SUP

PROJECT ID: 1570-01-74

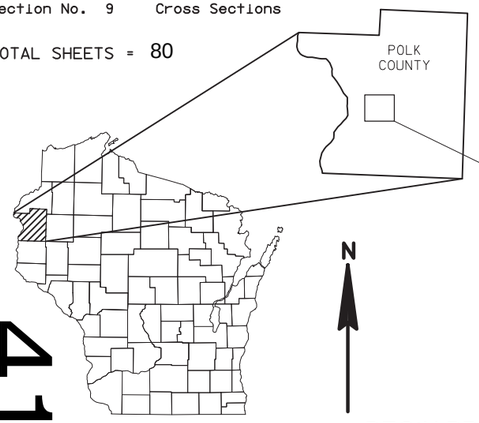
WITH: N/A

COUNTY: POLK

MAY 2017

ORDER OF SHEETS

TOTAL SHEETS = 80



41

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ST. CROIX FALLS - TURTLE LAKE

STH 46 NORTH JUNCTION INTERSECTION

USH 8

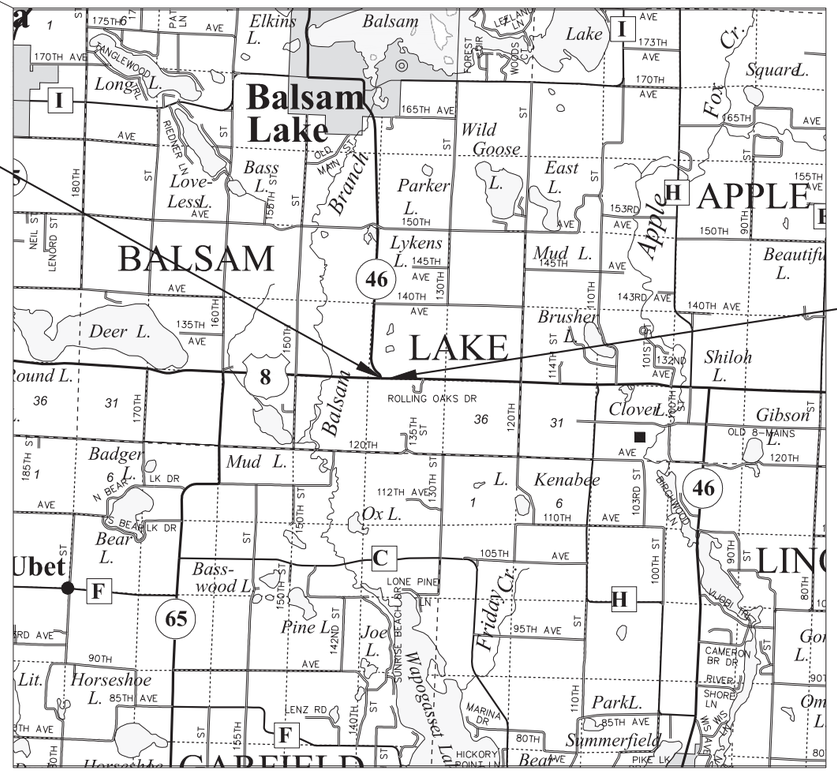
POLK COUNTY

STATE PROJECT NUMBER
1570-01-74

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1570-01-74	WISC 2017294	1

BEGIN PROJECT 1570-01-74
STA 533+55.51
Y = 267,954.665
X = 513,136.182

END PROJECT
STA 543+50
Y = 267,965.236
X = 514,130.619



LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.188 MI.

COORDINATES ON THIS PLAN ARE REFERNCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), POLK COUNTY, NAD 1983 (2011).

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

	DESIGN DESIGNATION USH 8	STH 46
A.A.D.T. (2017)	= 5,800	= 1,500
A.A.D.T. (2037)	= 6,500	= 1,700
D.H.V.	= 1,180	= N/A
D.D.	= 61/39	= N/A
T.	= 24.6%	= N/A
DESIGN SPEED	= 55 MPH	= 55 MPH
ESALS	= 88,000 (TURN LANE)	= N/A

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 (300'EB')
- 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)
- OVERHEAD UTILITY (OH)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ORIGINAL PLAN PREPARED BY

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

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

1-24-2017 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	BECHER-HOPPE ASSOCIATES, INC.
Designer	BECHER-HOPPE ASSOCIATES, INC.
Project Manager	BETH CUNNINGHAM
Regional Examiner	TOU YANG
Regional Supervisor	ANDREW STENSLAND

APPROVED FOR THE DEPARTMENT

DATE: 1/24/17 (Signature)

E

GENERAL NOTES

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

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.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

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

HMA PAVEMENTS ESTIMATED BY USING 115 LB/SY/IN.

TACK COAT ESTIMATED BY USING AN APPLICATION RATE OF 0.07 GAL/SY.

SECTION 2 ORDER

AS-BUILT REFERENCE (YEAR)*

USH 8
PROJECT: WI 1575-01-72 (1971)
PROJECT: WI 8399-01-71 (1991)
PROJECT: WI 1570-30-71 (2009)

STH 46
PROJECT: WI 8030-01-71 (1974)
PROJECT: WI 8030-03-71 (2008)

*APPROVAL YEAR (NOT CONSTRUCTION)

UTILITIES

COMMUNICATION
CHARTER COMMUNICATIONS
2304 S MAIN ST
RICE LAKE, WI 54868
TOM HAASE
PHONE: (715) 719-0564
MOBILE: (715) 418-9317
Tom.Haase@charter.com

COMMUNICATION
NORTHWEST COMMUNICATIONS
116 HARRIMAN AVE N
AMERY, WI 54001
GREG CARDINAL
PHONE: (715) 554-1620
gregcardinal@amerytel.net

ELECTRIC TRANSMISSION
DAIRYLAND POWER COOPERATIVE
PO BOX 817
3200 EAST AVENUE
LA CROSSE, WI 54601
STEVE SCHAUER
PHONE: (608) 787-1411
Steve.Schauer@DairylandPower.com

ELECTRIC
POLK-BURNETT ELECTRIC COOPERATIVE
1001 STATE ROAD 35
CENTURIA, WI 54824
ERICK VITALIS
PHONE: (800) 421-0283 EXT. 383
evitalis@polk-burnett.org

DNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
810 W. MAPLE STREET
SPOONER, WI 54801
AMY CRONK
PHONE: (715) 635-4229
amy.cronk@wisconsin.gov

2

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 7.48 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.16 ACRES

2

N

30

25

STH 46

20

PC: 21+62.59

PT: 20+45.14

PC: 18+44.94

END CONSTRUCTION
STA 18+94.23

520 525 530 535 540 545 550

USH 8

USH 8/STH 46

BP: 17+19.20

BEGIN PROJECT 1570-01-74
STA 533+55.51

END PROJECT
STA 543+50

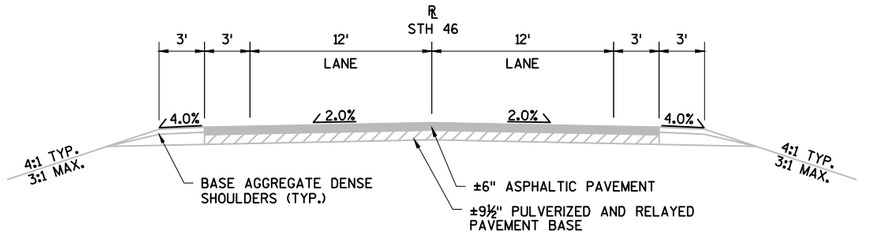
PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\157700174\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - ****

PLOT DATE : 1/20/2017 9:31 AM PLOT BY : DANIEL J. GERLING PLOT NAME : ---------- PLOT SCALE : 1 IN:200 FT

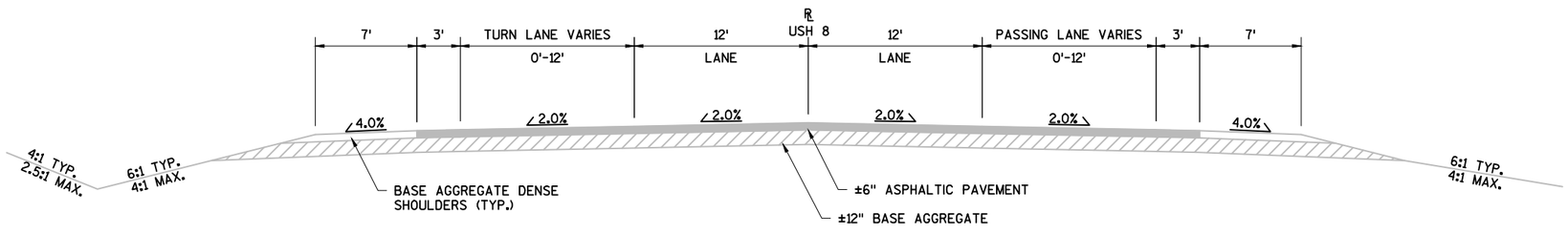
WISDOT/CADDS SHEET 42

2



EXISTING TYPICAL SECTION - STH 46

STATION 17+19.20 – STATION 18+94.23

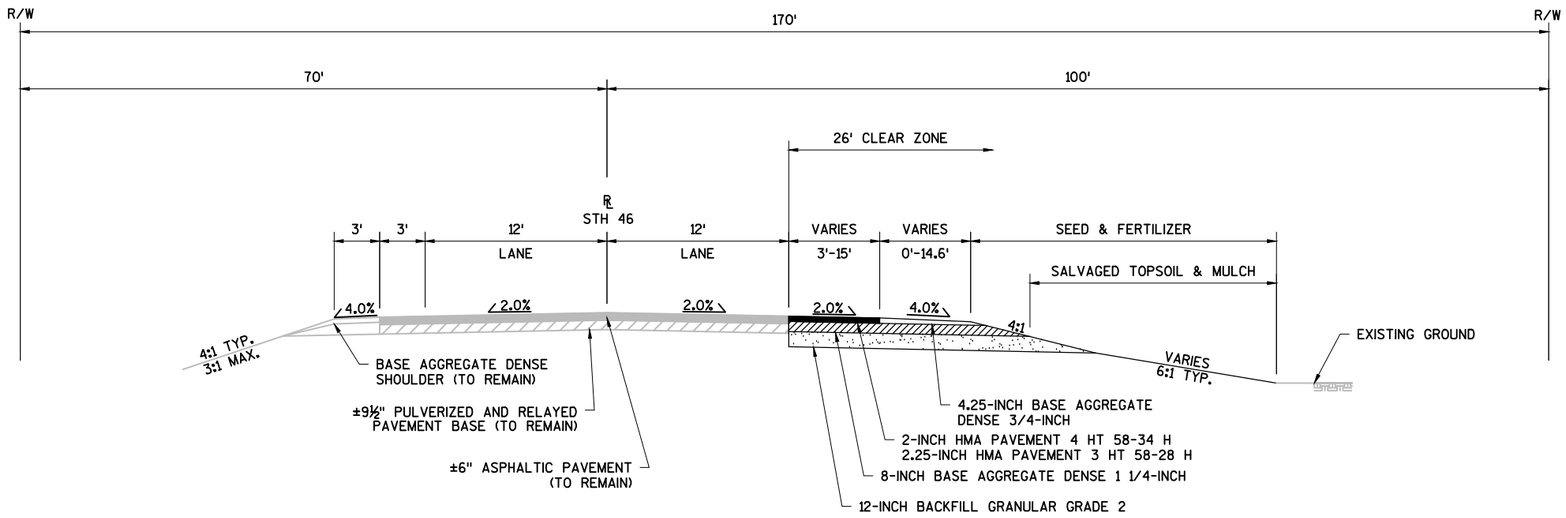


EXISTING TYPICAL SECTION - USH 8

STATION 533+55.51 – STATION 543+50

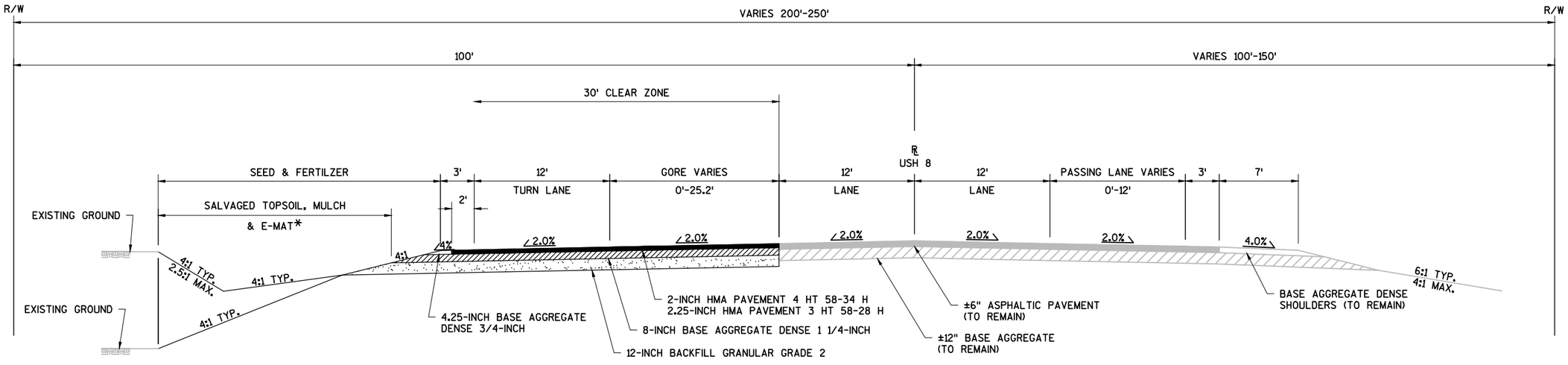
PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	TYPICAL SECTIONS	SHEET	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\020301-TS.DWG PLOT DATE : 1/19/2017 8:57 AM PLOT BY : DANIEL J. GERLING PLOT NAME :
WISDOT/CADDS SHEET 42



FINISHED TYPICAL SECTION - STH 46

STATION 17+19.20 – STATION 18+94.23

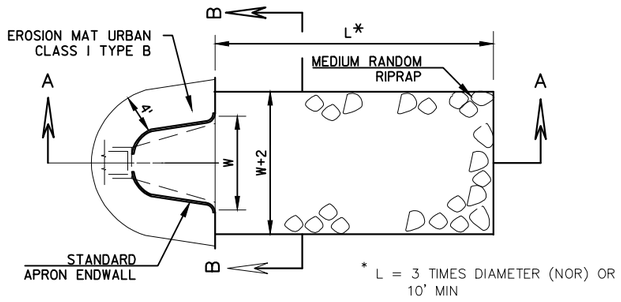


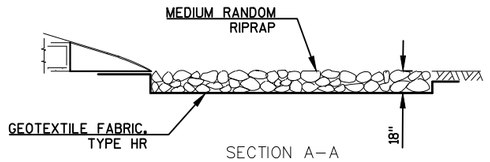
FINISHED TYPICAL SECTION - USH 8

STATION 533+55.51 – STATION 543+50

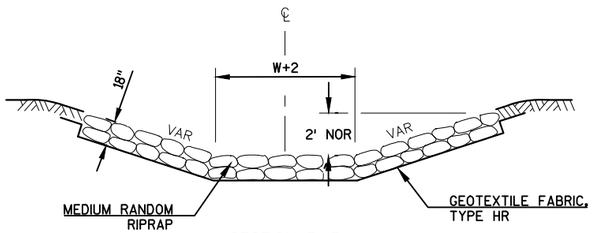
*NOTE:
PLACE E-MAT IN DITCH SECTION WITH 2.5:1
BACK SLOPES (STA 539+50 - STA 541+55)

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	TYPICAL SECTIONS	SHEET	E





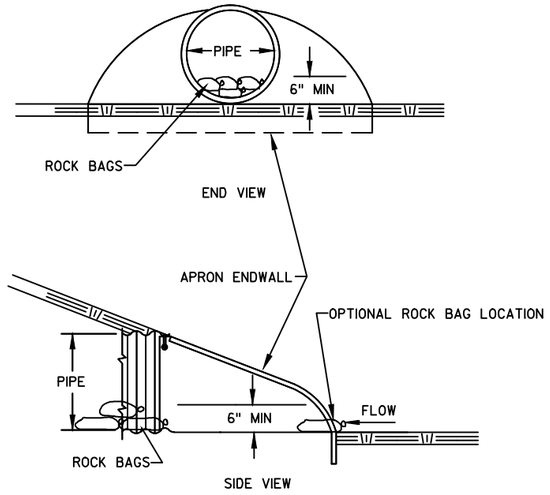
SECTION A–A



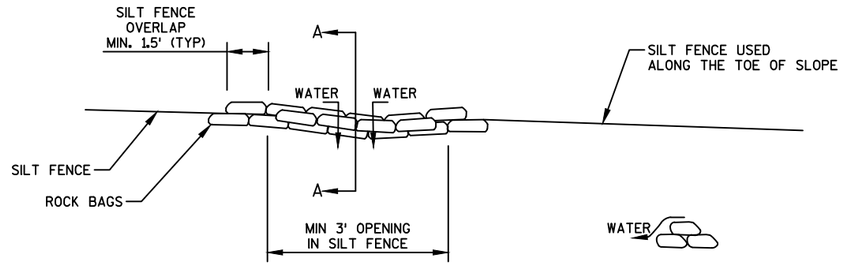
SECTION B–B

E-MAT, MEDIUM RANDOM RIPRAP AND GETEXTILE FABRIC

DETAIL AT APRON ENDWALLS AT DISCHARGE END



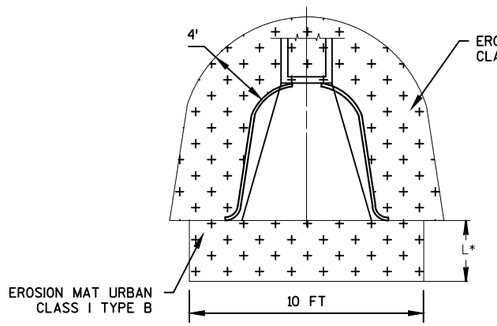
CULVERT PIPE CHECKS



TOP VIEW

SECTION A–A

ROCK BAGS USED FOR SILT FENCE RELIEF

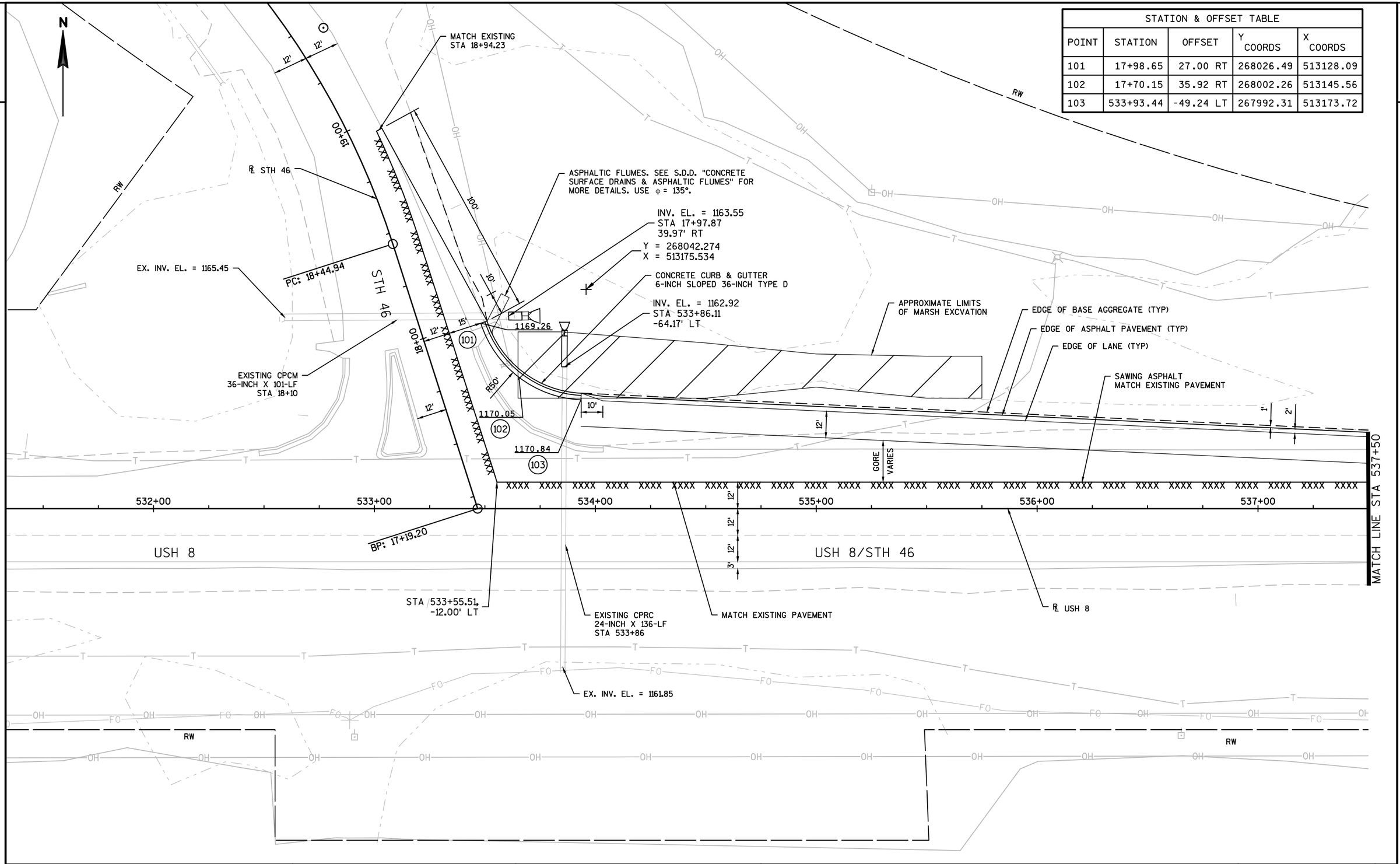


L = 3 TIMES DIAMETER OR 10' MIN.
INCREASE IF WARRANTED

* TO BE DETERMINED BY
ENGINEER IN THE FIELD

EROSION CONTROL AT PIPE ENDS

STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
101	17+98.65	27.00 RT	268026.49	513128.09
102	17+70.15	35.92 RT	268002.26	513145.56
103	533+93.44	-49.24 LT	267992.31	513173.72



PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	PLAN DETAIL - USH 8	SHEET 7	E

2

N

STA 539+31.11,
-24.00' LT

EDGE OF BASE AGGREGATE (TYP)

EDGE OF ASPHALT PAVEMENT (TYP)

EDGE OF LANE (TYP)

STA 542+00.00,
-24.00' LT

INV. EL. = 1160.11
STA 543+43.91,
-35.86' LT

EDGE OF EXISTING
ASPHALT PAVEMENT (TYP)

GORE VARIES

1"

2"

12'

12.5:1 TAPER

MATCH LINE STA 537+50

538+00

539+00

540+00

541+00

542+00

543+00

USH 8/STH 46

℄ USH 8

STA 539+31.11,
-12.00' LT

SAWING ASPHALT
MATCH EXISTING PAVEMENT

EXISTING CPRC
24-INCH X 77-LF
STA 543+44

EX. INV. EL. = 1158.52

MATCH EXISTING PAVEMENT
STA 543+50

RW

OH

T

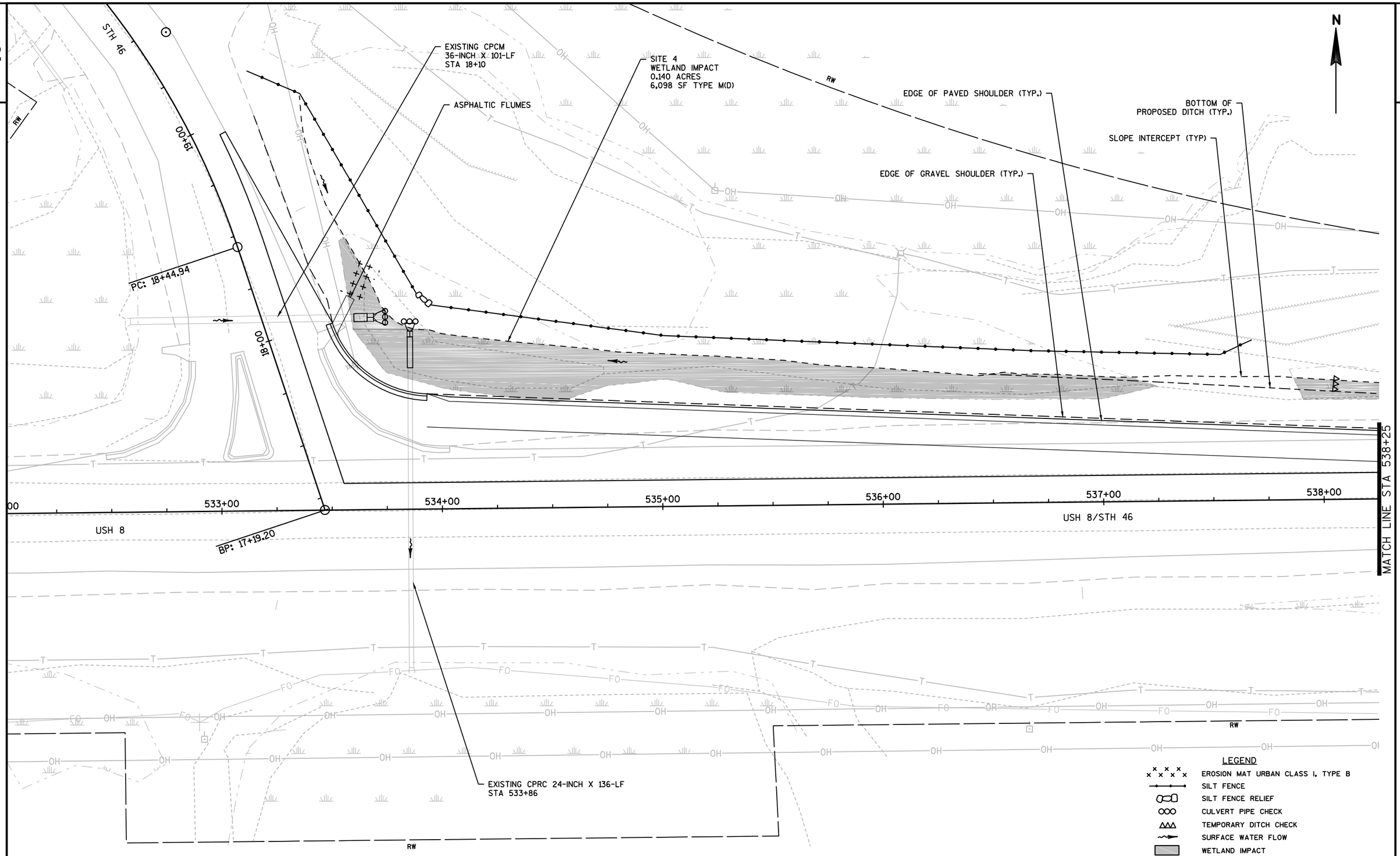
FO

PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	PLAN DETAIL - USH 8	SHEET 8	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - ****

PLOT DATE : 1/20/2017 8:01 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42



PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	EROSION CONTROL	SHEET 9	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - ****

PLOT DATE : 1/19/2017 9:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

EDGE OF GRAVEL SHOULDER (TYP.)

EDGE OF PAVED SHOULDER (TYP.)

BOTTOM OF PROPOSED DITCH (TYP.)

SITE 6
WETLAND IMPACT
0.044 ACRES
1,919 SF TYPE M

SLOPE INTERCEPT (TYP)

TOP OR TOE OF EXISTING SLOPE (TYP)

SITE 5
WETLAND IMPACT
0.068 ACRES
2,946 SF TYPE M(D)

WETLAND BOUNDARY (TYP)

RW

100'

MATCH LINE STA 538+25

539+00 540+00 541+00 542+00 543+00 544+00

USH 8/STH 46

EXISTING CPRC
24-INCH X 77-LF
STA 543+44

LEGEND

- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SILT FENCE RELIEF
- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW
- WETLAND IMPACT

PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	EROSION CONTROL	SHEET 10	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - ****

PLOT DATE : 1/19/2017 9:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

PAVEMENT MARKING LEGEND

WS04	PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4–INCH (WHITE SOLID)
WCH8	PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8–INCH (WHITE CHANNELIZING)
WCH8SK	PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8–INCH (WHITE CHANNELIZING, SKIPS, 3 FT LINE, 9 FT GAP)
WCC12	PAVEMENT MARKING DIAGONAL EPOXY 12–INCH (WHITE CHEVRON CROSSHATCH 25 FT SPACING)

SIGNING LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- X–X SIGN – MOVE
- X–X SIGN – REMOVE
- X–X SIGN – PLACE NEW
- X–X SIGN – EXISTING TO REMAIN

N

NORTH 46 M1-6 24"X24" 1-6

Balsam Lake 4 1-7

STOP 1-2

NORTH 46 J3-1 24"X57" 1-11

WEST NORTH 8 46 1-12

YIELD R1-2 36"X31" 1-10

St. Croix Falls
Balsam Lake
D1-2 1-15

W3-2 36"X36" 1-16

BEGIN RIGHT TURN LANE R3-20-R 24"X36" 1-17

St. Croix Falls
Balsam Lake
D1-2 1-15

WEST NORTH 8 46 1-18

STOP 1-4

1-5

1-8

STOP 1-1

EAST SOUTH 8 46 1-13

Amery 10
Turtle Lake 14
1-14

1-3

EAST SOUTH WEST 8 46 8

NORTH EAST SOUTH 46 8 46 1-9

18+94.35
12.00' RT

533+93.44
37.23' LT

533+93.44
12.00' LT

539+31.39
24.00' LT

30° - 45° TYP.

FROM STA 539+21
TO STA 545+50

542+00.00
24.00' LT

541+99.87
12.00' LT

FROM STA 546+00

TO STA 547+50

25'
TYP.

539+31.11
12.00' LT

543+50.00
12.00' LT

WS04

WCH8

WCC12

WCH8SK

RW

OH

T

FO

20+00

18+00

32+00

534+00

536+00

538+00

540+00

542+00

544+00

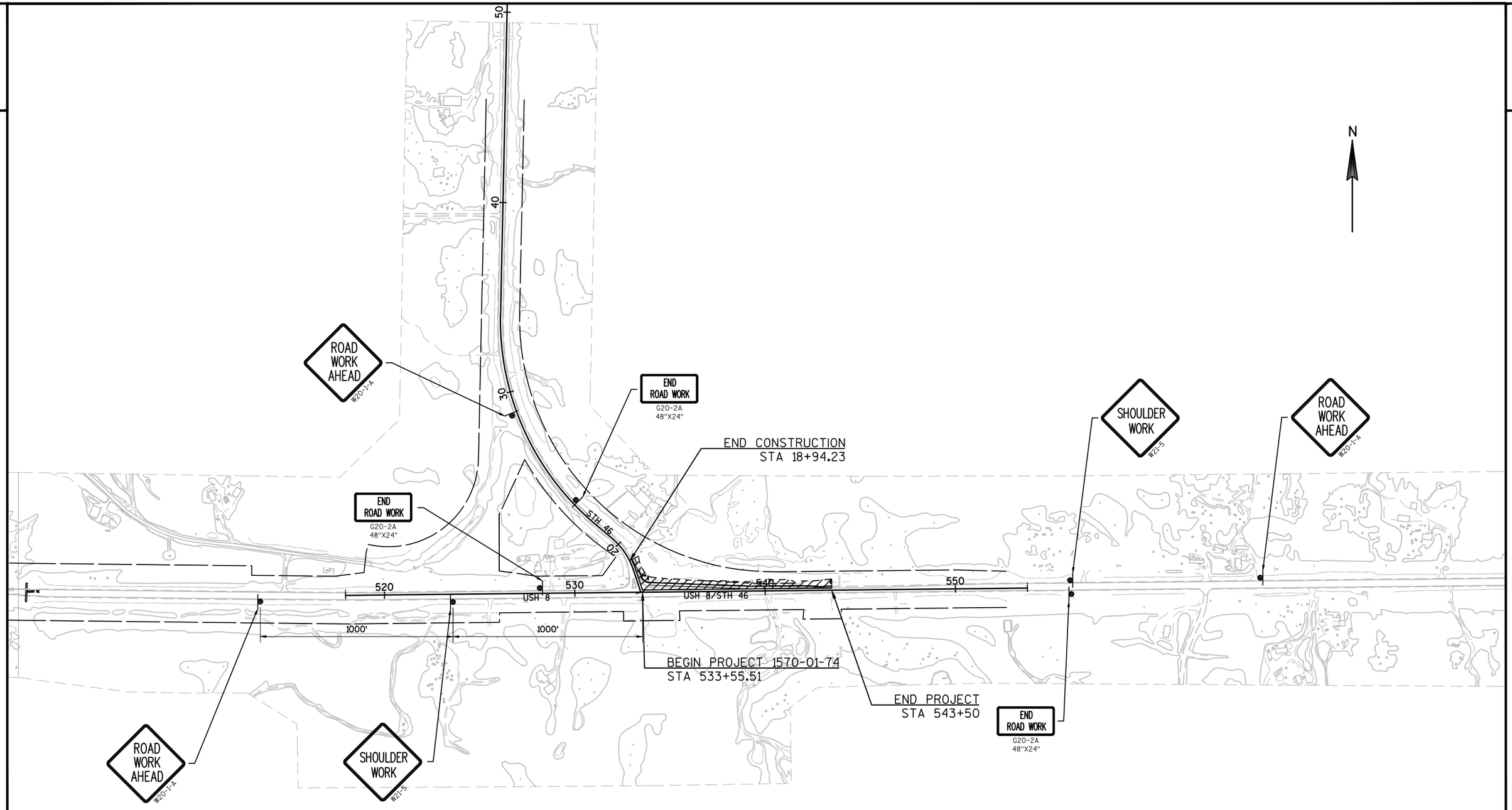
546+00

USH 8/STH 46

STH 46

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 11	E

2



PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	TRAFFIC CONTROL OVERVIEW	SHEET 12	E

2

N

LEGEND

TRAFFIC CONTROL DRUM

WORK AREA

DIRECTION OF TRAFFIC

STH 46

PC: 18+44.94

BP: 17+19.20

18+00

19+00

50' (TYP)

12'

POSITION DRUMS AND PLACE TEMPORARY BASE AGGREGATE DENSE TO GRADE TO ACCOMMODATE TRUCK TURNING MOVEMENTS WHEN NO WORK IS TAKING PLACE IN THIS AREA.

