

WKE

May 10, 2022

PROJECT ID:

1000-09-86

COUNTY:

WASHINGTON

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

USH 45

IH 41/USH 45 BOX CULVERT

USH 45

WASHINGTON

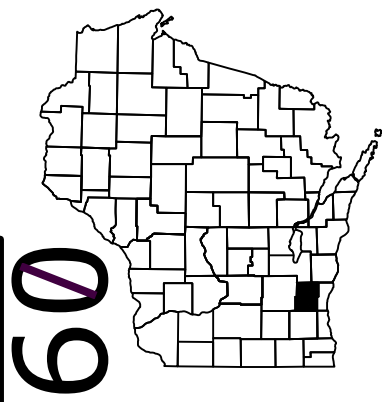
STATE PROJECT NUMBER
1000-09-86

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1000-09-86	WISC 2022384	1

ORDER OF SHEETS

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

TOTAL SHEETS = **16**



DESIGN DESIGNATION

A.A.D.T.	2020	=	35,000
A.A.D.T.		=	
D.H.V.		=	
D.D.		=	
T.		=	
DESIGN SPEED		=	
ESALS		=	

PROJECT LOCATION

STA 1699+81
N 129203.6070
E 361918.4568

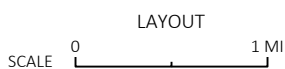
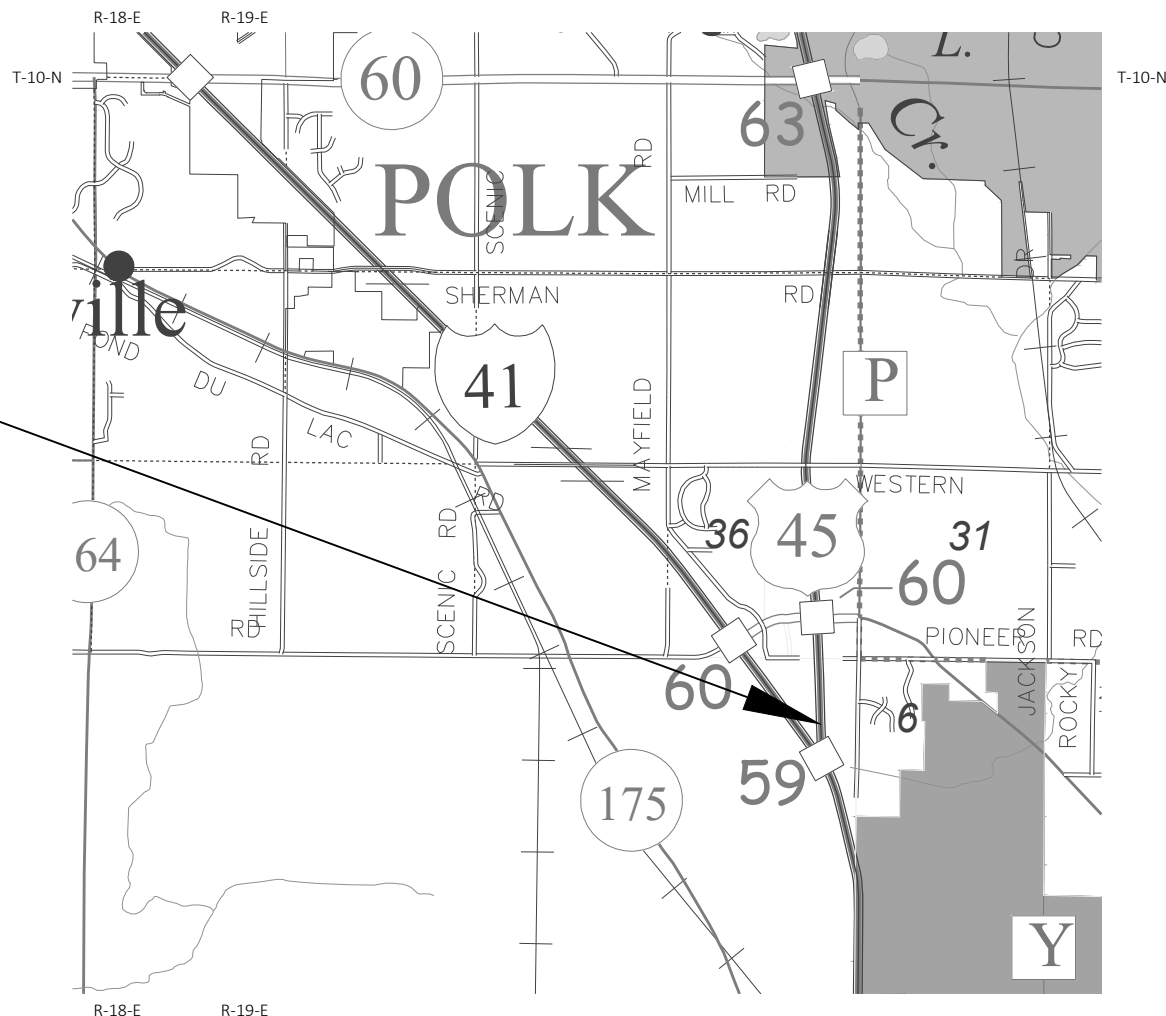
CONVENTIONAL SYMBOLS

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	



TOTAL NET LENGTH OF CENTERLINE = 0.0000 M.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WASHINGTON COUNTY NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS ELEVATIONS ARE BASED ON GEOID 12A.

ORIGINAL PLANS PREPARED BY

exp U.S. Services Inc.
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241 N Broadway, Suite 203
Milwaukee, WI 53202
U.S.A.

www.exp.com



- BUILDINGS • EARTH & ENVIRONMENT • ENERGY
- INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY



1/13/2022
(Date)

(Signature)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	EXP US SERVICES, INC
Designer	EXP US SERVICES, INC
Project Manager	MICHELE SPAETH, P.E.
Regional Examiner	
Regional Supervisor	Wafa ElQaqa, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 3/7/2022 *Michele Spaeth*
(Signature)

E

STANDARD ABBREVIATIONS:

ASPH	ASPHALT
AVE.	AVENUE
APT.	APARTMENT
BAD	BASE AGGREGATE DENSE
BLDG.	BUILDING
BM#	BENCH MARK
C&g	CURB AND GUTTER
€	CENTERLINE
CL	CLASS
CONC	CONCRETE
CONST.	CONSTRUCTION
COR.	CORNER
CP#	CONTROL POINT
CP	CULVERT PIPE
D/W	DRIVEWAY
EX.	EXISTING
EXC	EXCAVATION
FE	FIELD OF ENTRANCE
F.L	FLOWLINE
FT	FEET
GV	GAS VALVE
HS.	HOUSE
INL.	INLET
L.F	LINEAR FOOT
N.T.S	NOT TO SCALE
P.C	POINT OF CURVE
PCC.	PORTLAND CONCRETE CEMENT
PE	PRIVATE ENTRANCE
P.I.	POINT OF INTERSECT
P.L.E	PERMANENT LIMITED EASEMENT
P.T	POINT OF TANGENCY
R	RADIUS
REQ'D	REQUIRED
REMO	REMOVE
R/W	RIGHT OF WAY
SEC	SECTION
S.F.	SQUARE FOOT
STH	STATE TRUNK HIGHWAY
T	TANGENT
TLE	TEMPORARY LIMITED EASEMENT
VPC	VERTICAL POINT OF CURVE
VPT	VERTICAL POINT OF TANGENCY
W/L	WETLAND
WV	WATER VALVE

PROJECT CONTACTS

WisDOT CONTACT
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 MILWAUKEE, WI 53212
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 EMAIL: kristina.betzold@wi.gov

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 MILWAUKEE, WI 53202
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 EMAIL: JEFF.ROEMER@EXP.COM

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
 PROJECT OVERVIEW/TYPICAL SECTIONS
 PLAN DETAILS
 EROSION CONTROL
 TRAFFIC CONTROL
 ALIGNMENT DETAILS

GENERAL NOTES

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

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

ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE TOPSOILED, FERTILIZED, AND SEEDS AS DIRECTED BY THE ENGINEER.

SEED, FERTILIZER, AND EROSION MAT MUST BE PLACED WITHIN 5 DAYS OF TOPSOIL PLACEMENT.

EROSION CONTROL FEATURES ARE AT SUGGESTED LOCATIONS AND THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER.

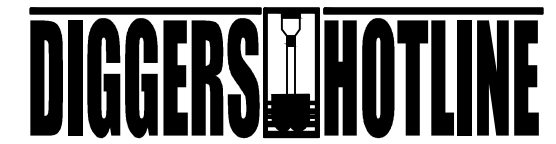
TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE.

UTILITY CONTACT LIST

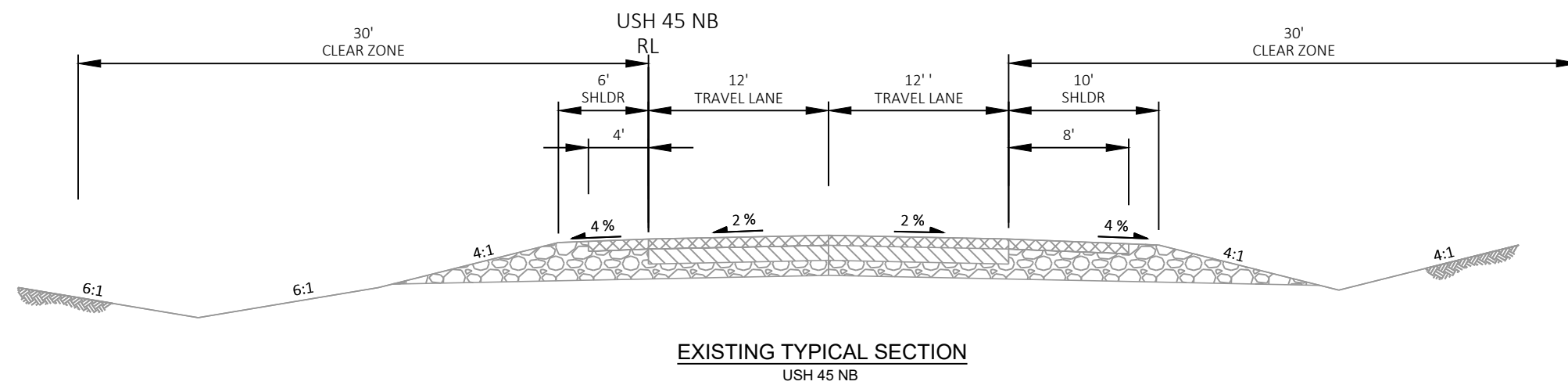
Wisconsin Independent Network, LLC –
 Communication Line
 Dick Hammetter
 Suite 219
 800 Wisconsin Ave
 Eau Claire, WI 54703
 838-4406
 Dick.Hammetter@wintechnology.com

WisDOT Communication Lines (FTMS)
 Jeffrey T. Madson
 433 W. St Paul Avenue
 Milwaukee, WI 53203
 225-3723
 Jeffrey.Madson@dot.wi.gov

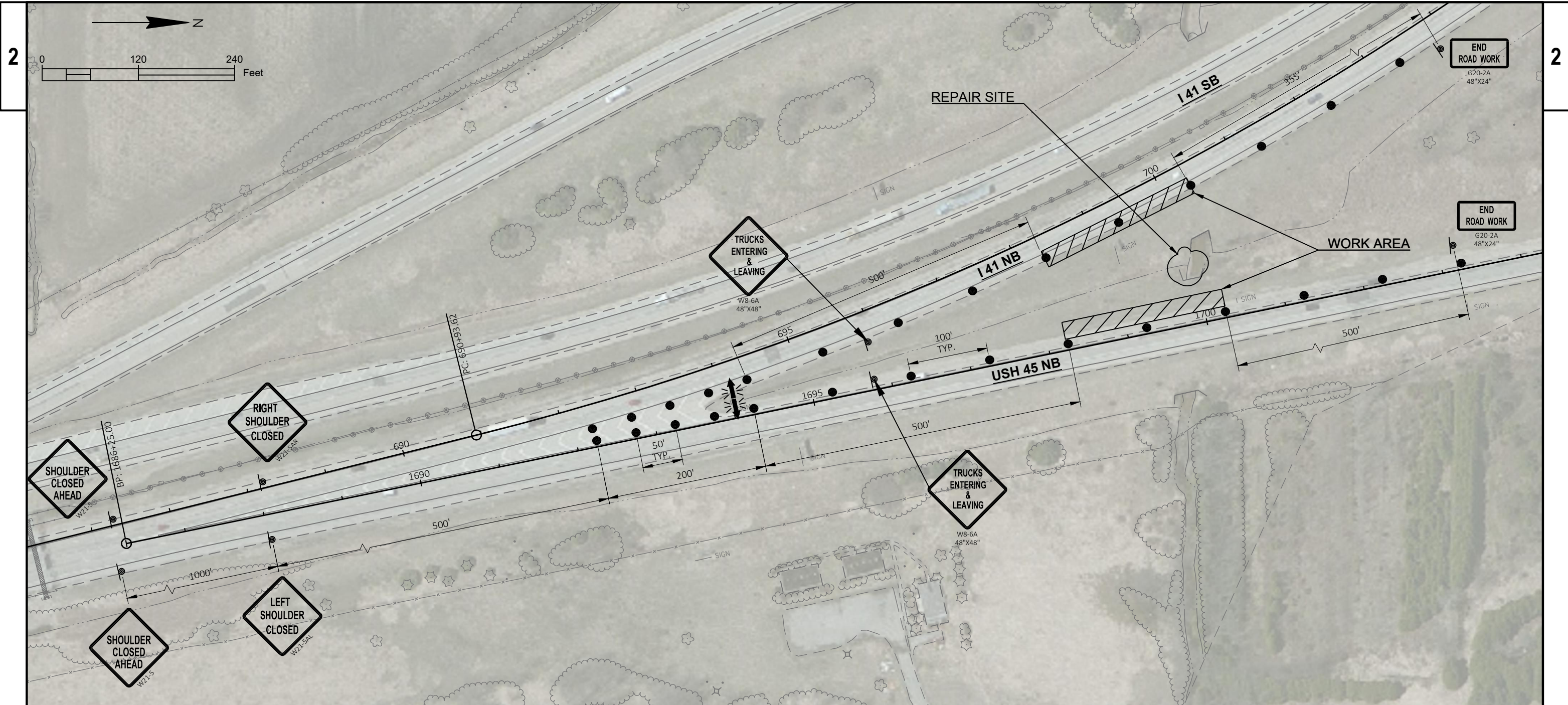


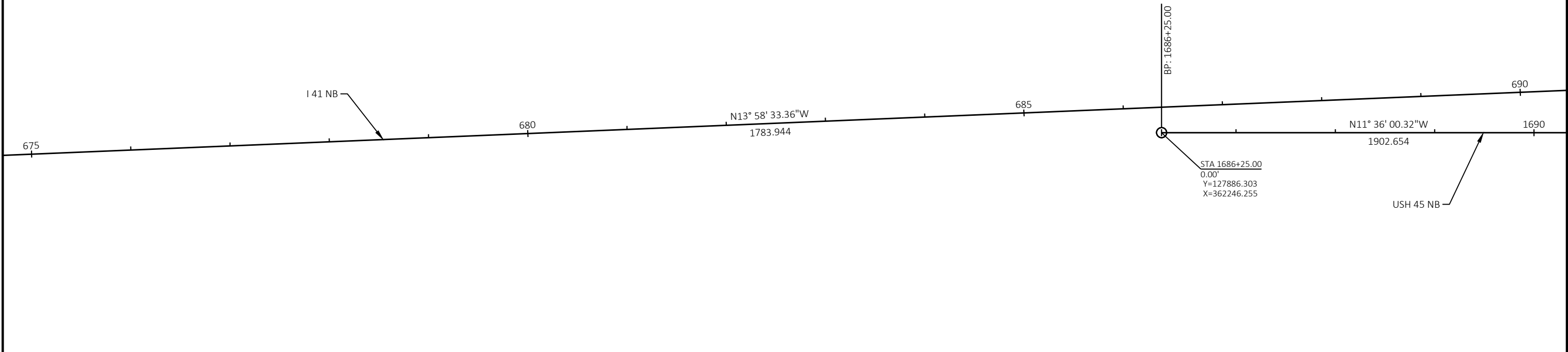
Dial **811** or (800)242-8511

www.DiggersHotline.com

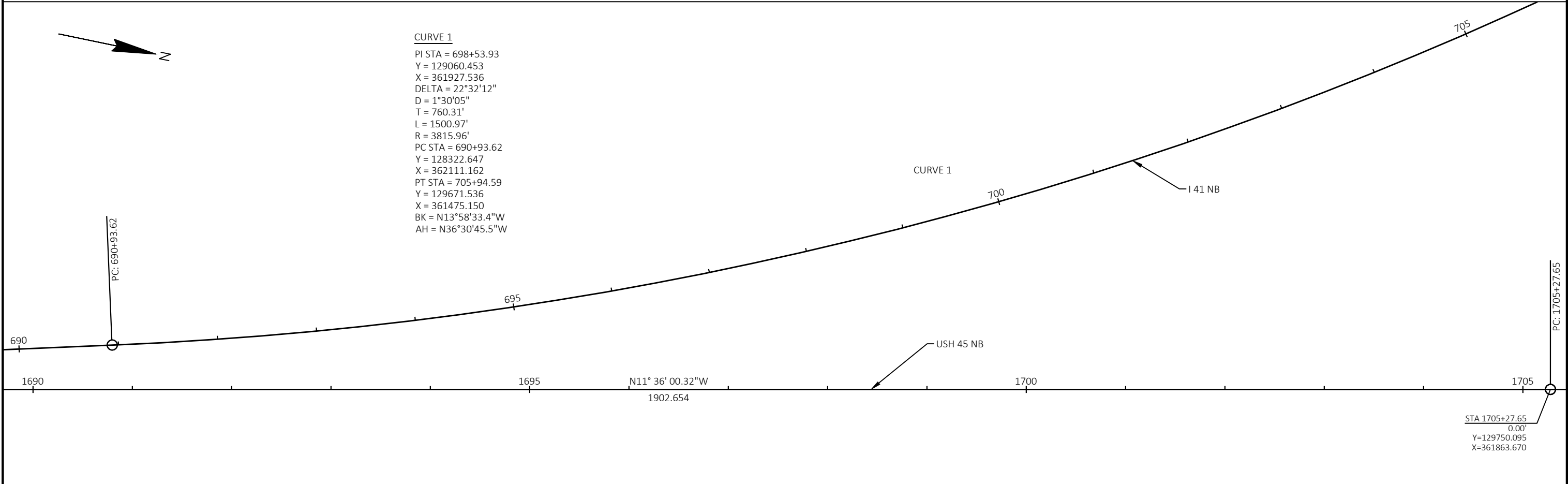








CURVE 1
 PI STA = 698+53.93
 Y = 129060.453
 X = 361927.536
 DELTA = 22°32'12"
 D = 1°30'05"
 T = 760.31'
 L = 1500.97'
 R = 3815.96'
 PC STA = 690+93.62
 Y = 128322.647
 X = 362111.162
 PT STA = 705+94.59
 Y = 129671.536
 X = 361475.150
 BK = N13°58'33.4\"/>



Estimate Of Quantities By Plan Sets

1000-09-86

Line	Item	Item Description	Unit	Total	Qty
0006	203.0220	Removing Structure (structure) 03. B-66-43	EACH	1.000	1.000
0024	206.2000	Excavation for Structures Culverts (structure) 03. B-66-43	LS	1.000	1.000
0032	210.2500	Backfill Structure Type B	TON	41.000	41.000
0034	213.0100	Finishing Roadway (project) 01. 1000-09-86	EACH	1.000	1.000
0044	311.0110	Breaker Run	TON	7.000	7.000
0060	502.4205	Adhesive Anchors No. 5 Bar	EACH	12.000	12.000
0062	504.0100	Concrete Masonry Culverts	CY	5.000	5.000
0066	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	430.000	430.000
0072	511.1200	Temporary Shoring (structure) 01. B-66-43	SF	205.000	205.000
0076	516.0500	Rubberized Membrane Waterproofing	SY	4.000	4.000
0082	606.0300	Riprap Heavy	CY	3.000	3.000
0096	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1000-09-86	EACH	1.000	1.000
0100	619.1000	Mobilization	EACH	0.250	0.250
0104	625.0100	Topsoil	SY	150.000	150.000
0108	627.0200	Mulching	SY	150.000	150.000
0112	628.1504	Silt Fence	LF	150.000	150.000
0114	628.1520	Silt Fence Maintenance	LF	150.000	150.000
0116	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0118	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0122	628.2027	Erosion Mat Class II Type C	SY	150.000	150.000
0130	629.0205	Fertilizer Type A	CWT	1.000	1.000
0140	630.0180	Seeding Mixture No. 80	LB	2.000	2.000
0142	630.0200	Seeding Temporary	LB	9.000	9.000
0144	630.0500	Seed Water	MGAL	7.000	7.000
0162	643.0300	Traffic Control Drums	DAY	750.000	750.000
0170	643.0800	Traffic Control Arrow Boards	DAY	55.000	55.000
0172	643.0900	Traffic Control Signs	DAY	225.000	225.000
0176	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
0178	643.5000	Traffic Control	EACH	0.250	0.250
0180	645.0105	Geotextile Type C	SY	10.000	10.000
0196	650.6500	Construction Staking Structure Layout (structure) 03. B-66-43	LS	1.000	1.000
0202	650.9910	Construction Staking Supplemental Control (project) 01. 1000-09-86	LS	1.000	1.000
0212	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000

3

CONSTRUCTION STAKING

650.9910
CONSTRUCTION STAKING
SUPPLEMENTAL CONTROL 01. 1000-09-86

<u>CATEGORY</u>	<u>LOCATION</u>	<u>LS</u>
0010	USH 45	1
	TOTALS	<u>1</u>

EROSION CONTROL

628.1504 SILT FENCE <u>LF</u>	628.1520 SILT FENCE MAINTENANCE <u>LF</u>	628.1905 MOBILIZATION EROSION CONTROL <u>EACH</u>	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL
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<u>CATEGORY</u>	<u>LOCATION</u>	628.1504 SILT FENCE <u>LF</u>	628.1520 SILT FENCE MAINTENANCE <u>LF</u>	628.1905 MOBILIZATION EROSION CONTROL <u>EACH</u>	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL
0010	I 41 AND USH 45 UNDISTRIBUTED	100 50	100 50	2 -	1 -
	TOTALS	<u>150</u>	<u>150</u>	<u>2</u>	<u>1</u>

3

LANDSCAPING

625.0100 TOPSOIL <u>SY</u>	627.0200 MULCHING <u>SY</u>	628.2027 EROSION MAT CLASS II TYPE C <u>SY</u>	629.0205 FERTILIZER TYPE A <u>CWT</u>	630.0180 SEEDING MIXTURE NO. 80 <u>LB</u>	630.0200 SEEDING TEMPORARY <u>LB</u>	630.0500 SEED WATER <u>MGAL</u>
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<u>CATEGORY</u>	<u>LOCATION</u>	625.0100 TOPSOIL <u>SY</u>	627.0200 MULCHING <u>SY</u>	628.2027 EROSION MAT CLASS II TYPE C <u>SY</u>	629.0205 FERTILIZER TYPE A <u>CWT</u>	630.0180 SEEDING MIXTURE NO. 80 <u>LB</u>	630.0200 SEEDING TEMPORARY <u>LB</u>	630.0500 SEED WATER <u>MGAL</u>
0010	I 41 AND USH 45 UNDISTRIBUTED	150 -	150 -	150 -	1 -	1 1	4 5	7
	TOTALS	<u>150</u>	<u>150</u>	<u>150</u>	<u>1</u>	<u>2</u>	<u>9</u>	<u>7</u>

TRAFFIC CONTROL

643.0300 DRUMS <u>DAYS</u>	643.0800 ARROW BOARDS <u>DAYS</u>	643.0900 CLASS II SIGNS <u>DAYS</u>	643.1050 SIGNS PCMS <u>DAYS</u>
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<u>CATEGORY</u>	<u>LOCATION</u>	643.0300 DRUMS <u>DAYS</u>	643.0800 ARROW BOARDS <u>DAYS</u>	643.0900 CLASS II SIGNS <u>DAYS</u>	643.1050 SIGNS PCMS <u>DAYS</u>
0010	I 41 AND USH 45 UNDISTRIBUTED	650 100	50 5	200 25	14 6
	TOTALS	<u>750</u>	<u>55</u>	<u>225</u>	<u>20</u>

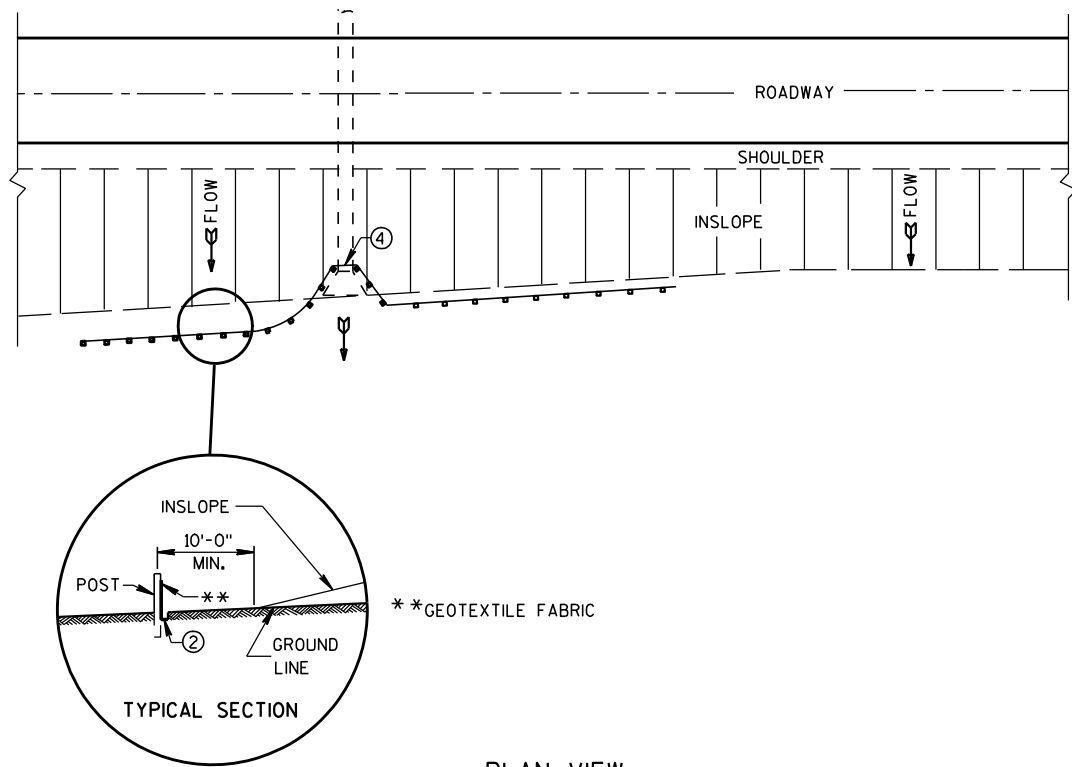
MOBILIZATION

619.1000 MOBILIZATION <u>EACH</u>

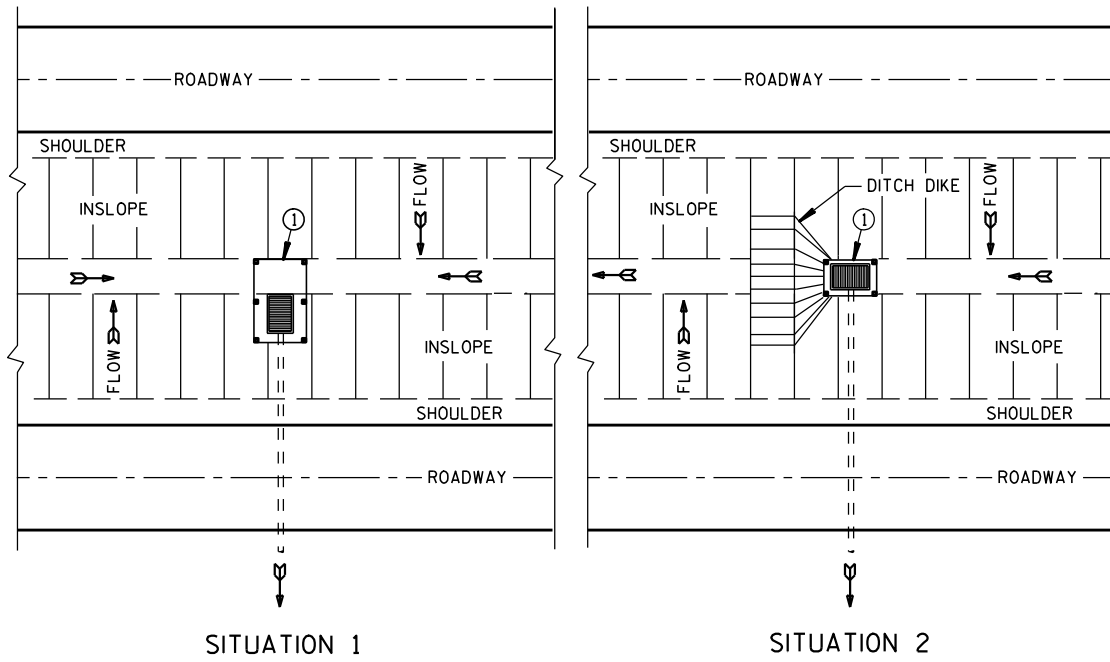
<u>CATEGORY</u>	<u>LOCATION</u>	619.1000 MOBILIZATION <u>EACH</u>
0010	USH 45	0.25
	TOTALS	<u>0.25</u>

Standard Detail Drawing List

08E09-06	SILT FENCE
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

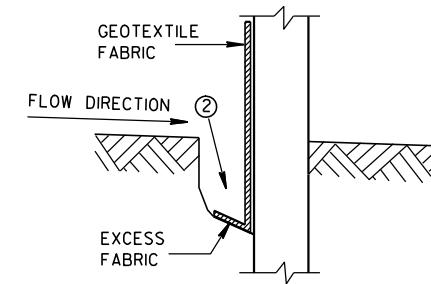


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

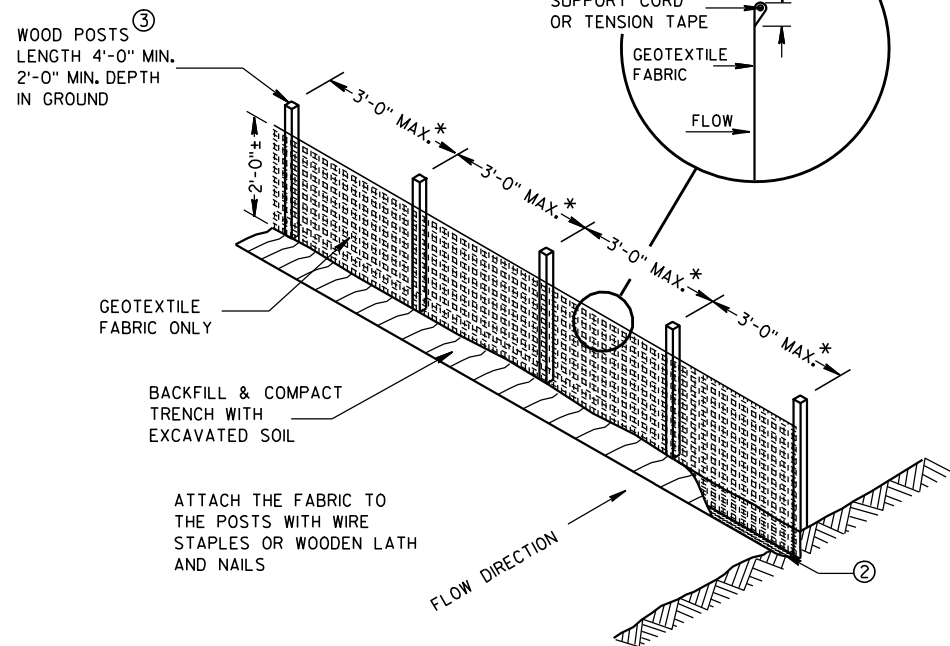
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



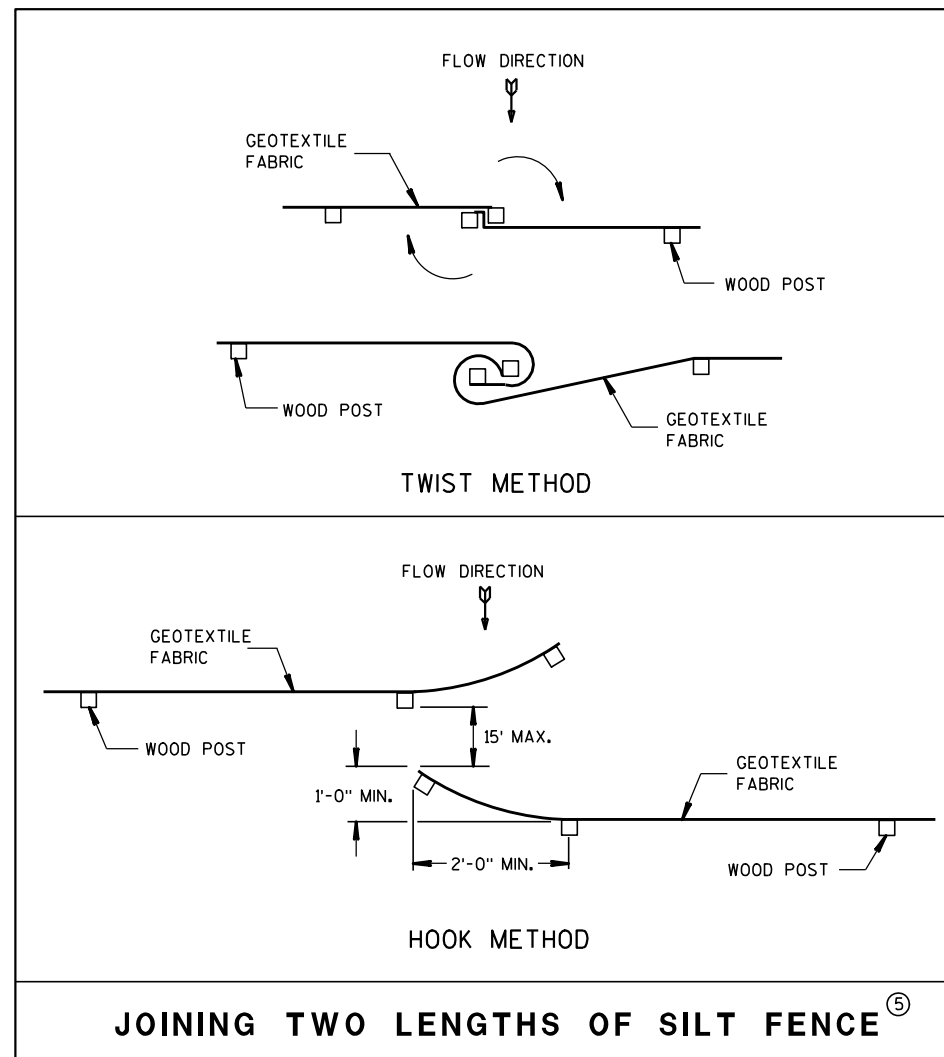
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

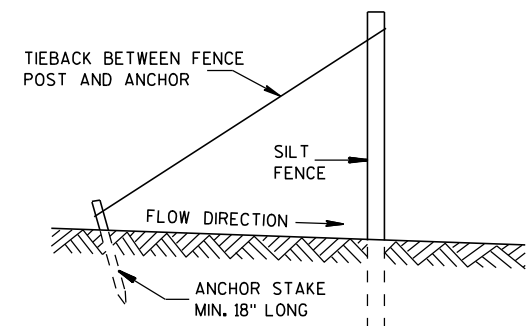


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤

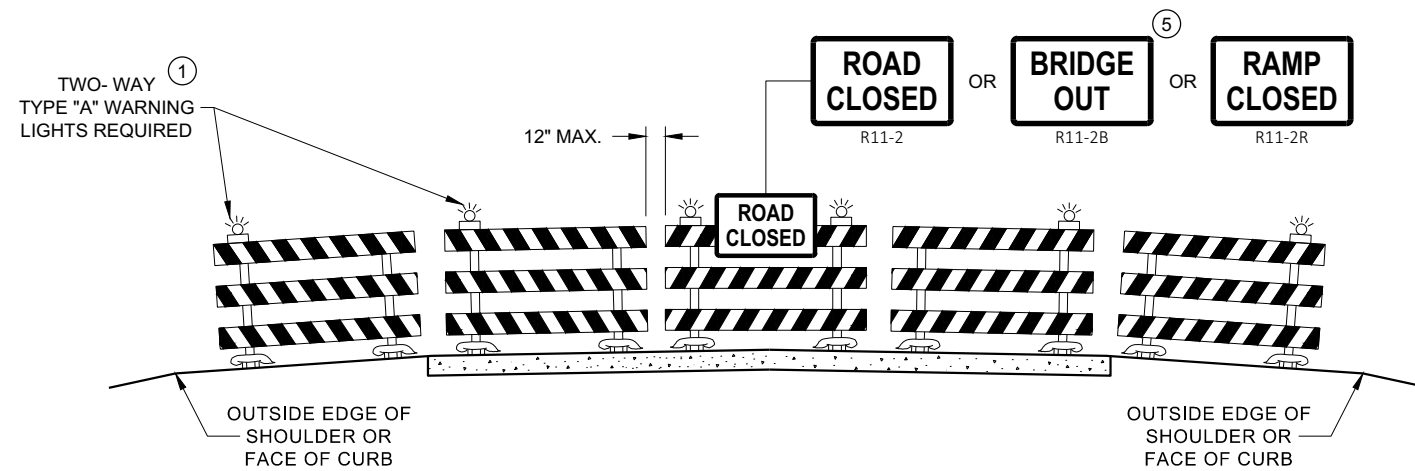


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

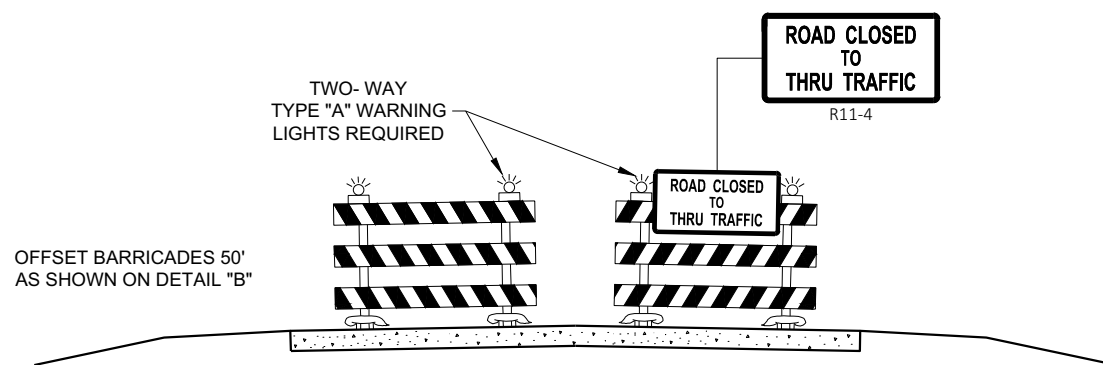
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT 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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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:

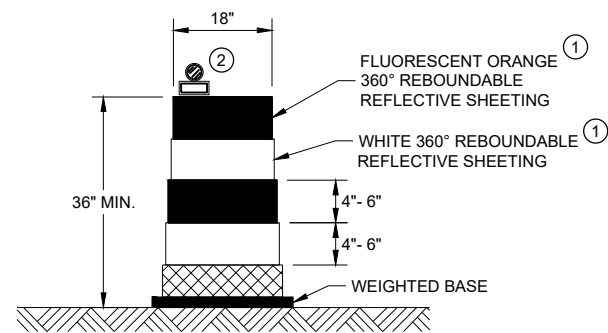
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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.

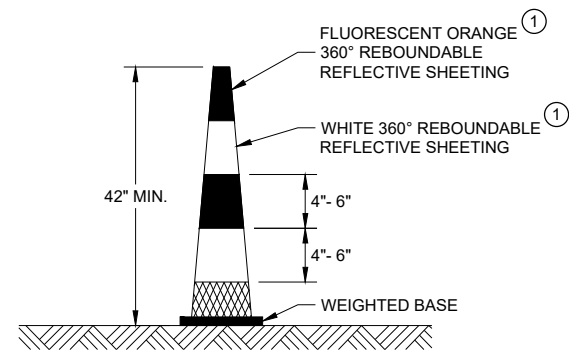
**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

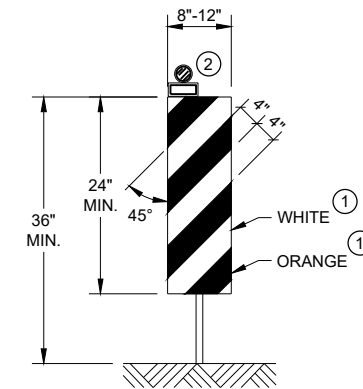


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

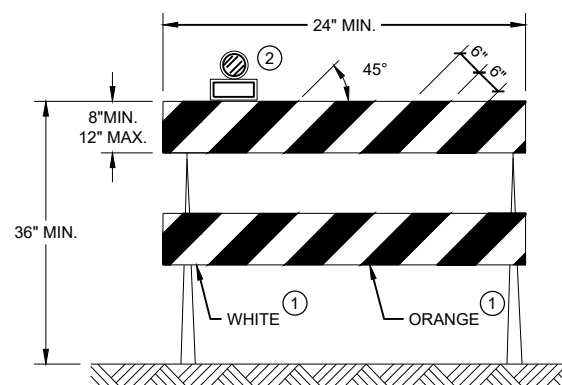


VERTICAL PANEL

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

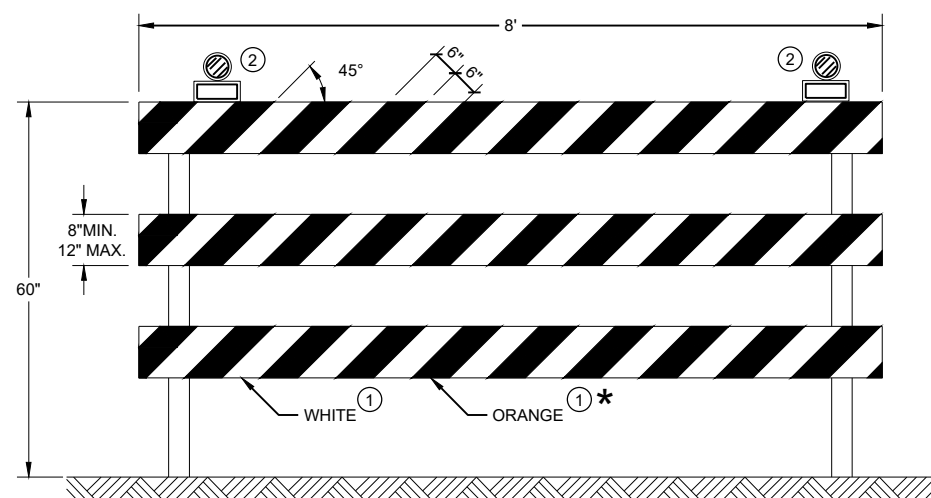
GENERAL NOTES

- 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 II BARRICADE

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



TYPE III 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 DATE May 2021	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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.

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 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.

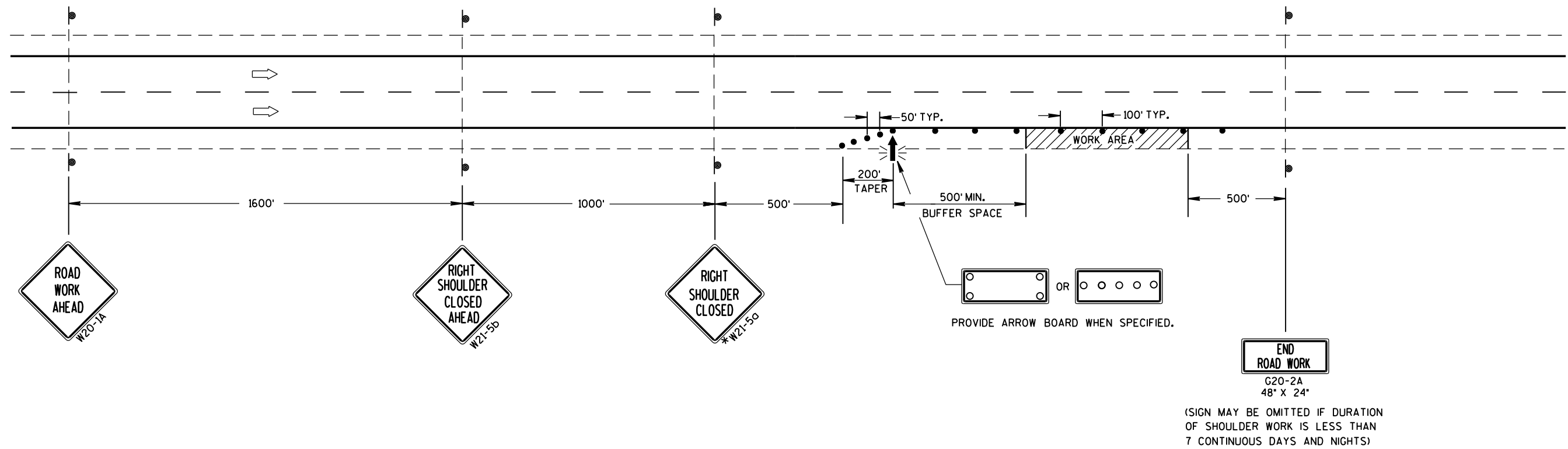
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220.03	REMOVING STRUCTURE (STA. 1699+90.00)	EACH	1
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-66-43	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	41
311.0110	BREAKER RUN	TON	7
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	12
504.0100	CONCRETE MASONRY CULVERTS	CY	5
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	430
511.1200	TEMPORARY SHORING B-66-43	SF	205
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	4
606.0300	RIPRAP HEAVY	CY	3
645.0105	GEOTEXTILE TYPE C	SY	10
NON-BID ITEMS			
PREFORMED JOINT FILLER		SIZE 3/4"	

BILL OF BARS

BAR DIMENSIONS ARE OUT TO OUT OF BAR. UNCOATED: 0 LBS
COATED: 430 LBS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
U401	X	16	3'-11"			FOOTING - BOTTOM - TRANS. - HORIZ.
U502	X	16	5'-5"	X		FOOTING - TOP - TRANS. - HORIZ.
U403	X	14	11'-6"			FOOTING & STEM - LONGIT. - HORIZ.
U404	X	13	4'-5"		*	FOOTING & STEM - F.F. - VERT.
U505	X	13	5'-3"	X	*	FOOTING & STEM - B.F. - VERT.
U406	X	2	7'-10"			STEM - F.F. & B.F. - HORIZ.
U407	X	2	3'-9"			STEM - F.F. & B.F. - HORIZ.
U508	X	2	12'-3"			STEM - TOP - ALONG SLOPE
** U509	X	12	2'-9"	X		FOOTING - DOWEL - VERT.

* LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.
** ADHESIVE ANCHORS NO. 5 BAR

BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTHS FOR EACH SERIES
U404	1 SERIES OF 13	2'-4" TO 6'-6"
U505	1 SERIES OF 13	3'-3" TO 7'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS20
INVENTORY RATING FACTOR: 1.0
OPERATING RATING FACTOR: 1.67
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 190 KIPS
OVERBURDEN DEPTH: 11'-0"

MATERIAL PROPERTIES:
CONCRETE MASONRY: $f'c = 3,500$ P.S.I.
BAR STEEL REINFORCEMENT: $f_y = 60,000$ P.S.I.

GEOTECHNICAL

WINGWALL SHALL BE FOUNDED ON SOIL WITH A MINIMUM ALLOWABLE BEARING RESISTANCE OF 2.0 KSF. CONTRACTOR TO VERIFY BEARING CAPACITY OF EXISTING SOIL PRIOR TO CONSTRUCTING THE WALL. IF BEARING CAPACITY IS INSUFFICIENT, ADDITIONAL UNDERCUT AND BACKFILL IS REQUIRED WITH ENGINEER'S APPROVAL.

TRAFFIC VOLUME

USH 45
A.D.T. = 38760 (2035)
R.D.S. = 70 MPH

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS OF EXISTING STRUCTURE MEMBERS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PLACE TEMPORARY SHORING AS DIRECTED BY THE ENGINEER TO LIMIT EXCAVATION.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-66-43" SHALL BE THE EXISTING GROUND LINE.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1/2" DEEP SAW CUT UNLESS OTHERWISE SHOWN OR NOTED.

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

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

CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE DRAWING. BACKFILL TYPE B MAY NOT REFLECT ACTUAL PLACED QUANTITIES. BACKFILL TYPE B REQUIRED ON THE BOX CULVERT SIDE AND BEHIND APRON WING FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

SCOPE OF WORK

REMOVE EXISTING SOUTHWEST WINGWALL.
CONSTRUCT NEW FOOTING AND STEM OF SOUTHWEST WINGWALL.

LIST OF DRAWINGS

1. GENERAL PLAN, ELEVATION & CROSS SECTION

NO.	DATE	REVISION	BY

exp. U.S. Services Inc.
Milwaukee, WI
BUILDINGS • EARTH & ENVIRONMENT • ENERGY
INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED: *[Signature]* SDR 03/08/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-66-43

USH 45 NB OVER BR CEDAR CREEK

COUNTY WASHINGTON TOWN/CITY/VILLAGE RICHFIELD

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY YC DESIGN CK'D. VCP DRAWN BY YC PLANS CK'D. MBP

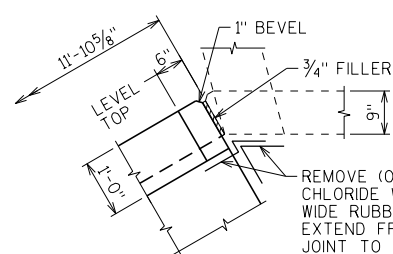
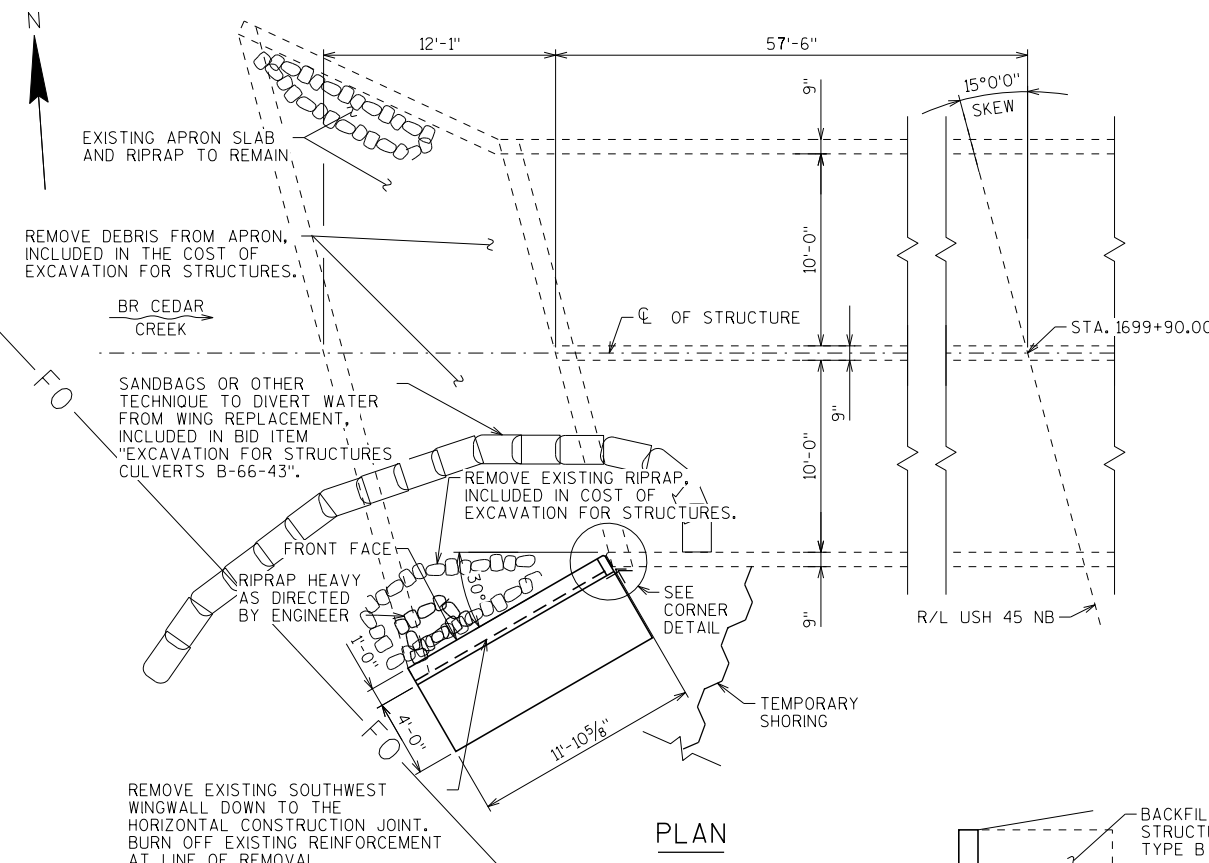
GENERAL PLAN, ELEVATION & CROSS SECTION SHEET 1 OF 1



DATE: 01/21/2022

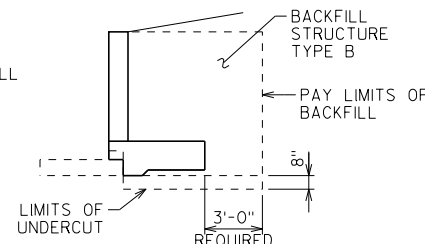
STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: AARON BONK, P.E. (608) 261-0261
CONSULTANT: VINOD C. PATEL, P.E. (312) 616-7359



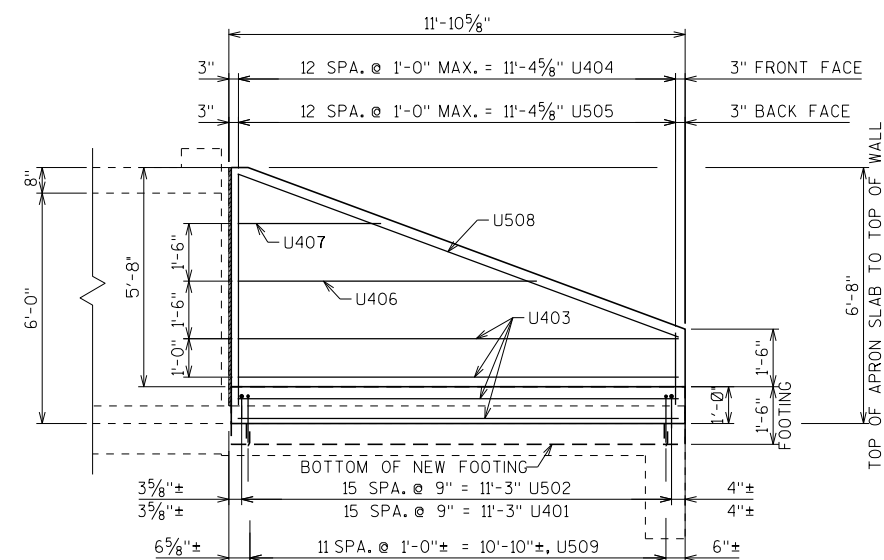
CORNER DETAIL

PLAN VIEW



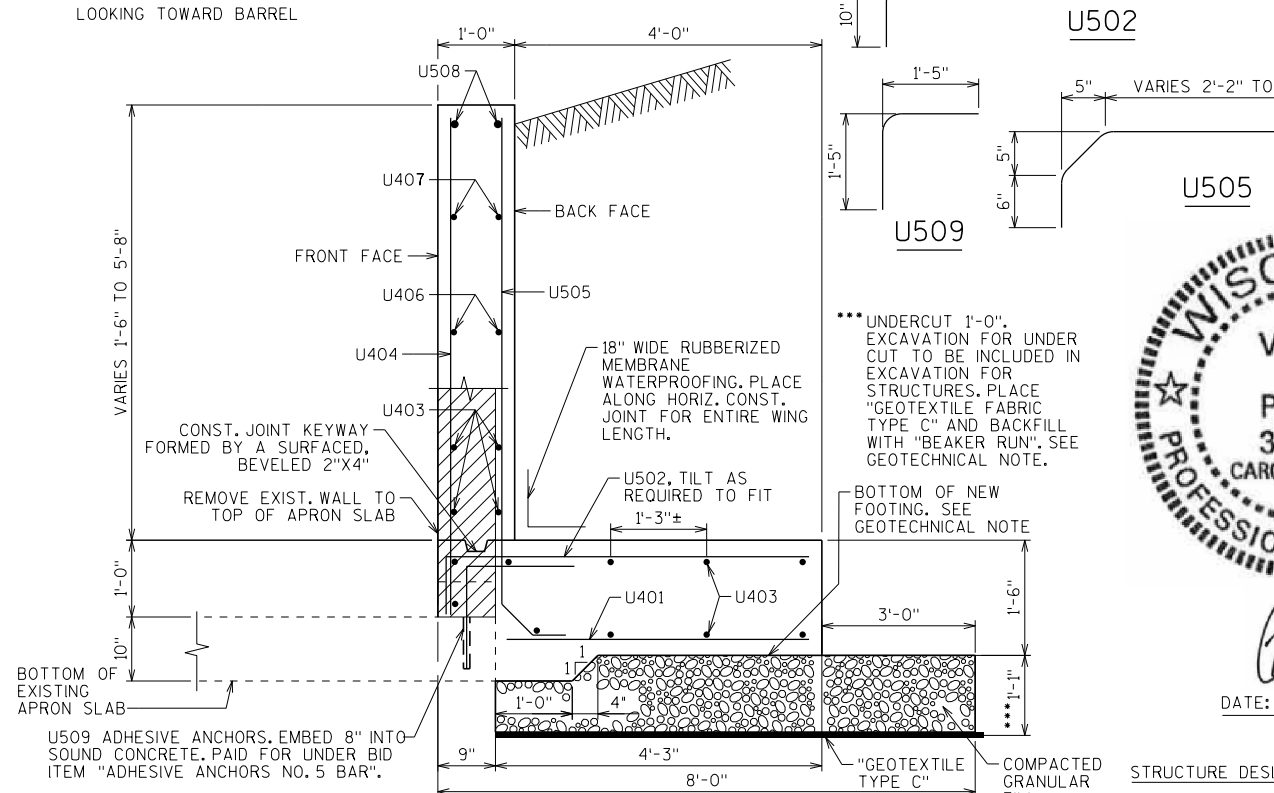
TYPICAL SECTION THRU PROPOSED WING

LOOKING TOWARD BARREL



WING ELEVATION

LOOKING SOUTH AT FRONT FACE OF WINGWALL



CROSS SECTION THRU PROPOSED WINGWALL

LOOKING TOWARD BARREL

\$\$\$\$ref_list_name\$\$\$\$
\$\$\$\$date\$\$\$\$
\$\$\$\$time\$\$\$\$

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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

WKE

May 10, 2022

PROJECT ID:
WITH: NA

3360-17-70

COUNTY:

WASHINGTON

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 = 120



DESIGN DESIGNATION 3360-17-00

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

CONVENTIONAL SYMBOLS

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

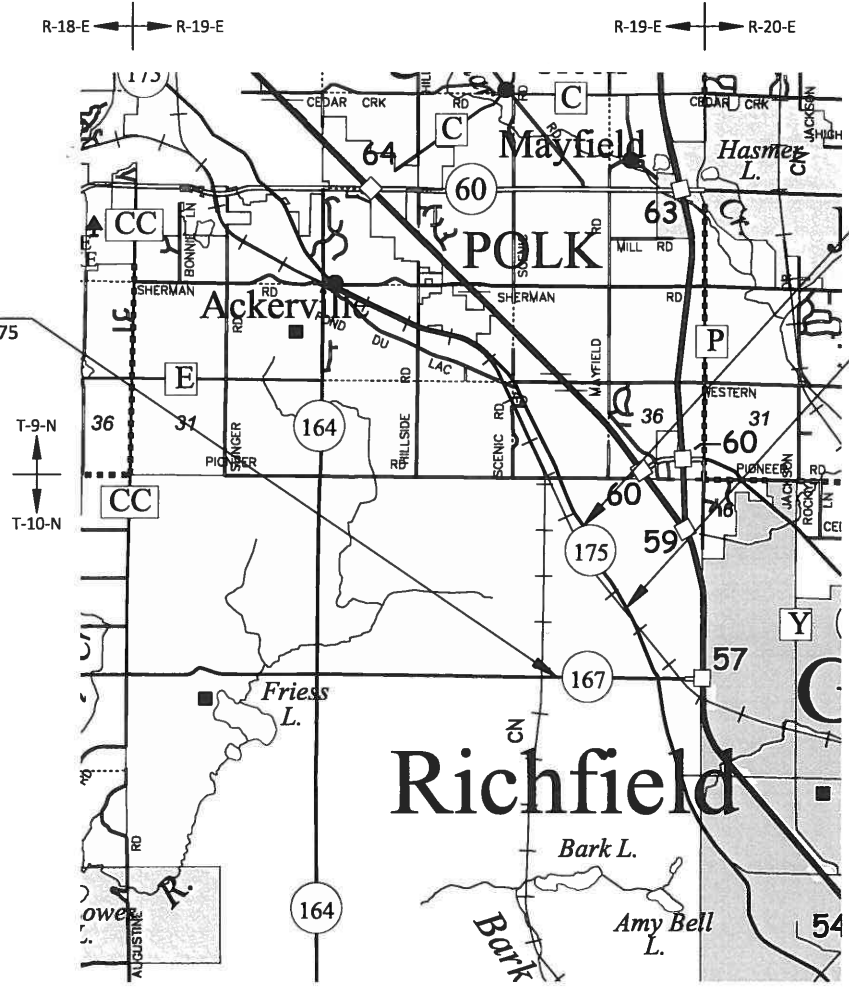
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 175 AND STH 167
LOCATIONS ON STN PER PLAN

VAR HWY
WASHINGTON COUNTY

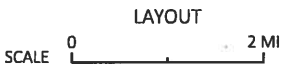
STATE PROJECT NUMBER
3360-17-70



C-66-48 EXIST, C-66-159 NEW
BEGIN CONSTRUCTION STA 1242+60
X:356,151.07
Y:129,382.91
END CONSTRUCTION 1247+65

C-66-47
BEGIN CONSTRUCTION STA 1193+50
X:358,426.81
Y:125,077.87
END CONSTRUCTION 1196+00

R-66-62
BEGIN CONSTRUCTION STA 630+75
X:354,373.87
Y:121,369.98
END CONSTRUCTION 634+00



TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WICRS), WASHINGTON COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3360-17-70	WISC 2022393	1

ORIGINAL PLANS PREPARED BY

Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-3300 Job No. 20289.00

DATE: 1-17-2022
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SIGMA
Designer	ALFRED BENESCH & CO
Project Manager	JULIE JENKS
Regional Examiner	SE REGION
Regional Supervisor	JANET CANNON

APPROVED FOR THE DEPARTMENT

DATE: 1/17/2022
Julie Jenks (Signature)

E

UTILITY CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE

ROB WIECZOREK
MILWAUKEE, WI
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rw2712@us.att.com

CHARTER COMMUNICATIONS - COMMUNICATION LINE

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1515 W WASHINGTON ST
WEST BEND, WI 53095
414-312-2652
Ronald.Mueller@charter.com

WE ENERGIES - ELECTRIC DISTRIBUTION

JONATHAN SCHALOW
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MENOMONEE FALLS, WI 53051
262-502-6814 - MOBILE: 414-881-4743
Jonathan.Schalow@we-energies.com

WE ENERGIES - GAS

JACOB HULBERT
500 S 116th STREET
WEST ALLIS, WI 53214
414-944-5575 - MOBILE: 414-651-1577
Jacob.Hulbert@we-energies.com



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

GENERAL NOTES

1. THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.
2. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
3. THE COST OF GRADING, CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY ACCESS IS INCIDENTAL TO THE CONTRACT.
4. DO NOT PLACE ANY TRAFFIC CONTROL WITHIN 50 FEET OF THE RAILROAD RIGHT-OF-WAY
5. REPLACE ALL GROUND LEVEL ITEMS (FENCES, ETC) THAT ARE DISTURBED IN THE TLE AREA OF PARCEL 1. NO SEPARATE PAYMENT WILL BE MADE, PAYMENT FOR WORK AND MATERIALS IS INCIDENTAL TO THE CONTRACT.
6. CONTACT THE PROJECT ENGINEER AND THE WASHINGTON COUNTY HIGHWAY COMMISSIONER, AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

EROSION CONTROL NOTES

1. RE-TOPSOIL DISTURBED AREAS, AS DESIGNATED BY THE ENGINEER. SEED AND E-MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
2. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
3. QUANTITIES FOR EROSION CONTROL ITEMS HAVE BEEN INCLUDED IN THE PROJECT, BUT MAY NOT BE REPRESENTED ON THE PLAN. THE LOCATIONS AND TYPE OF EROSION CONTROL ITEMS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL ITEMS SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE ITEM IS NO LONGER REQUIRED

PAVEMENT LOCATION	TOTAL PAVEMENT THICKNESS	LAYER	TYPE
STH 175 (C-66-47) SHOULDERS	5 INCHES	UPPER 1 3/4 INCHES	4 LT 58-28 S
		LOWER 3 1/4 INCHES	3 LT 58-28 S
STH 175 (C-66-159) LANES AND SHOULDERS	5 1/2 INCHES	UPPER 1 3/4 INCHES	4 LT 58-28 S
		LOWER 3 3/4 INCHES	3 LT 58-28 S

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- PAVEMENT MARKING
- DETOUR PLAN
- ALIGNMENT DETAIL

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
MEDIAN STRIP TURF	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
SIDE SLOPE TURF	0.25	0.27	0.25	0.30		0.27			0.28			0.30
	0.34	0.36	0.32			0.34			0.36			0.38
PAVEMENT:												
ASPHALT	0.70 - 0.95											
CONCRETE	0.80 - 0.95											
BRICK	0.70 - 0.80											
DRIVES, WALKS	0.75 - 0.85											
ROOFS	0.75 - 0.95											
GRAVEL ROADS, SHOULDERS	0.40 - 0.60											

TOTAL PROJECT AREA = 1.44 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.52 ACRES

OTHER AGENCIES

WISDNR

SOUTHERN REGION
KRISTINA BETZOLD
2300 N DR MARTIN LUTHER KING DR
MILWAUKEE, WI 53212
414-507-4946
Kristina.Betzold@wisconsin.gov

WISDOT

SOUTHEAST REGION
JULIE JENKS
141 NW BARSTOW ST
WAUKESHA, WI 53187
262-548-6462
Julie.Jenks@dot.wi.gov

DESIGN

ALFRED BENESCH & CO
BEN WEIGAND
1300 W CANAL ST, SUITE 150
MILWAUKEE, WI 53233
414-308-1322
bweigand@benesch.com

WASHINGTON COUNTY

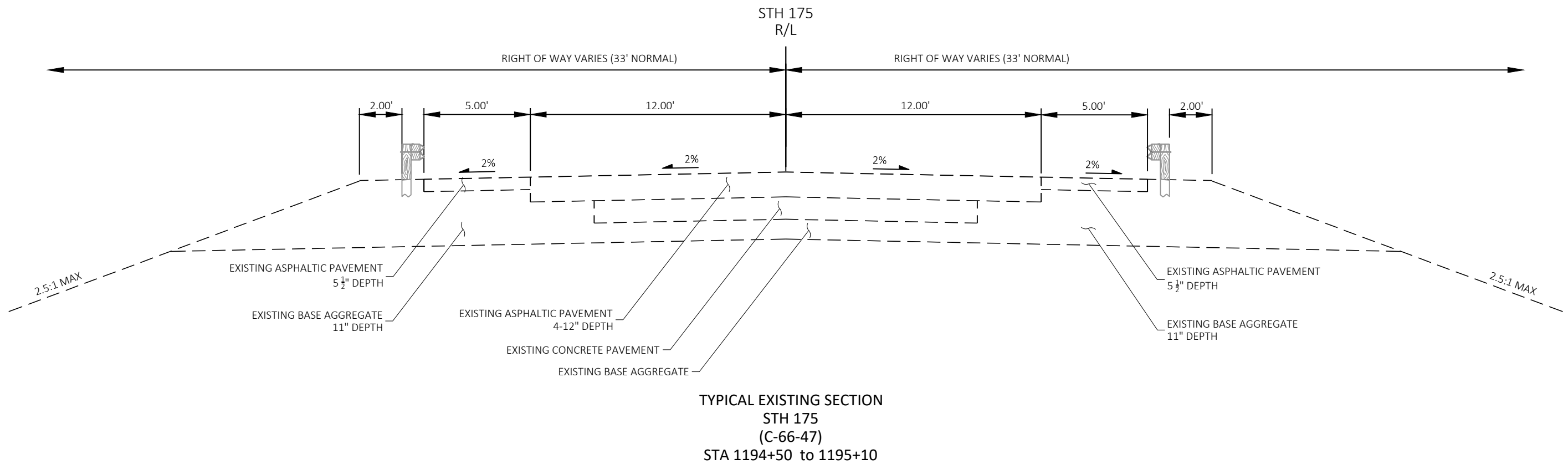
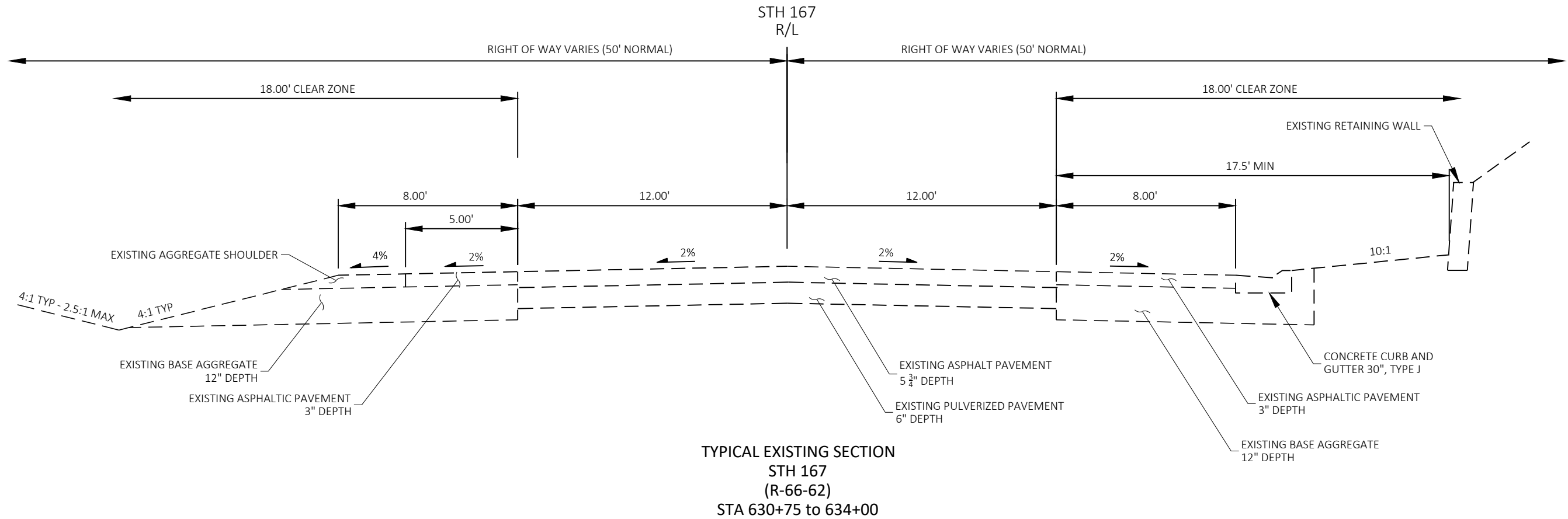
HIGHWAY COMMISSIONER
SCOTT M SCHMIDT, PE, PLS
900 LANG STREET
WEST BEND, WI 53090
262-335-6881
scott.schmidt@co.washington.wi.us

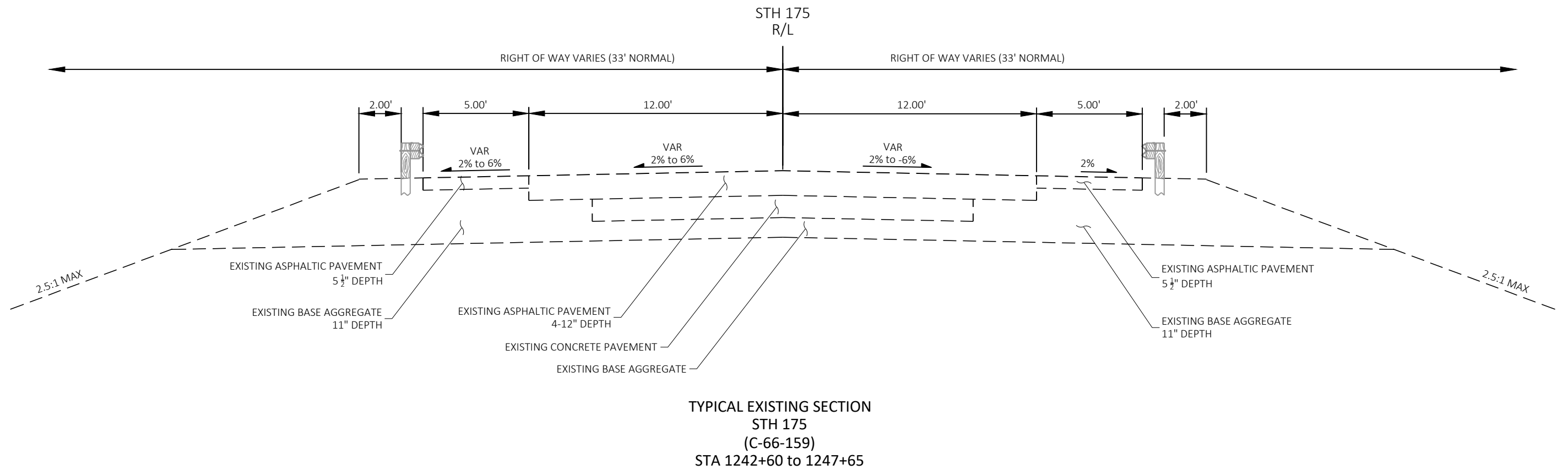
VILLAGE OF RICHFIELD

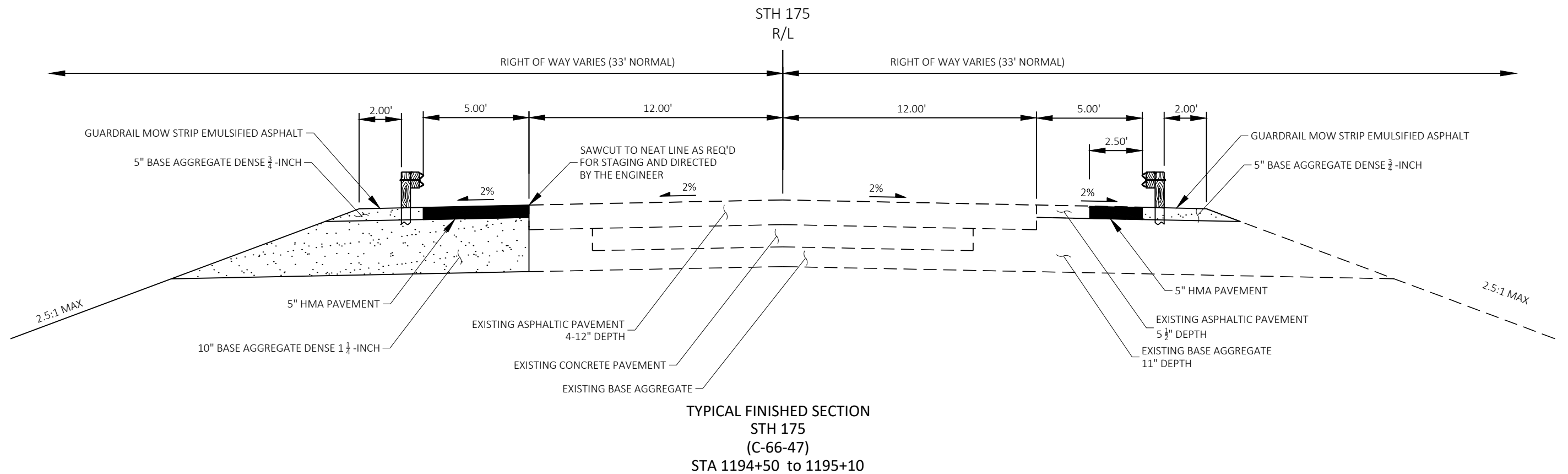
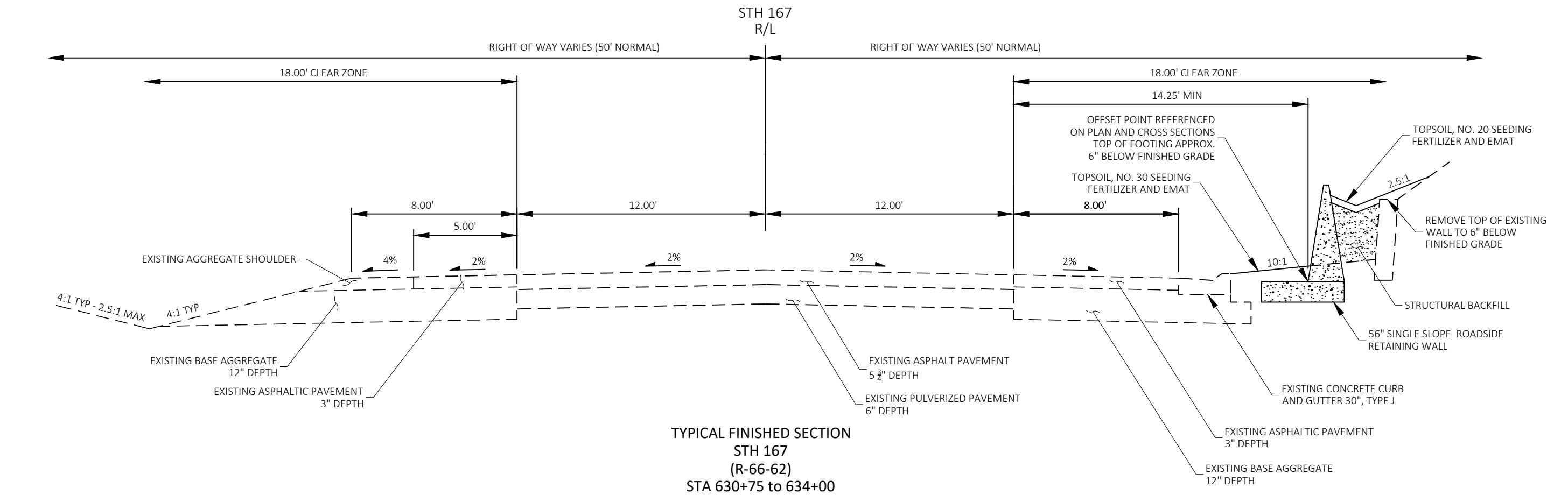
PUBLIC WORKS SUPERVISOR
BRETT THICKE
4128 HUBERTUS RD
HUBERTUS, WI 53033
262-628-2260
dpw@richfieldwi.gov

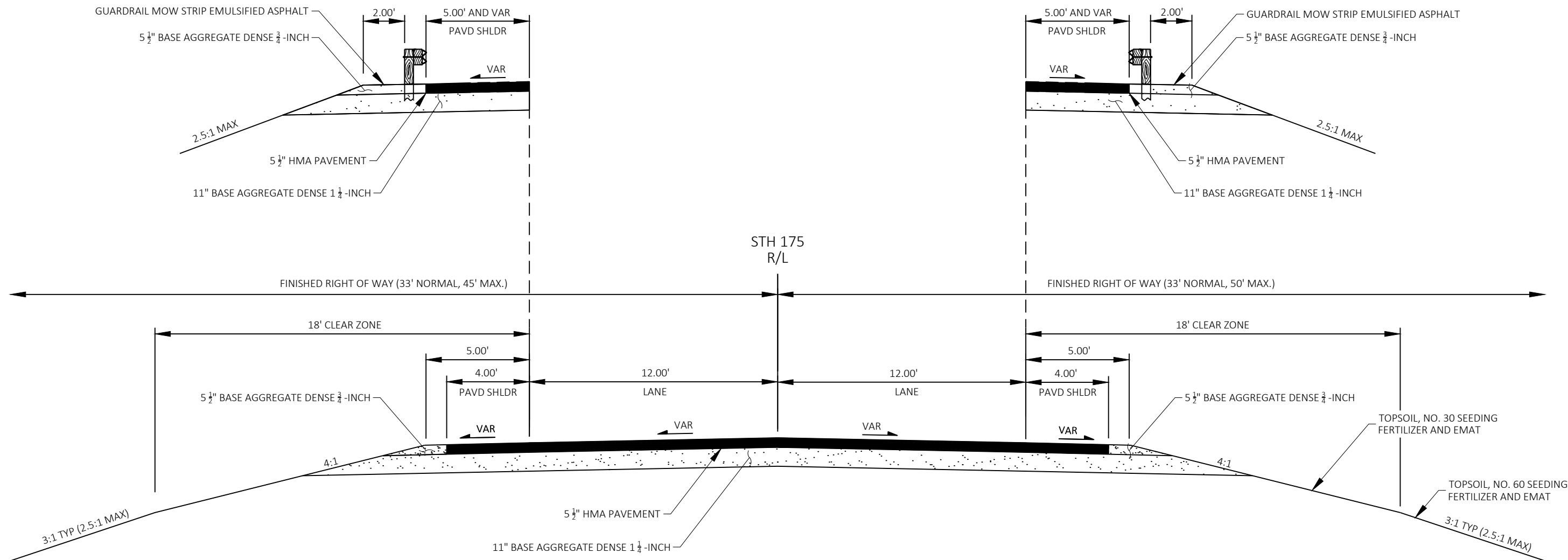


PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	PROJECT OVERVIEW	SHEET	E
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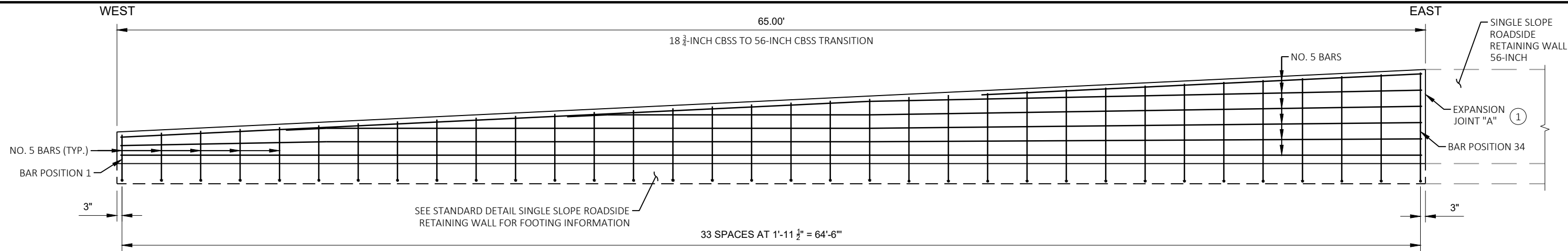




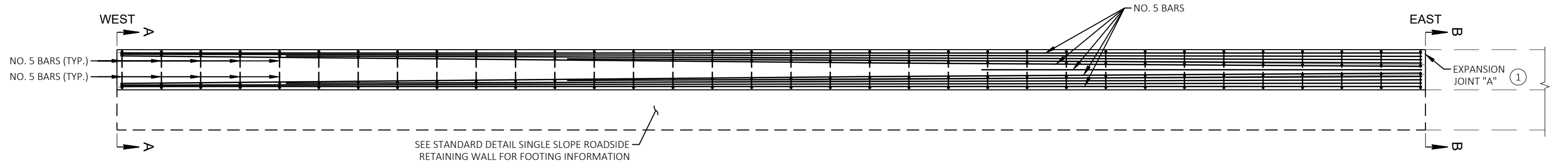


TYPICAL FINISHED SECTION
 STH 175
 (C-66-159)
 STA 1242+60 to 1247+65

SUPERELEVATION TRANSITION EVENT POINTS		RATE			
LOCATION	STATION	LEFT OF CROWNLIN		RIGHT OF CROWNLIN	
		LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
Begin Project	1242+60.00	-5.10%	-5.10%	2.80%	-4.00%
Full Super Left	1242+84.07	-6.00%	-6.00%	3.70%	-4.00%
Full Super Both	1243+45.57	-6.00%	-6.00%	6.00%	-2.00%
End Full Super	1245+68.92	-6.00%	-6.00%	6.00%	-2.00%
Low Shoulder Match	1246+22.26	-4.00%	-4.00%	4.00%	-4.00%
Reverse Crown	1246+75.59	-4.00%	-2.00%	2.00%	-4.00%
Level Crown	1247+28.92	-4.00%	-2.00%	0.00%	-4.00%
End Project	1247+65.00	-4.00%	-2.00%	-1.40%	-4.00%



ELEVATION VIEW



PLAN VIEW

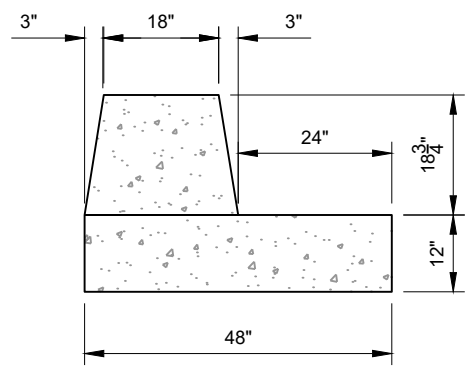
GENERAL NOTES

- CONSTRUCT PER STANDARD SPECIFICATION 603.
- SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.
- 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.
- USE 3/8" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
- THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.
- 2" CLEAR COVER TYPICAL.

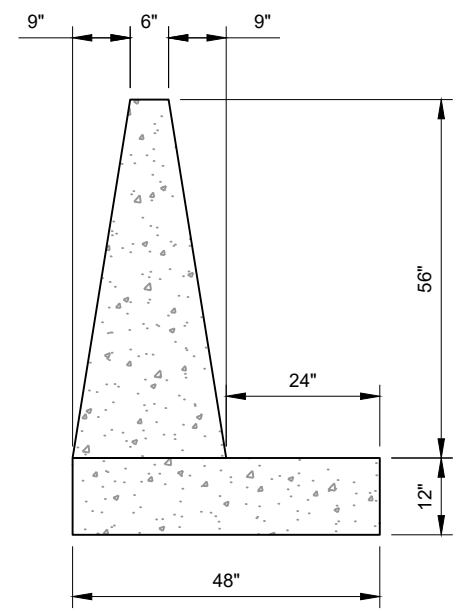
① EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD JOINT IS USED, ANCHOR IS NOT REQUIRED.

**BAR CHART
BAR POSITIONS
V1-V34**

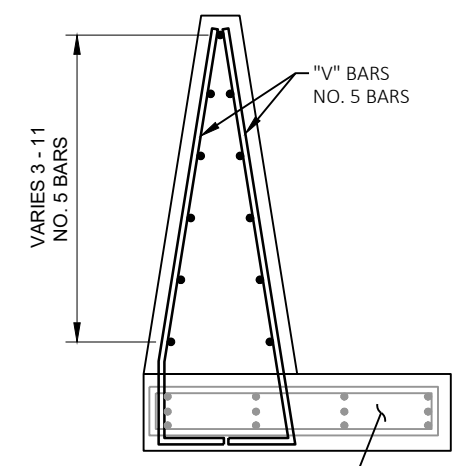
BAR	A	B	BAR	A	B
V1	1'-4 1/4"	2'-3 1/2"	V18	2'-11 1/2"	3'-10 3/4"
V2	1'-5 1/4"	2'-4 1/2"	V19	3'-0"	4'-0"
V3	1'-6 1/2"	2'-5 3/4"	V20	3'-1 3/4"	4'-1"
V4	1'-7 1/2"	2'-7"	V21	3'-2 3/4"	4'-2 1/4"
V5	1'-8 3/4"	2'-8"	V22	3'-4"	4'-3 1/4"
V6	1'-9 3/4"	2'-9 1/4"	V23	3'-5"	4'-4 1/2"
V7	1'-11"	2'-10 1/4"	V24	3'-6 1/4"	4'-5 1/2"
V8	2'-0"	2'-11 1/2"	V25	3'-7 1/2"	4'-6 3/4"
V9	2'-1 1/4"	3'-0"	V26	3'-8 1/2"	4'-7 3/4"
V10	2'-2 1/2"	3'-1 3/4"	V27	3'-9 3/4"	4'-9"
V11	2'-3 1/2"	3'-2 3/4"	V28	3'-10 3/4"	4'-10"
V12	2'-4 3/4"	3'-4"	V29	4'-0"	4'-11 1/4"
V13	2'-5 3/4"	3'-5"	V30	4'-1"	5'-0 1/2"
V14	2'-7"	3'-6 1/4"	V31	4'-2 1/4"	5'-1 1/2"
V15	2'-8"	3'-7 1/4"	V32	4'-3 1/4"	5'-2 3/4"
V16	2'-9 1/4"	3'-8 1/2"	V33	4'-4 1/2"	5'-3 3/4"
V17	2'-10 1/4"	3'-9 3/4"	V34	4'-5 1/2"	5'-5"



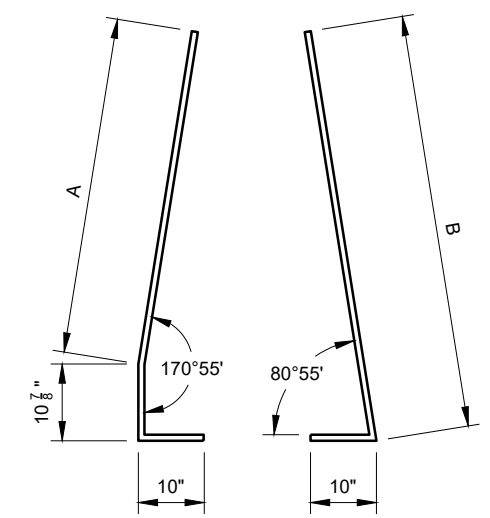
SECTION A - A



SECTION B - B



BAR DETAIL
BAR POSITIONS



BENDING DETAIL

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

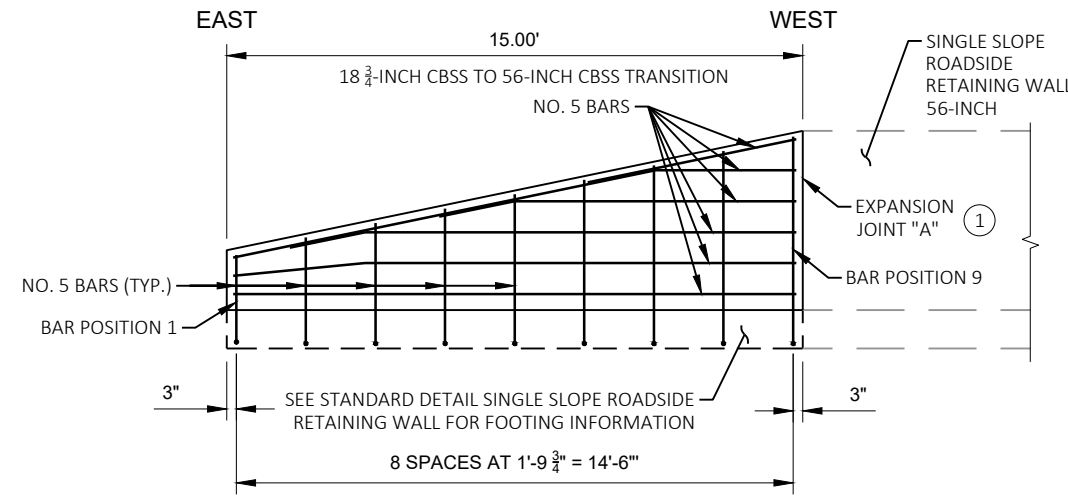
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE $\frac{3}{4}$ " BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

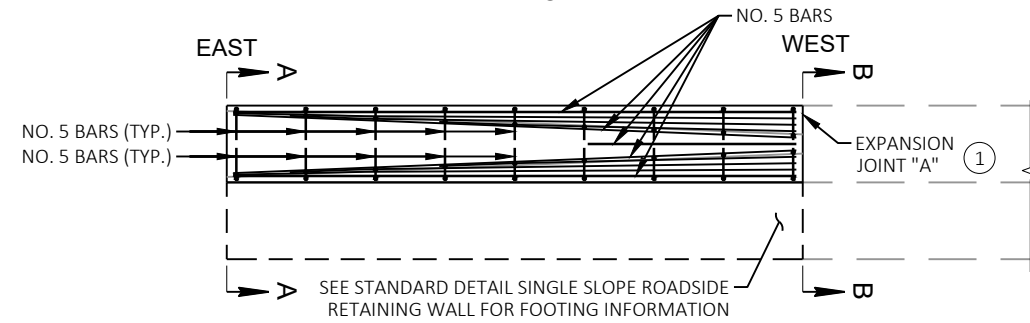
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

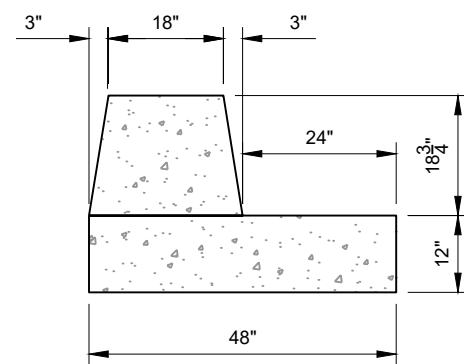
① EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD JOINT IS USED, ANCHOR IS NOT REQUIRED.



