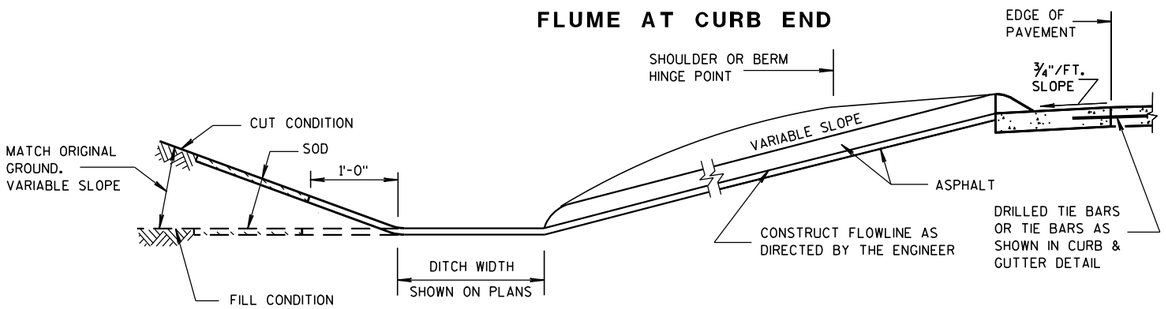
S.D.D. 8 D 1-17

ASPHALTIC FLUME

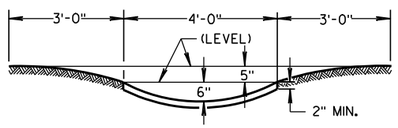


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

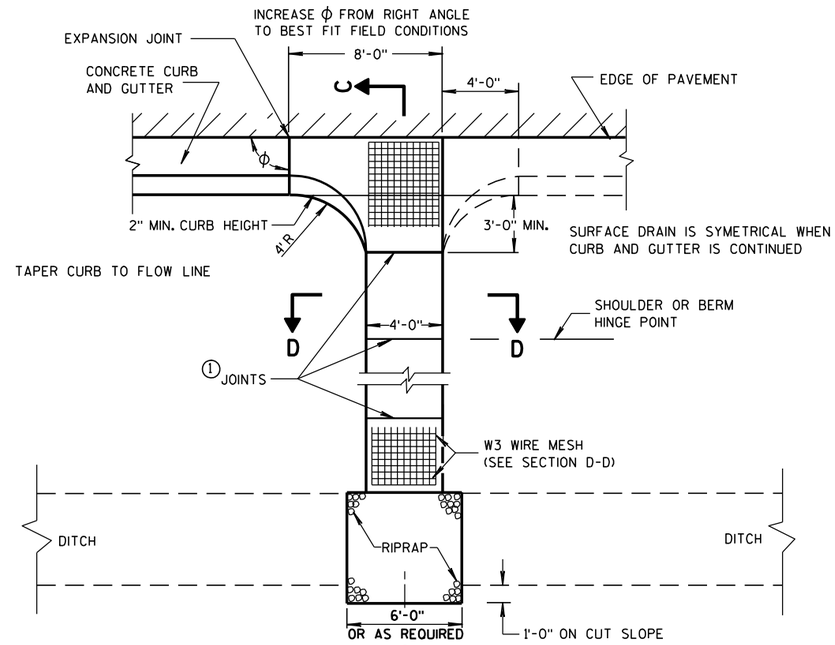
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

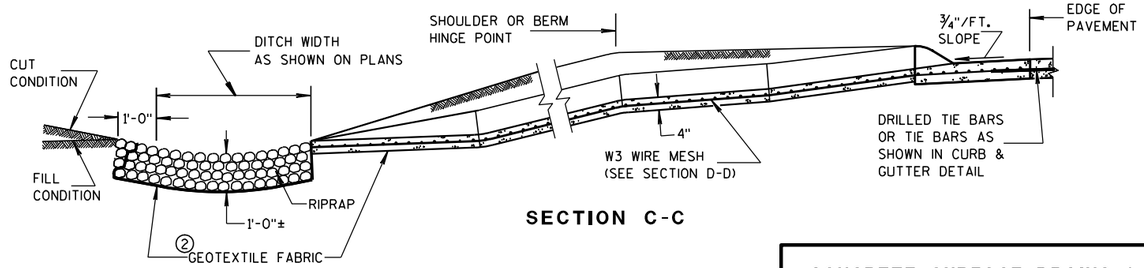
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

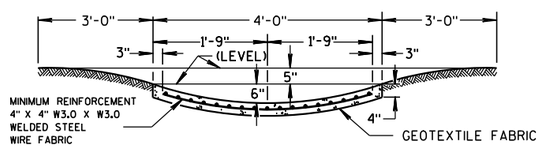
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
79
MENT

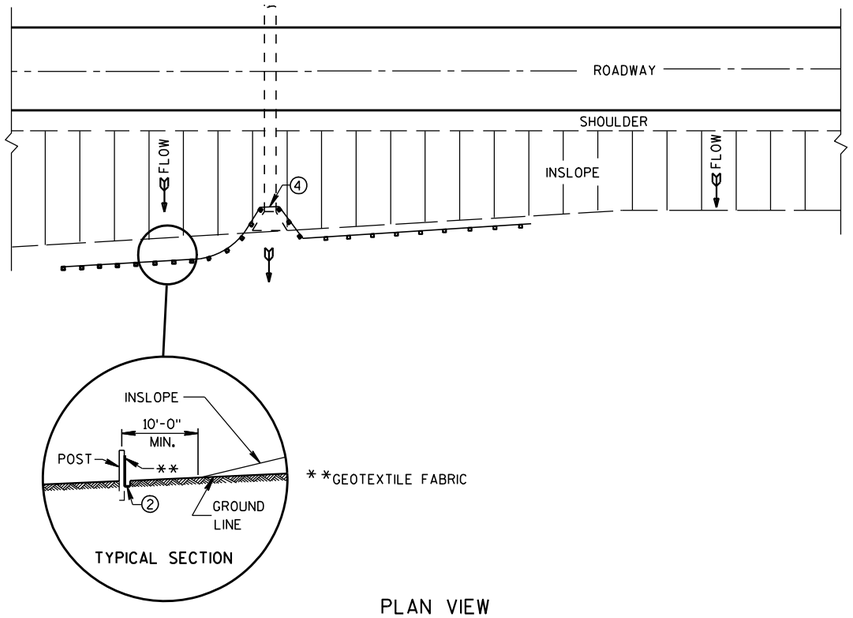
FHWA

6

S.D.D. 8 D 4-5

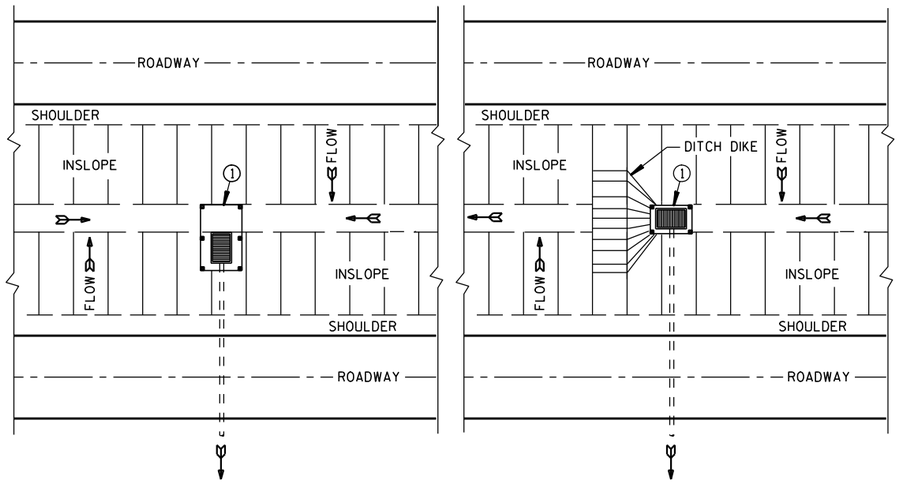
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S.D.D. 8 D 4-5



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.

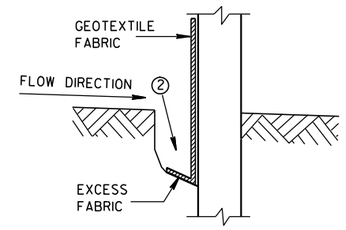
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

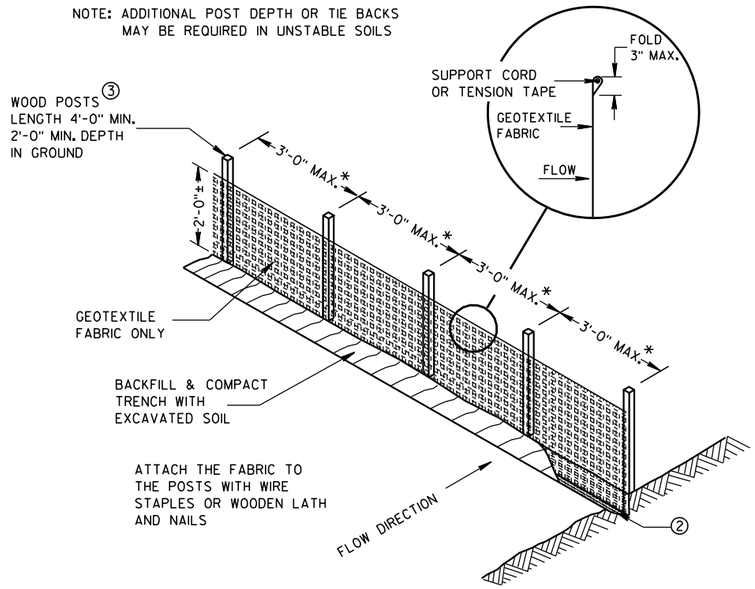
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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.

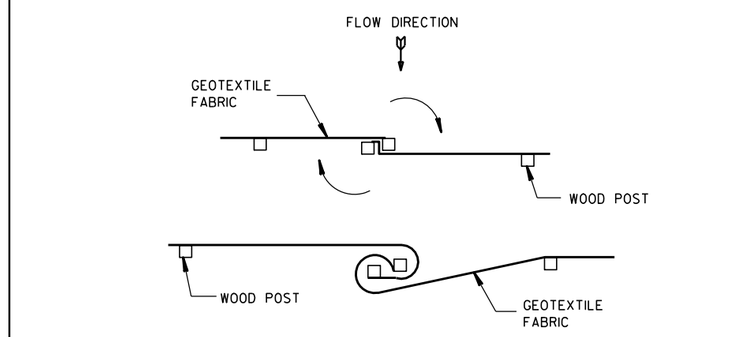


TRENCH DETAIL

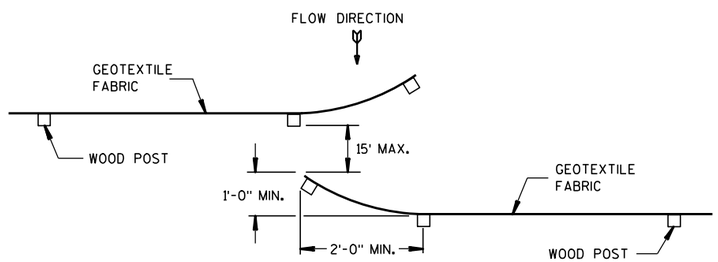


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

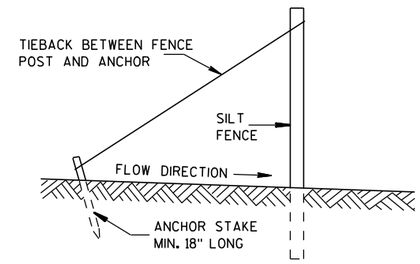


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

METAL APRON ENDWALLS

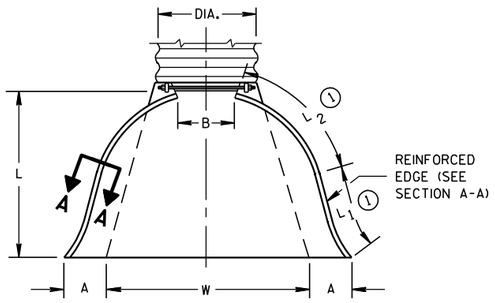
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

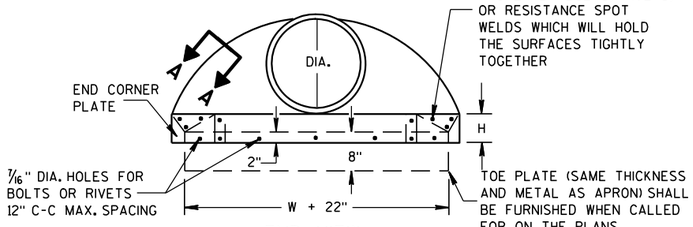
REINFORCED CONCRETE APRON ENDWALLS

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

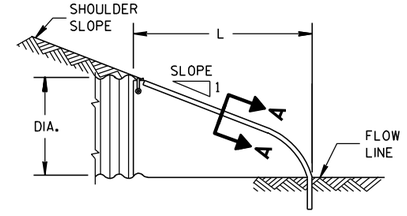
* MINIMUM
** MAXIMUM



PLAN VIEW

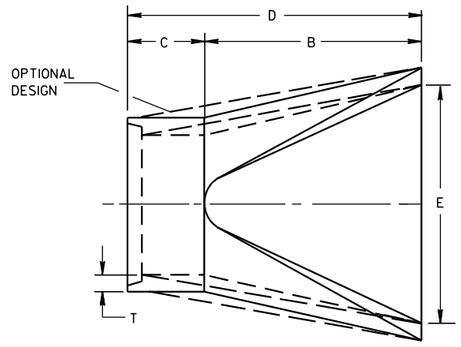


END VIEW

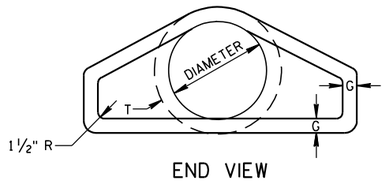


SIDE ELEVATION

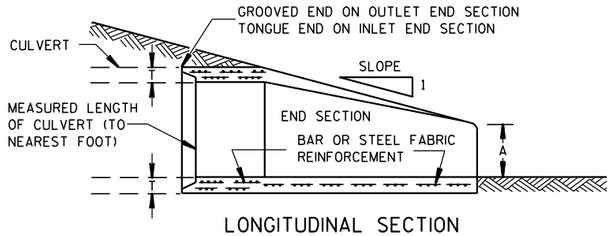
METAL ENDWALLS



PLAN

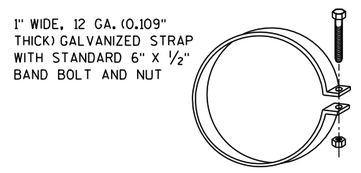


END VIEW



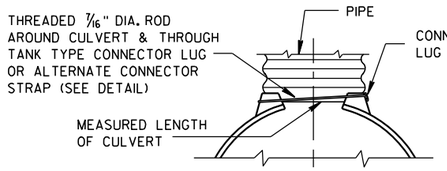
LONGITUDINAL SECTION

CONCRETE ENDWALLS

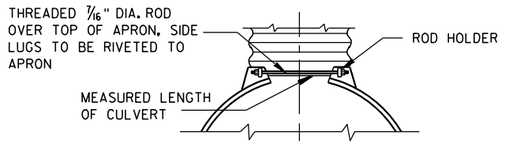


ALTERNATE FOR TYPE 1 CONNECTION

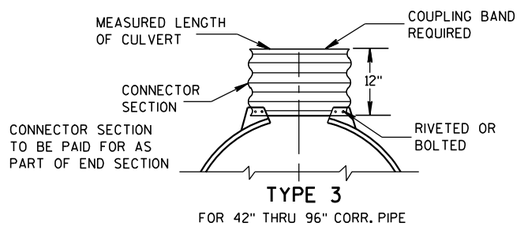
END SECTION CONNECTOR STRAP



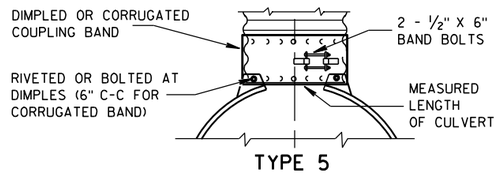
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

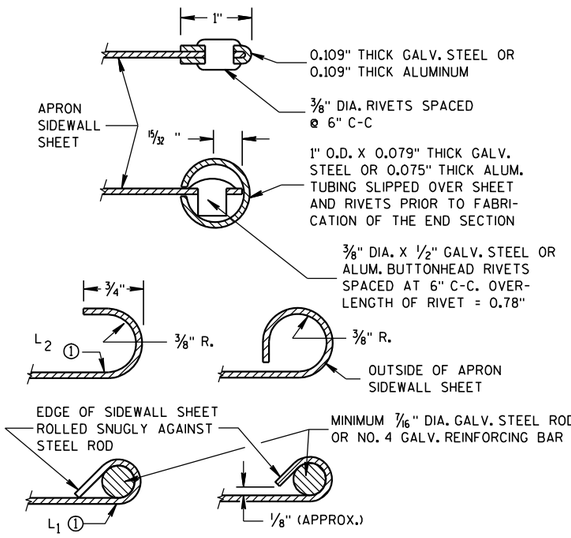
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

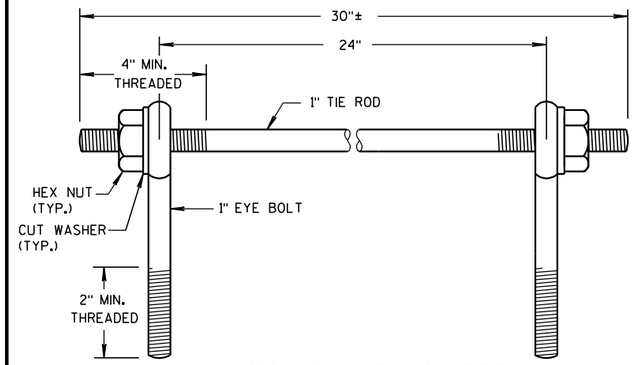
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

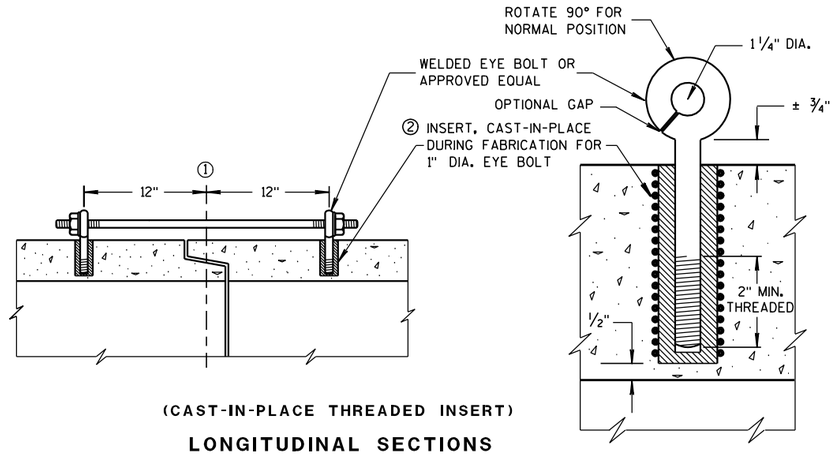
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



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.

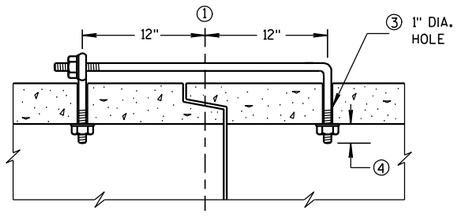
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

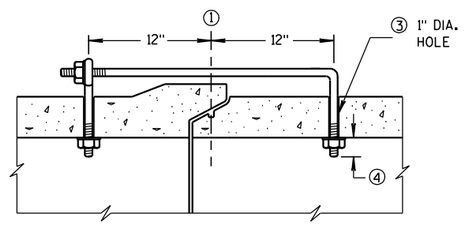
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

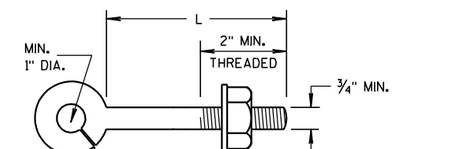


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

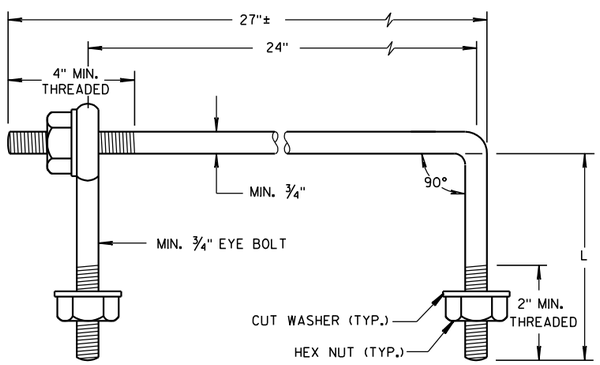
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

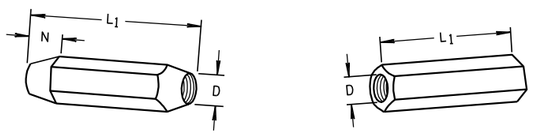
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

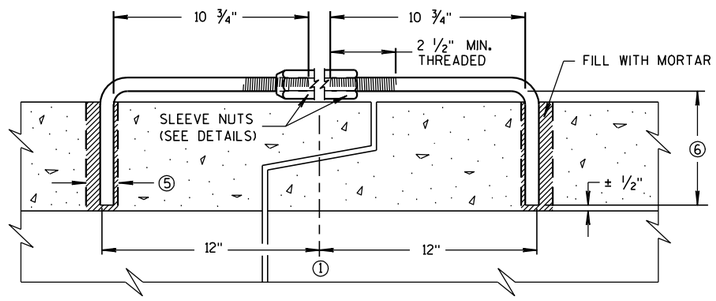
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

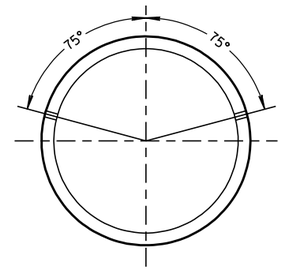
SLEEVE NUTS



LONGITUDINAL SECTION

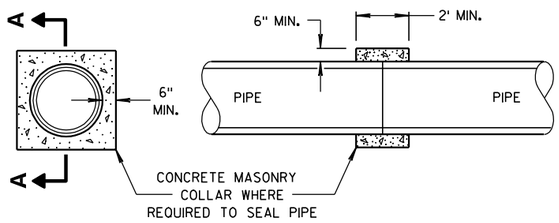
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

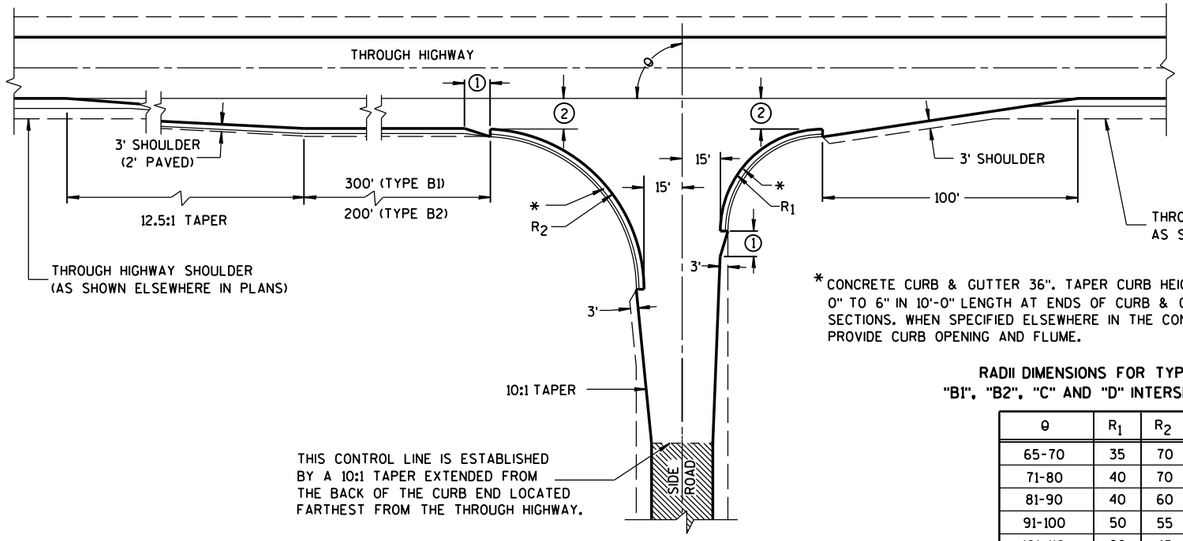
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
82
FHWA

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S.D.D. 8 F 4-7

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S.D.D. 8 F 4-7

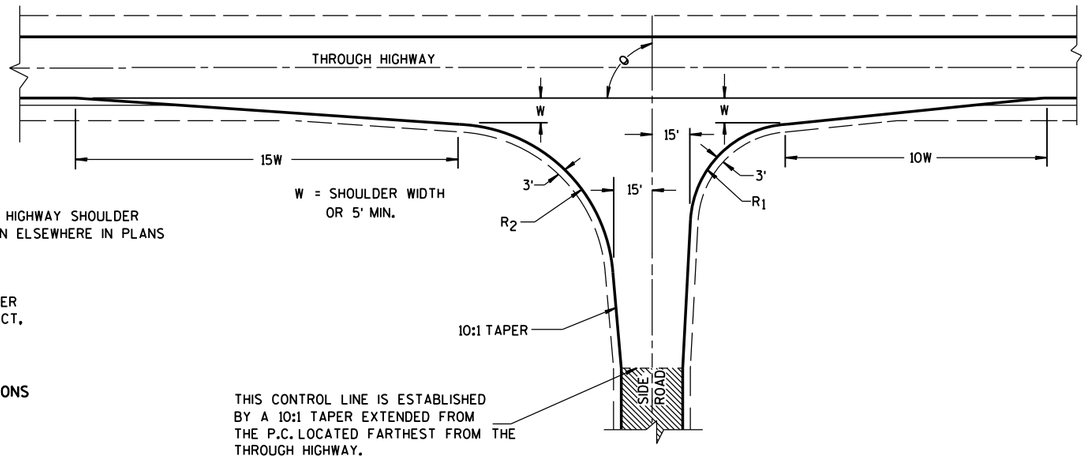


TYPE "B1" AND "B2"

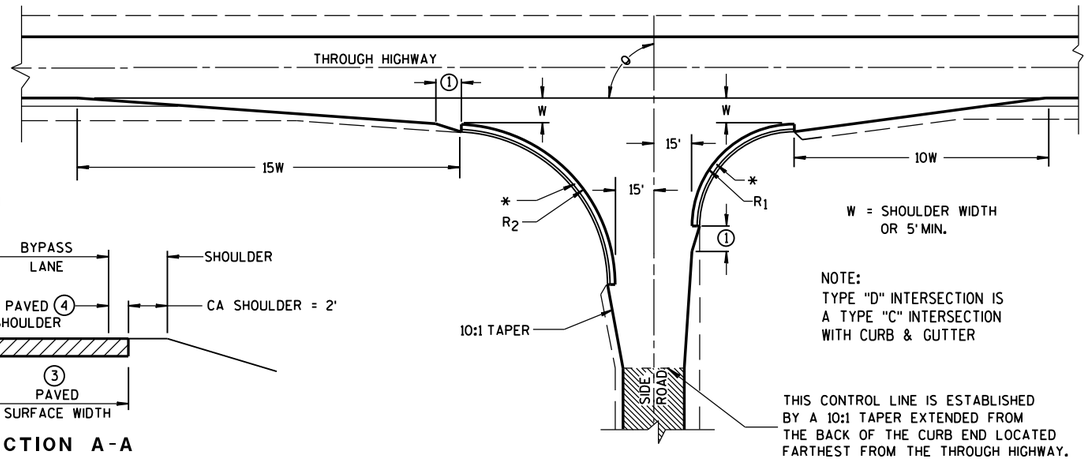
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

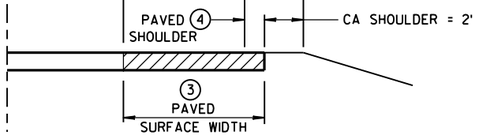
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

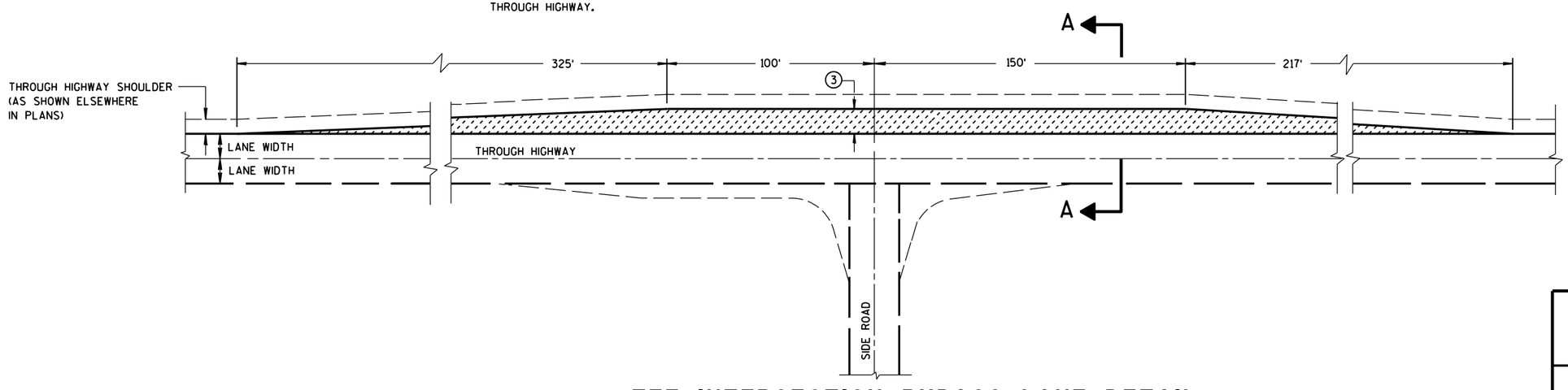
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



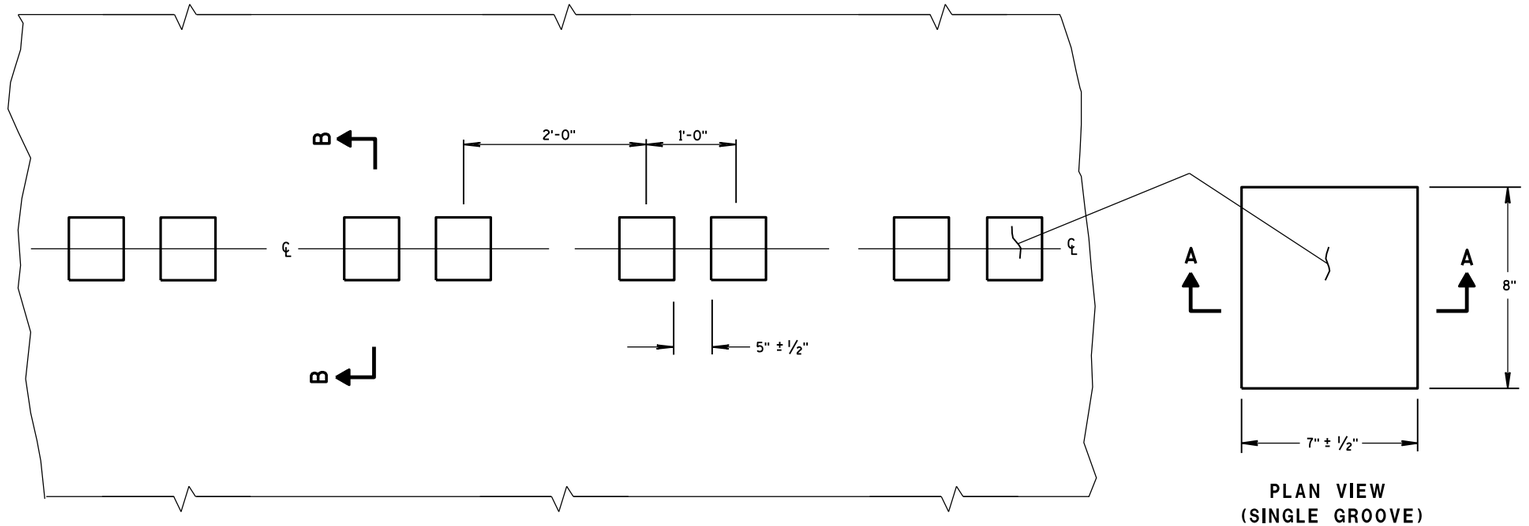
TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

S.D.D. 9 A 1-13a



PLAN VIEW
CENTER LINE WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

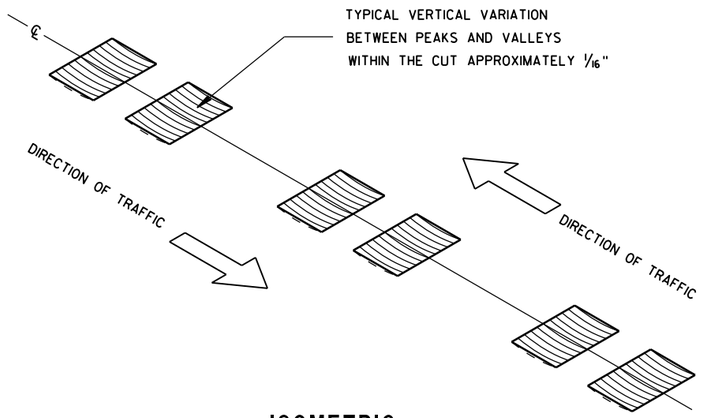
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

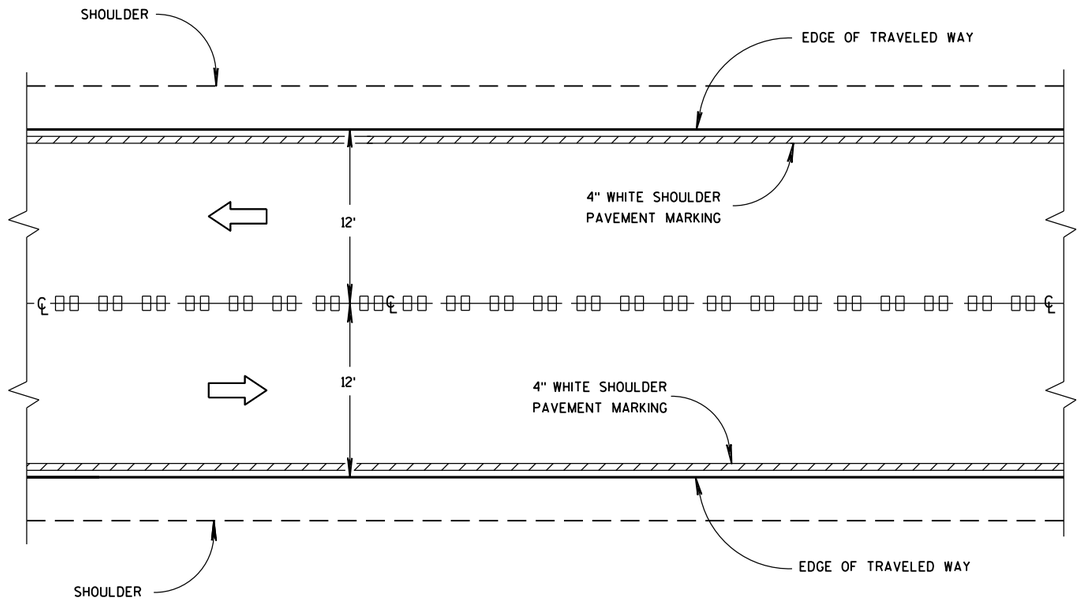
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

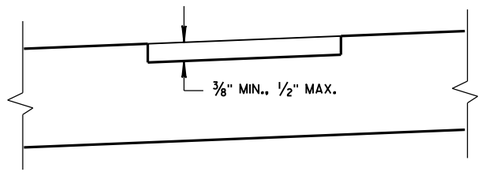
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



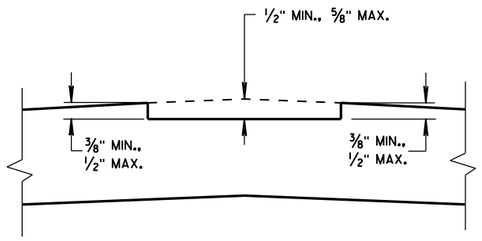
ISOMETRIC



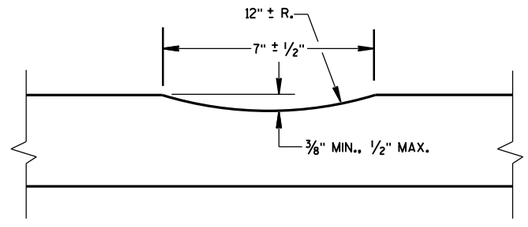
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

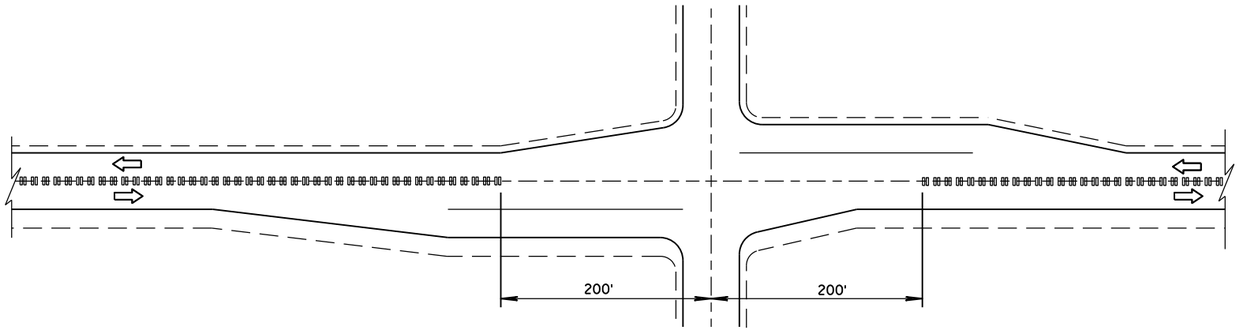
S.D.D. 13 A 11-2a

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

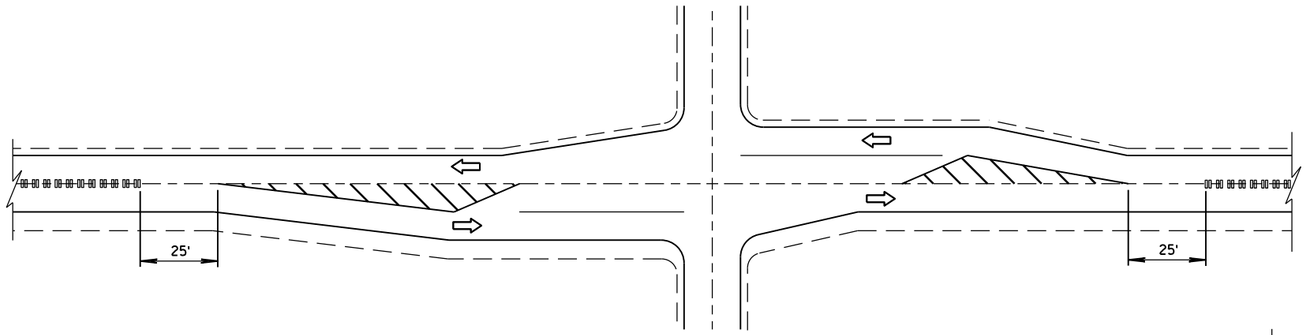
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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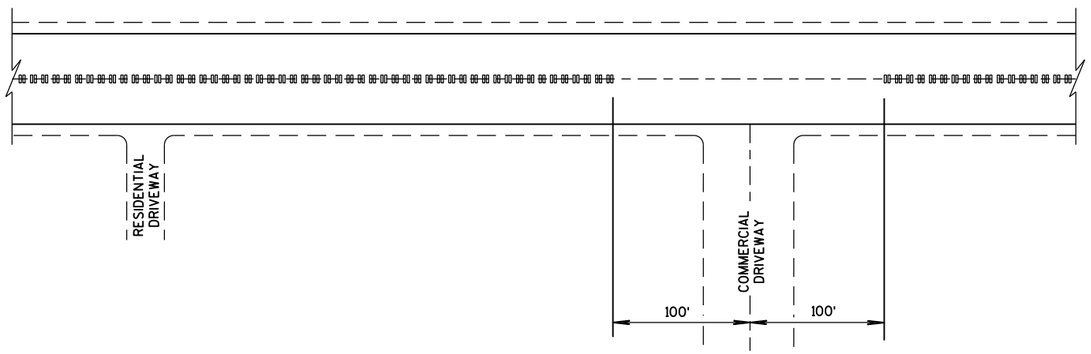
S.D.D. 13 A 11-2a



CENTER LINE GROOVES AT INTERSECTIONS

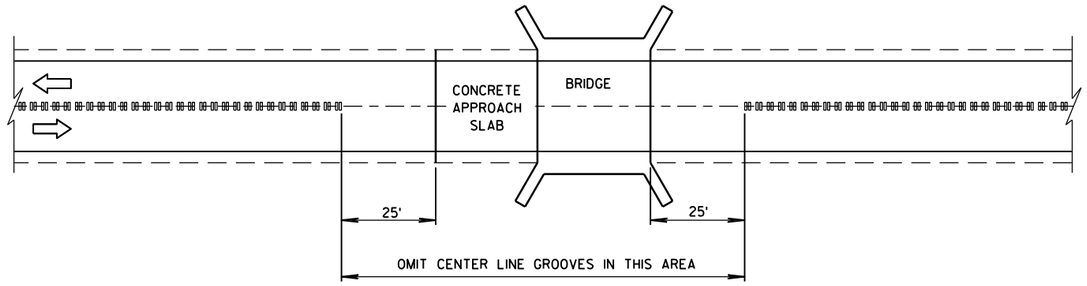


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

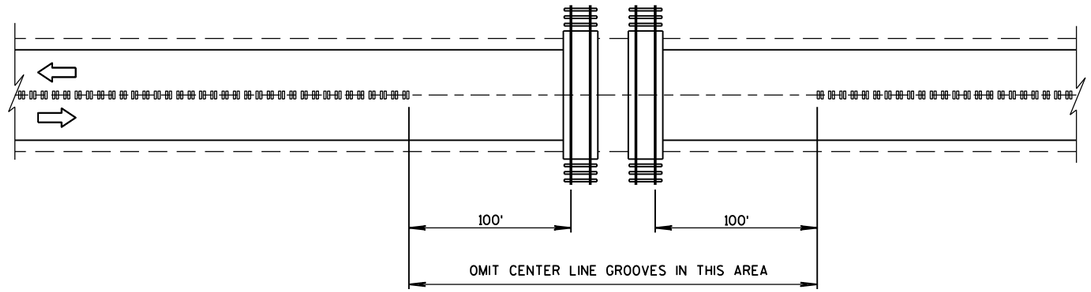


CENTER LINE GROOVES AT DRIVEWAYS (1)

(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

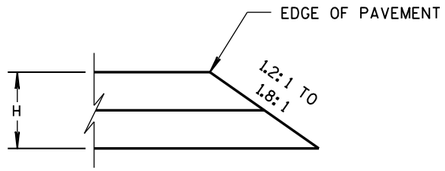
APPROVED

5/15/2013 — DATE

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

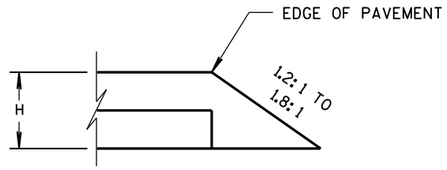
NT

FHWA



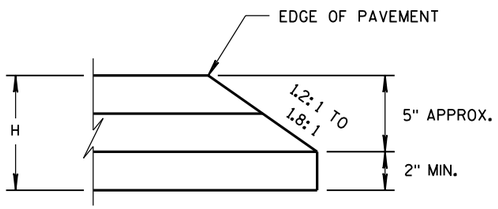
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



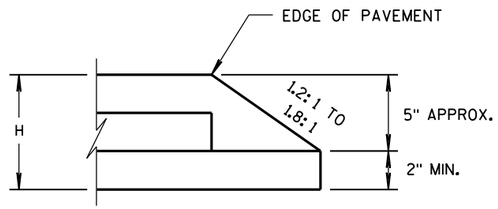
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

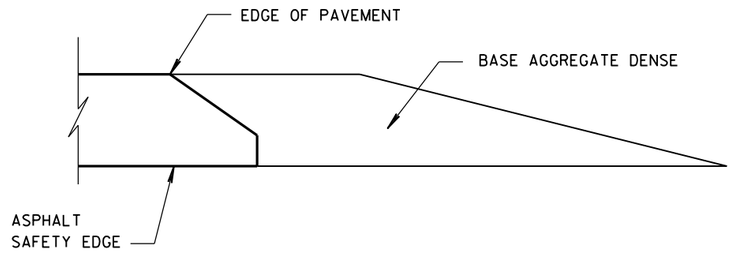
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

6

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

GENERAL NOTES

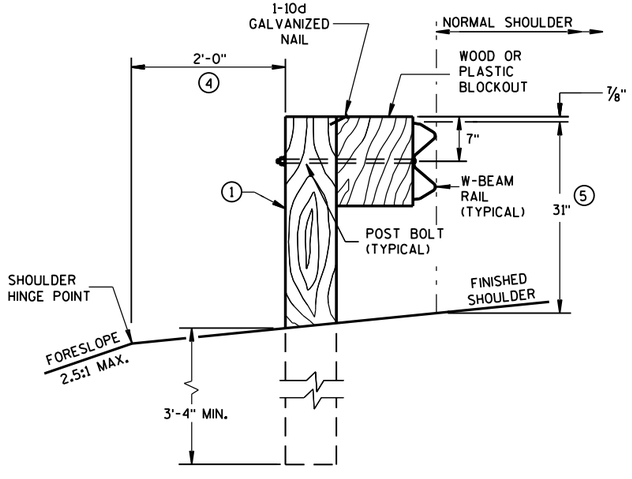
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

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

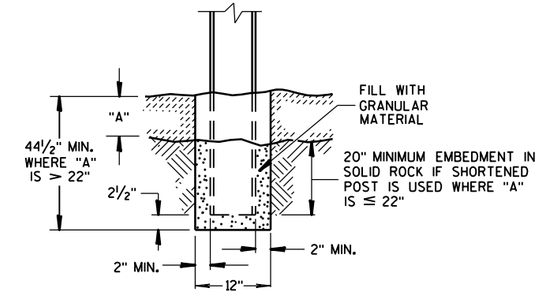
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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



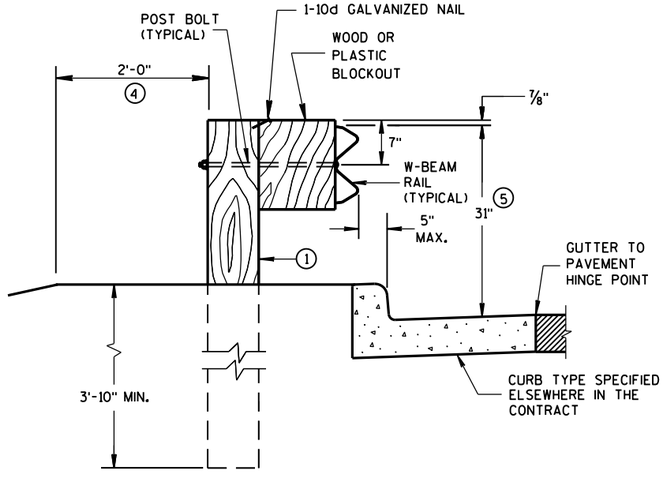
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



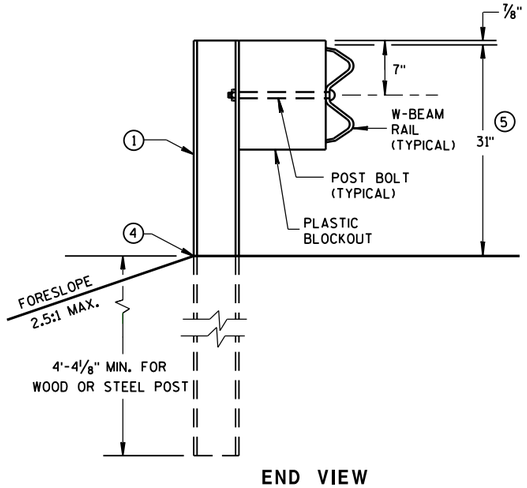
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



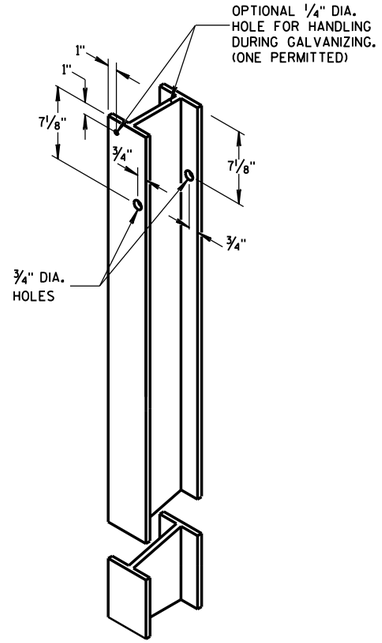
END VIEW

LOCATED ALONG A CURBED ROADWAY

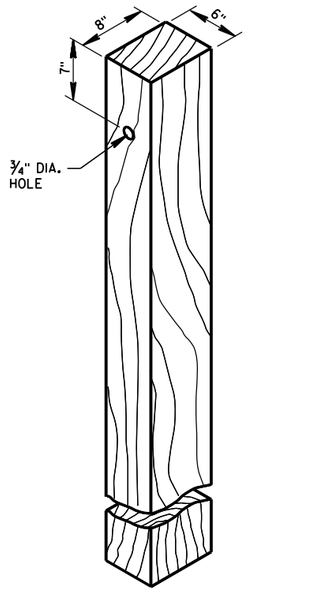


END VIEW

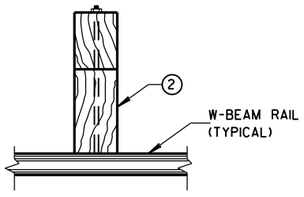
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



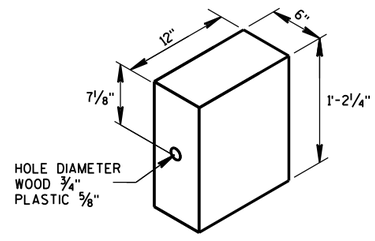
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



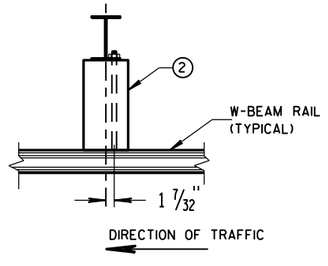
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

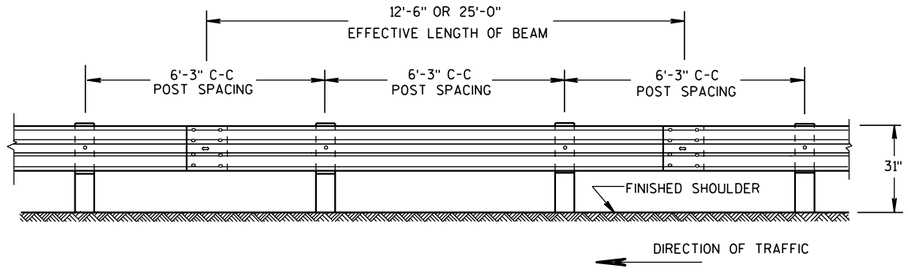


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

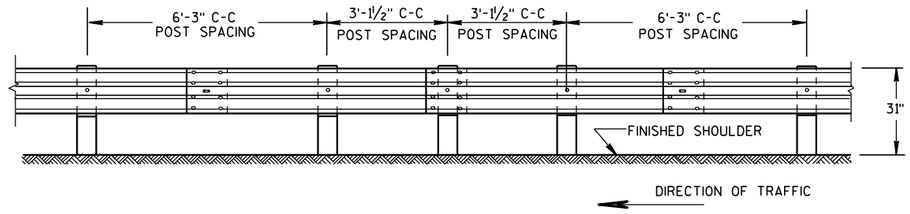
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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



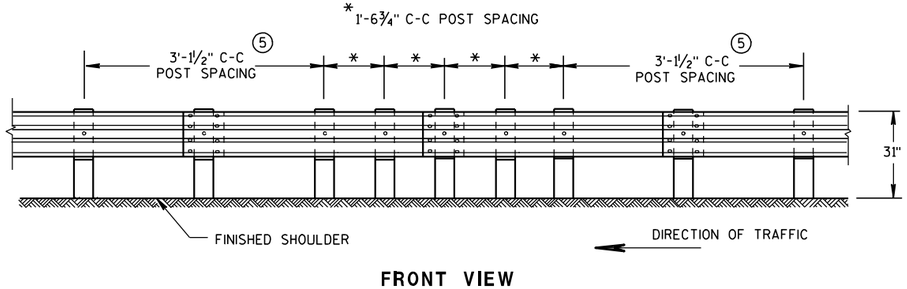
FRONT VIEW

POST SPACING STANDARD INSTALLATION



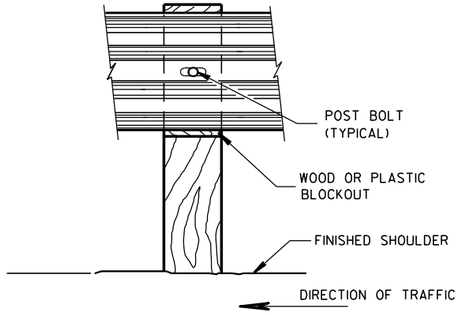
FRONT VIEW

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

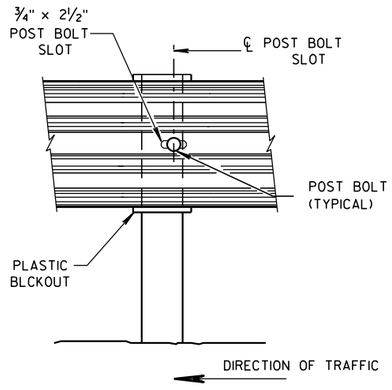


FRONT VIEW

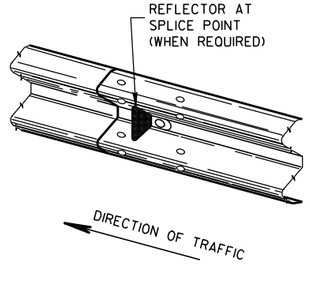
QUARTER POST SPACING (QS)

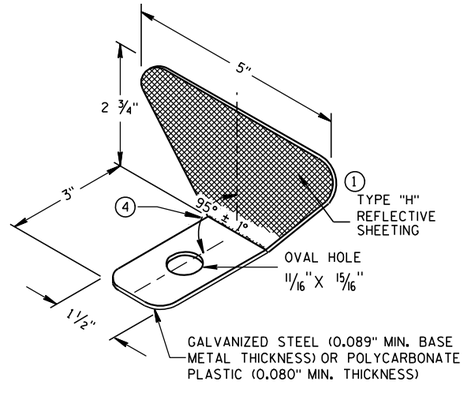


FRONT VIEW AT WOOD POST

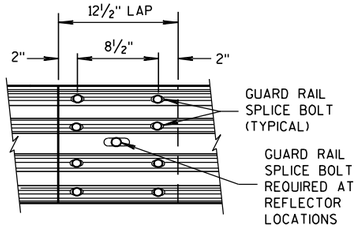


FRONT VIEW AT STEEL POST



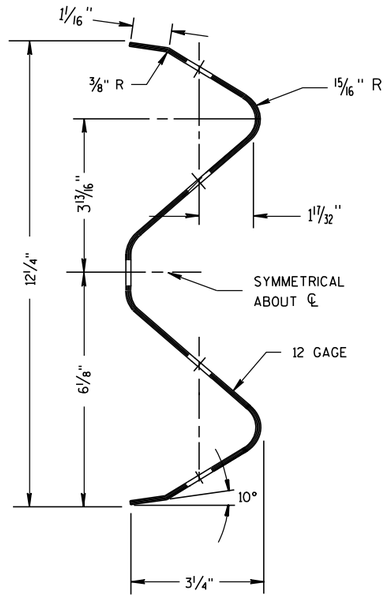


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

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

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

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

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

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

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

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

REFLECTOR SPACING ②

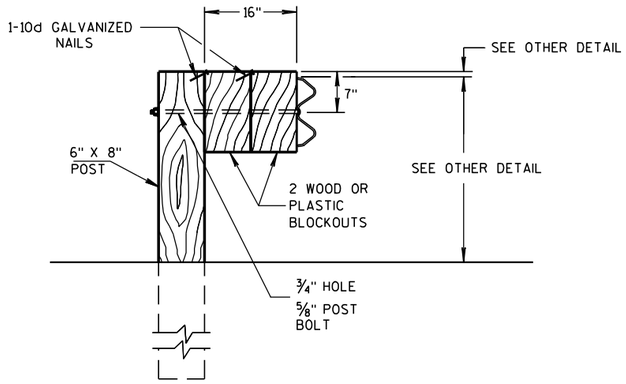
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

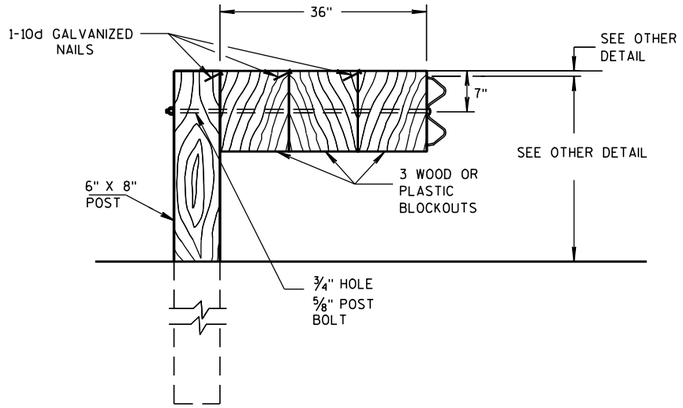
S.D.D. 14 B 42-2b

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



DETAIL FOR 16" BLOCKOUT DEPTH

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

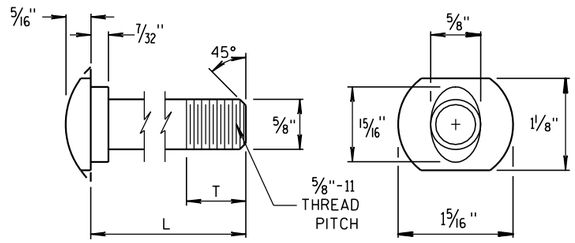


DETAIL FOR 36" BLOCKOUT DEPTH

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

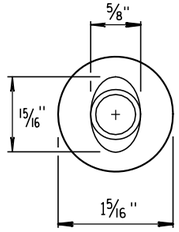
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

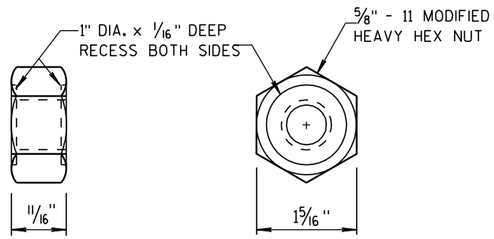


POST BOLT TABLE

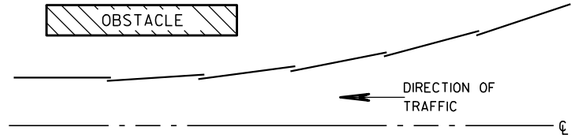
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

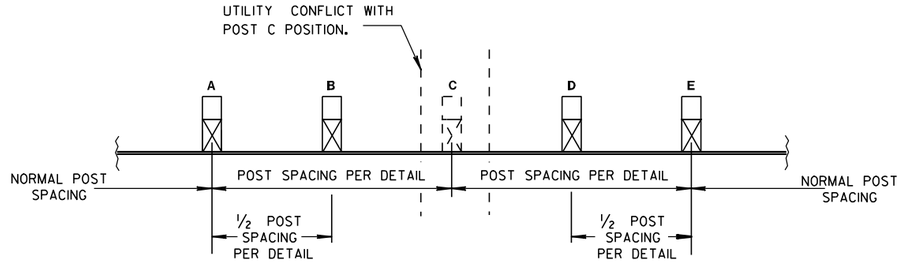


POST BOLT AND RECESS NUT

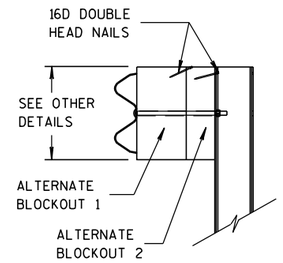


PLAN VIEW

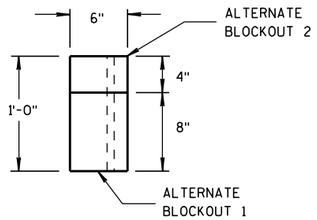
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011 DATE

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

FHWA

ENT

6

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

GENERAL NOTES

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

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

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

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

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

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

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

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

SEE SDD 14B42 FOR MORE INFORMATION.

