

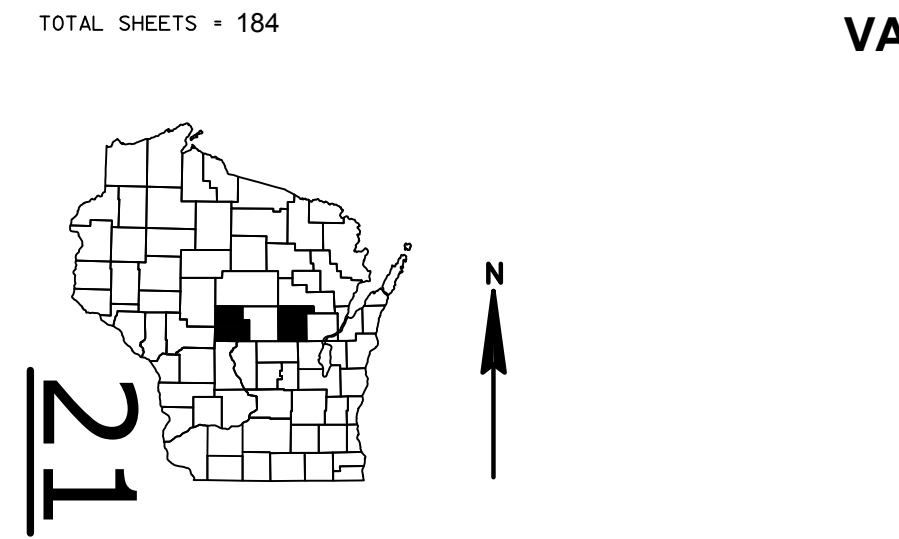
WIS PROJECT ID: 1009-42-70, 1009-42-73 COUNTY: WOOD & WAUPACA

APRIL 2019

ORDER OF SHEETS

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

TOTAL SHEETS = 184



DESIGN DESIGNATION	STH 80	STH 186	STH 110
A.A.D.T. 2019	= 2900	1200	3700
A.A.D.T. 2039	= 3200	1300	4200
D.H.V.	= 11.2	14.2	11.3
D.D.	= 60/40	60/40	60/40
T.	= 22.9	17.6	5.6
DESIGN SPEED	= 60	60	60/50
ESALS	=		

CONVENTIONAL SYMBOLS	
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	
PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

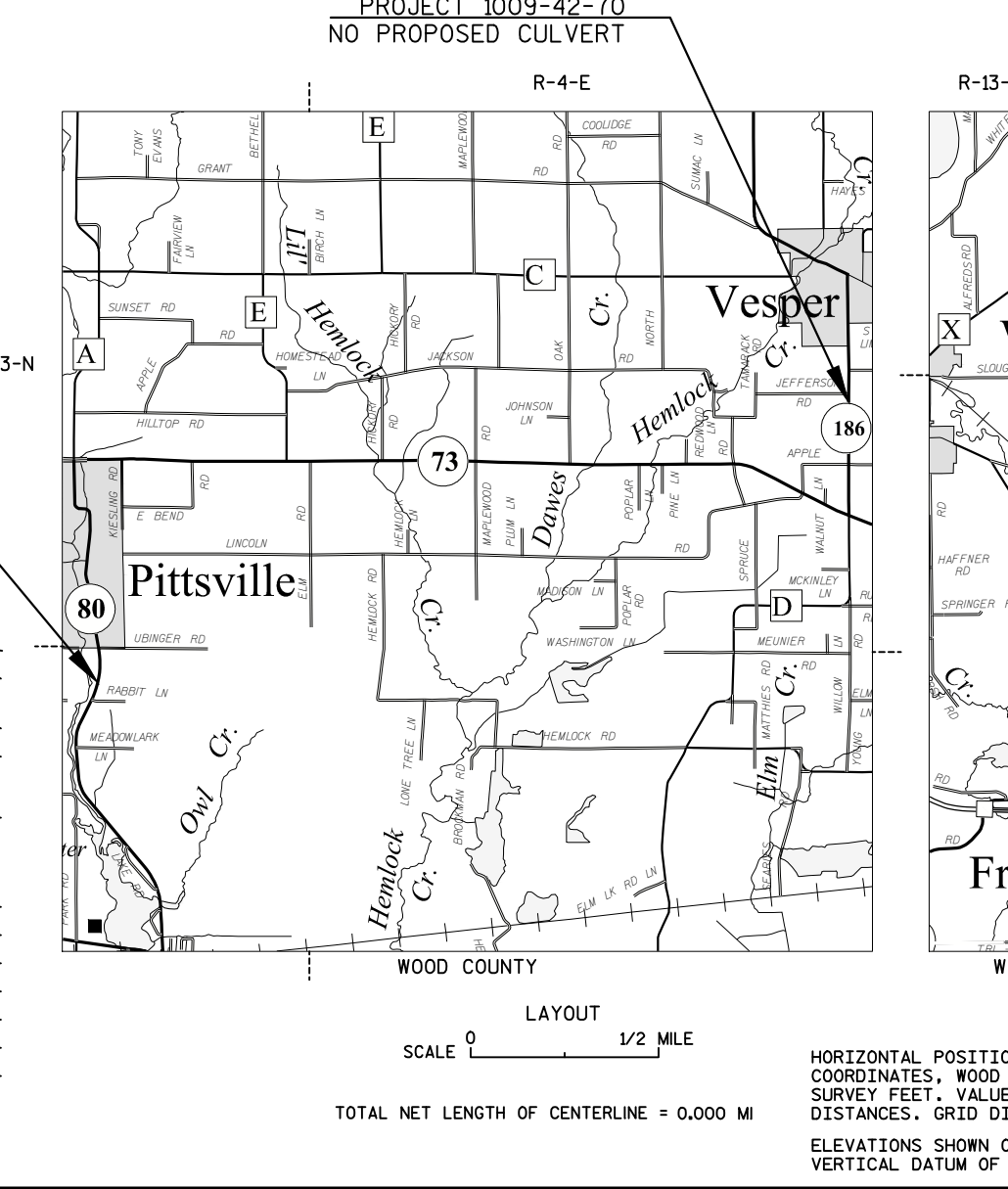
REGIONWIDE CULVERT REPLACEMENT

WOOD COUNTY CULVERTS

VARIOUS HIGHWAYS

WOOD COUNTY

STATE PROJECT NUMBER 1009-42-70



STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1009-42-70		
1009-42-73		

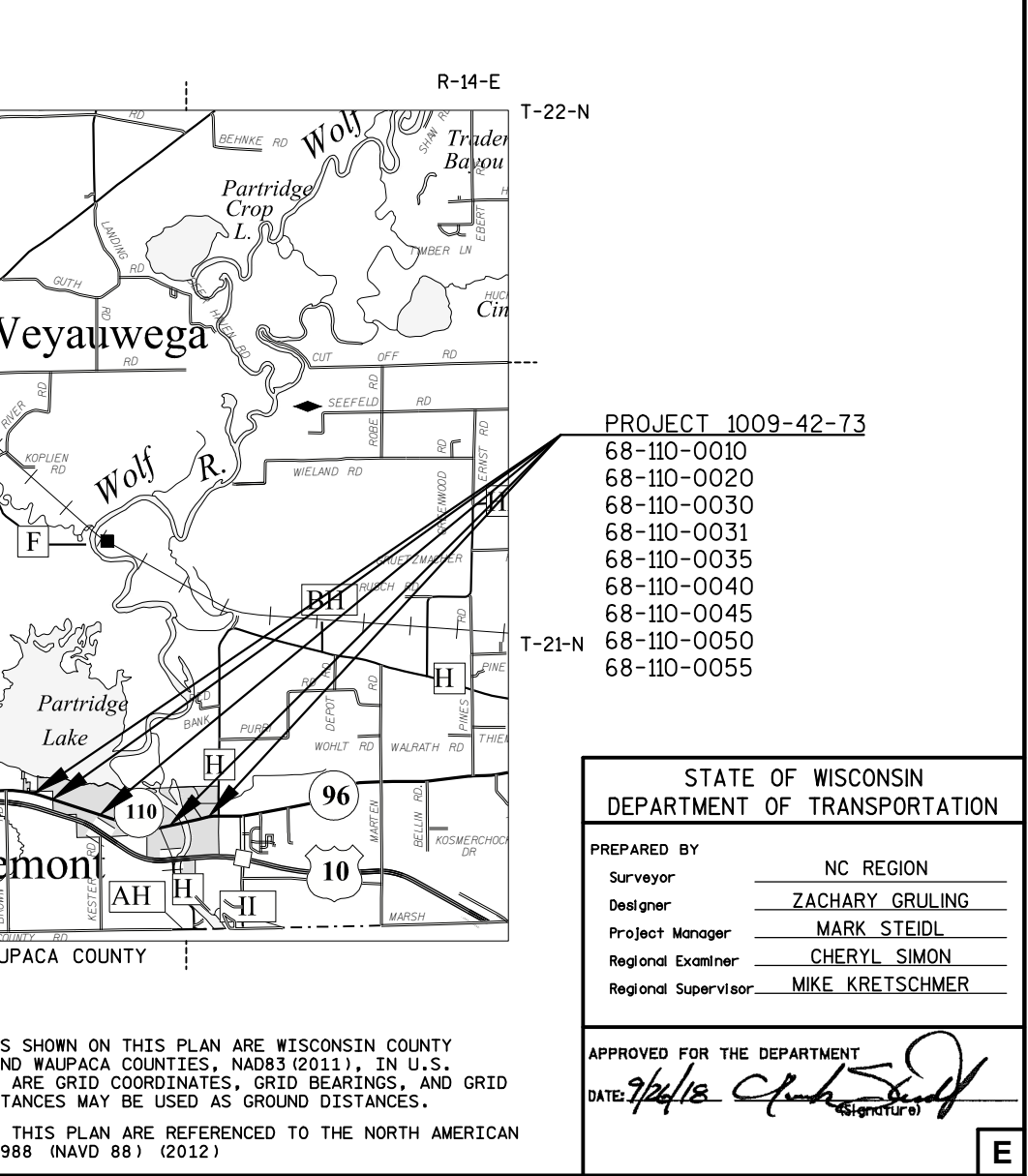
REGIONWIDE CULVERT REPLACEMENT

WAUPACA COUNTY CULVERTS

VARIOUS HIGHWAY

WAUPACA COUNTY

STATE PROJECT NUMBER 1009-42-73



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor NC REGION

Designer ZACHARY GRULING

Project Manager MARK STEIDL

Regional Examiner CHERYL SIMON

Regional Supervisor MIKE KRETSCHMER

APPROVED FOR THE DEPARTMENT

DATE: 9/24/18 [Signature]

E

GENERAL NOTES

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

CURVE DATA IS BASED ON THE ARC DEFINITION.

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

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

PAPCCS - PIPE ARCH POLY COATED CORRDATED STEEL

Q2 STH 80 TRIBUTARY TO YELLOW RIVER 17 CFS (71-080-0285)
Q2 STH 110 TRIBUTARY TO WOLF RIVER 45 CFS (68-110-0030)
Q2 STH 110 TRIBUTARY TO WOLF RIVER 5 CFS (68-110-0040)

SECTION 2 ORDER

General Notes
Project Overview
Typical Section
Construction Details
Erosion Control
Traffic Control
Detour Plan

AS-BUILT REFERENCE (YEAR)*

STH 80
S044(2) (1961)
1624-01-71 (1979)
1628-00-73 (1998)

STH 110
F019-3(19) (1955)
1510-01-72 (1975)
1510-04-71 (1982)
1510-07-71 (1987)
6841-00-70 (2008)

HMA LAYERS - STH 80

2" 4 LT 58-28 S Upper
2" 4 LT 58-28 S Lower
2" 4 LT 58-28 S Lower

HMA LAYERS - STH 110

2" 4 LT 58-28 S Upper
2" 4 LT 58-28 S Lower
2" 4 LT 58-28 S Lower

STH 186
6620-02-70 (1969)
6620-10-69 (1995)

*Approval Year (Not Construction)

HMA LAYERS - STH 186

2.25" 4 LT 58-28 S Upper
3" 4 LT 58-28 S Lower

ENVIRONMENTAL CONTACTS

WI Department of Natural Resources
Waupaca & Wood County
473 Griffith Drive
Wisconsin Rapids, WI 54494
Attn: Casey Jones
Phone: (715) 421-7867
casey.jones@wisconsin.gov

UTILITY CONTACTS - WOOD COUNTY

Alliant Energy - Electricity

Matthew Hosler
2710 Jefferson St
Wisconsin Rapids, WI 54494
(608) 963-3655
matthewhosler@alliantenergy.com

TDS Telecom - Communication Line

Steve Jakubiec
10 College Ave, Suite 218A
Appleton, WI 54911
(920) 882-4166
(920) 562-7221 (Mobile)
steve.jakubiec@tdstelecom.com

Oakdale Electric Cooperative - Electricity

Roy Boyles
PO Box 40
Oakdale, WI 54649
(608) 372-8851
(608) 343-3871 (Mobile)
rboyles@oakdalerec.com

Packerland Broadband - Communication Line

Andrew Heigl
PO Box 885
Iron Mountain, MI 49801
(906) 774-6621
(906) 221-7536 (Mobile)
andy.heigl@packerlandbroadband.com

UTILITY CONTACTS - WAUPACA COUNTY

Century Link - Communication Line

Tim Kroeze
19 W Fond du Lac St
Ripon, WI 54971
(920) 748-8491
(920) 219-0112 (Mobile)
tim.kroeze@centurylink.com

Mediacom - Communication Line

Craig Eggert
207 W Pearl St
Decorah, IA 52101
(563) 419-5160
(563) 419-5160 (Mobile)
ceggert@mediacomcc.com

Net Lec - Communication Line

Dennis LaFave
1700 Industrial Dr
Green Bay, WI 54302
(920) 619-9774 (Mobile)
dlafave@mi-tech.us

We Energies - Electricity

Kenneth Van Oss
800 S Lynndale Dr
Appleton, WI 54912
(920) 380-3318

We Energies - Gas

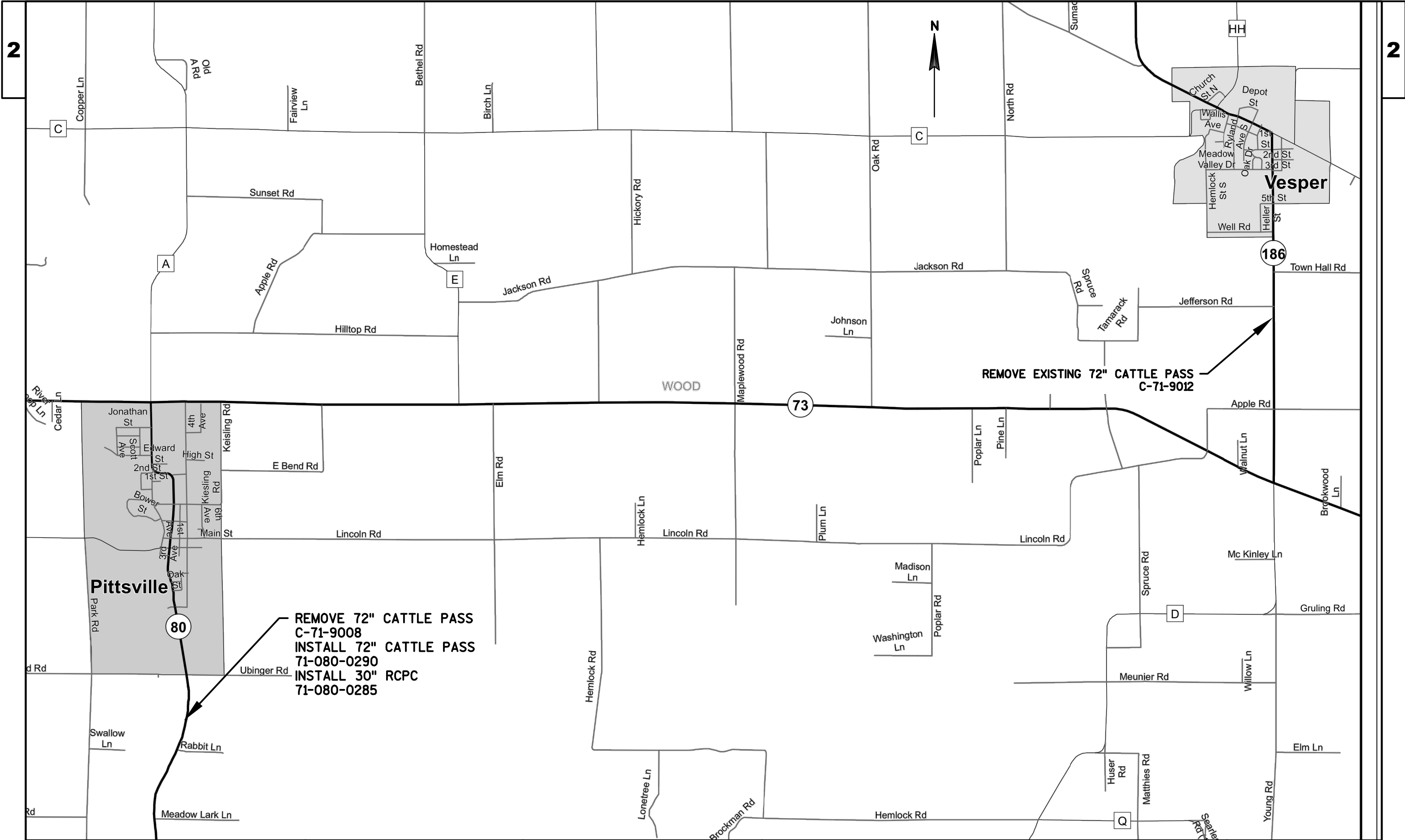
Eric Handler
800 S Lynndale Dr
Appleton, WI 54914
(920) 540-6093 (Mobile)
eric.handler@we-energies.com

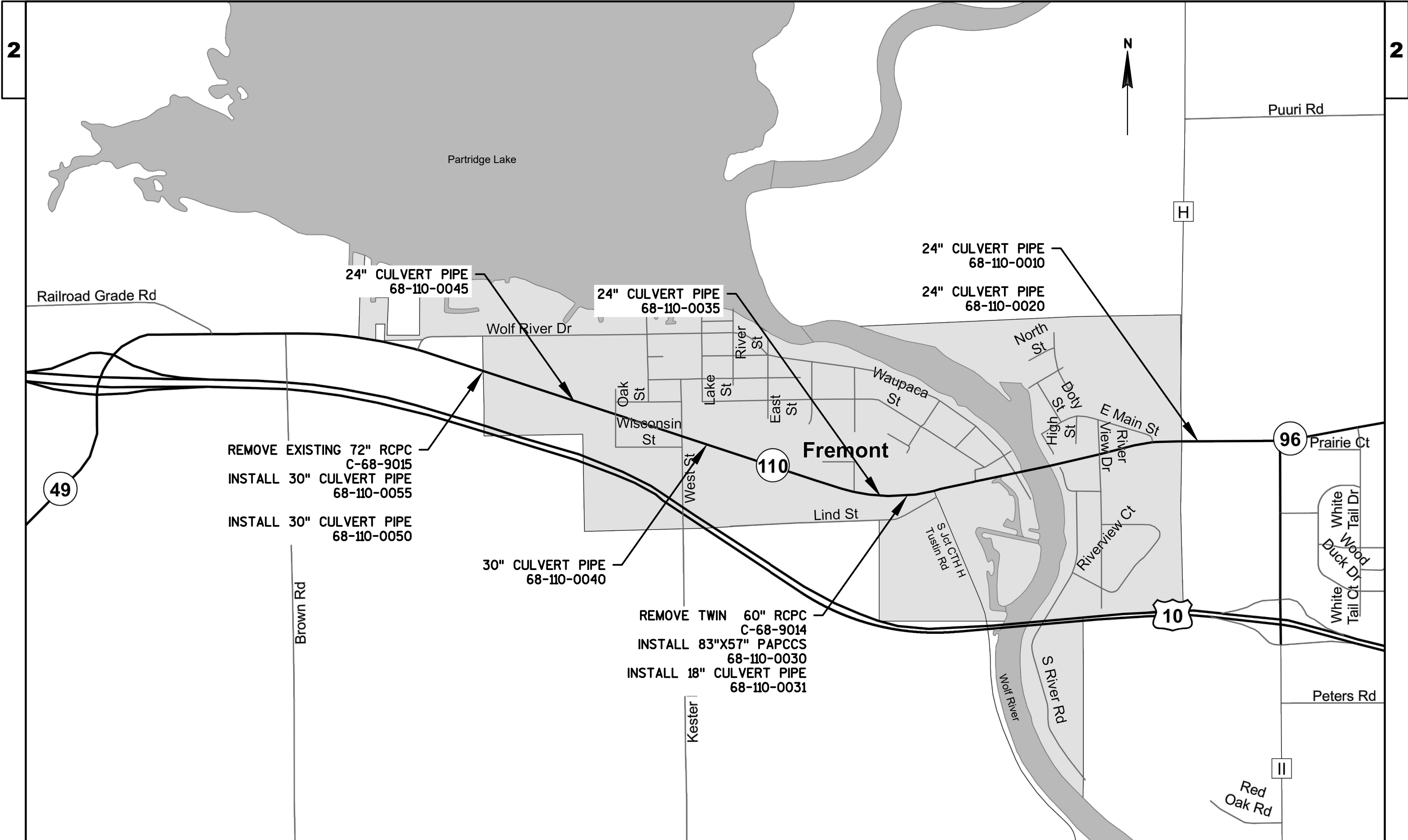
Wolf River Sanitary District

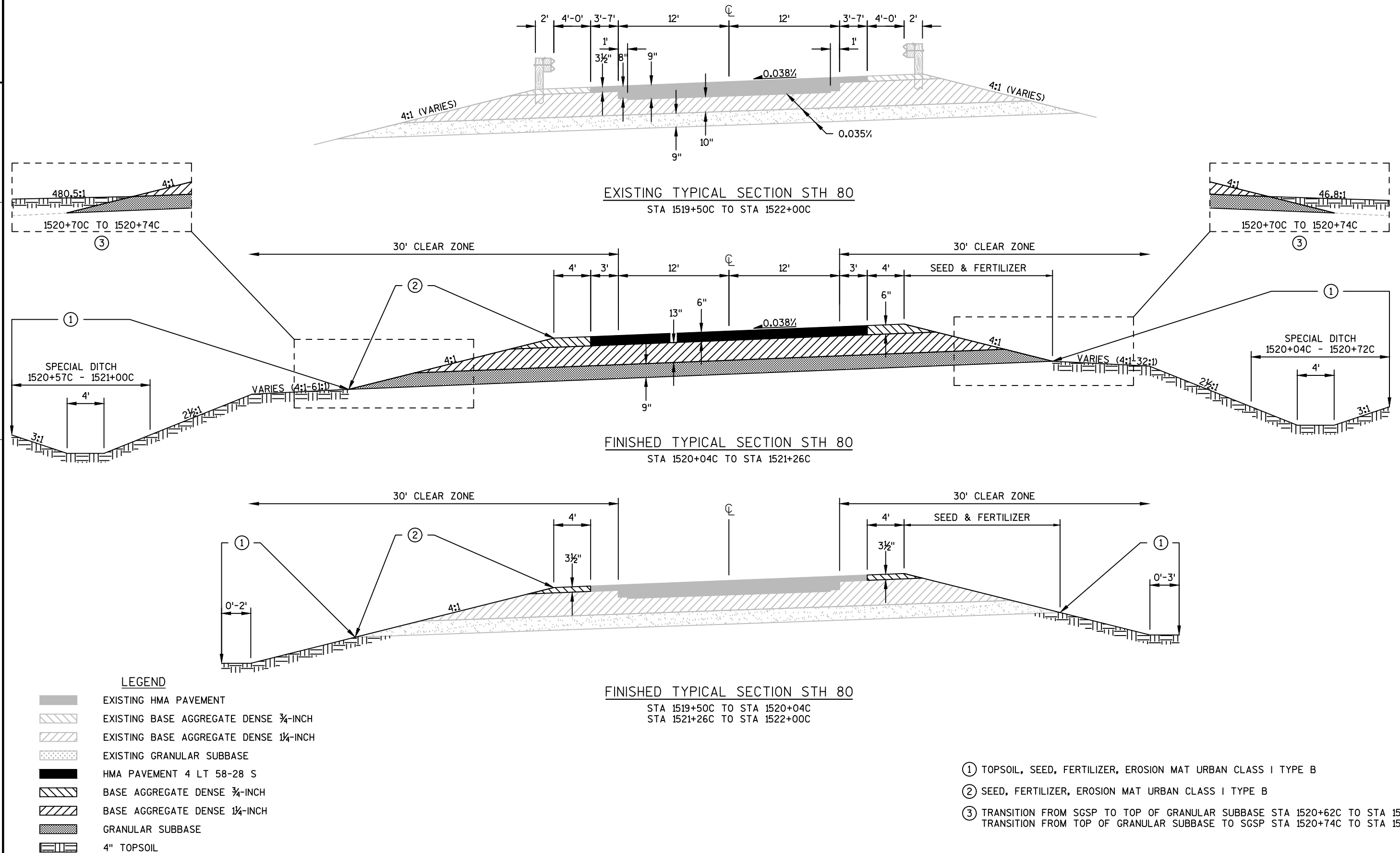
Ward Weiss
N297 Cty Rd H
Fremont, WI 54940
(920) 446-3243
wweiss@centurytel.net

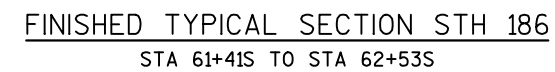
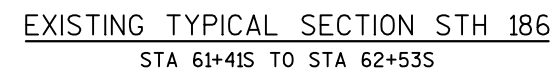


Dial 811 or (800)242-8511
www.DiggersHotline.com

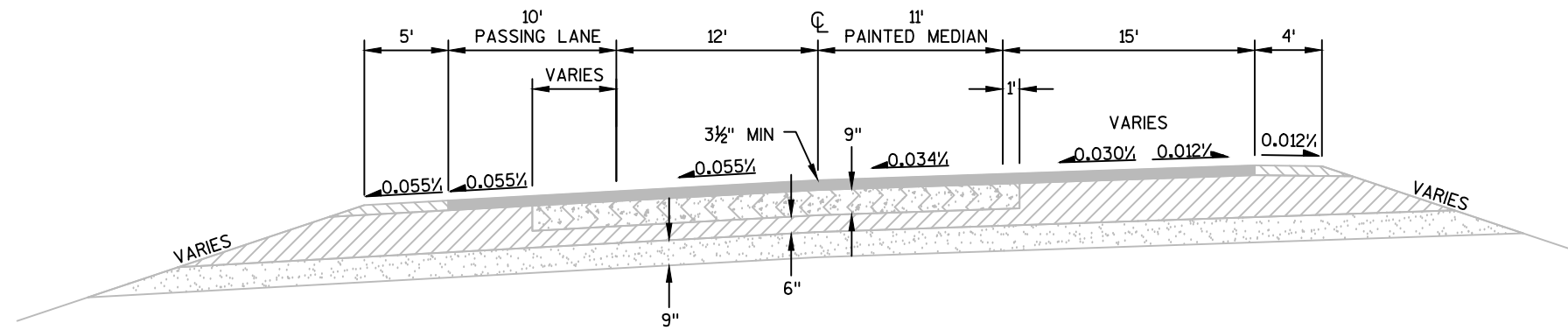




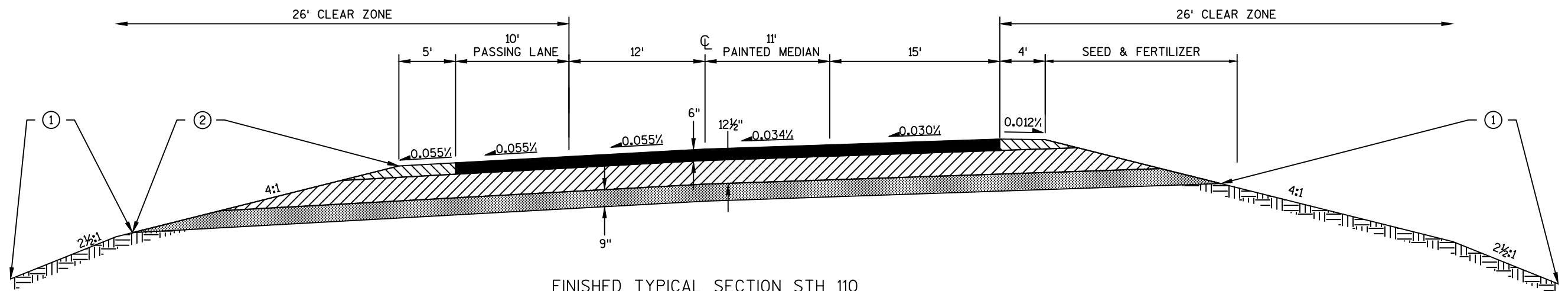




① SEED, FERTILIZER, EROSION MAT URBAN CLASS I TYPE B



EXISTING TYPICAL SECTION STH 110
STA 406+91Z TO STA 408+09Z



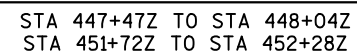
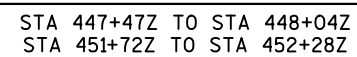
FINISHED TYPICAL SECTION STH 110
STA 406+91Z TO STA 408+09Z

LEGEND

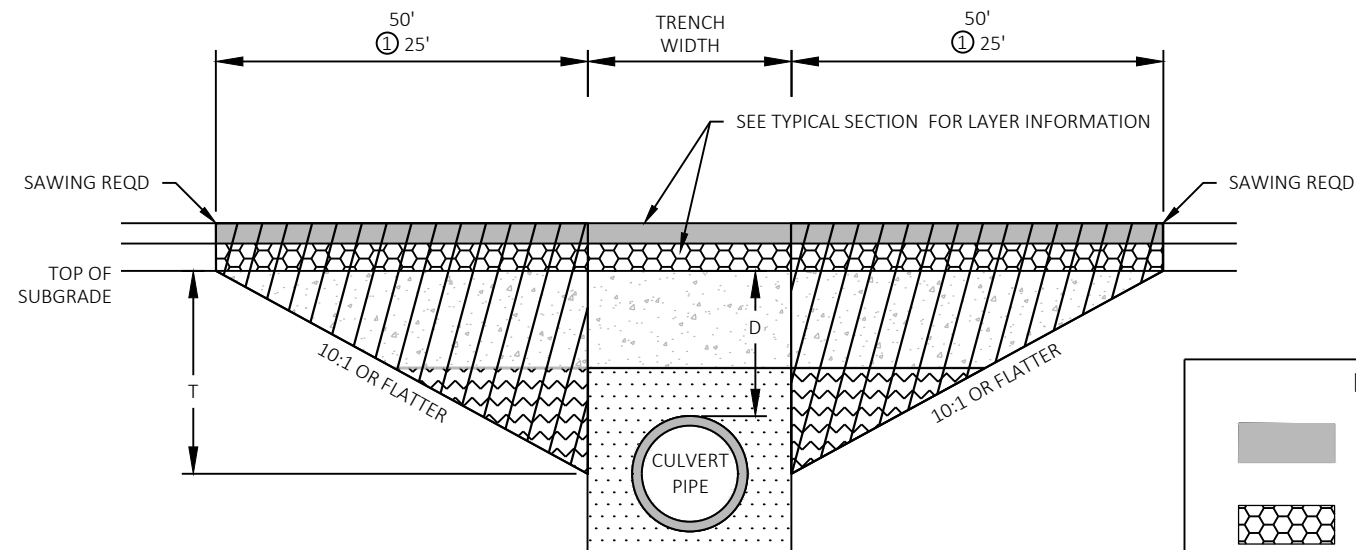
	EXISTING HMA PAVEMENT
	EXISTING CRACKED AND SEATED CONCRETE PAVEMENT
	EXISTING BASE AGGREGATE DENSE 3/4-INCH
	EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
	EXISTING GRANULAR SUBBASE
	HMA PAVEMENT 4 LT 58-28 S
	BASE AGGREGATE DENSE 3/4-INCH
	BASE AGGREGATE DENSE 1 1/4-INCH
	GRANULAR SUBBASE
	4" TOPSOIL

① TOPSOIL, SEED, FERTILIZER, EROSION MAT URBAN CLASS I TYPE B

② SEED, FERTILIZER, EROSION MAT URBAN CLASS I TYPE B



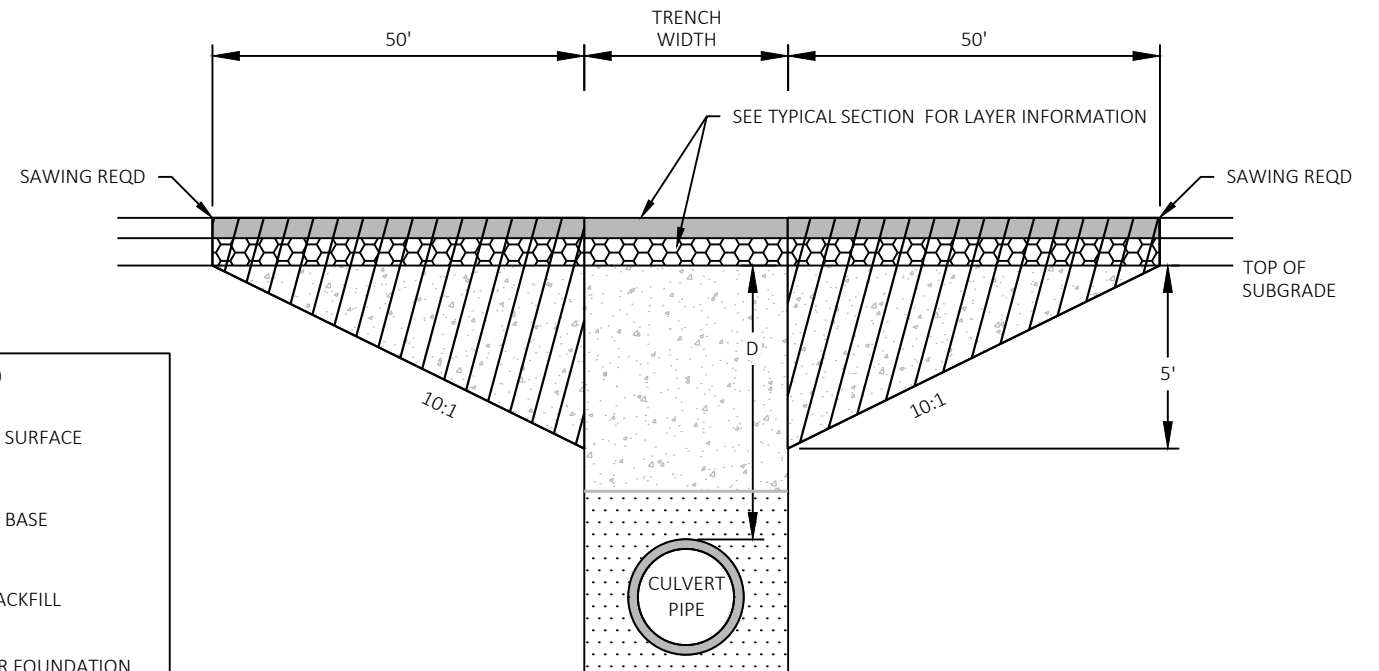
- ① SEED, FERTILIZER, EROSION MAT URBAN CLASS I TYPE B
- ② THE LENGTH OF THE OUTLET PIPE VARIES, SEE MISCELLANEOUS QUANTITIES FOR ESTIMATED LENGTHS. THE ENTIRE LENGTH OF THE OUTLET PIPE SHALL MEET THE REQUIREMENTS FOR PVC PIPE SCHEDULE 40.



DEPTH D < 6 FT

LEGEND

-  PROPOSED SURFACE
-  PROPOSED BASE
-  TRENCH BACKFILL
-  TRENCH OR FOUNDATION BACKFILL
-  FOUNDATION BACKFILL
-  TRANSITION CUT



DEPTH D ≥ 6 FT

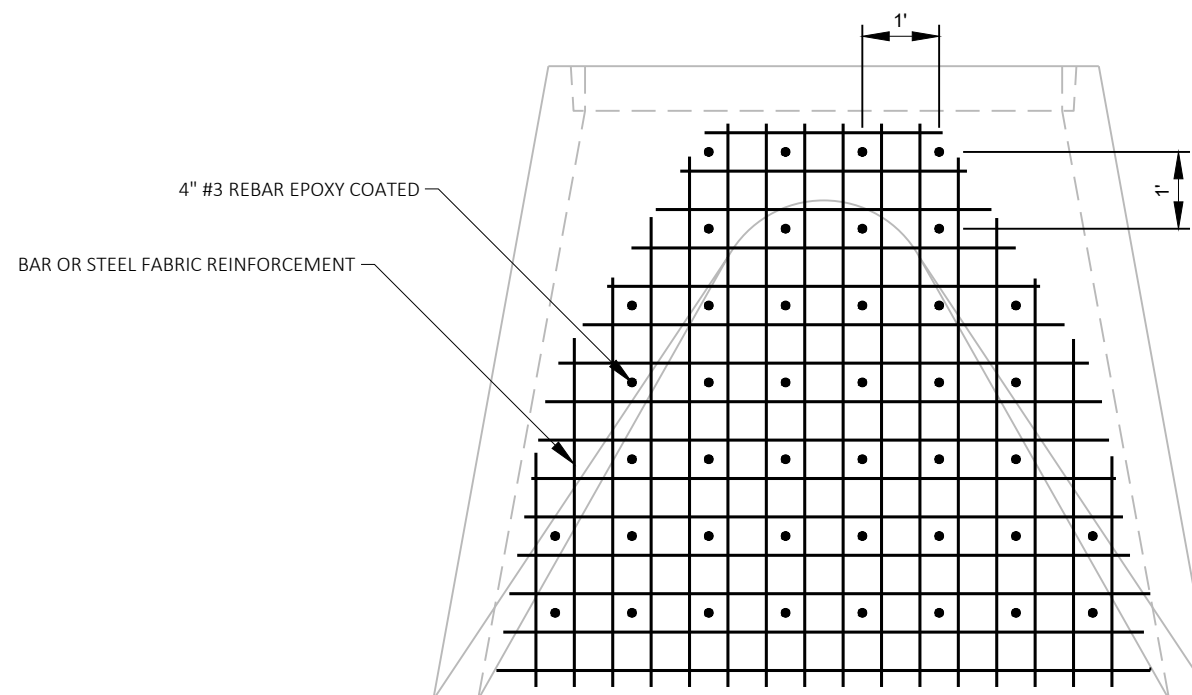
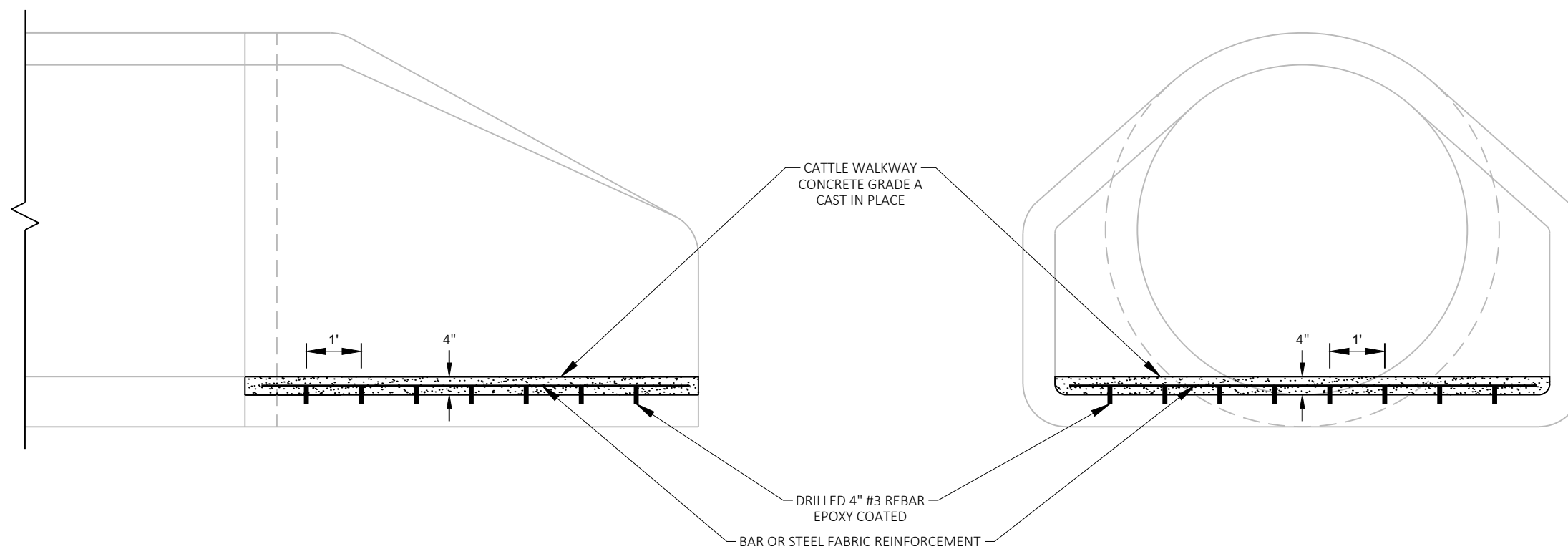
NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
TRENCH BACKFILL AND FOUNDATION BACKFILL USED IN TRANSITION CUT AREA IS INCIDENTAL TO CULVERT PIPE BID ITEMS.

- ② CULVERT IS REMOVE ONLY. REPLACE FOUNDATION BACKFILL WITH TRENCH BACKFILL AND BORROW. BORROW AND TRENCH EXCAVATION ARE INCIDENTAL TO THE REMOVING STRUCTURE BID ITEM.

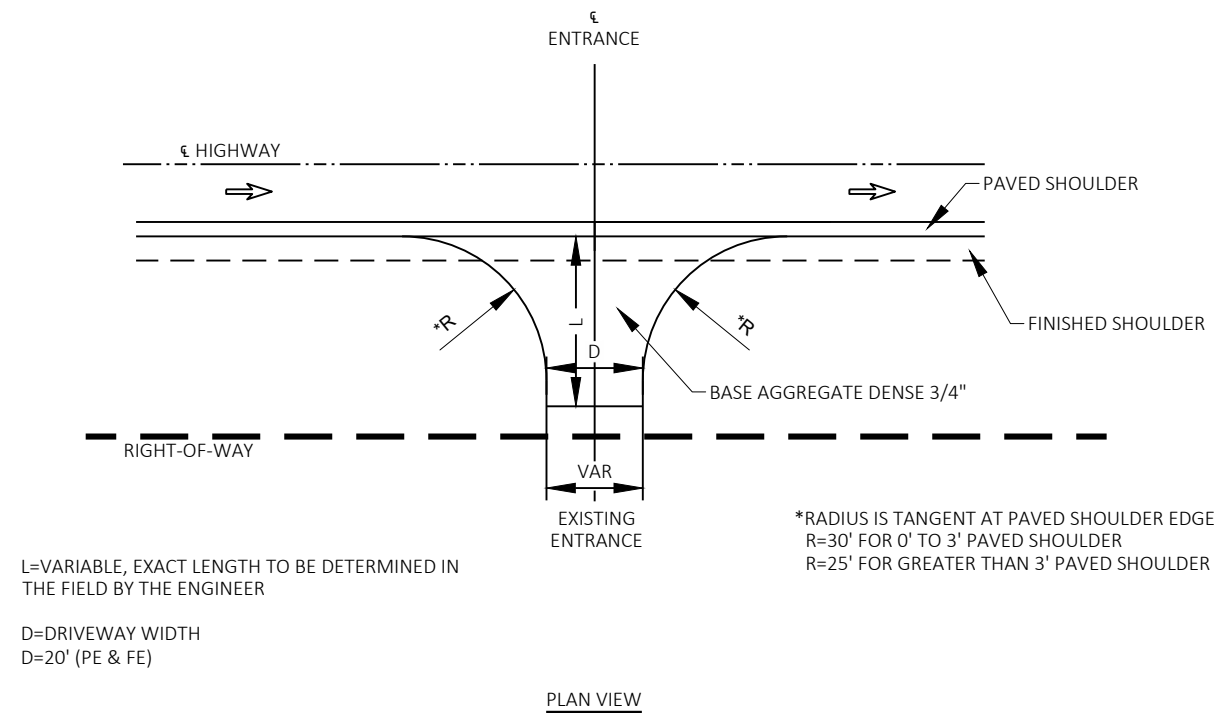
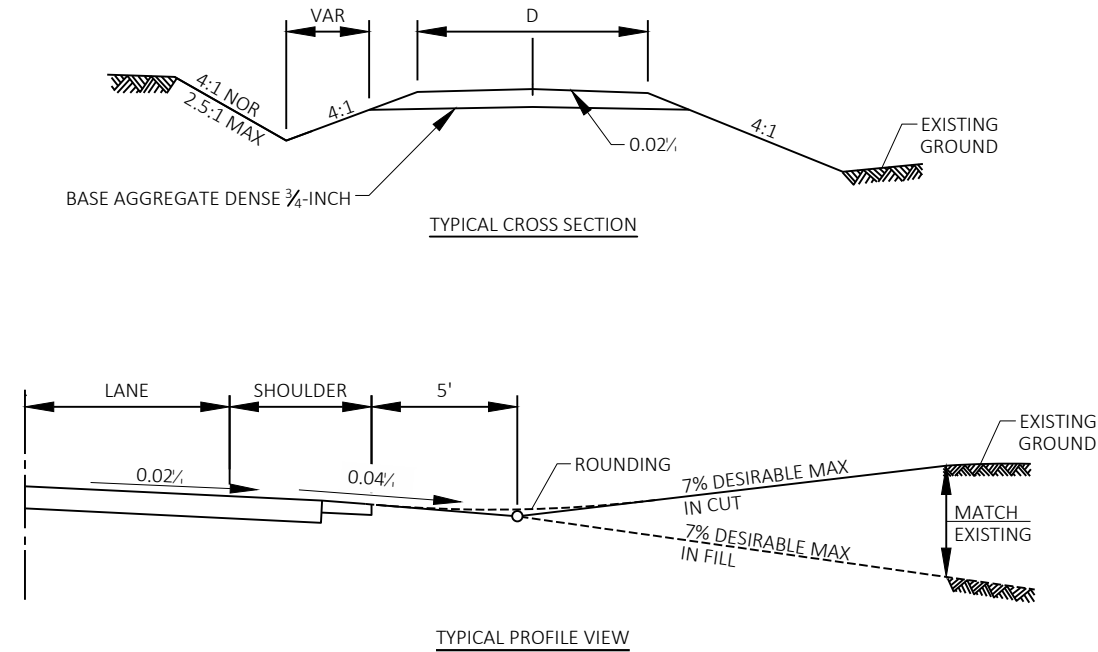
CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 80	1520+57C	4	36	71-080-0285
STH 80	1520+72C	1	72	71-080-0290
② STH 110	350+00Z	1	72	C-68-9015
STH 110	351+00Z	4	30	C-68-110-0055
STH 110	355+00Z	6	30	C-68-110-0050
①② STH 110	363+50Z	6	24	C-68-110-0045
STH 110	382+35Z	12	30	C-68-110-0040
STH 110	398+00Z	6	24	C-68-110-0035
STH 110	407+50Z	5	83x57	C-68-110-0030
① STH 110	447+75Z	1	24	68-110-0020
① STH 110	452+00Z	1	24	68-110-0010
② STH 186	62+00S	1	72	C-71-9012

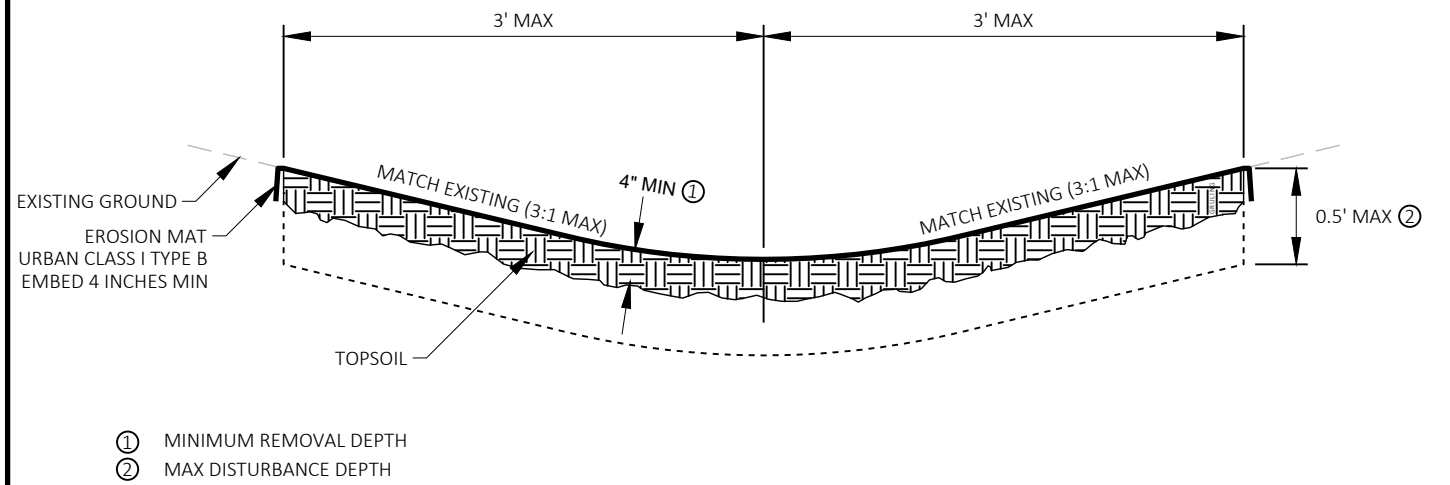


CONCRETE CATTLE WALKWAY FOR APRON ENDWALLS FOR CULVERT PIPE REINFORCED 72-INCH

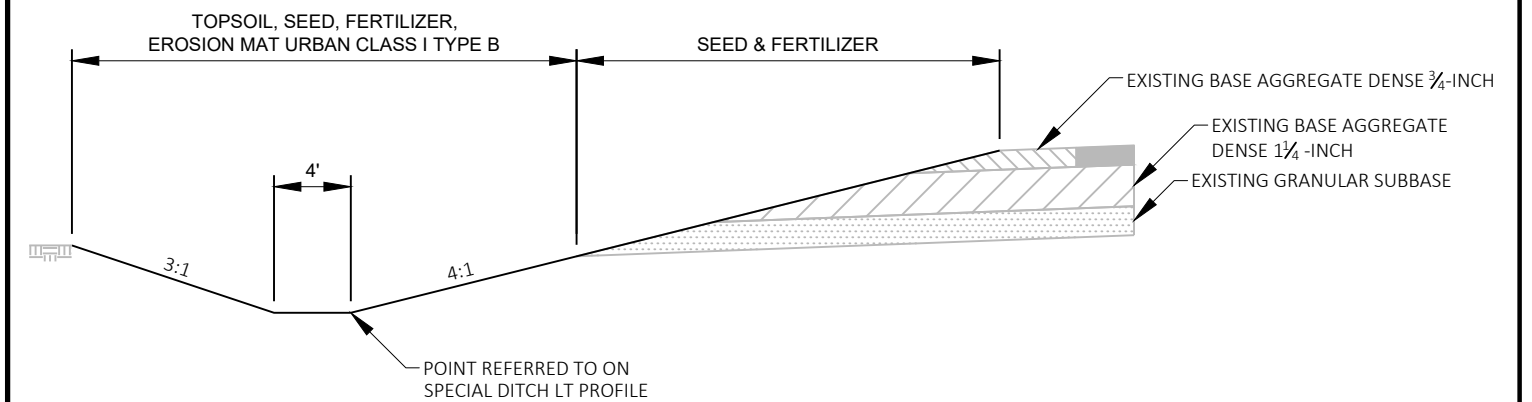
CONCRETE GRADE A, REINFORCEMENT AND DRILLING ARE INCIDENTAL TO
THE APRON ENDWALL FOR CULVERT PIPE 72-INCH BID ITEM



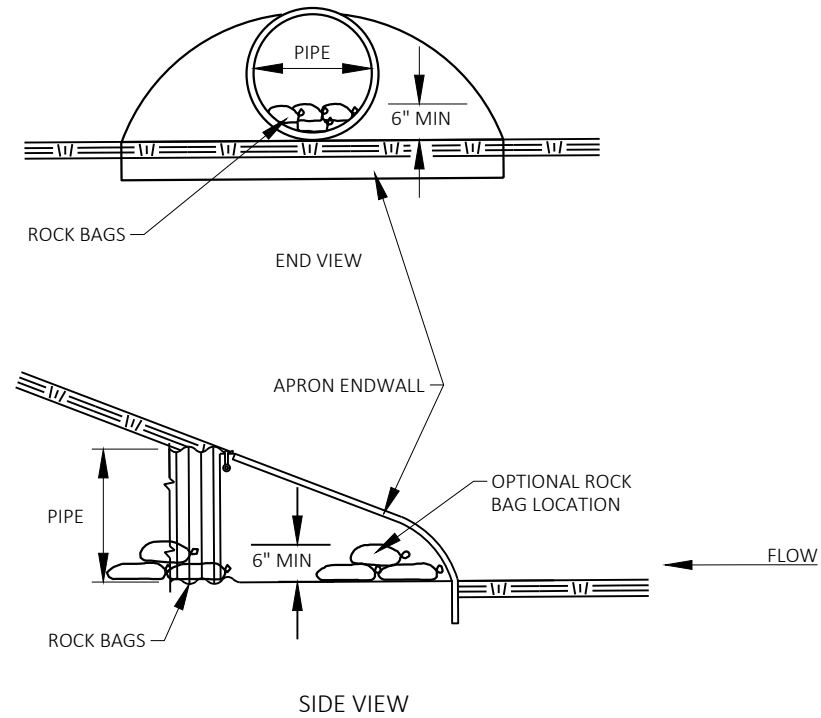
RURAL DRIVEWAY INTERSECTION
STATION 357+63 AND 361+70



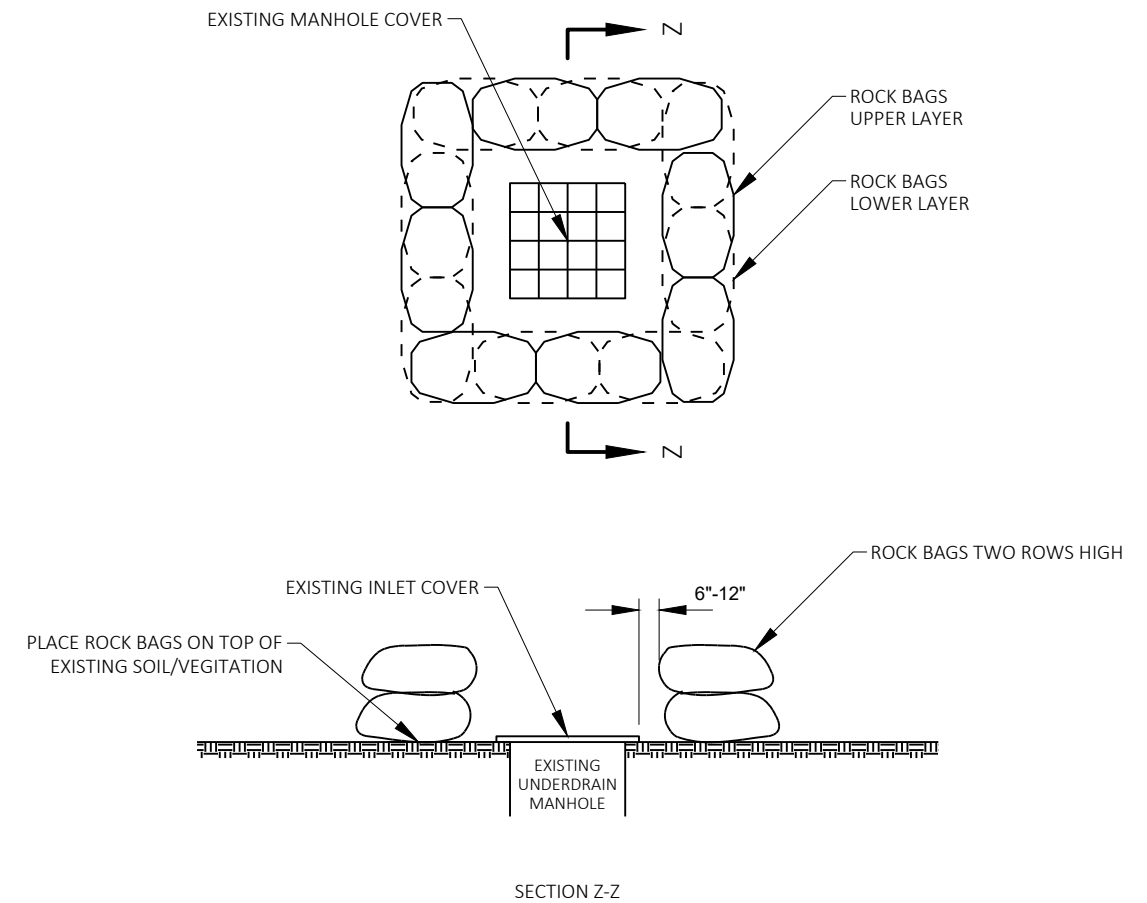
DITCH CLEANING



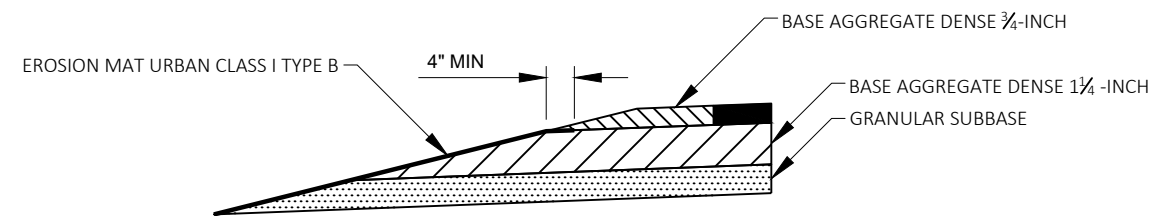
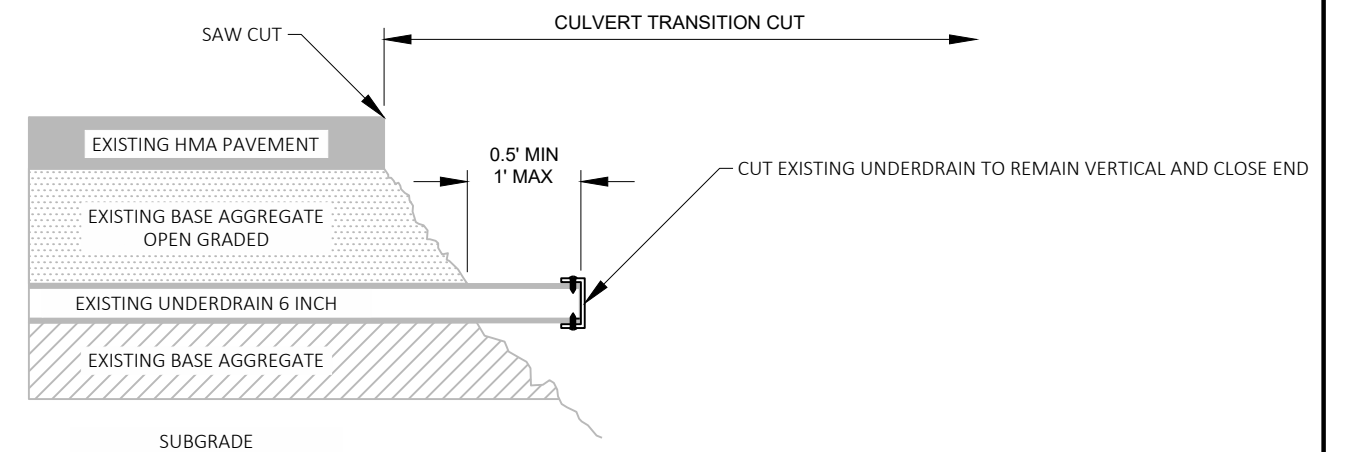
DITCH GRADING
STA 357+00 TO STA 363+75

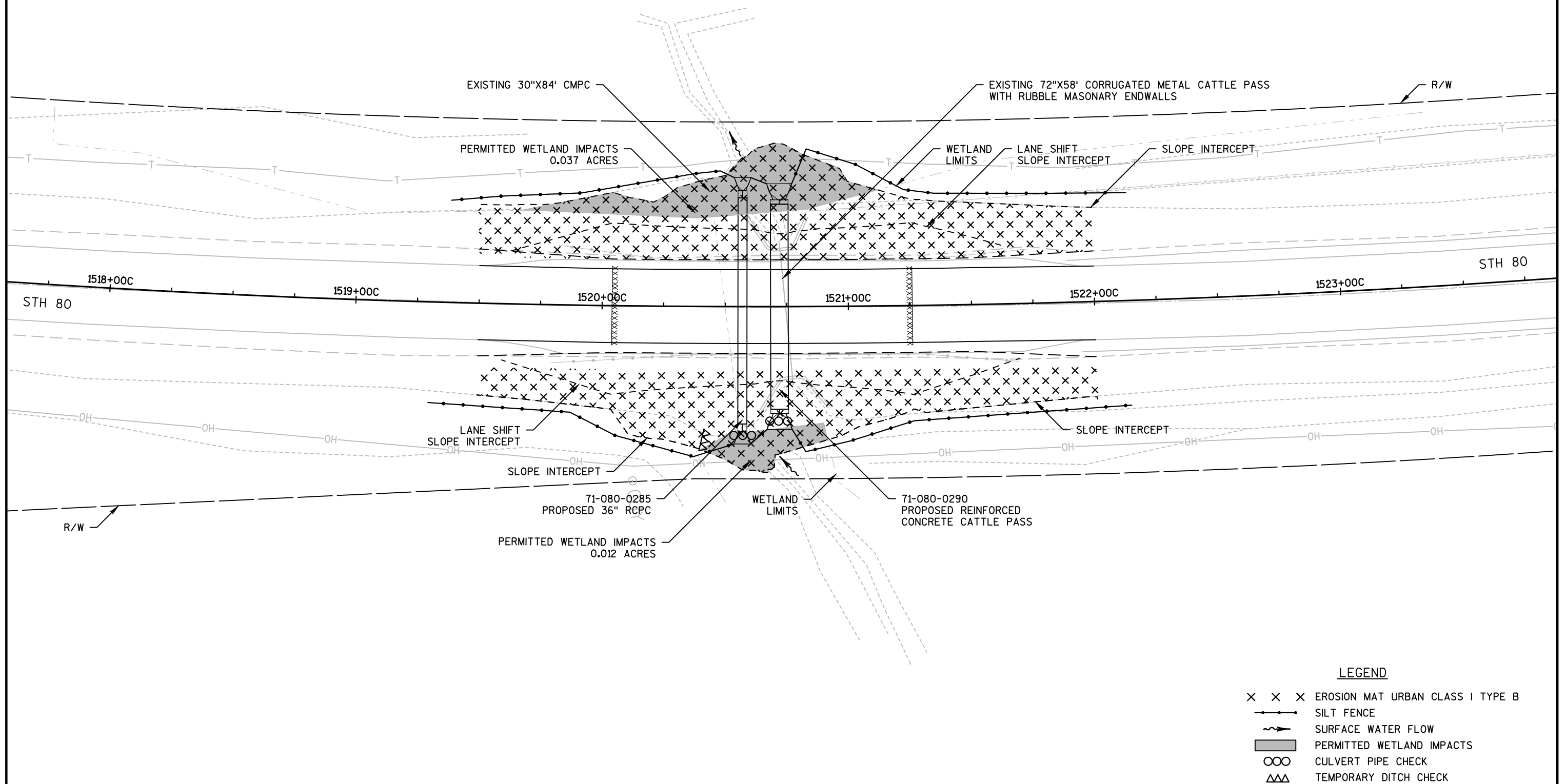
**CULVERT PIPE CHECK**

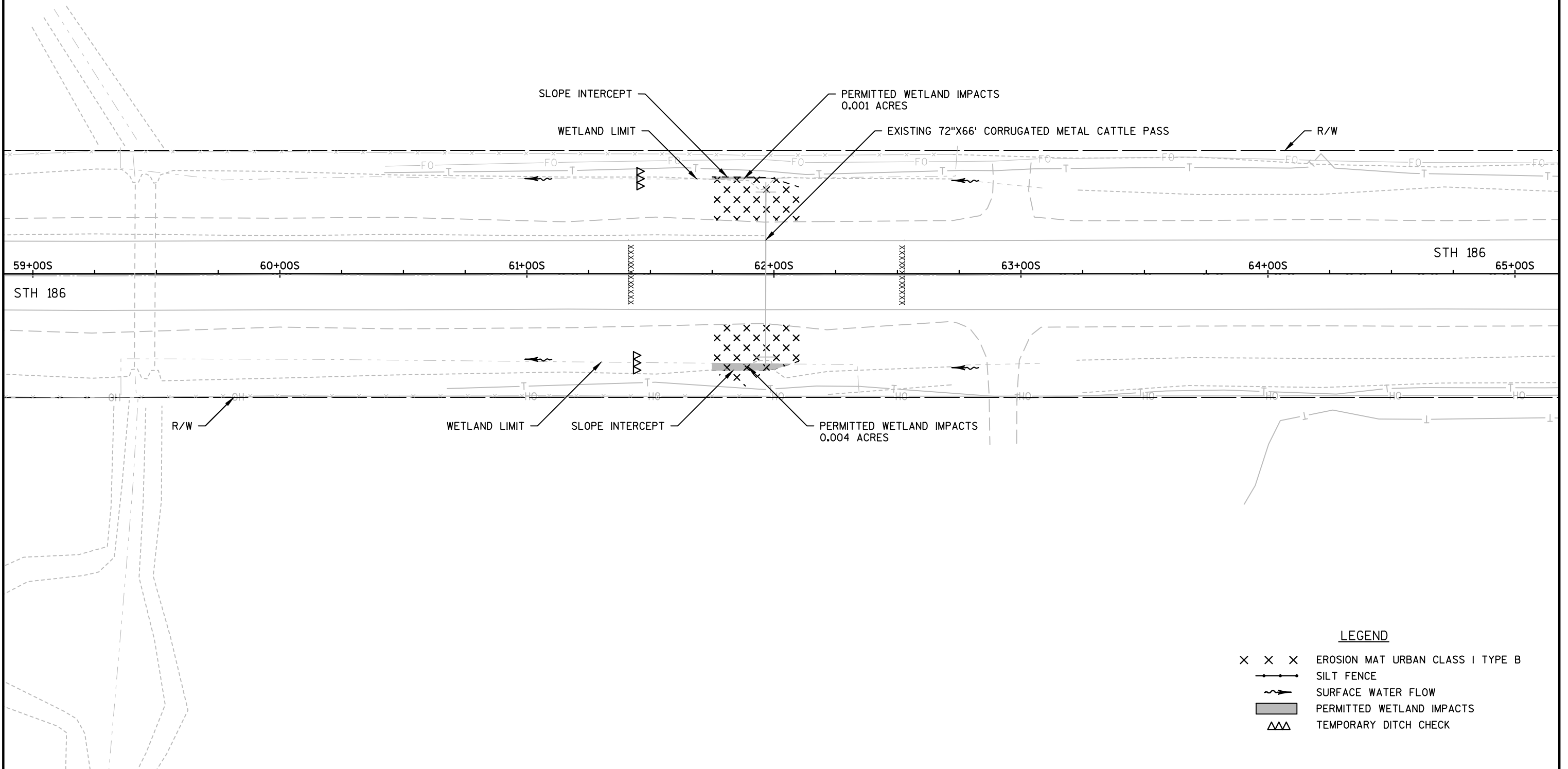
(INSTALL ON INLET END ONLY)

**ROCK BAG INLET PROTECTION**

CULVERT 398+00 RT

**EROSION MAT ENTRENCHMENT AT SHOULDER ON LOW SIDE SUPERELEVATED CURVES****UNDERDRAIN CLOSING DETAIL**STA 447+47Z
STA 451+72Z

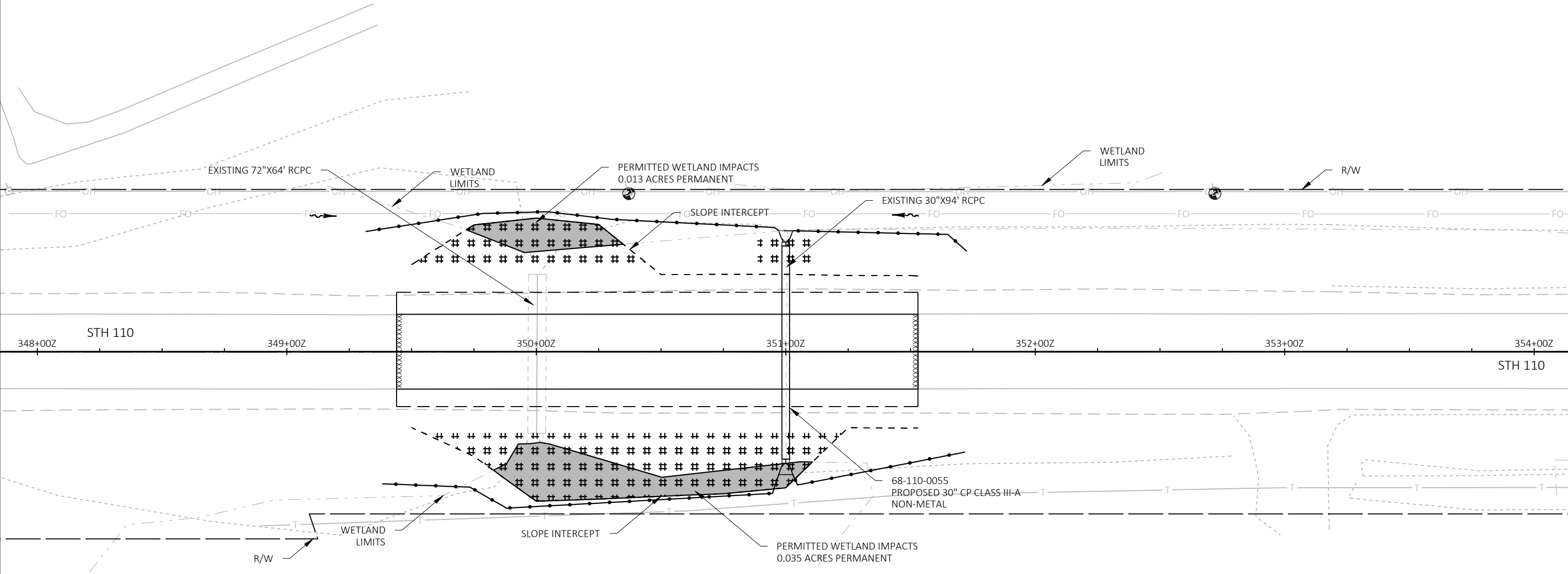




LEGEND

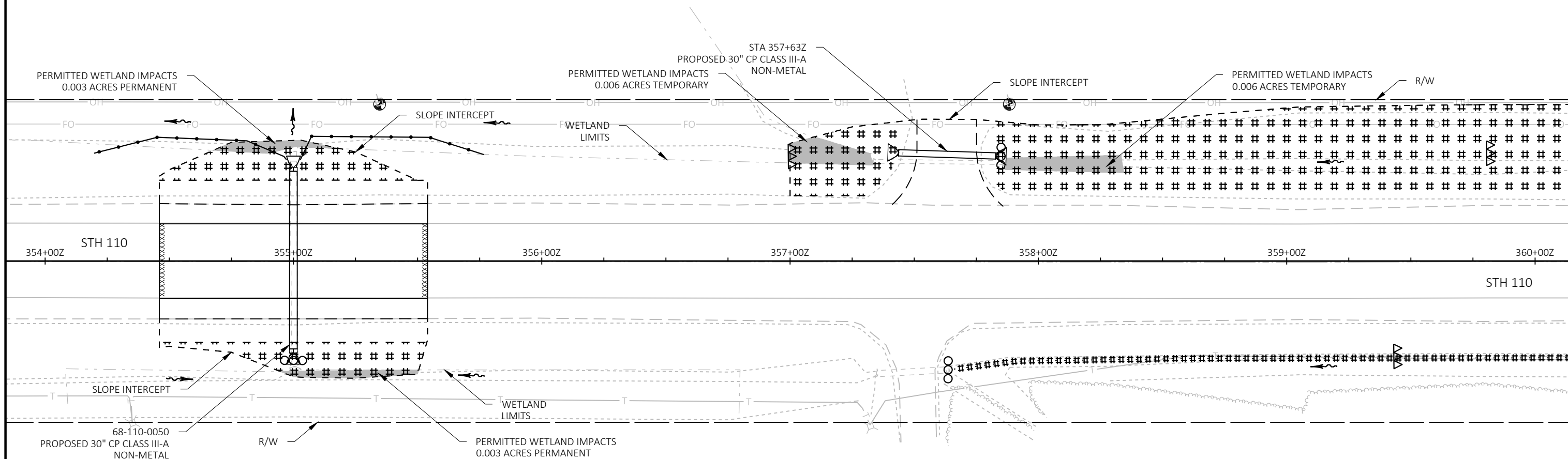
- × × × EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ~> SURFACE WATER FLOW
- PERMITTED WETLAND IMPACTS
- △△△ TEMPORARY DITCH CHECK

NOTES:
WILD PARSNIP KNOWN TO BE IN THE AREA
FOLLOW SPECIAL PROVISION ENVIRONMENTAL PROTECTION, AQUATIC EXOTIC SPECIES CONTROL
MINIMIZE DISTURBANCE OUTSIDE THE SLOPE INTERCEPTS



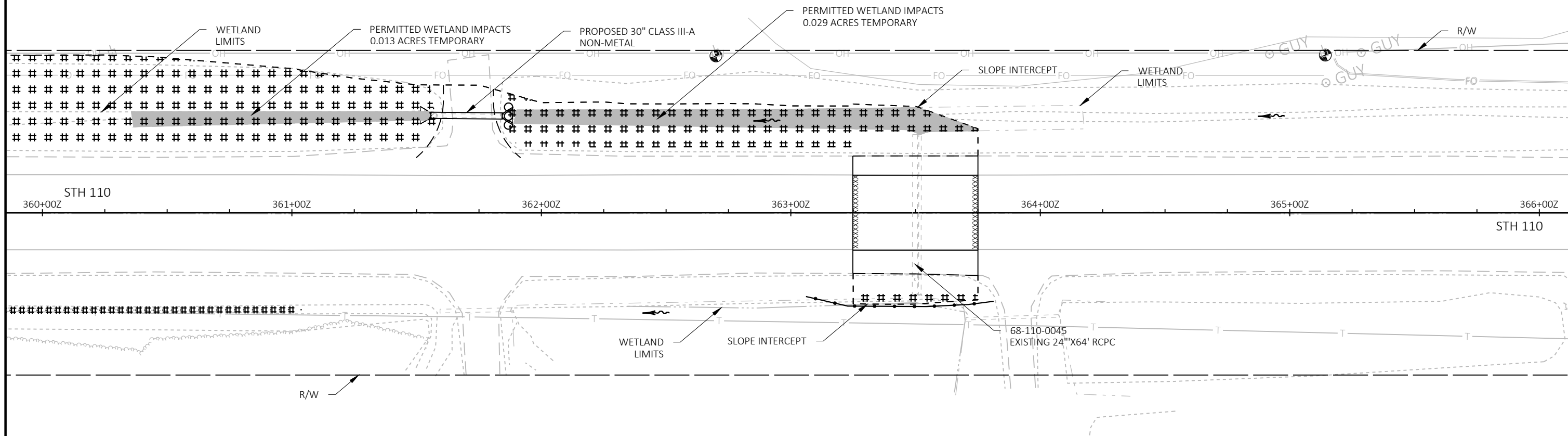
LEGEND

- ##### EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ~> SURFACE WATER FLOW
- ▨ PERMITTED WETLAND IMPACTS
- OOO CULVERT PIPE CHECK



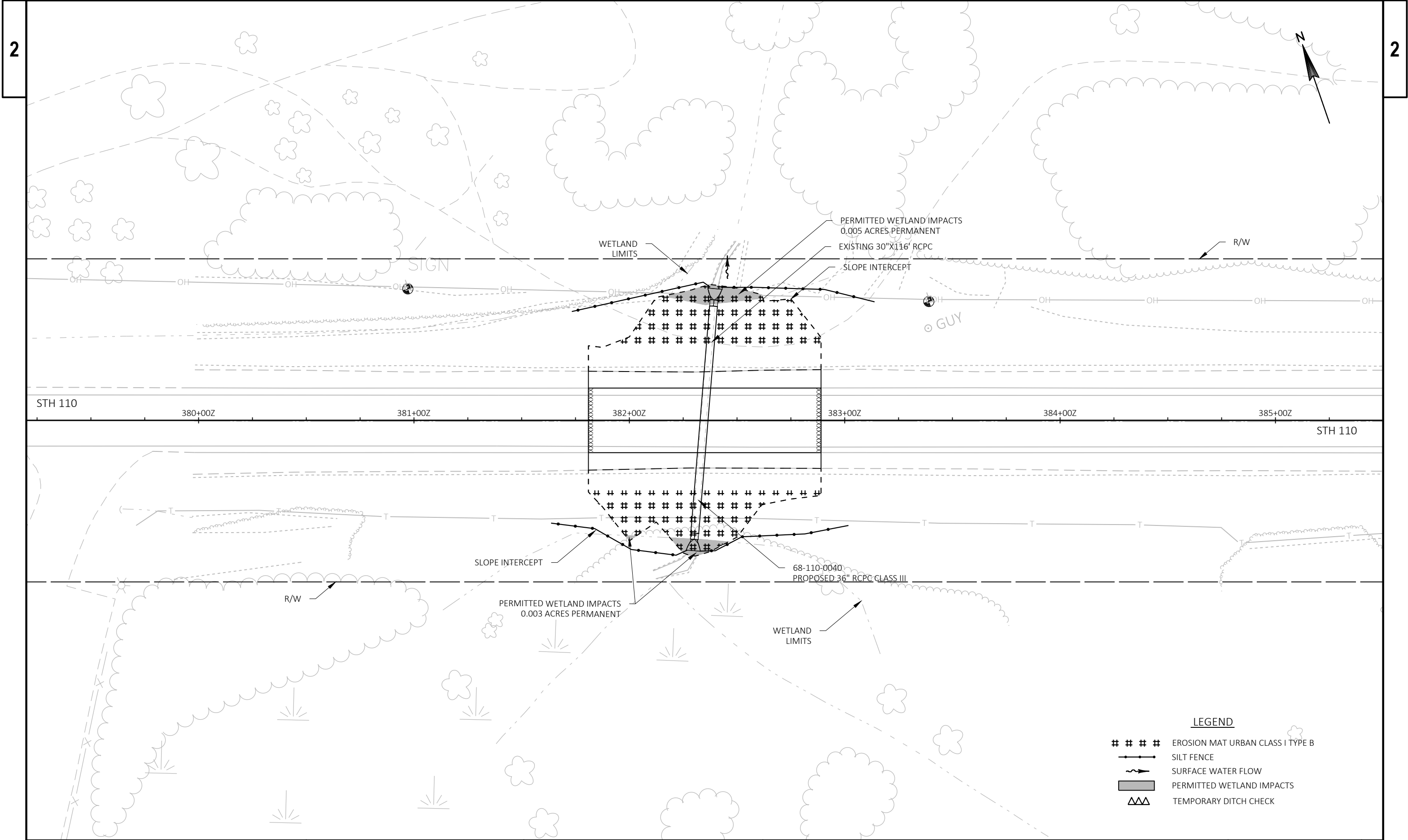
LEGEND

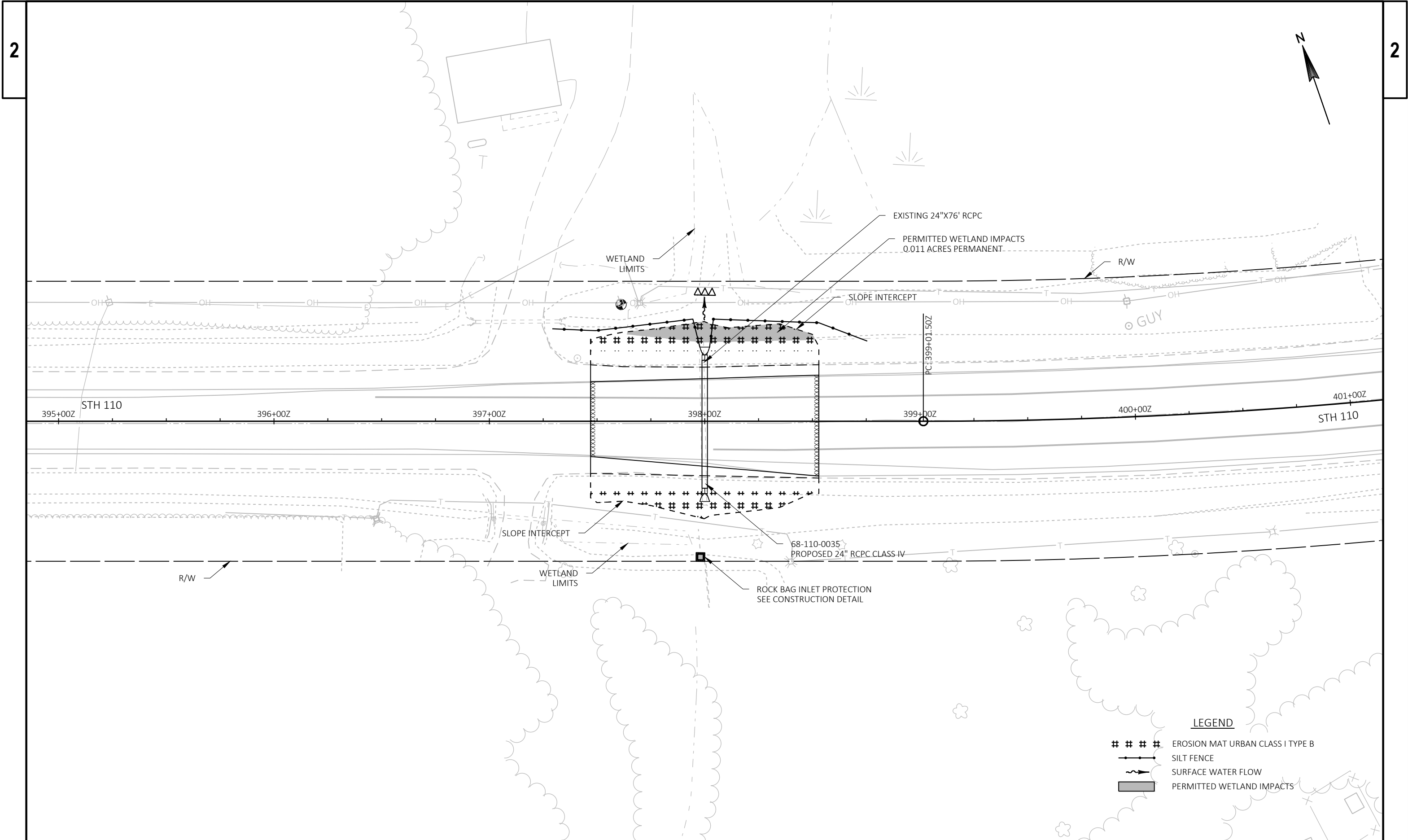
- ##### EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ~> SURFACE WATER FLOW
- PERMITTED WETLAND IMPACTS
- OO CULVERT PIPE CHECK
- AAA TEMPORARY DITCH CHECK

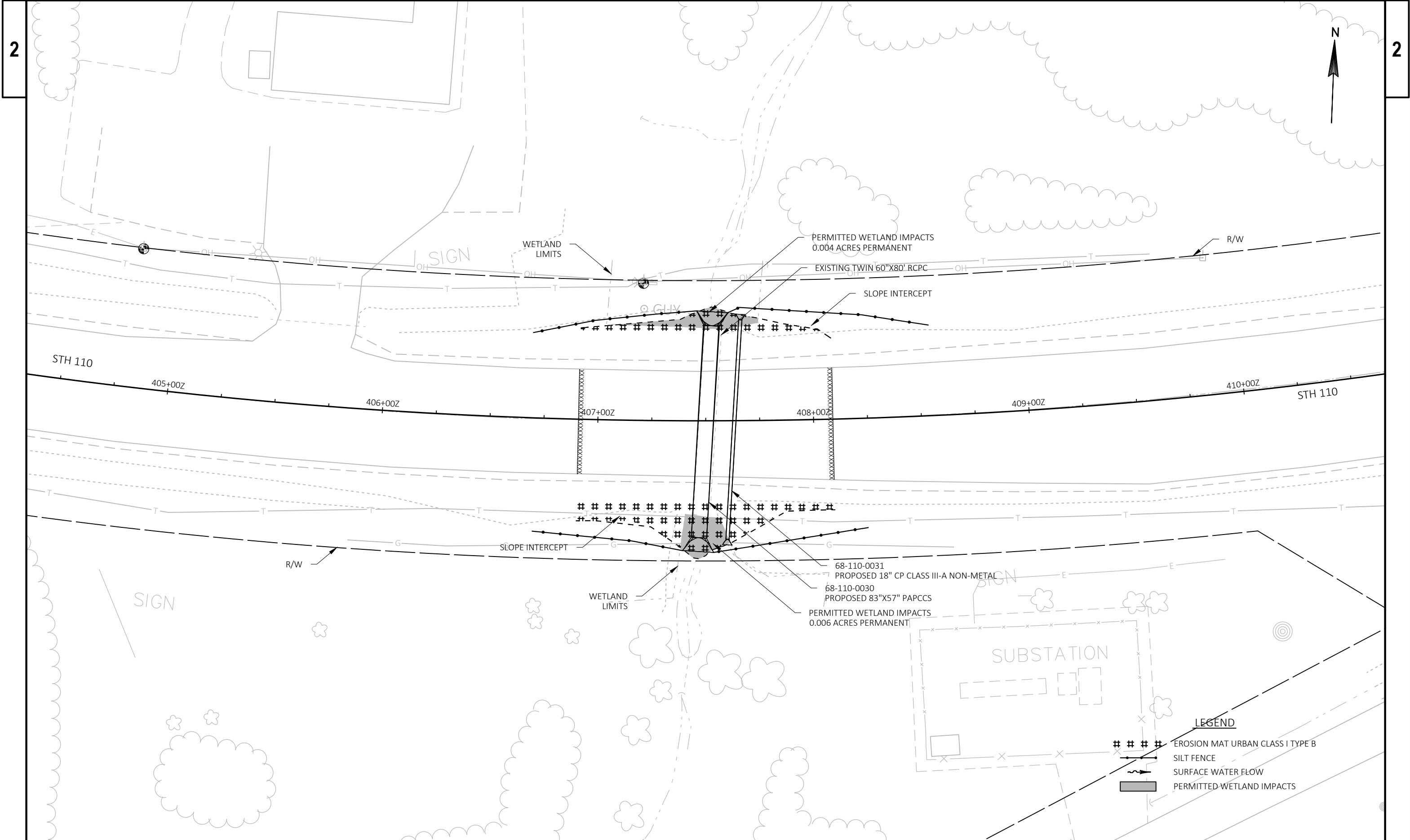


LEGEND

- ##### EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- ~> SURFACE WATER FLOW
- PERMITTED WETLAND IMPACTS
- OO CULVERT PIPE CHECK









--	--

STH 80 CATTLE PASS REPLACEMENT

TEMPORARY SIGNAL TIMING #1
6 AM TO 8 PM

INTERVAL	NB	SB	SECONDS
1	GREEN	RED	18
2	YELLOW	RED	5
3	RED	RED	21
4	RED	GREEN	18
5	RED	YELLOW	5
6	RED	RED	21

TOTAL CYCLE LENGTH

	GREEN	YELLOW	RED	
NB	18	5	21	
SB	18	5	21	
TOTAL	36	10	42	= 88

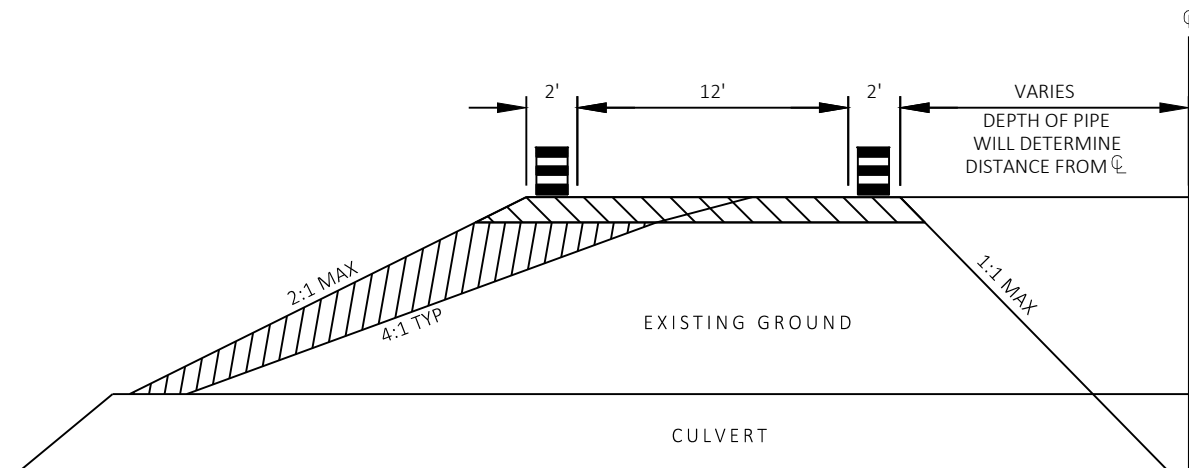
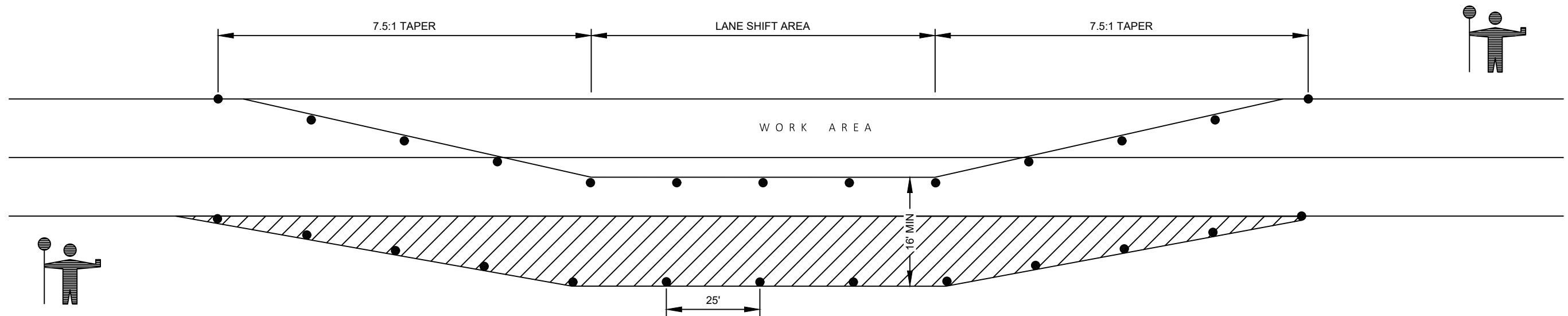
TEMPORARY SIGNAL TIMING #2
8 PM TO 6 AM

INTERVAL	NB	SB	SECONDS
1	GREEN	RED	15
2	YELLOW	RED	5
3	RED	RED	21
4	RED	GREEN	15
5	RED	YELLOW	5
6	RED	RED	21

TOTAL CYCLE LENGTH

	GREEN	YELLOW	RED	
NB	15	5	21	
SB	15	5	21	
TOTAL	30	10	42	= 82

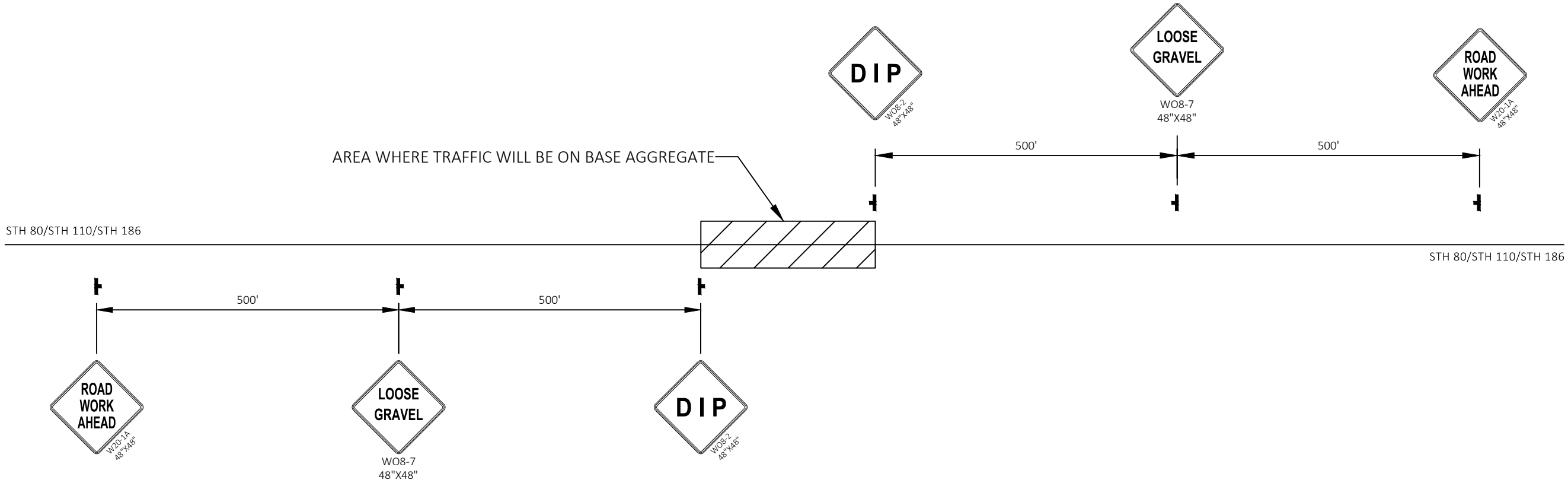
NOTES: ALL TIMES SHOWN IN SECONDS
STOP BAR PLACEMENT SPACED 625 FEET
55 MPH POSTED SPEED LIMIT

LANE SHIFT DETAILNOTES

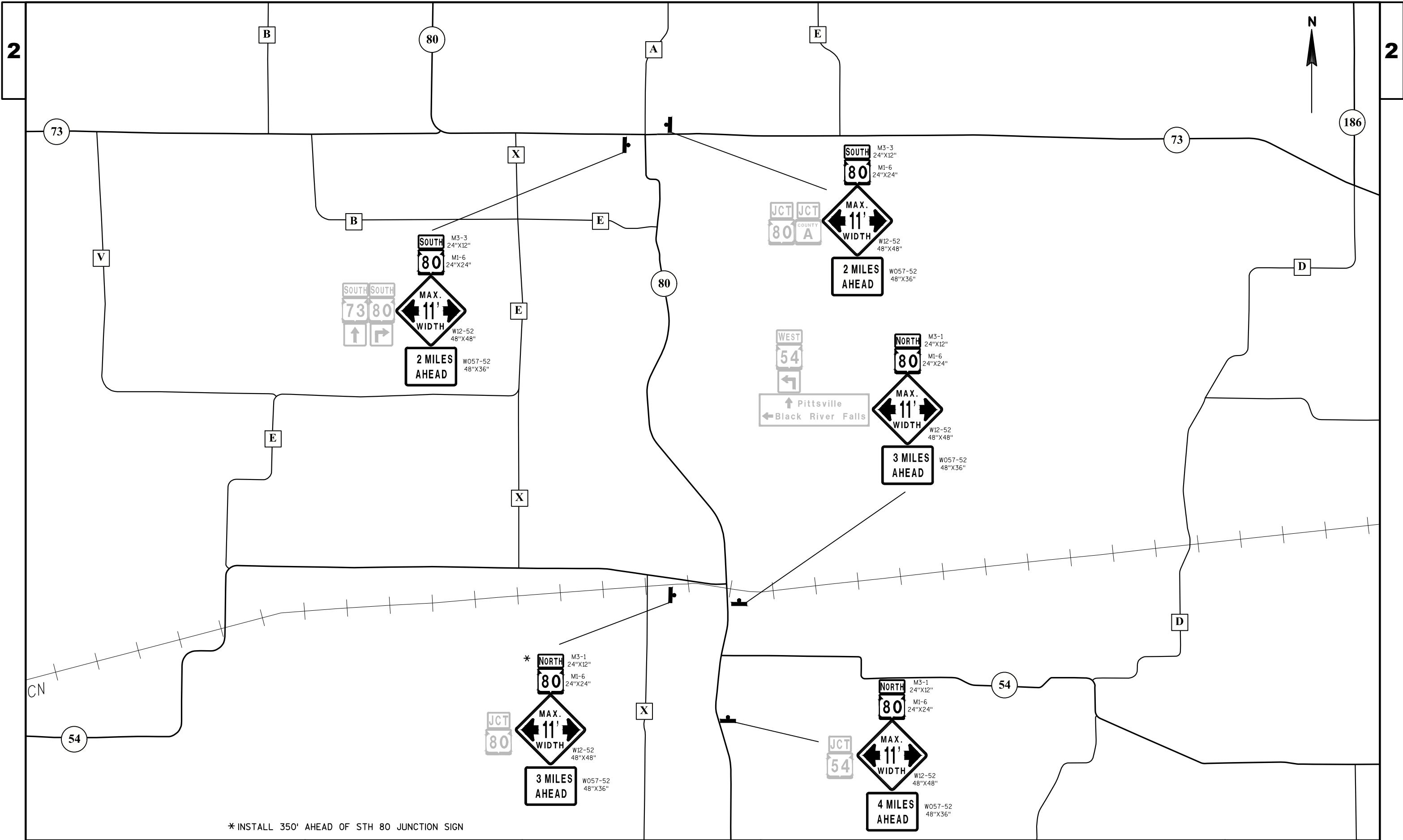
1. USE WITH SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION.
2. FLAGGERS ARE SPECIFIC TO THIS OPERATION.
3. THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.
4. ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED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

LEGEND

- TRAFFIC CONTROL DRUM
- ▨ 6" BASE AGGREGATE DENSE 1 1/4 INCH
- INCIDENTAL TO LANE SHIFT ITEM
- ▧ FILL
- INCIDENTAL TO LANE SHIFT ITEM

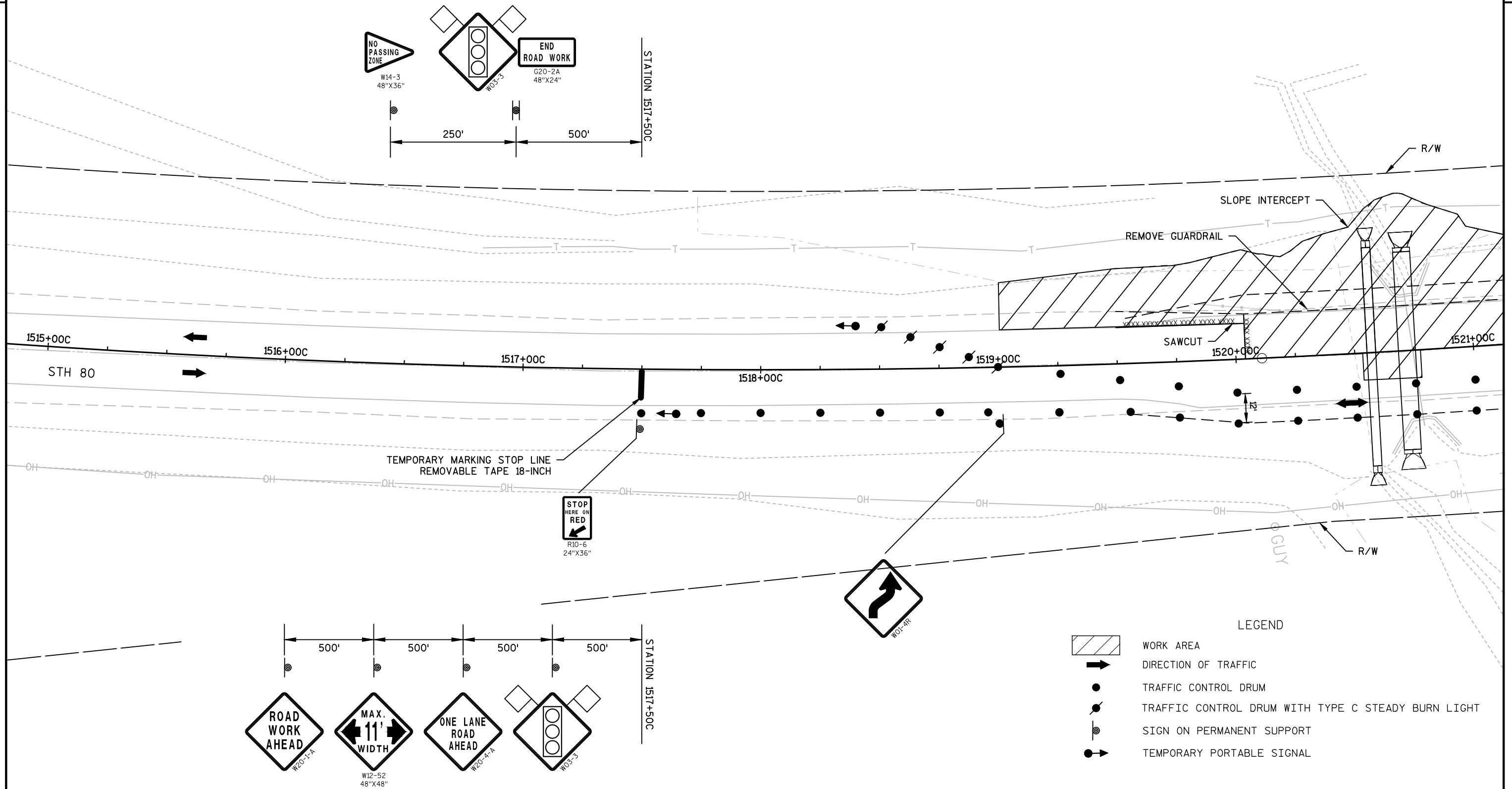


LOOSE GRAVEL SIGNING



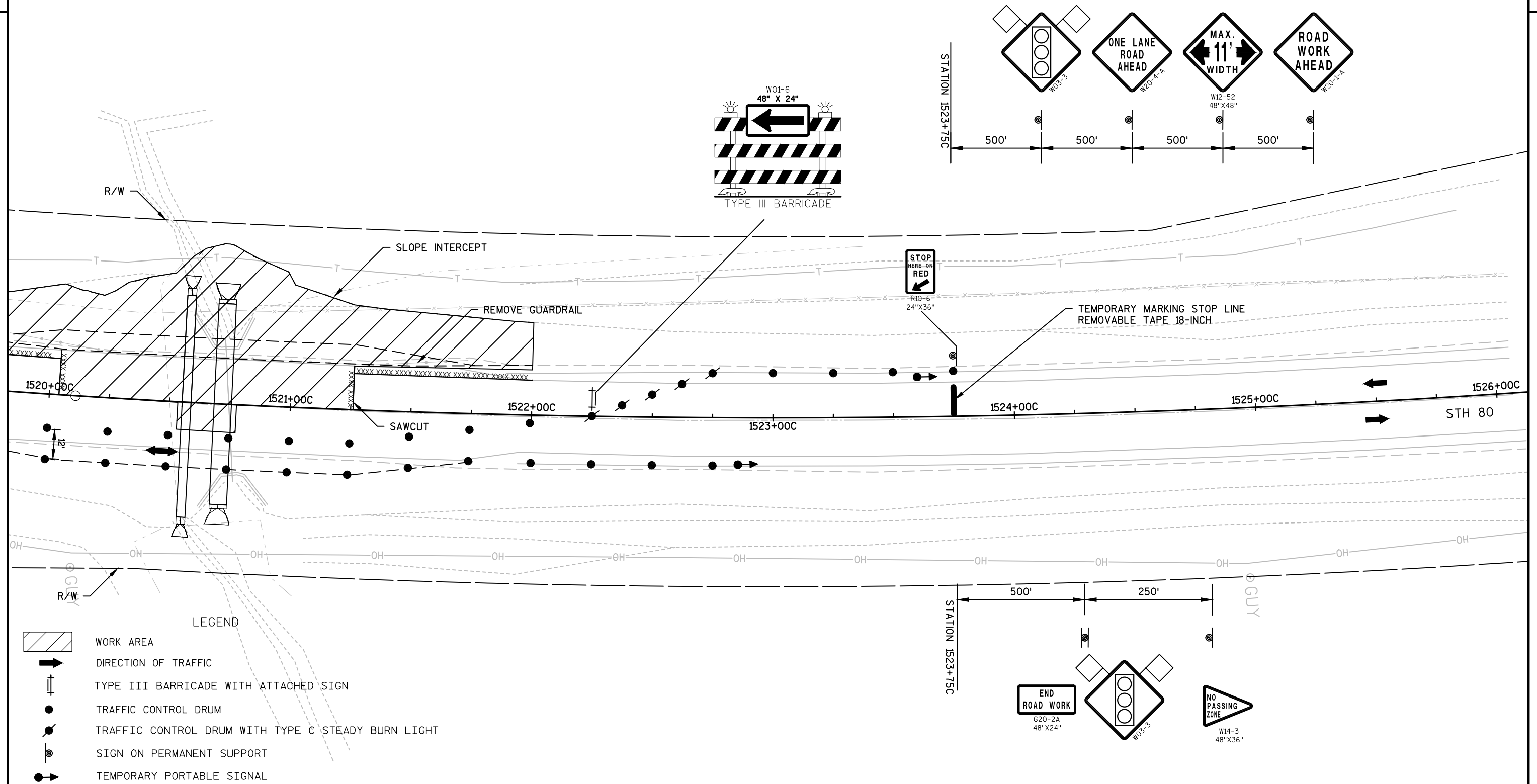
NOTES:

USE THE FOLLOWING TRAFFIC CONTROL SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

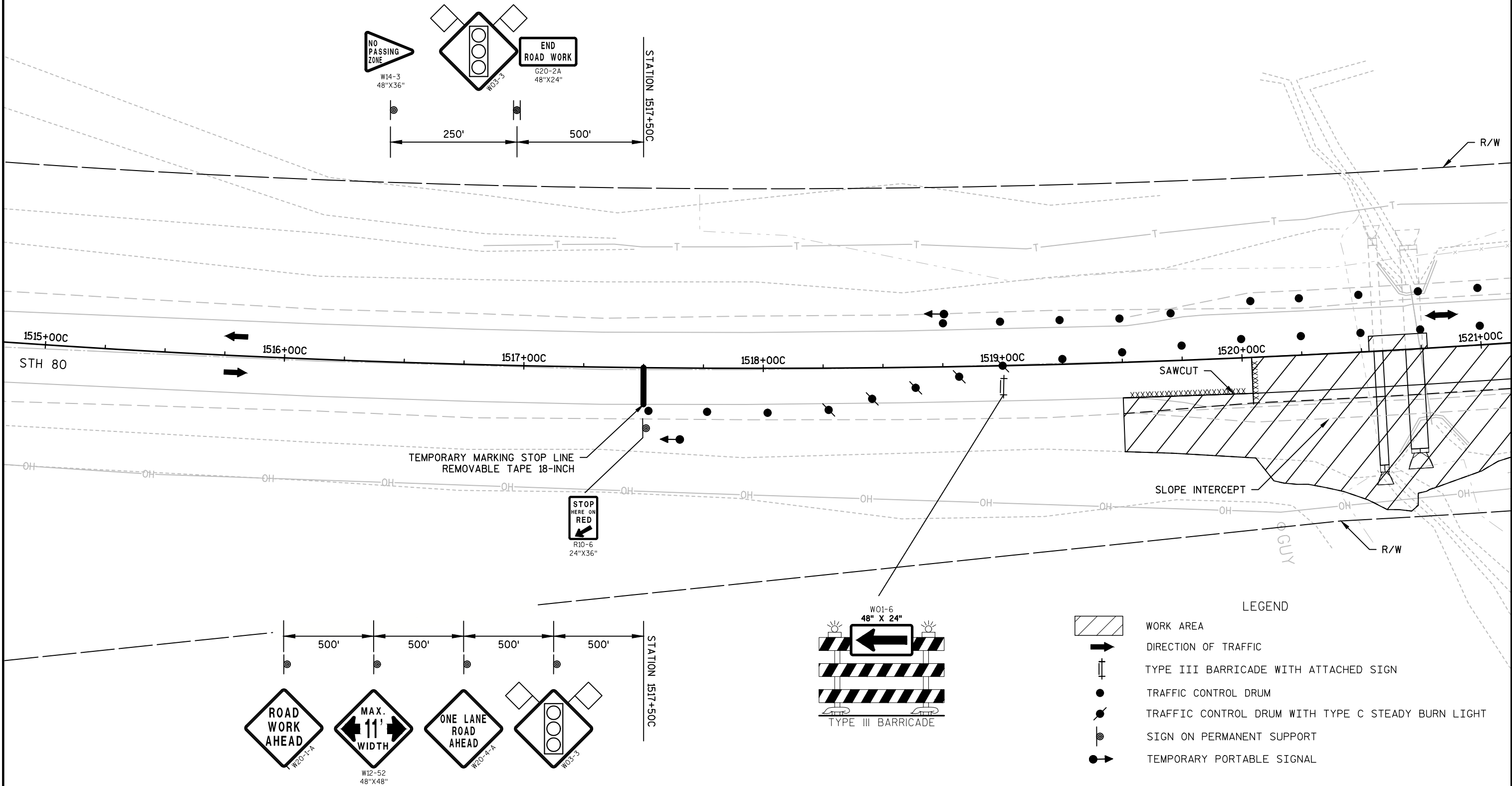


NOTES:

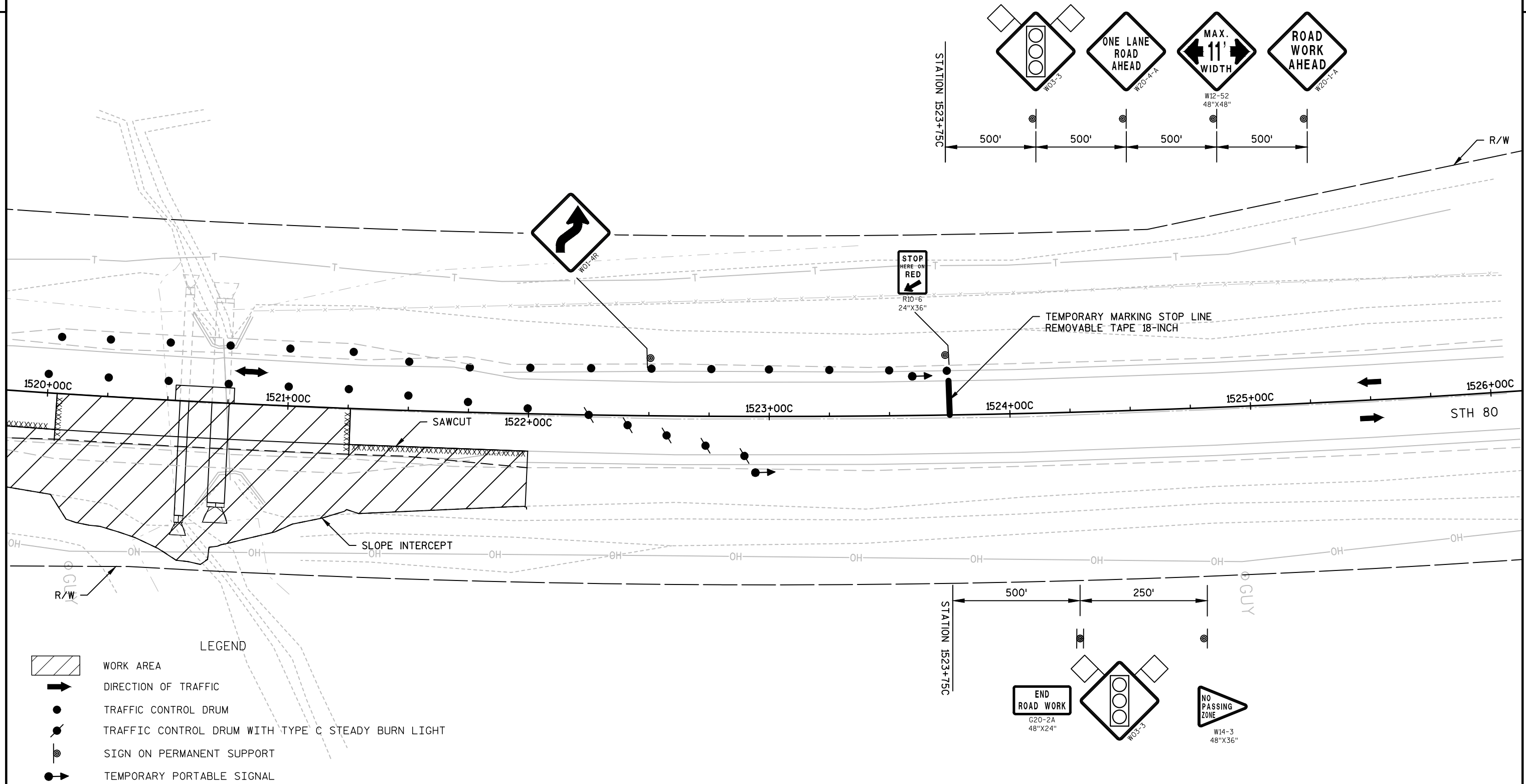
USE THE FOLLOWING TRAFFIC CONTROL SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

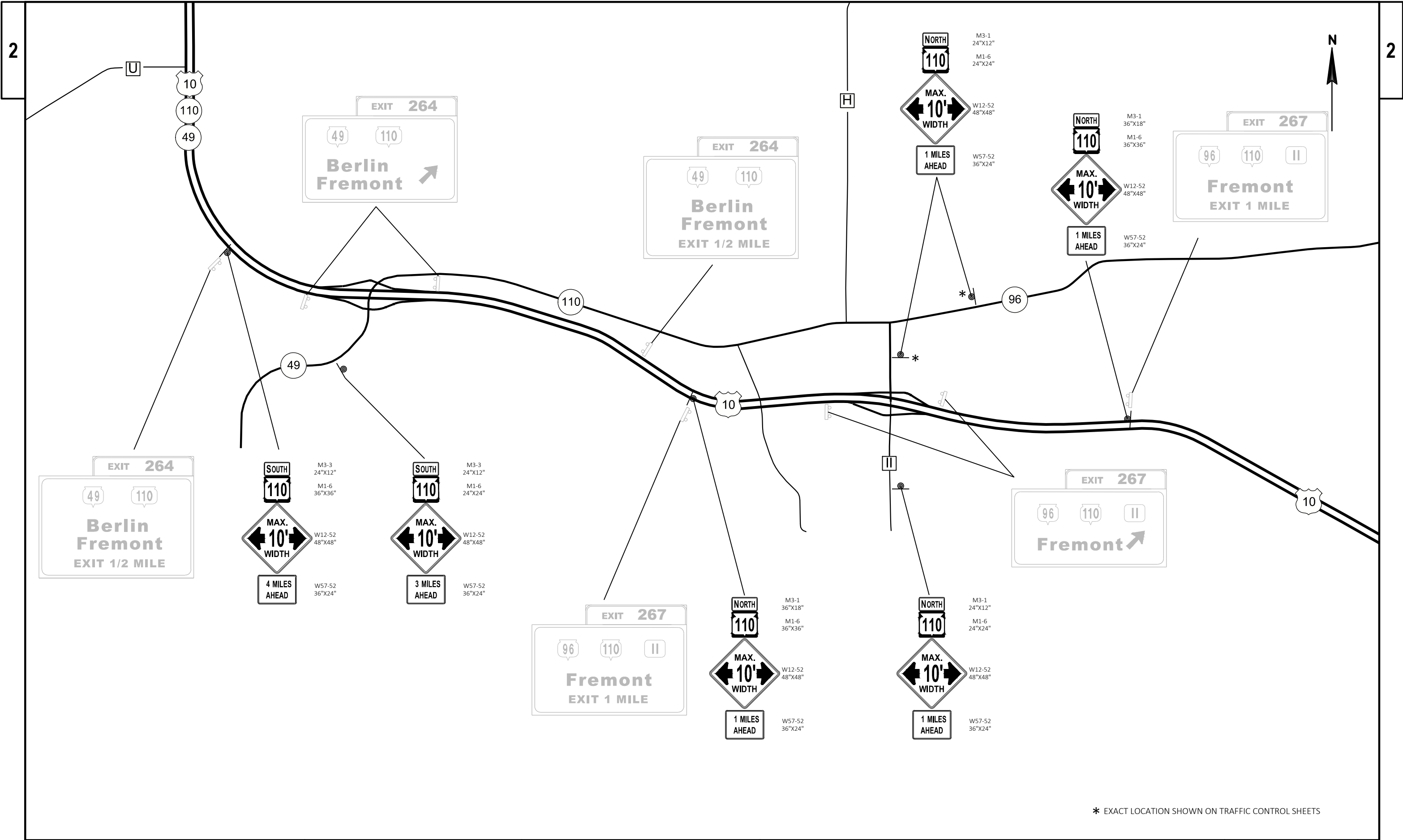


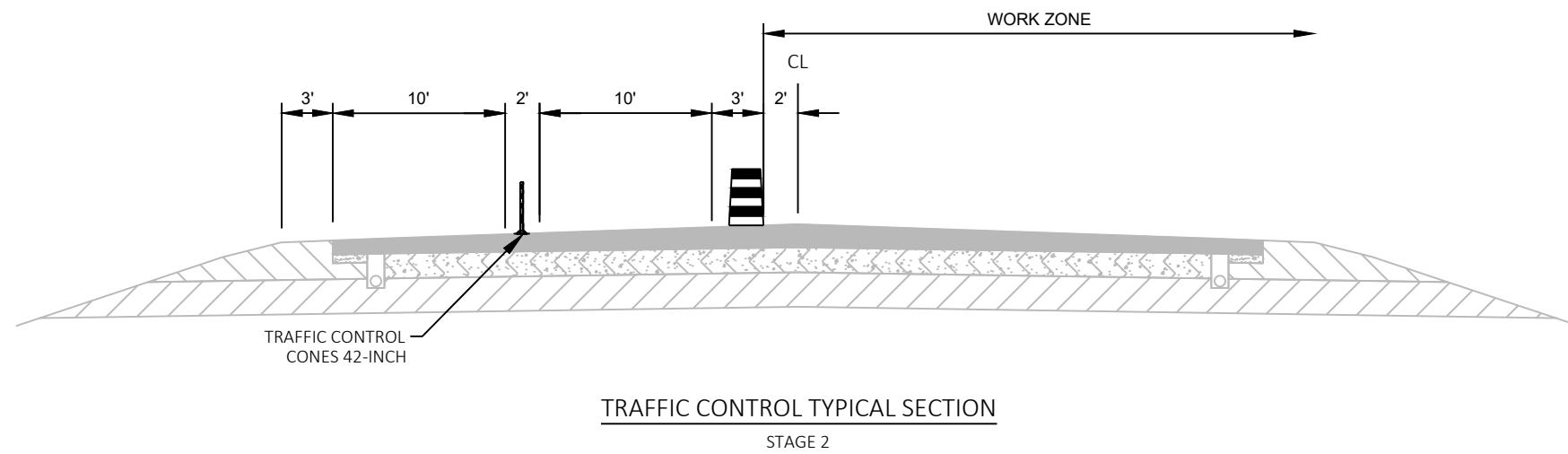
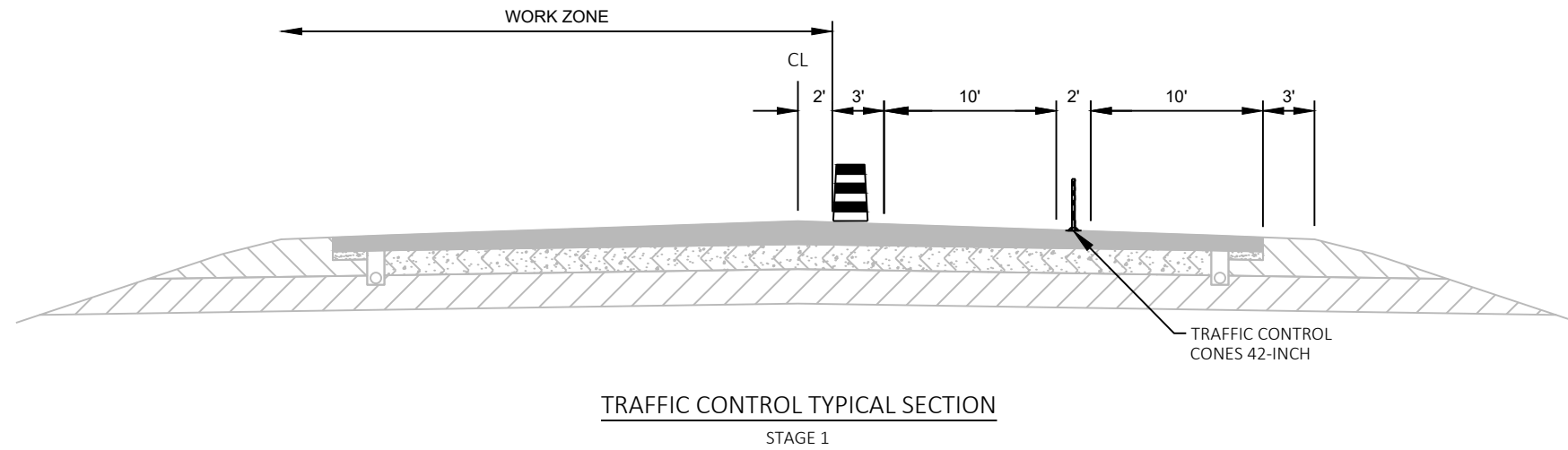
NOTES:
USE THE FOLLOWING TRAFFIC CONTROL SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING TRAFFIC CONTROL SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

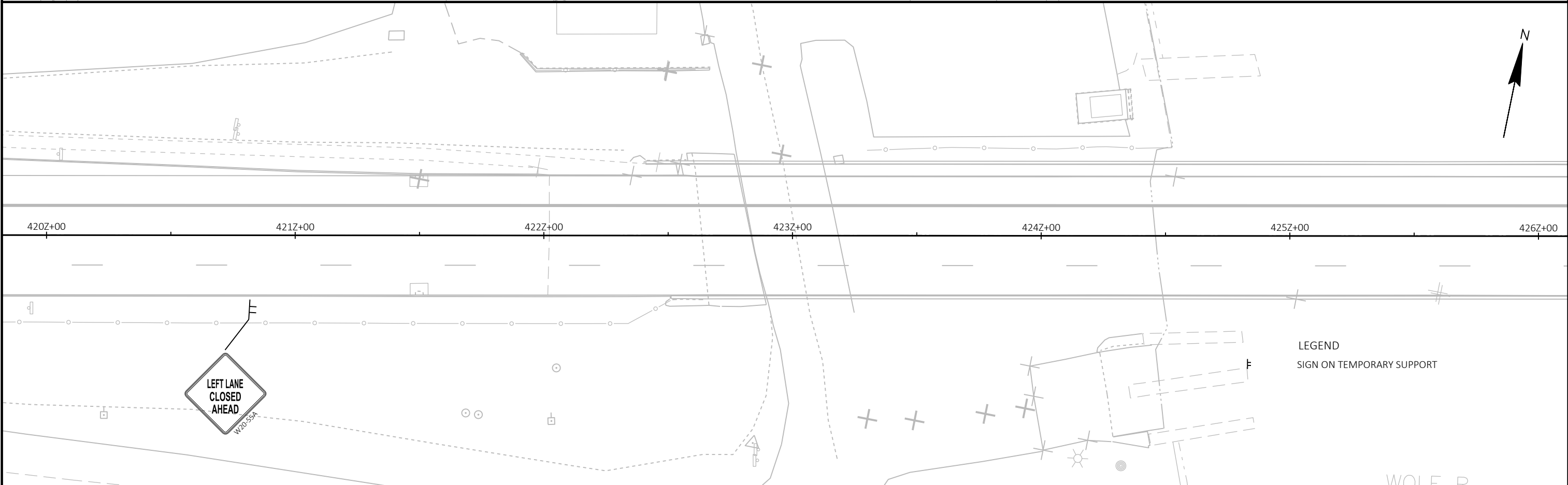
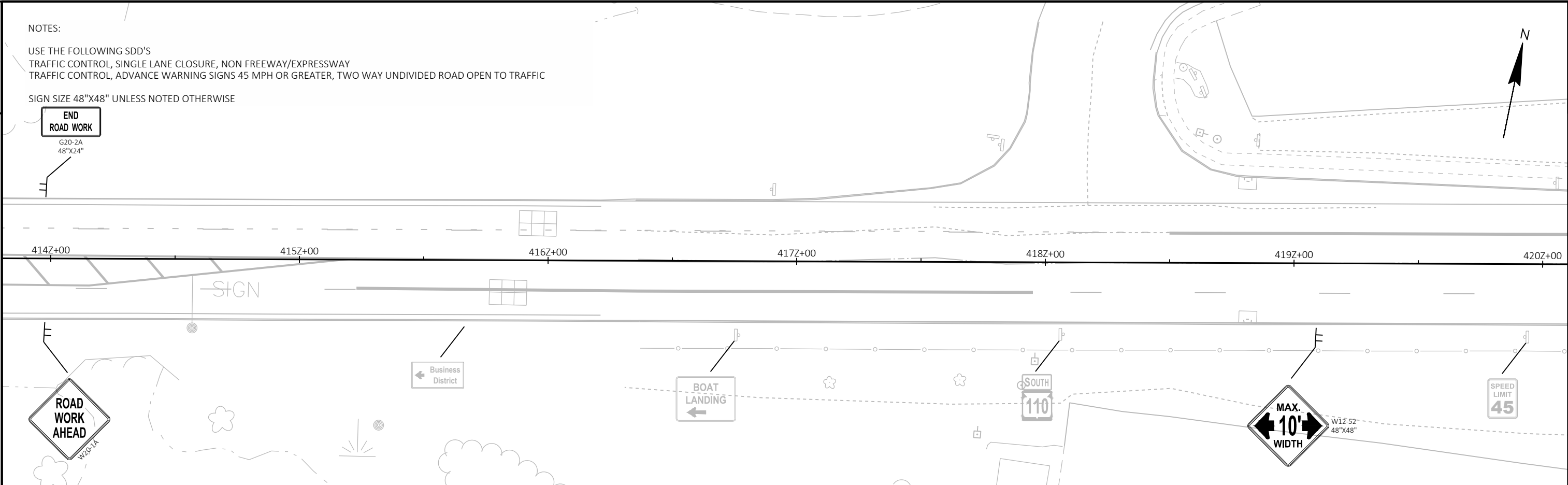




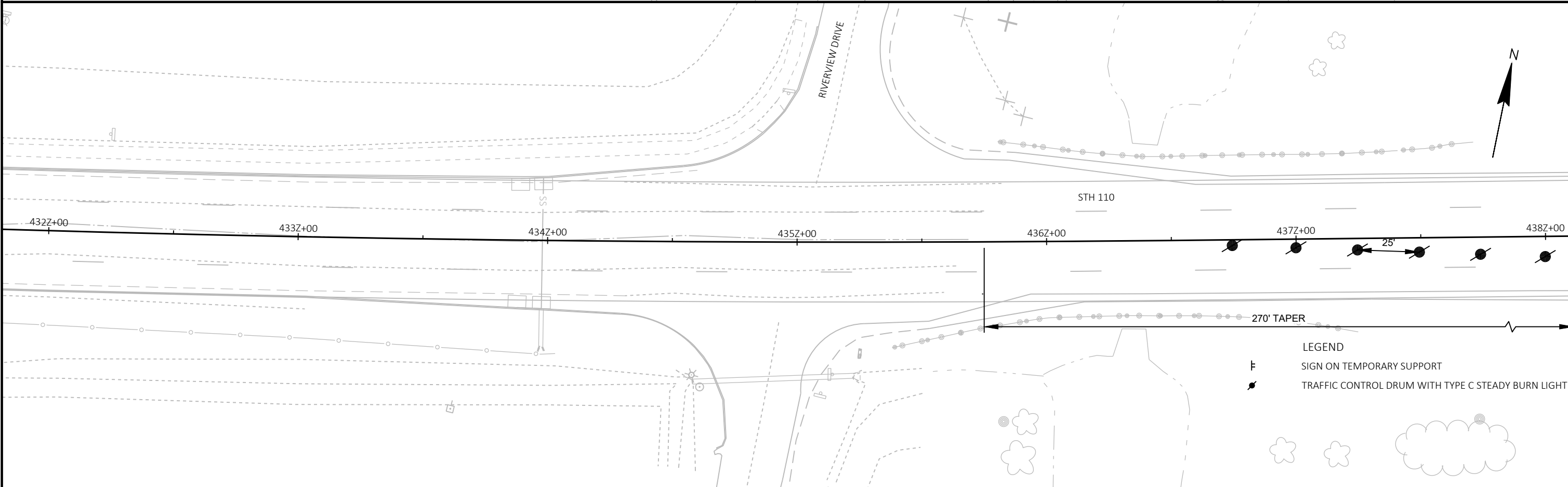
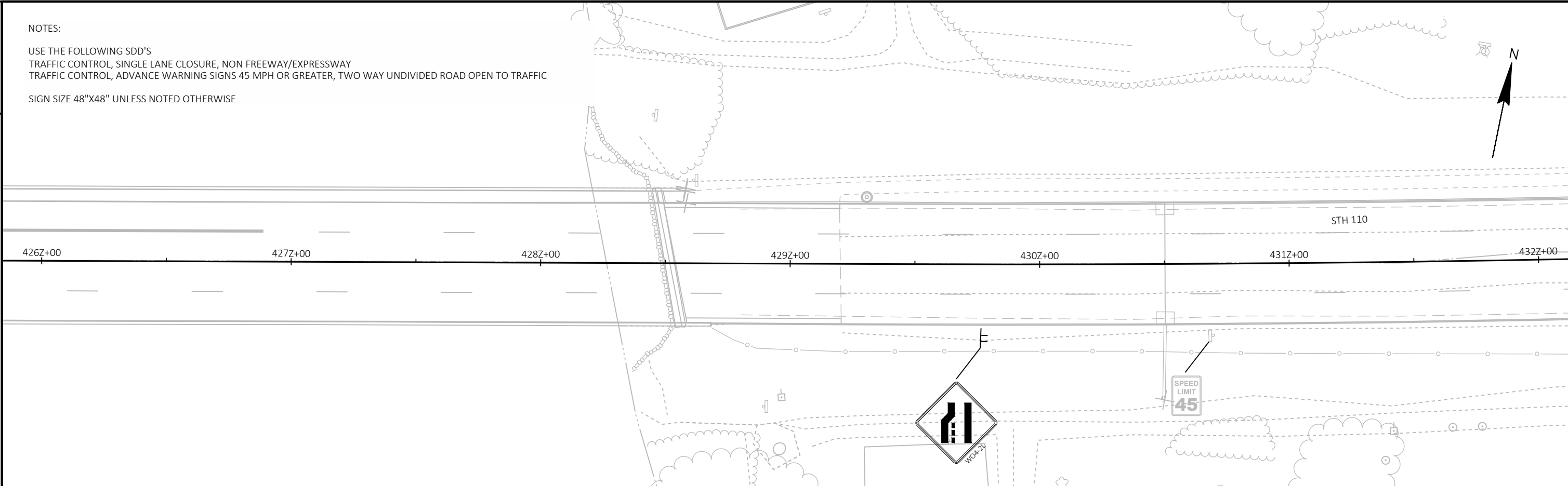


NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

END
ROAD WORK
G20-2A
48"X24"

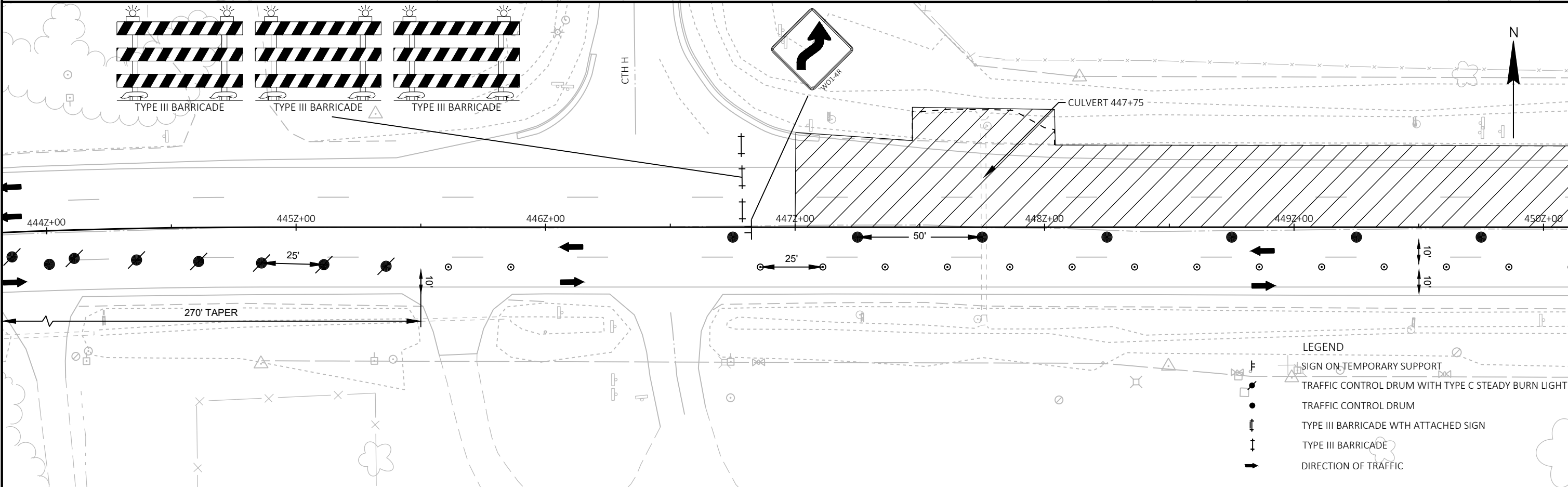
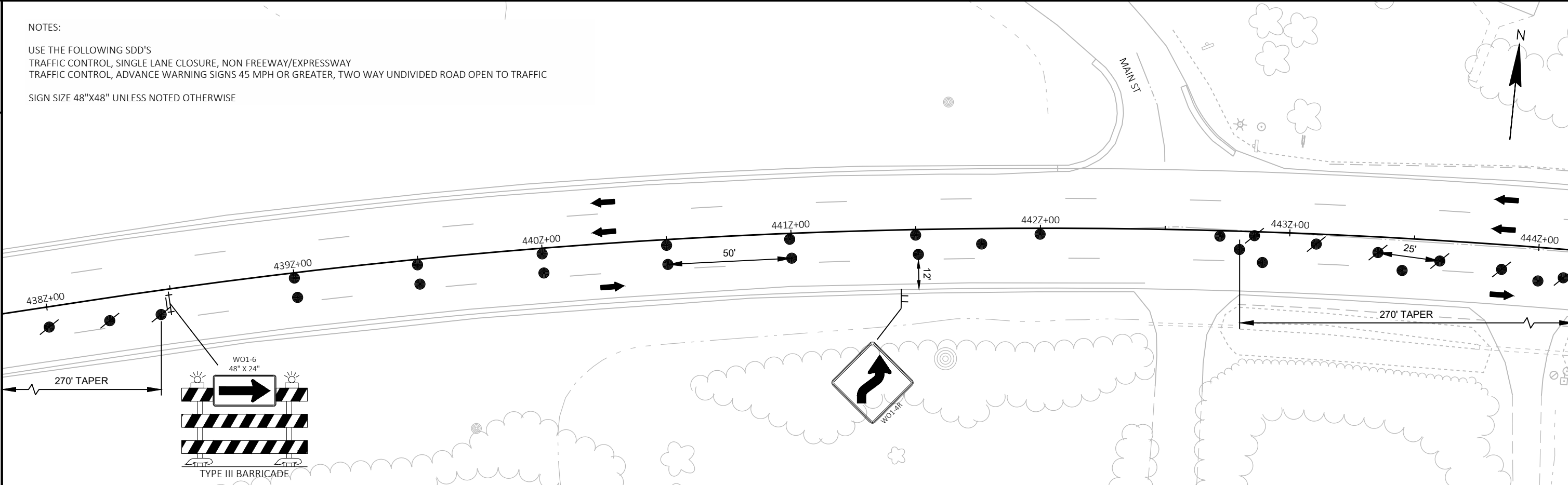


NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



- LEGEND
- SIGN ON TEMPORARY SUPPORT
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - TRAFFIC CONTROL DRUM
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE III BARRICADE
 - DIRECTION OF TRAFFIC

2

NOTES:

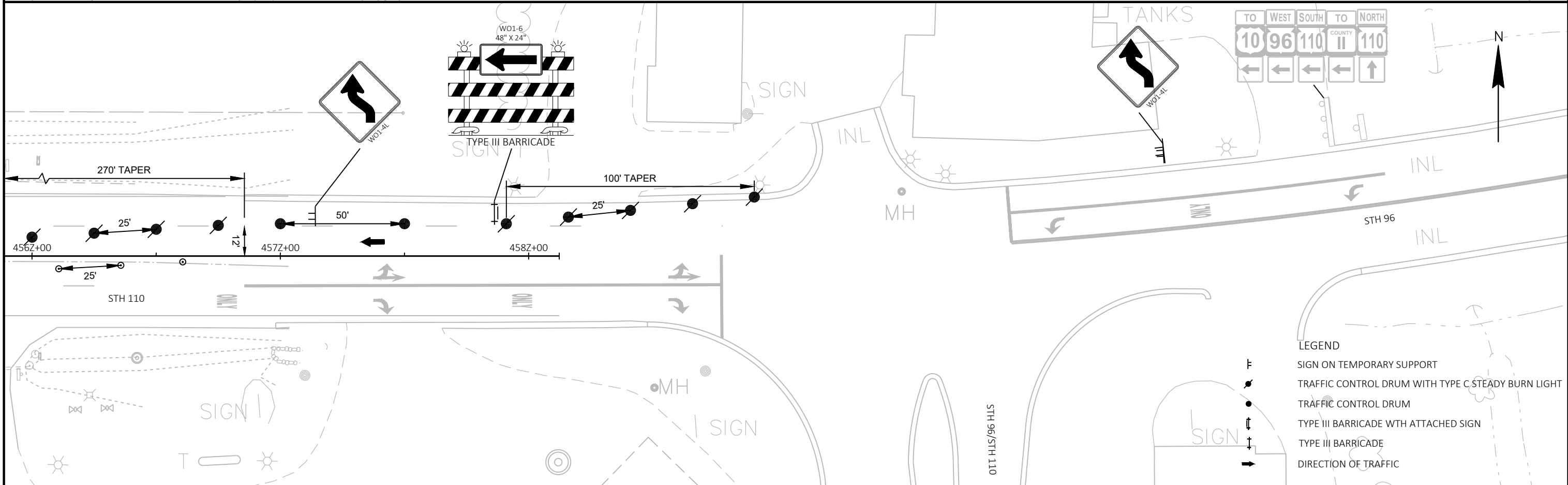
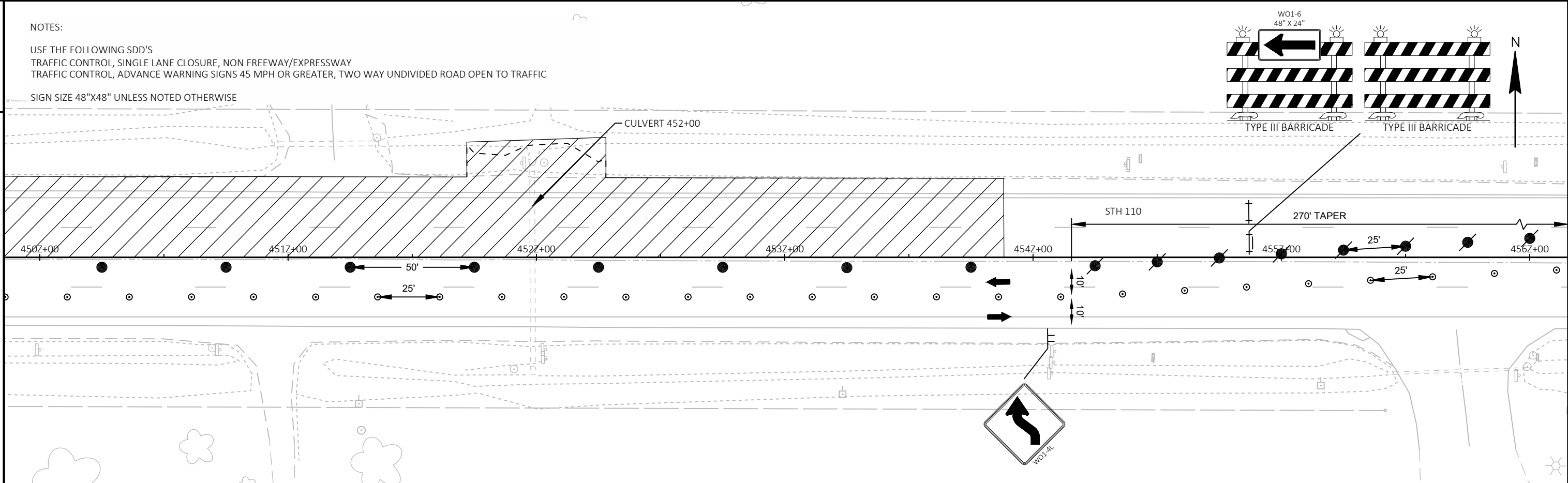
USE THE FOLLOWING SDD'S

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

SIGN SIZE 48"x48" UNLESS NOTED OTHERWISE

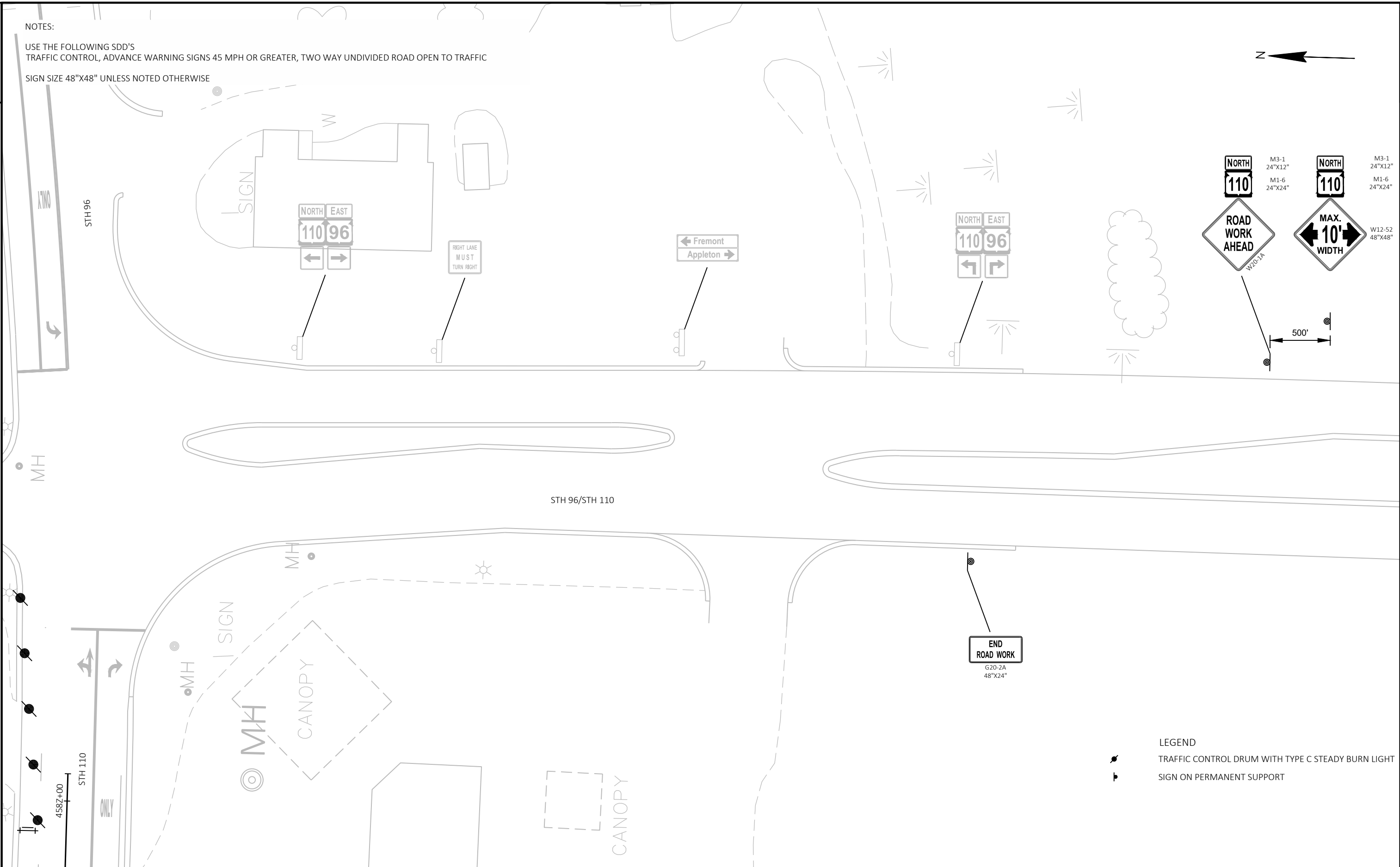
2



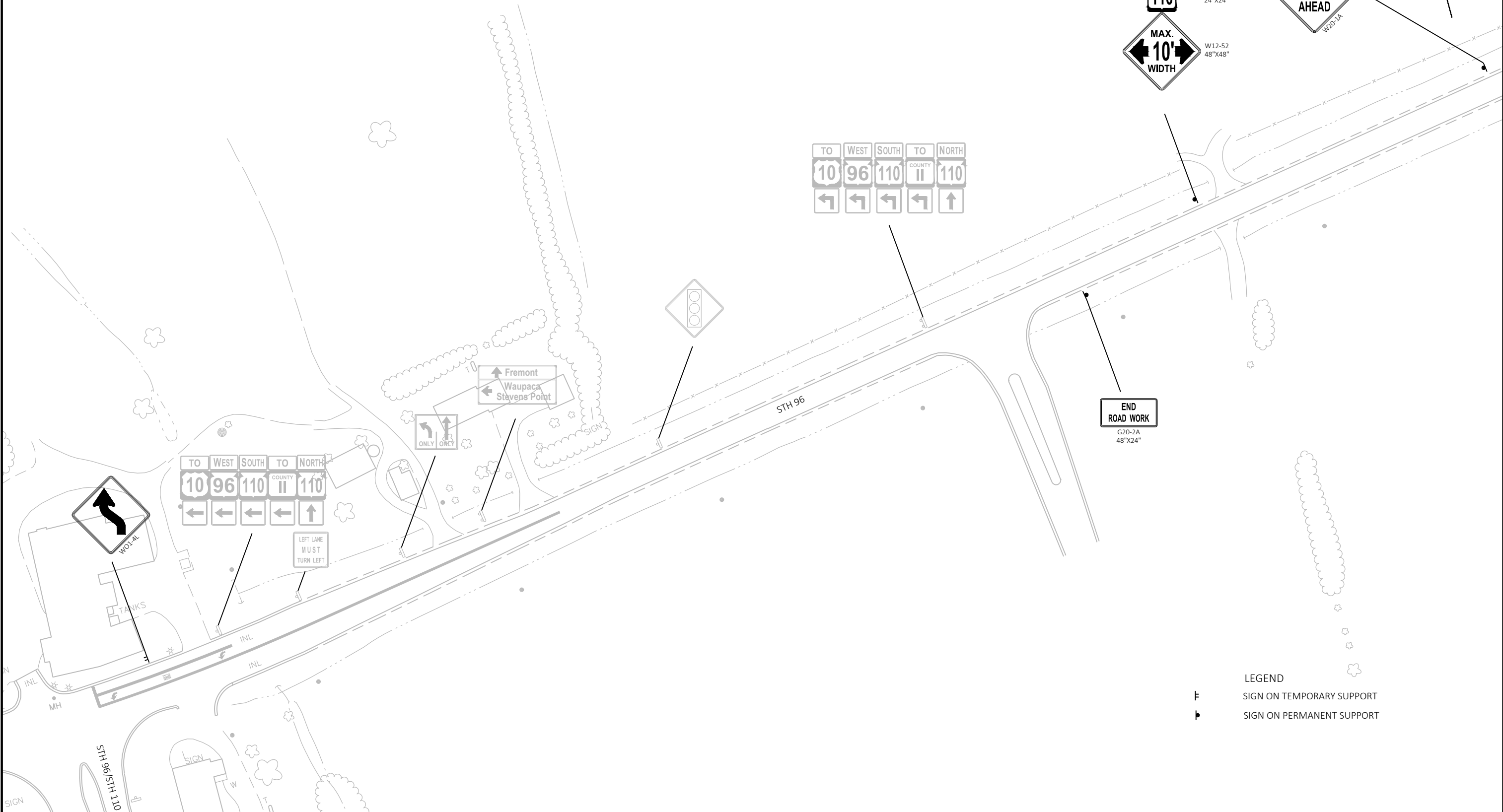
PROJECT NO:	1009-42-73	HWY: STH 110	COUNTY: WAUPACA	TRAFFIC CONTROL - CULVERT 447+75 & 452+00 STAGE 1 - SHEET 4	SHEET	36	E
-------------	------------	--------------	-----------------	---	-------	----	---

FILE NAME : N:\PDS\C3D\10094210\SHEETSPLAN\025021-TC.DWG PLOT DATE : 9/25/2018 2:48 PM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN=40 FT WISDOT/CADDs SHEET 44

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

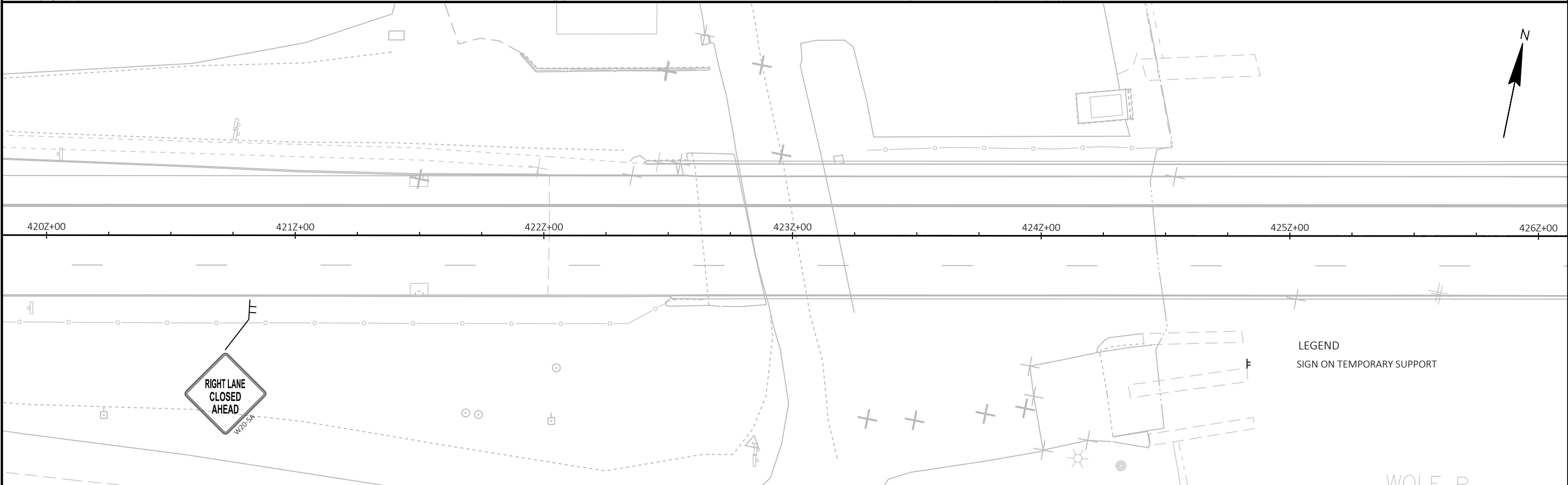
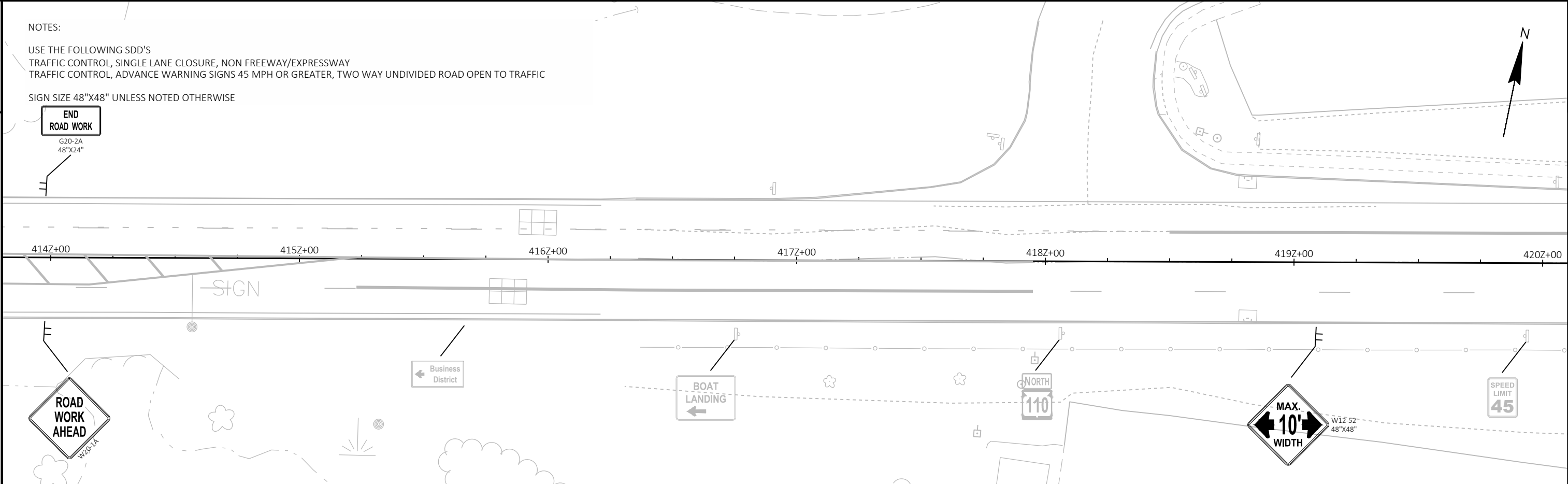


NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

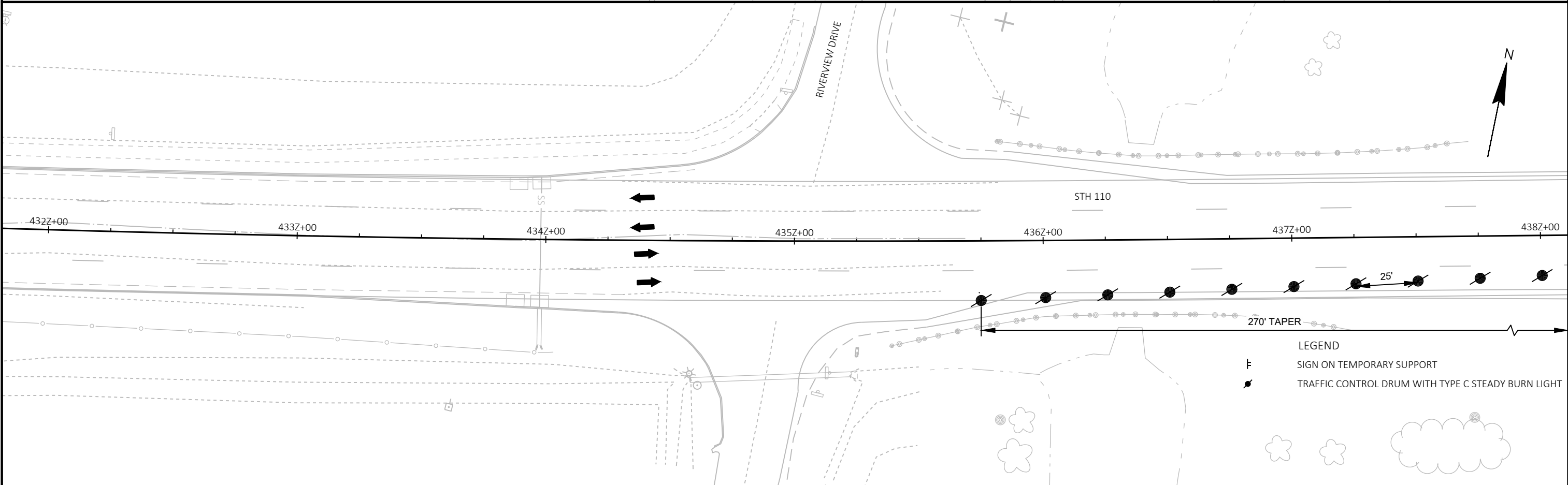
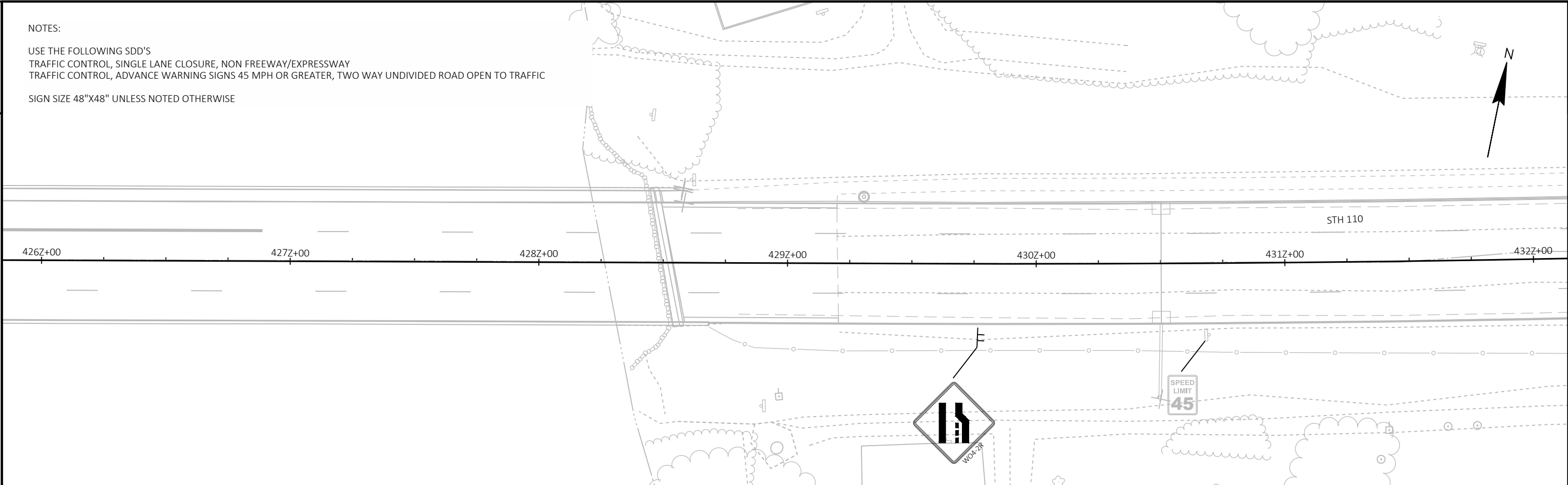


NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

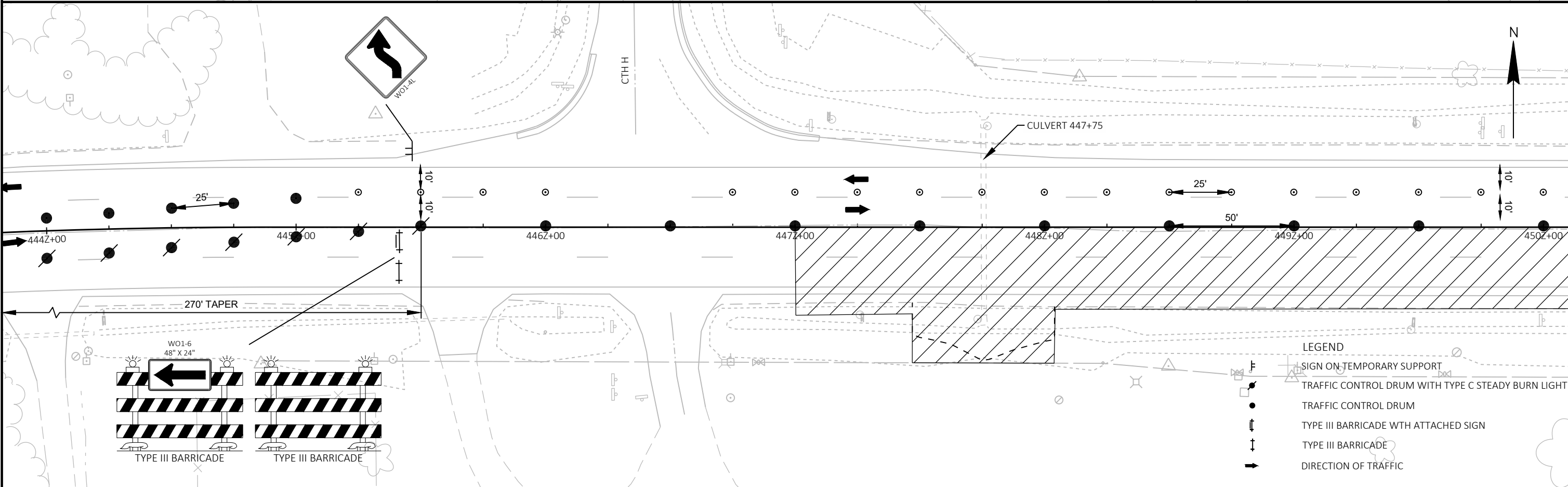
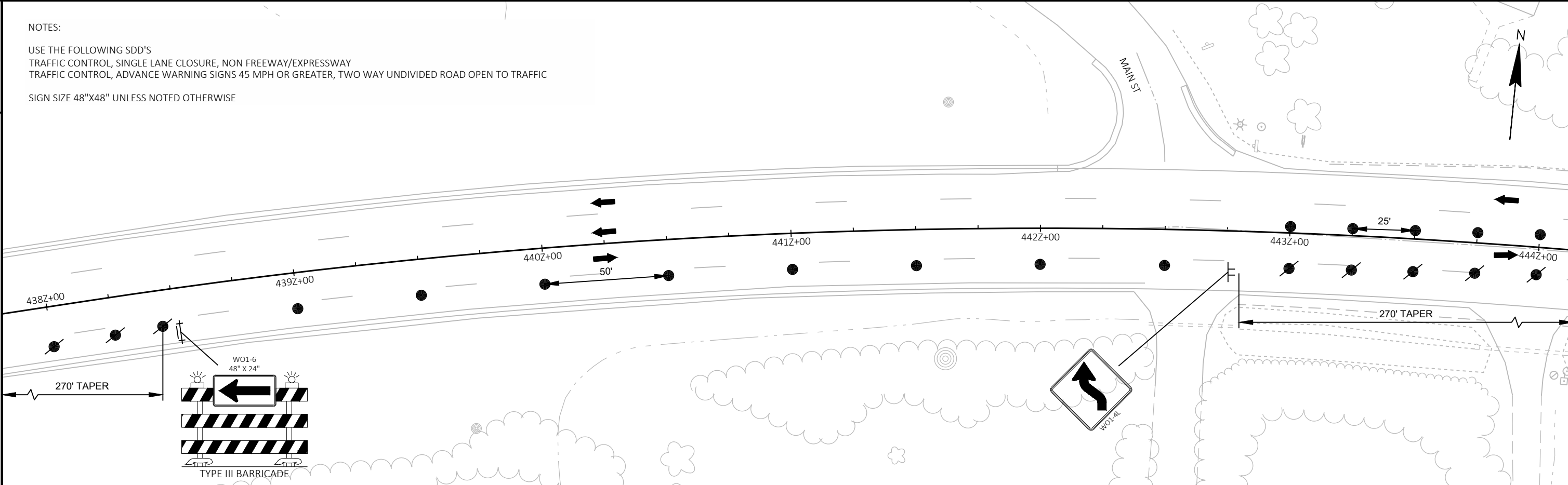
END
ROAD WORK
G20-2A
48"X24"



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



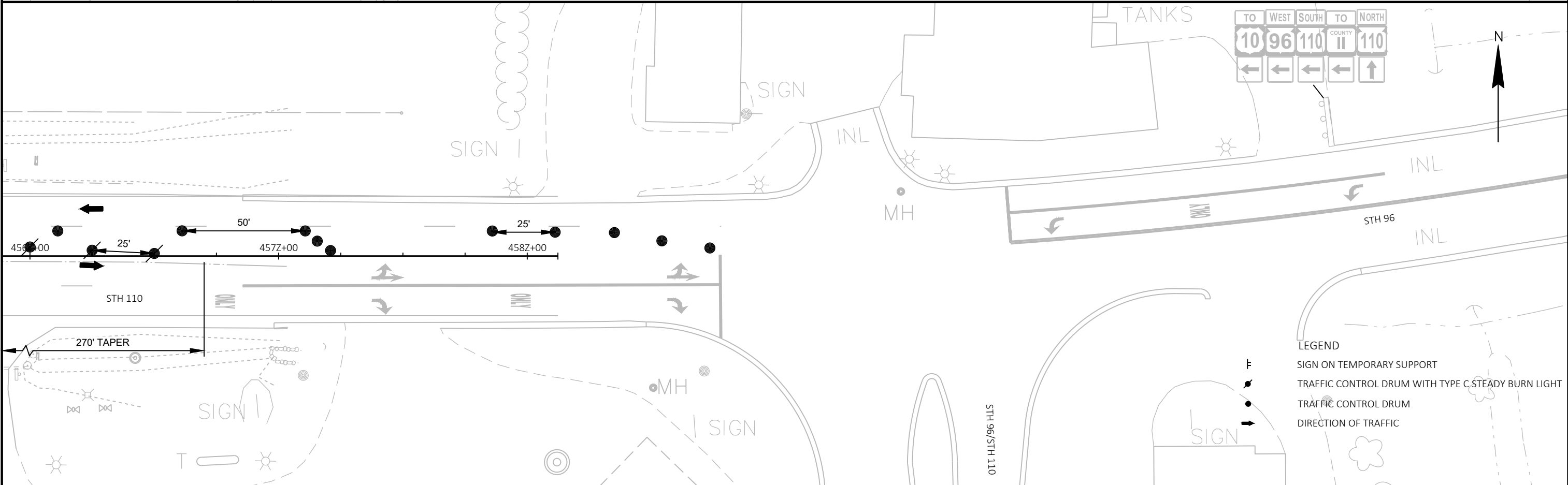
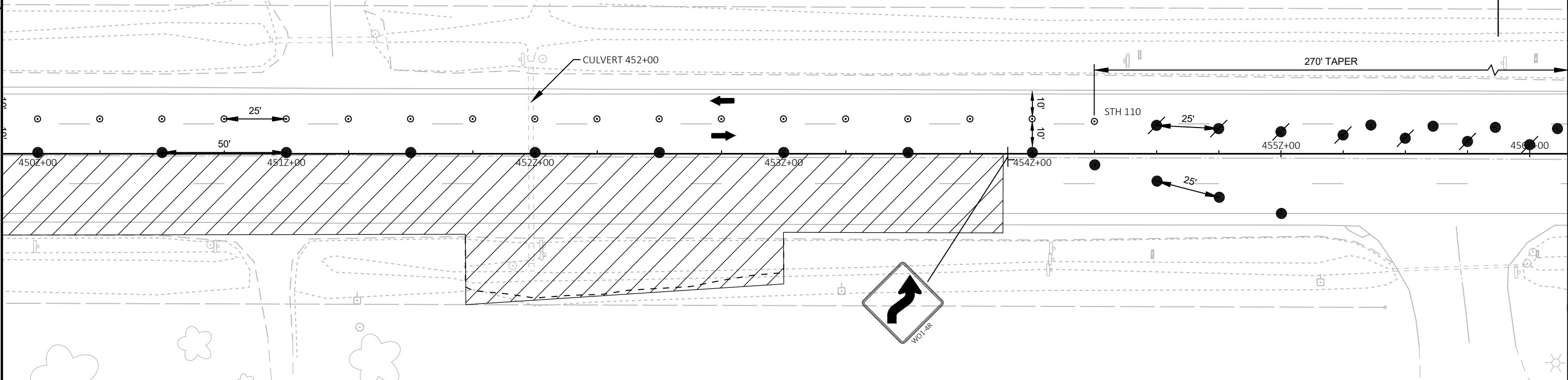
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



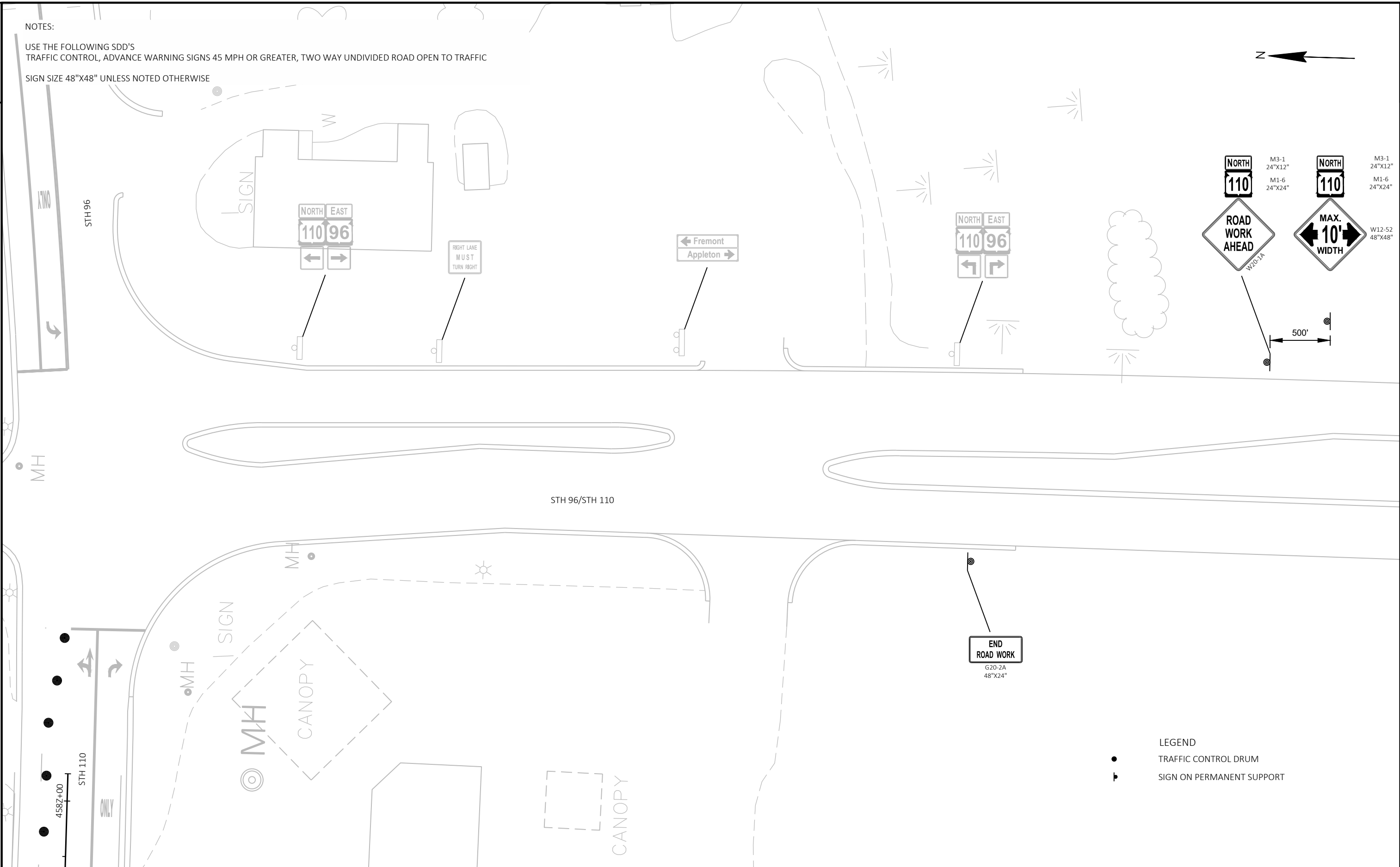
LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC

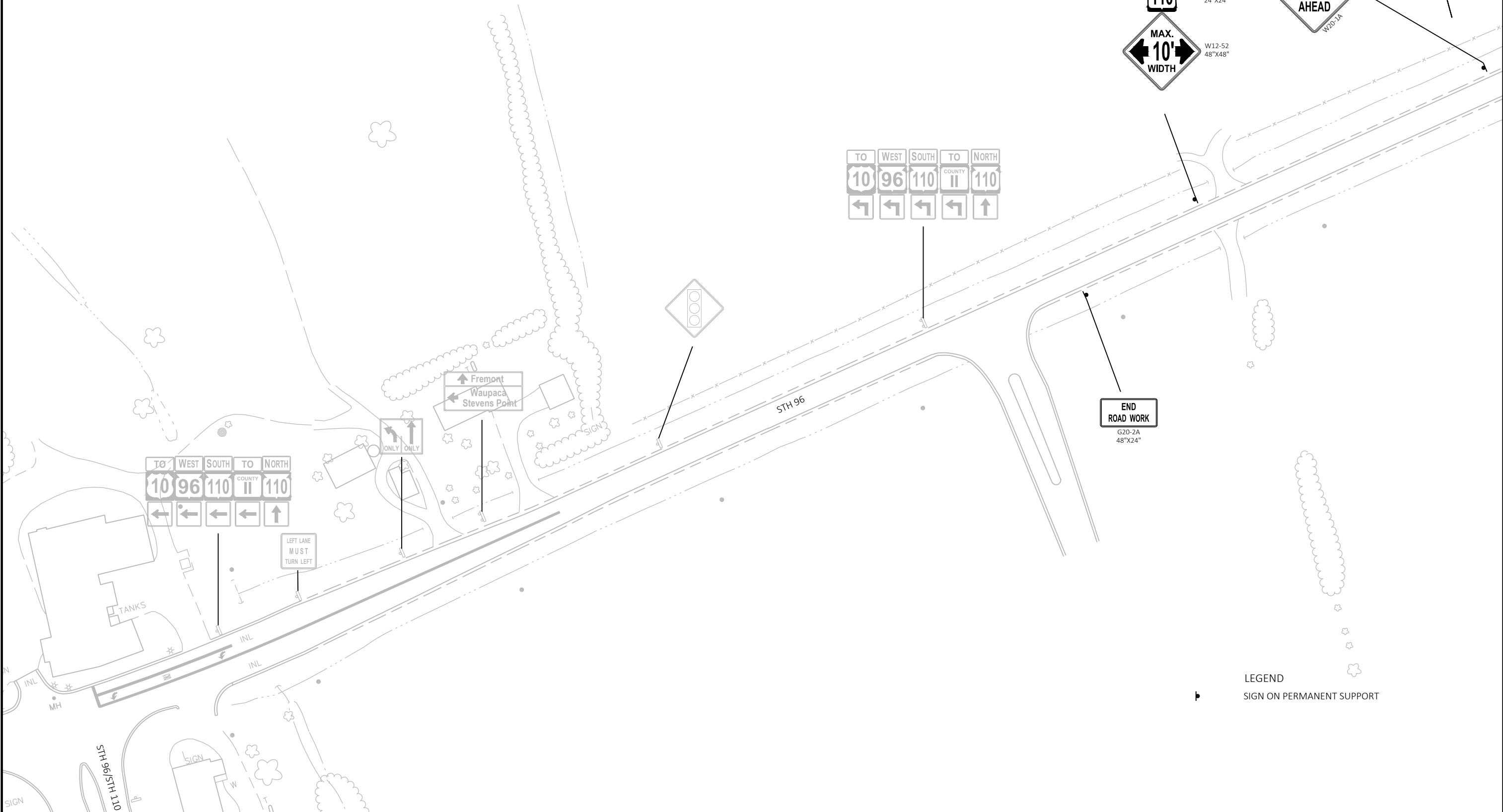
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



