

RHI
PROJECT ID: 9030-09-71
WITH:

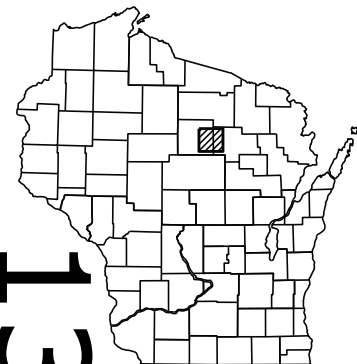
COUNTY: LANGLADE / LINCOLN

DEC 2014

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 = 180



DESIGN DESIGNATION

A.A.D.T. 2009	=	1300
A.A.D.T. 2035	=	1800
D.H.V.	=	236
D.D.	=	62/38
T.	=	11.6%
DESIGN SPEED	=	55 MPH
ESALS	=	459,900

CONVENTIONAL SYMBOLS

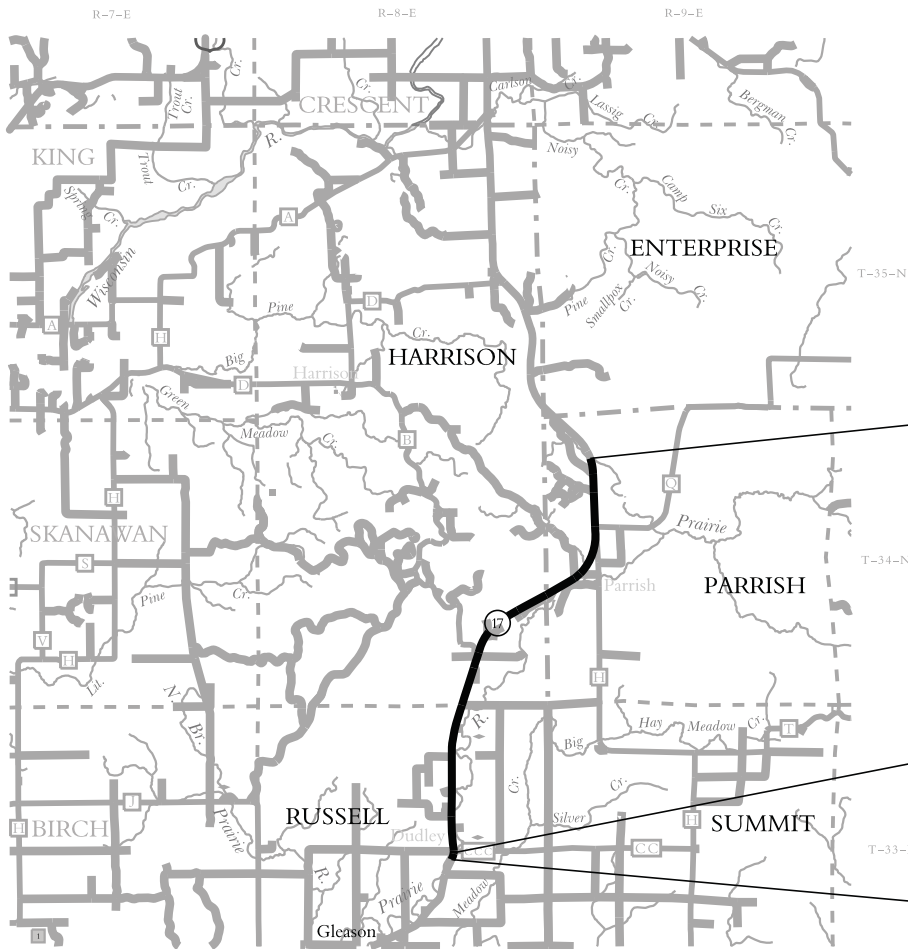
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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	

ROCK	
LABEL	
95.36	
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SAN	
SS	
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W	
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Ø	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREVENTATIVE MAINTENANCE PROJECT
MERRILL - RHINELANDER
CTH CCC TO DUMP ROAD
STH 17
LANGLADE AND LINCOLN COUNTIES

STATE PROJECT NUMBER
9030-09-71



END PROJECT
STA 516+00

EXCEPTION TO NET CENTERLINE LENGTH
STA 13+60 - 14+50

BEGIN PROJECT
STA 5+00

LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 9.661 MI

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), LINCOLN COUNTY, NAD83 (1991)"

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (91)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9030-09-71	WISC 2014444	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	
Designer	MITCH LAVIN
Project Manager	JED PETERS
Regional Examiner	CHERYL SIMON
Regional Supervisor	ROBIN STAFFORD
C.O. Examiner	
APPROVED FOR THE DEPARTMENT	
DATE: 7/30/2014	
(Signature)	

GENERAL NOTES

PURSUANT TO CHAPER 59 OF THE WISCONSIN STATE STATUES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK REFERENCE MONUMENT IN ALL AREAS WHERE SUCH A MONUMENT MAY EXIST.

THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT THAT ARE NOT SHOWN.

TREES OR SHRUBS ARE NOT TO BE REMOVED UNLESS APPROVED BY THE ENGINEER.

RADII ARE MEASURED TO THE EDGE OF PAVEMENT.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE OR HMA PAVEMENT IS MEASURED BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND UPON THE DISTRIBUTION IF THE MATERIAL AS DIRECTED BY THE ENGINEER.

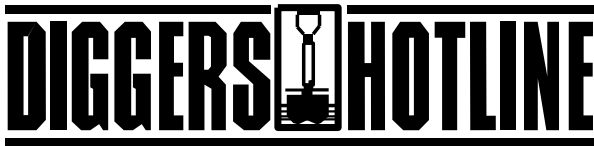
CONSTRUCTION CONTACTS FROM WORK PLANS

CENTURYLINK - COMMUNICATIONS
JIM ARQUETTE
5604 MAIN STREET
SHELDON, WI 54766
715.452.5168 (OFFICE)
715.563.8295 (CELL)
Jim.Arquette@centurylink.com

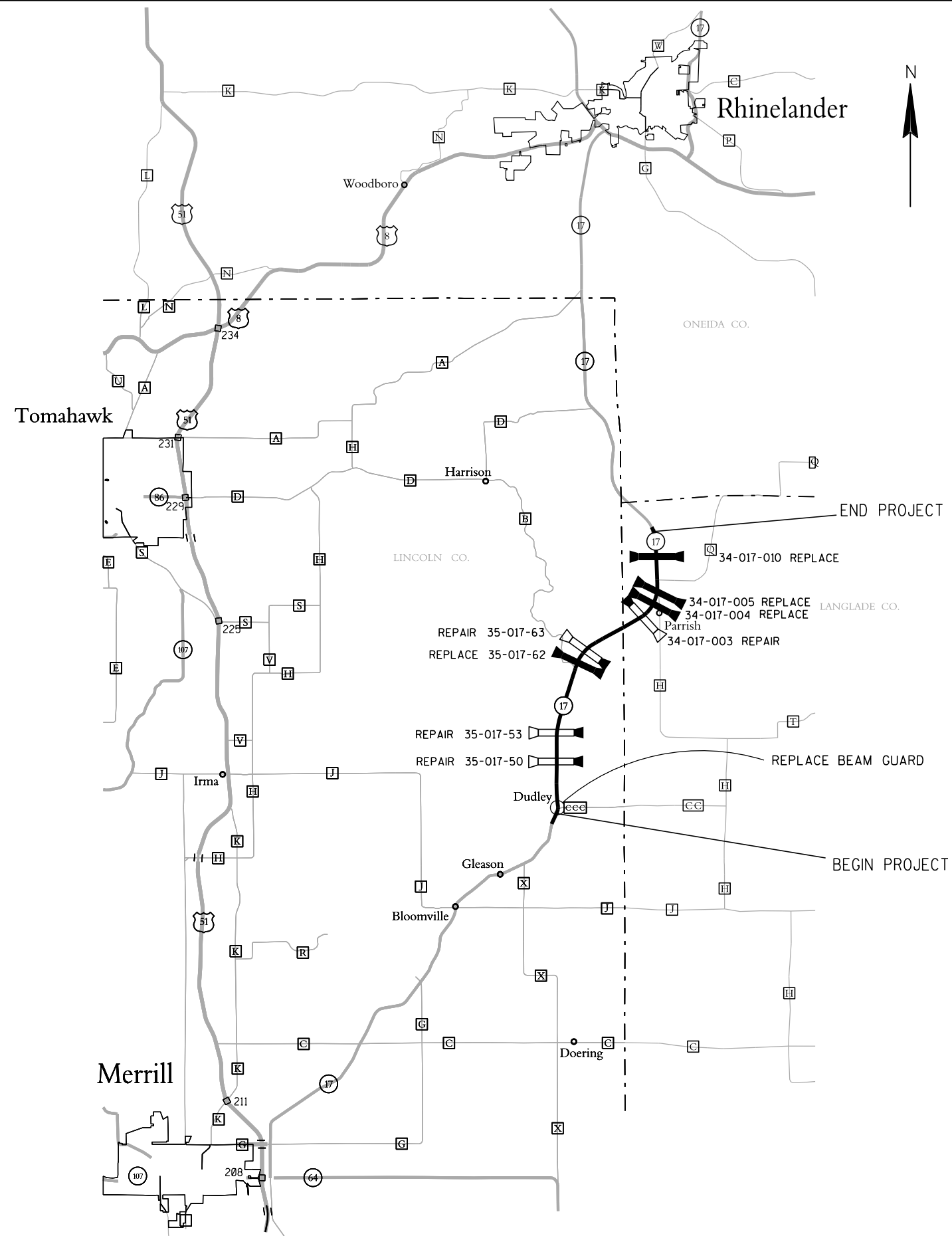
DEPT OF NATURAL RESOURCES
JON SIMONSEN
107 SUTLIFF AVE
RHINELANDER, WI 54501-0818
715-365-8915
Jonathan.Simonsen@wi.gov

NET-LEC - COMMUNICATIONS
DENNIS LAFAVE
1700 INDUSTRIAL DRIVE
GREEN BAY, WI 54302
920.619.9774
dllafave@mi-tech.us

WPS - ELECTRIC
MIKE REHWINKEL
3200 E MAIN STREET
MERRILL, WI 54452
715.539.4021 (OFFICE)
715.351.0221 (CELL)
marehwinkel@wisconsinpublicservice.com



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



PROJECT NO: 9030-09-71

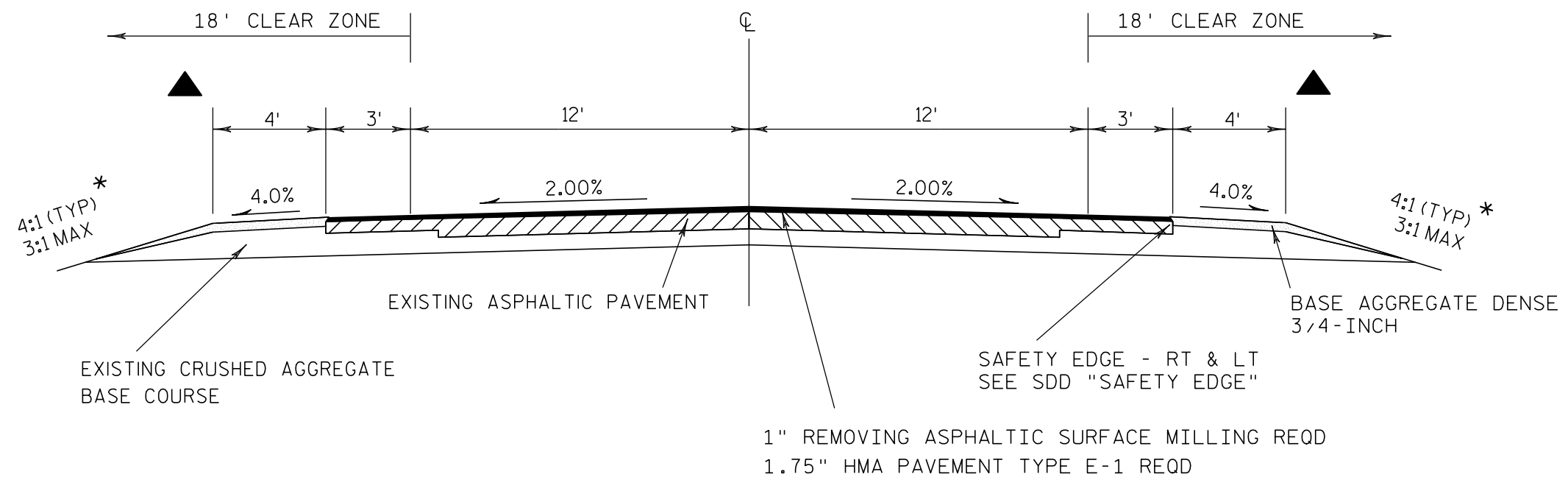
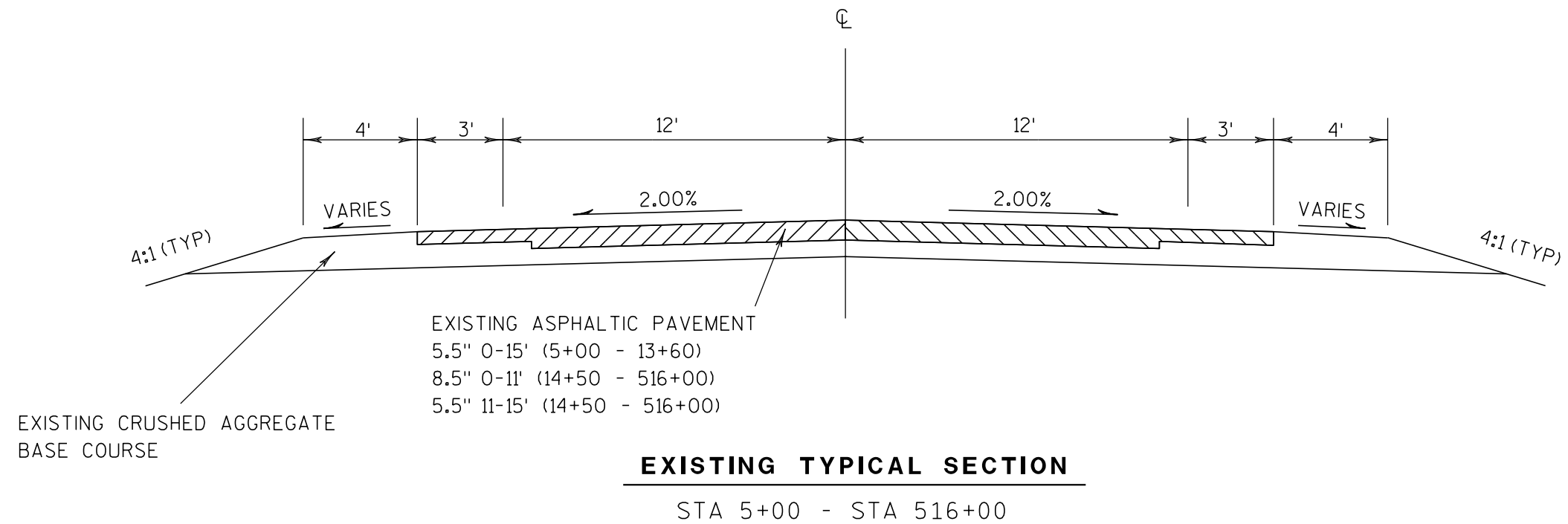
HWY: STH 17

COUNTY: LANGLEDE / LINCOLN

PLAN OVERVIEW - MERRILL TO RHINELANDER

SHEET

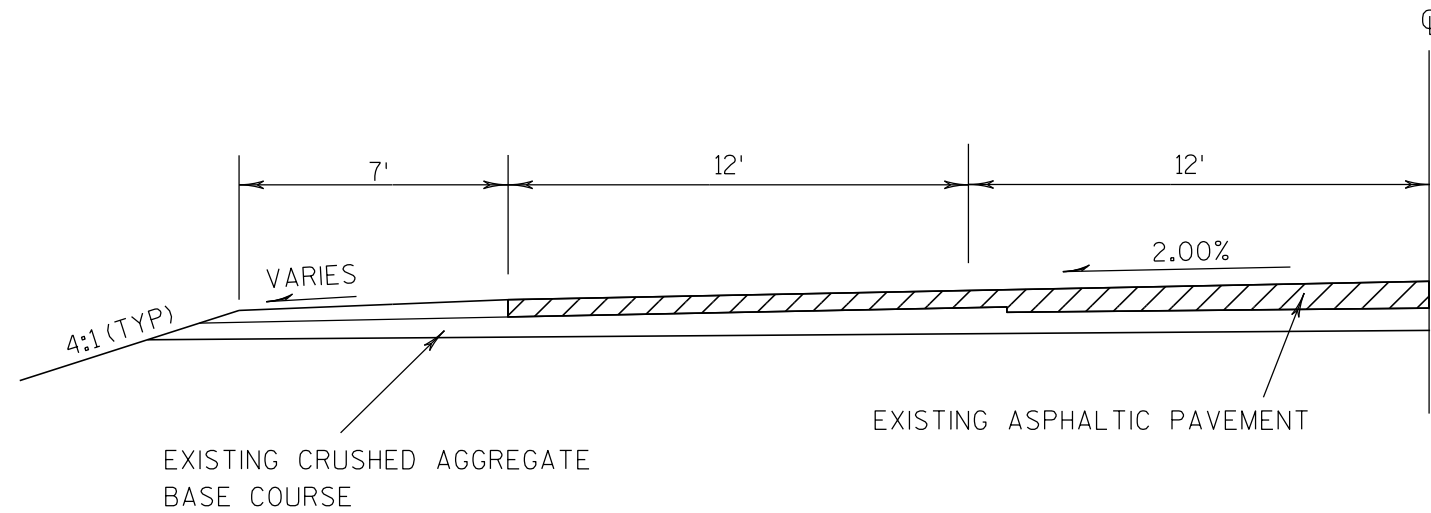
E



SHAPING SHOULDERS

*

NOTE: MATCH EXISTING SUBGRADE SHOULDER POINT

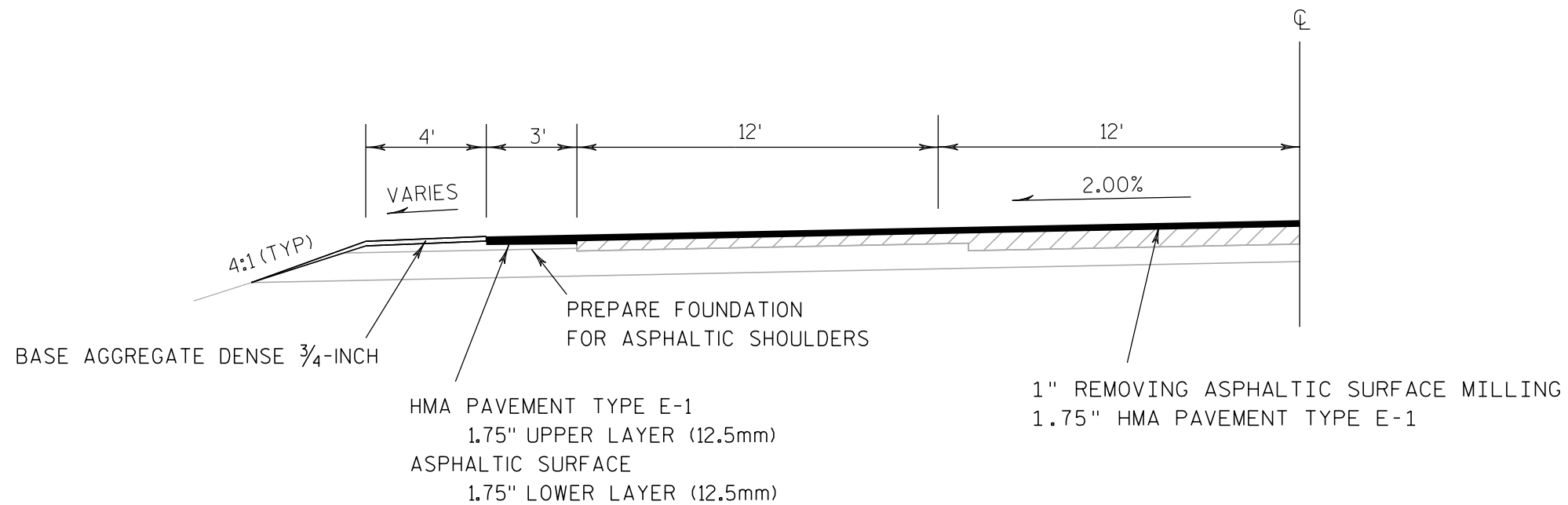


EXISTING TYPICAL 1/2 SECTION

BYPASS LANE

CTH B STA 246+00 RT

CTH Q/H STA STA 440+23 LT

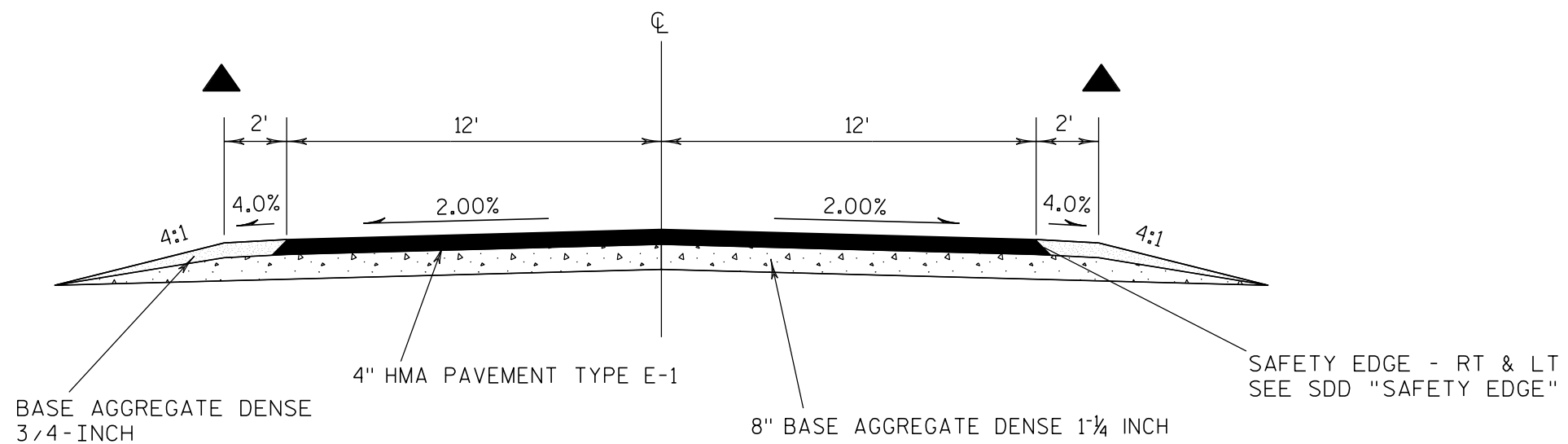


PROPOSED TYPICAL 1/2 SECTION

BYPASS LANE

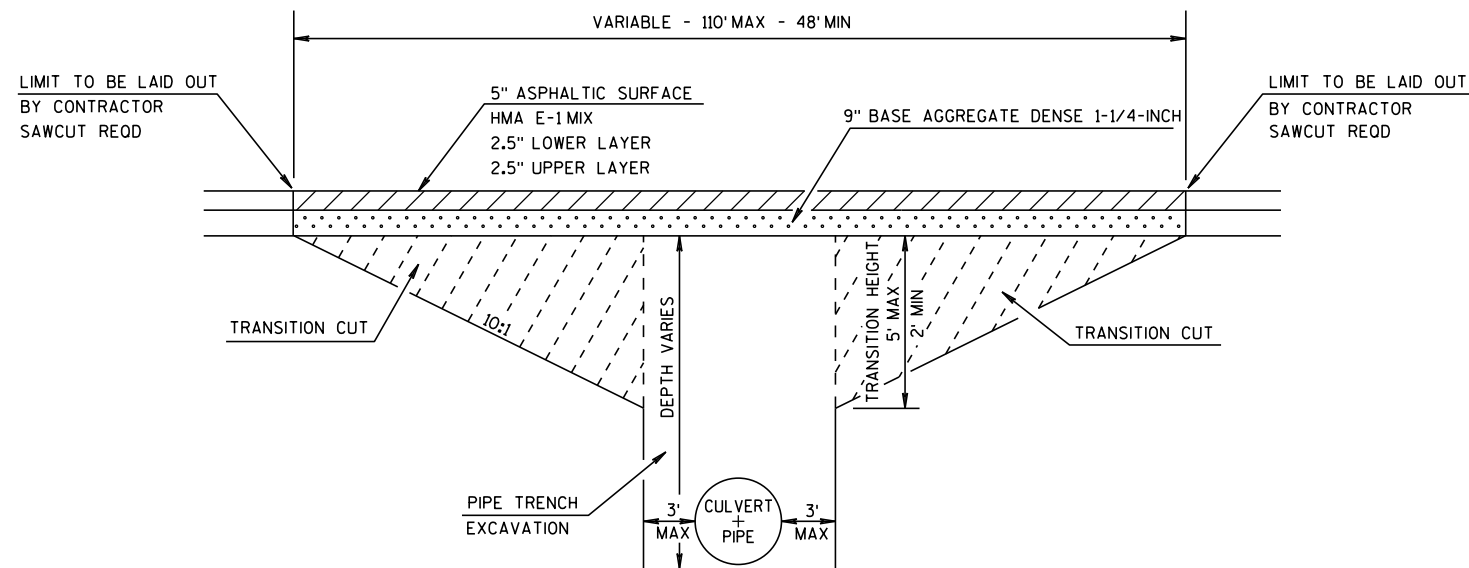
CTH B STA 246+00 RT

CTH Q/H STA STA 440+23 LT



PROPOSED TYPICAL SECTION

FIRST LAKE ROAD



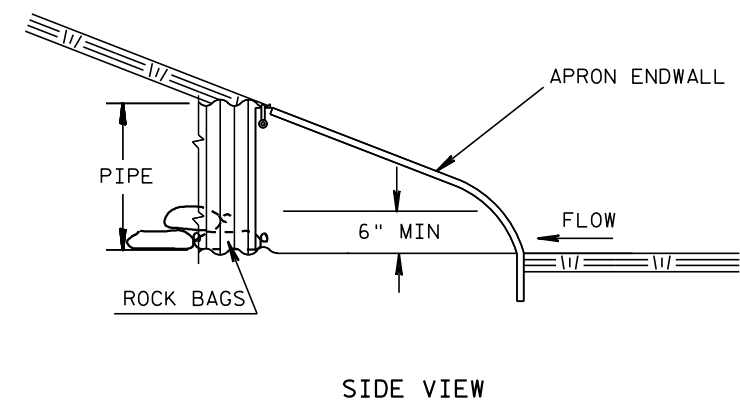
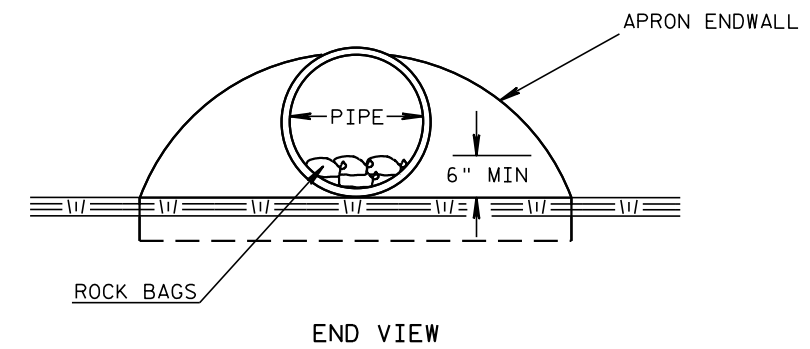
CULVERT PIPE TRANSITION

TO BE COMPLETED AT ALL CULVERT PIPE REPLACEMENT LOCATIONS

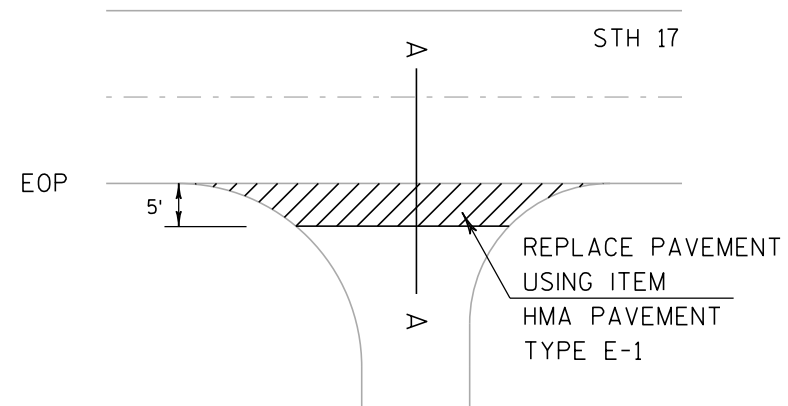
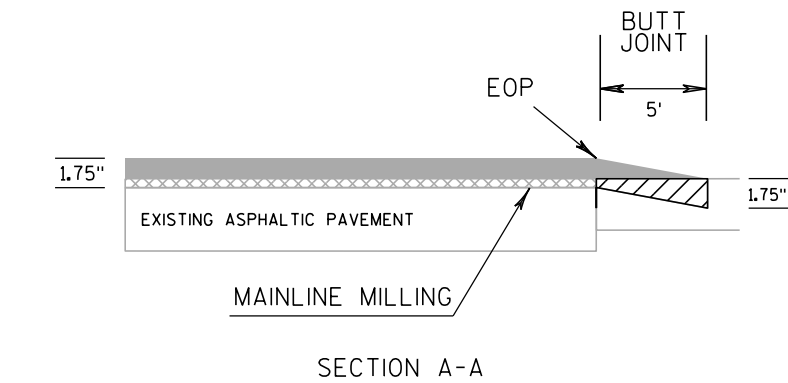
NOTE: REUSE MATERIAL REMOVED FROM TRANSITION CUT AND TRENCH EXCAVATION AS BACKFILL, UNLESS DIRECTED BY ENGINEER TO USE BACKFILL GRANULAR.

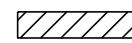
PIPE TRENCH EXCAVATION IS PAID FOR UNDER SPV "CULVERT PIPE TRANSITION".

TRANSITION CUT WILL BE AS WIDE AS SHOULDER POINT ON EACH SIDE OF CENTERLINE.



CULVERT PIPE CHECK

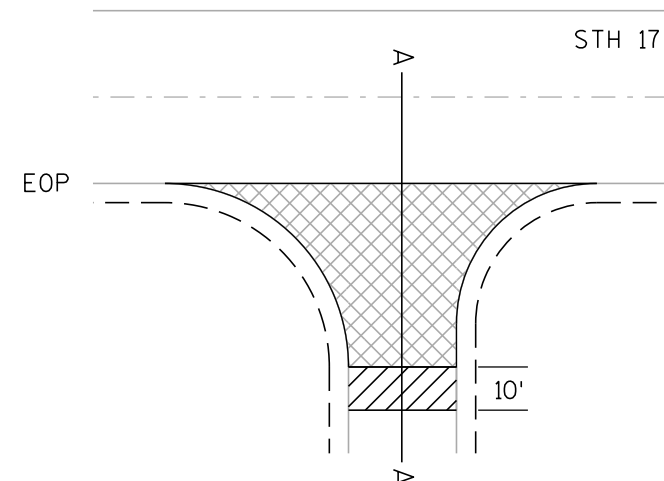
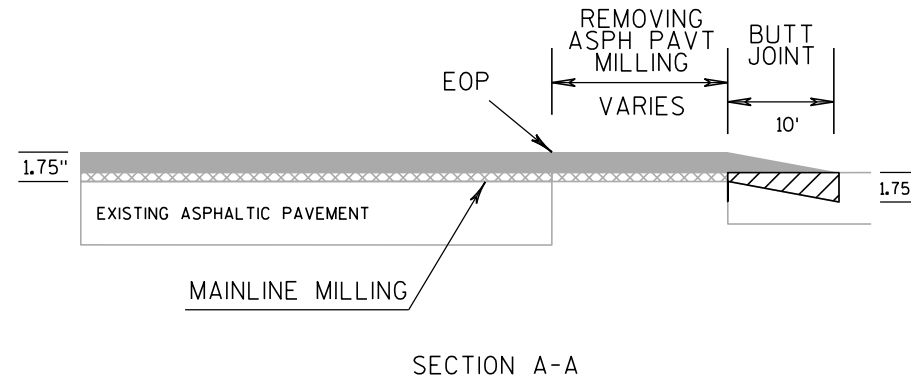


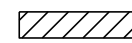
-  REMOVING ASPHALTIC SURFACE BUTT JOINT
-  REMOVING ASPHALTIC SURFACE MILLING

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

BUTT JOINT DETAIL

ALL ASPHALT DRIVEWAYS



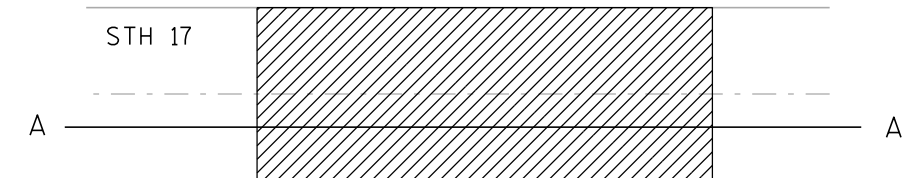
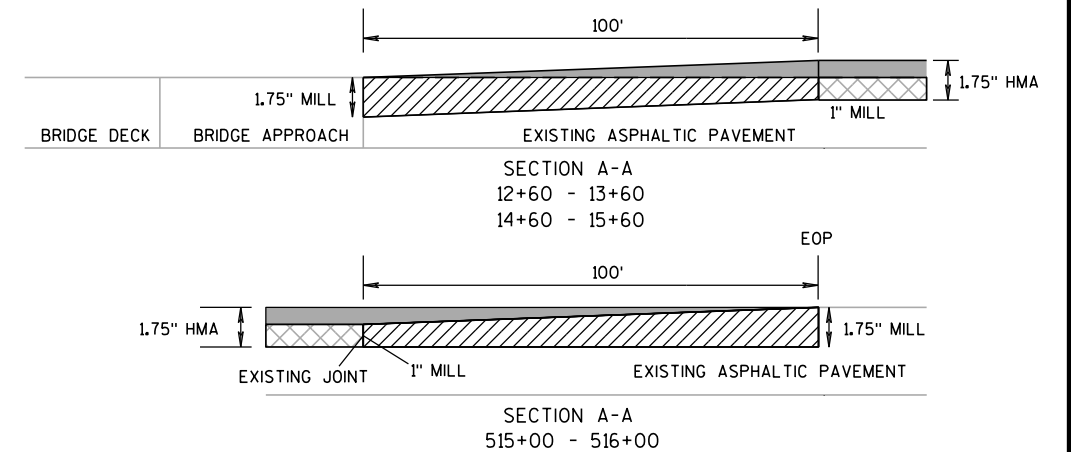
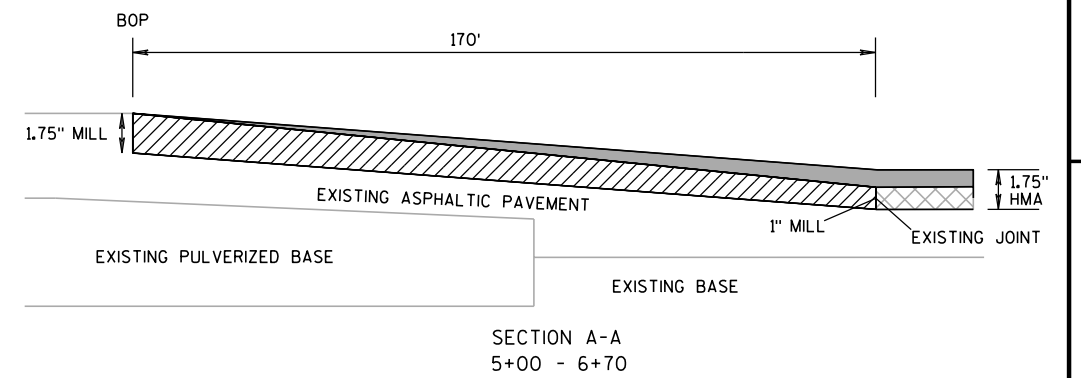
-  REMOVING ASPHALTIC SURFACE BUTT JOINT
-  REMOVING ASPHALTIC SURFACE MILLING

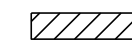
NOTE: EXACT DIMENSIONS AND LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD (NORMALLY END OF RADIUS)

BUTT JOINT DETAIL

SIDE ROADS

INTERSECTIONS (21) NO CURB AND GUTTER
CTH CCC SEE CCC DETAIL



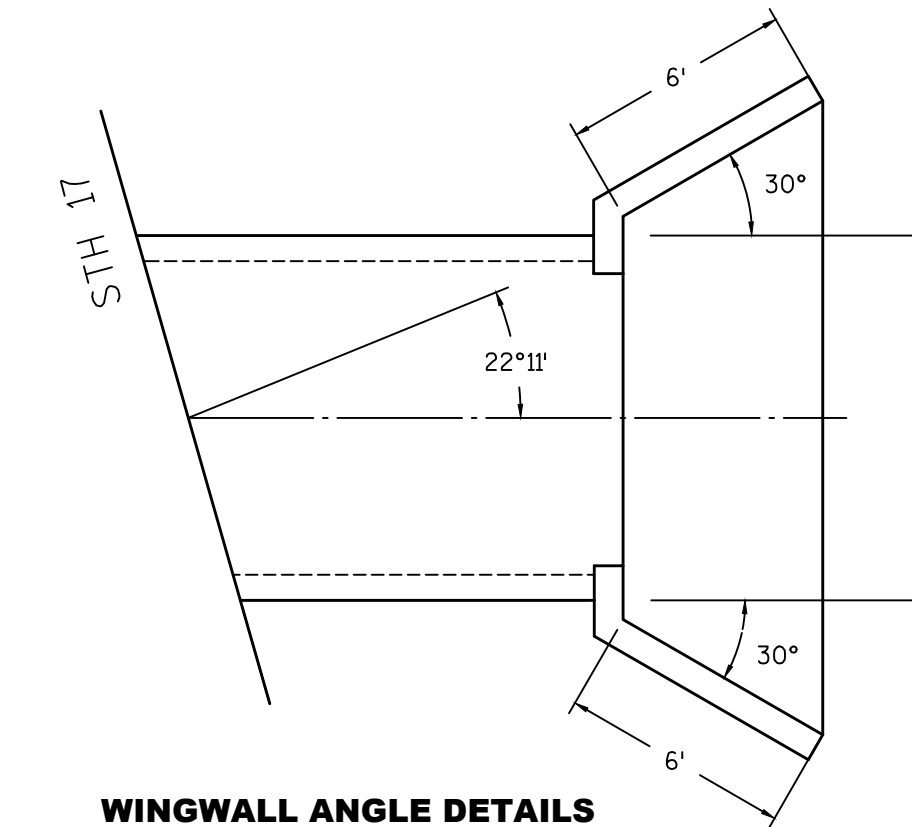
-  REMOVING ASPHALTIC SURFACE BUTT JOINT
-  REMOVING ASPHALTIC SURFACE MILLING

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

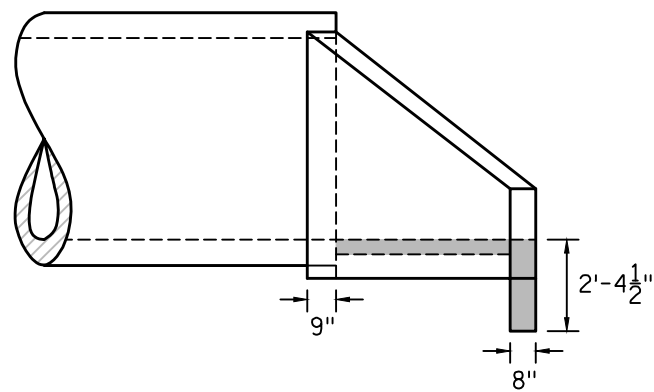
BUTT JOINT DETAIL

MAINLINE

STA 5+00 - 6+70 BOP
STA 12+60 - 13+60 BRIDGE APPROACH
STA 14+60 - 15+60 BRIDGE APPROACH
STA 515+00 - 516+00 EOP



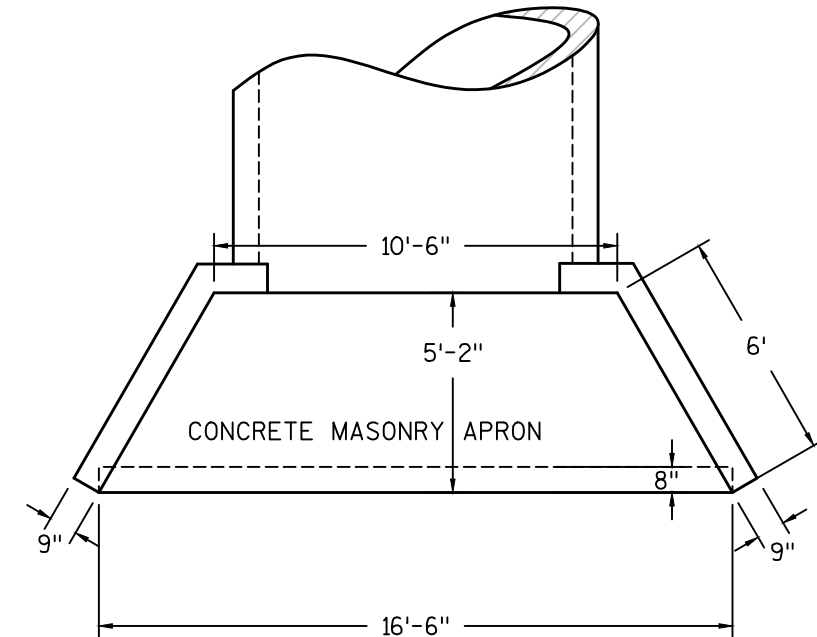
**WINGWALL ANGLE DETAILS
FOR CONCRETE MASONRY ENDWALL**



CONCRETE MASONRY ENDWALL
SIDE VIEW

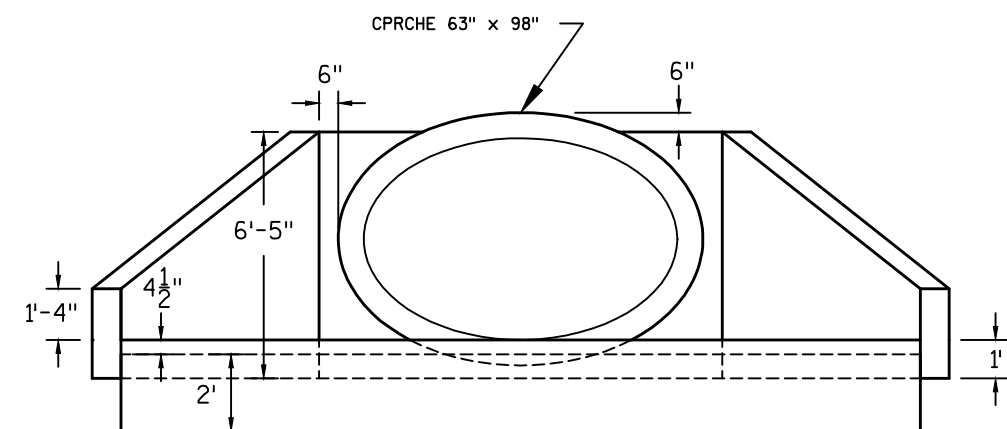
NOTES:

SEE SDD "CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH"



CONCRETE MASONRY ENDWALL

PLAN VIEW



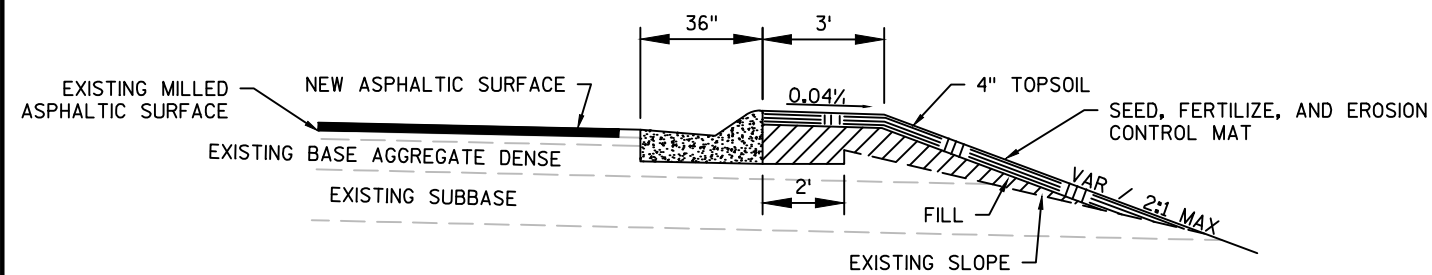
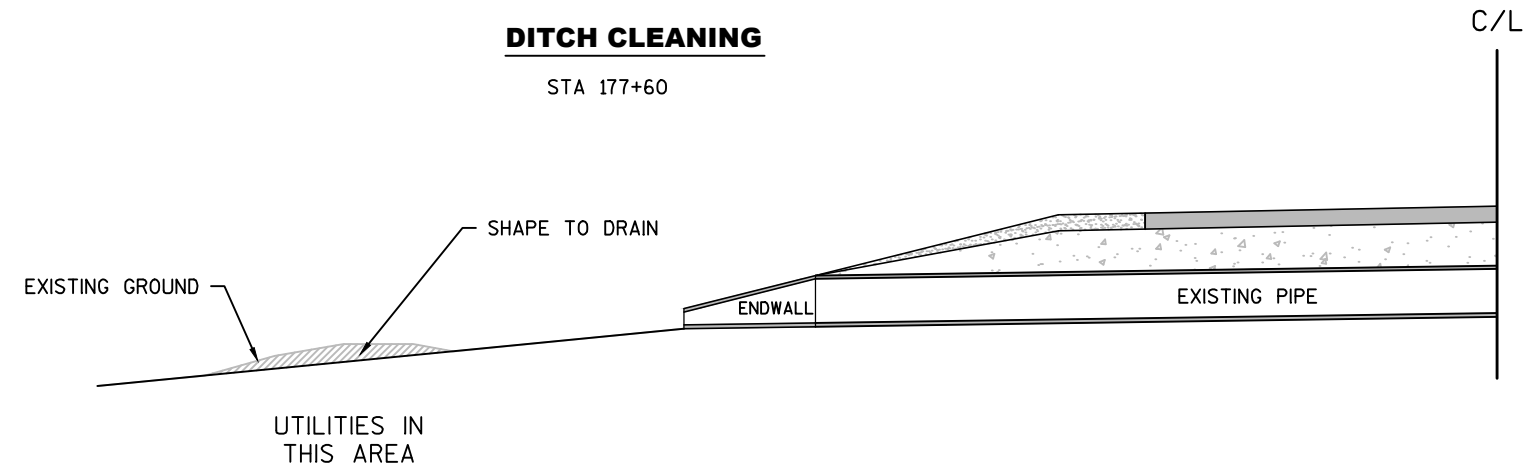
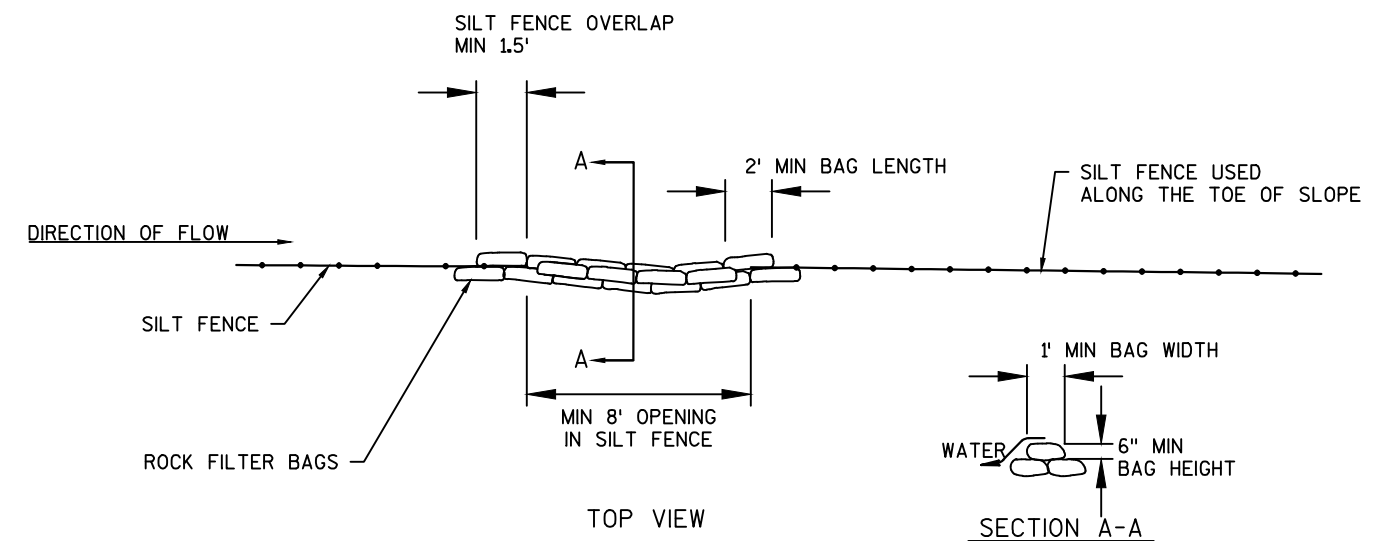
CONCRETE MASONRY ENDWALL

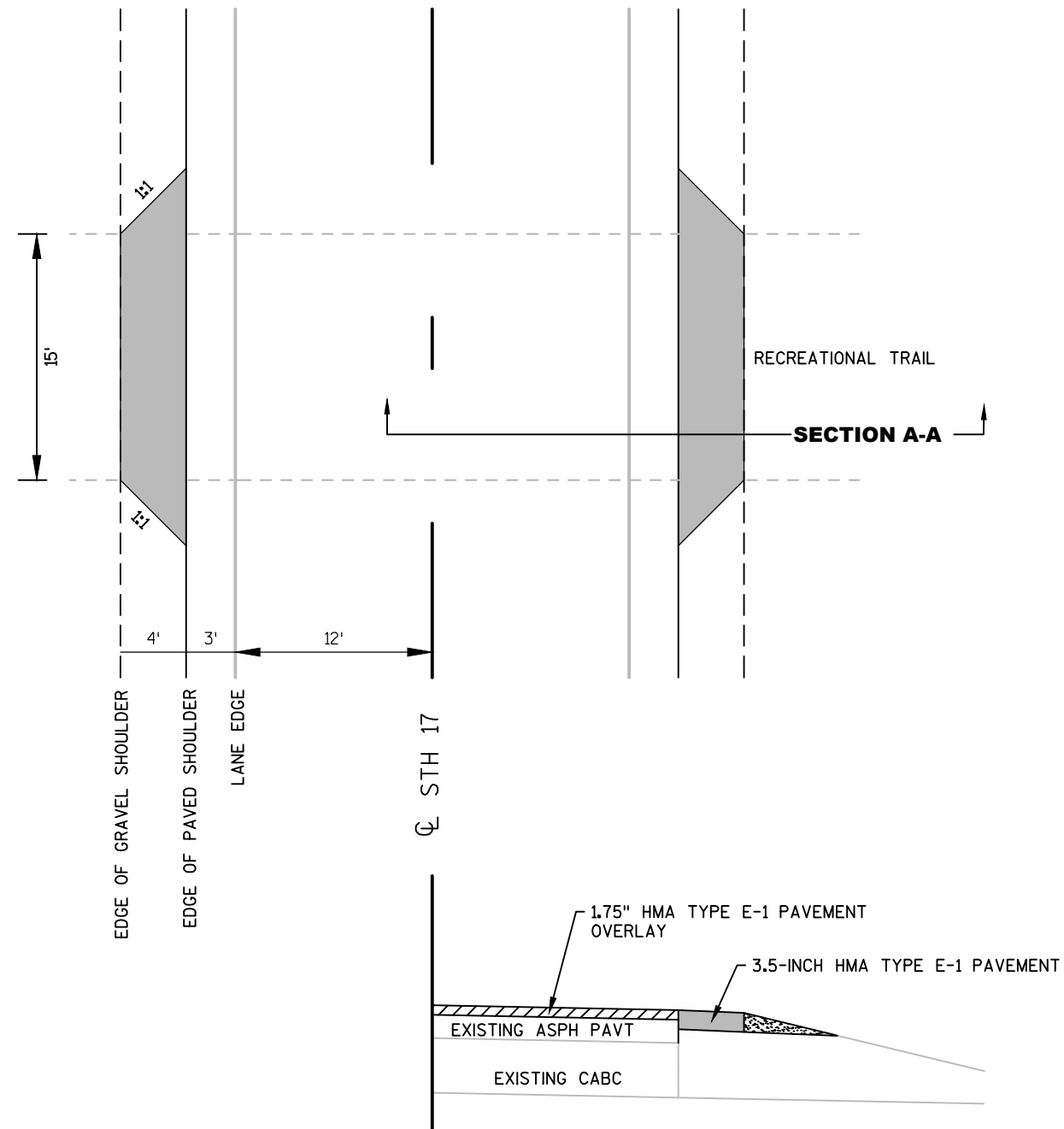
END VIEW

NOT TO SCALE

DITCH CLEANING

STA 177+60

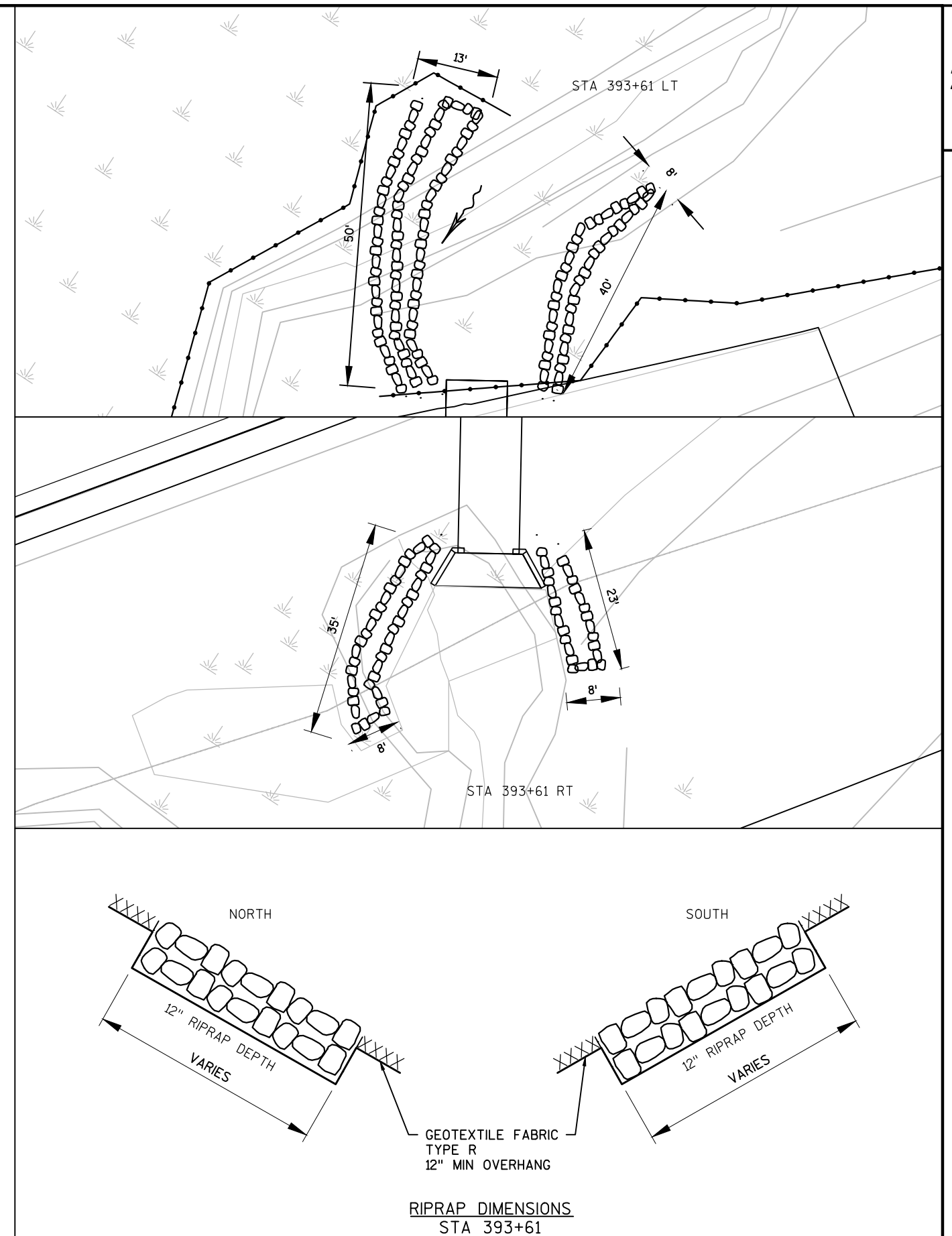
**DETAIL OF CURB & GUTTER INSTALLATION AT INTERSECTIONS****ROCK BAGS USED FOR SILT FENCE RELIEF**



HMA TYPE E-1 PAVEMENT WIDENING
3.5-INCH

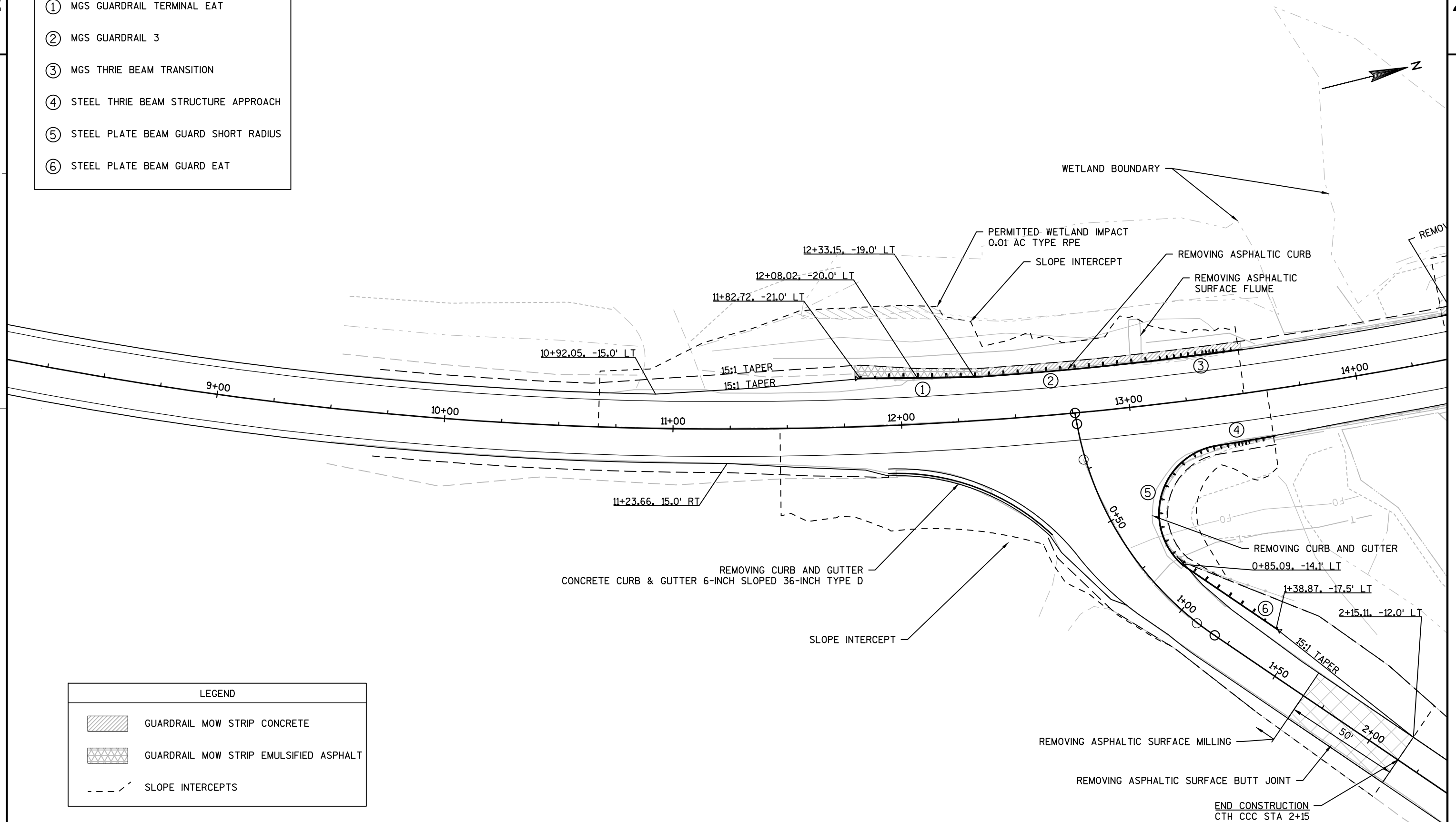
NOTE: PREPARATION FOR PAVEMENT WIDENING
FALLS UNDER PREPARE FOUNDATION
FOR ASPHALTIC SHOULDERS

PAVING FULL WIDTH SHOULDERS AT
RECREATIONAL TRAIL CROSSING
STA 448+00



GUARDRAIL LEGEND

- ① MGS GUARDRAIL TERMINAL EAT
- ② MGS GUARDRAIL 3
- ③ MGS THRIE BEAM TRANSITION
- ④ STEEL THRIE BEAM STRUCTURE APPROACH
- ⑤ STEEL PLATE BEAM GUARD SHORT RADIUS
- ⑥ STEEL PLATE BEAM GUARD EAT

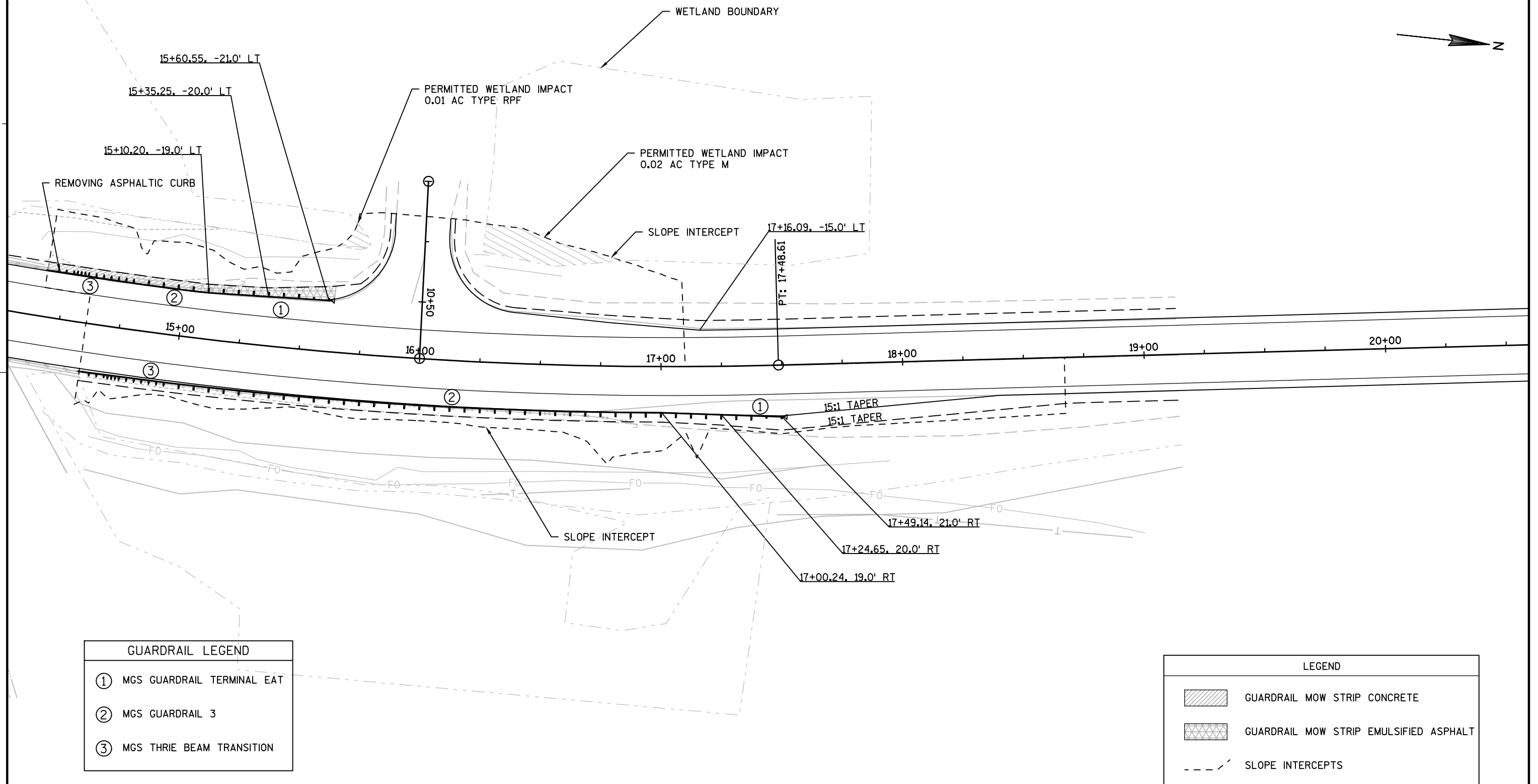


LEGEND

-  GUARDRAIL MOW STRIP CONCRETE
-  GUARDRAIL MOW STRIP EMULSIFIED ASPHALT
-  SLOPE INTERCEPTS

2

2 |



PROJECT NO: 9030-09-71

HWY: STH 17

COUNTY:LANGLADE / LINCOLN

DUDLEY RD & BEAM GUARD

SHEET

3

FILE NAME : N:\PDS\C3D\90300931\SHEETSPLAN\021101_ID.DWG

021102_id

PLOT DATE : 9/19/2014 8:20 AM

PLOT BY : LAVIN, MITCHELL L

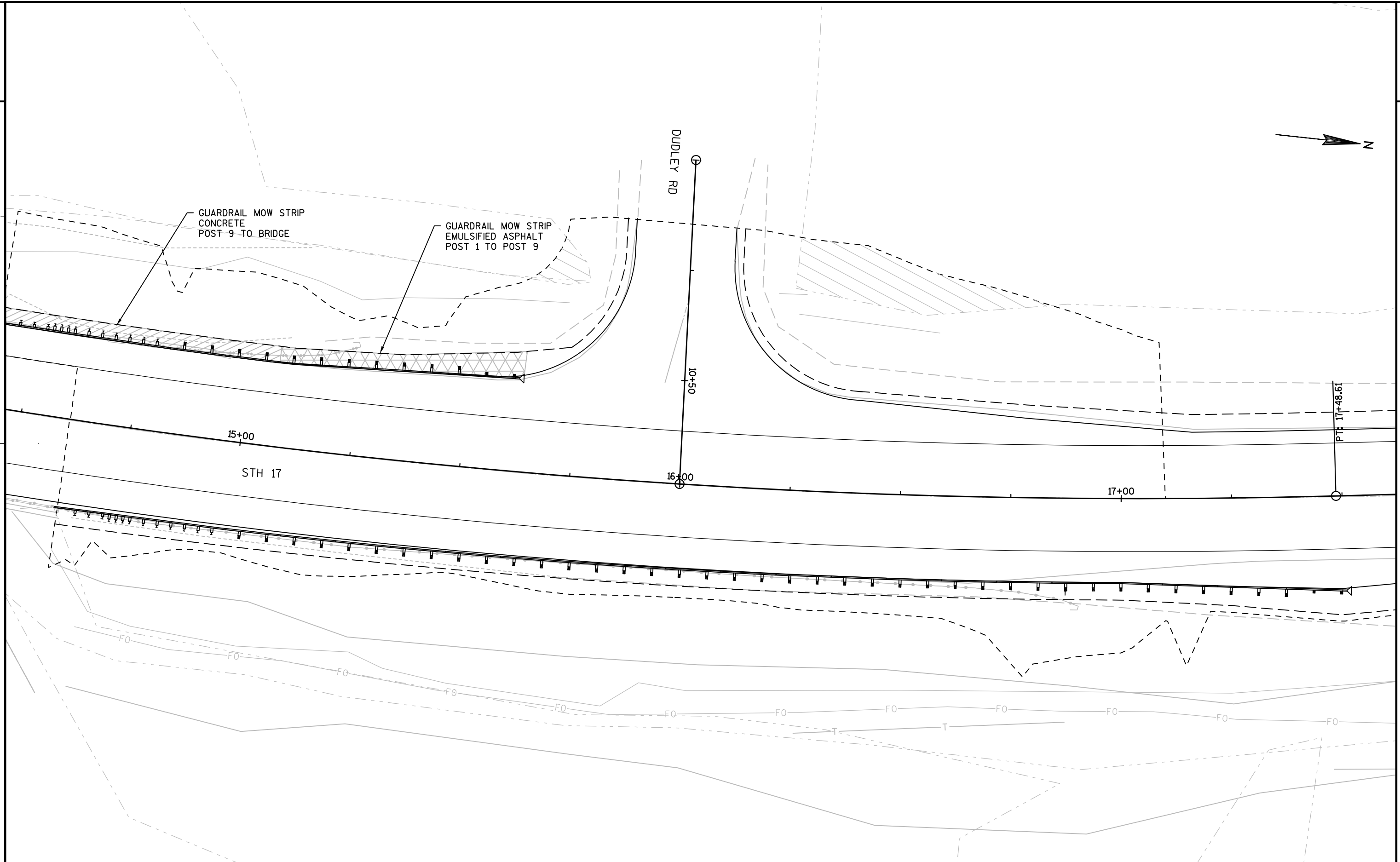
PLOT NAME :

PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2

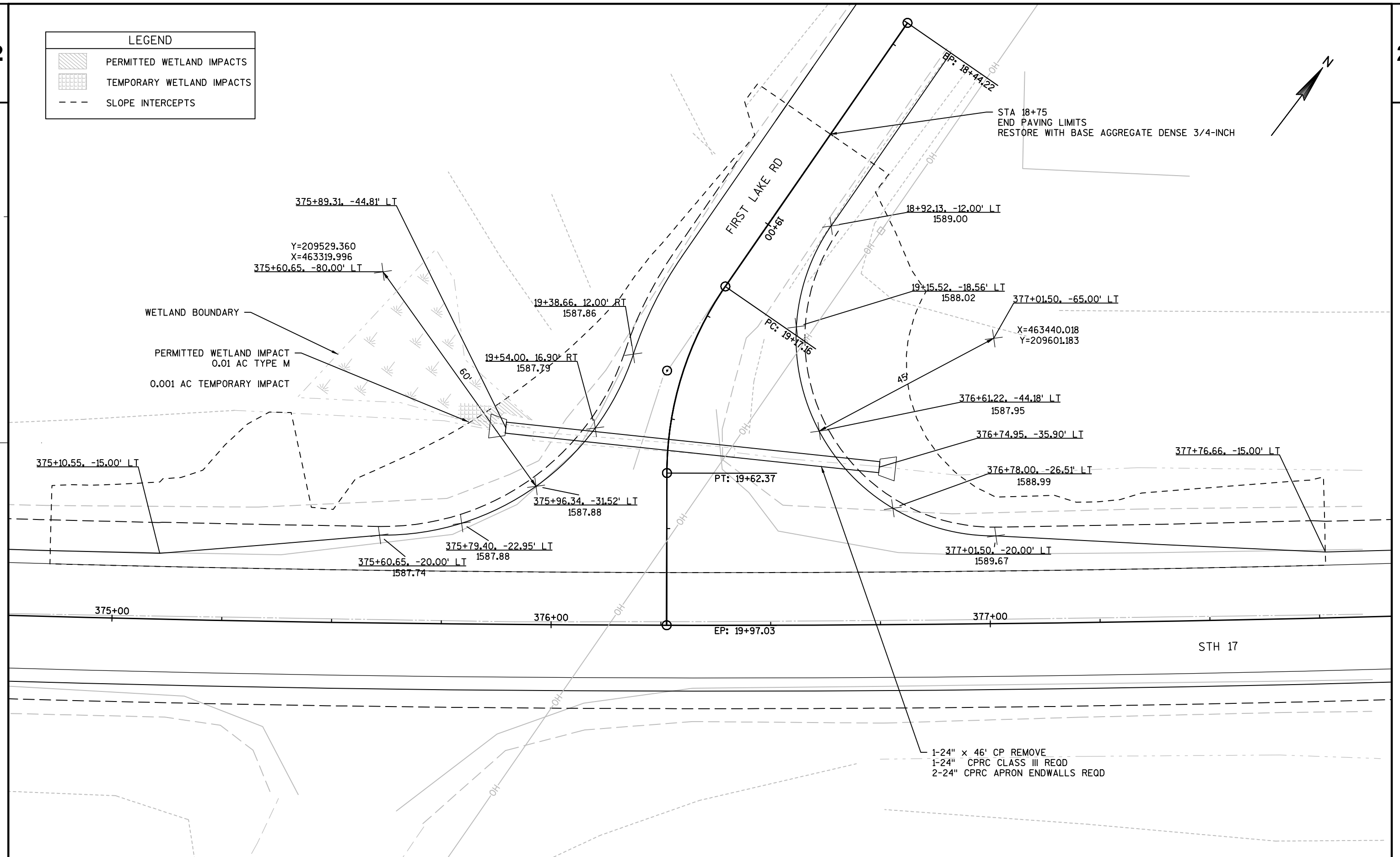




PROJECT NO:9030-09-71	HWY:STH 17	COUNTY:LANGLADE / LINCOLN	INTERSECTION DETAILS	SHEET	E
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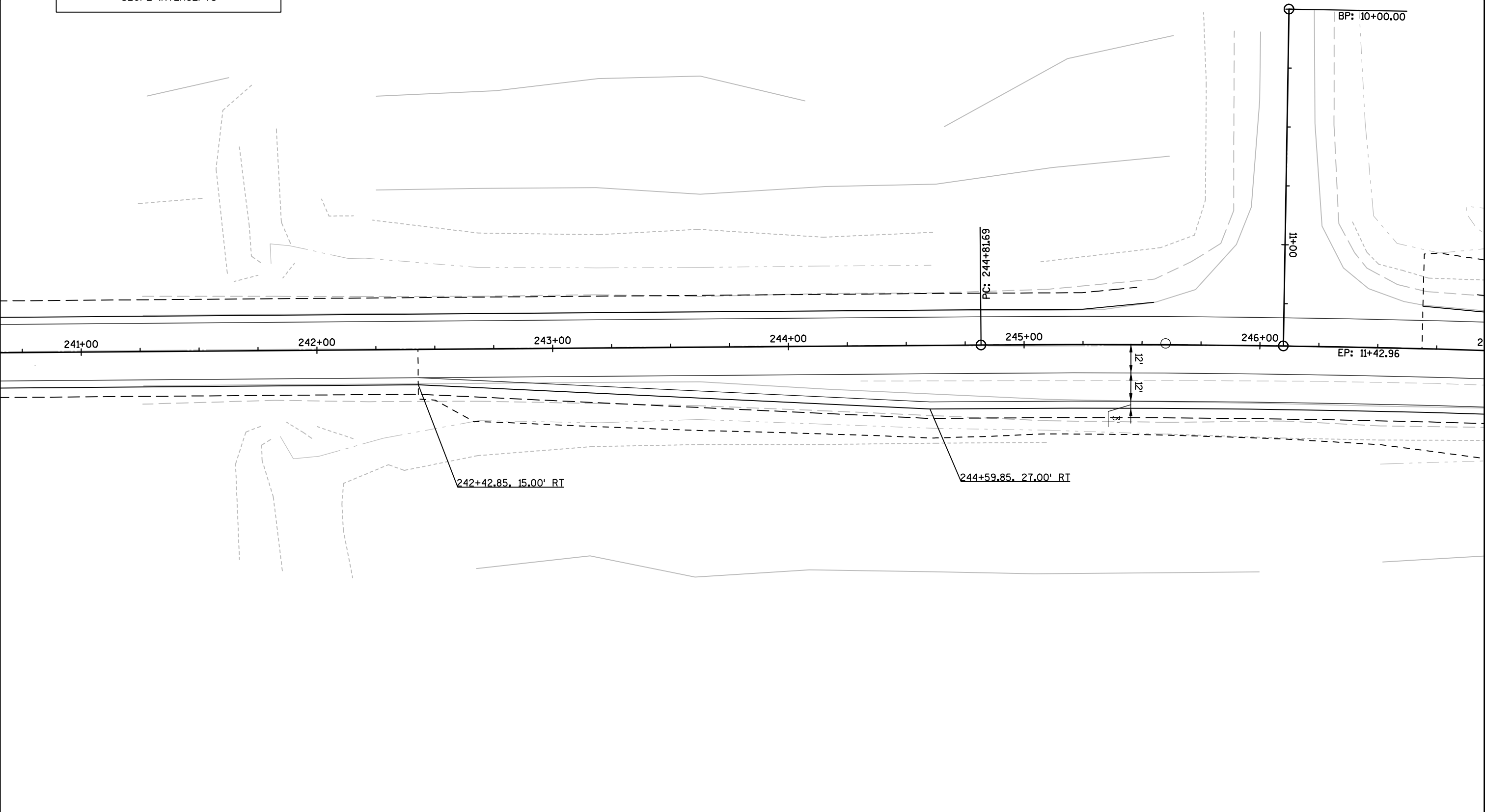
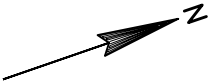
LEGEND

-  PERMITTED WETLAND IMPACTS
-  TEMPORARY WETLAND IMPACTS
-  SLOPE INTERCEPTS



LEGEND

PERMITTED WETLAND IMPACTS

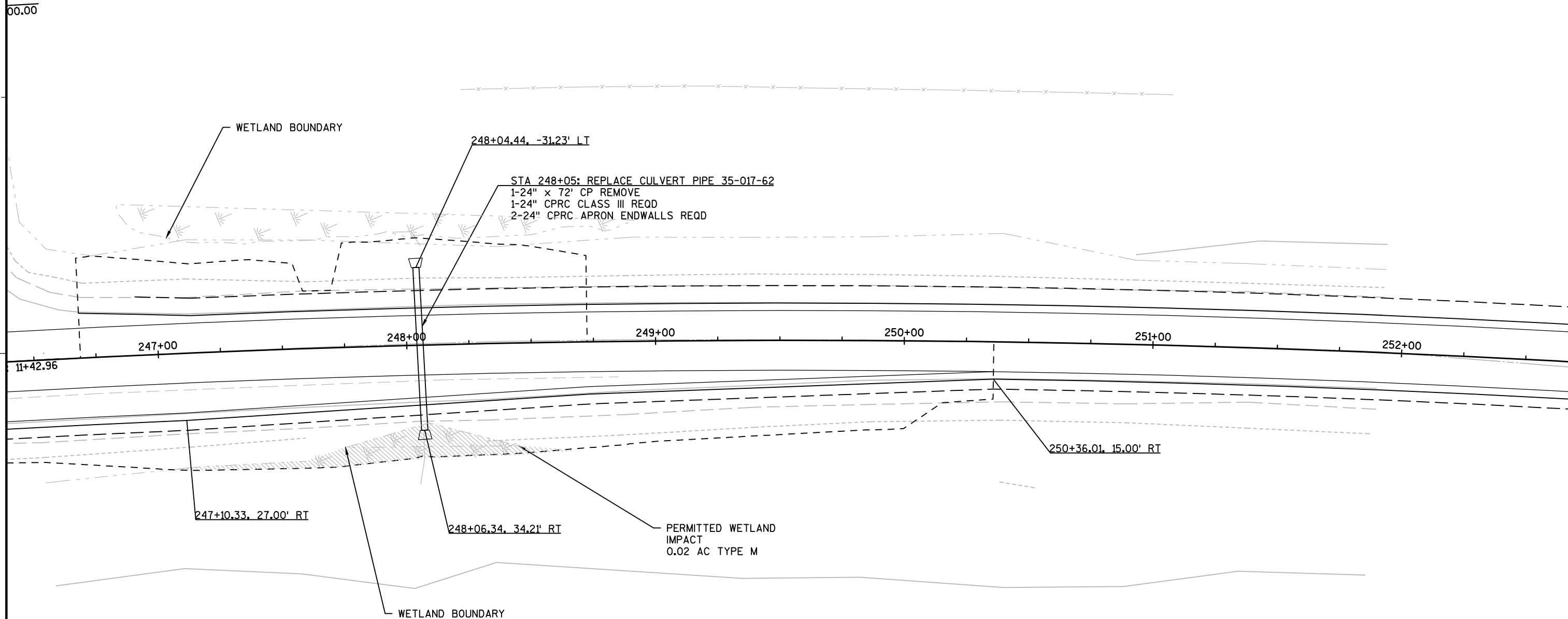
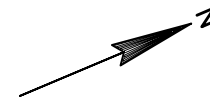
TEMPORARY WETLAND IMPACTS

LEGEND

 PERMITTED WETLAND IMPACTS

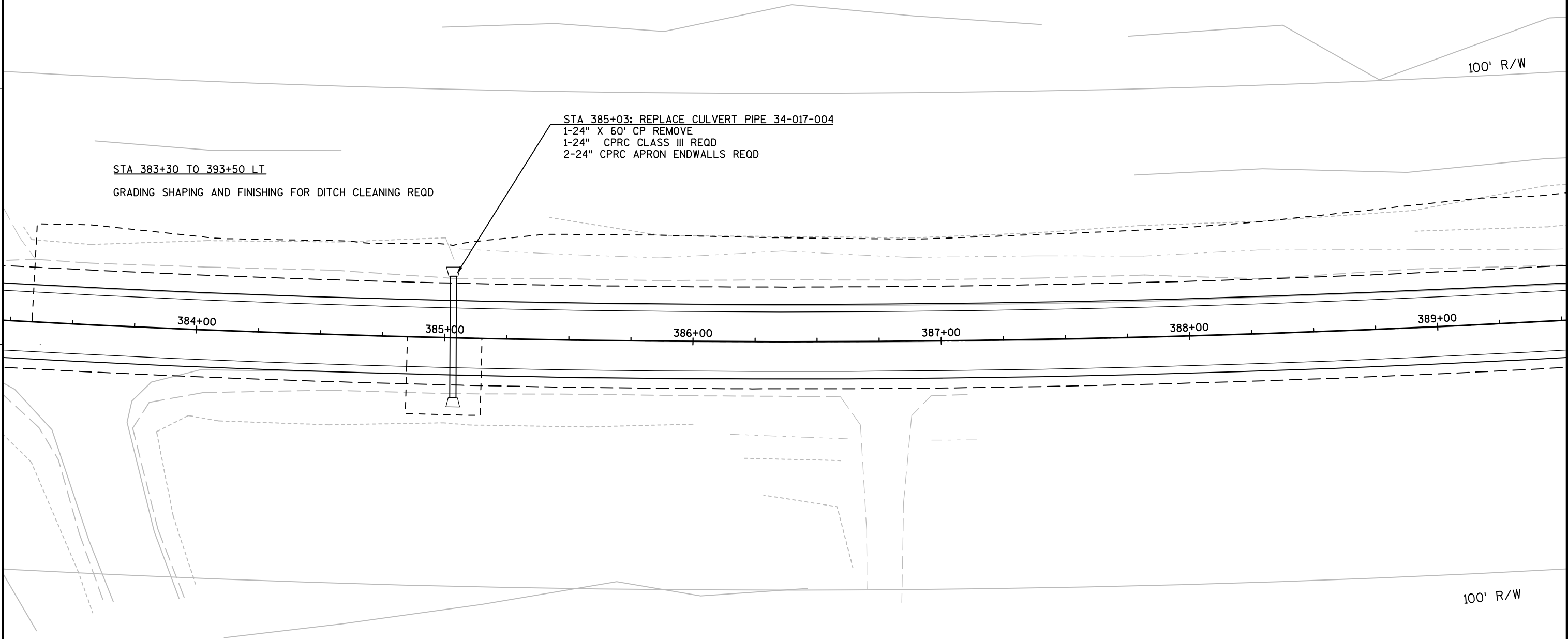
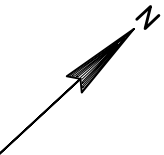
 TEMPORARY WETLAND IMPACTS

 SLOPE INTERCEPTS

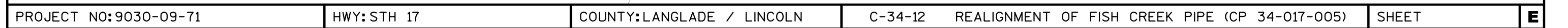


LEGEND

PERMITTED WETLAND IMPACTS

TEMPORARY WETLAND IMPACTS

2

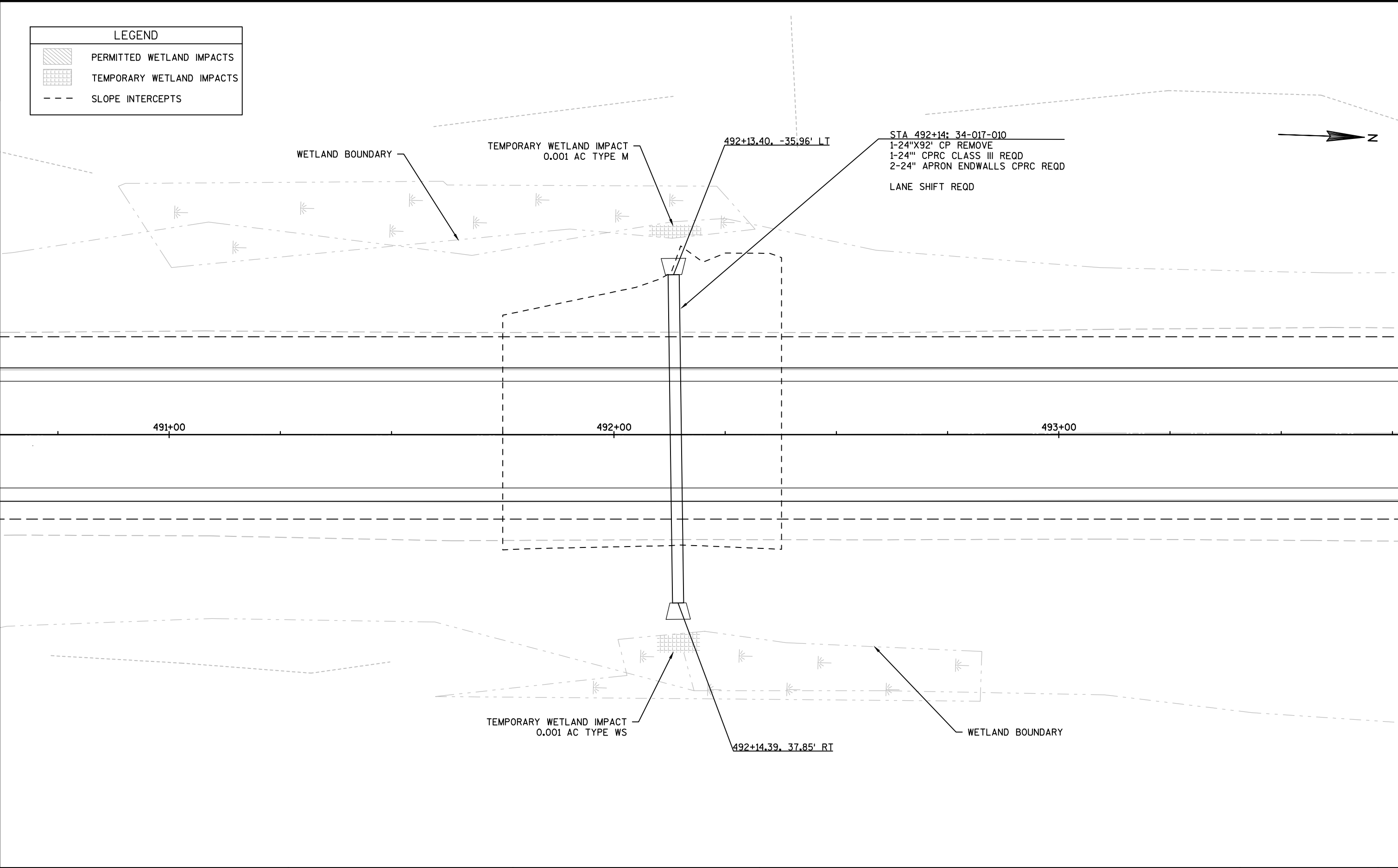


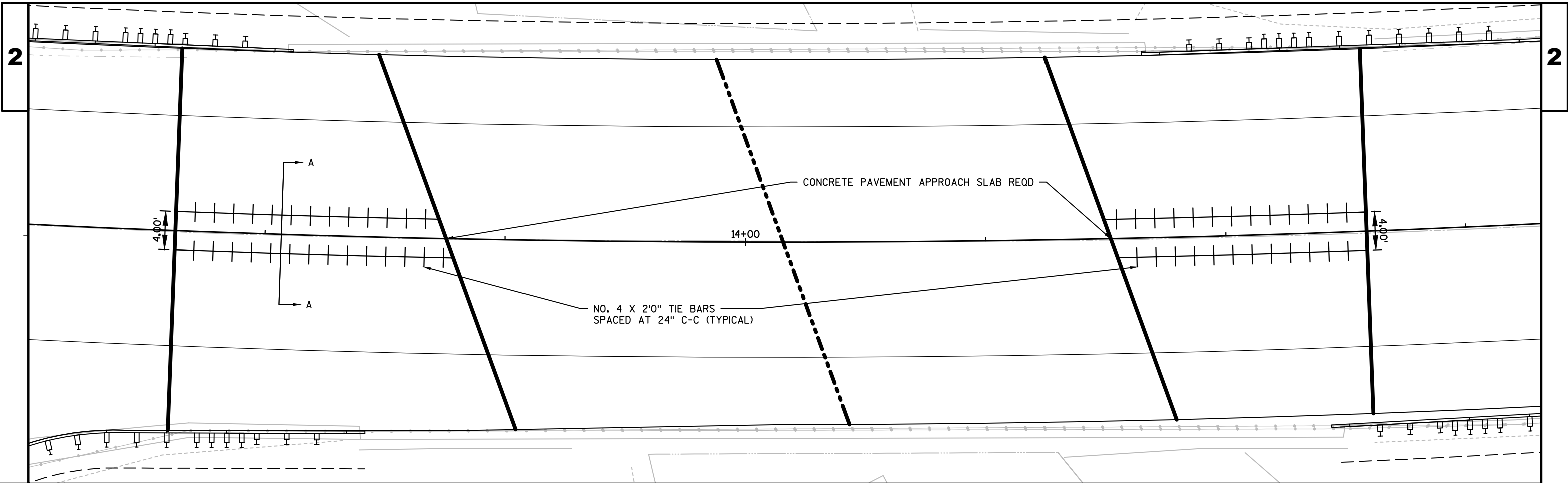
LEGEND

PERMITTED WETLAND IMPACTS

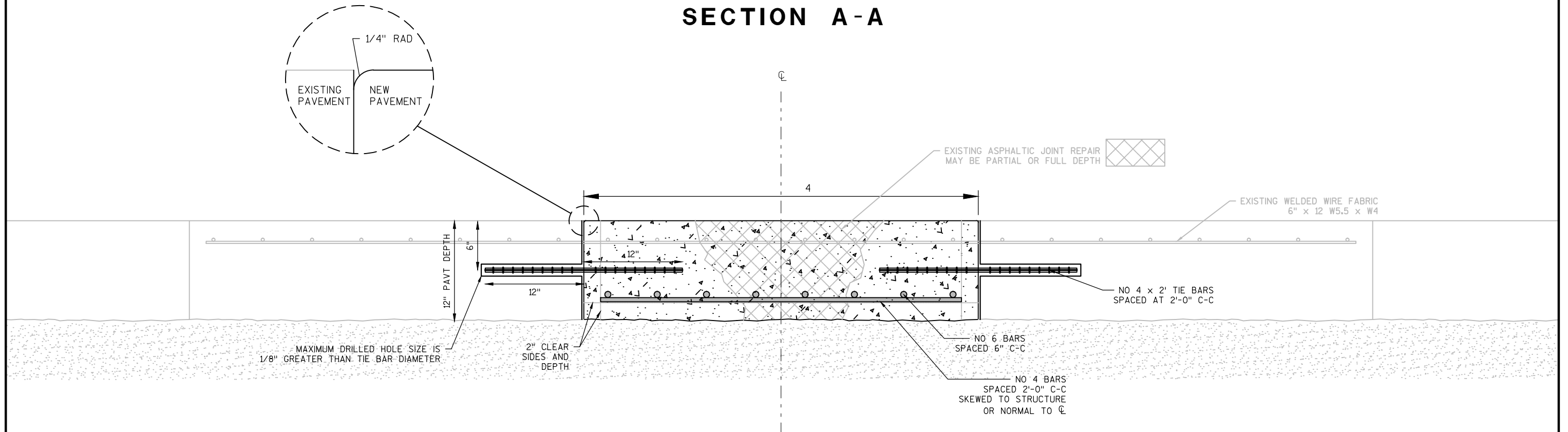
TEMPORARY WETLAND IMPACTS

- - -





SECTION A - A



PROJECT NO:9030-09-71

HWY:STH 17

COUNTY:LANGLADE / LINCOLN

JOINT REPAIR AT PRAIRIE RIVER BRIDGE APPROACH SLABS

SHEET

E

FILE NAME : N:\PDS\C3D\90300931\SHEETSPLAN\021301_JD.DWG

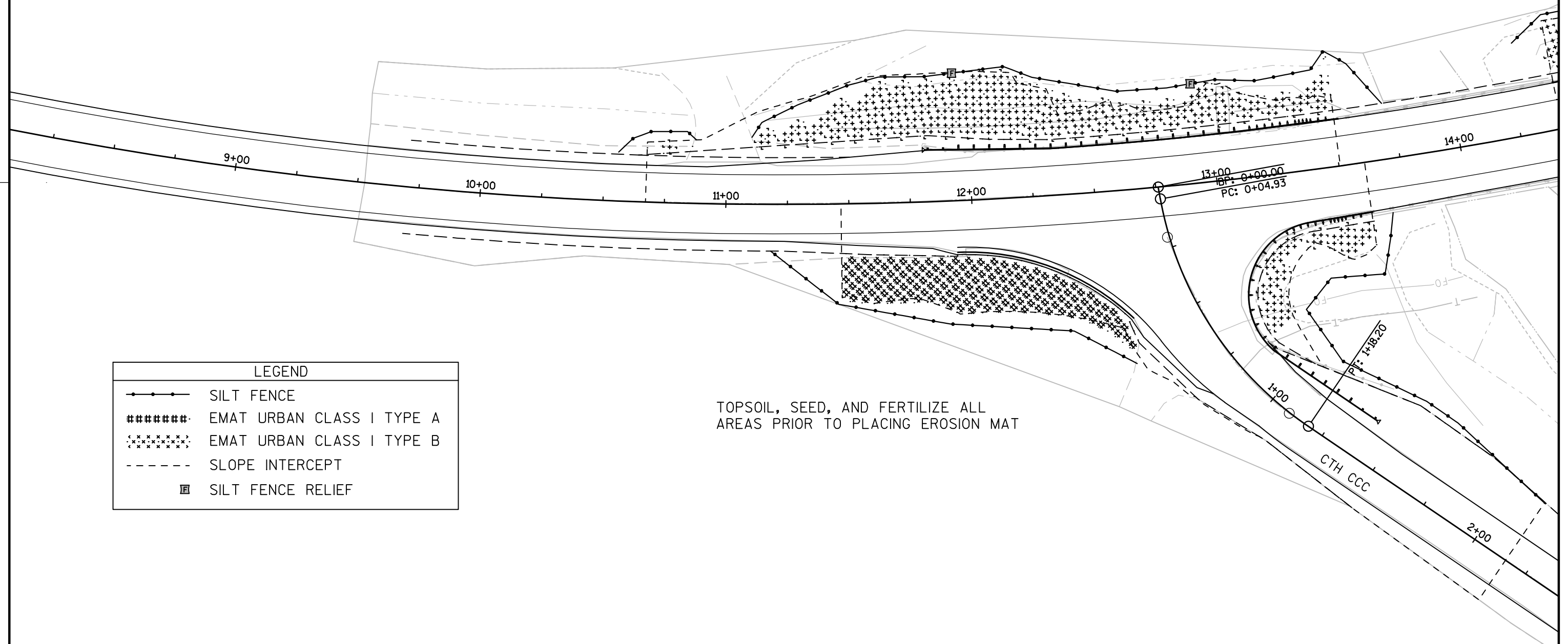
PLOT DATE : 9/19/2014 8:20 AM

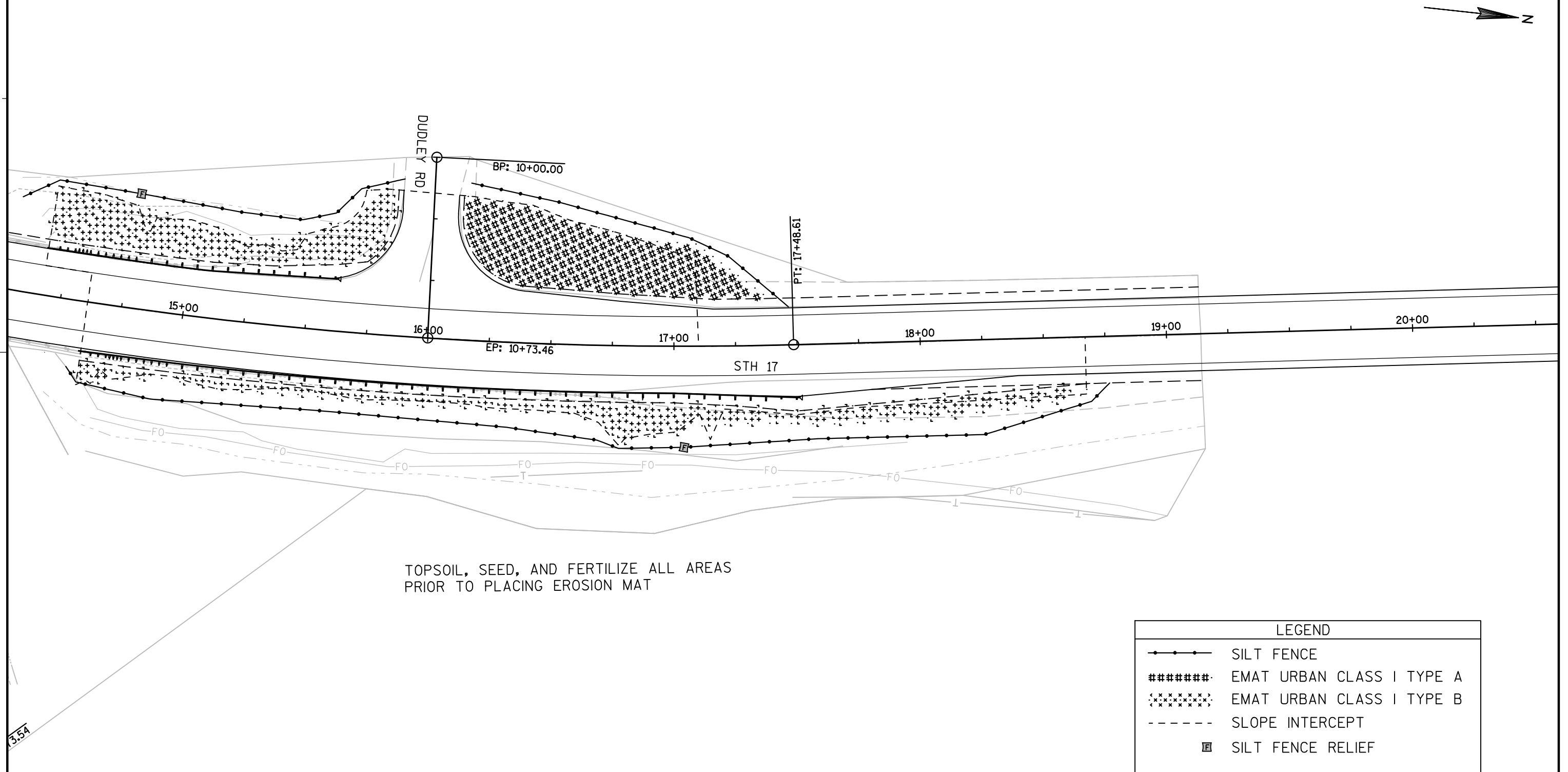
PLOT BY : LAVIN, MITCHELL L

PLOT NAME :

PLOT SCALE : 1:10-XREF

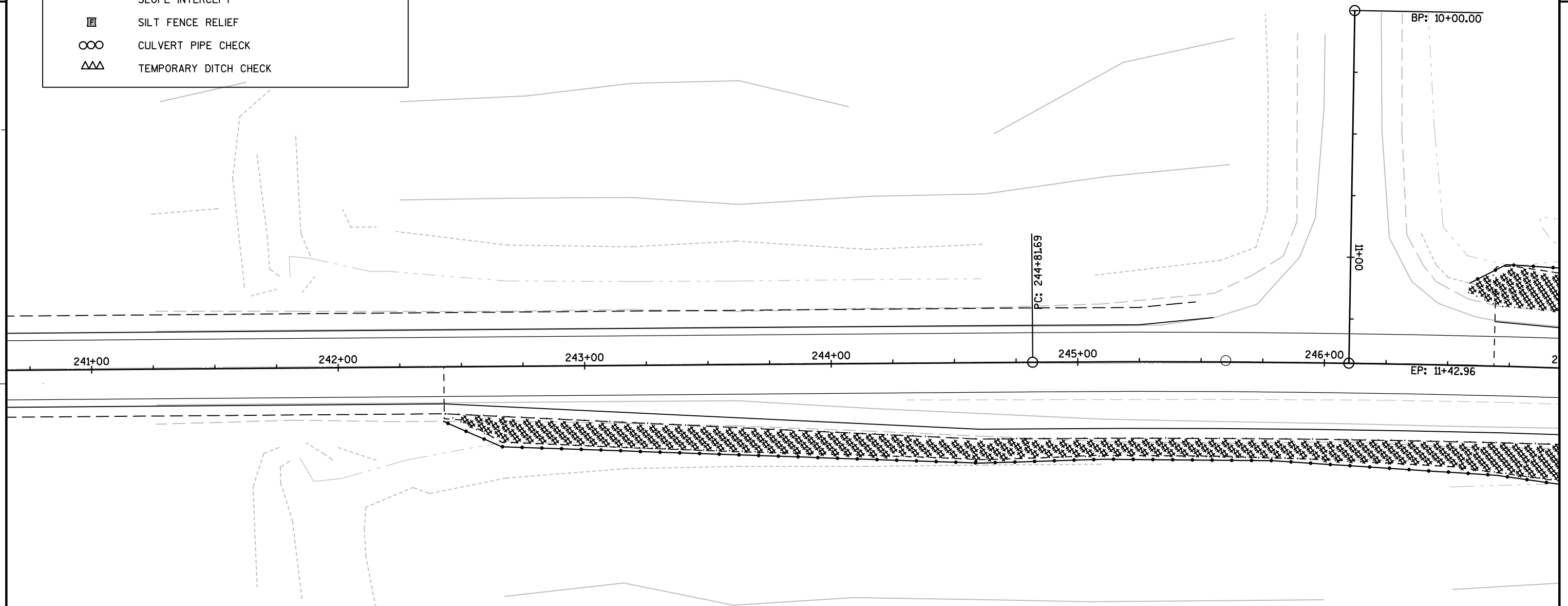
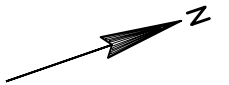
WISDOT/CADDS SHEET 42



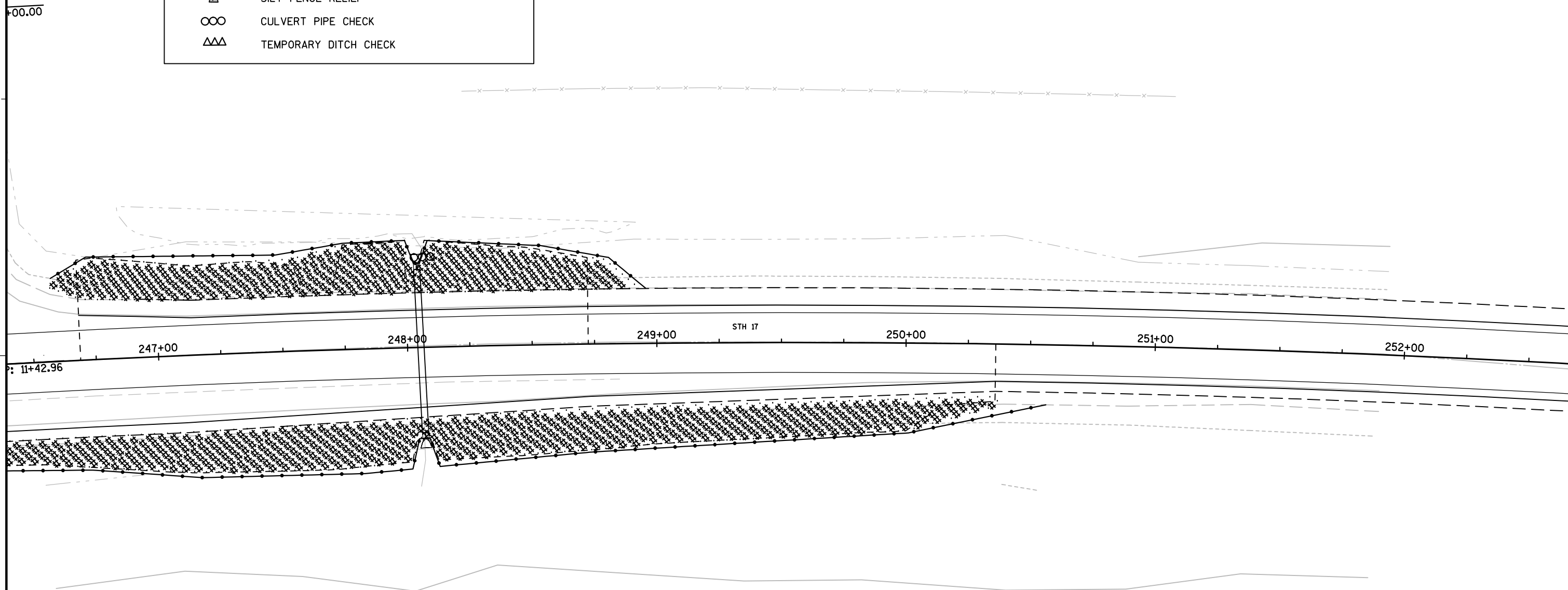
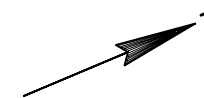


LEGEND

- SILT FENCE
·#####· EROSION CONTROL MAT URBAN CLASS I TYPE A
- - - - - SLOPE INTERCEPT
▣ SILT FENCE RELIEF
○○○ CULVERT PIPE CHECK
△△△ TEMPORARY DITCH CHECK



LEGEND	
—●—●—●—	SILT FENCE
·#####·	EROSION CONTROL MAT URBAN CLASS I TYPE A
- - - - -	SLOPE INTERCEPT
▣	SILT FENCE RELIEF
○○	CULVERT PIPE CHECK
△△	TEMPORARY DITCH CHECK



LEGEND

SILT FENCE

#####

EROSION CONTROL MAT URBAN CLASS I TYPE A

- - - -

SLOPE INTERCEPT

F

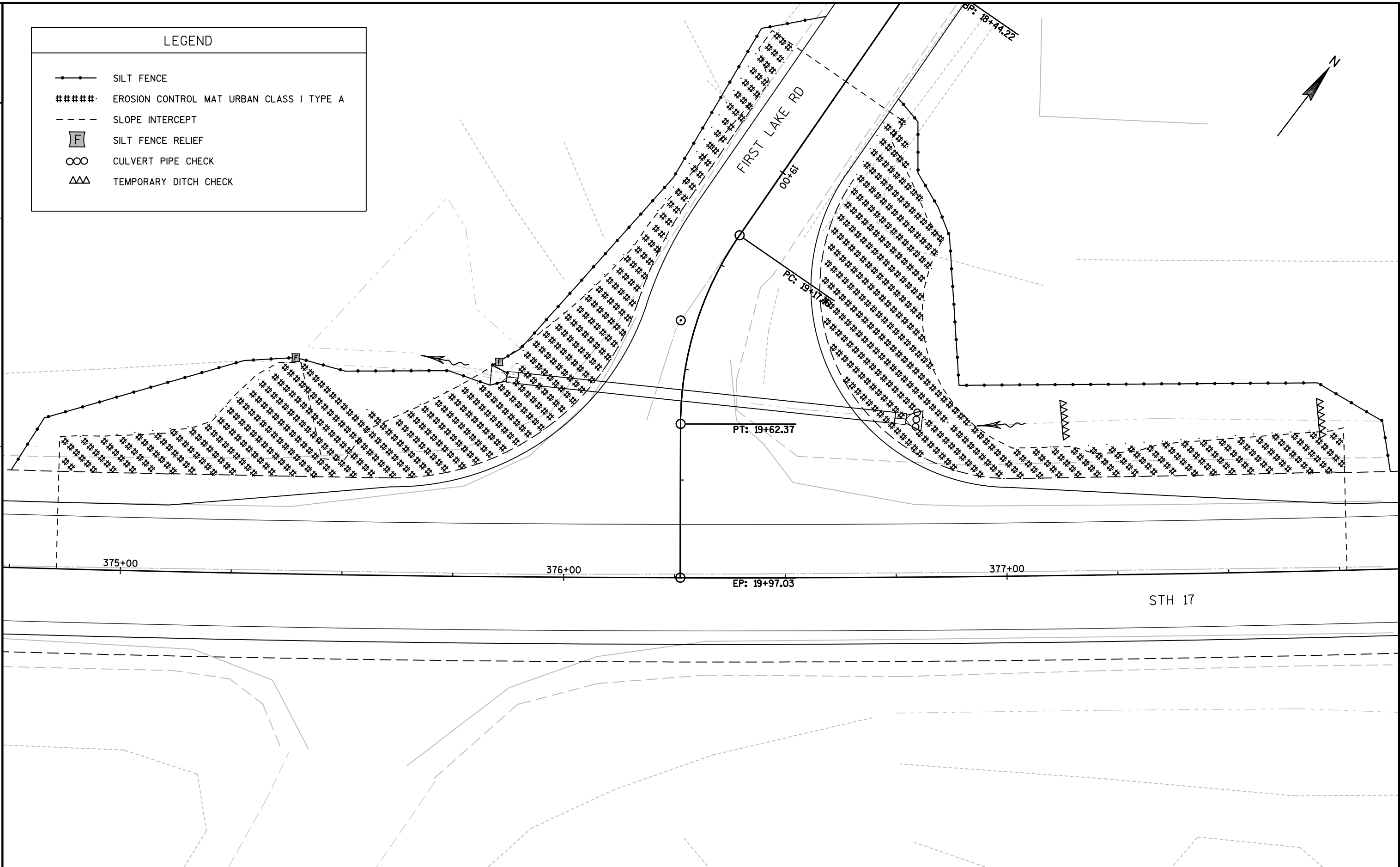
SILT FENCE RELIEF

OO

CULVERT PIPE CHECK

△△

TEMPORARY DITCH CHECK



LEGEND

SILT FENCE

#####

EROSION CONTROL MAT URBAN CLASS I TYPE A

SLOPE INTERCEPT

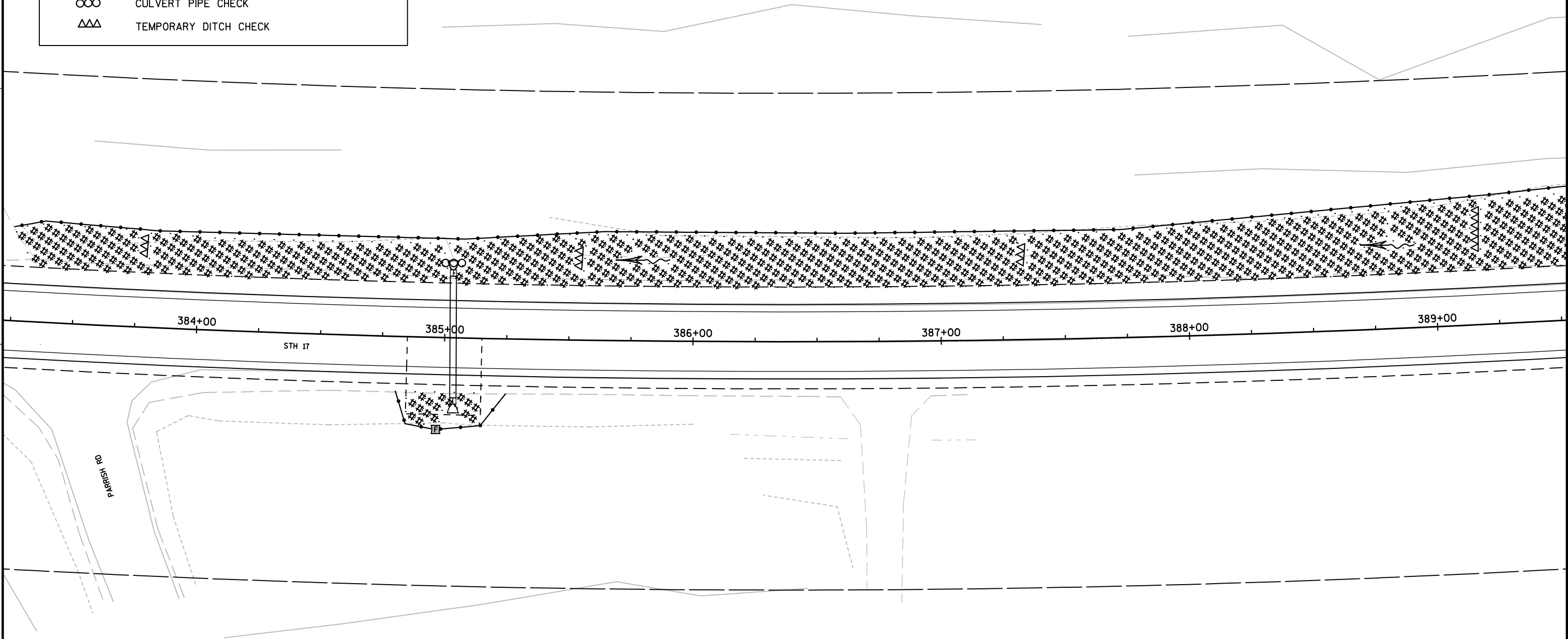
SILT FENCE RELIEF

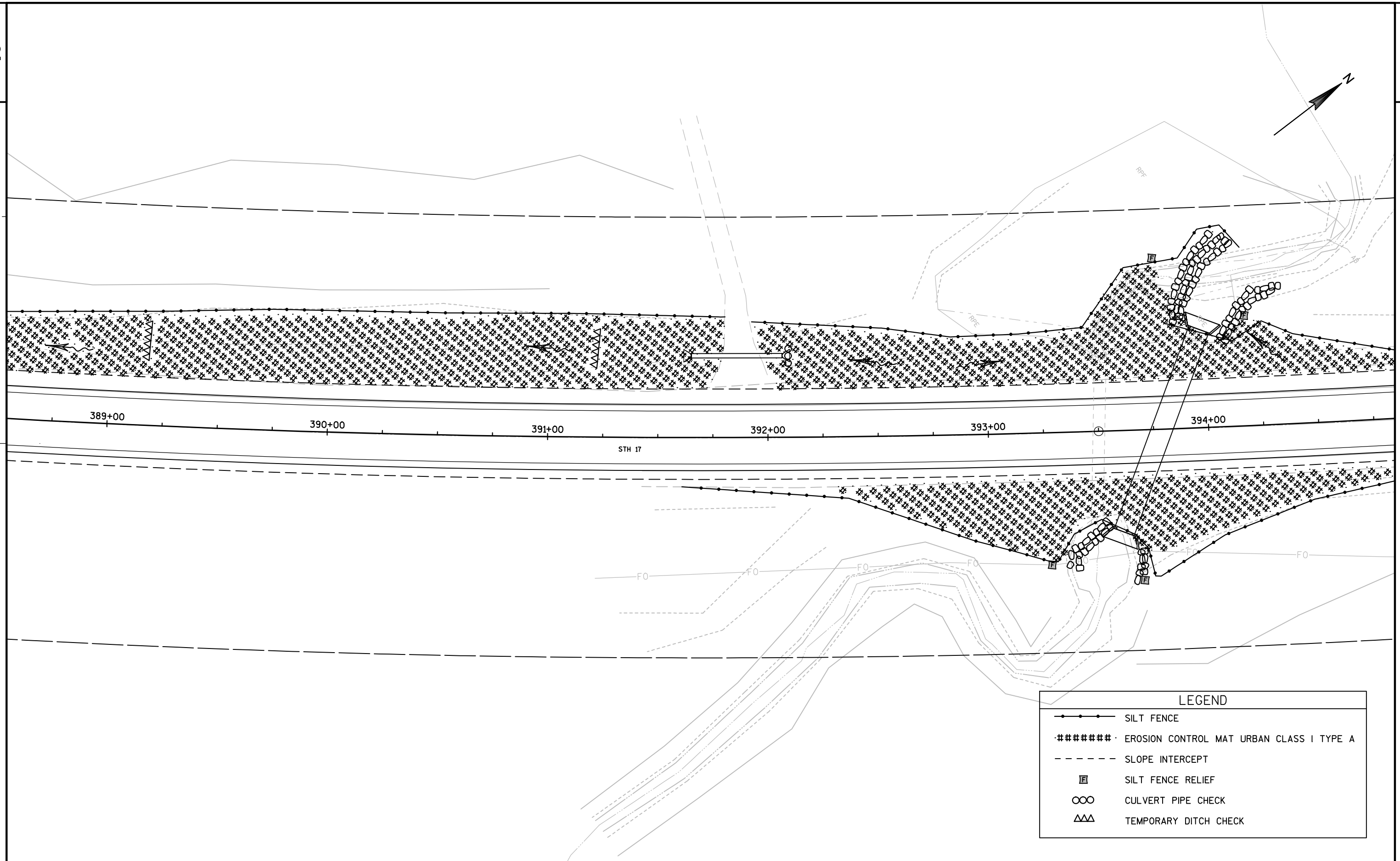
OO

CULVERT PIPE CHECK

△△

TEMPORARY DITCH CHECK

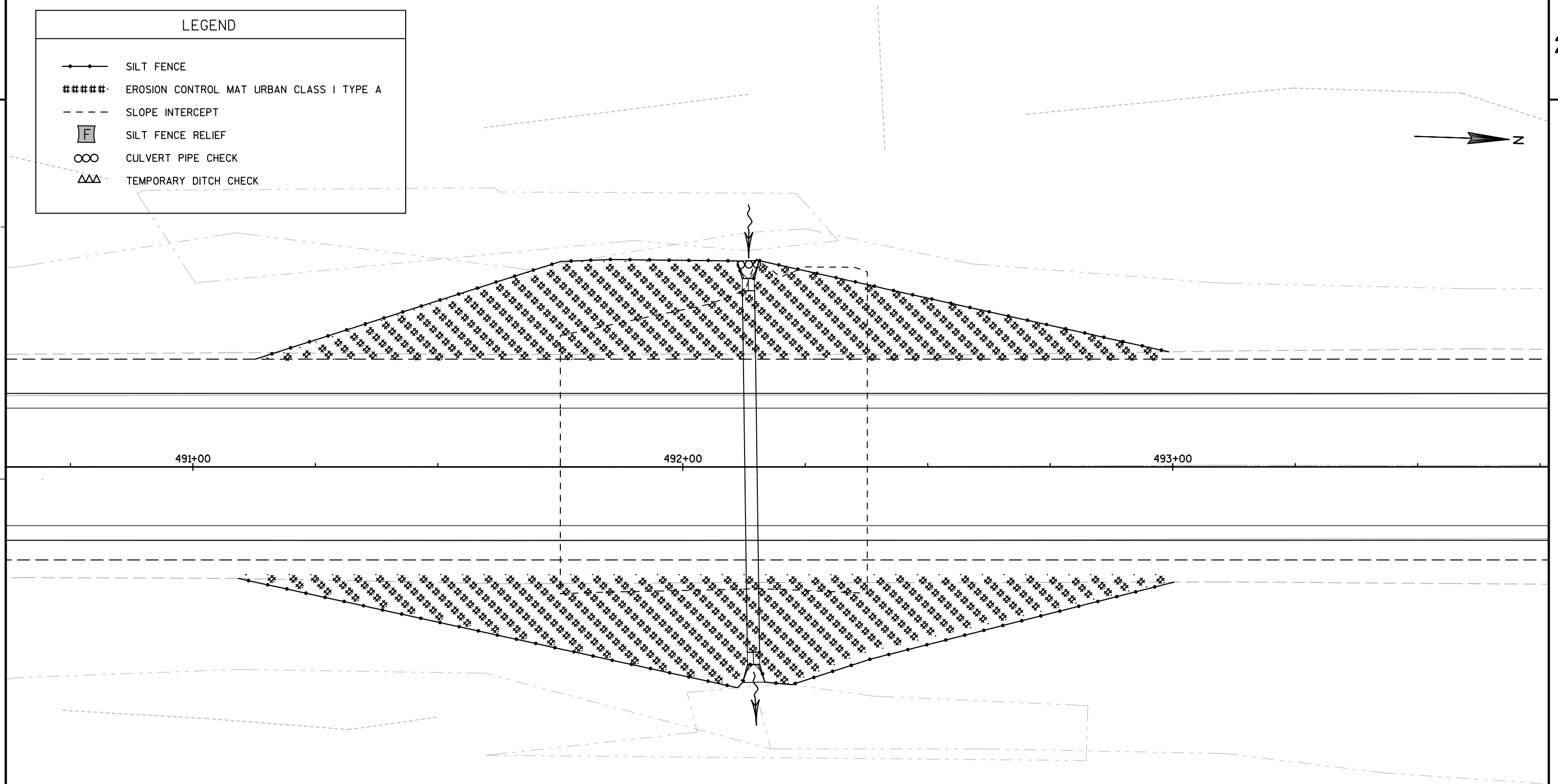


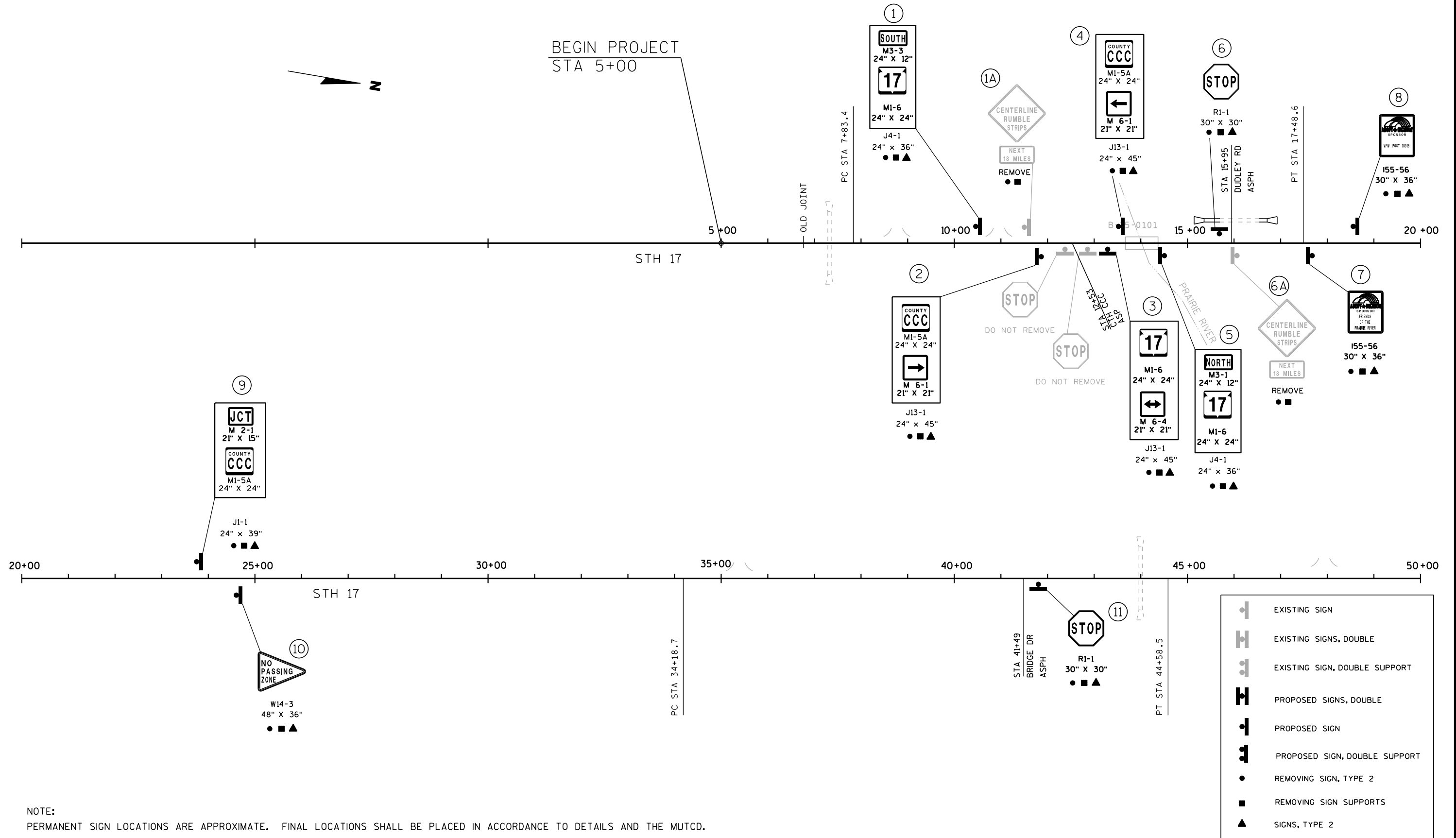


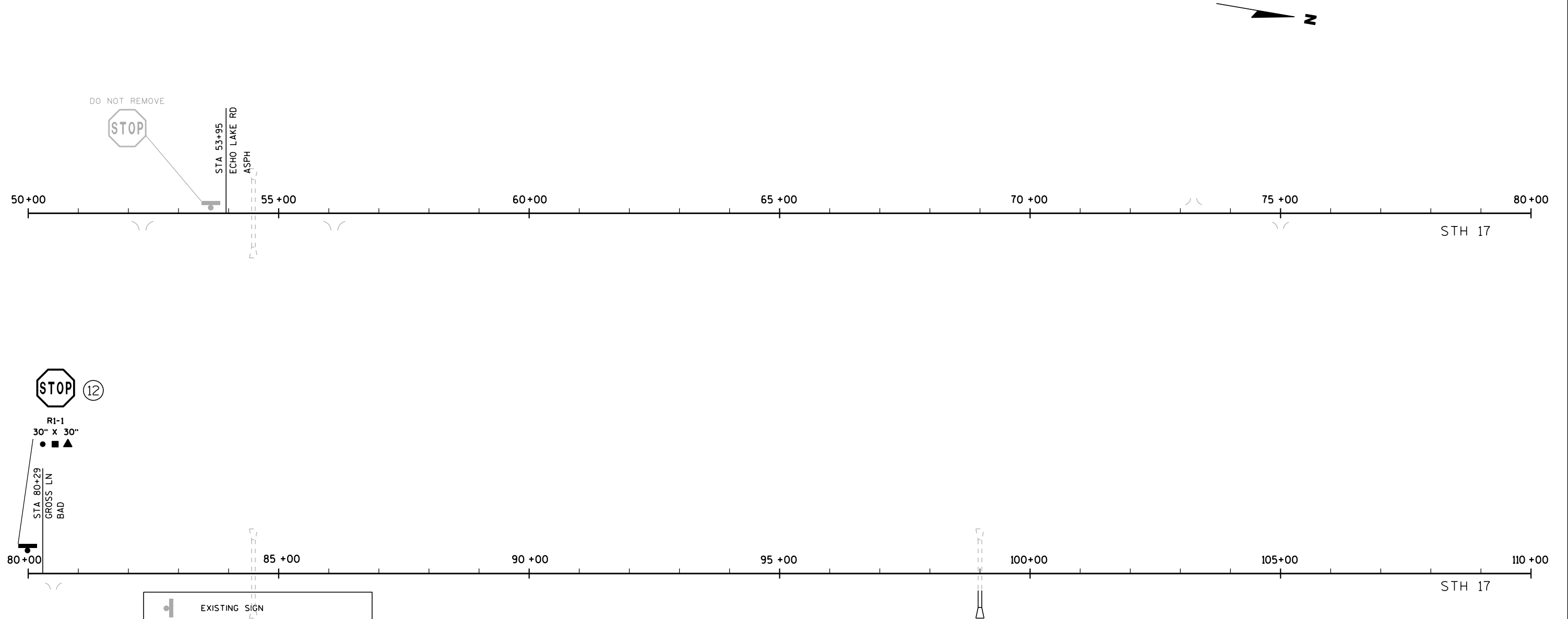
LEGEND	
—●—●—●—	SILT FENCE
#####	EROSION CONTROL MAT URBAN CLASS I TYPE A
- - - - -	SLOPE INTERCEPT
⌈	SILT FENCE RELIEF
OO	CULVERT PIPE CHECK
AAA	TEMPORARY DITCH CHECK

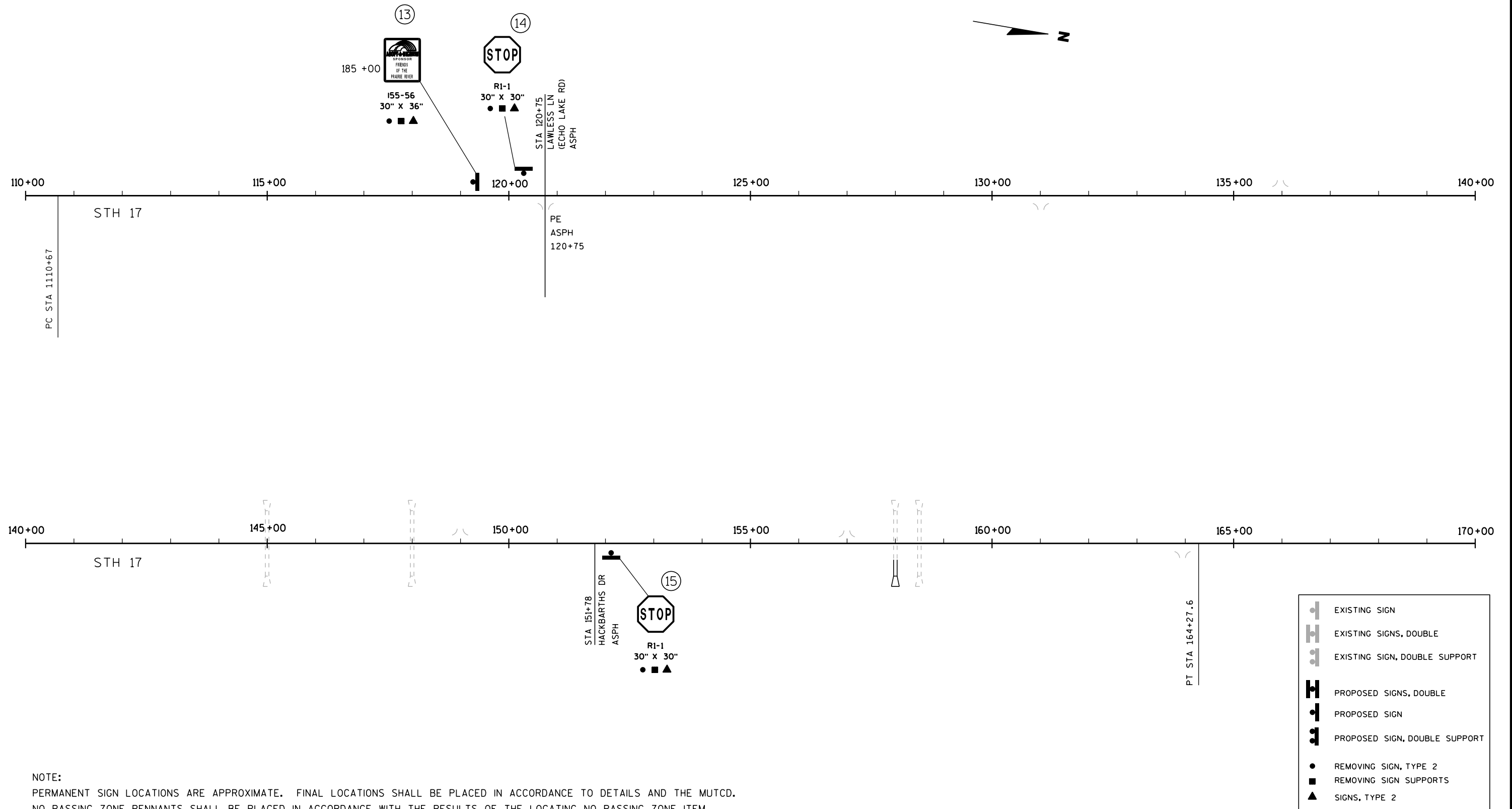
LEGEND

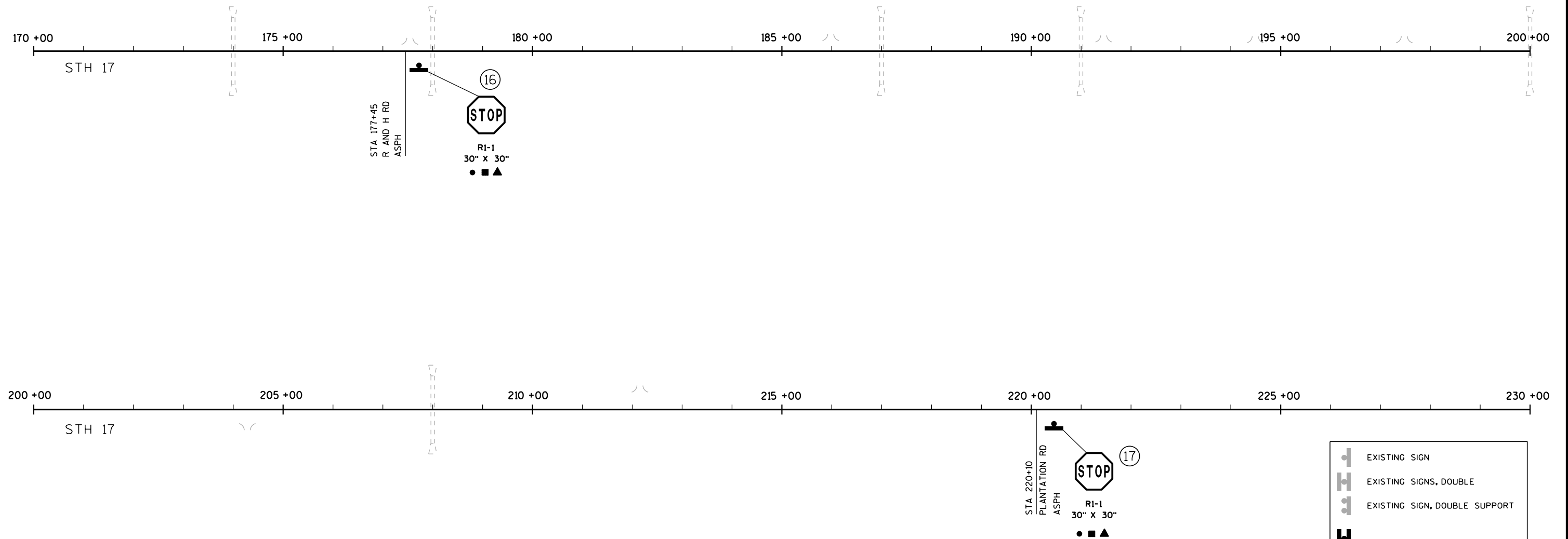
- SILT FENCE
- ##### EROSION CONTROL MAT URBAN CLASS I TYPE A
- - - SLOPE INTERCEPT
-  SILT FENCE RELIEF
- ooo CULVERT PIPE CHECK
- △△△ TEMPORARY DITCH CHECK











NOTE:

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

PROJECT NO: 9030-09-71

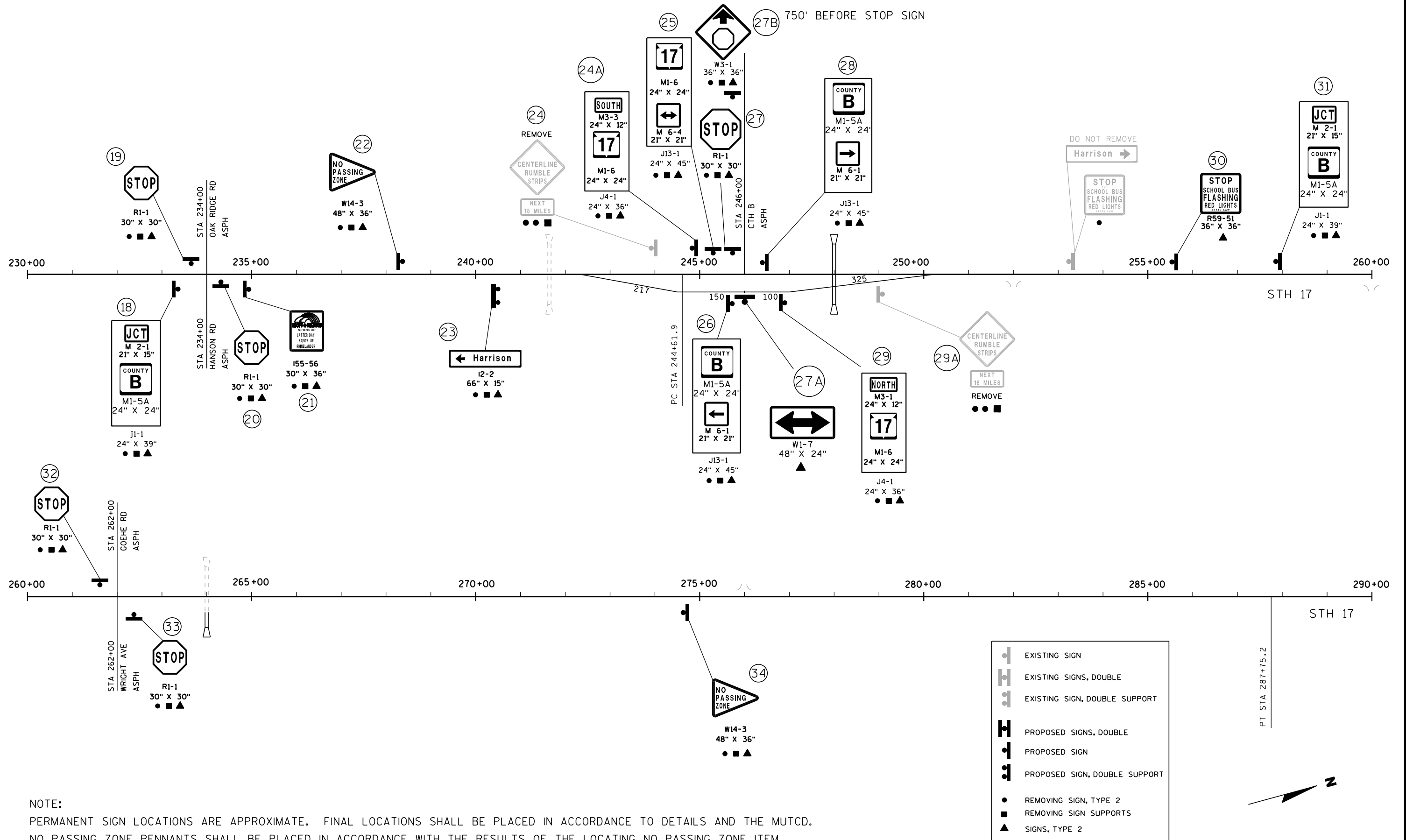
HWY: STH 17

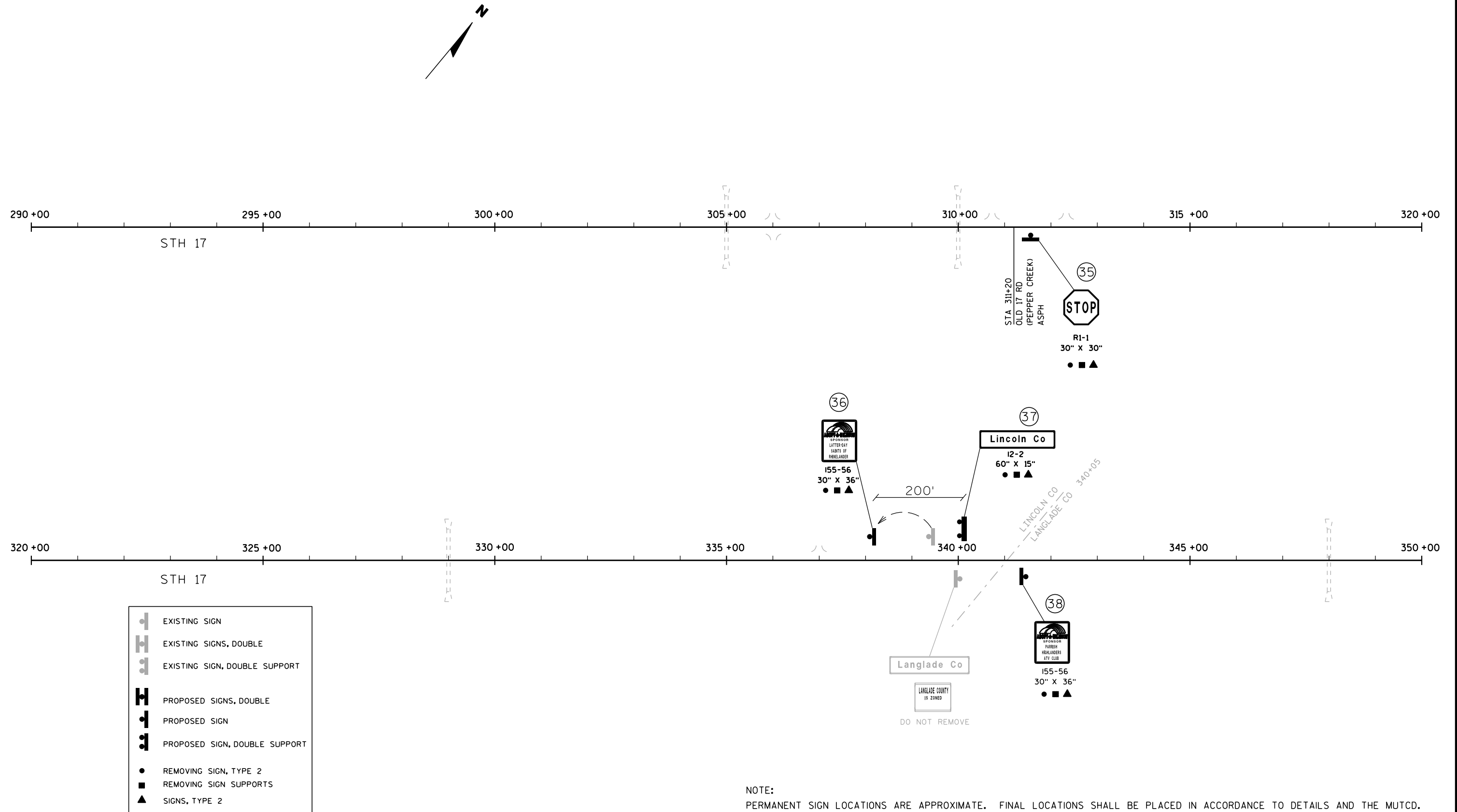
COUNTY: LANGLADE / LINCOLN

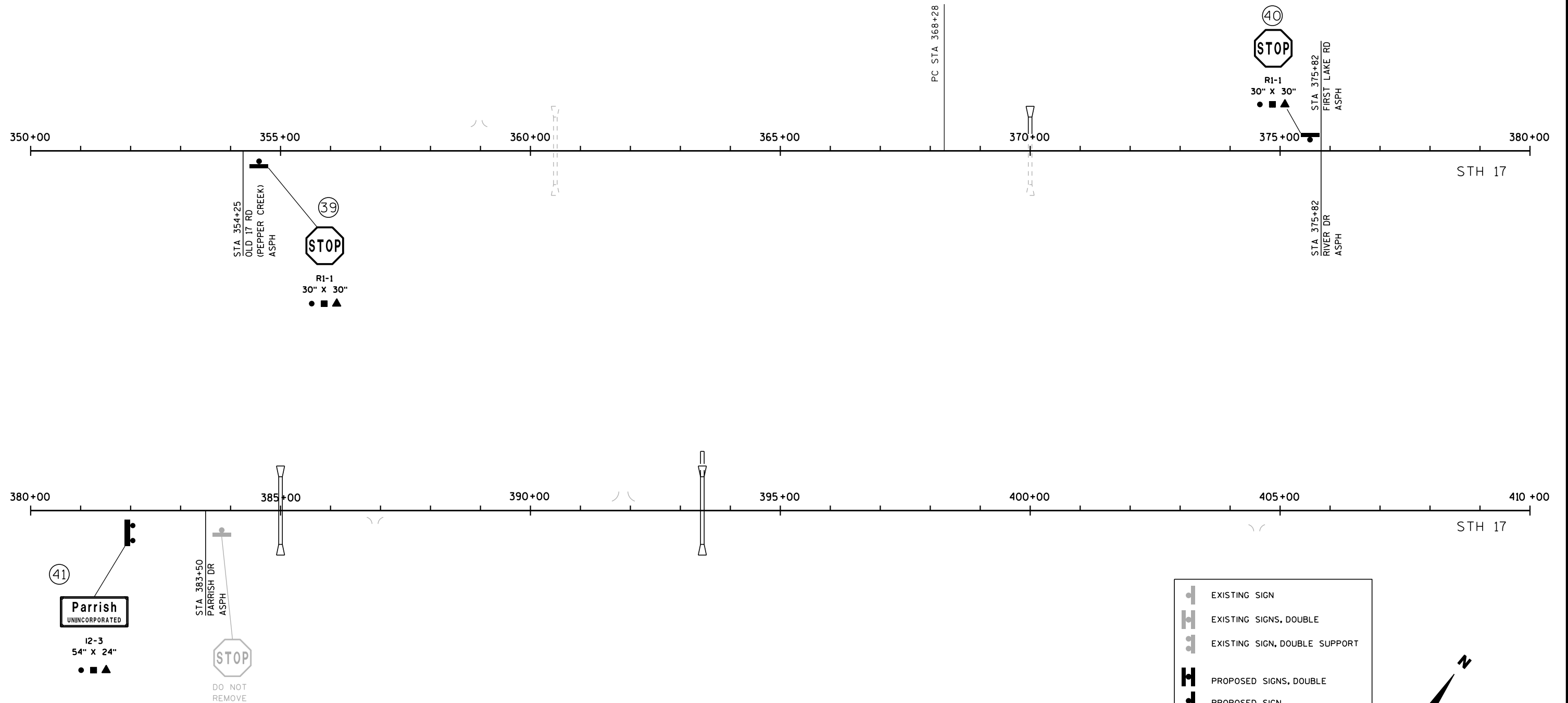
PERMANENT SIGNING

SHEET

E







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

PROJECT NO: 9030-09-71

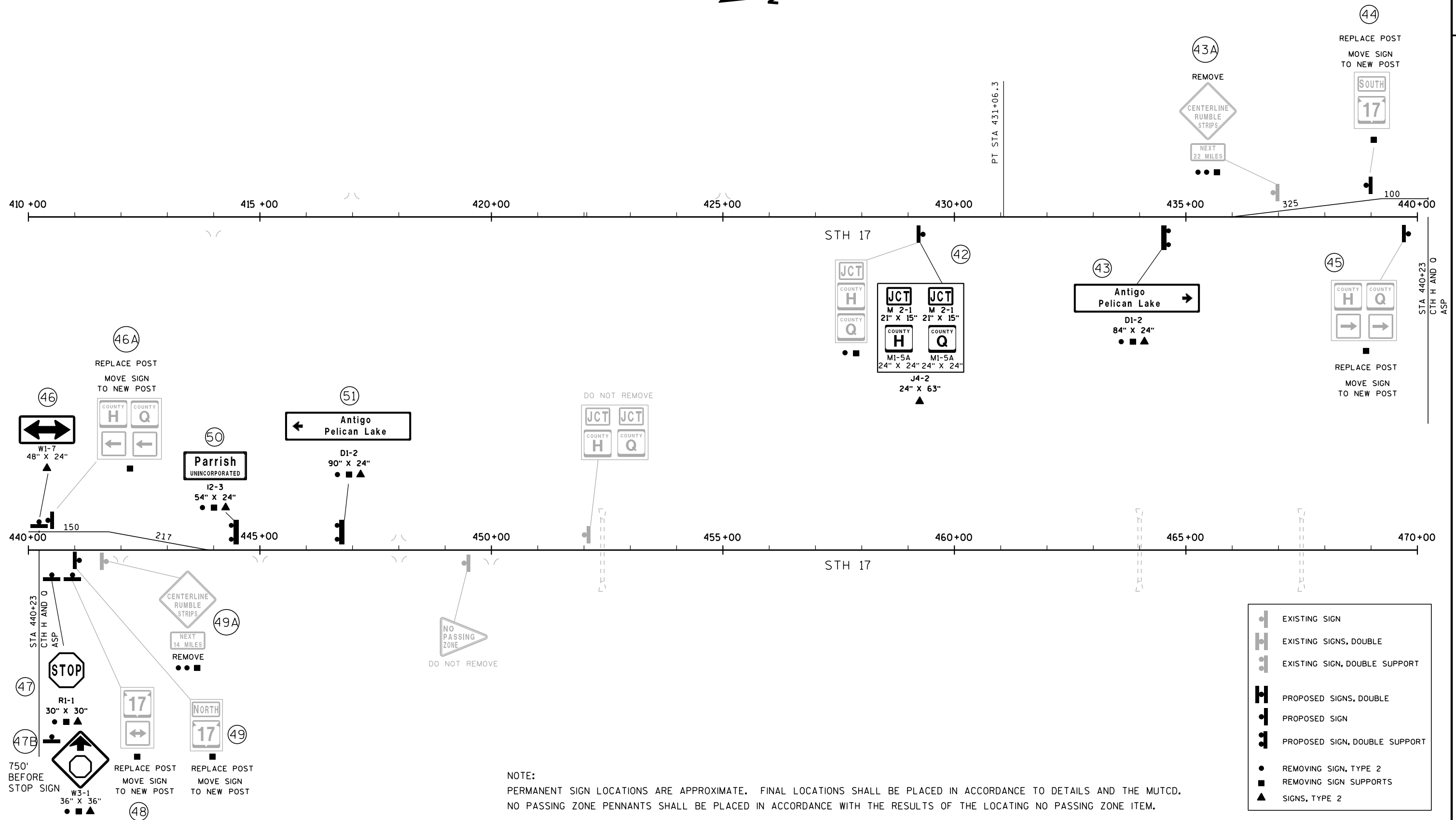
HWY: STH 17

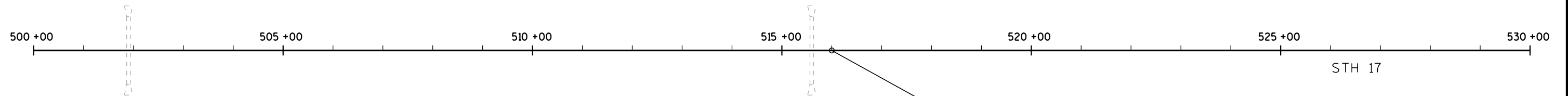
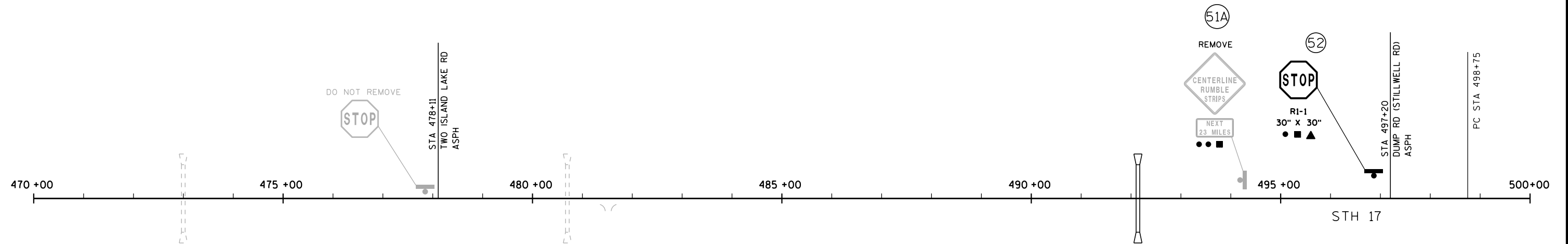
COUNTY: LANGLADE / LINCOLN

PERMANENT SIGNING

SHEET

E





	EXISTING SIGN
	EXISTING SIGNS, DOUBLE
	EXISTING SIGN, DOUBLE SUPPORT
	PROPOSED SIGNS, DOUBLE
	PROPOSED SIGN
	PROPOSED SIGN, DOUBLE SUPPORT
	REMOVING SIGN, TYPE 2
	REMOVING SIGN SUPPORTS
	SIGNS, TYPE 2

NOTE:

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



PROJECT NO: 9030-09-71

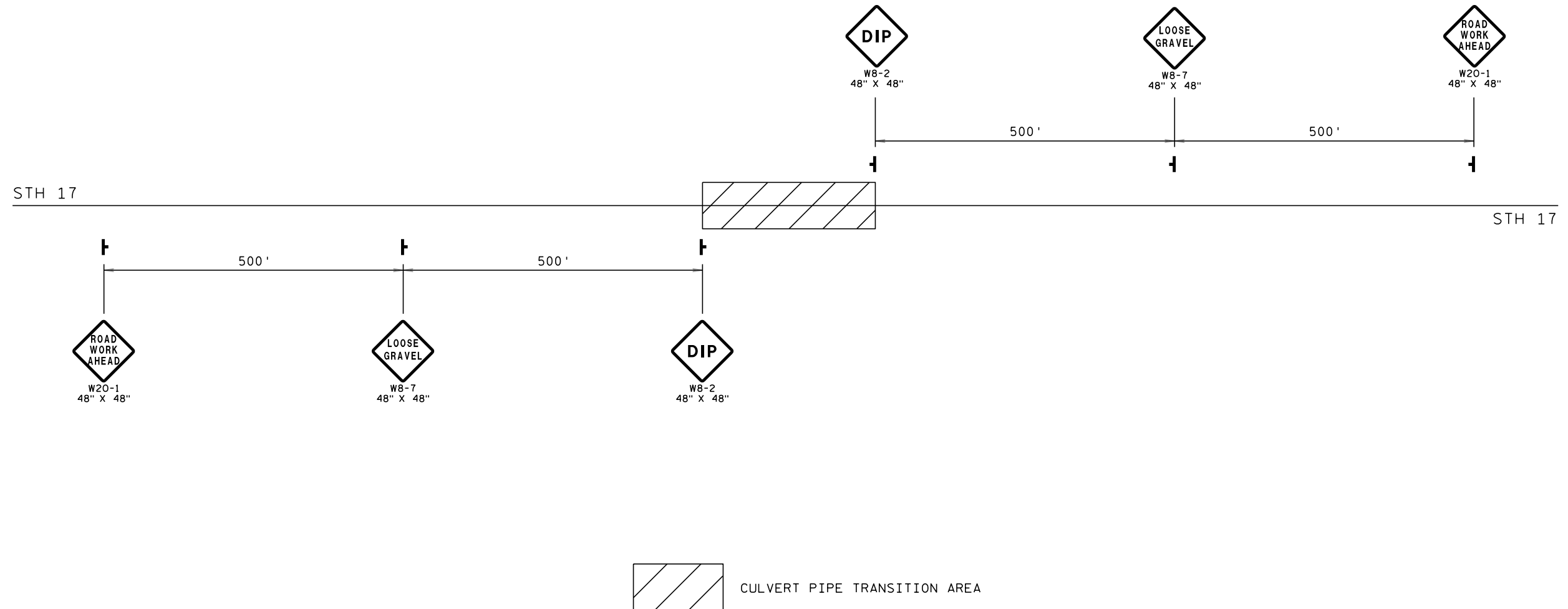
HWY: STH 17

COUNTY: LANGLADE / LINCOLN

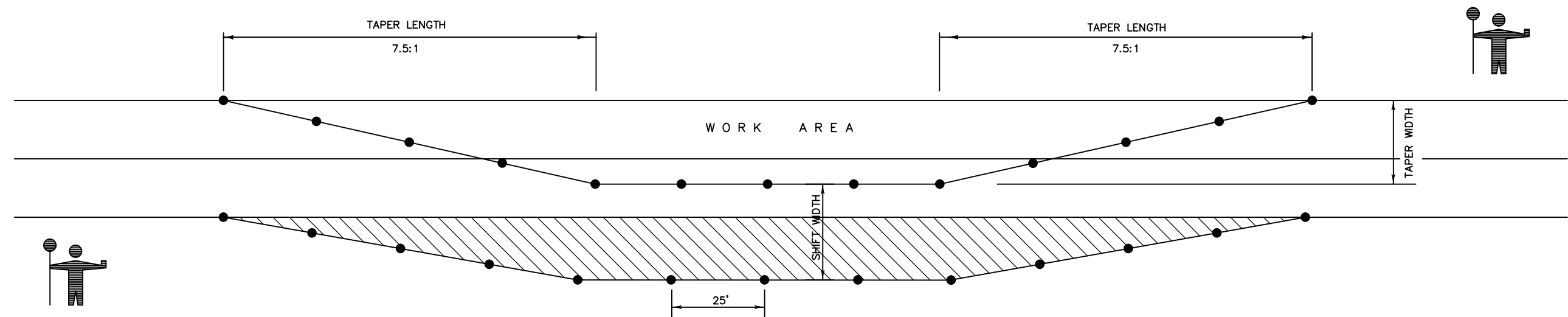
PERMANENT SIGNING

SHEET

E

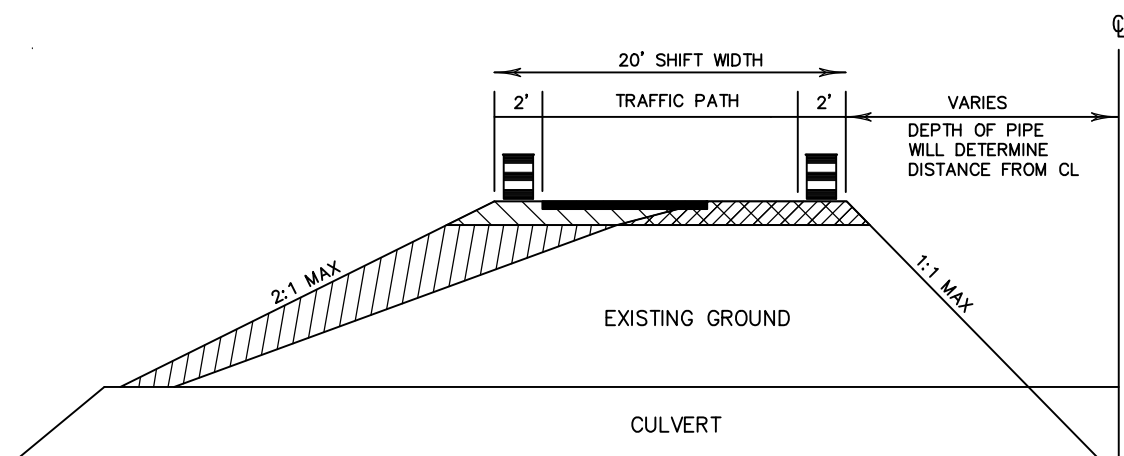


TEMPORARY SIGNING AT CULVERT PIPE REPLACEMENT

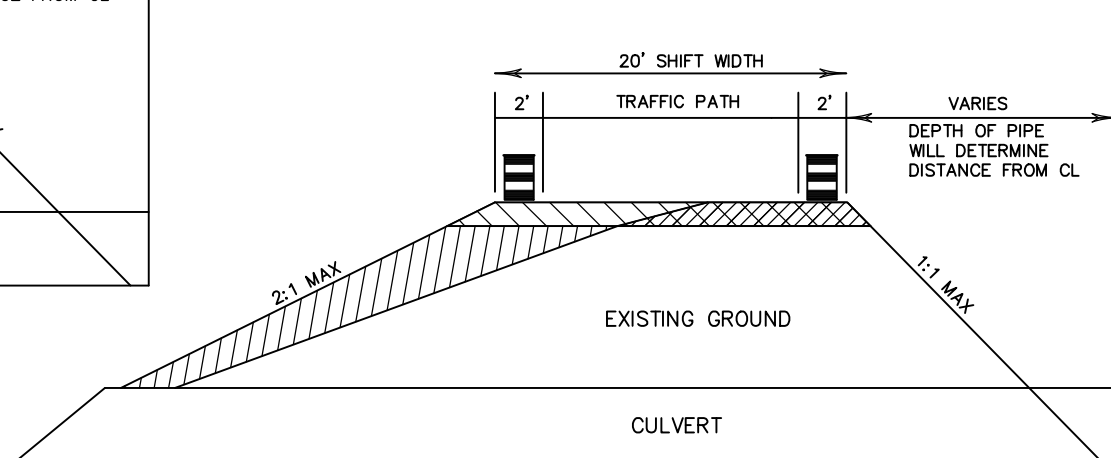


NOTES

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



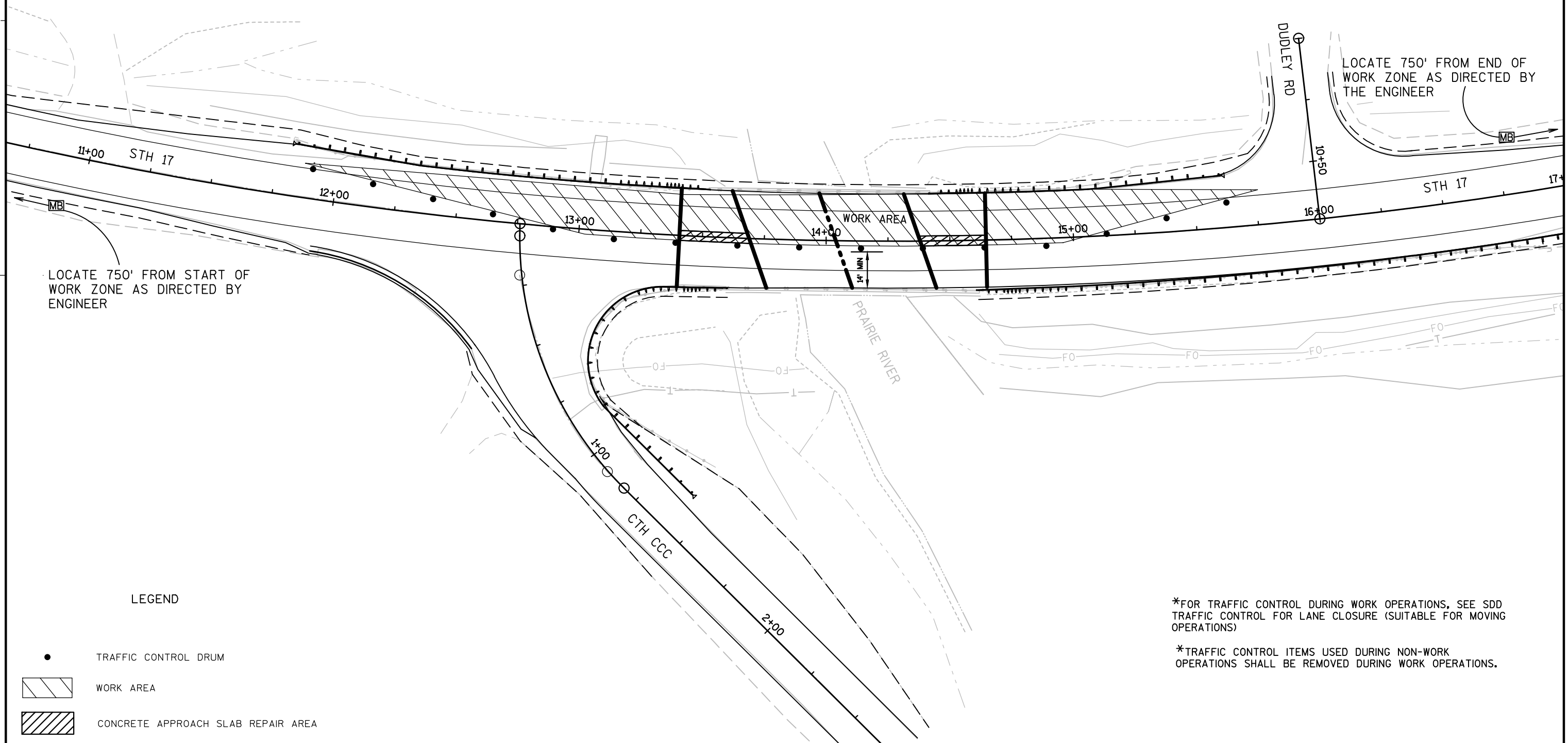
LANE SHIFT DETAIL
STA 393+50 C-34-12



LANE SHIFT DETAIL
STA 492+14 34-017-010

KEY	
●	TRAFFIC CONTROL DRUM
	FILL - INCIDENTAL TO LANE SHIFT ITEM
XXXXX	EXISTING PAVED SURFACE OR 6" BASE AGGREGATE DENSE 1 1/4-INCH - INCIDENTAL TO LANE SHIFT ITEM
	6" BASE AGGREGATE DENSE 1 1/4-INCH - INCIDENTAL TO LANE SHIFT ITEM
■	2" ASPHALTIC SURFACE TEMPORARY - INCIDENTAL TO LANE SHIFT ITEM

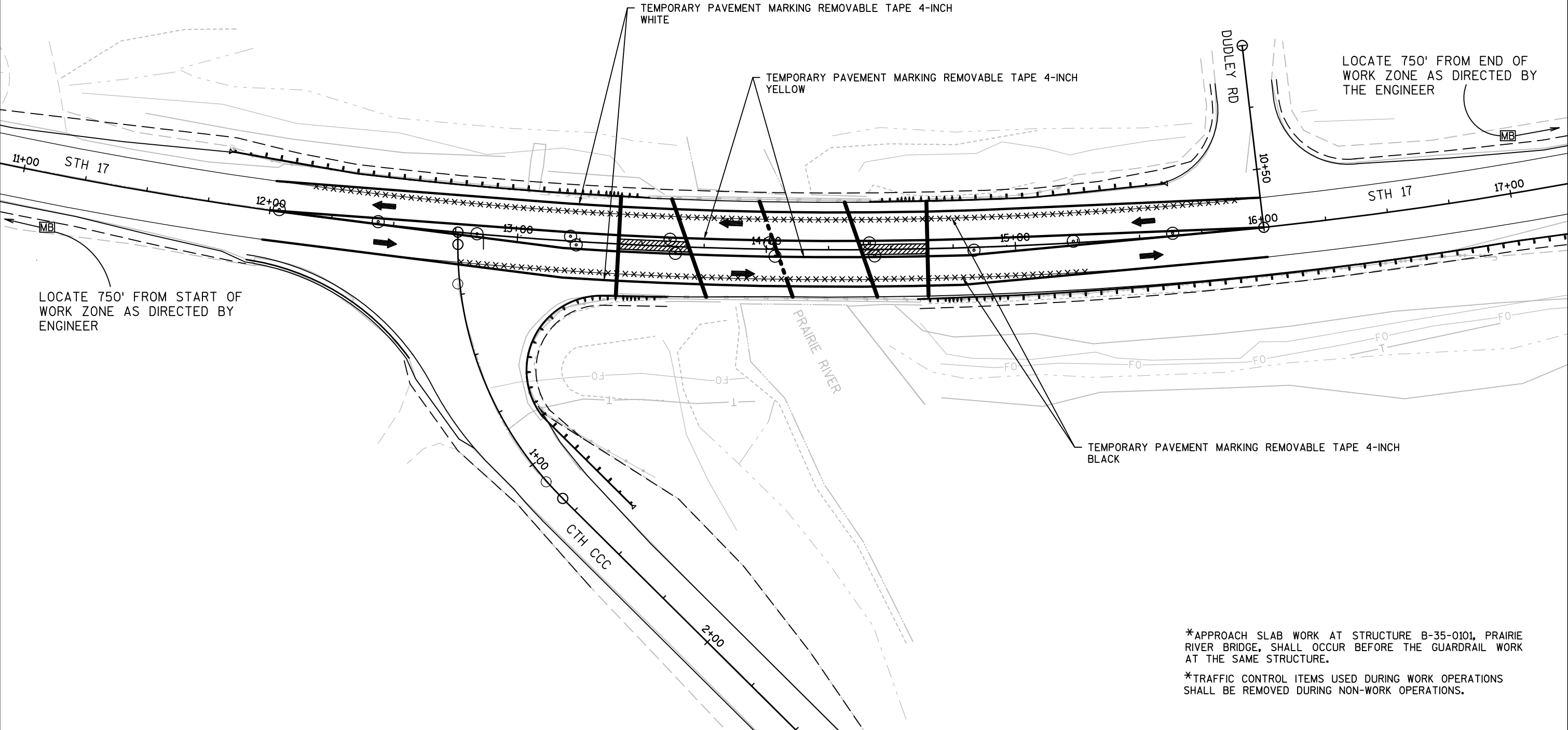
ROADWAY CONDITION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
DURING WORK OPERATIONS	ROAD WORK AHEAD	BE PREPARED TO STOP
DURING NON-WORK OPERATIONS	LANE SHIFT AHEAD	STAY IN YOUR LANE



LEGEND

-  DELINEATOR FLEXIBLE/TUBULAR MARKER
-  WORK AREA
-  DIRECTION OF TRAFFIC
-  PORTABLE CHANGEABLE MESSAGE BOARD

ROADWAY CONDITION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
DURING WORK OPERATIONS	ROAD WORK AHEAD	BE PREPARED TO STOP
DURING NON-WORK OPERATIONS	LANE SHIFT AHEAD	STAY IN YOUR LANE



9030-09-71

8/1/2014
CAD

STH 17
Langlade COUNTY

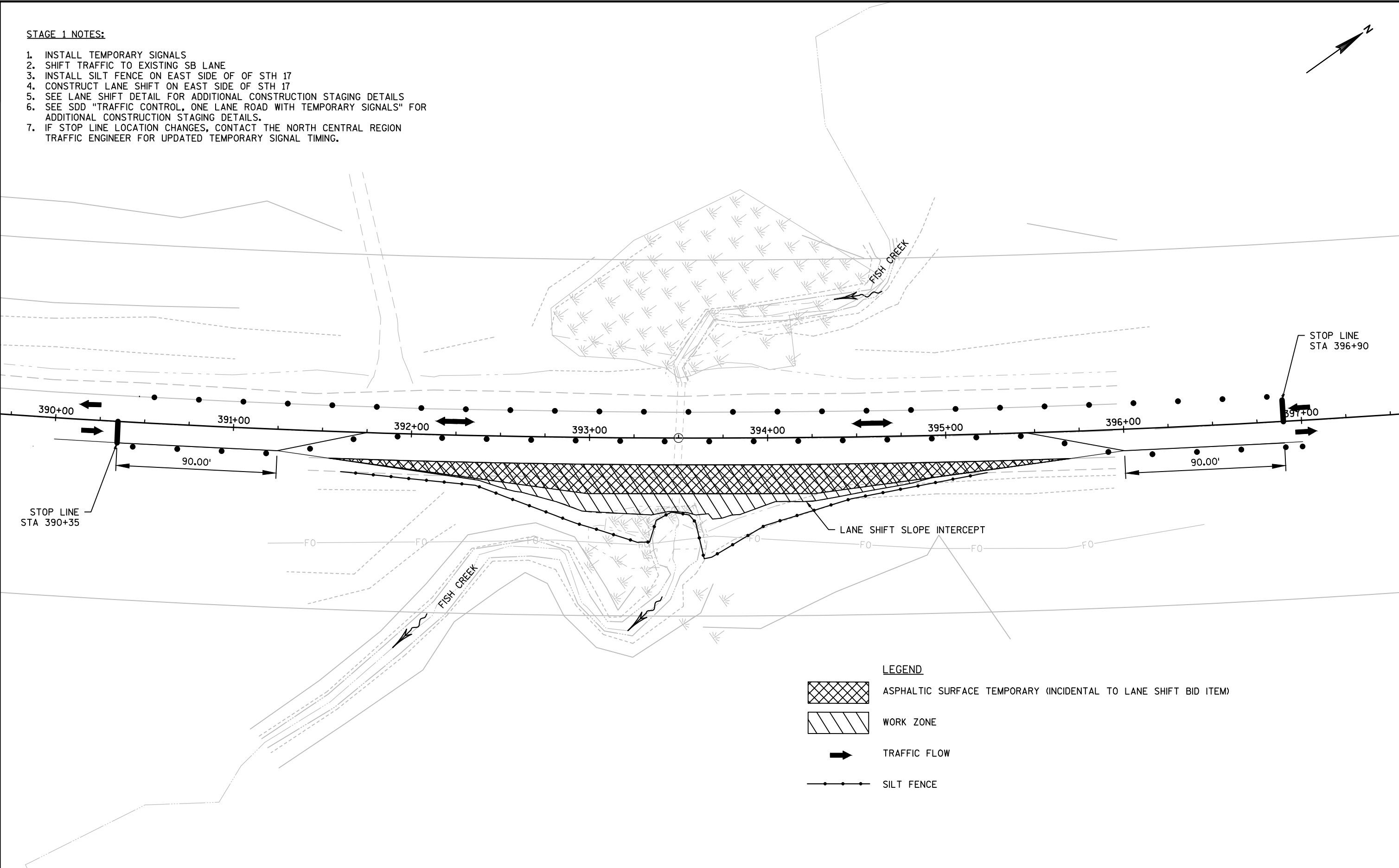
note: stop bar placement at 655 FT spacing

Temporary Signal Timing # 1		6:00am to 8:00pm				
EB	WB	Yellow	All Red	Green		
red	red		21.0 sec			
green	red			16.0 sec		
yellow	red	4.0 sec				
red	red		21.0 sec			
red	green			16.0 sec		
red	yellow	4.0 sec				
Total cycle length		8.0 sec	42.0 sec	32.0 sec	=	82.0 sec

Temporary Signal Timing # 2		8:00pm to 6:00am				
EB	WB	Yellow	All Red	Green		
red	red		21.0 sec			
green	red			11.0 sec		
yellow	red	4.0 sec				
red	red		21.0 sec			
red	green			11.0 sec		
red	yellow	4.0 sec				
Total cycle length		8.0 sec	42.0 sec	22.0 sec	=	72.0 sec

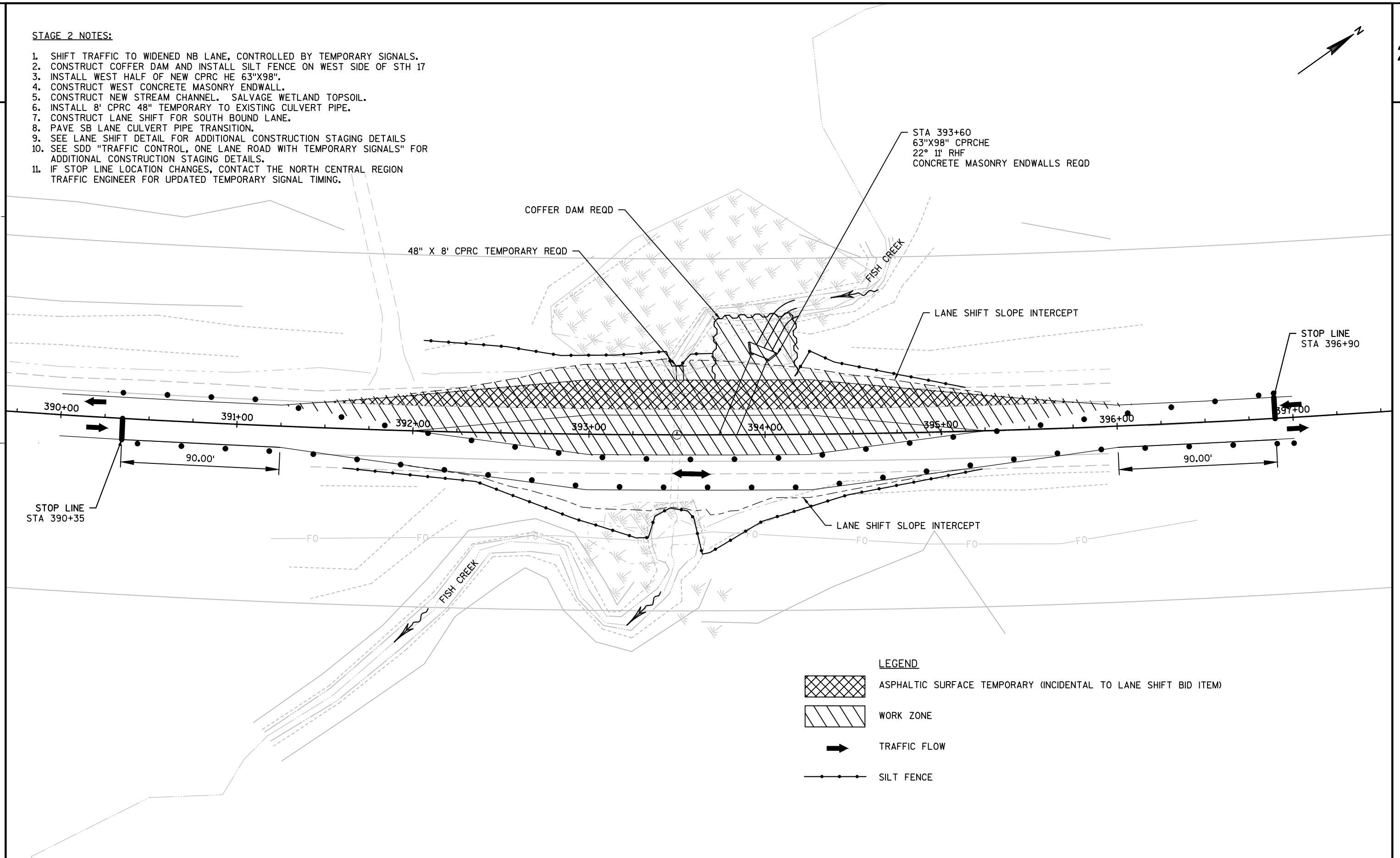
STAGE 1 NOTES:

- 1. INSTALL TEMPORARY SIGNALS
- 2. SHIFT TRAFFIC TO EXISTING SB LANE
- 3. INSTALL SILT FENCE ON EAST SIDE OF OF STH 17
- 4. CONSTRUCT LANE SHIFT ON EAST SIDE OF STH 17
- 5. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
- 6. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
- 7. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



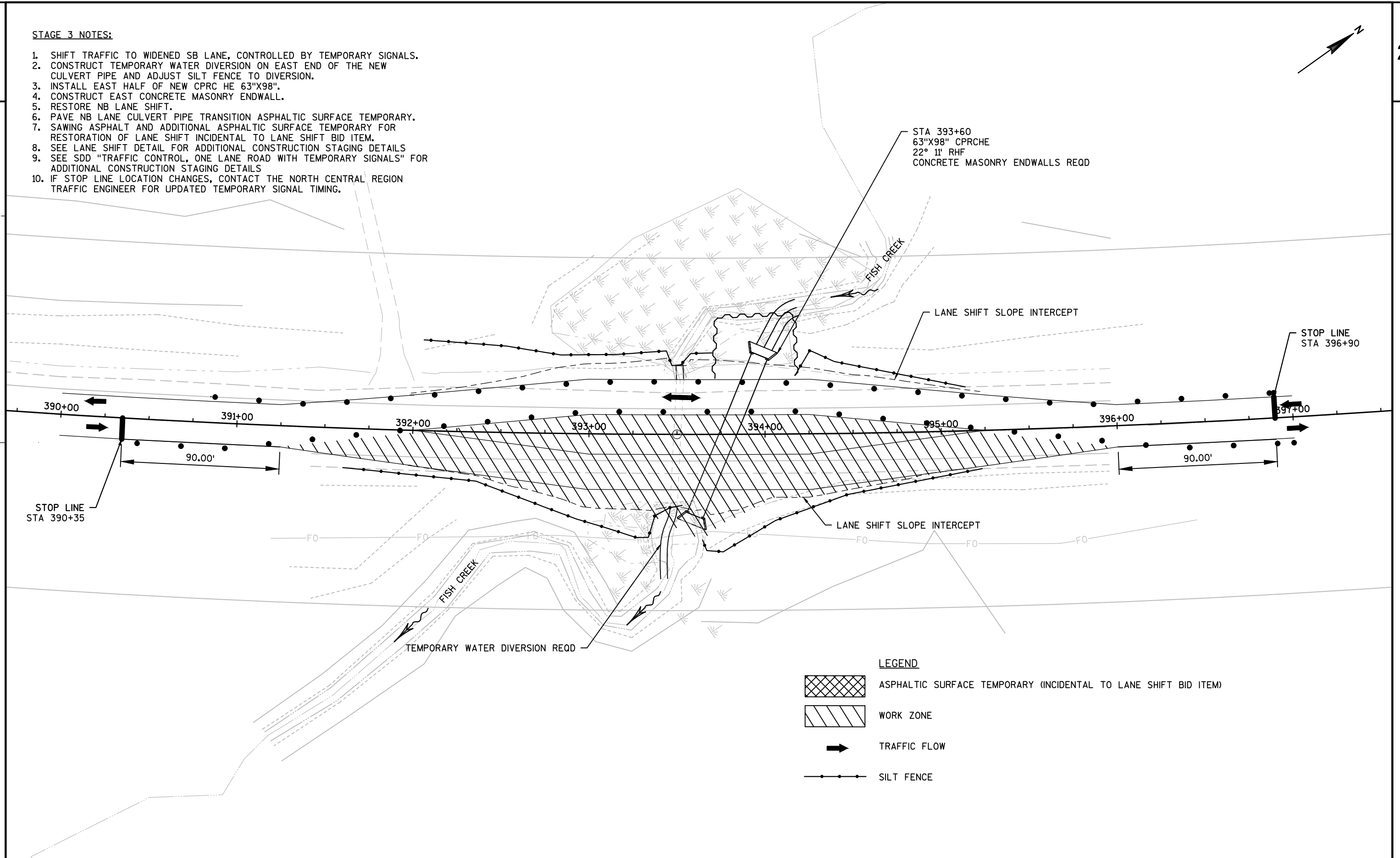
STAGE 2 NOTES:

1. SHIFT TRAFFIC TO WIDENED NB LANE, CONTROLLED BY TEMPORARY SIGNALS.
2. CONSTRUCT COFFER DAM AND INSTALL SILT FENCE ON WEST SIDE OF STH 17
3. INSTALL WEST HALF OF NEW CPRC HE 63"x98".
4. CONSTRUCT WEST CONCRETE MASONRY ENDWALL.
5. CONSTRUCT NEW STREAM CHANNEL. SALVAGE WETLAND TOPSOIL.
6. INSTALL 8' CPRC 48" TEMPORARY TO EXISTING CULVERT PIPE.
7. CONSTRUCT LANE SHIFT FOR SOUTH BOUND LANE.
8. PAVE SB LANE CULVERT PIPE TRANSITION.
9. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
10. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
11. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



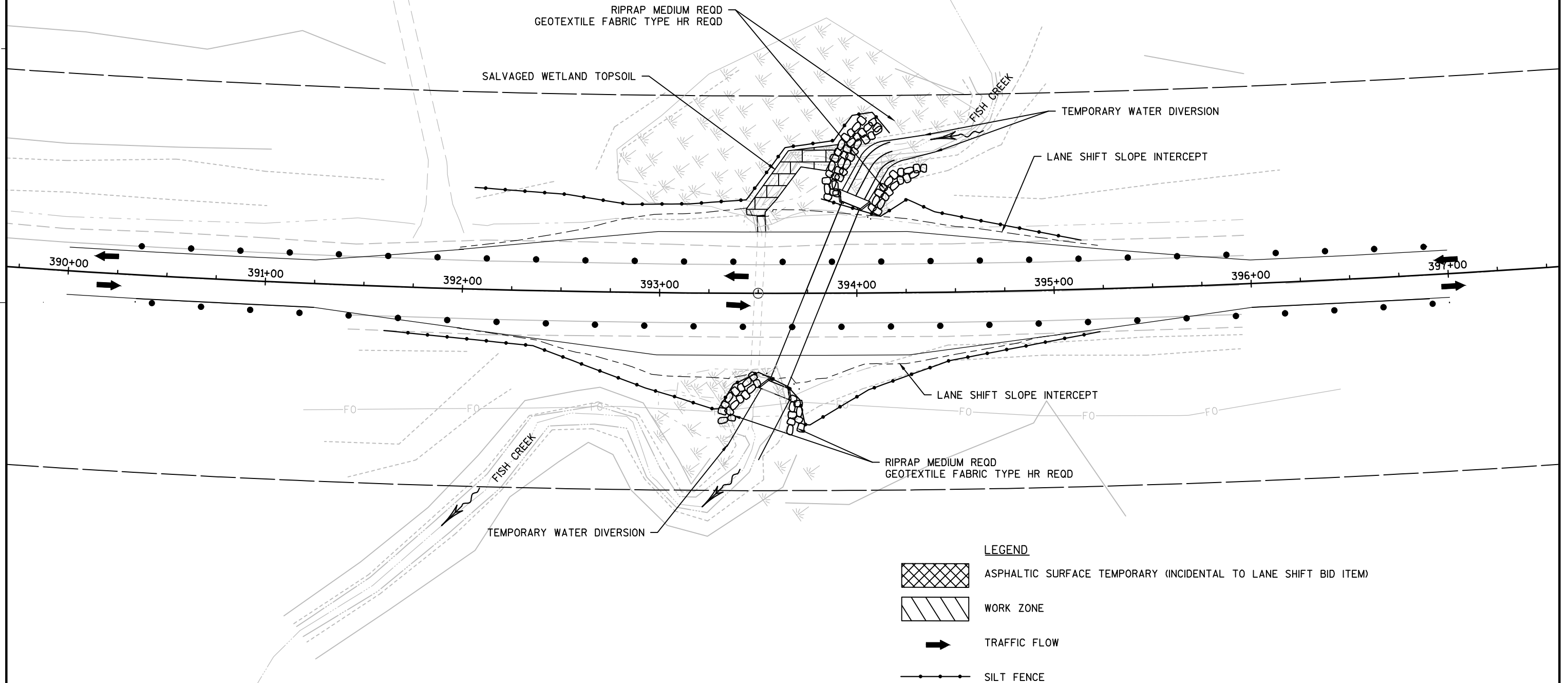
STAGE 3 NOTES:

1. SHIFT TRAFFIC TO WIDENED SB LANE, CONTROLLED BY TEMPORARY SIGNALS.
2. CONSTRUCT TEMPORARY WATER DIVERSION ON EAST END OF THE NEW CULVERT PIPE AND ADJUST SILT FENCE TO DIVERSION.
3. INSTALL EAST HALF OF NEW CPRC HE 63"x98".
4. CONSTRUCT EAST CONCRETE MASONRY ENDWALL.
5. RESTORE NB LANE SHIFT.
6. PAVE NB LANE CULVERT PIPE TRANSITION ASPHALTIC SURFACE TEMPORARY.
7. SAWING ASPHALT AND ADDITIONAL ASPHALTIC SURFACE TEMPORARY FOR RESTORATION OF LANE SHIFT INCIDENTAL TO LANE SHIFT BID ITEM.
8. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
9. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
10. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



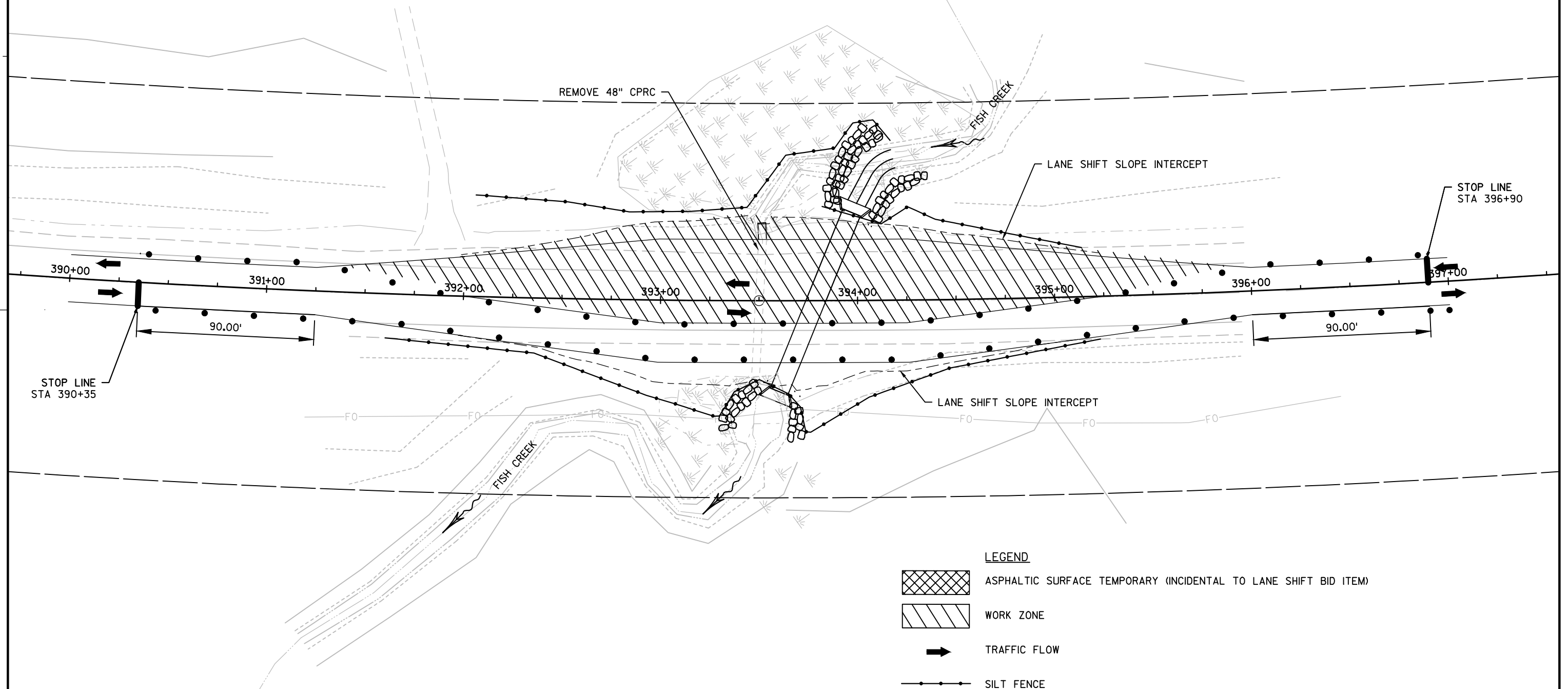
STAGE 4 NOTES:

1. SHIFT TRAFFIC TO NORMAL LANES
2. REMOVE COFFER DAMS ON BOTH SIDES OF STH 17 AND ADJUST SILT FENCE.
3. CONSTRUCT TEMPORARY WATER DIVERSION AND DIVERT CREEK THROUGH NEW CPRCHE 63"X98".
4. INSTALL GEOTEXTILE FABRIC TYPE HR AND RIPRAP MEDIUM.
5. RESTORE OLD STREAM BED WITH SALVAGED WETLAND TOPSOIL.
6. REMOVE TEMPORARY WATER DIVERSION.
7. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
8. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
9. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



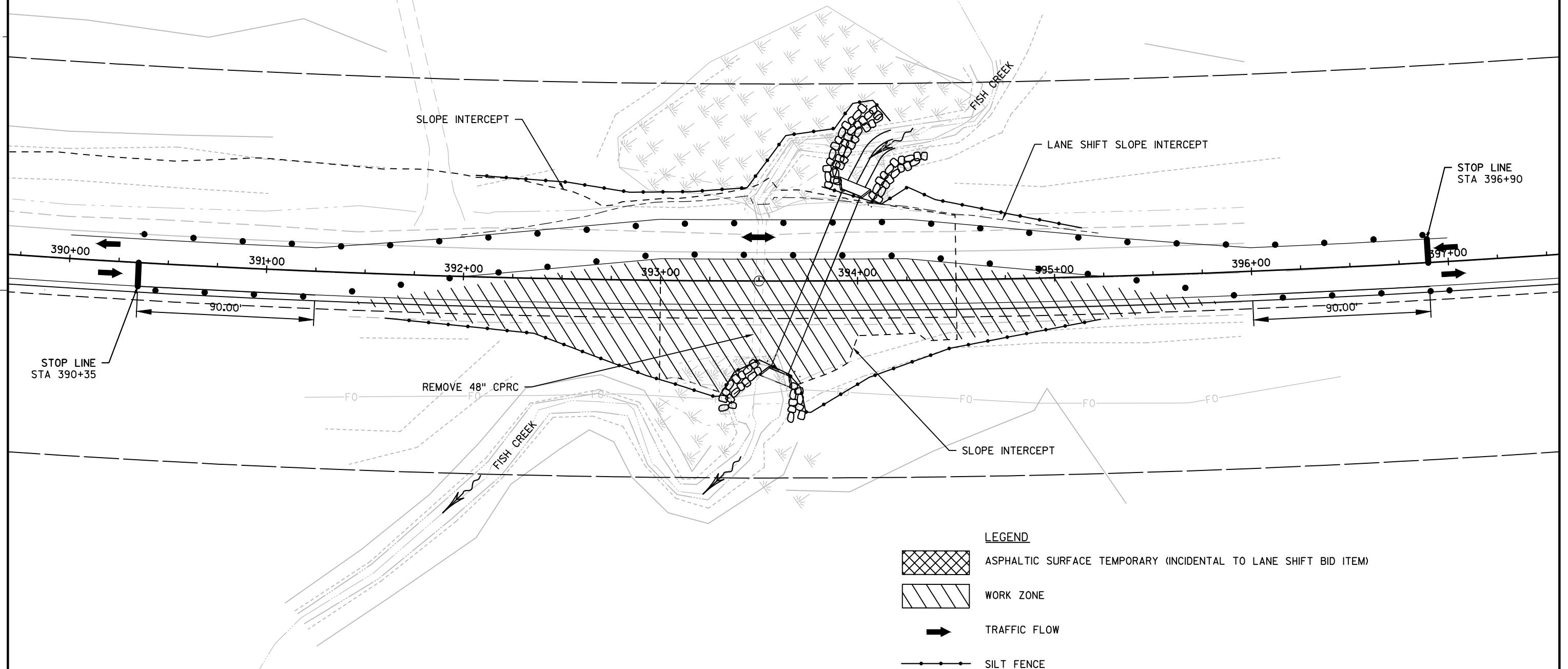
STAGE 5 NOTES:

1. SHIFT TRAFFIC TO THE NB LANE SHIFT.
2. REMOVE THE WEST HALF OF THE EXISTING 48" CPRC AND TEMPORARY EXTENSION.
3. RESTORE THE SB LANE SHIFT.
4. SAWING ASPHALT AND ADDITIONAL ASPHALTIC SURFACE TEMPORARY FOR RESTORATION OF LANE SHIFT INCIDENTAL TO LANE SHIFT BID ITEM.
5. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
6. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS.
7. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



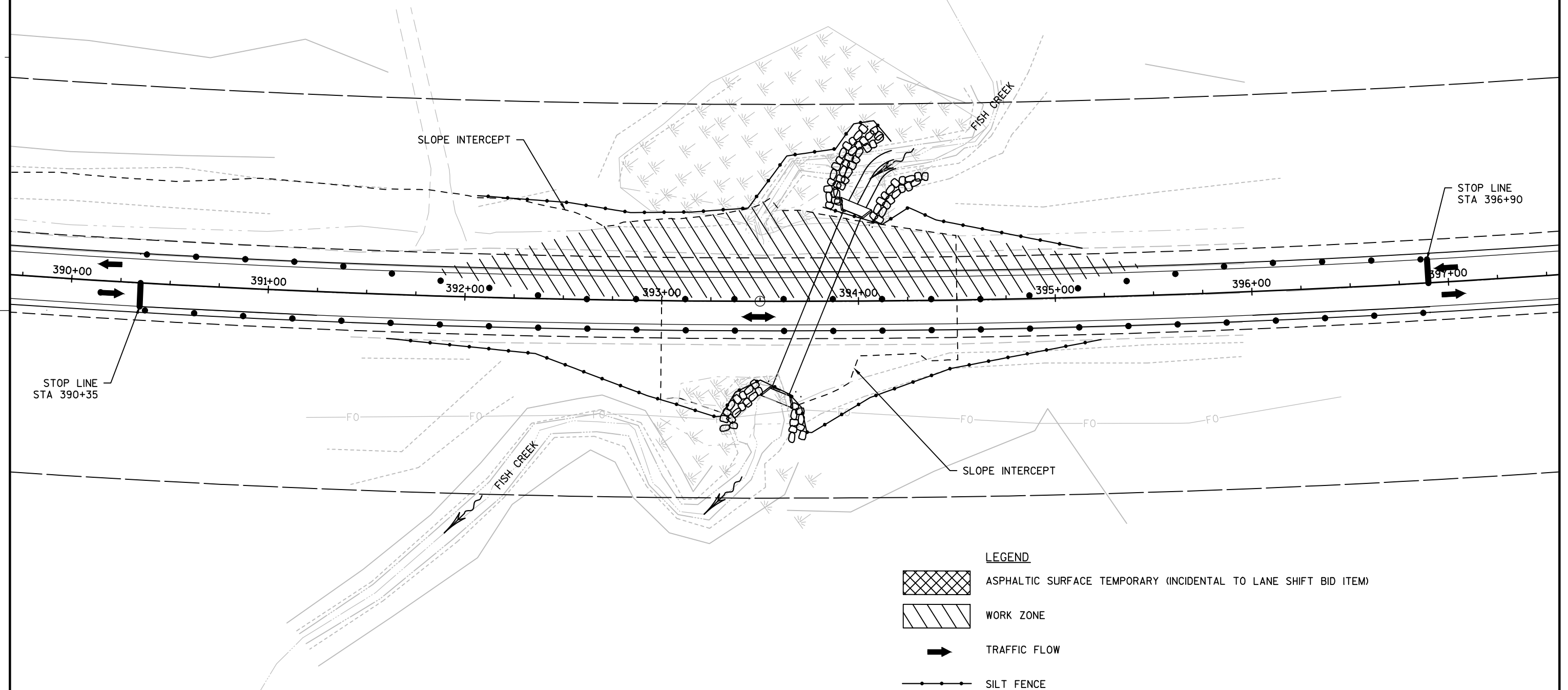
STAGE 6 NOTES:

1. SHIFT TRAFFIC TO THE SB LANE SHIFT.
2. REMOVE THE EAST HALF OF THE EXISTING 48" CIRC AND TEMPORARY EXTENSION.
3. REMOVE THE NB LANE SHIFT.
4. RESTORE EAST SIDE FILL SLOPES TO FINAL CROSS SECTIONS.
5. REMOVE ASPHALTIC SURFACE TEMPORARY IN ORIGINAL CULVERT PIPE TRANSITION.
6. PAVE CULVERT PIPE TRANSITION ASPHALTIC SURFACE BOTH LANES.
7. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
8. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
9. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



STAGE 7 NOTES:

1. SHIFT TRAFFIC TO THE NB LANE
2. REMOVE THE SB LANE SHIFT.
3. RESTORE WEST SIDE FILL SLOPES TO FINAL CROSS SECTIONS.
4. SEE LANE SHIFT DETAIL FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
5. SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL CONSTRUCTION STAGING DETAILS
6. IF STOP LINE LOCATION CHANGES, CONTACT THE NORTH CENTRAL REGION TRAFFIC ENGINEER FOR UPDATED TEMPORARY SIGNAL TIMING.