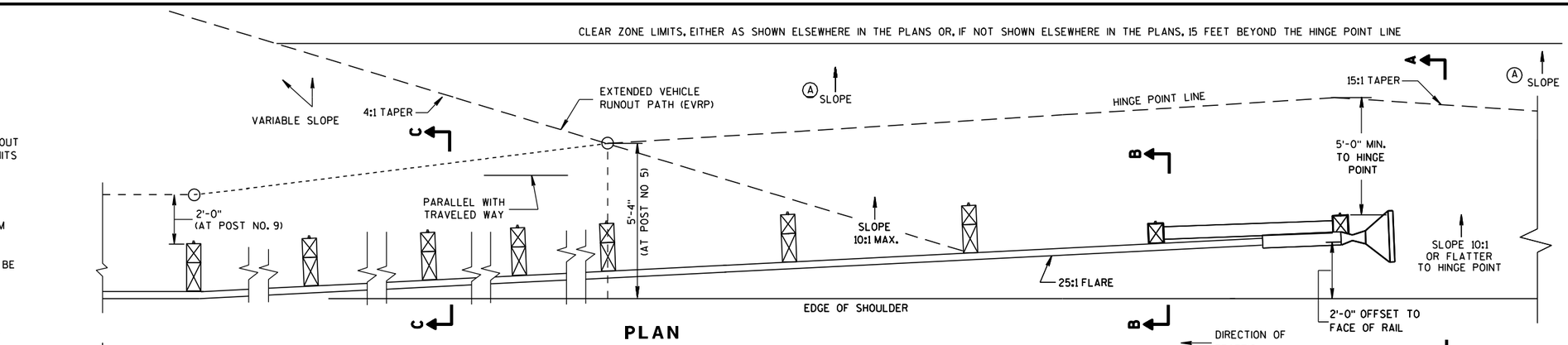
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

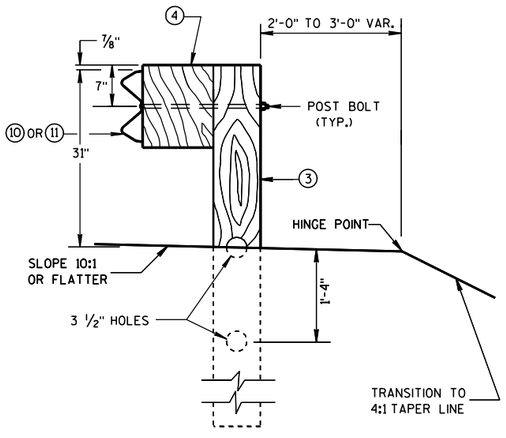
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

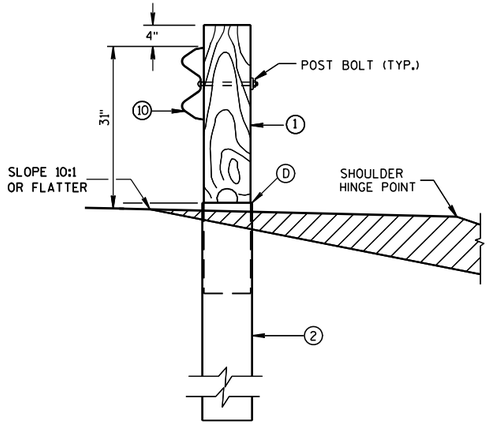
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

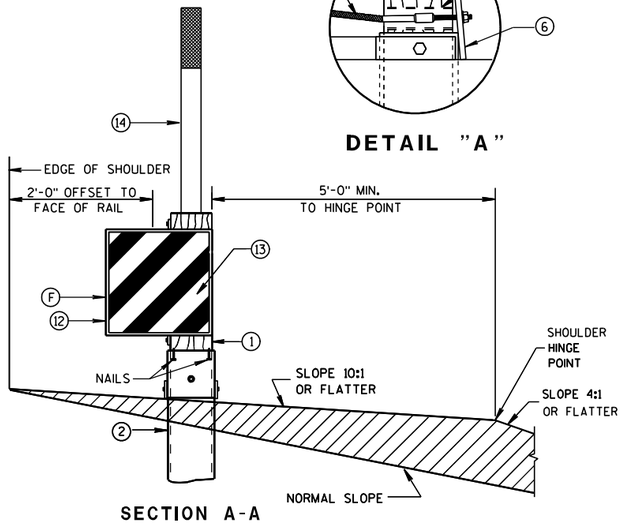




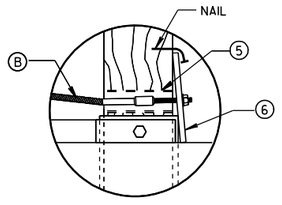
SECTION C-C
TYPICAL AT POST NOS. 3-9



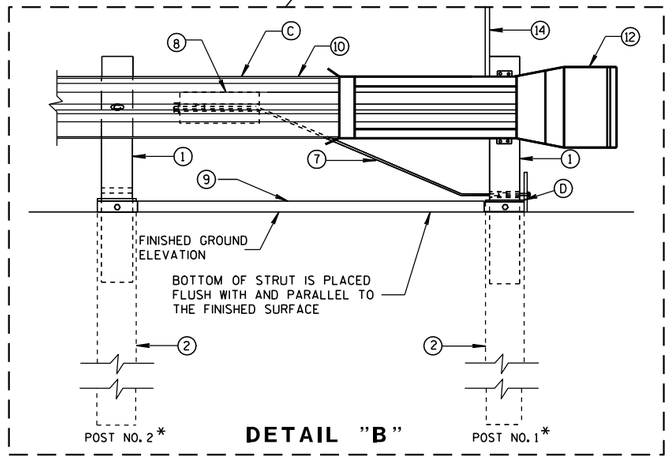
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



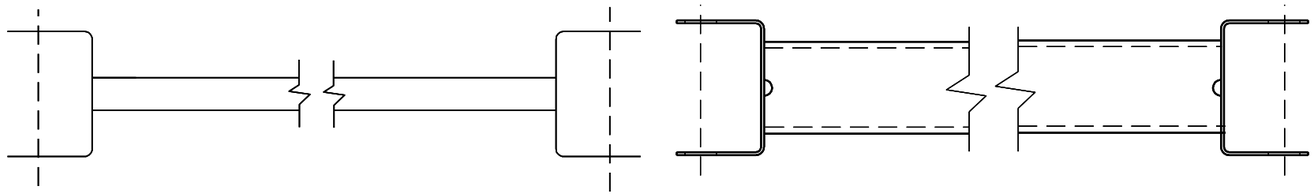
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

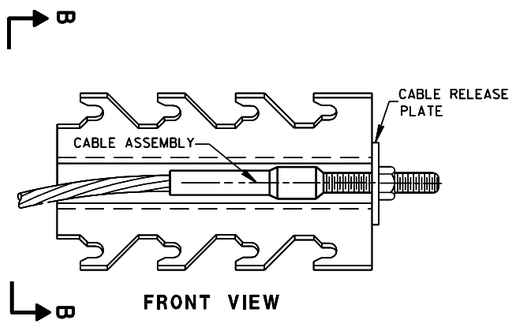
6 S.D.D. 14 B 44-1a



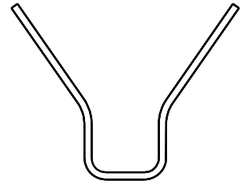
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

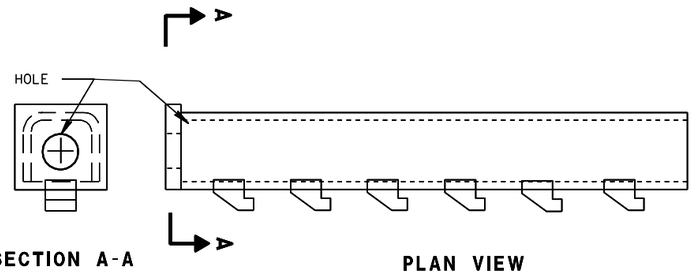
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



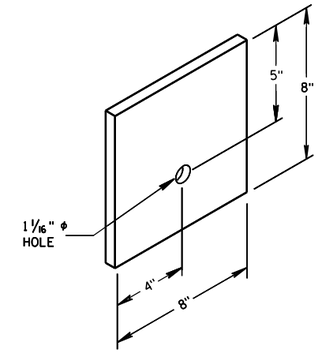
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



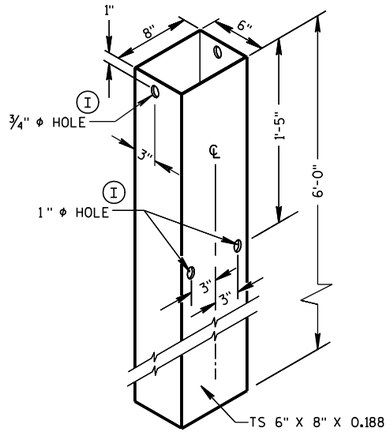
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

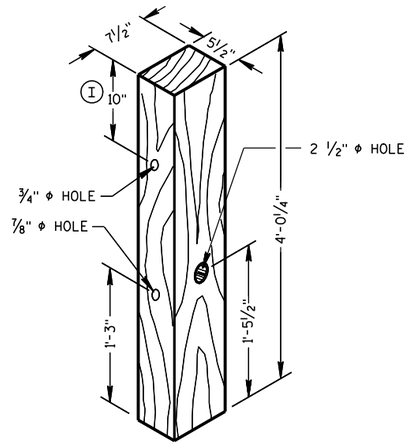
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

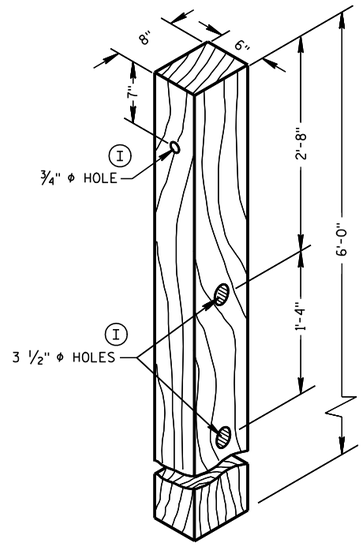


FOUNDATION TUBE (2)



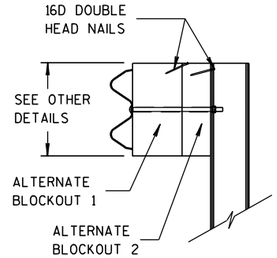
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

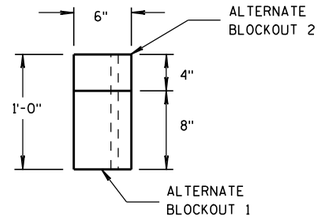


POSTS NUMBER 3-9

WOOD CRT POST (3)

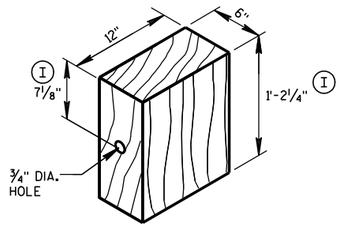


SIDE VIEW



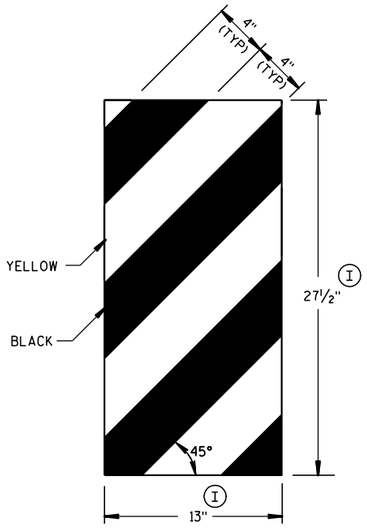
TOP VIEW

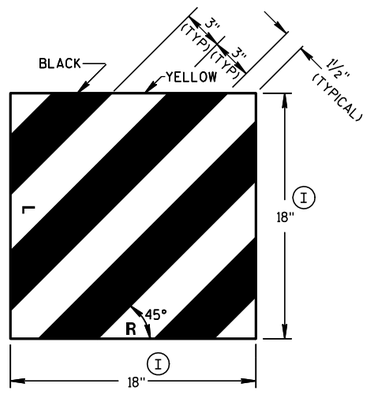
ALTERNATE WOOD BLOCKOUT DETAIL



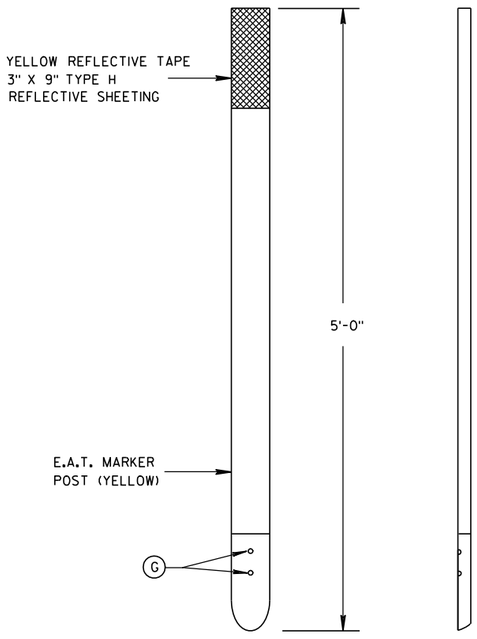
WOOD BLOCKOUT (4)

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





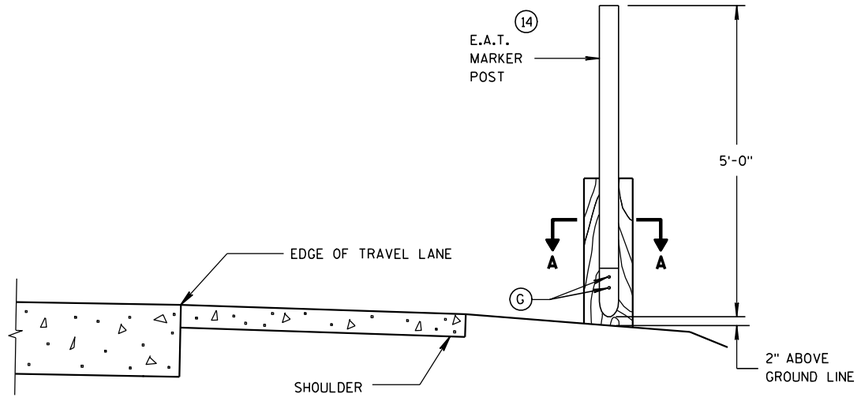
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

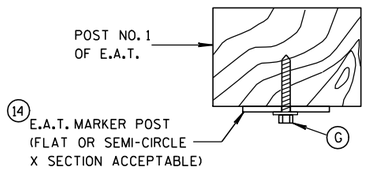
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

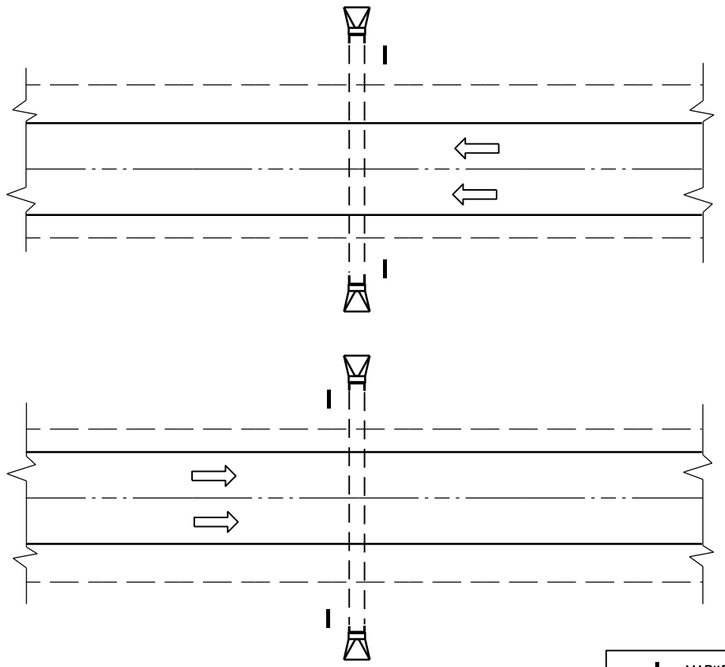
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
92
FHWA

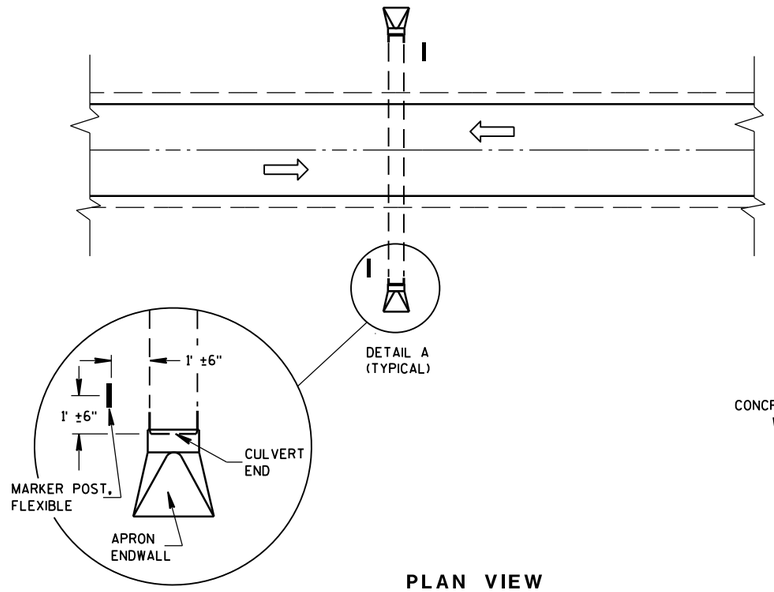
6

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



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

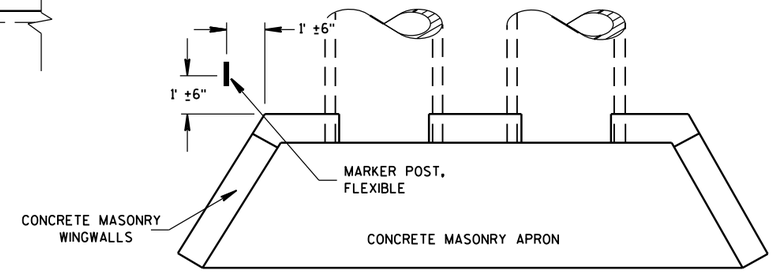
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

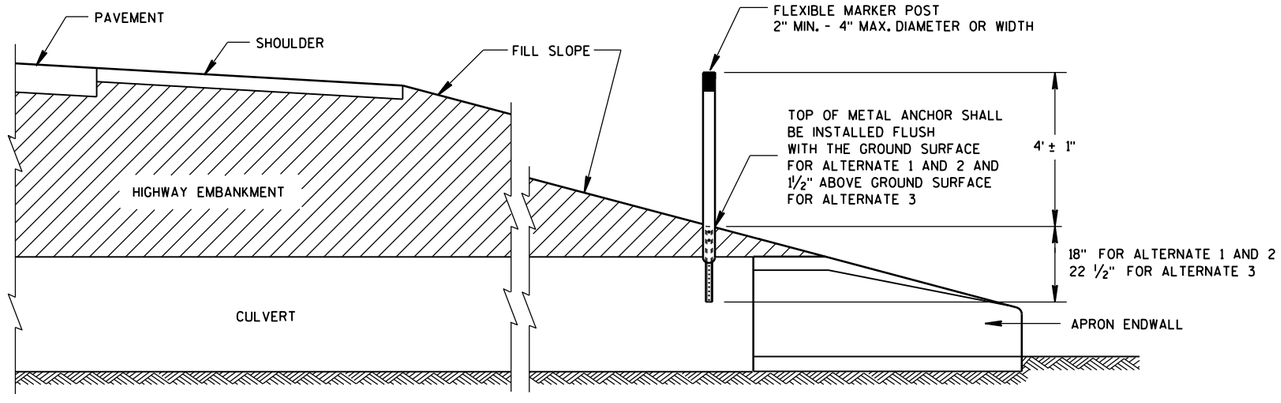
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

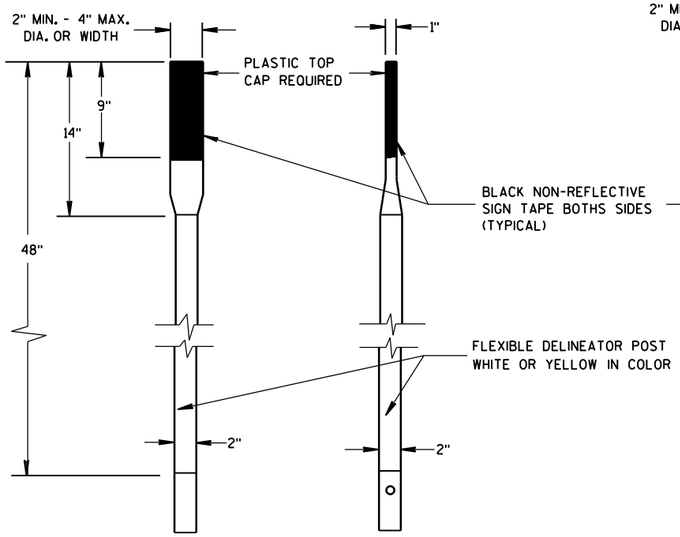
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

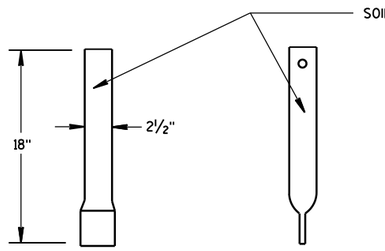
6

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

6

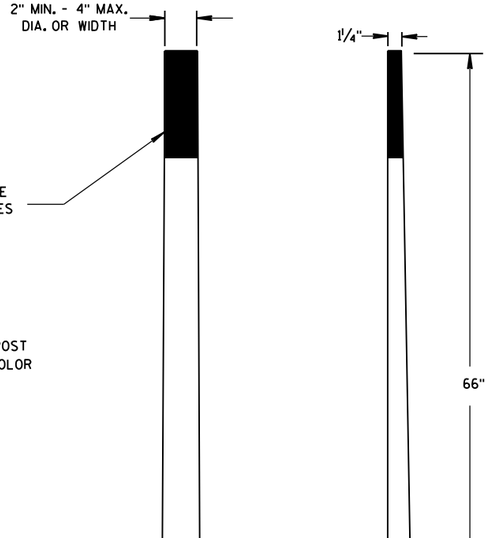
S.D.D. 15 A 3-2a





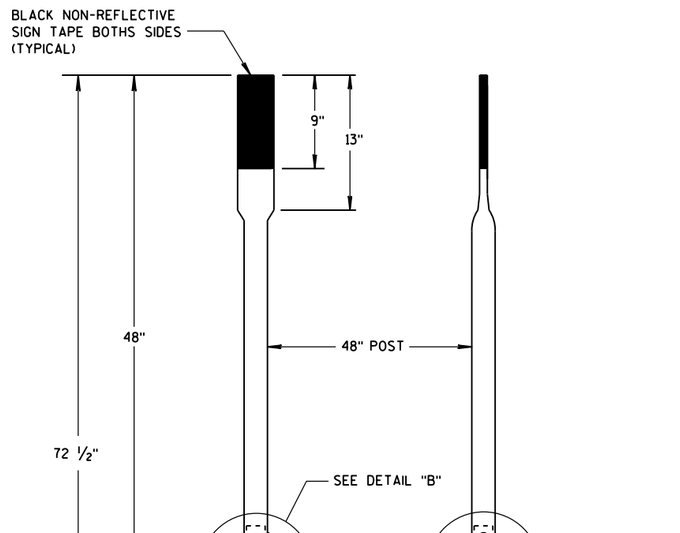
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

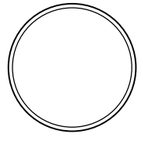
ALTERNATE 2



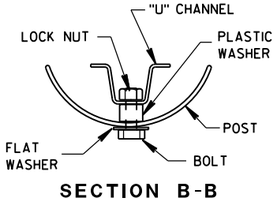
FRONT VIEW SIDE VIEW

ALTERNATE 3

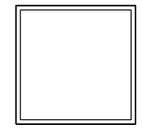
FLEXIBLE MARKER POSTS



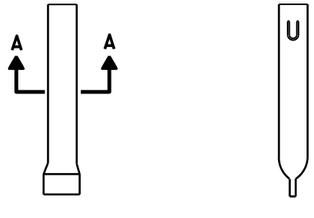
SECTION A-A



SECTION B-B

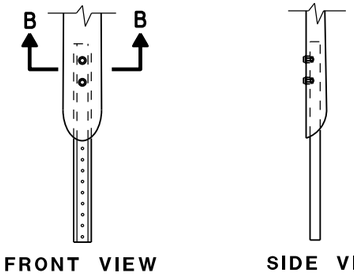


SECTION C-C



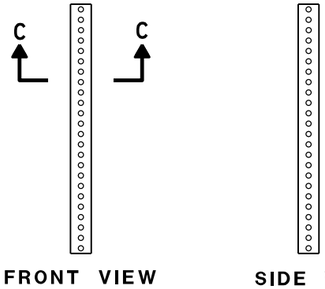
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

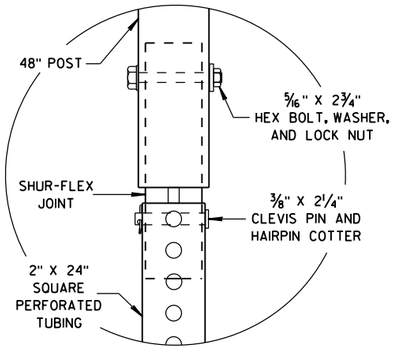
ALTERNATE 2



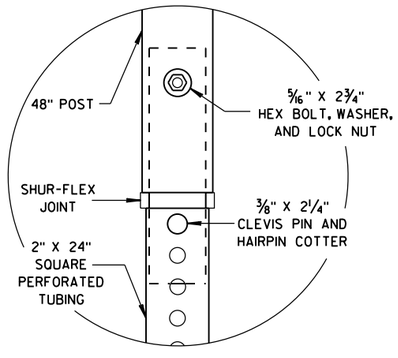
FRONT VIEW SIDE VIEW

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

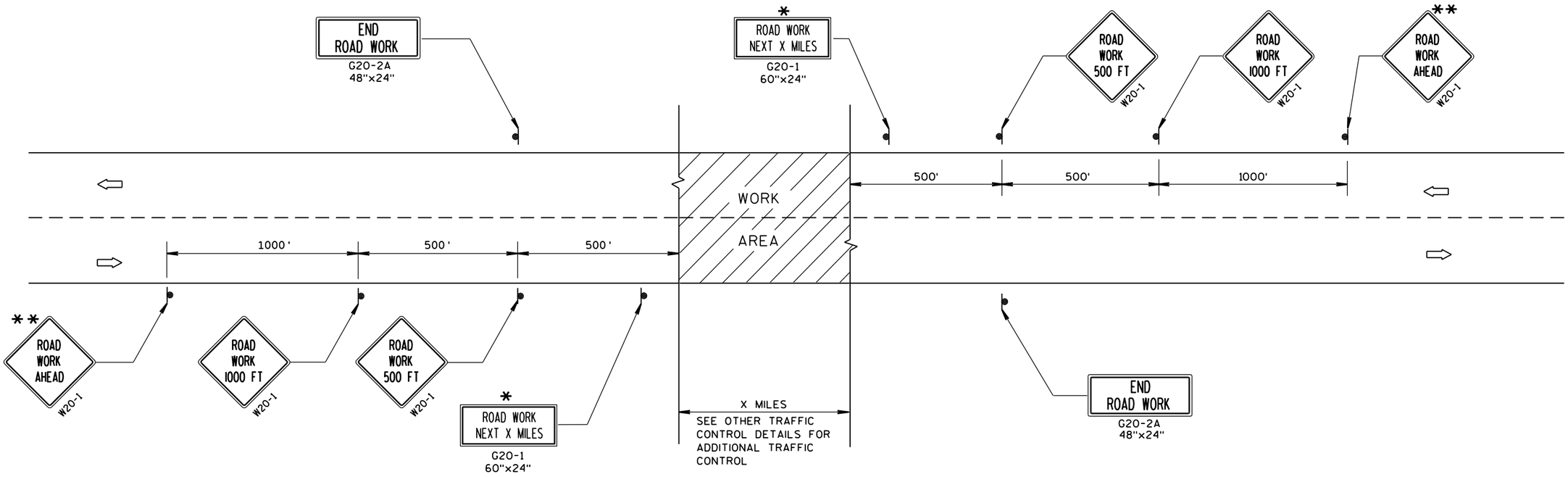
6

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

6

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

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

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

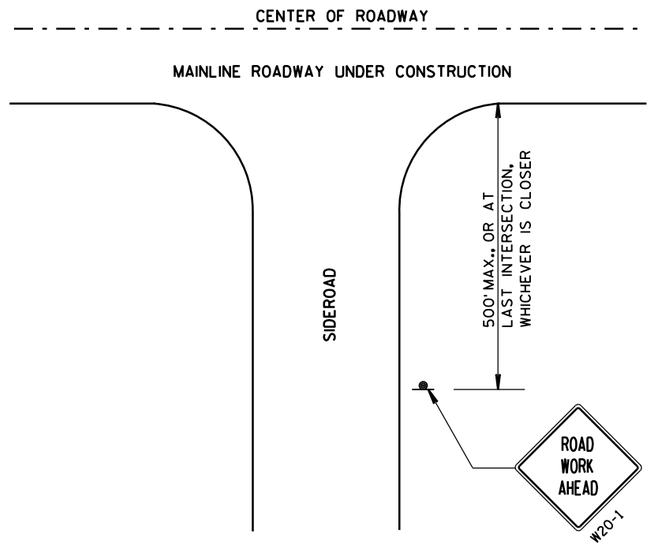
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

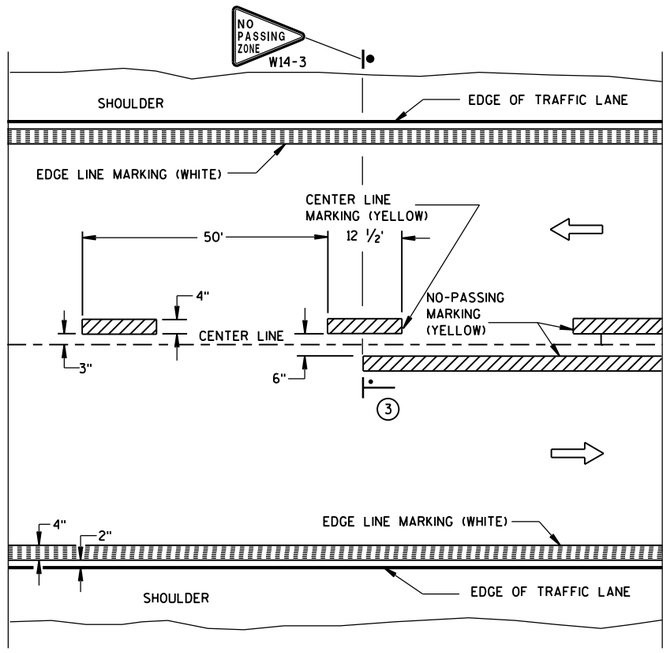
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

95 — SIGN

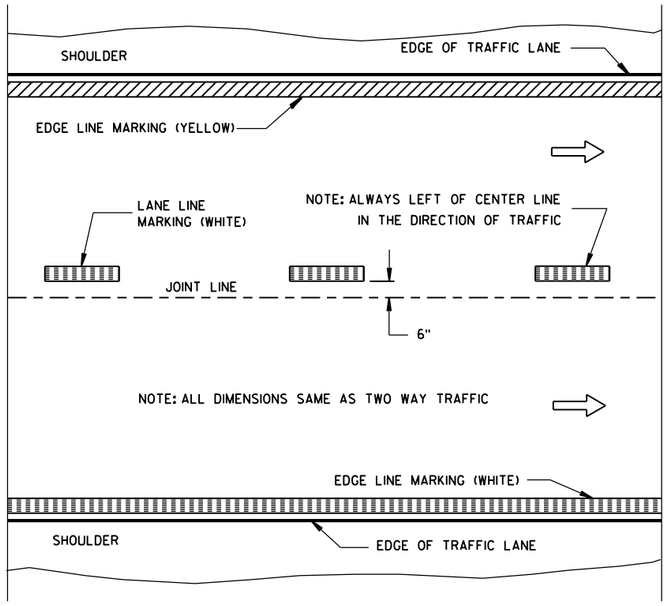
FHWA

6

S.D.D. 15 C 4-2

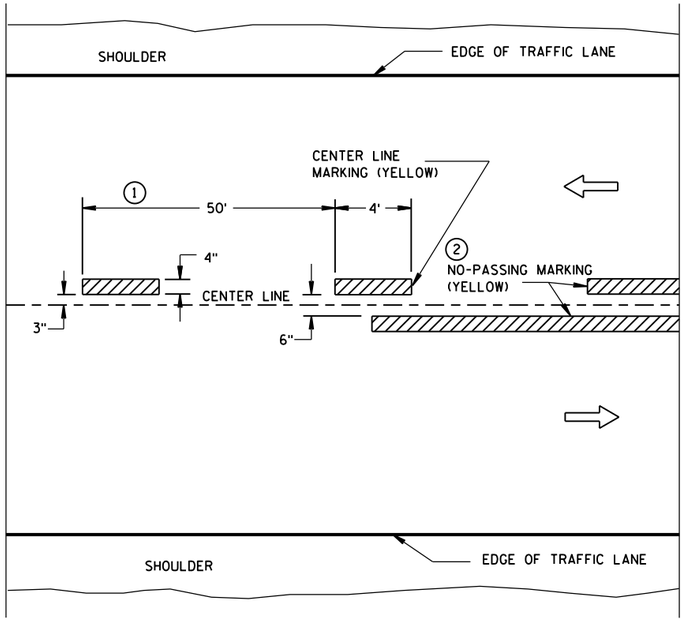


TWO WAY TRAFFIC

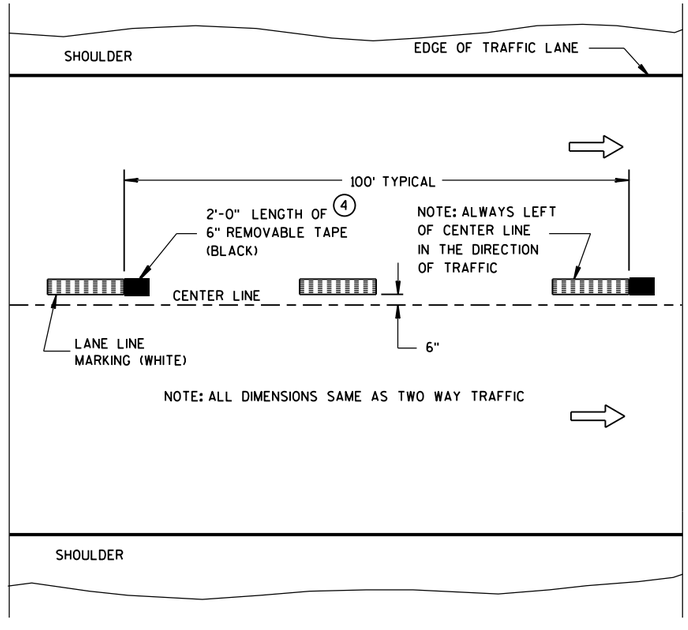


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

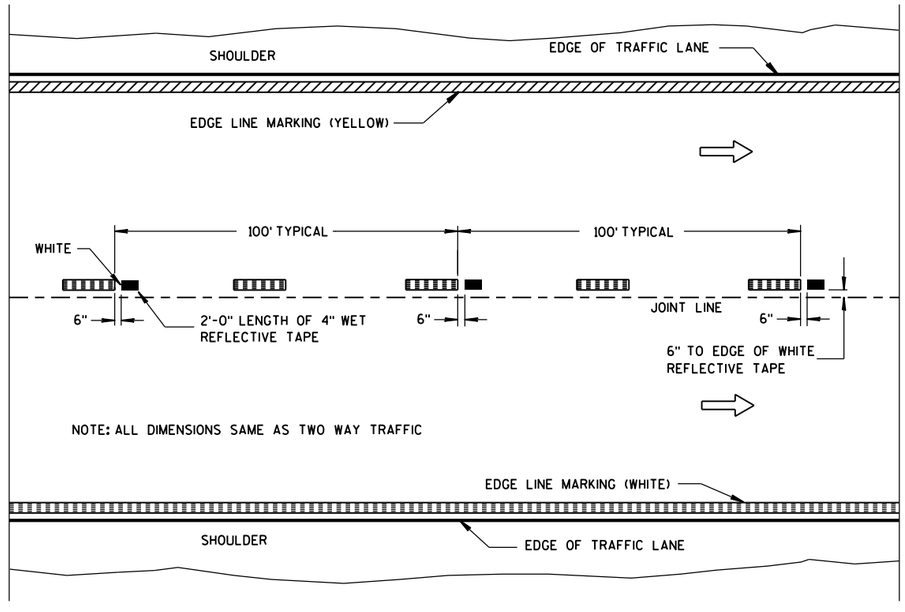
GENERAL NOTES

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

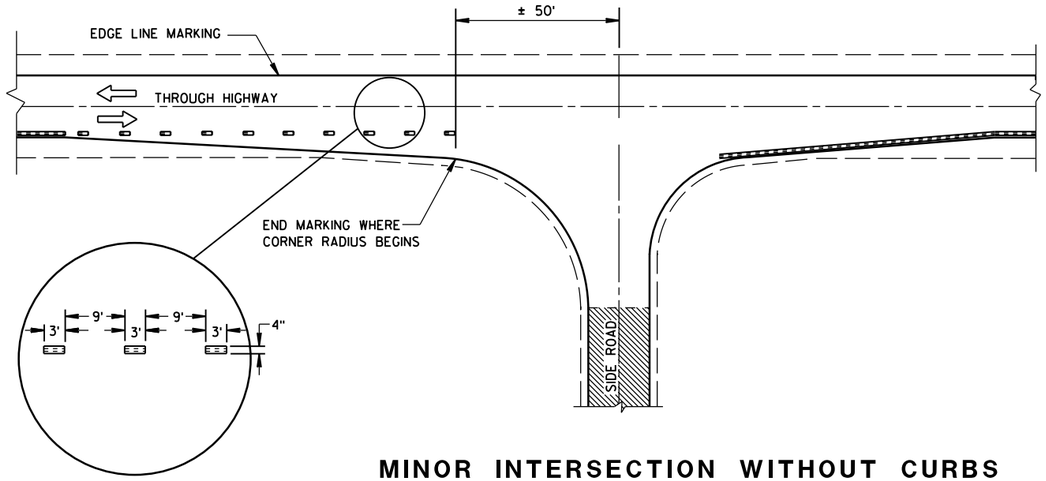
FHWA

6

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

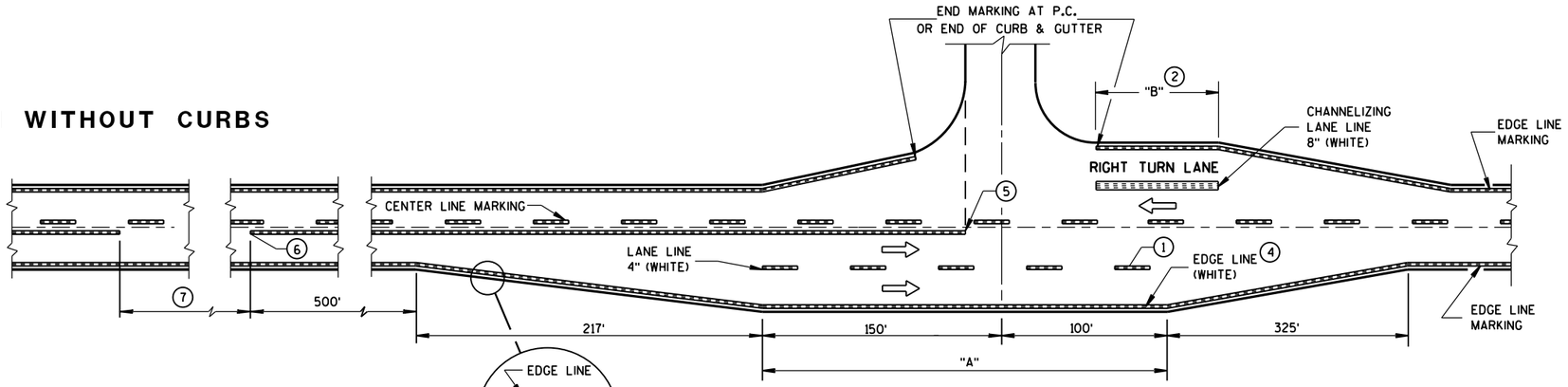
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

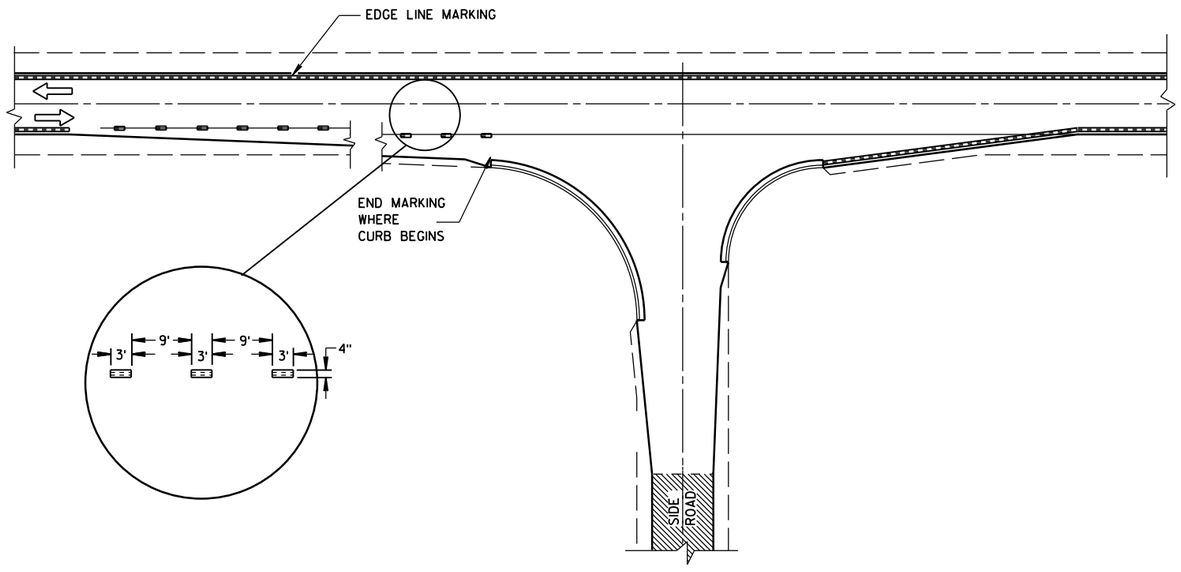
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



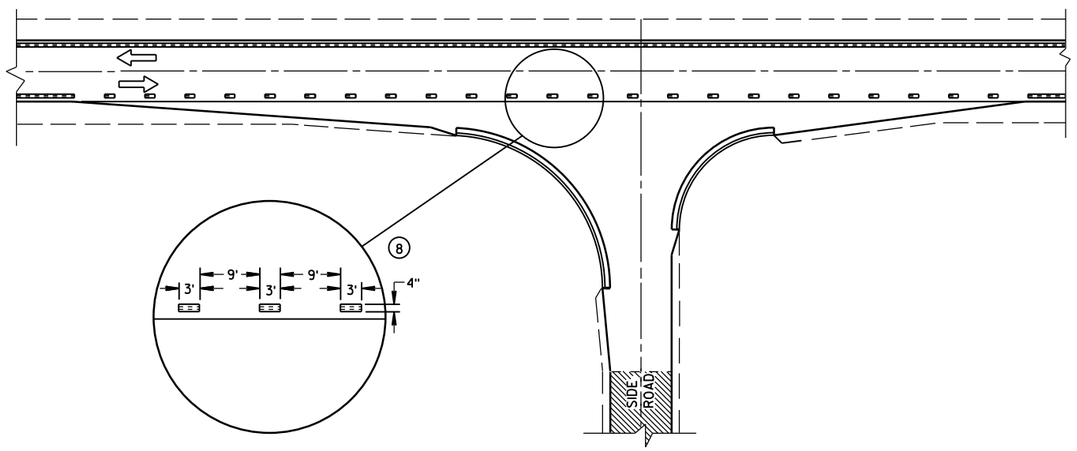
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

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

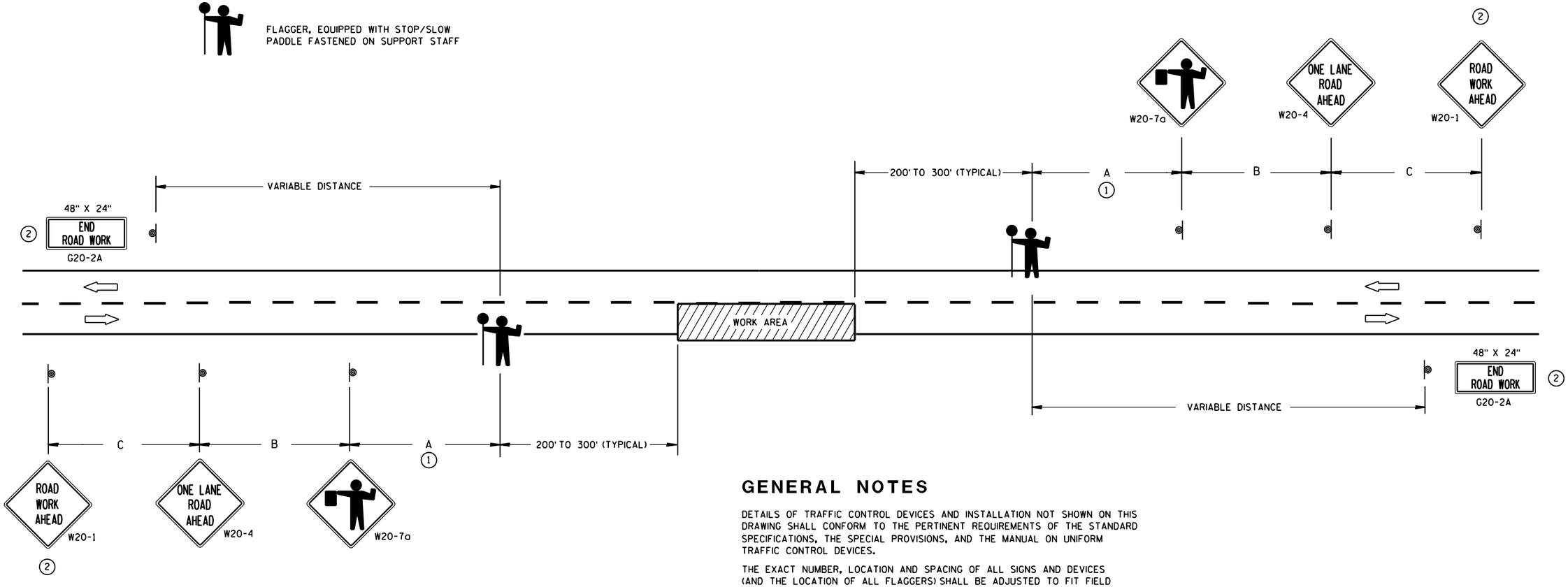
SIGN SPACING TABLE

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



W3-4

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



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

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

GENERAL NOTES

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

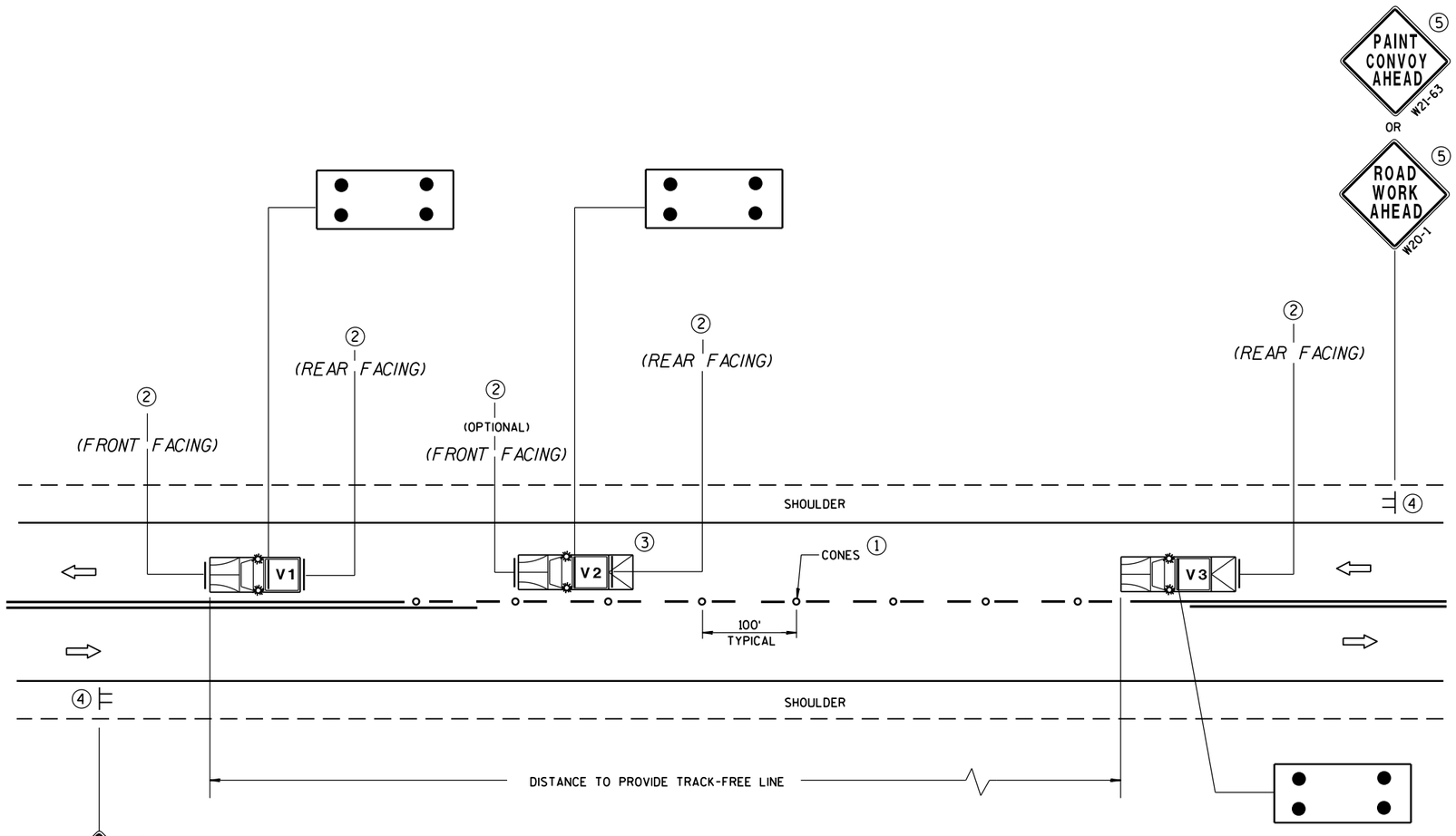
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(5) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1	LEAD VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE WITH TMA
TMA	TRUCK-MOUNTED ATTENUATOR
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	CONES
	FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 5/3/2013 DATE — /S/ Travis Feltes STATE TRAFFIC E FHWA

6

S.D.D. 15 C 19-2a

6

S.D.D. 15 C 19-2a

GENERAL NOTES

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

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

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

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

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

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

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

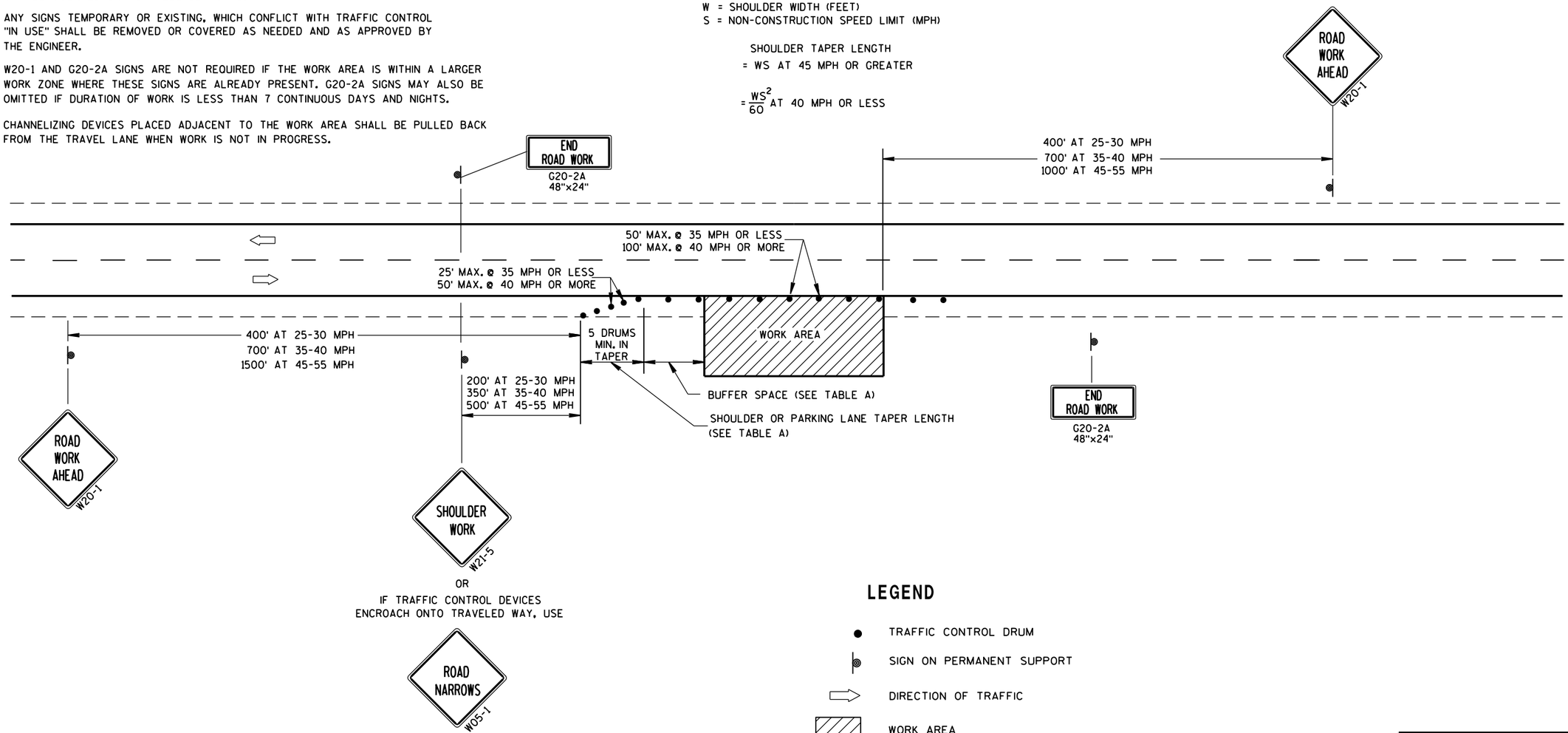
TABLE A

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

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

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

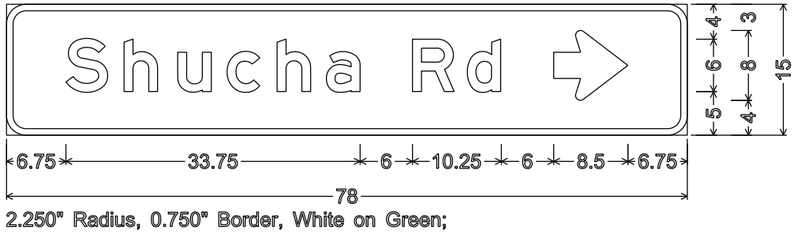
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINE ESIGN

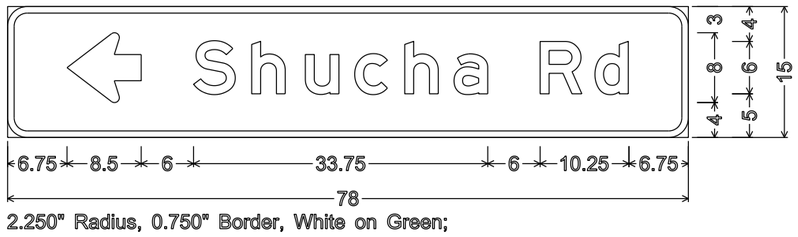
FHWA

6

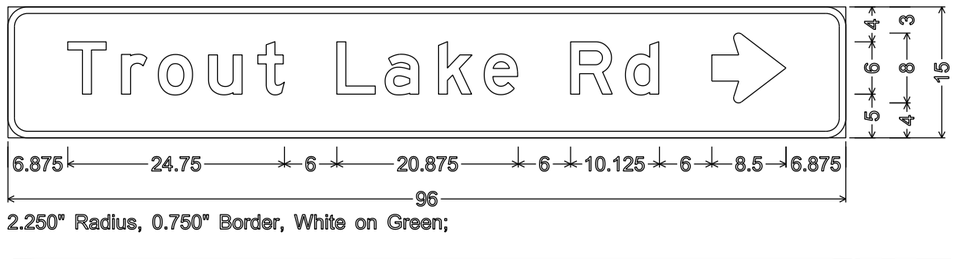
S.D.D. 15 D 28-2



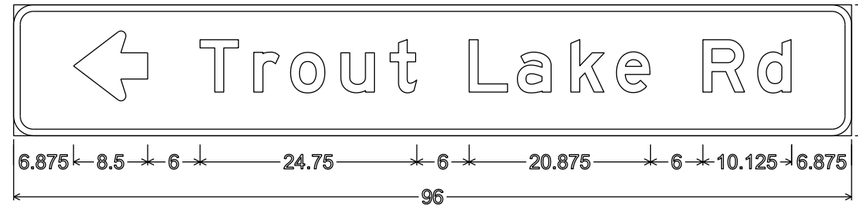
2.250" Radius, 0.750" Border, White on Green;



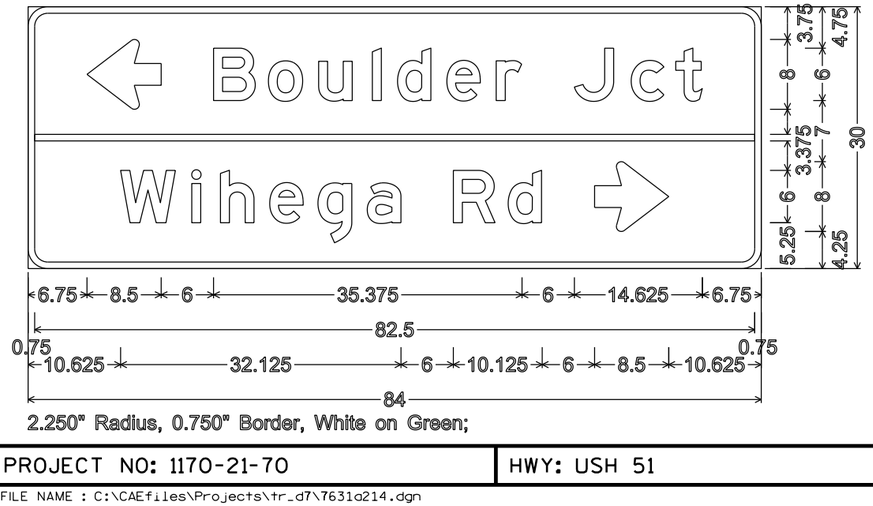
2.250" Radius, 0.750" Border, White on Green;



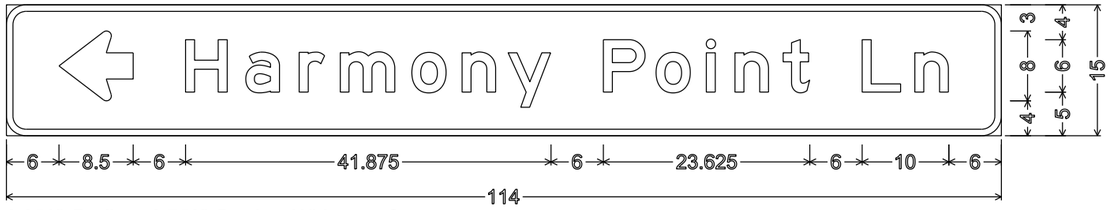
2.250" Radius, 0.750" Border, White on Green;



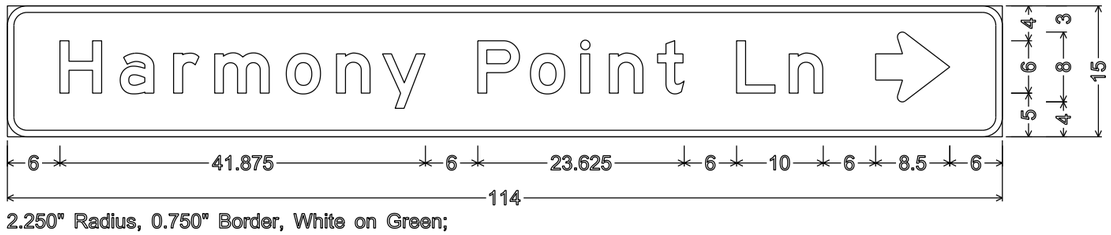
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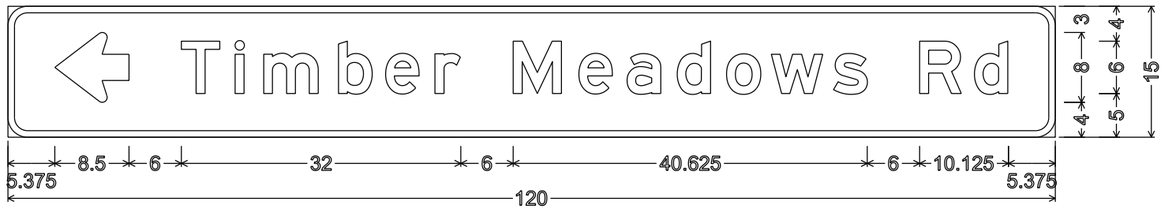
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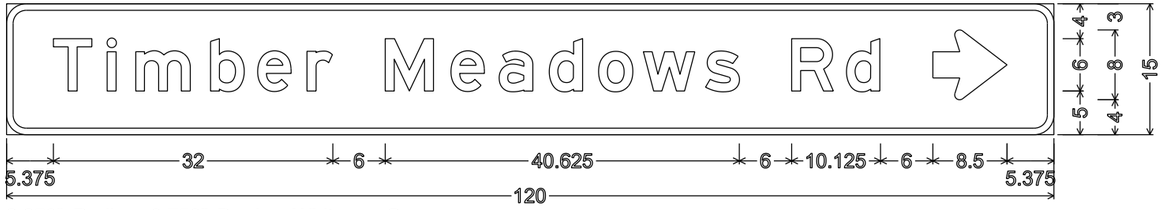
2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;

NOTES

1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E

7

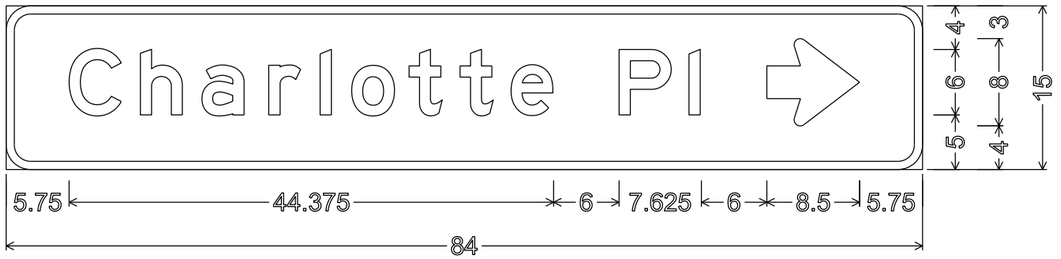
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E

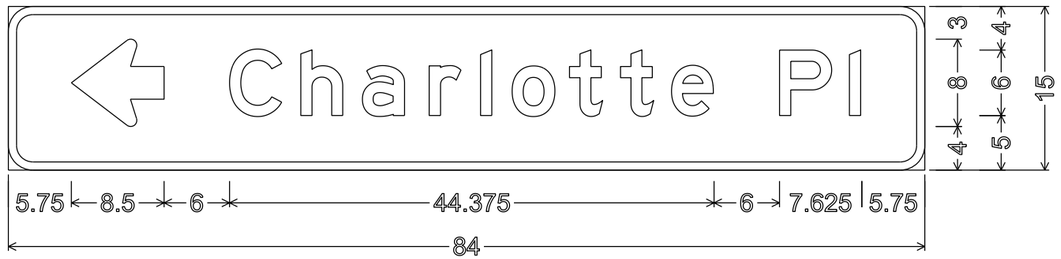
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NOTES