LEGEND
SIGN ON PERMANENT SUPPORT

2

2

VESPER

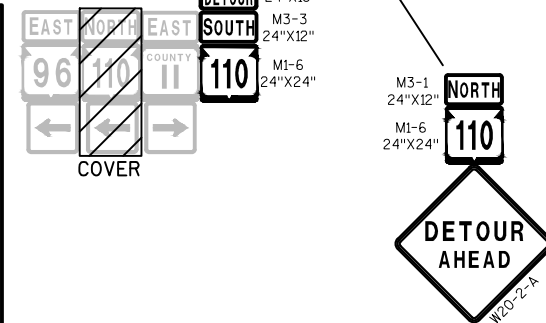


⑥

E

WISDOT/CADDS SHEET 42

2



LEGEND

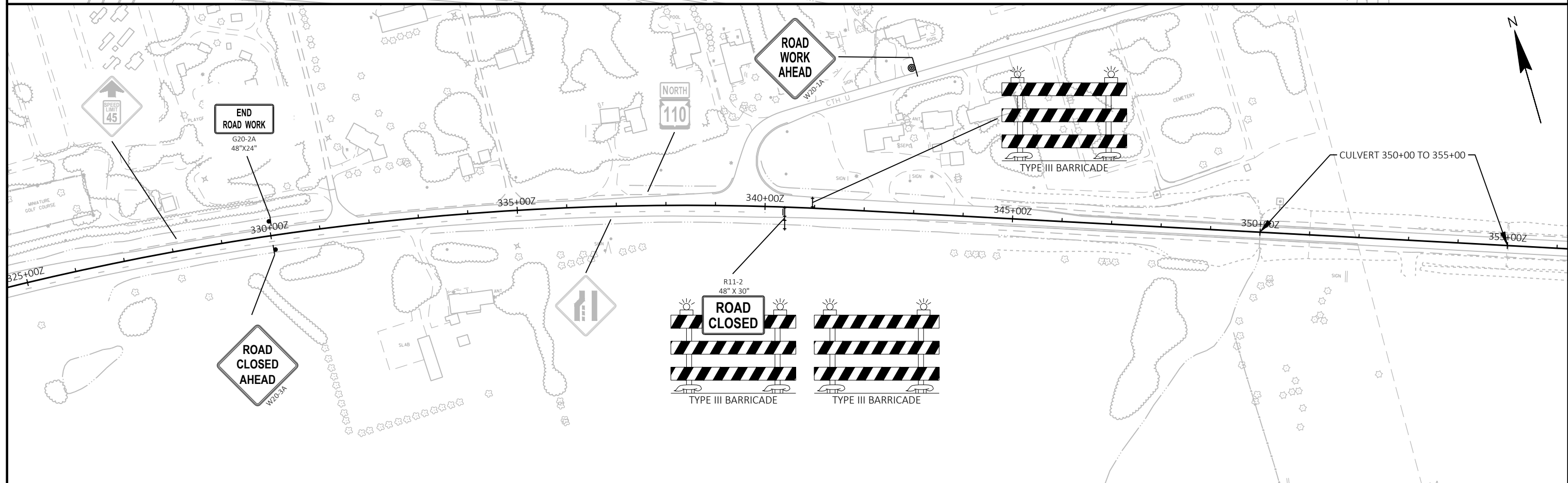
 SIGN ON PERMANENT SUPPORT

 EXISTING SIGN ON PERMANENT SUPPORT

 • DETOUR ROUTE

2

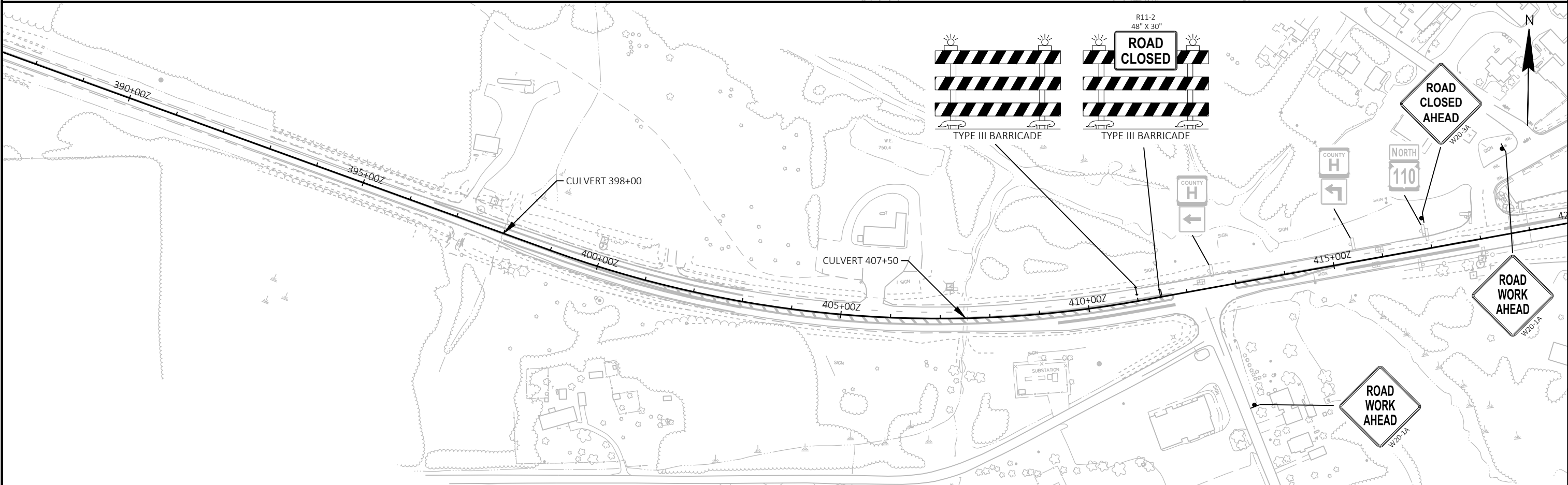
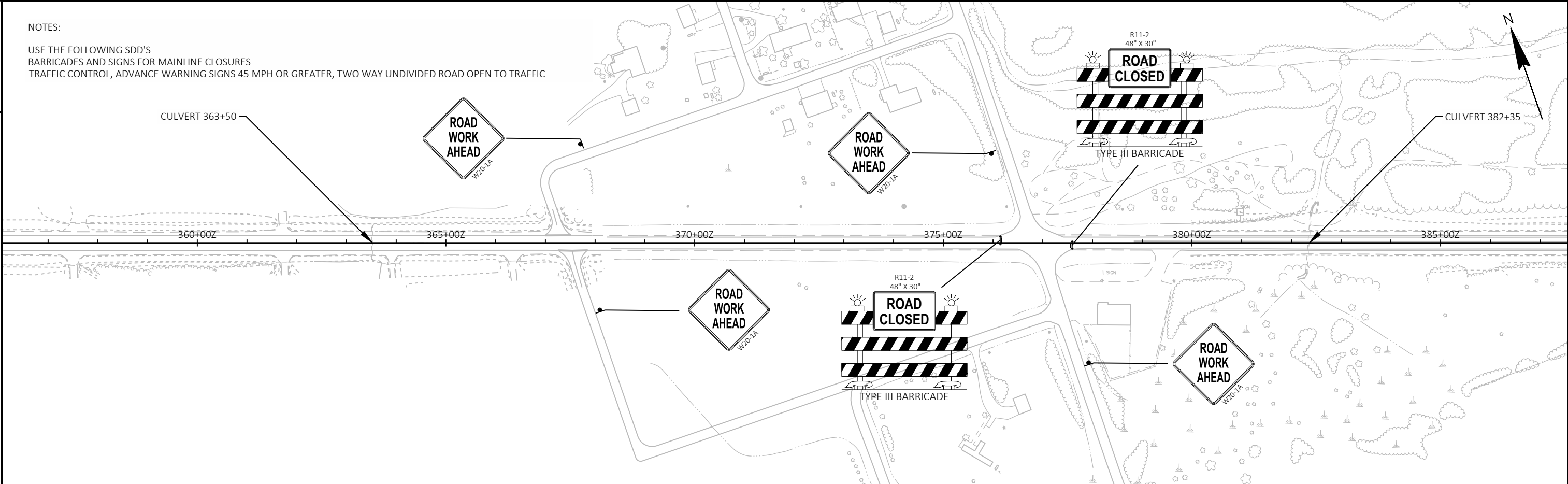
2



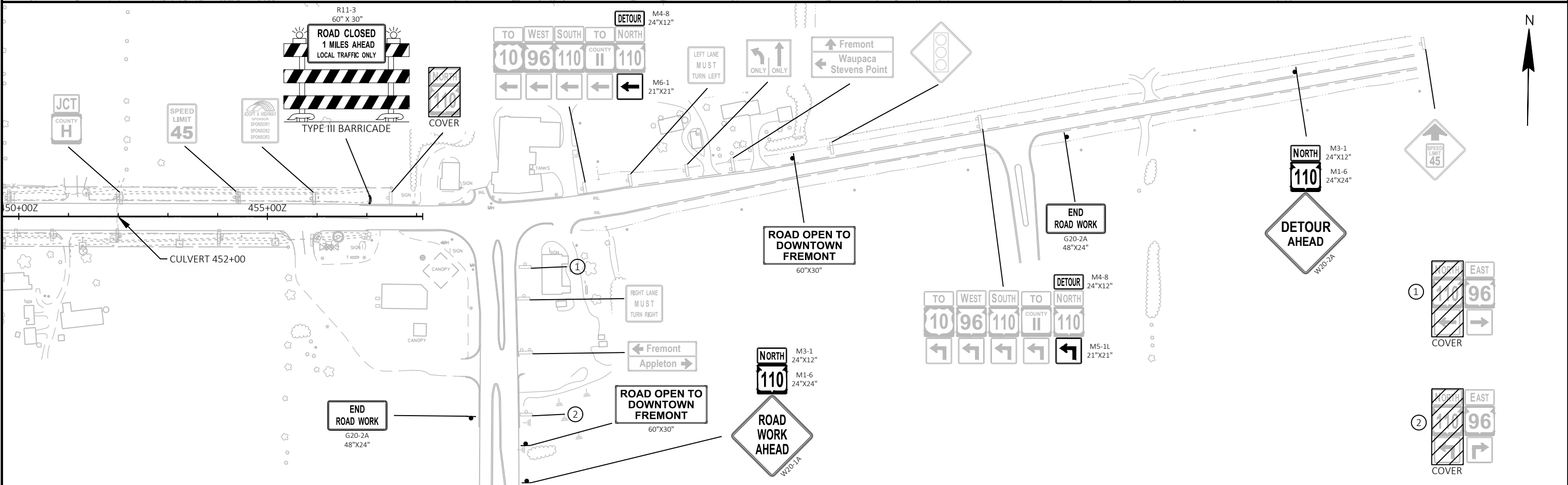
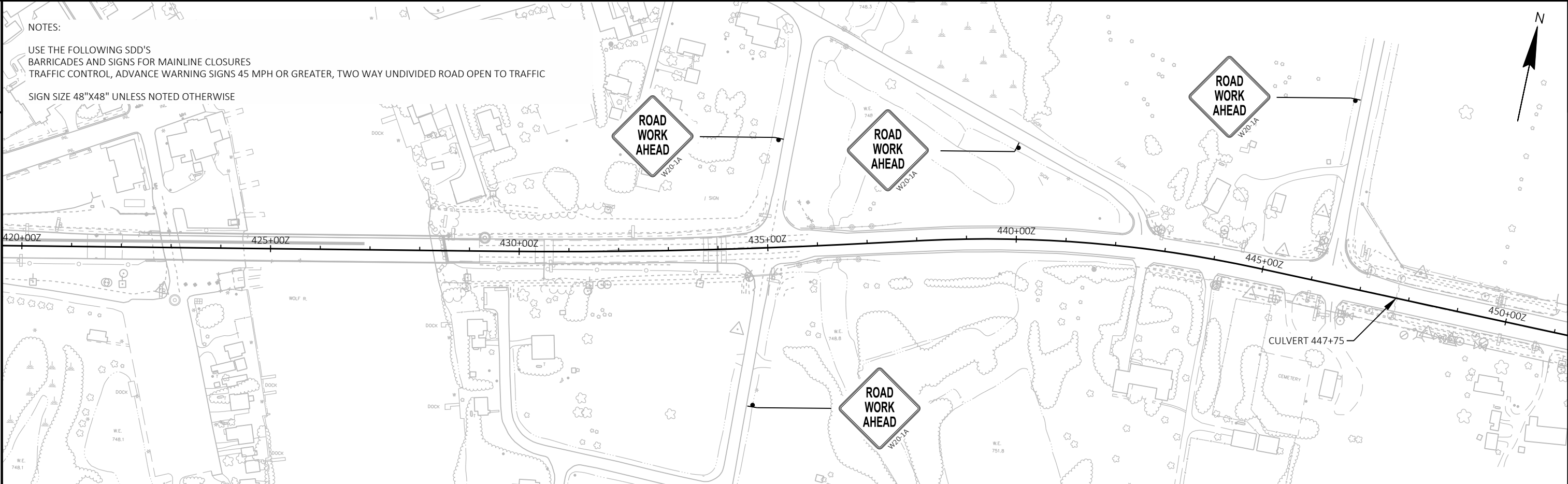
— 47

WISDOT/CADDS SHEET 44

NOTES:
USE THE FOLLOWING SDD'S
BARRICADES AND SIGNS FOR MAINLINE CLOSURES
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC



NOTES:
USE THE FOLLOWING SDD'S
BARRICADES AND SIGNS FOR MAINLINE CLOSURES
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



Estimate Of Quantities By Plan Sets

		1009-42-70		1009-42-73		
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	201.0220	Grubbing	ID	30.000		30.000
0004	203.0100	Removing Small Pipe Culverts	EACH	10.000	1.000	9.000
0006	203.0200	Removing Old Structure (station) 01. 1520+70C	LS	1.000	1.000	
0008	203.0200	Removing Old Structure (station) 02. 62+00S	LS	1.000	1.000	
0010	203.0200	Removing Old Structure (station) 03. 350+00Z	LS	1.000		1.000
0012	203.0200	Removing Old Structure (station) 04. 407+50Z	LS	1.000		1.000
0014	204.0110	Removing Asphaltic Surface	SY	80.000	80.000	
0016	204.0165	Removing Guardrail	LF	378.000	378.000	
0018	205.0100	Excavation Common	CY	9,420.000	1,736.000	7,684.000
0020	208.0100	Borrow	CY	58.000	58.000	
0022	213.0100	Finishing Roadway (project) 01. 1009-42-70	EACH	1.000	1.000	
0024	213.0100	Finishing Roadway (project) 02. 1009-42-73	EACH	1.000		1.000
0028	305.0110	Base Aggregate Dense 3/4-Inch	TON	628.000	114.000	514.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	4,622.000	761.000	3,861.000
0032	350.0102	Subbase	CY	1,513.000	321.000	1,192.000
0034	455.0605	Tack Coat	GAL	538.000	81.000	457.000
0036	460.2000	Incentive Density HMA Pavement	DOL	890.000	160.000	730.000
0038	460.5224	HMA Pavement 4 LT 58-28 S	TON	1,372.000	245.000	1,127.000
0086	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000		2.000
0088	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	8.000		8.000
0090	520.3418	Culvert Pipe Class III-A Non-metal 18-Inch	LF	102.000		102.000
0092	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	226.000		226.000
0094	521.1283	Apron Endwalls for Pipe Arch Steel 83x57-Inch	EACH	2.000		2.000
0096	521.5783	Pipe Arch Polymer Coated Corrugated Steel 83x57-Inch	LF	100.000		100.000
0098	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	198.000	92.000	106.000
0100	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	200.000		200.000
0102	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000		6.000
0104	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	4.000	2.000	2.000
0106	522.1072	Apron Endwalls for Culvert Pipe Reinforced Concrete 72-Inch	EACH	2.000	2.000	
0108	522.1500	Pipe Cattle Pass Reinforced Concrete	LF	84.000	84.000	
0114	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	50.000		50.000
0116	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	4.000		4.000
0128	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1009-42-70	EACH	1.000	1.000	
0130	618.0100	Maintenance And Repair of Haul Roads (project) 02. 1009-42-73	EACH	1.000		1.000
0134	619.1000	Mobilization	EACH	0.400	0.200	0.200

Estimate Of Quantities By Plan Sets

				1009-42-70	1009-42-73	
Line	Item	Item Description	Unit	Total	Qty	Qty
0136	624.0100	Water	MGAL	29.900	6.700	23.200
0138	625.0100	Topsoil	SY	5,058.000	1,323.000	3,735.000
0140	628.1504	Silt Fence	LF	2,170.000	730.000	1,440.000
0142	628.1520	Silt Fence Maintenance	LF	2,120.000	680.000	1,440.000
0144	628.1905	Mobilizations Erosion Control	EACH	4.000	2.000	2.000
0146	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	2.000	4.000
0148	628.2008	Erosion Mat Urban Class I Type B	SY	5,804.000	1,513.000	4,291.000
0152	628.7504	Temporary Ditch Checks	LF	119.000	50.000	69.000
0154	628.7555	Culvert Pipe Checks	EACH	29.000	8.000	21.000
0156	628.7570	Rock Bags	EACH	16.000		16.000
0158	629.0210	Fertilizer Type B	CWT	4.840	1.200	3.640
0160	630.0130	Seeding Mixture No. 30	LB	120.900	27.300	93.600
0162	630.0140	Seeding Mixture No. 40	LB	10.200		10.200
0164	630.0180	Seeding Mixture No. 80	LB	1.400		1.400
0166	630.0400	Seeding Nurse Crop	LB	1.400		1.400
0168	633.5200	Markers Culvert End	EACH	20.000	4.000	16.000
0170	638.2102	Moving Signs Type II	EACH	3.000		3.000
0172	642.5001	Field Office Type B	EACH	0.400	0.100	0.300
0174	643.0300	Traffic Control Drums	DAY	621.000	311.000	310.000
0176	643.0310.S	Temporary Portable Rumble Strips 01. 1009-42-70	LS	1.000	1.000	
0178	643.0420	Traffic Control Barricades Type III	DAY	306.000	20.000	286.000
0180	643.0705	Traffic Control Warning Lights Type A	DAY	584.000	12.000	572.000
0182	643.0715	Traffic Control Warning Lights Type C	DAY	194.000	60.000	134.000
0184	643.0900	Traffic Control Signs	DAY	2,001.000	347.000	1,654.000
0186	643.0910	Traffic Control Covering Signs Type I	EACH	4.000		4.000
0188	643.0920	Traffic Control Covering Signs Type II	EACH	8.000	2.000	6.000
0190	643.1000	Traffic Control Signs Fixed Message	SF	233.000		233.000
0192	643.1050	Traffic Control Signs PCMS	DAY	8.000	8.000	
0194	643.1070	Traffic Control Cones 42-Inch	DAY	154.000		154.000
0196	643.5000	Traffic Control	EACH	0.600	0.400	0.200
0204	646.1020	Marking Line Epoxy 4-Inch	LF	5,250.000	1,125.000	4,125.000
0206	646.3020	Marking Line Epoxy 8-Inch	LF	100.000		100.000
0214	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	24.000	24.000	
0220	650.6000	Construction Staking Pipe Culverts	EACH	10.000	2.000	8.000
0222	650.9910	Construction Staking Supplemental Control (project) 01. 1009-42-70	LS	1.000	1.000	
0224	650.9910	Construction Staking Supplemental Control (project) 02. 1009-42-73	LS	1.000		1.000
0226	650.9920	Construction Staking Slope Stakes	LF	1,804.000	367.000	1,437.000
0228	661.0100	Temporary Traffic Signals for Bridges (structure) 01.	LS	1.000	1.000	

Estimate Of Quantities By Plan Sets

		1009-42-70		1009-42-73	
Line	Item	Item Description	Unit	Total	Qty
		1520+72C			
0232	690.0150	Sawing Asphalt	LF	458.000	362.000
0234	690.0250	Sawing Concrete	LF	532.000	532.000
0240	SPV.0060	Special 01. Lane Shift	EACH	2.000	2.000
0242	SPV.0090	Special 01. Ditch Cleaning	LF	395.000	395.000
0246	SPV.0105	Special 01. Temporary Water Diversion Station 1520+72C	LS	1.000	1.000
0248	SPV.0105	Special 02. Temporary Water Diversion Station 382+35Z	LS	1.000	1.000
0250	SPV.0105	Special 03. Temporary Water Diversion Station 407+50Z	LS	1.000	1.000
0252	SPV.0180	Special 01. Preparing Topsoil for Lawn Type Turf	SY	356.000	356.000

3

REMOVING OLD STRUCTURE

STATION	LOCATION	DESCRIPTION	203.0200.01	203.0200.02	STRUCTURE NUMBER
			LS	LS	
1520+72C	LT & RT	72 INCH CMP CATTLE PASS	1	---	C-71-9008
61+97S	LT & RT	72 INCH CMP CATTLE PASS	---	1	C-71-9012
TOTAL			1	1	

REMOVING ASPHALTIC SURFACE

STATION - STATION	LOCATION	WIDTH FEET	204.0110 SY	REMARKS
1519+50C - 1520+04C	LT	4	14	SHOULDER
1519+50C - 1520+04C	RT	4	17	SHOULDER
1521+26C - 1522+00C	LT	4	22	SHOULDER
1521+26C - 1522+00C	RT	4	27	SHOULDER
TOTAL			80	

3

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	REMARKS
1520+50C	LT & RT	1	30 INCH CMPC
TOTAL		1	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF	REMARKS
1519+80C - 1521+69C	LT	189	STAGE 1 - STH 80
1519+80C - 1521+69C	RT	189	STAGE 2 - STH 80
TOTAL		378	

HMA PAVEMENT

STATION - STATION	LOCATION	455.0605	460.5224	REMARKS
		TACK COAT GAL	4 LT 58-28 S TON	
1520+04C - 1521+26C	LT & RT	57	140	STH 80
61+41S - 62+53S	LT & RT	24	105	STH 186
TOTALS		81	245	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110	305.0120	REMARKS
		3/4-INCH TON	1 1/4-INCH TON	
1519+50C - 1520+04C	LT	6	---	
1519+50C - 1520+04C	RT	6	---	
1520+04C - 1521+26C	LT	24	244	
1520+04C - 1521+26C	RT	24	244	
1521+26C - 1522+00C	LT	8	---	
1521+26C - 1522+00C	RT	8	---	
61+41S - 62+53S	LT	18	137	
61+41S - 62+53S	RT	18	137	
TOTALS		114	761	

SUBBASE

STATION	THICKNESS IN	350.0102 CY	REMARKS
1520+04C - 1521+26C	9	175	STH 80
61+41S - 62+53S	9	146	STH 186
TOTAL		321	

EARTHWORK SUMMARY

STATION - STATION	LOCATION	205.0100 EXCAVATION COMMON CUT (1) CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (3) FACTOR 1.25	MASS ORDINATE +/- (4)	WASTE	208.0100 BORROW (CUMULATIVE) CY	REMARKS
1519+50C - 1522+00C	LT & RT	593	118	475	436	545	-70	0	70	CULVERT REPLACEMENT
1519+50C - 1522+00C	LT & RT	560	0	560	560	560	0	0	70	CULVERT TRANSITION CUT
61+50S - 62+25S	LT & RT	166	25	141	24	29	112	112	-41	CULVERT REMOVAL
61+50S - 62+25S	LT & RT	417	0	417	417	417	0	0	-41	CULVERT TRANSITION CUT
TOTAL		1,736	143	1,593	1,437	1,552	41	112	58	

Notes:

- (1) Salvaged/Unusable Pavement Material is included in Cut.
- (2) Available Material = Cut - Unusable Pavement Material
- (3) Expanded Fill Factor = 1.25
- Transition Cut Volume NOT Expanded
- (4) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CROSS DRAINS

STATION	LOCATION	522.0136 CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	522.1036 APRON ENDWALLS REINFORCED CONCRETE 36-INCH EACH	522.1072 APRON ENDWALLS REINFORCED CONCRETE 72-INCH EACH	522.1500 PIPE CATTLE PASS REINFORCED CONCRETE LF	633.5200 MARKERS CULVERT END EACH	REMARKS
1520+57C	LT & RT	92	2	---	---	2	CLASS IV
1520+70C	LT & RT	---	---	2	84	2	
TOTALS		92	2	2	84	4	

3

TOPSOIL, EROSION MAT, FERTILIZER AND SEEDING							
				628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	
STATION - STATION	LOCATION	625.0100 TOPSOIL SY		SY			REMARKS
1519+50C - 1522+00C	LT	572		763	0.4	10.3	
1519+50C - 1522+00C	RT	602		602	0.6	14.3	
61+75S - 62+10S	LT	67		67	0.1	1.2	
61+75S - 62+10S	RT	81		81	0.1	1.5	
TOTALS		1323		1513	1.2	27.3	

WATER		
STATION - STATION	LOCATION	624.0100 MGAL
1520+04C - 1521+26C	LT	3.2
1520+04C - 1521+26C	RT	3.2
1519+31C - 1521+62C	RT	0.1
61+41S - 62+53S	LT	0.1
61+41S - 62+53S	RT	0.1
TOTAL		6.7

TRAFFIC CONTROL COVERING SIGNS		
LOCATION	CYCLES	643.0920 TYPE II EACH
DETOUR - STH 186		
DETOUR PLAN	1	2
TOTAL		2

TRAFFIC CONTROL												
LOCATION	DAYS NEEDED	QTY	643.0300 DRUMS DAY	QTY	643.0420 BARRICADES TYPE III DAY	QTY	643.0705 WARNING LIGHTS TYPE A DAY	QTY	643.0715 WARNING LIGHTS TYPE C DAYS	QTY	643.1050 SIGNS PCMS DAY	REMARKS
DETOUR - STH 186												
PRIOR TO DETOUR	3	5	15	0	0	0	0	0	0	2	6	
DURING DETOUR	1	5	5	14	14	0	0	0	0	2	2	
STH 80												
SHEET 1	3	31	93	0	0	0	0	5	15	0	0	STAGE 2
SHEET 2	3	20	60	1	3	2	6	5	15	0	0	STAGE 2
SHEET 1	3	26	78	1	3	2	6	5	15	0	0	STAGE 3
SHEET 2	3	20	60	0	0	0	0	5	15	0	0	STAGE 3
TOTAL			311		20		12		60		8	

PROJECT NO: 1009-42-70	HWY: STH 80, STH 186	COUNTY: WOOD	MI
------------------------	----------------------	--------------	----

<u>SILT FENCE</u>				
STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF	REMARKS
1519+30C - 1522+13C	LT	400	400	
1519+30C - 1522+13C	RT	280	280	
UNDISTRIBUTED		50	---	
TOTALS		730	680	

<u>CULVERT PIPE CHECKS</u>		
STATION	LOCATION	628.7555 EACH
1520+57C	RT	3
1520+70C	RT	5
TOTAL		8

<u>TEMPORARY DITCH CHECKS</u>		
STATION	LOCATION	628.7504 LF
1520+42C	RT	10
61+41S	LT	20
61+41S	RT	20
TOTAL		50

<u>TEMPORARY PORTABLE RUMBLE STRIPS</u>			
STATION - STATION	LOCATION	643.0310.S.01 LS	REMARKS
PROJECT	STH 80/STH 186	1	FLAGGING
TOTAL		1	

<u>MOBILIZATIONS EROSION CONTROL</u>			
STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
1519+50C - 1522+00C	1	1	STH 80
61+50S - 62+25S	1	1	STH 186
TOTAL	2	2	

SCCELLANEOUS QUANTITIES		SHEET: 55	E
-------------------------	--	-----------	---

3

3

TRAFFIC CONTROL					
SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
DETOUR - STH 186					
M4-8	DETOUR	19	1	19	DETOUR PLAN
M3-1	NORTH	13	1	13	DETOUR PLAN
M3-3	SOUTH	9	1	9	DETOUR PLAN
M1-6	186	20	1	20	DETOUR PLAN
M6-1	ARROW	10	1	10	DETOUR PLAN
M5-1R	RIGHT AHEAD ARROW	3	1	3	DETOUR PLAN
M5-1L	LEFT AHEAD ARROW	2	1	2	DETOUR PLAN
M4-8A	END DETOUR	2	1	2	DETOUR PLAN
W20-2A	DETOUR AHEAD	3	1	3	DETOUR PLAN
W20-3	ROAD CLOSED AHEAD	2	1	2	AT CLOSURE
W20-3C	ROAD CLOSED 1000 FT	2	1	2	AT CLOSURE
W20-3D	ROAD CLOSED 500 FT	2	1	2	AT CLOSURE
R11-2B	BRIDGE OUT	4	1	4	AT CLOSURE
GENERAL - STH 186					
W20-1A	ROAD WORK AHEAD	2	4	8	ADVANCE WARNING
W20-1C	ROAD 1000 FT	2	4	8	ADVANCE WARNING
W20-1D	ROAD WORK 500 FT	2	4	8	ADVANCE WARNING
W8-7	LOOSE GRAVEL	2	4	8	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	4	8	LOOSE GRAVEL SIGNING
STH 80					
W20-1A	ROAD WORK AHEAD	2	2	4	STAGE 1
W20-1C	ROAD 1000 FT	2	2	4	STAGE 1
W20-1D	ROAD WORK 500 FT	2	2	4	STAGE 1
W20-4A	ONE LANE ROAD AHEAD	2	2	4	STAGE 1
W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 2 - SHEET 1
W12-52	MAX 11' WIDTH	1	2	2	STAGE 2 - SHEET 1
W21-65	RUMBLE STRIPS AHEAD	1	2	2	STAGE 2 - SHEET 1
W20-4A	ONE LANE ROAD AHEAD	1	2	2	STAGE 2 - SHEET 1
WO3-3	TRAFFIC SIGNAL AHEAD	2	2	4	STAGE 2 - SHEET 1
R10-6	STOP HERE ON RED	1	2	2	STAGE 2 - SHEET 1
WO1-4R	SHIFT RIGHT	1	2	2	STAGE 2 - SHEET 1
W14-3	NO PASSING ZONE	1	2	2	STAGE 2 - SHEET 1
G20-2A	END ROAD WORK	1	2	2	STAGE 2 - SHEET 1
W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 2 - SHEET 2
W12-52	MAX 11' WIDTH	1	2	2	STAGE 2 - SHEET 2
W21-65	RUMBLE STRIPS AHEAD	1	2	2	STAGE 2 - SHEET 2
W20-4A	ONE LANE ROAD AHEAD	1	2	2	STAGE 2 - SHEET 2
WO3-3	TRAFFIC SIGNAL AHEAD	2	2	4	STAGE 2 - SHEET 2
R10-6	STOP HERE ON RED	1	2	2	STAGE 2 - SHEET 2
WO1-4R	SHIFT RIGHT	1	2	2	STAGE 2 - SHEET 2
W14-3	NO PASSING ZONE	1	2	2	STAGE 2 - SHEET 2
G20-2A	END ROAD WORK	1	2	2	STAGE 2 - SHEET 2
WO1-6	NIGHT ARROW	1	2	2	STAGE 2 - SHEET 2

TRAFFIC CONTROL					
SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 3 - SHEET 1
W12-52	MAX 11' WIDTH	1	2	2	STAGE 3 - SHEET 1
W21-65	RUMBLE STRIPS AHEAD	1	2	2	STAGE 3 - SHEET 1
W20-4A	ONE LANE ROAD AHEAD	1	2	2	STAGE 3 - SHEET 1
WO3-3	TRAFFIC SIGNAL AHEAD	2	2	4	STAGE 3 - SHEET 1
R10-6	STOP HERE ON RED	1	2	2	STAGE 3 - SHEET 1
WO1-4R	SHIFT RIGHT	1	2	2	STAGE 3 - SHEET 1
W14-3	NO PASSING ZONE	1	2	2	STAGE 3 - SHEET 1
G20-2A	END ROAD WORK	1	2	2	STAGE 3 - SHEET 1
WO1-6	NIGHT ARROW	1	2	2	STAGE 3 - SHEET 1
W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 3 - SHEET 2
W12-52	MAX 11' WIDTH	1	2	2	STAGE 3 - SHEET 2
W21-65	RUMBLE STRIPS AHEAD	1	2	2	STAGE 3 - SHEET 2
W20-4A	ONE LANE ROAD AHEAD	1	2	2	STAGE 3 - SHEET 2
WO3-3	TRAFFIC SIGNAL AHEAD	2	2	4	STAGE 3 - SHEET 2
R10-6	STOP HERE ON RED	1	2	2	STAGE 3 - SHEET 2
WO1-4R	SHIFT RIGHT	1	2	2	STAGE 3 - SHEET 2
W14-3	NO PASSING ZONE	1	2	2	STAGE 3 - SHEET 2
G20-2A	END ROAD WORK	1	2	2	STAGE 3 - SHEET 2
W20-1A	ROAD WORK AHEAD	2	2	4	STAGE 4
W20-1C	ROAD 1000 FT	2	2	4	STAGE 4
W20-1D	ROAD WORK 500 FT	2	2	4	STAGE 4
W20-4A	ONE LANE ROAD AHEAD	2	2	4	STAGE 4
M3-1	NORTH	3	5	15	WIDTH RESTRICTION SIGNING
M3-3	SOUTH	2	5	10	WIDTH RESTRICTION SIGNING
M1-6	80	5	5	25	WIDTH RESTRICTION SIGNING
W12-52	MAX 11' WIDTH	5	5	25	WIDTH RESTRICTION SIGNING
W57-52	MILES AHEAD	5	5	25	WIDTH RESTRICTION SIGNING
TOTAL				347	

3

TEMPORARY MARKING STOP LINE			
649.0850 REMOVEABLE TAPE 18-INCH			
STATION	LOCATION	LF	REMARKS
1520+00C	RT	12	STH 80 - STAGE 2 & 3
1522+00C	LT	12	STH 80 - STAGE 2 & 3
TOTAL		24	

3

MARKING LINE EPOXY

STATION - STATION	LOCATION	646.1020	646.1020
		4-INCH	4-INCH
		WHITE	YELLOW
		LF	LF
1519+00C - 1522+00C	EDGE LINE LT	300	---
1519+00C - 1522+00C	EDGE LINE RT	300	---
1519+00C - 1522+00C	CENTERLINE	---	75
61+00S - 63+00S	EDGE LINE LT	200	---
61+00S - 63+00S	EDGE LINE RT	200	---
61+00S - 63+00S	CENTERLINE	---	50
	SUBTOTAL	1000	125
	TOTAL	1125	

CONSTRUCTION STAKING

STATION - STATION	650.6000	650.9920	REMARKS
	PIPE	SLOPE	
		STAKES	
		LF	
1519+50C - 1522+00C	2	250	
61+41S - 62+58S	---	117	
TOTALS	2	367	

LANE SHIFT

				*BASE	
				AGGREGATE	
				DENSE	
SPV.0060.01				1 1/4 INCH	
STATION - STATION	LOCATION	EACH	REMARKS	*FILL CY	TON
1519+50C - 1521+75C	RT	1	STAGE 1	105	54
1519+50C - 1521+75C	LT	1	STAGE 2	67	54
TOTALS		2		172	107

*FOR INFORMATIONAL PURPOSES ONLY, NOT A BID ITEM

3

TEMPORARY TRAFFIC SIGNALS

		661.0100.01	
		FOR	
		BRIDGES	
		(STRUCTURE)	
STATION - STATION	LOCATION	LS	REMARKS
1520+04C - 1521+26C	STH 80	1	STAGE 2 & STAGE 3
TOTAL		1	

SAWING

		690.0150	
		ASPHALT	
STATION - STATION	LOCATION	LF	REMARKS
1520+04C	LT & RT	30	
1521+26C	LT & RT	30	
1519+50C - 1520+04C	LT	54	
1519+50C - 1520+04C	RT	54	
1521+26C - 1522+00C	LT	69	
1521+26C - 1522+00C	RT	69	
61+41S	LT & RT	28	
62+53S	LT & RT	28	
	TOTAL	362	

TEMPORARY WATER DIVERSION

STATION	LOCATION	SPV.0105.01	REMARKS
		LS	
1520+70C	71-080-0285	1	
TOTALS		1	

3

REMOVING OLD STRUCTURE					
STATION	LOCATION	DESCRIPTION	203.0200.03 LS	203.0200.04 LS	STRUCTURE NUMBER
350+00Z	LT & RT	72 INCH RCPC	1	---	C-68-9015
407+50Z	LT & RT	TWIN 60 INCH RCPC	---	1	C-68-9014
TOTAL			1	1	

HMA PAVEMENT				
STATION - STATION	LOCATION	455.0605 TACK COAT GAL	460.5224 4 LT 58-28 S TON	REMARKS
349+44Z - 351+53Z	LT & RT	98	240	68-110-0055
354+46Z - 355+54Z	LT & RT	50	124	68-110-0050
363+25Z - 363+75Z	LT & RT	23	58	68-110-0045
381+81Z - 382+89Z	LT & RT	50	123	68-110-0040
397+47Z - 398+53Z	LT & RT	49	122	68-110-0035
406+91Z - 408+09Z	LT & RT	92	226	68-110-0030, 0031
447+47Z - 448+04Z	LT & RT	48	118	68-110-0020
451+72Z - 452+28Z	LT & RT	47	116	68-110-0010
TOTALS		457	1127	

SUBBASE			
STATION	THICKNESS IN	350.0102 CY	REMARKS
349+44Z - 351+53Z	9	344	68-110-0055
354+46Z - 355+54Z	9	178	68-110-0050
363+25Z - 363+75Z	9	82	68-110-0045
381+81Z - 382+89Z	9	176	68-110-0040
397+47Z - 398+53Z	9	175	68-110-0035
406+91Z - 408+09Z	9	237	68-110-0030, 0031
TOTAL		1192	

GRUBBING			
STATION	LOCATION	201.0220 ID	REMARKS
382+35Z	RT	30	
TOTAL		30	

REMOVING SMALL PIPE CULVERTS			
STATION	LOCATION	203.0100 EACH	REMARKS
351+00Z	CL	1	30"X92' RCPC
355+00Z	CL	1	30"X88' RCPC
357+63Z	LT	1	18"X53' RCPC
361+70Z	LT	1	18"X30' CPCS
363+50Z	CL	1	24"X64' RCPC
382+35Z	CL	1	30"X116' RCPC
398+00Z	CL	1	24"X76' RCPC
447+75Z	CL	1	24"X70' RCPC
452+00Z	CL	1	24"X70' RCPC
TOTAL		9	

BASE AGGREGATE DENSE				
STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS
349+44Z - 351+53Z	LT	65	457	68-110-0055
349+44Z - 351+53Z	RT	65	457	68-110-0055
354+46Z - 355+56Z	LT	34	241	68-110-0050
354+46Z - 355+56Z	RT	34	241	68-110-0050
357+63Z	LT	38	---	FE
361+70Z	LT	28	---	PE
363+25Z - 363+75Z	LT	16	109	68-110-0045
363+25Z - 363+75Z	RT	16	109	68-110-0045
381+81Z - 382+89Z	LT	34	236	68-110-0040
381+81Z - 382+89Z	RT	34	236	68-110-0040
397+47Z - 398+53Z	LT	33	232	68-110-0035
397+47Z - 398+53Z	RT	33	232	68-110-0035
406+91Z - 408+09Z	LT	28	325	68-110-0030, 0031
406+91Z - 408+09Z	RT	18	335	68-110-0030, 0031
408+09Z - 408+25Z	LT	4	---	68-110-0030, 0031
447+47Z - 448+04Z	LT	9	164	68-110-0020
447+47Z - 448+04Z	RT	9	164	68-110-0020
451+72Z - 452+28Z	LT	9	161	68-110-0010
451+72Z - 452+28Z	RT	9	161	68-110-0010
TOTALS		514	3861	

EARTHWORK SUMMARY

STATION - STATION	LOCATION	205.0100	SALVAGED/	AVAILABLE	UNEXPANDED	EXPANDED	MASS	WASTE	208.0100	REMARKS
		EXCAVATION COMMON CUT (1) CY	UNUSABLE PAVEMENT MATERIAL CY			FILL (3) FACTOR 1.25			BORROW (CUMULATIVE) CY	
349+44Z - 351+53Z	LT & RT	913	219	695	438	548	147	147	-147	CULVERT REPLACEMENT
349+44Z - 351+53Z	LT & RT	1,051	0	1,051	1,051	1,051	0	0	-147	CULVERT TRANSISTION CUT
354+46Z - 355+54Z	LT & RT	502	113	389	26	33	356	356	-502	CULVERT REPLACEMENT
354+46Z - 355+54Z	LT & RT	409	0	409	409	409	0	0	-502	CULVERT TRANSISTION CUT
357+00Z - 363+75Z	LT & RT	961	67	894	27	34	860	860	-1,363	CULVERT REPLACEMENT
363+25Z - 363+75Z	LT & RT	122	0	122	122	122	0	0	-1,363	CULVERT TRANSISTION CUT
381+81Z - 382+89Z	LT & RT	490	113	377	81	101	276	276	-1,639	CULVERT REPLACEMENT
381+81Z - 382+89Z	LT & RT	593	0	593	593	593	0	0	-1,639	CULVERT TRANSISTION CUT
397+47Z - 398+53Z	LT & RT	526	111	415	32	40	375	375	-2,014	CULVERT REPLACEMENT
397+47Z - 398+53Z	LT & RT	130	0	130	130	130	0	0	-2,014	CULVERT TRANSISTION CUT
406+91Z - 408+09Z	LT & RT	589	160	429	204	255	174	174	-2,188	CULVERT REPLACEMENT
406+91Z - 408+09Z	LT & RT	704	0	704	704	704	0	0	-2,188	CULVERT TRANSISTION CUT
447+47Z - 448+04Z	LT & RT	260	121	139	7	8	130	130	-2,318	CULVERT REPLACEMENT
447+47Z - 448+04Z	LT & RT	110	0	110	110	110	0	0	-2,318	CULVERT TRANSISTION CUT
451+72Z - 453+00Z	LT & RT	324	143	181	5	6	176	176	-2,494	CULVERT REPLACEMENT
451+75Z - 452+28Z	LT & RT	147	0	147	147	147	0	0	-2,494	CULVERT TRANSISTION CUT
TOTAL		7,684	1,046	6,637	3,939	4,143	2,494	2,494	-2,494	

Notes:
(1) Salvaged/Unusable Pavement Material is included in Cut.
(2) Available Material = Cut - Unusable Pavement Material
(3) Expanded Fill Factor = 1.25
Transition Cut Volume NOT Expanded
(4) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CROSS DRAINS

STATION	LOCATION	CULVERT PIPE		APRON ENDWALLS		521.1283	521.5783	CULVERT PIPE		APRON ENDWALLS FOR CULVERT		633.5200	REMARKS
		CLASS III-A		FOR CULVERT PIPE		APRON	PIPE ARCH	REINFORCED CONCRETE		PIPE REINFORCED CONCRETE		MARKERS	
		NON-METAL				ENDWALLS	POLYMER COATED	522.0136	522.0424	522.1024	522.1036	CULVERT	
		520.3418	520.3430	520.1018	520.1030	PIPE	CORRUGATED	CLASS III	CLASS IV	24-INCH	36-INCH	END	
		18-INCH	30-INCH	18-INCH	30-INCH	ARCH STEEL	STEEL	36-INCH	24-INCH	24-INCH	36-INCH	EACH	
		LF	LF	EACH	EACH	83X57-INCH	83X57-INCH	LF	LF	EACH	EACH	EACH	
351+00Z	LT & RT	---	86	---	2	---	---	---	---	---	---	2	68-110-0055
355+00Z	LT & RT	---	72	---	2	---	---	---	---	---	---	2	68-110-0050
357+63Z	LT	---	39	---	2	---	---	---	---	---	---	---	FE
361+70Z	LT	---	29	---	2	---	---	---	---	---	---	---	PE
382+35Z	LT & RT	---	---	---	---	---	---	106	---	---	2	2	68-110-0040, 4.7° LHF
398+00Z	LT & RT	---	---	---	---	---	---	---	60	2	---	2	68-110-0035
407+50Z	LT & RT	---	---	---	---	2	100	---	---	---	---	2	68-110-0030, 3.3° LHF
407+63Z	LT & RT	102	---	2	---	---	---	---	---	---	---	2	68-110-0031, 3.3° LHF
447+75Z	LT & RT	---	---	---	---	---	---	---	68	2	---	2	68-110-0020
452+00Z	LT & RT	---	---	---	---	---	---	---	72	2	---	2	68-110-0010
TOTALS		102	226	2	8	2	100	106	200	6	2	16	

3

TOPSOIL, EROSION MAT, FERTILIZER AND SEEDING											
		628.2008 EROSION									SPV.0180.01
		625.0100 TOPSOIL			MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0140 SEEDING MIXTURE NO. 40 LB	630.0180 SEEDING MIXTURE NO. 80 LB	630.0400 SEEDING NURSE CROP LB	PREPAIRING TOPSOIL FOR LAWN TYPE TURF SY
STATION -	STATION	LOCATION	SY	SY	CWT	LB	LB	LB	LB	LB	REMARKS
349+44Z -	351+53Z	LT	199	199	0.2	7.1	---	1.4	1.4	---	DITCH CLEANING
349+44Z -	351+53Z	RT	371	371	0.4	10.2	---	---	---	---	
354+46Z -	355+54Z	LT	127	127	0.1	4.1	---	---	---	---	
354+46Z -	355+54Z	RT	117	117	0.1	3.9	---	---	---	---	
357+00Z -	357+42Z	LT	92	120	0.1	2.2	---	---	---	---	
357+85Z -	361+57Z	LT	1128	1376	0.9	24.8	---	---	---	---	
357+65Z -	361+61Z	RT	264	264	0.2	4.8	---	---	---	---	
361+85Z -	363+75Z	LT	185	312	0.2	5.6	---	---	---	---	
363+25Z -	363+75Z	RT	20	20	0.0	1.2	---	---	---	---	
381+81Z -	382+89Z	LT	238	238	0.2	6.1	---	---	---	---	
381+81Z -	382+89Z	RT	190	190	0.2	5.3	---	---	---	---	
397+47Z -	398+53Z	LT	124	124	0.1	3.5	---	---	---	---	
397+47Z -	398+53Z	RT	87	87	0.1	---	2.8	---	---	87	
406+91Z -	408+25Z	LT	78	231	0.2	6.8	---	---	---	---	
406+91Z -	408+09Z	RT	185	185	0.2	5.2	---	---	---	---	
447+47Z -	448+04Z	LT	36	36	0.1	1.6	---	---	---	---	
447+47Z -	448+04Z	RT	67	67	0.1	---	2.0	---	---	67	
451+75Z -	452+28Z	LT	25	25	0.04	1.2	---	---	---	---	
451+72Z -	453+00Z	RT	201	201	0.2	---	5.4	---	---	201	
TOTALS			3735	4291	3.64	93.6	10.2	1.4	1.4	356	

CULVERT PIPE CHECKS		
STATION	LOCATION	628.7555 EACH
351+00Z	LT	3
355+00Z	RT	3
357+50Z	RT	3
357+63Z	LT	3
361+70Z	LT	3
447+75Z	RT	3
452+00Z	RT	3
TOTAL		21

TEMPORARY DITCH CHECKS		
STATION	LOCATION	628.7504 LF
357+00Z	LT	14
359+43Z	RT	8
359+81Z	LT	8
447+25Z	LT	10
452+00Z	LT	14
UNDISTRUBUTED		15
TOTAL		69

SILT FENCE				
STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF	REMARKS
350+00Z	LT	245	245	68-110-0055
350+00Z	RT	250	250	68-110-0055
355+00Z	LT	165	165	68-110-0050
382+35Z	LT	140	140	68-110-0040
382+35Z	RT	160	160	68-110-0040
398+00Z	LT	155	155	68-110-0035
407+50Z	LT	175	175	68-110-0030
407+50Z	RT	150	150	68-110-0030
TOTALS		1440	1440	

WATER			
STATION - STATION	LOCATION	624.0100 MGAL	REMARKS
349+44Z - 351+53Z	LT	2.7	
349+44Z - 351+53Z	RT	2.7	
354+47Z - 355+53Z	LT	1.4	
354+47Z - 355+53Z	RT	1.4	
362+97Z - 364+03Z	LT	1.4	
362+97Z - 364+03Z	RT	1.4	
381+82Z - 382+88Z	LT	1.4	
381+82Z - 382+88Z	RT	1.4	
397+47Z - 398+53Z	LT	1.4	
397+47Z - 398+53Z	RT	1.4	
406+91Z - 408+09Z	LT	1.8	
406+91Z - 408+09Z	RT	1.8	
447+47Z - 448+03Z	LT	0.7	
447+47Z - 448+03Z	RT	0.7	
451+72Z - 452+28Z	LT	0.7	
451+72Z - 452+28Z	RT	0.7	
TOTAL		23.2	

PIPE UNDERDRAIN			
STATION - STATION	LOCATION	612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH
447+47Z - 448+04Z	LT	10	1
447+47Z - 448+04Z	RT	10	1
451+72Z - 452+28Z	LT	15	1
451+72Z - 452+28Z	RT	15	1
TOTAL		50	4

3

TRAFFIC CONTROL						TRAFFIC CONTROL					
SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS	SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
DETOUR						CULVERT 447+75 & 452+00					
M4-8	DETOUR	11	14	154		W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 1 - SHEET 1
M3-1	NORTH	6	14	84	DETOUR PLAN - SHEET 1	G20-2A	END ROAD WORK	1	2	2	STAGE 1 - SHEET 1
M3-3	SOUTH	8	14	112	DETOUR PLAN - SHEET 1	W20-55A	LEFT LANE CLOSED AHEAD	1	2	2	STAGE 1 - SHEET 1
M1-6	110	14	14	196	DETOUR PLAN - SHEET 1	W12-52	MAX 10' WIDTH	1	2	2	STAGE 1 - SHEET 1
M6-1	ARROW	5	14	70	DETOUR PLAN - SHEET 1	WO4-2L	LEFT LANE CLOSED	1	2	2	STAGE 1 - SHEET 2
M5-1R	RIGHT AHEAD ARROW	1	14	14	DETOUR PLAN - SHEET 1	WO1-6	NIGHT ARROW	1	2	2	STAGE 1 - SHEET 3
M5-1L	LEFT AHEAD ARROW	1	14	14	DETOUR PLAN - SHEET 1	WO1-4R	SHIFT RIGHT	2	2	4	STAGE 1 - SHEET 3
M6-2	TILT RIGHT ARROW	1	14	14	DETOUR PLAN - SHEET 1	WO1-4L	SHIFT LEFT	3	2	6	STAGE 1 - SHEET 4
M5-2R	TILT RIGHT AHEAD ARROW	1	14	14	DETOUR PLAN - SHEET 1	WO1-6	NIGHT ARROW	2	2	4	STAGE 1 - SHEET 4
M4-8A	END DETOUR	2	14	28	DETOUR PLAN - SHEET 1	G20-2A	END ROAD WORK	1	2	2	STAGE 1 - SHEET 5
W20-2A	DETOUR AHEAD	4	14	56	DETOUR PLAN - SHEET 1	W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 1 - SHEET 5
R11-3	ROAD CLOSED 1 MILE AHEAD	1	14	14	DETOUR PLAN - SHEET 2	W12-52	MAX 10' WIDTH	1	2	2	STAGE 1 - SHEET 5
G20-2A	END ROAD WORK	3	14	42	DETOUR PLAN - SHEET 2	M3-1	NORTH	2	2	4	STAGE 1 - SHEET 5
W20-3A	ROAD CLOSED AHEAD	1	14	14	DETOUR PLAN - SHEET 2	M1-6	110	2	2	4	STAGE 1 - SHEET 5
R11-2	ROAD CLOSED	1	14	14	DETOUR PLAN - SHEET 2	G20-2A	END ROAD WORK	1	2	2	STAGE 1 - SHEET 6
W20-1A	ROAD WORK AHEAD	1	14	14	DETOUR PLAN - SHEET 2	W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 1 - SHEET 6
W20-1A	ROAD WORK AHEAD	6	14	84	DETOUR PLAN - SHEET 3	W12-52	MAX 10' WIDTH	1	2	2	STAGE 1 - SHEET 6
W20-3A	ROAD CLOSED AHEAD	1	14	14	DETOUR PLAN - SHEET 3	M3-1	NORTH	2	2	4	STAGE 1 - SHEET 6
R11-2	ROAD CLOSED	3	14	42	DETOUR PLAN - SHEET 3	M1-6	110	2	2	4	STAGE 1 - SHEET 6
W20-1A	ROAD WORK AHEAD	5	14	70	DETOUR PLAN - SHEET 4				2		
R11-3	ROAD CLOSED 1 MILE AHEAD	1	14	14	DETOUR PLAN - SHEET 4	W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 2 - SHEET 1
G20-2A	END ROAD WORK	2	14	28	DETOUR PLAN - SHEET 4	G20-2A	END ROAD WORK	1	2	2	STAGE 2 - SHEET 1
M4-8	DETOUR	2	14	28	DETOUR PLAN - SHEET 4	W20-55A	RIGHT LANE CLOSED AHEAD	1	2	2	STAGE 2 - SHEET 1
M3-1	NORTH	2	14	28	DETOUR PLAN - SHEET 4	W12-52	MAX 10' WIDTH	1	2	2	STAGE 2 - SHEET 1
M1-6	110	2	14	28	DETOUR PLAN - SHEET 4	WO4-2L	LEFT LANE CLOSED	1	2	2	STAGE 2 - SHEET 2
M6-1	ARROW	1	14	14	DETOUR PLAN - SHEET 4	WO1-6	NIGHT ARROW	2	2	4	STAGE 2 - SHEET 3
M5-1L	LEFT AHEAD ARROW	1	14	14	DETOUR PLAN - SHEET 4	WO1-4L	SHIFT LEFT	1	2	2	STAGE 2 - SHEET 3
DETOUR - AT CLOSURE						WO1-4R	SHIFT RIGHT	1	2	2	STAGE 2 - SHEET 4
R11-2	ROAD CLOSED	2	14	28		G20-2A	END ROAD WORK	1	2	2	STAGE 2 - SHEET 5
W20-3C	ROAD CLOSED 1000 FT	2	14	28		W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 2 - SHEET 5
W20-3D	ROAD CLSOED 500 FT	2	14	28		W12-52	MAX 10' WIDTH	1	2	2	STAGE 2 - SHEET 5
						M3-1	NORTH	2	2	4	STAGE 2 - SHEET 5
						M1-6	110	2	2	4	STAGE 2 - SHEET 5
						G20-2A	END ROAD WORK	1	2	2	STAGE 2 - SHEET 6
						W20-1A	ROAD WORK AHEAD	1	2	2	STAGE 2 - SHEET 6
						W12-52	MAX 10' WIDTH	1	2	2	STAGE 2 - SHEET 6
						M3-1	NORTH	2	2	4	STAGE 2 - SHEET 6
						M1-6	110	2	2	4	STAGE 2 - SHEET 6
						M3-1	NORTH	3	5	15	WIDTH RESTRICTION SIGNING
						M3-3	SOUTH	2	5	10	WIDTH RESTRICTION SIGNING
						M1-6	110	5	5	25	WIDTH RESTRICTION SIGNING
						W12-52	MAX 10' WIDTH	5	5	25	WIDTH RESTRICTION SIGNING
						W57-52	MILES AHEAD	5	5	25	WIDTH RESTRICTION SIGNING

3

CONTINUED ON NEXT PAGE

3

TRAFFIC CONTROL					
SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
CULVERT 350+00 AND 355+00					
W8-7	LOOSE GRAVEL	2	13	26	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	13	26	LOOSE GRAVEL SIGNING
CULVERT 363+50					
W8-7	LOOSE GRAVEL	2	8	16	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	8	16	LOOSE GRAVEL SIGNING
CULVERT 382+35					
W8-7	LOOSE GRAVEL	2	11	22	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	11	22	LOOSE GRAVEL SIGNING
CULVERT 398+00					
W8-7	LOOSE GRAVEL	2	8	16	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	8	16	LOOSE GRAVEL SIGNING
CULVERT 407+50					
W8-7	LOOSE GRAVEL	2	5	10	LOOSE GRAVEL SIGNING
WO8-2	DIP	2	5	10	LOOSE GRAVEL SIGNING
TOTAL				1654	

3

TRAFFIC CONTROL						
			643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	643.1000 SIGNS FIXED MESSAGE SF	REMARKS
LOCATION	CYCLES	NUMBER OF SIGNS				
DETOUR						
SHEET 1	1	7	4	3	208	
SHEET 2	1	0	---	---	---	
SHEET 3	1	0	---	---	---	
SHEET 4	1	3	---	3	25	
TOTALS			4	6	233	

TRAFFIC CONTROL													
LOCATION	DAYS NEEDED	QTY	643.0300 DRUMS		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0715 WARNING LIGHTS TYPE C		643.1070 CONES		REMARKS
			DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	
DETOUR													
SHEET 1	14	0	0	0	0	0	0	0	0	0	0		
SHEET 2	14	0	0	4	56	8	112	0	0	0	0		
SHEET 3	14	0	0	4	56	8	112	0	0	0	0		
SHEET 4	14	0	0	1	14	2	28	0	0	0	0		
AT CULVERT REPLACEMENT	14	0	0	10	140	20	280	0	0	0	0		
CULVERT 447+75 & 452+00													
SHEET 2	2	6	12	0	0	0	0	6	12	0	0	STAGE 1	
SHEET 3	2	40	80	4	8	8	16	13	26	15	30	STAGE 1	
SHEET 4	2	26	52	3	6	6	12	16	32	27	54	STAGE 1	
							0						
SHEET 2	2	10	20	0	0	0	0	10	20	0	0	STAGE 2	
SHEET 3	2	39	78	3	6	6	12	13	26	18	36	STAGE 2	
SHEET 4	2	34	68	0	0	0	0	9	18	17	34	STAGE 2	
TOTAL		310		286		572		134		154			

MOVING SIGNS TYPE 2			
STATION	LOCATION	MESSAGE	638.2102 MOVING SIGNS TYPE 2 EACH
451+95Z	LT	JCT CTH H	1
452+03Z	RT	JCT STH 96	1
452+03Z	RT	ARROW ONLY, ARROW ONLY	1
TOTAL			3

3

MARKING LINE EPOXY					
STATION - STATION	LOCATION	646.1020	646.1020	646.3020	REMARKS
		4-INCH WHITE LF	4-INCH YELLOW LF	8-INCH YELLOW LF	
349+00Z - 352+00Z	EDGE LINE LT	300	---	---	DOUBLE YELLOW
349+00Z - 352+00Z	EDGE LINE RT	300	---	---	
349+00Z - 352+00Z	CENTERLINE	---	75	---	
354+47Z - 355+53Z	ALL	250	25	---	
363+25Z - 363+75Z	ALL	150	25	---	
381+82Z - 382+88Z	ALL	250	25	---	
397+47Z - 398+53Z	ALL	250	25	---	
406+00Z - 409+00Z	EDGE LINE LT	300	---	---	
406+00Z - 409+00Z	EDGE LINE RT	300	---	---	
406+00Z - 409+00Z	CENTERLINE	---	1200	---	
406+00Z - 409+00Z	MEDIAN DIAGONAL	---	---	100	TWO DOUBLE YELLOW
447+47Z - 448+03Z	ALL	175	150	---	25 FOOT SPACING
451+72Z - 452+28Z	ALL	175	150	---	DOUBLE YELLOW
SUBTOTAL		2450	1675		
TOTAL		4125		100	

SAWING				
STATION - STATION	LOCATION	690.0150	690.0250	REMARKS
		ASPHALT LF	CONCRETE LF	
349+44Z	LT & RT	6	24	RUBBILIZED CONCRETE
351+53Z	LT & RT	6	24	RUBBILIZED CONCRETE
354+46Z	LT & RT	6	24	RUBBILIZED CONCRETE
355+54Z	LT & RT	6	24	RUBBILIZED CONCRETE
363+25Z	LT & RT	6	24	RUBBILIZED CONCRETE
363+75Z	LT & RT	6	24	RUBBILIZED CONCRETE
381+81Z	LT & RT	6	24	RUBBILIZED CONCRETE
382+89Z	LT & RT	6	24	RUBBILIZED CONCRETE
397+47Z	LT & RT	6	24	RUBBILIZED CONCRETE
398+53Z	LT & RT	6	24	RUBBILIZED CONCRETE
406+91Z	LT & RT	6	50	RUBBILIZED CONCRETE
408+09Z	LT & RT	6	50	RUBBILIZED CONCRETE
447+47Z	LT & RT	6	48	RUBBILIZED CONCRETE
448+04Z	LT & RT	6	48	RUBBILIZED CONCRETE
451+72Z	LT & RT	6	48	RUBBILIZED CONCRETE
452+28Z	LT & RT	6	48	RUBBILIZED CONCRETE
TOTAL		96	532	

3

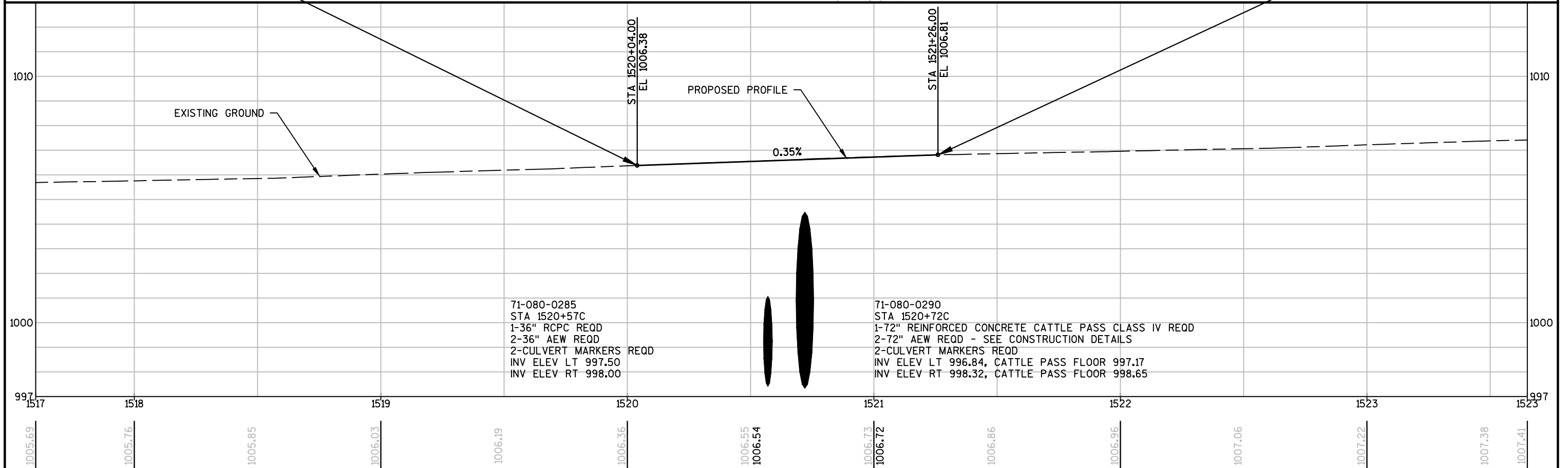
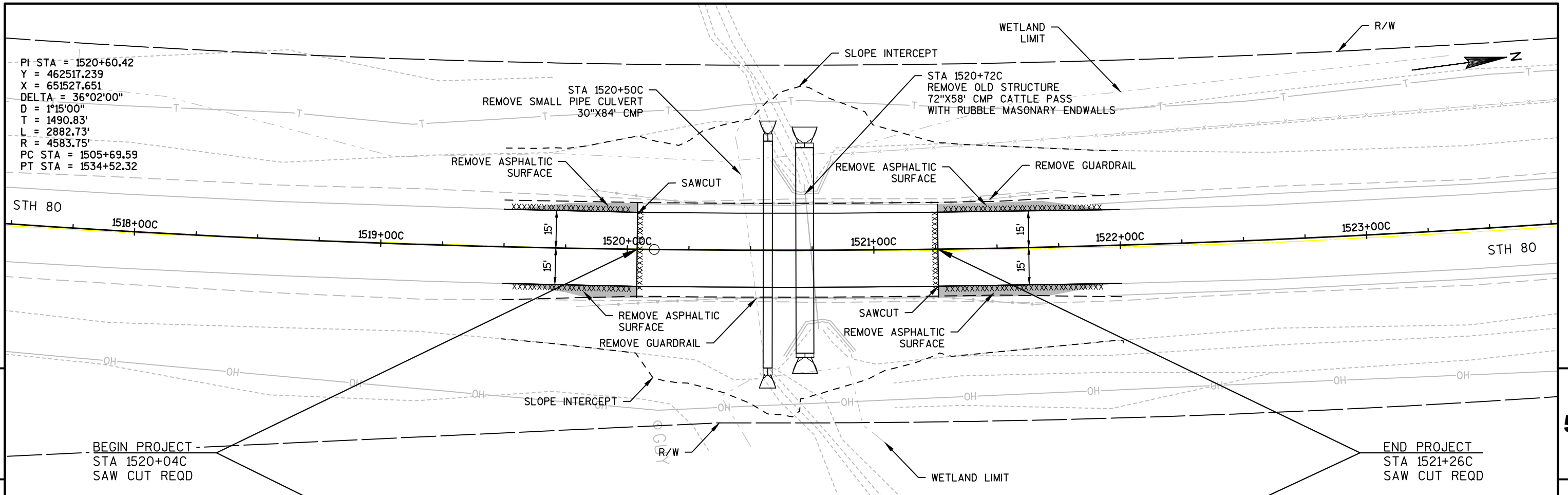
CONSTRUCTION STAKING			
STATION - STATION	650.6000	650.9920	REMARKS
	PIPE CULVERTS EACH	SLOPE STAKES LF	
349+44Z - 351+53Z	1	209	
354+46Z - 355+54Z	1	108	
357+00Z - 363+75Z	---	675	
381+81Z - 382+89Z	1	108	
397+47Z - 398+53Z	1	106	
406+91Z - 408+09Z	2	118	
447+47Z - 448+04Z	1	57	
451+72Z - 452+28Z	1	56	
TOTALS	8	1437	

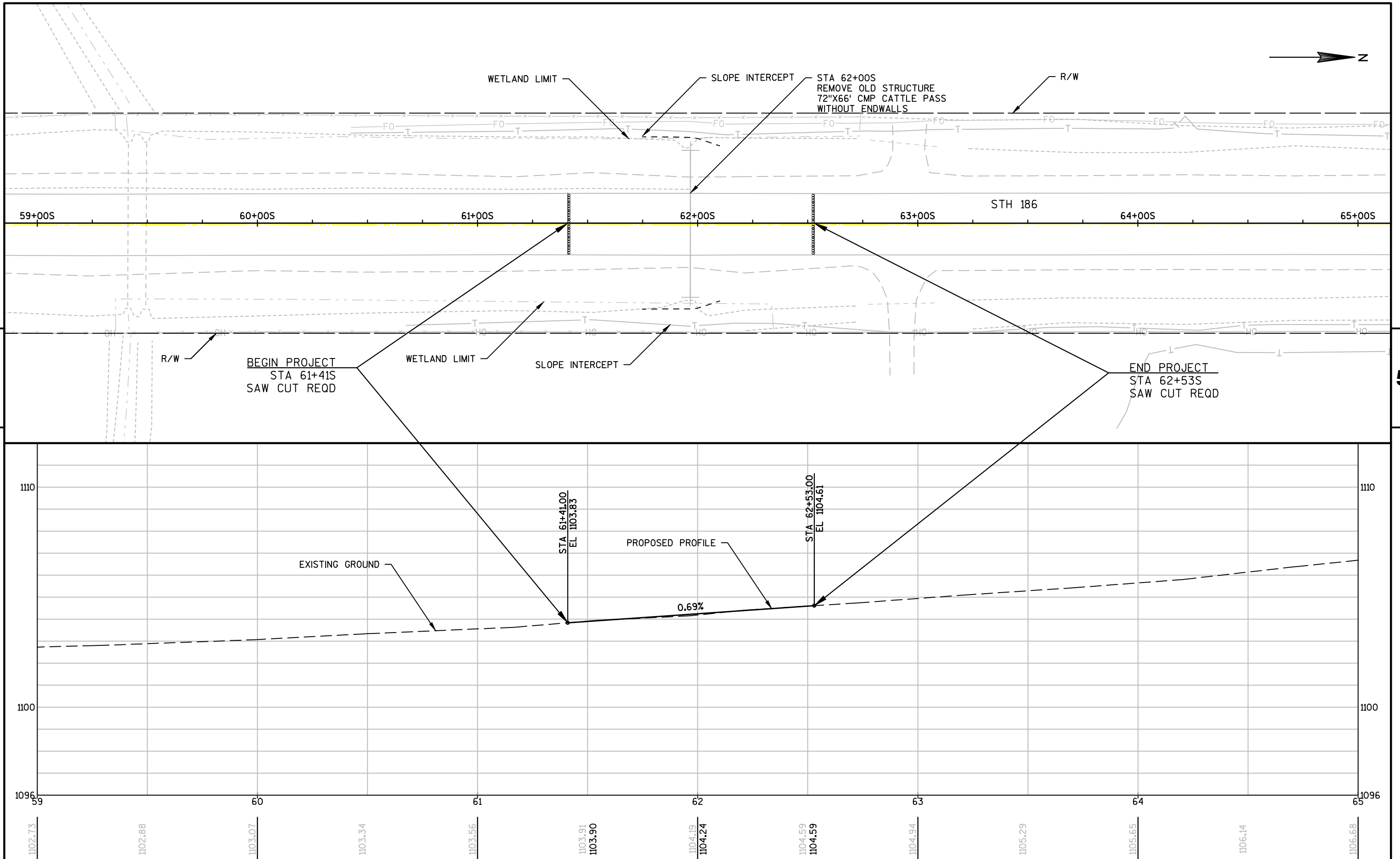
MOBILIZATIONS EROSION CONTROL			
STATION - STATION	628.1905	628.1910	REMARKS
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	
349+44Z - 408+09Z	1	2	
447+47Z - 452+28Z	1	2	
TOTAL	2	4	

DITCH CLEANING		
STATION - STATION	LOCATION	SPV.0090.01 LF
357+65Z - 361+60Z	RT	395
	TOTAL	395

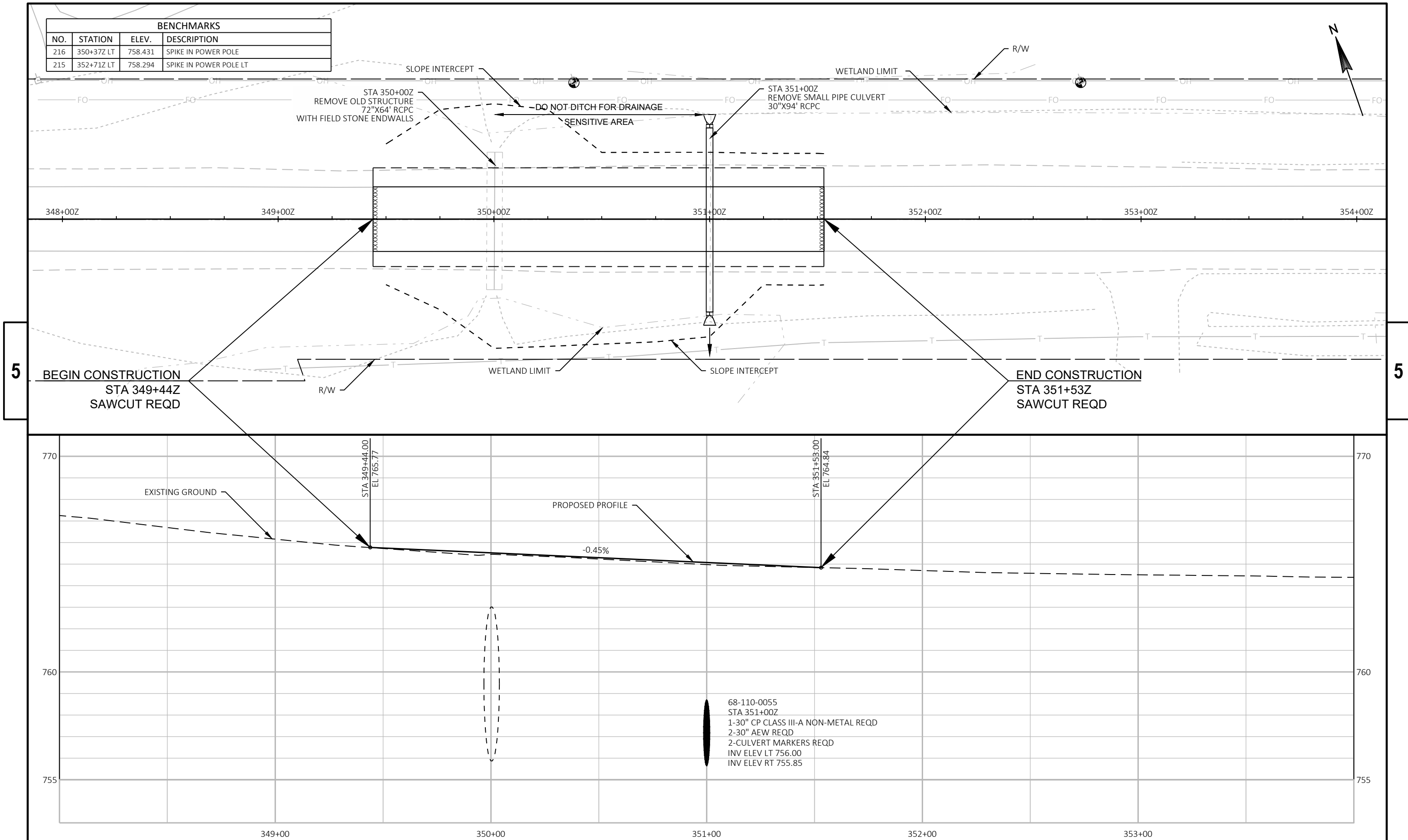
ROCK BAGS		
STATION	LOCATION	628.7570 EACH
398+00Z	RT	16
TOTAL		16

TEMPORARY WATER DIVERSION				
STATION	LOCATION	SPV.0105.02 LS	SPV.0105.03 LS	REMARKS
382+35Z	LT & RT	1	---	
407+50Z	LT & RT	---	1	
TOTALS		1	1	





BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
216	350+37Z LT	758.431	SPIKE IN POWER POLE
215	352+71Z LT	758.294	SPIKE IN POWER POLE LT



PROJECT NO: 1009-42-73

HWY: STH 110

COUNTY: WAUPACA

PLAN AND PROFILE: STH 110

SHEET

66

E

FILE NAME : N:\PDS\C3D\10094210\SHEETS\PLAN\050104-PP.DWG
LAYOUT NAME - 01

PLOT DATE : 10/8/2018 6:50 AM

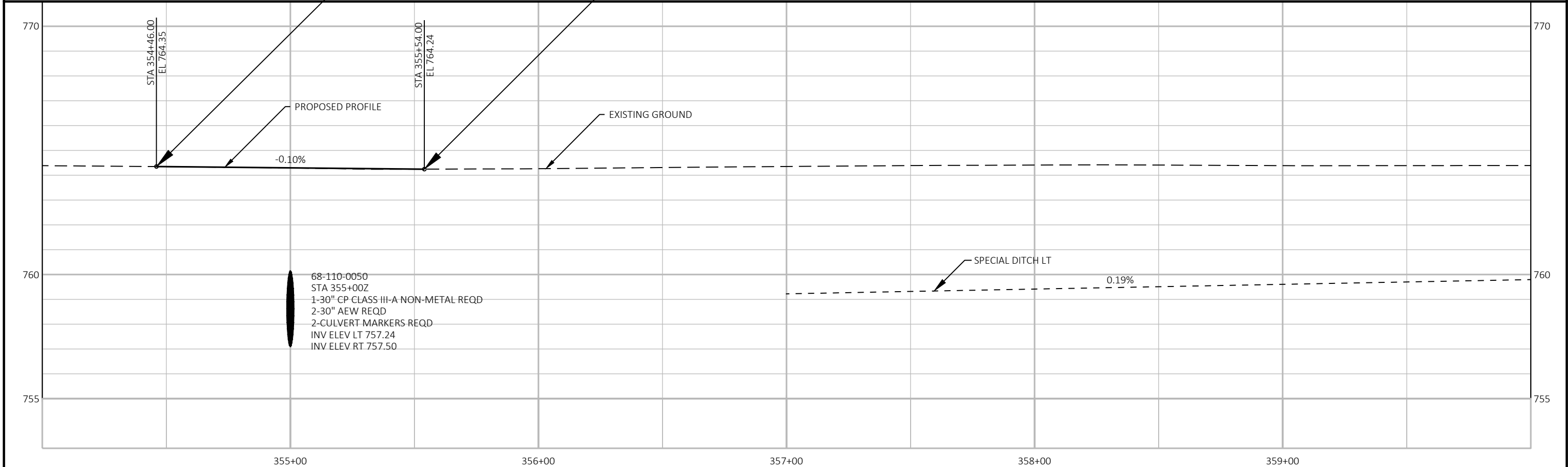
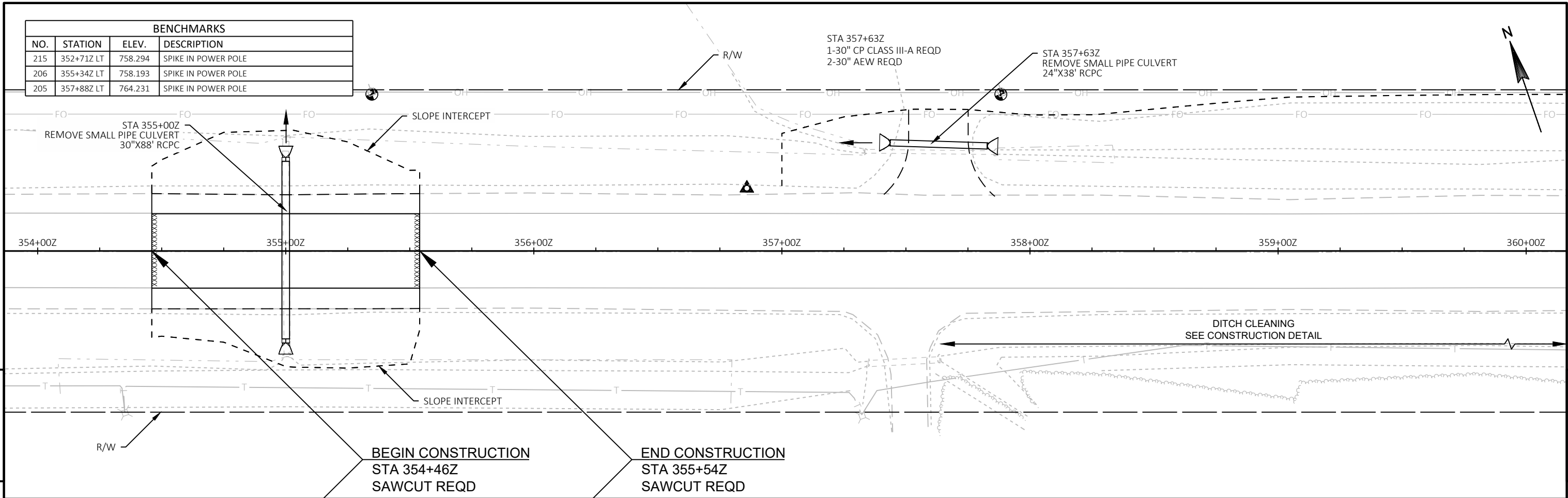
PLOT BY : GRULING, ZACHARY P

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
215	352+71Z LT	758.294	SPIKE IN POWER POLE
206	355+34Z LT	758.193	SPIKE IN POWER POLE
205	357+88Z LT	764.231	SPIKE IN POWER POLE



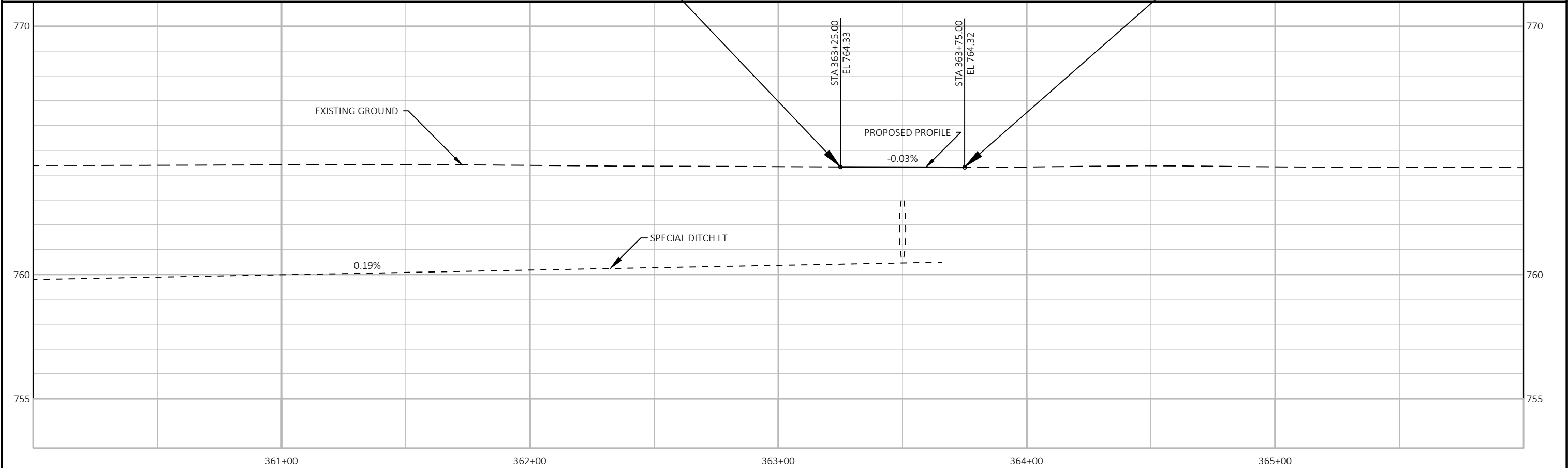
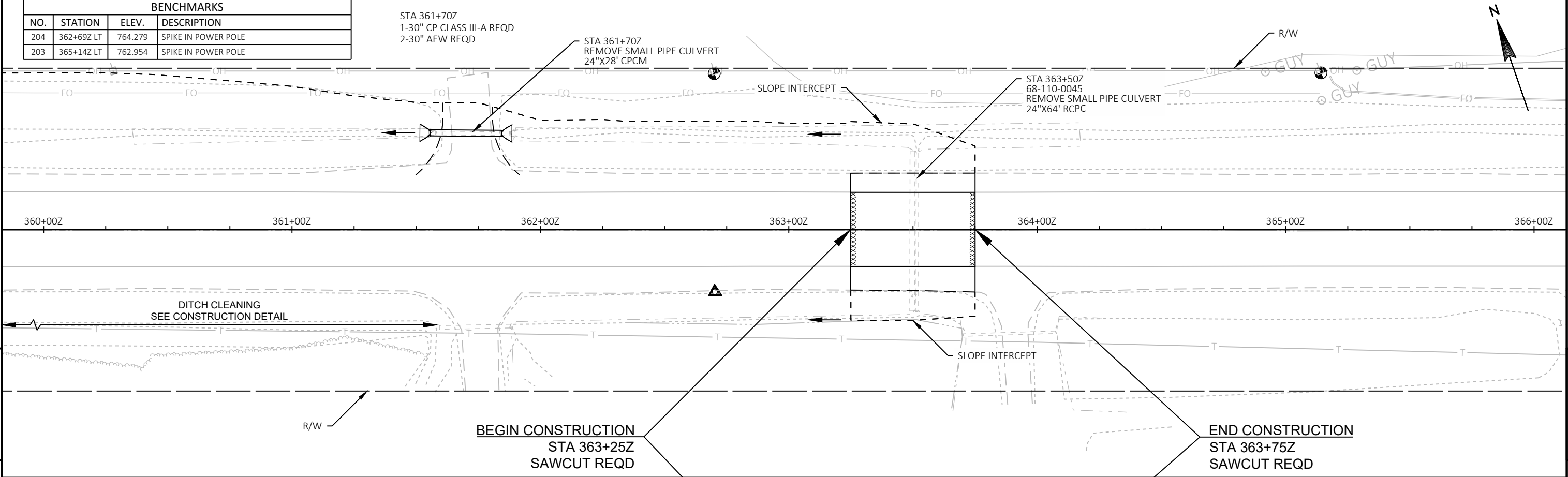
PROJECT NO: 1009-42-73	HWY: STH 110	COUNTY: WAUPACA	PLAN AND PROFILE: STH 110	SHEET 67	E
------------------------	--------------	-----------------	---------------------------	----------	---

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
204	362+69Z LT	764.279	SPIKE IN POWER POLE
203	365+14Z LT	762.954	SPIKE IN POWER POLE

STA 361+70Z
1-30" CP CLASS III-A REQD
2-30" AEW REQD

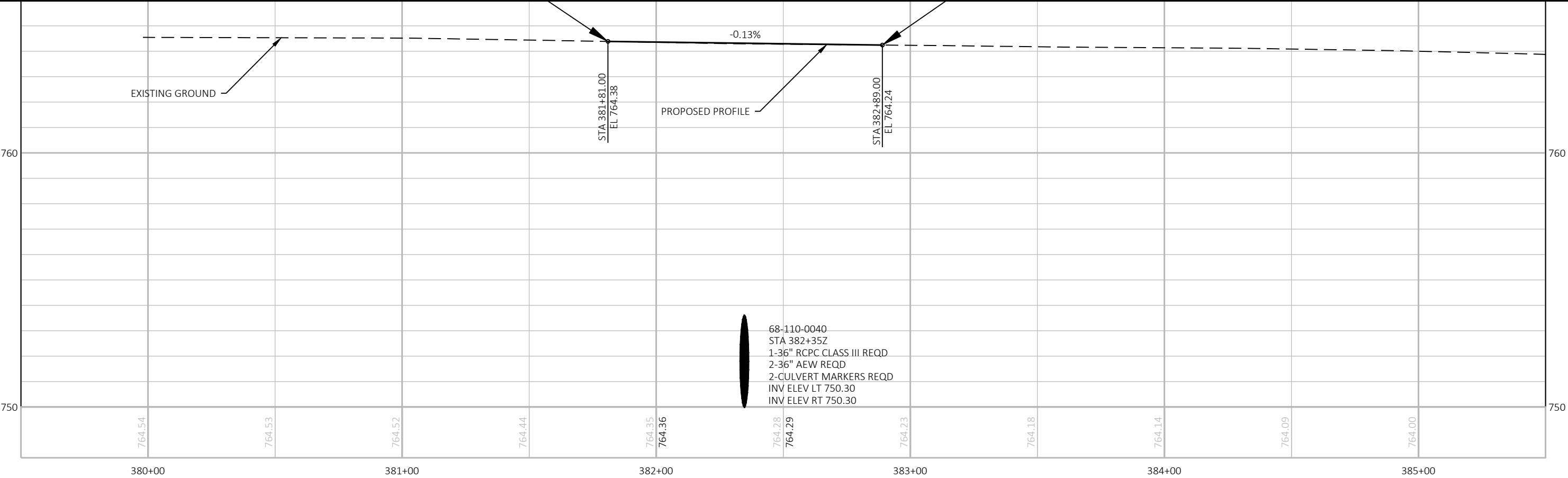
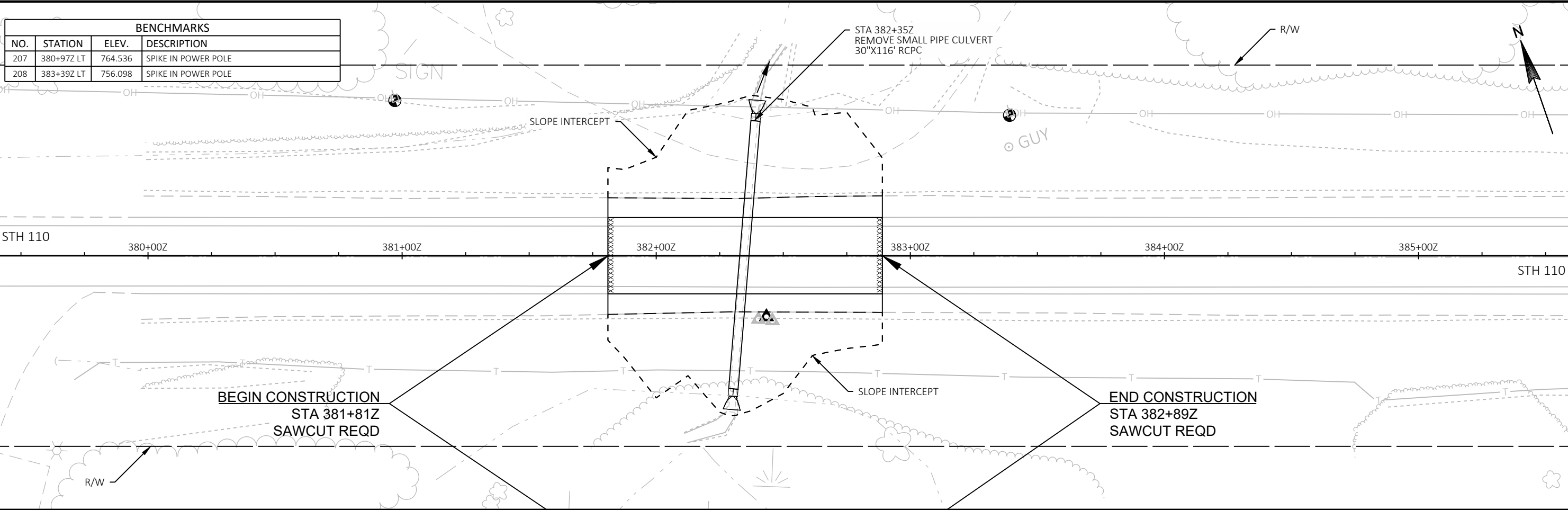
STA 361+70Z
REMOVE SMALL PIPE CULVERT
24"X28" CPCM

STA 363+50Z
68-110-0045
REMOVE SMALL PIPE CULVERT
24"X64' RPC



PROJECT NO: 1009-42-73	HWY: STH 110	COUNTY: WAUPACA	PLAN AND PROFILE: STH 110	SHEET 68	E
------------------------	--------------	-----------------	---------------------------	----------	---

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
207	380+97Z LT	764.536	SPIKE IN POWER POLE
208	383+39Z LT	756.098	SPIKE IN POWER POLE



PROJECT NO: 1009-42-73

HWY: STH 110

COUNTY: WAUPACA

PLAN AND PROFILE: STH 110

SHEET

69

E

FILE NAME : N:\PDS\C3D\10094210\SHEETS\PLAN\050104-PP.DWG
LAYOUT NAME - 04

PLOT DATE : 10/8/2018 6:52 AM

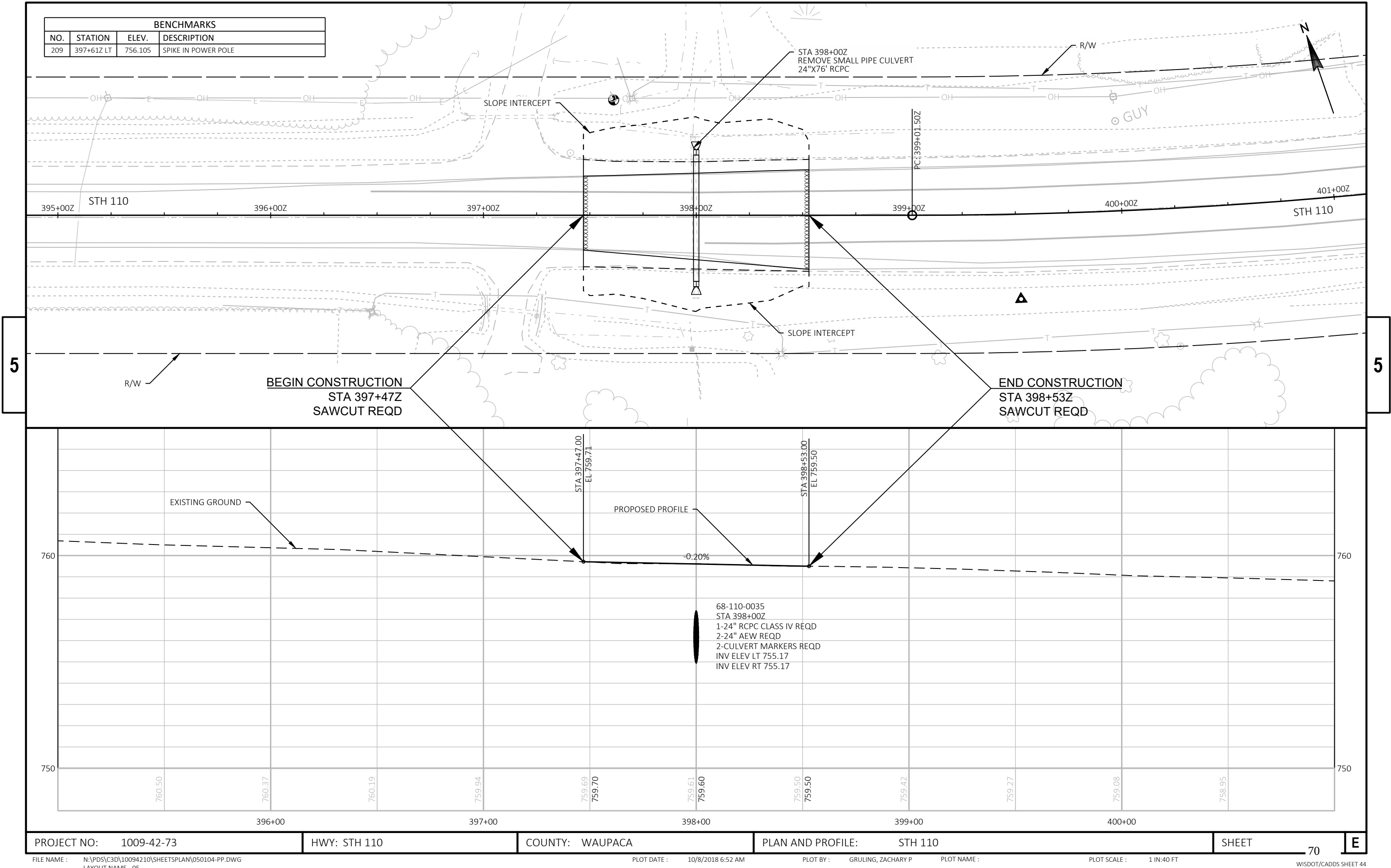
PLOT BY : GRULING, ZACHARY P

PLOT NAME :

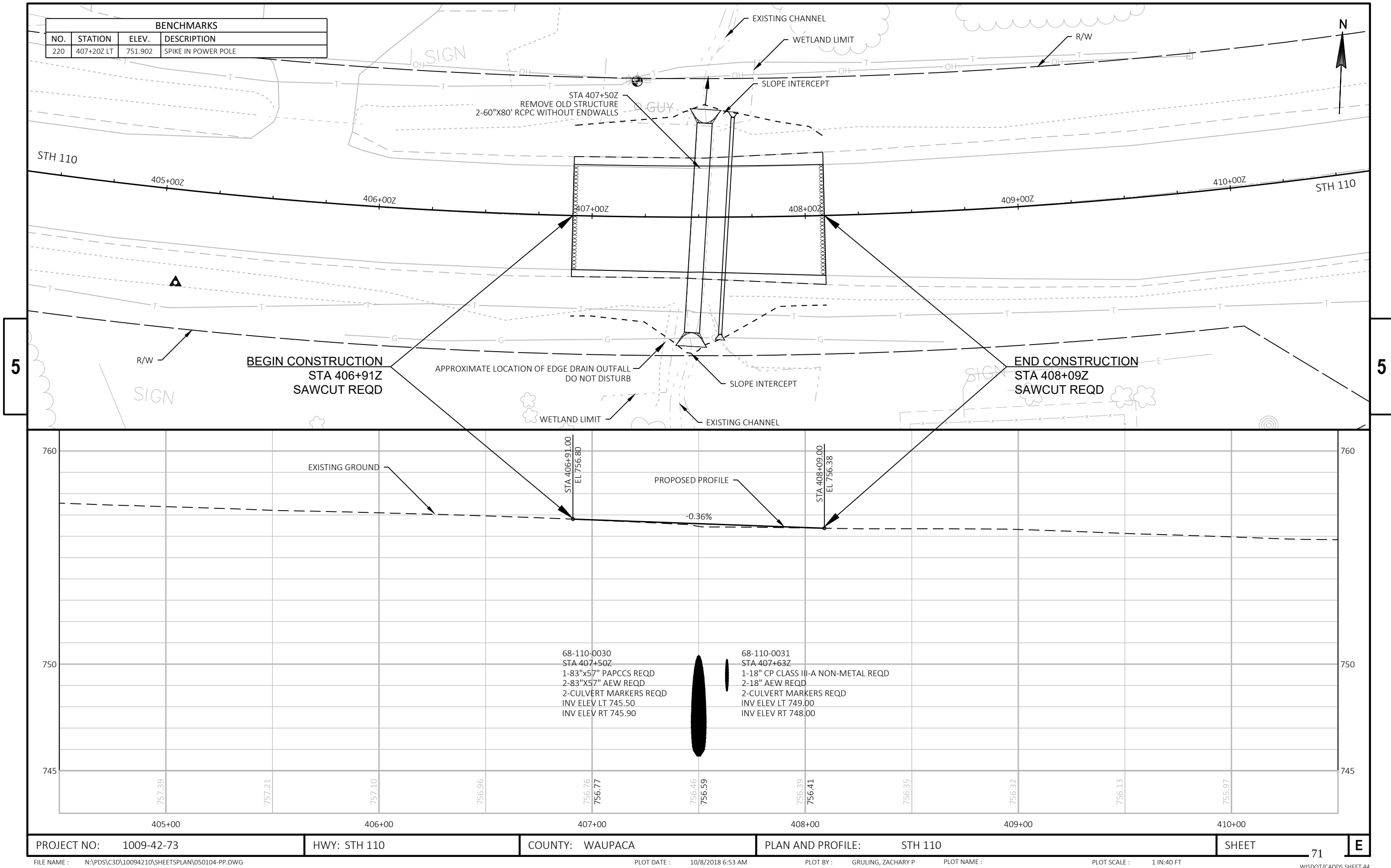
PLOT SCALE : 1 IN=40 FT

WISDOT/CADDSS SHEET 44

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
209	397+61Z LT	756.105	SPIKE IN POWER POLE

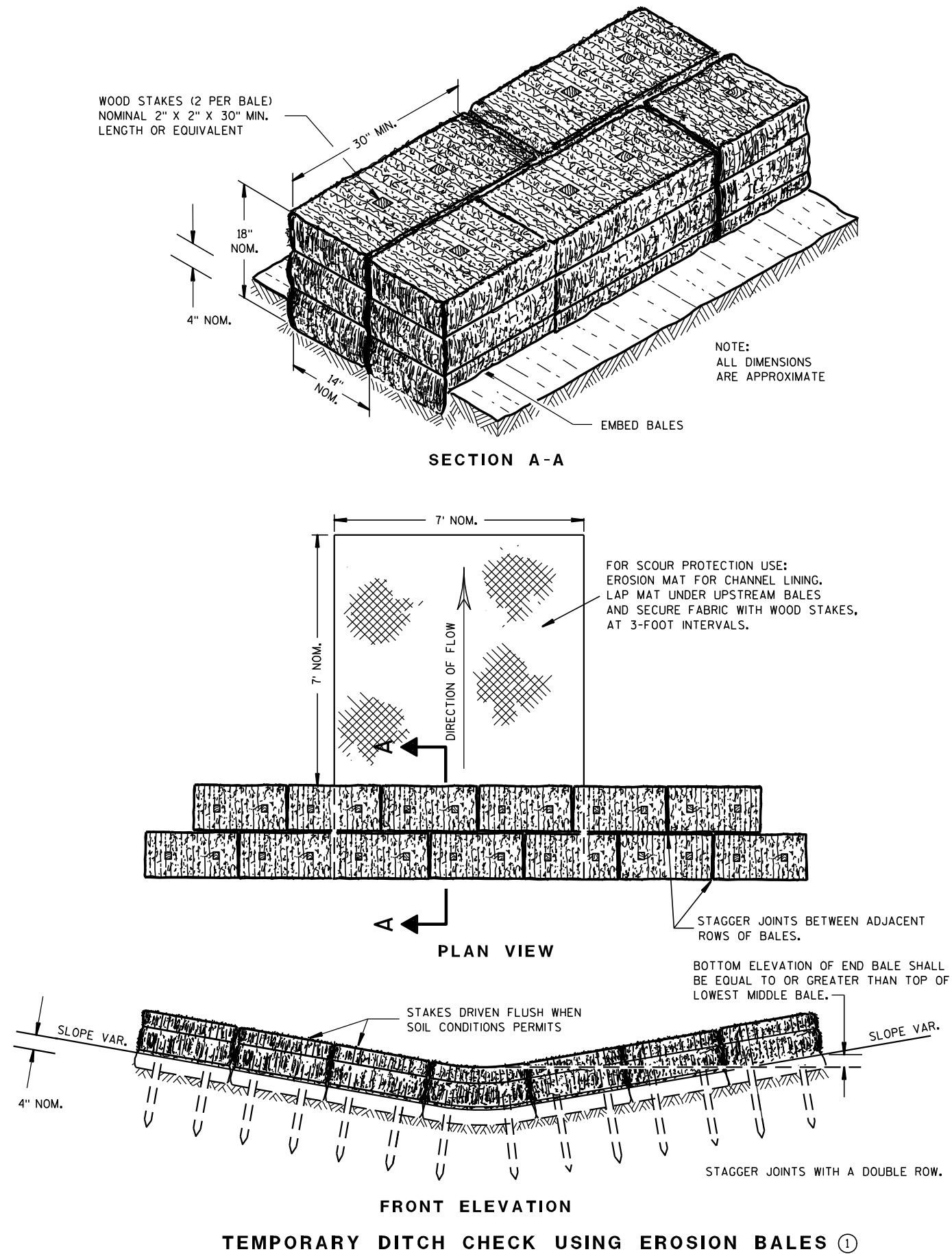


BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
220	407+20Z LT	751.902	SPIKE IN POWER POLE



Standard Detail Drawing List

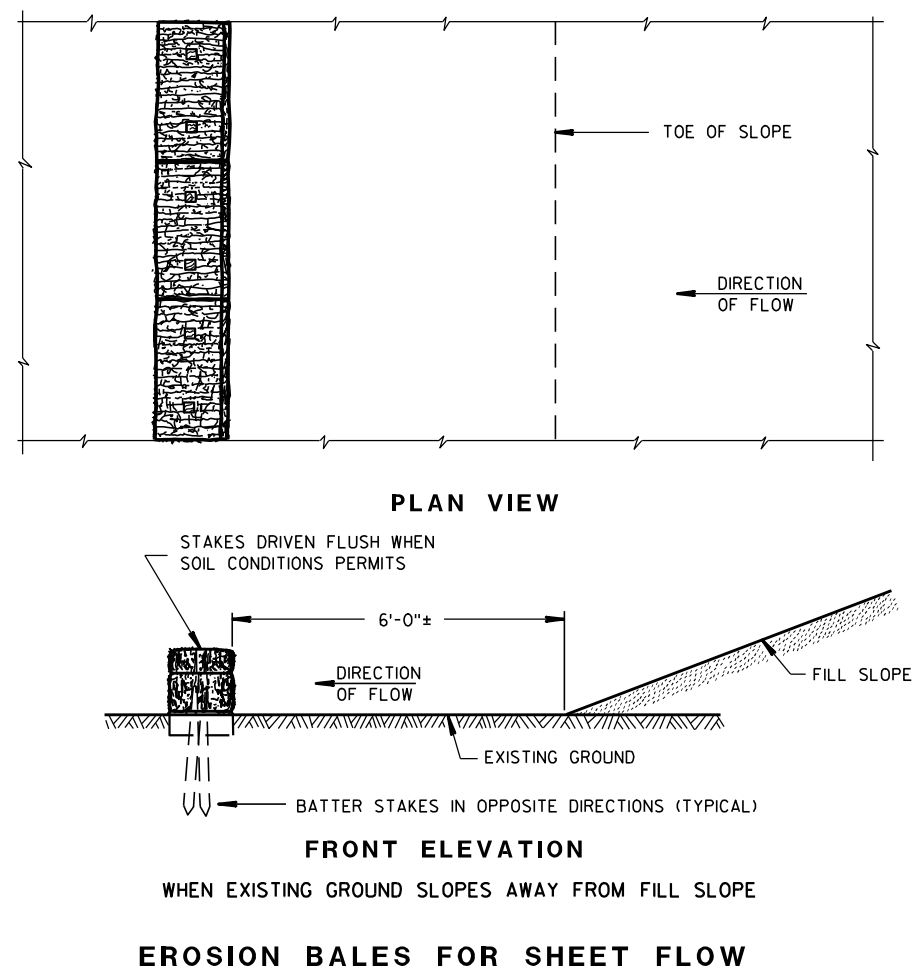
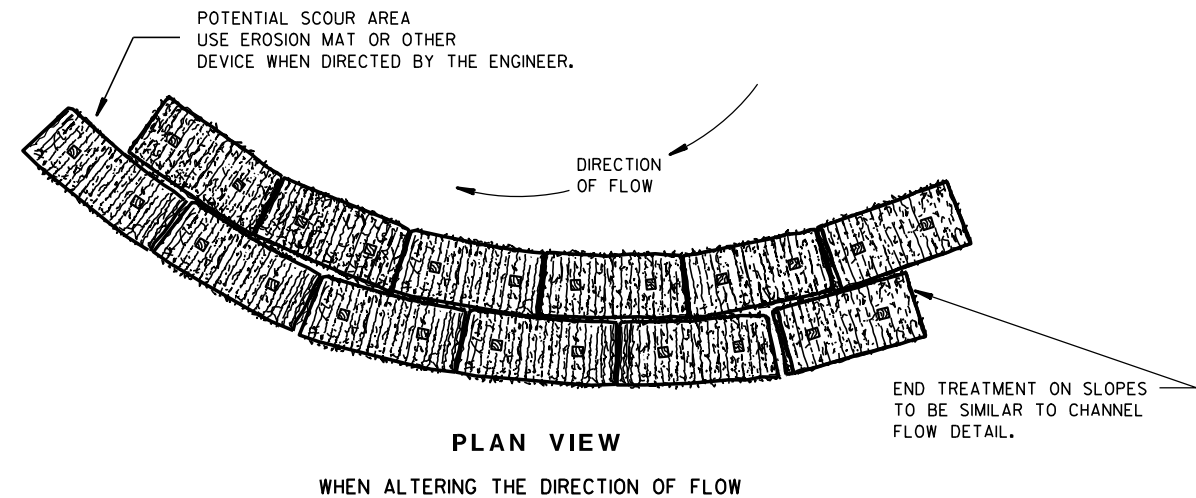
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F03-03	DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE FRAINS
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D06-03	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

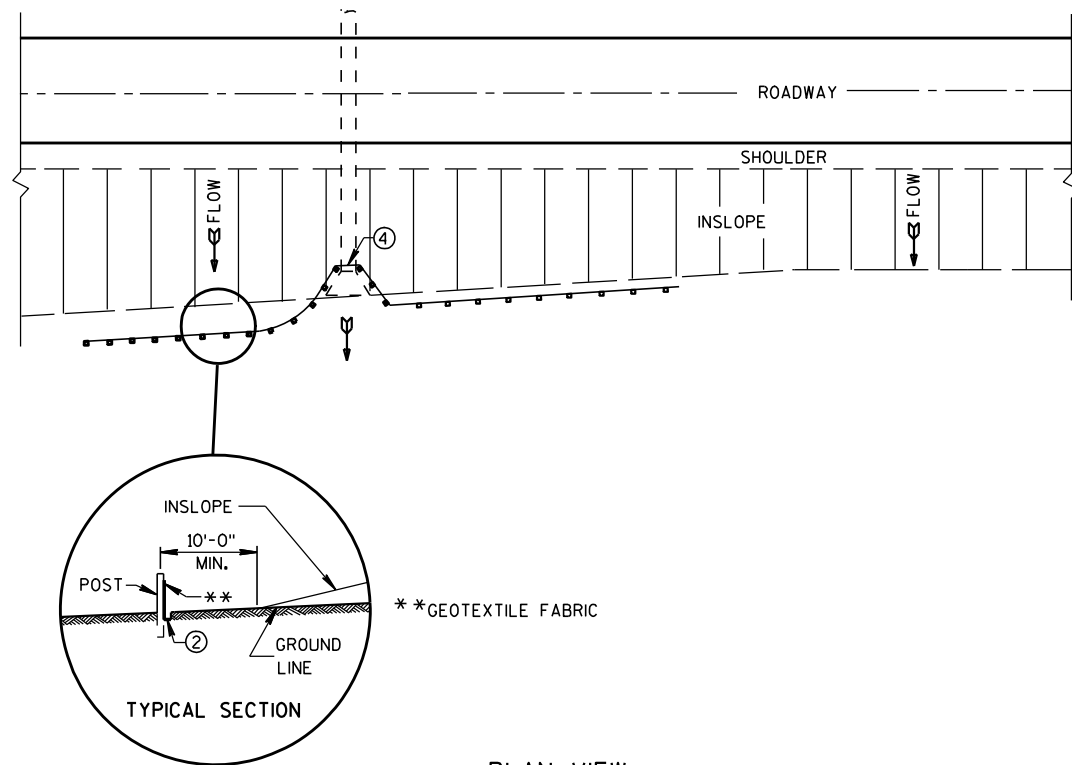
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

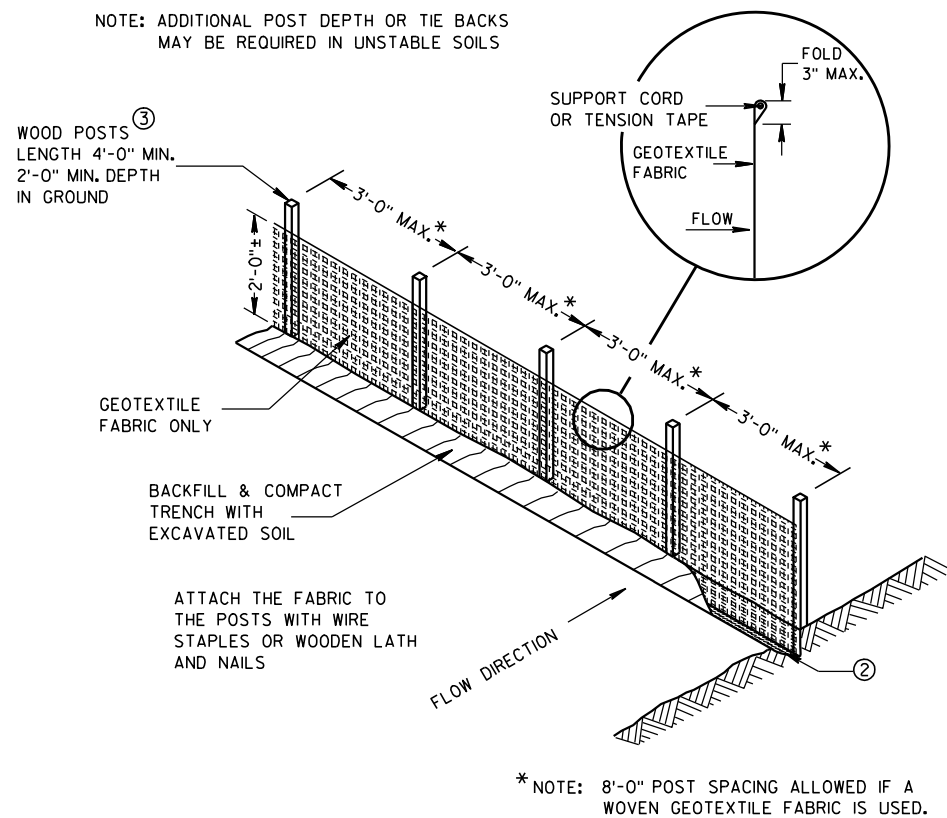
6/04/02
DATE/S/ Beth Connolly
CHIEF ROADWAY DEVELOPER

ENGINEER

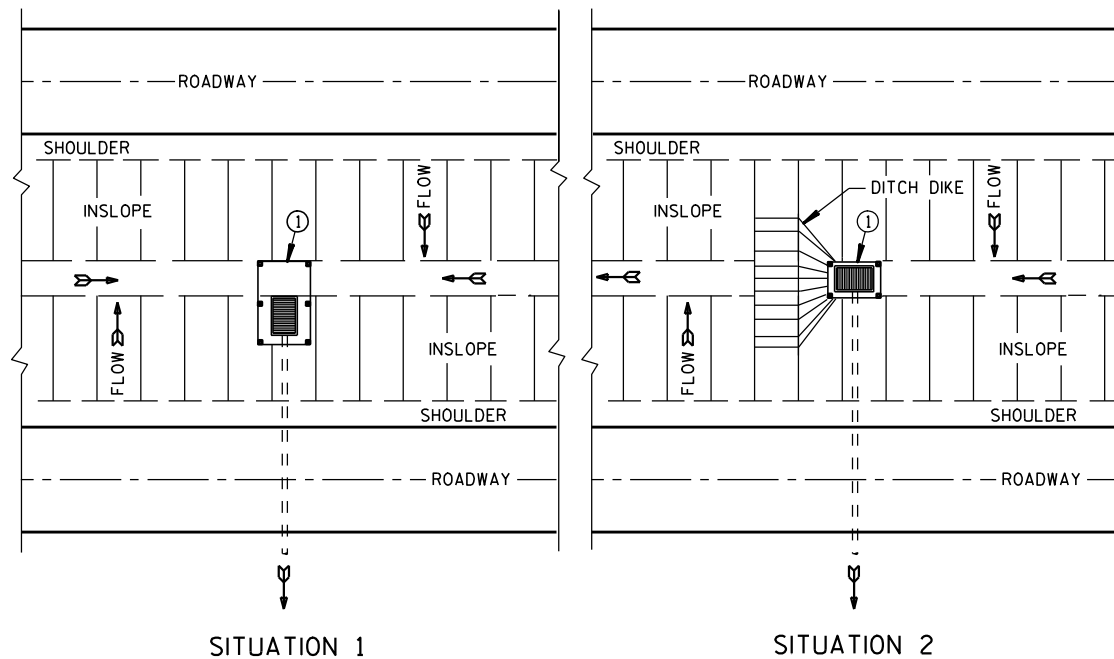
FHWA



TYPICAL APPLICATION OF SILT FENCE

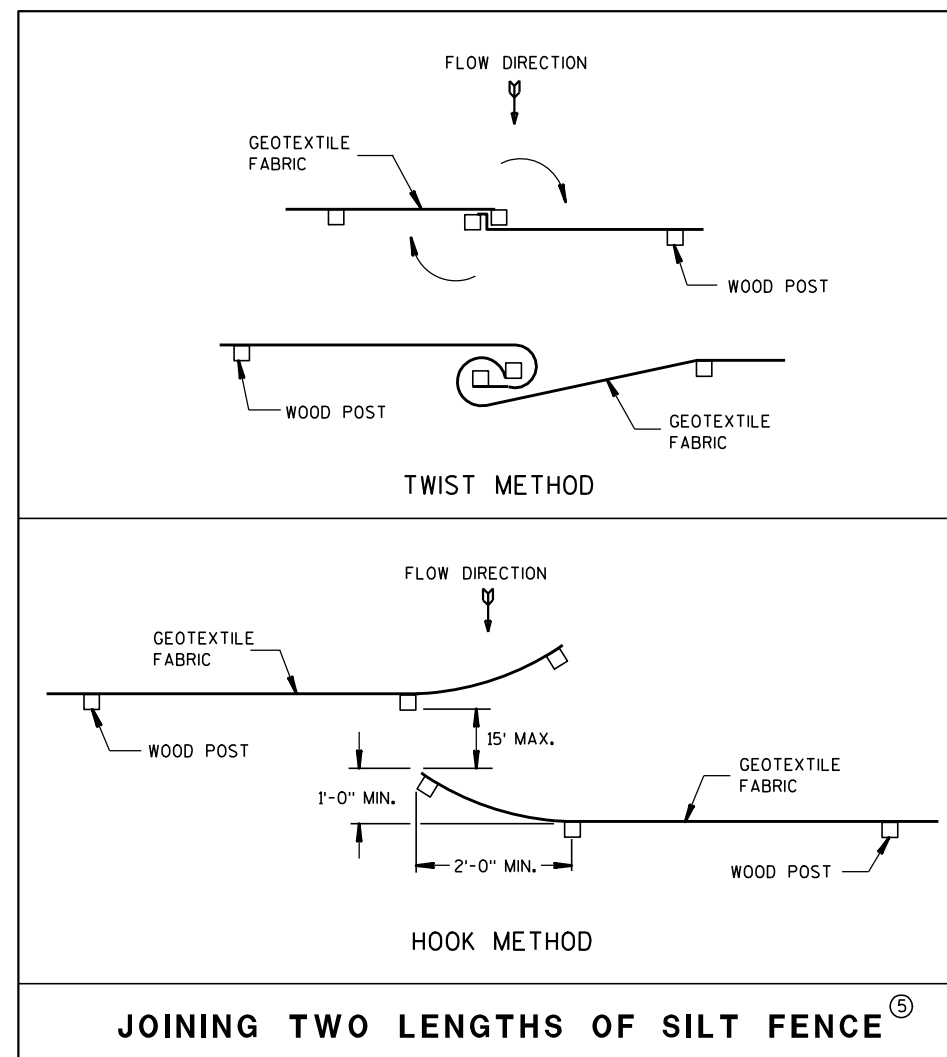


SILT FENCE



PLAN VIEW

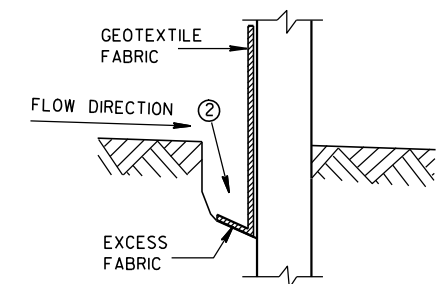
SILT FENCE AT MEDIAN SURFACE DRAINS



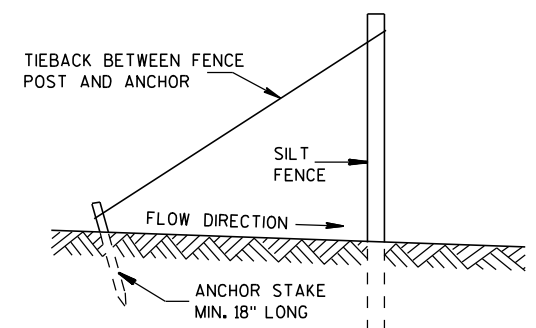
GENERAL NOTES

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 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05

DATE

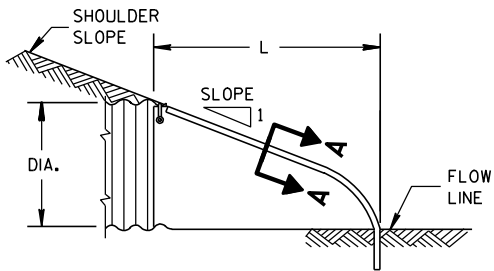
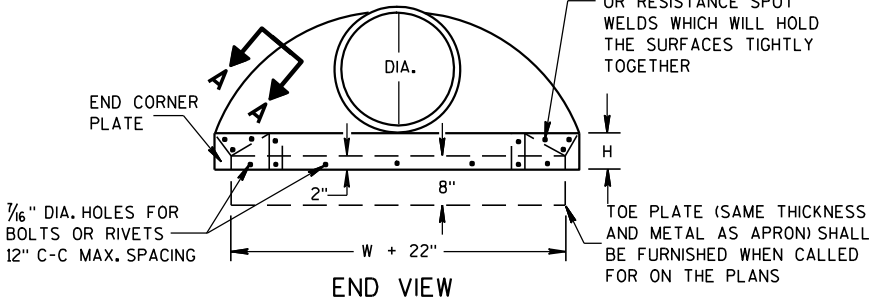
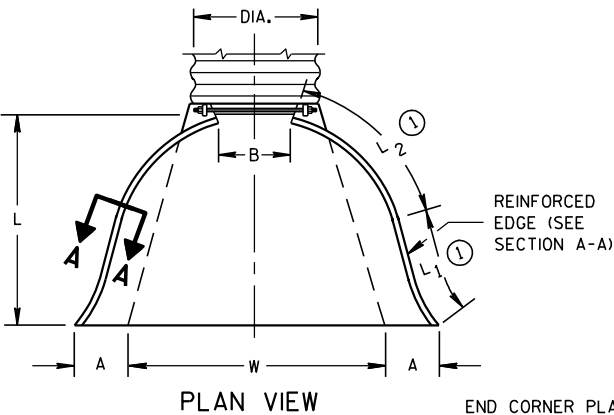
FHWA

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER

ENGINEER

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

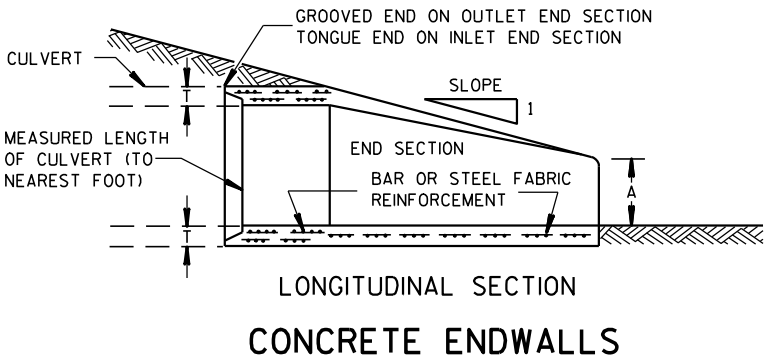
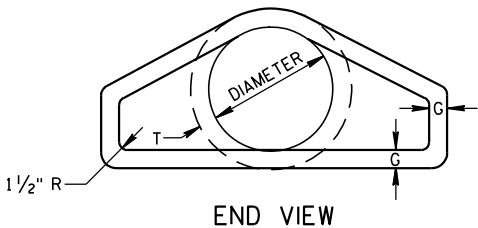
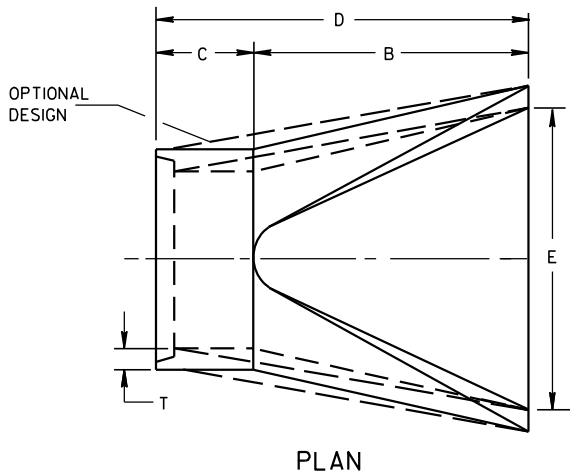
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

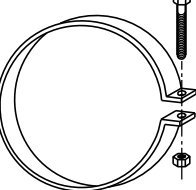
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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 1/2 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

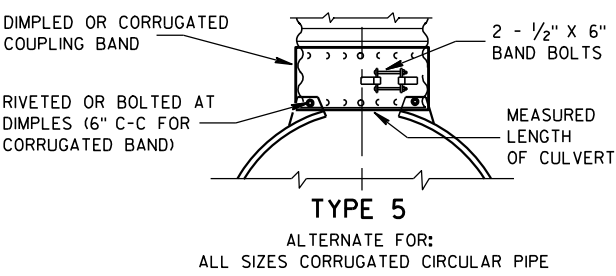
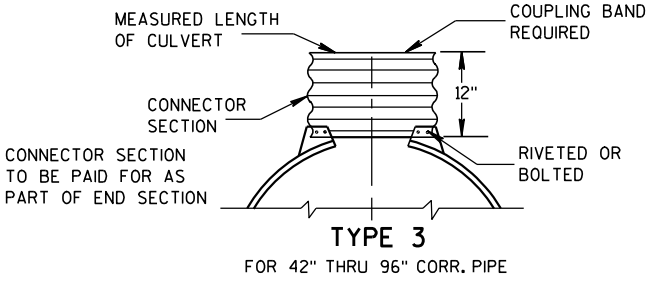
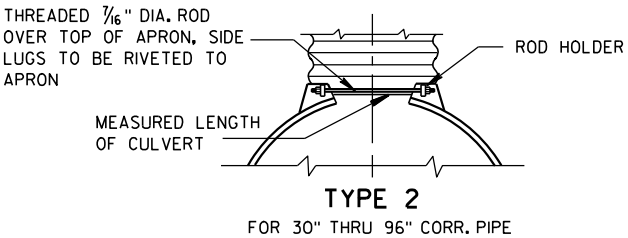
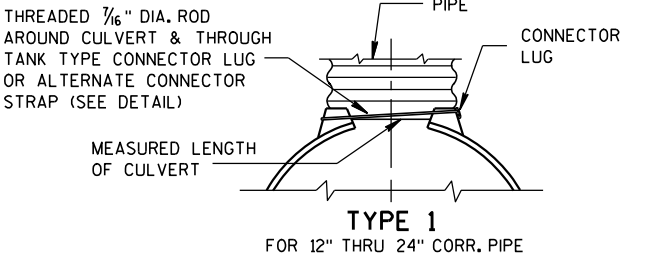


CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



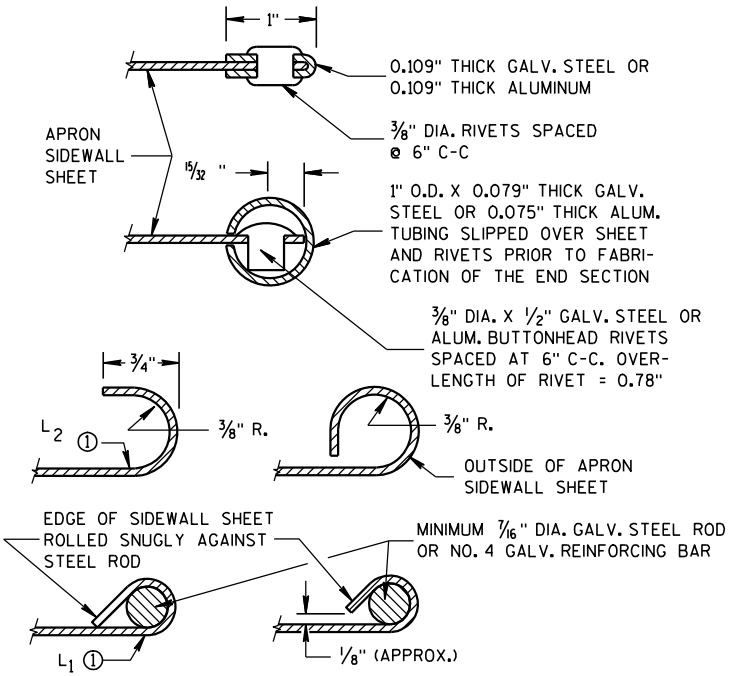
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

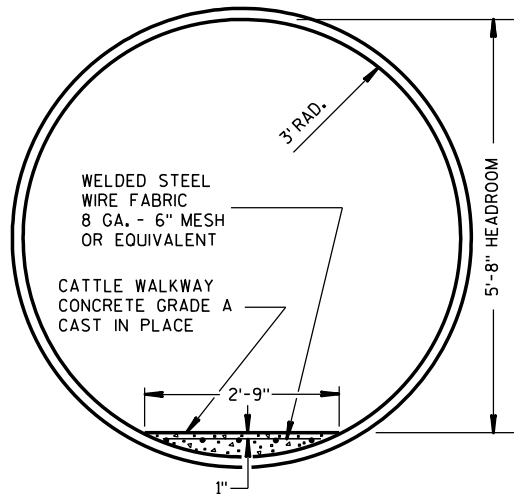
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

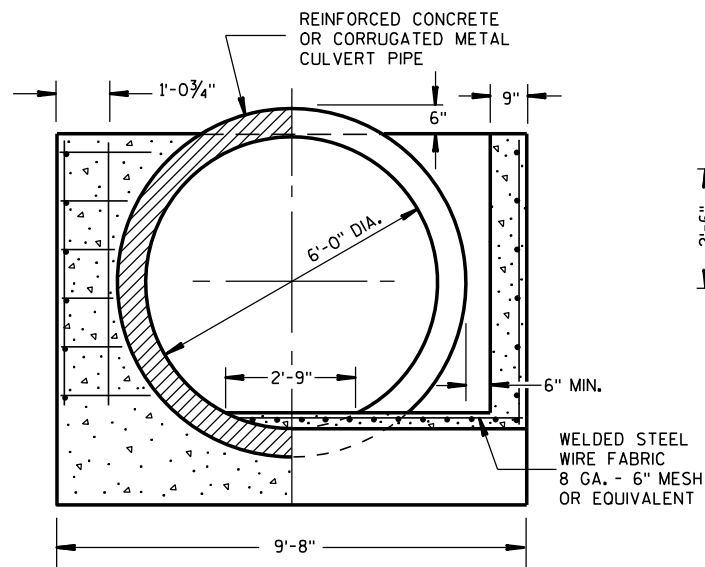
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

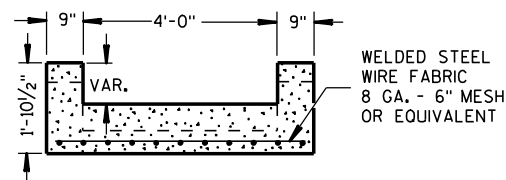
APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP	76	NEER
FHWA			



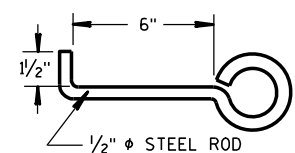
CROSS SECTION
CORRUGATED METAL PIPE
CATTLE PASS



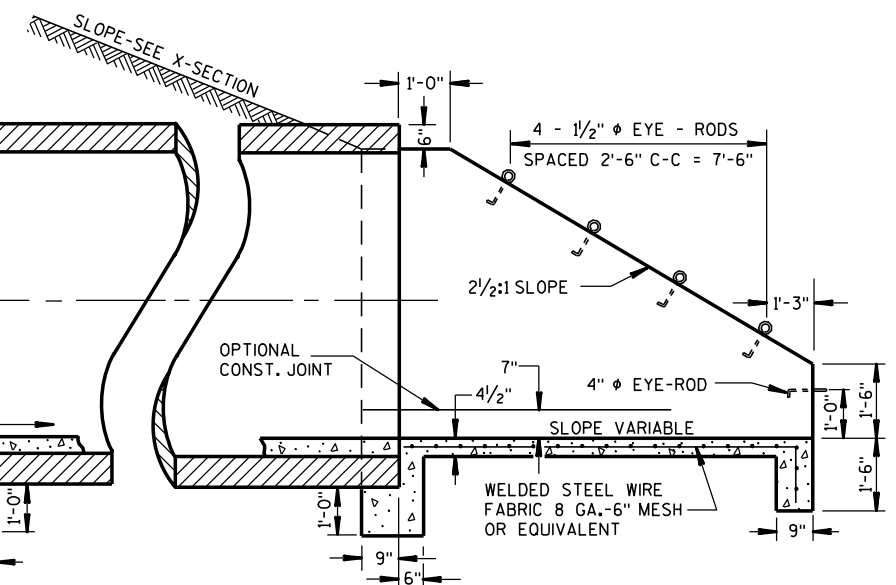
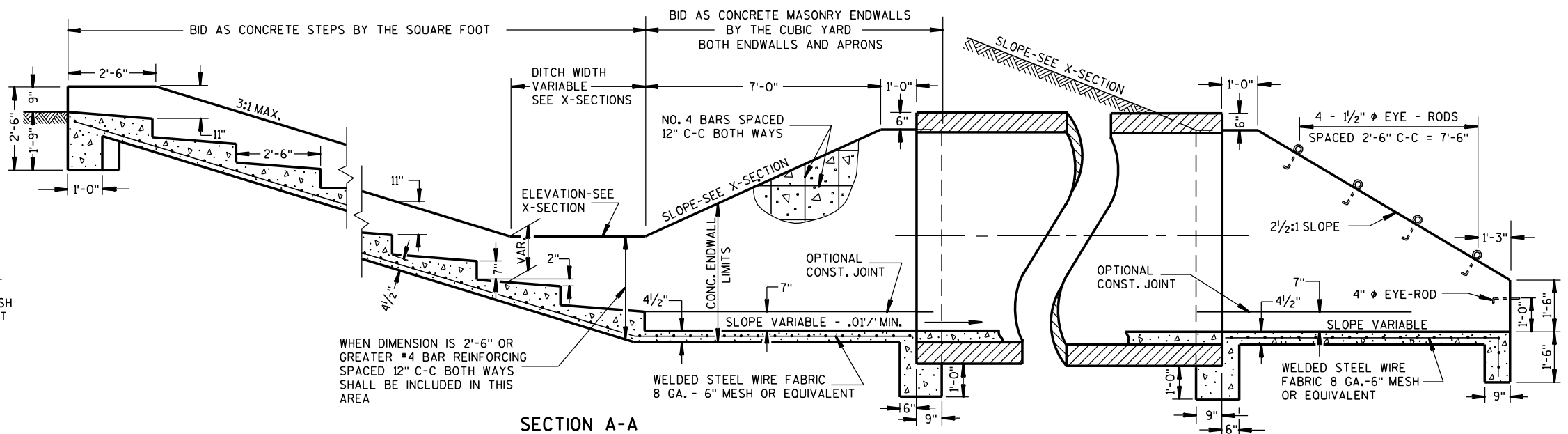
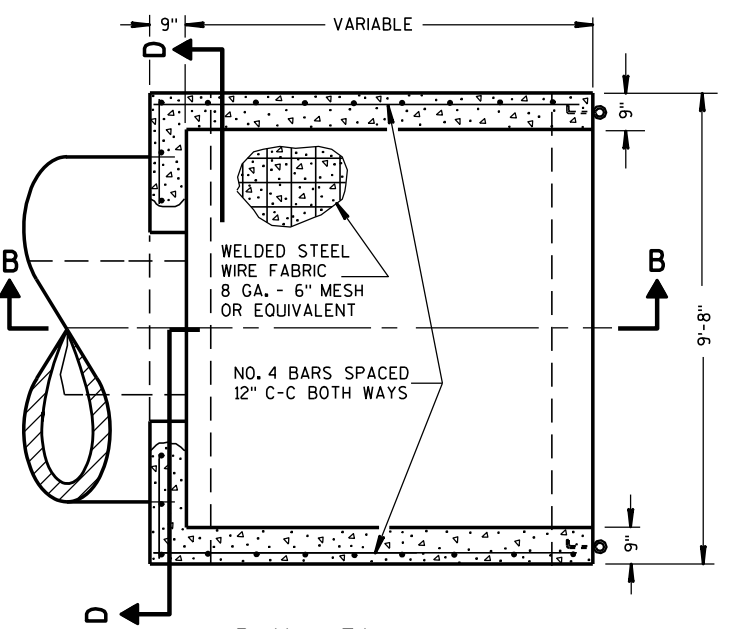
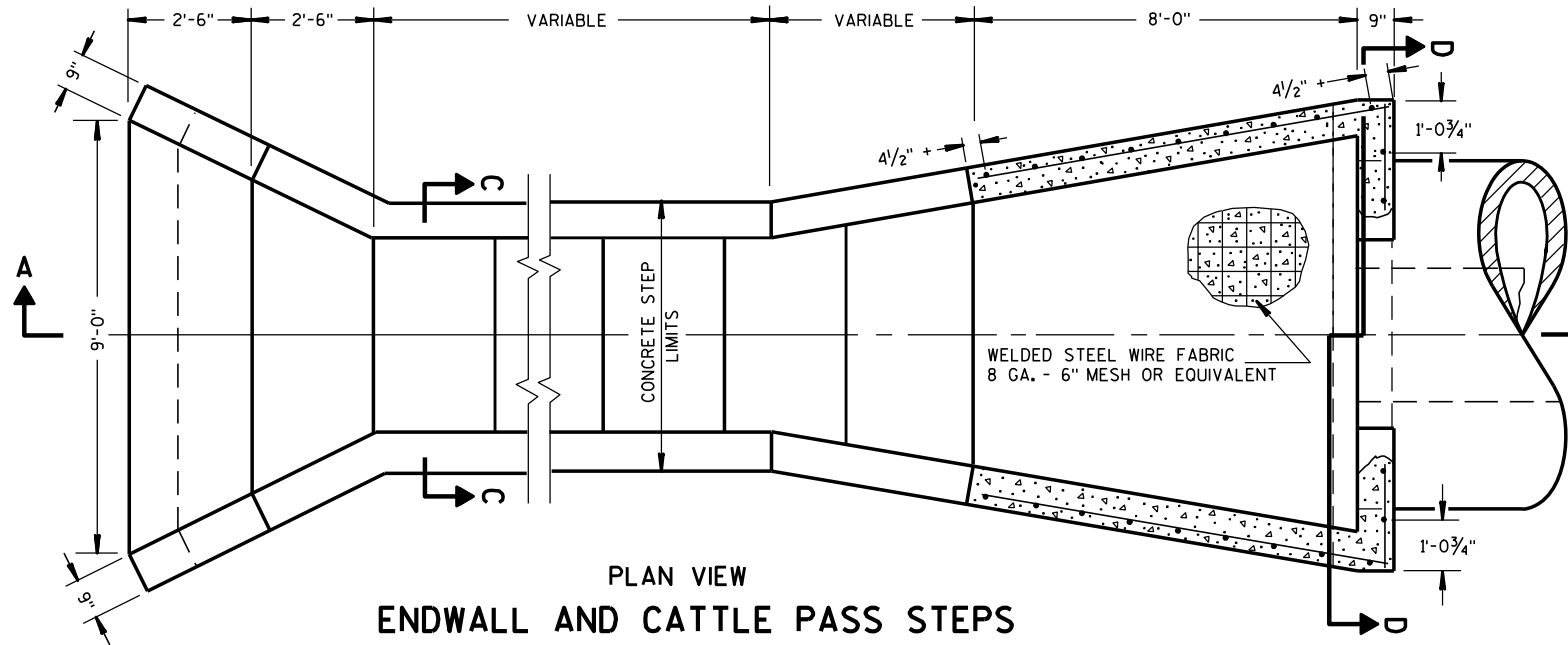
SECTION D-D



SECTION C-C



EYE-ROD ANCHOR



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.

ALL STEEL REINFORCEMENT IN ENDWALLS AND CATTLE PASS STEPS SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

ALL STEEL REINFORCEMENT OR FABRIC USED AS SHOWN ABOVE SHALL BE INCIDENTAL TO THE BID ITEM OF WHICH IT IS AN INTEGRAL PART.

EYE-RODS FOR FENCE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR AS AN INCIDENTAL TO THE BID ITEM OF CONCRETE MASONRY, ENDWALLS AND SHALL BE GALVANIZED.

CONCRETE USED FOR THE CATTLE WALKWAY WITHIN THE PIPE SHALL BE INCIDENTAL TO THE BID ITEM OF PIPE CATTLE PASS.

DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALL AND STEPS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

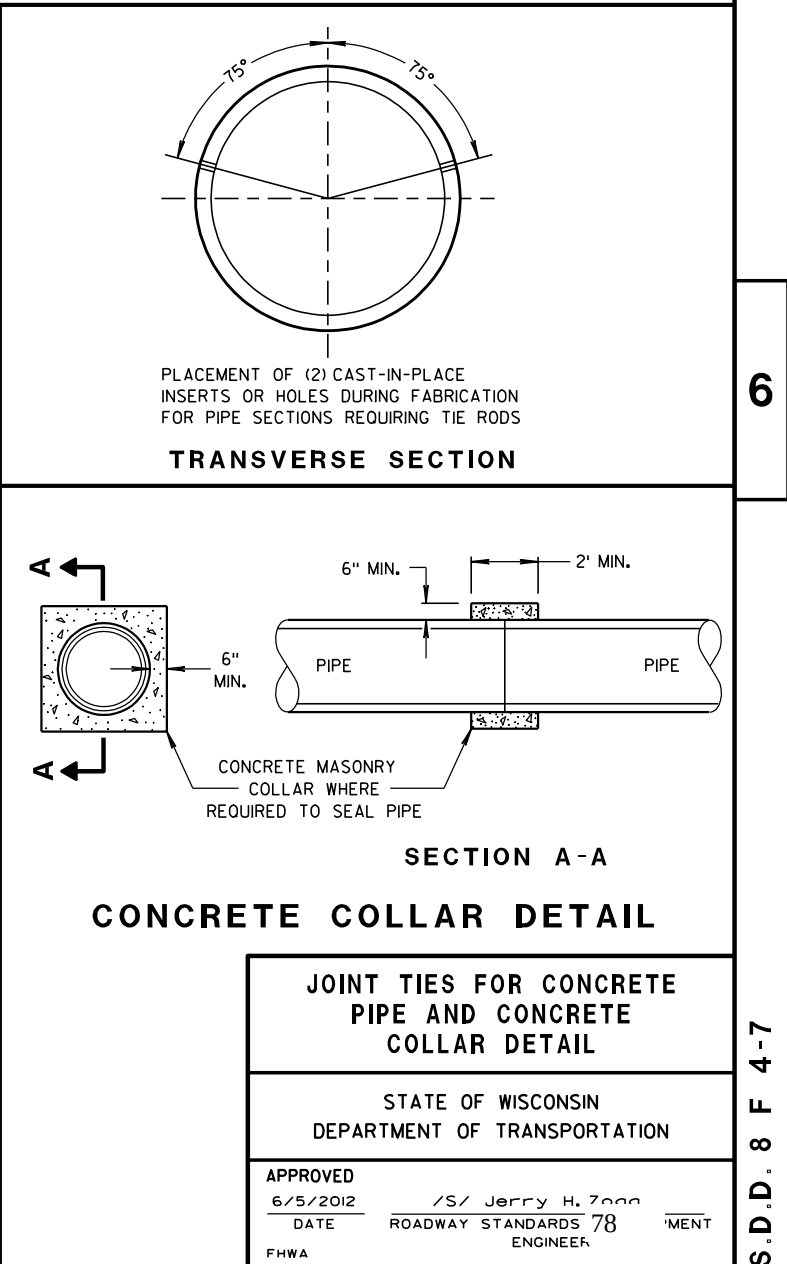
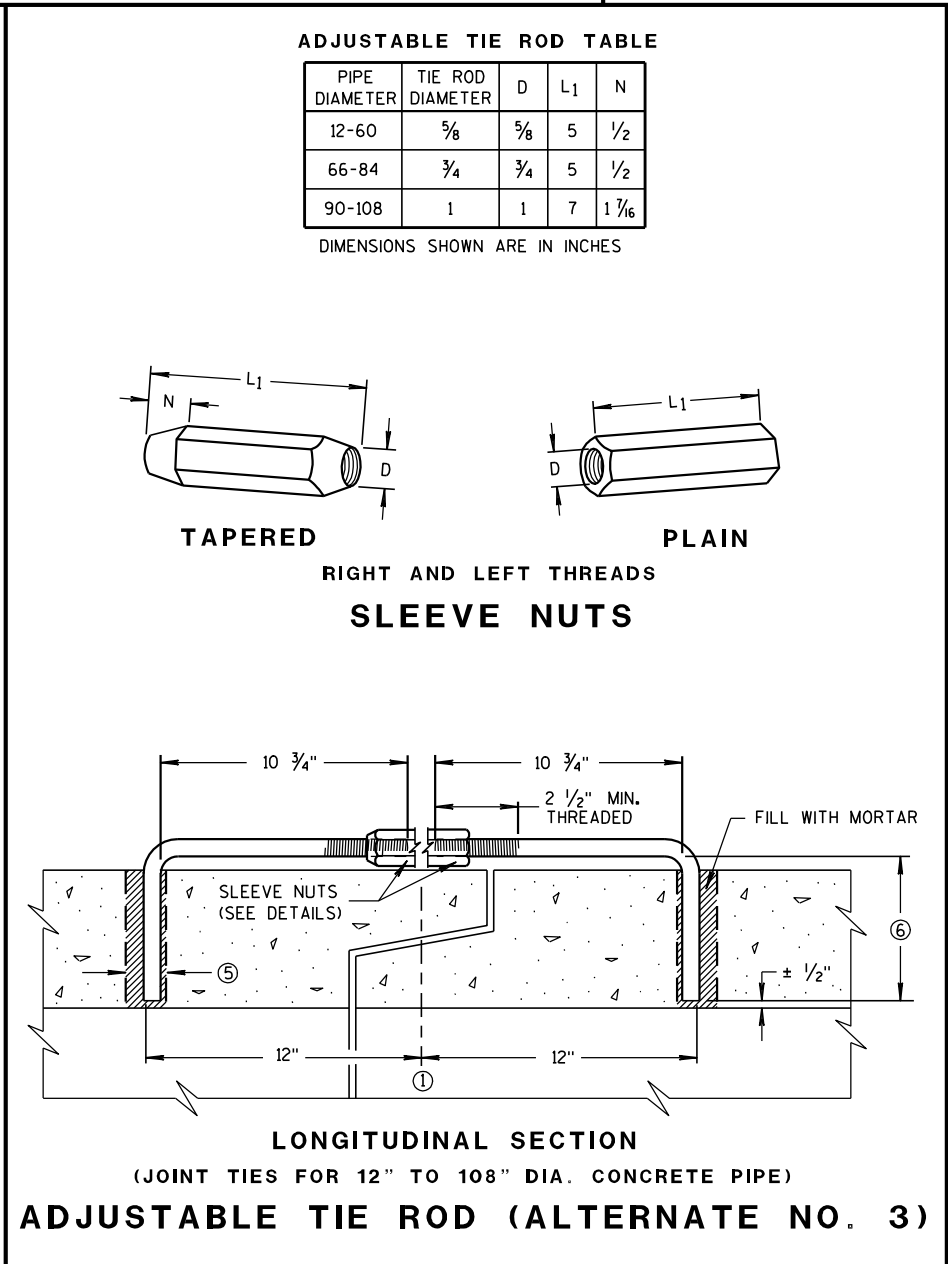
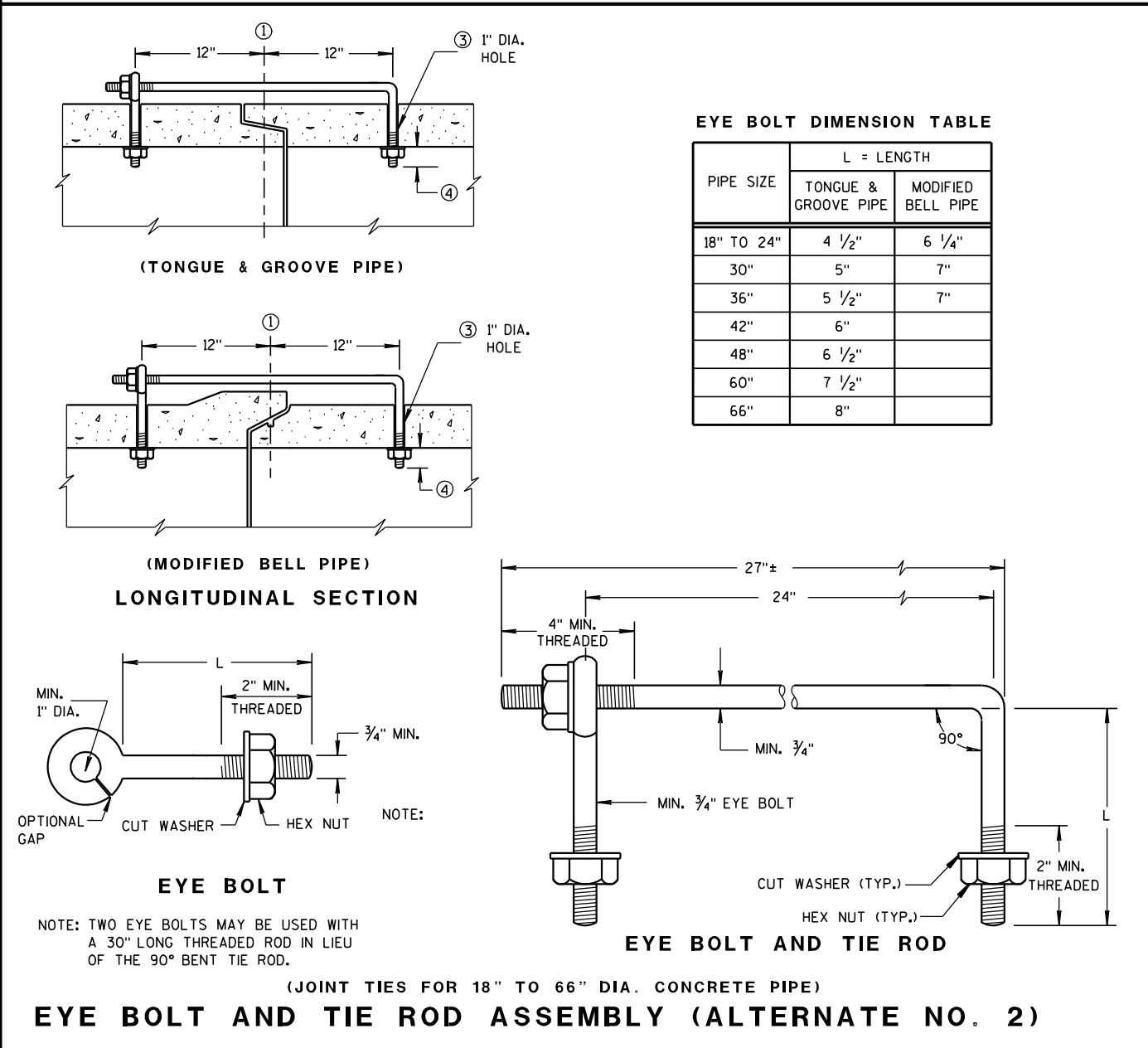
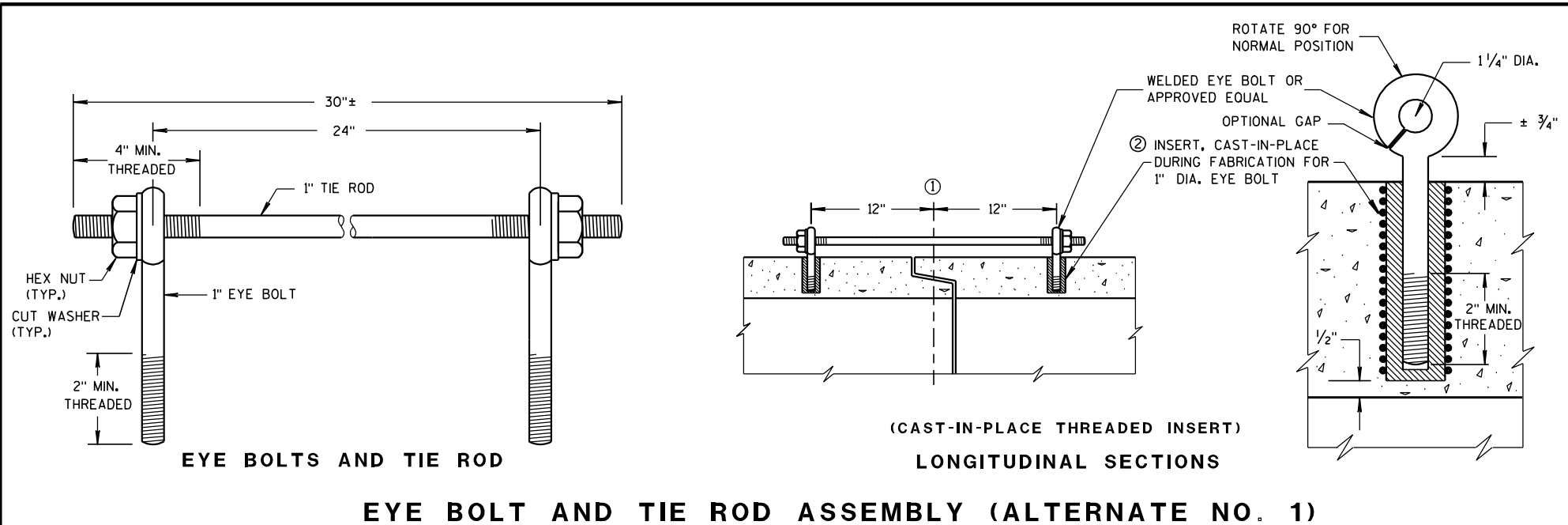
6/6/75

DATE

FHWA

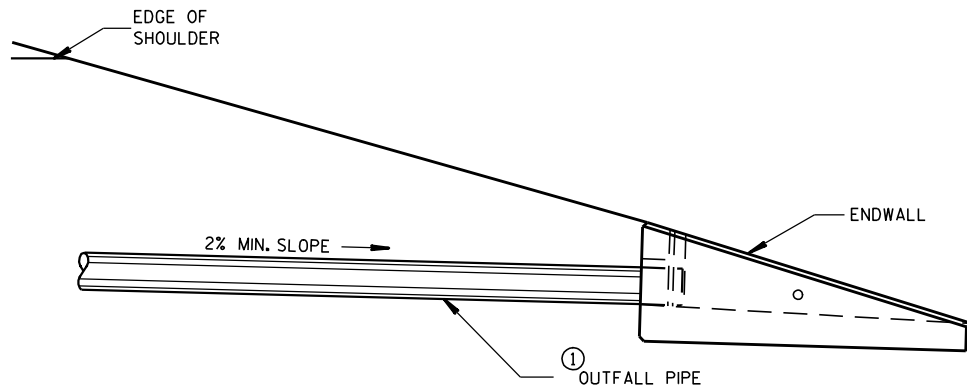
/S/ Harold F. ...
STATE DESIGN ENGINE 77

4WYS

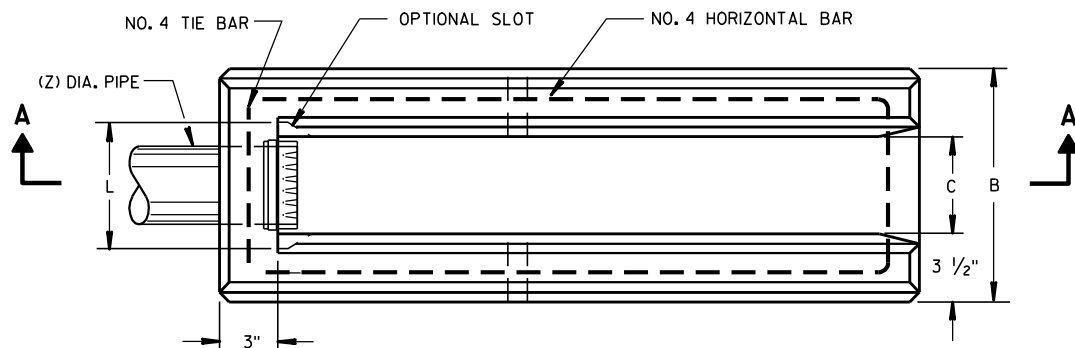


DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

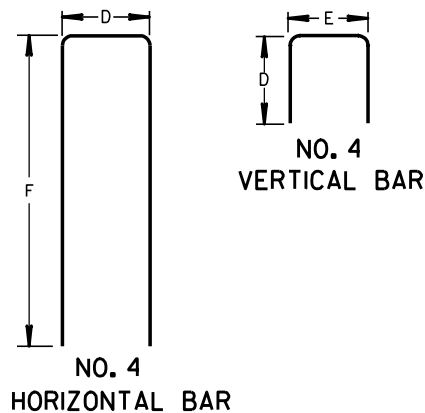
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



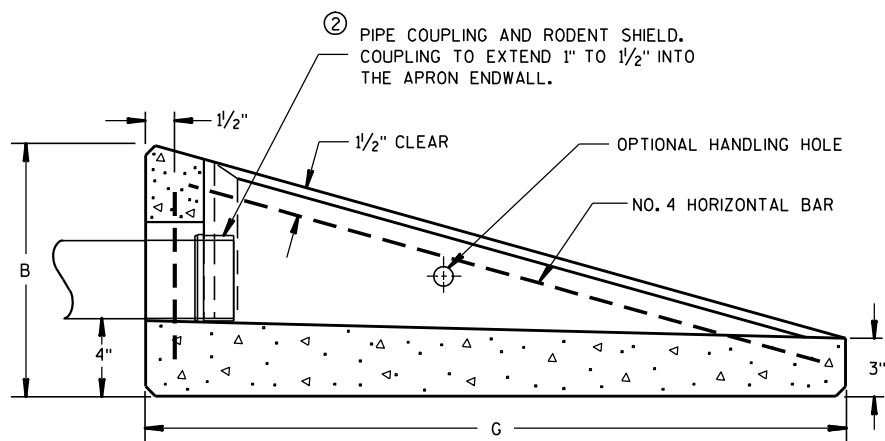
INSTALLATION DETAIL



PLAN VIEW

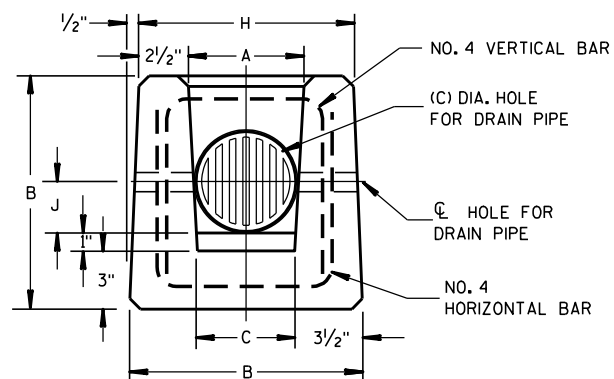


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

GENERAL NOTES

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

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

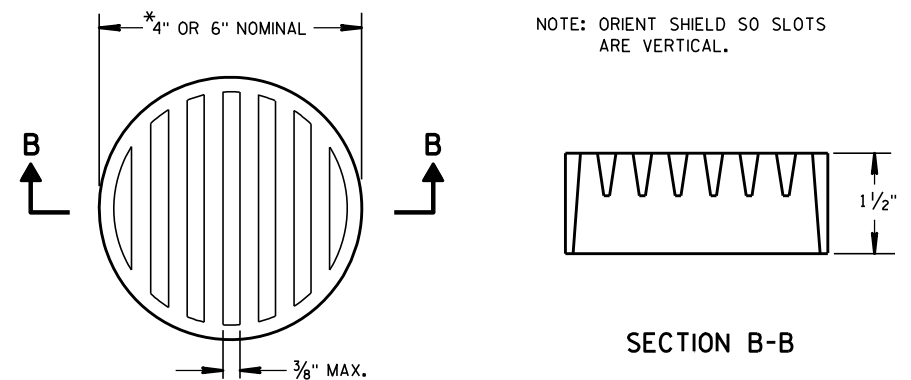
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

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

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

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

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



② RODENT SHIELD

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

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

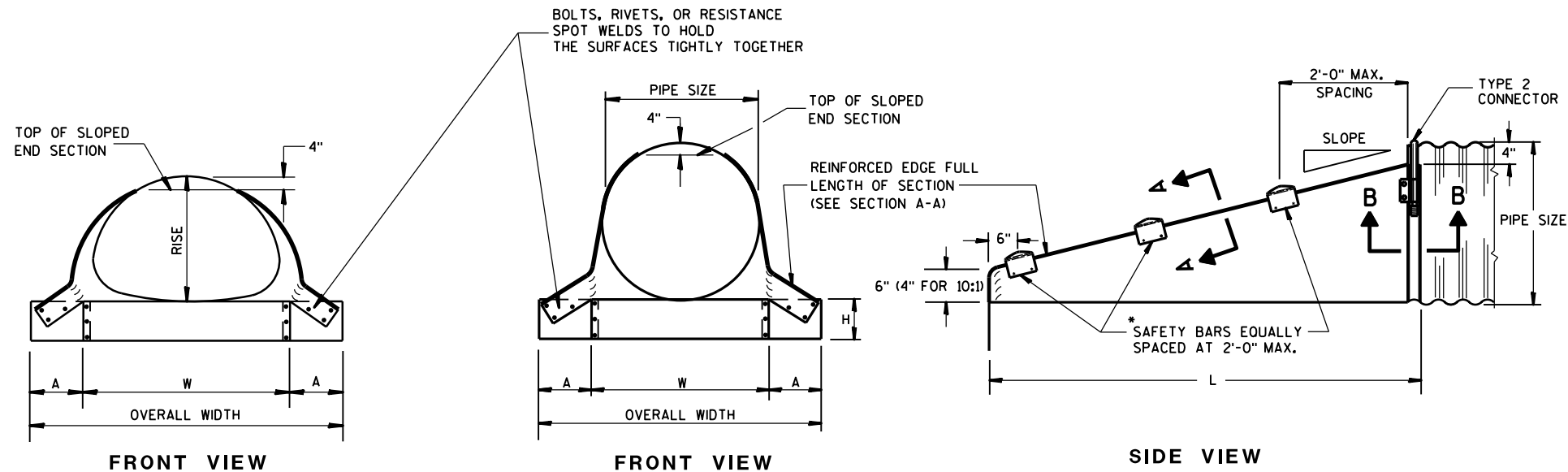
3/10/98

DATE

FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPER

INEER



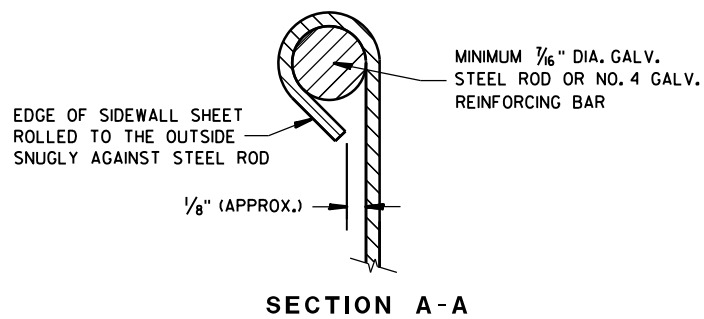
GENERAL NOTES

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.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

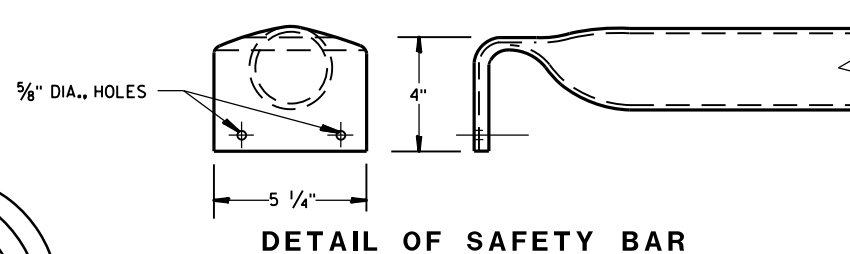
SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS					
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30	10:1	70
18	.064	8	6	24	40	4:1	32	6:1	48	10:1	100
21	.064	8	6	27	43	4:1	44	6:1	66	10:1	130
24	.064	8	6	30	46	4:1	56	6:1	84	10:1	160
30	.109	12	9	36	60	4:1	80	6:1	120	10:1	220
36	.109	12	9	42	66	4:1	104	6:1	156	10:1	280
42	.109	16	12	48	80	4:1	128	6:1	192	—	—
48	.109	16	12	54	86	4:1	152	6:1	228	—	—
54	.109	16	12	60	92	4:1	176	6:1	264	—	—
60	.109	16	12	66	98	4:1	200	6:1	300	—	—



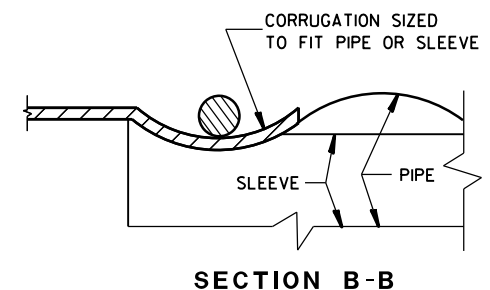
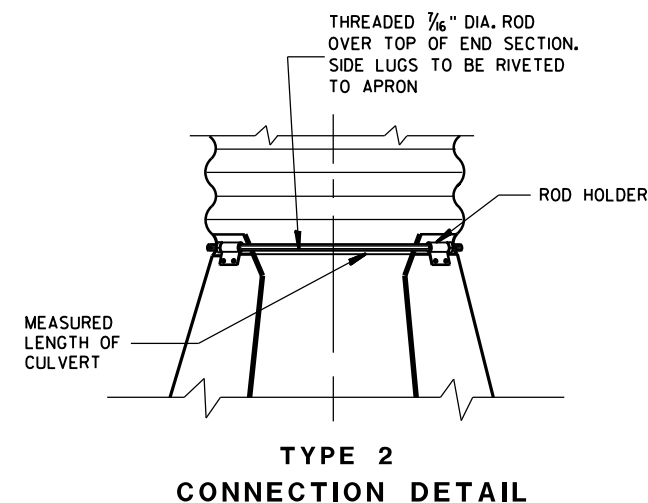
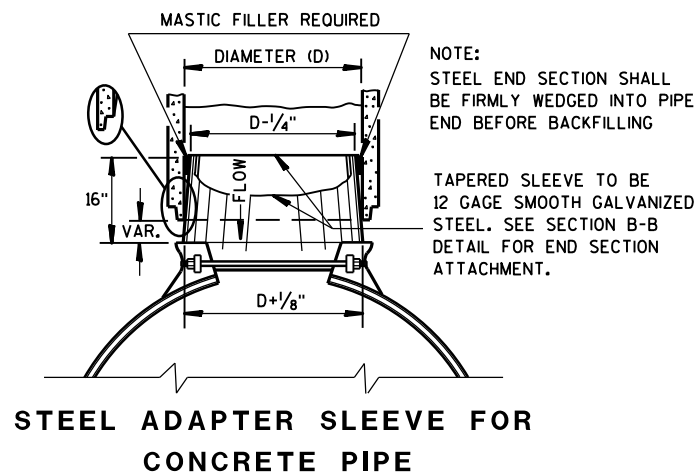
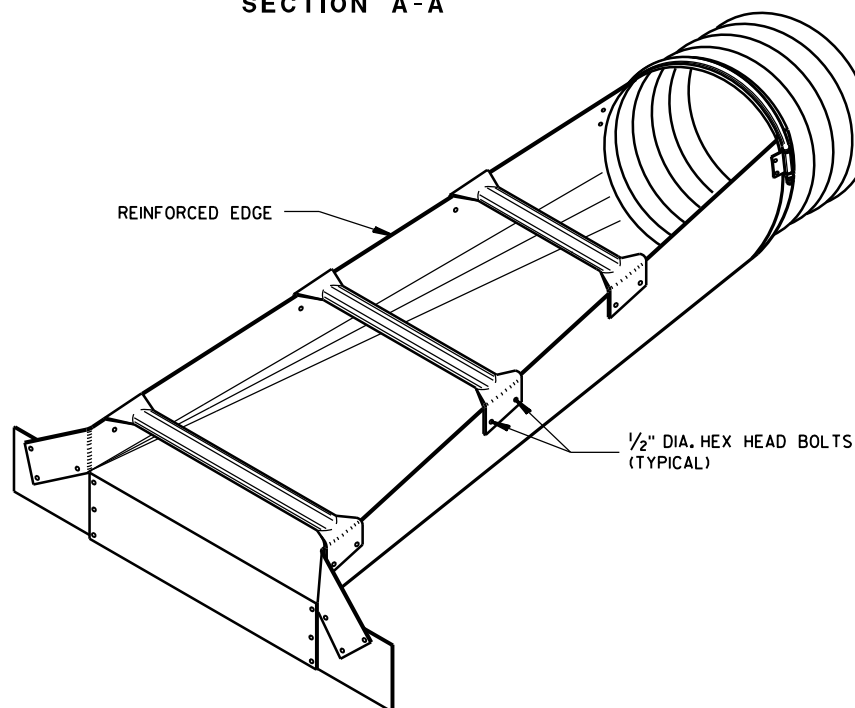
*NOTE:
THREE SAFETY BARS ARE SHOWN.
ACTUAL NUMBER OF BARS REQUIRED AT
A 2'-0" C-C MAX. SPACING WILL VARY
DEPENDING ON THE LENGTH OF THE
END SECTION.

3" GALVANIZED PIPE, FLATTEN
ENDS, THEN BEND OUTSIDE 4"
TO MATCH END SECTION SIDES.



STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches) ①	DIMENSIONS (Inches)				L DIMENSIONS					
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	13	.064 *	7	6	30	44	4:1	19	6:1	30	10:1 ②	70
18	21	15	.064 *	8	6	27	43	4:1	20	6:1	30	10:1	70
21	24	18	.064 *	8	6	30	46	4:1	32	6:1	48	10:1	100
24	28	20	.064 *	8	6	34	50	4:1	40	6:1	60	10:1	120
30	35	24	.079 *	12	9	41	65	4:1	56	6:1	84	10:1	160
36	42	29	.109 *	12	9	48	72	4:1	76	6:1	114	10:1	210
42	49	33	.109	16	12	55	87	4:1	92	6:1	138	—	—
48	57	38	.109	16	12	63	95	4:1	112	6:1	168	—	—
54	64	43	.109	16	12	70	102	4:1	132	6:1	198	—	—

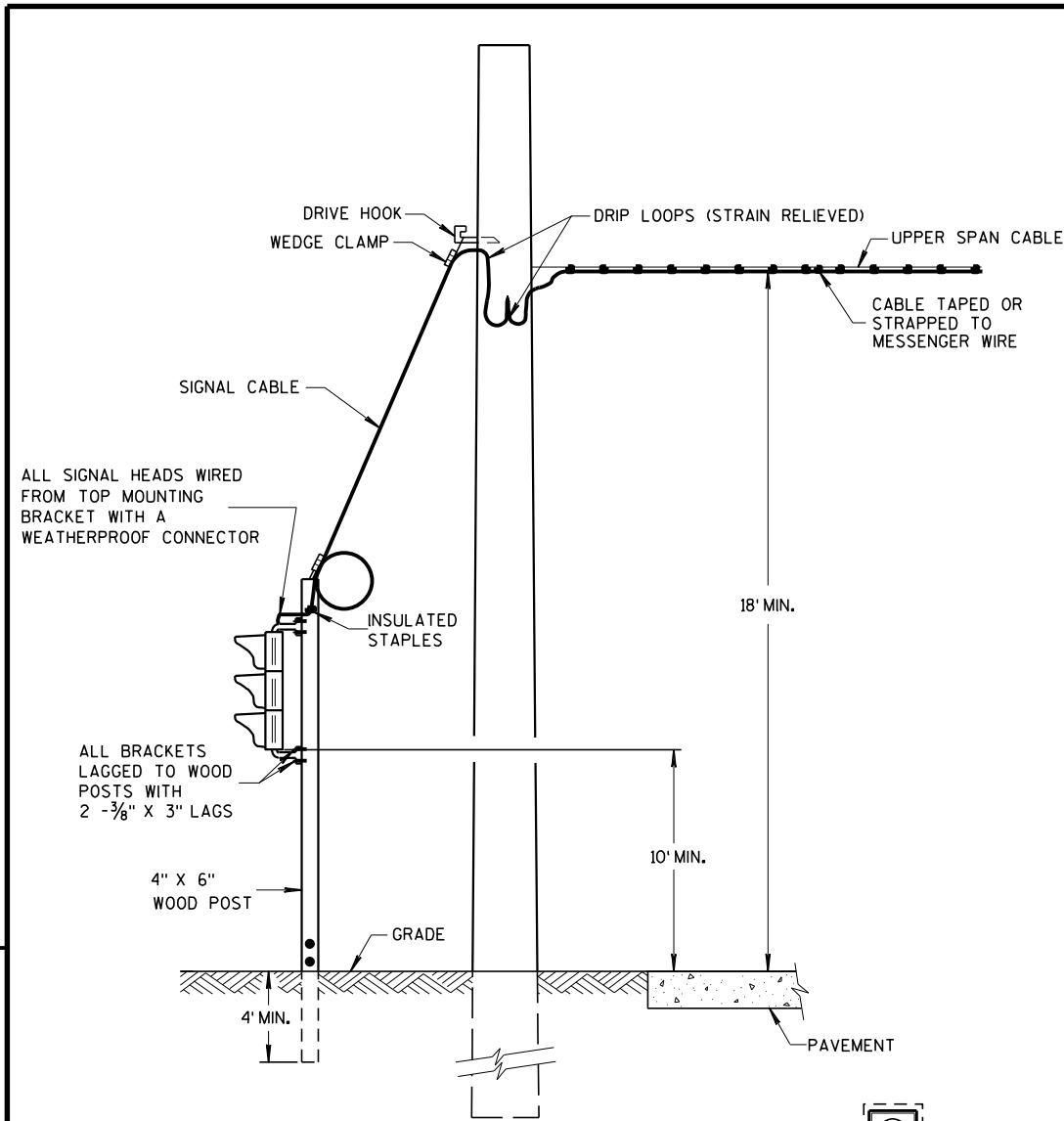
- ① * MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".
② ACTUAL SLOPE GREATER THAN 10:1.



STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

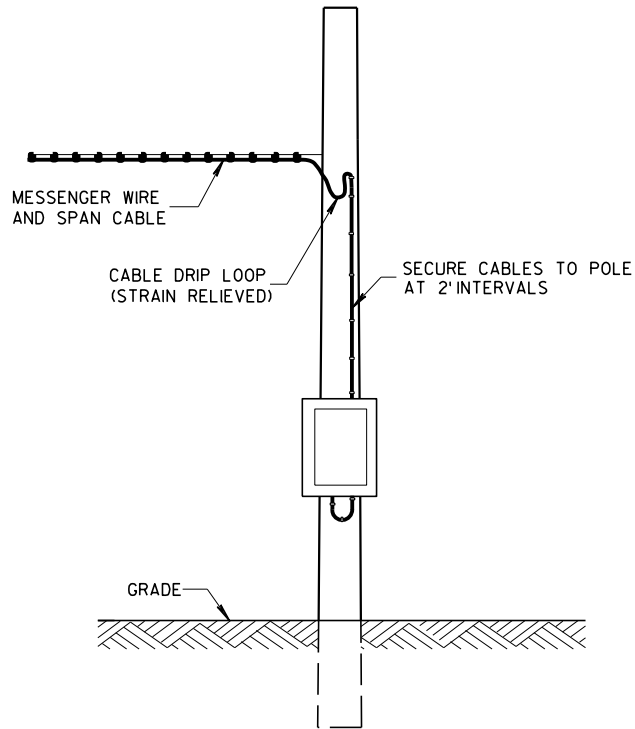
APPROVED
9/14/2012
DATE
/S/ Jerry H. Zoia
ROADWAY STANDARDS ENGINEER
80
NT
FHWA



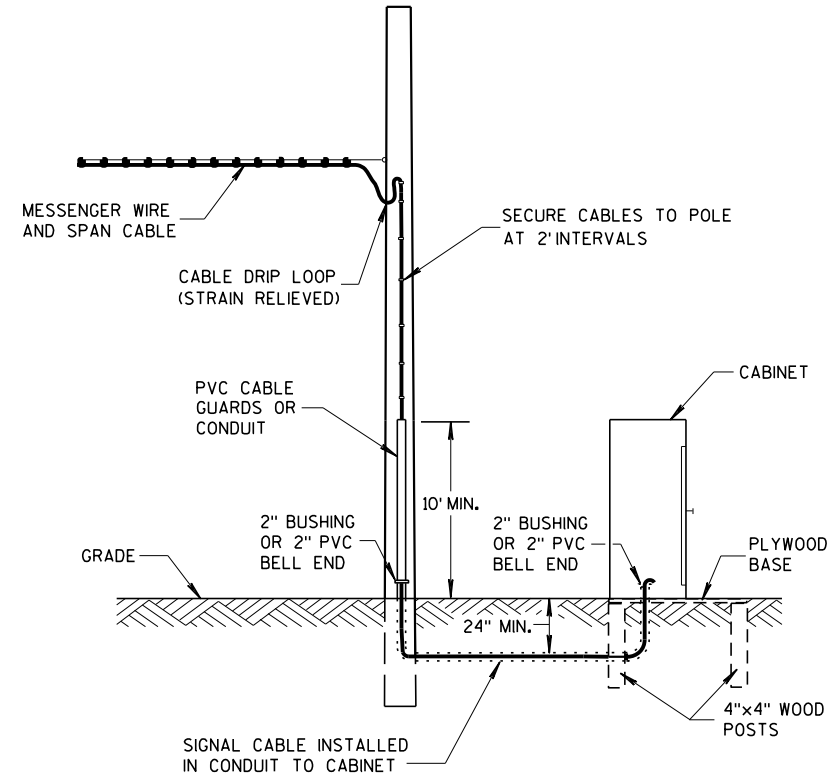
TYPICAL DROP TO TRAFFIC SIGNAL FACE

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

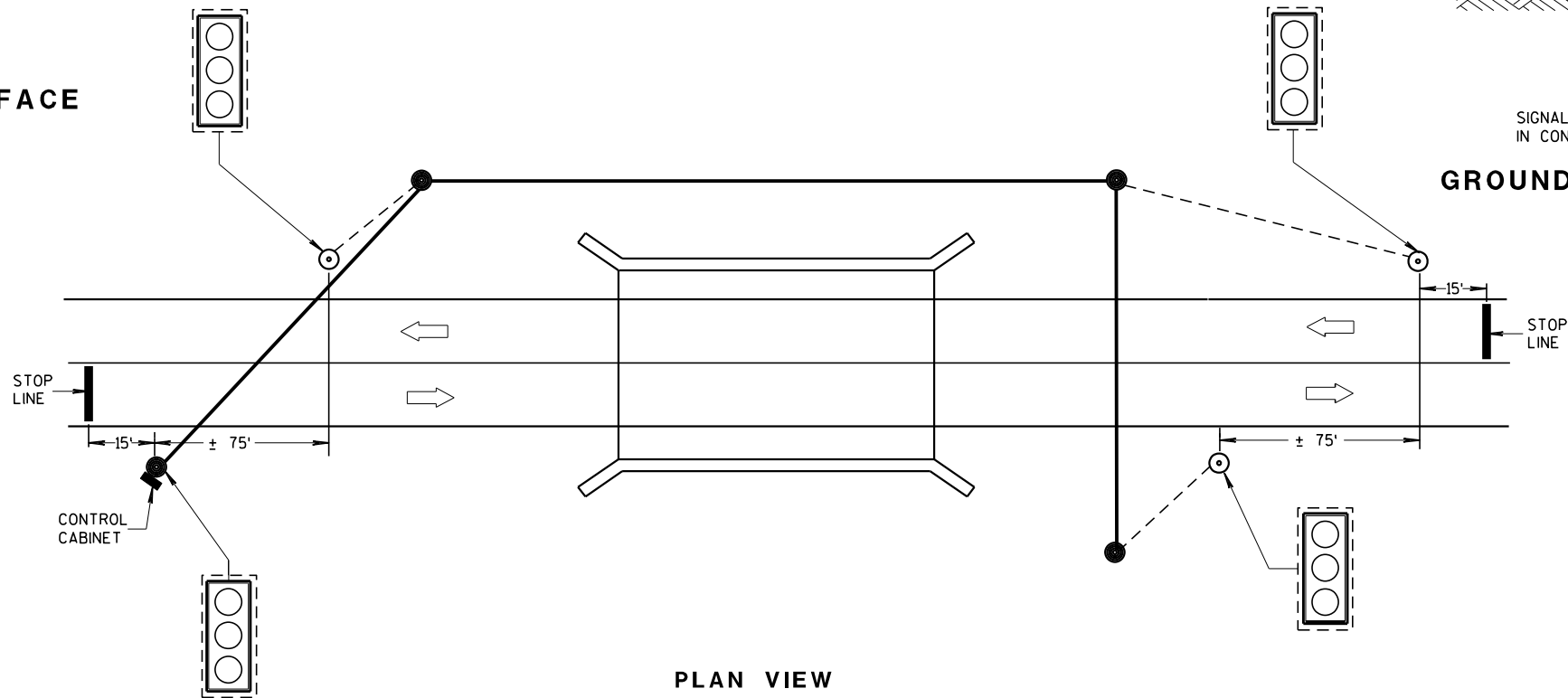
MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET



POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

GENERAL NOTES

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

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

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

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

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

VERTICAL CLEARANCE ETC. PER NEC.