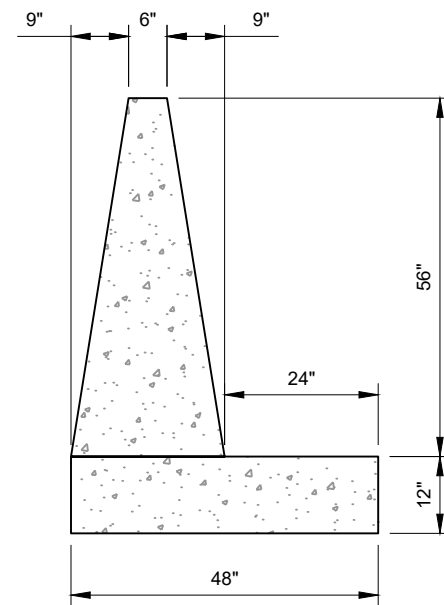
ELEVATION VIEW



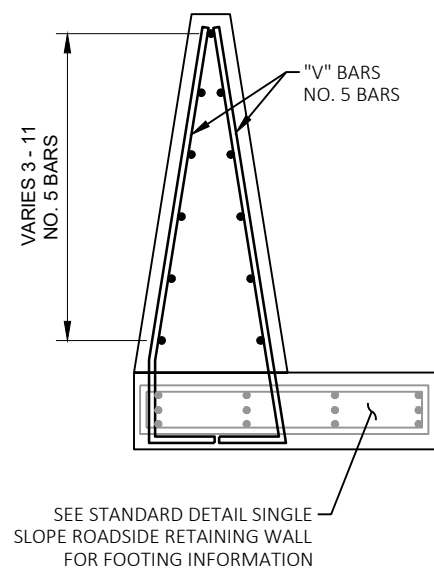
PLAN VIEW



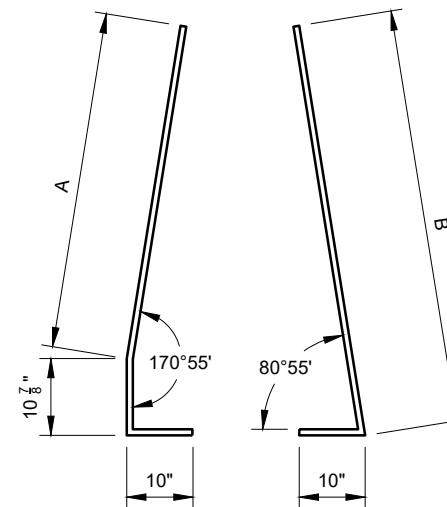
SECTION A - A



SECTION B - B



BAR DETAIL
BAR POSITIONS



BENDING DETAIL

BAR CHART
BAR POSITIONS
V1-V9

BAR	A	B
V1	1'-4 $\frac{3}{4}$ "	2'-4"
V2	1'-9 $\frac{1}{4}$ "	2'-8 $\frac{1}{2}$ "
V3	2'-1 $\frac{3}{4}$ "	3'-1"
V4	2'-6 $\frac{1}{4}$ "	3'-5 $\frac{3}{4}$ "
V5	2'-11"	3'-10 $\frac{1}{4}$ "
V6	3'-3 $\frac{1}{2}$ "	4'-2 $\frac{3}{4}$ "
V7	3'-8"	4'-7 $\frac{1}{4}$ "
V8	4'-0 $\frac{1}{2}$ "	4'-11 $\frac{3}{4}$ "
V9	4'-5"	5'-4 $\frac{1}{2}$ "

GENERAL NOTES

THE SILT FENCE RELIEF DETAIL IS A SUPPLEMENTAL DETAIL TO THE SILT FENCE STANDARD DETAILS AND SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

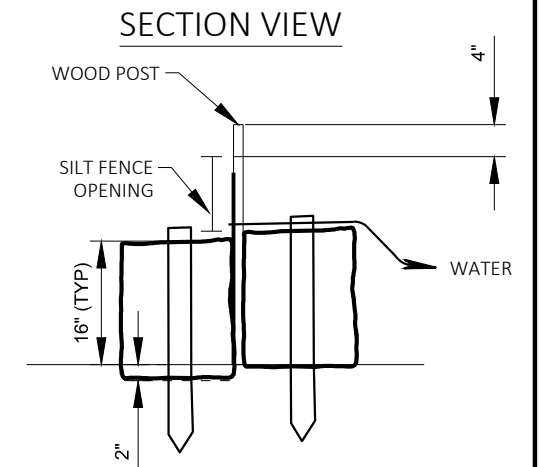
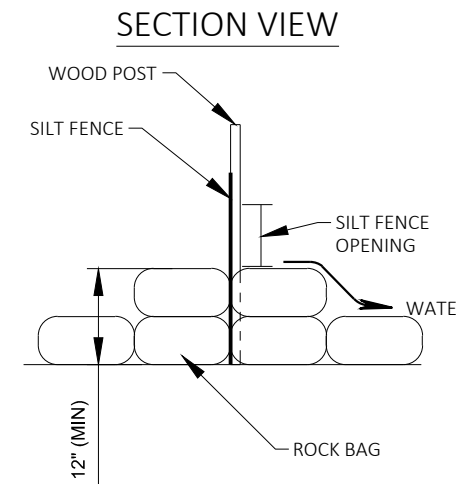
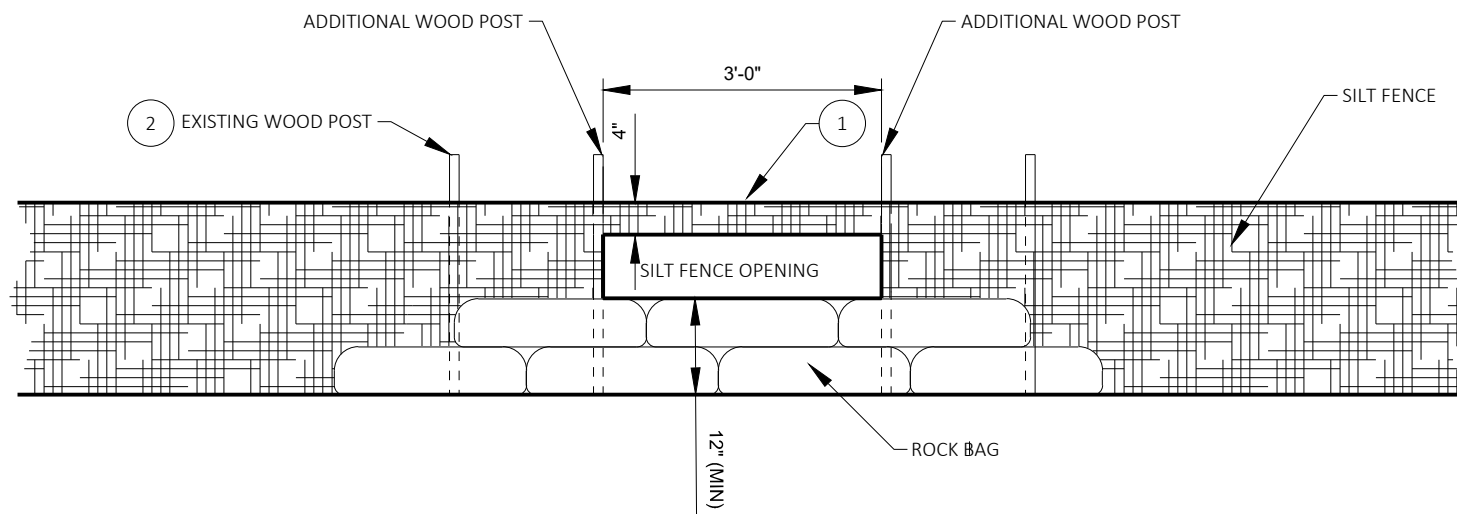
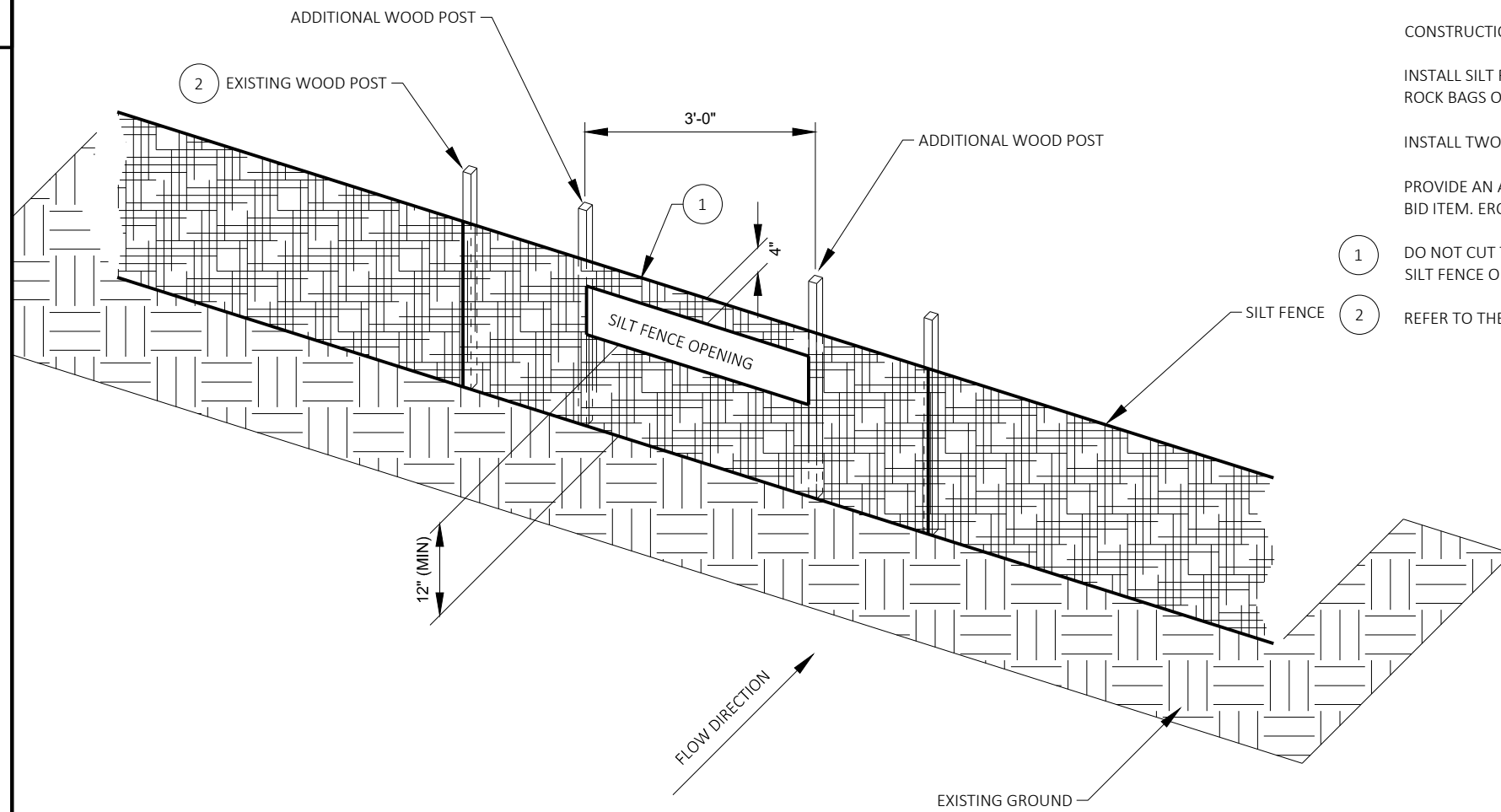
CONSTRUCTION OF THE SILT FENCE OPENING SHALL BE INCIDENTAL TO THE COST OF THE SILT FENCE MAINTENANCE BID ITEM.

INSTALL SILT FENCE PRIOR TO CONSTRUCTING THE SILT FENCE OPENING. PRIOR TO CUTTING THE SILT FENCE OPENING, PLACE ROCK BAGS OR BALES AT THE SILT FENCE OPENING AS SHOWN IN THIS DETAIL. SILT FENCE OPENING SHOULD BE BETWEEN 4" - 8" TALL

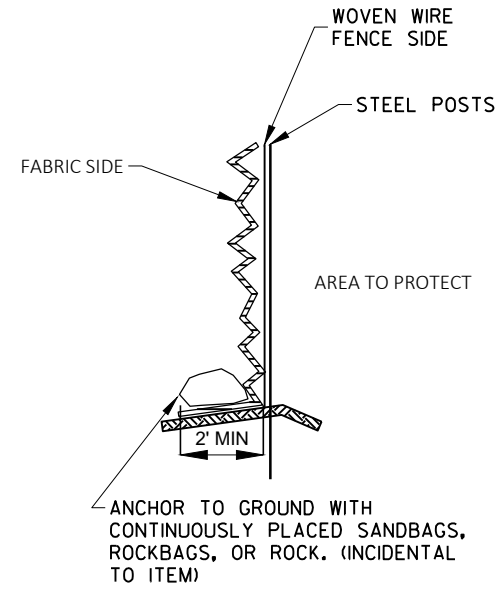
INSTALL TWO (2) ADDITIONAL POSTS AT 3' SPACING AT LOCATION OF OPENING.

PROVIDE AN ADEQUATE NUMBER OF ROCK BAGS OR BALES TO STACK TO A HEIGHT OF 1' (MINIMUM). ROCK BAGS SHALL BE PAID UNDER THE ROCK BAGS BID ITEM. EROSION BALES SHALL BE PAID UNDER THE EROSION BALES BID ITEM.

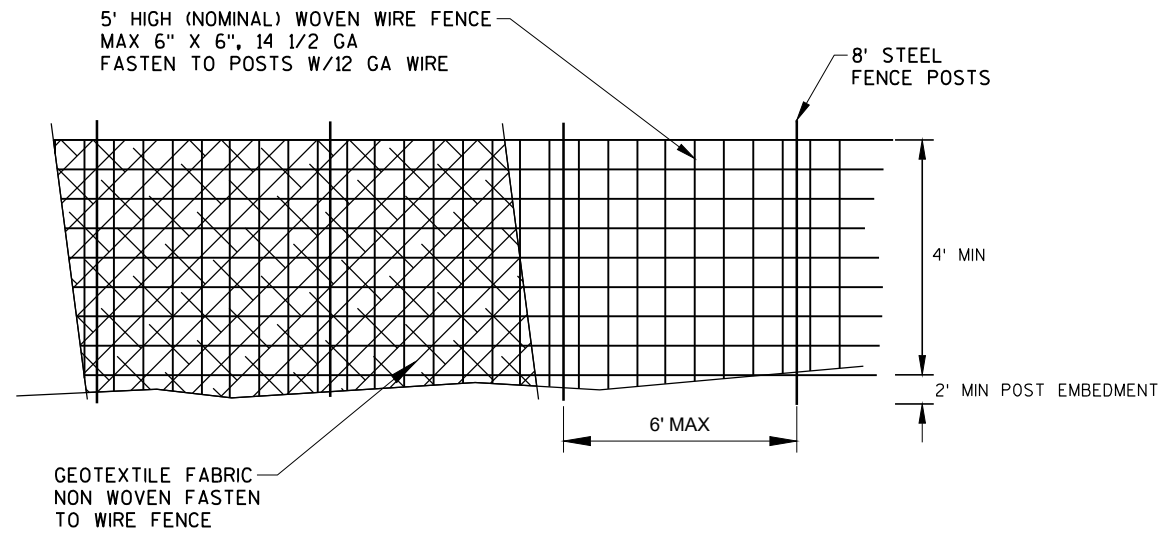
- 1 DO NOT CUT THE SUPPORT CORD OR TENSION TAPE WHEN CONSTRUCTING THE SILT FENCE OPENING. CUT THE SILT FENCE OPENING AT LEAST 1" BELOW THE 3" FOLD AT THE SUPPORT CORD OR TENSION TAPE.
- 2 REFER TO THE SILT FENCE STANDARD DETAILS FOR ALLOWABLE ADJUSTMENTS TO POST SPACING.



SILT FENCE RELIEF DETAIL

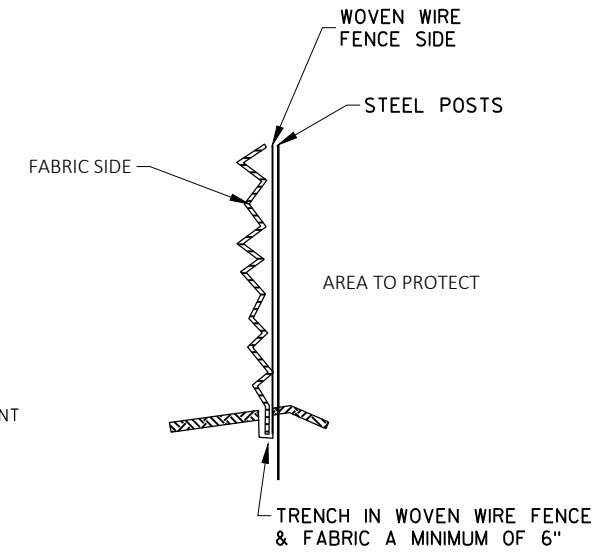


ANCHORED INSTALLATION FOR WET CONDITION

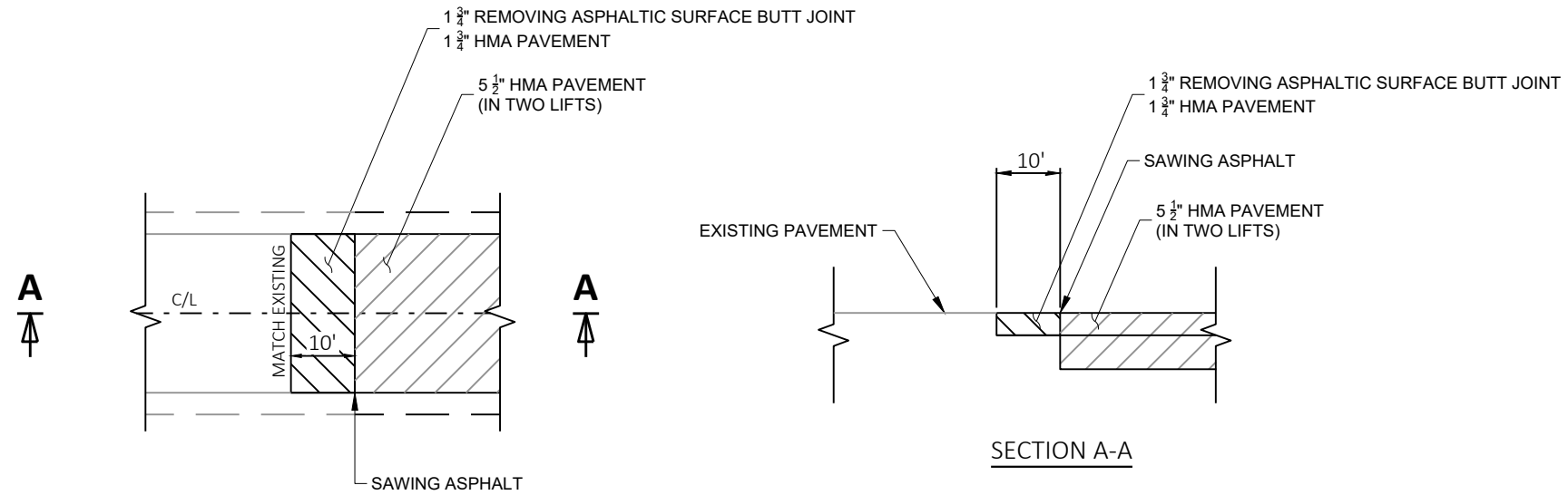


HEAVY DUTY SILT FENCE

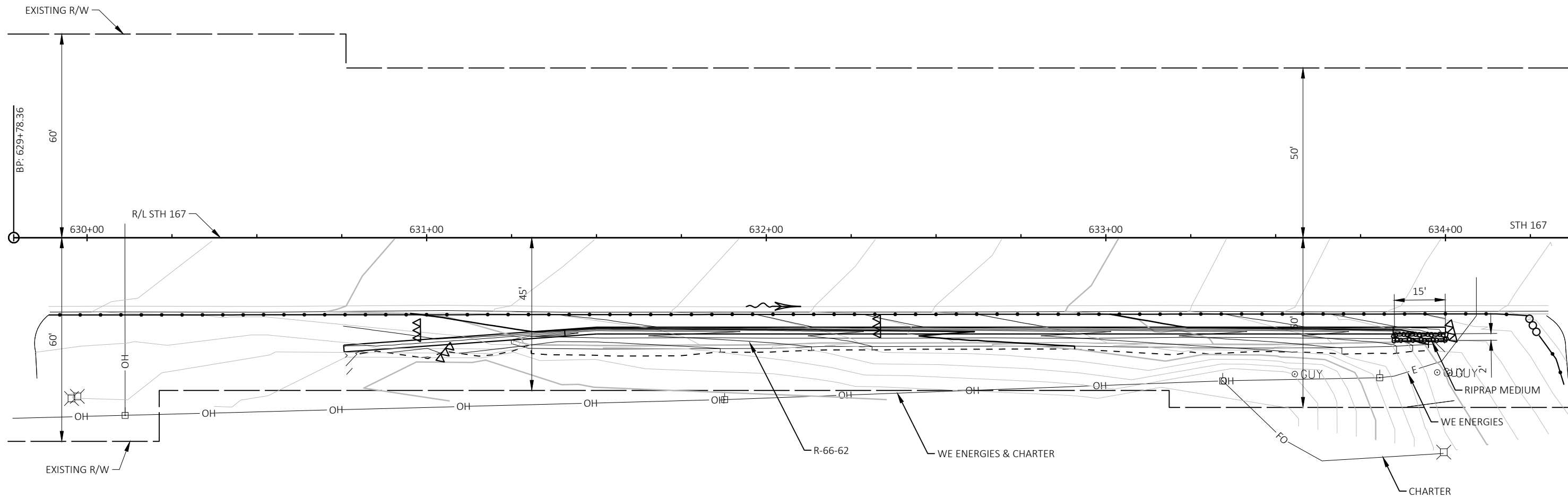
GENERAL NOTES:
 THE FABRIC TO WOVEN WIRE FENCE EVERY 2- FEET
 ADJUST POST EMBEDMENT AND/OR SPACING BASED ON EXISTING SOILS



TRENCH INSTALLATION FOR DRY CONDITION



BUTT JOINT

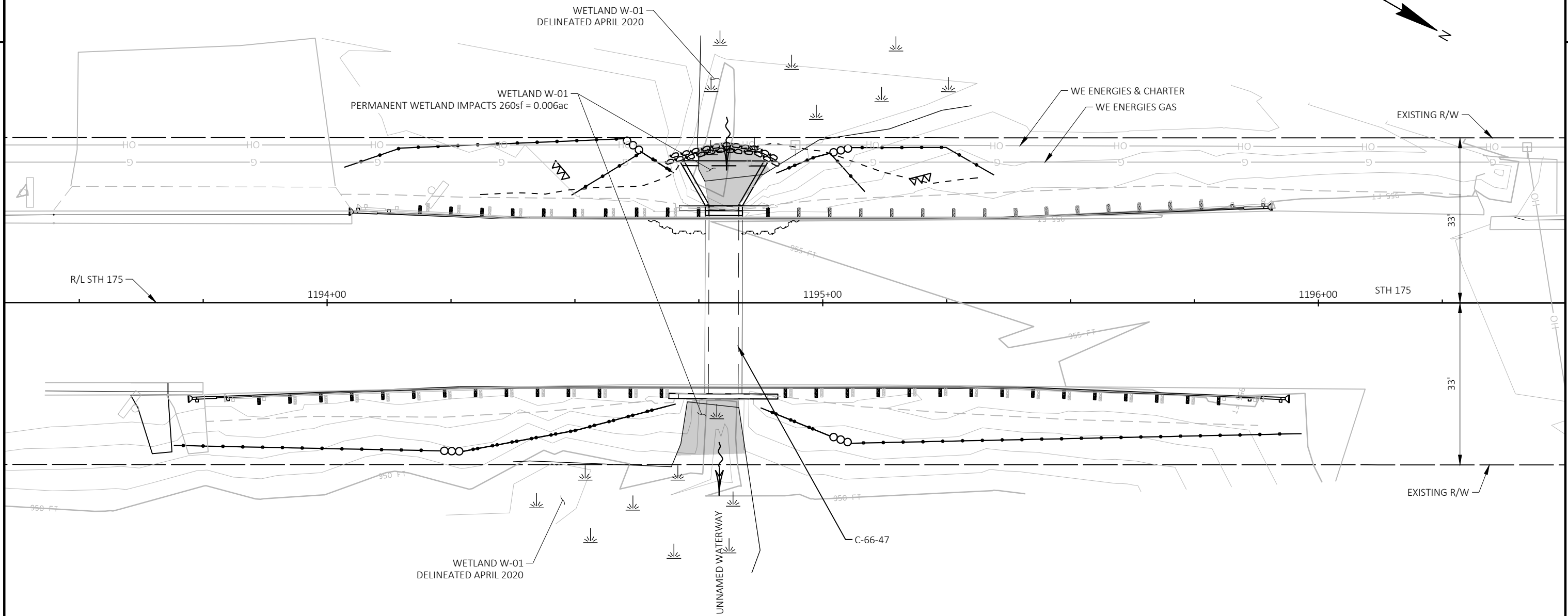


LEGEND

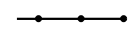
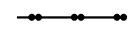
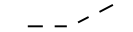
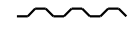
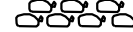




- SILT FENCE
- LIMITS OF DISTURBANCE
- SILT FENCE RELIEF
- TEMPORARY DITCH CHECK

NOTES

1. ALL DISTURBED GROUND TO RECEIVE SALVAGED TOPSOIL, SEEDING, AND EROSION MAT URBAN CLASS I TYPE B
2. LIMITS OF DISTURBANCE ARE APPROXIMATE. ACTUAL LIMITS OF DISTURBANCE TO COORDINATED WITH THE ENGINEER. NO ADDITIONAL WETLAND IMPACTS WILL BE ALLOWED BEYOND WHAT IS SHOWN ON THE PLAN.
3. SEE GENERAL NOTES FOR MORE ACCESS AND EROSION CONTROL INFORMATION.

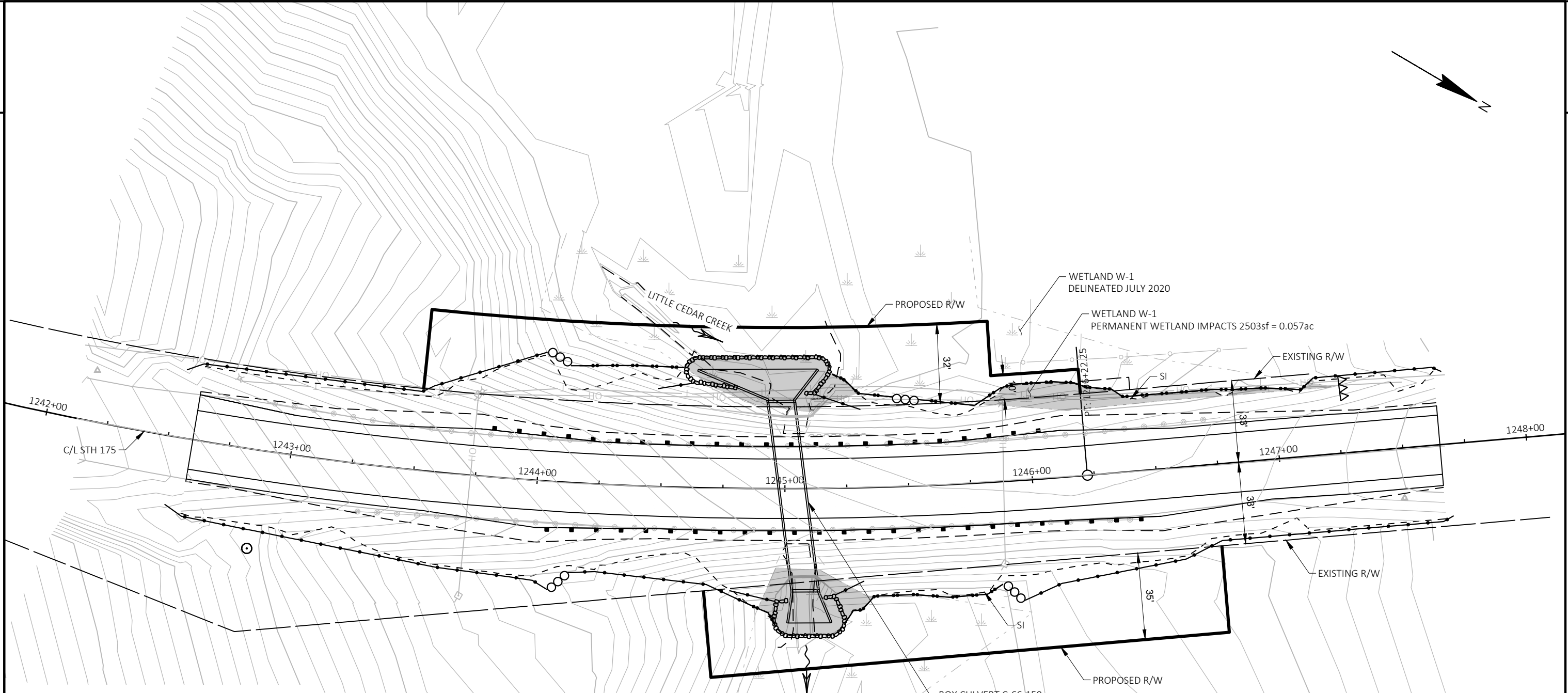
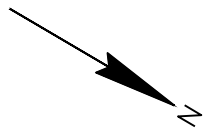


LEGEND

-  SILT FENCE
-  HEAVY DUTY SILT FENCE
-  LIMITS OF DISTURBANCE
-  TEMPORARY SHORING
-  COFFERDAM
-  SILT FENCE RELIEF
-  TEMPORARY DITCH CHECK
-  SURFACE WATER FLOW
-  WETLAND IMPACTS

NOTES

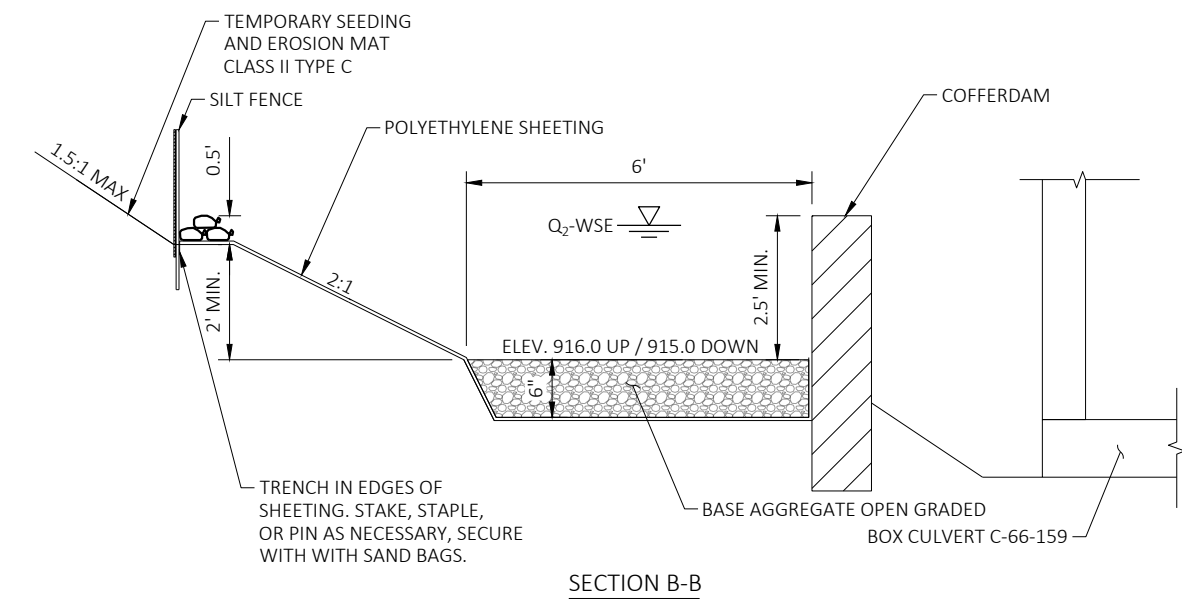
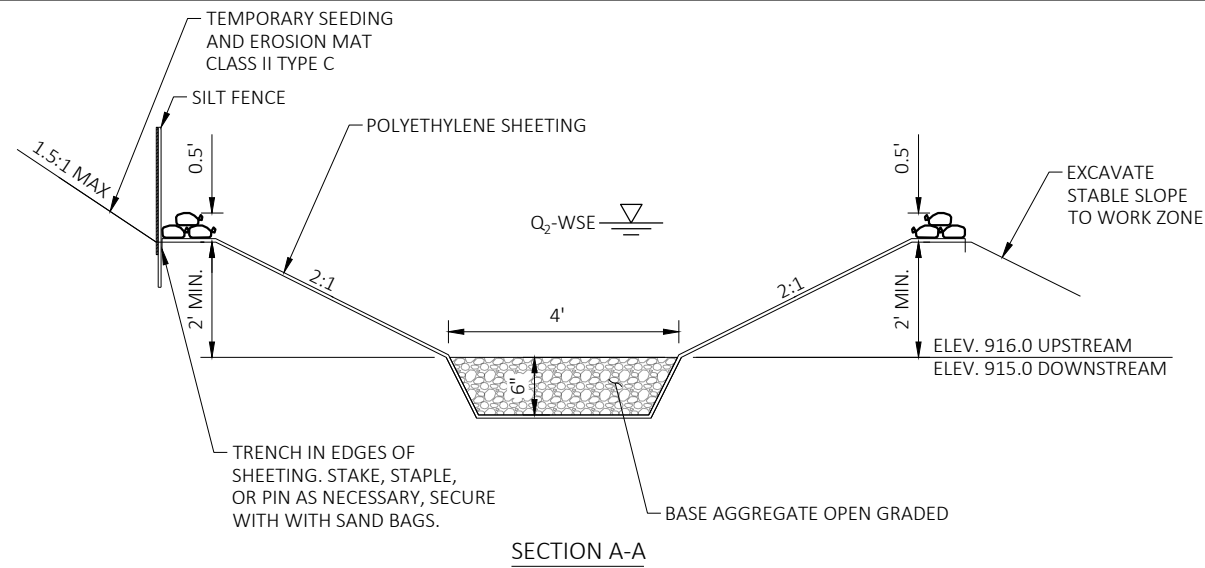
1. ALL DISTURBED GROUND TO RECEIVE SALVAGED TOPSOIL, SEEDING MIXTURE NO. 30, AND EROSION MAT URBAN CLASS I TYPE B
2. WORK TO BE DONE WITH TRAFFIC UNDER DETOUR. SEE DETOUR PLAN.
3. LIMITS OF DISTURBANCE ARE APPROXIMATE. ACTUAL LIMITS OF DISTURBANCE TO COORDINATED WITH THE ENGINEER. NO ADDITIONAL WETLAND IMPACTS WILL BE ALLOWED BEYOND WHAT IS SHOWN ON THE PLAN.
4. SEE GENERAL NOTES FOR MORE ACCESS AND EROSION CONTROL INFORMATION.
5. SEE STRUCTURE PLANS FOR LIMITS OF FINAL RIPRAP.
6. HEAVY DUTY SILT FENCE TO BE USED ADJACENT TO WETLAND AREAS TO A MINIMUM OF 10 FEET BEYOND THE WETLAND LIMITS.



- NOTES**
1. ALL DISTURBED GROUND TO RECEIVE SALVAGED TOPSOIL, SEEDING, AND EROSION MAT URBAN CLASS I TYPE B
 2. WORK TO BE DONE WITH TRAFFIC FOLLOWING DETOUR.
 3. LIMITS OF DISTURBANCE ARE APPROXIMATE. ACTUAL LIMITS OF DISTURBANCE TO COORDINATED WITH THE ENGINEER. NO ADDITIONAL WETLAND IMPACTS WILL BE ALLOWED BEYOND WHAT IS SHOWN ON THE PLAN.
 4. SEE GENERAL NOTES FOR MORE ACCESS AND EROSION CONTROL INFORMATION.

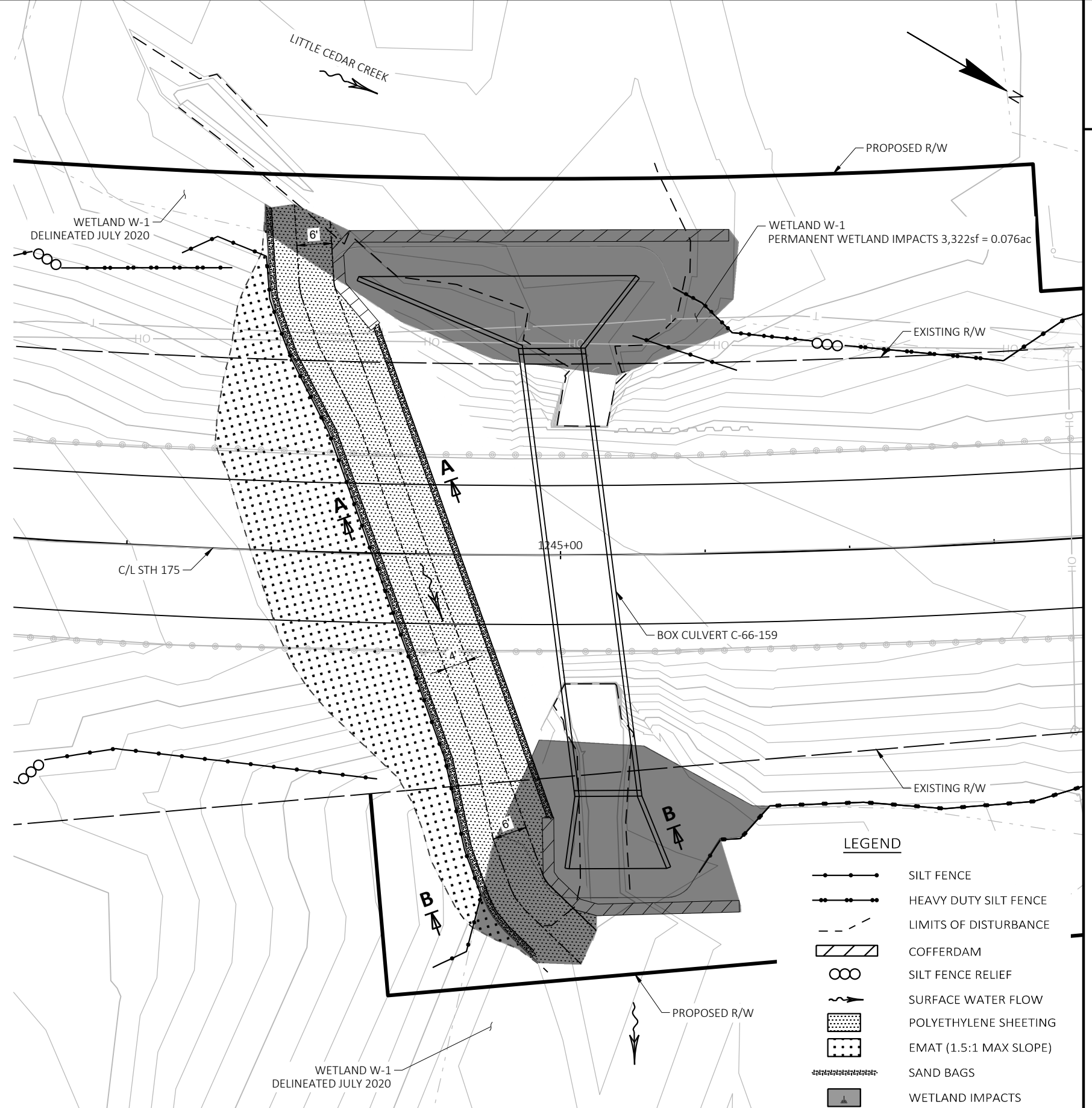
LEGEND

	SILT FENCE
	HEAVY DUTY SILT FENCE
	LIMITS OF DISTURBANCE
	TEMPORARY SHORING
	COFFERDAM
	SILT FENCE RELIEF
	TEMPORARY DITCH CHECK
	SURFACE WATER FLOW
	WETLAND IMPACTS



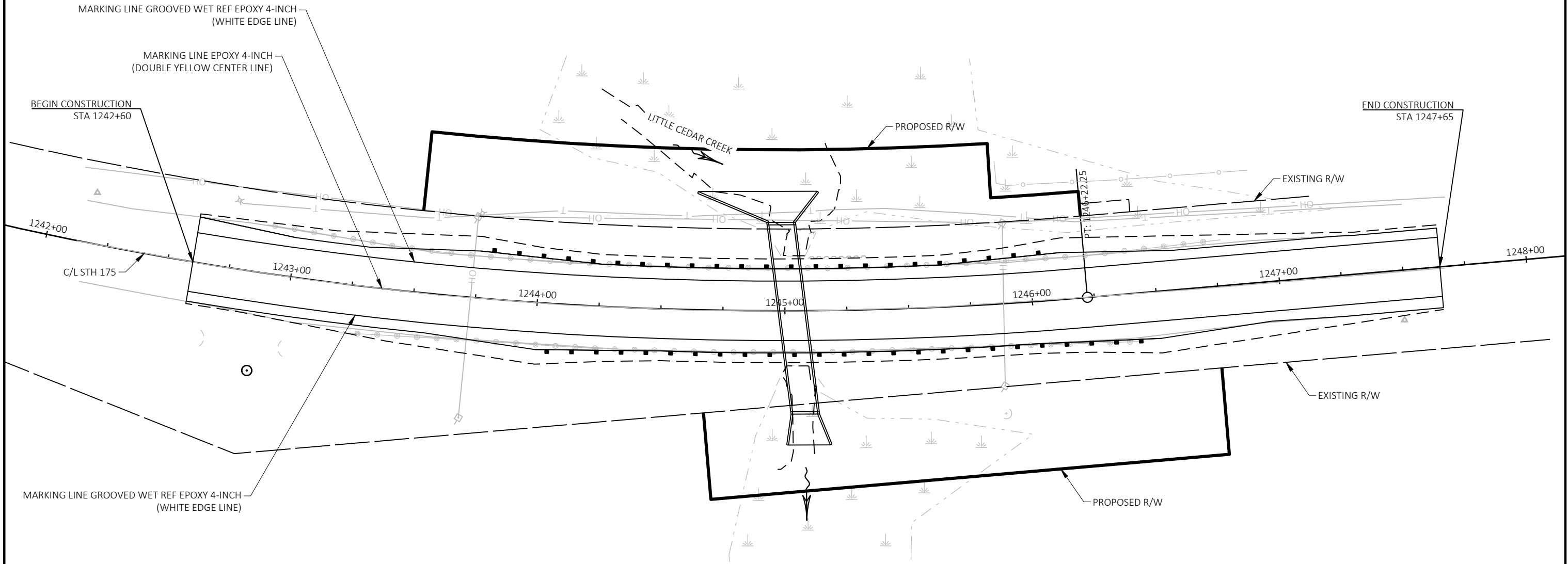
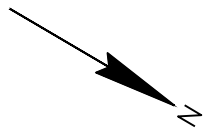
NOTES

- DIVERSION CHANNEL SHOWN FOR INFORMATION ONLY. CONTRACTOR MAY CHOOSE DEWATERING METHODS WHICH SUIT THEIR BEST PRACTICES.
- SUBMIT A WATER DIVERSION PLAN TO THE ENGINEER AS PART OF THE EROSION CONTROL IMPLEMENTATION PLAN.
- THE TEMPORARY DIVERSION CHANNEL MUST BE CAPABLE OF DIVERTING THE 2-YEAR RAINFALL EVENT STREAM FLOW (Q₂). FISH AND AQUATIC SPECIES THAT BECOME STRANDED IN DEWATERED AREAS OR TEMPORARY CHANNELS SHOULD BE CAPTURED AND RETURNED TO THE ACTIVE CHANNEL IMMEDIATELY.
- Q₂ IS ESTIMATED TO BE 80 CFS. WATER SURFACE ELEVATION (WSE) SHOWN IN DETAIL IS APPROXIMATE EXPECTED ELEVATION BASED ON THE CHANNEL INFORMATION SHOWN. IT IS ASSUMED THE WORK ZONE WILL BE INUNDATED FOR RAINFALL EVENTS WITH FLOWS EXCEEDING THE 2-YEAR EVENT.
- EXCAVATION, AND BACKFILL, POLYETHYLENE SHEETING, TEMPORARY SAND BAGS, AND COFFERDAM REQUIRED FOR DIVERSION CHANNEL AND FOR DEWATERING WORK ZONE WILL BE INCLUDED IN BID ITEM "COFFERDAMS C-66-159."
- BASE AGGREGATE OPEN GRADED, SILT FENCE, SEEDING TEMPORARY, AND EROSION MAT WILL BE PAID UNDER THEIR RESPECTIVE STANDARD ITEMS.
- WETLAND IMPACT AREAS TO BE RESTORED USING RIPRAP AS DIRECTED BY THE ENGINEER.

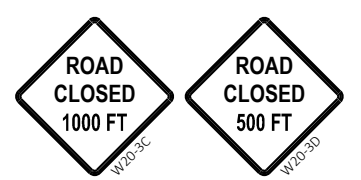
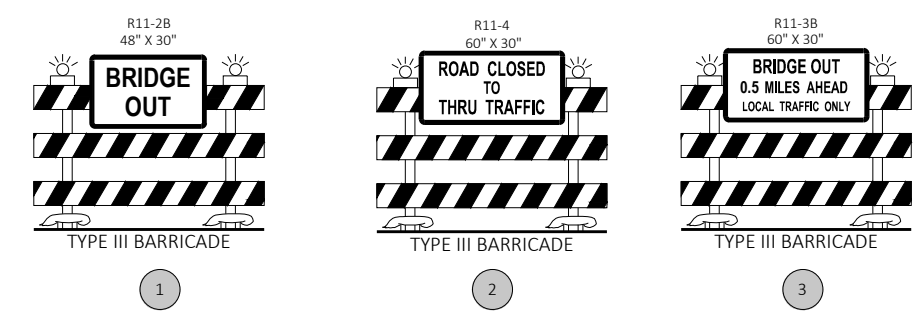
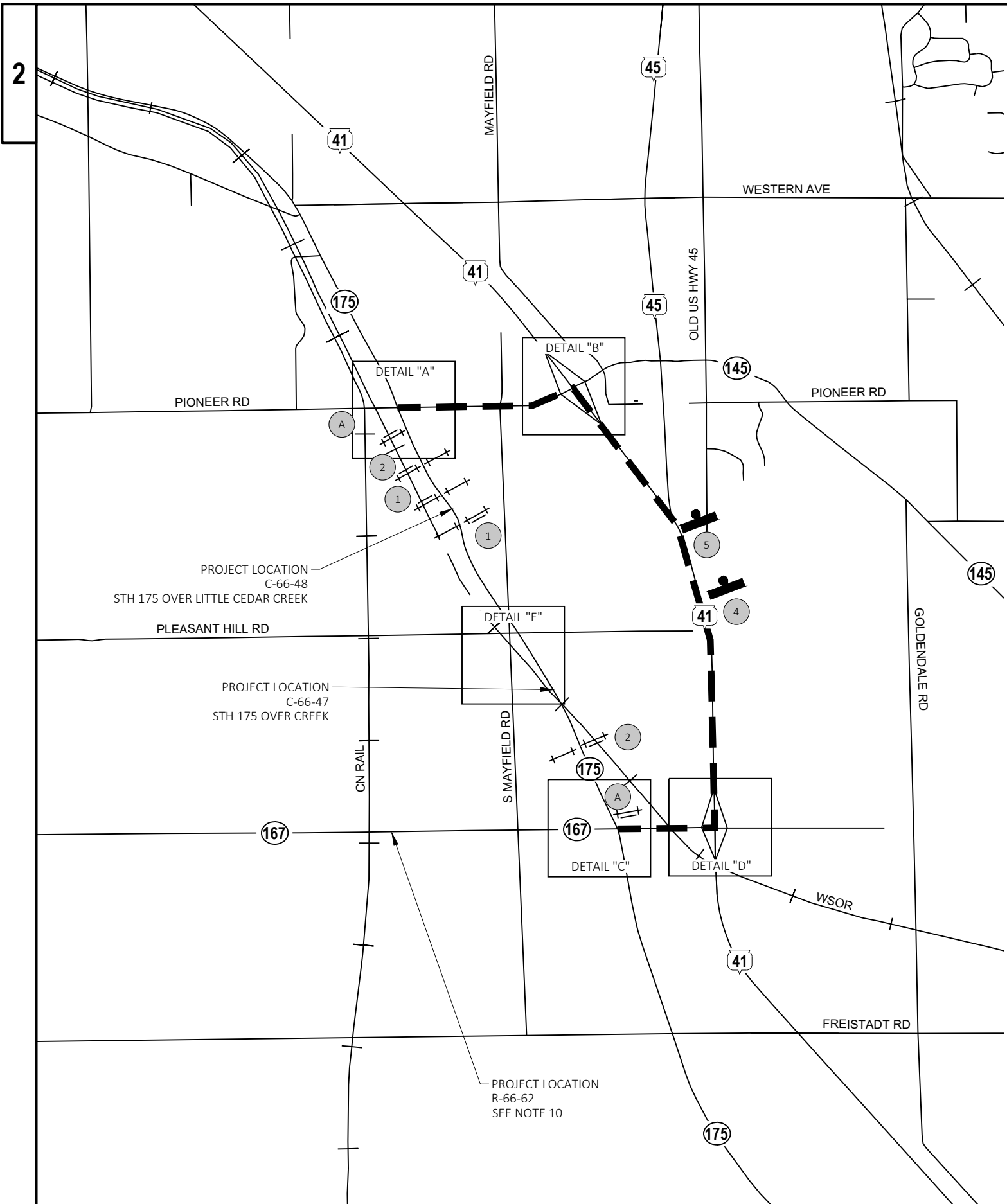


LEGEND

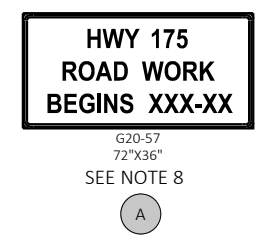
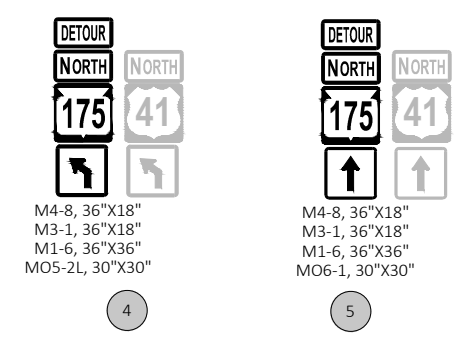
- SILT FENCE
- HEAVY DUTY SILT FENCE
- LIMITS OF DISTURBANCE
- COFFERDAM
- SILT FENCE RELIEF
- SURFACE WATER FLOW
- POLYETHYLENE SHEETING
- EMAT (1.5:1 MAX SLOPE)
- SAND BAGS
- WETLAND IMPACTS



PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	PAVEMENT MARKING : C-66-159 (STH 175)	SHEET E
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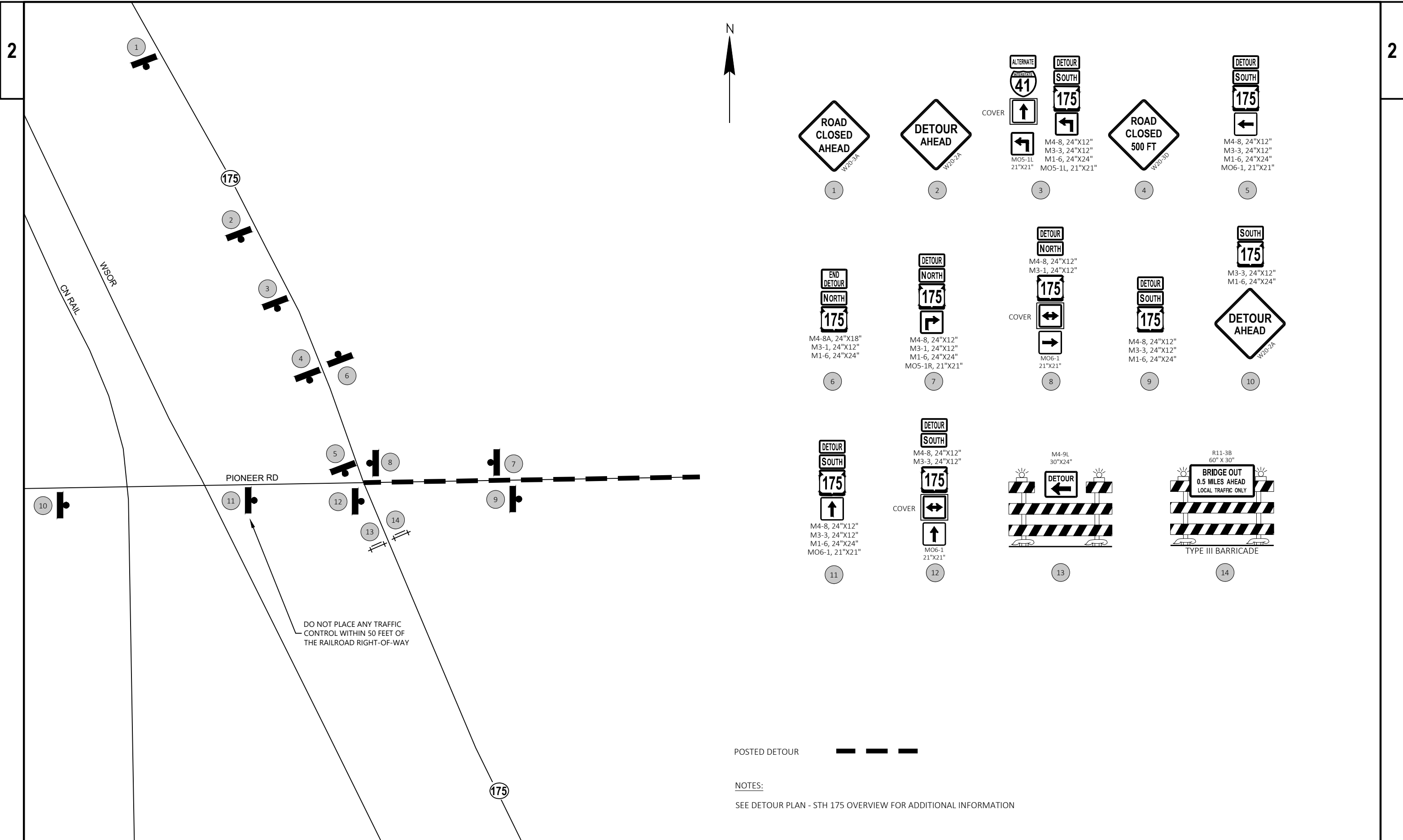
PLACE ALONG STH 175 THE APPROPRIATE DISTANCE FROM "ROAD CLOSED" BARRICADE

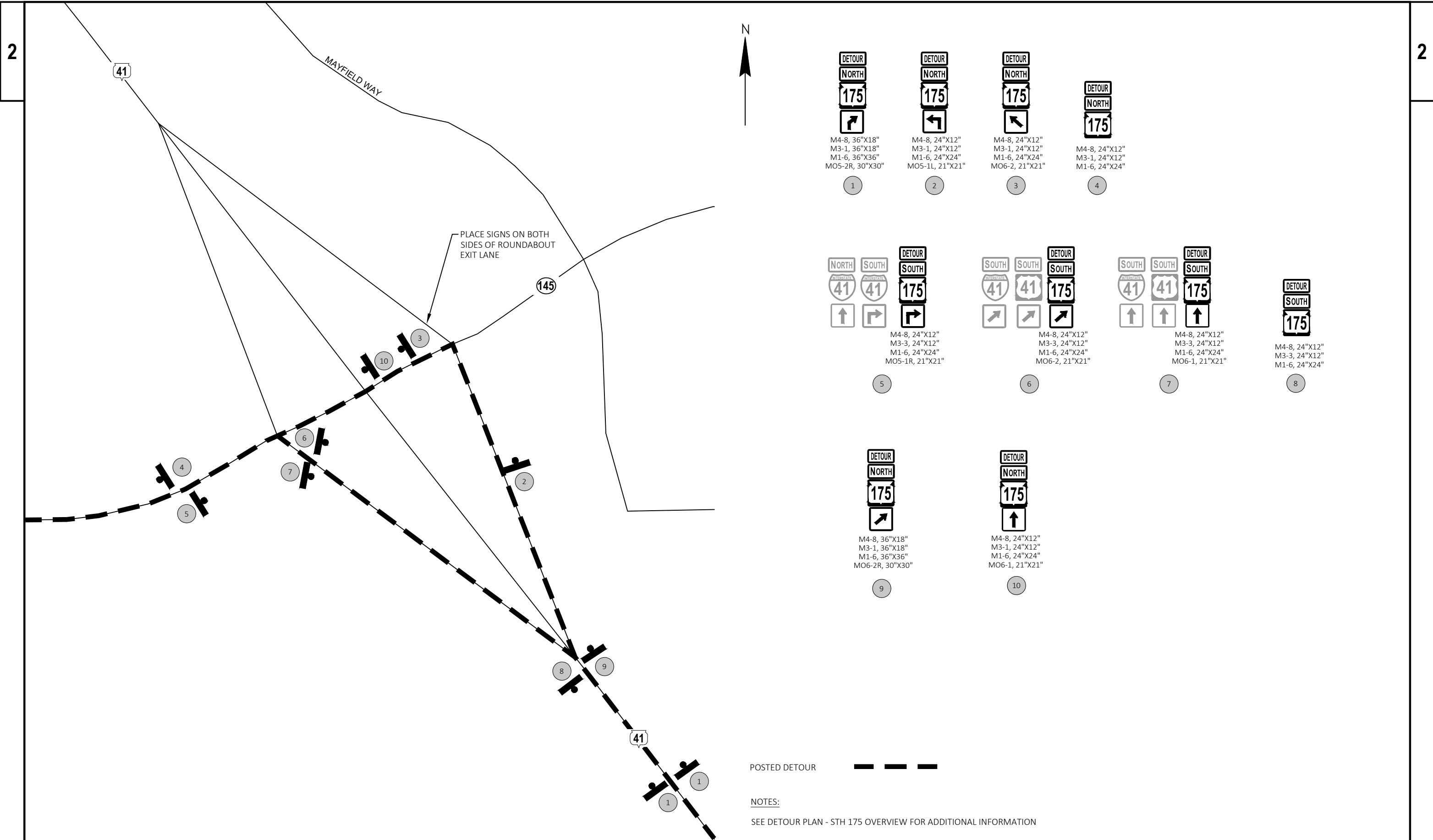


POSTED DETOUR

NOTES:

1. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. NO TRAFFIC CONTROL SIGNS OR DEVICES TO BE PLACED WITHIN 50 FEET OF ANY RAILROAD RIGHT OF WAY.
2. 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.
3. THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
4. 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.
5. "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
6. SEE STANDARD DETAIL DRAWING (SDD), "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "DETOUR SIGNING FOR MAINLINE CLOSURES", FOR SIGN SPACING, BARRICADE LOCATIONS AND OTHER DETAILS.
7. ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED.
8. G-20-57 SIGNS TO BE PLACED 10 DAYS BEFORE CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.
9. DO NOT PLACE ANY TRAFFIC CONTROL SIGNS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
10. DO NOT BEGIN WORK ON R-66-62 UNTIL DETOUR IS IN PLACE FOR PROJECT 2300-08-70. WORK SITE WILL BE PROTECTED FROM LOCAL TRAFFIC FOLLOWING STANDARD DETAIL DRAWING TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY.





1

2

3

4

DETOUR NORTH 175

M4-8, 36"x18"
M3-1, 36"x18"
M1-6, 36"x36"
MO5-2R, 30"x30"

DETOUR NORTH 175

M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO5-1L, 21"x21"

DETOUR NORTH 175

M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO6-2, 21"x21"

DETOUR NORTH 175

M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"

5

6

7

8

NORTH 41 SOUTH 41

DETOUR SOUTH 175

M4-8, 24"x12"
M3-3, 24"x12"
M1-6, 24"x24"
MO5-1R, 21"x21"

SOUTH 41 SOUTH 41

DETOUR SOUTH 175

M4-8, 24"x12"
M3-3, 24"x12"
M1-6, 24"x24"
MO6-2, 21"x21"

SOUTH 41 SOUTH 41

DETOUR SOUTH 175

M4-8, 24"x12"
M3-3, 24"x12"
M1-6, 24"x24"
MO6-1, 21"x21"

DETOUR SOUTH 175

M4-8, 24"x12"
M3-3, 24"x12"
M1-6, 24"x24"

9

10

DETOUR NORTH 175

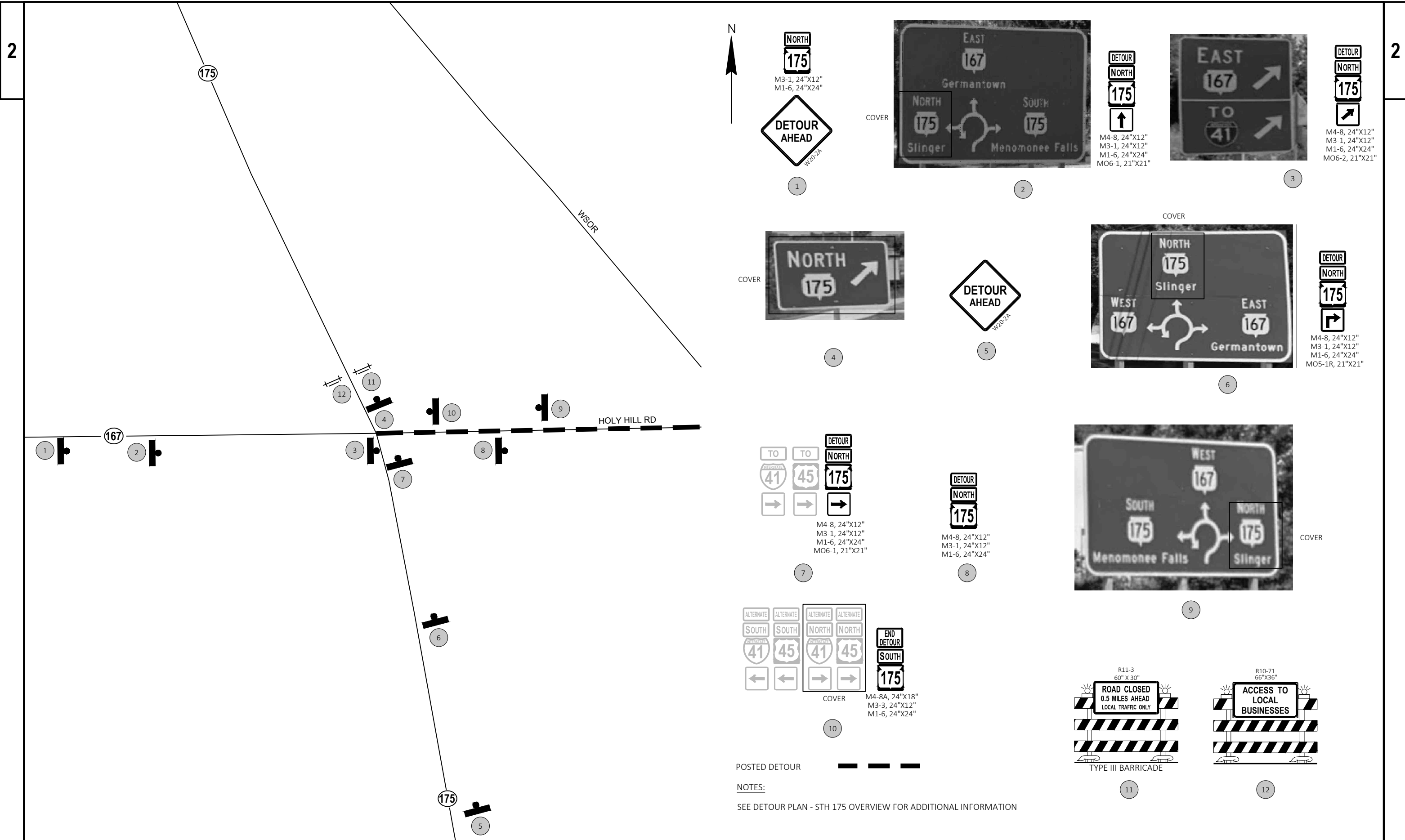
M4-8, 36"x18"
M3-1, 36"x18"
M1-6, 36"x36"
MO6-2R, 30"x30"

DETOUR NORTH 175

M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO6-1, 21"x21"

POSTED DETOUR

NOTES:
SEE DETOUR PLAN - STH 175 OVERVIEW FOR ADDITIONAL INFORMATION



M3-1, 24"x12"
M1-6, 24"x24"

1



COVER

2



M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO6-1, 21"x21"

3



M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO6-2, 21"x21"



COVER

4



5

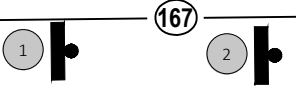


COVER

6



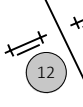
M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO5-1R, 21"x21"



1



2



12



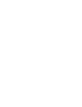
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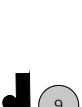
4



10

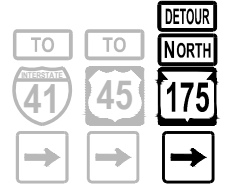


7



9

HOLY HILL RD



M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"
MO6-1, 21"x21"

7



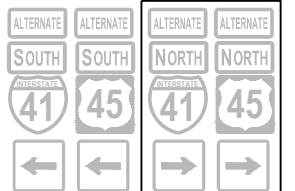
M4-8, 24"x12"
M3-1, 24"x12"
M1-6, 24"x24"

8



COVER

9



M4-8A, 24"x18"
M3-3, 24"x12"
M1-6, 24"x24"

10



POSTED DETOUR

NOTES:

SEE DETOUR PLAN - STH 175 OVERVIEW FOR ADDITIONAL INFORMATION



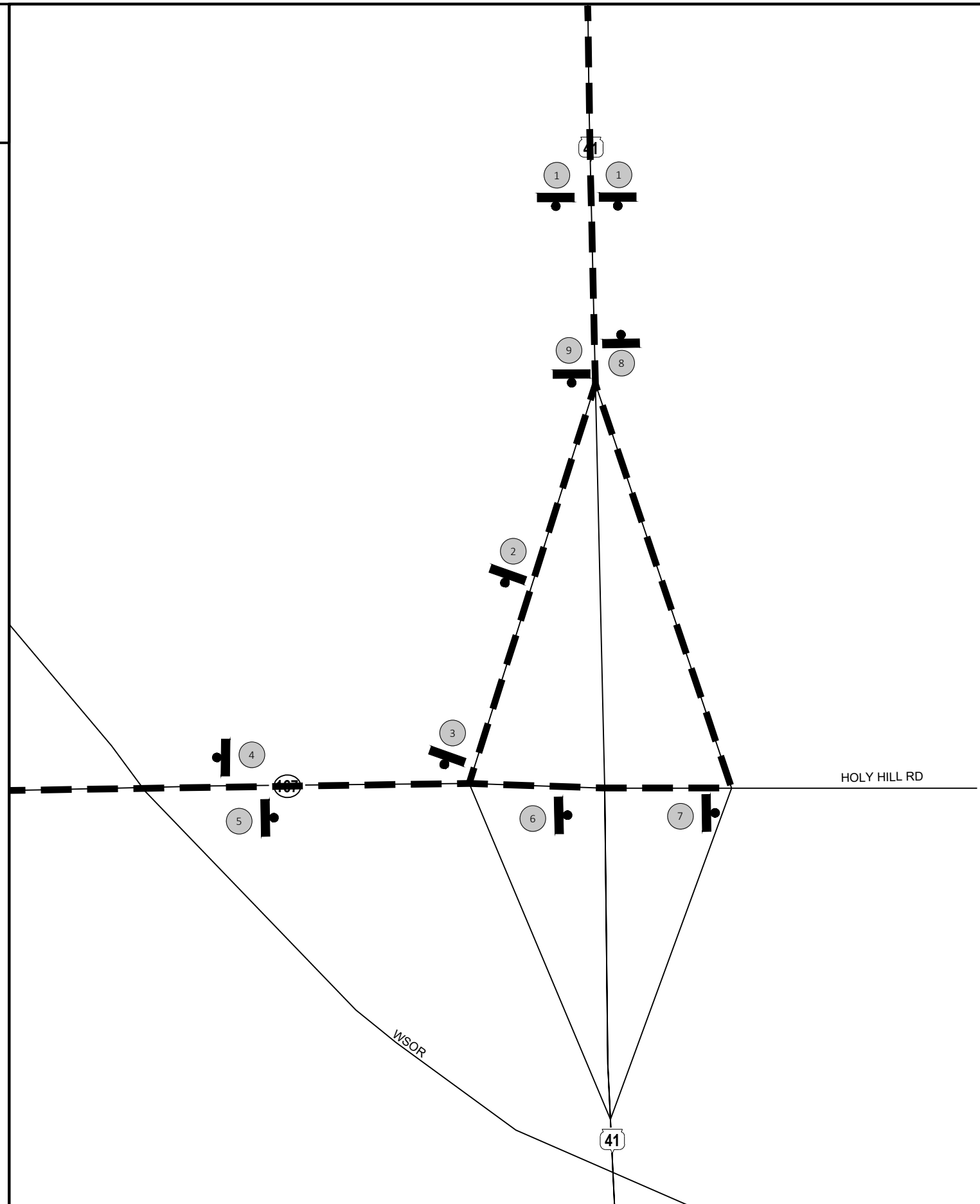
R11-3
60" X 30"

11



R10-71
66" X 36"

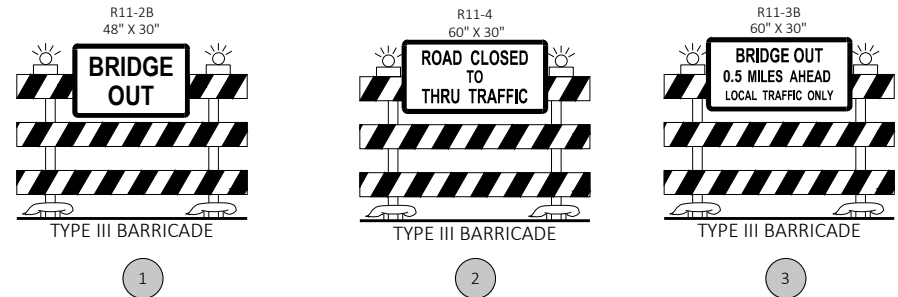
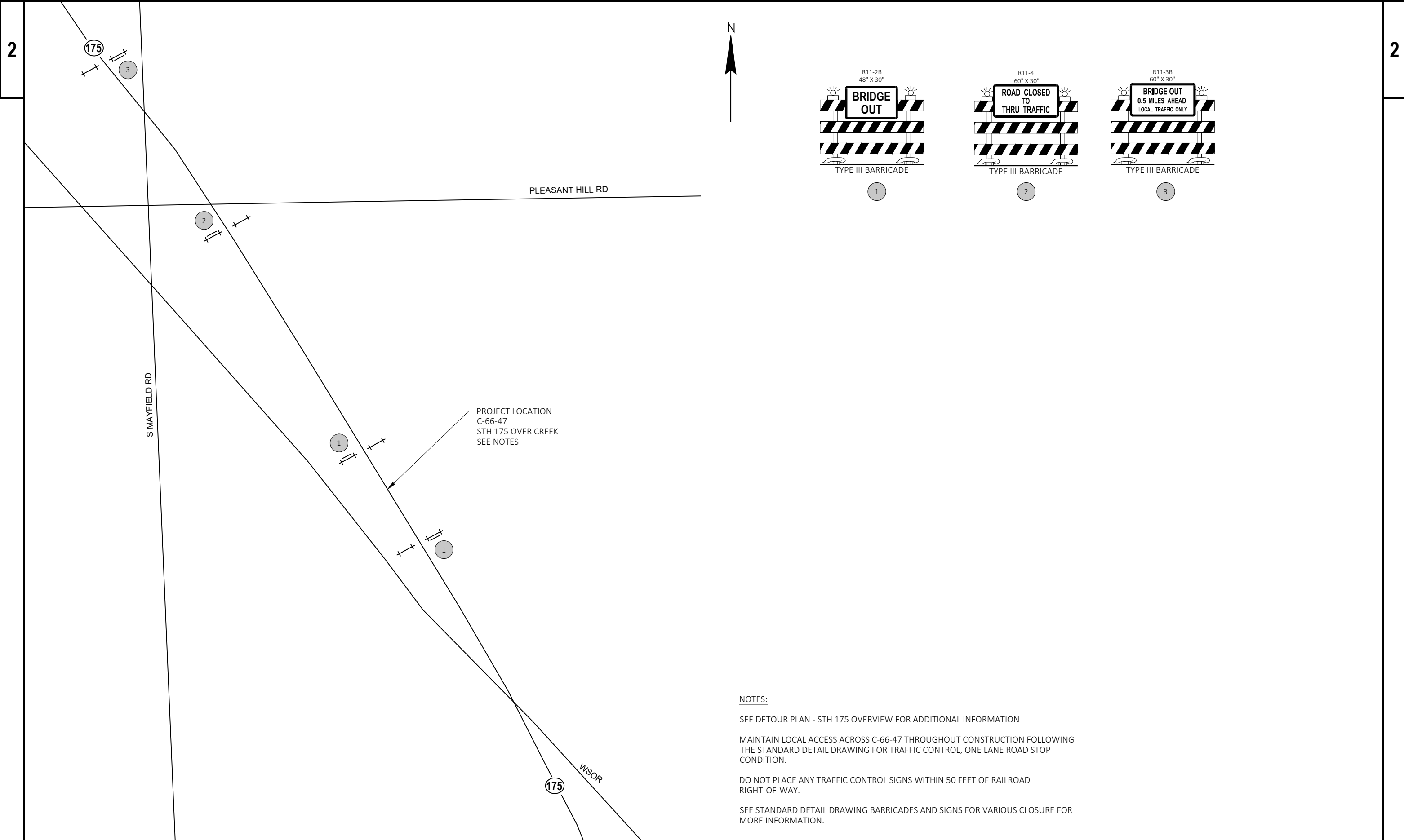
12



 M4-8, 36"x18" M3-3, 36"x18" M1-6, 36"x36" MO5-2R, 30"x30" 1	 M4-8, 24"x12" M3-3, 24"x12" M1-6, 24"x24" MO5-1R, 21"x21" 2	 M4-8, 24"x12" M3-3, 24"x12" M1-6, 24"x24" MO6-1, 21"x21" 3	 M4-8, 24"x12" M3-3, 24"x12" M1-6, 24"x24" 4
 M4-8, 24"x12" M3-1, 24"x12" M1-6, 24"x24" MO6-1, 21"x21" 5	 M4-8, 24"x12" M3-1, 24"x12" M1-6, 24"x24" MO5-1L, 21"x21" 6	 M4-8, 24"x12" M3-1, 24"x12" M1-6, 24"x24" MO6-1, 21"x21" 7	 M4-8, 24"x12" M3-1, 24"x12" M1-6, 24"x24" 8
 M4-8, 36"x18" M3-3, 36"x18" M1-6, 36"x36" MO6-2R, 30"x30" 9			

POSTED DETOUR

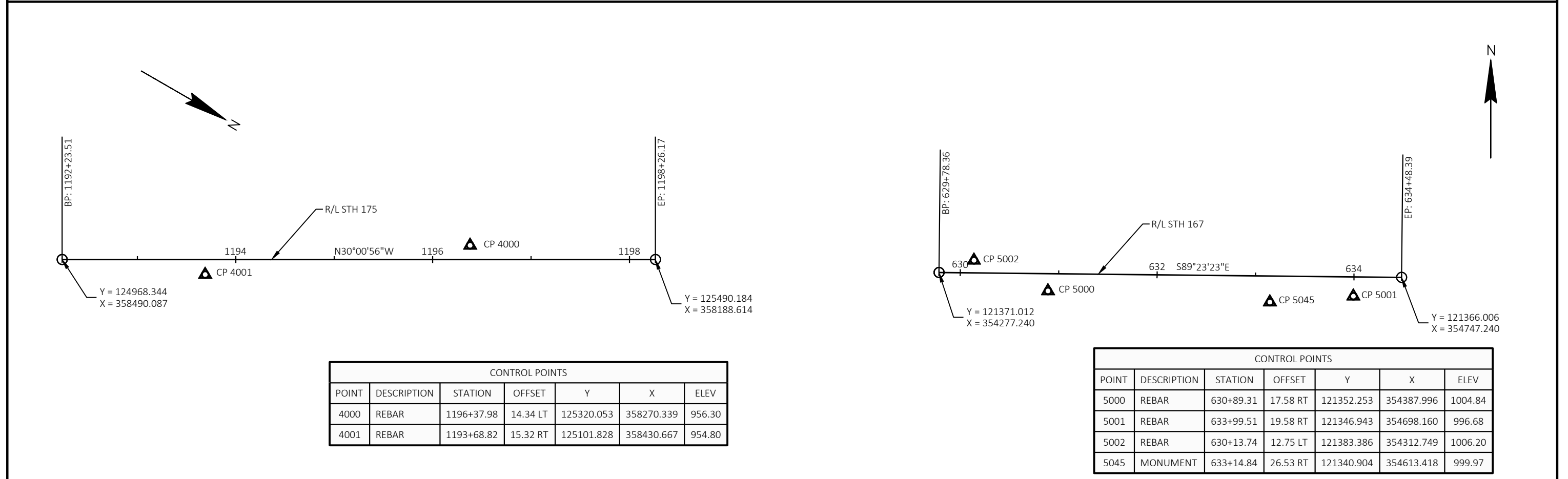
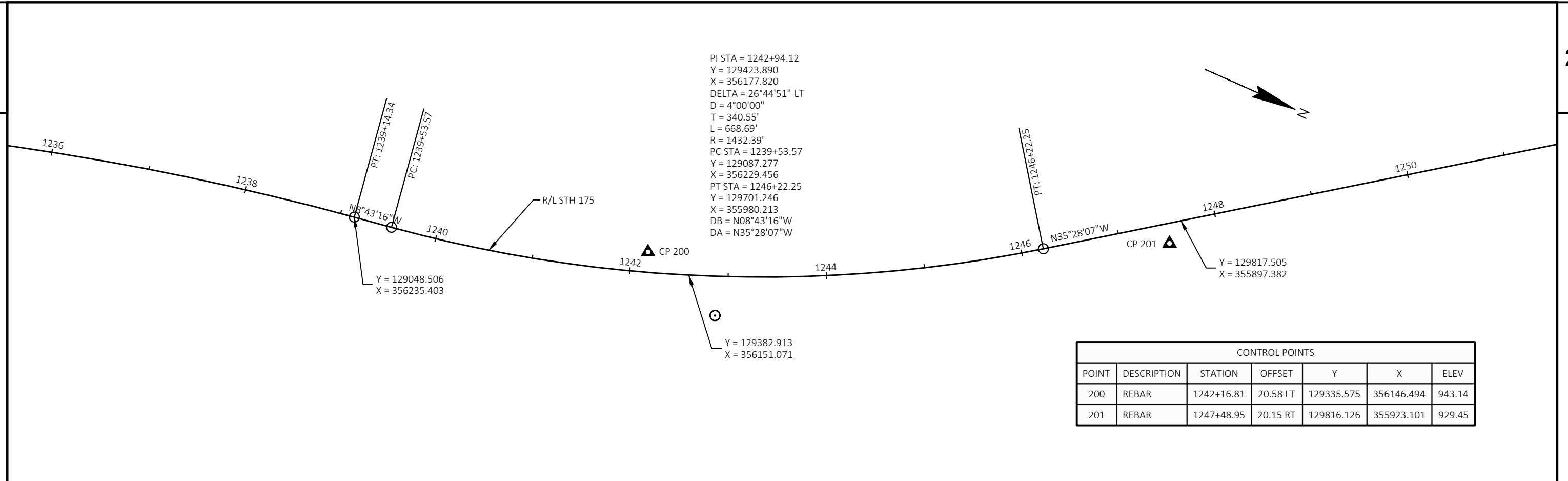
NOTES:
SEE DETOUR PLAN - STH 175 OVERVIEW FOR ADDITIONAL INFORMATION



PROJECT LOCATION
C-66-47
STH 175 OVER CREEK
SEE NOTES

NOTES:

- SEE DETOUR PLAN - STH 175 OVERVIEW FOR ADDITIONAL INFORMATION
- MAINTAIN LOCAL ACCESS ACROSS C-66-47 THROUGHOUT CONSTRUCTION FOLLOWING THE STANDARD DETAIL DRAWING FOR TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION.
- DO NOT PLACE ANY TRAFFIC CONTROL SIGNS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
- SEE STANDARD DETAIL DRAWING BARRICADES AND SIGNS FOR VARIOUS CLOSURE FOR MORE INFORMATION.



Estimate Of Quantities By Plan Sets

3360-17-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	203.0220	Removing Structure (structure) 01. C-66-48	EACH	1.000	1.000
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 02. C-66-47	EACH	1.000	1.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	76.000	76.000
0012	204.0165	Removing Guardrail	LF	1,080.000	1,080.000
0014	204.9165.S	Removing (item description) 50. Loose Concrete	SF	15.000	15.000
0016	204.9180.S	Removing (item description) 01. Asphaltic Flumes	SY	10.000	10.000
0018	205.0100	Excavation Common	CY	1,012.000	1,012.000
0020	206.2000	Excavation for Structures Culverts (structure) 01. C-66-159	LS	1.000	1.000
0022	206.2000	Excavation for Structures Culverts (structure) 02. C-66-47	LS	1.000	1.000
0026	206.5000	Cofferdams (structure) 02. C-66-47	LS	1.000	1.000
0028	208.0100	Borrow	CY	894.000	894.000
0030	210.1100	Backfill Structure Type A	CY	120.000	120.000
0032	210.2500	Backfill Structure Type B	TON	1,128.000	1,128.000
0036	213.0100	Finishing Roadway (project) 02. 3360-17-70	EACH	1.000	1.000
0038	305.0110	Base Aggregate Dense 3/4-Inch	TON	107.000	107.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	234.000	234.000
0042	310.0110	Base Aggregate Open-Graded	TON	67.000	67.000
0044	311.0110	Breaker Run	TON	12.000	12.000
0046	311.0115	Breaker Run	CY	92.000	92.000
0048	455.0605	Tack Coat	GAL	142.000	142.000
0050	460.2000	Incentive Density HMA Pavement	DOL	380.000	380.000
0052	460.5223	HMA Pavement 3 LT 58-28 S	TON	396.000	396.000
0054	460.5224	HMA Pavement 4 LT 58-28 S	TON	195.000	195.000
0056	465.0315	Asphaltic Flumes	SY	10.000	10.000
0058	502.4204	Adhesive Anchors No. 4 Bar	EACH	54.000	54.000
0062	504.0100	Concrete Masonry Culverts	CY	120.000	120.000
0064	505.0400	Bar Steel Reinforcement HS Structures	LB	16,148.000	16,148.000
0066	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,928.000	2,928.000
0068	505.0904	Bar Couplers No. 4	EACH	10.000	10.000
0070	509.1500	Concrete Surface Repair	SF	5.000	5.000
0074	511.1200	Temporary Shoring (structure) 02. C-66-47	SF	130.000	130.000
0076	516.0500	Rubberized Membrane Waterproofing	SY	34.000	34.000
0078	603.1456	Concrete Barrier Type S56C	LF	325.000	325.000
0080	606.0200	Riprap Medium	CY	2.000	2.000
0082	606.0300	Riprap Heavy	CY	161.000	161.000
0084	614.0010	Barrier System Grading Shaping Finishing	EACH	2.000	2.000
0086	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	990.000	990.000
0088	614.0925	Salvaged Guardrail End Treatments	EACH	1.000	1.000
0090	614.2300	MGS Guardrail 3	LF	62.500	62.500
0092	614.2340	MGS Guardrail 3 L	LF	426.500	426.500
0094	614.2610	MGS Guardrail Terminal EAT	EACH	7.000	7.000
0098	618.0100	Maintenance And Repair of Haul Roads (project) 02. 3360-17-70	EACH	1.000	1.000
0100	619.1000	Mobilization	EACH	0.750	0.750
0102	624.0100	Water	MGAL	7.100	7.100
0106	625.0500	Salvaged Topsoil	SY	1,951.000	1,951.000
0110	628.1104	Erosion Bales	EACH	36.000	36.000
0112	628.1504	Silt Fence	LF	1,700.000	1,700.000
0114	628.1520	Silt Fence Maintenance	LF	2,030.000	2,030.000

Estimate Of Quantities By Plan Sets

3360-17-70

Line	Item	Item Description	Unit	Total	Qty
0116	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0118	628.1910	Mobilizations Emergency Erosion Control	EACH	7.000	7.000
0120	628.2008	Erosion Mat Urban Class I Type B	SY	1,894.000	1,894.000
0122	628.2027	Erosion Mat Class II Type C	SY	195.000	195.000
0124	628.7504	Temporary Ditch Checks	LF	130.000	130.000
0126	628.7560	Tracking Pads	EACH	3.000	3.000
0128	628.7570	Rock Bags	EACH	48.000	48.000
0132	629.0210	Fertilizer Type B	CWT	0.300	0.300
0134	630.0120	Seeding Mixture No. 20	LB	4.000	4.000
0136	630.0130	Seeding Mixture No. 30	LB	29.000	29.000
0138	630.0160	Seeding Mixture No. 60	LB	5.000	5.000
0142	630.0200	Seeding Temporary	LB	5.000	5.000
0144	630.0500	Seed Water	MGAL	44.000	44.000
0146	631.1100	Sod Erosion Control	SY	60.000	60.000
0148	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	8.000	8.000
0150	637.2210	Signs Type II Reflective H	SF	30.000	30.000
0152	637.2230	Signs Type II Reflective F	SF	20.000	20.000
0154	638.2102	Moving Signs Type II	EACH	6.000	6.000
0156	638.2602	Removing Signs Type II	EACH	7.000	7.000
0158	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0160	642.5001	Field Office Type B	EACH	1.000	1.000
0162	643.0300	Traffic Control Drums	DAY	789.000	789.000
0164	643.0420	Traffic Control Barricades Type III	DAY	2,380.000	2,380.000
0166	643.0705	Traffic Control Warning Lights Type A	DAY	2,880.000	2,880.000
0168	643.0715	Traffic Control Warning Lights Type C	DAY	320.000	320.000
0172	643.0900	Traffic Control Signs	DAY	12,250.000	12,250.000
0174	643.0920	Traffic Control Covering Signs Type II	EACH	52.000	52.000
0178	643.5000	Traffic Control	EACH	0.750	0.750
0180	645.0105	Geotextile Type C	SY	280.000	280.000
0182	645.0120	Geotextile Type HR	SY	288.000	288.000
0184	646.1020	Marking Line Epoxy 4-Inch	LF	1,010.000	1,010.000
0186	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	1,070.000	1,070.000
0188	650.4500	Construction Staking Subgrade	LF	260.000	260.000
0190	650.5000	Construction Staking Base	LF	260.000	260.000
0192	650.6500	Construction Staking Structure Layout (structure) 01. C-66-159	LS	1.000	1.000
0194	650.6500	Construction Staking Structure Layout (structure) 02. C-66-47	LS	1.000	1.000
0198	650.7500	Construction Staking Concrete Barrier	LF	325.000	325.000
0200	650.8000	Construction Staking Resurfacing Reference	LF	305.000	305.000
0204	650.9910	Construction Staking Supplemental Control (project) 02. 3360-17-70	LS	1.000	1.000
0206	650.9920	Construction Staking Slope Stakes	LF	1,395.000	1,395.000
0208	690.0150	Sawing Asphalt	LF	173.000	173.000
0210	690.0250	Sawing Concrete	LF	10.000	10.000
0212	715.0502	Incentive Strength Concrete Structures	DOL	1,460.000	1,460.000
0214	715.0603	Incentive Strength Concrete Barrier	DOL	163.000	163.000
0216	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	350.000	350.000
0218	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0220	SPV.0060	Special 01. Reinstall Guardrail End Treatment	EACH	1.000	1.000
0222	SPV.0090	Special 01. Heavy Duty Silt Fence	LF	330.000	330.000

CLEARING & GRUBBING

LOCATION	201.0105 CLEARING (STA)
630+75 - 634+00	4
TOTALS	4

REMOVALS

LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS (SY)	204.9180.S REMOVING ASPHALTIC FLUME (SY)
C-66-47 (STH 175)	-	10
C-66-159 (STH 175)		
1242+60 to 1242+70	38	-
1247+55 to 1247+65	38	-
TOTALS	76	10

MGS GUARDRAIL

LOCATION	204.0165 REMOVING GUARDRAIL (LF)	614.0397 GUARDRAIL MOW STRIP EMULSIFIED ASPHALT (SY)	614.0925 SALVAGED GUARDRAIL END TREATMENT (EACH)	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING (EACH)	614.2300 MGS GUARDRAIL 3 (LF)	614.2340 MGS GUARDRAIL 3 L (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)	SPV.0060 0.01 REINSTALL GUARDRAIL END TREATMENT (EACH)	EXCAVATION COMMON (CY)	FILL (CY)	BORROW (CY)
C-66-47 (STH 175)											
1194+49 to 1195+11.5 LT	150	228	1	1	-	101.5	1	1	-	15.0	15.0
1194+49 to 1195+11.5 RT	210	240	-	1	-	112.5	2	-	-	15.0	15.0
C-66-159 (STH 175)											
1245+55 to 1247+70 LT	400	252	-	-	25.0	106.25	2	-	See Earthwork Table		
1245+55 to 1247+70 RT	320	270	-	-	37.5	106.25	2	-	See Earthwork Table		
TOTALS	1,080	990	1	2	62.5	426.5	7	1			

* NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY, ITEMS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
DIVISION 1												
C-66-159	1242+60/1247+60		940	0	715	225	895	1,119	-894	0	894	
DIVISION 1 SUBTOTAL			940	0	715	225	895	1,119	-894	0	894	
DIVISION 2												
R-66-62	630+76/633+99		72	0	0	72	0	0	72	72	0	
DIVISION 2 SUBTOTAL			72	0	0	72	0	0	72	72	0	
GRAND TOTAL			1,012	0	715	297	895	1,119	-822	72	894	
TOTAL COMMON EXC			1,012									

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (6) EXPANDED FILL FACTOR = 1.25
- EXPANDED FILL = (UNEXPANDED FILL - REDUCED EBS) * FILL FACTOR**
- (7) 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.
- (8) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ALL ITEMS ON THIS PAGE ARE
CATEGORY 0010

PROJECT NO: 3360-01-70

HWY: STH 175

COUNTY: WASHINGTON

MISCELLANEOUS QUANTITIES

SHEET

E

PAVEMENT & SHOULDERS

LOCATION	305.0110	305.0120	455.0605	460.5223	460.5224	465.0315	624.0100
	BASE	BASE	TACK	HMA PAVEMENT	HMA PAVEMENT	ASPHALTIC	WATER
	AGGREGATE	AGGREGATE	COAT	3 LT 58-28 S	4 LT 58-28 S	FLUMES	
	DENSE	DENSE		*LOWER LAYER*	*UPPER LAYER*		
	3/4-INCH	1 1/4-INCH	(GAL)	(TON)	(TON)	(SY)	(MGAL)
C-66-47 (STH 175) LEFT							
1194+50 to 1195+10	LOWER	-	30	-	7	-	0.6
1194+50 to 1195+10	UPPER	6	-	5	-	4	0.2
C-66-47 (STH 175) RIGHT							
1194+60 to 1195+00	LOWER	-	-	-	3	-	-
1194+60 to 1195+00	UPPER	-	-	2	-	2	10
C-66-159 (STH 175)							
1242+60 to 1242+70	UPPER	1	-	3	-	4	0.1
1242+70 to 1247+55	LOWER	-	204	-	386	-	4.1
1242+70 to 1247+55	UPPER	99	-	129	-	181	2.0
1247+55 to 1247+65	UPPER	1	-	3	-	4	0.1
TOTALS		107	234	142	396	195	7.1

CONCRETE BARRIER

LOCATION	210.1100	603.1456
	STRUCTURAL	CONCRETE
	BACKFILL	BARRIER
	TYPE A	TYPE S56C
	(CY)	(LF)
R-66-62 (STH 167)		
631+08 to 633+98	LT	120
		325
TOTALS	120	325

EROSION CONTROL

LOCATION	310.0110	606.0200	606.0300	628.1104	628.1504	SPV.0090.01	628.1520	628.1905	628.1910	628.2008	628.2027	628.7504	628.7560	628.7570	630.0200	631.1100	645.0120	**	**	**
	BASE	RIPRAP	RIPRAP	EROSION	SILT	HEAVY	SILT	MOBILIZATIONS	MOBILIZATIONS	EROSION	EROSION	TEMPORARY	TRACKING	ROCK	SEEDING	SOD	GEOTEXTILE	EXCAVATION	BACKFILL	POLYETHYLENE
	AGGREGATE	MEDIUM	HEAVY	BALES	FENCE	DUTY	FENCE	EROSION	EROSION	MAT URBAN	MAT	DITCH	PADS	BAGS	TEMPORARY	EROSION	TYPE HR			SHEETING
	OPEN					SILT	MAINTENANCE	CONTROL	EROSION	CLASS I	CLASS II	CHECKS				CONTROL				
	GRADED				FENCE			CONTROL	TYPE B	TYPE C							*	(CY)	(CY)	(SY)
	(TON)	(CY)	(CY)	(EA)	(LF)	(LF)	(LF)	(EACH)	(EACH)	(SY)	(SY)	(LF)	(EACH)	(EACH)	(LB)	(SY)	(SY)			
C-66-47 (STH 175)	-	-	-	12	260	80	340	2	2	15	10	20	1	48	-	20	-	-	-	-
R-66-62 (STH 167)	-	2	-	12	430	-	430	2	1	356	-	48	1	-	-	20	4	-	-	-
C-66-159 (STH 175) - DIVERSION CHANNEL	67	-	92	-	150	-	150	-	-	-	185	-	-	-	5	-	138	1000	1000	210
C-66-159 (STH 175)	-	-	-	12	860	250	1110	2	4	1523	-	62	1	-	-	20	-	-	-	-
TOTALS	67	2	92	36	1700	330	2030	6	7	1894	195	130	3	48	5	60	142			

* SEE STRUCTURE PLAN FOR ADDITIONAL QUANTITY

** NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY, ITEMS INCIDENTAL TO COFFERDAM. SEE STRUCTURE PLANS FOR COFFERDAM C-66-159.