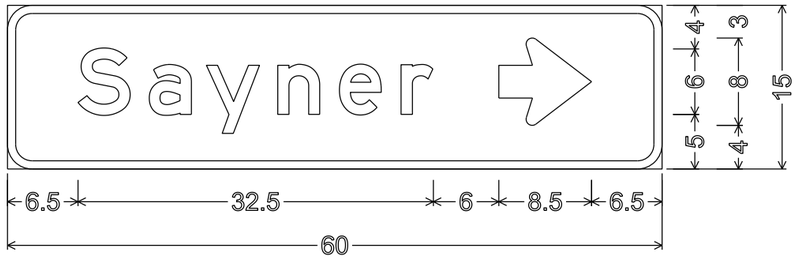
1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



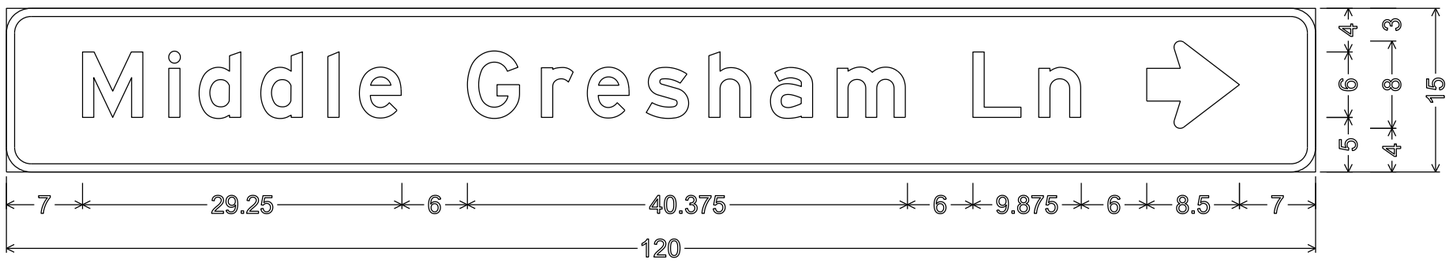
2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



2.250" Radius, 0.750" Border, White on Green;



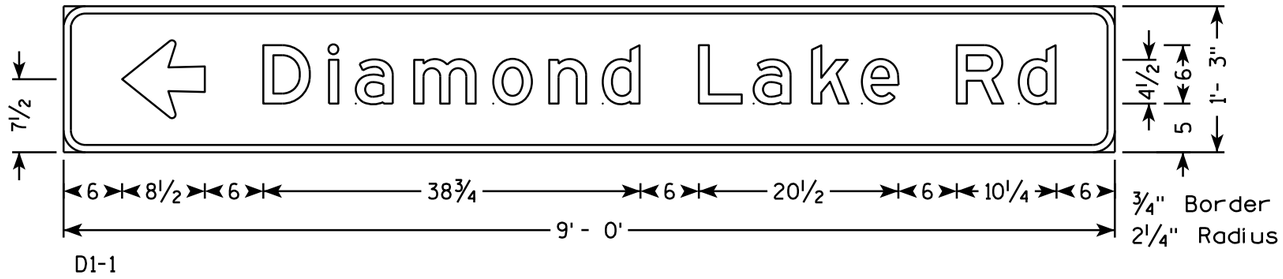
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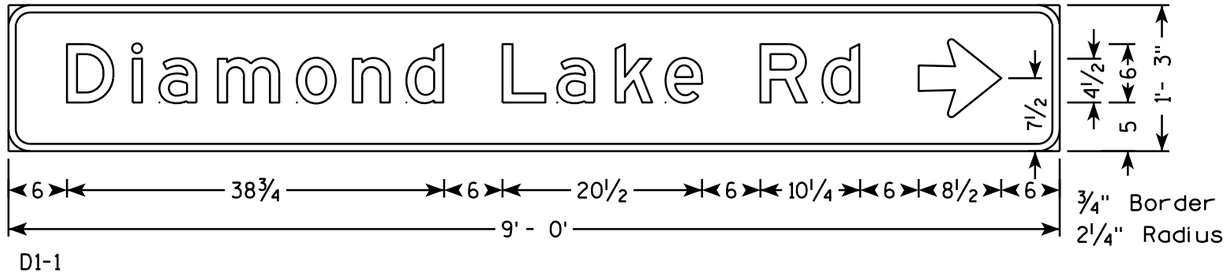
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	PERMANENT SIGNING	SHEET NO:	E

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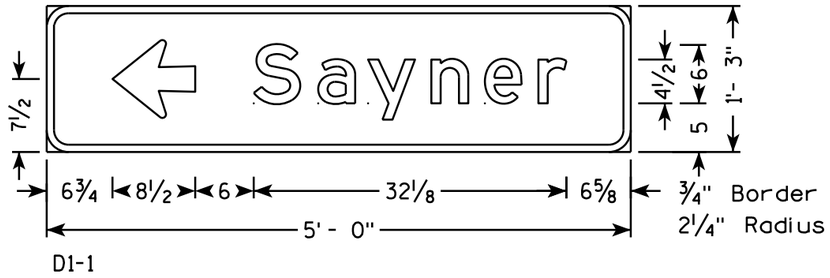
D1-1



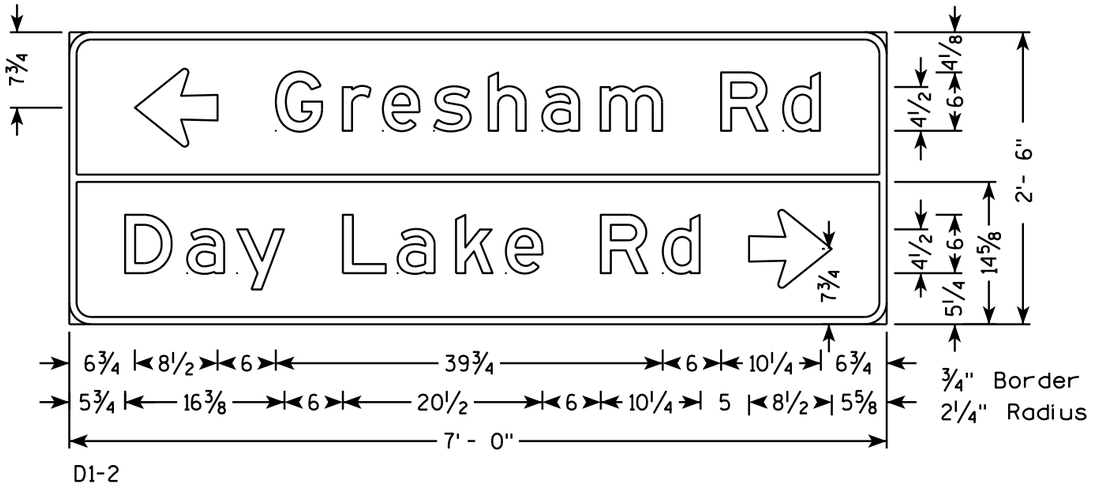
D1-1

NOTES

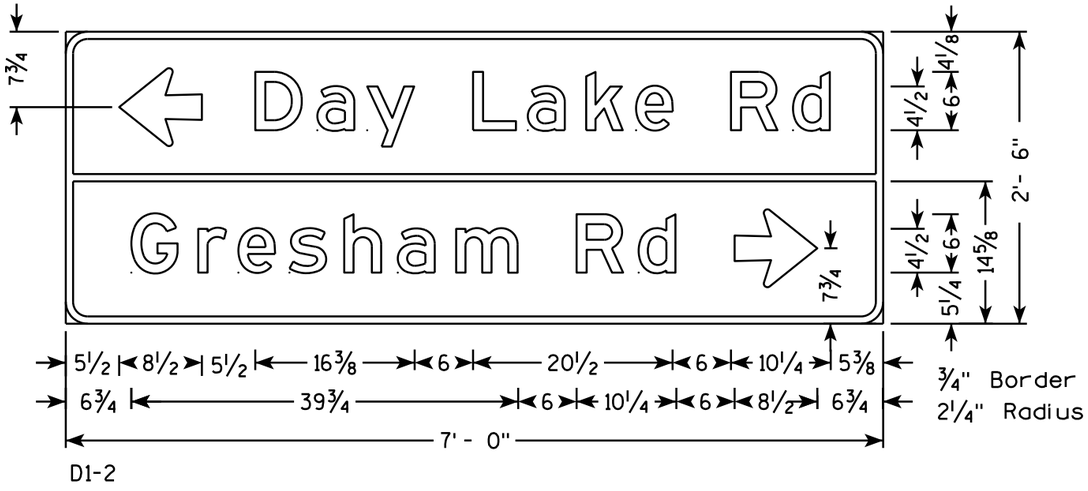
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



D1-1



D1-2



D1-2

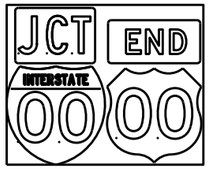
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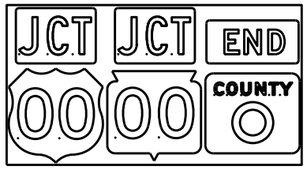
TYPICAL ASSEMBLIES



J1-1



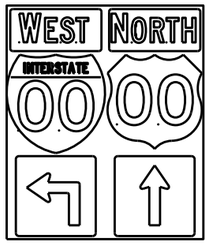
J1-2



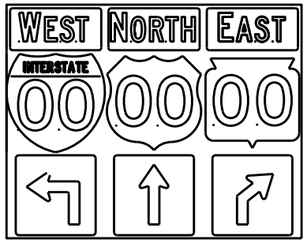
J1-3



J2-1



J2-2

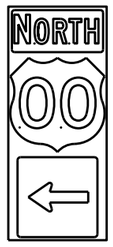


J2-3

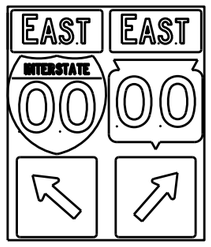


JV

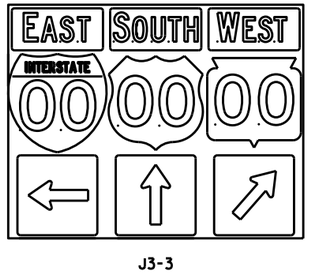
(Typical Vertical J-Assembly
See Note 10 and 11)



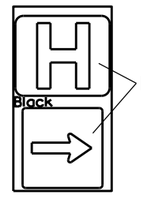
J3-1



J3-2



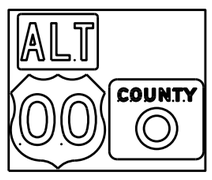
J3-3



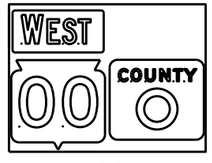
JH-1



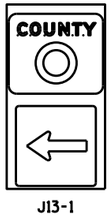
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

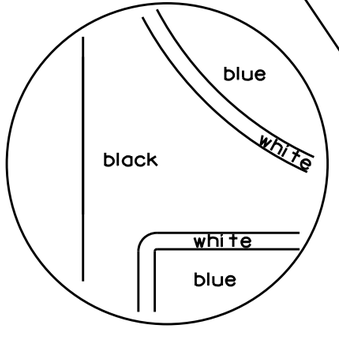


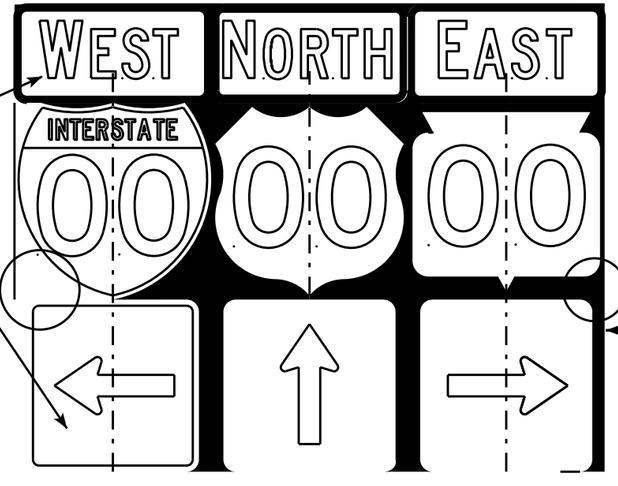
J23-1

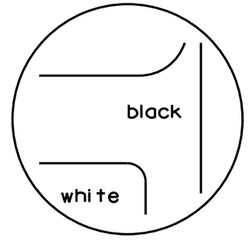


J22-1

[blue background with interstate]







[black background]

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

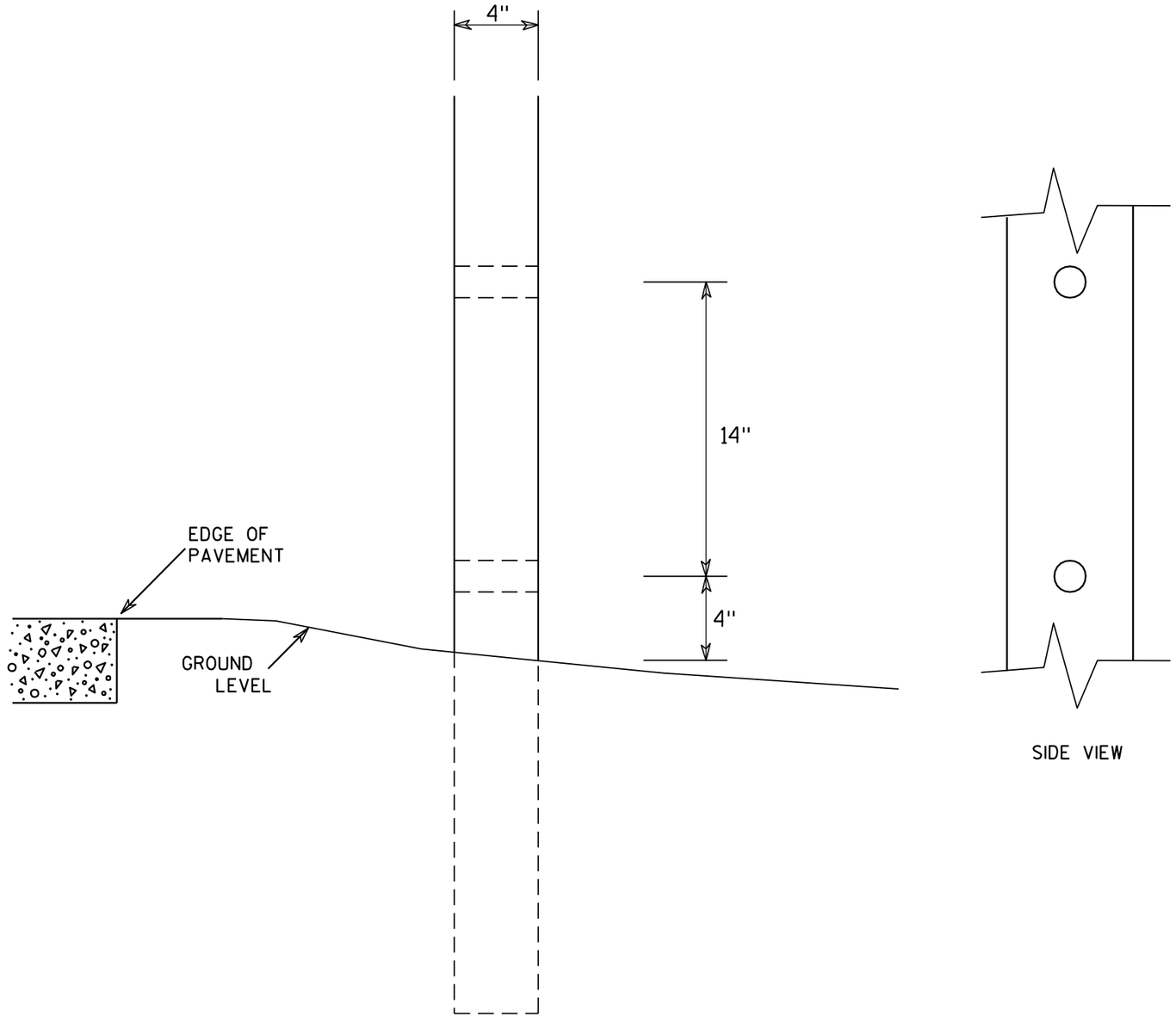
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

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.

7

7

4 X 6 WOOD POST MODIFICATIONS

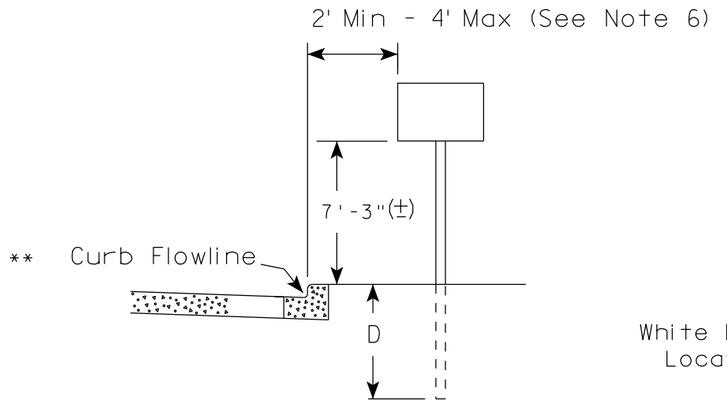
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

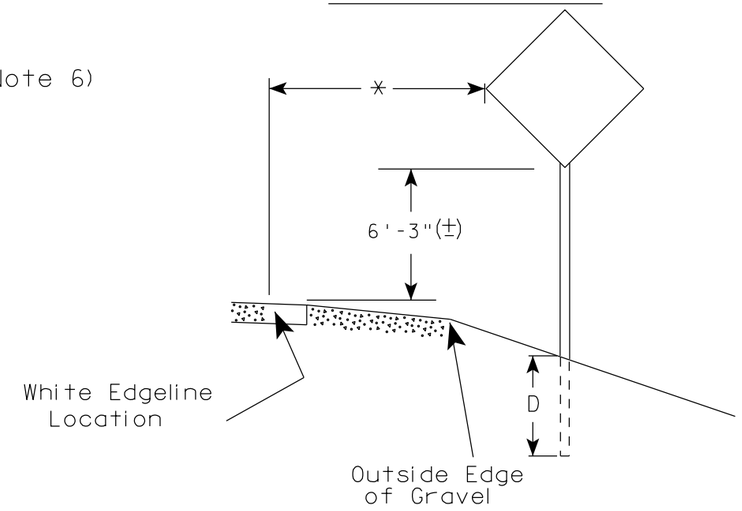
DATE 3/27/97 PLATE NO. A4-11.2

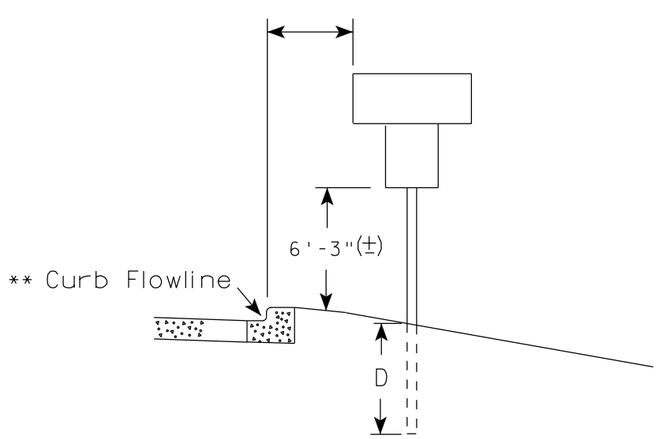
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 105	E

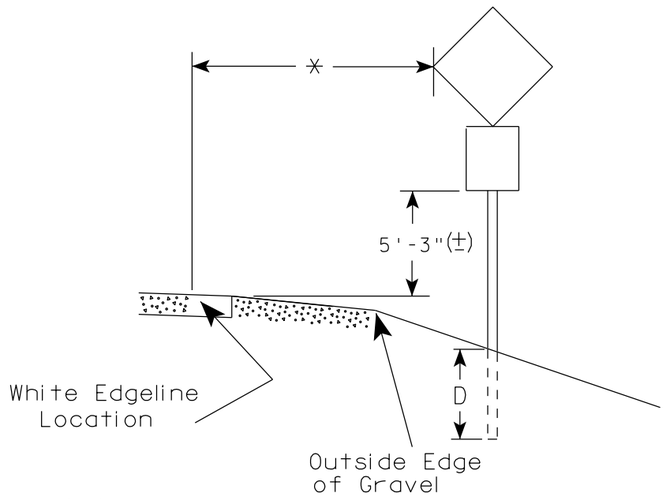
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) 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 stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed 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) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

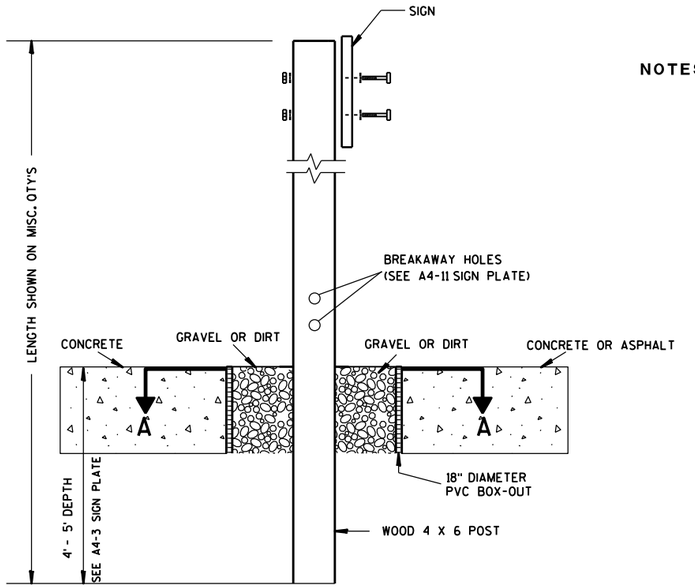
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

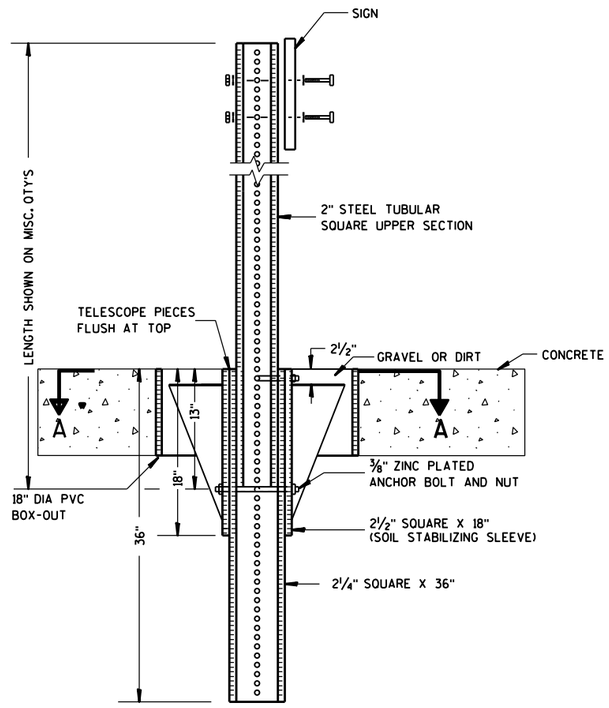
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 30-SEP-2013 13:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42



ELEVATION VIEW

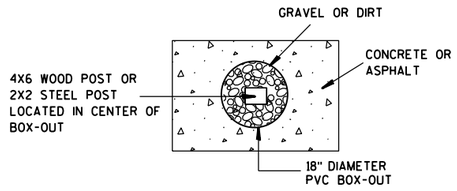
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

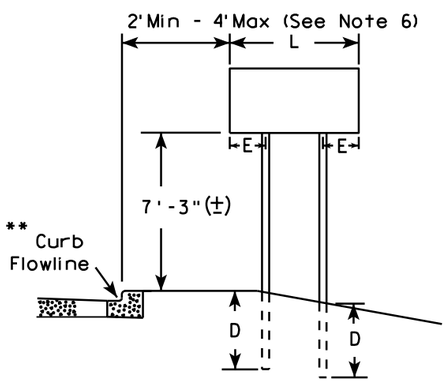
WISCONSIN DEPT OF TRANSPORTATION

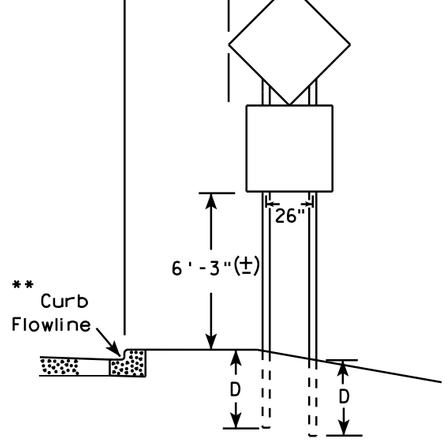
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

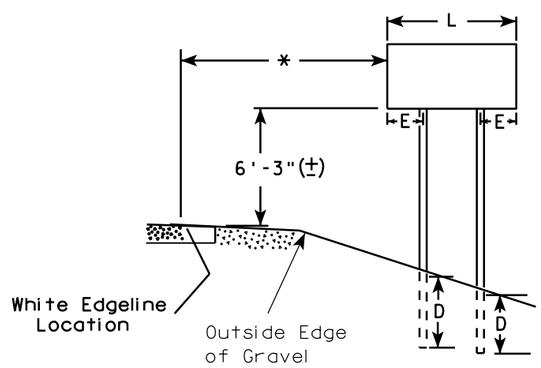
URBAN AREA

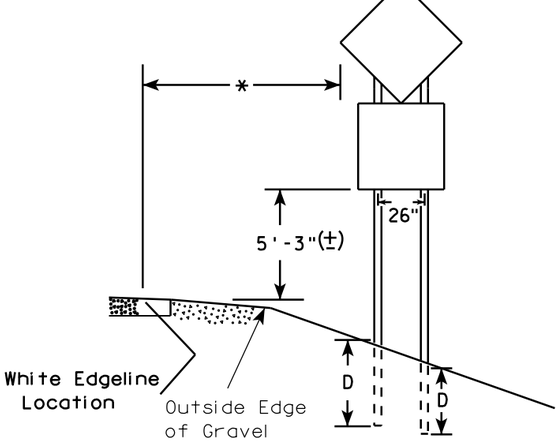




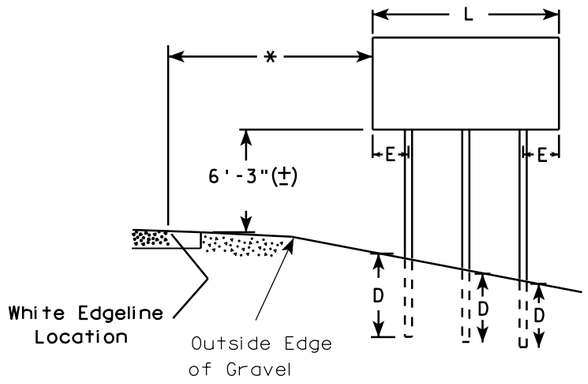
48" DIAMOND WARNING SIGN

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 (A4-5) 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 stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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 or 20 S.F. or less 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'

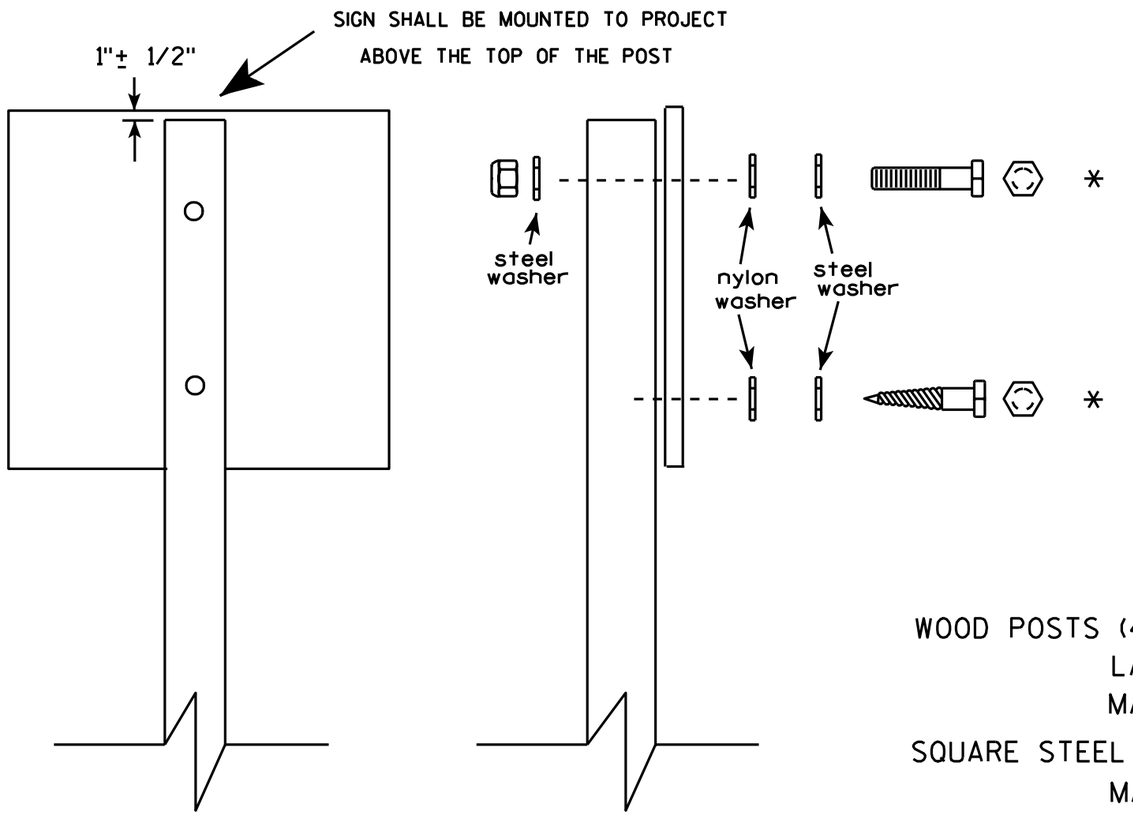
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-4 12

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

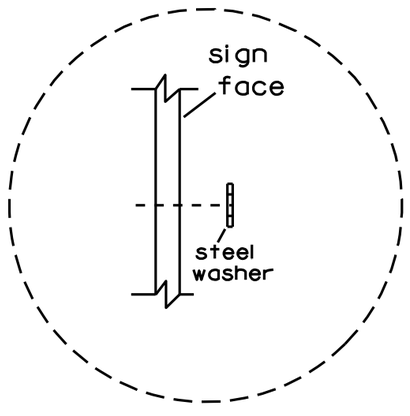
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

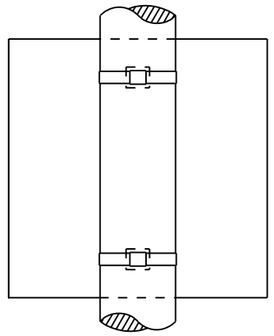
7

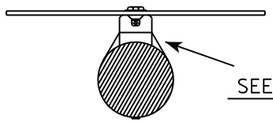
PROJECT NO:

SHEET NO: 109 E

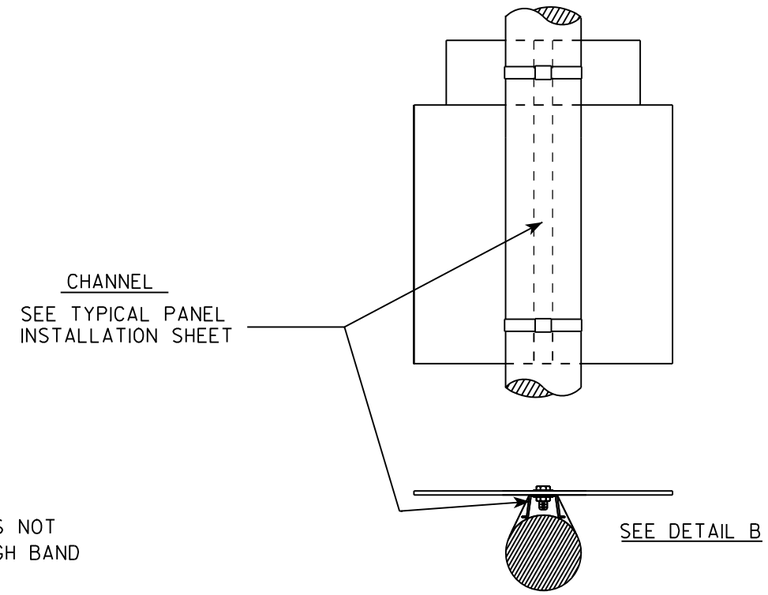
BANDING

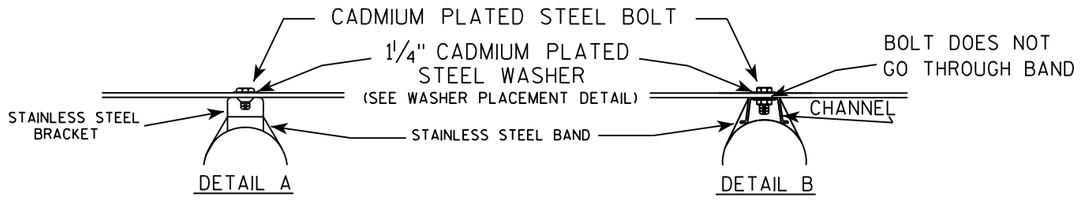
SINGLE SIGN



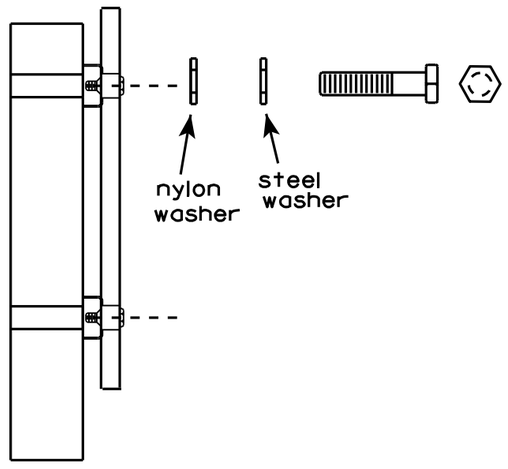


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

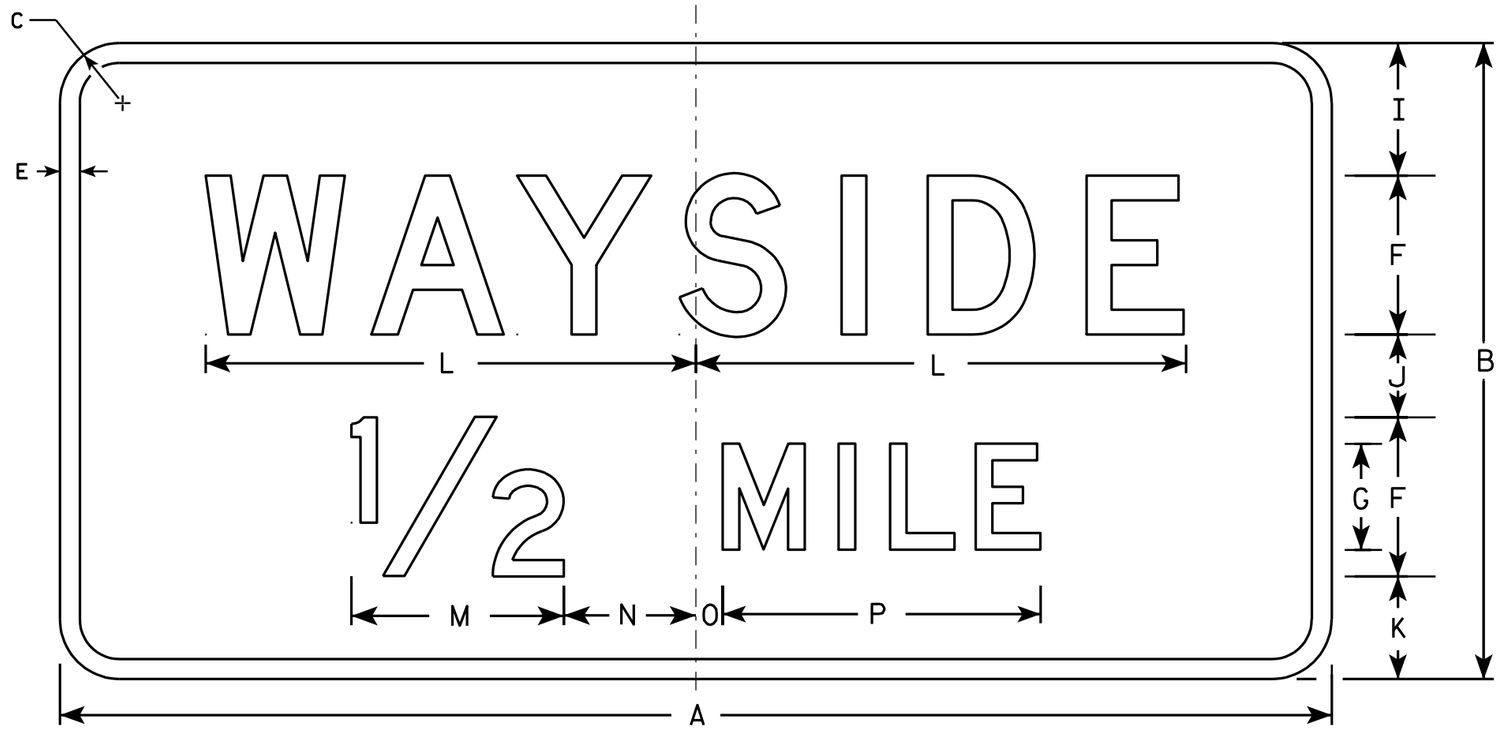
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 110	E



D5-61

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White
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.

Metric equivalent for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

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		
1																												
2	48	24	2 1/4		3/4	6	4	6	5	3 1/8	3 7/8	18 1/2	8	5	1	12											8.0	0.72
3																												
4	78	42	3		1	10	7	10 1/2	8 3/4	5 3/4	7	30 1/8	14	8 3/4	1 3/4	21											22.8	2.05
5																												

STANDARD SIGN
D5-61

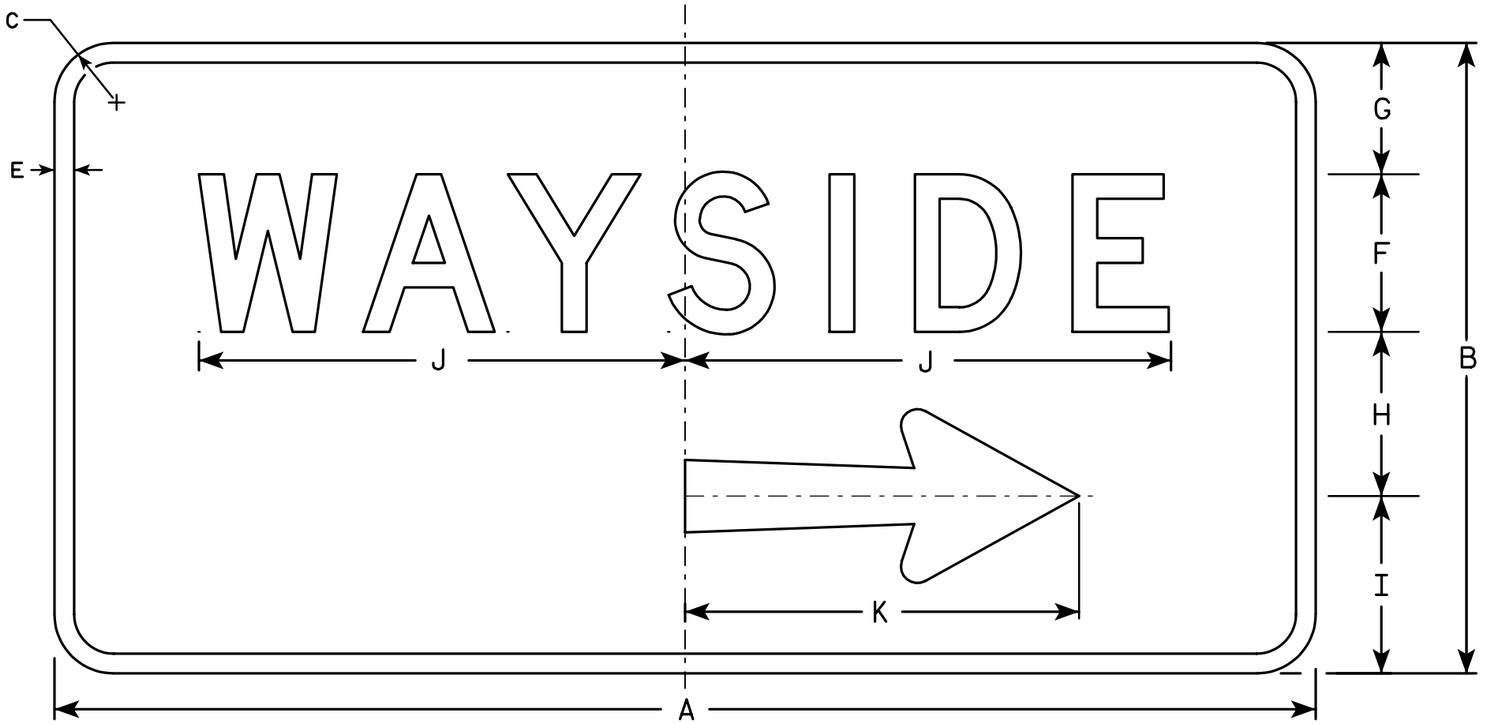
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spagg for State Traffic Engineer

DATE 1/09/02 PLATE NO. D5-61.9

STATE PROJECT NUMBER:

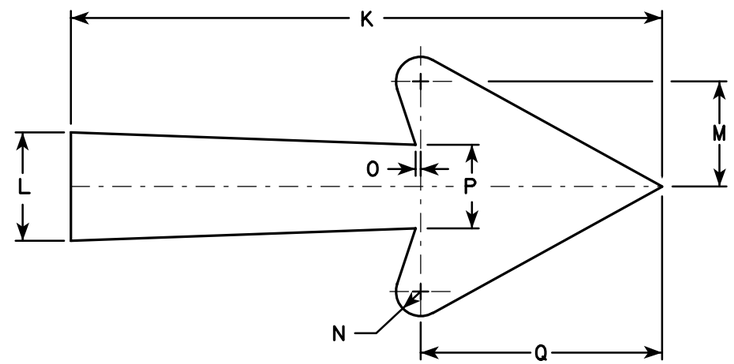
SHEET NO: 111 E



D5-62R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White
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.
5. D5-62L is the same as D5-62R except that the arrow is rotated 180° about the vertical center line.



Arrow Detail

Metric equivalent for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

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.	Area m2
1																												
2	48	24	2 1/4		3/4	6	4	6 1/4	6 3/4	18 1/2	15	2 3/4	3 1/8	5/8	1/8	2 1/8	6 1/8										8.0	0.72
3																												
4	78	42	3		1	10	8 3/4	11	12 1/4	30 1/8	26 1/4	4 3/4	4 5/8	1 1/8	1/4	3 3/4	10 3/4										22.8	2.05
5																												

STANDARD SIGN
D5-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spagg for State Traffic Engineer

DATE 1/09/02 PLATE NO. D5-62.10

STATE PROJECT NUMBER:

SHEET NO: 112 E

FILE NAME : C:\Users\Projects\tr_stdplate\D562.DGN PLOT DATE : 09-JAN-2002 10:07 ORG DATE : 6/16/97 Originator : Don Kluever

WISDOT/CADDS SHEET 42

58,59,60,61,62,63

LEVELS ON • 2.3. 5.6. 10. 14.

7

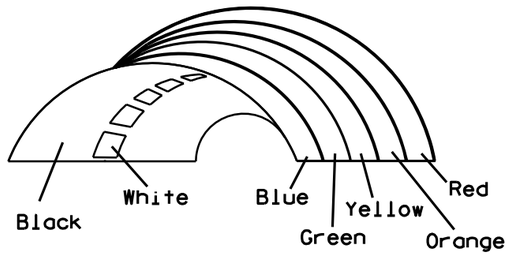
7



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
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.
5. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

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																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

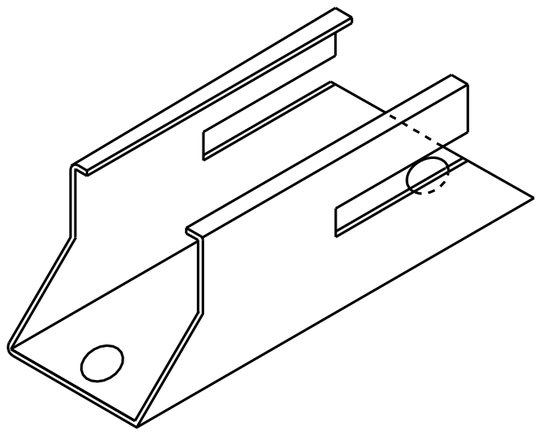
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/11 PLATE NO. 155-56.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 113

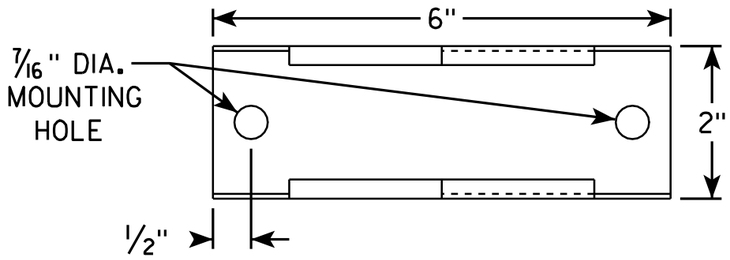
ISOMETRIC VIEW



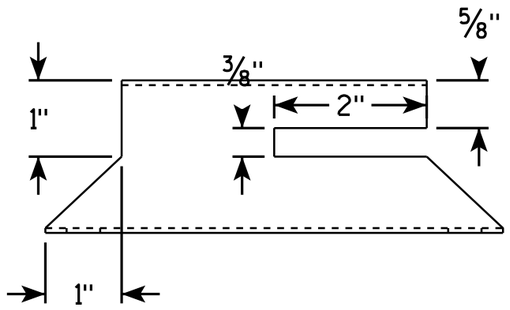
NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

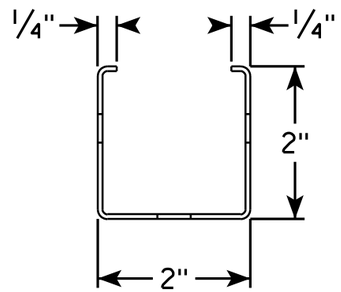
TOP VIEW



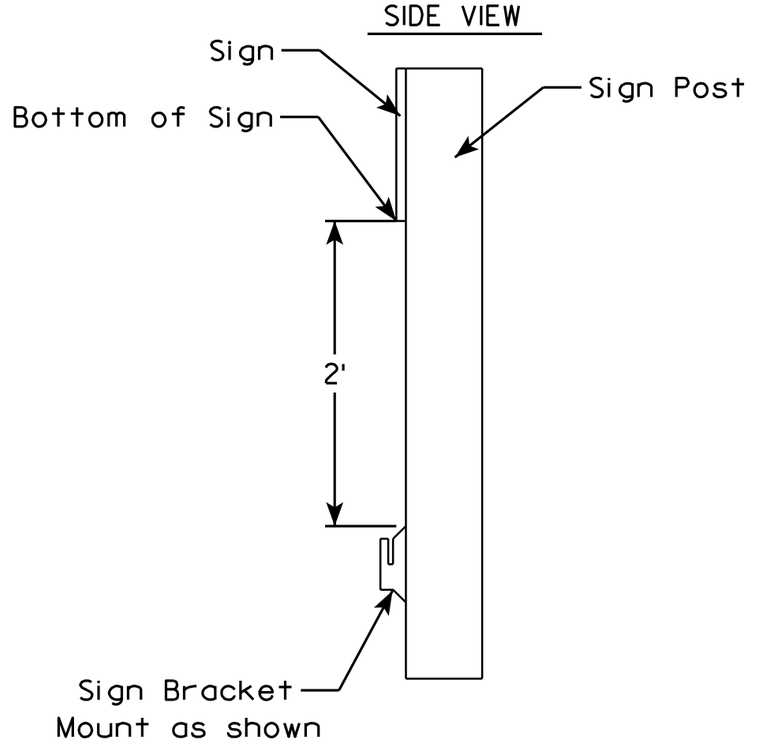
SIDE VIEW



END VIEW



SIDE VIEW



7

7

ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

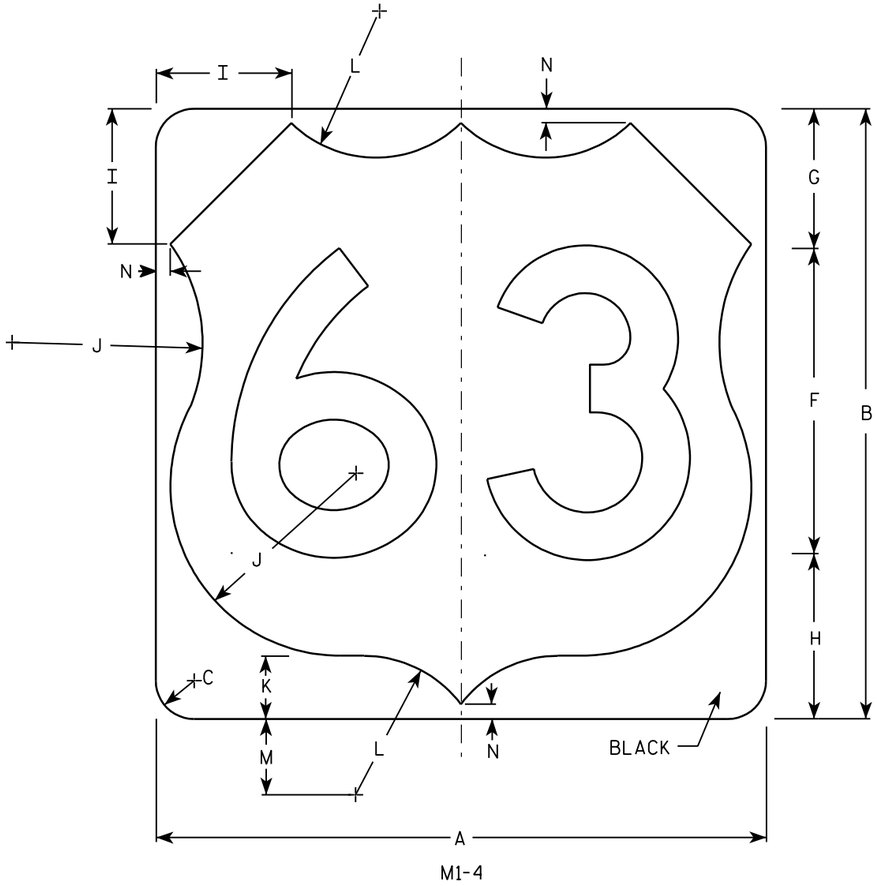
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

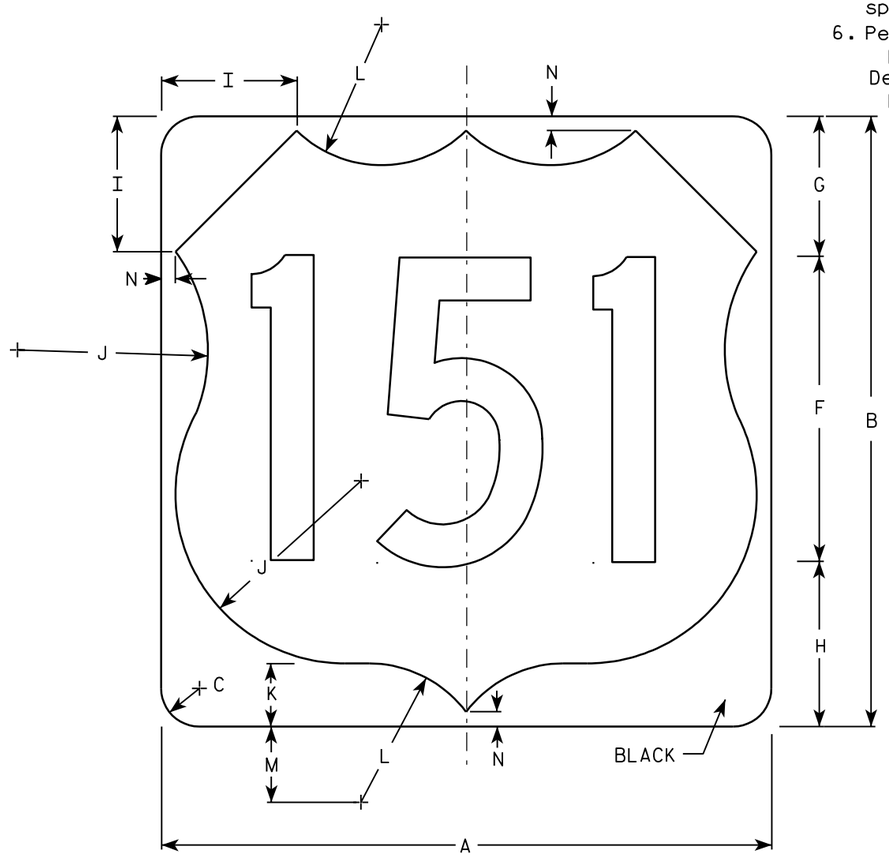
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 114	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
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.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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.	Area m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

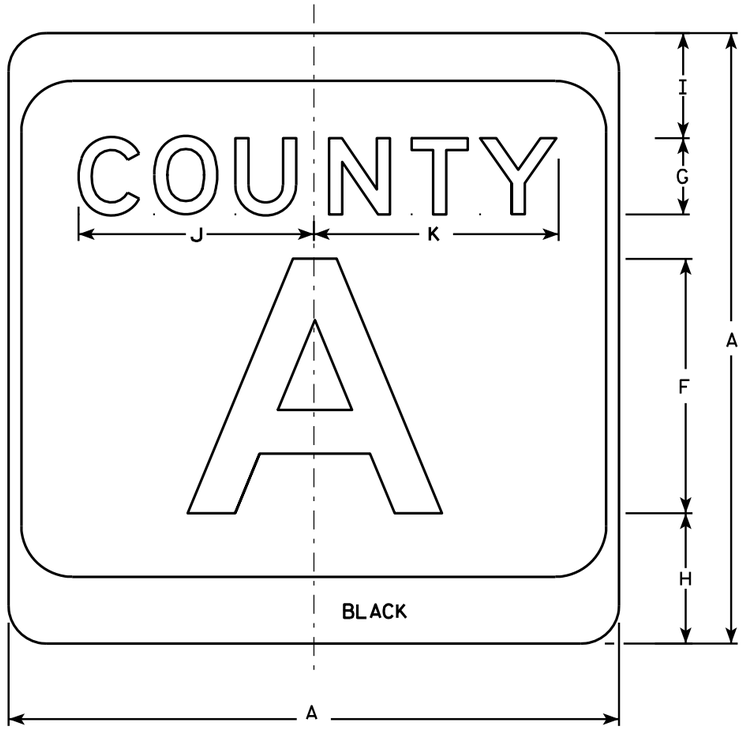
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

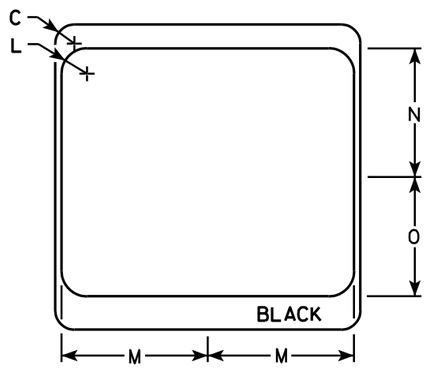
APPROVED Matthew R Rauch
for State Traffic Engineer

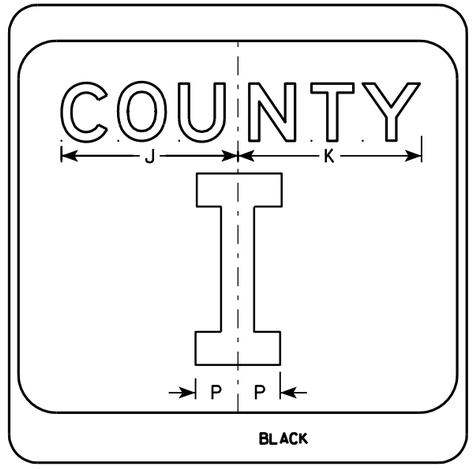
DATE 08/25/05 PLATE NO. M1-4.9

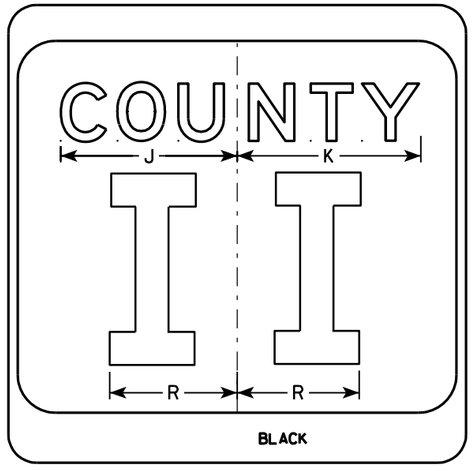
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 115 | E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
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.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

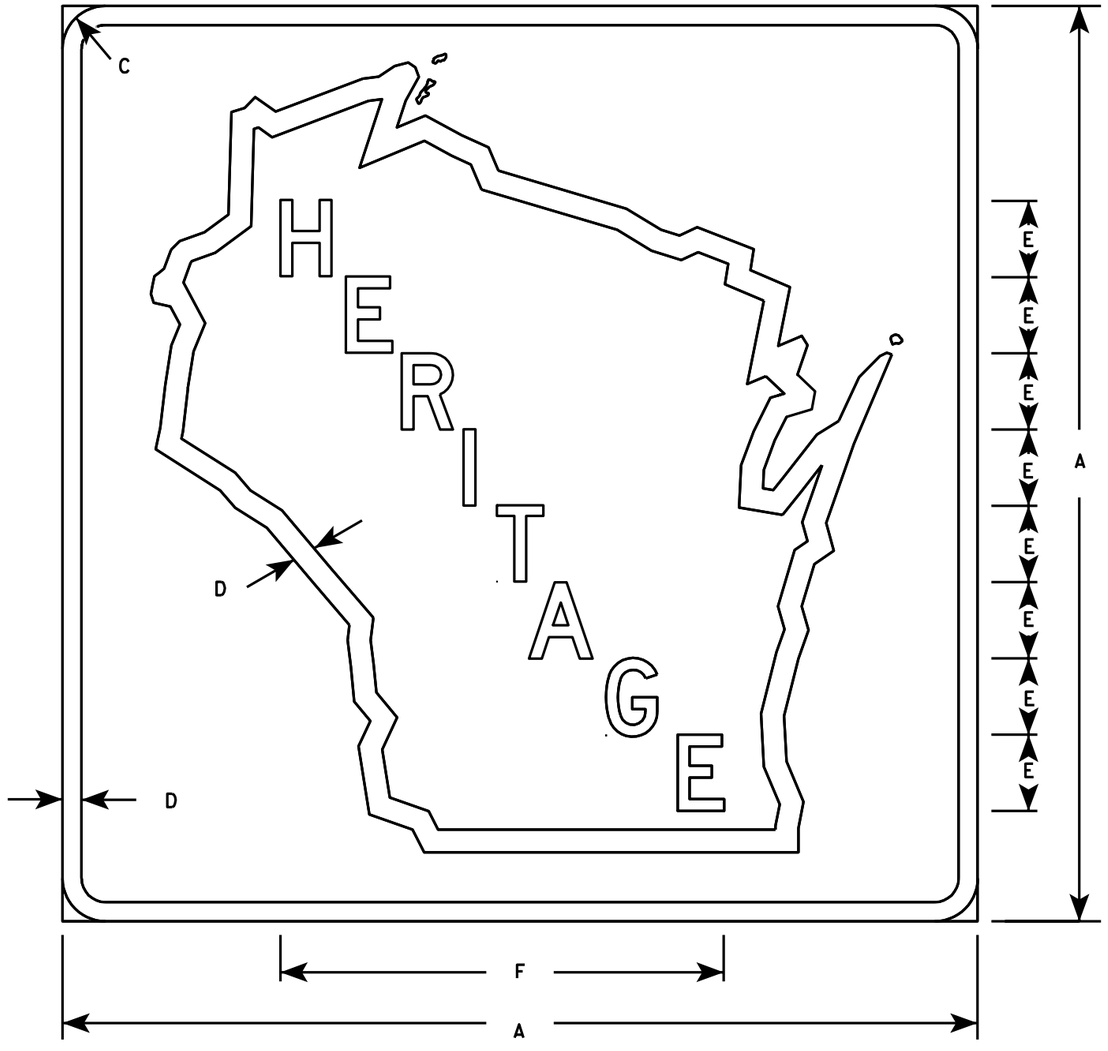
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 116	E



M1-85

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
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.