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

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.

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

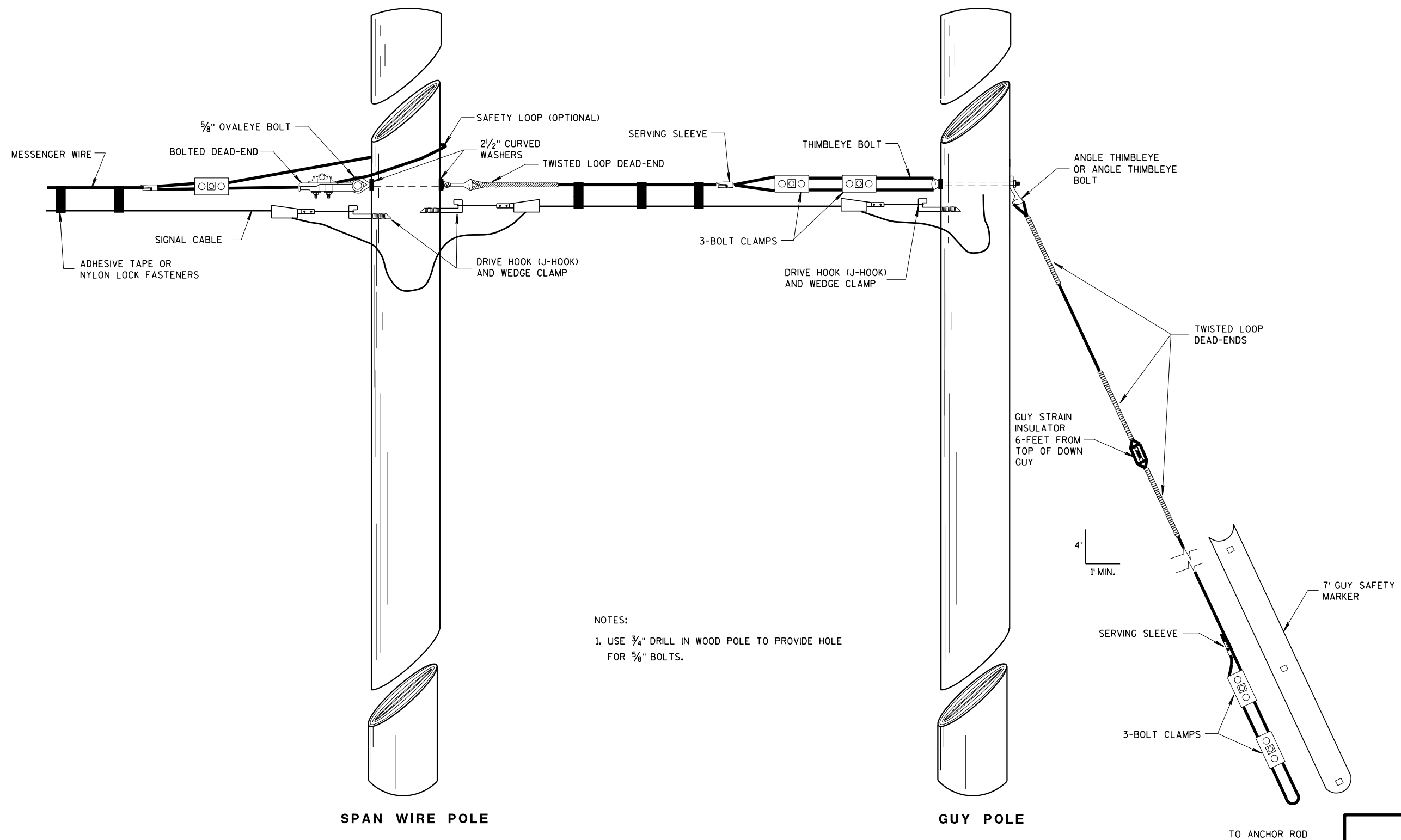
LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL R
FHWA

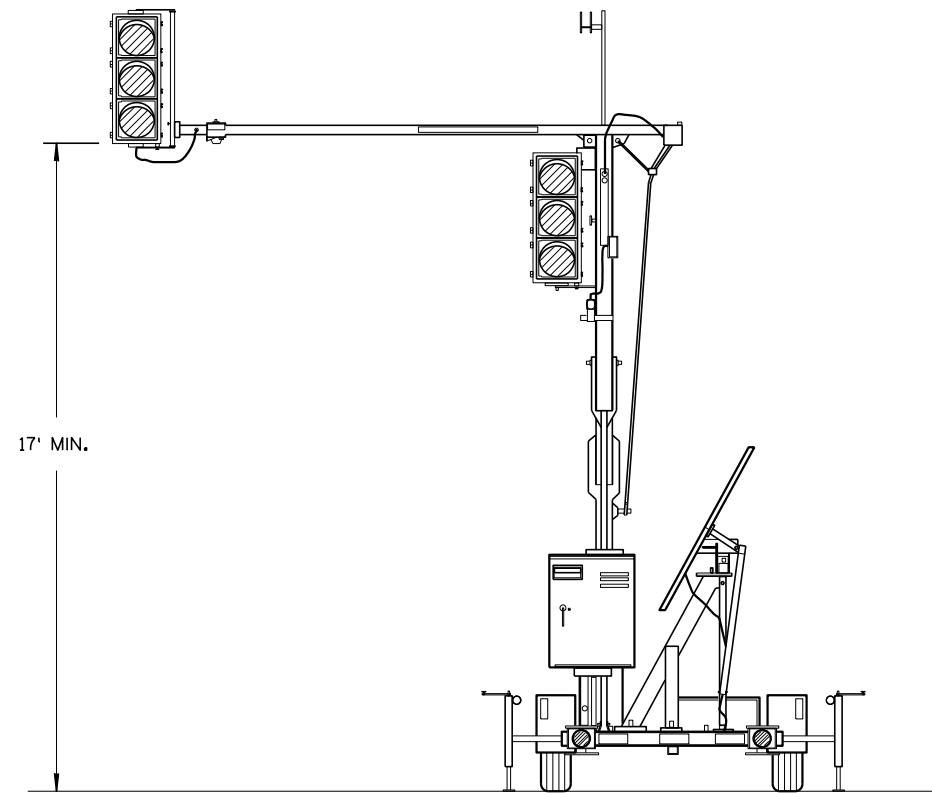


TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirelli
DATE STATE ELECTRICAL 82 R
FHWA

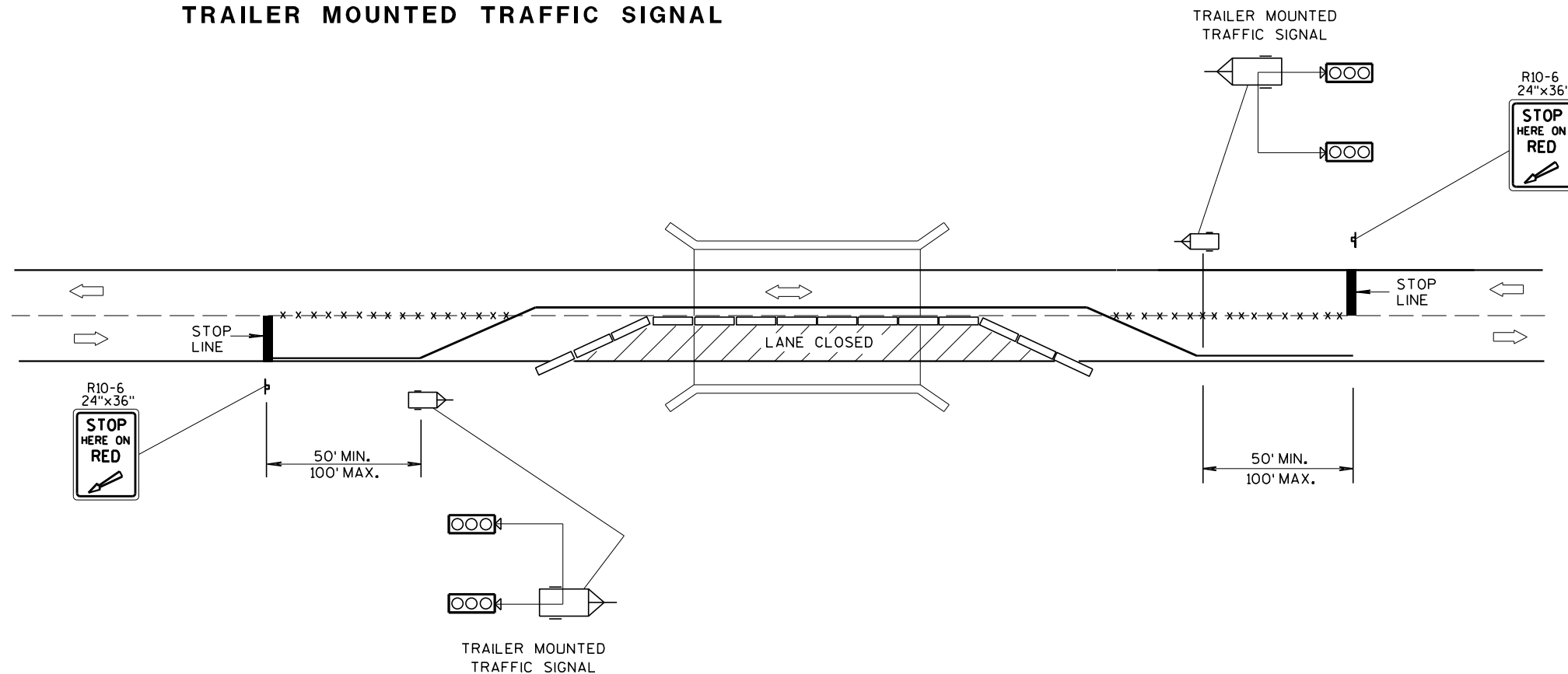


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

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



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

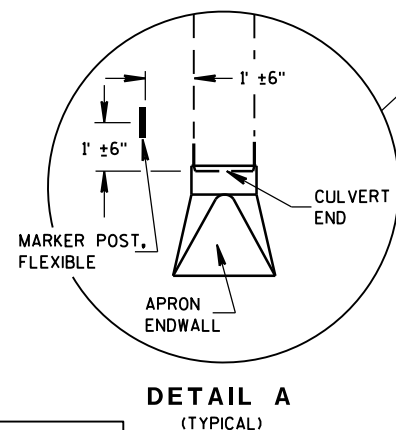
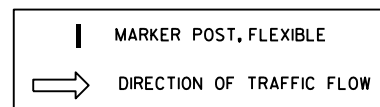
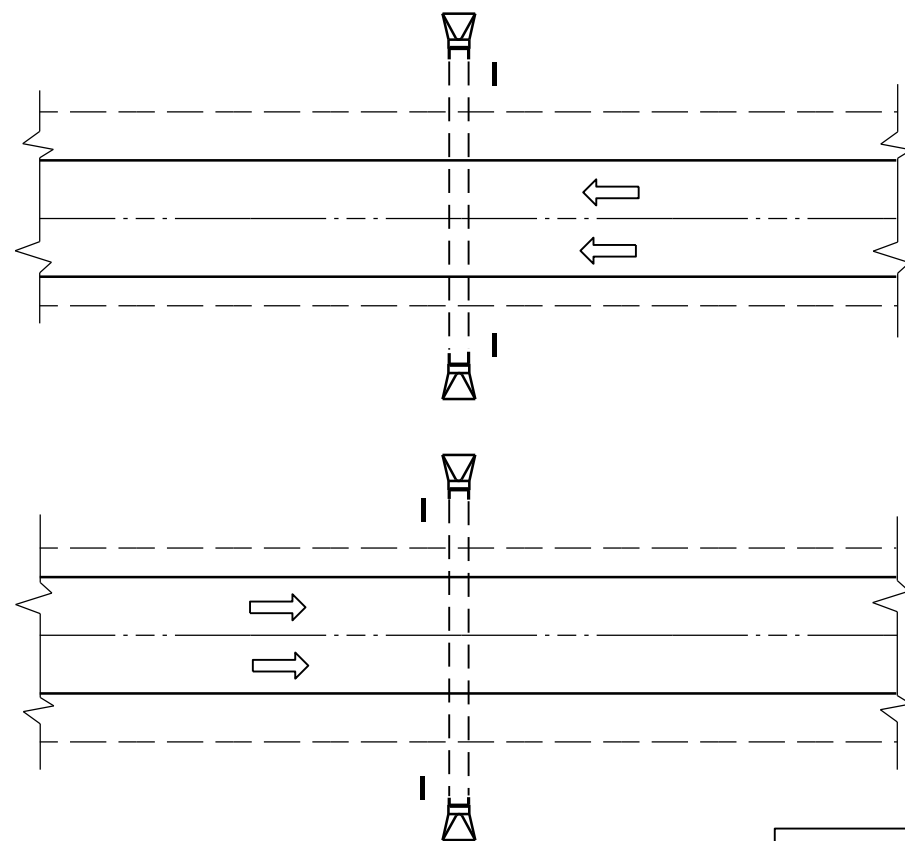
- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

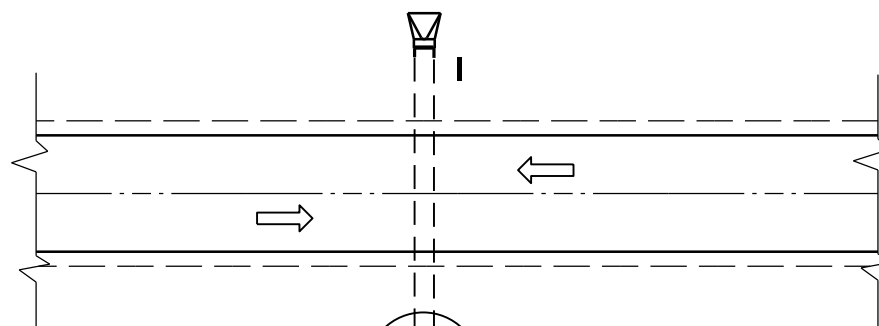
APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL R
FHWA

PLAN VIEW
DIVIDED HIGHWAY

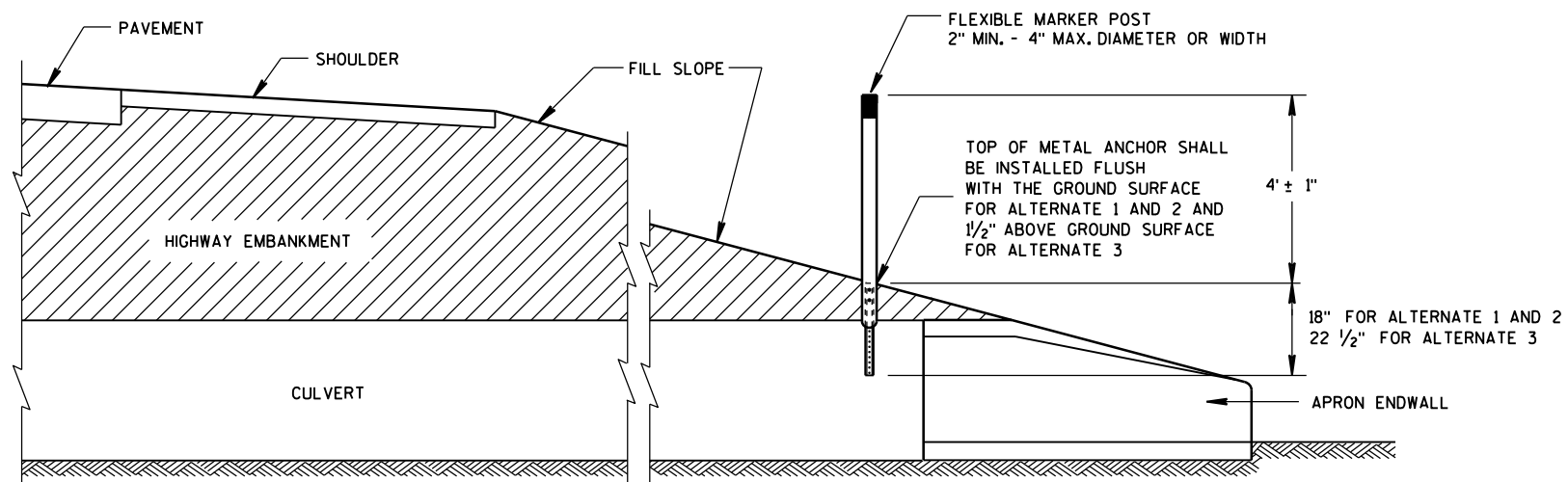


DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY



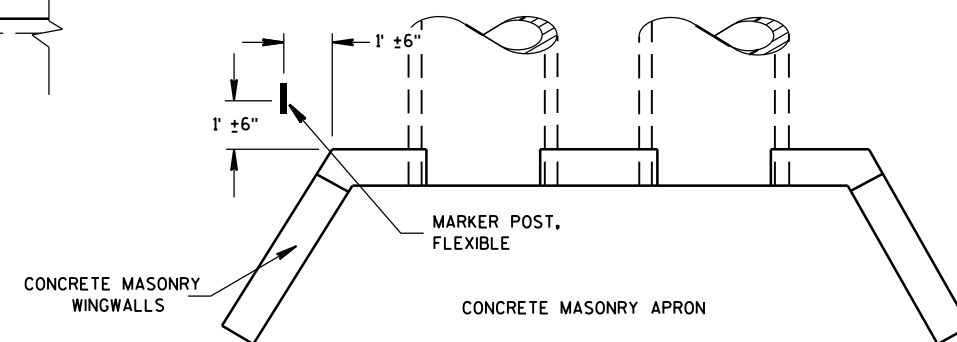
FLEXIBLE MARKER POST LOCATION



CROSS SECTION
FLEXIBLE MARKER POST

GENERAL NOTES

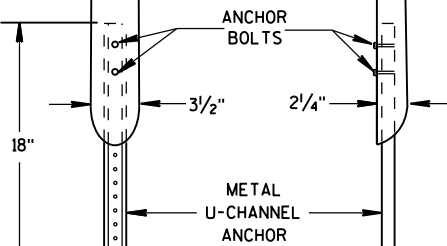
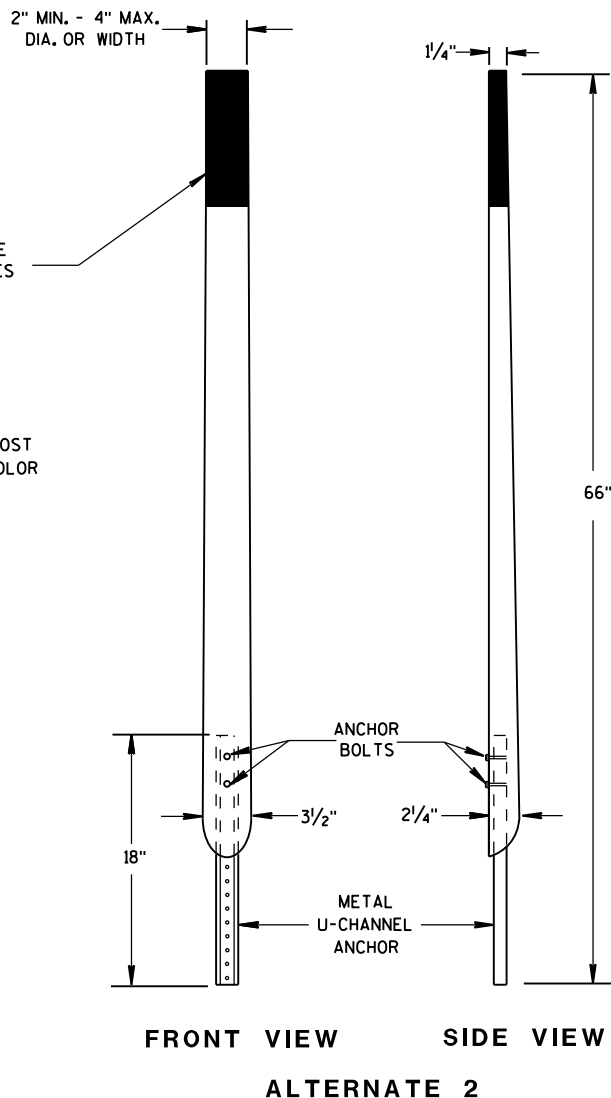
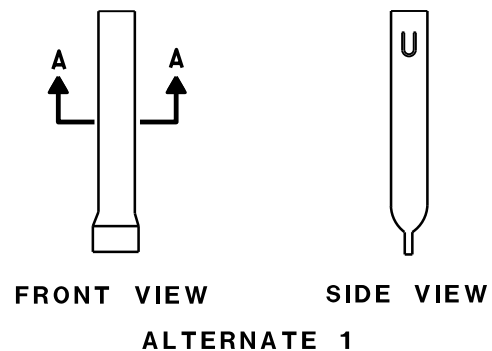
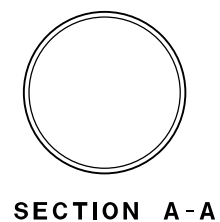
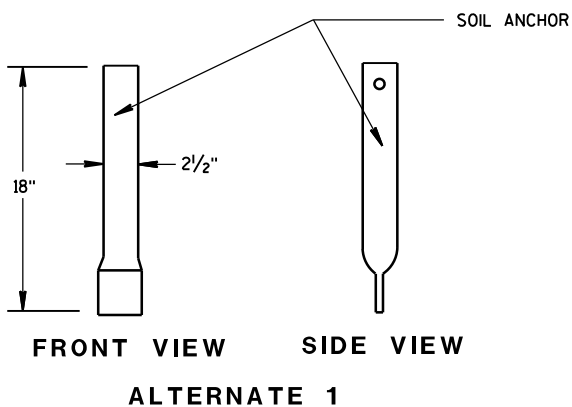
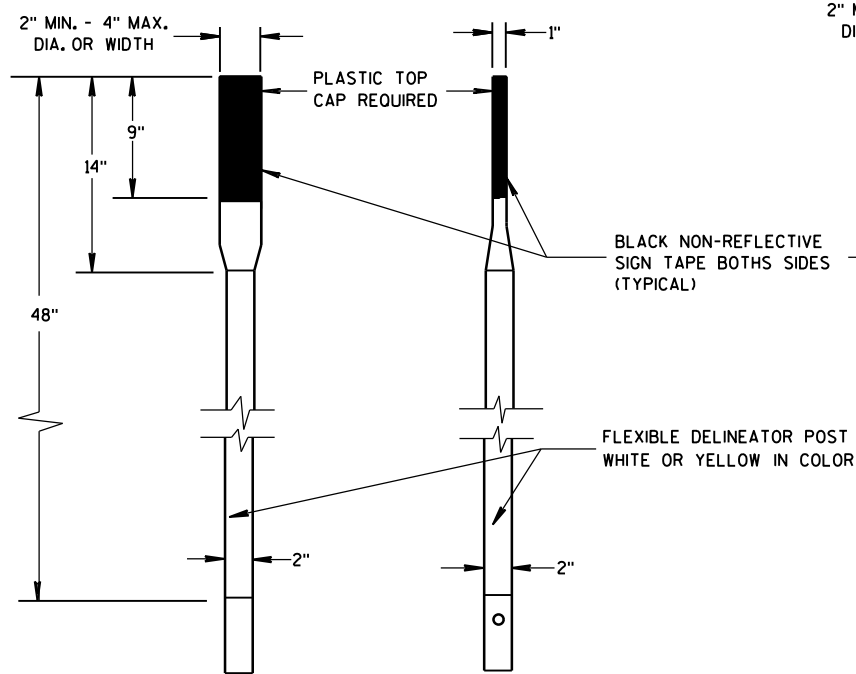
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



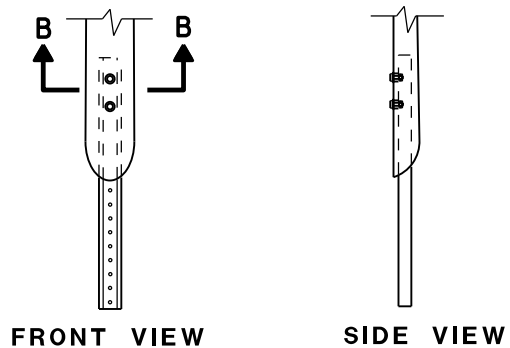
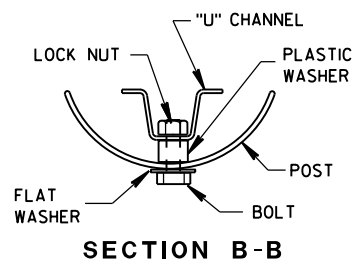
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST
FOR CULVERT END

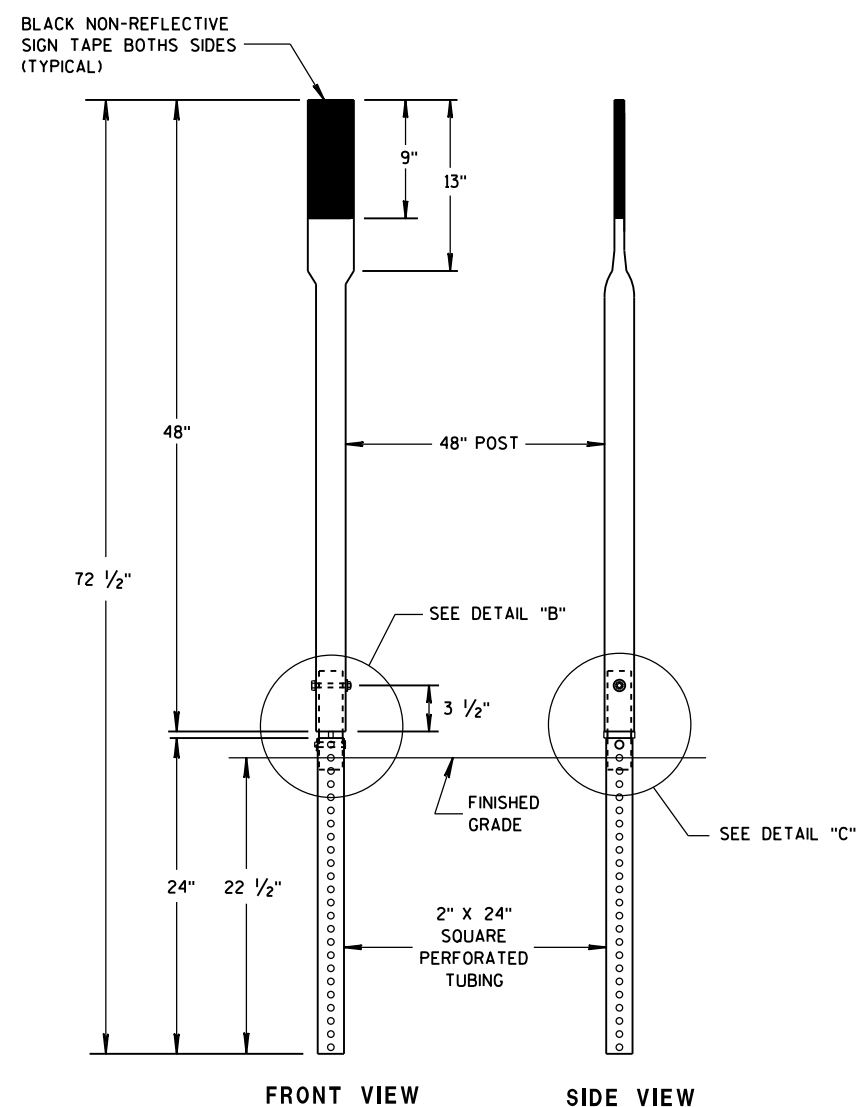
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



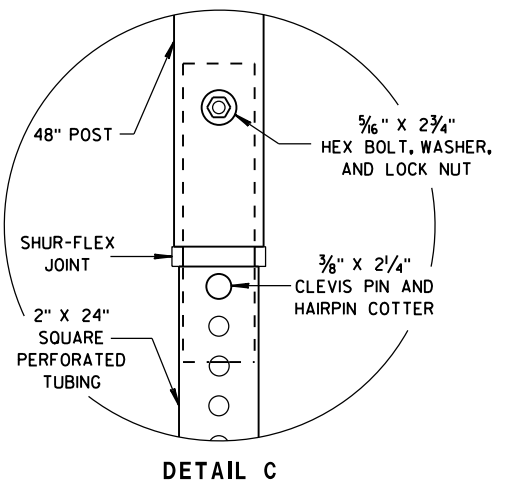
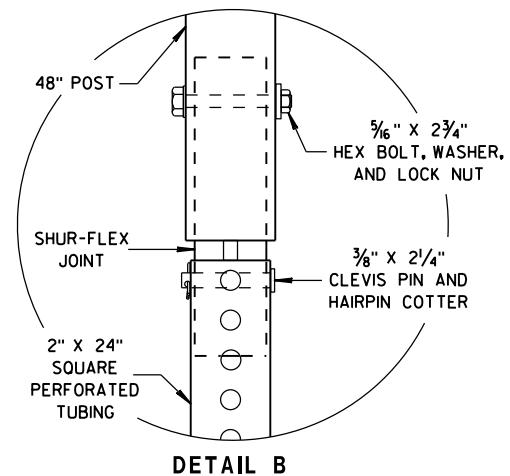
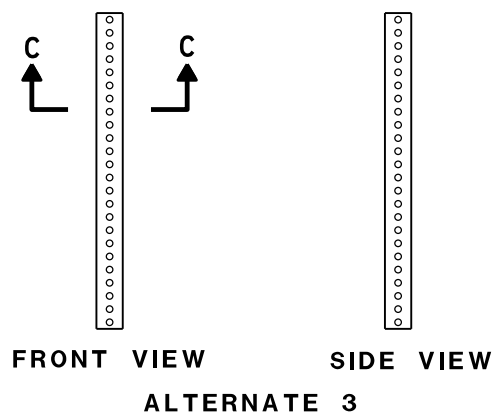
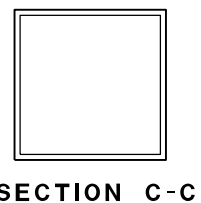
FLEXIBLE MARKER POSTS



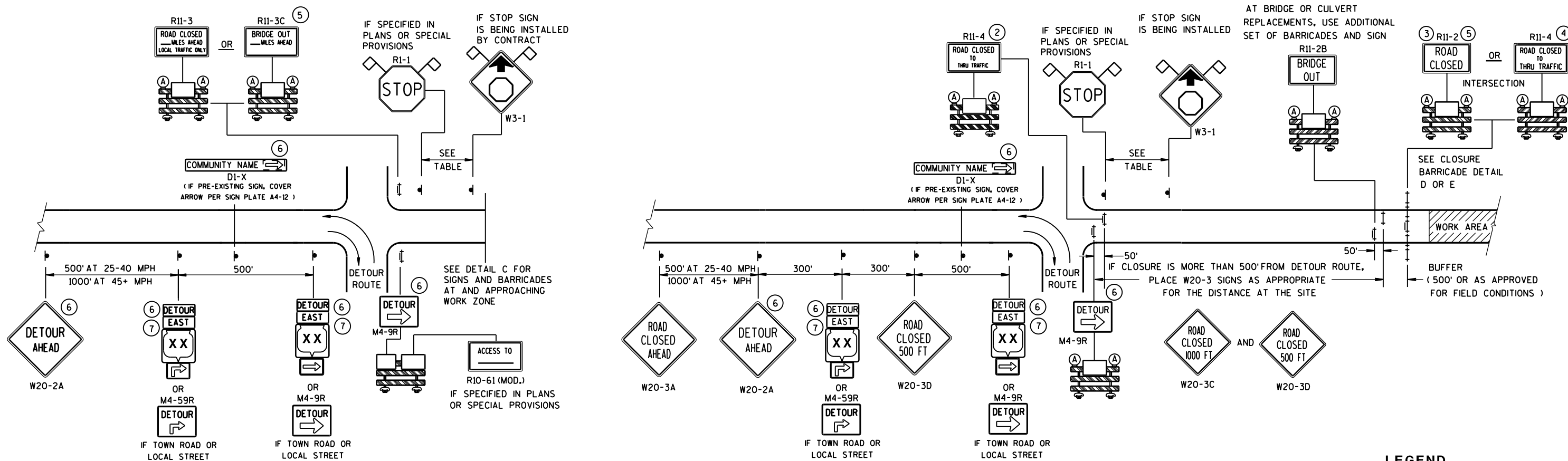
FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW
ALTERNATE 3



FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 85 IGN
FHWA	



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

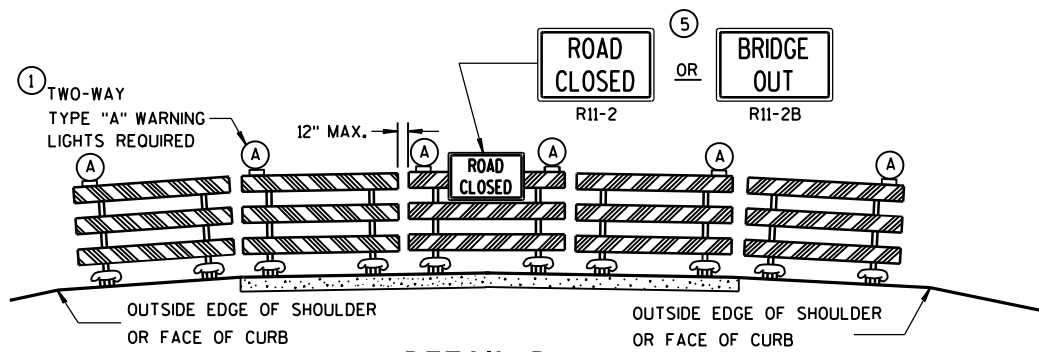
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

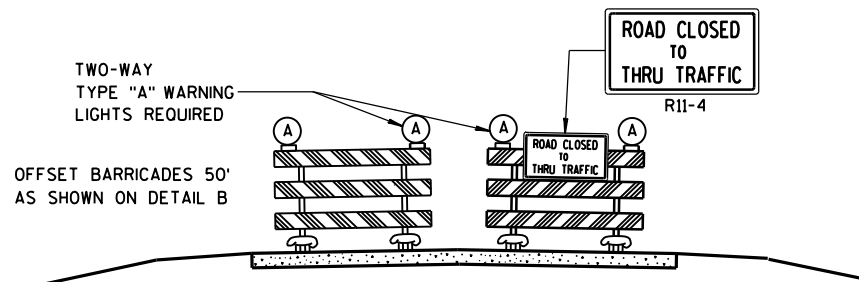
BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

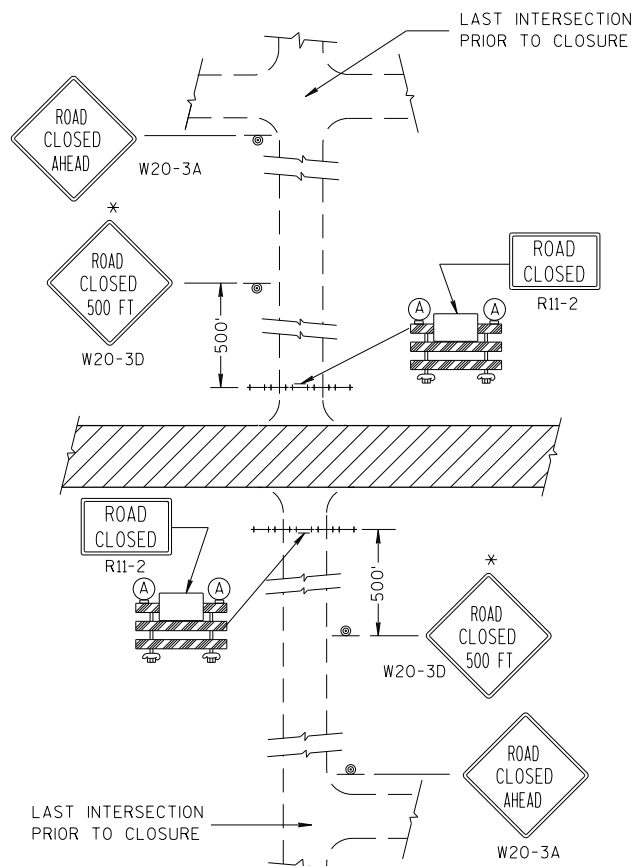
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36"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

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

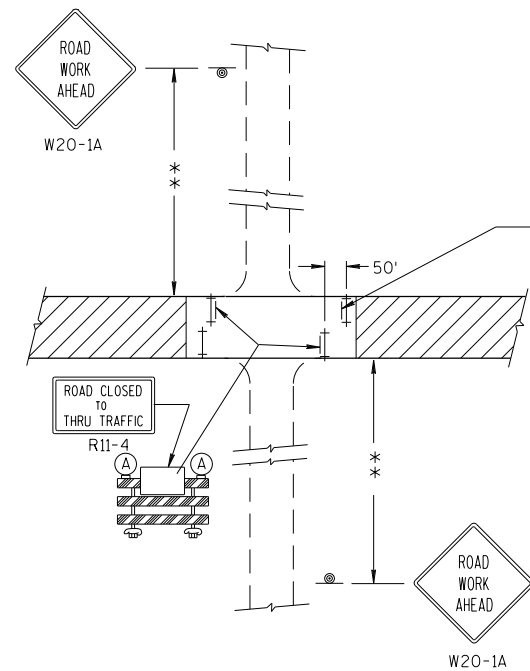
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

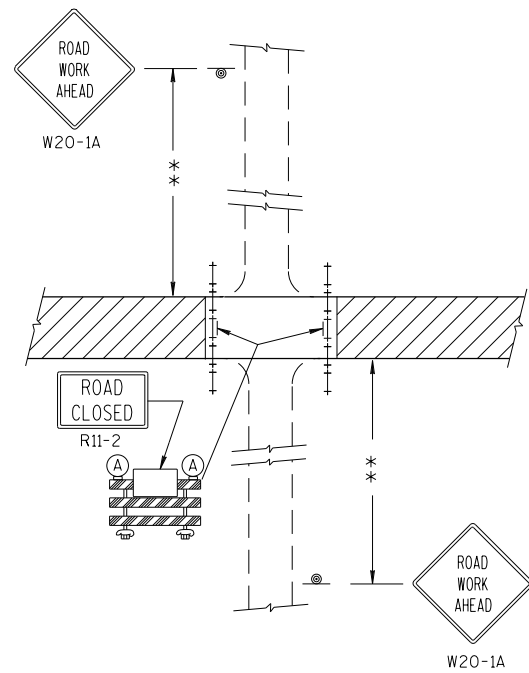
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWORK 2087 FIC
FHWA SAFETY ENGR



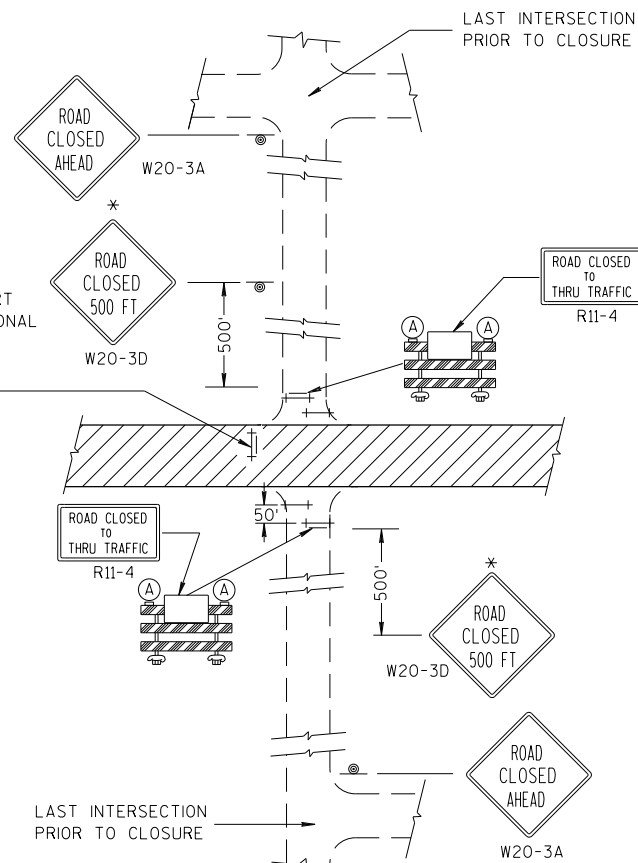
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

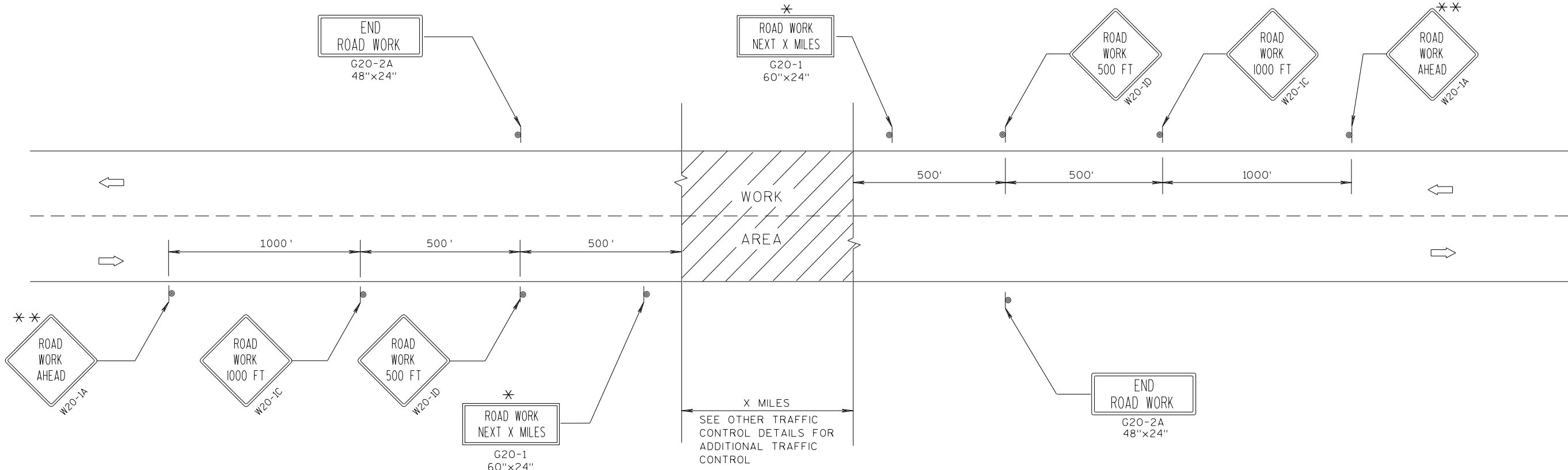
LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGR 89
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

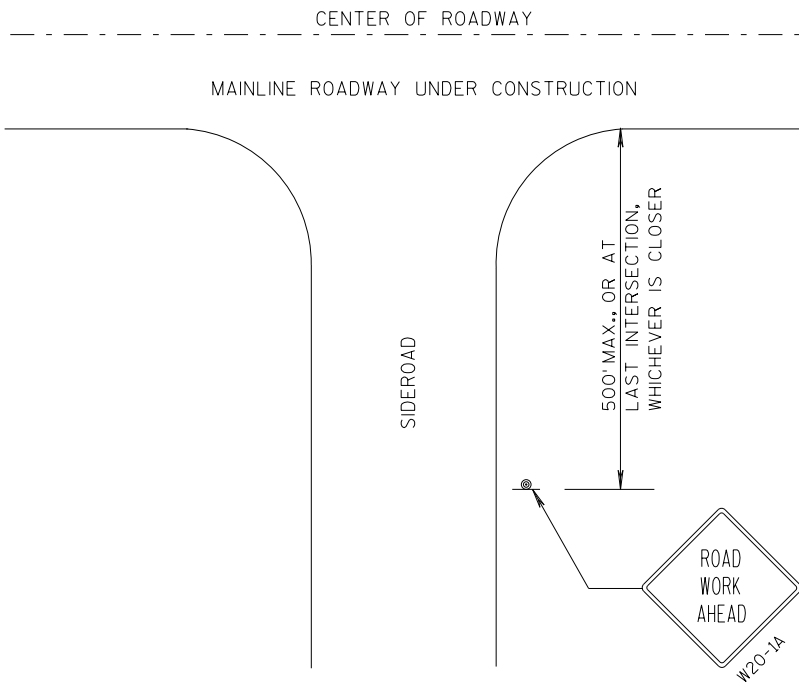
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

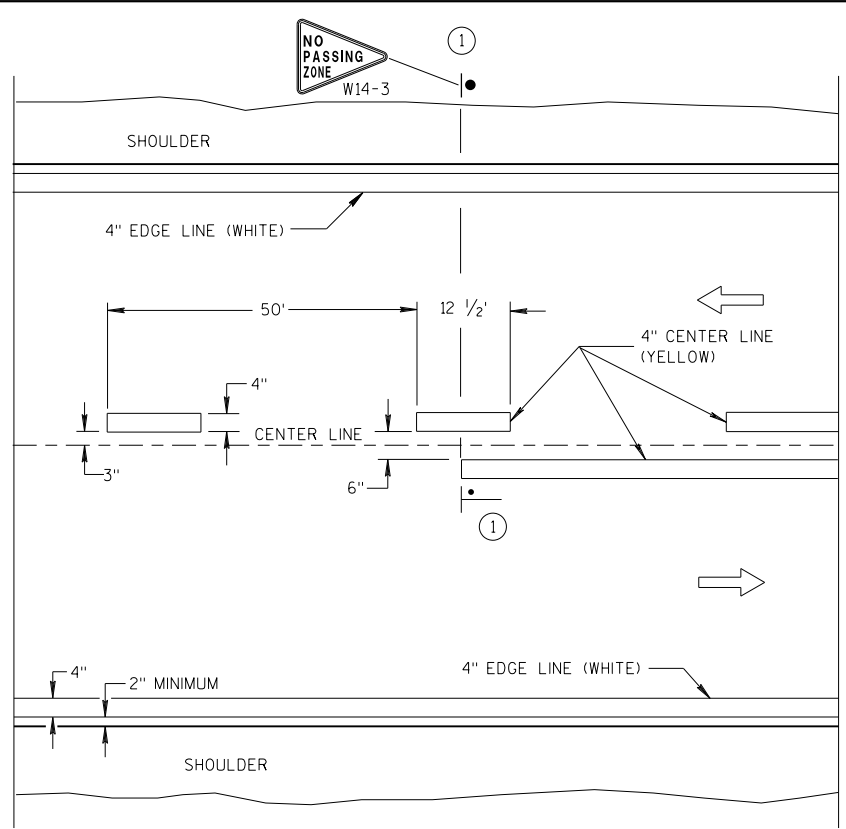
* * PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



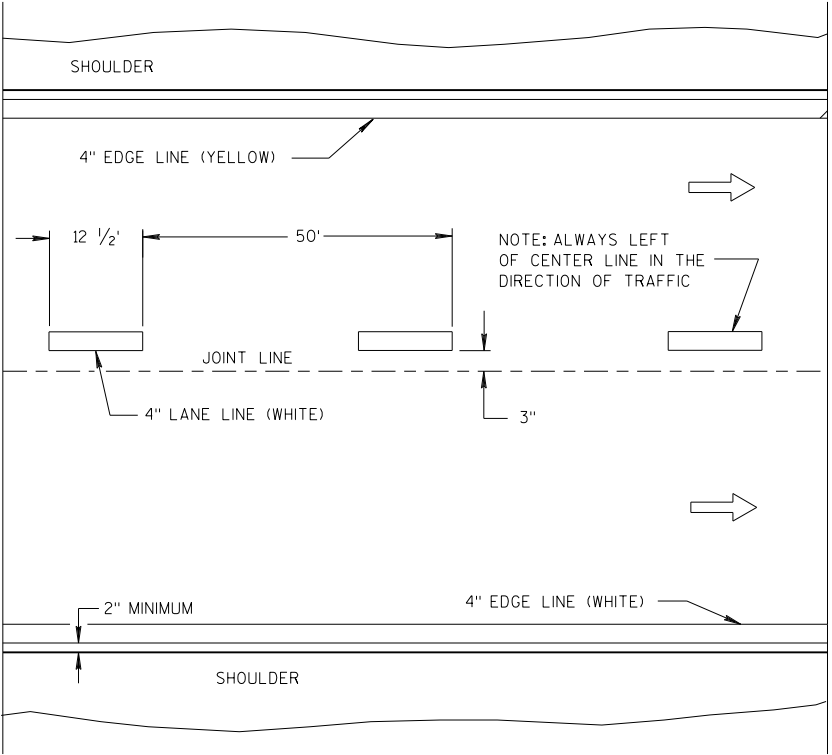
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	90

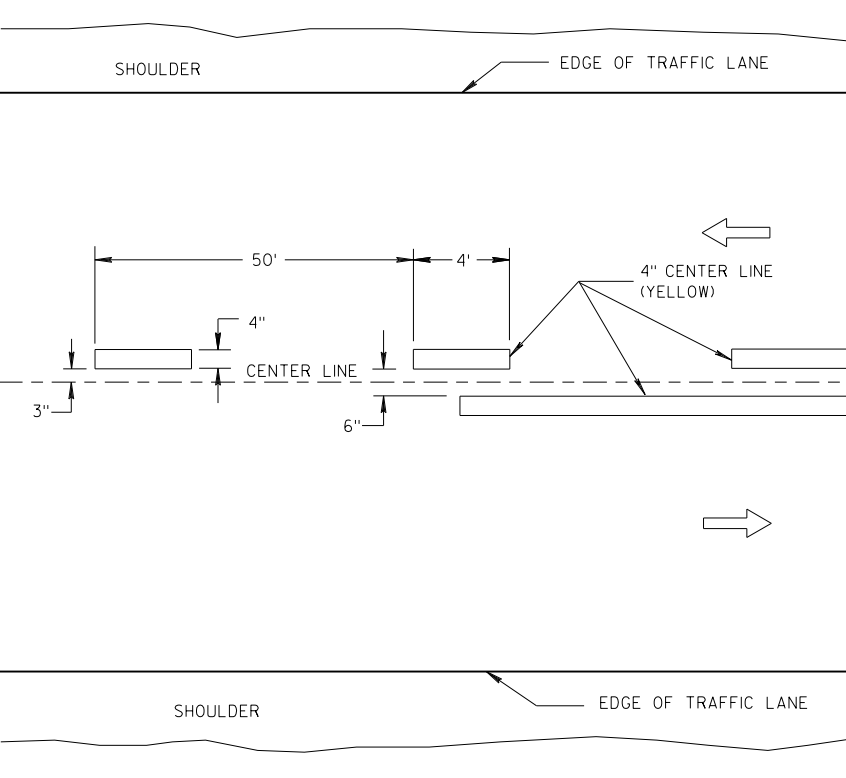


TWO WAY TRAFFIC

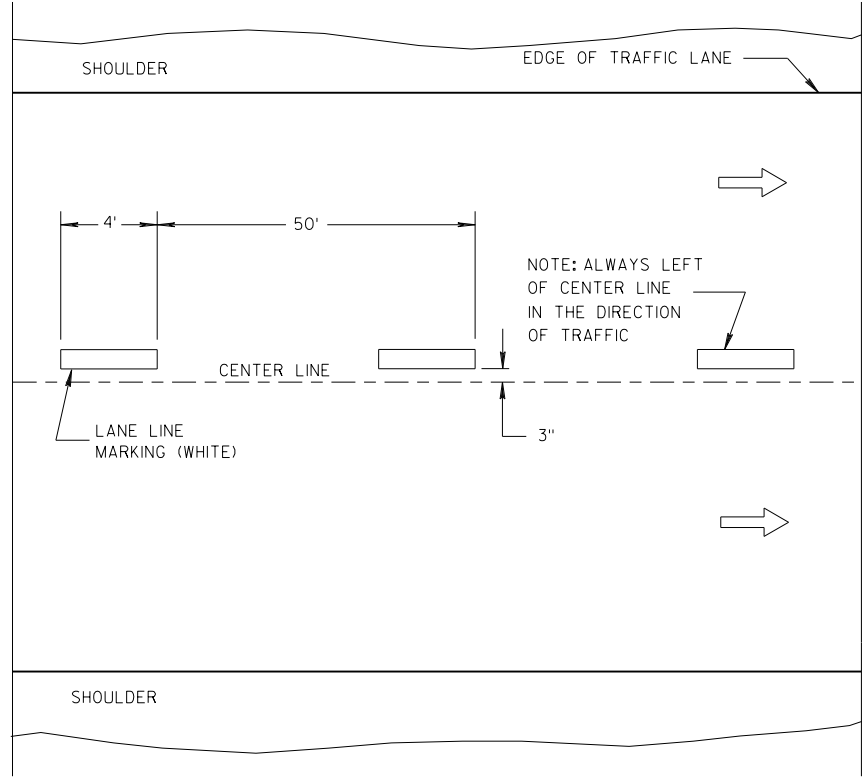


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

1 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

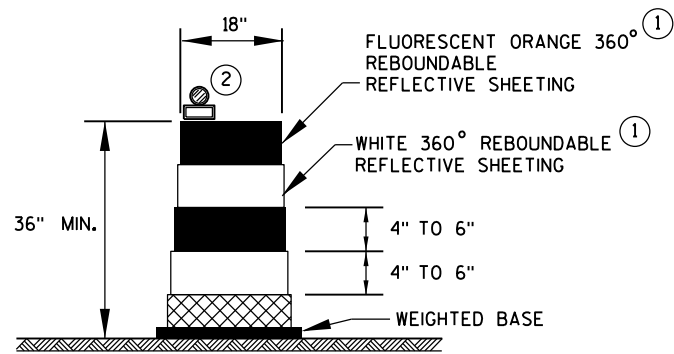
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

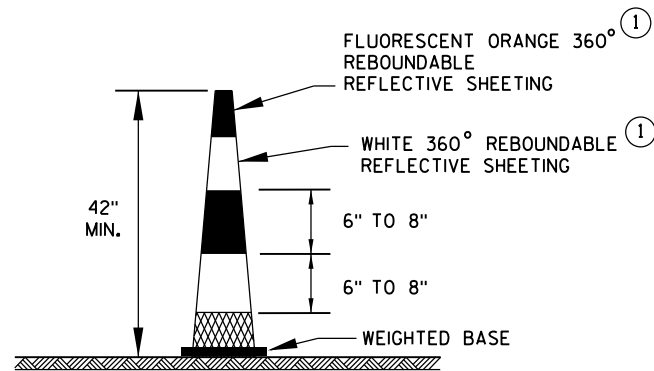
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 91 INEER
FHWA



DRUM

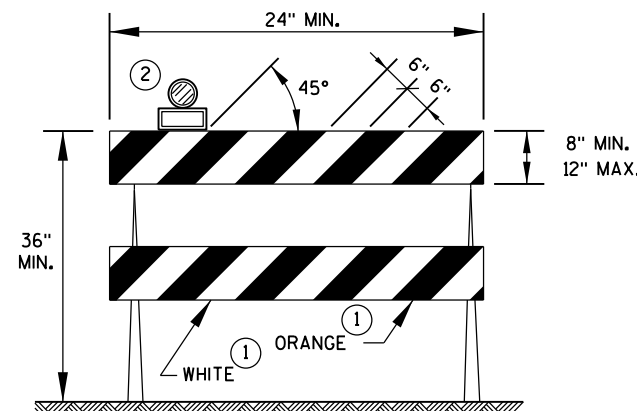


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

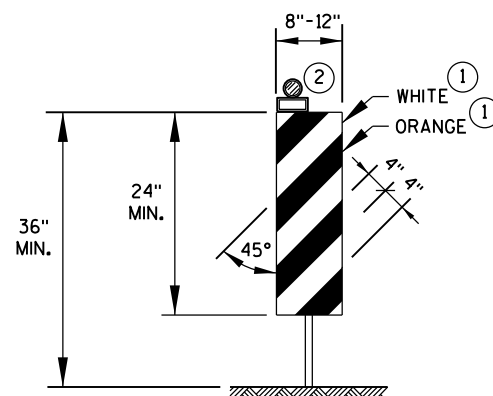
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



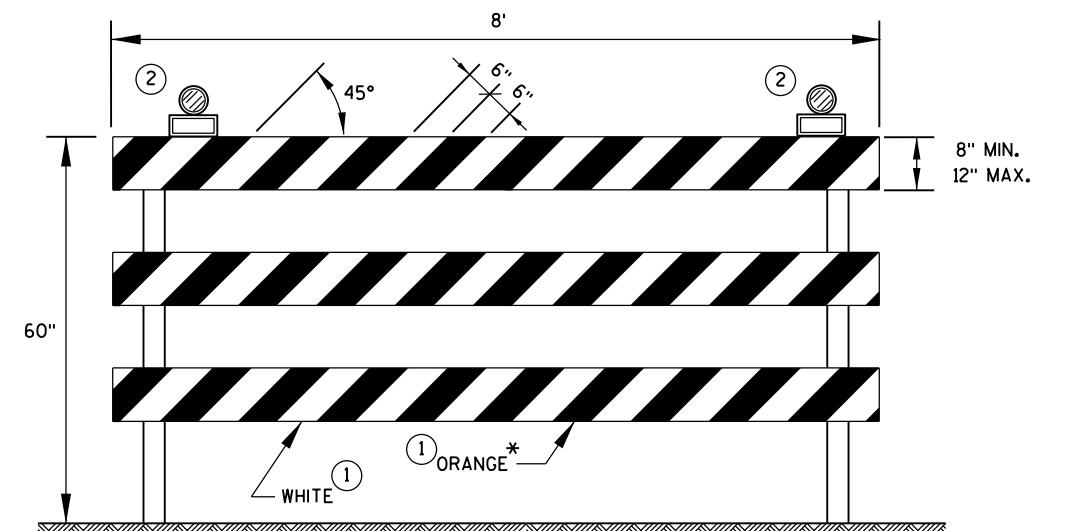
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 92

FHWA

LEGEND

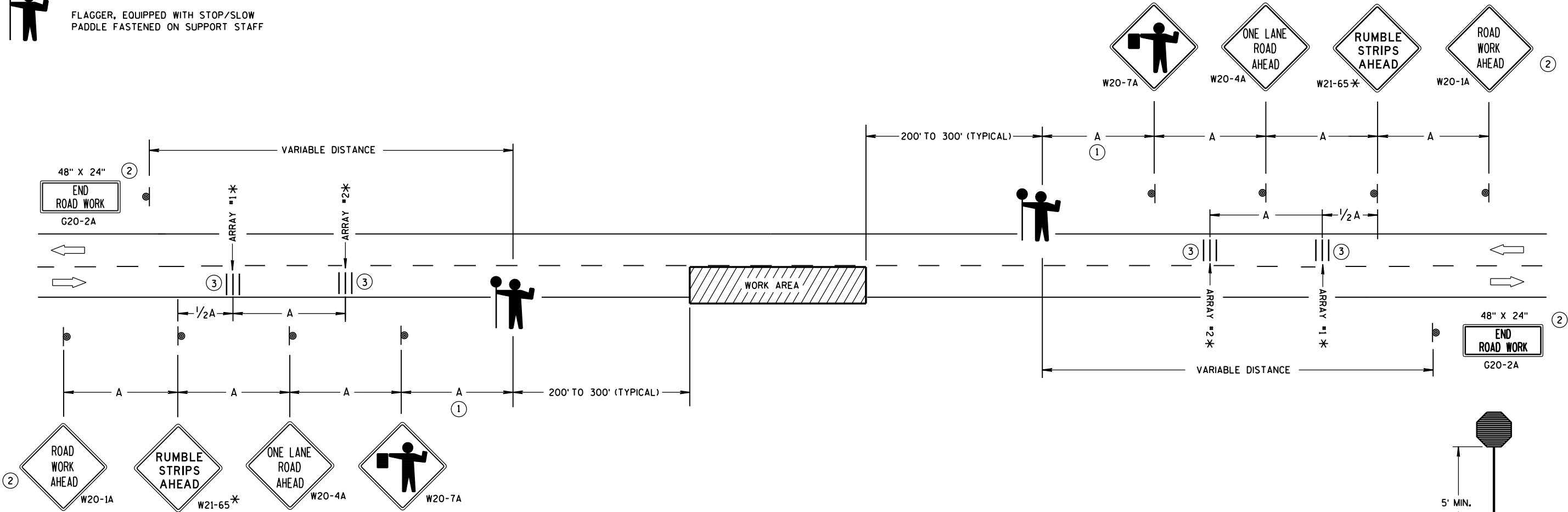
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

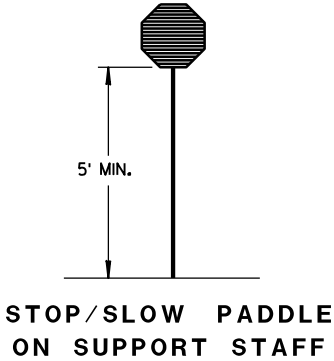
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

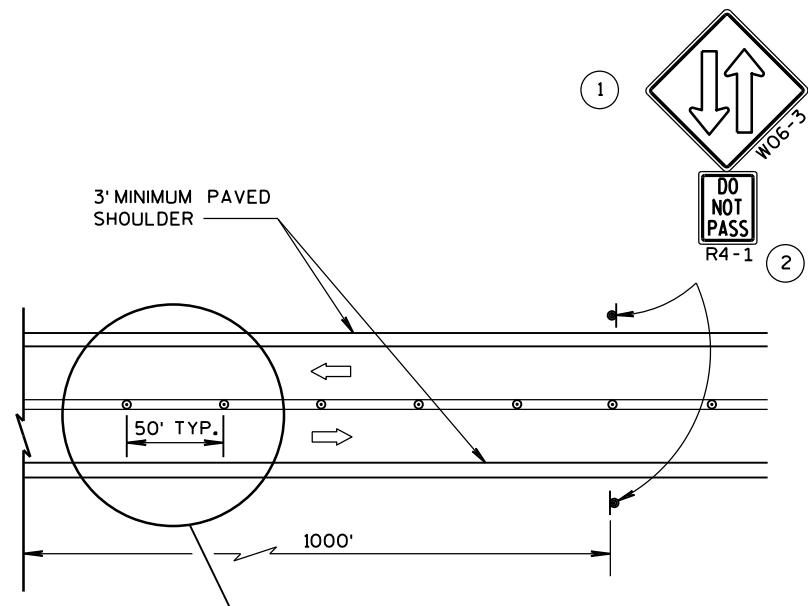
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

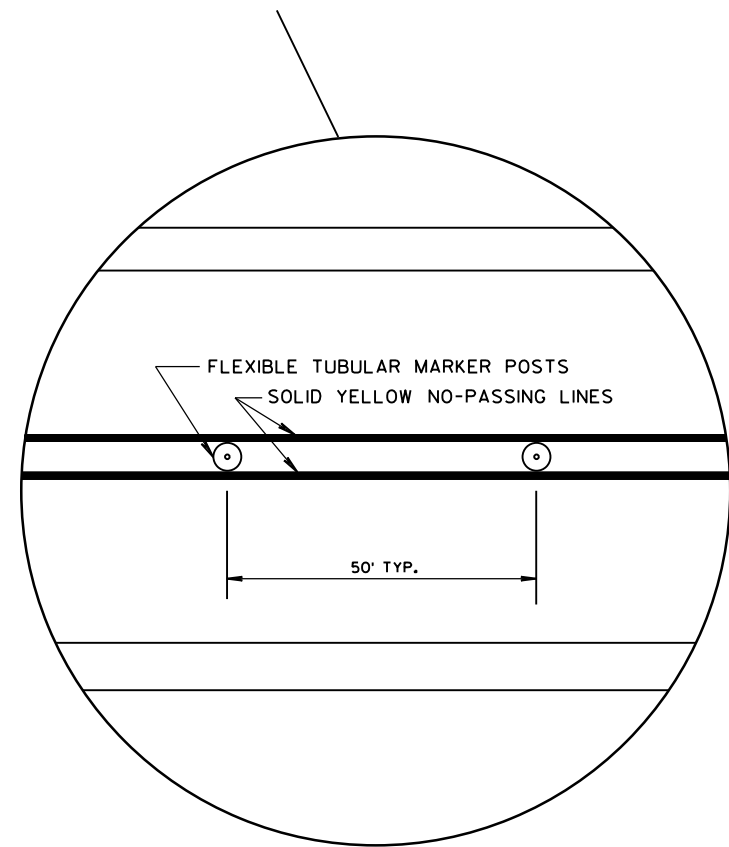
- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
 - ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENC 93
FHWA	



TWO LANE, TWO WAY OPERATION



LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERS NOTED.

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

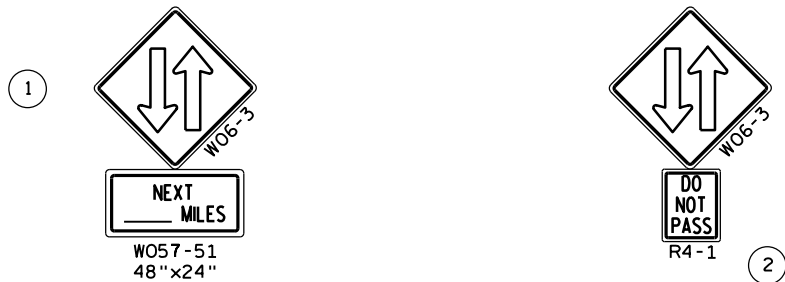
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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

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

A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50-FOOT SPACING.

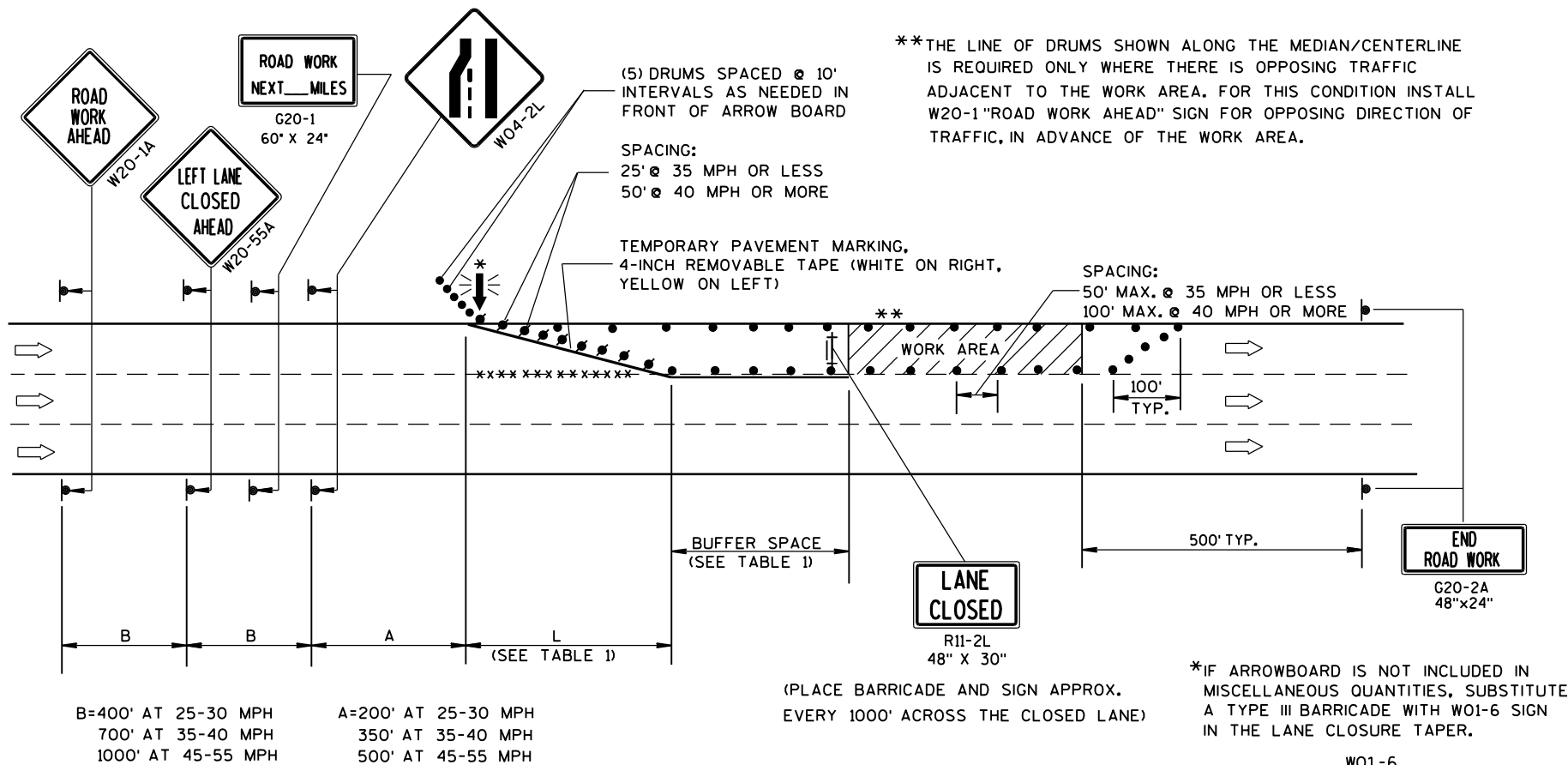
COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING, 4-INCH DOUBLE YELLOW.



THE W06-3 WITH THE W057-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND/OR 500 FEET BEYOND ANY SIDEROAD. THE W06-3 WITH THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN W06-3 SIGNS.

- CONVENTIONAL: 24"x30"
- FREEWAY AND EXPRESSWAY: 36"x48"

TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER	SIGN
FHWA		



GENERAL NOTES

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

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER

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

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

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

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

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	

TAPER LENGTH

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


LEGEND

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

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

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

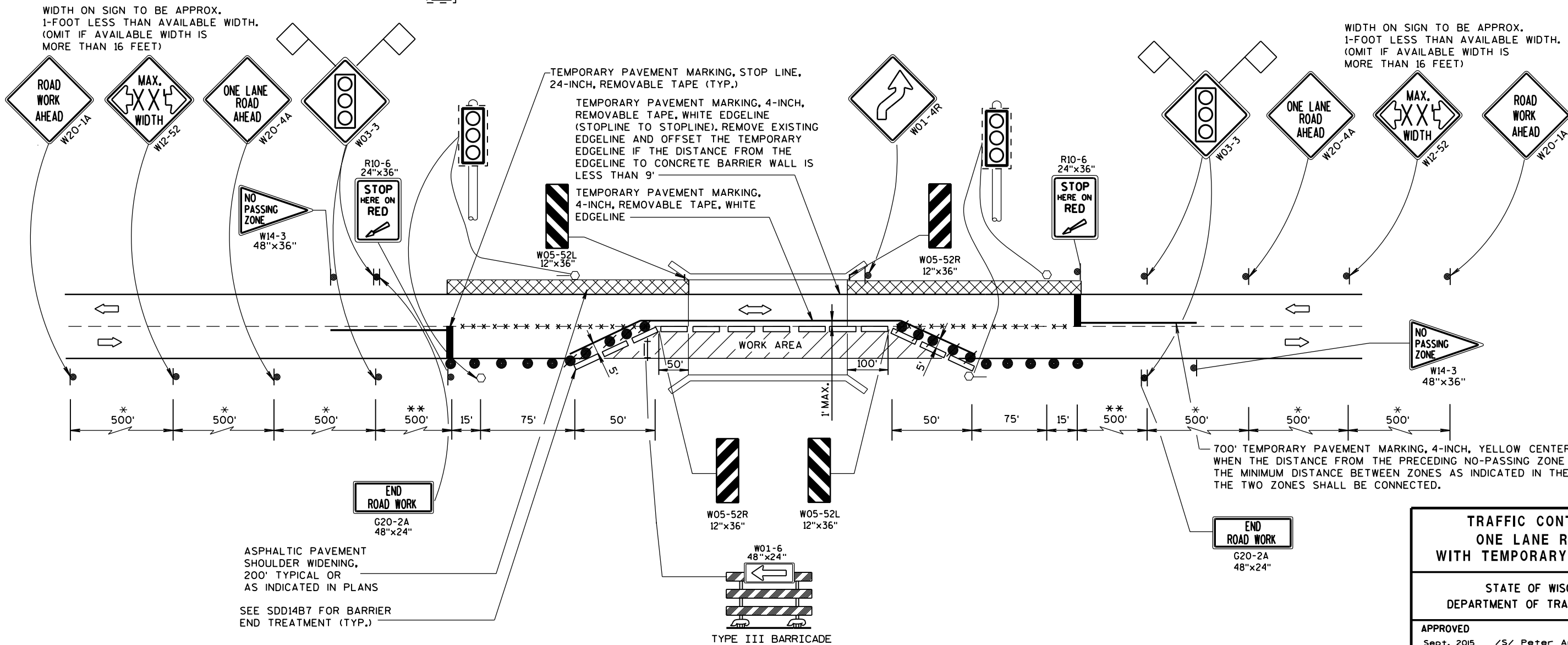
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

6



TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

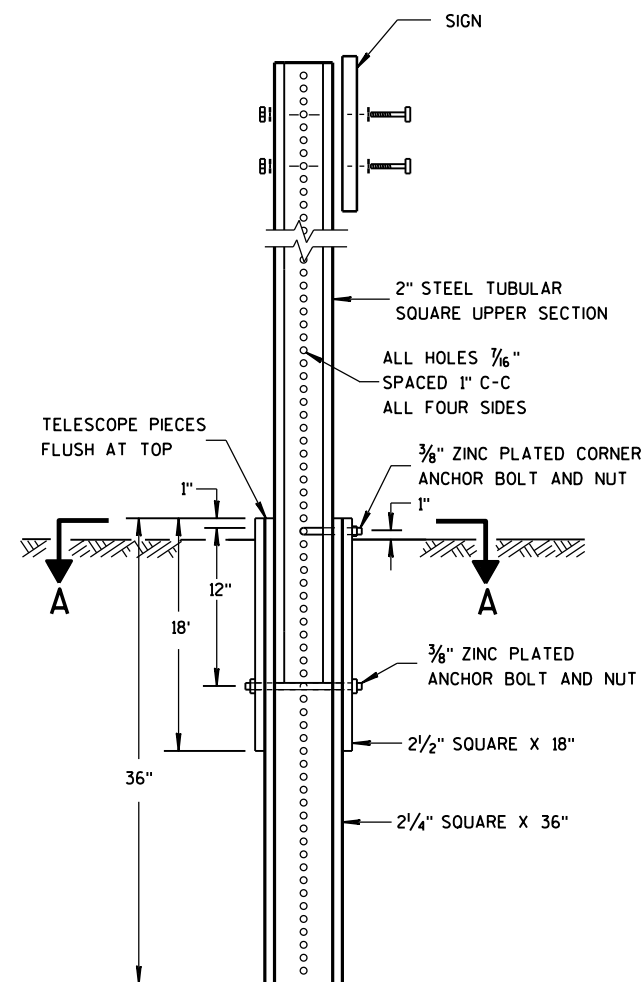
Sept. 2015

DATE

FHWA

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE
SAFETY ENGINEER

6



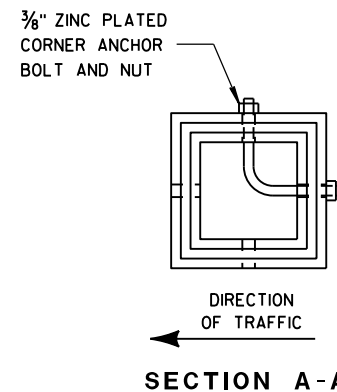
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

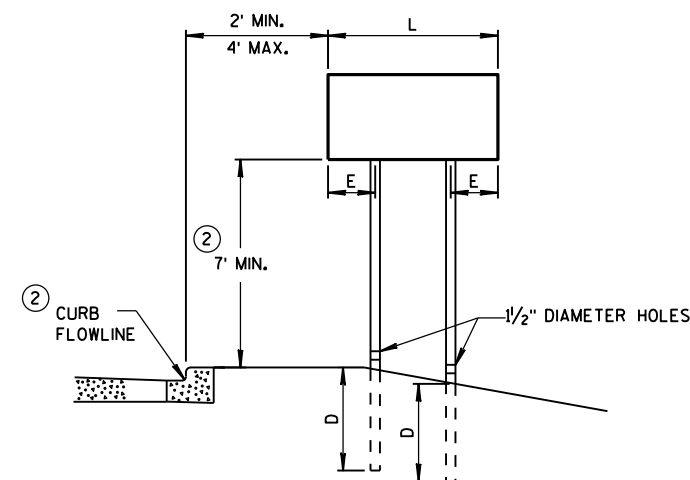
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

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



SECTION A-A

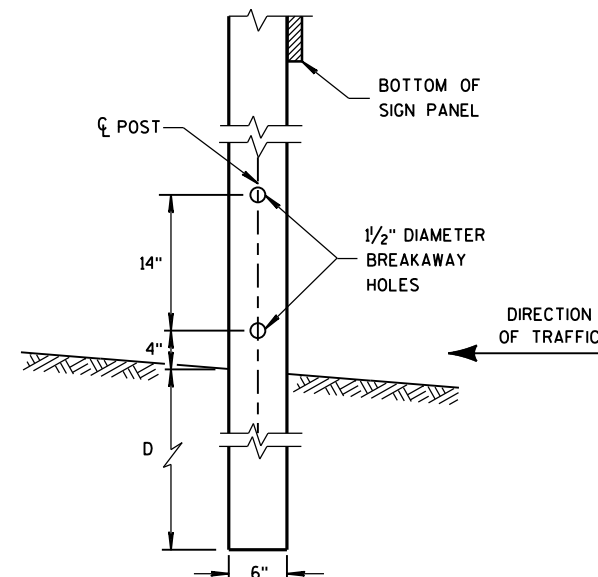


URBAN AREA

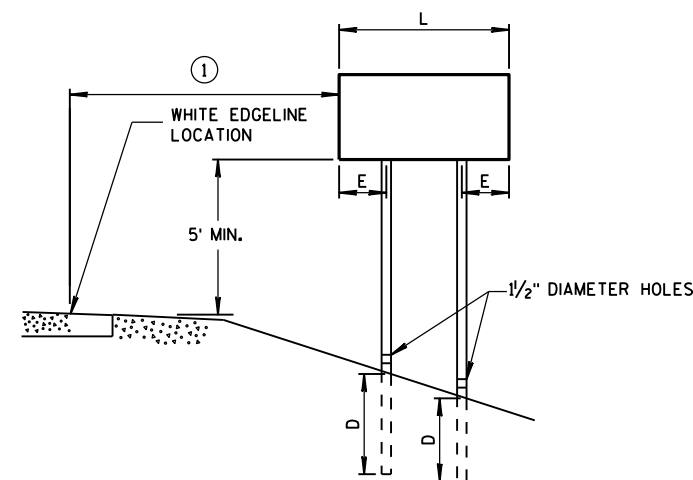
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

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

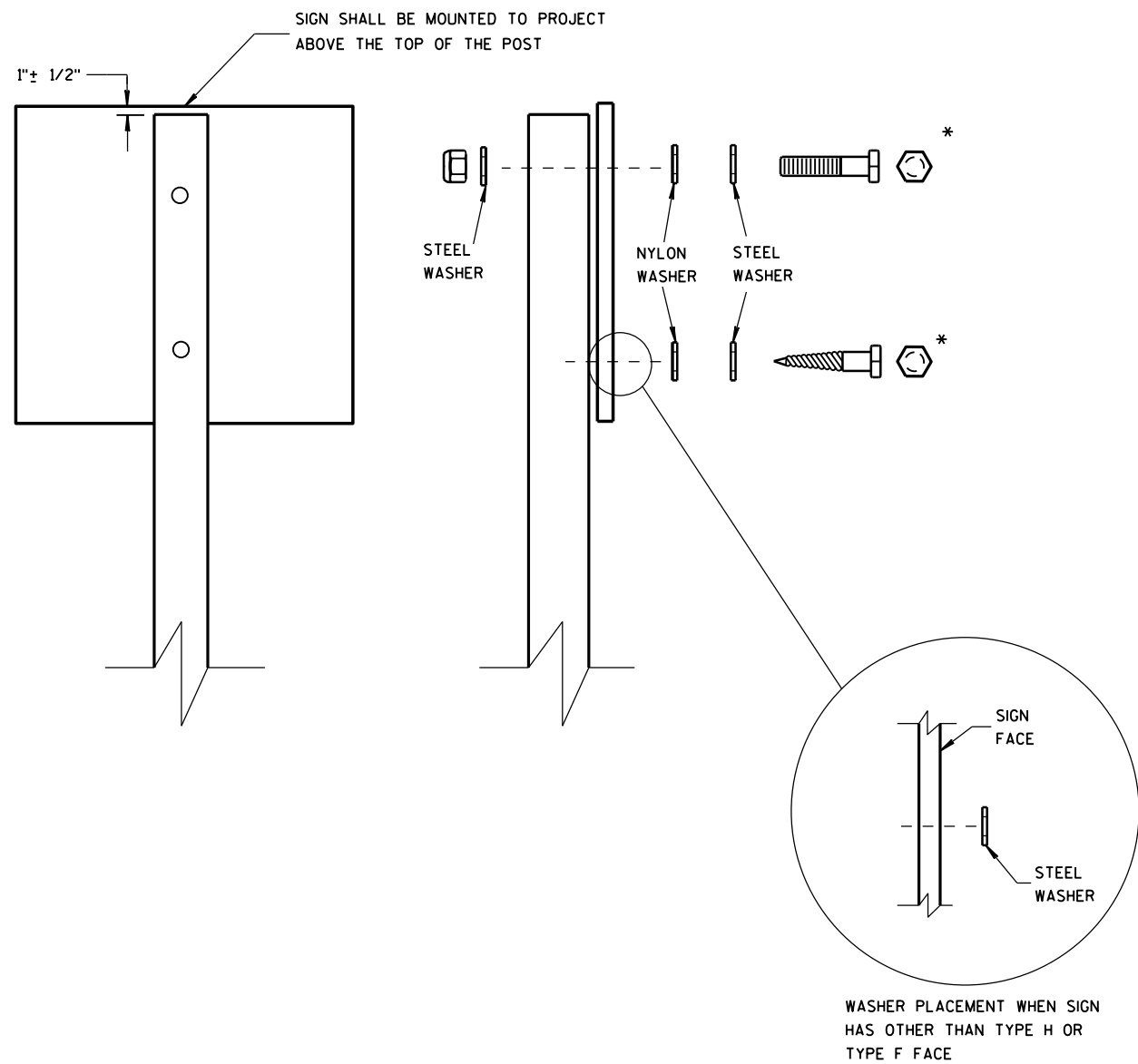
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

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

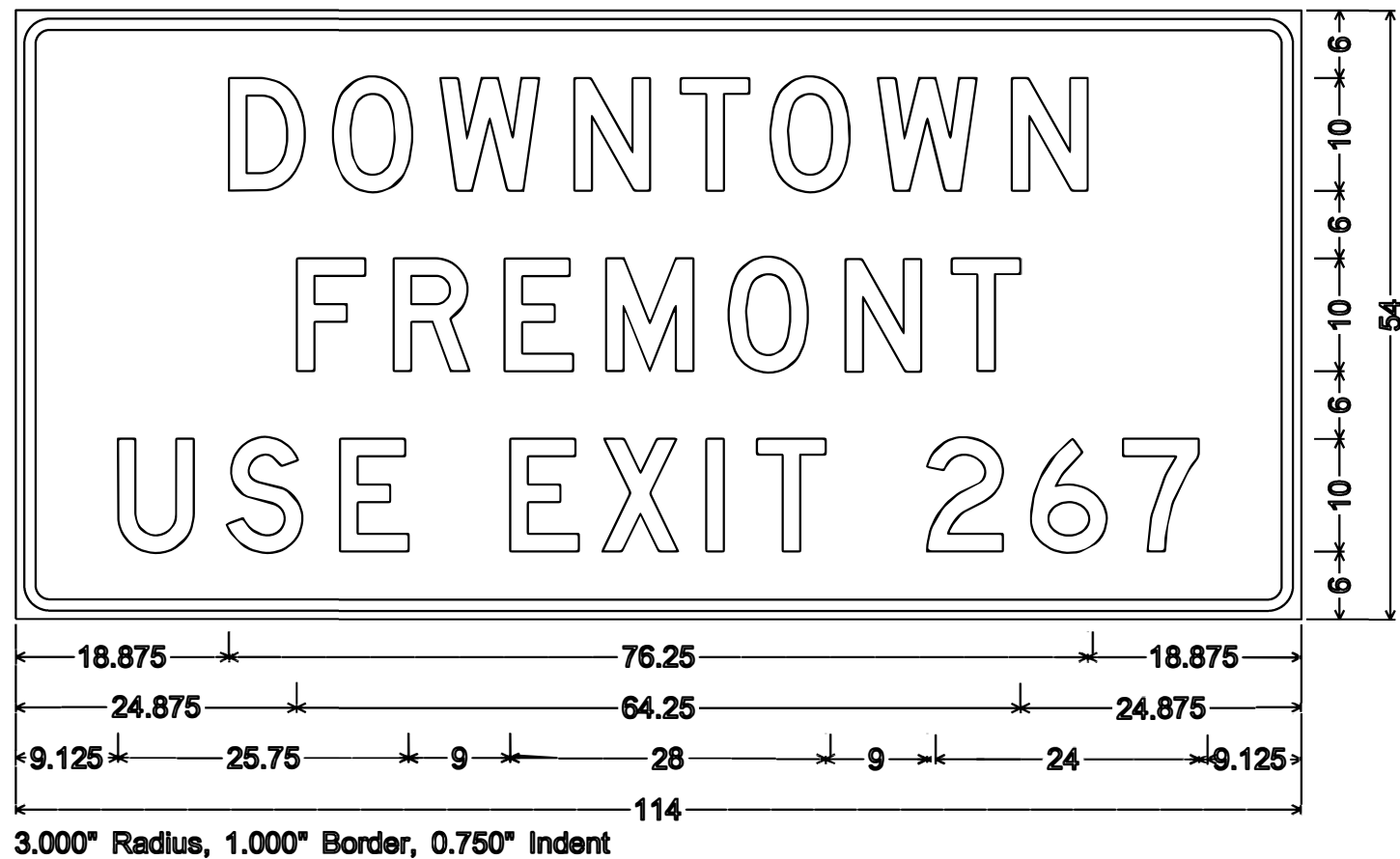
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 99
FHWA	

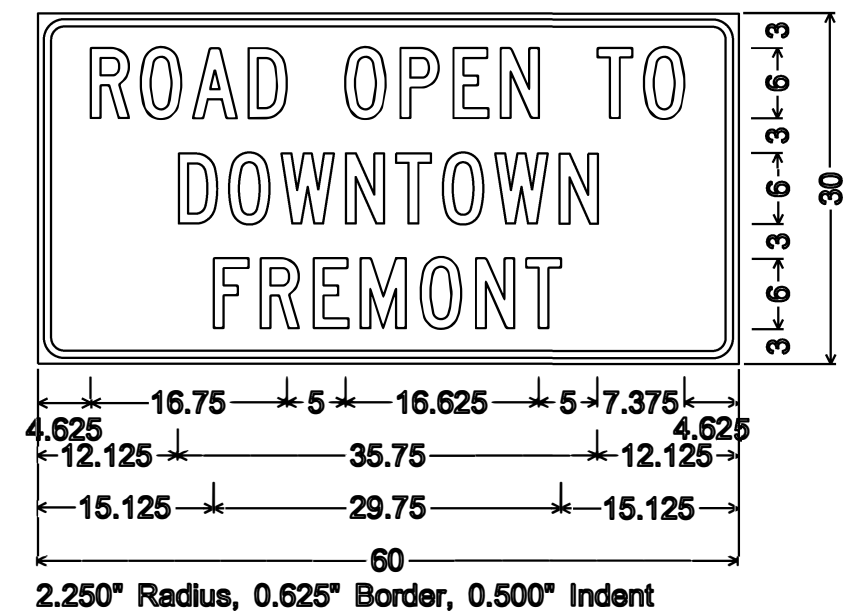
NOTES

1. All Signs Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D

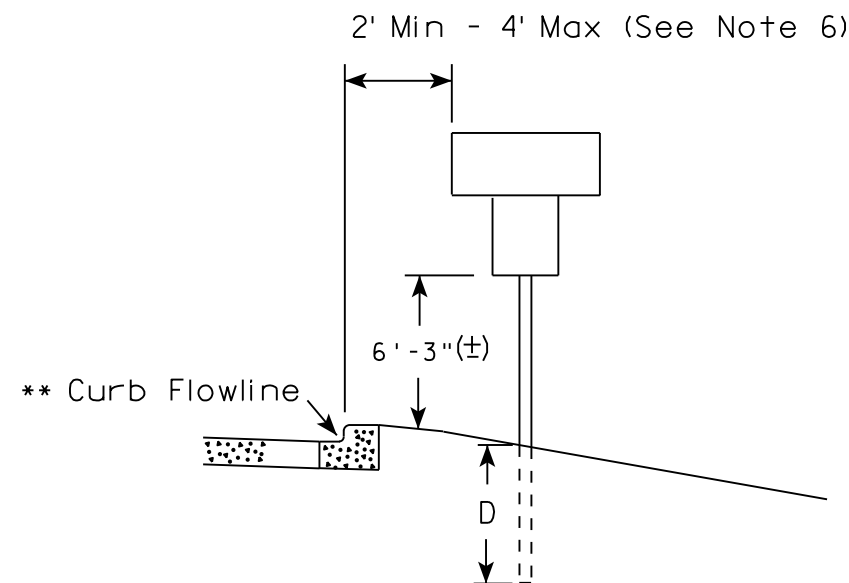
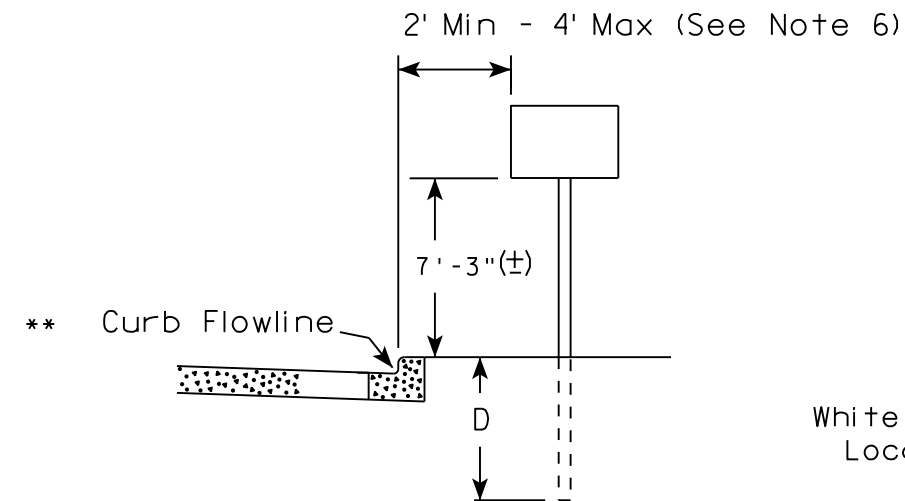


NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - C

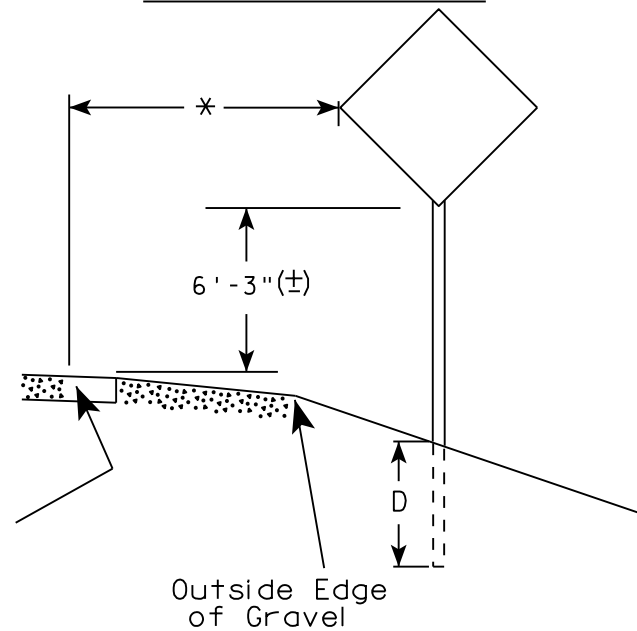


URBAN AREA

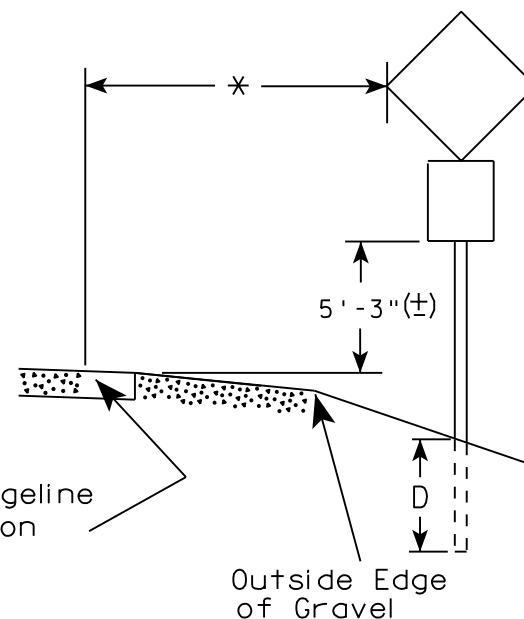


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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 directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

✱✱ 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.

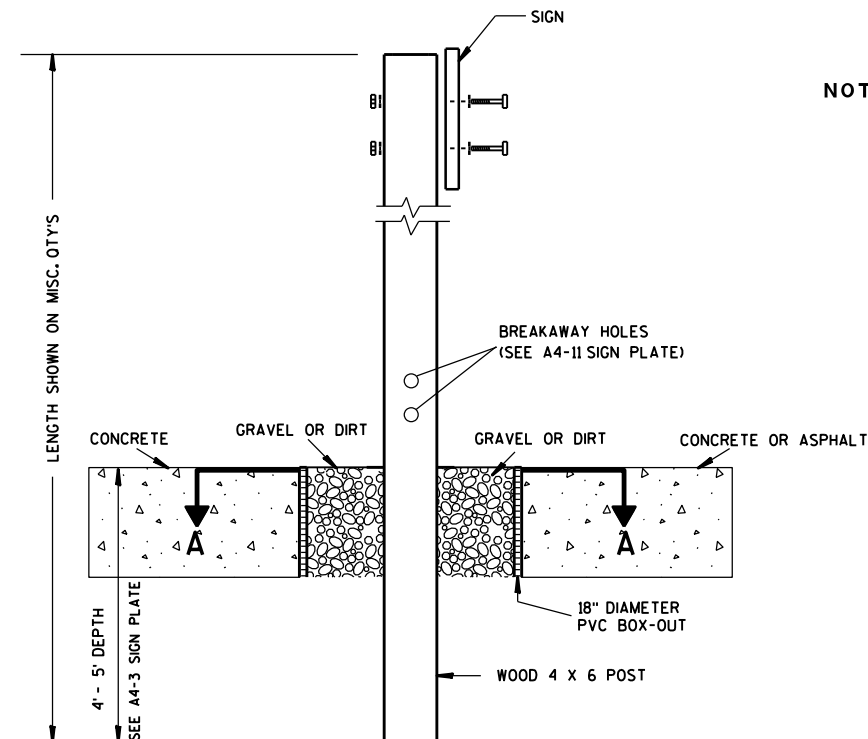
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

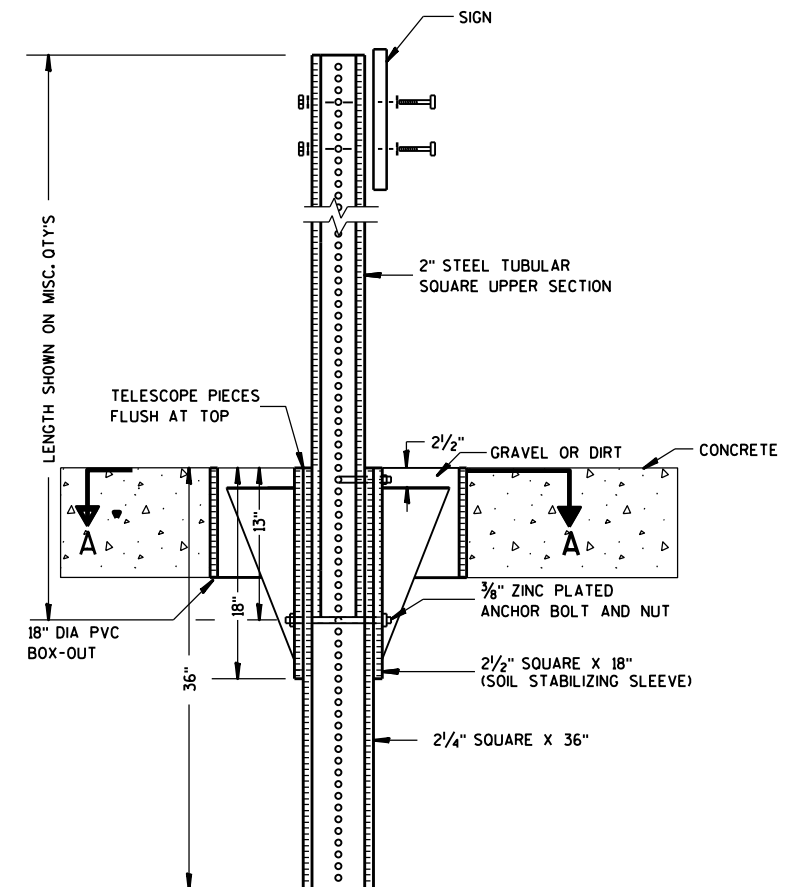
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

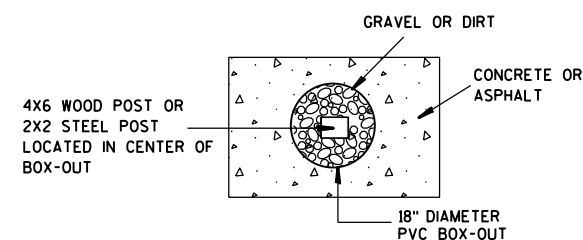
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 102 A4-3B.1

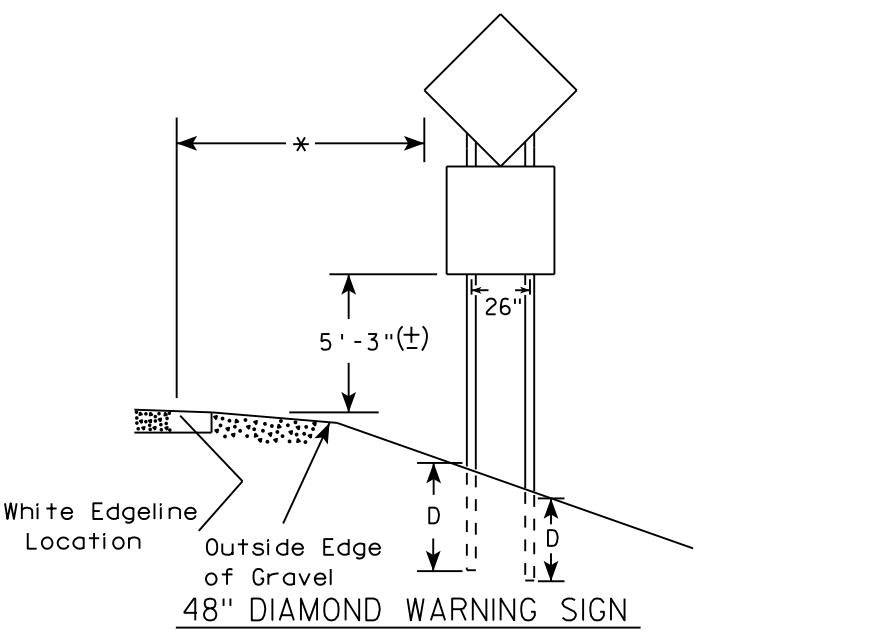
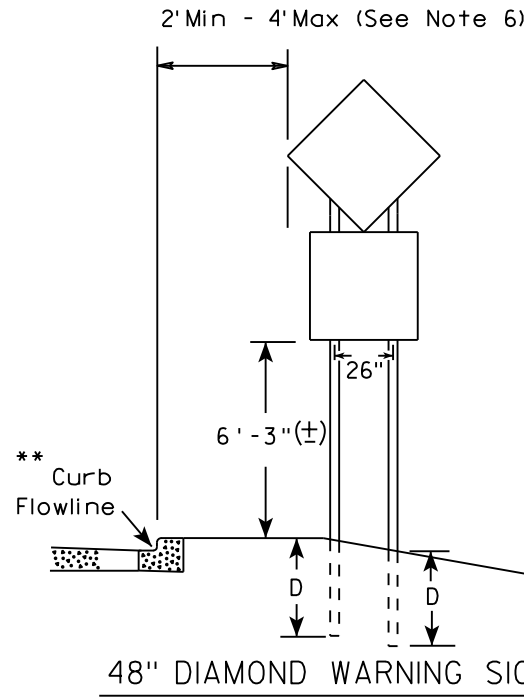
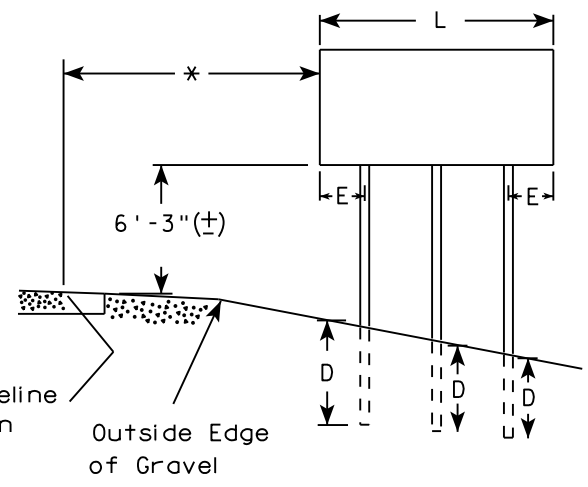
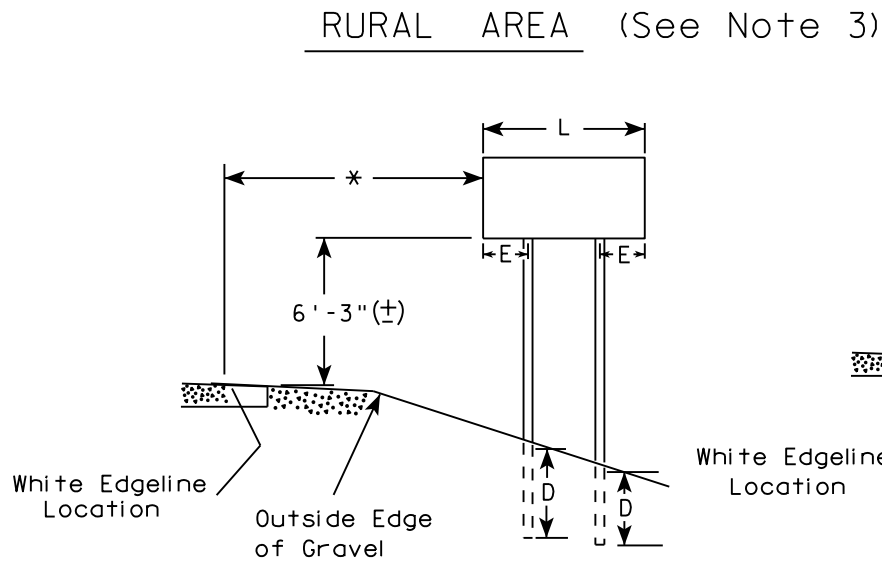
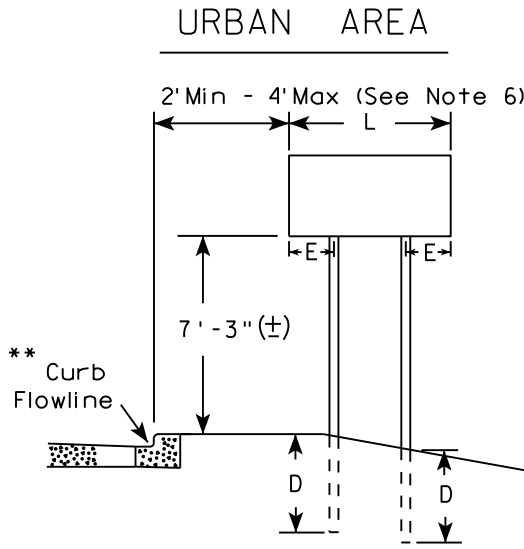
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- 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. J-Assemblies are considered to be one sign for mounting height.
 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 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

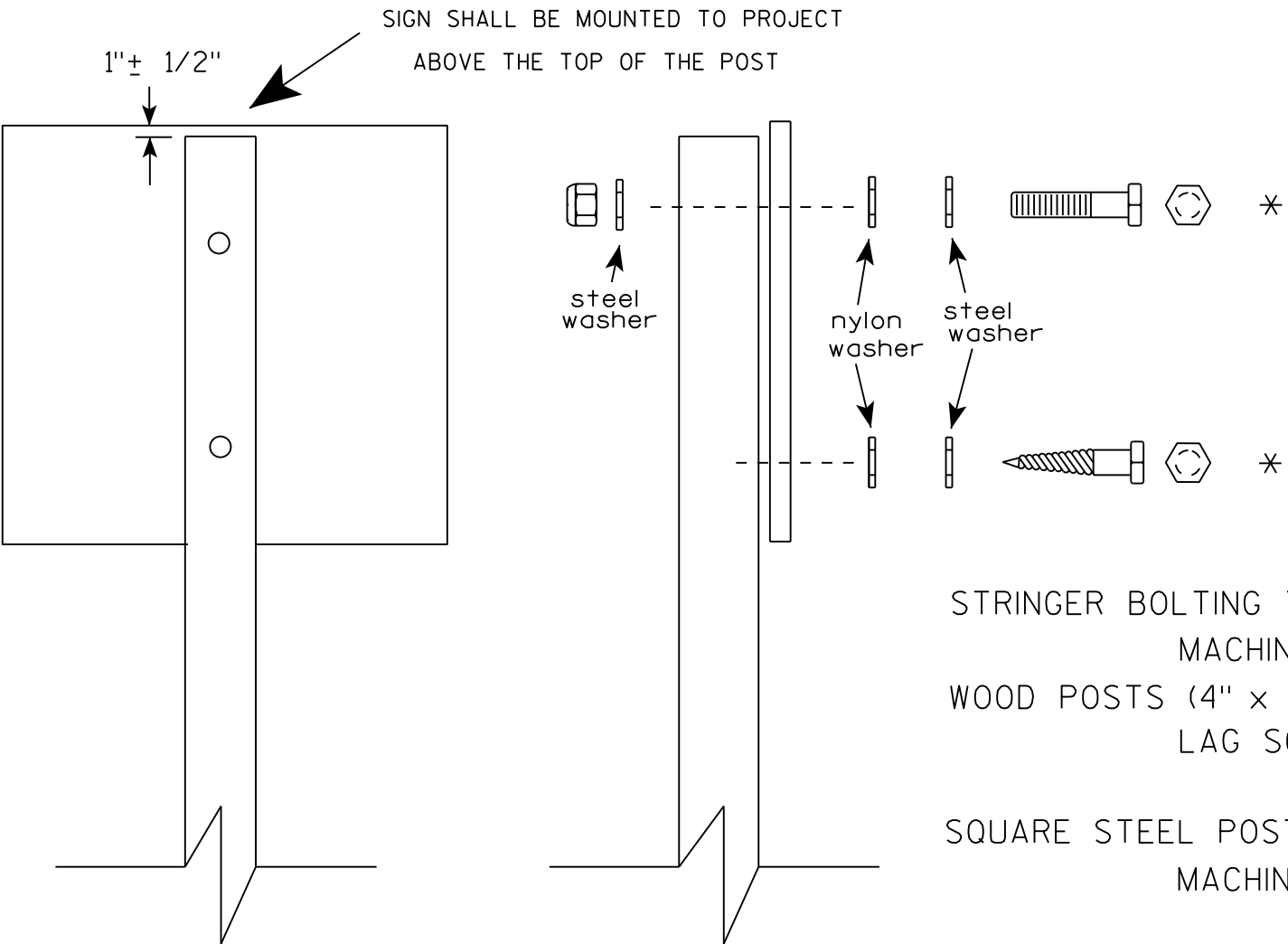
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



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.

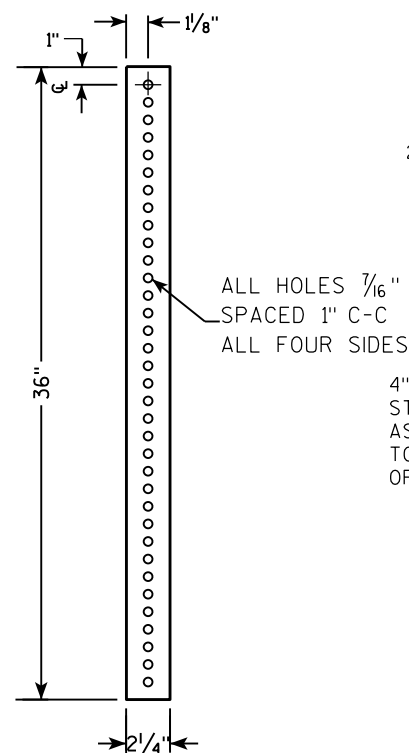
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

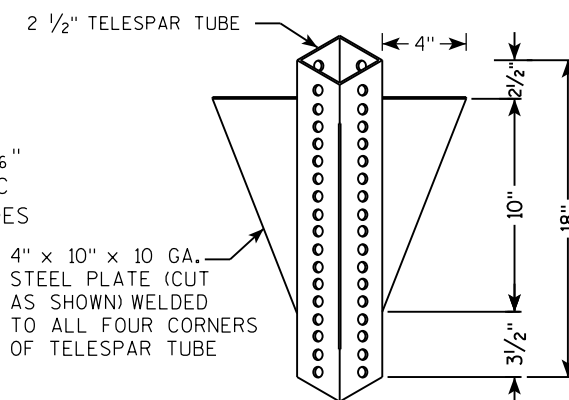
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8 104

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



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



TECHNICAL DRAWING OF A SIGN POST ASSEMBLY.

Side View Labels:

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 2 1/2" GRAVEL OR DIRT
- $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- 2 1/4" SQUARE X 36"

Cross Section Labels:

- TELESCOPE PIECES FLUSH AT TOP
- 13"
- 18"
- 36"
- 18" DIA SCHEDULE 40 PVC BOX-OUT

Vertical Dimension:

- LENGTH SHOWN ON MISC. QTY'S

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

- Overall height: LENGTH SHOWN ON MISC. QTYS
- Section 1: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Section 2: 2 1/4" SQUARE X 36"
- Section 3: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Section 4: 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT (1" diameter)
- Section 5: 3/8" ZINC PLATED ANCHOR BOLT AND NUT
- Section 6: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Section 7: 2 1/4" SQUARE X 36"
- Section 8: 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT (1" diameter)
- Section 9: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Section 10: SIGN

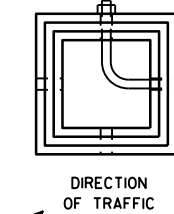
Top View Dimensions:

- Overall width: 36"
- Section 1: 18"
- Section 2: 12"
- Section 3: 12"

Material and Assembly Notes:

- ALL HOLES 7/16" SPACED 1" C-C
- ALL FOUR SIDES
- TELESCOPE PIECES FLUSH AT TOP
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



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 PLAT 105 14-9.9

SHEET NO: _____

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN

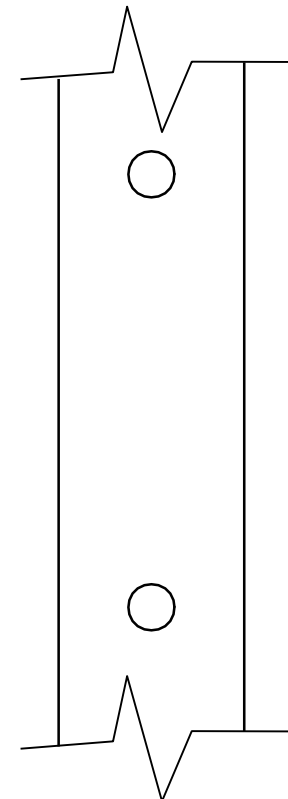
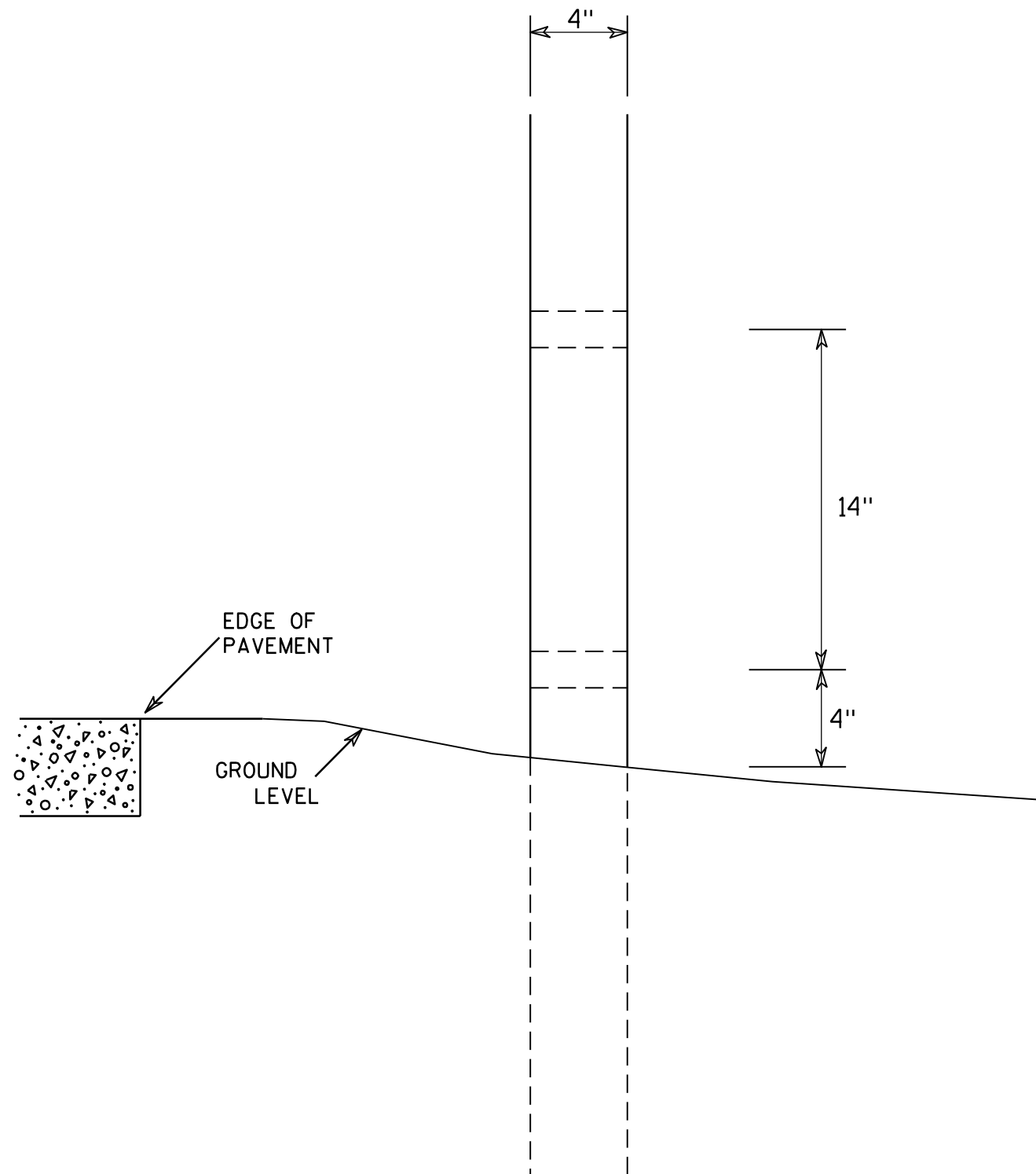
PLOT DATE : 05-FEB-2015 17:09

PLOT BY : mscs_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

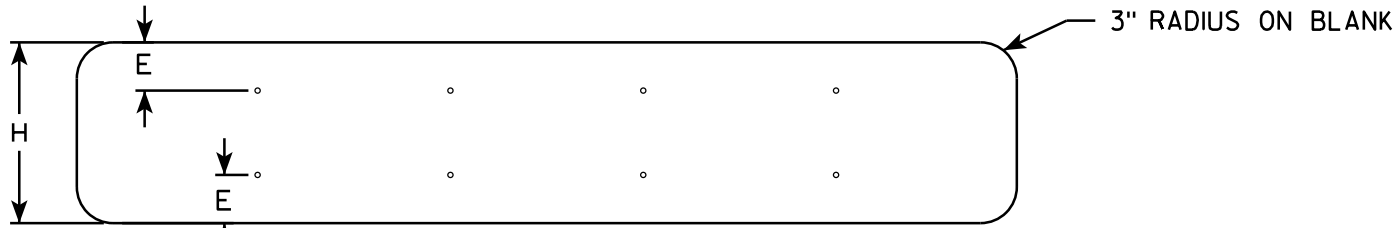
PROJECT NO:

HWY:

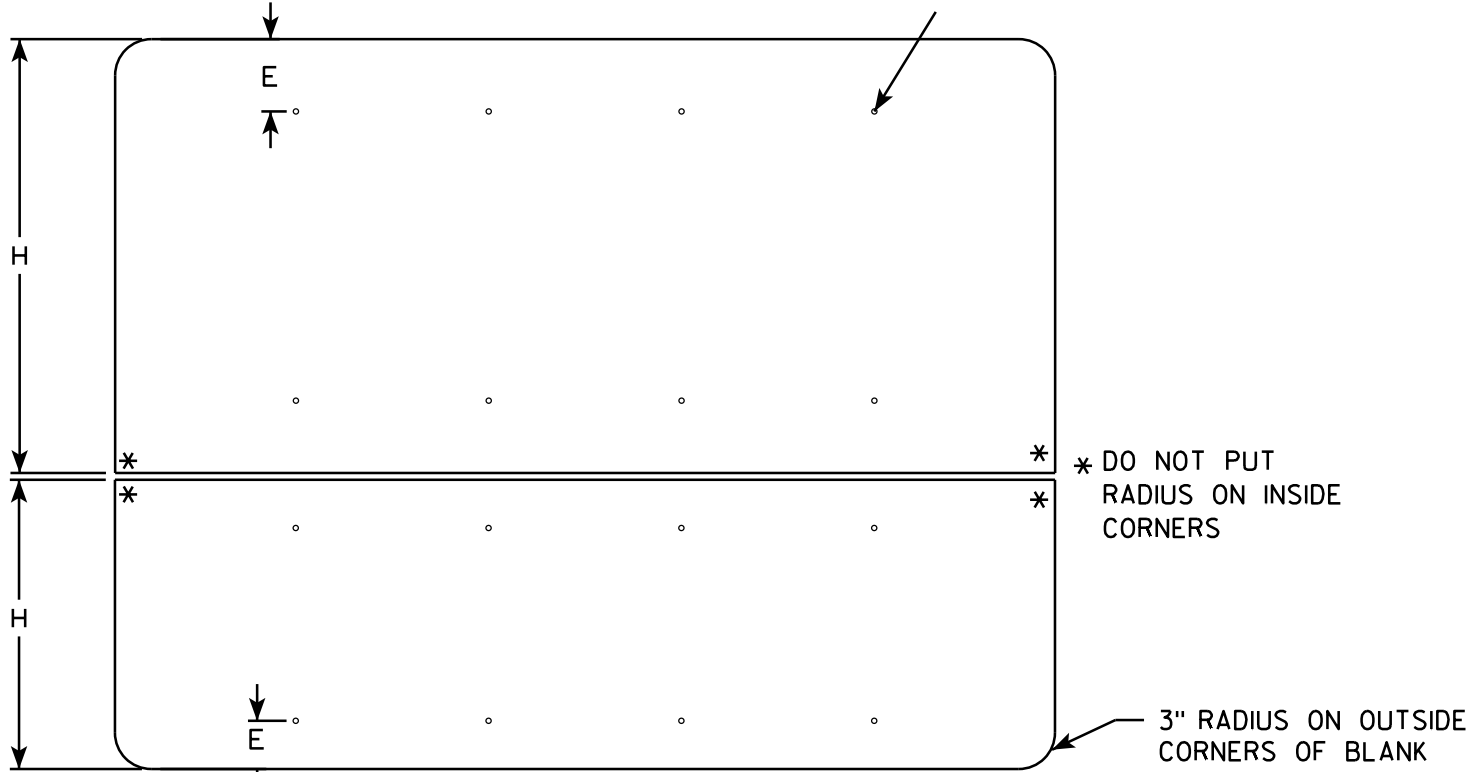
COUNTY:

SHEET NO: 106

E



SINGLE PIECE ALUMINUM SIGN 1/16" MOUNTING HOLES

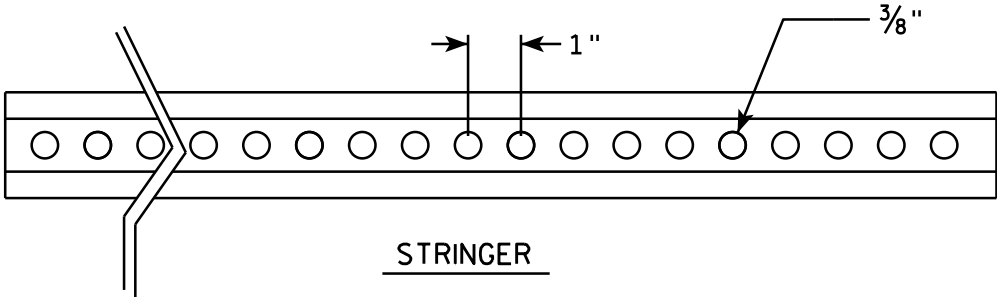


MULTI-PIECE ALUMINUM SIGN

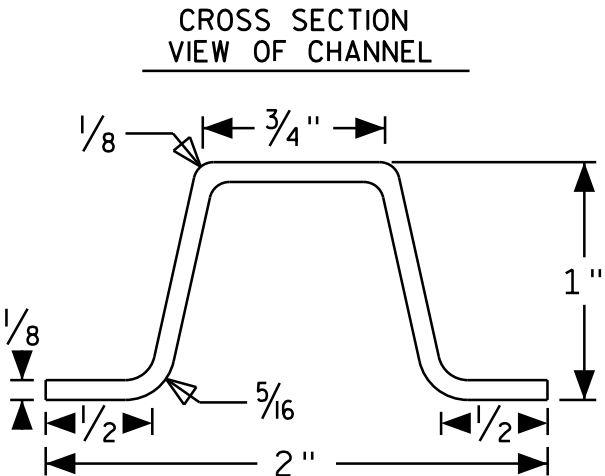
GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

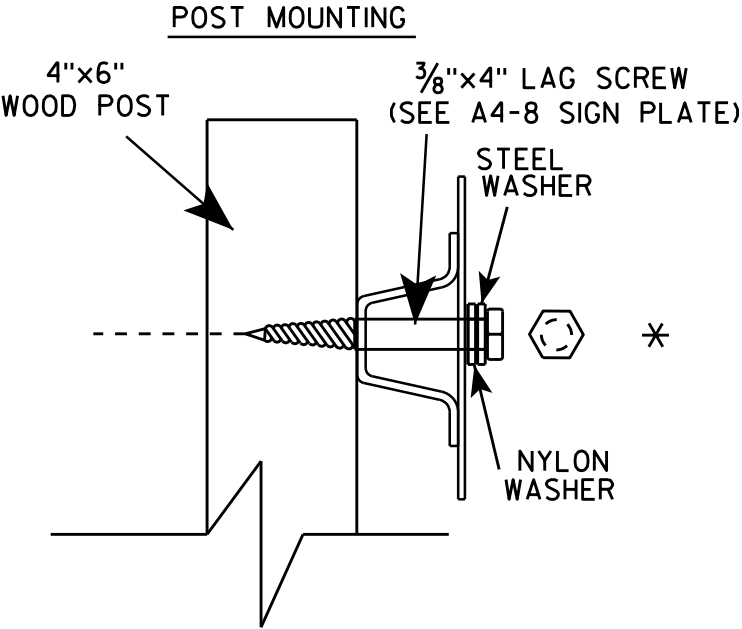
SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



STRINGER



CROSS SECTION VIEW OF CHANNEL



POST MOUNTING

SIGN STRINGER
MOUNTING REQUIREMENTS

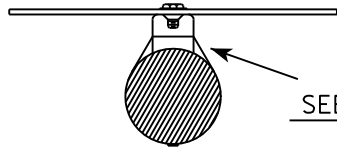
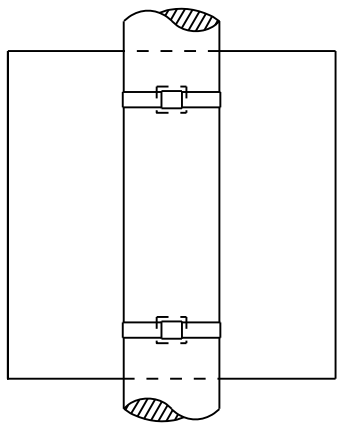
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
107

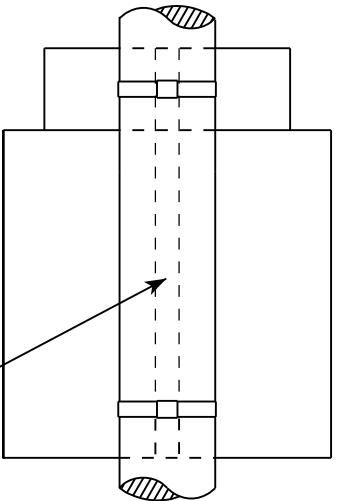
BANDING

SINGLE SIGN

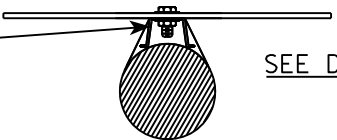


SEE DETAIL A

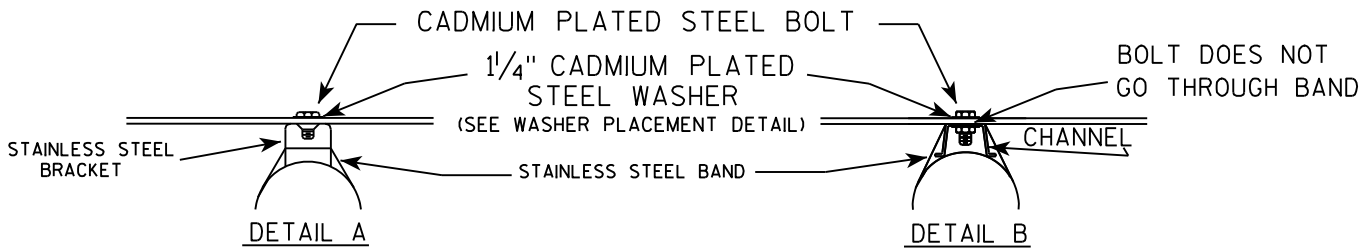
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



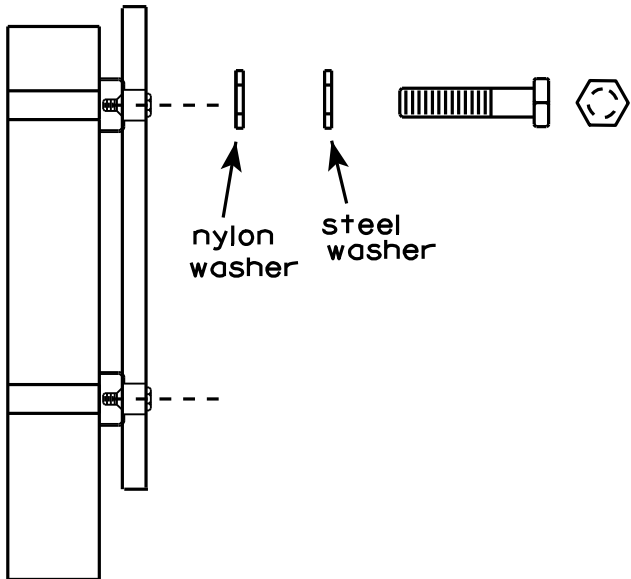
SEE DETAIL B



GENERAL NOTES

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

WASHER PLACEMENT



nylon washer
steel washer

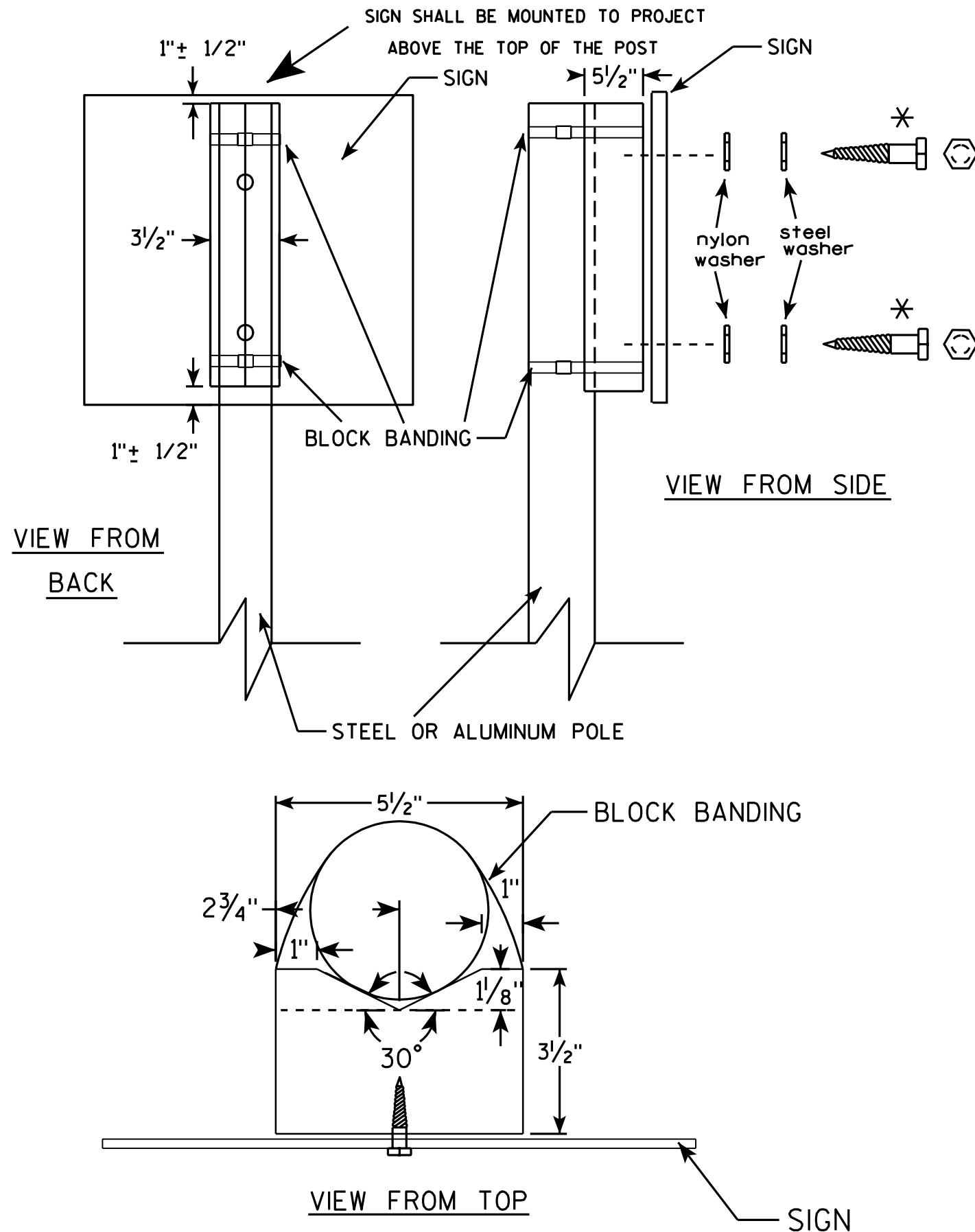
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

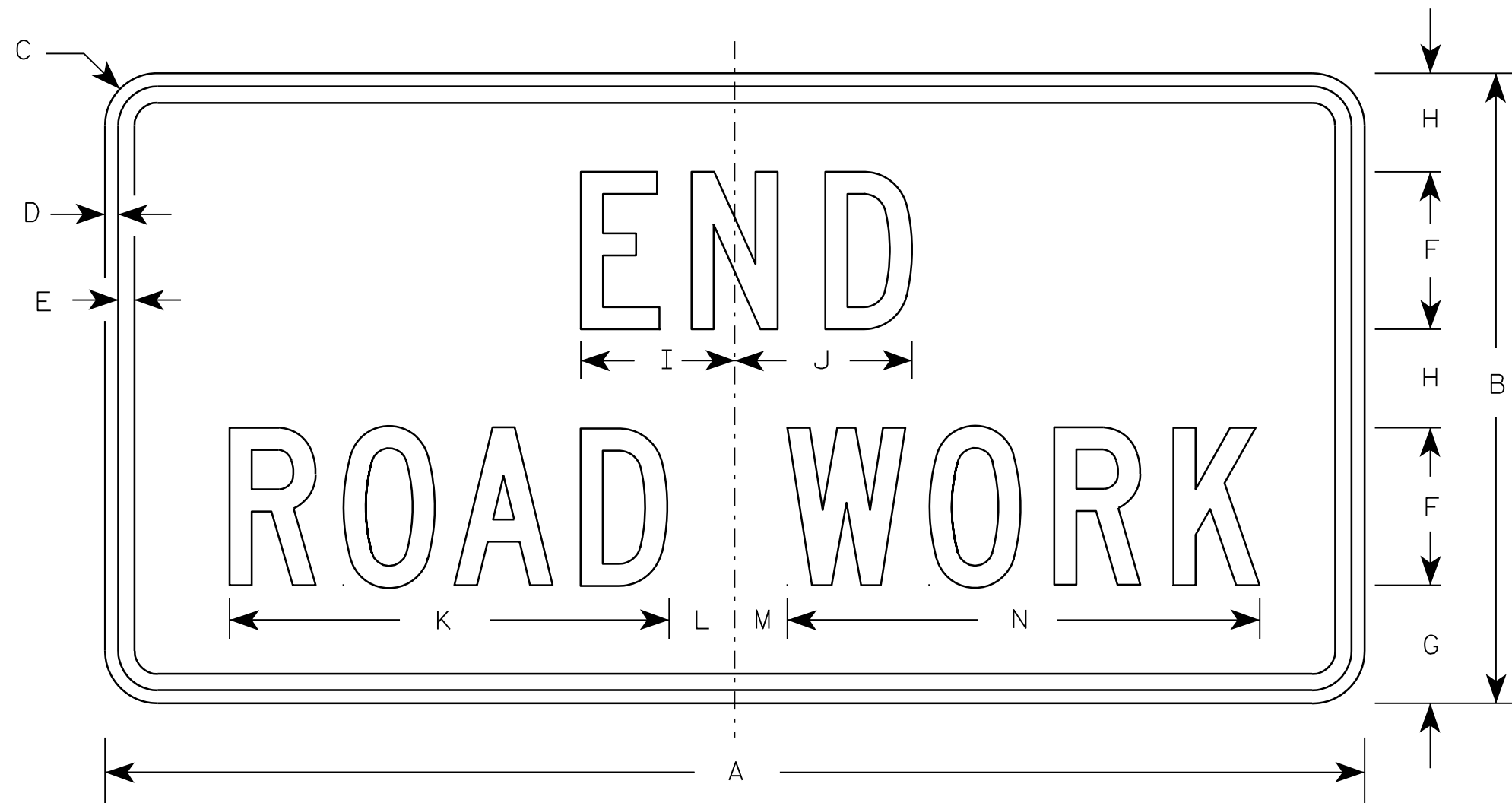
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 109

E

7



G20-2A

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

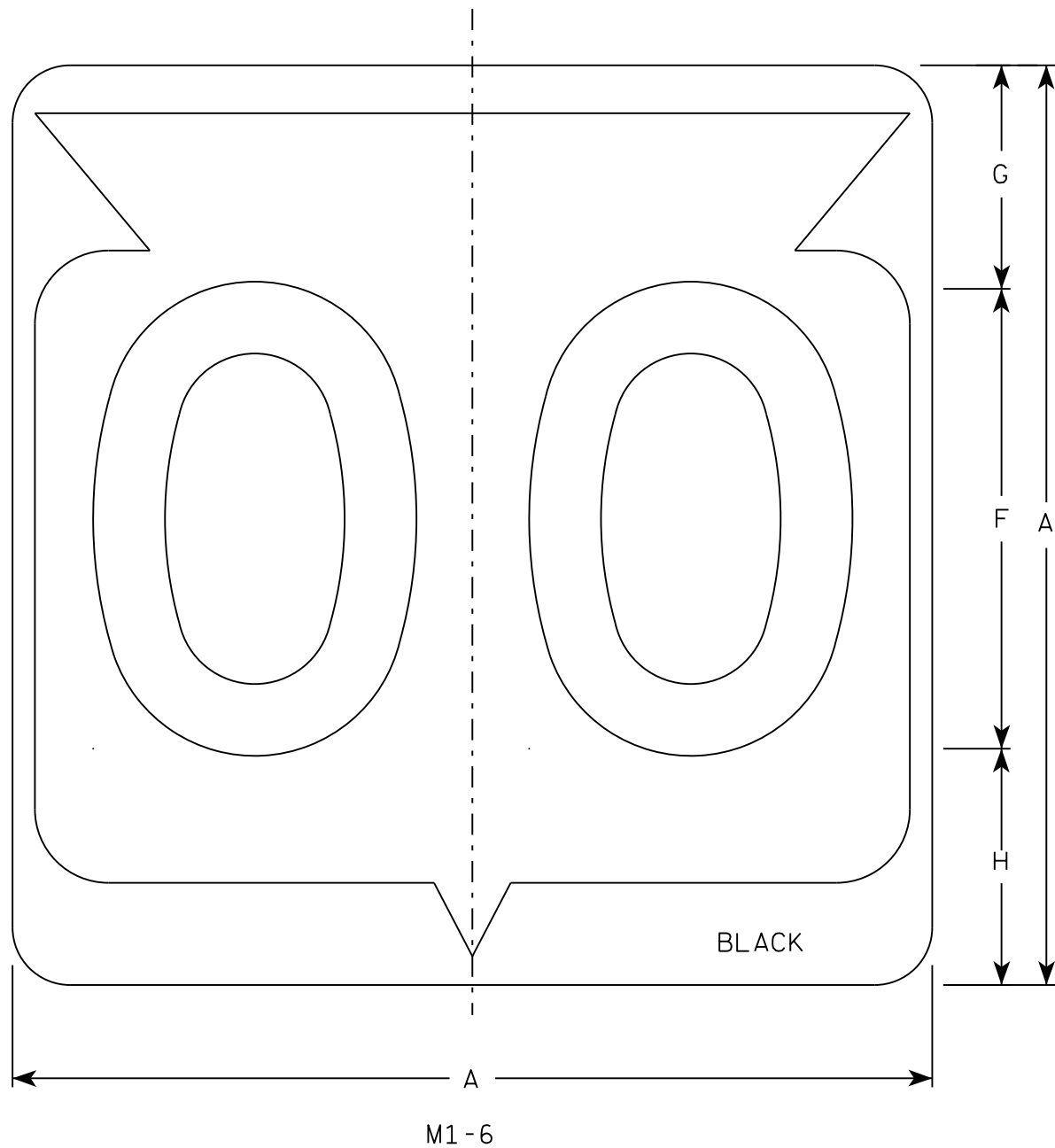
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	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

NOTES

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

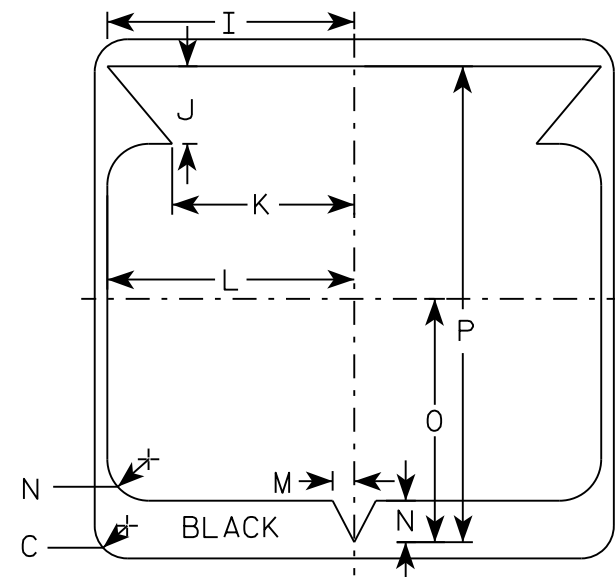
7

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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.



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			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
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
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
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

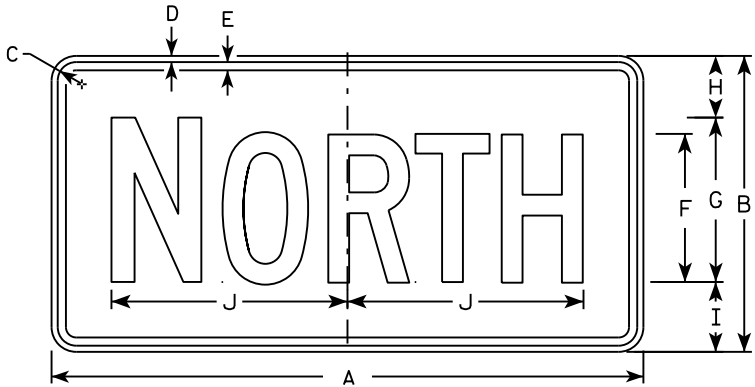
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

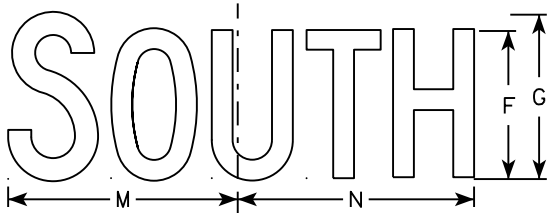
SHEET NO: 111



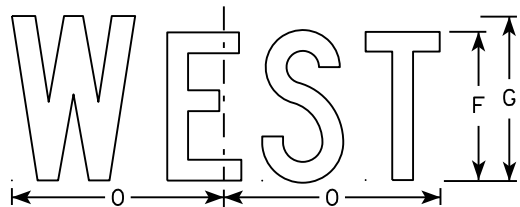
M3-1
MM3-1
MP3-1



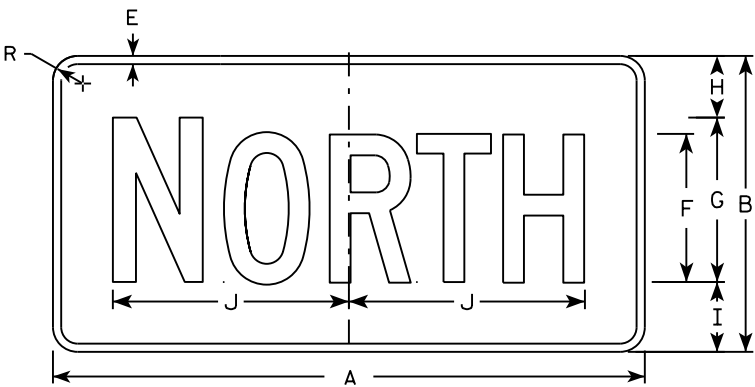
M3-2
MM3-2
MP3-2



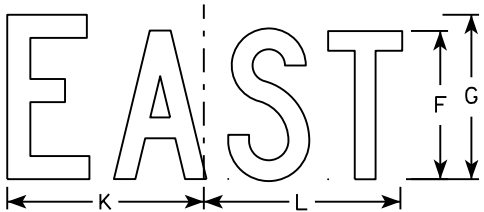
M3-3
MM3-3
MP3-3



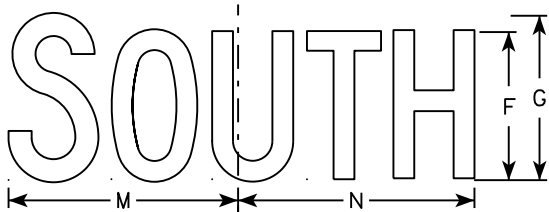
M3-4
MM3-4
MP3-4



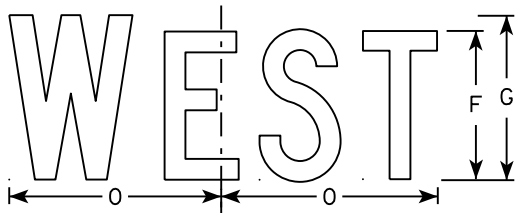
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



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 thru M3-4
SERIES

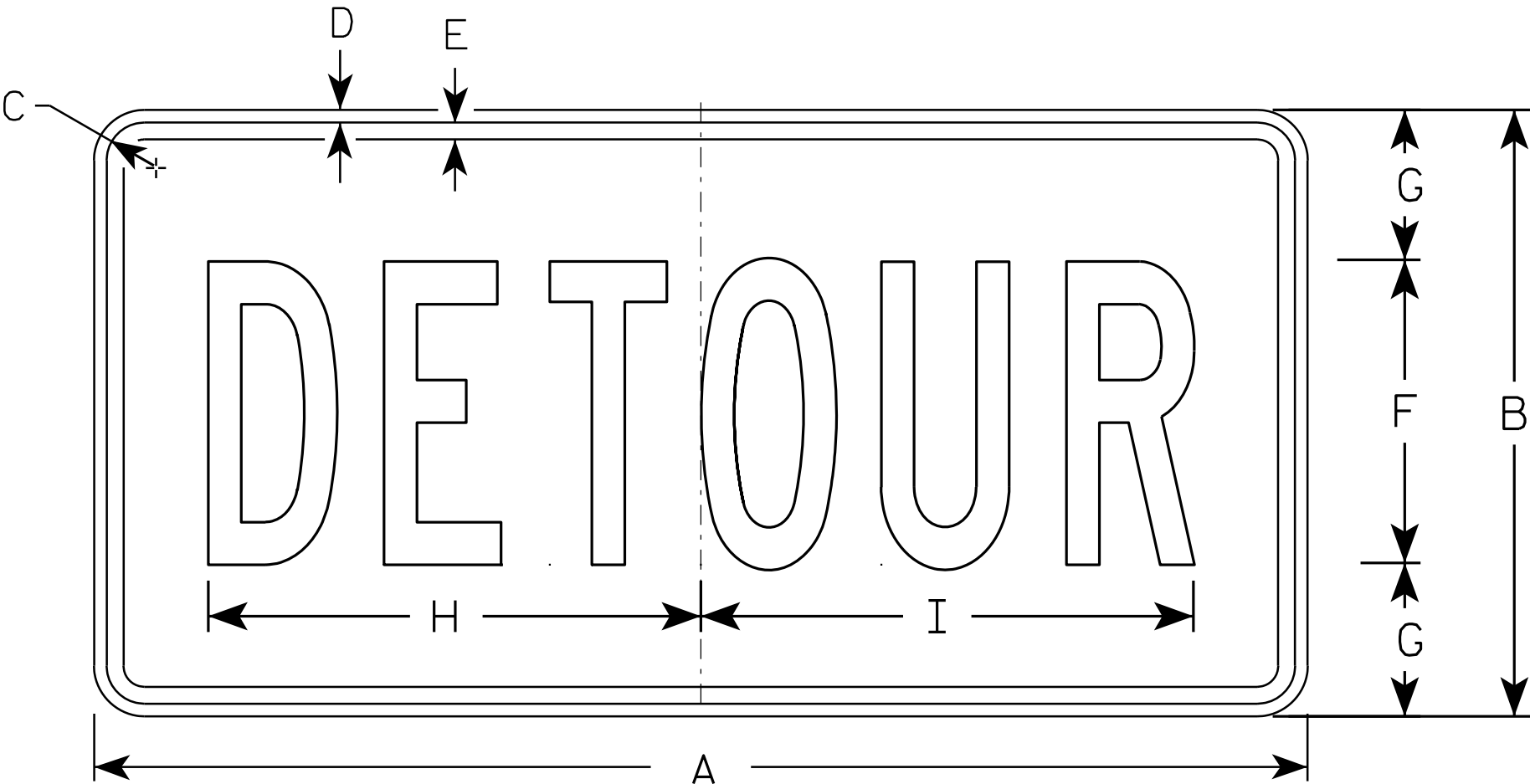
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 112 M3-1.14

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 - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



M4 - 8

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	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

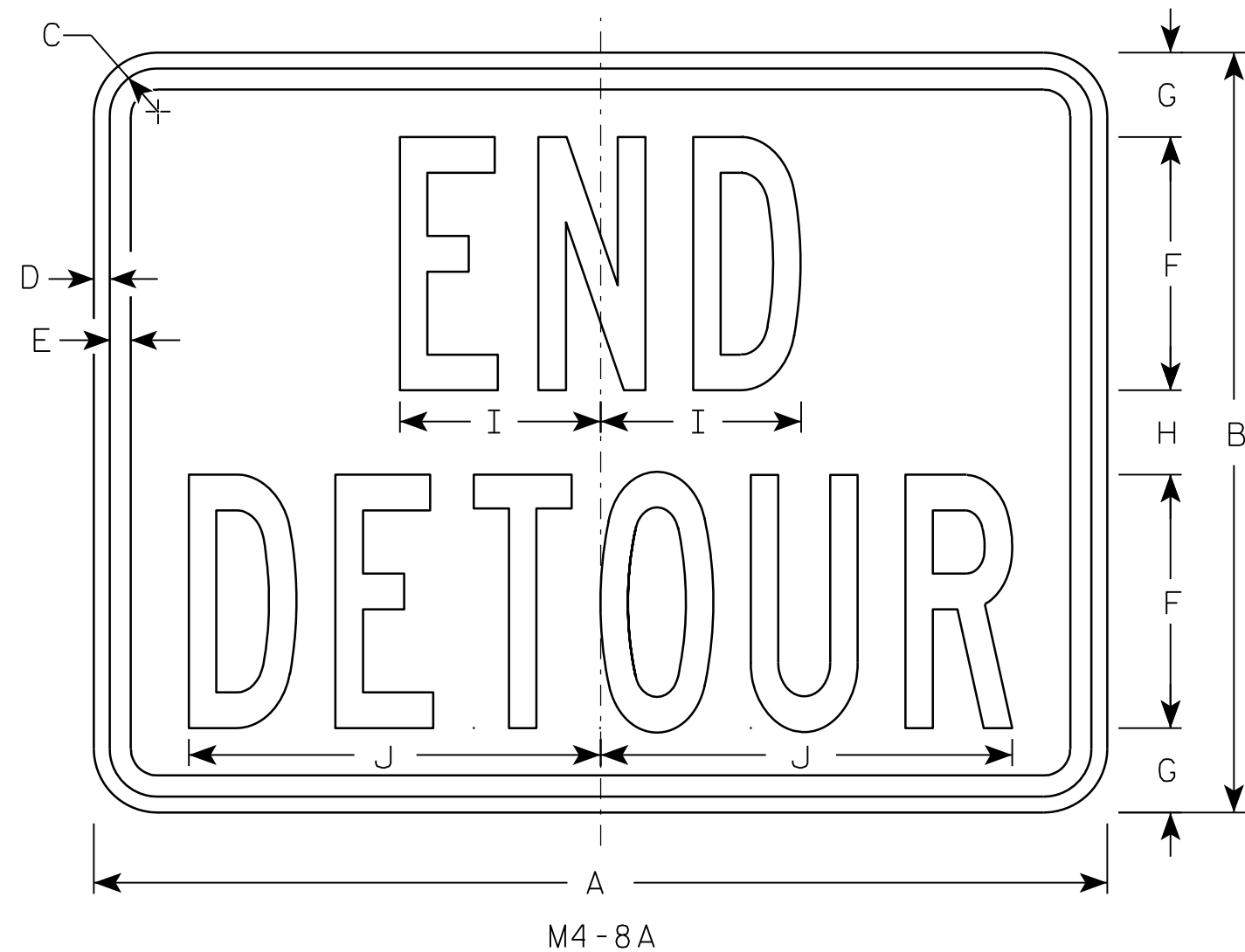
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

7



NOTES

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

7

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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

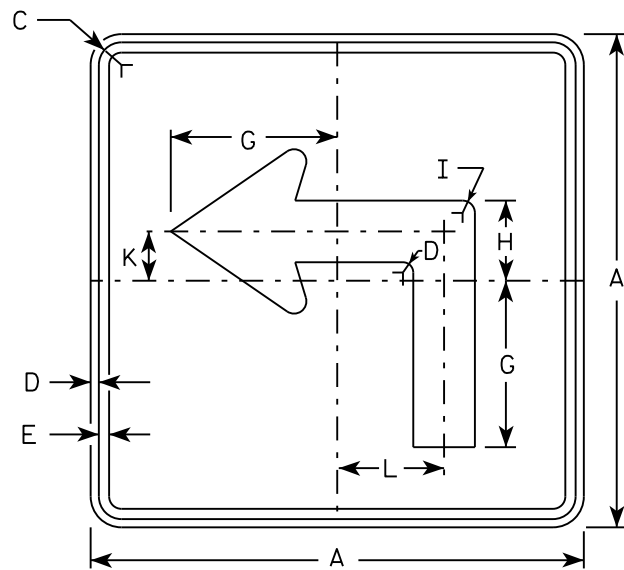
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 114	E
-------------	------	---------	--	---------------	---

STANDARD SIGN
M4-8A

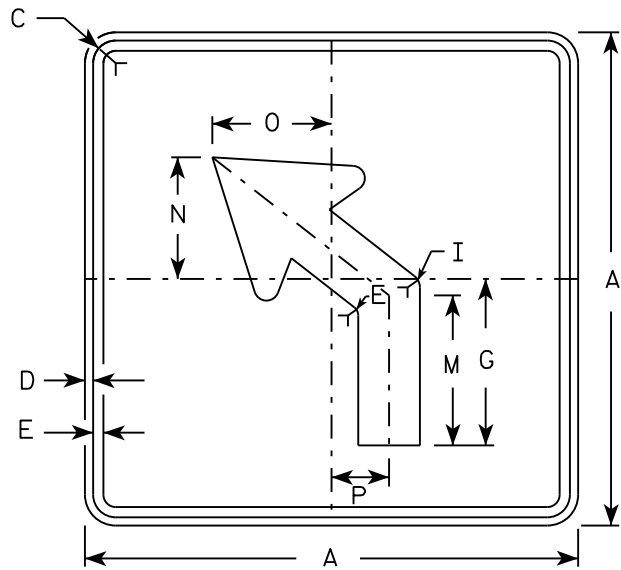
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

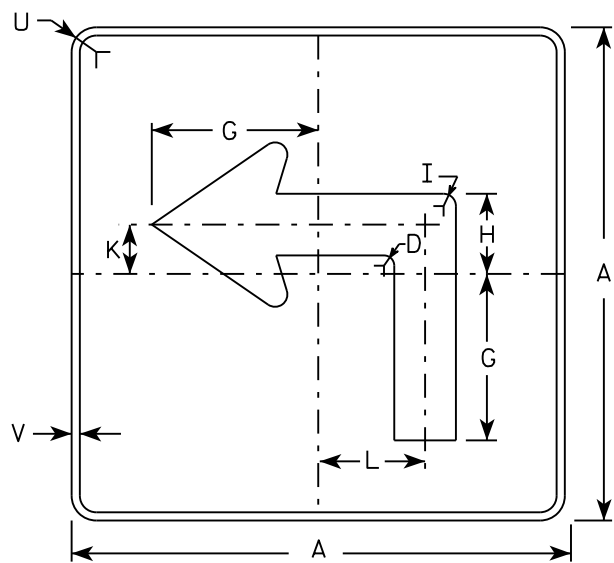
DATE 3/9/11 PLATE NO. M4-8A.2



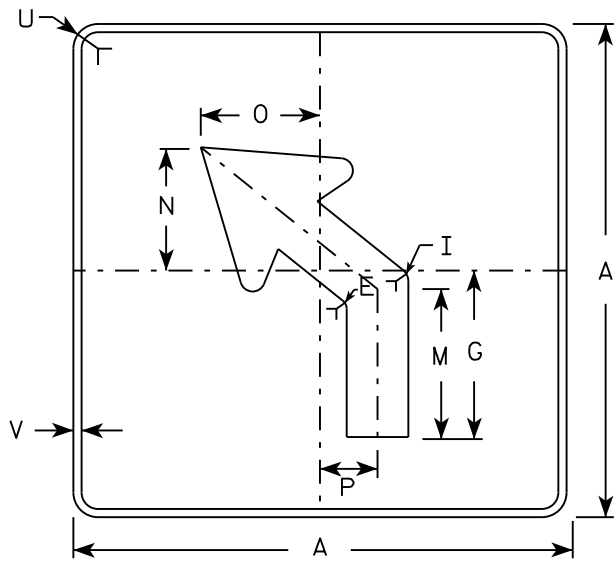
M5-1L
MM5-1L
M05-1L
MP5-1L



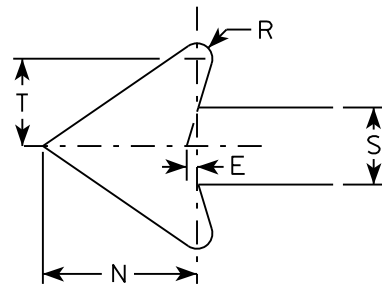
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 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.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

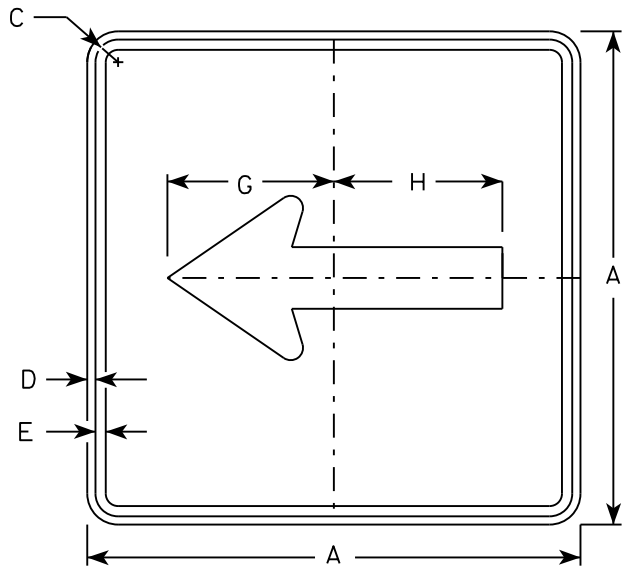
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

STANDARD SIGN
M5-1 & M5-2

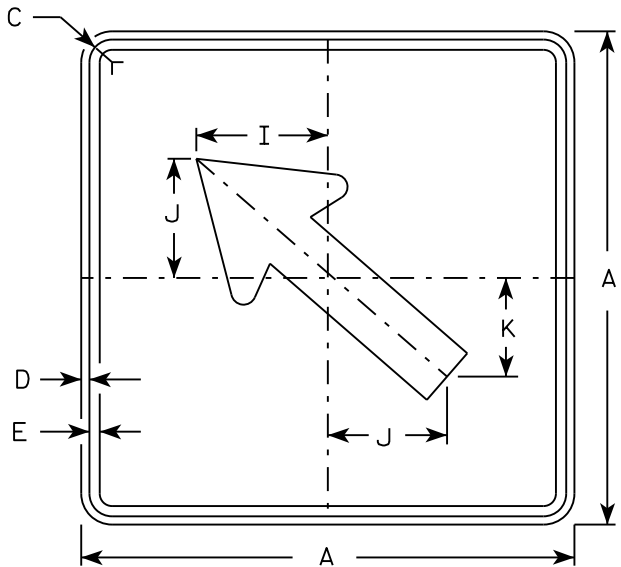
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

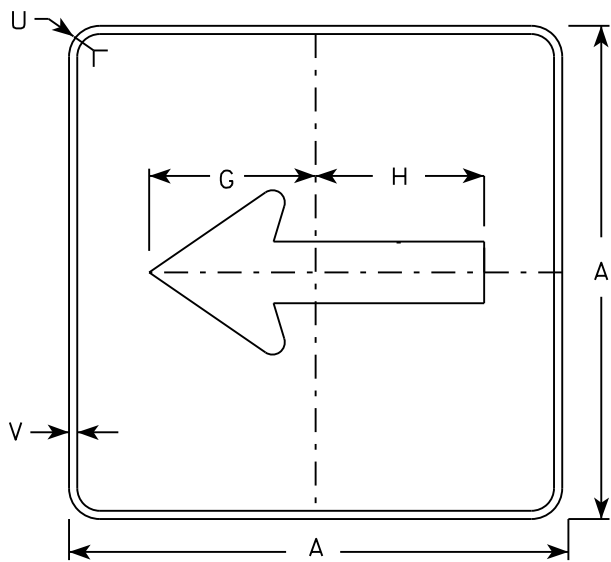
DATE 10/15/15 PLATF 115 M5-1.13



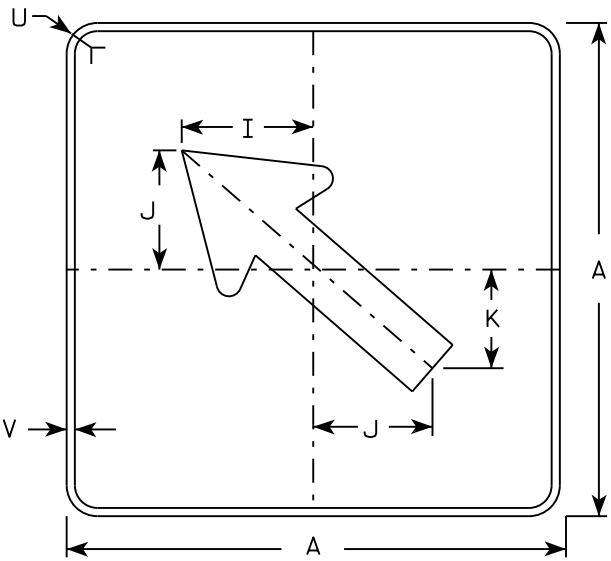
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



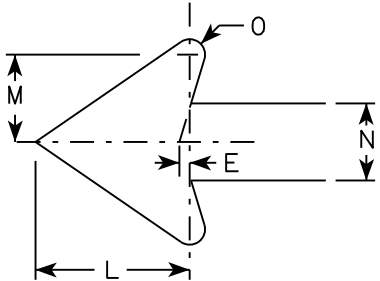
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 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.
- 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
M06-1 and M06-2 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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

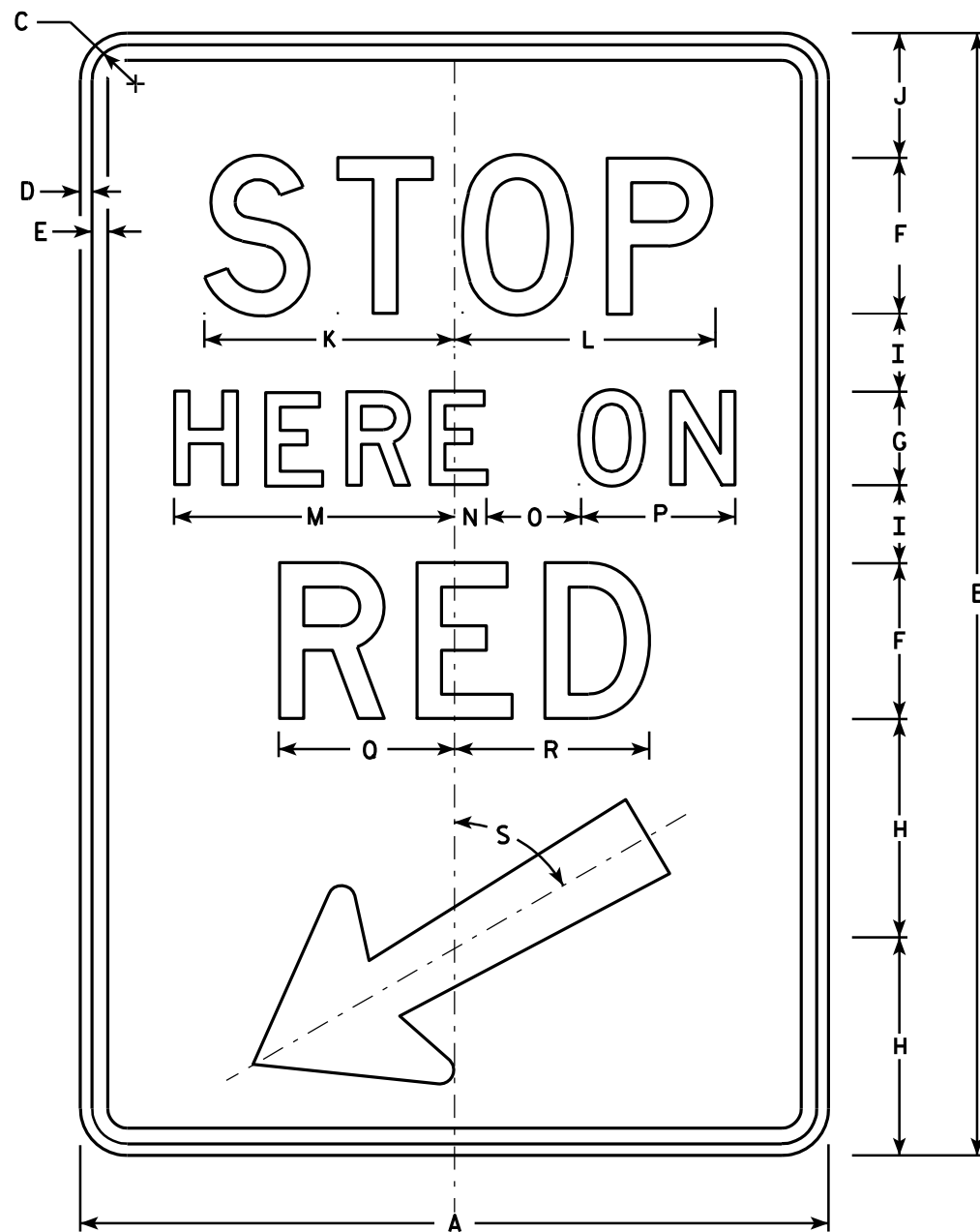
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

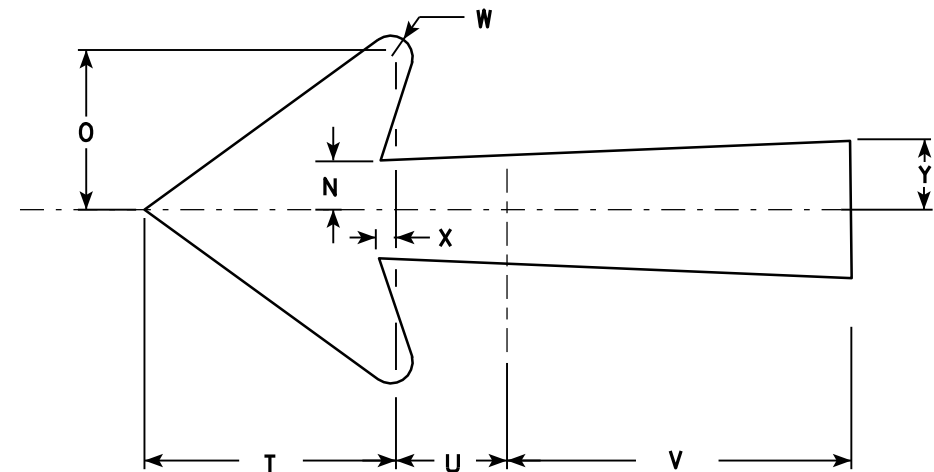
DATE 10/15/15 PLAT 116 M6-1.15



R10-6

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 - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



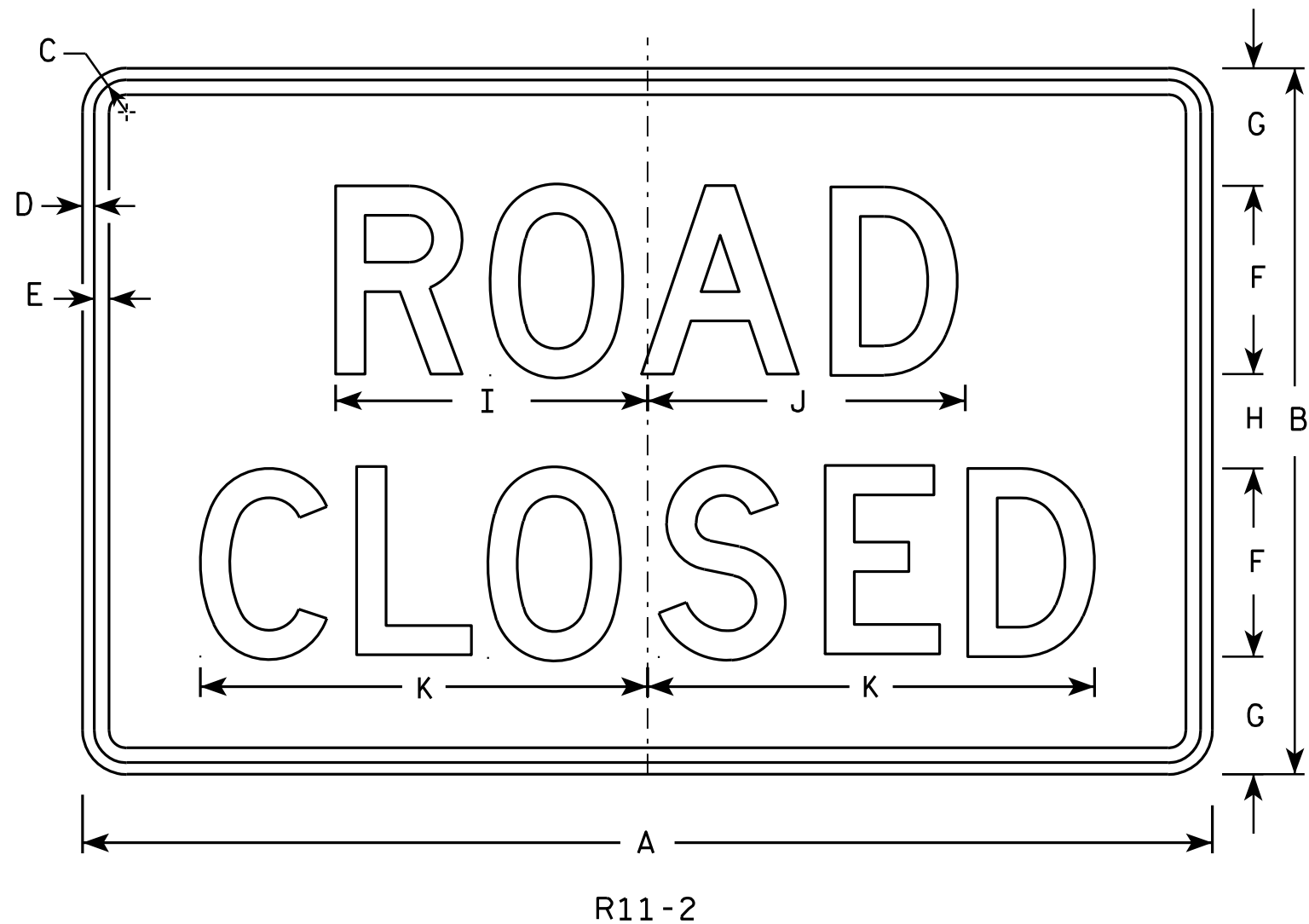
Arrow Detail

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	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
2M	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
3																											
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 117	E
-------------	------	---------	---------------	---

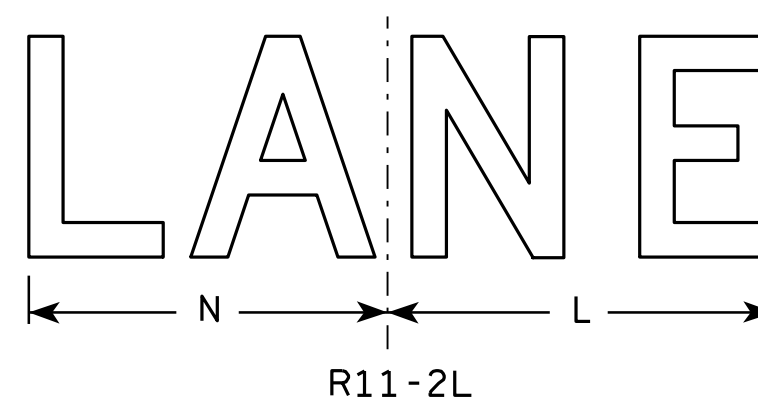
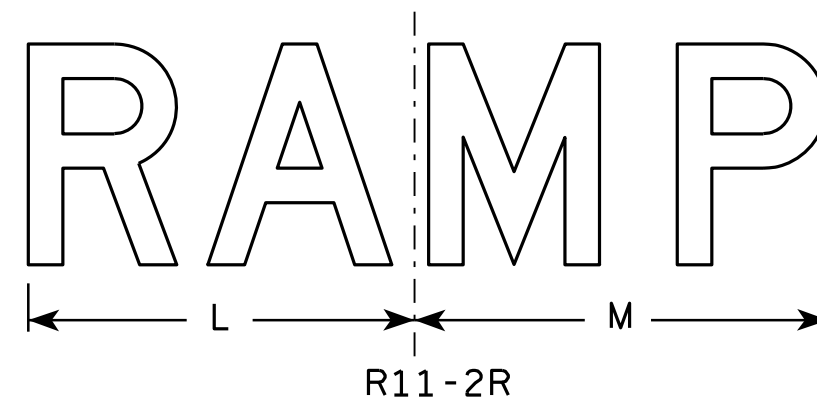
STANDARD SIGN
R10-6

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/5/11 PLATE NO. R10-6.6



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 - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.