SIGN

532+00

533+00

534+00

535+00

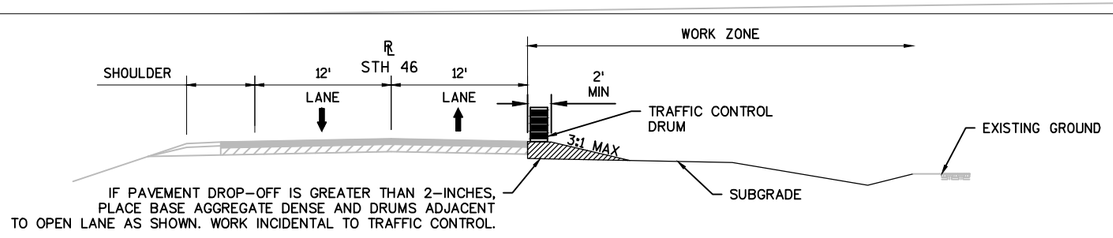
536+00

537+00

50' (TYP)

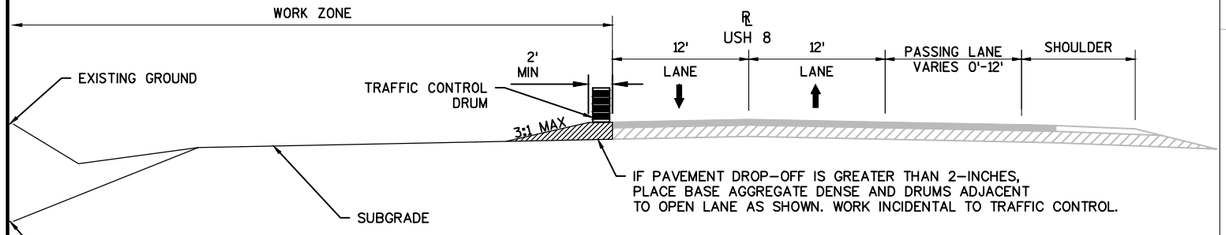
USH 8

MATCH LINE STA 537+50



TRAFFIC CONTROL TYPICAL SECTION – STH 46

STA 17+19.20 - STA 18+94.23



TRAFFIC CONTROL TYPICAL SECTION – USH 8

STA 533+55.51 - STA 543+50

NOTE:
PERFORM WORK USING "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY", AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)" UNLESS OTHERWISE NOTED. MAINTAIN MINIMUM 12' LANE WIDTH.

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	TRAFFIC CONTROL	SHEET 13	E

2

N

LEGEND

TRAFFIC CONTROL DRUM

WORK AREA

DIRECTION OF TRAFFIC

SIGN

SEE NOTE

MATCH LINE STA 537+50

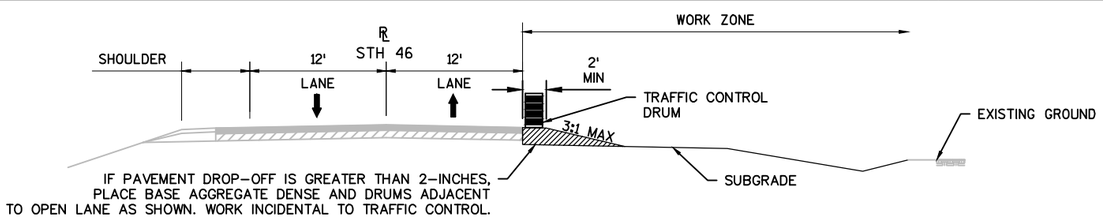
538+00 539+00 540+00 541+00 542+00 543+00

50' (TYP)

12'

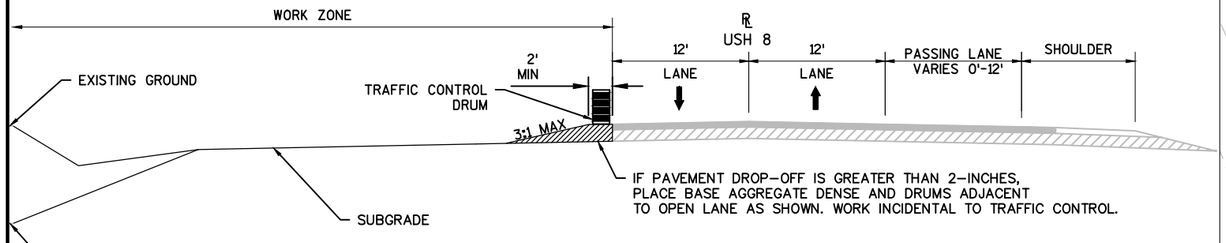
USH 8

FLAG



TRAFFIC CONTROL TYPICAL SECTION – STH 46

STA 17+19.20 - STA 18+94.23



TRAFFIC CONTROL TYPICAL SECTION – USH 8

STA 533+55.51 - STA 543+50

NOTE:
PERFORM WORK USING "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY", AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)" UNLESS OTHERWISE NOTED. MAINTAIN MINIMUM 12' LANE WIDTH.

PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	TRAFFIC CONTROL	SHEET 14	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - ****
PLOT DATE : 1/19/2017 10:00 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 42

2

CURVE 02
PI STA = 28+31.27
Y = 268732.635
X = 512376.239
DELTA = 51°03'40"
D = 4°05'33"
T = 668.68'
L = 1247.66'
R = 1400.00'
PC STA = 21+62.59
Y = 268301.313
X = 512887.217
PT STA = 34+10.25
Y = 269401.163
X = 512390.583
BK = N49°49'55.1"W
AH = N01°13'44.9"E

CURVE 01
PI STA = 19+47.63
Y = 268159.318
X = 513055.437
DELTA = 31°25'37"
D = 15°41'51"
T = 102.69'
L = 200.20'
R = 365.00'
PC STA = 18+44.94
Y = 268061.881
X = 513087.859
PT STA = 20+45.14
Y = 268225.556
X = 512976.966
BK = N18°24'18.1"W
AH = N49°49'55.1"W

N

30

CURVE 02

25

STH 46 ℄

N49° 49' 55"W
117.45'

PC: 21+62.59

PT: 20+45.14

20

CURVE 01

N18° 24' 18"W
125.74'

PC: 18+44.94

520

525

530

535

N89° 23' 27"E

540

545

550

STA 525+00
Y = 267933.571
X = 512280.852

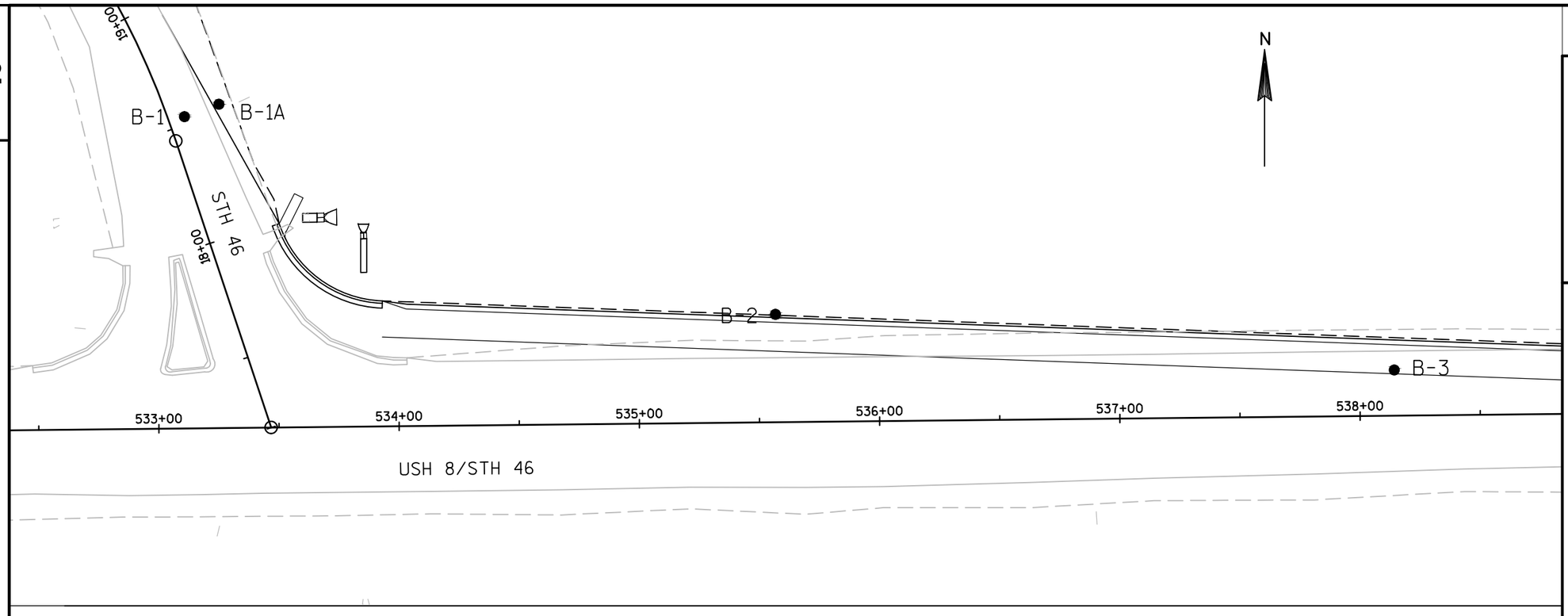
BP: 17+19.20

STA 17+19.20 STH 46 =
STA 533+46.76 USH 8
Y = 267942.572
X = 513127.559

USH 8 ℄

STA 545+00
Y = 267954.831
X = 514280.739

PROJECT NO:1570-01-74	HWY: USH 8	COUNTY: POLK	ALIGNMENT DIAGRAM	SHEET 15	E

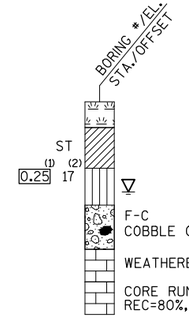


STATE PROJECT NUMBER
1570-01-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

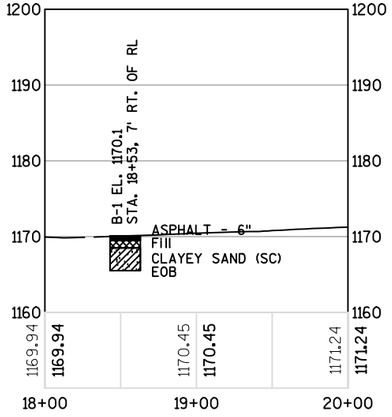
(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

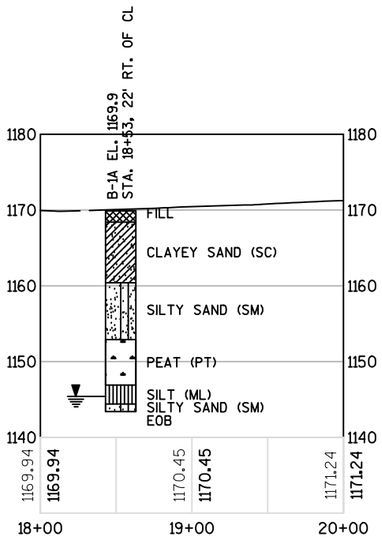
ground water elevation

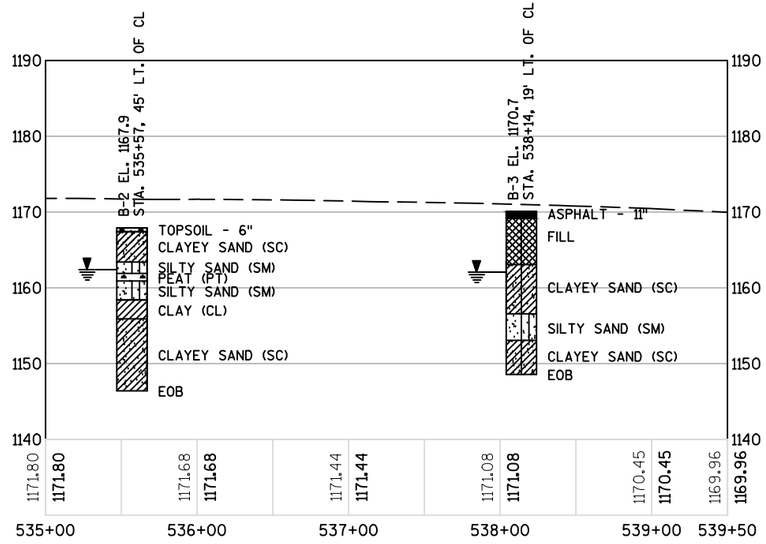
- at time of drilling
- end of drilling
- after drilling

ABBREVIATIONS

F-Fine M-Medium C-Coarse st-shelby tube







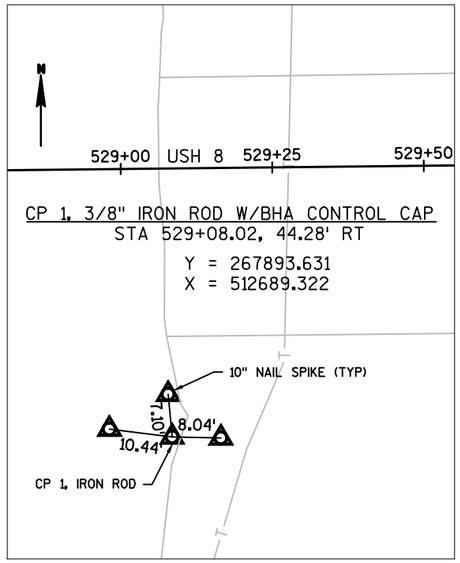
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

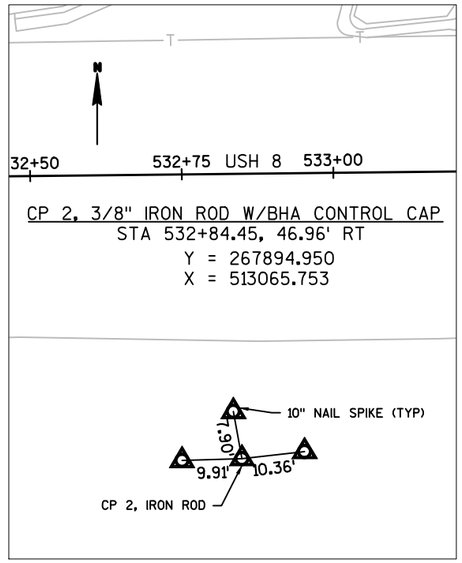
BORINGS TAKEN BY:
AMERICAN ENGINEERING TESTING, INC.
SCHOFIELD, WI
MAY 19, 2016

FACTUAL REPORT OF GEOTECHNICAL EXPLORATION BY:
AMERICAN ENGINEERING TESTING, INC.
SCHOFIELD, WI
JUNE 9, 2016

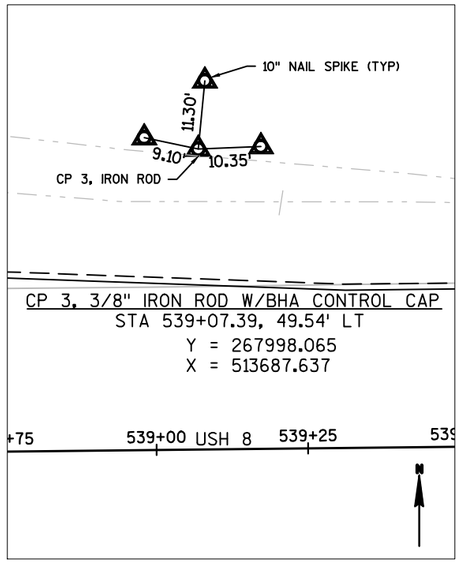
PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	SUBSURFACE EXPLORATION	SHEET 16	E



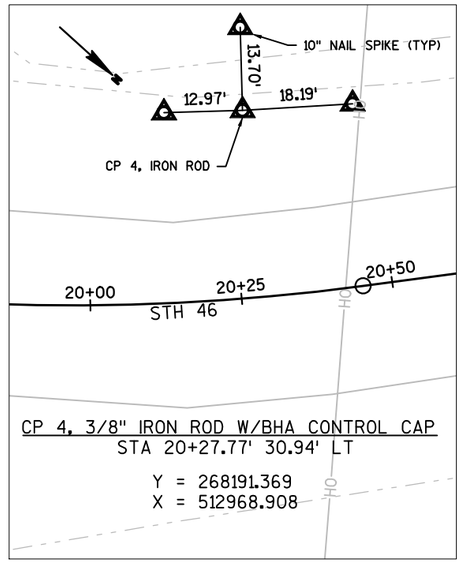
CP 1, 3/8" IRON ROD W/BHA CONTROL CAP
STA 529+08.02, 44.28' RT
Y = 267893.631
X = 512689.322



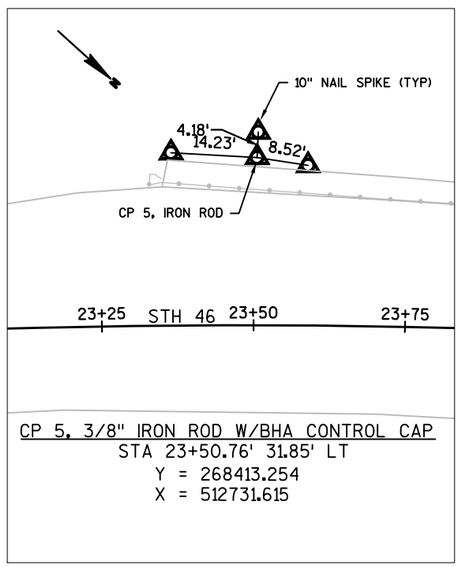
CP 2, 3/8" IRON ROD W/BHA CONTROL CAP
STA 532+84.45, 46.96' RT
Y = 267894.950
X = 513065.753



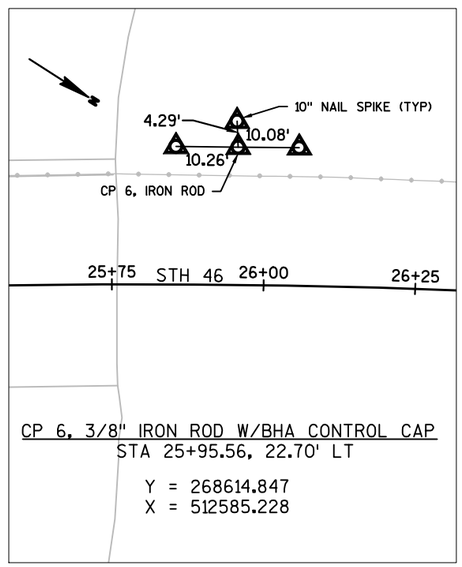
CP 3, 3/8" IRON ROD W/BHA CONTROL CAP
STA 539+07.39, 49.54' LT
Y = 267998.065
X = 513687.637



CP 4, 3/8" IRON ROD W/BHA CONTROL CAP
STA 20+27.77' 30.94' LT
Y = 268191.369
X = 512968.908



CP 5, 3/8" IRON ROD W/BHA CONTROL CAP
STA 23+50.76' 31.85' LT
Y = 268413.254
X = 512731.615



CP 6, 3/8" IRON ROD W/BHA CONTROL CAP
STA 25+95.56, 22.70' LT
Y = 268614.847
X = 512585.228

1570-01-74

Line	Item	Item Description	Unit	Total	Qty
0010	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0020	204.0150	Removing Curb & Gutter	LF	80.000	80.000
0030	204.0180	Removing Delineators and Markers	EACH	3.000	3.000
0040	205.0100	Excavation Common	CY	1,900.000	1,900.000
0050	205.0400	Excavation Marsh	CY	1,350.000	1,350.000
0060	209.2500	Backfill Granular Grade 2	TON	4,270.000	4,270.000
0070	213.0100	Finishing Roadway (project) 01. 1570-01-74	EACH	1.000	1.000
0080	305.0110	Base Aggregate Dense 3/4-Inch	TON	71.000	71.000
0090	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,440.000	1,440.000
0100	455.0605	Tack Coat	GAL	175.000	175.000
0110	460.2000	Incentive Density HMA Pavement	DOL	400.000	400.000
0120	460.7423	HMA Pavement 3 HT 58-28 H	TON	330.000	330.000
0130	460.7444	HMA Pavement 4 HT 58-34 H	TON	290.000	290.000
0140	465.0315	Asphaltic Flumes	SY	7.000	7.000
0150	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0160	520.8700	Cleaning Culvert Pipes	EACH	3.000	3.000
0170	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	30.000	30.000
0180	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	6.000	6.000
0190	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0200	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	1.000	1.000
0210	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	59.000	59.000
0220	606.0200	Riprap Medium	CY	4.000	4.000
0230	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1570-01-74	EACH	1.000	1.000
0240	619.1000	Mobilization	EACH	1.000	1.000
0250	624.0100	Water	MGAL	30.000	30.000
0260	625.0100	Topsoil	SY	100.000	100.000
0270	625.0500	Salvaged Topsoil	SY	2,400.000	2,400.000
0280	627.0200	Mulching	SY	1,950.000	1,950.000
0290	628.1504	Silt Fence	LF	755.000	755.000
0300	628.1520	Silt Fence Maintenance	LF	755.000	755.000
0310	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0320	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0330	628.2008	Erosion Mat Urban Class I Type B	SY	630.000	630.000
0340	628.7504	Temporary Ditch Checks	LF	45.000	45.000
0350	628.7555	Culvert Pipe Checks	EACH	15.000	15.000
0360	628.7570	Rock Bags	EACH	20.000	20.000
0370	629.0210	Fertilizer Type B	CWT	2.000	2.000

1570-01-74

Line	Item	Item Description	Unit	Total	Qty
0380	630.0120	Seeding Mixture No. 20	LB	90.000	90.000
0390	633.5200	Markers Culvert End	EACH	3.000	3.000
0400	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	4.000	4.000
0410	637.2210	Signs Type II Reflective H	SF	28.380	28.380
0420	638.2102	Moving Signs Type II	EACH	5.000	5.000
0430	638.2602	Removing Signs Type II	EACH	7.000	7.000
0440	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0450	642.5001	Field Office Type B	EACH	1.000	1.000
0460	643.0100	Traffic Control (project) 01. 1570-01-74	EACH	1.000	1.000
0470	643.0300	Traffic Control Drums	DAY	1,400.000	1,400.000
0480	643.0900	Traffic Control Signs	DAY	480.000	480.000
0490	645.0120	Geotextile Type HR	SY	10.000	10.000
0500	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	1,057.000	1,057.000
0510	646.2308.S	Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	LF	1,145.000	1,145.000
0520	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	383.000	383.000
0530	650.4500	Construction Staking Subgrade	LF	1,178.000	1,178.000
0540	650.5000	Construction Staking Base	LF	1,178.000	1,178.000
0550	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	59.000	59.000
0560	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000
0570	650.9910	Construction Staking Supplemental Control (project) 01. 1570-01-74	LS	1.000	1.000
0580	650.9920	Construction Staking Slope Stakes	LF	1,178.000	1,178.000
0590	690.0150	Sawing Asphalt	LF	1,173.000	1,173.000
0600	SPV.0090	Special 01. Concrete Curb & Gutter Cure and Seal Treatment	LF	59.000	59.000

3

CULVERT PIPE REMOVALS

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	204.0180 REMOVING DELINEATORS AND MARKERS EACH	COMMENT
17+98	RT	1	1	ENDWALL ONLY
533+86	LT	1	1	ENDWALL ONLY
543+44	LT	1	1	ENDWALL ONLY
	TOTALS	**3**	**3**	

204.0150 REMOVING CURB & GUTTER

STATION	TO	STATION	LOCATION	LF
533+44	-	534+04	LT	80
			TOTAL	**80**

EARTHWORK SUMMARY

DIVISION	STATION	TO	STATION	205.0100 EXCAVATION COMMON (1) CUT (2) CY	205.0100 EXCAVATION COMMON (1) EBS (3) CY	UNUSABLE PAVEMENT MATERIAL (4) CY	AVAILABLE MATERIAL (5) CY	205.0500 MARSH EXCAVATION (6) CY	UNEXPANDED FILL CY	EXPANDED FILL (7) CY	MASS ORDINATE ± (8) CY	WASTE CY	COMMENTS:
1	533+56	-	543+50	1,752	0	248	1,504	1,350	1,193	1,491	13		USH 8 / STH 46
	18+00	-	18+94	151	0	10	141	0	59	74	67		STH 46
			TOTALS	**1,903**	**0**	**258**	**1,645**	**1,350**	**1,252**	**1,565**	**80**	**338**	

TOTAL EXCAVATION COMMON **1,900**

1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NO. 205.0100.

2) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

3) EBS EXCAVATION TO BE BACKFILLED WITH CUT MATERIAL.

4) UNUSABLE PAVEMENT MATERIAL.

5) AVAILABLE MATERIAL = CUT - UNUSABLE PAVEMENT MATERIAL.

6) MARSH EXCVATION - STA. 533+65 TO STA. 535+75 LT. BACKFILL WITH BACKFILL GRANULAR GRADE 2.

7) EXPANDED FILL = UNEXPANDED FILL * EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.25.

8) MASS ORDINATE = (AVAILABLE MATERIAL) - (EXPANDED FILL). PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	209.2500 BACKFILL GRANULAR GRADE 2 TON	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL	COMMENT
17+98	-	18+94	RT	140	21	100	2	STH 46
533+33	-	533+93	LT	165	-	140	3	USH 8 / STH 46 INTERSECTION
533+65	-	535+75	LT	2,300	-	-	-	MARSH EXCAVATION BACKFILL
533+93	-	543+50	LT	1,665	50	1,200	25	USH 8
			TOTALS	**4,270**	**71**	**1,440**	**30**	

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

3

HMA PAVEMENT

				455.0605	460.7423	460.7444	465.0315	
				TACK COAT	3 HT 58-28 H	4 HT 58-34 H	ASPHALTIC FLUMES	
STATION	TO	STATION	LOCATION	GAL	TON	TON	SY	COMMENT
533+00	-	543+50	LT	175	330	-	-	2.25" LOWER LIFT
533+00	-	543+50	LT	-	-	290	-	2" UPPER LIFT
18+04			RT	-	-	-	7	CURB & GUTTER RADIUS
			TOTALS	**175**	**330**	**290**	**7**	

CULVERT PIPE ITEMS

				520.8000	520.8700	522.0124	522.0136	522.1024	522.1036	606.0200	633.5200	645.0120	
		CULVERT PIPE THICKNESS	JOINT TIES	CONCRETE COLLARS FOR PIPE	CLEANING CULVERT PIPES	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	RIPRAP MEDIUM	MARKERS CULVERT END	GEOTEXTILE TYPE HR	
STATION	LOCATION	IN	EACH**	EACH	EACH	LF	LF	EACH	EACH	CY	EACH	SY	COMMENT
17+98	RT	4.0	2	1	1	-	6	-	1	4	1	10	CULVERT PIPE EXTENSION
533+86	LT	3.0	6	-	1	14	-	1	-	-	1	-	CULVERT PIPE EXTENSION
543+44	LT	3.0	6	-	1	16	-	1	-	-	1	-	CULVERT PIPE EXTENSION
			TOTALS	**1**	**3**	**30**	**6**	**2**	**1**	**4**	**3**	**10**	

**NOTE: NOT A BID ITEM. FOR INFORMATION ONLY. SEE S.D.D. "JOINT TIES FOR CONCRETE CULVERT PIPES" FOR MORE INFORMATION.

CONCRETE CURB & GUTTER

				601.0557	SPV.0090.01	
				6-INCH SLOPED 36-INCH TYPE D	CURE AND SEAL TREATMENT	
STATION	TO	STATION	LOCATION	LF	LF	COMMENT
533+50	-	533+94	LT	59	59	
			TOTALS	**59**	**59**	

EROSION CONTROL AND LANDSCAPING ITEMS

				625.0100	625.0500	627.0200	628.1504	628.1520	628.1905	628.1910	628.2008	628.7504	628.7555	628.7570	629.0210	630.0120	
				TOPSOIL	SALVAGED TOPSOIL	MULCHING	SILT FENCE	SILT FENCE MAINTENANCE	MOBILIZATIONS	MOBILIZATIONS EMERGENCY	EROSION MAT URBAN CLASS I TYPE B	TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	ROCK BAGS	FERTILIZER TYPE B	SEEDING MIXTURE NO. 20	
STATION	TO	STATION	LOCATION	SY	SY	SY	LF	LF	EACH	EACH	SY	LF	EACH	EACH	CWT	LB	COMMENTS
17+95			RT	-	-	-	-	-	-	-	20	-	-	-	-	-	ASPHALTIC FLUME
17+98			RT	-	-	-	-	-	-	-	10	-	5	-	-	-	36-INCH CULVERT PIPE
533+13	-	537+68	LT	-	-	-	505	505	-	-	-	-	-	-	-	-	
533+18	-	543+50	LT	-	2,400	1,850	-	-	-	-	550	-	-	-	1.8	80	EROSION MAT STA 539+50 - STA 541+55
533+86			LT	-	-	-	-	-	-	-	10	-	3	-	-	-	24-INCH CULVERT PIPE
533+92			LT	-	-	-	-	-	-	-	-	-	-	10	-	-	FOR SILT FENCE RELIEF
538+00			LT	-	-	-	-	-	-	-	-	15	-	-	-	-	
541+00			LT	-	-	-	-	-	-	-	-	15	-	-	-	-	
541+56	-	544+00	LT	-	-	-	250	250	-	-	-	-	-	-	-	-	
543+44			LT	-	-	-	-	-	-	-	10	-	3	-	-	-	24-INCH CULVERT PIPE
UNDISTRIBUTED				100	-	100	-	-	2	1	30	15	4	10	0.2	10	
			TOTALS	**100**	**2,400**	**1,950**	**755**	**755**	**2**	**1**	**630**	**45**	**15**	**20**	**2.0**	**90**	

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

SIGNING SCHEDULE

STATION	OFFSET	SIGN NO.	CODE NO.	DESCRIPTION	MESSAGE LINE 1	MESSAGE LINE 2	MESSAGE LINE 3	SIZE IN	X	SIZE IN	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
17+53	LT	1-1	R1-1	Stop	-	-	-	36	X	36	-	-	-	-	-
17+63	RT	1-2	R1-1	Stop	-	-	-	36	X	36	-	-	-	1	1
17+77	LT	1-3	J3-3	Directional Assembly (3 Headed Route Panel)	EAST / SOUTH / WEST	8 / 46 / 8	[LA] / [LA] / [RA]	72	X	57	-	-	-	-	-
17+77	LT	1-4	R1-1	Stop	-	-	-	36	X	36	-	-	-	-	-
17+93	LT	1-5	W12-1D	Double Down Arrows	-	-	-	24	X	24	-	-	-	-	-
18+54	RT	1-6	J4-1	Reassurance Assembly (1 Headed Route Panel)	NORTH	46	-	24	X	36	-	-	2	-	-
18+54	RT	1-7	D2-1	Destination/Distance (One)	Balsam Lake 4	-	-		X		-	-	1	-	-
533+07	LT	1-8	R4-7	Keep Right	-	-	-	24	X	30	-	-	-	-	-
533+25	RT	1-9	J3-3	Directional Assembly (3 Headed Route Panel)	NORTH / EAST / SOUTH	46 / 8 / 46	[LA] / [UA] / [UA]	72	X	57	-	-	-	-	-
533+90	LT	1-10	R1-2	Yield	-	-	-	36	X	31	1	3.88	-	-	-
533+90	LT	1-11	J3-1	Directional Assembly (1 Headed Route Panel)	NORTH	46	[RA]	24	X	57	1	9.50	-	-	-
534+13	LT	1-12	J3-2	Directional Assembly (2 Headed Route Panel)	WEST / NORTH	8 / 46	[UA] / [RA]	48	X	57	-	-	-	6	1
535+42	RT	1-13	J4-2	Reassurance Assembly (2 Headed Route Panel)	EAST / SOUTH	8 / 46	-	48	X	36	-	-	-	-	-
536+90	RT	1-14	D2-2	Destination/Distance (Two)	Amery 10	Turtle Lake 14	-		X		-	-	-	-	-
539+21	LT	1-15	D1-2		[UA] St. Croix Falls	Balsam Lake [RA]	-		X		-	-	1	-	-
541+40	LT	1-16	W3-2	Yield Ahead	-	-	-	36	X	36	1	9.00	-	-	-
543+50	LT	1-17	R3-20R	Begin Right Turn Lane	-	-	-	24	X	36	1	6.00	-	-	-
546+00	LT	1-18	J3-2	Directional Assembly (2 Headed Route Panel)	[WEST] / [NORTH]	8 / 46	[UA] / [Advance RA]		X		-	-	1	-	-
								TOTALS			**4**	**28.38**	**5**	**7**	**2**

TRAFFIC CONTROL

LOCATION	DURATION (DAYS)	643.0100.01 PROJECT 1570-01-74 EACH	643.0300 DRUMS EACH	643.0300 DRUMS DAY	643.0900 SIGNS EACH	643.0900 SIGNS DAY
PROJECT 1570-01-74	40	1	35	1,400	12	480
	TOTALS	**1**		**1,400**		**480**

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	646.2304.S GROOVED WET REFLECTIVE EPOXY 4-INCH LF	646.2308.S GROOVED WET REFLECTVE EPOXY 8-INCH LF	647.0726 DIAGONAL EPOXY 12-INCH LF	COMMENT
17+99	-	18+94	RT	99	-	-	WHITE EDGE LINE
533+93	-	543+50	LT	958	-	-	WHITE EDGE LINE
533+93	-	539+31	LT	-	1,076	-	WHITE CHANNELIZING
534+75	-	539+31	LT	-	-	383	WHITE CHEVRON CROSSHATCH
539+31	-	542+00	LT	-	69	-	WHITE CHANNELIZING (3-FT SKIPS, 9-FT GAPS)
			TOTAL	**1,057**	**1,145**	**383**	