RESTORATION

LOCATION	625.0500	629.0210	630.0120	630.0130	630.0160	630.0500
	SALVAGED	FERTILIZER	SEEDING	SEEDING	SEEDING	SEED
	TOPSOIL	TYPE B	MIXTURE	MIXTURE	MIXTURE	WATER
			NO. 20	NO. 30	NO. 60	
	(SY)	(CWT)	(LB)	(LB)	(LB)	(MGAL)
C-66-47 (STH 175)	25	-	-	1	-	0.6
R-66-62 (STH 167)	356	0.3	4	3	-	8.0
C-66-159 (STH 175) - DIVERSION CHANNEL	47	-	-	-	1	1.1
C-66-159 (STH 175)	1523	-	-	25	4	34.3
TOTALS	1951	0.3	4	29	5	44.0

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

PROJECT NO: 3360-01-70

HWY: STH 175

COUNTY: WASHINGTON

MISCELLANEOUS QUANTITIES

SHEET

E

FILE NAME : _____

PLOT DATE : _____

PLOT BY : _____

PLOT NAME : _____

ORG DATE : _____

ORIGINATOR : DIST_

PLOT SCALE : 1:1

3

3

TRAFFIC CONTROL

LOCATION	DESCRIPTION	DURATION		643.0300	643.0420	643.0705	643.0715	643.0900	643.0920	643.5000
		CALANDAR DAYS	#	TC DRUMS	TC BARRICADES TYPE III	TC WARNING LIGHTS TYPE A	TC WARNING LIGHTS TYPE C	TC SIGNS	TC COVERING SIGNS TYPE II	TC 1000-09-74
C-66-47 & 48 (STH 175)	G20-57	10	-	-	2	20	-	2	20	-
C-66-47 & 48 (STH 175)	DETOUR	90	-	-	20	1800	32	2880	-	-
R-66-62 (STH 167)	SHOULDER CLOSURE	30	25	750	-	-	-	-	5	150
C-66-47 (STH 175)	LOCAL ACCESS	40	-	24	2	80	-	8	320	20
	UNDISTRIBUTED			15		480				480
TOTALS				789		2,380		2,880		320
								12,250		52
										0.75

PAVEMENT MARKING

LOCATION	646.1020	646.1040
	MARKING LINE EPOXY 4-INCH YELLOW (LF)	MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE (LF)
C-66-47 (STH 175) 1194+50 to 1195+10	-	60
C-66-159 (STH 175) 1242+60 to 1247+65	1010	1010
TOTALS	1010	1070

CONSTRUCTION STAKING

LOCATION	650.4500	650.5000	650.6500	650.7500	650.8000	650.9920
	SUBGRADE CAT 0010 (LF)	BASE CAT 0010 (LF)	STRUCTURE LAYOUT (LS)	CONCRETE BARRIER CAT 0010 (LF)	RESURFACING REFERENCE CAT 0010 (LF)	SLOPE STAKES CAT 0010 (LF)
R-66-62	-	-	-	325	-	325
C-66-47	60	60	1 (CAT 0030)	-	-	60
C-66-159	200	200	1 (CAT 0020)	-	305	1010
TOTALS	260	260	2	325	305	1395

SAWING

LOCATION	690.0150	690.0250
	SAWING ASPHALT (LF)	SAWING CONCRETE (LF)
C-66-47 (STH 175)	105	10
C-66-159 (STH 175) 1242+70	34	-
1247+55	34	-
TOTALS	173	10

ALL ITEMS ON THIS PAGE ARE
CATEGORY 0010 UNLESS OTHERWISE
NOTED

PROJECT NO: 3360-01-70

HWY: STH 175

COUNTY: WASHINGTON

MISCELLANEOUS QUANTITIES

SHEET

E

FILE NAME : _____

PLOT DATE : _____

PLOT BY : _____

PLOT NAME : _____

ORG DATE : _____

ORIGINATOR : DIST_

PLOT SCALE : 1:1

3

3

TYPE II PERMANENT SIGNING

3360-17-70

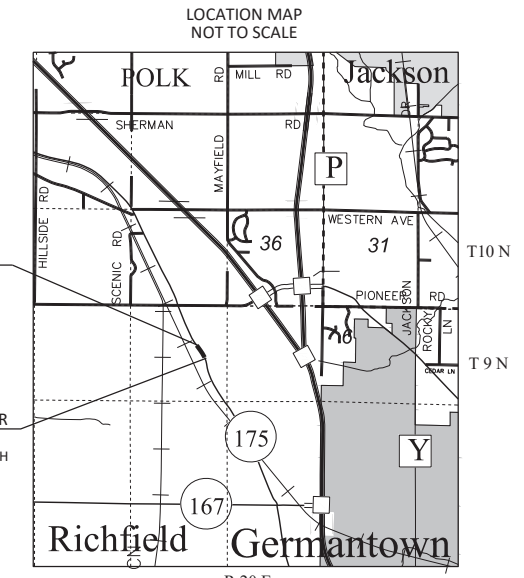
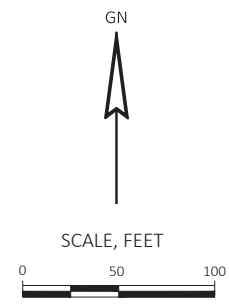
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2230	638.2102	638.2602	638.3000	634.0618	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
			W [IN.]	x x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	SIGNS TYPE II RELFECTIVE F [SF]	MOVING SIGNS TYPE II [EA]	REMOVING SIGNS TYPE II (EA)	REM SMALL SIGN SUP [EA]	POSTS WOOD 4" X 6" X 18' [EA]		
1	R7-1D(2S)	NO PARKING	24	X	30	5.000			1	1	1		LOCATED AT C-66-47 ON STH 175
2	R7-1D(2S)	NO PARKING	24	X	30	5.000			1	1	1		LOCATED AT C-66-47 ON STH 175
3	W14-3	NO PASSING PENNANT UNDISTRIBUTED				20.000	20.000	1 5	5	5	5		LOCATED AT C-66-47 ON STH 175
TOTALS						30.000	20.000	6	7	8	8		

SCHEDULE OF LANDS AND INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTEREST TO THE DEPARTMENT.
 *=CALCULATED **=SQUARE FEET

PARCEL NUMBER	OWNER	INTEREST REQUIRED	TOTAL ACRES	R/W REQUIRED ACRES			TOTAL REMAINING ACRES	T.L.E. TEMP. ACRES	P.L.E. PERM. ACRES	PARCEL NUMBER
				NEW	EXISTING	TOTAL				
1 (2)	KARA KASTEN-OLSEN FAMILY TRUST ETAL	HE,TLE	32.18	0.175		0.175	32.005	0.002		1
2 (2)	KARA KASTEN-OLSEN FAMILY TRUST ETAL	HE	30.41	0.169		0.169	30.241			2
UTILITY NUMBER	OWNER	INTEREST REQUIRED								
51	AT&T WISCONSIN	ROR								51

R/W PROJECT NUMBER	3360-17-20	SHEET NUMBER	4.01	TOTAL SHEETS	
FEDERAL PROJECT NUMBER					
PLAT OF RIGHT OF WAY REQUIRED FOR STH 175 OVER LITTLE CEDAR CREEK CULVERT REPLACEMENT					
CONSTRUCTION I.D. 3360-17-70	WASHINGTON COUNTY				



CONVENTIONAL SYMBOLS
 (1" UNLESS NOTED)

FOUND IRON PIPE/PIN	PROPOSED R/W LINE	CONVENTIONAL UTILITY SYMBOLS
R/W MONUMENT	EXISTING H.E. LINE	WATER
R/W STANDARD	PROPERTY LINE	GAS
SIGN	LOT & TIE LINES	TELEPHONE
SECTION CORNER MONUMENT	SLOPE INTERCEPTS	OVERHEAD
SECTION CORNER SYMBOL	CORPORATE LIMITS	TRANSMISSION LINES
FEE (HATCH VARIES)	NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	ELECTRIC
TEMPORARY LIMITED EASEMENT	ACCESS RESTRICTED (BY ACQUISITION)	CABLE TELEVISION
PERMANENT LIMITED EASEMENT	NO ACCESS (BY STATUTORY AUTHORITY)	FIBER OPTIC
R/W BOUNDARY POINT	SECTION LINE	SANITARY SEWER
PARCEL NUMBER	QUARTER LINE	STORM SEWER
UTILITY INTEREST	SIXTEENTH LINE	NON COMPENSABLE
SIGN NUMBER (OFF PREMISE)	EXISTING CENTERLINE	COMPENSABLE
BUILDING	PROPOSED REFERENCE LINE	POWER POLE
	PARALLEL OFFSET	TELEPHONE POLE
		TELEPHONE PEDESTAL
		ELECTRIC TOWER

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS REMAINING	ROR
ACCESS RIGHTS	AR	RIGHT-OF-WAY	R/W
ACRES	AC.	SECTION	SEC.
AND OTHERS	ET.AL.	STATION	STA.
CENTERLINE	C/L	TEMPORARY LIMITED EASEMENT	TLE
CERTIFIED SURVEY MAP	CSM	VOLUME	V.
CORNER	COR.		
DOCUMENT	DOC.		
EASEMENT	EASE.		
HIGHWAY EASEMENT	H.E.		
LAND CONTRACT	LC		
MONUMENT	MON.		
PAGE	P.		
PERMANENT LIMITED EASEMENT	PLE		
PROPERTY LINE	PL		
RECORDED AS	(100')		
REFERENCE LINE	R/L		

CURVE DATA

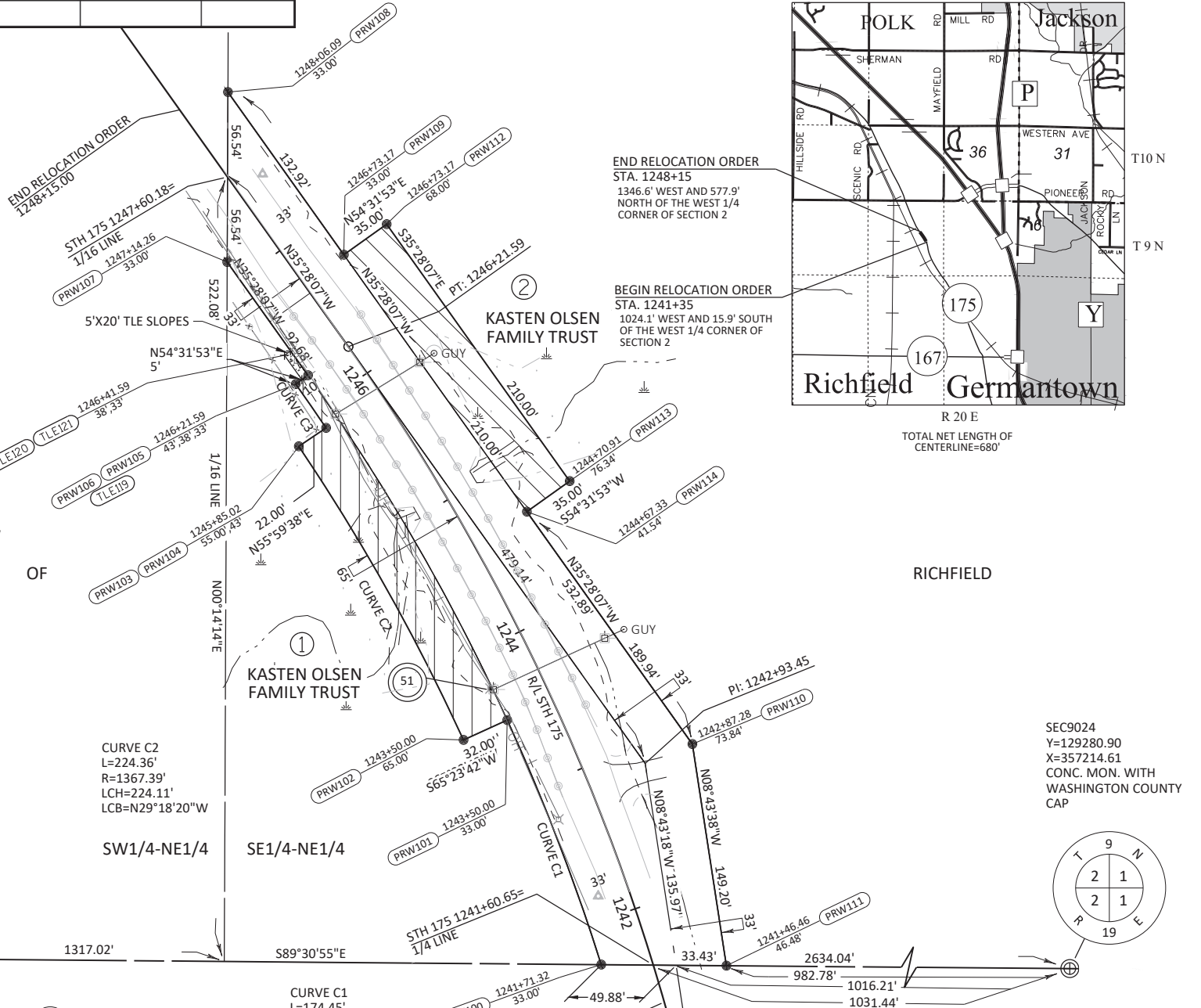
H.E.	LONG CHORD	LCH
LC	LONG CHORD BEARING	LCB
MON.	RADIUS	R
P.	DEGREE OF CURVE	D
PLE	CENTRAL ANGLE OR DELTA	DELTA
PL	LENGTH OF CURVE	L
R/L	TANGENT	TAN

HWY	BASIS OF EXISTING R/W	WIDTH	YEAR
STH 175	TERRITORIAL ROAD	66'	1843
STH 175	PROJECT 2608	VARIES	1925

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), WASHINGTON COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.
 FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

SEC9023
 Y=129303.18
 X=354580.66
 CONC. MON. WITH WASHINGTON COUNTY CAP

R/L STH 175
 PI STA = 1242+93.45
 Y = 129423.890
 X = 356177.820
 PC STA = 1239+52.90
 PT STA = 1246+21.59
 DELTA = 26°44'51"
 D = 4°00'00"
 T = 340.55'
 L = 668.69'
 R = 1432.39'
 LCH=662.63'
 LCB=N22°05'41"W

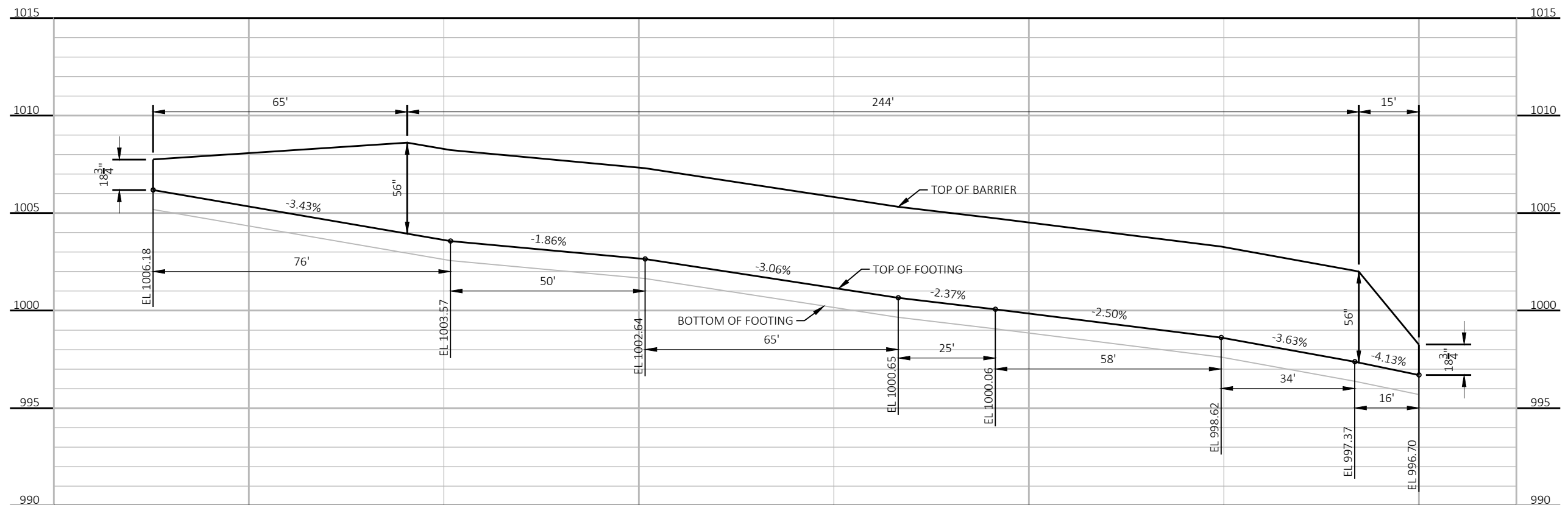
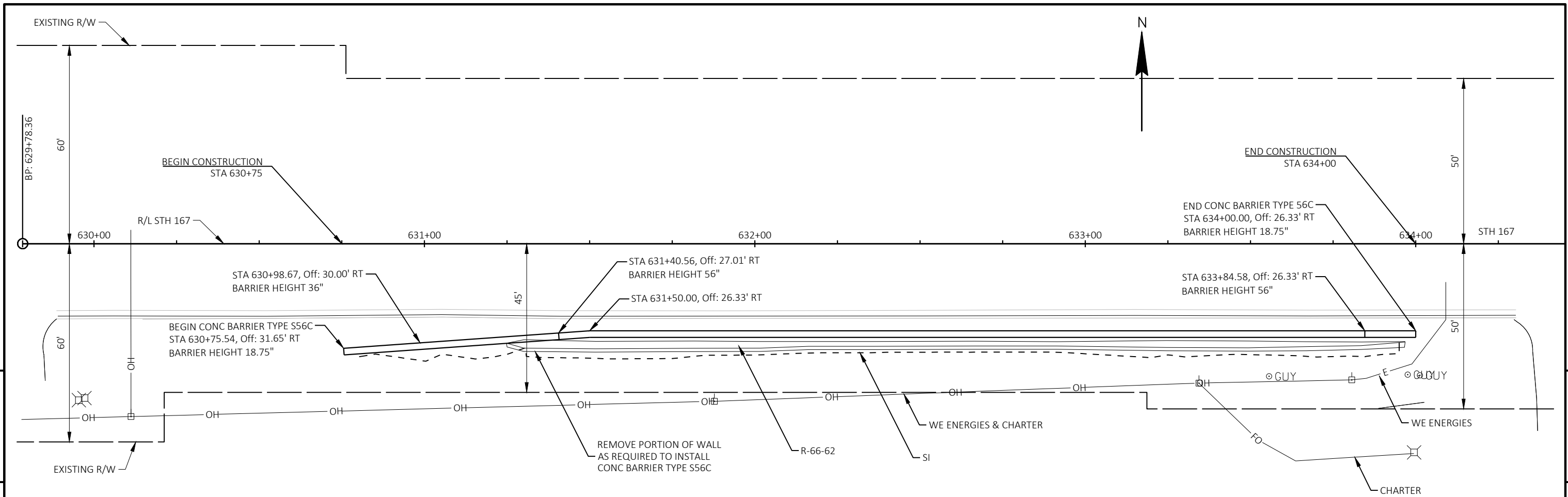


(51) AT&T WISCONSIN
 NO RECORDED EASEMENT
 PCL. 1

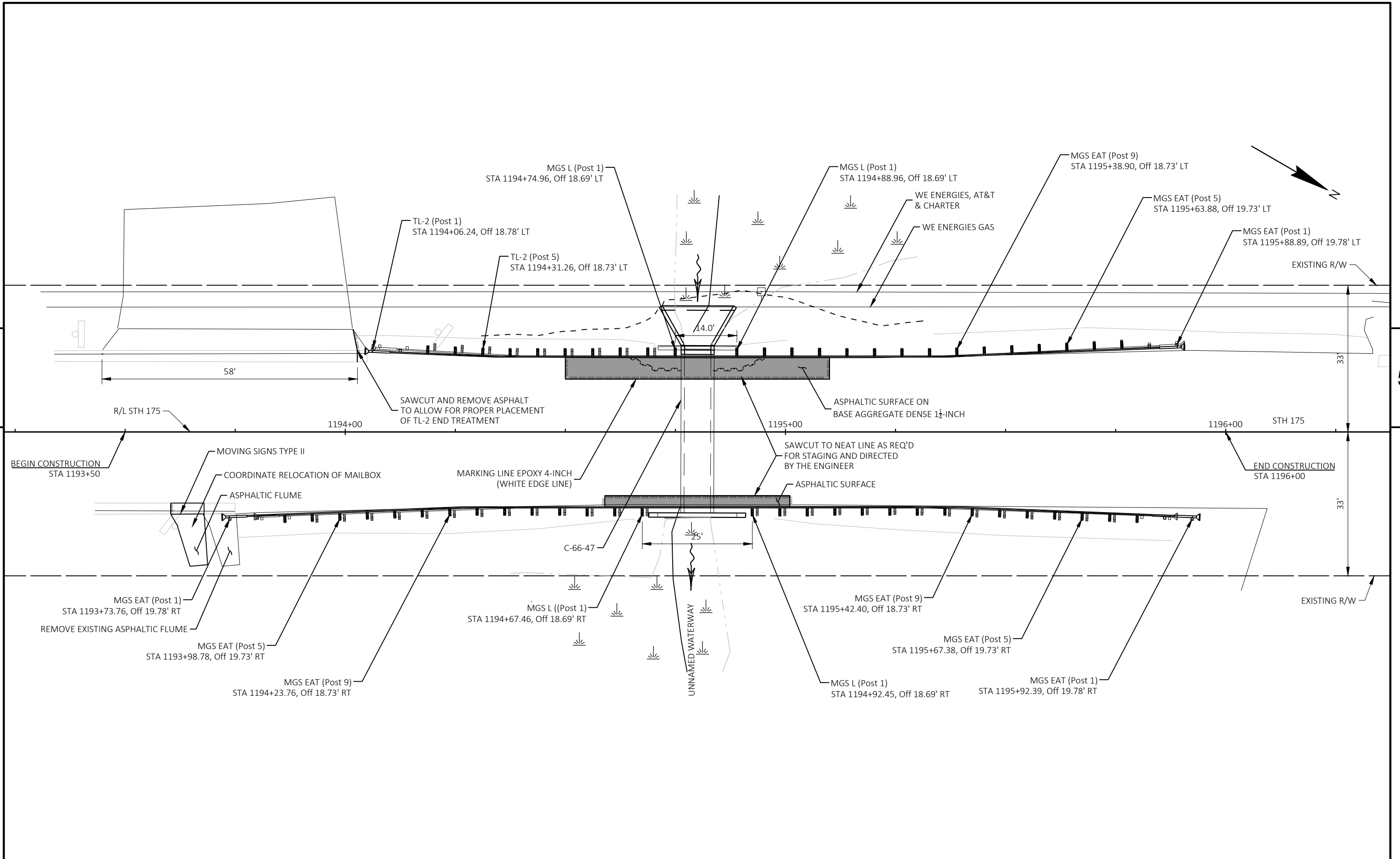
REVISION DATE
 6-24-2021

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

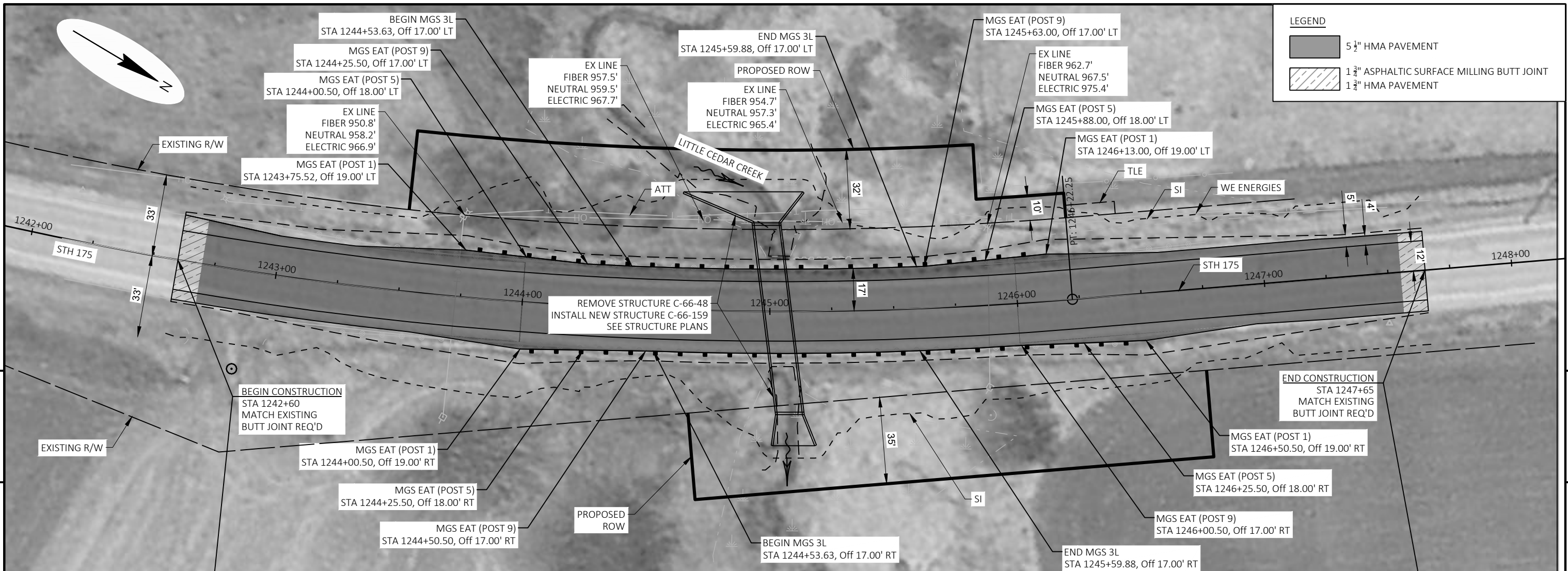
APPROVED FOR THE DEPARTMENT
 DATE: 04/26/21 *Robert A. Duffek*
 (Signature)



PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON PLAN AND PROFILE: R-66-62 (STH 167) SHEET: E

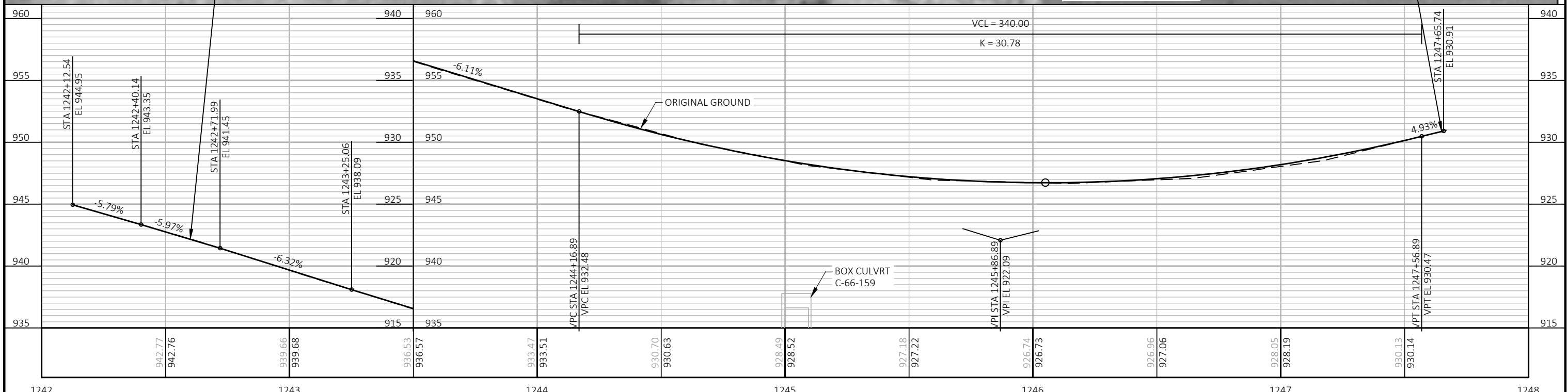


PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	PLAN: C-66-47 (STH 175)	SHEET	E
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LEGEND

	5 1/2" HMA PAVEMENT
	1 3/4" ASPHALTIC SURFACE MILLING BUTT JOINT
	1 3/4" HMA PAVEMENT



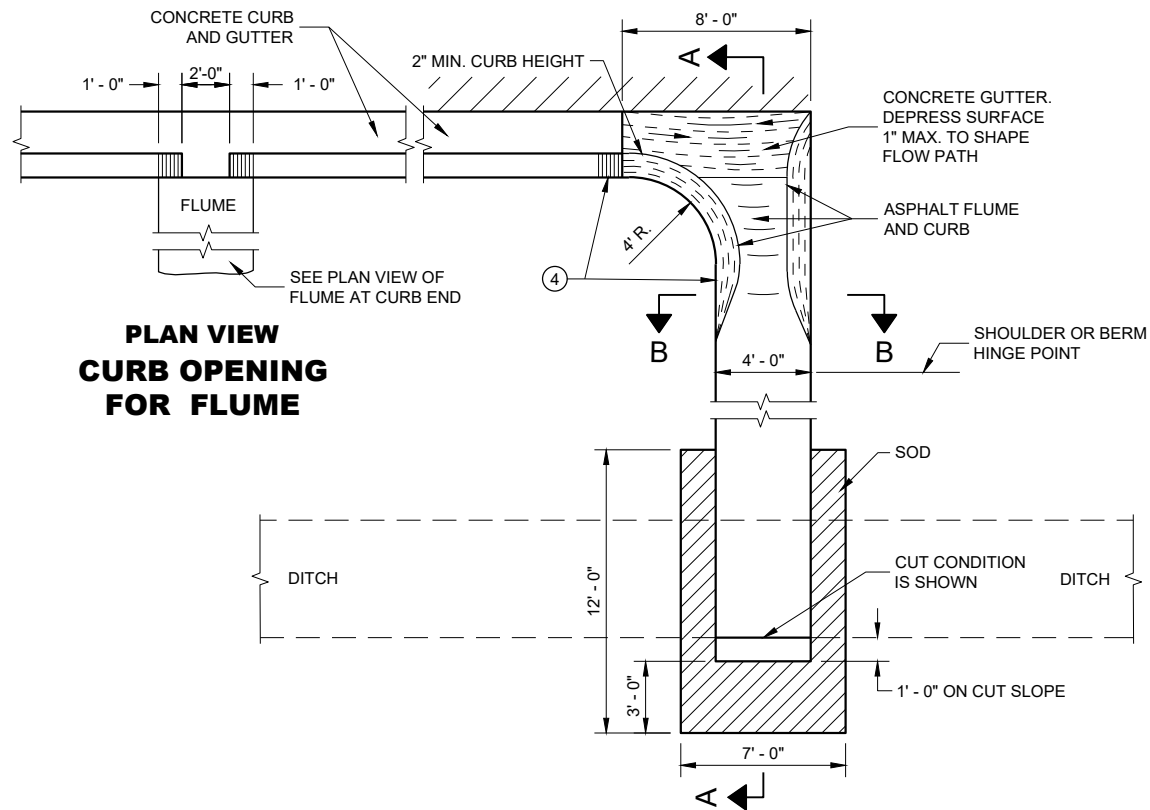
1242	1243	1244	1245	1246	1247	1248
PROJECT NO: 3360-17-70		HWY: STH 175		COUNTY: WASHINGTON		PLAN AND PROFILE: C-66-159 (STH 175)
SHEET						E

Standard Detail Drawing List

08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
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"
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B41-03A	SINGLE SLOPE ROADSIDE RETAINING WALL
14B41-03B	SINGLE SLOPE ROADSIDE RETAINING WALL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
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)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D32-05	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION

NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



**PLAN VIEW
CURB OPENING
FOR FLUME**

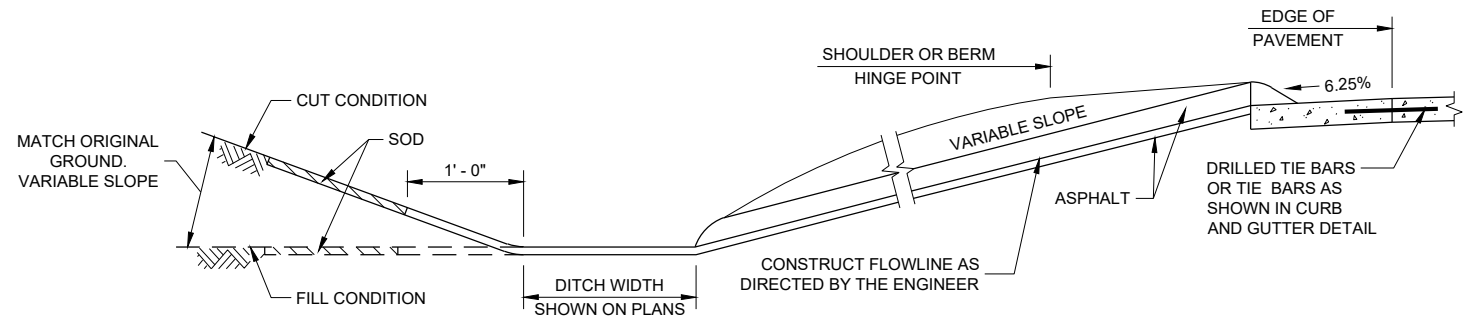
**PLAN VIEW
FLUME AT CURB END**

GENERAL NOTES

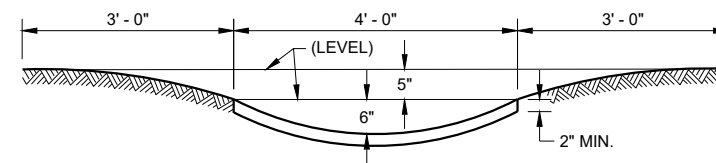
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

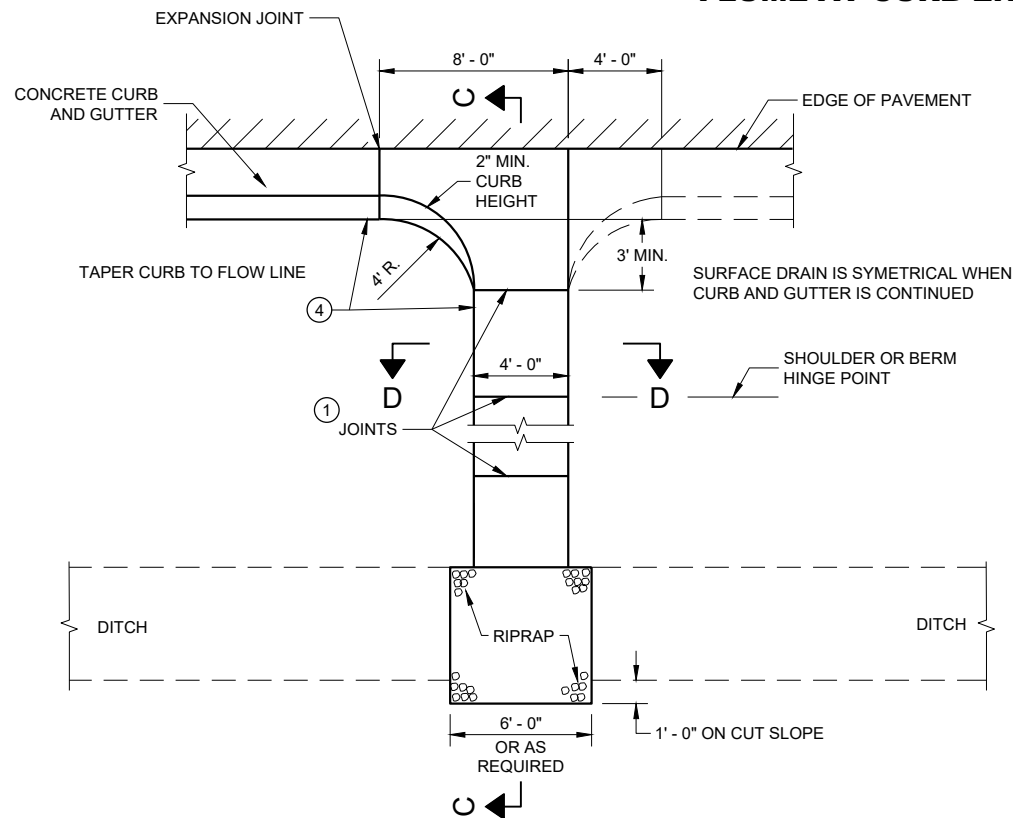
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



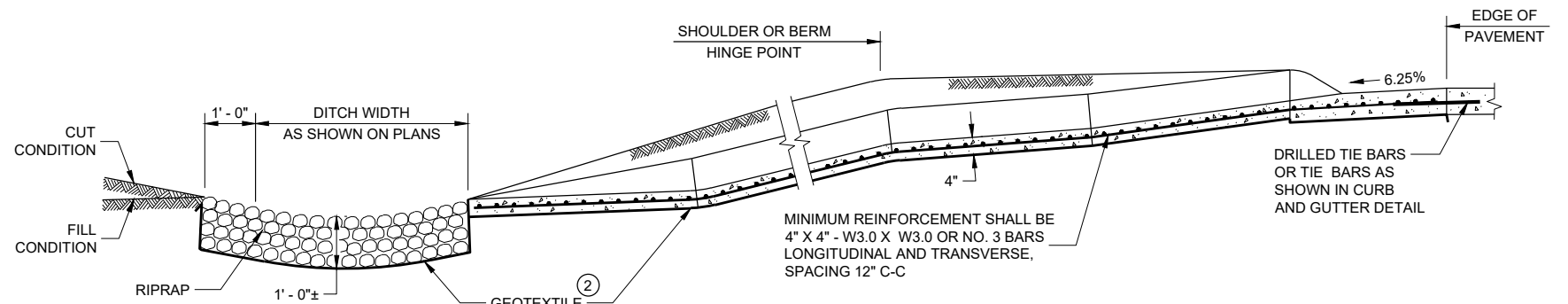
SECTION A - A



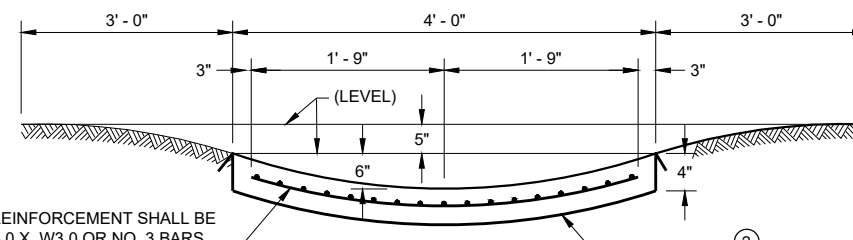
SECTION B - B



**PLAN VIEW
CONCRETE SURFACE DRAIN**



SECTION C - C



SECTION D - D

MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE, SPACING 12" C-C

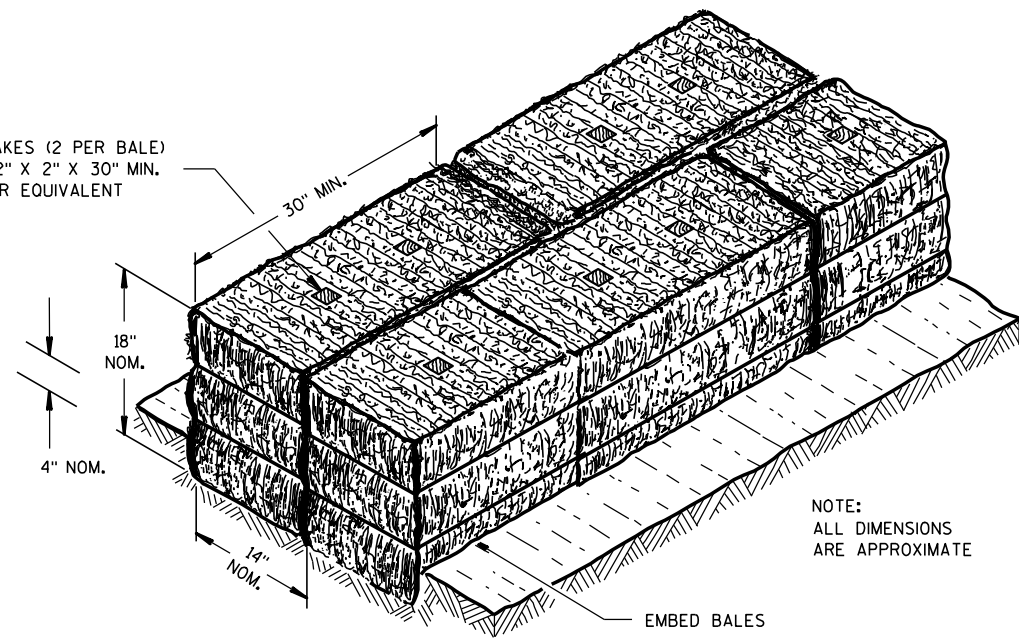
CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

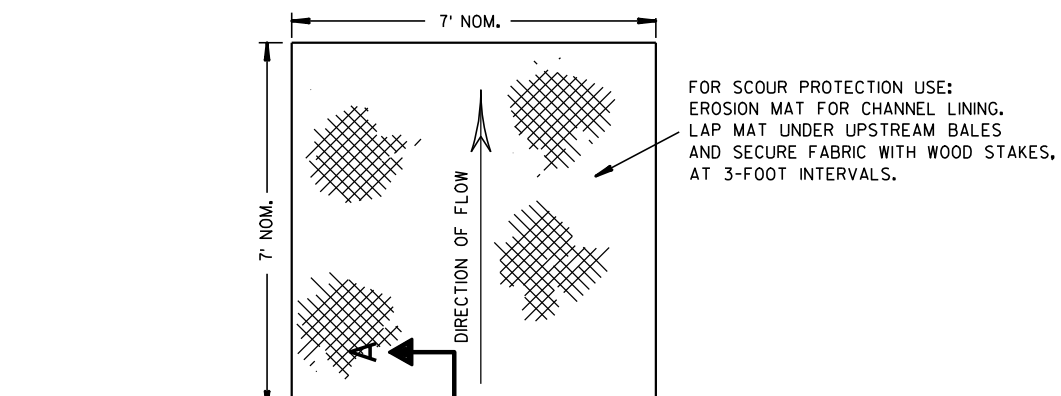
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



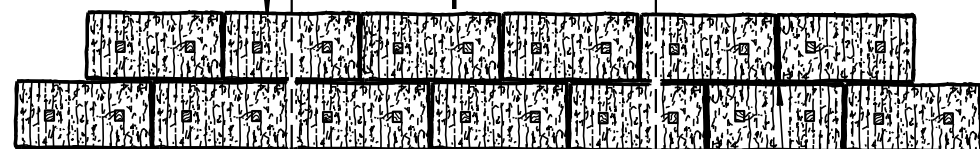
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A



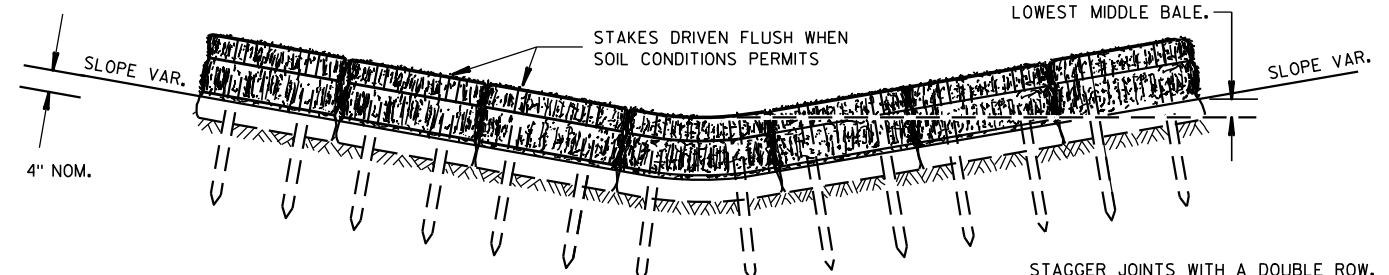
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



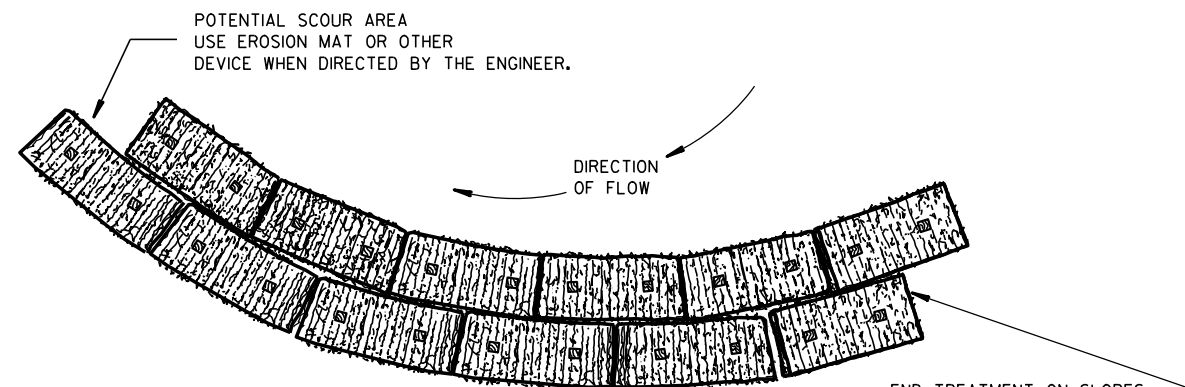
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

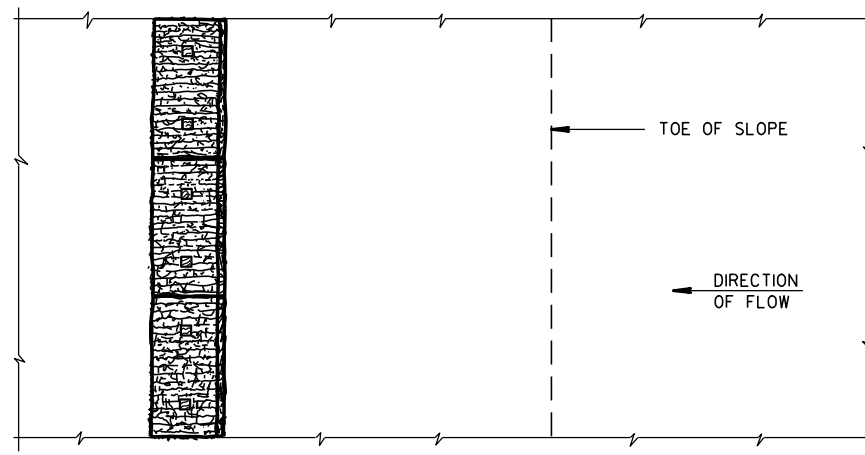
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

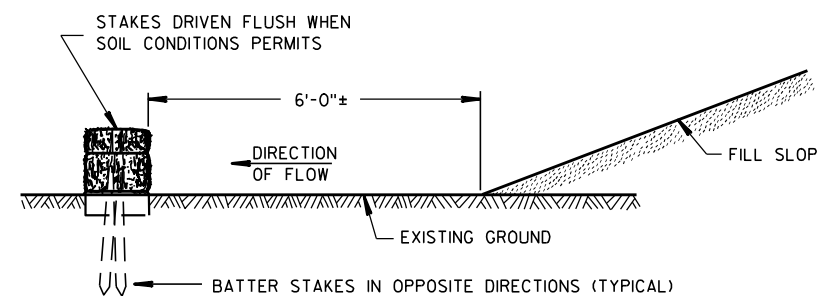


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

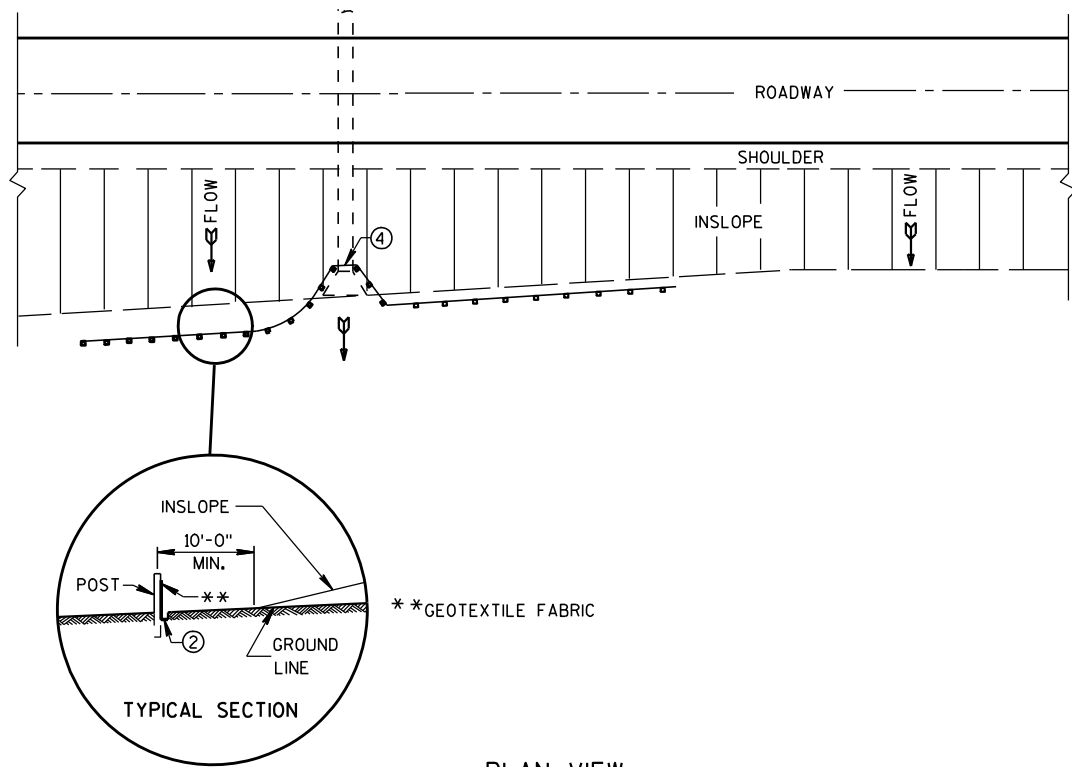
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

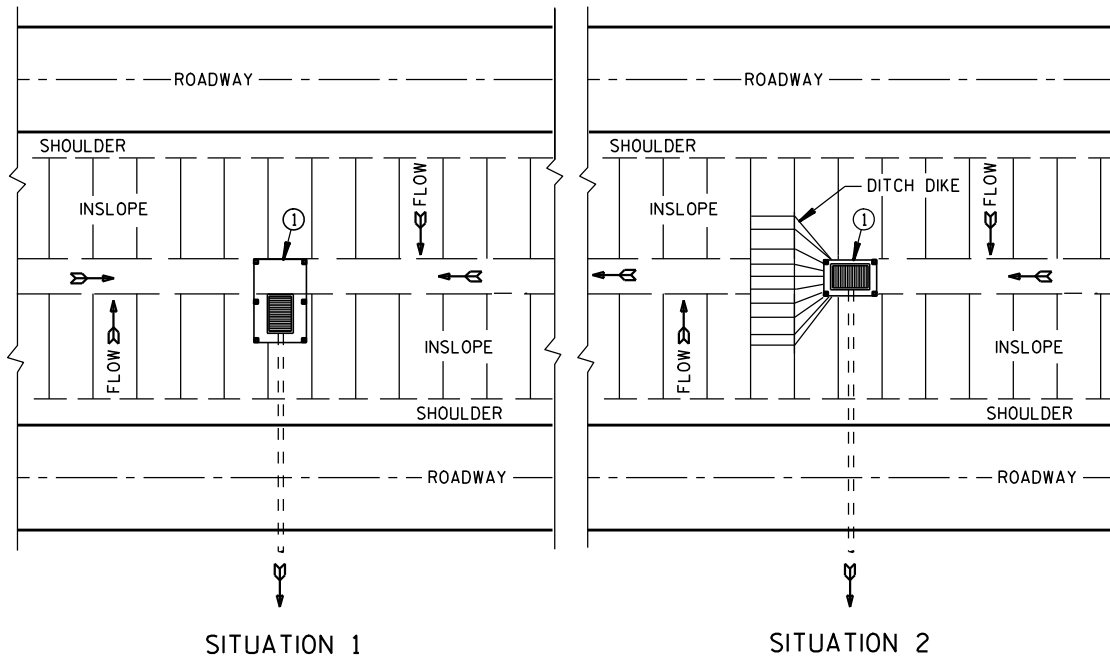
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

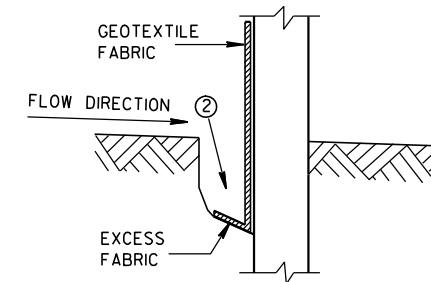


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

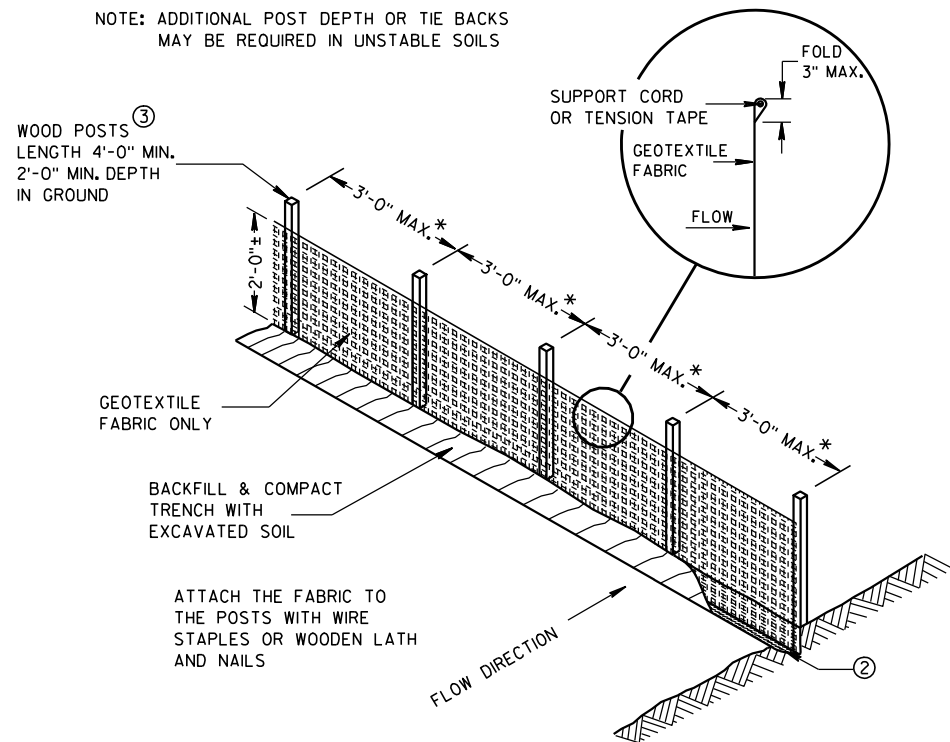
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



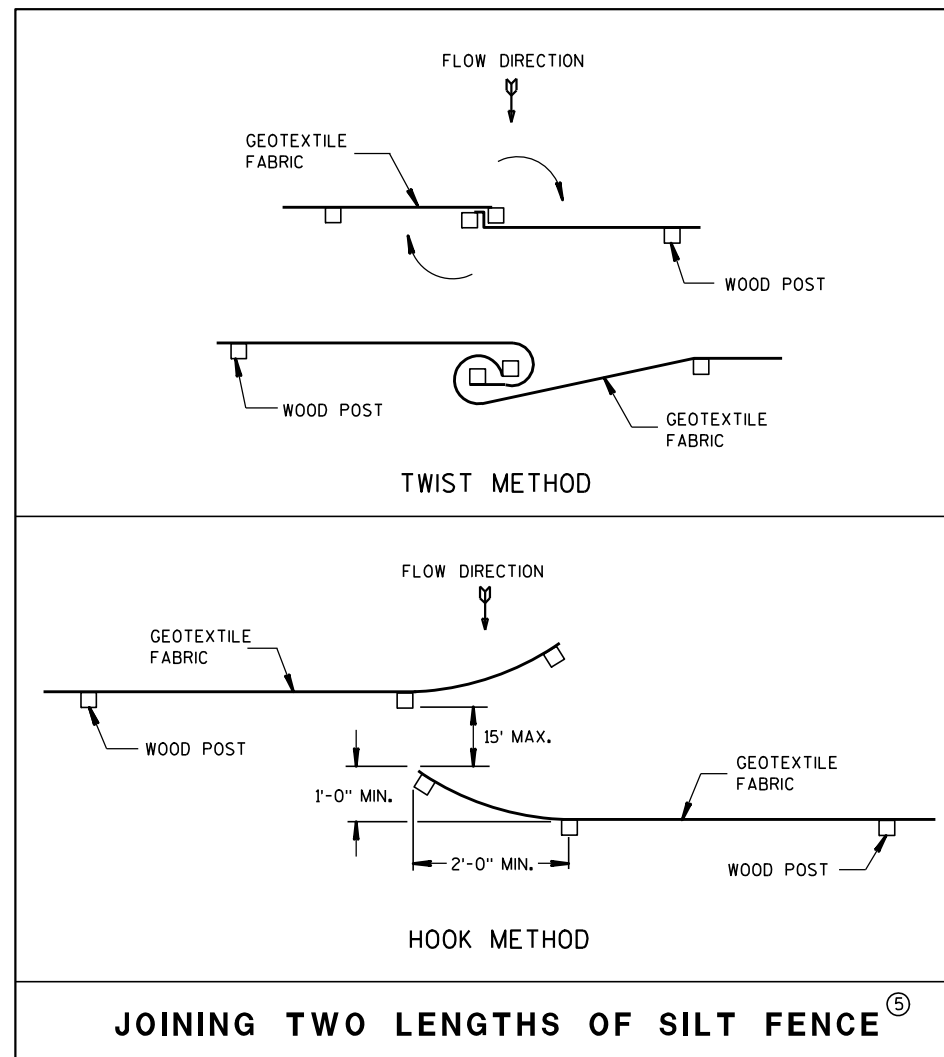
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

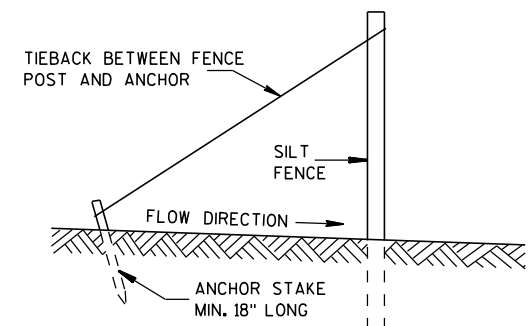


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

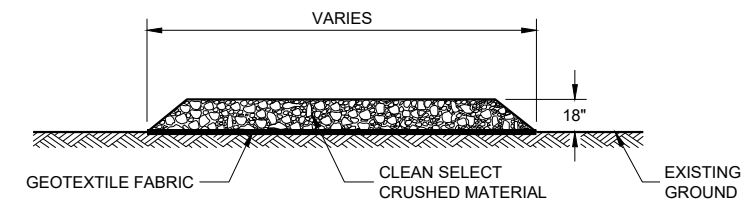
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

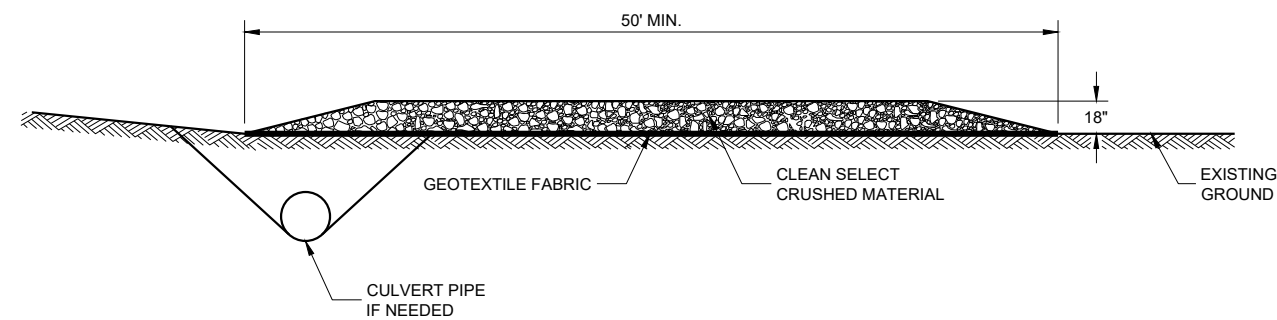
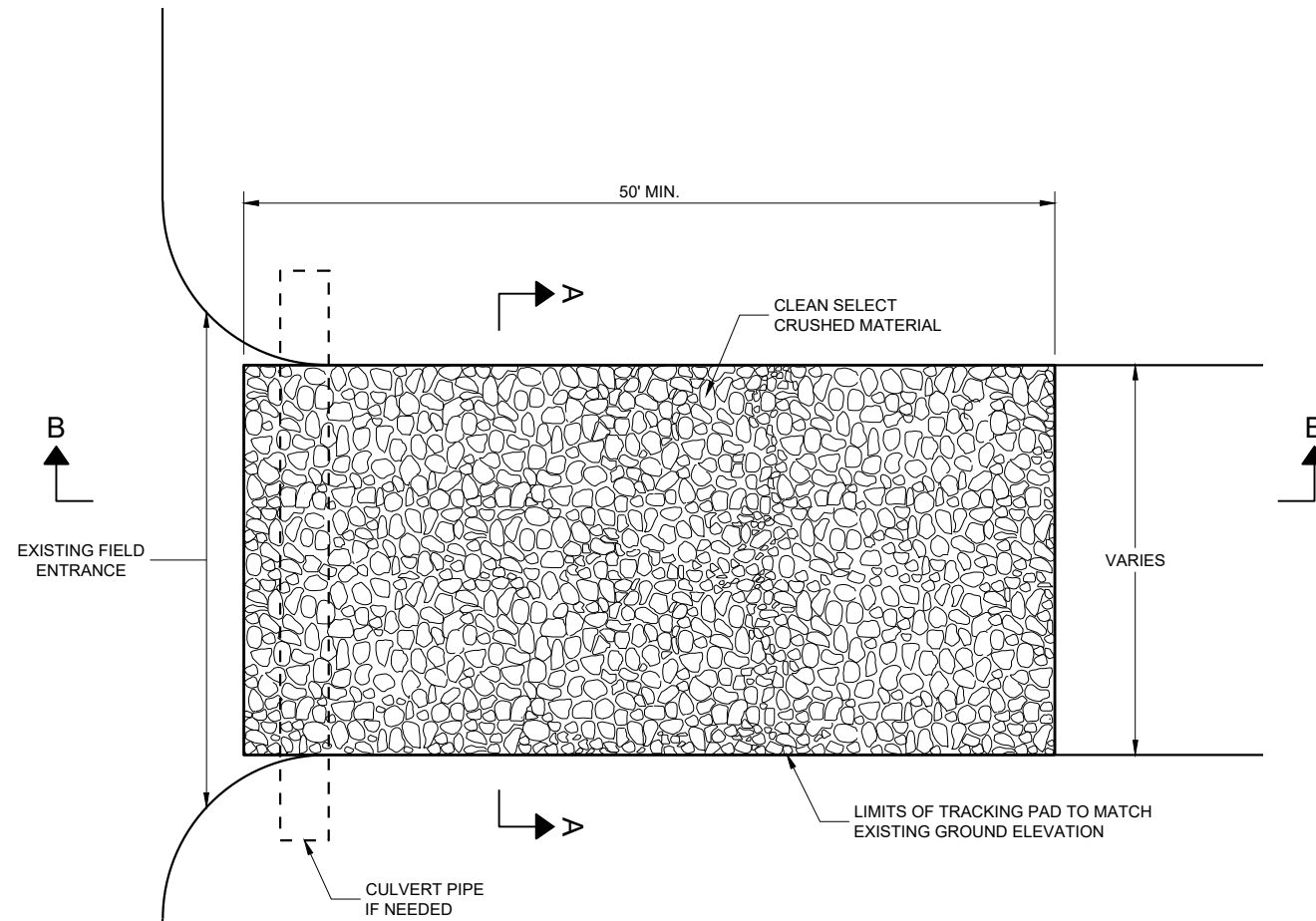
SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A



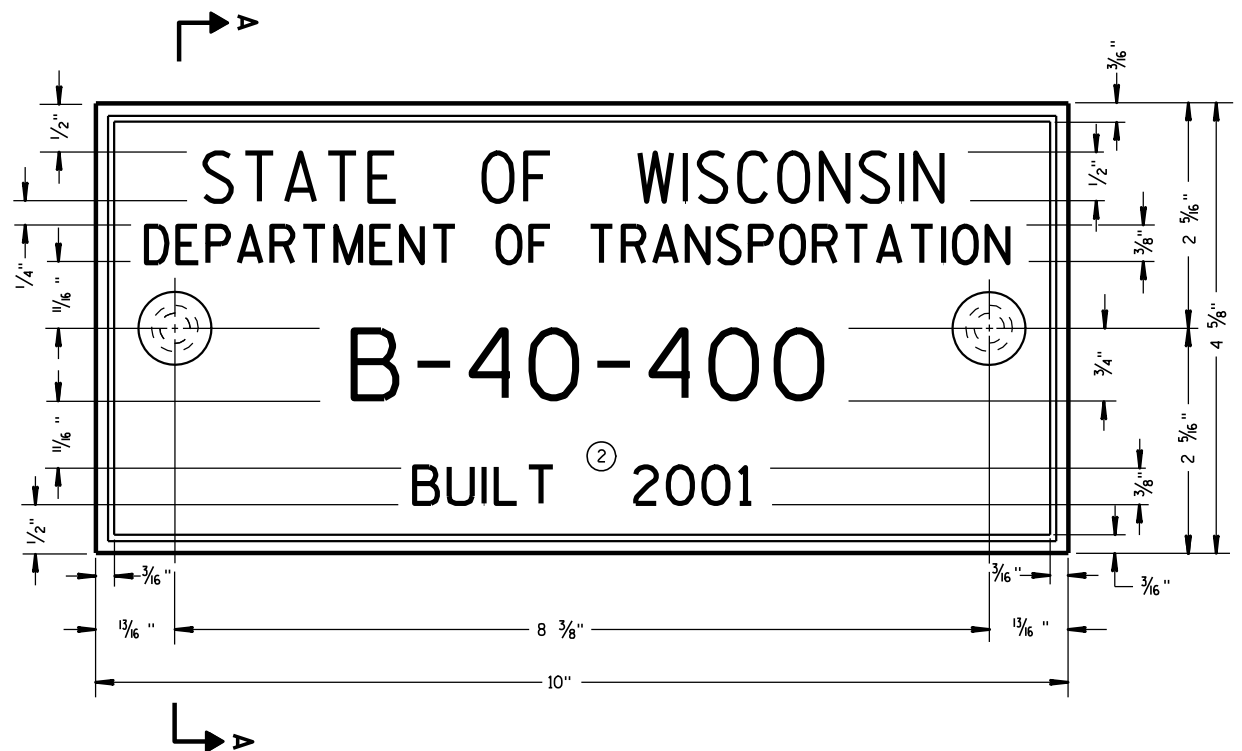
SECTION B - B

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



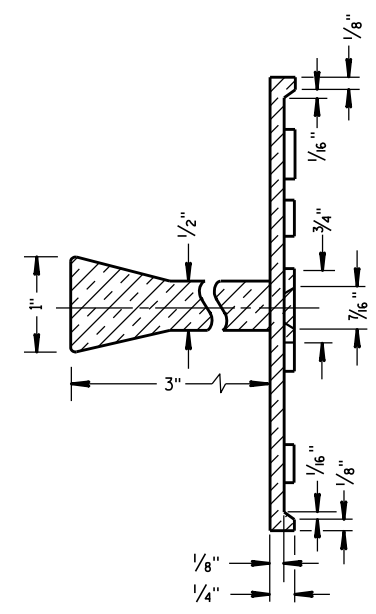
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

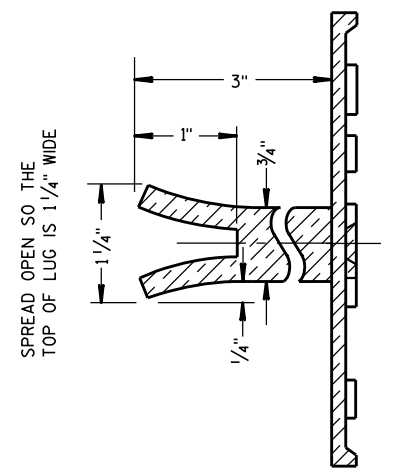
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



SPREAD OPEN SO THE TOP OF LUG IS 1 1/4" WIDE

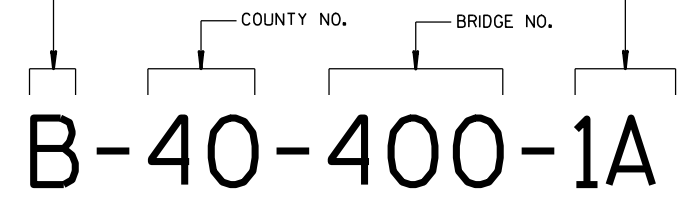
ALTERNATE LUG

6

6

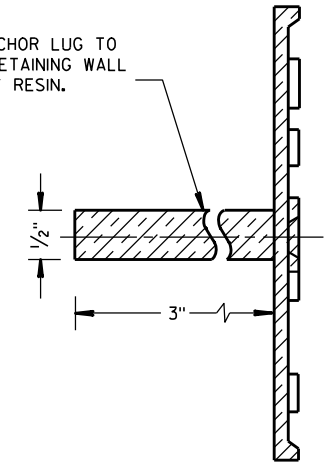
FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

- B = BRIDGE
- C = CULVERT
- R = RETAINING WALL
- UNIT NO. FOR MULTIPLE UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

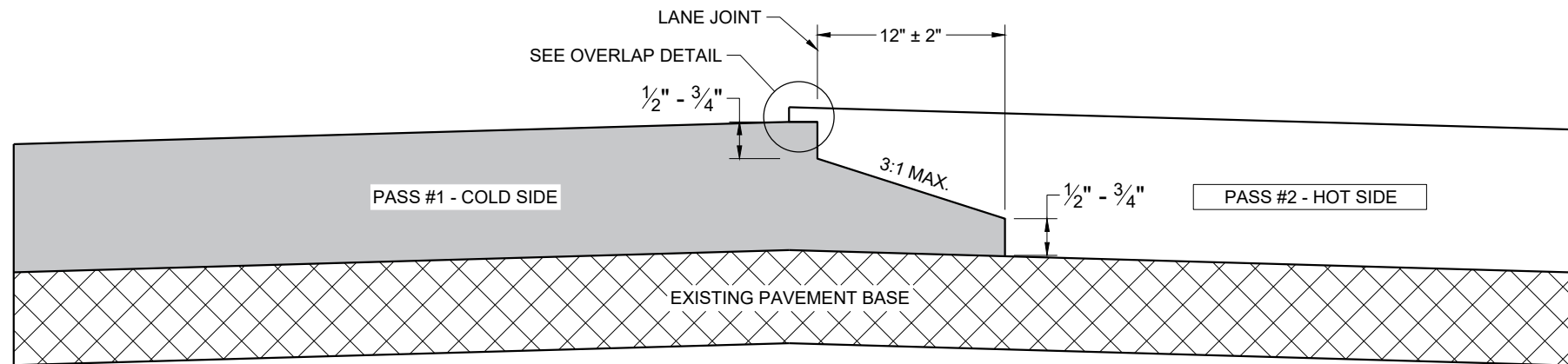


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

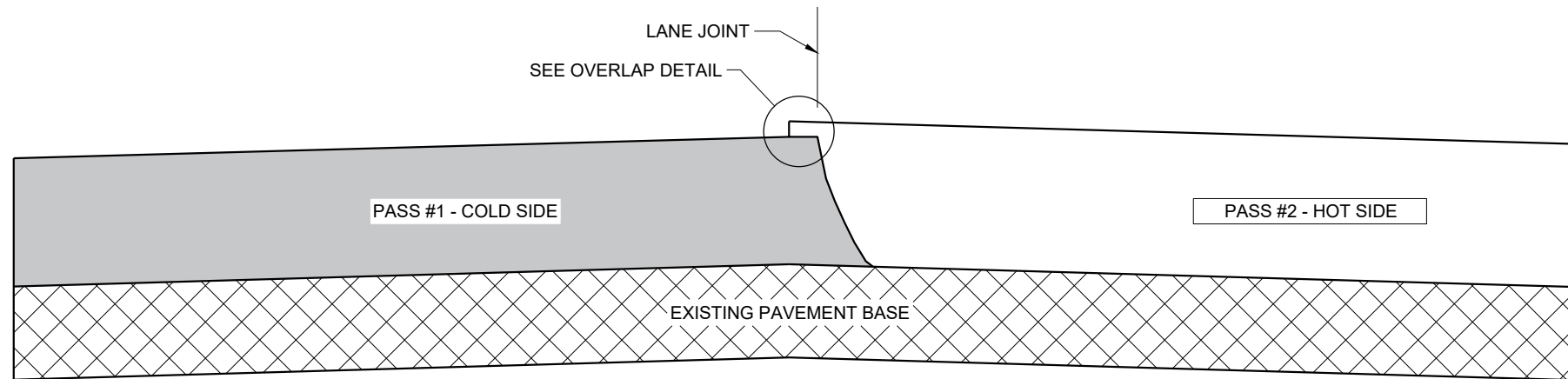
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

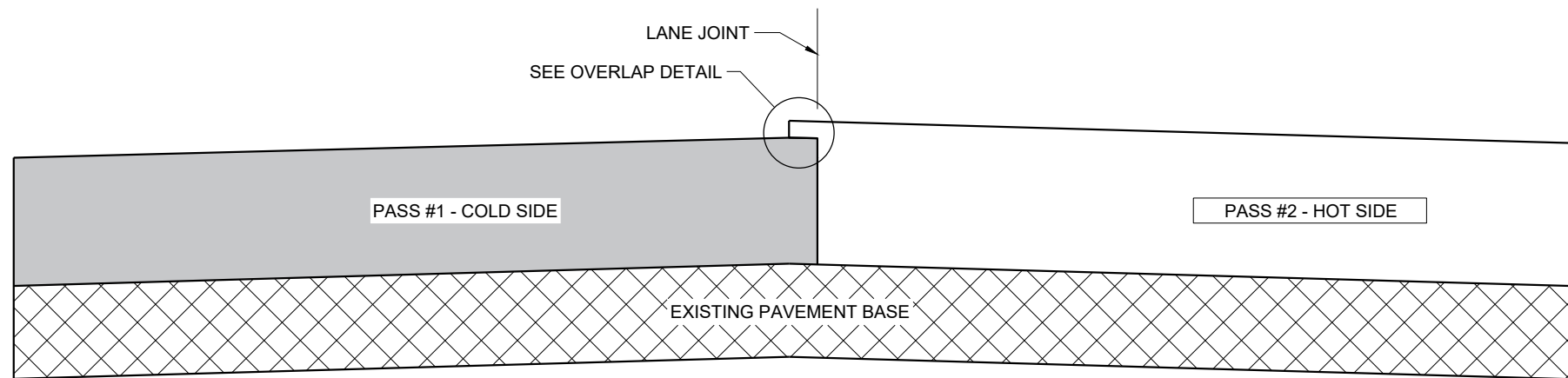
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

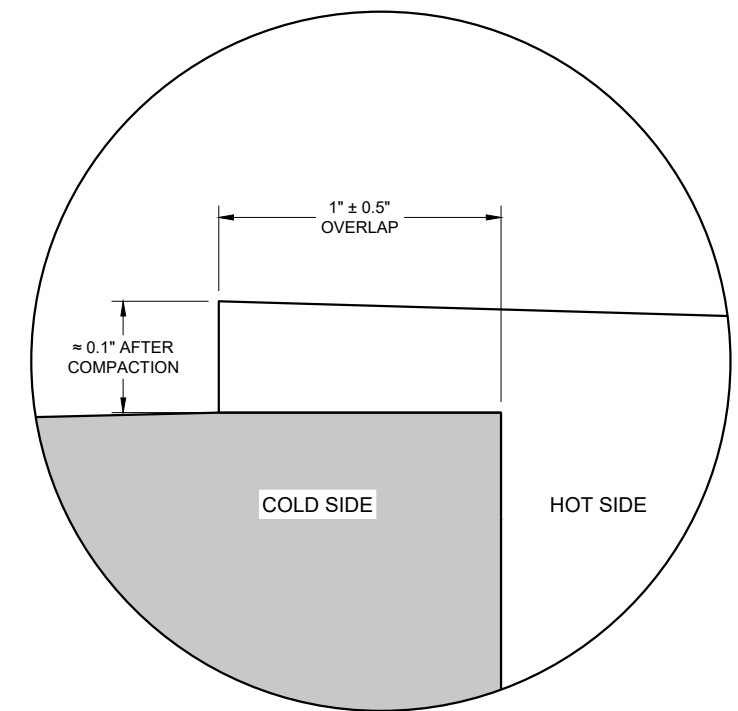
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

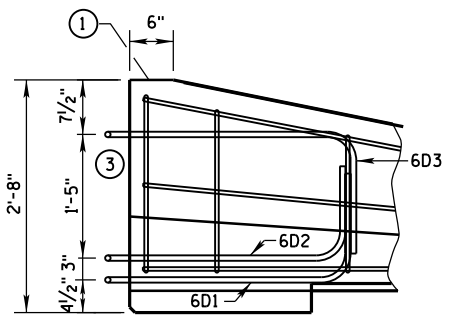
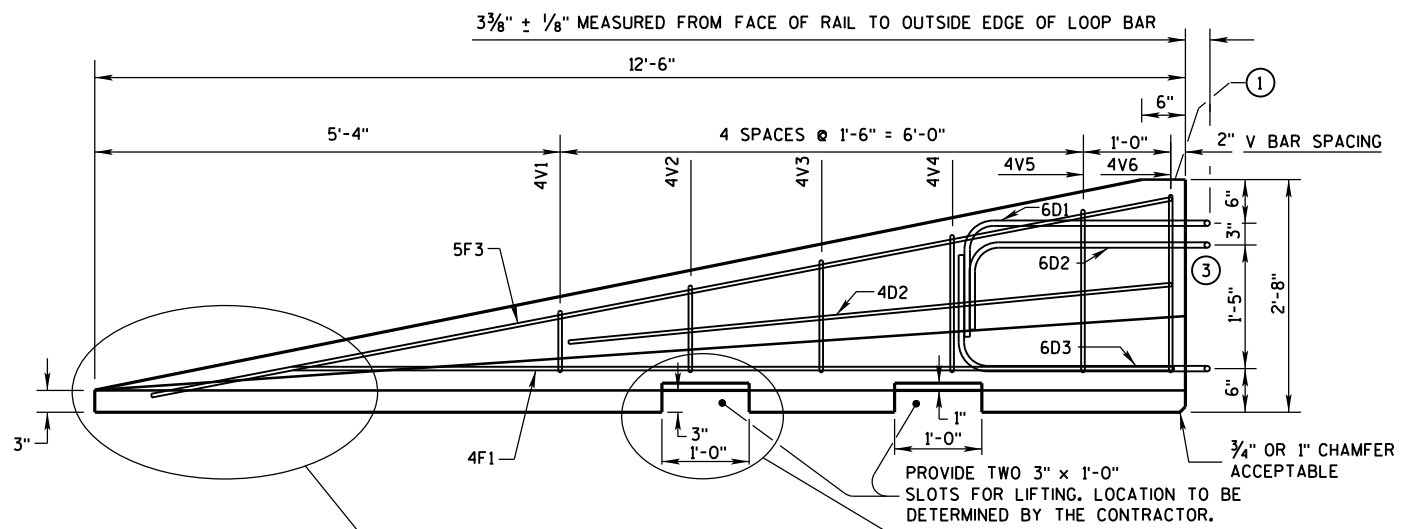
6

6

SDD 13C19 - 03

SDD 13C19 - 03

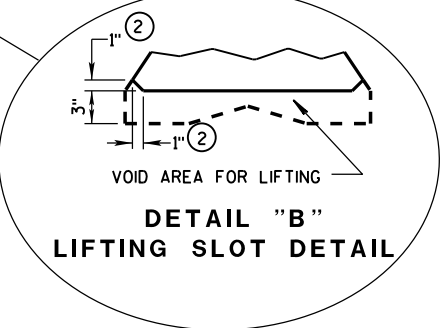
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



GENERAL NOTES

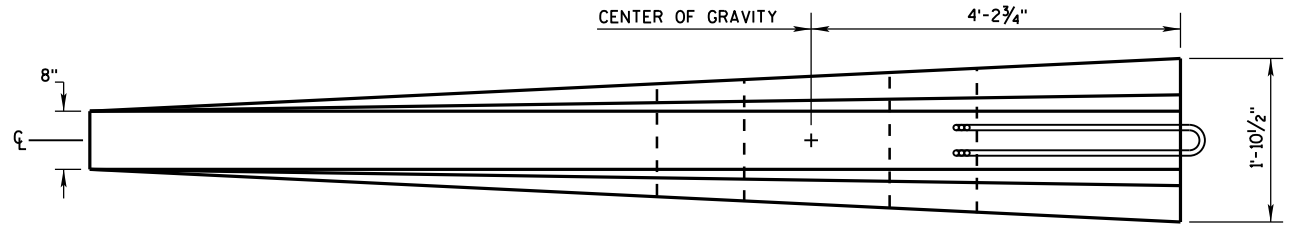
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

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

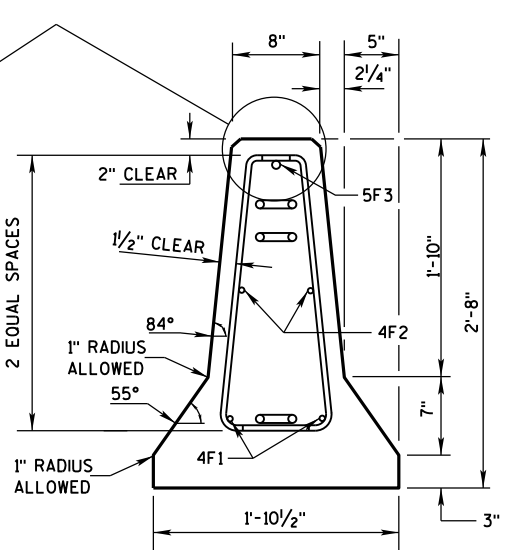
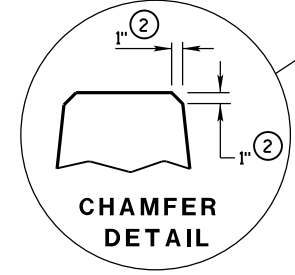


SIDE ELEVATION
 (FOR CONNECTION TO LEFT END OF BARRIER)

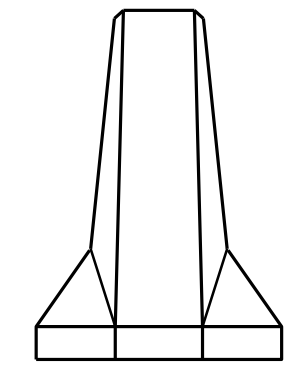
SEE DETAIL "C", BENT BAR DETAIL



PLAN VIEW

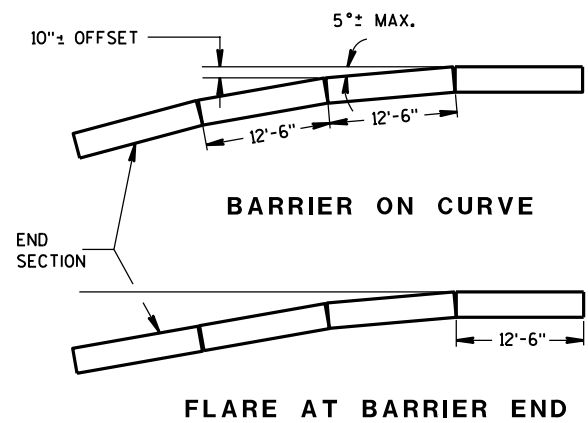


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



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 TRANSPORTATION

GENERAL NOTES

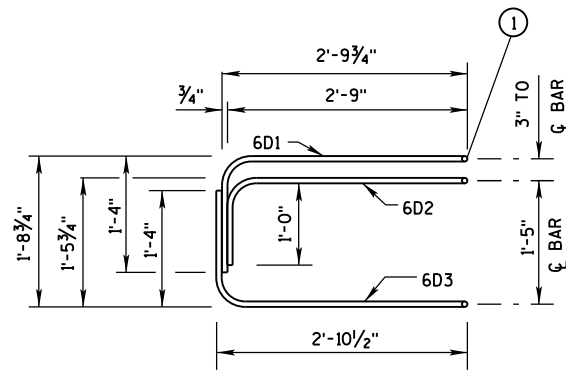
① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

**BARRIER TAPER SECTION
BILL OF MATERIALS**

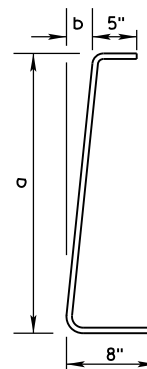
(PER 12'-6" BARRIER TAPER SECTION)

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

LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"

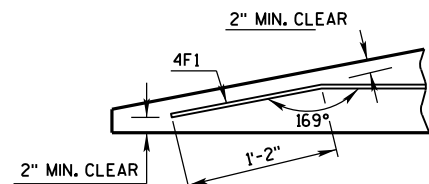


**ELEVATION
LOOP BAR ASSEMBLY**



BAR	a	b
V1	10"	1"
V2	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"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY



**DETAIL "C"
BENT BAR DETAIL**

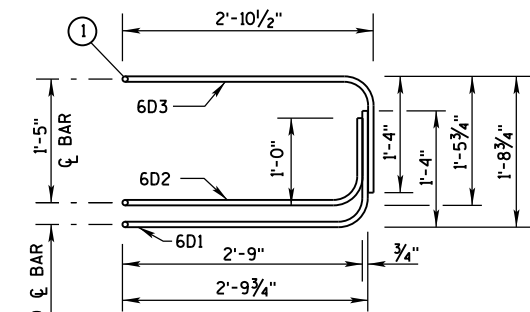
TAPER BARRIER SECTION

**BARRIER SECTION
BILL OF MATERIALS**

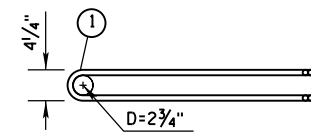
(PER 12'-6" BARRIER SECTION)

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"

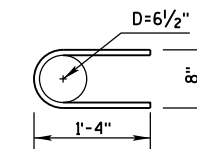
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



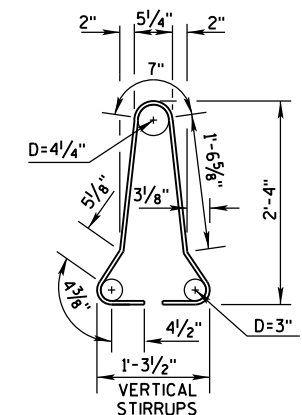
ELEVATION VIEW



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



6A2

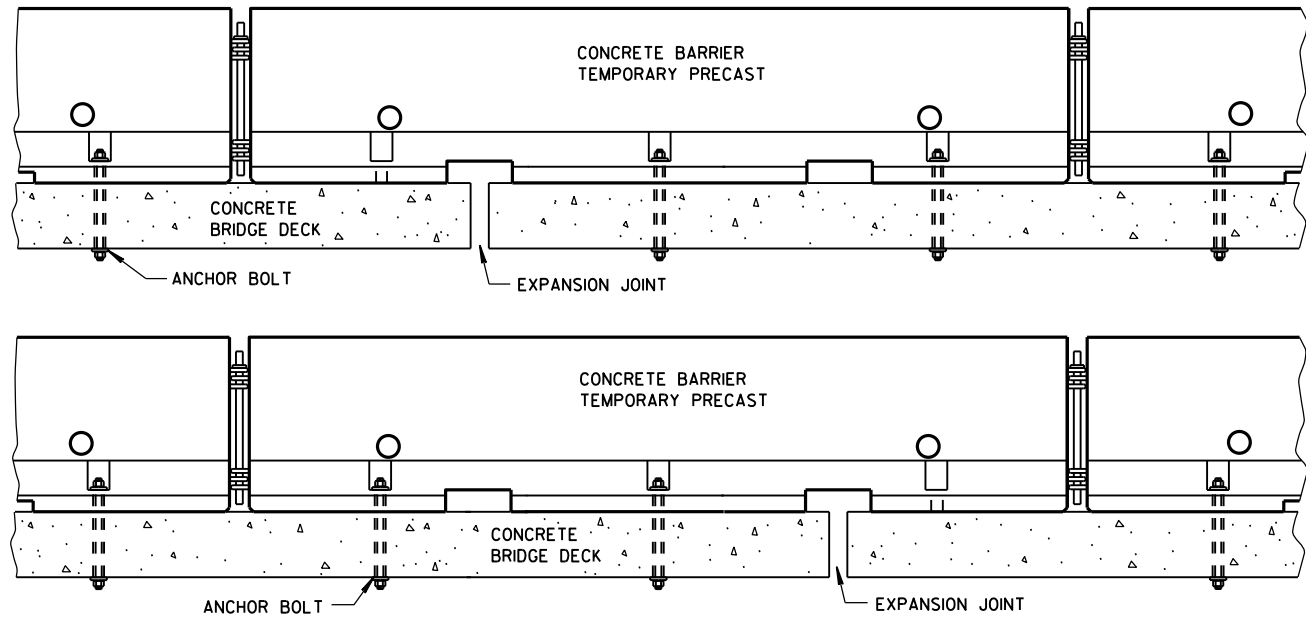


4A1

BARRIER SECTION

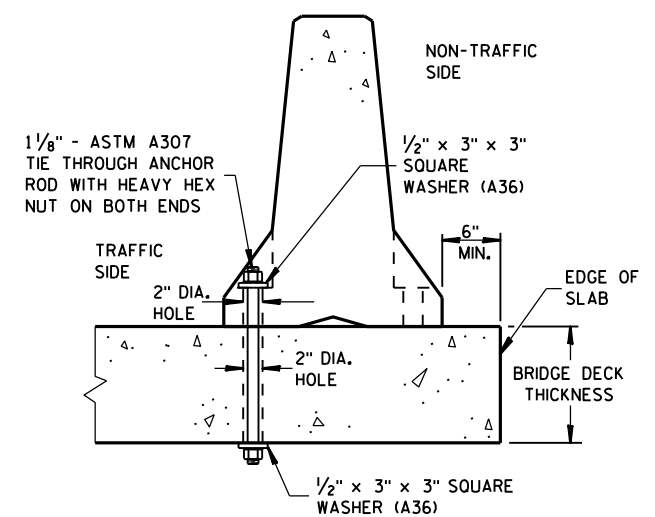
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



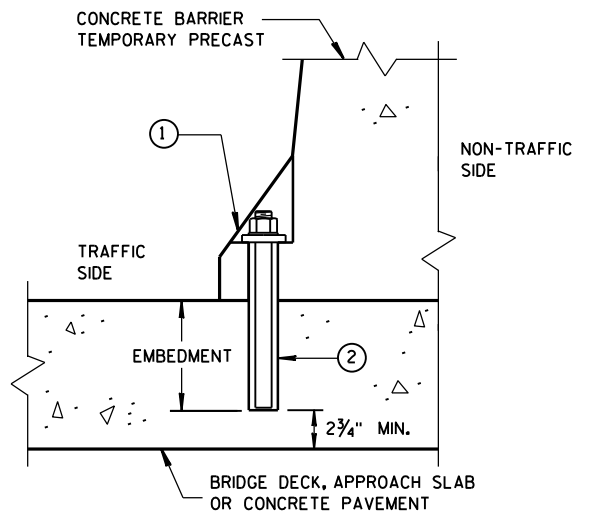
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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

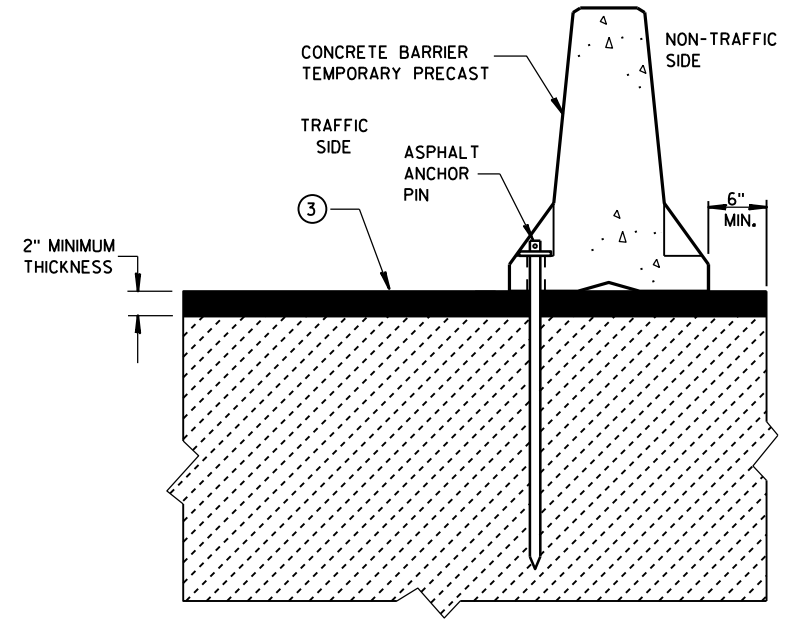
(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

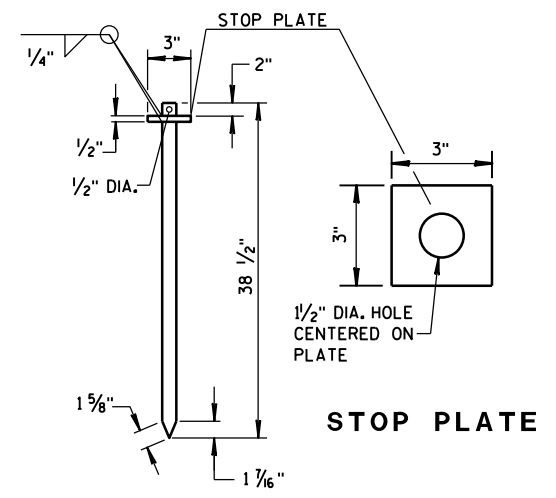
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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.