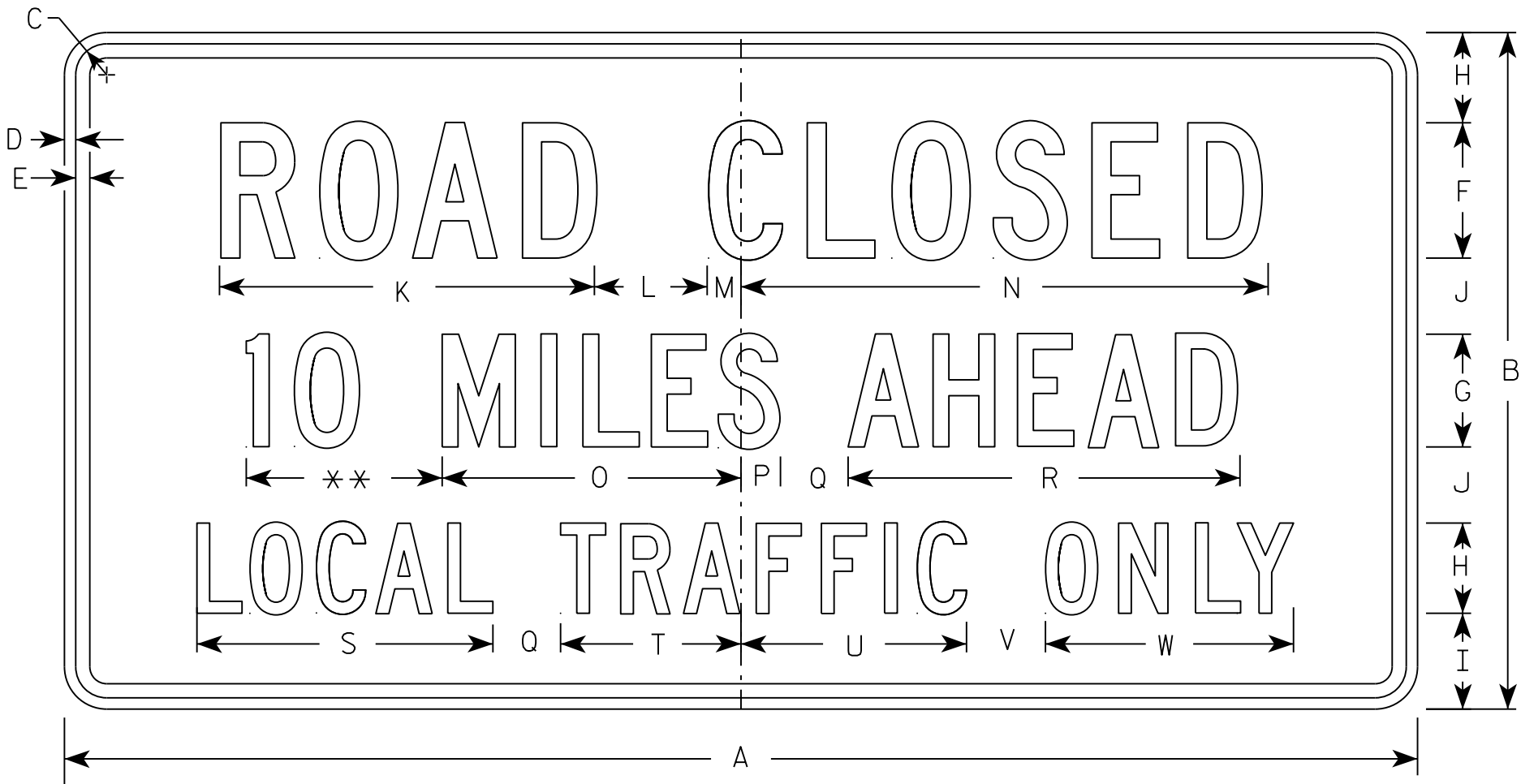


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-2.10

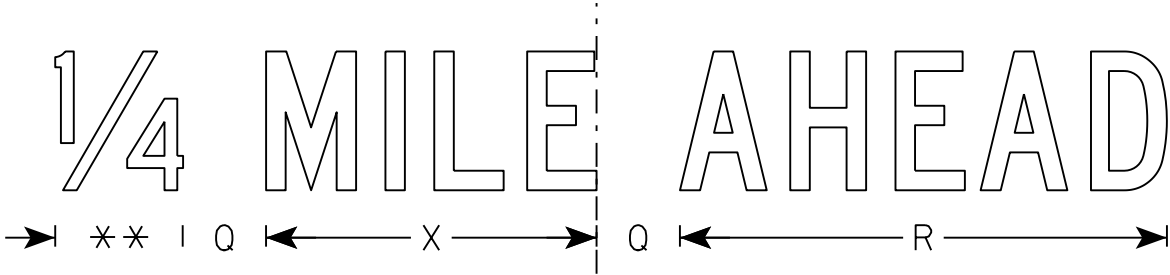
NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - 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.
- 5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3

** See Note 5

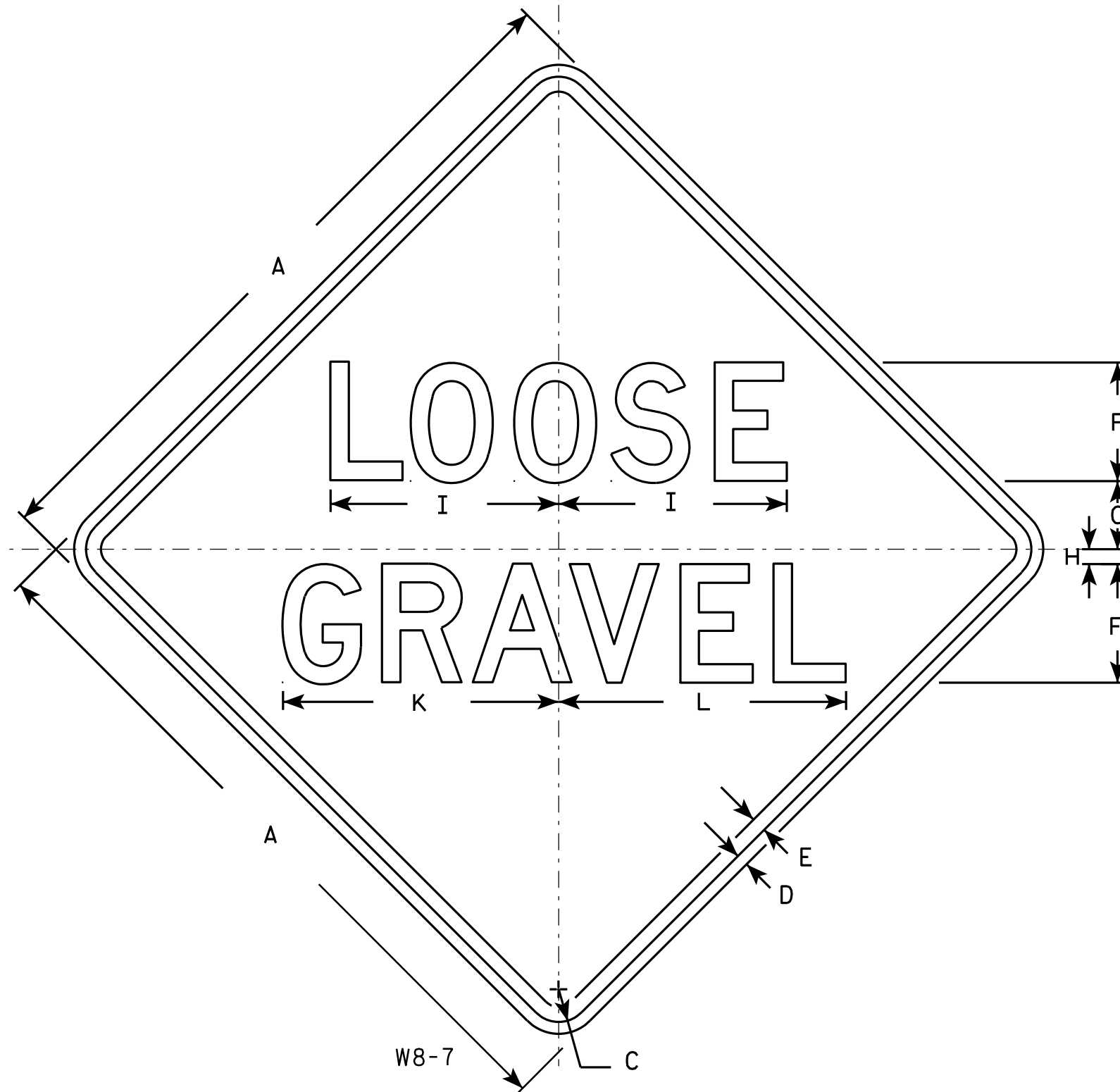


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	11 1/8	3	1 1/8	15 1/4	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8			4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/15/17 PLATE NO. R11-3.8



NOTES

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

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

STANDARD SIGN

W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/30/12 PLATE NO. W8-7.7

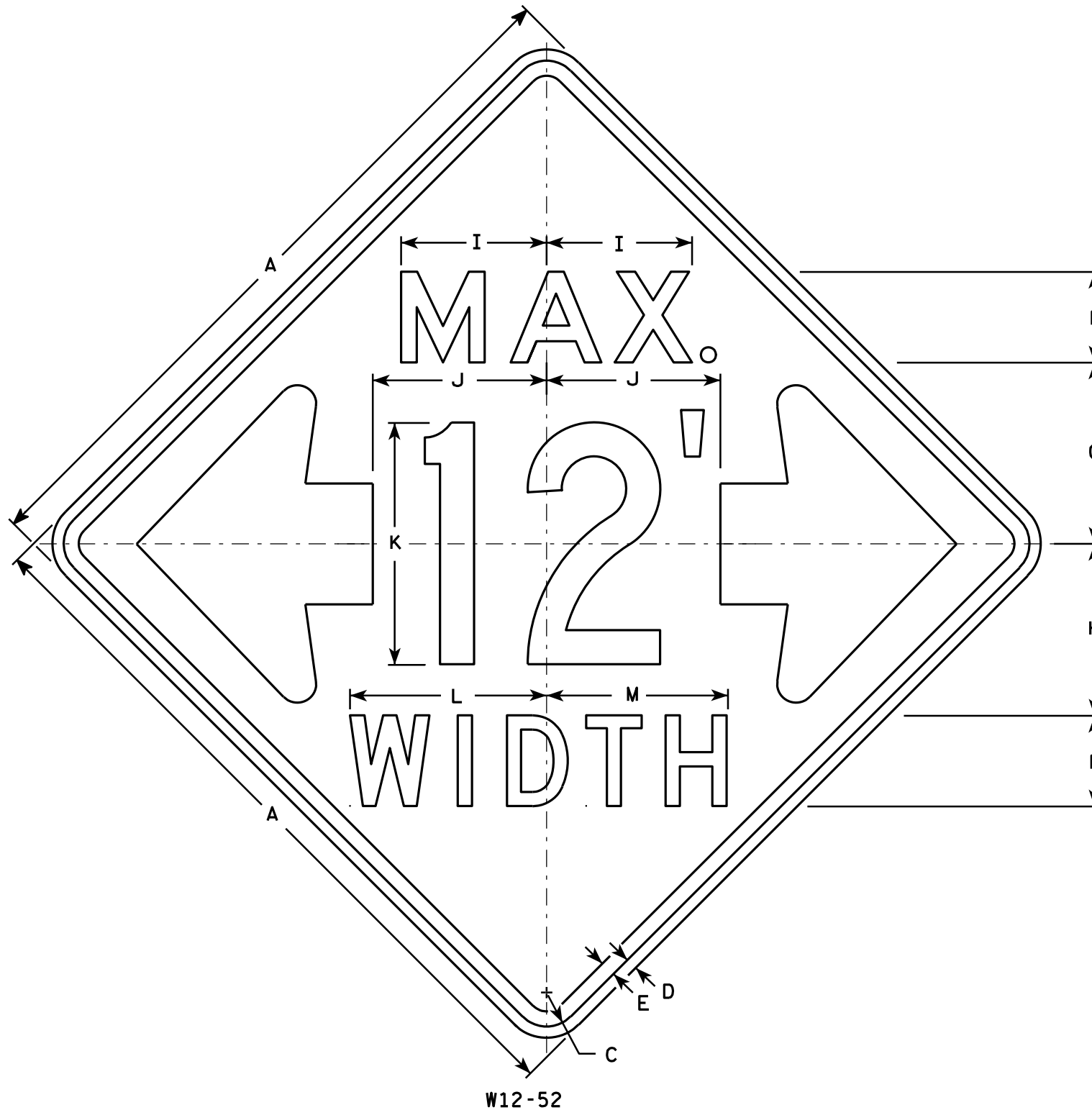
PROJECT NO:

HWY:

COUNTY:

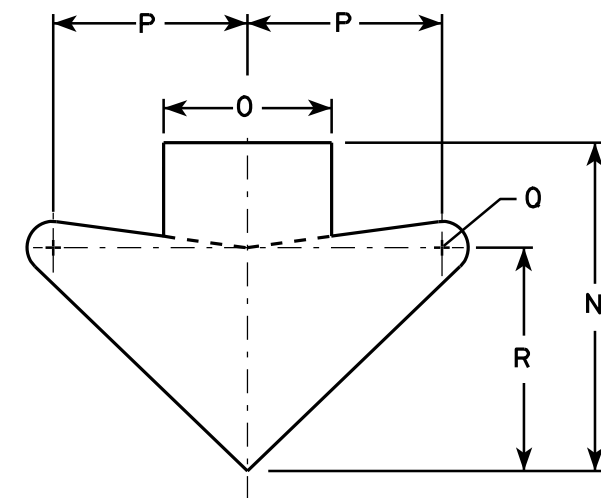
SHEET NO: 120

E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO:

HWY:

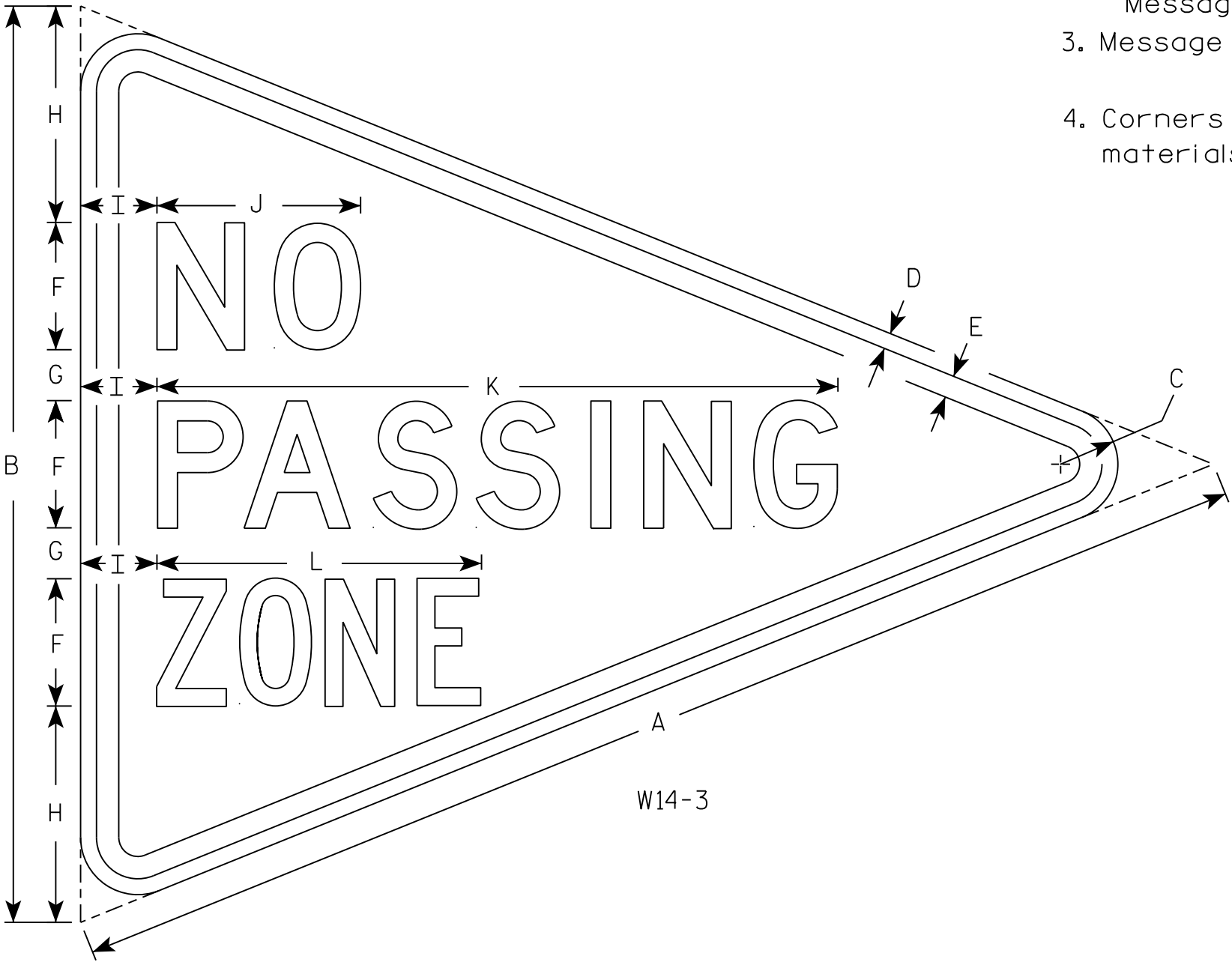
COUNTY:

SHEET NO: 121

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



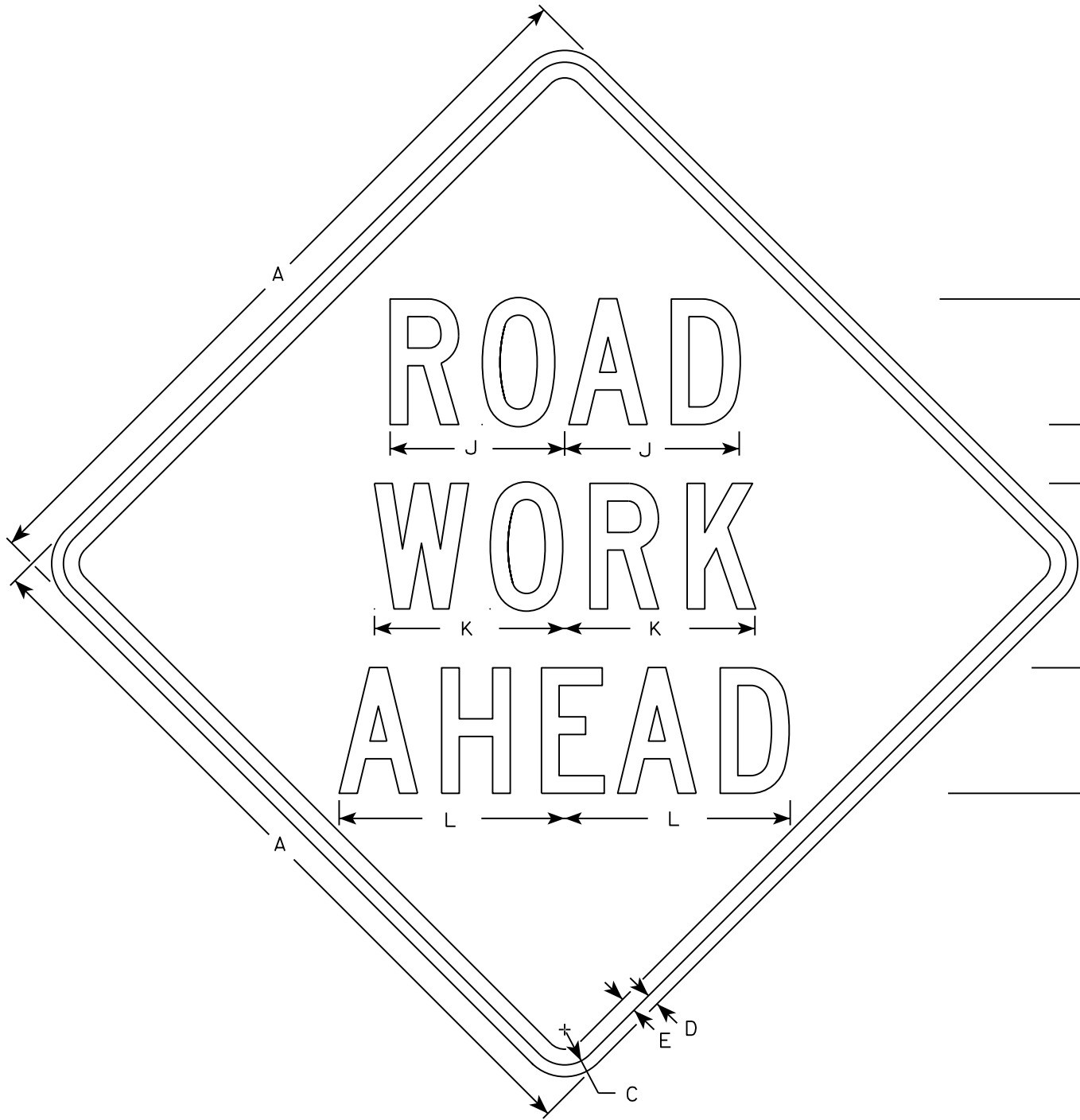
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

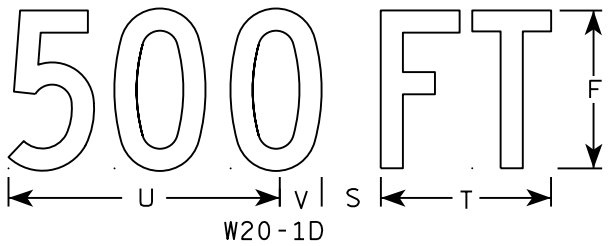
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

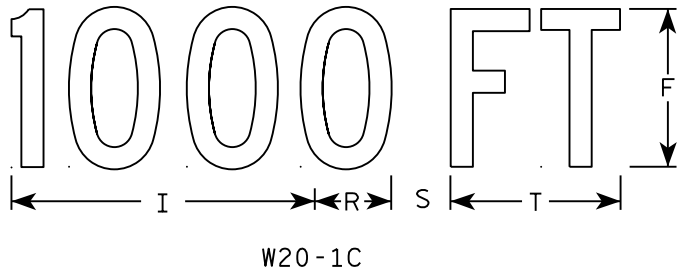
DATE 3/21/17 PLATE NO. W14-3.10



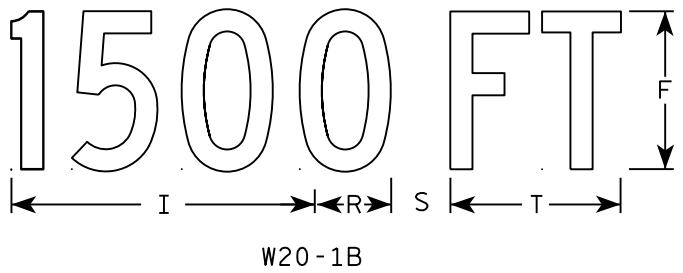
W20-1A



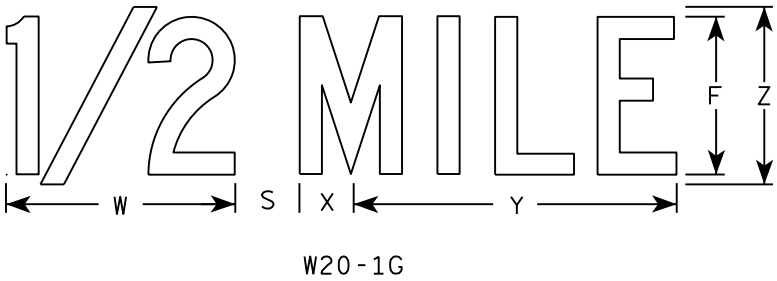
W20-1D



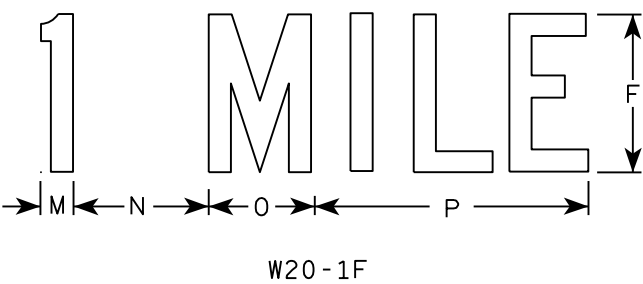
W20-1C



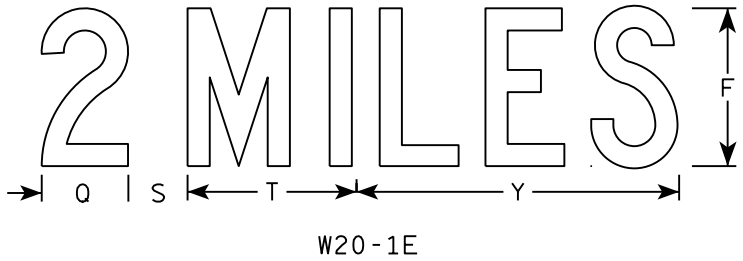
W20-1B



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

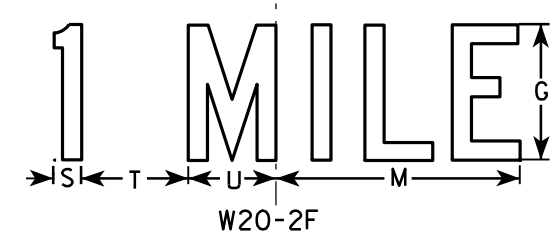
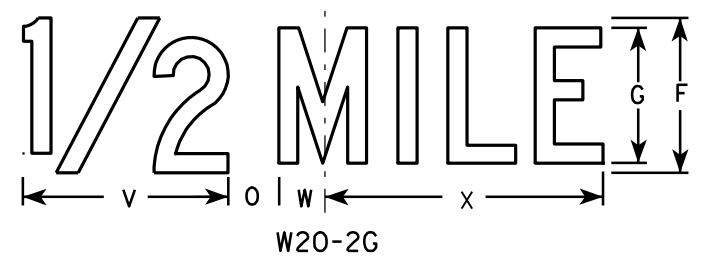
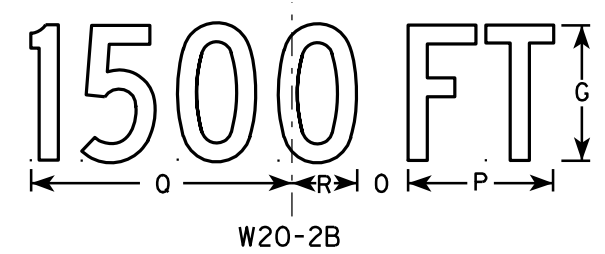
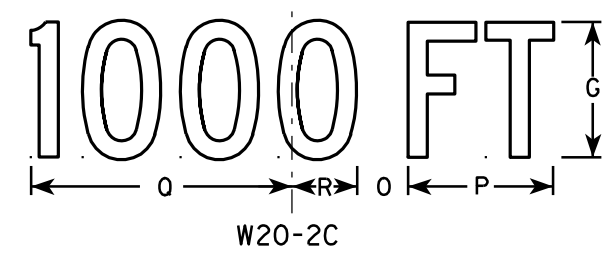
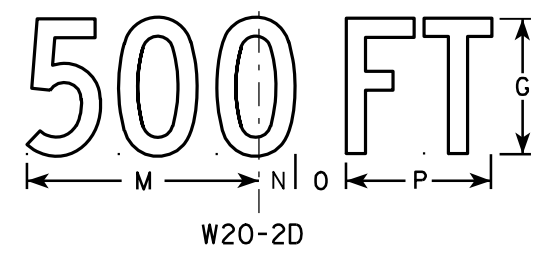
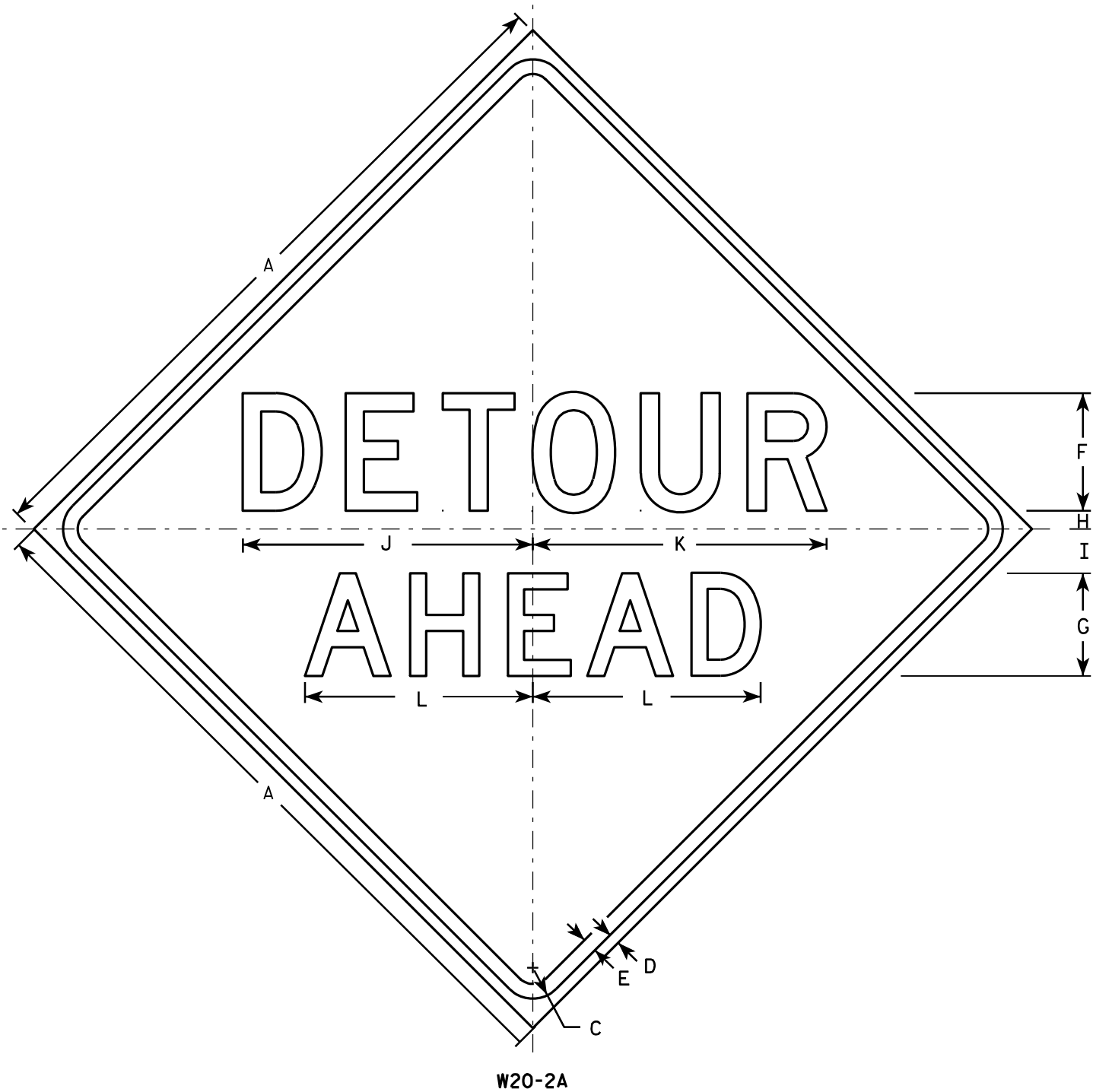
STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

123



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 - 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. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

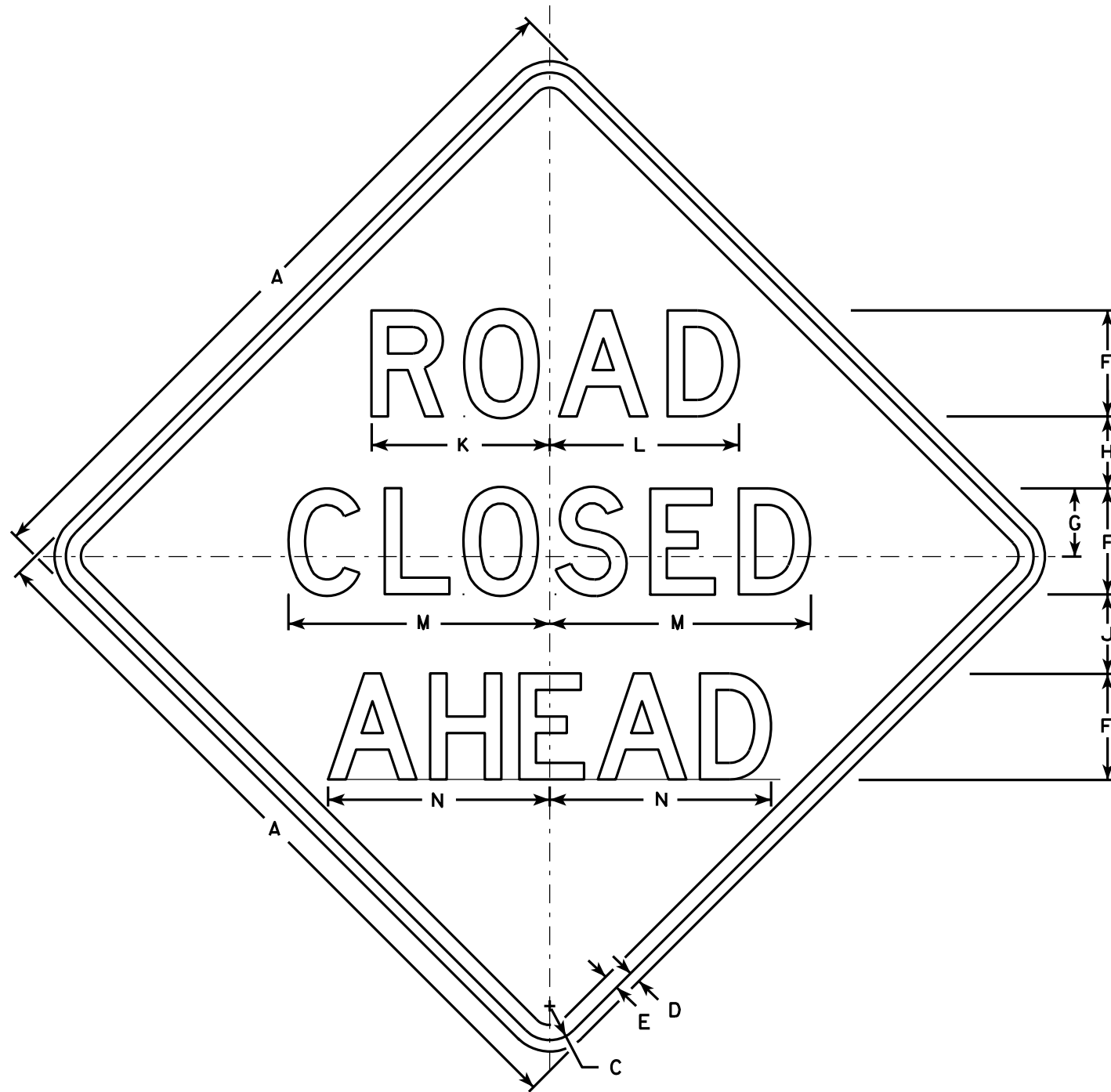
PROJECT NO:

HWY:

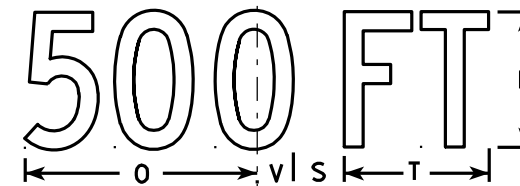
COUNTY:

SHEET NO: 124

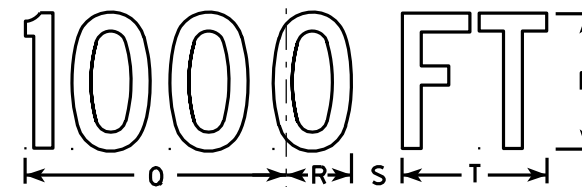
E



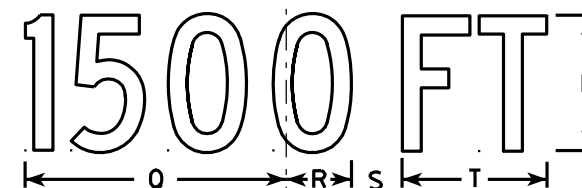
W20-3A



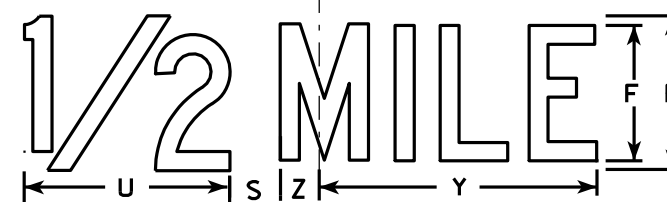
W20-3D



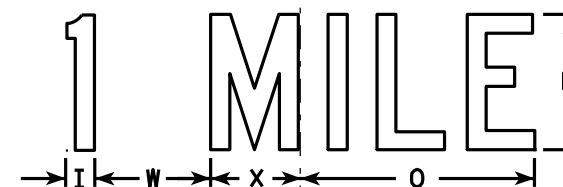
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - see note 5
- 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.
- Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

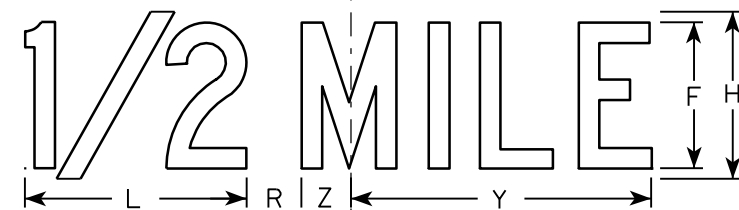
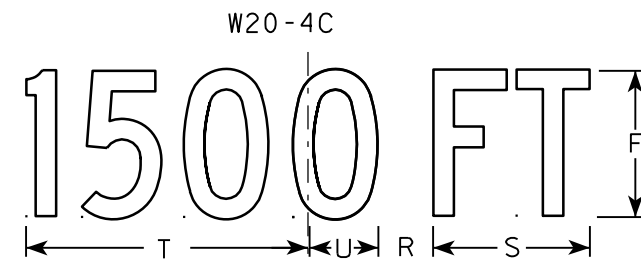
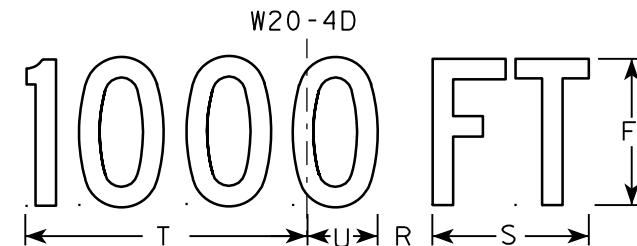
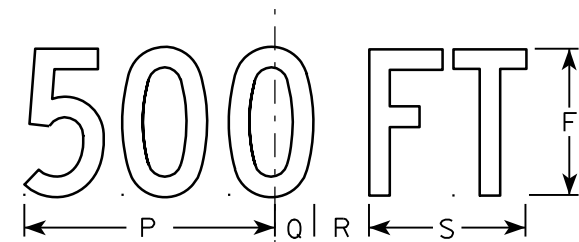
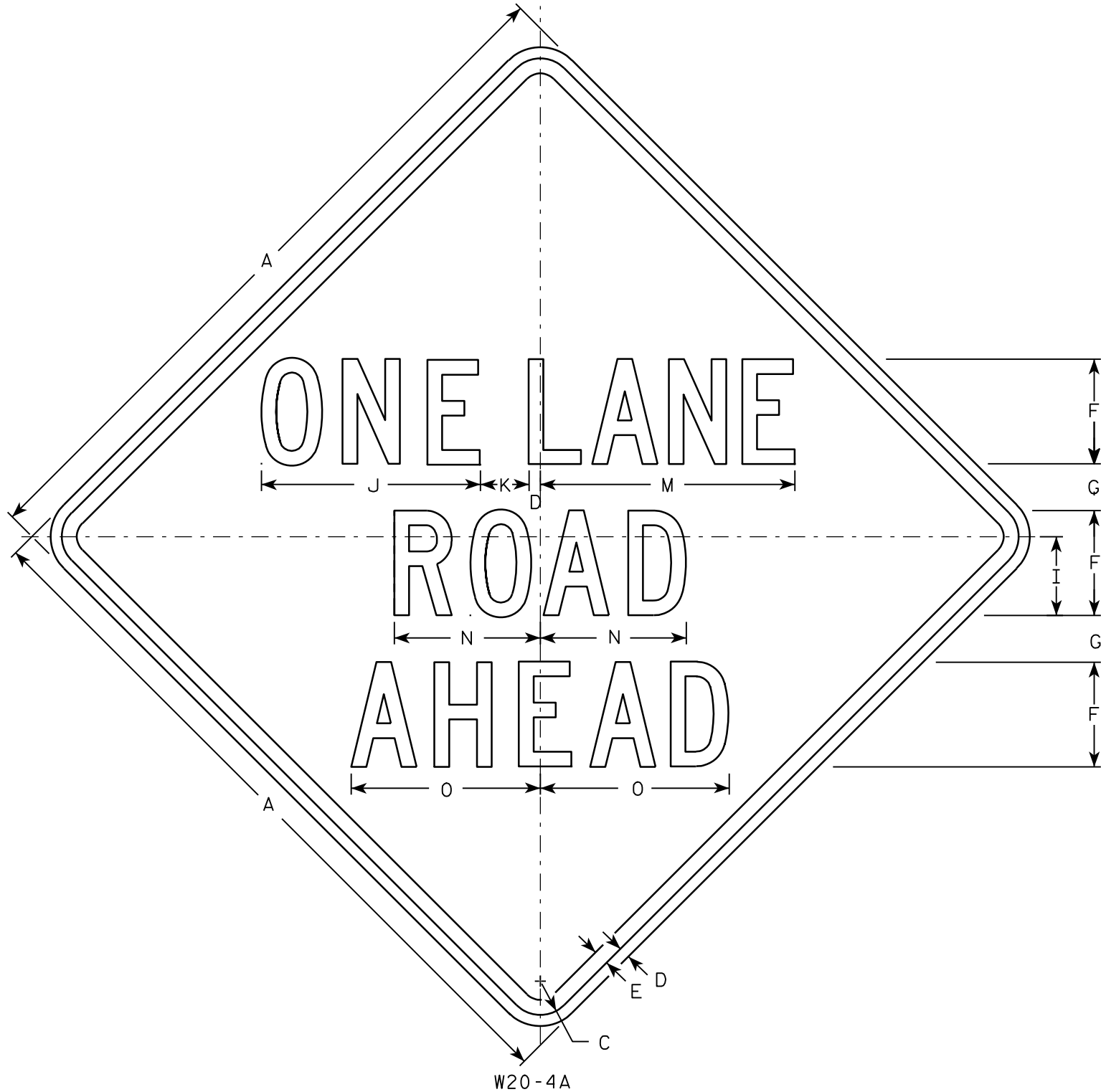
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 125

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - 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 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

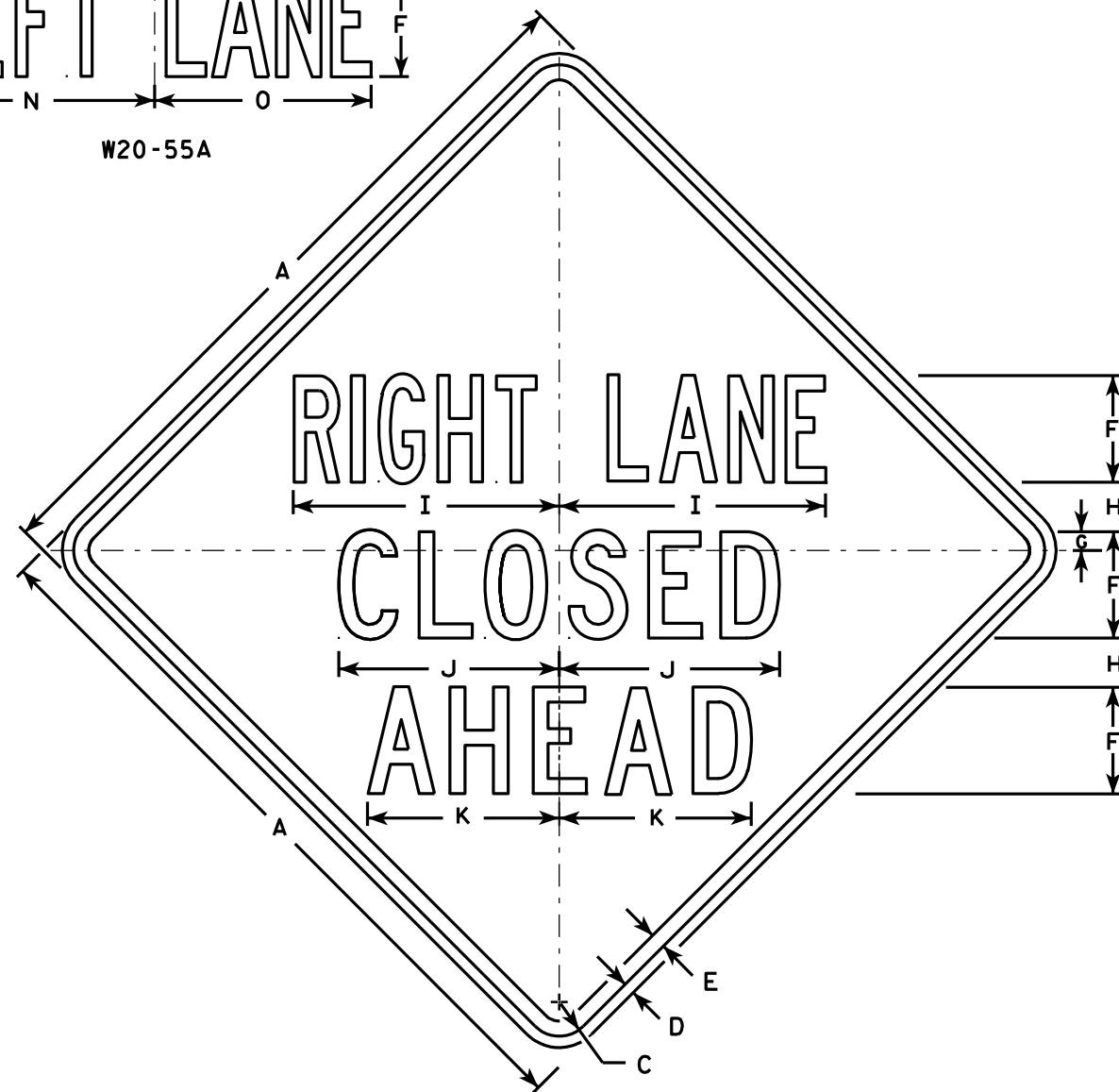
STANDARD SIGN	
W20-4A, B, C, D, F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/18/11	PLATE NO. W20-4.9

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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 - 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. "-----LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
W20-5A, B, C, D, F & G

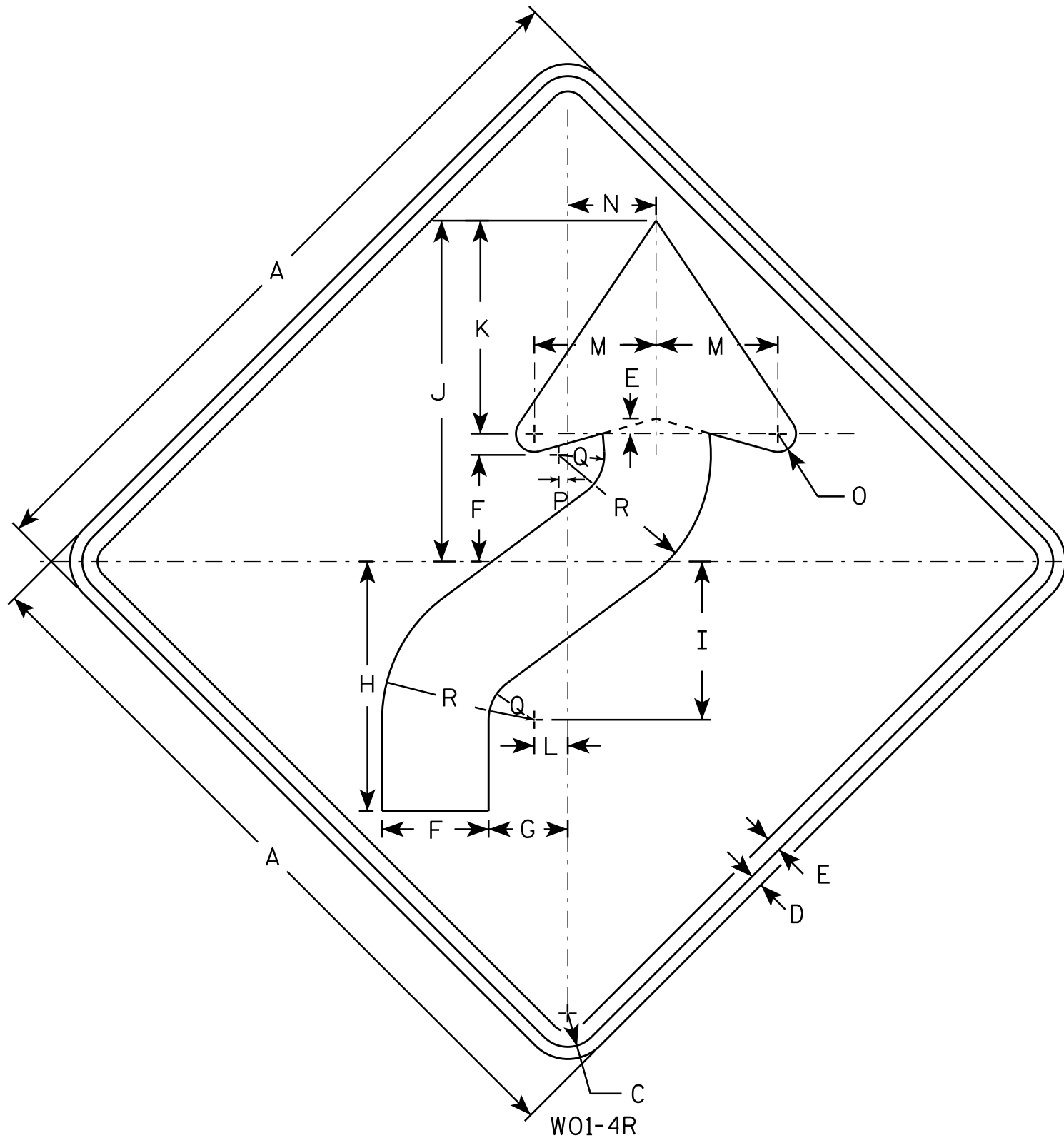
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 127

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. 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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1
128

PROJECT NO:

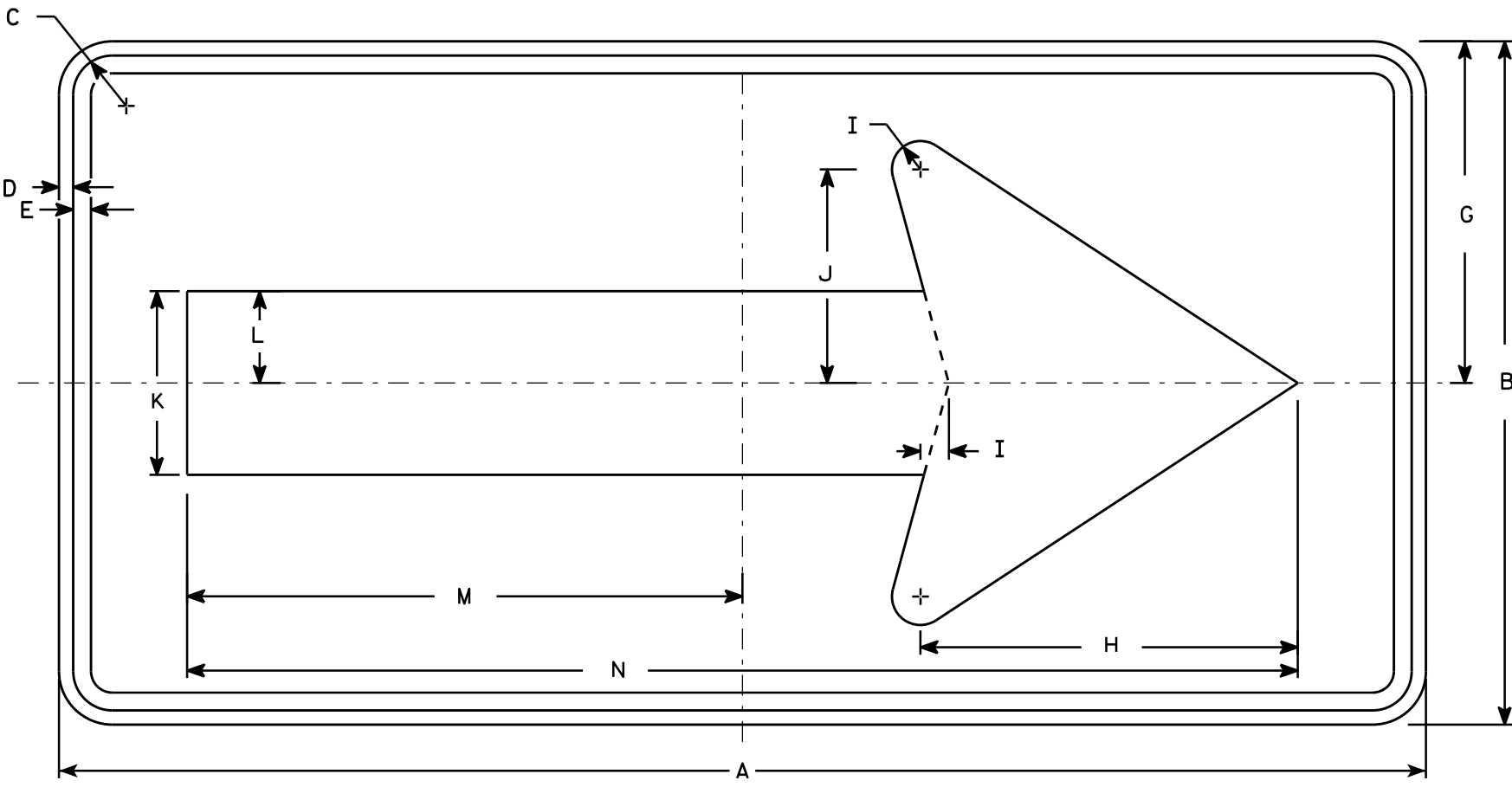
HWY:

COUNTY:

SHEET NO:

E

7



W01-6

NOTES

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

7

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	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

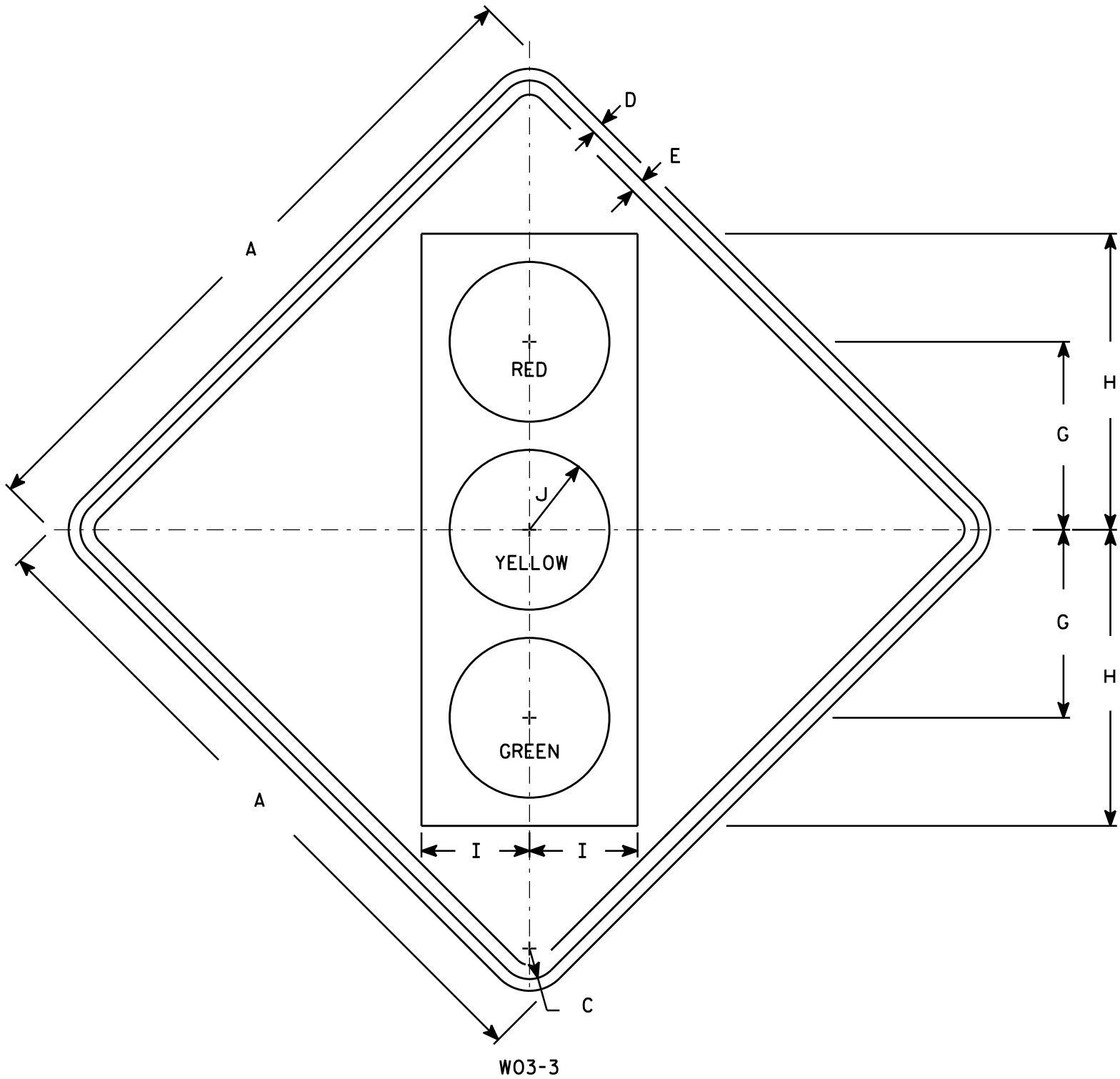
APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13

PLATE NO. 129

W01-6.1



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 - 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. Symbol and border are non-reflective black.
Top circle - Type H ReflectORIZED Red
Center circle - Same as background
Bottom circle - Type H ReflectORIZED Green

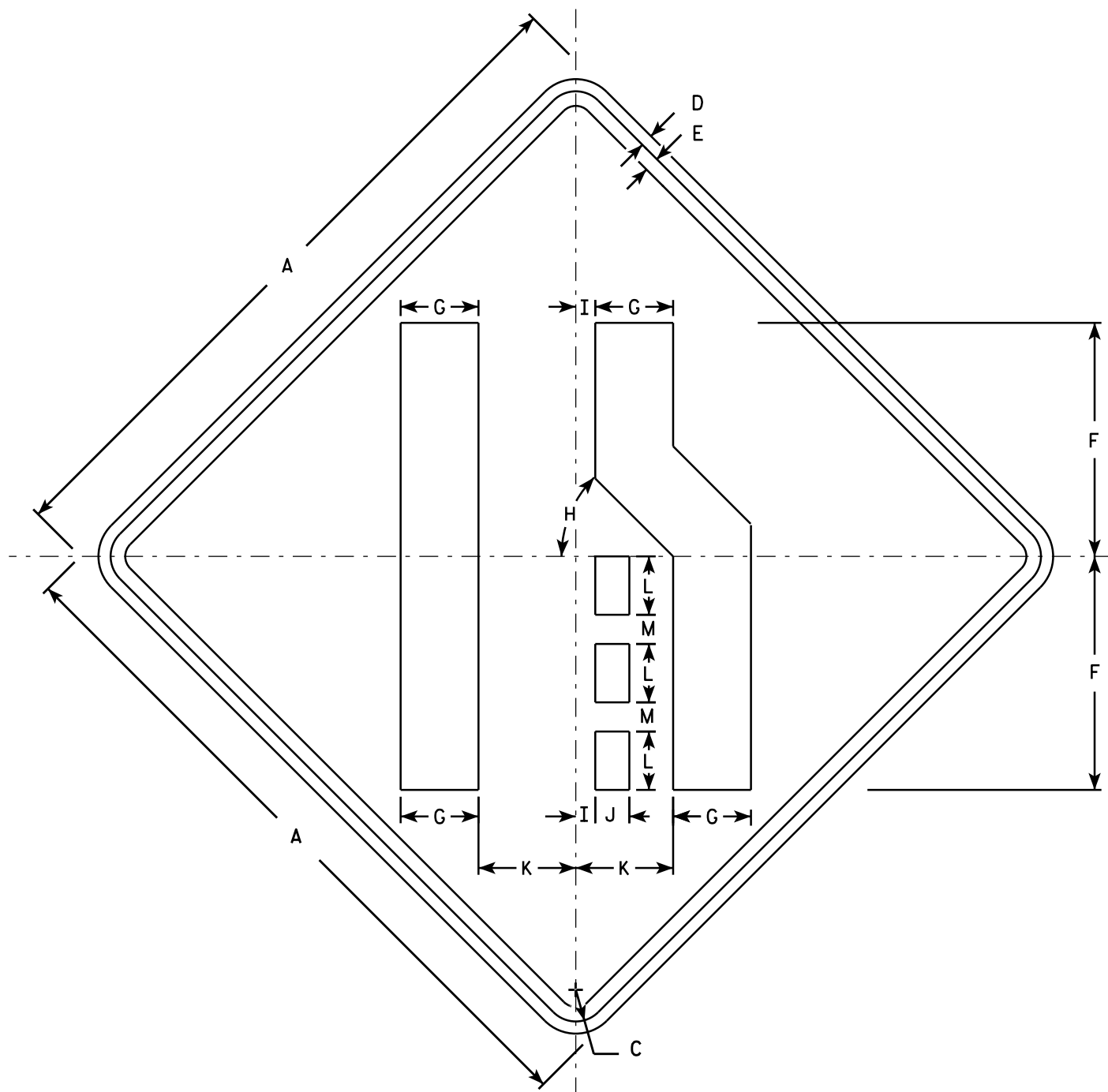
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2S	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN
W03-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLAT 130 "03-3.1



W04-2R

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. 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. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

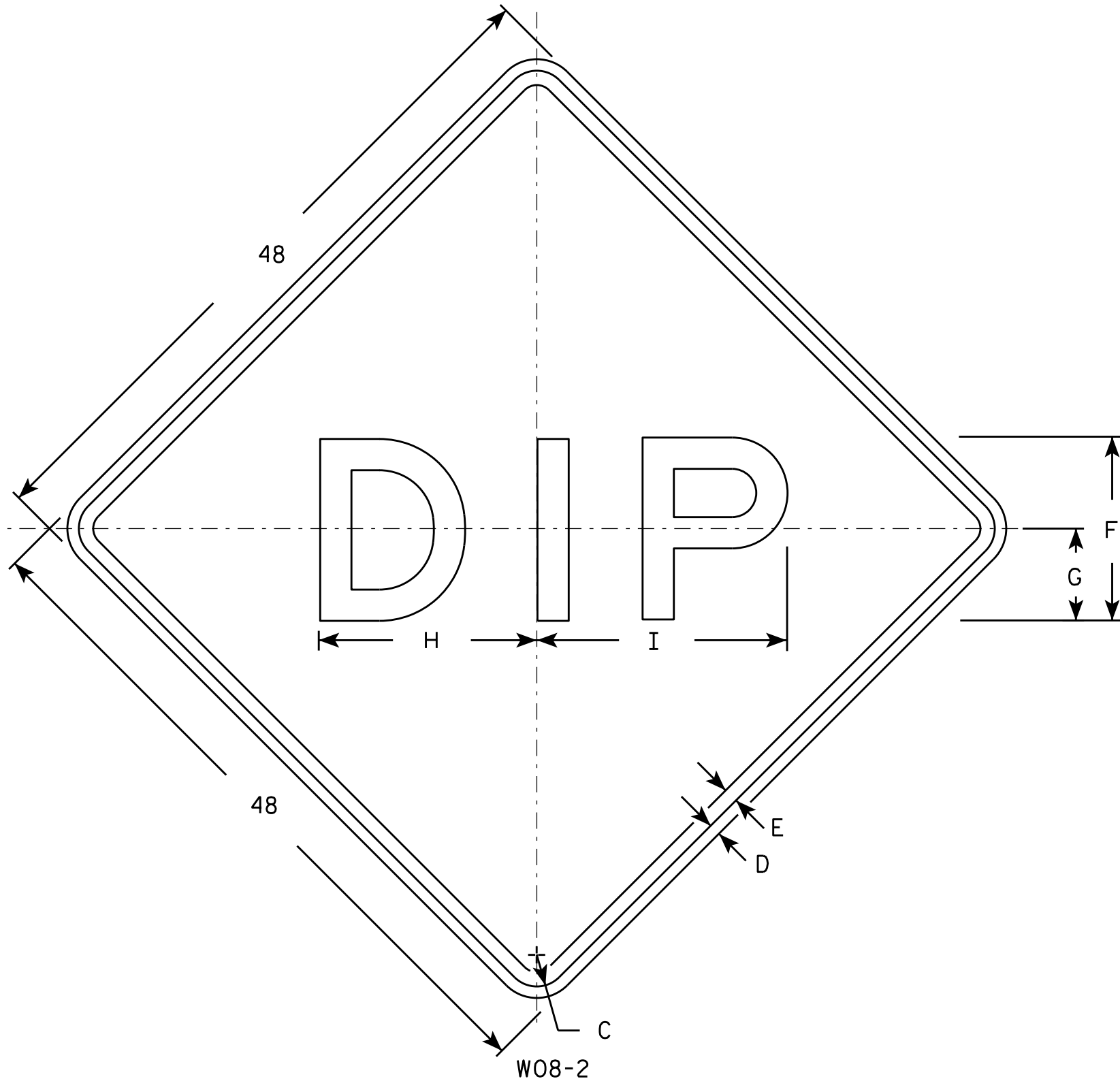
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 11/20/13 PLATE 131 W04-2.1



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

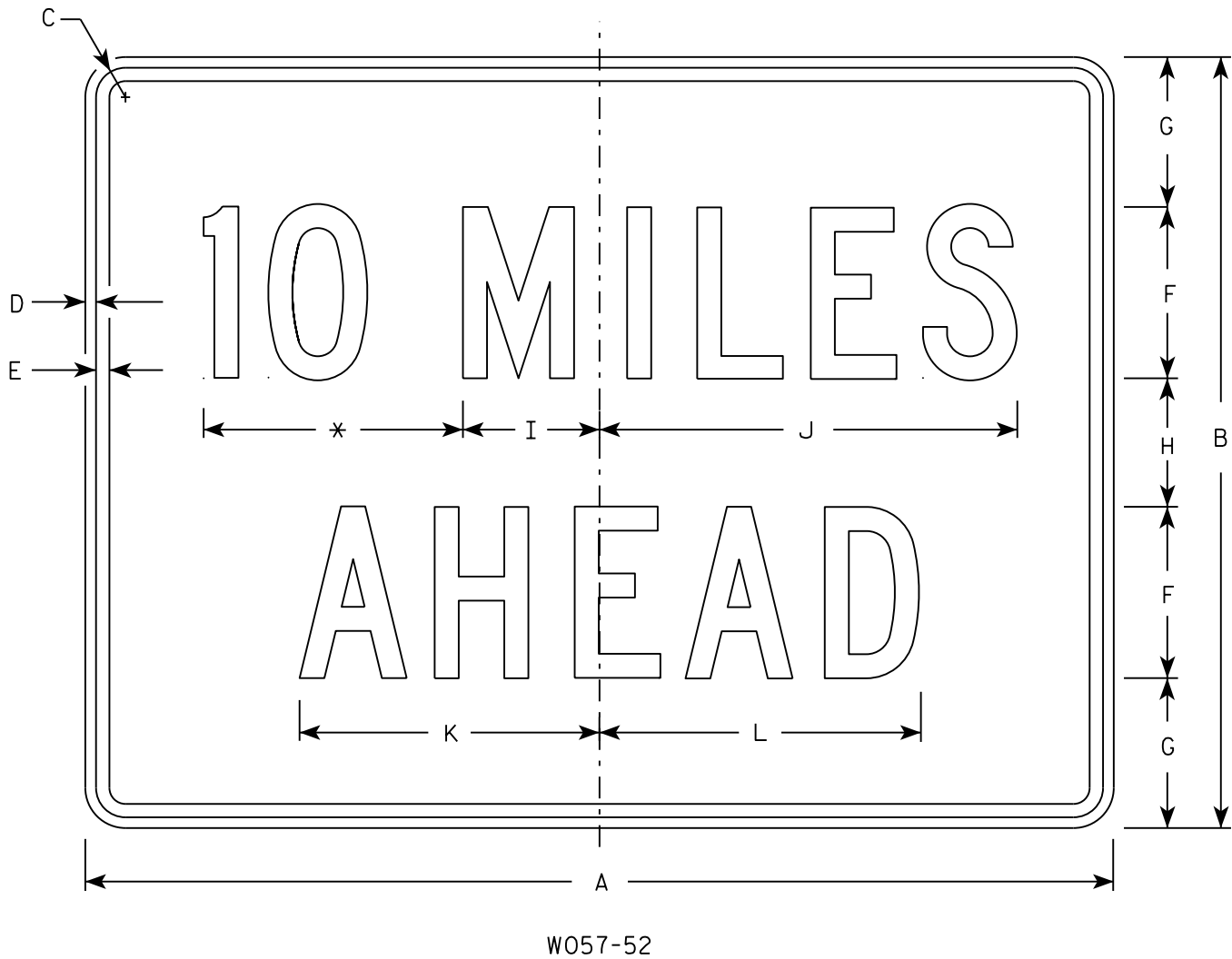
SHEET NO: E

STANDARD SIGN
W08-2

WISCONSIN DEPT OF TRANSPORTATION

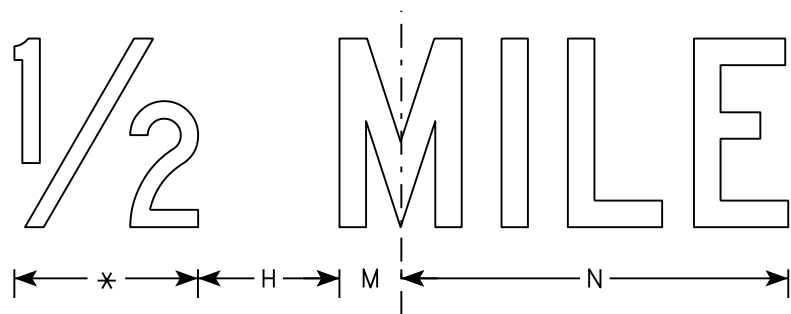
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 132 3-2.1



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.
- 5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

OLD STRUCTURE C-71-9012

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	
61+50	0.00	0.00	0	0	0	0	0
61+75	81.17	11.72	38	5	38	7	25
61+90	82.06	11.09	45	6	83	15	56
61+96.67	82.37	19.29	20	4	103	19	68
62+10	81.25	6.27	40	6	144	27	95
62+25	0.00	0.00	23	2	166	29	112

16624

CULVERT 71-080-0285, 0290

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	
1519+25	0.00	0.00	0	0	0	0	0
1519+50	1.55	0.43	1	0	1	0	0
1519+75	11.56	1.41	6	1	7	1	5
1519+82	16.15	0.05	4	0	10	2	9
1520+04	125.13	0.00	58	0	68	2	57
1520+25	110.74	4.26	92	2	160	4	130
1520+50	93.16	106.79	94	51	254	68	140
1520+57	95.53	149.53	24	33	279	109	117
1520+62	100.32	175.57	18	30	297	147	93
1520+72	88.98	284.34	35	85	332	254	14
1520+82	93.67	198.52	34	89	366	365	-72
1521+00	90.14	90.19	61	96	427	486	-146
1521+25	96.33	6.59	86	45	513	542	-136
1521+50	17.33	0.00	53	3	566	545	-97
1521+70	15.53	0.00	12	0	578	545	-85
1521+75	14.94	0.00	3	0	581	545	-82
1522+00	11.27	0.00	12	0	593	545	-70

593436

NOTE: SALVAGED/UNUSABLE PAVEMENT MATERIAL NOT SHOWN IN CROSS SECTION, SEE MISCELLANEOUS QUANTITIES SHEETS

CULVERT 68-110-0055

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
349+44	118.53	0.00	0	0	0	0	0
350+00	115.00	119.45	239	248	239	310	-130
350+50	119.06	17.96	217	127	455	469	-124
351+00	118.66	24.55	220	39	675	518	-6
351+53	123.83	0.00	238	24	913	548	147

913 438

CULVERT 68-110-0050

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
354+46	126.40	0.16	0	0	0	0	0
354+75	126.54	7.40	136	4	136	5	105
355+00	124.96	12.59	116	9	252	17	196
355+25	123.98	7.27	115	9	368	28	285
355+54	125.59	0.00	134	4	502	33	389

502 26

DITCHING/CULVERT 68-110-0045

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
357+00	1.26	0.16	0	0	0	0	0
357+50	1.38	3.13	2	3	2	4	2
357+63	0.20	3.23	0	2	3	6	3
358+00	37.58	5.67	26	6	29	13	29
358+50	36.77	1.84	69	7	98	22	98
359+00	49.91	0.21	80	2	178	24	178
359+50	53.50	0.22	96	0	274	25	274
360+00	56.24	0.00	102	0	375	25	375
360+50	54.93	0.00	103	0	478	25	478
361+00	29.18	1.35	78	1	556	27	556
361+50	7.70	1.02	34	2	590	29	590
361+70	0.01	2.26	3	1	593	31	593
362+00	13.79	0.00	8	1	601	33	601
362+50	13.23	0.00	25	0	626	33	626
362+97	10.87	0.00	21	0	647	33	647
363+25	131.11	0.55	74	0	720	33	706
363+50	125.66	0.63	119	1	839	34	798
363+75	138.34	0.01	122	0	961	34	894

961 27

CULVERT 68-110-0040

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
381+81	127.08	0.04	0	0	0	0	0
382+00	124.04	7.47	88	3	88	3	68
382+35	119.41	47.10	158	35	246	48	190
382+50	120.86	29.14	67	21	313	74	241
382+89	124.51	0.60	177	21	490	101	377

490 81

CULVERT 68-110-0035

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
397+47	139.22	0.35	0	0	0	0	0
397+75	132.13	4.85	141	3	141	3	111
398+00	130.79	15.60	122	9	262	15	207
398+25	134.88	12.65	123	13	385	32	304
398+53	135.63	0.06	140	7	526	40	415

526 32

CULVERT 68-110-0030,0031

Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
406+91	140.60	6.11	0	0	0	0	0
407+25	131.88	20.98	172	17	172	21	126
407+50	123.68	163.82	118	86	290	128	210
407+75	134.12	24.84	119	87	409	237	296
408+00	146.23	3.26	130	13	539	254	392
408+09	150.83	0.69	50	1	589	255	429

589 204

9

9

NOTE: SALVAGED/UNUSABLE PAVEMENT MATERIAL NOT SHOWN IN CROSS SECTION, SEE MISCELLANEOUS QUANTITIES SHEETS

NOTE: SALVAGED/UNUSABLE PAVEMENT MATERIAL NOT SHOWN IN CROSS SECTION, SEE MISCELLANEOUS QUANTITIES SHEETS

CULVERT 68-110-0020

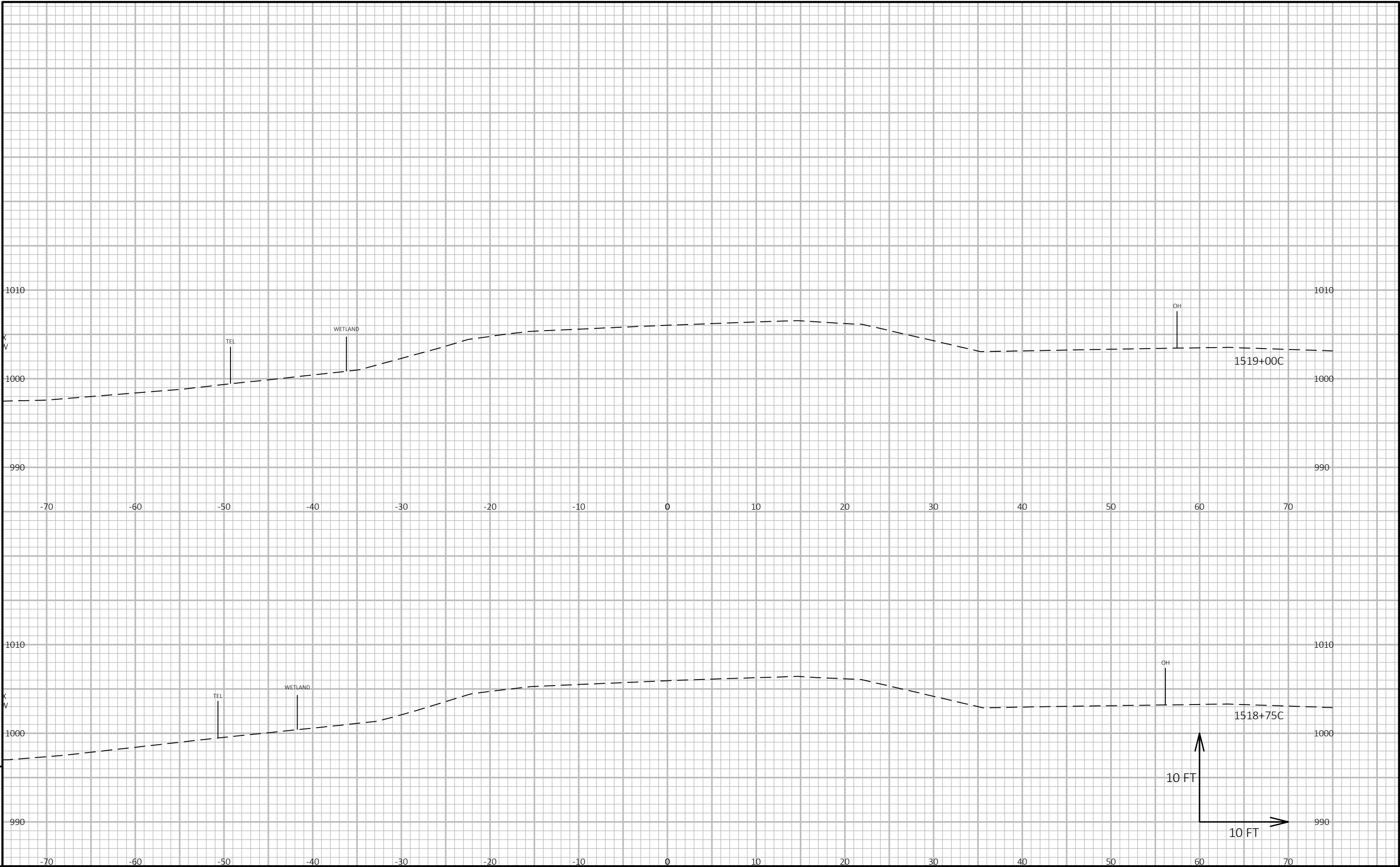
Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
447+47	122.76	0.56	0	0	0	0	0
447+75	125.16	6.02	129	3	129	4	69
448+04	119.65	0.28	131	3	260	8	139

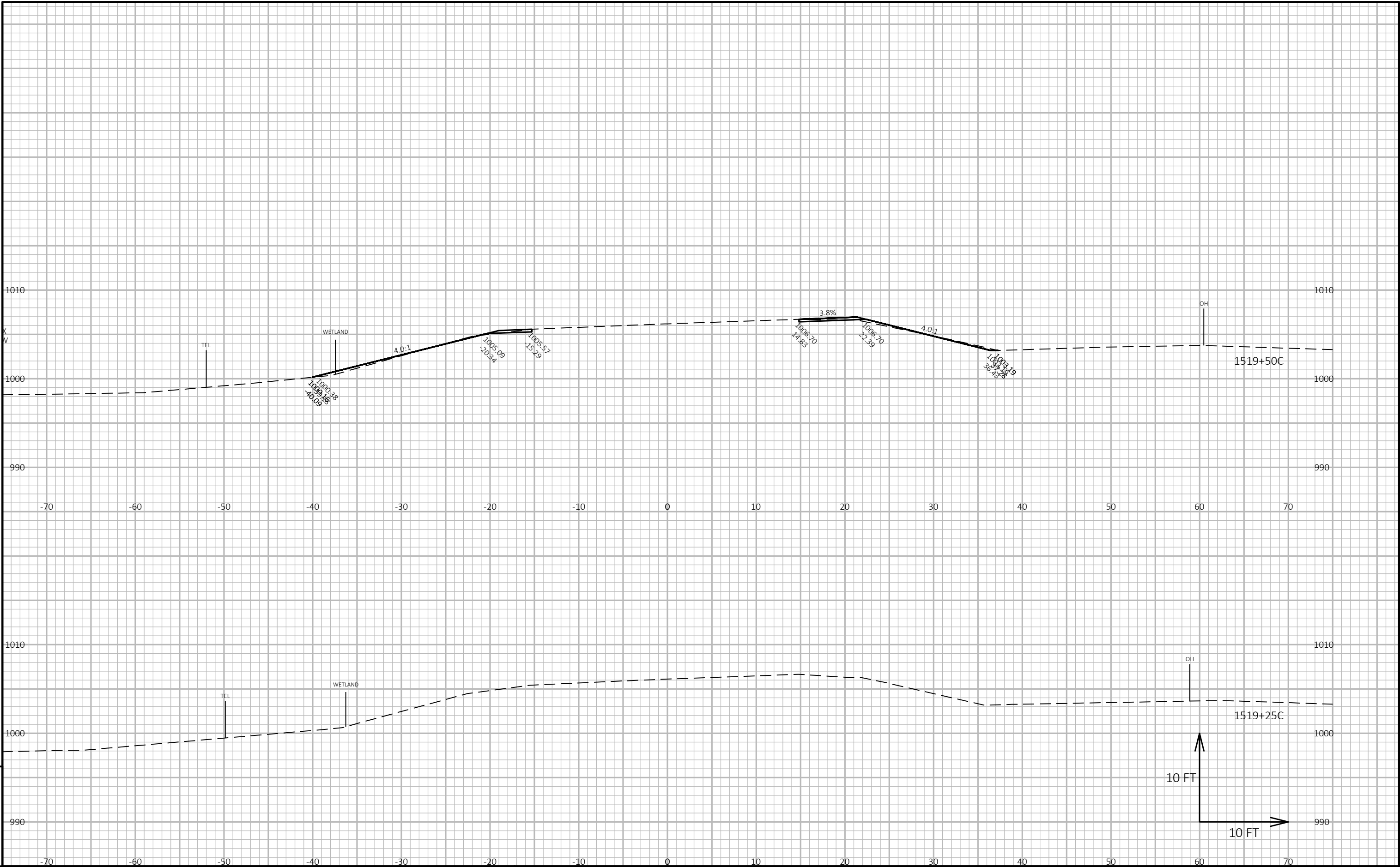
2607

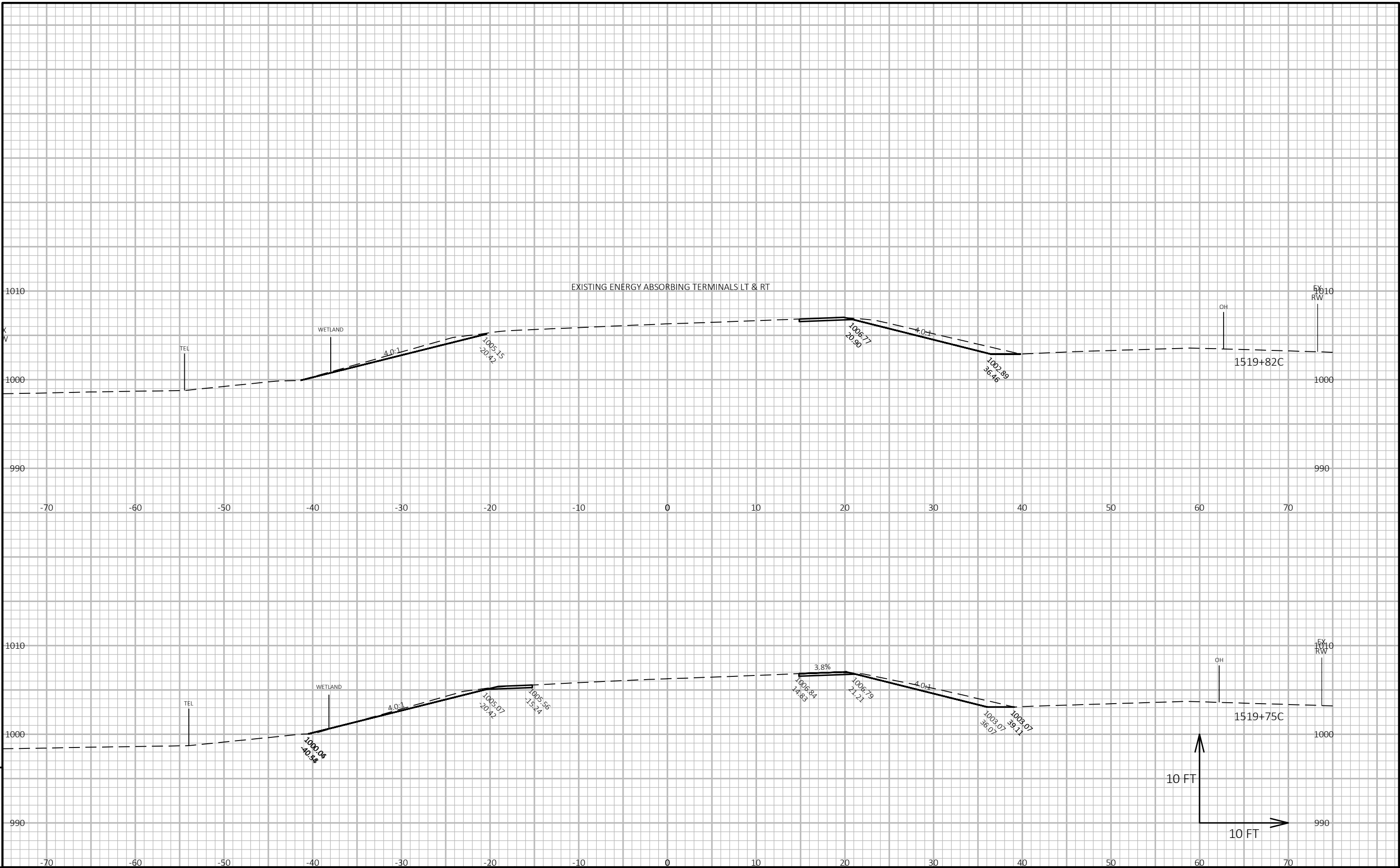
CULVERT 68-110-0010

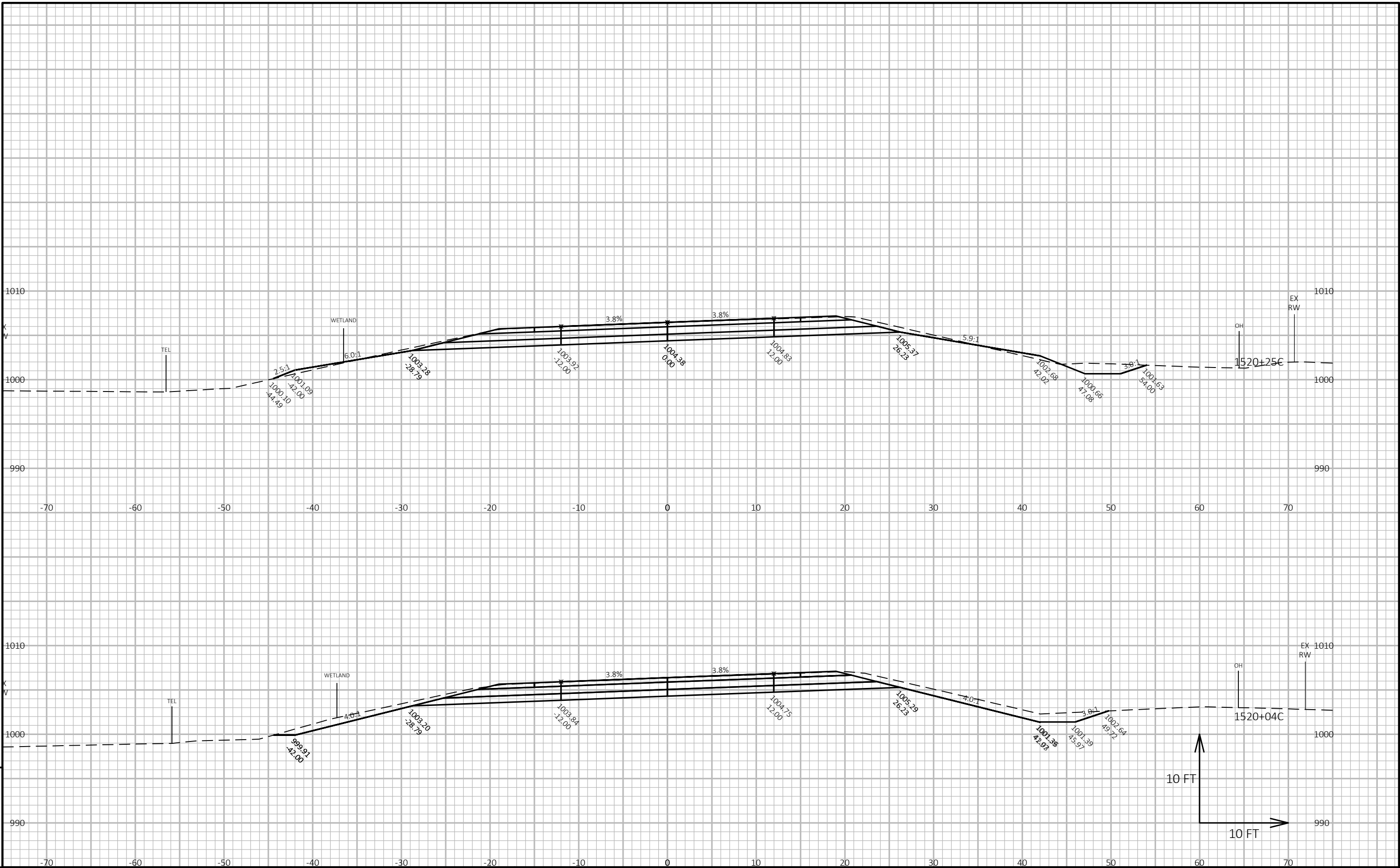
Station	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass
					1.00	1.25	
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Ordinate
451+72	116.55	0.68	0	0	0	0	0
452+00	132.26	4.06	129	2	129	3	69
452+28	123.11	0.00	132	2	261	6	142
452+50	8.30	0.00	54	0	315	6	172
452+75	4.49	0.00	6	0	321	6	178
453+00	2.06	0.01	3	0	324	6	181

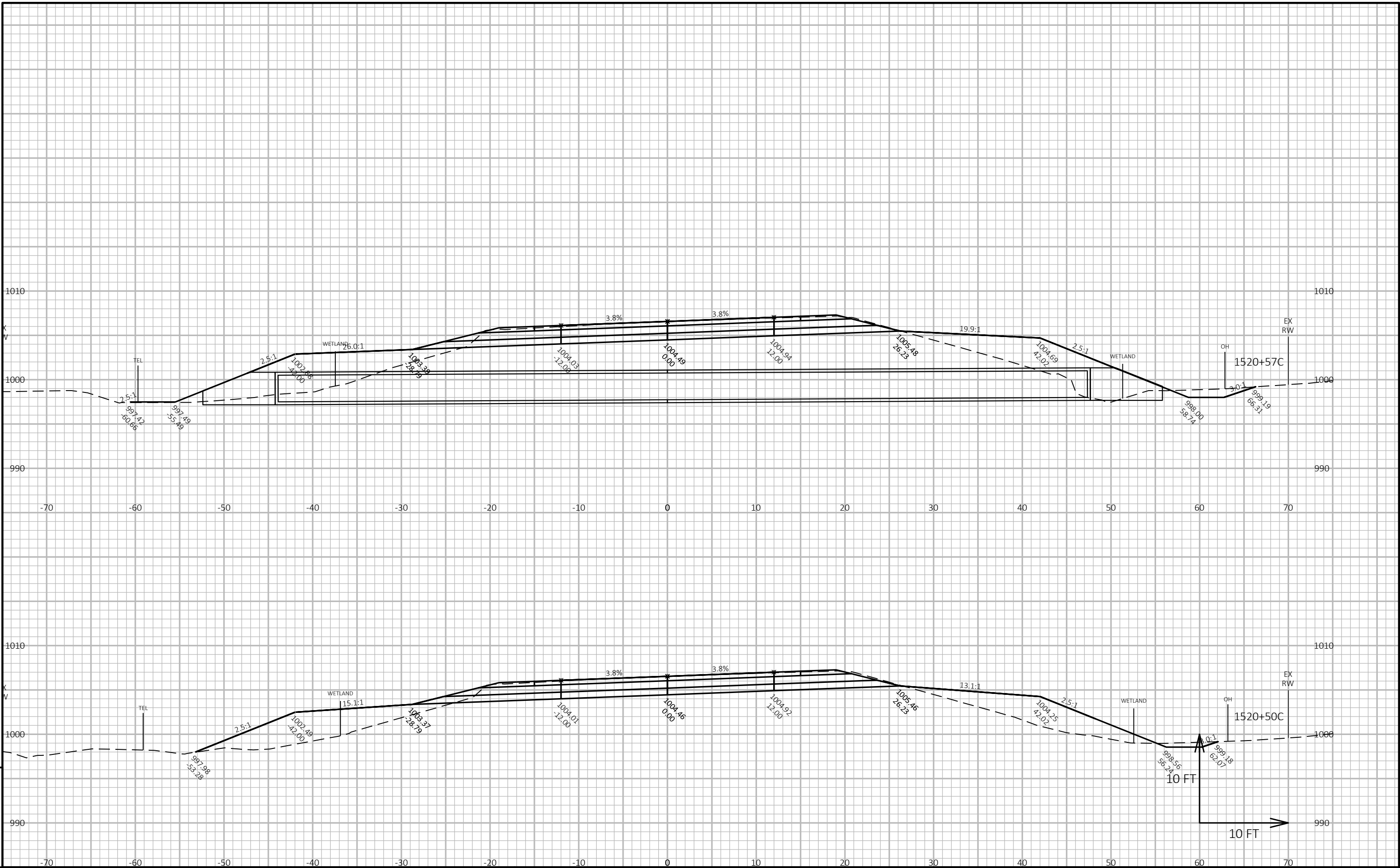
3245

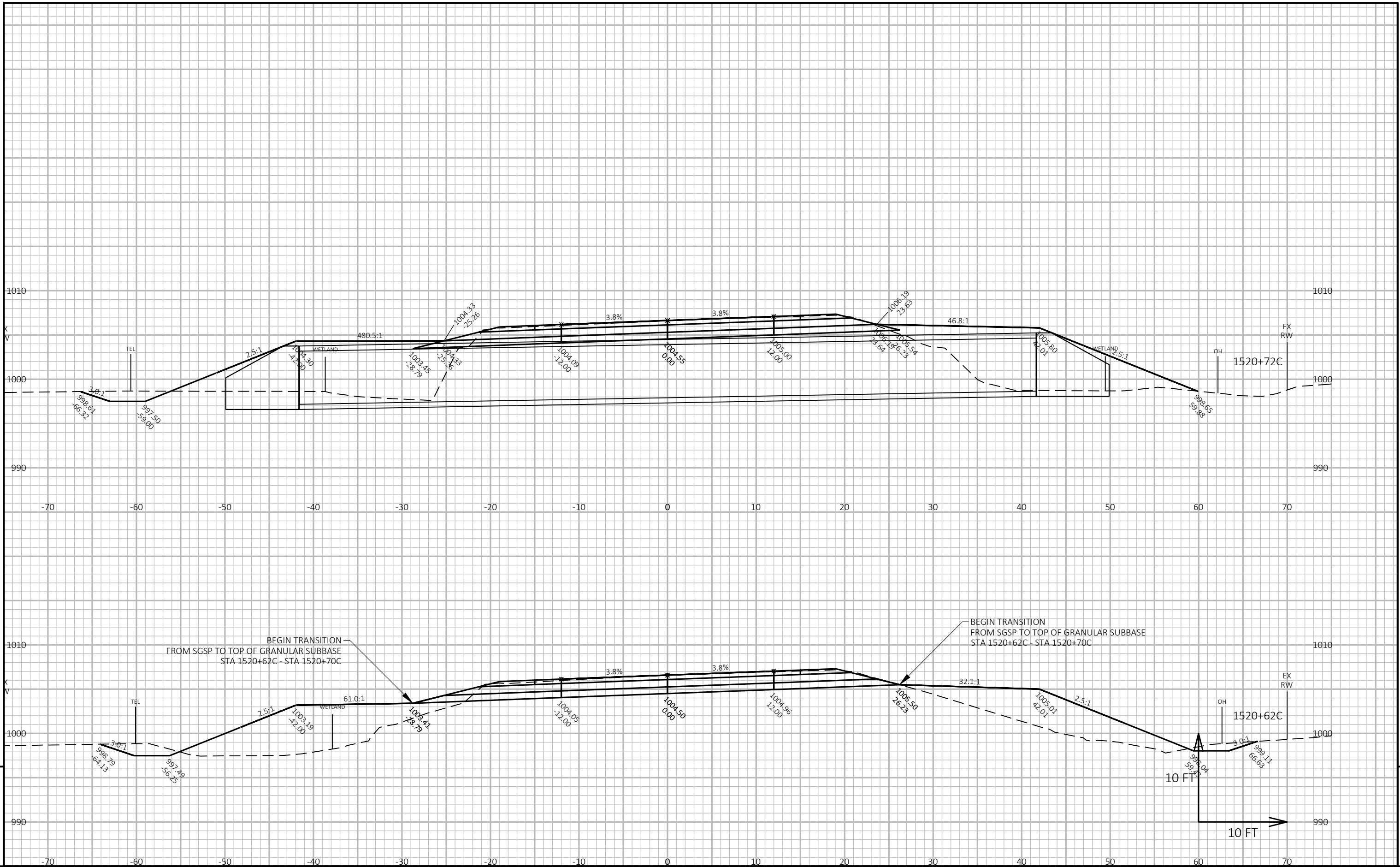


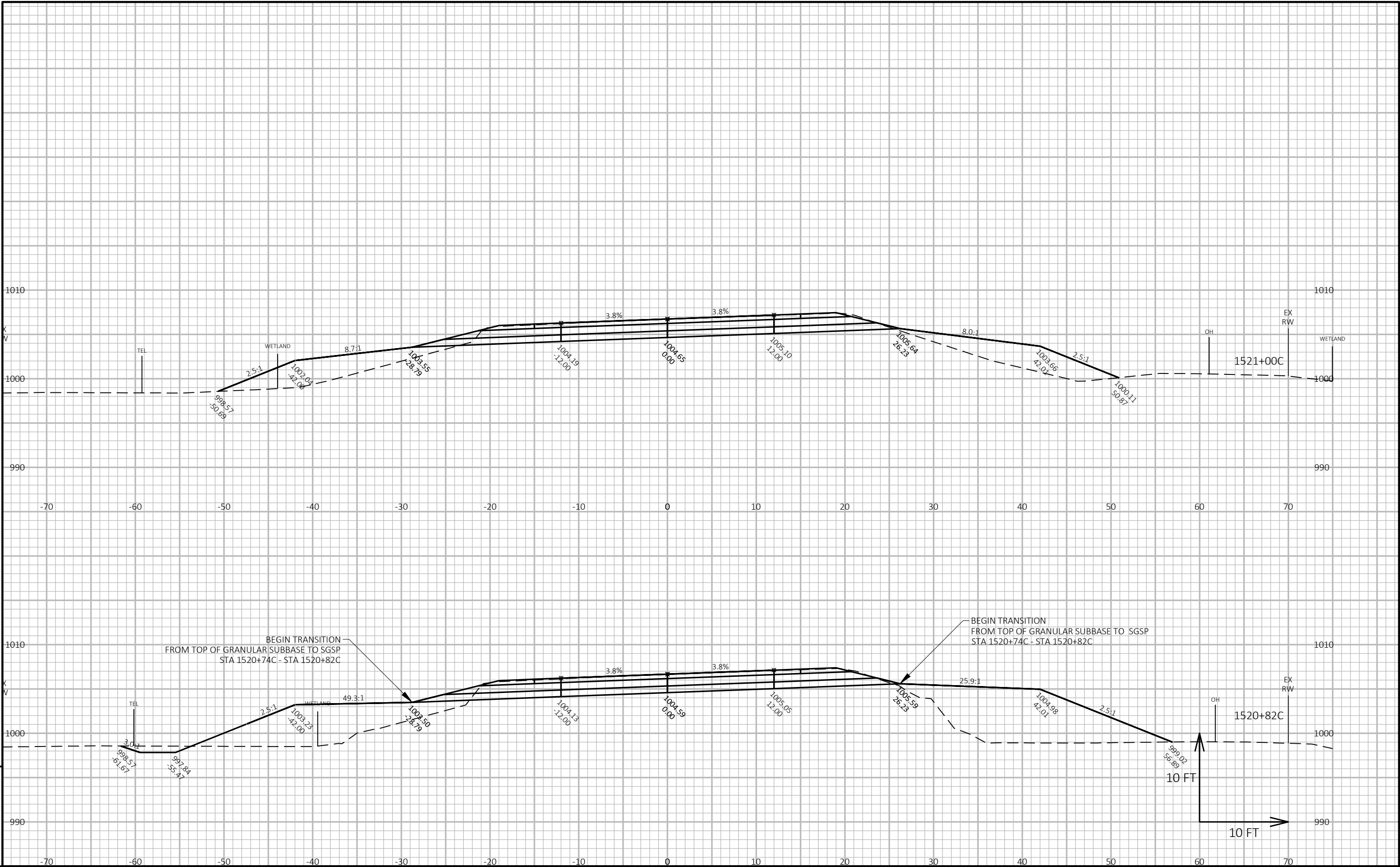


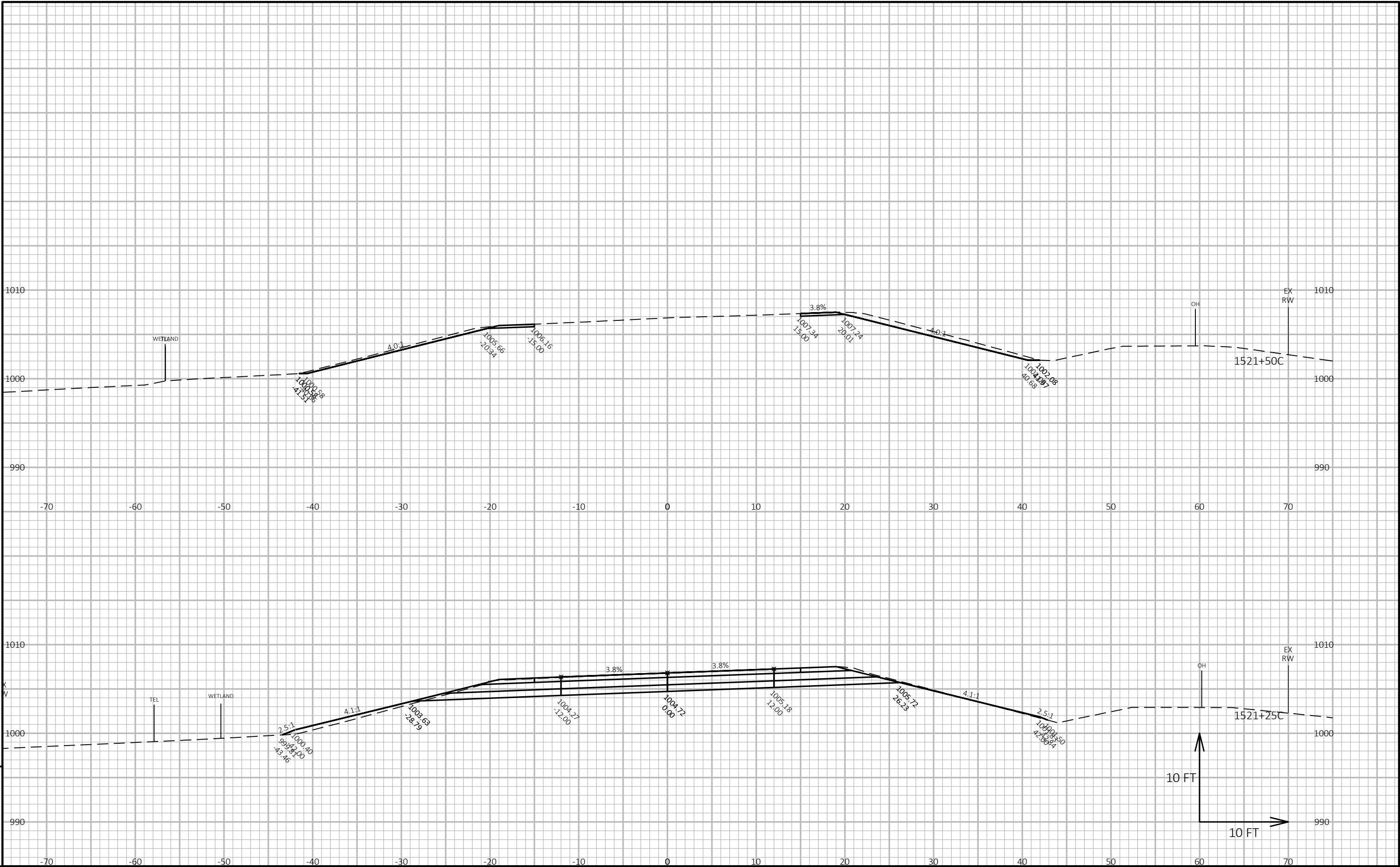


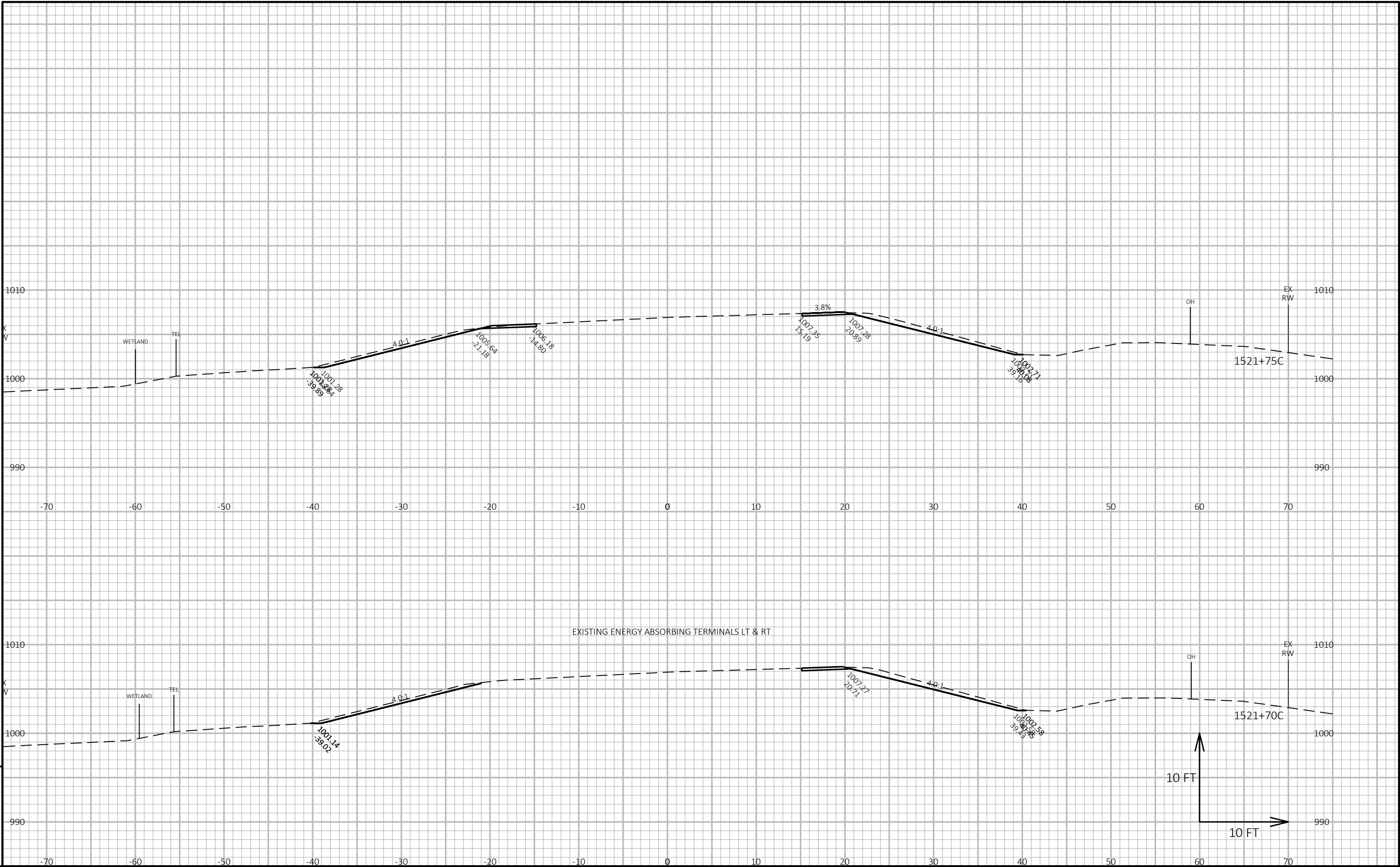


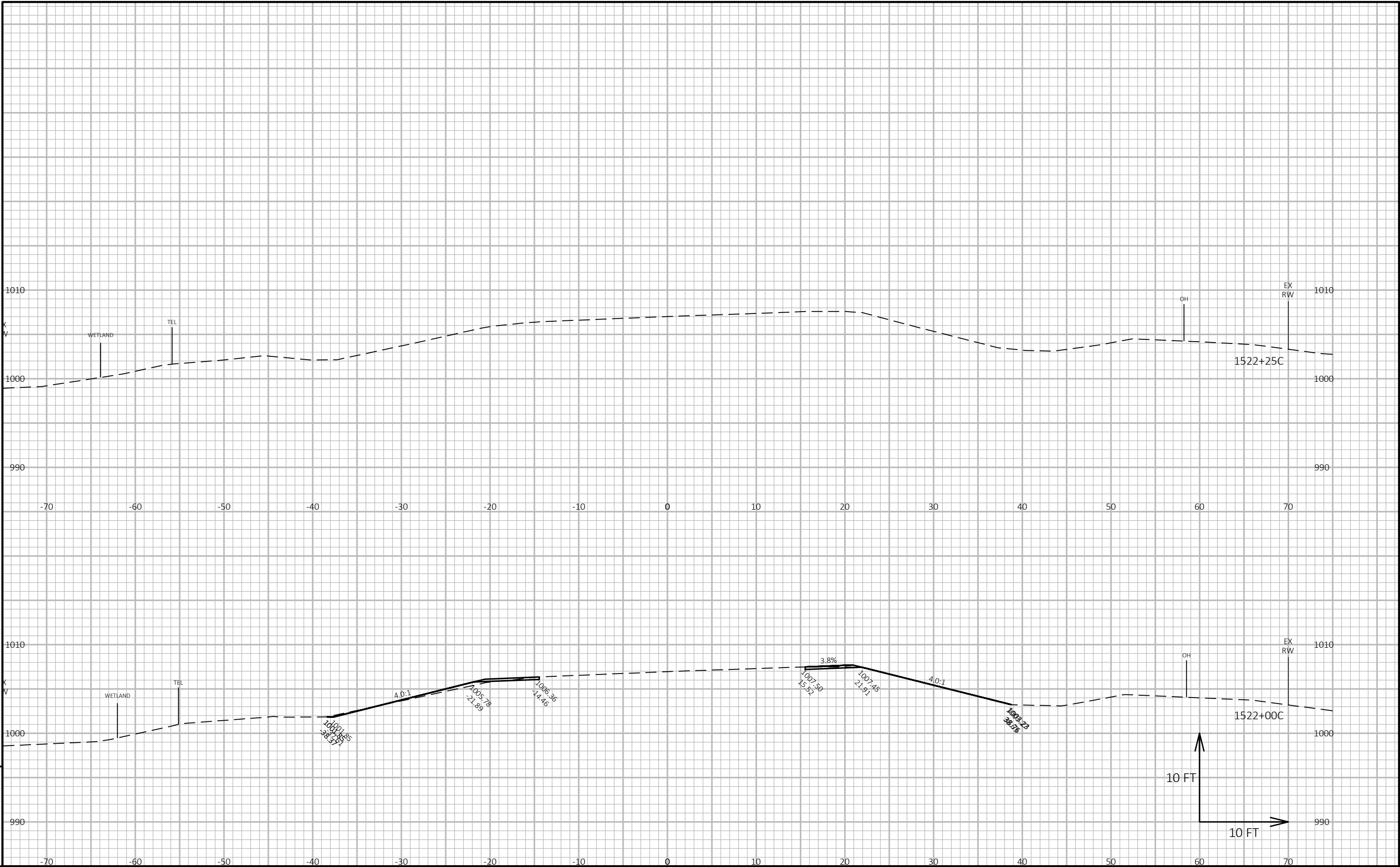


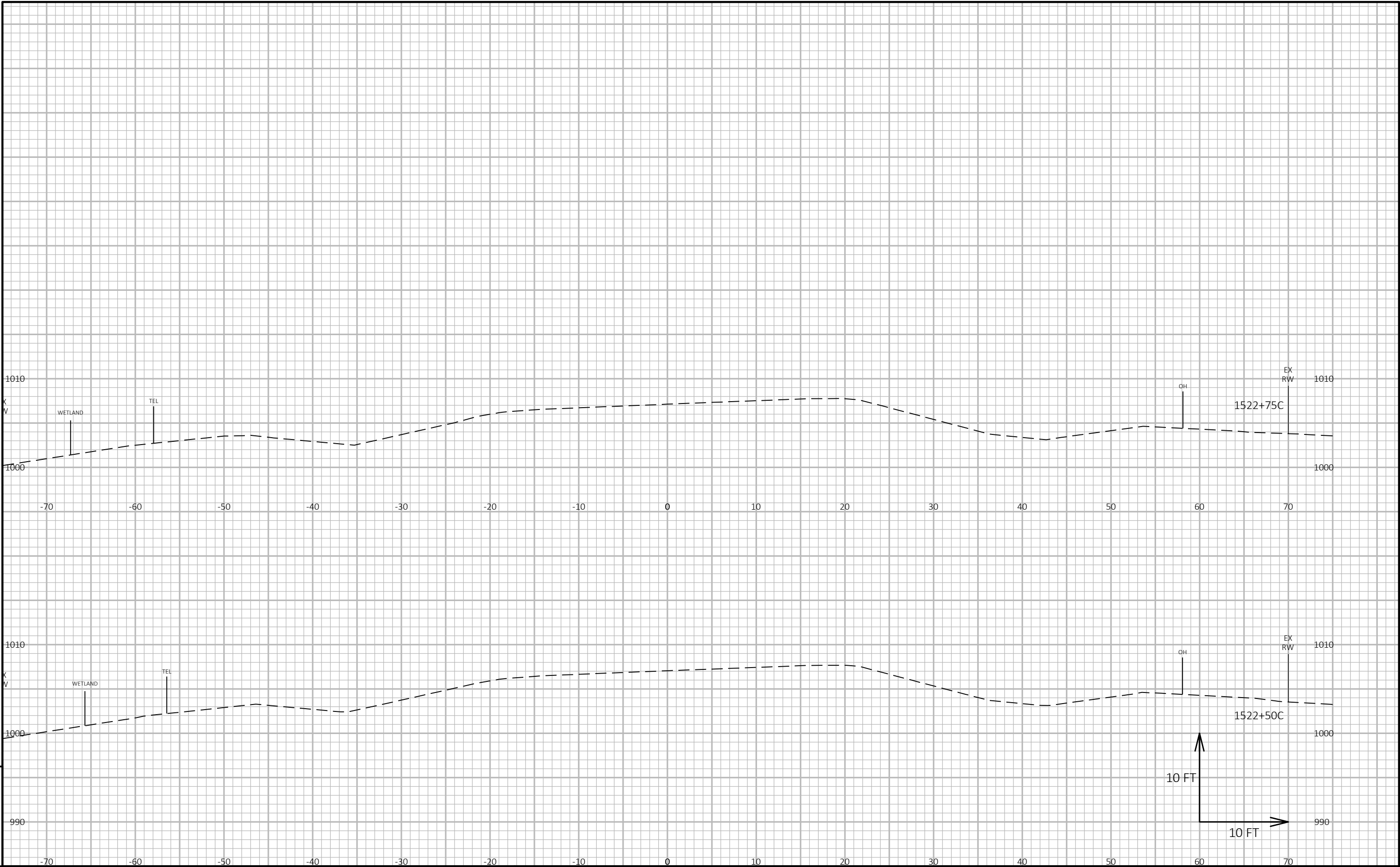








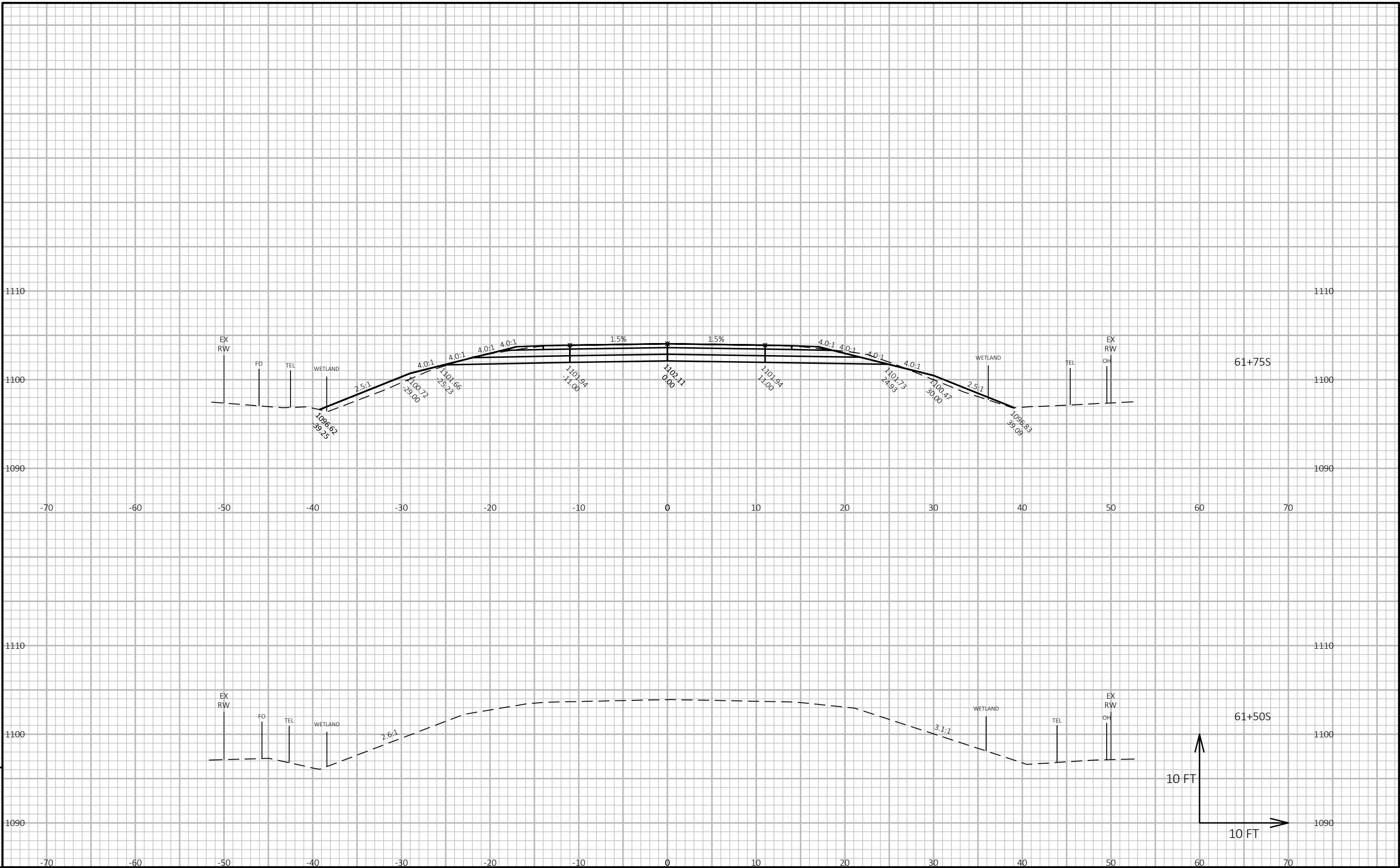


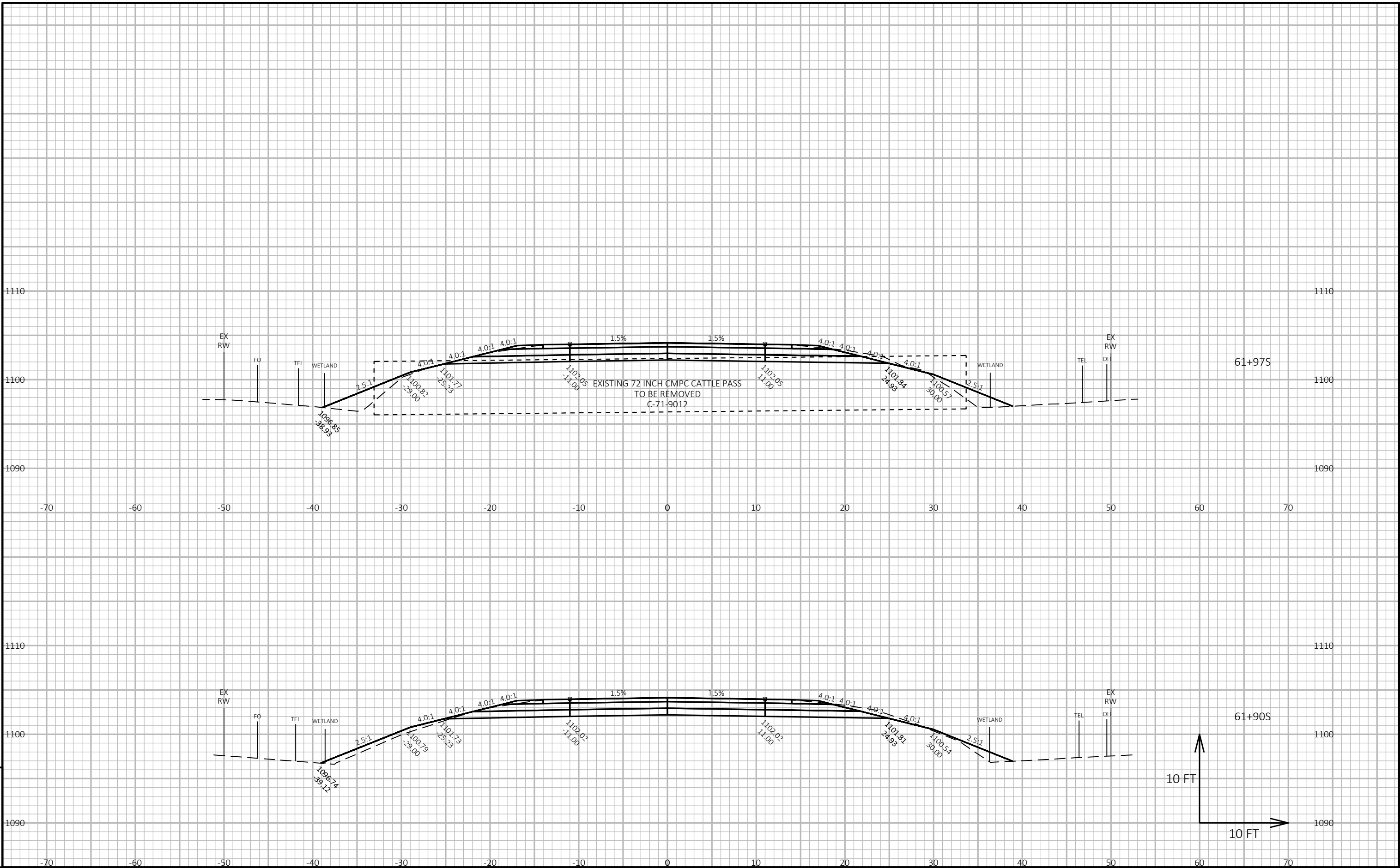


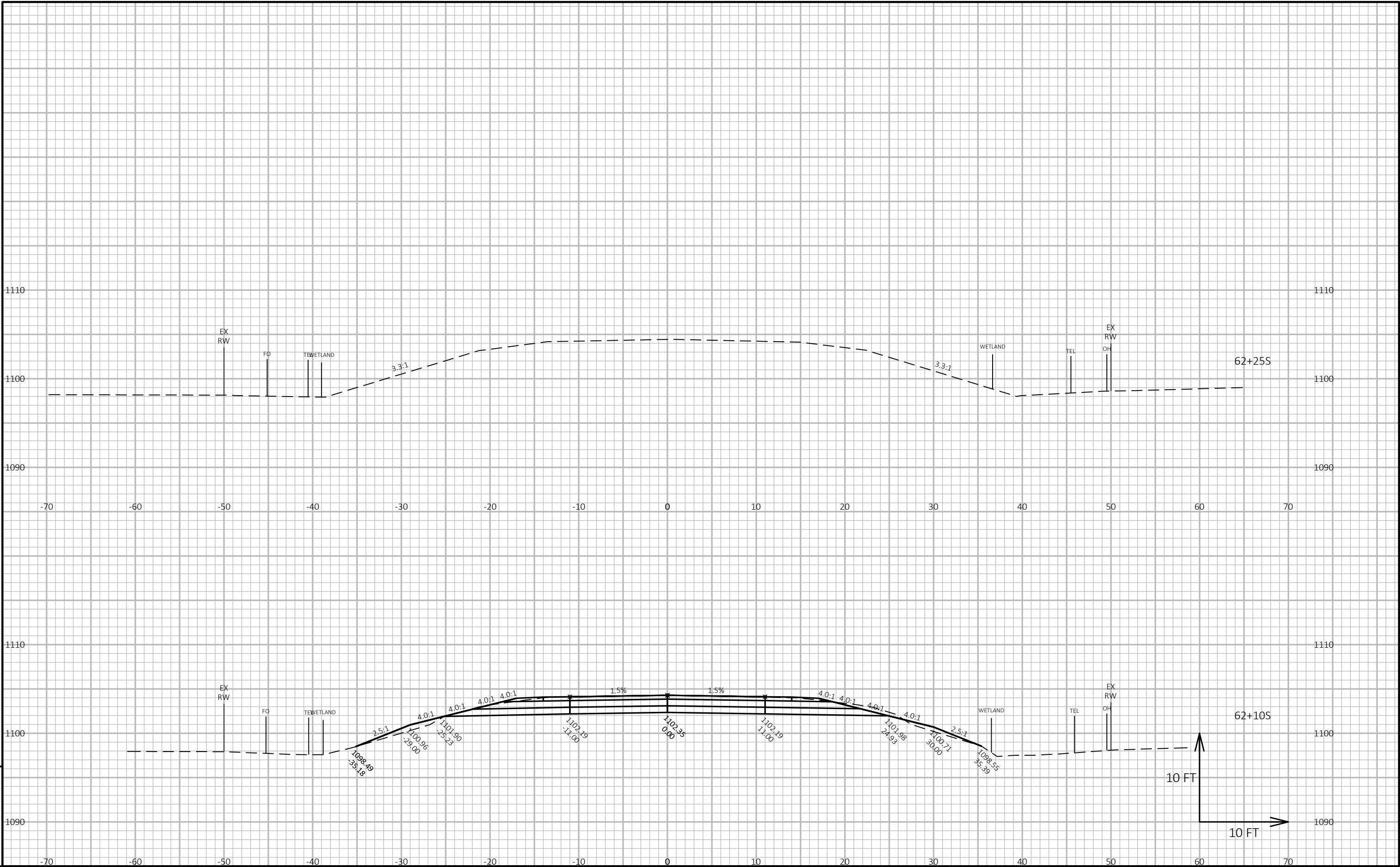
9

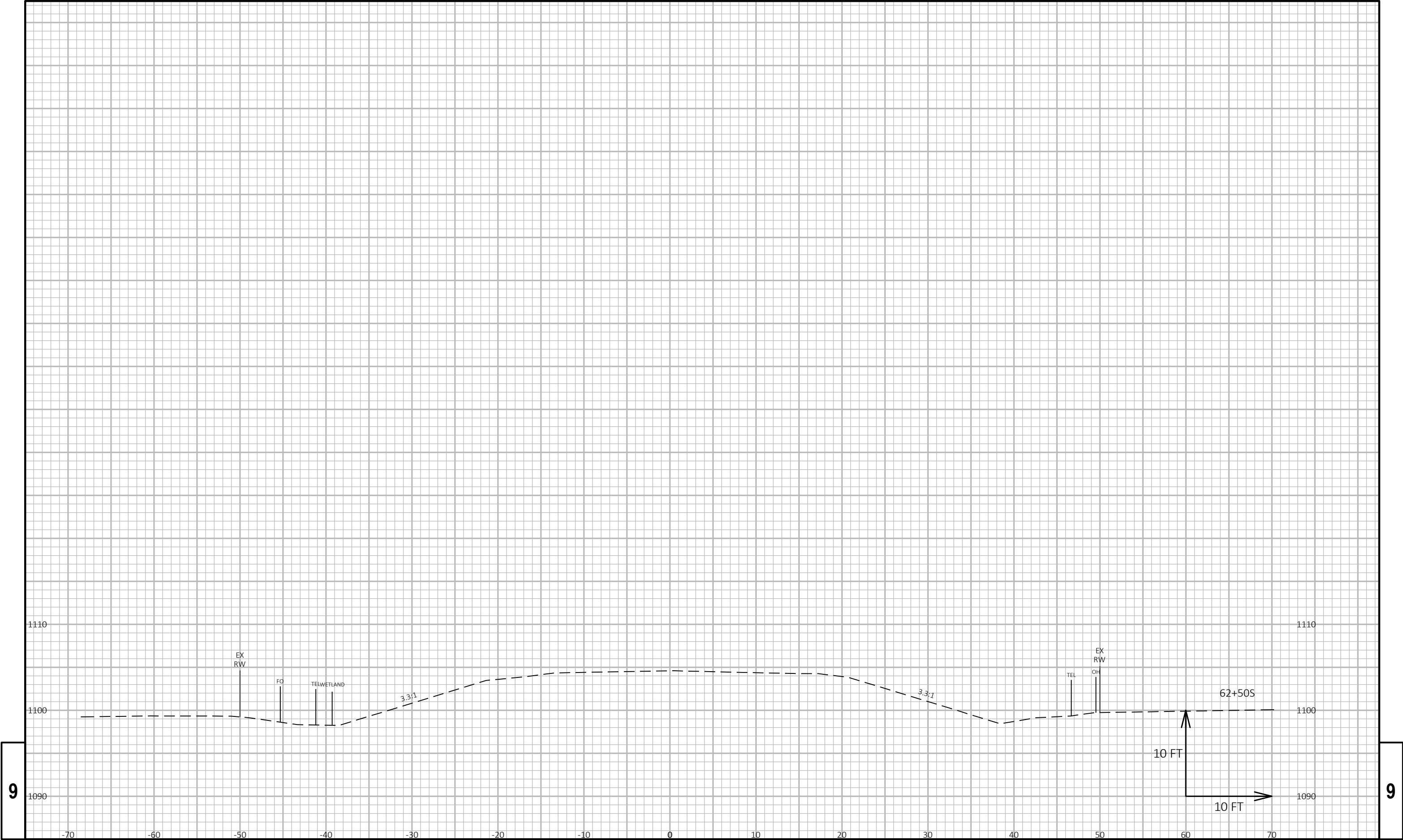
9

PROJECT NO: 1009-42-70	HWY: STH 80	COUNTY: WOOD	CROSS SECTIONS: STH 80	SHEET 147	E
------------------------	-------------	--------------	------------------------	-----------	---





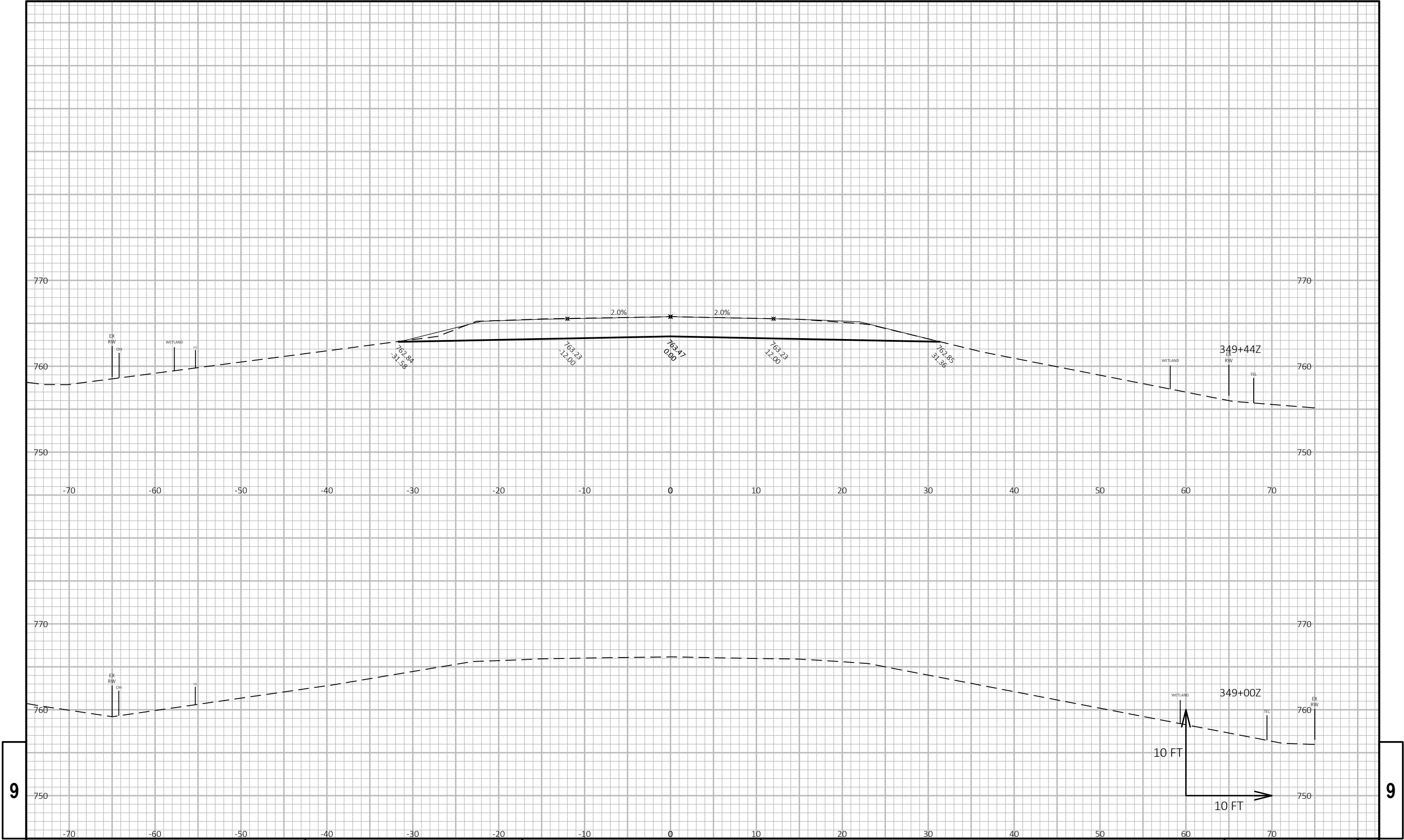




9

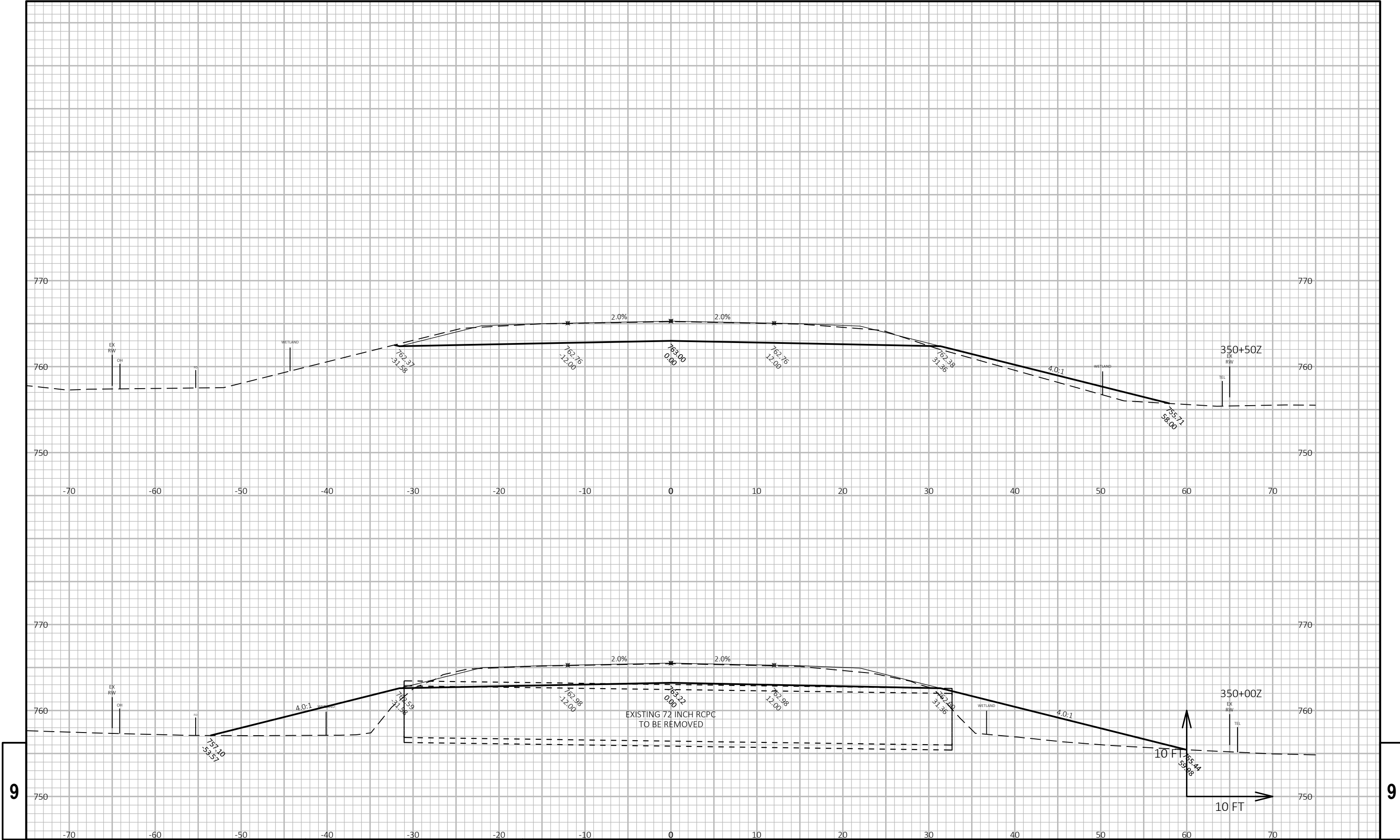
9

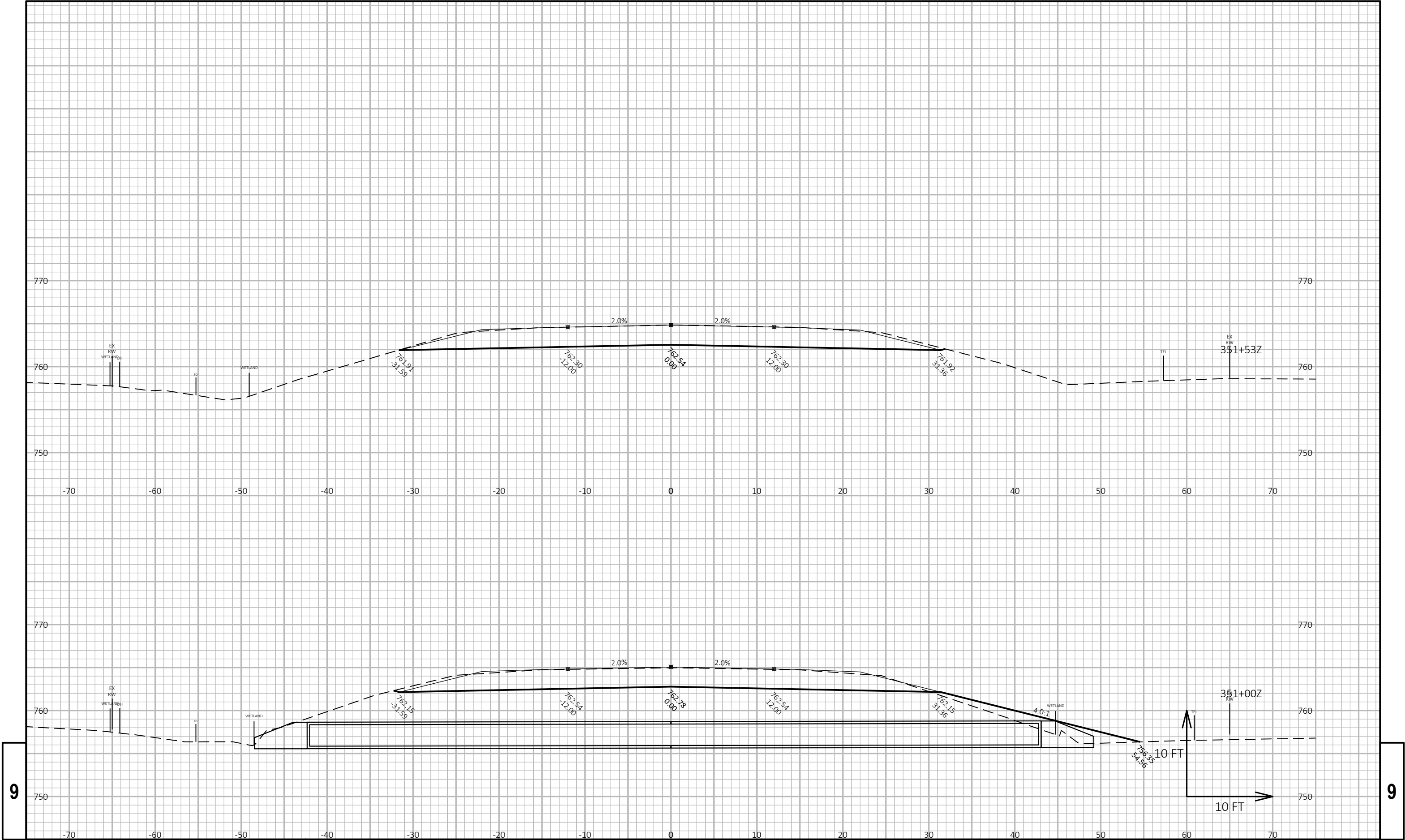
PROJECT NO: 1009-42-70	HWY: STH 186	COUNTY: WOOD	CROSS SECTIONS: STH 186	SHEET 151	E
------------------------	--------------	--------------	-------------------------	-----------	---

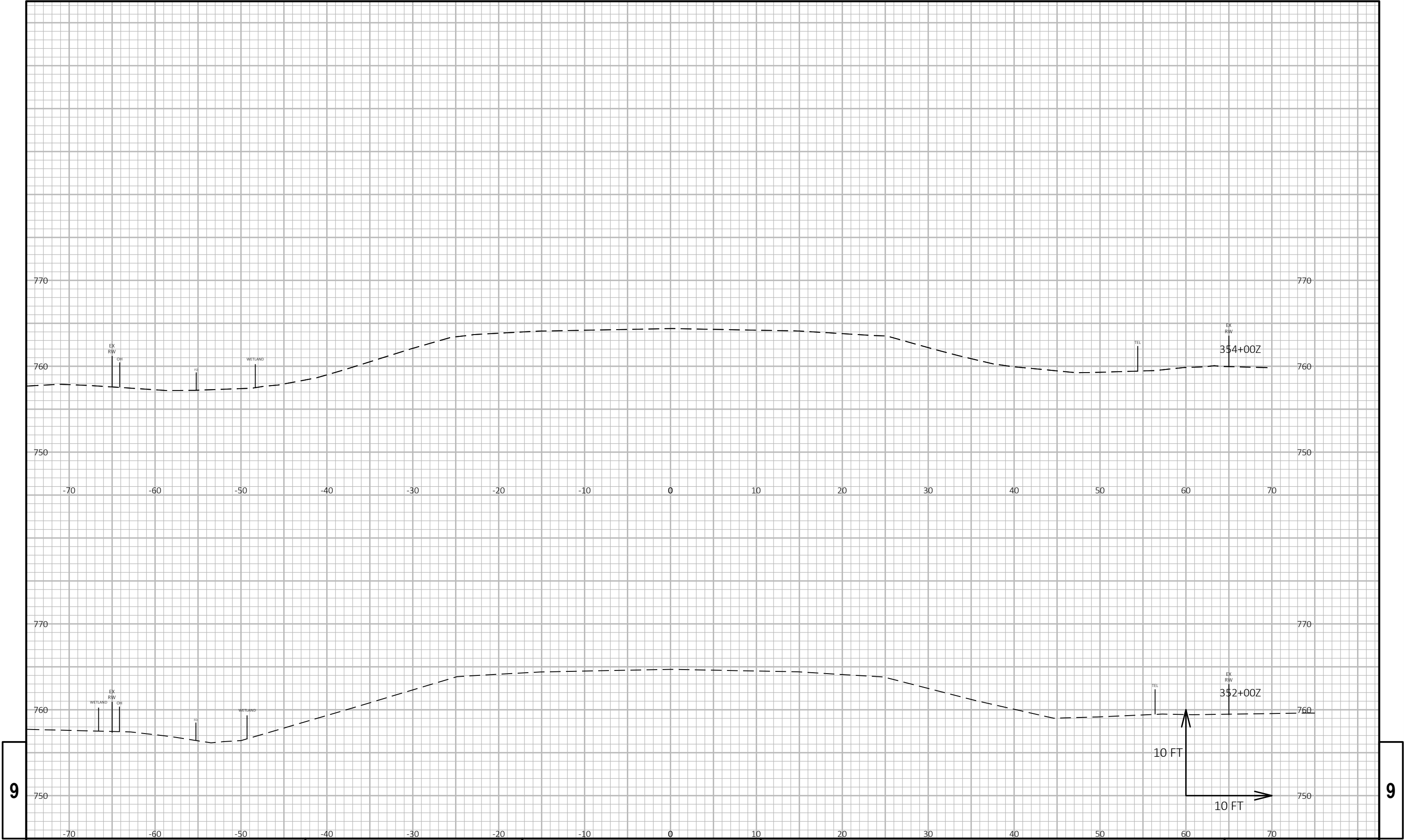


9

9

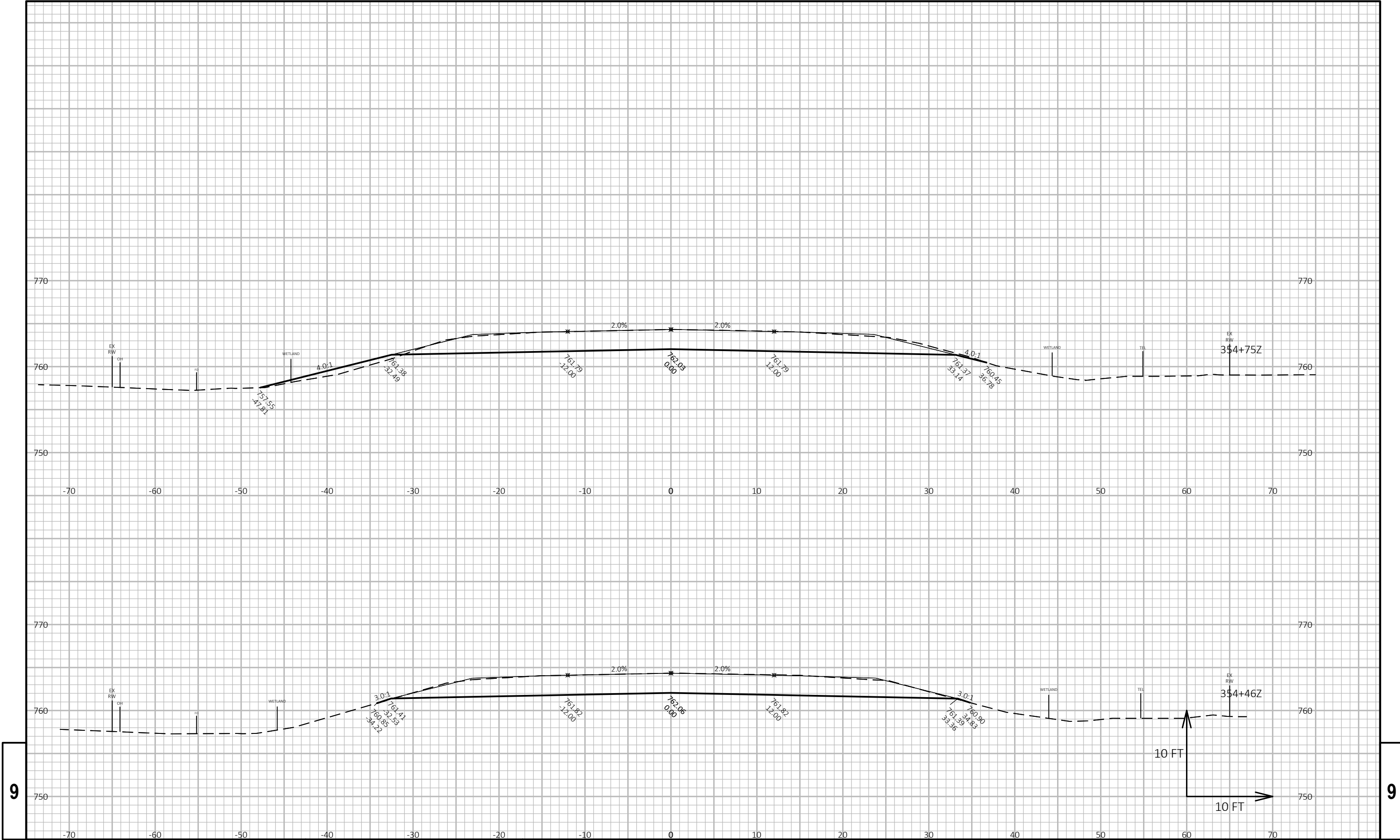


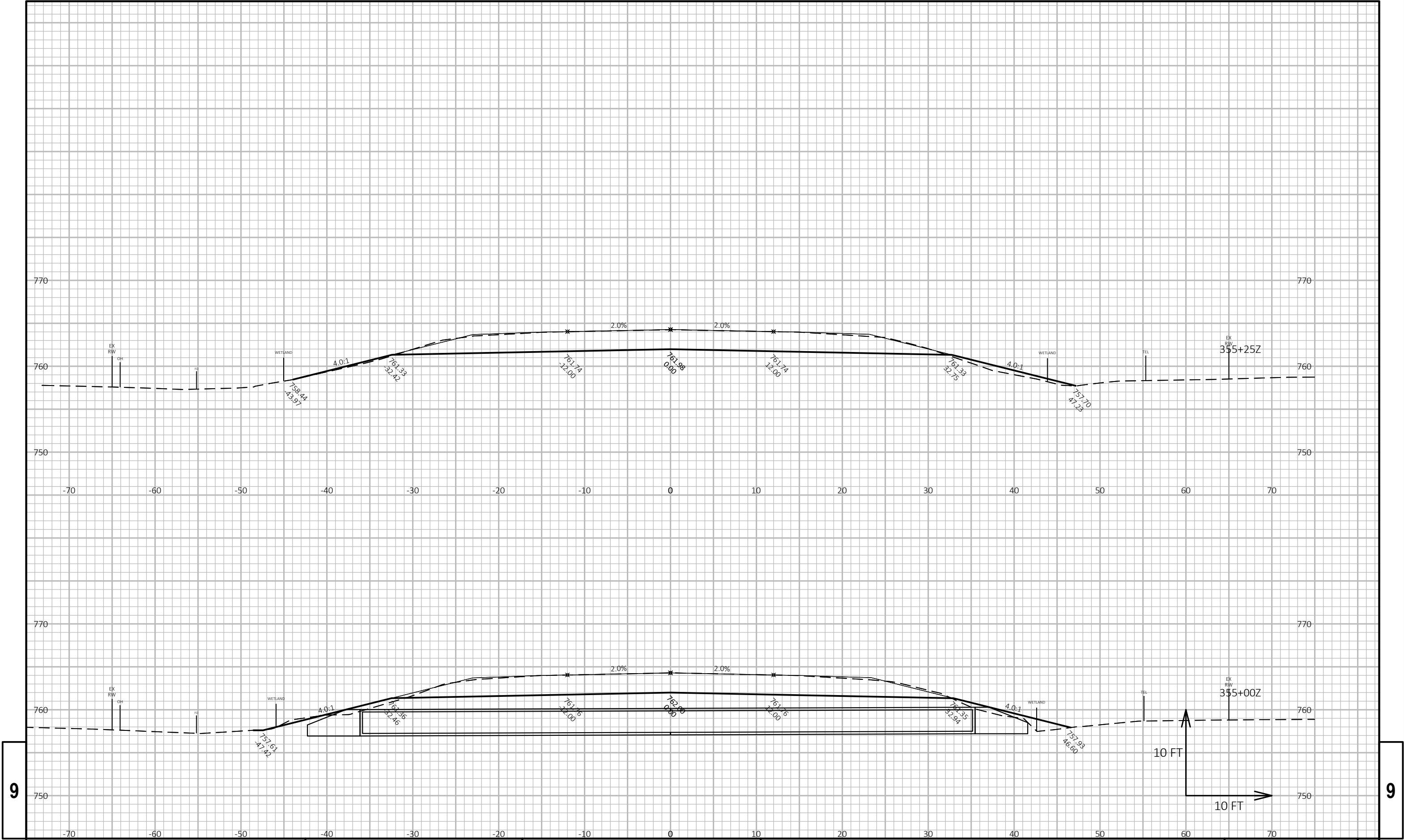


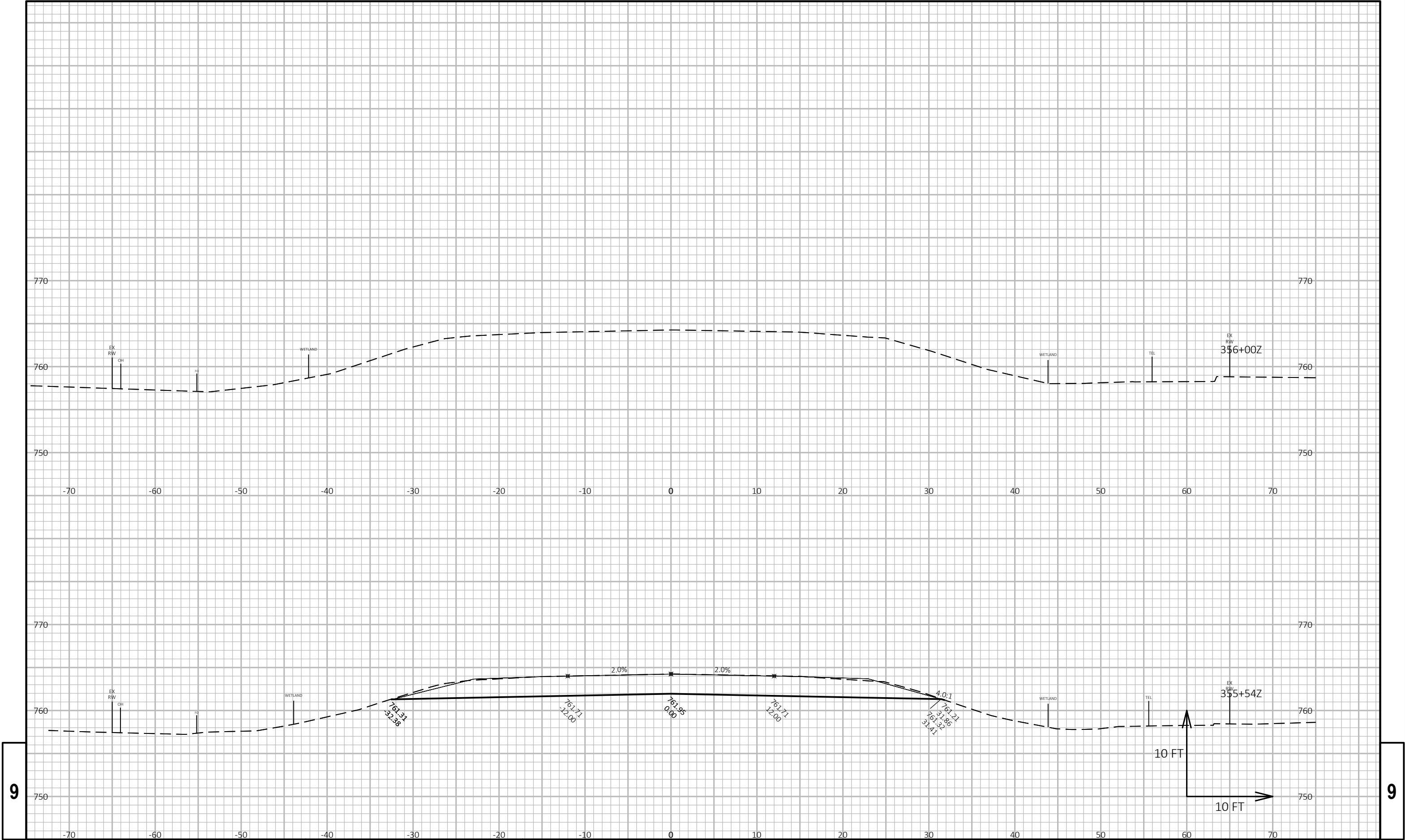


9

9

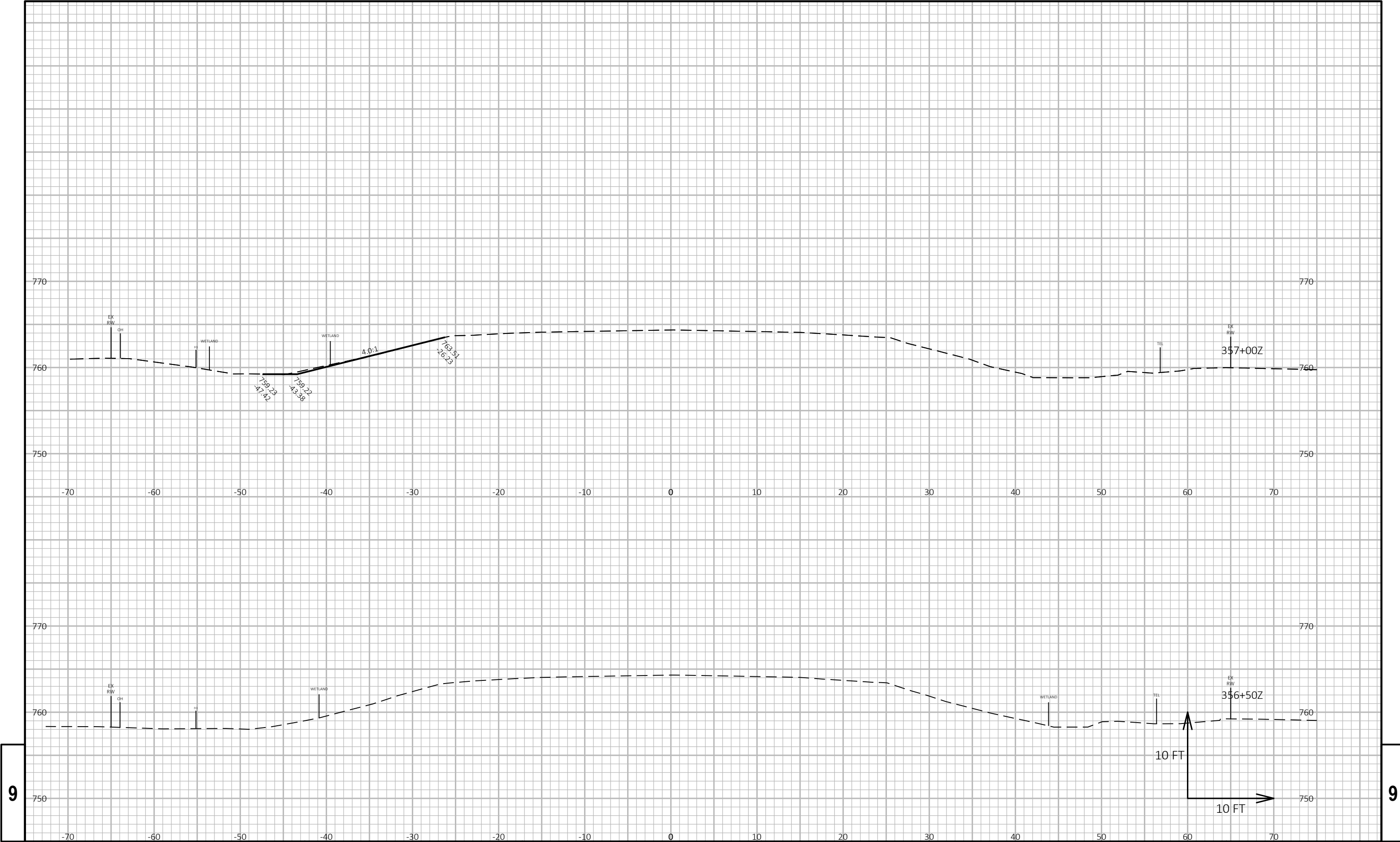


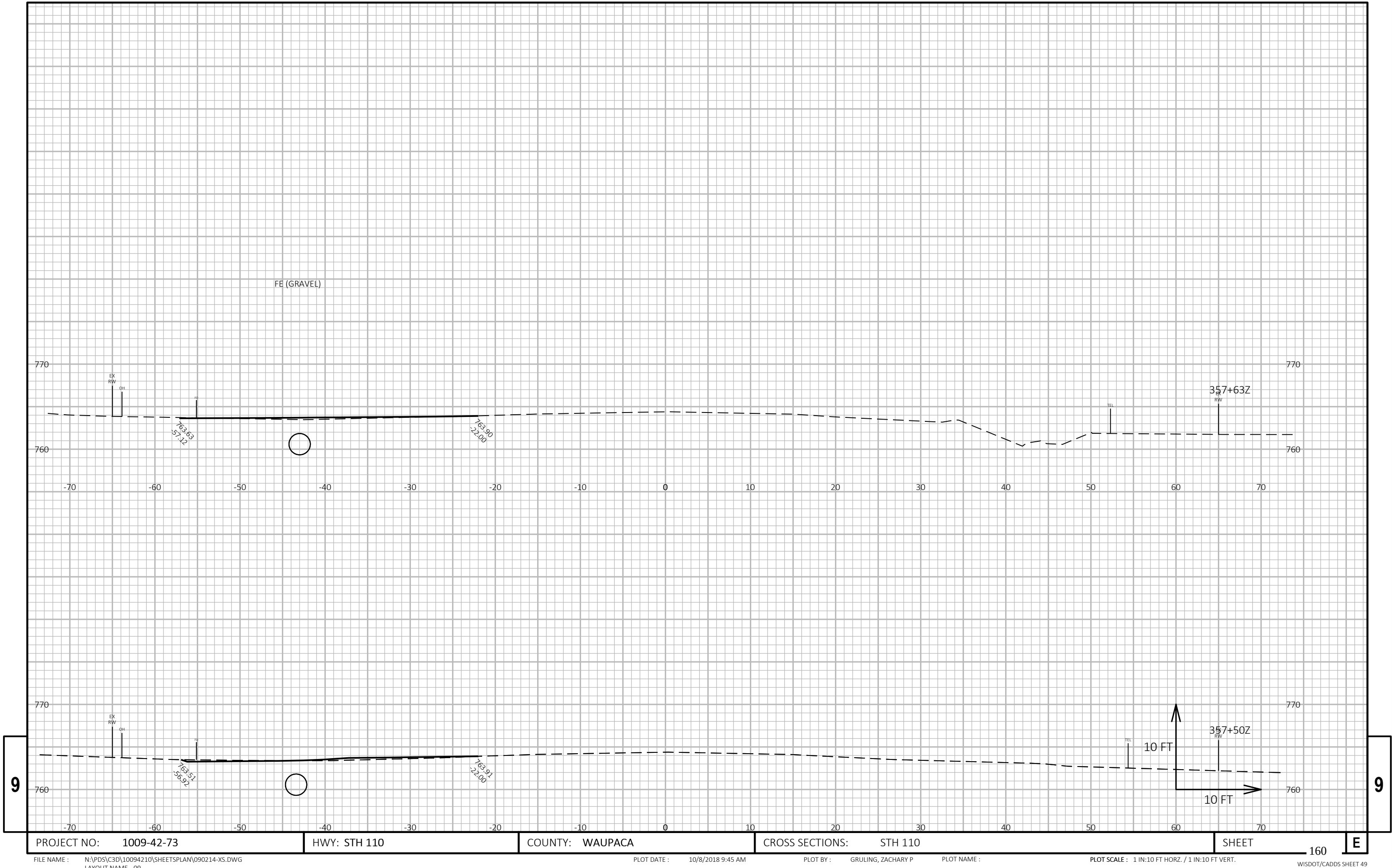


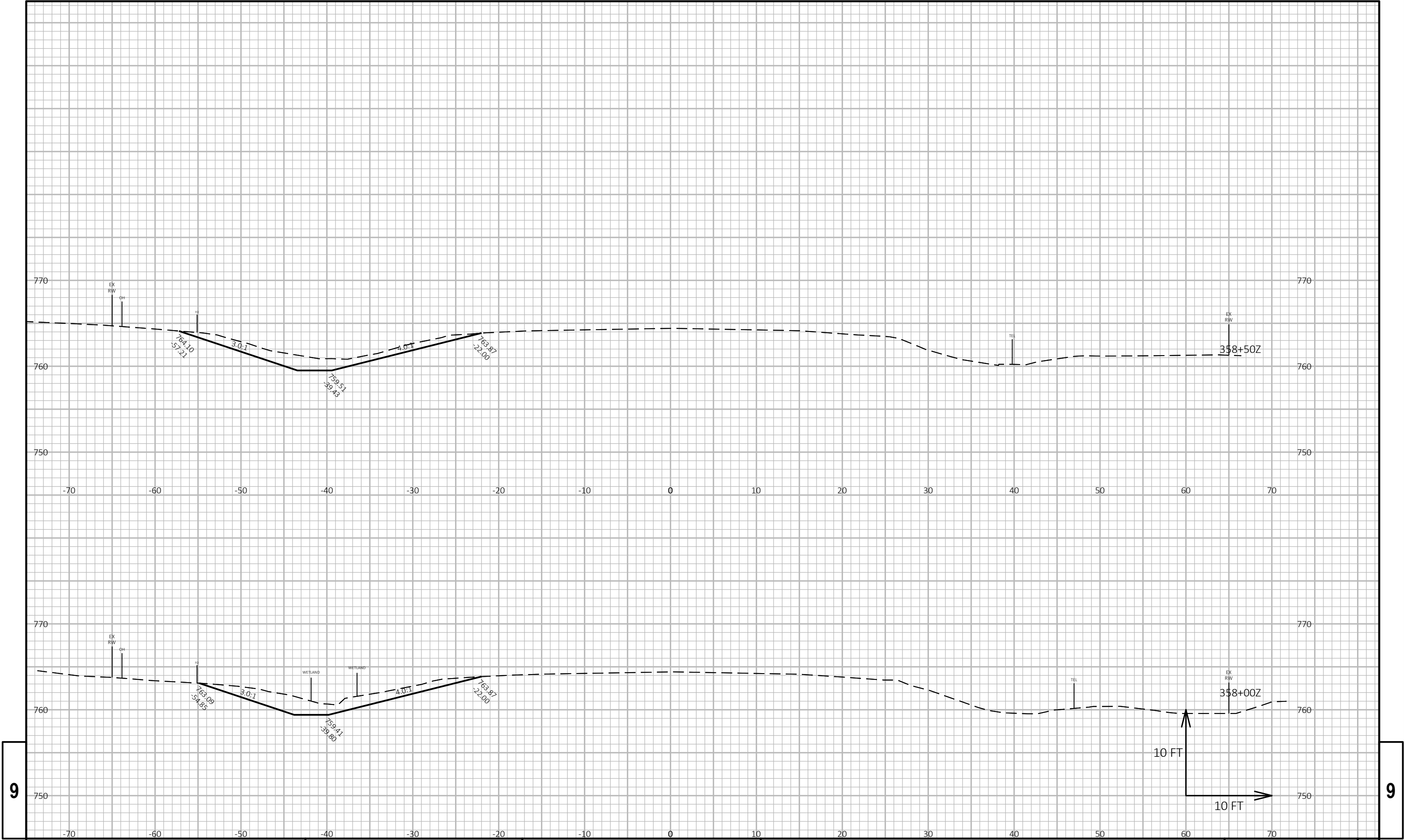


9

9

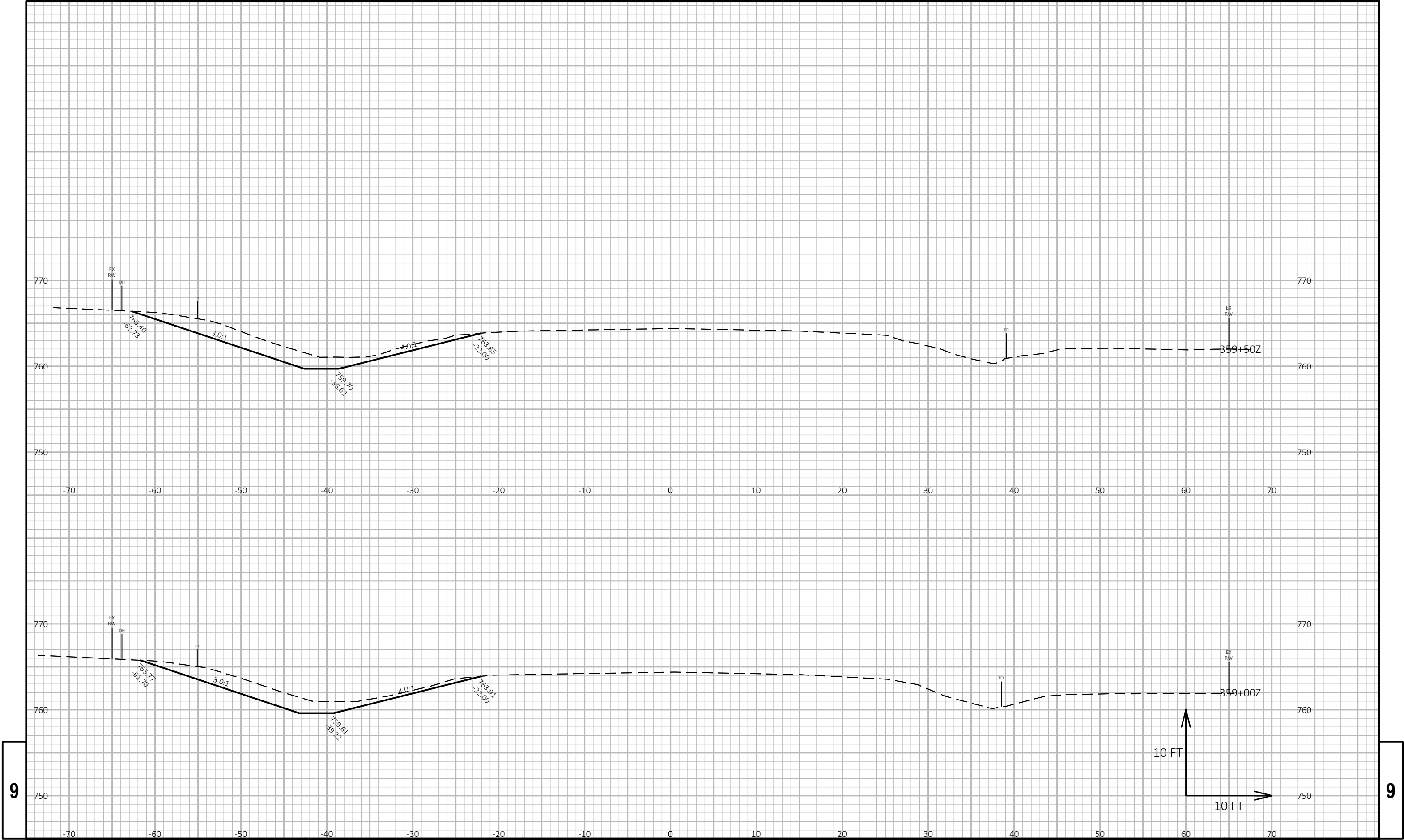


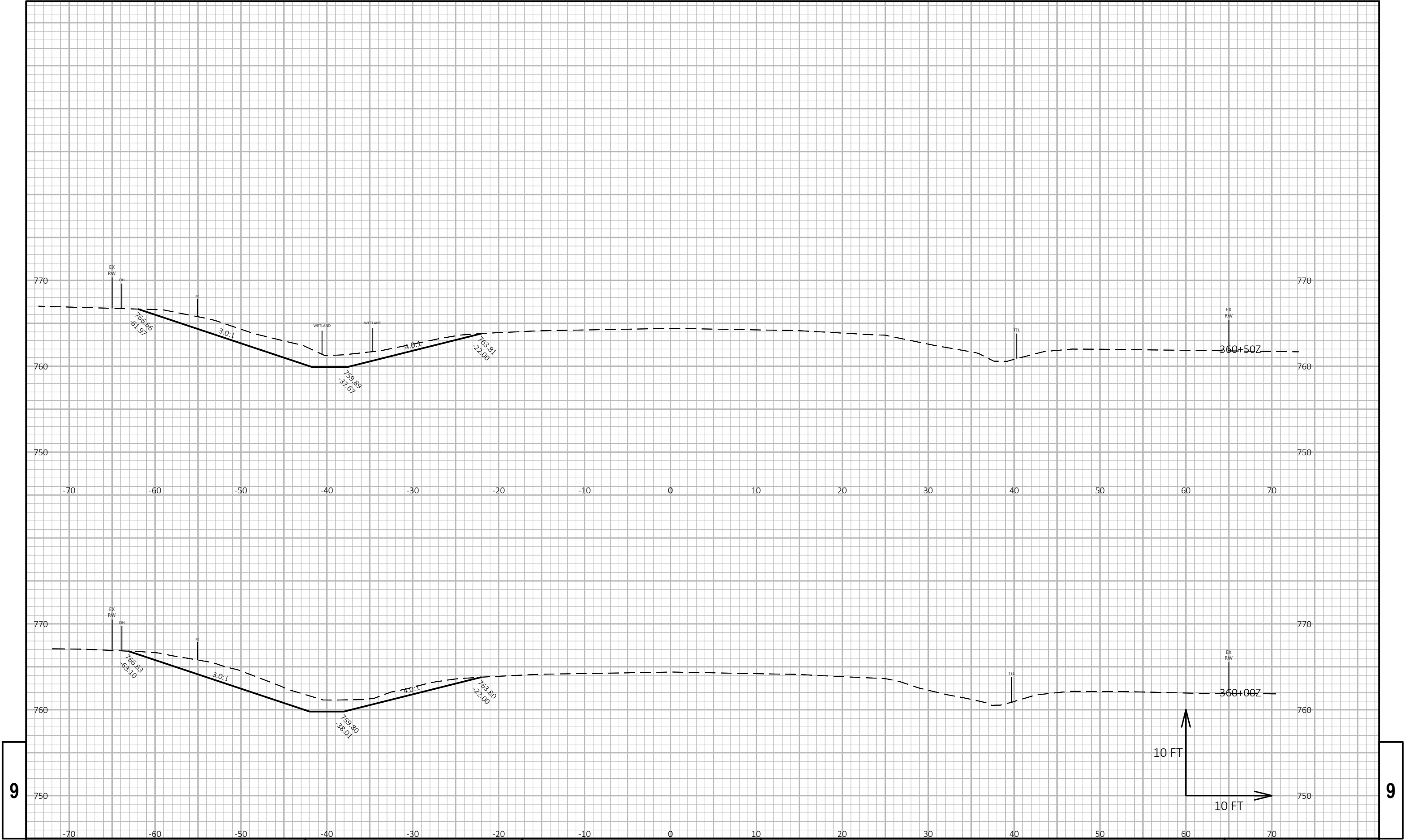




9

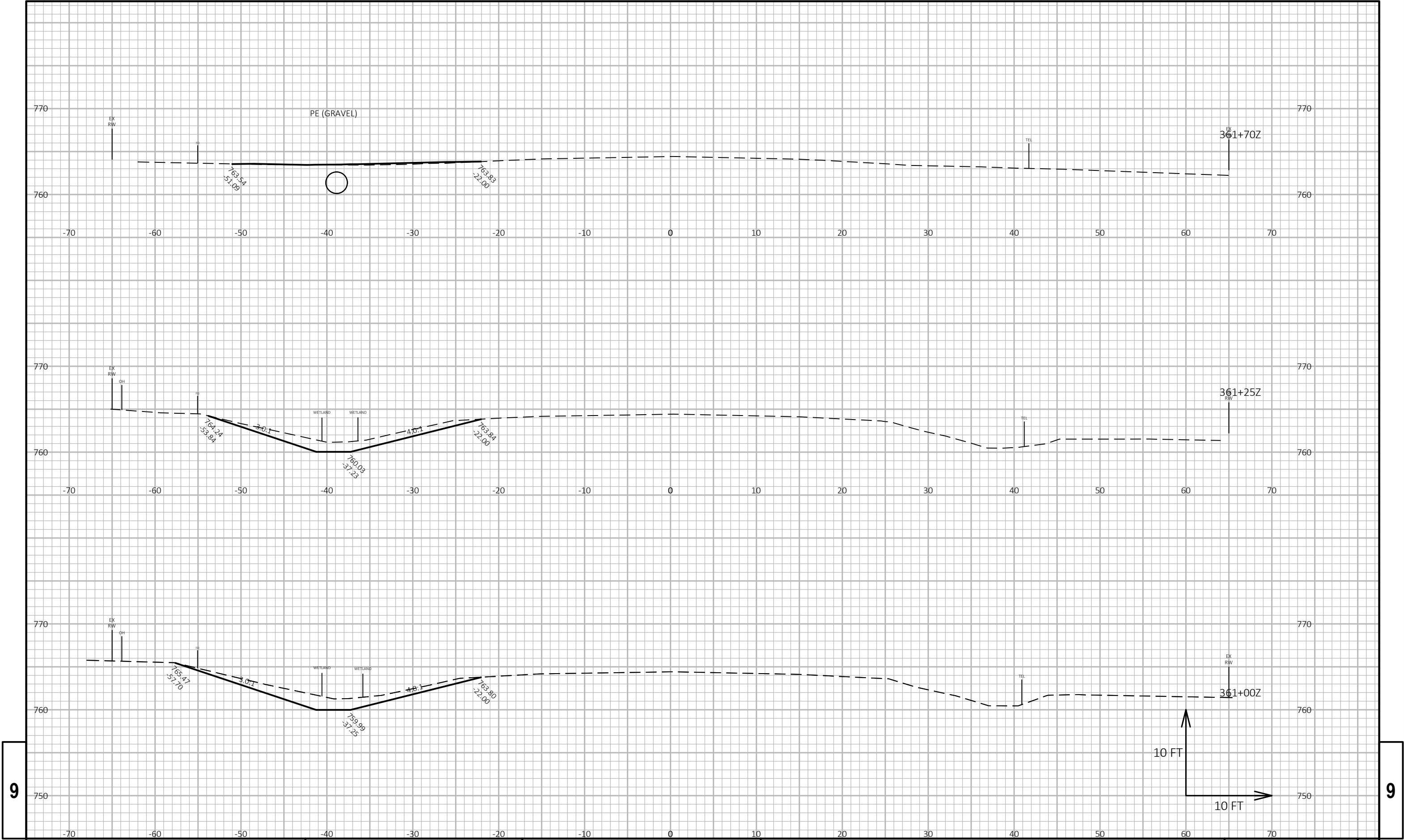
9





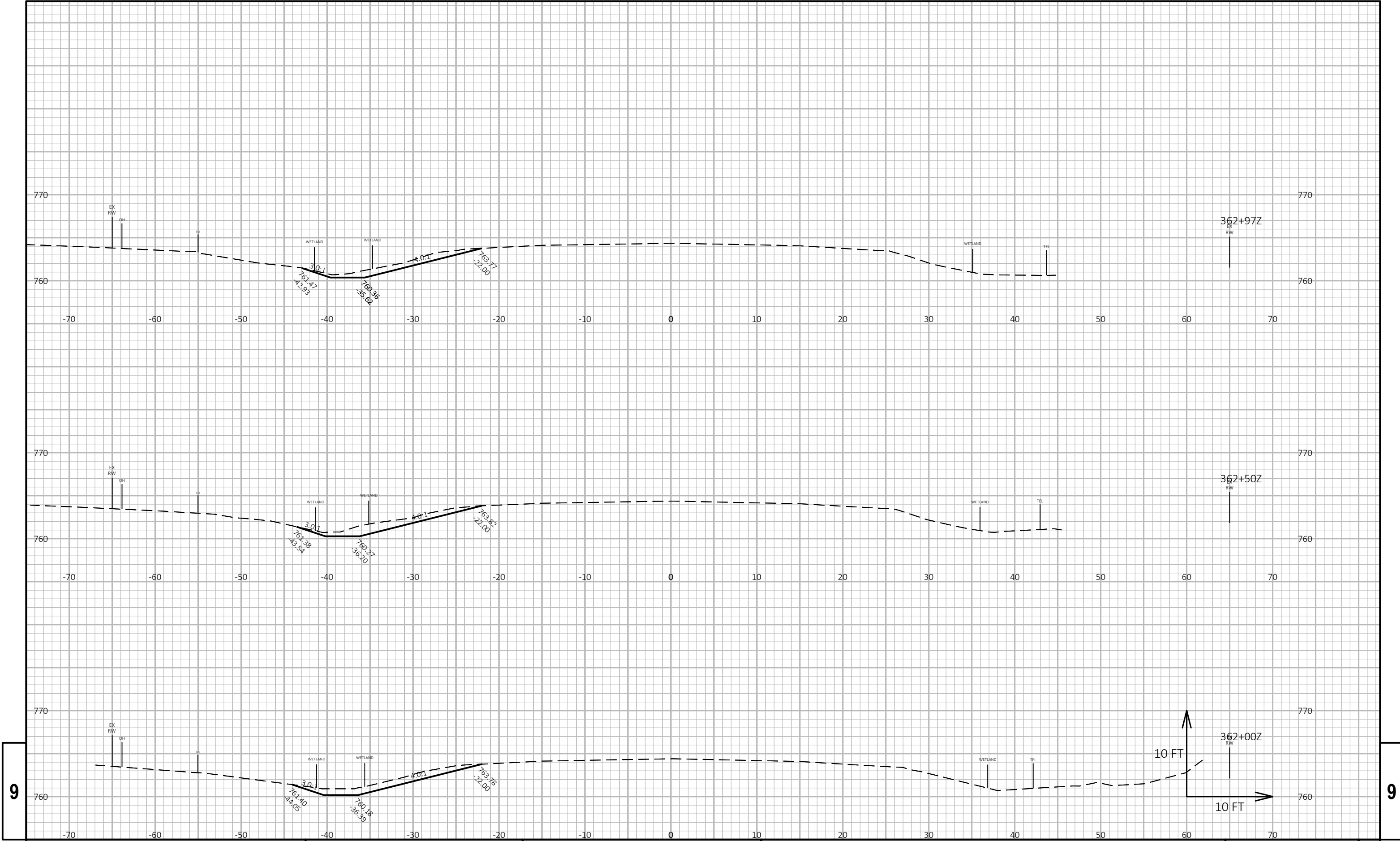
9

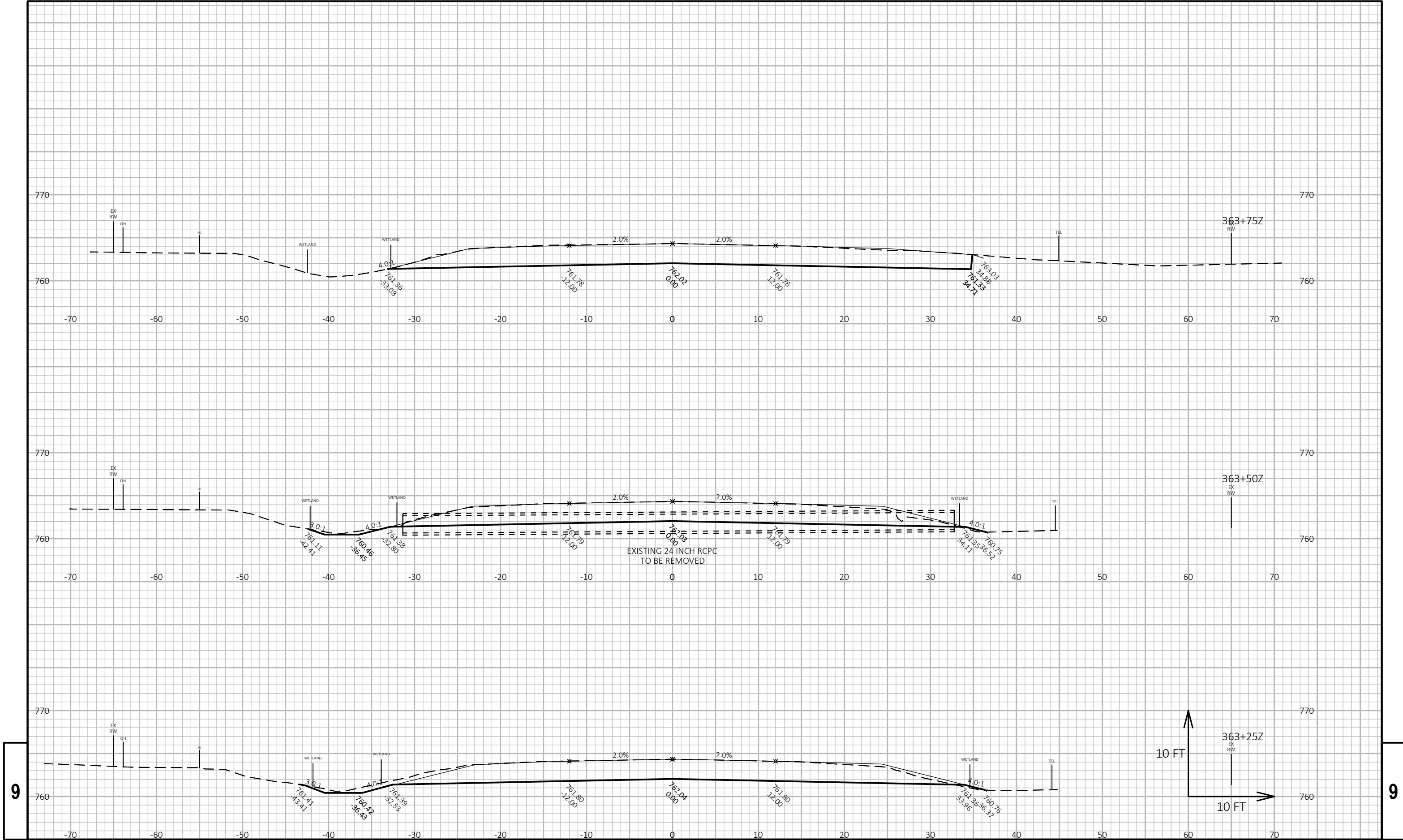
9

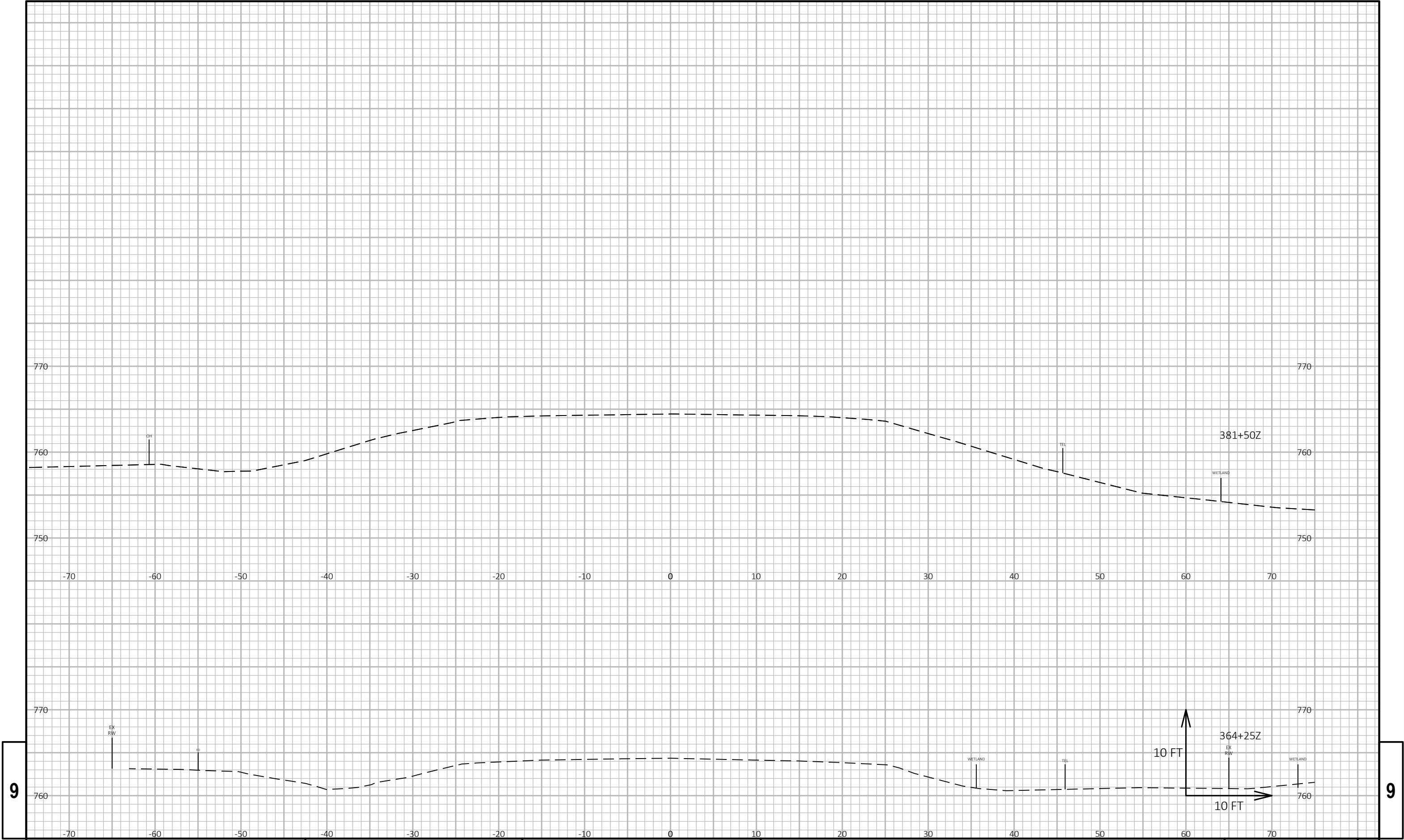


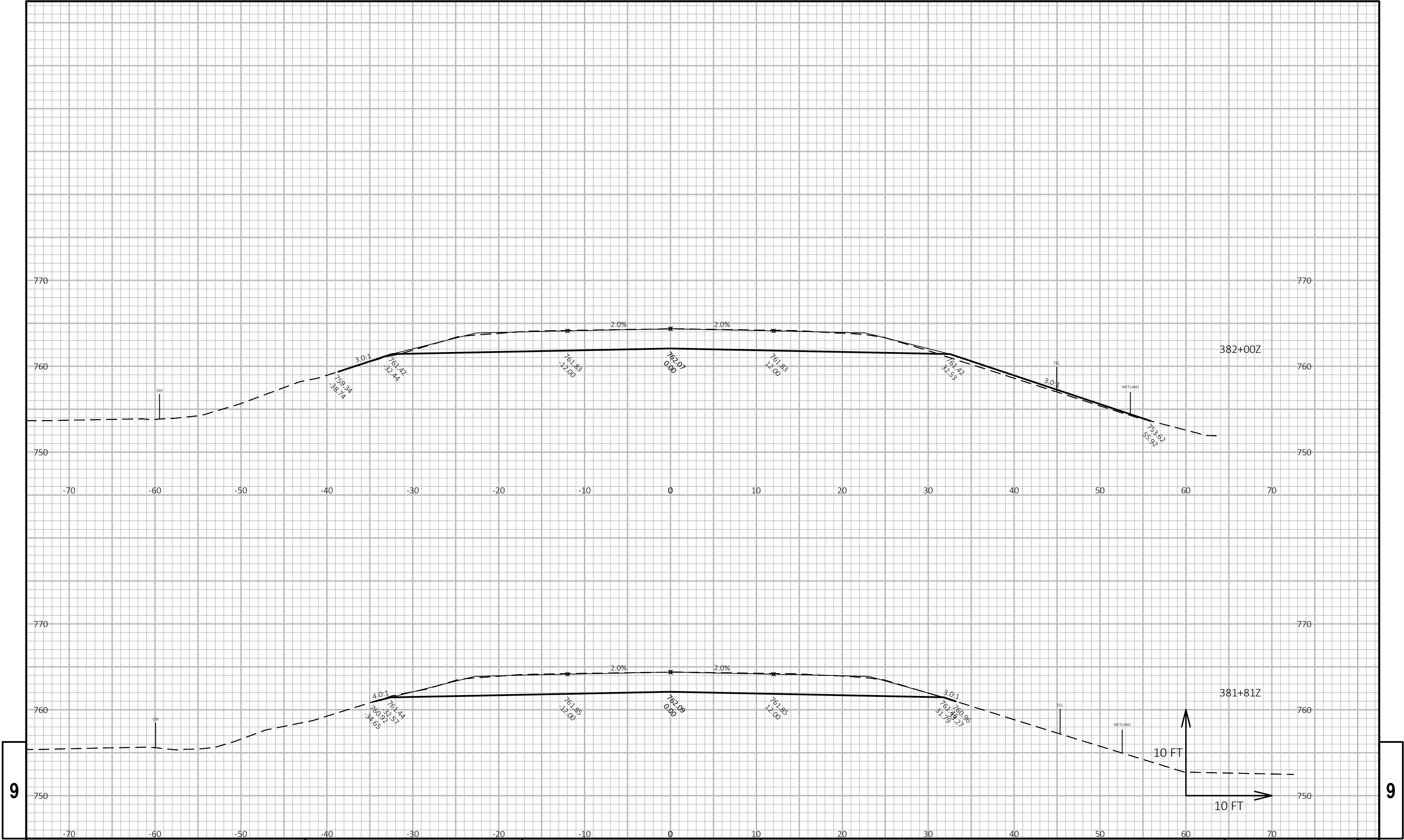
9

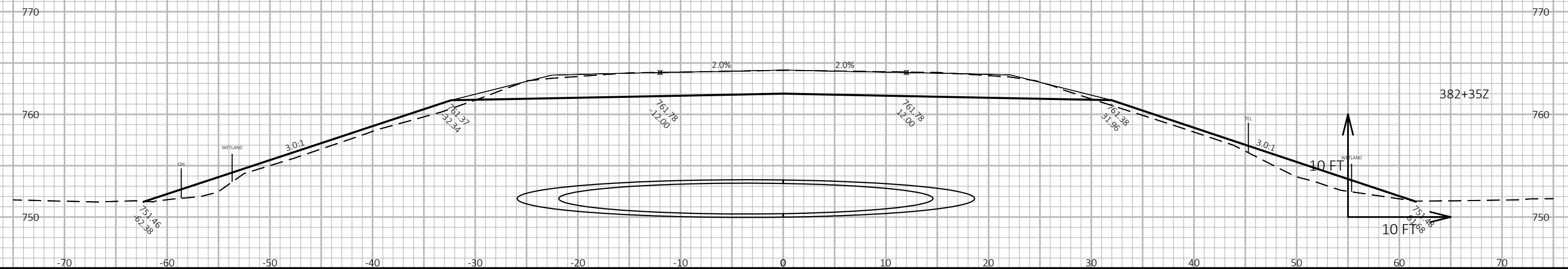
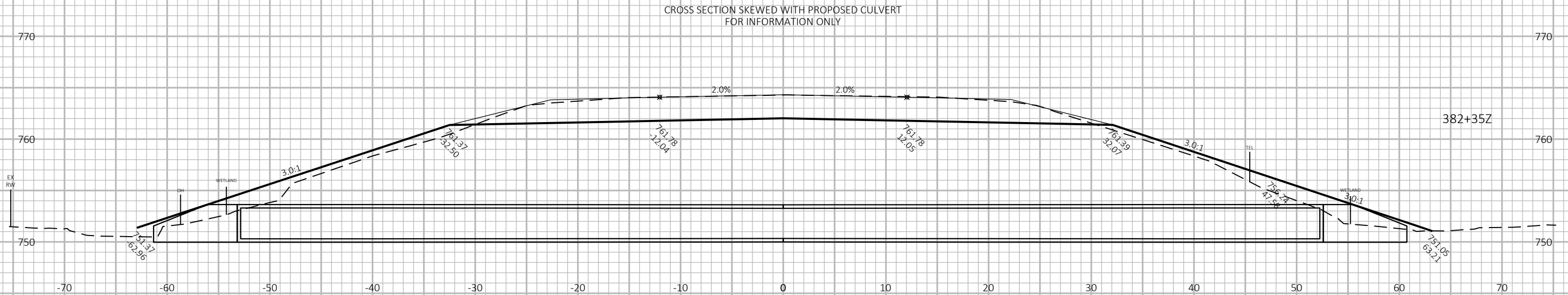
9