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

3

CONSTRUCTION STAKING

				650.4500 SUBGRADE	**650.5000** BASE	**650.5500** CURB GUTTER AND CURB & GUTTER	**650.6000** PIPE CULVERTS	**650.9910** SUPPLEMENTAL CONTROL 1570-01-74	**650.9920** SLOPE STAKES
STATION	TO	STATION	LOCATION	LF	LF	LF	EACH	LS	LF
17+19	-	18+94	RT	175	175	-	-	-	175
	17+98		RT	-	-	-	1	-	-
533+50	-	533+94	LT	-	-	59	-	-	-
533+47	-	543+50	LT	1,003	1,003	-	-	-	1,003
	533+86		LT	-	-	-	1	-	-
	543+44		LT	-	-	-	1	-	-
PROJECT ID 1570-01-74				-	-	-	-	1	-
			TOTALS	**1,178**	**1,178**	**59**	**3**	**1**	**1,178**

690.0150 SAWING ASPHALT

STATION	TO	STATION	LOCATION	LF	COMMENT
17+28	-	18+94	RT	171	EDGE OF PAVEMENT
533+55	-	543+50	LT	1,002	EDGE OF PAVEMENT
			TOTAL	**1,173**	

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

SAWING ASPHALT
REMOVING ASPHALTIC SURFACE
MATCH EXISTING
CONCRETE CURB & GUTTER
6-INCH SLOPED 36-INCH TYPE D
ASPHALTIC FLUMES
EXTEND CULVERT PIPE
CPCM 36-INCH 6' RT.
1 AEW REQUIRED
CONCRETE COLLARS FOR PIPE
EXTEND CULVERT PIPE
CPRC CL III 24-INCH 14' LT.
1 AEW REQUIRED
JOINT TIES REQ'D
POLK-BURNETT ELECTRIC COOP
ELECTRIC
NORTHWEST COMMINICATIONS
COMMUNICATION
SLOPE INTERCEPT (TYP)
BOTTOM OF PROPOSED DITCH (TYP)
EXTEND CULVERT PIPE
CPRC CL III 24-INCH 16' LT.
1 AEW REQUIRED
JOINT TIES REQ'D
SAWING ASPHALT
MATCH EXISTING
PT: 20+45.14
STH 46
℄ STH 46
PC: 18+44.94
POLK-BURNETT ELECTRIC COOP
ELECTRIC
LIGHT POLE TO BE
RELOCATED (BY OTHERS)
REMOVING CURB & GUTTER
BM 203
CP 03
BM 204
BORE 2
BORE 3
540' TAPERED TURN BAY
270' STRAIGHT TURN BAY
GORE
USH 8
USH 8/STH 46
BP: 17+19.20
CP 02
℄ USH 8
NORTHWEST COMMUNICATIONS
COMMUNICATION
CHARTER COMMUNICATION
NORTHWEST COMMUNICATIONS
COMMUNICATION
DAIRYLAND POWER COOPERATIVE
ELECTRIC
WETLAND BOUNDARY (TYP)
FLAG
RW
150'
100'
12'
532
534
536
538
540
542
544
546

BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
203	17+77.74	33.35' RT	60D NAIL IN POLE	1168.37
204	539+20.24	42.39' LT	60D NAIL IN SIGN	1168.67

BEGIN PROJECT
STA 533+55.51
Y = 267954.665
X = 513136.182

END PROJECT
STA 543+50
Y = 267965.236
X = 514130.619

STA 536+25.00
EL 1166.24
STA 539+75.00
EL 1166.49
STA 541+50.00
EL 1166.00
STA 541+75.00
EL 1165.12
EXISTING PROFILE AT ℄ USH 8
(TO REMAIN)
-0.30%
0.07%
-0.28%
-3.52%
0.24%
1.09%
PROPOSED DITCH PROFILE LT
EXISTING ELEVATION AT ℄ USH 8

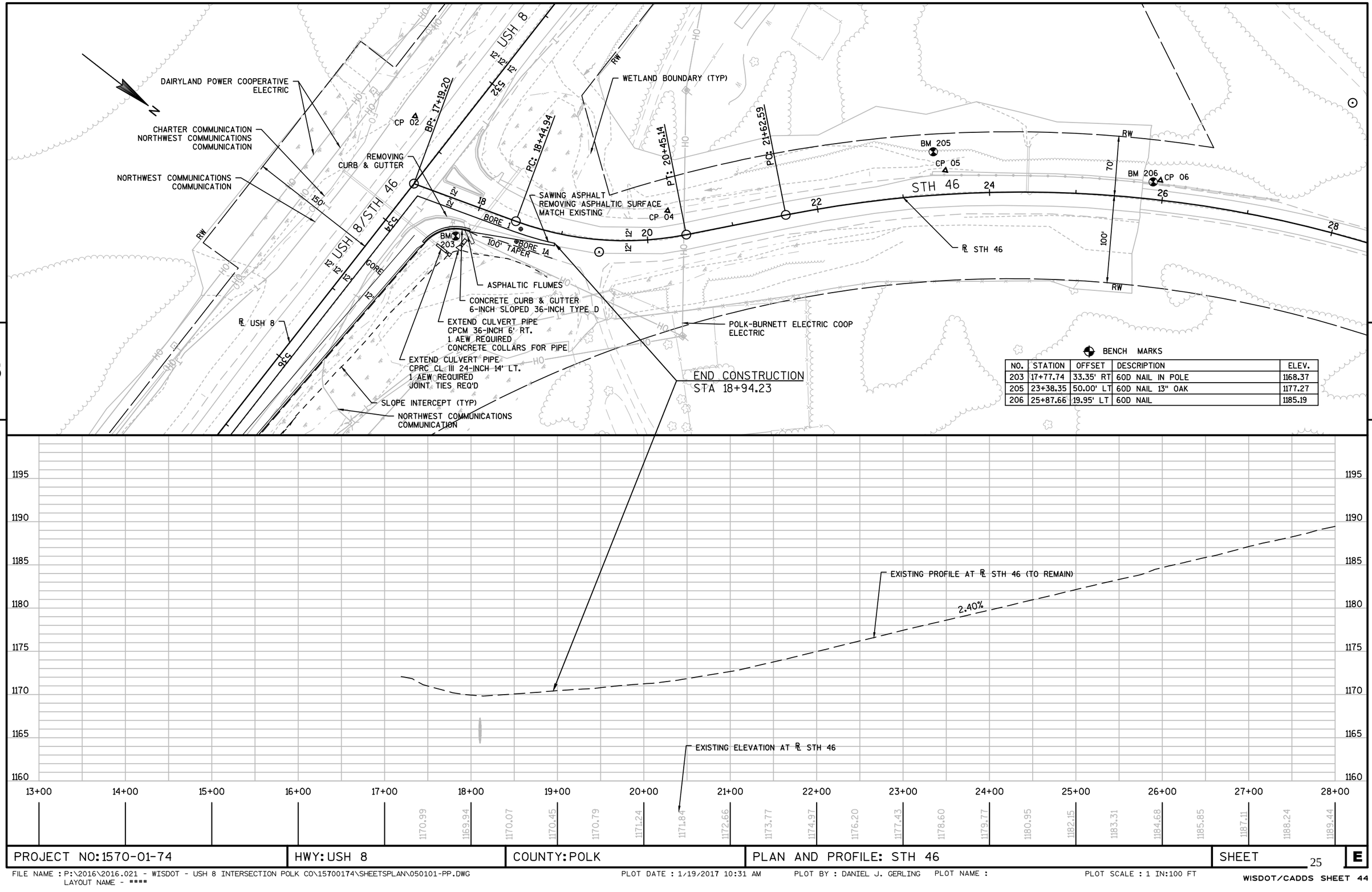
1185 1180 1175 1170 1165 1160 1155 1150

531+00 532+00 533+00 534+00 535+00 536+00 537+00 538+00 539+00 540+00 541+00 542+00 543+00 544+00 545+00 546+00

1173.58 1173.31 1173.13 1172.91 1172.41 1172.06 1171.97 1171.84 1171.80 1171.72 1171.68 1171.59 1171.44 1171.27 1171.08 1170.79 1170.45 1169.96 1169.93 1169.91 1169.75 1169.65 1169.72 1169.83 1170.35 1171.00 1171.82 1172.77 1173.94 1175.25 1176.65

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	PLAN AND PROFILE: USH 8	SHEET 24	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - ****
PLOT DATE : 1/19/2017 10:31 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:100 FT

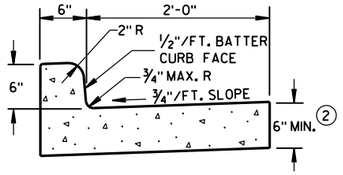


PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	PLAN AND PROFILE: STH 46	SHEET 25	E

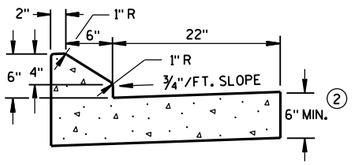
FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - ****
PLOT DATE : 1/19/2017 10:31 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

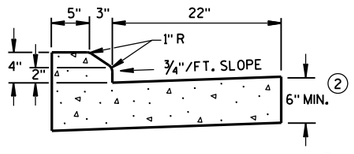
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-04A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-04B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C35-01A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



TYPES A & D ①

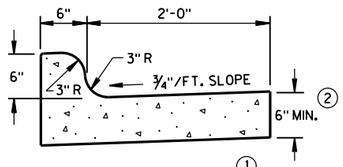


6" SLOPED CURB TYPES G & J ①

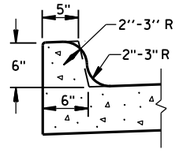


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

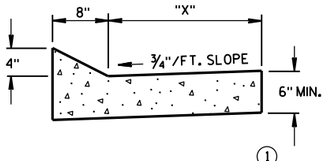


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

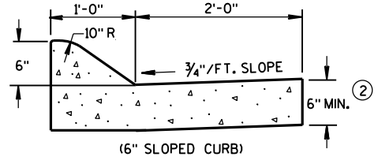
CONCRETE CURB & GUTTER 30"



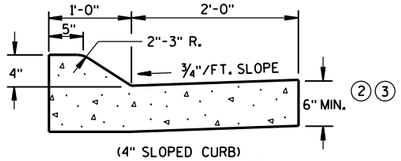
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"

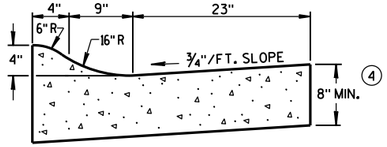


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ①⑤

CONCRETE CURB & GUTTER 36"

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, R AND TBTT.

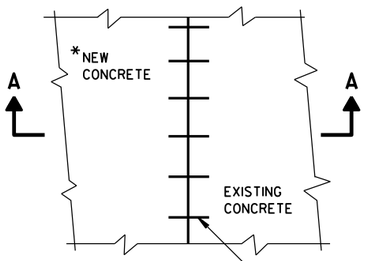
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

④ 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.

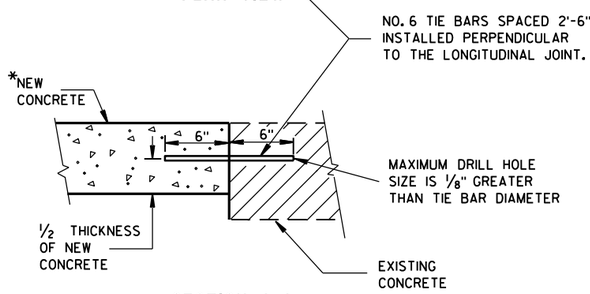
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



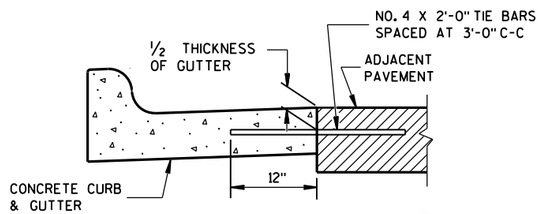
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

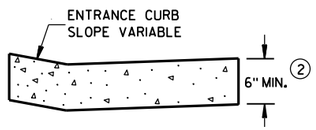


SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

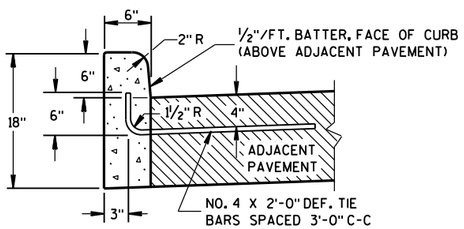


TYPICAL TIE BAR LOCATION ①

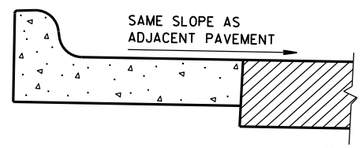


DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

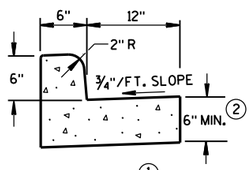


① TYPES A & D



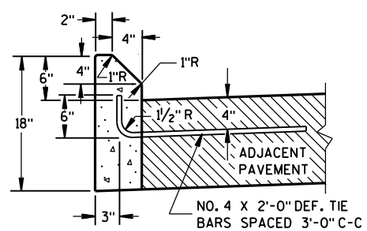
⑥ REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)



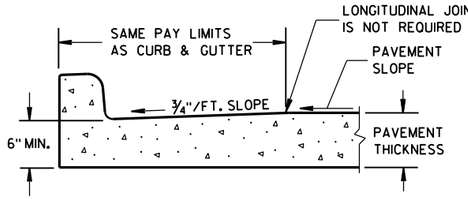
① TYPES A & D

CONCRETE CURB & GUTTER 18"

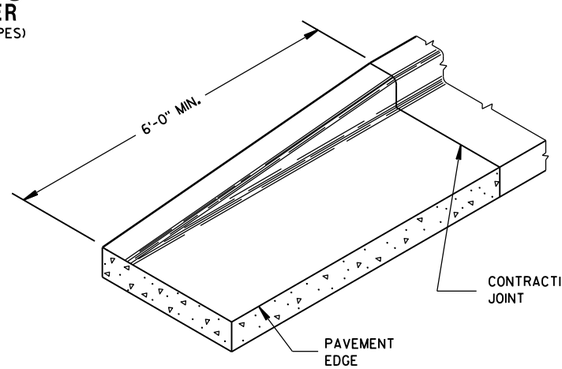


① TYPES G & J

CONCRETE CURB



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

June, 2016 — DATE

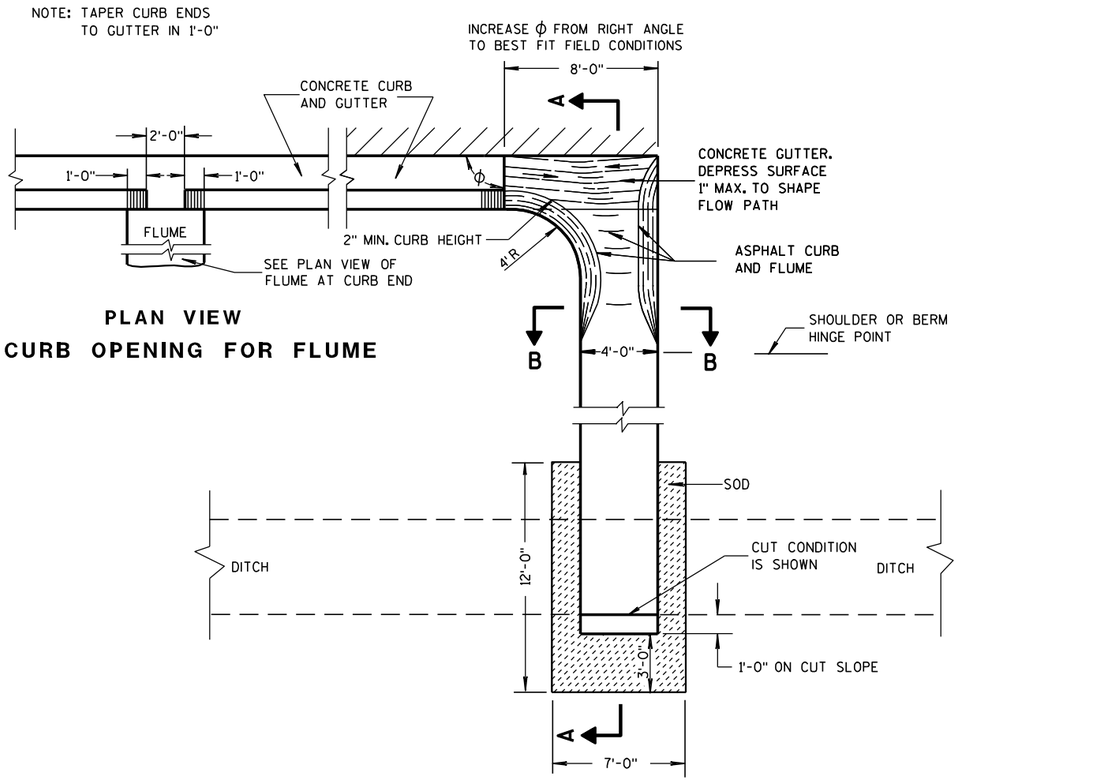
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

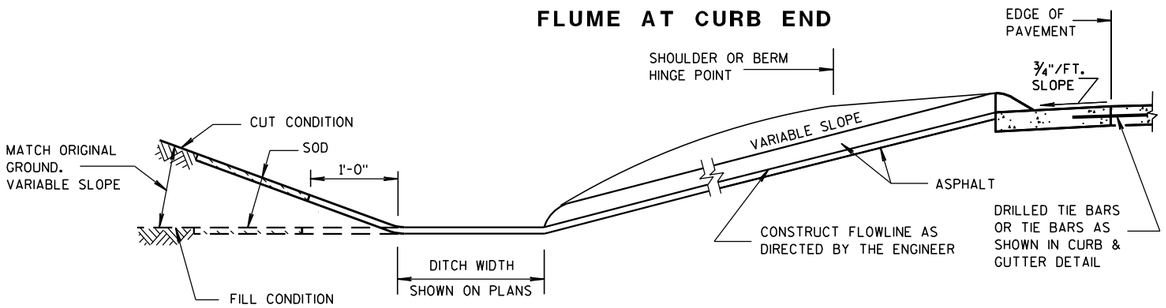
S.D.D. 8 D 1-19

ASPHALTIC FLUME

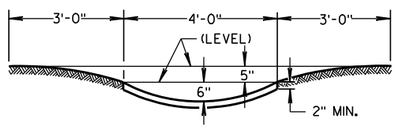


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

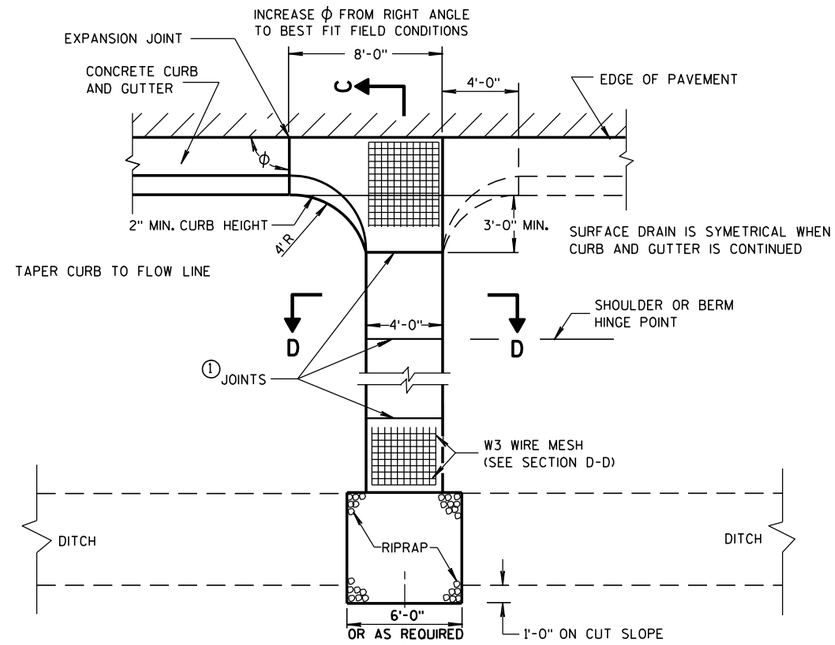
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

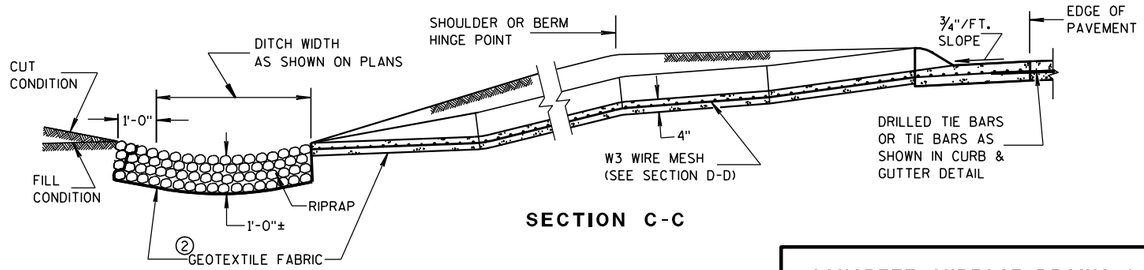
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

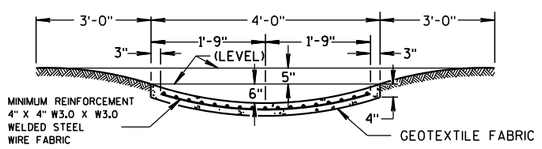
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

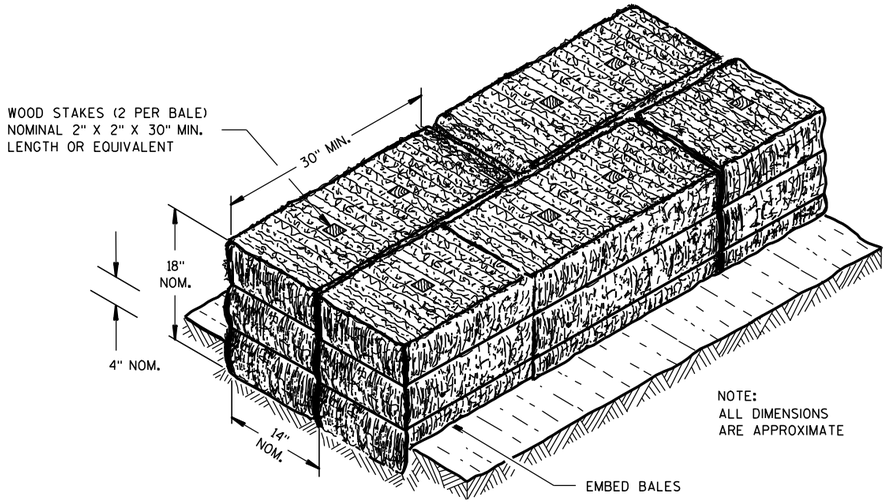
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
28
MENT
FHWA

6

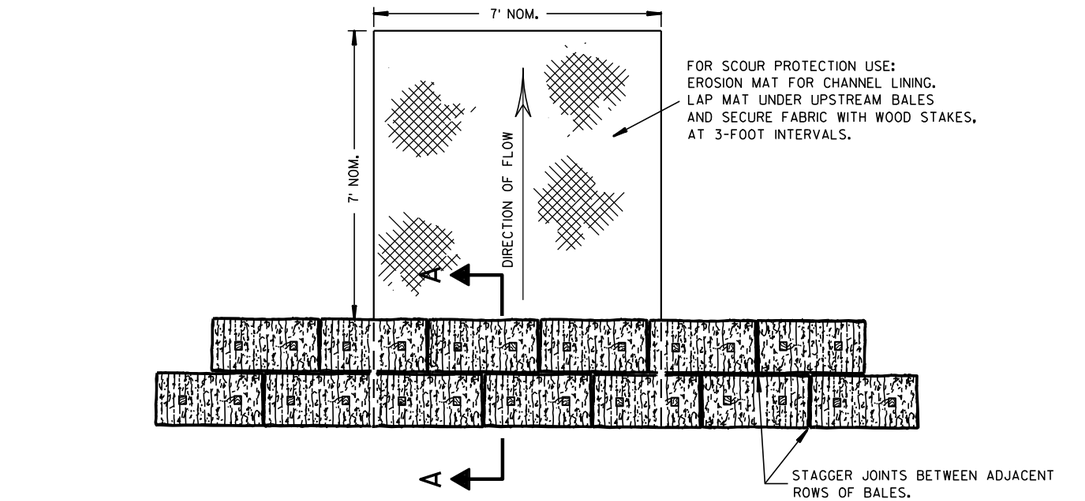
S.D.D. 8 D 4-5

6

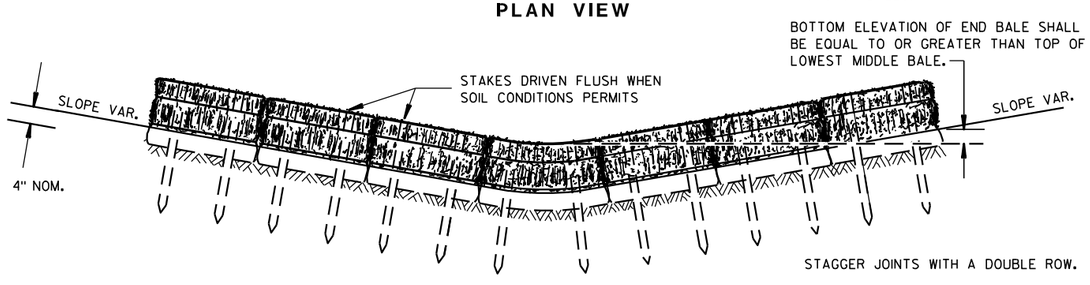
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



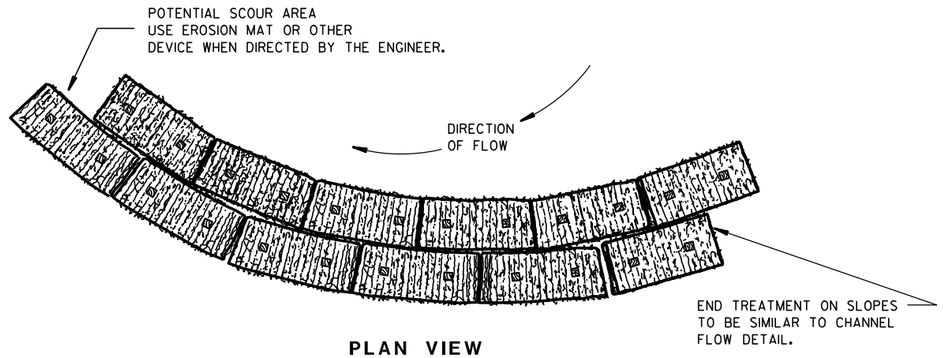
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

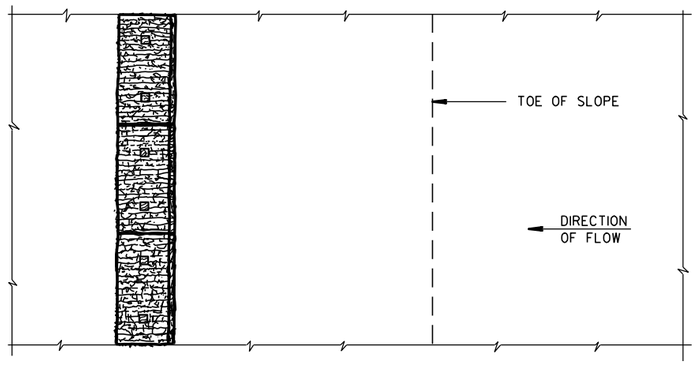
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

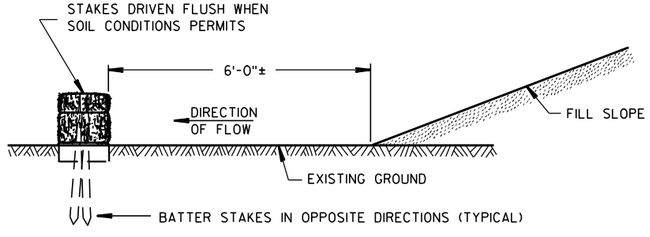


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

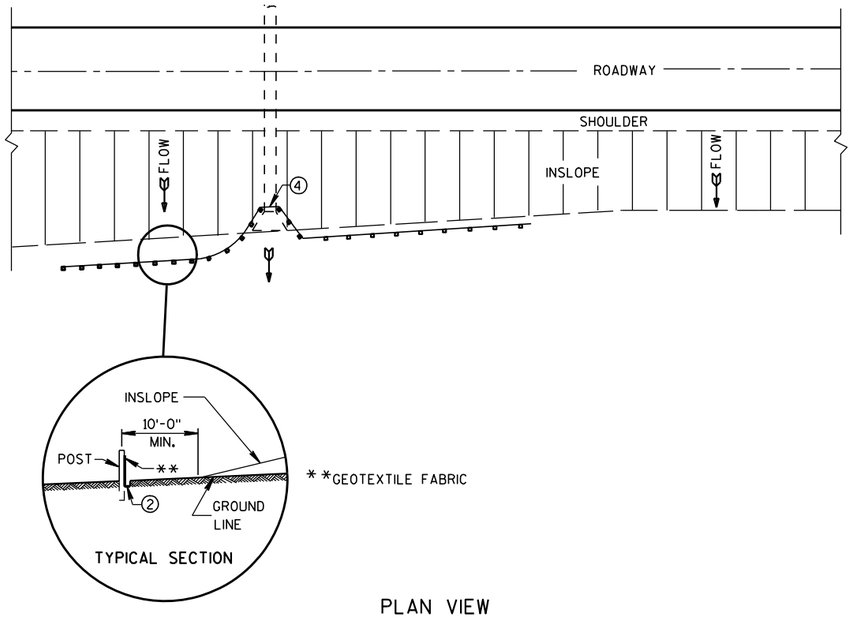
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

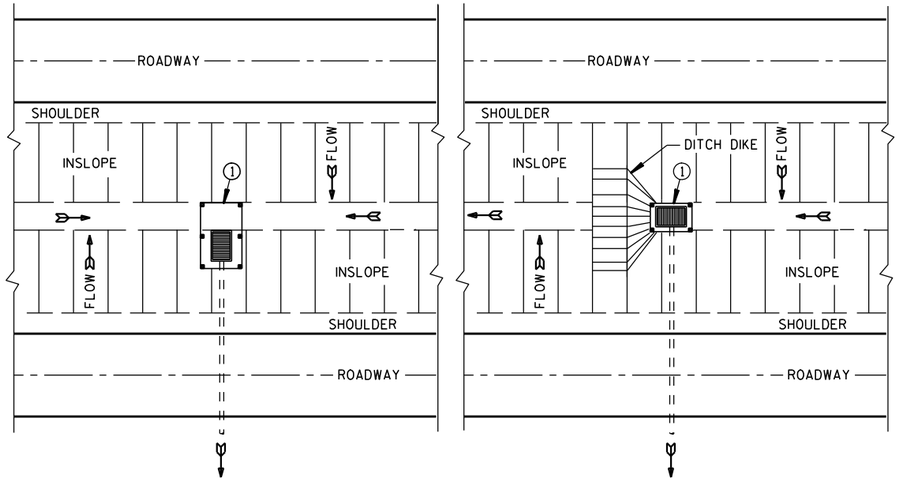
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

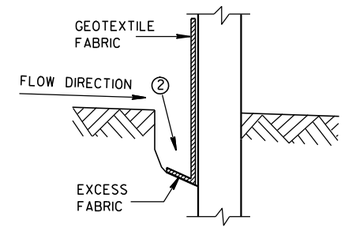
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

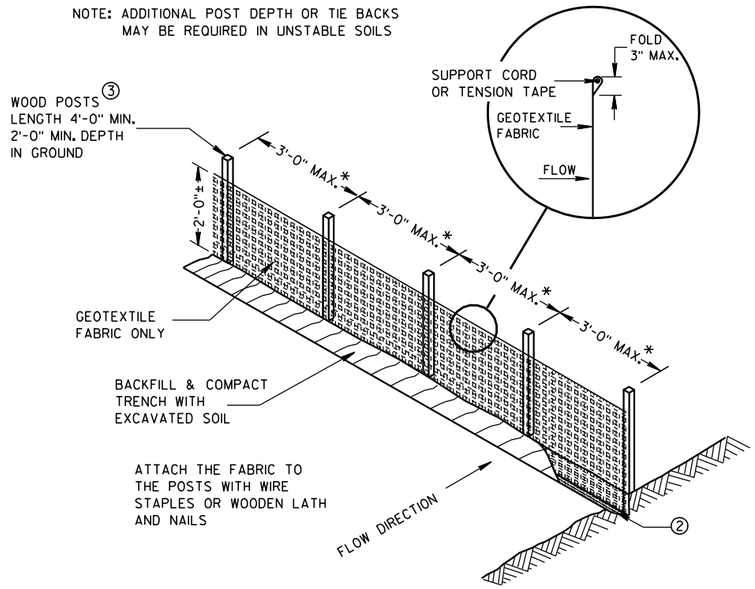
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

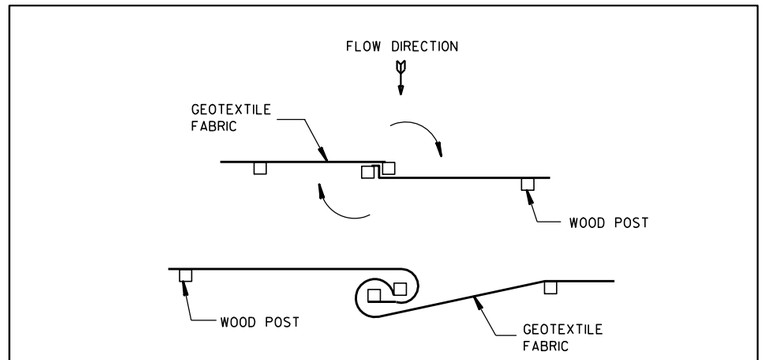
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



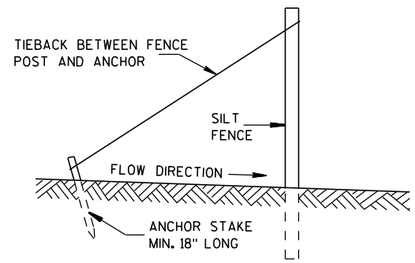
TRENCH DETAIL



SILT FENCE



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

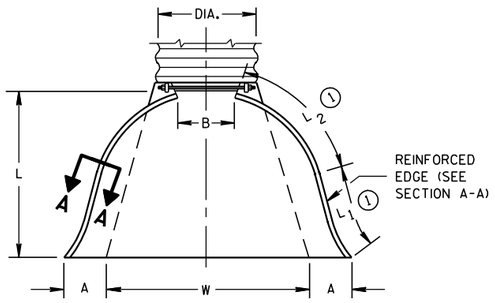
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