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm x 600 mm
3	
4	
5	

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.	Area m2
1																												
2	24		1 1/8	1/2	2	11 3/4																					4.0	0.36
3																												
4																												
5																												

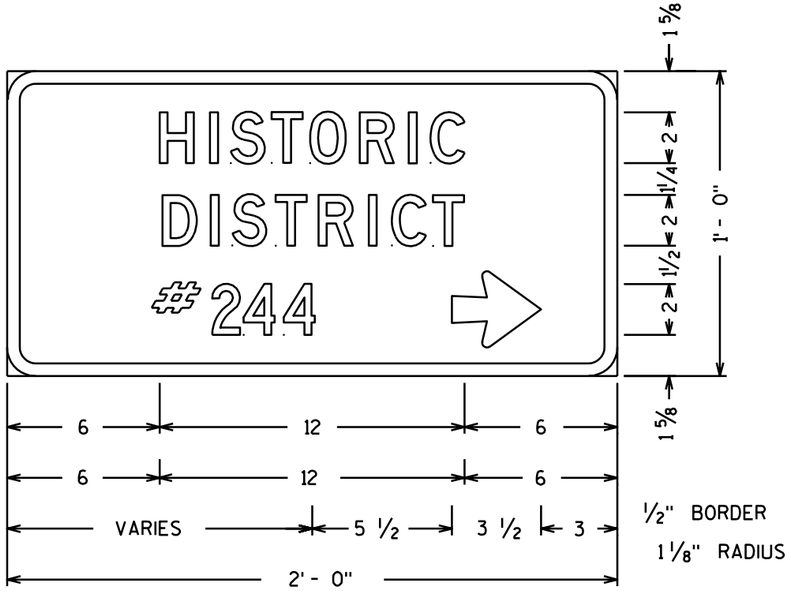
STANDARD SIGN
M1-85

WISCONSIN DEPT OF TRANSPORTATION

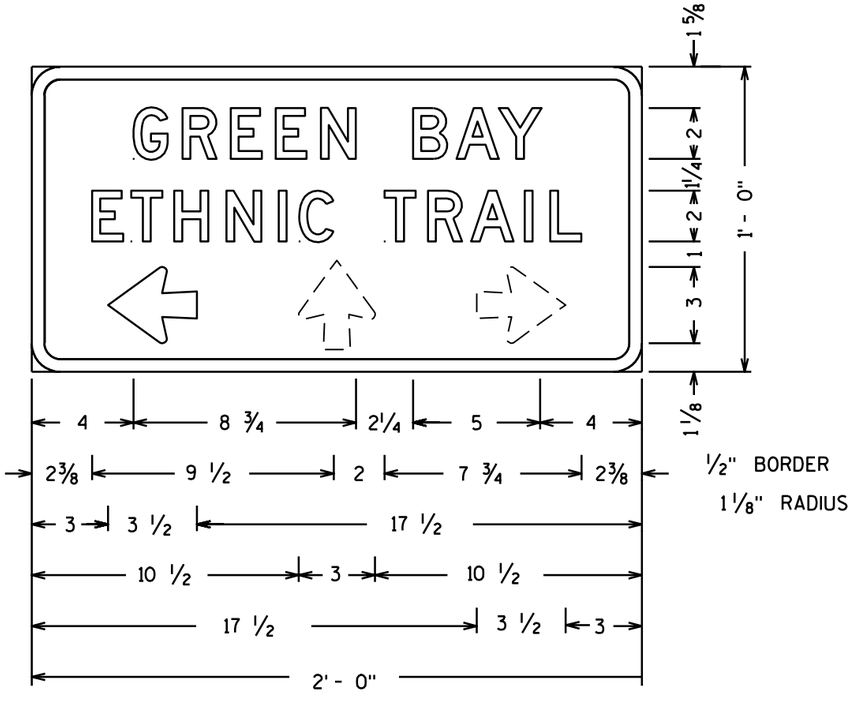
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-85.2

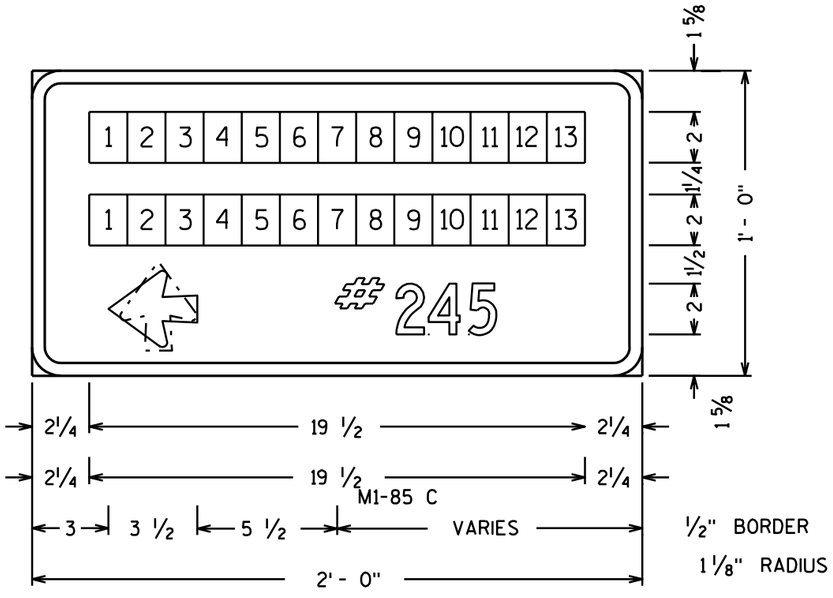
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 117	E



M1-85 D



M1-85 B



M1-85 C

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
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.

Metric equivalent for this sign is:

300 mm x 150 mm

For good legibility, 2" Series D copy will allow approximately 13 letters/characters per message line. The message shall be opitically balanced about the centerline of the sign.

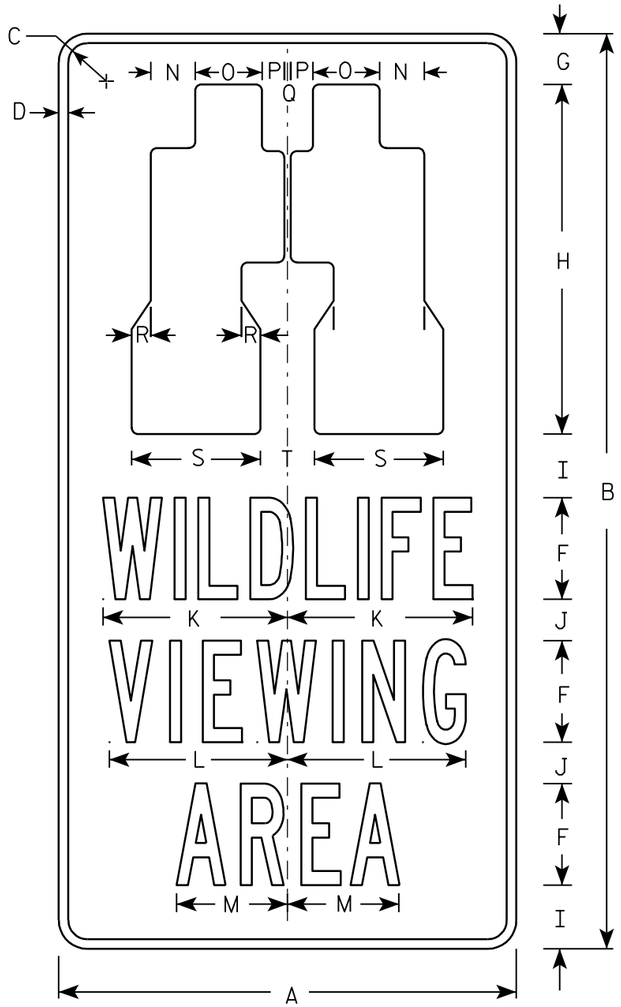
STANDARD SIGN
M1-85 B, C & D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-85B.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 118	E



M1-86

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
3. Message Series - B
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.

Metric equivalent for this sign is:

SIZE	
1	
2	450 mm X 900 mm
3	
4	
5	

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.	Area m2
1																												
2	18	36	1 1/8	3/8		4	2	13 3/4	2 1/2	1 5/8	7 1/4	7	4 3/8	1 3/4	2 5/8	7/8	1/4	3/4	5 1/8	2 1/8							4.5	.41
3																												
4																												
5																												

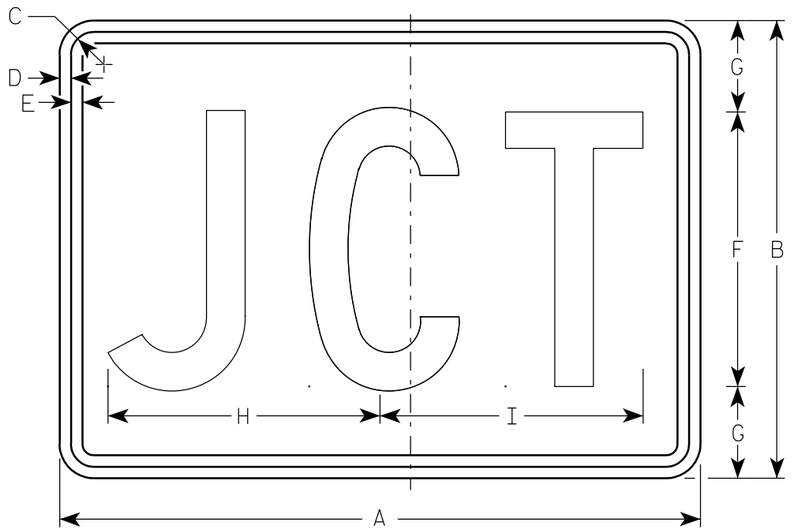
STANDARD SIGN
M1-86

WISCONSIN DEPT OF TRANSPORTATION

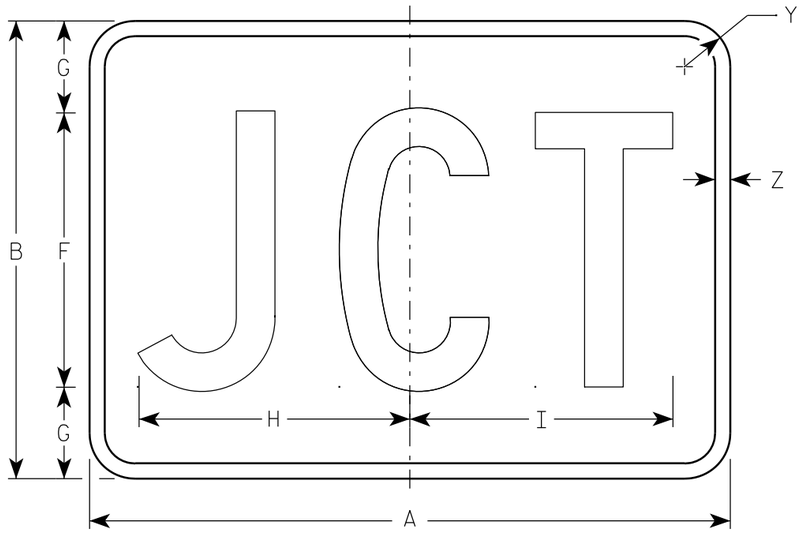
APPROVED Chester J Spang
for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-86.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 119 | E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

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.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

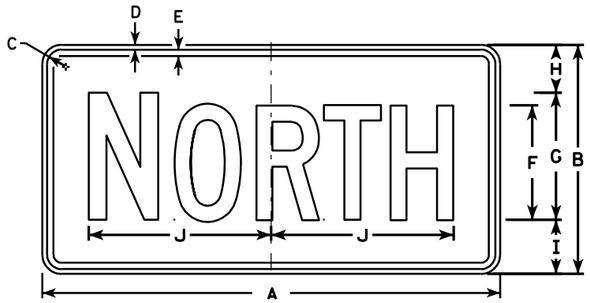
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

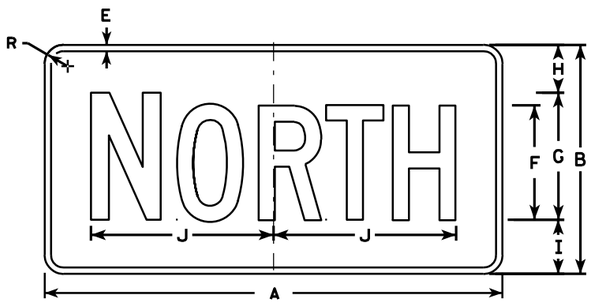
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

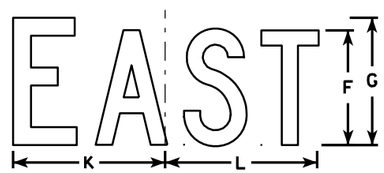
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 120	E



M3-1
MK3-1
MO3-1



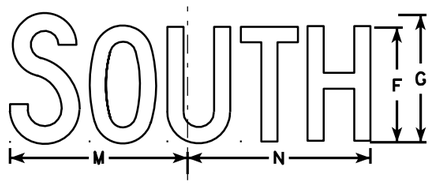
MB3-1
MG3-1
MM3-1
MN3-1



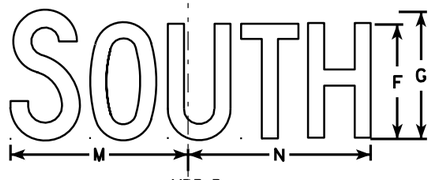
M3-2
MK3-2
MO3-2



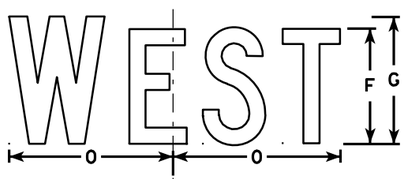
MB3-2
MG3-2
MM3-2
MN3-2



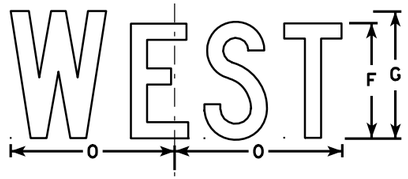
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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.
5. M3-1 thru M3-4 Background - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green
   Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green
   Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective
   Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

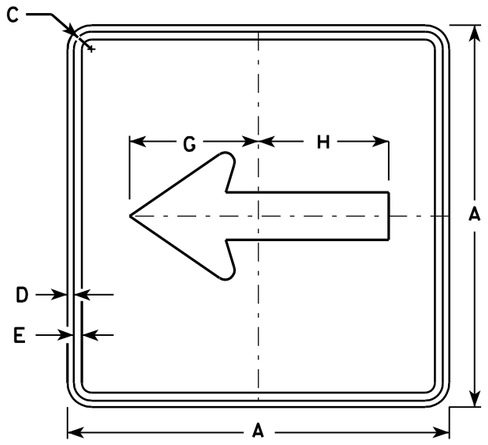
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

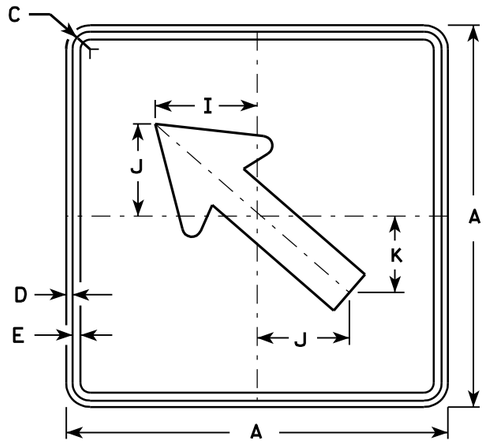
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

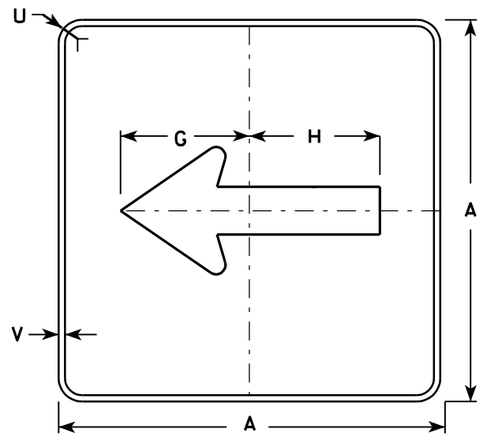
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 121	E



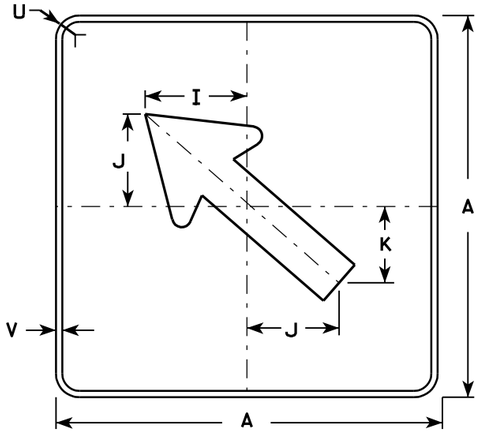
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective
   Message - Black

   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H Reflective

   MG6-1 and MG6-2 Background - Green
   Message - White - Type H Reflective

   MK6-1 and MK6-2 Background - Green
   Message - White - Type H Reflective

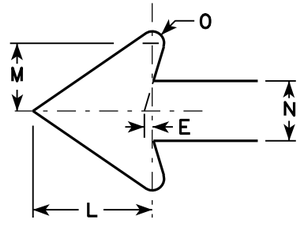
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green

   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective

   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black

   MP6-1 and MP6-2 Background - White - Type H Reflective
   Message - Blue

   MR6-1 and MR6-2 Background - Brown
   Message - White - Type H Reflective



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																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

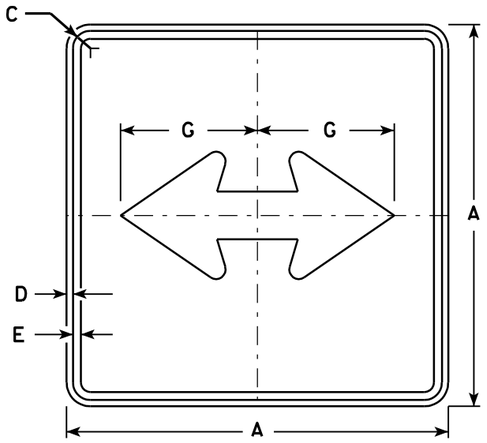
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

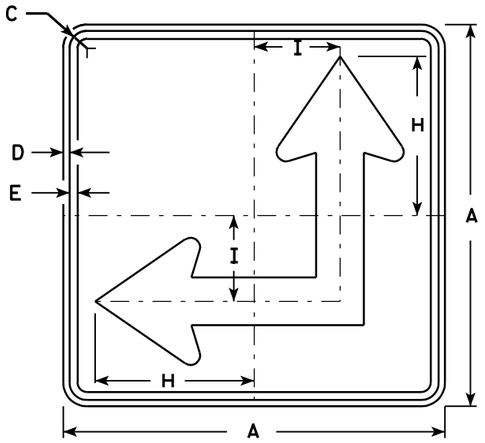
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

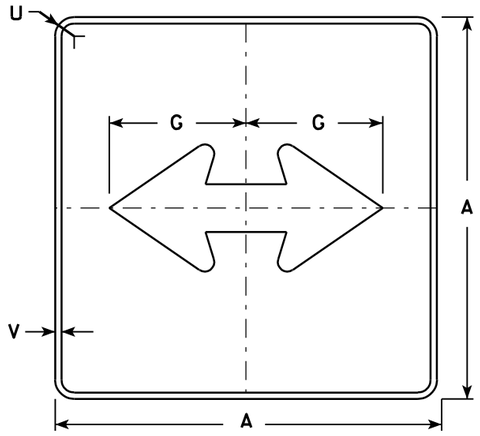
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 122	E



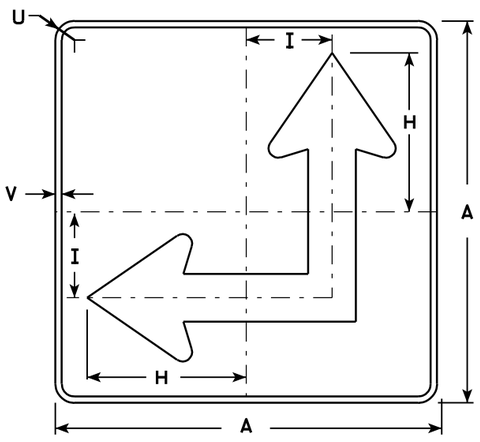
M6-4
MK6-4
MM6-4
MO6-4
MP6-4
MR6-4



M6-6
MK6-6
MM6-6
MO6-6
MP6-6
MR6-6



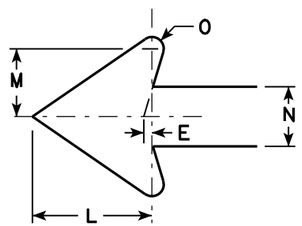
MB6-4
MG6-4
MN6-4



MB6-6
MG6-6
MN6-6

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White - Type H Reflective
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White - Type H Reflective
   MG6-4 and MG6-6 Background - Green
   Message - White - Type H Reflective
   MK6-4 and MK6-6 Background - Green
   Message - White - Type H Reflective
   MM6-4 and MM6-6 Background - White - Type H Reflective
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White - Type H Reflective
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White - Type H Reflective
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow - Type H Reflective
5. M6-6R same as M6-6L except arrow points ahead and right.



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																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

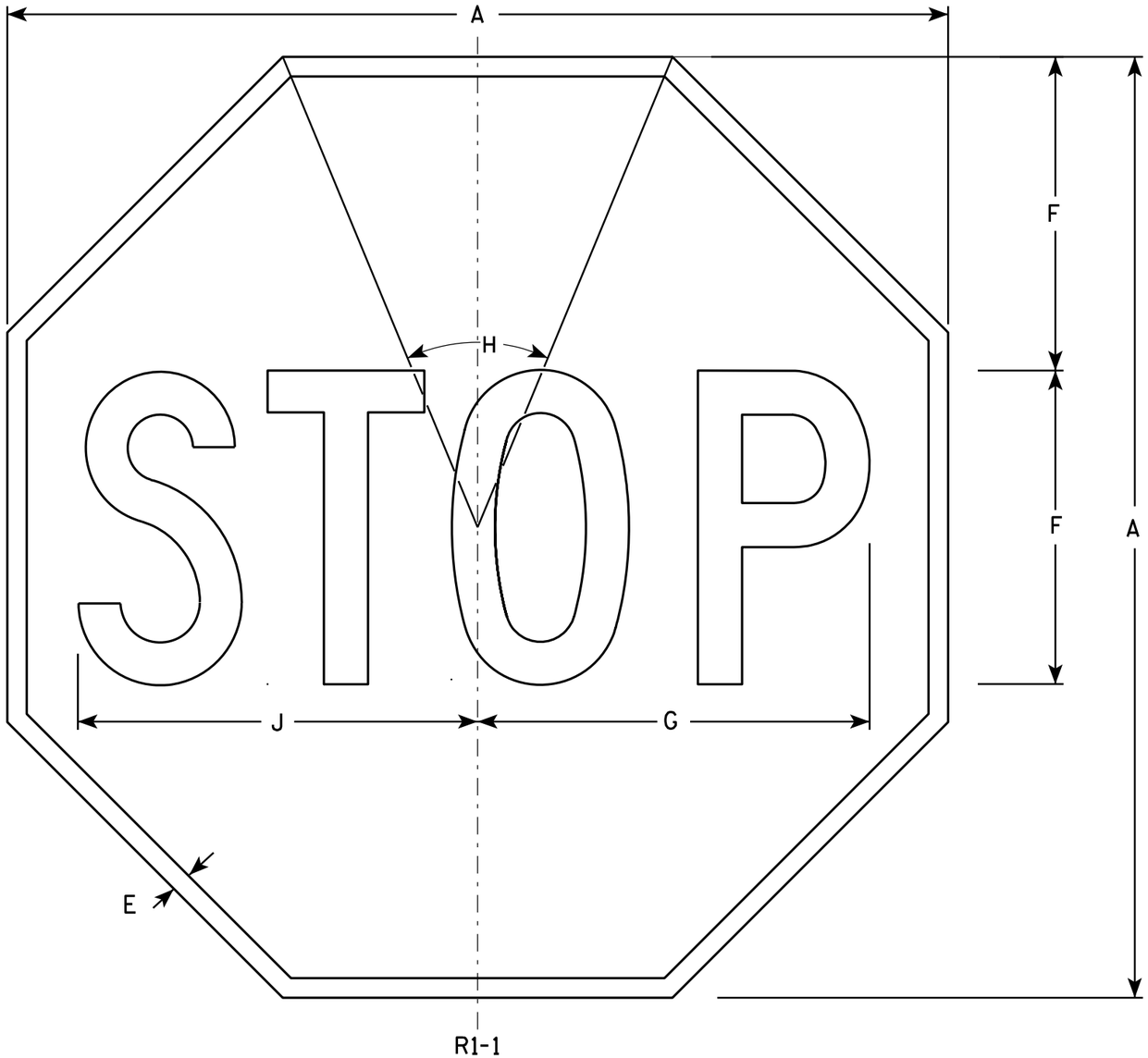
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-4.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 123 | E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

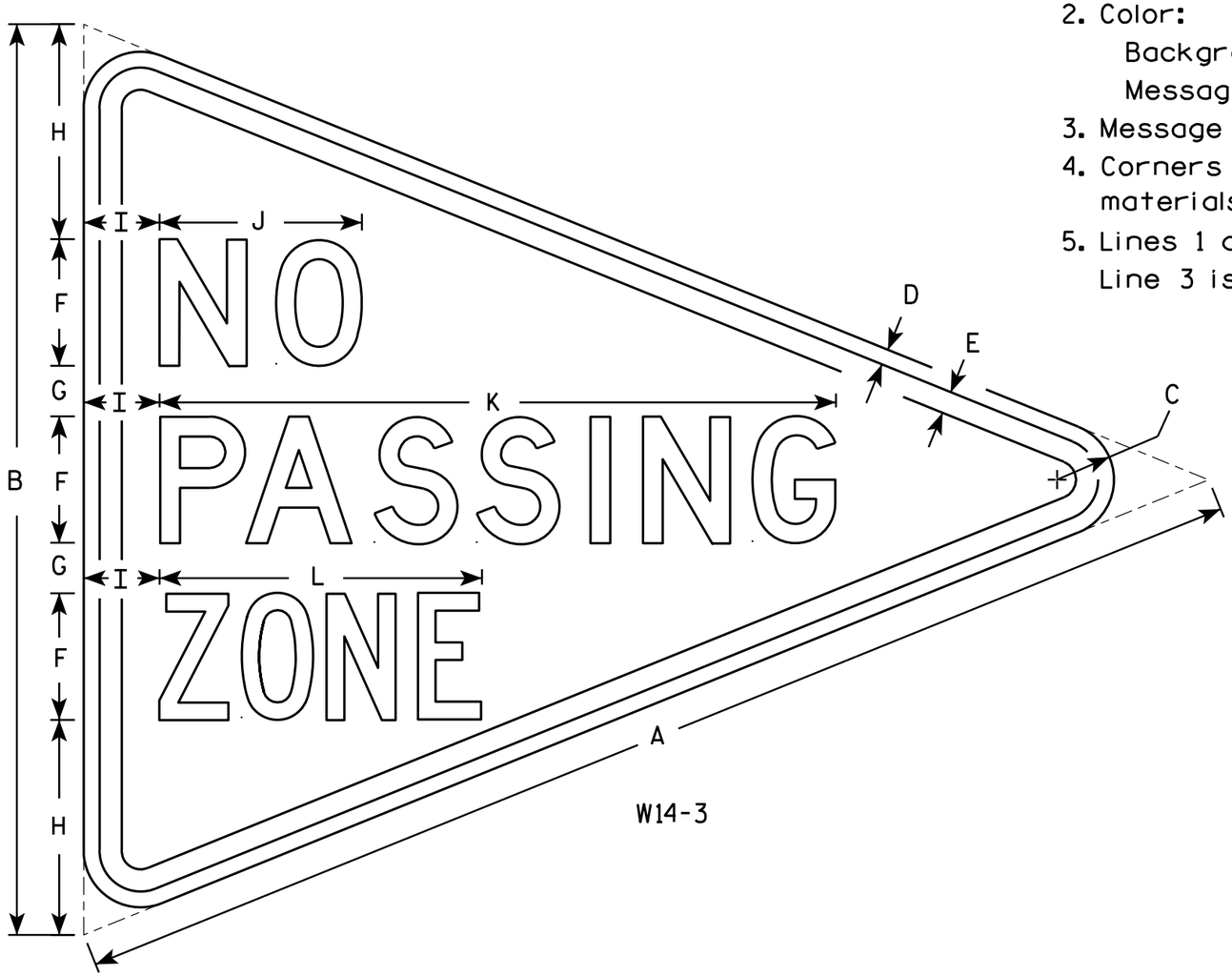
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 124	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 - See note 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

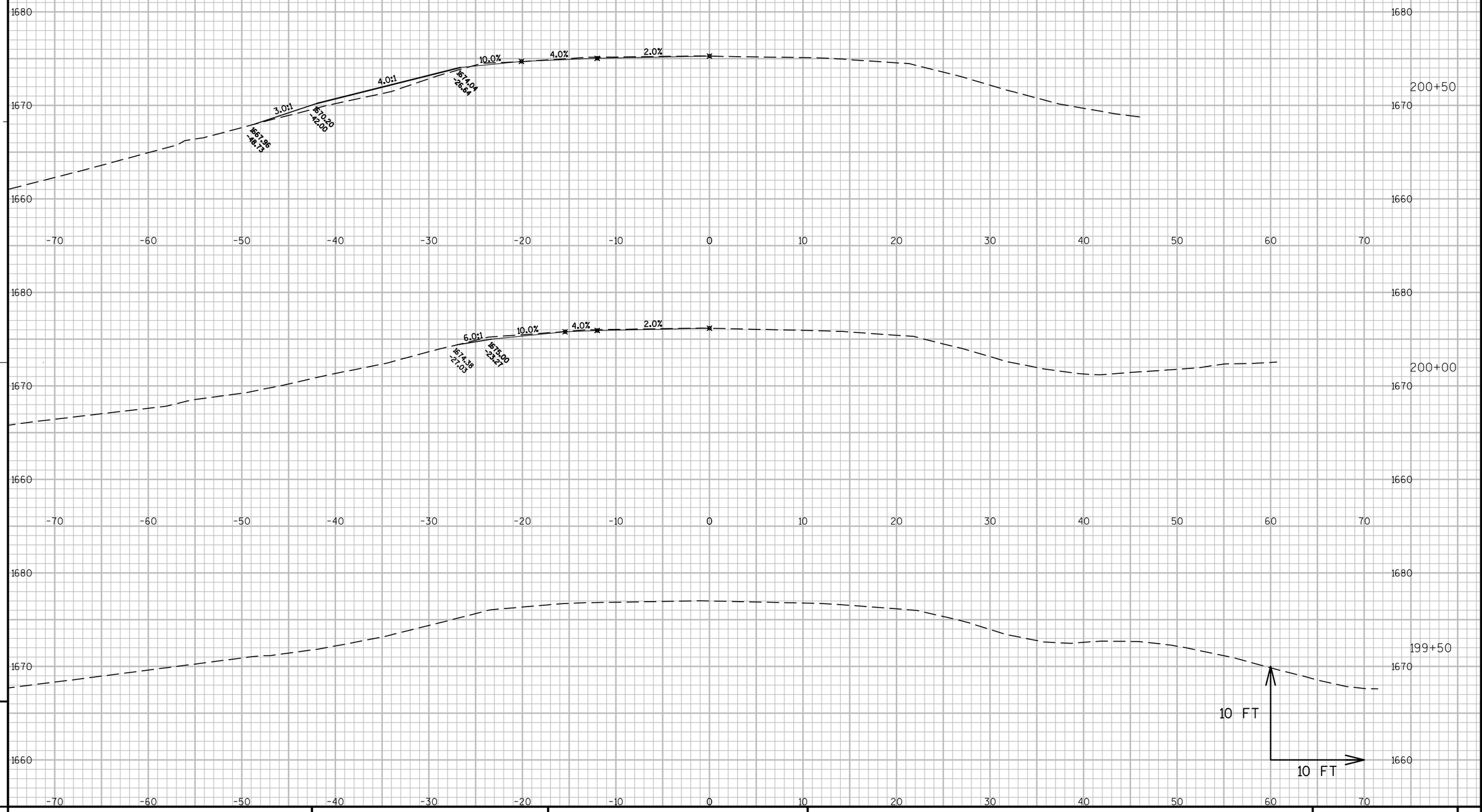
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

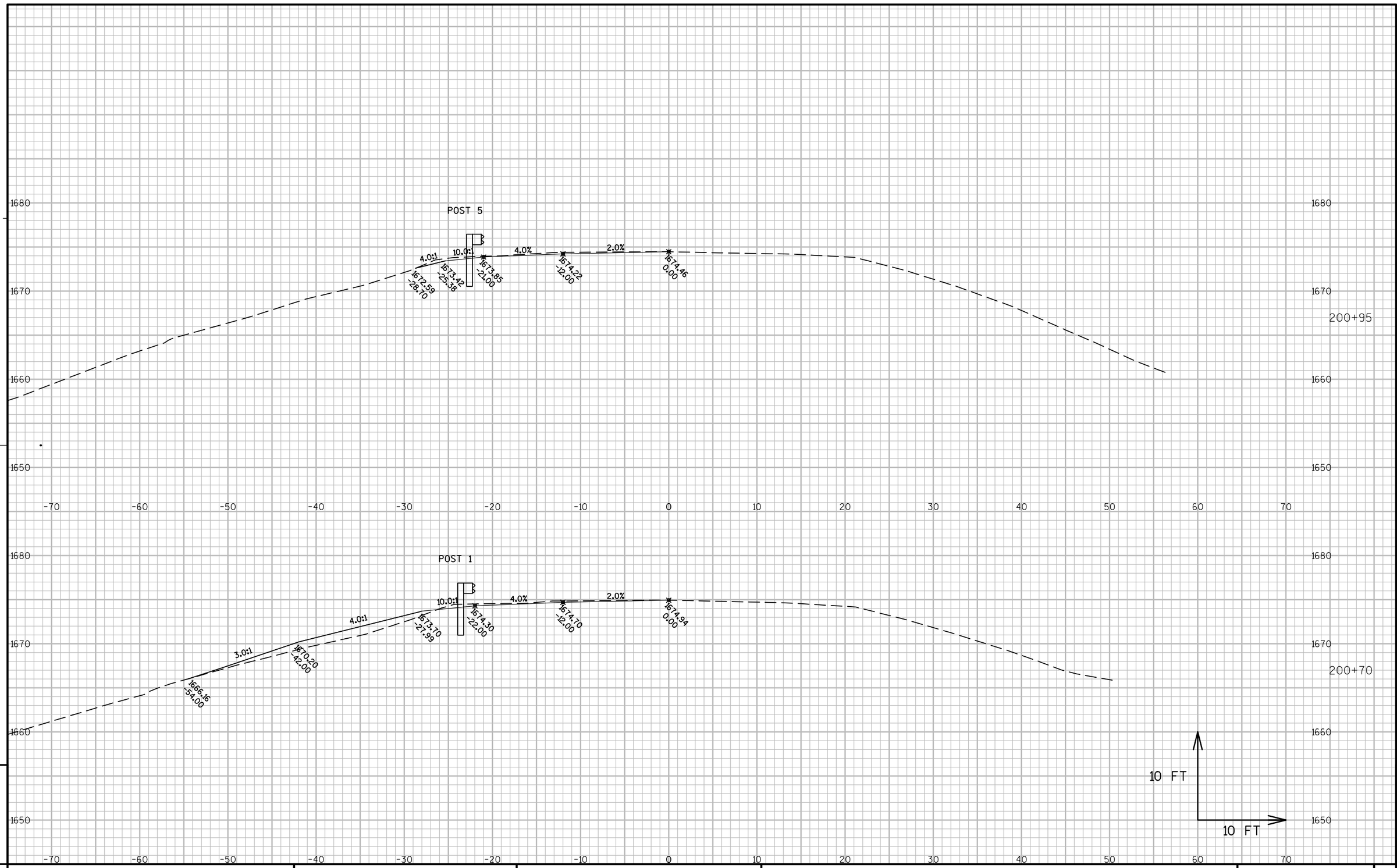
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 125	E

R/W LIMITS SHOWN IF WITHIN
LIMITS OF CROSS SECTIONS



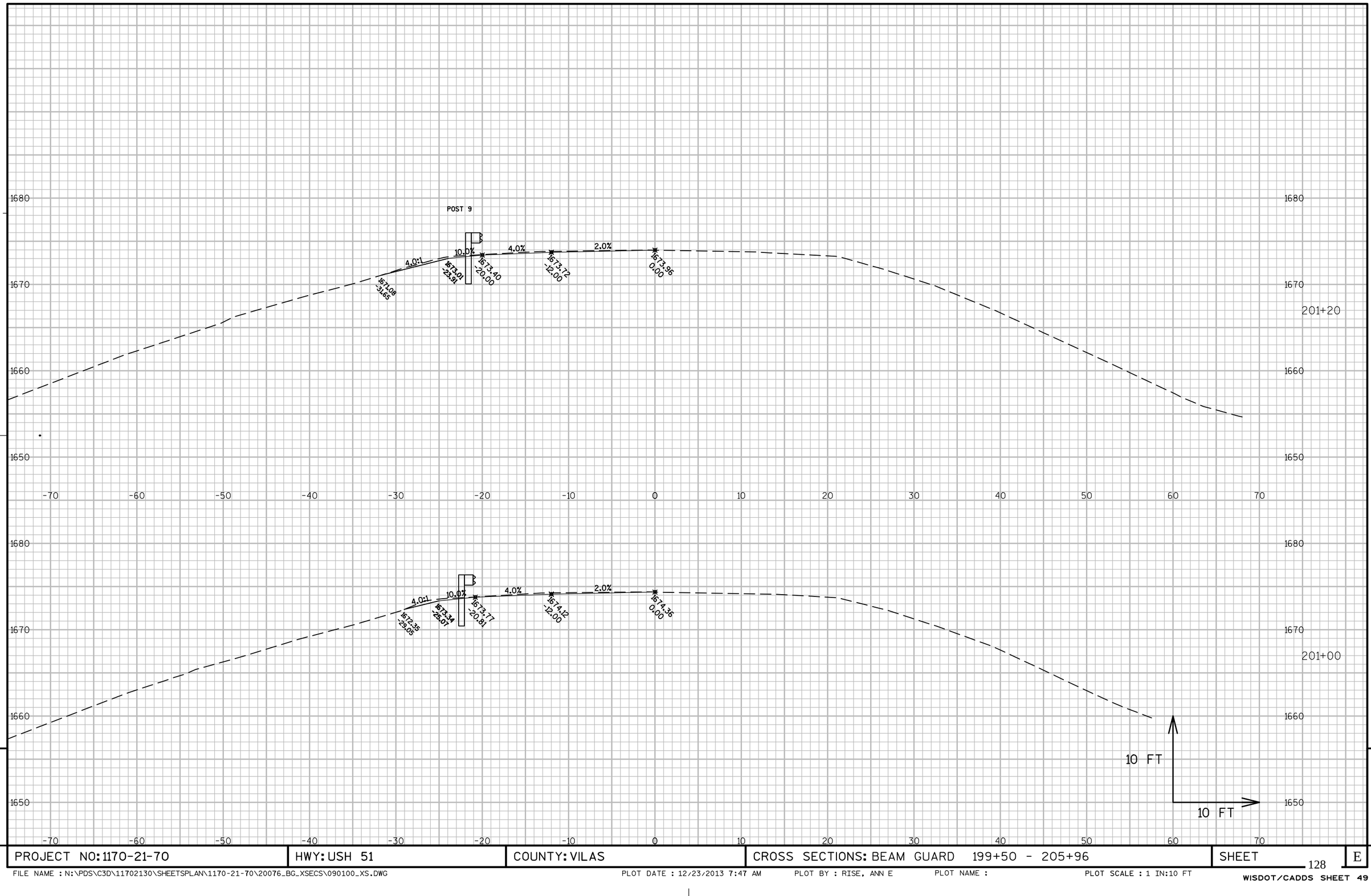
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 8:59 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:47 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

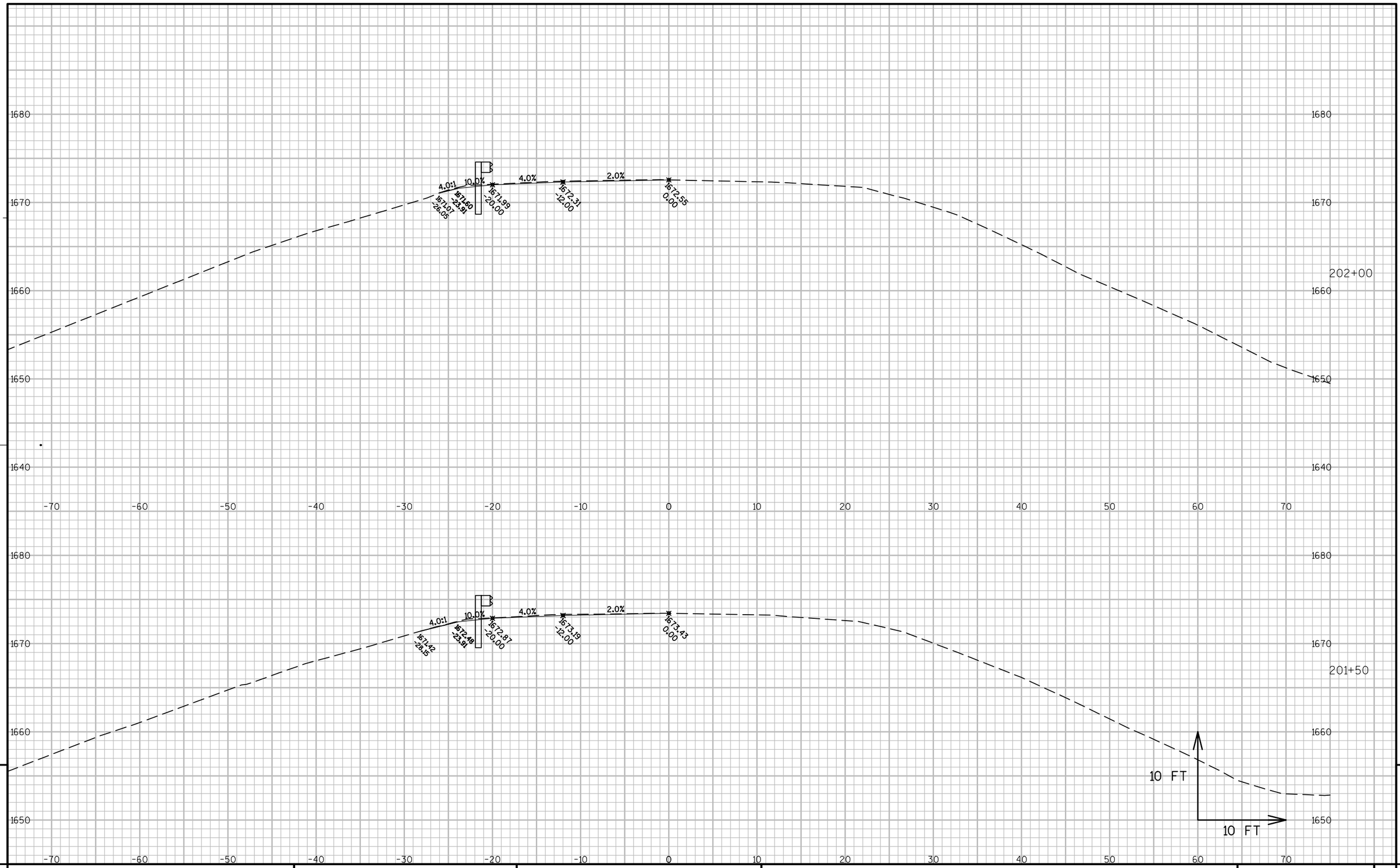


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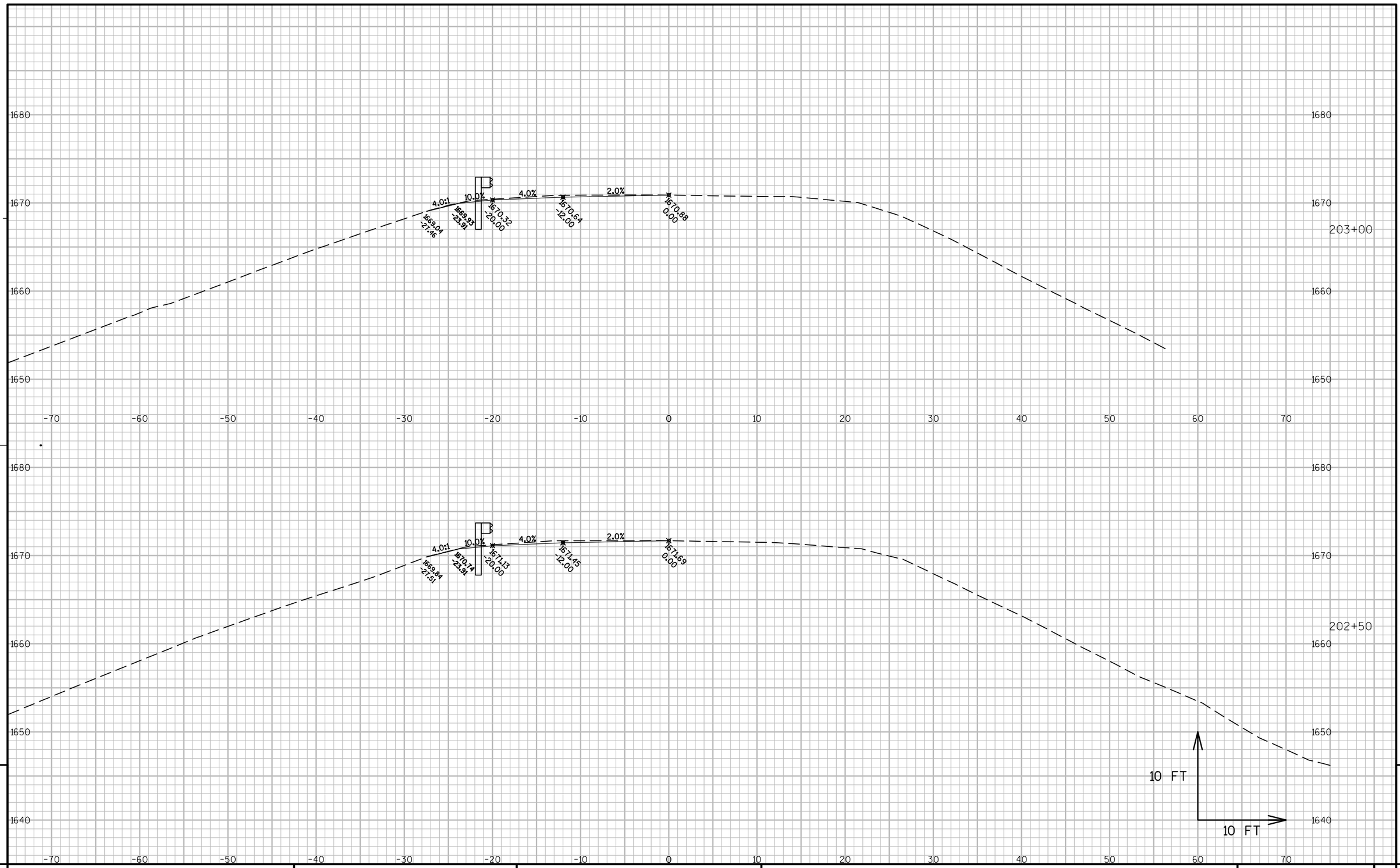
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9

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:47 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

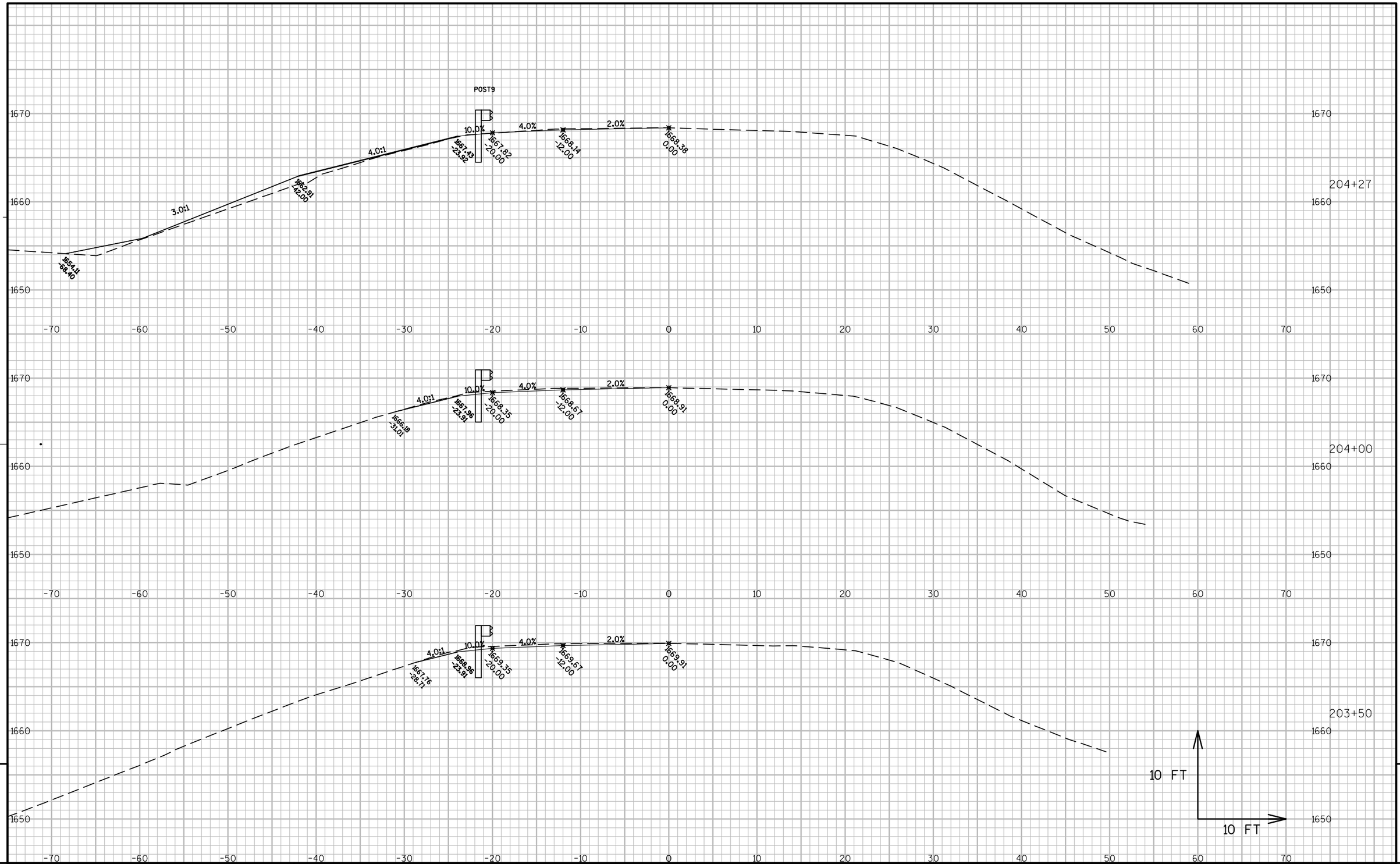


PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E



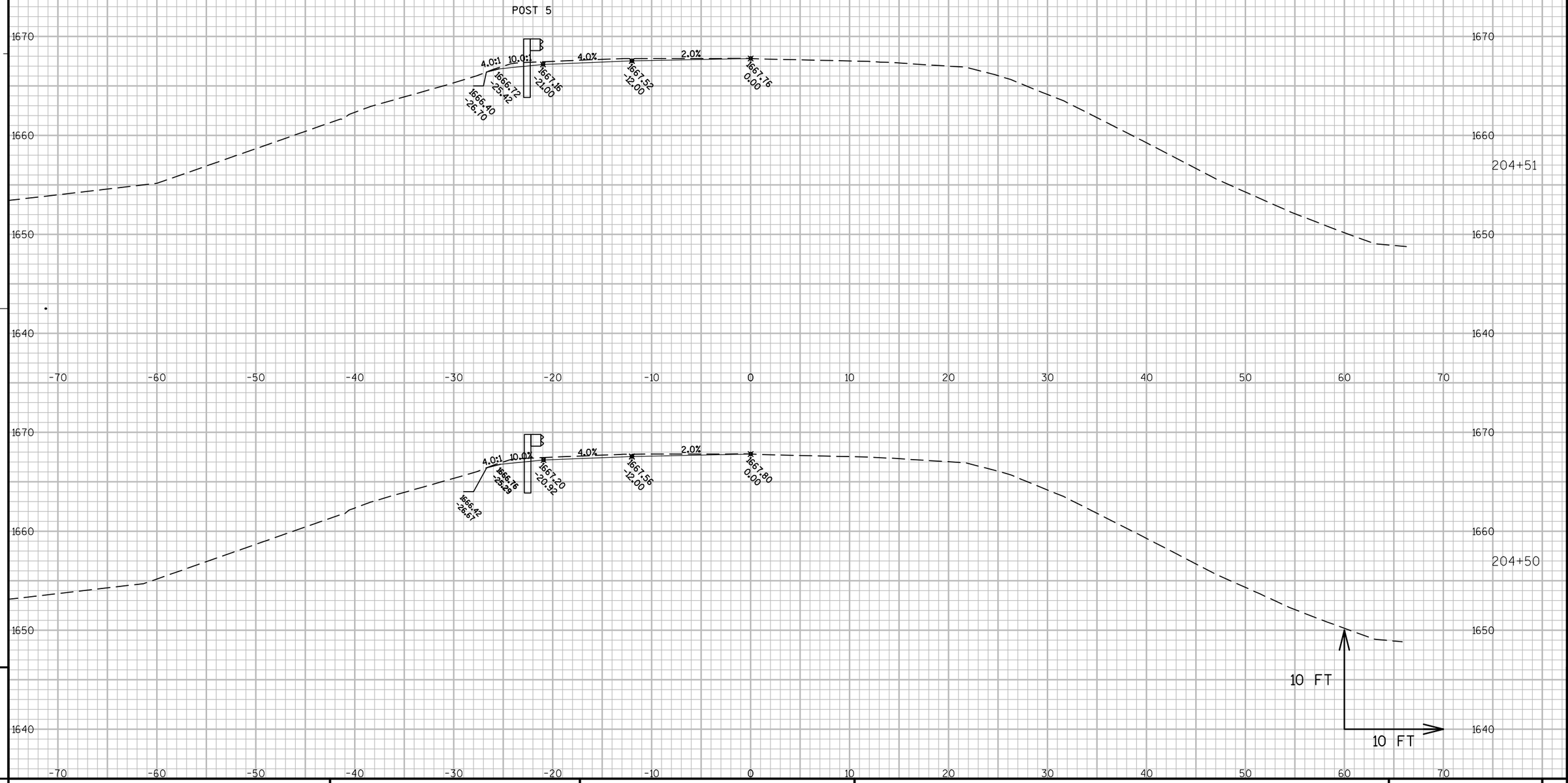
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:47 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:48 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

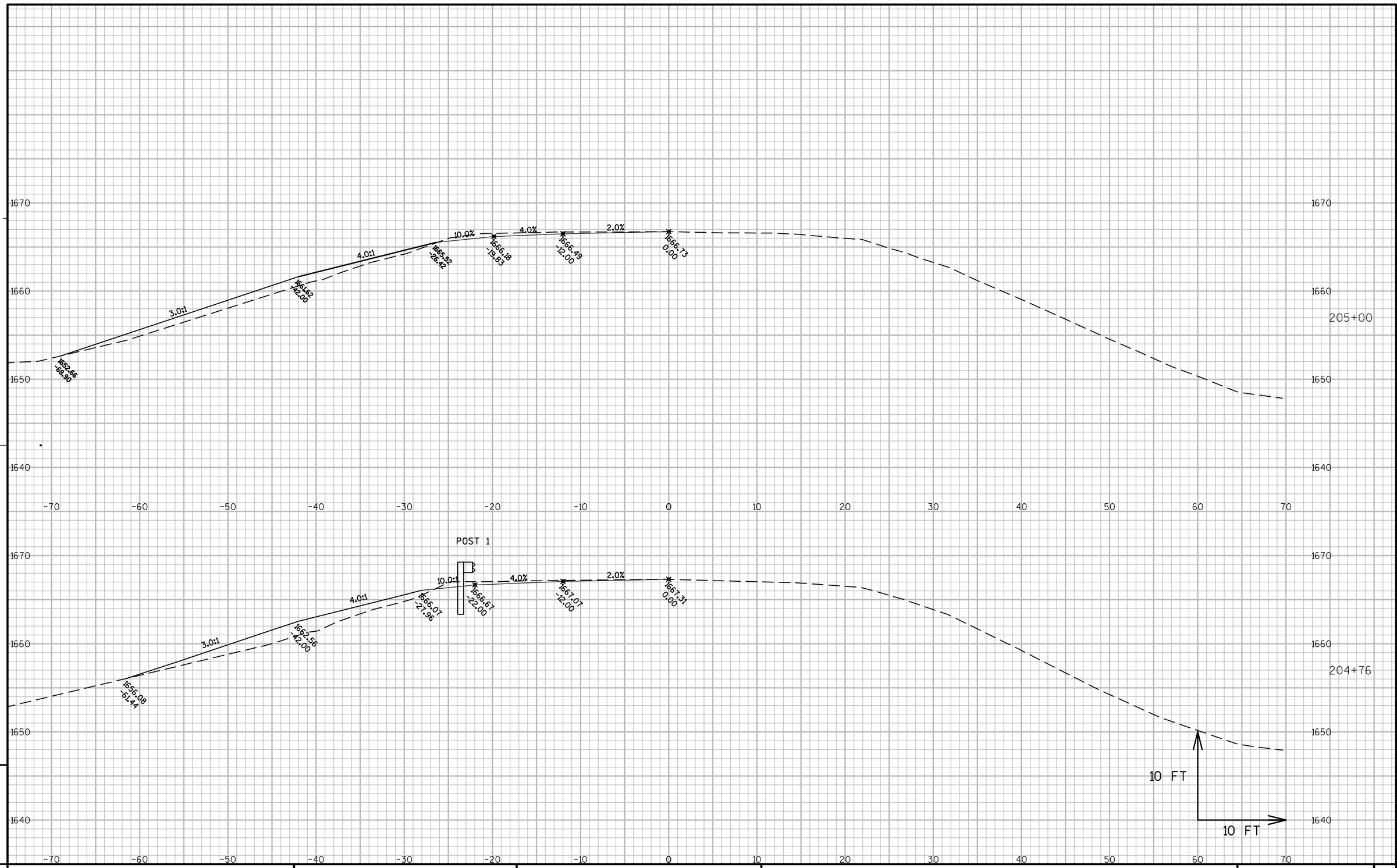


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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

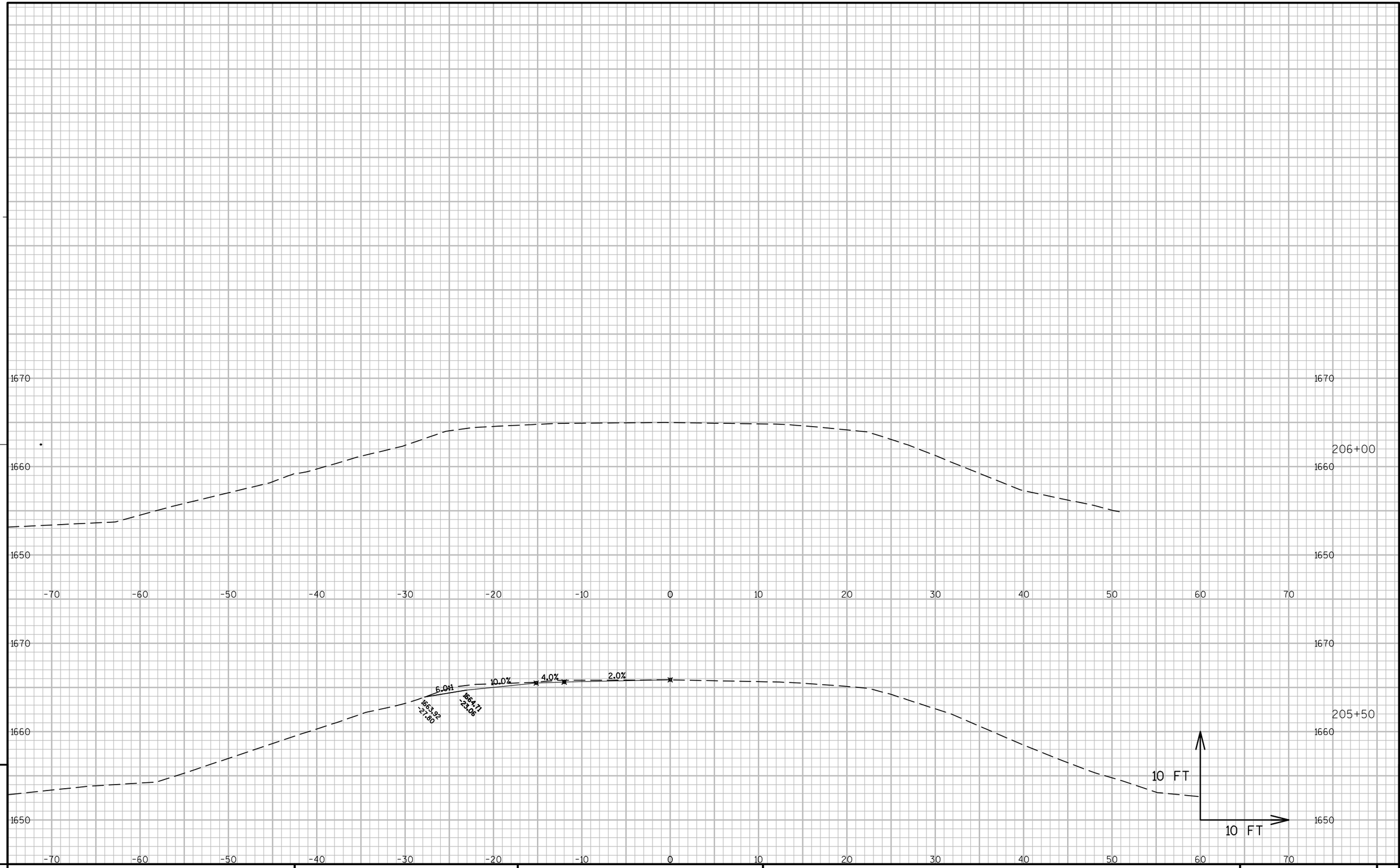
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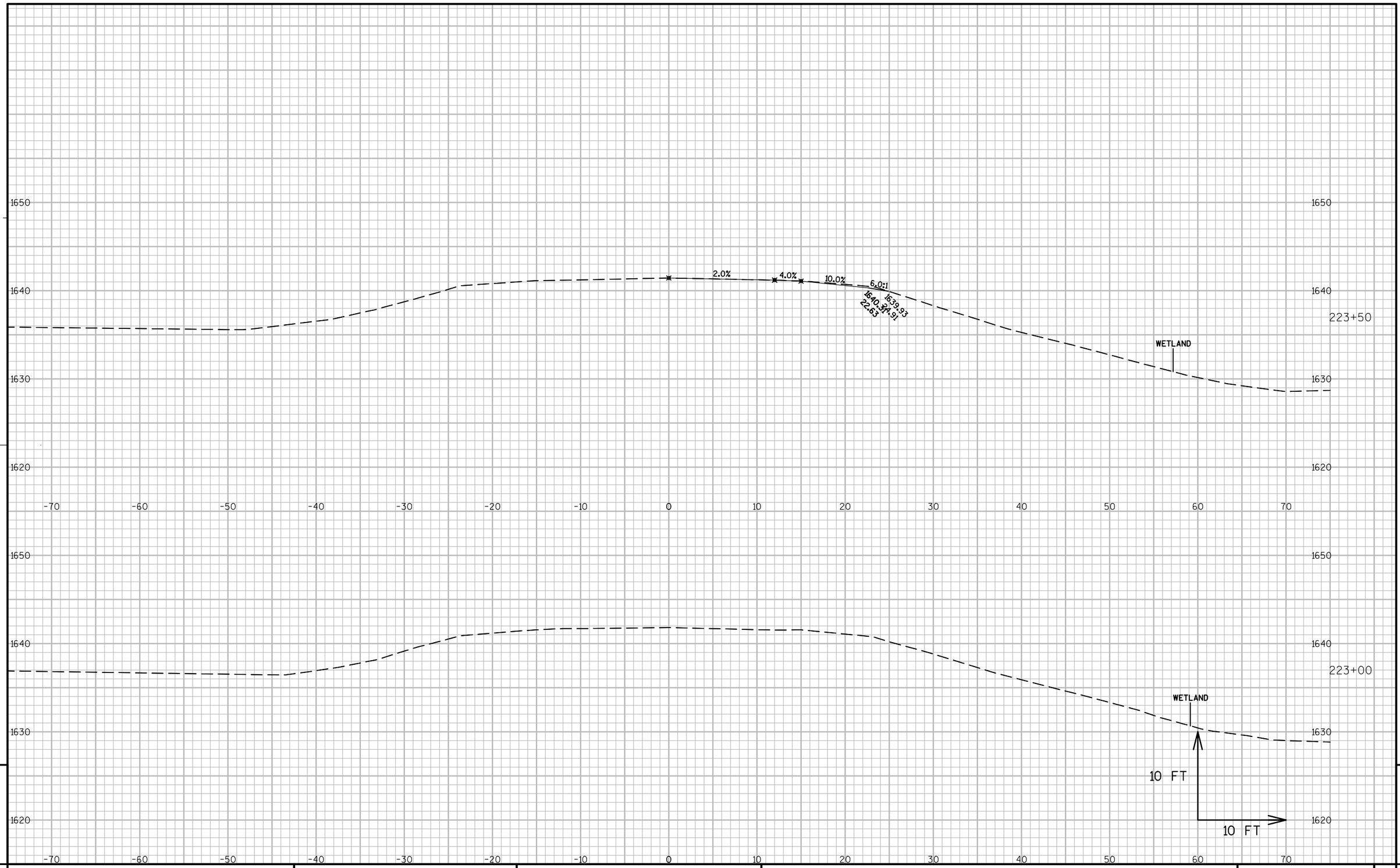
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:48 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 199+50 - 205+96	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\20076_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 7:48 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