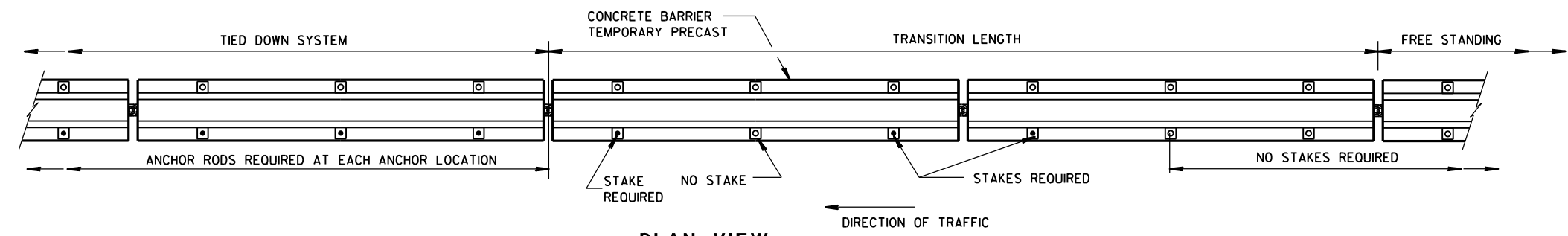
- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- 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)



FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

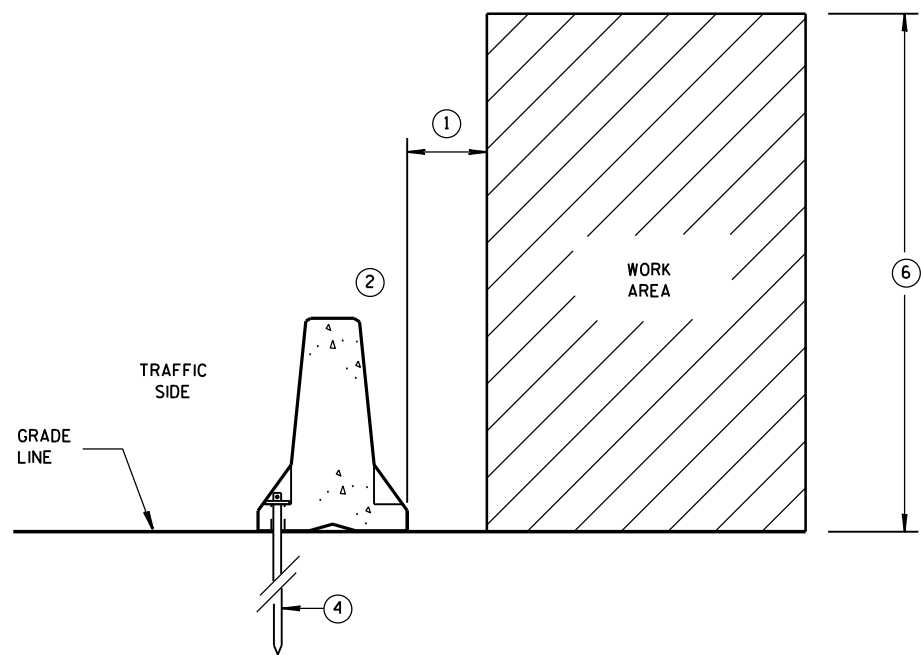
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

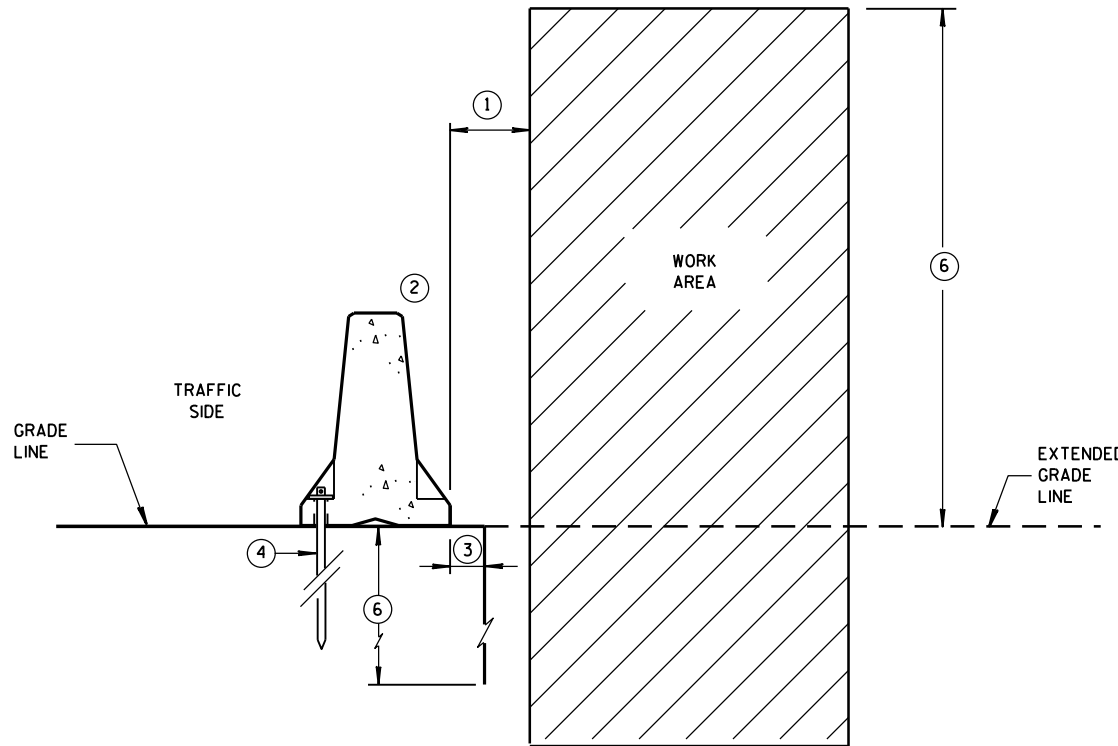
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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".

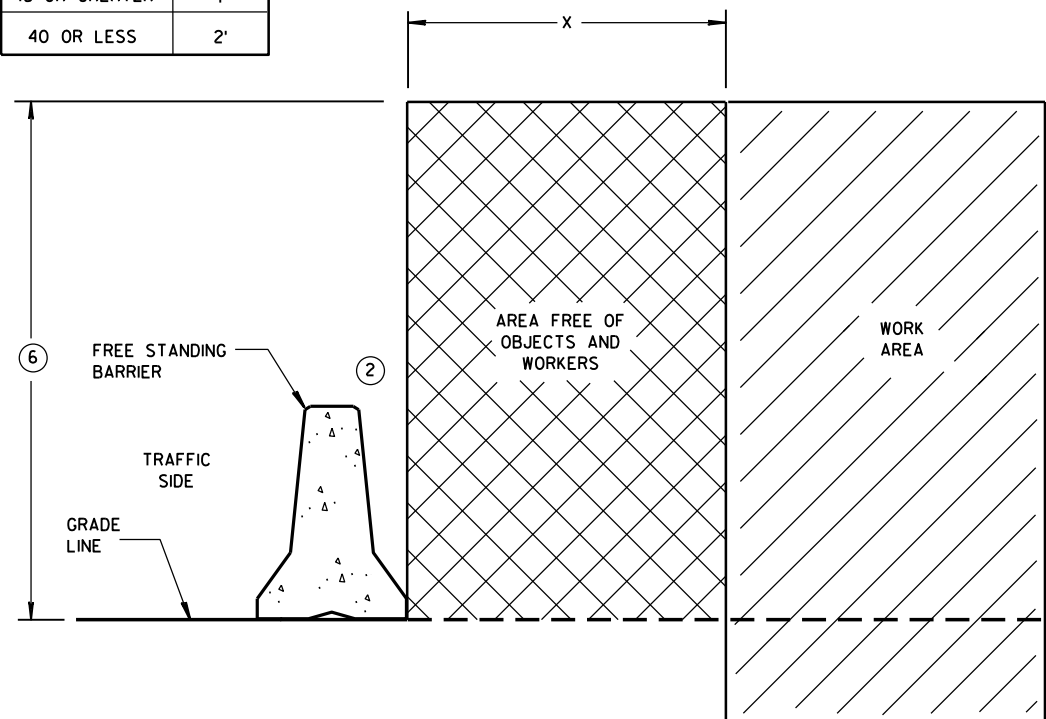


ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

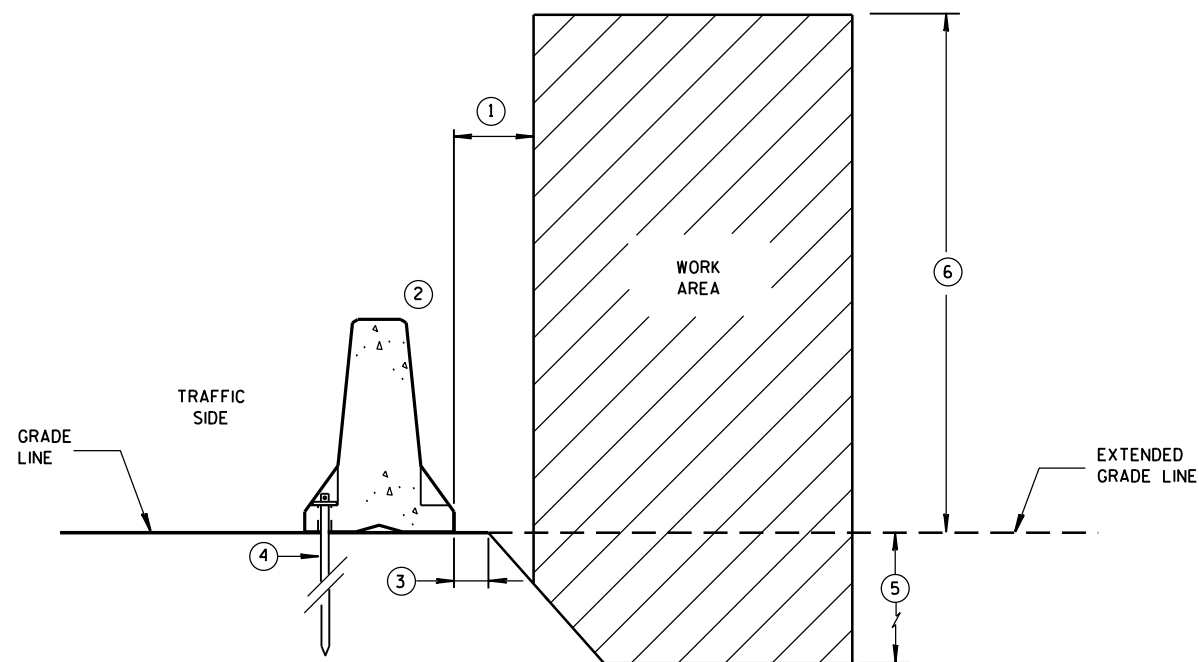


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

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



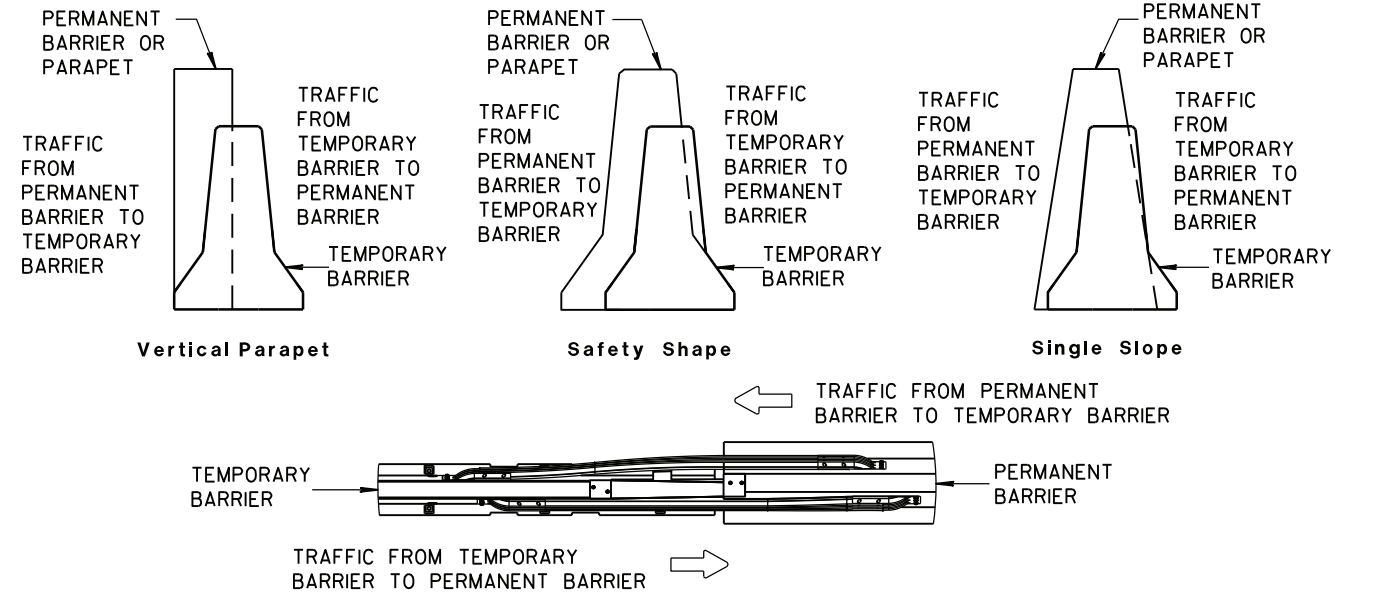
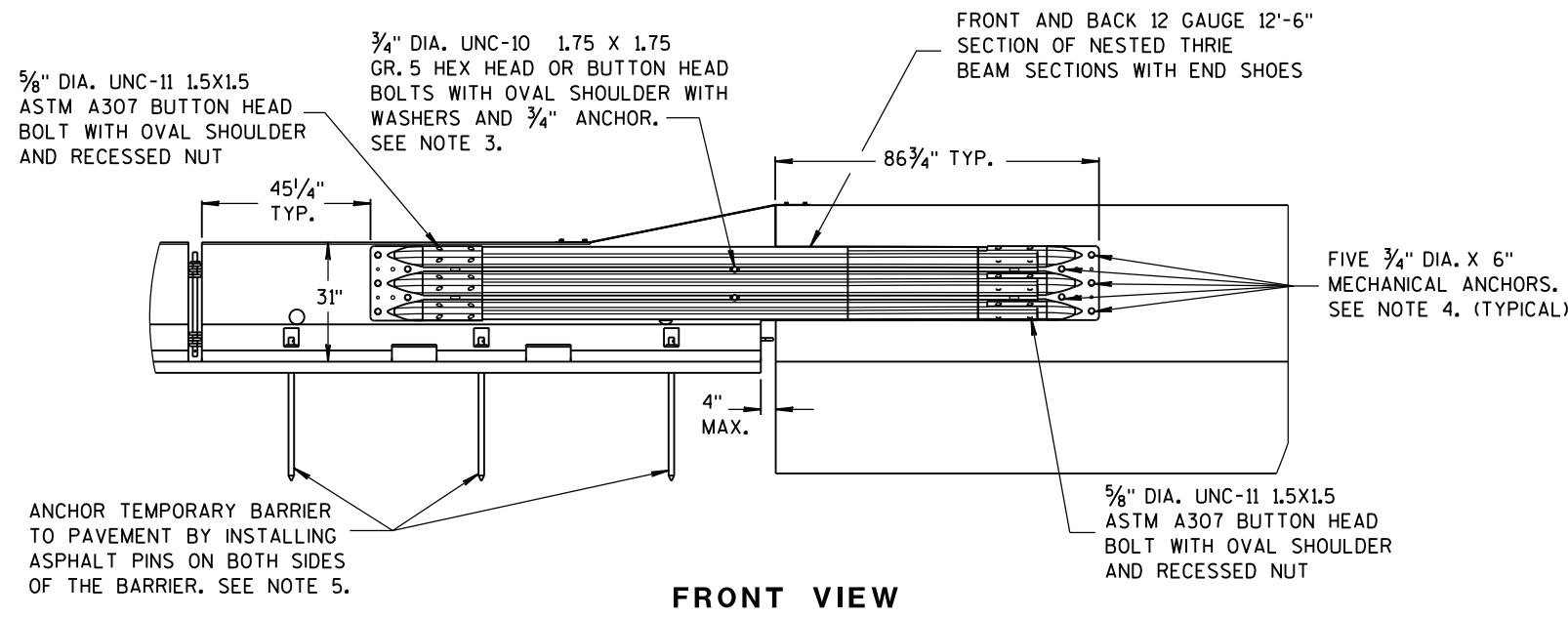
FREE STANDING BARRIER SPACE REQUIREMENTS



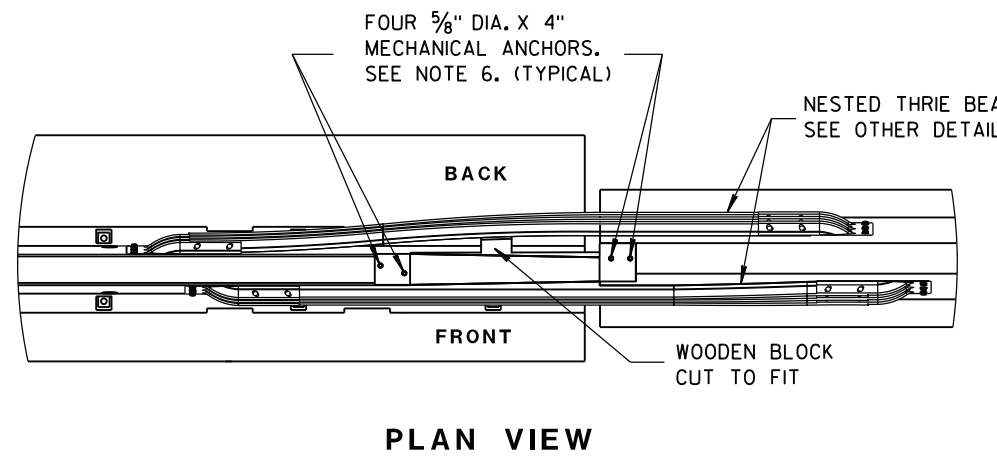
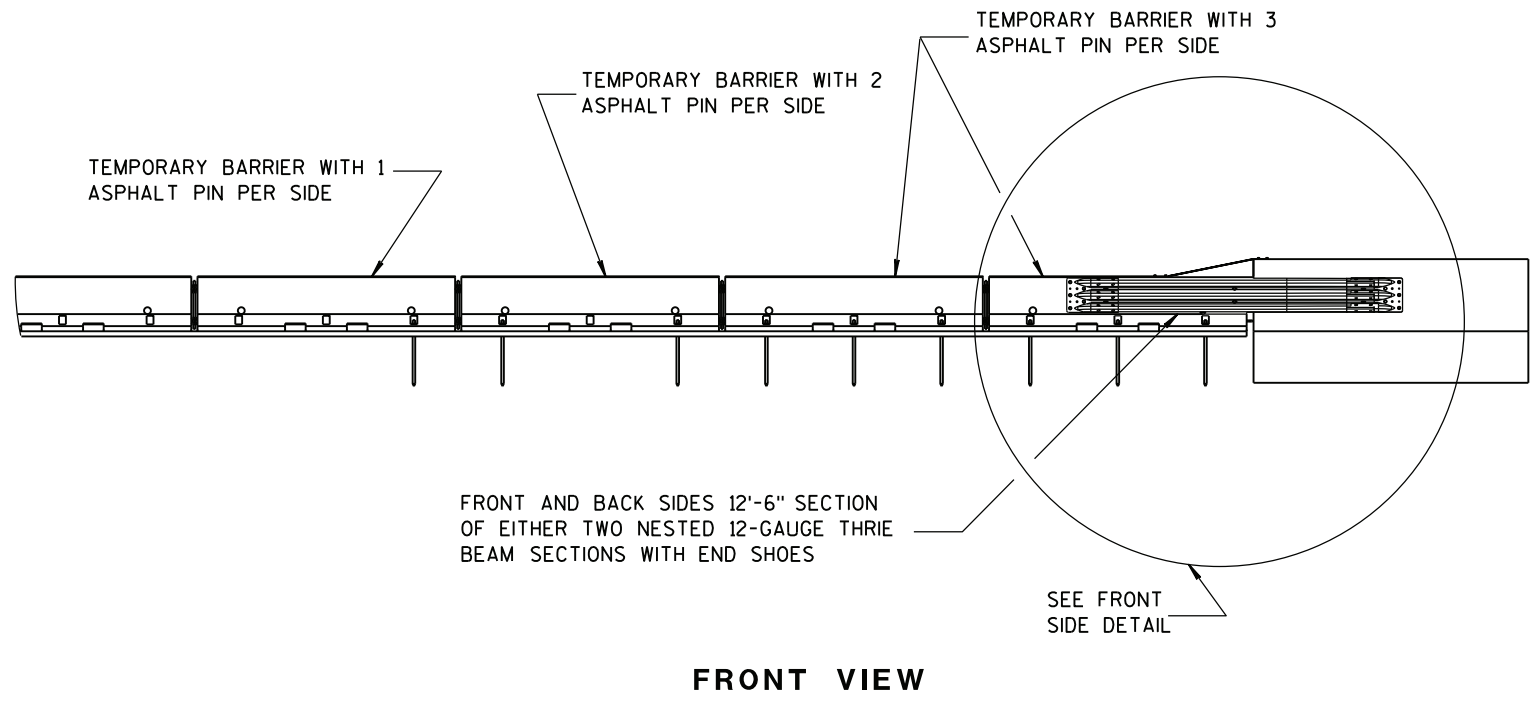
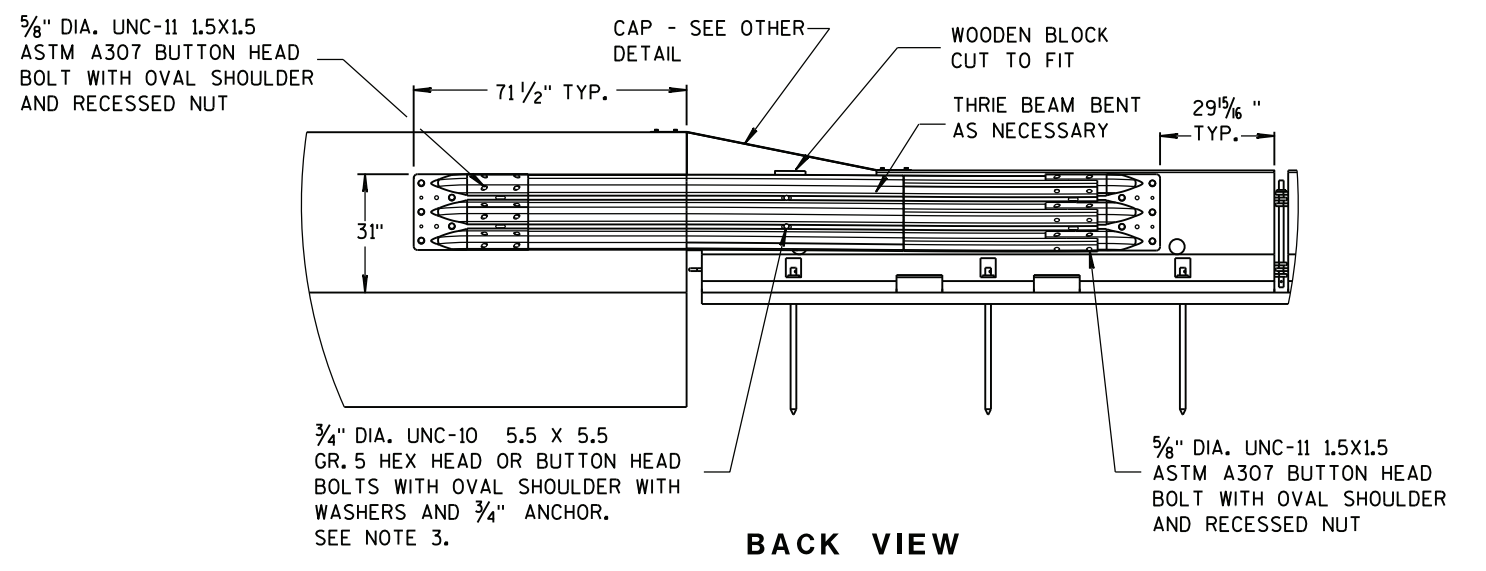
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

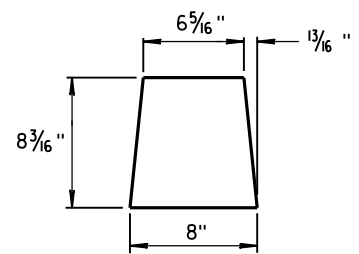


- NOTES**
- NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.
- CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
 - THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
 - MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
 - MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

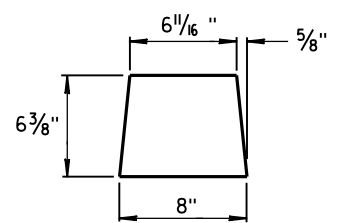


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

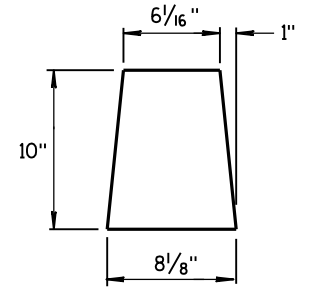
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



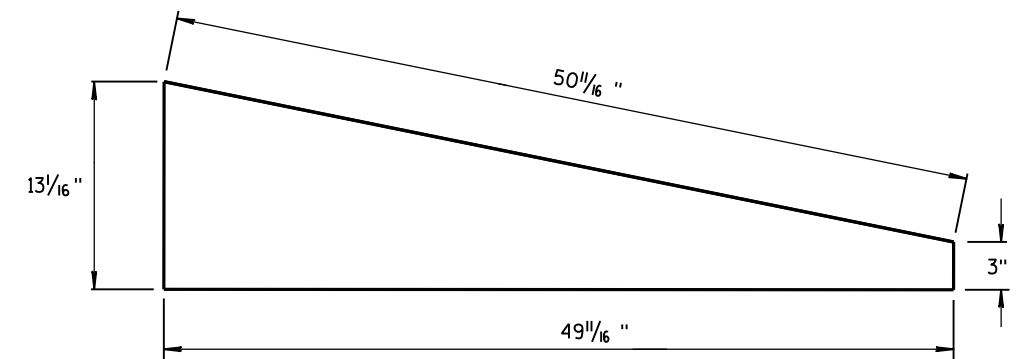
GUSSET 1



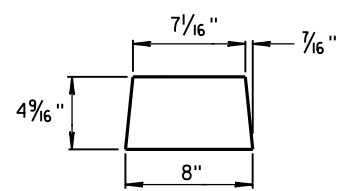
GUSSET 2



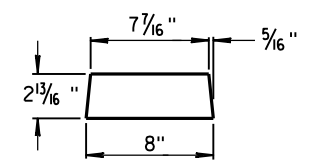
END PLATE



SIDE PLATE

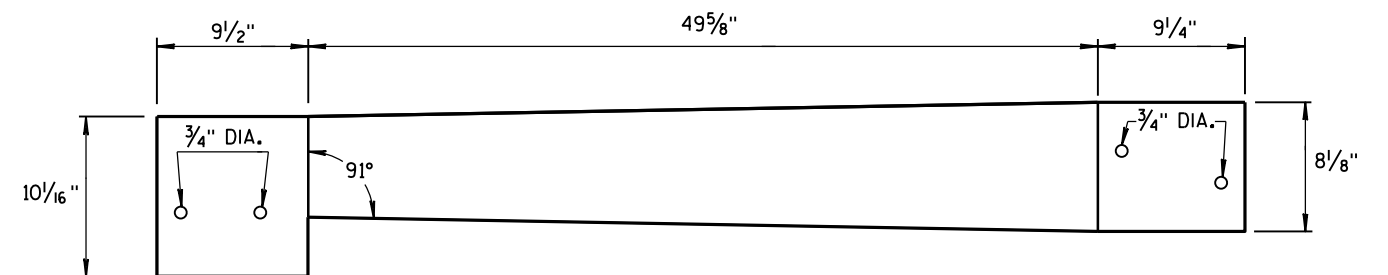


GUSSET 3

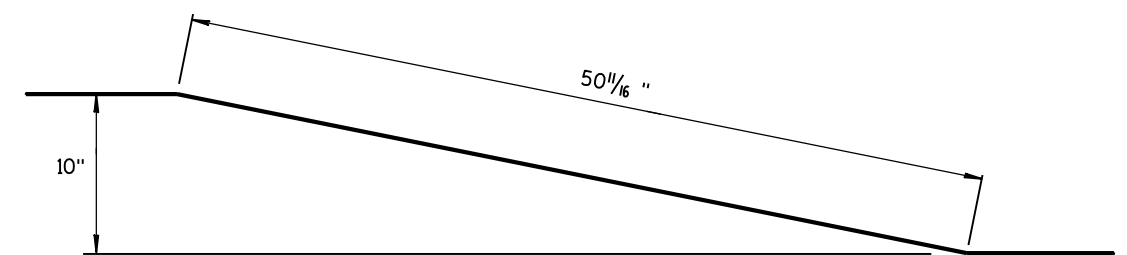


GUSSET 4

GUSSETS

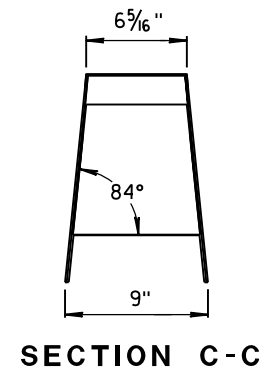
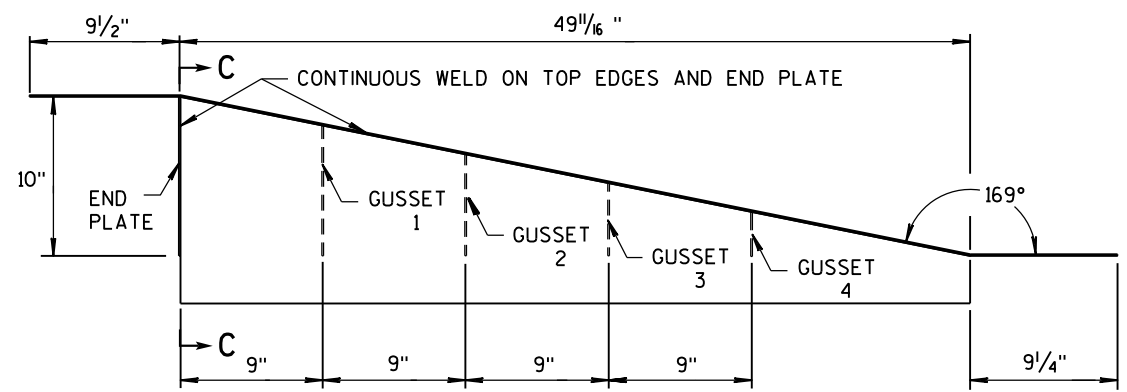
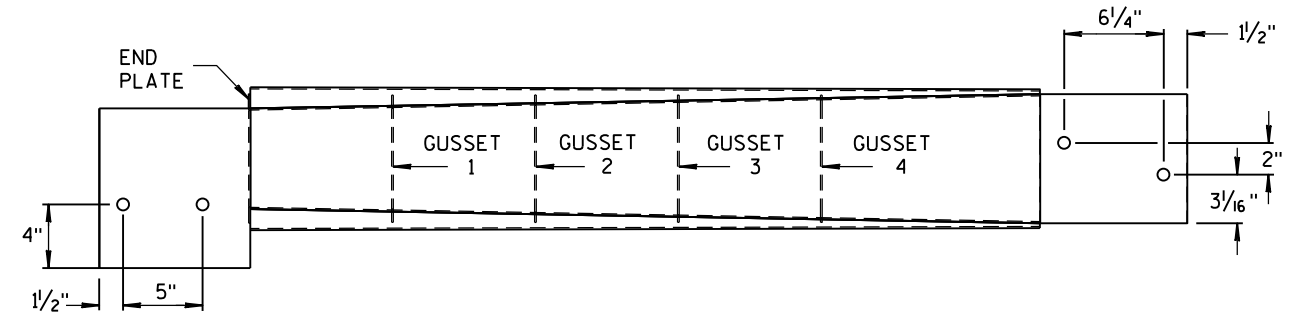


TOP PLATE



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

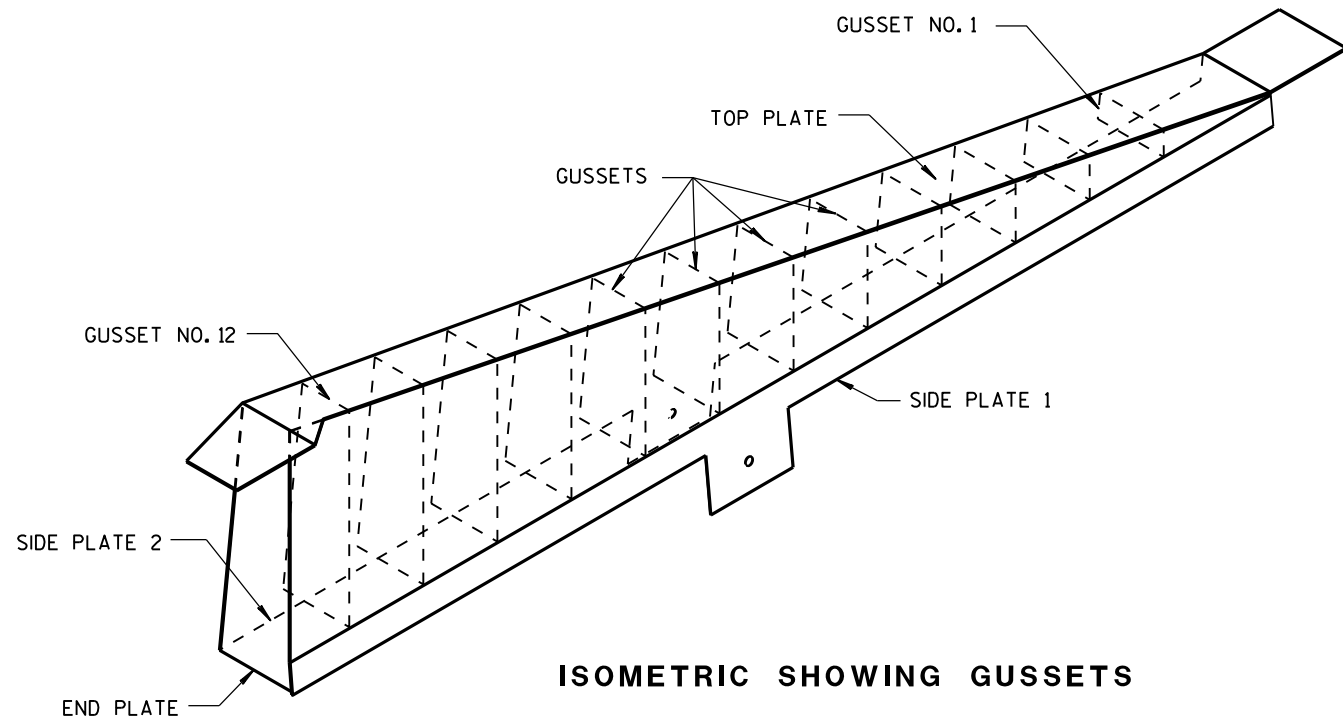
NOTES

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

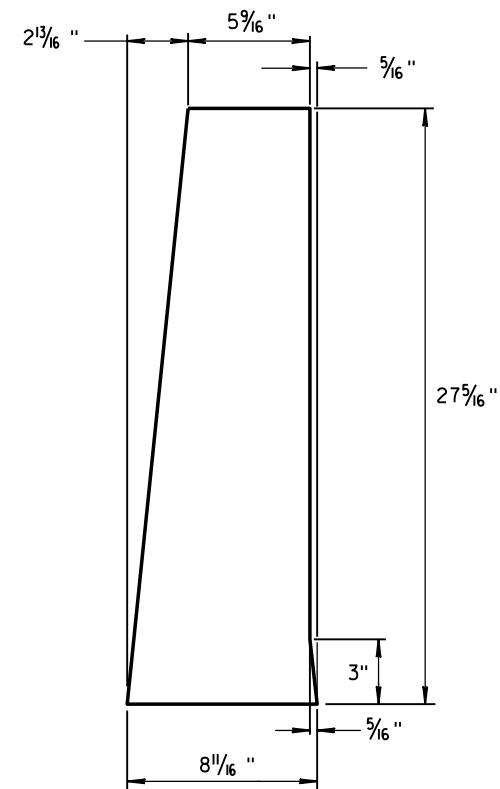
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

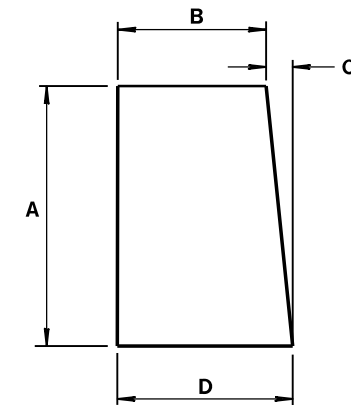


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

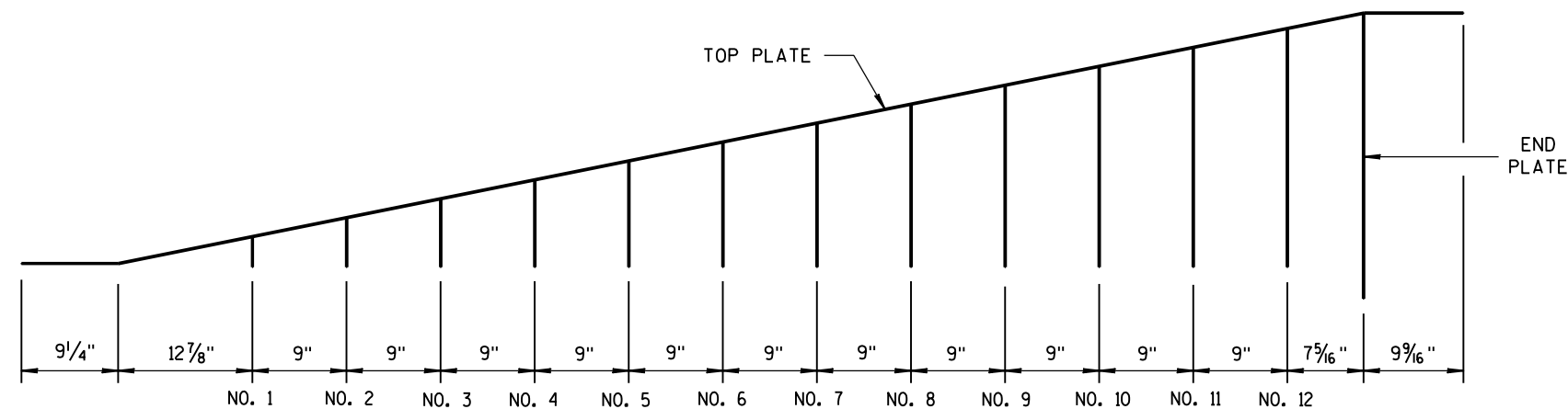
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

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

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

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

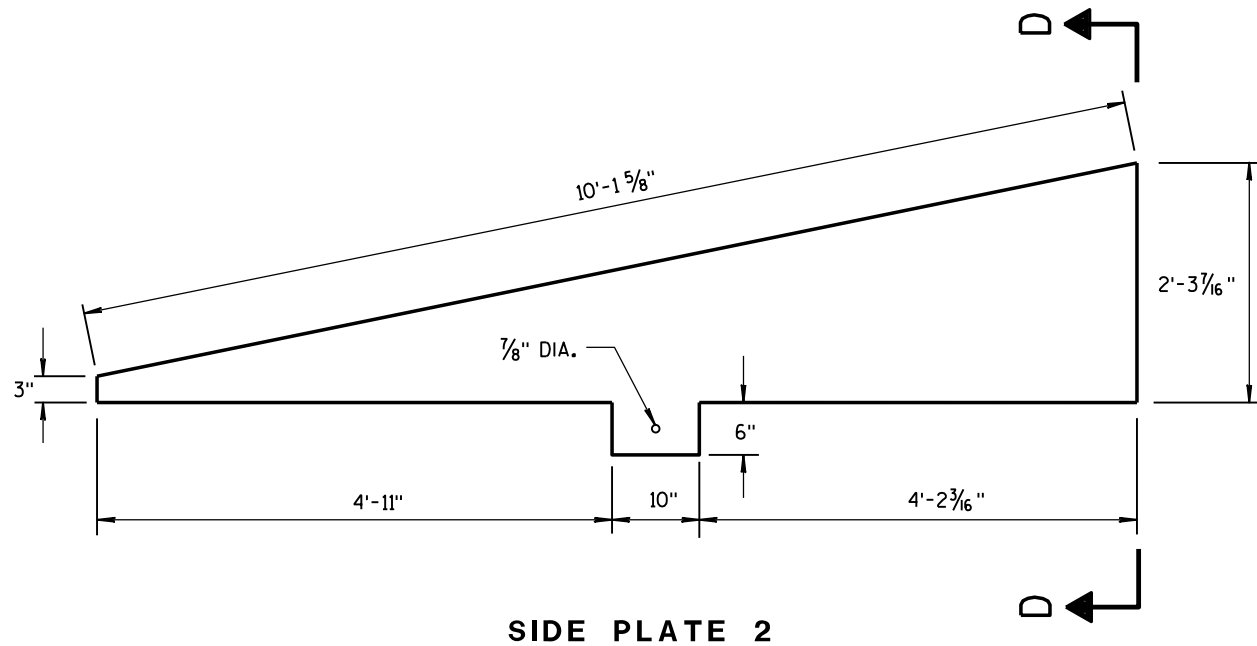


GUSSET LOCATION

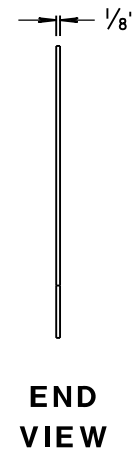
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

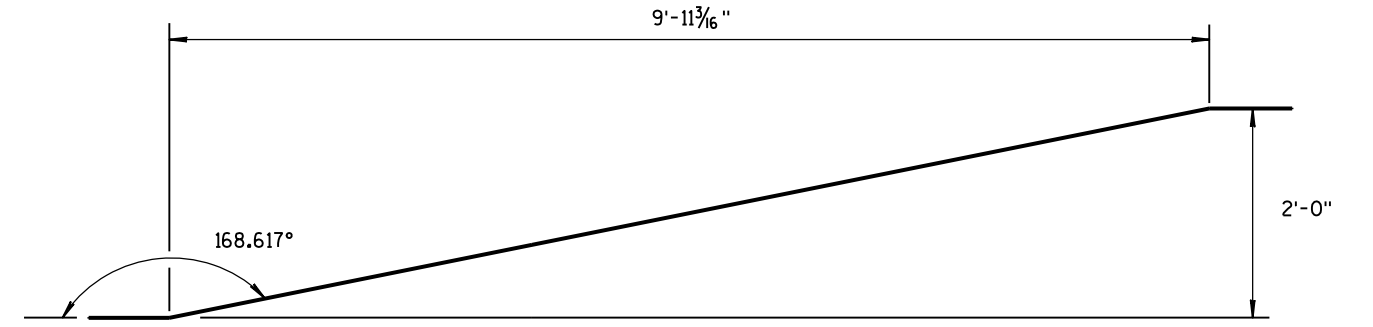
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



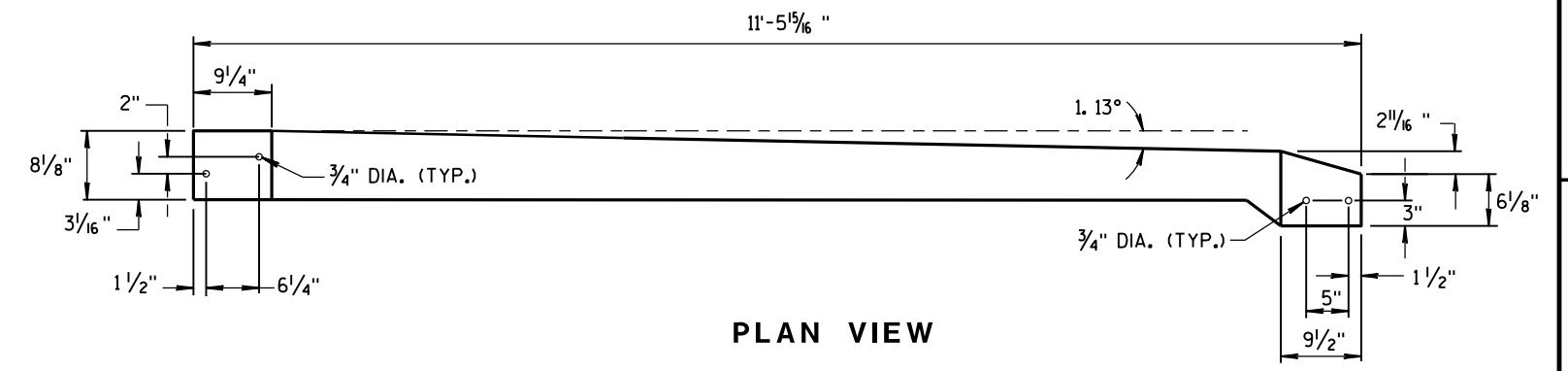
SIDE PLATE 2



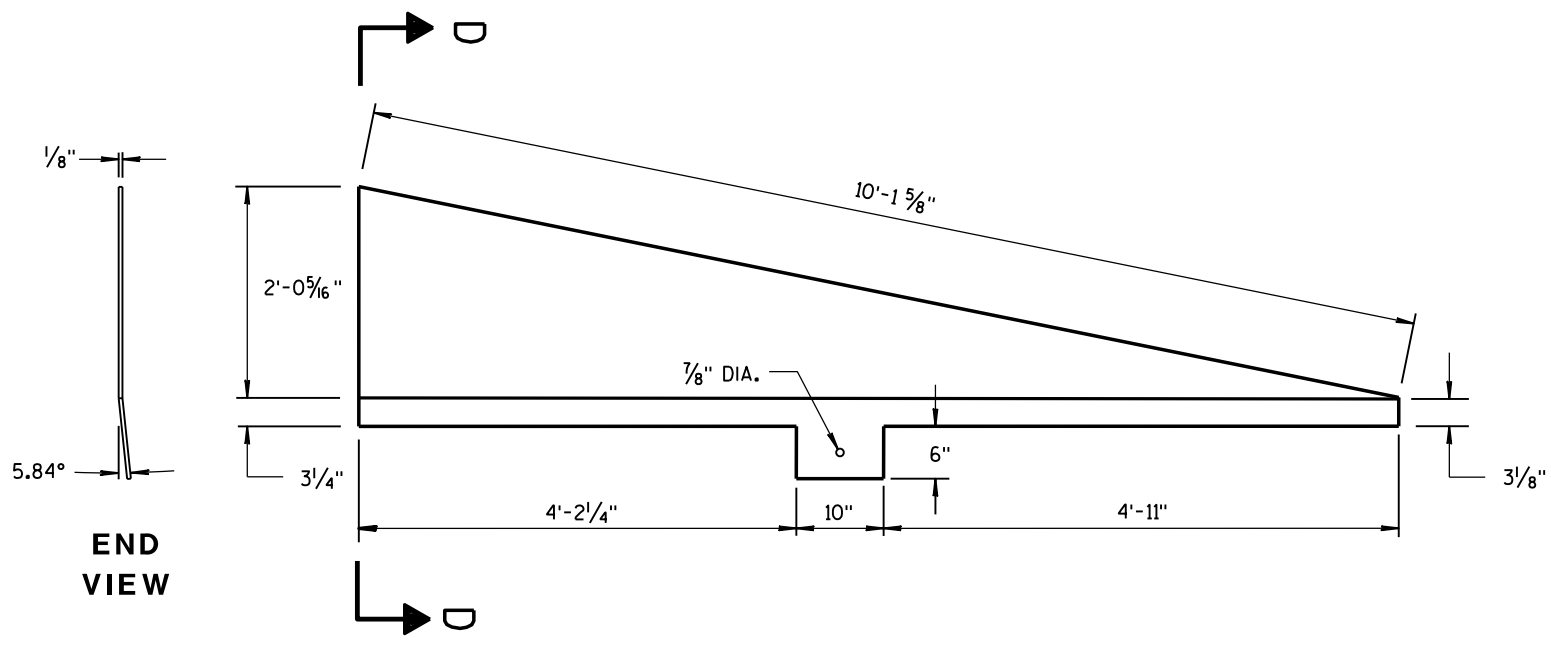
END VIEW



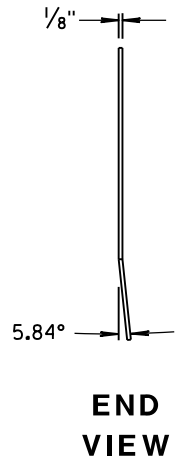
SIDE VIEW
TOP PLATE



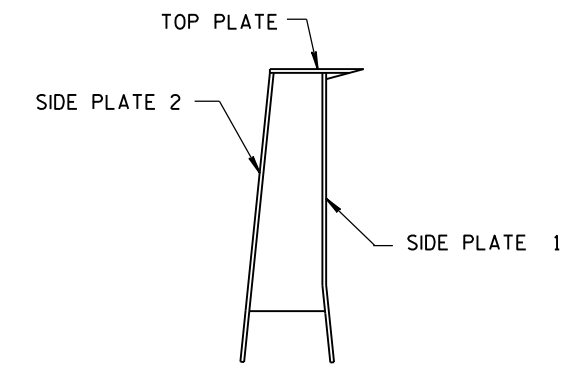
PLAN VIEW
TOP PLATE



SIDE PLATE 1



END VIEW



SECTION D-D

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

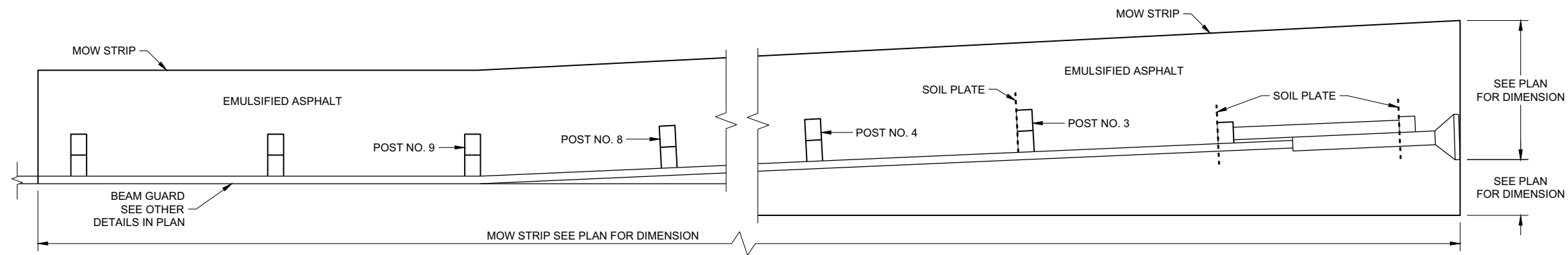
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR
FHWA	

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S.D.D. 14 B 7-15i

S.D.D. 14 B 7-15i

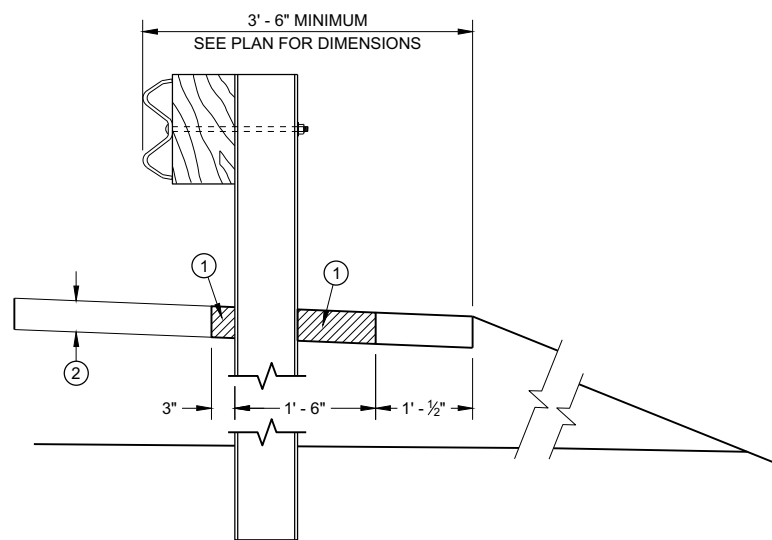


PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

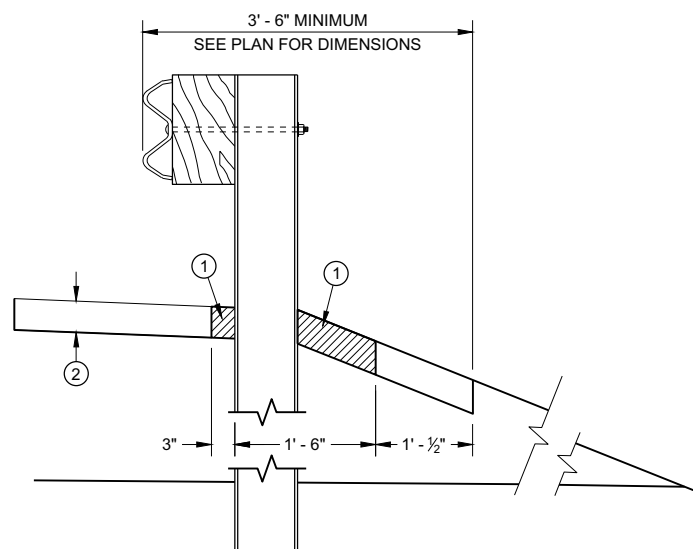
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

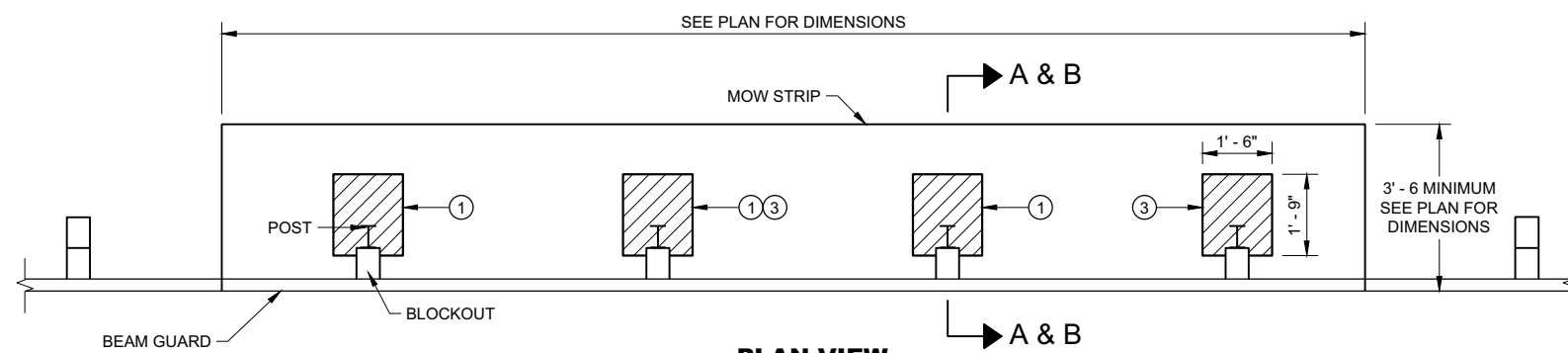
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



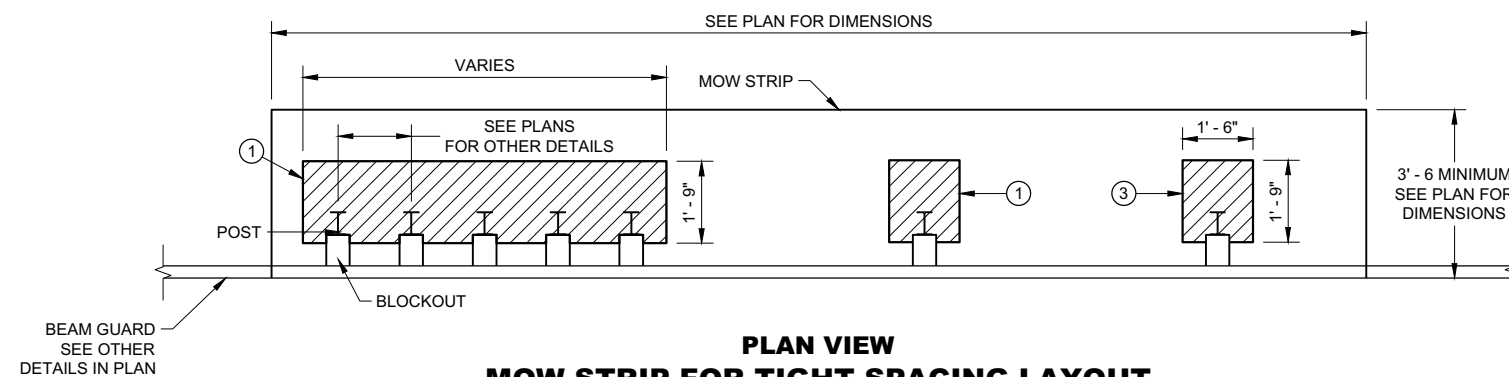
SECTION A - A



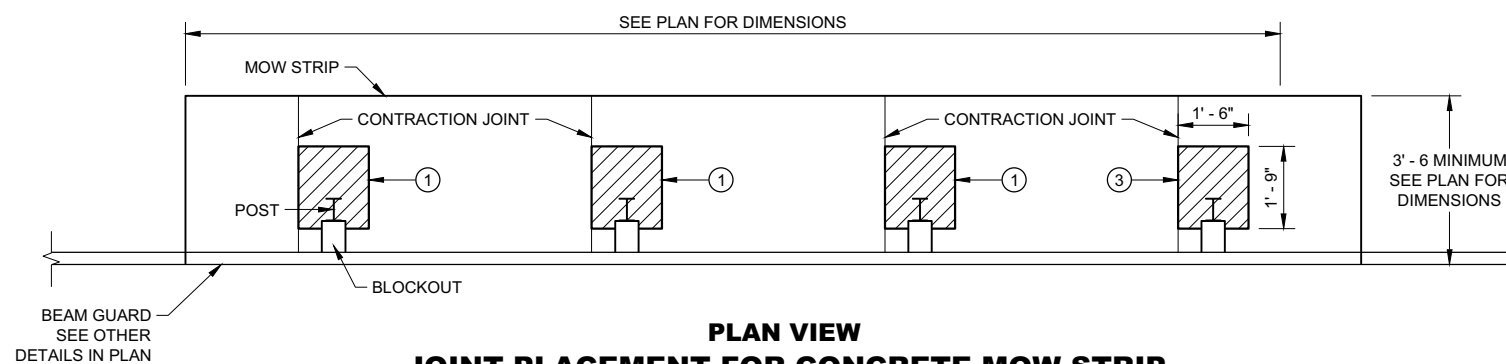
SECTION B - B



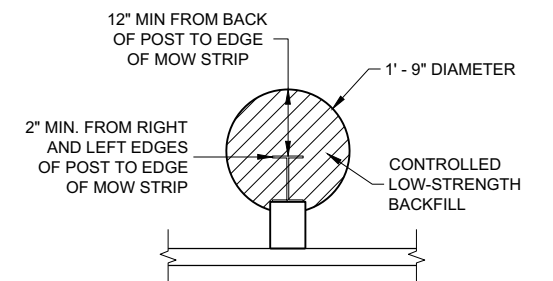
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



ALTERNATIVE HMA
MOW STRIP DESIGN

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

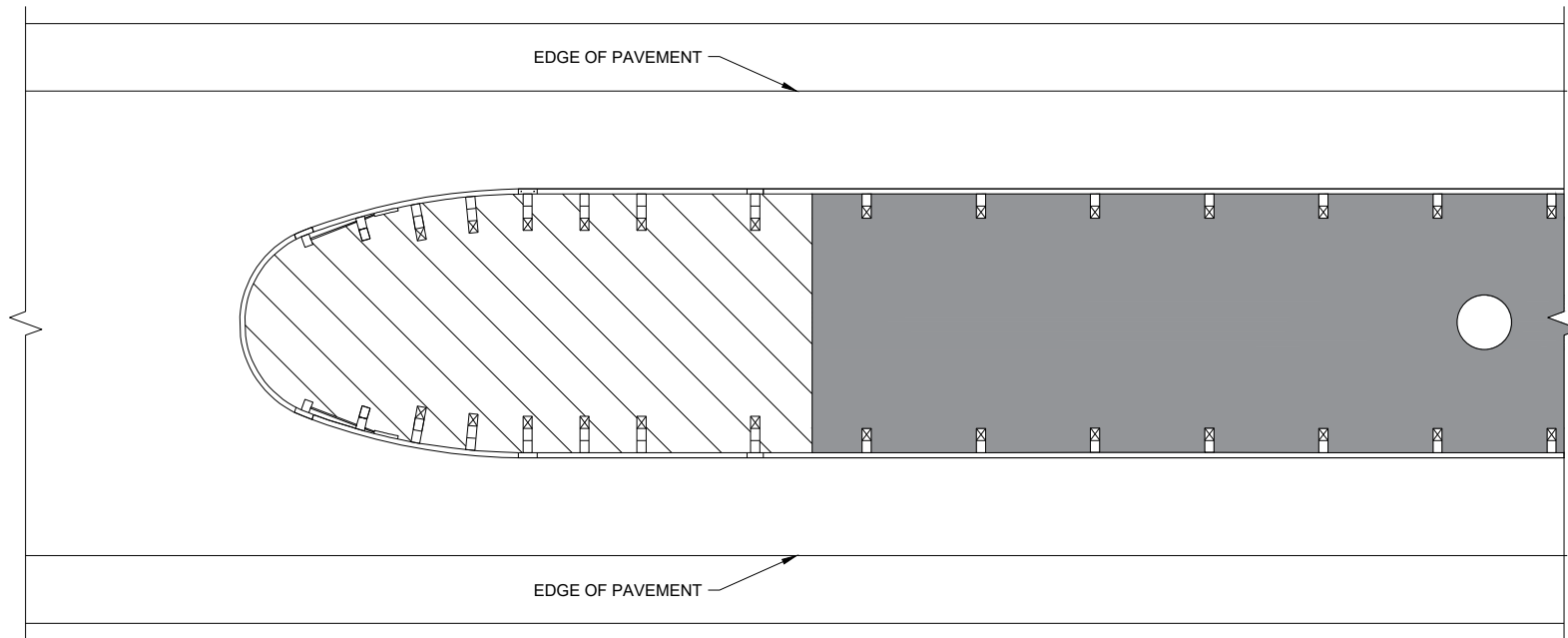
LEGEND

 CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

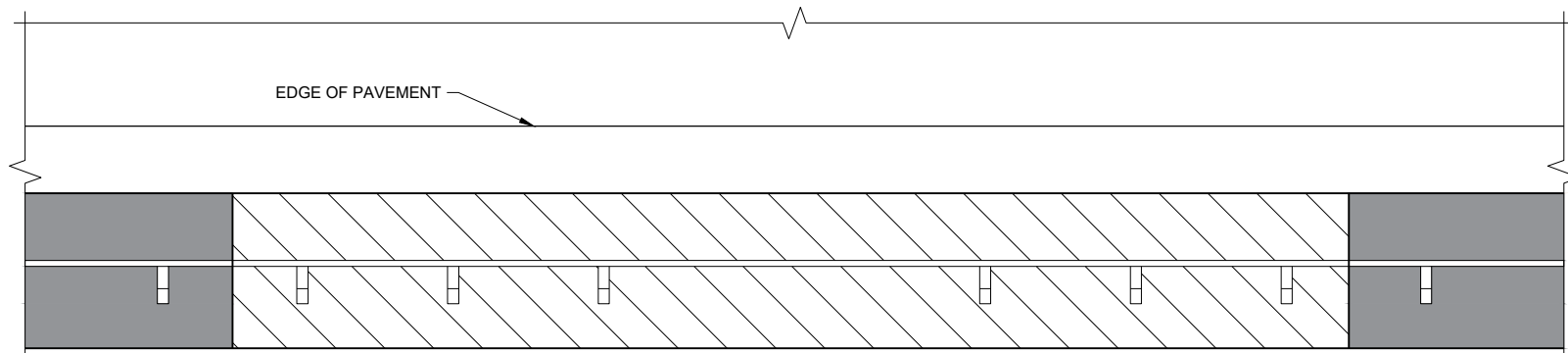
 EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

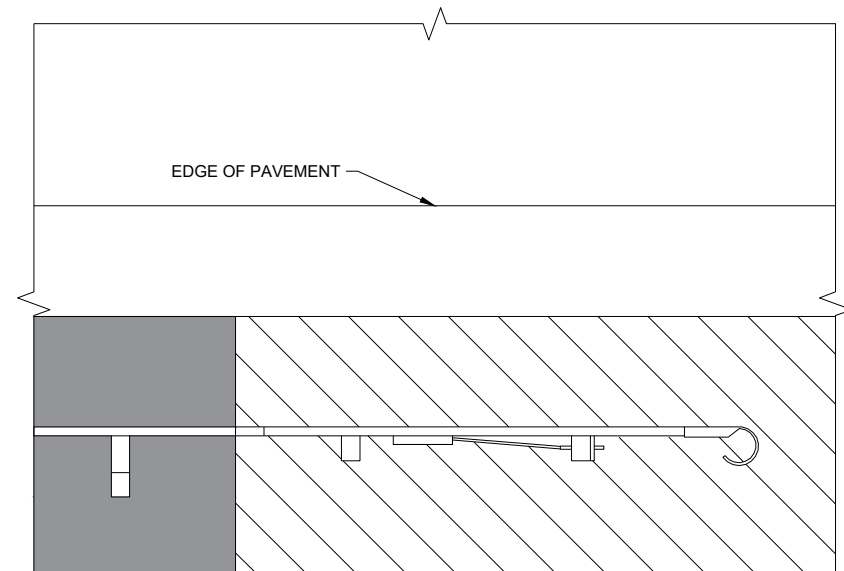
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



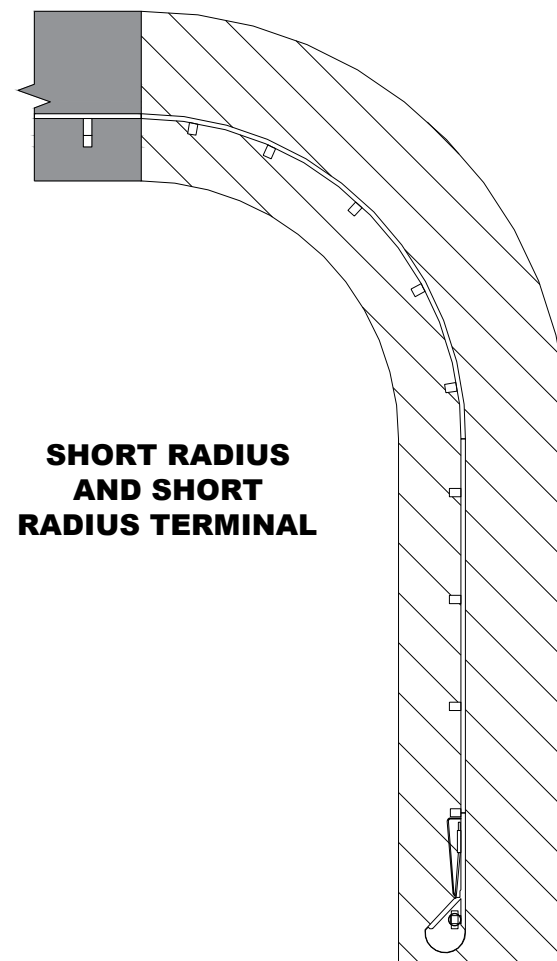
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



**SHORT RADIUS
AND SHORT
RADIUS TERMINAL**

6

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SDD 14B28 - 04b

SDD 14B28 - 04b

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

GENERAL NOTES

PROVIDE EXPANSION JOINTS WHERE THERE ARE EXISTING EXPANSION JOINTS OR AT THE END OF EACH POUR.

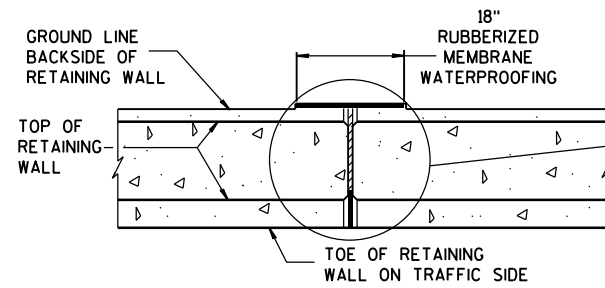
NO HORIZONTAL STEEL CROSSES EXPANSION JOINTS.

CONSTRUCT PER STANDARD SPECIFICATION 603. SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

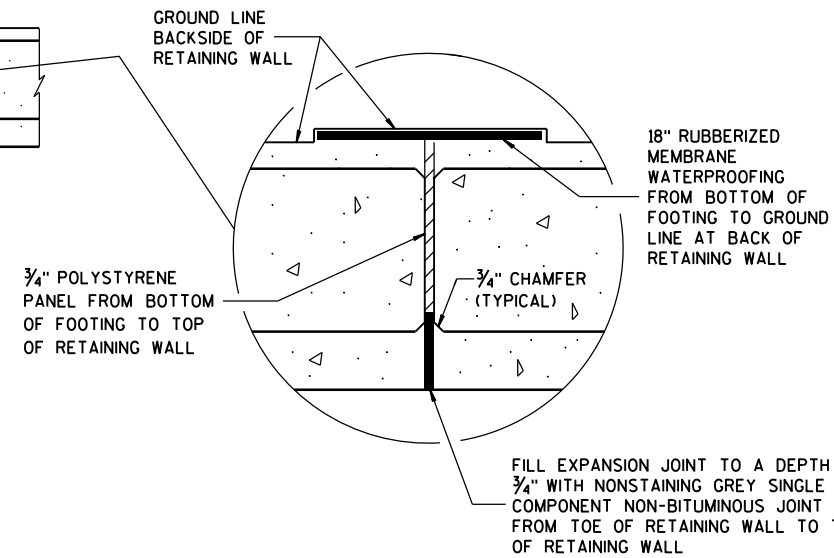
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE $\frac{3}{4}$ " BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR.



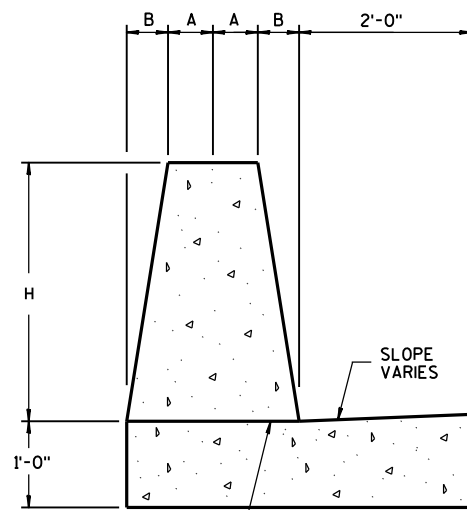
**VERTICAL EXPANSION JOINT
PLAN VIEW**



FILL EXPANSION JOINT TO A DEPTH OF $\frac{3}{4}$ " WITH NONSTAINING GREY SINGLE COMPONENT NON-BITUMINOUS JOINT SEALER FROM TOE OF RETAINING WALL TO TOP OF RETAINING WALL



DELINEATION

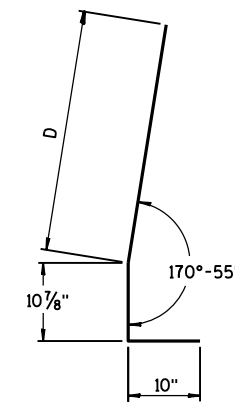


OPTIONAL CONSTRUCTION JOINT, ROUGH FINISHED

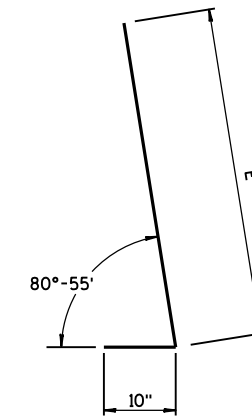
ROADSIDE RETAINING WALL

BARRIER WALL DIMENSIONS

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6 $\frac{1}{4}$	5 $\frac{3}{4}$	8
42	5 $\frac{1}{4}$	6 $\frac{3}{4}$	10
56	3	9	11



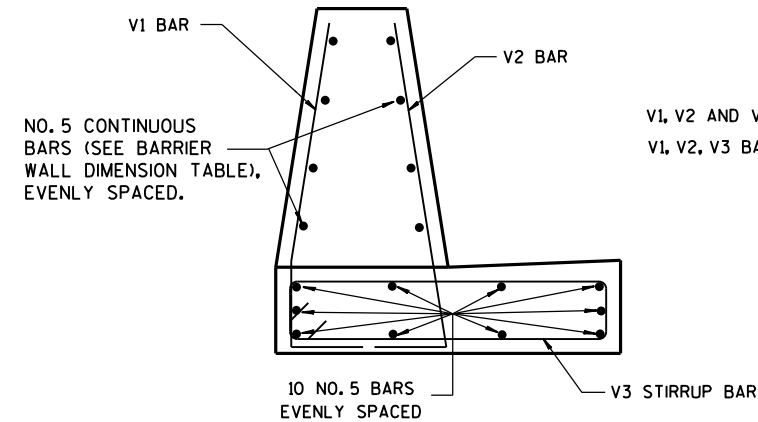
V1 BAR BENDING DETAIL



V2 BAR BENDING DETAIL

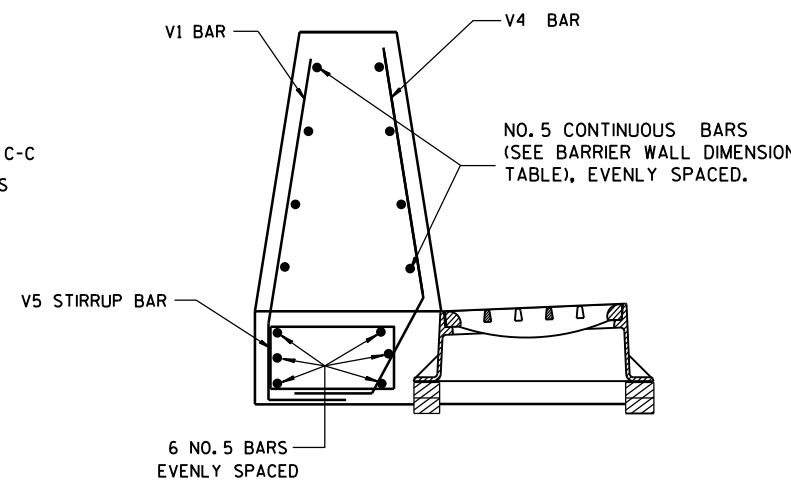
**BAR CHART
ROADSIDE RETAINING WALL**

BARRIER HEIGHT	V1 BAR D	V2 BAR E	V4 BAR F
32"	2'-5 $\frac{1}{2}$ "	3'-4 $\frac{1}{2}$ "	2'-6 $\frac{1}{2}$ "
36"	2'-9 $\frac{1}{2}$ "	3'-9 $\frac{3}{4}$ "	2'-10 $\frac{3}{4}$ "
42"	3'-3 $\frac{1}{2}$ "	4'-2 $\frac{1}{2}$ "	3'-4 $\frac{3}{4}$ "
56"	4'-5 $\frac{3}{4}$ "	5'-4 $\frac{3}{4}$ "	4'-6 $\frac{3}{4}$ "



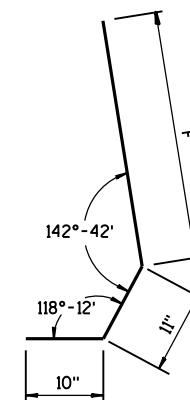
**ROADSIDE RETAINING WALL
NORMAL BAR PLACEMENT**

V1, V2 AND V3 ARE SPACED 18" C-C
V1, V2, V3 BARS ARE NO. 5 BARS

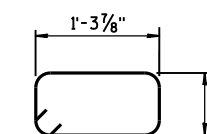


**ROADSIDE RETAINING WALL
BAR PLACEMENT NEAR
INLET**

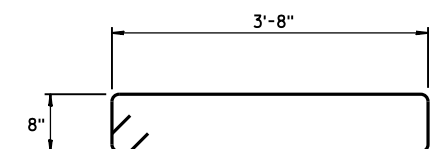
NO. 5 CONTINUOUS BARS (SEE BARRIER WALL DIMENSION TABLE), EVENLY SPACED.



V4 BAR BENDING DETAIL



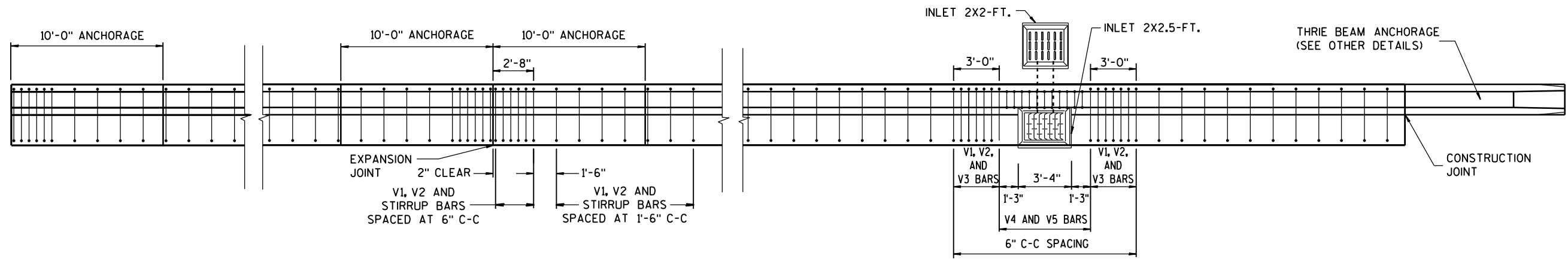
V5 STIRRUP BAR BENDING DETAIL



V3 STIRRUP BAR BENDING DETAIL

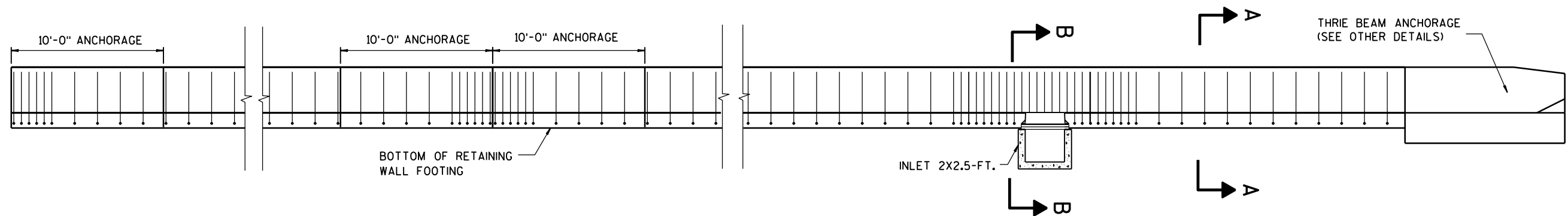
**SINGLE SLOPE
ROADSIDE RETAINING WALL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



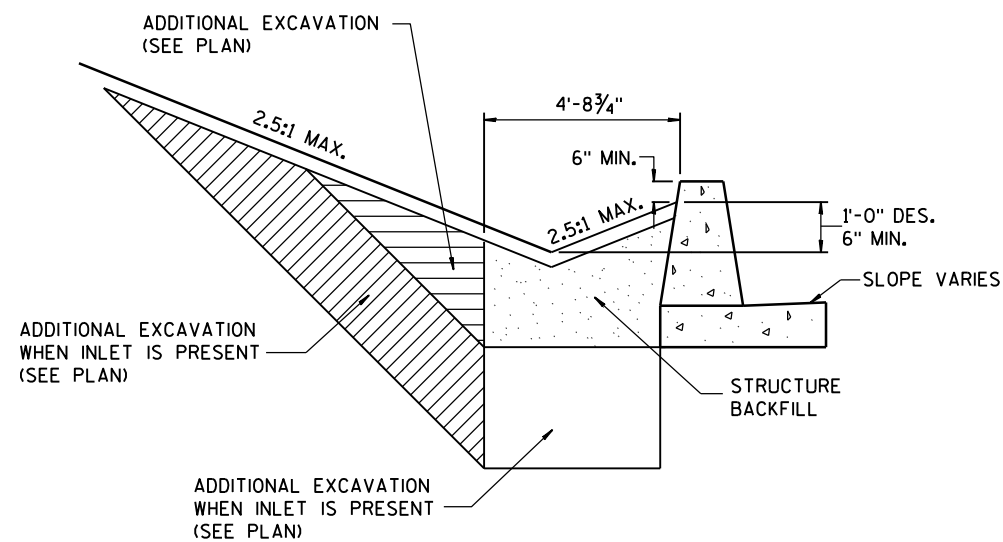
PLAN VIEW

NOTE: HORIZONTAL BARS ARE NOT SHOWN. SEE OTHER DETAILS FOR HORIZONTAL BARS.

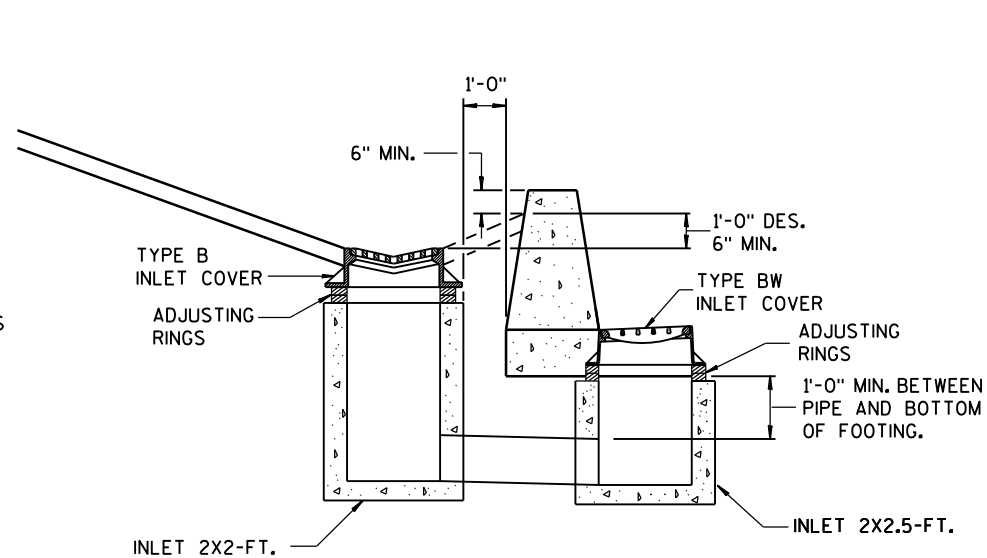


ELEVATION VIEW

NOTE: HORIZONTAL BARS ARE NOT SHOWN. SEE OTHER DETAILS FOR HORIZONTAL BARS.