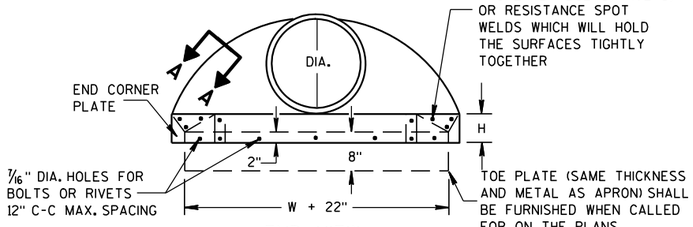
REINFORCED CONCRETE APRON ENDWALLS

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

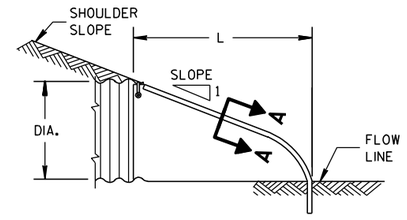
*MINIMUM
**MAXIMUM



PLAN VIEW

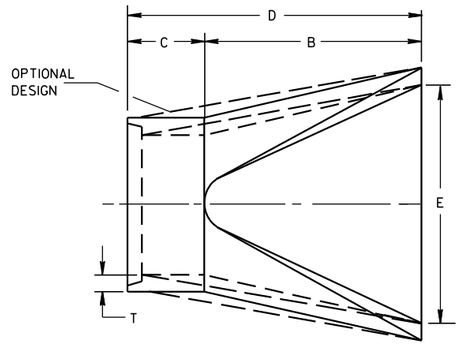


END VIEW

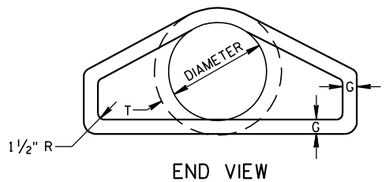


SIDE ELEVATION

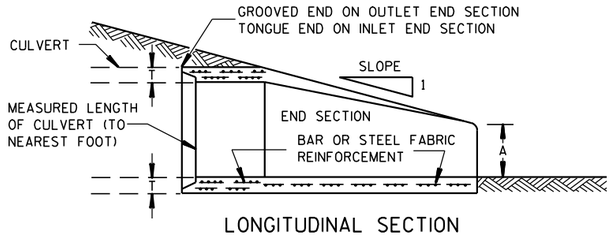
METAL ENDWALLS



PLAN

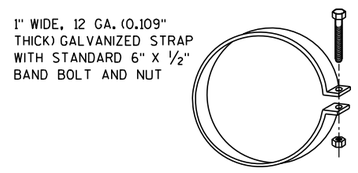


END VIEW



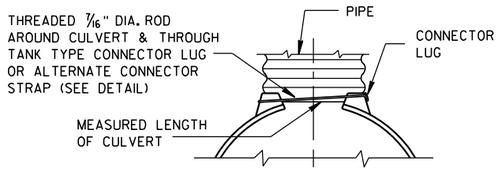
LONGITUDINAL SECTION

CONCRETE ENDWALLS

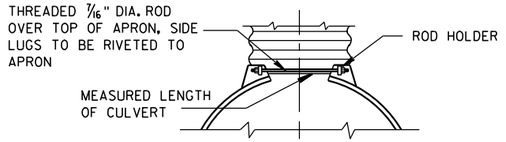


ALTERNATE FOR TYPE 1 CONNECTION

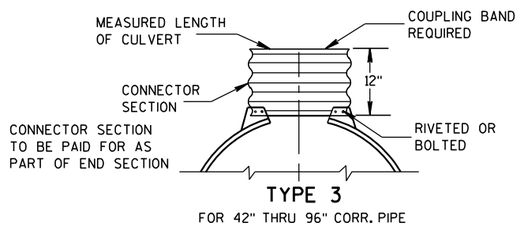
END SECTION CONNECTOR STRAP



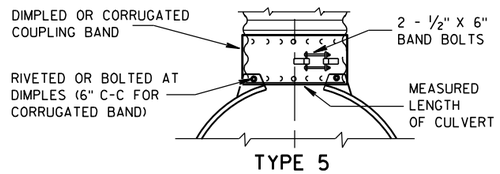
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

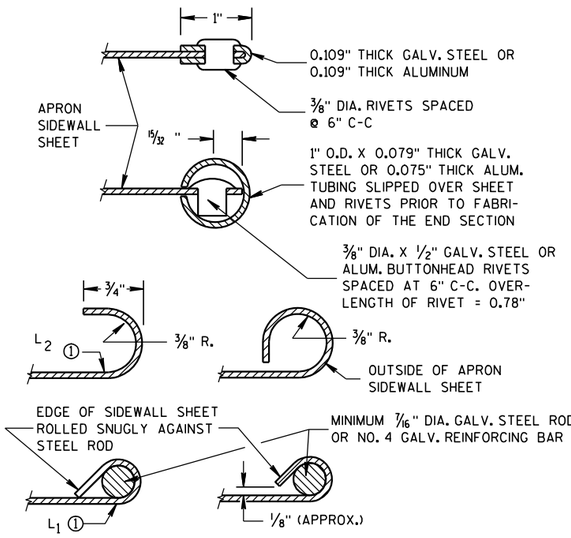
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

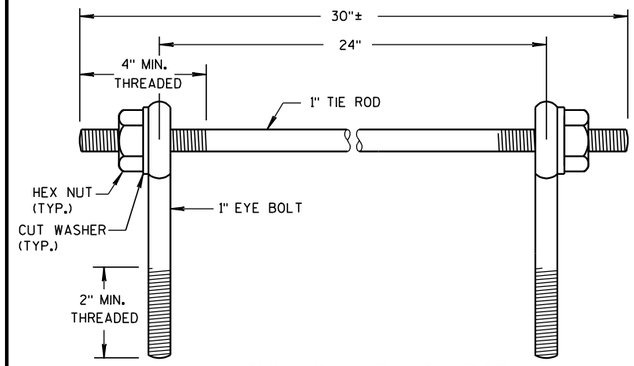
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

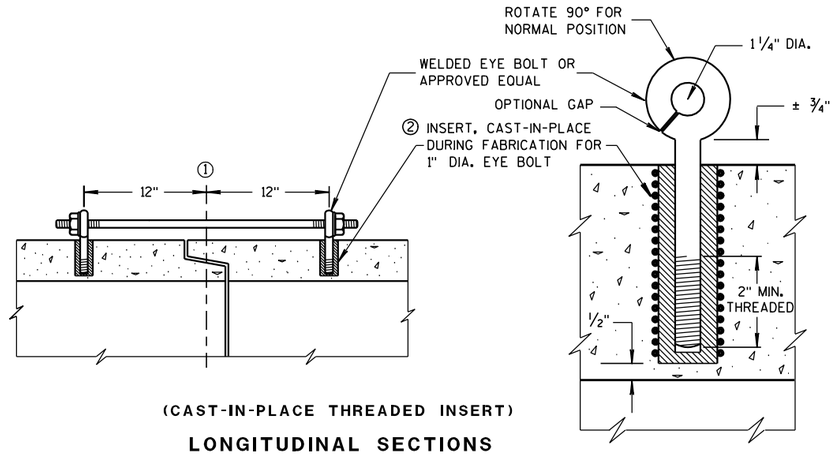
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

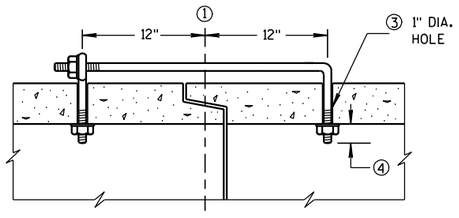
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

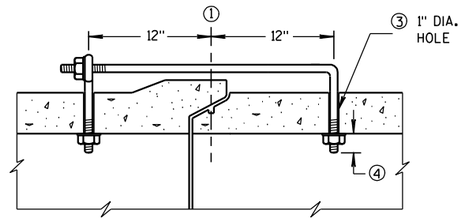
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

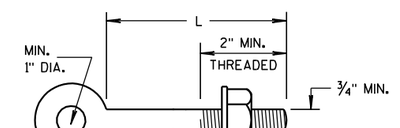


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

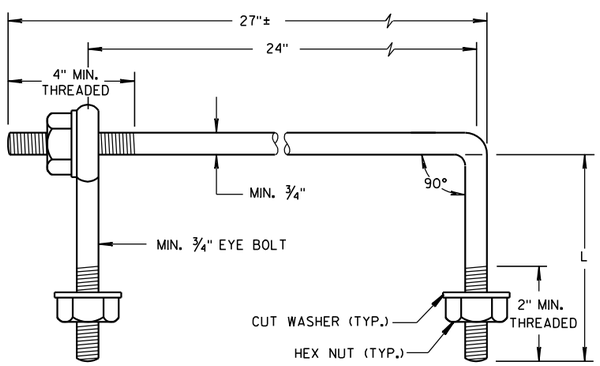
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

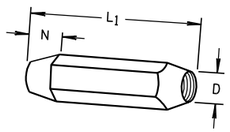
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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



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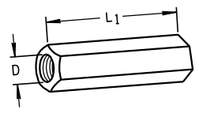
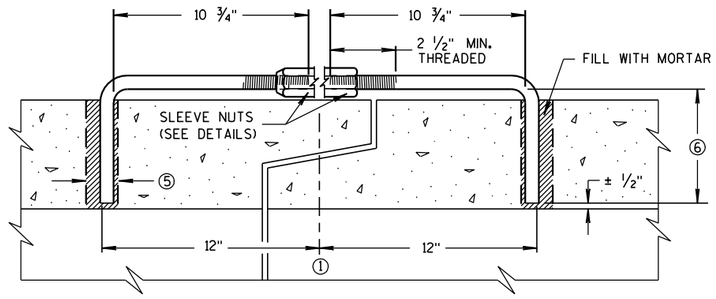


PLAIN

RIGHT AND LEFT THREADS

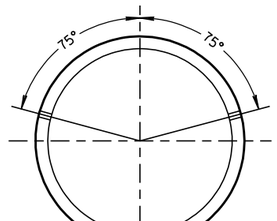
SLEEVE NUTS



LONGITUDINAL SECTION

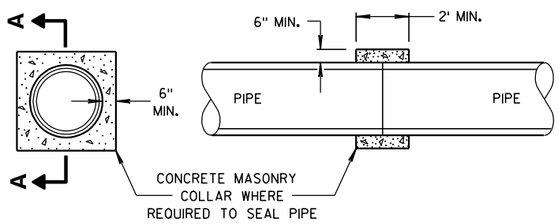
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

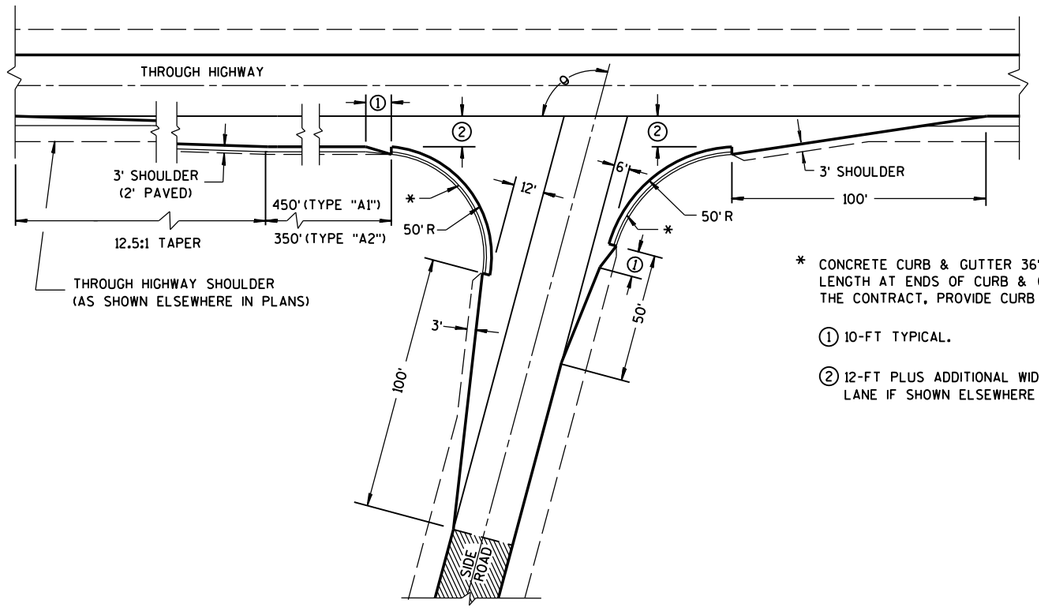
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
32
FHWA

6

S.D.D. 8 F 4-7



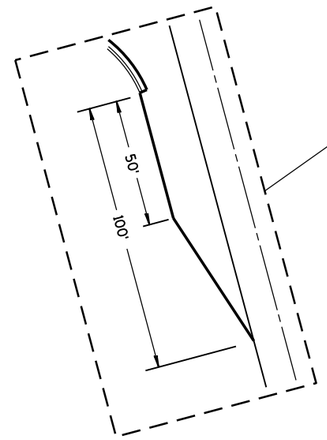
θ = MORE THAN 80°

* 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.

① 10-FT TYPICAL.

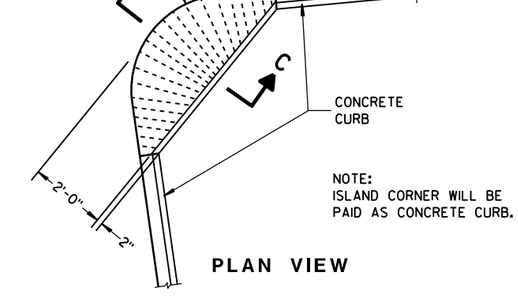
② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.

EXISTING PAVED SURFACE



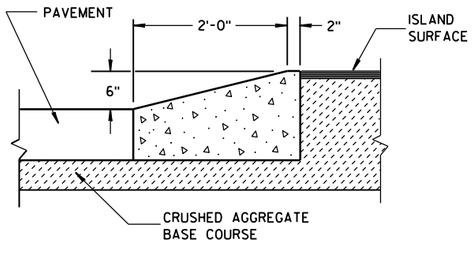
θ = ACUTE ANGLES 80° OR LESS

SIDE ROAD WIDENING AND TAPER REQUIRED WHERE
THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS



NOTE:
ISLAND CORNER WILL BE
PAID AS CONCRETE CURB.

PLAN VIEW



SECTION C-C

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR
VARIABLE SIDE ROAD INTERSECTION ANGLES
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O") X / Y								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 / -14.0	44.9 / -12.0	46.4 / -72.4	41.9 / 0.0	205.0 / 0.0	104.6 / -12.0	64.0 / -75.5	85.0 / -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 / -14.0	39.0 / -12.0	37.8 / -71.6	39.4 / 0.0	196.1 / 0.0	95.7 / -12.0	54.1 / -71.5	70.5 / -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 / -14.0	33.9 / -12.0	29.8 / -70.1	37.4 / 0.0	188.3 / 0.0	87.8 / -12.0	45.6 / -67.5	56.1 / -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 / -14.0	29.3 / -12.0	22.3 / -67.9	35.7 / 0.0	181.2 / 0.0	80.7 / -12.0	38.2 / -63.4	41.8 / -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 / -14.0	25.4 / -12.0	15.6 / -65.2	34.4 / 0.0	174.8 / 0.0	74.4 / -12.0	31.8 / -59.3	27.6 / -156.5	18.9	52.0	15.6	66.9	158.9

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

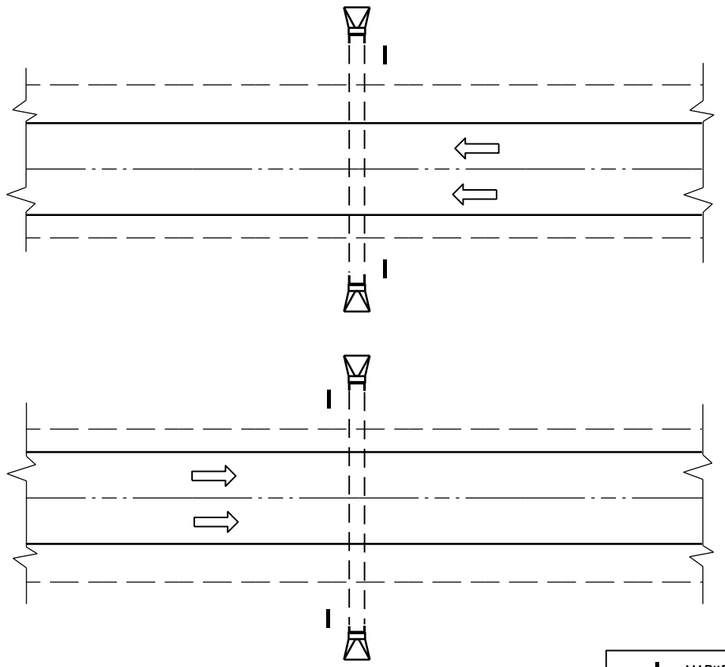
AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/12 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

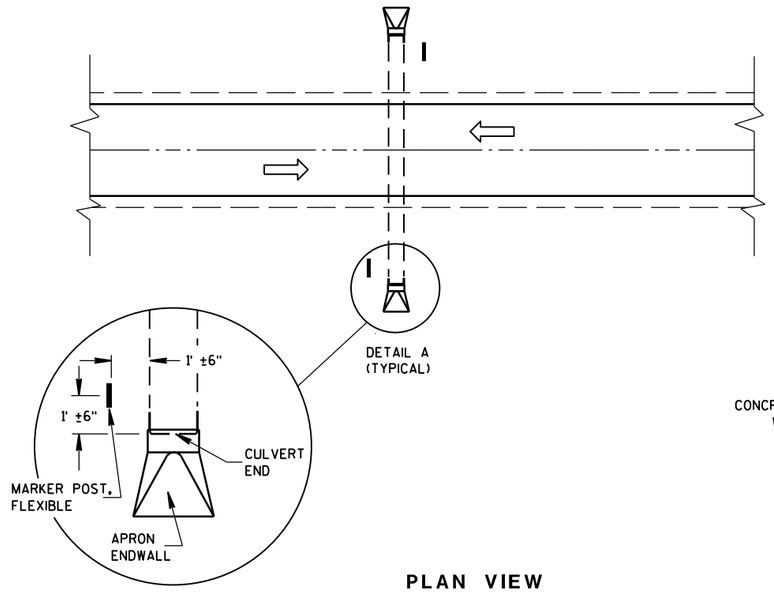
S.D.D. 9 A 1-13b

S.D.D. 9 A 1-13b



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

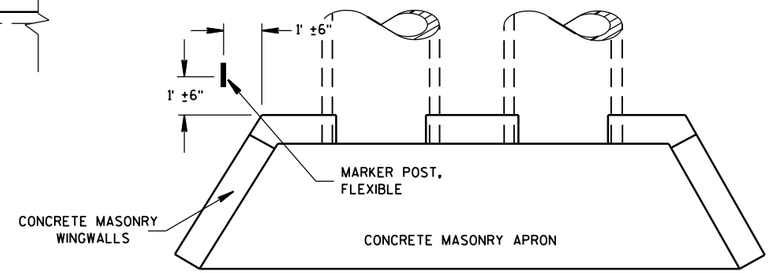
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

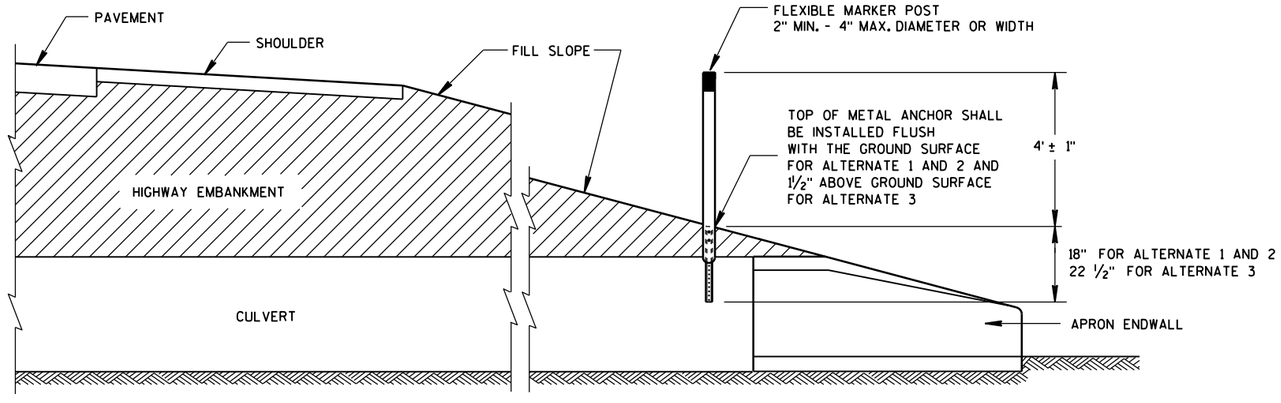
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

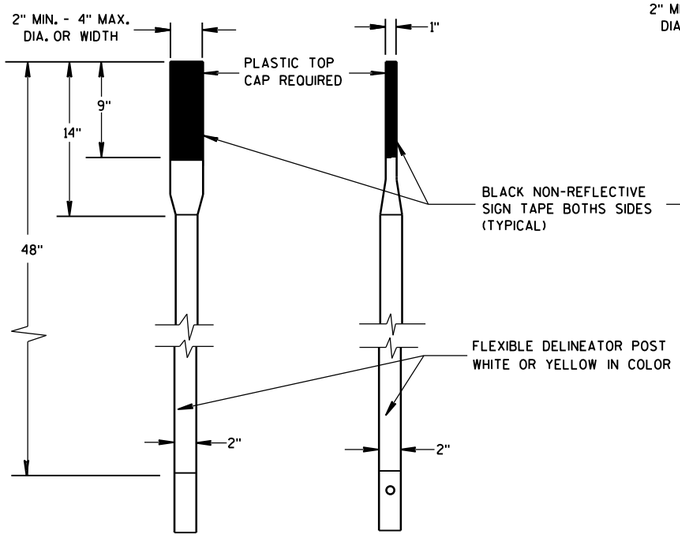
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

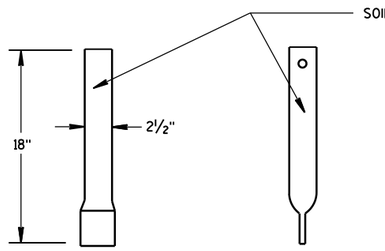
6

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

6

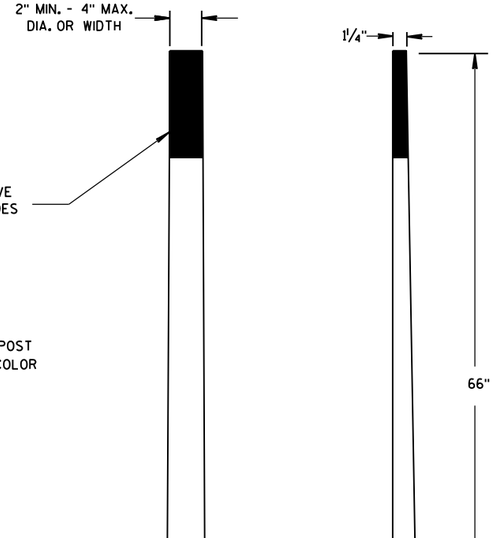
S.D.D. 15 A 3-2a





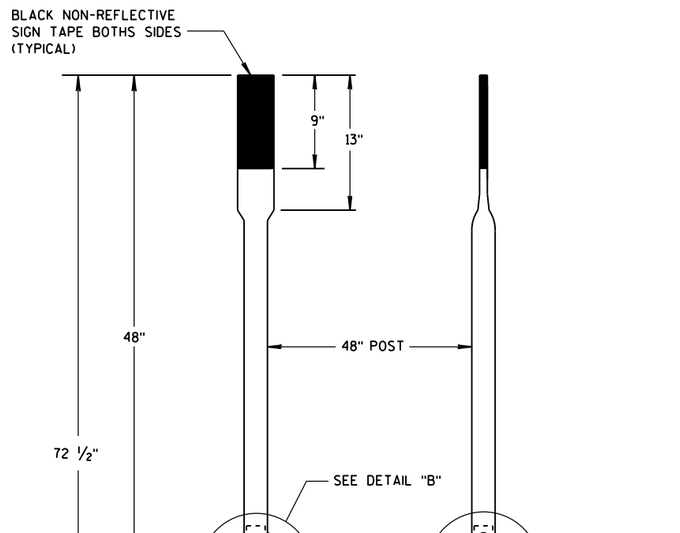
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

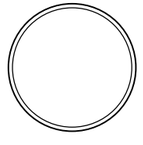
ALTERNATE 2



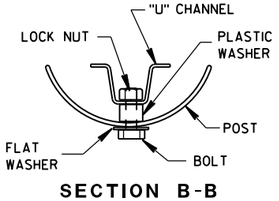
FRONT VIEW SIDE VIEW

ALTERNATE 3

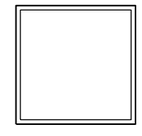
FLEXIBLE MARKER POSTS



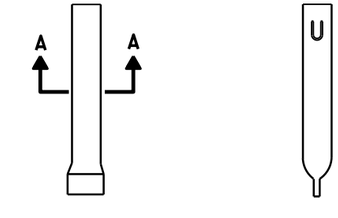
SECTION A-A



SECTION B-B

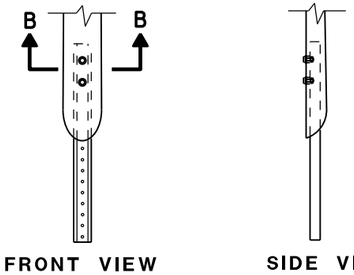


SECTION C-C



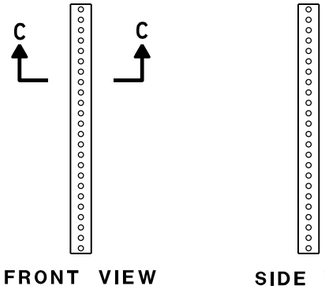
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

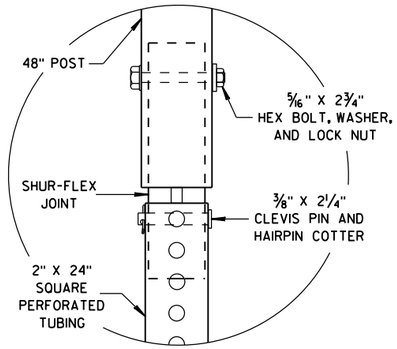
ALTERNATE 2



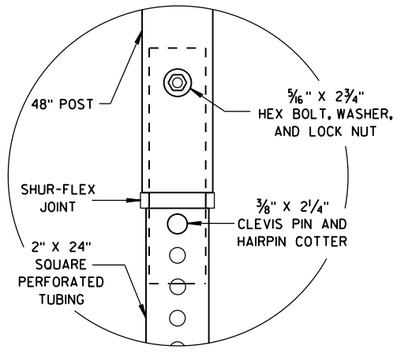
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

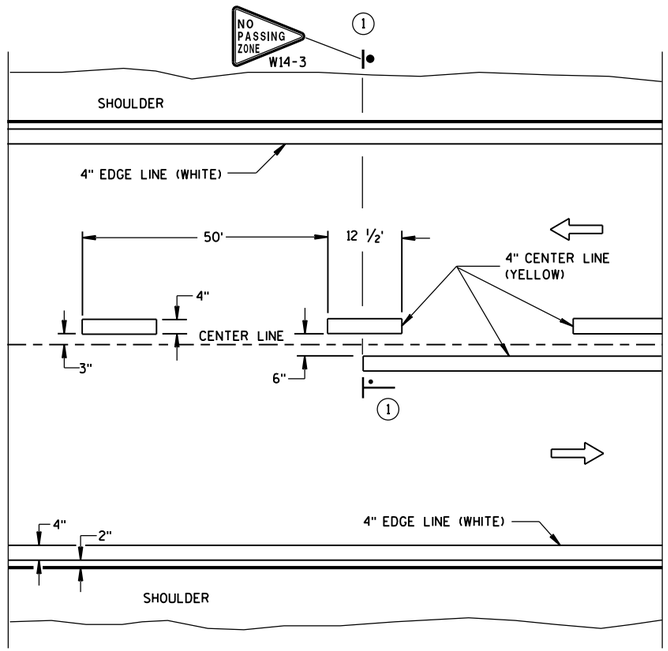
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

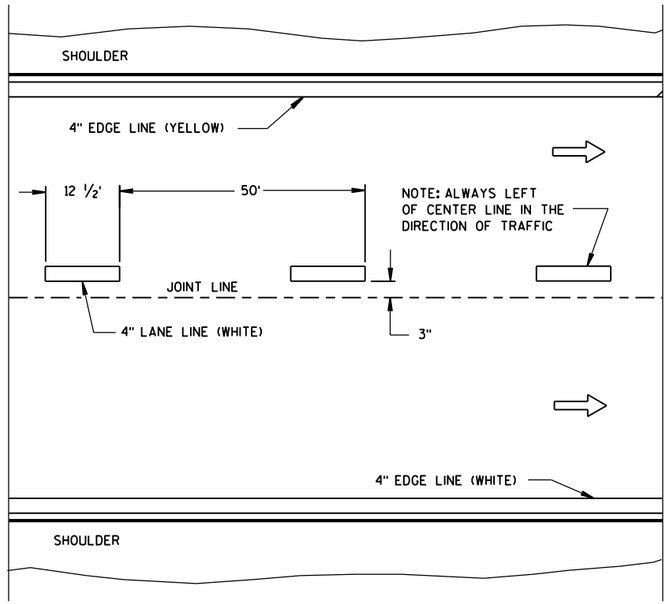
S.D.D. 15 A 3-2b

6

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

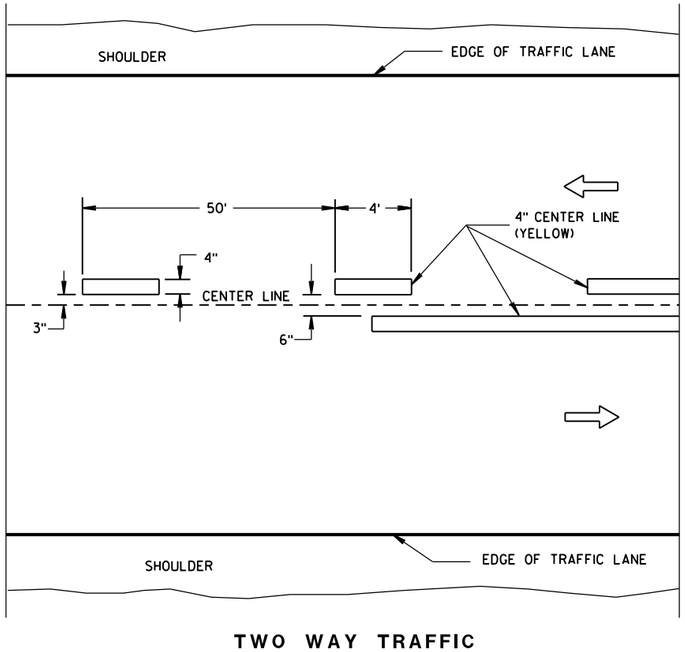
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

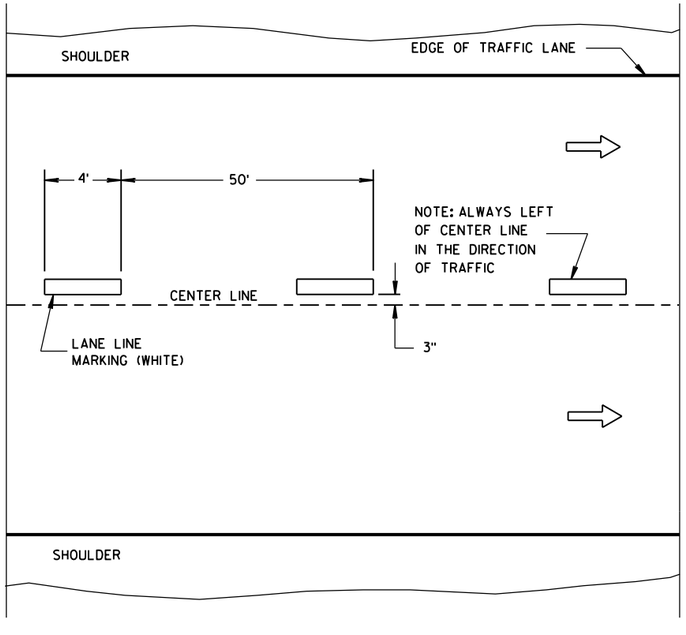
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

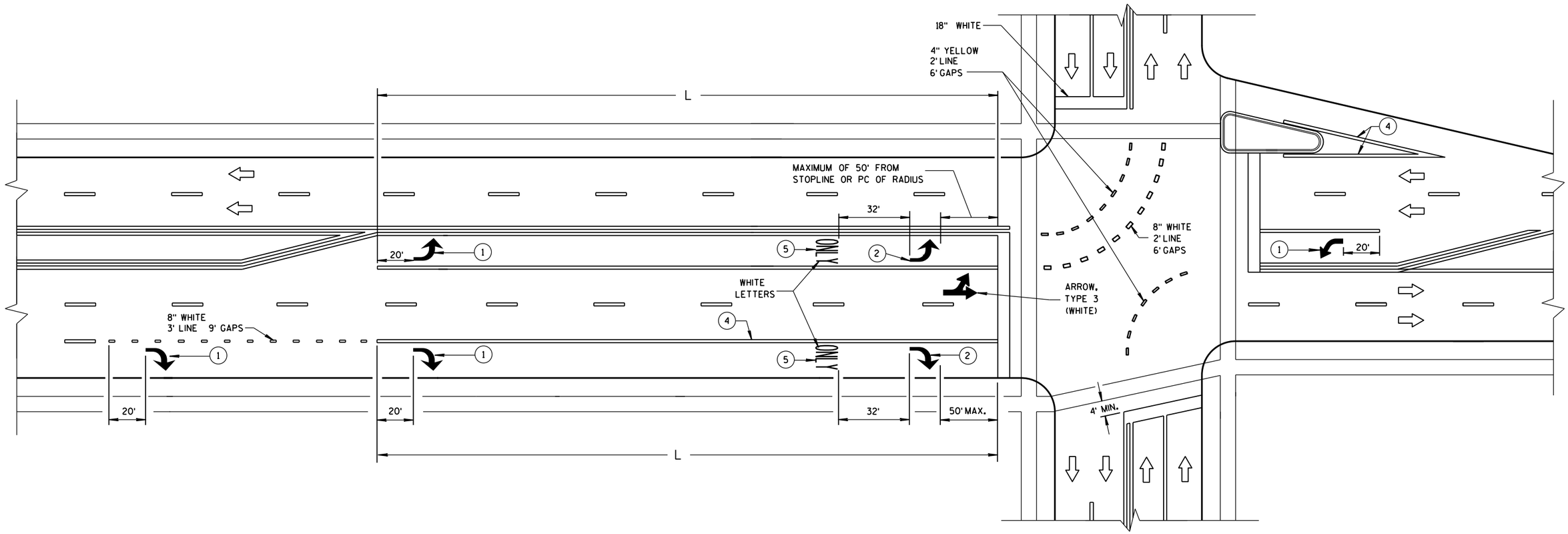
LONGITUDINAL MARKING (MAINLINE)

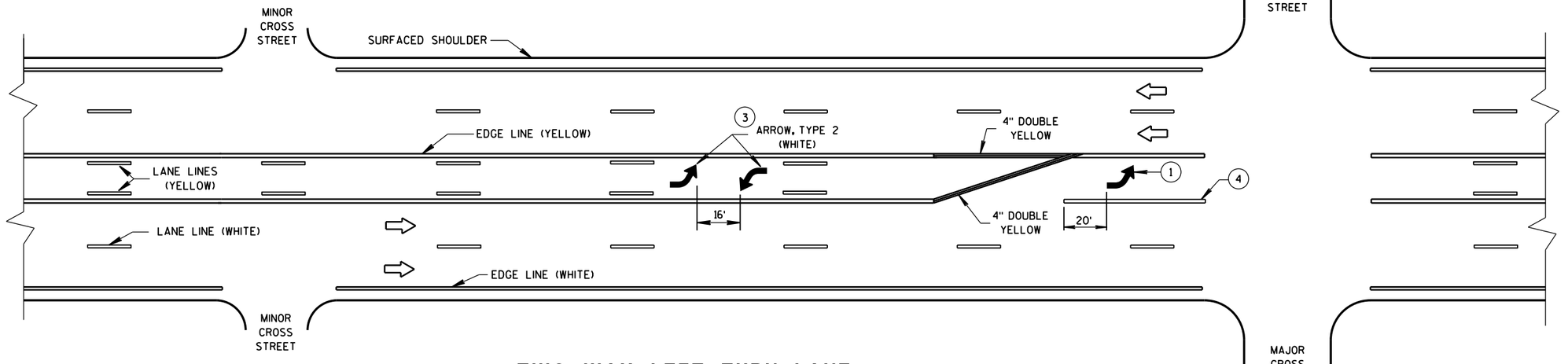
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

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





GENERAL NOTES

(1) REQUIRED ARROW, TYPE 2 (WHITE).