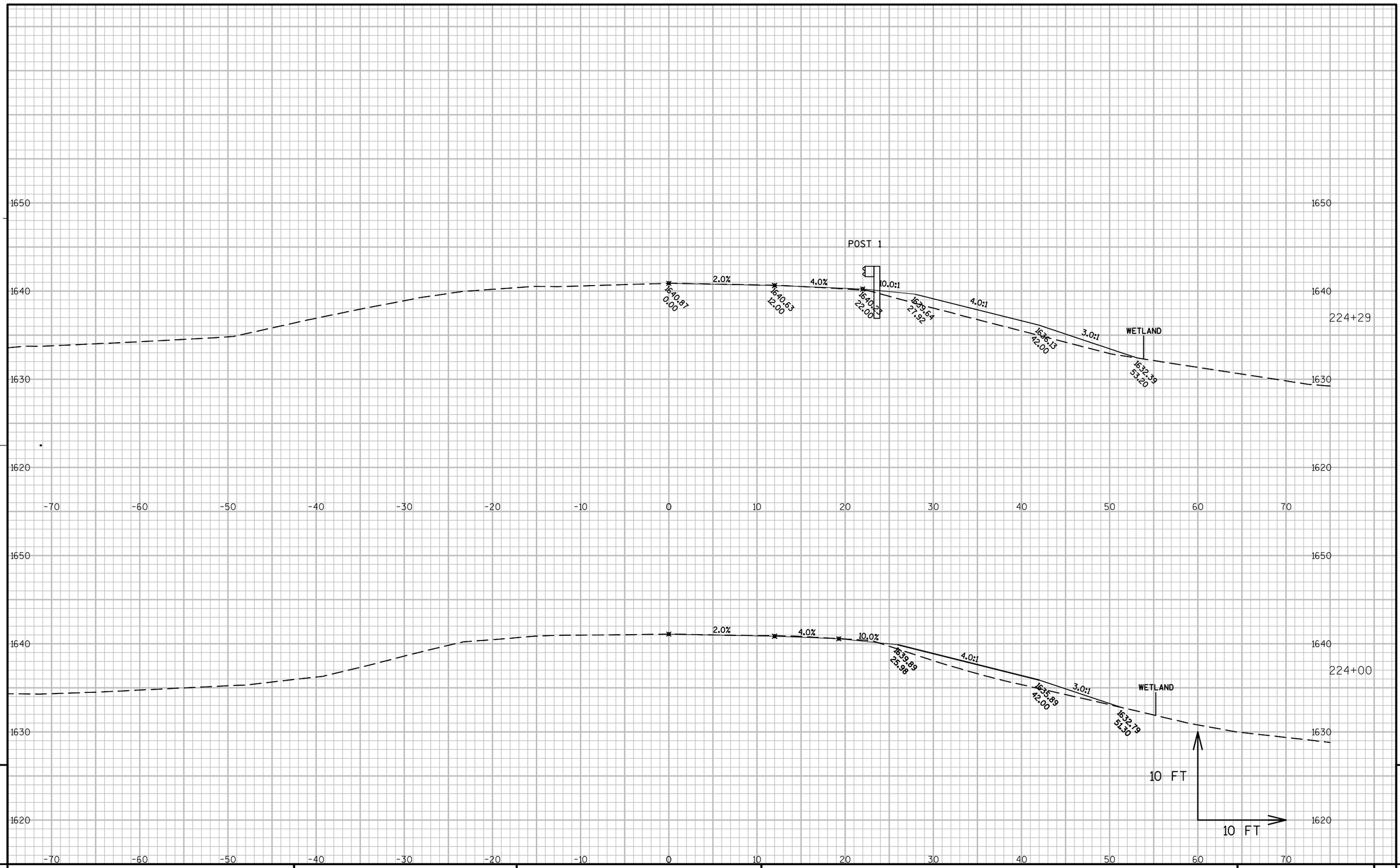
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E

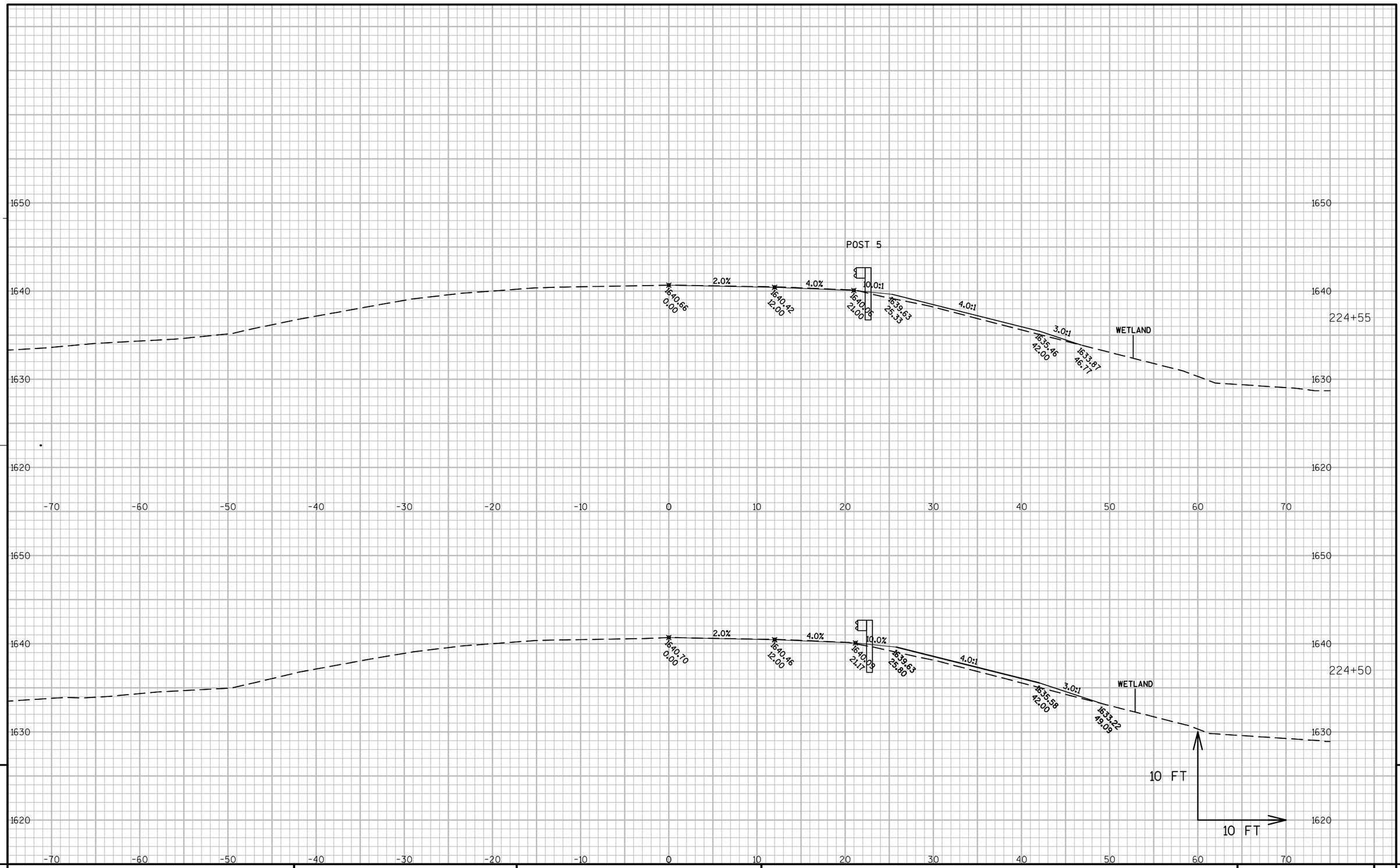
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FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\22300_BG_XSECS\090100_XS.DWG PLOT DATE : 1/15/2014 1:33 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

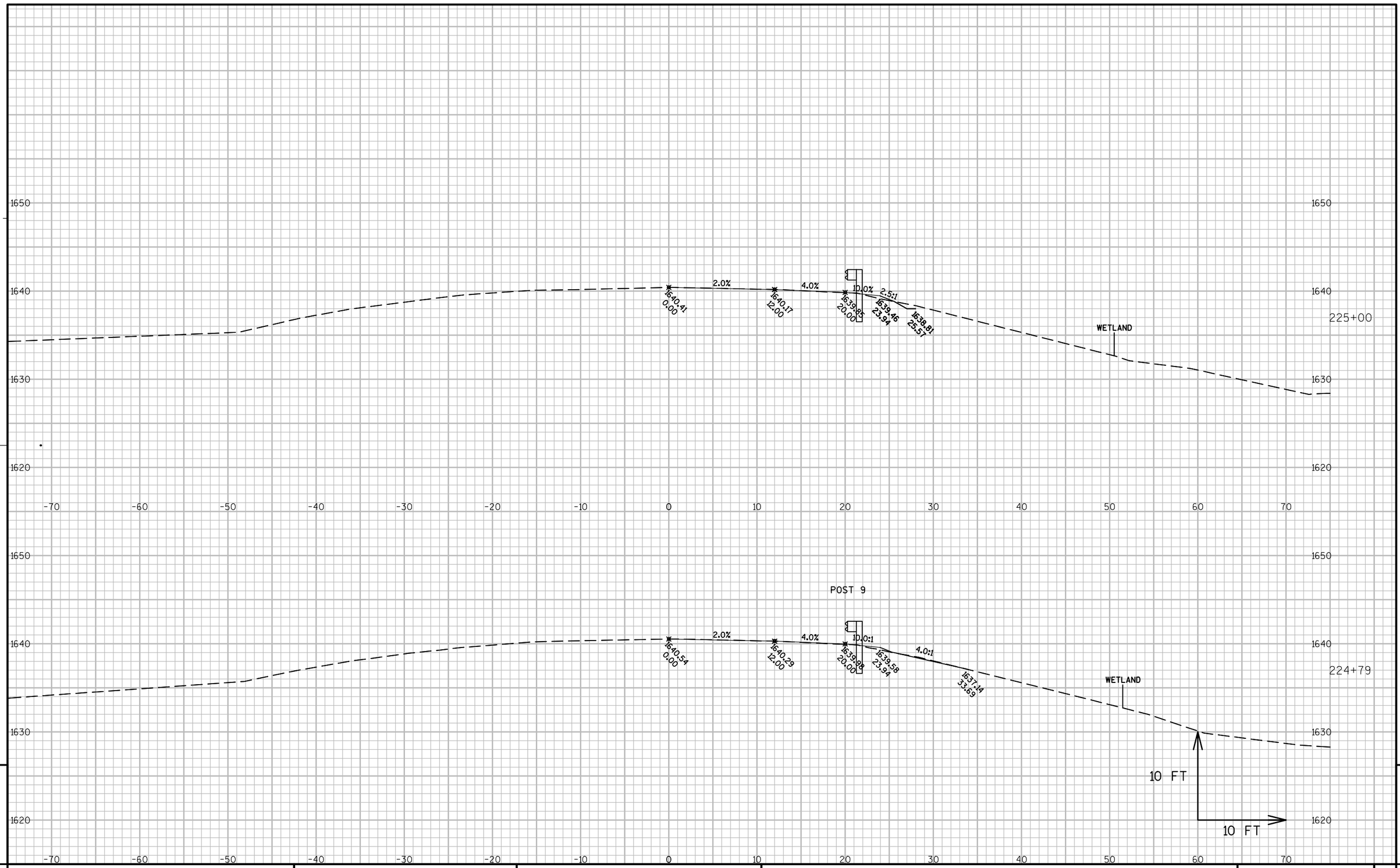
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E

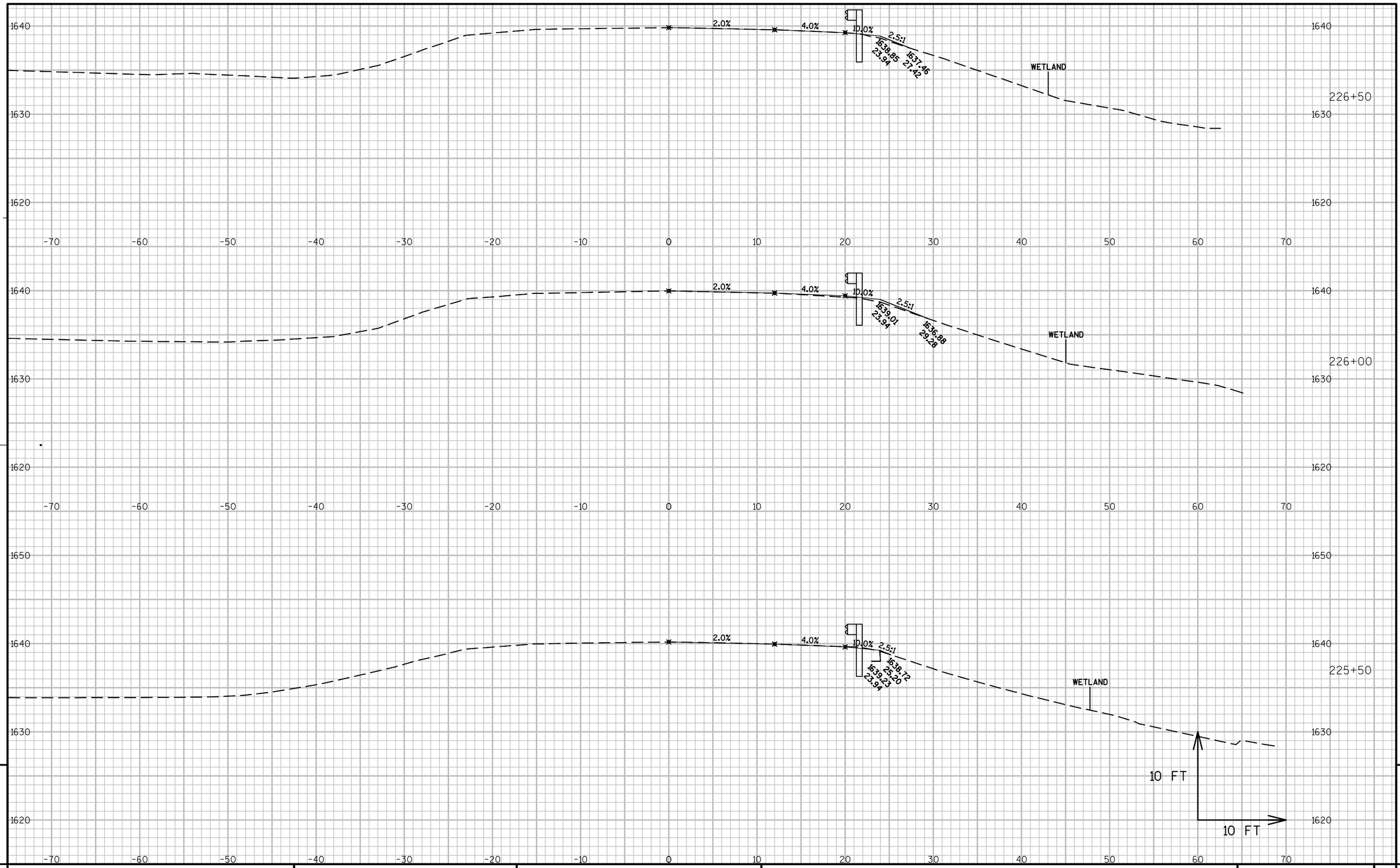


PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E



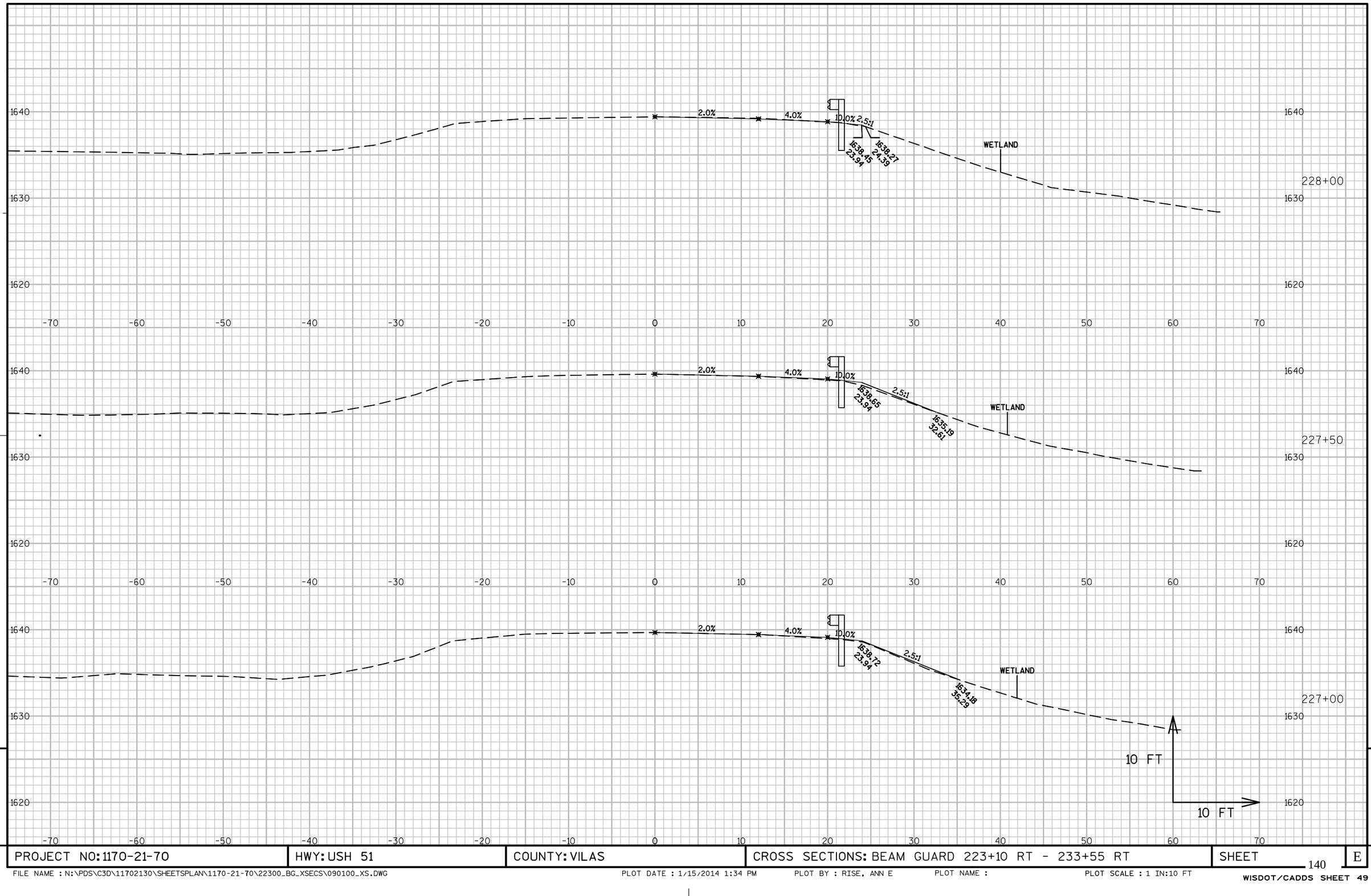
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E

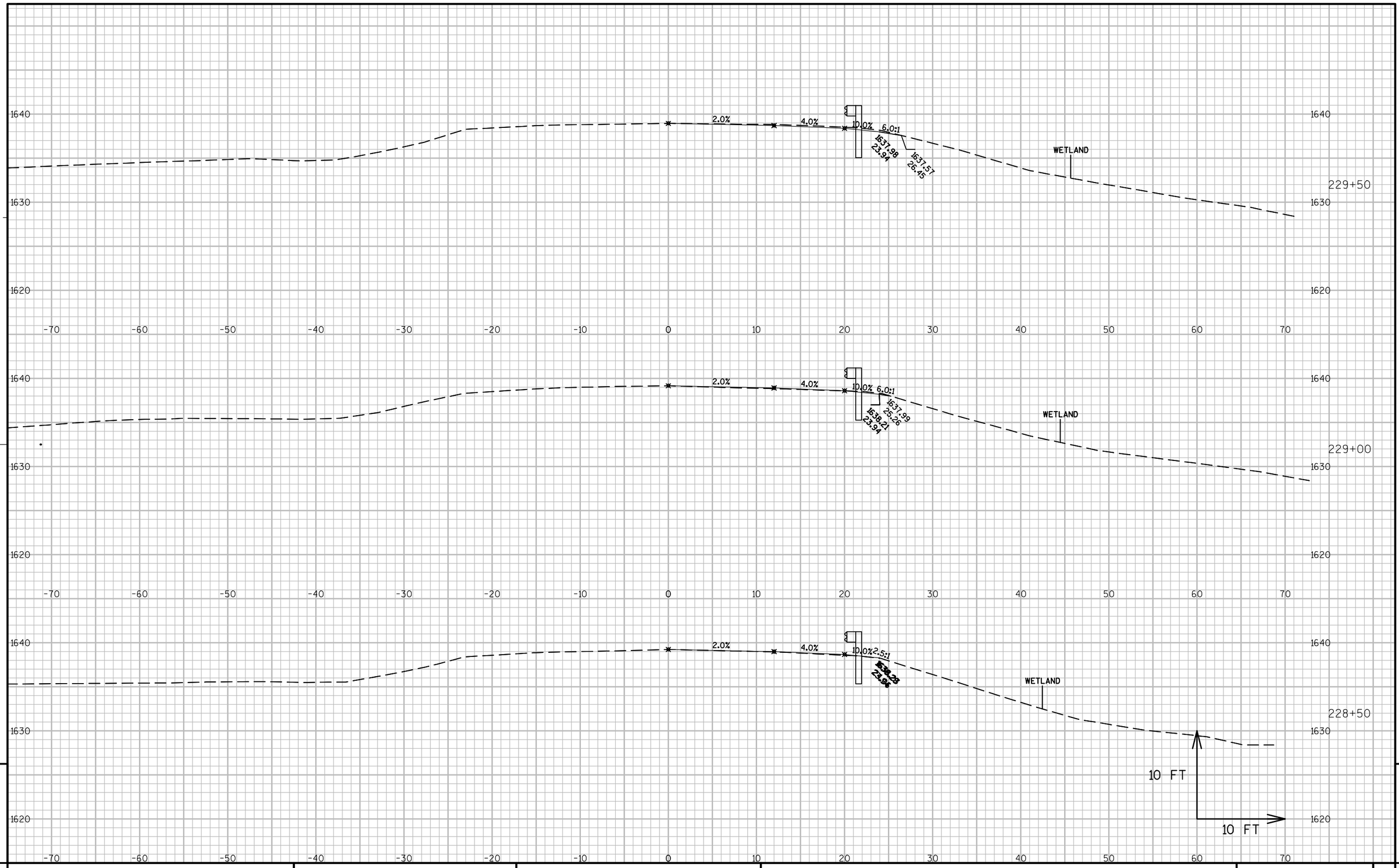
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E

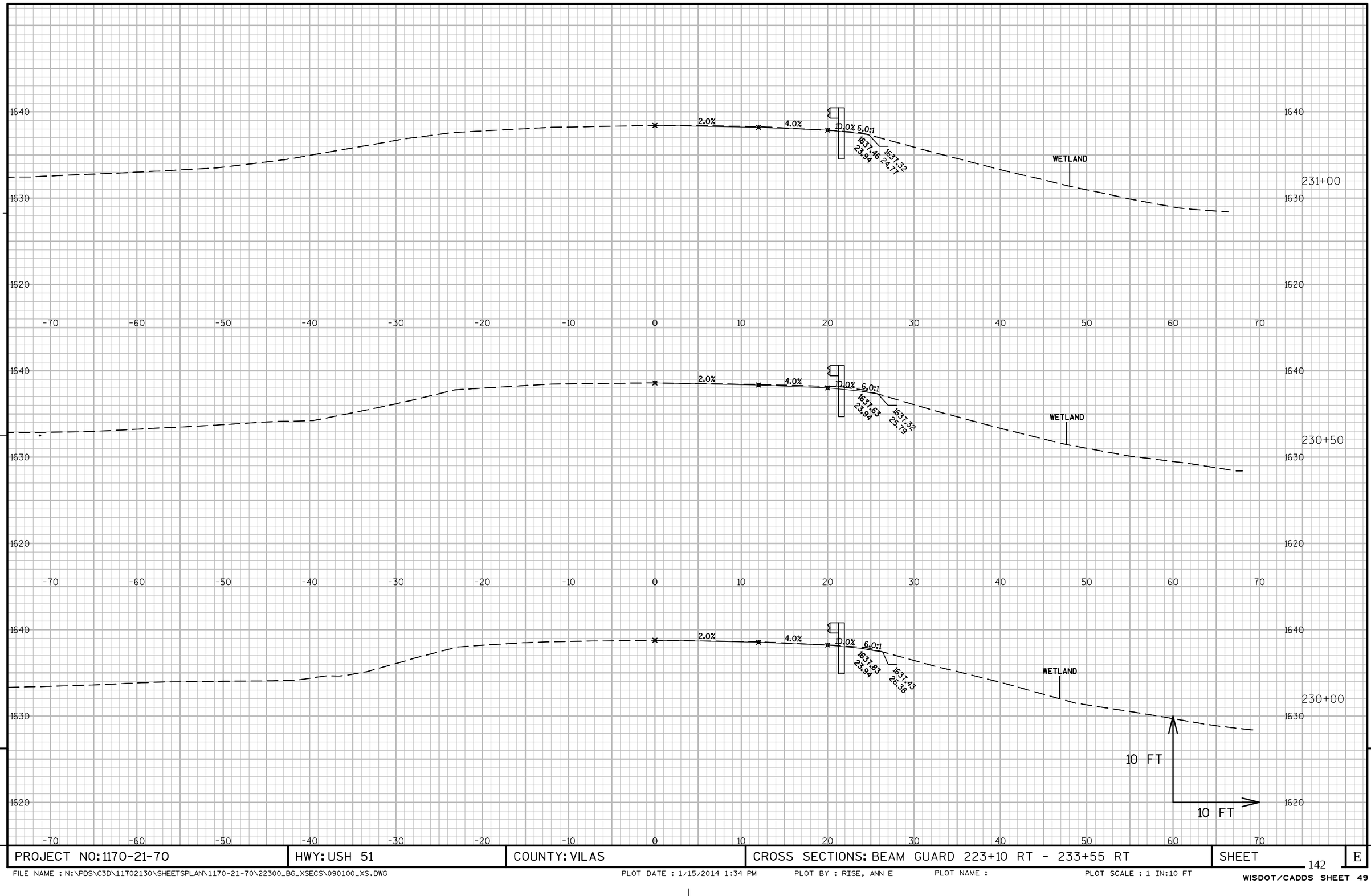
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WISDOT/CADDS SHEET 49



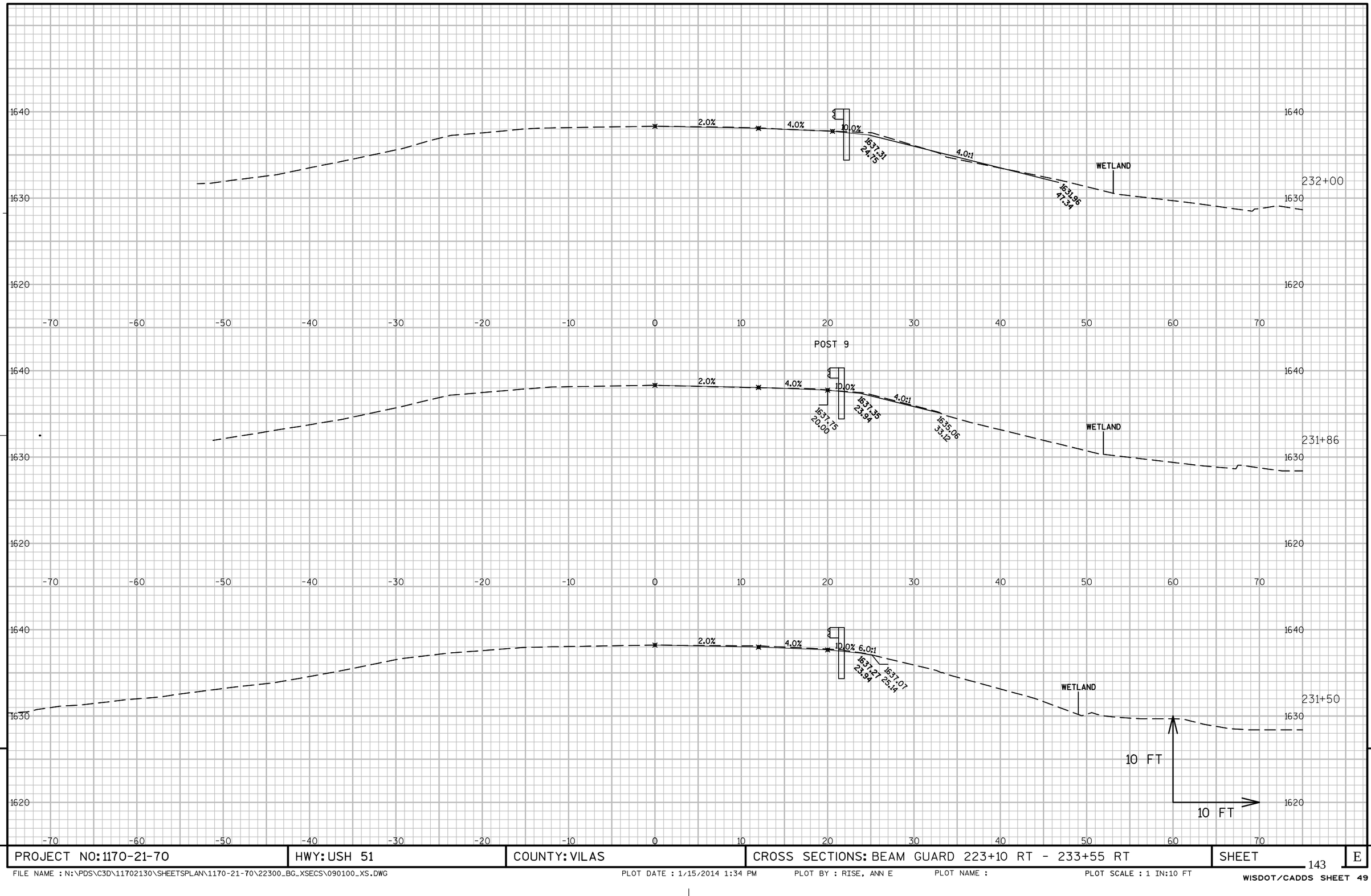
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E

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WISDOT/CADDS SHEET 49

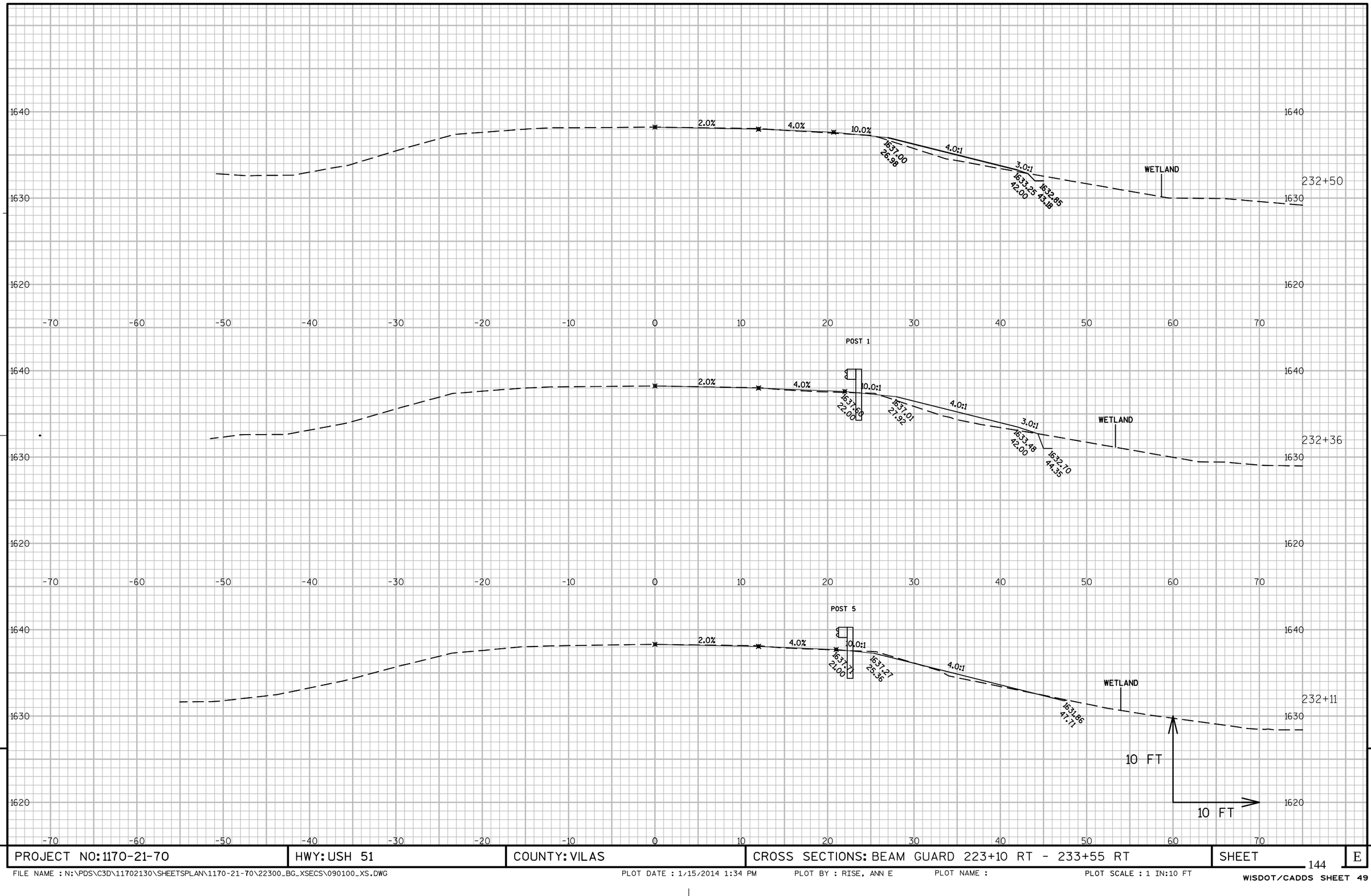


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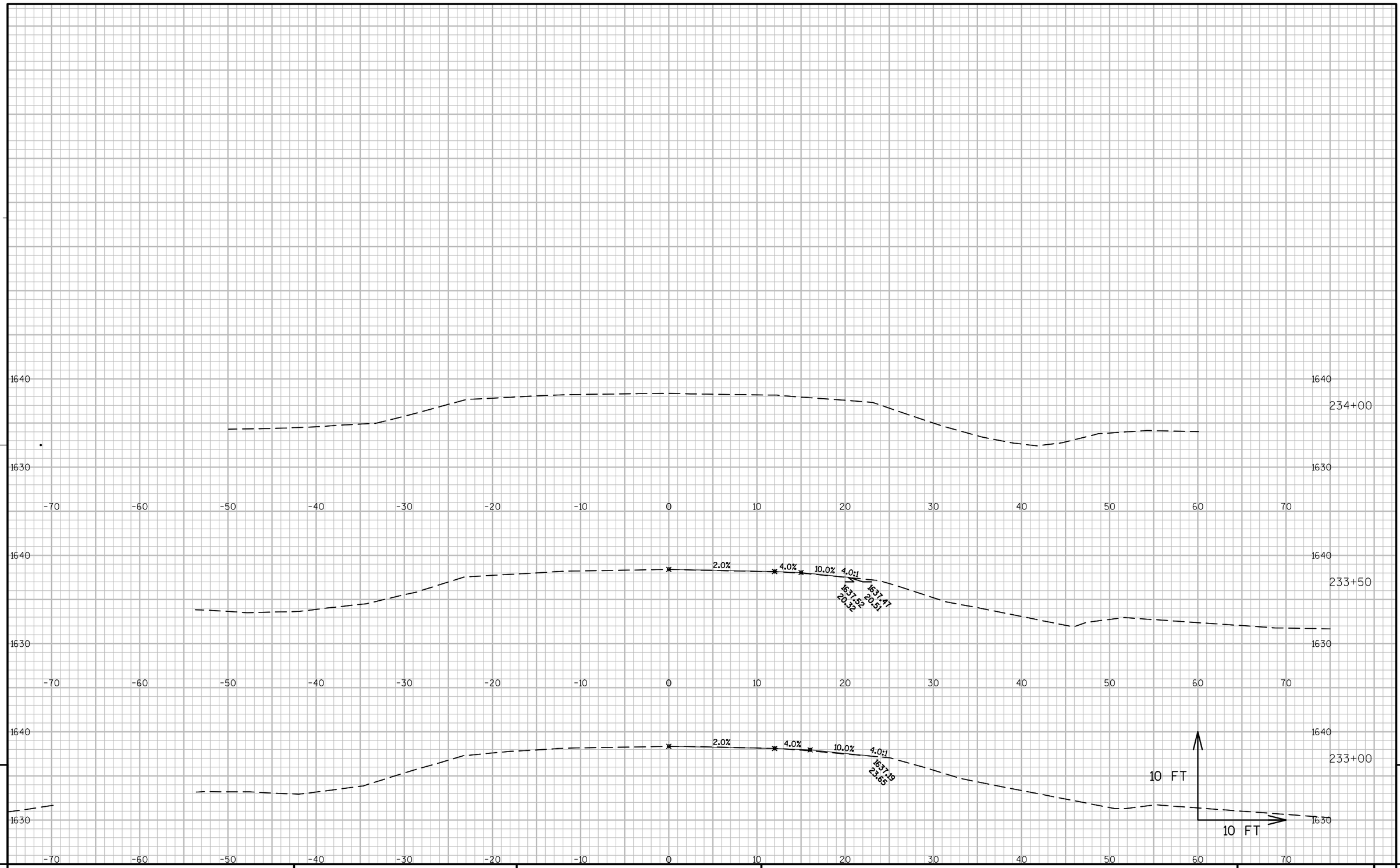
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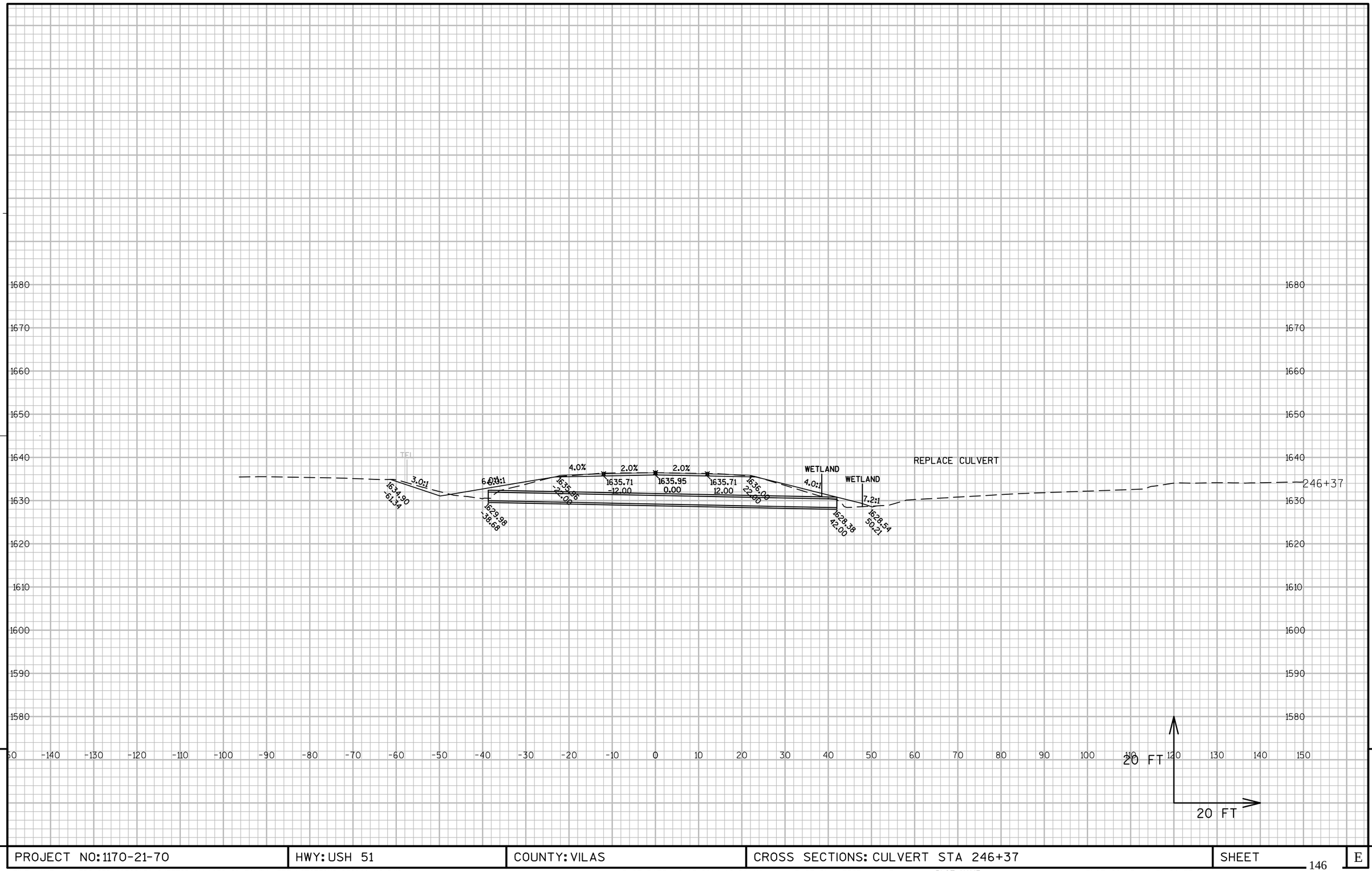


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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD 223+10 RT - 233+55 RT	SHEET	E



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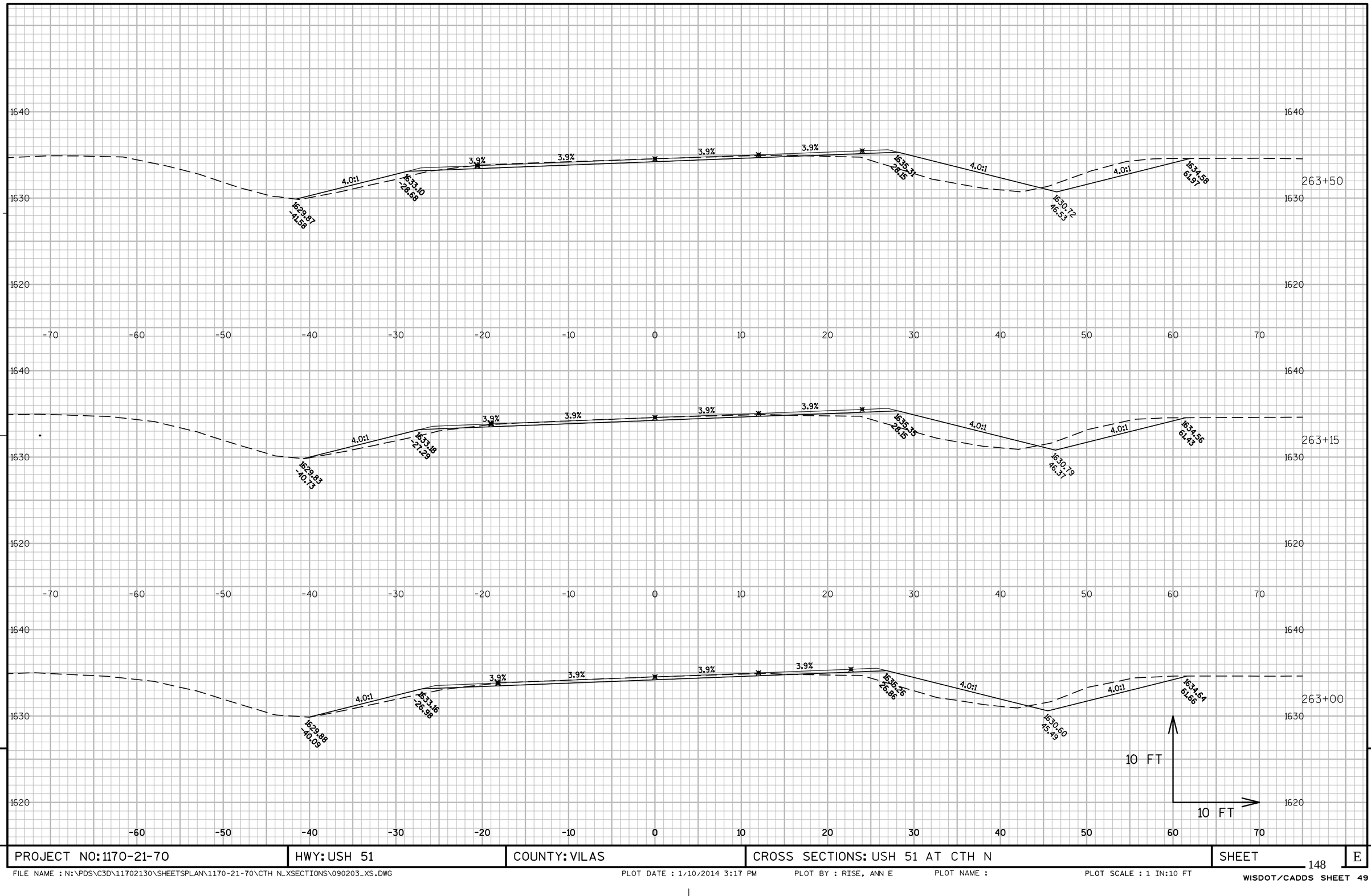
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT STA 246+37	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\CULVERT_XSECTIONS\090100_XS.DWG PLOT DATE : 2/13/2014 10:08 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

9	PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\CTH N_XSECTIONS\090203_XS.DWG PLOT DATE : 1/10/2014 3:17 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

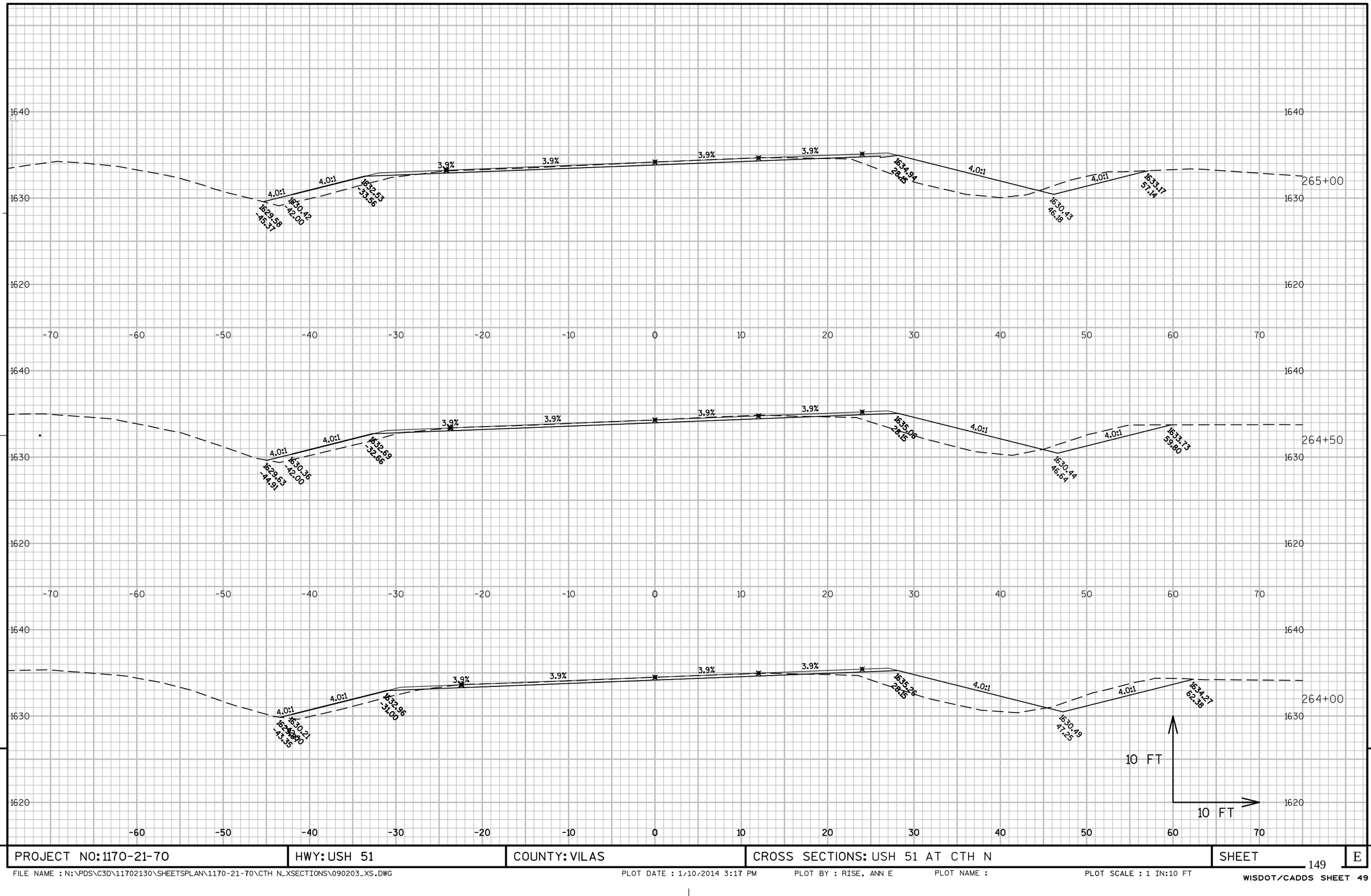


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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET	E

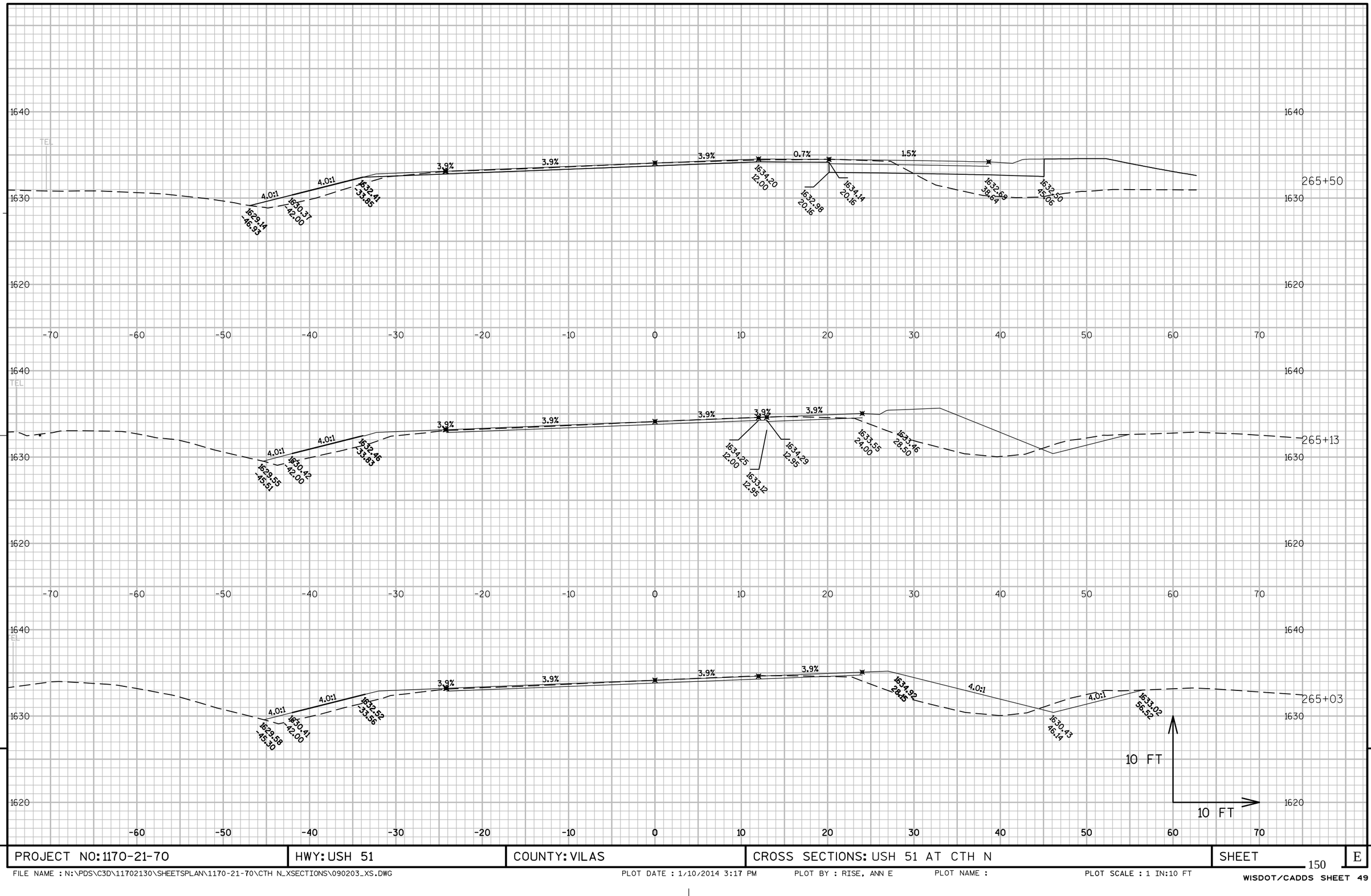
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET	E

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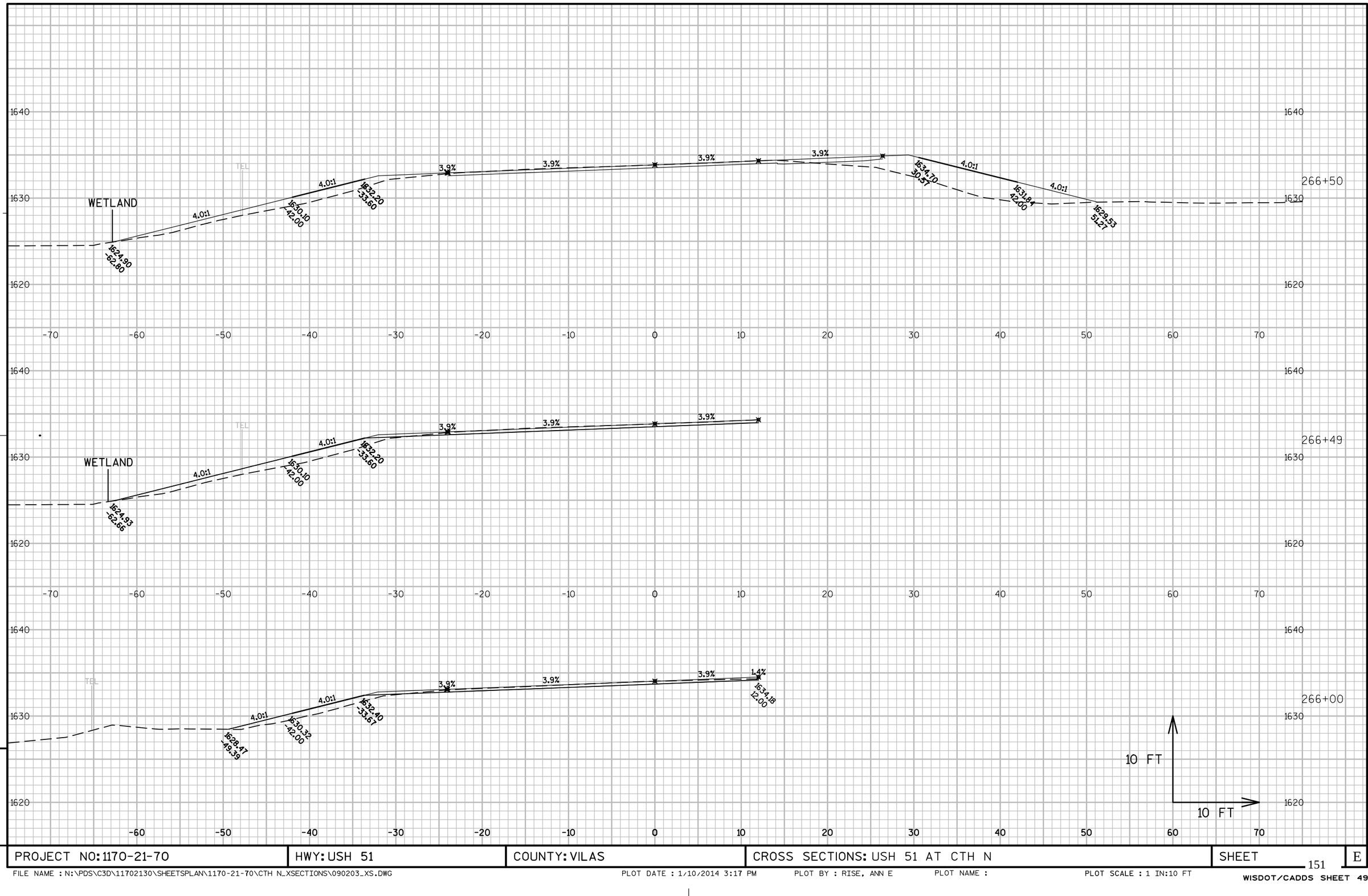


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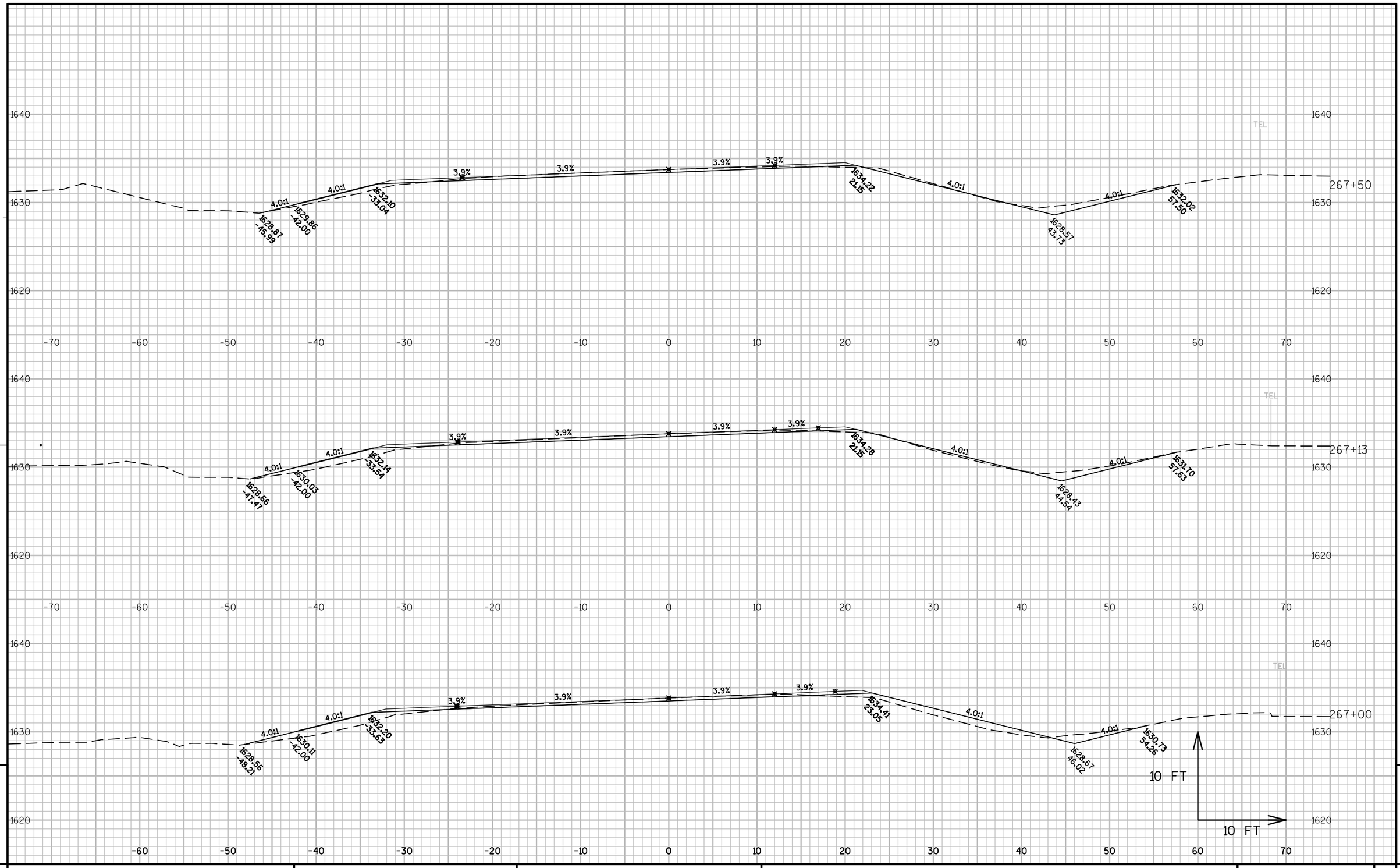
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WISDOT/CADDS SHEET 49