DATE 02OCT14		E S T I M A T E O F Q U A N T I T I E S			
LINE		9030-09-71			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	CLEARING	STA	2.000	2.000
0020	201.0205	GRUBBING	STA	2.000	2.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	6.000	6.000
0040	204.0110	REMOVING ASPHALTIC SURFACE	SY	160.000	160.000
0050	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	2,256.000	2,256.000
0060	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	171,520.000	171,520.000
0070	204.0150	REMOVING CURB & GUTTER	LF	144.000	144.000
0080	204.0165	REMOVING GUARDRAIL	LF	643.000	643.000
0090	204.9090.S	REMOVING (ITEM DESCRIPTION) 01. ASPHALTIC CURB	LF	185.000	185.000
0100	204.9180.S	REMOVING (ITEM DESCRIPTION) 01. ASPHALTIC SURFACE FLUMES	SY	11.000	11.000
0110	205.0100	EXCAVATION COMMON	CY	486.010	486.010
0120	206.5000	COFFERDAMS (STRUCTURE) 01. C-34-12	LS	1.000	1.000
0130	208.0100	BORROW	CY	781.910	781.910
0140	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 9030-09-71	LS	1.000	1.000
0150	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	16.000	16.000
0160	213.0100	FINISHING ROADWAY (PROJECT) 01. 9030-09-71	EACH	1.000	1.000
0170	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	12,339.000	12,339.000
0180	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	4,650.000	4,650.000
0190	305.0500	SHAPING SHOULDERS	STA	917.000	917.000
0200	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	25.000	25.000
0210	416.0610	DRILLED TIE BARS	EACH	52.000	52.000
0220	440.4410.S	INCENTIVE IRI RIDE	DOL	38,644.000	38,644.000
0230	455.0105	ASPHALTIC MATERIAL PG58-28	TON	969.000	969.000
0240	455.0605	TACK COAT	GAL	4,379.000	4,379.000
0250	460.1101	HMA PAVEMENT TYPE E-1	TON	17,626.000	17,626.000
0260	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	11,290.000	11,290.000
0270	460.4110.S	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	LF	50,976.000	50,976.000
0280	465.0105	ASPHALTIC SURFACE	TON	438.000	438.000
0290	465.0110	ASPHALTIC SURFACE PATCHING	TON	50.000	50.000
0300	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	52.000	52.000
0310	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	127.000	127.000
0320	465.0475	ASPHALT CENTER LINE RUMBLE STRIPS 2-LANE RURAL	LF	43,773.000	43,773.000
0330	504.0900	CONCRETE MASONRY ENDWALLS	CY	8.000	8.000
0340	520.0124	CULVERT PIPE CLASS III 24-INCH	LF	42.000	42.000
0350	520.1024	APRON ENDWALLS FOR CULVERT PIPE 24-INCH	EACH	2.000	2.000
0360	520.4048	CULVERT PIPE TEMPORARY 48-INCH	LF	8.000	8.000
0370	521.0136	CULVERT PIPE CORRUGATED STEEL 36-INCH	LF	12.000	12.000
0380	521.1036	APRON ENDWALLS FOR CULVERT PIPE STEEL 36-INCH	EACH	2.000	2.000
0390	522.0124	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	276.000	276.000
0400	522.0130	CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH	LF	8.000	8.000
0410	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	8.000	8.000
0420	522.1030	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	EACH	1.000	1.000

DATE 02OCT14		E S T I M A T E O F Q U A N T I T I E S			
LINE					9030-09-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0430	523.0163	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 63X98-INCH	LF	98.000	98.000
0440	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	80.000	80.000
0450	606.0200	RIPRAP MEDIUM	CY	84.000	84.000
0460	609.0124	RELAID STORM SEWER 24-INCH	LF	24.000	24.000
0470	609.0130	RELAID STORM SEWER 30-INCH	LF	24.000	24.000
0480	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	21.000	21.000
0490	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	1.000	1.000
0500	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	1.000	1.000
0510	614.0395	GUARDRAIL MOW STRIP CONCRETE	SY	68.000	68.000
0520	614.0397	GUARDRAIL MOW STRIP EMULSIFIED ASPHALT	SY	55.000	55.000
0530	614.2300	MGS GUARDRAIL 3	LF	300.000	300.000
0540	614.2500	MGS THRIE BEAM TRANSITION	LF	118.000	118.000
0550	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	3.000	3.000
0560	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 9030-09-71	EACH	1.000	1.000
0570	619.1000	MOBILIZATION	EACH	1.000	1.000
0580	624.0100	WATER	MGAL	184.000	184.000
0590	625.0100	TOPSOIL	SY	8,290.000	8,290.000
0600	628.1504	SILT FENCE	LF	5,660.000	5,660.000
0610	628.1520	SILT FENCE MAINTENANCE	LF	5,660.000	5,660.000
0620	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0630	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0640	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	7,220.000	7,220.000
0650	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,070.000	1,070.000
0660	628.7504	TEMPORARY DITCH CHECKS	LF	110.000	110.000
0670	628.7555	CULVERT PIPE CHECKS	EACH	24.000	24.000
0680	628.7570	ROCK BAGS	EACH	100.000	100.000
0690	629.0210	FERTILIZER TYPE B	CWT	6.000	6.000
0700	630.0120	SEEDING MIXTURE NO. 20	LB	148.000	148.000
0710	633.5200	MARKERS CULVERT END	EACH	72.000	72.000
0720	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	62.000	62.000
0730	637.2210	SIGNS TYPE II REFLECTIVE H	SF	291.000	291.000
0740	637.2230	SIGNS TYPE II REFLECTIVE F	SF	52.000	52.000
0750	638.2102	MOVING SIGNS TYPE II	EACH	6.000	6.000
0760	638.2602	REMOVING SIGNS TYPE II	EACH	53.000	53.000
0770	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	60.000	60.000
0780	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
0790	643.0100	TRAFFIC CONTROL (PROJECT) 01. 9030-09-71	EACH	1.000	1.000
0800	643.0300	TRAFFIC CONTROL DRUMS	DAY	2,213.000	2,213.000
0810	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	12.000	12.000
0820	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS	EACH	20.000	20.000
0830	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	20.000	20.000
0840	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	240.000	240.000
0850	643.0900	TRAFFIC CONTROL SIGNS	DAY	3,463.000	3,463.000
0860	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	20.000	20.000
0870	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	235.000	235.000
0880	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	123,568.000	123,568.000
0890	646.0600	REMOVING PAVEMENT MARKINGS	LF	600.000	600.000

DATE 02OCT14		E S T I M A T E O F Q U A N T I T I E S				
LINE					9030-09-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0900	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	20.000	20.000	
0910	648.0100	LOCATING NO-PASSING ZONES	MI	9.680	9.680	
0920	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	19,776.000	19,776.000	
0930	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	2,400.000	2,400.000	
0940	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	24.000	24.000	
0950	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	84.000	84.000	
0960	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	80.000	80.000	
0970	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	5.000	5.000	
0980	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	51,100.000	51,100.000	
0990	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 9030-09-71	LS	1.000	1.000	
1000	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	3,647.000	3,647.000	
1010	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. C-34-12	LS	1.000	1.000	
1020	690.0150	SAWING ASPHALT	LF	80.000	80.000	
1030	690.0250	SAWING CONCRETE	LF	125.000	125.000	
1040	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,200.000	1,200.000	
1050	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	600.000	600.000	
1060	SPV.0060	SPECIAL 01. CULVERT PIPE TRANSISTIONS	EACH	4.000	4.000	
1070	SPV.0060	SPECIAL 02. LANE SHIFT	EACH	4.000	4.000	
1080	SPV.0060	SPECIAL 03. TEMPORARY PAVEMENT MARKING REFLECTIVE TABS	EACH	1,020.000	1,020.000	
1090	SPV.0090	SPECIAL 01. GRADING, SHAPING, AND FINISHING FOR DITCH CLEANING	LF	1,160.000	1,160.000	
1100	SPV.0090	SPECIAL 02. FOG SEAL RUMBLE STRIPS	LF	50,980.000	50,980.000	
1110	SPV.0105	SPECIAL 01. TEMPORARY WATER DIVERSION	LS	1.000	1.000	
1120	SPV.0180	SPECIAL 01. SALVAGED WETLAND TOPSOIL	SY	60.000	60.000	
1130	SPV.0195	SPECIAL 01. BASE AGGREGATE DISINTEGRATED GRANITE	TON	40.000	40.000	

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CLEARING & GRUBBING <table><tr><th colspan="2"></th><th>201.0105</th><th>201.0205</th><th></th></tr><tr><th colspan="2"></th><th>CLEARING</th><th>GRUBBING</th><th></th></tr><tr><th>STATION</th><th>LOCATION</th><th>STA</th><th>STA</th><th>REMARKS</th></tr><tr><td>492+00</td><td>LT, RT</td><td>2</td><td>2</td><td>AT PIPE ENDS</td></tr><tr><td colspan="2">TOTALS</td><td>2</td><td>2</td><td></td></tr></table>							201.0105	201.0205				CLEARING	GRUBBING		STATION	LOCATION	STA	STA	REMARKS	492+00	LT, RT	2	2	AT PIPE ENDS	TOTALS		2	2		REMOVING ASPHALTIC SURFACE BUTT JOINT <table><tr><th colspan="2"></th><th>204.0115</th><th></th></tr><tr><th>STATION</th><th>LOCATION</th><th>SY</th><th>REMARKS</th></tr><tr><td>5+00</td><td>MAINLINE SOUTH</td><td>333</td><td>100 FT LENGTH</td></tr><tr><td>11+00</td><td>PE LT</td><td>22</td><td></td></tr><tr><td>12+53</td><td>CTH CCC</td><td>167</td><td>50 FT LENGTH</td></tr><tr><td>13+60</td><td>PRAIRIE RIVER BRIDGE</td><td>333</td><td>100 FT LENGTH</td></tr><tr><td>14+60</td><td>PRAIRIE RIVER BRIDGE</td><td>333</td><td>100 FT LENGTH</td></tr><tr><td>15+95</td><td>DUDLEY RD</td><td>33</td><td></td></tr><tr><td>41+49</td><td>BRIDGE DR</td><td>33</td><td></td></tr><tr><td>53+95</td><td>ECHO LAKE RD</td><td>33</td><td></td></tr><tr><td>120+75</td><td>LAWLESS LN</td><td>33</td><td></td></tr><tr><td>120+75</td><td>PE RT</td><td>22</td><td></td></tr><tr><td>151+78</td><td>HACKBARTHS DR</td><td>33</td><td></td></tr><tr><td>177+45</td><td>R AND H RD</td><td>33</td><td></td></tr><tr><td>177+50</td><td>PE LT</td><td>22</td><td></td></tr><tr><td>220+10</td><td>PLANTATION RD</td><td>33</td><td></td></tr><tr><td>234+00</td><td>OAK RIDGE RD</td><td>33</td><td></td></tr><tr><td>234+00</td><td>HANSON RD</td><td>33</td><td></td></tr><tr><td>246+00</td><td>CTH B</td><td>33</td><td></td></tr><tr><td>262+00</td><td>GOEHE RD</td><td>33</td><td></td></tr><tr><td>262+00</td><td>WRIGHT AVE</td><td>33</td><td></td></tr><tr><td>306+00</td><td>PE RT</td><td>22</td><td></td></tr><tr><td>311+20</td><td>OLD 17 RD</td><td>33</td><td></td></tr><tr><td>354+25</td><td>OLD 17 RD</td><td>33</td><td></td></tr><tr><td>375+82</td><td>1ST LAKE RD</td><td>33</td><td></td></tr><tr><td>375+82</td><td>RIVER DR</td><td>33</td><td></td></tr><tr><td>383+50</td><td>PARRISH DR</td><td>33</td><td></td></tr><tr><td>440+23</td><td>CTH H AND Q</td><td>33</td><td></td></tr><tr><td>478+11</td><td>TWO ISLAND LAKE RD</td><td>33</td><td></td></tr><tr><td>497+20</td><td>DUMP RD</td><td>33</td><td></td></tr><tr><td>516+00</td><td>MAINLINE NORTH</td><td>333</td><td>100 FT LENGTH</td></tr><tr><td colspan="2">TOTAL</td><td>2256</td><td></td></tr></table>							204.0115		STATION	LOCATION	SY	REMARKS	5+00	MAINLINE SOUTH	333	100 FT LENGTH	11+00	PE LT	22		12+53	CTH CCC	167	50 FT LENGTH	13+60	PRAIRIE RIVER BRIDGE	333	100 FT LENGTH	14+60	PRAIRIE RIVER BRIDGE	333	100 FT LENGTH	15+95	DUDLEY RD	33		41+49	BRIDGE DR	33		53+95	ECHO LAKE RD	33		120+75	LAWLESS LN	33		120+75	PE RT	22		151+78	HACKBARTHS DR	33		177+45	R AND H RD	33		177+50	PE LT	22		220+10	PLANTATION RD	33		234+00	OAK RIDGE RD	33		234+00	HANSON RD	33		246+00	CTH B	33		262+00	GOEHE RD	33		262+00	WRIGHT AVE	33		306+00	PE RT	22		311+20	OLD 17 RD	33		354+25	OLD 17 RD	33		375+82	1ST LAKE RD	33		375+82	RIVER DR	33		383+50	PARRISH DR	33		440+23	CTH H AND Q	33		478+11	TWO ISLAND LAKE RD	33		497+20	DUMP RD	33		516+00	MAINLINE NORTH	333	100 FT LENGTH	TOTAL		2256		REMOVING CURB & GUTTER <table><tr><th colspan="2"></th><th>204.0150</th><th></th></tr><tr><th>STATION</th><th>LOCATION</th><th>LF</th><th>REMARKS</th></tr><tr><td>11+93 RT</td><td>CTH CCC SOUTH</td><td>44</td><td>6" SLOPED</td></tr><tr><td>13+36 RT</td><td>CTH CCC NORTH</td><td>100</td><td>6" SLOPED</td></tr><tr><td colspan="2">TOTAL</td><td>144</td><td></td></tr></table> COFFERDAMS (C-34-12) <table><tr><th colspan="2"></th><th>206.5000</th><th></th></tr><tr><th>STATION</th><th>LOCATION</th><th>LS</th><th>REMARKS</th></tr><tr><td>393+61 LT</td><td>FISH CREEK PIPE</td><td>1</td><td>LEFT END</td></tr><tr><td colspan="2">TOTAL</td><td>1</td><td></td></tr></table> REMOVING ASPHALTIC SURFACE MILLING <table><tr><th colspan="2"></th><th>204.0120</th><th></th></tr><tr><th>STATION</th><th>LOCATION</th><th>SY</th><th>REMARKS</th></tr><tr><td>5+00 - 516+00</td><td>MAINLINE</td><td>170,400</td><td></td></tr><tr><td>12+53</td><td>CTH CCC</td><td>660</td><td></td></tr><tr><td>246+00</td><td>CTH B</td><td>230</td><td></td></tr><tr><td>440+23</td><td>CTH H AND Q</td><td>230</td><td></td></tr><tr><td colspan="2">TOTAL</td><td>TOTAL 171,520</td><td></td></tr></table>							204.0150		STATION	LOCATION	LF	REMARKS	11+93 RT	CTH CCC SOUTH	44	6" SLOPED	13+36 RT	CTH CCC NORTH	100	6" SLOPED	TOTAL		144				206.5000		STATION	LOCATION	LS	REMARKS	393+61 LT	FISH CREEK PIPE	1	LEFT END	TOTAL		1				204.0120		STATION	LOCATION	SY	REMARKS	5+00 - 516+00	MAINLINE	170,400		12+53	CTH CCC	660		246+00	CTH B	230		440+23	CTH H AND Q	230		TOTAL		TOTAL 171,520	
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15+00 RT	NORTH RT	235	PRAIRIE RIVER BRIDGE AT CTH CCC																																																																																																																																																																																																																																				
12+00 LT	SOUTH LT	173	PRAIRIE RIVER BRIDGE AT CTH CCC																																																																																																																																																																																																																																				
14+00 LT	NORTH LT	86	PRAIRIE RIVER BRIDGE AT CTH CCC																																																																																																																																																																																																																																				
TOTAL		643																																																																																																																																																																																																																																					
		204.0110																																																																																																																																																																																																																																					
STATION	LOCATION	SY	REMARKS																																																																																																																																																																																																																																				
12+25 RT	MAINLINE	160	CCC CURB AND GUTTER																																																																																																																																																																																																																																				
TOTAL		160																																																																																																																																																																																																																																					
PROJECT NO:9030-09-71		HWY:STH 17		COUNTY:LANGLADE / LINCOLN		MISCELLANEOUS QUANTITIES		SHEET		E																																																																																																																																																																																																																													

Division	From/To Station	Common Excavation (1) (item # 205.0100)		Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow (item #208.0100)	Comment:
		Cut (2)	EBS Excavation (3)							
Division 1						Factor 1.25				
STH 17 at CTH CCC	10+67/18+67	54	0	54	182	228	-174	0	174	
CTH CCC	0+05/01+07	1	0	1	1	2	-1	0	1	
STH 17 at CTH B	242+42/248+73	0	0	0	244	305	-305	0	305	
STH 17 at First Lake Road	374+85/377+76	91	0	91	19	24	67	67	0	
First Lake Road	18+75/19+85	177	0	177	22	27	150	150	0	
STH 17 at STA 392+50	393+10/394+50	0	0	0	241	302	-302	0	302	
Fish Creek New Stream Bed	393+67/394+39	156	0	156	1	2	154	154	0	
STH 17 at STA 492+00	491+75/492+38	7	0	7	1	1	6	6	0	
Division 1 Subtotal		486	0	486	713	891	-405	377	782	
Grand Total		486.01	0.00	486.01	712.94	891.17	-405.16	376.75	781.91	
Total Common Exc		486.01								

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.25
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

3

BASE AGGREGATE DENSE

SPV.0195.01 BASE AGGREGATE						
		305.0110	305.0120	DISINTEGRATED	624.0100	
		3/4-INCH	1 1/4-INCH	GRANITE	WATER	
STATION	LOCATION	TON	TON	TON	MGAL	REMARKS
PROJECT LENGTH	6+00 – 516+0	11,900				SHOULDERS
CCC BEAMGUARD	SW QUAD	76				SHOULDERS-HINGE POINT
CCC BEAMGUARD	NW QUAD	16				SHOULDERS-HINGE POINT
CCC BEAMGUARD	SE QUAD	16				SHOULDERS-HINGE POINT
CCC BEAMGUARD	NE QUAD	16				SHOULDERS-HINGE POINT
248+00	35-017-62		1,050			PIPE TRANSITIONS
385+00	34-017-004		590			PIPE TRANSITIONS
393+50	34-017-005		1,310			PIPE TRANSITIONS
492+14	34-017-010		1,310			PIPE TRANSITIONS
375+82	FIRST LK RD	15	290			
SIDE ROADS AND DRIVEWAYS	PROJECT	200		20		
UNDISTRIBUTED	PROJECT	100	100	20		
PROJECT TOTAL		12339	4650	40		

HMA PAVEMENT TYPE & ASPHALTIC MATERIAL

460.1101 455.0105 460.4110.S.01 HMA ASPHALTIC REHEATING HMA PAVEMENT MATERIAL TACK PAVEMENT TYPE E-1 PG58-28 COAT LONGITUDINAL TON TON GALLONS JOINTS LF						
STATION	STATION	LOCATION	TON	TON	GALLONS	LF
5+00	516+00	MAINLINE	17,140	943	4,258	50976
242+69	250+25	CTH B PASS	58	3	14	
435+98	443+90	CTH H/Q PASS	58	3	14	
12+75	CTH CCC	RT	67	4	17	
375+82	FIRST LAKE ROAD	LT	64	4	16	
	SIDE ROADS	PROJECT	239	13	59	
TOTALS			17626	969	4379	50976

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ASPHALTIC CENTER LINE RUMBLE STRIP 2-LANE RURAL

465.0475 ASPHALTIC CENTERLINE RUMBLE STRIP LF						
STATION	STATION	LOCATION	COMMENTS	LF		
STA 5+00	- STA 13+50	STH 17	MAINLINE	850		
STA 18+00	- STA 39+49	STH 17	MAINLINE	2149		
STA 43+49	- STA 51+95	STH 17	MAINLINE	846		
STA 55+95	- STA 78+29	STH 17	MAINLINE	2234		
STA 82+29	- STA 118+75	STH 17	MAINLINE	3646		
STA 122+75	- STA 149+78	STH 17	MAINLINE	2703		
STA 153+78	- STA 175+45	STH 17	MAINLINE	2167		
STA 179+45	- STA 218+10	STH 17	MAINLINE	3865		
STA 222+10	- STA 232+00	STH 17	MAINLINE	990		
STA 236+00	- STA 244+00	STH 17	MAINLINE	800		
STA 248+00	- STA 260+00	STH 17	MAINLINE	1200		
STA 264+00	- STA 309+20	STH 17	MAINLINE	4520		
STA 313+20	- STA 352+25	STH 17	MAINLINE	3905		
STA 356+25	- STA 373+82	STH 17	MAINLINE	1757		
STA 377+82	- STA 381+50	STH 17	MAINLINE	368		
STA 385+50	- STA 438+23	STH 17	MAINLINE	5273		
STA 443+00	- STA 476+11	STH 17	MAINLINE	3311		
STA 480+11	- STA 495+20	STH 17	MAINLINE	1509		
STA 499+20	- STA 516+00	STH 17	MAINLINE	1680		
TOTAL				43,773		

PREPARE FOUNDATION FOR ASPHALTIC PAVING (9030-09-71)

211.0100 LS			
STATION	LOCATION	LS	REMARKS
5+00 – 516+00	PROJECT	1	
TOTAL		1	

CONCRETE CURB & GUTTER

601.0557 CONCRETE CURB&GUTTER 6-IN SLOPED 36-IN TYPE D			
STA	LOCATION	LF	REMARKS
12+25	RT	80	CTH CCC – WEST
TOTAL		80	

SHAPING SHOULDERS

305.0500 SHAPING SHOULDERS (STA)				
STATION	STATION	LOCATION	COMMENTS	(STA)
STA 5+00 RT	- STA 516+00 RT	STH 17	RT SHOULDER	511
STA 5+00 LT	- STA 516+00 LT	STH 17	LT SHOULDER	511
				917

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS (STA)				
STATION	STATION	LOCATION	COMMENTS	(STA)
STA 243+00 RT	- STA 250+25 RT	STH 17	RT SHOULDER	8
STA 436+00 LT	- STA 444+00 LT	STH 17	LT SHOULDER	8
				16

3

3

CROSS DRAINS & SIDE ROAD CULVERT PIPES																					
STATION LOCATION			520.0124		520.1024		521.0136		521.1036		522.0124	522.0130	520.4048	523.0163	522.1024	522.1030	504.0900	609.0124	609.0130	** JOINT TIES EACH	REMARKS
			CULVERT		APRON		CULVERT		APRON		CULVERT PIPE	CULVERT PIPE	CULVERT	CULVERT PIPE	APRON ENDWALLS FOR		CONCRETE	RELAID	RELAID		
			PIPE		ENDWALLS		PIPE		ENDWALLS		REINFORCED	REINFORCED	PIPE	REINFORCED	CULVERT PIPE		MASONRY	STORM	STORM		
			CLASS III	MINIMUM	FOR CULVERT	CORRUGATED	MINIMUM	FOR CULVERT	STEEL	THICKNESS	PIPE STEEL	CONCRETE	CONCRETE	TEMPORARY	CONCRETE	24-INCH	30-INCH	ENDWALLS	SEWER		
24-INCH	24-INCH	24-INCH	36-INCH	36-INCH	36-INCH	LF	INCHES	LF	LF	LF	LF	LF	LF	EACH	EACH	CY	LF	LF			
15+95	DUDLEY RD	SIDEROAD LT				12	0.079	2												8' & 4' EXTENSIONS	
99+00	MAINLINE	35-017-50															8		2	RETIE RT x 1	
158+50	MAINLINE	35-017-53																8	2	RETIE RT x 1	
248+03	MAINLINE	35-017-62								66				2					8		
264+00	MAINLINE	35-017-63															16		4	RETIE RT x 2	
370+00	MAINLINE	34-017-003									8				1			16	4	RETIE LT x 2	
375+82	FIRST LK RD	SIDEROAD LT								86				2							
385+03	MAINLINE	34-017-004								50				2					8		
391+80	PE-BAD	DRIVEWAY LT	42	0.064	2																
393+50	MAINLINE	34-017-005										8								REINFORCED CONCRETE	
393+61	MAINLINE	C-34-12											98			8				OLD 34-017-005	
492+14	MAINLINE	34-017-010								74				2					8		
TOTALS			42		2	12		2	276	8	8	98	8	1	8	24	24	36			
** FOR INFORMATIONAL PURPOSES ONLY. NOT A BID ITEM.																					

<u>APPROACH SLAB</u>					<u>ASPHALTIC SURFACE</u>					<u>ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES</u>				

TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

		625.0100	628.2006	628.2008	629.0210	630.0120	624.0100
		TOPSOIL	EROSION MAT	EROSION MAT	FERTILIZER	SEEDING	
			URBAN	URBAN		MIXTURE	
			CLASS 1 TYPE A	CLASS 1 TYPE B	TYPE B	NO. 20	WATER
STATION - STATION	LOCATION	SY	SY	SY	CWT	LB	MGAL
10+75	LT	10	10	-	0.1	0.2	0.2
11+10 - 13+75	LT	430	-	430	0.3	7.6	9.5
11+10 - 12+50	RT	250	250	-	0.2	4.5	5.6
13+75	RT	80	-	80	0.1	1.4	1.8
14+25 - 15+80	LT	270	-	270	0.2	4.8	5.9
16+15 - 17+50	LT	320	320	-	0.2	5.7	7.1
14+50 - 18+75	RT	290	-	290	0.2	5.1	6.4
99+00	RT	40	40	-	0.1	0.7	0.8
158+50	RT	40	40	-	0.1	0.7	0.8
177+50	RT	40	40	-	0.1	0.7	0.8
246+60 - 249+00	RT	1020	1020	-	0.6	18.2	22.7
246+60 - 249+00	LT	410	410	-	0.3	7.3	9.1
264+00	RT	40	40	-	0.1	0.7	0.8
370+00	LT	40	40	-	0.1	0.7	0.8
374+75 - 378+00	LT	530	530	-	0.3	9.4	11.7
385+00	RT	40	40	-	0.1	0.7	0.8
383+30 - 394+50	LT	2960	2960	-	1.9	53.3	66.5
392+50 - 394+50	RT	580	580	-	0.4	10.3	12.9
492+14	LT&RT	500	500	-	0.1	9.0	11.2
UNDISTRIBUTED		400	400	-	0.2	7.0	8.8
TOTAL		8290	7220	1070	6	148	184

BEAM GUARD

				614.2300	614.2500	614.2610	614.0200	614.0370	614.0390	614.0395	614.0397
					MGS		STEEL	STEEL PLATE	STEEL PLATE		
				MGS	THRIE	GUARDRAIL	THRIE BEAM	BEAM GUARD	BEAM GUARD		GUARDRAIL
				GUARDRAIL	BEAM	TERMINAL	STRUCTURE	ENERGY	SHORT	GUARDRAIL	MOW STRIP
				3	TRANSITION	EAT	APPROACH	ABSORBING	RADIUS	MOW STRIP	EMULSIFIED
STATION	STATION	LOCATION	COMMENTS	(LF)	(LF)	(EACH)	(LF)	(EACH)	(EACH)	(SY)	(SY)
11+83 LT	- 13+52 LT	B-35-0101	SW QUAD	75.0	39.4	1				44	28
14+42 LT	- 15+61 LT	B-35-0101	NW QUAD	25.0	39.4	1				24	26
13+07 RT	- 13+61 RT	B-35-0101	SE QUAD				21	1	1		
14+61 RT	- 17+50 RT	B-35-0101	NE QUAD	200.0	39.4	1					
TOTAL				300.0	118	3	21	1	1	68	55

EROSION CONTROL

STATION	LOCATION	628.1504	628.1520	628.7504	628.7555	628.7570	REMARKS
		SILT FENCE	SILT FENCE MAINTENANCE	TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	ROCK BAGS EACH	
10+75	LT	40	40	--	--	--	CCC BEAMGUARD
11+10 - 13+75	LT	280	280	--	--	--	CCC BEAMGUARD
11+10 - 12+50	RT	160	160	--	--	--	CCC BEAMGUARD
13+75	RT	200	200	--	--	--	CCC BEAMGUARD
14+25 - 15+80	LT	165	165	--	--	--	CCC BEAMGUARD
16+15 - 17+50	LT	140	140	--	--	--	CCC BEAMGUARD
14+50 - 18+75	RT	440	440	--	--	--	CCC BEAMGUARD
99+00	RT	60	60	--	--	--	35-017-50
158+50	RT	60	60	--	--	--	35-017-53
177+50	RT	200	200	--	--	--	DITCH CLEANING
246+60 - 249+00	RT	275	275	--	--	--	35-017-62
246+60 - 249+00	LT	845	845	--	--	--	35-017-62
264+00	RT	60	60	--	--	--	35-017-63
370+00	LT	60	60	--	--	--	34-017-003
374+75 - 378+00	LT	420	420	20	6	--	FIRST LAKE ROAD
385+00	RT	60	60	--	6	--	34-017-004
383+30 - 394+50	LT	1250	1250	60	6	--	DITCH AND 34-017-005
392+50 - 394+50	RT	245	245	--	--	--	34-017-005
492+14	LT&RT	400	400	--	--	--	34-017-010
UNDISTRIBUTED		300	300	30	6	100	
TOTALS		5660	5660	110	24	100	

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905	628.1910	REMARKS
	MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL	
PROJECT	4	4	
TOTALS	4	4	

MARKERS CULVERT END

STATION	LOCATION (CULVERT NO.)	633.5200
		MARKERS CULVERT END (EACH)
STA 7+30	35-017-46	2
STA 15+95 LT	DUDLEY RD	2
STA 44+00	35-017-47	2
STA 54+50	35-017-48	2
STA 84+50	35-017-49	2
STA 99+00	35-017-50	2
STA 145+00	35-017-51	2
STA 148+00	C-35-9703	2
STA 158+00	35-017-53	2
STA 158+50	C-35-9704	2
STA 174+00	35-017-55	2
STA 178+00	35-017-56	2
STA 187+00	CATTLE PASS	2
STA 191+00	35-017-58	2
STA 200+00	35-017-59	2
STA 208+00	35-017-60	2
STA 241+75	CATTLE PASS	2
STA 248+03	35-017-62	2
STA 264+00	35-017-63	2
STA 305+00	35-017-64	2
STA 310+00	CATTLE PASS	2
STA 329+00	35-017-66	2
STA 348+00	34-017-001	2
STA 360+50	34-017-002	2
STA 370+00	34-017-003	2
STA 375+82	FIRST LAKE RD	2
STA 385+00	34-017-004	2
STA 393+50	34-017-005	2
STA 452+30	34-017-006	2
STA 464+00	34-017-007	2
STA 467+50	34-017-008	2
STA 473+00	34-017-008R	2
STA 480+75	34-017-009	2
STA 492+14	34-017-010	2
STA 501+95	34-017-011	2
STA 515+50	34-017-012	2
		72

3

PERMANENT SIGNING
SHEET 1

PERMANENT SIGNING										634.0616	637.2210	637.2230	638.2102	638.2602	638.3000		
SHEET 1										WOOD POSTS	SIGNS	SIGNS	MOVING	REMOVING	REMOVING		
										4X6-INCH	TYPE II	TYPE II	SIGNS	SIGNS	SMALL SIGN		
										16 FOOT	REFLECTIVE H	REFLECTIVE F	TYPE II	TYPE II	SUPPORTS		
SIGN #	STATION	LOCATION	SIGN MESSAGE	SIGN CODE		SIZE		EACH	SF	SF	EACH	EACH	EACH	DESCRIPTION			
Project ID		9030-09-71															
1	10+50	LT	SOUTH STH 17	J4-1	M3-3 M1-6	24	X	36	1	6.00			1	1			
1A	11+50	LT	CENTERLINE RUMBLE STRIPS NEXT 18 MILES											1	1		
2	11+75	RT	COUNTY CCC RA	J13-1	M1-5A M6-1	24	X	45	1	7.50			1	1			
3	13+20	RT	17 DA	J13-1	M1-6 M6-4	24	X	45	1	7.50			1	1			
4	13+60	LT	COUNTY CCC LA	J13-1	M1-5A M6-1	24	X	45	1	7.50			1	1			
5	14+40	RT	NORTH 17	J4-1	M3-1 M1-6	24	X	36	1	6.00			1	1			
6	15+80	LT	STOP	R1-1			30	X	30	1	5.18			1	1		
6A	16+00	RT	CENTERLINE RUMBLE STRIPS NEXT 18 MILES											1	1		
7	17+55	RT	ADOPT-A-HIGHWAY	I55-56			30	X	36	1	7.50			1	1	FRIENDS OF THE PRAIRIE RIVER VFW POST 10915	
8	18+80	LT	ADOPT-A-HIGHWAY	I55-56			30	X	36	1	7.50			1	1		
9	23+90	LT	JCT COUNTY CCC	J1-1	M2-1 M1-5A	24	X	39	1	6.50			1	1			
10	24+70	RT	NO PASSING ZONE	W14-3			48	X	36	1		6.00					
11	41+60	RT	STOP	R1-1			30	X	30	1	5.18			1	1	FRIENDS OF THE PRAIRIE RIVER	
12	80+10	LT	STOP	R1-1			30	X	30	1	5.18			1	1		
13	119+25	LT	ADOPT-A-HIGHWAY	I55-56			30	X	36	1	7.50			1	1		
14	120+60	LT	STOP	R1-1			30	X	30	1	5.18			1	1		
15	153+00	RT	STOP	R1-1			30	X	30	1	5.18			1	1		
16	177+70	RT	STOP	R1-1			30	X	30	1	5.18			1	1		
17	220+25	RT	STOP	R1-1			30	X	30	1	5.18			1	1		
18	230+15	RT	JCT COUNTY B	J1-1	M2-1 M1-5A	24	X	39	1	6.50			1	1			
19	233+75	LT	STOP	R1-1			30	X	30	1	5.18			1	1	LATTER-DAY SAINTS OF RHINELANDER	
20	234+25	RT	STOP	R1-1			30	X	30	1	5.18			1	1		
21	234+90	RT	ADOPT-A-HIGHWAY	I55-56			30	X	36	1	7.50			1	1		
22	238+20	LT	NO PASSING ZONE	W14-3			48	X	36	1		6		1	1		
23	240+40	RT	LA HARRISON	D1-1			66	X	15	2	6.88			1	1		
24	244+00	LT	CENTERLINE RUMBLE STRIPS NEXT 18 MILES											1	1		
24A	244+95	LT	SOUTH 17	J4-1	M3-3 M1-6	24	X	36	1	6.00			1	1			
25	245+85	LT	17 DA	J13-1	M1-6 M6-4	24	X	45	1	7.50			1	1			
26	245+85	RT	COUNTY B LA	J13-1	M1-5A M6-1	24	X	45	1	7.50			1	1			
27	245+85	LT	STOP	R1-1			30	X	30	1	5.18			1	1		
27A	246+00	RT	DOUBLE NIGHT ARROW	W1-7			48	x	24	1		8					
27B	245+85	LT	STOP AHEAD	W3-1			36	X	36	1		9.00		1	1		
28	246+50	LT	COUNTY B RA	J13-1	M1-5A M6-1	24	X	45	1	7.50			1	1			
TOTALS PAGE 1									31	165	29	0	31	31			

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PERMANENT SIGNING
SHEET 2

PERMANENT SIGNING										634.0616	637.2210	637.2230	638.2102	638.2602	638.3000		
SHEET 2										WOOD POSTS	SIGNS	SIGNS	MOVING	REMOVING	REMOVING		
										4X6-INCH	TYPE II	TYPE II	SIGNS	SIGNS	SMALL SIGN		
										16 FOOT	REFLECTIVE H	REFLECTIVE F	TYPE II	TYPE II	SUPPORTS		
SIGN #	STATION	LOCATION	SIGN MESSAGE	SIGN CODE	SIZE				EACH	SF	SF	EACH	EACH	EACH	DESCRIPTION		
Project ID		9030-09-71															
29	246+90	RT	NORTH 17	J4-1	M3-1 M1-6	24	X	36	1	6.00				1	1		
30	255+60	LT	STOP FOR SCHOOL BUS FLASHING RED LIGHTS	R59-51		36	X	36	1			1				MOVE FROM STA 253+25 TO 255+60/NEW POST REQD	
31	257+95	LT	JCT COUNTY B	J1-1	M2-1 M1-5A	24	X	39	1	6.50				1	1		
32	261+75	LT	STOP	R1-1		30	X	30	1	5.18				1	1		
33	262+75	RT	STOP	R1-1		30	X	30	1	5.18				1	1		
34	274+60	RT	NO PASSING ZONE	W14-3		48	X	36	1		6			1	1		
35	311+35	RT	STOP	R1-1		30	X	30	1	5.18				1	1		
36	338+10	LT	ADOPT-A-HIGHWAY	I55-56		30	X	36	1	7.50				1	1	LATTER-DAY SAINTS OF RHINELANDER MOVE FROM STA 339+50 TO 338+10	
37	340+10	LT	LINCOLN CO	I2-2		60	X	16	2	6.67				1	1		
38	341+30	RT	ADOPT-A-HIGHWAY	I55-56		30	X	36	1	7.50				1	1	PARRISH HIGHLANDERS ATV CLUB	
39	354+50	RT	STOP	R1-1		30	X	30	1	5.18				1	1		
40	375+57	LT	STOP	R1-1		30	X	30	1	5.18				1	1		
41	379+95	RT	PARRISH UNINCORPORATED	I2-3		54	X	24	2	9.00				1	1		
42	429+10	RT	JCT COUNTY H	JCT COUNTY Q	J4-2	M2-1 M1-5A	48	x	39	1	13.00			1	1		
43	434+50	RT	ANTIGO RA PELICAN LAKE	D1-2		84	X	24	2	14.00				1	2		
43A	437+00	LT	CENTERLINE RUMBLE STRIPS NEXT 22 MILES											1	1		
44	439+00	LT	SOUTH 17						1			1			1	REPLACE POST/MOVE SIGN TO A NEW POST	
45	439+80	RT	COUNTY H RA	COUNTY Q RA					1			1			1	REPLACE POST/MOVE SIGN TO A NEW POST	
46	440+23	LT	DOUBLE NIGHT ARROW	W1-7		48	x	24	1		8						
46A	440+30	LT	COUNTY H LA	COUNTY Q LA					1			1			1	REPLACE POST/MOVE SIGN TO A NEW POST	
47	440+40	RT	STOP	R1-1		36	x	36	1	7.46				1	1		
47B	440+40	RT	STOP AHEAD	W3-1		36	X	36	1		9.00			1	1		
48	440+40	RT	17 DA						1			1			1	REPLACE POST/MOVE SIGN TO A NEW POST	
49	441+00	RT	NORTH 17						1			1			1	REPLACE POST/MOVE SIGN TO A NEW POST	
49A	441+60	RT	CENTERLINE RUMBLE STRIPS NEXT 14 MILES											1	1		
50	444+45	LT	PARRISH UNINCORPORATED	I2-3		54	X	24	2	9.00				1	1		
51	446+90	LT	LA ANTIGO PELICAN LAKE	D1-2		84	X	24	2	14.00				1	2		
51A	494+25	LT	CENTERLINE RUMBLE STRIPS NEXT 23 MILES											1	1		
52	497+00	LT	STOP	R1-1		30	X	30	1					1	1		
TOTALS PAGE 2									31	127	23	6	22	29			
TOTALS PAGE 1									31	165	29	0	31	31			
GRAND TOTAL									62	291	52	6	53	60			

3

3

RIPRAP AND GEOTEXTILE FABRIC

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY	REMARKS
393+50	C-34-12 LT-N	11	56	
393+50	C-34-12 LT-S	45	102	
393+50	C-34-12 RT-N	10	30	
393+50	C-34-12 RT-S	18	47	
TOTALS		84	235	

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 PAVEMENT MARKING 4-INCH EPOXY DASHED WHITE LF	646.0106 PAVEMENT MARKING 4-INCH EPOXY EDGE LINE WHITE LF	646.0106 PAVEMENT MARKING 4-INCH EPOXY CENTERLINE YELLOW LF	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH LF	649.0100 TEMPORARY PAVEMENT MARKING 4-INCH LF
5+00 - 516+00	MAINLINE		102326	20302		19776
245+00 - 247+00	BYPASS LANE	60				
439+00 - 442+00	BYPASS LANE	80				
12+53 RT	CTH CCC		400	400	20	
SUBTOTALS		140	102726	20702		
TOTALS			123568		20	19776

3

TRAFFIC CONTROL

STATION	STATION	LOCATION	COMMENTS	643.0100 TRAFFIC CONTROL PROJECT (EACH)	643.0300 TRAFFIC CONTROL DRUMS (DAY)	643.0420 TRAFFIC CONTROL BARRICADES TYPE III (DAY)	643.0500 FLEXIBLE TUBULAR MARKERS POSTS (EACH)	643.0600 FLEXIBLE TUBULAR MARKERS BASES (EACH)	643.0715 WARNING LIGHTS TYPE C (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.1050 TRAFFIC CONTROL SIGNS PCMS (DAY)	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (C-34-12) (LS)
PROJECT LIMITS												
STA 5+00	- STA 516+00	MAINLINE	PROJECT	1						2736		
APPROACH SLAB REPAIR												
STA 12+00	- STA 16+00				25		20	20		60	20	
PIPE REPLACEMENT												
STA 248+00		35-017-062			93					24		
STA 375+82		FIRST LAKE ROAD			93					24		
STA 385+00		34-017-004			102					24		
STA 393+50		34-017-005	LANE SHIFT		1344	12			240	192		1
STA 492+14		34-017-010	LANE SHIFT		111					24		
BEAM GUARD												
STA 11+80	- STA 17+50	MAINLINE	BEAM GUARD		144					24		
FIRST LAKE ROAD INTERSECTION IMPROVEMENTS												
STA 374+00 LT	- STA 379+00 LT	STH 47	INTERSECTION		100					40		
UNDISTRIBUTED		PROJECT	PROJECT		201					315		
TOTAL				1	2,213	12	20	20	240	3,463	20	1

3

PAVEMENT MARKING CONTINUED

			646.0600	649.0400			649.1400
			REMOVING	TEMPORARY PAVEMENT			PAVEMENT MARKING
			PAVEMENT	MARKING REMOVABLE TAPE			TEMPORARY
			MARKINGS	BLACK	YELLOW	WHITE	TAPE STOP
			(LF)	(LF)	(LF)	(LF)	LINE 24-INCH
							(LF)
STATION	STATION	LOCATION					
STA 12+00 - STA 16+00	B-35-0101	APPROACH SLAB JOINT REPAIR		800	800	800	
STA 390+50 - STA 396+50		FISH CREEK CULVERT PIPE	600				24
			600	2400			24

SAWING

		690.0150	690.025	REMARKS
		SAWING	SAWING	
		ASPHALT	CONCRETE	
STATION	LOCATION	LF	LF	
12+53	CTH CCC SOUTH	80		CURB & GUTTER
13+55	APPROACH		60	
14+50	APPROACH		65	
TOTAL		80	125	

3

CONSTRUCTION STAKING

			650.4500	650.5500	650.6000	650.8000	650.9910	650.9920
			CONSTRUCTIONG	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
			STAKING	STAKING	STAKING	STAKING	STAKING	STAKING
			SUBGRADE	CURB	PIPE	RESURFACING	SUPPLEMENTAL	SLOPE
			(LF)	GUTTER AND	CULVERTS	REFERENCE	CONTROL	STAKES
				CURB & GUTTER	(EACH)	(LF)	(LS)	(LF)
STATION	STATION	LOCATION						
STA 5+00 - STA 516+00		STH 17				51100	1	
STA 10+70 LT - STA 13+75 LT		GUARDRAIL						305
STA 14+40 LT - STA 17+10 LT		GUARDRAIL						270
STA 11+93 19' RT - STA 12+63 51' RT		CURB AND GUTTER		80				
STA 11+46 RT - STA 13+60 RT		GUARDRAIL						214
STA 14+62 RT - STA 18+67 RT		GUARDRAIL						405
STA 374+86 LT - STA 377+80 LT		STH 17						294
STA 18+75 - STA 19+17		FIRST LAKE ROAD	84					84
STA 248+00	PIPE 35-017-062	PIPE REPLACEMENT			1			100
STA 375+82	FIRST LAKE ROAD	PIPE REPLACEMENT			1			100
STA 383+25 - STA 395+00		DITCH CLEANING						1175
STA 385+00	PIPE 34-017-004	PIPE REPLACEMENT			1			100
STA 393+50	PIPE 34-017-005	PIPE REPLACEMENT			1			400
STA 492+00	PIPE 34-017-010	PIPE REPLACEMENT			1			200
			84	80	5	51,100	1	3,647

LOCATE NO-PASSING ZONES

				648.0100
				LOCATING
				NO-PASSING
				ZONES
				(MI)
STATION	STATION	LOCATION		
STA 5+00 - STA 516+00		PROJECT LIMITS		9.68
TOTAL				9.68

3

CULVERT PIPE TRANSITIONS

SPV.0060.01 CULVERT PIPE TRANSITIONS					
STATION		STATION	LOCATION		(EACH)
STA	247+74	- STA	248+32	35-017-062	1
STA	384+34	- STA	385+72	34-017-004	1
STA	392+36	- STA	394+64	34-017-005	1
STA	491+05	- STA	493+23	34-017-010	1
TOTAL					4

LANE SHIFT

SPV.0060.02 LANE SHIFTS						**ESTIMATE OF QUANTITIES		
STATION		STATION	LOCATION		(EACH)	**BORROW (CY)	**BASE AGGREGATE DENSE 1 1/4-INCH (TON)	**ASPHALTIC SURFACE TEMPORARY (TON)
STA	392+36	- STA	394+64	34-017-005 RT	1	140	160	55
STA	392+36	- STA	394+64	34-017-005 LT	1	300	175	60
STA	491+05	- STA	493+23	34-017-010 RT	1	270	190	-
STA	491+05	- STA	493+23	34-017-010 LT	1	315	205	-
TOTAL					4	1,025	730	115

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

3

GRADING SHAPING AND FINISHING FOR DITCH CLEANING

SPV.0090.01 GRADING SHAPING AND FINISHING FOR DITCH CLEANING				
STATION		STATION	LOCATION	(LF)
STA	177+45	- STA	178+50 RT	120
STA	247+93	- STA	248+13 RT	20
STA	383+30	- STA	393+50 LT	1020
STA	464+00	-	RT	20
TOTAL				1,160

FOG SEAL AND REFLECTIVE TABS

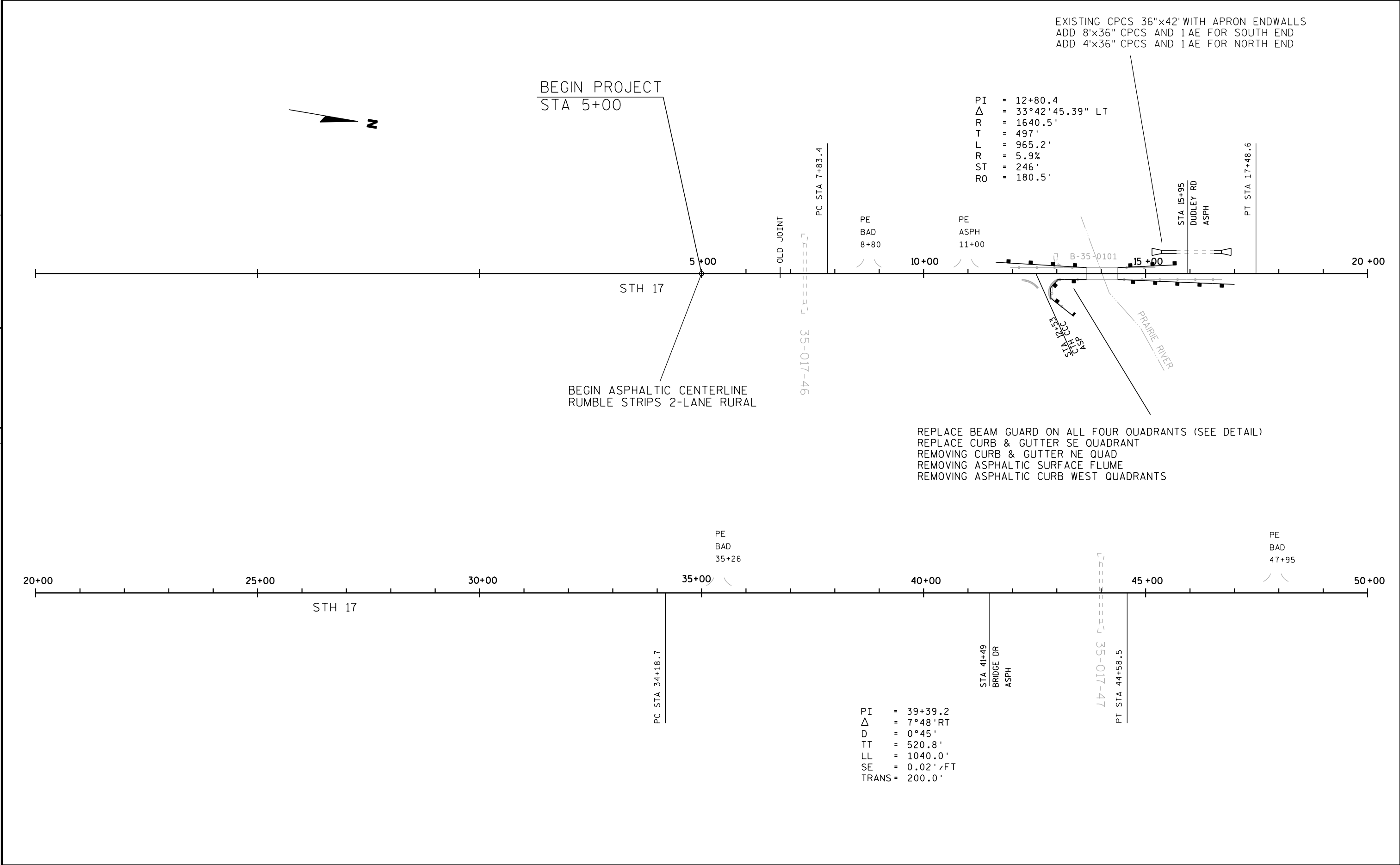
SPV.0060.03 TEMPORARY PAVEMENT MARKING REFLECTIVE TABS			SPV.0090.02 FOG SEAL RUMBLE STRIPS	
STATION		STATION	LOCATION	(LF)
STA	5+00	- STA	516+00 PROJECT	1020
TOTAL			1,020	50,980

SALVAGED WETLAND SOIL

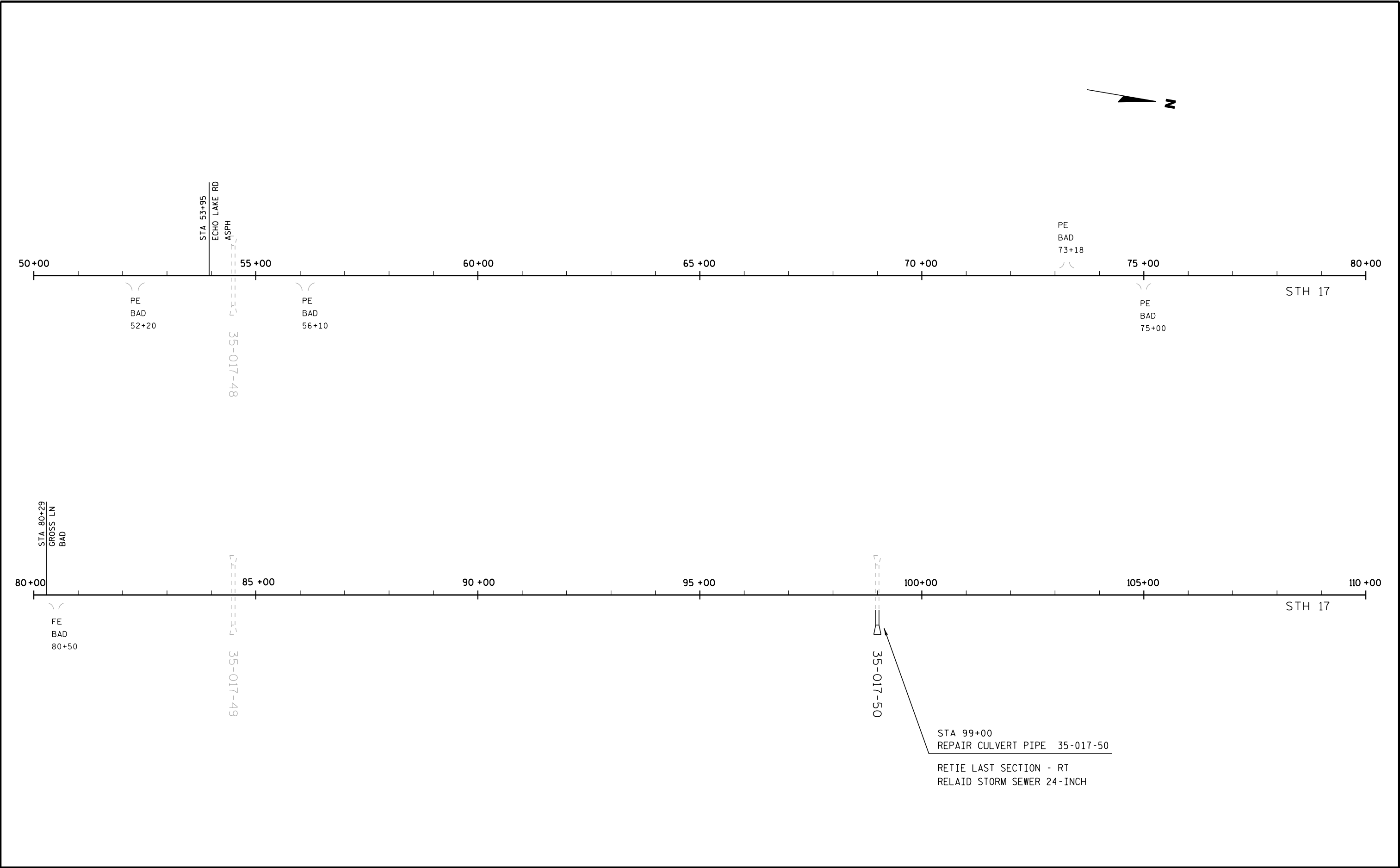
SPV.0180.01 SALVAGED WETLAND SOIL			
STATION	STATION	LOCATION	(SY)
STA	392+36	- STA	394+64 34-017-005
TOTAL			60

TEMPORARY WATER DIVERSION

SPV.0105.01 TEMPORARY WATER DIVERSION				REMARKS
STATION	STATION	LOCATION	(LS)	
STA	392+36	- STA	394+64 34-017-005	1 INCLUDES BOTH SIDES OF ROADWAY
TOTAL			1	



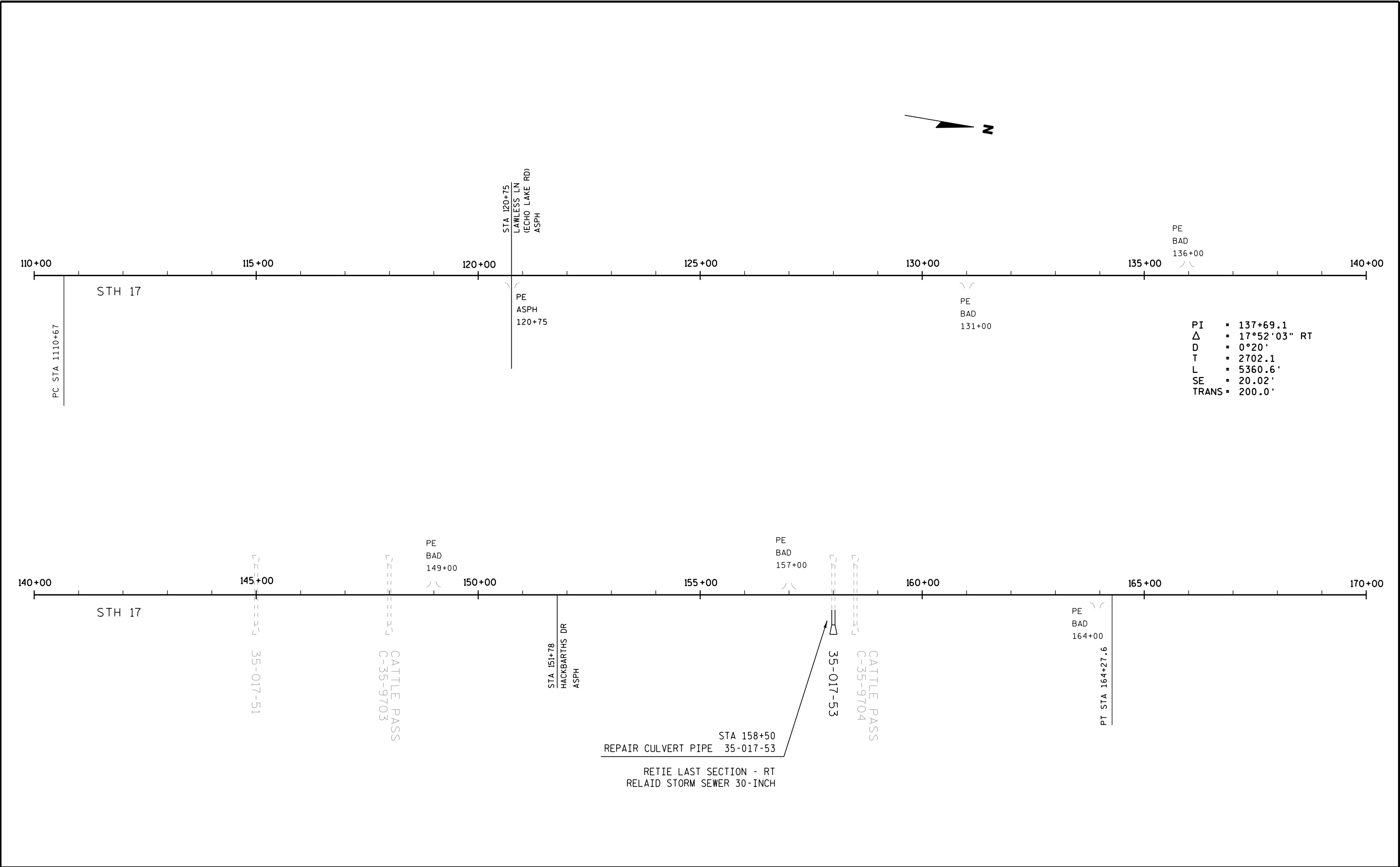
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5

PROJECT NO: 9030-09-71	HWY: STH 17	COUNTY: LANGLADE / LINCOLN	LINE DIAGRAM 50+00 - 110+00	SHEET	E
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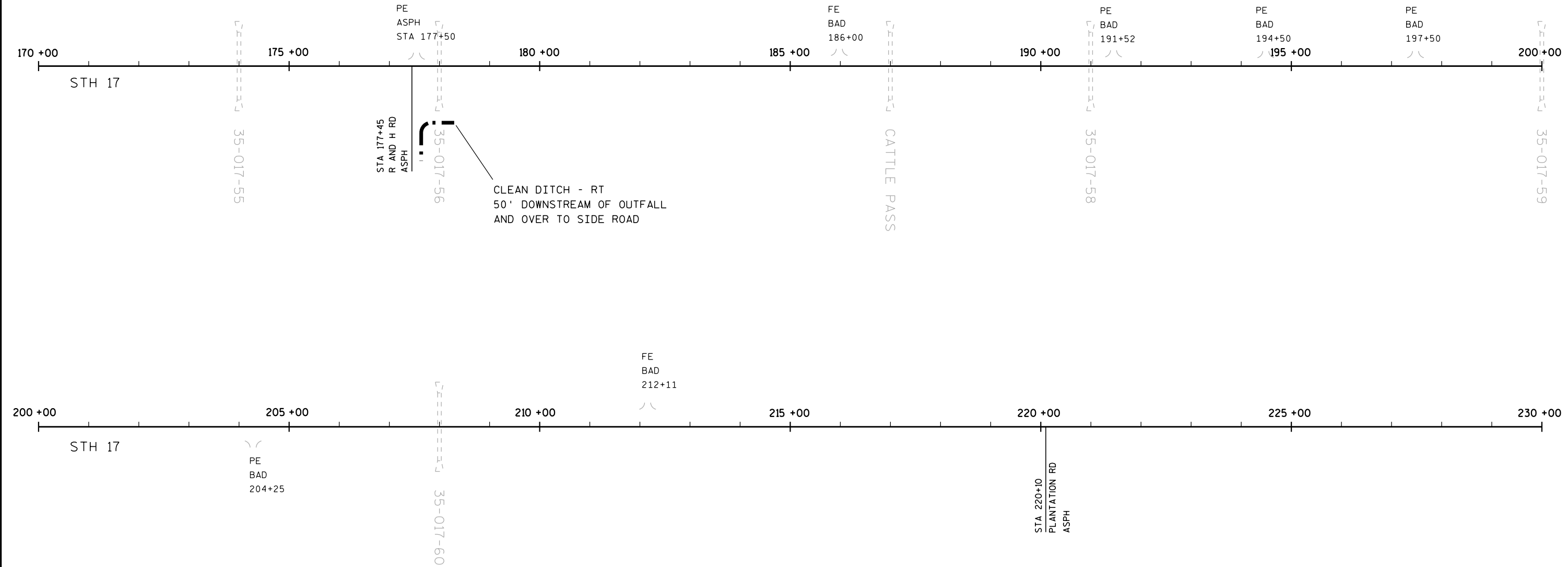
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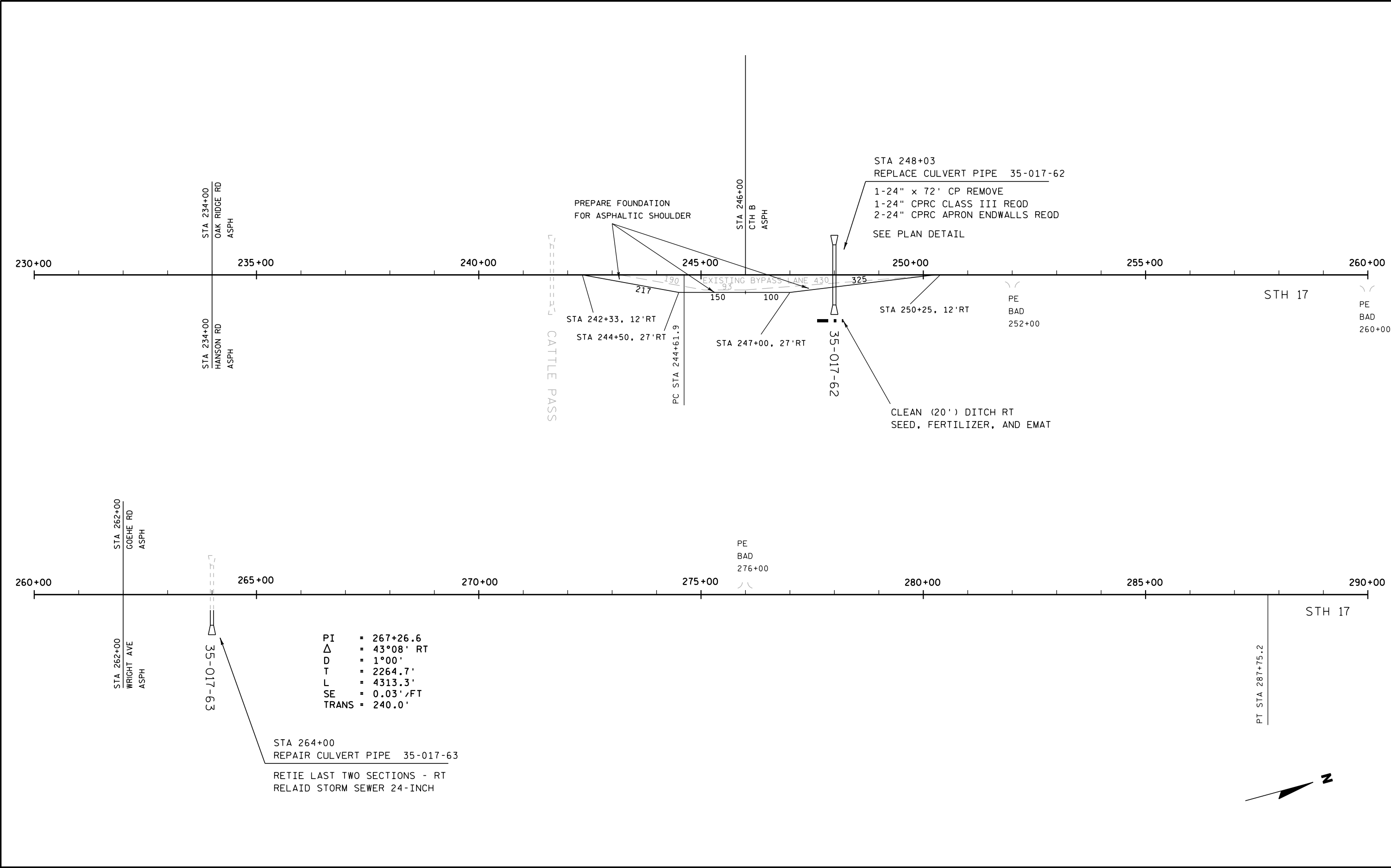
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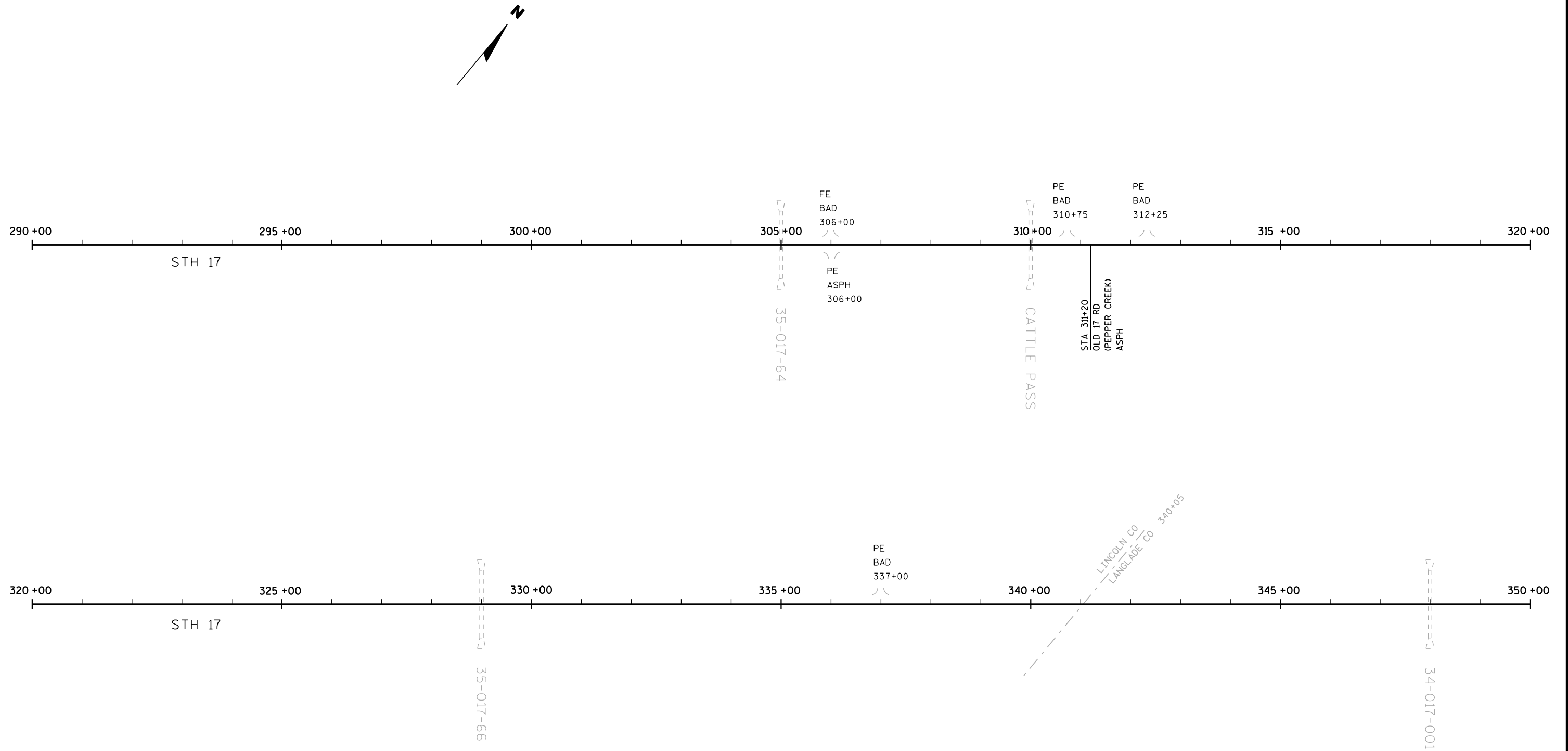
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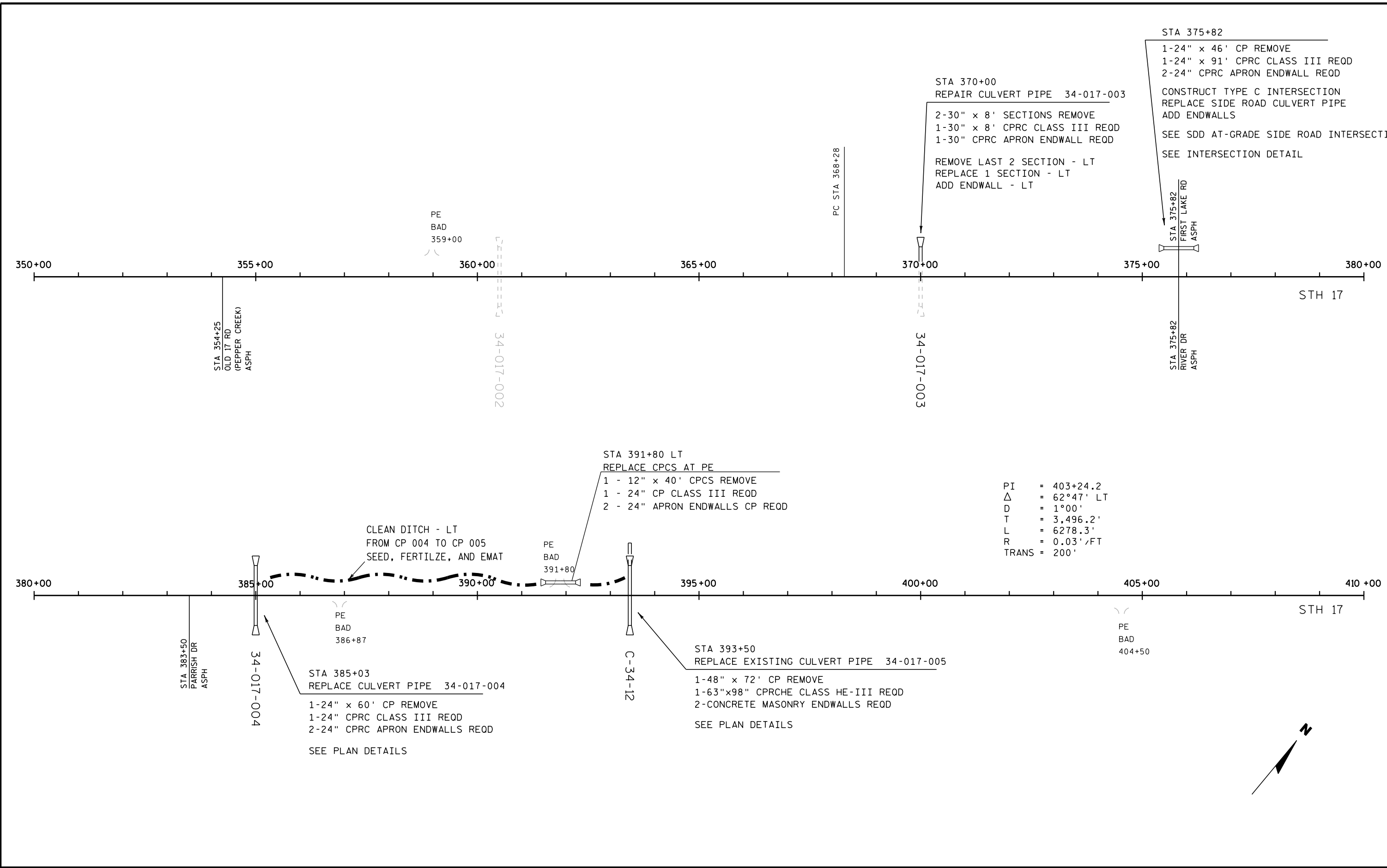


PROJECT NO: 9030-09-71	HWY: STH 17	COUNTY: LANGLADE / LINCOLN	LINE DIAGRAM 230+00 - 290+00	SHEET	E
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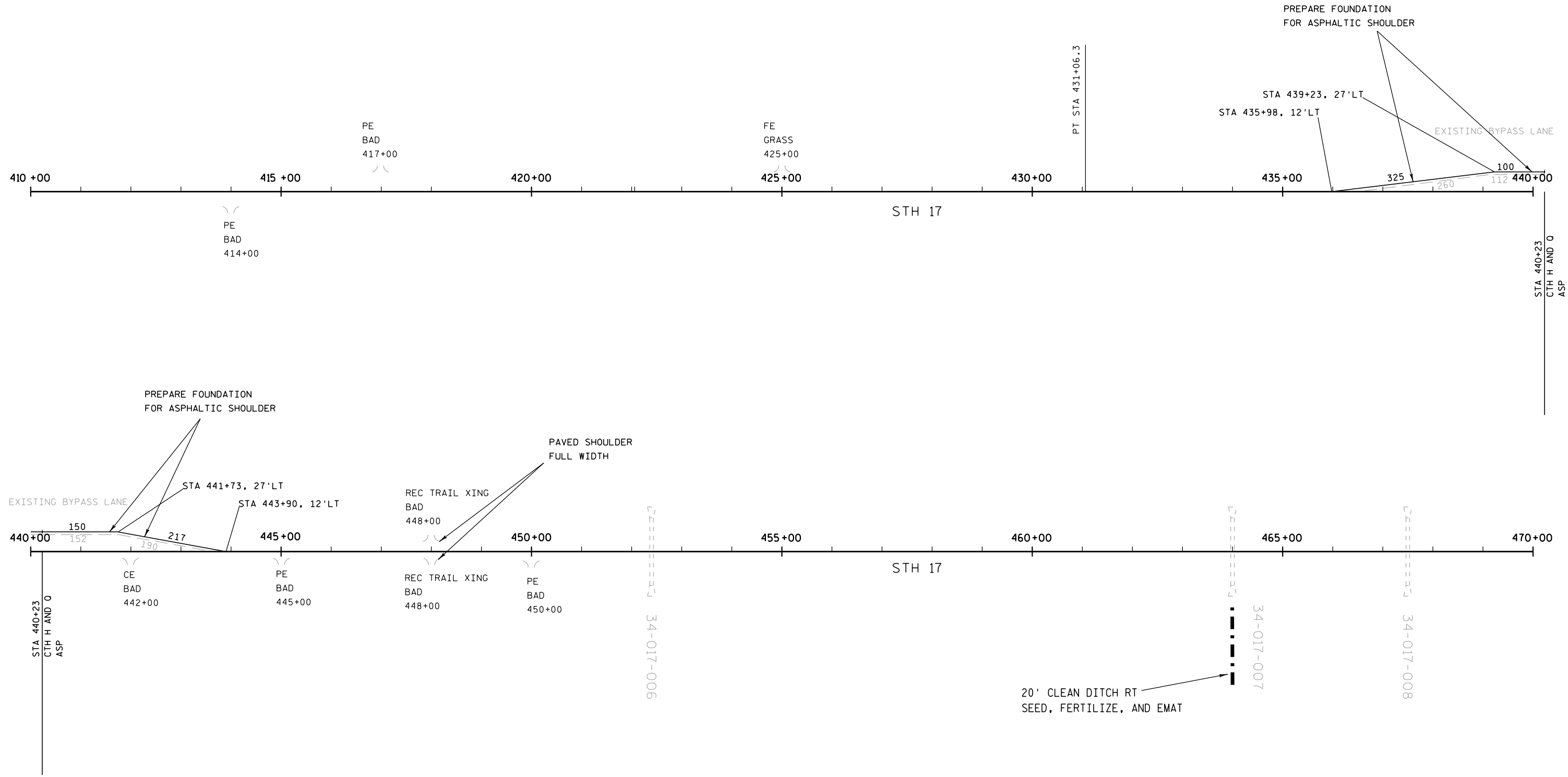