(2) REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.

(3) A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

(4) 8" WHITE

(5) REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL

L = LENGTH OF TURN BAY

TWO WAY LEFT TURN LANE

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

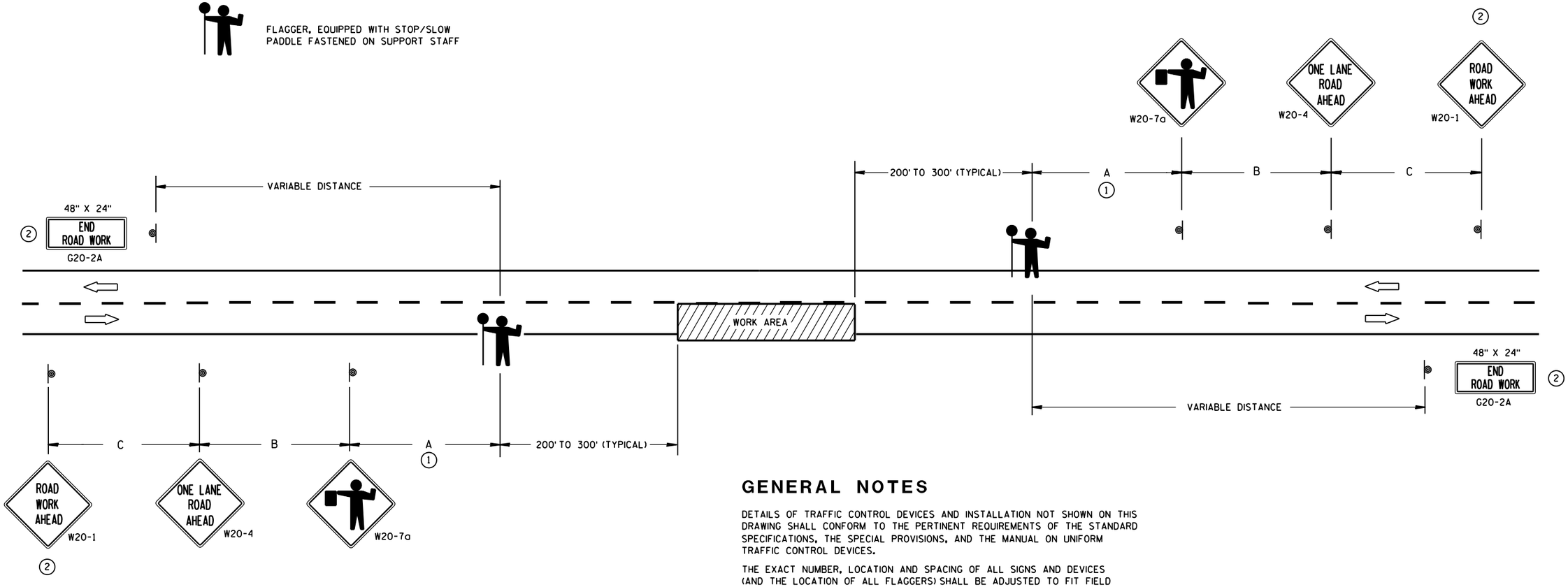
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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

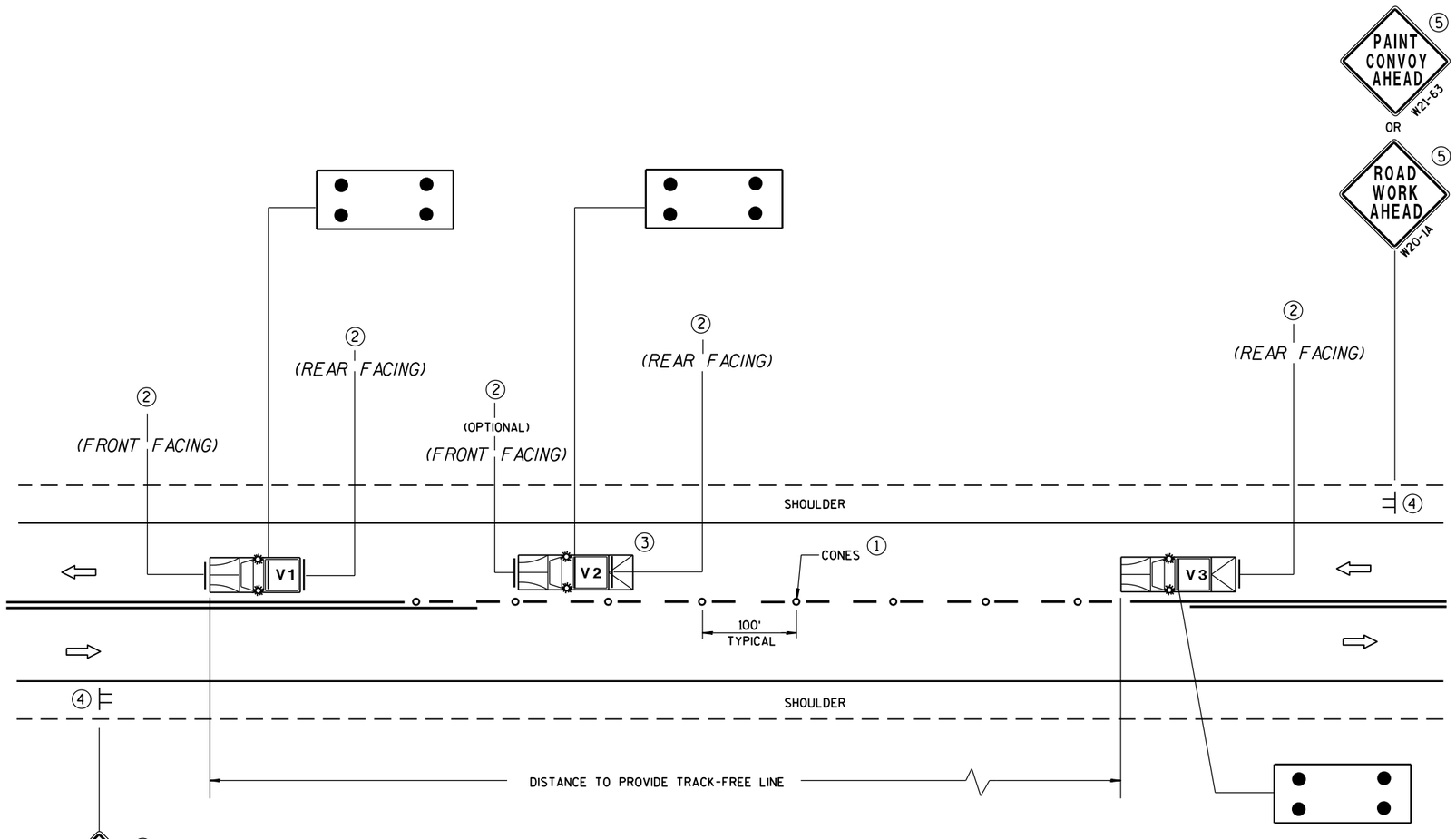
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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
o	CONES
⁘	FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

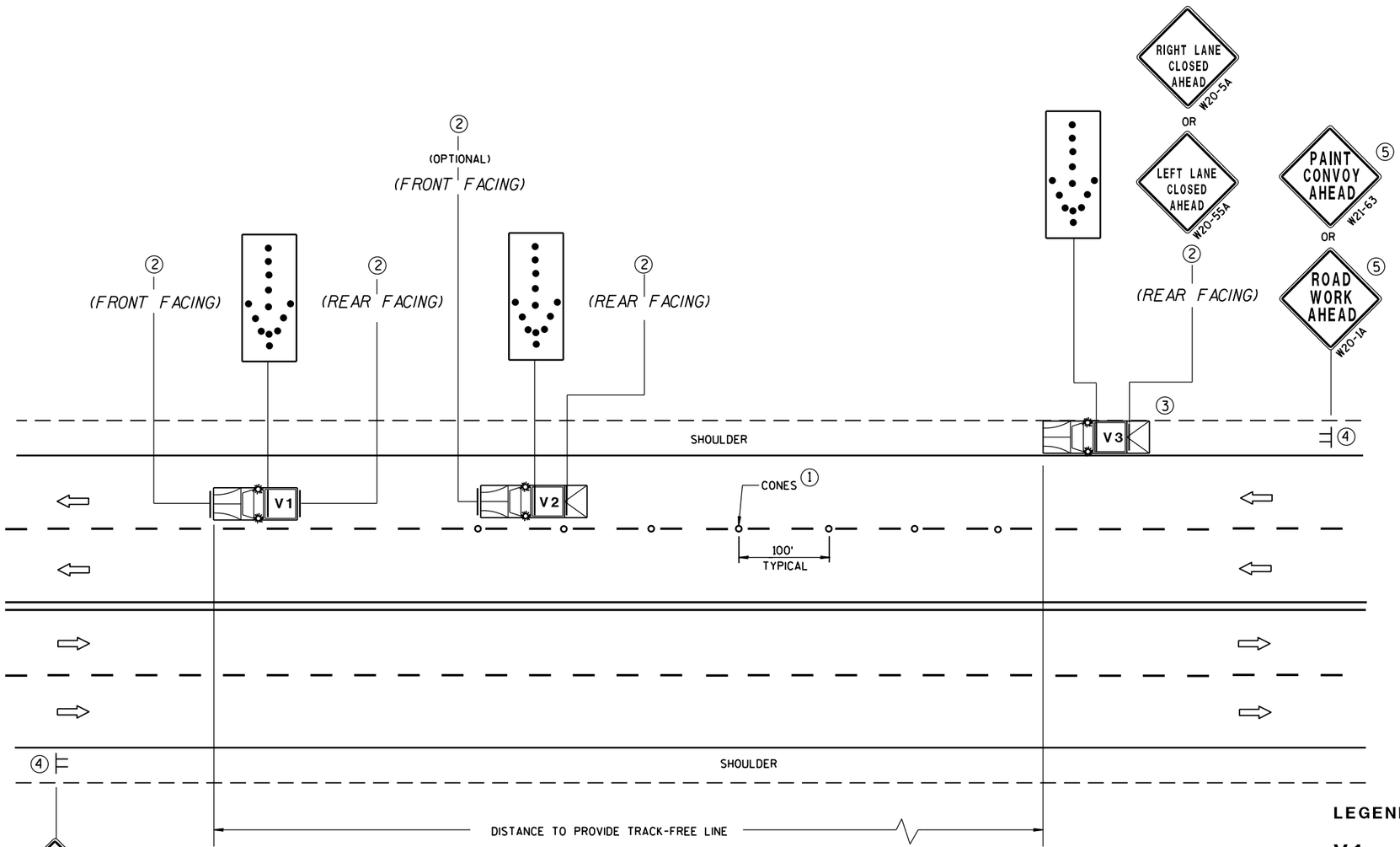
APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZON SAFETY ENGINE
FHWA

6

S.D.D. 15 C 19-4a

6

S.D.D. 15 C 19-4a



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.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. 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.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

(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.

MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

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 (MERGE)

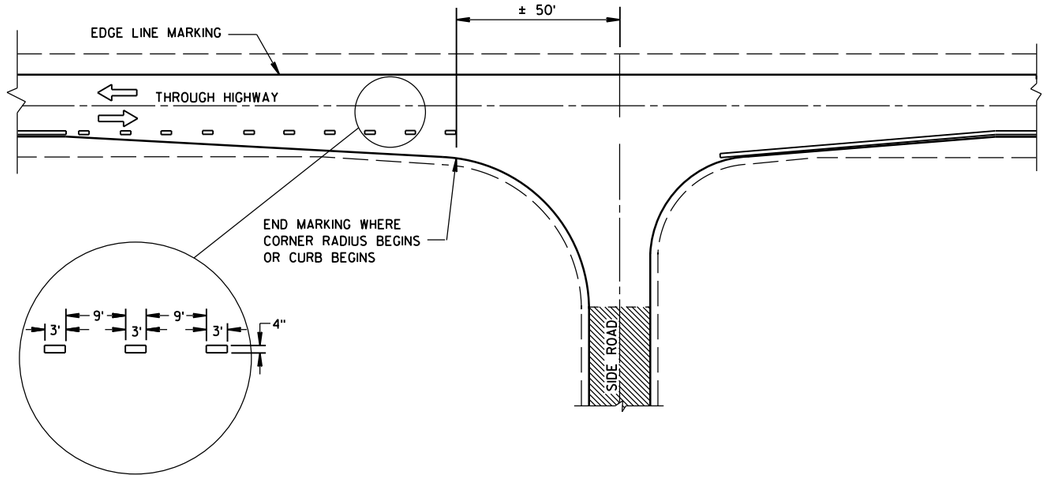
MOVING PAVEMENT MARKING OPERATION
MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZON SAFETY ENGINE
FHWA

6

S.D.D. 15 C 19-4b



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

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

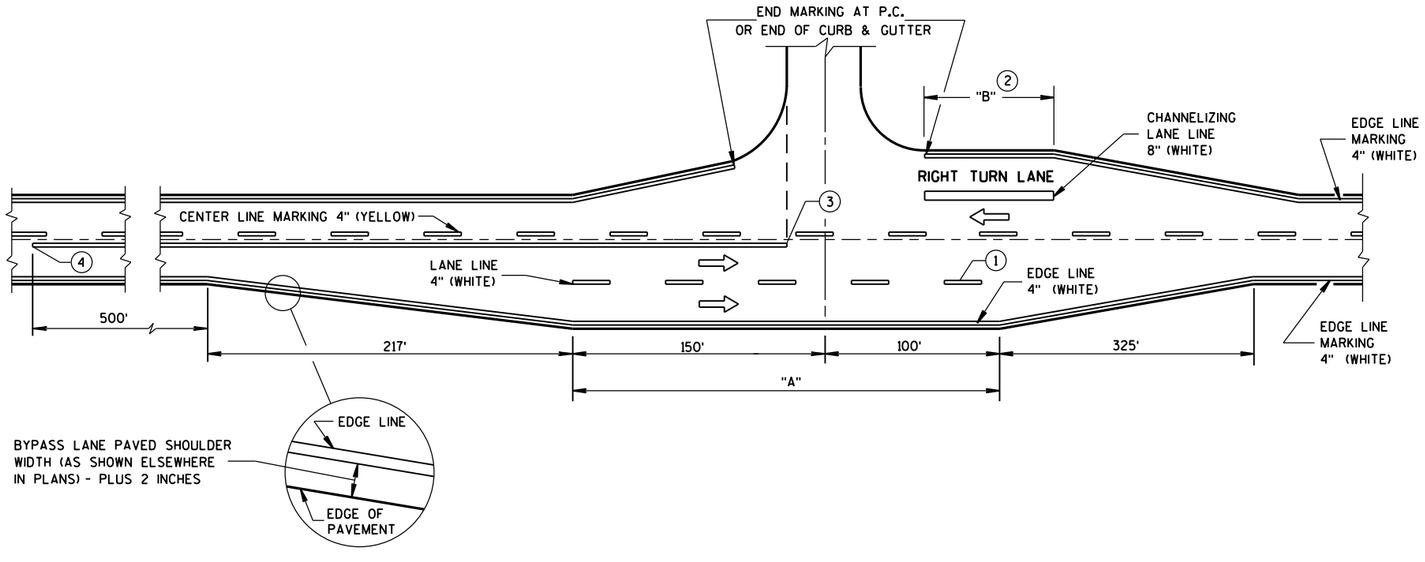
(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

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

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

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

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 C 35-1a

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.

W20-1A 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

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

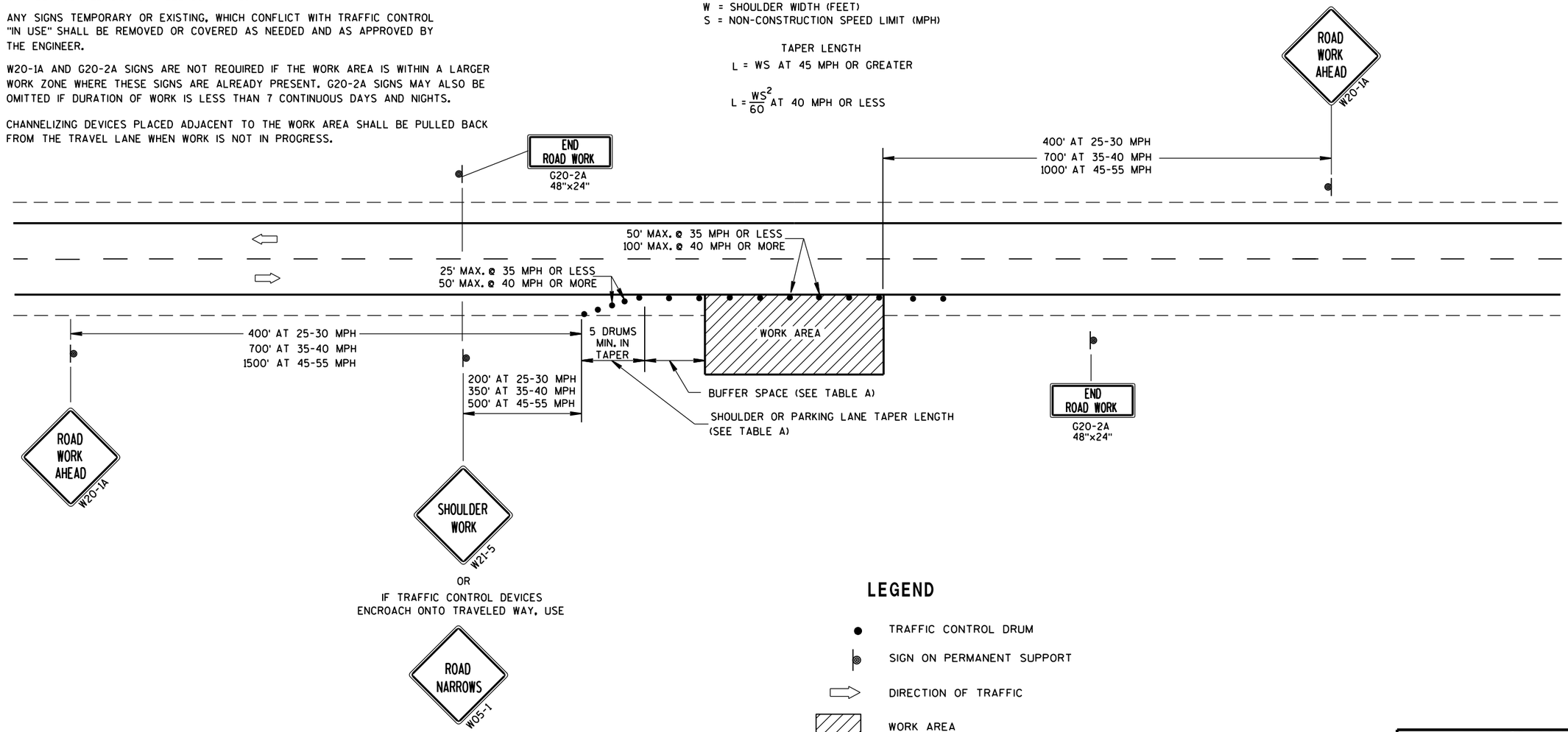
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER

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

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



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

July 14, 2015 — DATE

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

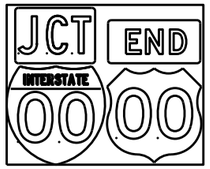
FHWA

6

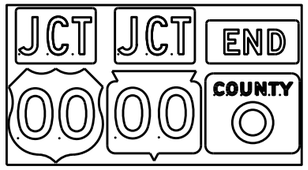
S.D.D. 15 D 28-3

TYPICAL ASSEMBLIES

J1-1

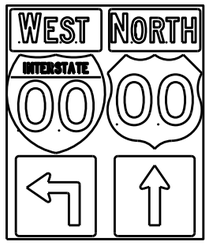


J1-2

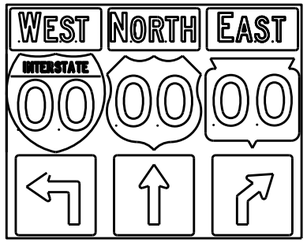


J1-3

J2-1



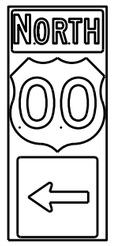
J2-2



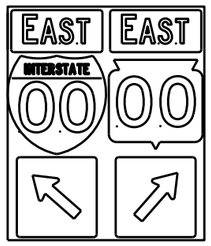
J2-3

JV

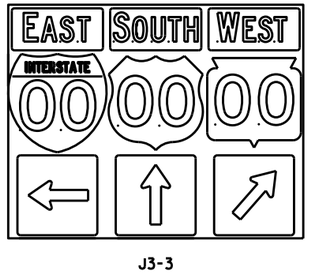
(Typical Vertical J-Assembly
See Note 10 and 11)



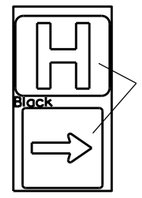
J3-1



J3-2

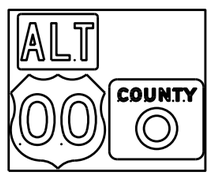


J3-3

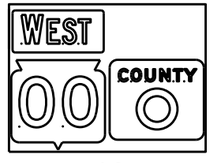


JH-1

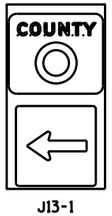
J4-1



J4-2



J4-2



J13-1

J12-1

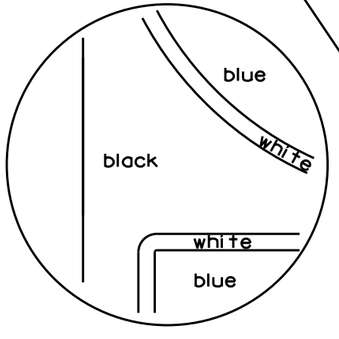
J32-1

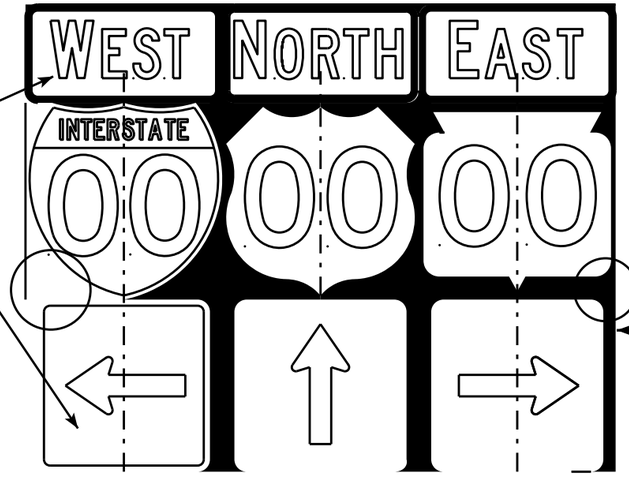
J33-1

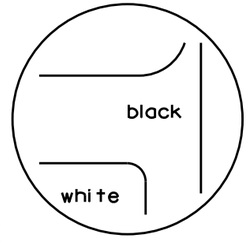
J23-1

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

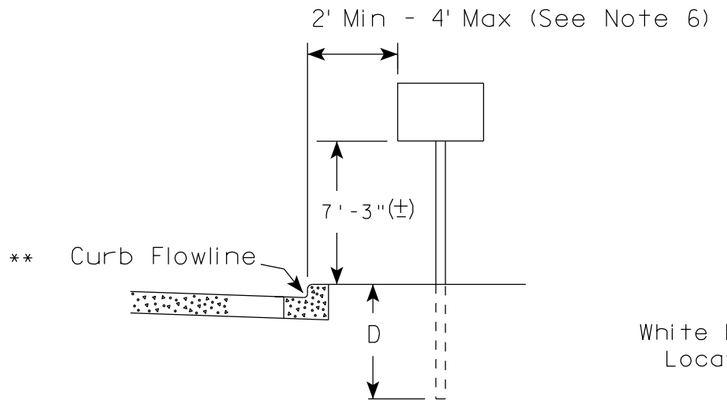
DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E

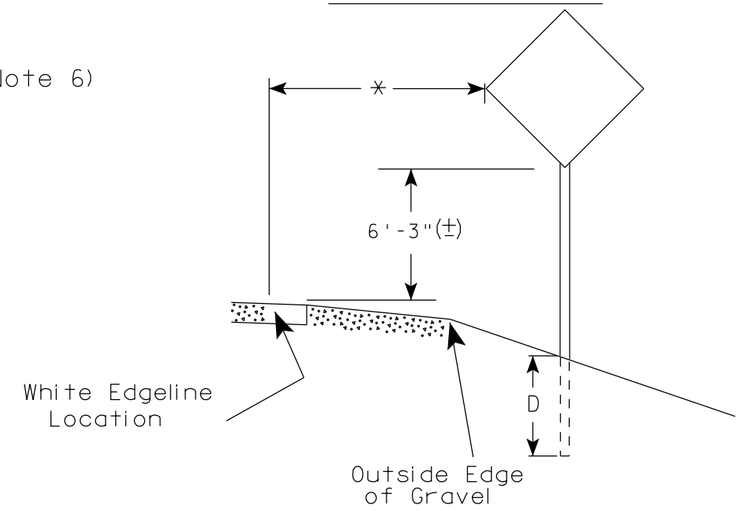
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

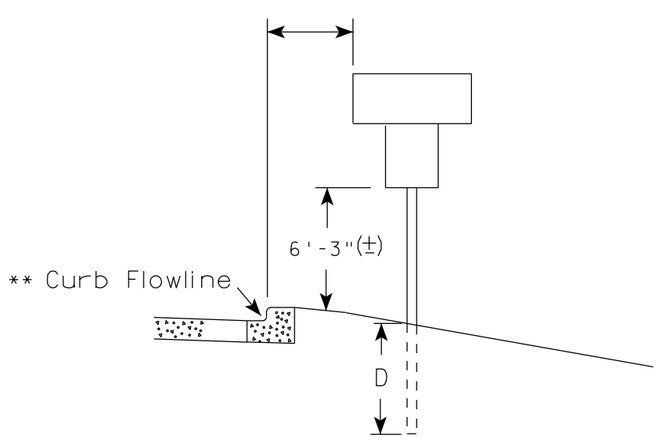
WISDOT/CADDS SHEET 42

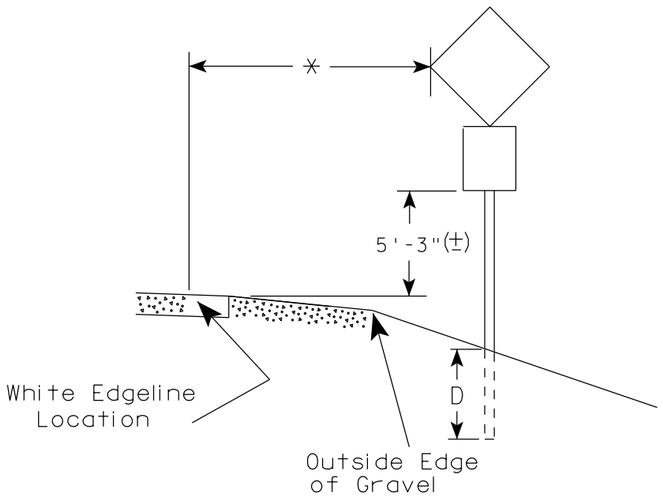
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

** 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.

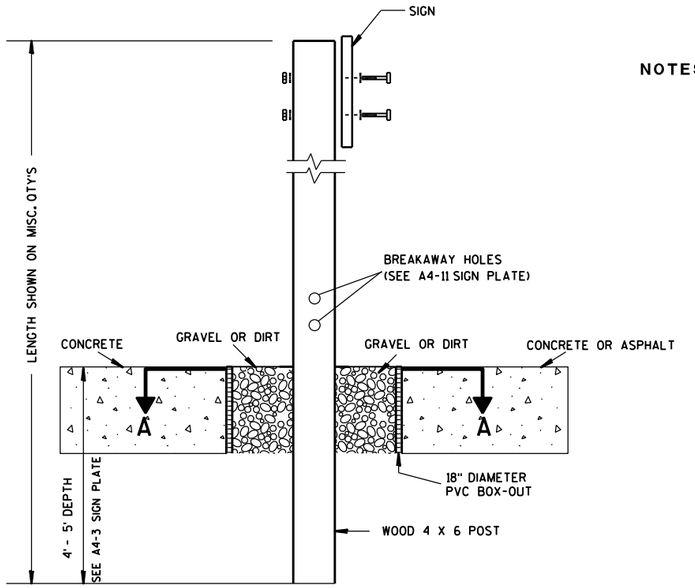
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

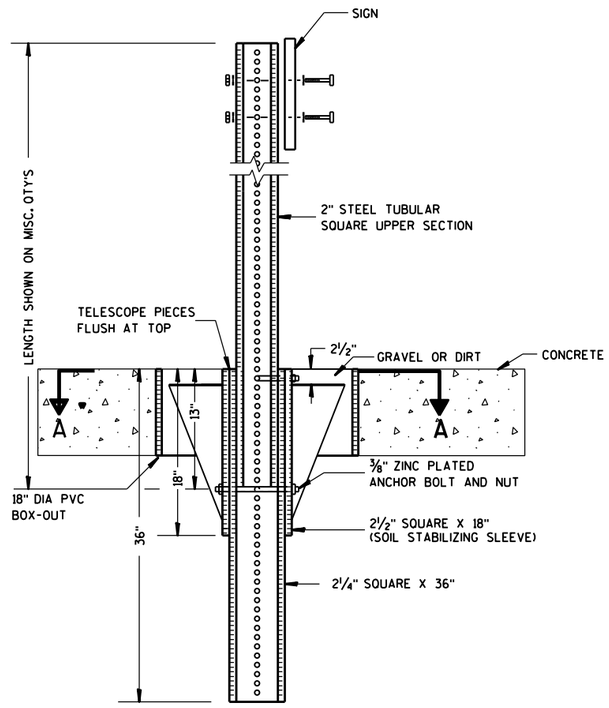
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

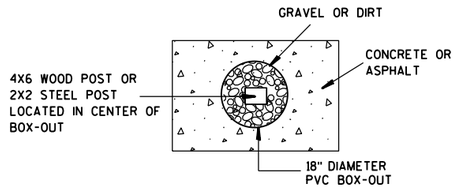
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

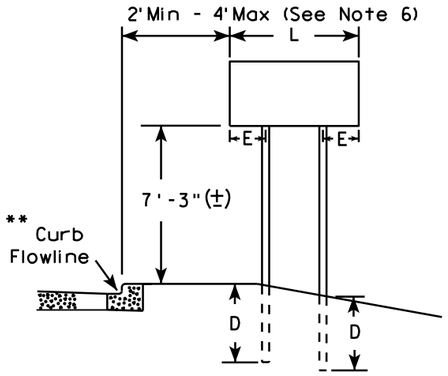
APPROVED Matthew R Rauch
for State Traffic Engineer