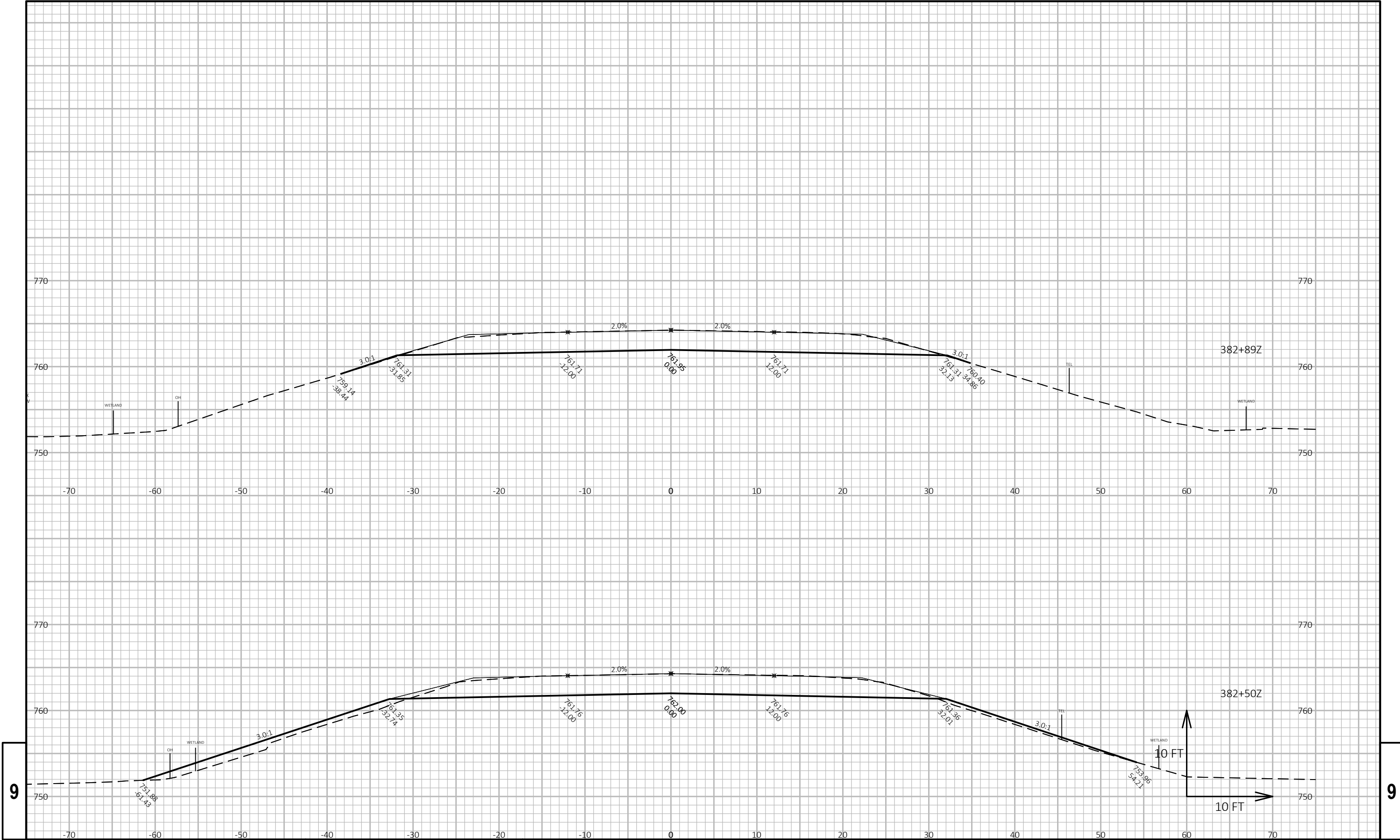


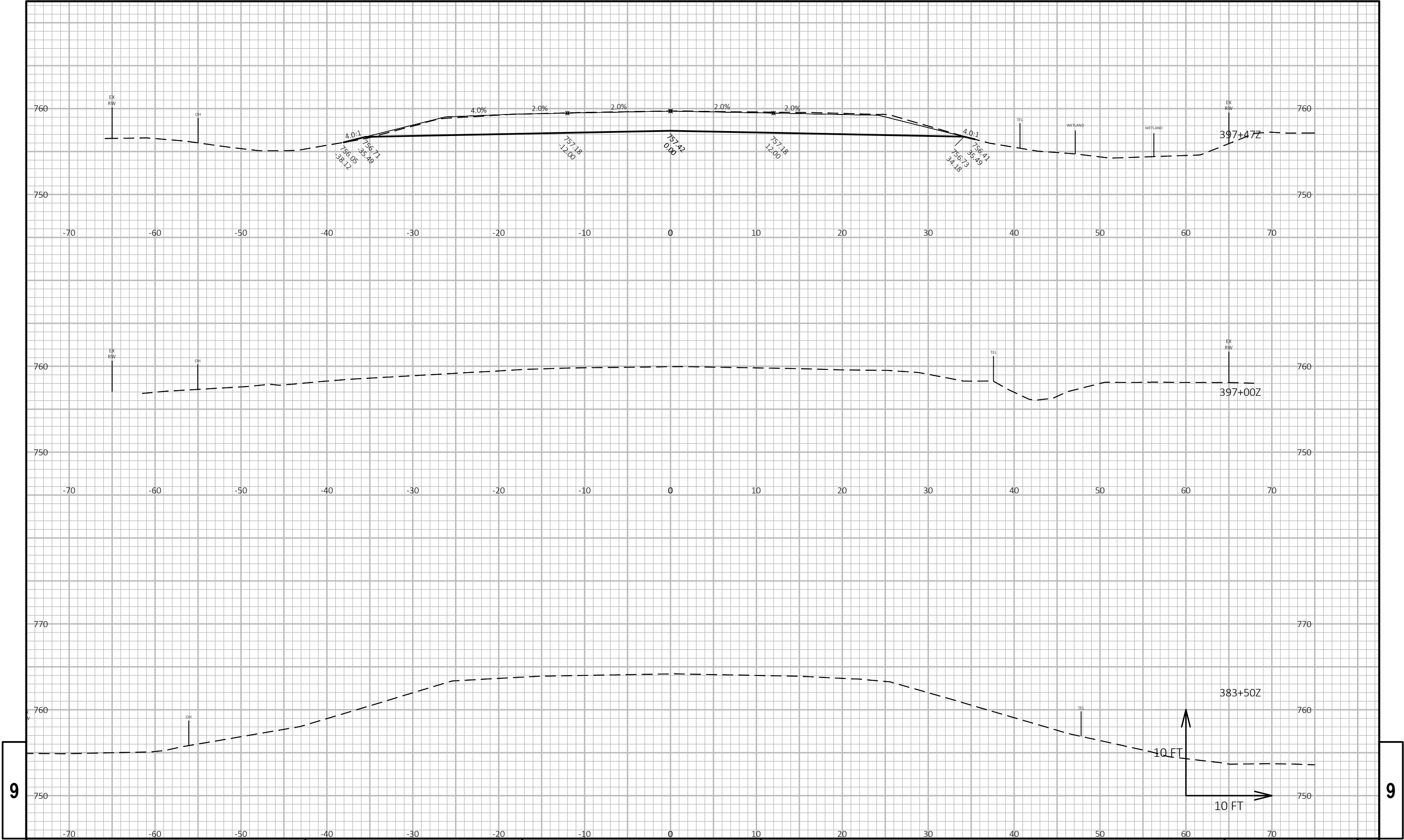






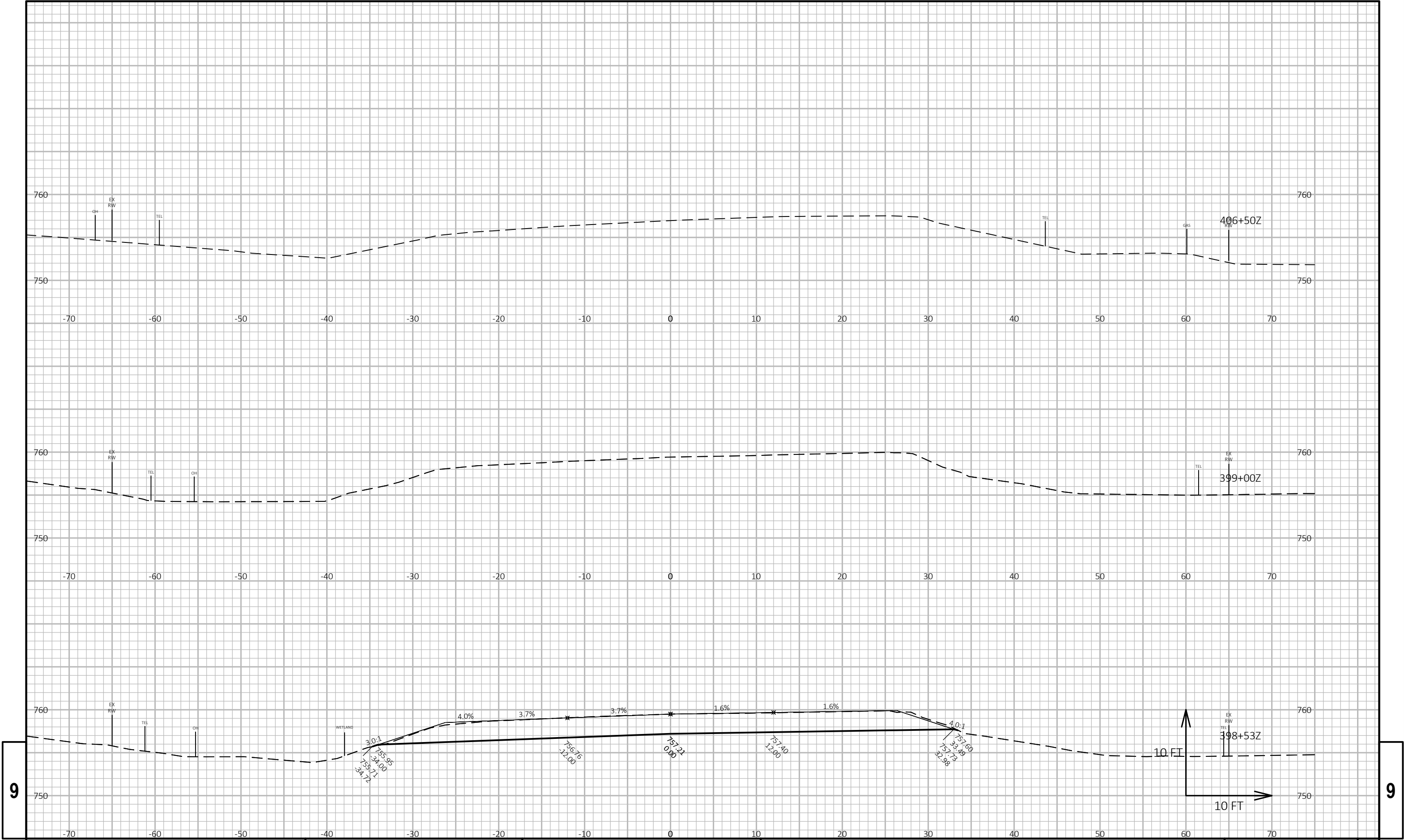


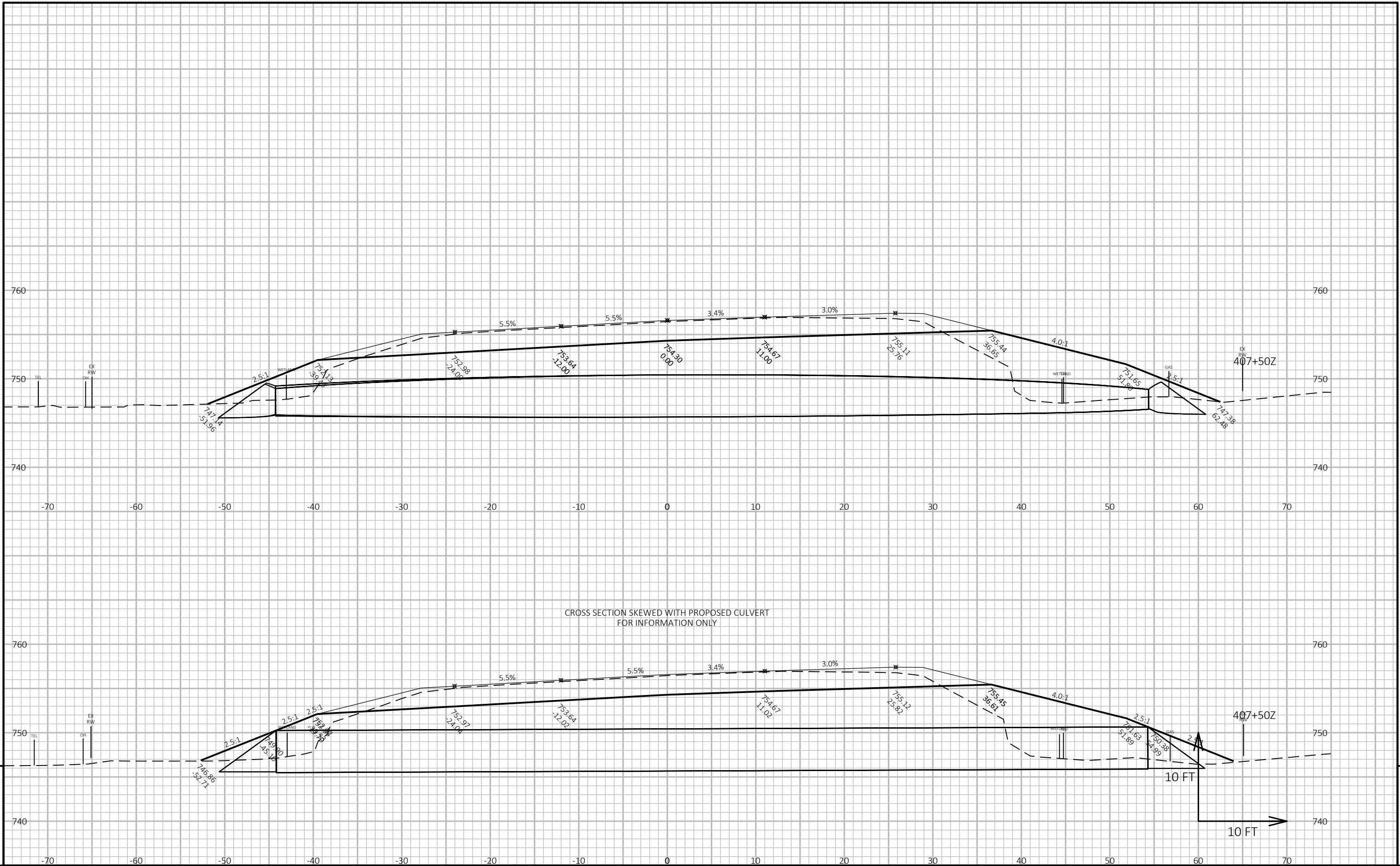


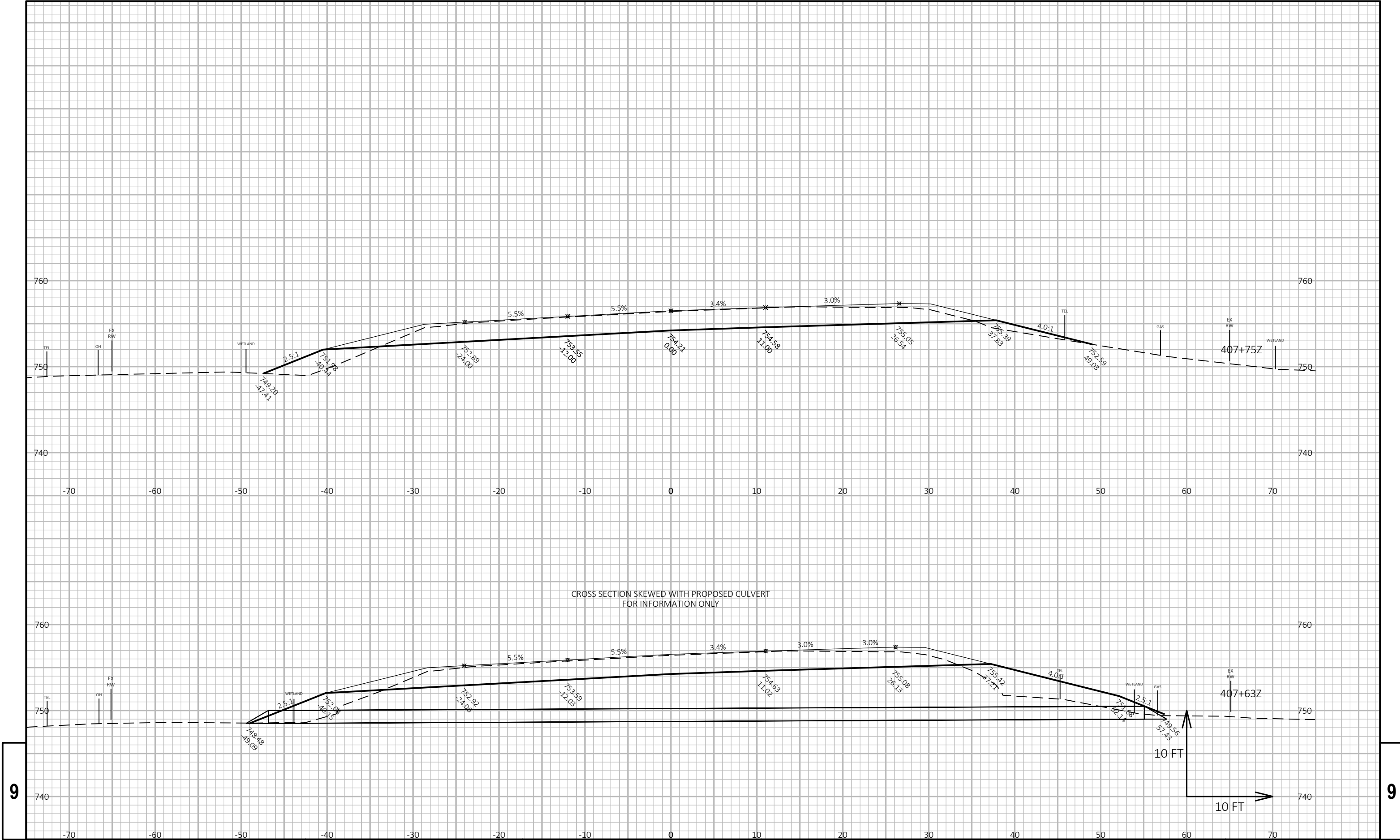


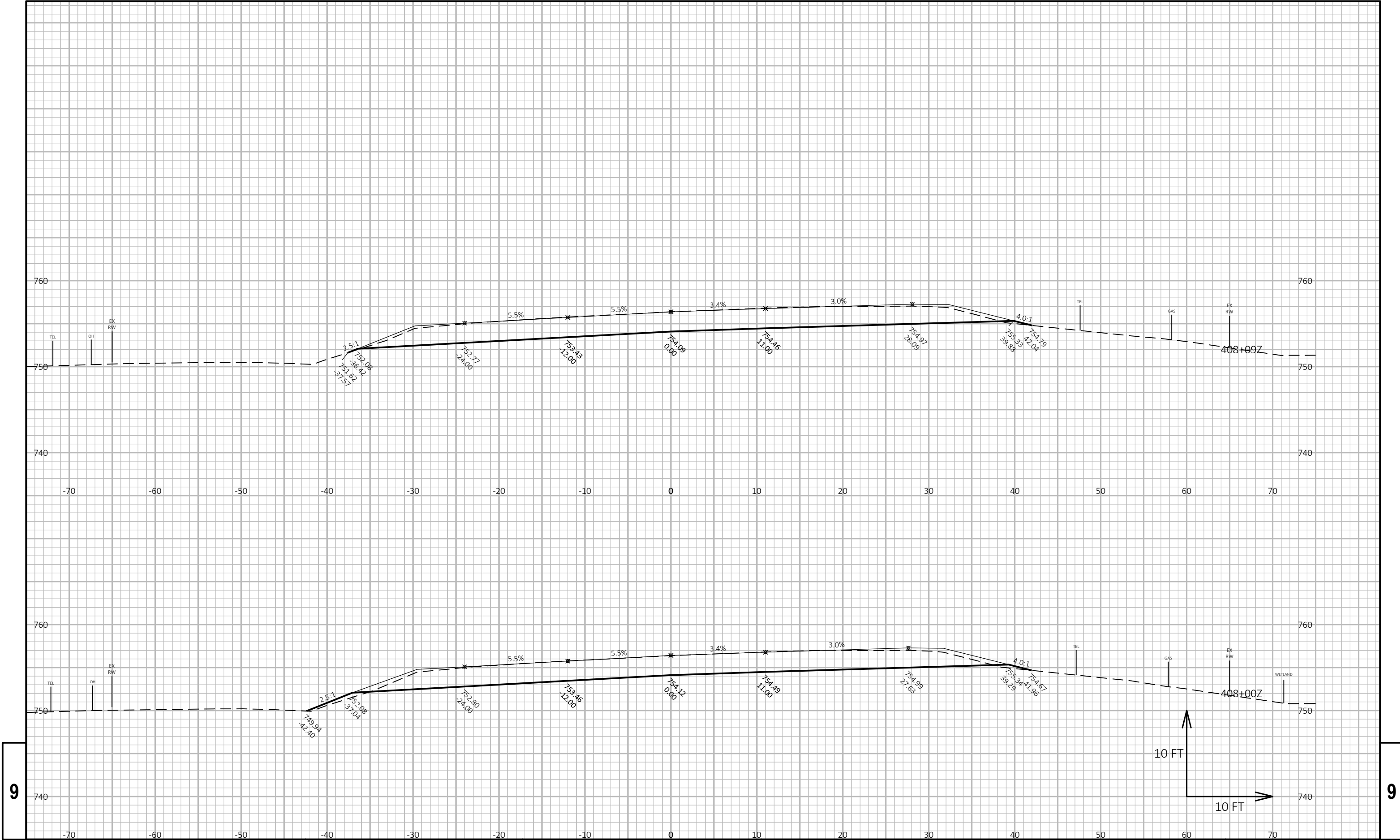
9

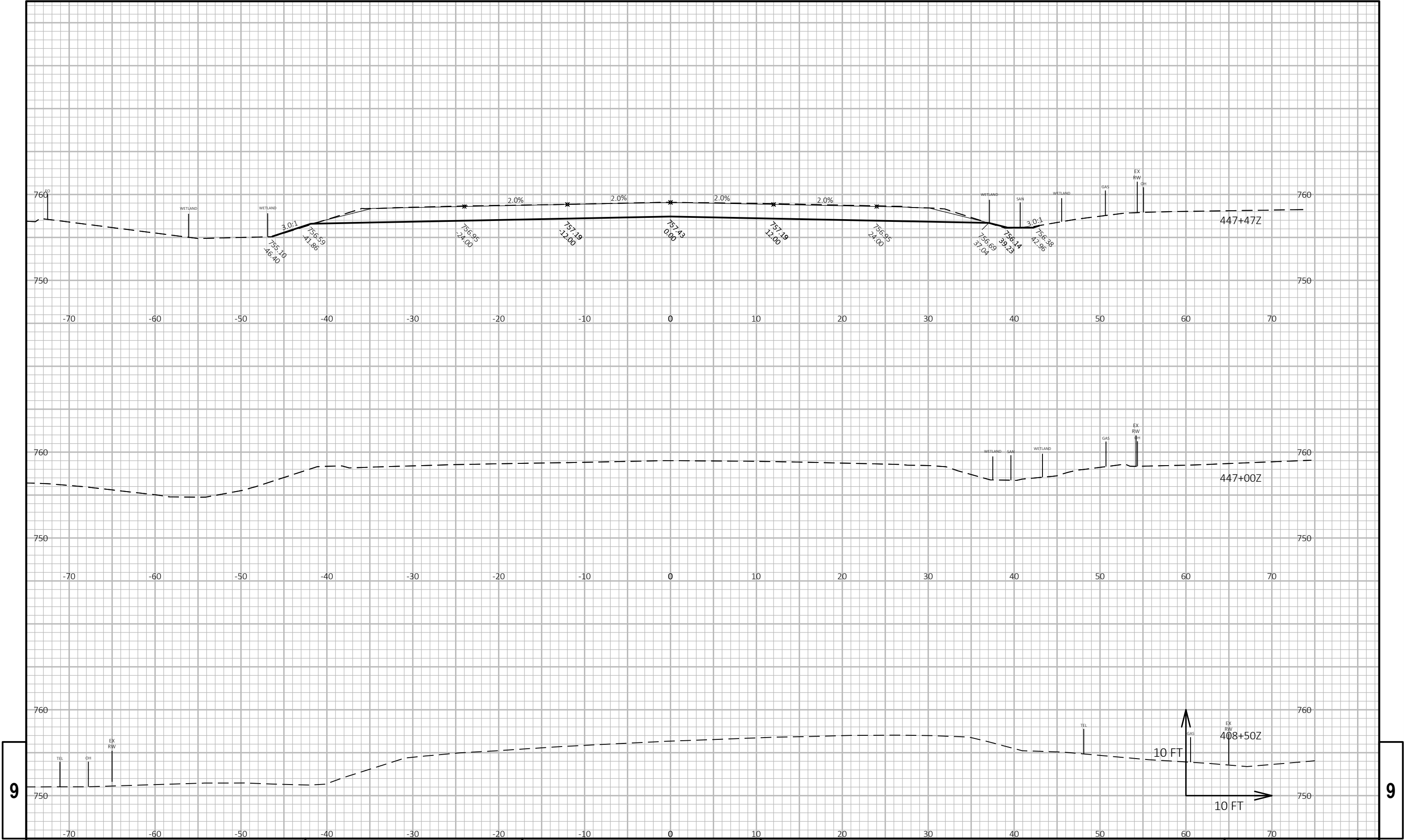
9





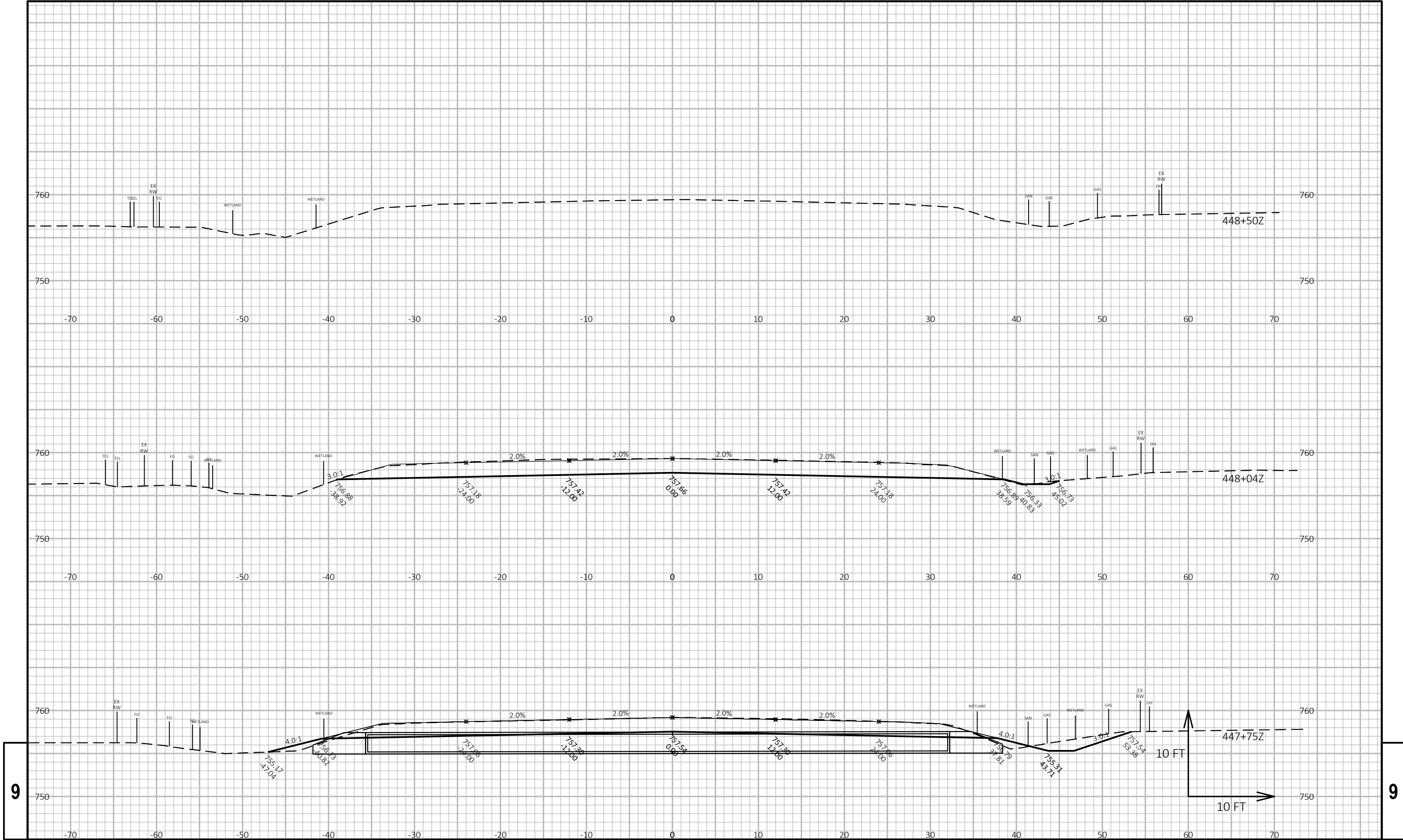


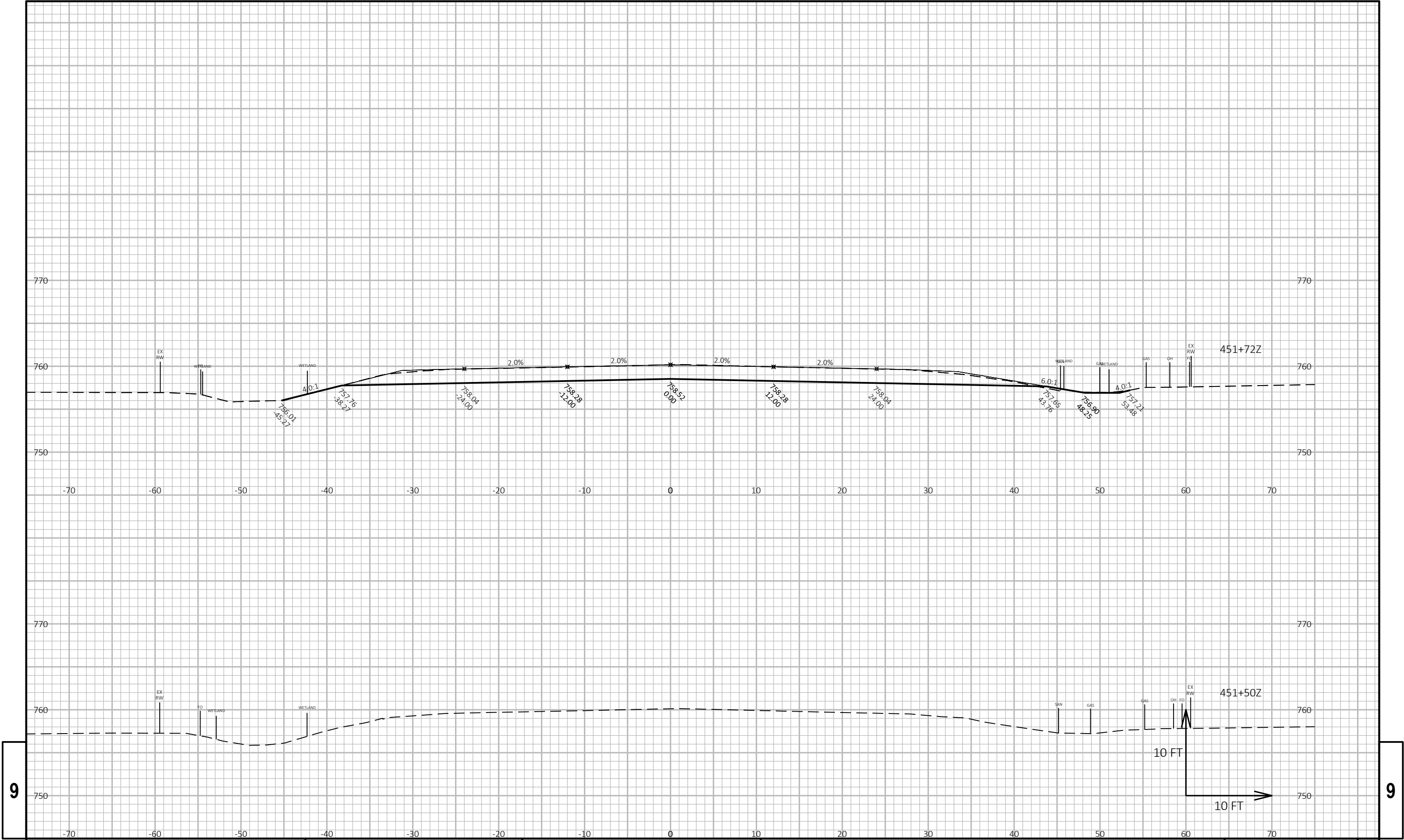


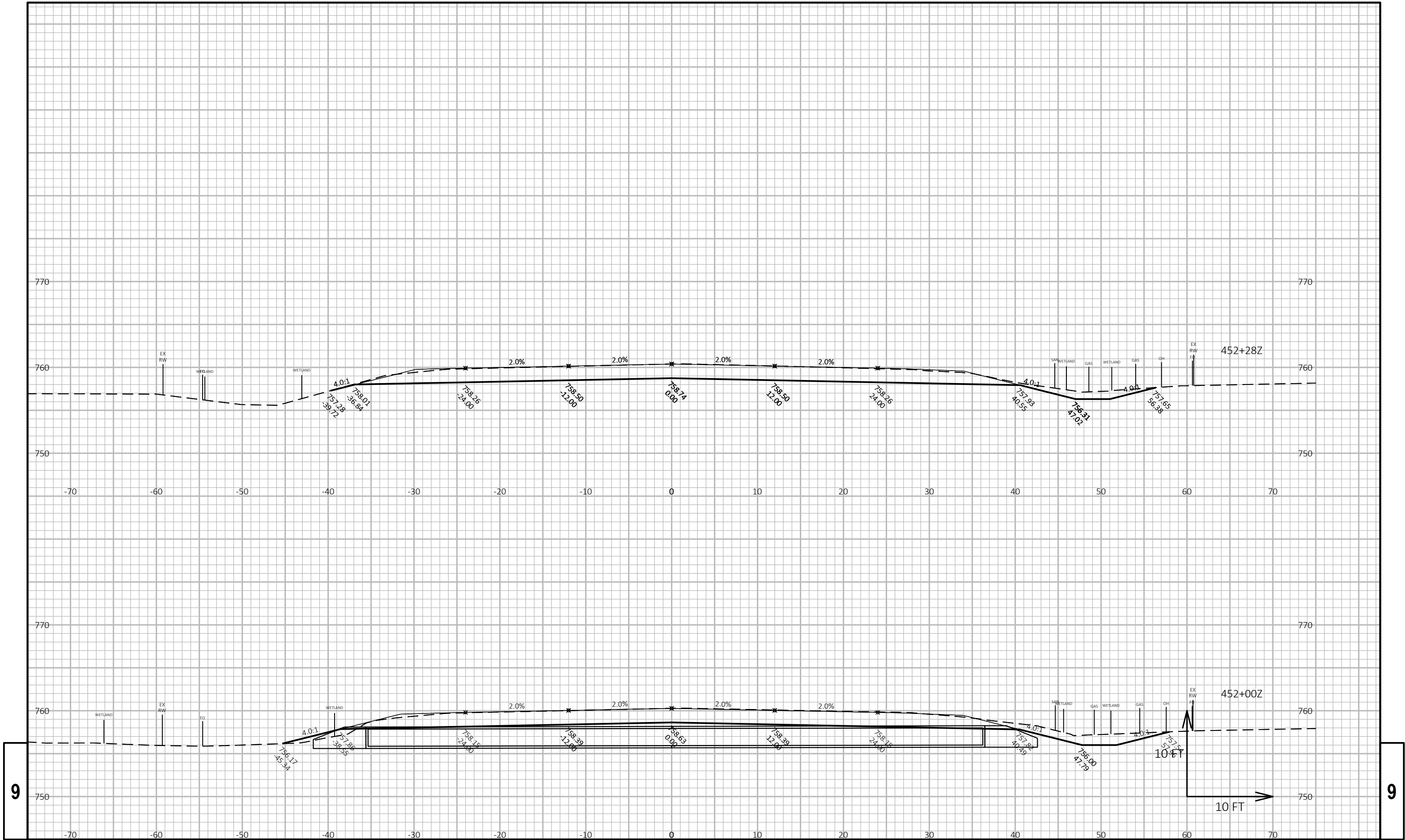


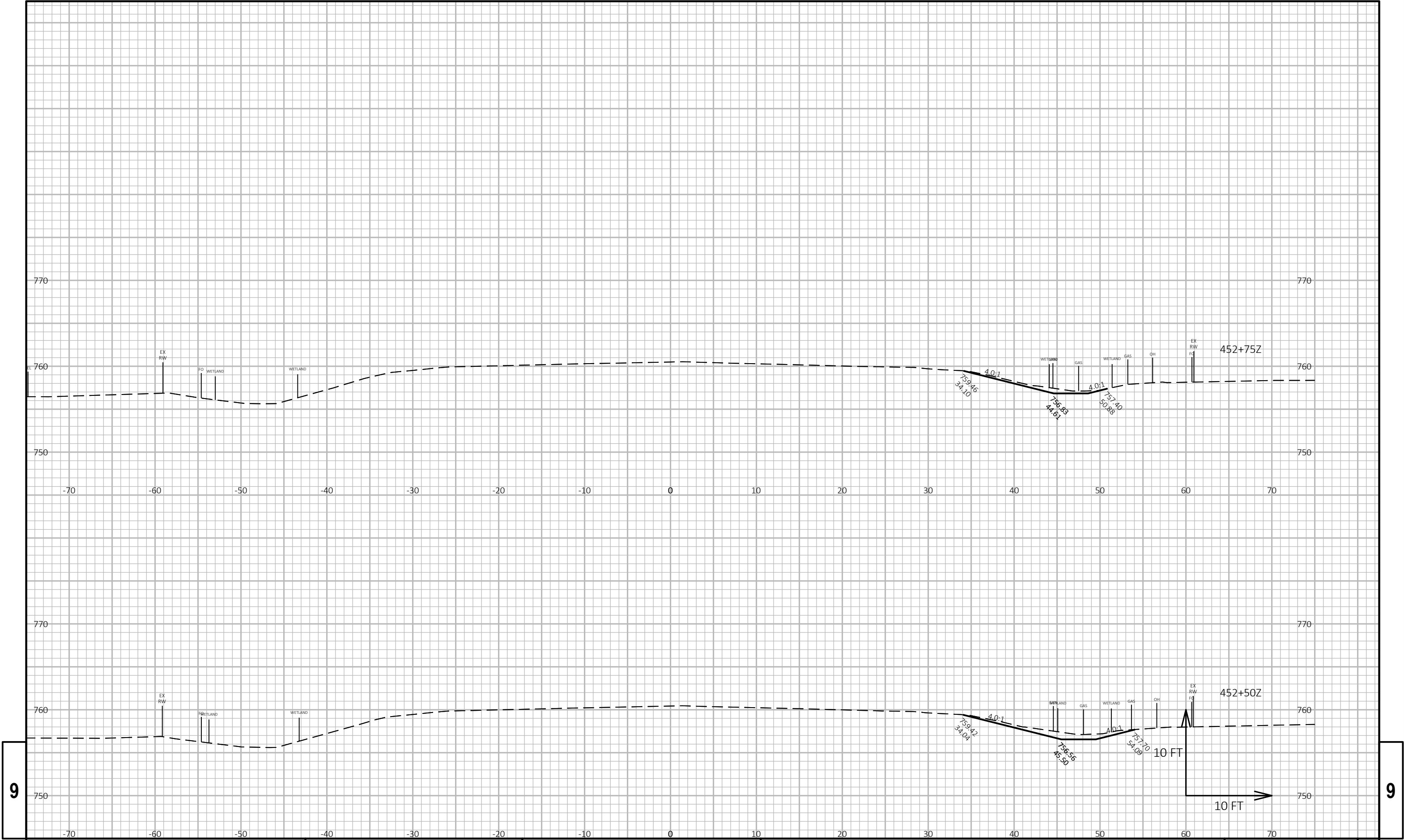
9

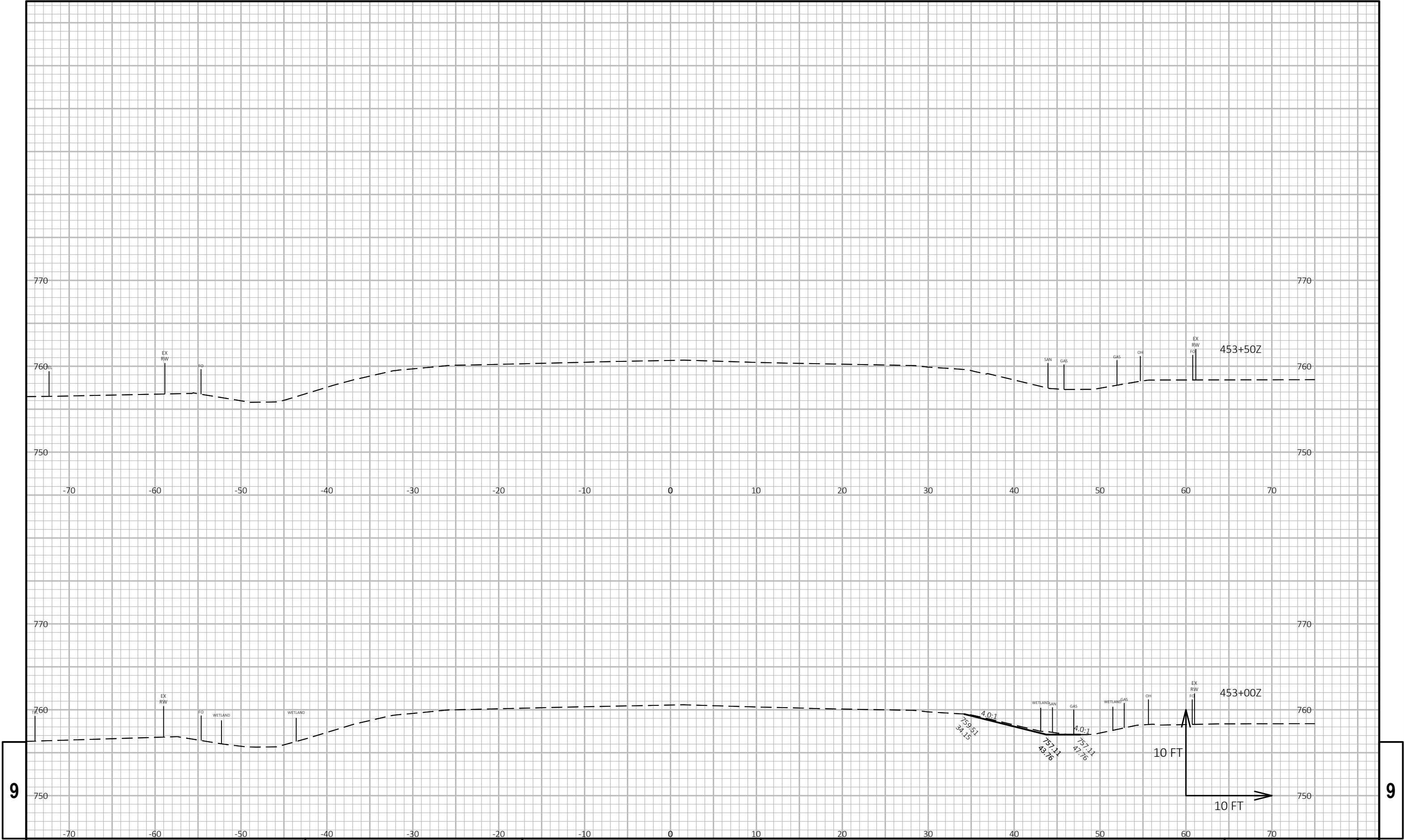
9

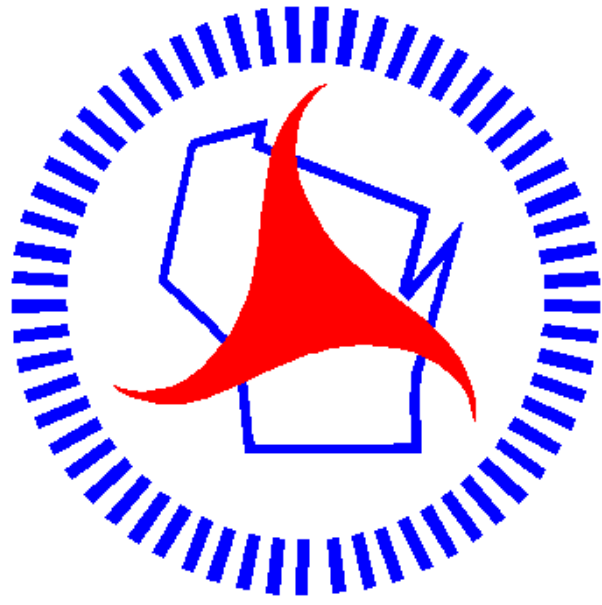












Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>

WIS

PROJECT ID: 6841-00-60

WITH: 1009-42-70, 73

COUNTY: WAUPACA

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

FREMONT - APPLETON

WOLF RIVER BRIDGE B-68-31

STH 110

WAUPACA

STATE PROJECT NUMBER
6841-00-60

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6841-00-60	WISC 2019229	1

ORDER OF SHEETS

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

TOTAL SHEETS = 124



DESIGN DESIGNATION 6841-00-30

A.A.D.T.	2019	=	3700
A.A.D.T.	2039	=	4200
D.H.V.		=	11.0%
D.D.		=	60/40
T.		=	5.6%
DESIGN SPEED		=	45 MPH
ESALS		=	N/A

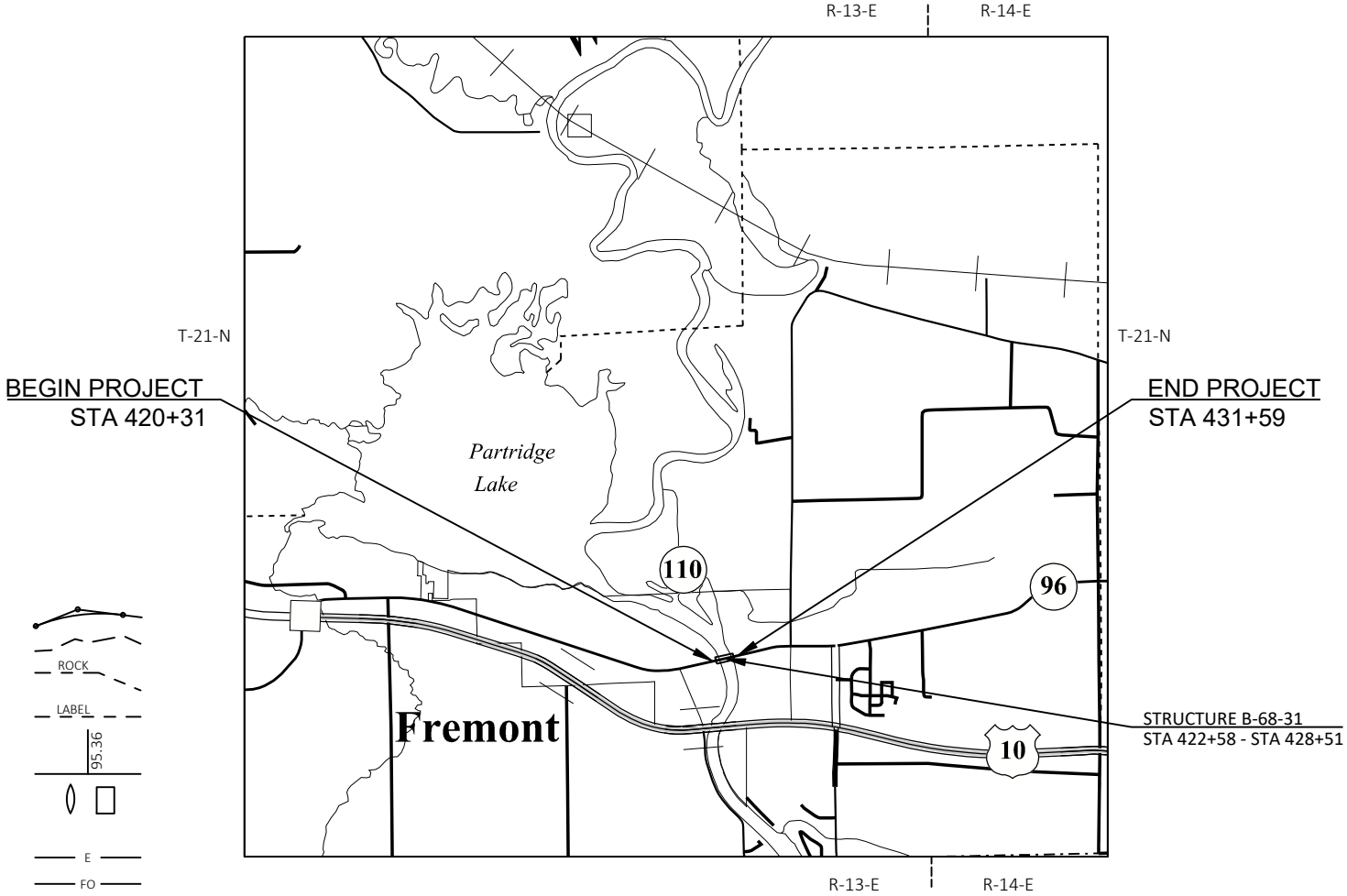
CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



HORIZONTAL POSITION SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUPACA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2012).

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	NORTH CENTRAL REGION
Designer	BRYCE SCHLEICHER, ZACHARY GRULING
Project Manager	JEFF STEWART
Regional Examiner	CHERYL SIMON
Regional Supervisor	NICHOLE LYSNE
APPROVED FOR THE DEPARTMENT	
DATE: 9/24/18	(Signature)

E

GENERAL NOTES

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

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT THAT ARE NOT SHOWN ON THE PLANS.

ENVIRONMENTAL CONTACTS

WI Department of Natural Resources
473 Griffith Drive
Wisconsin Rapids, WI 54494
Attn: Casey Jones
Phone: (715) 421-7867
casey.jones@wisconsin.gov

UTILITIES

Century Link - Communication Line

Tim Kroeze
19 W Fond du Lac St
Ripon, WI 54971
(920) 748-8491
(920) 219-0112 (Mobile)
tim.kroeze@centurylink.com

Mediacom - Communication Line

Craig Eggert
Highway 52 South
Chatfield, MN 55923
(563) 419-5160
(563) 419-5160 (Mobile)
ceggert@mediacomcc.com

Net Lec - Communication Line

Dennis LaFave
1700 Industrial Dr
Green Bay, WI 54302
(920) 619-9774 (Mobile)
dlafave@mi-tech.us

We Energies - Electricity

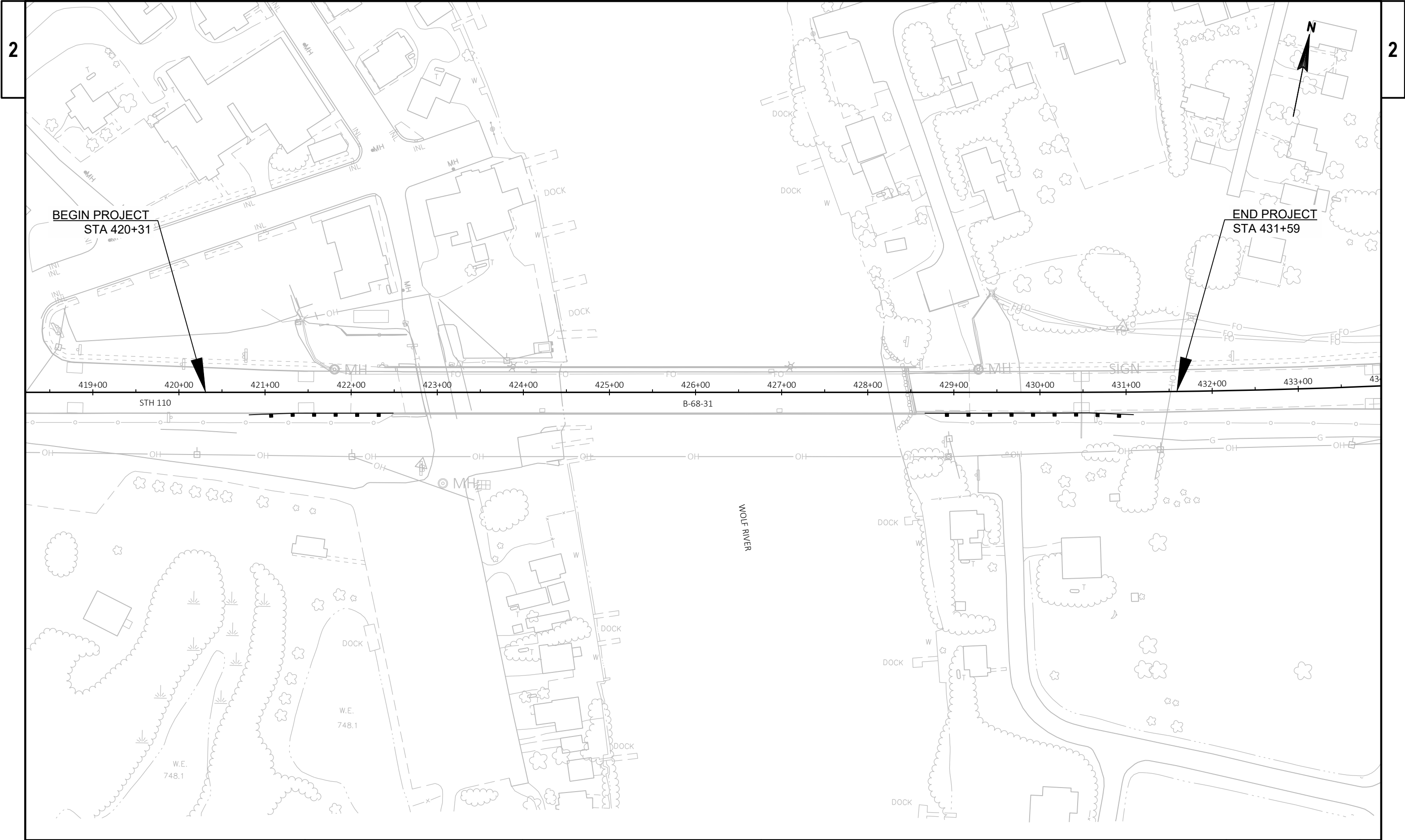
Reijo Murto
800 S Lynndale Dr
Appleton, WI 54912
(920) 380-3369
(920) 858-6254 (Mobile)
reijo.murto@we-energies.com

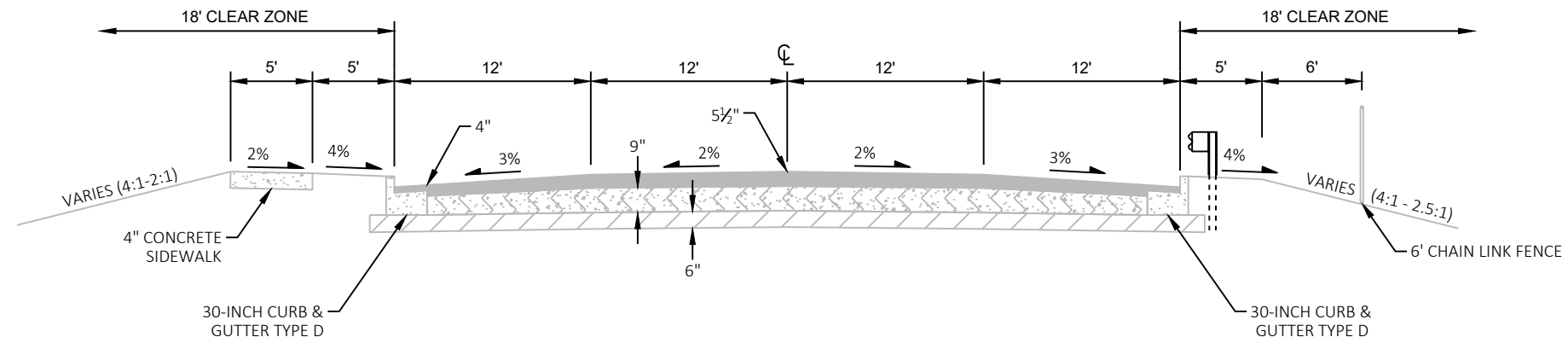
We Energies - Gas

Jacob Hulbert
1921 S 8th St
Wisconsin Rapids, WI 54494
(715) 421-7277
(715) 231-5189 (Mobile)

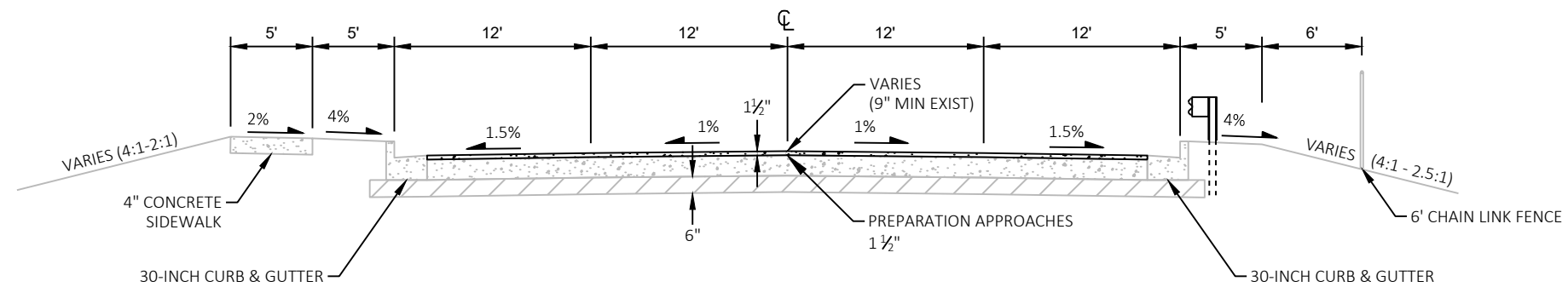


Dial  or (800)242-8511
www.DiggersHotline.com





EXISTING/PROPOSED TYPICAL SECTION STH 110

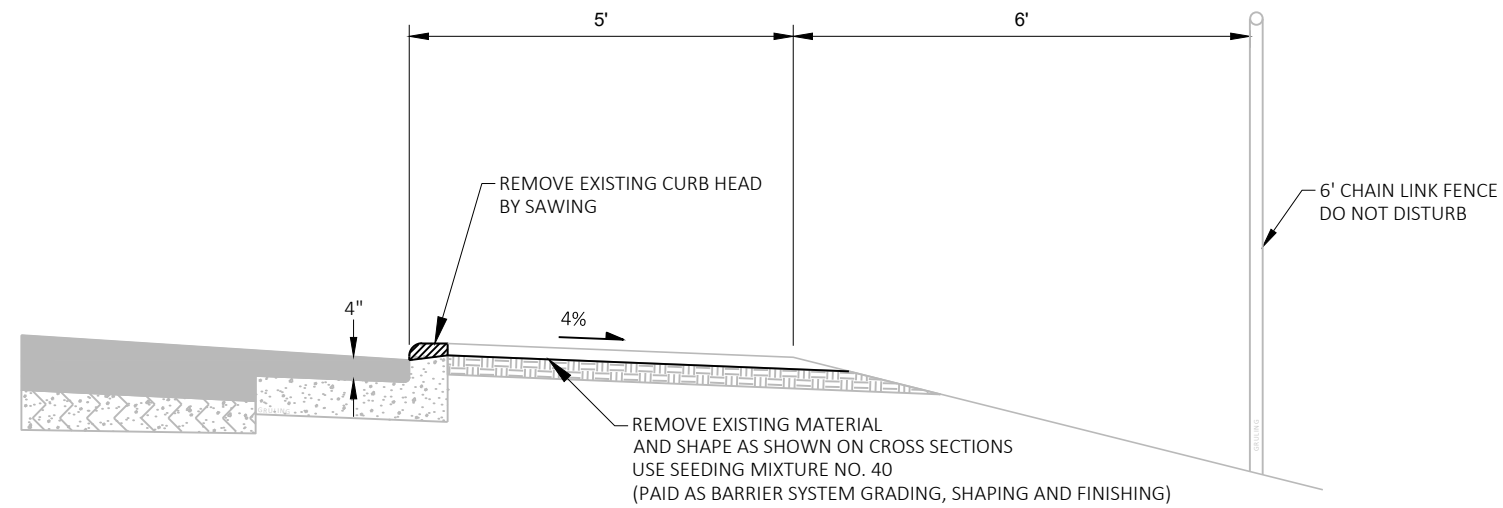
STA 420+81 - 422+00
STA 429+18 - 431+09

EXISTING/PROPOSED TYPICAL SECTION STH 110

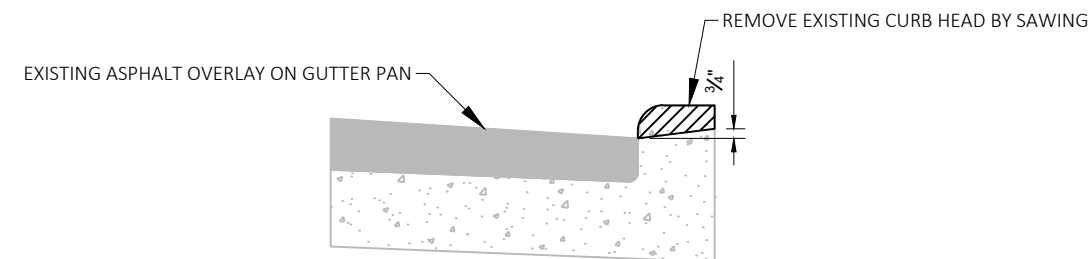
STA 422+00 - 422+58
STA 428+52 - 429+18

LEGEND

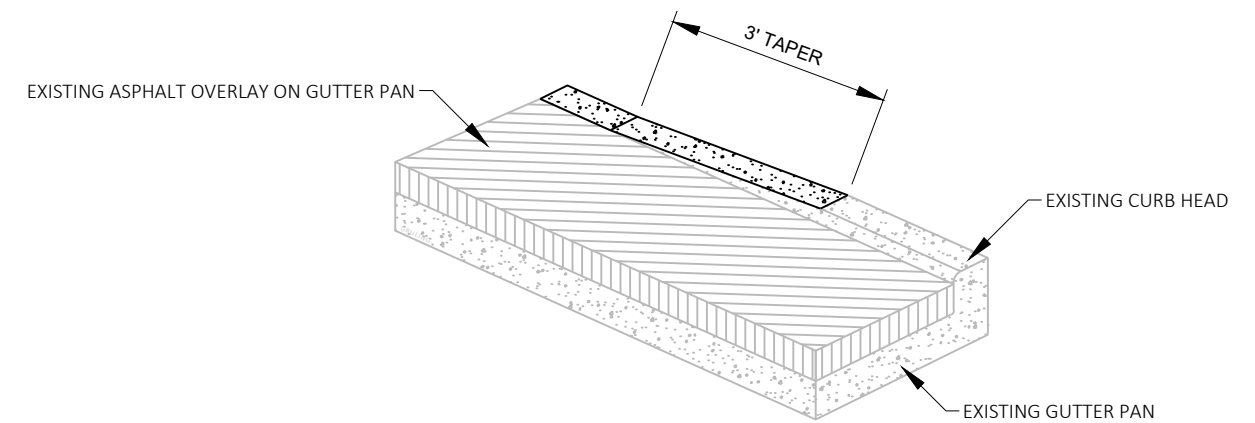
	EXISTING RUBBLIZED CONCRETE PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
	EXISTING ASPHALTIC SURFACE
	PROPOSED CONCRETE MASONRY OVERLAY APPROACHES



SAWING CURB HEAD, GRADING AND SHAPING

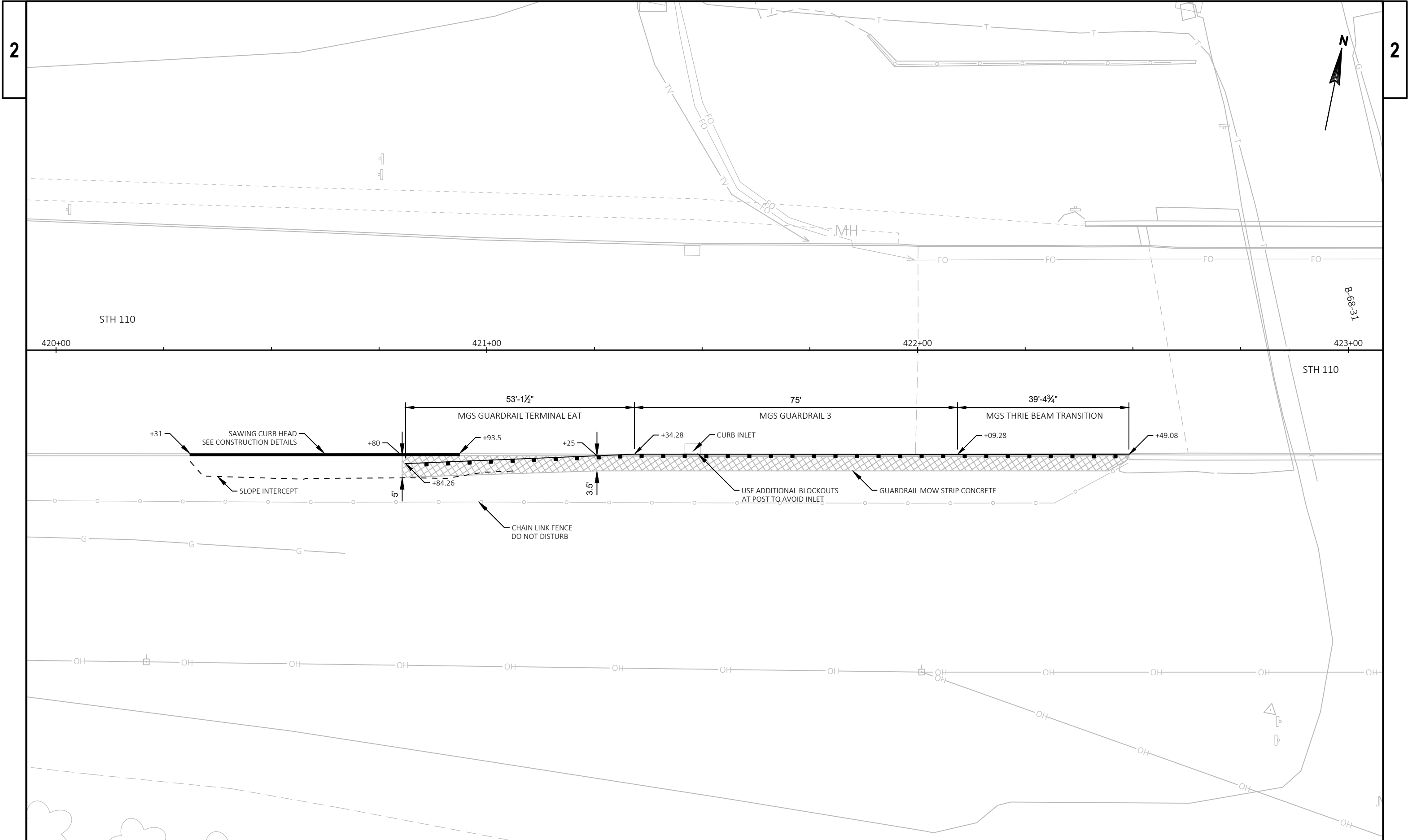


SAWING CURB HEAD

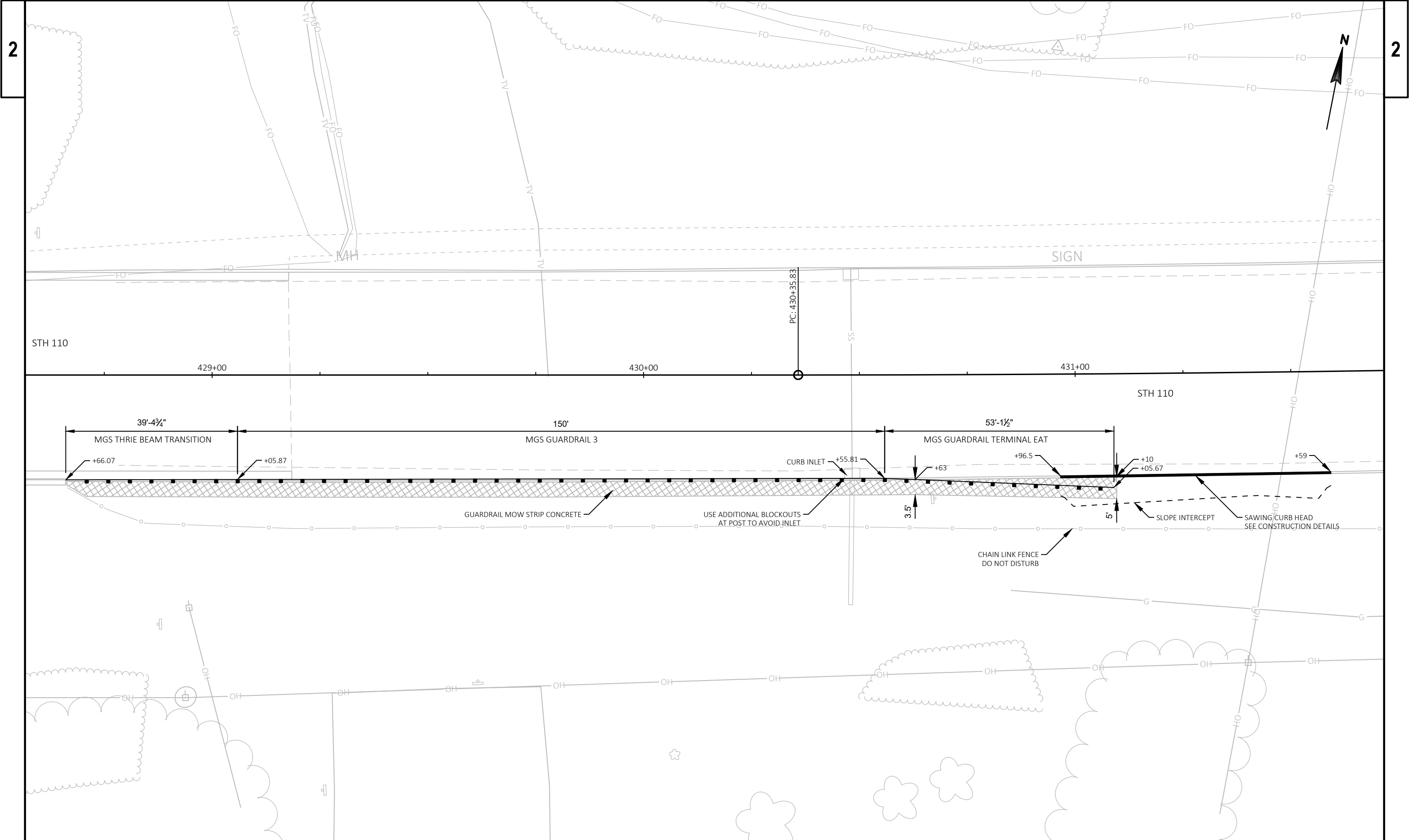


SAWING CURB HEAD TAPER

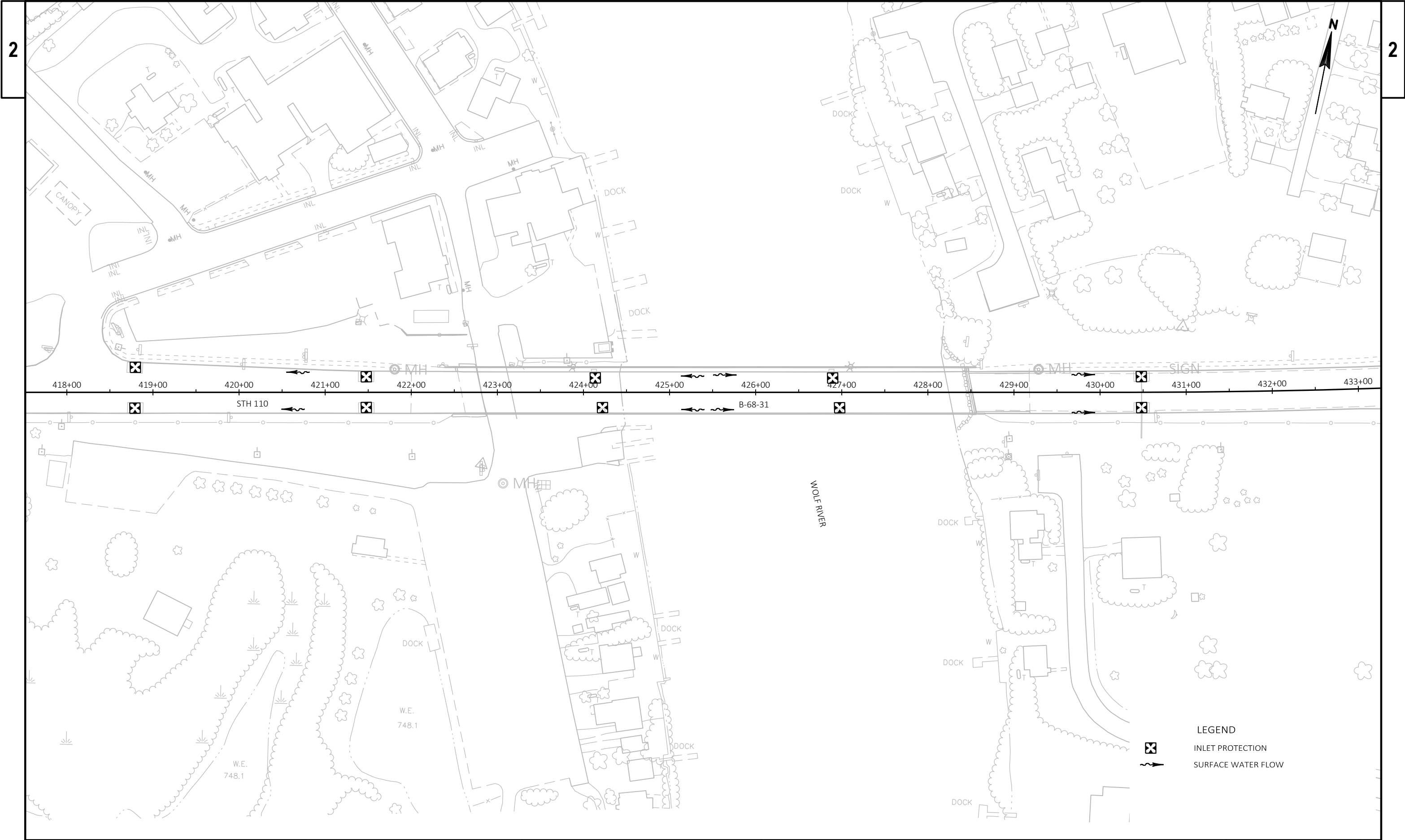
ISOMETRIC VIEW

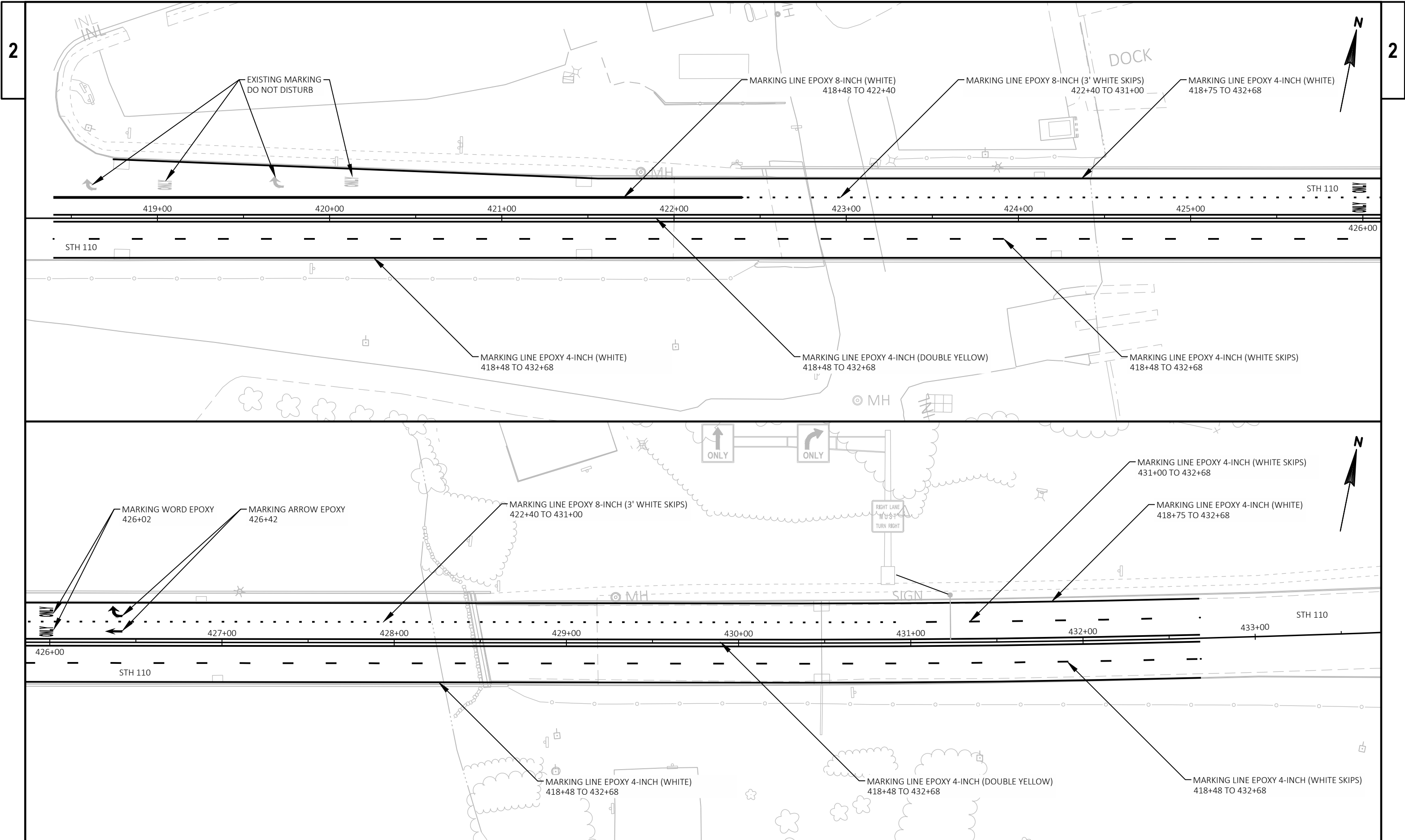


PROJECT NO: 6841-00-60	HWY: STH 110	COUNTY: WAUPACA	MGS GUARDRAIL DETAIL	SHEET 6	E
------------------------	--------------	-----------------	----------------------	---------	---



PROJECT NO: 6841-00-60	HWY: STH 110	COUNTY: WAUPACA	MGS GUARDRAIL DETAIL	SHEET 7	E
------------------------	--------------	-----------------	----------------------	---------	---





STH 110 DECK OVERLAY B-68-31

TEMPORARY SIGNAL TIMING #1
6 AM TO 8 PM

INTERVAL	NB	SB	SECONDS
1	GREEN	RED	30
2	YELLOW	RED	4.5
3	RED	RED	35
4	RED	GREEN	30
5	RED	YELLOW	4.5
6	RED	RED	35

TOTAL CYCLE LENGTH

	GREEN	YELLOW	RED	
WB	30	4.5	35	
EB	30	4.5	35	
TOTAL	60	9	70	= 139

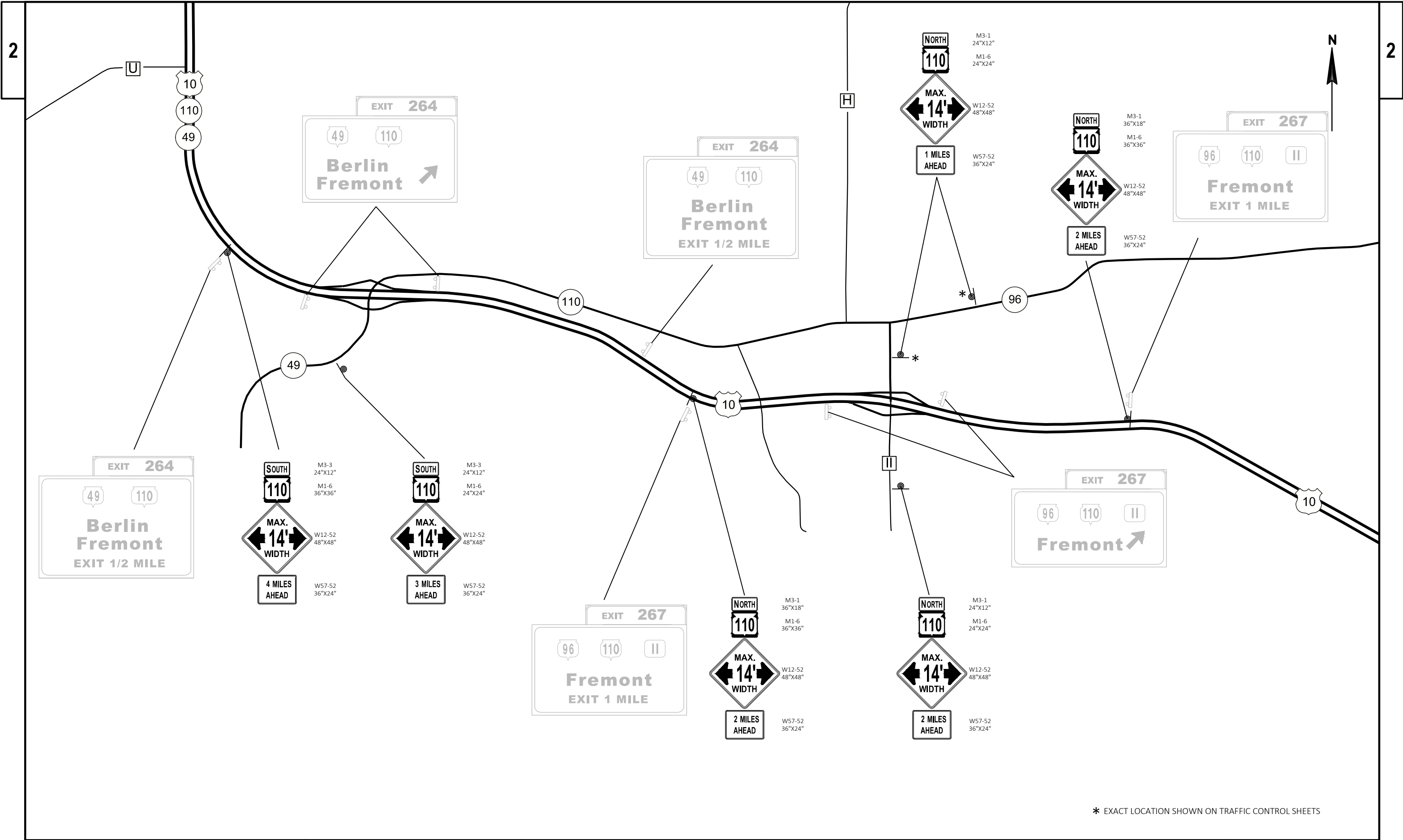
TEMPORARY SIGNAL TIMING #2
8 PM TO 6 AM

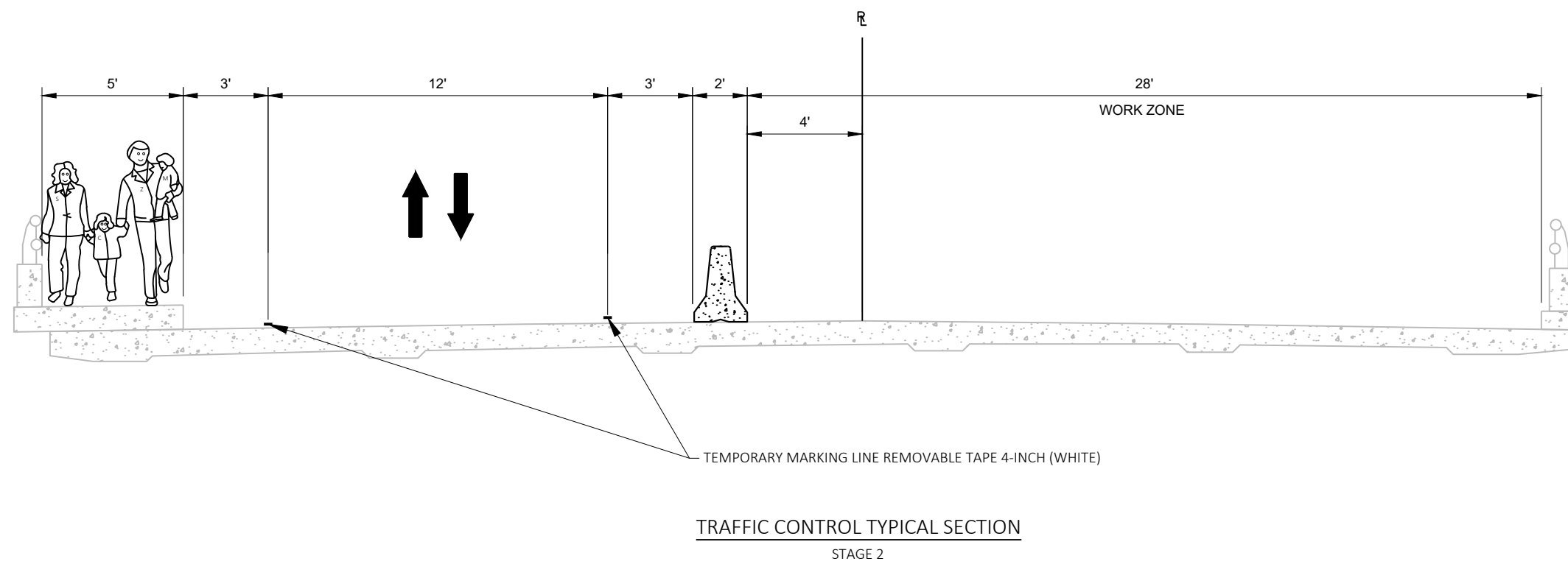
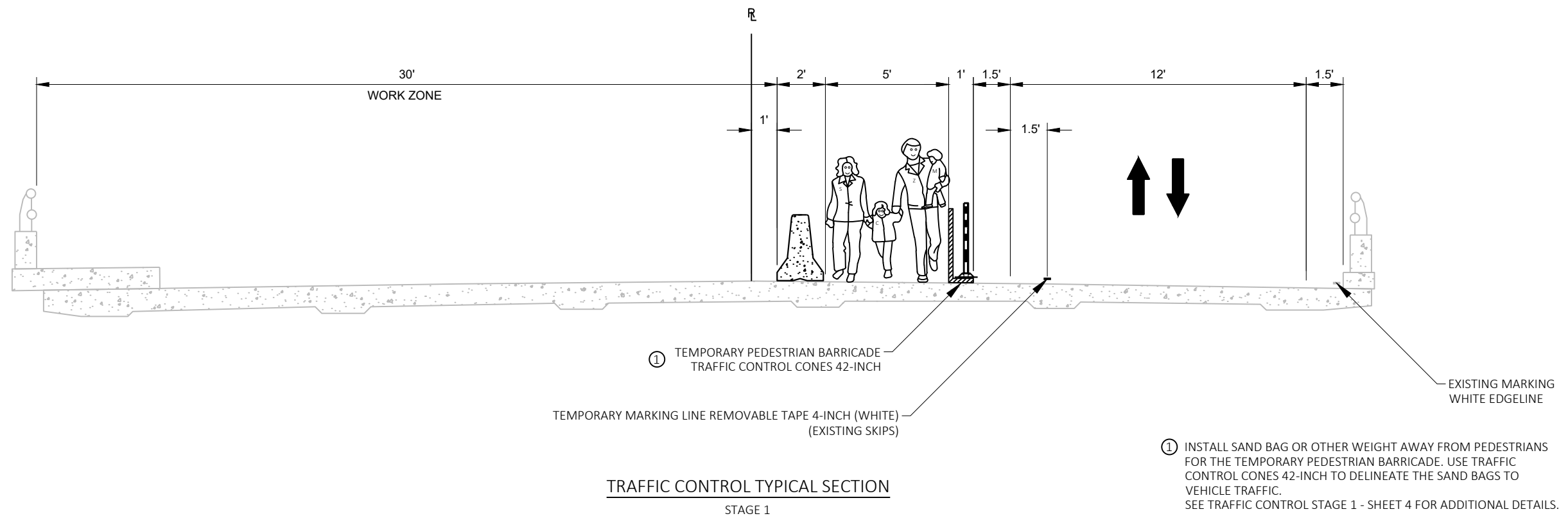
INTERVAL	NB	SB	SECONDS
1	GREEN	RED	24
2	YELLOW	RED	4.5
3	RED	RED	35
4	RED	GREEN	24
5	RED	YELLOW	4.5
6	RED	RED	35

TOTAL CYCLE LENGTH

	GREEN	YELLOW	RED	
WB	24	4.5	35	
EB	24	4.5	35	
TOTAL	48	9	70	= 127

NOTES: ALL TIMES SHOWN IN SECONDS
STOP BAR PLACEMENT SPACED 1368 FEET
45 MPH POSTED SPEED LIMIT

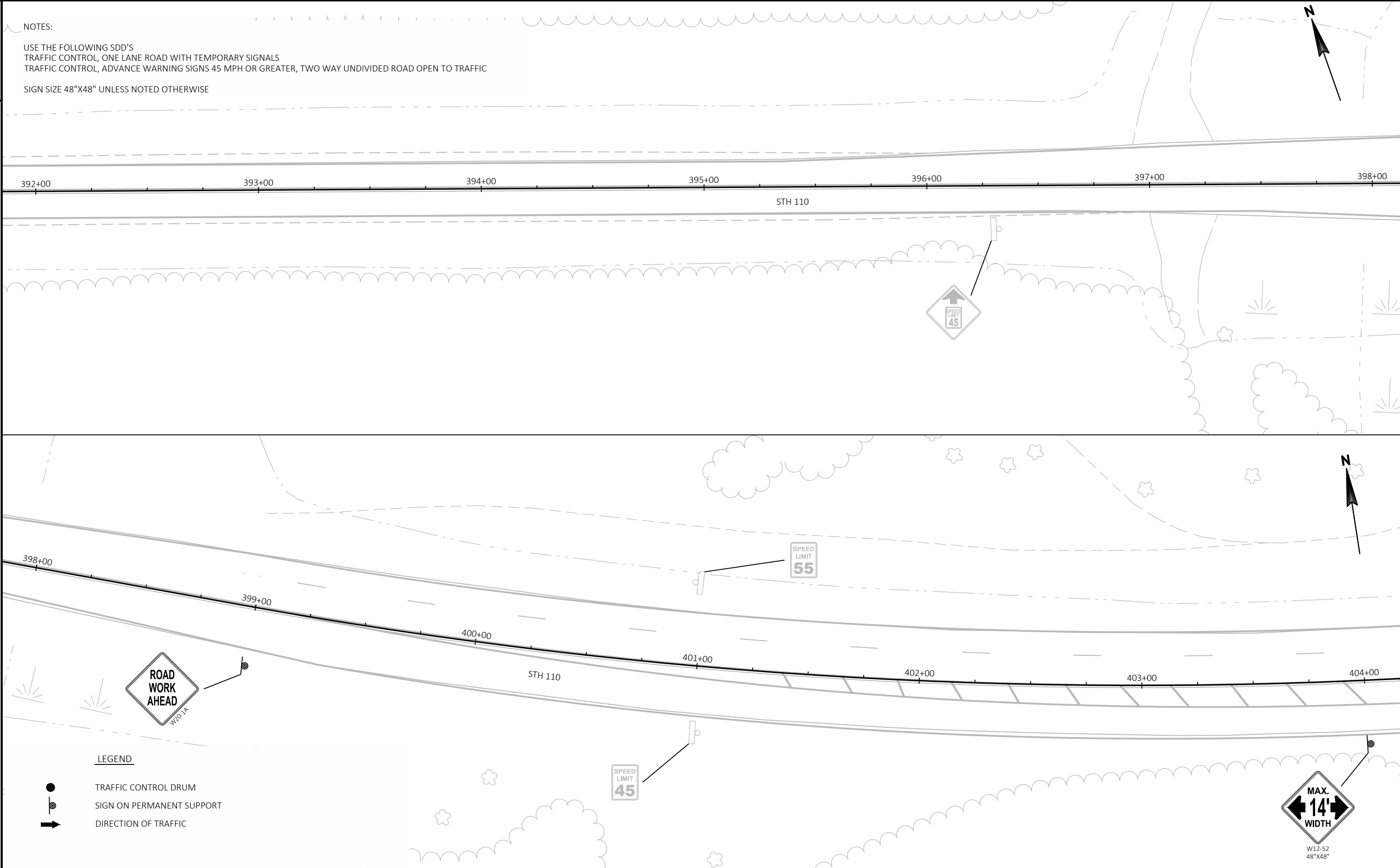




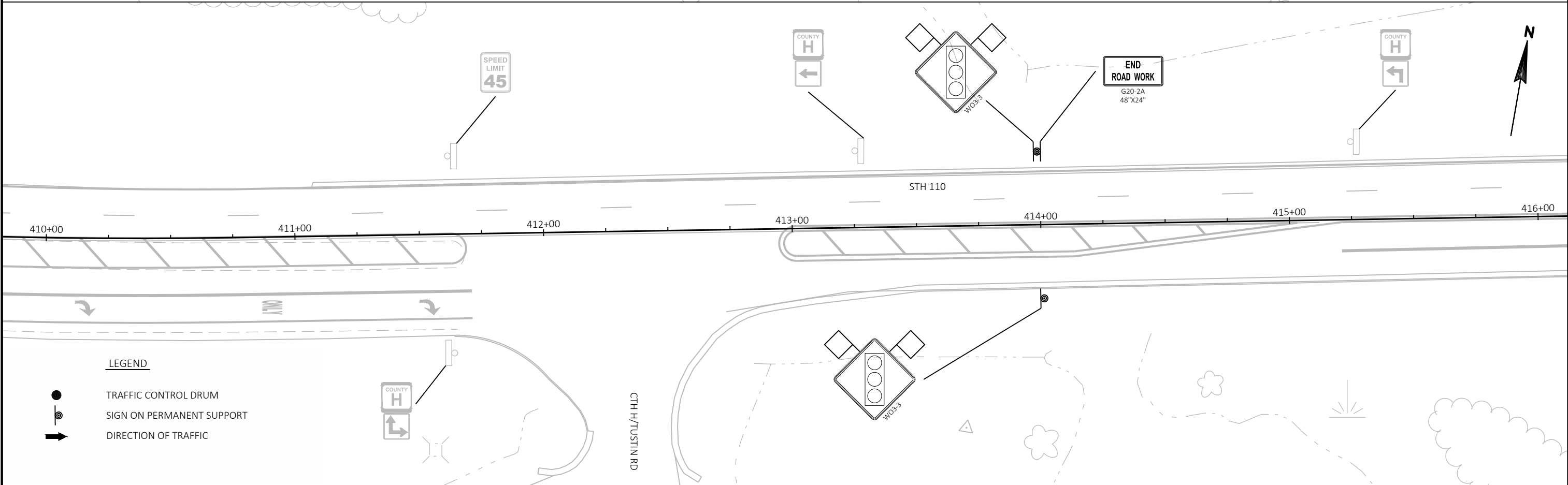
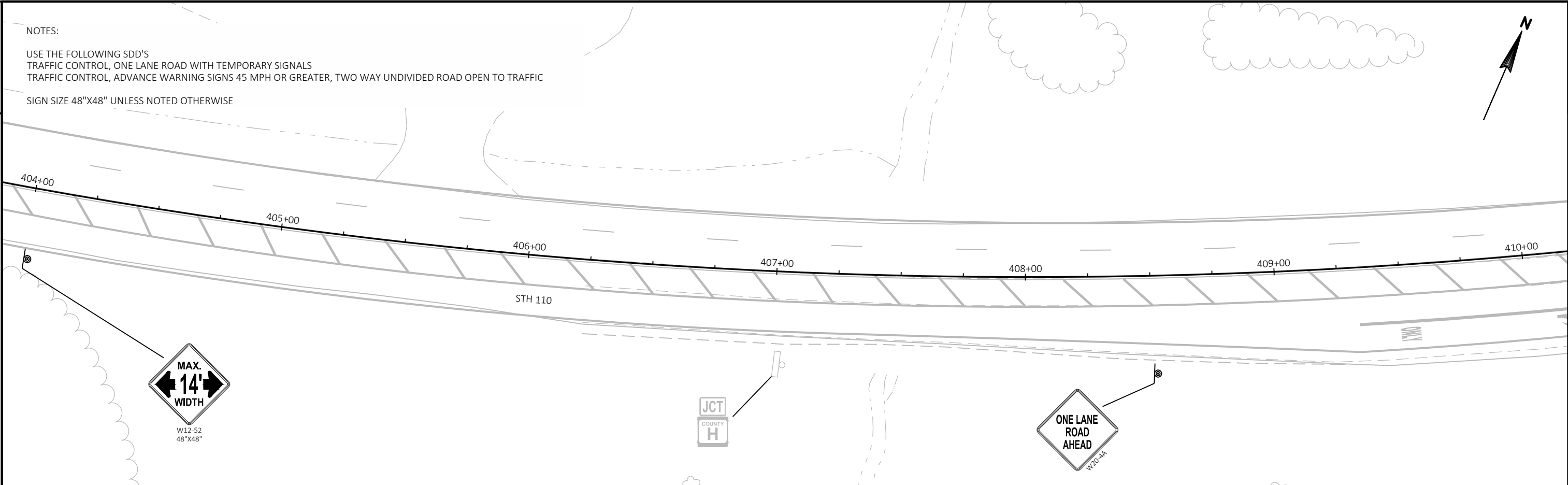
NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



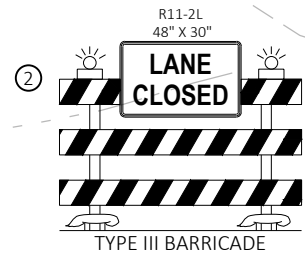
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

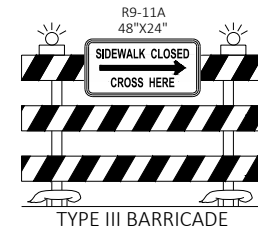


③ TEMPORARY MARKING REMOVABLE MASK OUT TAPE 10-INCH
(MASK OUT EXISTING CHANNELIZING 9' TO CREATE A 3' WHITE SKIP)
419+48 TO 420+32



TEMPORARY PEDESTRIAN SURFACE PLATE

TEMPORARY CURB RAMP



TYPE III BARRICADE



TEMPORARY MARKING LINE REMOVABLE
TAPE 4-INCH (YELLOW)
419+30 TO 420+05

416+00 417+00 418+00 419+00 420+00 421+00 422+00

STH 110



TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH
(WHITE) 419+80 TO 432+68

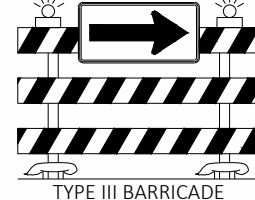
TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH
(EXISTING SKIPS)
420+05 TO 421+24

TEMPORARY MARKING REMOVABLE MASK OUT TAPE 6-INCH
(EXISTING SOLID CENTERLINE)
419+30 TO 421+00

TEMPORARY MARKING LINE REMOVABLE TAPE
4-INCH (YELLOW)
418+48 TO 419+95

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE 18-INCH
419+00

W01-6
48" X 24"



TYPE III BARRICADE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT/TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- TRAFFIC CONTROL CONES 42-INCH
- WORK AREA
- TEMPORARY PORTABLE SIGNAL
- TEMPORARY PEDESTRIAN BARRIER

PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

TRAFFIC CONTROL STAGE 1 - SHEET 03

SHEET

15

E

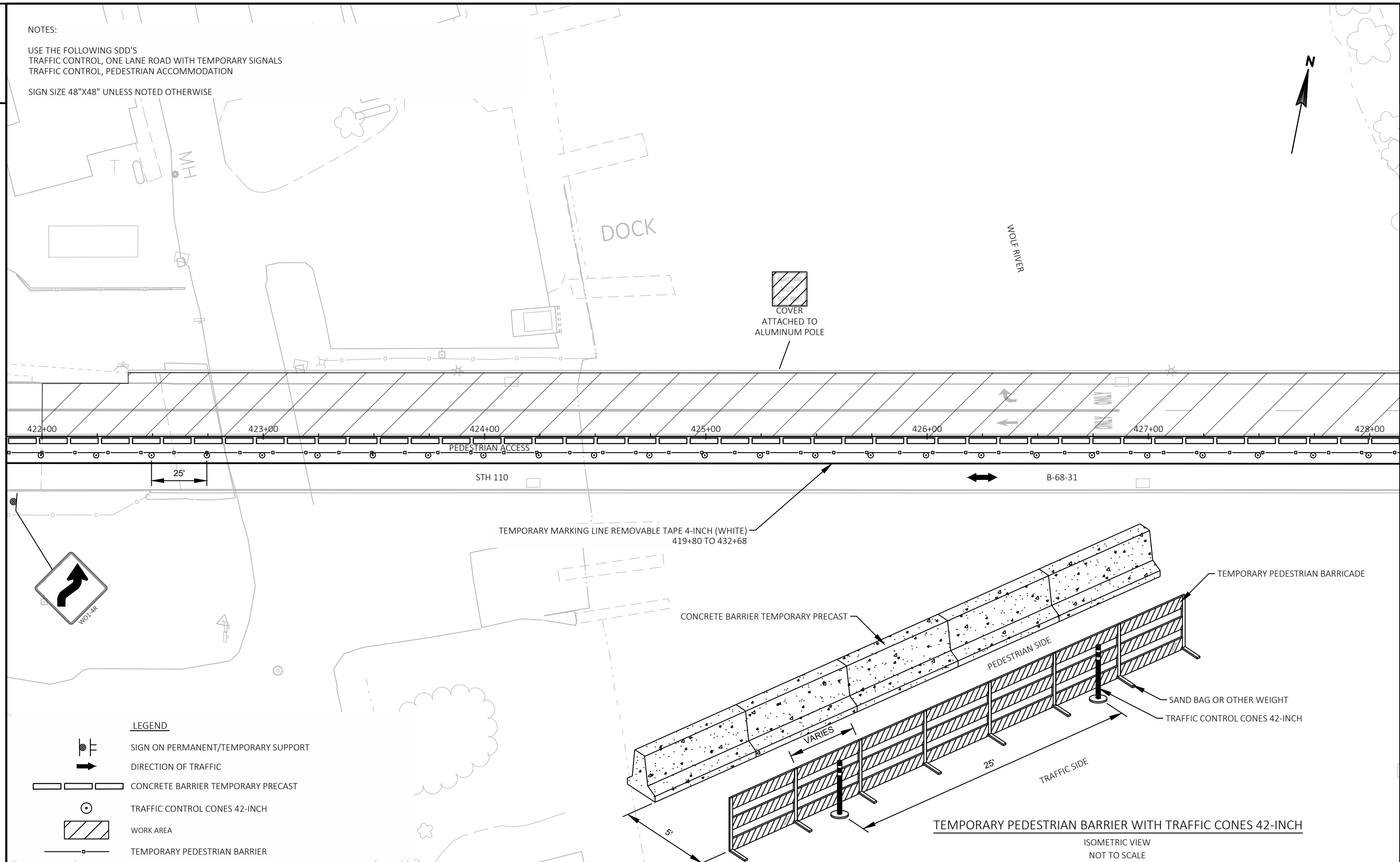
2

NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

2



PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

TRAFFIC CONTROL STAGE 1 - SHEET 04

SHEET

— 16

11

FILE NAME : N:\PDS\C3D\68410030\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 04

PLOT DATE : 10/8/2018 11:46 AM

PLOT BY : GRULING, ZACHARY P

PLOT NAME :

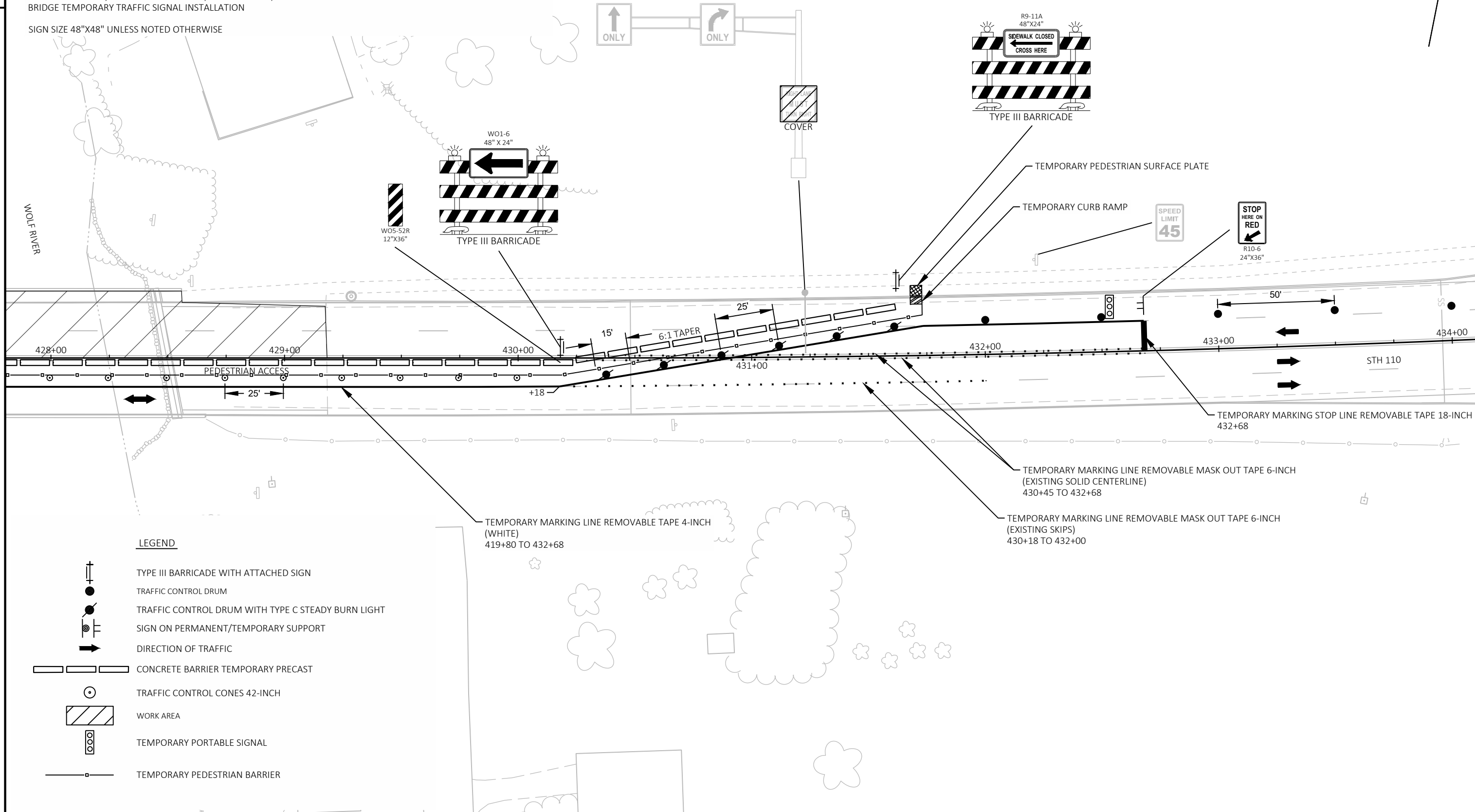
PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

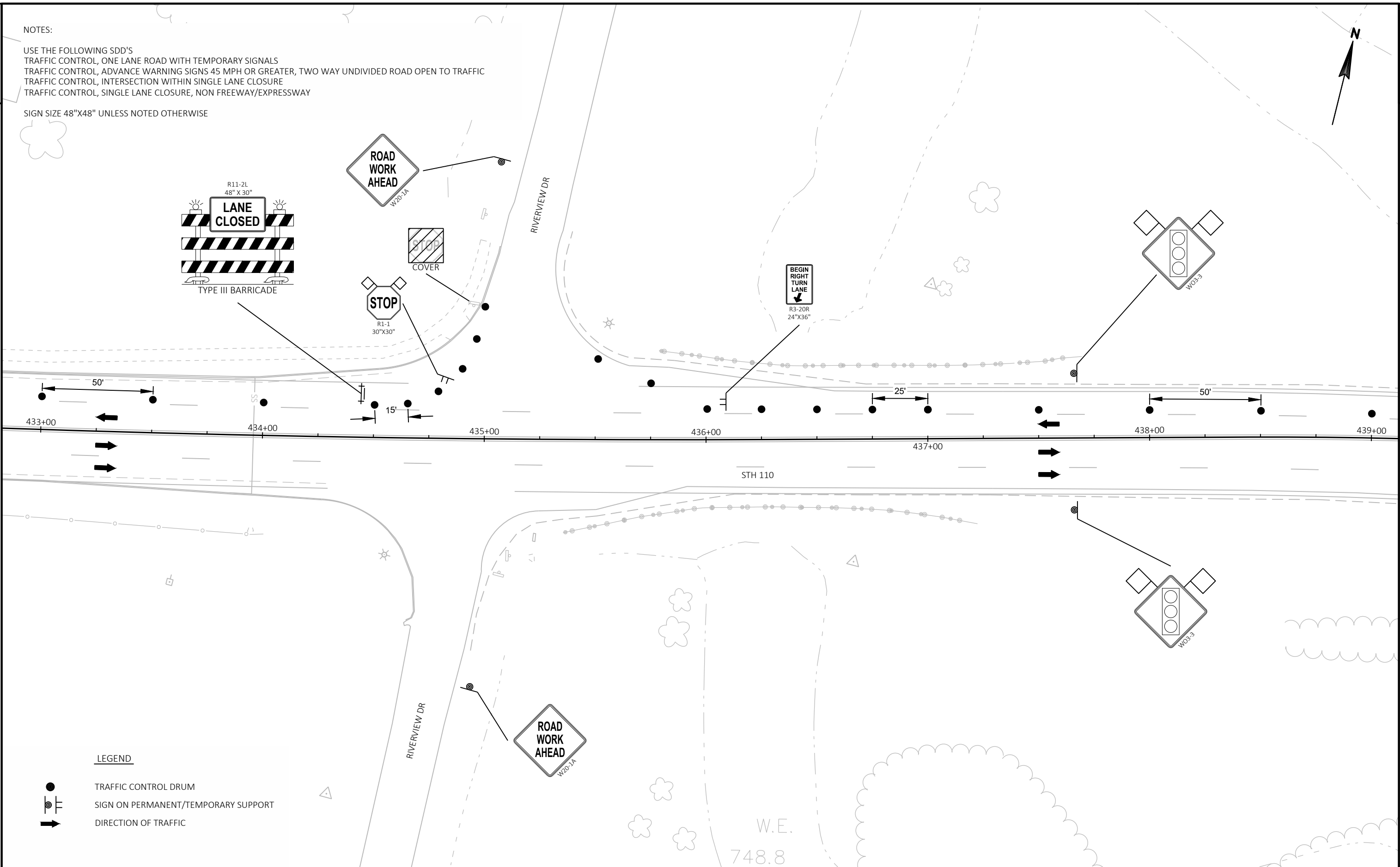


LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT/TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- TRAFFIC CONTROL CONES 42-INCH
- WORK AREA
- TEMPORARY PORTABLE SIGNAL
- TEMPORARY PEDESTRIAN BARRIER

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

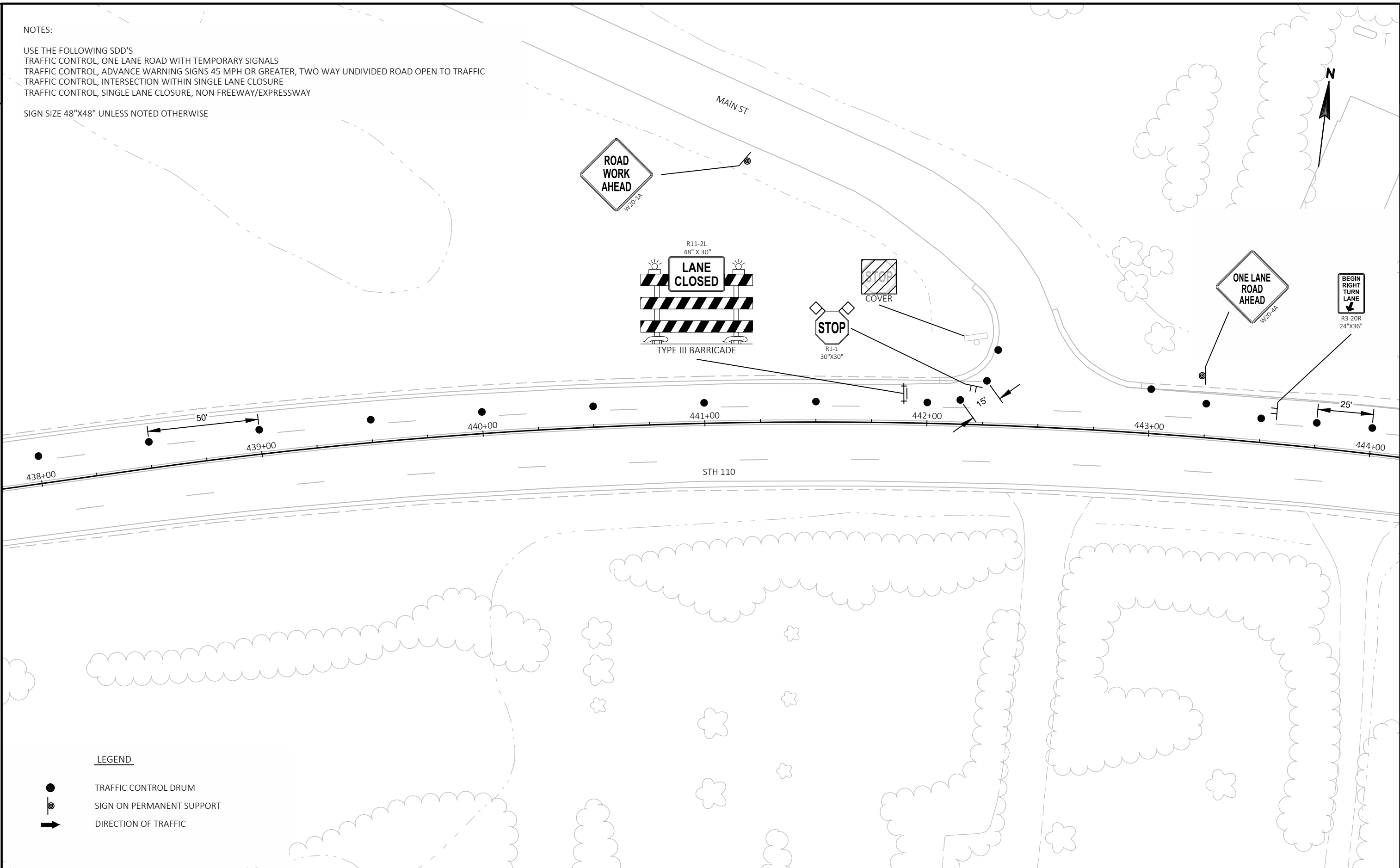


LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT/TEMPORARY SUPPORT
- ➔ DIRECTION OF TRAFFIC

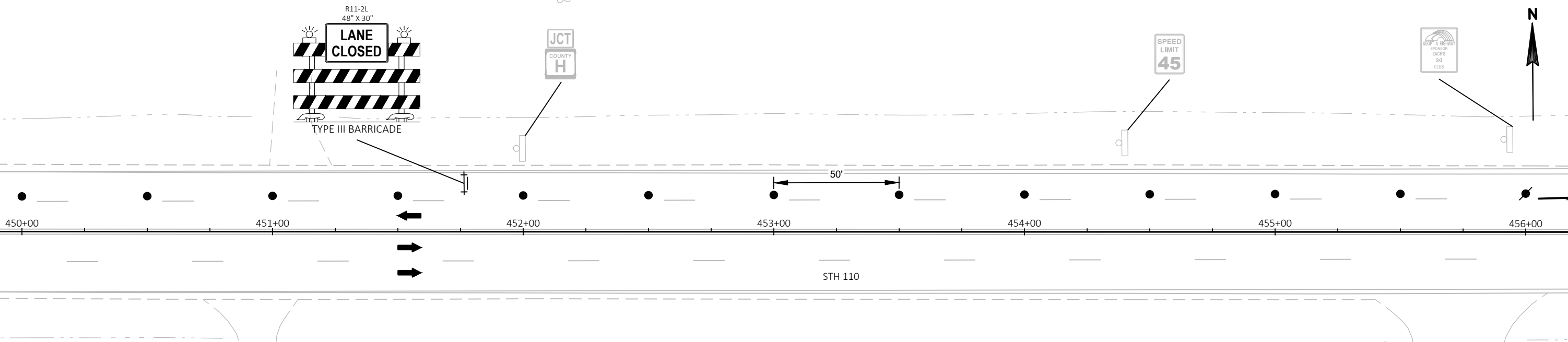
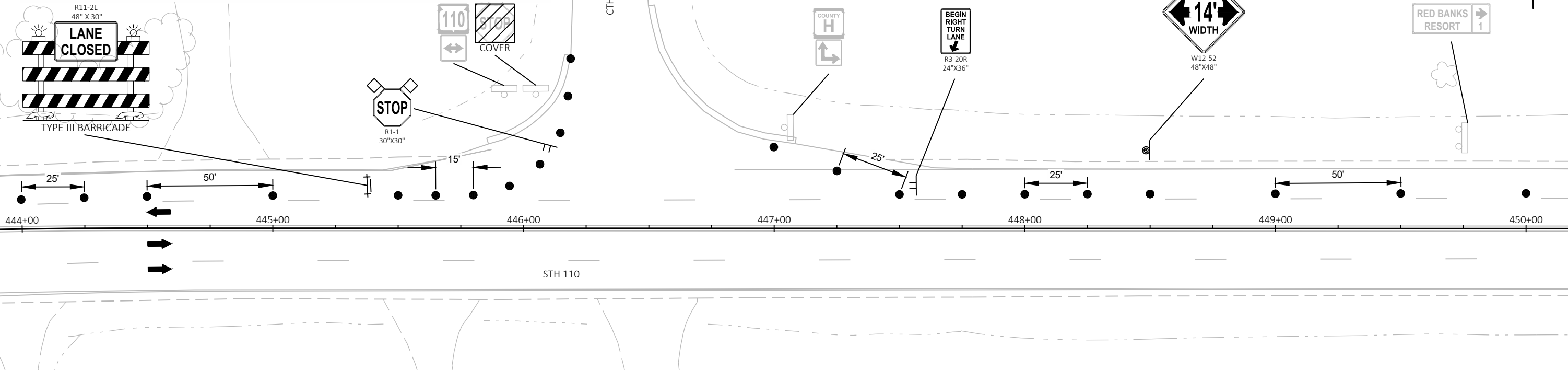
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



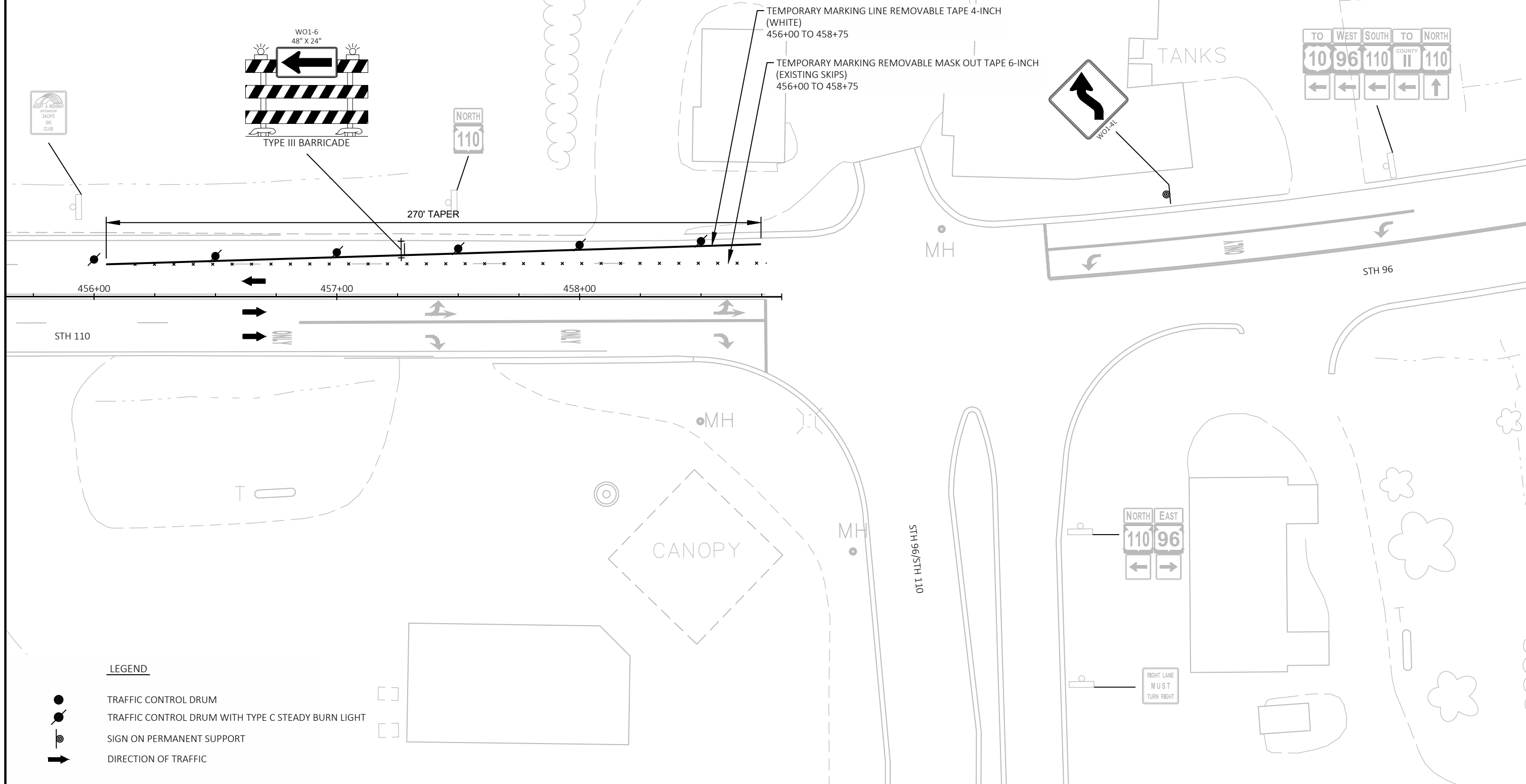
LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➔ DIRECTION OF TRAFFIC

NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



LEGEND

- TRAFFIC CONTROL DRUM
- / TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⊙ SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

TRAFFIC CONTROL STAGE 1 - SHEET 09

SHEET

21

E

FILE NAME : N:\PDS\C3D\68410030\SHEETS\PLAN\026001-S1.DWG
LAYOUT NAME - 09

PLOT DATE : 10/8/2018 11:46 AM

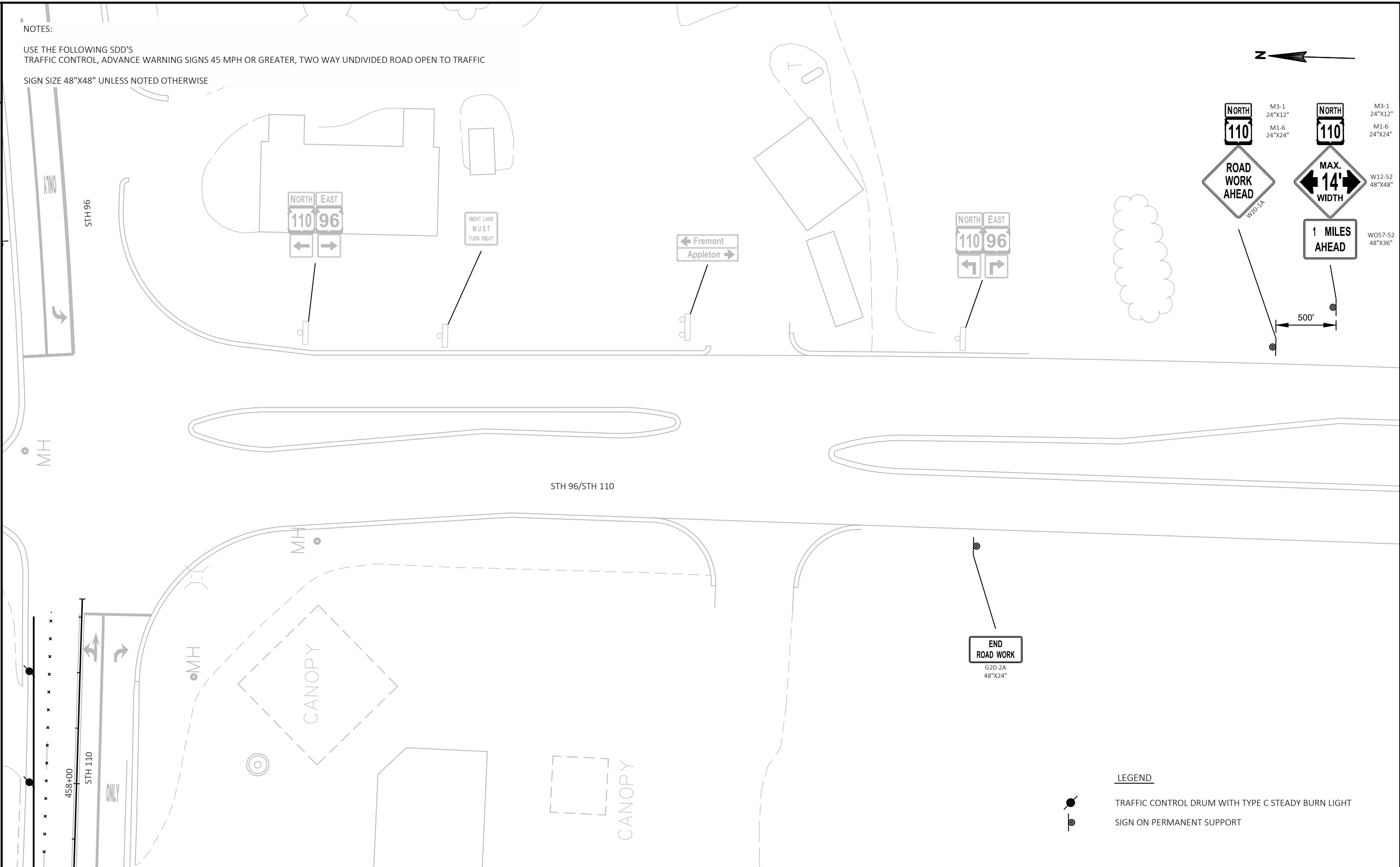
PLOT BY : GRULING, ZACHARY P

PLOT NAME :

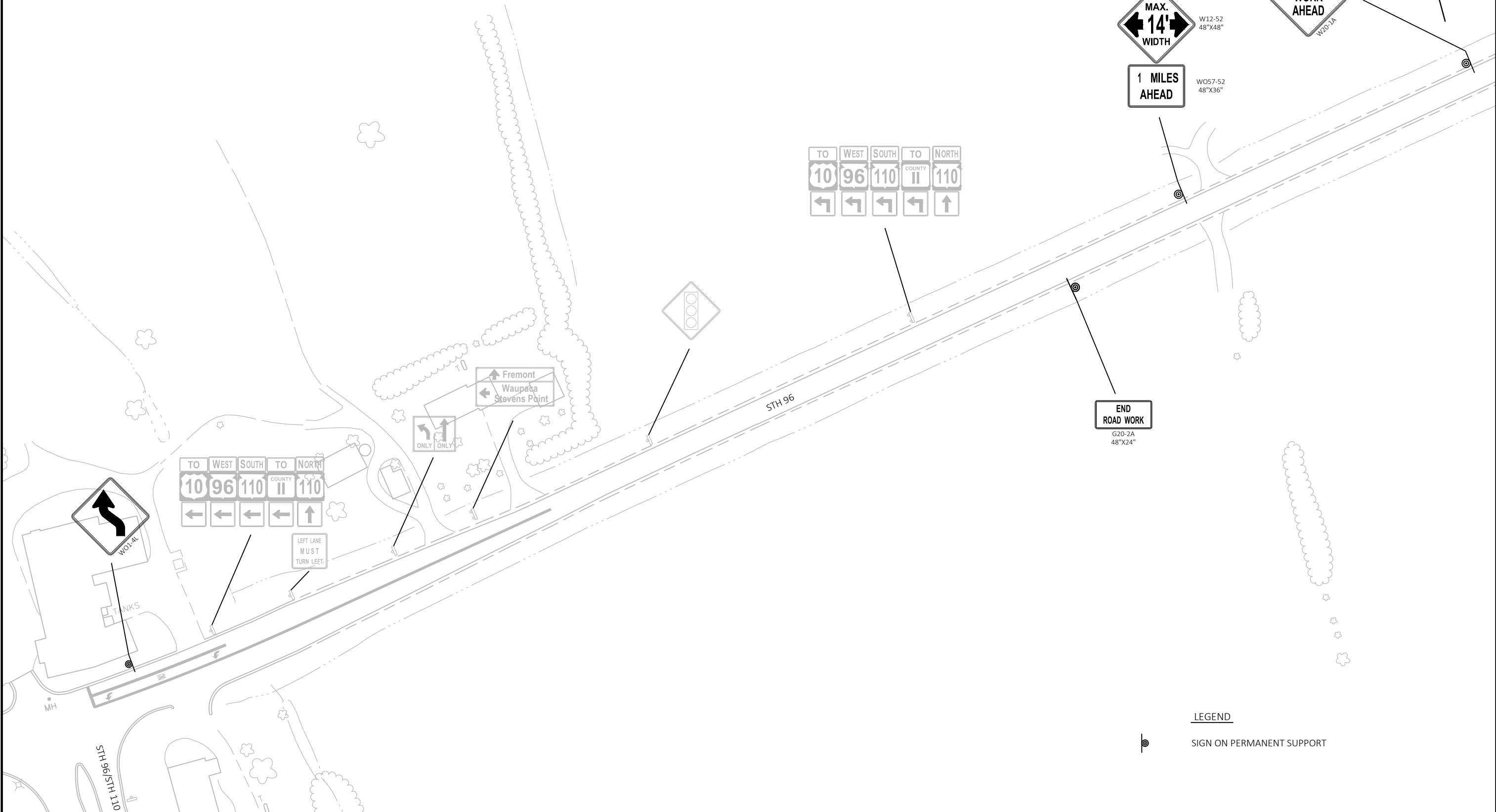
PLOT SCALE : 1 IN:40 FT

WISDOT/CADDIS SHEET 42

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



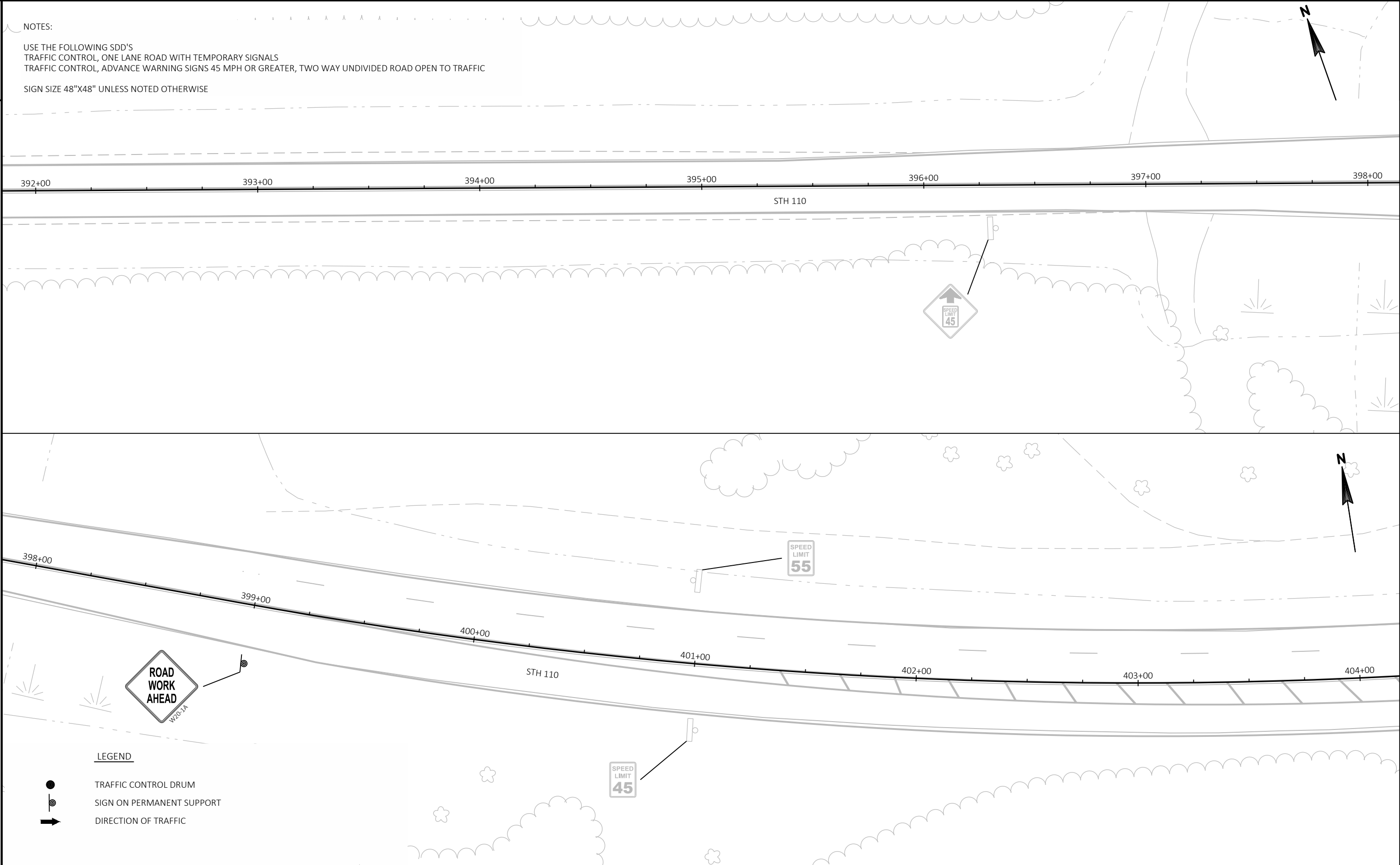
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



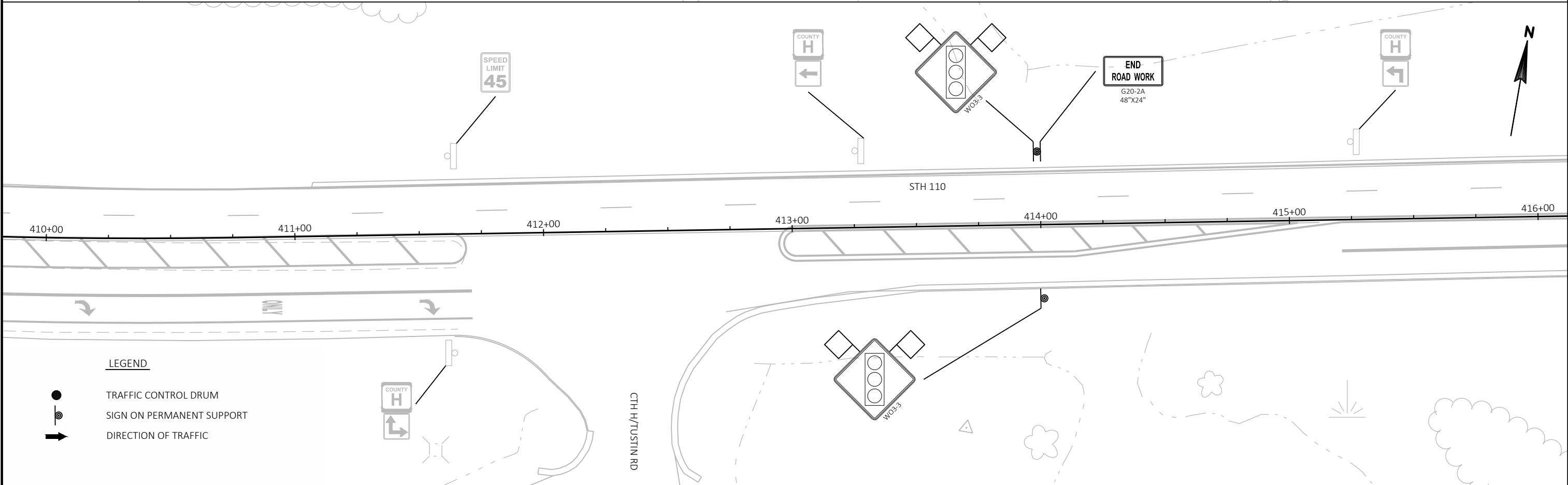
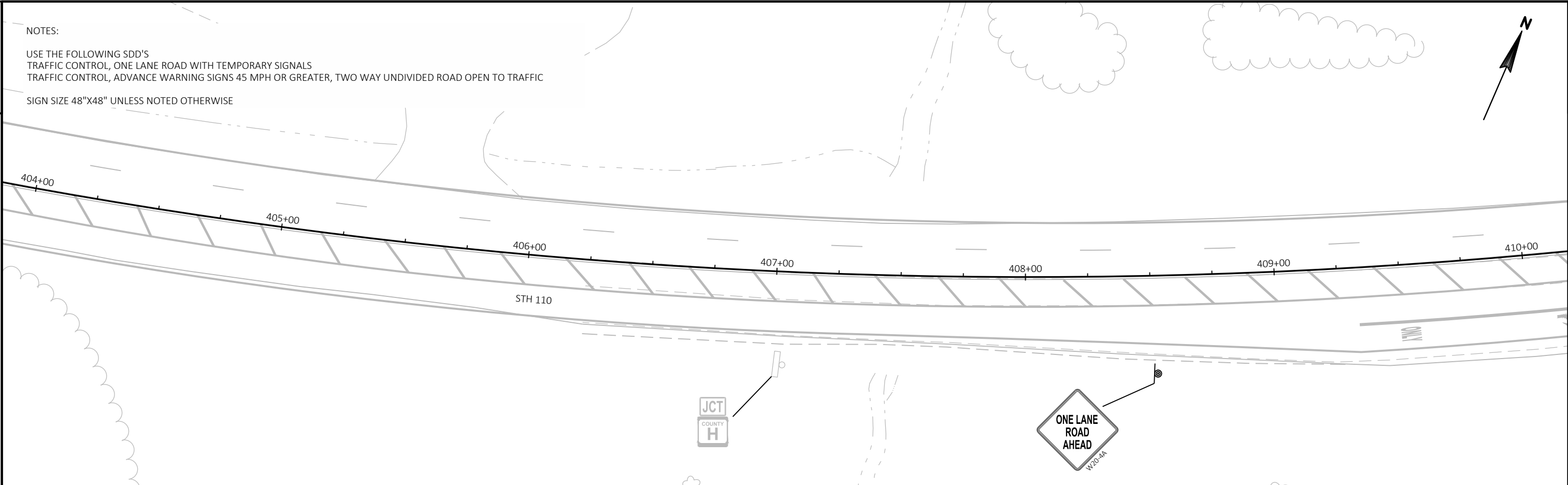
NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➔ DIRECTION OF TRAFFIC

PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

TRAFFIC CONTROL STAGE 2 - SHEET 02

SHEET

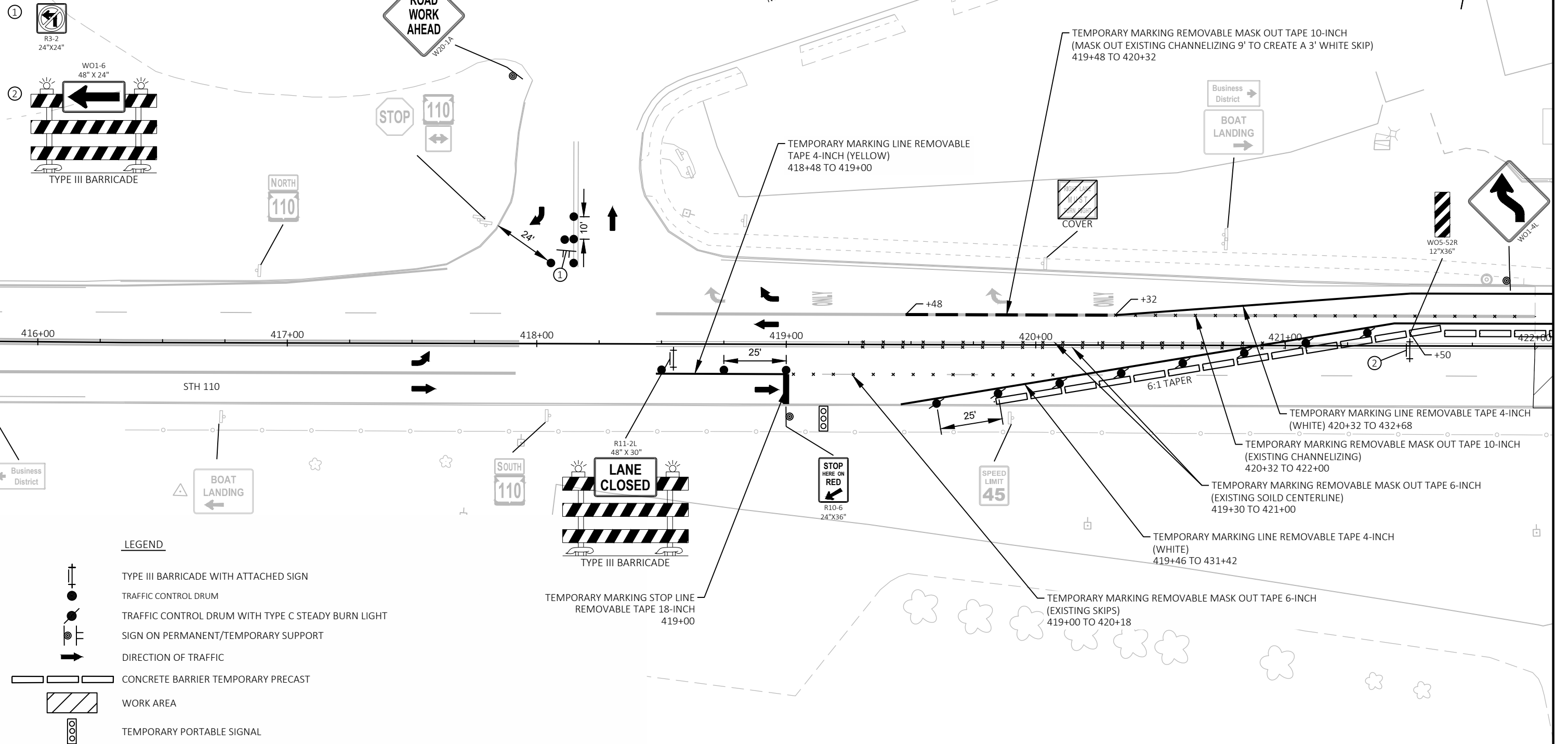
25

E

NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

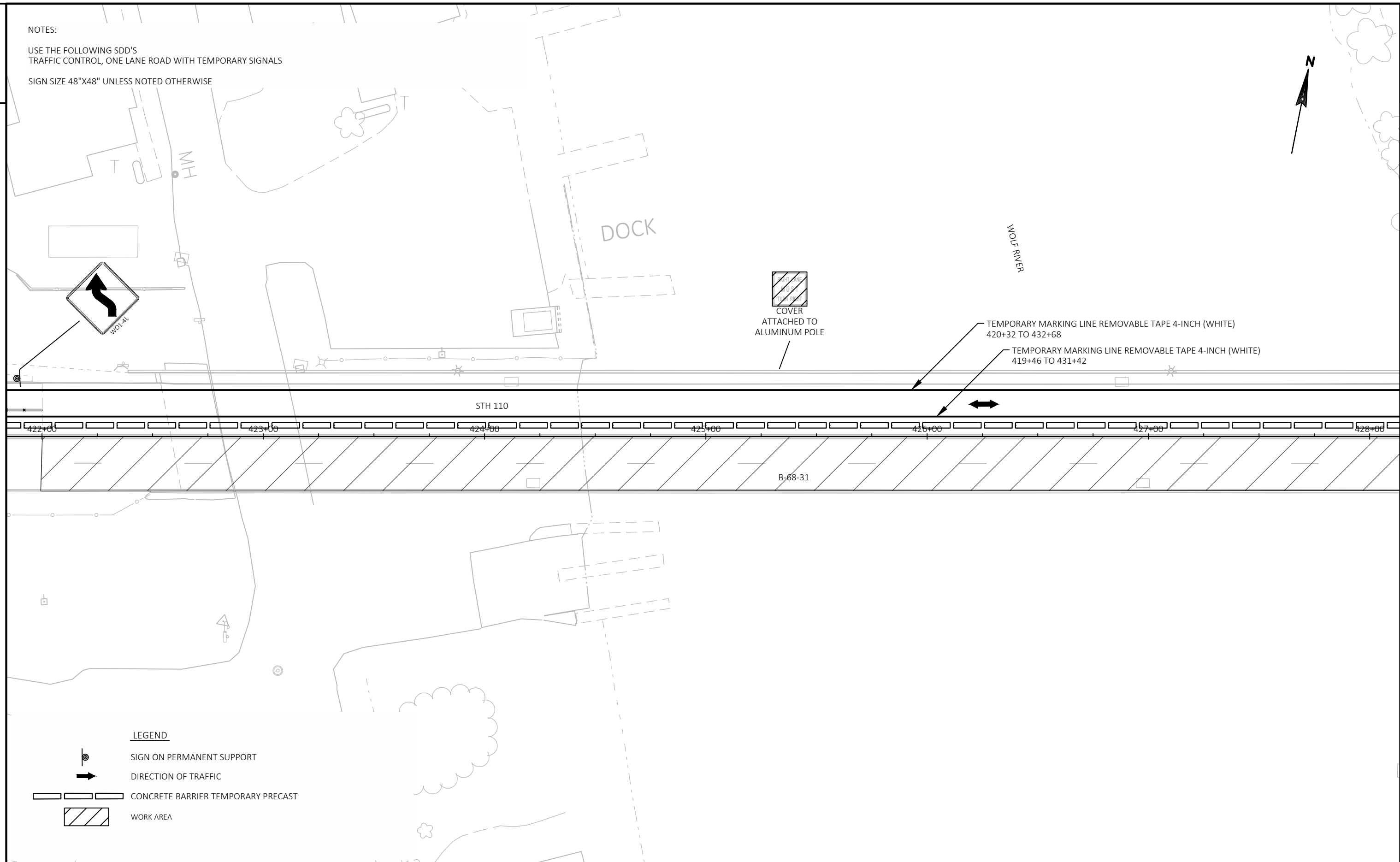
TRAFFIC CONTROL STAGE 2 - SHEET 03

SHEET

26

E

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



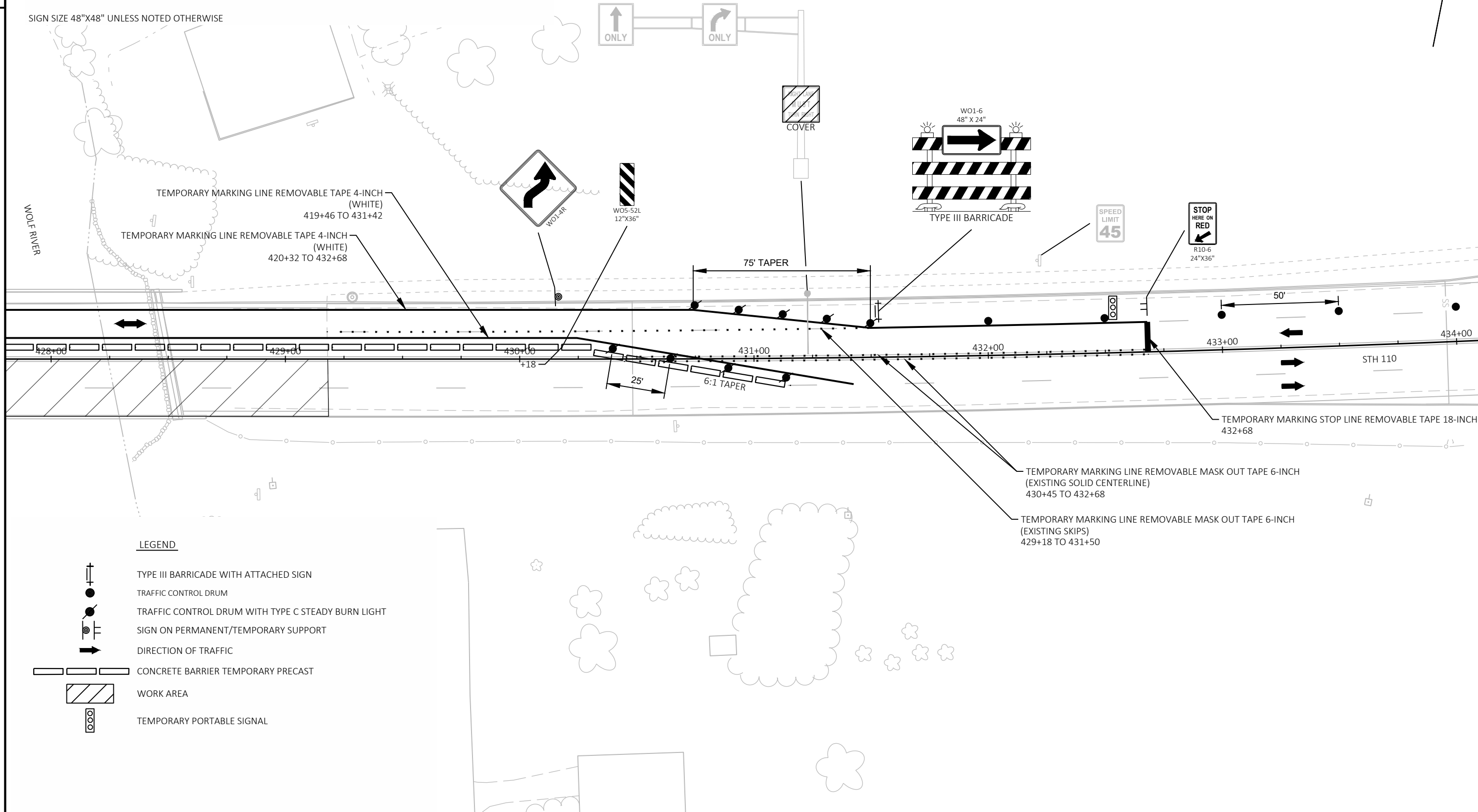
LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

NOTES:

USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT/TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY PORTABLE SIGNAL

PROJECT NO: 6841-00-60

HWY: STH 110

COUNTY: WAUPACA

TRAFFIC CONTROL STAGE 2 - SHEET 05

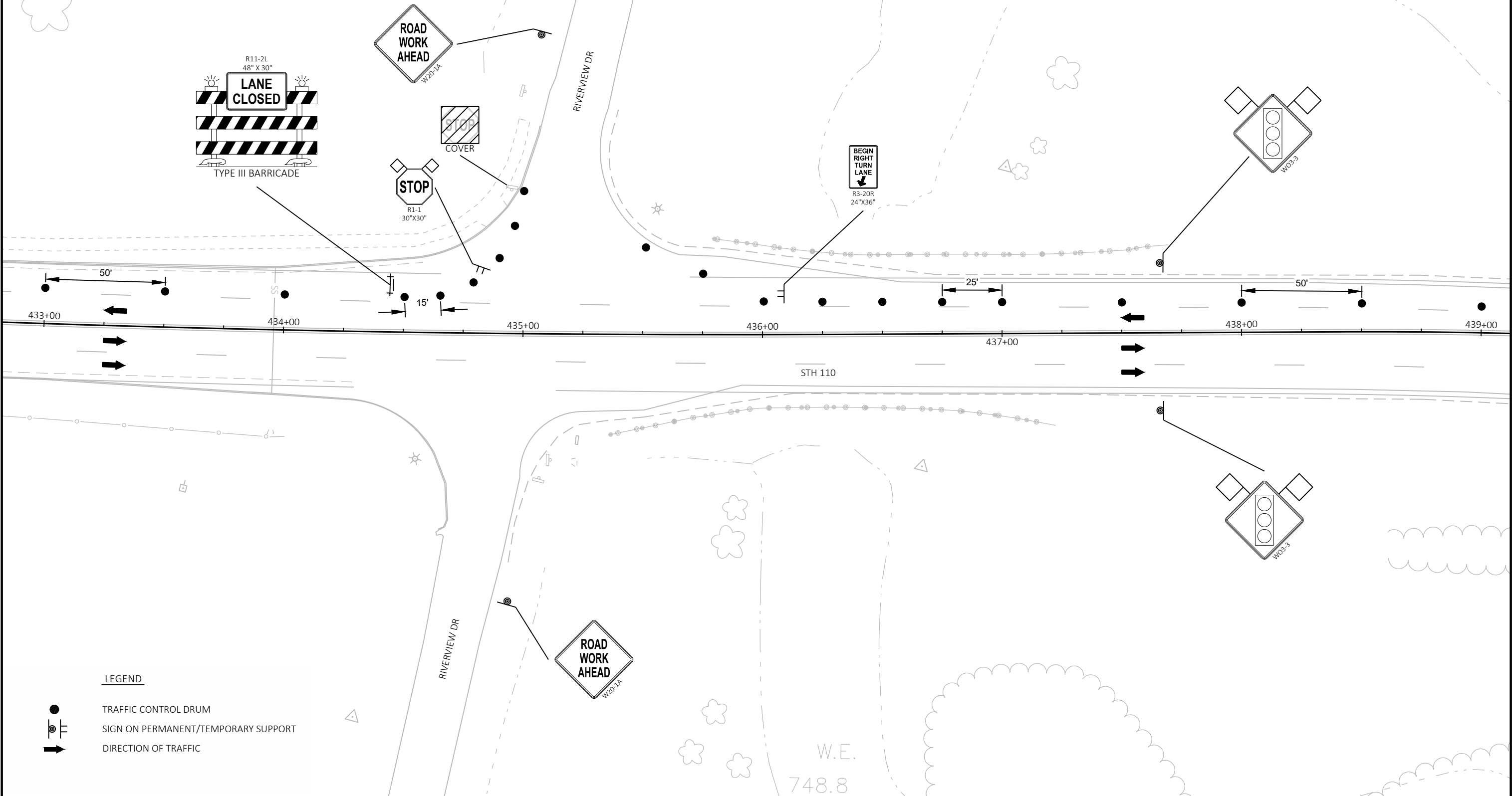
SHEET

28

E

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT/TEMPORARY SUPPORT
- ➔ DIRECTION OF TRAFFIC

NOTES:

USE THE FOLLOWING SDD'S

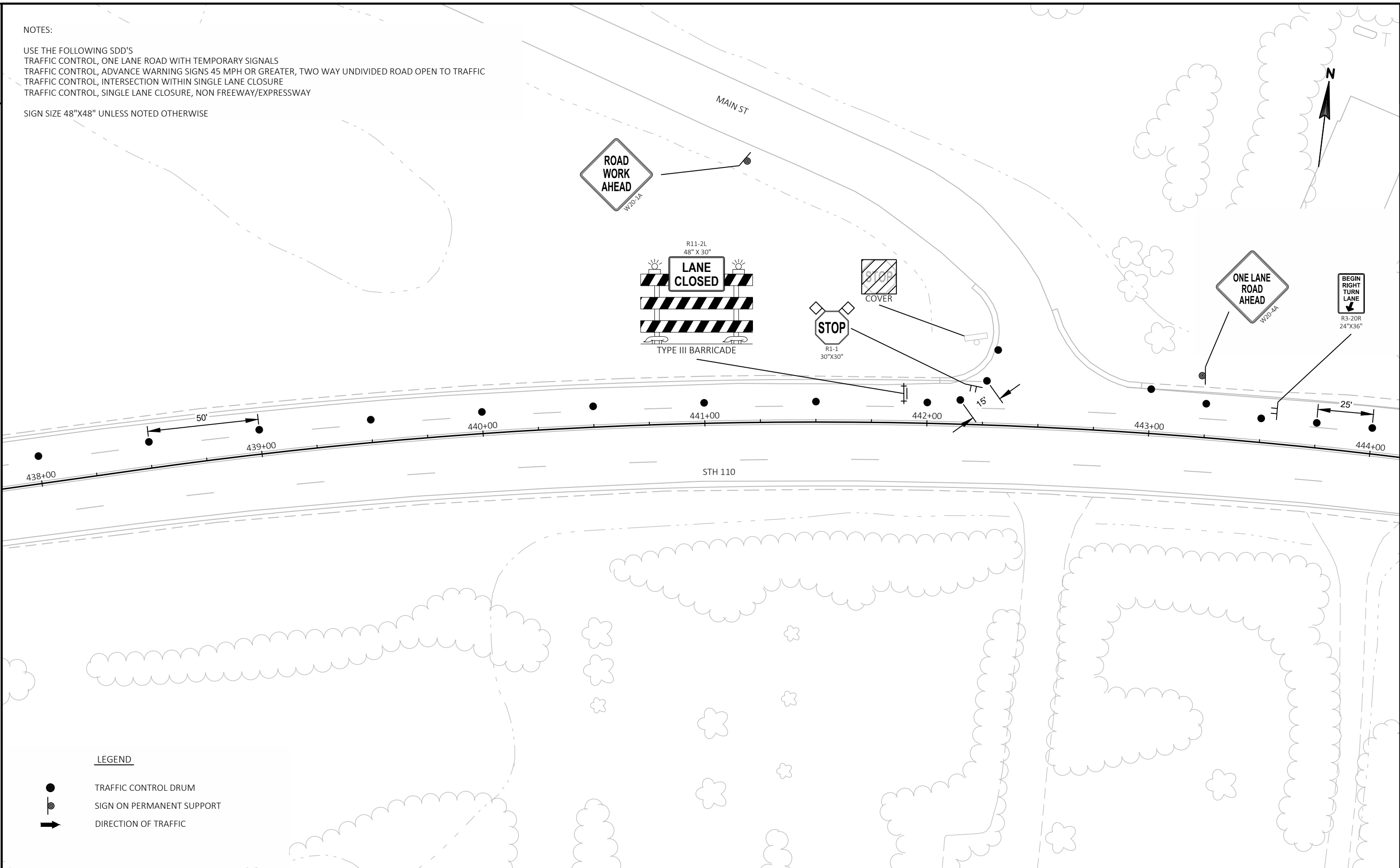
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

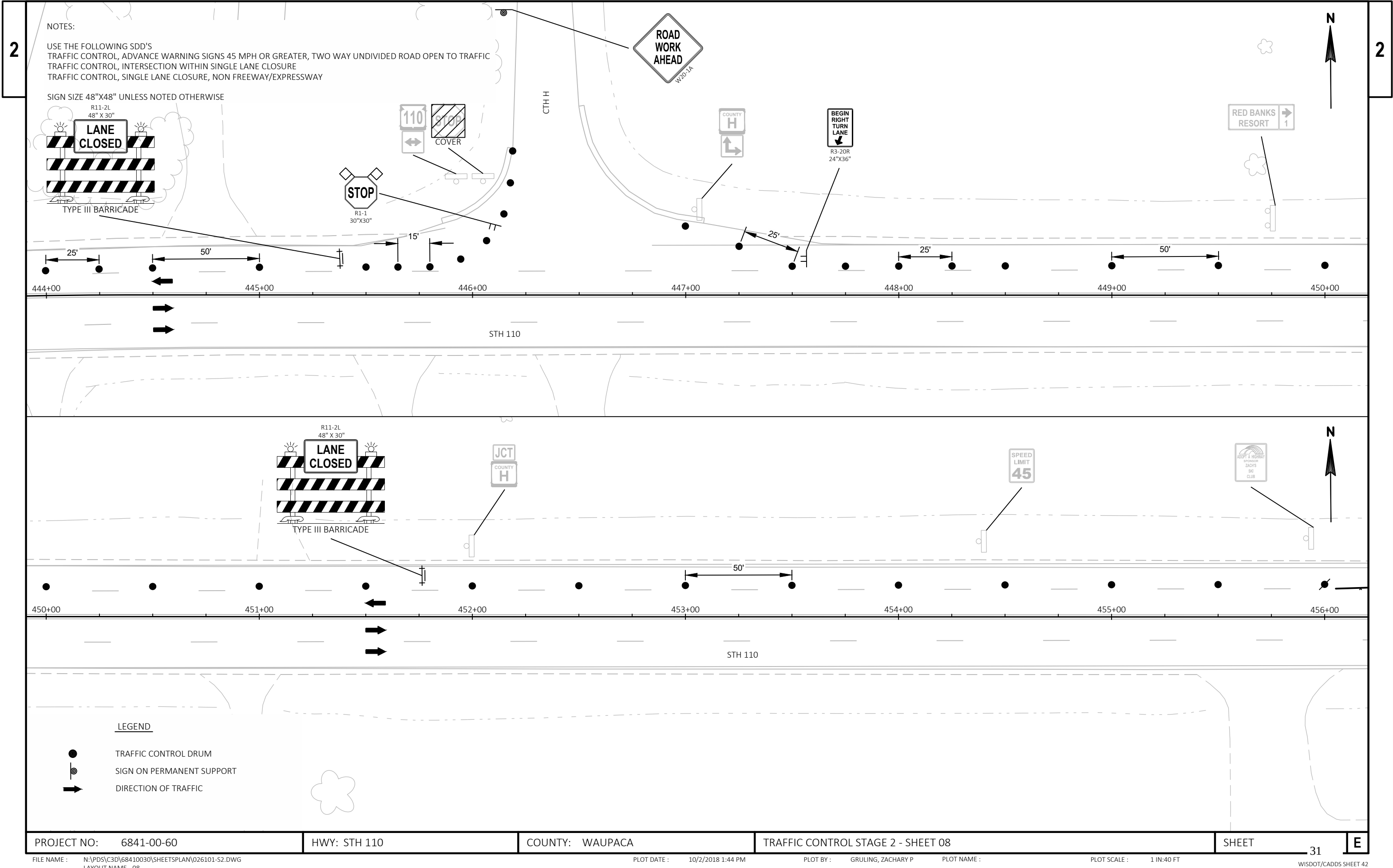
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

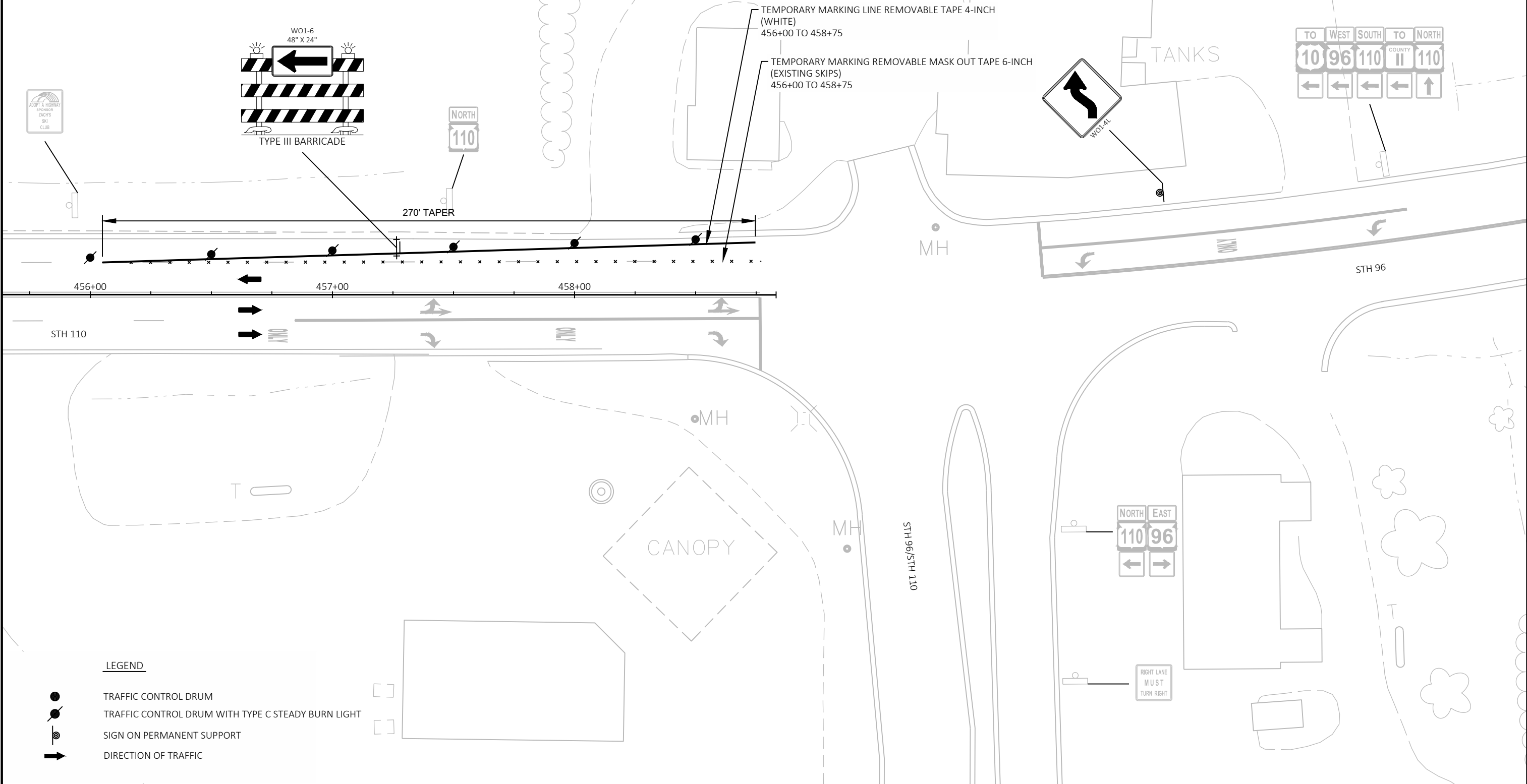
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY

SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE





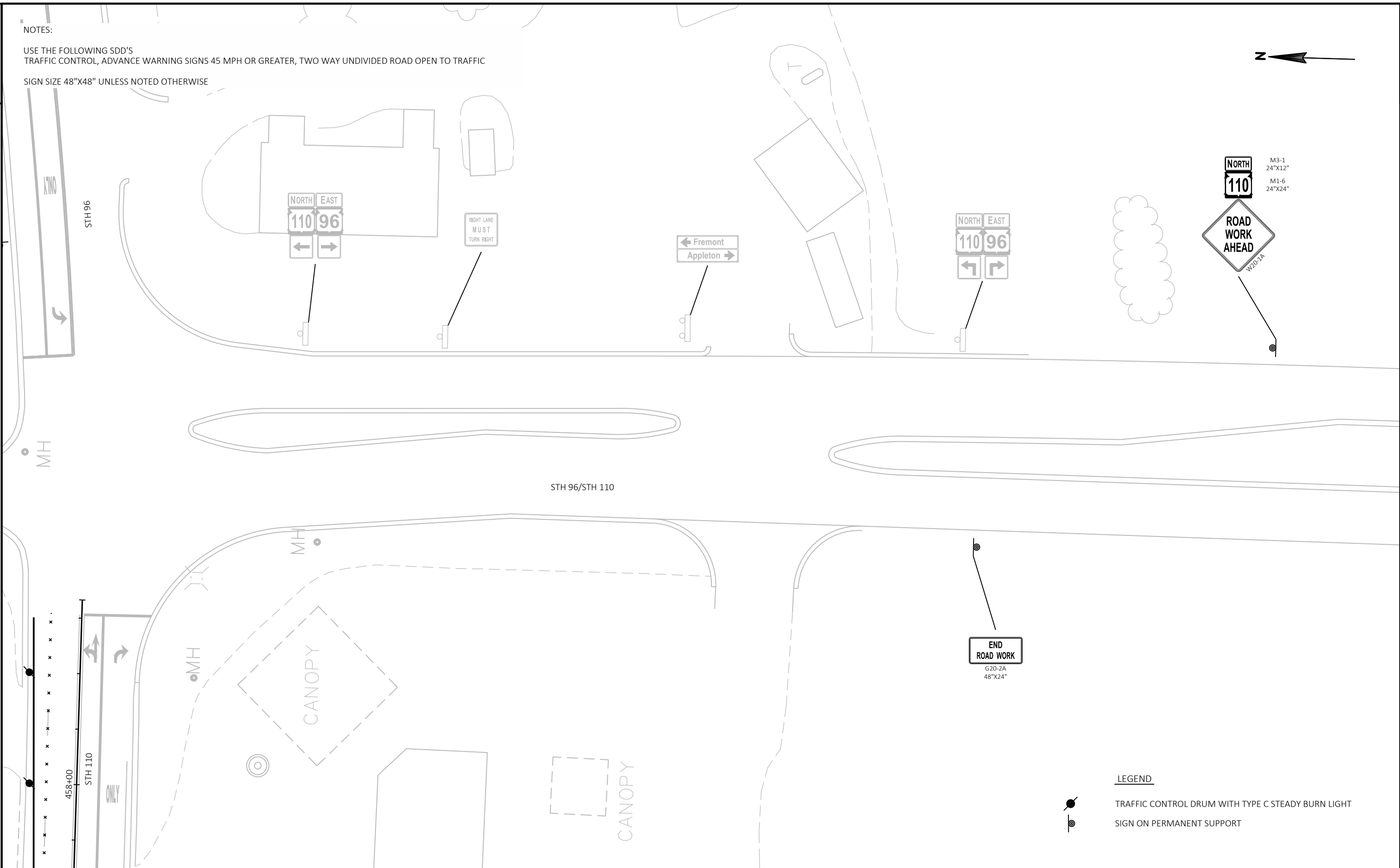
NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



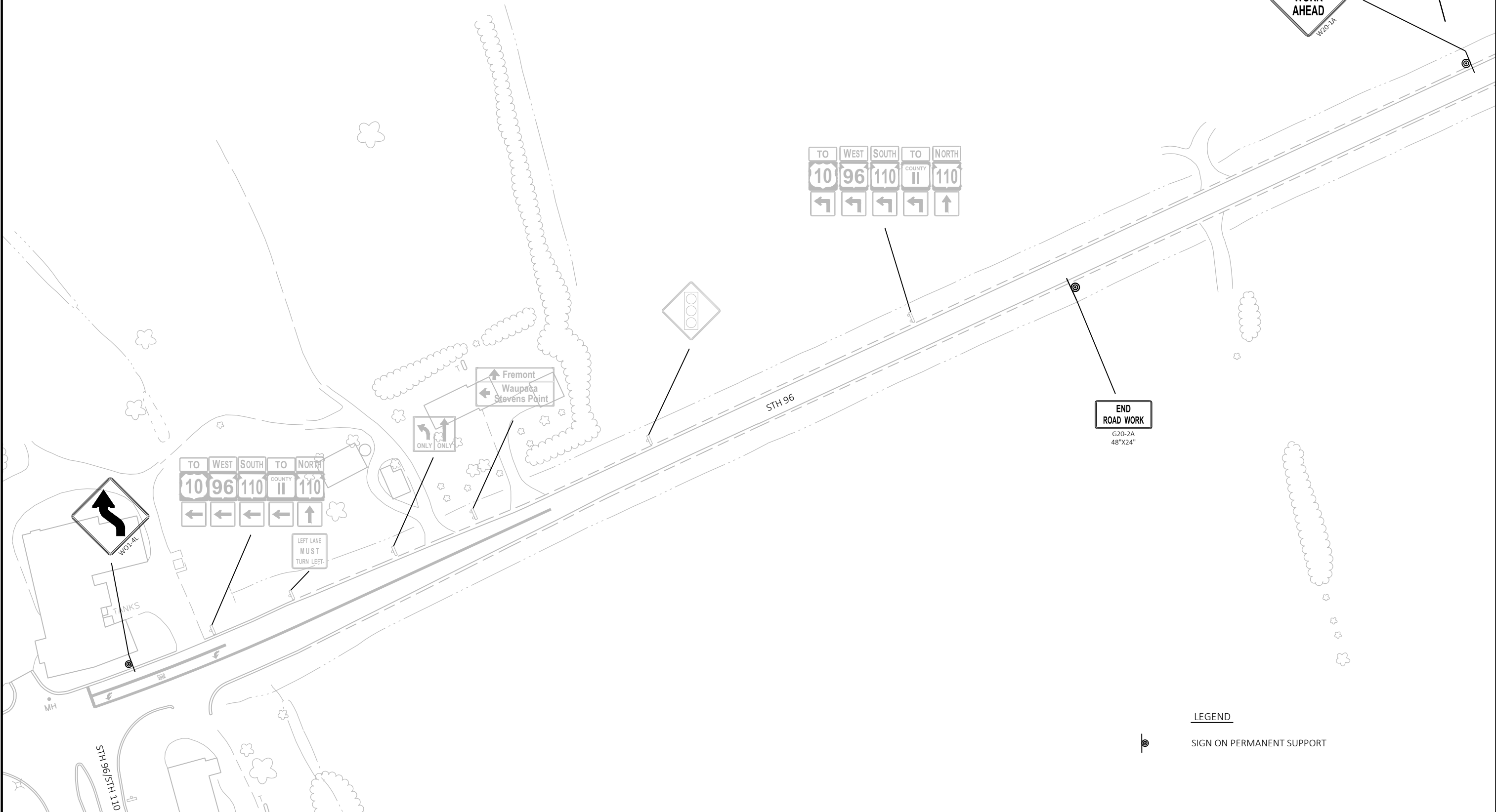
LEGEND

- TRAFFIC CONTROL DRUM
- / TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➔ DIRECTION OF TRAFFIC

NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



NOTES:
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE



Estimate Of Quantities By Plan Sets

6841-00-60					
Line	Item	Item Description	Unit	Total	Qty
0026	213.0100	Finishing Roadway (project) 03. 6841-00-60	EACH	1.000	1.000
0040	502.3100	Expansion Device (structure) 01. B-68-31	LS	1.000	1.000
0042	502.3200	Protective Surface Treatment	SY	3,568.000	3,568.000
0044	502.3210	Pigmented Surface Sealer	SY	520.000	520.000
0046	502.4205	Adhesive Anchors No. 5 Bar	EACH	108.000	108.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	3,270.000	3,270.000
0050	506.6000	Bearing Assemblies Expansion (structure) 01. B-68-31	EACH	12.000	12.000
0052	506.7050.S	Removing Bearings (structure) 01. B-68-31	EACH	12.000	12.000
0054	509.0200	Preparation Approaches	SY	612.000	612.000
0056	509.0301	Preparation Decks Type 1	SY	200.000	200.000
0058	509.0302	Preparation Decks Type 2	SY	100.000	100.000
0060	509.0505.S	Cleaning Decks to Reapply Concrete Masonry Overlay	SY	3,221.000	3,221.000
0062	509.0600	Cleaning Approaches	SY	612.000	612.000
0064	509.1000	Joint Repair	SY	44.000	44.000
0066	509.1200	Curb Repair	LF	75.000	75.000
0068	509.1500	Concrete Surface Repair	SF	55.000	55.000
0070	509.2000	Full-Depth Deck Repair	SY	5.000	5.000
0072	509.2500	Concrete Masonry Overlay Decks	CY	205.000	205.000
0074	509.2600	Concrete Masonry Overlay Approaches	CY	26.000	26.000
0076	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 01. B-68-31	SY	3,121.000	3,121.000
0078	509.9050.S	Cleaning Parapets	LF	1,236.000	1,236.000
0080	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 01. B-68-31	LS	1.000	1.000
0082	517.4000.S	Containment and Collection of Waste Materials (structure) 01. B-68-31	LS	1.000	1.000
0084	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0110	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,130.000	1,130.000
0112	603.8125	Concrete Barrier Temporary Precast Installed	LF	2,260.000	2,260.000
0118	614.0010	Barrier System Grading Shaping Finishing	EACH	2.000	2.000
0120	614.0395	Guardrail Mow Strip Concrete	SY	167.000	167.000
0122	614.2300	MGS Guardrail 3	LF	225.000	225.000
0124	614.2500	MGS Thrie Beam Transition	LF	80.000	80.000
0126	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0132	618.0100	Maintenance And Repair of Haul Roads (project) 03. 6841-00-60	EACH	1.000	1.000
0134	619.1000	Mobilization	EACH	0.600	0.600
0144	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0146	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0150	628.7010	Inlet Protection Type B	EACH	10.000	10.000
0172	642.5001	Field Office Type B	EACH	0.600	0.600

Estimate Of Quantities By Plan Sets

6841-00-60					
Line	Item	Item Description	Unit	Total	Qty
0174	643.0300	Traffic Control Drums	DAY	6,330.000	6,330.000
0178	643.0420	Traffic Control Barricades Type III	DAY	540.000	540.000
0180	643.0705	Traffic Control Warning Lights Type A	DAY	1,080.000	1,080.000
0182	643.0715	Traffic Control Warning Lights Type C	DAY	1,380.000	1,380.000
0184	643.0900	Traffic Control Signs	DAY	3,540.000	3,540.000
0188	643.0920	Traffic Control Covering Signs Type II	EACH	6.000	6.000
0194	643.1070	Traffic Control Cones 42-Inch	DAY	1,140.000	1,140.000
0196	643.5000	Traffic Control	EACH	0.400	0.400
0198	644.1430.S	Temporary Pedestrian Surface Plate	SF	47.000	47.000
0200	644.1601.S	Temporary Curb Ramp	EACH	2.000	2.000
0202	644.1810.S	Temporary Pedestrian Barricade	LF	1,165.000	1,165.000
0204	646.1020	Marking Line Epoxy 4-Inch	LF	6,077.000	6,077.000
0206	646.3020	Marking Line Epoxy 8-Inch	LF	607.000	607.000
0208	646.5020	Marking Arrow Epoxy	EACH	2.000	2.000
0210	646.5120	Marking Word Epoxy	EACH	2.000	2.000
0212	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	4,217.000	4,217.000
0214	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	24.000	24.000
0216	649.0960	Temporary Marking Removable Mask Out Tape 6-Inch	LF	1,043.000	1,043.000
0218	649.0970	Temporary Marking Removable Mask Out Tape 10-Inch	LF	63.000	63.000
0230	661.0100	Temporary Traffic Signals for Bridges (structure) 02. B-68-31	LS	1.000	1.000
0236	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0238	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0244	SPV.0090	Special 02. Sawing Curb Head	LF	125.000	125.000

3

3

MGS GUARDRAIL

STATION - STATION		LOCATION	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH	614.0395 GUARDRAIL MOW STRIP CONCRETE SY	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	SPV.0090.02 SAWING CURB HEAD LF	*COMMON CY	*FILL CY	*TOPSOIL & MULCH SY	*SEED NO 40 LBS	*FERTILIZER CWT
420+31 - 422+49		RT	1	69	75	40	1	62.5	2	0	28	0.5	0.02
428+66 - 431+59		RT	1	98	150	40	1	62.5	3	0	30	0.5	0.02
TOTAL			2	167	225	80	2	125	5	0	58	1	0.04

* FOR INFORMATION ONLY. NOT A BID ITEM.