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5



PROJECT NO: 9030-09-71	HWY: STH 17	COUNTY: LANGLADE / LINCOLN	LINE DIAGRAM 350+00 - 410+00	SHEET E
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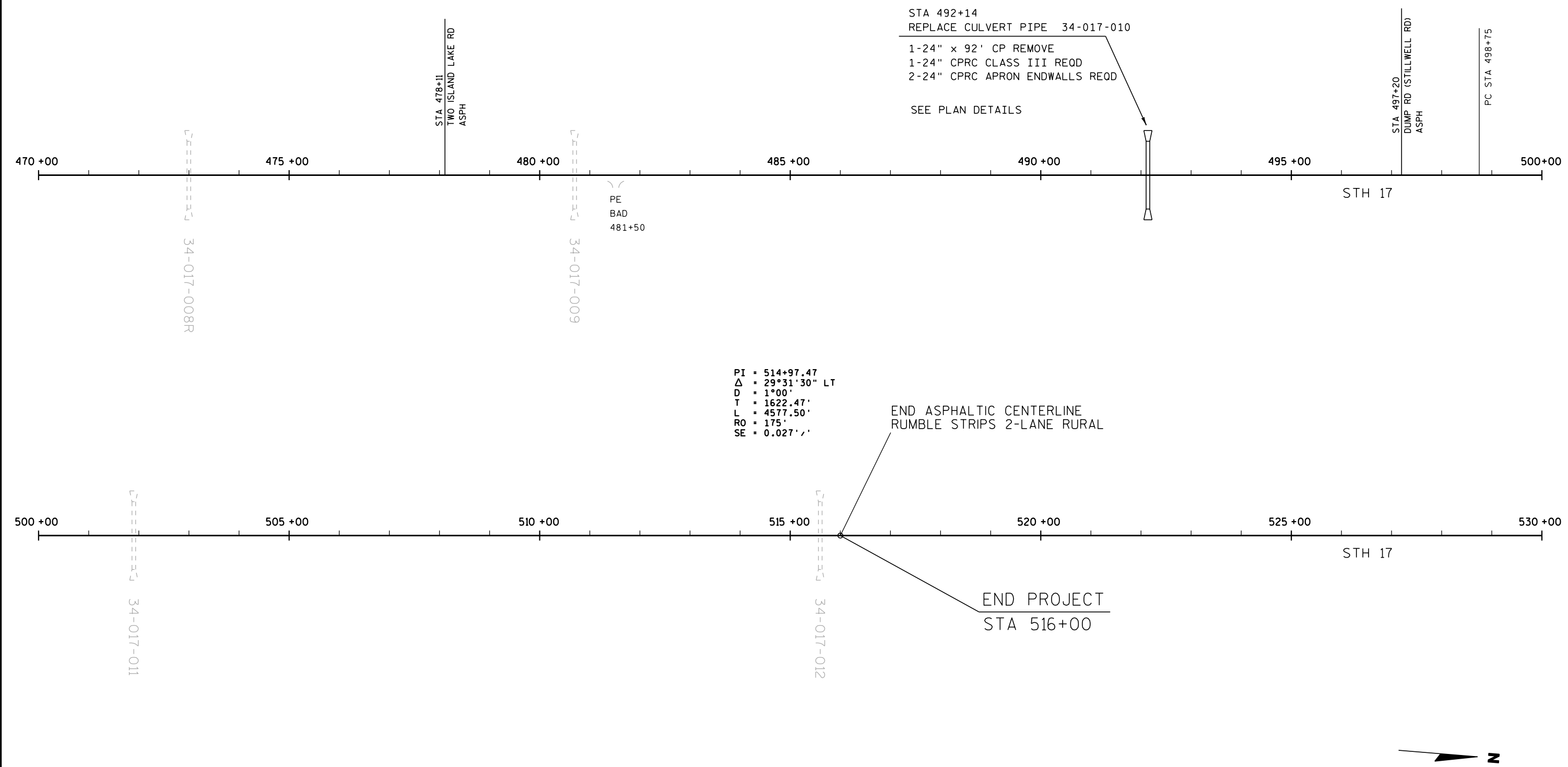
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PROJECT NO: 9030-09-71	HWY: STH 17	COUNTY: LANGLADE / LINCOLN	LINE DIAGRAM 410+00 - 470+00	SHEET	E
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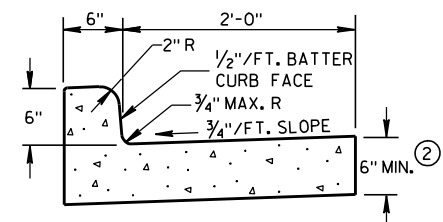
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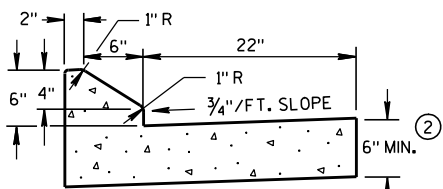


Standard Detail Drawing List

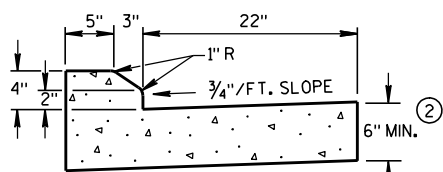
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-01	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B28-03	GUARDRAIL MOW STRIP
14B29-01	SAFETY EDGE
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



TYPES A & D ①

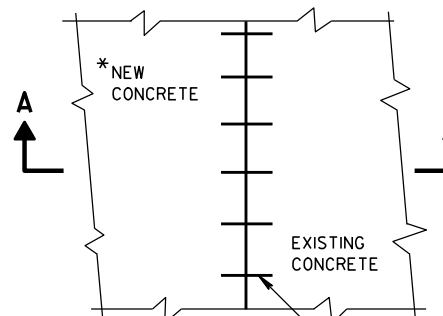


6" SLOPED CURB TYPES G & J ①



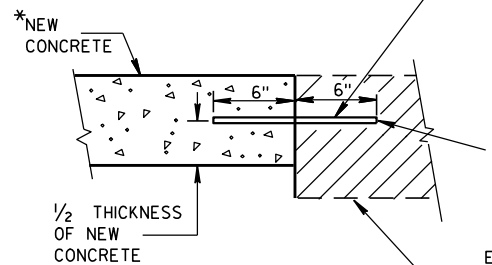
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



PLAN VIEW

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

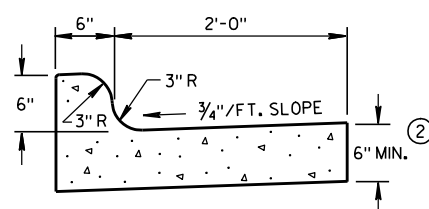


SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

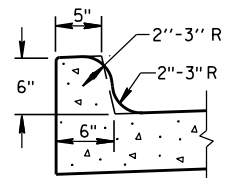
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

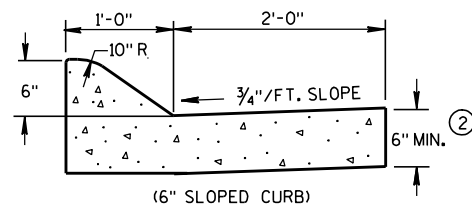
EXISTING
CONCRETE



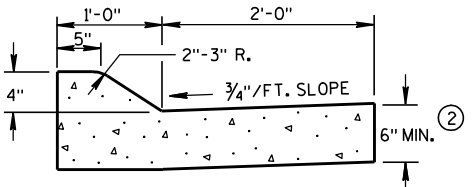
TYPES K & L ①



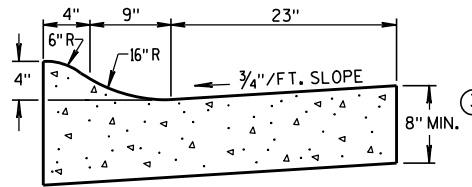
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



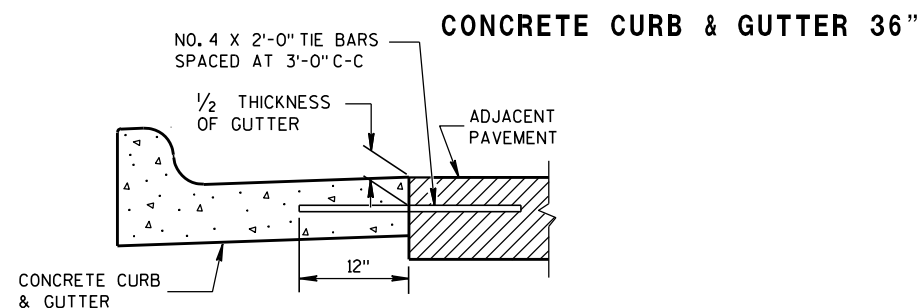
(6" SLOPED CURB)



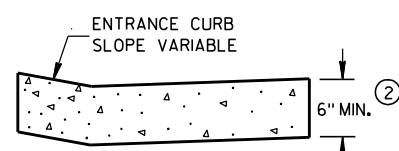
TYPES A & D ①



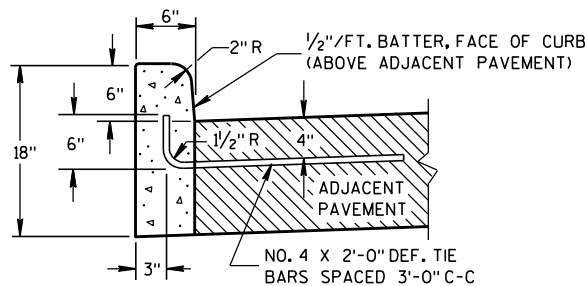
4" SLOPED CURB TYPES R & T ① ④



TYPICAL TIE BAR LOCATION ①

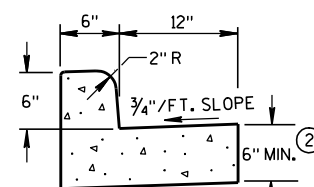


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

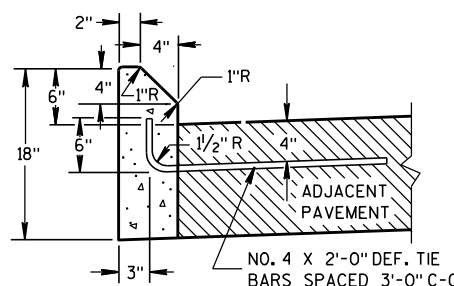


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

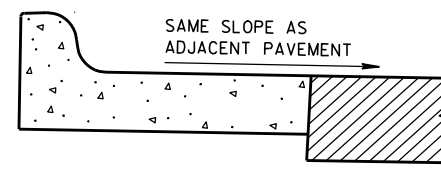
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

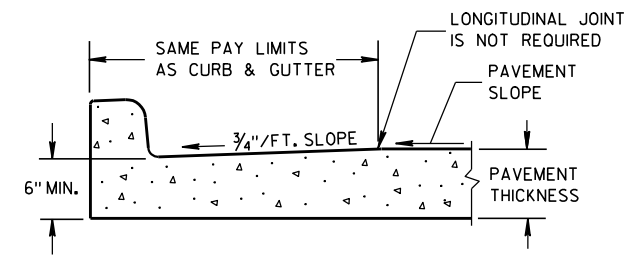
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

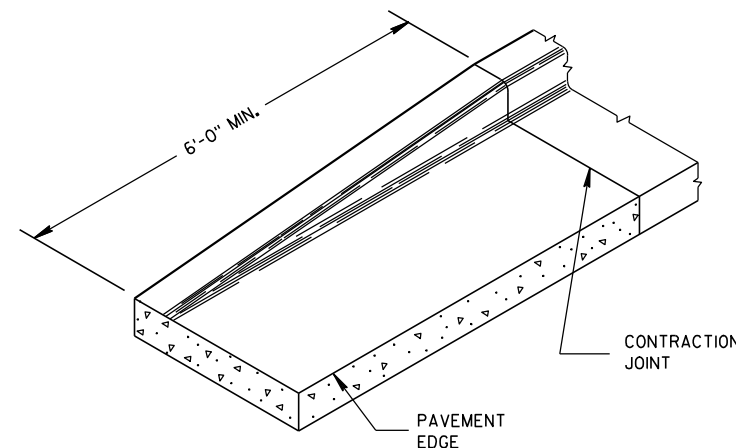
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

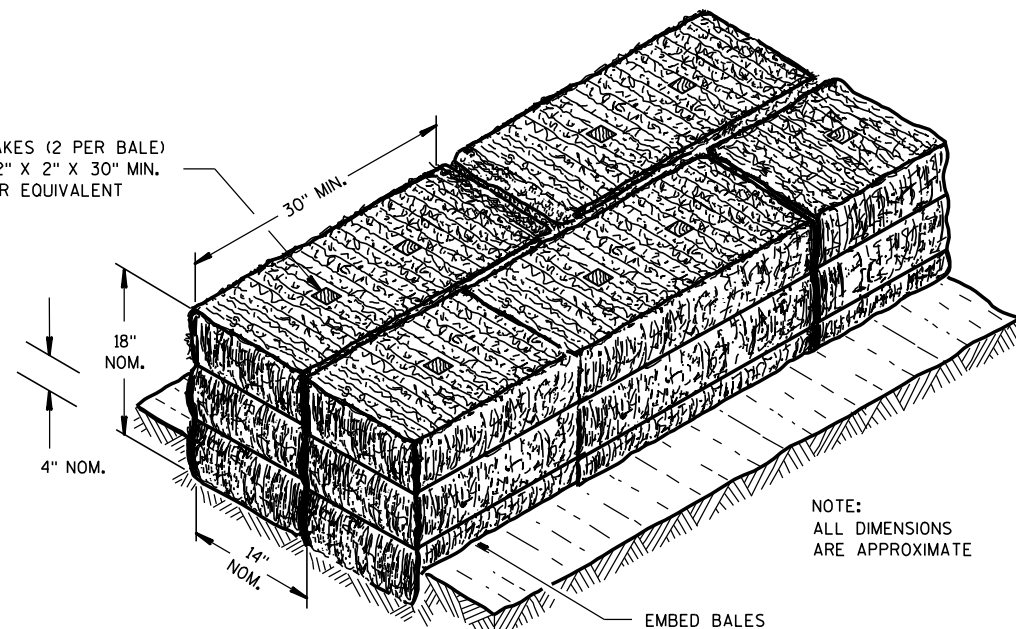
9/4/08

DATE

FHWA

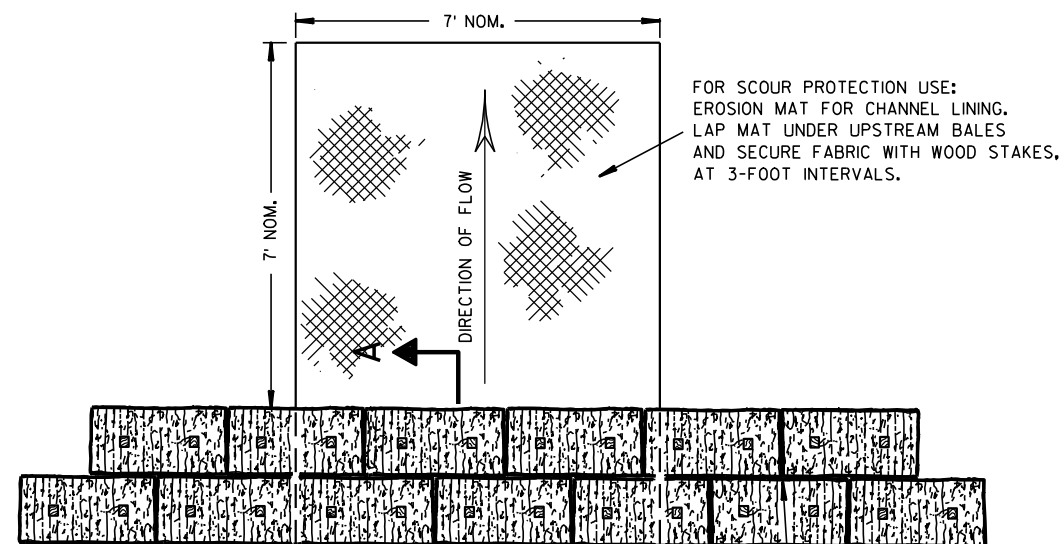
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

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



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

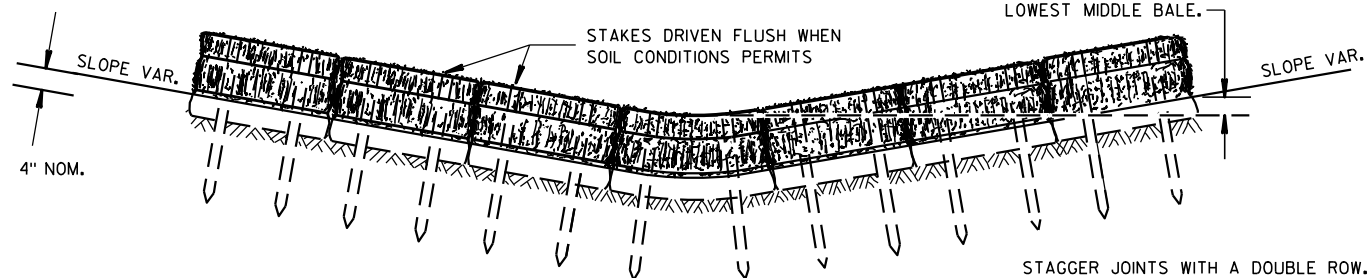
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

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



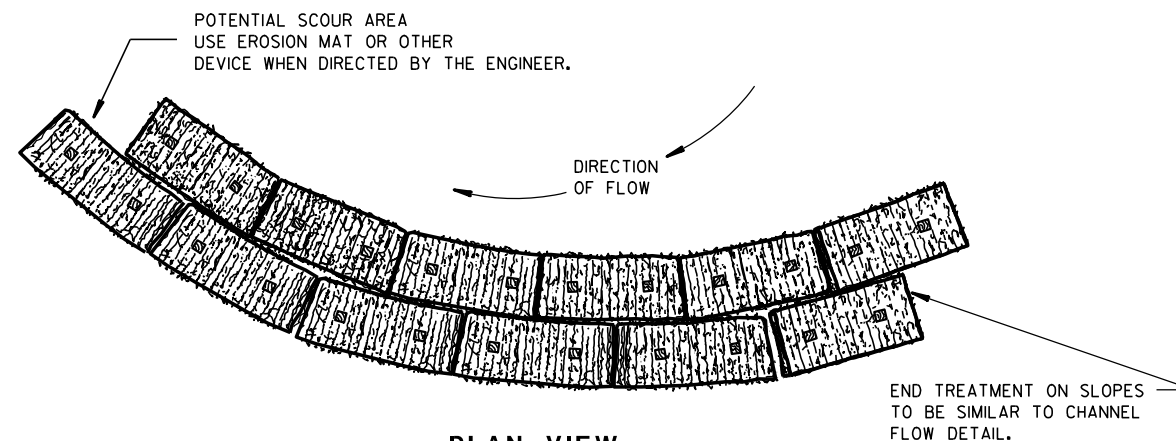
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

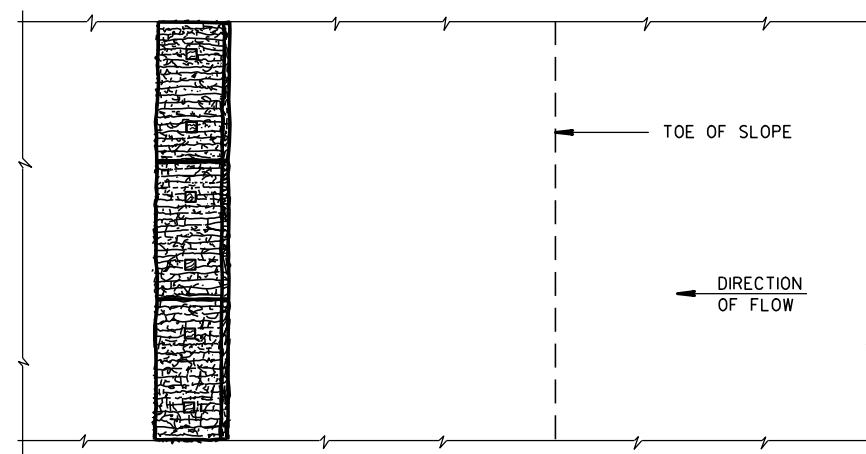
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

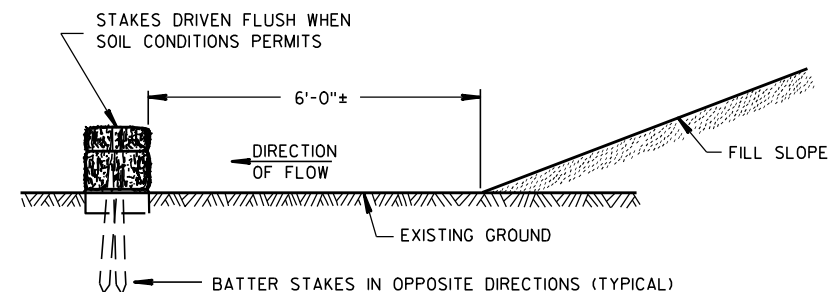


PLAN VIEW

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

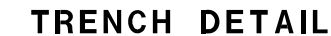
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



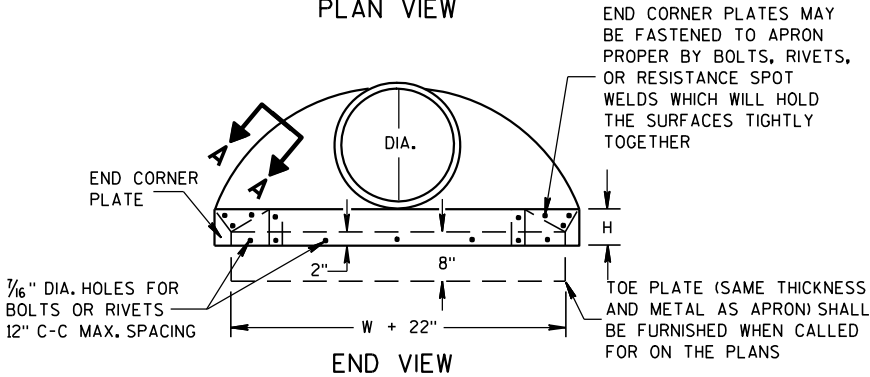
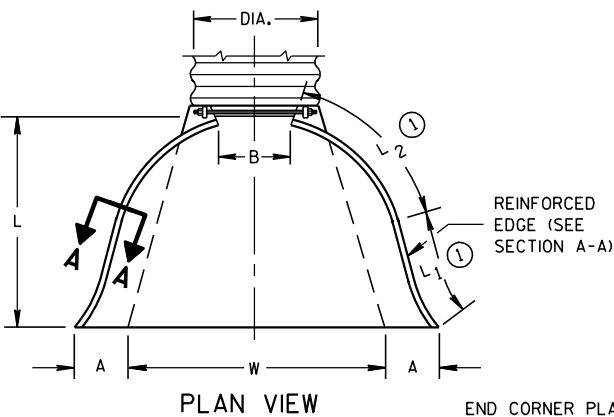
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> <u>DATE</u>	<u>/S/ Beth Canestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER

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

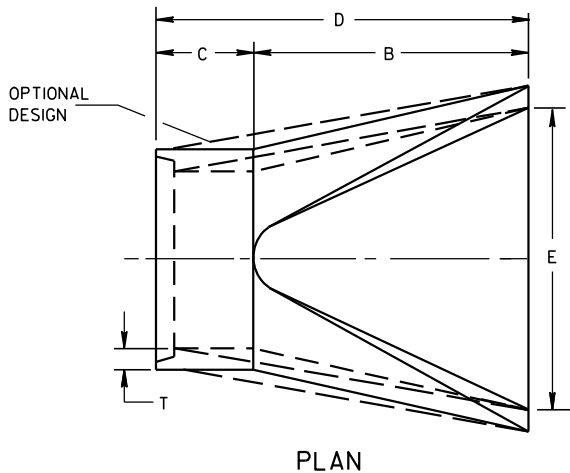
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



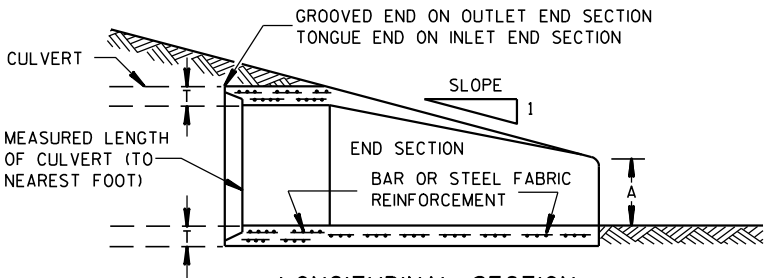
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

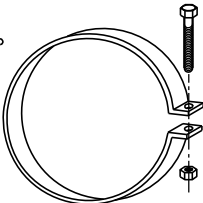
*MINIMUM
**MAXIMUM



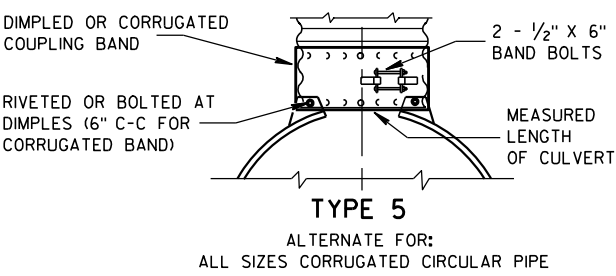
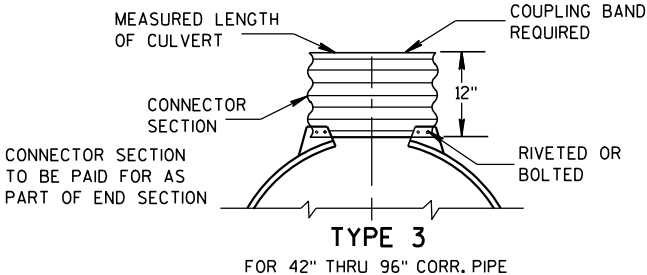
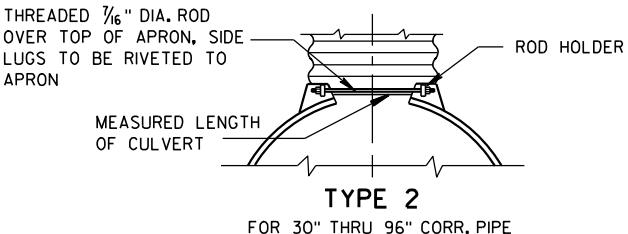
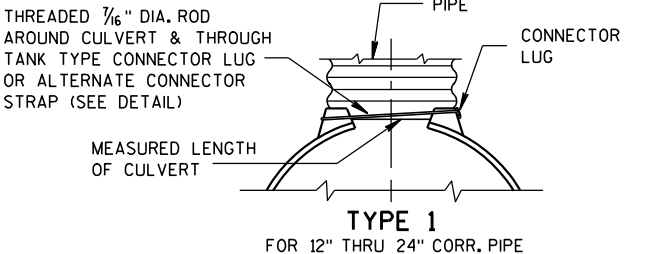
CONCRETE ENDWALLS



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



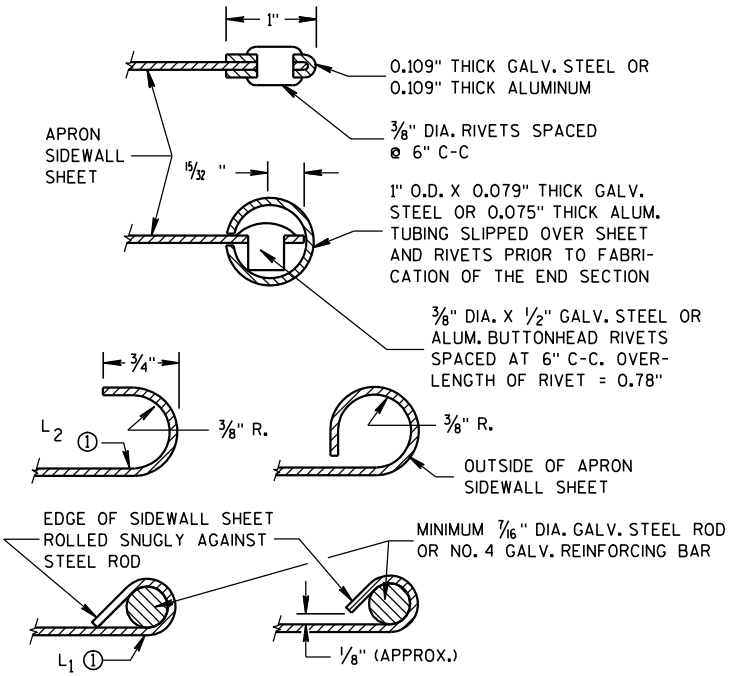
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

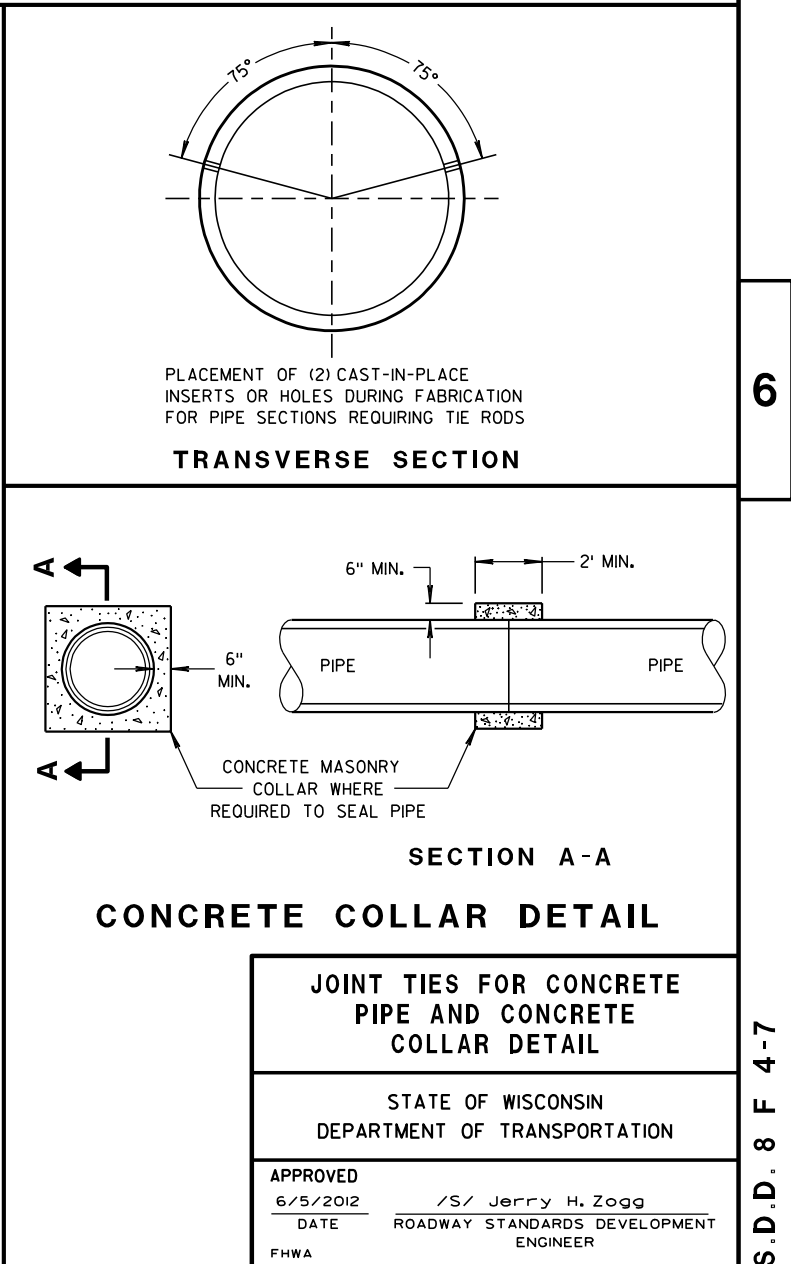
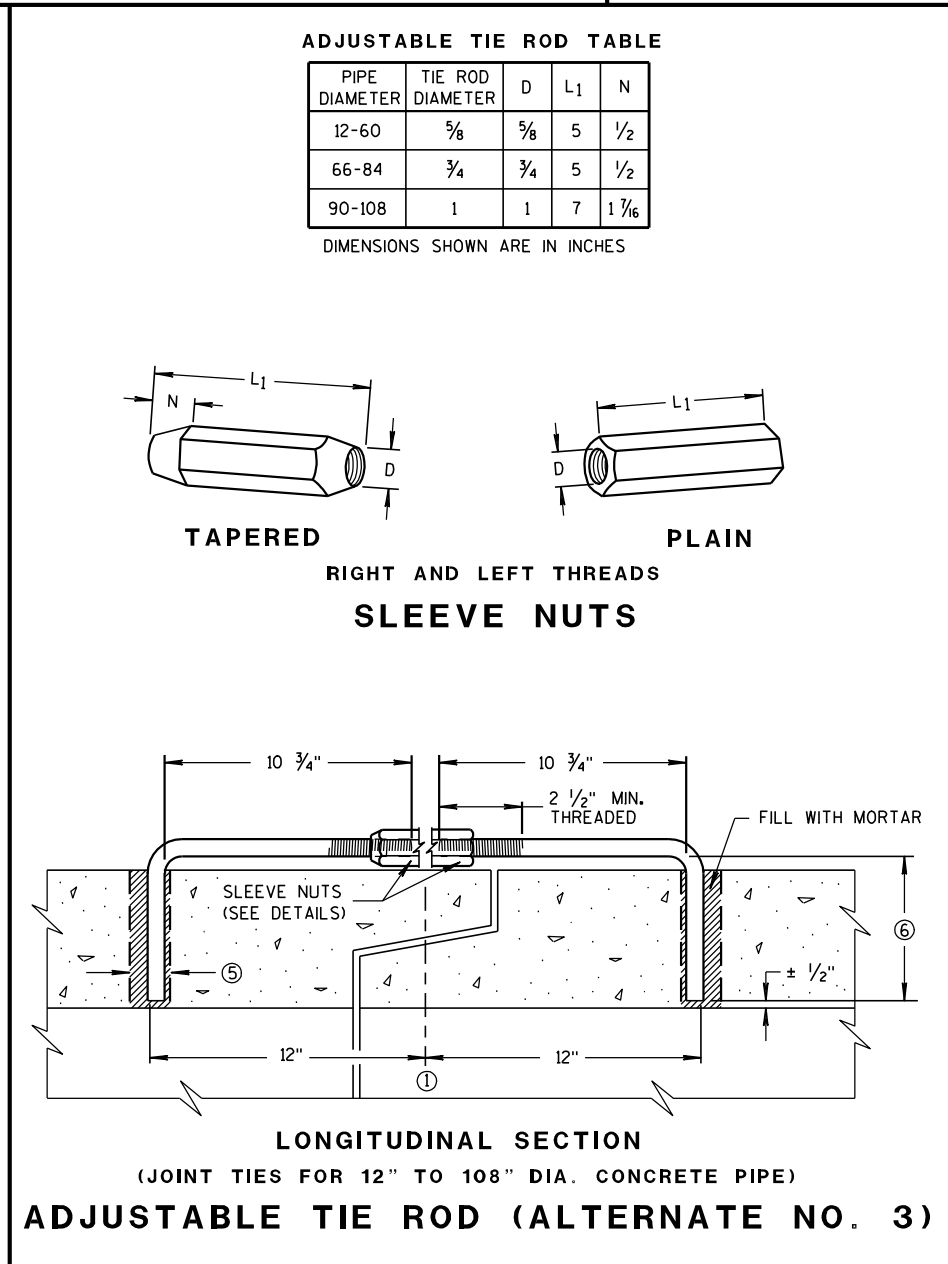
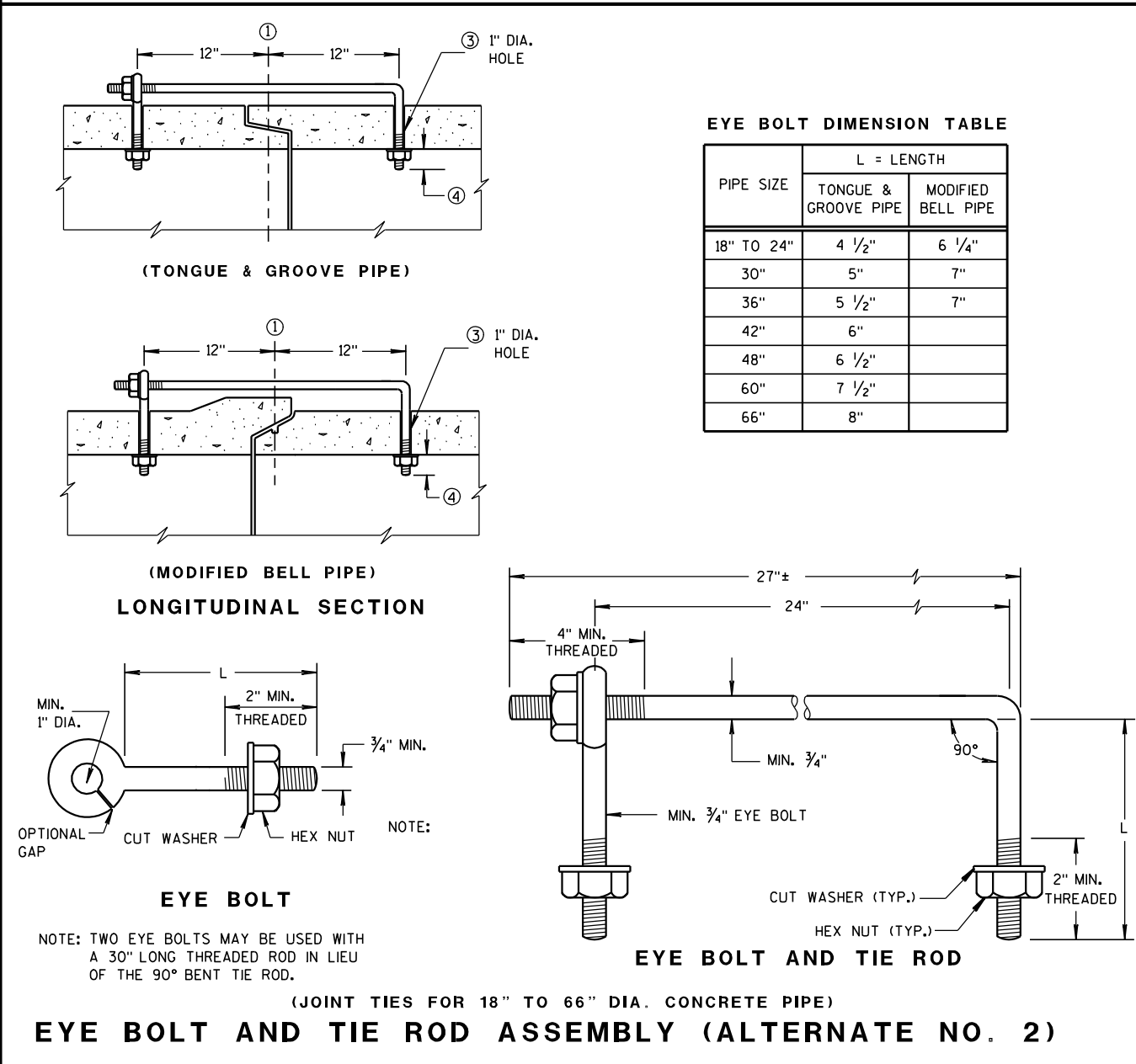
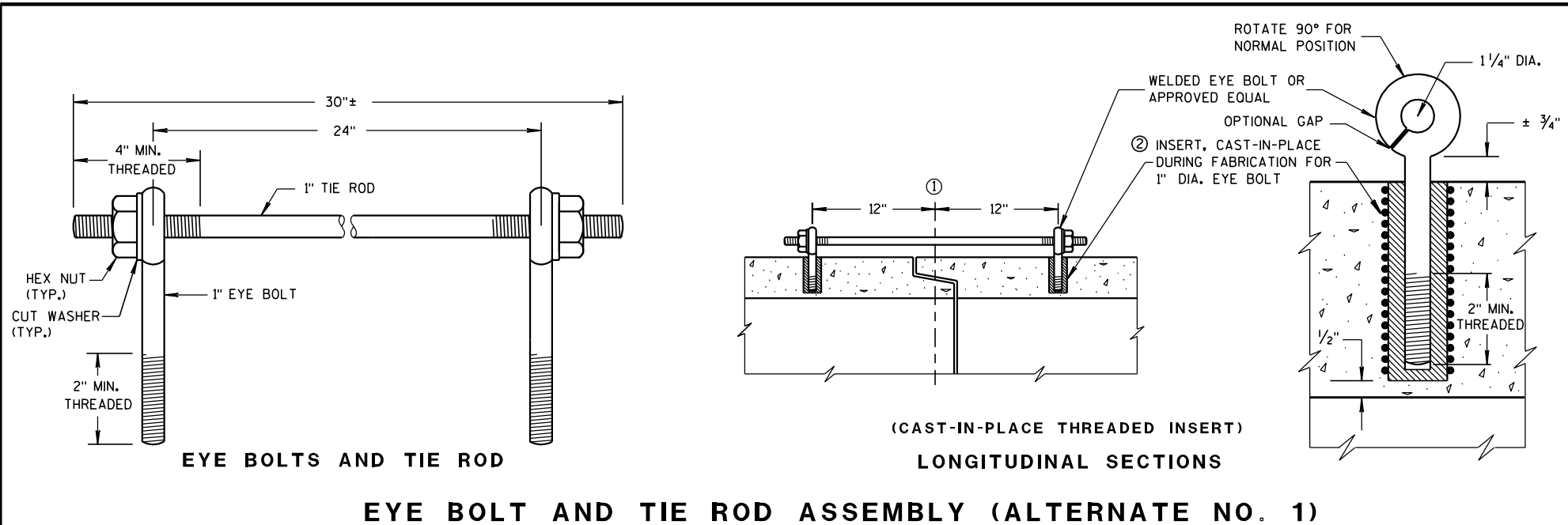
GENERAL NOTES

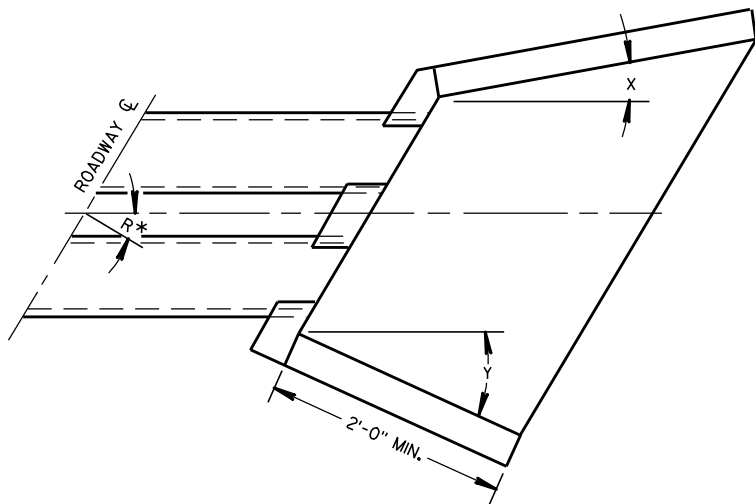
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.
- ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.
- LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.
- WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.
- ① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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





WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

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.

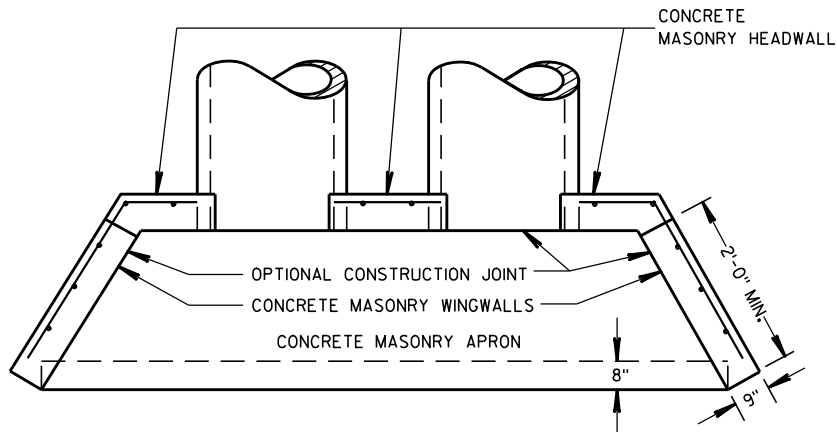
FILL SLOPES FLATTER THAN 2 1/2:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

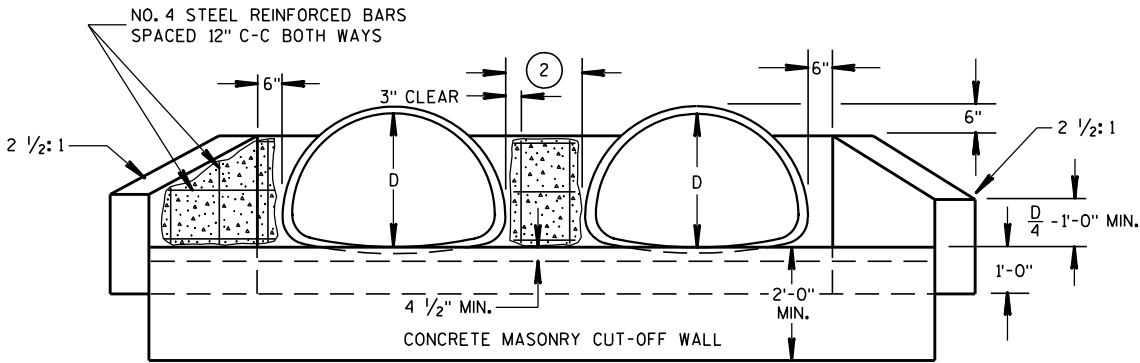
1 MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

2 THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

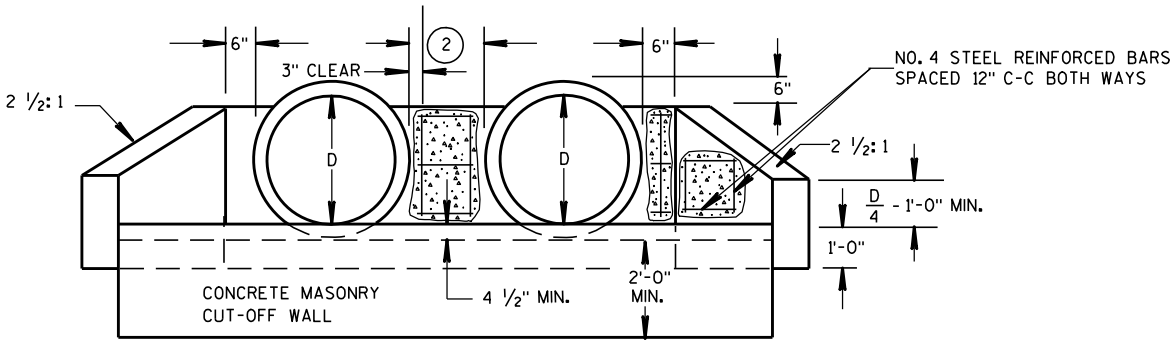
DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	1/2 DIA. OR SPAN
OVER 72"	3'-0"



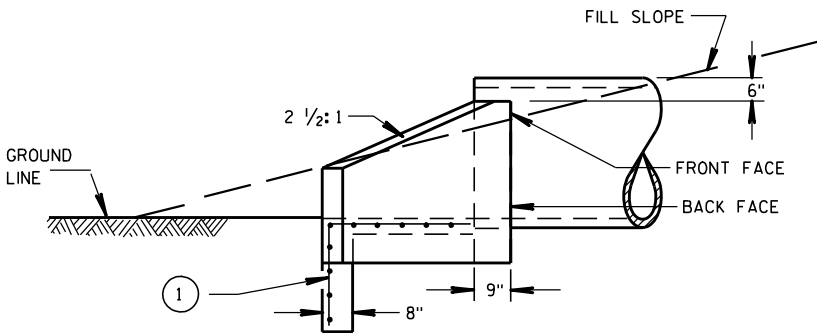
PLAN VIEW
CULVERT PIPE AND PIPE ARCH



END ELEVATION
PIPE ARCH



END ELEVATION
CULVERT PIPE

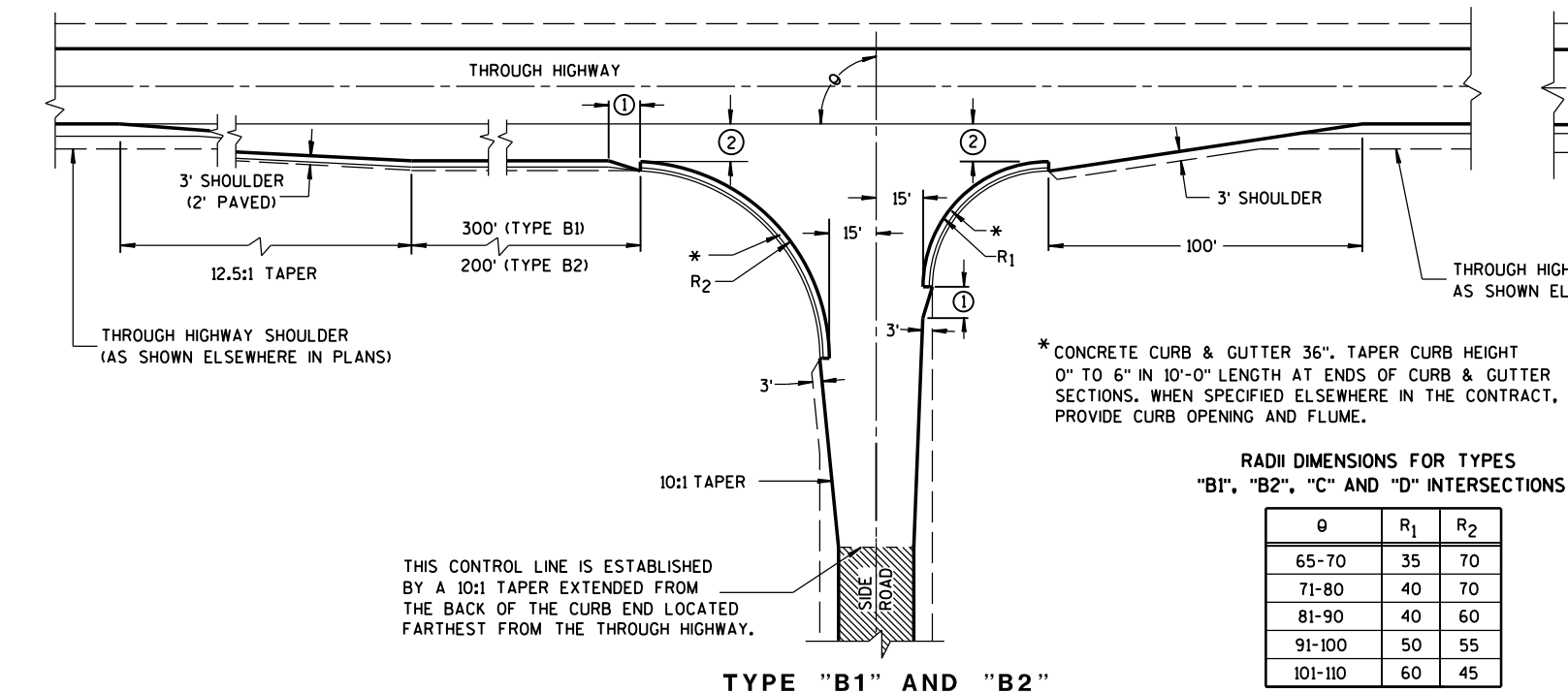


SIDE ELEVATION
CULVERT PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS
FOR CULVERT PIPE AND
PIPE ARCH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/14/98 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

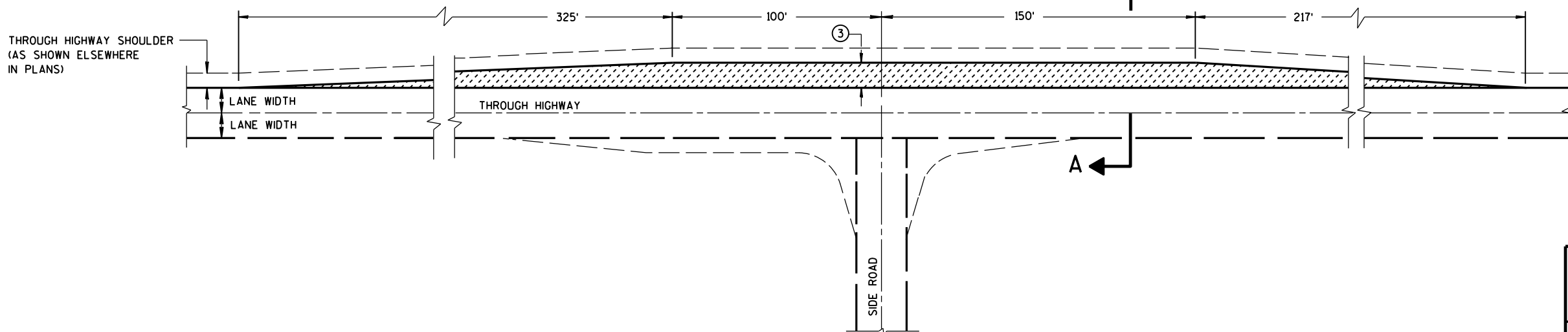
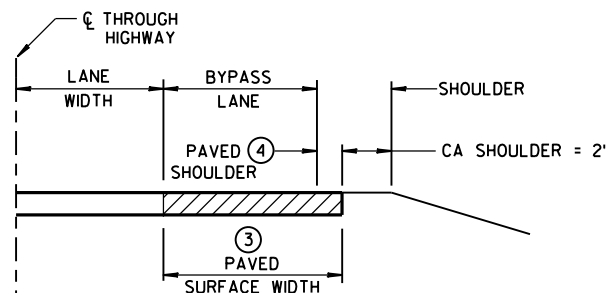
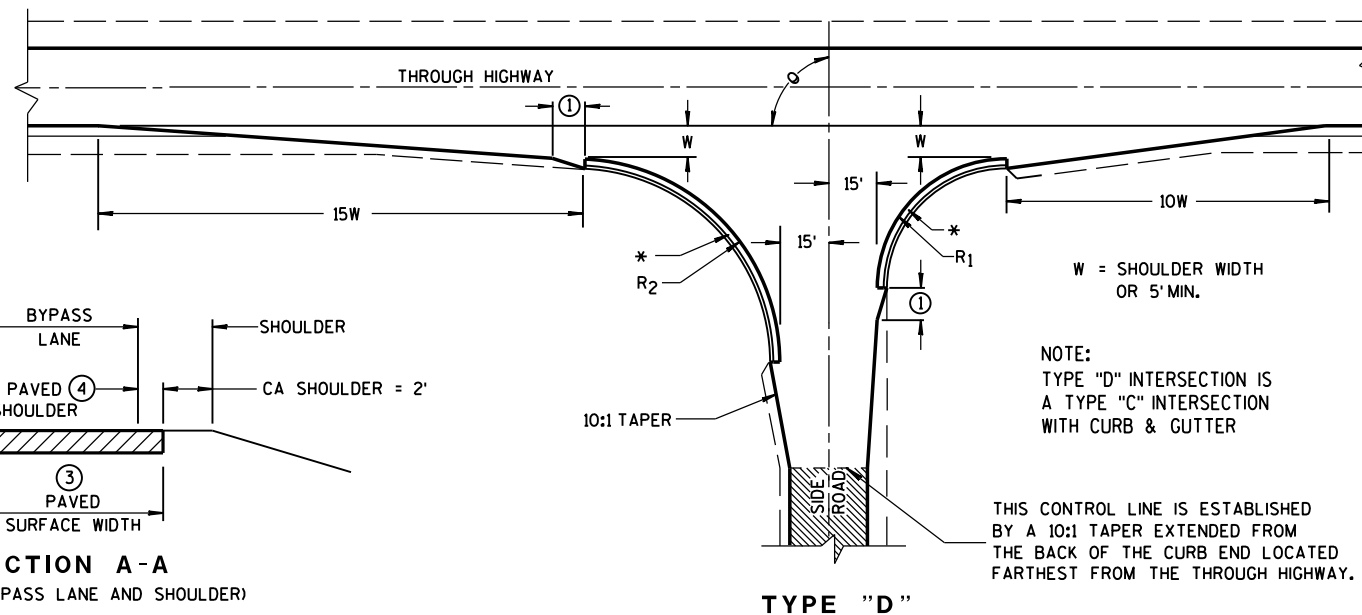
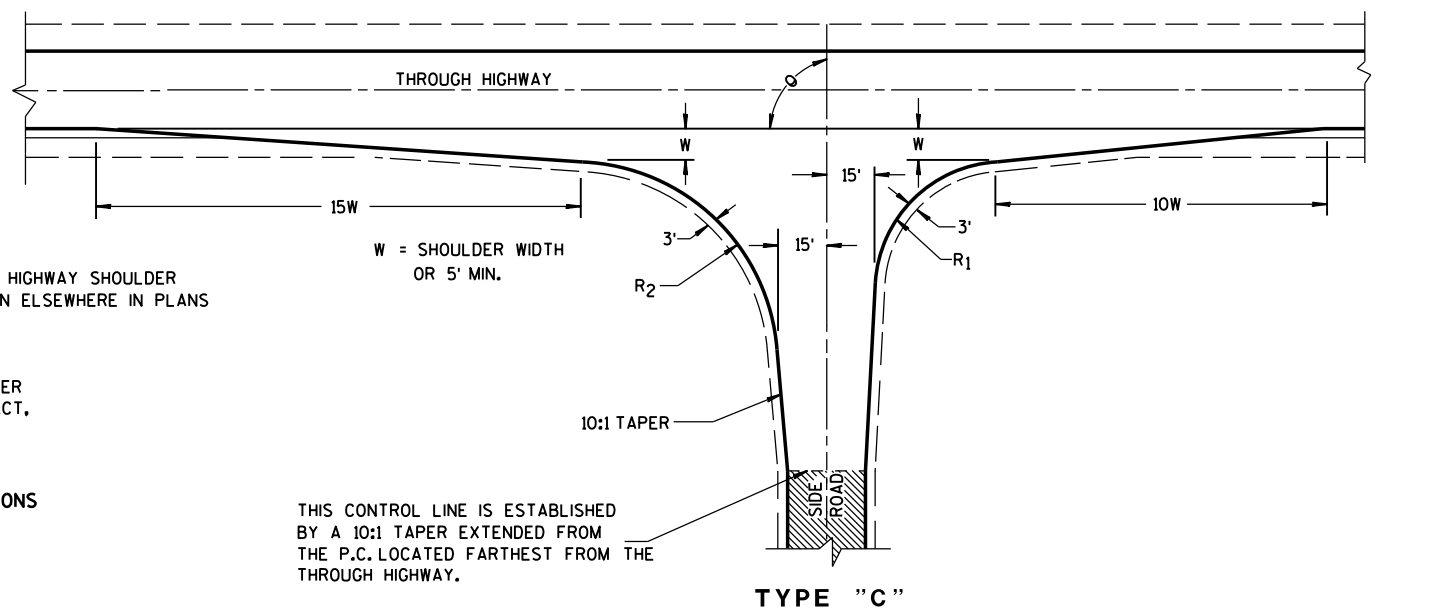
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

- 10-FT TYPICAL.
- 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

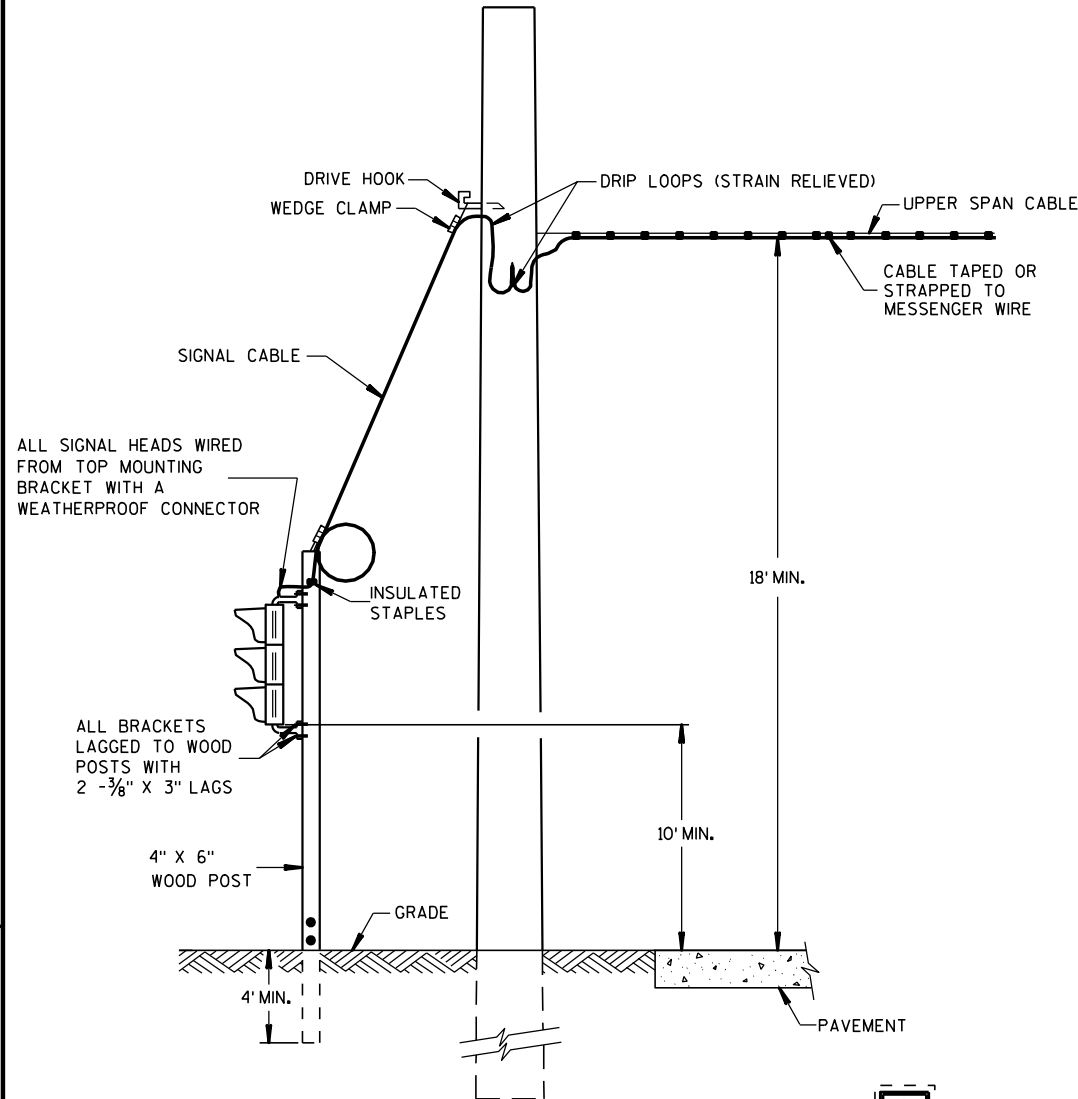
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

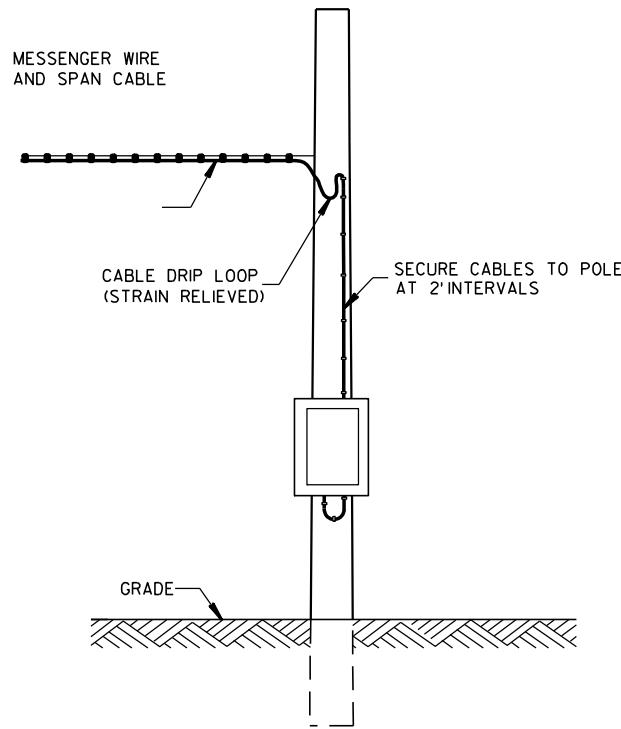
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL DROP TO TRAFFIC SIGNAL FACE

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

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



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

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

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

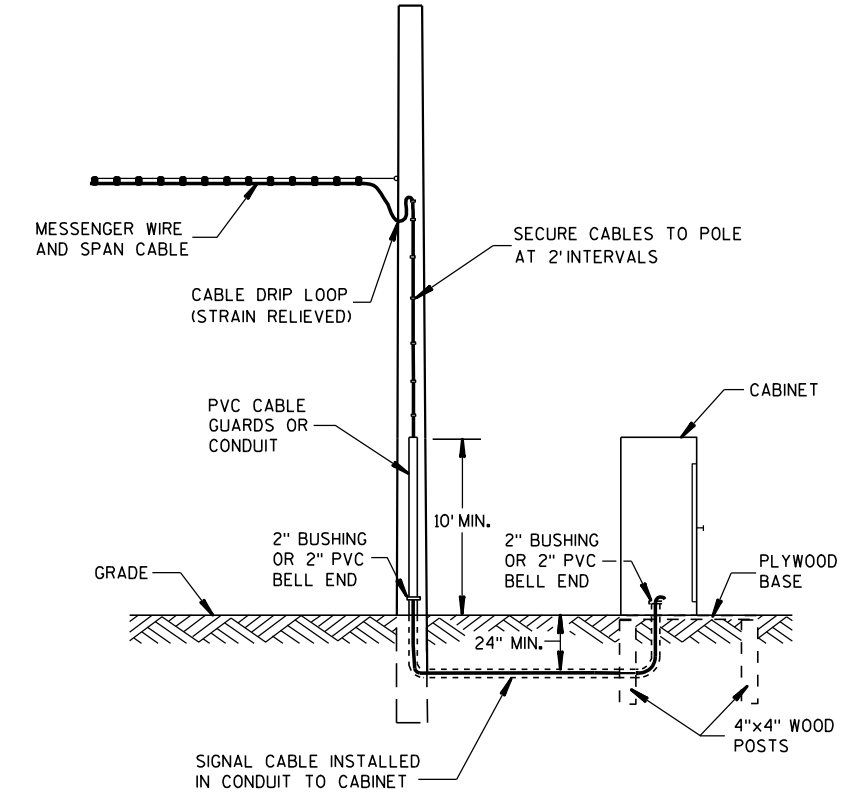
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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

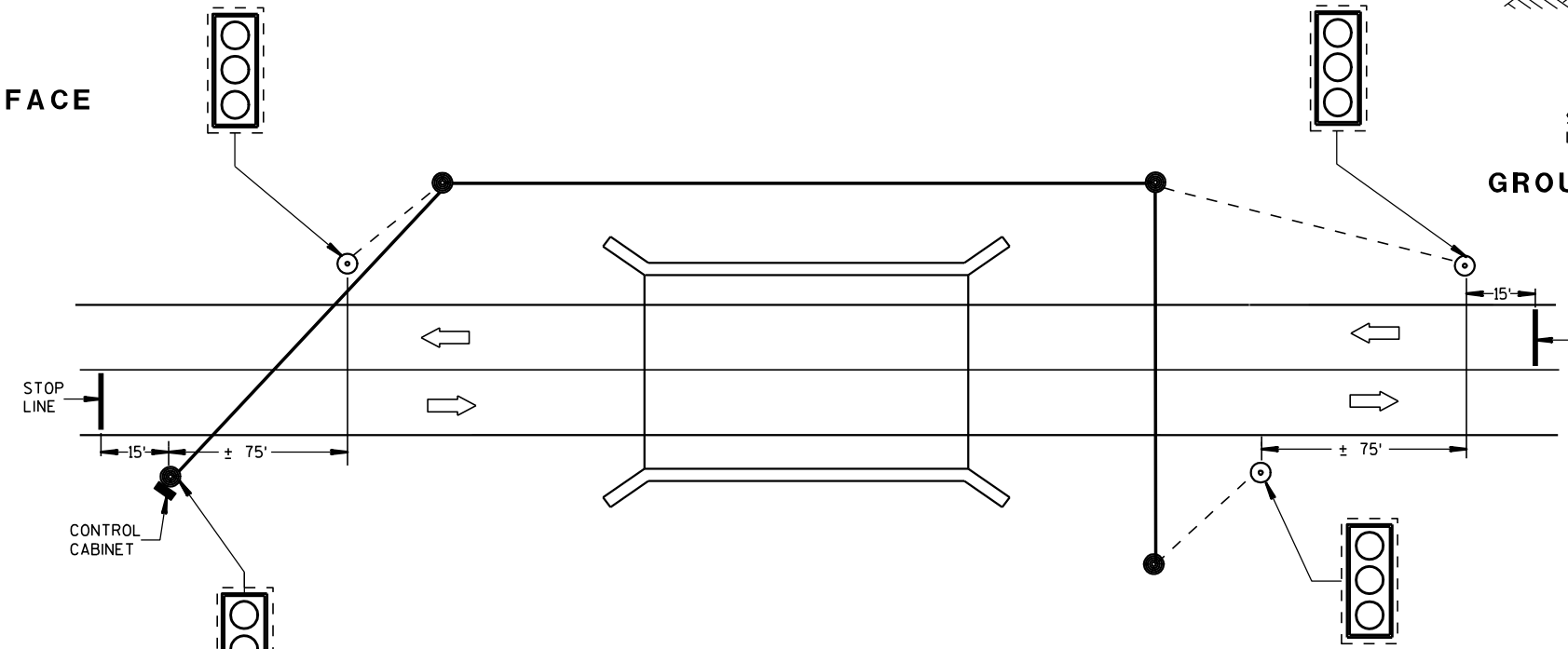
VERTICAL CLEARANCE ETC. PER NEC.