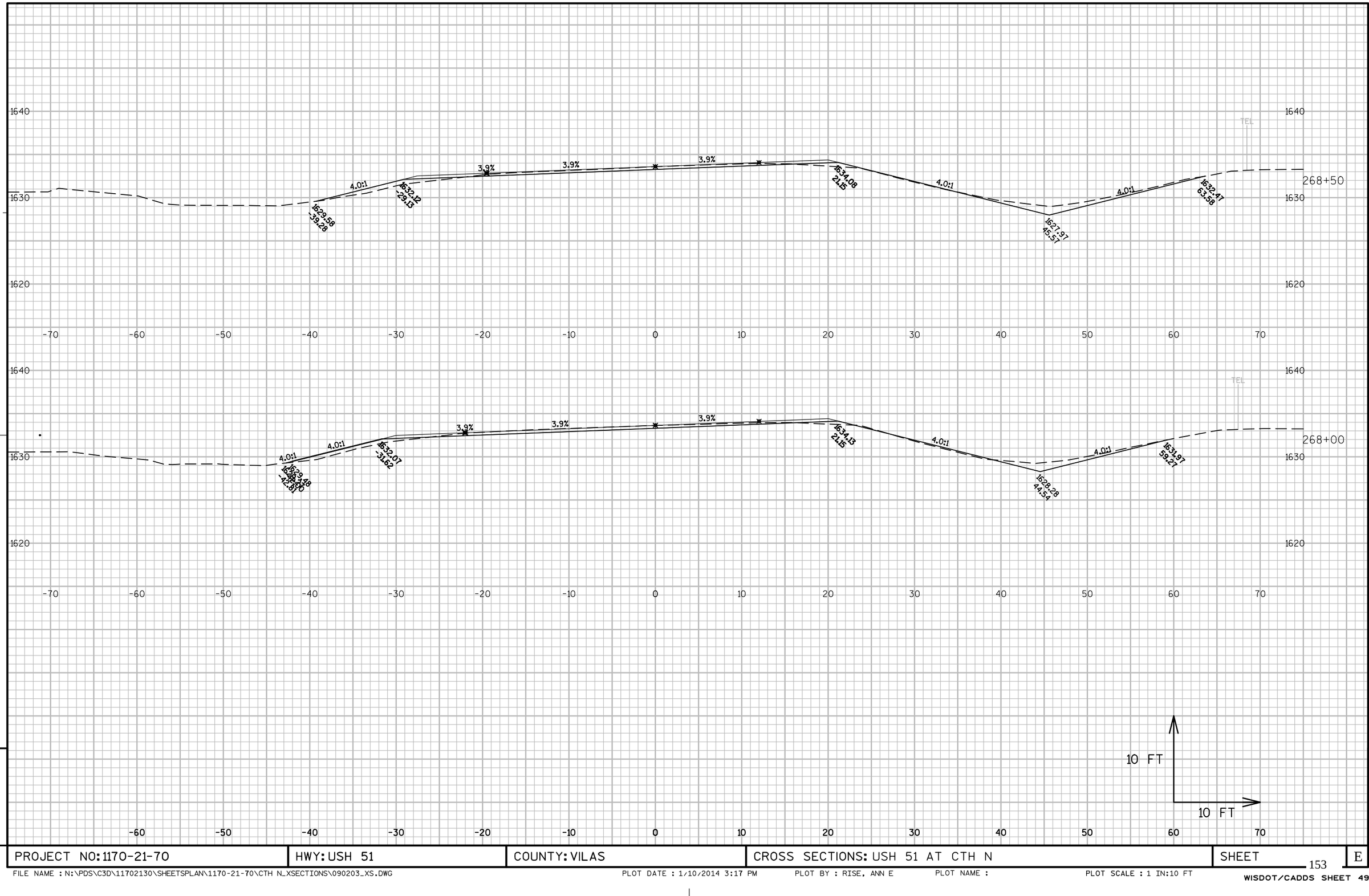
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET	E

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WISDOT/CADDS SHEET 49



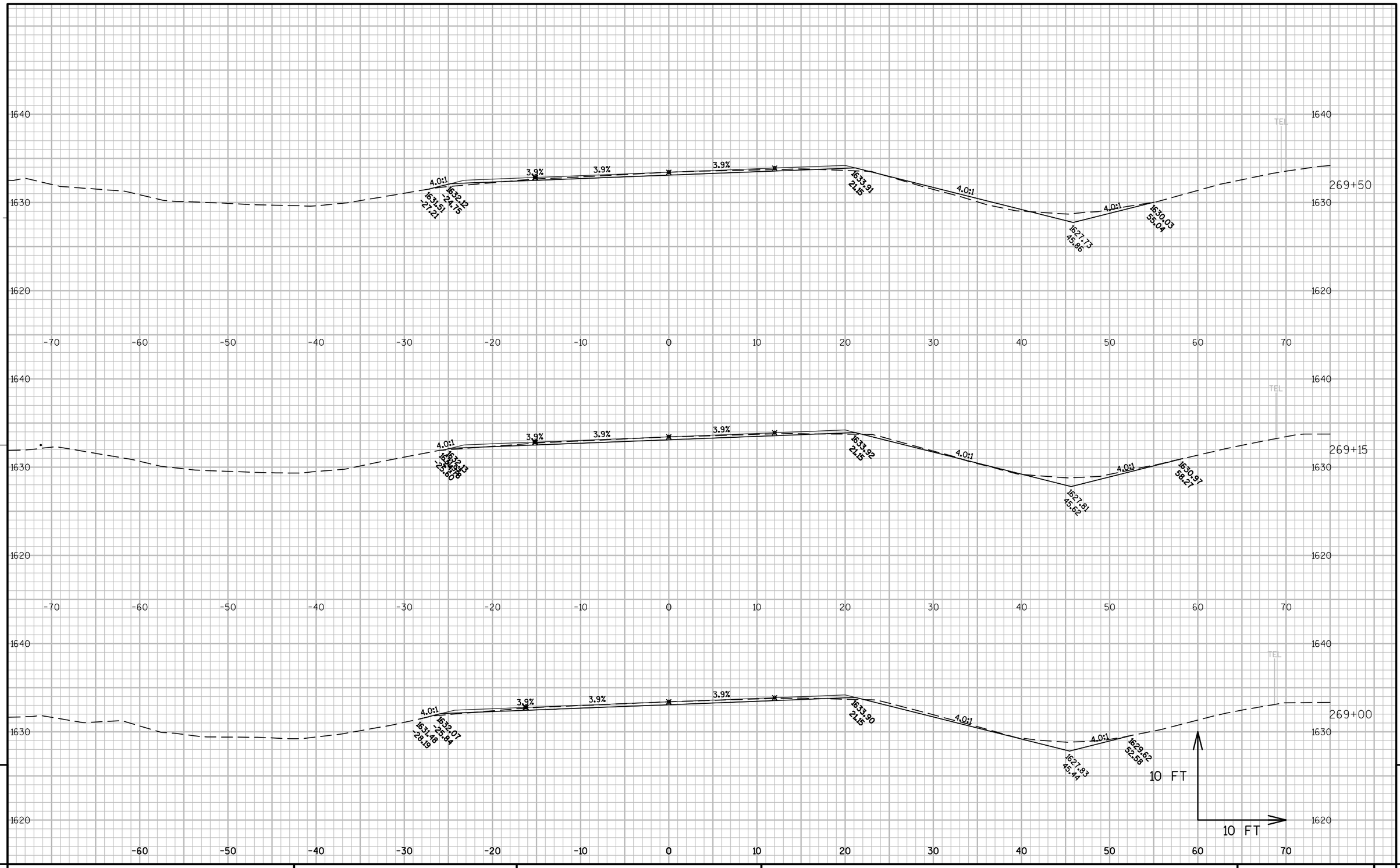
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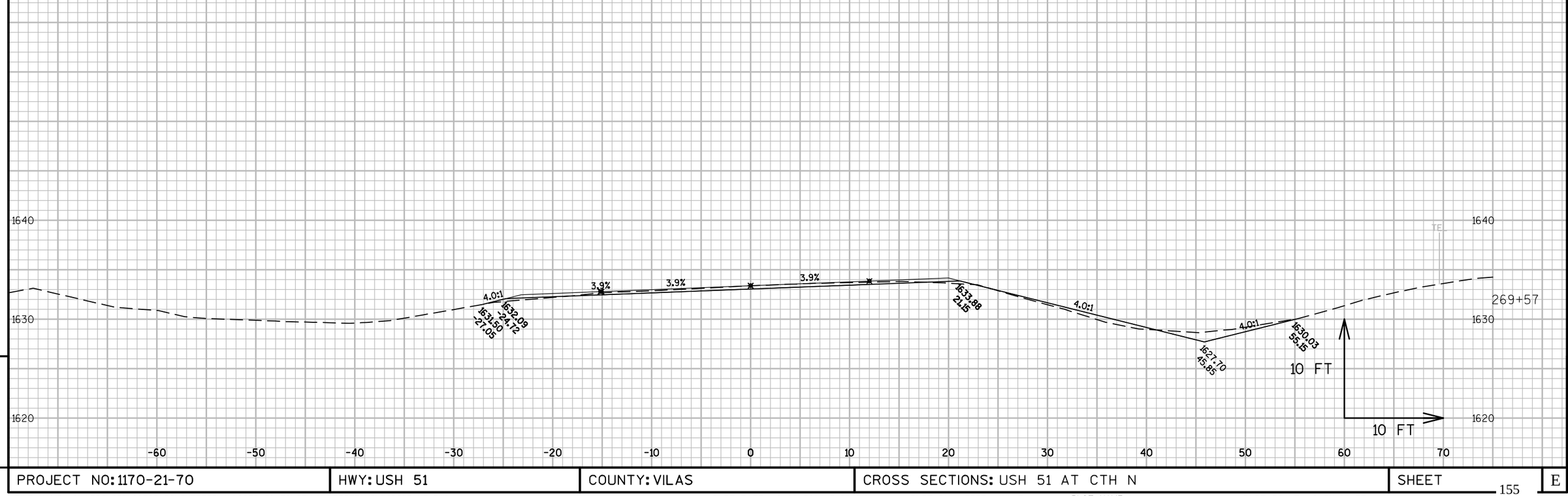
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WISDOT/CADDS SHEET 49



9	PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET E

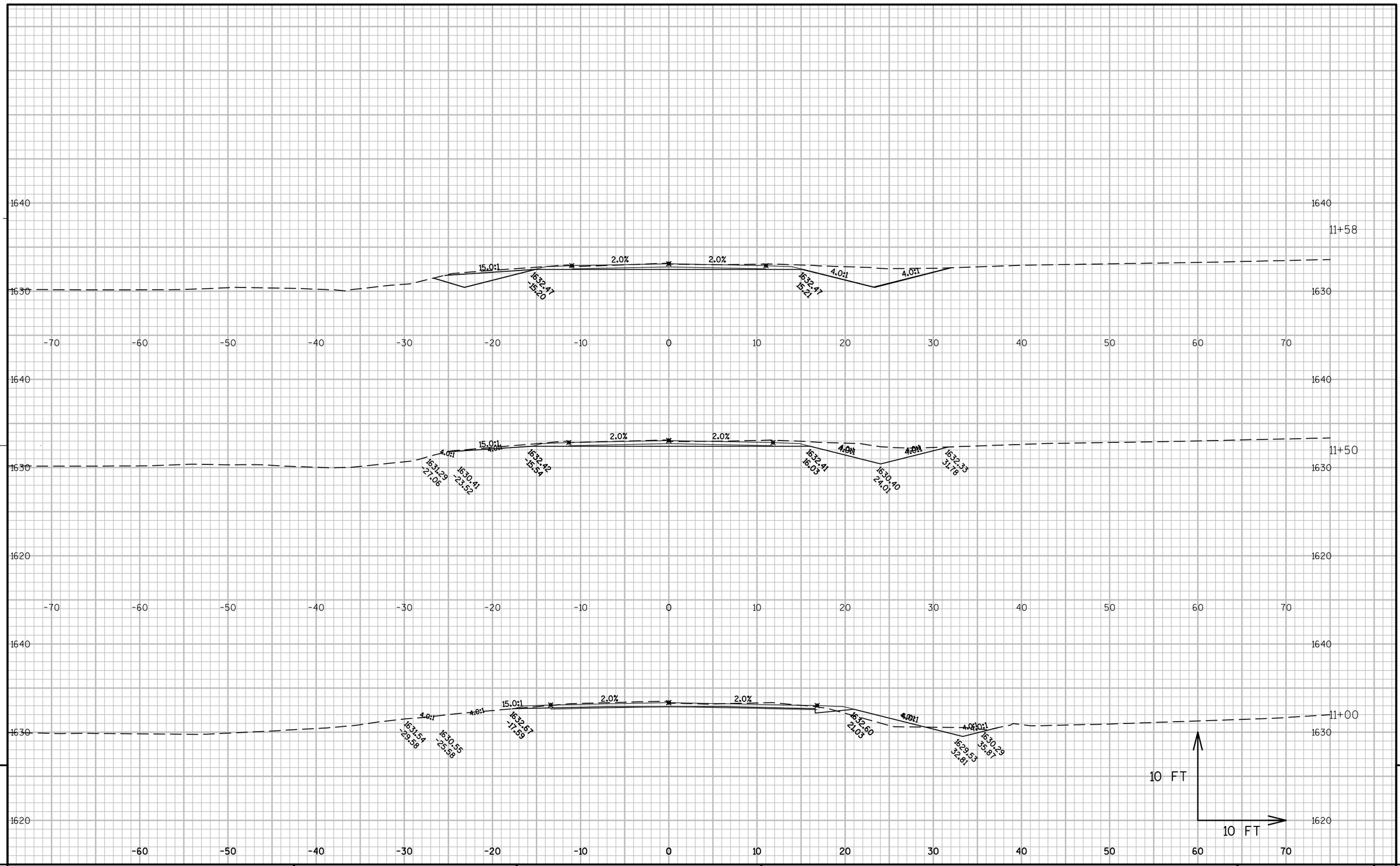
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH N	SHEET	E

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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CTH N	SHEET	E

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LINE CULVERT

280+80

FO

EL

4.0:1

3.0:1

4.0%2.0%

3.9%

3.9%

2.0%4.0%

40.0:1

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-20.00

1632.22
25.18

1623.29
-40.00

1622.83
46.00

20 FT

20 FT

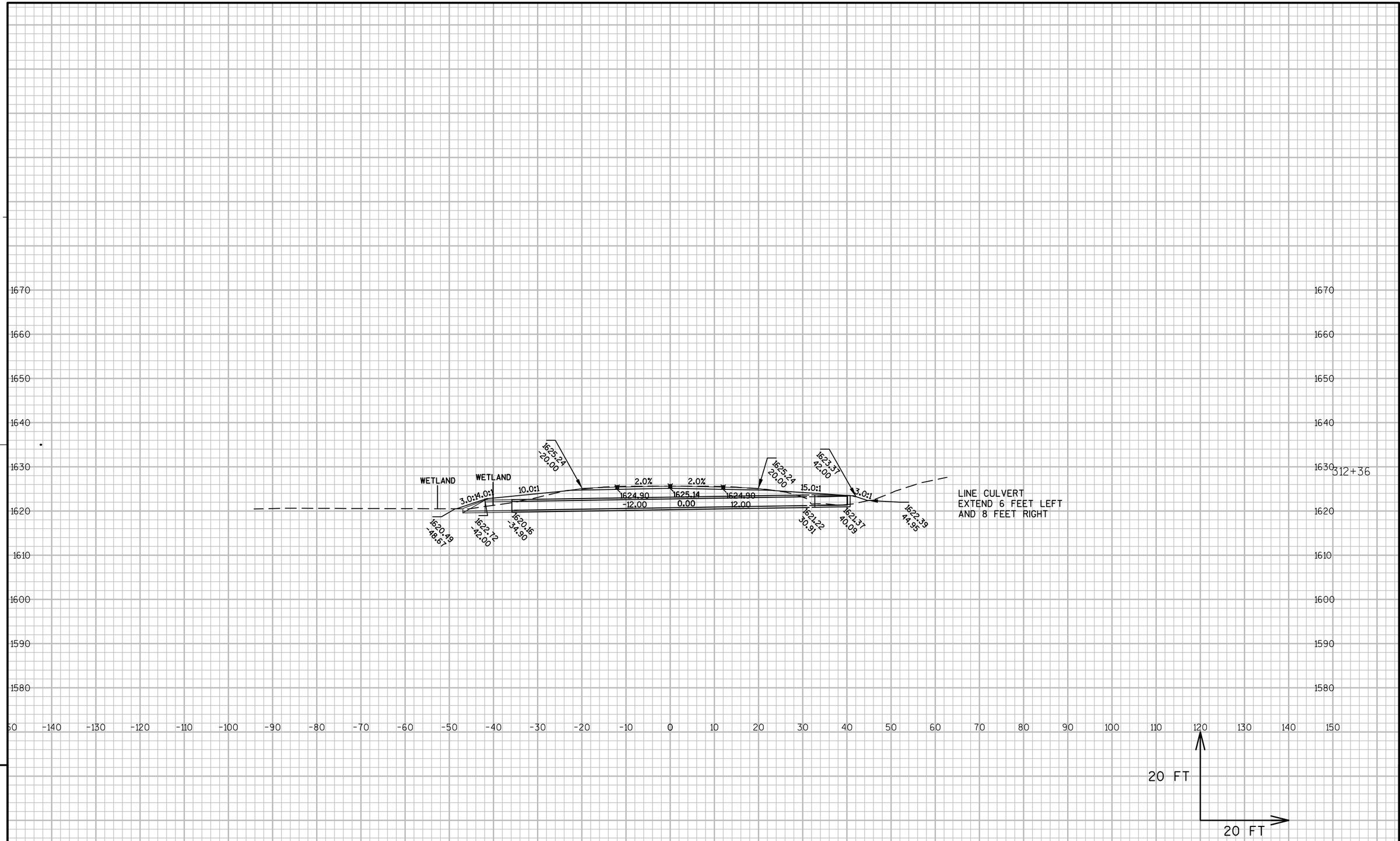
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WISDOT/CADDS SHEET 49



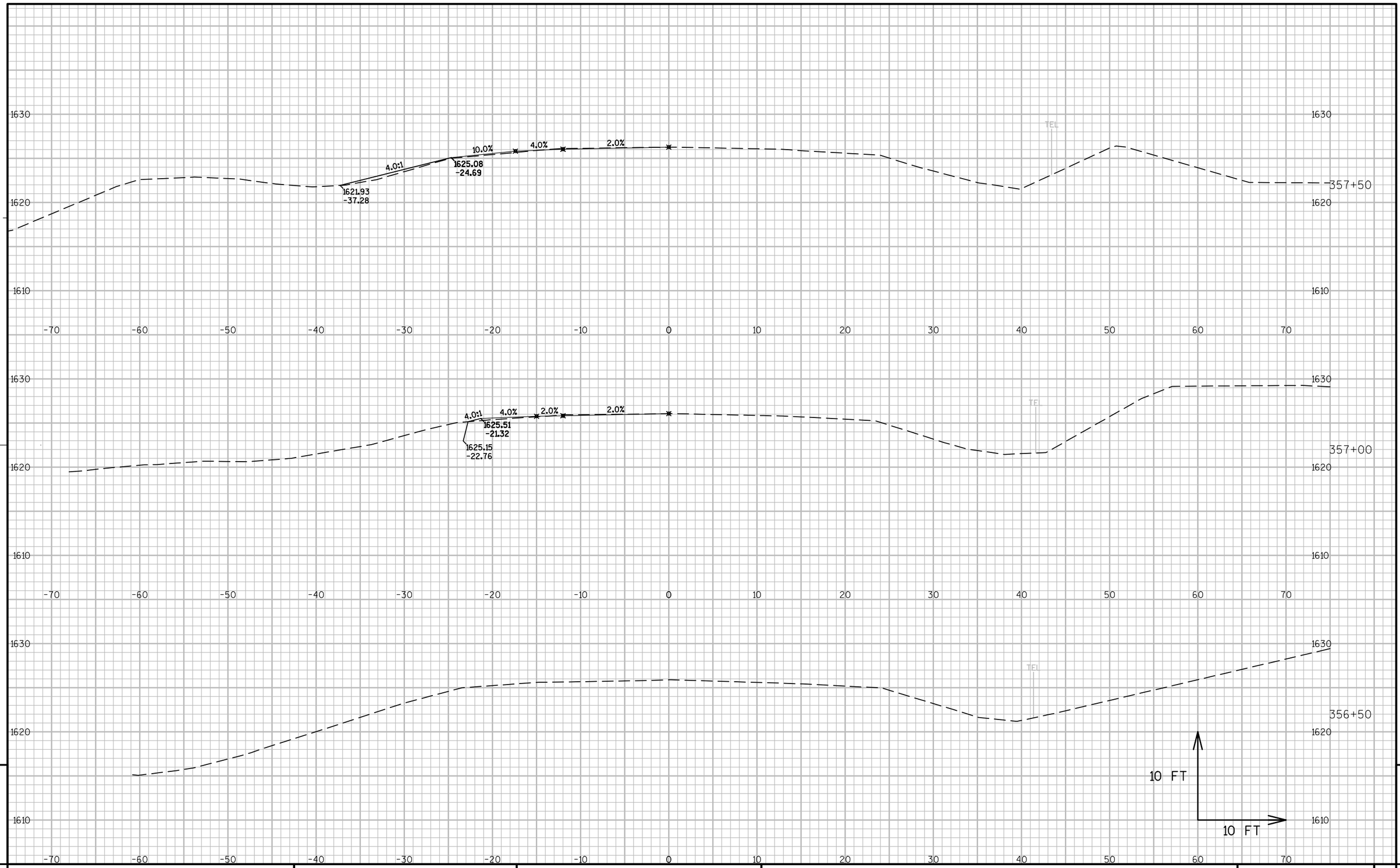
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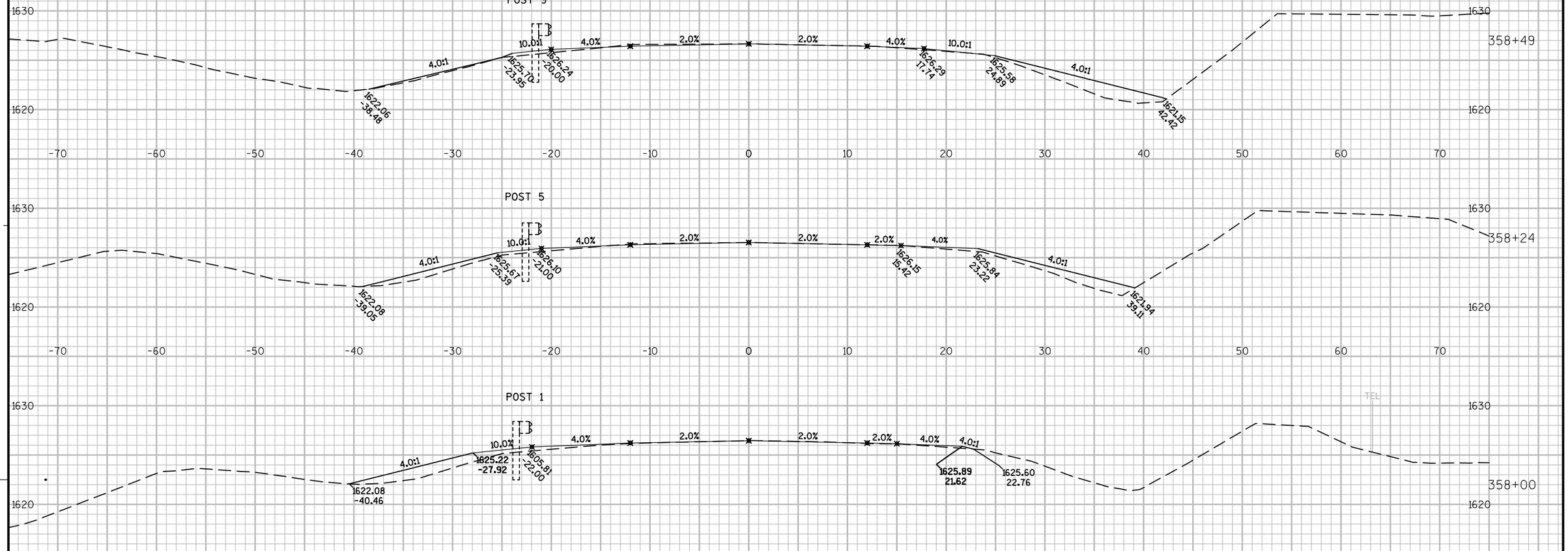
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WISDOT/CADDS SHEET 49



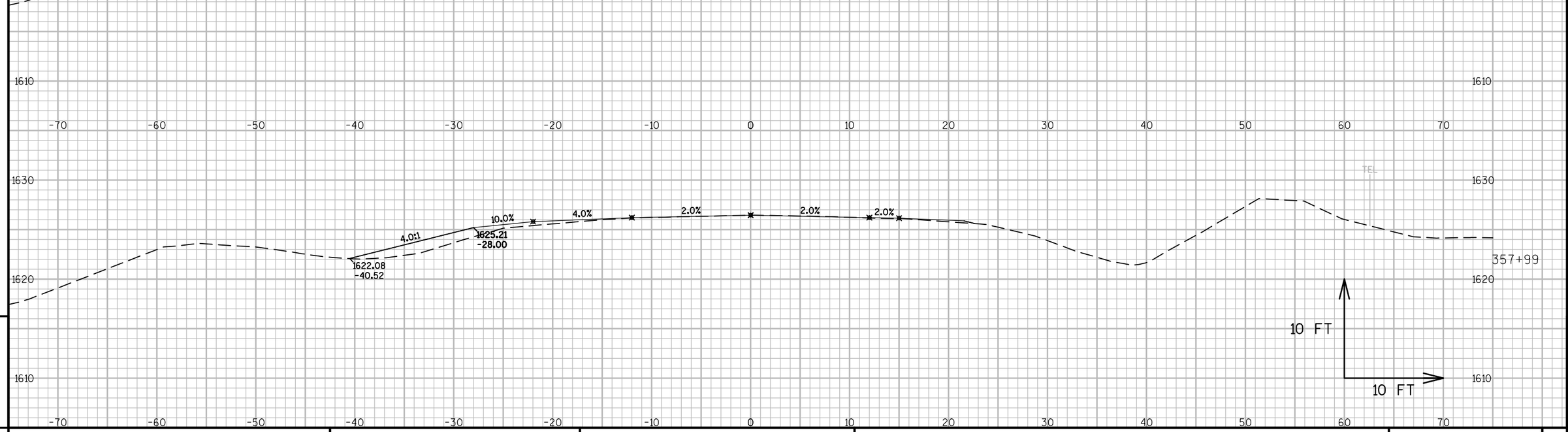
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POST 9



POST 5

POST 1

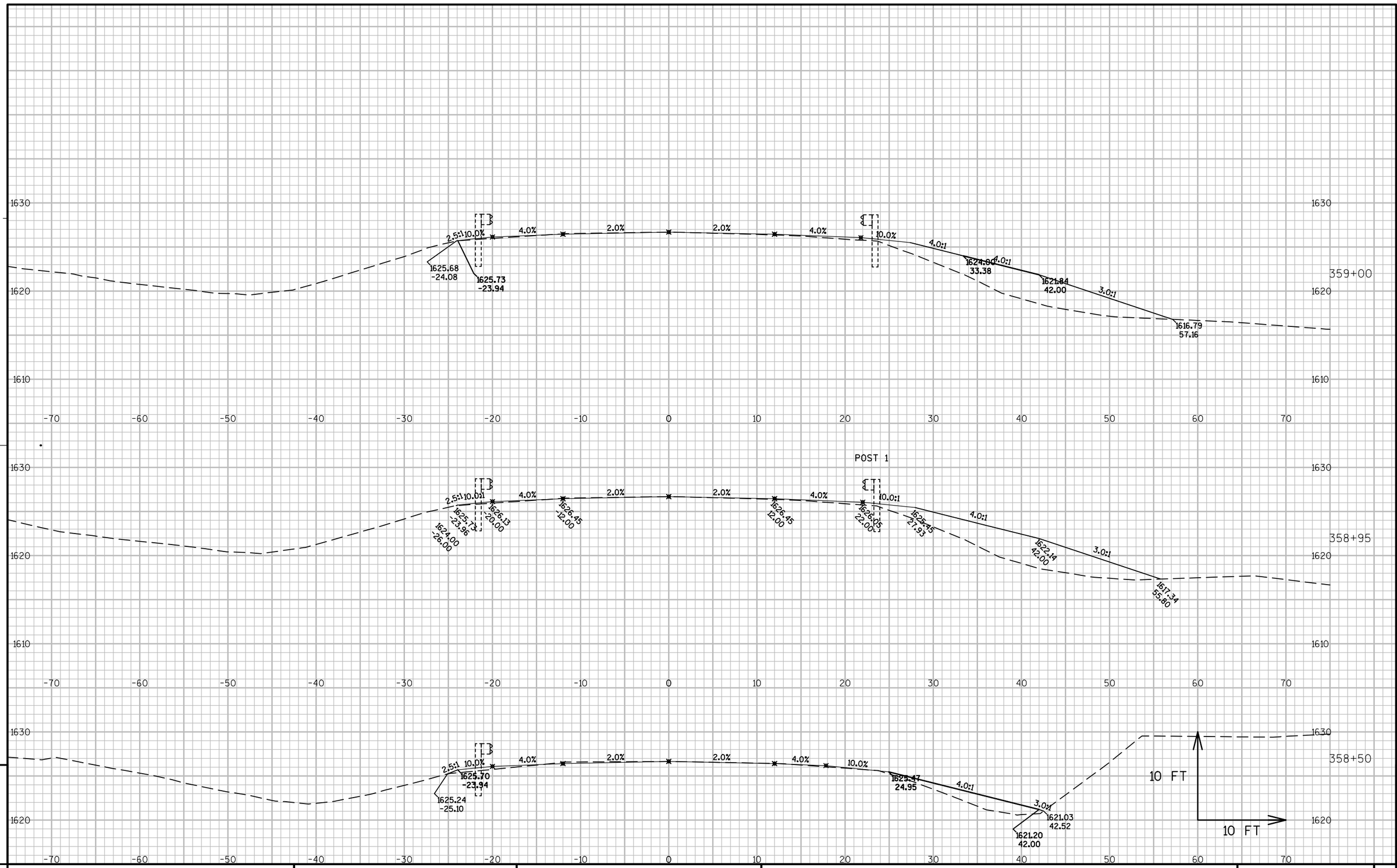


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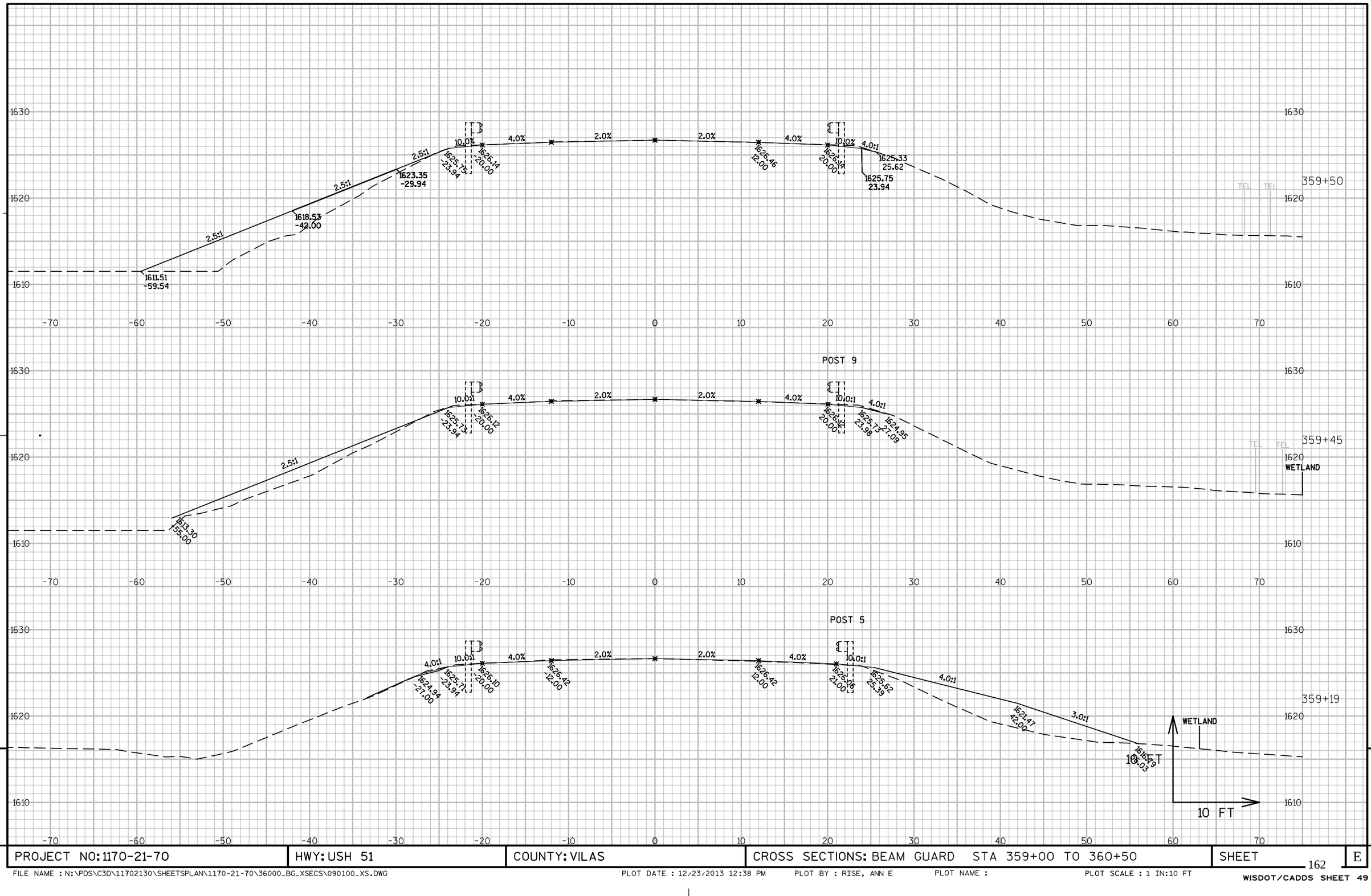
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\36000_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 12:37 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT



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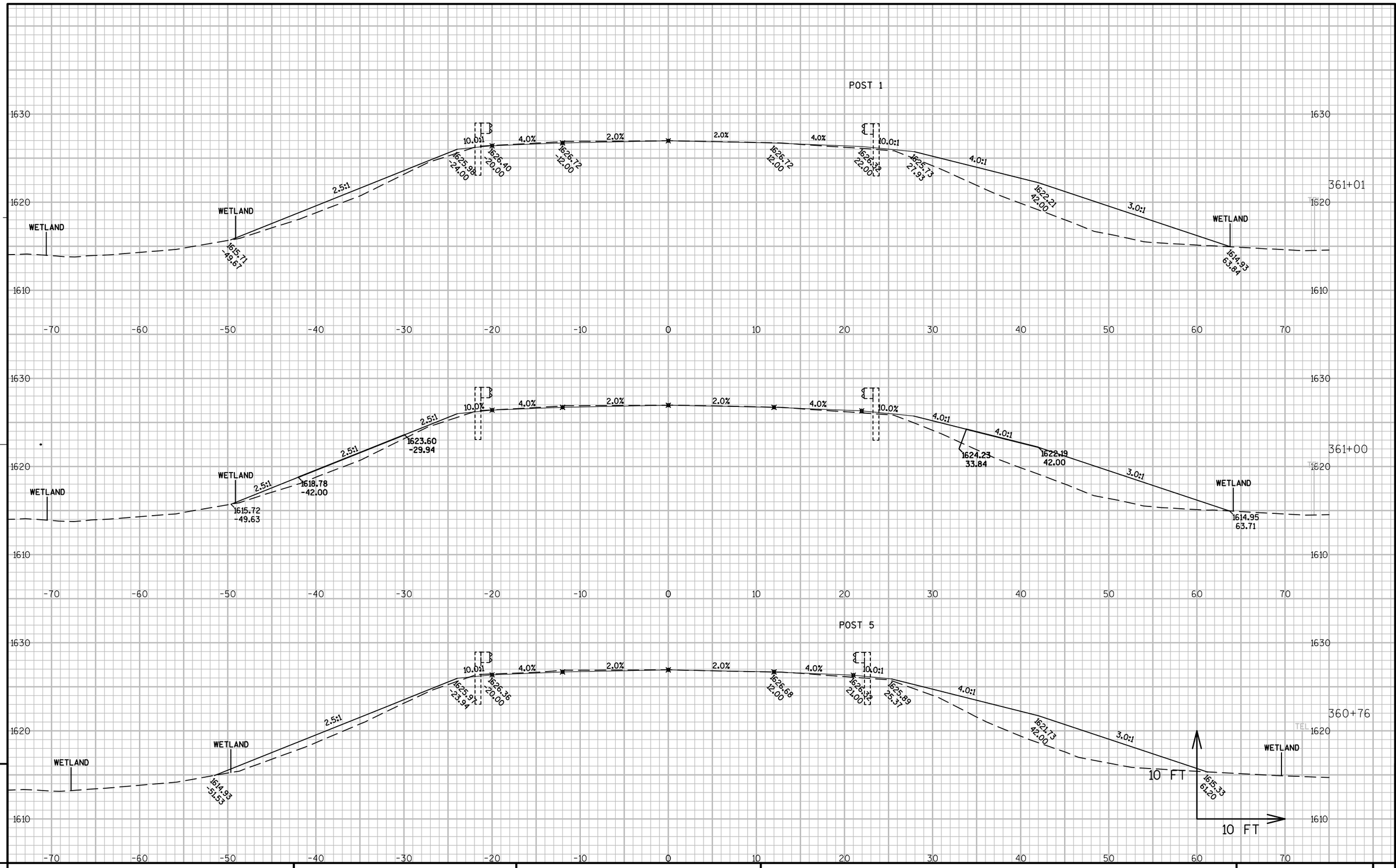
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WISDOT/CADDS SHEET 49

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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

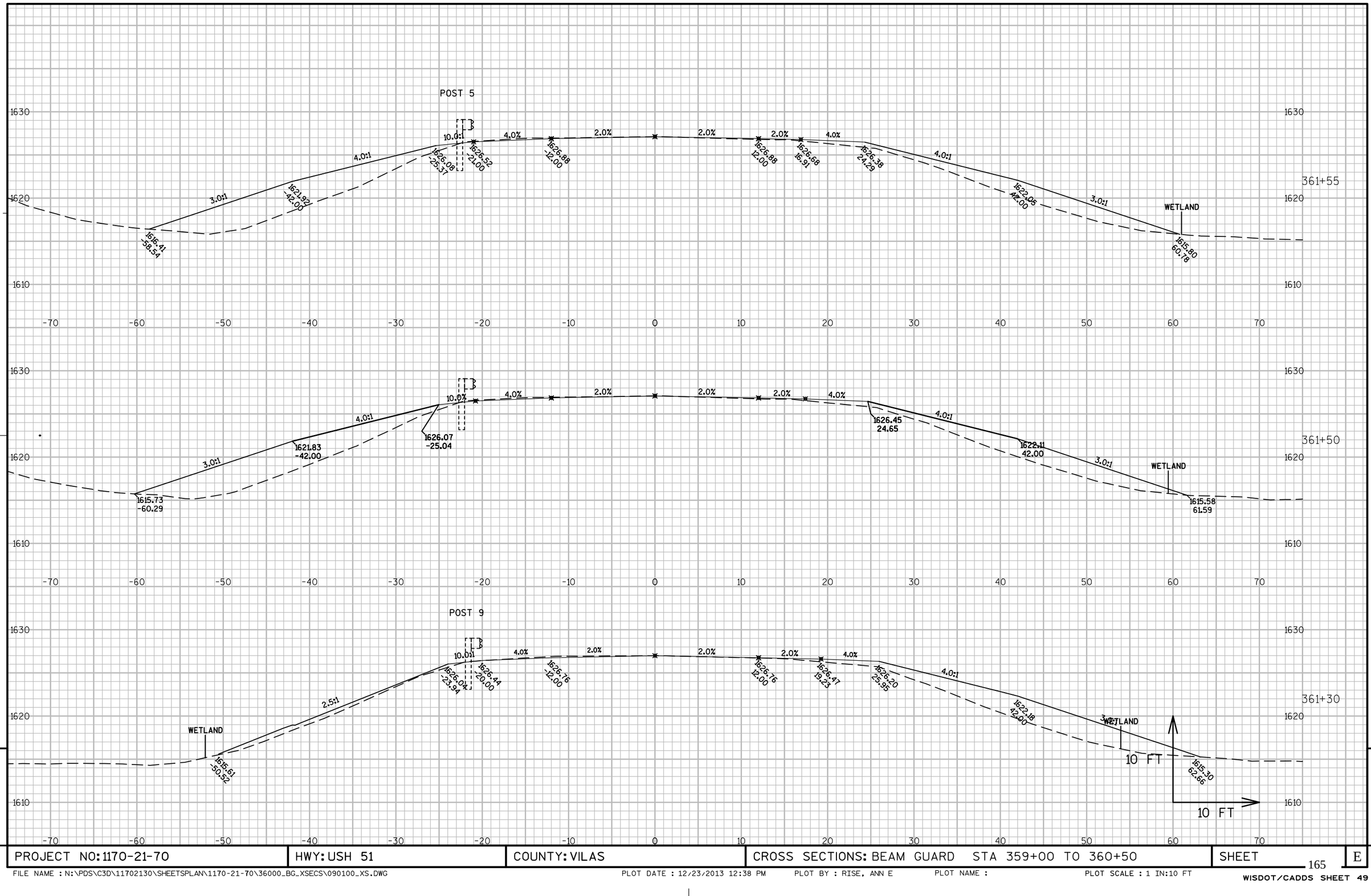
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

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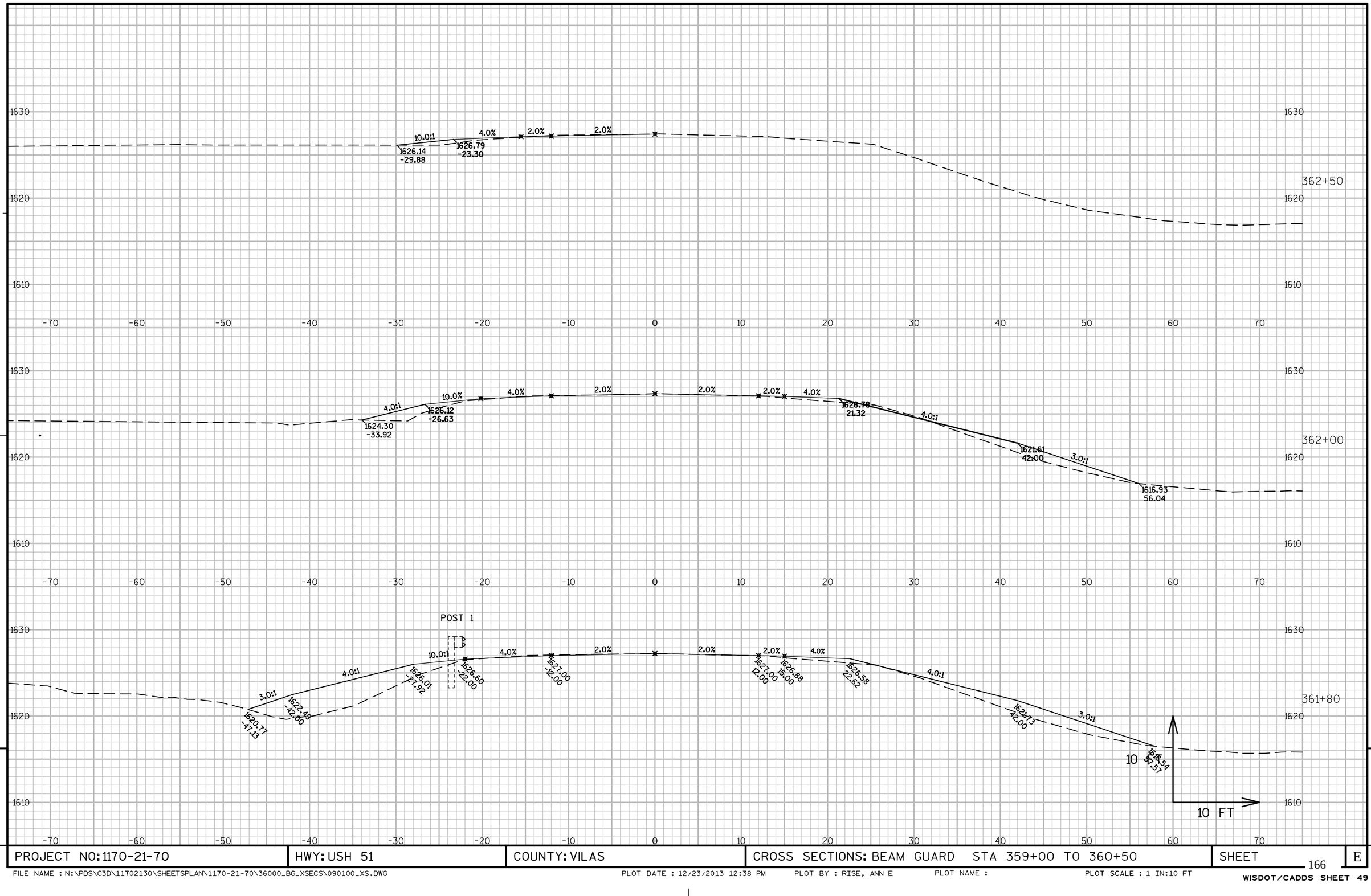


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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

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WISDOT/CADDS SHEET 49

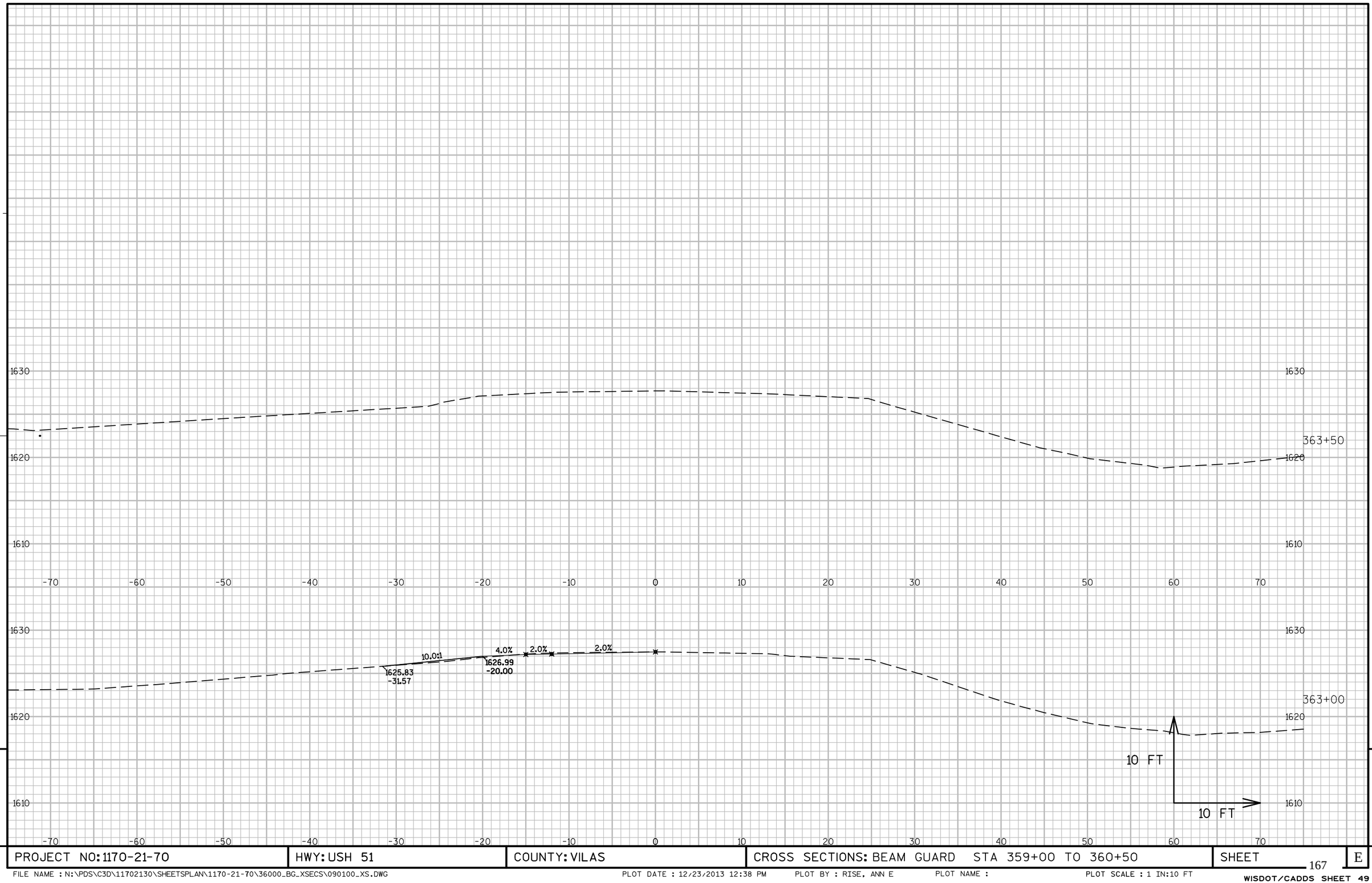


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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

9

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\36000_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 12:38 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

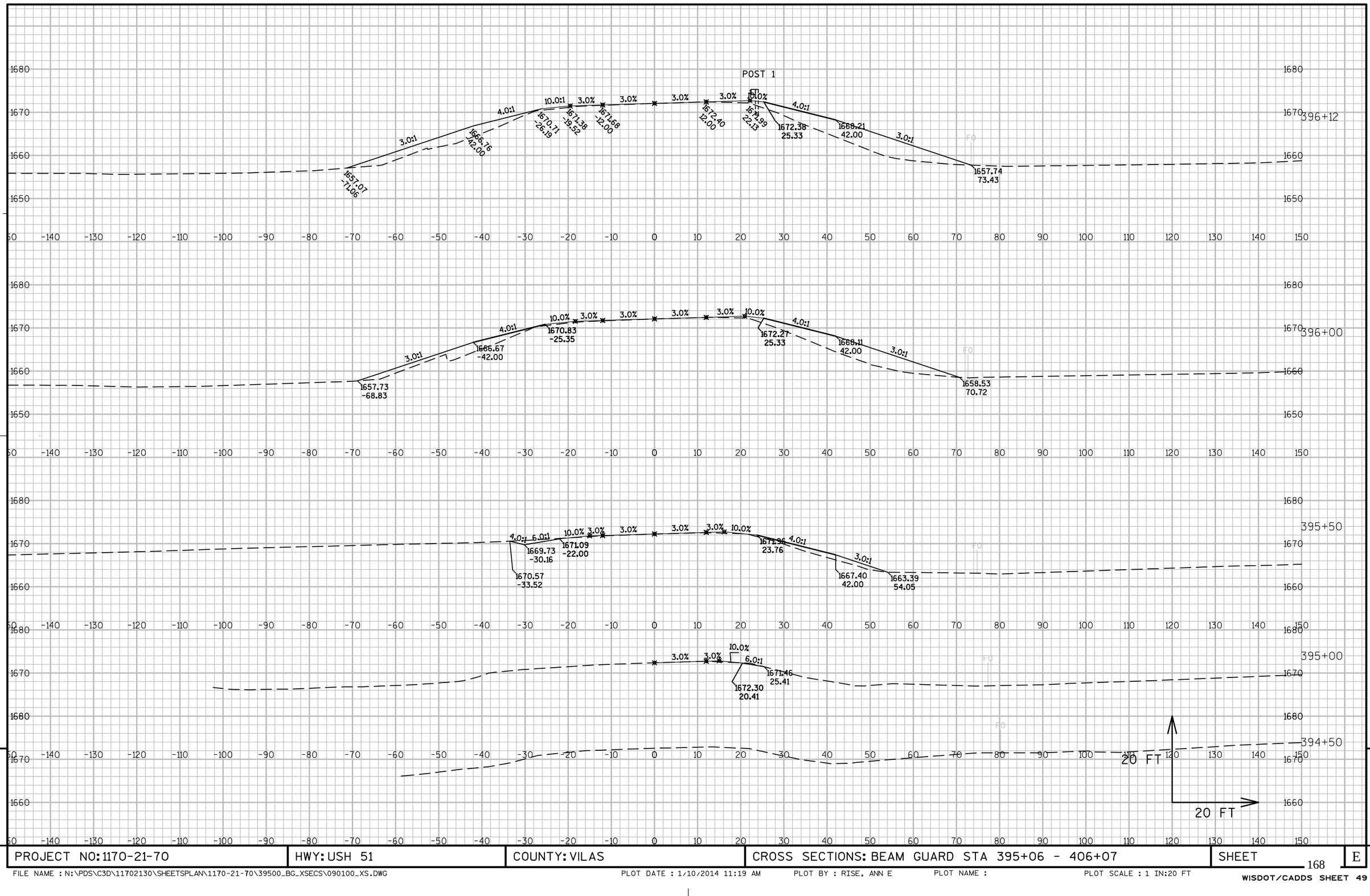


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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 359+00 TO 360+50	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\36000_BG_XSECS\090100_XS.DWG PLOT DATE : 12/23/2013 12:38 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

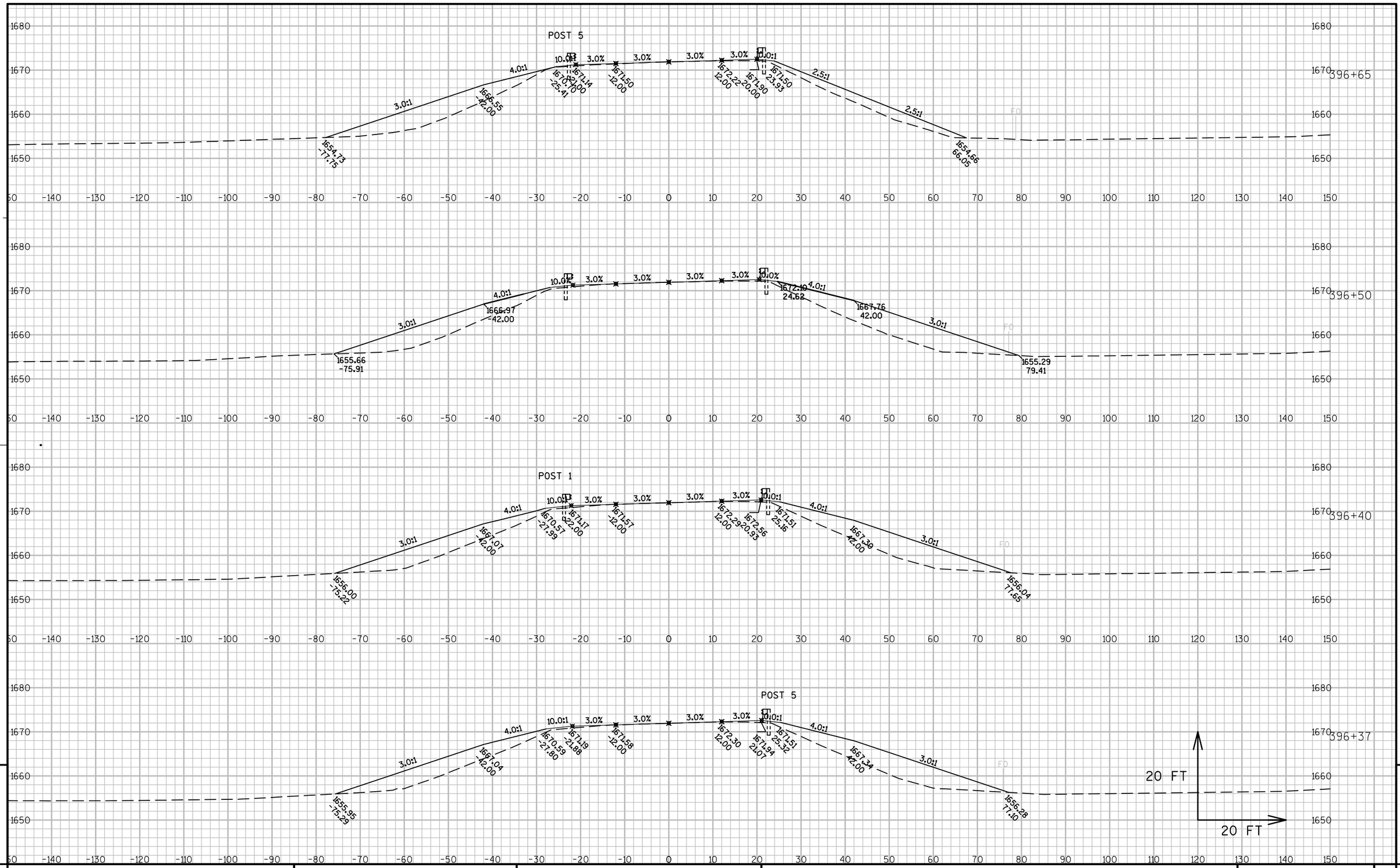
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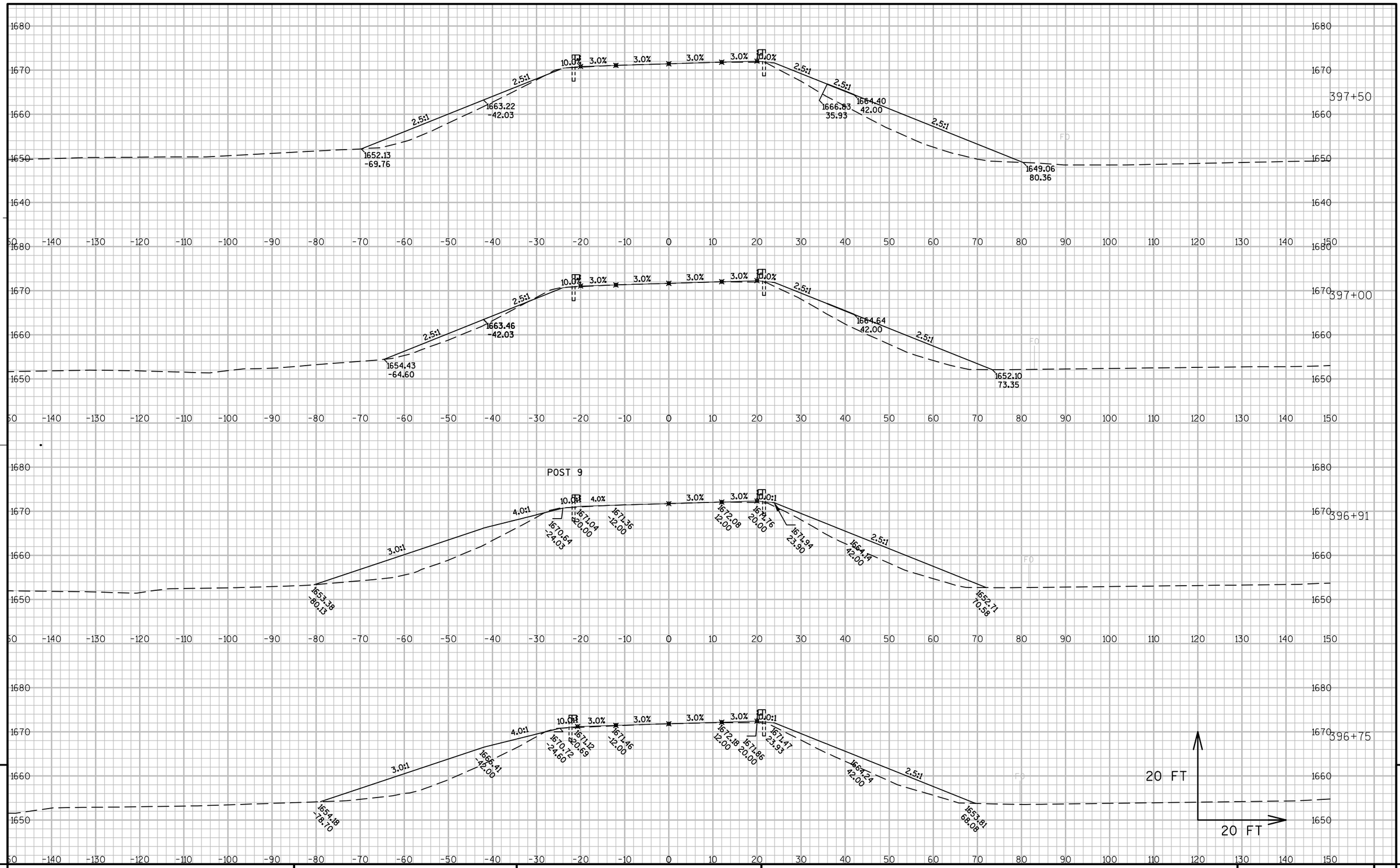


PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\39500_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 11:19 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49


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3.0%
3.0%
3.0%
10.0:1
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3.0:1
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1671.50
-12.00
1672.22
12.00
1671.90
20.00
1671.50
23.93
2.5:1
2.5:1
1654.73
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1670.70
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1654.66
66.09
396+65
FG
POST 1
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3.0%
3.0%
3.0%
3.0%
10.0:1
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3.0:1
1656.00
-75.22
1667.07
-42.00
1670.57
-27.99
1667.39
42.00
1656.04
71.65
396+40
FG
POST 5
10.0:1
3.0%
3.0%
3.0%
3.0%
10.0:1
4.0:1
3.0:1
1671.19
-21.88
1671.58
-12.00
1672.30
12.00
1671.94
21.07
1671.51
25.32
4.0:1
3.0:1
1655.95
-75.29
1667.04
-42.00
1670.59
-27.80
1667.34
42.00
1656.28
71.10
396+37
FG
20 FT
20 FT