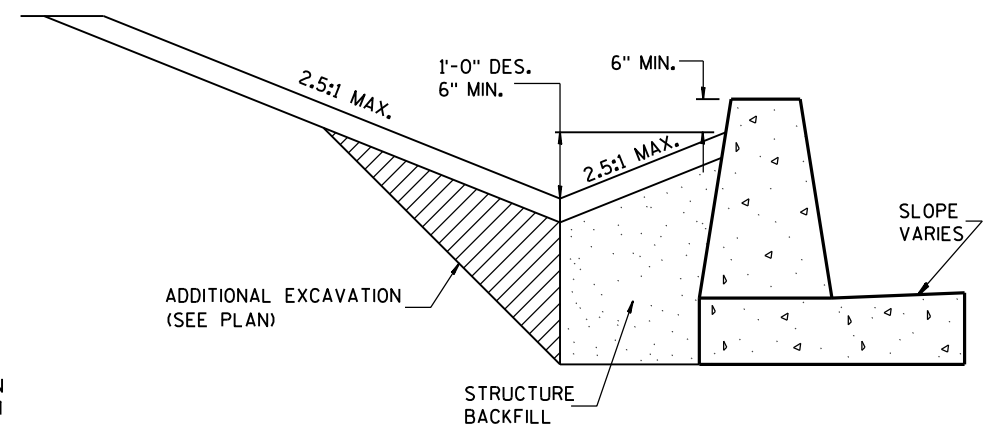


SECTION A-A



SECTION B-B

MINIMUM DESIGN OF EARTH WORK FOR INLET



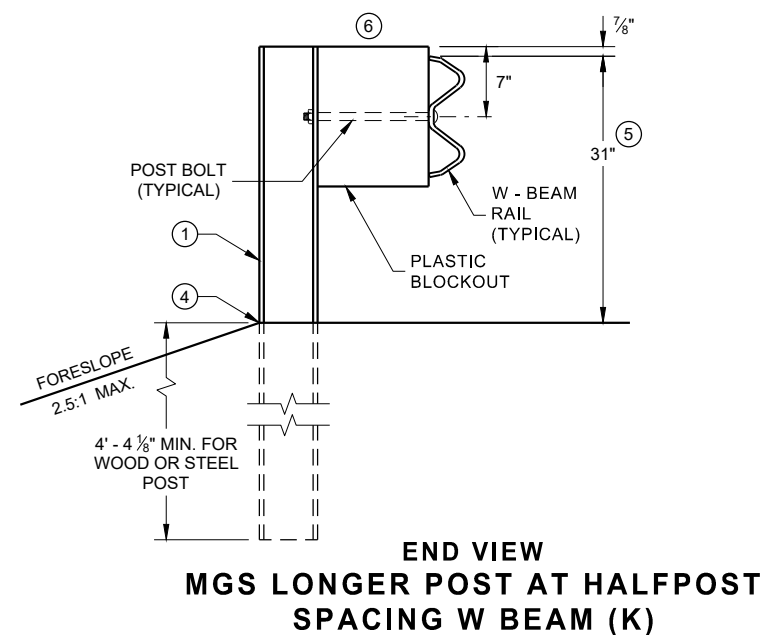
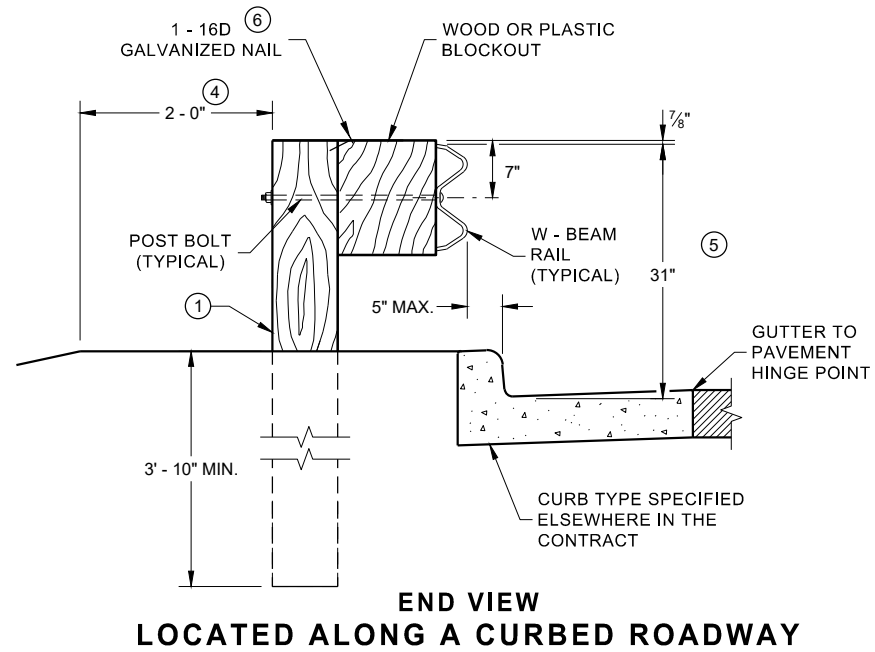
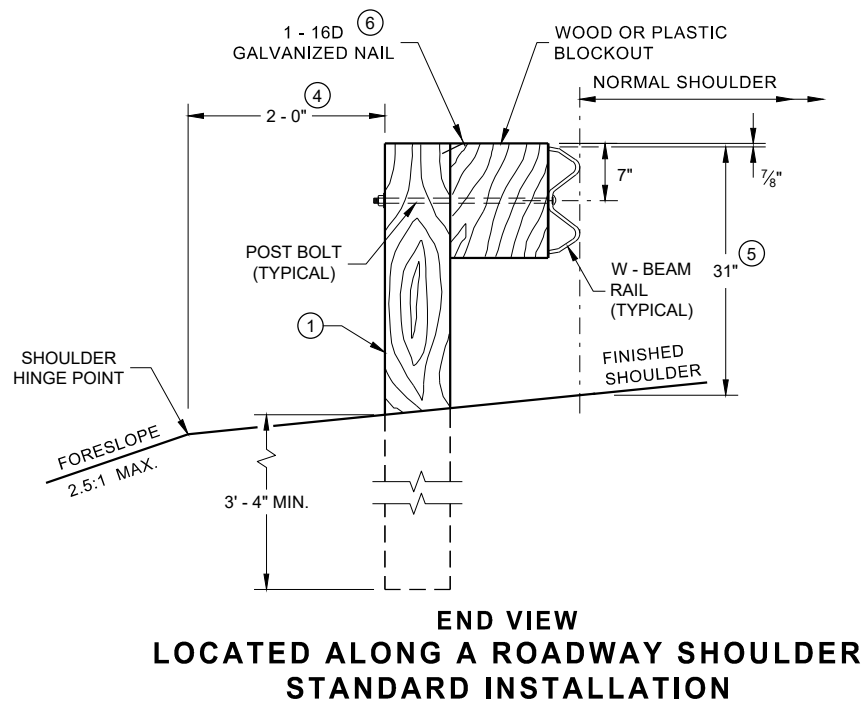
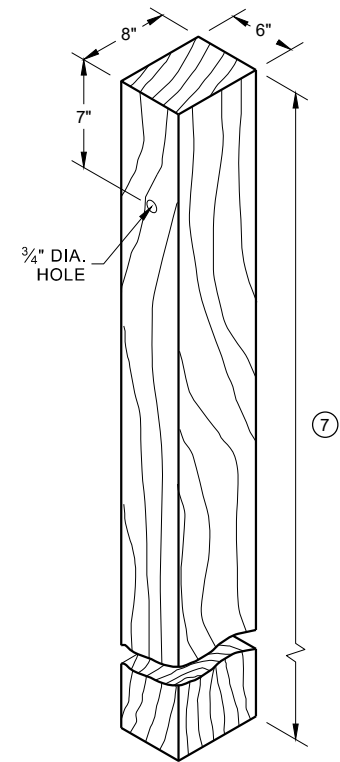
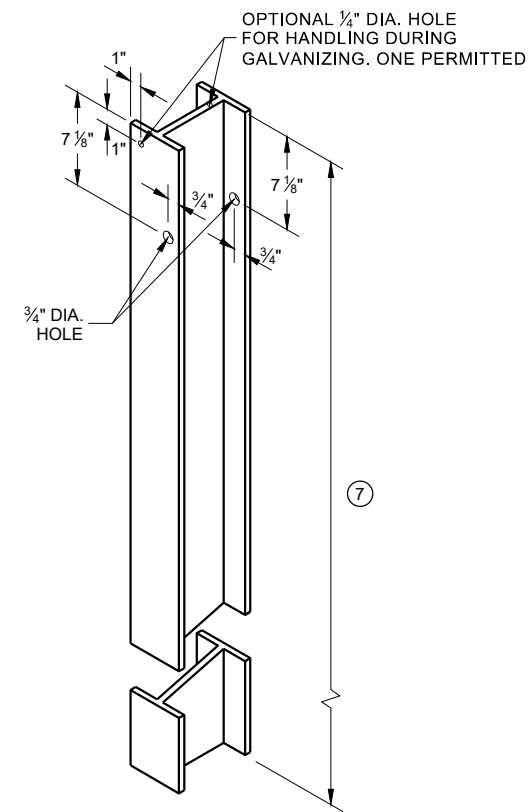
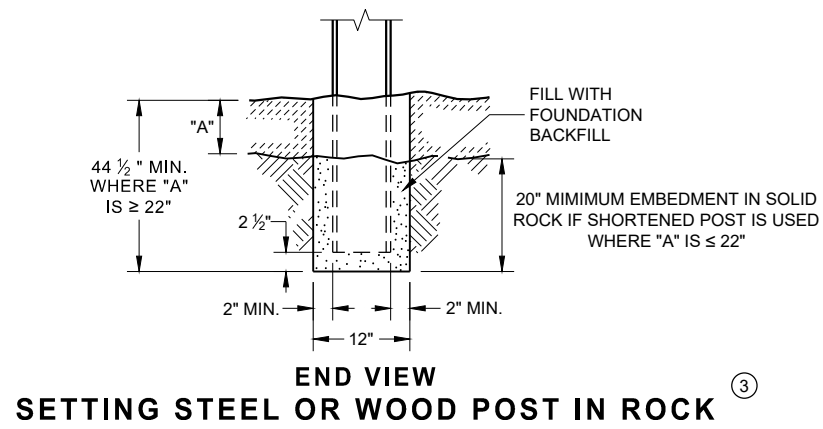
MINIMUM DESIGN OF EARTH WORK

**SINGLE SLOPE
ROADSIDE RETAINING WALL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

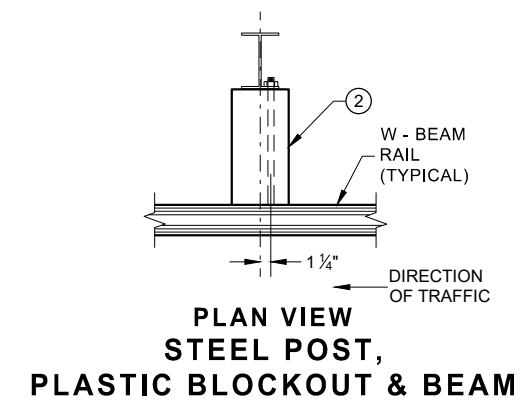
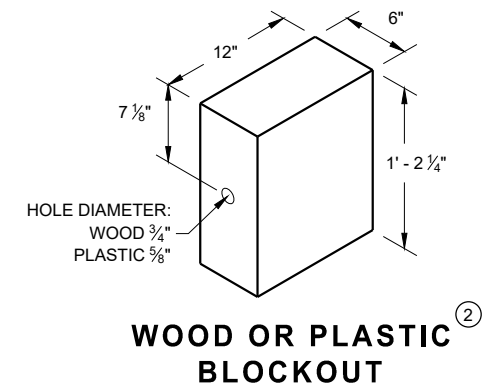
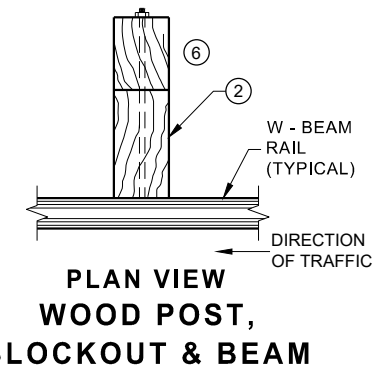
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

- 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 THE 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".



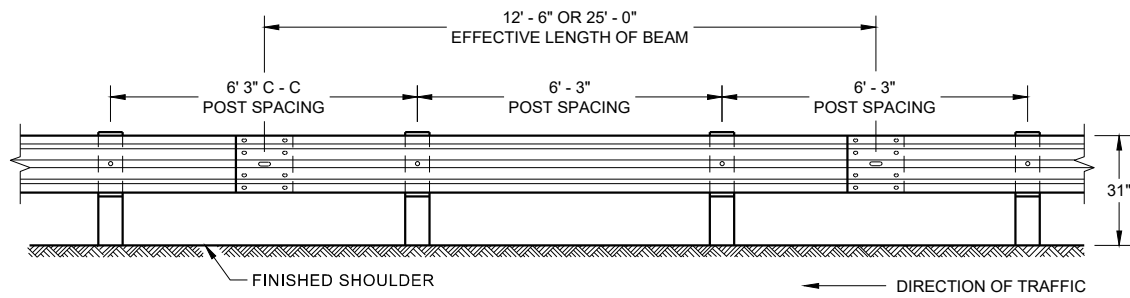
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ①

WOOD POST (6" X 8") NOMINAL ①

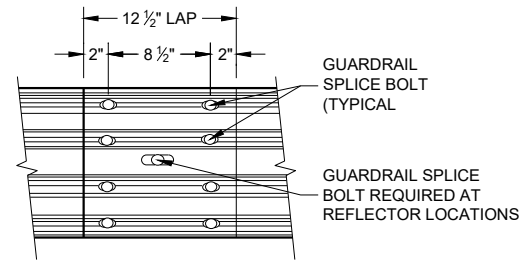


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



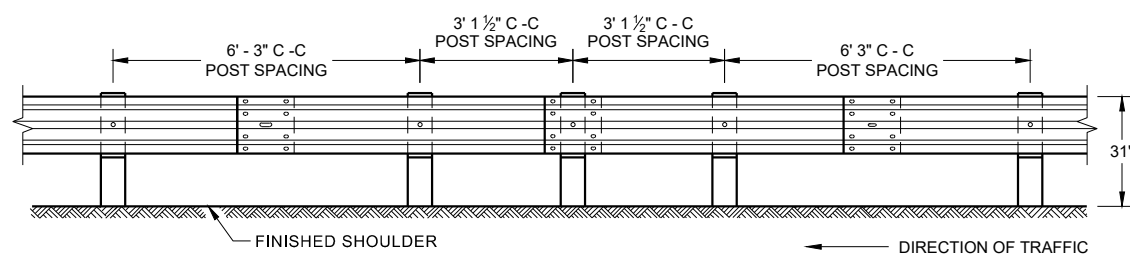
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



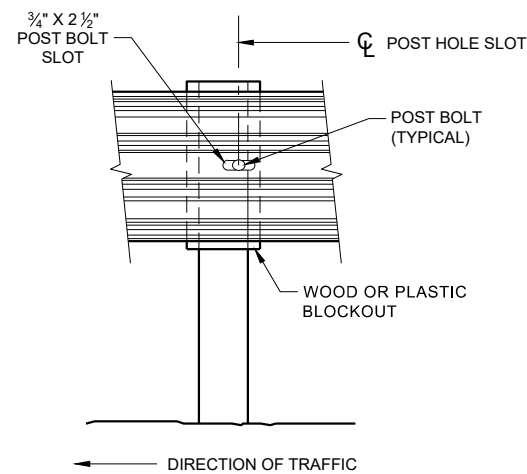
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

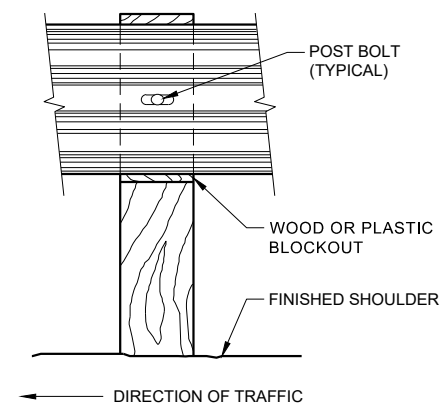
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



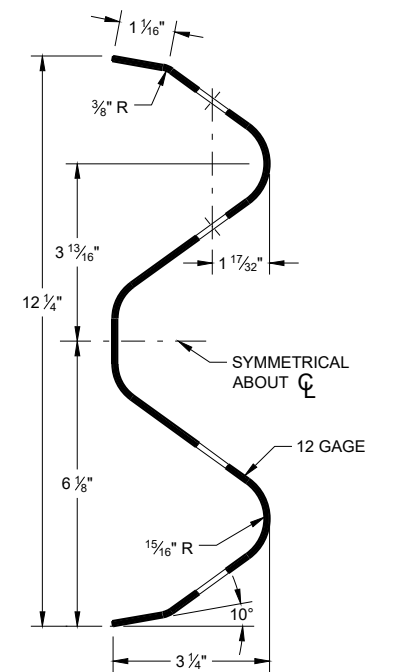
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



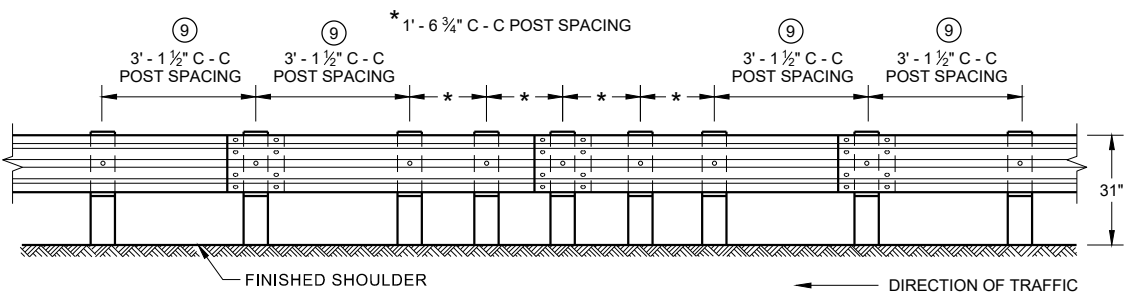
FRONT VIEW AT STEEL POST



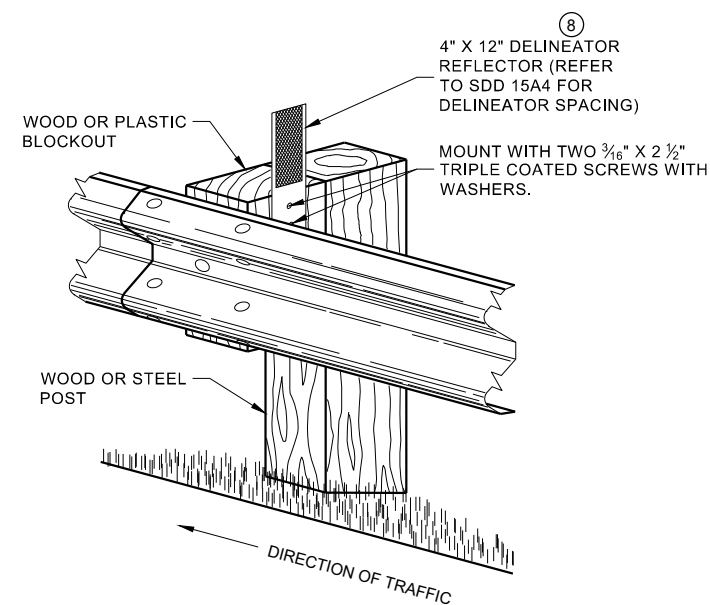
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

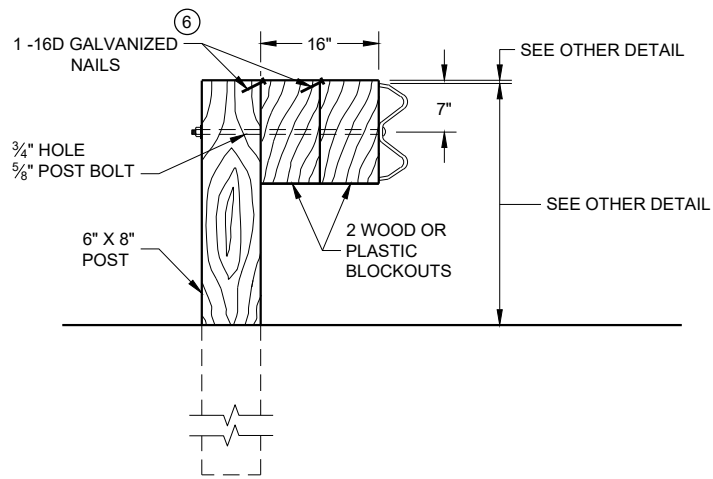
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B42 - 07b

SDD 14B42 - 07b

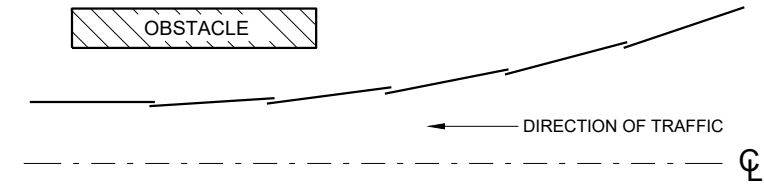
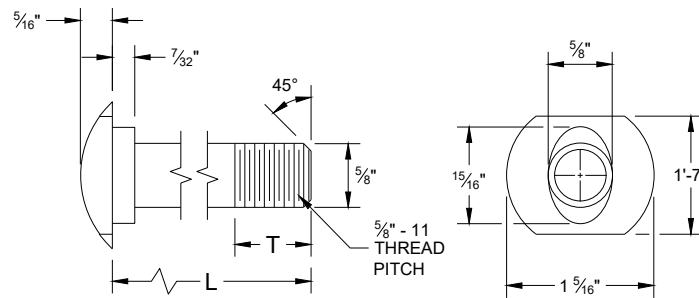


DETAIL FOR 16" BLOCKOUT DEPTH

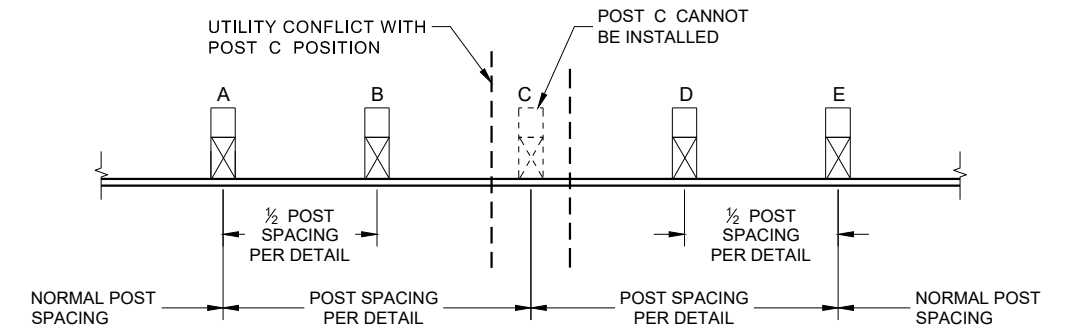
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

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.



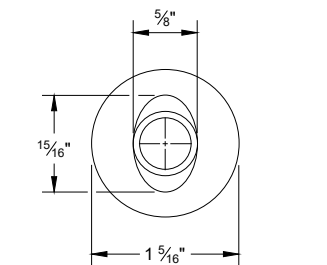
**PLAN VIEW
BEAM LAPPING DETAIL**



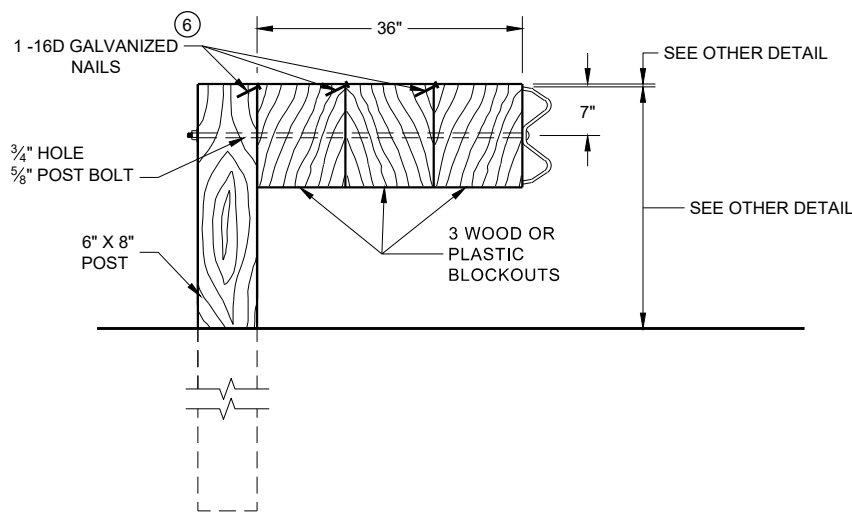
**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

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"

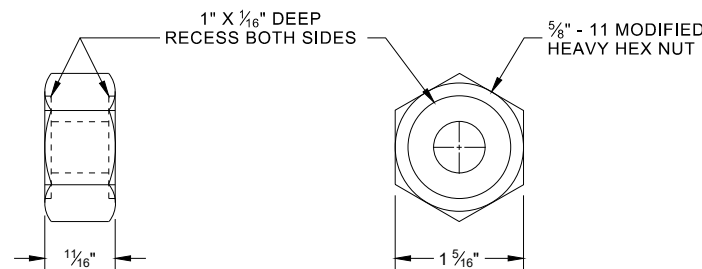


ALTERNATE BOLT HEAD

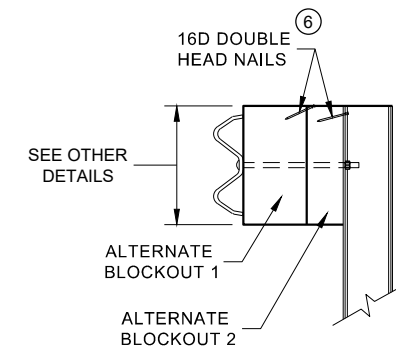


DETAIL FOR 36" BLOCKOUT DEPTH

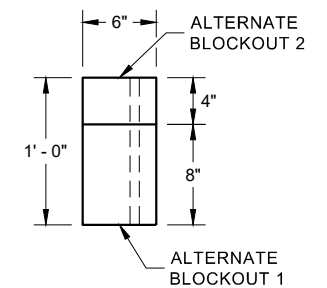
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



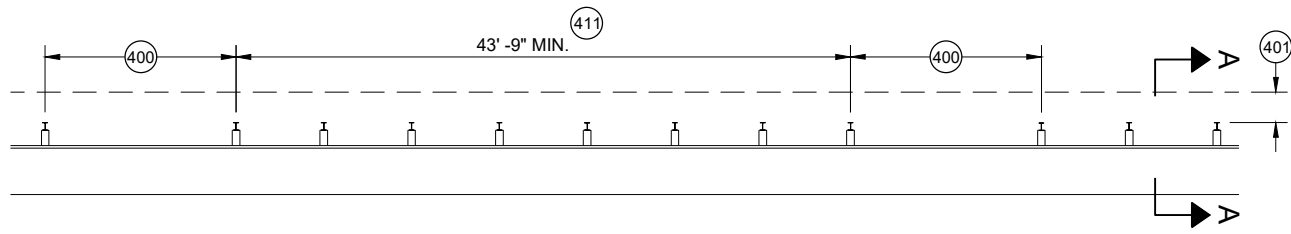
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

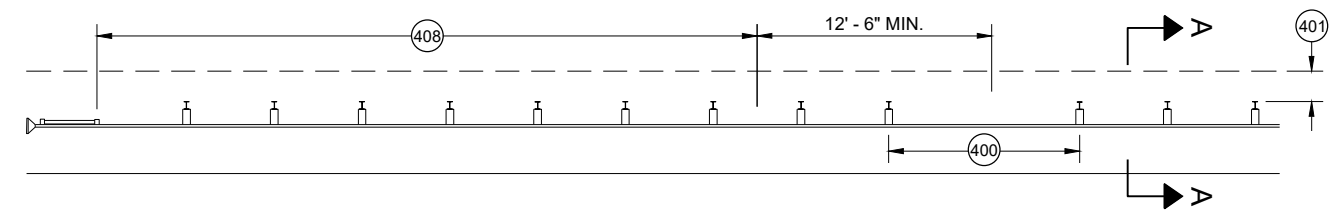
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

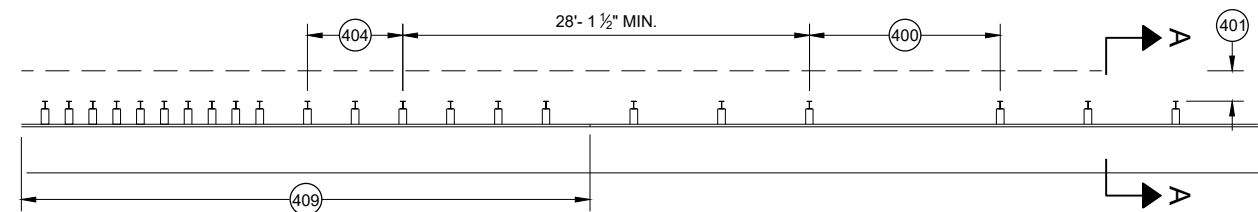
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



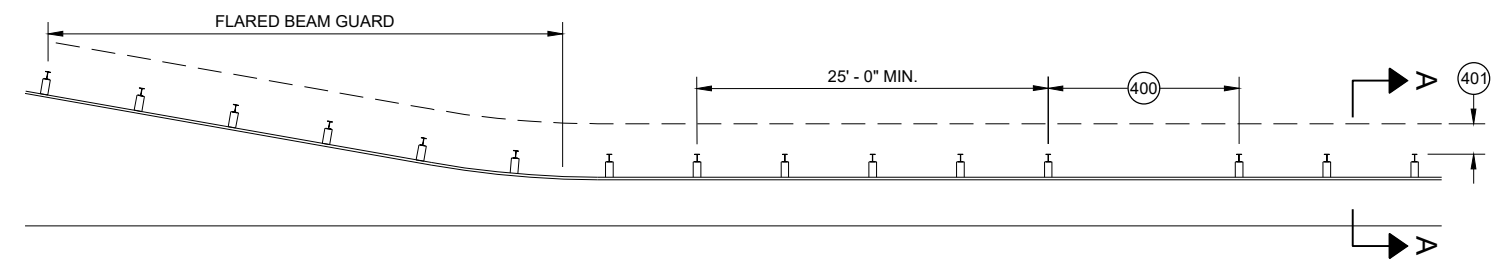
MISSING POST IN MGS GUARDRAIL



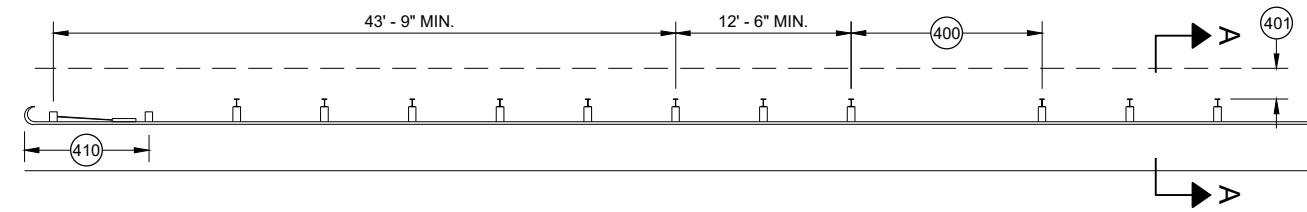
MISSING POST IN MGS GUARDRAIL NEAR EAT



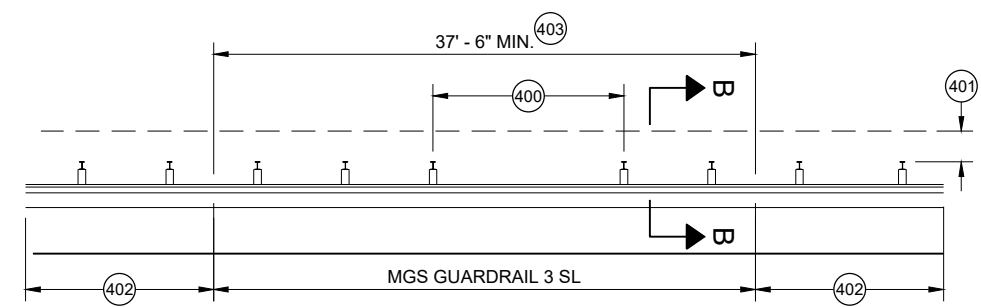
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

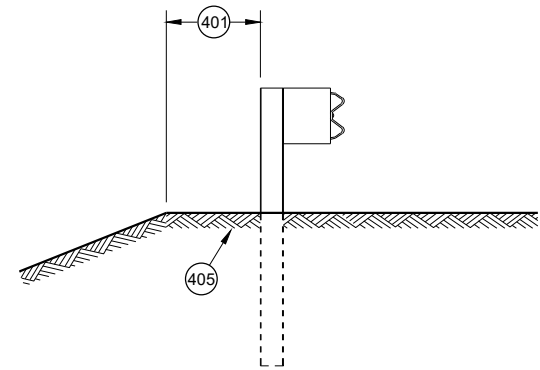


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

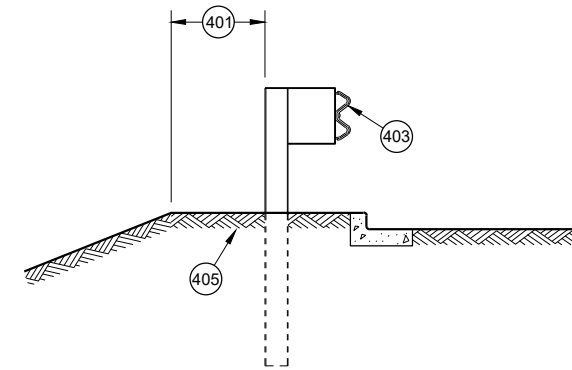


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- ④00 MAX SPAN 12' - 6"
- ④01 2' MIN.
- ④02 MGS GUARDRAIL 3
- ④03 NESTING BEAM GUARD
- ④04 ASYMMETRIC TRANSITION
- ④05 SOIL WELL DRAINED AND COMPACTED
- ④06 SEE OTHER DRAWINGS IN THIS SDD
- ④07 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- ④08 SEE SDD 14B44
- ④09 SEE SDD 14B45
- ④10 SEE SDD 14B47
- ④11 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

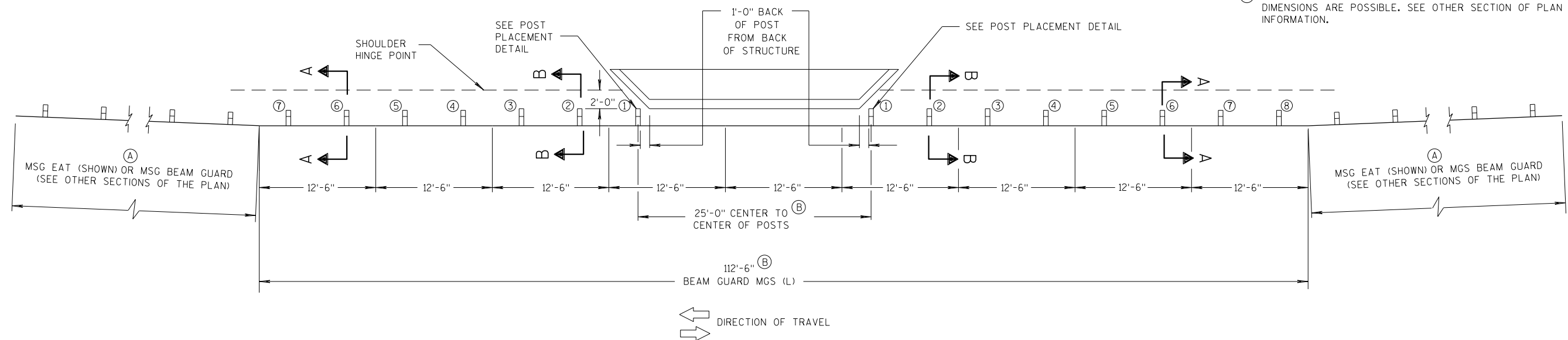
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

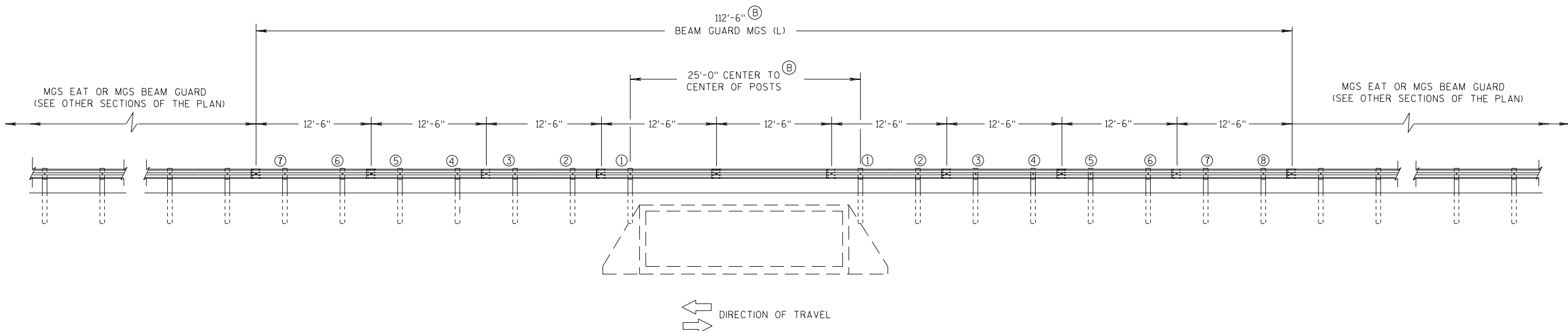
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN, IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

**MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)**

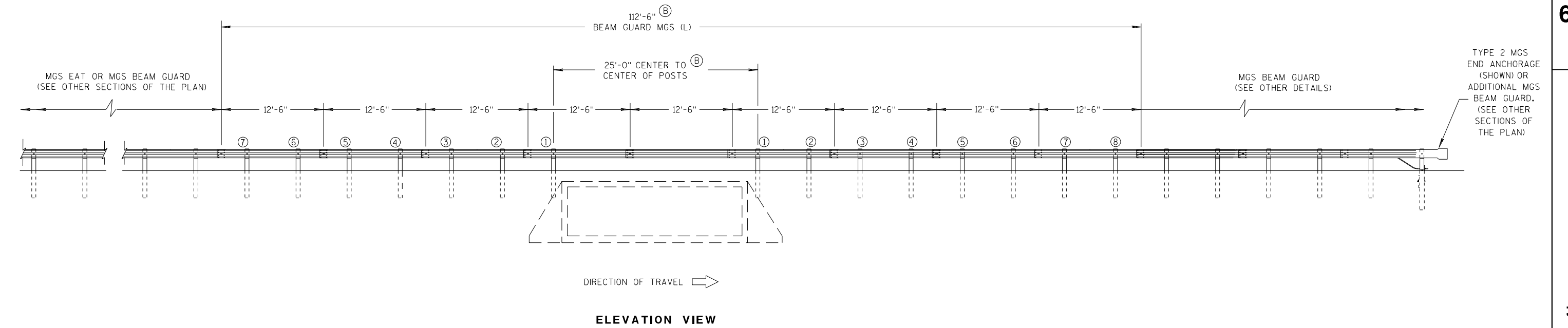
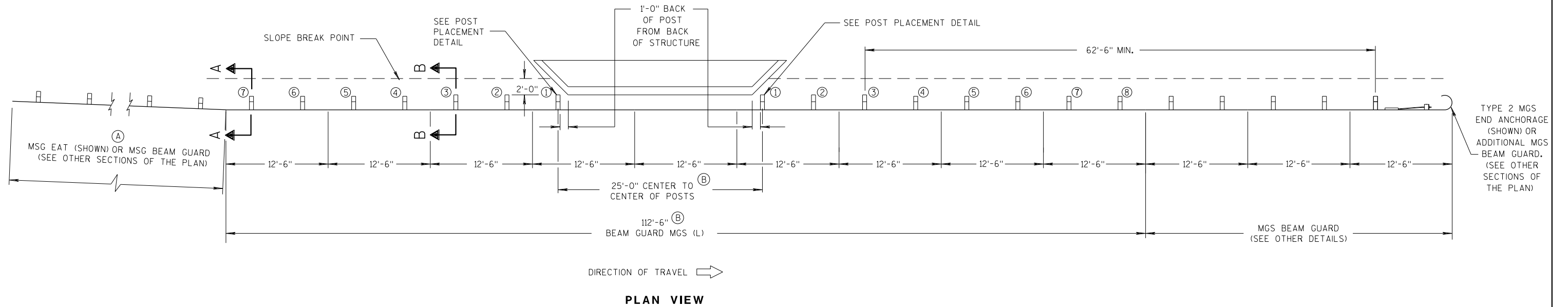
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

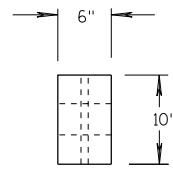
- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



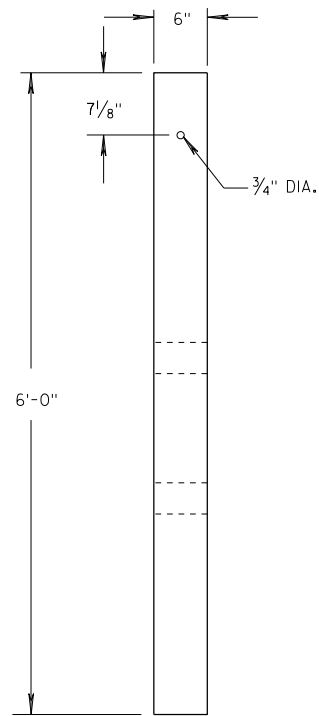
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

**MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)**

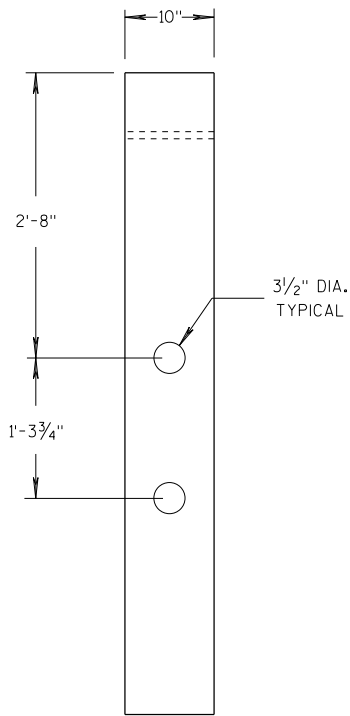
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

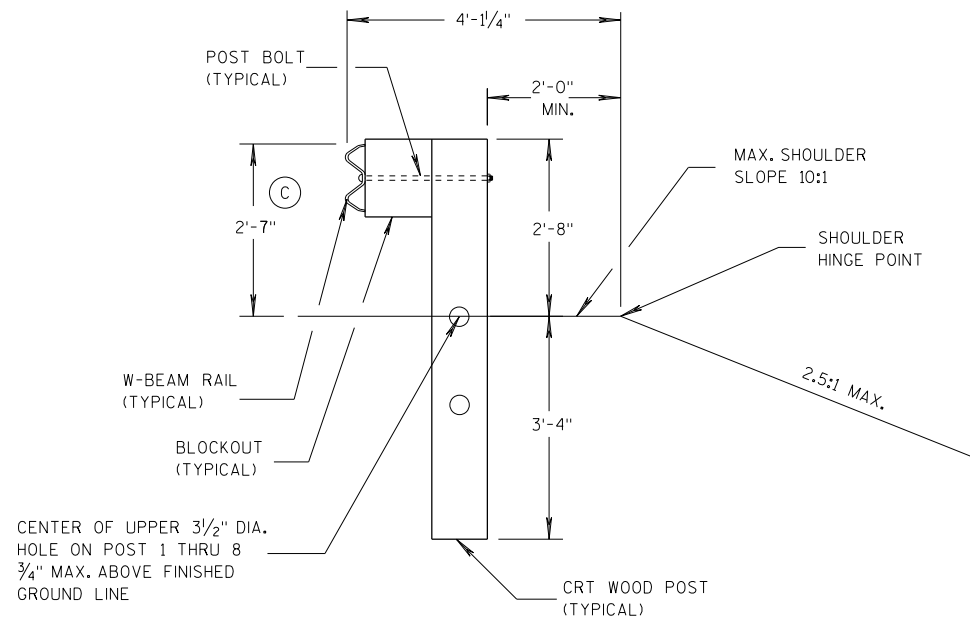


FRONT VIEW

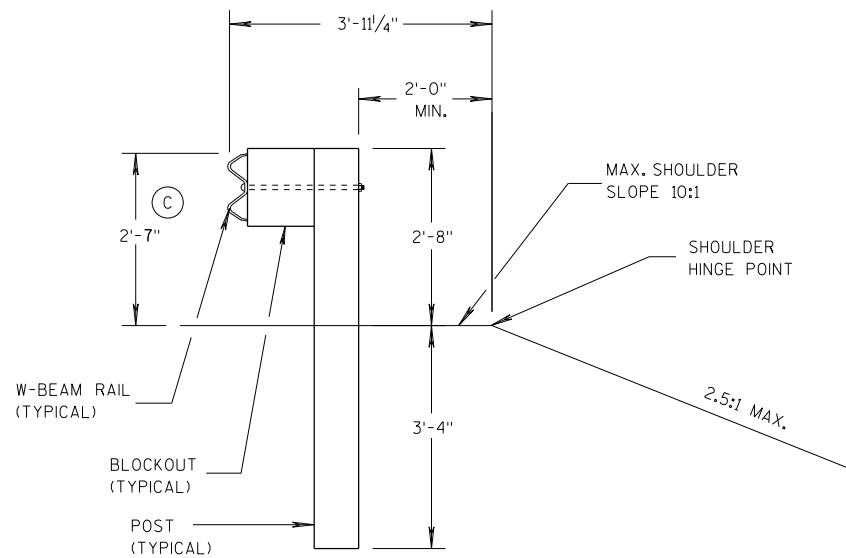


SIDE VIEW

CRT WOOD POST



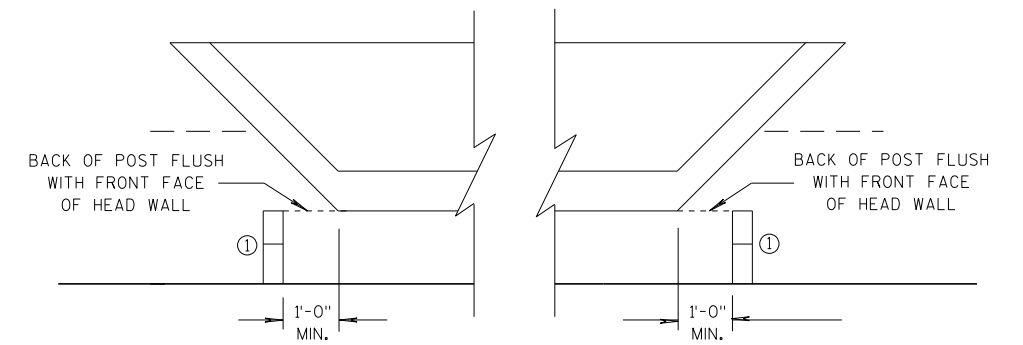
SECTION B-B
POSTS NO. 1-3
SEE OTHER DETAILS



SECTION A-A
POSTS NO. 4-8
SEE OTHER DETAILS

GENERAL NOTES

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



POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Rodney Taylor
07/2018	DATE
	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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.

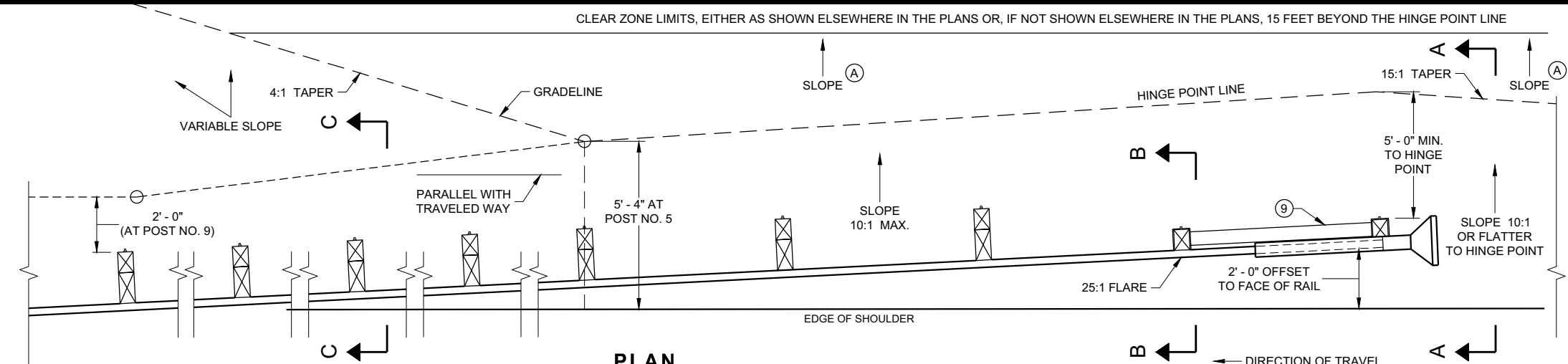
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

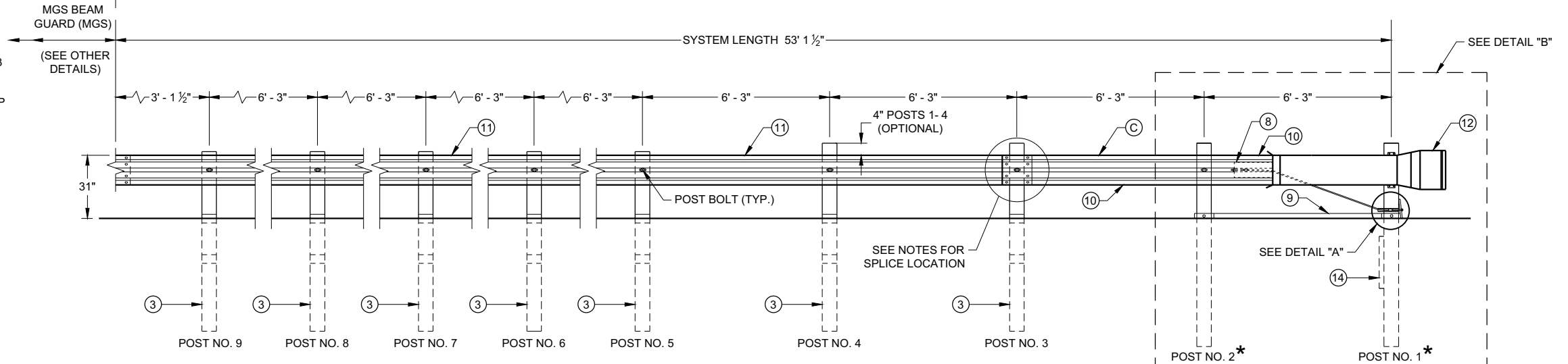
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

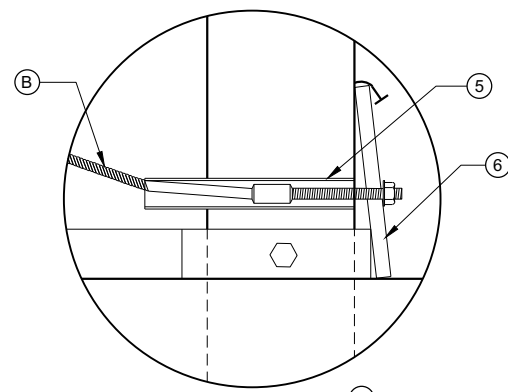
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



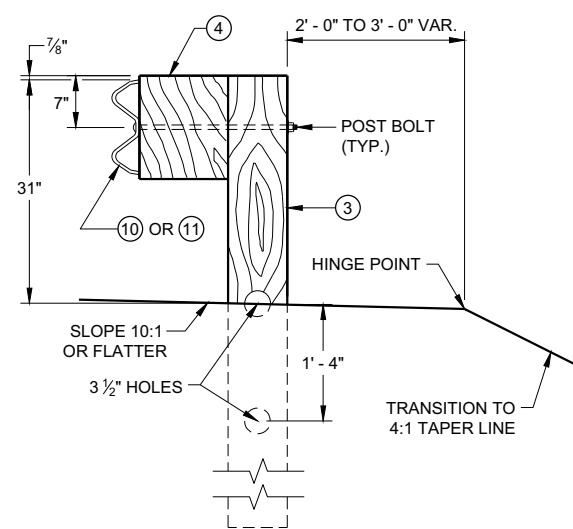
PLAN



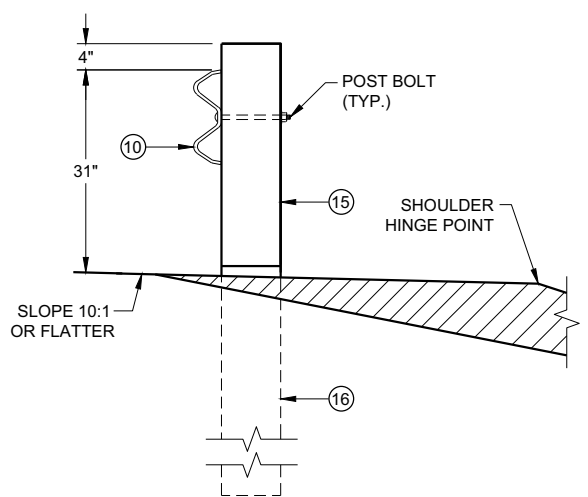
ELEVATION



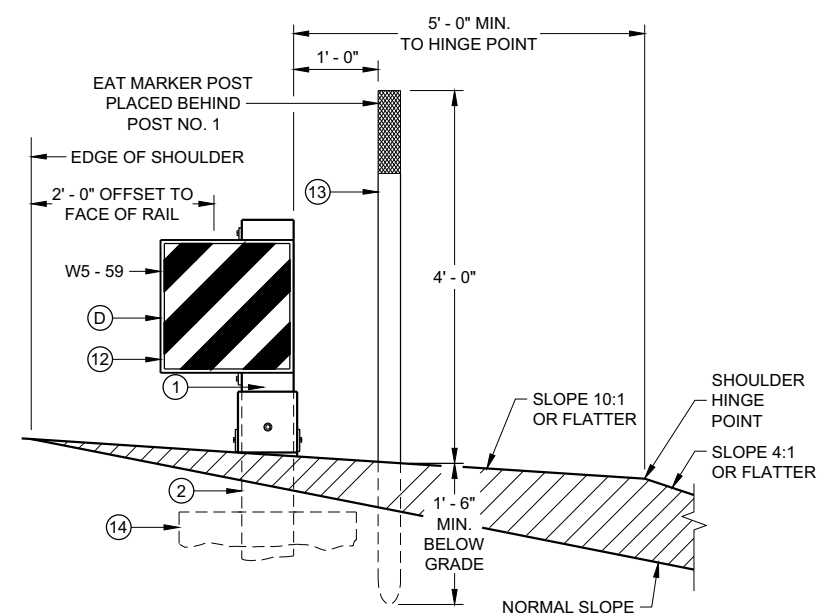
DETAIL "A"



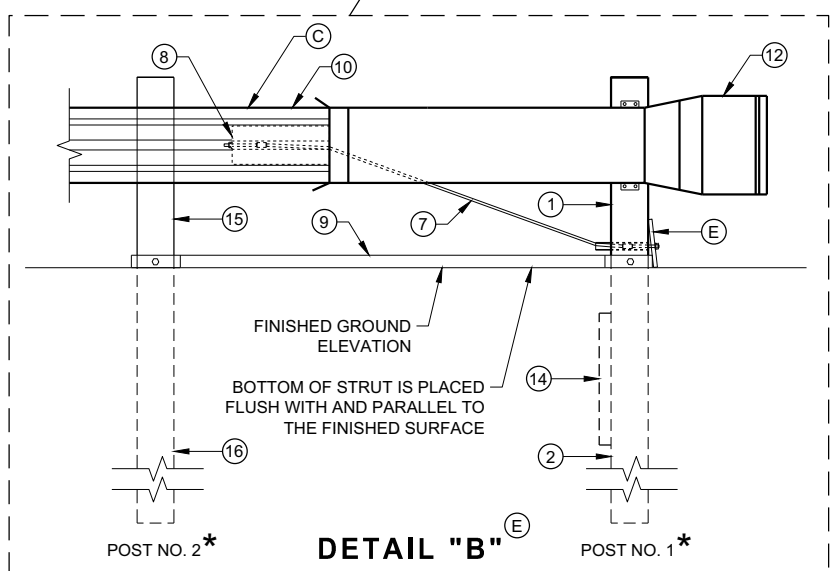
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

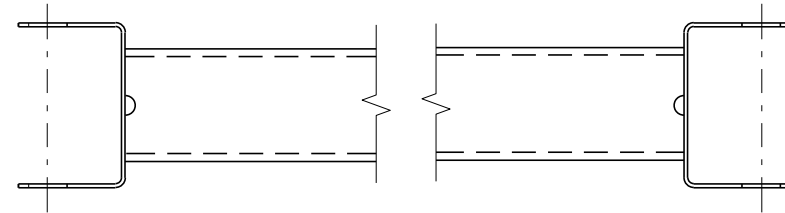
6

SDD 14B44 - 04a

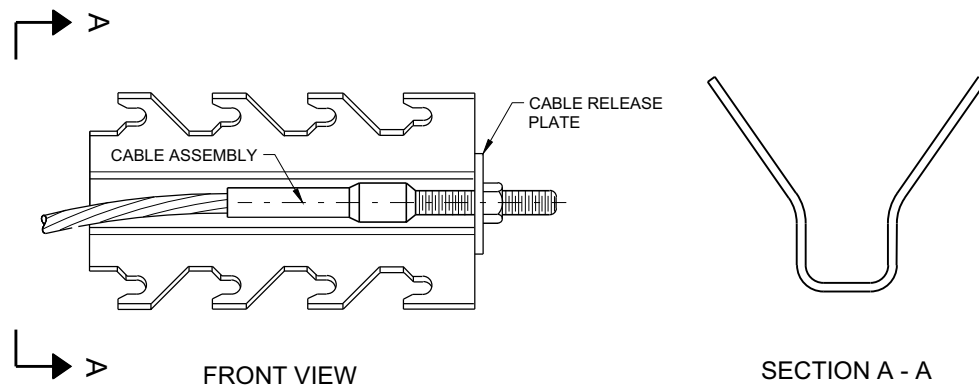
SDD 14B44 - 04a

BILL OF MATERIALS

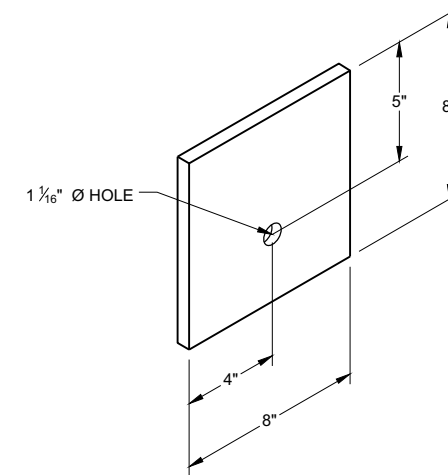
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



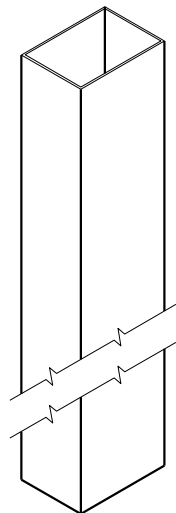
GENERIC GROUND STRUT ⑨ ⑤



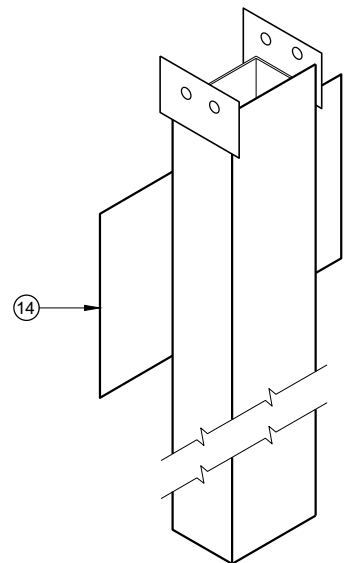
GENERIC ANCHOR CABLE BOX ⑨ ⑤



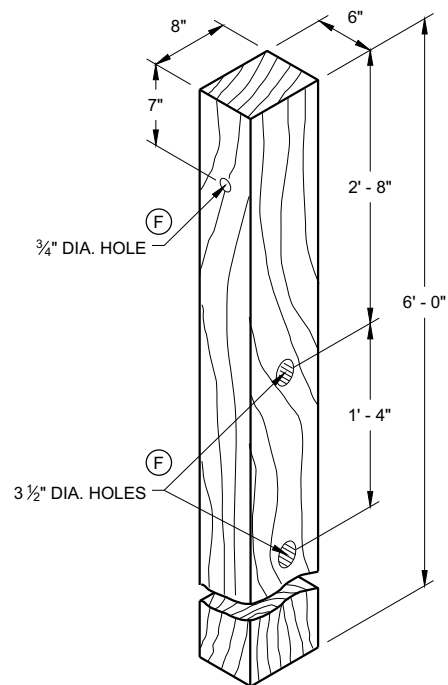
BEARING PLATE ⑥ ⑤



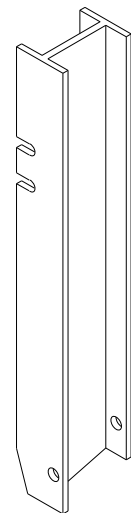
UPPER POST NO. 1 ⁽¹⁾ (E)



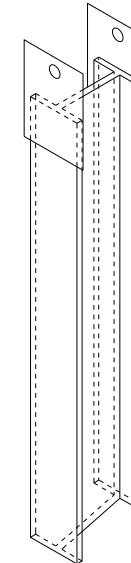
LOWER POST NO. 1 ⁽²⁾ (E)



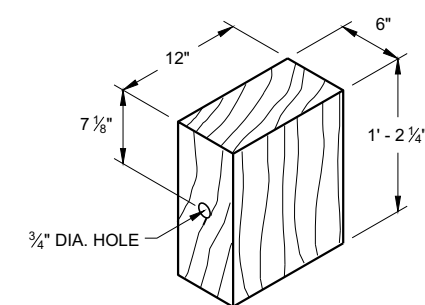
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

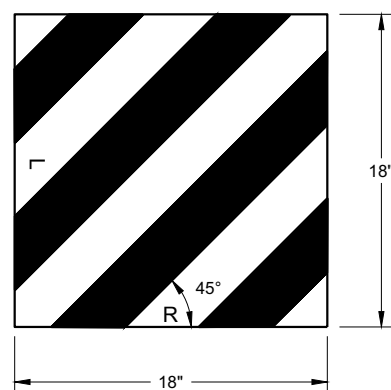


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

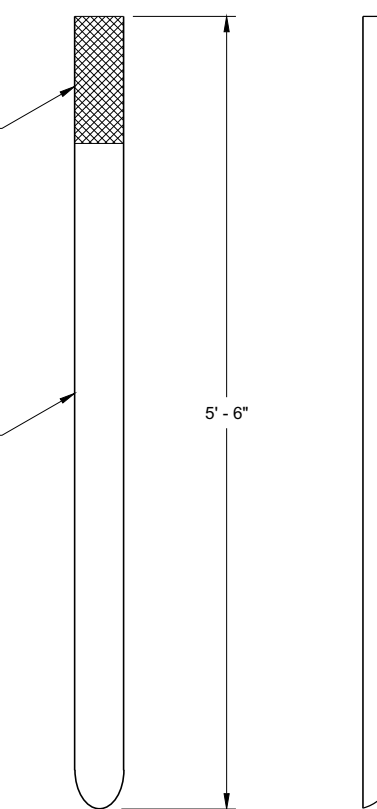
6



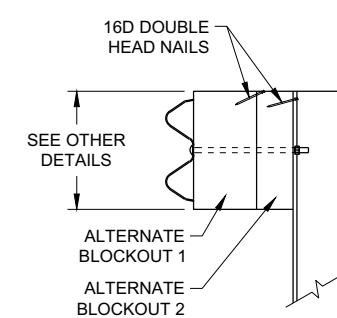
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

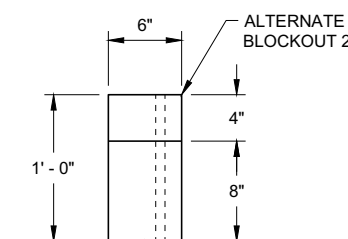
E.A.T. MARKER
POST (YELLOW)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

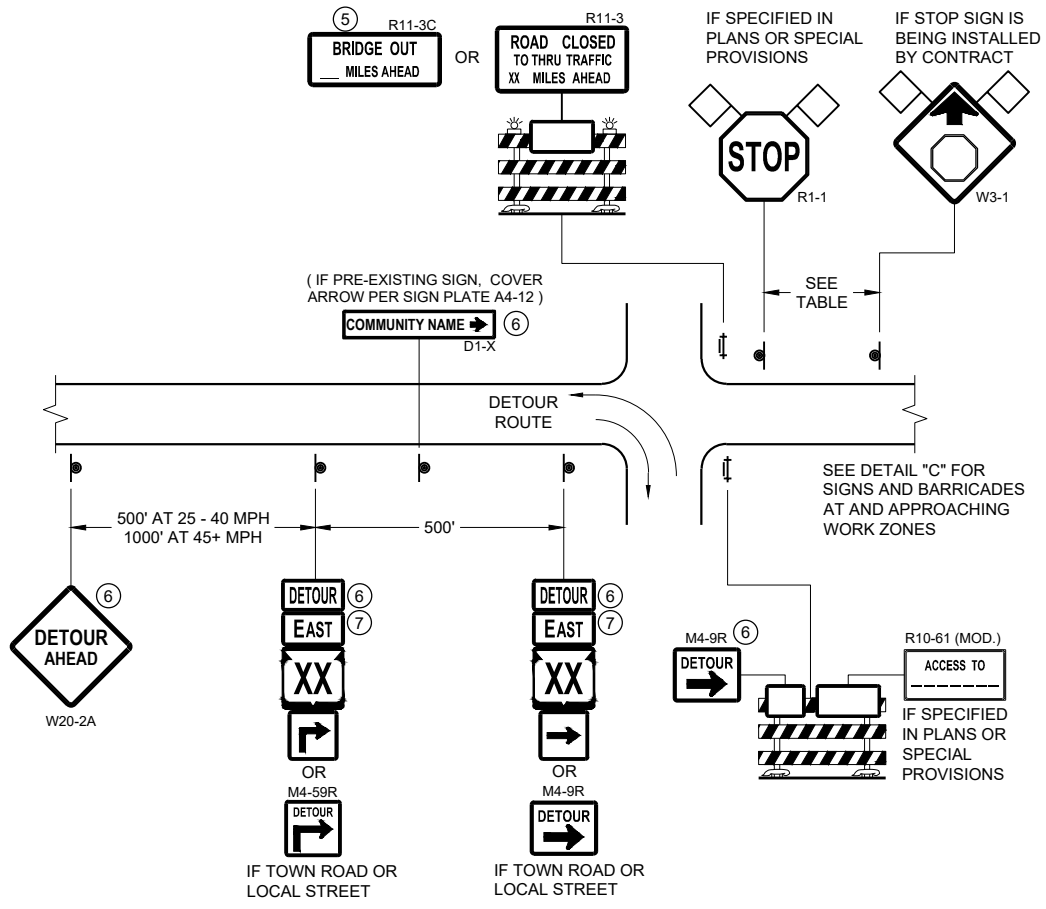
SDD 14B44 - 04c

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

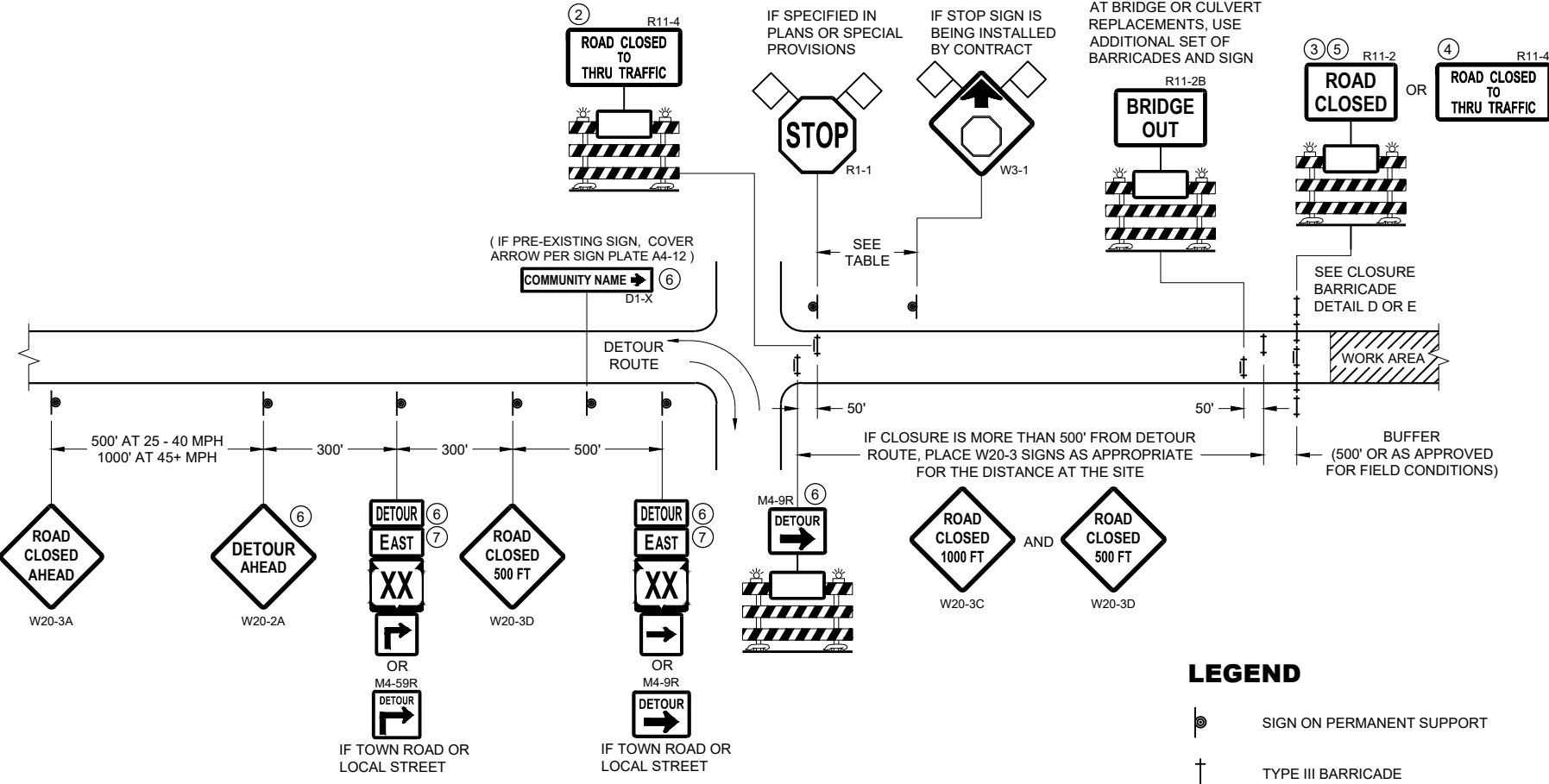
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA



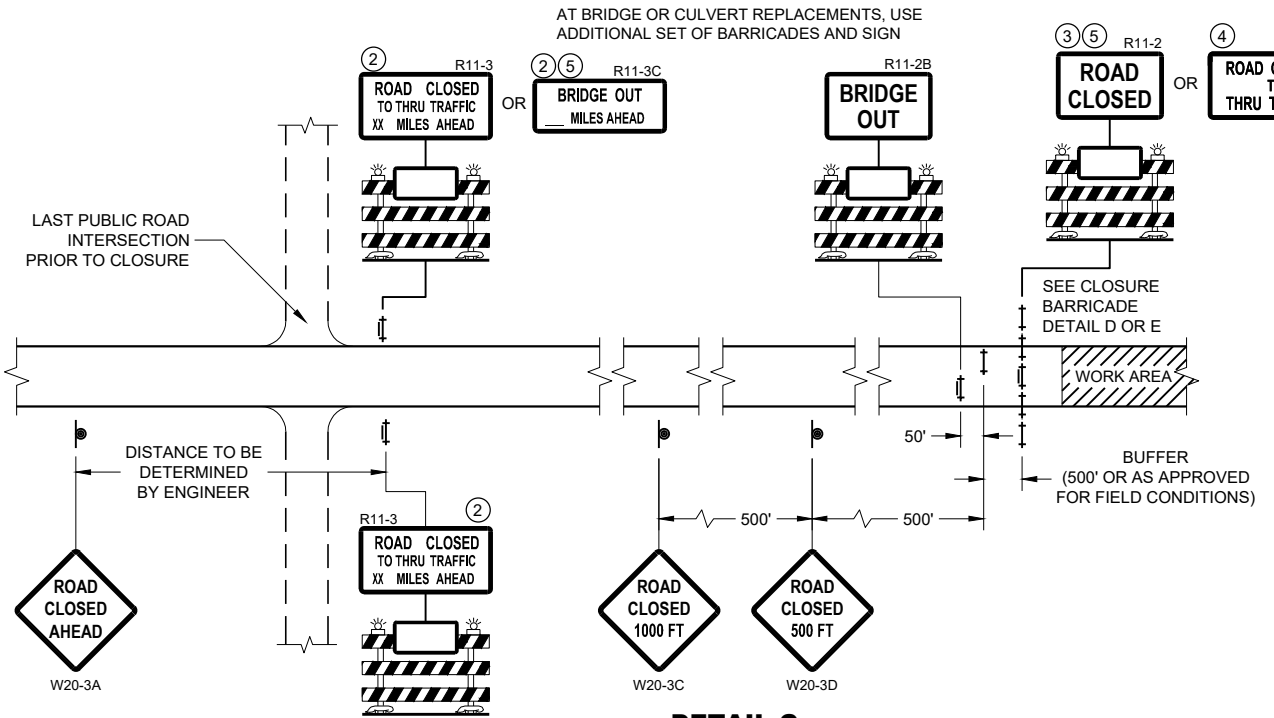
**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 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**

LEGEND

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

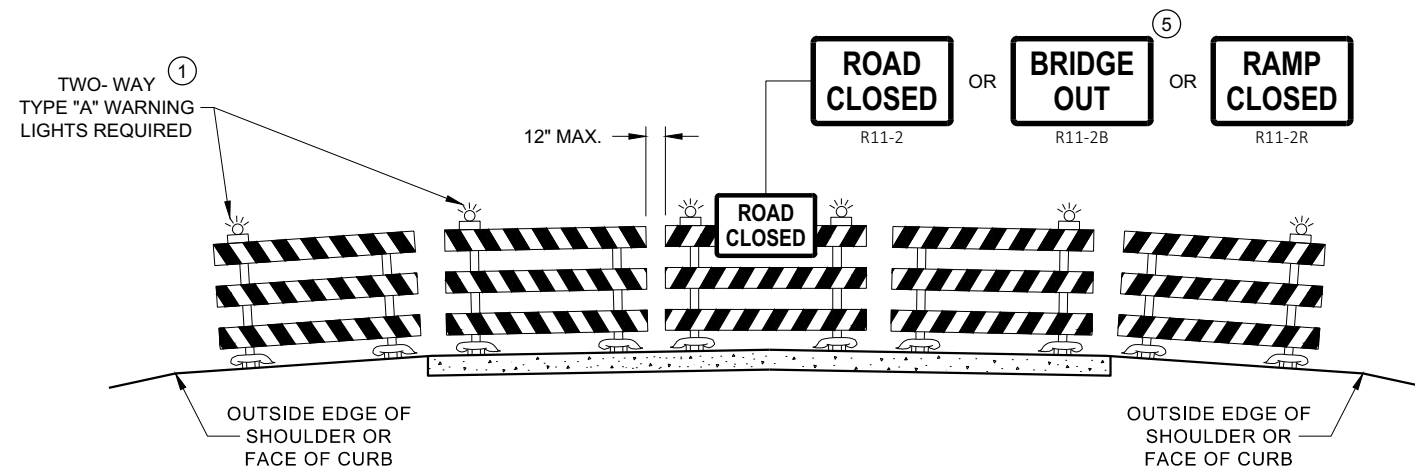
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

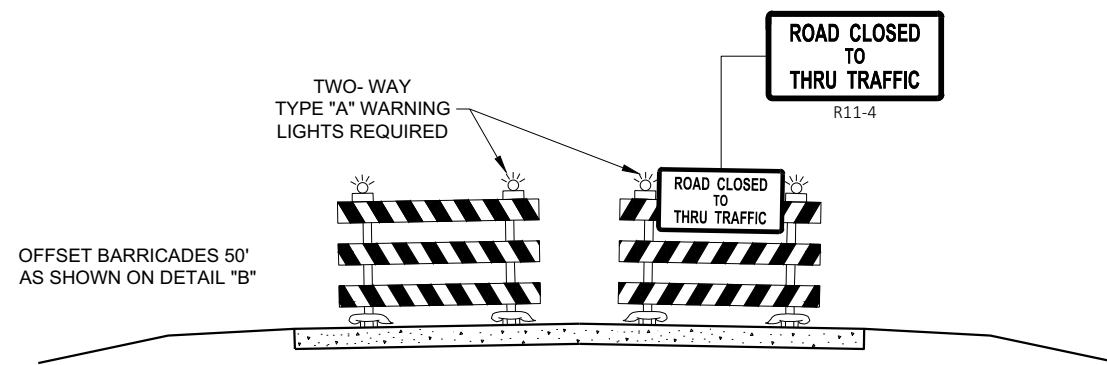
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE DATE WORK ZONE 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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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:

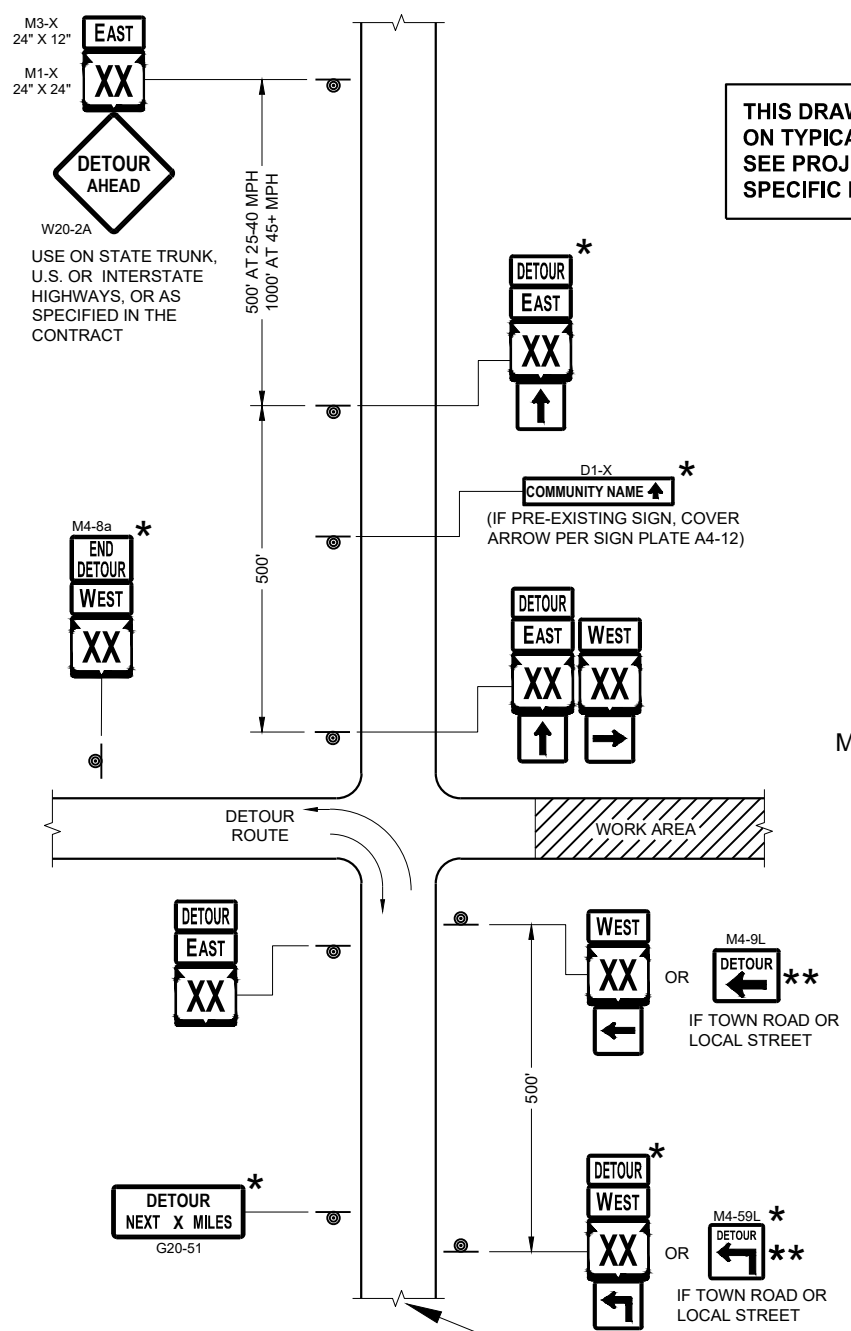
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

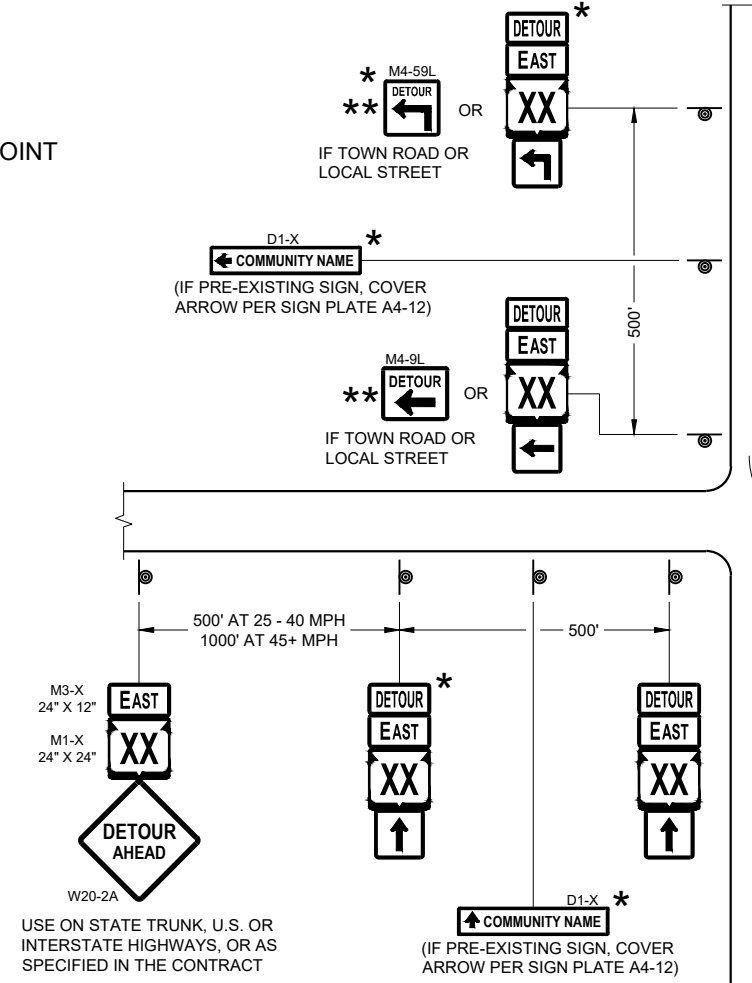
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

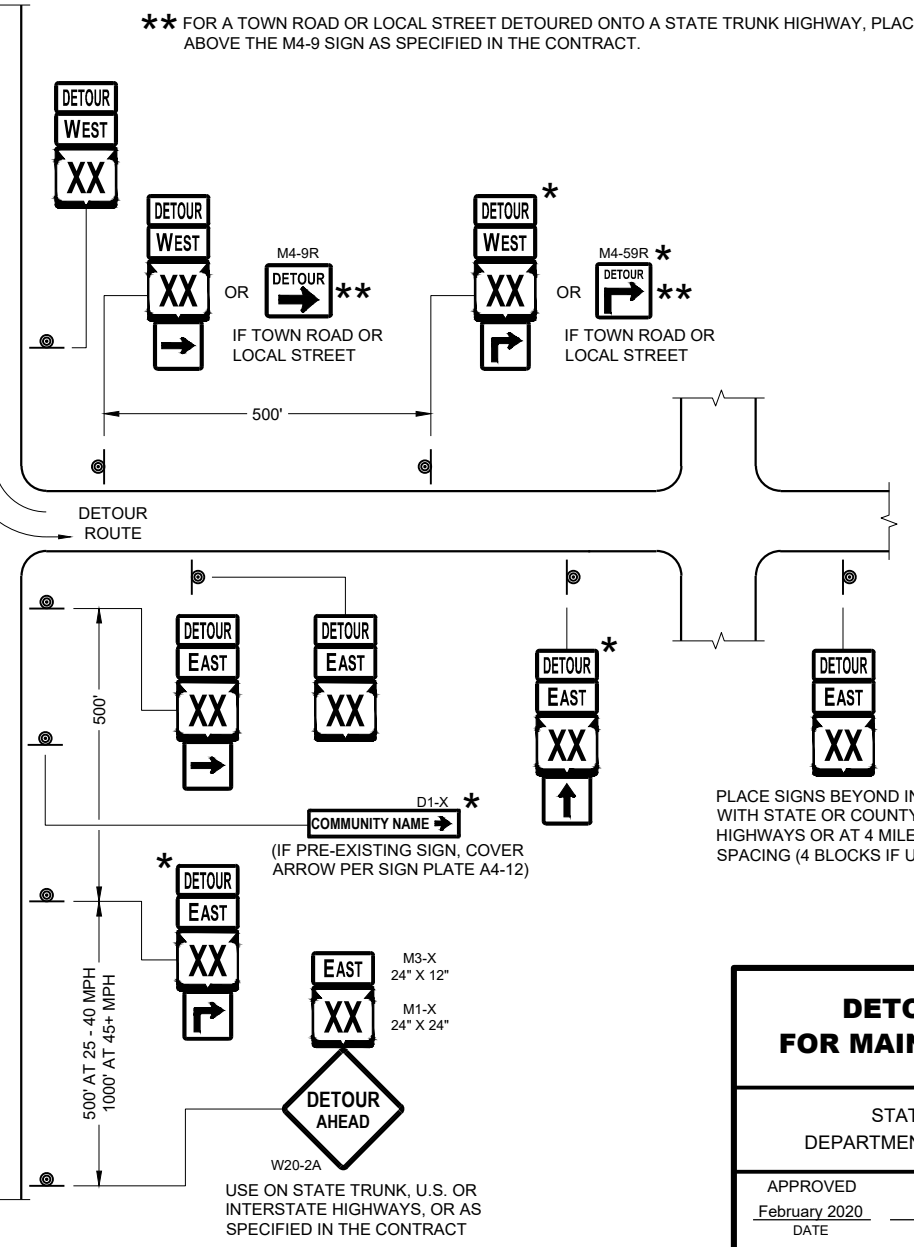
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



**DETAIL F
DETOUR SIGNING**



PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

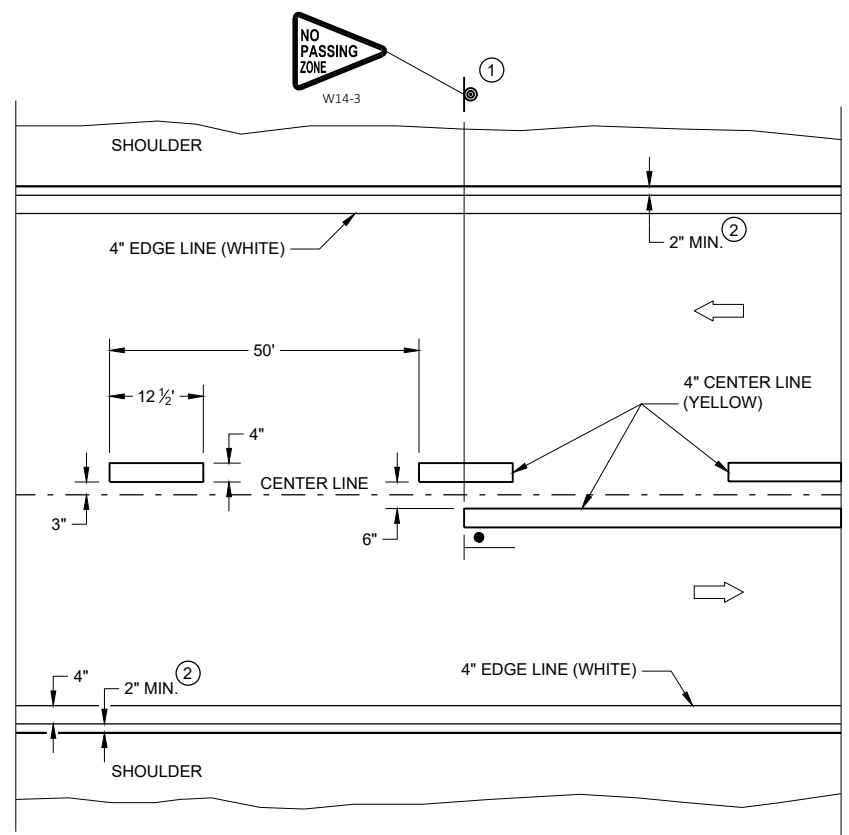
SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

**DETOUR SIGNING
FOR MAINLINE CLOSURES**

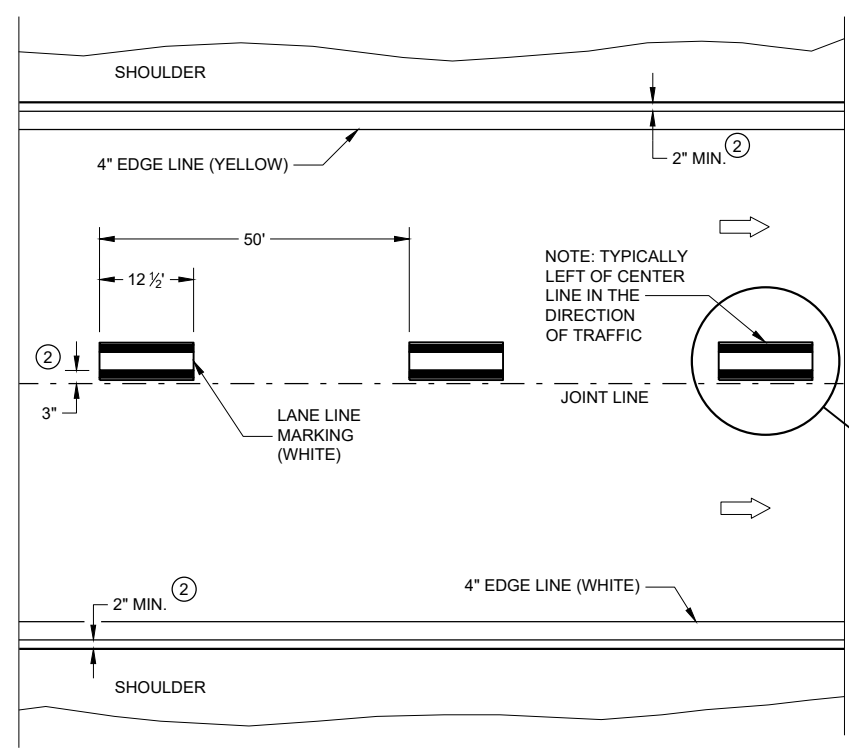
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

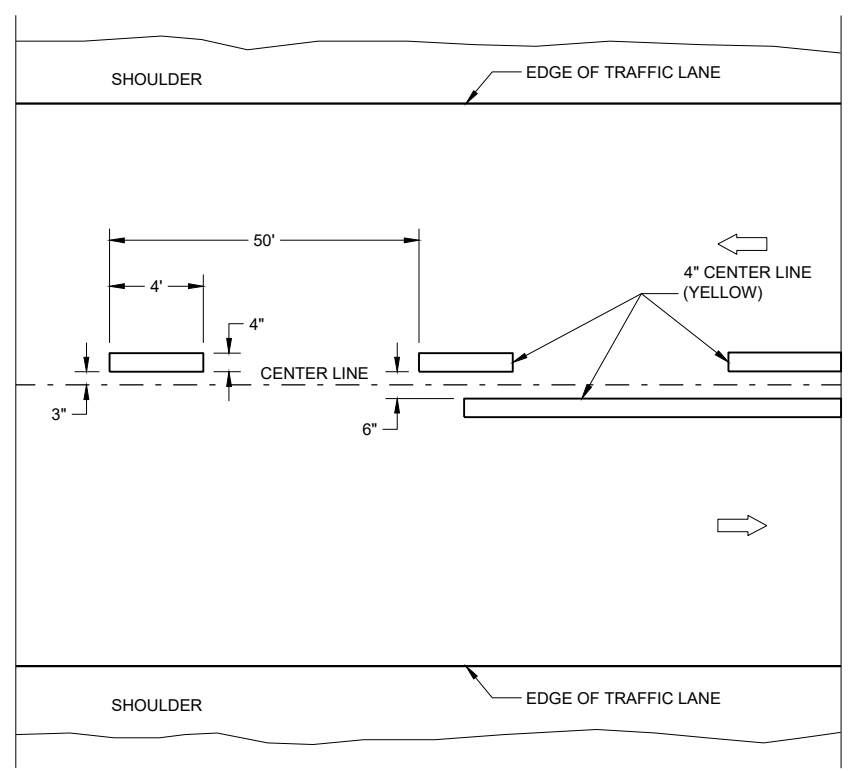


TWO WAY TRAFFIC

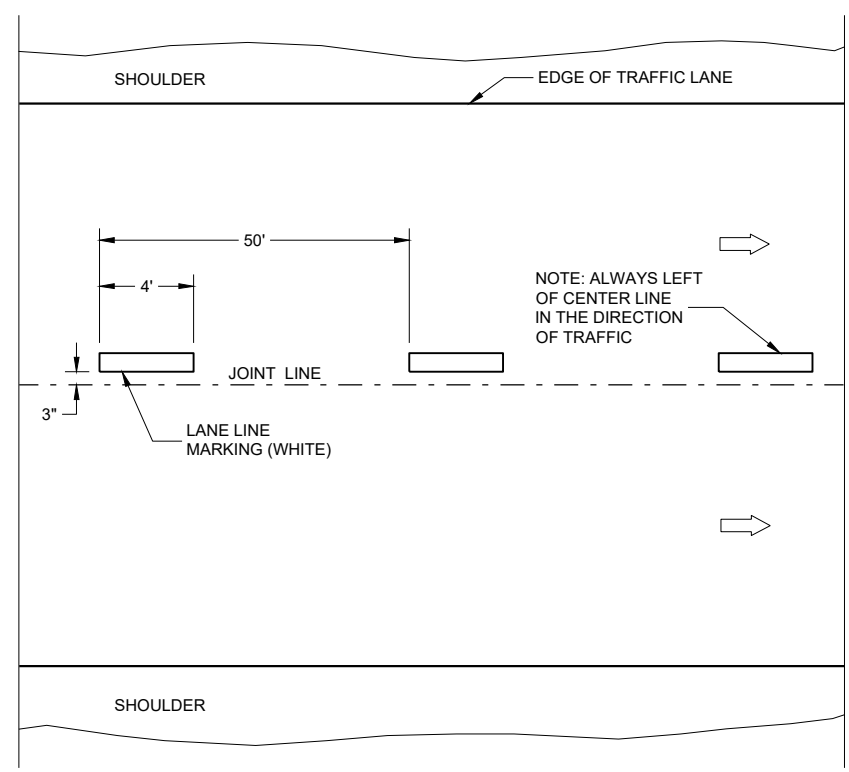


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

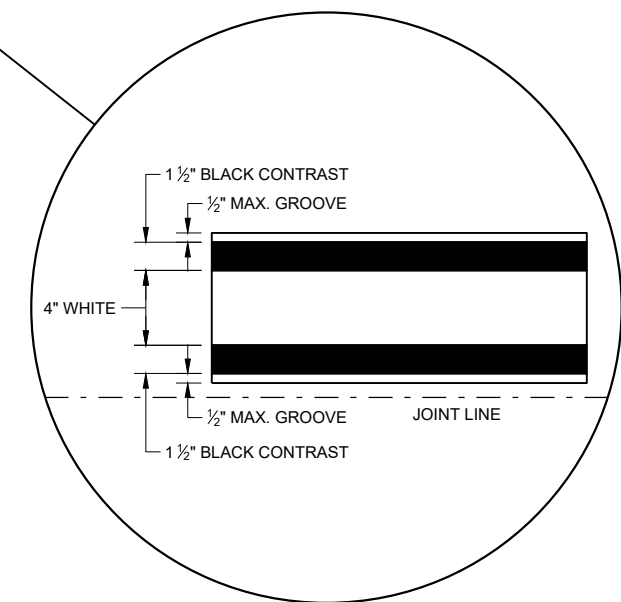
GENERAL NOTES

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
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

- |• "T" MARKING
- ⊙ SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

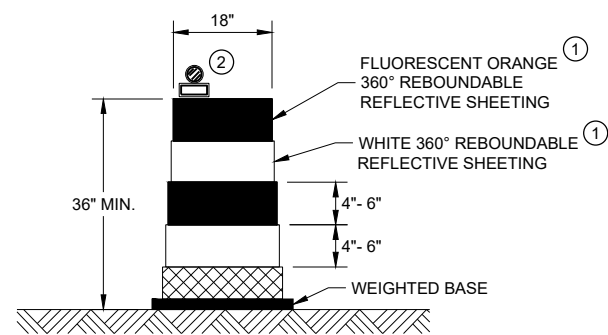


LONGITUDINAL MARKING (MAINLINE)

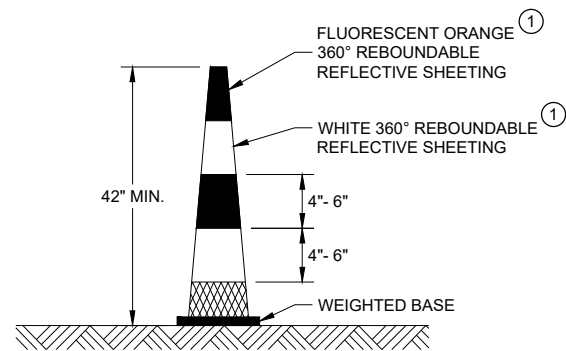
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Matthew Rauch
DATE STATEWIDE SIGNING AND MARKING
ENGINEER

FHWA

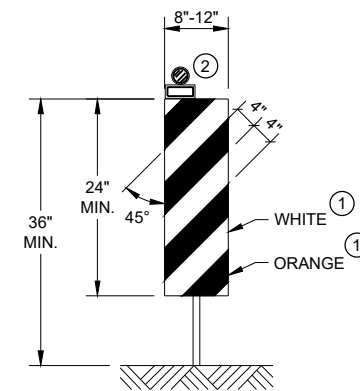


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

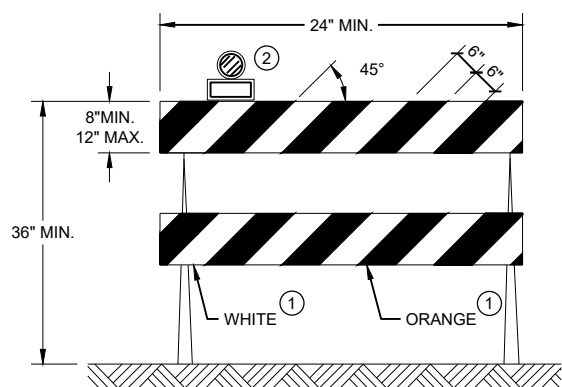


VERTICAL PANEL

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

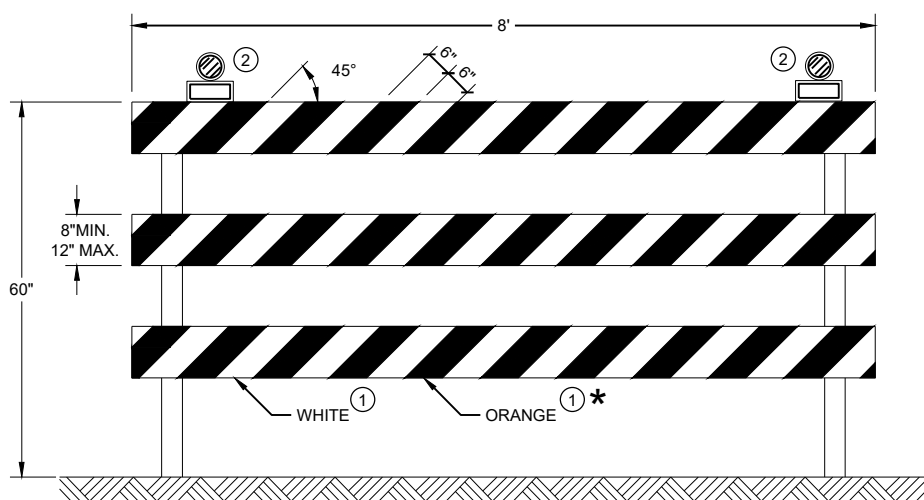
GENERAL NOTES

- 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 II BARRICADE

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



TYPE III 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
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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.