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

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

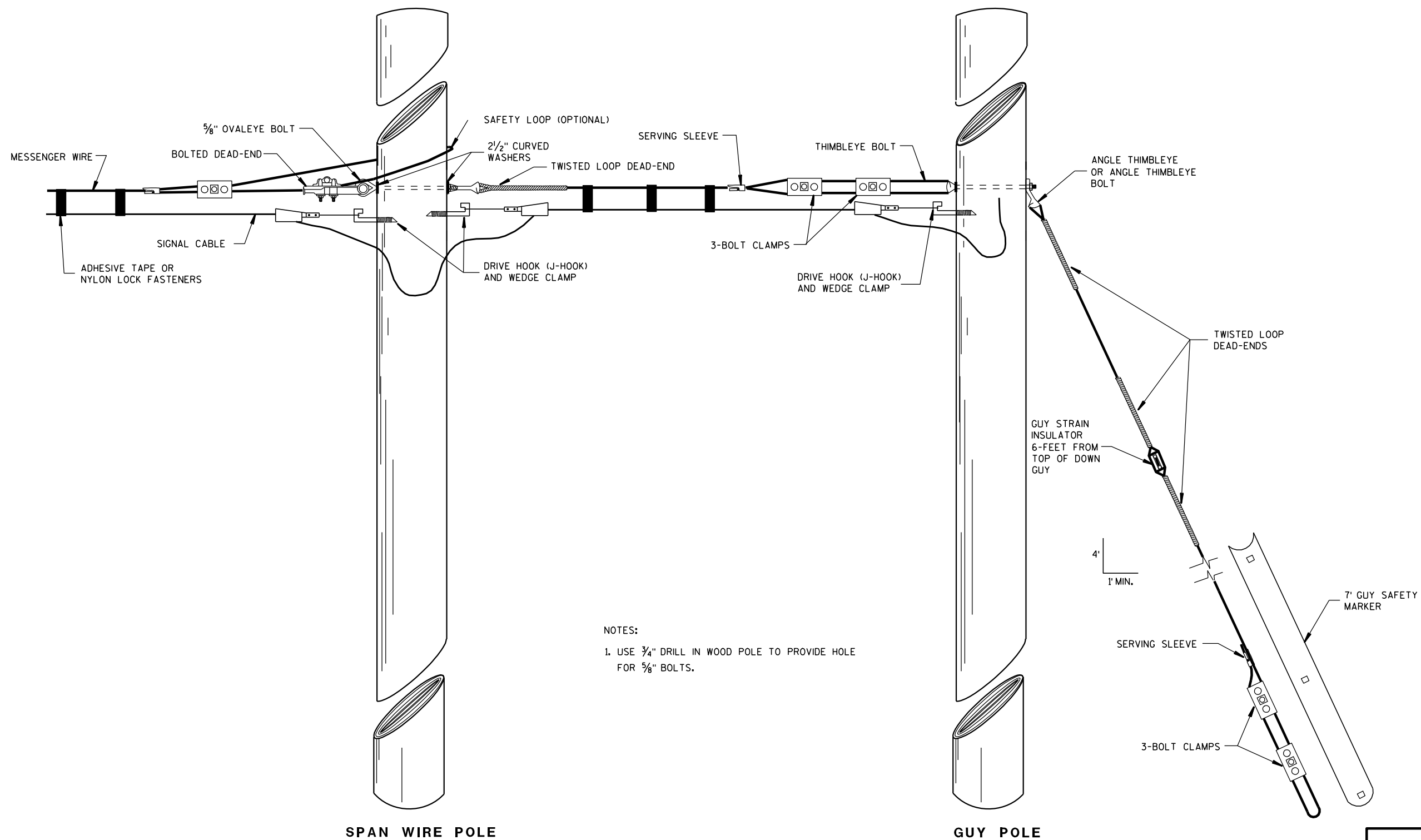
LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE /S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



NOTES:

1. USE $\frac{3}{4}$ " DRILL IN WOOD POLE TO PROVIDE HOLE FOR $\frac{5}{8}$ " BOLTS.

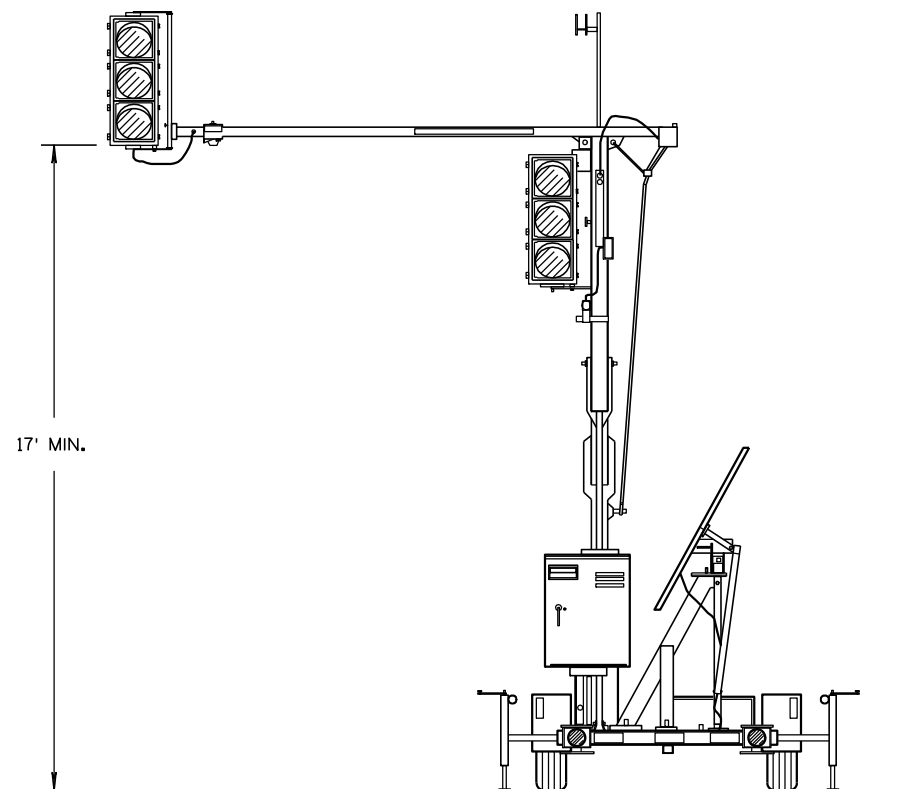
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATIONSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA

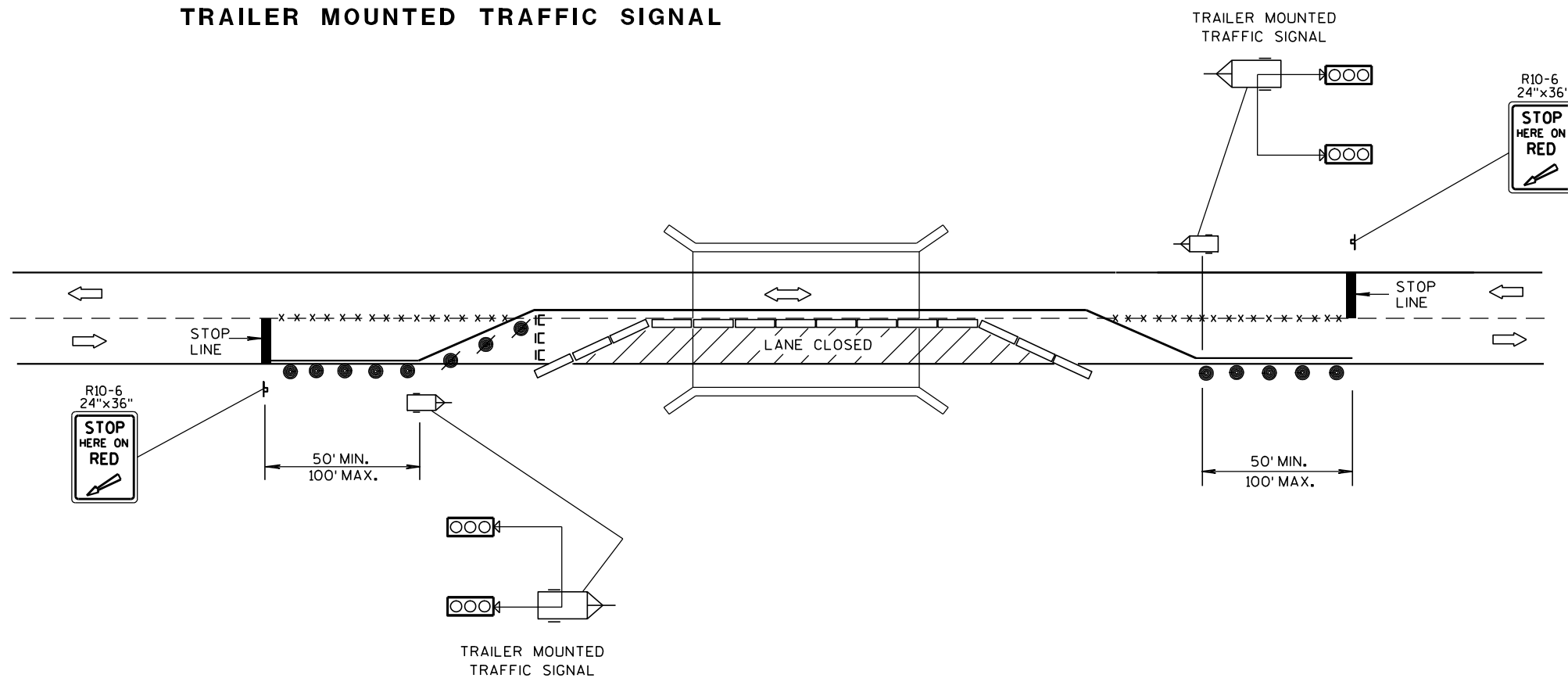


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

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



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011

DATE

FHWA

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

GENERAL NOTES

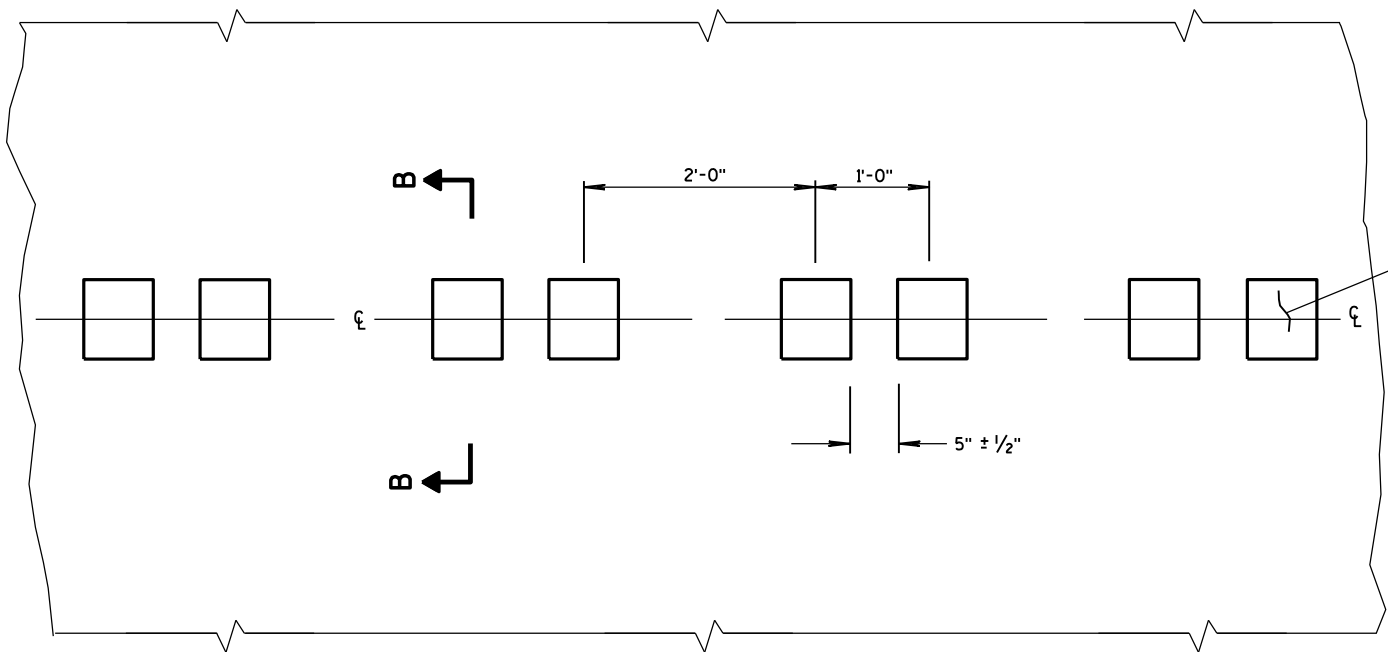
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

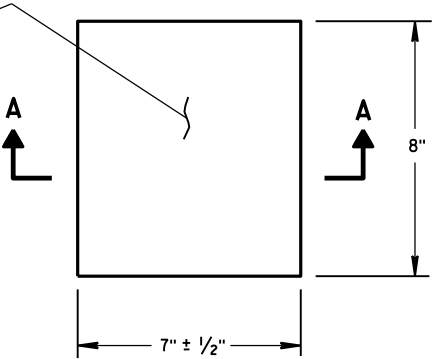
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

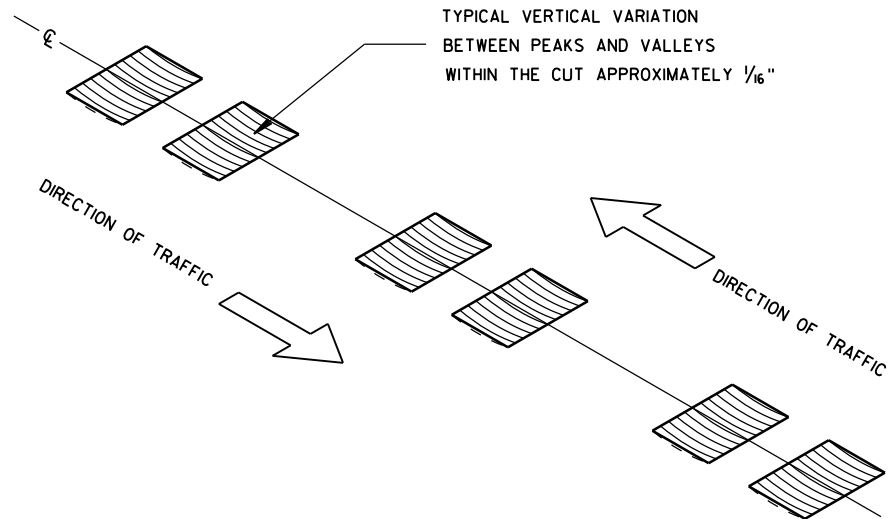
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



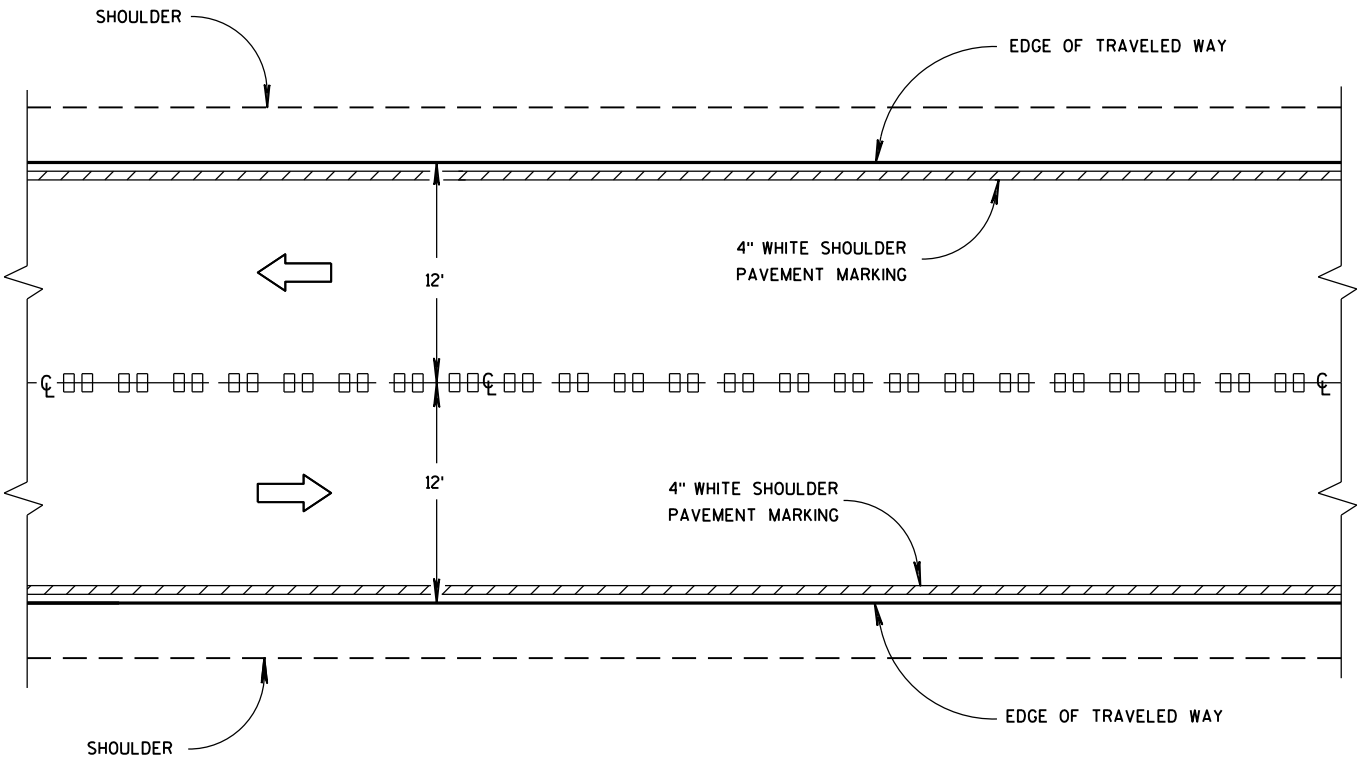
PLAN VIEW
CENTER LINE WITH GROOVES



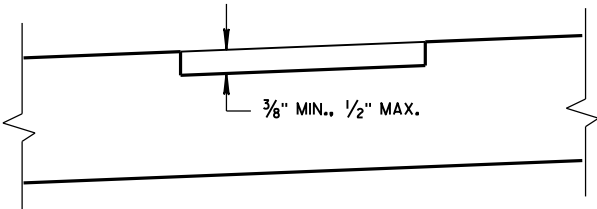
PLAN VIEW
(SINGLE GROOVE)



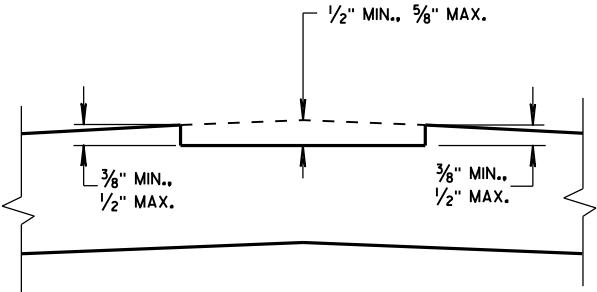
ISOMETRIC



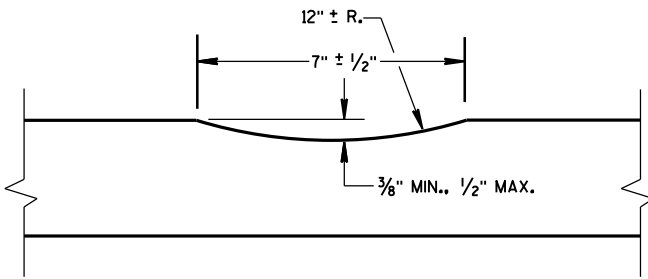
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



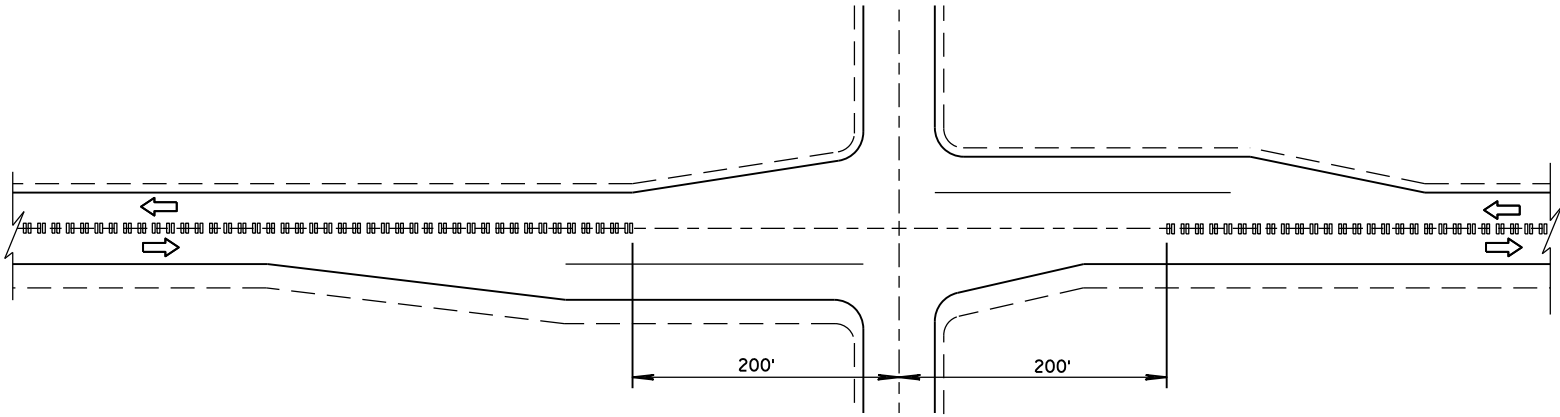
SECTION B-B
CROWNED ROADWAY



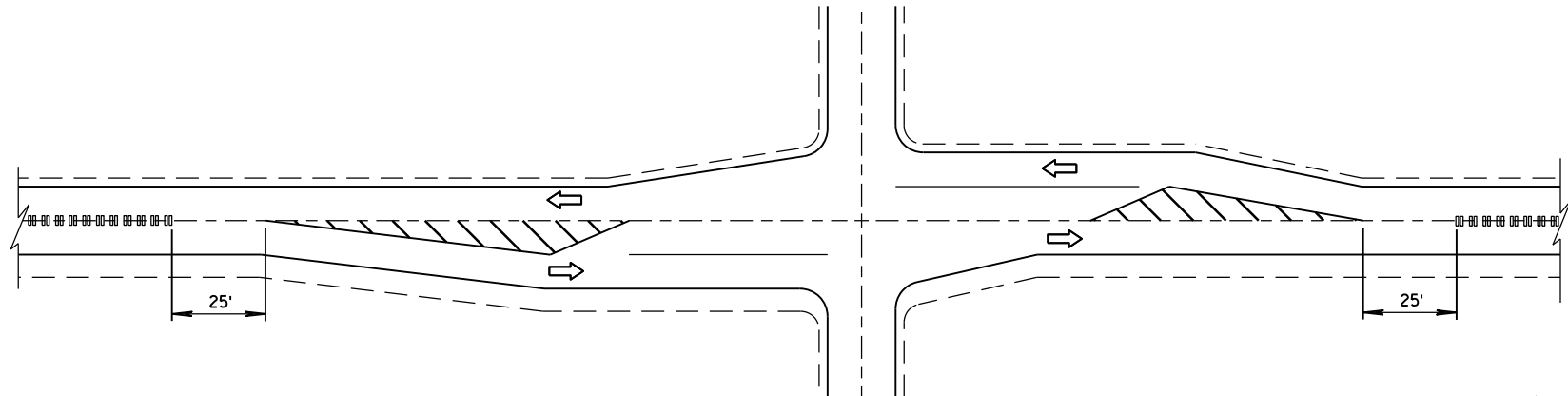
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

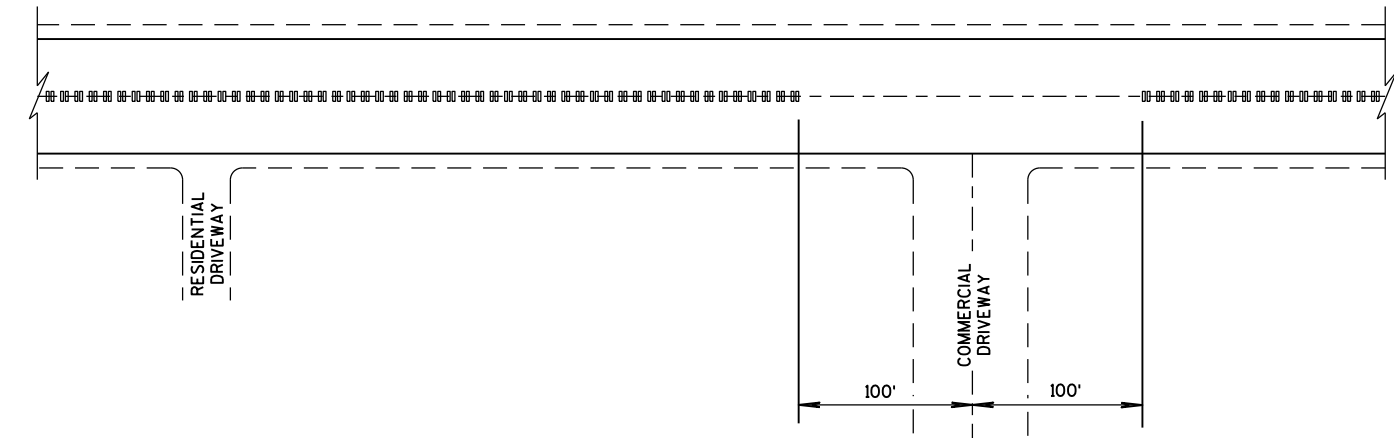
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

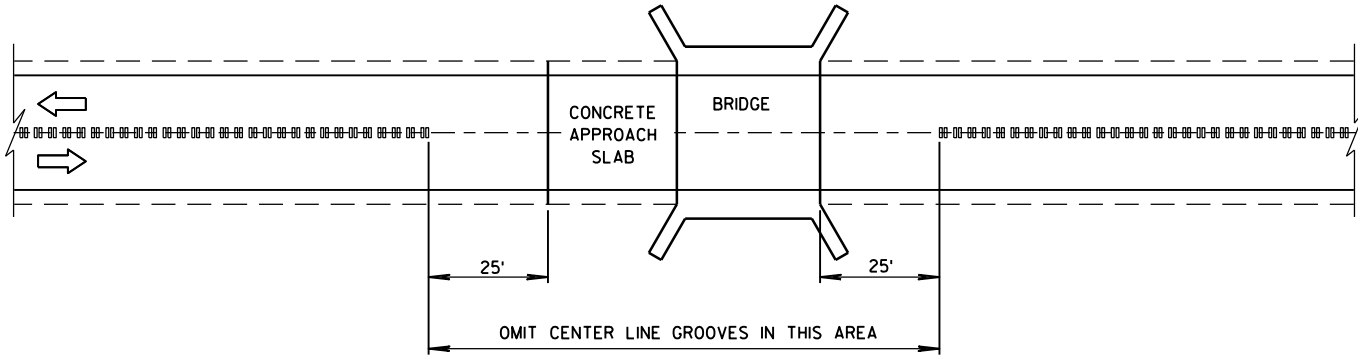


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

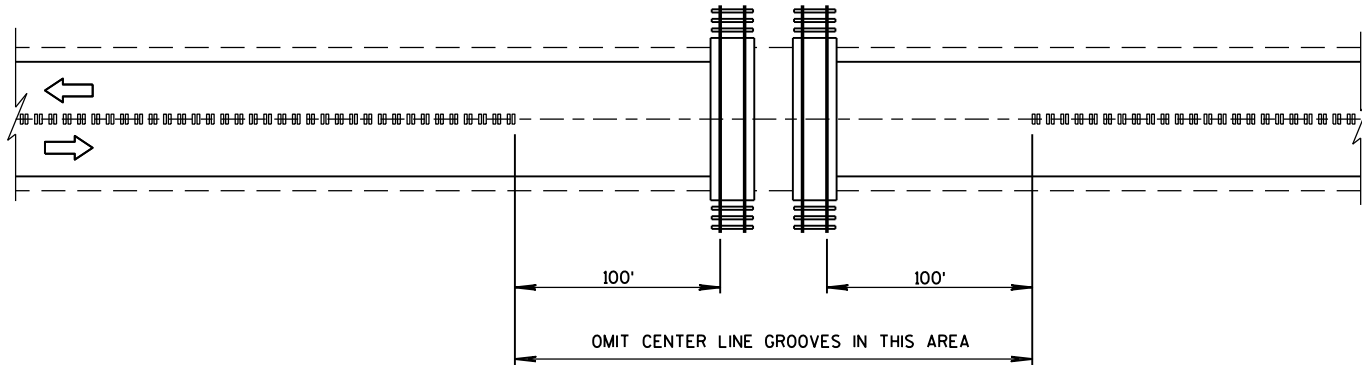


CENTER LINE GROOVES AT DRIVEWAYS^①

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

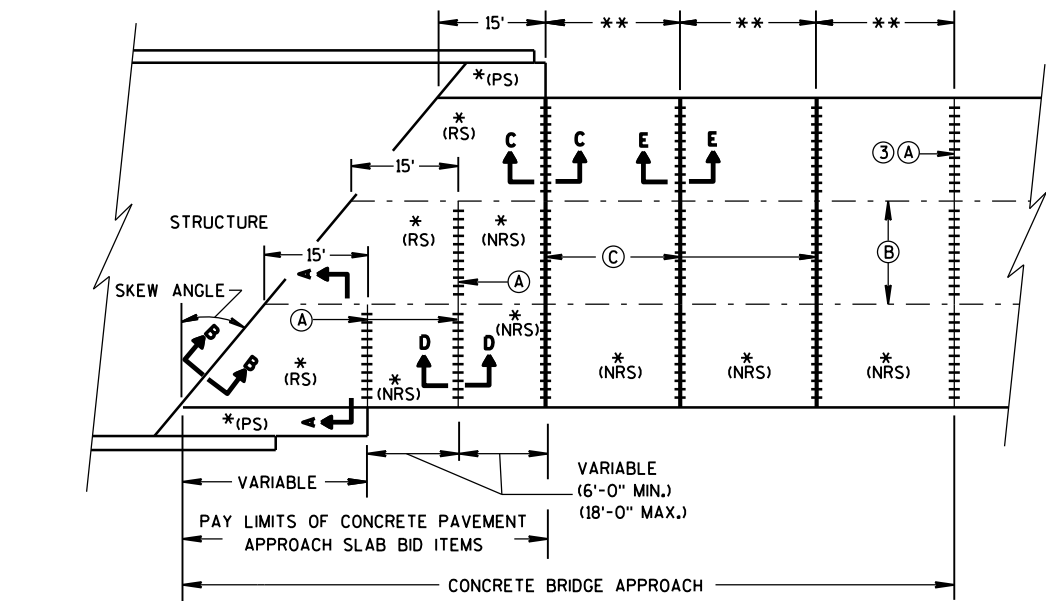


CENTER LINE GROOVES AT BRIDGES

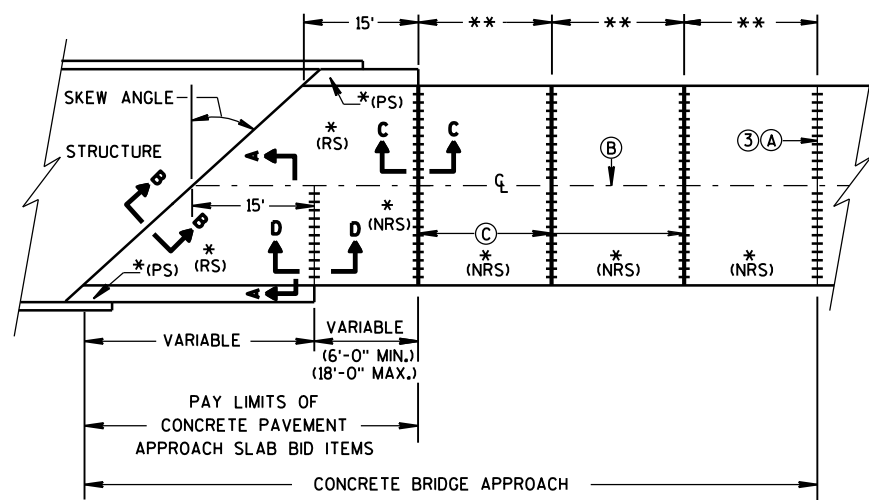


CENTER LINE GROOVES AT RAILROADS

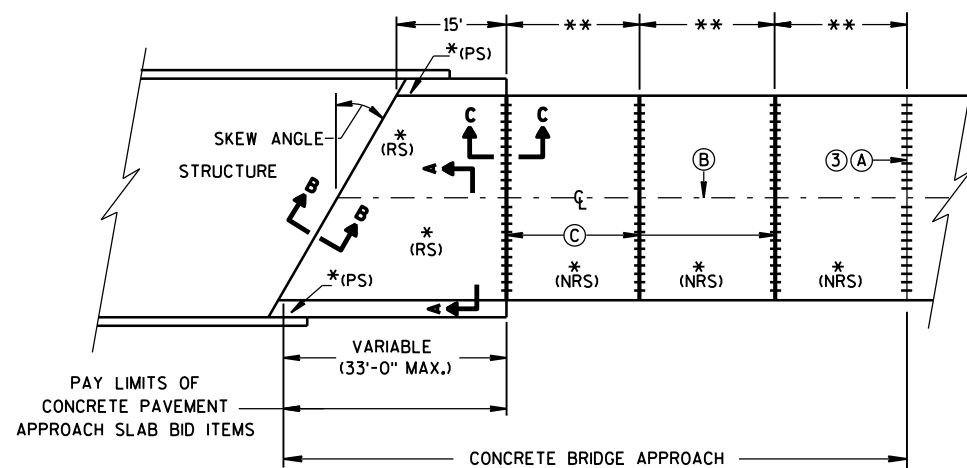
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKEWS > 30°
(PAVEMENT WIDTH ≤ 30')**

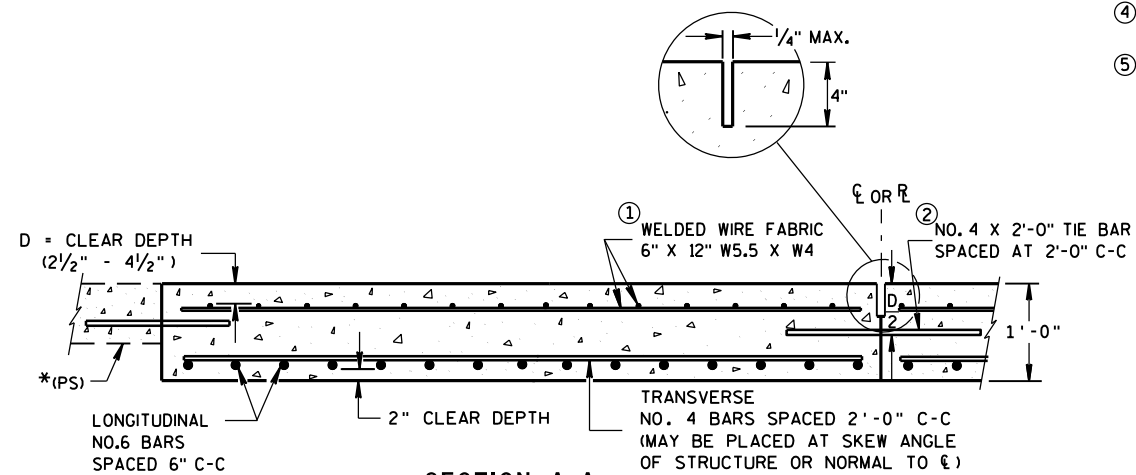


**SKEWS ≤ 30°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

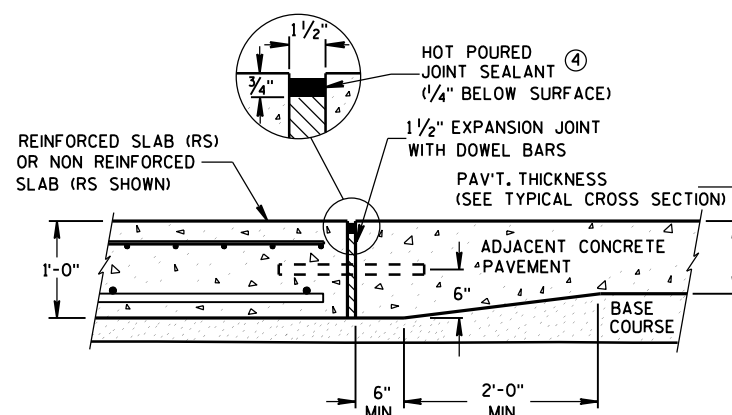
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

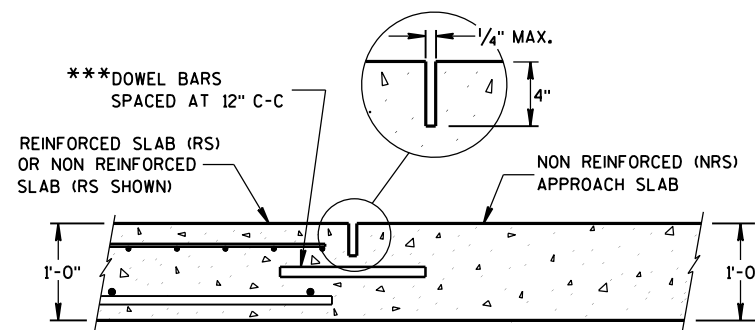
- (A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR R_C
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR R_C



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



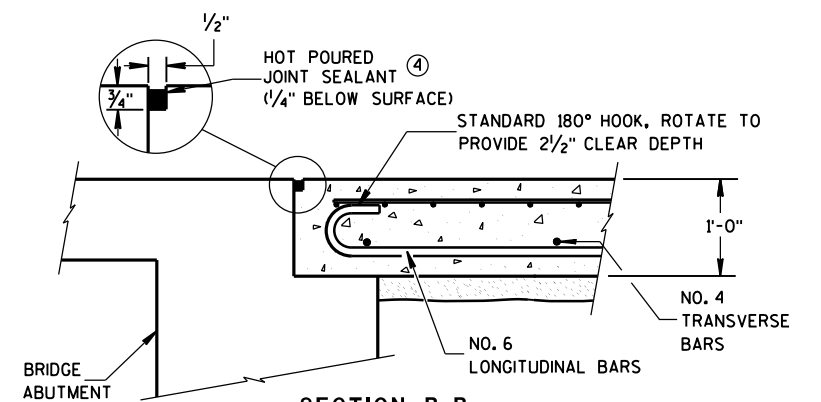
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

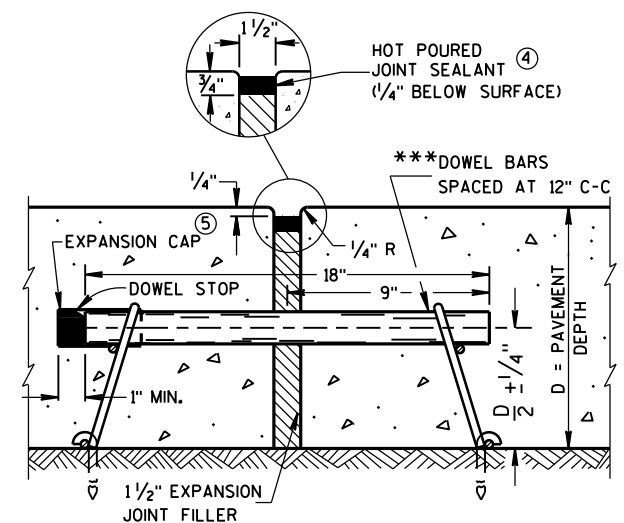
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**



**SECTION E-E
EXPANSION JOINT**

**CONCRETE BRIDGE
APPROACH**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

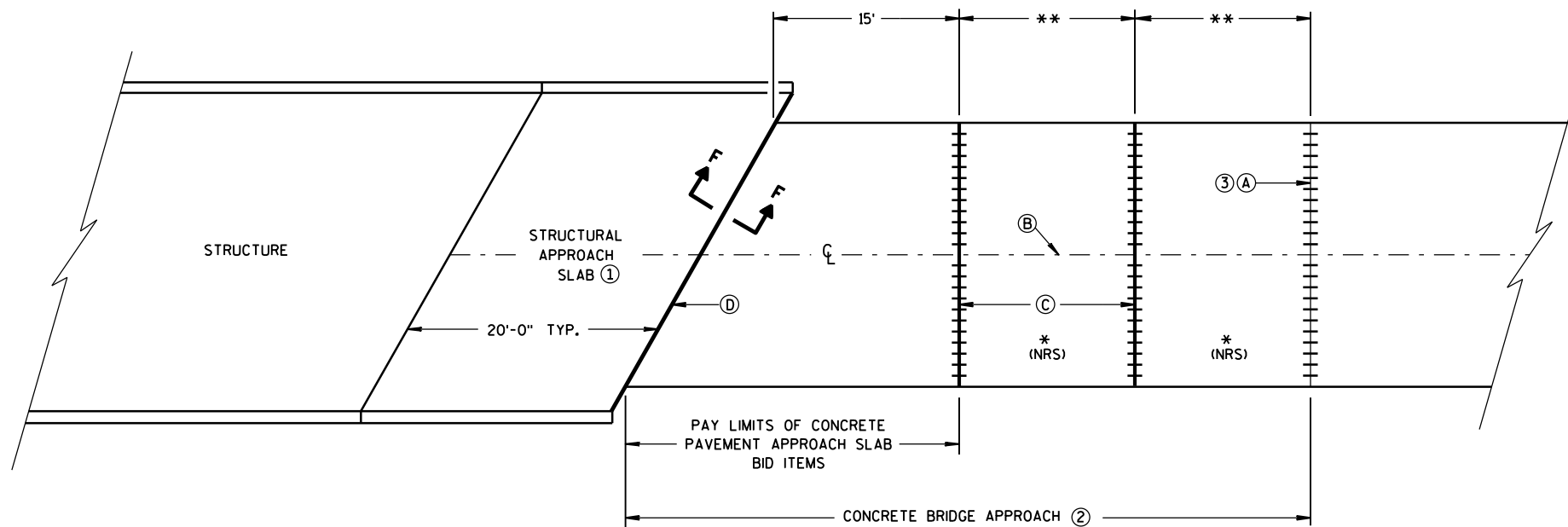
June, 2014

DATE

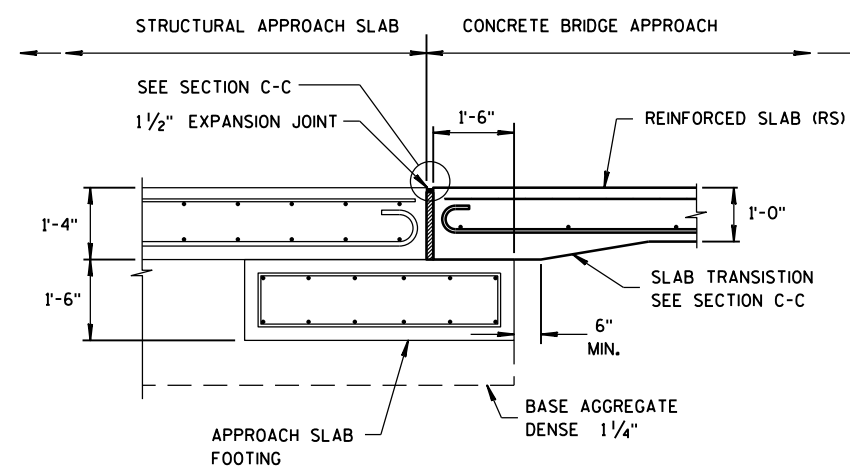
FHWA

/S/ Deb Bischoff

PAVEMENT POLICY & DESIGN ENGINEER



BRIDGE APPROACHES



SECTION F-F FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

- ① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).
- ② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION—WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.
- ③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

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

③(A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR C_L

③(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.

③(C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR C_L

③(D) 1 1/2" EXPANSION JOINT (NO DOWELS)

STRUCTURAL APPROACH SLAB
AND
CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2014

DATE

FHWA

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

6

S.D.D. 14 B 15-8a

- 6

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



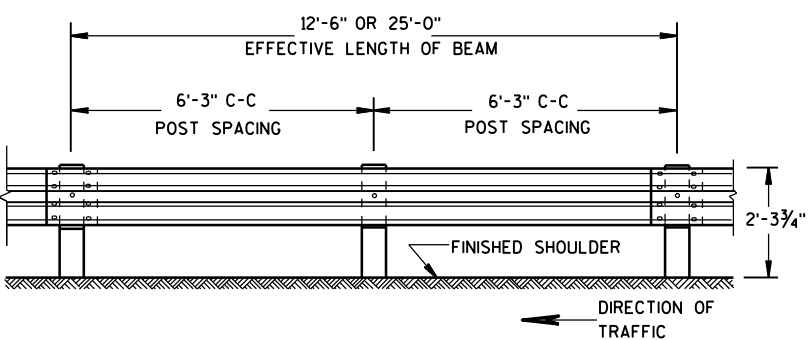
S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a

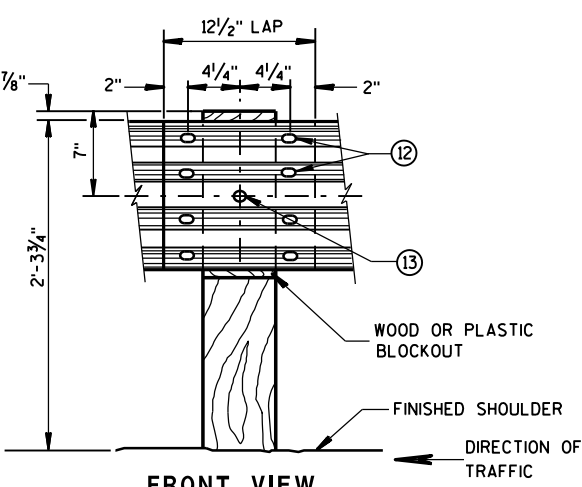
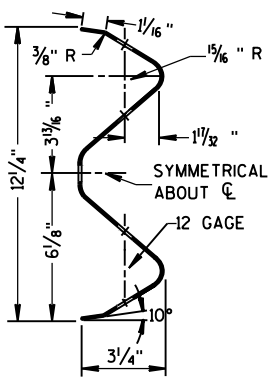
S.D.D. 14 B 15-8a



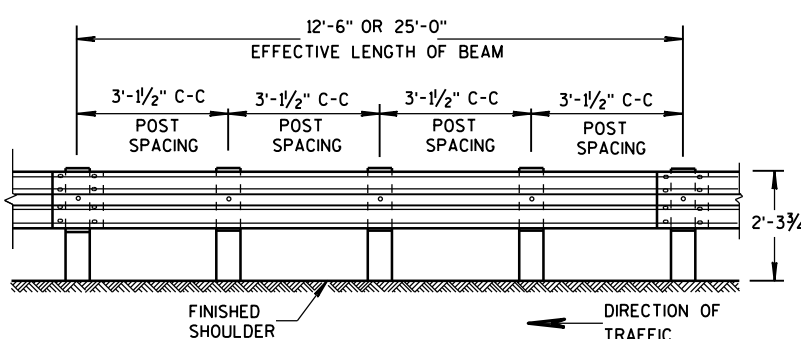
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

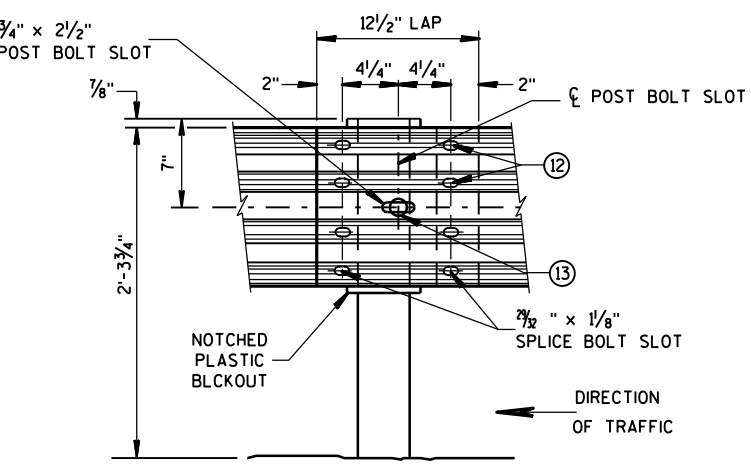


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



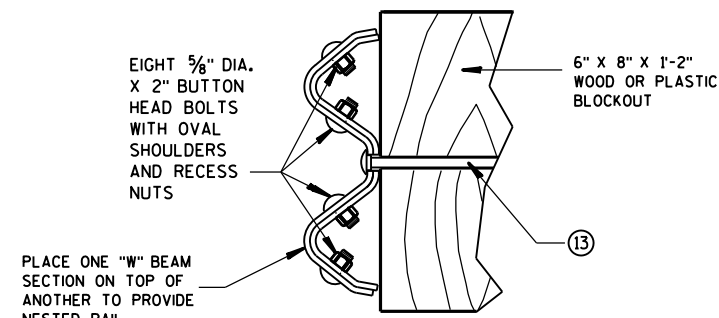
FRONT VIEW

POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

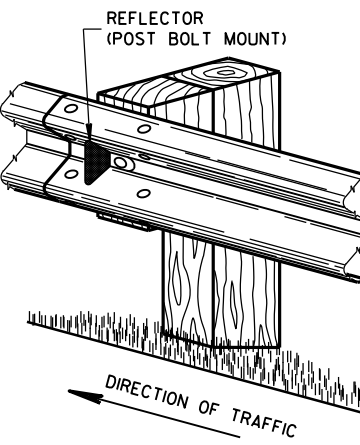


NESTED W BEAM (NW)

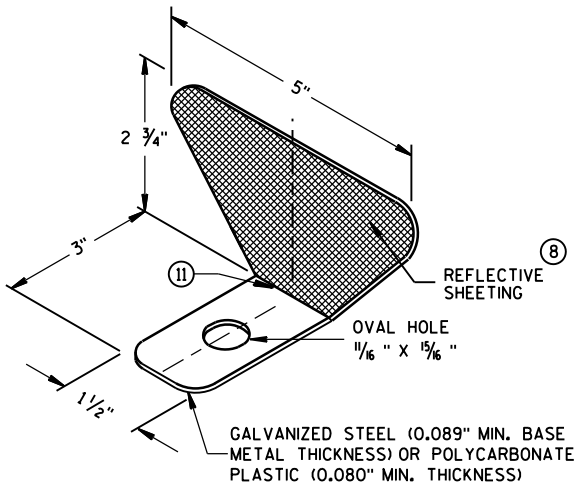
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING^⑨

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	3
TWO WAY TRAFFIC	< 200'	25' C-C	1 ^⑩	6
	> 200'	50' C-C	1 ^⑩	6
TWO WAY TRAFFIC	< 200'	50' C-C	2 ^⑪	3
	> 200'	100' C-C	2 ^⑪	3



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

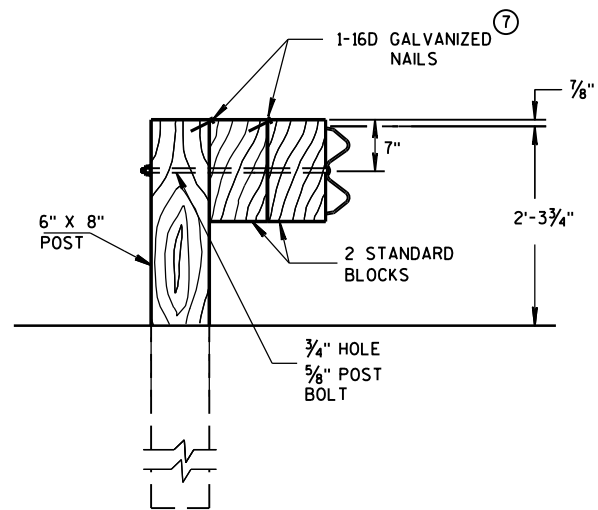


STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

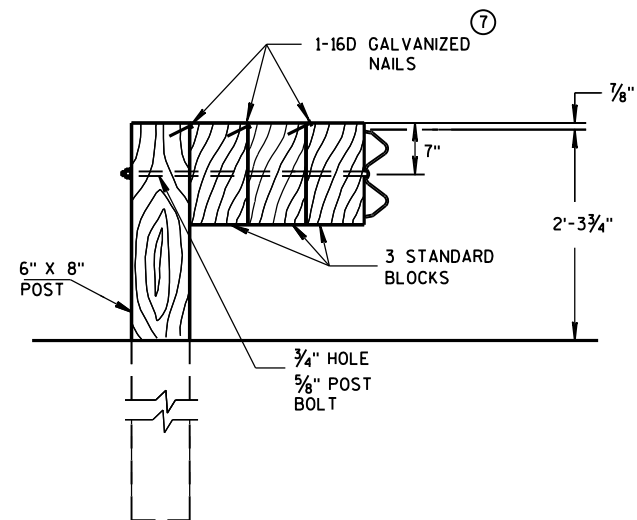
GENERAL NOTES

- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑩ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑪ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
- ⑫ 8 - 5/8" φ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

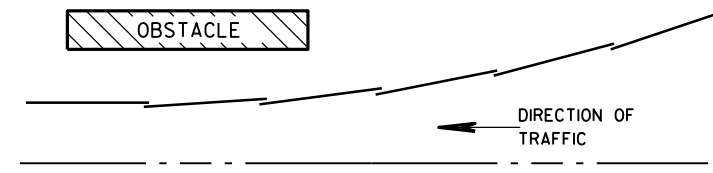


DETAIL FOR TRIPLE BLOCKS

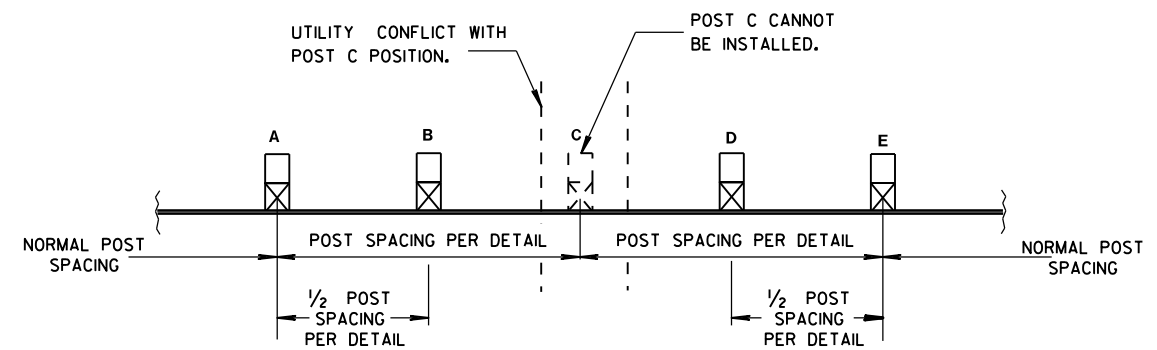
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

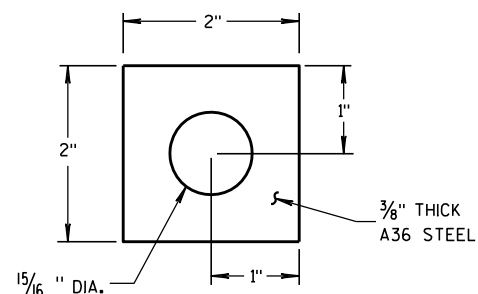
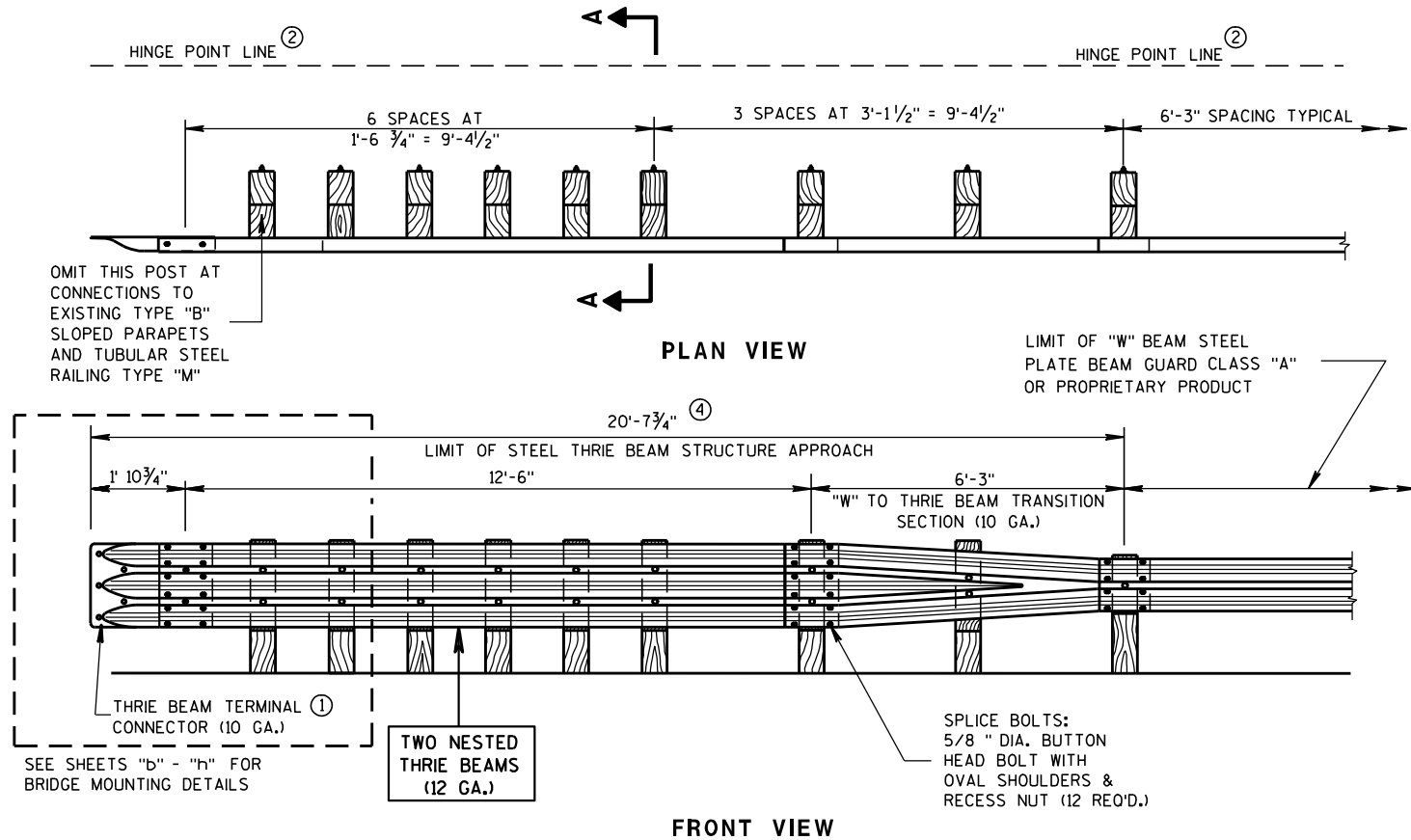


PLATE WASHER DETAIL

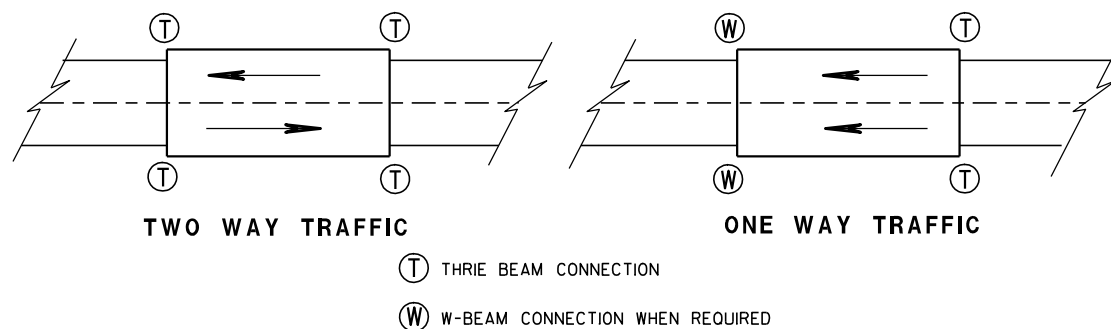
GENERAL NOTES

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

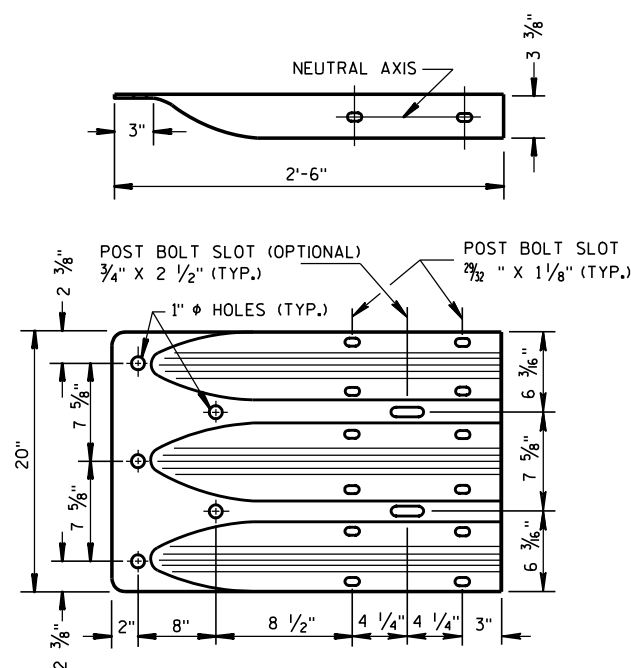
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

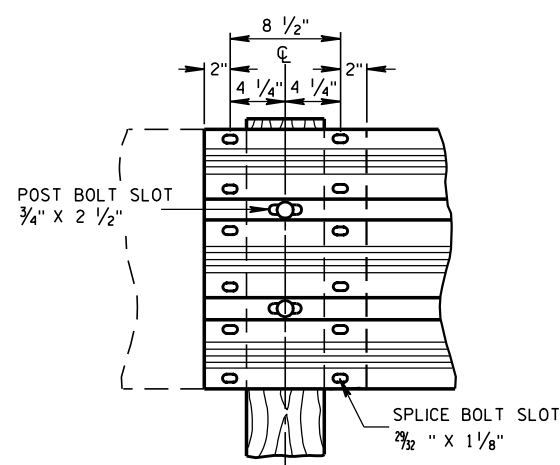
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



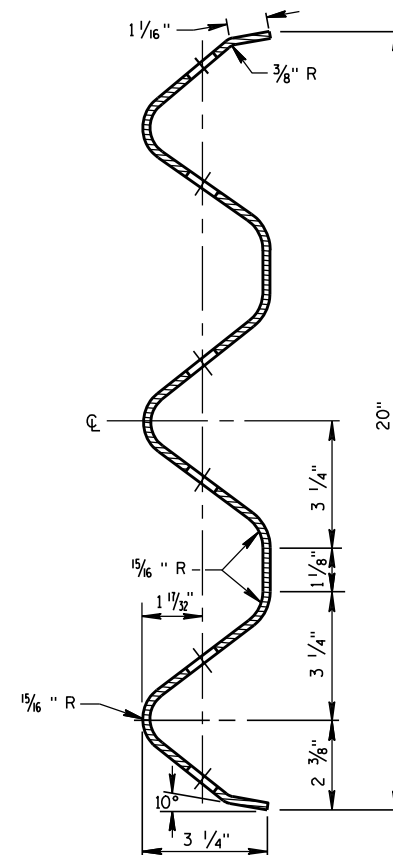
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



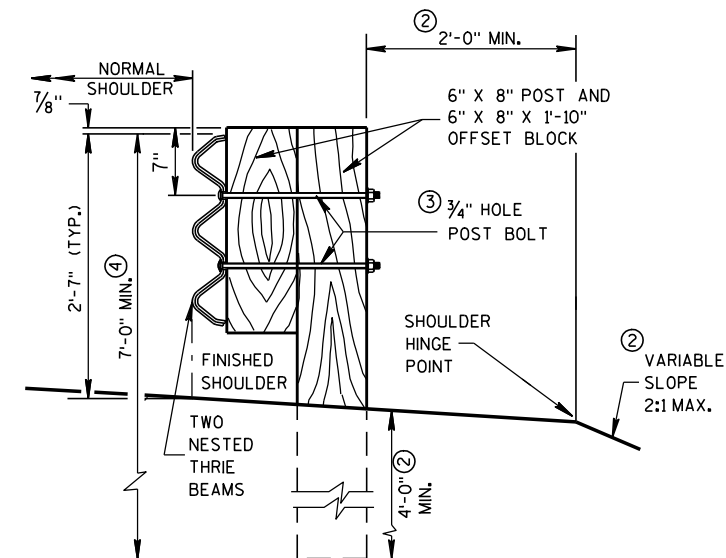
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

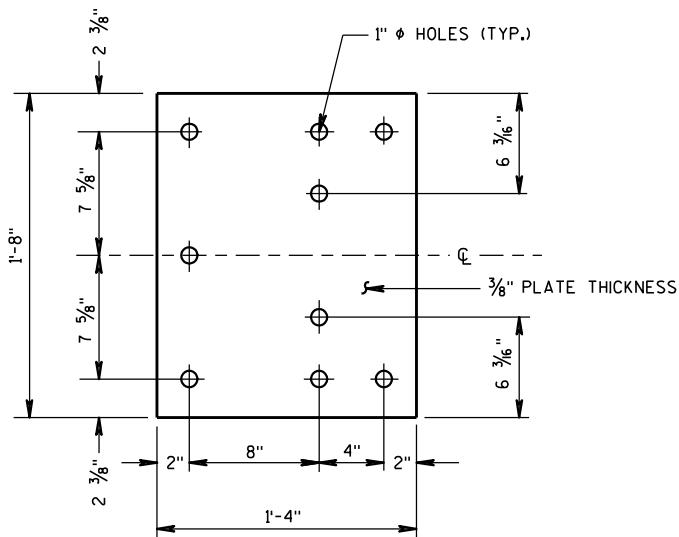
APPROVED

8/31/2012

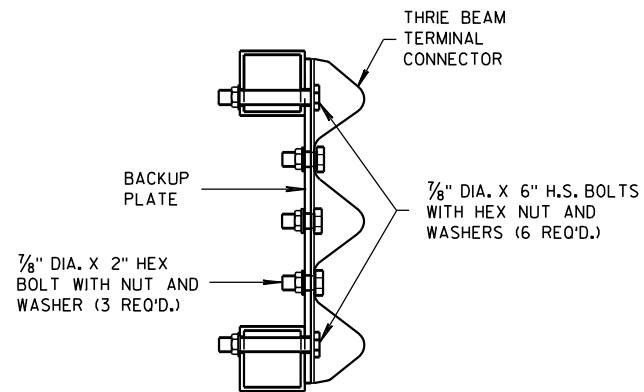
DATE

FHWA

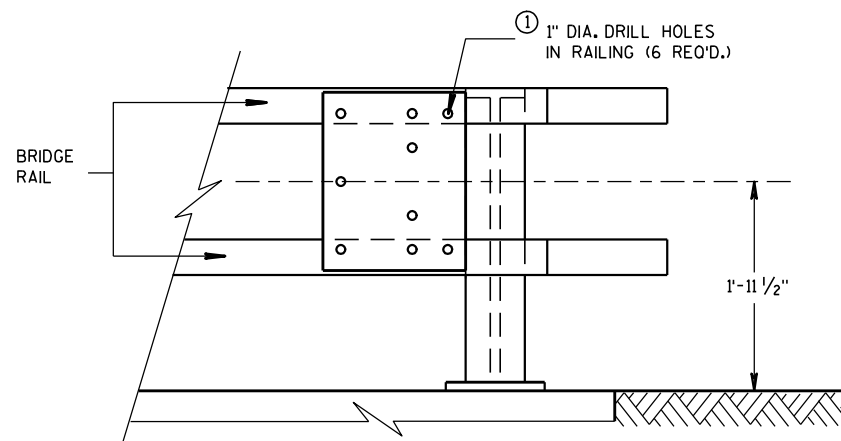
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



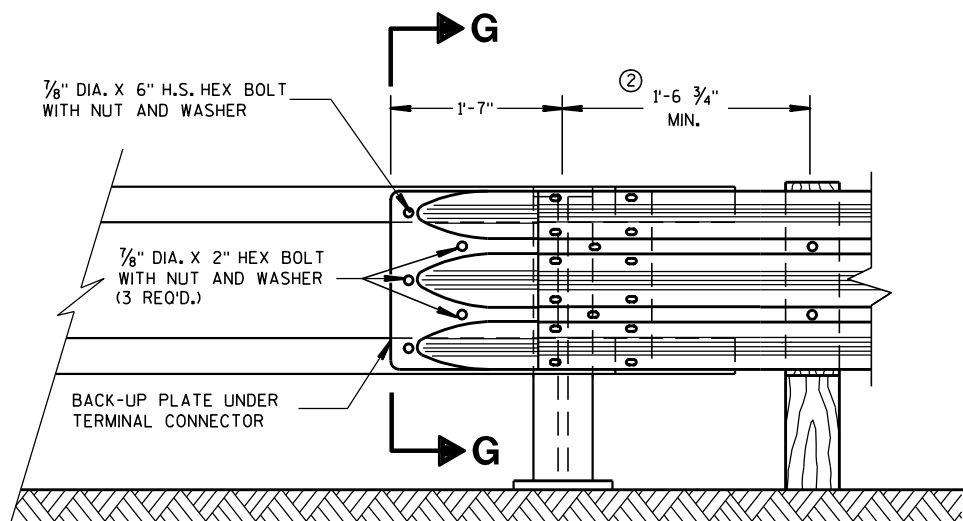
BACK-UP PLATE DETAIL



SECTION G-G

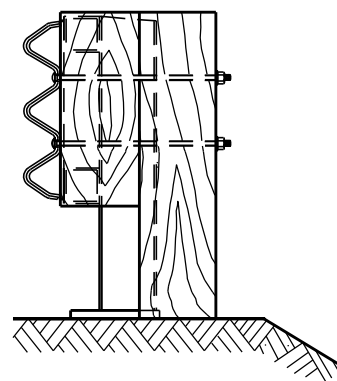


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

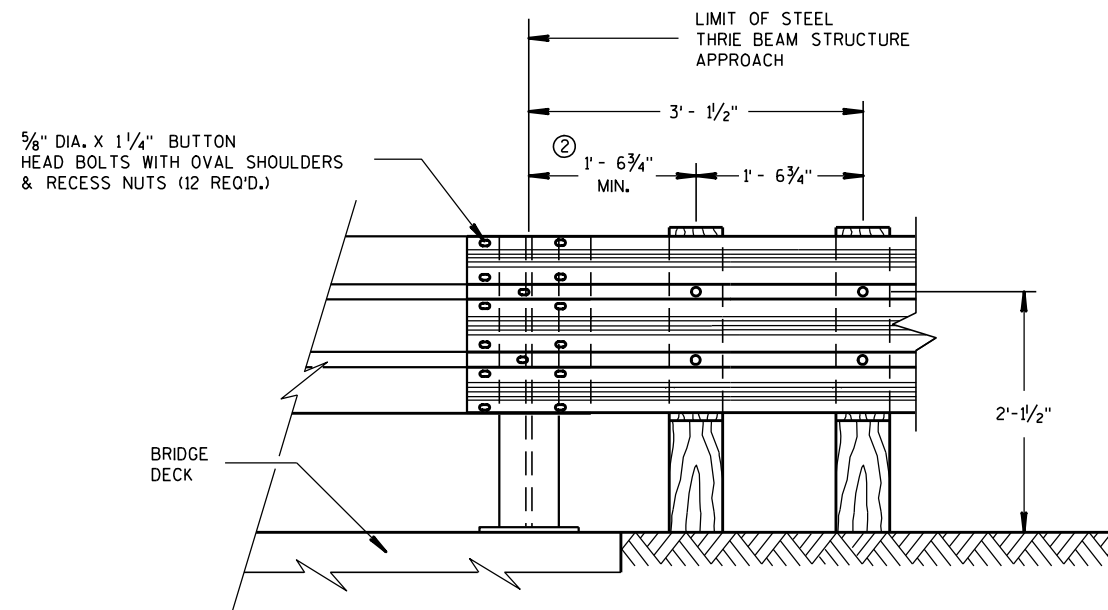


END VIEW

GENERAL NOTES

BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

STEEL THRIE BEAM STRUCTURE
APPROACH, CONNECTION TO BRIDGE
RAILING TYPES "F" AND "W"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS, IF NONE ARE AVAILABLE, INSTALL 3/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

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

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

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.