MARKING LINE EPOXY

STATION - STATION		LOCATION	646.1020 4-INCH WHITE LF	646.1020 4-INCH YELLOW LF	646.3020 8-INCH WHITE LF	REMARKS
418+48 - 432+68		CL	---	2840	---	DOUBLE YELLOW
418+48 - 432+68		LT	1420	---	---	EDGE LINE
418+48 - 432+68		RT	1420	---	---	EDGE LINE
418+48 - 432+68		RT	355	---	---	SKIPS
418+48 - 422+40		LT	---	---	392	CHANNELIZING
422+40 - 431+00		LT	---	---	215	SKIPS
431+00 - 432+68			42	---	---	SKIPS
SUBTOTAL			3237	2840		
TOTAL			6077		607	

CONCRETE BARRIER TEMPORARY PRECAST

STATION - STATION		LOCATION	603.8000 DELIVERED LF	603.8125 INSTALLED LF	REMARKS
420+43 - 431+66		CL	1130	1130	STAGE 1
419+83 - 431+15		CL	---	1130	STAGE 2
TOTAL			1130	2260	

INLET PROTECTION

STATION	LOCATION	628.7010 TYPE B EACH	REMARKS
418+78	LT & RT	2	
421+28	LT & RT	2	
424+12	LT	1	DECK INLET
424+22	RT	1	DECK INLET
426+88	LT	1	DECK INLET
426+97	RT	1	DECK INLET
430+48	LT & RT	2	
TOTALS		10	

APPROACHES

STATION - STATION		509.0200 PREPARATION SY	509.0600 CLEANING SY	509.2600 CONCRETE MASONRY OVERLAY APPROACHES CY
422+00 - 422+58		286	286	12
428+50 - 429+16		326	326	14
TOTAL		612	612	26

MARKING ARROWS AND WORDS

STATION	LOCATION	646.5020 ARROW EPOXY EACH	646.5120 WORD EPOXY EACH
426+02	LT	---	2
426+42	LT	2	---
TOTAL		2	2

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
418+50 - 434+00	1	2	
TOTAL	1	2	

TRAFFIC CONTROL

SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
STAGE 1					
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 01
W12-52	MAX 13' WIDTH	1	30	30	SHEET 01
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 02
W20-4A	ONE LANE ROAD AHEAD	1	30	30	SHEET 02
WO3-3	SIGNAL AHEAD	2	30	60	SHEET 02
G20-2A	END ROAD WORK	1	30	30	SHEET 02
R3-2	NO LEFT TURN	1	30	30	SHEET 03
R11-2L	LANE CLOSED	1	30	30	SHEET 03
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 03
R10-6	STOP HERE ON RED	1	30	30	SHEET 03
WO1-6	NIGHT ARROW	1	30	30	SHEET 03
WO1-4R	SHIFT RIGHT	1	30	30	SHEET 03
WO5-52L	TIGER BOARD	1	30	30	SHEET 03
R9-11A	SIDEWALK CLOSED CROSS HERE	1	30	30	SHEET 03
WO1-6	NIGHT ARROW	1	30	30	SHEET 05
WO5-52L	TIGER BOARD	1	30	30	SHEET 05
R9-11A	SIDEWALK CLOSED CROSS HERE	1	30	30	SHEET 05
R10-6	STOP HERE ON RED	1	30	30	SHEET 05
R11-2L	LANE CLOSED	1	30	30	SHEET 06
W20-1A	ROAD WORK AHEAD	2	30	60	SHEET 06
WO3-3	SIGNAL AHEAD	2	30	60	SHEET 06
R1-1	STOP	1	30	30	SHEET 06
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 06
R11-2L	LANE CLOSED	1	30	30	SHEET 07
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 07
W20-4A	ONE LANE ROAD AHEAD	1	30	30	SHEET 07
R1-1	STOP	1	30	30	SHEET 07
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 07
R11-2L	LANE CLOSED	2	30	60	SHEET 08
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 08
W12-52	MAX 13' WIDTH	1	30	30	SHEET 08
R1-1	STOP	1	30	30	SHEET 08
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 08
WO1-6	NIGHT ARROW	1	30	30	SHEET 09
WO1-4L	SHIFT LEFT	1	30	30	SHEET 09
G20-2A	END ROAD WORK	1	30	30	SHEET 10
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 10
W12-52	MAX 13' WIDTH	1	30	30	SHEET 10
WO57-52	MILES AHEAD	1	30	30	SHEET 10
M3-1	NORTH	2	30	60	SHEET 10
M1-6	110	2	30	60	SHEET 10
G20-2A	END ROAD WORK	1	30	30	SHEET 11
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 11
W12-52	MAX 13' WIDTH	1	30	30	SHEET 11
WO57-52	MILES AHEAD	1	30	30	SHEET 11
M3-1	NORTH	2	30	60	SHEET 11
M1-6	110	2	30	60	SHEET 11

TRAFFIC CONTROL

SIGN NUMBER	MESSAGE	NUMBER SIGNS REQUIRED	DAYS NEEDED	643.0900 SIGNS DAY	REMARKS
STAGE 2					
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 01
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 02
W20-4A	ONE LANE ROAD AHEAD	1	30	30	SHEET 02
WO3-3	SIGNAL AHEAD	2	30	60	SHEET 02
G20-2A	END ROAD WORK	1	30	30	SHEET 02
R3-2	NO LEFT TURN	1	30	30	SHEET 03
R11-2L	LANE CLOSED	1	30	30	SHEET 03
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 03
R10-6	STOP HERE ON RED	1	30	30	SHEET 03
WO1-4L	SHIFT LEFT	1	30	30	SHEET 03
WO5-52R	TIGER BOARD	1	30	30	SHEET 03
WO1-6	NIGHT ARROW	1	30	30	SHEET 05
WO5-52R	TIGER BOARD	1	30	30	SHEET 05
WO1-4R	SHIFT RIGHT	1	30	30	SHEET 05
R10-6	STOP HERE ON RED	1	30	30	SHEET 05
R11-2L	LANE CLOSED	1	30	30	SHEET 06
W20-1A	ROAD WORK AHEAD	2	30	60	SHEET 06
WO3-3	SIGNAL AHEAD	2	30	60	SHEET 06
R1-1	STOP	1	30	30	SHEET 06
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 06
R11-2L	LANE CLOSED	1	30	30	SHEET 07
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 07
W20-4A	ONE LANE ROAD AHEAD	1	30	30	SHEET 07
R1-1	STOP	1	30	30	SHEET 07
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 07
R11-2L	LANE CLOSED	2	30	60	SHEET 08
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 08
R1-1	STOP	1	30	30	SHEET 08
R3-20R	BEGIN RIGHT TURN LANE	1	30	30	SHEET 08
WO1-6	NIGHT ARROW	1	30	30	SHEET 09
WO1-4L	SHIFT LEFT	1	30	30	SHEET 09
G20-2A	END ROAD WORK	1	30	30	SHEET 10
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 10
M3-1	NORTH	1	30	30	SHEET 10
M1-6	110	1	30	30	SHEET 10
G20-2A	END ROAD WORK	1	30	30	SHEET 11
W20-1A	ROAD WORK AHEAD	1	30	30	SHEET 11
M3-1	NORTH	1	30	30	SHEET 11
M1-6	110	1	30	30	SHEET 11
WIDTH RESTRICTION					
W12-52	MAX 13' WIDTH	5	30	150	STAGE 1
WO57-52	MILES AHEAD	5	30	150	STAGE 1
M3-1	NORTH	3	30	90	STAGE 1
M3-3	SOUTH	2	30	60	STAGE 1
M1-6	110	5	30	150	STAGE 1

TOTAL 3540

3

TRAFFIC CONTROL													
LOCATION	DAYS NEEDED	QTY	643.0300 DRUMS		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0715 WARNING LIGHTS TYPE C		643.1070 CONES		REMARKS
			DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	DAY	QTY	
STAGE 1													
SHEET 03	30	22	660	3	90	6	180	11	330	6	180		
SHEET 04	30	0	0	0	0	0	0	0	0	24	720		
SHEET 05	30	11	330	2	60	4	120	6	180	8	240		
SHEET 06	30	19	570	1	30	2	60	0	0	0	0		
SHEET 07	30	16	480	1	30	2	60	0	0	0	0		
SHEET 08	30	34	1020	2	60	4	120	1	30	0	0		
SHEET 09	30	5	150	1	30	2	60	5	150	0	0		
STAGE 2													
SHEET 03	30	16	480	2	60	4	120	8	240	0	0		
SHEET 05	30	14	420	1	30	2	60	9	270	0	0		
SHEET 06	30	19	570	1	30	2	60	0	0	0	0		
SHEET 07	30	16	480	1	30	2	60	0	0	0	0		
SHEET 08	30	34	1020	2	60	4	120	1	30	0	0		
SHEET 09	30	5	150	1	30	2	60	5	150	0	0		
TOTAL			6330		540		1080		1380		1140		

PEDESTRIAN ACCOMODATIONS					
STATION	LOCATION	644.1430.S TEMPORARY PEDESTRIAN SURFACE PLATE SF	644.1601.S TEMPORARY CURB RAMP EACH	644.1810.S TEMPORARY PEDESTRIAN BARRICADE LF	REMARKS
420+39	LT	24	1	---	STAGE 1
431+70	LT	23	1	---	STAGE 1
420+35 - 431+73	LT & RT	---	---	1165	STAGE 1
TOTAL		47	2	1165	

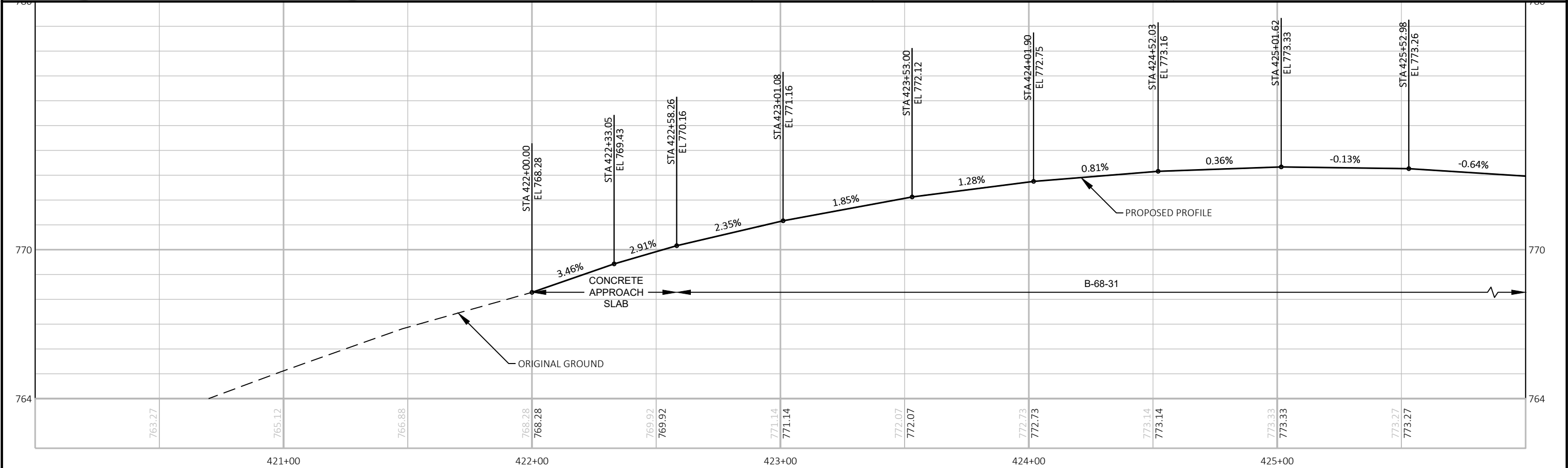
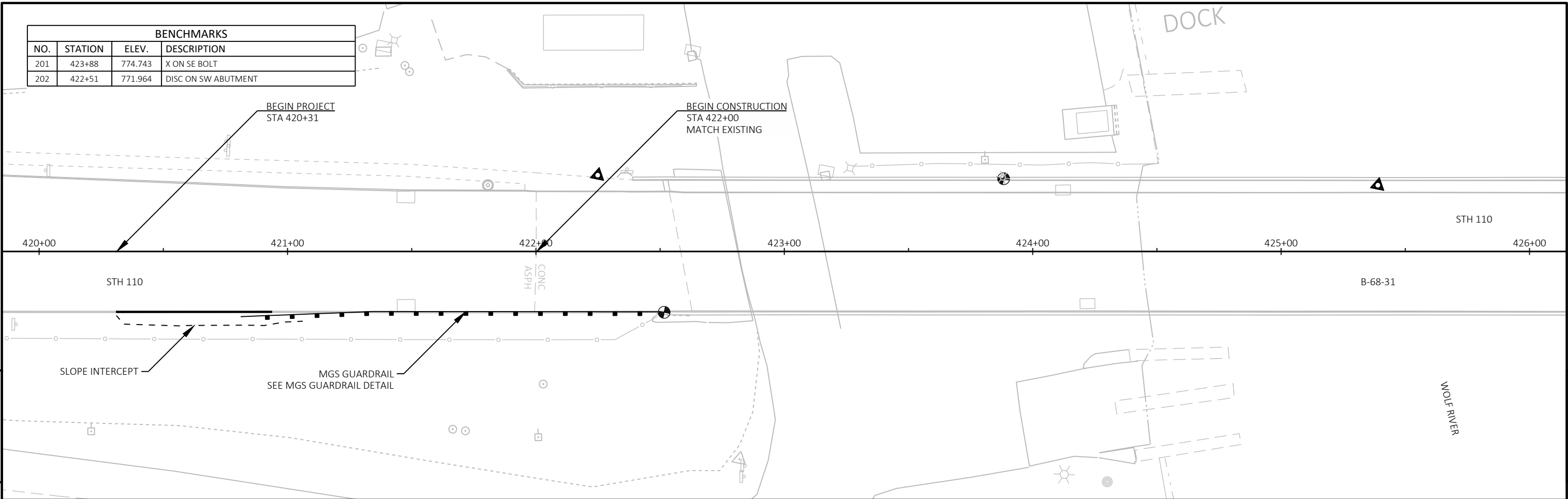
TEMPORARY TRAFFIC SIGNALS				
661.0100.01 FOR BRIDGES (STRUCTURE)				
STATION - STATION		LOCATION	LS	REMARKS
419+00 - 432+68		B-68-31	1	STAGE 1 & STAGE 2
TOTAL			1	

TEMPORARY MARKING LINE						
STATION - STATION	LOCATION	649.0150 REMOVABLE TAPE 4-INCH WHITE LF	649.0150 REMOVABLE TAPE 4-INCH YELLOW LF	649.0960 REMOVABLE MASK OUT TAPE 6-INCH LF	649.0970 REMOVABLE MASK OUT TAPE 10-INCH LF	REMARKS
418+48 - 419+95	RT	---	222	---	---	STAGE 1 & STAGE 2
419+30 - 421+00	CL	---	---	340	---	STAGE 1 & STAGE 2- DOUBLE YELLOW
419+48 - 420+32	LT	---	---	---	63	STAGE 1 & STAGE 2
420+05 - 421+24	RT	---	---	30	---	STAGE 1
419+80 - 432+68	RT	1288	---	---	---	STAGE 1
430+18 - 432+00	RT	---	---	46	---	STAGE 1
430+45 - 432+68	CL	---	---	446	---	STAGE 1 & STAGE 2- DOUBLE YELLOW
456+00 - 458+75	LT	275	---	69	---	STAGE 1 & STAGE 2
419+00 - 420+18	RT	---	---	30	---	STAGE 2
419+46 - 431+42	LT	1196	---	---	---	STAGE 2
420+32 - 432+68	LT	1236	---	---	---	STAGE 2
429+18 - 432+50	LT	---	---	83	---	STAGE 2
TOTAL		3995	222			
PROJECT TOTAL			4217	1043	63	

TRAFFIC CONTROL COVERING SIGNS				
LOCATION	CYCLES	NUMBER OF SIGNS	643.0920 TYPE II EACH	REMARKS
SHEET 3	1	1	1	STAGE 1 & 2
SHEET 4	1	1	1	STAGE 1 & 2
SHEET 5	1	1	1	STAGE 1 & 2
SHEET 6	1	1	1	STAGE 1 & 2
SHEET 7	1	1	1	STAGE 1 & 2
SHEET 8	1	1	1	STAGE 1 & 2
TOTAL			6	

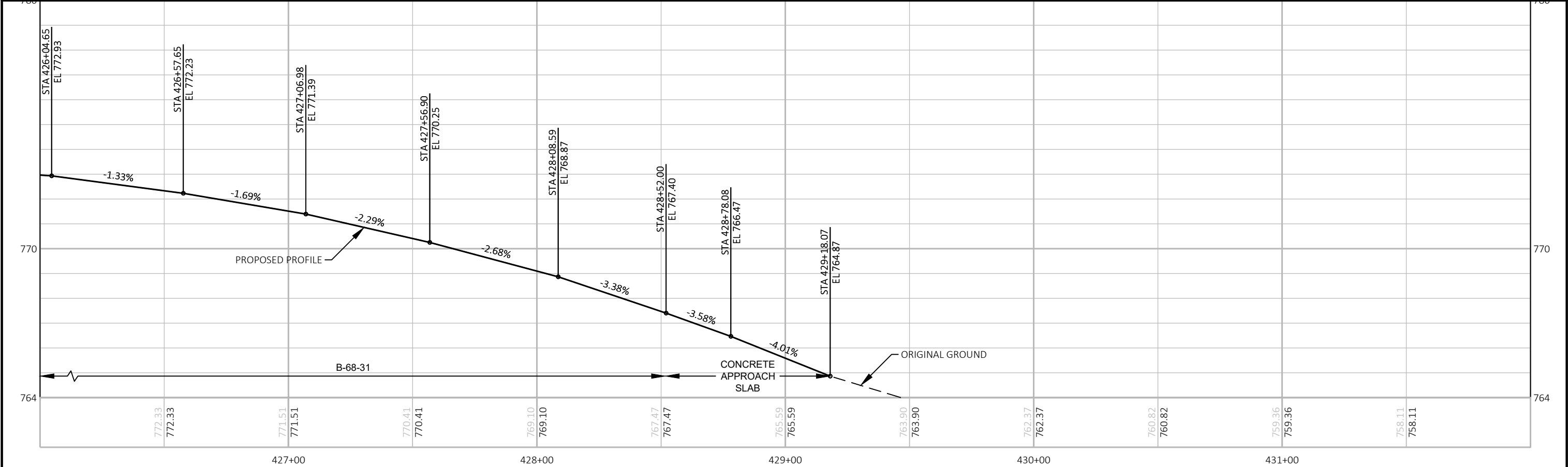
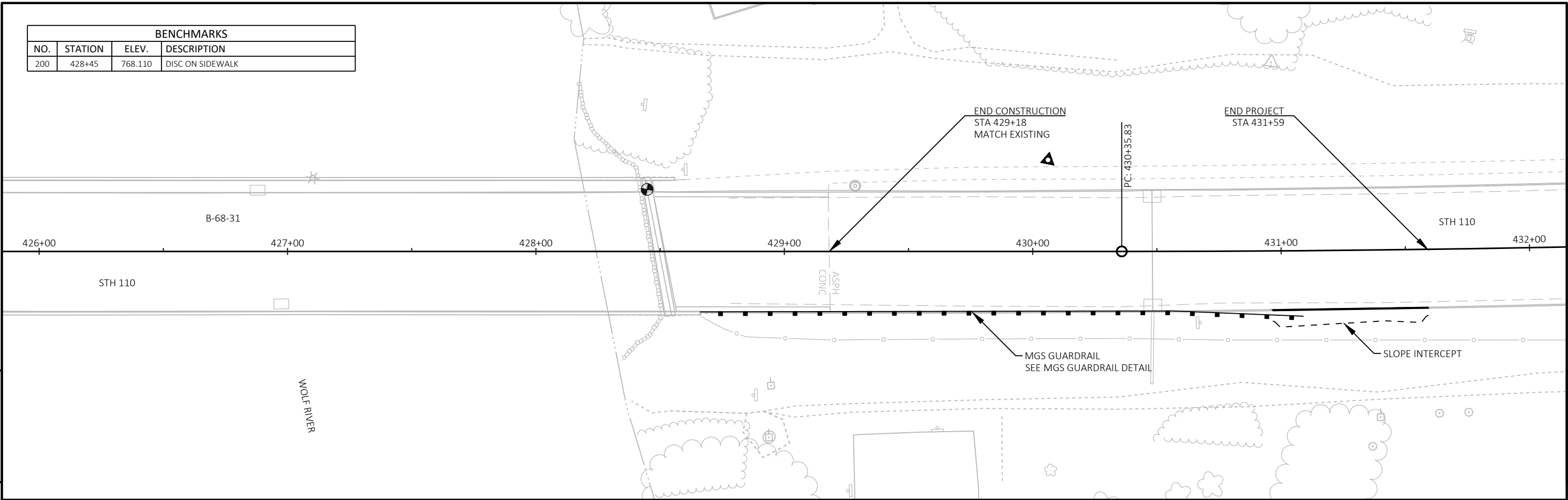
TEMPORARY MARKING STOP LINE			
649.0850 REMOVEABLE TAPE 18-INCH LF			
STATION	LOCATION		REMARKS
419+00	RT	12	
432+68	LT	12	
TOTAL		24	

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
201	423+88	774.743	X ON SE BOLT
202	422+51	771.964	DISC ON SW ABUTMENT



PROJECT NO: 6841-00-60	HWY: STH 110	COUNTY: WAUPACA	PLAN AND PROFILE: STH 110	SHEET 40	E
------------------------	--------------	-----------------	---------------------------	----------	---

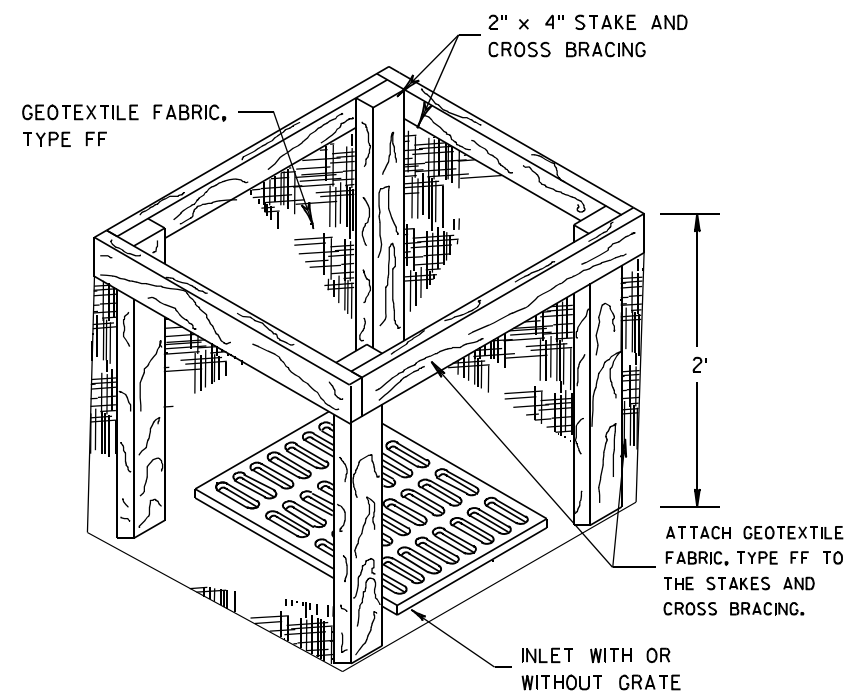
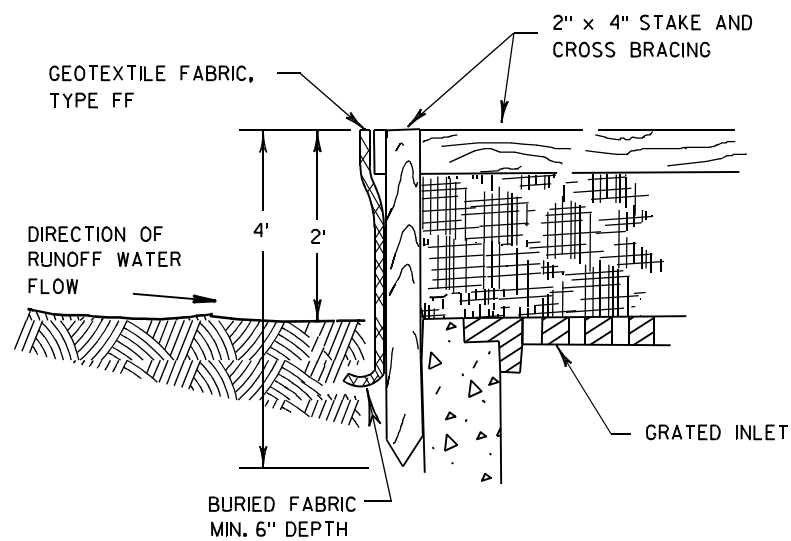
BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
200	428+45	768.110	DISC ON SIDEWALK



PROJECT NO: 6841-00-60	HWY: STH 110	COUNTY: WAUPACA	PLAN AND PROFILE: STH 110	SHEET 41	E
------------------------	--------------	-----------------	---------------------------	----------	---

Standard Detail Drawing List

08E10-02	INLET PROTECTION TYPE A, B, C AND D
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B28-03	GUARDRAIL MOW STRIP
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-06	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-04A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-04B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-04C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



INLET PROTECTION, TYPE A

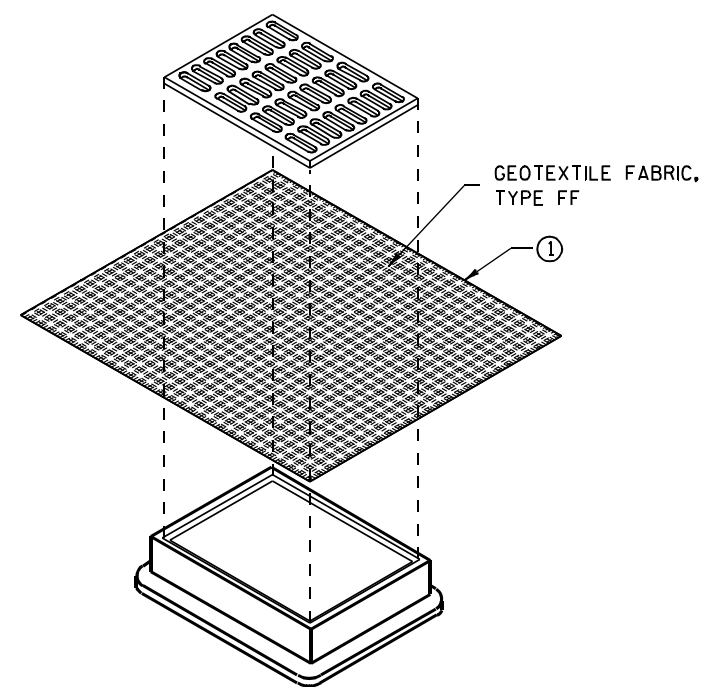
GENERAL NOTES

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

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

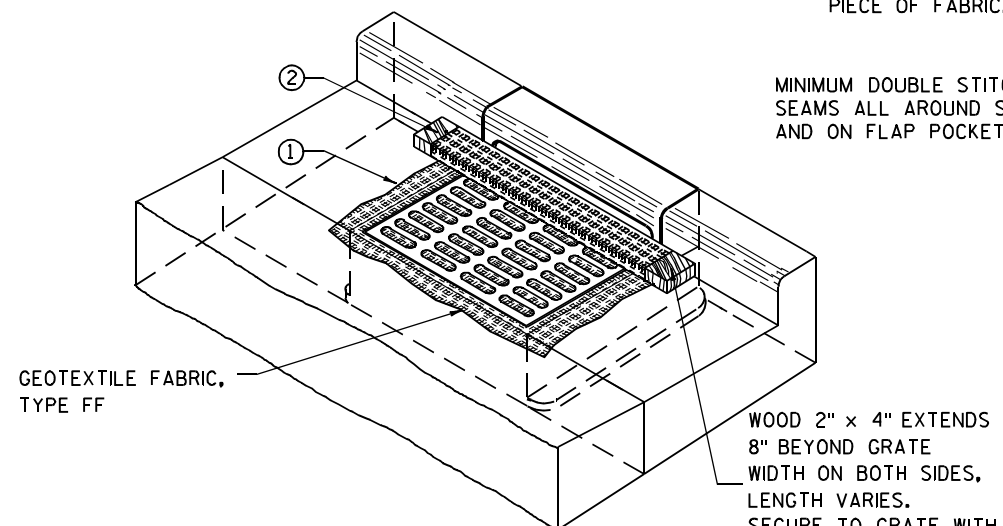
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

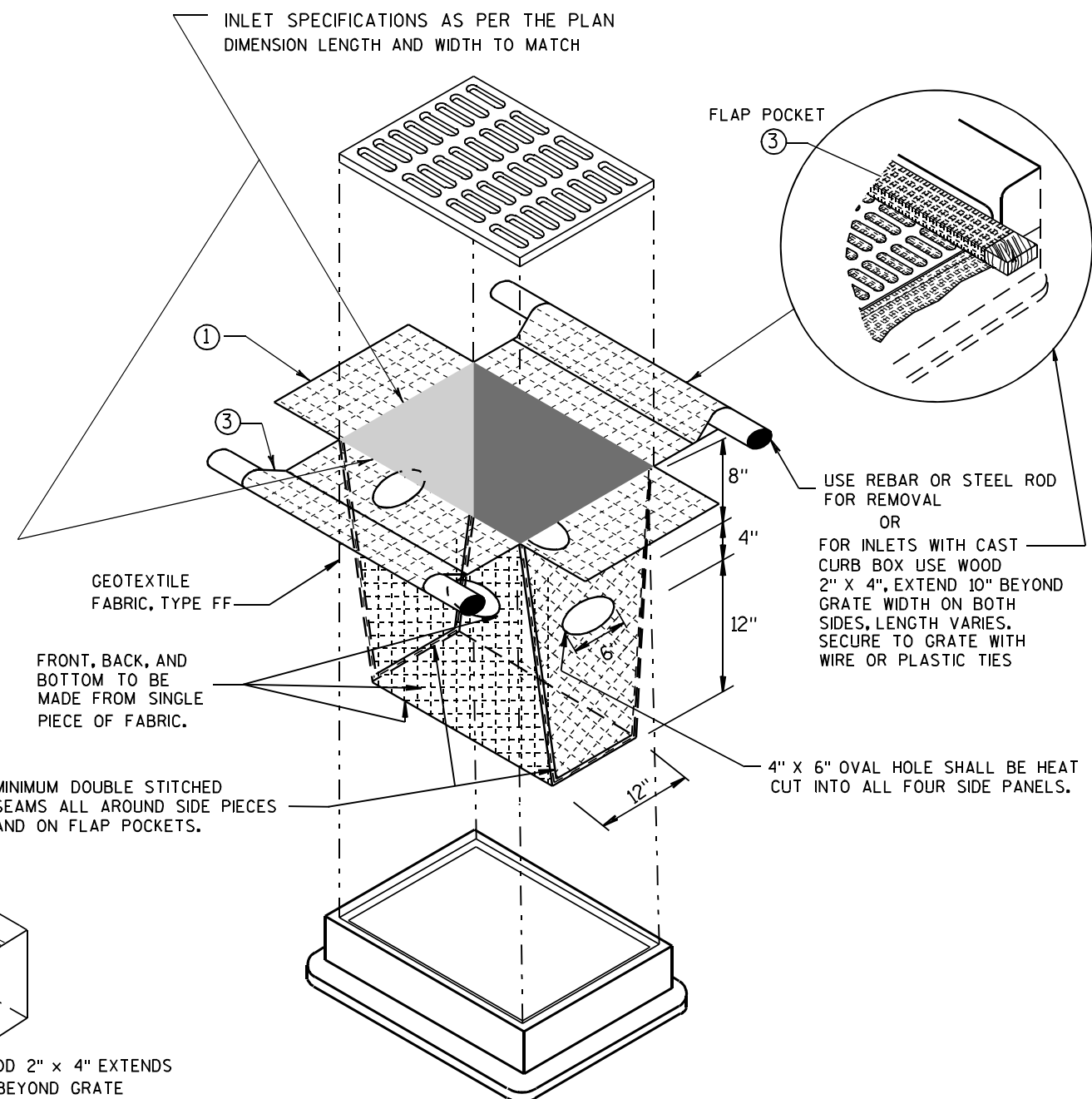
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



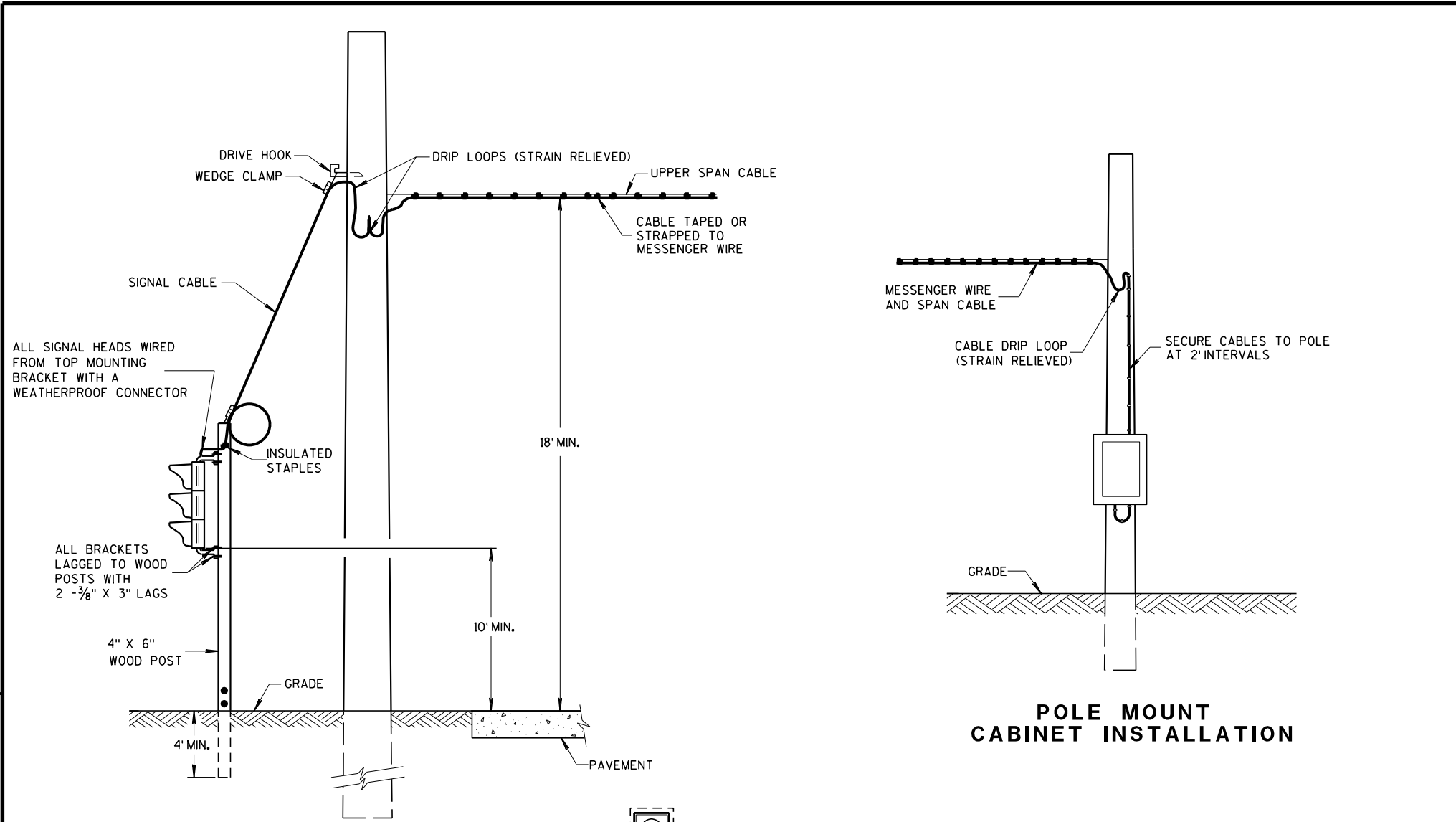
INLET PROTECTION, TYPE D

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

**INLET PROTECTION
TYPE A, B, C, AND D**

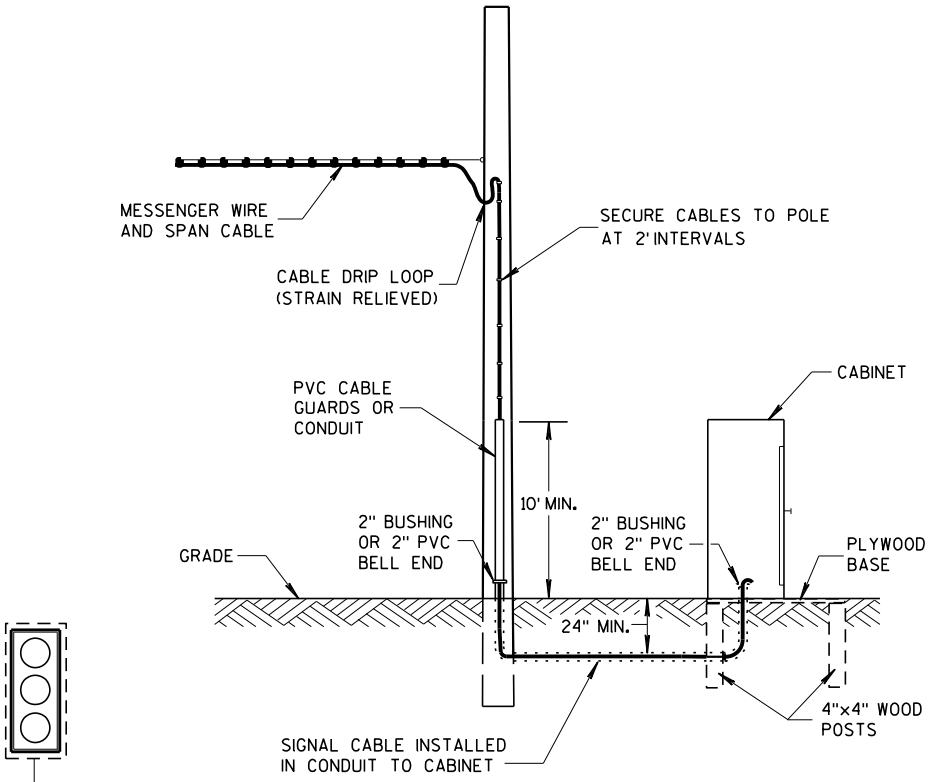
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 43
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



TYPICAL DROP TO TRAFFIC SIGNAL FACE

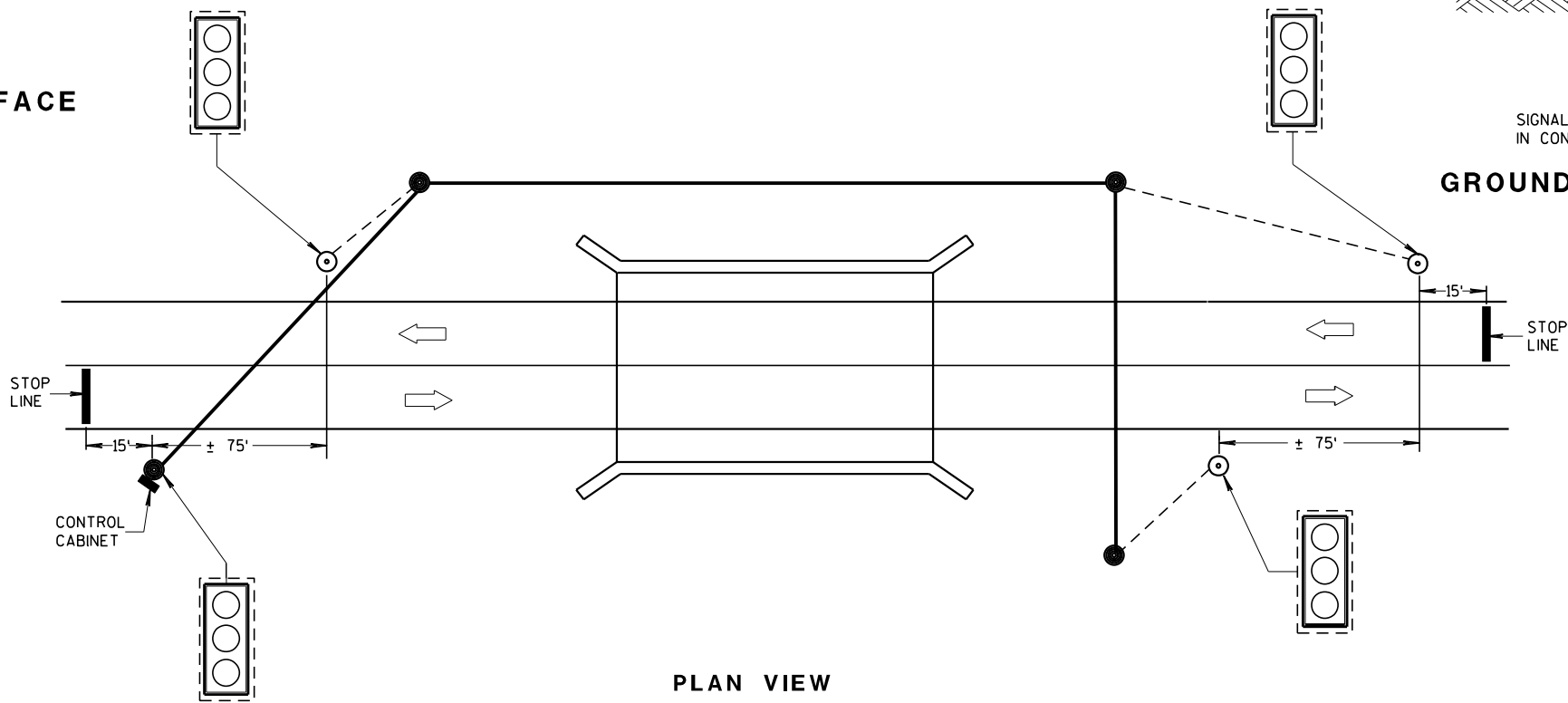
POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

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



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

GENERAL NOTES

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

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

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

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

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

VERTICAL CLEARANCE ETC. PER NEC.

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

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.

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

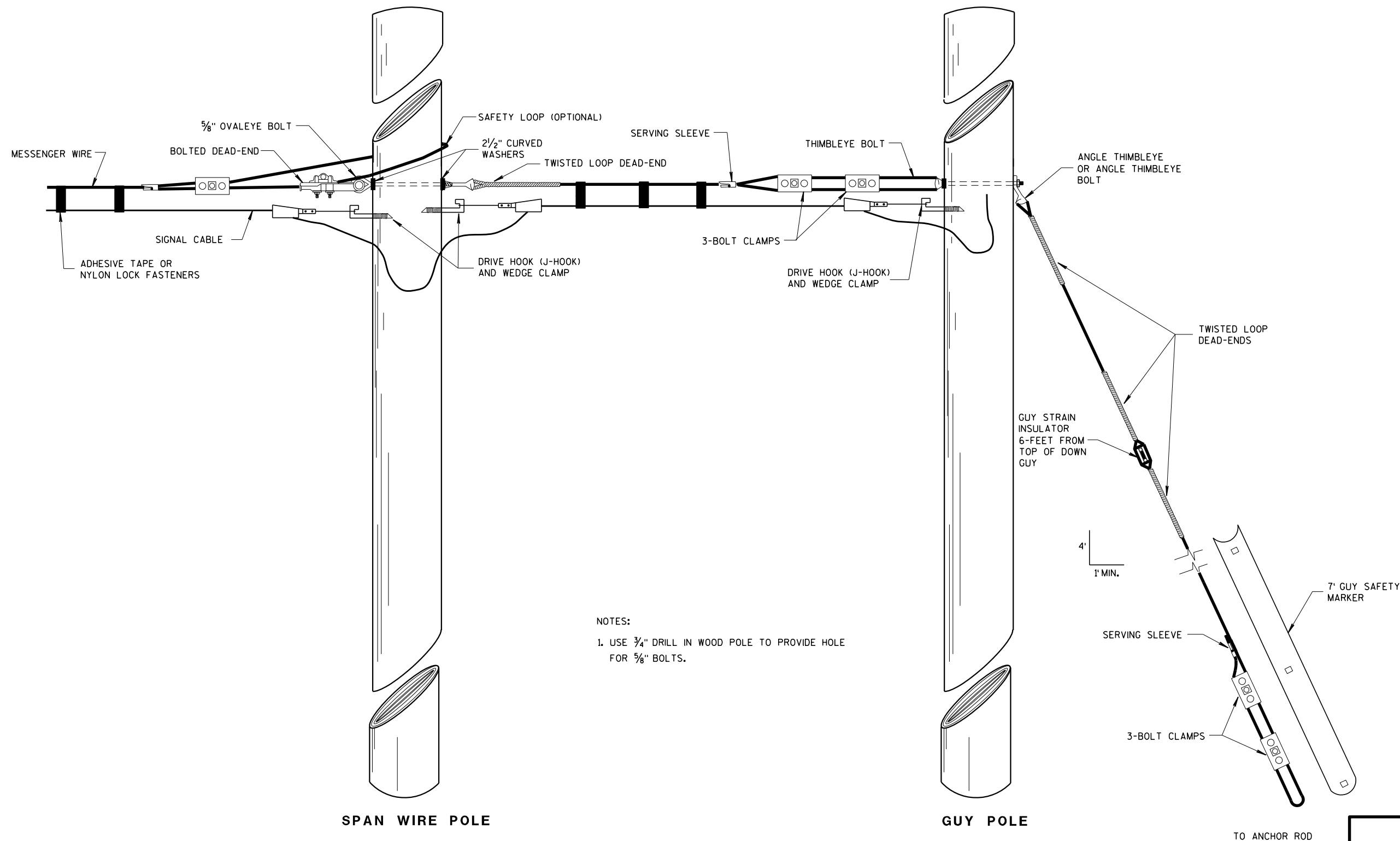
LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

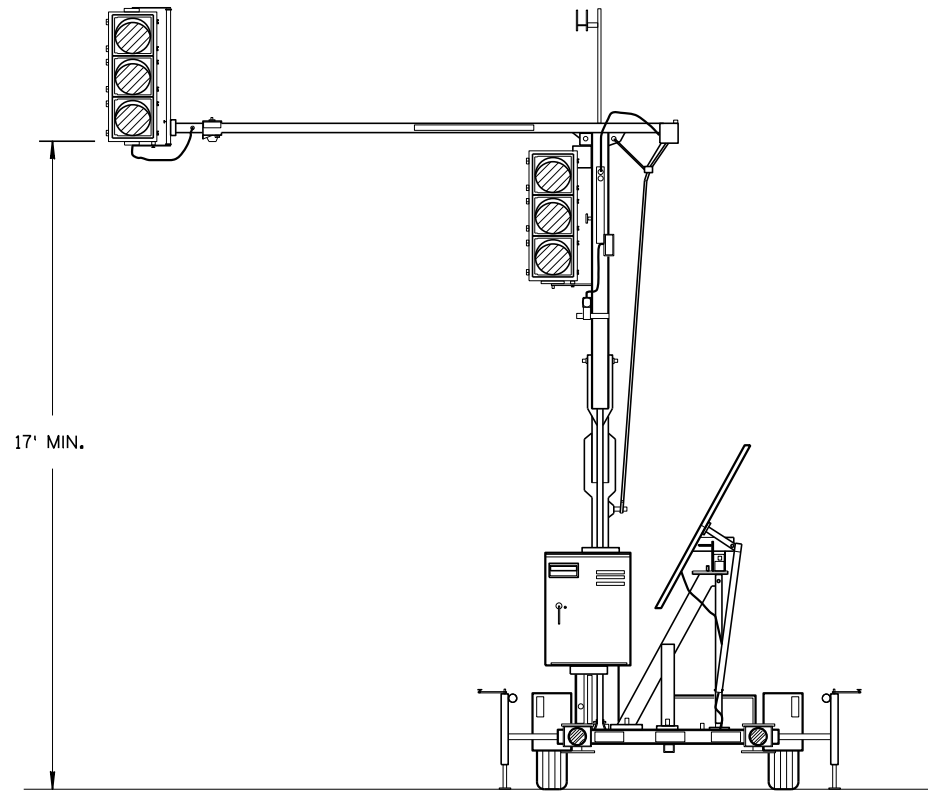
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL 44 R
FHWA



TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/S/ Ahmet Demirelli STATE ELECTRICAL 45 R
FHWA	

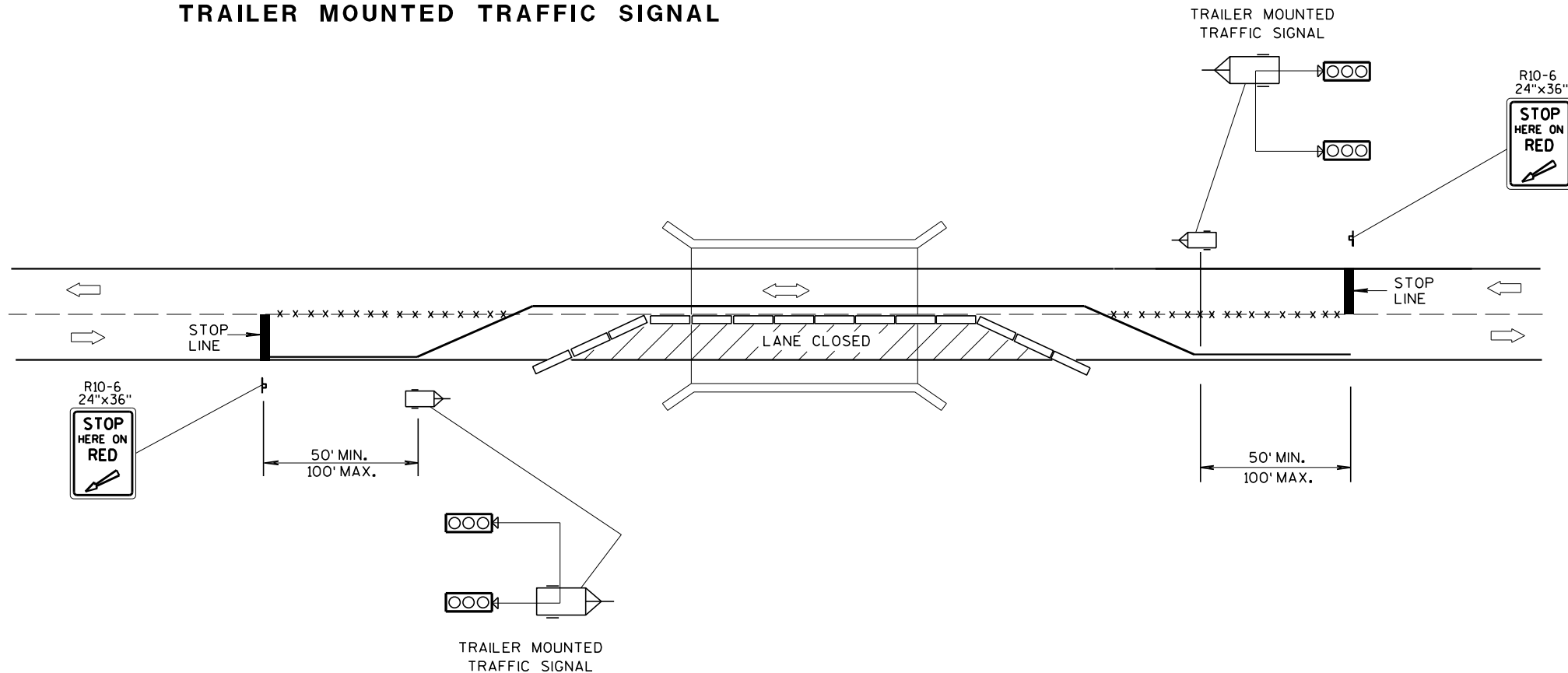


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

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



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

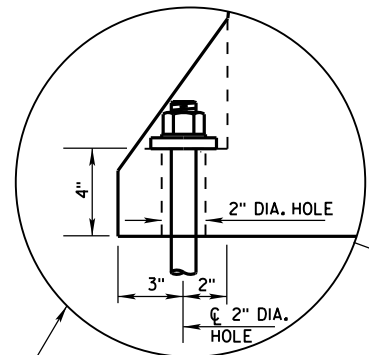
LEGEND

- POST MOUNTED SIGN
- * * * REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

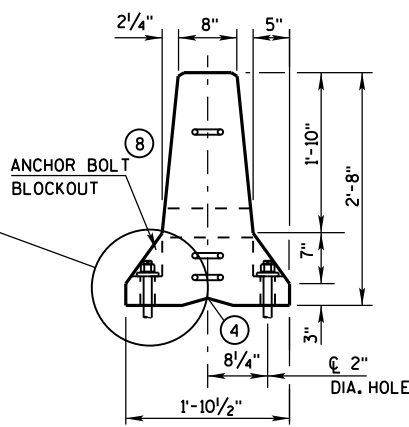
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

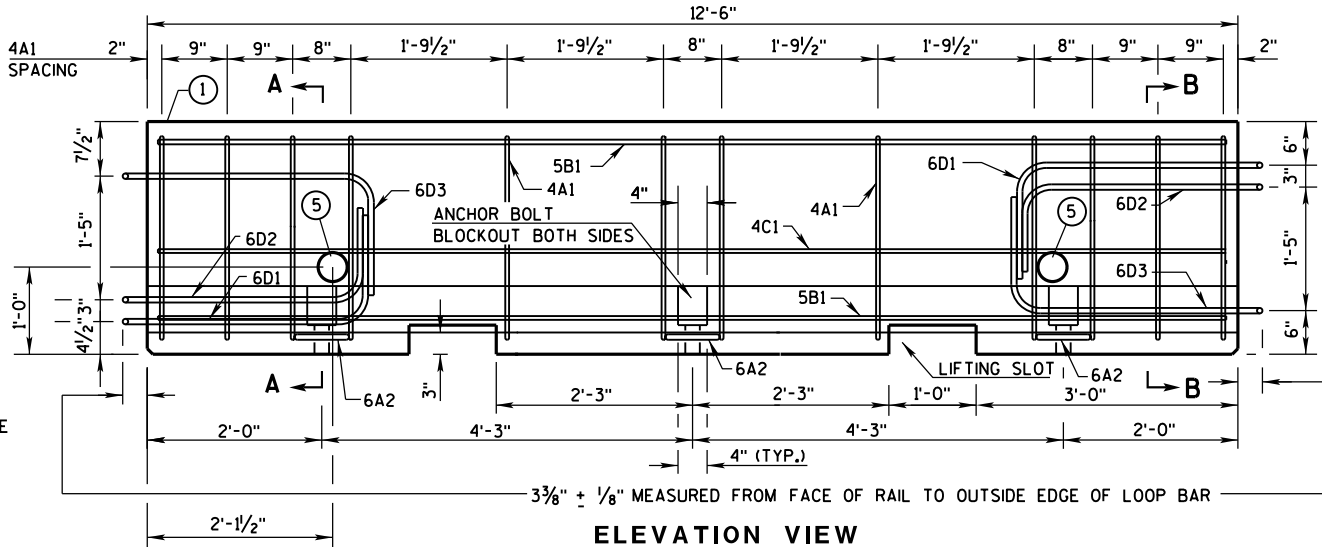
APPROVED
March 2018 /S/ Ahmet Demirel
DATE STATE ELECTRICAL 46 R
FHWA



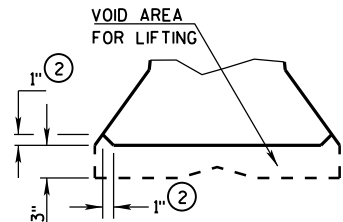
ANCHOR ON TRAFFIC SIDE (8)
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



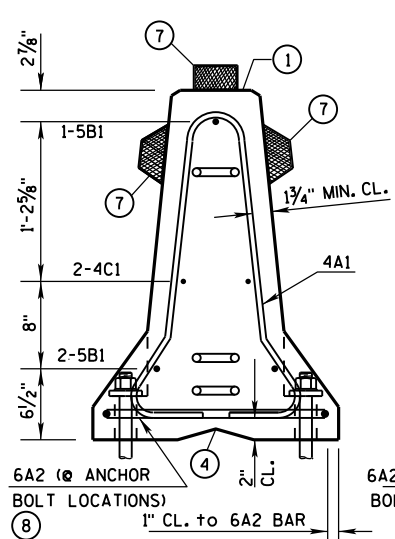
END VIEW



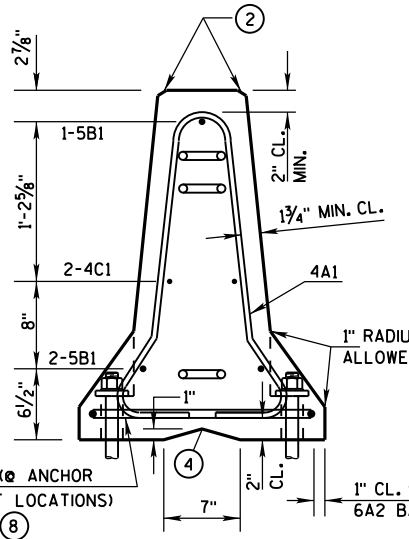
ELEVATION VIEW



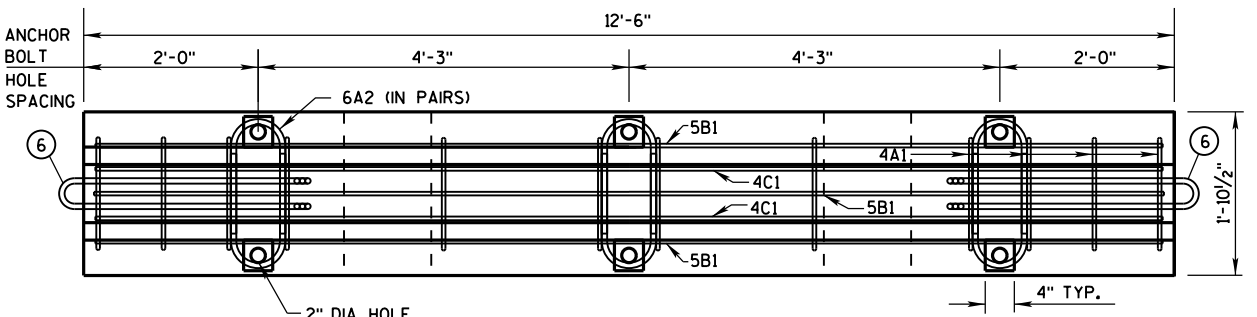
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

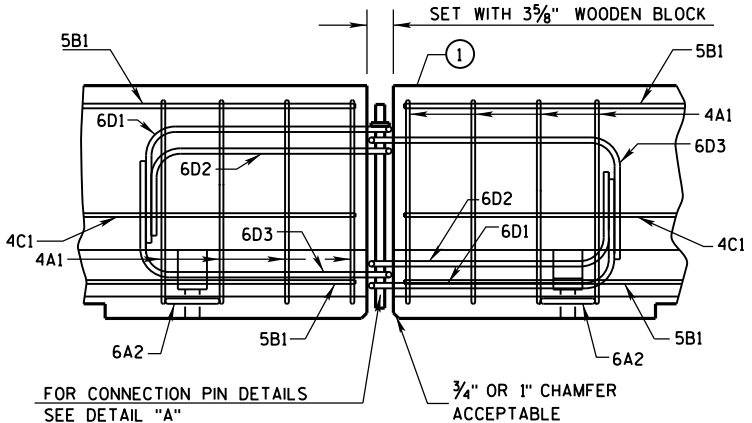


SECTION B-B
(STIRRUP PLACEMENT)

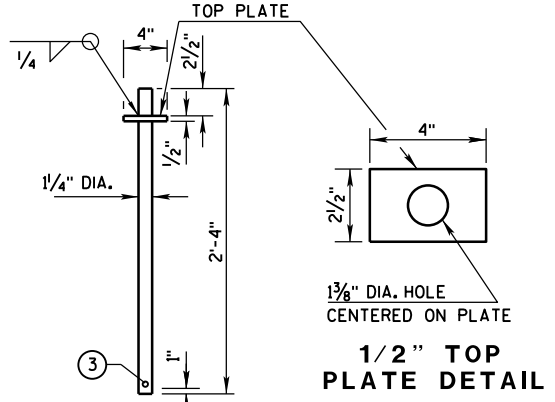


PLAN VIEW

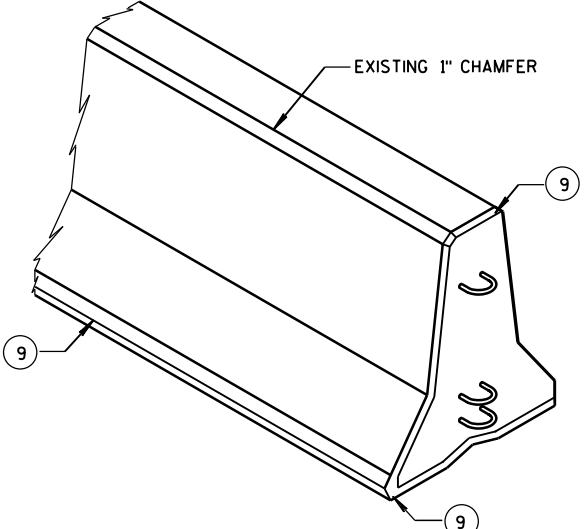
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

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

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

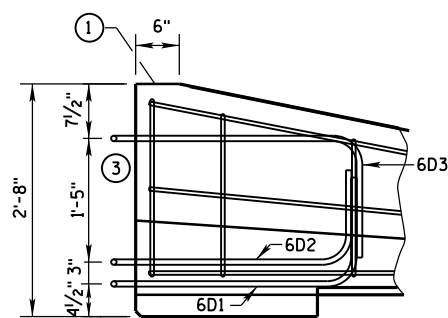
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
a. TYPE: WICBTP
b. MANUFACTURER
c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- ⑧ SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- ⑨ 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

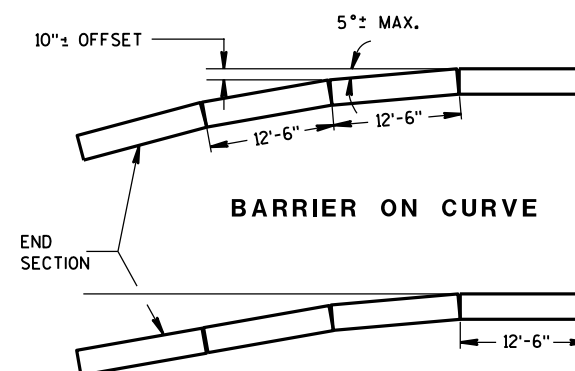
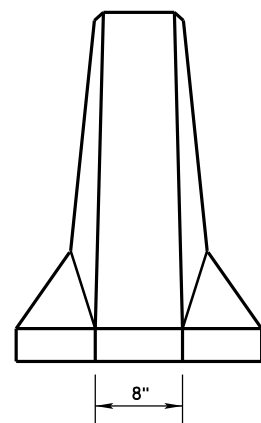
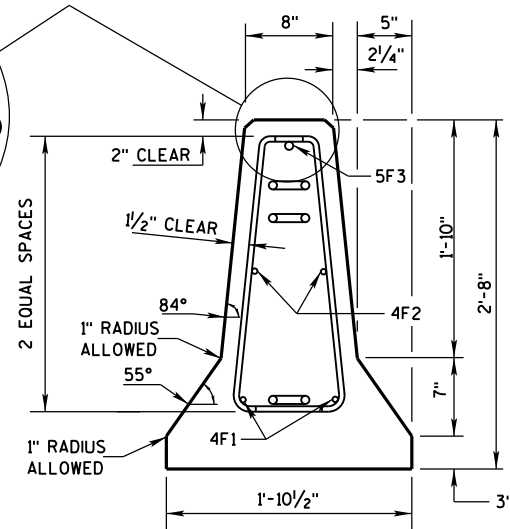
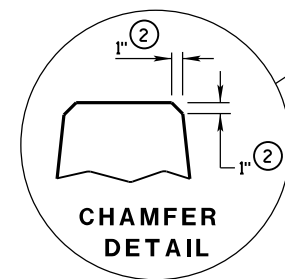
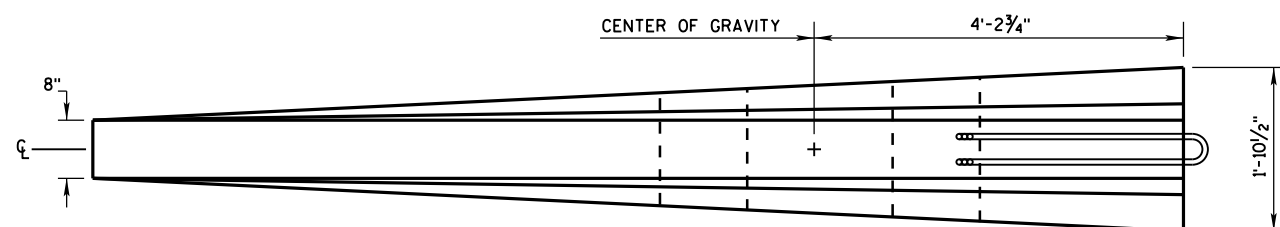
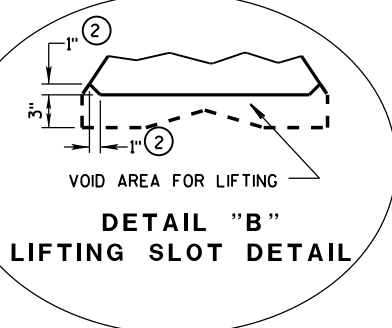
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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



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

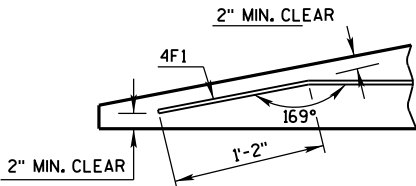
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁴⁸

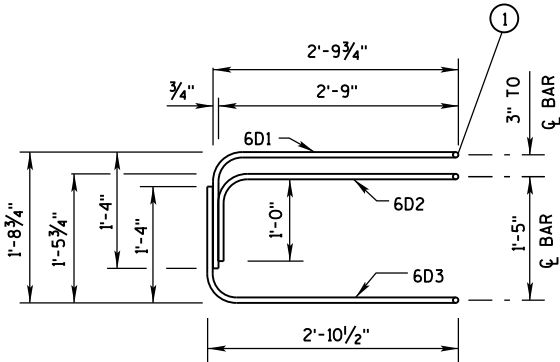
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

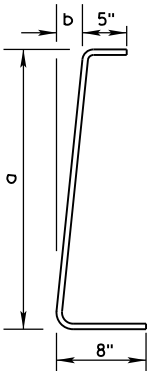
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

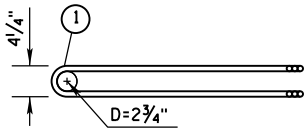
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

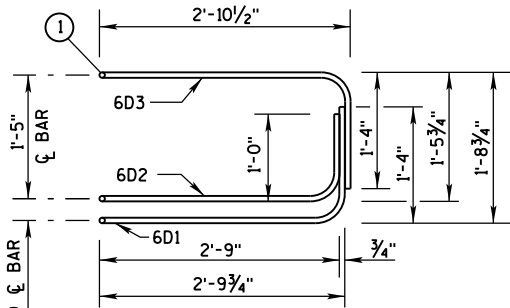
(PER 12'-6" BARRIER SECTION)

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

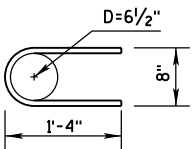


PLAN VIEW
LOOP BAR ASSEMBLY

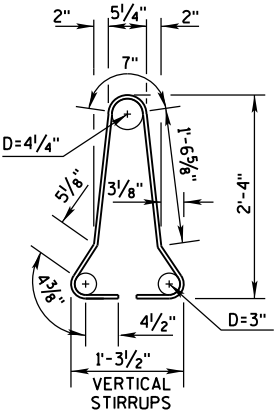
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

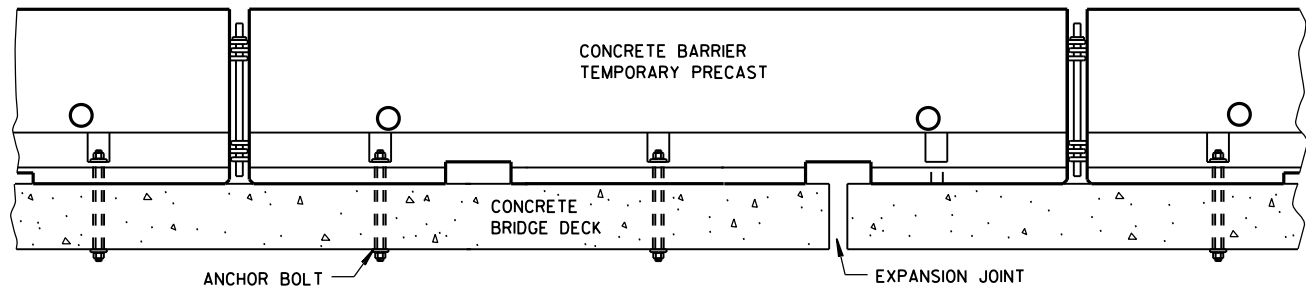
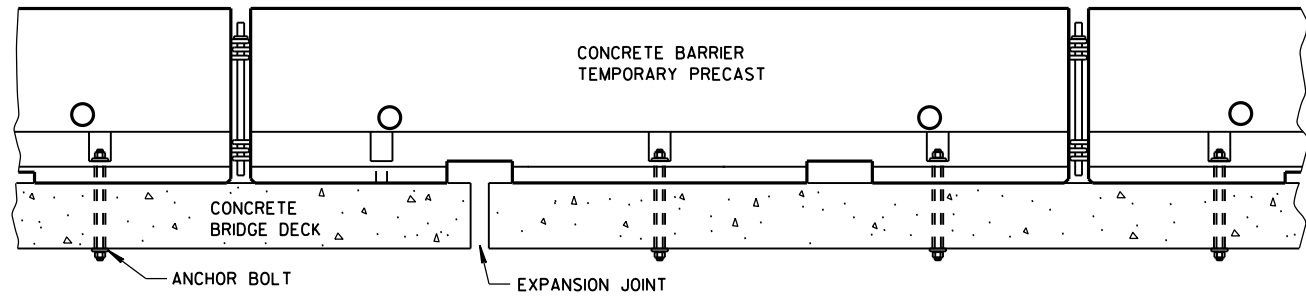


4A1

BARRIER SECTION

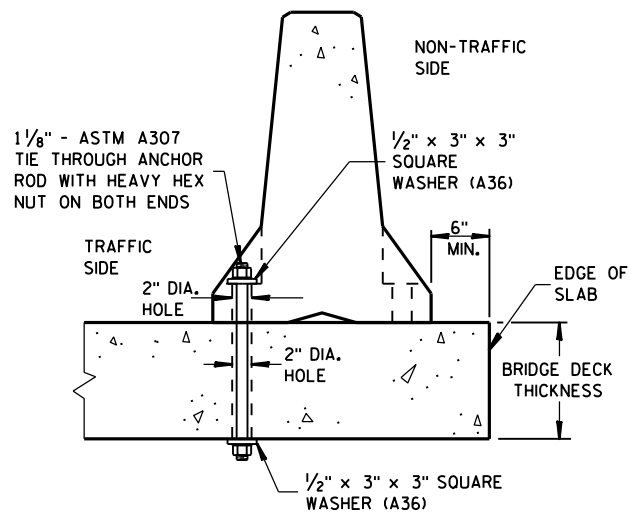
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



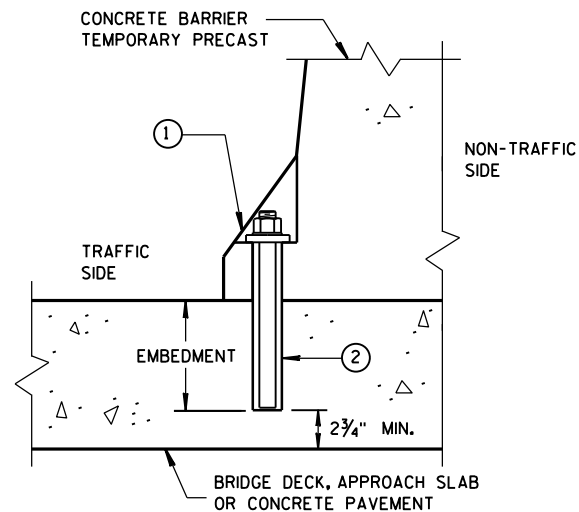
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



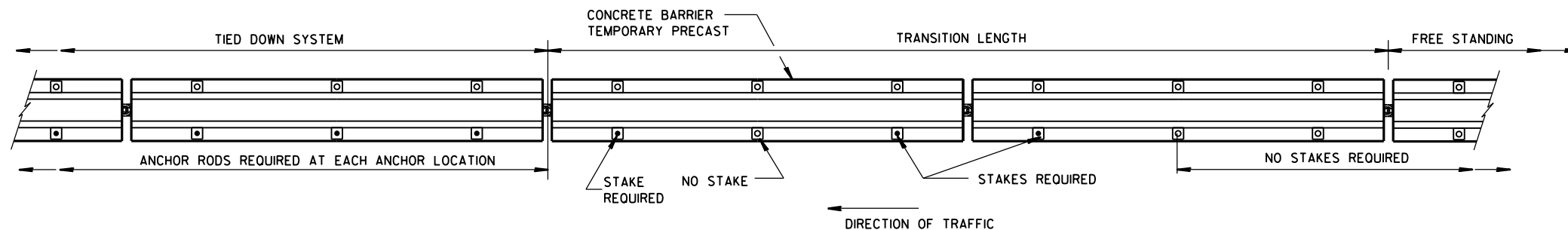
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

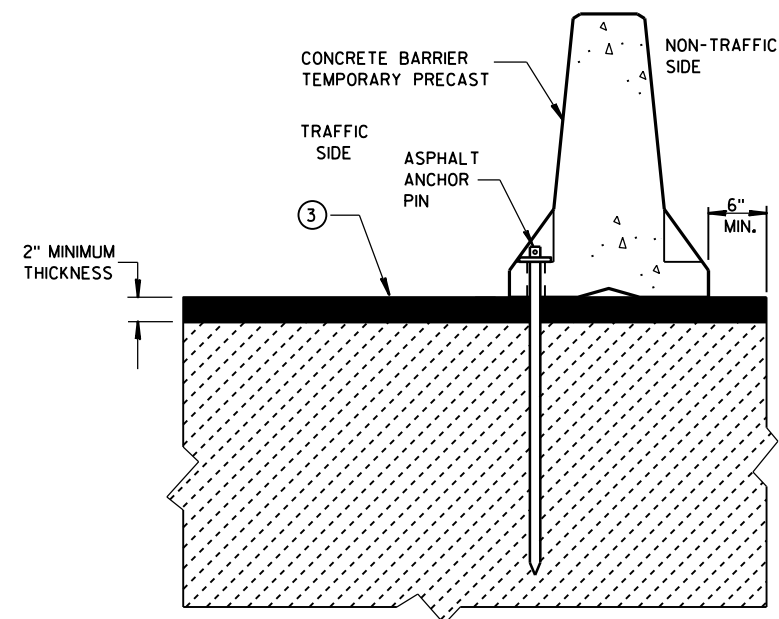
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

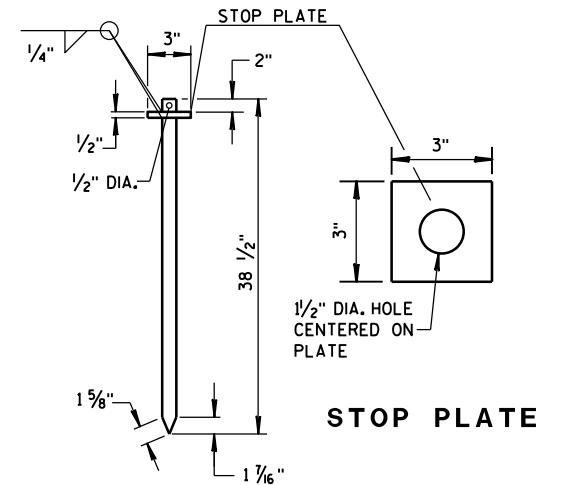
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

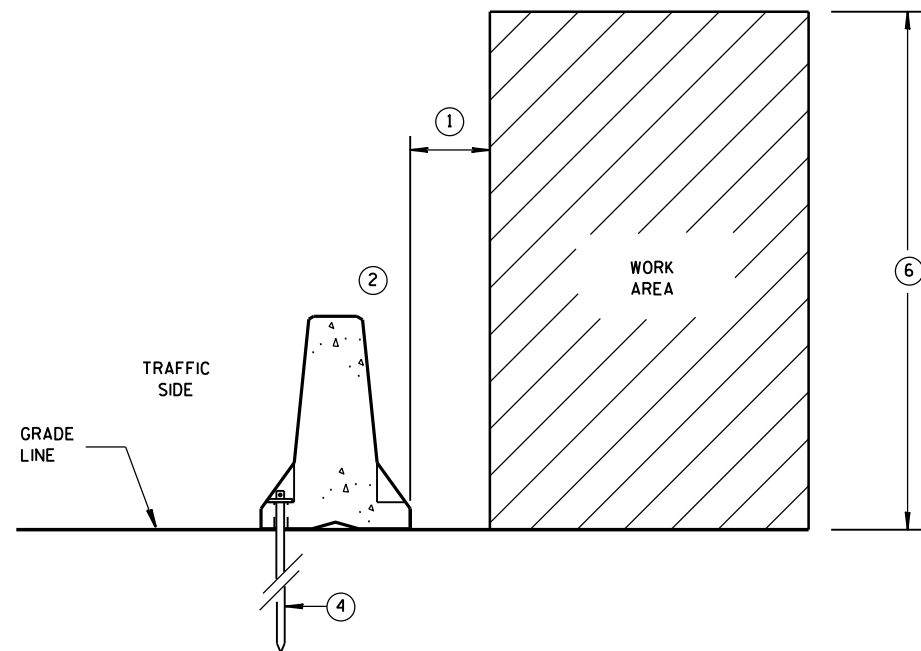


ASPHALT ANCHOR PIN

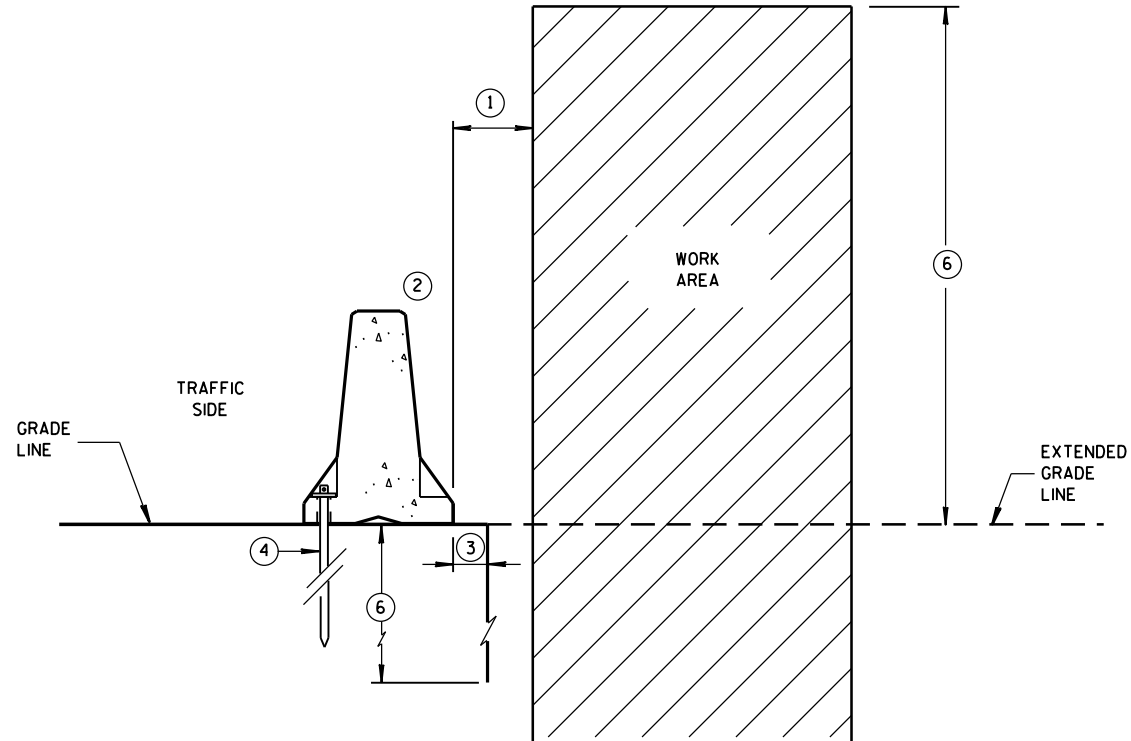
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

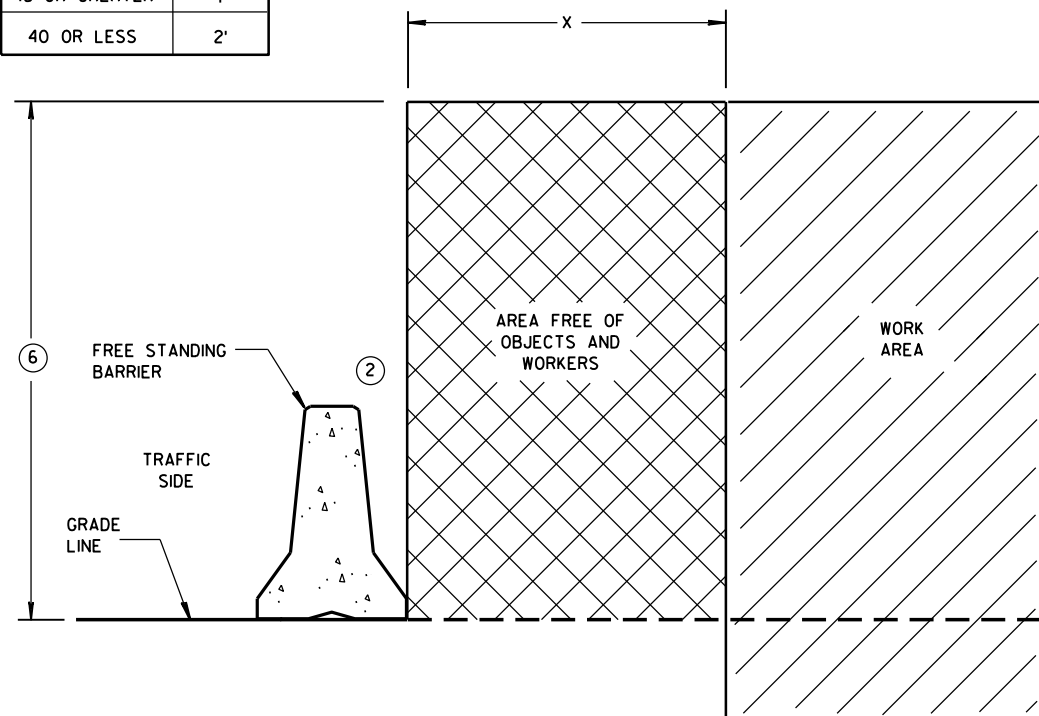


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

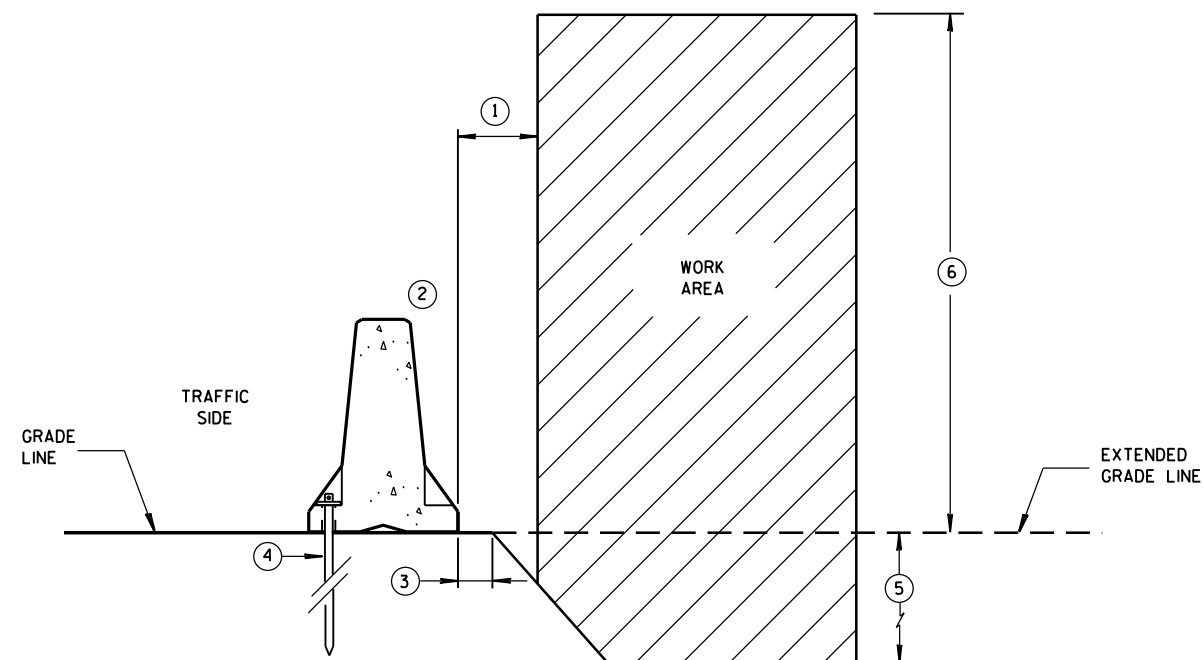
GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



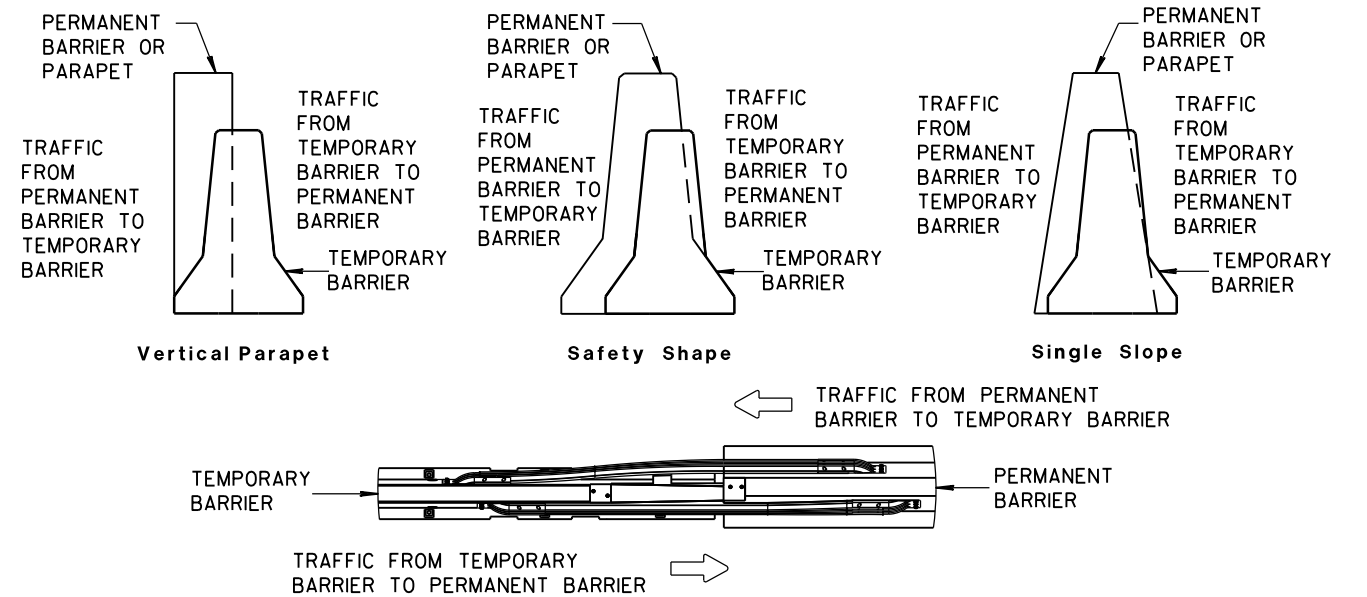
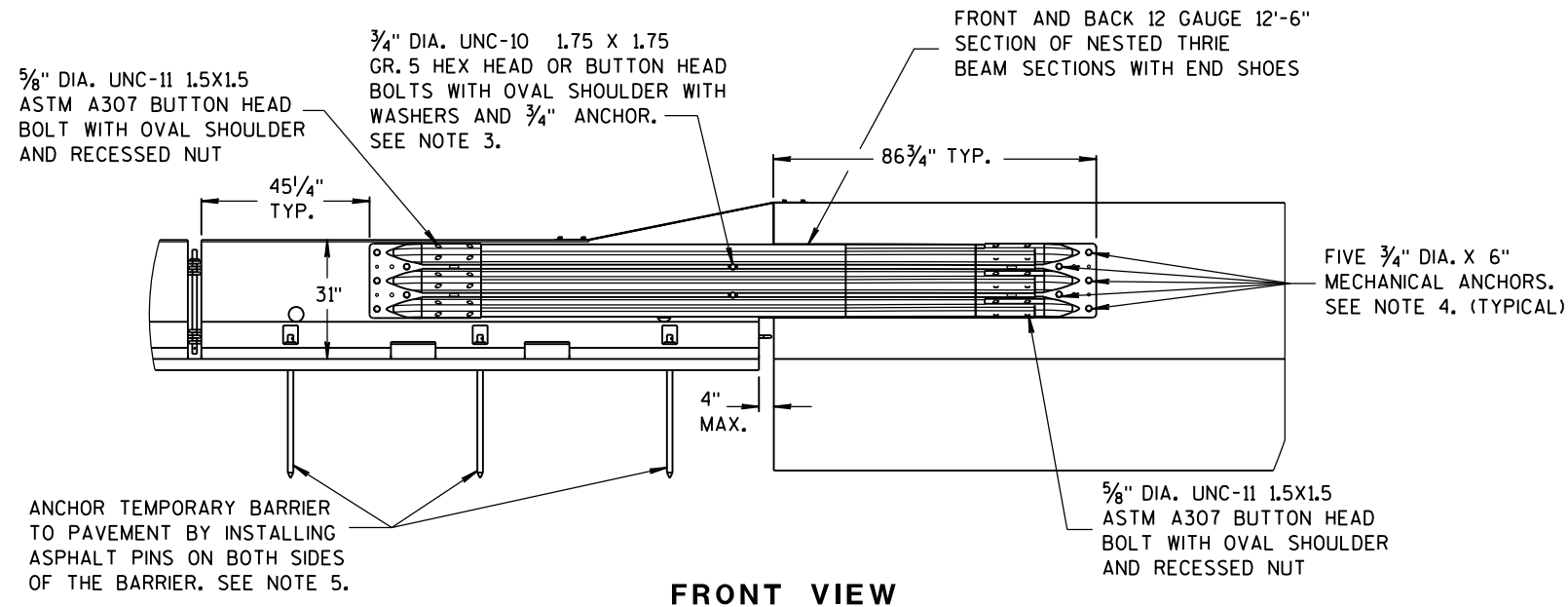
FREE STANDING BARRIER SPACE REQUIREMENTS



**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

NOTES

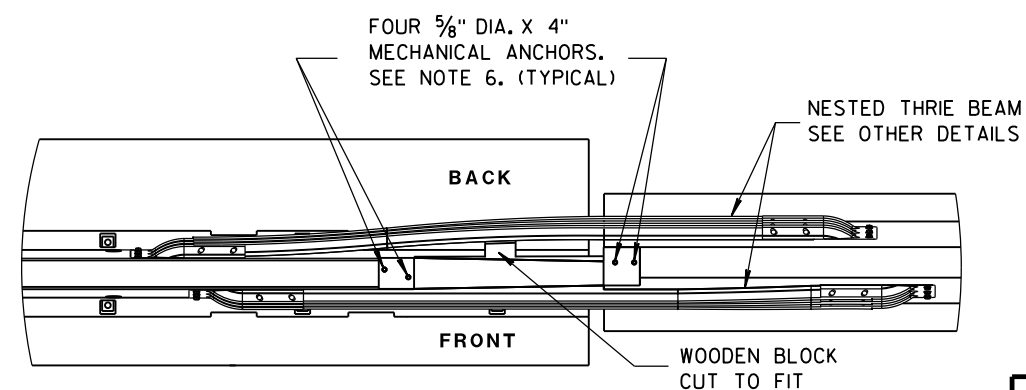
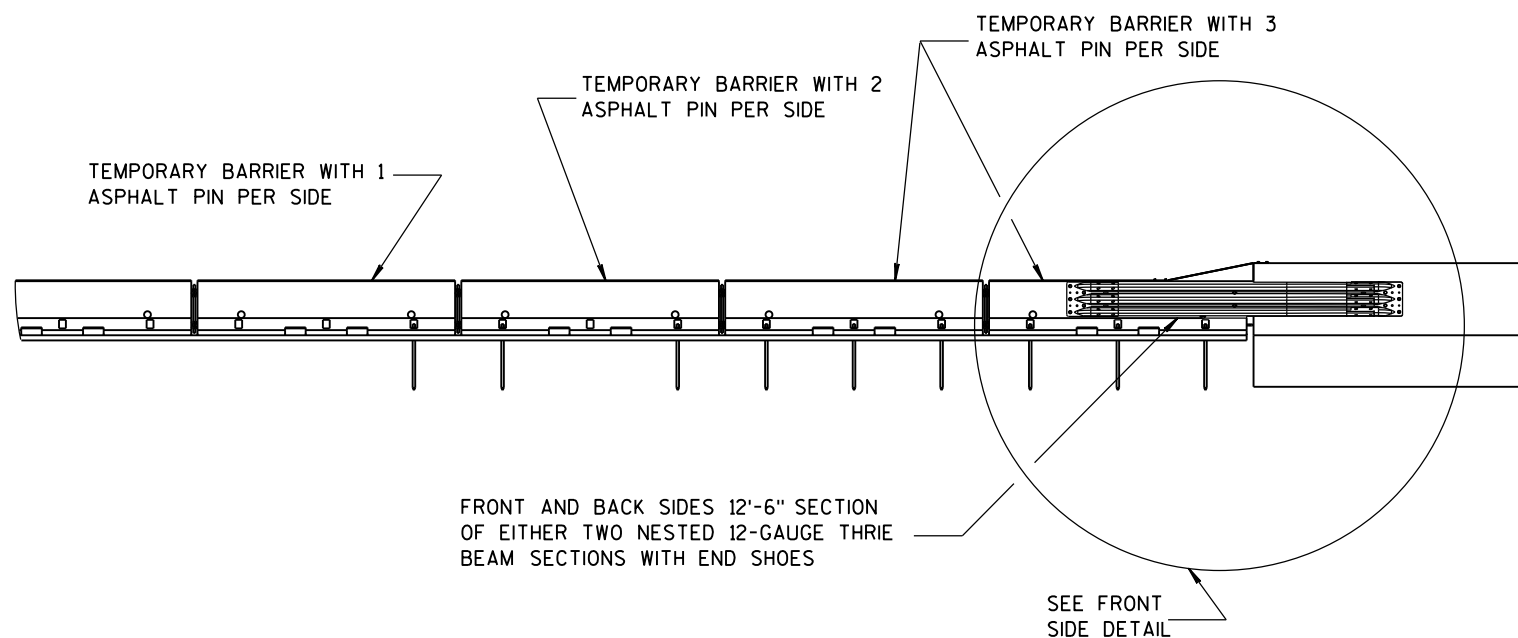
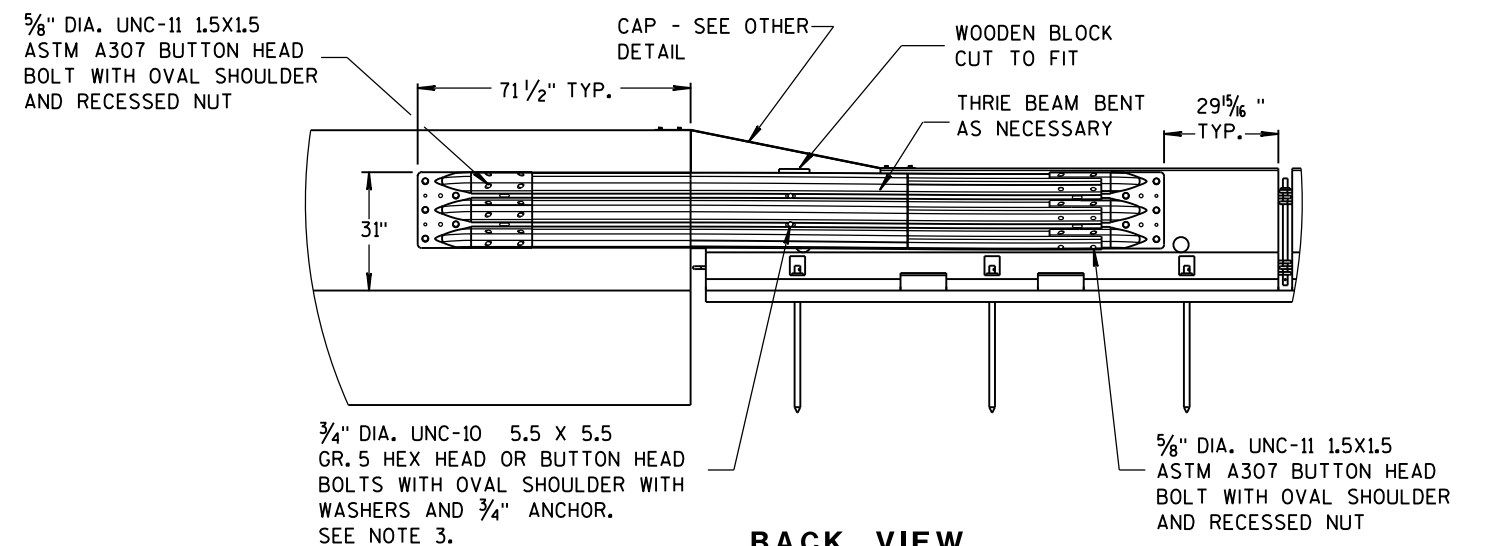
NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.

5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.

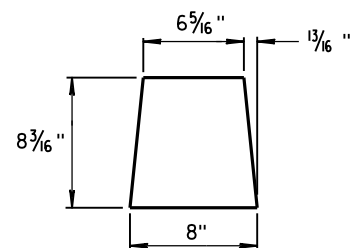
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



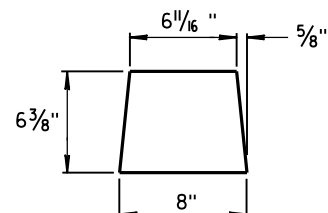
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

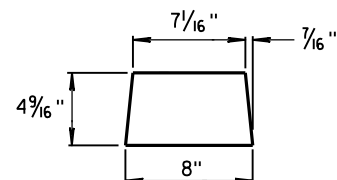
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



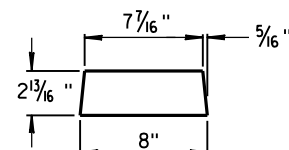
GUSSET 1



GUSSET 2

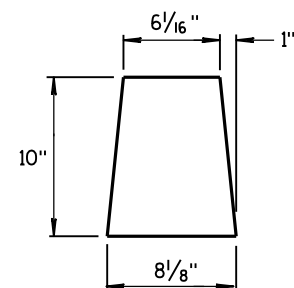


GUSSET 3

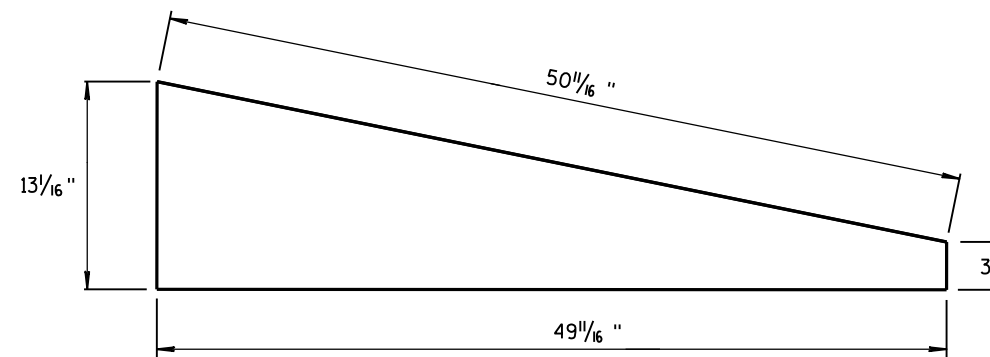


GUSSET 4

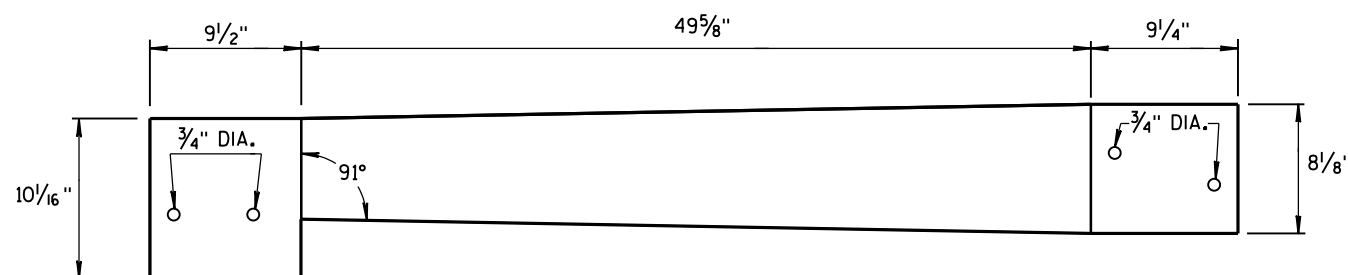
GUSSETS



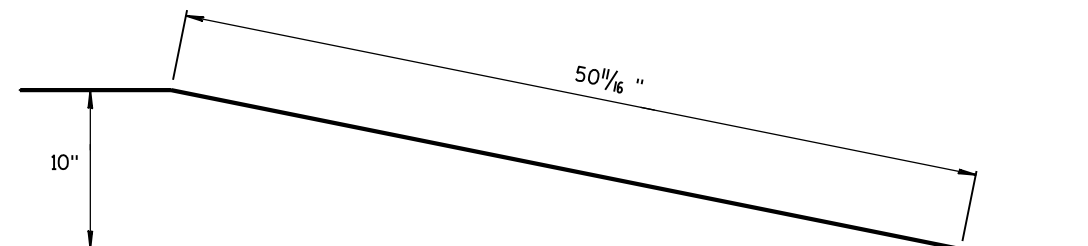
END PLATE



SIDE PLATE

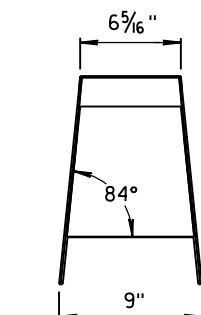
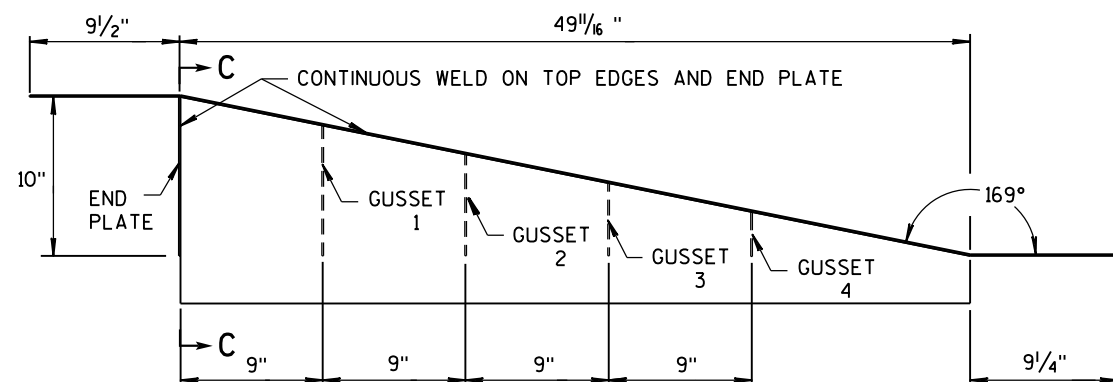
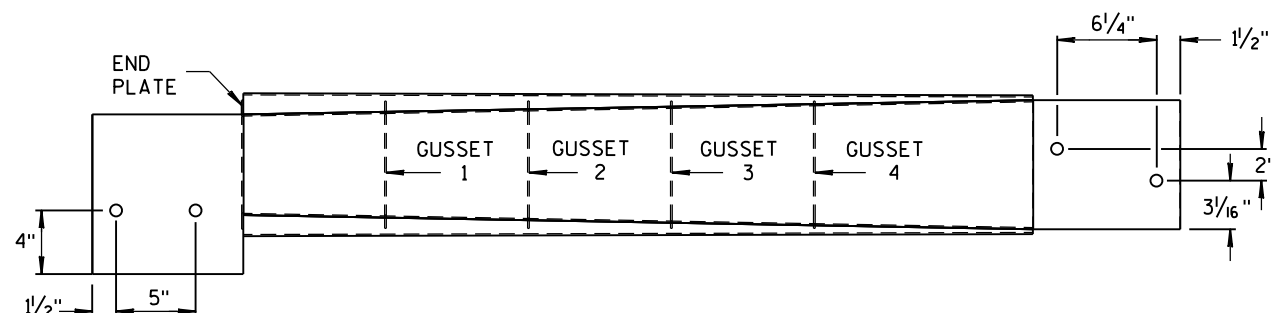


TOP PLATE



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

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



SECTION C-C

NOTES

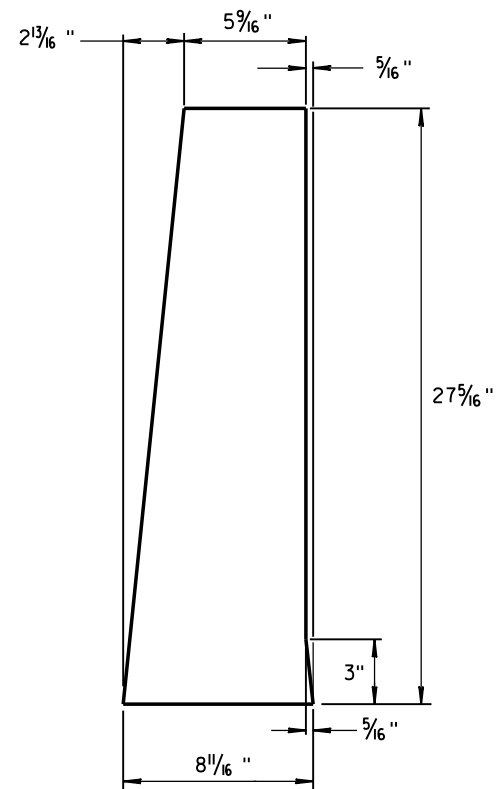
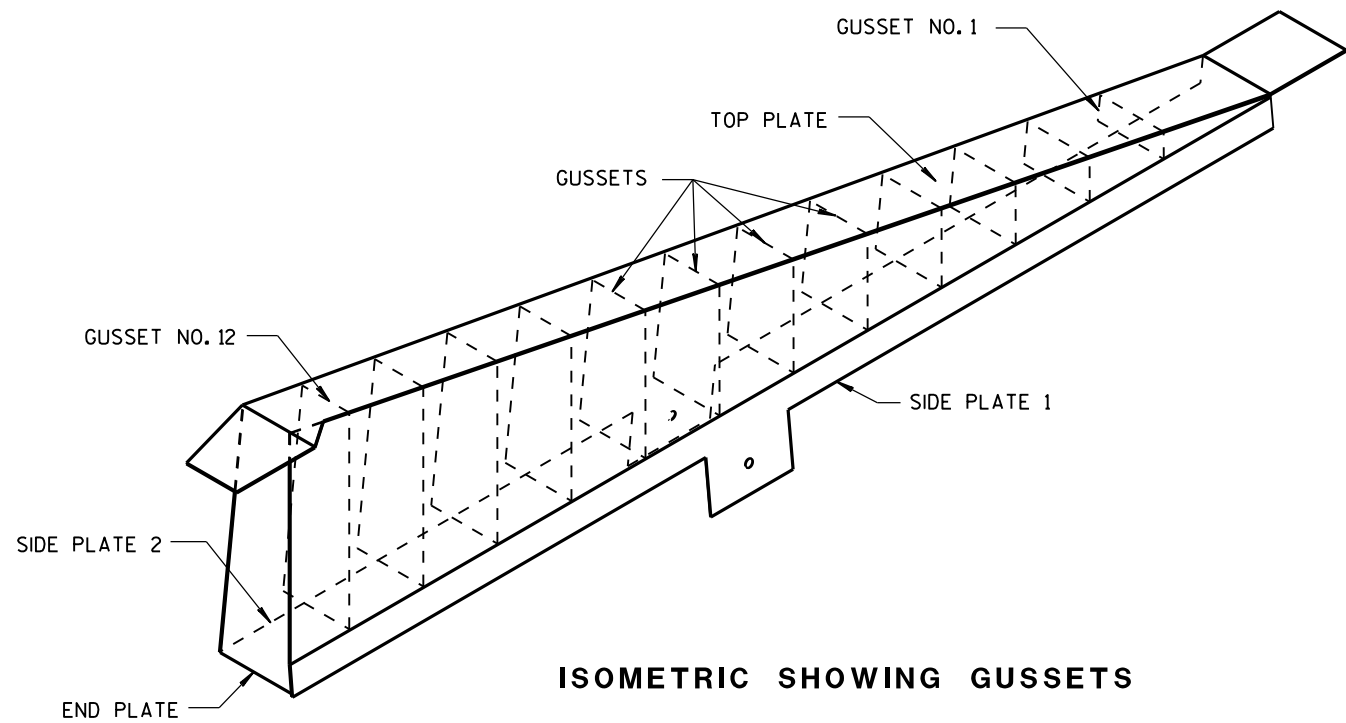
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

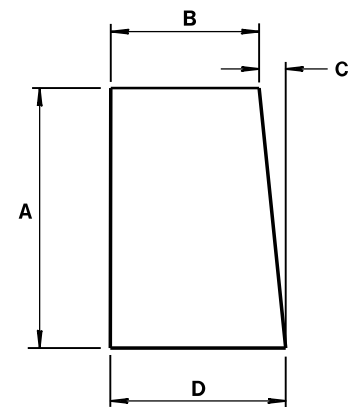
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

53



1/8" STEEL PLATE

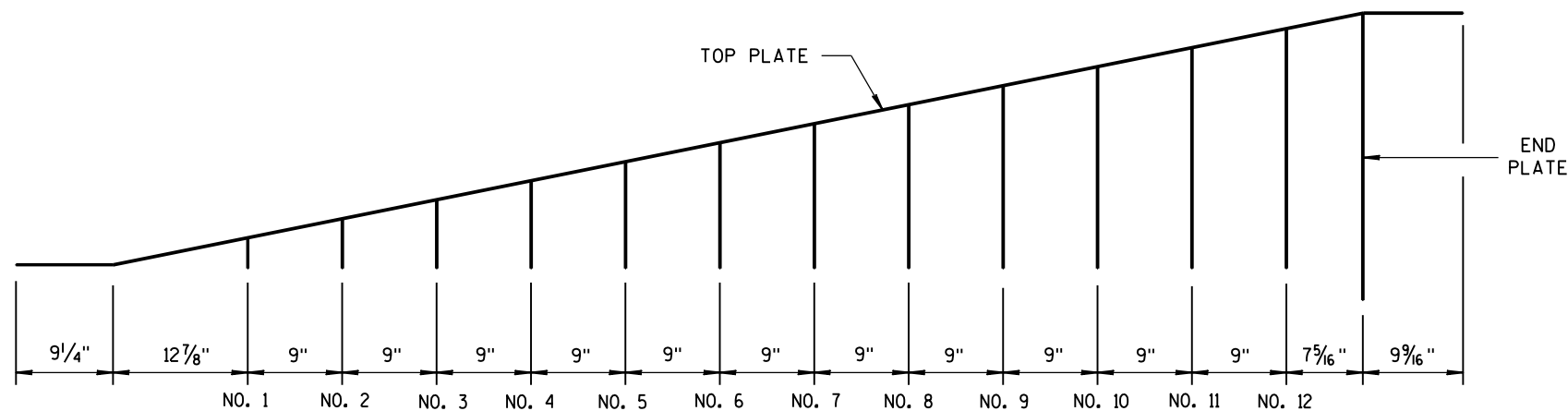


ALL GUSSETS 1/8" STEEL PLATE

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

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

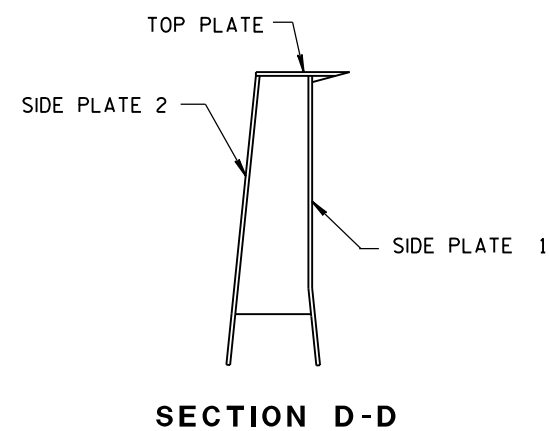
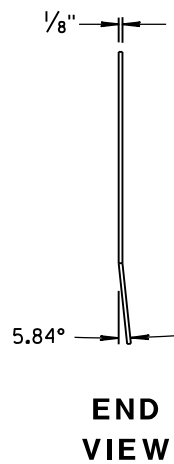
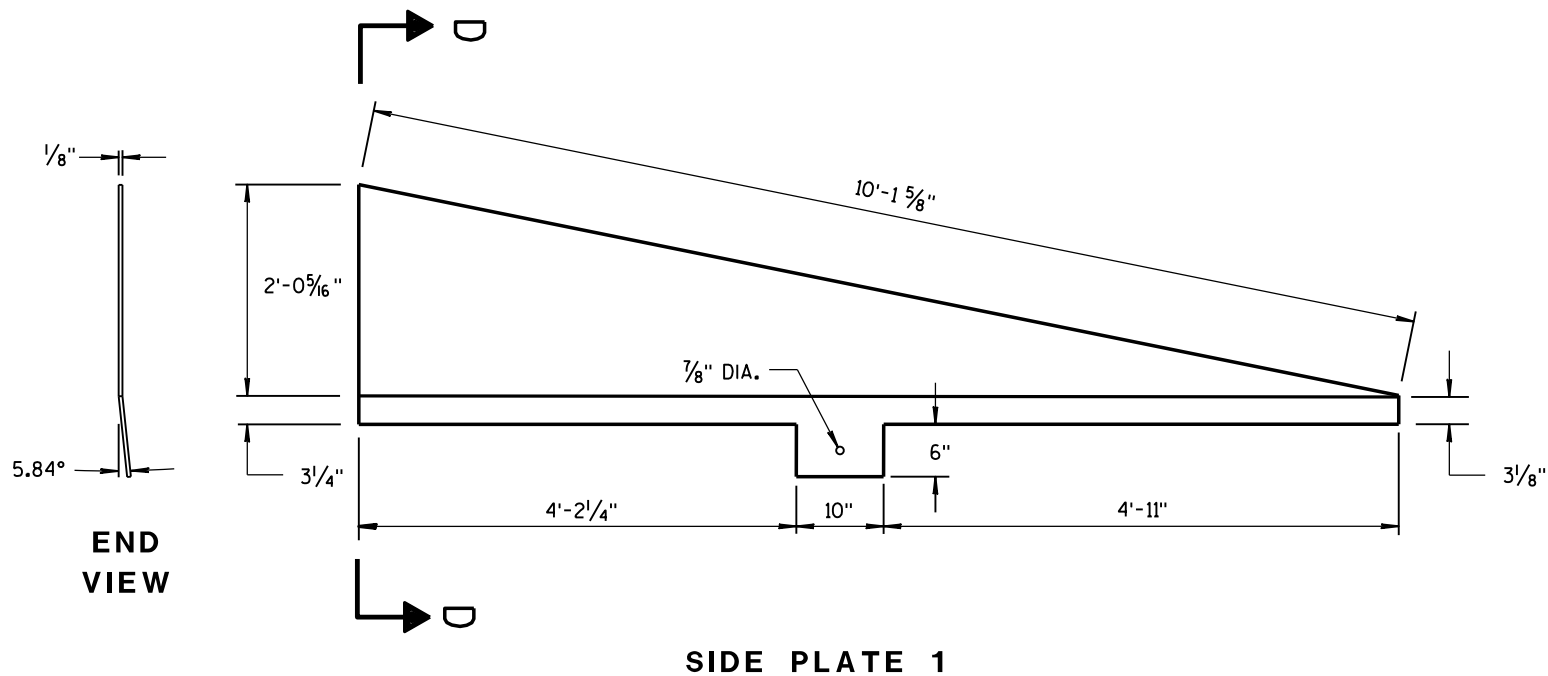
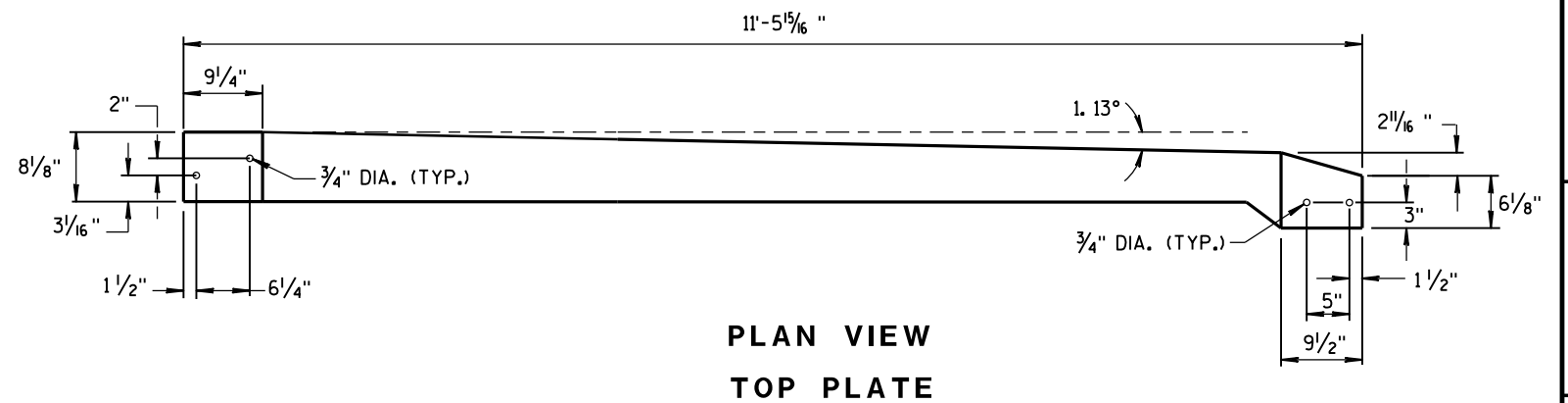
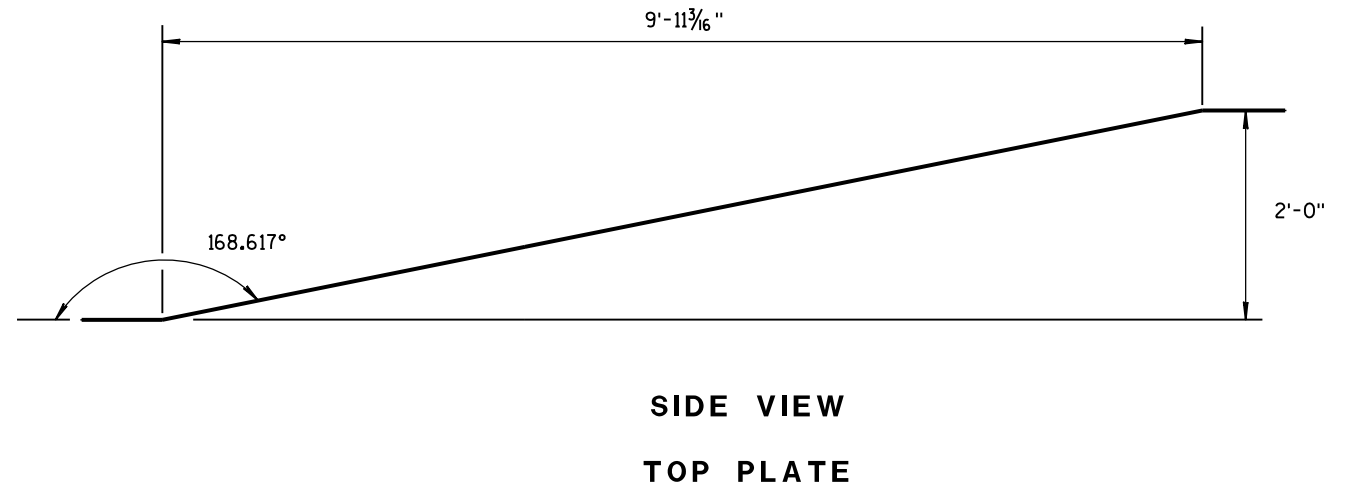
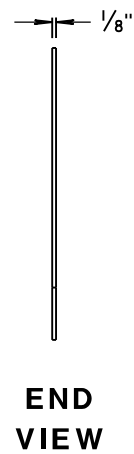
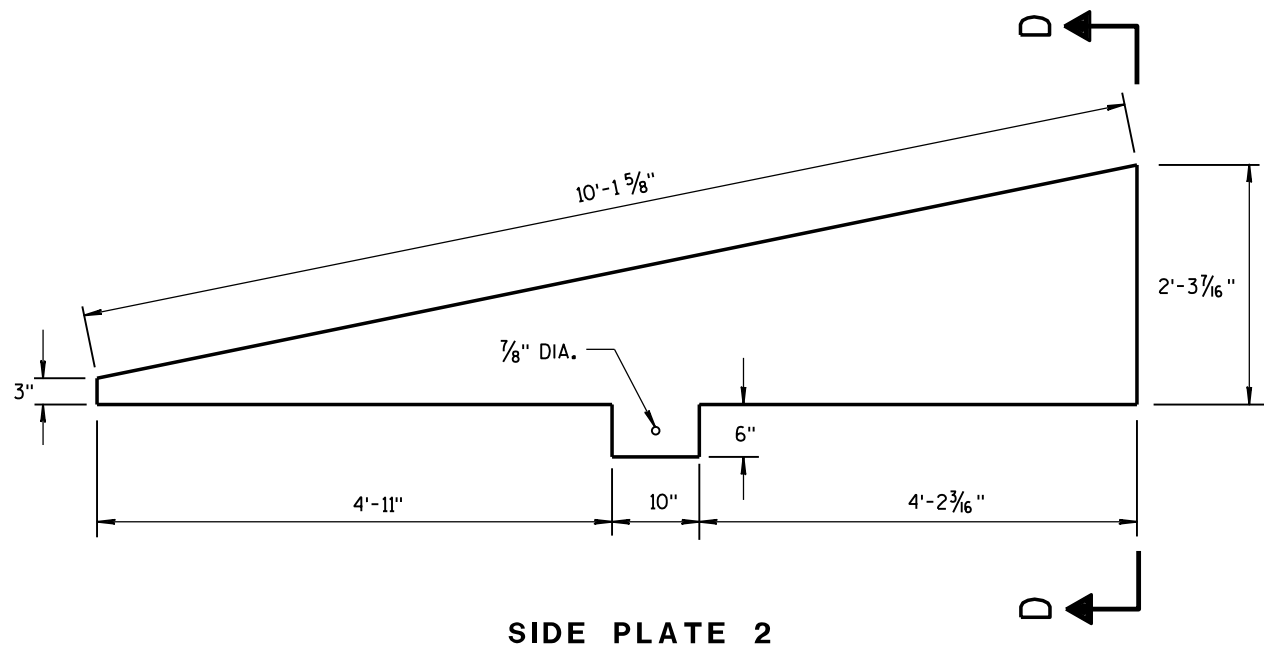
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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

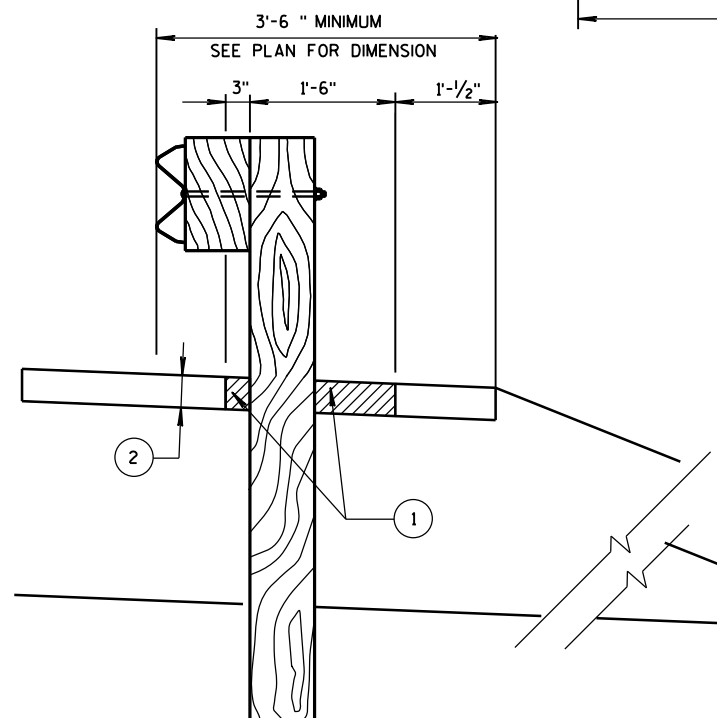
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

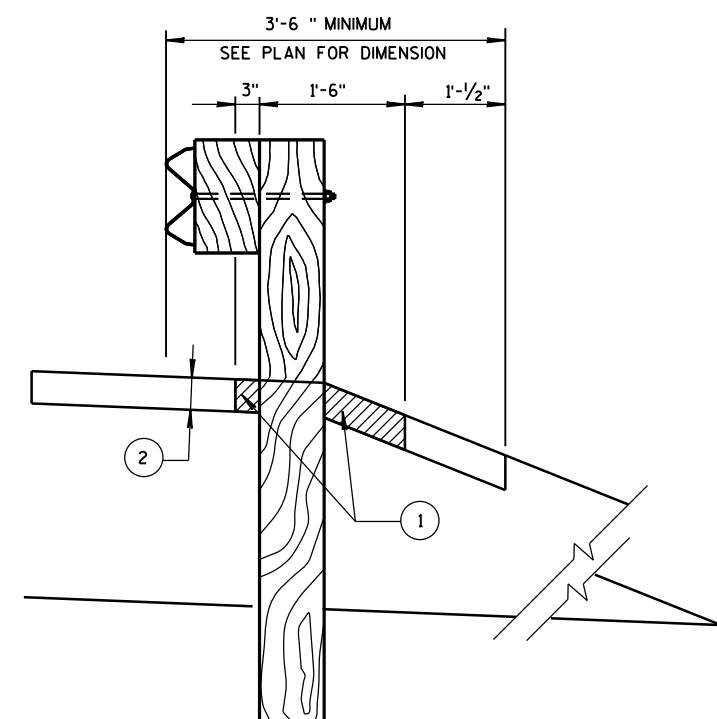


**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

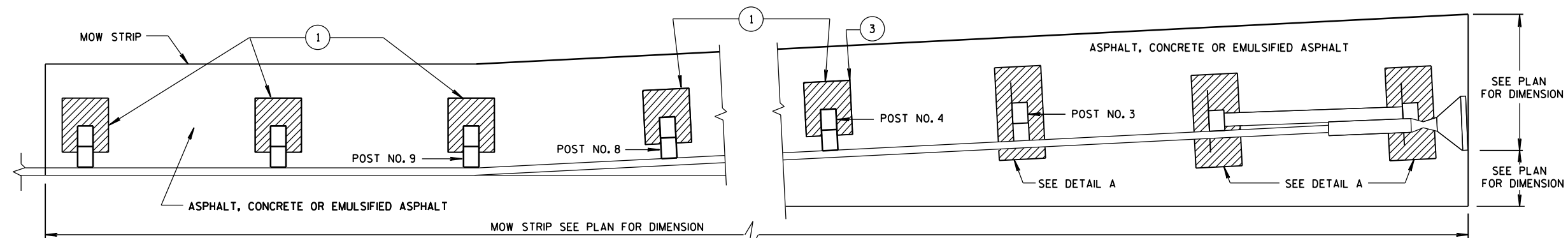
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARD	55	ENT
FHWA	UNIT SUPERV		



SECTION A-A

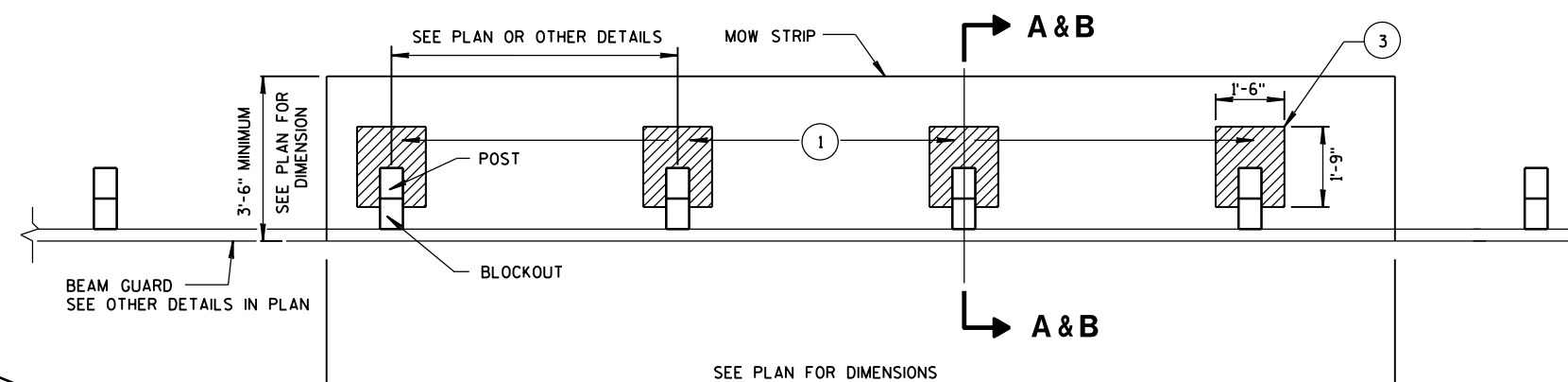


SECTION B-B



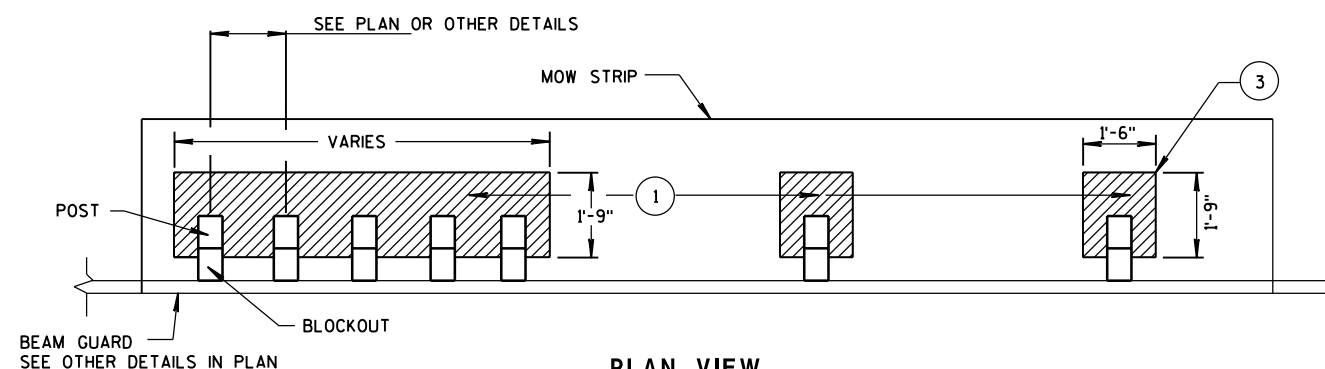
PLAN VIEW

MOW STRIP LAYOUT FOR ENERGY ABORING TERMINAL



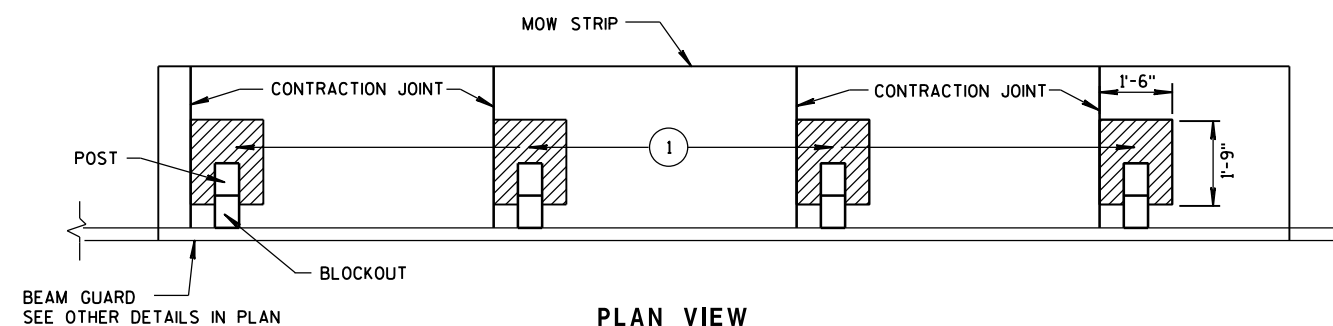
PLAN VIEW

MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



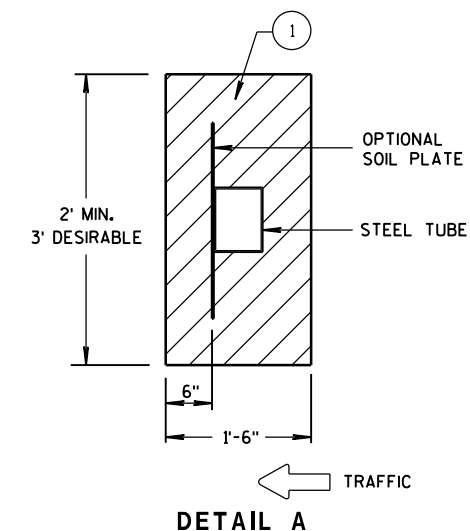
PLAN VIEW

MOW STRIP FOR TIGHT SPACING LAYOUT

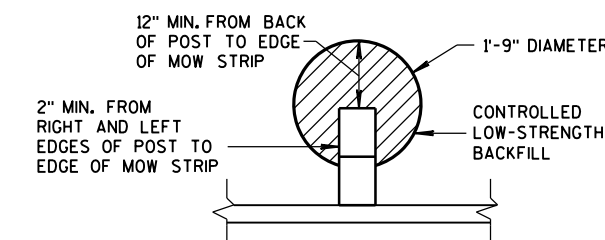


PLAN VIEW

JOINT PLACEMENT FOR CONCRETE MOW STRIP



DETAIL A

ALTERNATIVE HMA
MOW STRIP DESIGN

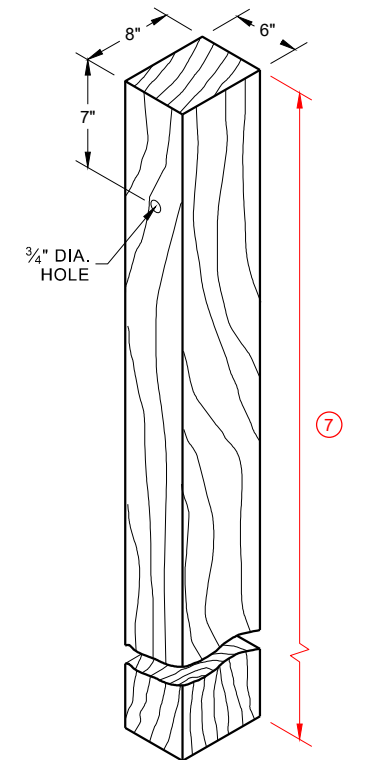
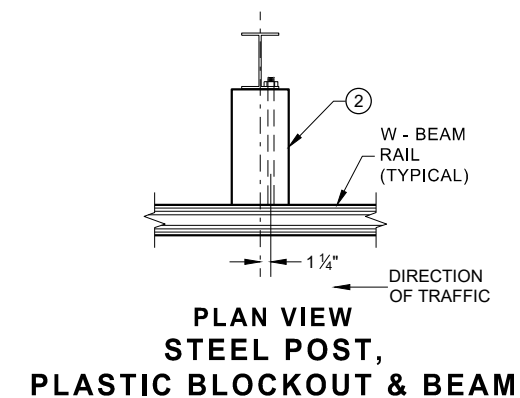
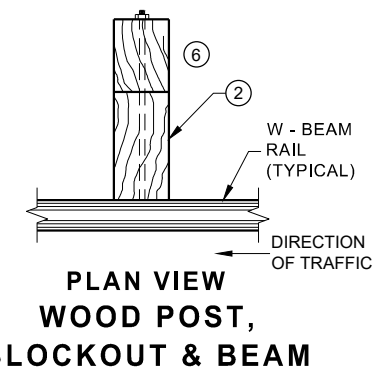
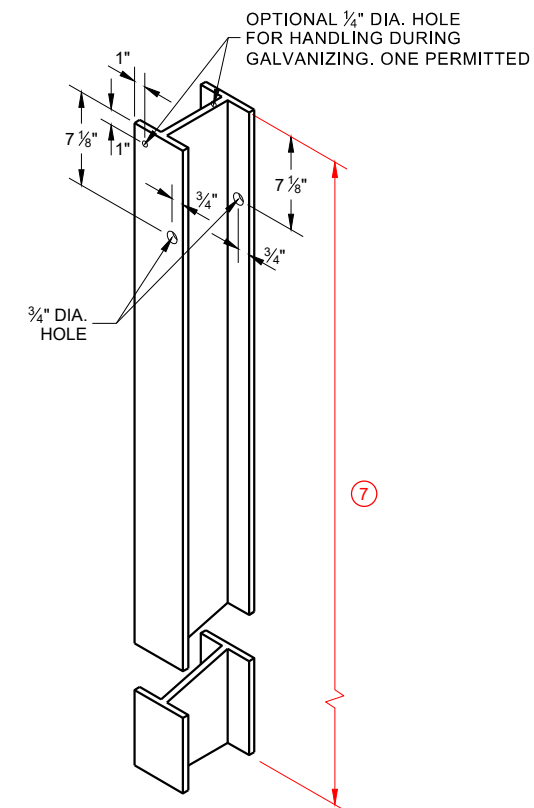
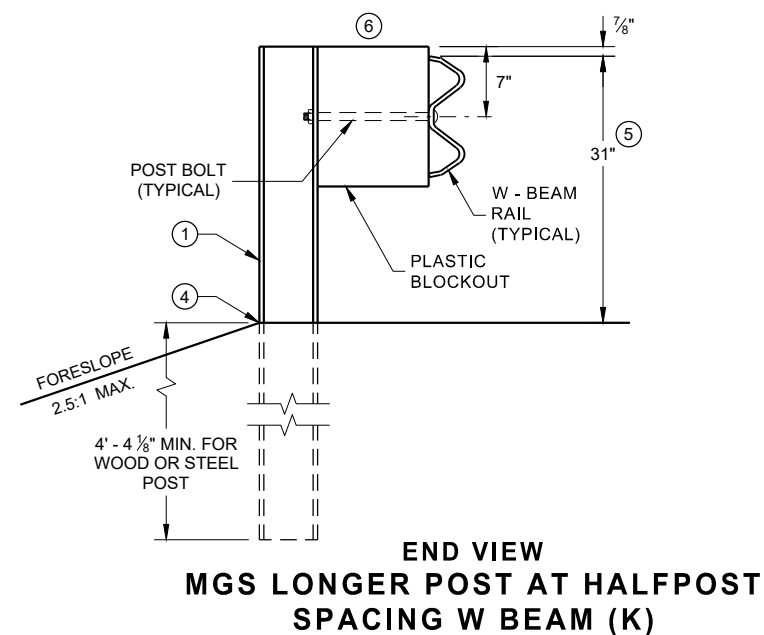
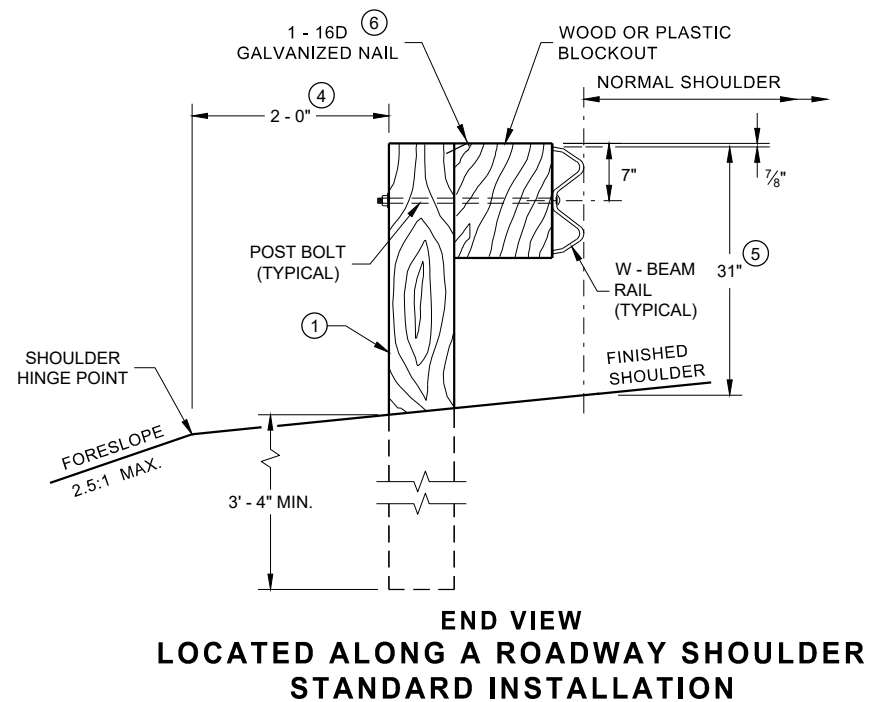
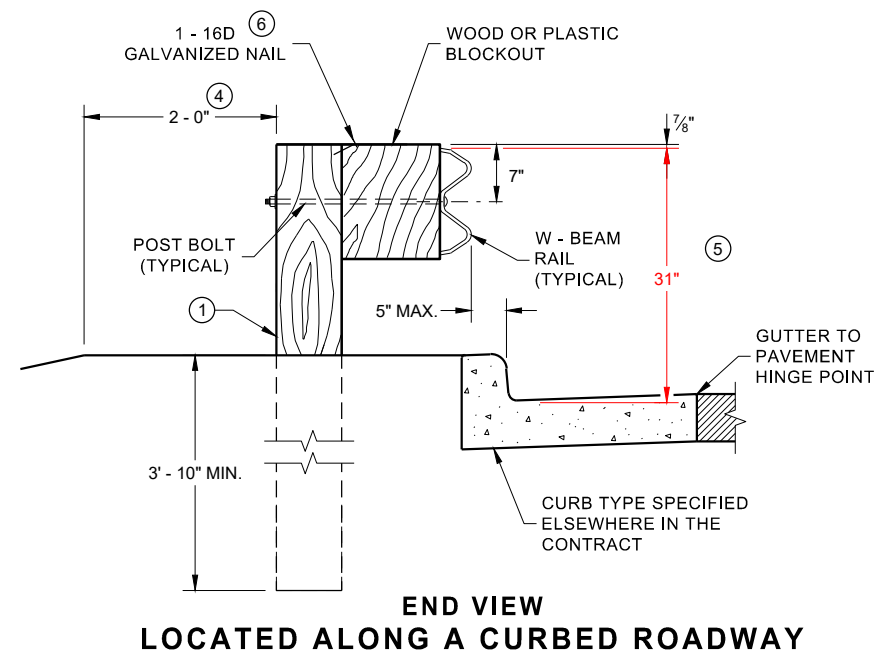
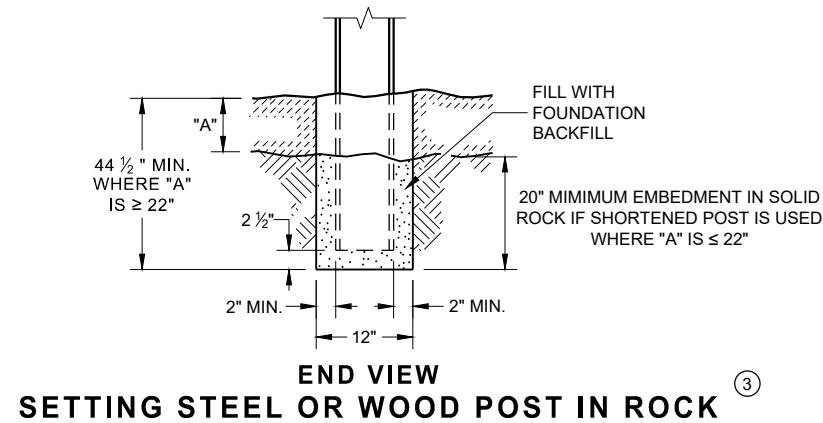
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT MOW STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS.)