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 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.

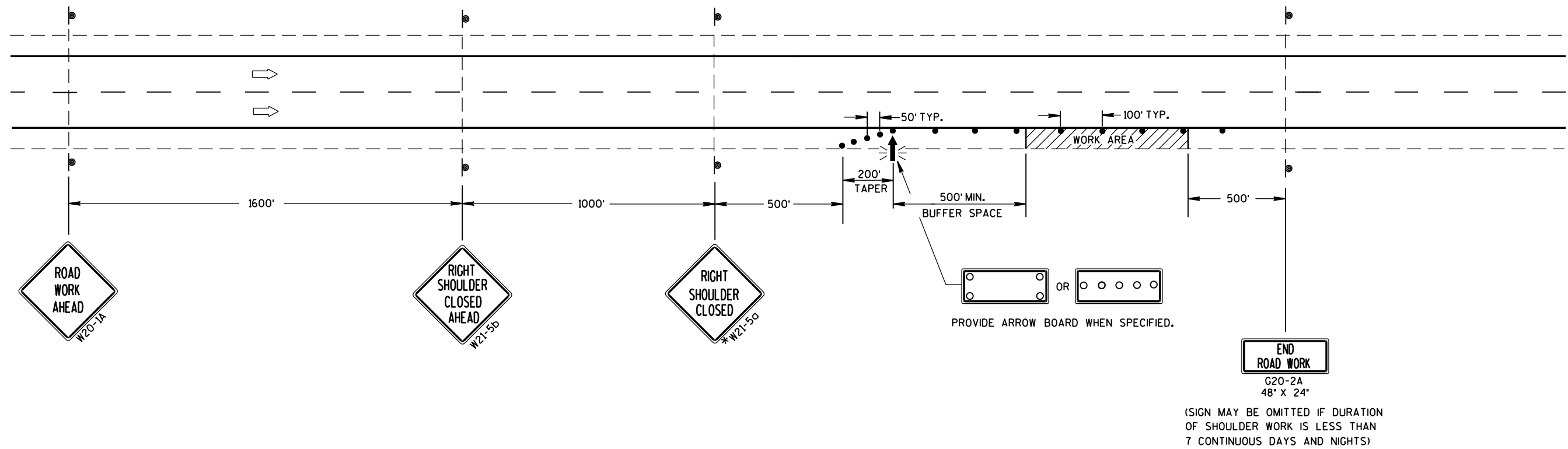
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA



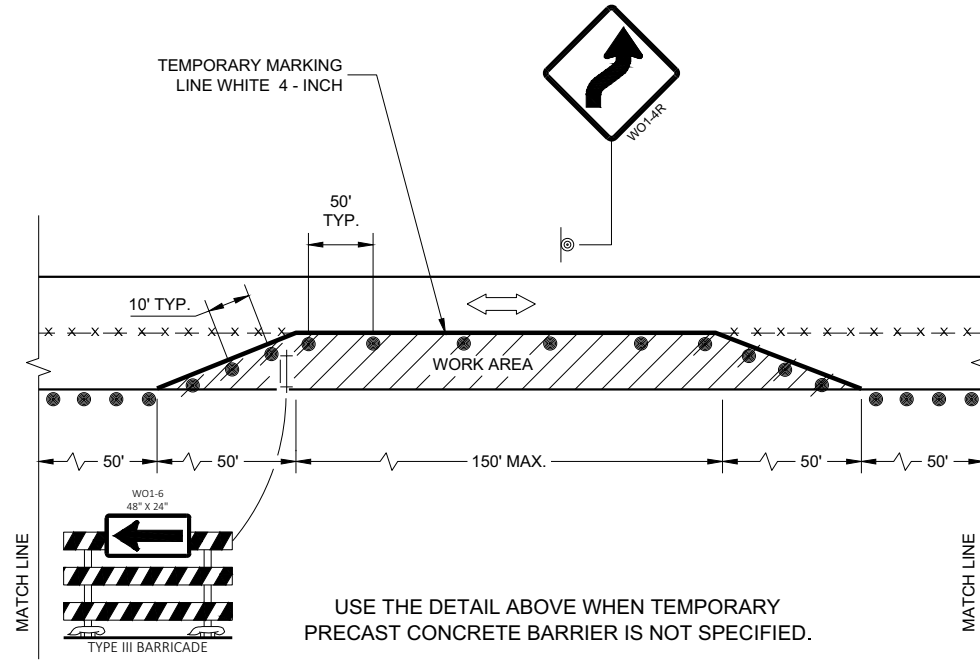
TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLAGS, 16" X 16" MIN. (ORANGE)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- ASPHALTIC PAVEMENT WIDENING
- CONCRETE BARRIER TEMPORARY PRECAST

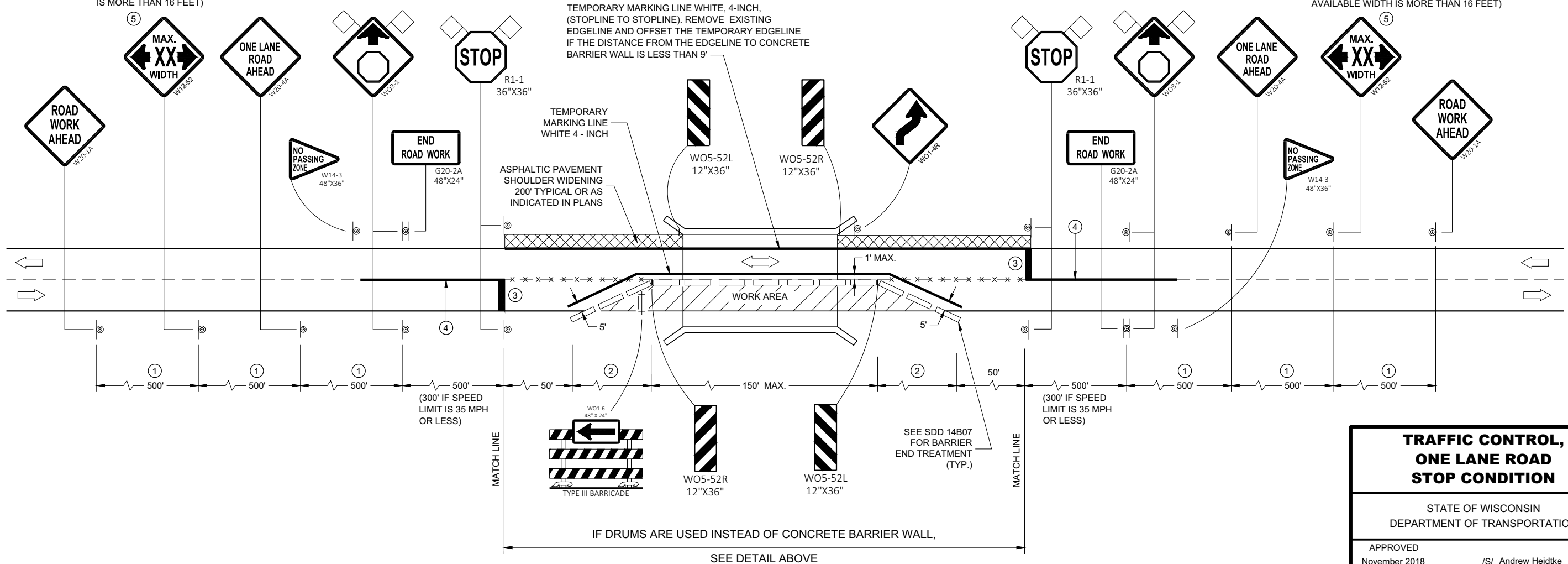
GENERAL NOTES

- 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 TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE..
- THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.
- ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR 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 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.
- ① 500 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.
 - ② DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
 - ③ TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.
 - ④ 700 FOOT TEMPORARY MARKING LINE, DOUBLE YELLOW 4 - INCH . WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
 - ⑤ SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.



WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)

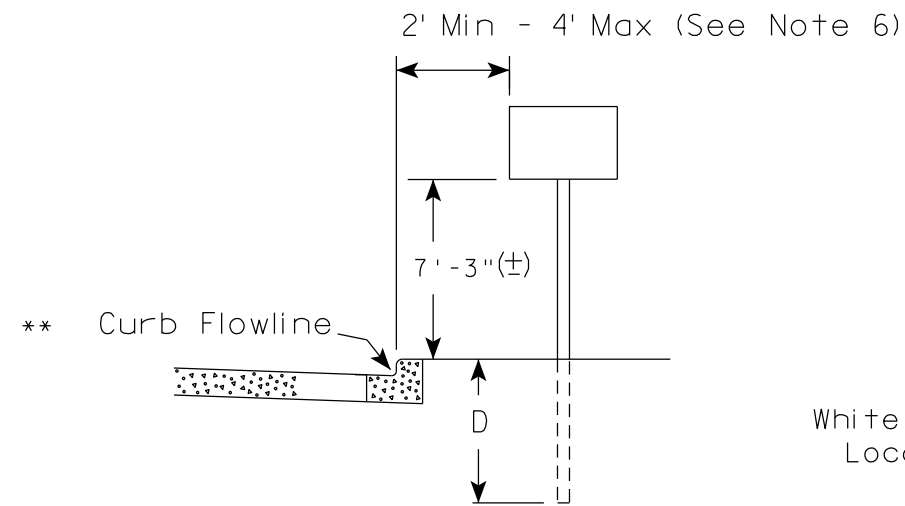
WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)



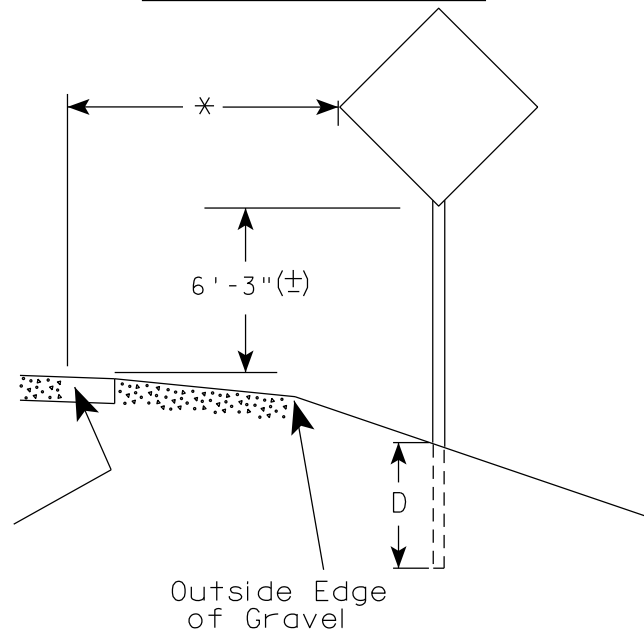
TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA

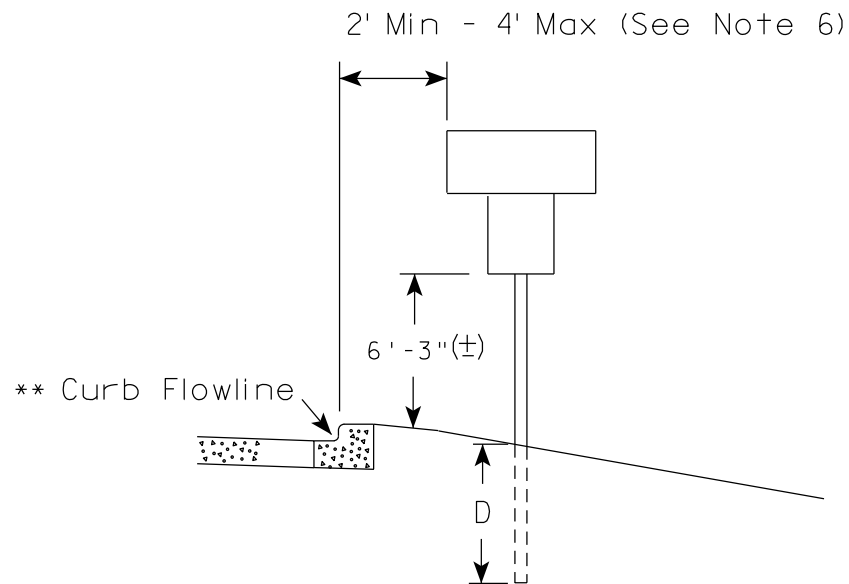
RURAL AREA (See Note 2)



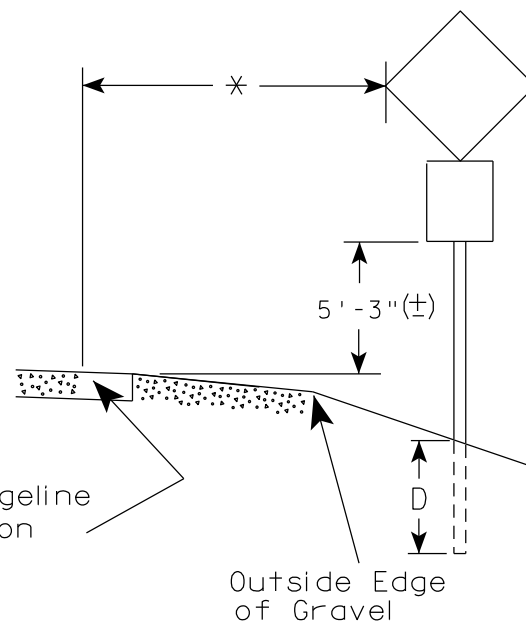
White Edgeline Location



Outside Edge of Gravel



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 or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) 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" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the 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.

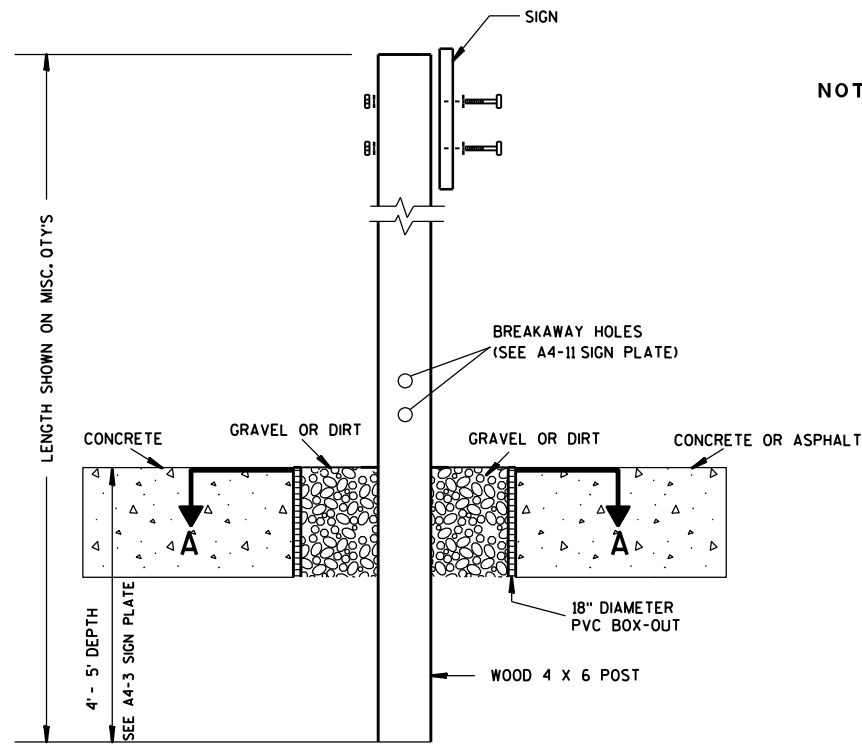
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

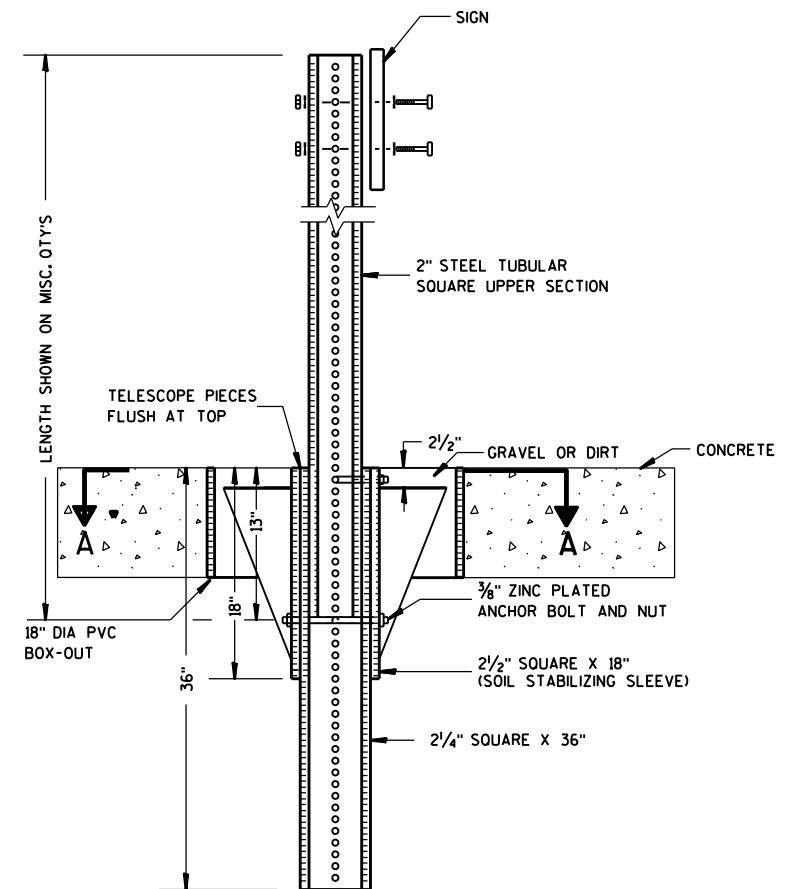
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

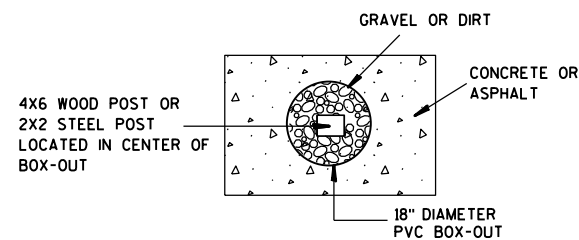
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

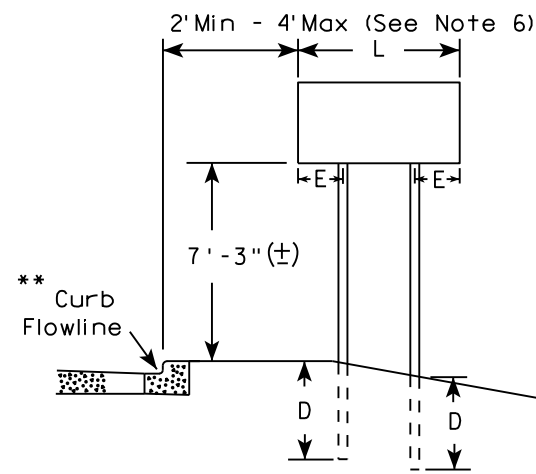
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

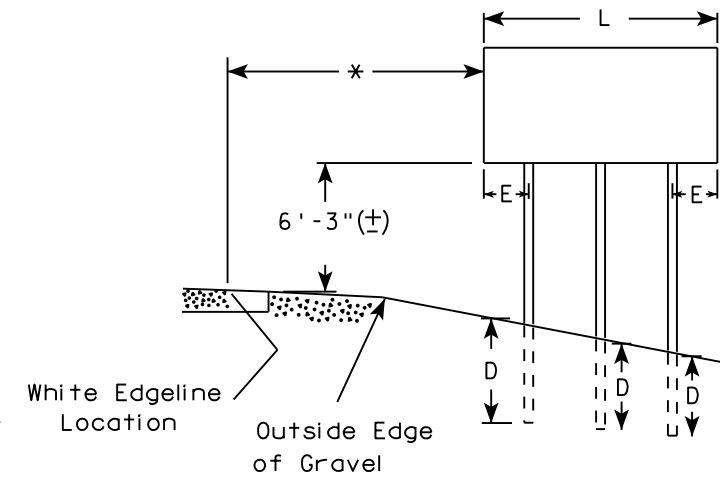
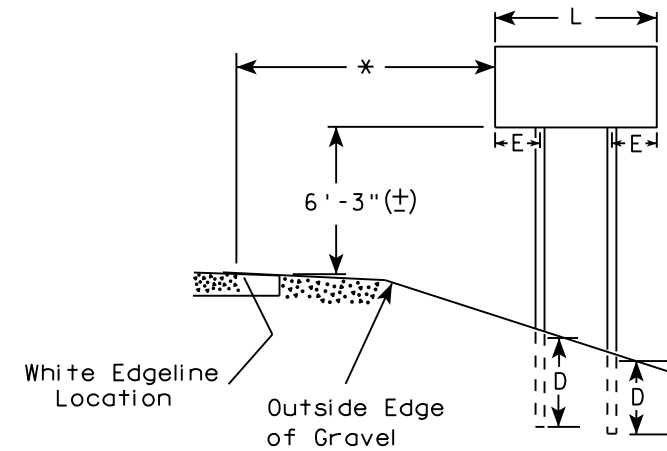
GENERAL NOTES

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" (±).

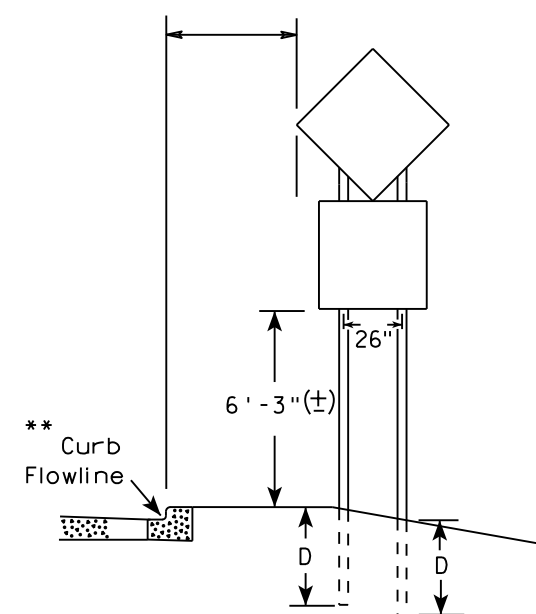
URBAN AREA



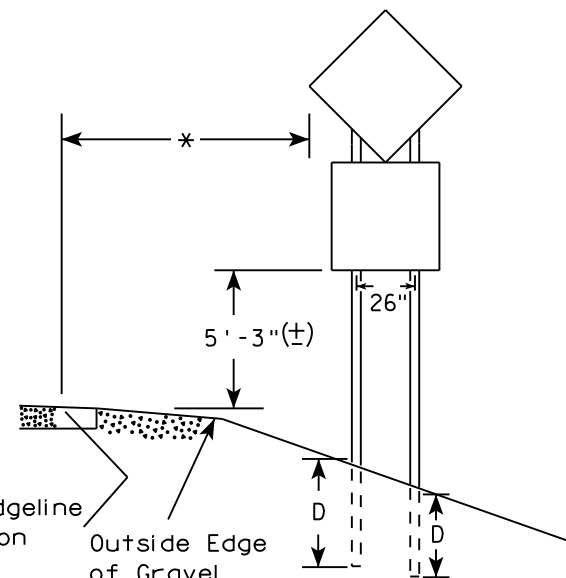
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 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

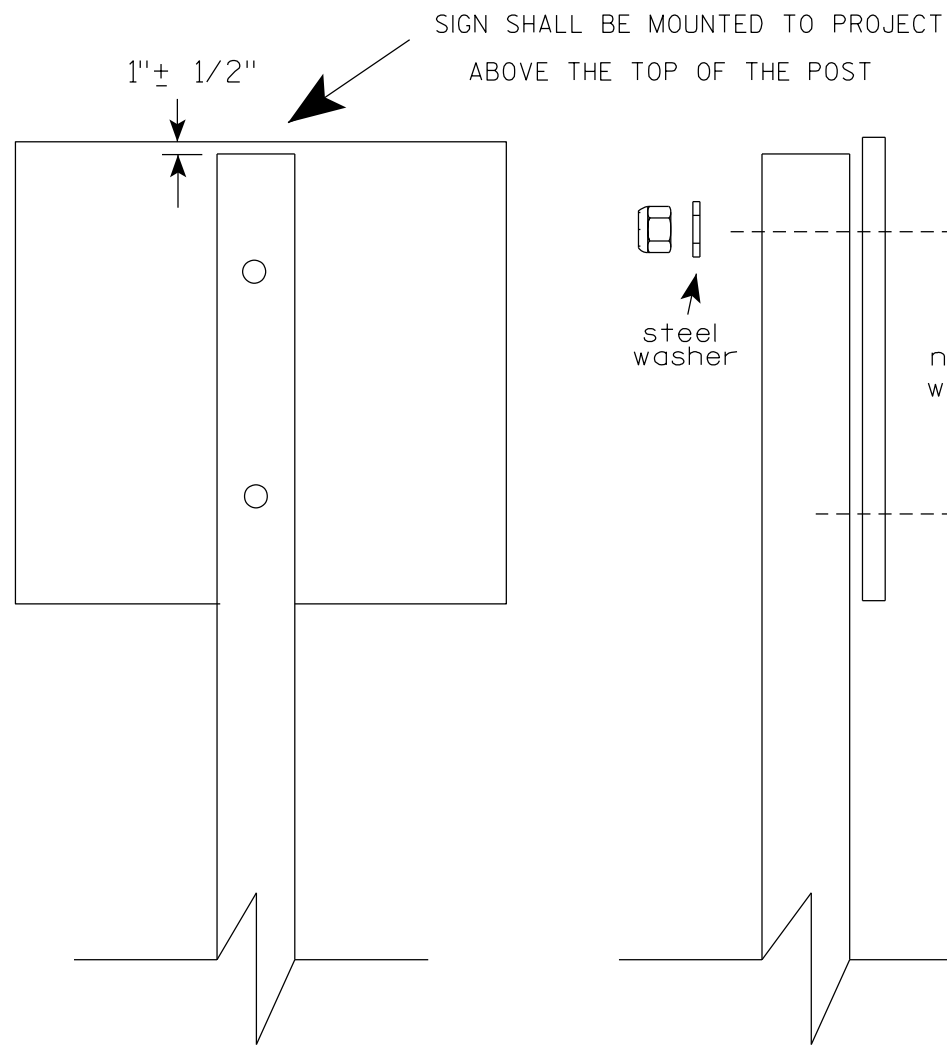
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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 :

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

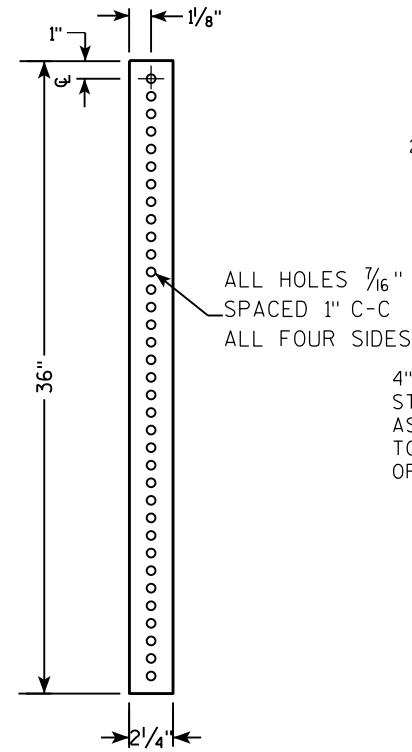
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " 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.

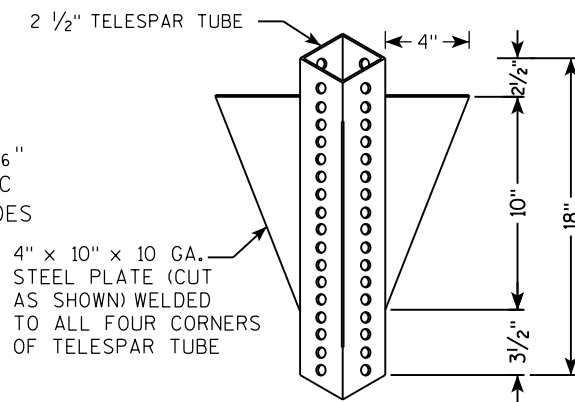
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

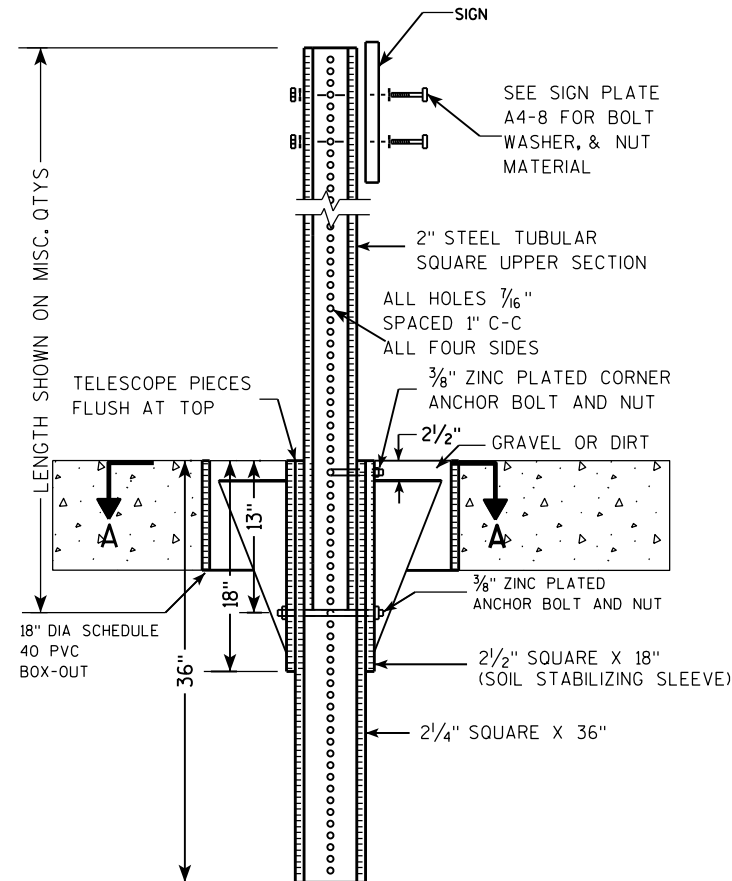
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



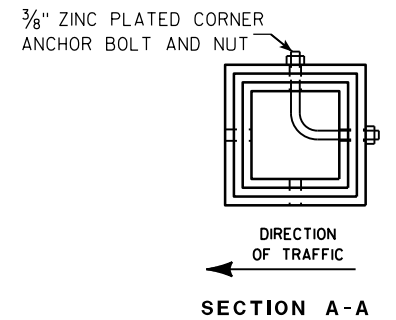
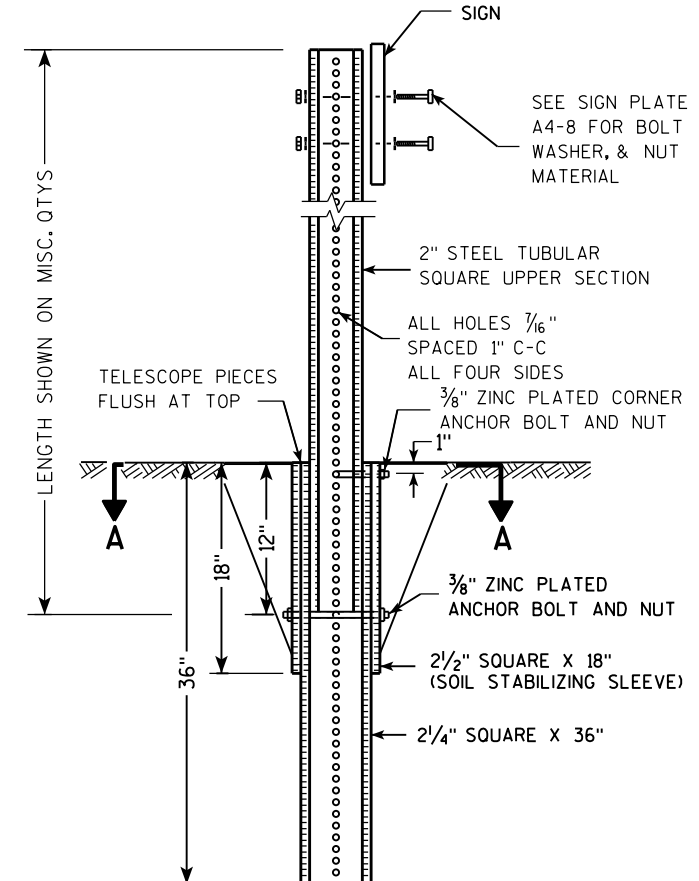
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

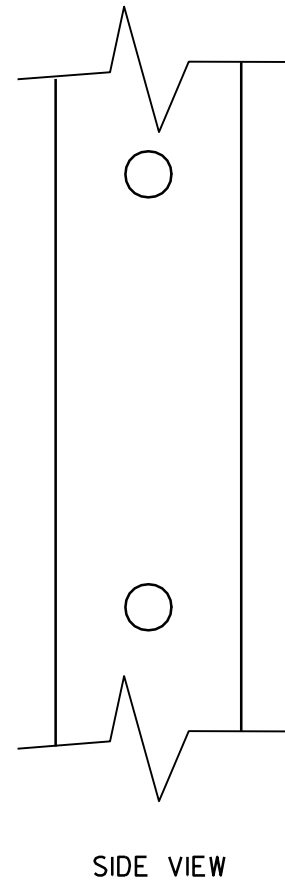
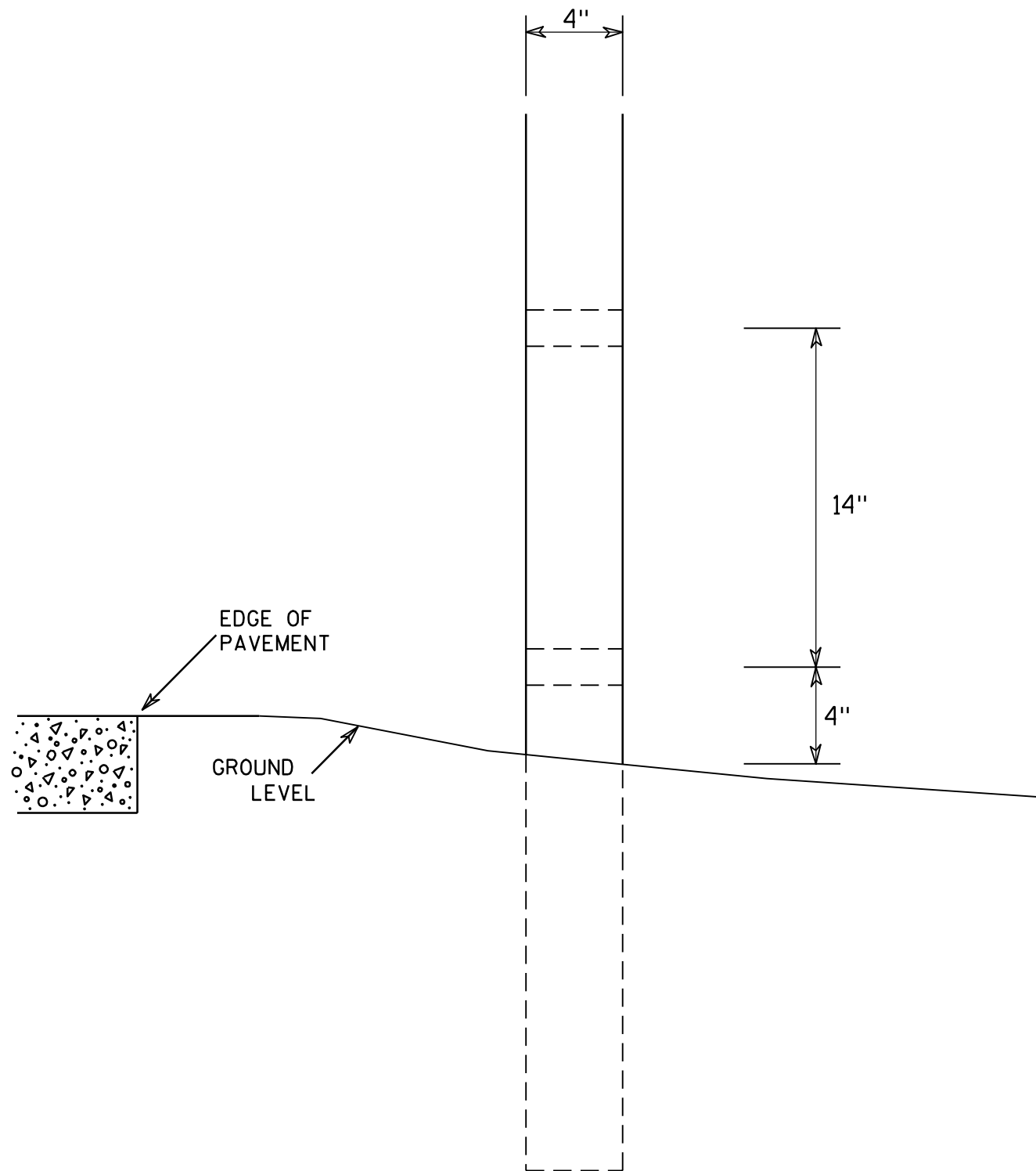
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

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

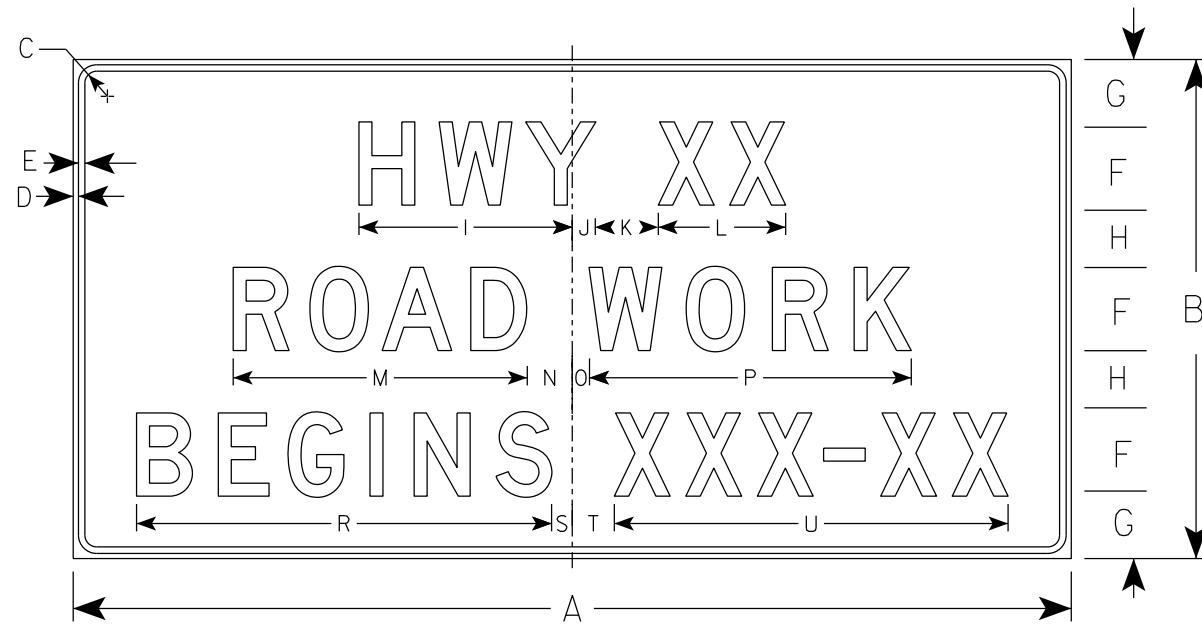
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57

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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																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2					18.0	
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8					32.0	
5																											

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

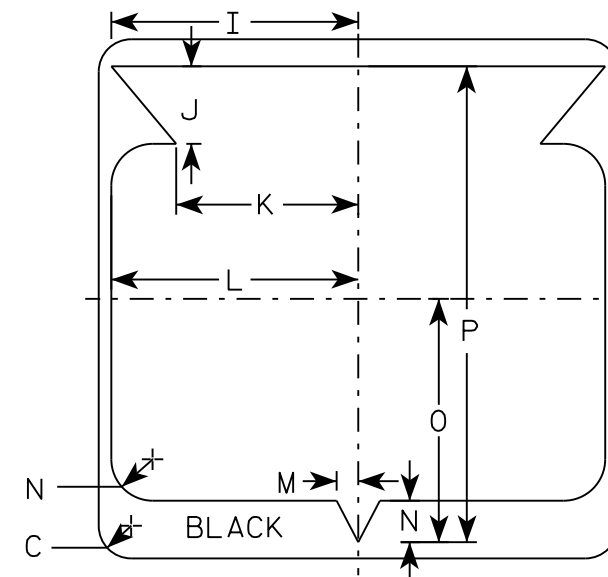
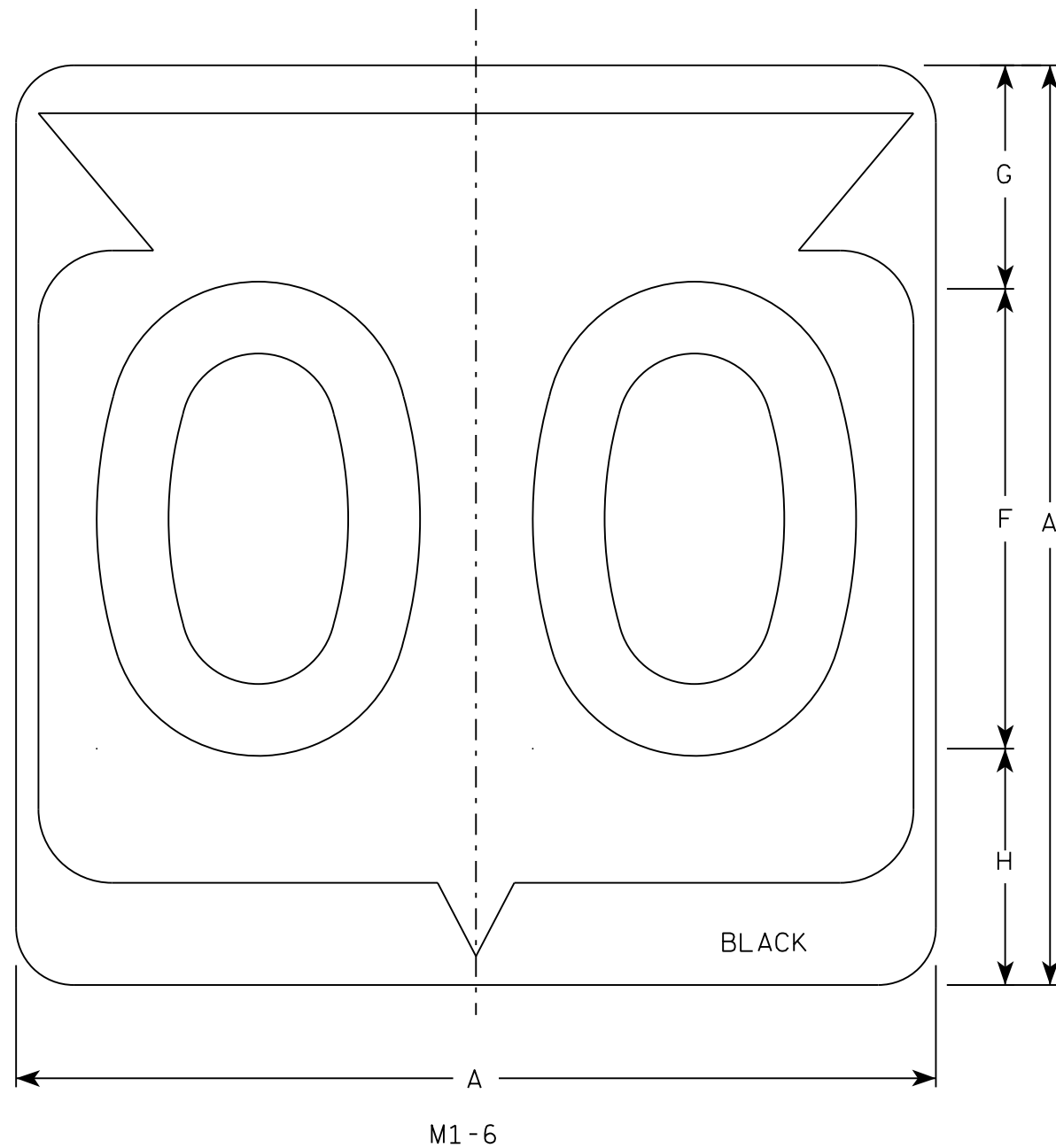
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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

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

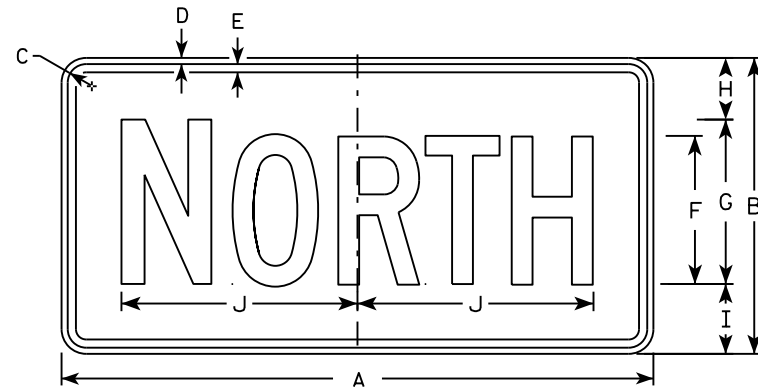
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

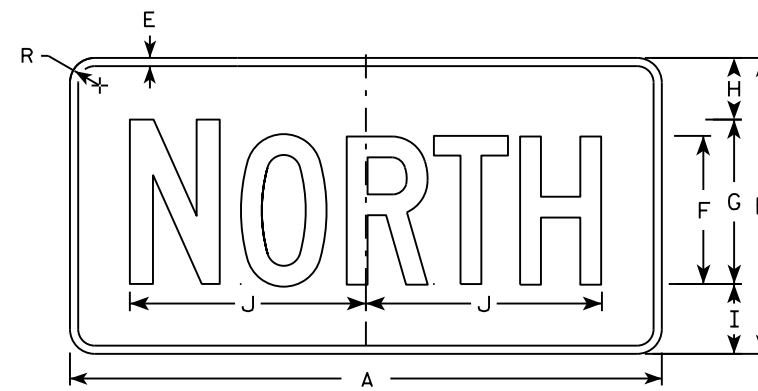
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- 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.
- 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
- Note the first letter of each direction is larger than the remainder of the message.



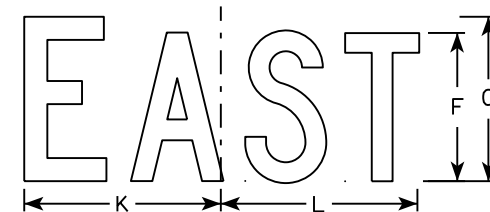
M3-1
MM3-1
MP3-1



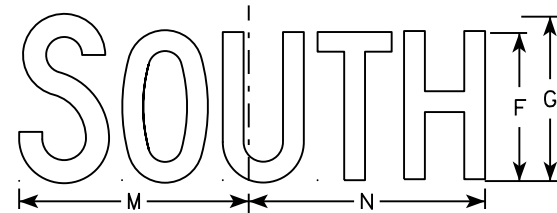
MB3-1
MK3-1
MN3-1



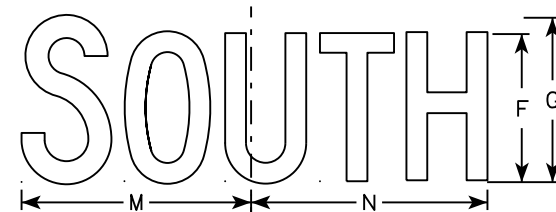
M3-2
MM3-2
MP3-2



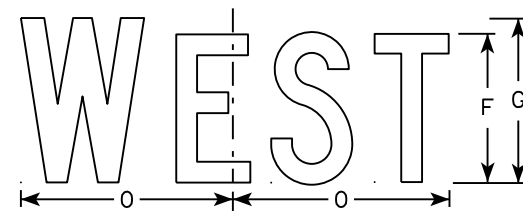
MB3-2
MK3-2
MN3-2



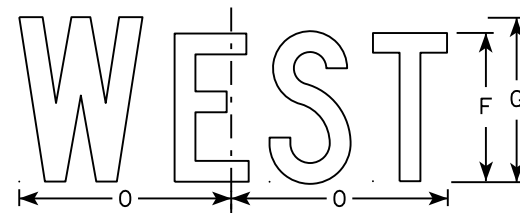
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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	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

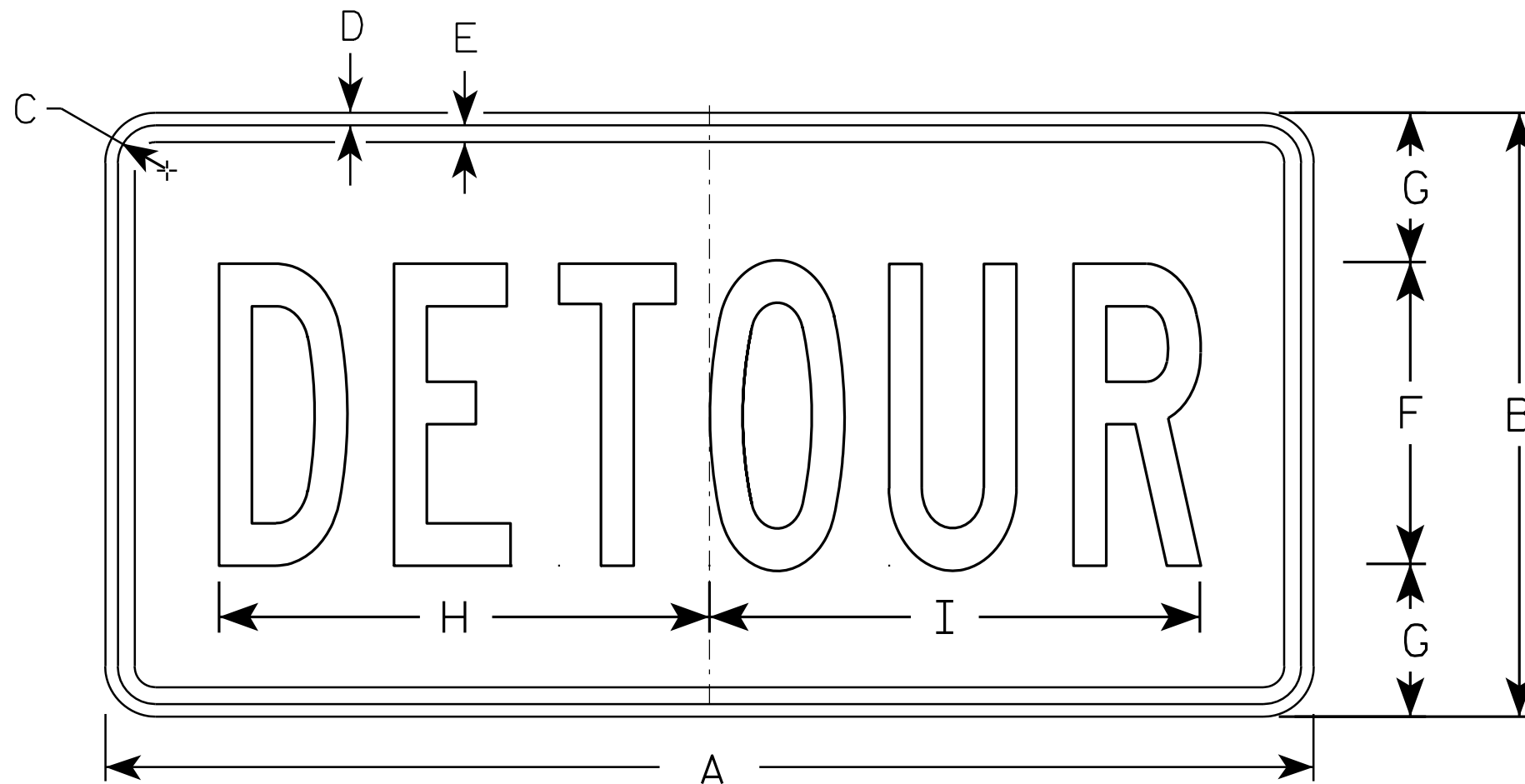
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 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

7

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	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

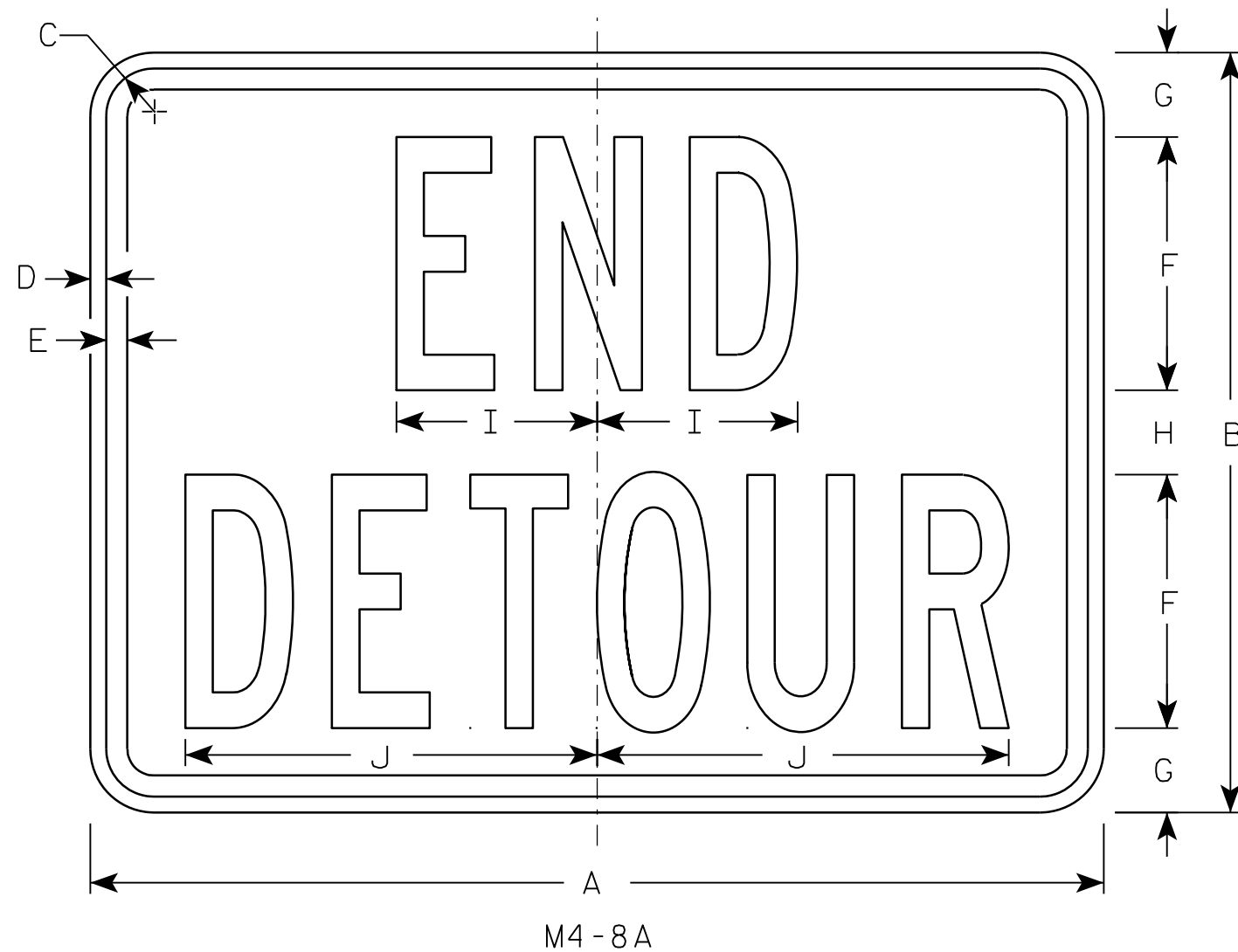
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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. 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

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																											

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

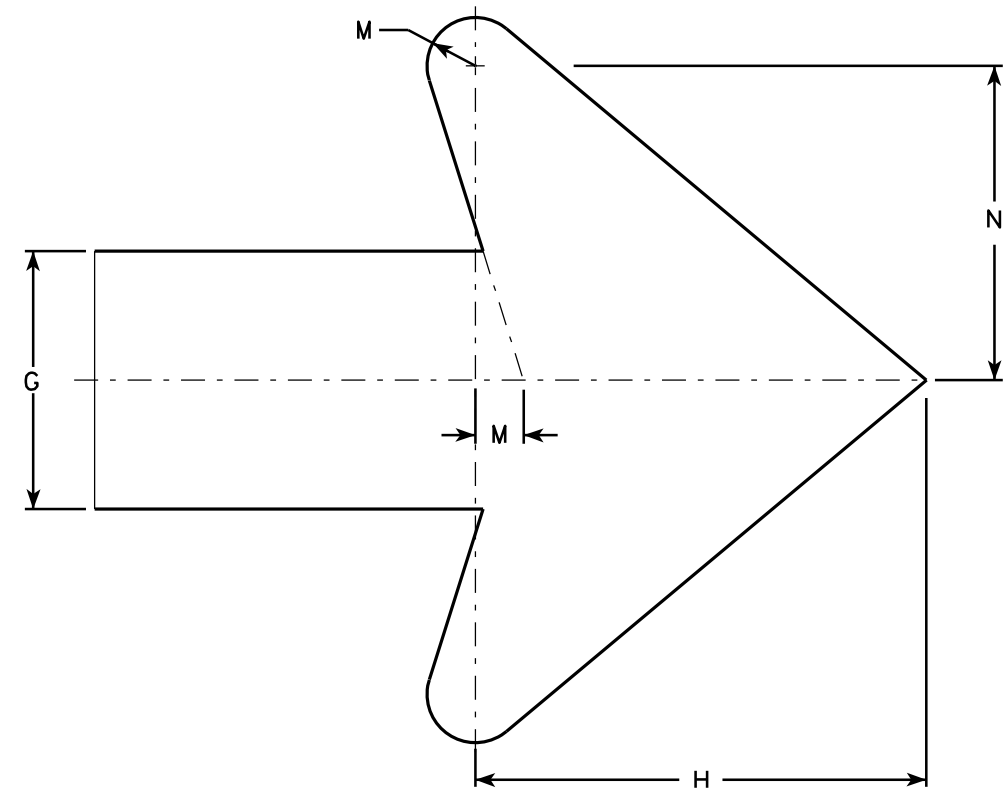
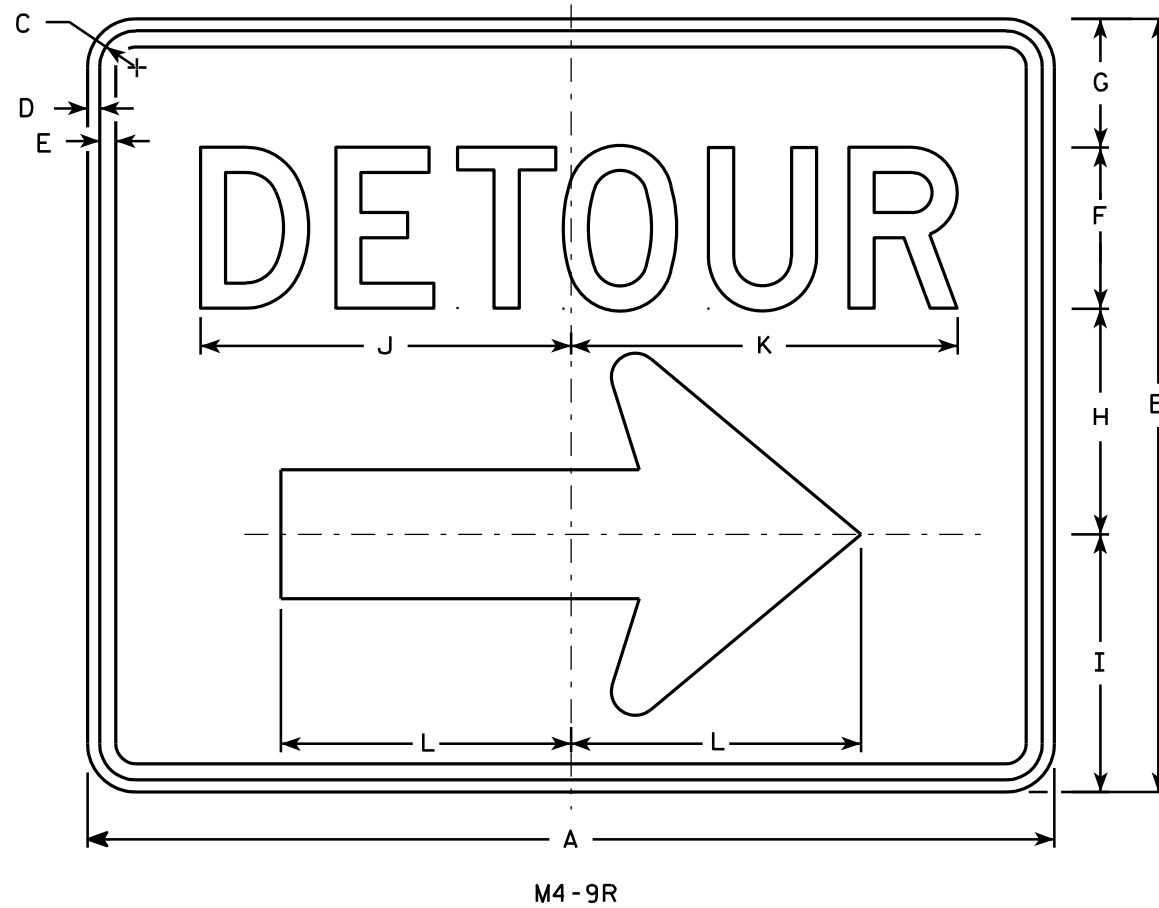
APPROVED *Matthew R Rauch*
for State Traffic Engineer

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

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. 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. M4-9L is the same as M4-9R except the arrow is reversed.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

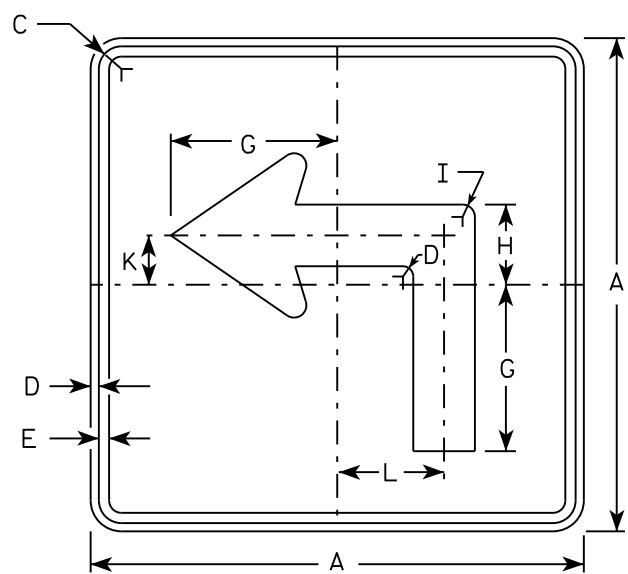
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

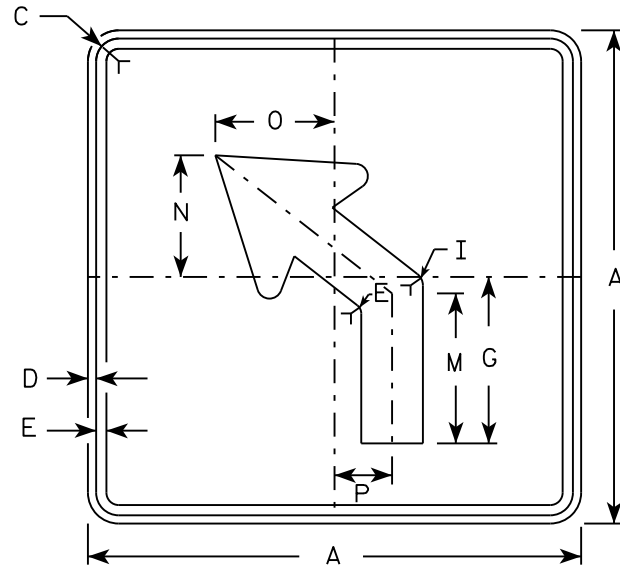
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

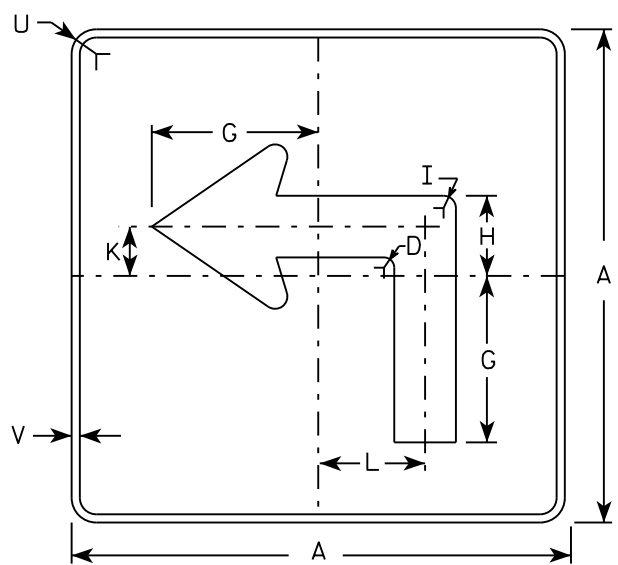
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



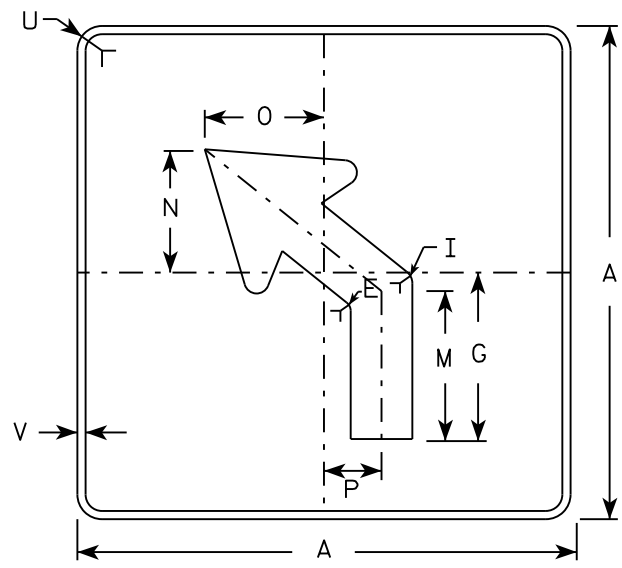
M5-1L
MM5-1L
M05-1L
MP5-1L



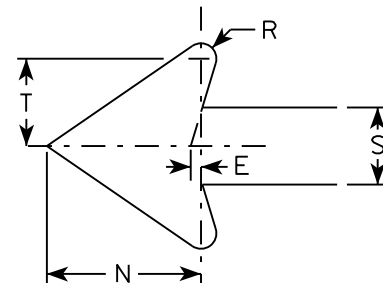
M5-2L
MM5-2L
M05-2L
MP5-2L



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

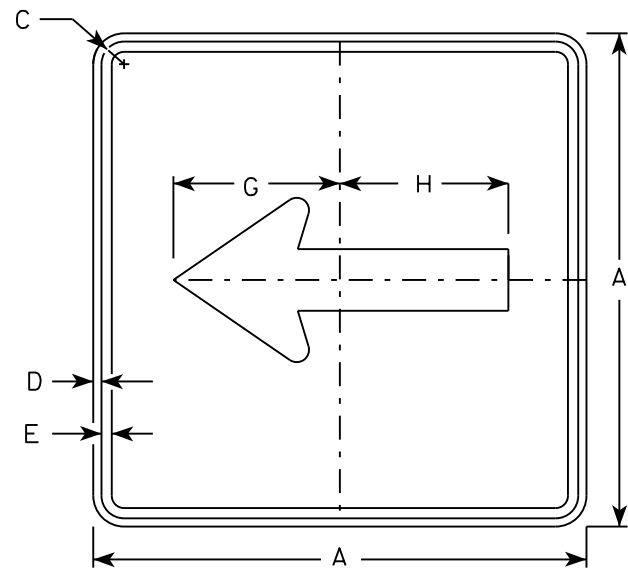
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

STANDARD SIGN
M5-1 & M5-2

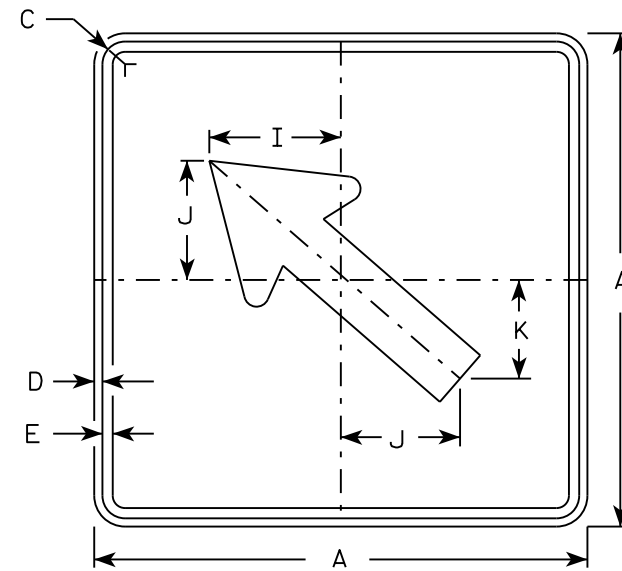
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

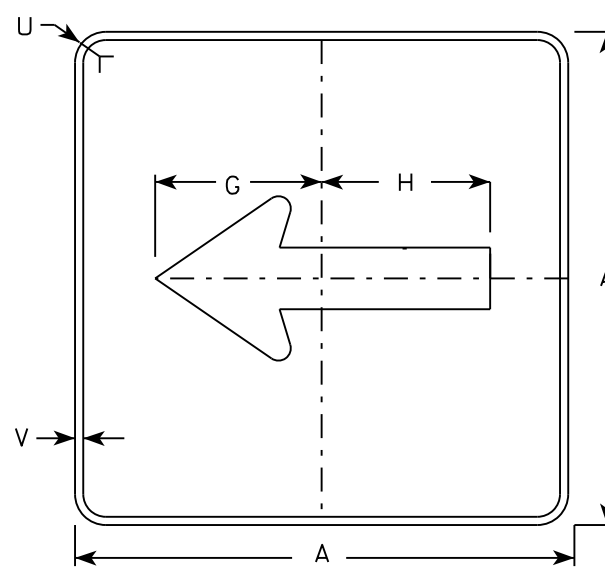
DATE 10/15/15 PLATE NO. M5-1.13



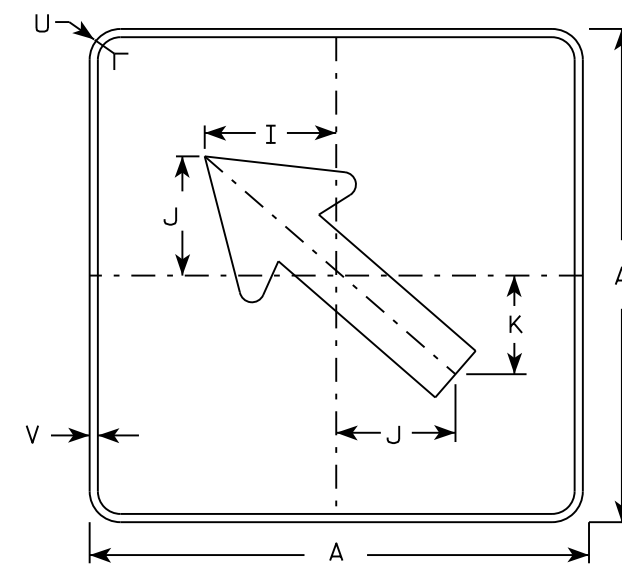
M6-1
MM6-1
M06-1
MP6-1



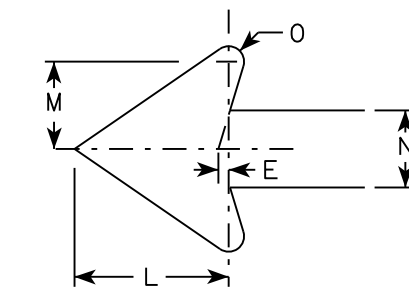
M6-2
MM6-2
M06-2
MP6-2



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

7

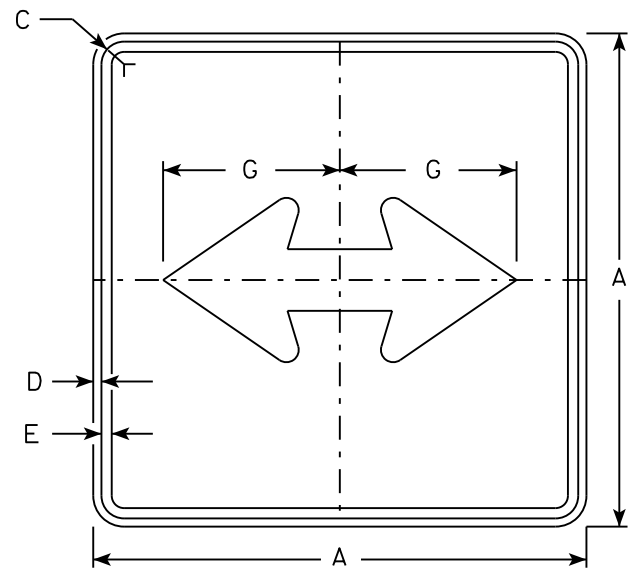
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

STANDARD SIGN
M6-1 & M6-2
SERIES

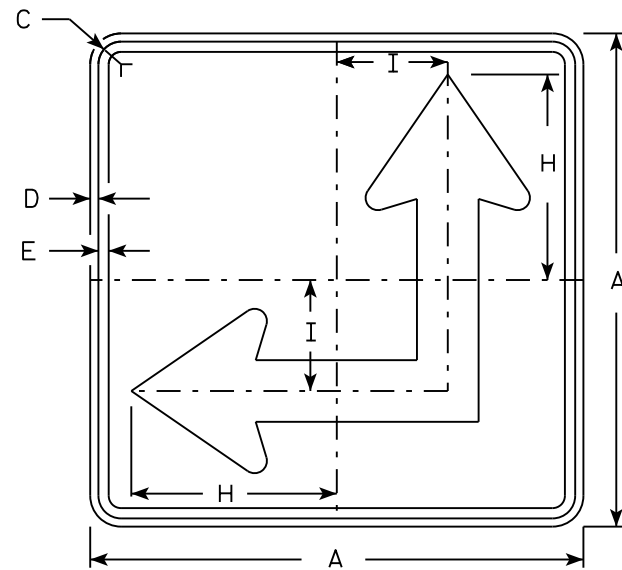
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

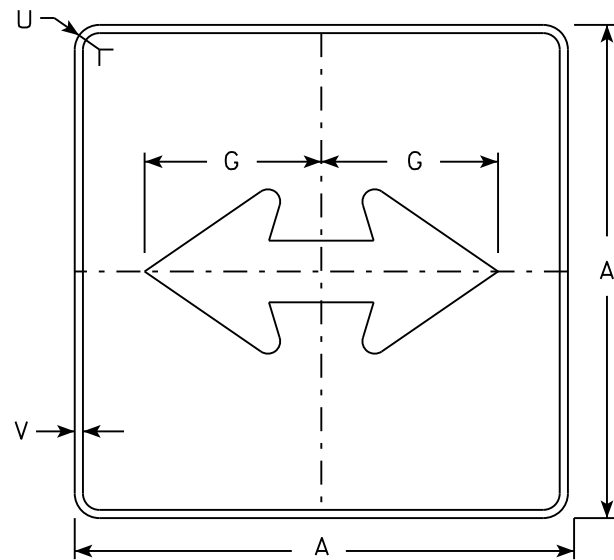
DATE 10/15/15 PLATE NO. M6-1.15



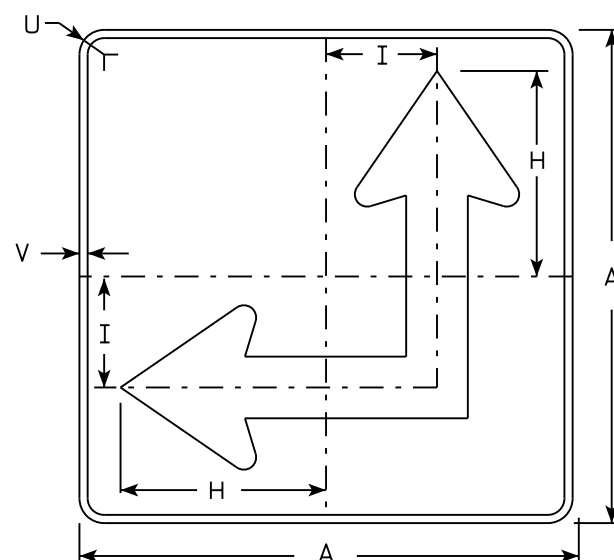
M6-4
MM6-4
M06-4
MP6-4



M6-6
MM6-6
M06-6
MP6-6



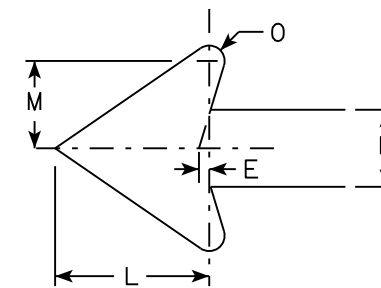
MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6

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.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.



7

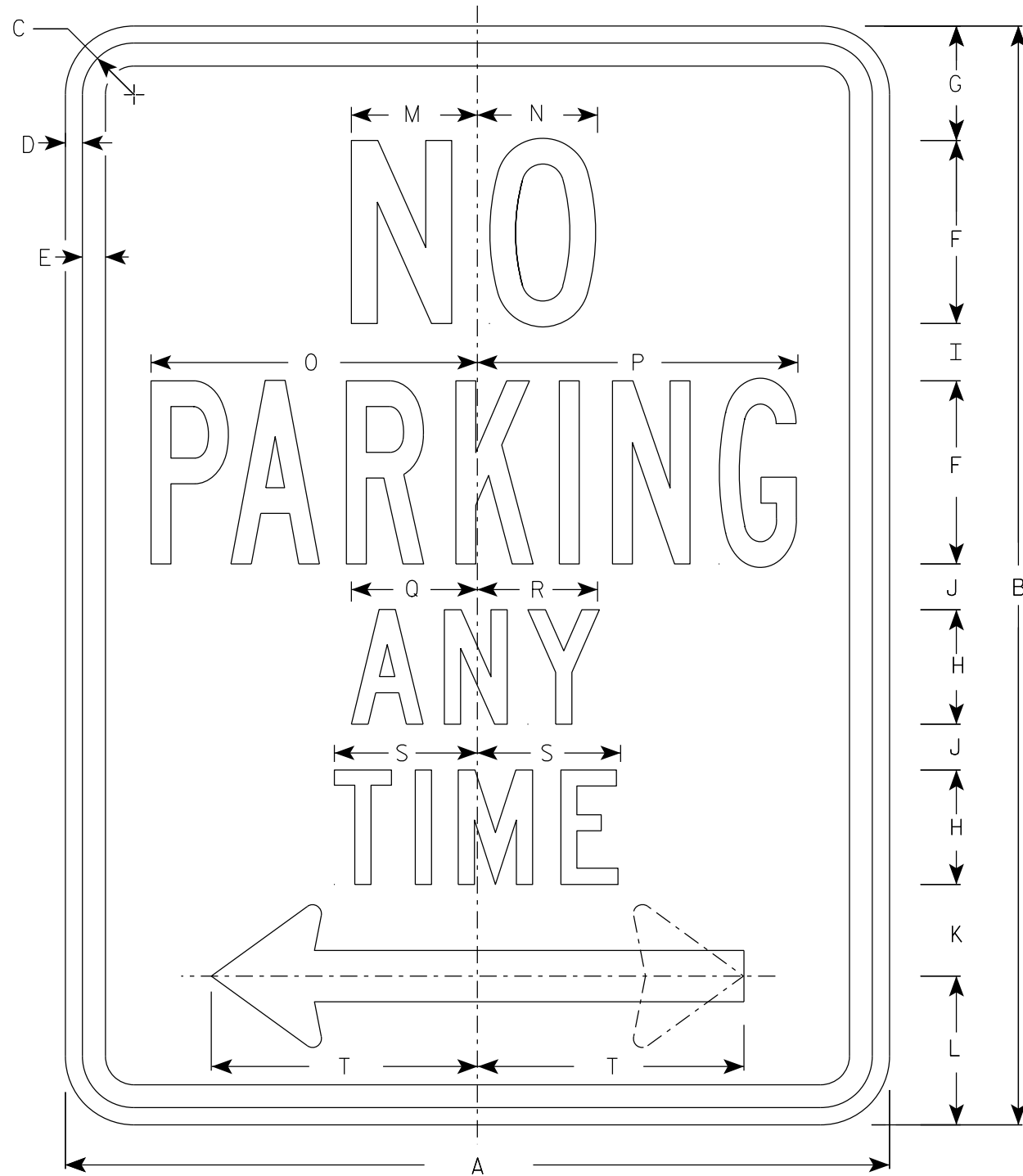
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-4 & M6-6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

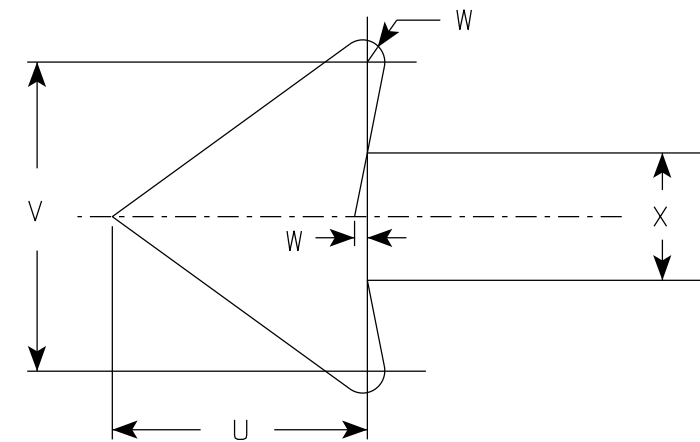
DATE 10/15/15 PLATE NO. M6-4.10



R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4		1.5	
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8		3.0	
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2		5.0	
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2		5.0	
4																											
5																											

STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/31/2021 PLATE NO. R7-1.10



R10-71

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.



R10-71L



R10-71R

7

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	R10-71L&R	R10-71
																											Area sq. ft.	Area sq. ft.
1																												
2S	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
2M	72	36	2 1/4	3/4	1	18	5	4	6	20 5/8	11 3/4	9 1/8	8 1/2	12 7/8	9 7/8	16 1/8	23 7/8	30	5 5/8	26 3/4	66	23 5/8	8 3/4	13	26 7/8	27	18.0	16.5
3																												
4																												
5																												

STANDARD SIGN
R10-71

WISCONSIN DEPT OF TRANSPORTATION

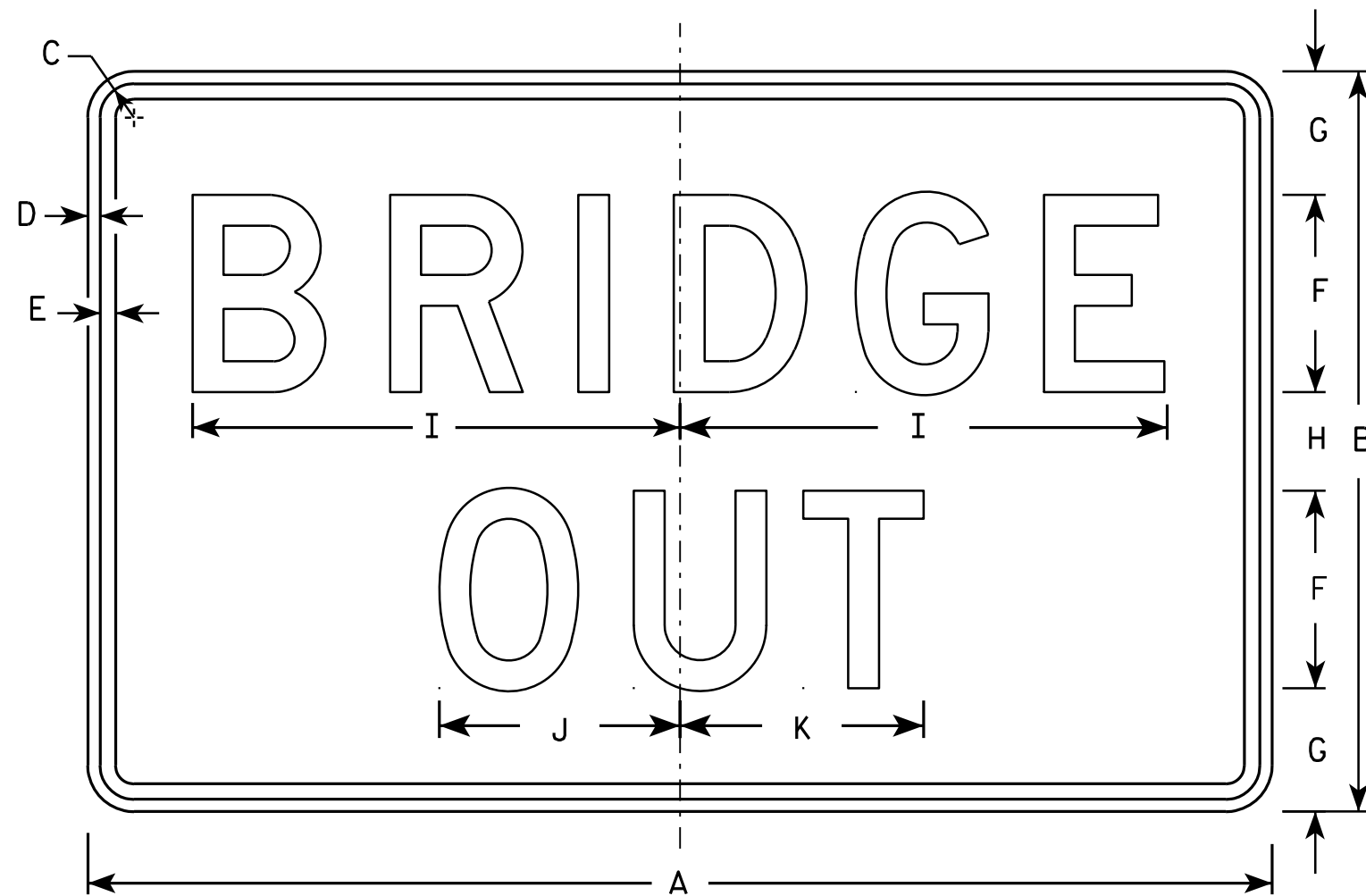
APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 4/4/11 PLATE NO. R10-71.3

PROJECT NO: _____ SHEET NO: _____ 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.