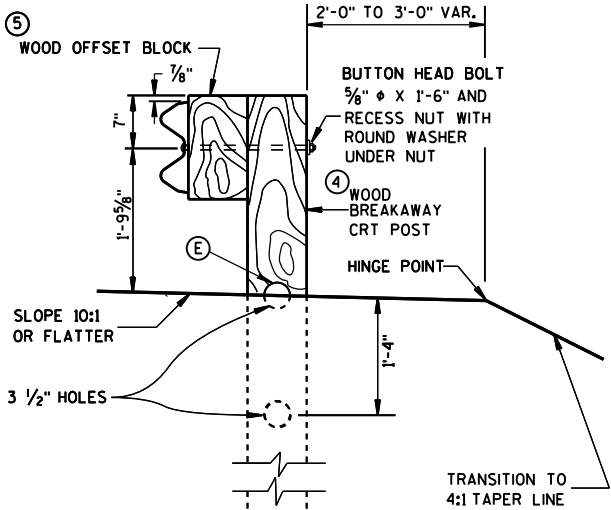
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

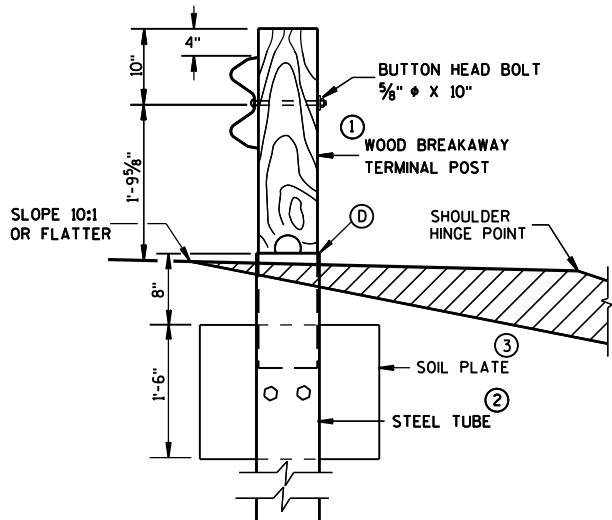
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

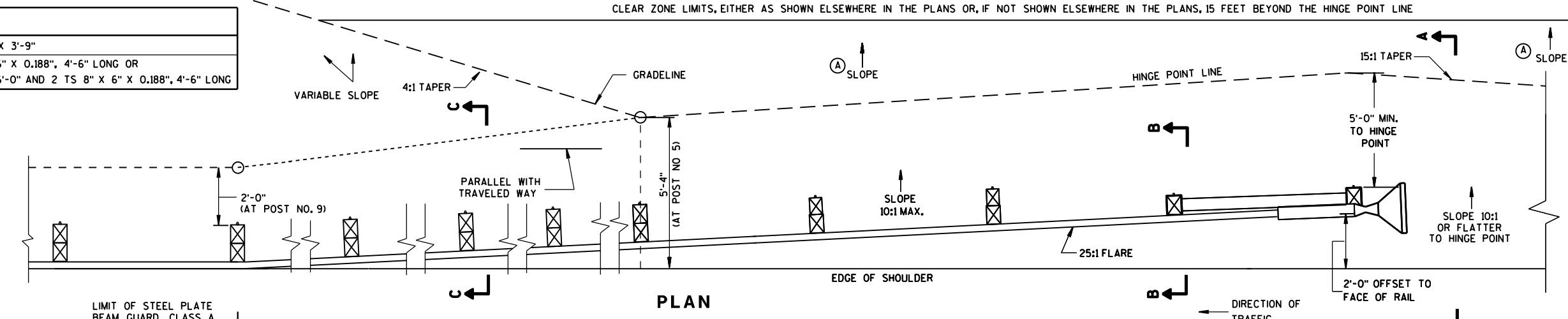
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



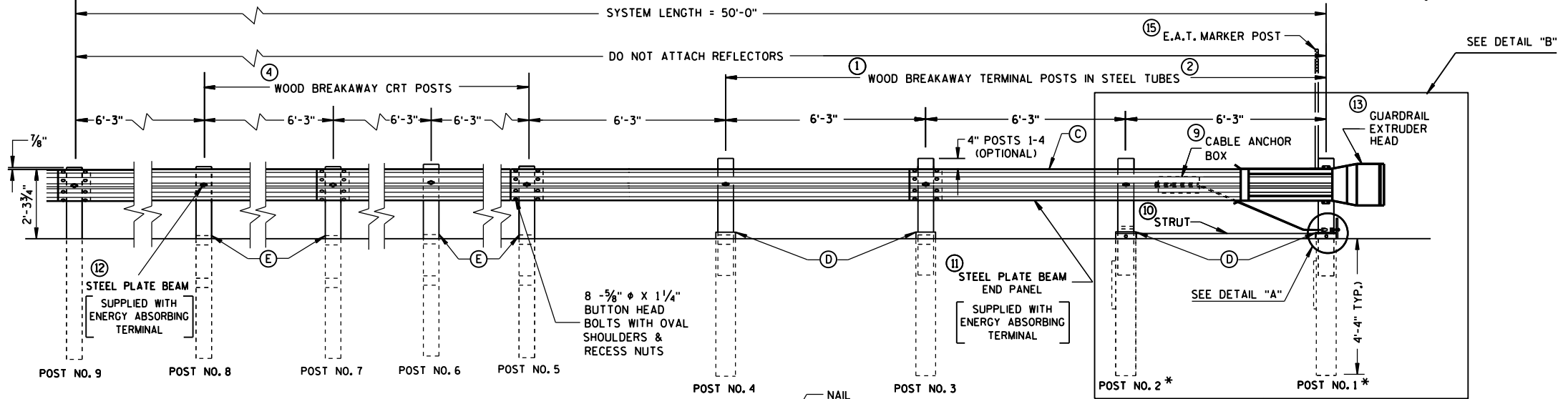
SECTION C-C
TYPICAL AT POST NOS. 6, 8



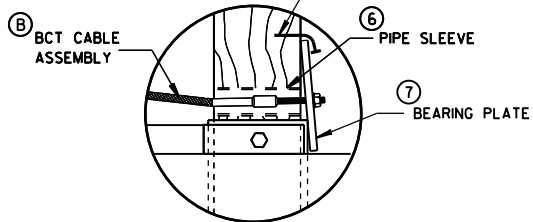
SECTION B-B
TYPICAL AT POST NO. 2 *



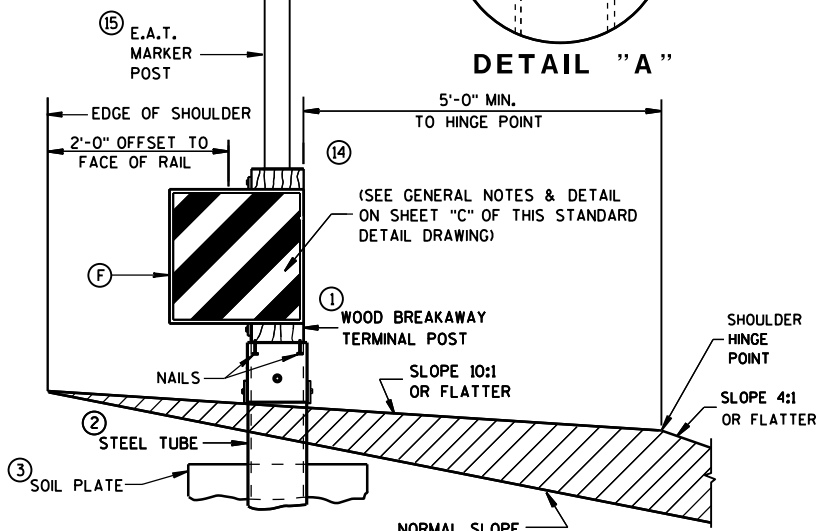
PLAN



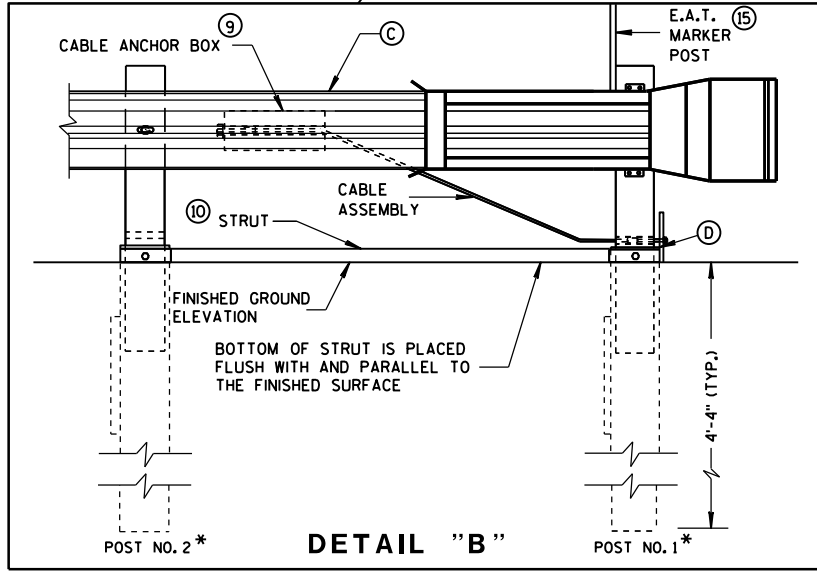
ELEVATION



DETAIL "A"



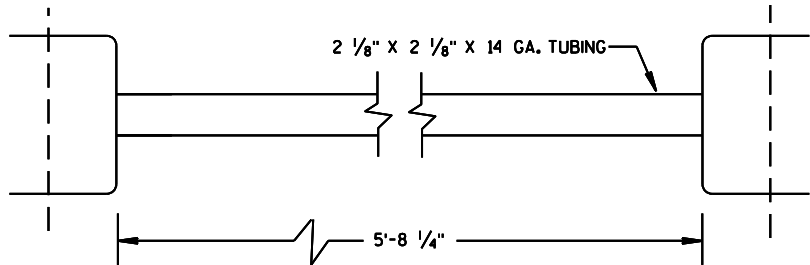
SECTION A-A
TYPICAL AT POST NO. 1 *



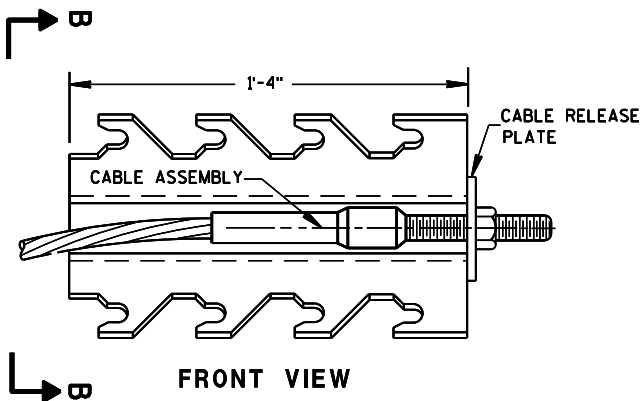
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

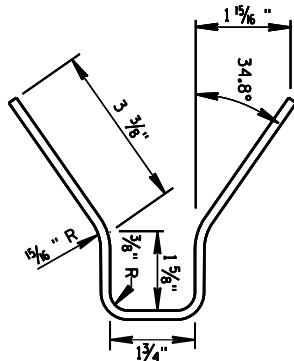
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



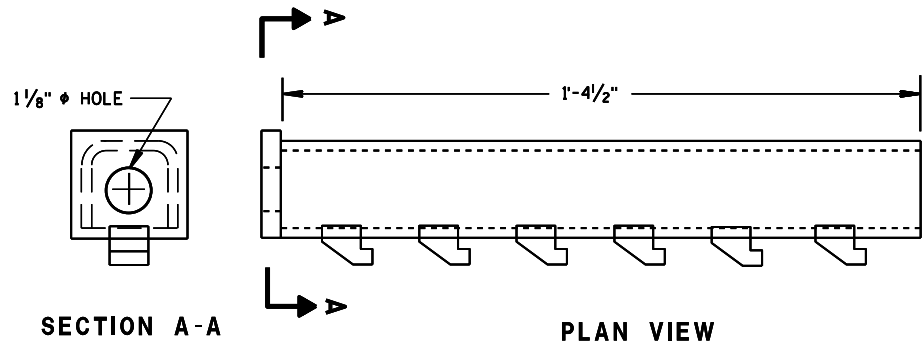
10 STRUT DETAIL (SKT-350)



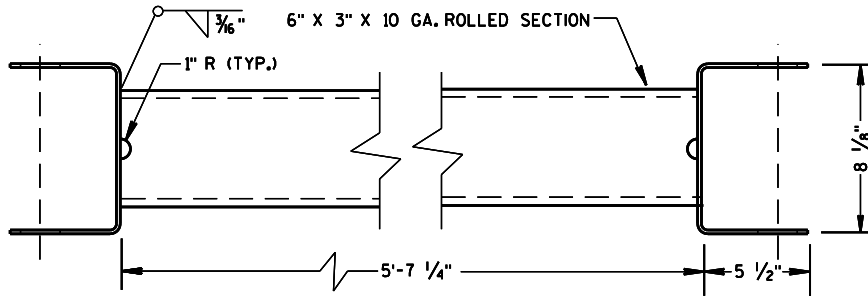
9 CABLE ANCHOR BOX (SKT-350)
(SKT-350)



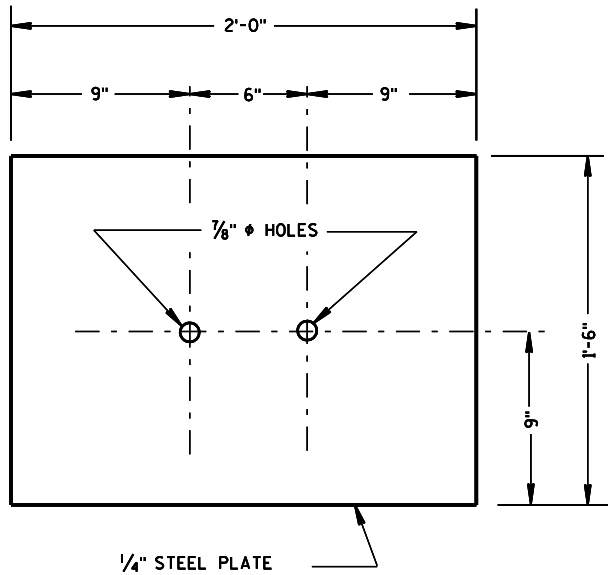
SECTION B-B



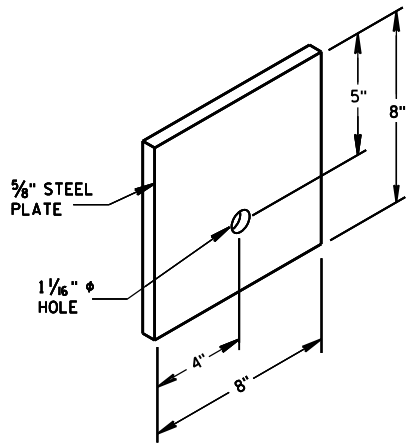
9 CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



10 STRUT DETAIL (ET-2000/ET-2000 PLUS)
(ET-2000/ET-2000 PLUS)



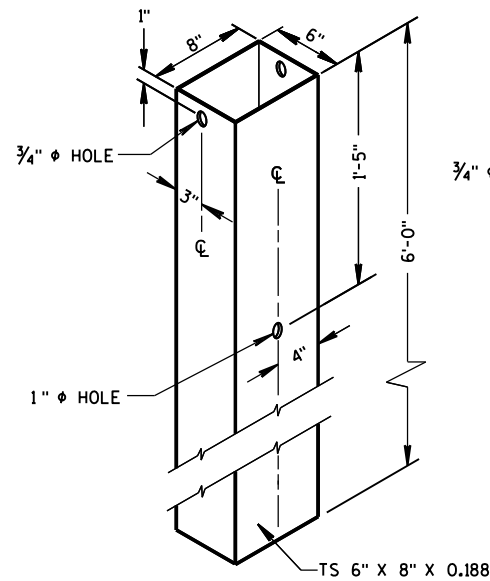
3 SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



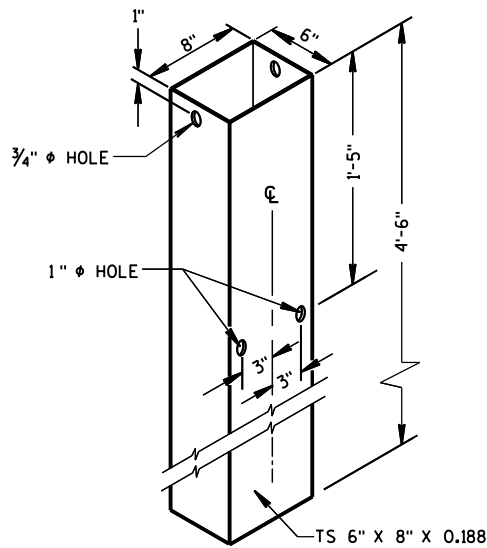
7 STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

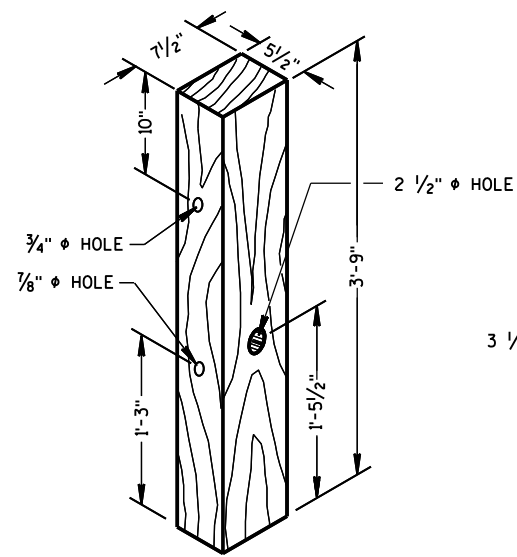
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



② **72" STEEL TUBE**
(POSTS NO. 1-4)

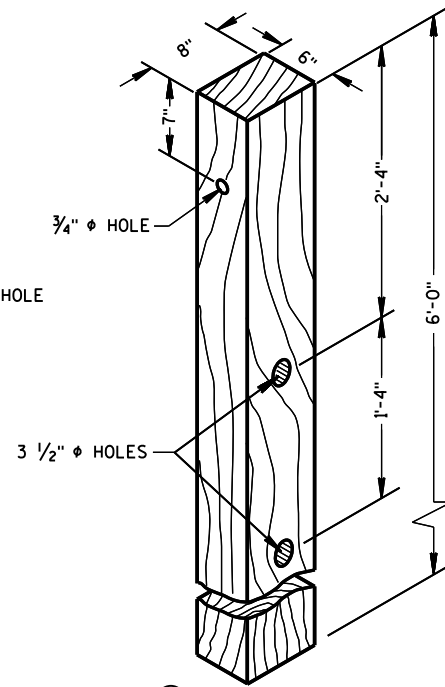


② **54" STEEL TUBE**
(POSTS NO. 1-4)



① **TERMINAL POST**
(POSTS NO. 1-4)

WOOD BREAKAWAY POSTS



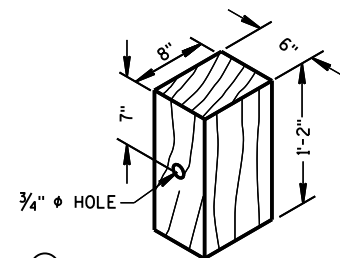
④ **CRT POST**
(POSTS NO'S 5-8)

GENERAL NOTES

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

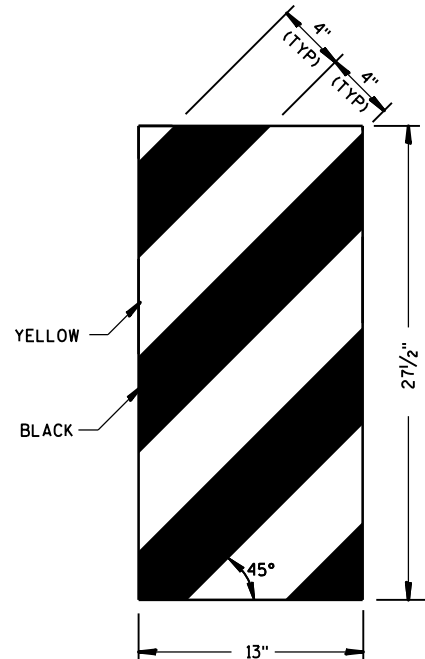
SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

ⓐ 1/2" DIA. X 3" LAG BOLT WITH WASHER.

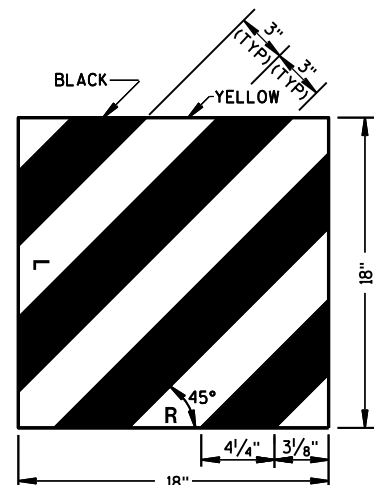


⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

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

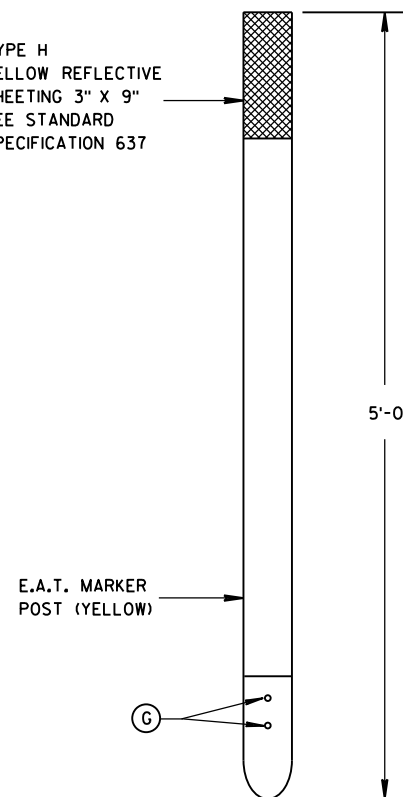


ET-2000 PLUS ONLY

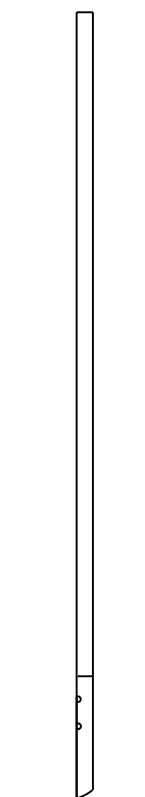


ET-2000 AND SKT-350

⑭ **REFLECTIVE SHEETING DETAILS**

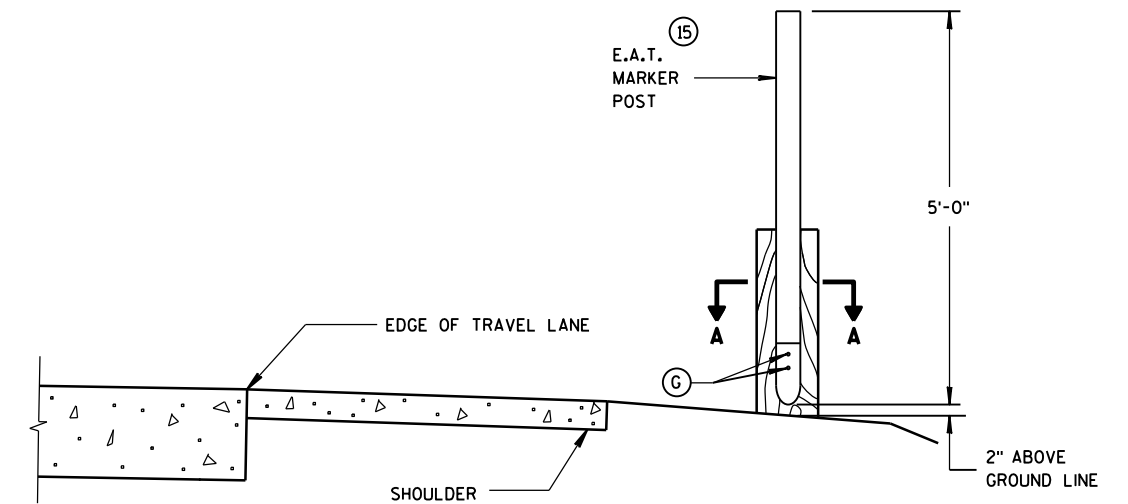


FRONT VIEW

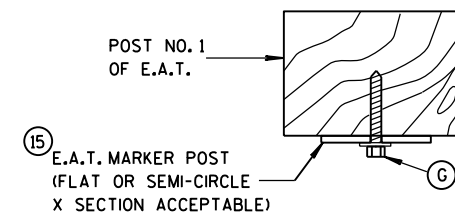


SIDE VIEW

⑮ **E.A.T. MARKER POST**



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



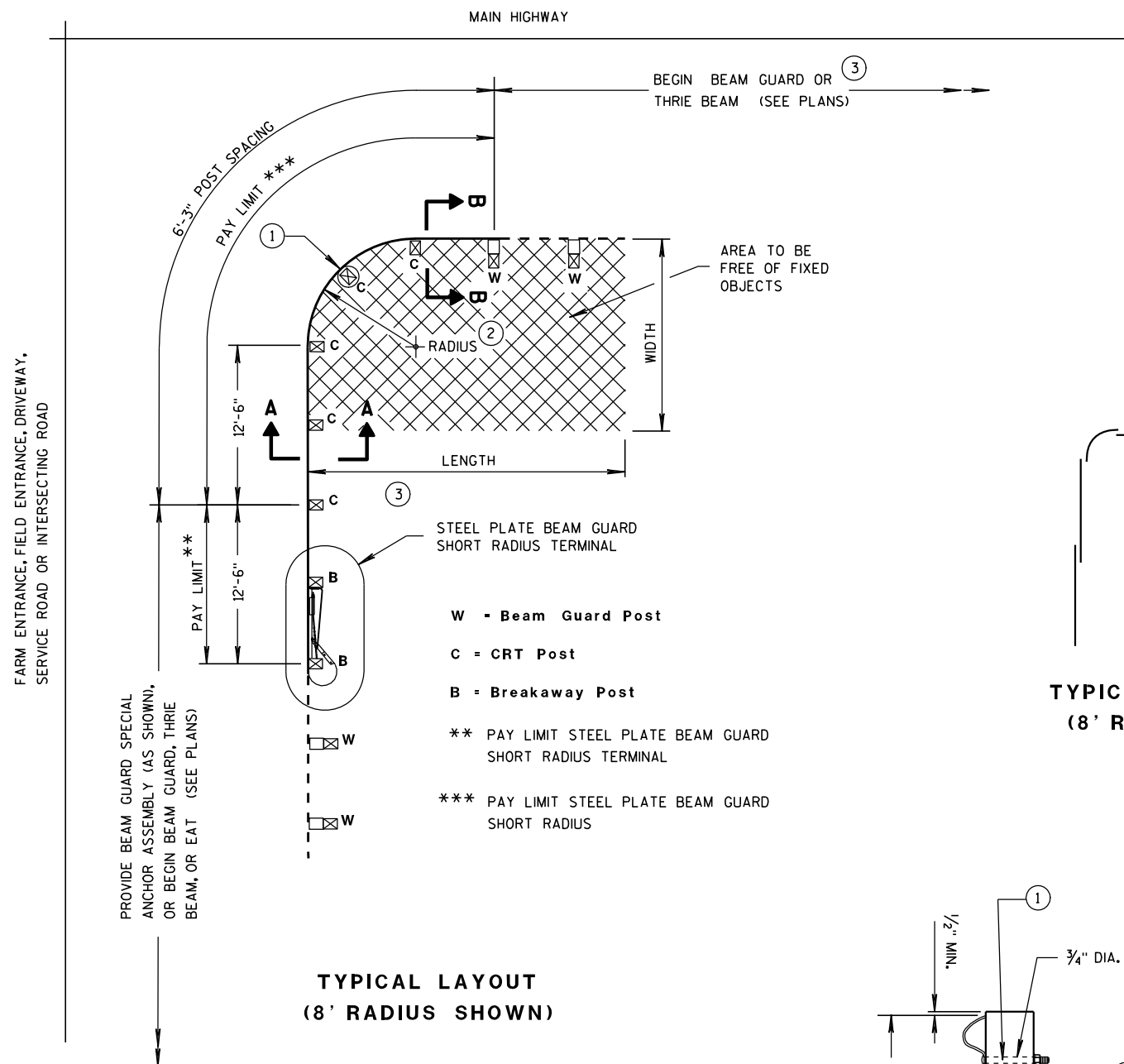
SECTION A-A

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

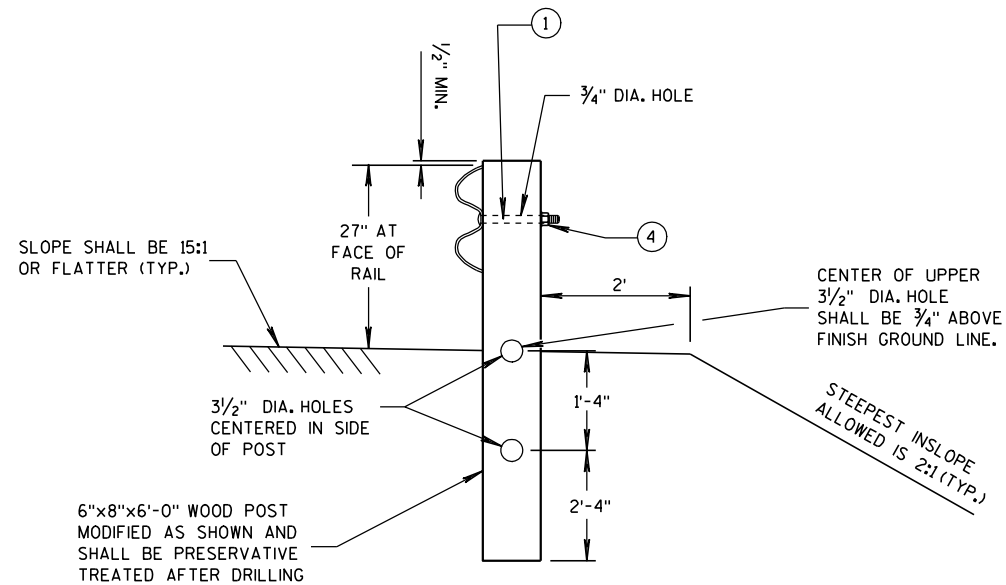
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June 2014
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



**TYPICAL LAYOUT
(8' RADIUS SHOWN)**



**SECTION A-A
(CRT POST)**

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

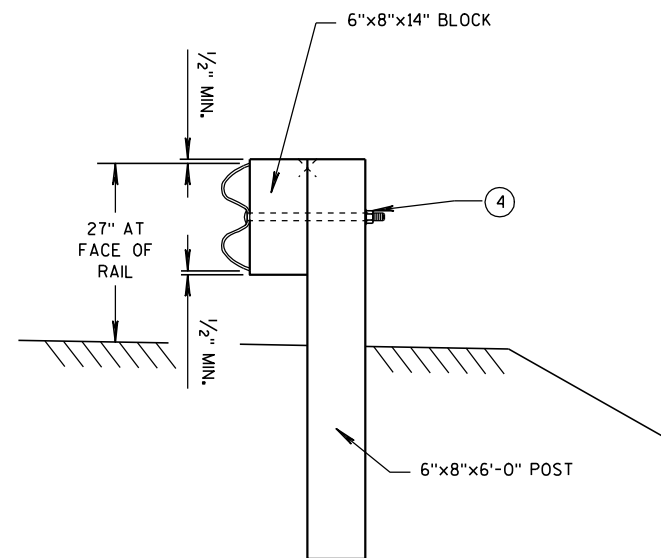
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- ① ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- ② RADIUS FROM 8' - 36'. SEE PLAN.
- ③ HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- ④ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

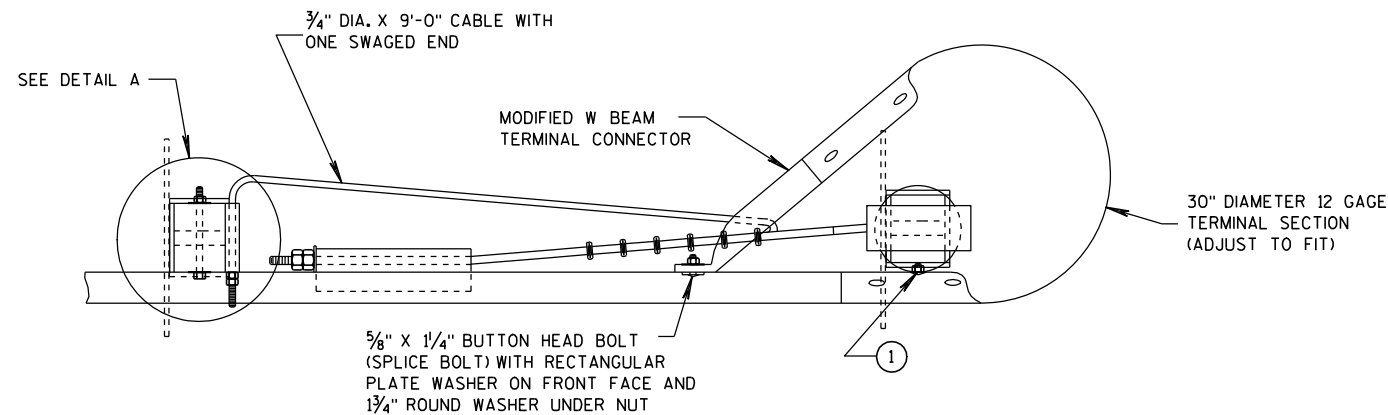
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



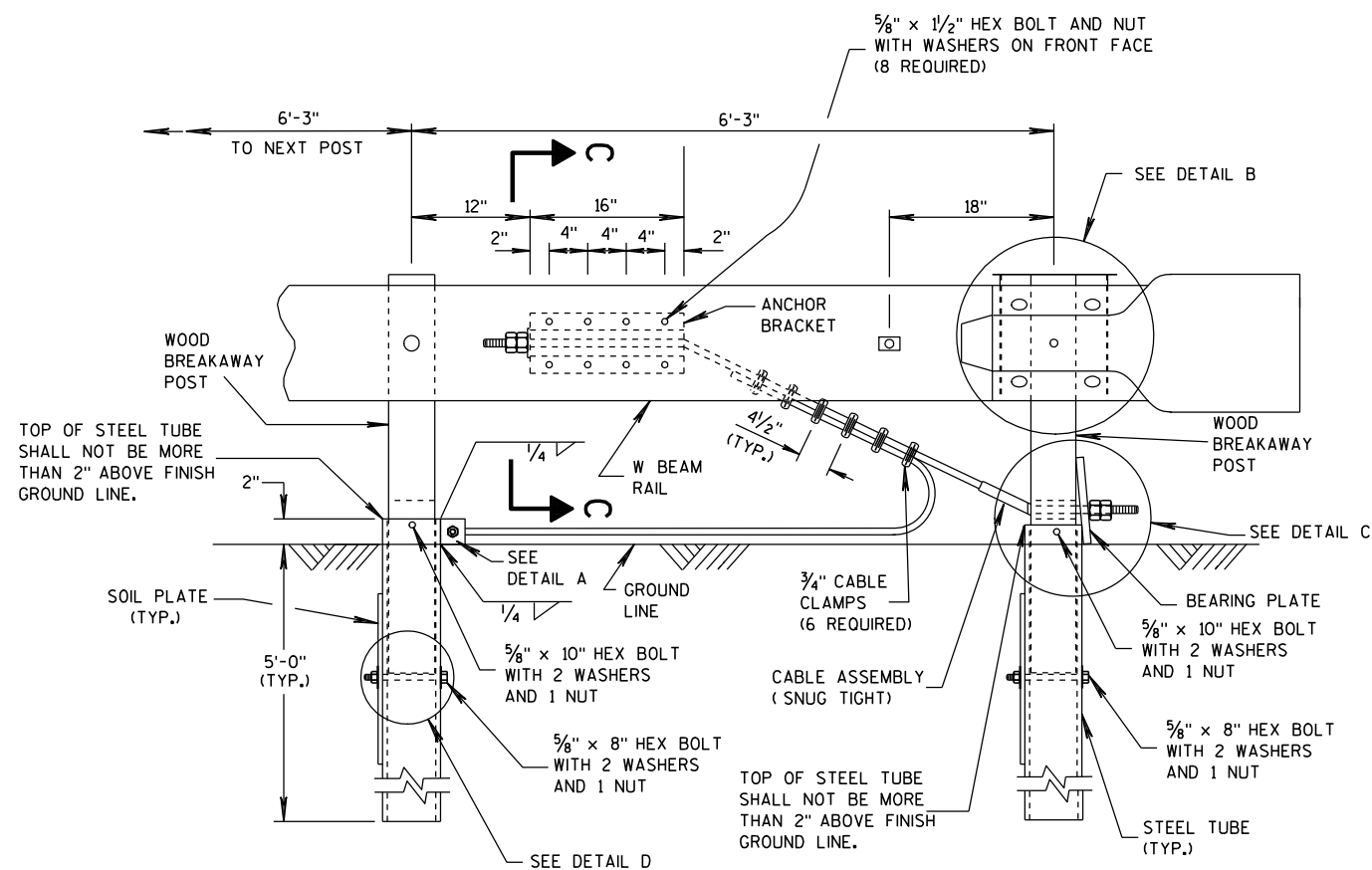
**SECTION B-B
(BEAM GUARD POST)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

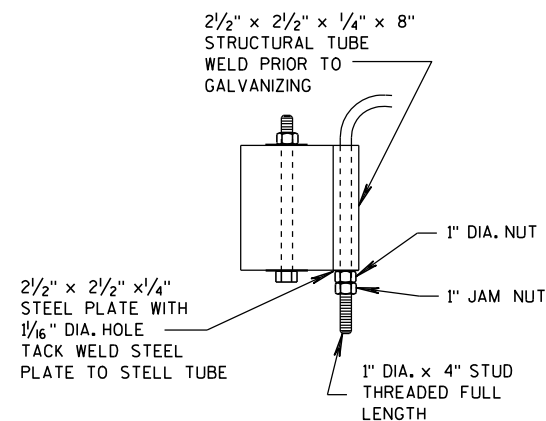


ELEVATION VIEW

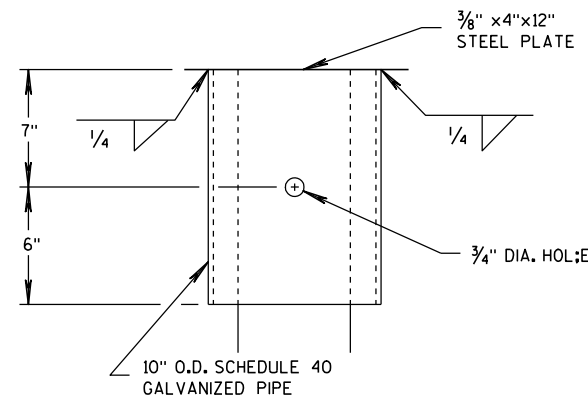
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A

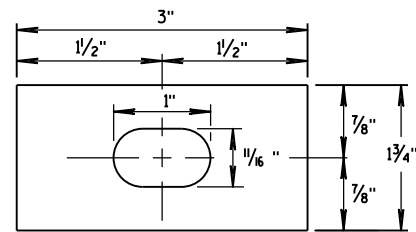


DETAIL B

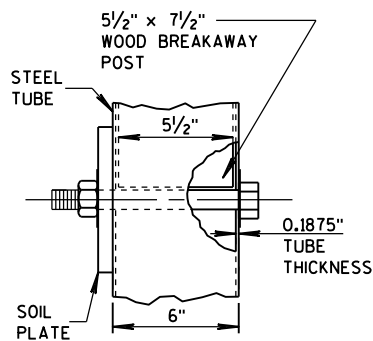
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

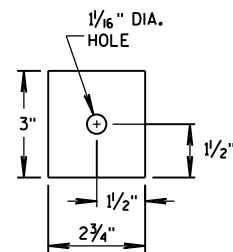
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



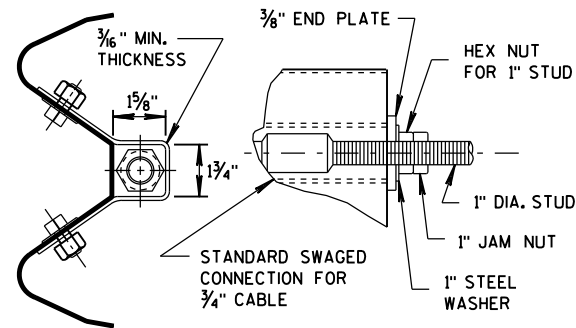
**RECTANGULAR
PLATE WASHER**



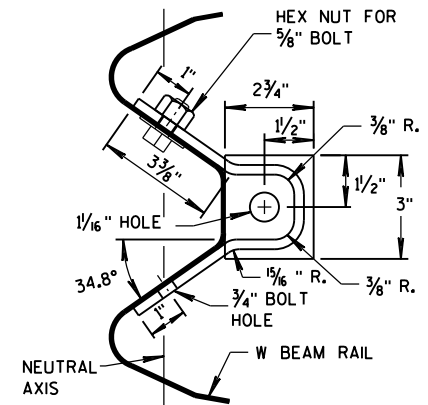
DETAIL D



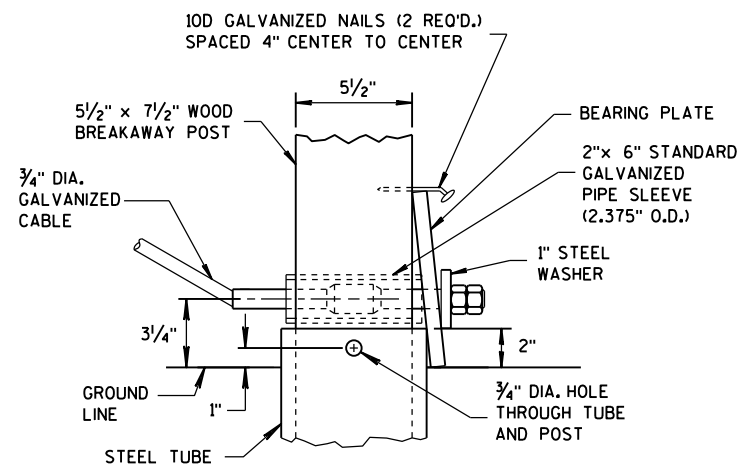
END PLATE



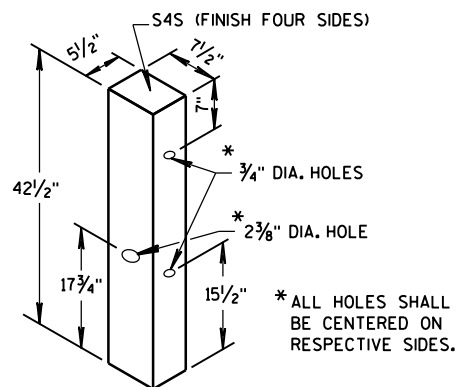
**SECTION C-C
(END PLATE REMOVED)**



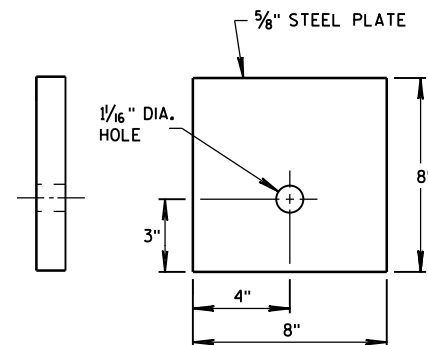
ANCHOR BRACKET



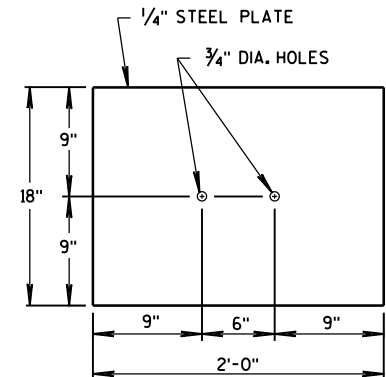
DETAIL C



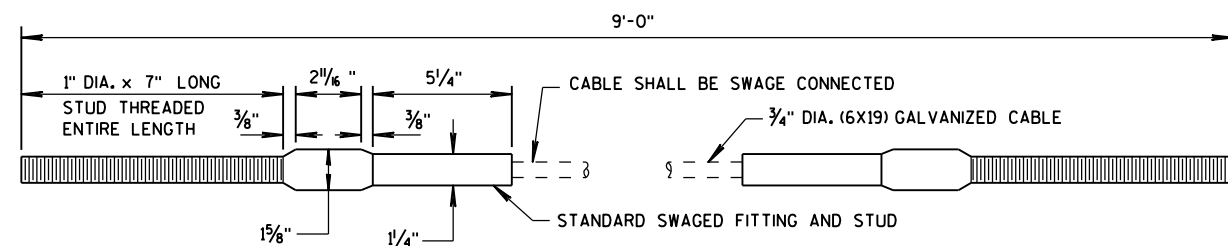
WOOD BREAKAWAY POST



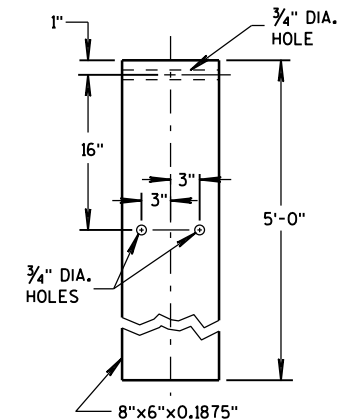
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY

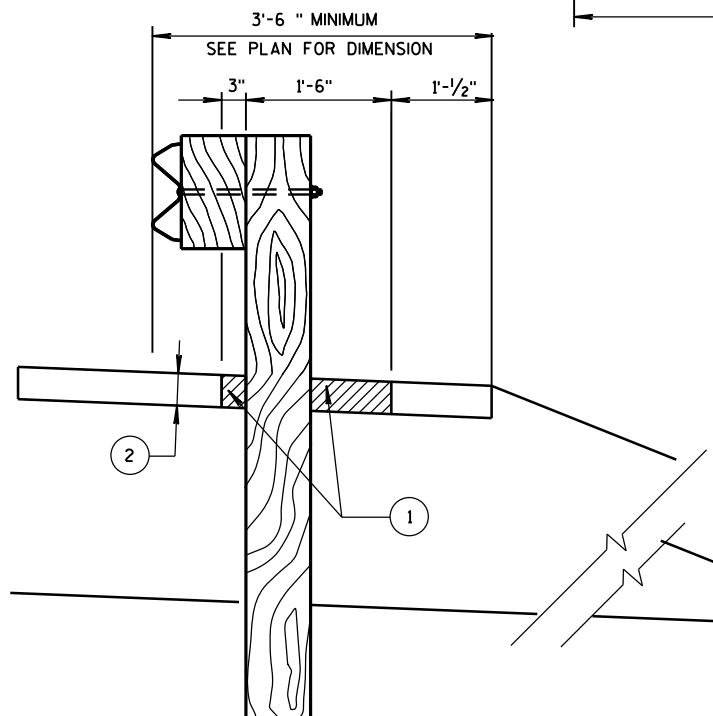


STEEL TUBE

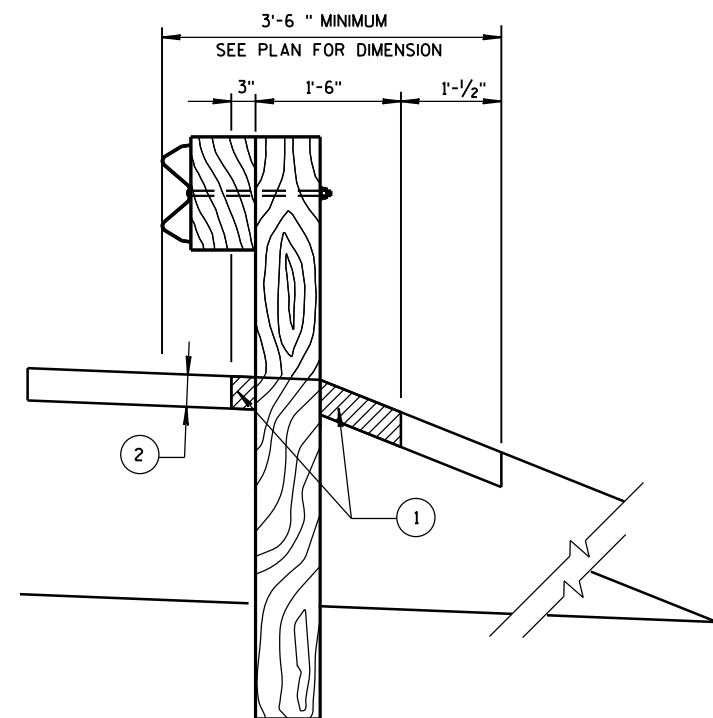
**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

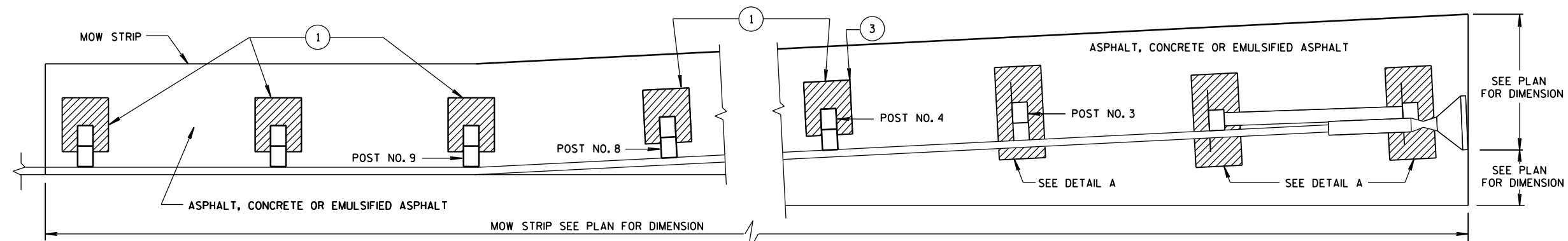
APPROVED
DATE 12/18/08
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



SECTION A-A

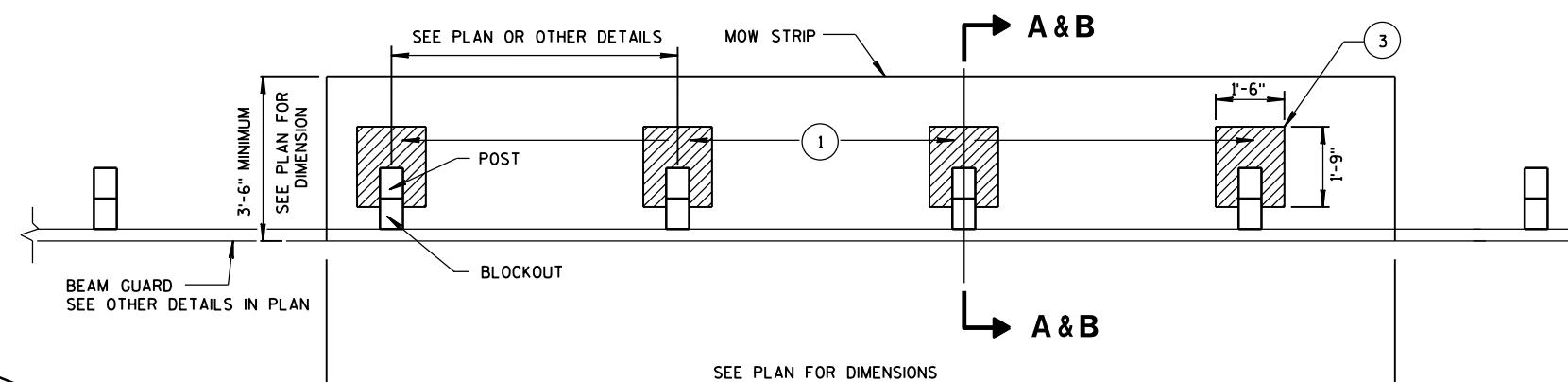


SECTION B-B



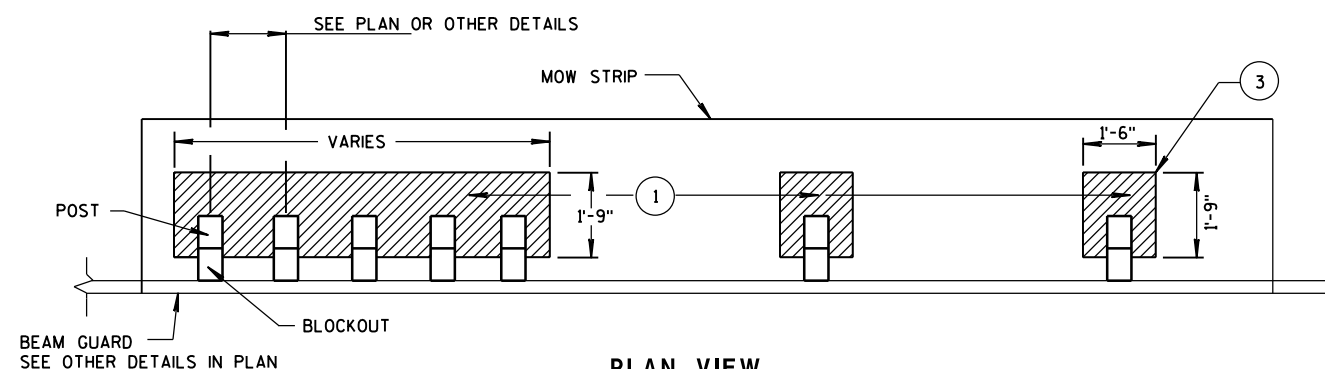
PLAN VIEW

MOW STRIP LAYOUT FOR ENERGY ABORING TERMINAL



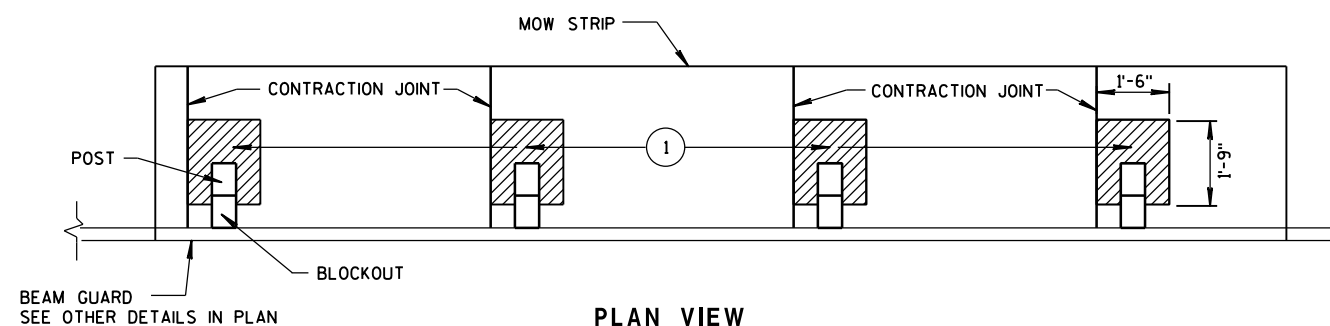
PLAN VIEW

MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



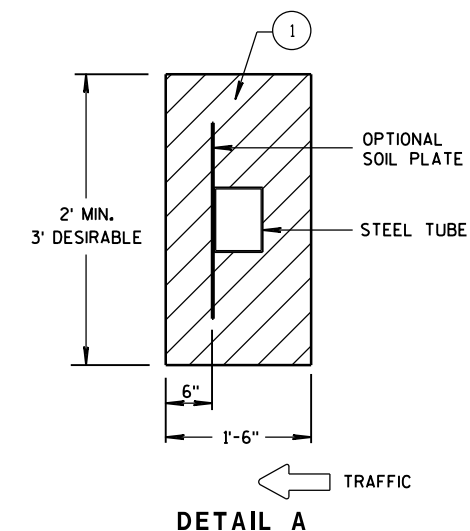
PLAN VIEW

MOW STRIP FOR TIGHT SPACING LAYOUT

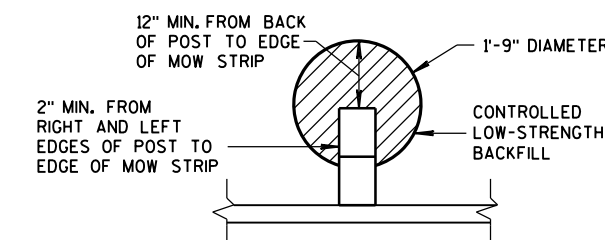


PLAN VIEW

JOINT PLACEMENT FOR CONCRETE MOW STRIP



DETAIL A

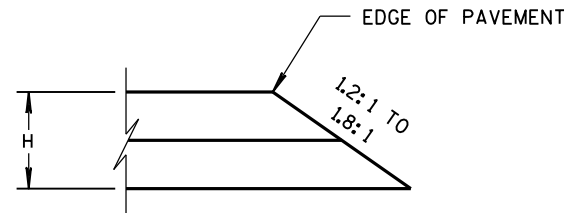
ALTERNATIVE HMA
MOW STRIP DESIGN

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

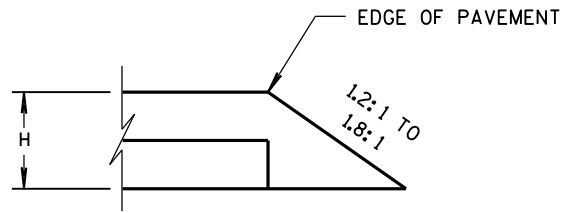
GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

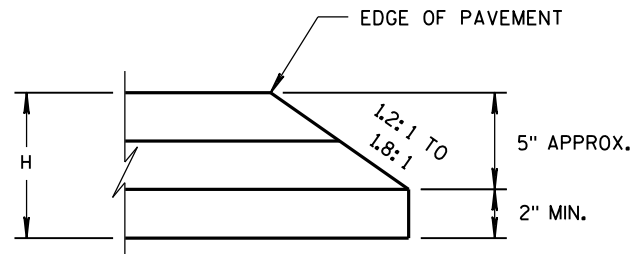
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



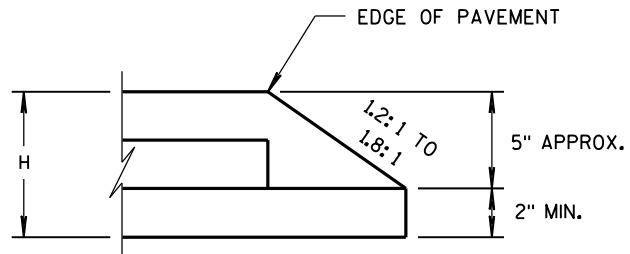
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