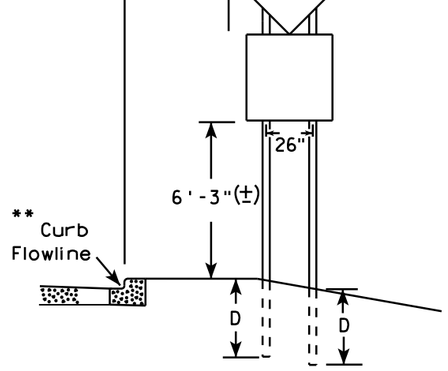
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

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

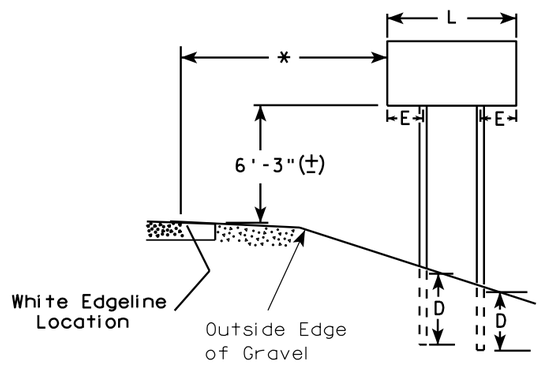
URBAN AREA

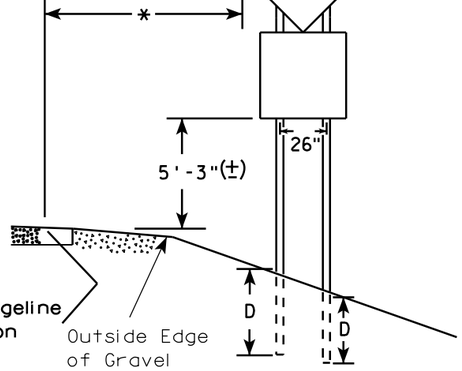




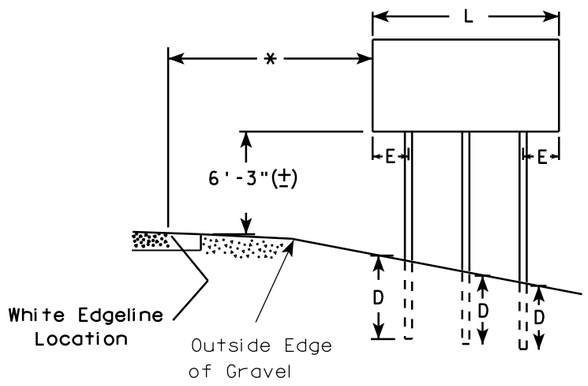
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

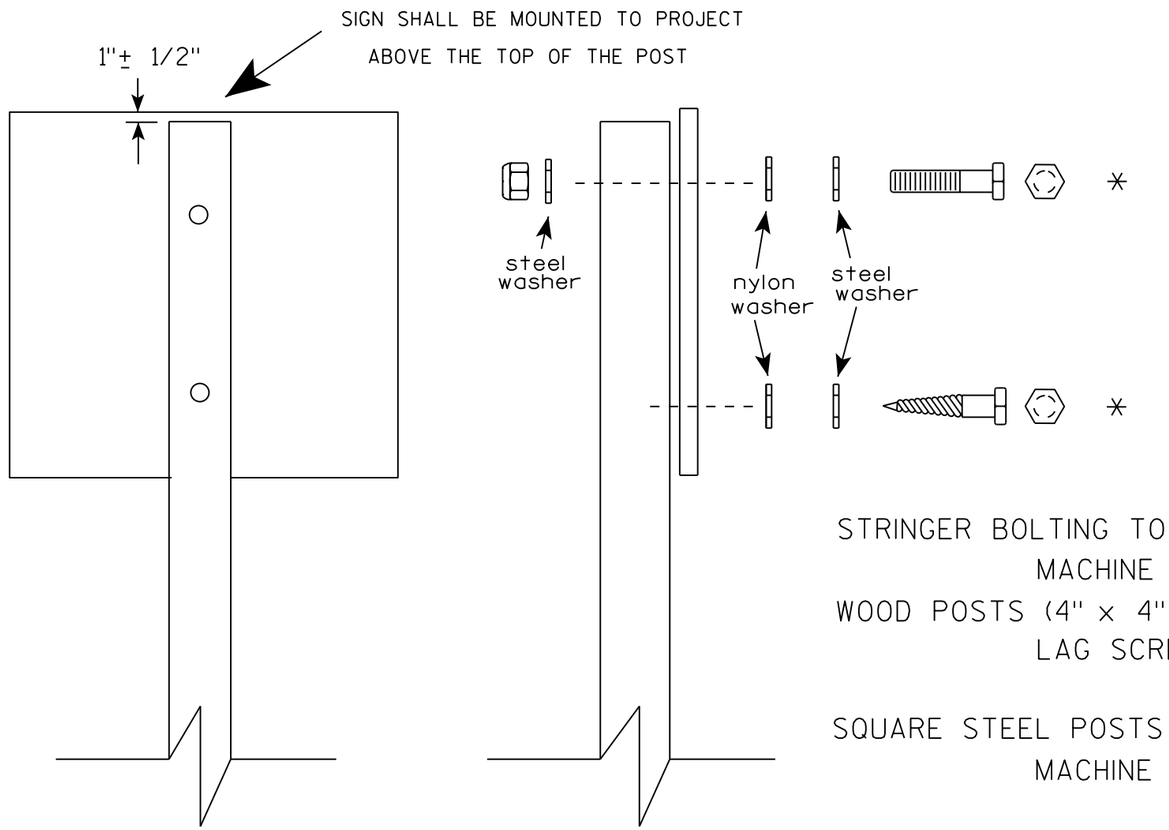
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 14
46

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

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

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

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

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

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

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

3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

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

3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

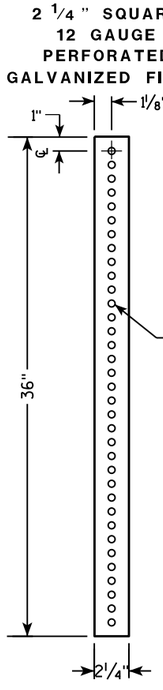
APPROVED Matthew R Rauch
For State Traffic Engineer

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

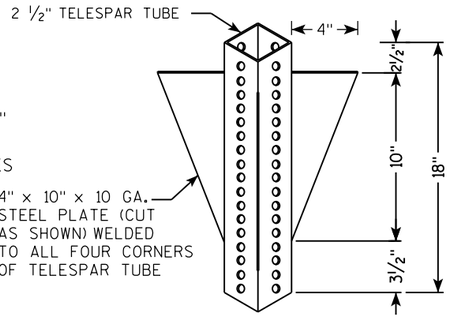
PROJECT NO: SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

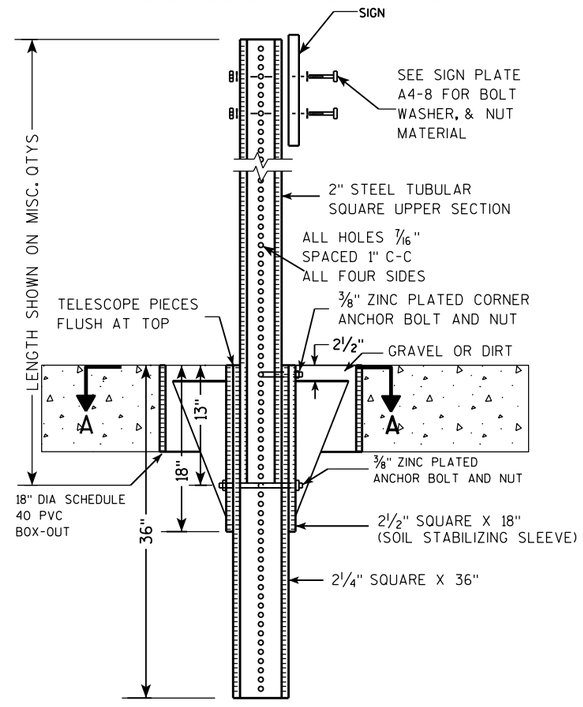
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



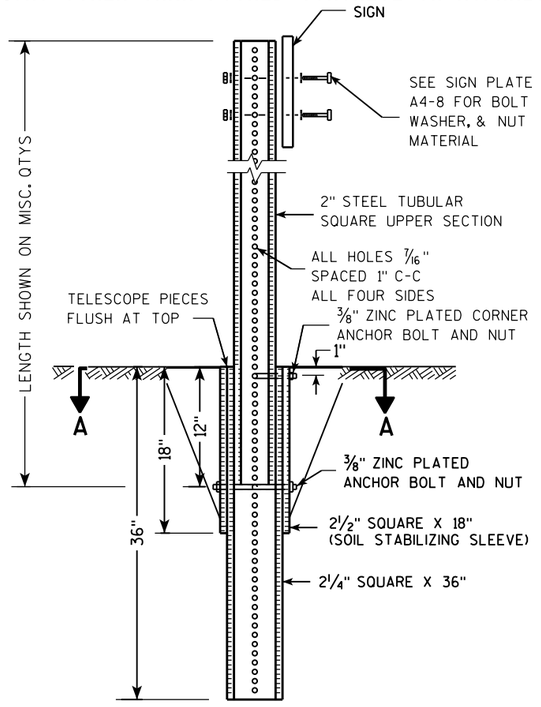
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

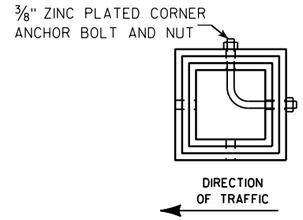


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

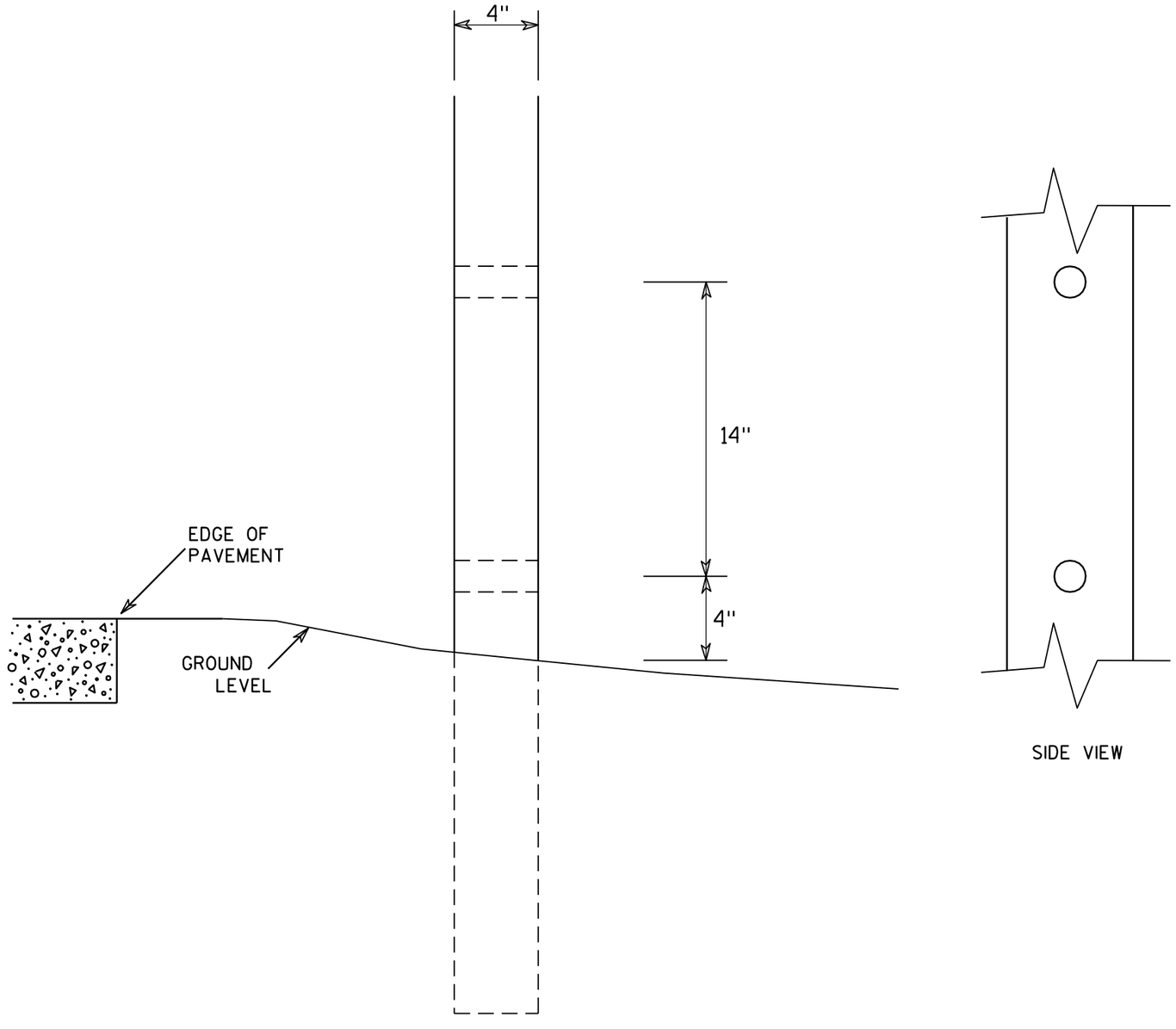
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 48 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

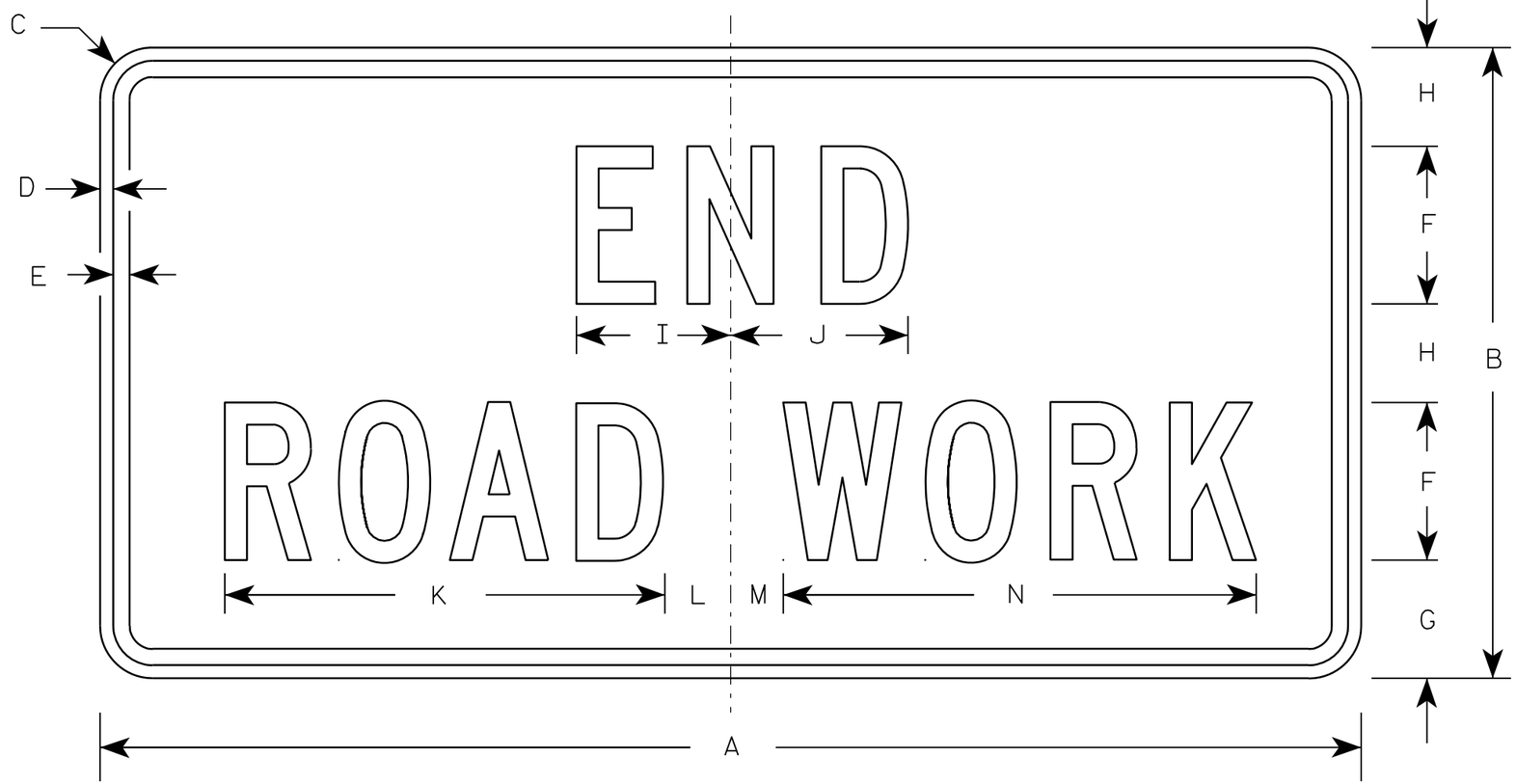
4 X 6 WOOD POST MODIFICATIONS

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: 49	E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - 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.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 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	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

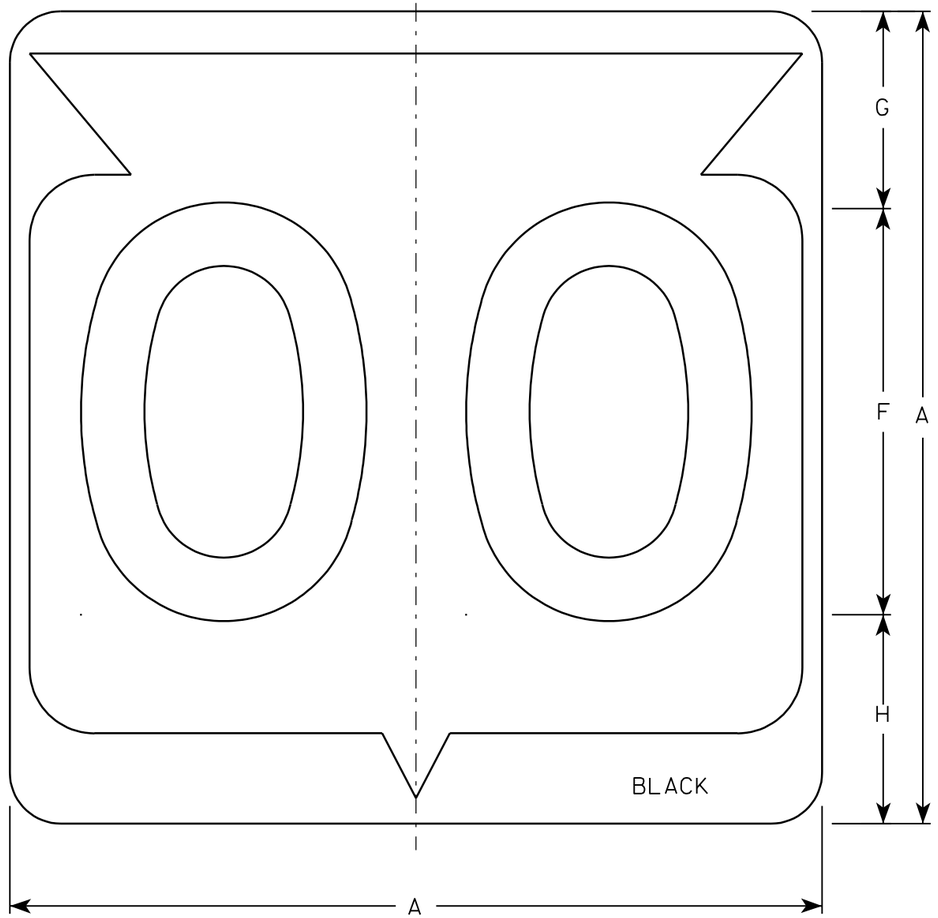
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

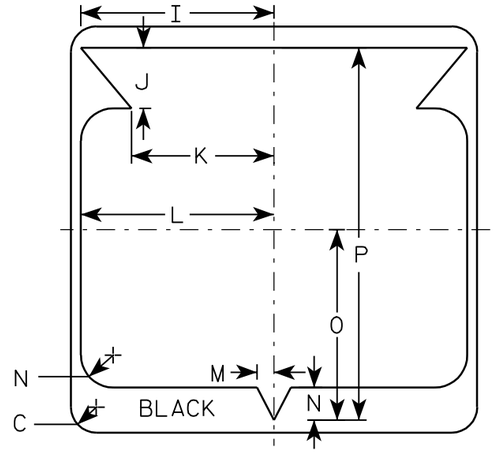
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 50	E



M1-6

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 Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



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		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

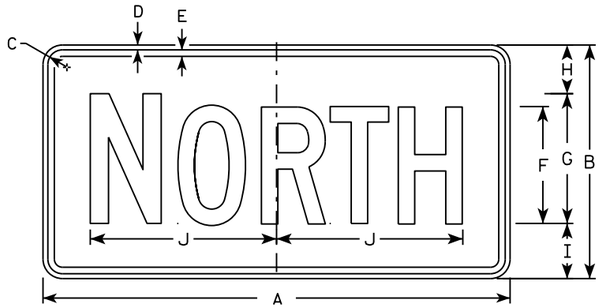
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

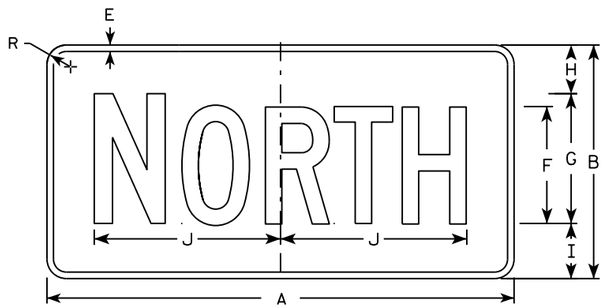
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 51	E



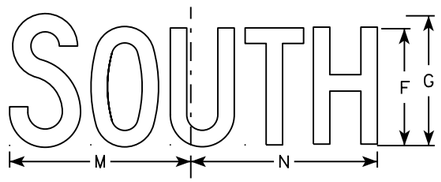
M3-1
MM3-1
MP3-1



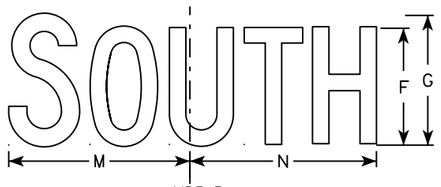
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

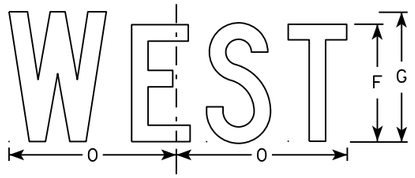
MB3-2
MK3-2
MN3-2



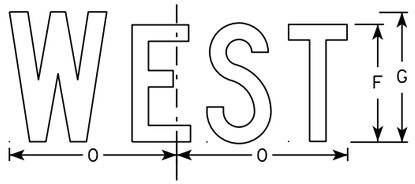
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
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
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
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

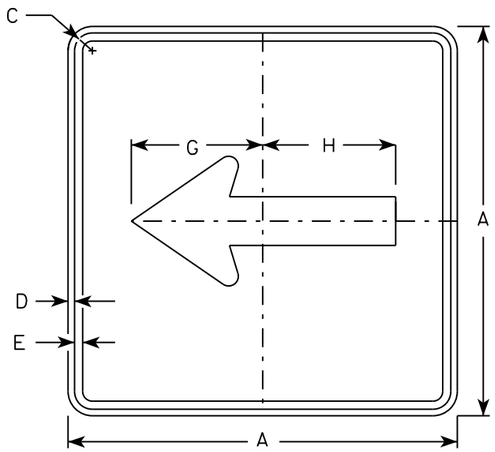
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

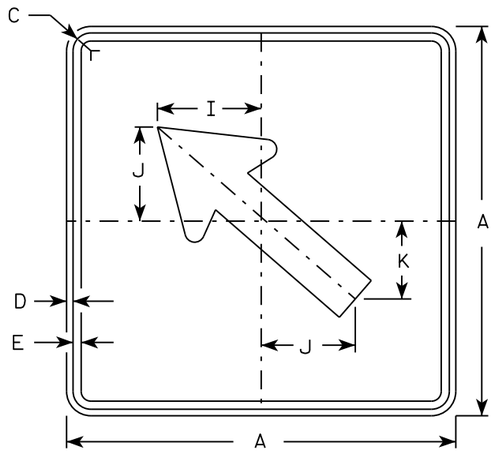
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

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



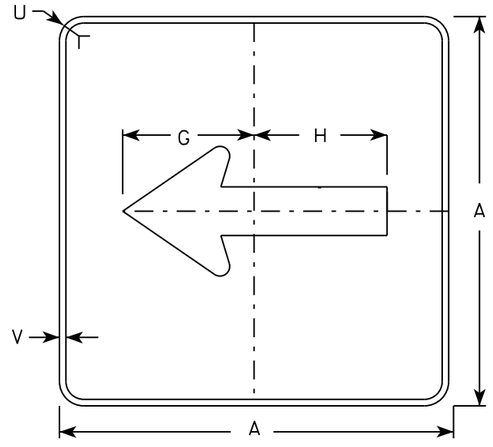
M6-1
MM6-1
MO6-1
MP6-1



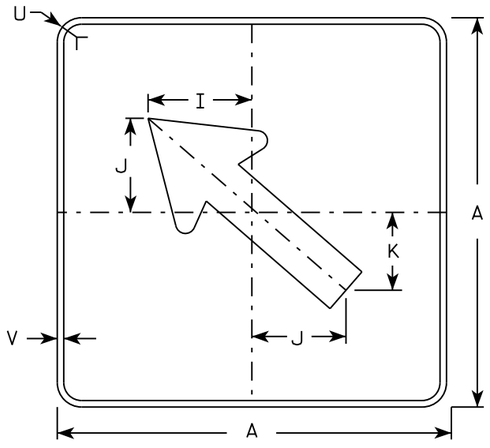
M6-2
MM6-2
MO6-2
MP6-2

NOTES

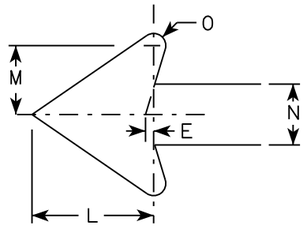
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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

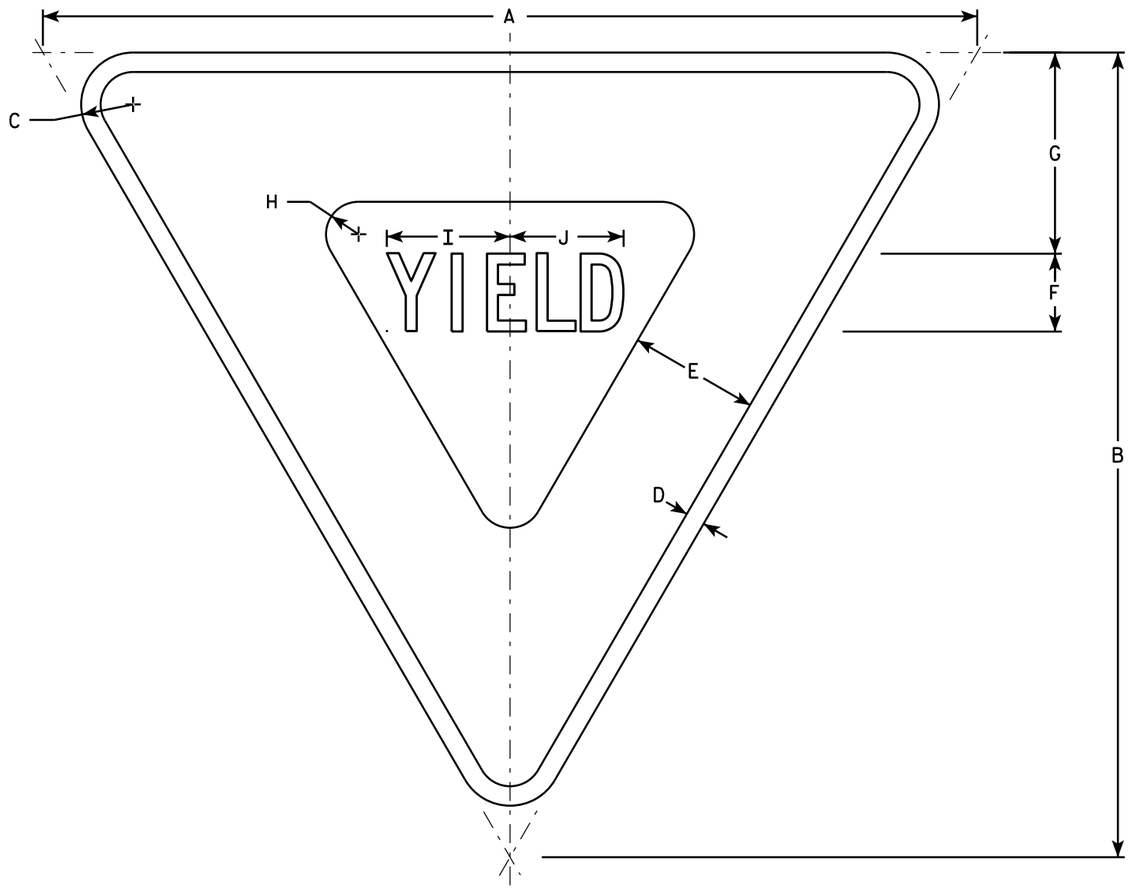
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 53 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



R1-2

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 - 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. The border strip and word message are reflectorized red.

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	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

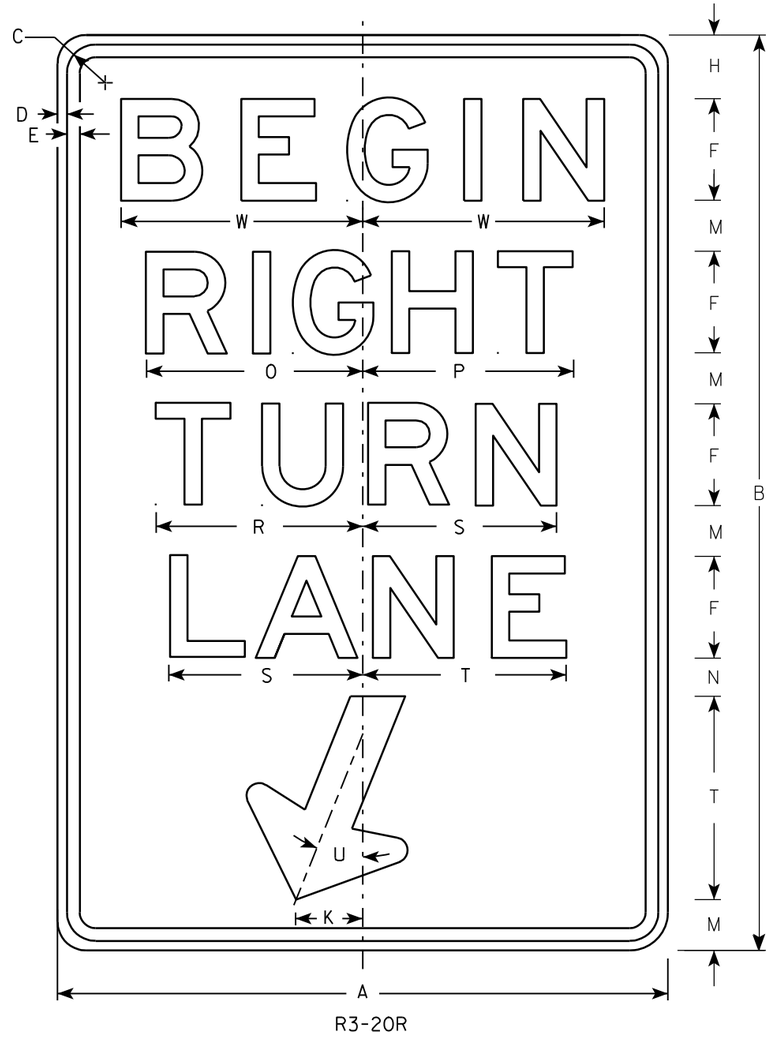
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

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

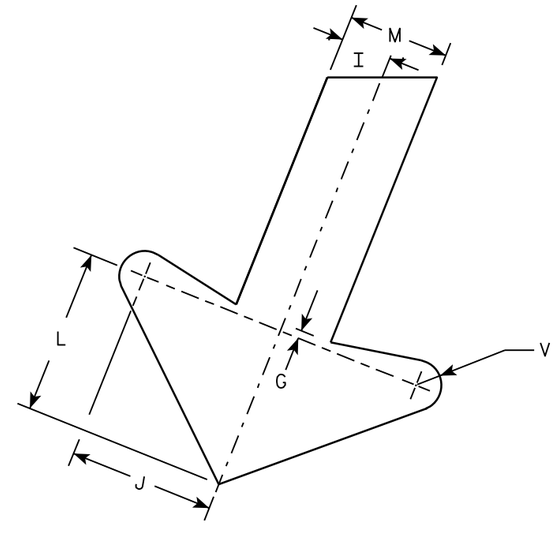
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42



R3-20R

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.