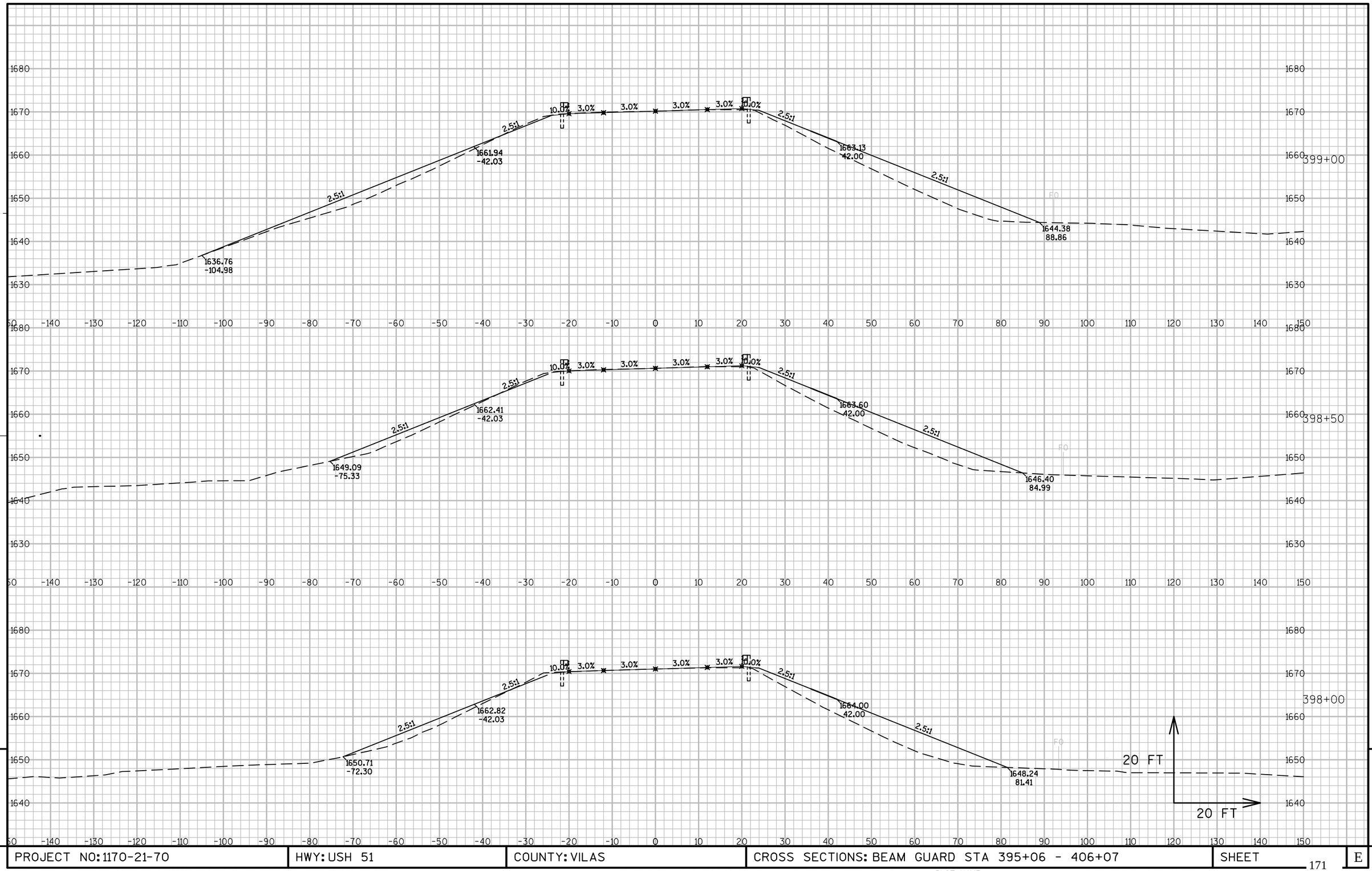


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9

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET 170	E

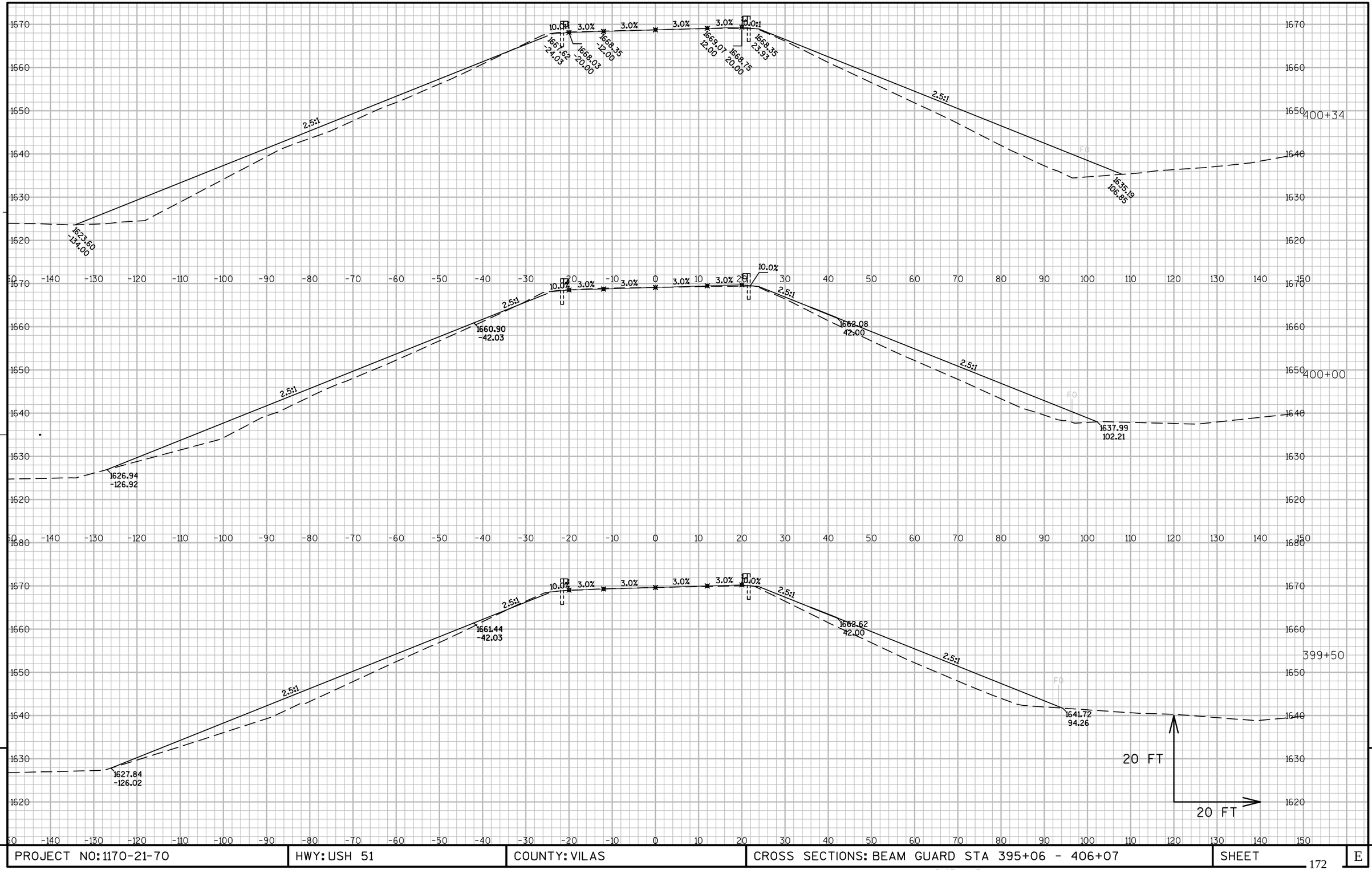
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\39500_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 11:20 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

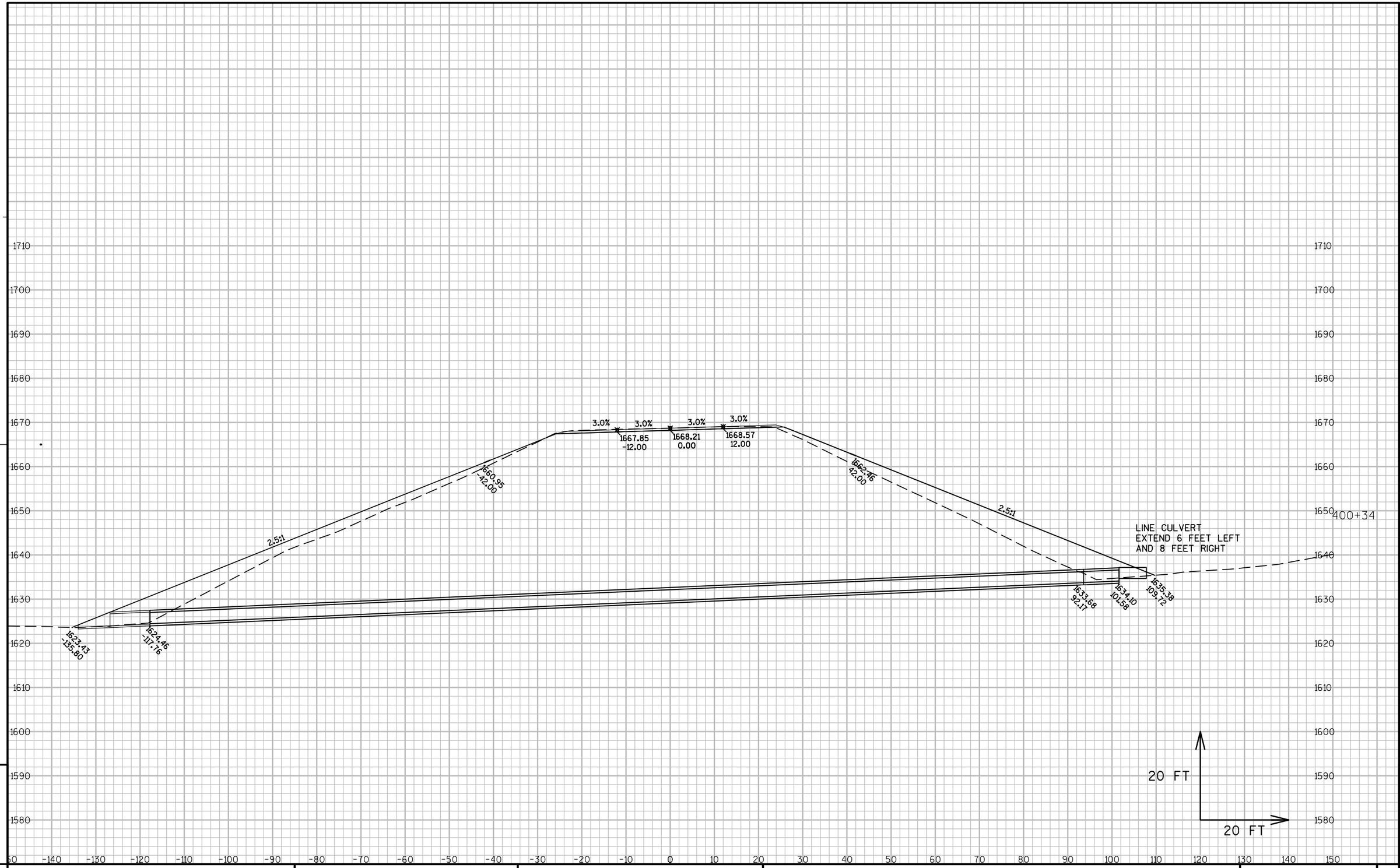
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\39500_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 11:20 AM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

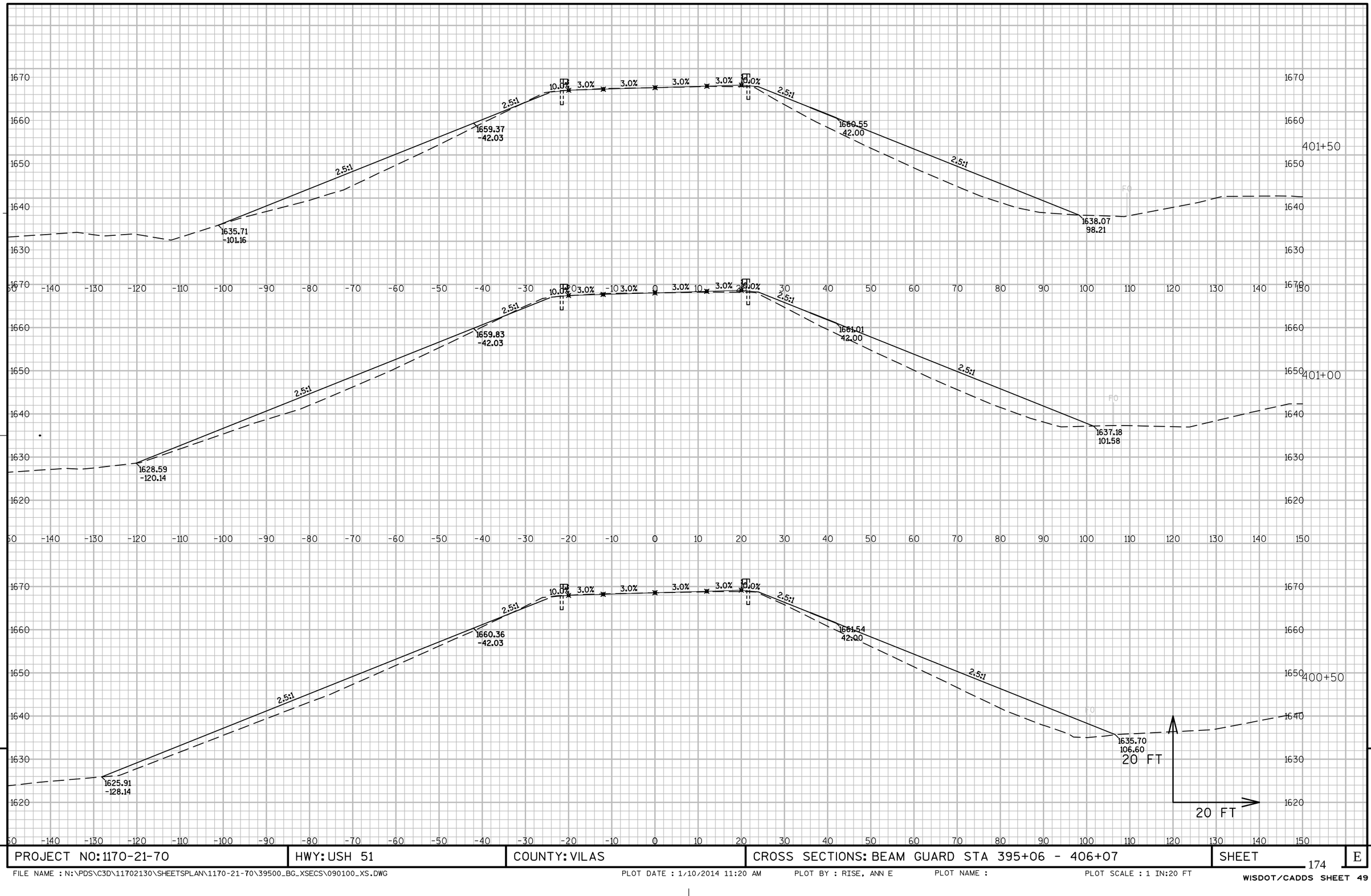
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT STA 400+34	SHEET 173	E

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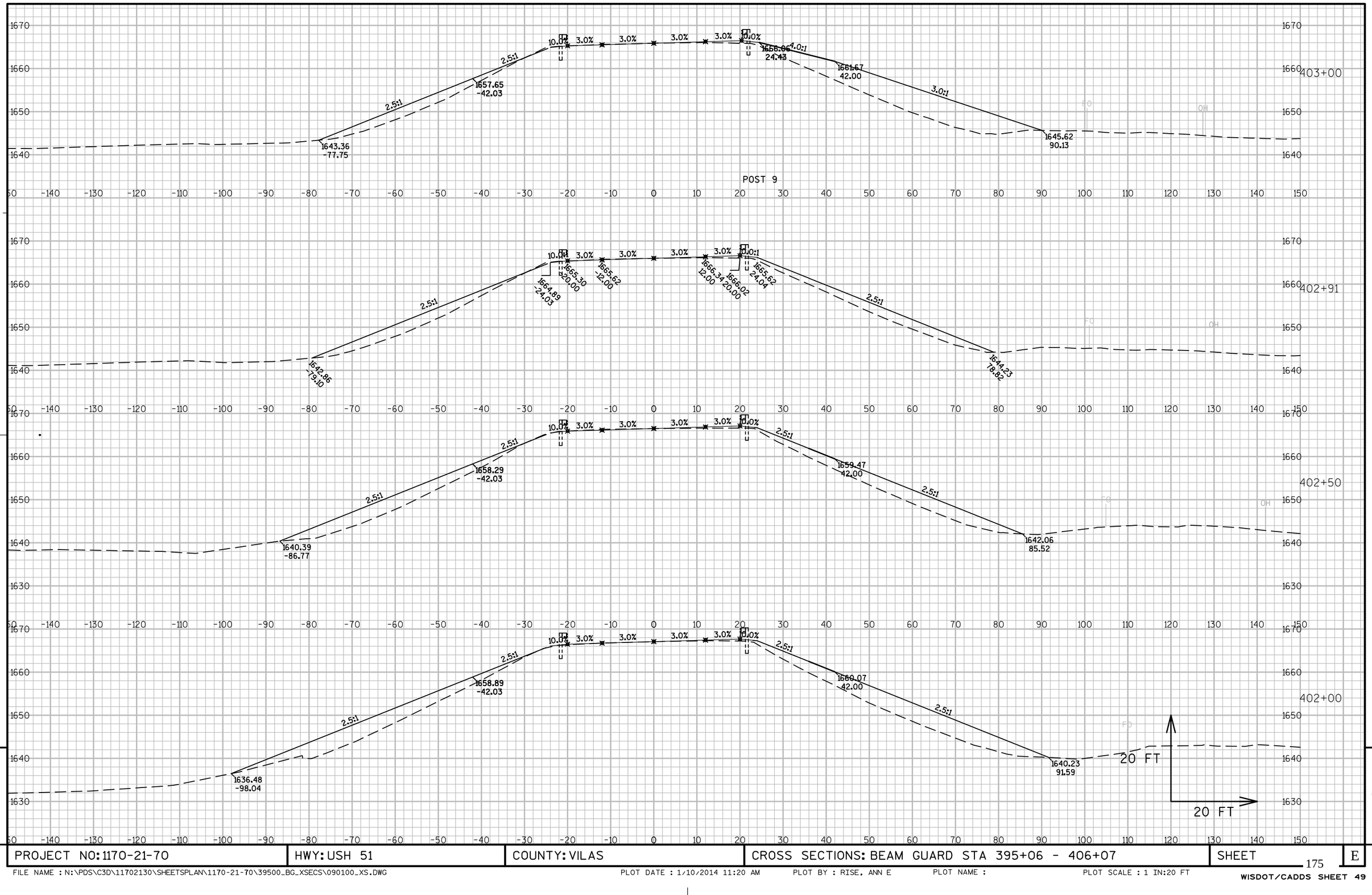
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET 174	E

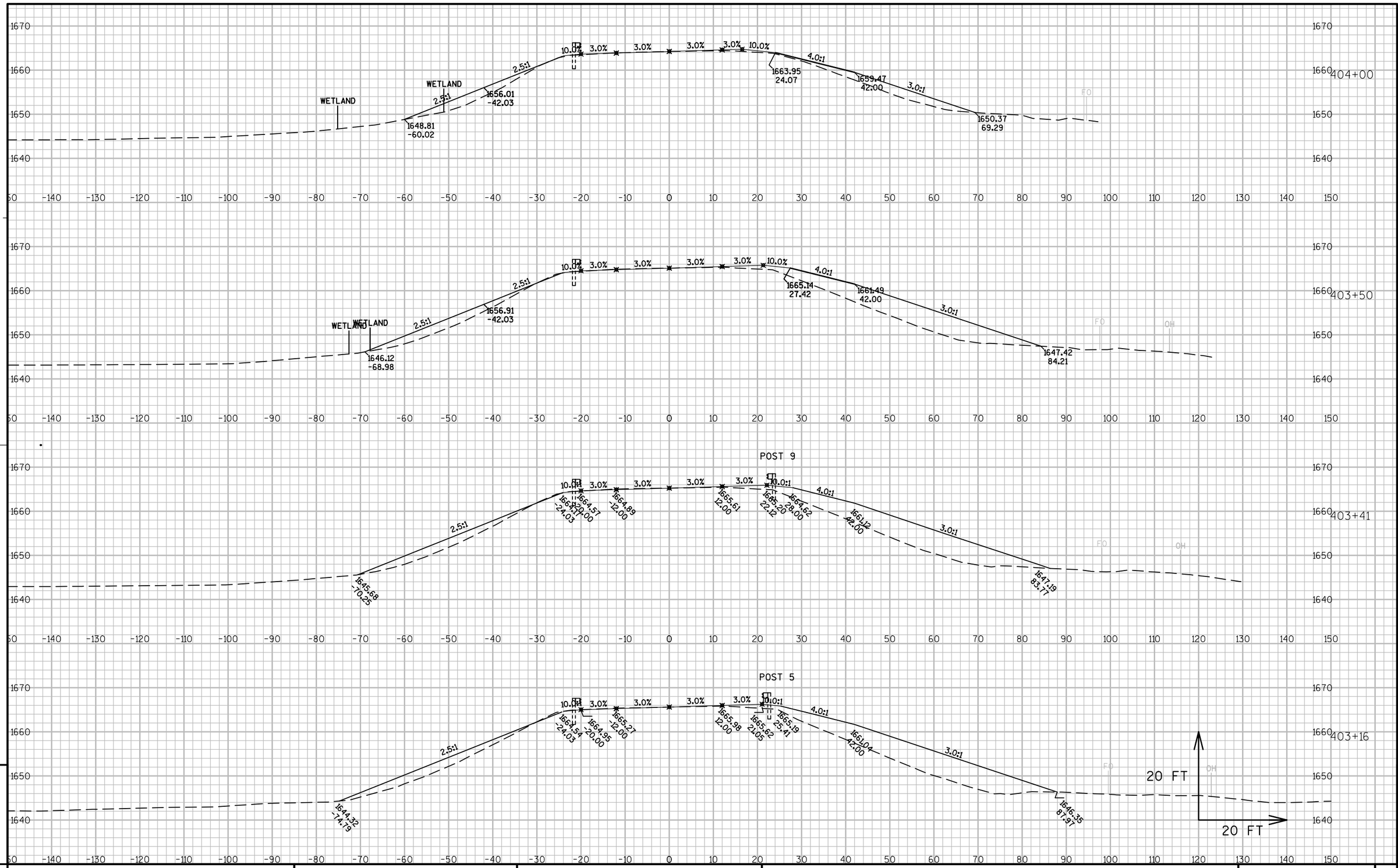
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WISDOT/CADDS SHEET 49

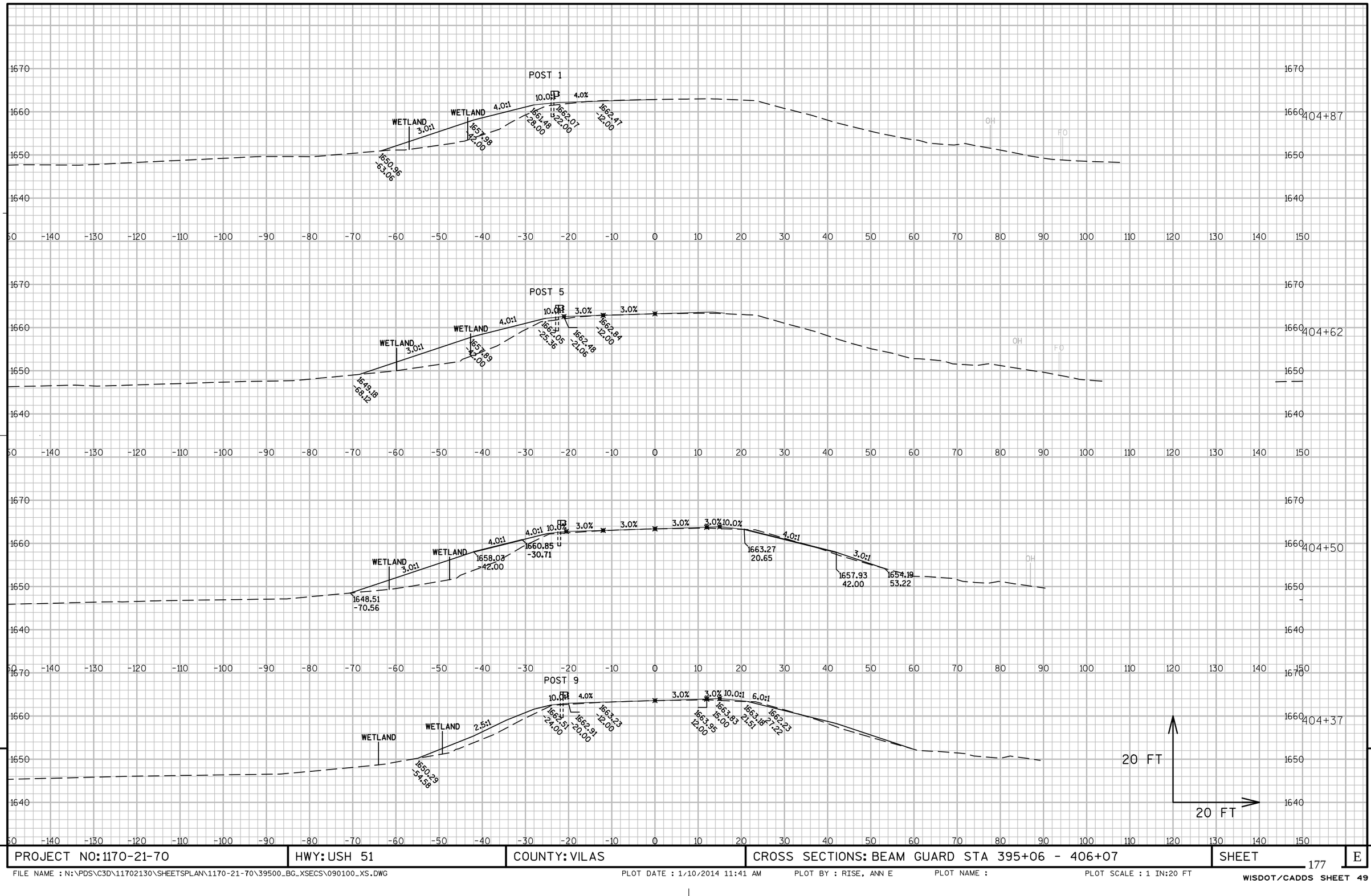


PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET E

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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET	E



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET	E

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WISDOT/CADDS SHEET 49

406+50

406+00

405+50

405+00

1660.72
-64.20

4.0:1

6.0:1

1655.93
-45.04

10.0%

3.0%

3.0%

1660.04
-20.43

6.0:1

10.0%

3.0%

3.0%

1660.59
-23.78

1660.43
-24.75

WETLAND

3.0:1

WETLAND

4.0:1

1657.70
-42.00

1651.87
-59.47

10.0%

3.0%

3.0%

1661.40
-27.18

OH

FO

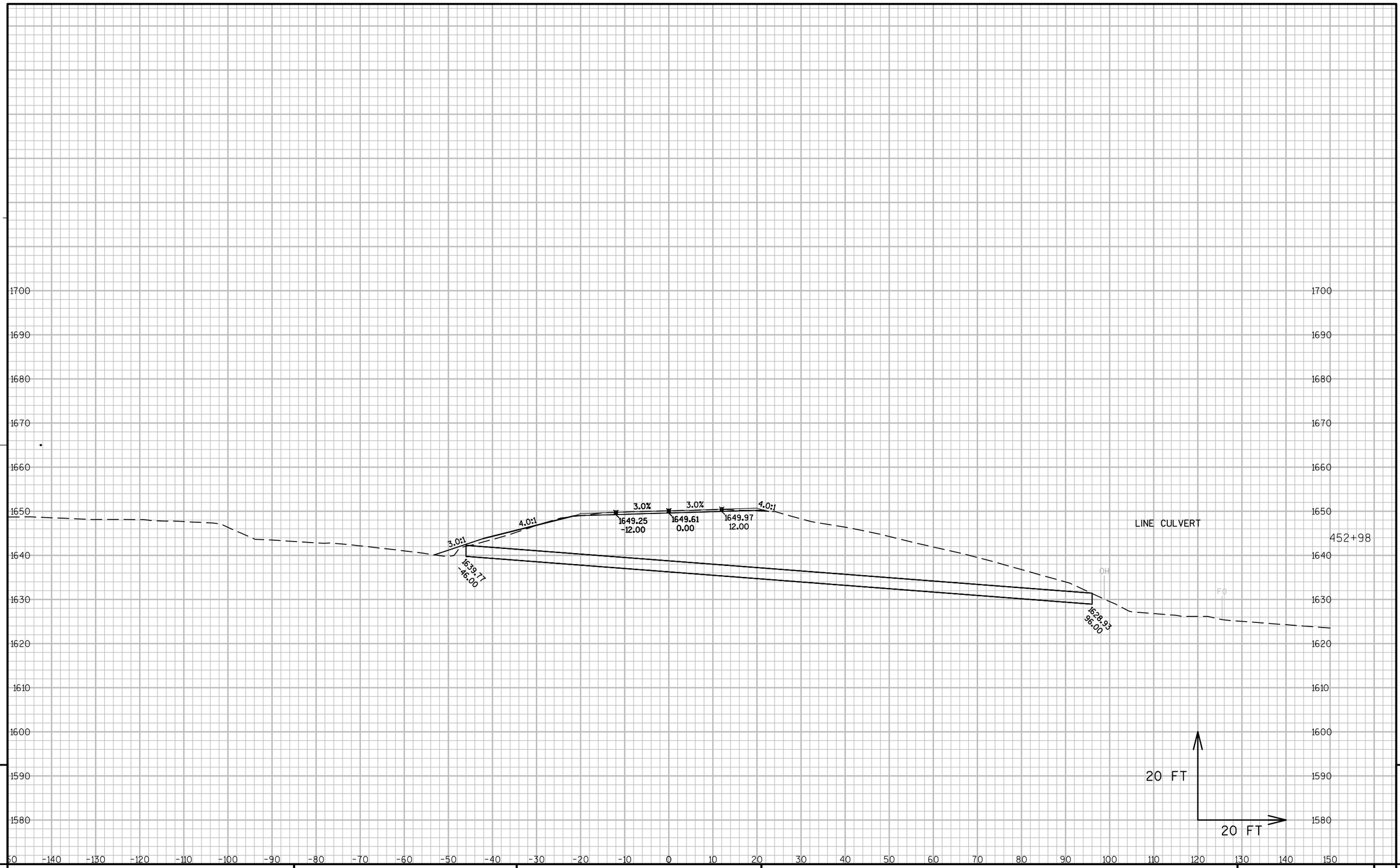
20 FT

20 FT

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD STA 395+06 - 406+07	SHEET 178	E

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WISDOT/CADDS SHEET 49

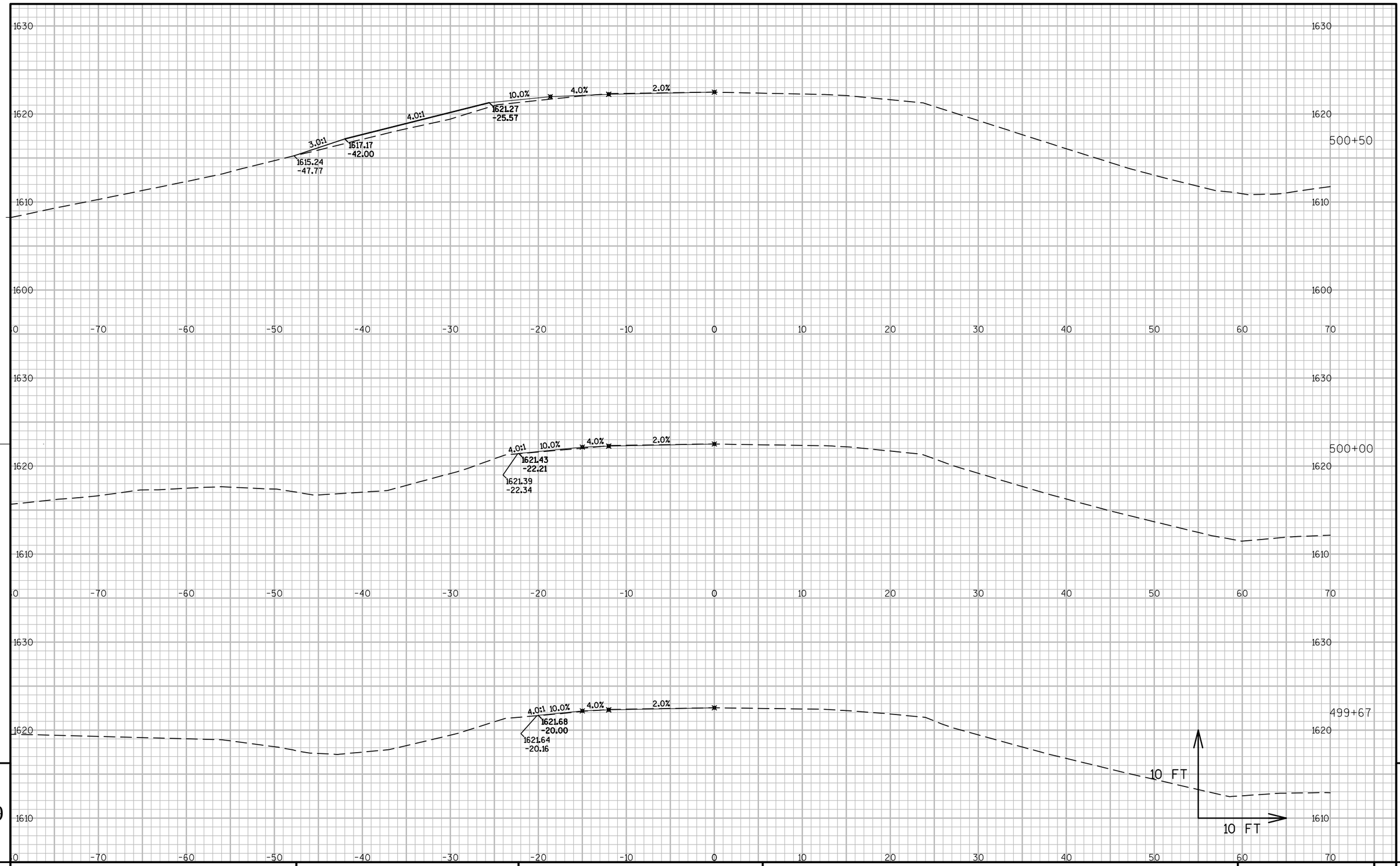


9

9

PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERT STA 452+98	SHEET	E

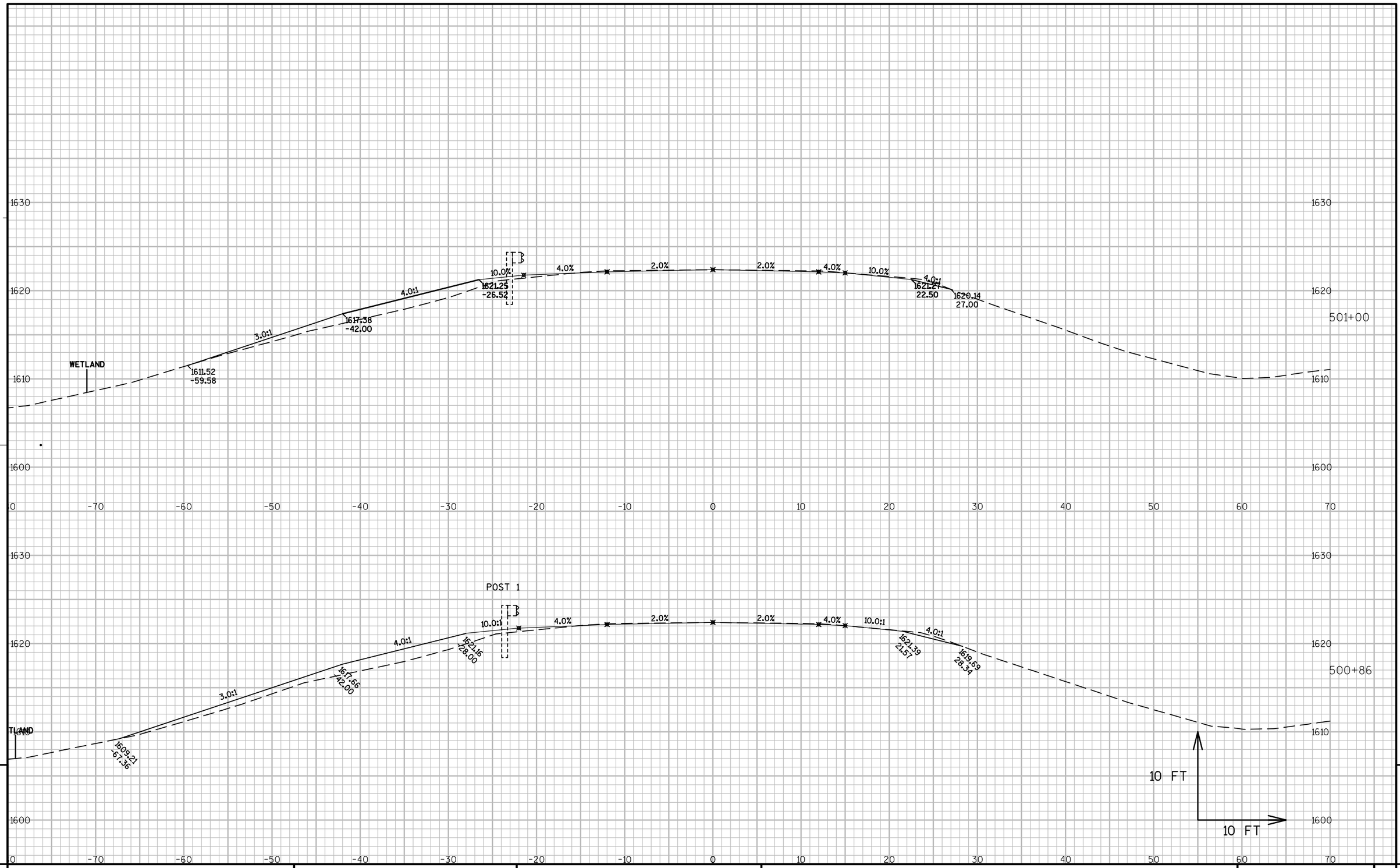
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET E

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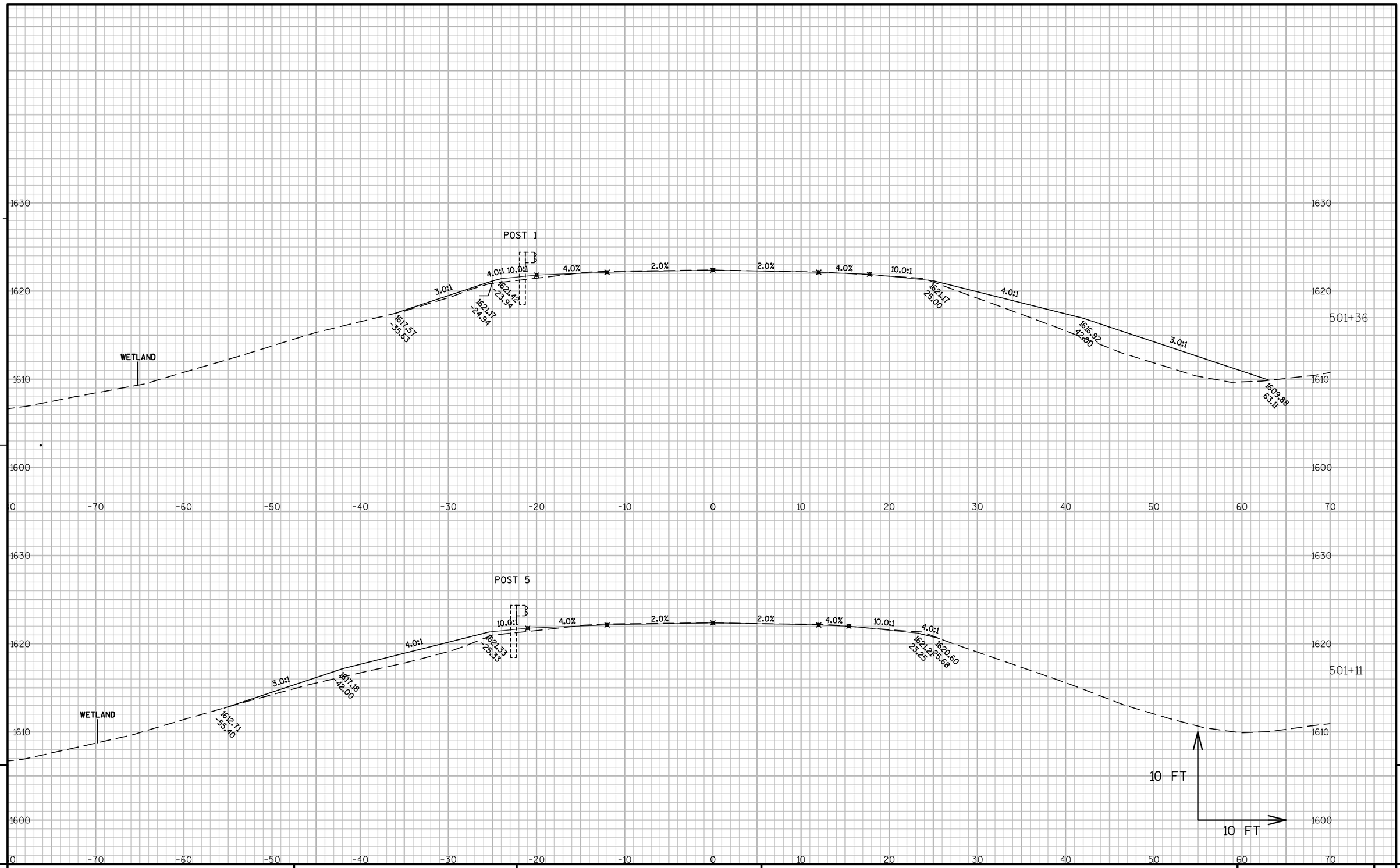
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\50000_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 1:33 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

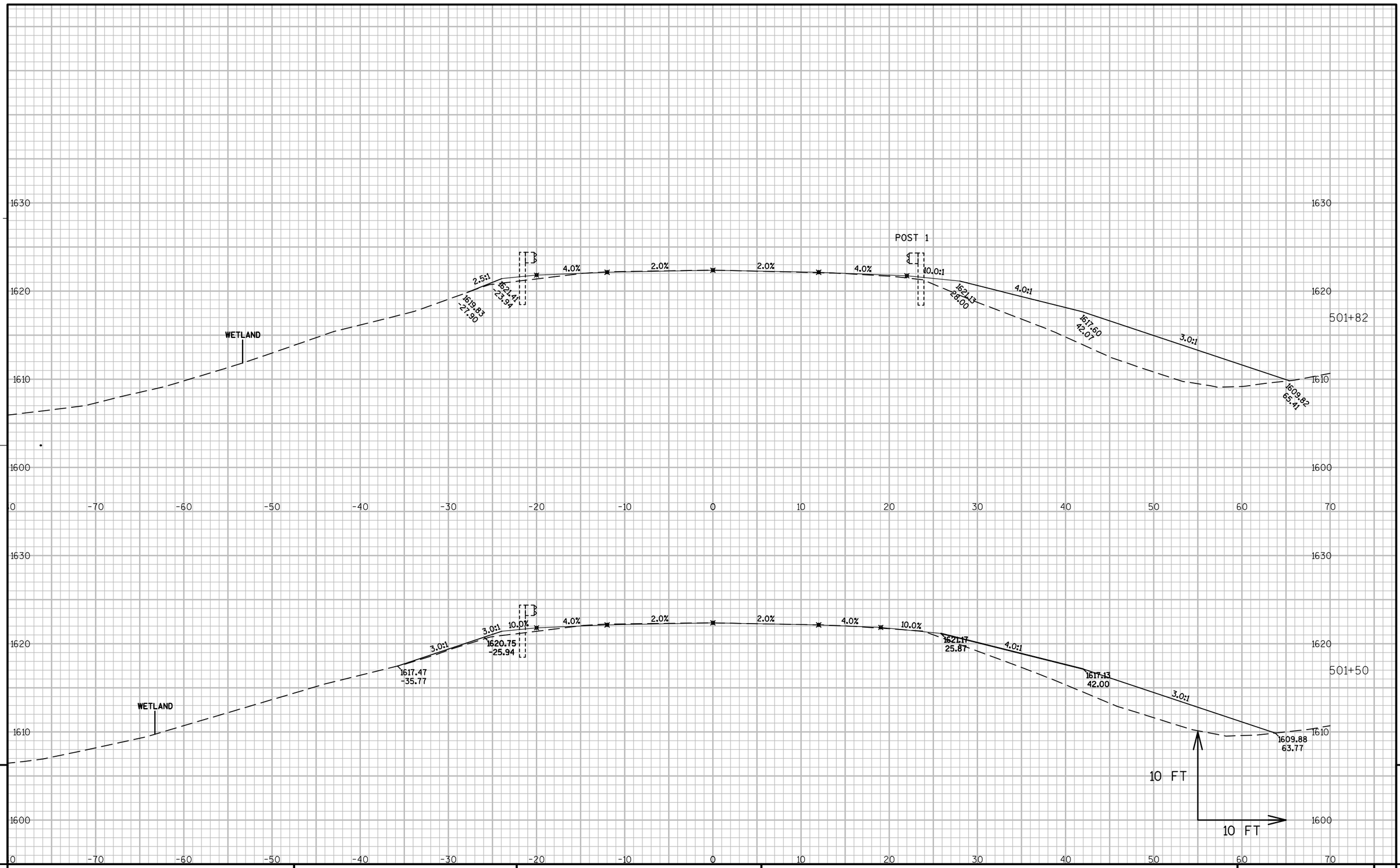
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\50000_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 1:33 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

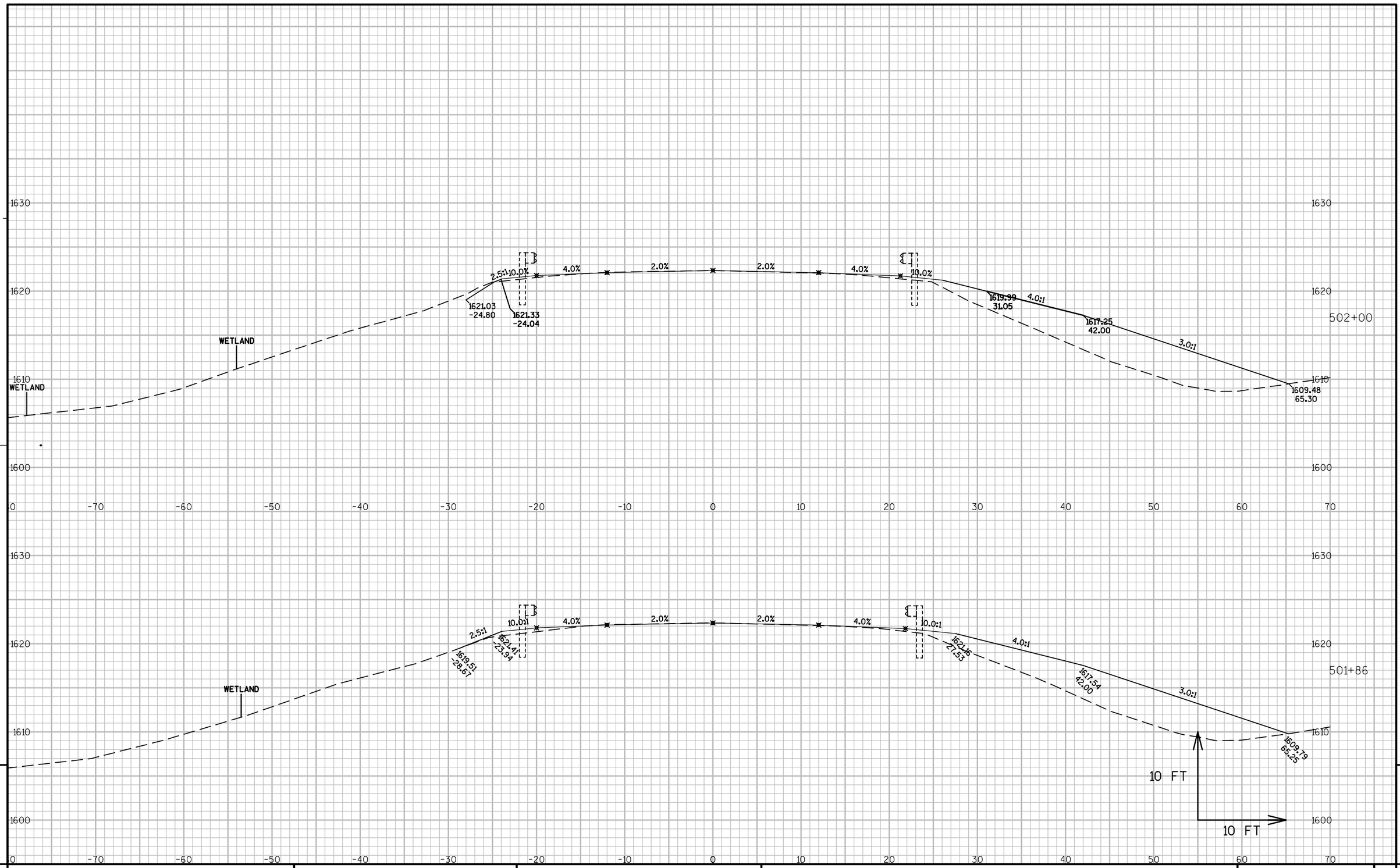
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\50000_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 1:33 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

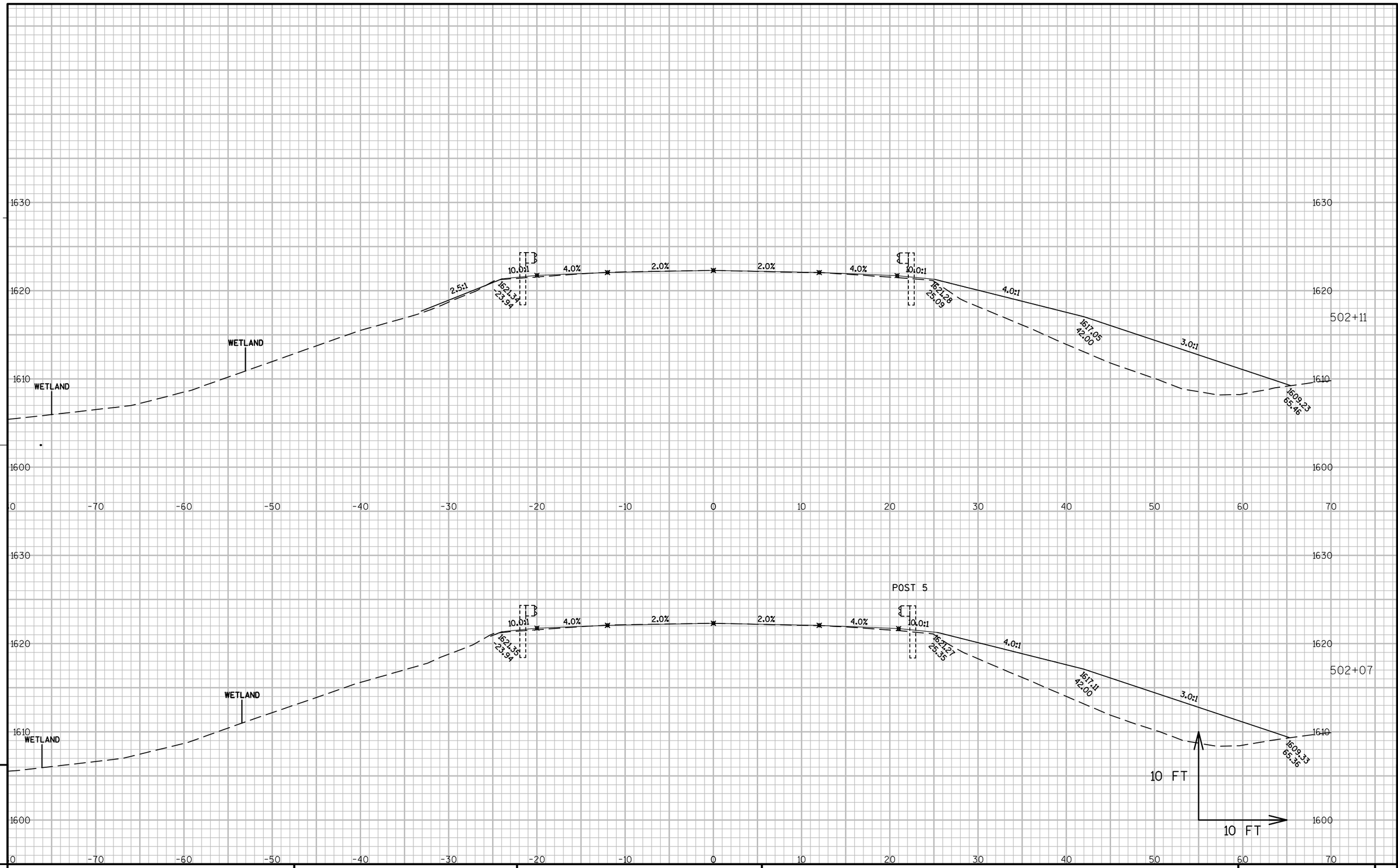
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\50000_BG_XSECS\090100_XS.DWG PLOT DATE : 1/10/2014 1:33 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:10 FT

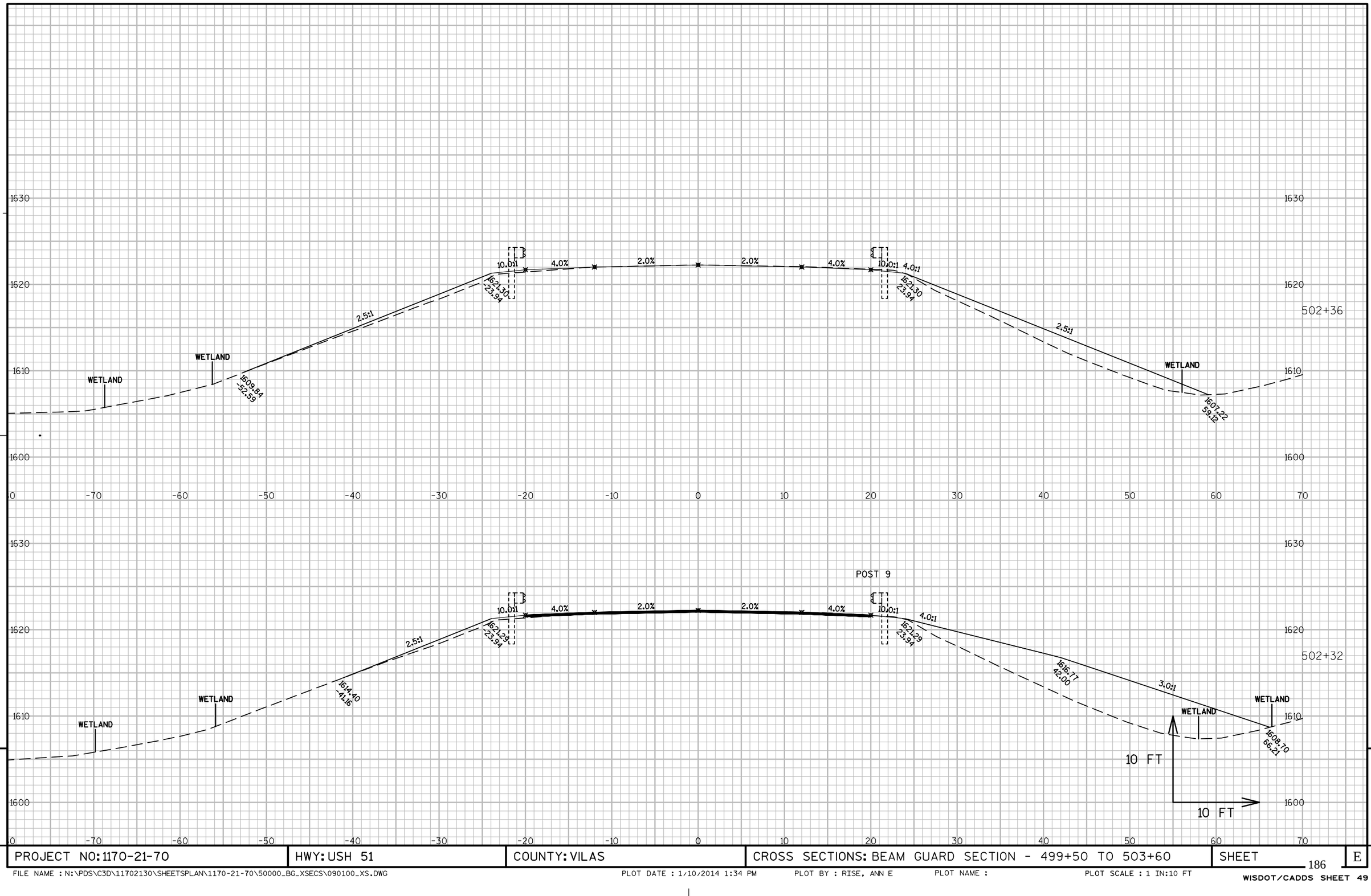
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

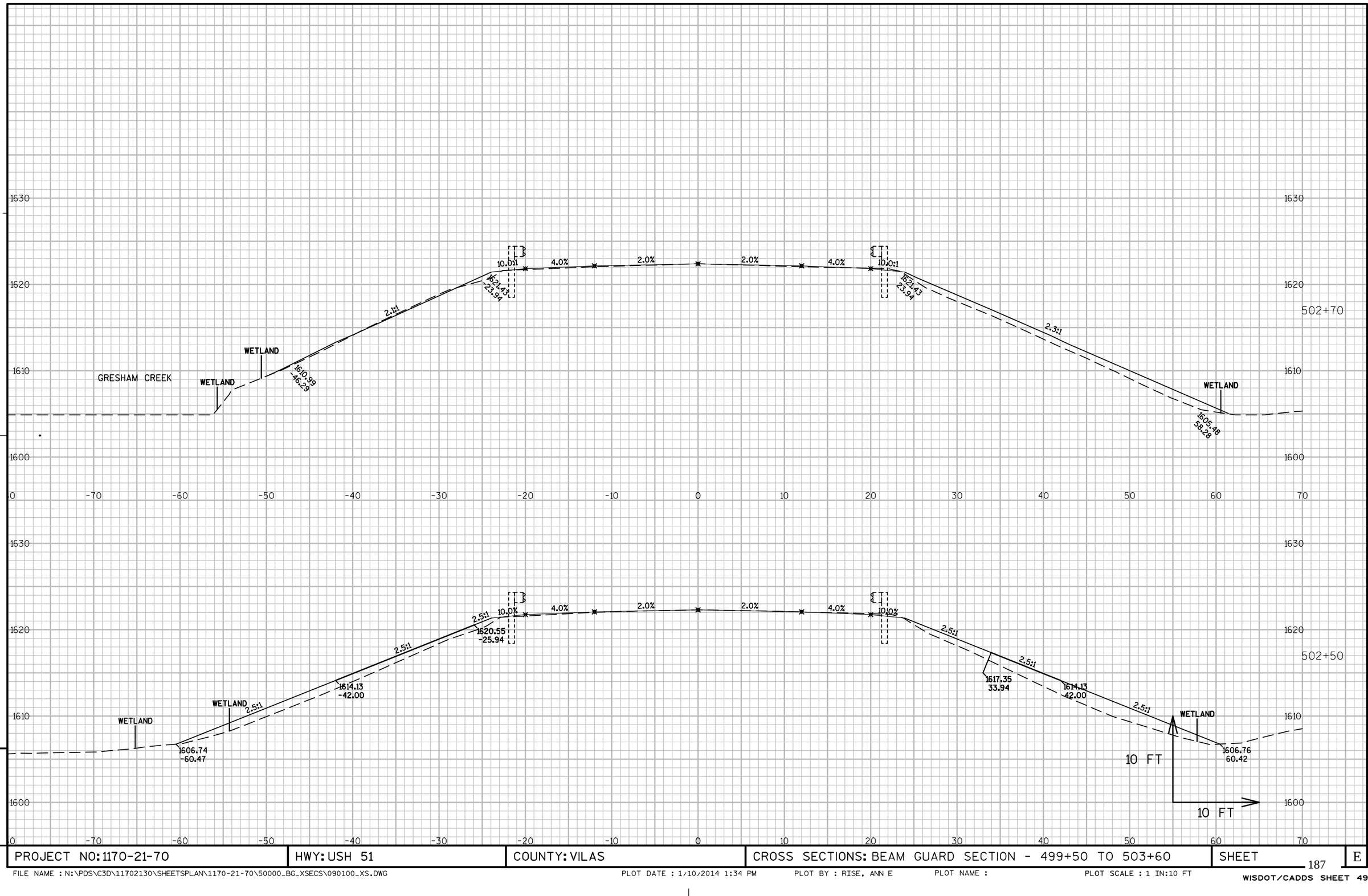
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

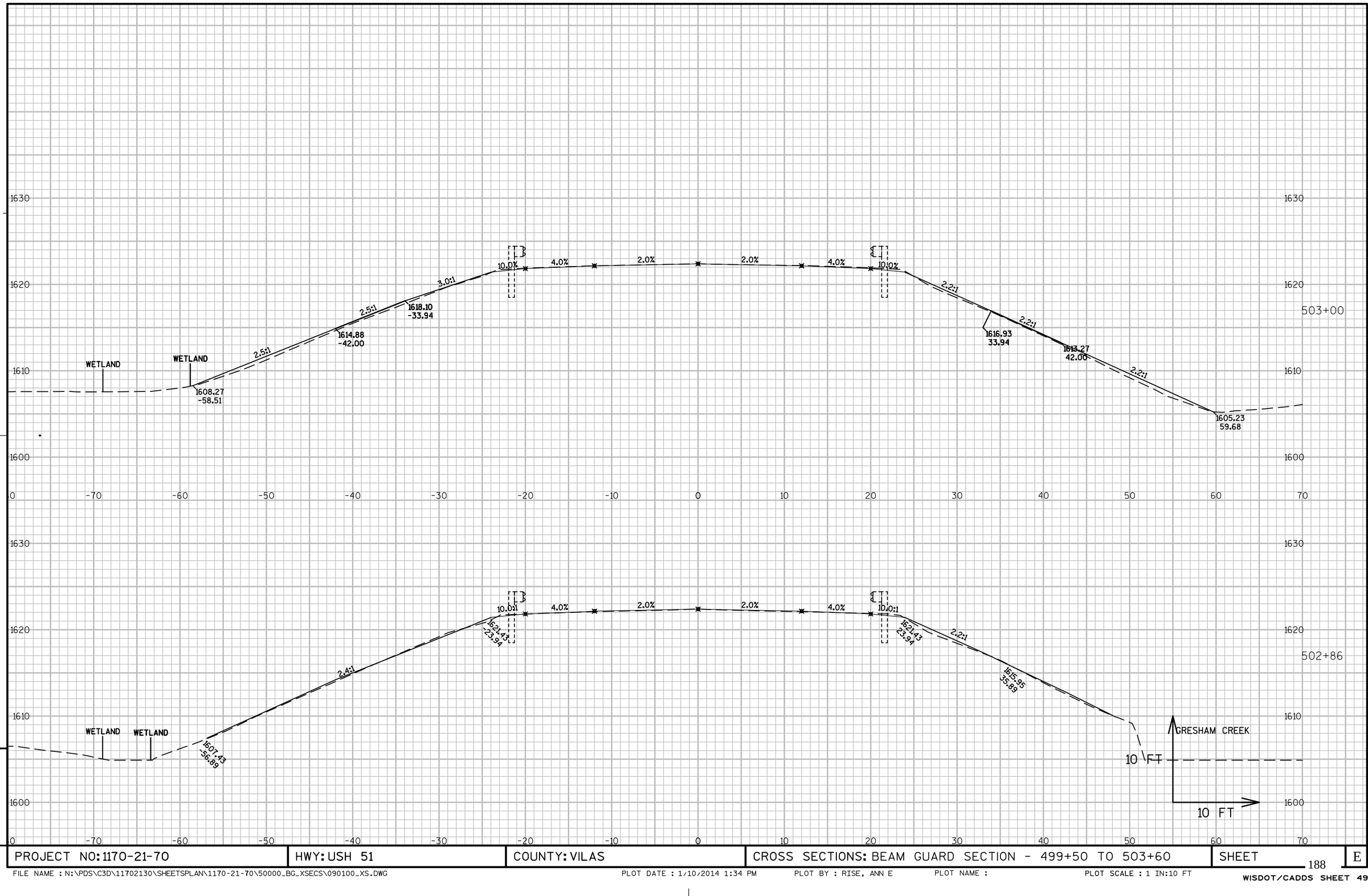
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