GUARDRAIL MOW STRIP

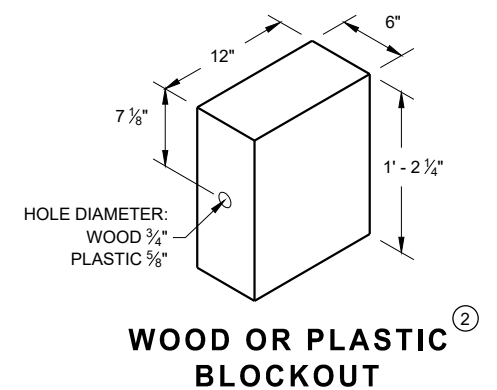
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 56 NT
FHWA ENGINEER

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

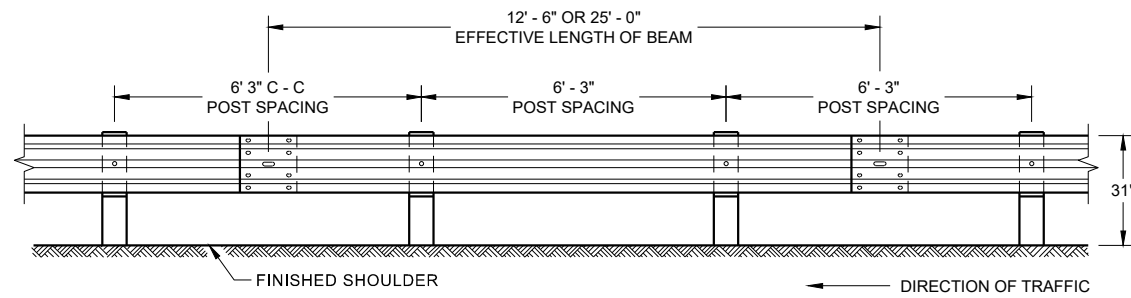


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

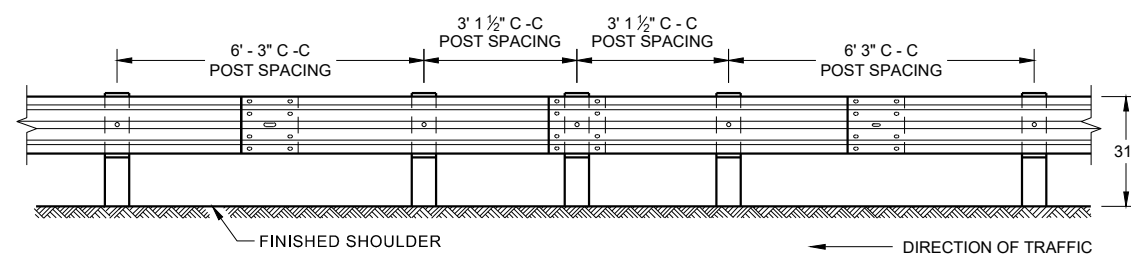


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

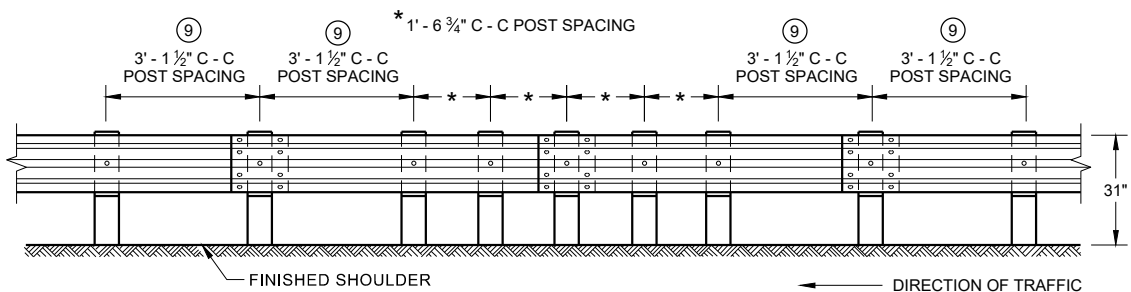
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 57



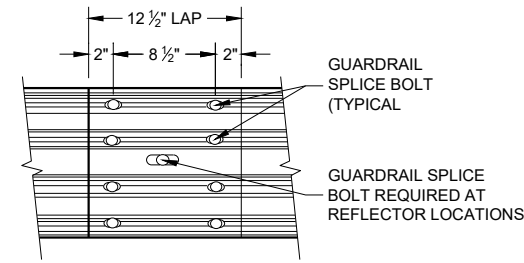
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



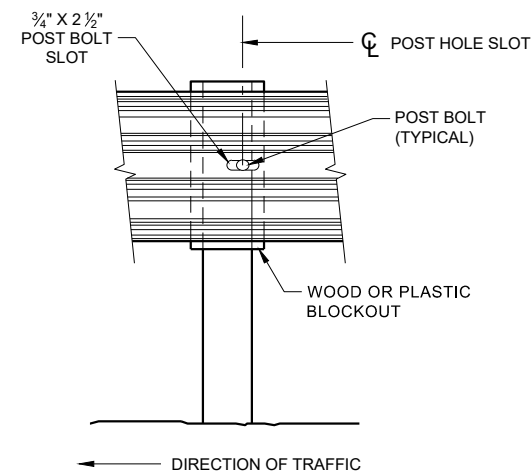
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



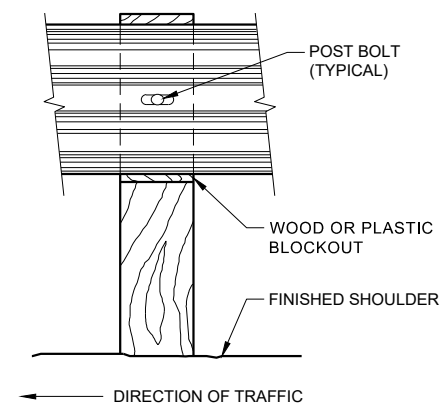
**FRONT VIEW
QUARTER POST SPACING (QS)**



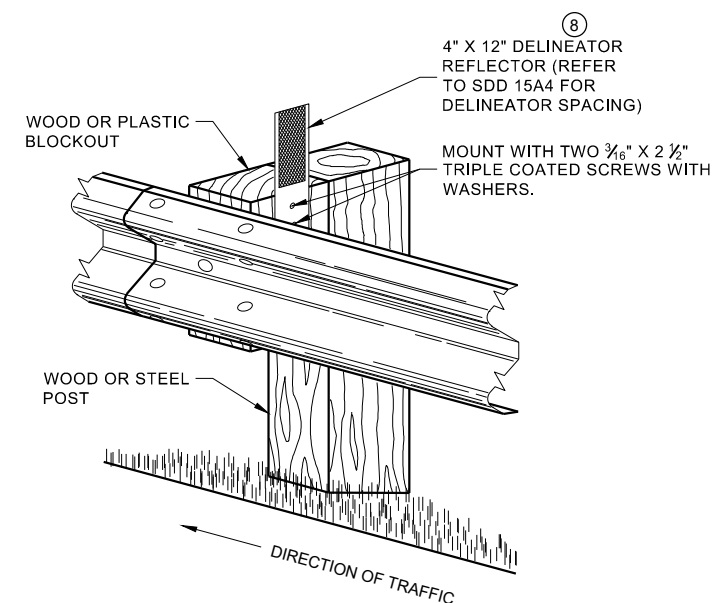
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



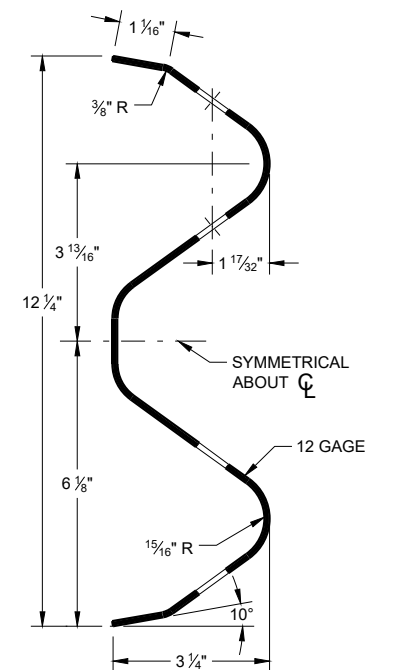
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

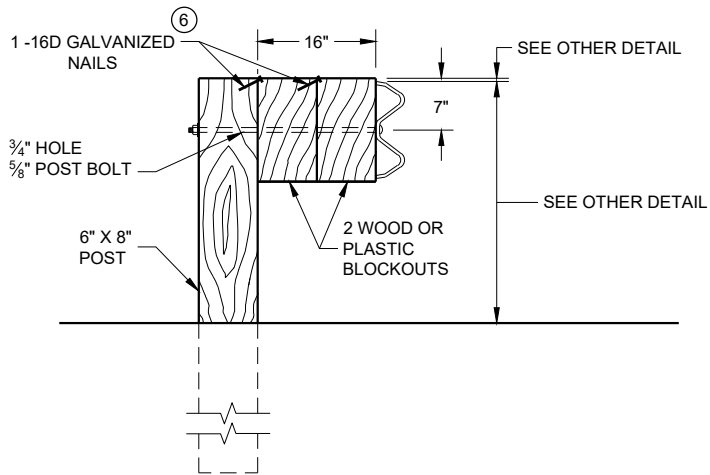
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

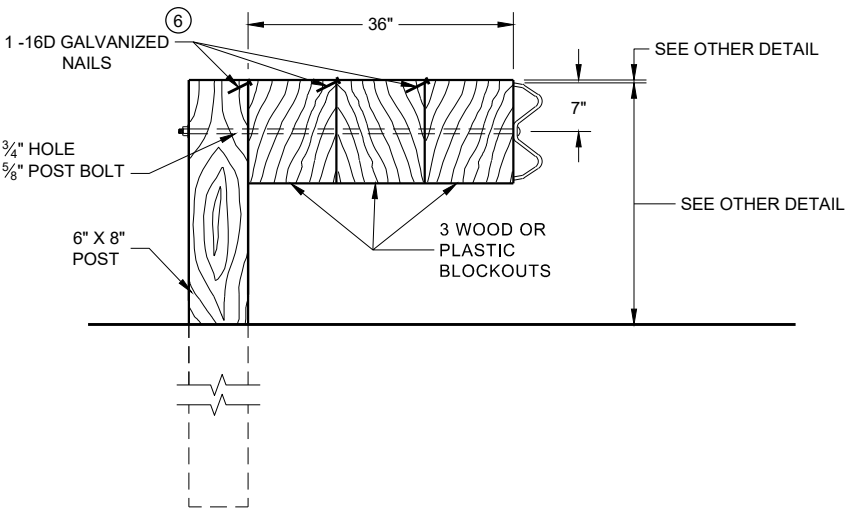
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

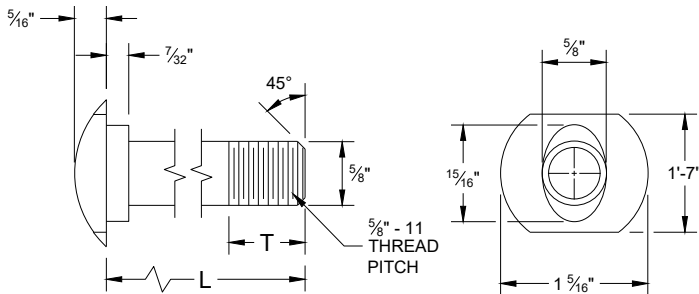
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

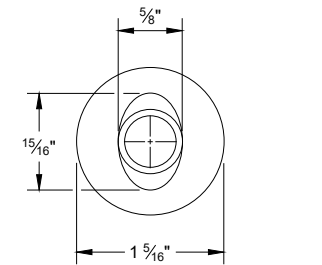
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

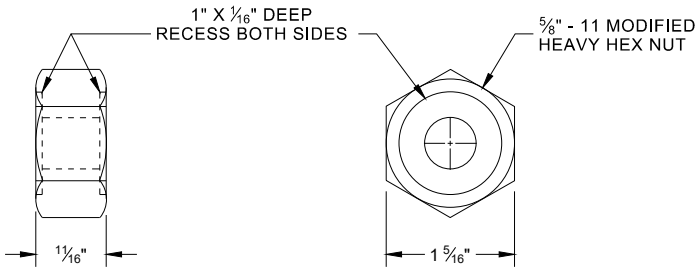


POST BOLT TABLE

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

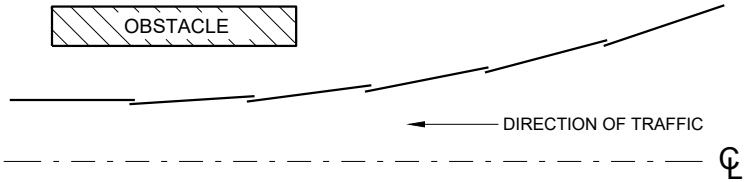


ALTERNATE BOLT HEAD

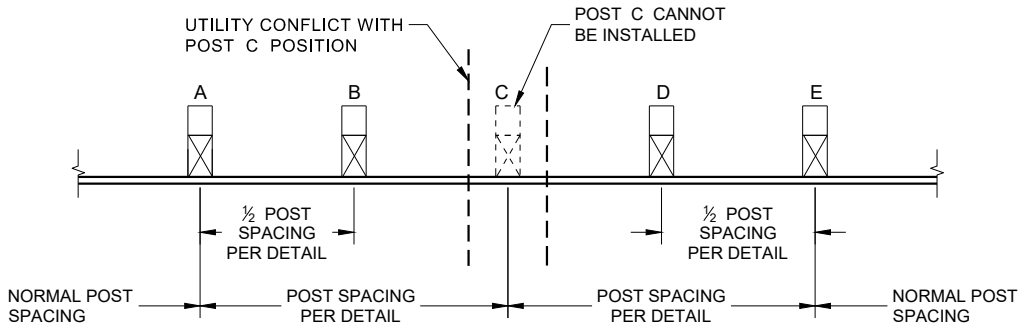


POST BOLT, SPLICE BOLT AND RECESS NUT

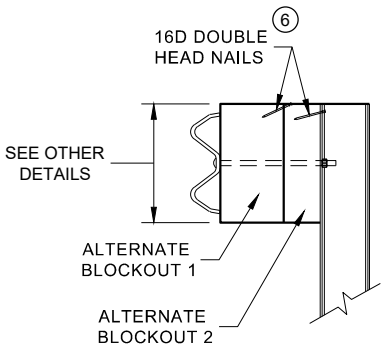
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



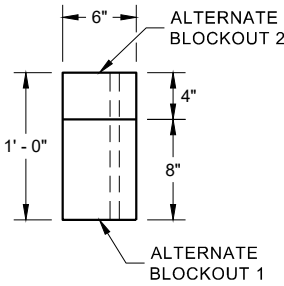
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

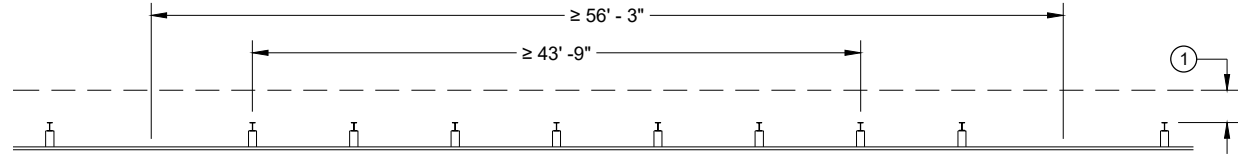


PLAN VIEW

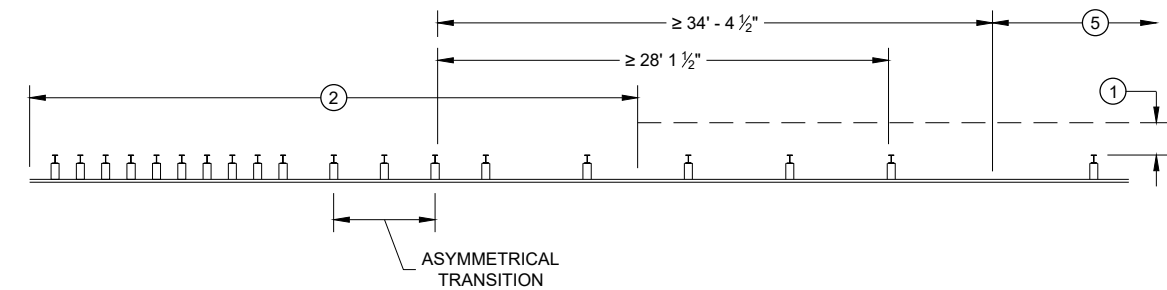
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

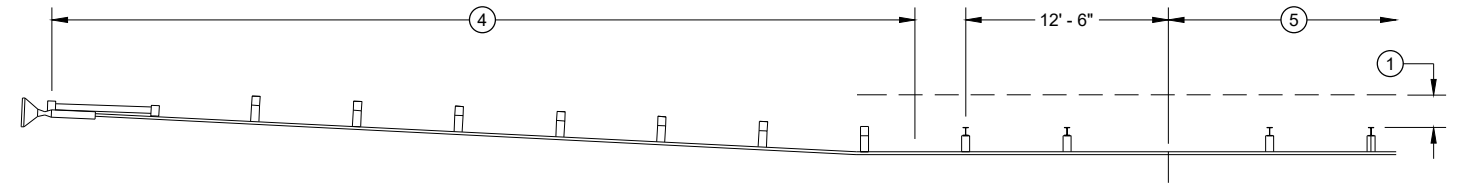
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



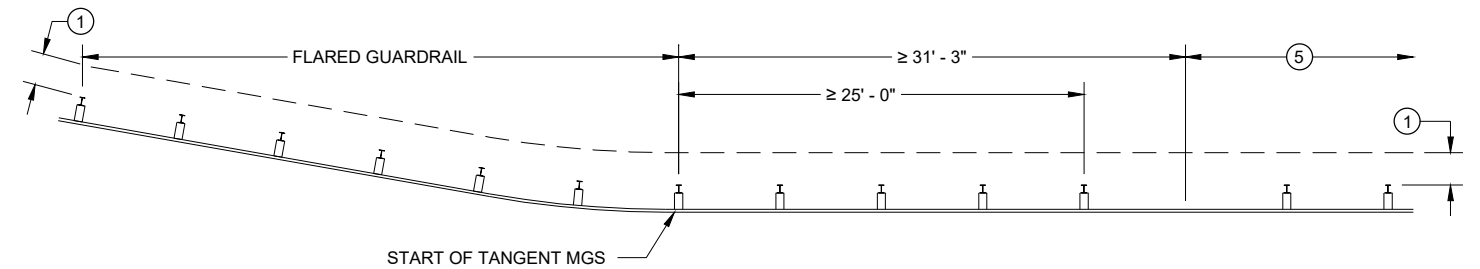
MISSING POST IN NORMAL BEAM GUARD RUN



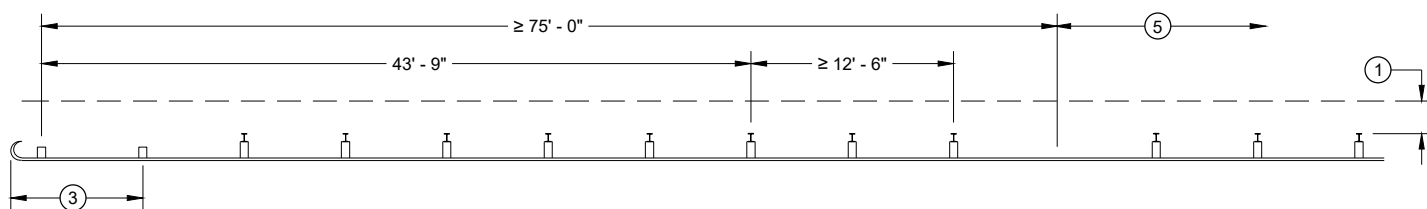
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



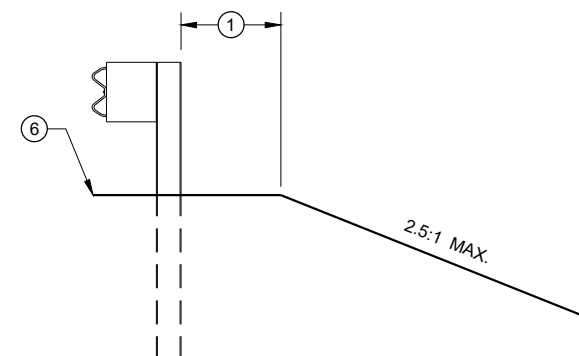
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

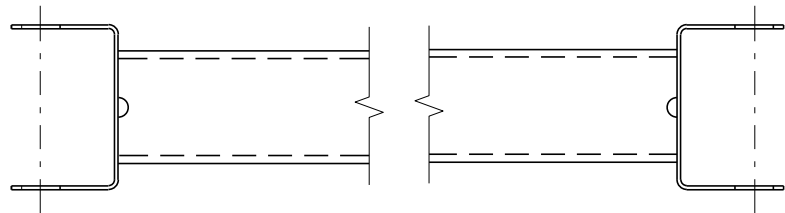
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
60
FHWA

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

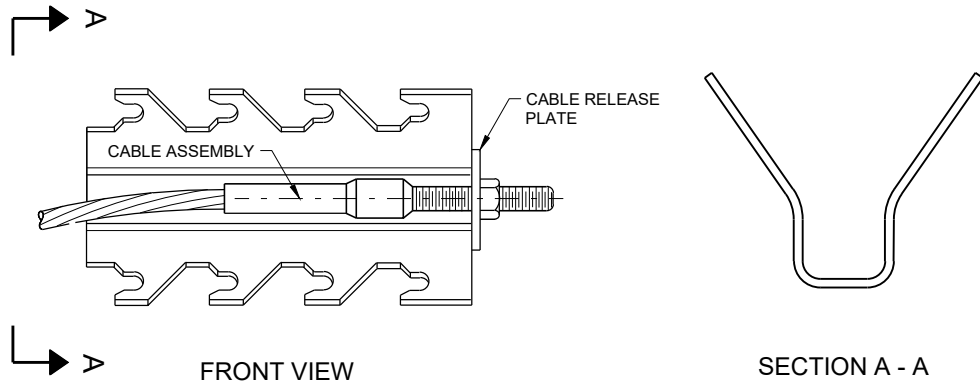
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 61

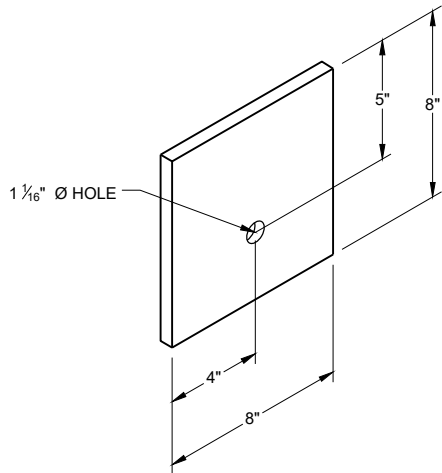


GENERIC GROUND STRUT⁹ E

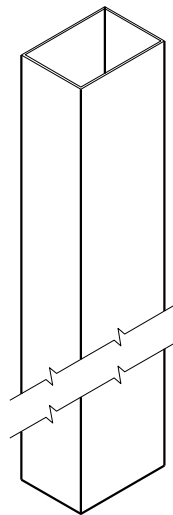
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



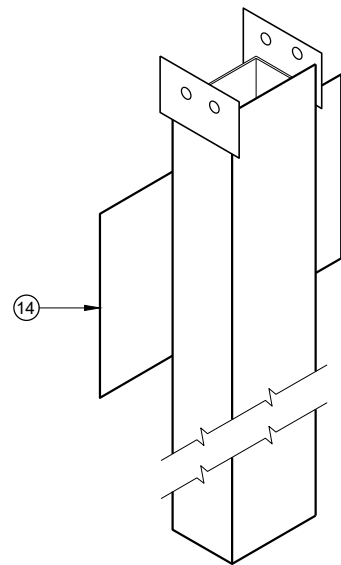
GENERIC ANCHOR CABLE BOX⁹ E



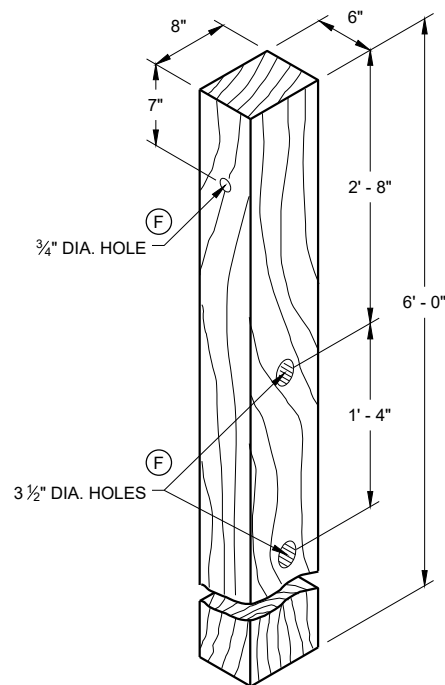
BEARING PLATE⁶ E



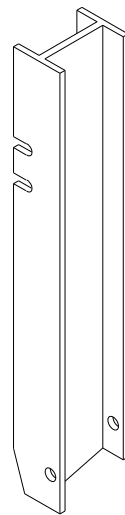
UPPER POST NO. 1 ⁽¹⁾ (E)



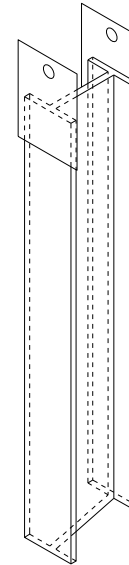
LOWER POST NO. 1 ⁽²⁾ (E)



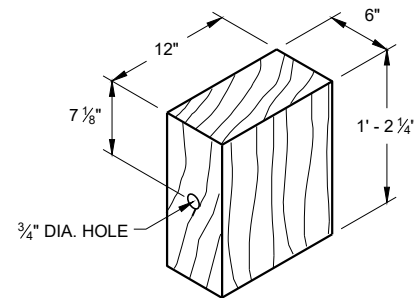
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



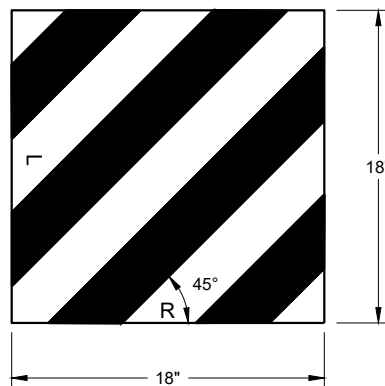
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



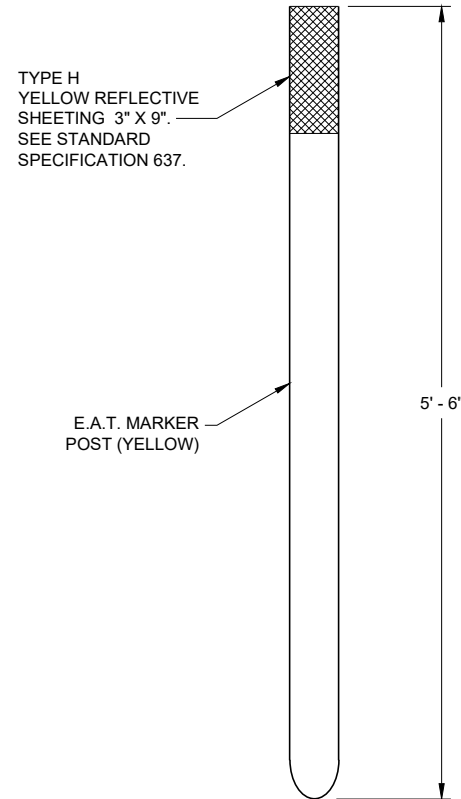
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



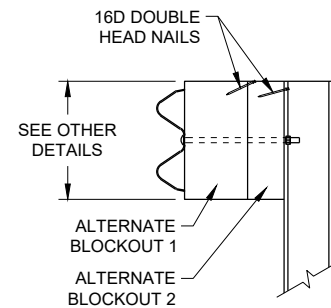
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



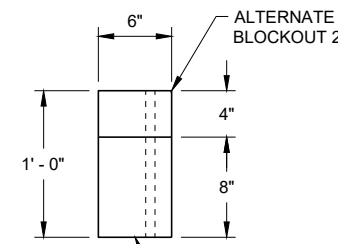
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



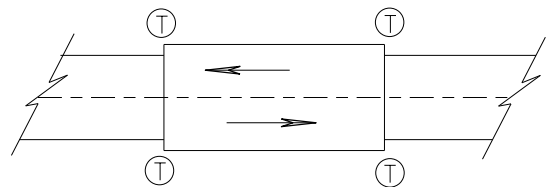
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

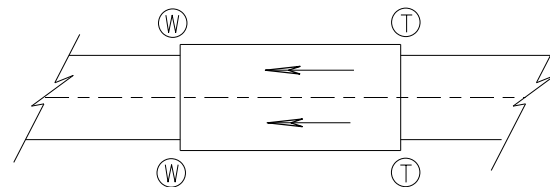
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 63



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

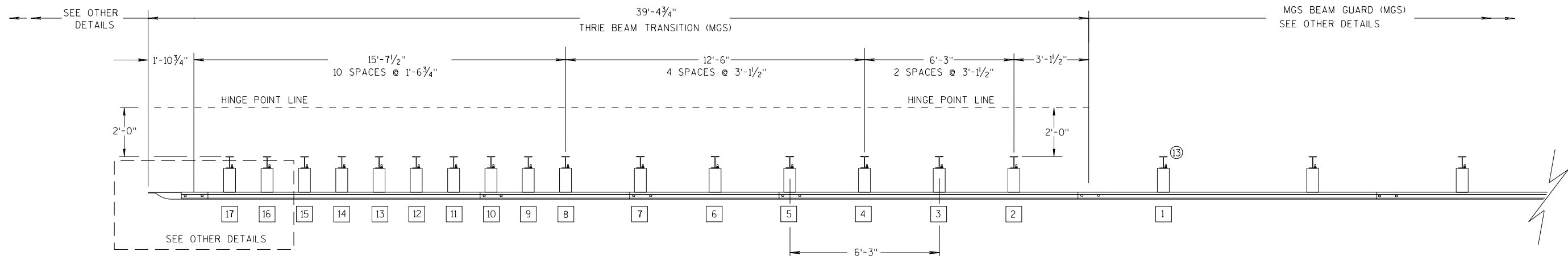
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

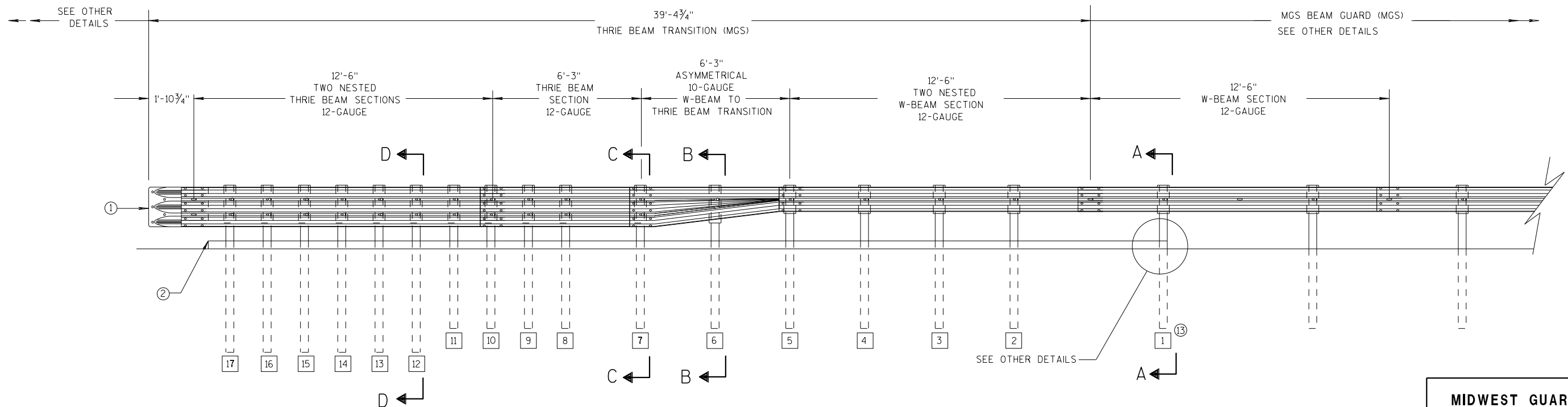
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

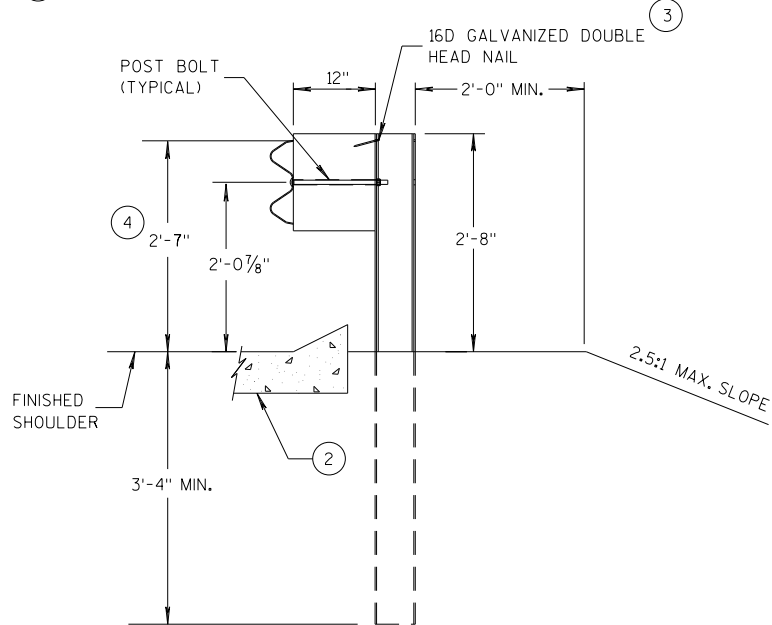
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

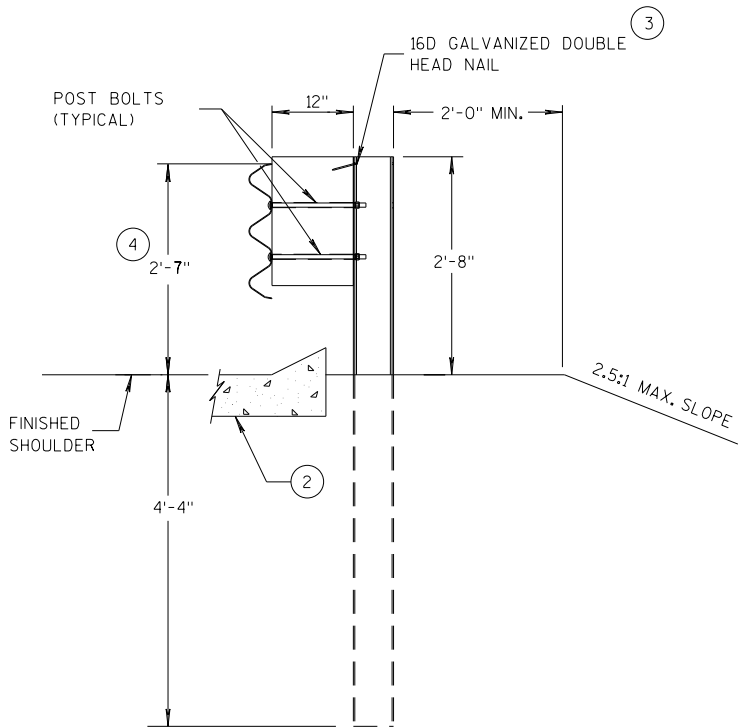
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

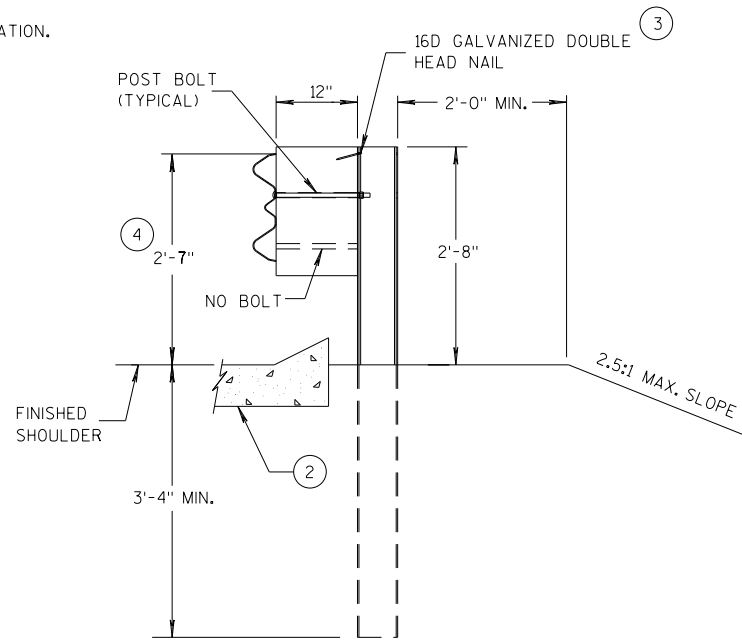
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



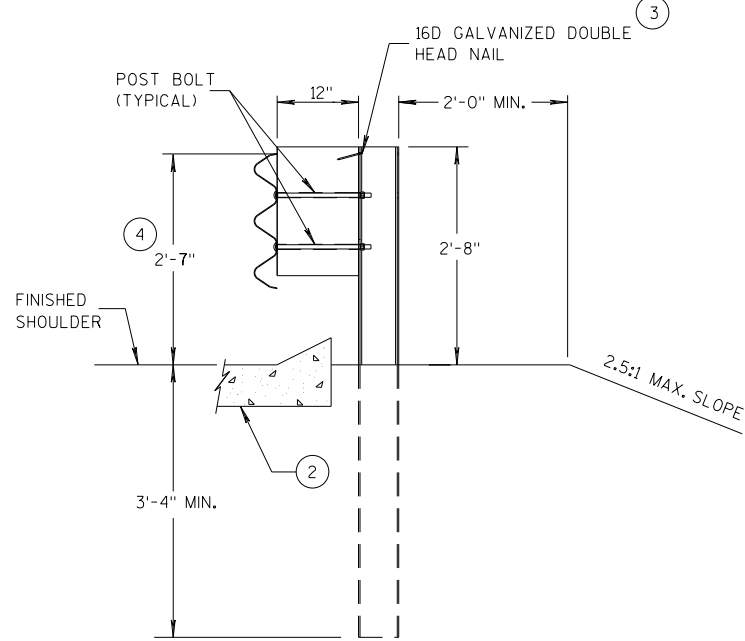
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

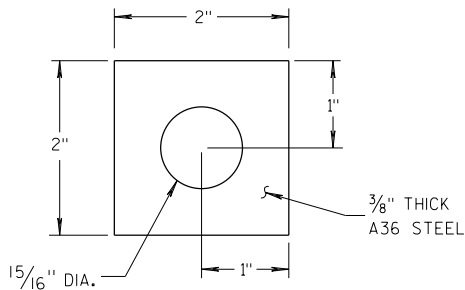
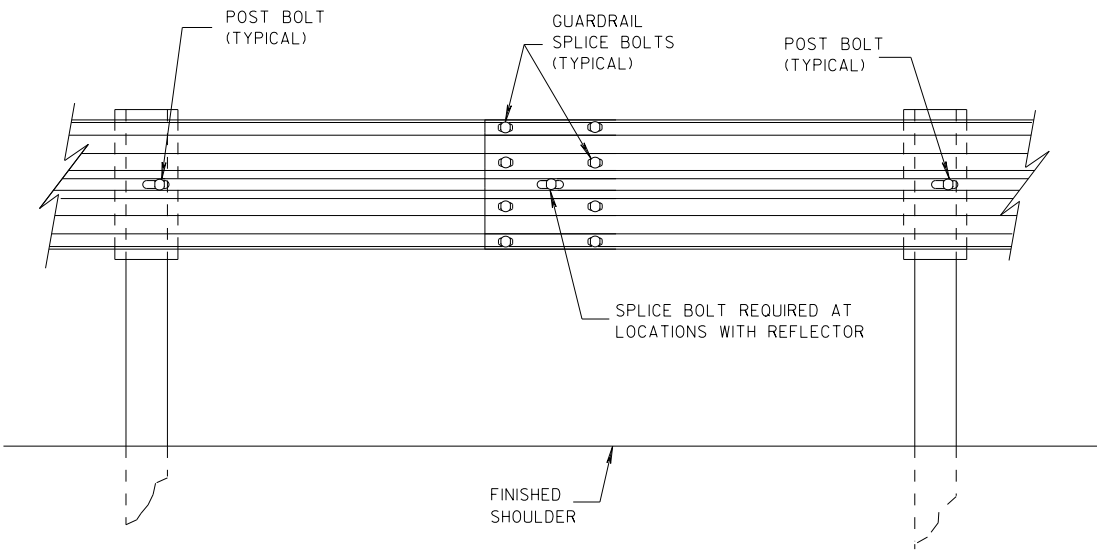
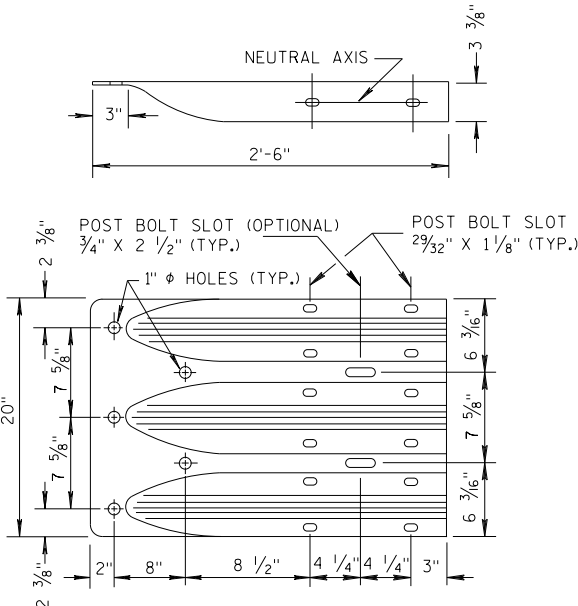


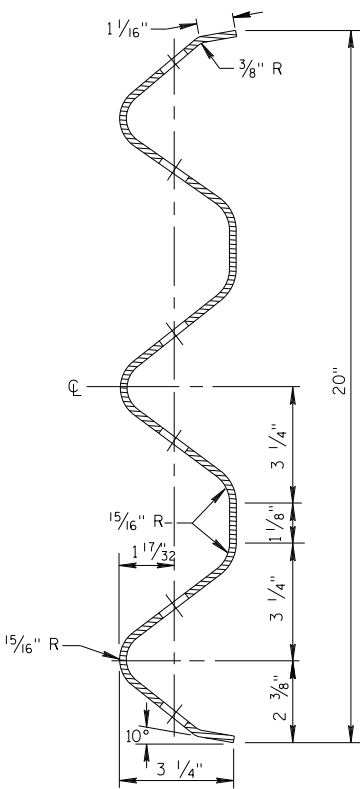
PLATE WASHER DETAIL



SPLICE DETAIL



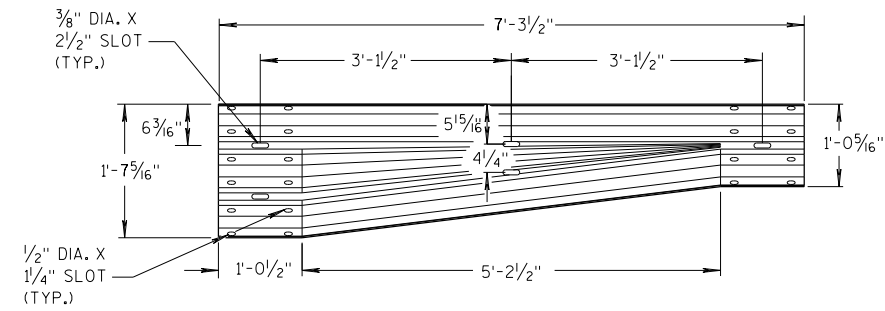
THRIE BEAM
TERMINAL CONNECTOR



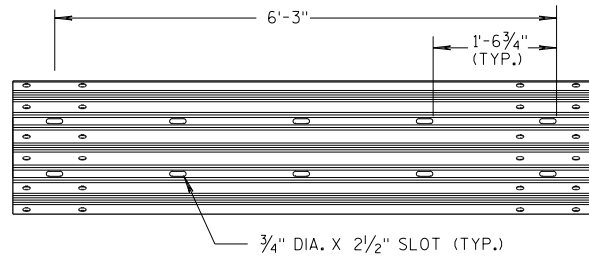
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

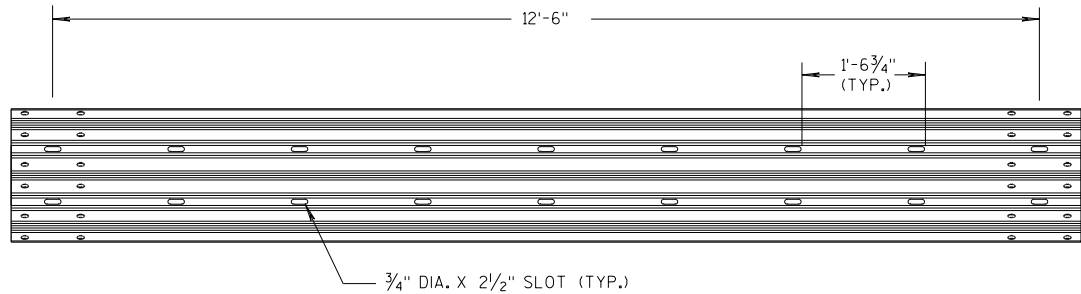
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



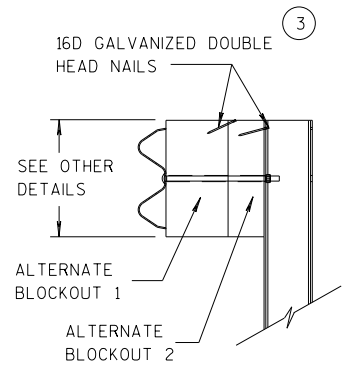
W-BEAM TO THRIE BEAM TRANSITION SECTION



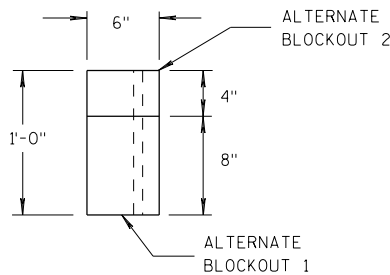
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

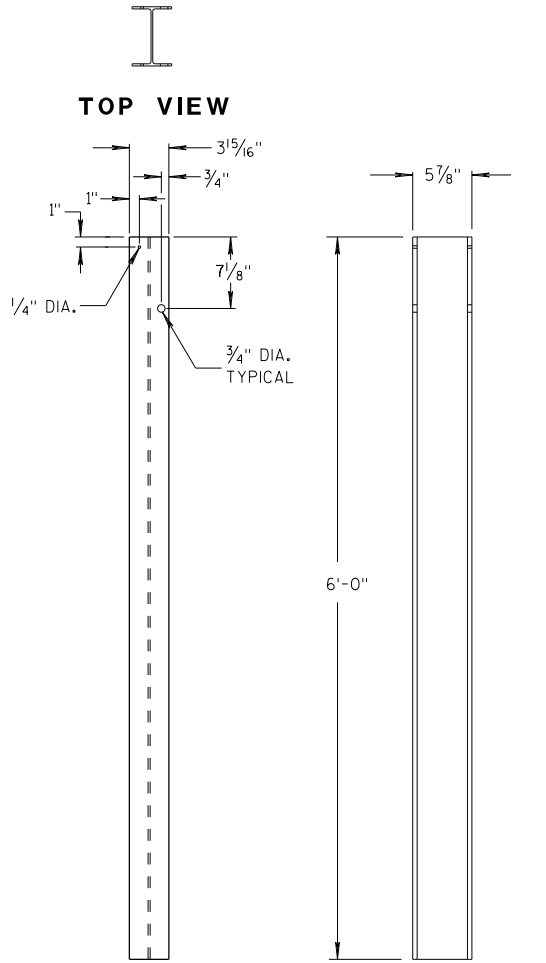


SIDE VIEW



TOP VIEW

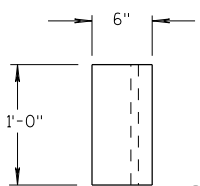
ALTERNATE WOOD BLOCKOUT DETAIL



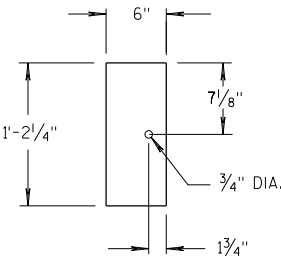
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

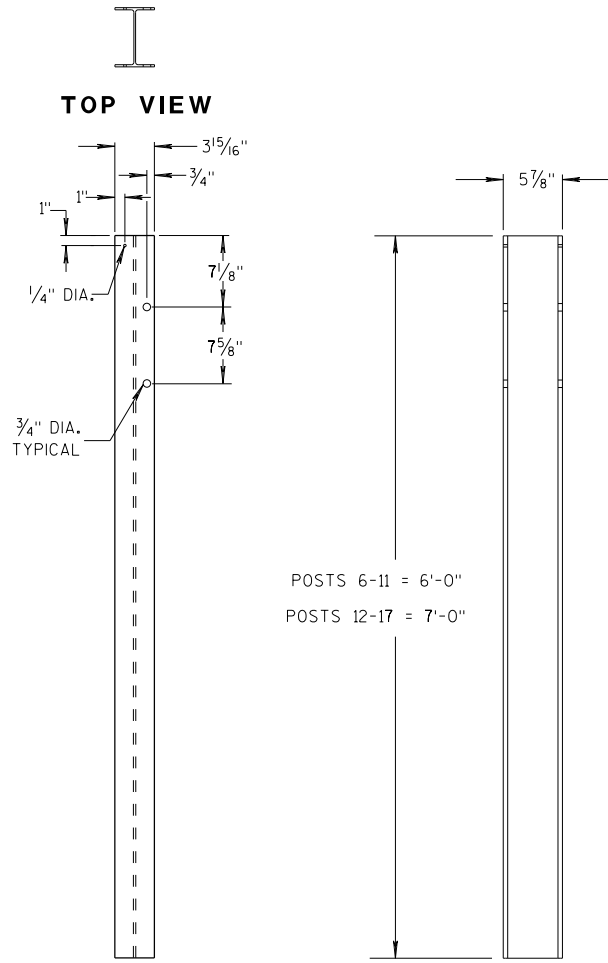


TOP VIEW



FRONT VIEW

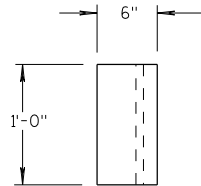
BLOCKOUT POSTS 1-5



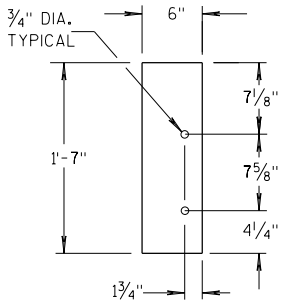
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

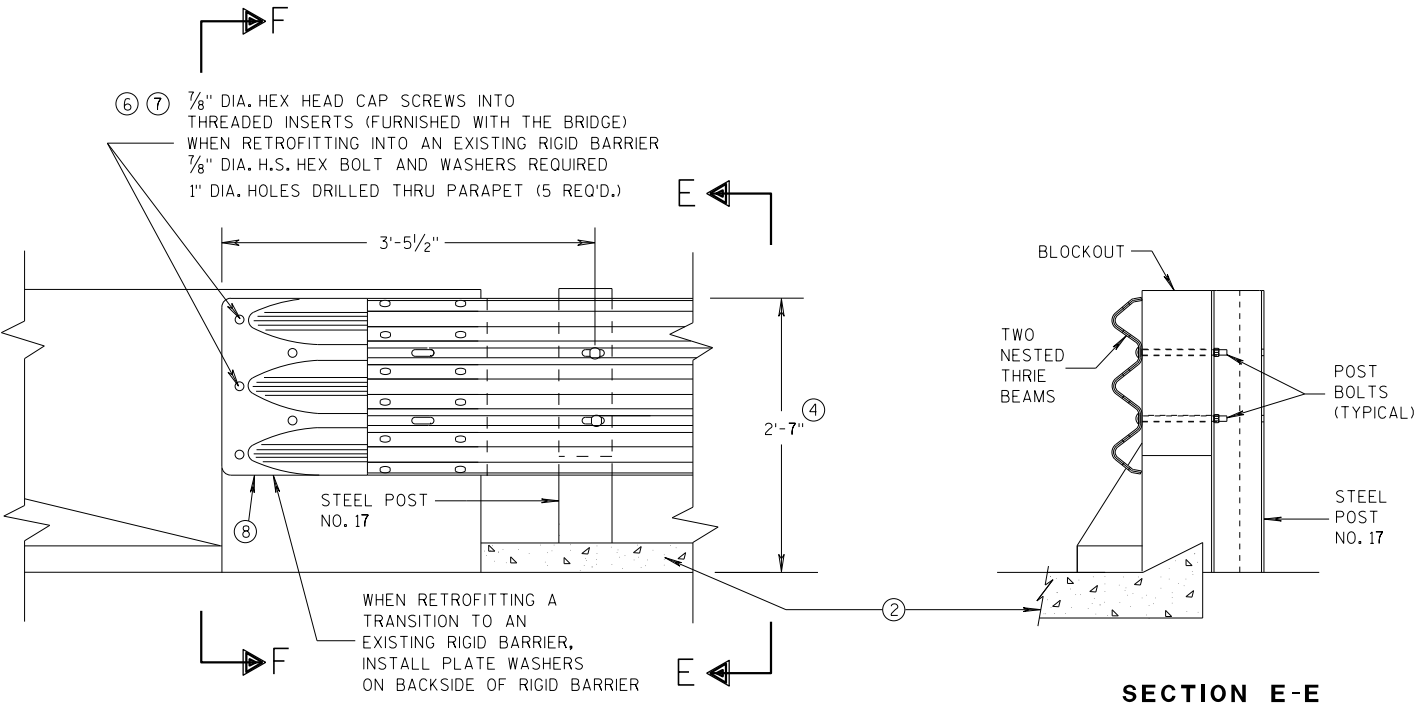
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

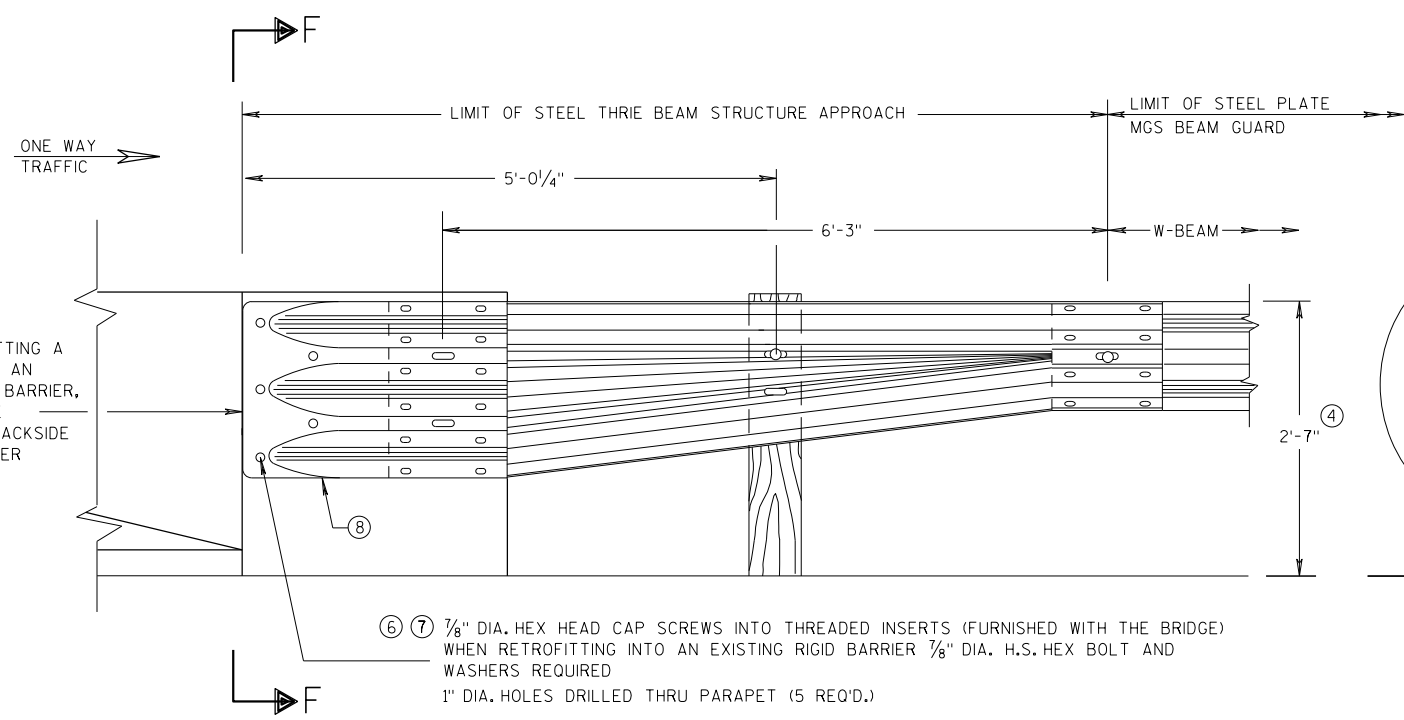
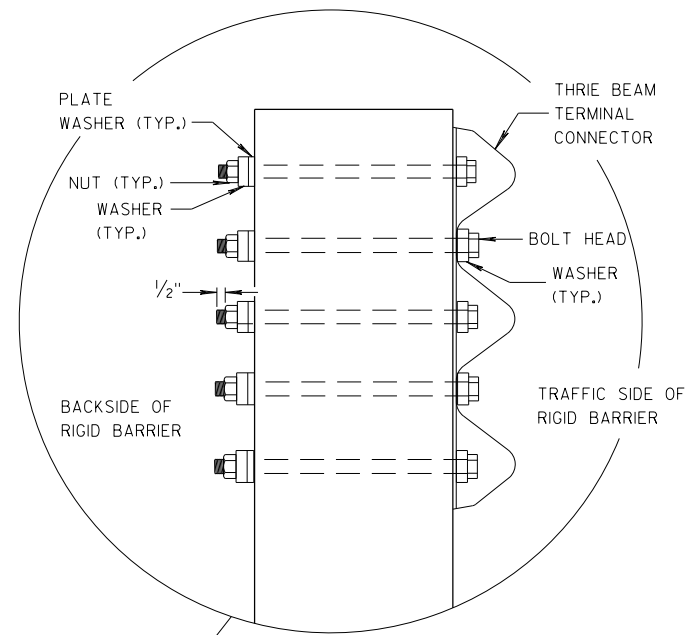
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

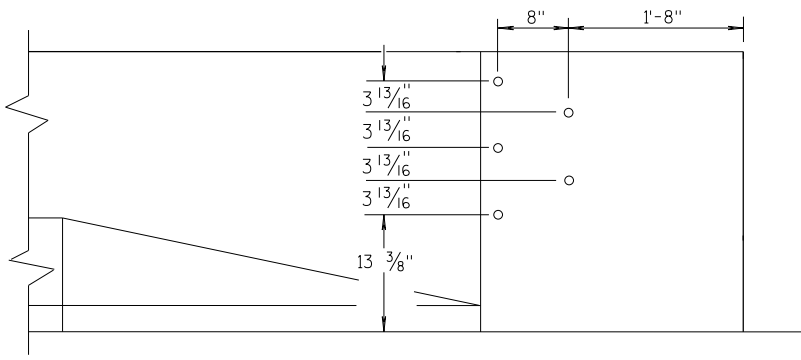


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F

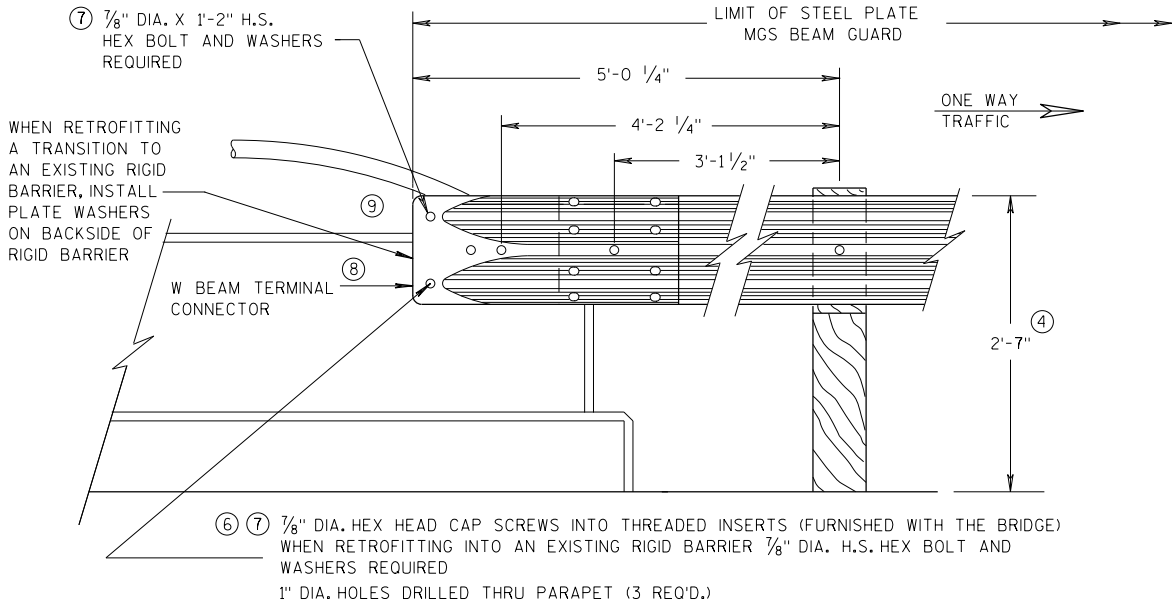


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	67	NT	

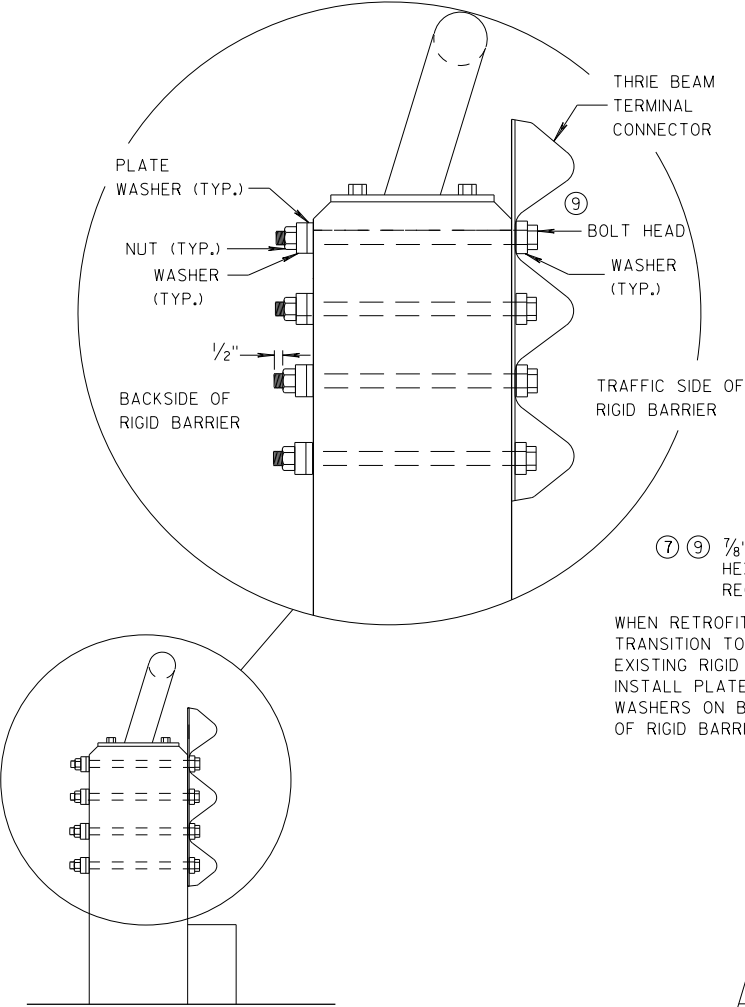
GENERAL NOTES

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

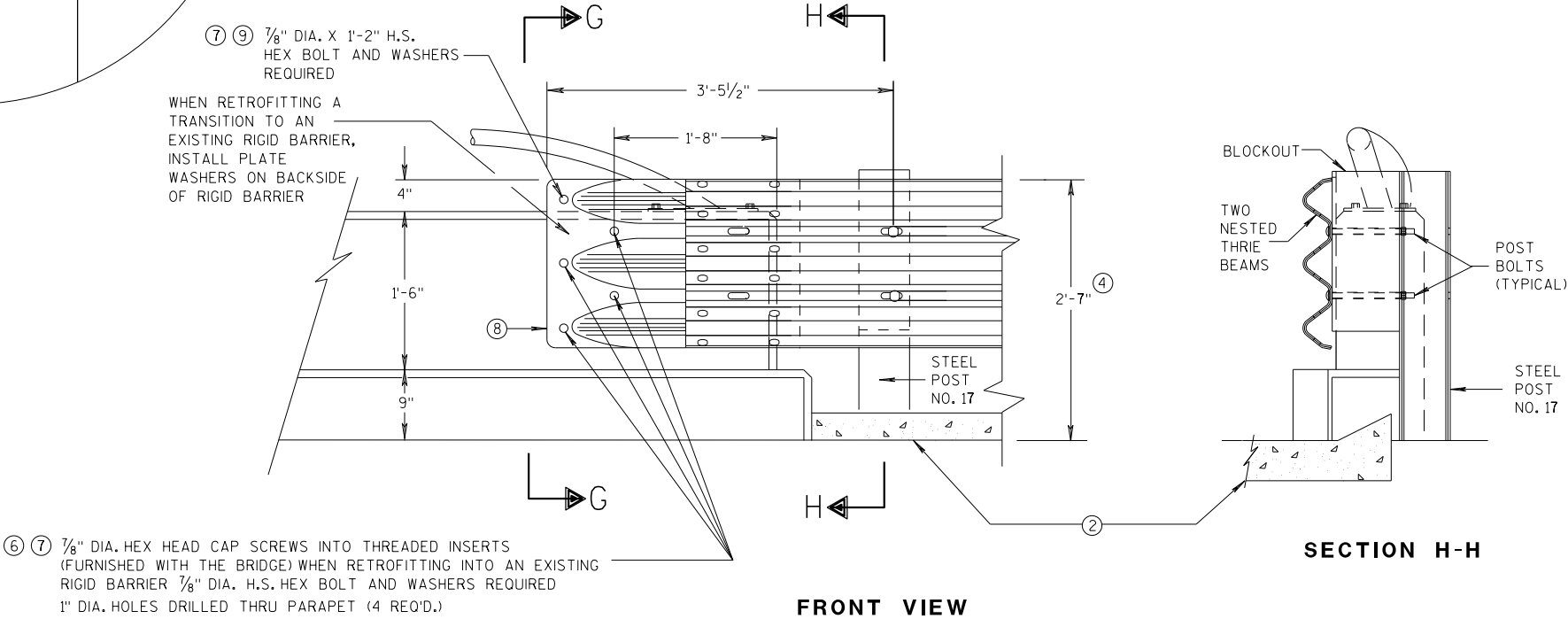
- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS ± 1".
- ⑥
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



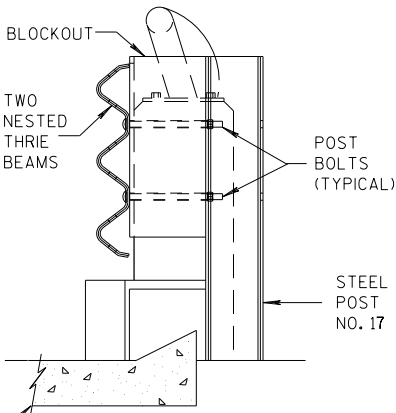
FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



FRONT VIEW
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

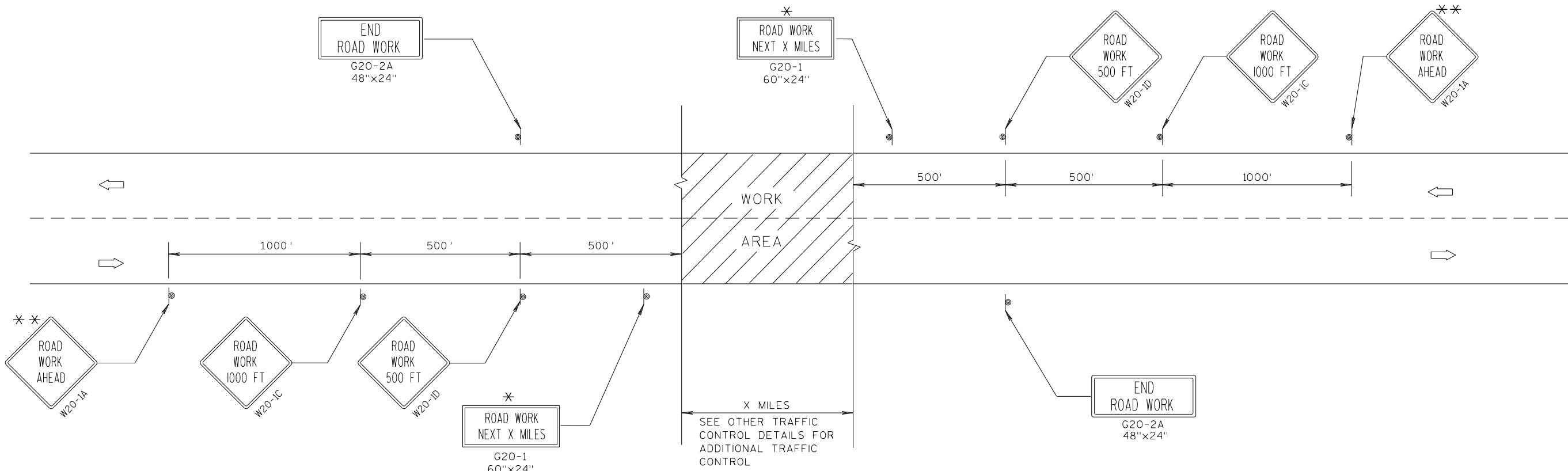


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 68



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

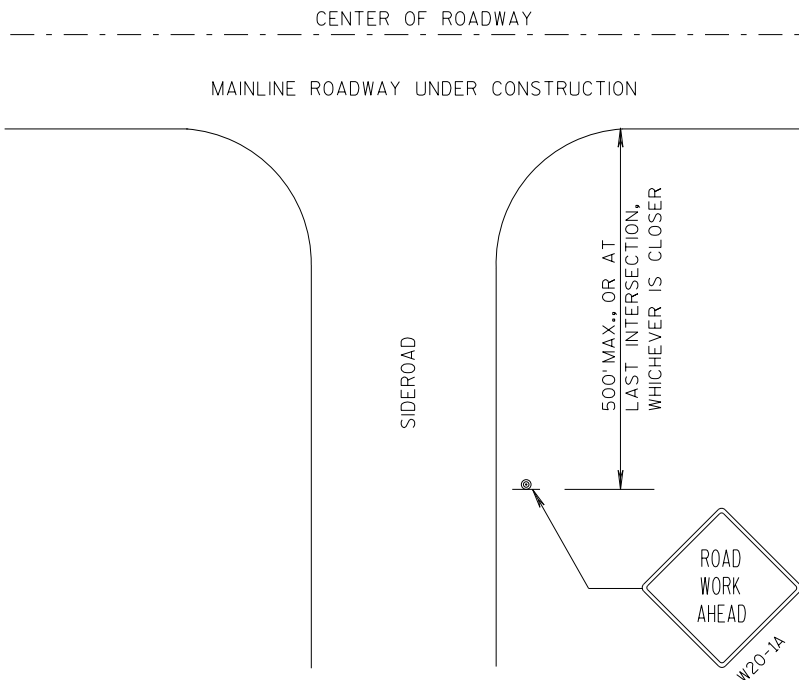
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

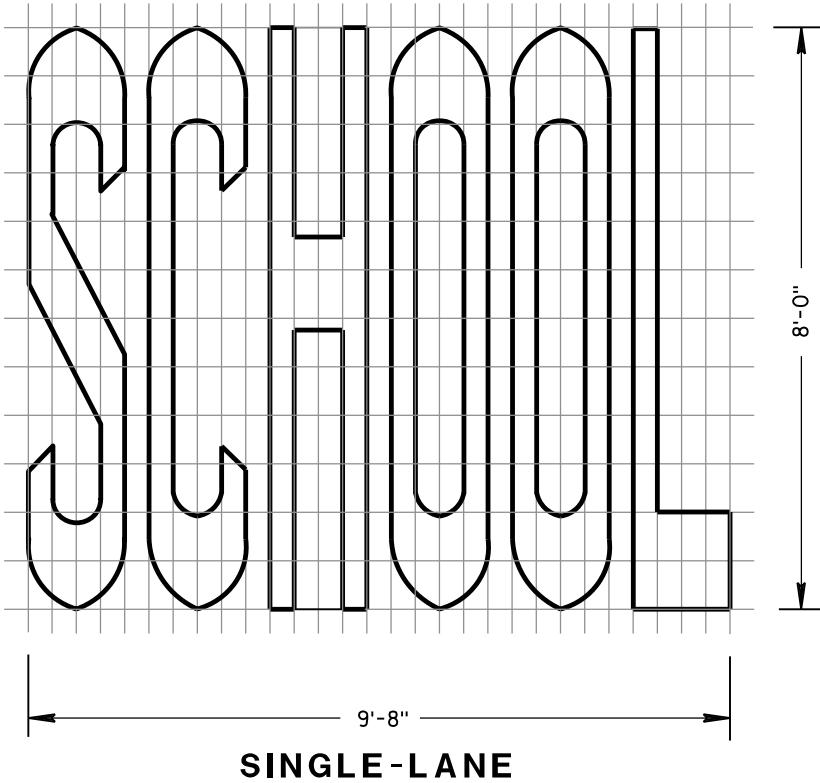
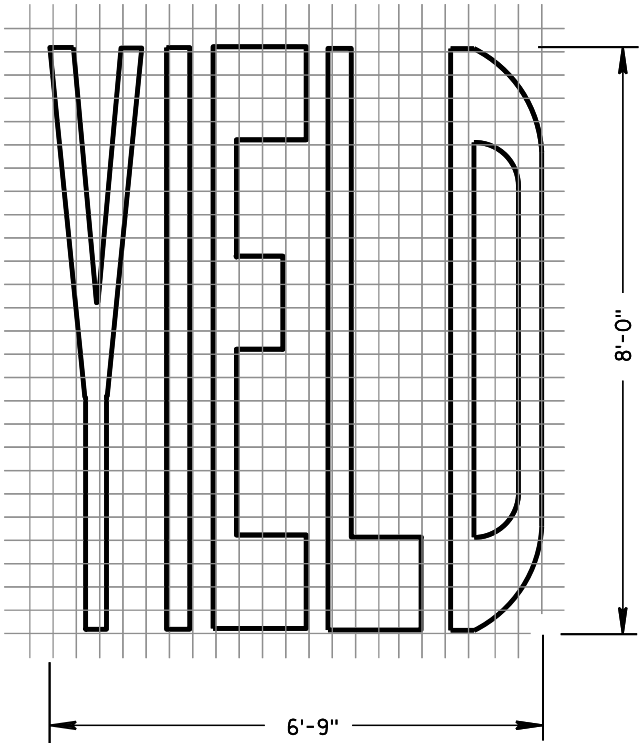
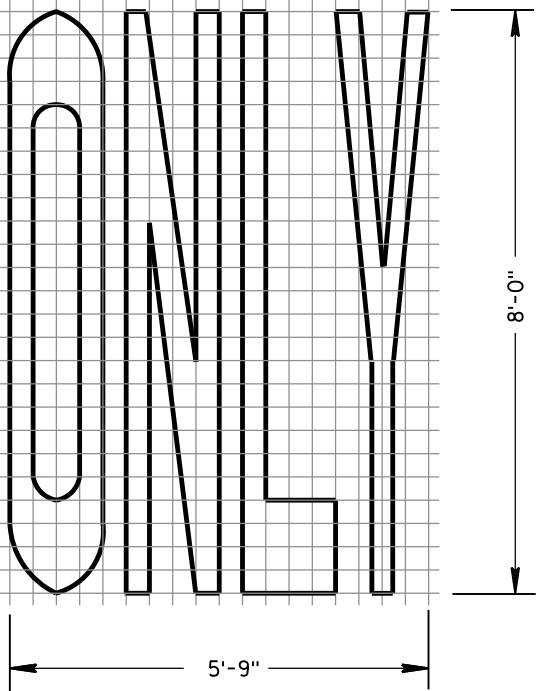
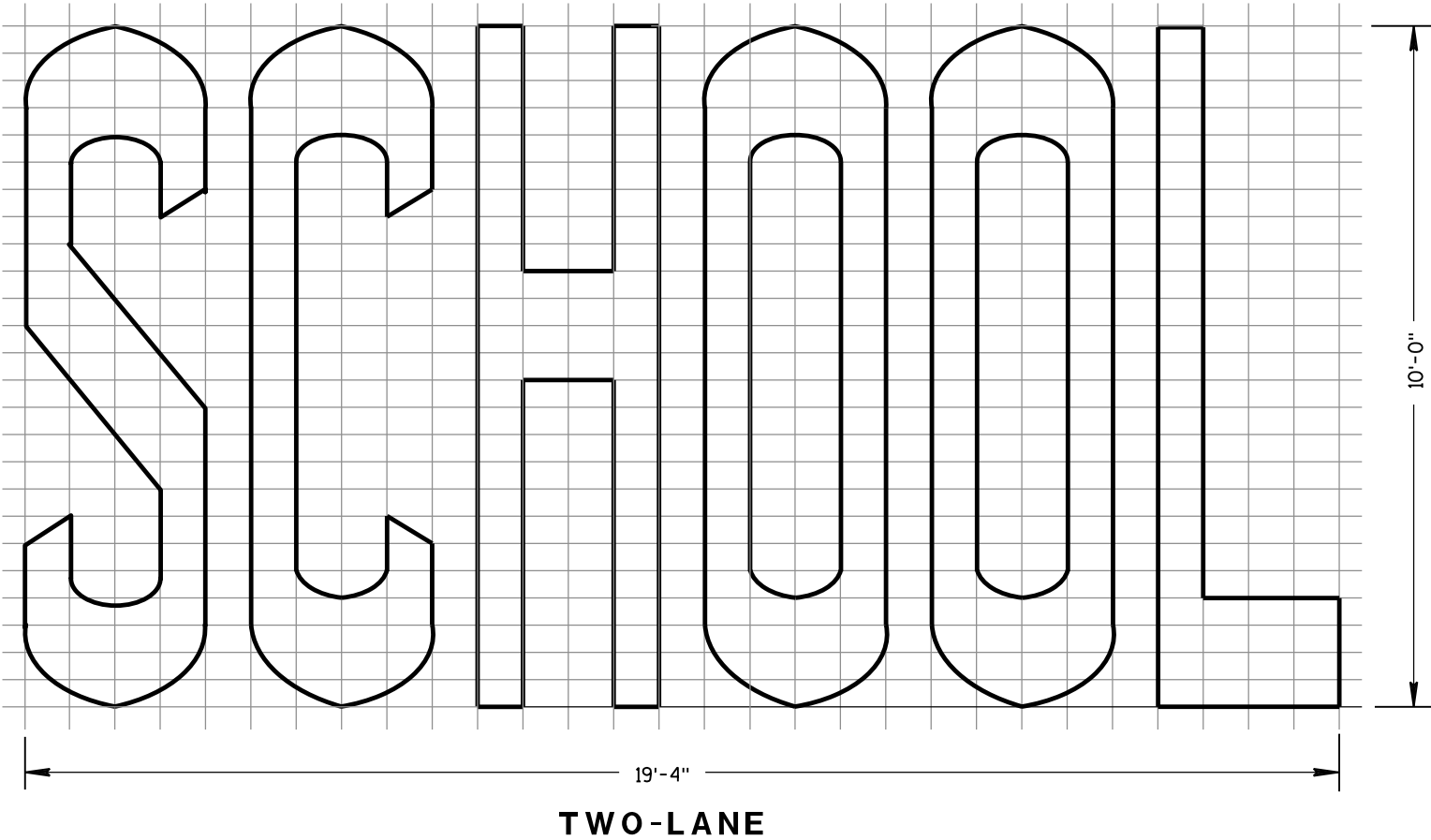
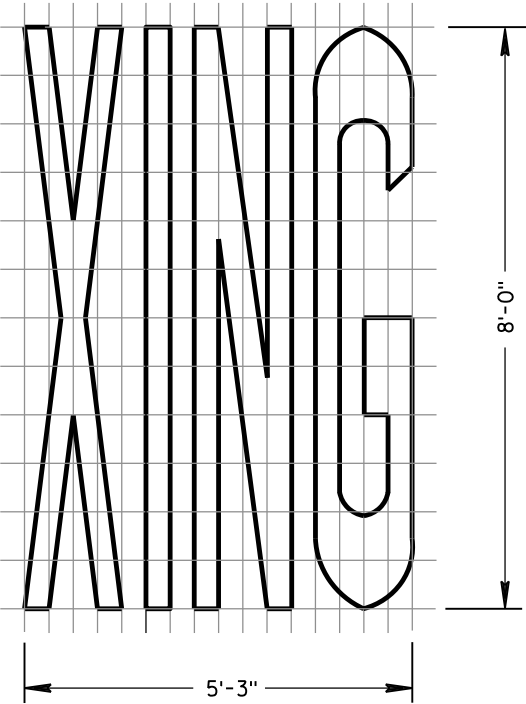
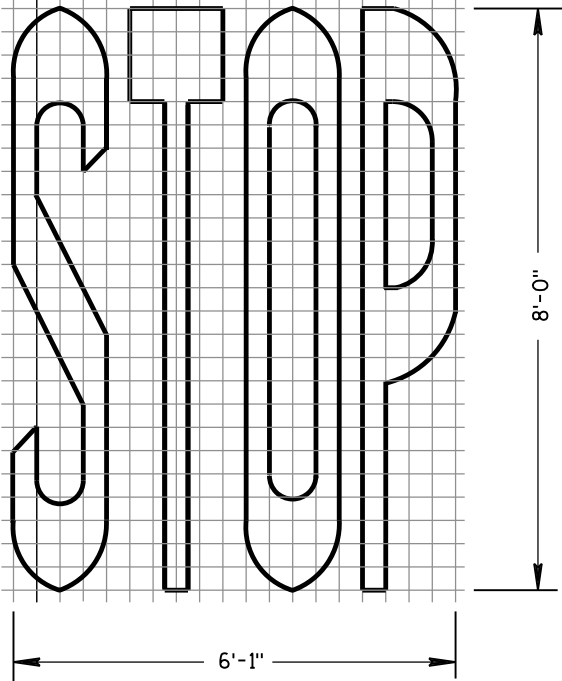
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

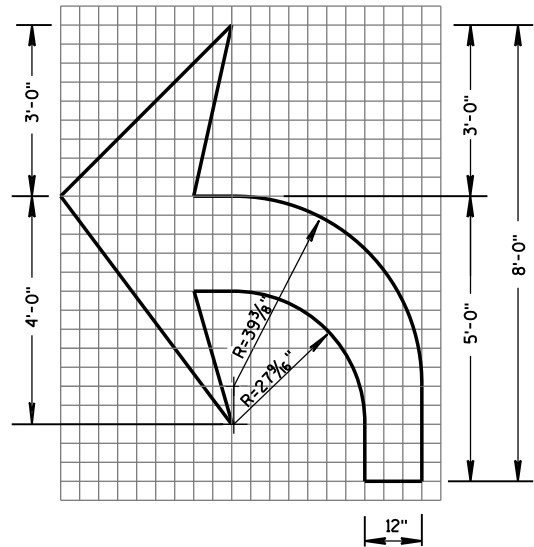
APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGI 69
FHWA

GENERAL NOTES

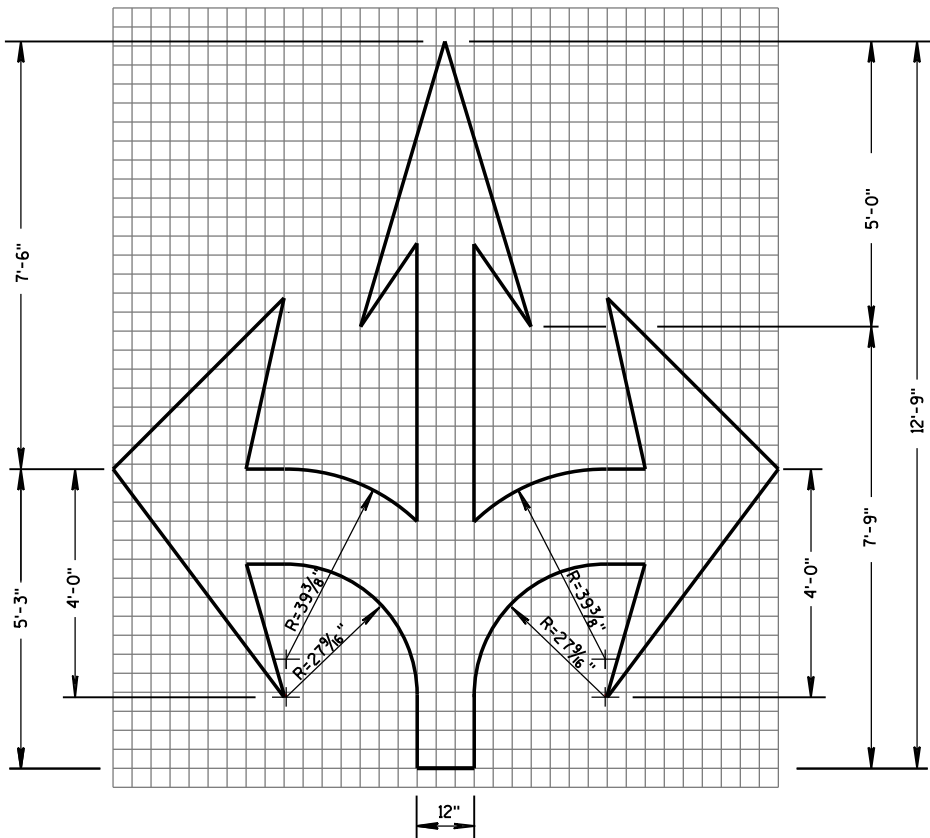
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



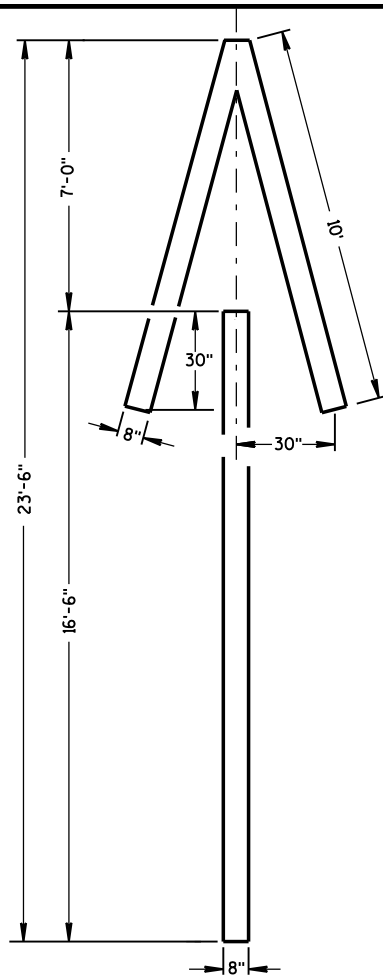
PAVEMENT MARKING WORDS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MARK	70	EER
FHWA			



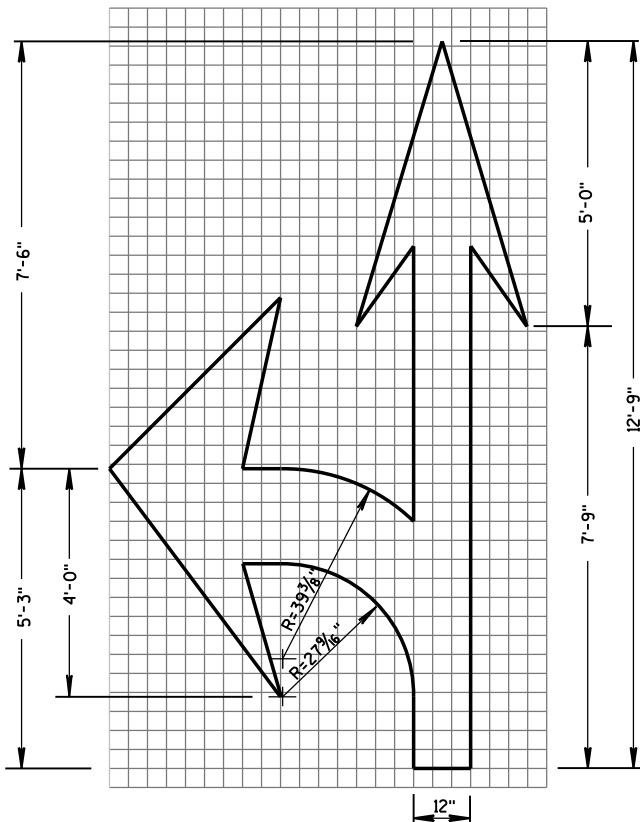
TYPE 2



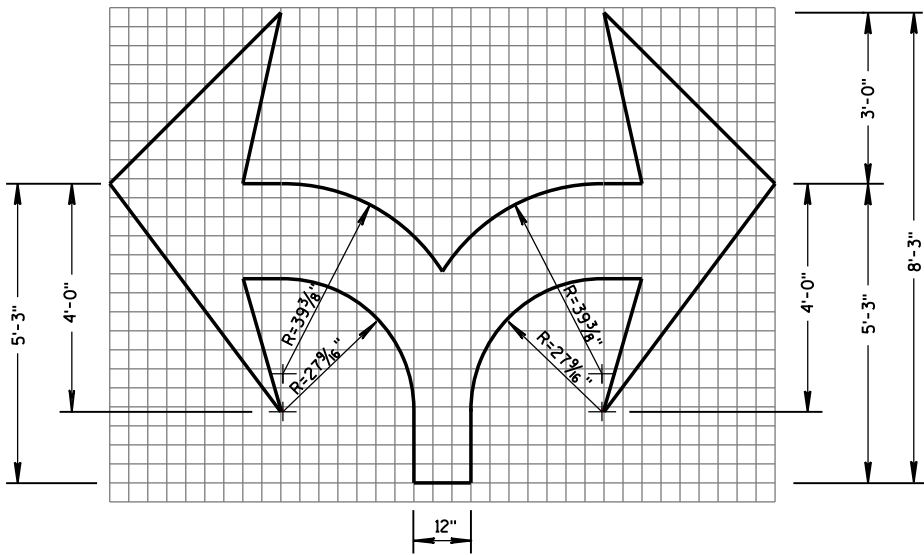
TYPE 6



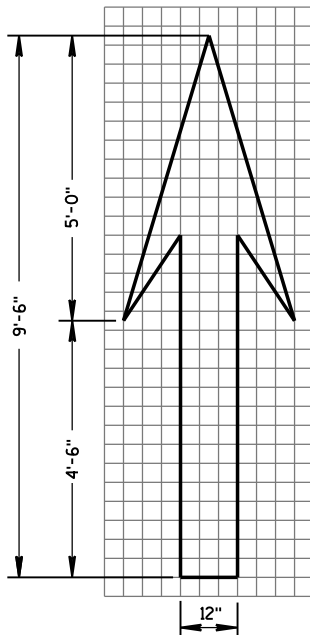
TYPE 4



TYPE 3



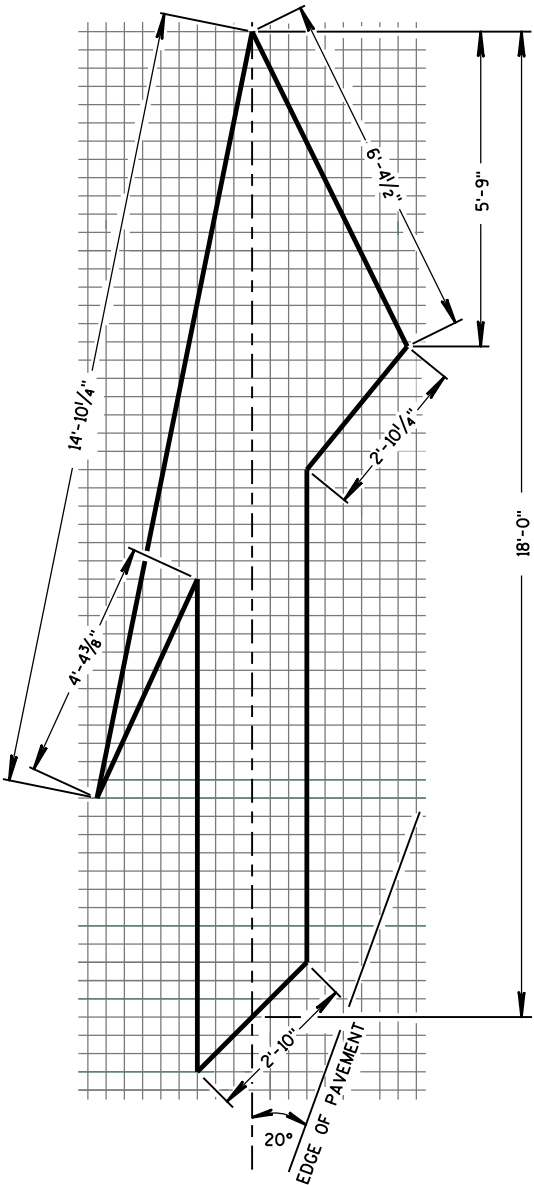
TYPE 7



TYPE 1

GENERAL NOTES

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

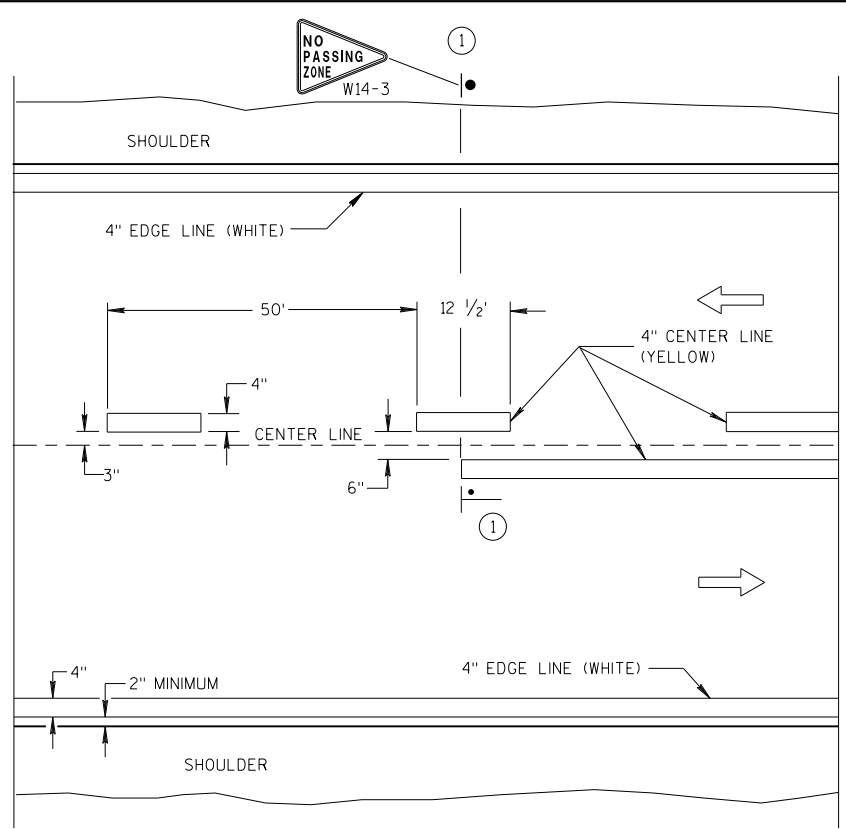


TYPE 5 LANE DROP ARROW

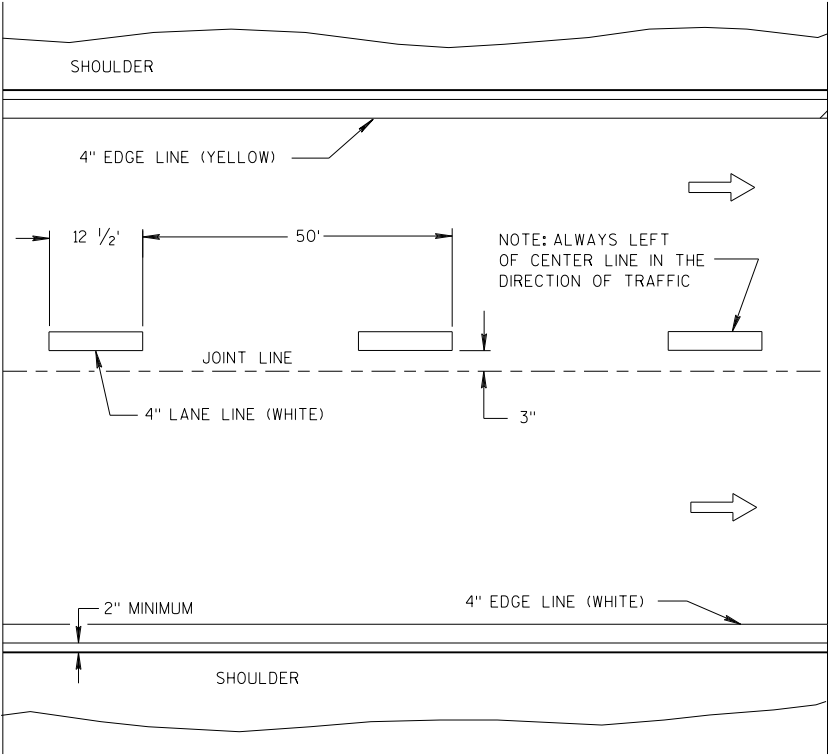
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 71
FWHA

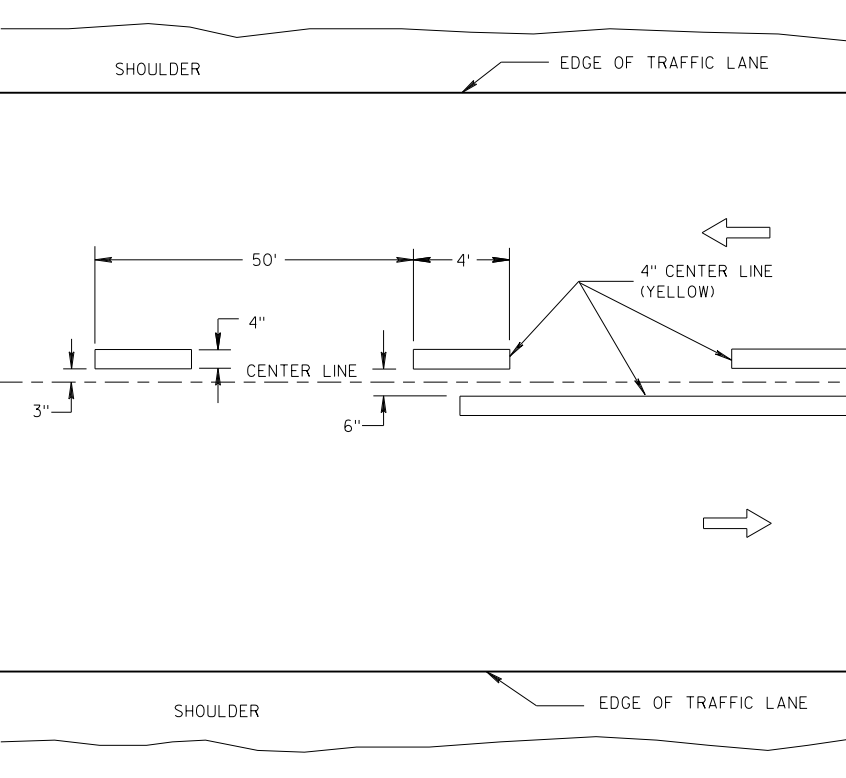


TWO WAY TRAFFIC

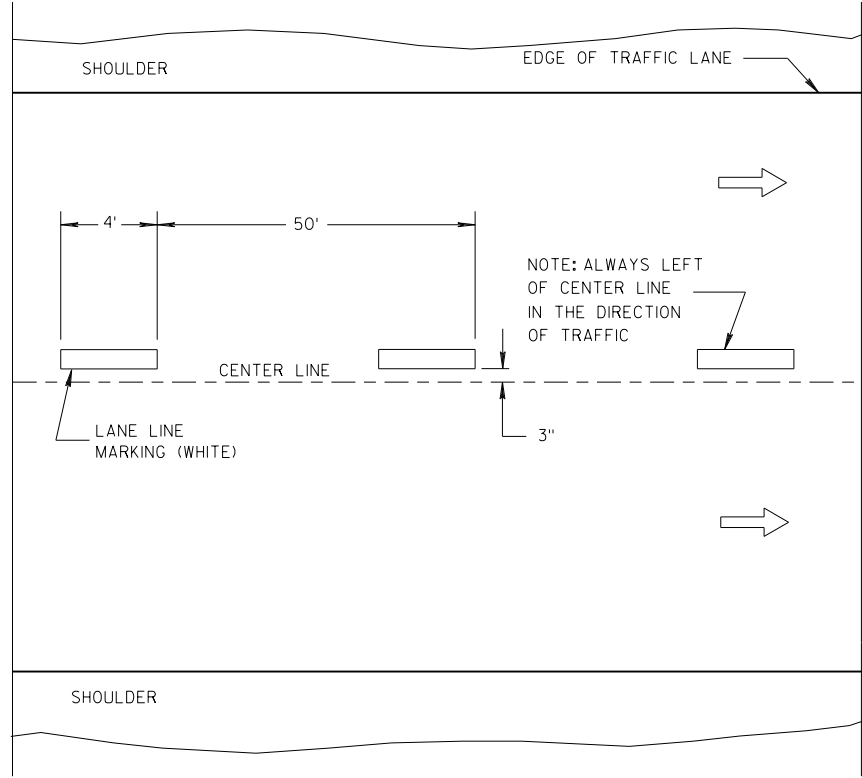


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

1 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

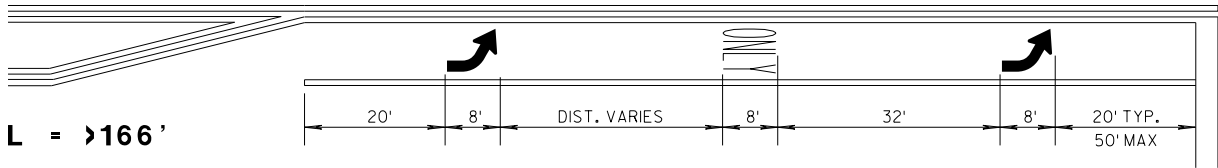
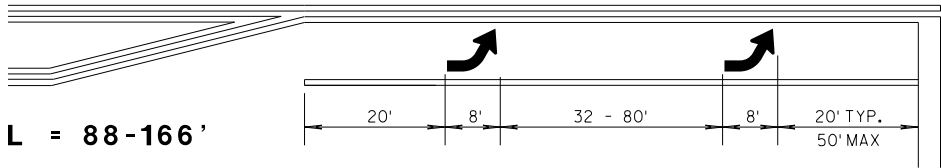
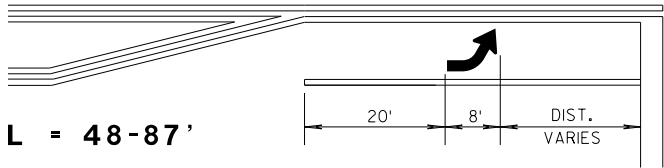
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 72 INEER
FHWA

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

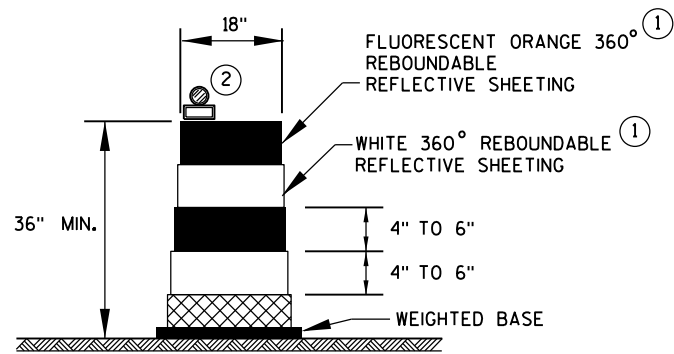
GENERAL NOTES

- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

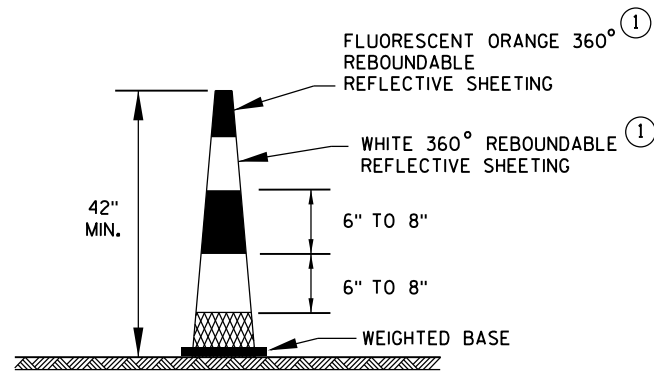
➡ DIRECTION OF TRAFFIC
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORT 73



DRUM

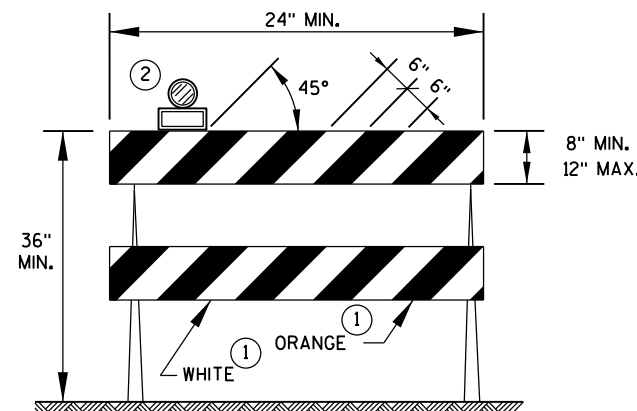


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

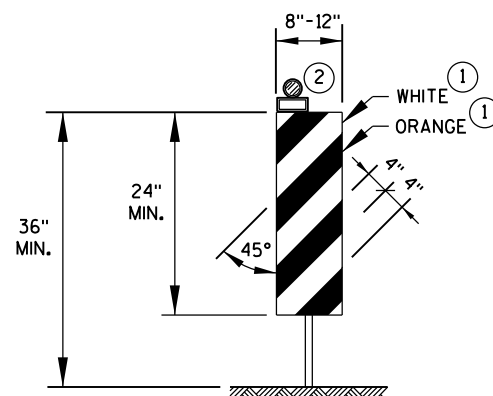
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



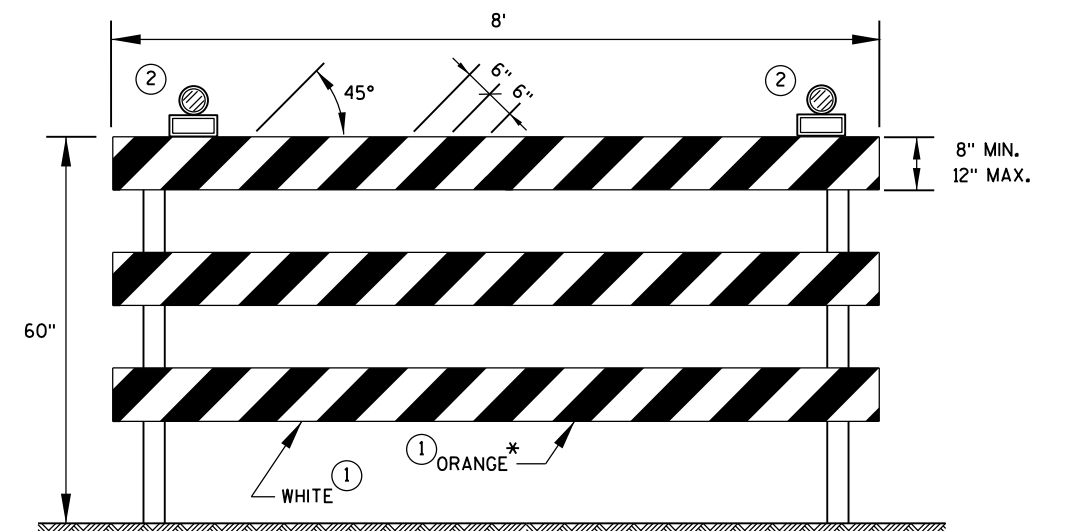
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 74

FHWA

LEGEND

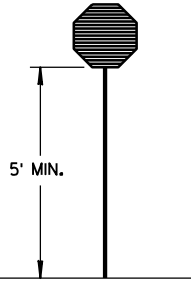
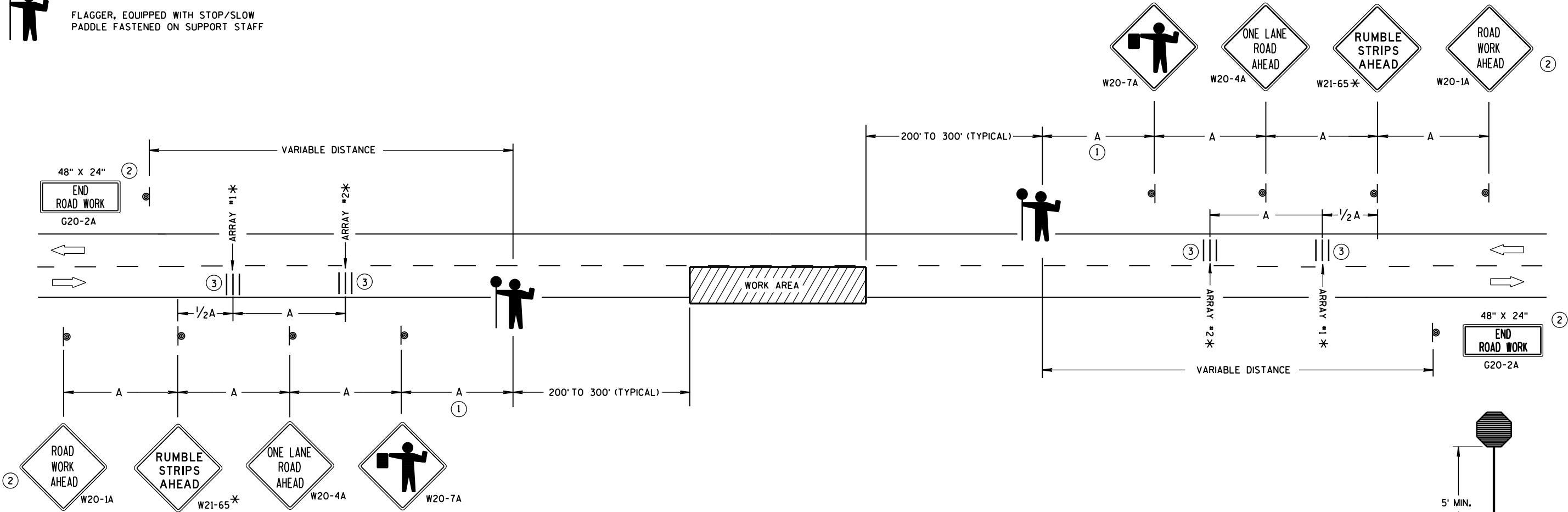
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



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



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

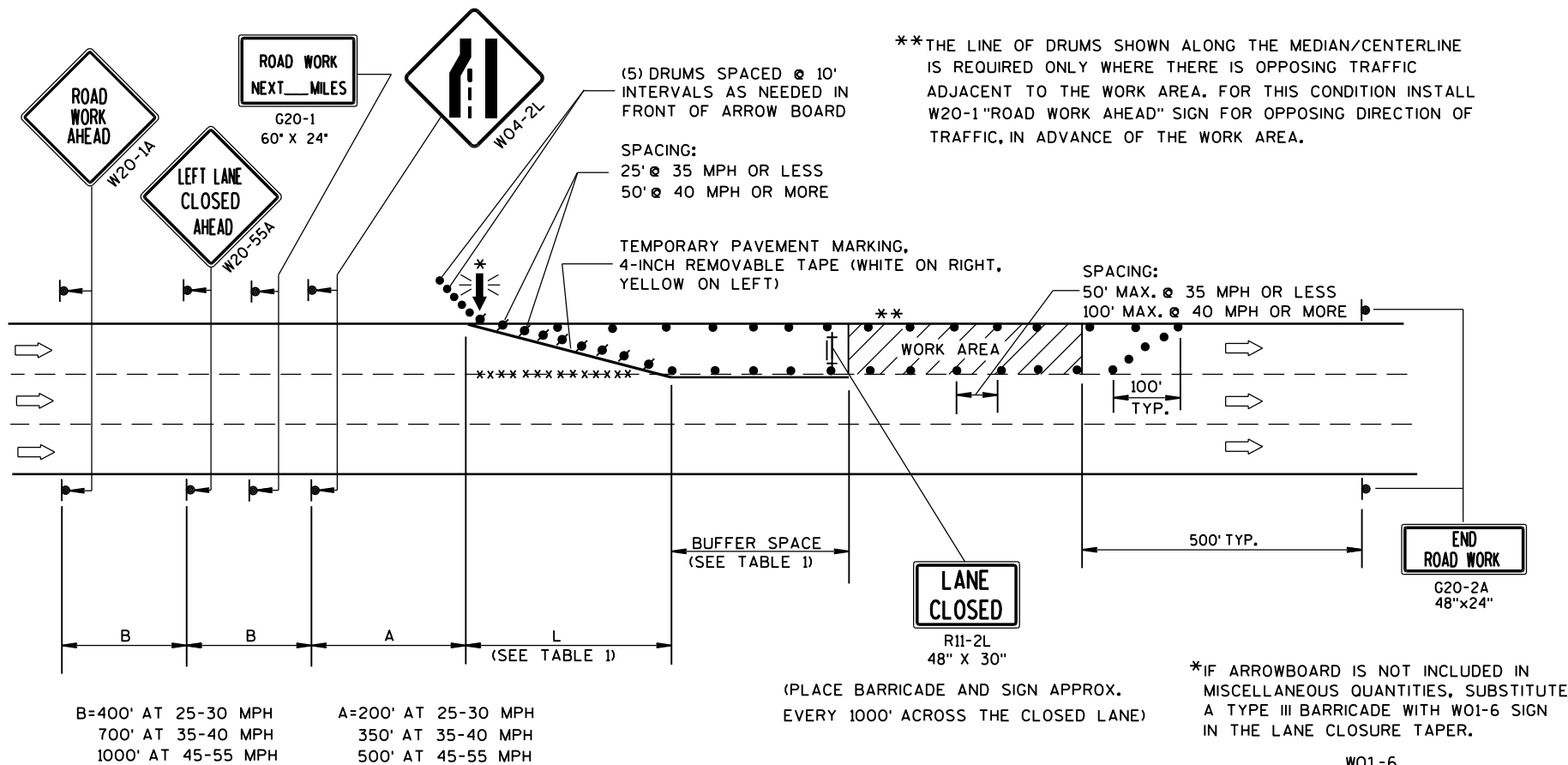
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENC 75
FHWA



GENERAL NOTES

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

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

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

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

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

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

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

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

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

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

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

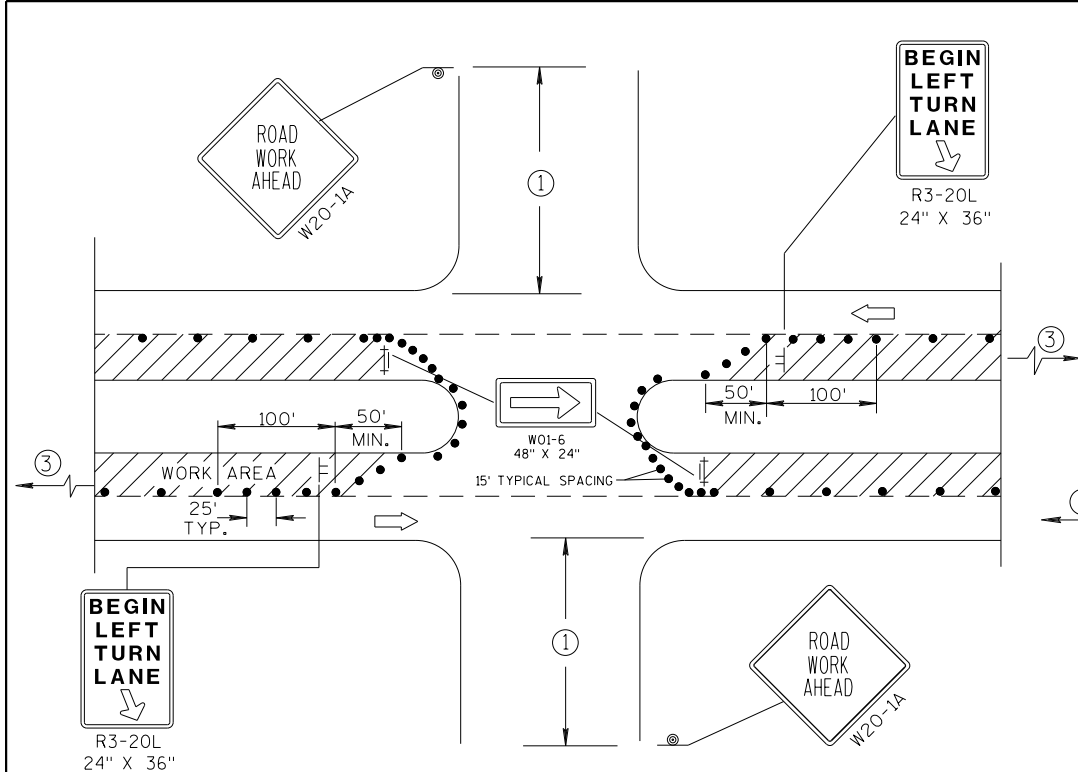
LEGEND

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

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

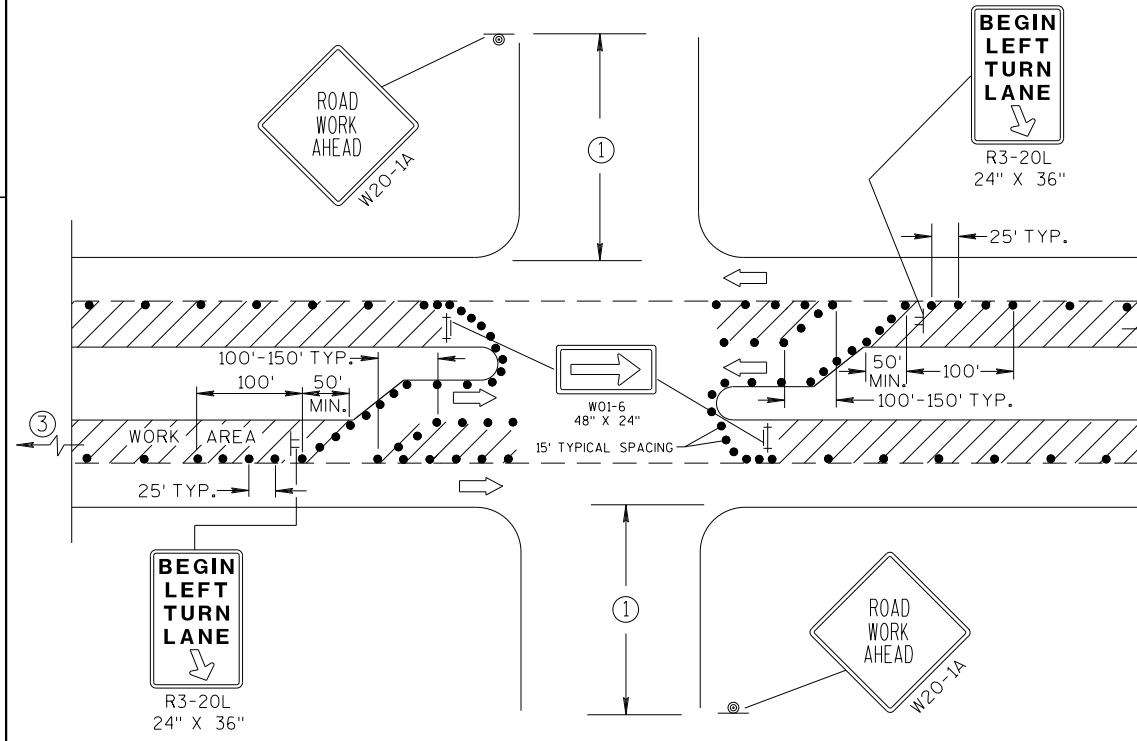
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

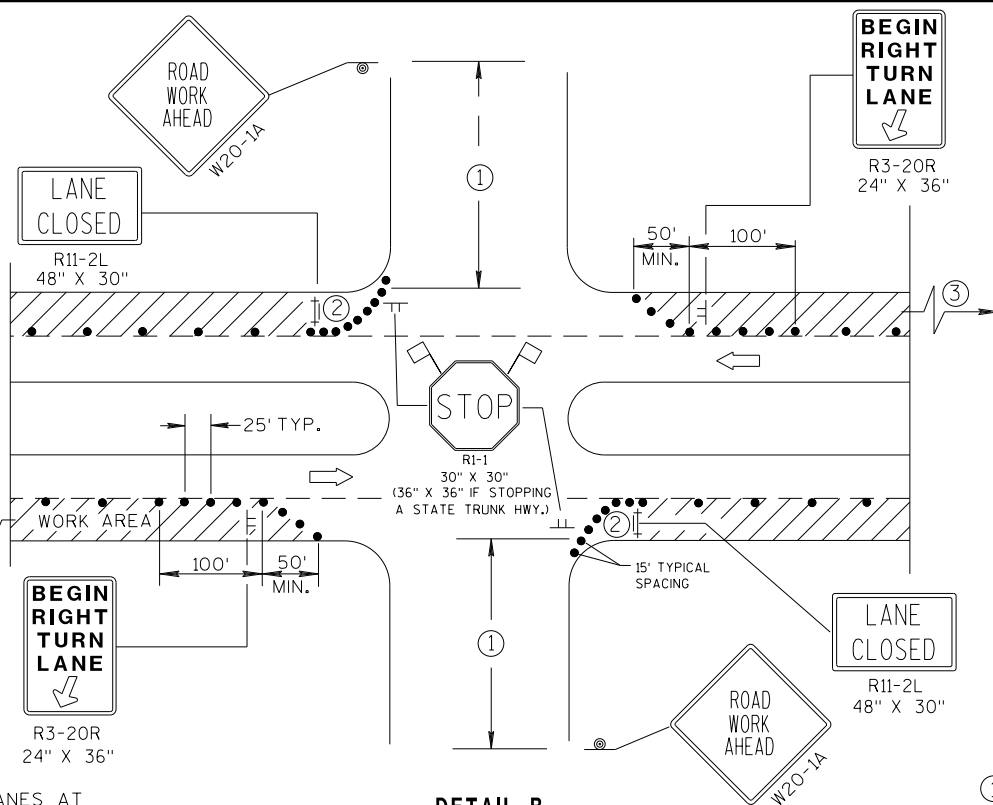


DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

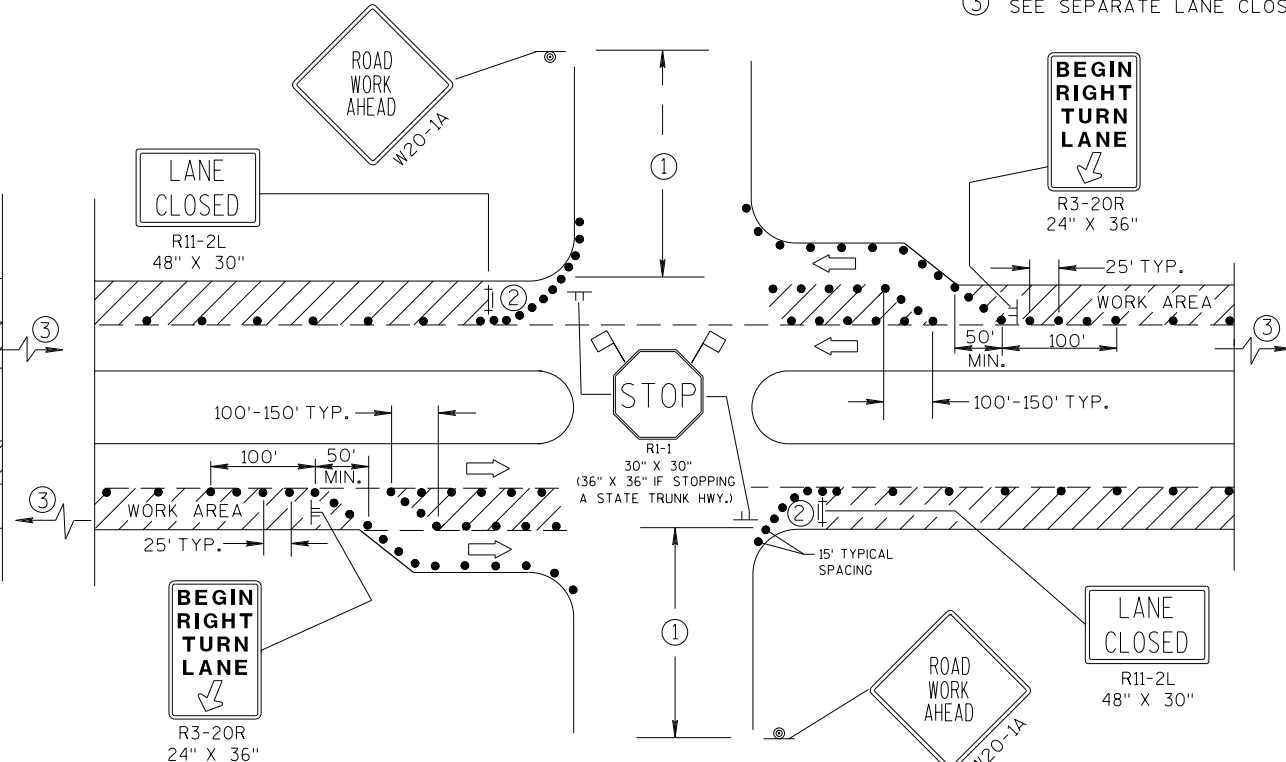
PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



DETAIL C
FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION



DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

GENERAL NOTES

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

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

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

- 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ≡ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ≡ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENG 77
FHWA

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

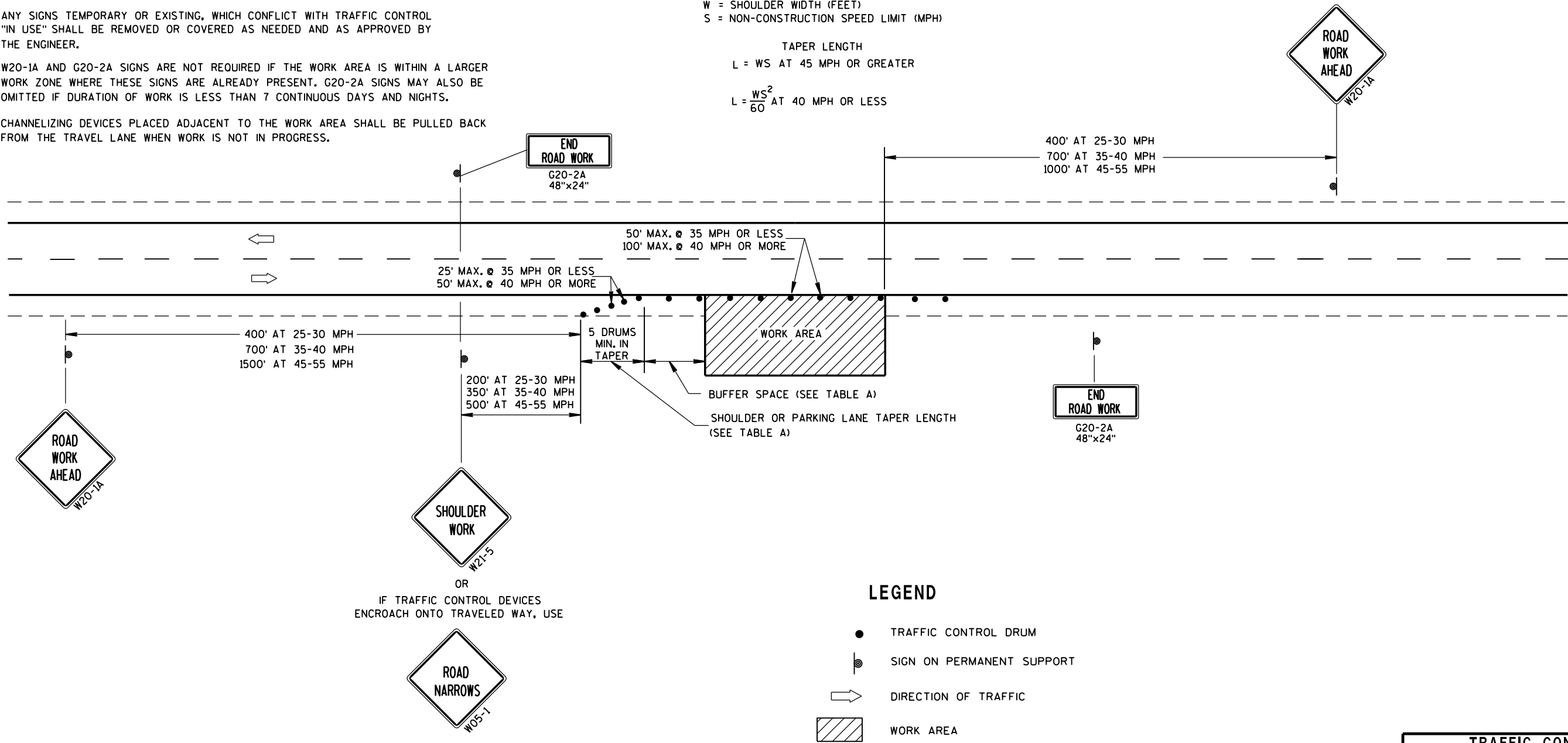
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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 = $\frac{1}{3}L$

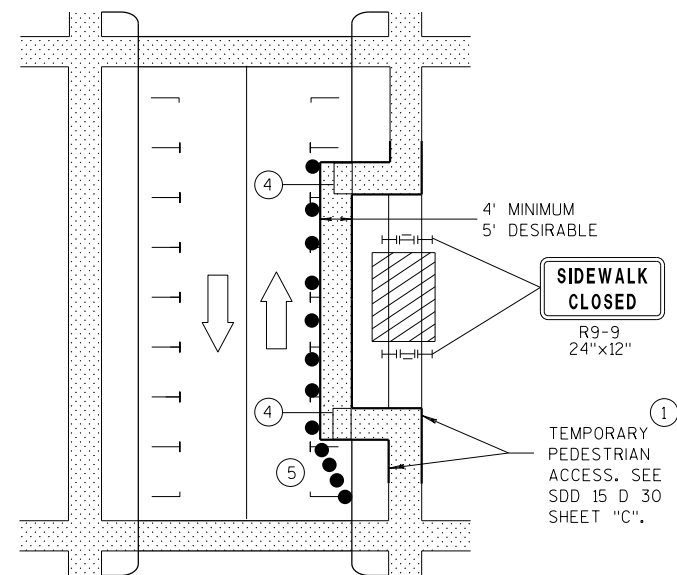


LEGEND

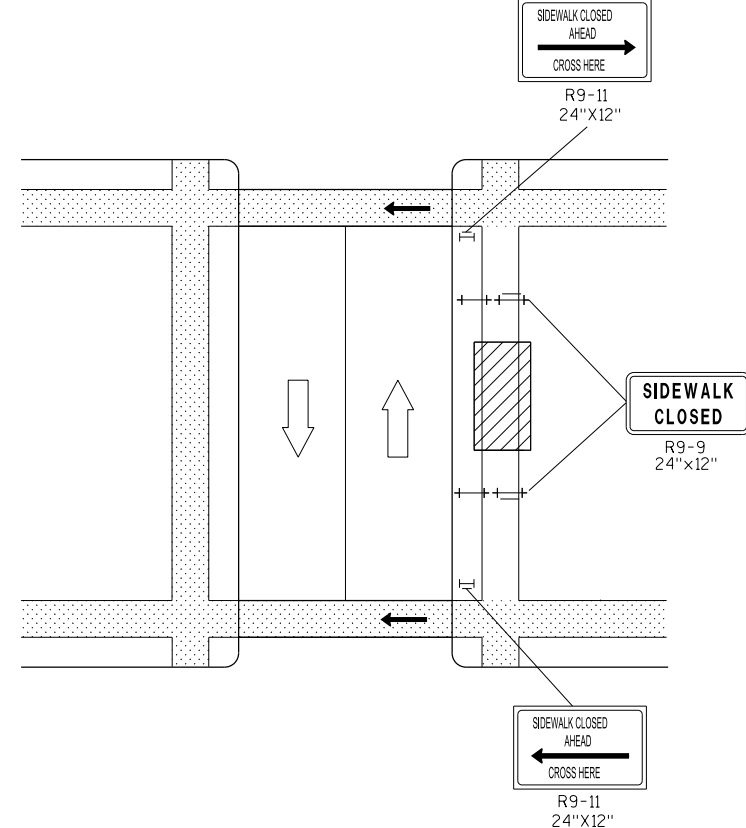
- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

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 ZONE SAFETY ENGINEER	IC
FHWA		

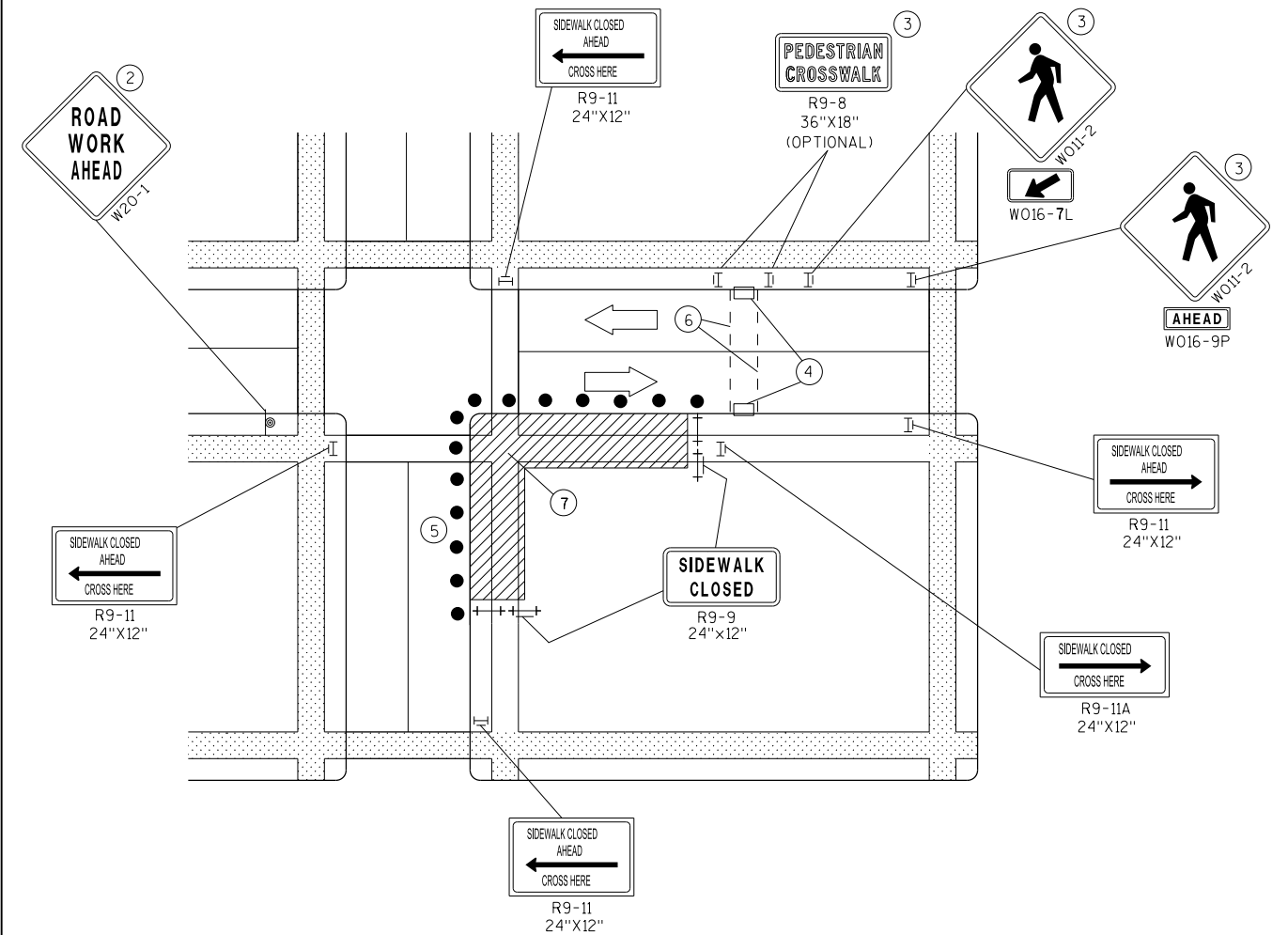
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

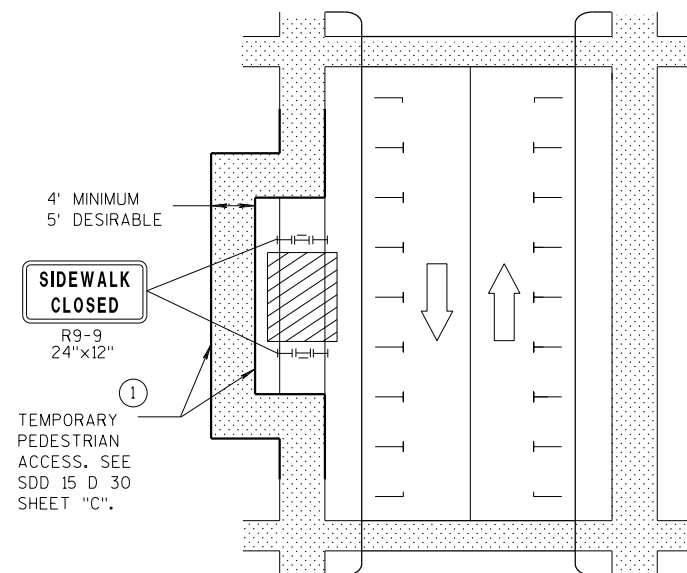


MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

- IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".
- DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

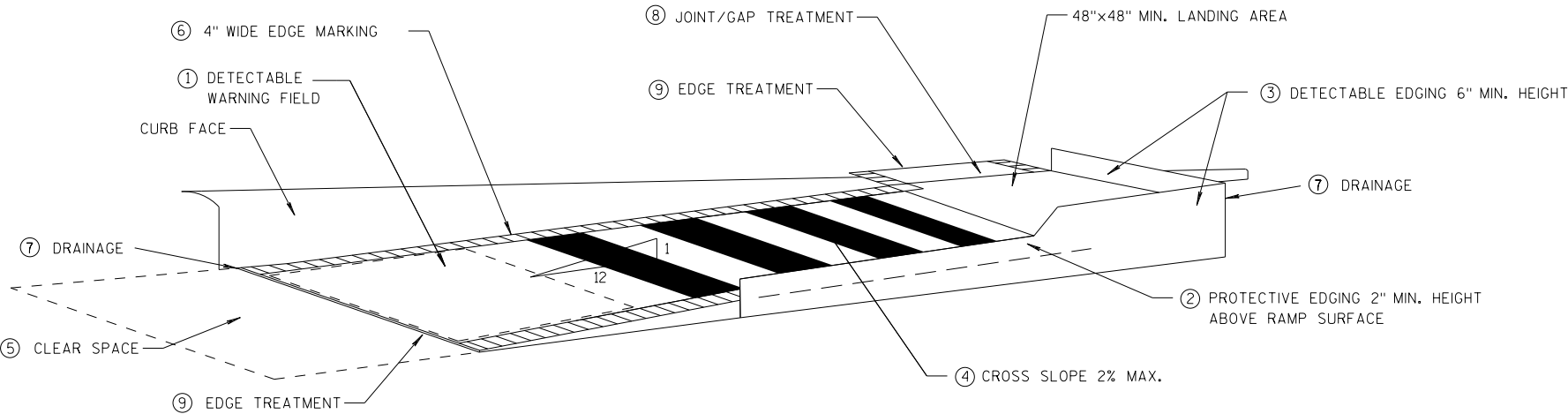
	SIGN ON PERMANENT SUPPORT		DIRECTION OF TRAFFIC
	UNDER PEDESTRIAN TRAFFIC		TRAFFIC CONTROL DRUM
	WORK AREA		
	PEDESTRIAN CHANNELIZATION DEVICE		
	TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		
	TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

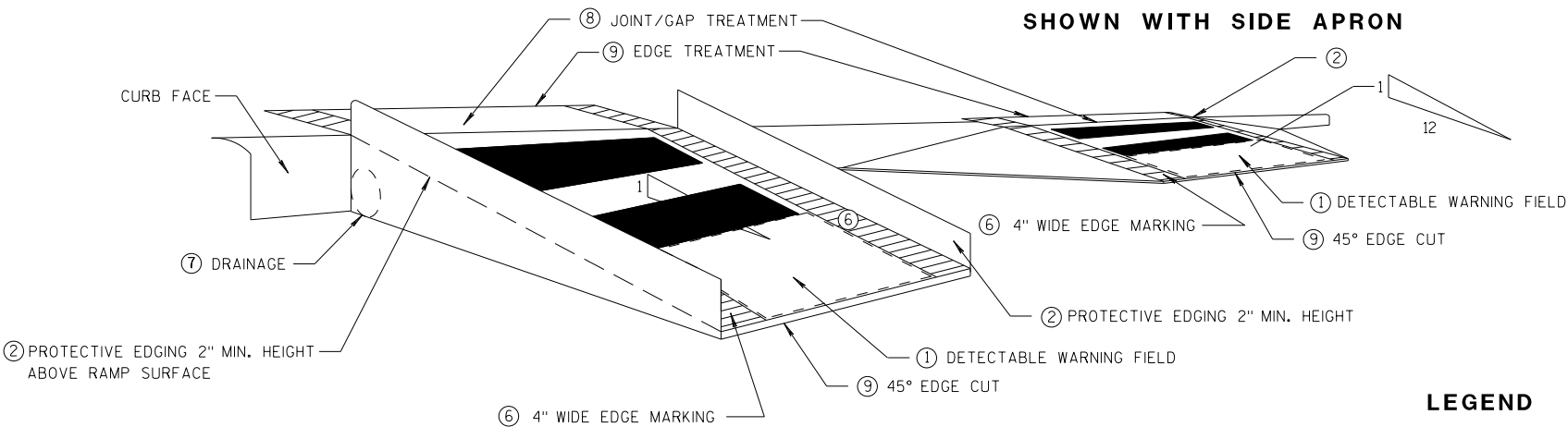
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.
- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 805 SHEET "E".
 - 2 PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
 - 3 DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
 - 4 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
 - 5 CLEAR SPACE OF 48"x48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 - 6 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
 - 7 DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
 - 8 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
 - 9 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
 - 10 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.

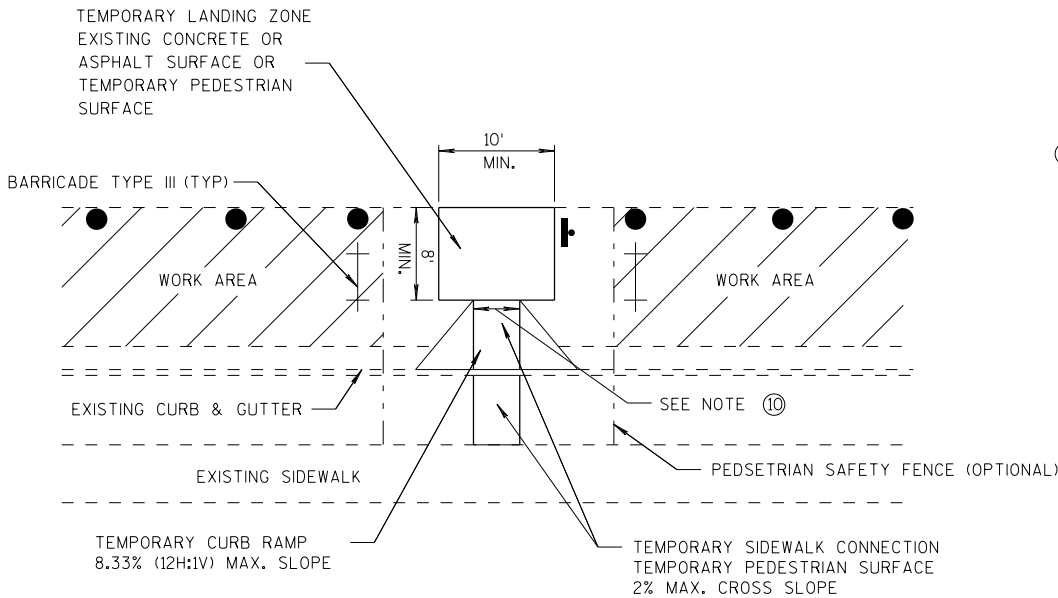


TEMPORARY CURB RAMP
PARALLEL TO CURB



SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP
PERPENDICULAR TO CURB



TEMPORARY BUS STOP PAD

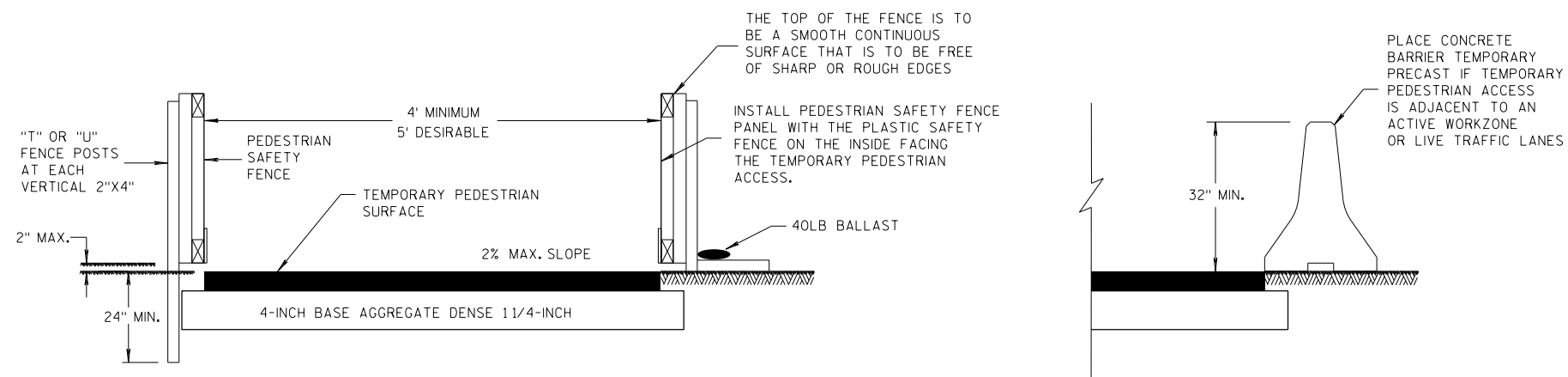
LEGEND

- WORK AREA
- TYPE III BARRICADE
- TRAFFIC CONTROL DRUM

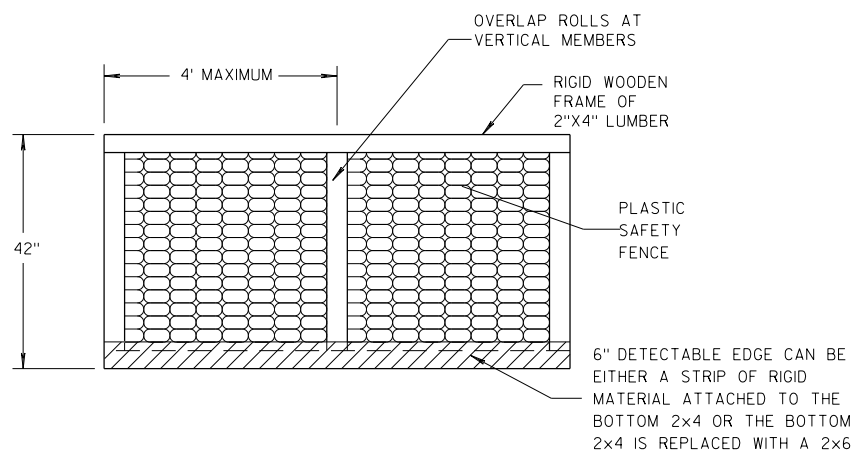
TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

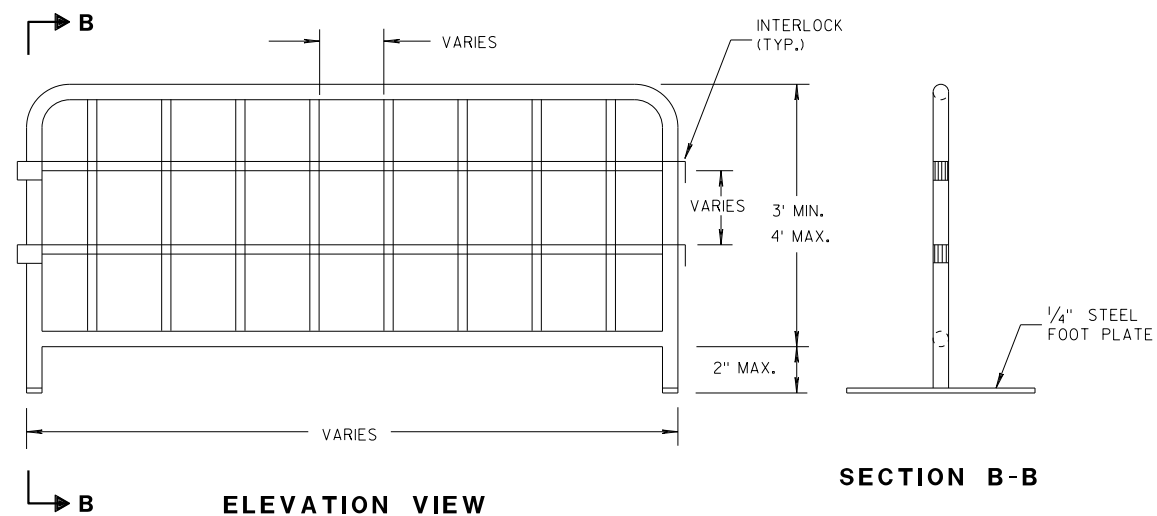
APPROVED
DATE 7/2018 /S/ Andrew Heidtke
WORK ZONE ENG 80
FHWA



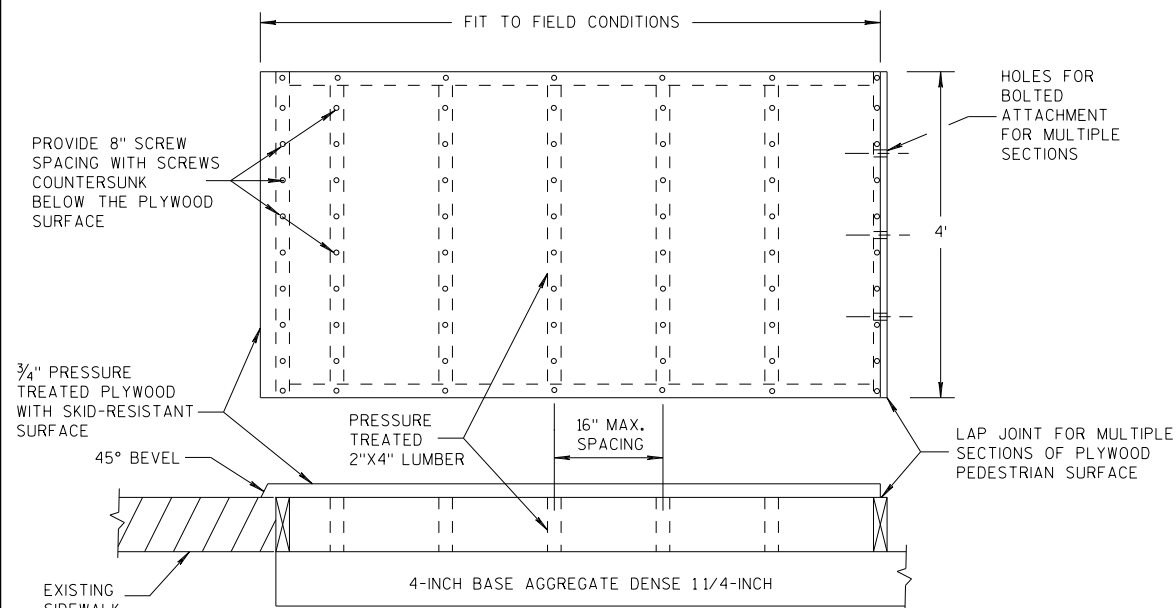
TEMPORARY PEDESTRIAN ACCESS



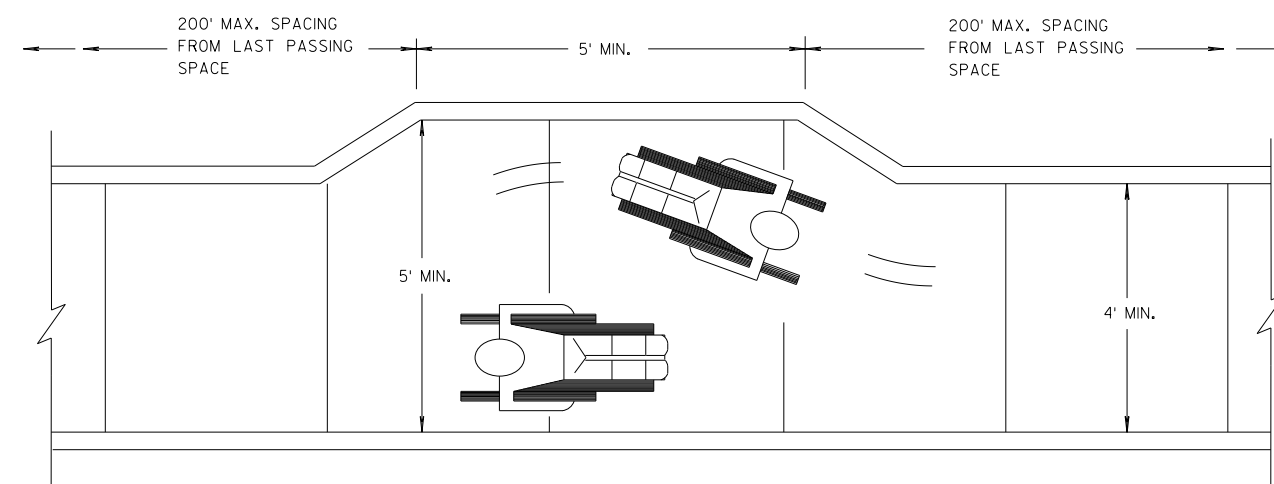
PEDESTRIAN SAFETY FENCE



TEMPORARY PEDESTRIAN STEEL BARRICADE



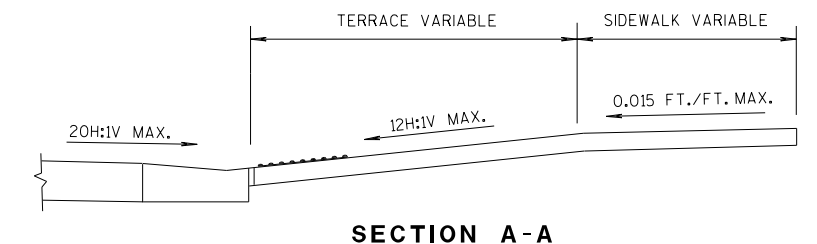
TEMPORARY PEDESTRIAN SURFACE PLYWOOD



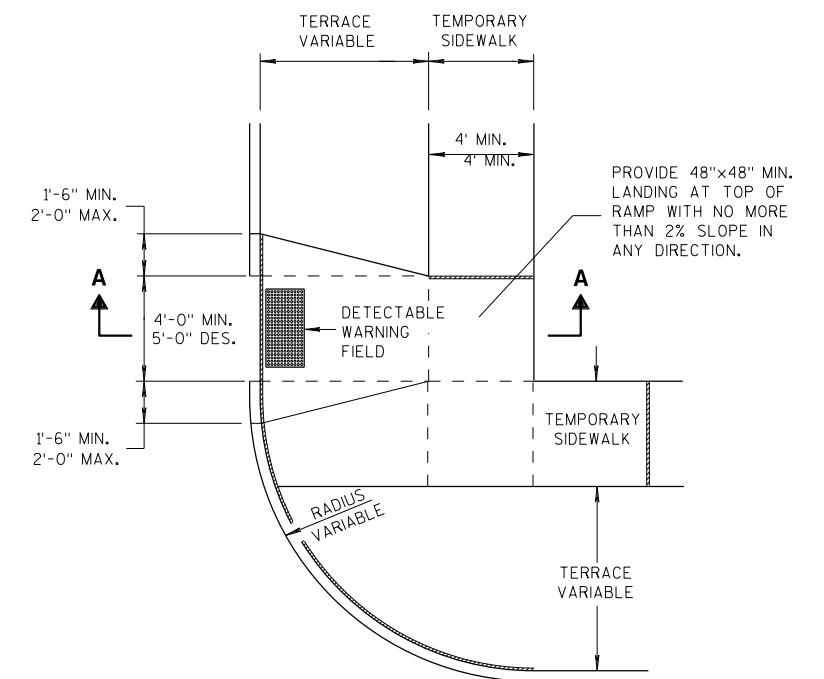
NARROW SIDEWALK PASSING DETAIL

GENERAL NOTES

- ① INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>7/2018</u> DATE	<u>/S/ Andrew Heidtke</u> WORK ZONE ENG 81

LEGEND

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

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

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

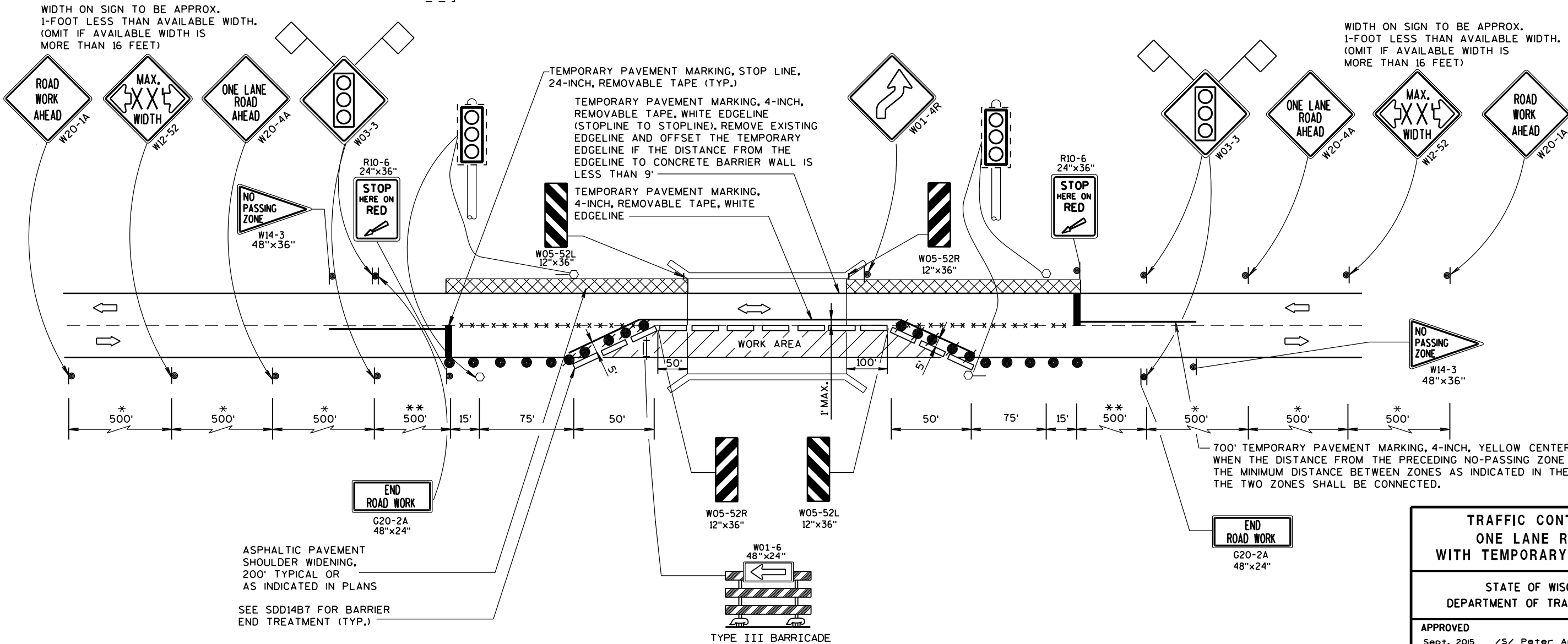
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

6

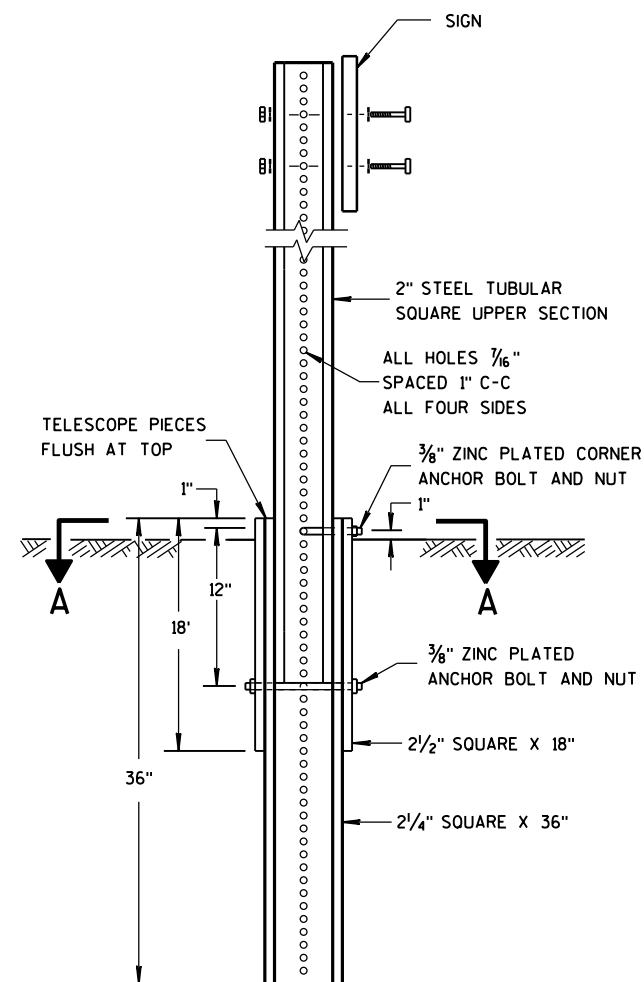


6

TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



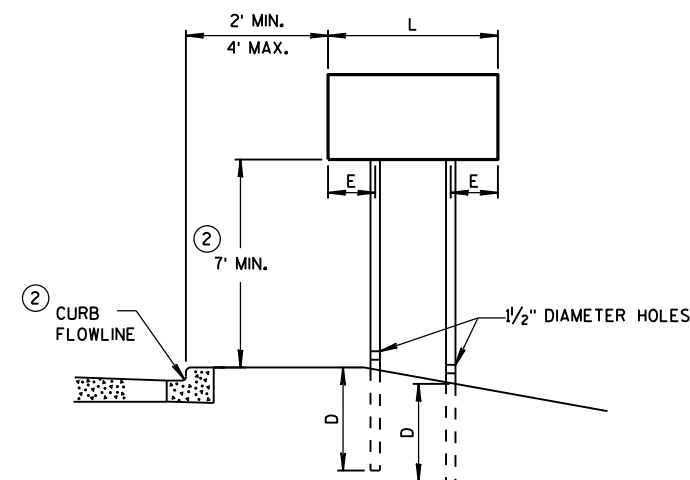
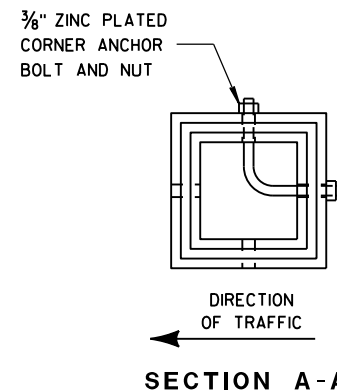
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

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

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

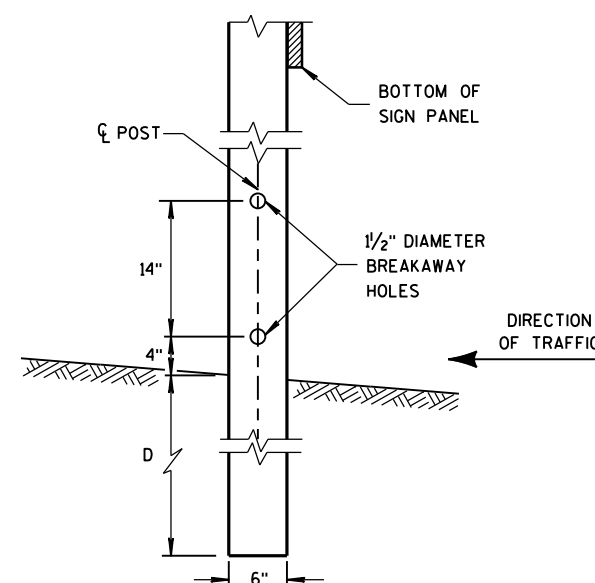


URBAN AREA

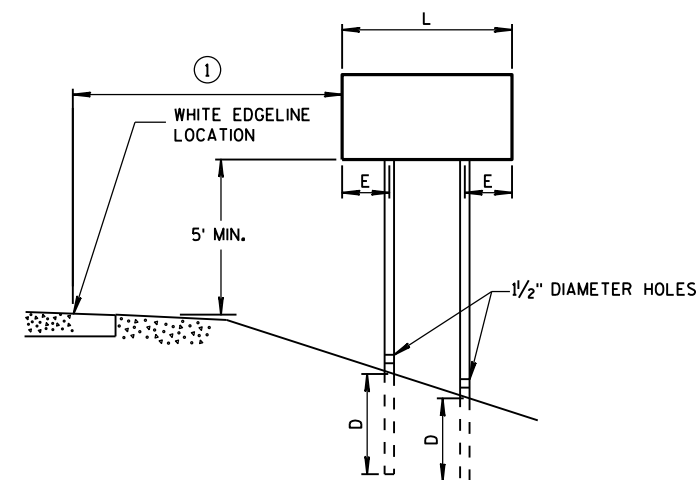
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

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

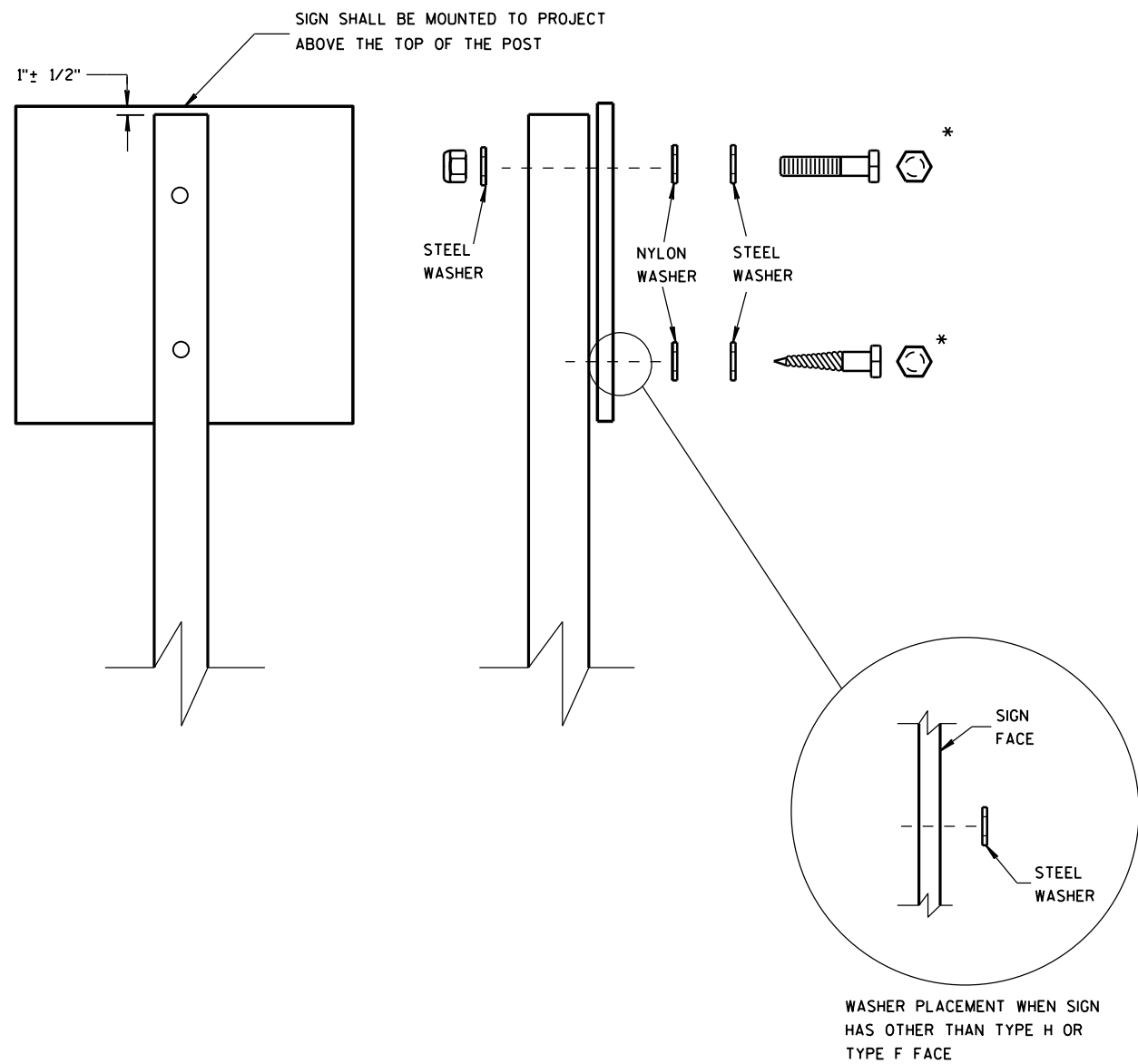
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

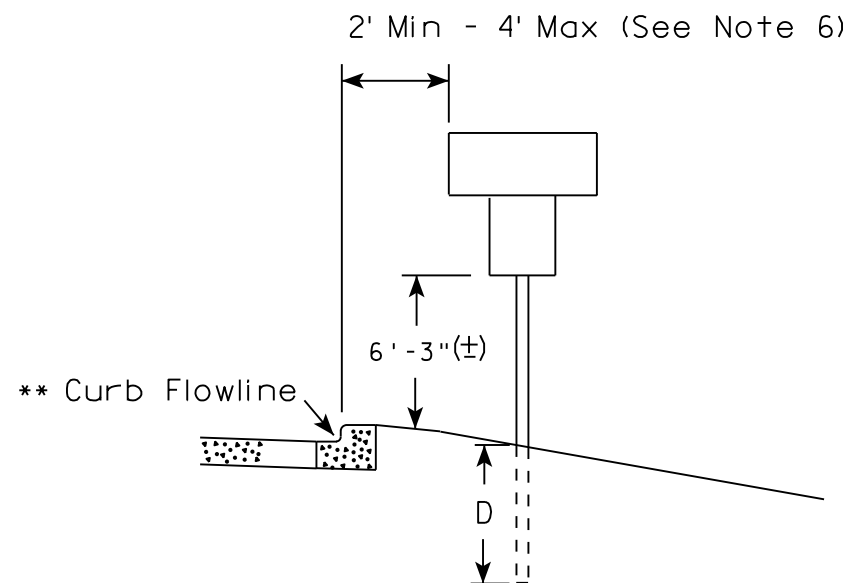
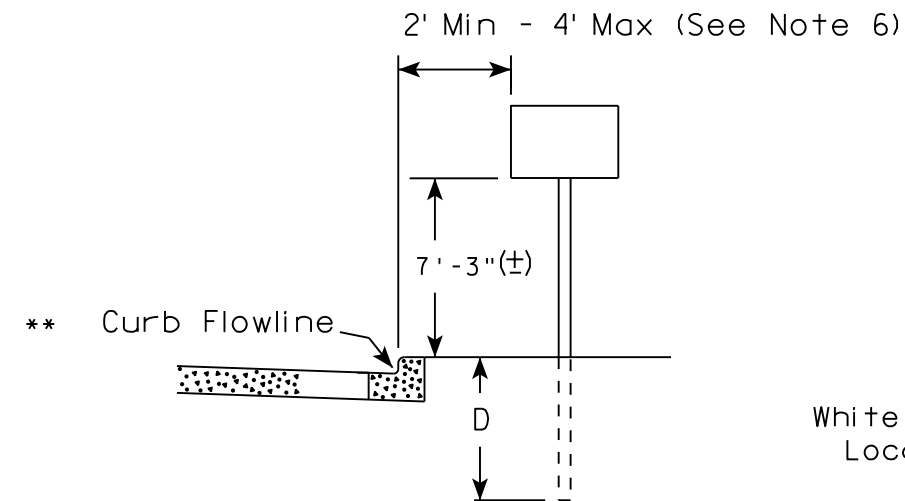
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

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

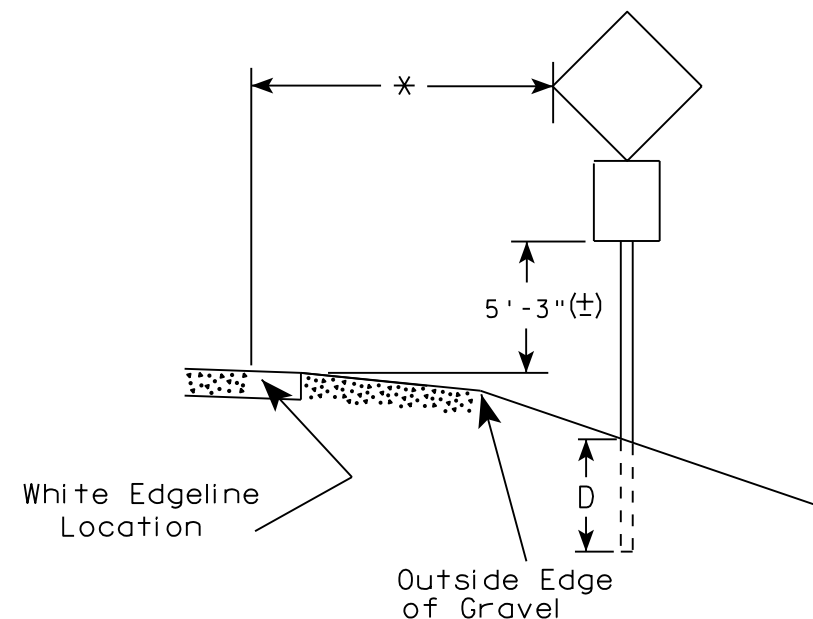
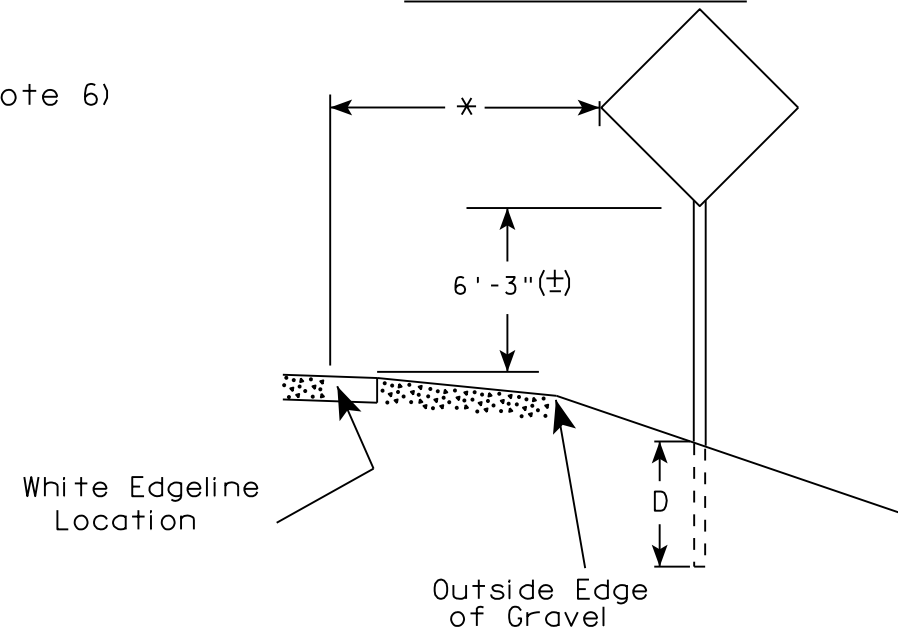
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 84
FHWA	

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

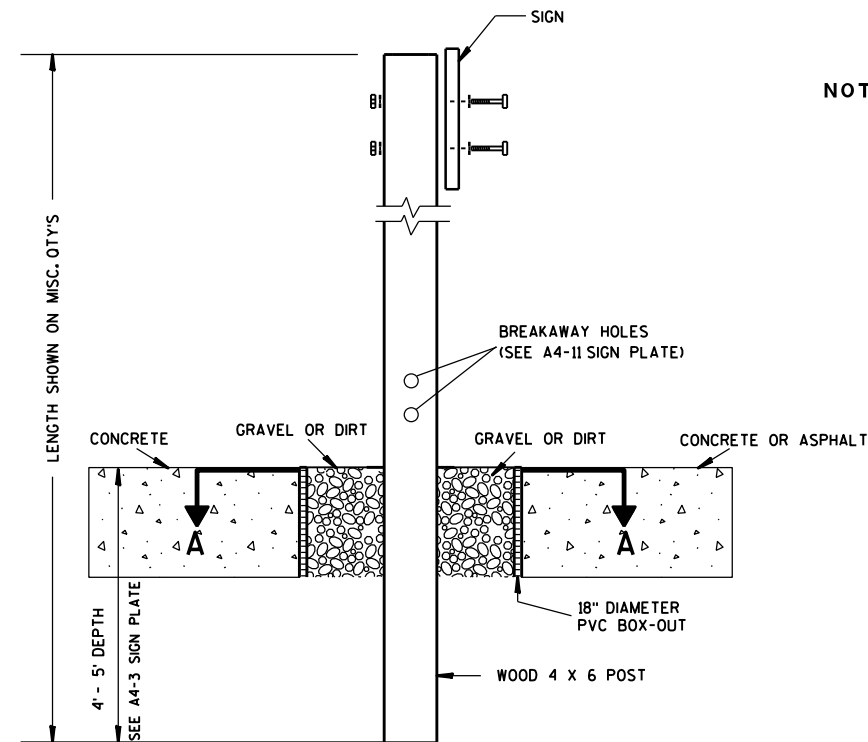
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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 directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

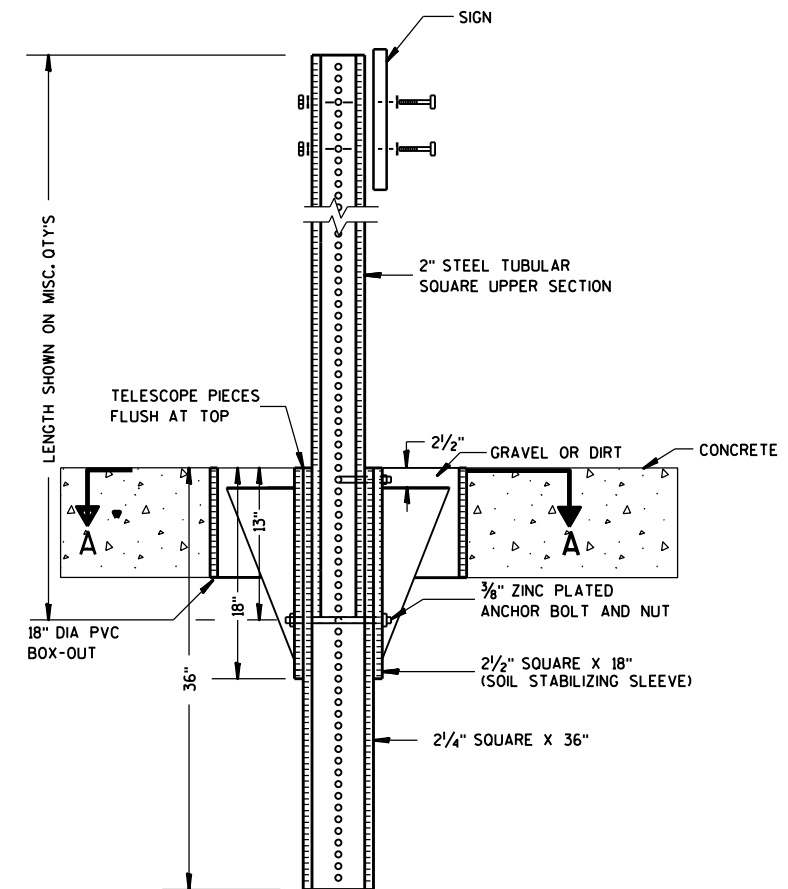
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

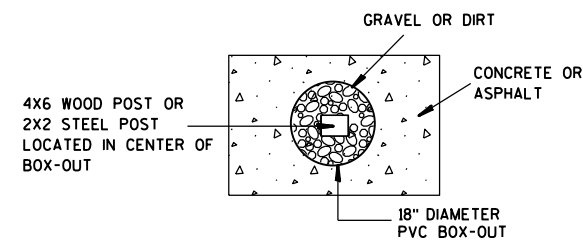
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 86 A4-3B.1

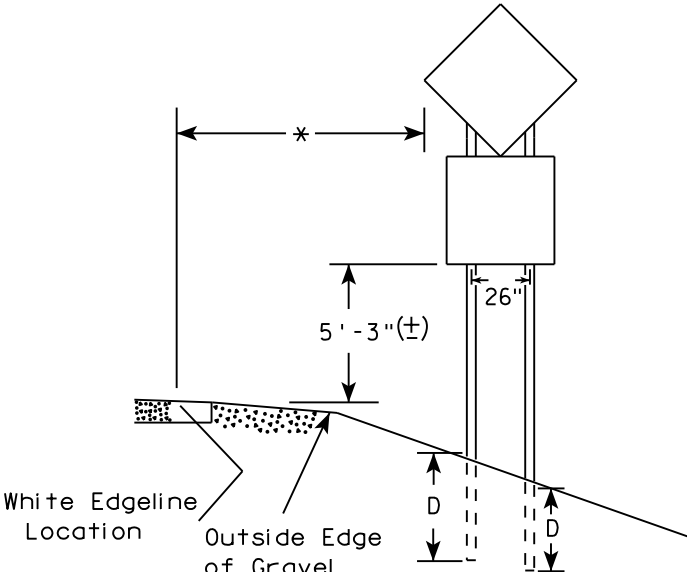
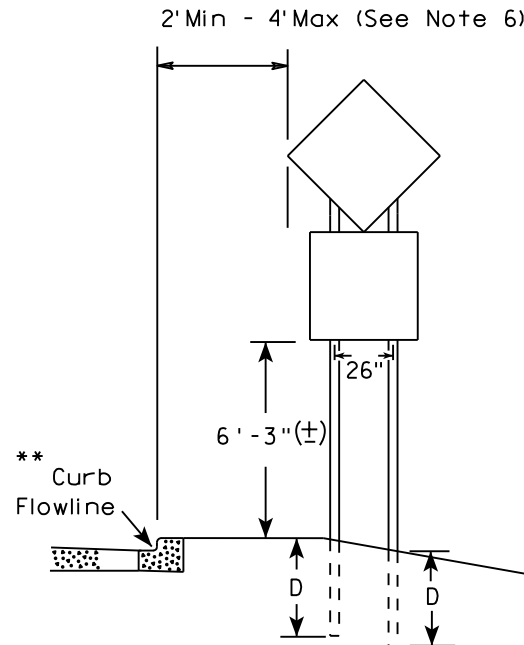
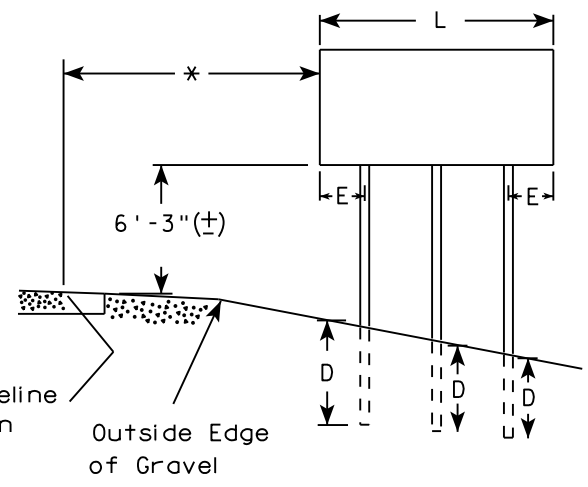
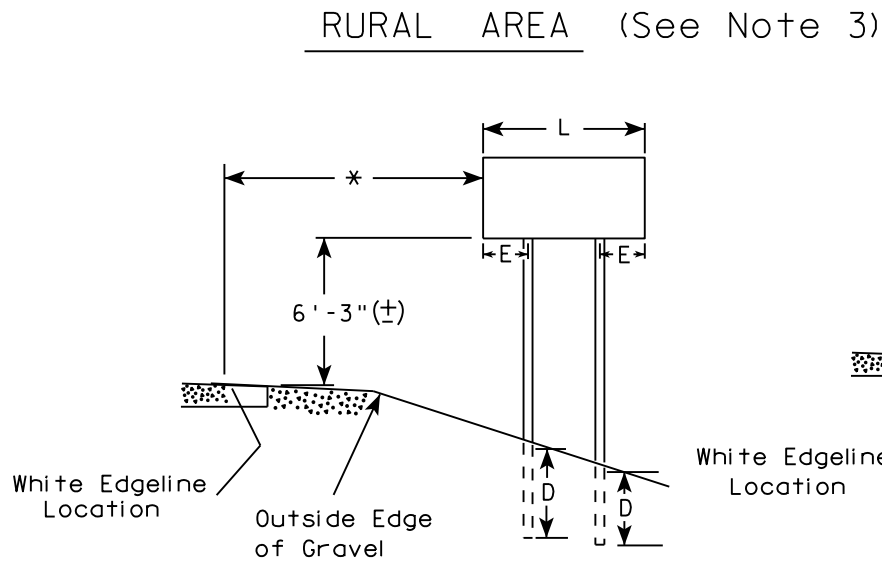
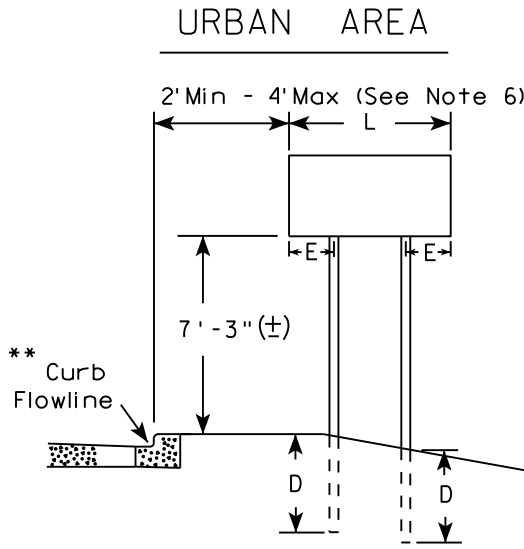
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	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

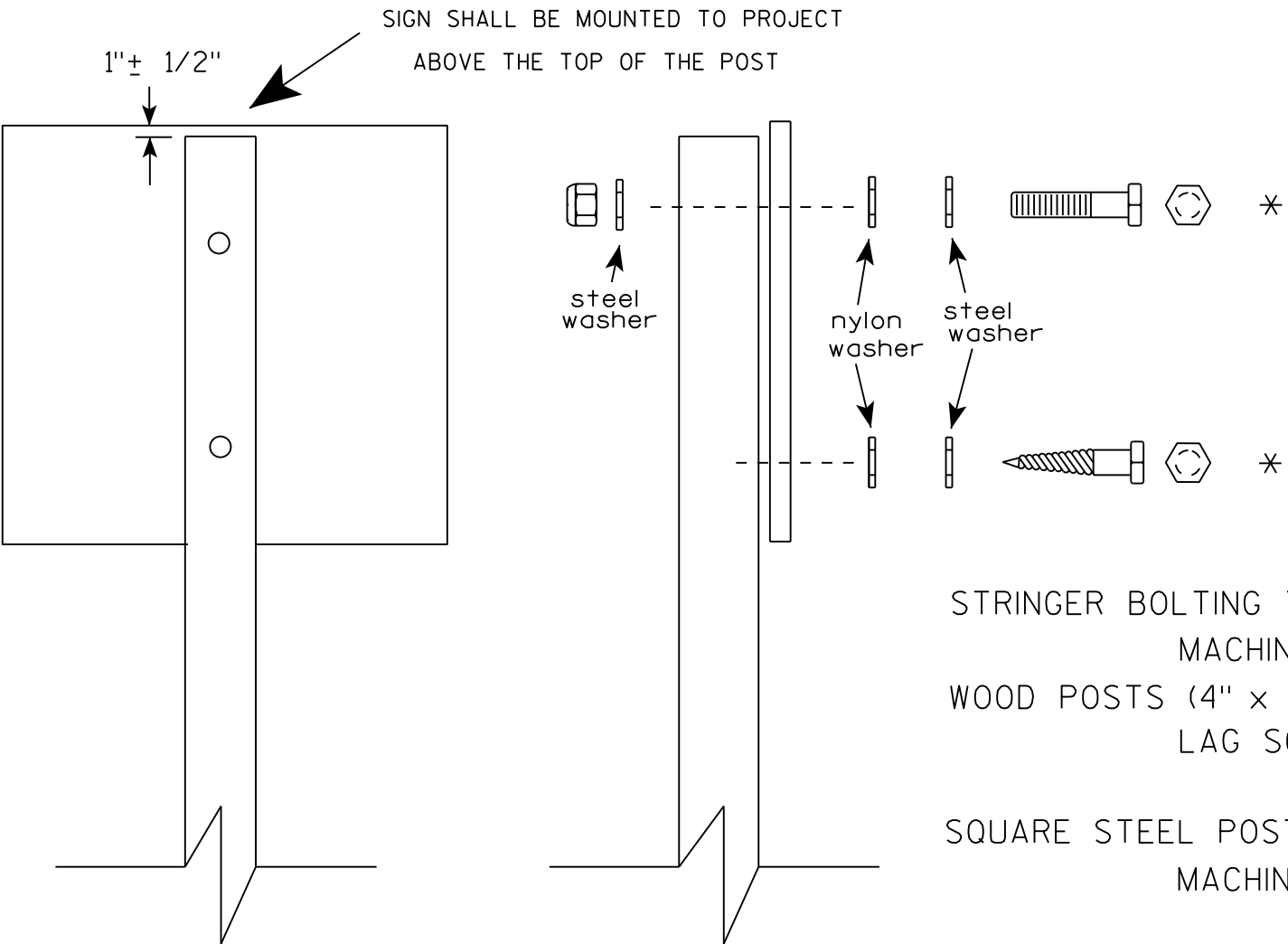
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

- 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. J-Assemblies are considered to be one sign for mounting height.
 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.