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																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

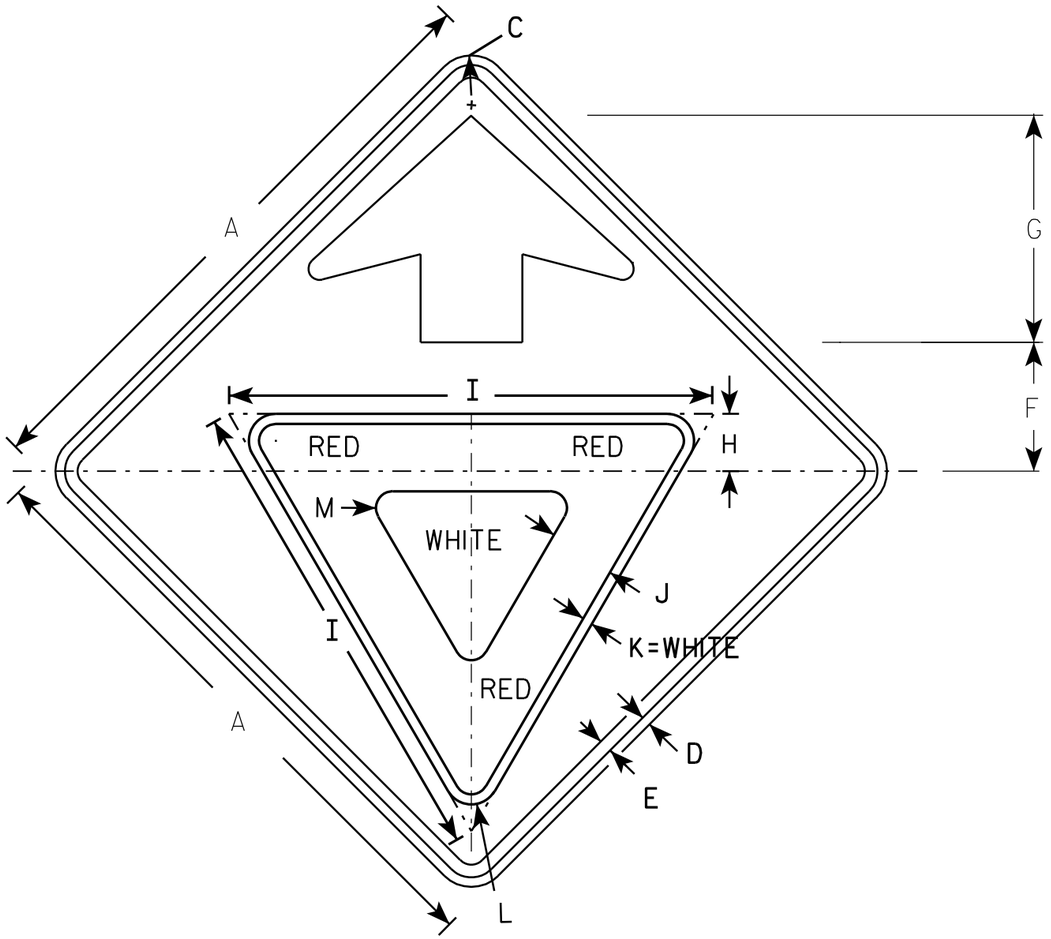
STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

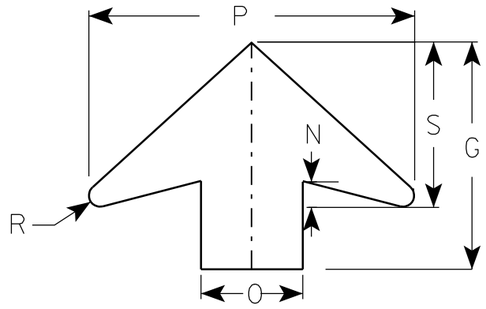
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 55 | E



W3-2

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
   Arrow & Border - BLACK
   Yield Symbol - WHITE BORDER ON RED BACKGROUND



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	3	25	3 3/8	1/2	1 3/8	7/8	1 1/4	5	16		1/2	8								6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

STANDARD SIGN
W3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-2..9

PROJECT NO:

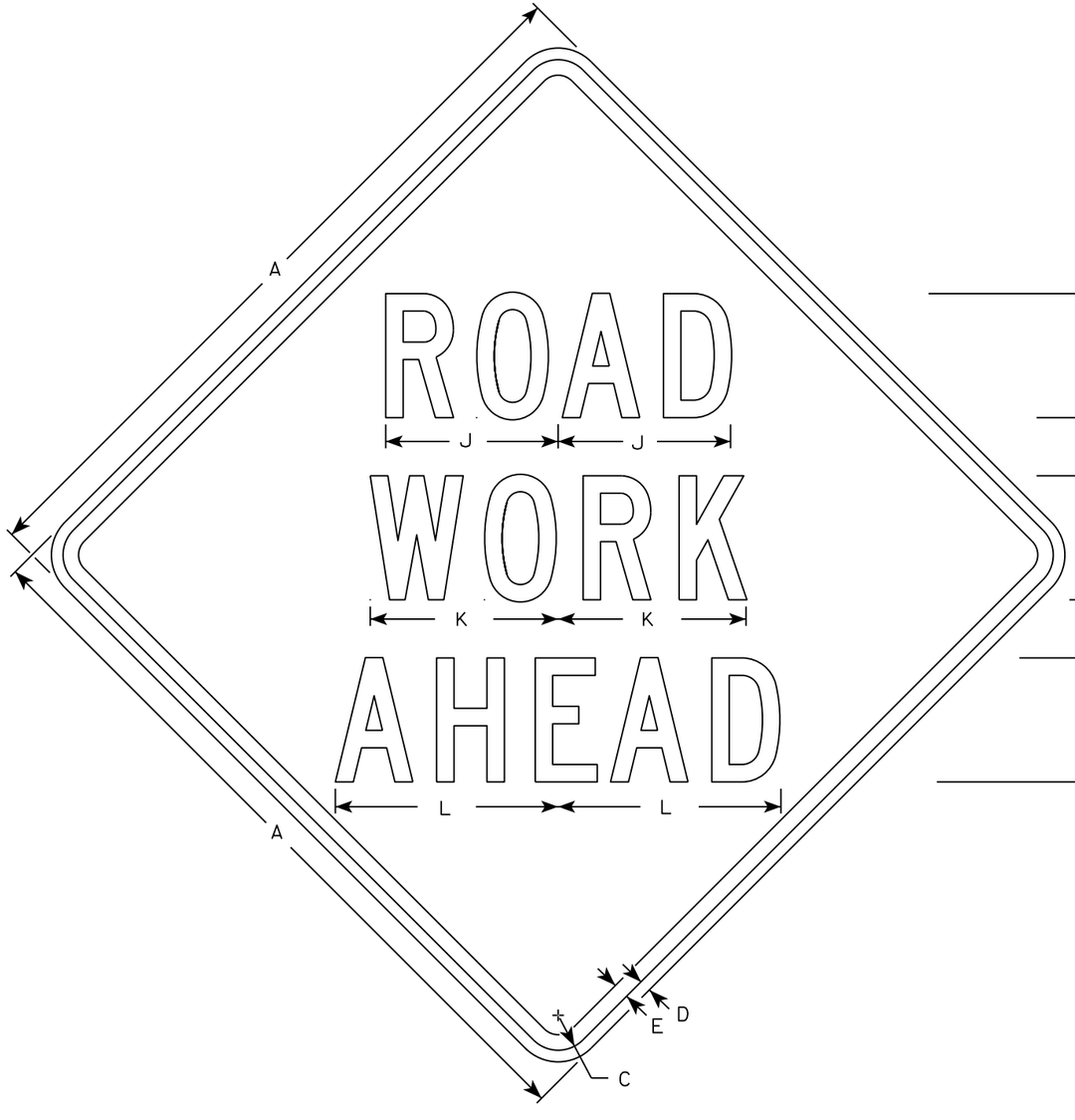
SHEET NO: 56 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W32.DGN PLOT DATE : 07-JUN-2010 13:03 PLOT BY : ditjph

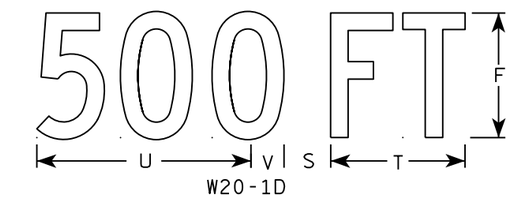
WISDOT/CADDS SHEET 42

7

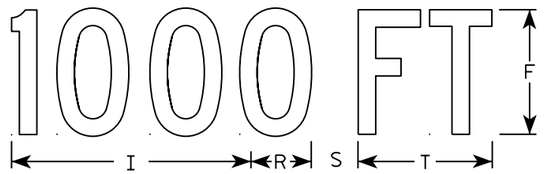
7



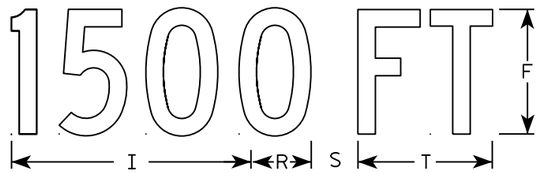
W20-1A



W20-1D

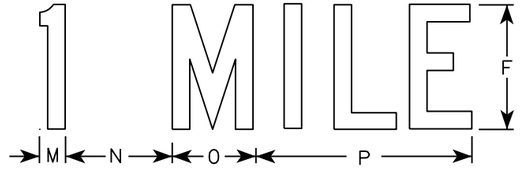


W20-1C

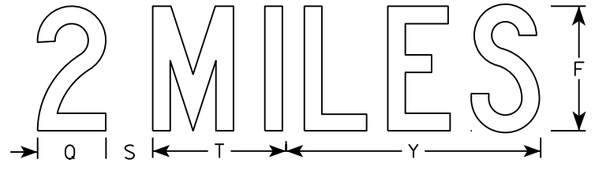


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

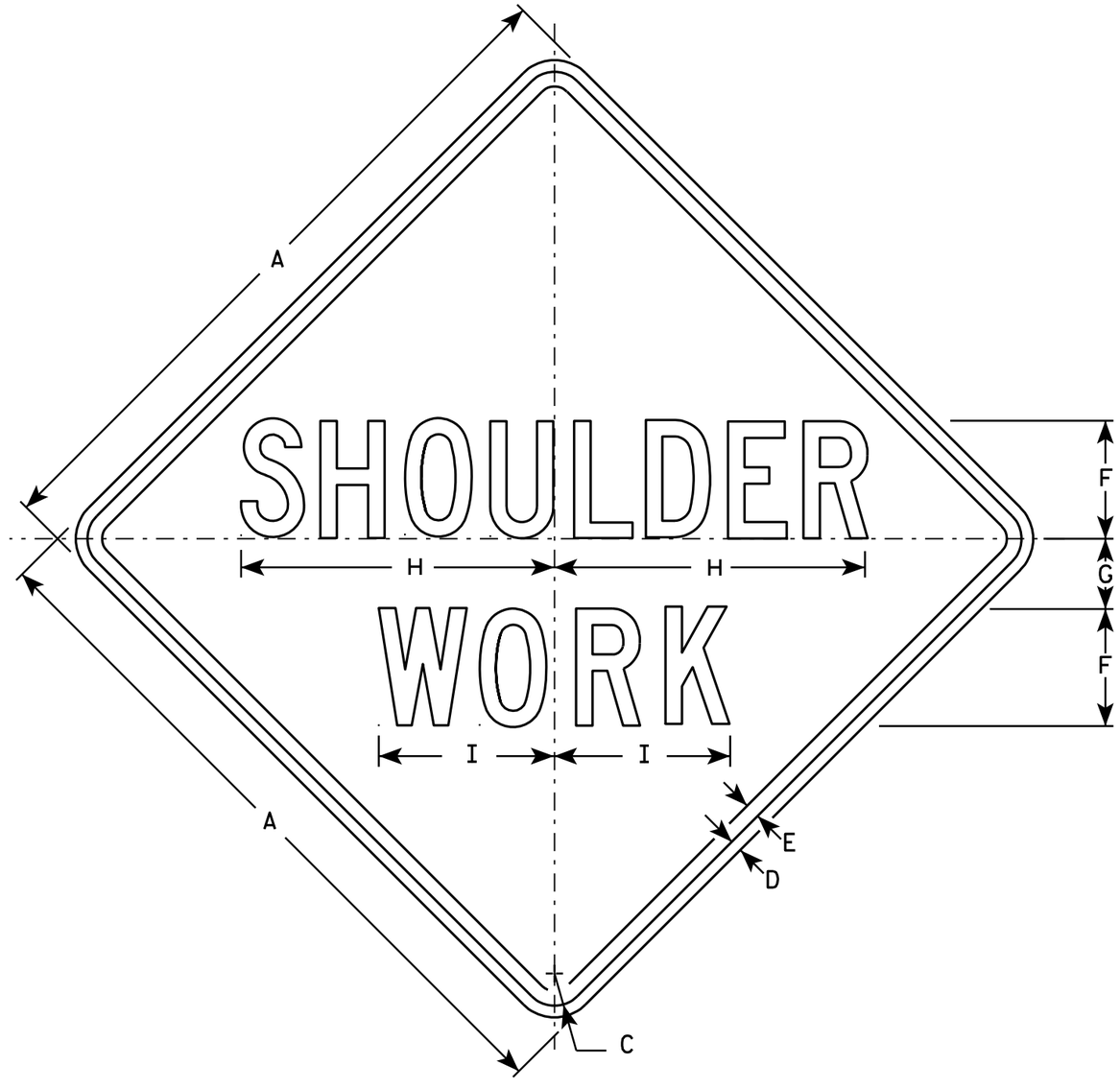
DATE 5/07/15 PLATE NO. W20-1.10

PROJECT NO:

SHEET NO: E

7

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



W21-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - 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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 1/2	10 3/4	6																		4.0
2S	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3 1/2	16	9																		9.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

STANDARD SIGN
W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5.5

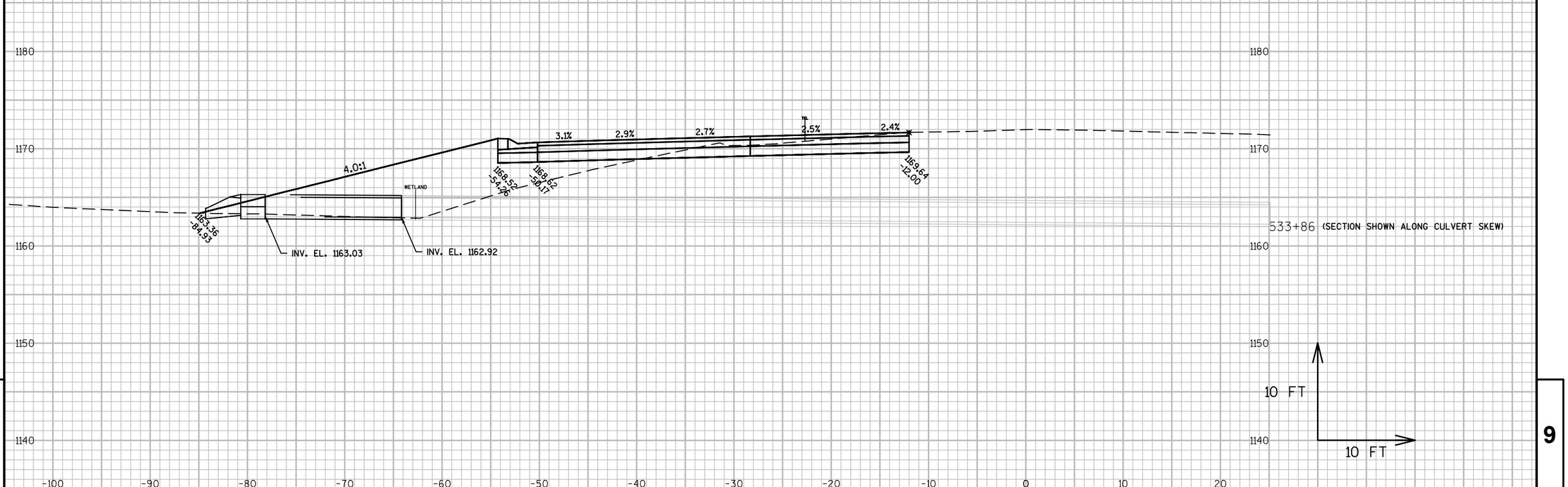
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 58	E

STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
		CUT	UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT NOTE 1	UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 4	MASS ORDINATE NOTE 5
533+56	---	94	19	44	0	---	---	---	---	---	---	---
533+65	9	63	7	109	0	28	4	27	0	28	34	-11
533+86	21	34	7	137	0	37	5	94	0	64	151	-97
534+00	14	32	7	127	0	18	4	70	0	82	239	-171
534+50	50	36	7	114	0	64	14	223	0	146	518	-400
535+00	50	44	7	50	0	74	14	153	0	220	709	-530
535+50	50	47	7	33	0	84	14	77	0	304	805	-556
535+75	25	48	7	28	0	44	7	28	0	348	840	-554
536+00	25	48	7	18	0	45	7	21	0	393	867	-543
536+50	50	46	7	17	0	87	14	33	0	480	908	-511
537+00	50	48	7	9	0	87	14	24	0	567	938	-468
537+50	50	53	7	1	0	94	14	9	0	660	950	-399
538+00	50	58	8	0	0	103	14	0	0	763	950	-311
538+50	50	59	8	0	0	109	14	0	0	872	950	-216
539+00	50	58	8	0	0	109	14	0	0	981	950	-121
539+50	50	60	6	0	0	110	13	0	0	1091	951	-25
540+00	50	62	5	0	0	113	11	0	0	1204	951	78
540+50	50	63	5	0	0	116	9	0	0	1321	951	185
541+00	50	59	5	0	0	113	9	0	0	1434	951	289
541+50	50	40	5	3	0	91	9	3	0	1525	954	368
542+00	50	28	5	34	0	63	9	34	0	1588	997	379
542+50	50	26	5	39	0	50	9	68	0	1638	1082	335
543+00	50	25	5	64	0	47	9	96	0	1685	1201	254
543+44	44	24	5	101	0	39	8	134	0	1724	1369	117
543+50	6	24	5	82	0	5	1	21	0	1730	1396	95
544+00	50	0	5	0	0	22	9	76	0	1752	1491	13
				COLUMN TOTALS		1752	248	1193	0			

NOTES:
1) CUT INCLUDES UNUSABLE PAVEMENT MATERIAL
2) UNUSABLE PAVEMENT MATERIAL DOES NOT APPEAR IN THE CROSS SECTIONS
3) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT MATERIAL EXCAVATION VOLUME
4) EXPANDED FILL = UNEXPANDED FILL * EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.25
5) MASS ORDINATE = (CUT - UNUSABLE PAVEMENT MATERIAL) - (FILL * FILL FACTOR)

STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)		
		CUT	UNUSABLE PAVEMENT MATERIAL	FILL	EBS	CUT NOTE 1	UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 4	MASS ORDINATE NOTE 5
18+00	---	29	5	41	0	---	---	---	---	---	---	---
18+10	10	31	4	56	0	12	2	19	0	12	23	-13
18+50	40	42	2	0	0	54	5	41	0	65	74	-15
18+94	44	55	2	0	0	80	4	0	0	145	74	60
19+00	6	0	1	0	0	6	0	0	0	151	74	66
				COLUMN TOTALS		151	10	59	0			

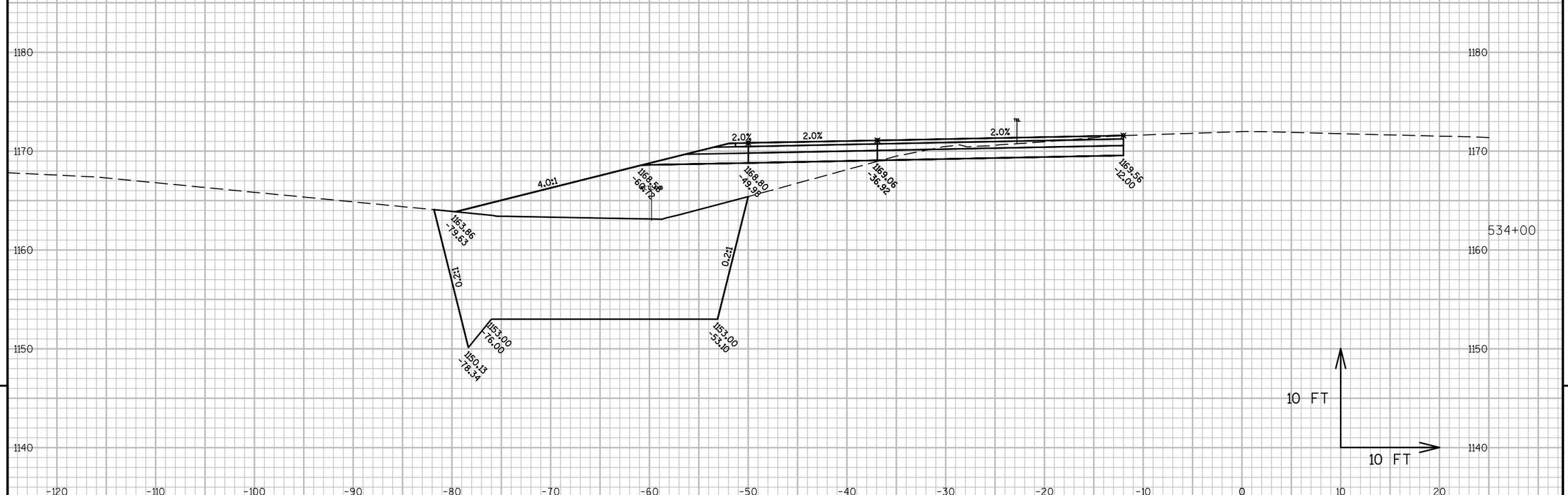
NOTES:
1) CUT INCLUDES UNUSABLE PAVEMENT MATERIAL
2) UNUSABLE PAVEMENT MATERIAL DOES NOT APPEAR IN THE CROSS SECTIONS
3) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT MATERIAL EXCAVATION VOLUME
4) EXPANDED FILL = UNEXPANDED FILL * EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.25
5) MASS ORDINATE = (CUT - UNUSABLE PAVEMENT MATERIAL) - (FILL * FILL FACTOR)



9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 61	E



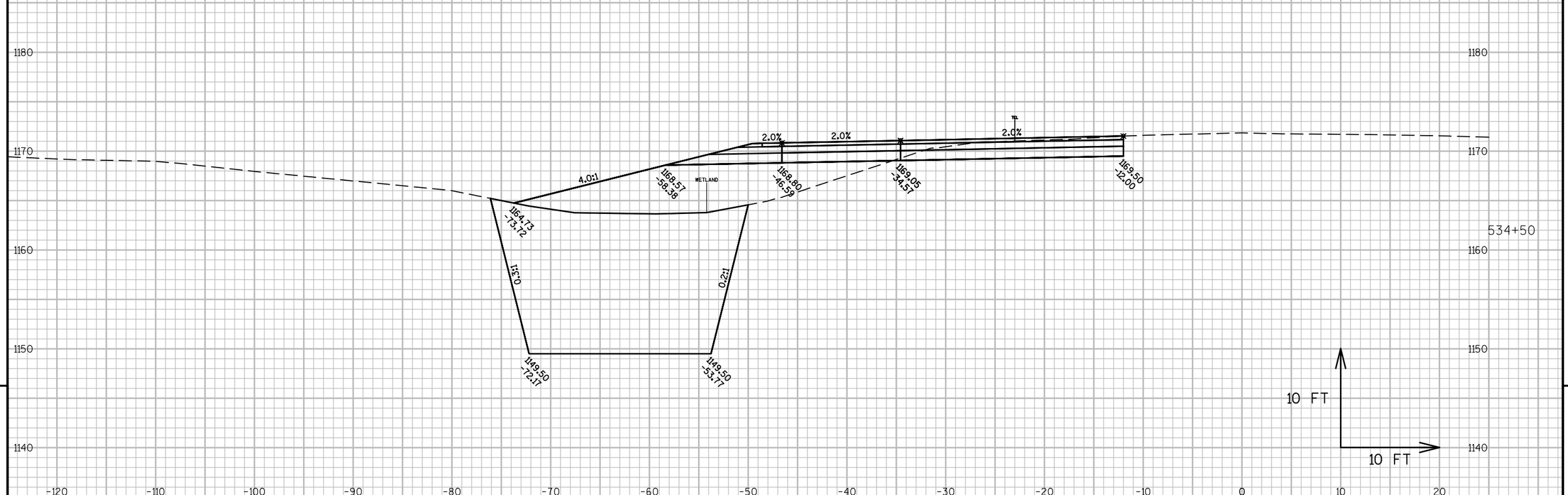
9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 62	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (28)

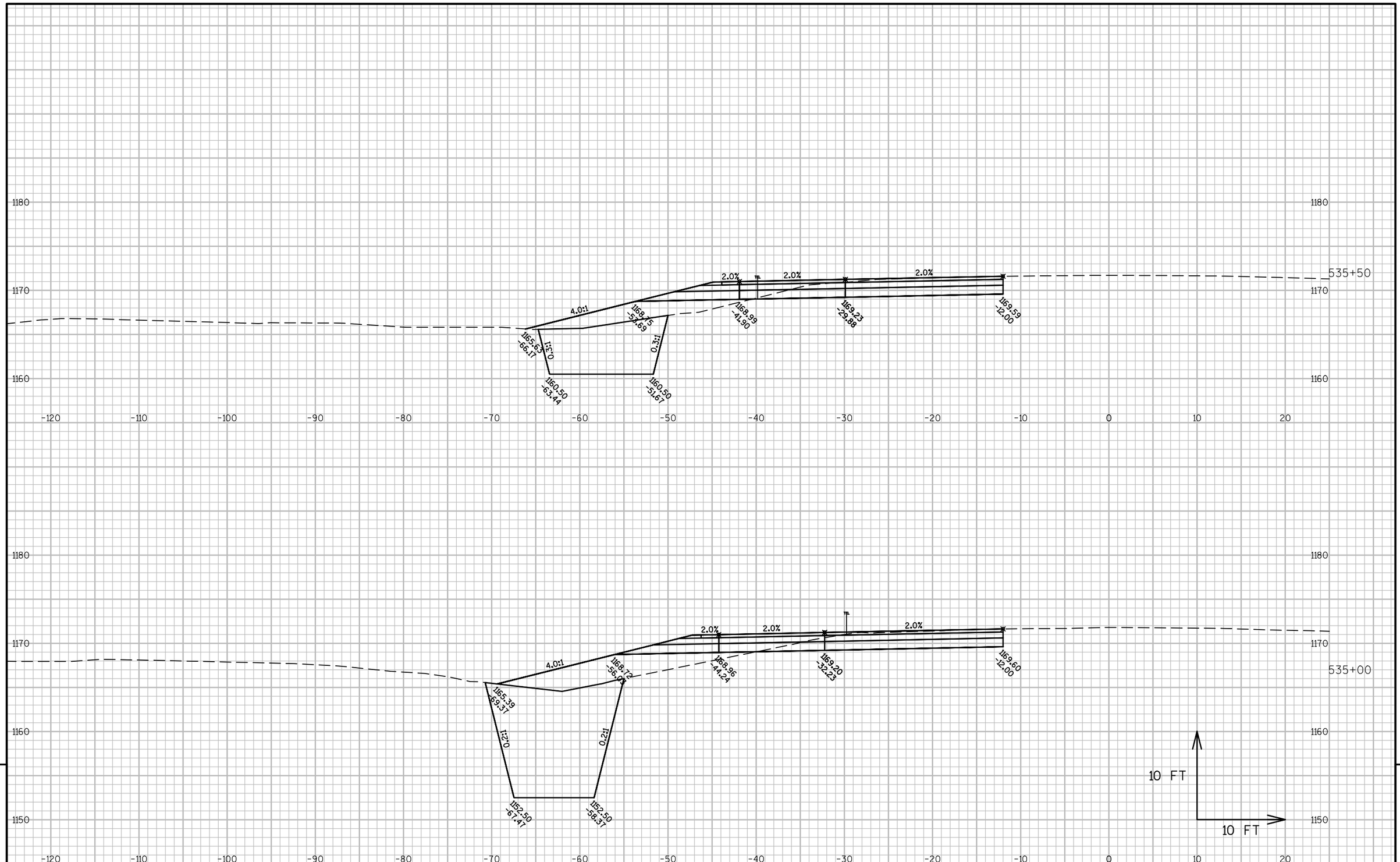
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 63	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (29)

PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



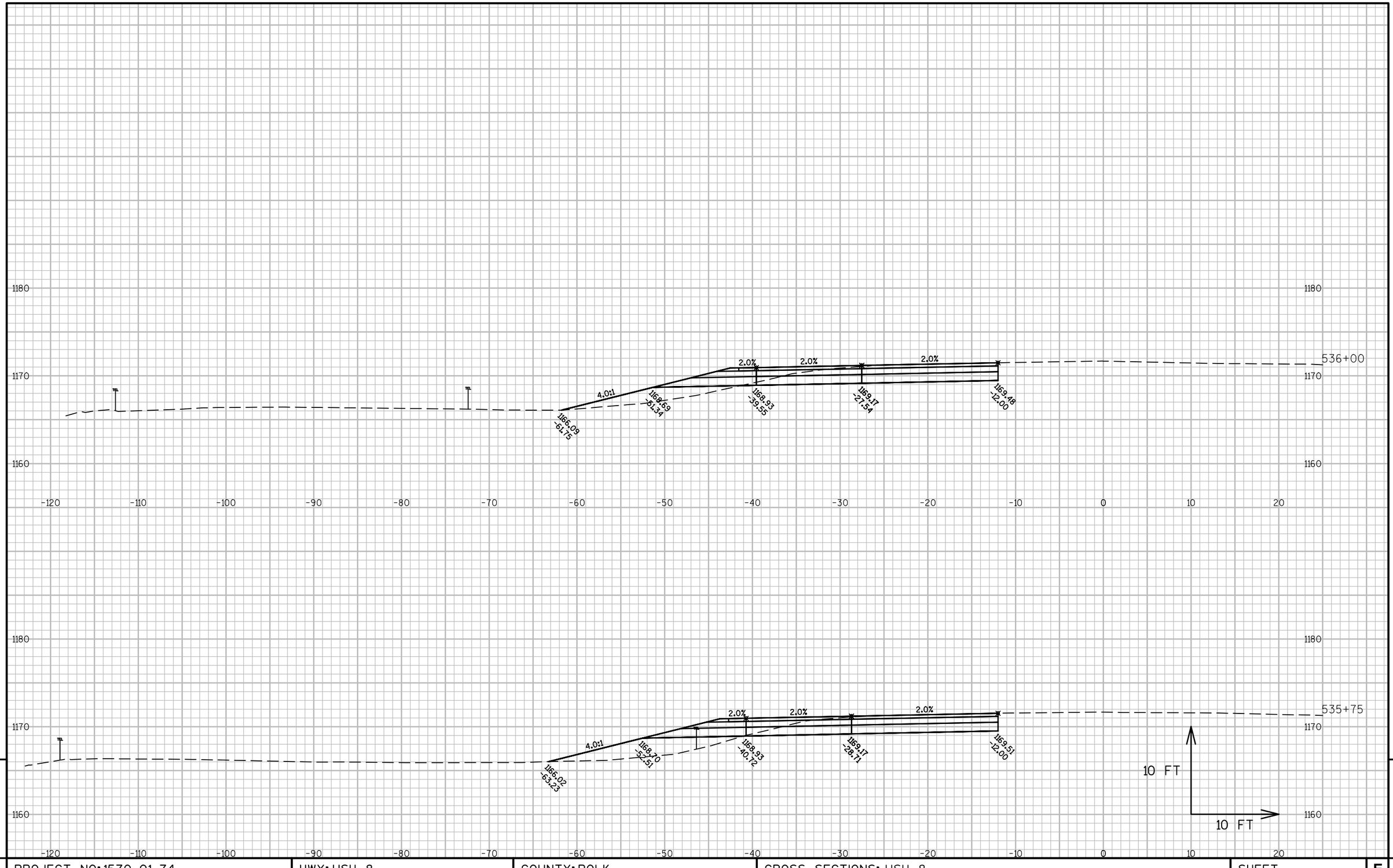
9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 64	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (30)

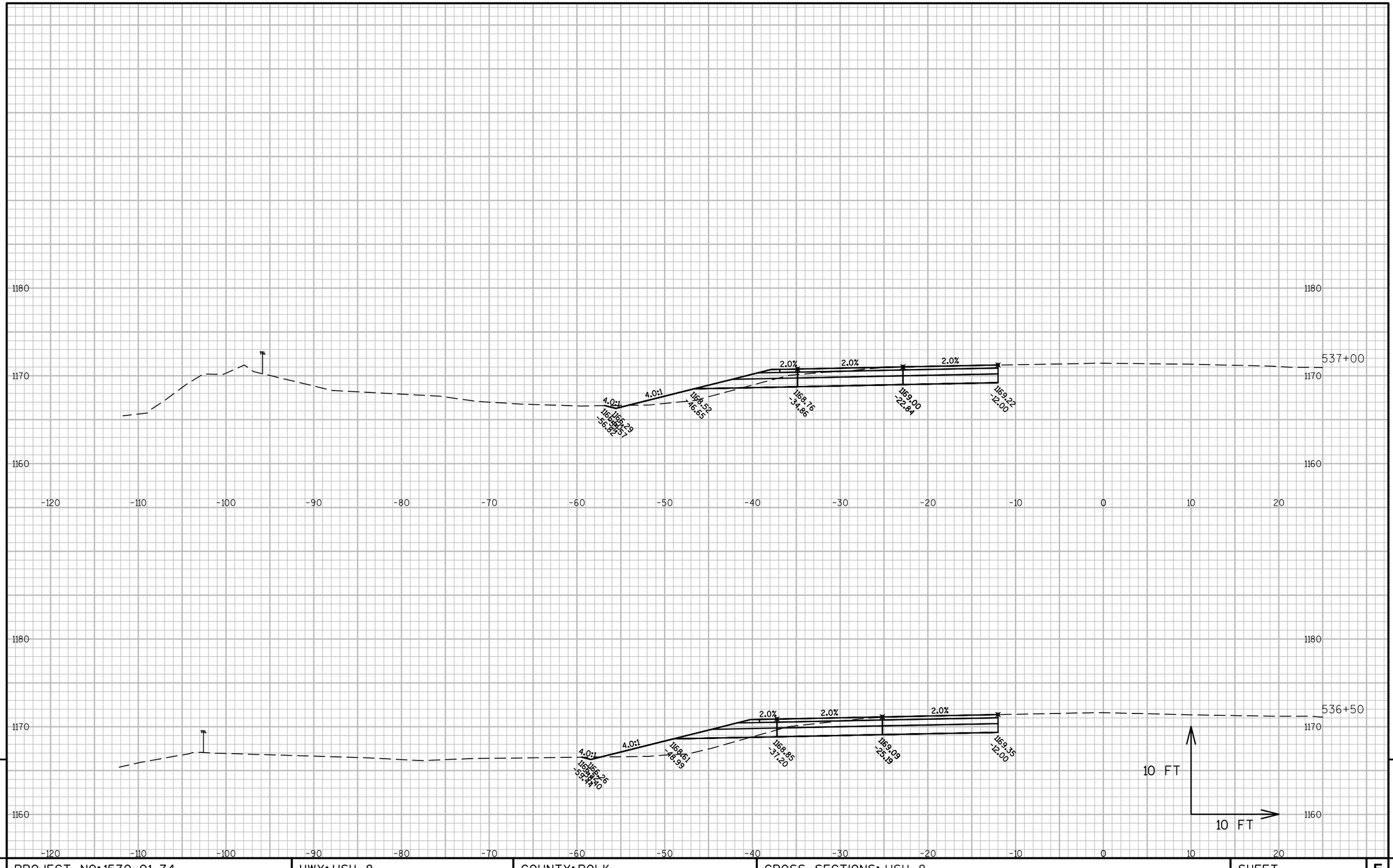
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 65	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (31)