R11-2B

7

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	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

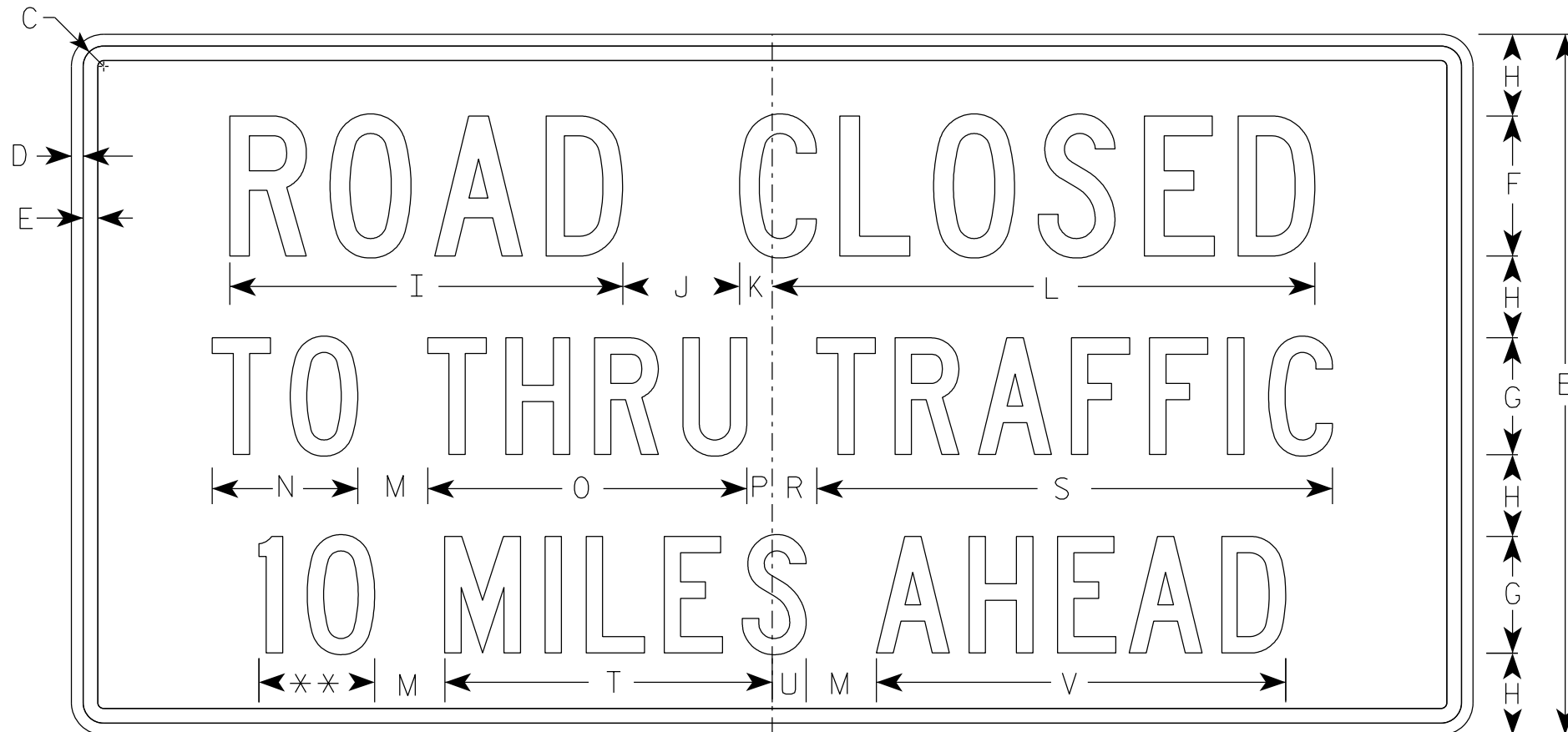
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: _____ SHEET NO: _____ E

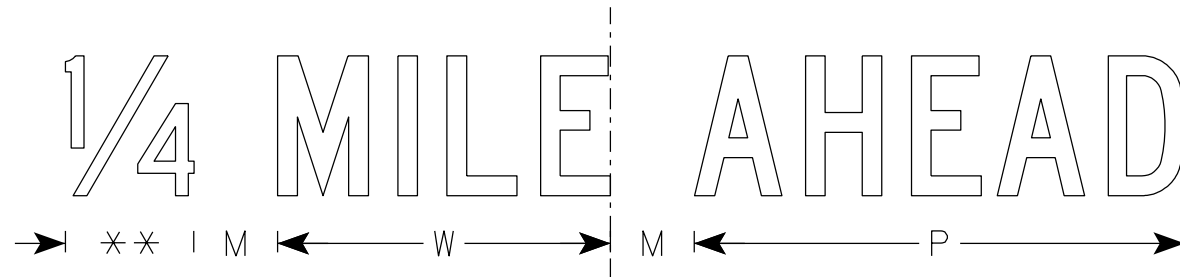
NOTES

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. 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 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5	
3																												
4																												
5																												

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

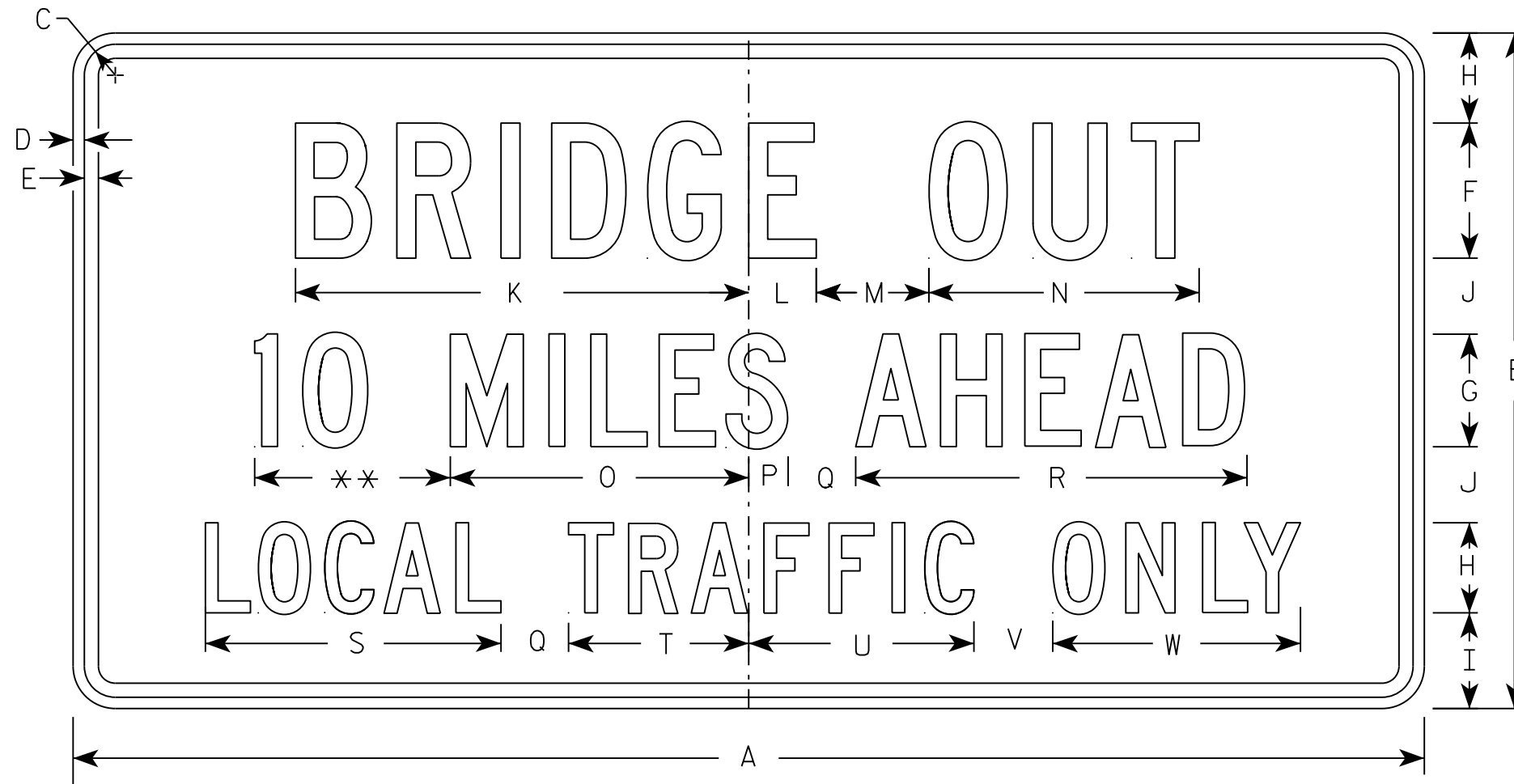
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

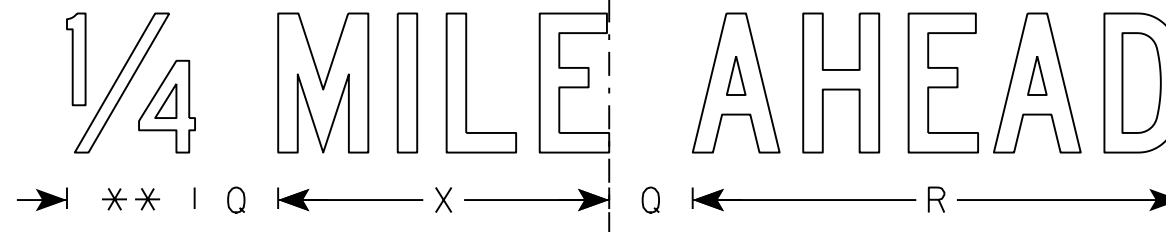
NOTES

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



** See Note 5

R11-3B



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	13 1/4	2 1/4	3	8	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	20 1/8	3	5	12	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	20 1/8	3	5	12	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
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

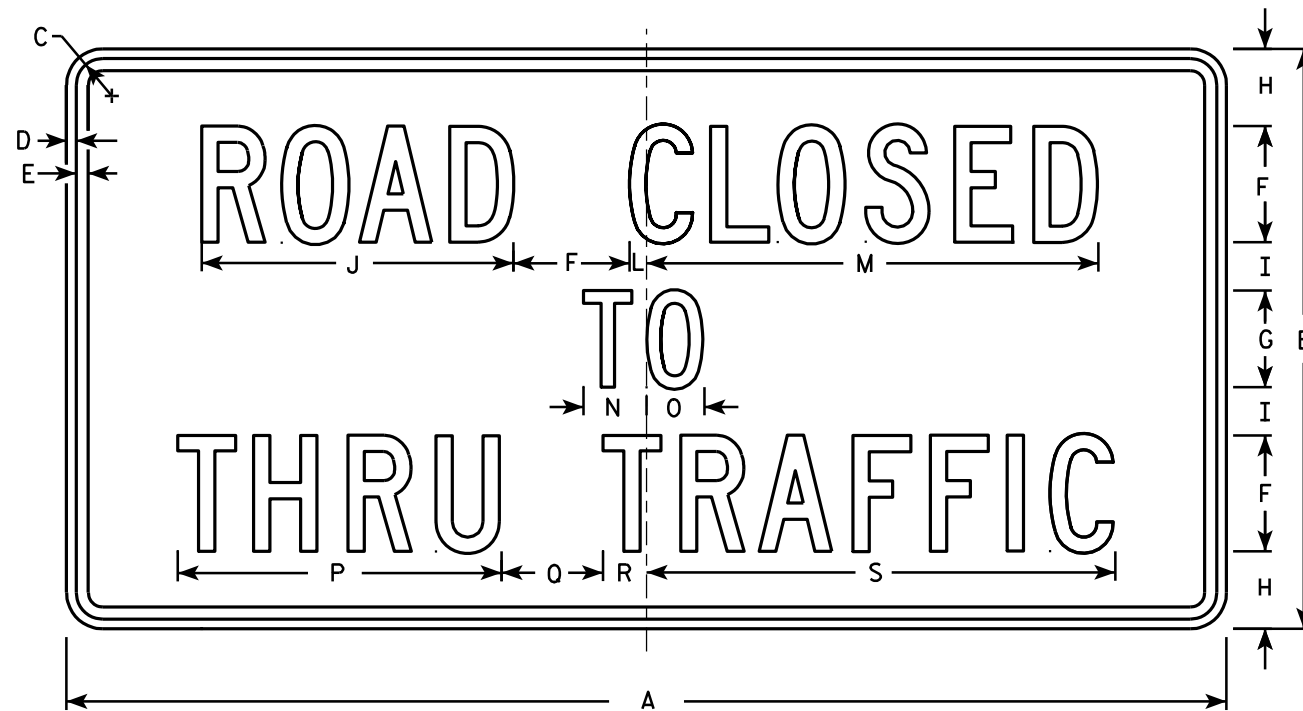
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **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 - 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.



R11-4

7

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

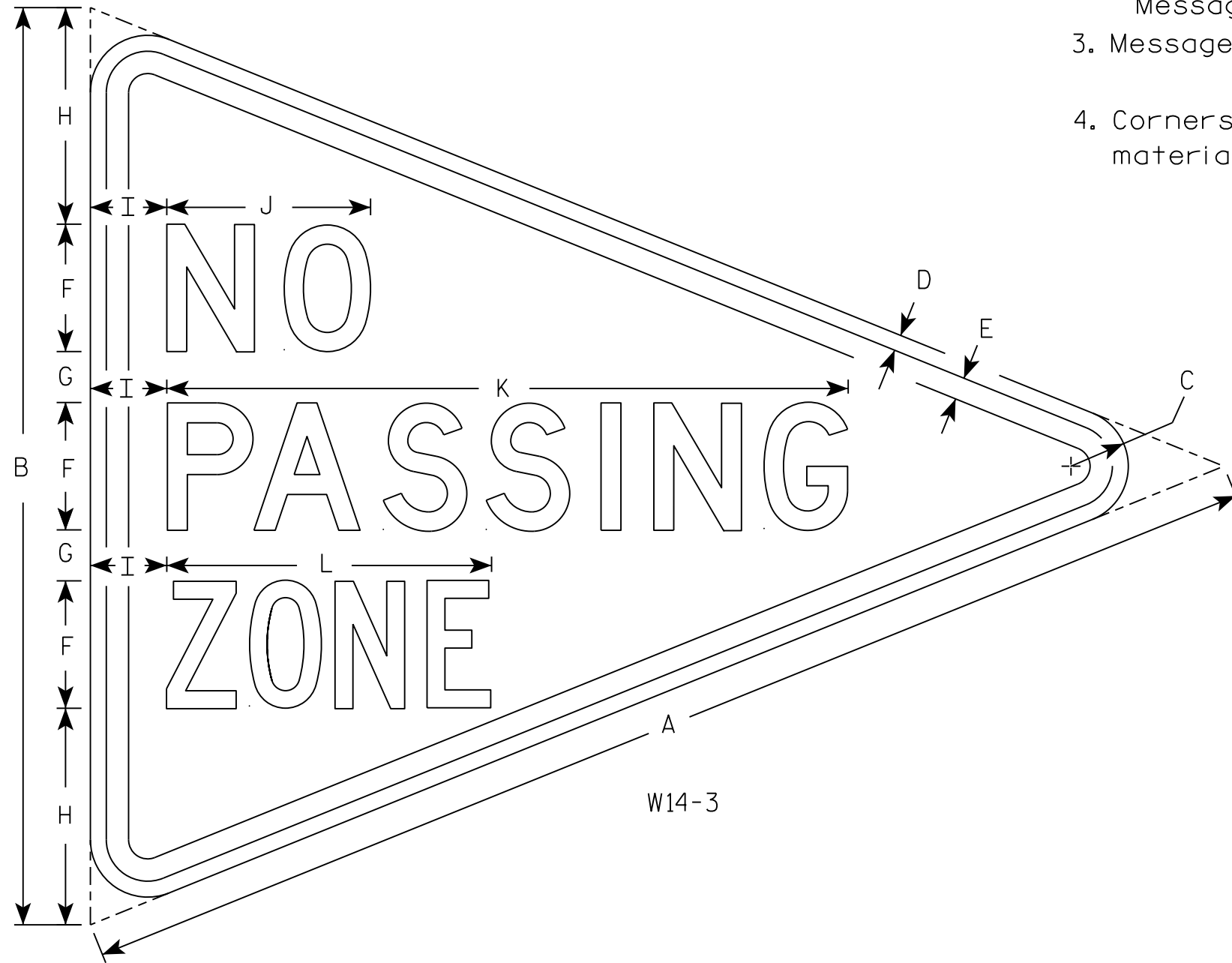
APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ 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.



7

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	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																											

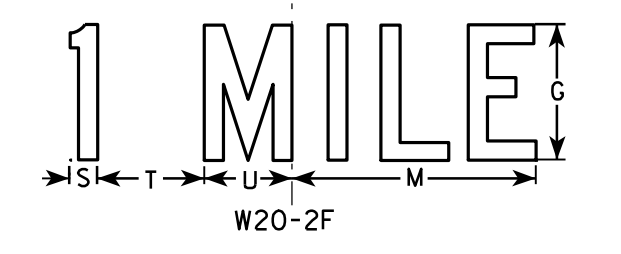
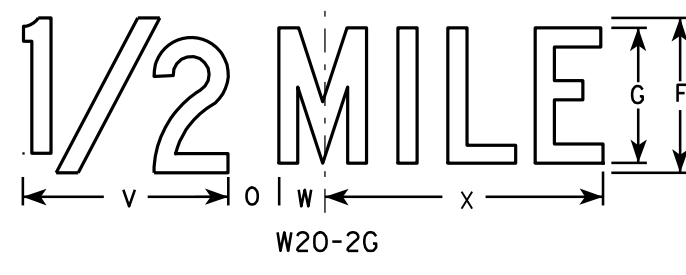
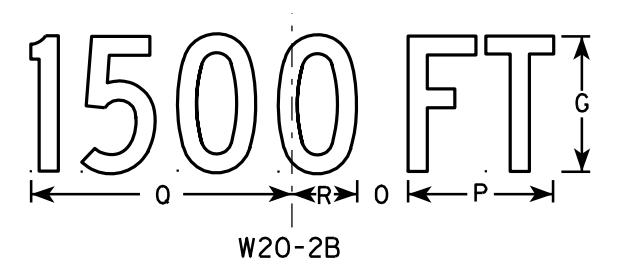
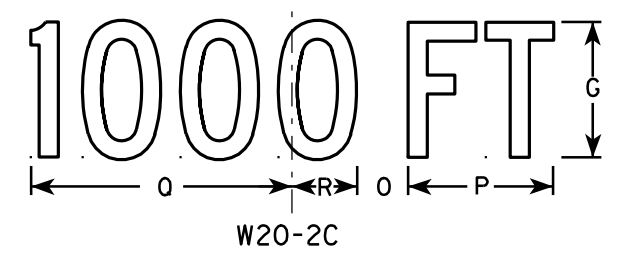
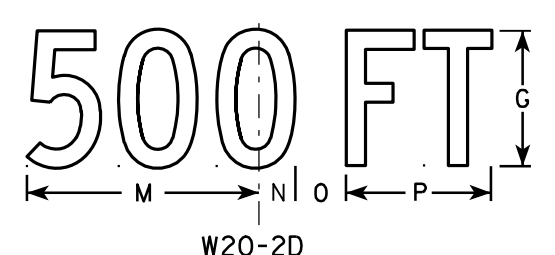
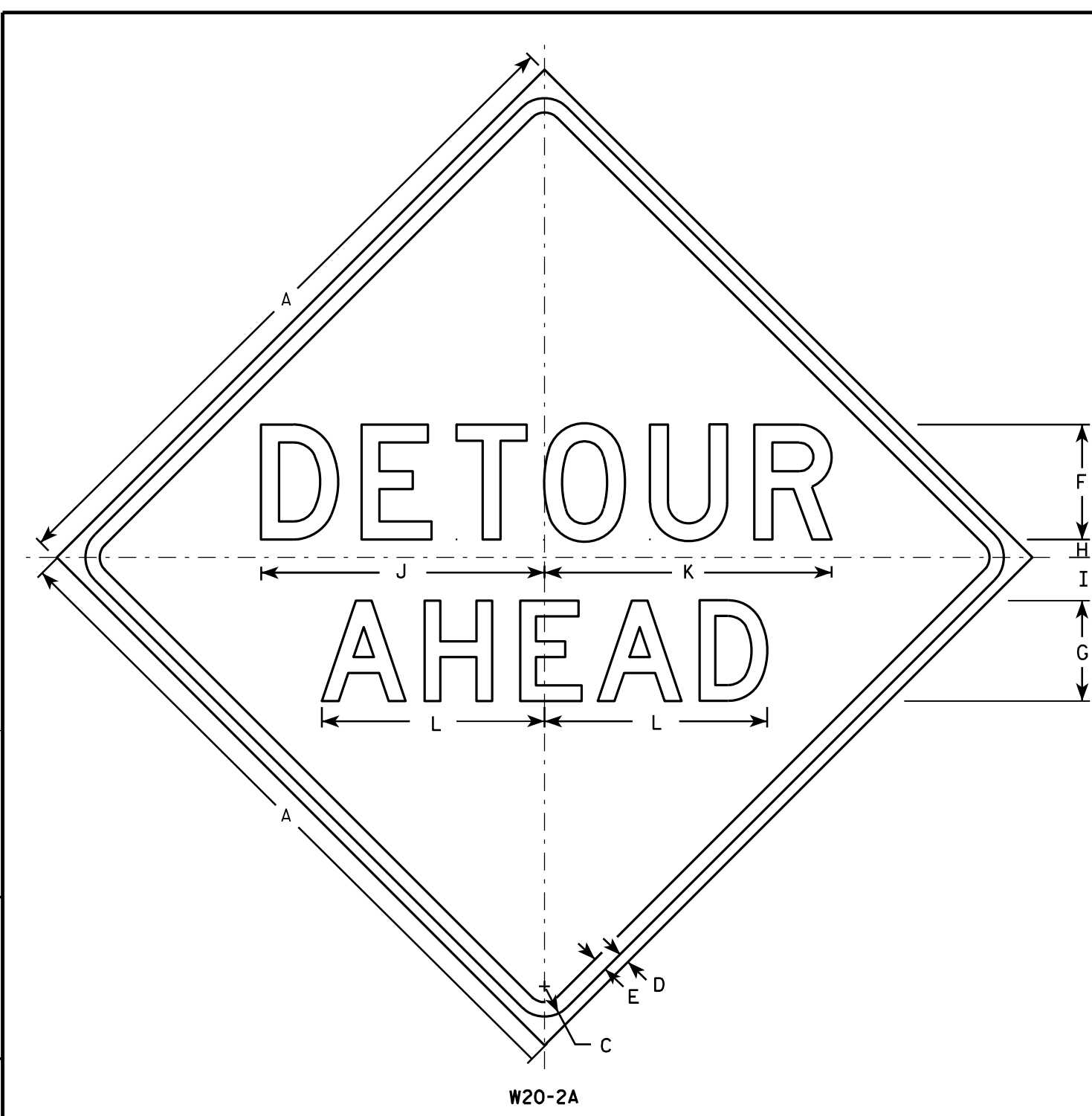
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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. 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.

7

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	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

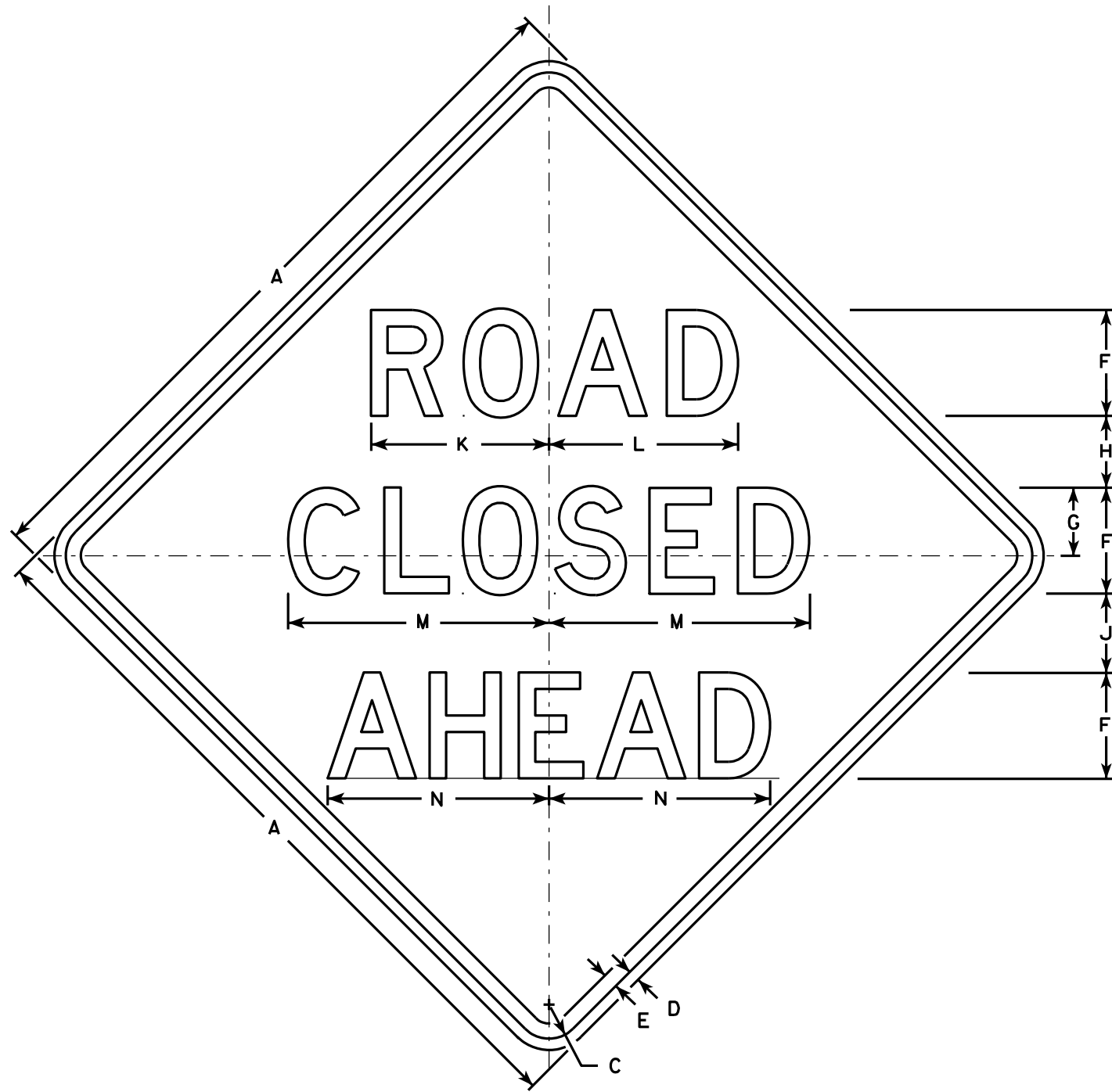
STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

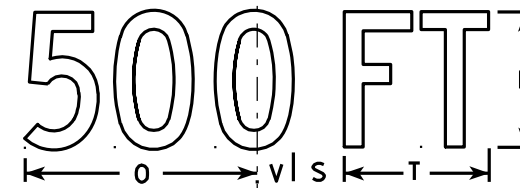
APPROVED *Matthew R. Raub*
for State Traffic Engineer

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

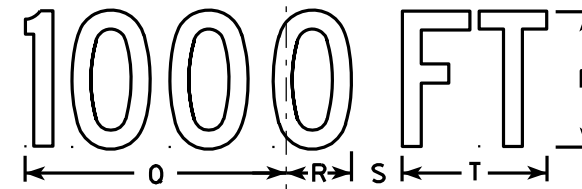
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



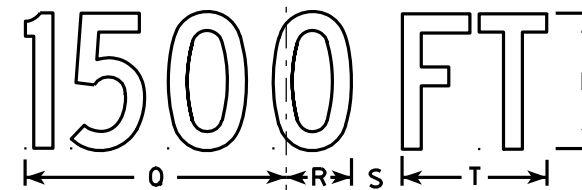
W20-3A



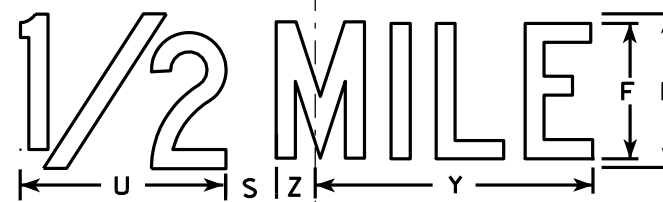
W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

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. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

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	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

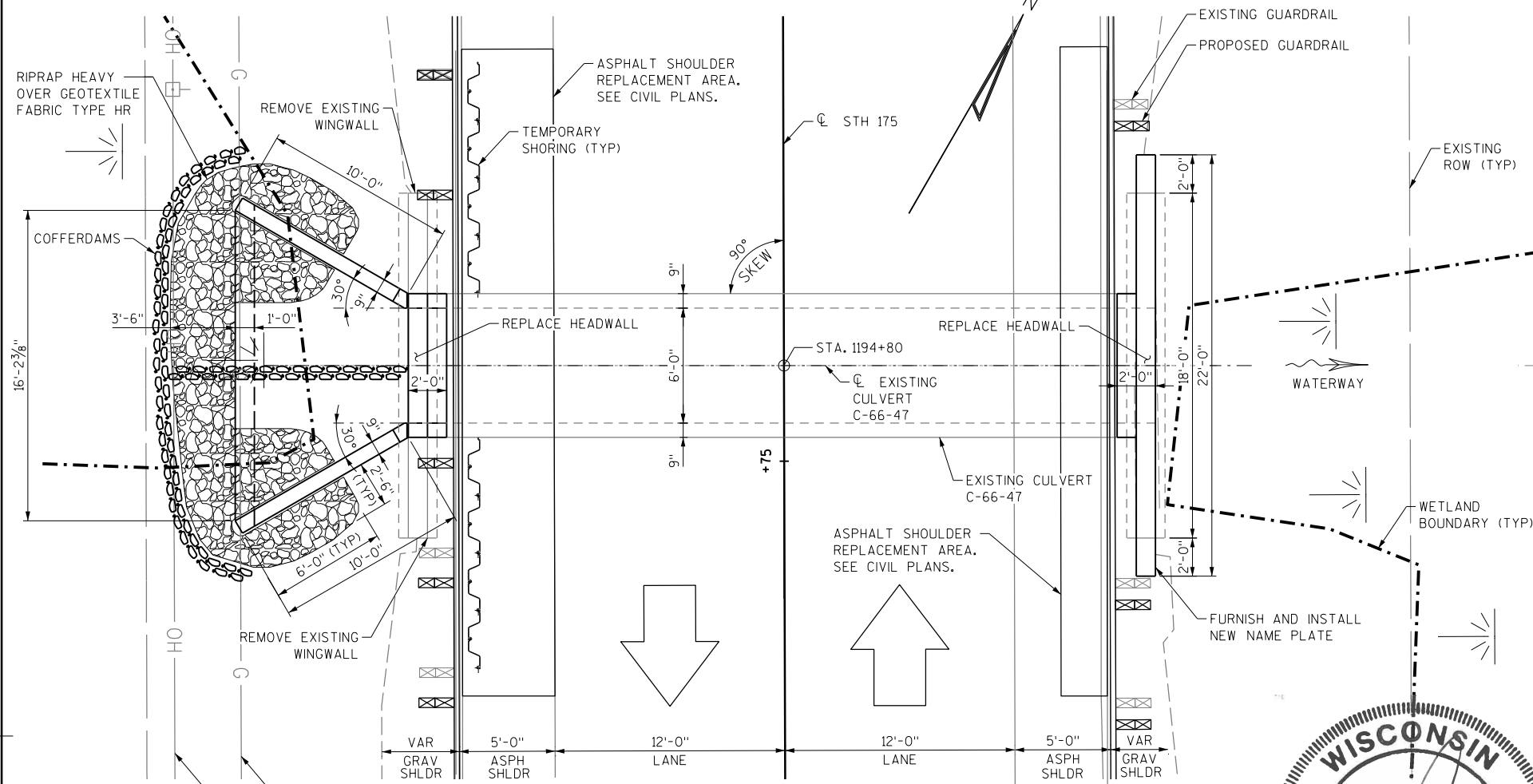
STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

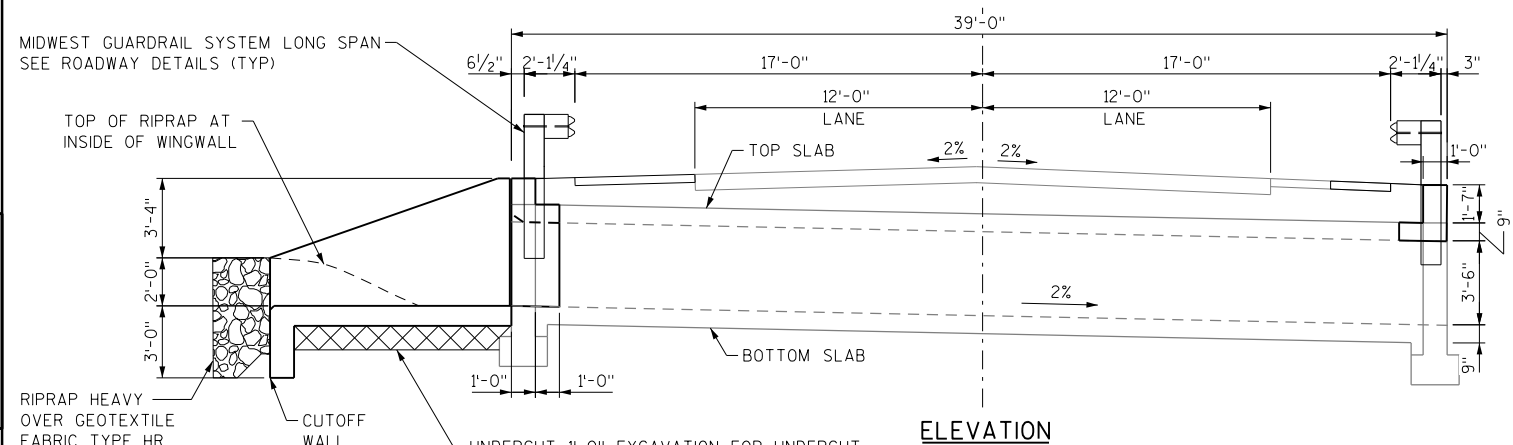
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



PLAN
1-CELL REINFORCED CONCRETE BOX CULVERT
(WEST WINGWALL AND HEADWALL REPLACEMENT, EAST HEADWALL REPLACEMENT)



ELEVATION

- LIST OF DRAWINGS:**
1. GENERAL PLAN & ELEVATION
 2. UPSTREAM APRON
 3. DOWNSTREAM HEADWALL

DESIGN DATA

MATERIAL PROPERTIES:
 CONCRETE MASONRY..... f'c = 3,500 psi
 BAR STEEL REINFORCEMENT..... fy = 60,000 psi

TRAFFIC DATA

STH 175
 AADT (2019) = 4,100

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
 AARON BONK, PE
 (608) 261-0261

CONSULTANT:
 WILLIAM J. ZIPPEL, PE, SE
 ALFRED BENESCH & CO
 1300 W CANAL ST, SUITE 150
 MILWAUKEE, WI 53233
 (414) 308-1321



TOTAL ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEM	UNIT	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS C-66-47	EACH	1
204.9165.S	REMOVING LOOSE CONCRETE	SF	15
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-66-47	LS	1
206.5000	COFFERDAMS C-66-47	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	90
311.0110	BREAKER RUN	TON	12
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	54
504.0100	CONCRETE MASONRY CULVERTS	CY	10
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	288
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	708
505.0904	BAR COUPLERS NO. 4	EACH	10
509.1500	CONCRETE SURFACE REPAIR	SF	5
511.1200	TEMPORARY SHORING C-66-47	SF	130
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	13
606.0300	RIPRAP HEAVY	CY	18
645.0105	GEOTEXTILE TYPE C	SY	17
645.0120	GEOTEXTILE TYPE HR	SY	10
NON-BID ITEMS			
	JOINT FILLER - 3/4"		
	NAME PLATE		

GENERAL NOTES:

1. DRAWINGS SHALL NOT BE SCALED.
2. DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS
3. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
4. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
5. ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE. STATIONS AND ELEVATIONS ARE IN FEET.
6. BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
7. THE UPPER LIMITS FOR "EXCAVATION FOR STRUCTURES CULVERTS C-66-47" SHALL BE THE EXISTING GROUND LINE.
8. AT THE BACK FACE OF THE WEST WINGWALLS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE WINGWALL CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE B.
9. THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON SHEET 3 OF THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES CULVERTS C-66-47". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR, ORIGINAL CONSTRUCTION YEAR IS 1925.
11. UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE. EXISTING BARS SHALL BE CLEANED AND STRAIGHTENED.
12. TRANSVERSE SAWCUTTING OF TOP SLAB SHALL BE PARTIAL DEPTH TO PREVENT SLURRY FROM POURING THROUGH INTO WATERWAY. FINAL REMOVAL SHALL BE DONE WITH BREAKER.
13. REMOVE CONCRETE DEBRIS RESULTING FROM CONCRETE REMOVAL FROM THE WATERWAY
14. TEMPORARY SHORING SHALL NOT BE PLACED WITHIN THE 12'-0" WIDE DRIVING LANES OF STH 175. EXACT LOCATION AND LIMITS OF TEMPORARY SHORING SHALL BE DETERMINED BY THE CONTRACTOR.
15. CONCRETE IN THE CUTOFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED. THE ALTERNATIVE CUTOFF WALL DETAIL SHOWN ON SHEET 3 OF THE PLANS MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUTOFF WALL. PAYMENT SHALL BE BASED ON THE CONCRETE CUTOFF WALL.

CONCRETE REPAIR NOTES:

1. ALL CONCRETE REMOVAL FOR CONCRETE SURFACE REPAIR SHALL BE DEFINED BY A 1/2" DEEP SAW CUT.
2. CLEAN COAT AND SECURE EXISTING REINFORCING STEEL. ADDITIONAL REINFORCING STEEL SHALL BE TIED IN PLACE TO EXISTING REINFORCEMENT STEEL AS SHOWN IN THE DETAILS AND AS DIRECTED BY THE ENGINEER.
3. THE ITEM "REMOVING LOOSE CONCRETE" IS INTENDED FOR USE AT AREAS OF SPALLING AND DELAMINATION ON THE UNDERSIDE OF THE TOP SLAB. THE QUANTITY IS APPROXIMATE AND THE EXACT LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. CONCRETE SURFACE REPAIR AREAS OF SPALLING AND DELAMINATION ON THE CULVERT WALLS AND WINGWALLS AT LOCATIONS DETERMINED BY THE ENGINEER.

NO.	DATE	REVISION	BY

benesch
 Alfred Benesch & Company
 1300 West Canal Street, Suite 150
 Milwaukee, Wisconsin 53233
 414-308-1310 Job No. 20289,00

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 ACCEPTED *[Signature]* SDR 03/08/22
 CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-66-47

STH 175 OVER WATERWAY

COUNTY WASHINGTON TOWN/CITY/VILLAGE RICHFIELD

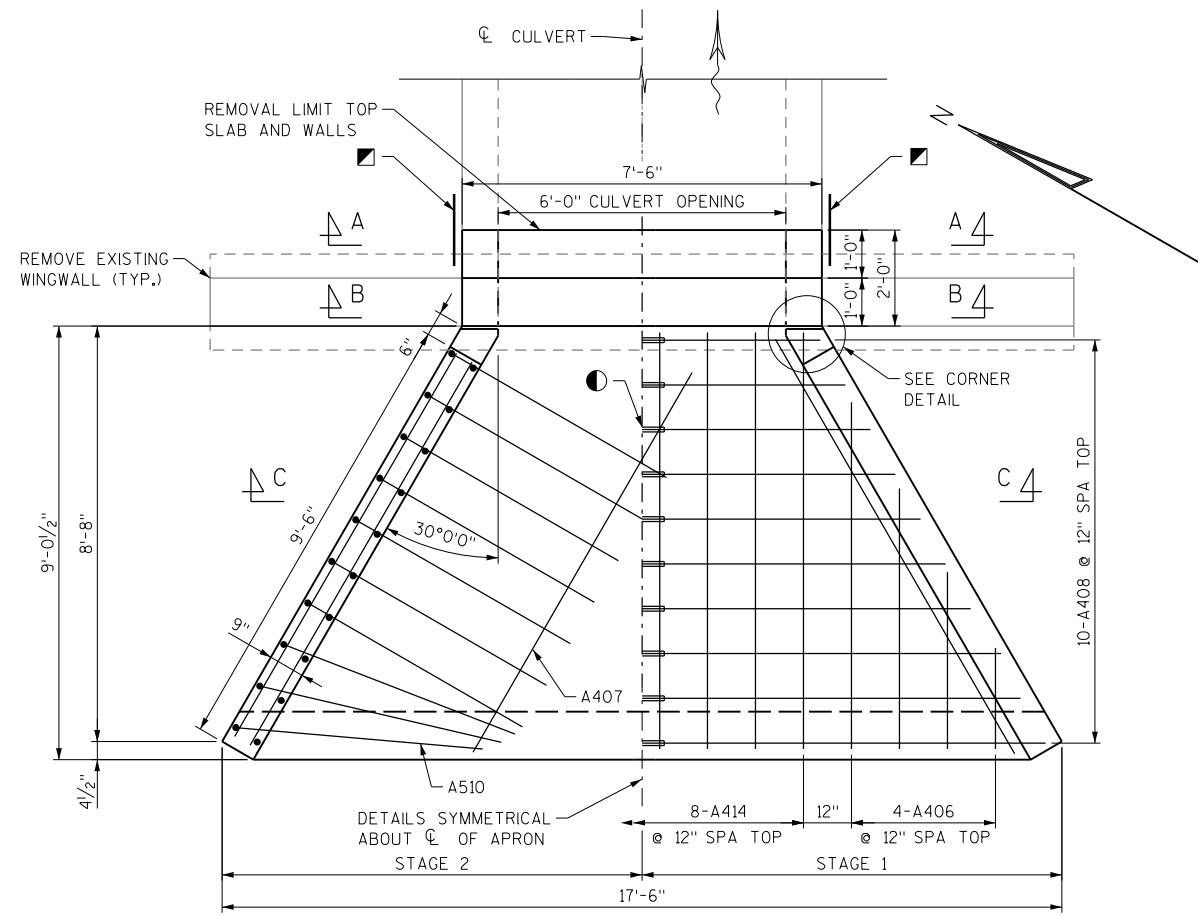
DESIGN SPEC. REHABILITATION N/A

DESIGNED BY JAP DESIGN CK'D. WJZ DRAWN BY HRC PLANS CK'D. WJZ

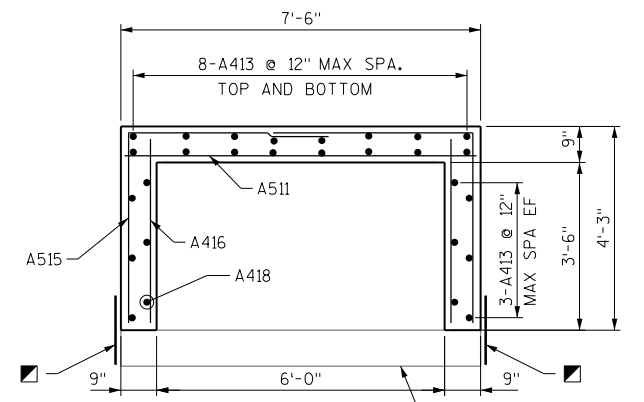
GENERAL PLAN & ELEVATION SHEET 1 OF 3

8

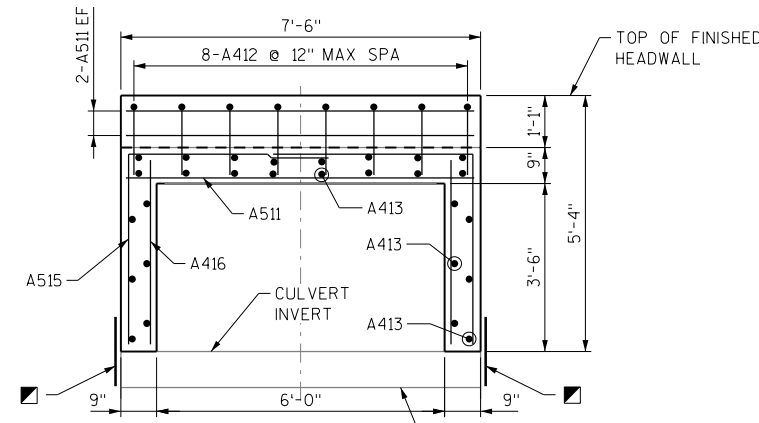
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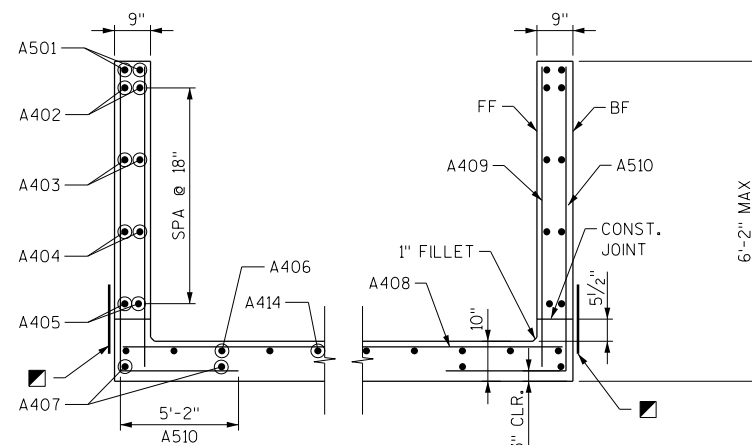
APRON DETAIL



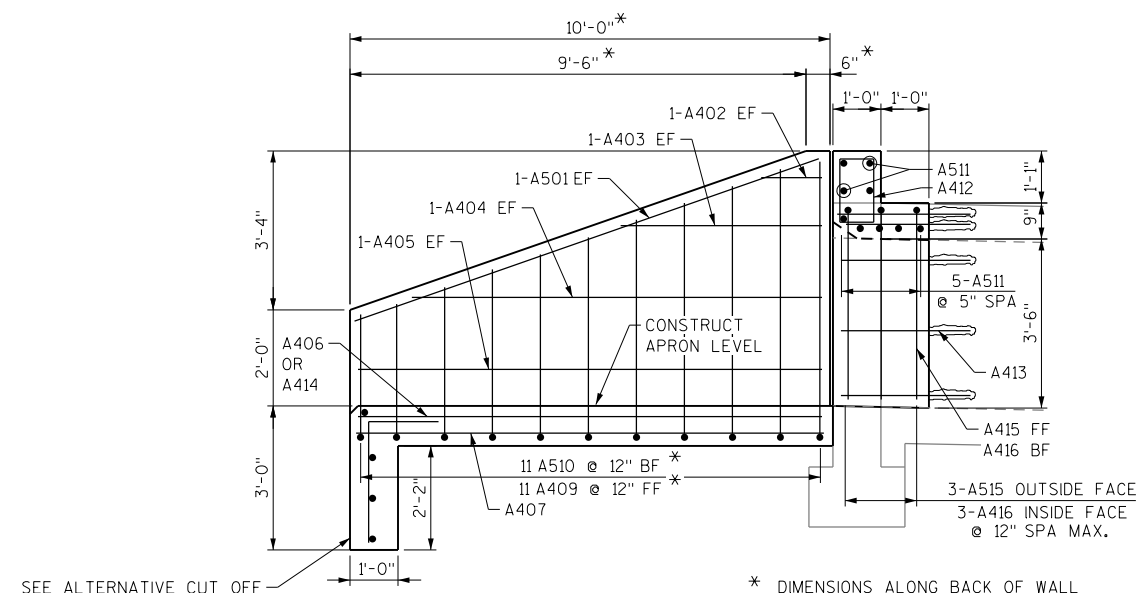
SECTION A-A



SECTION B-B



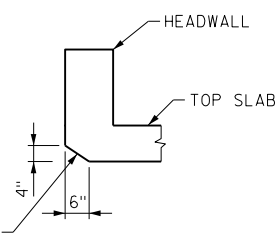
SECTION C-C



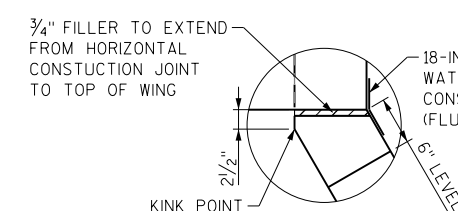
ELEVATION

WING AND PORTION OF BARREL

SEE ALTERNATIVE CUT OFF WALL DETAIL ON SHEET 3.



INLET DETAIL



CORNER DETAIL

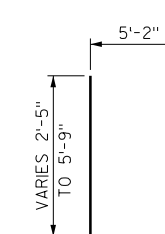
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR BAR SERIES	470 # COATED 288 # UNCOATED
					LOCATION
A501	X	4	10'-1"		WINGWALL TOP DIAGONAL
A402	X	4	1'-3"		WINGWALL HORIZONTAL
A403	X	4	5'-0"		WINGWALL HORIZONTAL
A404	X	4	8'-9"		WINGWALL HORIZONTAL
A405	X	4	9'-7"		WINGWALL HORIZONTAL
A406		8	4'-7"	▲	APRON LONGITUDINAL
A407		4	9'-8"		APRON BOTTOM OUTSIDE CORNERS
A408		20	6'-1"	▲	APRON TRANSVERSE
A409	X	22	4'-1"	▲	WINGWALL VERTICAL FF
A510	X	22	9'-2"	X	WINGWALL VERTICAL BF
A511	X	9	7'-2"		HEADWALL AND BARREL TRANSVERSE
A412	X	8	4'-6"	X	HEADWALL VERTICAL
A413		28	2'-3"		BARREL LONGITUDINAL ADHESIVE ANCHORS
A414		8	8'-9"		APRON LONGITUDINAL
A515		6	8'-2"	X	BARREL OUTSIDE CORNERS
A416		6	3'-11"		BARREL INSIDE VERTICAL

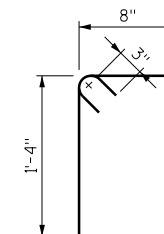
BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
A406	2 SERIES OF 4	2'-0" TO 7'-2"
A408	2 SERIES OF 10	3'-7" TO 8'-6"
A409	2 SERIES OF 11	2'-5" TO 5'-9"
A510	2 SERIES OF 11	7'-6" TO 10'-10"

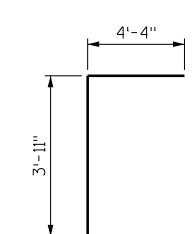
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- ▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.
- 5" MIN EMBEDMENT AND 3" MIN COVER REQUIRED FOR #4 ADHESIVE ANCHORS.
- SEE BAR COUPLER DETAILS ON SHEET 3.
- 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING ALONG ALL CONSTRUCTION JOINTS AND AT JOINTS BETWEEN EXISTING AND PROPOSED CONCRETE



A510



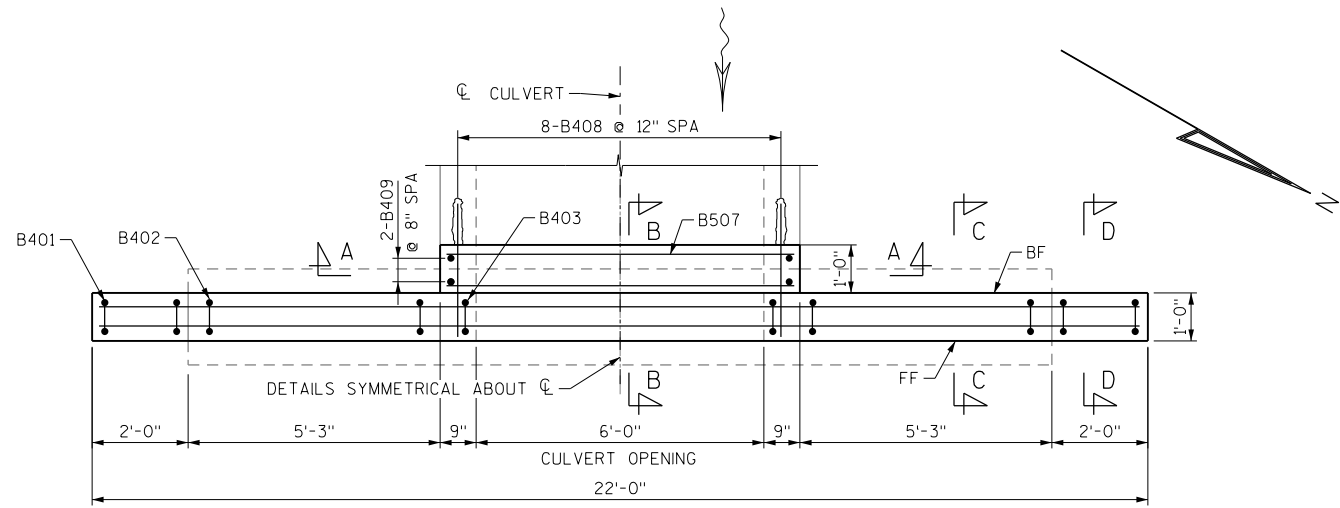
A412



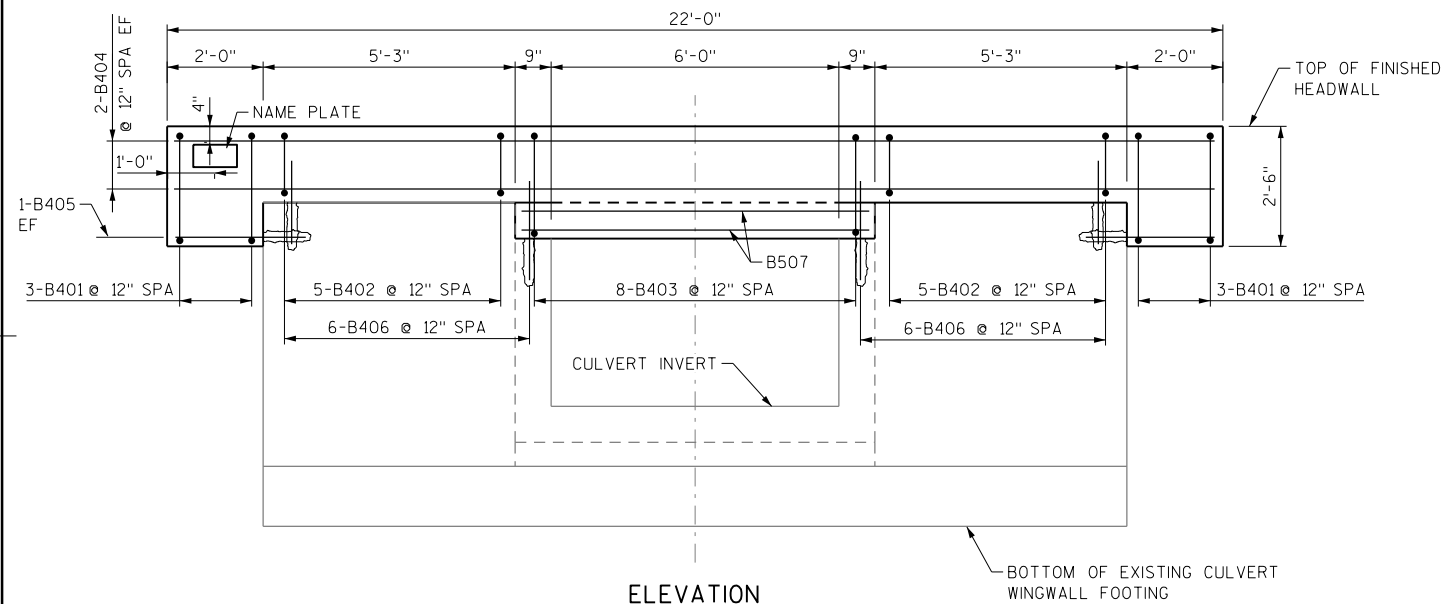
A515

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		C-66-47	
DRAWN BY		PLANS CK'D.	
HRC		WJZ	
UPSTREAM APRON			SHEET 2 OF 3

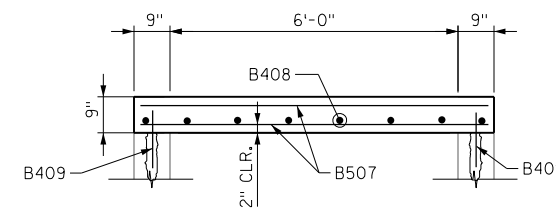
LEGEND
FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE



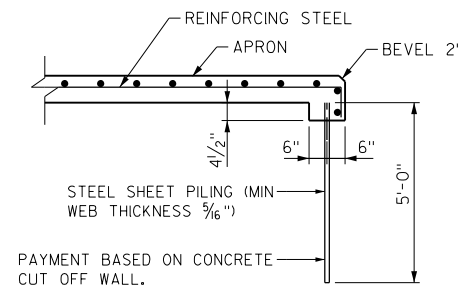
PLAN



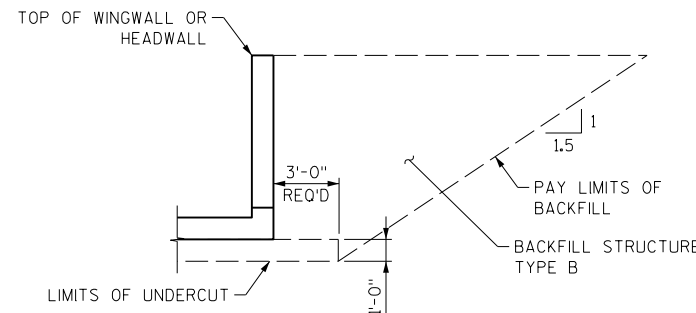
ELEVATION



SECTION A-A



ALTERNATIVE CUT-OFF WALL FOR USE AT UPSTREAM APRON

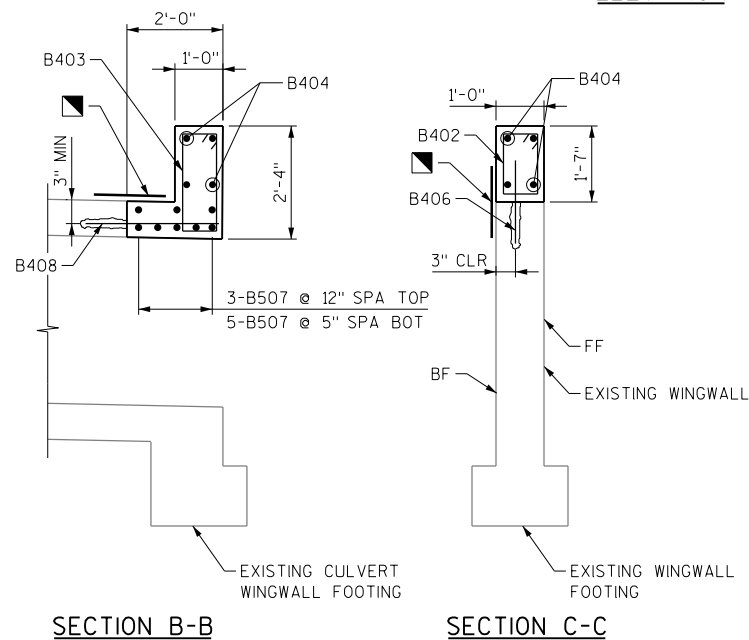
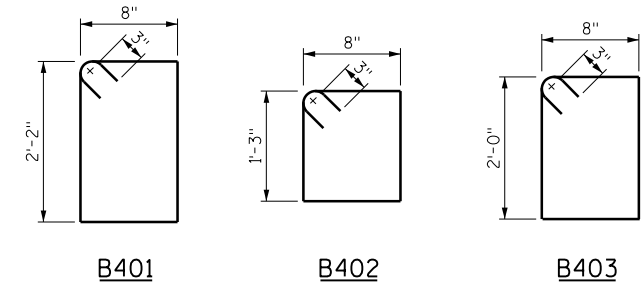


TYPICAL BACKFILL PAY LIMITS

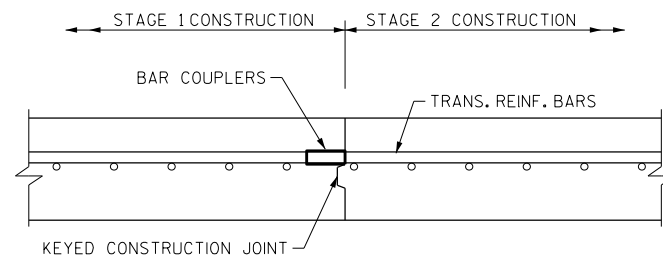
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BAR SERIES	238 # COATED
					0 # UNCOATED
					LOCATION
B401	X	6	6'-2"	X	HEADWALL VERTICAL
B402	X	10	4'-4"	X	HEADWALL VERTICAL
B403	X	8	5'-10"	X	HEADWALL VERTICAL
B404	X	4	21'-8"		HEADWALL HORIZONTAL
B405	X	4	2'-3"		HEADWALL HORIZONTAL ADHESIVE ANCHOR
B406	X	12	1'-9"		HEADWALL VERTICAL ADHESIVE ANCHOR
B507	X	8	7'-2"		BARREL TRANSVERSE
B408	X	8	2'-3"		BARREL LONGITUDINAL ADHESIVE ANCHOR
B409	X	4	11"		BARREL VERTICAL ADHESIVE ANCHOR

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
 5" MIN EMBEDMENT AND 3" MIN COVER REQUIRED FOR #4 ADHESIVE ANCHORS.
 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING ALONG ALL CONSTRUCTION JOINTS AND AT JOINTS BETWEEN EXISTING AND PROPOSED CONCRETE



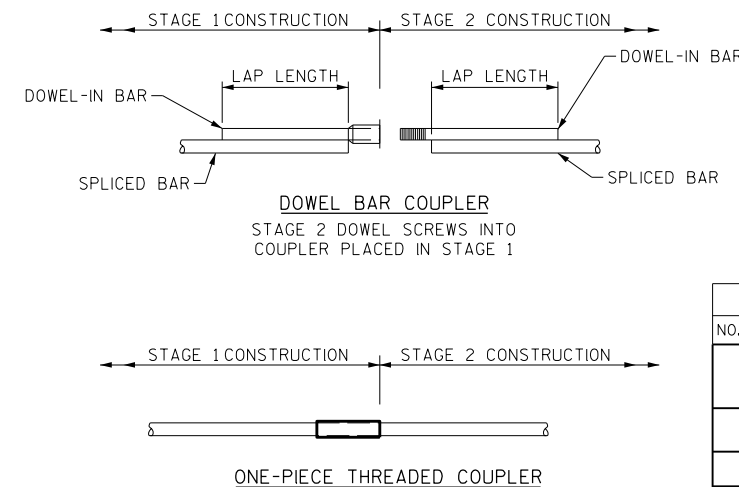
LEGEND
 FF = FRONT FACE
 BF = BACK FACE
 EF = EACH FACE



SECTION THRU APRON ONE-PIECE THREADED COUPLER SHOWN

BAR COUPLER NOTES

FOR DOWEL BAR COUPLERS, ALL DOWEL BARS SHALL BE LAPPED AND TIED TO THE REINFORCEMENT BARS.
 BAR COUPLERS REQUIRED FOR THE A408 BARS. BAR LENGTHS ARE COMPUTED TO THE CL OF THE CONSTRUCTION JOINT AND SHALL BE MODIFIED PER THE BAR COUPLER MANUFACTURERS RECOMMENDATIONS.



BAR COUPLER ALTERNATIVES

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		C-66-47	
DRAWN BY HRC		PLANS CK'D. WJZ	
DOWNSTREAM HEADWALL			SHEET 3 OF 3

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

- ▲ SEE CORNER DETAILS ON "DETAILS" SHEET
- NAME PLATE LOCATION (SEE "DETAILS" SHEET)
- * BUILD APRON AND END OF BOX LEVEL
- INDICATES WING NUMBER
- ▲ VERT. CONST. JOINT (TYP.)

LITTLE CEDAR CREEK

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-66-159" SHALL BE THE EXISTING GROUNDLINE.

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO 6" BELOW TOP OF BOTTOM SLAB.

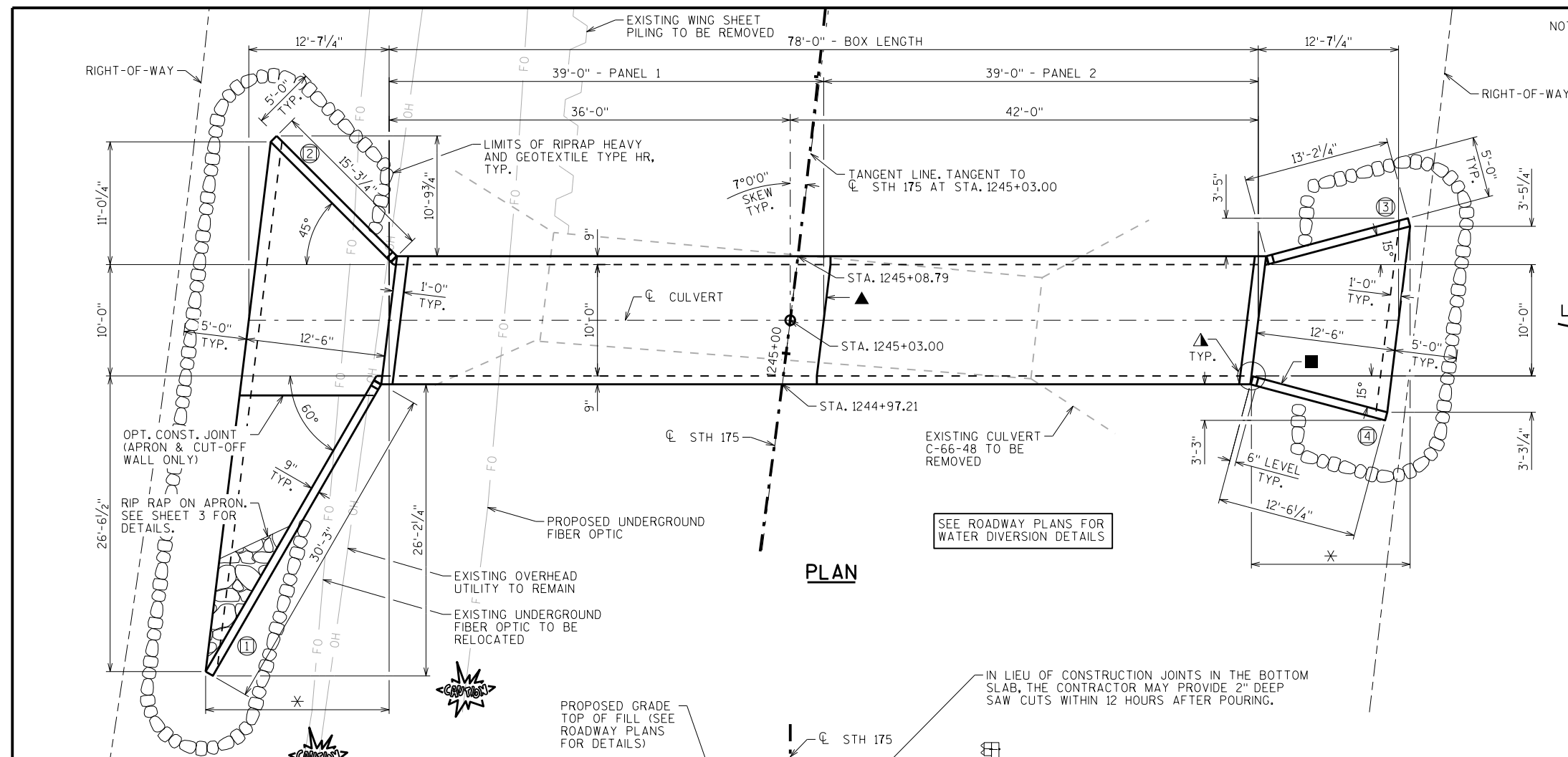
THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

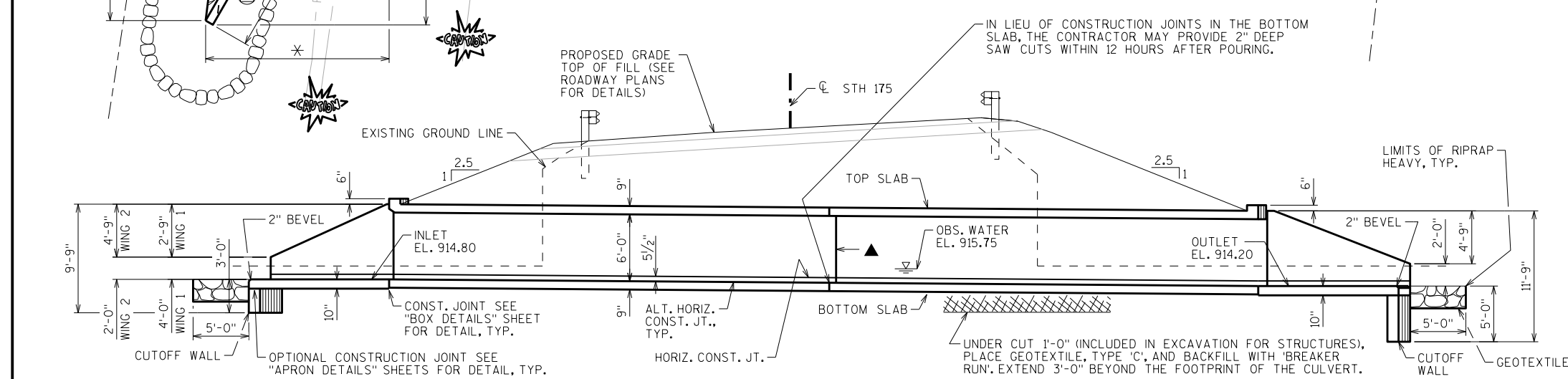
EXISTING STRUCTURE, C-66-48, IS A SINGLE CELL CONCRETE BOX CULVERT AND SHALL BE REMOVED. REMOVAL OF SHEET PILING AT NORTHWEST WING IS ALSO INCLUDED IN THE "REMOVING STRUCTURE C-66-48" BID ITEM.

STRUCTURE DESIGN CONTACTS:

ADAM SWIERCZEK (608) 267-4593
DOMINIQUE BECHLE (608) 261-8205



PLAN



ELEVATION
LOOKING NORTH

TOTAL ESTIMATED QUANTITIES

Table with columns: BID ITEM NUMBER, BID ITEMS, UNIT, TOTALS. Lists items like REMOVING STRUCTURE C-66-48, EXCAVATION FOR STRUCTURES CULVERTS, etc.

DESIGN DATA

LIVE LOAD: DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.22
OPERATING RATING FACTOR: RF = 1.59
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)
EARTHLOAD: DESIGNED FOR 5.5 TO 8.5 FT. OF FILL
MATERIAL PROPERTIES: CONCRETE MASONRY: f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT: GRADE 60 fy = 60,000 P.S.I.

HYDRAULIC DATA

100 YEAR FREQUENCY
Q100 = 285 C.F.S.
VEL.100 = 9.7 F.P.S.
HW.100 = EL. 919.48
WATERWAY AREA = 60 SQ. FT.
DRAINAGE AREA = 2.6 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8
2 YEAR FREQUENCY
Q2 = 80 C.F.S.
VEL.2 = 3.5 F.P.S.
HW.2 = EL. 917.34

LIST OF DRAWINGS

- 1. LAYOUT
2. BOX DETAILS
3. INLET APRON DETAILS
4. OUTLET APRON DETAILS
5. DETAILS
6. SUBSURFACE EXPLORATION

TRAFFIC VOLUME

STH 175
ADT = 3,800 (2013)
R.D.S. = 60 M.P.H.

Project information block including revision table, BUREAU OF STRUCTURES logo, project name (STRUCTURE C-66-159), location (STH 175 OVER LITTLE CEDAR CREEK), county (WASHINGTON), town (RICHFIELD), design specifications (AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS), designer (ABS), and sheet number (SHEET 1 OF 6).

8

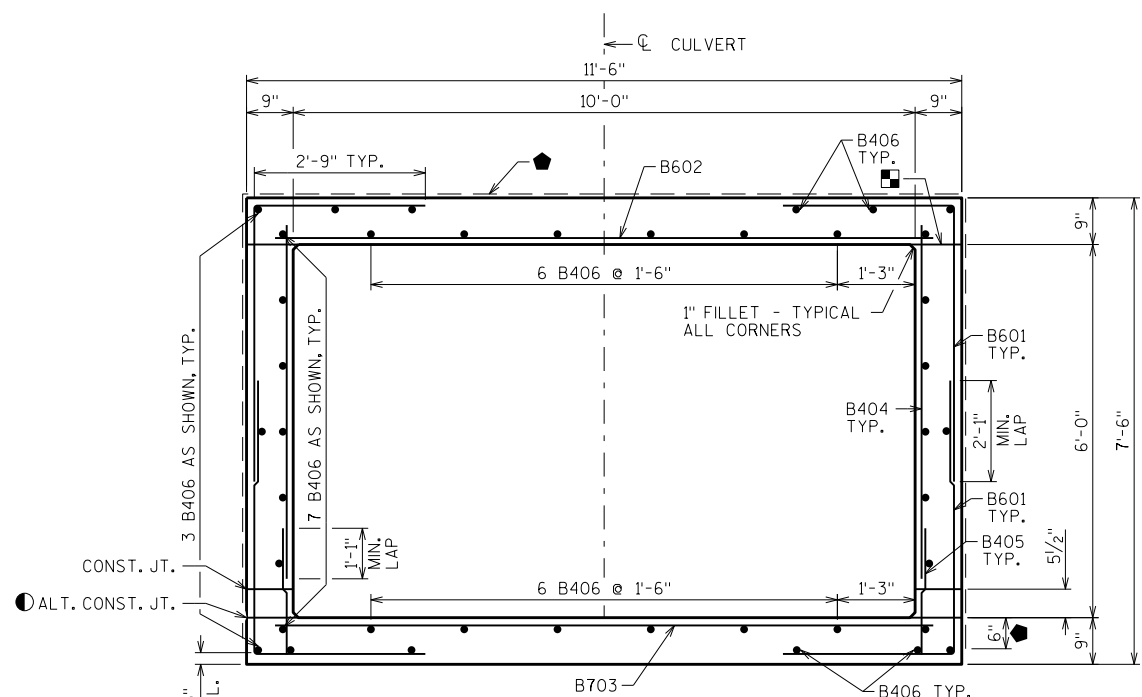
8

SCALE = 6:00

BILL OF BARS

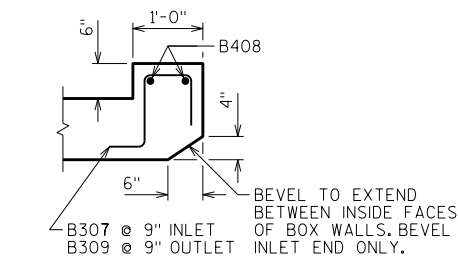
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601		624	7'-2"	X		CORNERS
B602		118	11'-1"			TOP SLAB - TRANSVERSE
B703		118	11'-1"			BOT. SLAB - TRANSVERSE
B404		164	5'-11"			WALLS - VERT.
B405		164	2'-3"			WALLS - DOWELS - VERT.
B406		160	20'-7"			TOP & BOT. SLAB & WALLS - LONGIT.
B307		16	2'-6"	X		HEADER - VERT. - INLET
B408		4	11'-3"			HEADER - HORIZ.
B309		16	2'-10"	X		HEADER - VERT. - INLET
B510		34	4'-0"			DOWELS - VERT. CONST. JT.
B511		22	4'-0"			DOWELS - APRON CONNECTION



TYPICAL SECTION THRU BOX

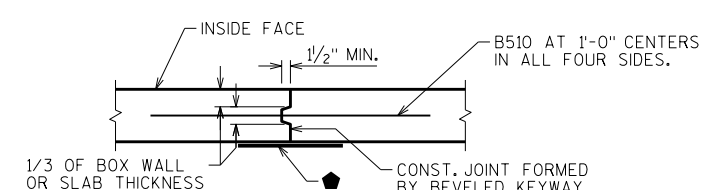
- OPTIONAL CONST. JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.
- OMIT 1" FILLET IF ALT. CONST. JOINT IS USED.
- ◆ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL JOINTS UP THE WALLS AND ACROSS THE TOP SLAB.



SECTION THRU HEADER

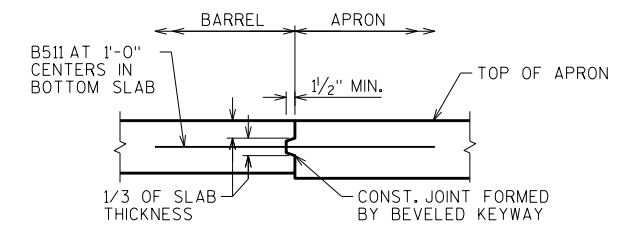
B601

B307, B309



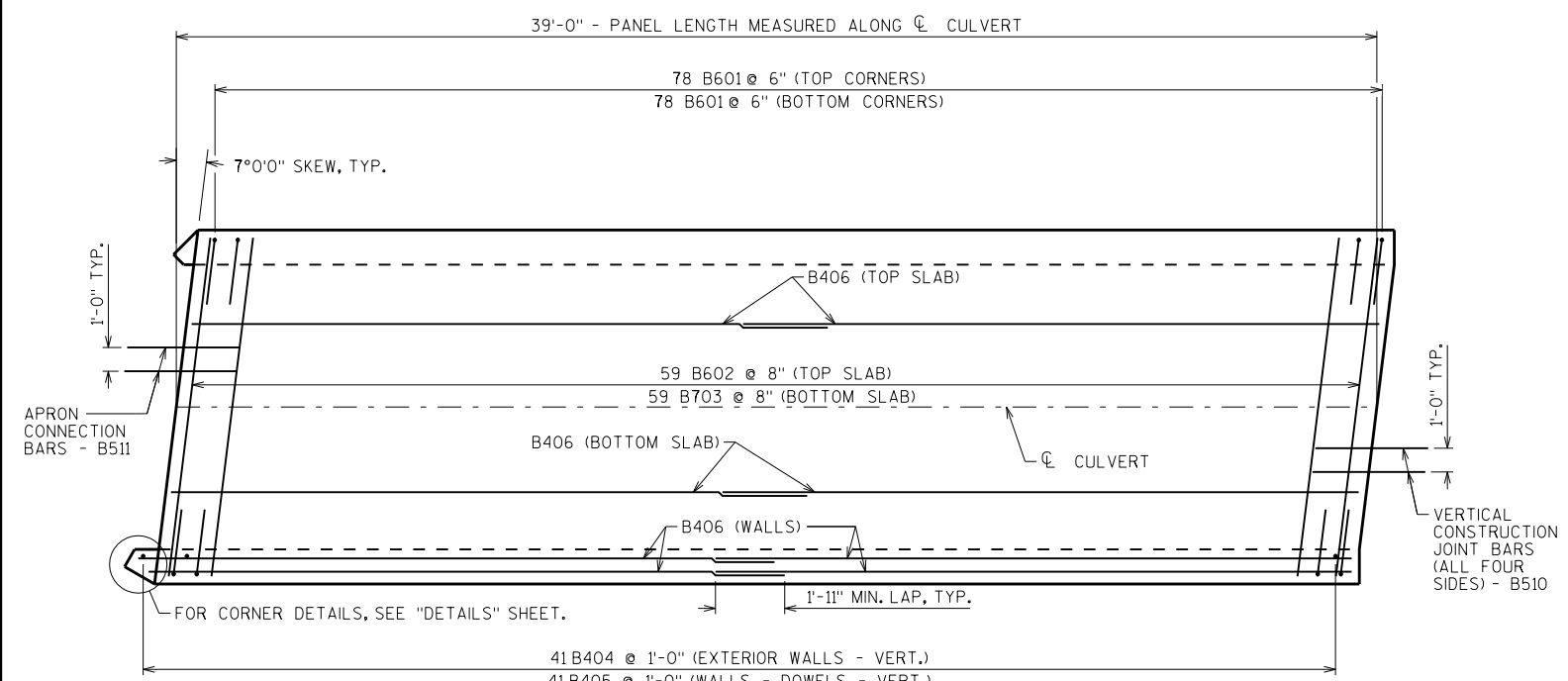
VERTICAL CONSTRUCTION JOINT

- 2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB. B510 BARS REQUIRED.
- ◆ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL JOINTS UP THE WALLS AND ACROSS THE TOP SLAB.



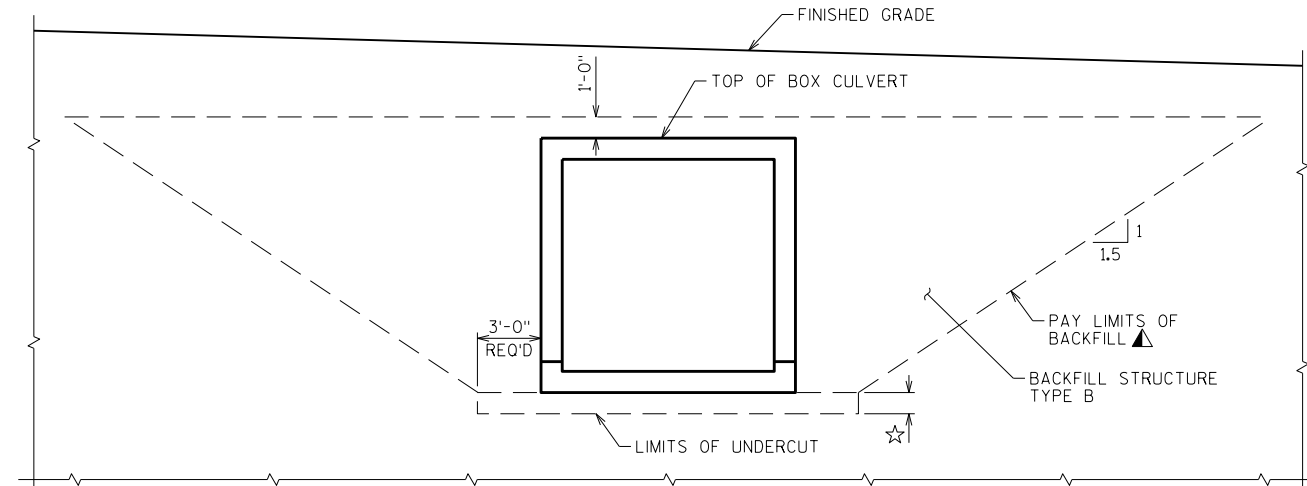
APRON CONNECTION DETAIL

- 2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB. B511 BARS REQUIRED.



PLAN VIEW OF PANELS

HEADER & APRON NOT SHOWN FOR CLARITY. PANEL 1 SHOWN. PANEL 2 SIMILAR.