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.

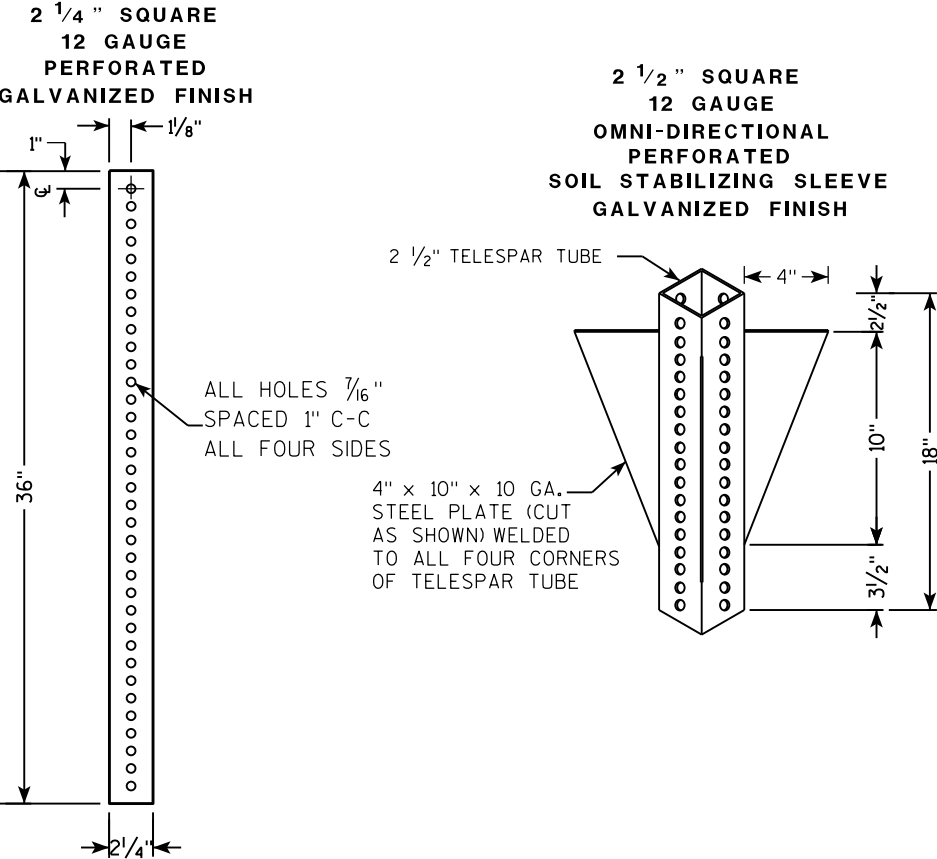
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

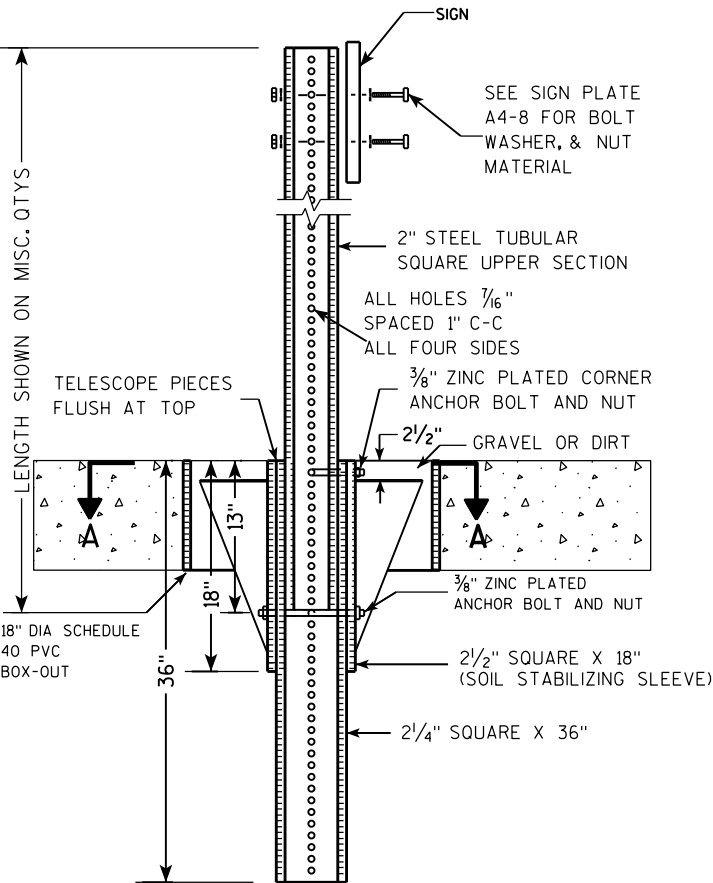
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8
88

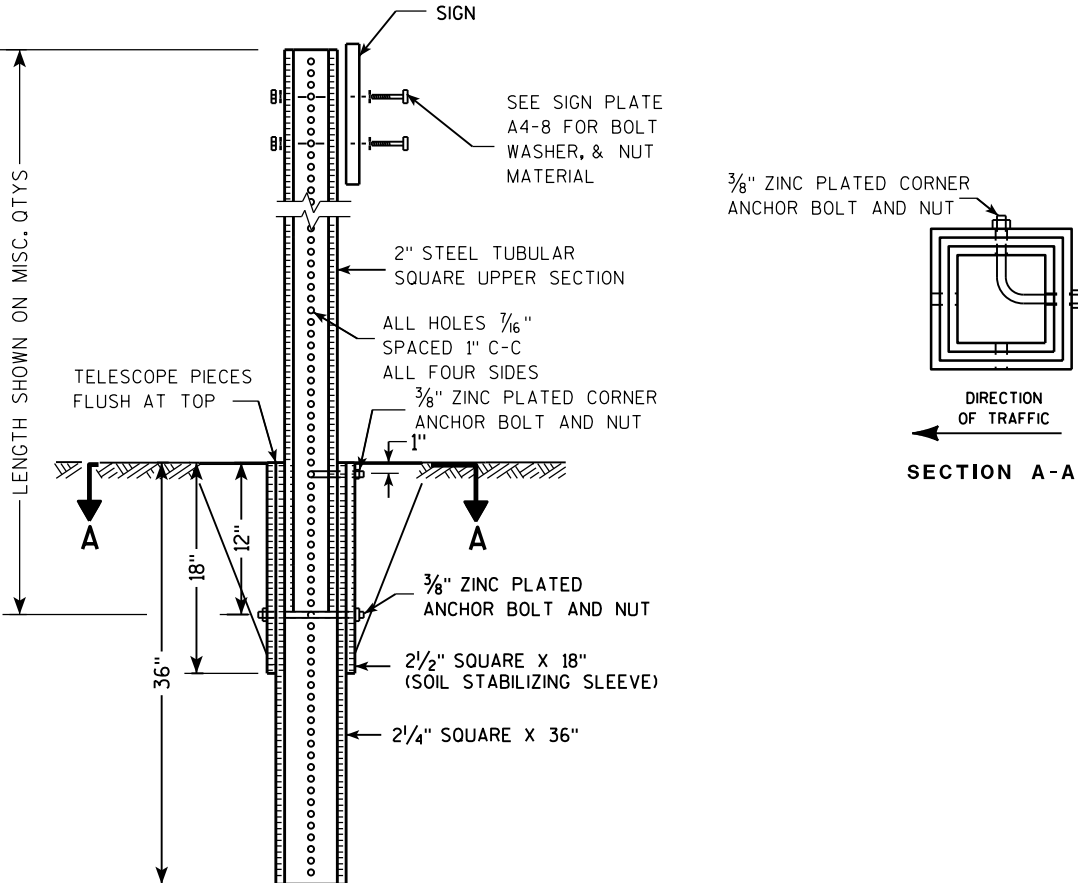
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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)



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

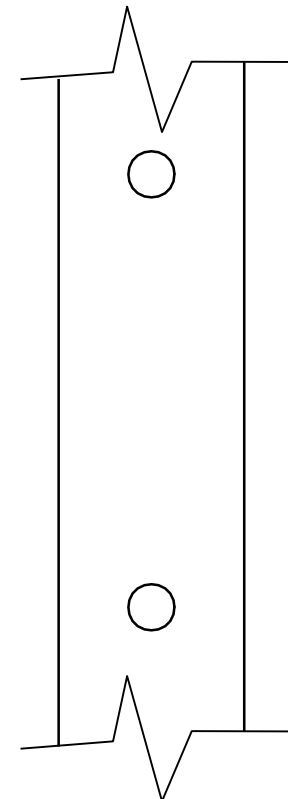
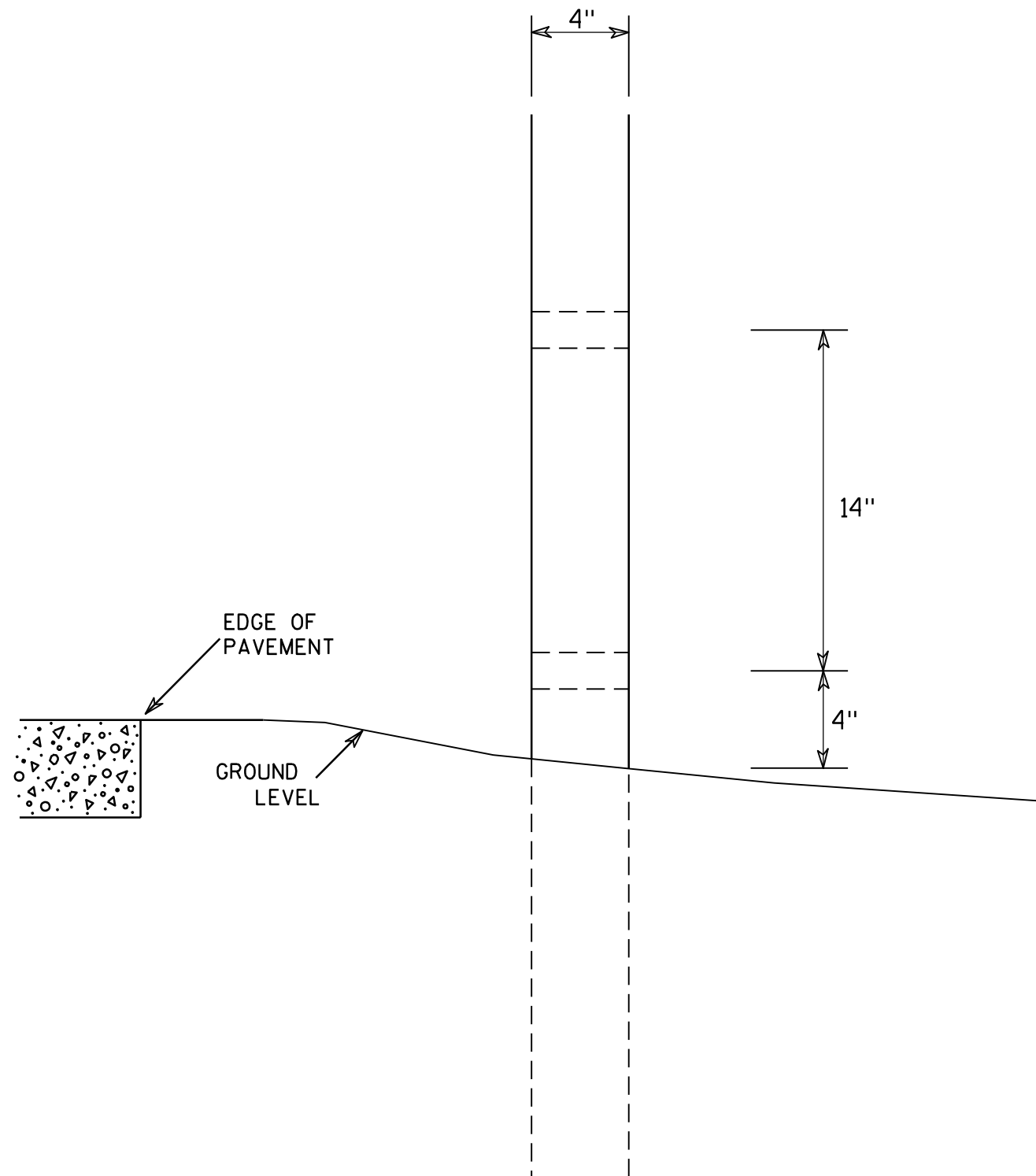
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 89 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

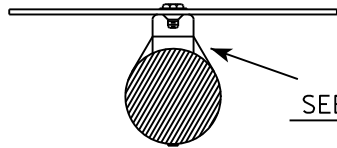
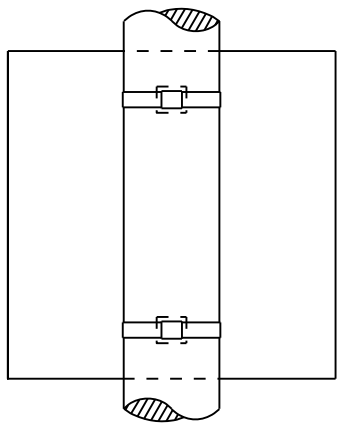
COUNTY:

SHEET NO: 90

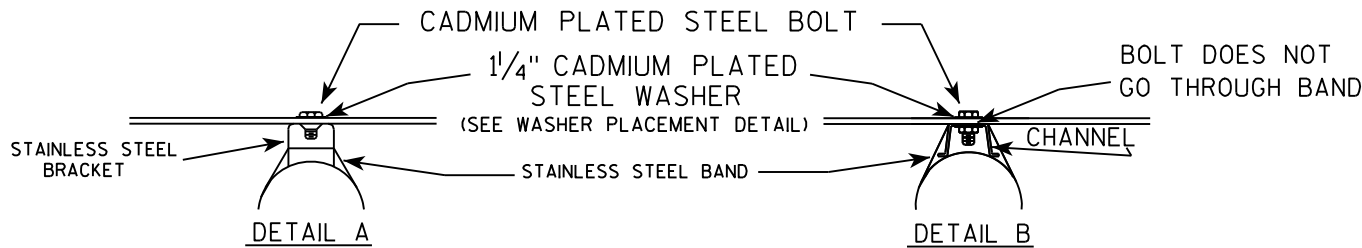
E

BANDING

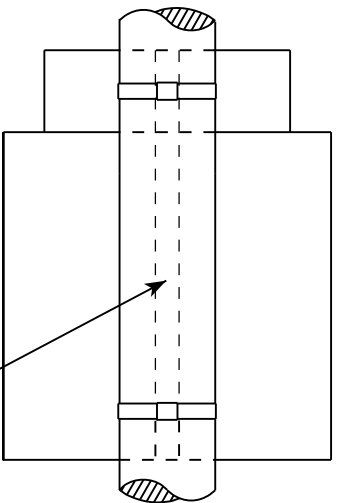
SINGLE SIGN



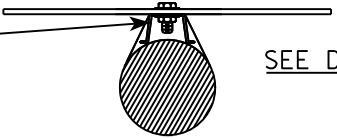
SEE DETAIL A



"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

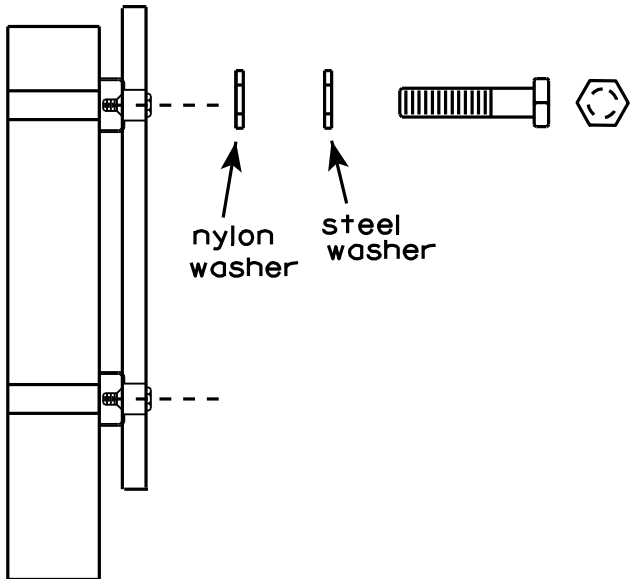


SEE DETAIL B

GENERAL NOTES

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

WASHER PLACEMENT



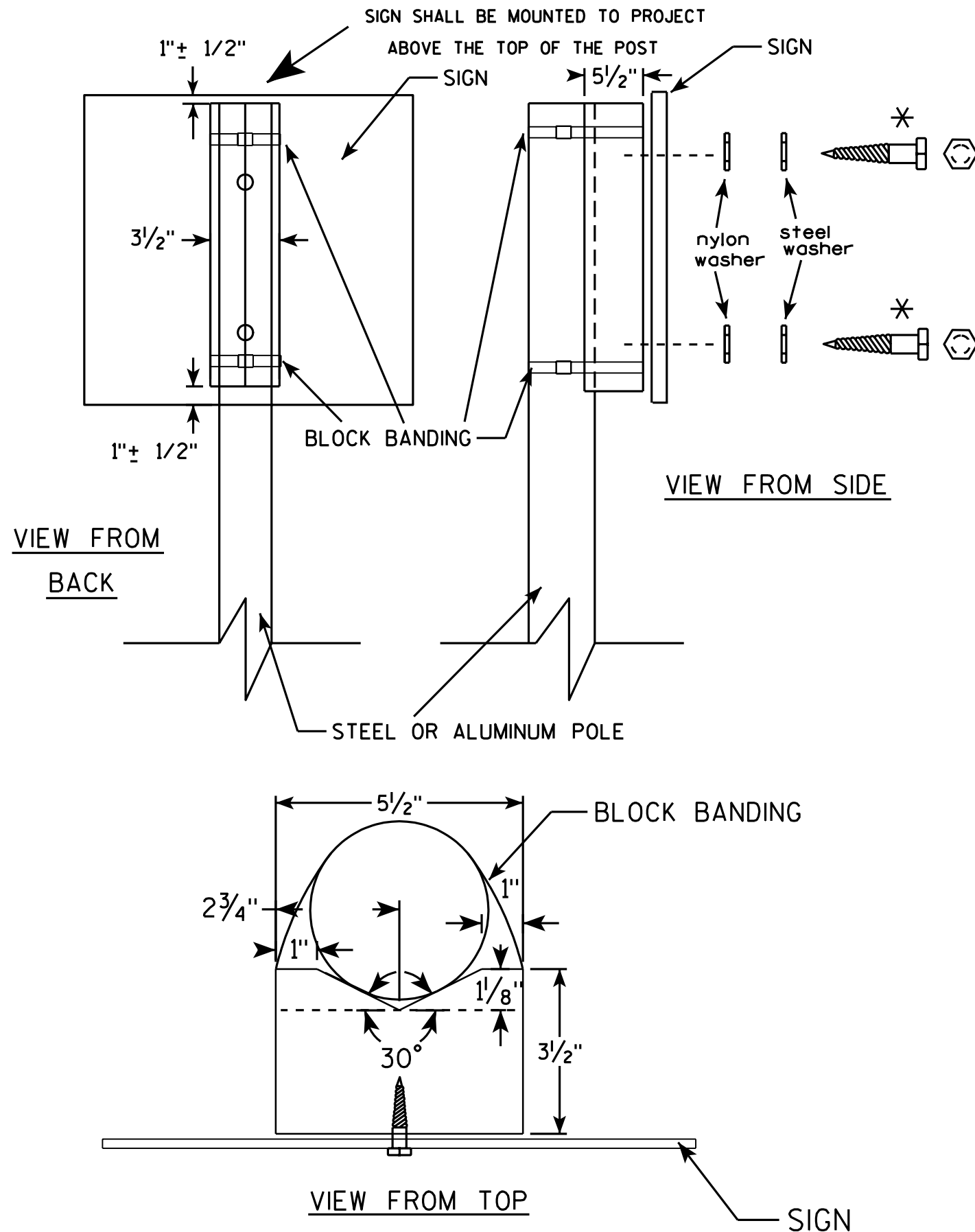
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

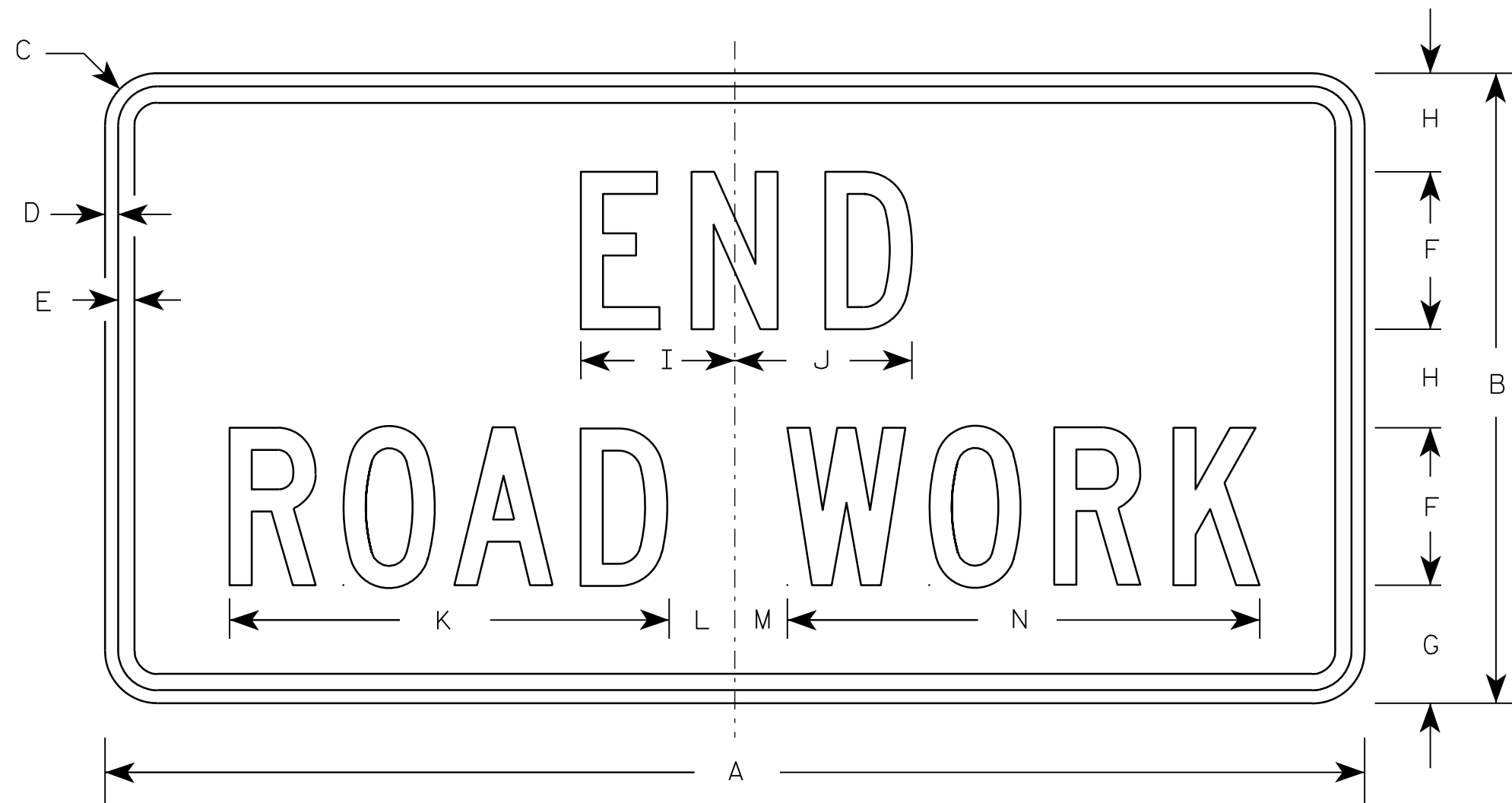
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 92

E

7



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 m ²
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

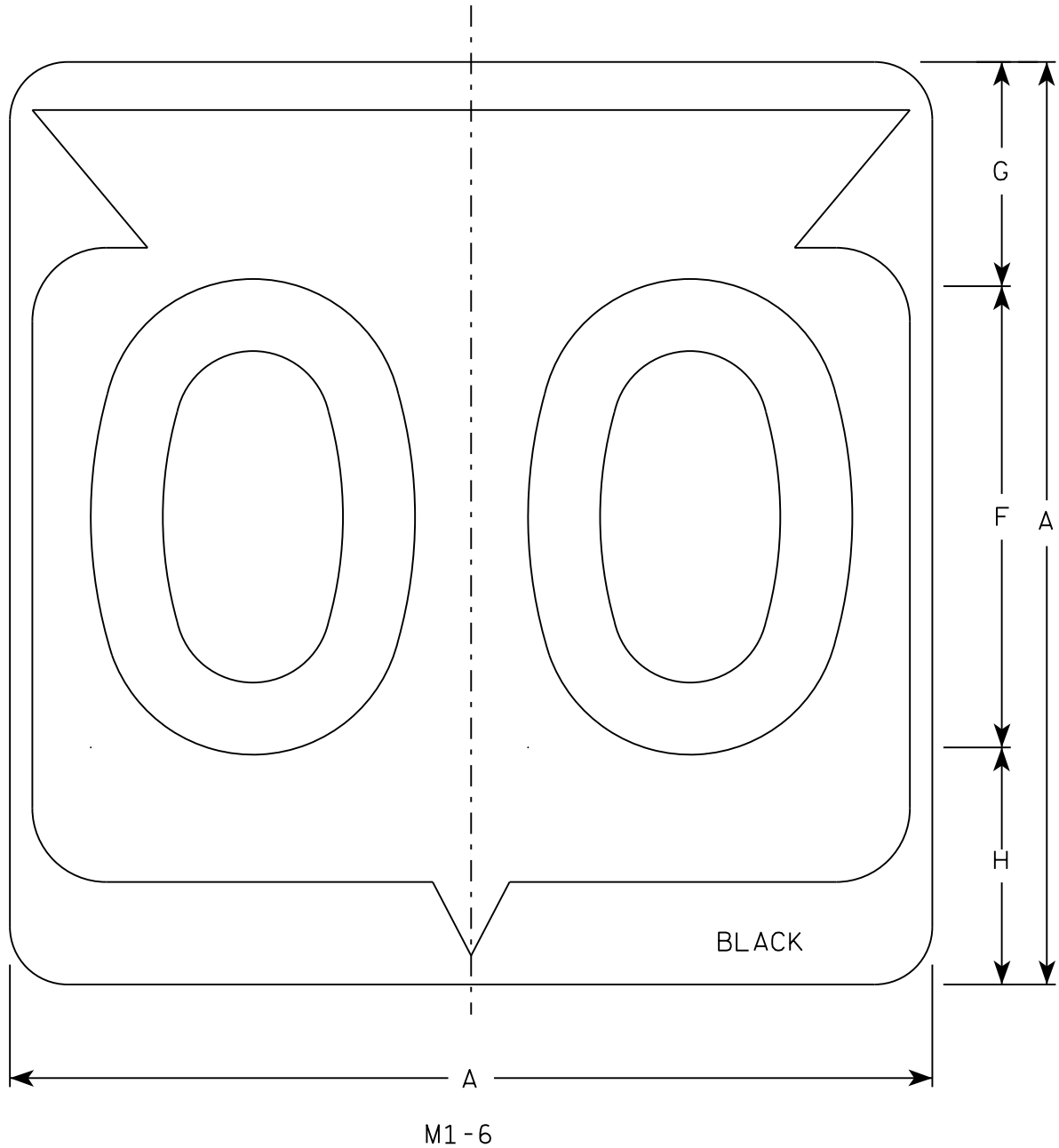
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

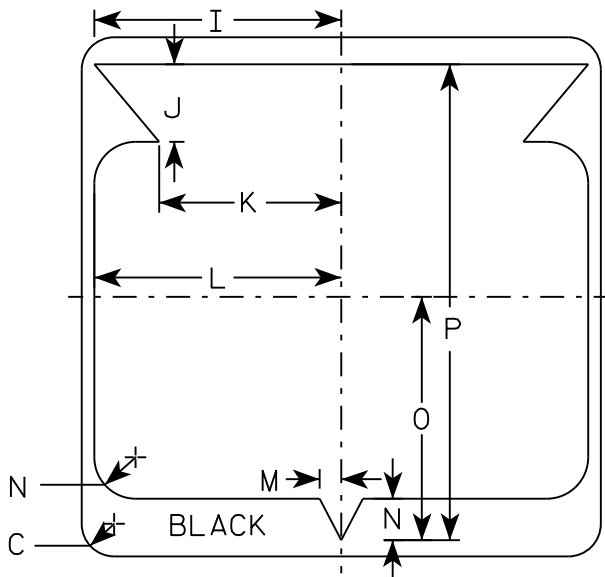
7

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D except 3 number signs 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.



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			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
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
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
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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 94

E

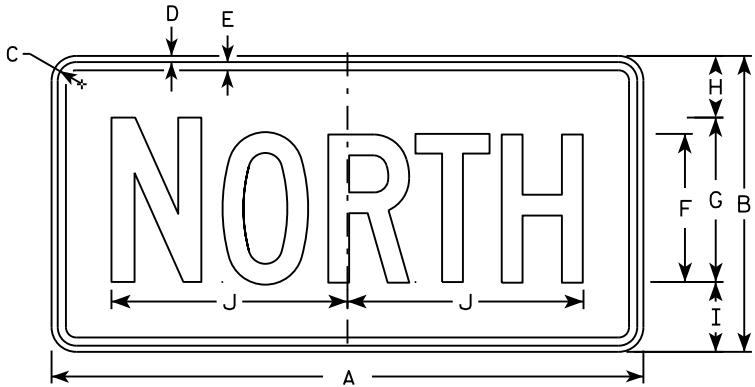
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

DATE 3/16/18

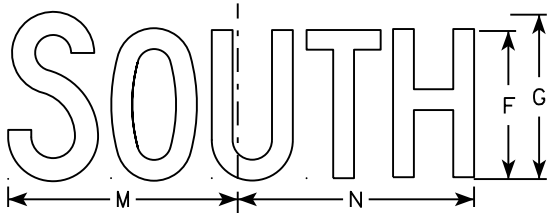
PLATE NO. M1-6.10



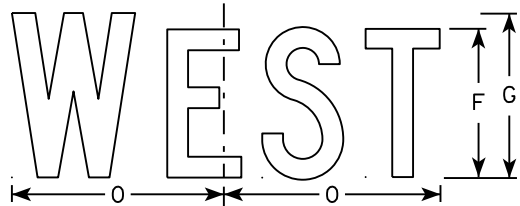
M3-1
MM3-1
MP3-1



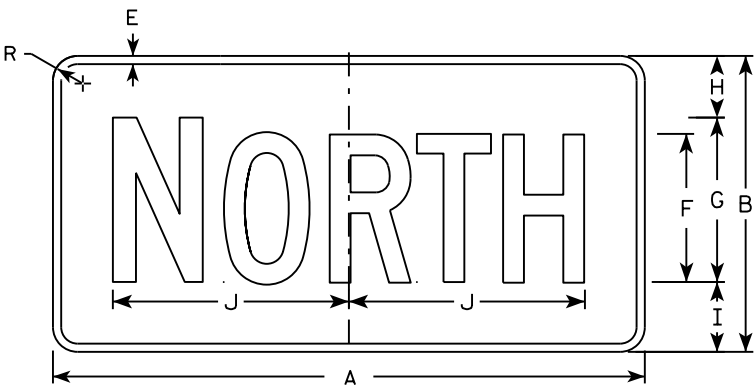
M3-2
MM3-2
MP3-2



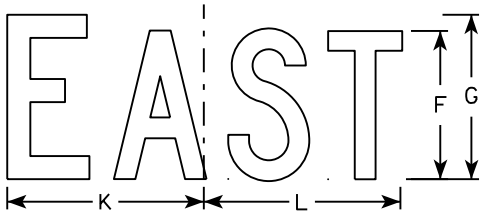
M3-3
MM3-3
MP3-3



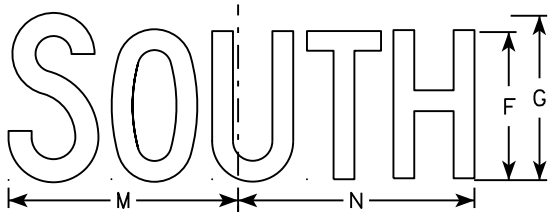
M3-4
MM3-4
MP3-4



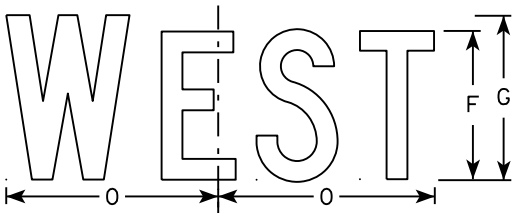
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



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

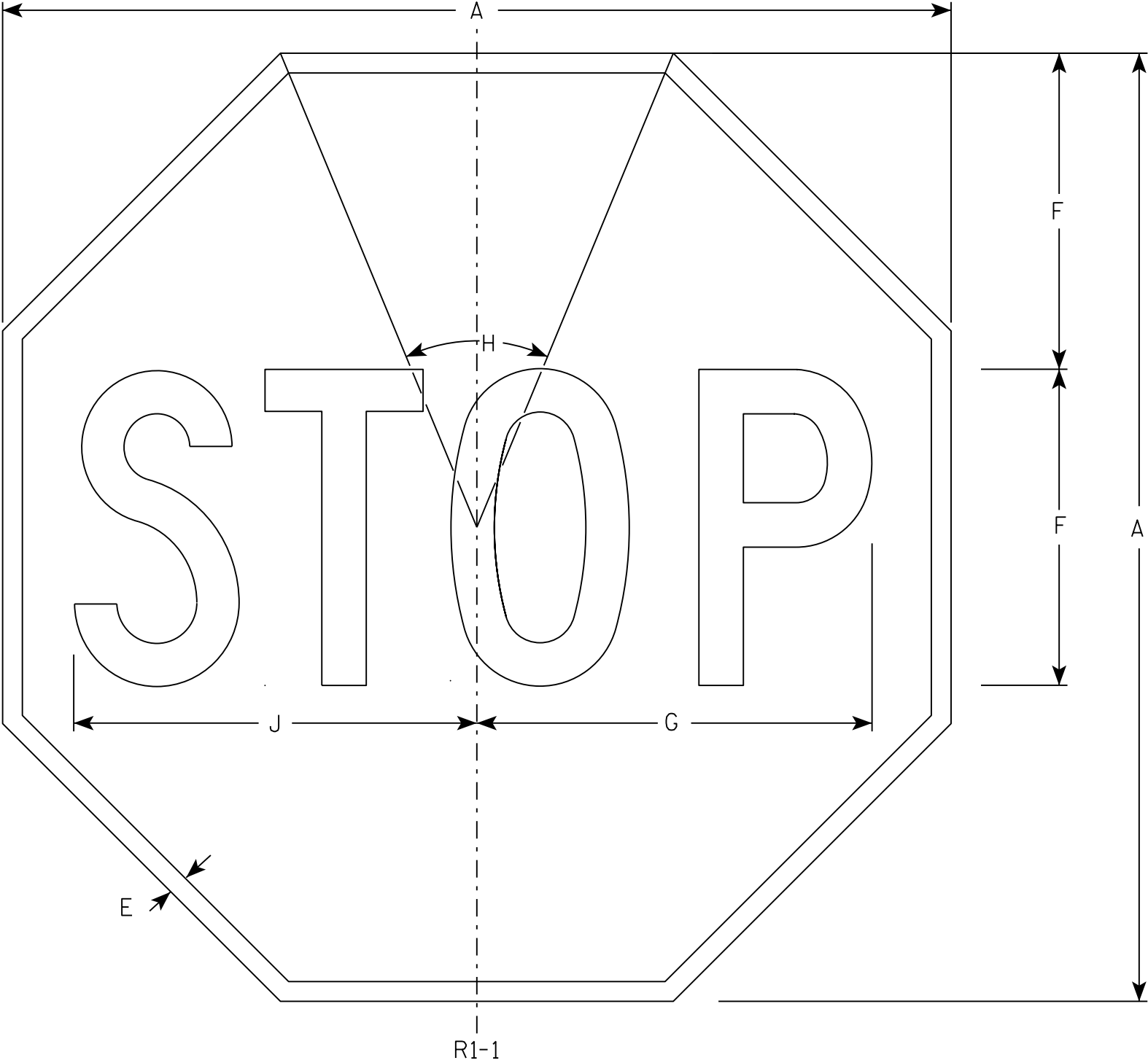
STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLAT 95 M3-1.14

7



NOTES

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

7

R1-1

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

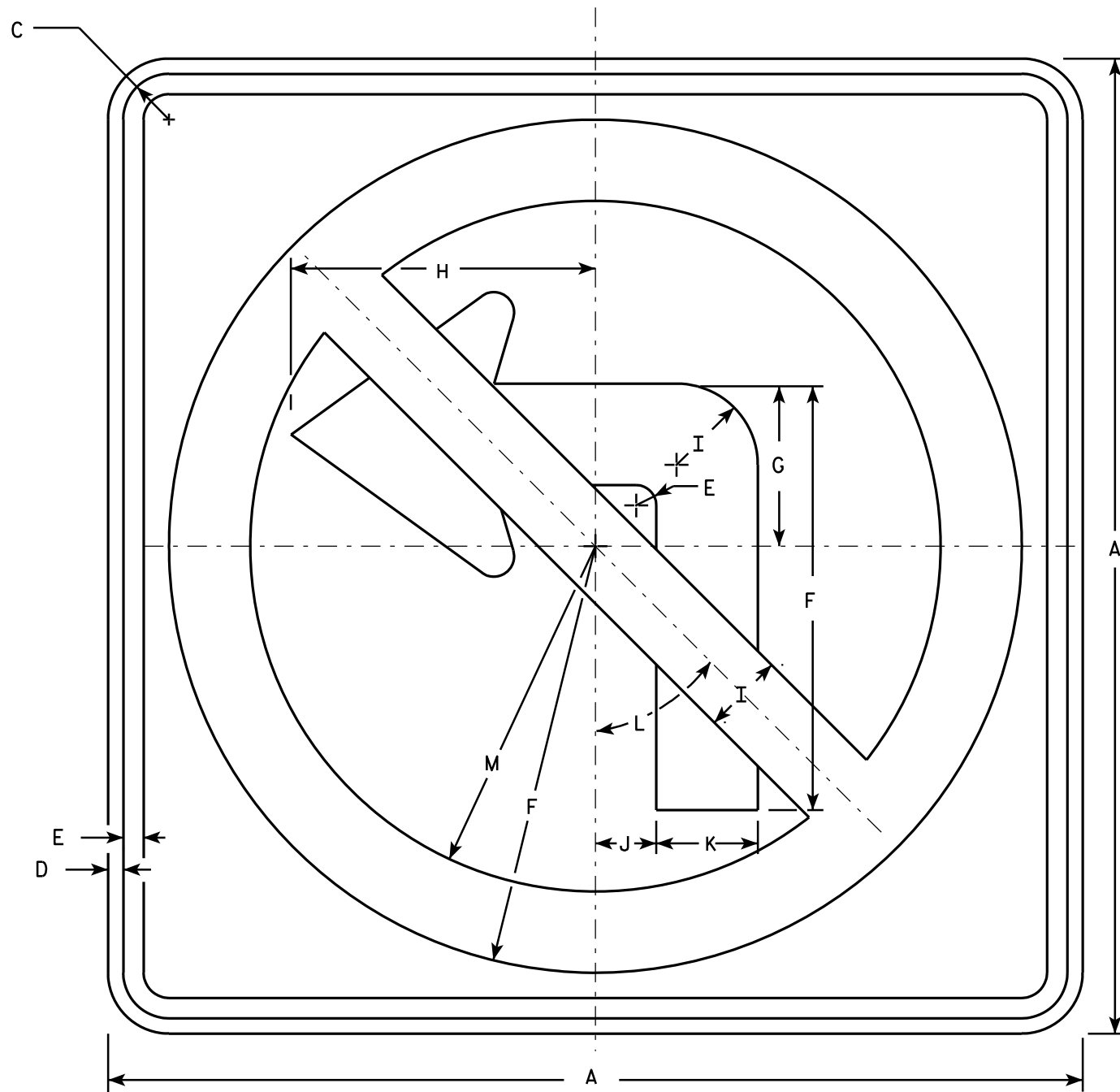
STANDARD SIGN

R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

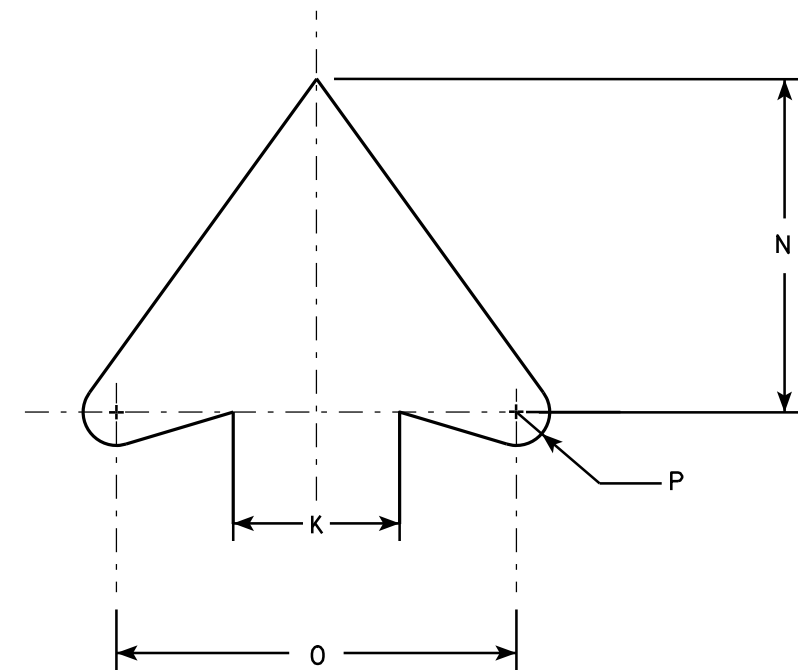
DATE 11/12/15 PLATE NO. R1-1.13



R3-2

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 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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

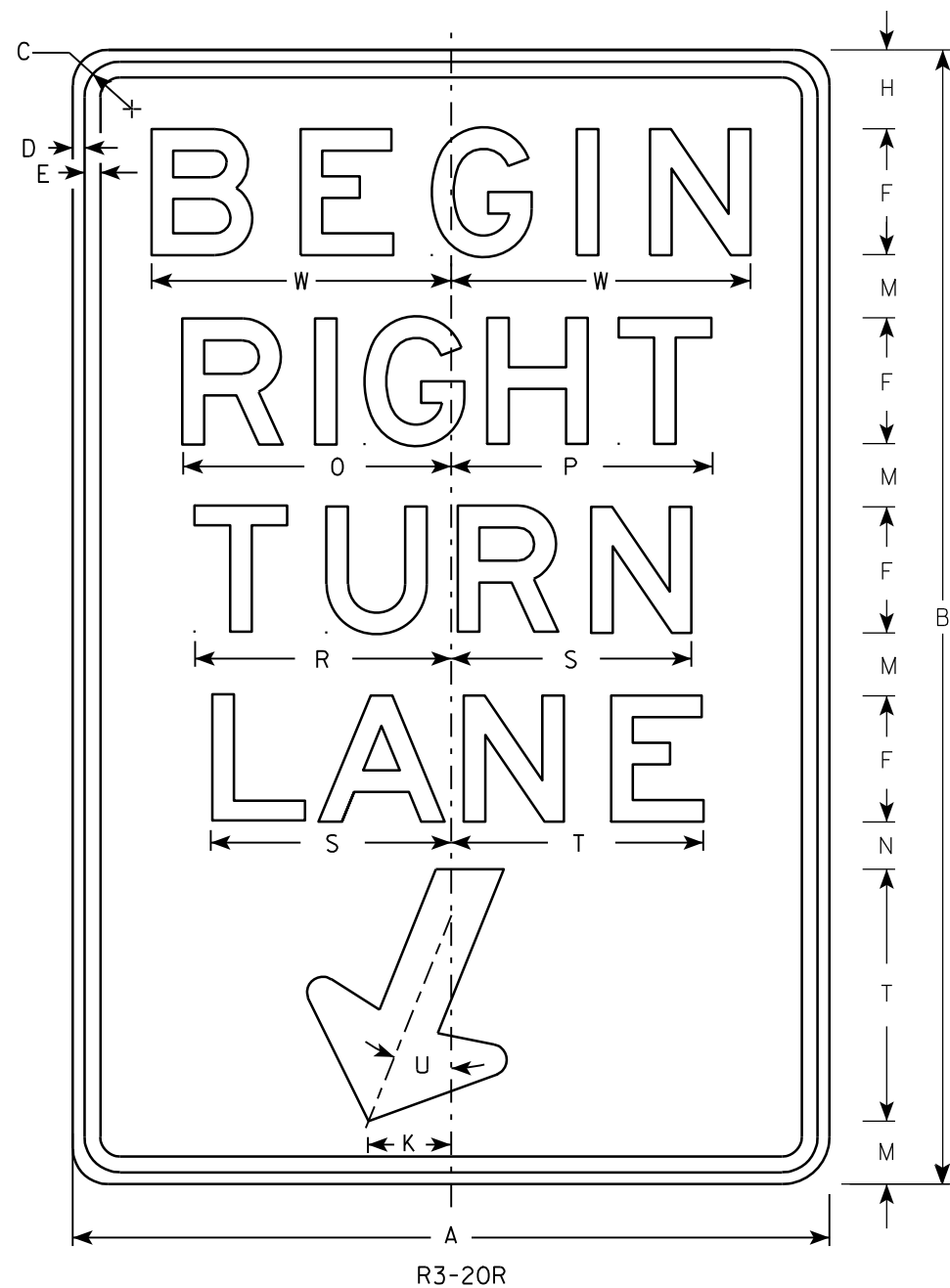
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 97

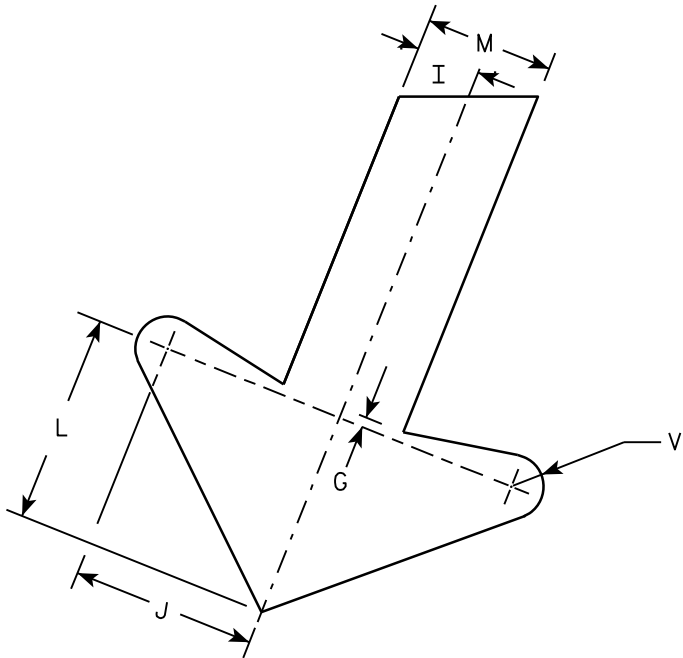
E



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.



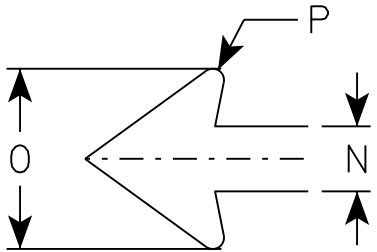
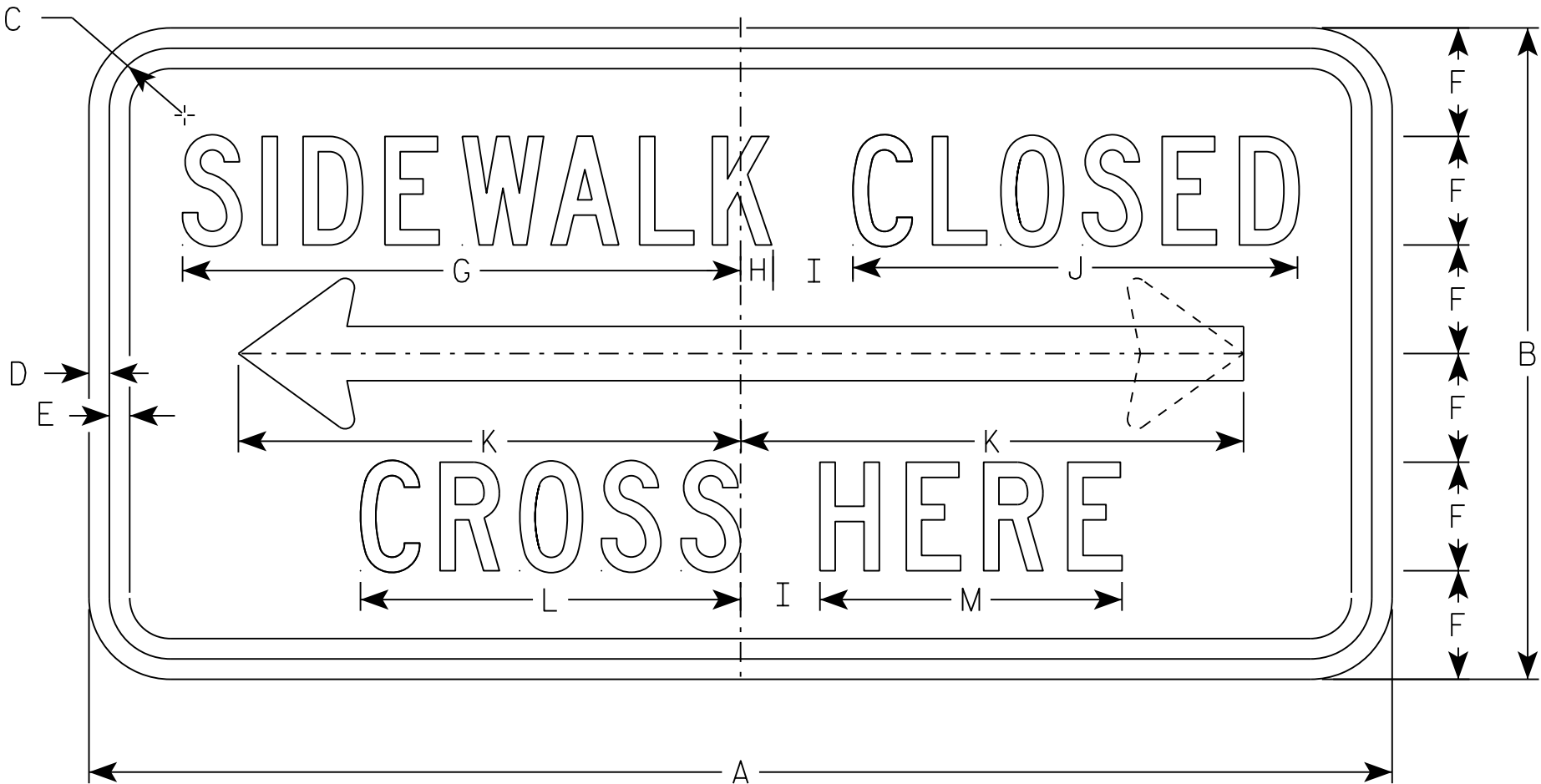
ARROW DETAIL

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																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 98	E
-------------	------	---------	--------------	---

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
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.
- 5. Use Size 2 for Sidewalks. Use Size 3 for paths and Trails.



R9-11A

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	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2M	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
3	30	15	1 1/8	3/8	1/2	2	13	3/4	2	10 1/4	12 3/8	8 7/8	6 7/8	1 1/4	3 5/8	1/4											3.125
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 99

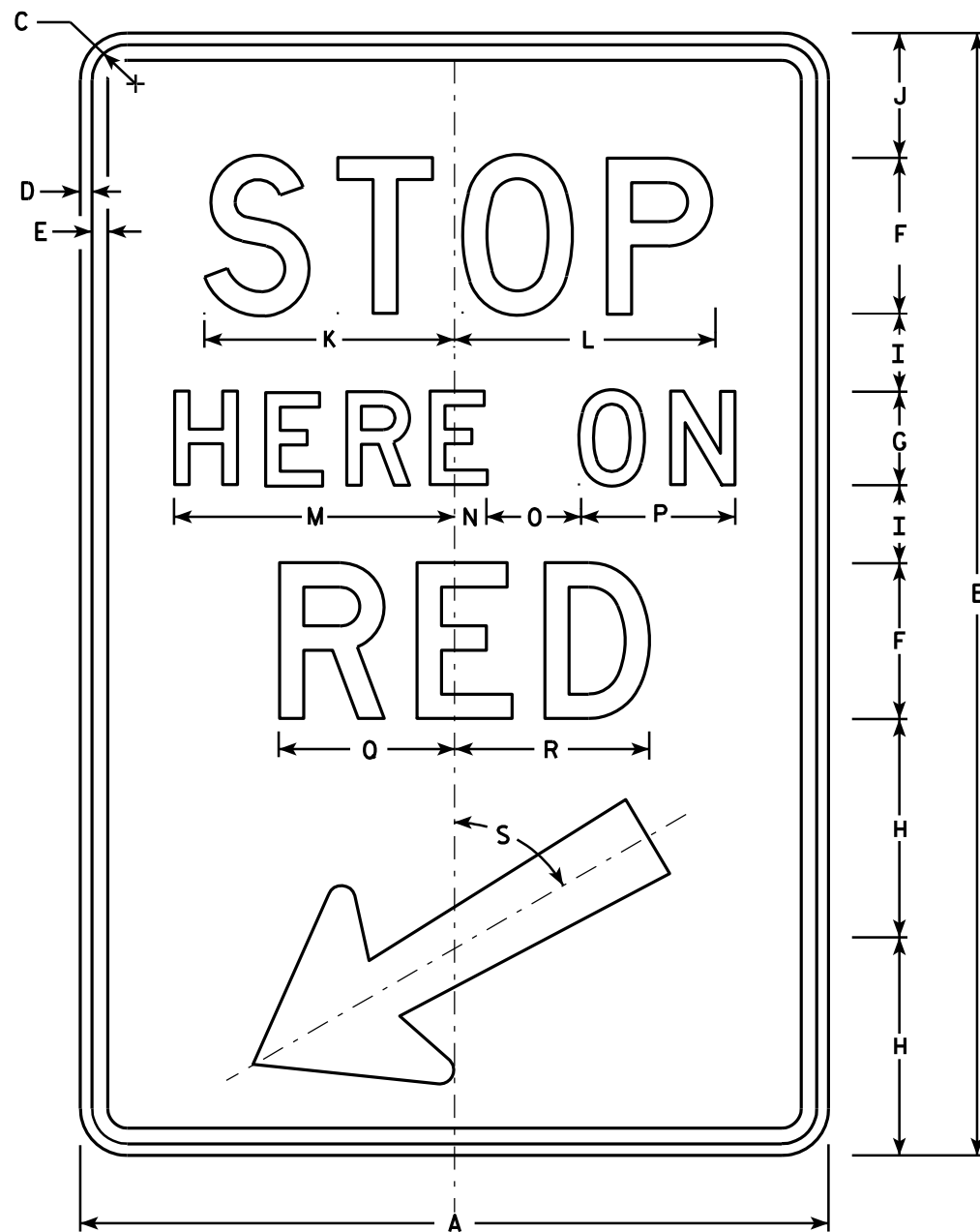
E

STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

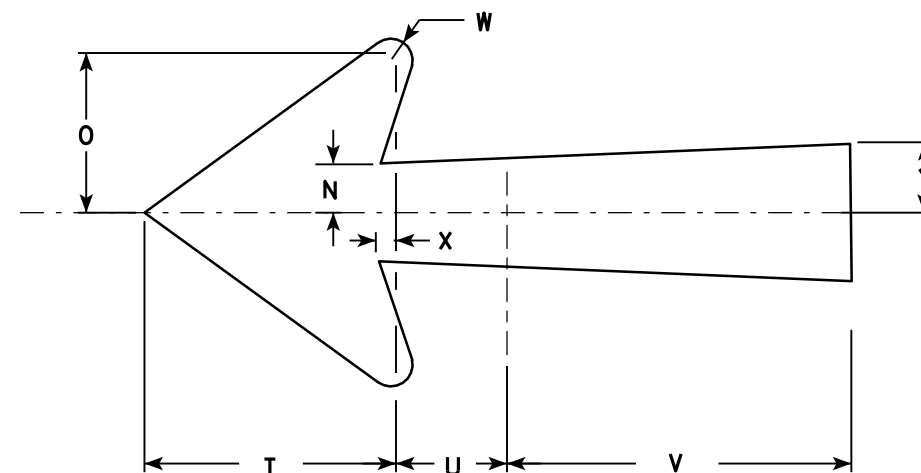
DATE 11/29/16 PLATE NO. R9-11A.3



R10-6

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 - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
2M	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
3																											
4																											
5																											

STANDARD SIGN R10-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-6.6

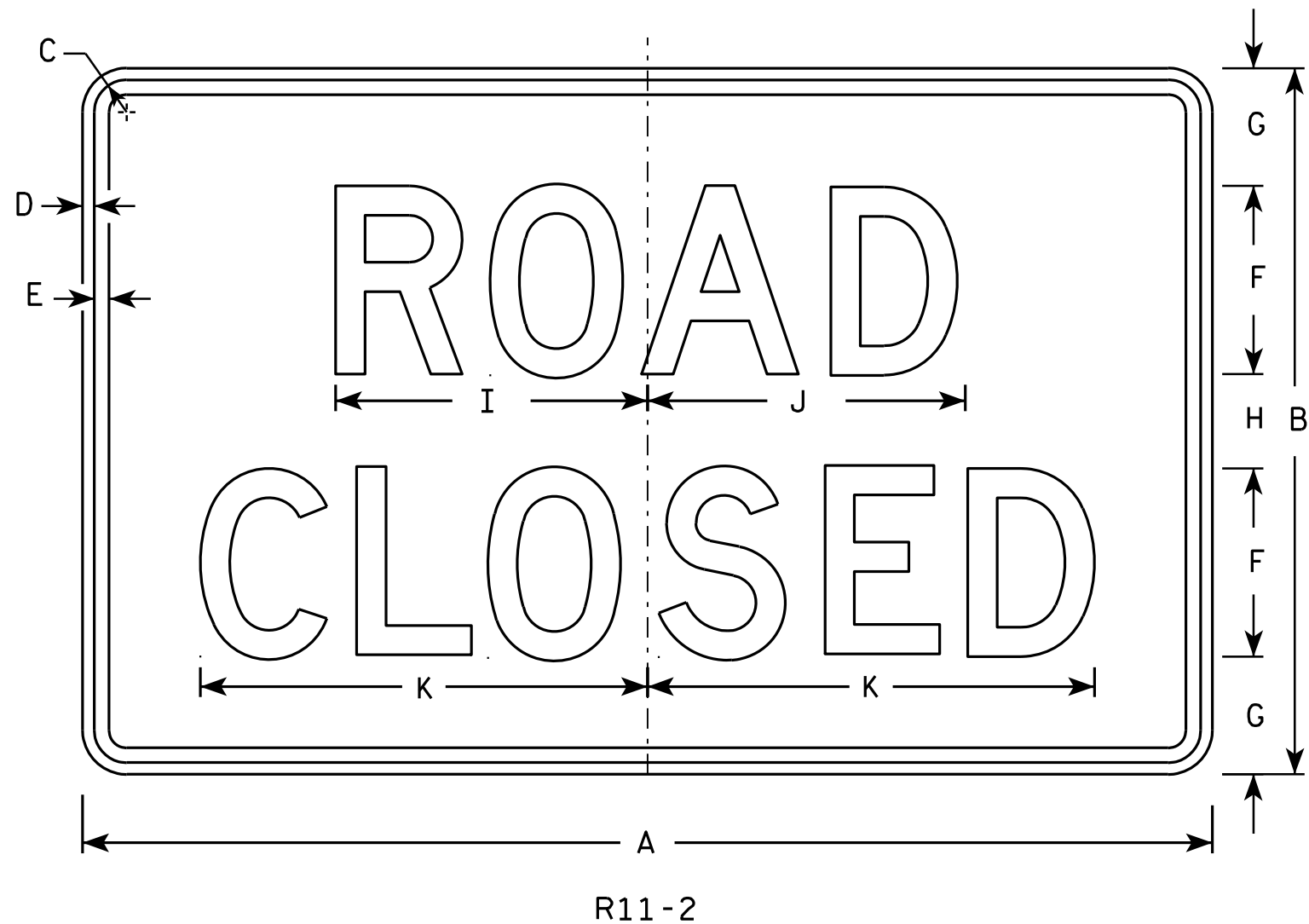
PROJECT NO:

HWY:

COUNTY:

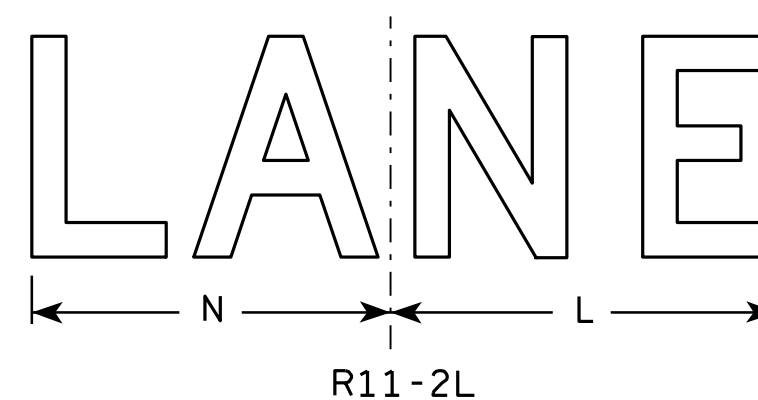
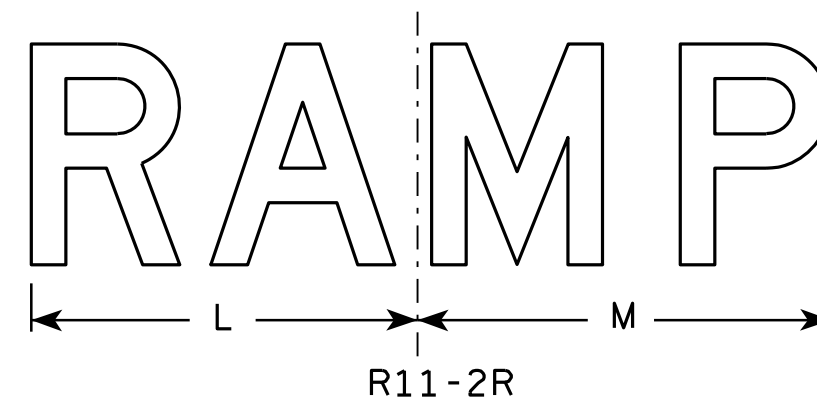
SHEET NO: 100

E



NOTES

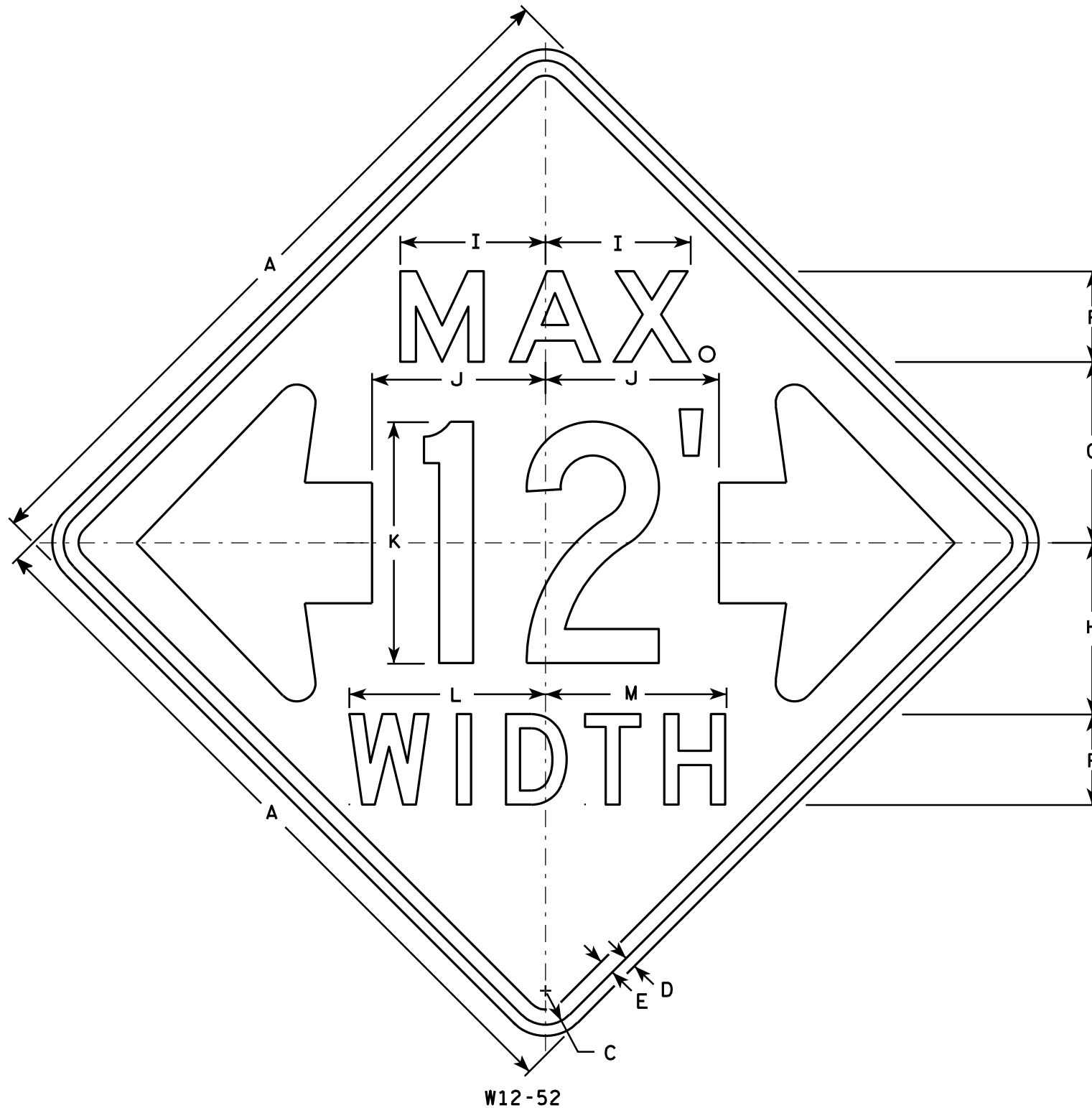
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



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	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

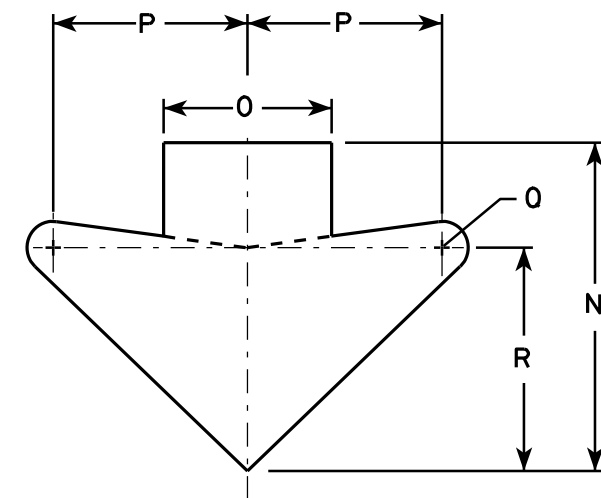
STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 101
-------------	------	---------	---------------



NOTES

- Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

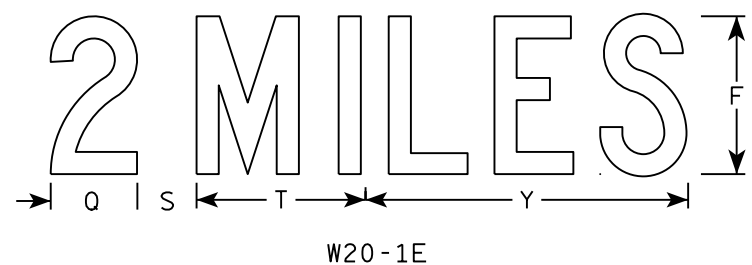
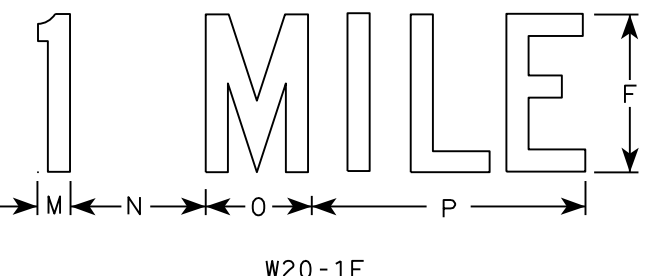
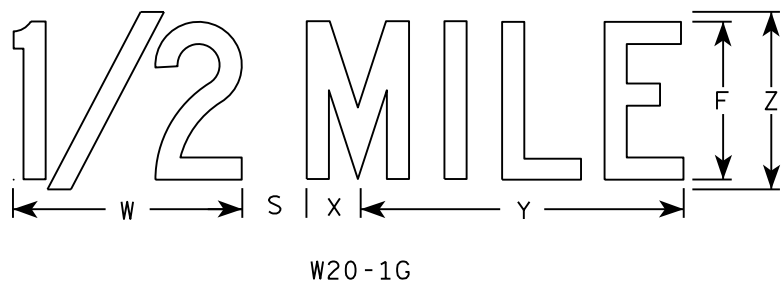
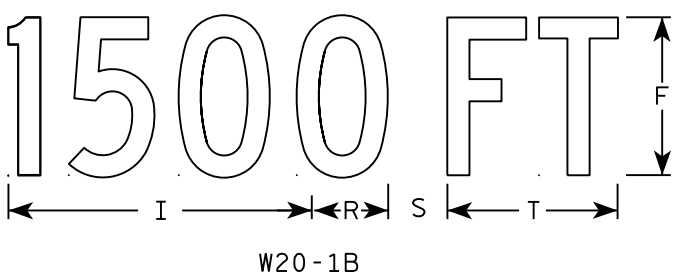
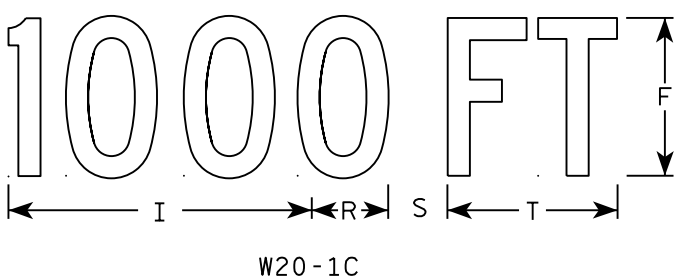
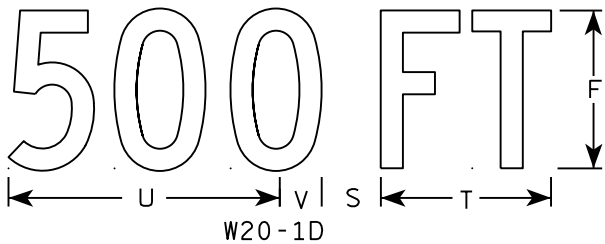
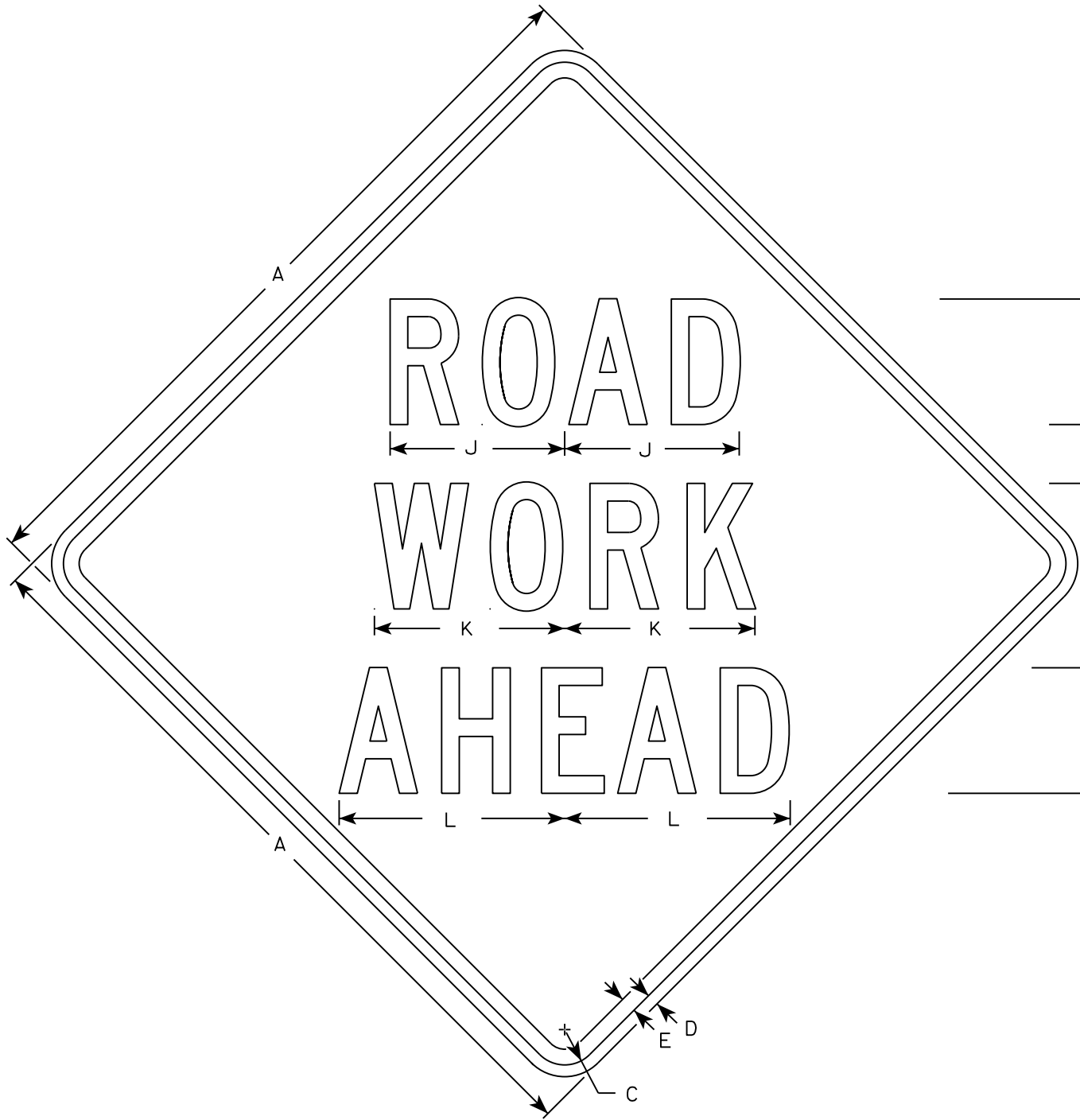
STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO: HWY: COUNTY: SHEET NO: 102 E



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.

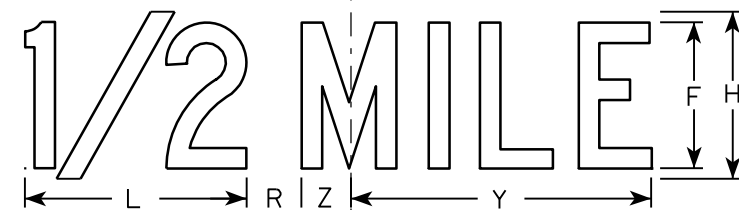
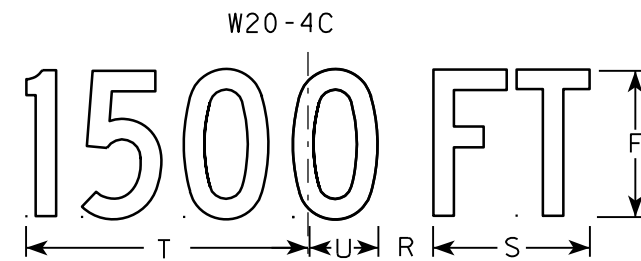
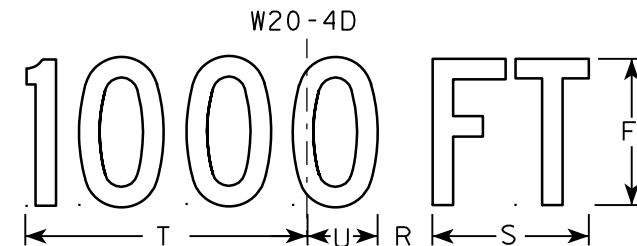
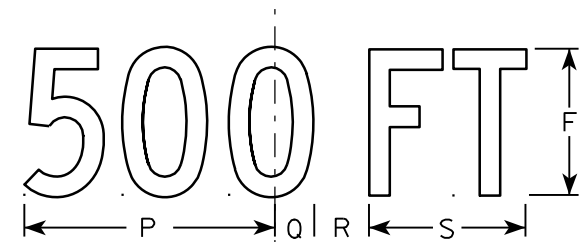
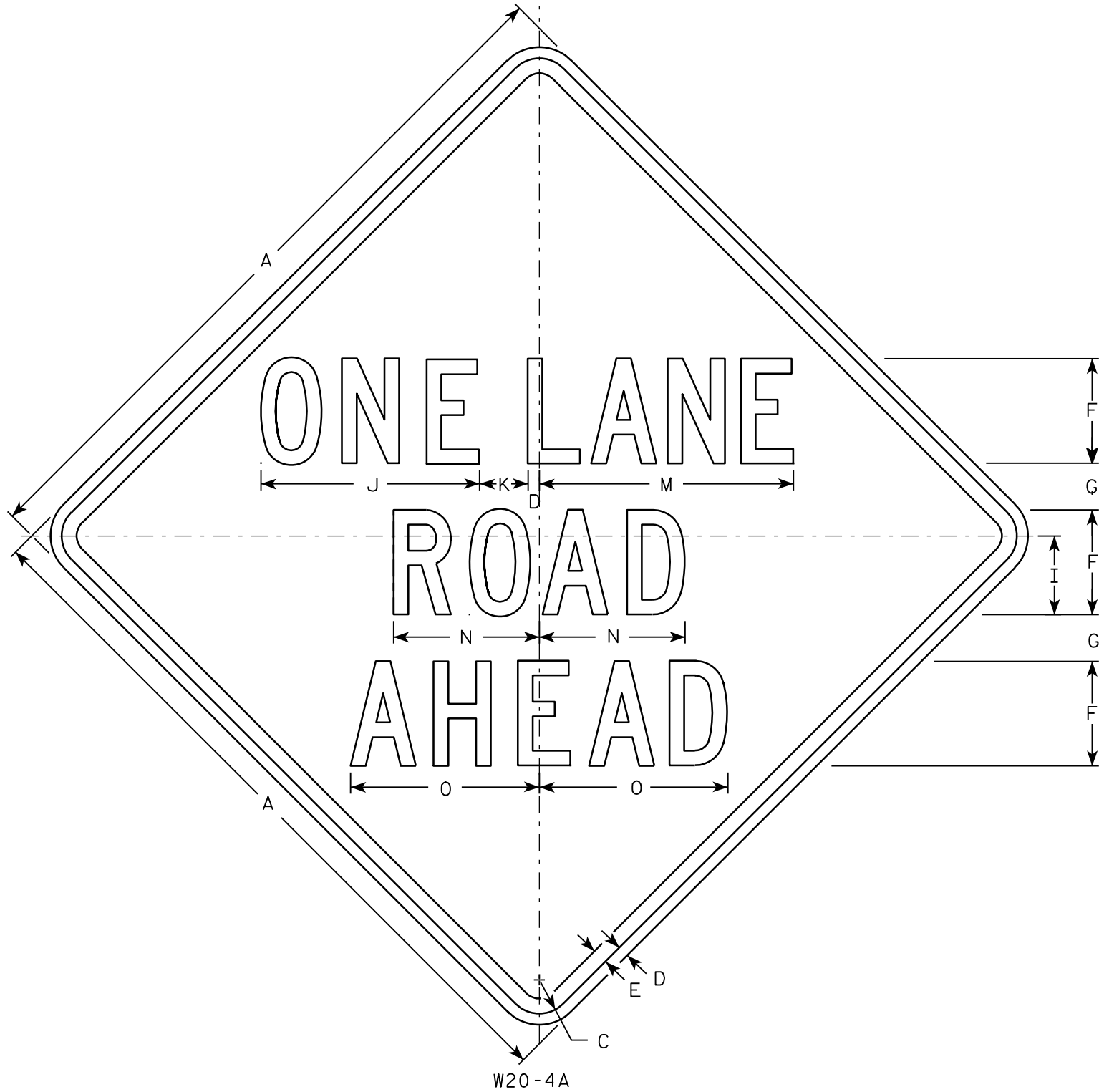
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13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



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.

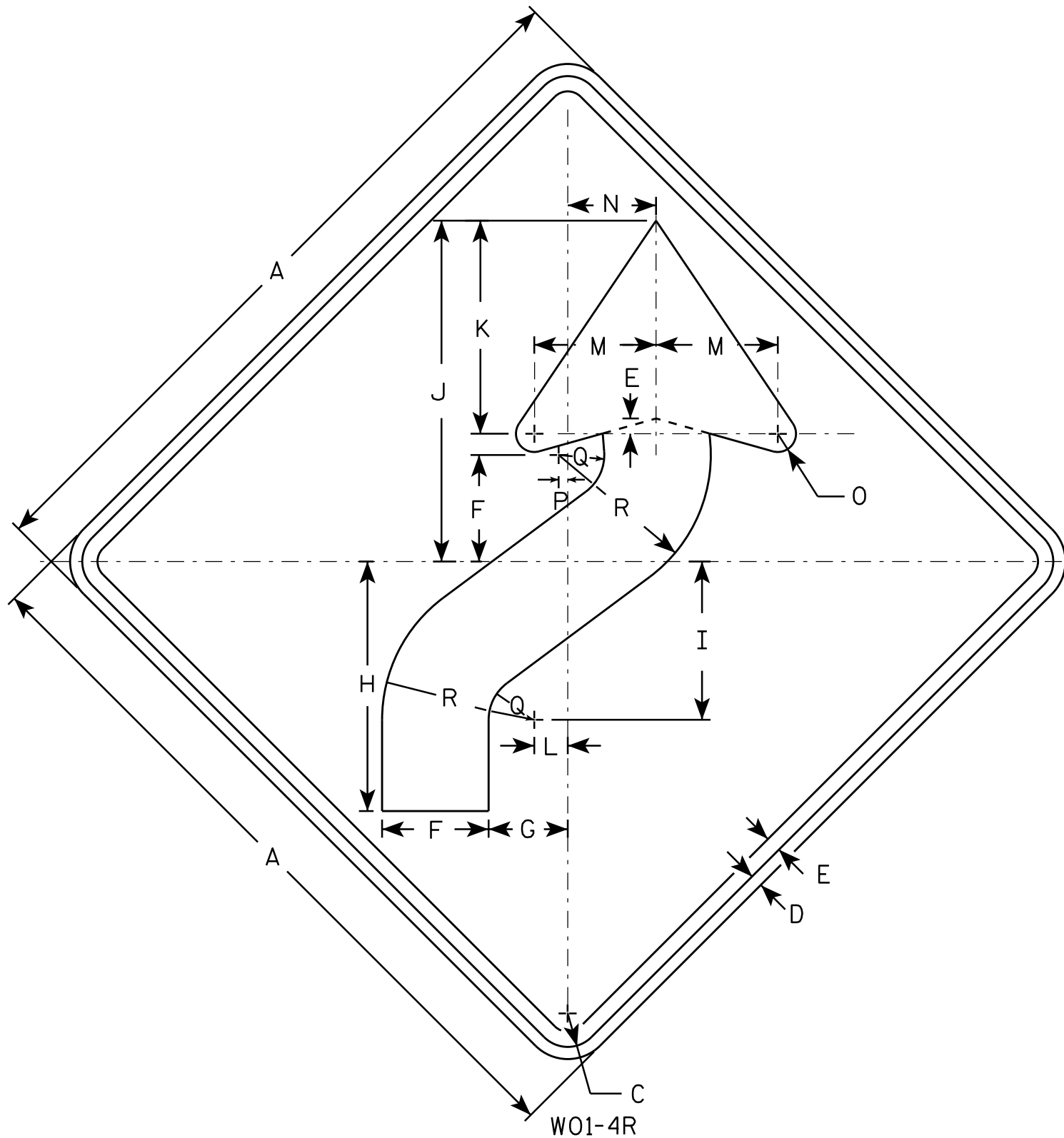
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-4.9



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. 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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

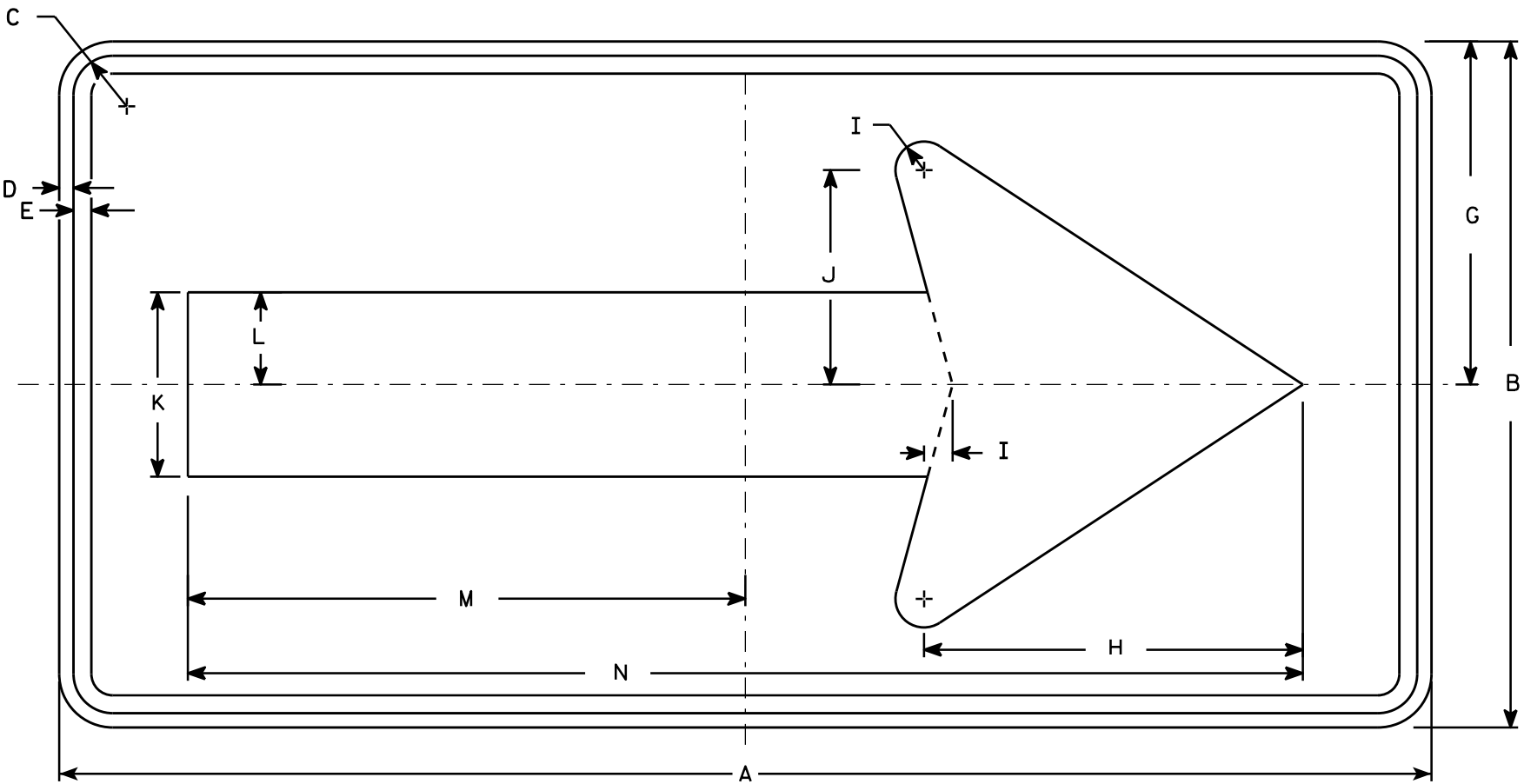
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1
105

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

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



W01-6

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	48	24	1 3⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
2M	48	24	1 3⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
3	60	30	1 3⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
4	60	30	1 3⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
5	60	30	1 3⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5

STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13

PLATE NO. 106

W01-6.1

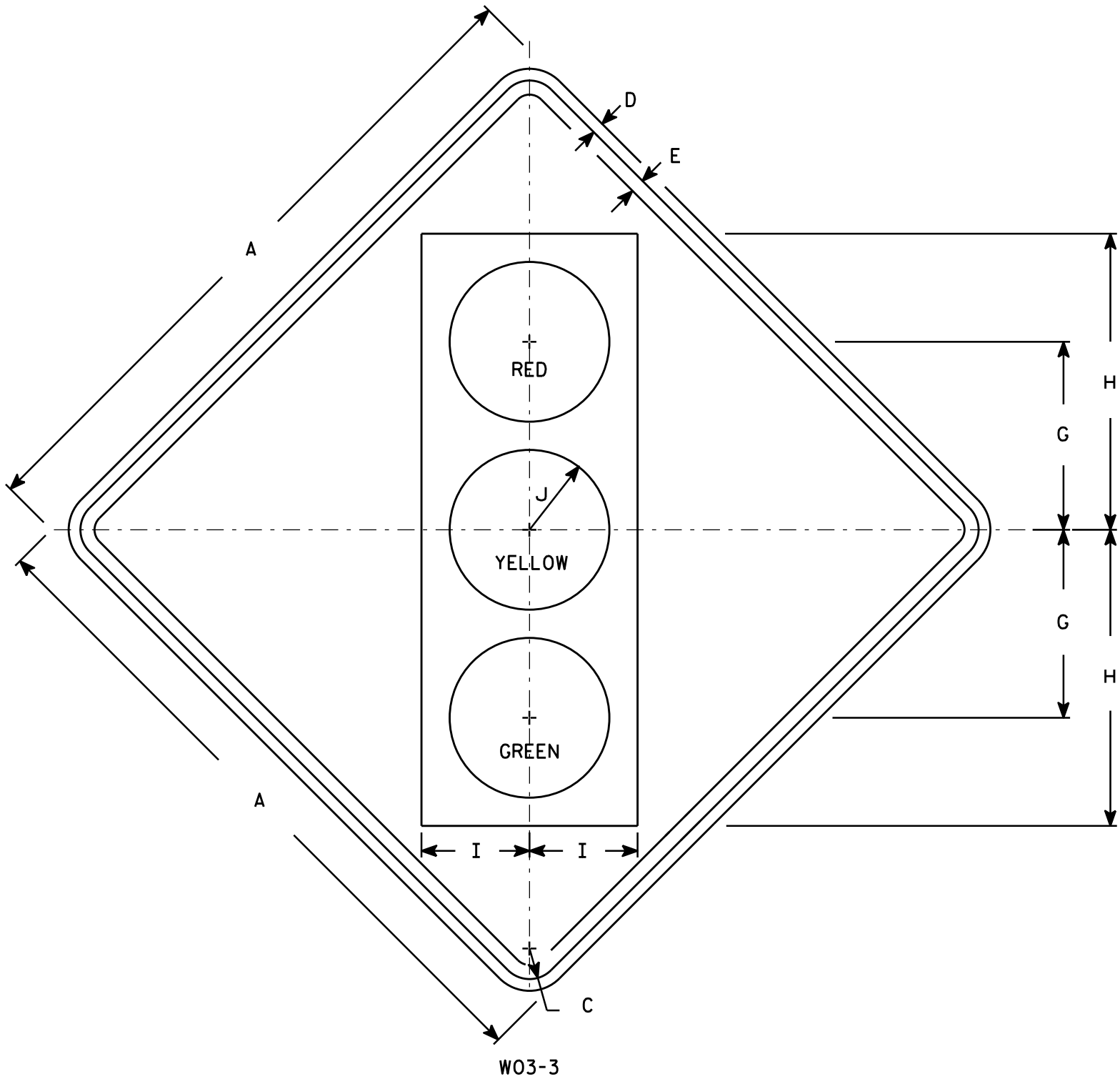
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - 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. Symbol and border are non-reflective black.
Top circle - Type H Reflectorized Red
Center circle - Same as background
Bottom circle - Type H Reflectorized Green

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2S	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

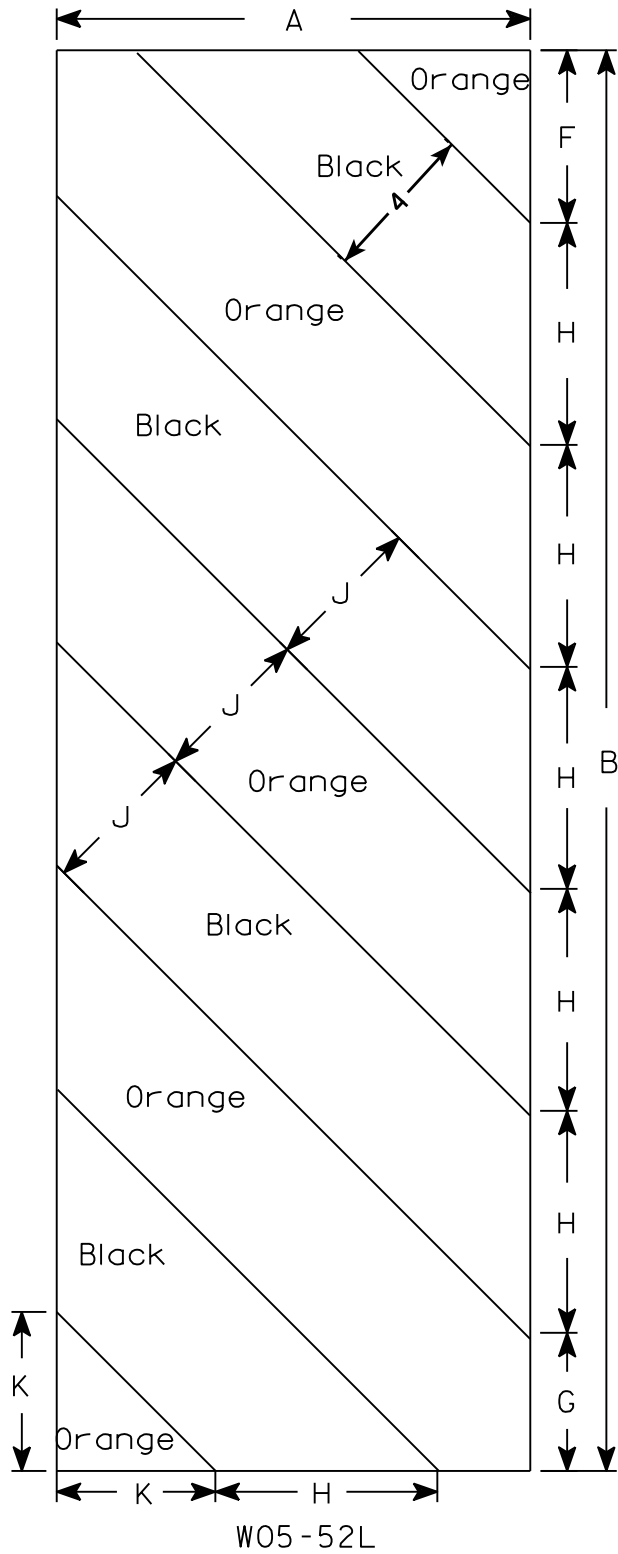
STANDARD SIGN
W03-3

WISCONSIN DEPT OF TRANSPORTATION

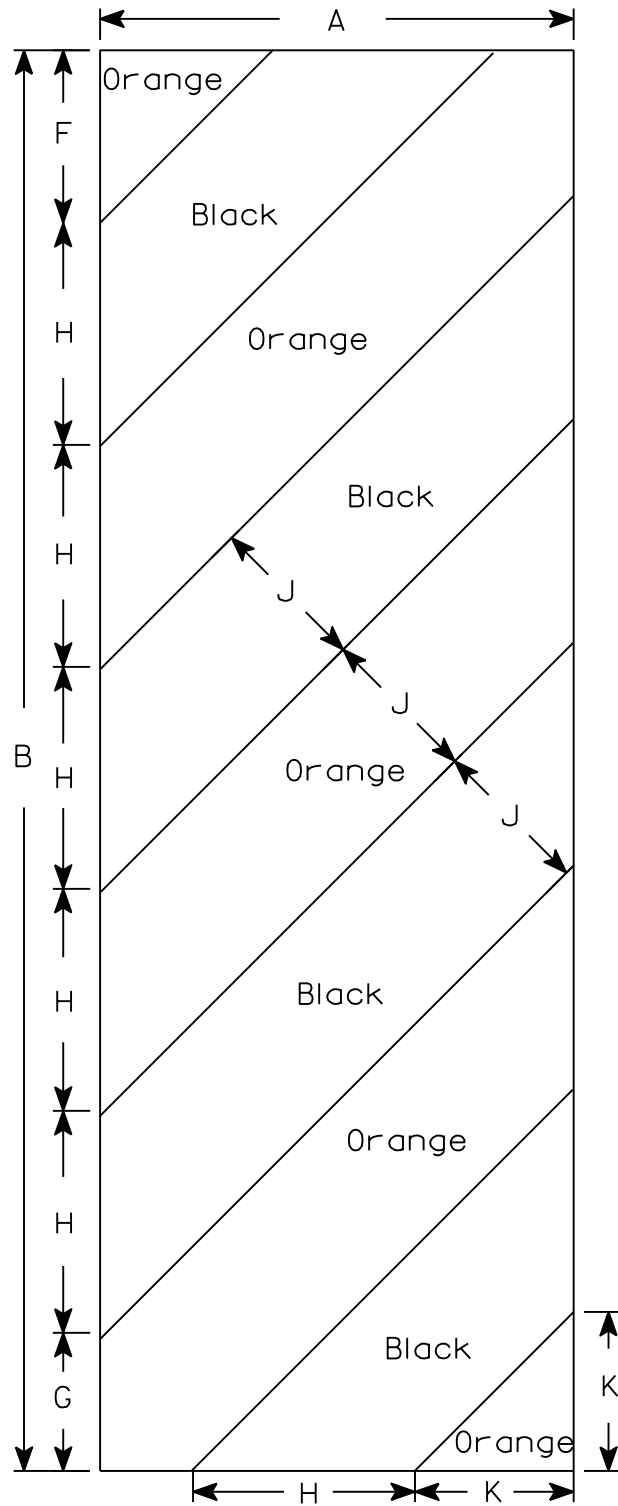
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLAT 107 "03-3.1

SHEET NO: E



W05-52L



W05-52R

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. 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. Alternate colors of stripes as shown.

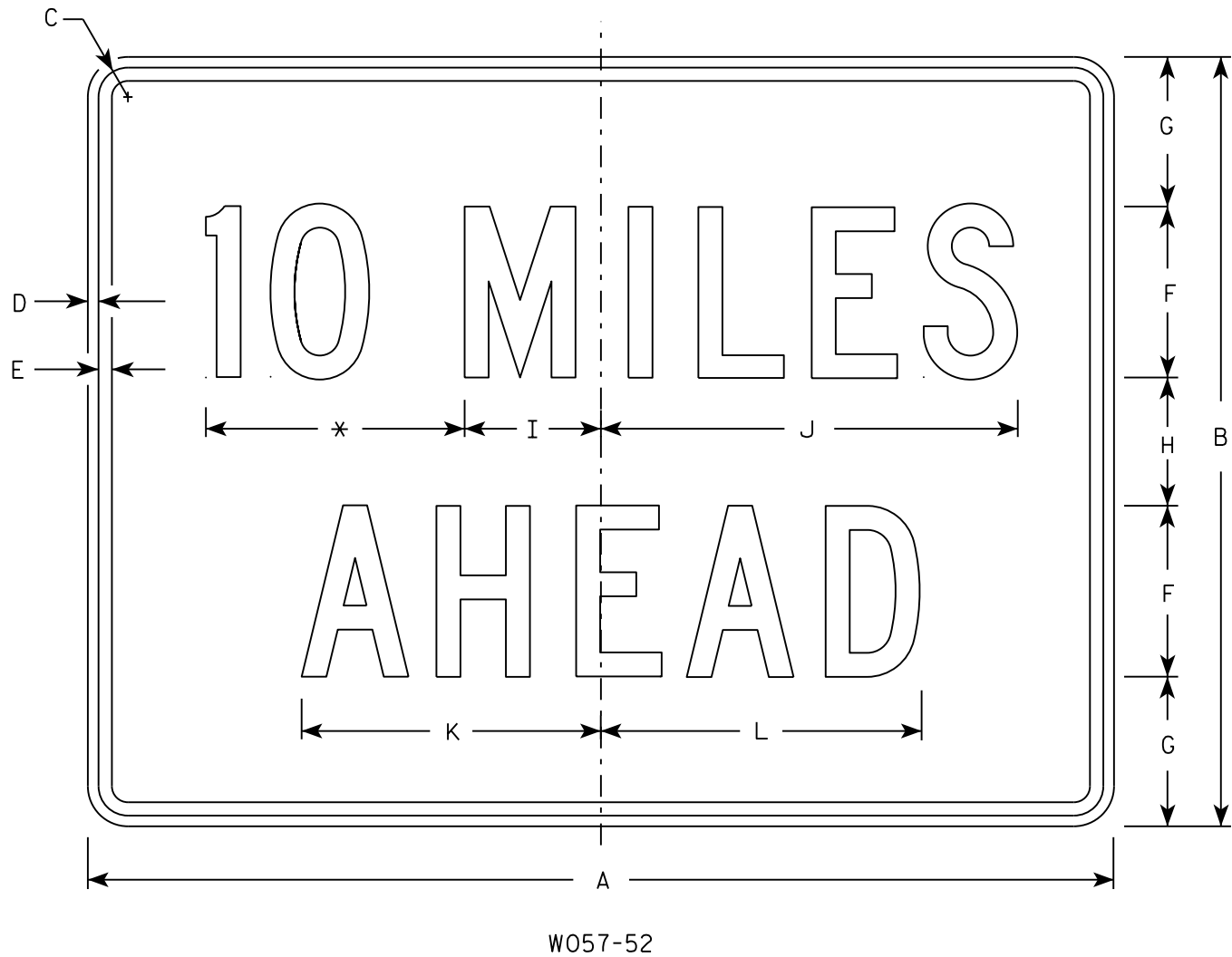
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

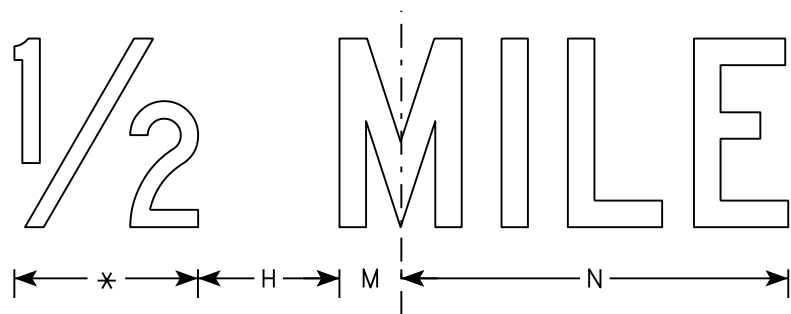
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W05-52.1
108



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.
- 5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

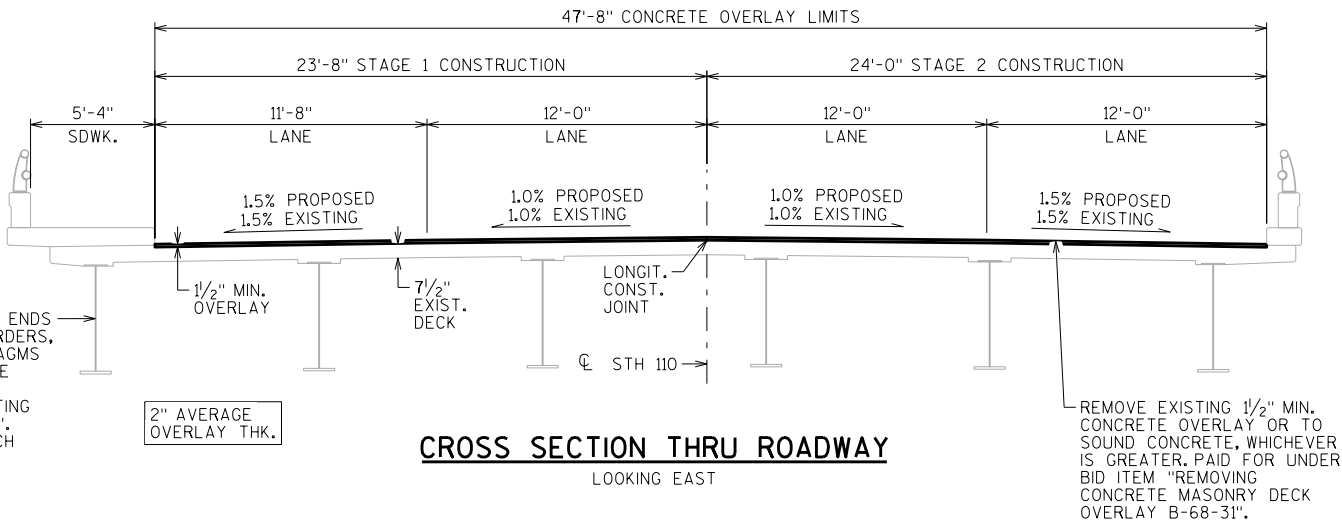
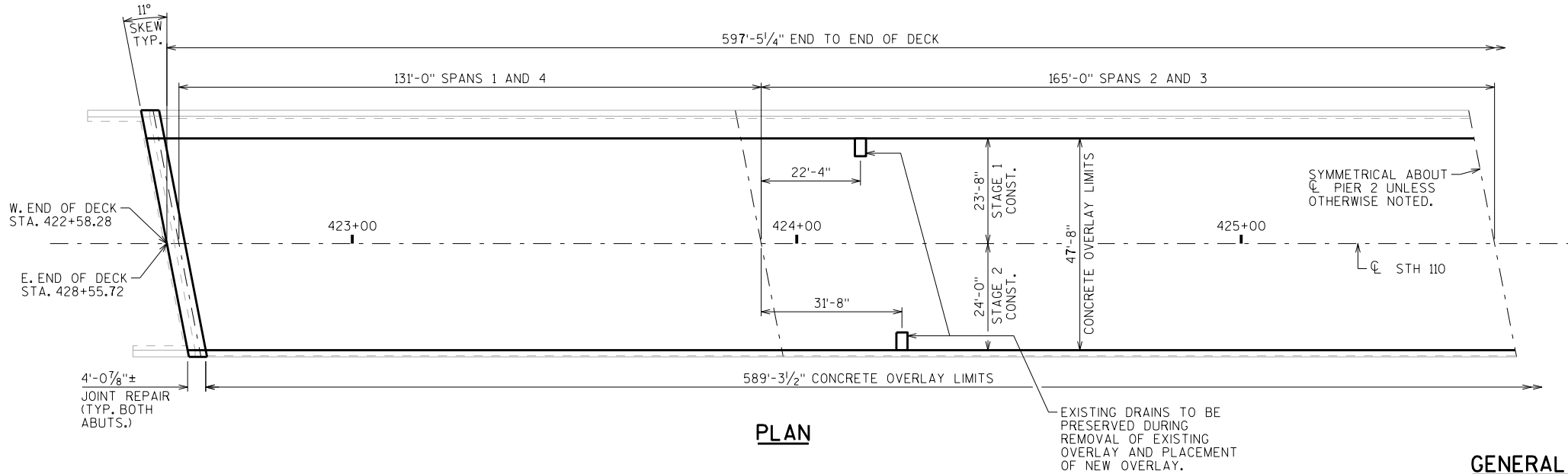
DESIGN DATA

LIVE LOAD:
INVENTORY RATING: HS-14
OPERATING RATING: HS- 24
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 190 (KIPS)

MATERIAL PROPERTIES:
CONCRETE MASONRY:
OVERLAY DECKS ————— f'c = 4,000 P.S.I.
SURFACE REPAIR ————— f'c = 3,500 P.S.I.
(SUBSTRUCTURE)
SURFACE REPAIR ————— f'c = 4,000 P.S.I.
(SUPERSTRUCTURE)

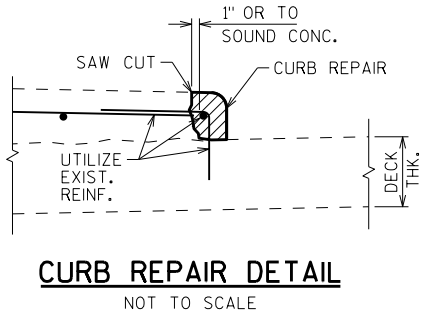
GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY AND TO ENTIRE SIDEWALK.
- PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS AND BRUSH CURB.
- DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
- ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
- PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1 1/2" ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION, EXPECTED AVERAGE OVERLAY THICKNESS IS 2".
- CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN 1/2".
- THE EXISTING OVERLAY SHALL BE REMOVED FROM THE BRIDGE DECK UNDER BID ITEM "REMOVING CONCRETE MASONRY DECK OVERLAY".
- PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".
- EXISTING BEARINGS ARE TO BE SALVAGED.
- DURING REMOVAL PREVENT ALL LARGE PIECES AND MINIMIZE THE NUMBER OF SMALL PIECES OF DEBRIS ENTERING THE WATERWAY. REMOVE ALL CONCRETE OR OTHER DEBRIS THAT FALLS INTO WATERWAY.



TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.3100	EXPANSION DEVICE B-68-31	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	3,568
502.3210	PIGMENTED SURFACE SEALER	SY	520
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	108
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	3,270
506.6000	BEARING ASSEMBLIES EXPANSION B-68-31	EACH	12
506.7050.S	REMOVING BEARINGS B-68-31	EACH	12
509.0301	PREPARATION DECKS TYPE 1	SY	200
509.0302	PREPARATION DECKS TYPE 2	SY	100
509.0505.S	CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY	SY	3,221
509.1000	JOINT REPAIR	SY	44
509.1200	CURB REPAIR	LF	75
509.1500	CONCRETE SURFACE REPAIR	SF	55
509.2000	FULL-DEPTH DECK REPAIR	SY	5
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	205
509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-68-31	SY	3,121
509.9050.S	CLEANING PARAPETS	LF	1,236
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-68-31	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-68-31	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1



LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. JOINT REPAIR 1
3. JOINT REPAIR 2
4. COVER PLATE DETAILS 1
5. COVER PLATE DETAILS 2
6. BEARING DETAILS
7. DECK CONDITION

STRUCTURE DESIGN CONTACTS:
MICAH BROOKS (608) 266-5080
LAURA SHADEWALD (608) 267-9592

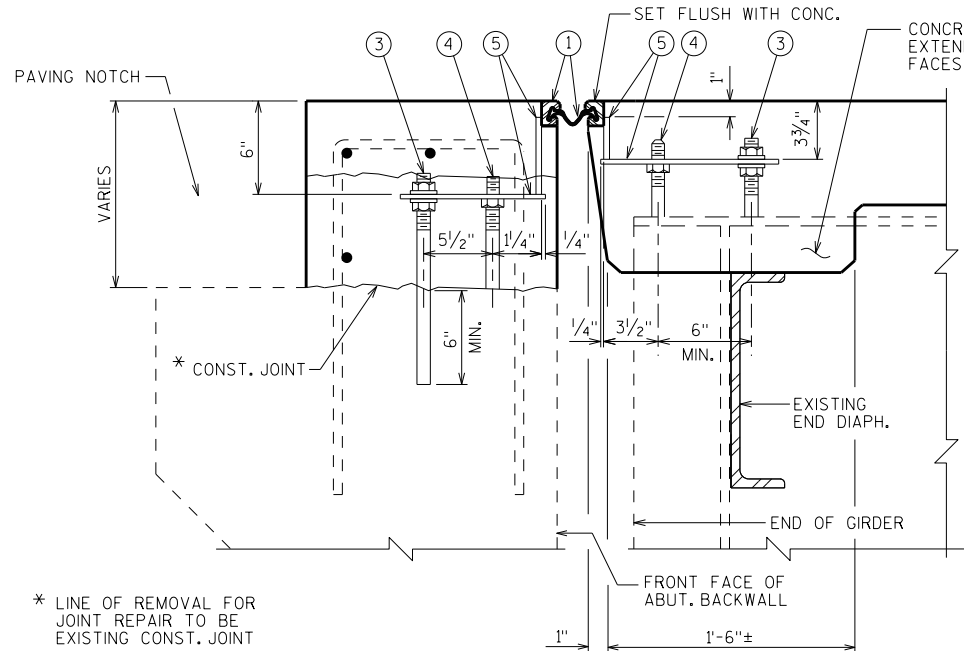
NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Dreher</i> ^{LLS}		2/4/19	
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-68-31			
STH 110 OVER WOLF RIVER			
COUNTY	WAUPACA	VILLAGE	FREMONT
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	MWB	DESIGNED CK'D.	MJL
DRAWN BY	MWB	PLANS CK'D.	MJL
CONCRETE OVERLAY			SHEET 1 OF 7
			110

EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH BARS INDICATED BY ★

★ ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-6" IN EXISTING CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

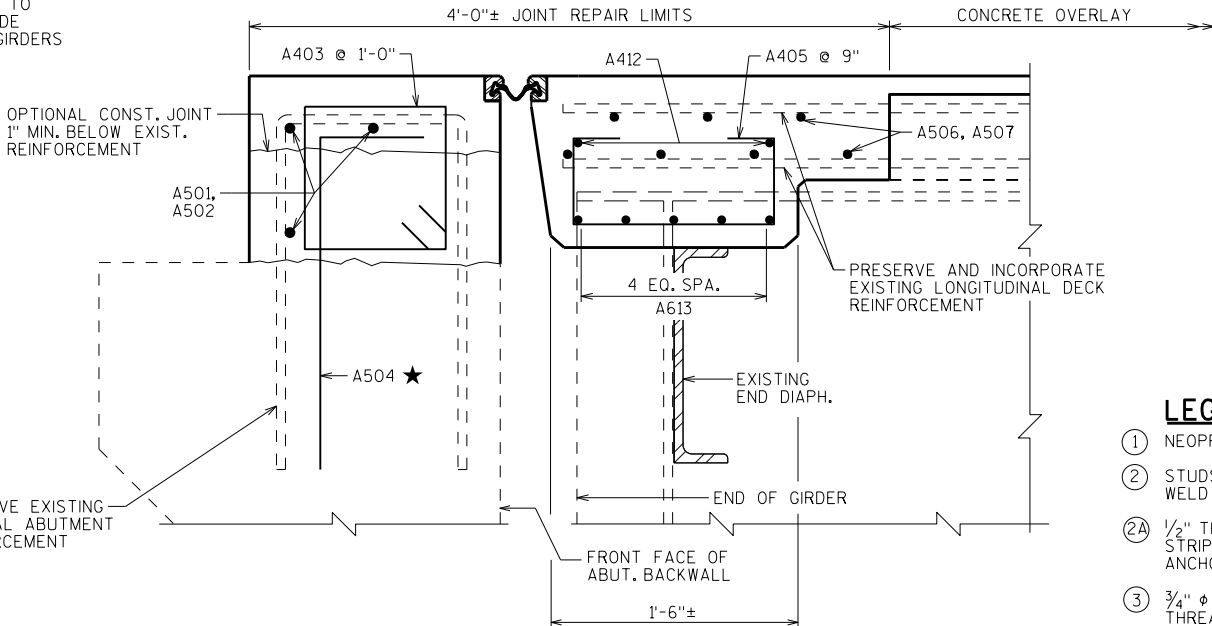
LEGEND

- NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- STUDS $\frac{5}{8}" \phi \times 6\frac{3}{4}"$ LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- $\frac{1}{2}"$ THICK ANCHOR PLATE WITH $\frac{5}{8}" \phi$ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- $\frac{3}{4}" \phi$ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- $\frac{3}{4}" \phi$ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- FABRICATE SUPPORT FROM 3" X $\frac{1}{2}"$ BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}" \phi$ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.
- GALVANIZED PLATE $\frac{3}{8}" \times 9\frac{1}{4}" \times 2'-2"$ LONG WITH HOLES FOR NO. 7.
- $\frac{3}{4}" \phi \times 1\frac{1}{2}"$ STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}"$ BELOW PLATE SURFACE.
- $\frac{3}{4}" \phi \times 4"$ GALVANIZED HEX HEAD BOLT. BEND 45°.
- $\frac{3}{4}" \phi \times 2\frac{1}{4}"$ GALVANIZED THREADED COUPLING.
- 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- SIDEWALK COVER PLATE $\frac{3}{8}" \times 2'-0"$ X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.



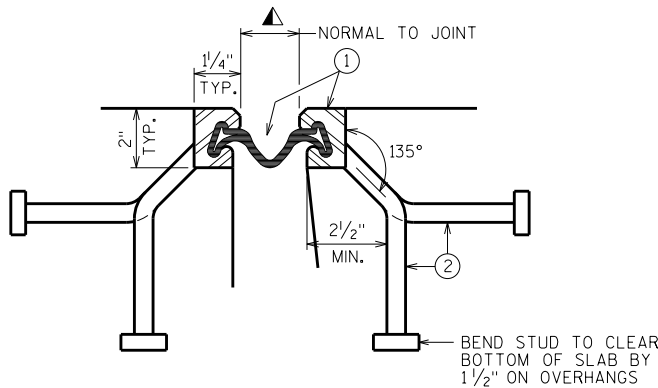
SECTION THRU JOINT AT ABUTMENTS

SHOWING EXPANSION DEVICE ANCHORAGE
NORMAL TO ϕ SUBSTRUCTURE



SECTION THRU JOINT AT ABUTMENTS

SHOWING JOINT REPAIR REINFORCEMENT
NORMAL TO ϕ SUBSTRUCTURE

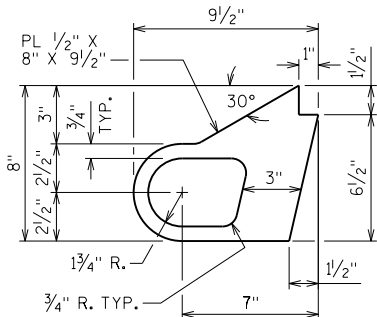


SECTION THRU JOINT

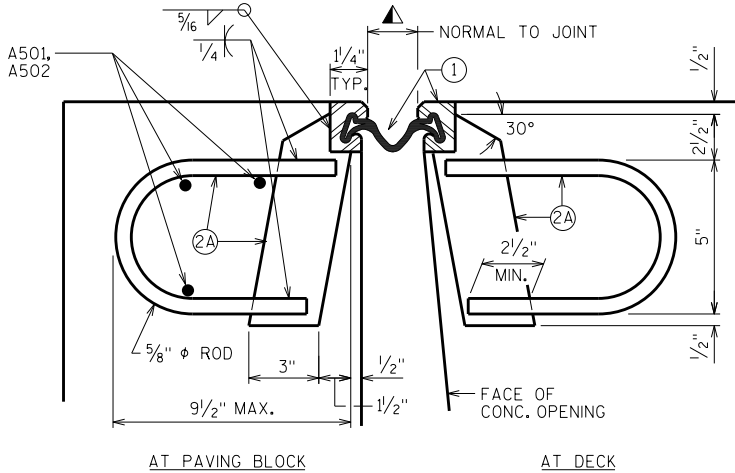
EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS, MEDIANS AND SIDEWALKS

SHADED UNDERSIDE DECK TEMP (°F)	WEST ABUTMENT JOINT OPENING (NORMAL TO JOINT)	EAST ABUTMENT JOINT OPENING (NORMAL TO JOINT)
5°	3 1/4"	4"
15°	3 1/8"	3 5/8"
25°	3"	3 3/8"
35°	2 7/8"	3"
45°	2 3/4"	2 3/4"
55°	2 5/8"	2 1/2"
65°	2 1/2"	2 1/8"
75°	2 3/8"	1 7/8"
85°	2 1/4"	1 1/2"

TEMPERATURE TABLE

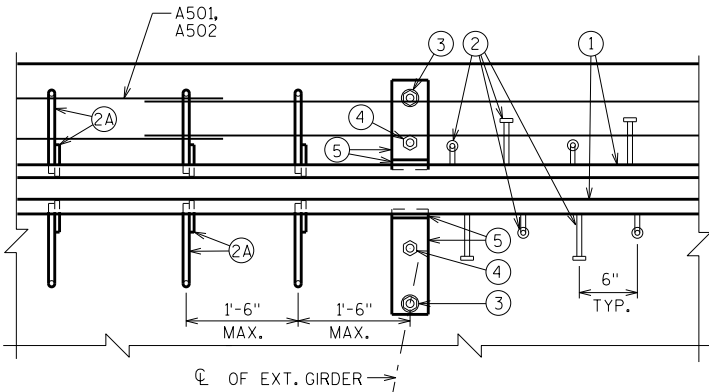


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

NOTES

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

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

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

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

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

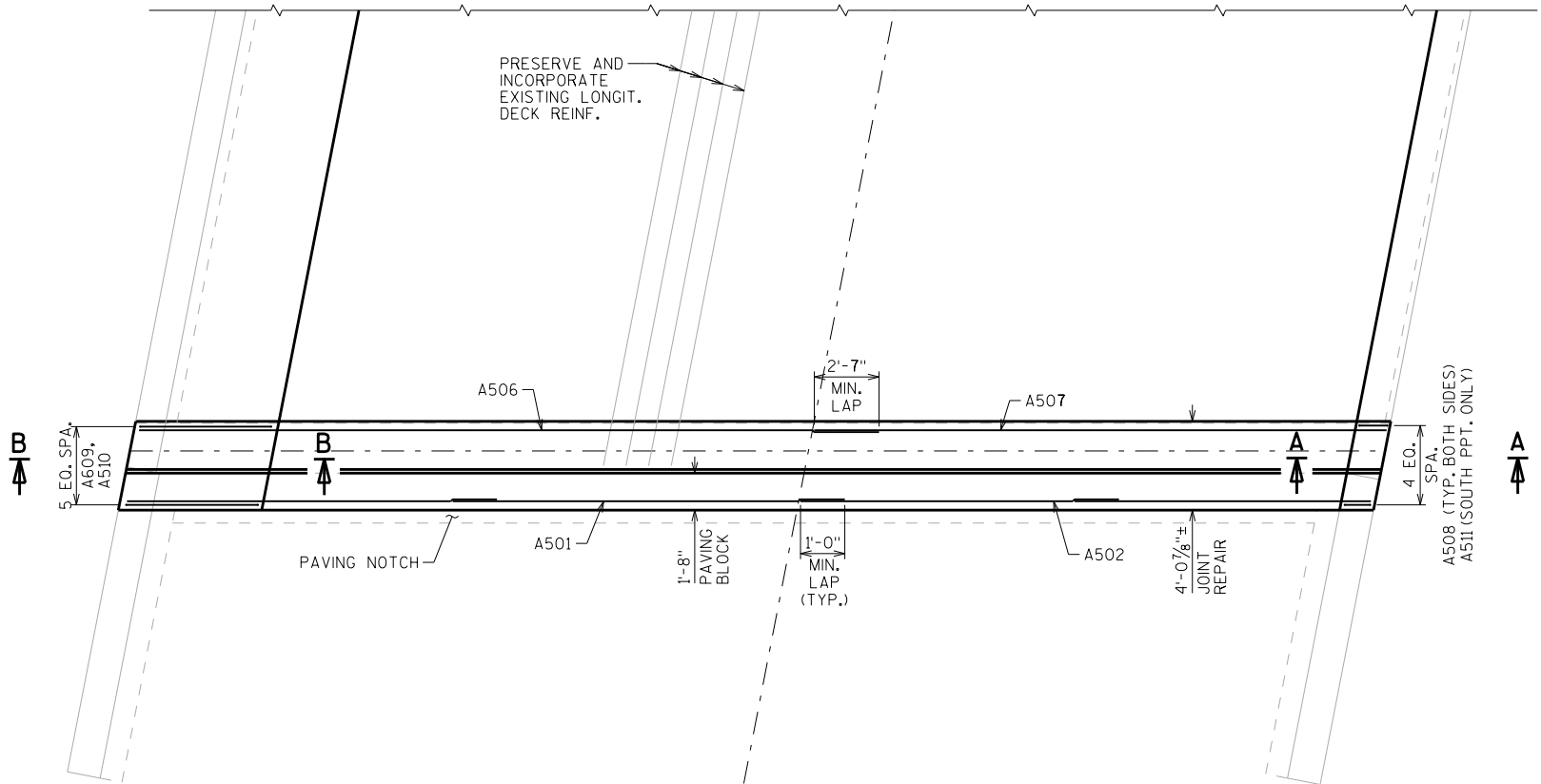
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-68-31".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
DRAWN BY		MWB	PLANS CK'D. MJL
JOINT REPAIR 1			SHEET 2
			111

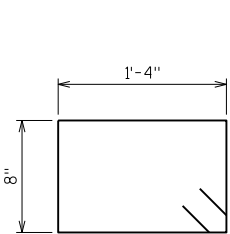
BILL OF BARS

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

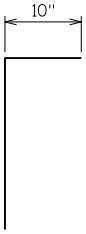
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	24	8'-3"			PAVING BLOCK - HORIZ. - STAGE 1
A502	X	24	7'-2"			PAVING BLOCK - HORIZ. - STAGE 2
A403	X	108	4'-6"	X		PAVING BLOCK - VERT.
A504	X	108	2'-9"	X		PAVING BLOCK - VERT. - ANCHORS
A405	X	120	3'-6"	X		END DIAPHRAGM - VERT.
A506	X	14	30'-9"			DECK - TRANS. - STAGE 1
A507	X	14	24'-11"			DECK - TRANS. - STAGE 2
A508	X	20	5'-0"	X		PPT. - VERT.
A609	X	12	6'-4"	X		SIDEWALK - HORIZ.
A510	X	12	6'-7"	X		SIDEWALK & DECK - VERT.
A511	X	10	3'-4"	X		CURB & DECK - VERT.
A412	X	20	9'-2"			END DIAPHRAGM - TRANS.
A613	X	50	9'-2"			END DIAPHRAGM - TRANS. - BTWN. GIRDERS



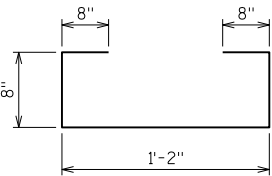
JOINT REPAIR PLAN
WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR



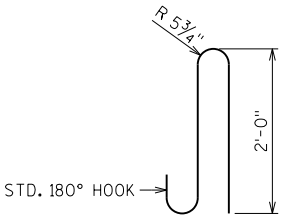
A403



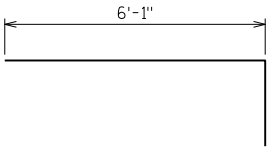
A504



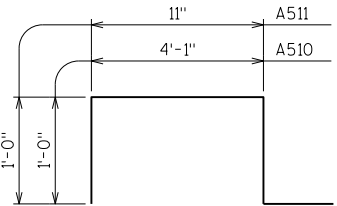
A405



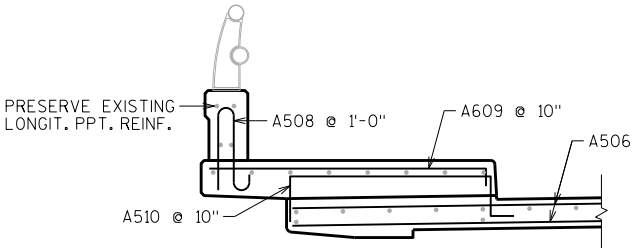
A508



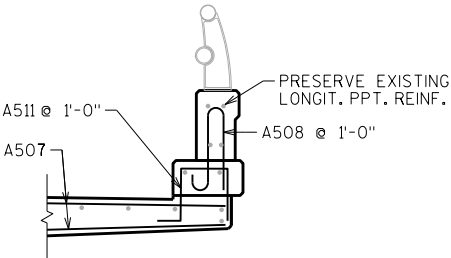
A609



A510, A511



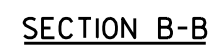
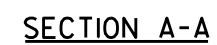
SECTION B-B
GIRDERS NOT SHOWN FOR CLARITY



SECTION A-A

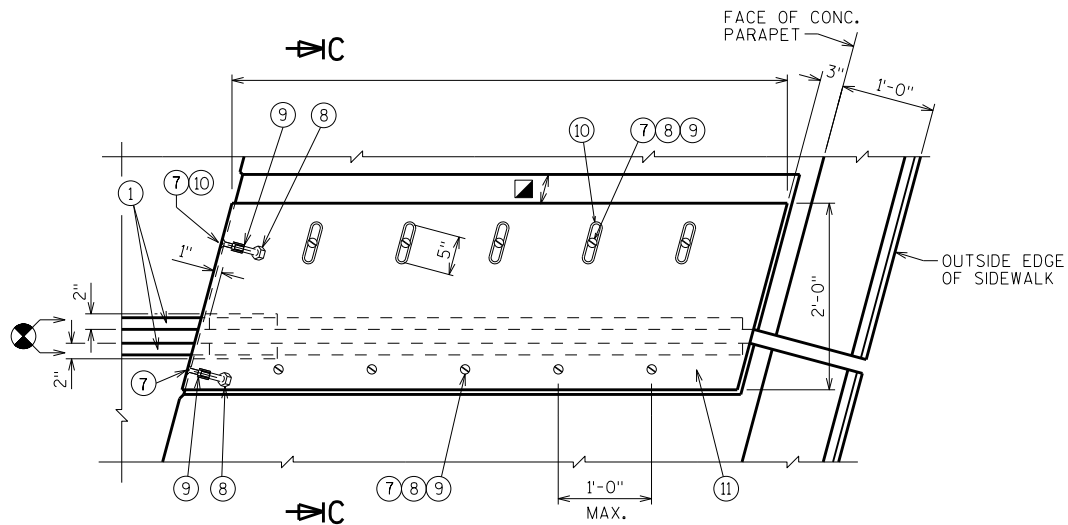
★ ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-6" IN EXISTING CONCRETE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
DRAWN BY MWB		PLANS CK'D. MJL	
JOINT REPAIR 2			SHEET 3
			112

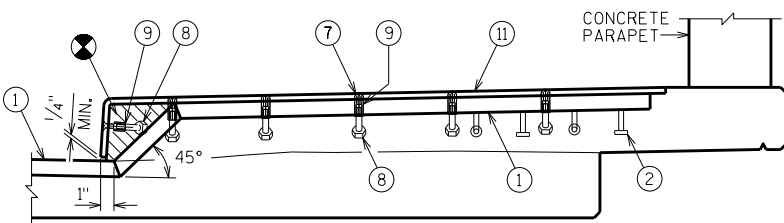


■ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

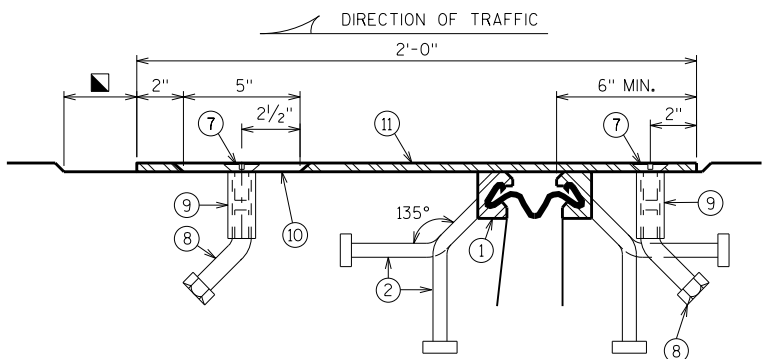
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
		DRAWN BY	MWB CK'D. MJL
COVER PLATE DETAILS 1		SHEET 4	
		113	



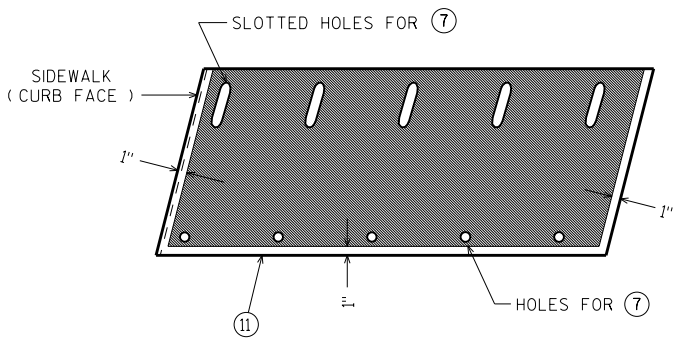
PLAN AT SIDEWALK



SECTION AT SIDEWALK



SECTION C-C



PLAN OF SIDEWALK COVER PLATE
WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE
IN SHADED AREA ONLY (NOT ON CURB FACE).

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
DRAWN BY		PLANS CK'D.	MJL
COVER PLATE DETAILS 2		SHEET 5	
		114	

- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- ▣ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ϕ OF GIRDER AND ϕ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 1'-10" BOLTS. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING ANCHOR BOLTS, STAINLESS STEEL SHEET, TEFLON SURFACE, PINTLES, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

PROVIDE 1/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-68-31", EACH.

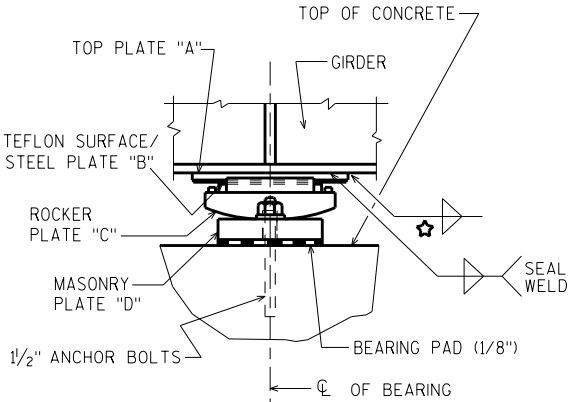
ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A". ROCKER PLATE "C" AND MASONRY PLATE "D" SHALL BE GALVANIZED. DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.

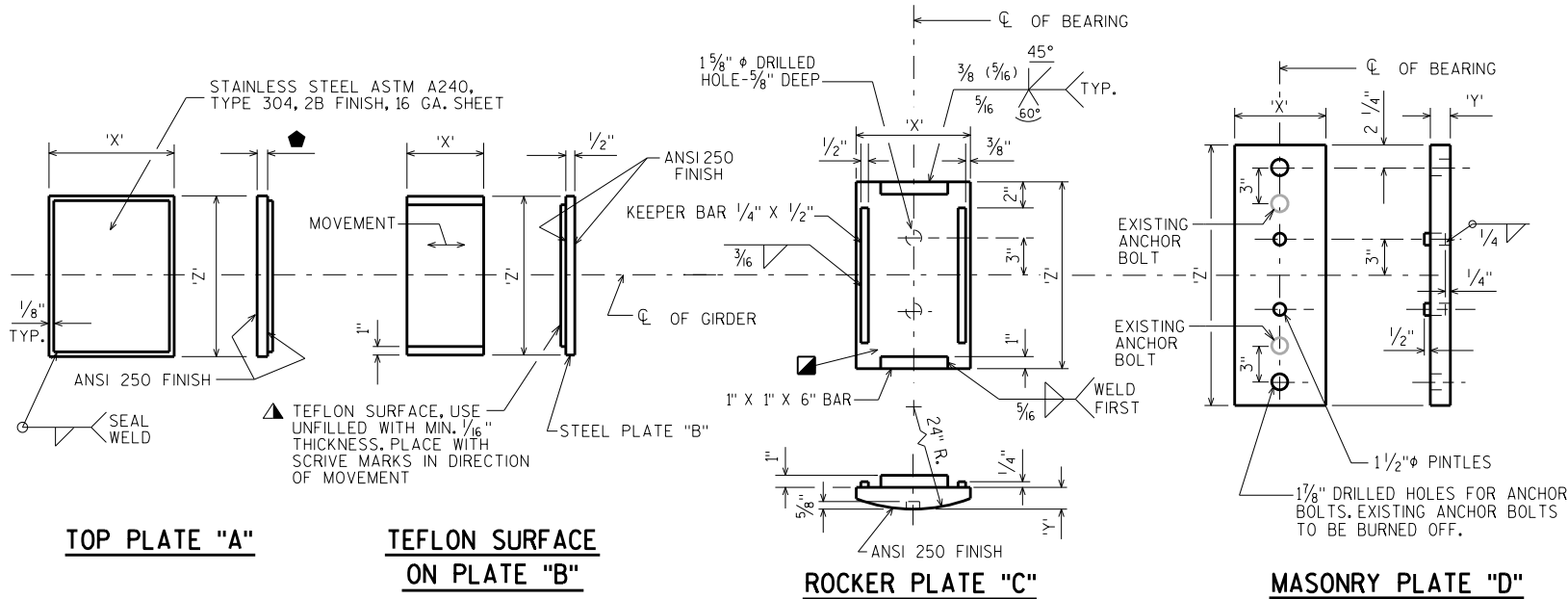
- PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.
- BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.

REMOVE EXISTING EXPANSION BEARINGS AT BOTH ABUTMENTS. BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE AND GRIND SMOOTH.



EXPANSION BEARING ASSEMBLY



EXPANSION BEARINGS

TOP PLATE "A"

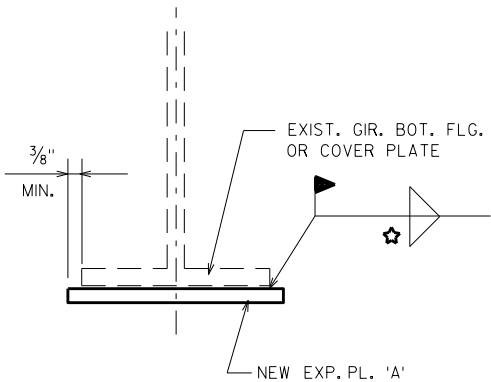
TEFLON SURFACE ON PLATE "B"

ROCKER PLATE "C"

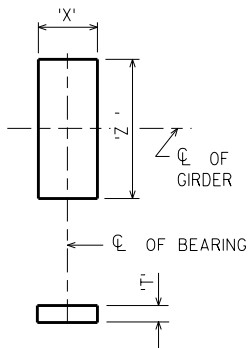
MASONRY PLATE "D"

1/16" AT W. ABUT., SLOPE FROM 1/16" TO 1/16" AT E. ABUT.

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'		
	11"	1'-6"	7"	1'-6"	9"	1 1/16"	1'-8 1/4"	9"	1 1/2"	2'-9"	12	ABUTMENTS
EXPANSION BEARINGS												



BEARING REPLACEMENT DETAILS



PLACE SHIM PLATE BETWEEN BEARING PAD AND MASONRY PLATE "D".

'T'	NO. REQ'D.	LOCATION
1/4"	1	GIR. 3, E. ABUT.

FOR DIMS. 'X', 'Z' AND ANCHOR BOLT LOCATIONS SEE MASONRY PLATE "D".

SHIM PLATE DETAILS

IGNORE SHIM PLATES IN ABOVE TABLE WHEN BOTTOM FLANGE BUTT SPLICE IS NOT USED AND THE LARGER BOTTOM FLANGE PLATE IS EXTENDED TO THE END OF THE GIRDER.

IN LIEU OF USING SHIM PLATES, FABRICATOR MAY INCREASE THICKNESS OF TOP PLATE "A" OR MASONRY PLATE "D" BY "T", THE SHIM PLATE THICKNESS.

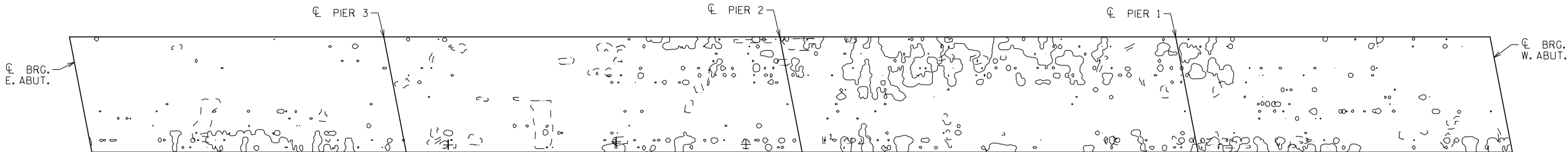
TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"
OVER 2 1/4" TO 6"	1/2"

EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

MIN. PASS SIZE IS 3/16"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
		DRAWN BY	PLANS CK'D.
		MWB	MJL
BEARING DETAILS		SHEET 6	
		115	



PLAN

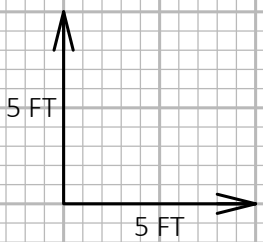
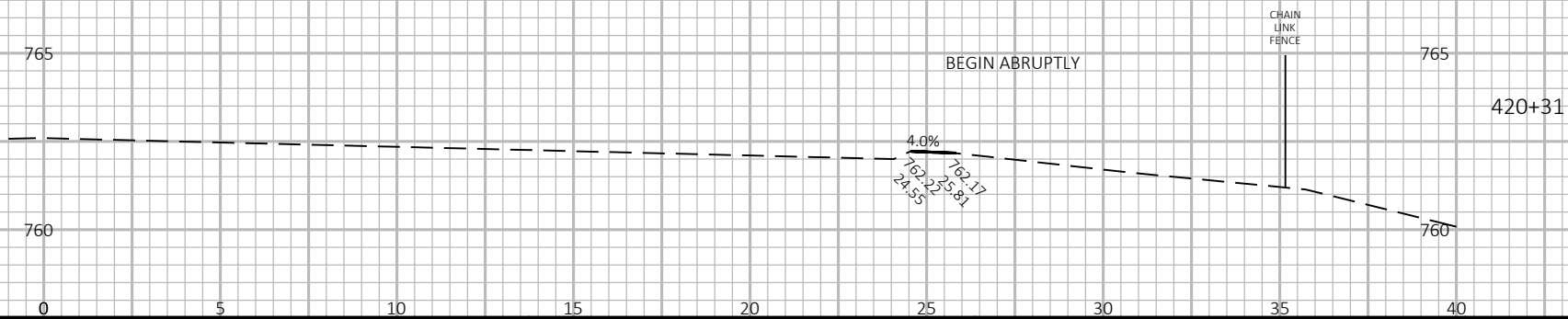
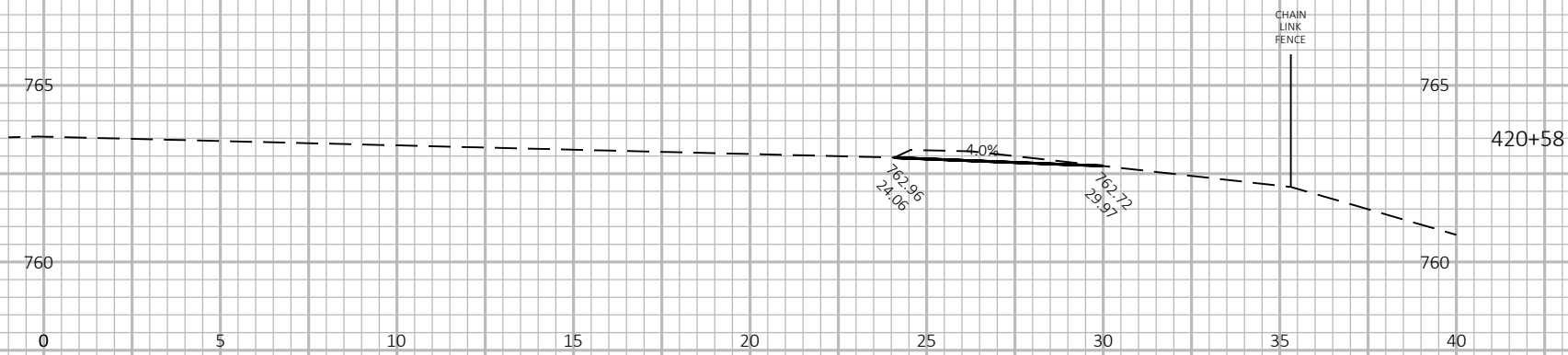
SHOWING APPROXIMATE DETERIORATION AREAS

CONDITIONS LEGEND		QUANTITY SUMMARY		
AREAS OF DELAMINATION (IR)	○	CONDITION	SQ. FT.	%
AREAS OF REBAR-LEVEL DETERIORATION (GPR)	○	DEBONDING	882.3	3.1
DELAMINATION CONFIRMED BY SOUNDING	+	DETERIORATION	2637.6	9.3

INFRARED AND GPR SCAN
PERFORMED BY INFRASENSE
ON 09/08/2017. PROVIDED
FOR INFORMATION ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-68-31			
		DRAWN BY MWB	PLANS CK'D. MJL
DECK CONDITION		SHEET 7	
		116	

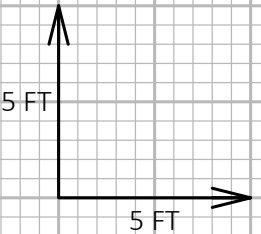
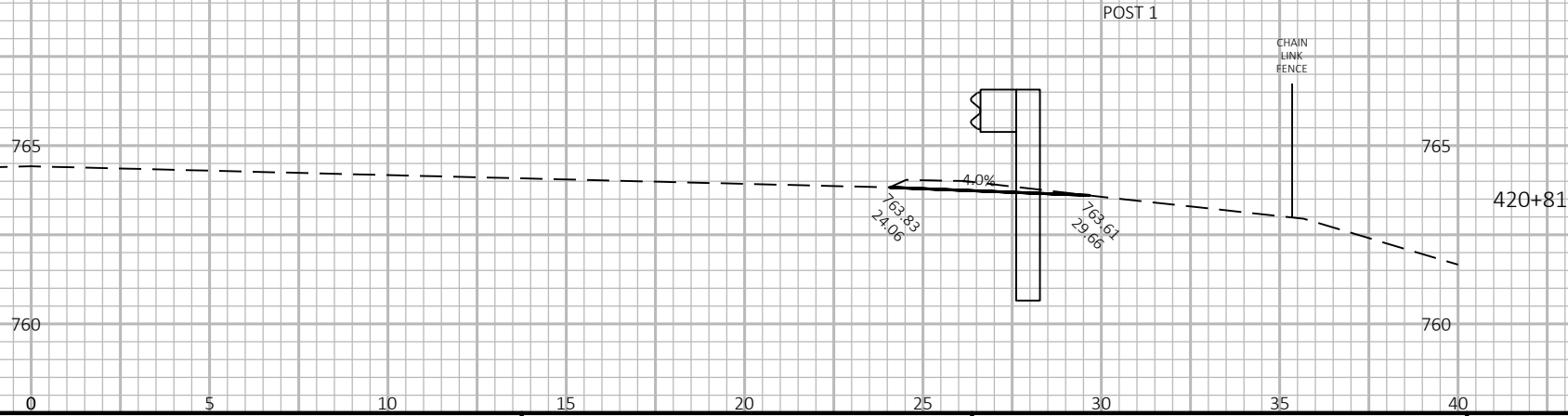
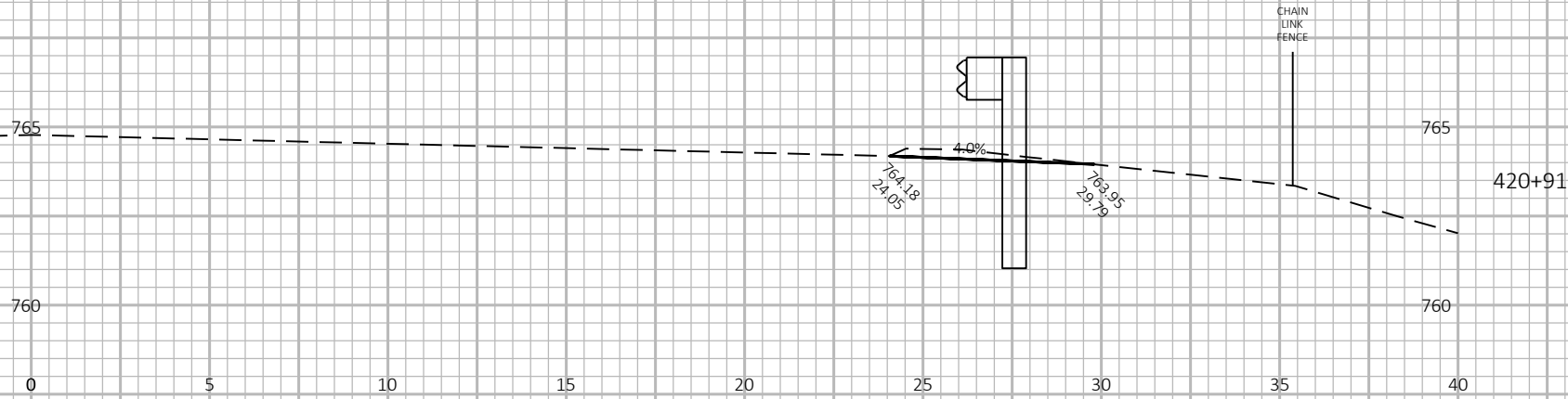
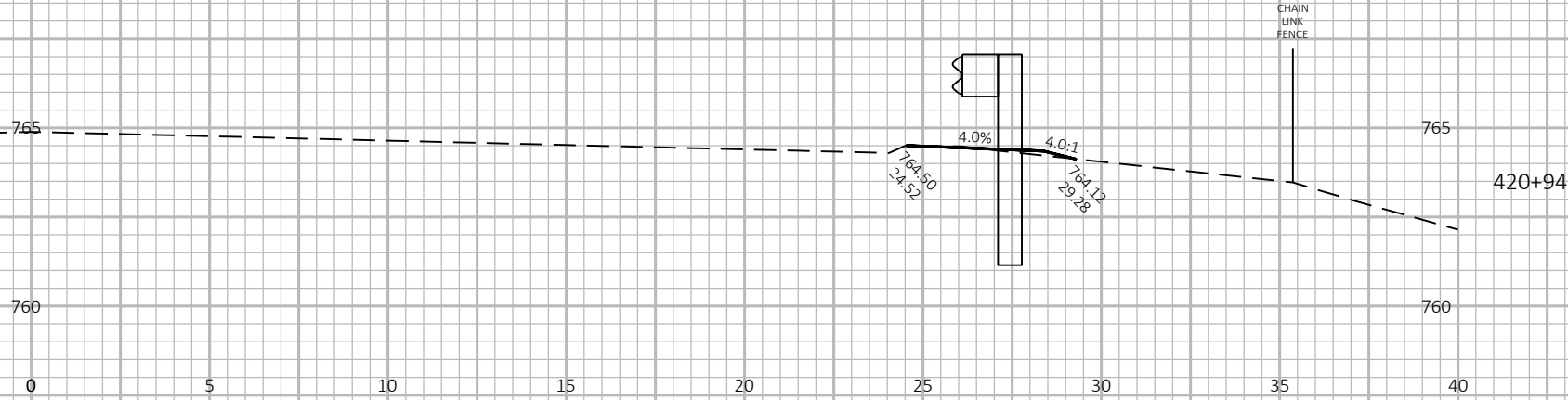
CROSS SECTIONS FOR INFORMATION ONLY
EXCAVATION INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING ITEM



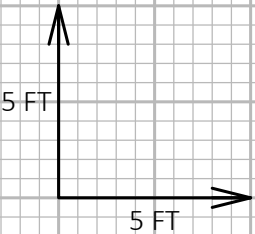
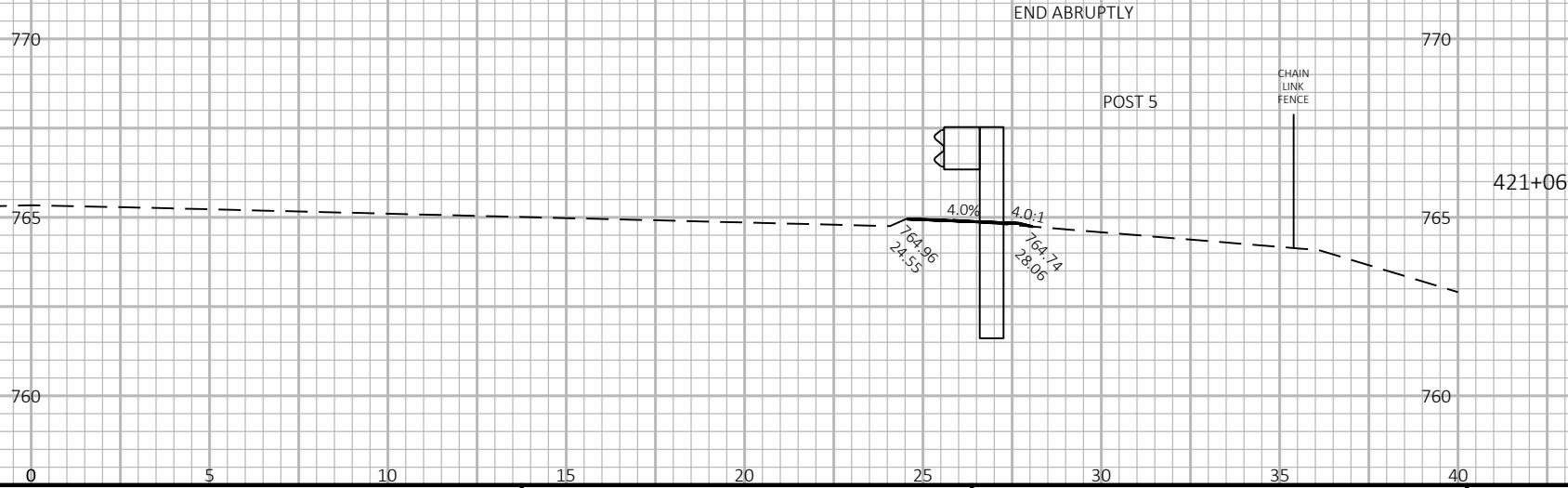
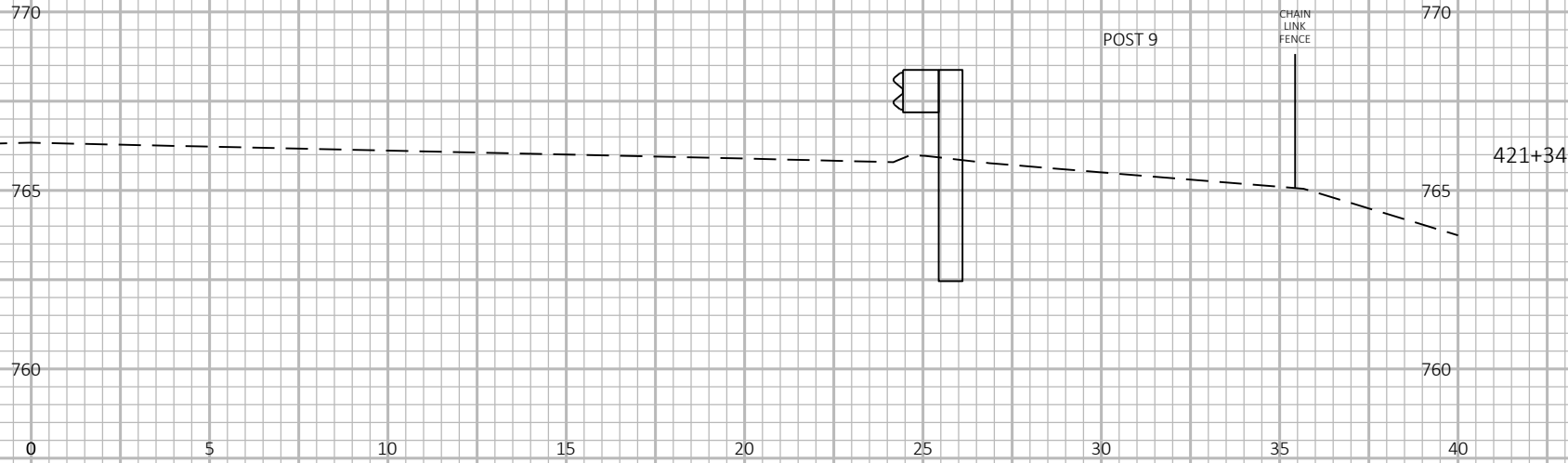
9

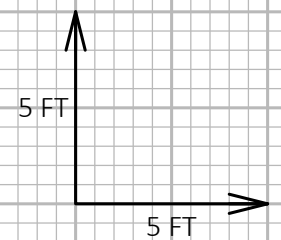
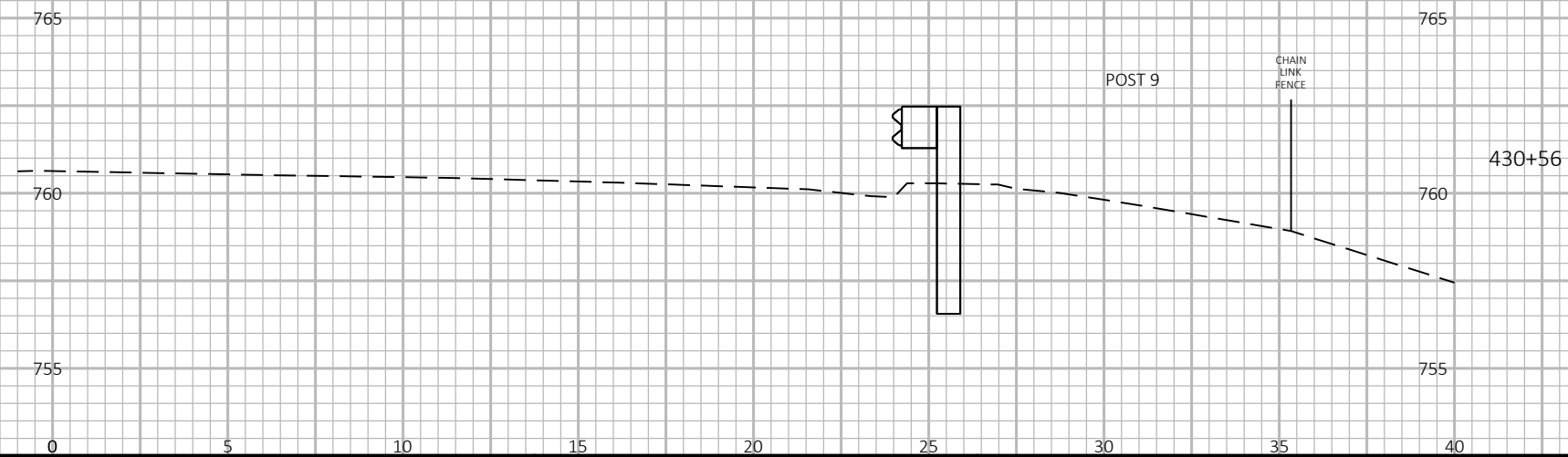
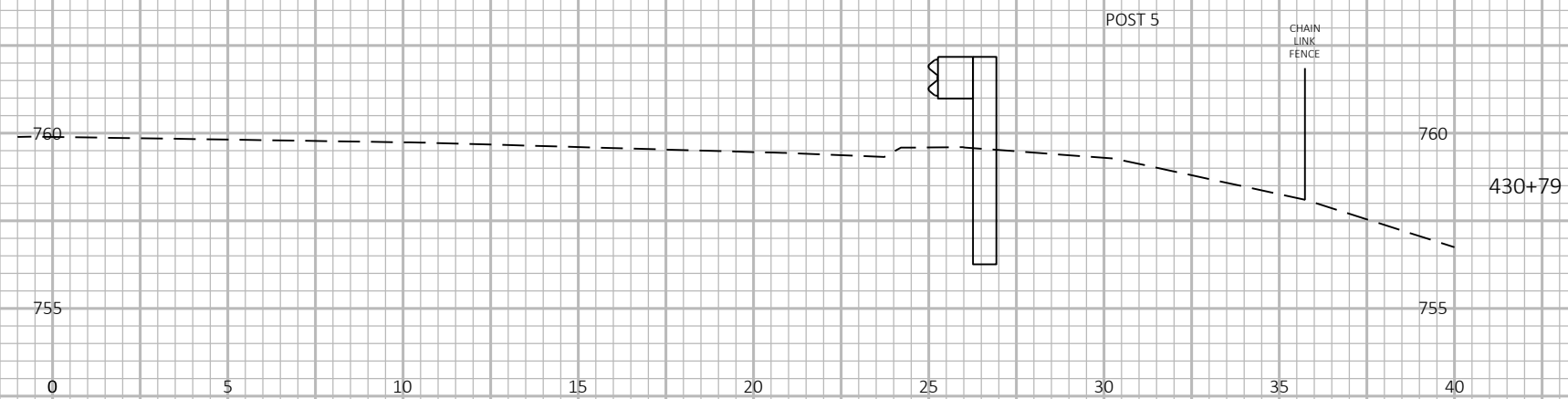
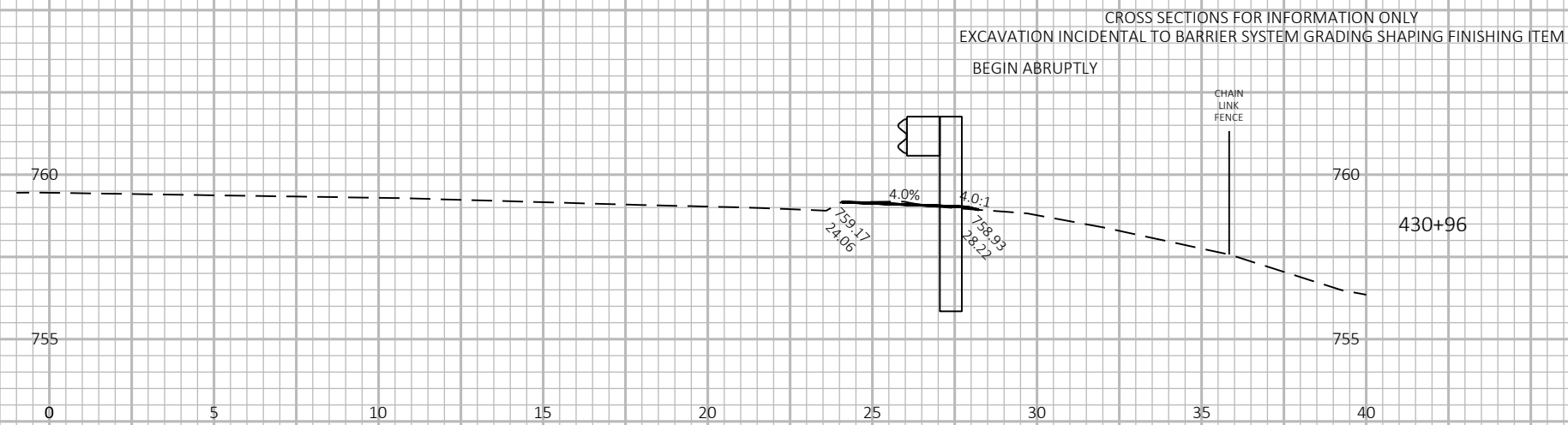
9

CROSS SECTIONS FOR INFORMATION ONLY
EXCAVATION INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING ITEM

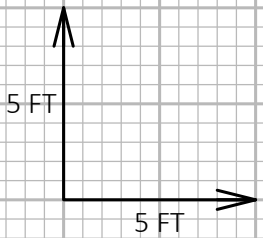
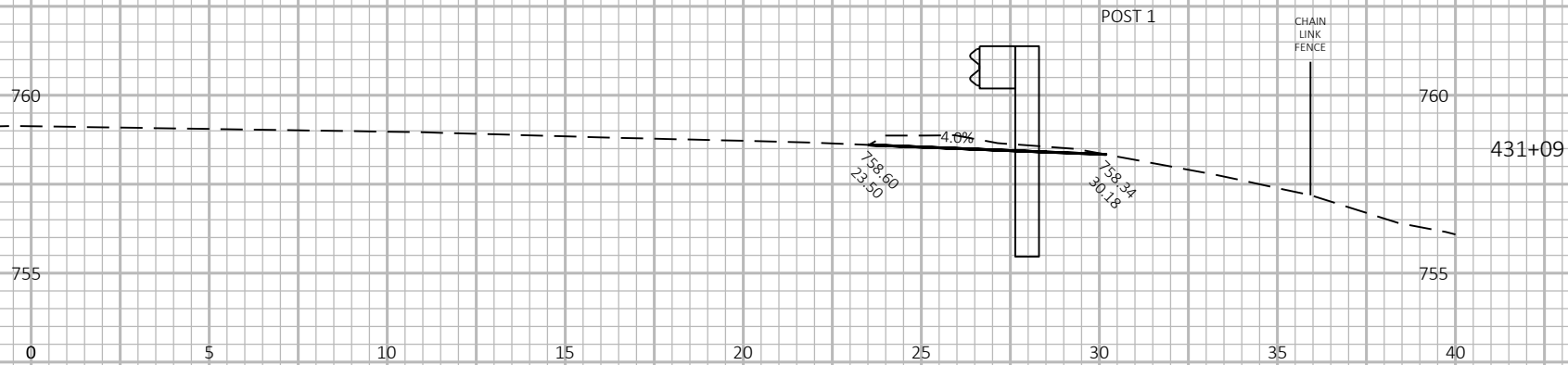
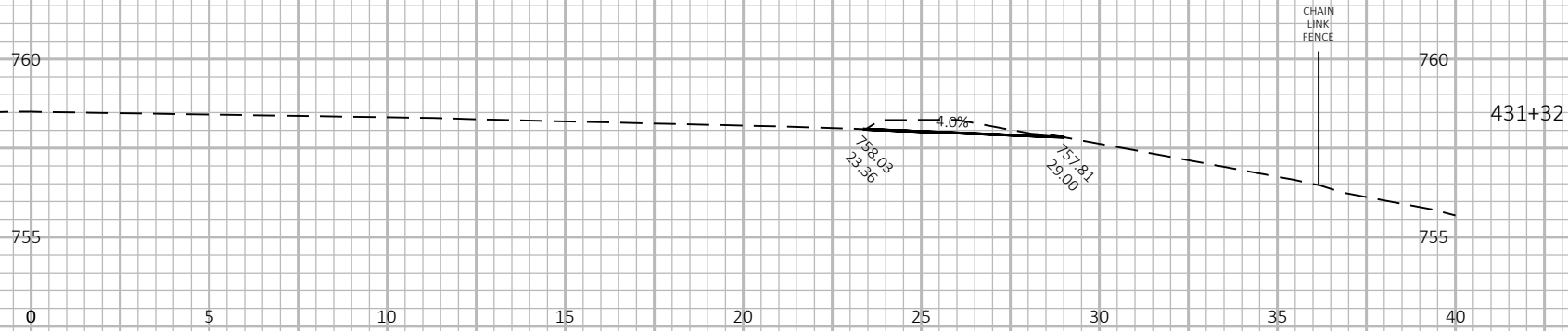


CROSS SECTIONS FOR INFORMATION ONLY
EXCAVATION INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING ITEM





CROSS SECTIONS FOR INFORMATION ONLY
EXCAVATION INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING ITEM



CROSS SECTIONS FOR INFORMATION ONLY
EXCAVATION INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING ITEM

END ABRUPTLY

CHAIN LINK FENCE

4.0%

757.67
23.71

757.56
26.48

760

755

0 5 10 15 20 25 30 35 40

431+59

CHAIN LINK FENCE

4.0%

757.49
23.28

757.24
29.41

760

755

0 5 10 15 20 25 30 35 40

431+56

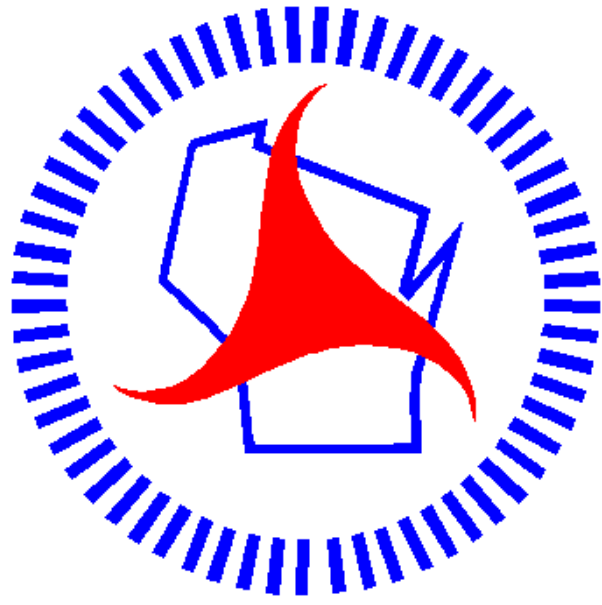
5 FT

5 FT

9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>