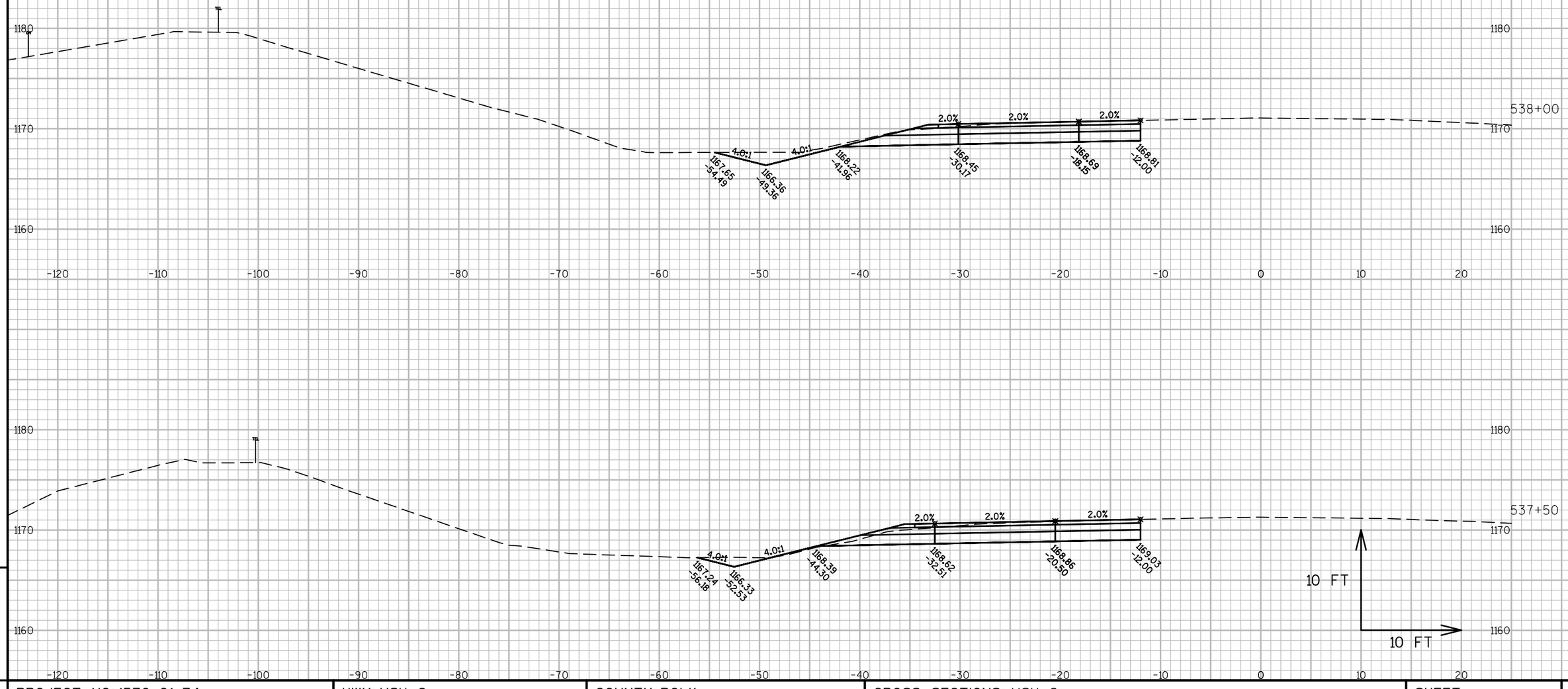
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



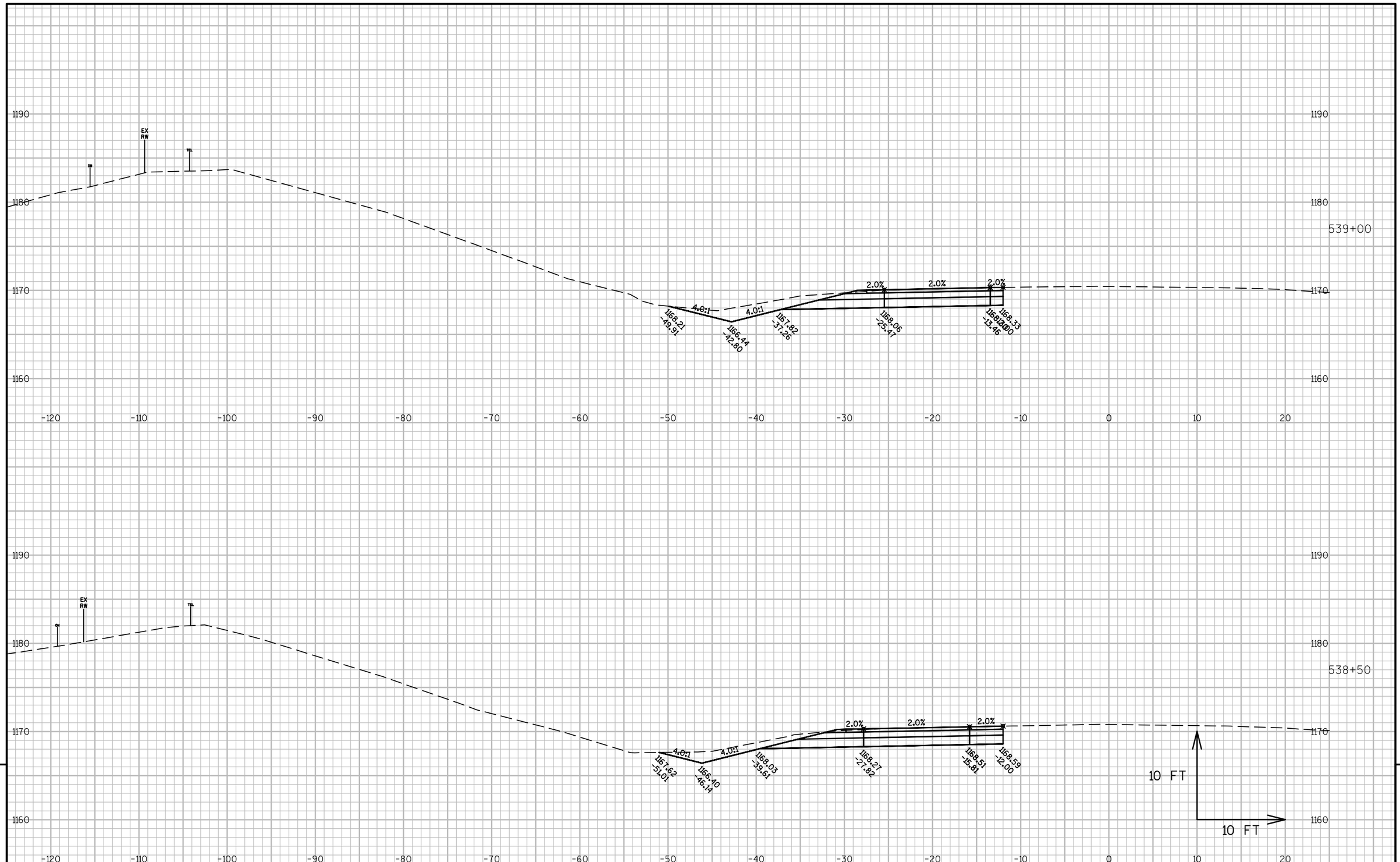
9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 66	E



PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 67	E

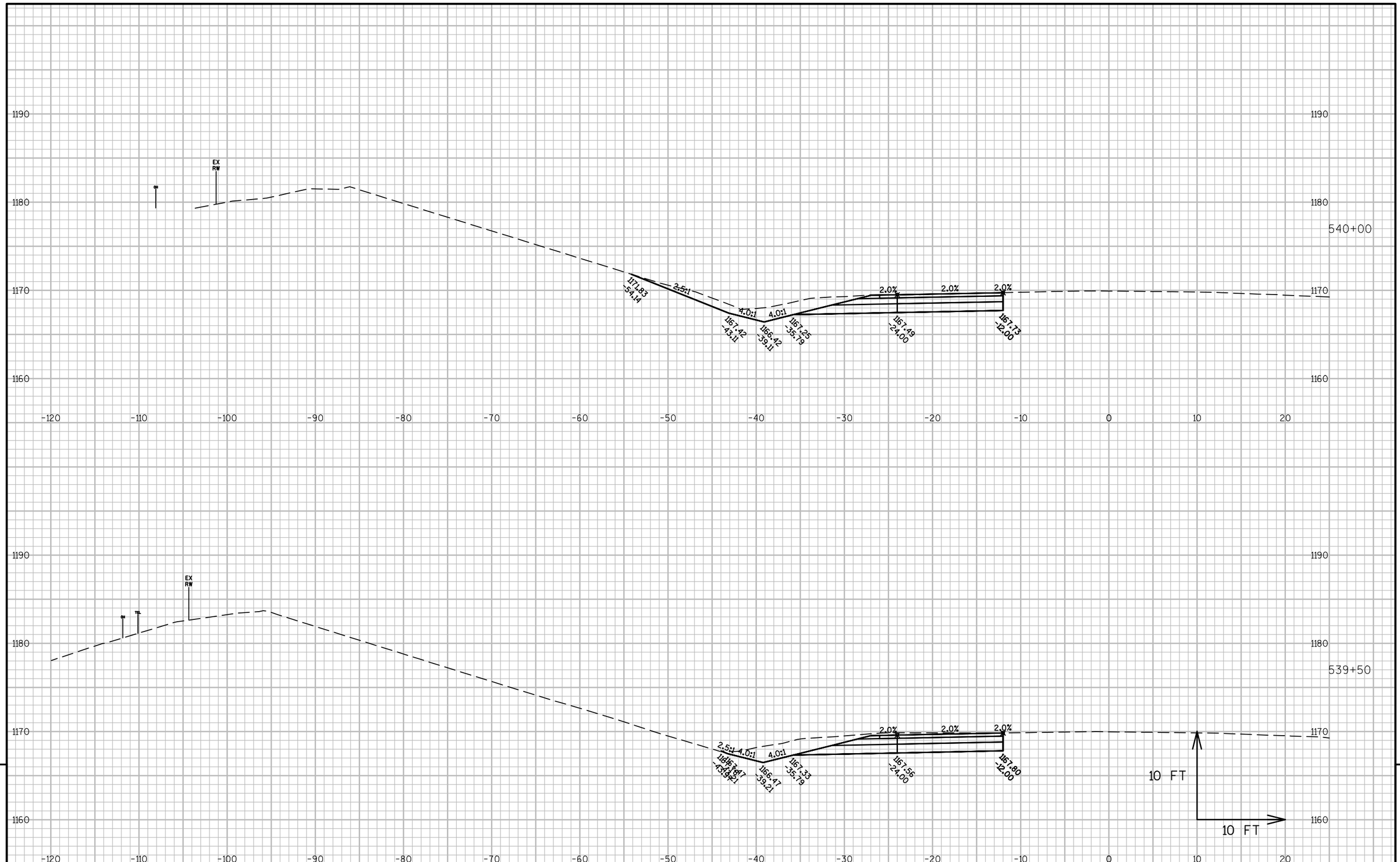


9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 68	E

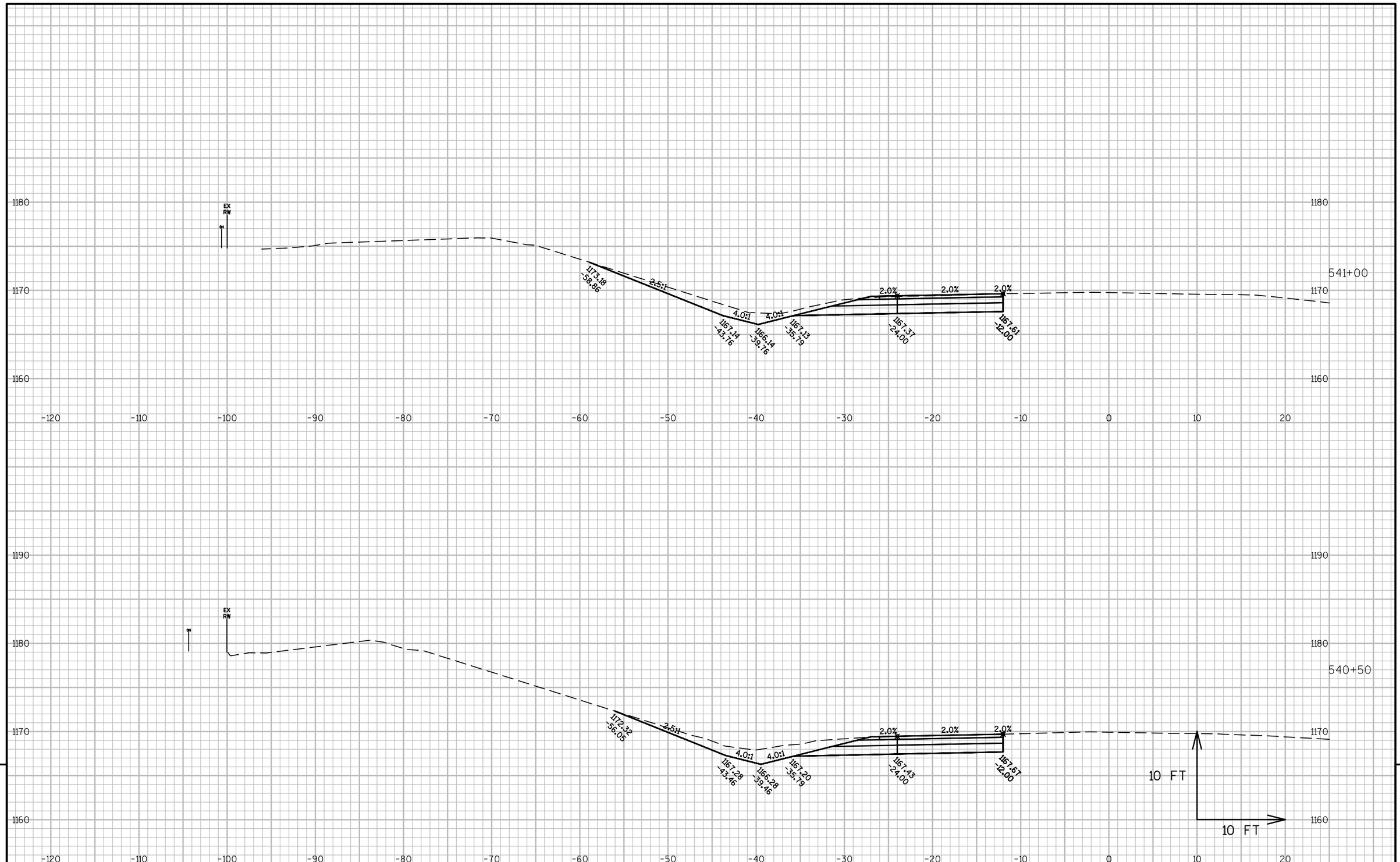
FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (34)
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 69	E



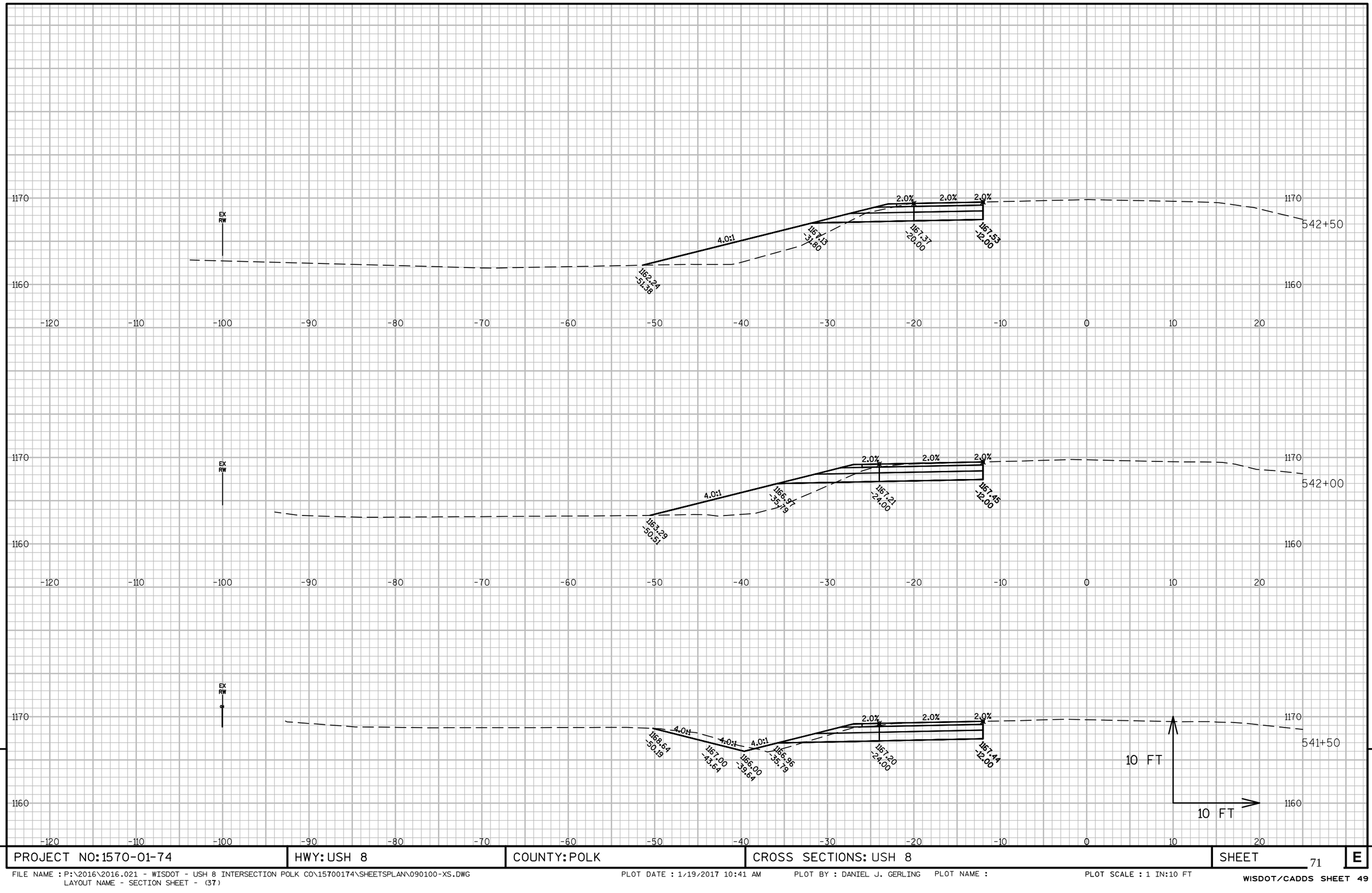
9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 70	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (36)

PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT

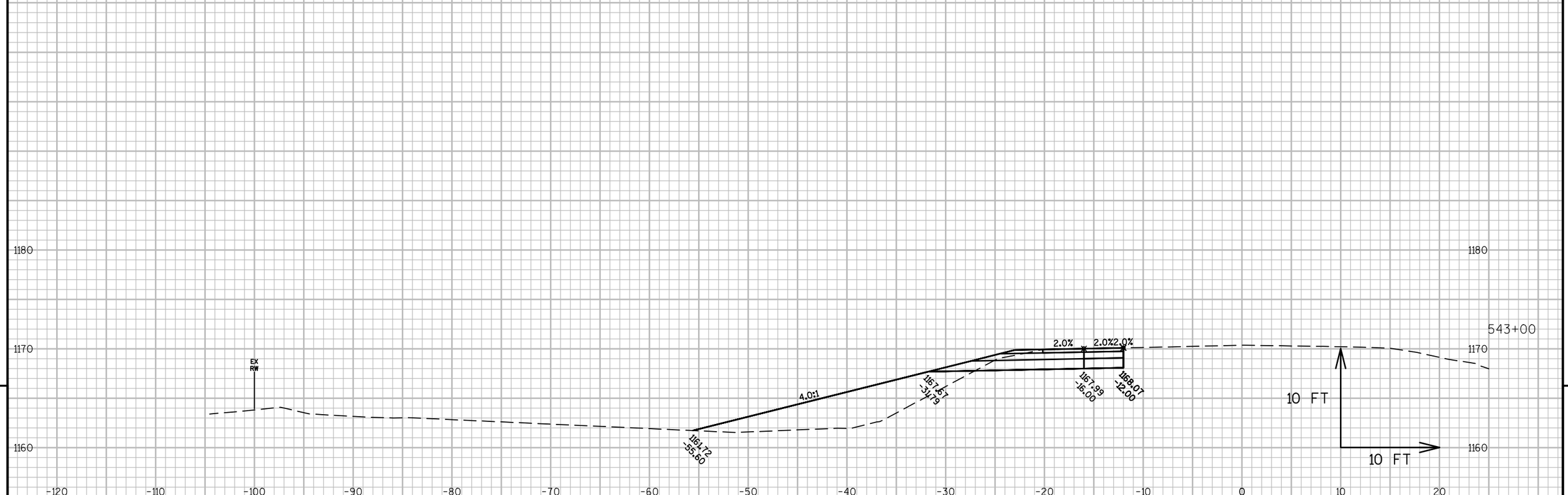


9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 71	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (37)
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



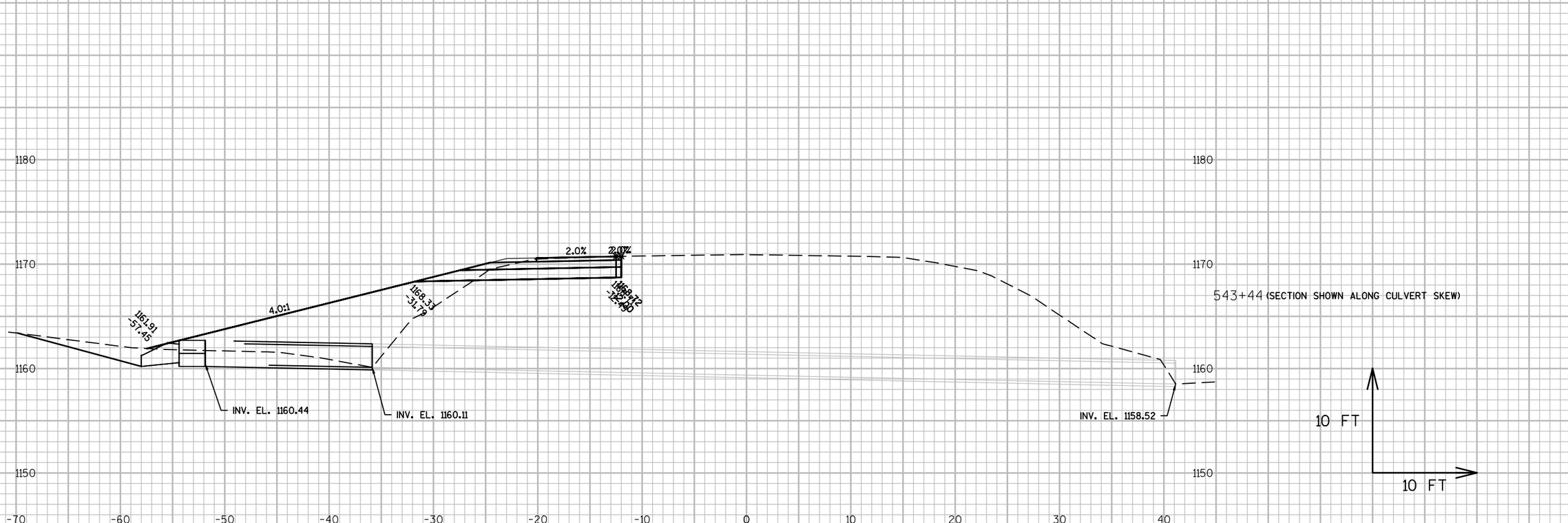
9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 72	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (38)

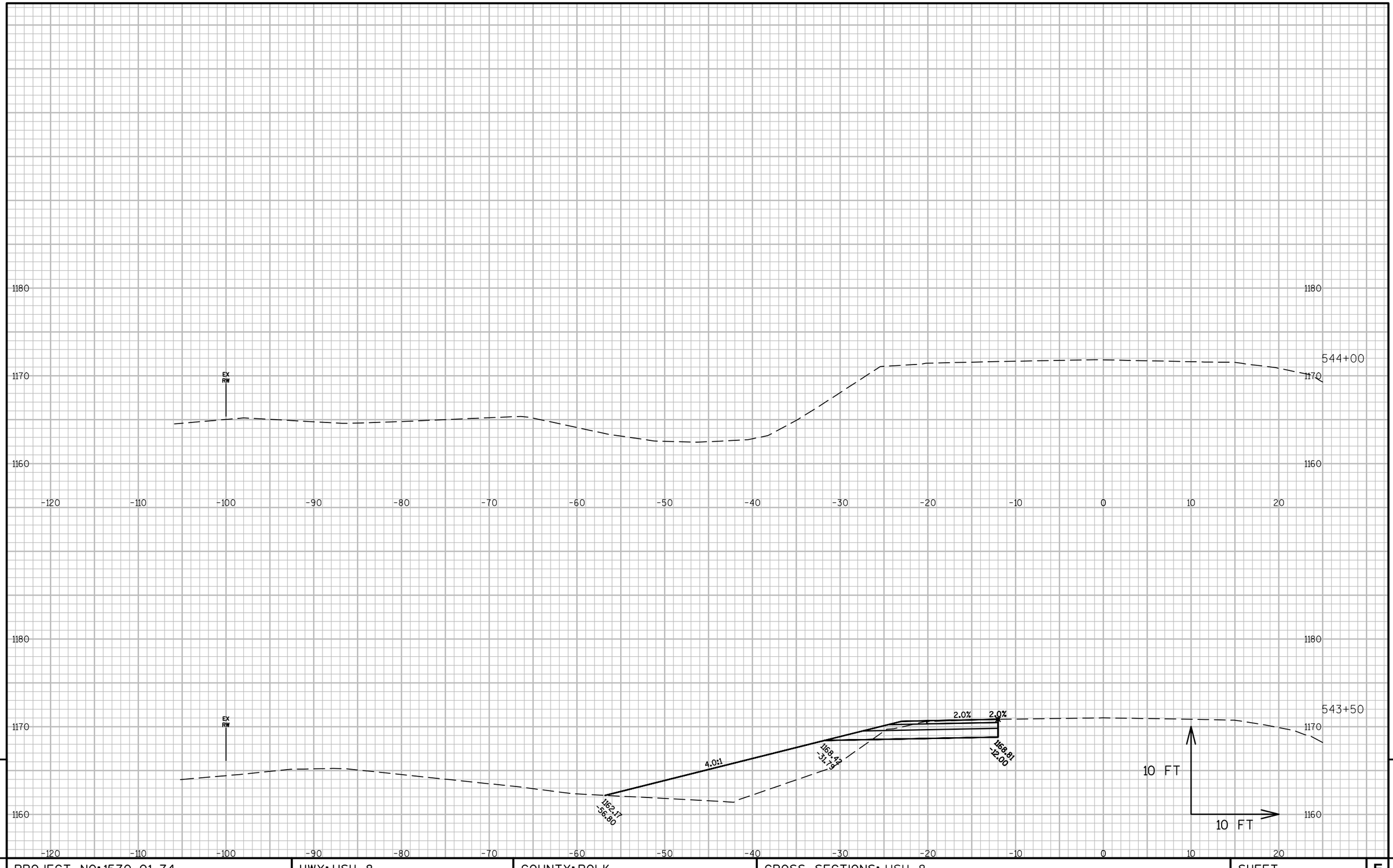
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 73	E



9

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PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: USH 8	SHEET 74	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (40)
PLOT DATE : 1/19/2017 10:41 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

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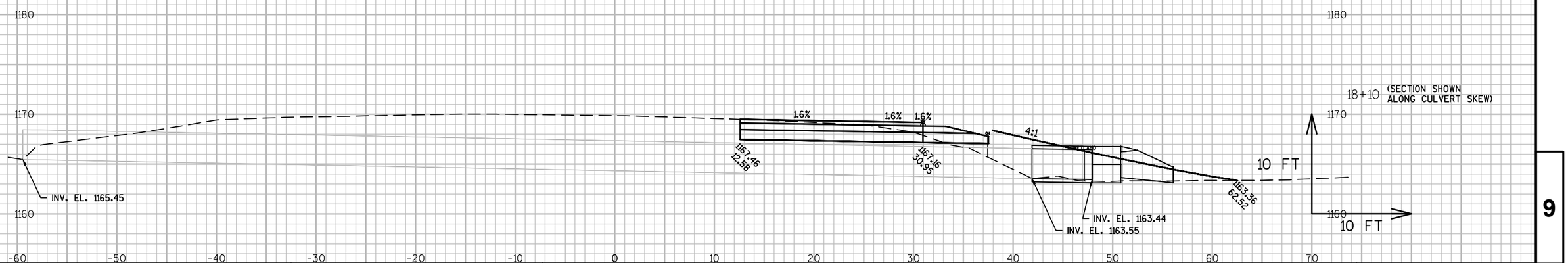
PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: STH 46	SHEET 75	E



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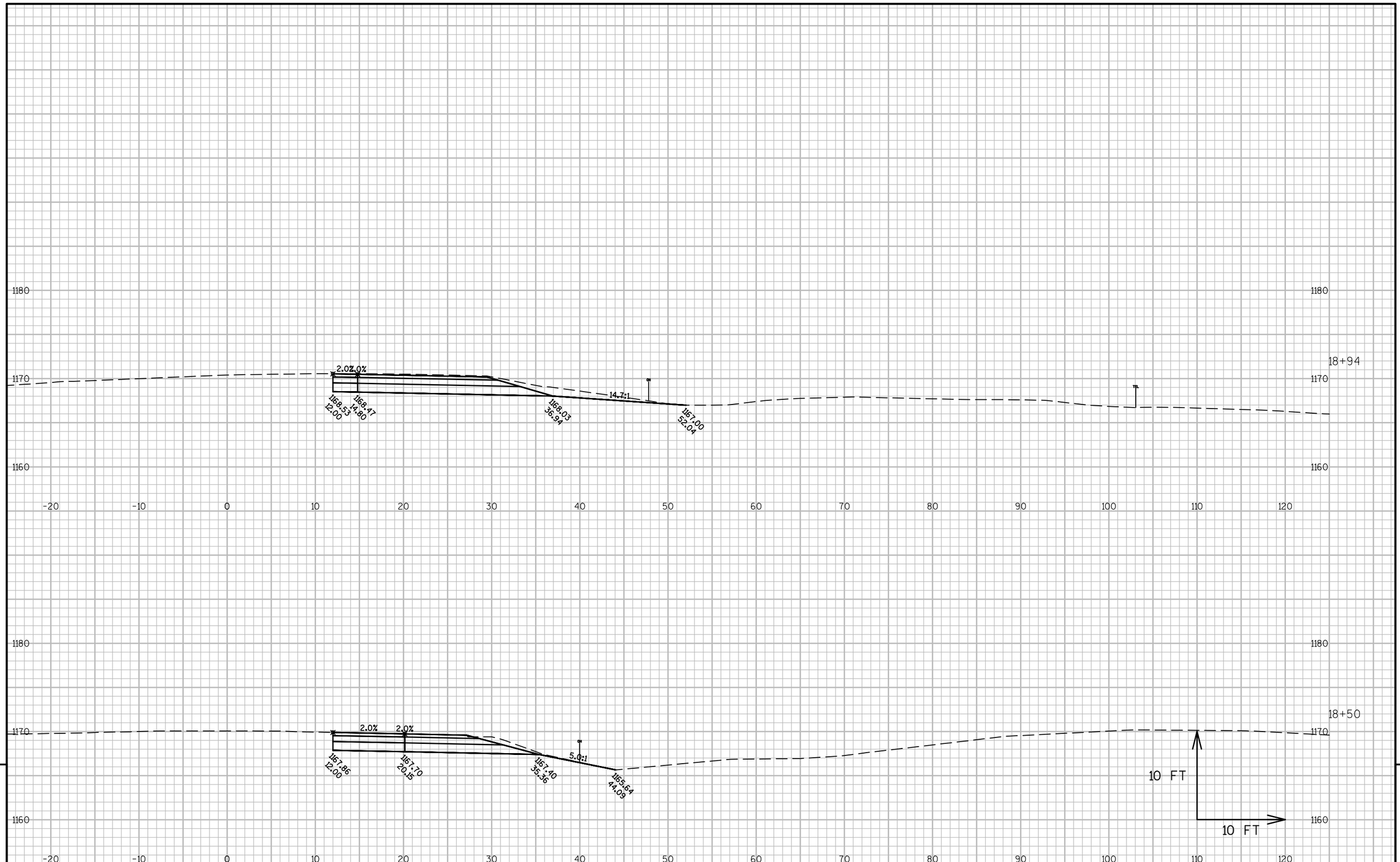
PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: STH 46	SHEET 76	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (24)

PLOT DATE : 1/19/2017 10:42 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT



9

9

PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: STH 46	SHEET 77	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\157700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (25)

PLOT DATE : 1/19/2017 10:42 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

9

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PROJECT NO: 1570-01-74	HWY: USH 8	COUNTY: POLK	CROSS SECTIONS: STH 46	SHEET 78	E

FILE NAME : P:\2016\2016.021 - WISDOT - USH 8 INTERSECTION POLK CO\15700174\SHEETSPLAN\090100-XS.DWG
LAYOUT NAME - SECTION SHEET - (26)

PLOT DATE : 1/19/2017 10:42 AM PLOT BY : DANIEL J. GERLING PLOT NAME : PLOT SCALE : 1 IN:10 FT

Notes

Wisconsin Department of Transportation

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