TYPICAL SECTION THRU BOX CULVERT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-66-159

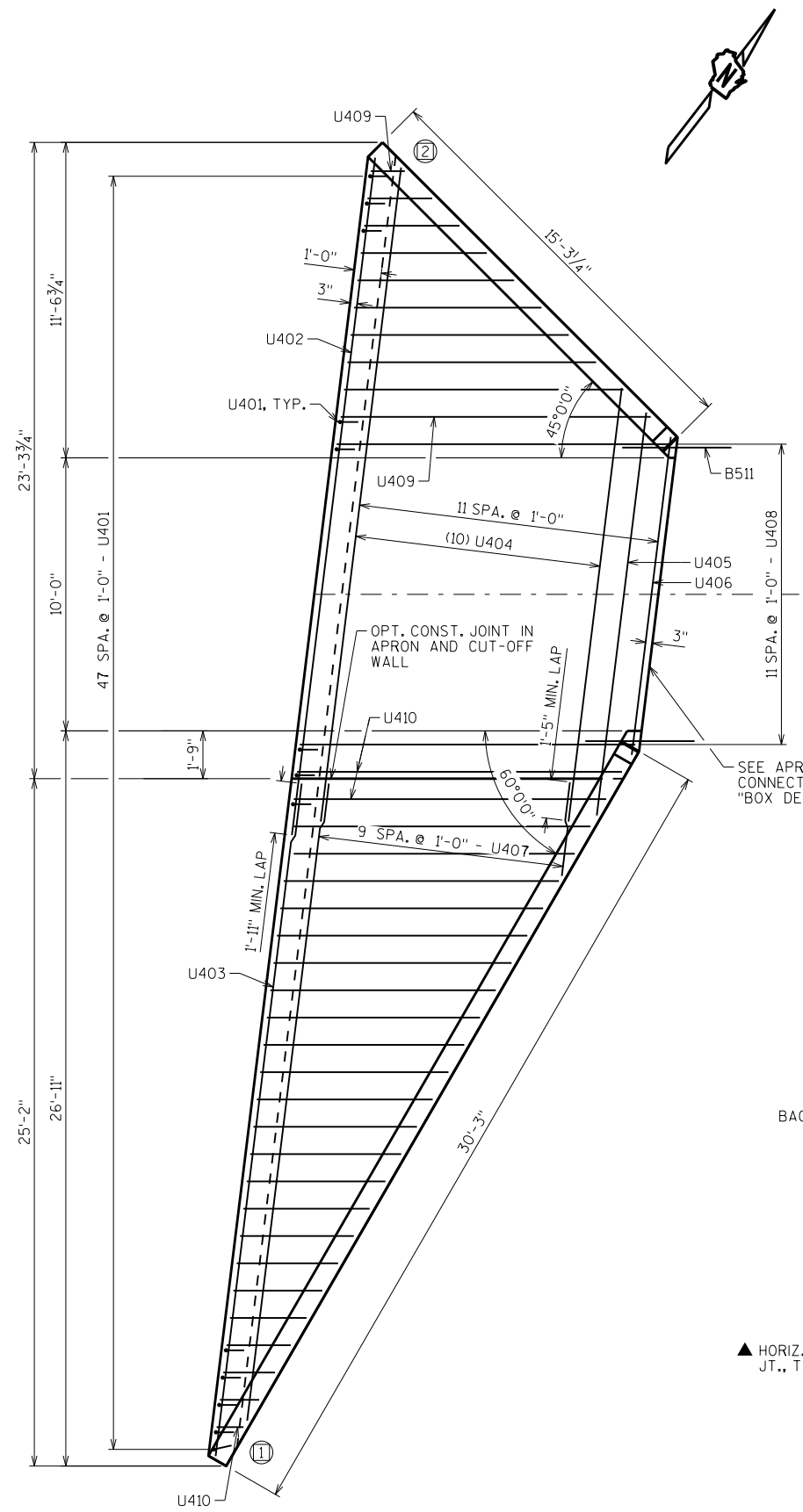
DRAWN BY: ABS PLANS CK'D: MJK

BOX DETAILS

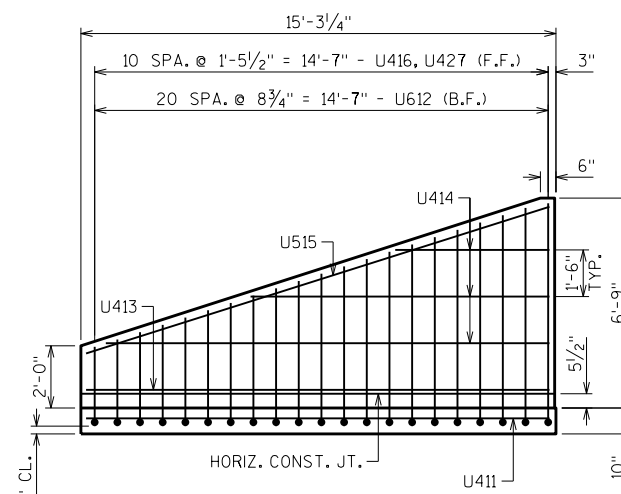
SHEET 2

8

8

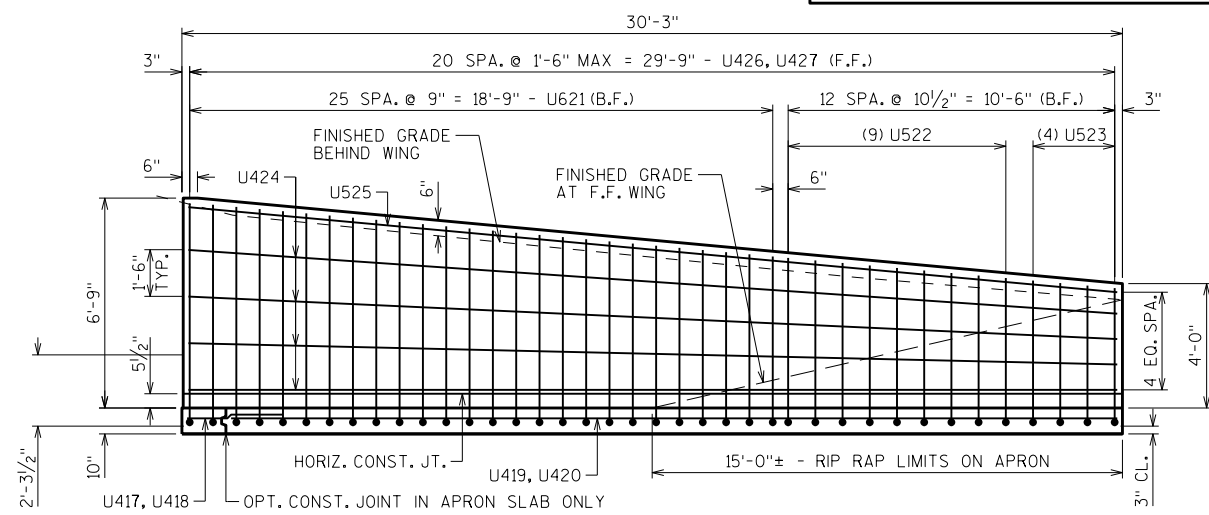


PLAN - INLET APRON



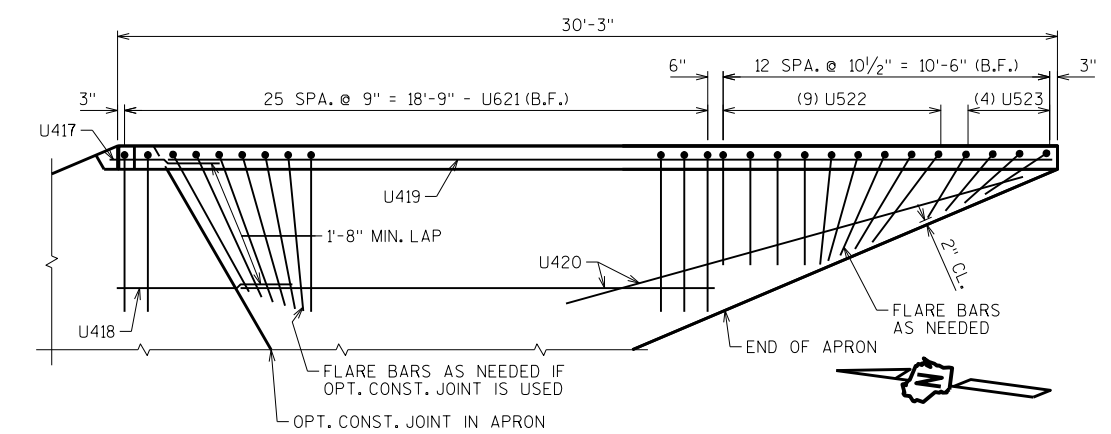
WING 2 ELEVATION

LOOKING NORTH AT F.F.
SHOWING B.F. REINFORCEMENT



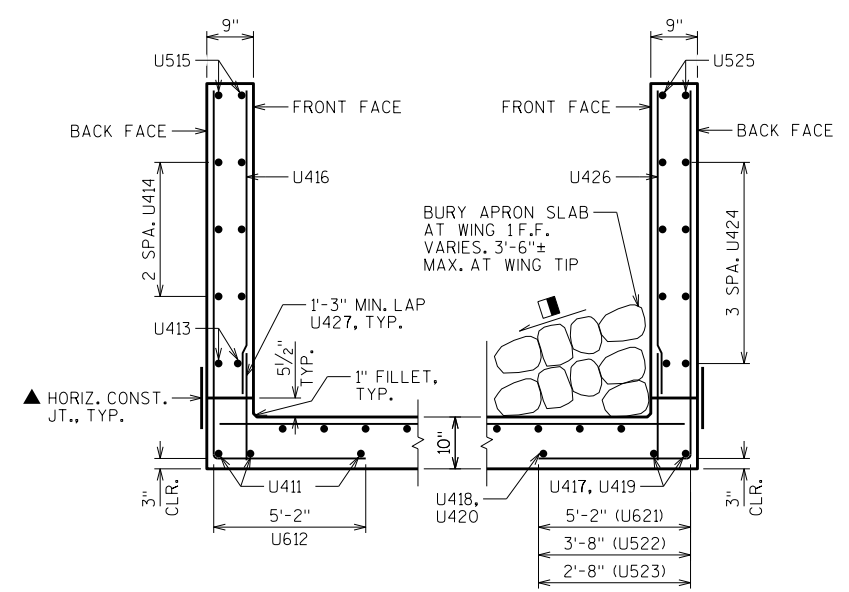
WING 1 ELEVATION

LOOKING EAST AT F.F.
SHOWING B.F. REINFORCEMENT



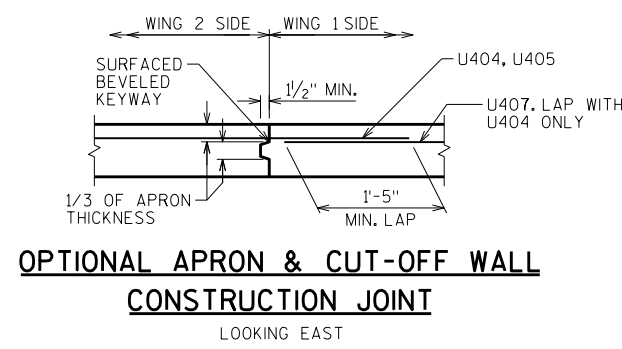
WING 1 PLAN

SHOWING B.F. WING REINFORCEMENT



WING 2 SECTION

WING 1 SECTION

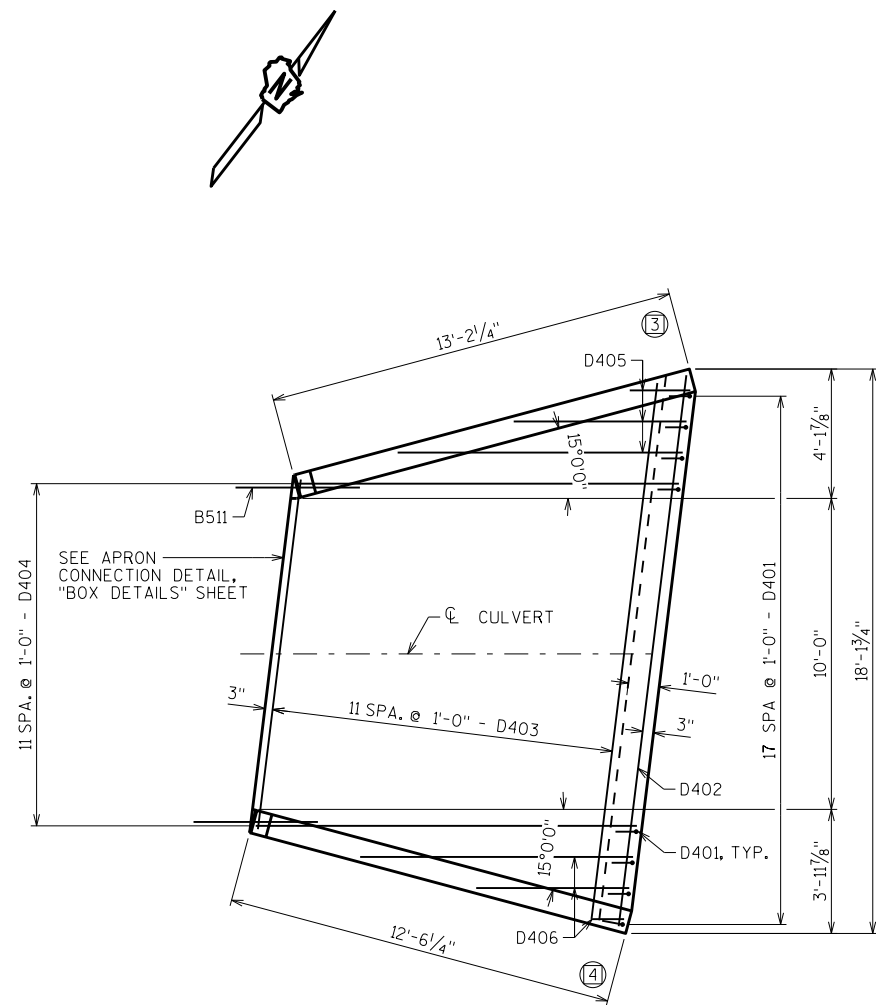


OPTIONAL APRON & CUT-OFF WALL CONSTRUCTION JOINT

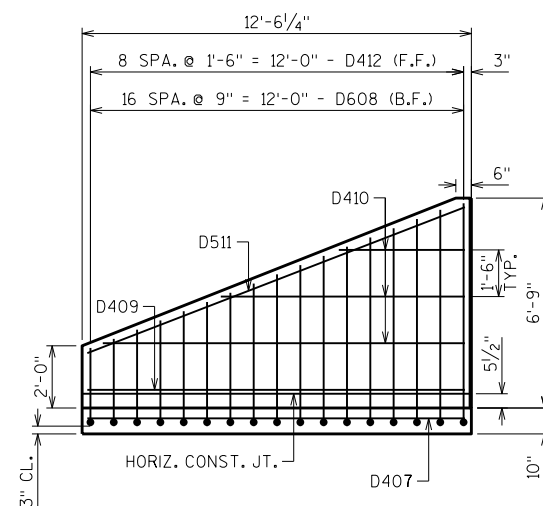
LOOKING EAST

▲ SLOPE TO MATCH STREAM BANK. 1.5 MIN.:1 (H:V)
▲ 18\"/>

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-66-159			
DRAWN BY		ABS	PLANS CK'D. MJK
INLET APRON DETAILS		SHEET 3	

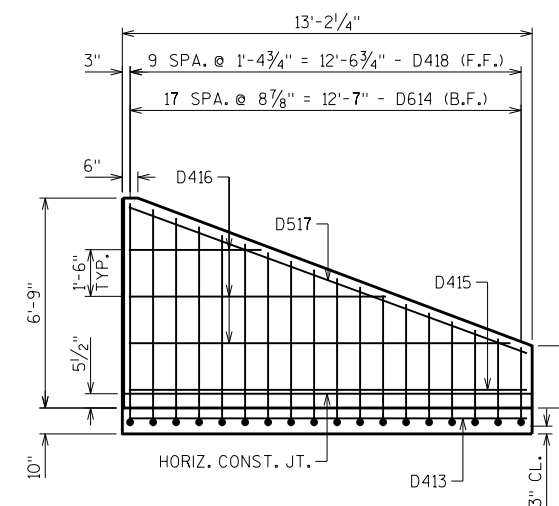


PLAN OUTLET APRON



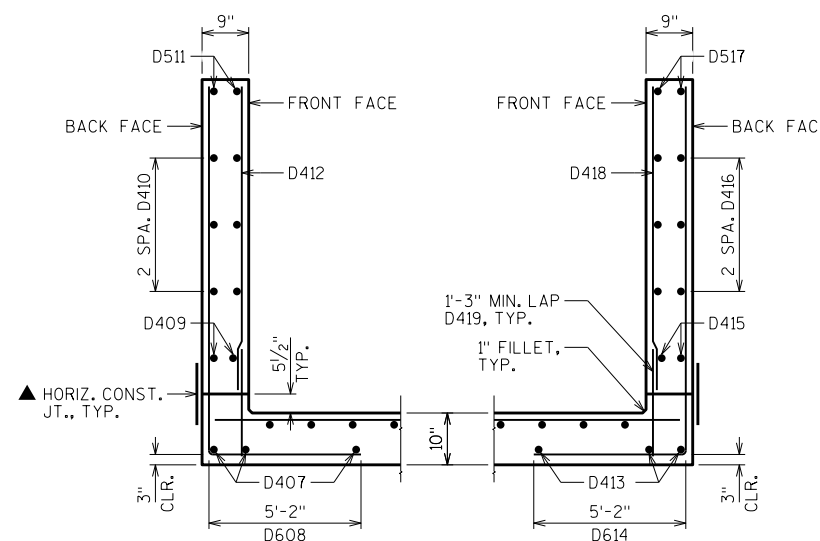
WING 4 ELEVATION

LOOKING SOUTH AT F.F.
SHOWING B.F. REINFORCEMENT



WING 3 ELEVATION

LOOKING WEST AT F.F.
SHOWING B.F. REINFORCEMENT



WING 4 SECTION

WING 3 SECTION

▲ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING
ALONG HORIZ. CONST. JT. IN WING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-66-159			
DRAWN BY		ABS	PLANS CK'D. MJK
OUTLET APRON DETAILS		SHEET 4	

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
U401		48	3'-6"	X		INLET APRON & CUTOFF WALL - VERT.
U402		4	25'-0"			INLET APRON & CUTOFF WALL - HORIZ.
U403		4	24'-8"			INLET APRON & CUTOFF WALL - HORIZ.
U404		10	20'-0"		▲	INLET APRON SLAB - HORIZ.
U405		1	14'-10"			INLET APRON SLAB - HORIZ.
U406		1	11'-8"			INLET APRON SLAB - HORIZ.
U407		10	13'-11"		▲	INLET APRON SLAB - HORIZ.
U408		12	12'-3"			INLET APRON SLAB - HORIZ.
U409		10	6'-4"		▲	INLET APRON SLAB - HORIZ.
U410		25	6'-6"		▲	INLET APRON SLAB - HORIZ.
U411	X	3	14'-11"			WING 2 - HORIZ. - APRON SLAB
U612	X	21	9'-10"	X	▲	WING 2 - VERT. B.F.
U413	X	2	14'-11"			WING 2 - HORIZ. - F.F. & B.F.
U414	X	6	9'-7"		▲	WING 2 - HORIZ. - F.F. & B.F.
U515	X	2	15'-8"			WING 2 - HORIZ. - F.F. & B.F.
U416	X	11	3'-8"		▲	WING 2 - VERT. - F.F.
U417	X	2	3'-6"			WING 1 - HORIZ. - APRON SLAB
U418	X	1	4'-2"			WING 1 - HORIZ. - APRON SLAB
U419	X	2	28'-5"			WING 1 - HORIZ. - APRON SLAB
U420	X	2	15'-3"			WING 1 - HORIZ. - APRON SLAB
U621	X	26	11'-4"	X	▲	WING 1 - VERT. B.F.
U522	X	9	8'-8"	X	▲	WING 1 - VERT. B.F.
U523	X	4	6'-11"	X	▲	WING 1 - VERT. B.F.
U424	X	8	29'-10"			WING 1 - HORIZ. - F.F. & B.F.
U525	X	2	30'-0"			WING 1 - HORIZ. - F.F. & B.F.
U426	X	21	4'-7"		▲	WING 1 - VERT. - F.F.
U427	X	32	2'-5"			WINGS 1 & 2 - DOWELS - VERT.
D401		18	5'-6"	X		OUTLET APRON & CUTOFF WALL - VERT.
D402		6	17'-9"			OUTLET APRON & CUTOFF WALL - HORIZ.
D403		12	14'-4"		▲	OUTLET APRON SLAB - HORIZ.
D404		12	12'-3"			OUTLET APRON SLAB - HORIZ.
D405		3	5'-7"		▲	OUTLET APRON SLAB - HORIZ.
D406		3	4'-11"		▲	OUTLET APRON SLAB - HORIZ.
D407	X	3	12'-2"			WING 4 - HORIZ. - APRON SLAB
D608	X	17	9'-10"	X	▲	WING 4 - VERT. B.F.
D409	X	2	12'-2"			WING 4 - HORIZ. - F.F. & B.F.
D410	X	6	7'-10"		▲	WING 4 - HORIZ. - F.F. & B.F.
D511	X	2	13'-0"			WING 4 - HORIZ. - F.F. & B.F.
D412	X	9	3'-8"		▲	WING 4 - VERT. - F.F.
D413	X	3	12'-10"			WING 3 - HORIZ. - APRON SLAB
D614	X	18	9'-10"	X	▲	WING 3 - VERT. B.F.
D415	X	2	12'-10"			WING 3 - HORIZ. - F.F. & B.F.
D416	X	6	8'-3"		▲	WING 3 - HORIZ. - F.F. & B.F.
D517	X	2	13'-7"			WING 3 - HORIZ. - F.F. & B.F.
D418	X	10	3'-8"		▲	WING 3 - VERT. - F.F.
D419	X	19	2'-5"			WINGS 3 & 4 - DOWELS - VERT.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

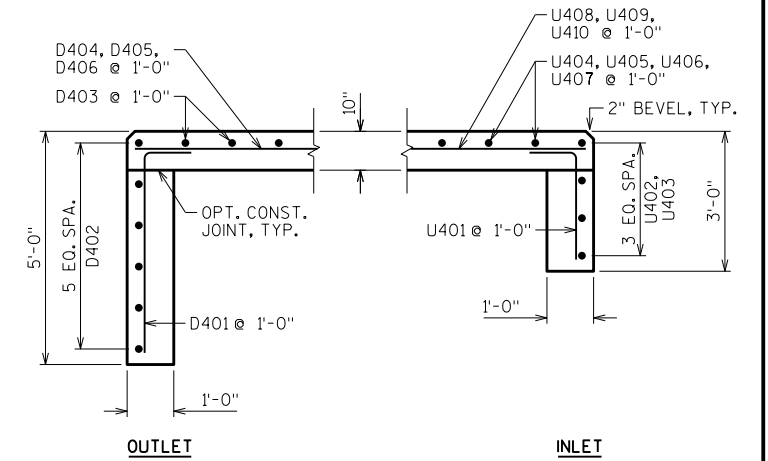
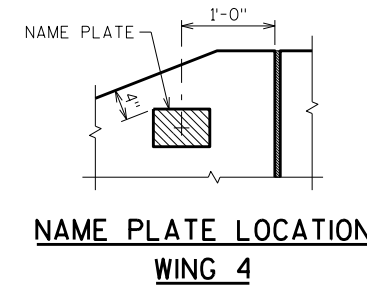
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
U404	1 SERIES OF 10	15'-11" TO 24'-1"
U407	1 SERIES OF 11	3'-4" TO 24'-6"
U409	1 SERIES OF 10	1'-3" TO 11'-4"
U410	1 SERIES OF 25	1'-0" TO 11'-11"
U612	1 SERIES OF 21	7'-6" TO 12'-2"
U414	2 SERIES OF 3	4'-11" TO 14'-3"
U416	1 SERIES OF 11	1'-4" TO 5'-11"
U621	1 SERIES OF 26	10'-6" TO 12'-2"
U522	1 SERIES OF 9	8'-3" TO 9'-0"
U523	1 SERIES OF 4	6'-10" TO 7'-1"
U426	1 SERIES OF 21	3'-3" TO 5'-11"
D403	1 SERIES OF 12	11'-4" TO 17'-4"
D405	1 SERIES OF 3	1'-11" TO 9'-3"
D406	1 SERIES OF 3	1'-1" TO 8'-9"
D608	1 SERIES OF 17	7'-6" TO 12'-2"
D410	2 SERIES OF 3	4'-0" TO 11'-8"
D412	1 SERIES OF 9	1'-4" TO 5'-11"
D614	1 SERIES OF 18	7'-6" TO 12'-2"
D416	2 SERIES OF 3	4'-3" TO 12'-3"
D418	1 SERIES OF 10	1'-4" TO 5'-11"

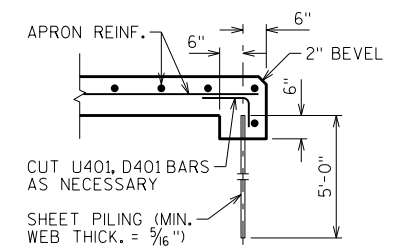
BUNDLE AND TAG EACH SERIES SEPARATELY.

STATE PROJECT NUMBER

3360-17-70

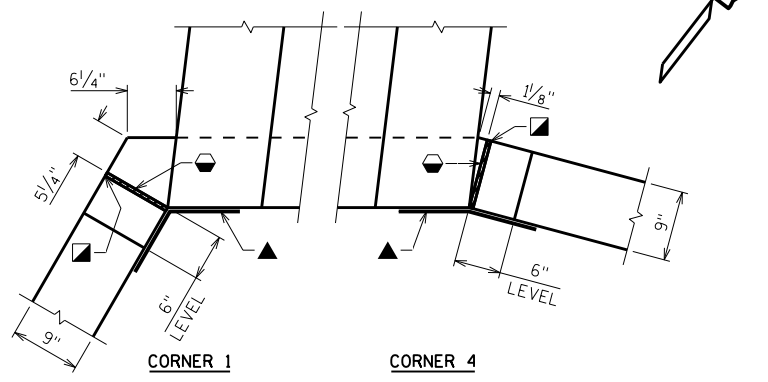
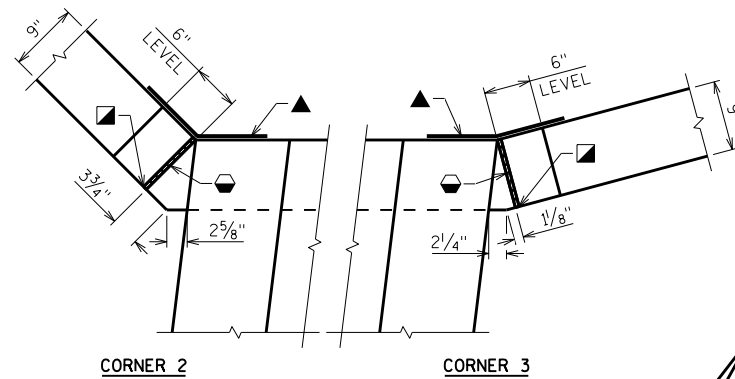


CUT-OFF WALLS



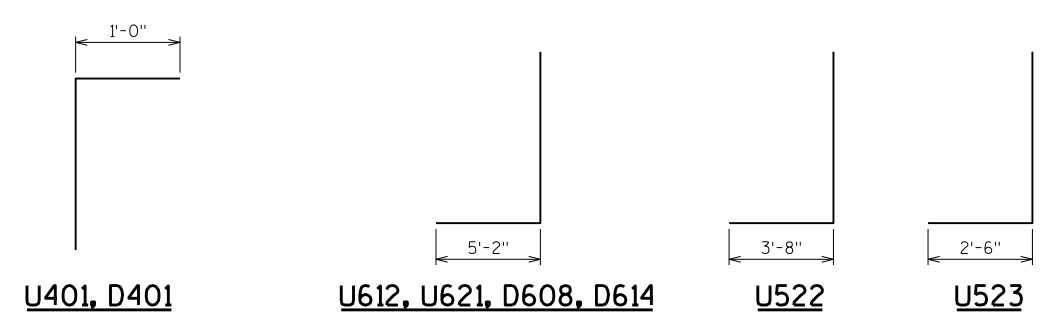
ALTERNATE CUT-OFF WALLS

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALLS.



CORNER DETAILS

- 3/4" FILLER, TYP. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.
- 1" BEVEL, TYP.
- 18" RUBBERIZED MEMBRANE WATERPROOFING, EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL. (FLUSH WITH FACE OF CONCRETE)

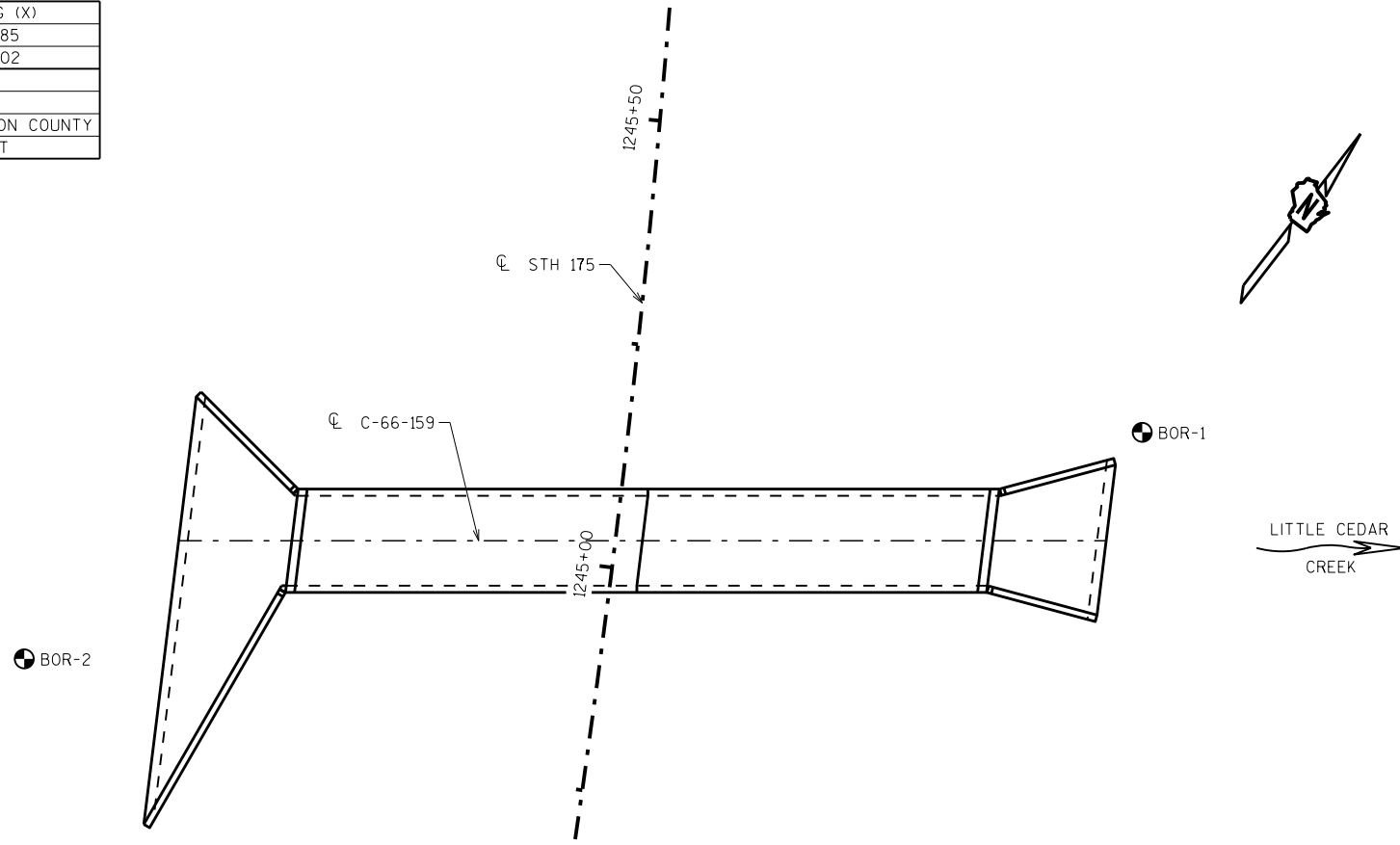


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-66-159			
DRAWN BY		ABS	PLANS CK'D. MJK
DETAILS		SHEET 5	

SCALE = 1:00

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5/05/2021	129647	356085
2	5/11/2021	129551	356002

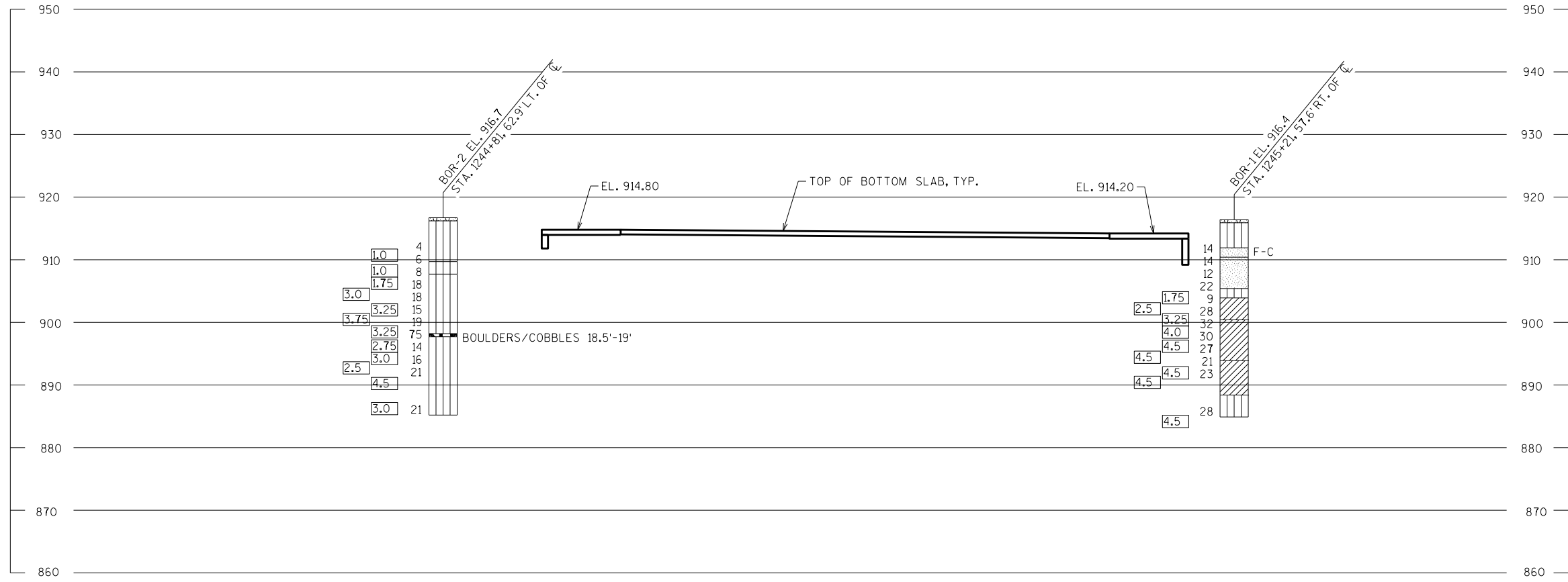
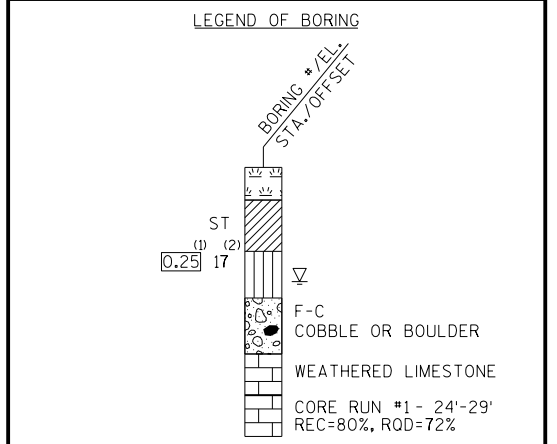
BORINGS COMPLETED BY: WISDOT
 REPORT COMPLETED BY: WISDOT
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) WASHINGTON COUNTY
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT



STATE PROJECT NUMBER
3360-17-70

MATERIAL SYMBOLS

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



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
 (2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION
 ▽ AT TIME OF DRILLING
 ▽ END OF DRILLING
 ▽ AFTER DRILLING

ABBREVIATIONS
 F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-66-159			
DRAWN BY JJ/ABS		PLANS CK'D. MJK	
SUBSURFACE EXPLORATION		SHEET 6	

8

8

SCALE = 10.00

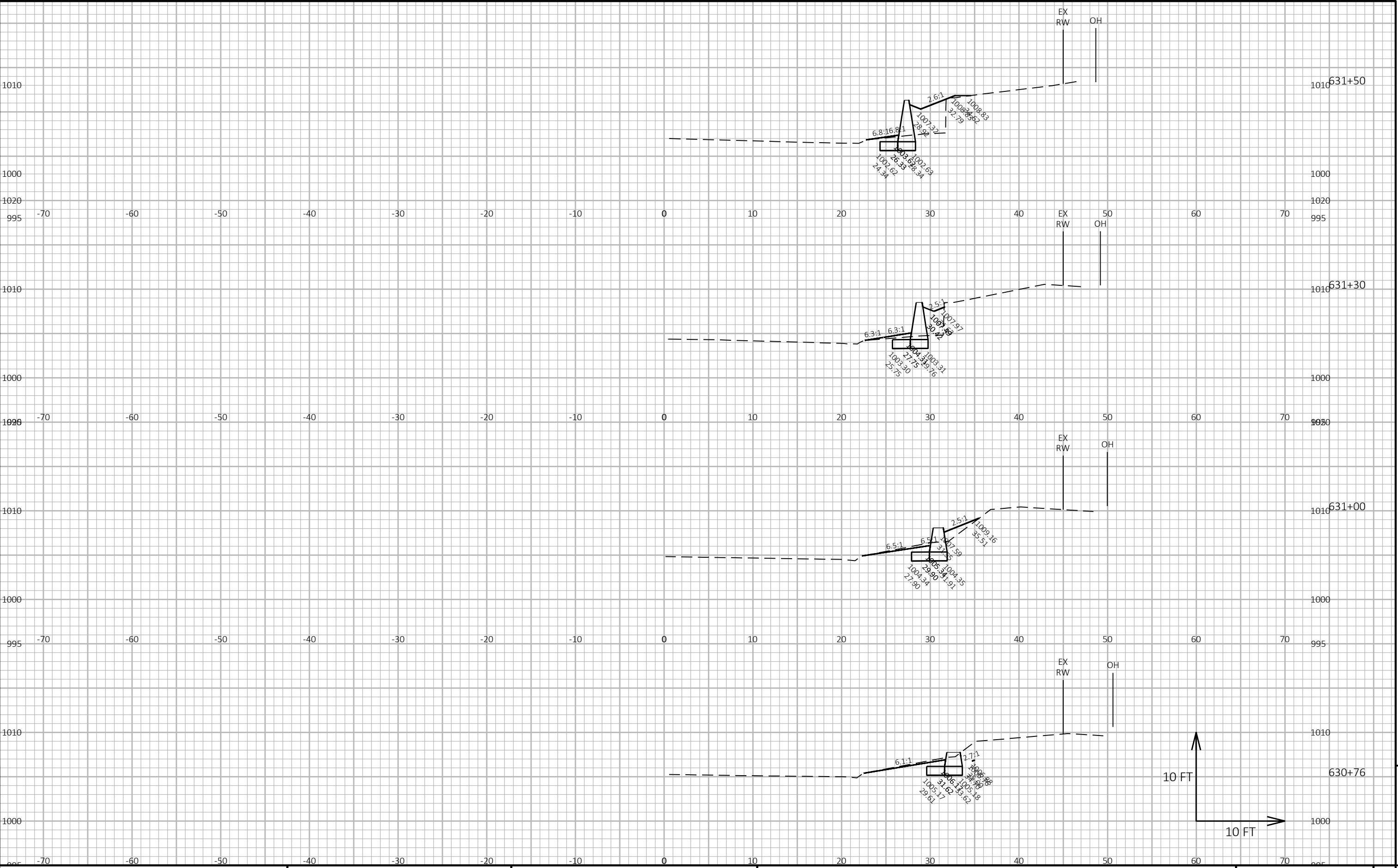
DIVISION 1 - C-66-159

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 8		
1242+60	0.00	46.94	38.58	0.00	0	0	0	0	0	0
1243+00	40.00	56.34	38.58	0.28	77	57	0	77	0	20
1243+50	50.00	57.90	38.58	7.13	106	71	7	183	9	46
1243+75.5	25.50	51.18	38.58	26.85	52	36	16	235	29	42
1244+00.5	25.00	52.38	38.58	22.33	48	36	23	283	58	26
1244+25.5	25.00	48.86	38.58	19.96	47	36	20	330	83	12
1244+50.5	25.00	52.73	38.58	8.99	47	36	13	377	99	6
1245+05	54.50	46.03	38.58	387.07	100	78	400	477	599	-472
1245+50	45.00	50.22	38.58	20.09	80	64	339	557	1,023	-880
1245+63	13.00	50.30	38.58	13.55	24	19	8	581	1,033	-885
1245+88	25.00	46.90	38.58	14.36	45	36	13	626	1,049	-892
1246+00	12.00	45.46	38.58	21.22	21	17	8	647	1,059	-898
1246+13	13.00	46.07	38.58	21.86	22	19	10	669	1,071	-907
1246+25.5	12.50	45.84	38.58	18.21	21	18	9	690	1,083	-916
1246+50.5	25.00	50.38	38.58	11.78	45	36	14	735	1,100	-924
1247+00	49.50	50.33	38.58	2.04	92	71	13	827	1,116	-919
1247+50	50.00	51.07	38.58	0.00	94	71	2	921	1,119	-899
1247+60	10.00	49.05	38.58	0.00	19	14	0	940	1,119	-894

DIVISION 2 - R-66-62

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 8			
630+76	63076.00	0.00	7.93	0.00	0.00	0	0	0	0	0	0
631+00	63100.00	24.00	7.91	0.00	0.00	7	0	0	7	0	7
631+30.126	63130.13	30.13	5.30	0.00	0.00	7	0	0	14	0	14
631+50	63150.00	19.87	6.61	0.00	0.00	4	0	0	18	0	18
632+00	63200.00	50.00	6.53	0.00	0.00	12	0	0	30	0	30
632+50	63250.00	50.00	4.51	0.00	0.00	10	0	0	40	0	40
633+00	63300.00	50.00	6.71	0.00	0.00	10	0	0	50	0	50
633+50	63350.00	50.00	5.60	0.00	0.00	11	0	0	61	0	61
633+84.583	63384.58	34.58	6.21	0.00	0.00	8	0	0	69	0	69
633+99	63399.00	14.42	6.54	0.00	0.00	3	0	0	72	0	72

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME



9

9

PROJECT NO: 3360-17-70

HWY: STH 175

COUNTY: WASHINGTON

CROSS SECTIONS: R-66-62

SHEET

E

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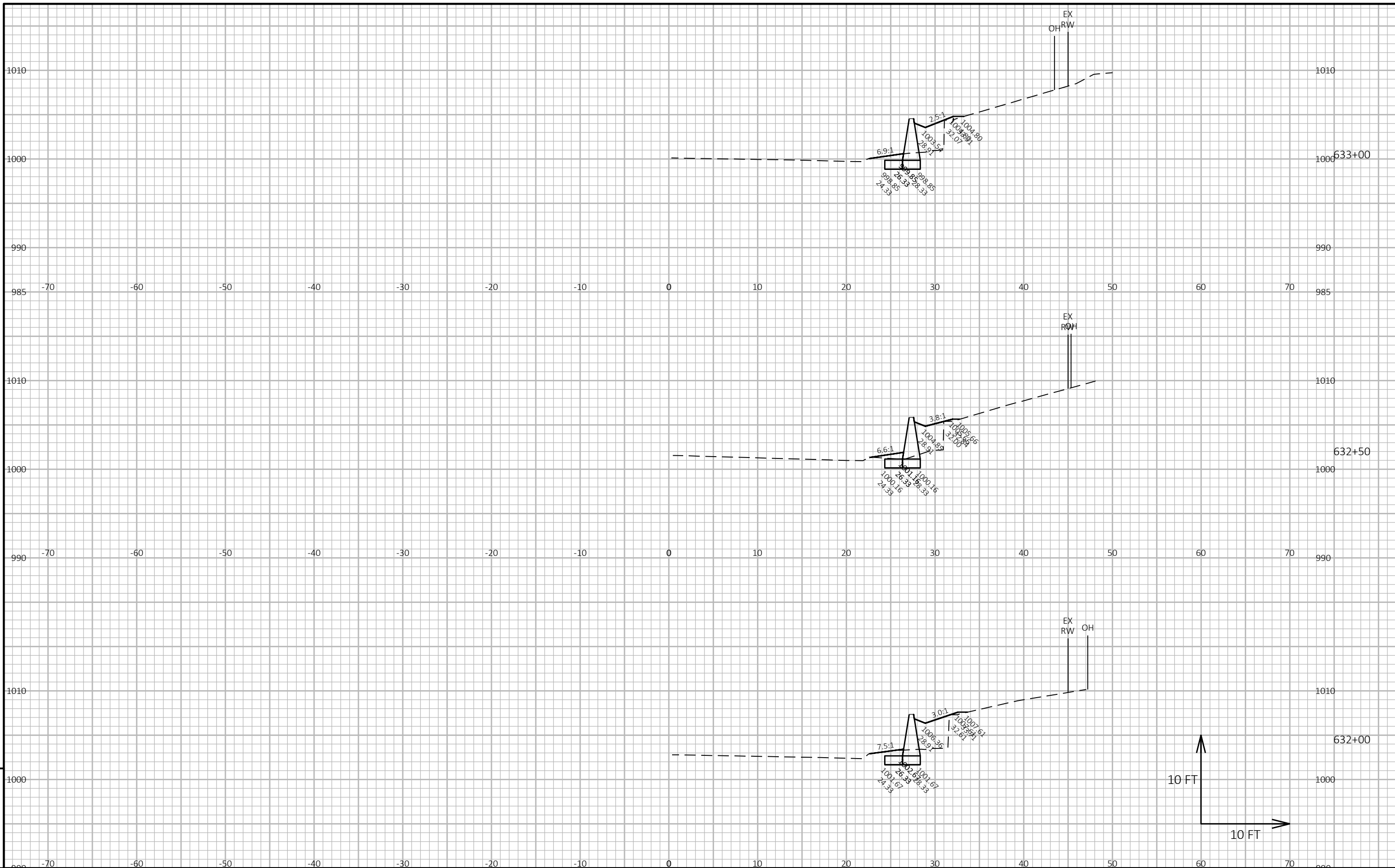
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PLOT BY : WEIGAND, BEN

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



9

9

PROJECT NO: 3360-17-70

HWY: STH 175

COUNTY: WASHINGTON

CROSS SECTIONS: R-66-62

SHEET

E

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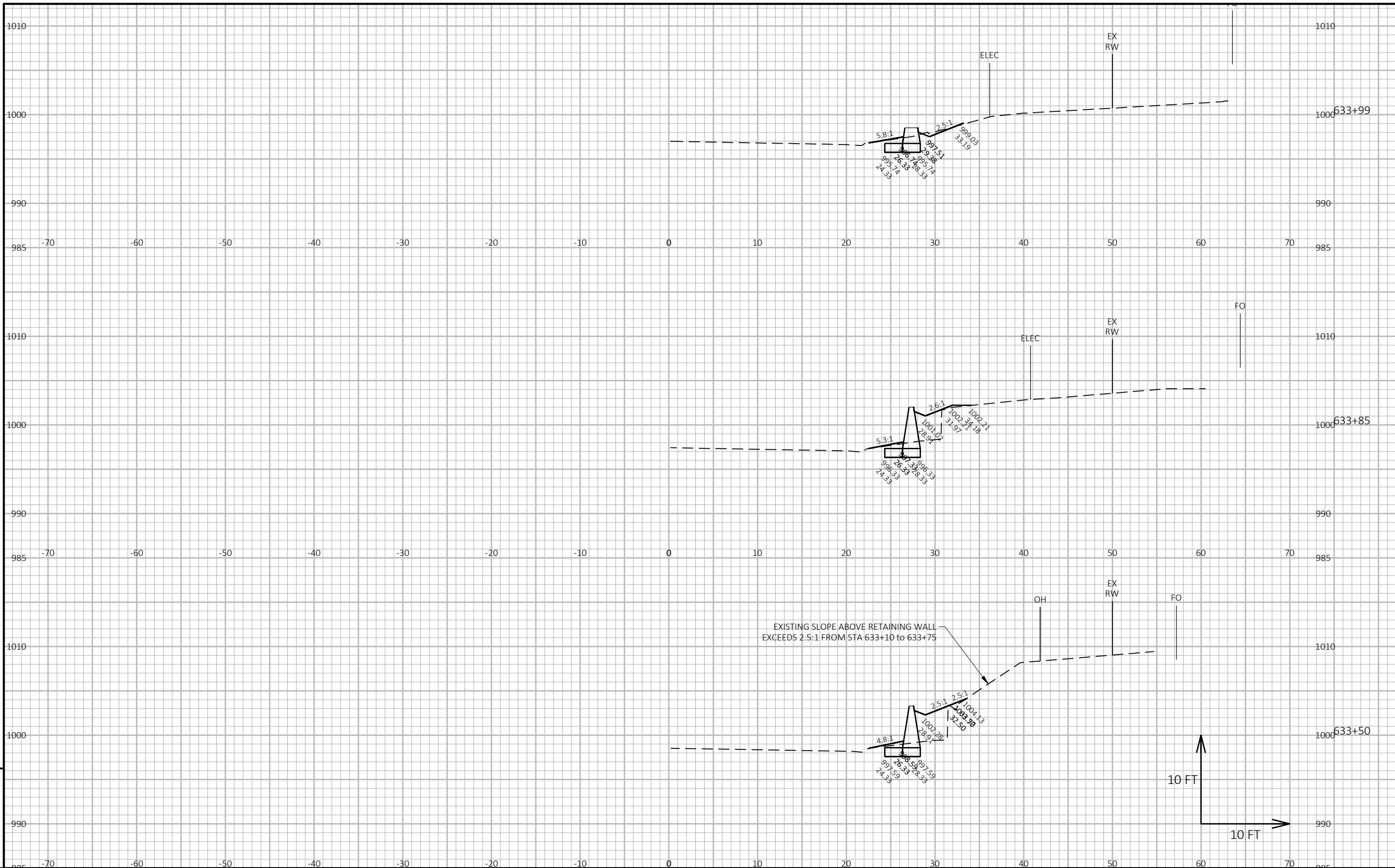
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PLOT BY : WEIGAND, BEN

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADD SHEET 49



9

9

PROJECT NO: 3360-17-70

HWY: STH 175

COUNTY: WASHINGTON

CROSS SECTIONS: R-66-62

SHEET

E

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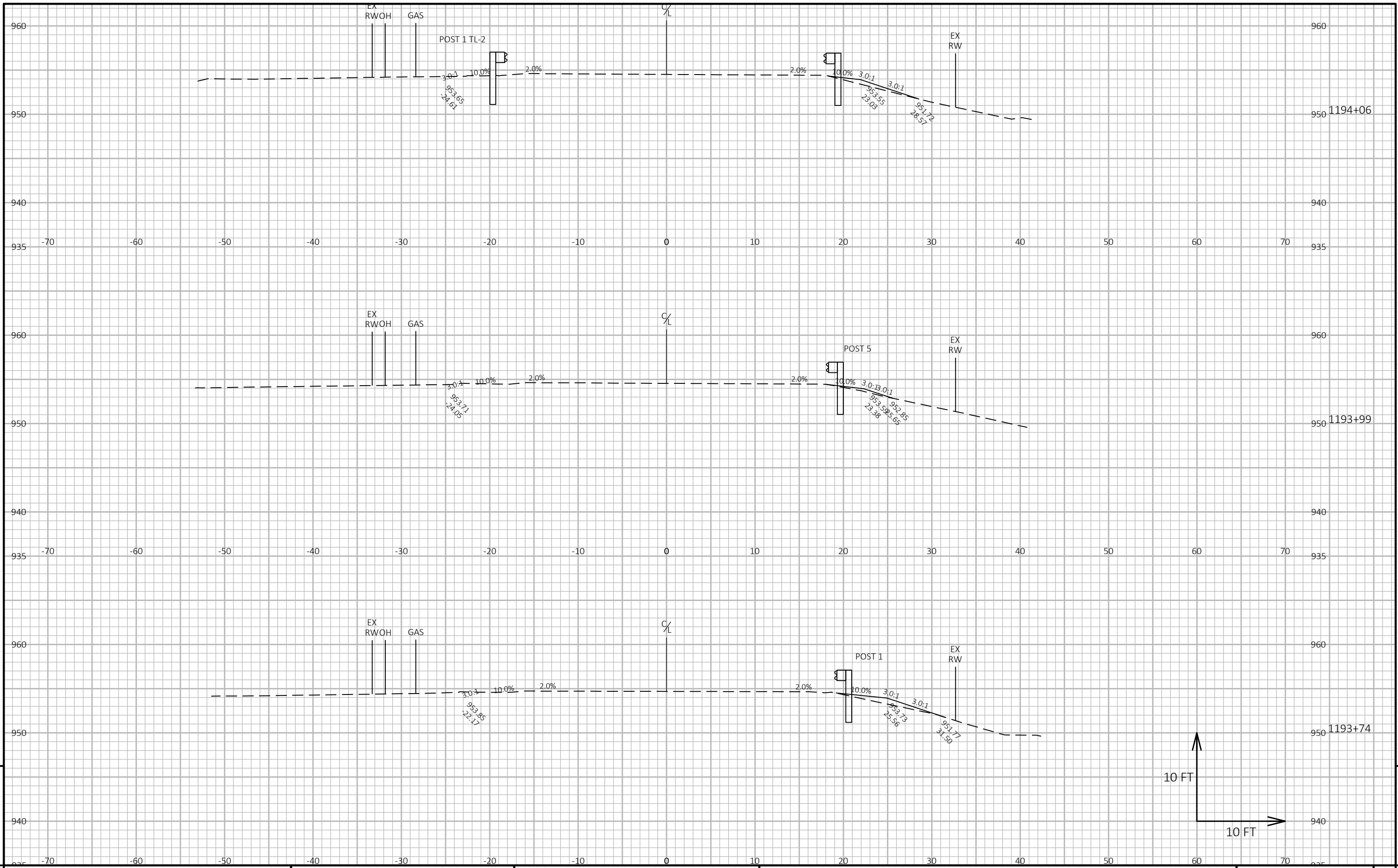
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PLOT BY: WEIGAND, BEN

PLOT NAME:

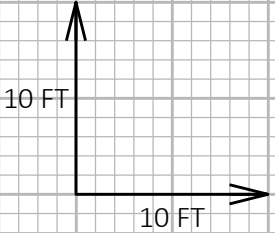
PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADD SHEET 49

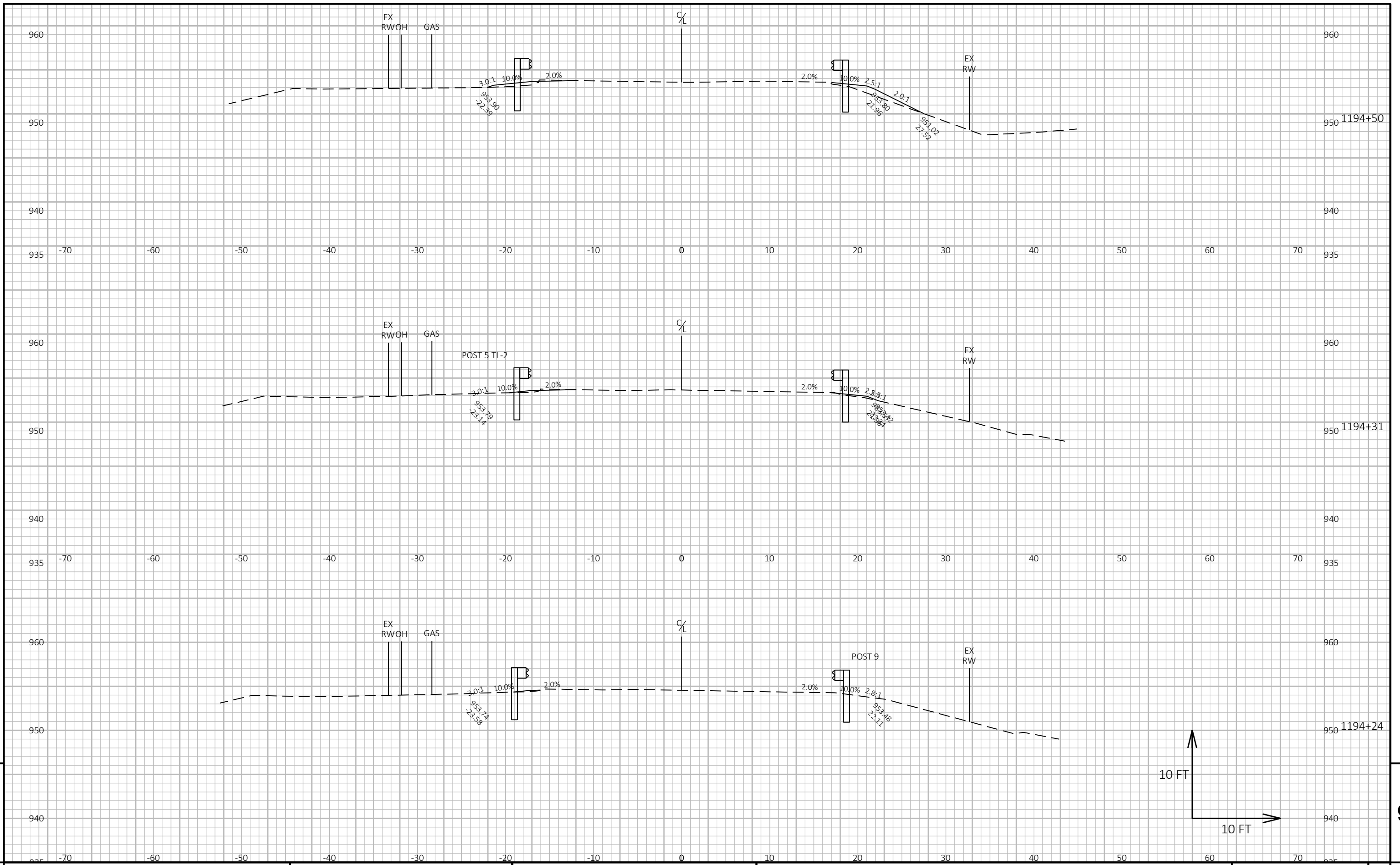


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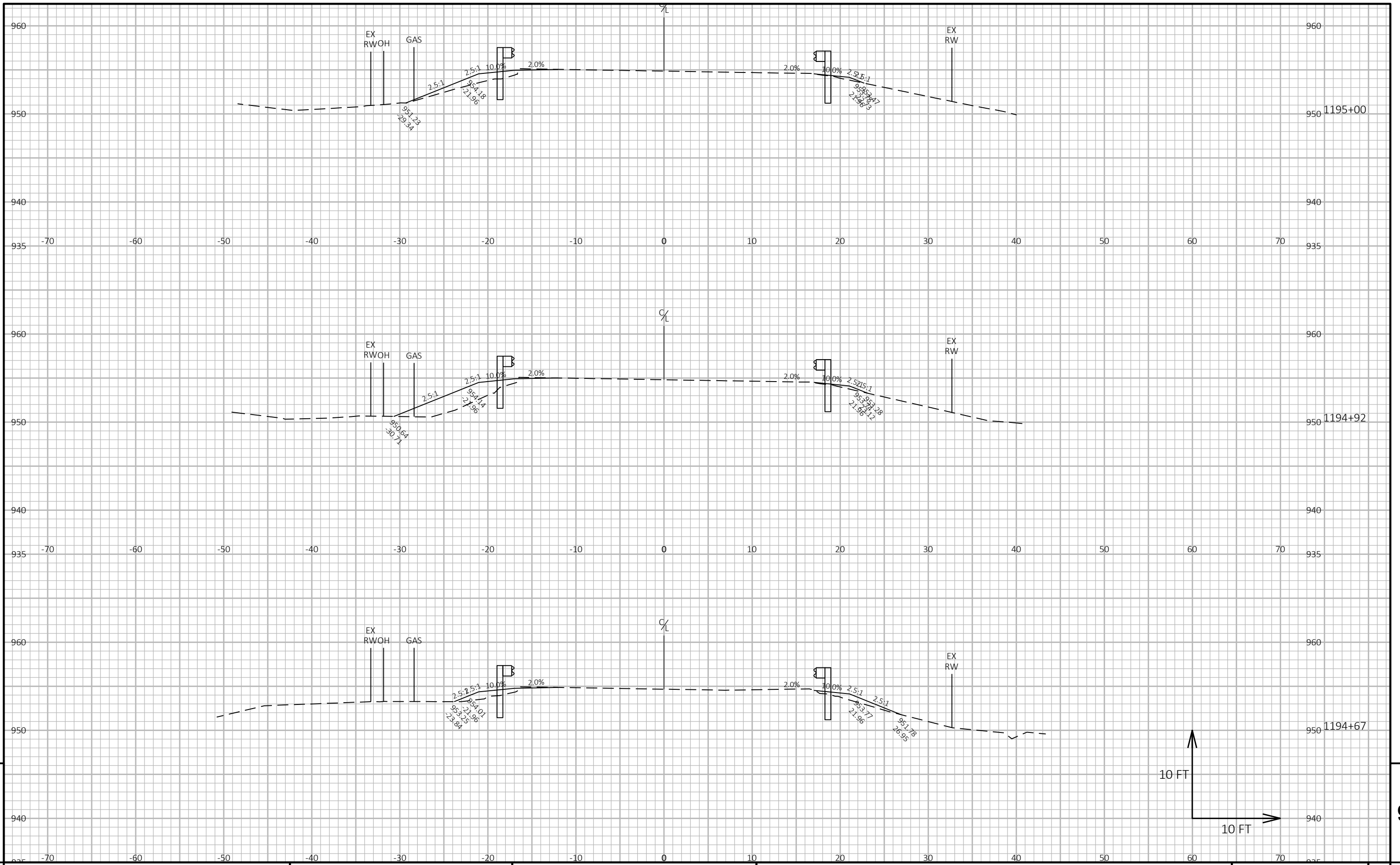
PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	CROSS SECTIONS: C-66-47	SHEET E
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9

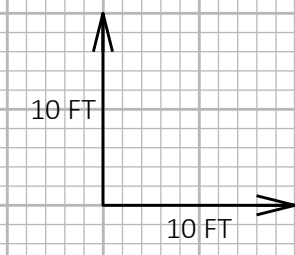
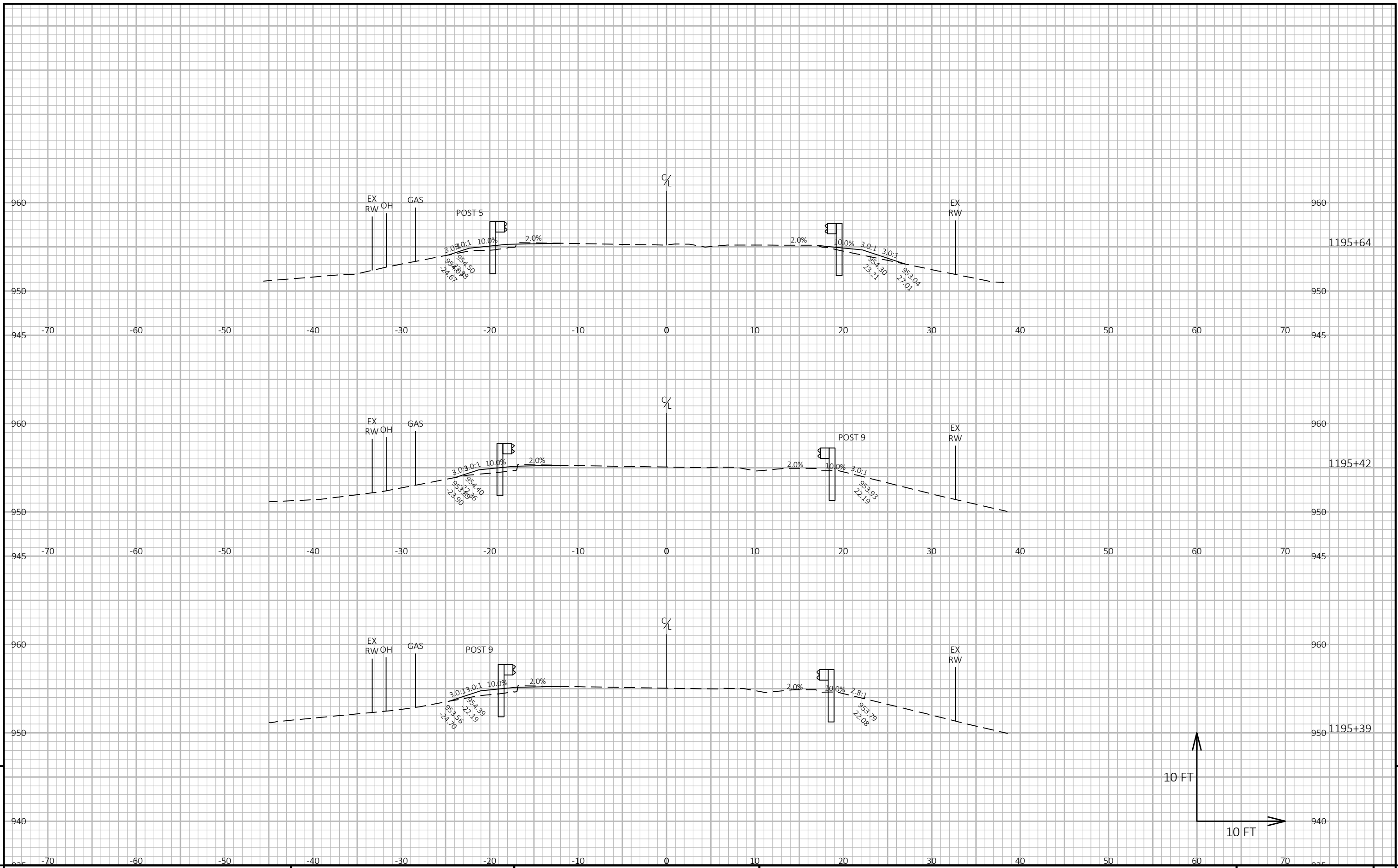
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PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	CROSS SECTIONS: C-66-47	SHEET	E
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PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-47 SHEET 9

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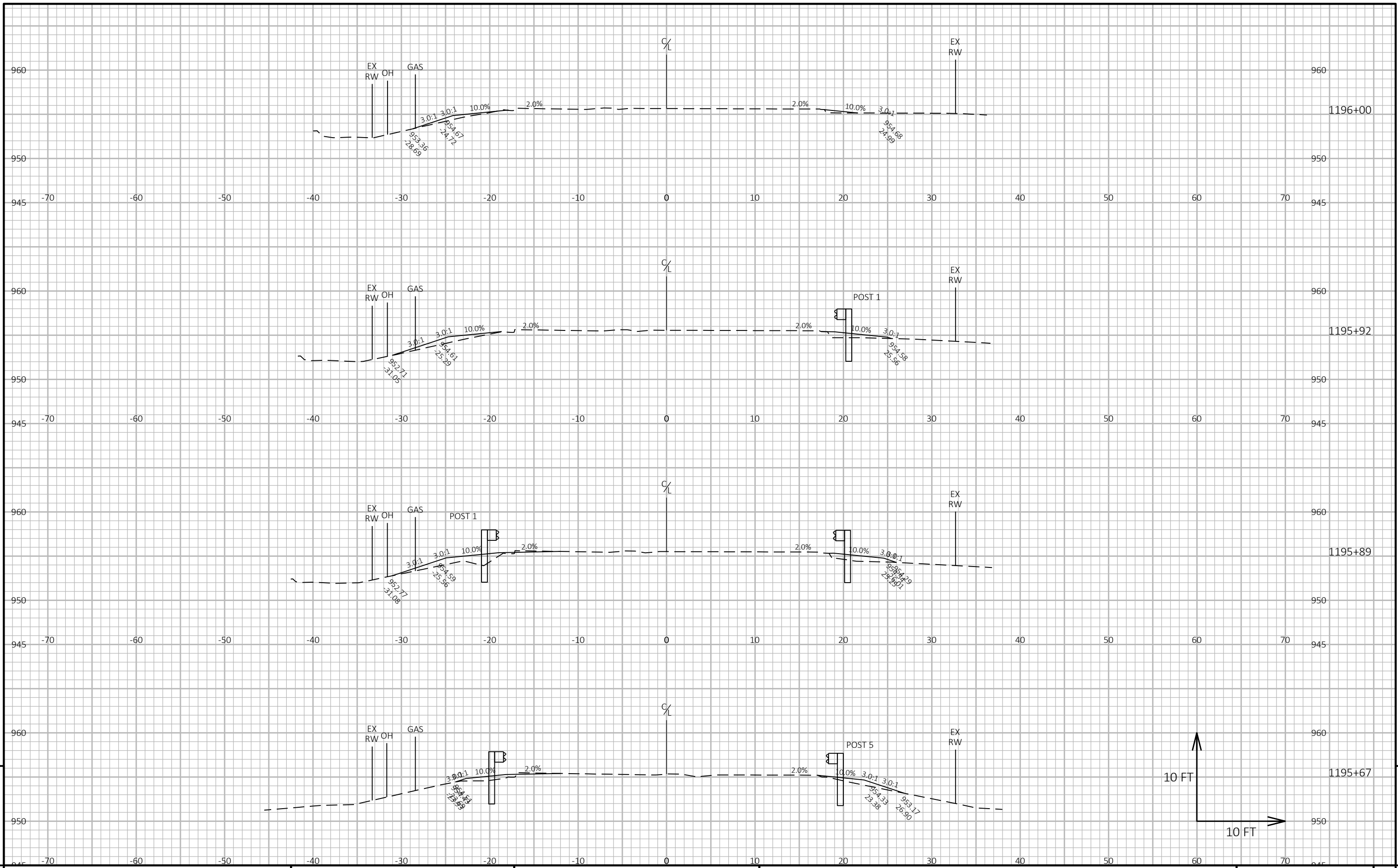


9

9

PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-47 SHEET E

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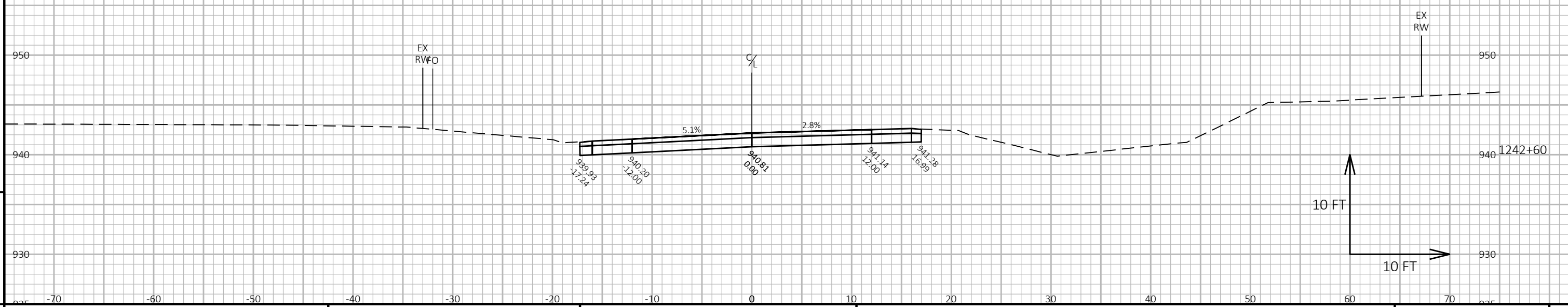
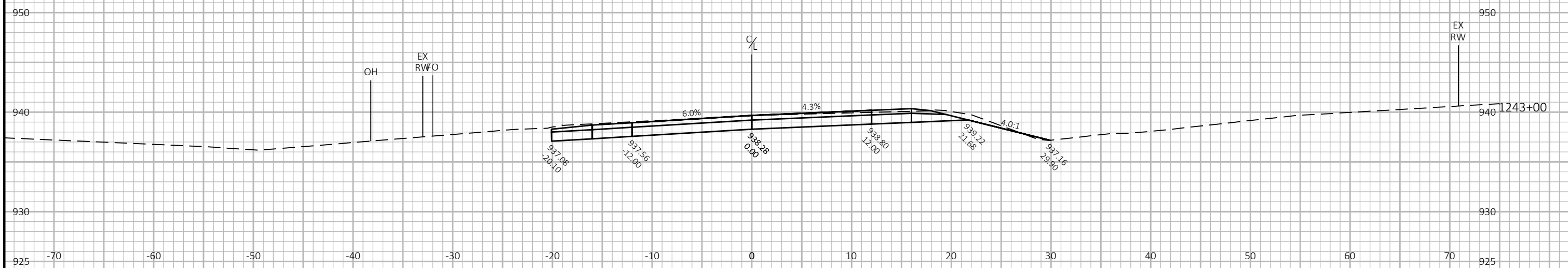
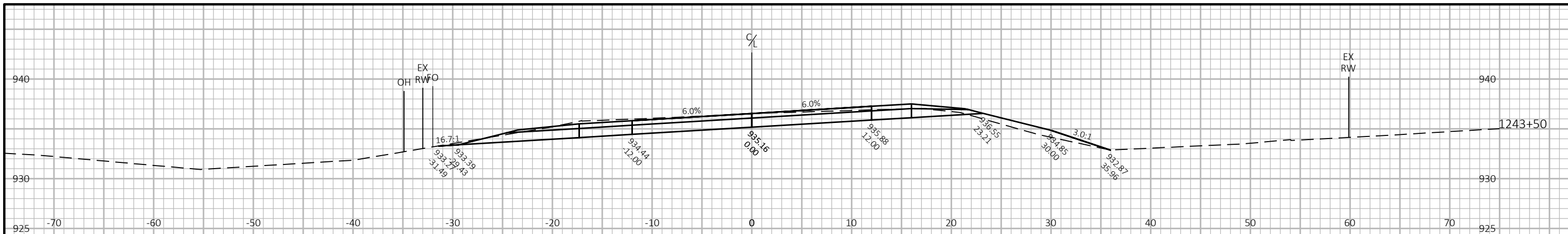


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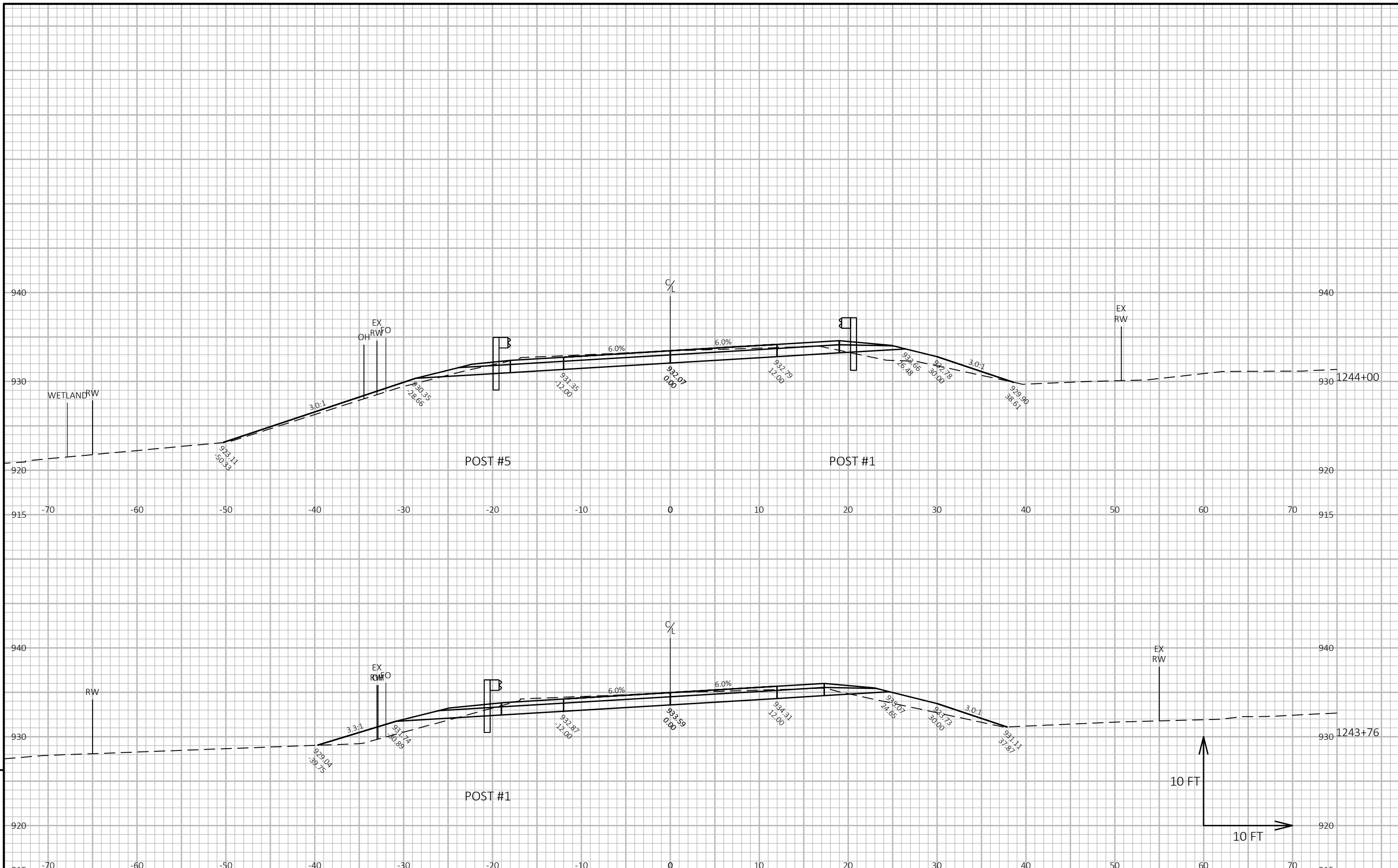
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PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-47 SHEET E

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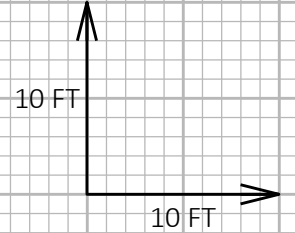
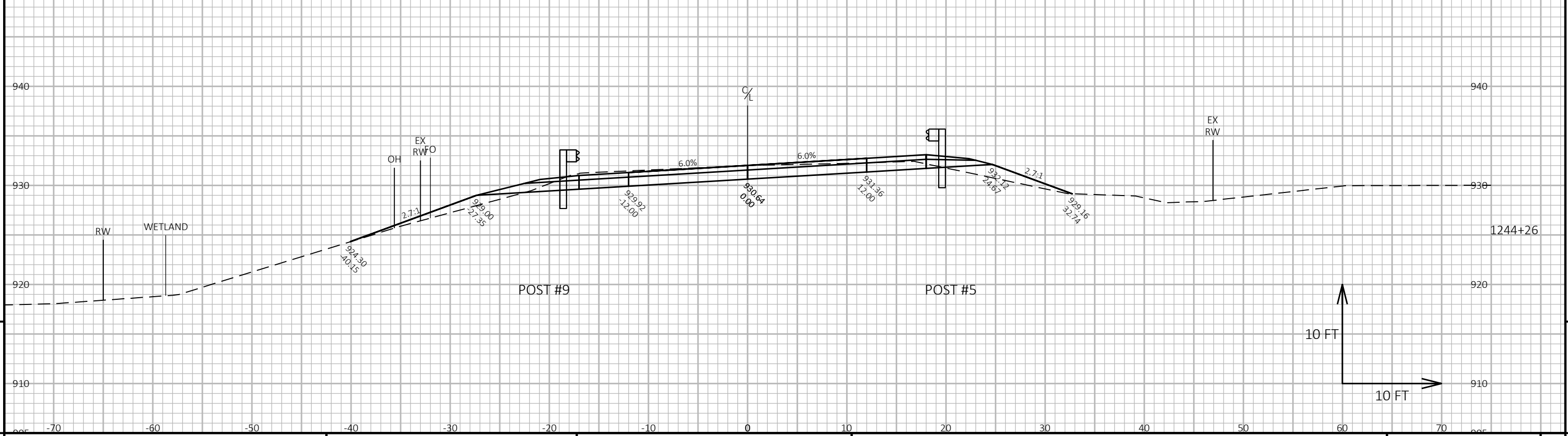
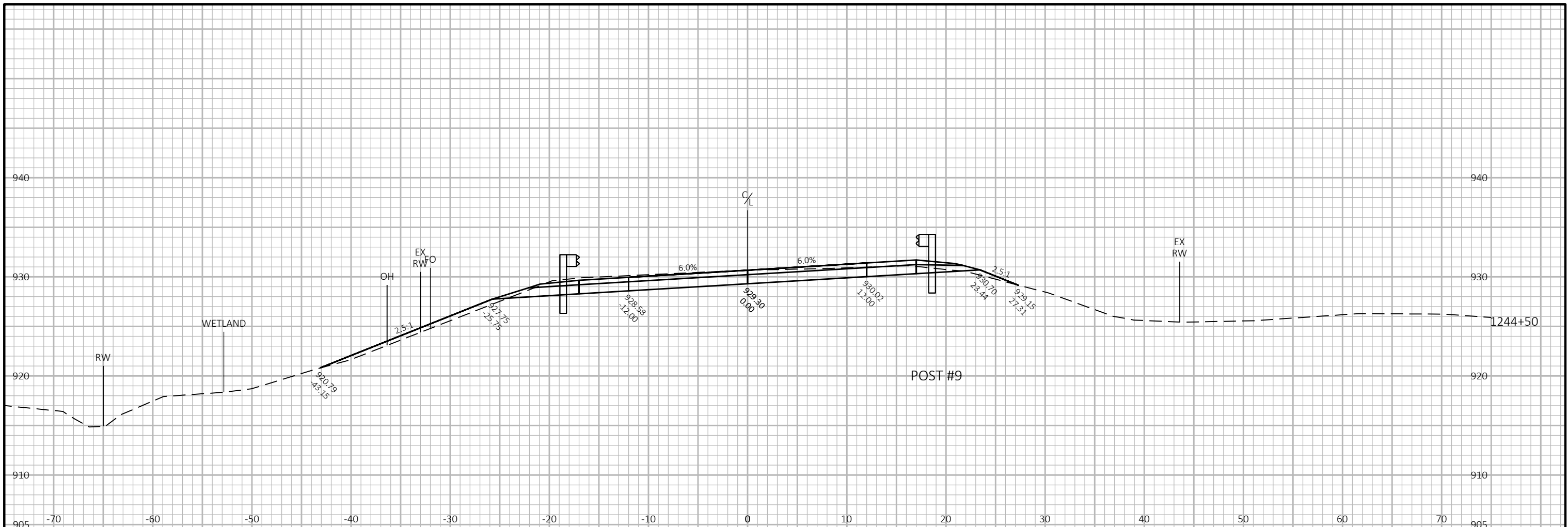
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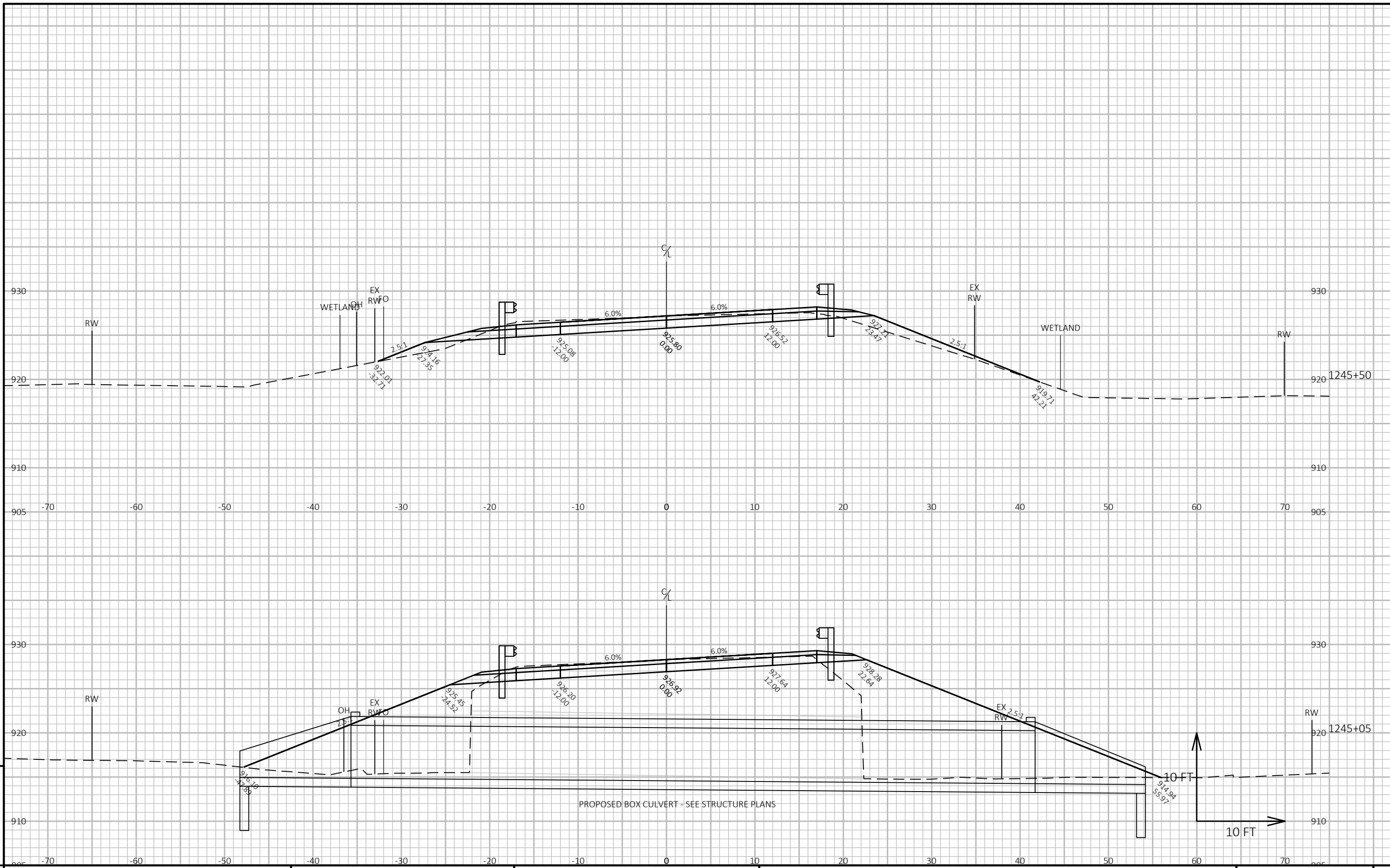
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PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	CROSS SECTIONS: C-66-159	SHEET	E
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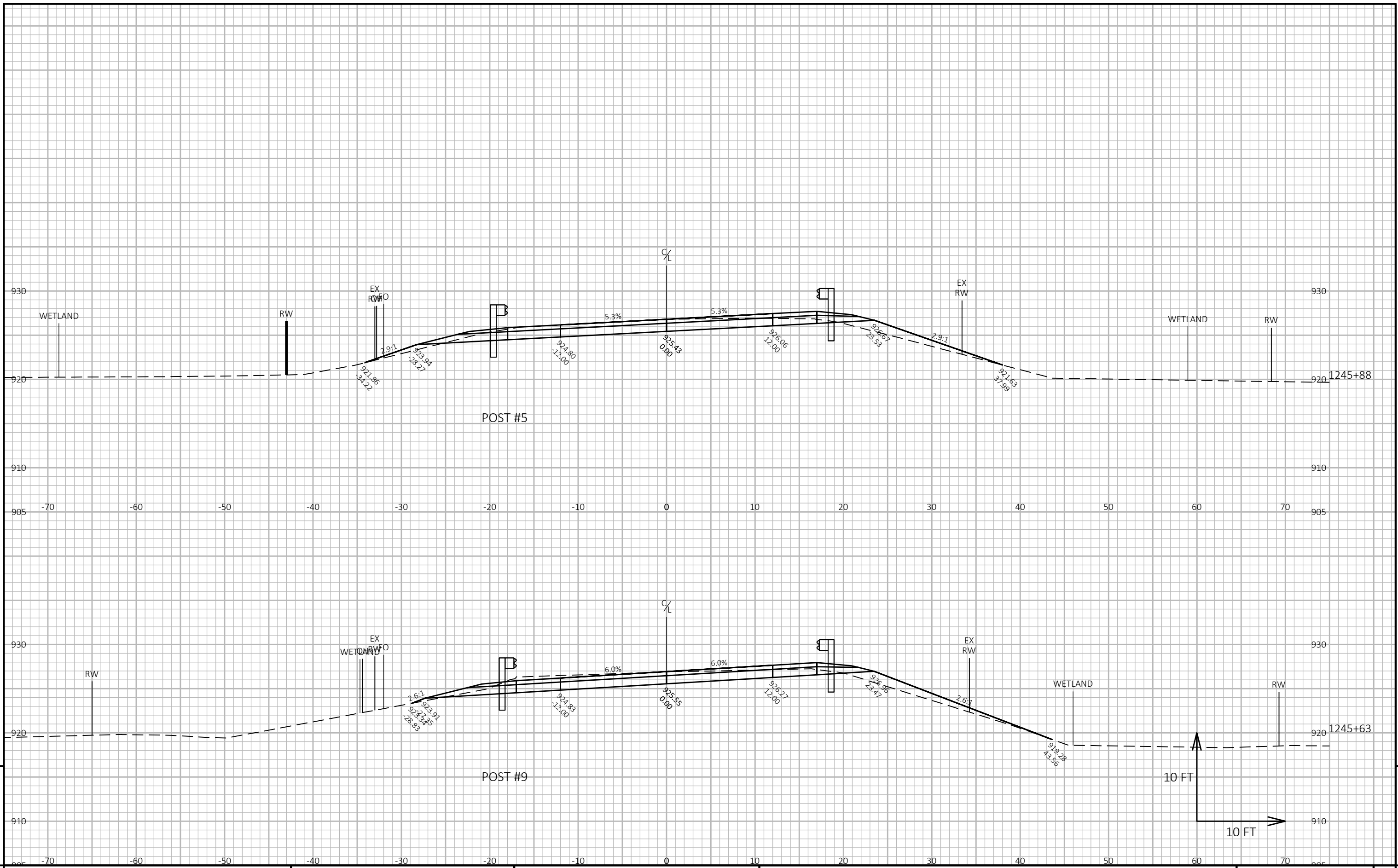


PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-159 SHEET 9

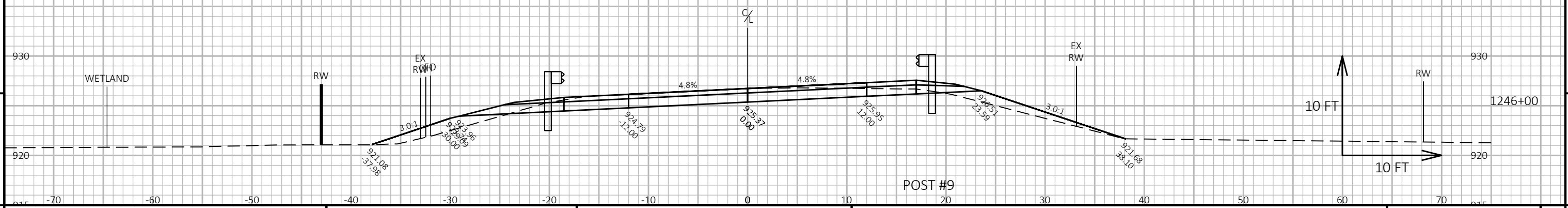
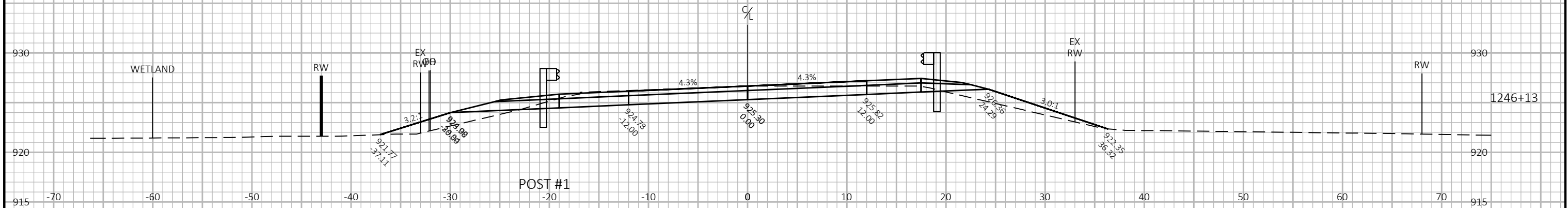
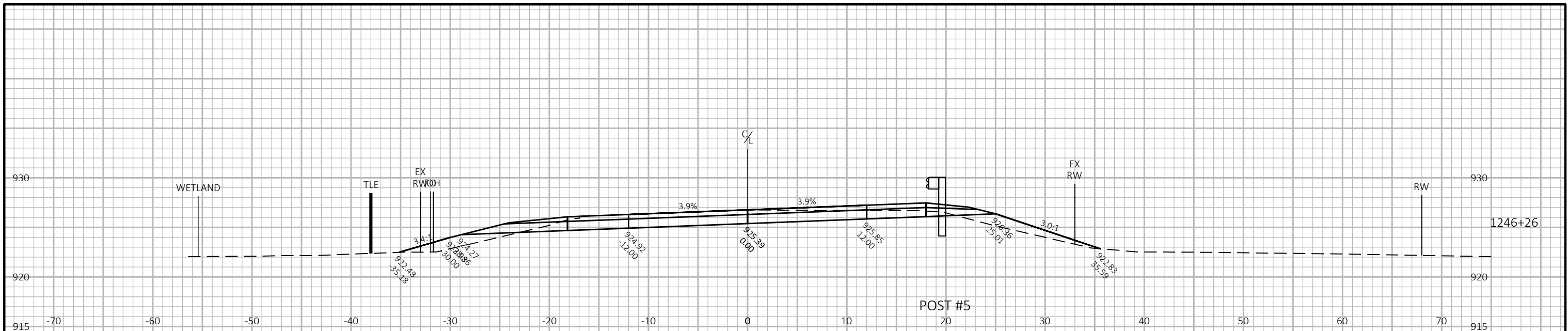


PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-159 SHEET 9

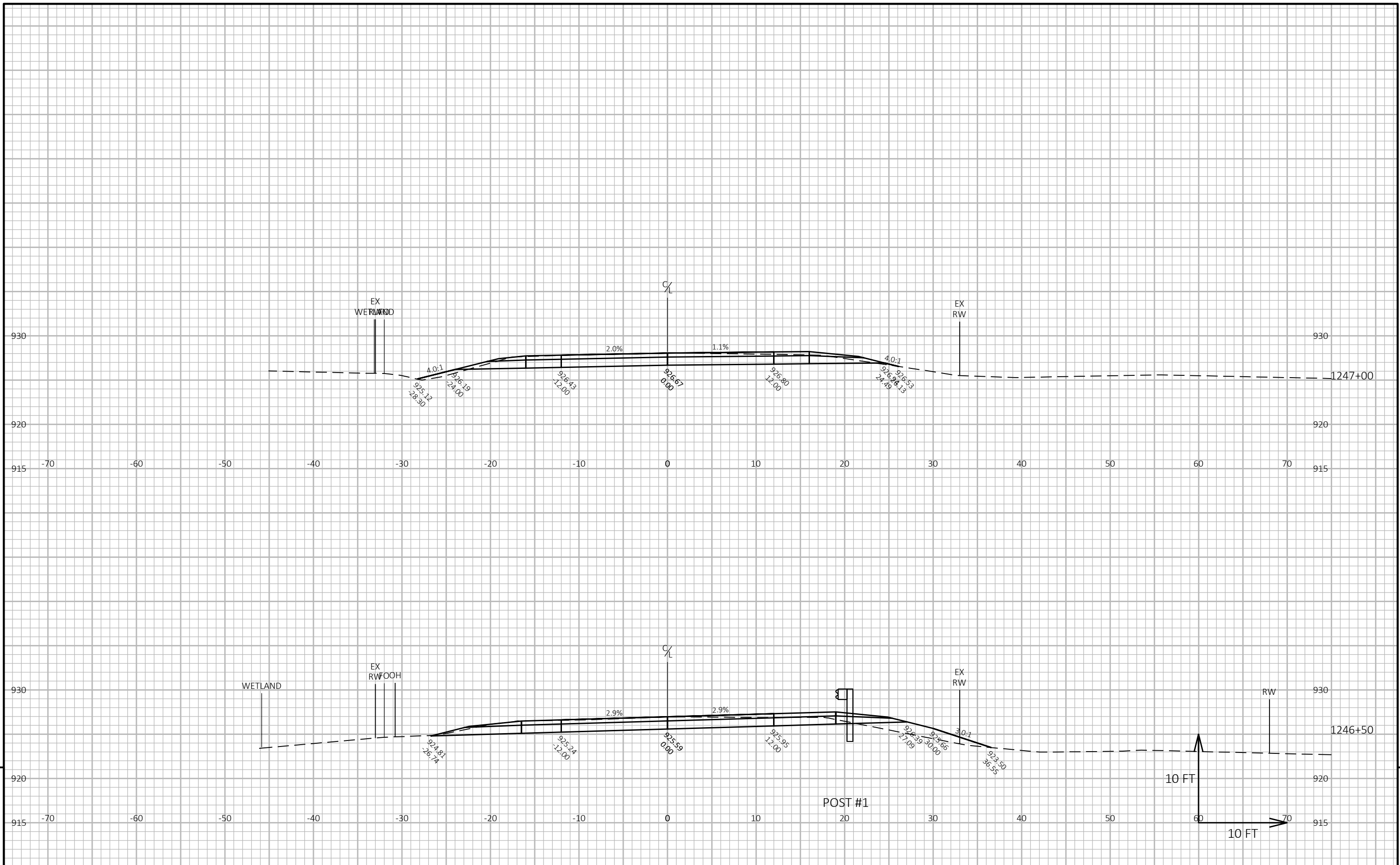
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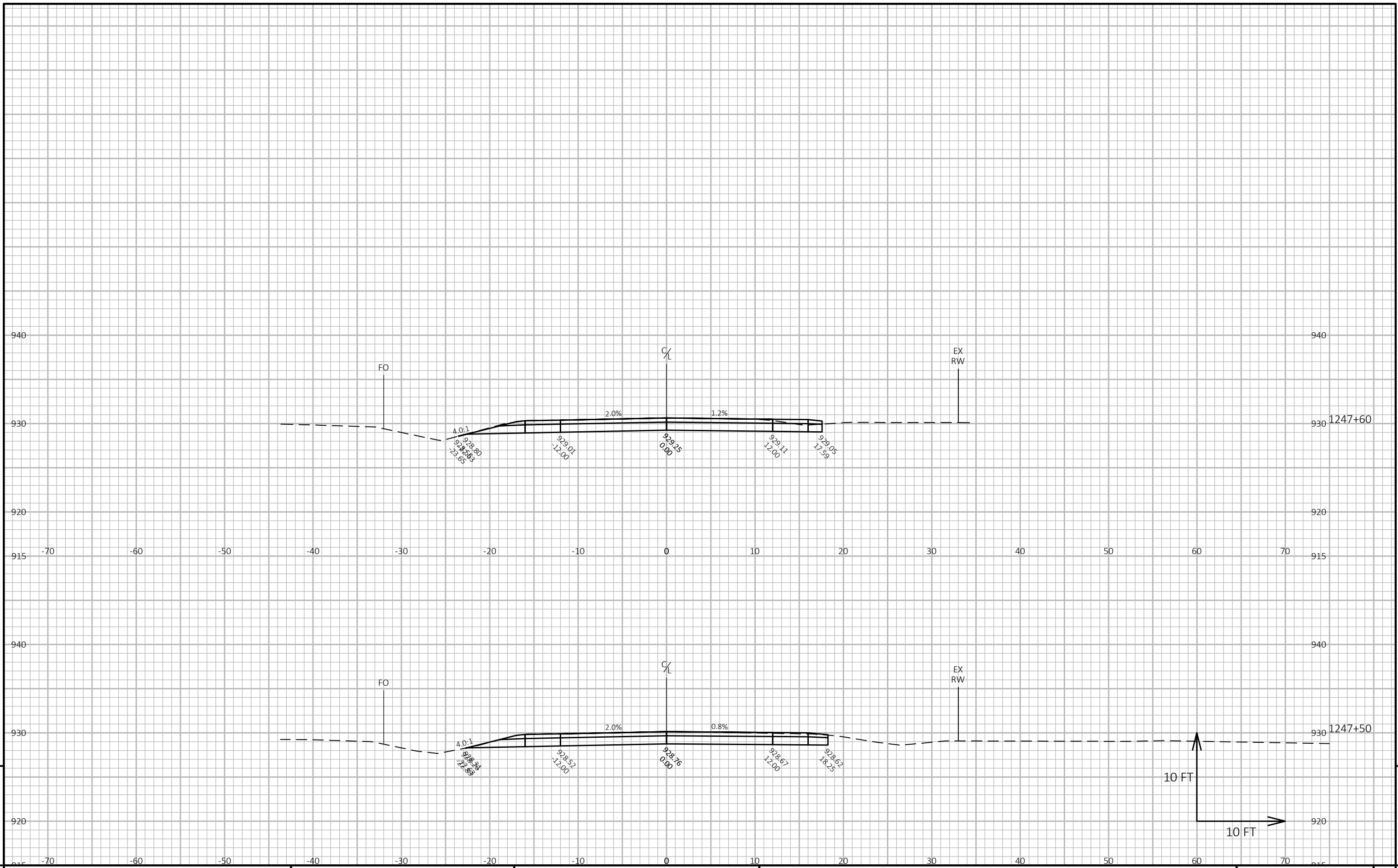
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PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-159 SHEET E



PROJECT NO: 3360-17-70 HWY: STH 175 COUNTY: WASHINGTON CROSS SECTIONS: C-66-159 SHEET **E**



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PROJECT NO: 3360-17-70	HWY: STH 175	COUNTY: WASHINGTON	CROSS SECTIONS: C-66-159	SHEET	E
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