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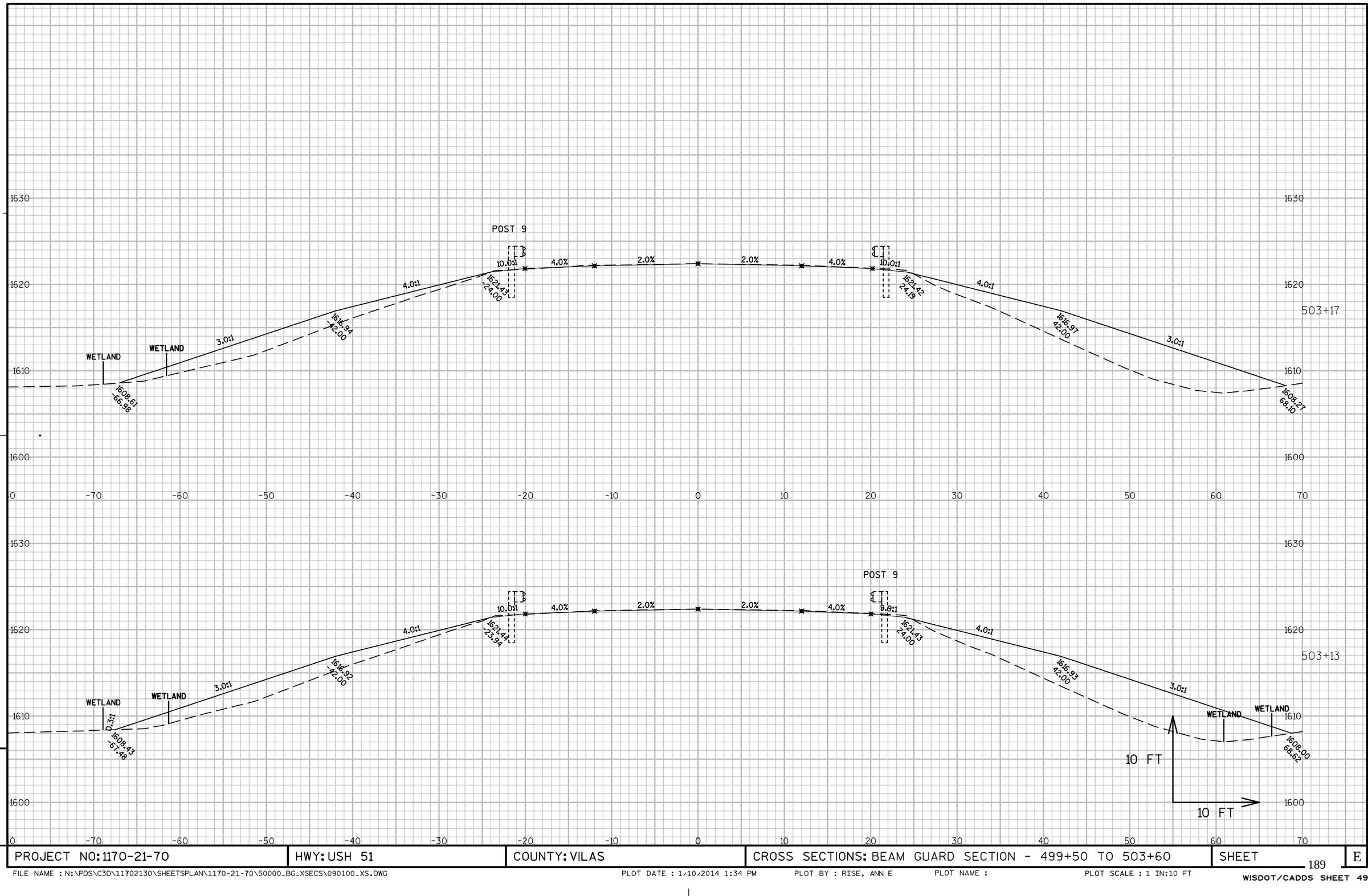
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET 188	E

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WISDOT/CADDS SHEET 49



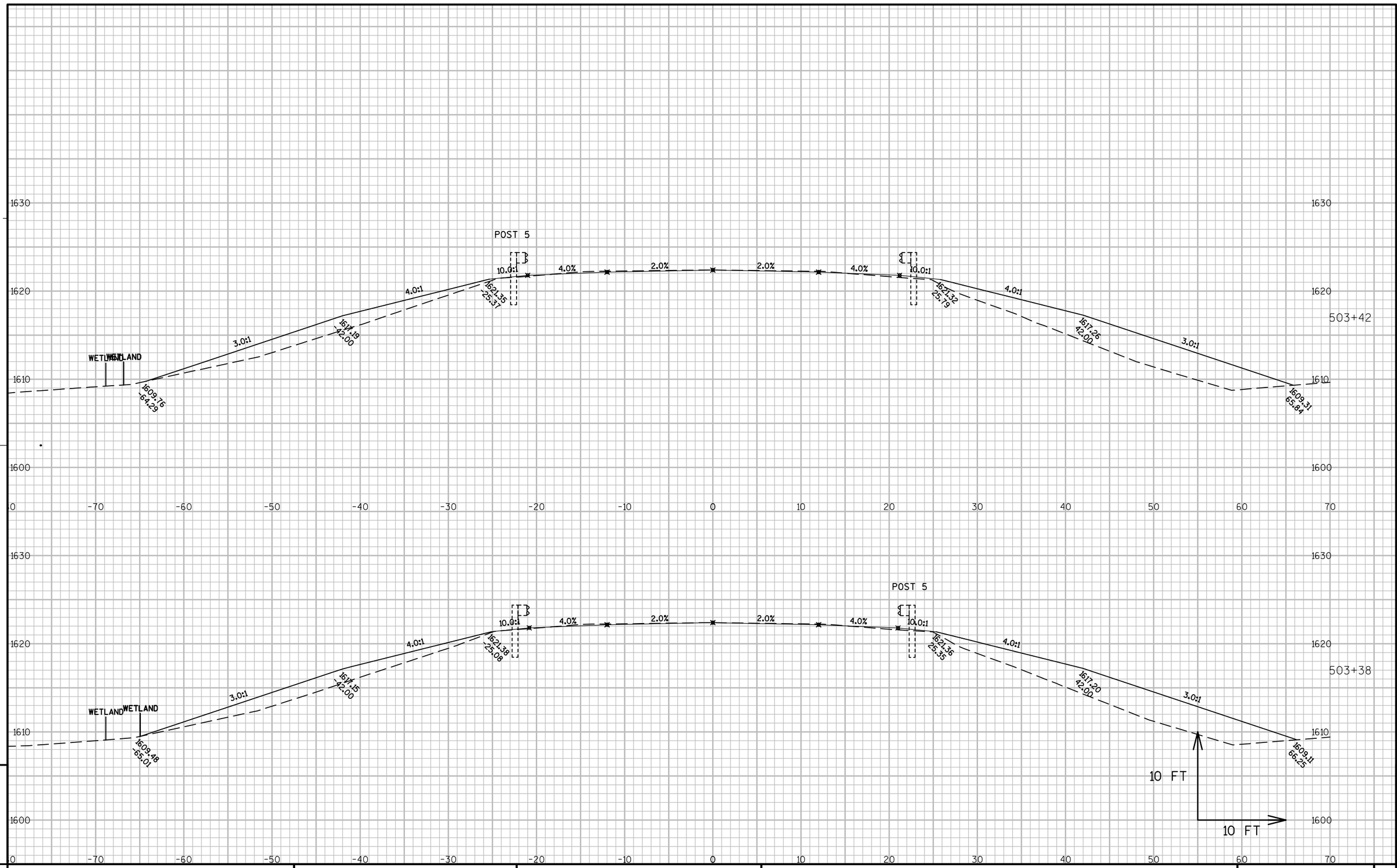
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET 189	E

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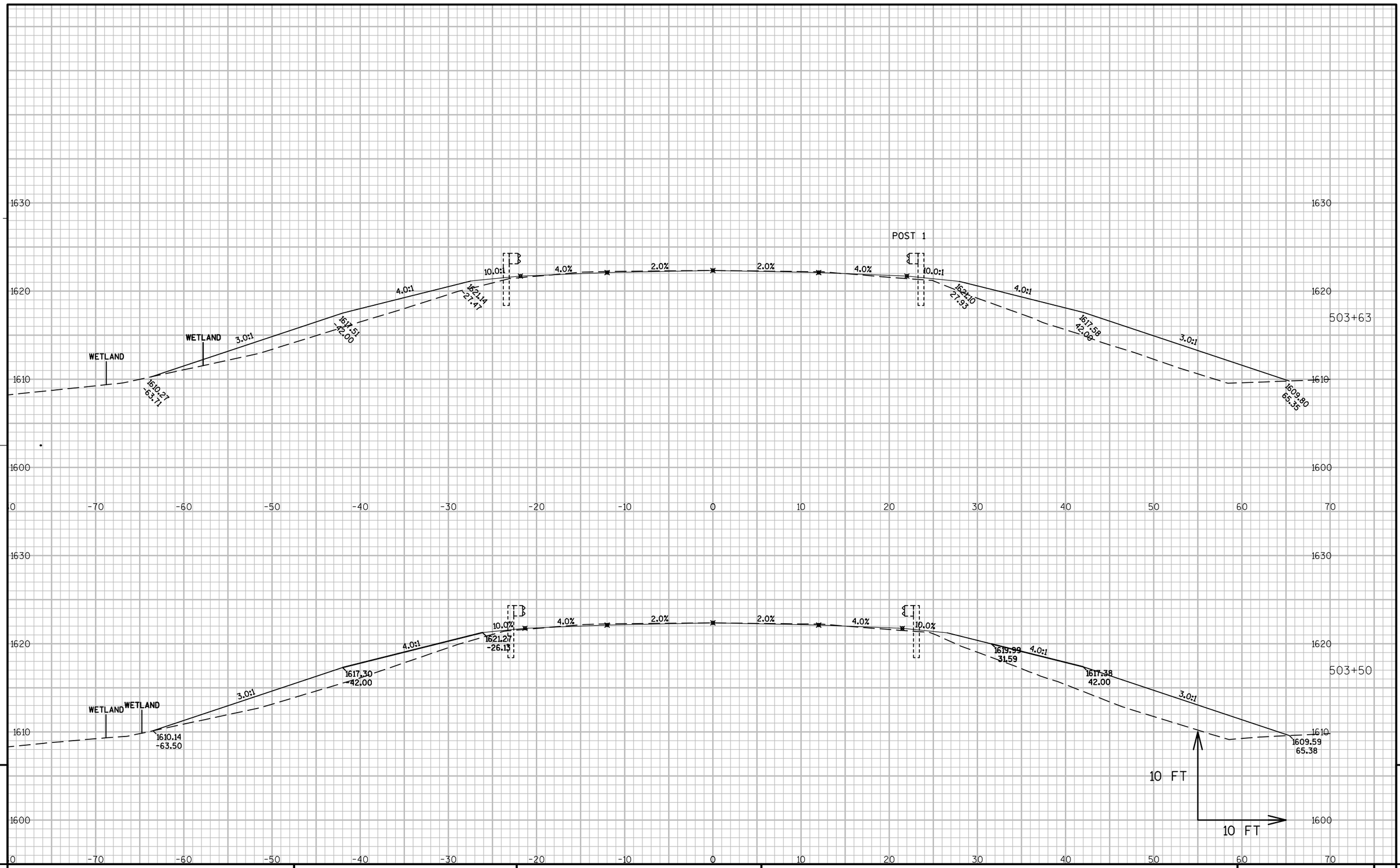
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET E

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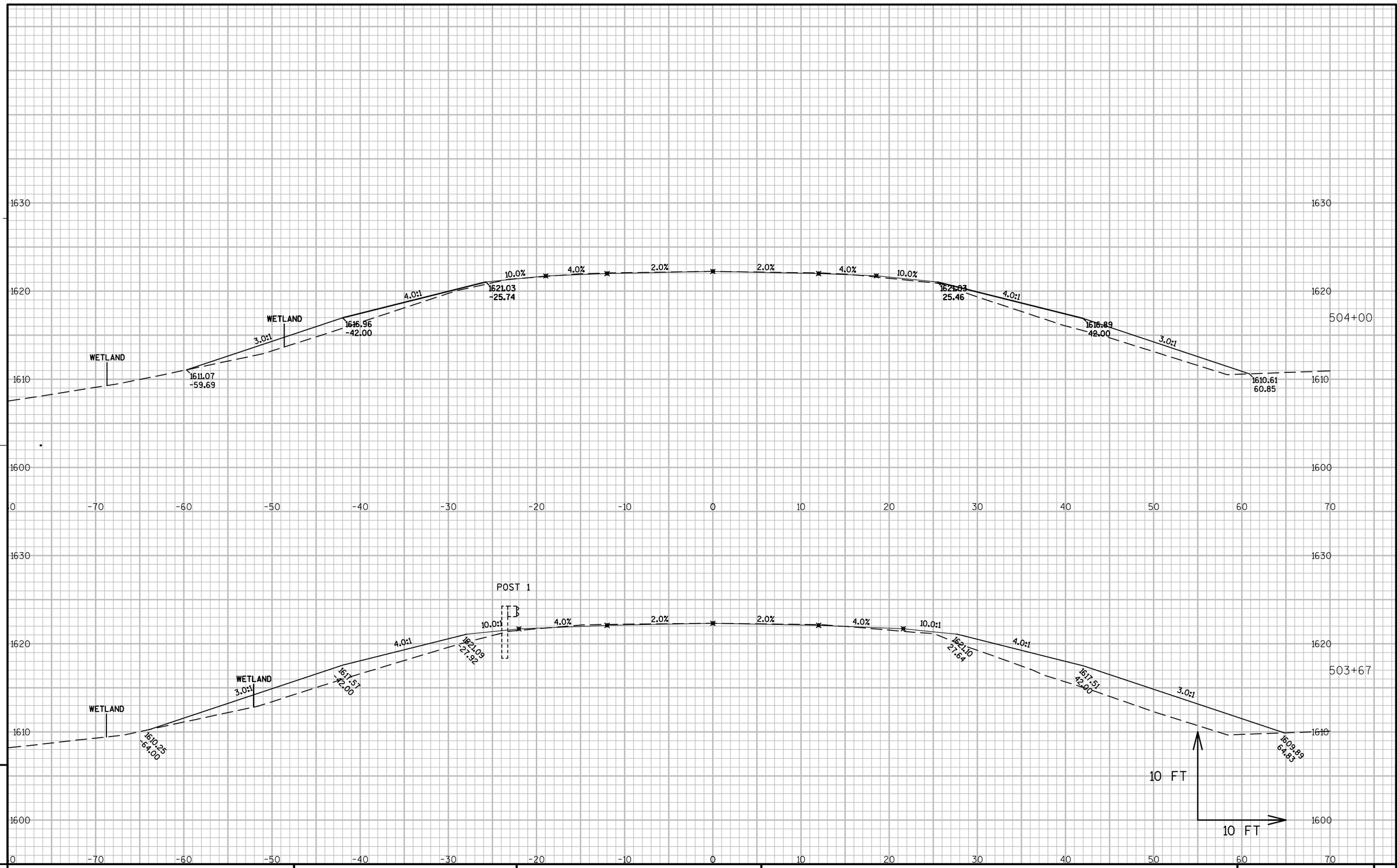
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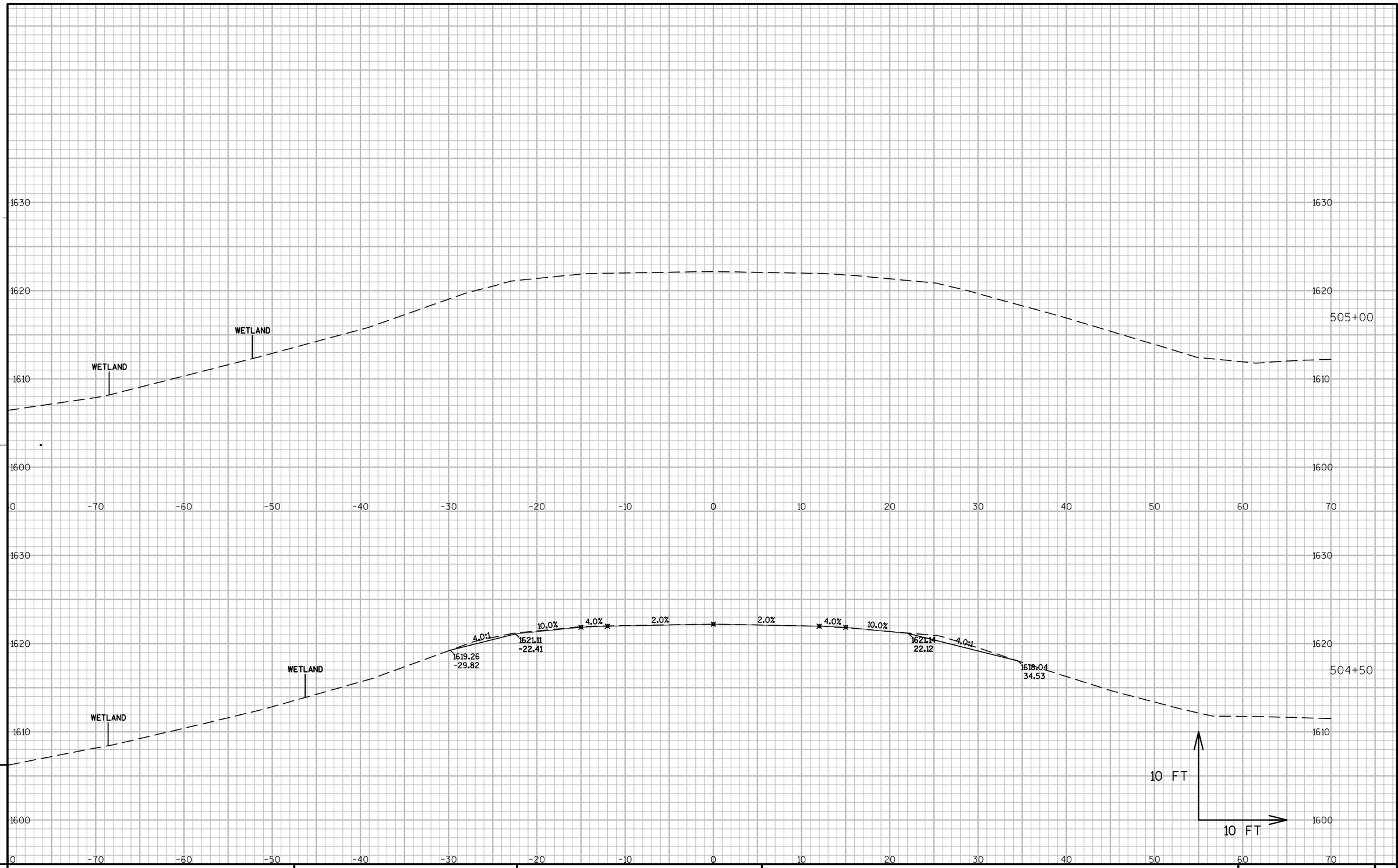
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WISDOT/CADDS SHEET 49



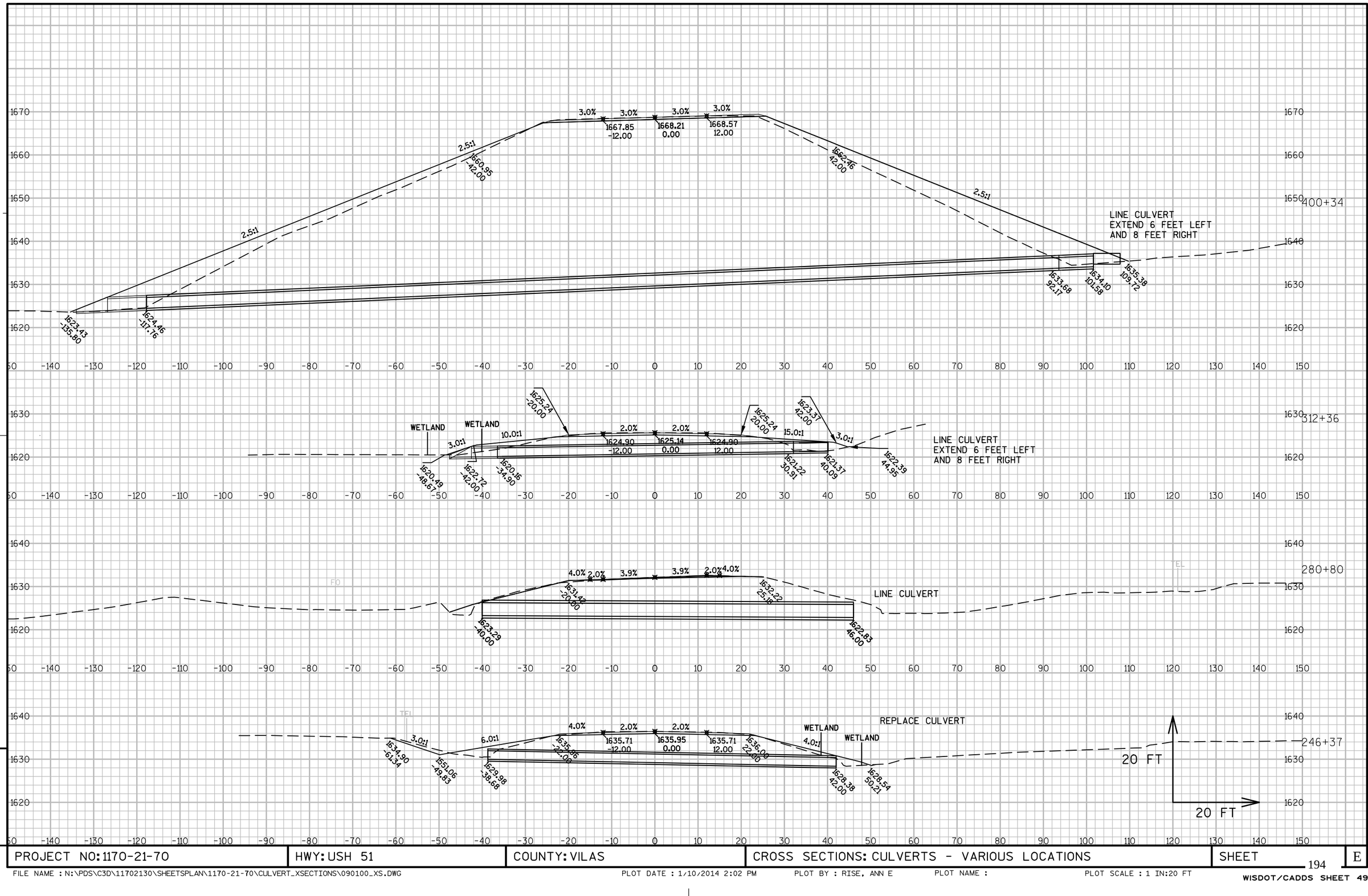
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: BEAM GUARD SECTION - 499+50 TO 503+60	SHEET	E

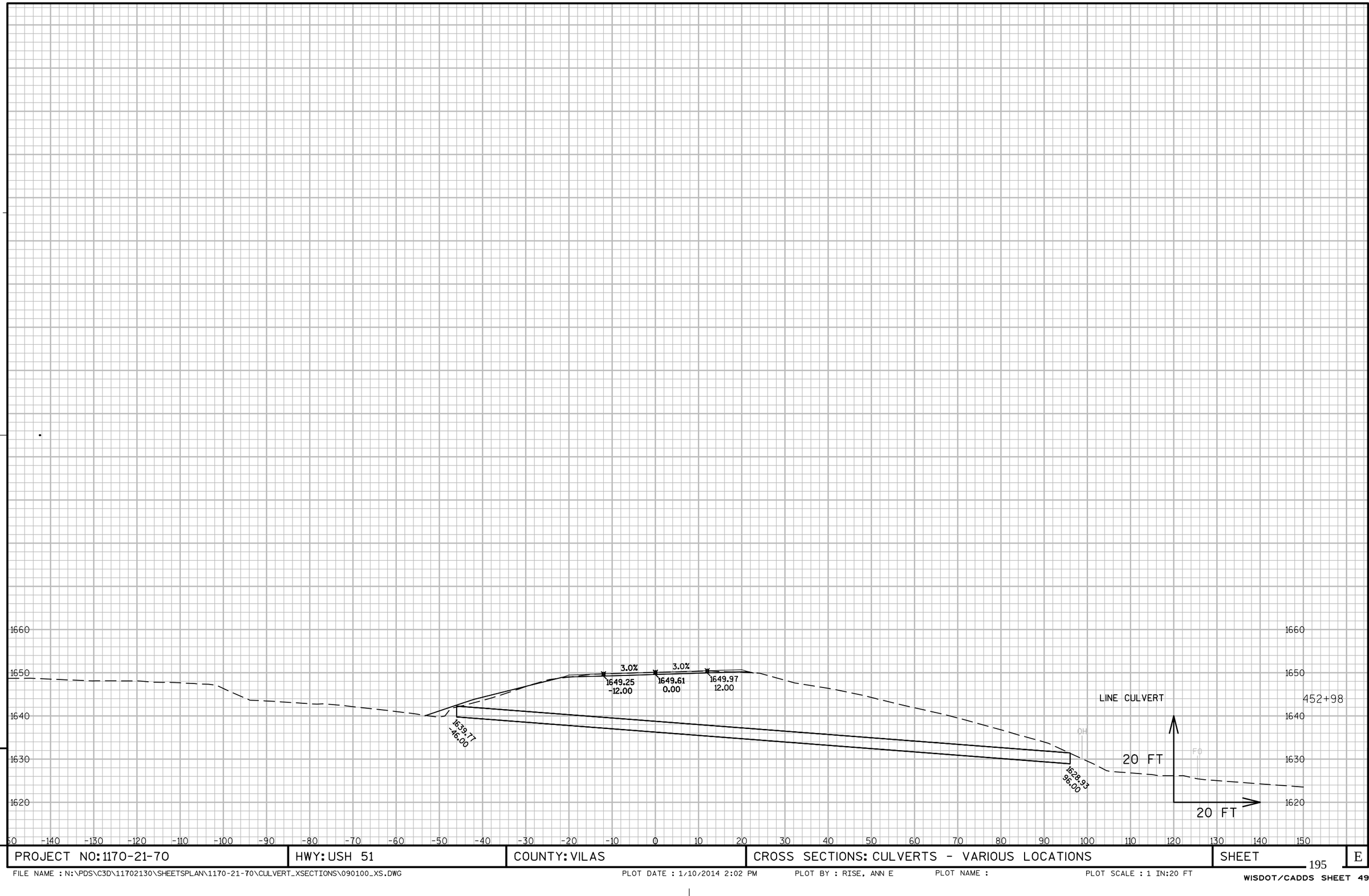
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERTS - VARIOUS LOCATIONS	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\CULVERT_XSECTIONS\090100_XS.DWG PLOT DATE : 1/10/2014 2:02 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

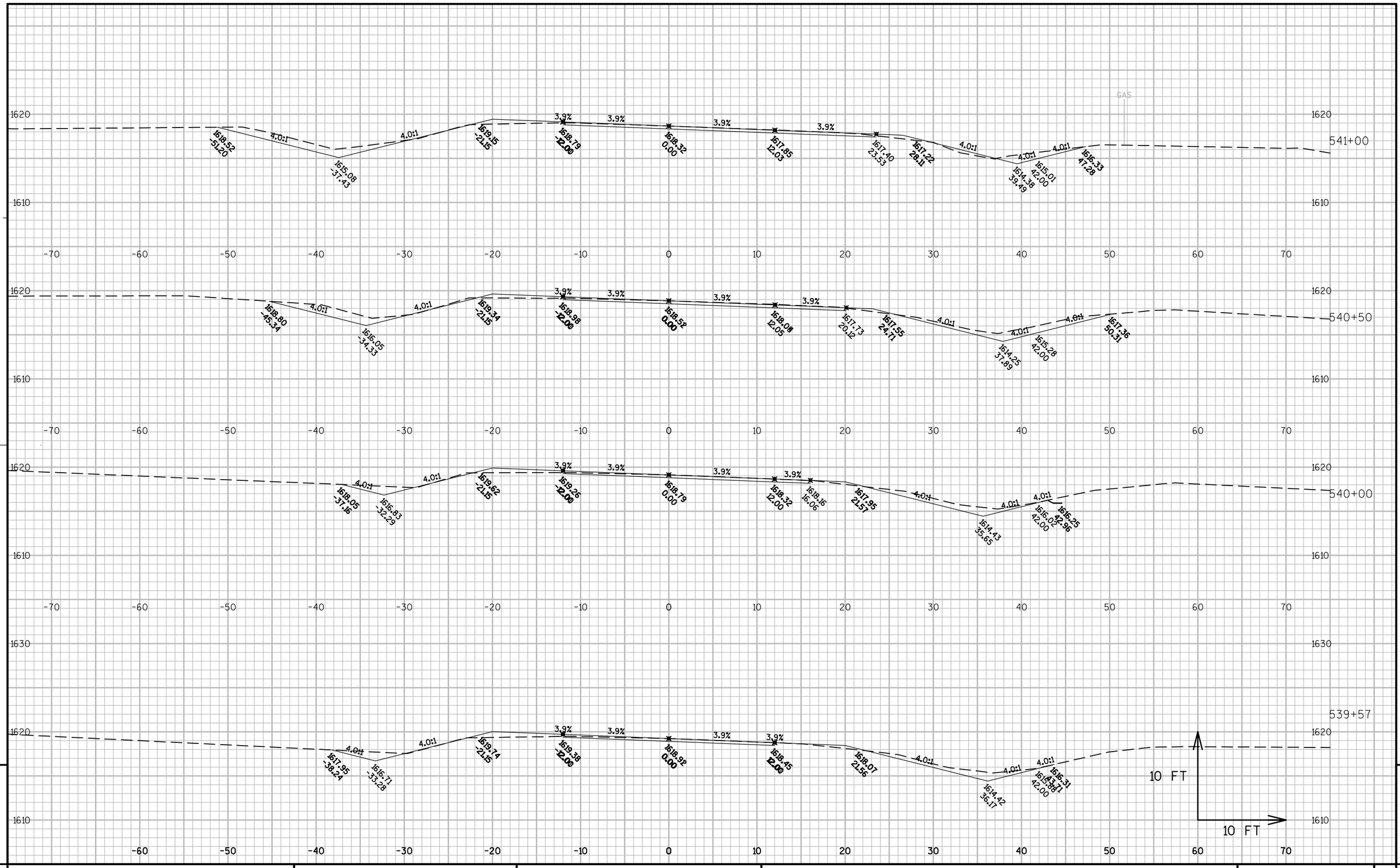


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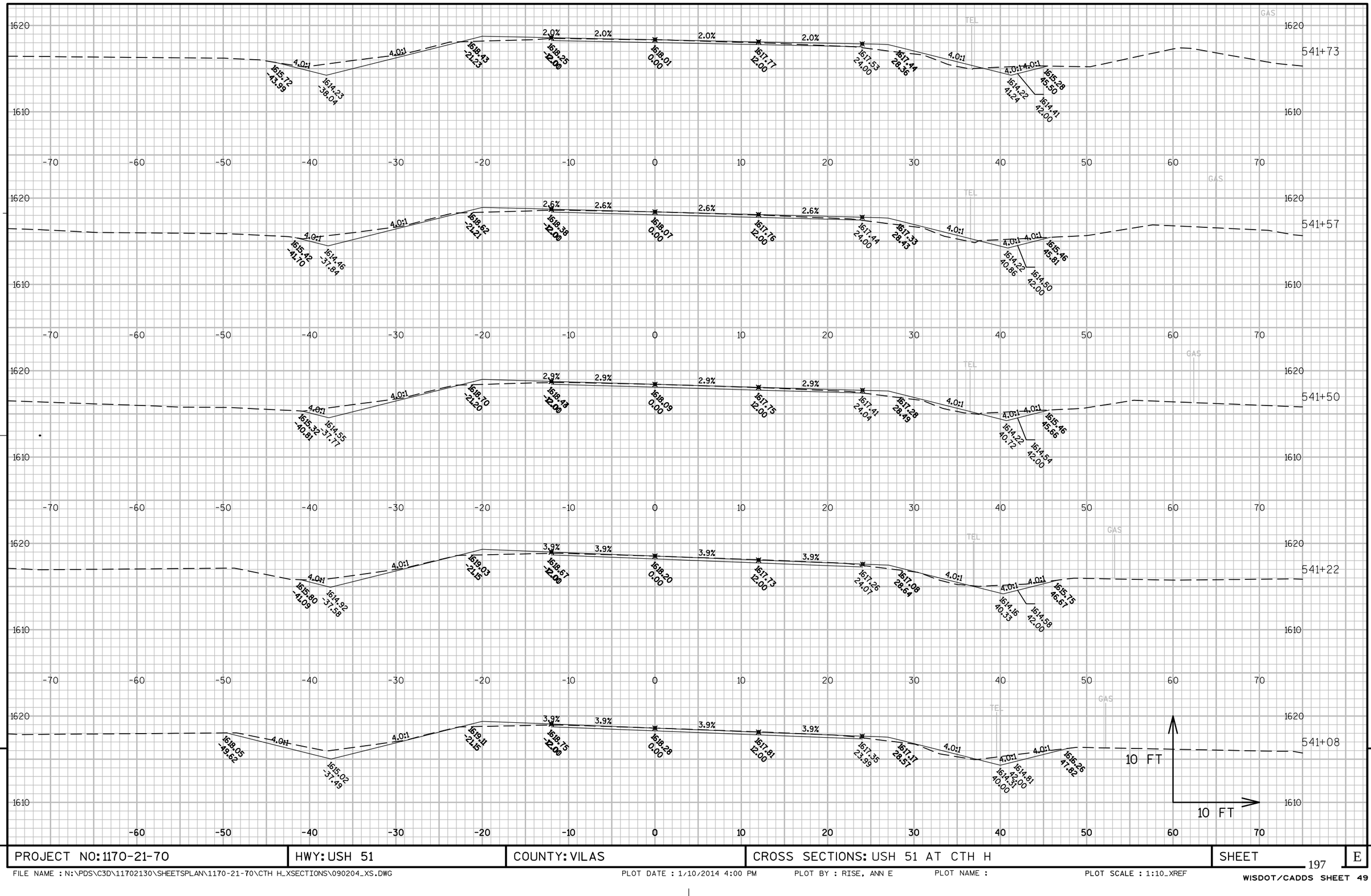
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CULVERTS - VARIOUS LOCATIONS	SHEET	E

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WISDOT/CADDS SHEET 49

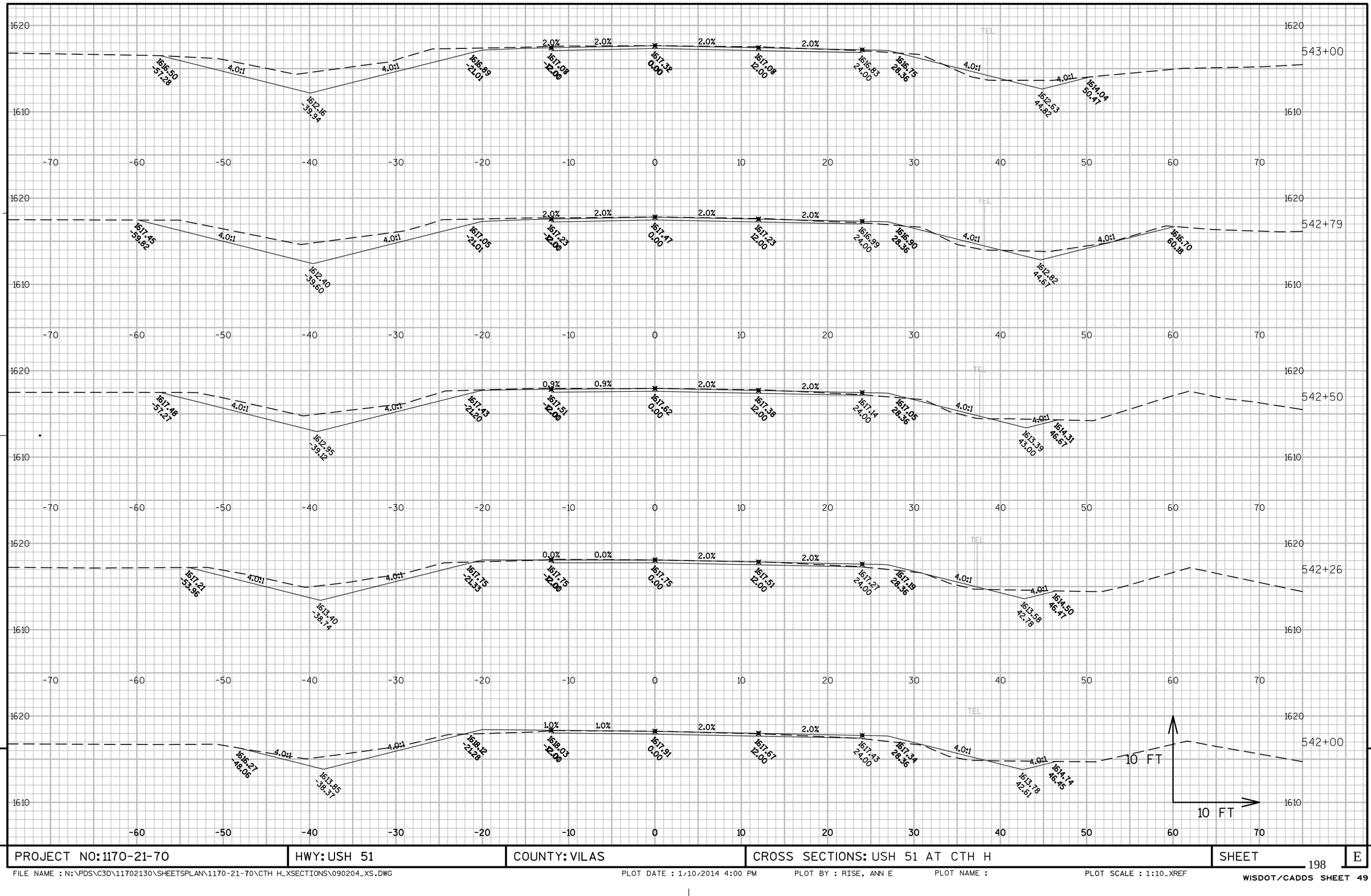


PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET	E



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET	E

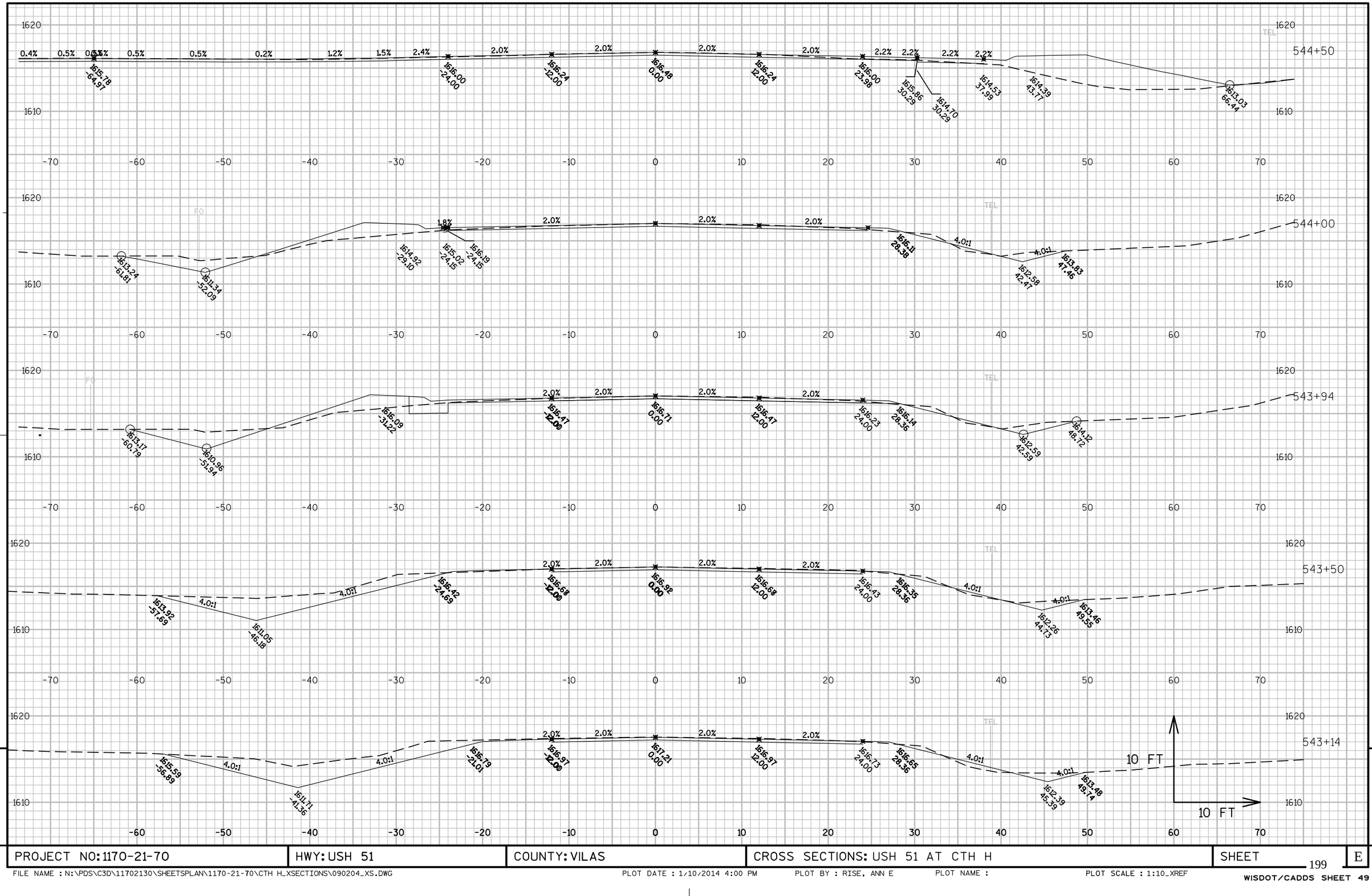
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET	E

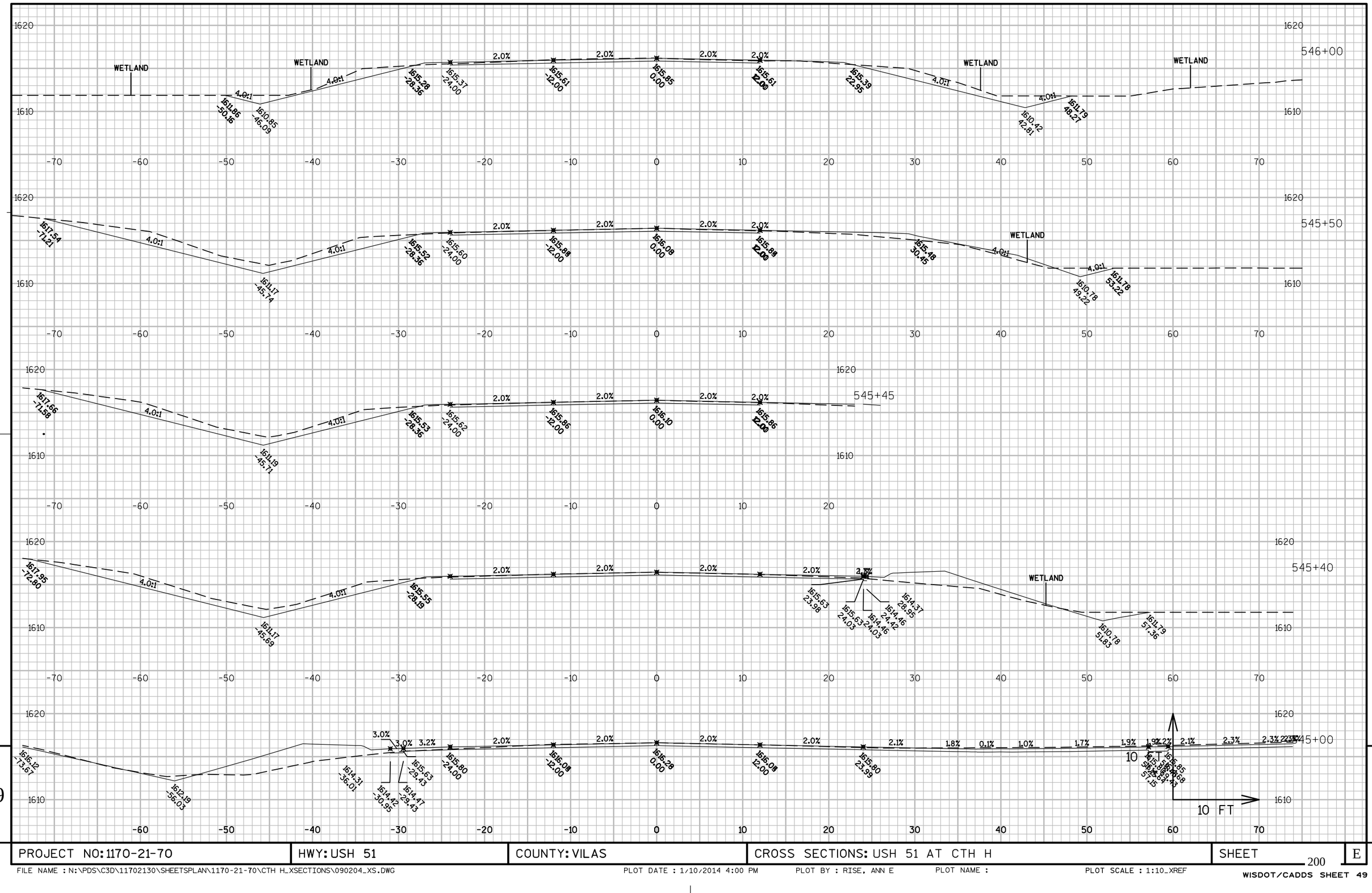
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WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET	E

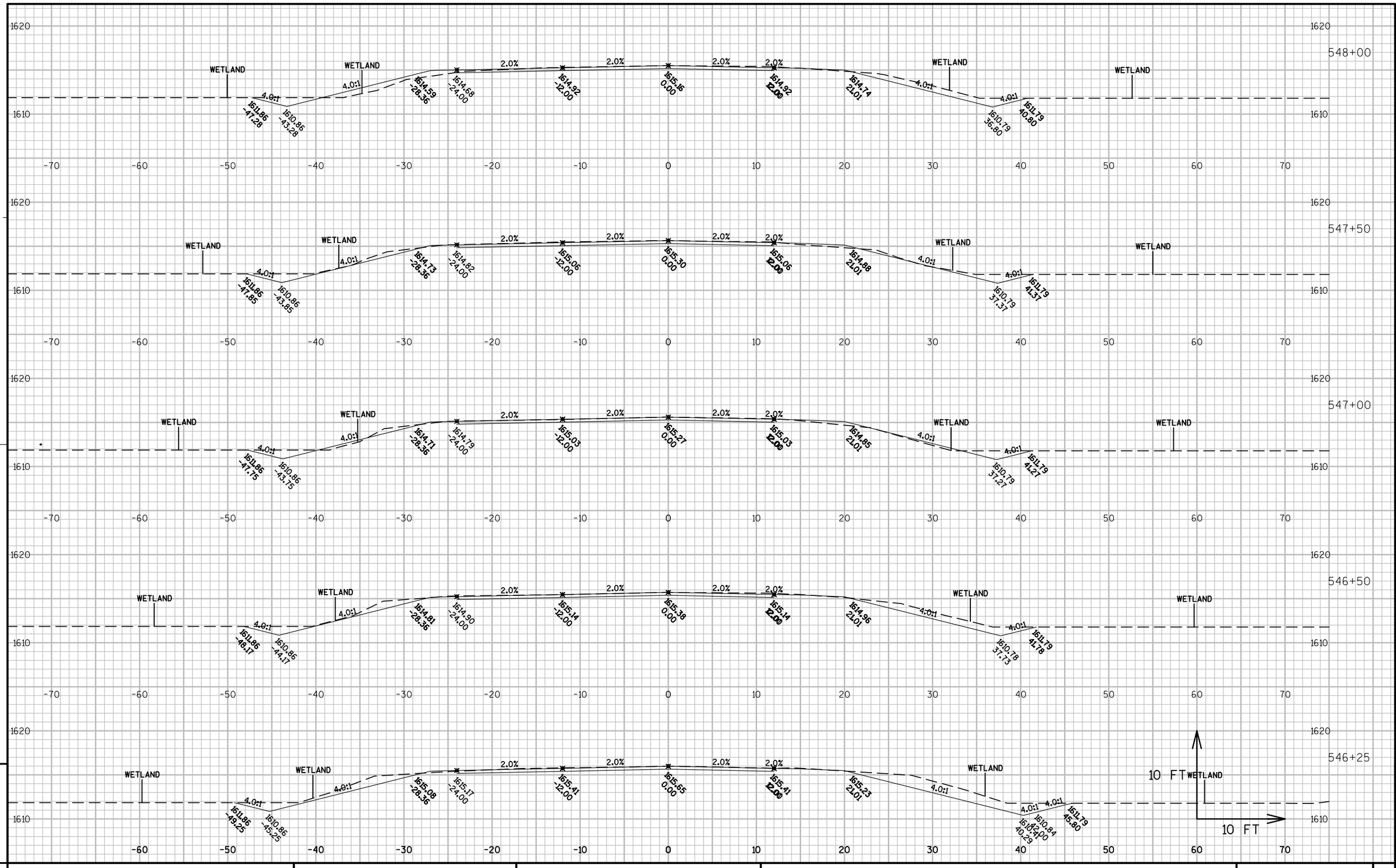
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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET 200	E

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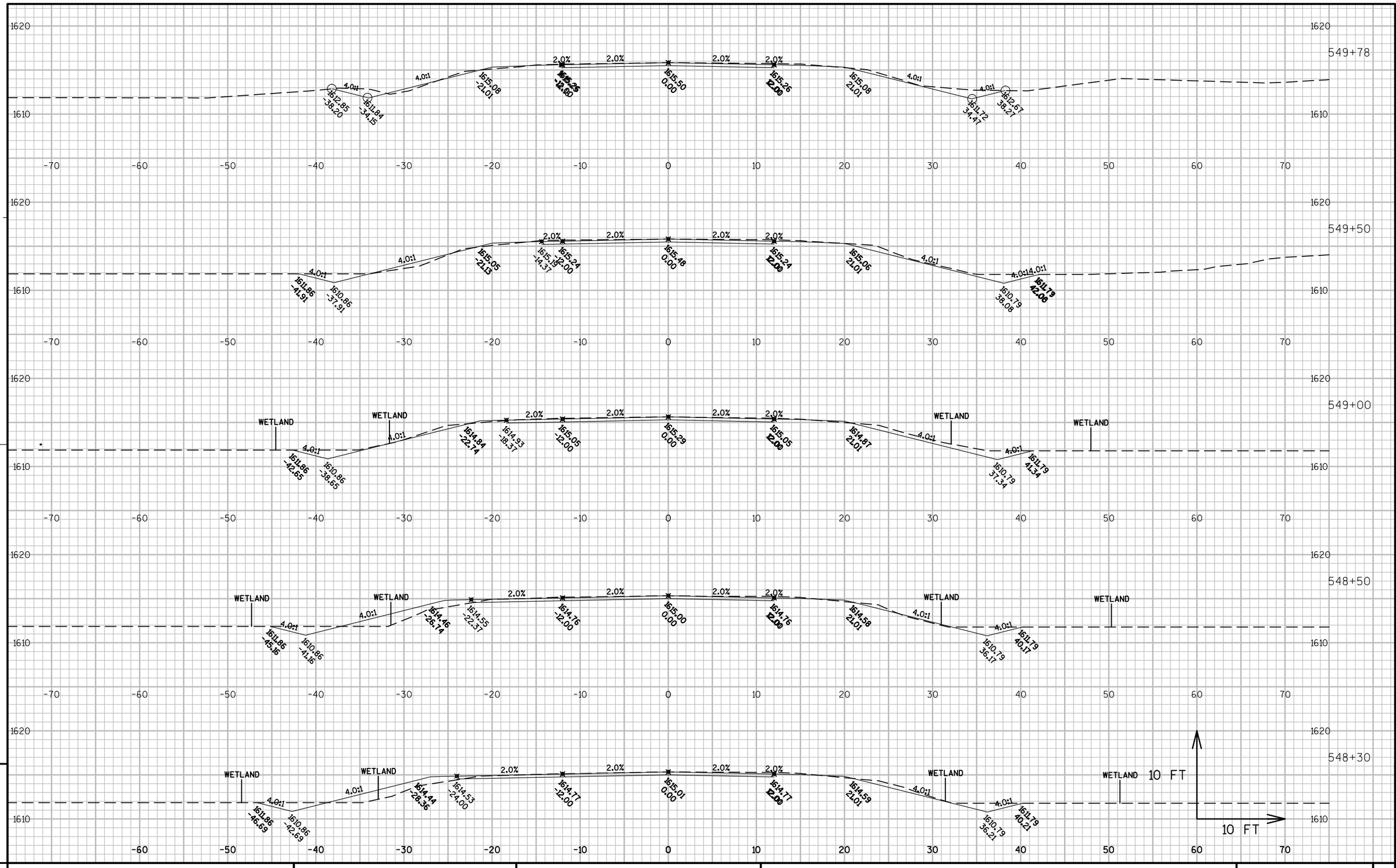
WISDOT/CADDS SHEET 49



PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET 201	E

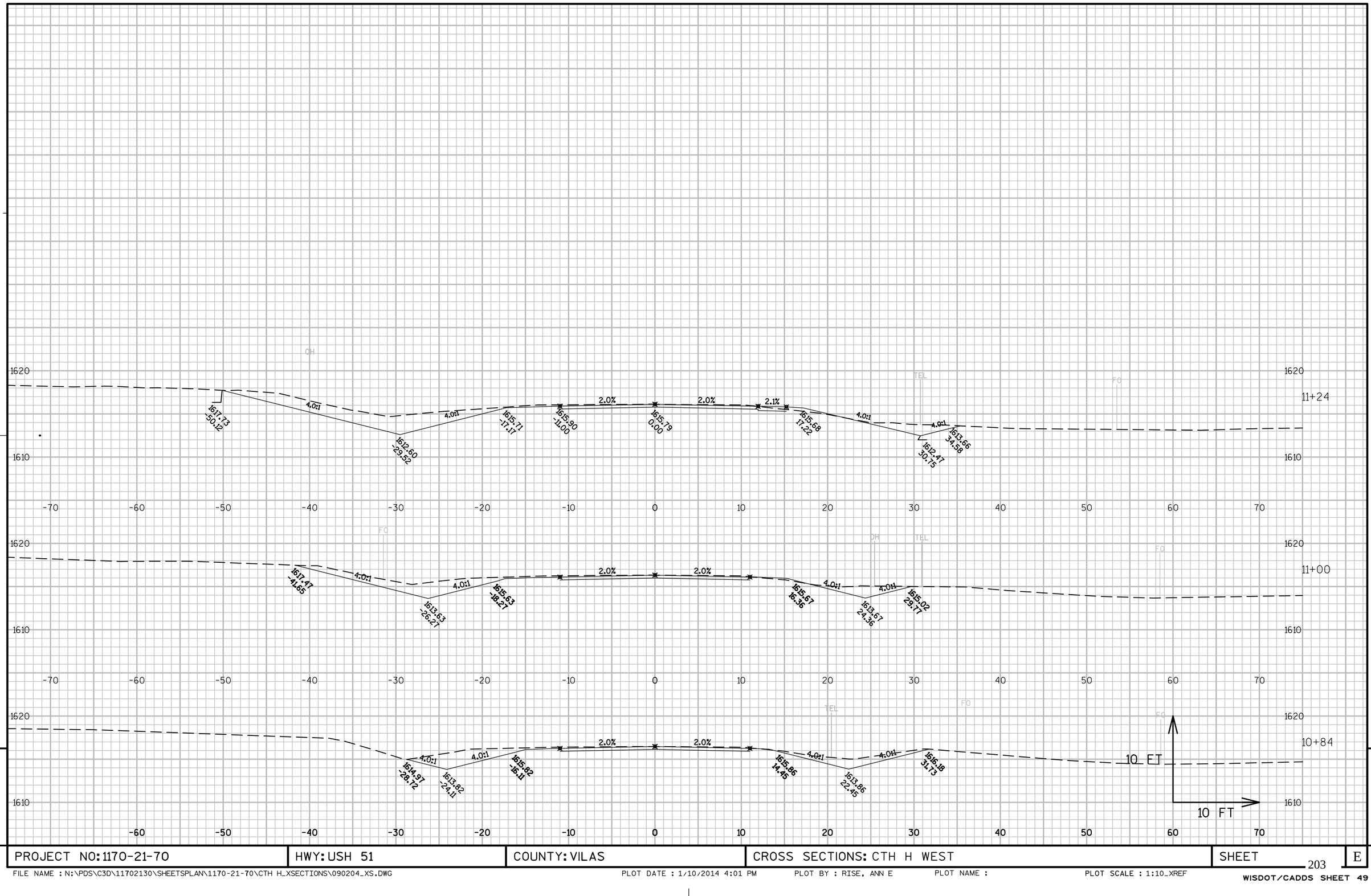
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WISDOT/CADDS SHEET 49



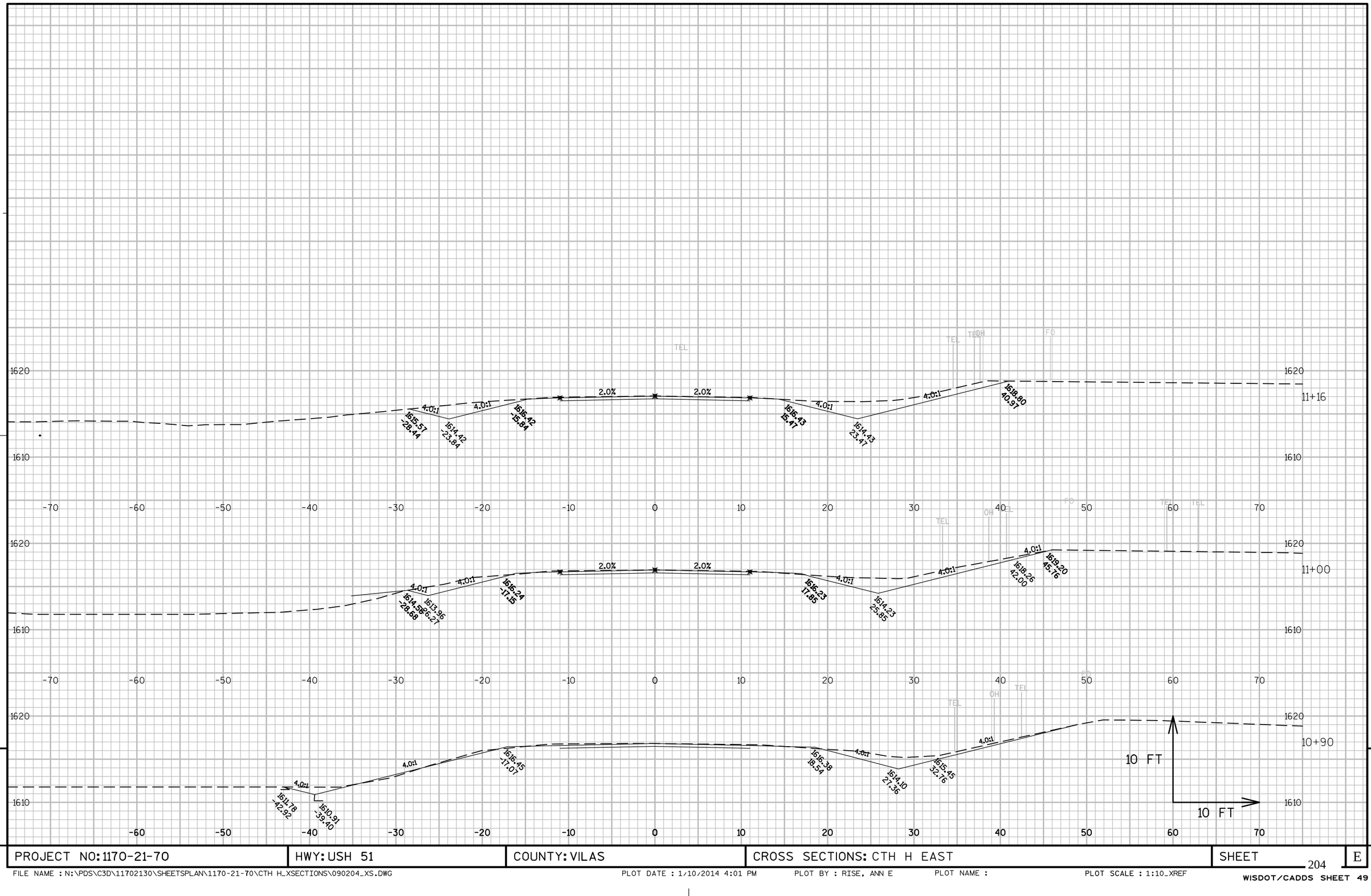
PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: USH 51 AT CTH H	SHEET	E

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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CTH H WEST	SHEET	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\CTH H_XSECTIONS\090204_XS.DWG PLOT DATE : 1/10/2014 4:01 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:10_XREF



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PROJECT NO: 1170-21-70	HWY: USH 51	COUNTY: VILAS	CROSS SECTIONS: CTH H EAST	SHEET 204	E

FILE NAME : N:\PDS\C3D\11702130\SHEETSPLAN\1170-21-70\CTH H_XSECTIONS\090204_XS.DWG PLOT DATE : 1/10/2014 4:01 PM PLOT BY : RISE, ANN E PLOT NAME : PLOT SCALE : 1:10_XREF

Notes

Wisconsin Department of Transportation

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