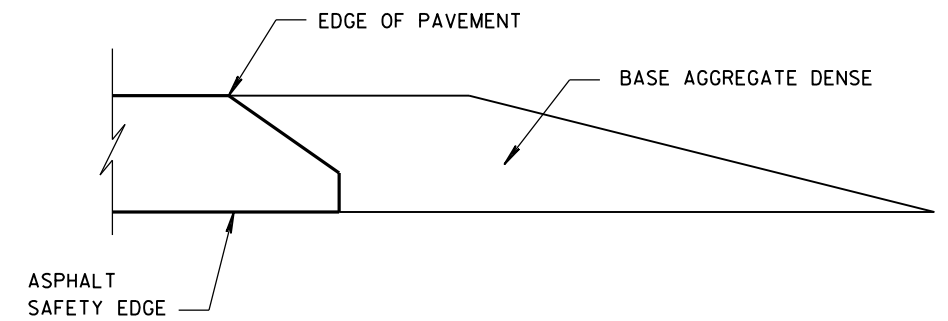


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

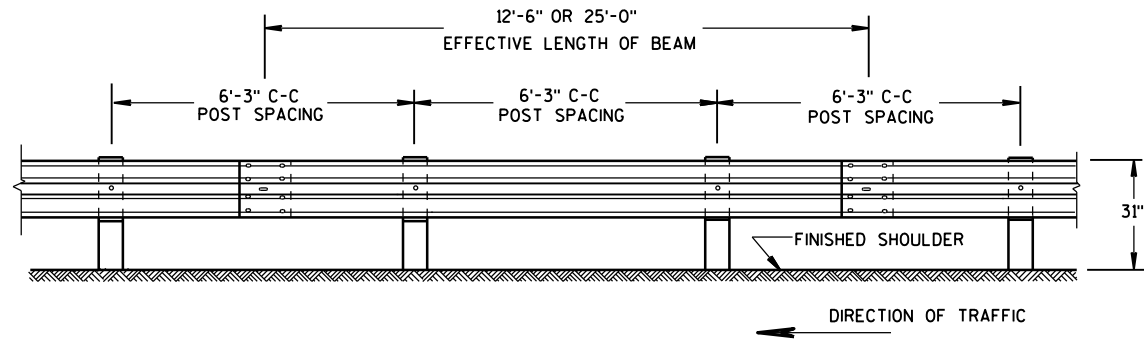
6

- S.D.D. 14 B 42-3a**



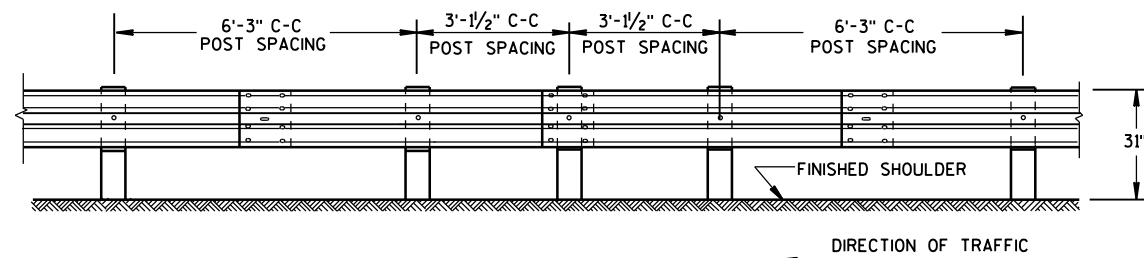
S.D.D. 14 B 42-3a





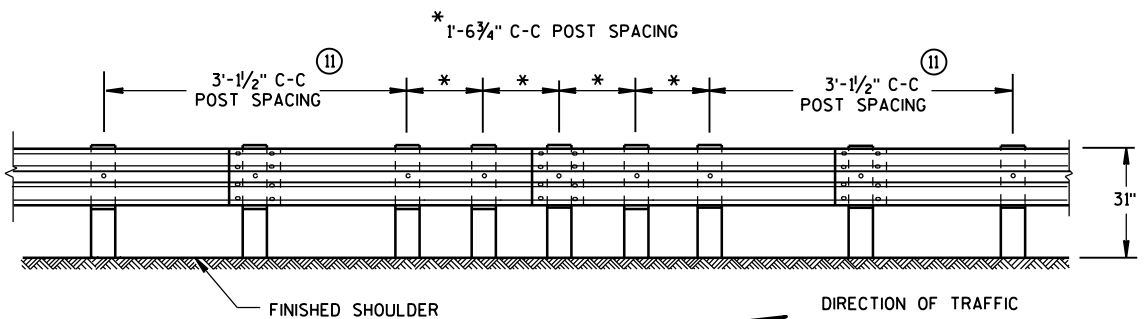
FRONT VIEW

POST SPACING STANDARD INSTALLATION



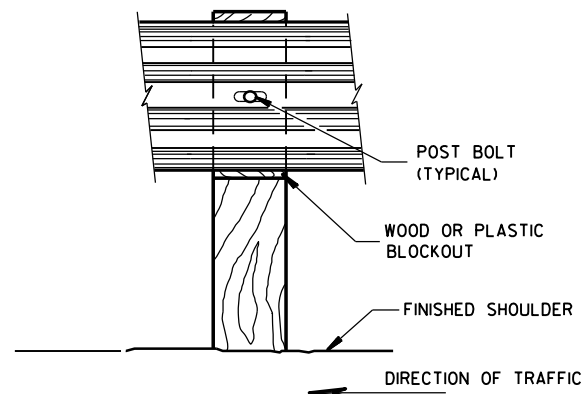
FRONT VIEW

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

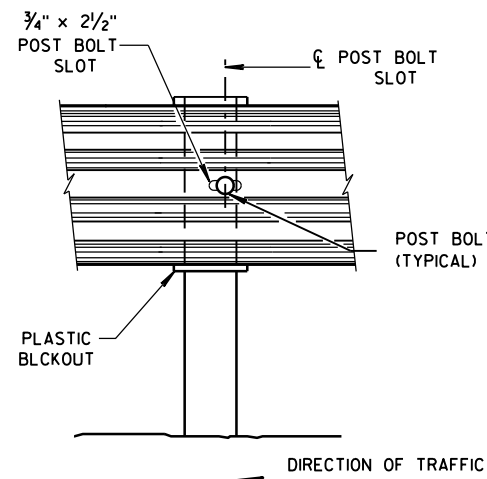


FRONT VIEW

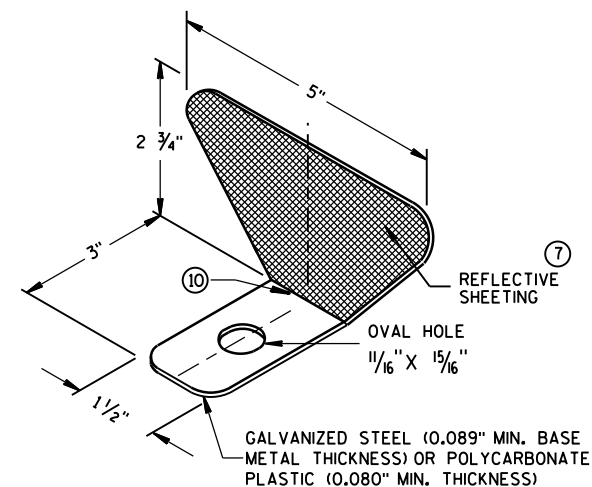
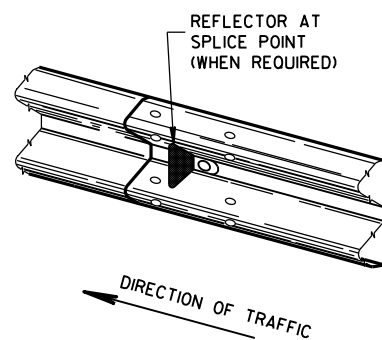
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



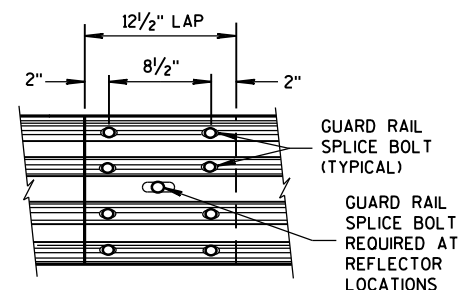
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

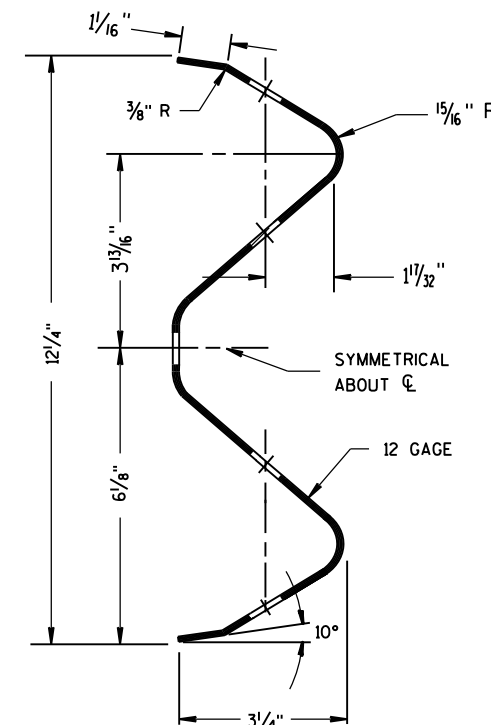
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

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



FRONT VIEW
MID-SPAN BEAM SPLICE



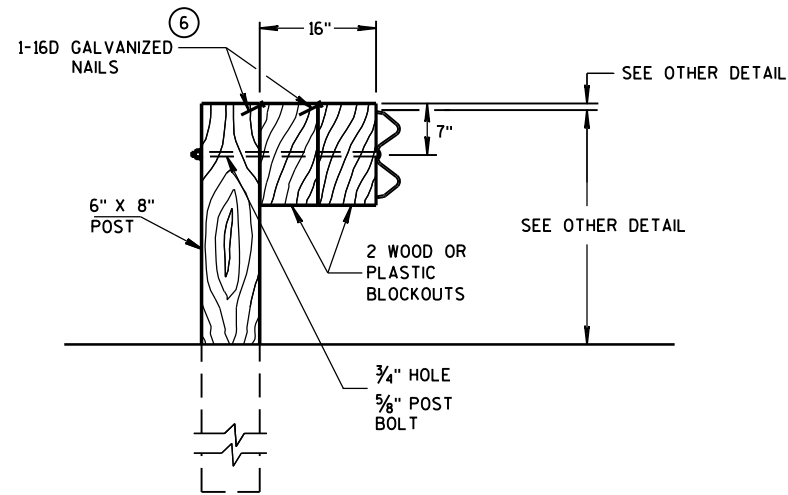
SECTION THRU W-BEAM RAIL

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

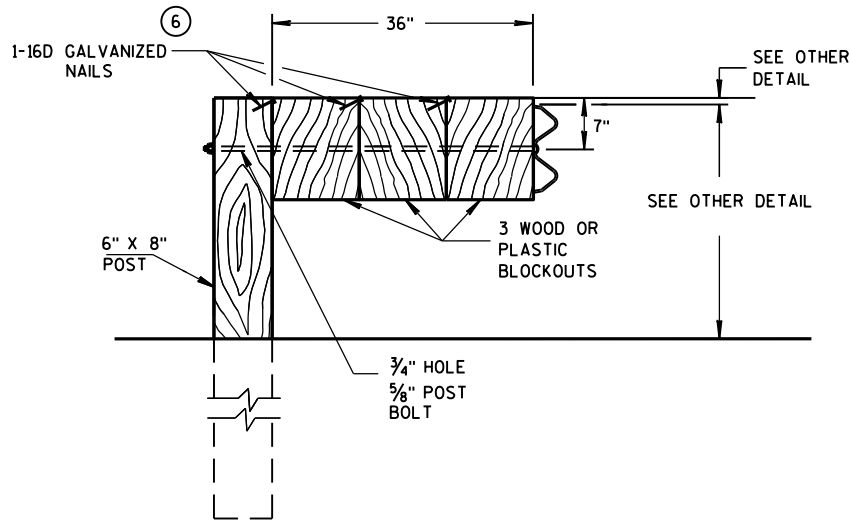
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

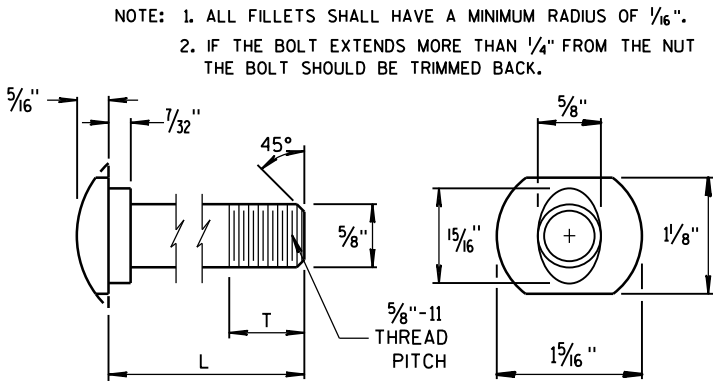
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



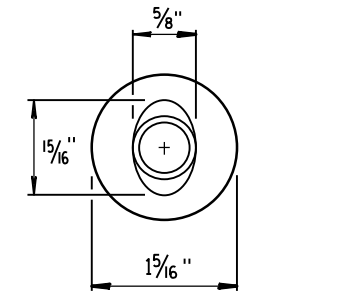
DETAIL FOR 36" BLOCKOUT DEPTH

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

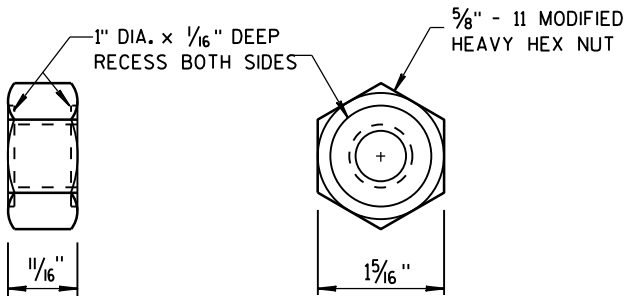
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



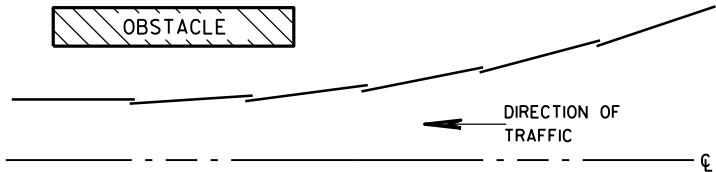
POST BOLT TABLE



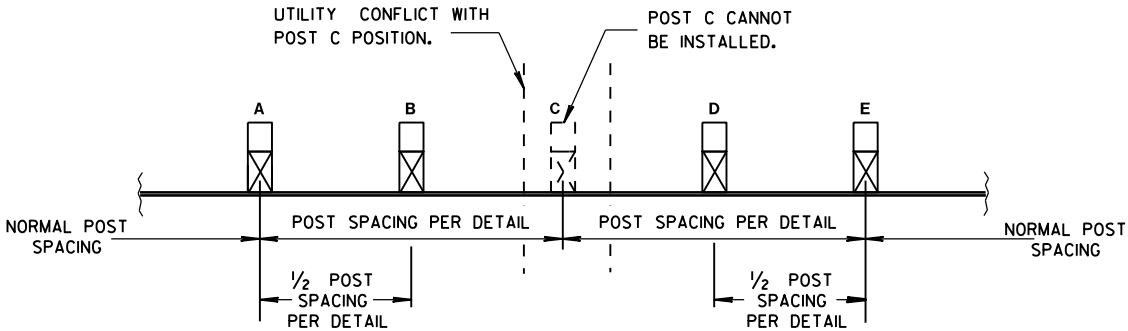
ALTERNATE BOLT HEAD



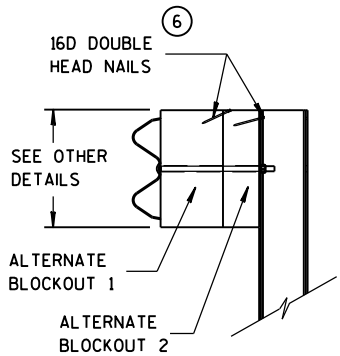
POST BOLT
AND RECESS NUT



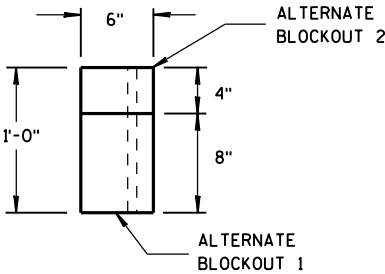
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

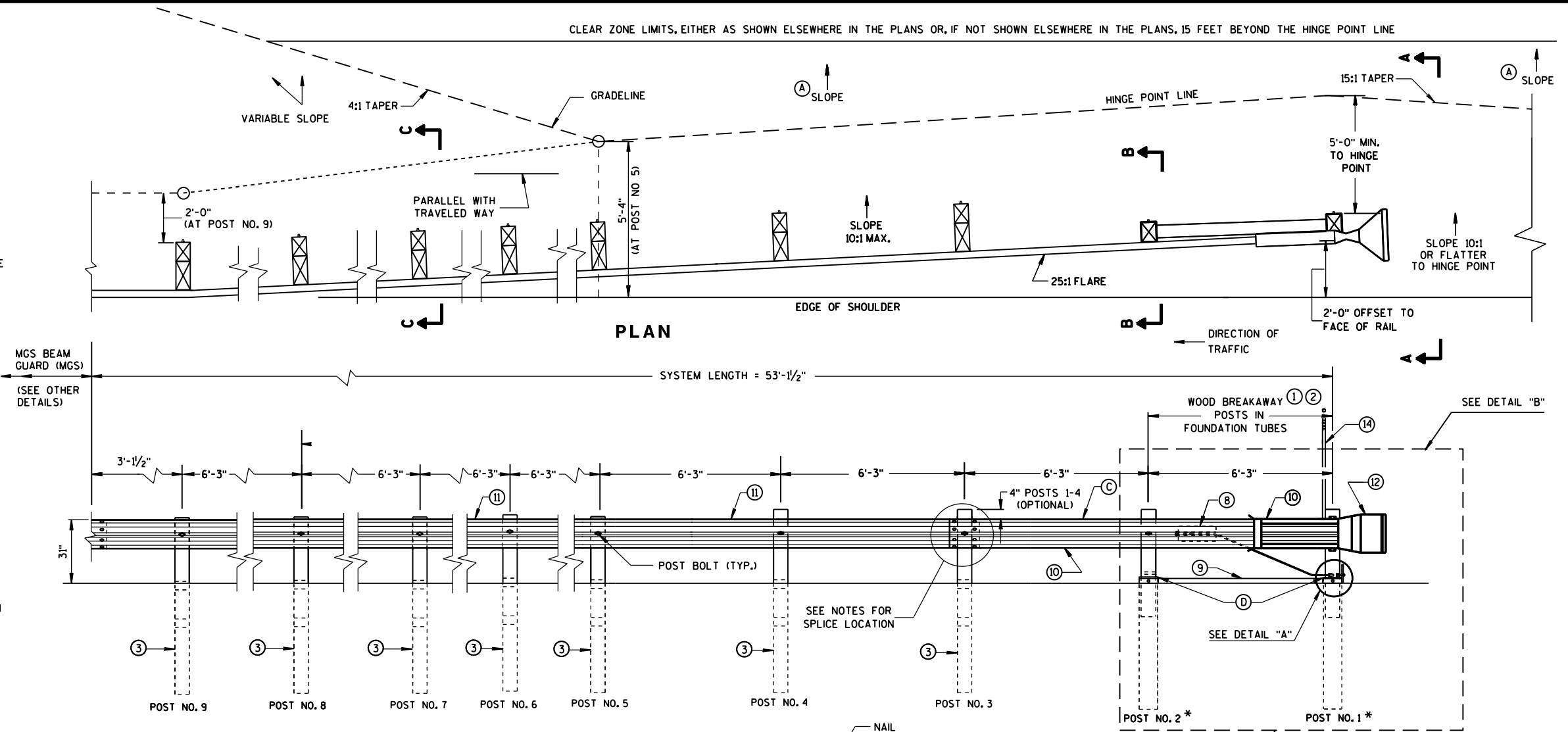
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

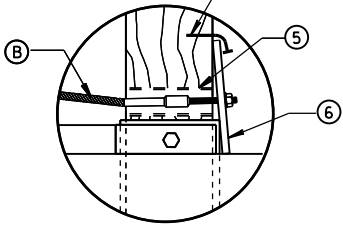
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

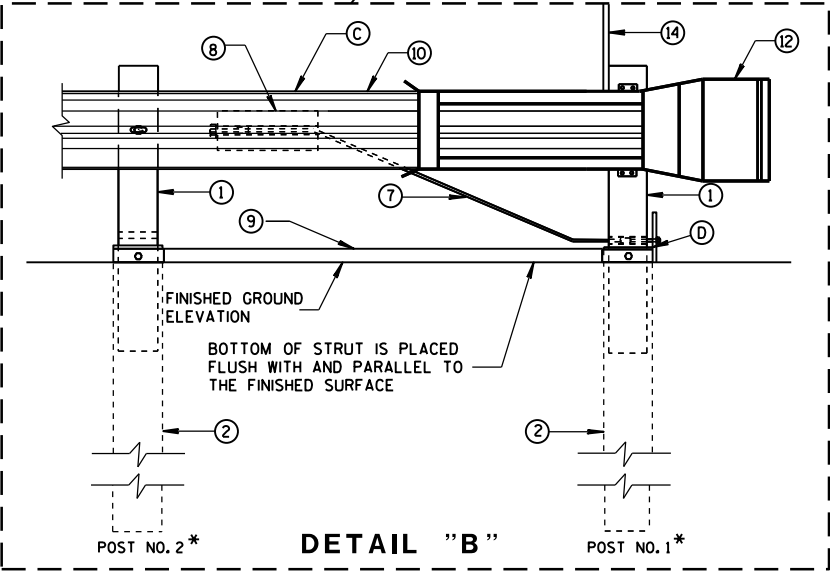
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



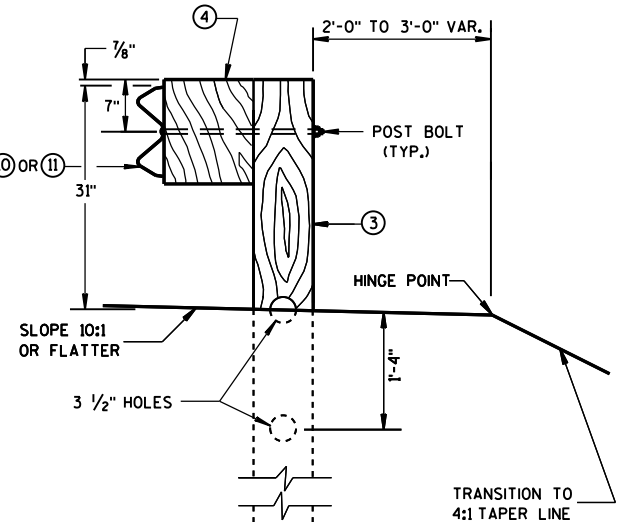
ELEVATION



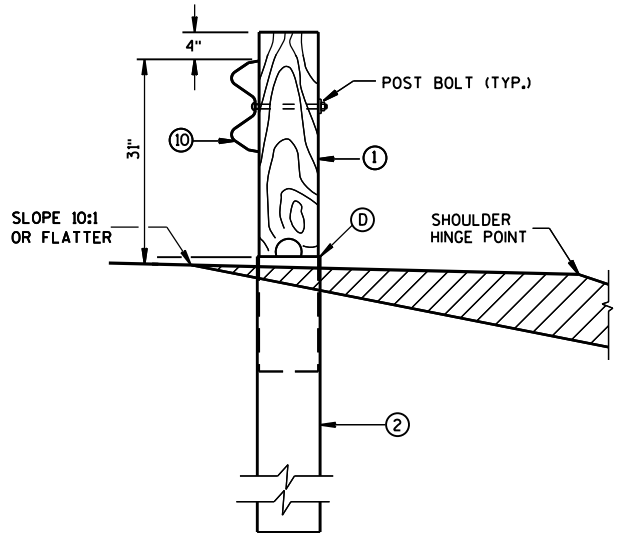
DETAIL "A"



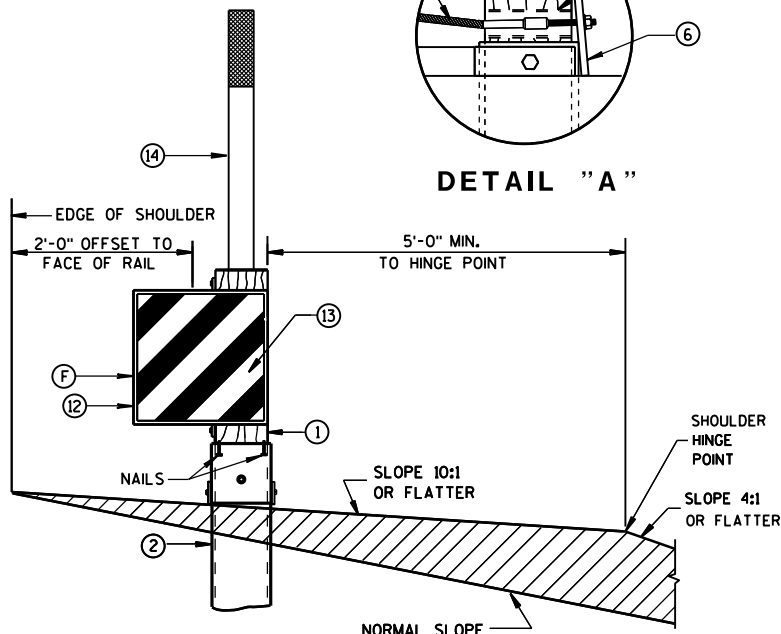
DETAIL "B"



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



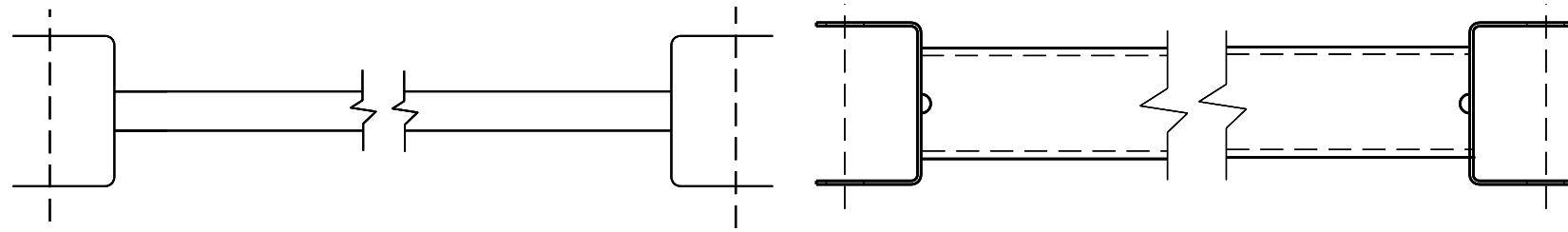
SECTION B-B
TYPICAL AT POST NO. 2*



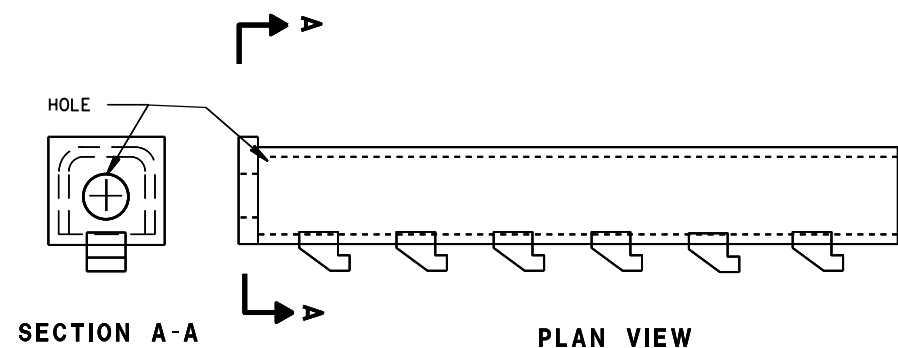
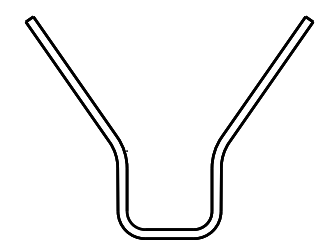
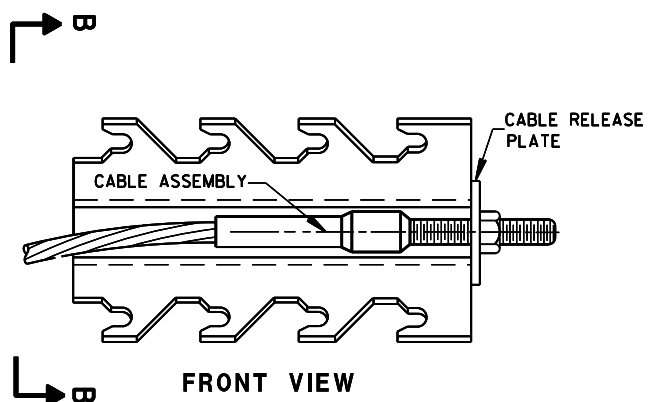
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



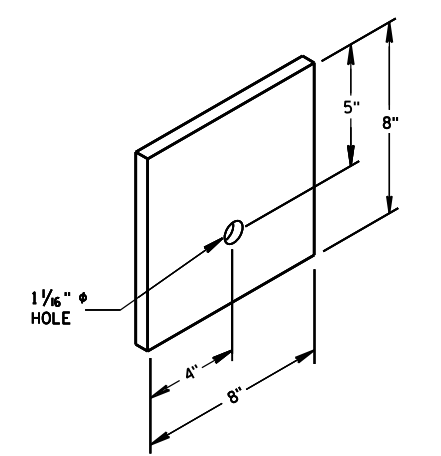
9 H
GENERIC GROUND STRUT



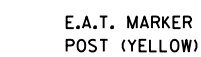
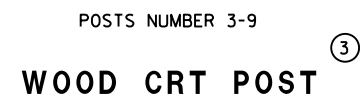
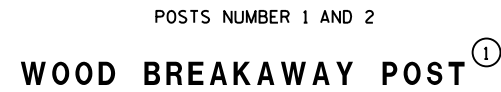
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

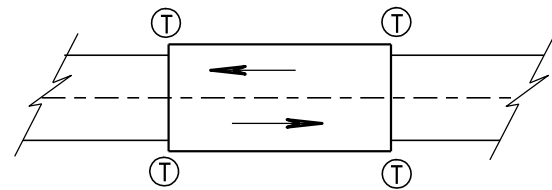
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



6
BEARING PLATE

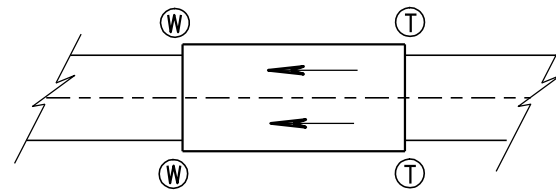


MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	<i>/S/ Jerry H. Zogg</i>
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

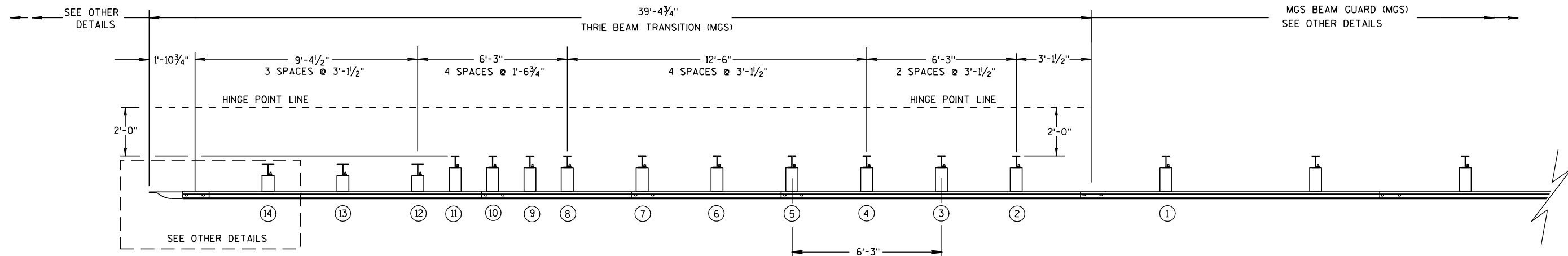
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

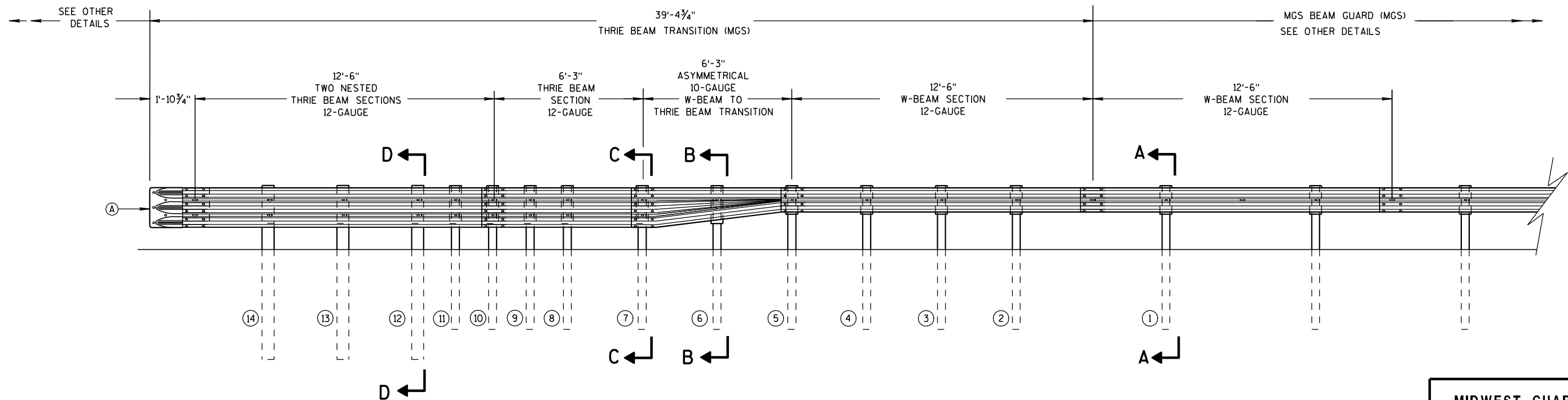
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

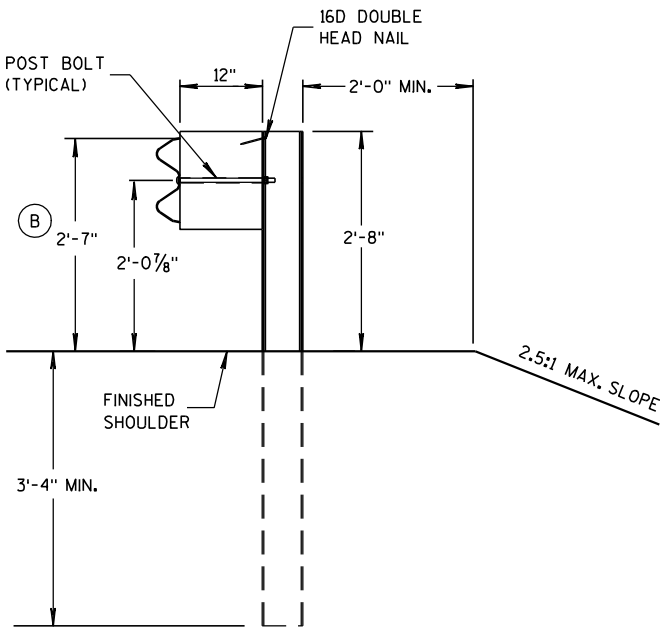
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

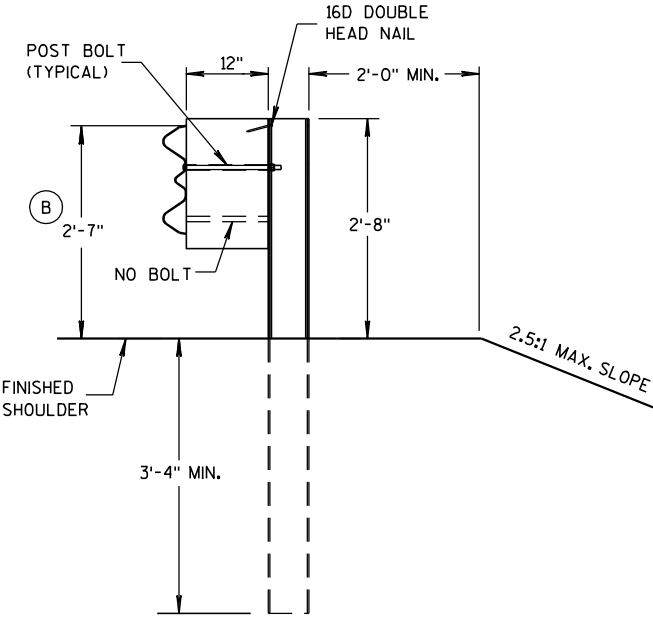
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

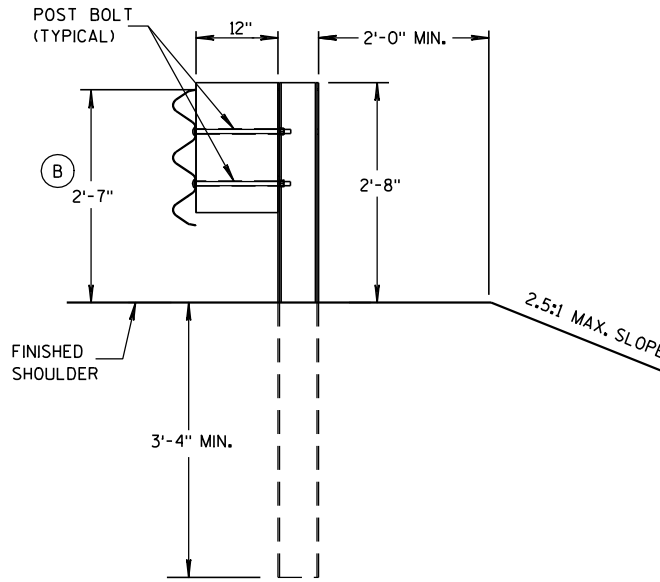
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



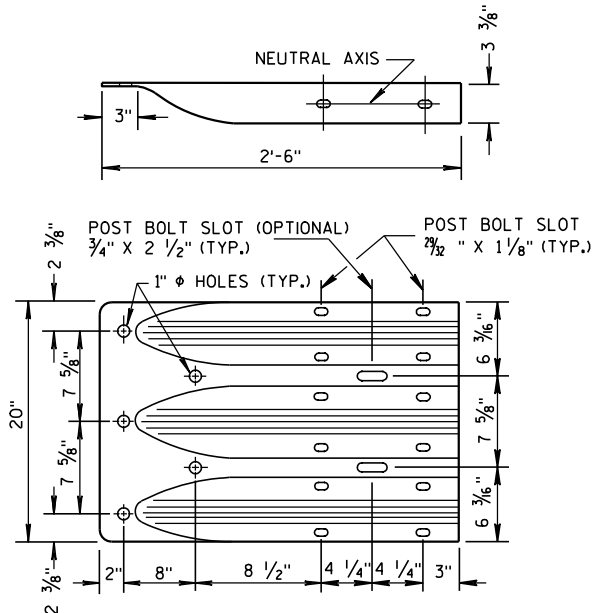
SECTION A-A
POSTS 1-5



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11



THRIE BEAM
TERMINAL CONNECTOR

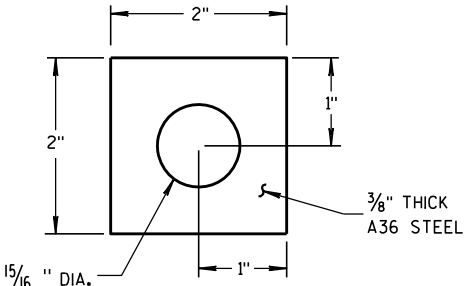
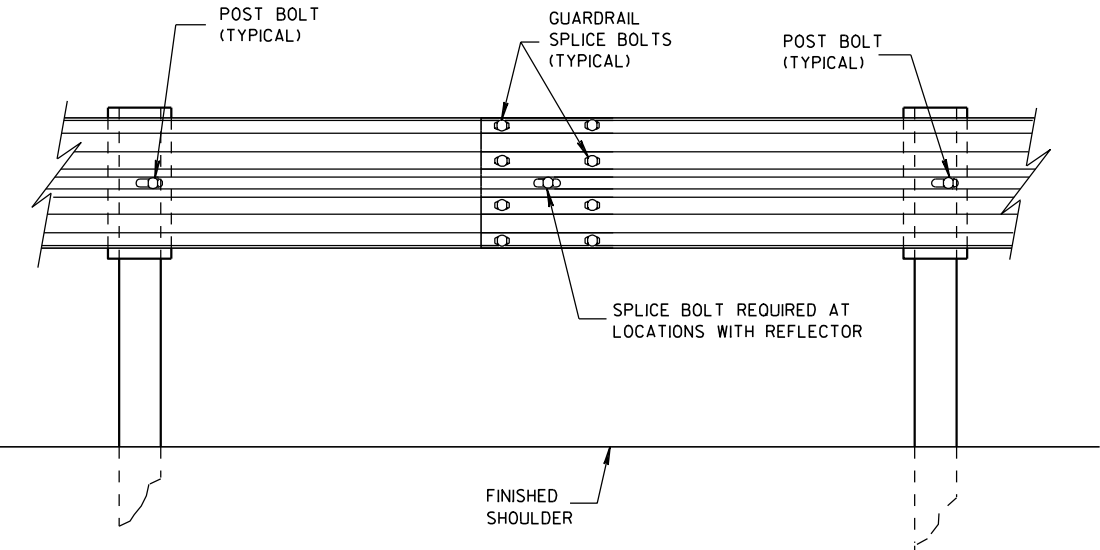
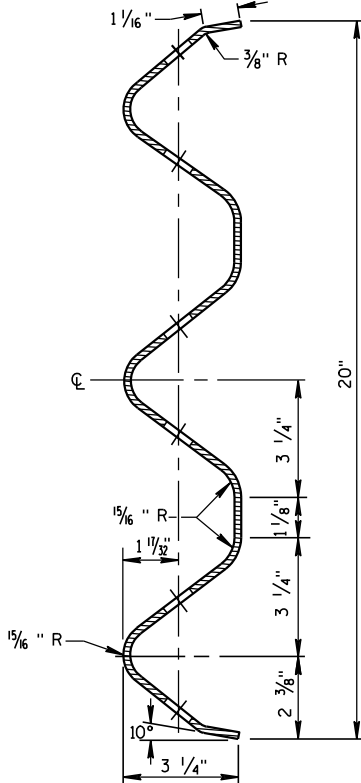


PLATE WASHER DETAIL



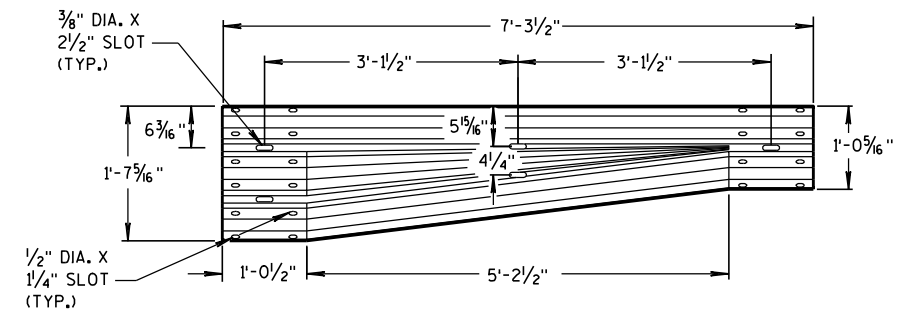
SPLICE DETAIL



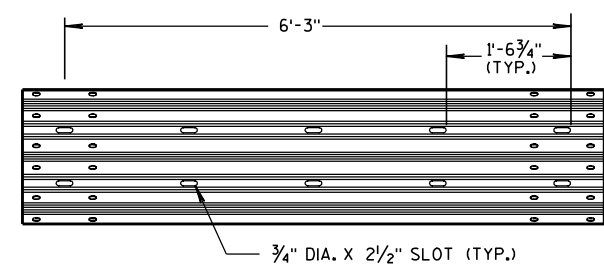
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

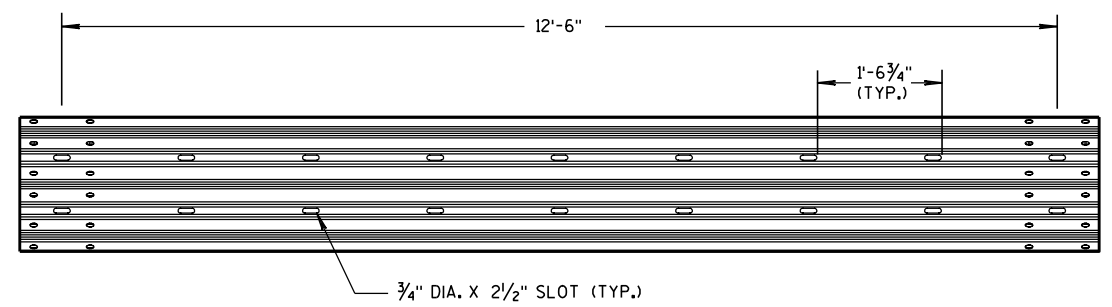
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



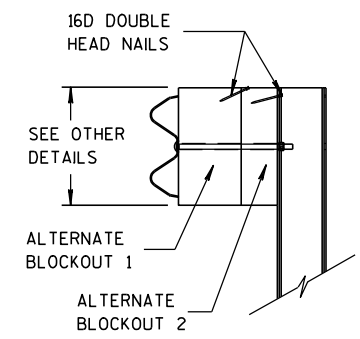
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

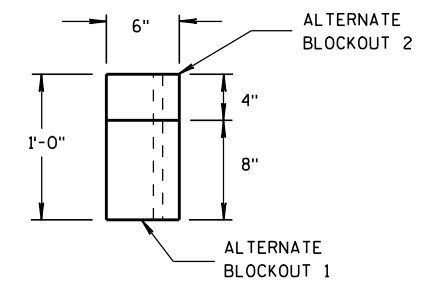


12'-6" THRIE BEAM SECTION

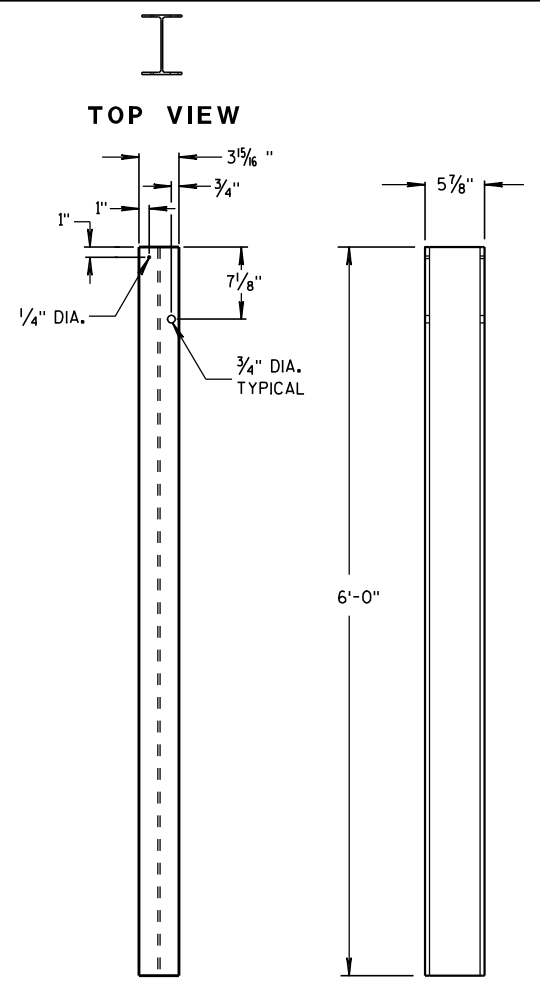


SIDE VIEW

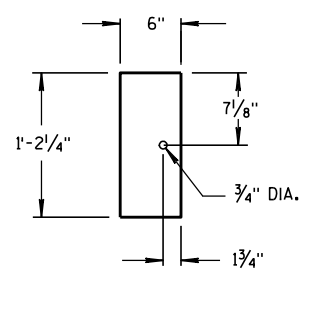
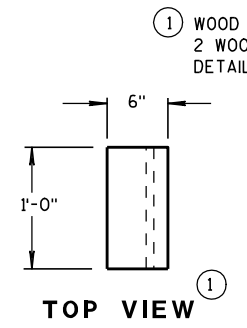
ALTERNATE WOOD BLOCKOUT DETAIL



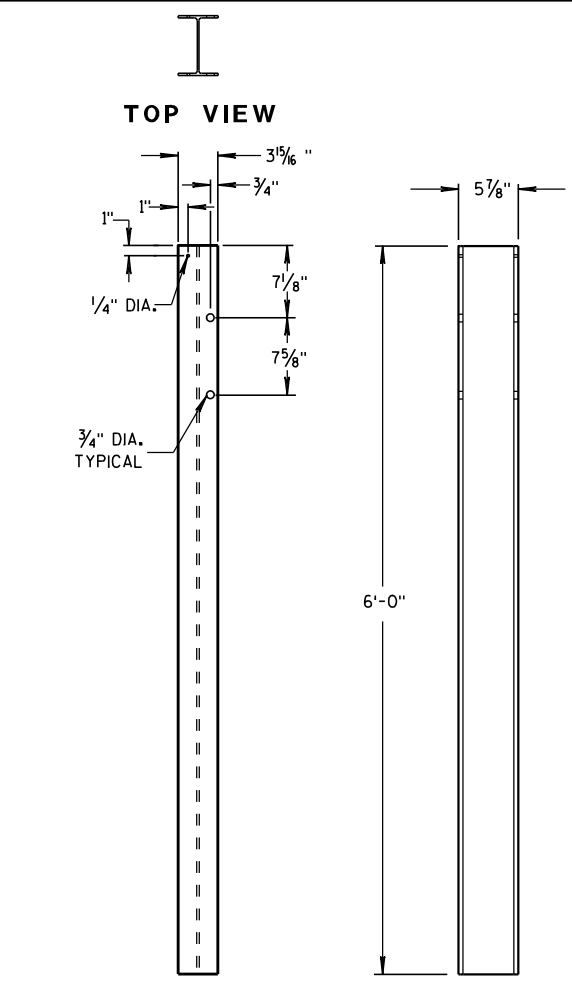
TOP VIEW



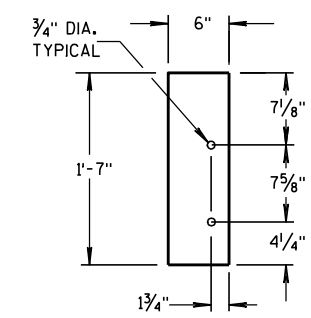
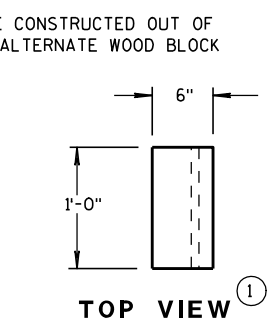
STEEL POSTS 1-5



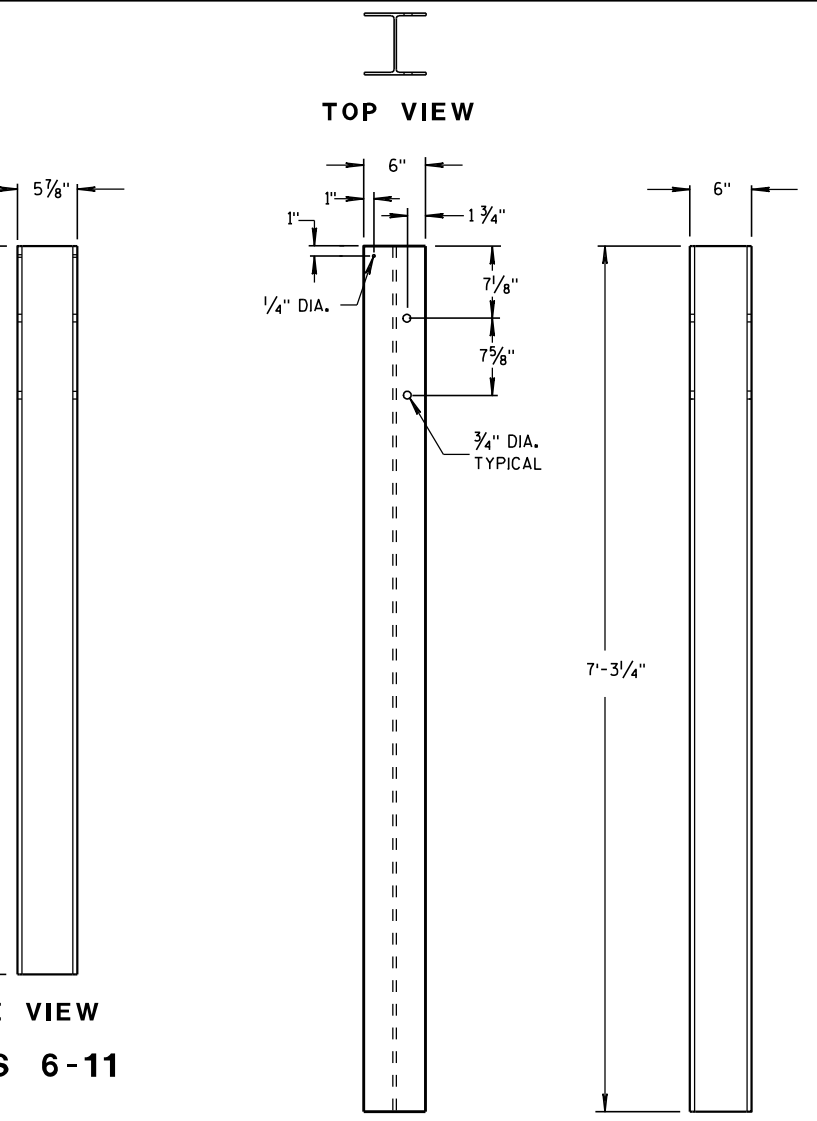
BLOCKOUT POSTS 1-5



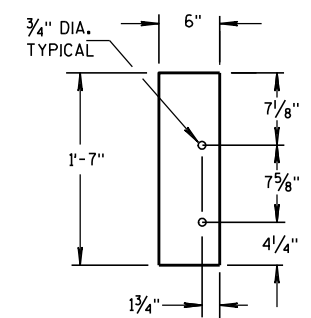
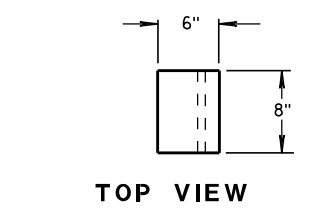
STEEL POSTS 6-11



BLOCKOUT POSTS 6-11



STEEL POSTS 12-14



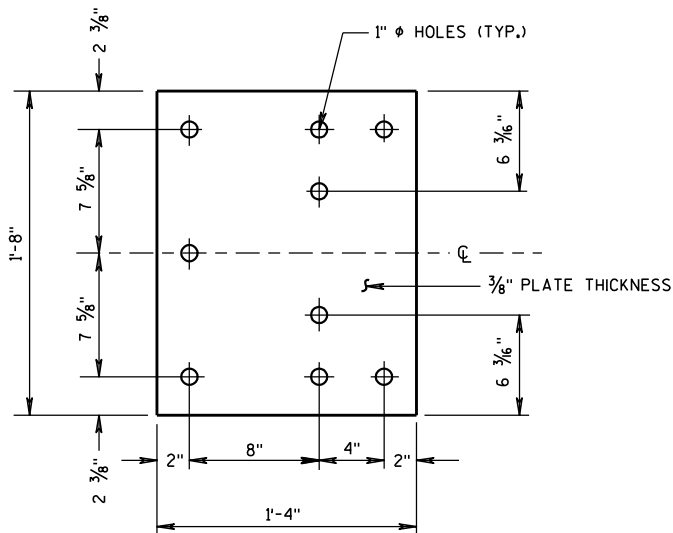
BLOCKOUT POSTS 12-14

STEEL POST SIZES

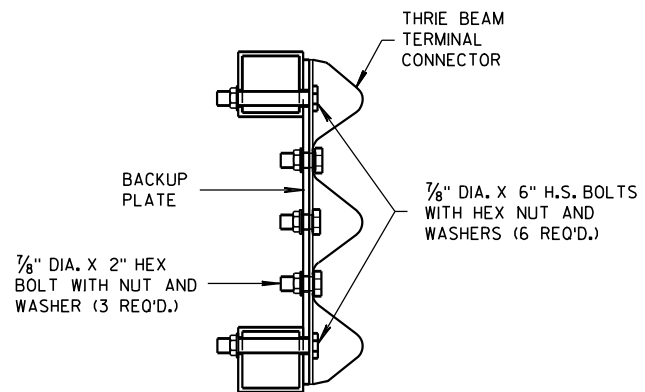
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

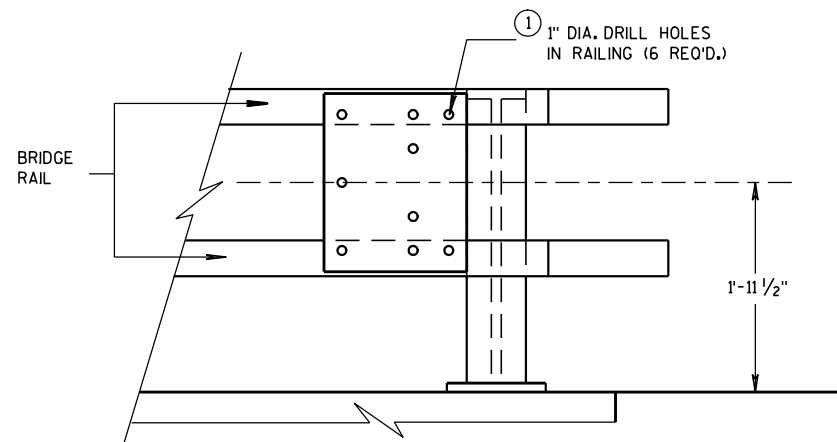
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



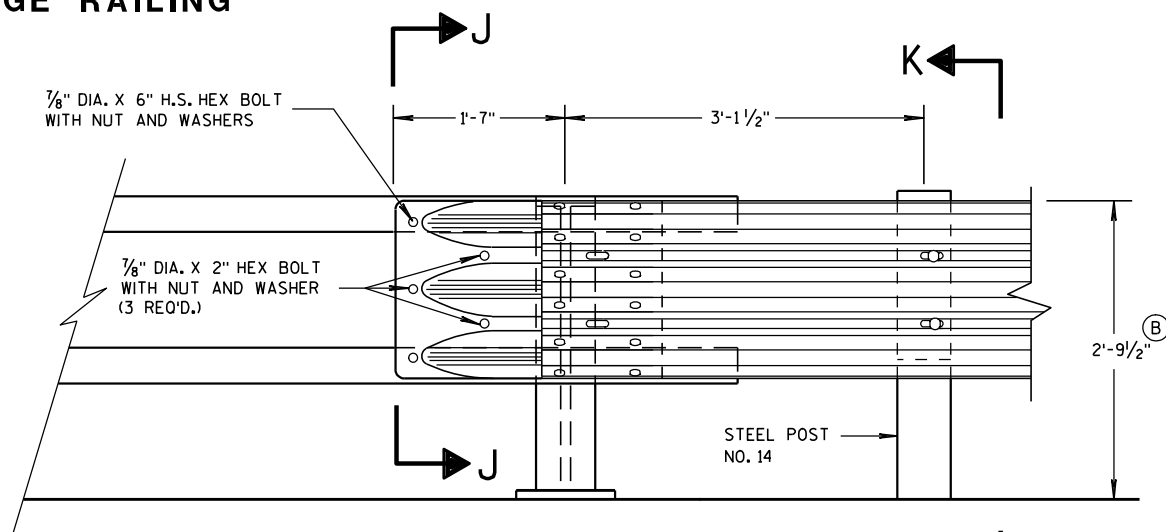
BACK-UP PLATE DETAIL



SECTION J-J

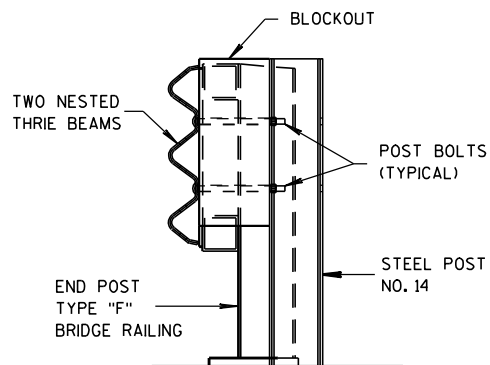


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

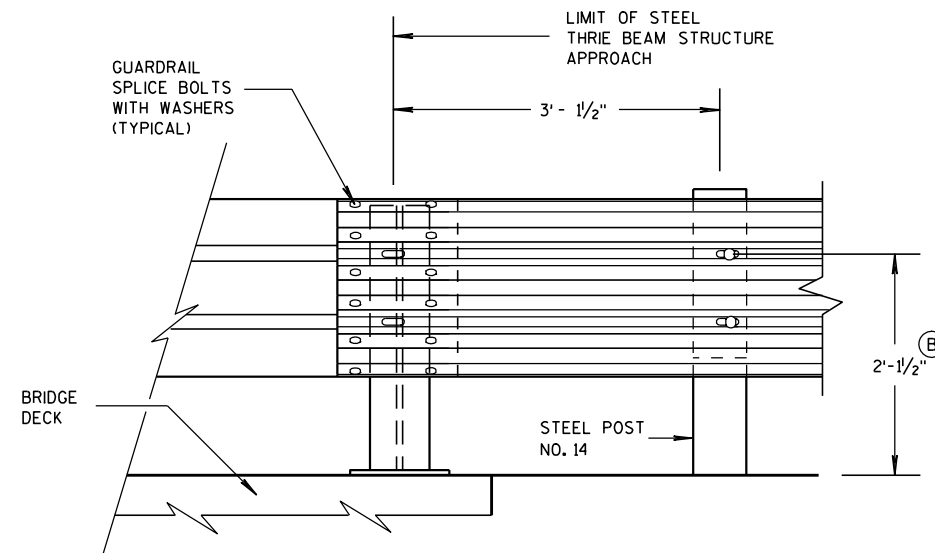
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



FRONT VIEW

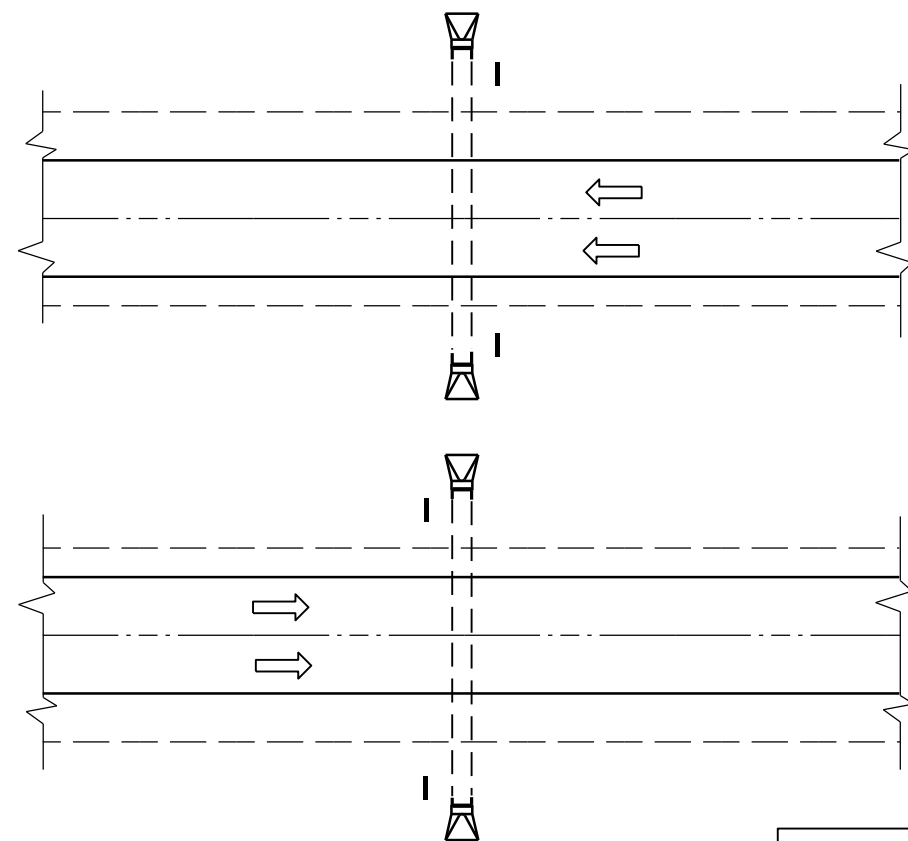
THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

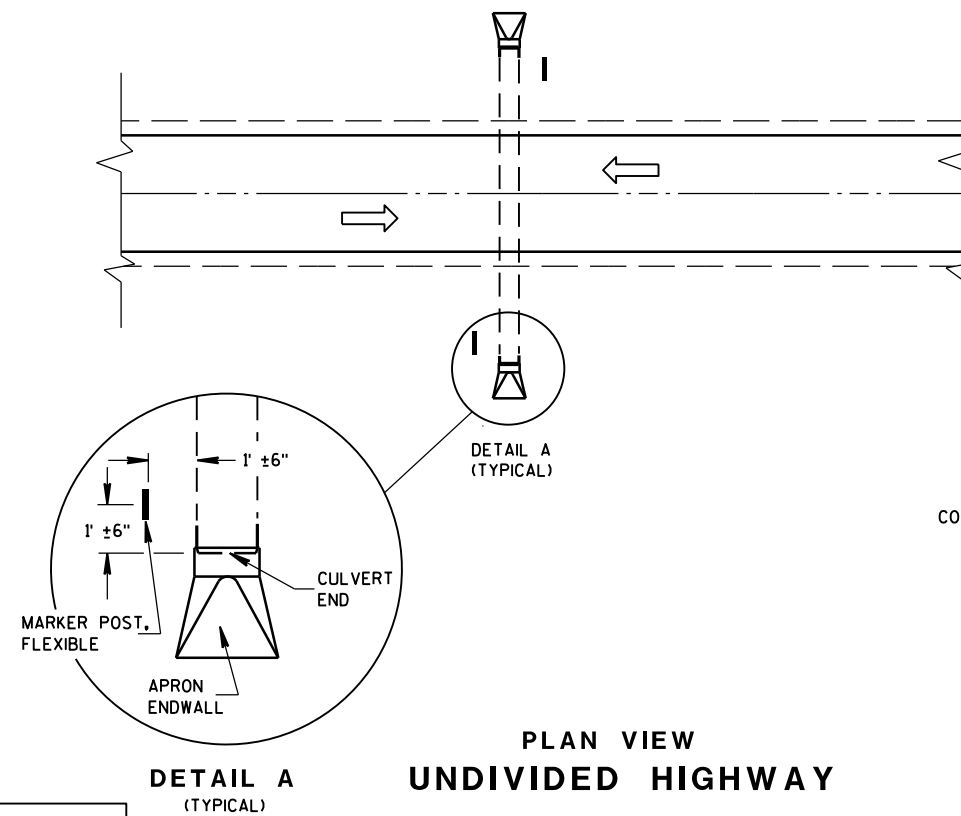
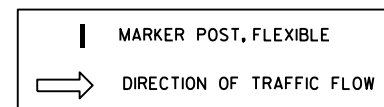
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

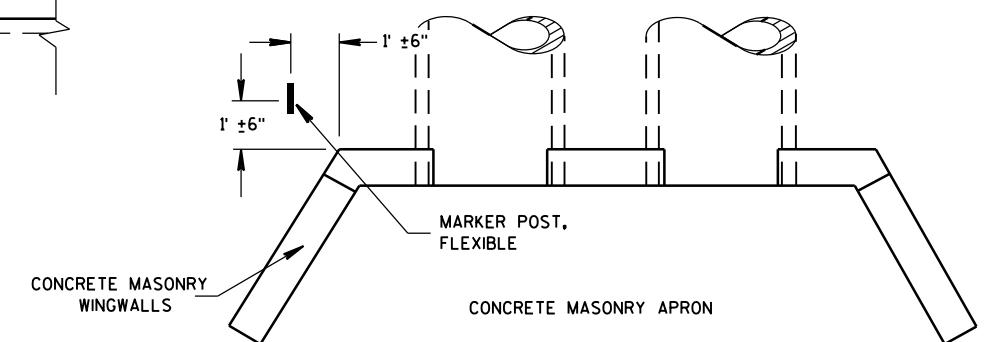


PLAN VIEW
UNDIVIDED HIGHWAY

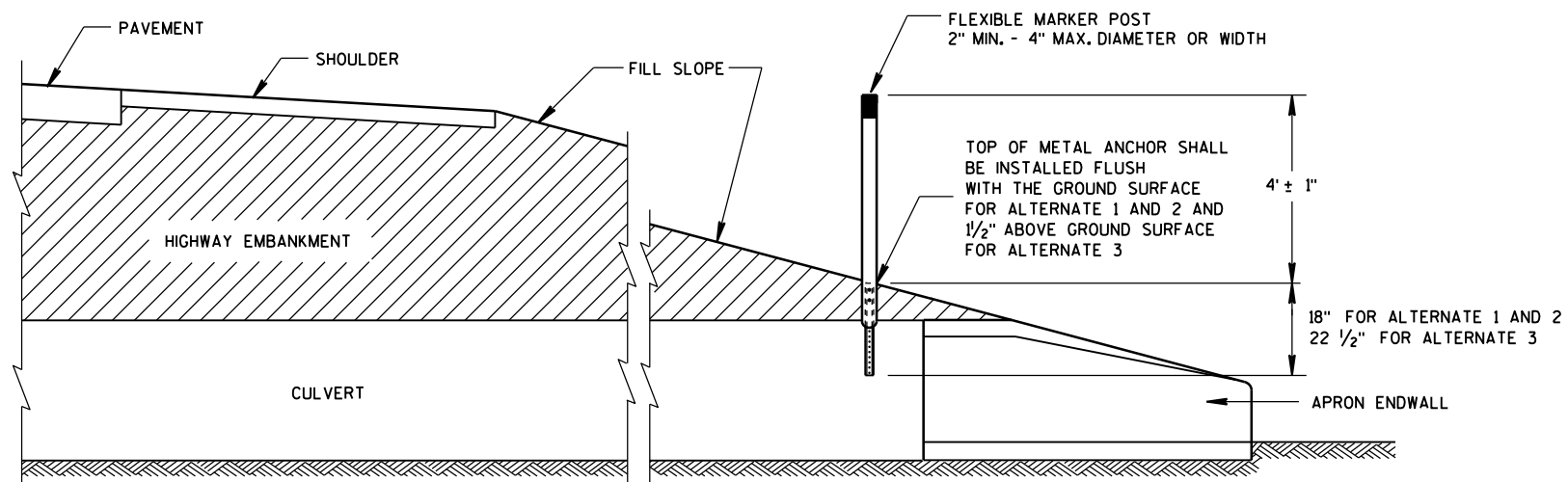
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



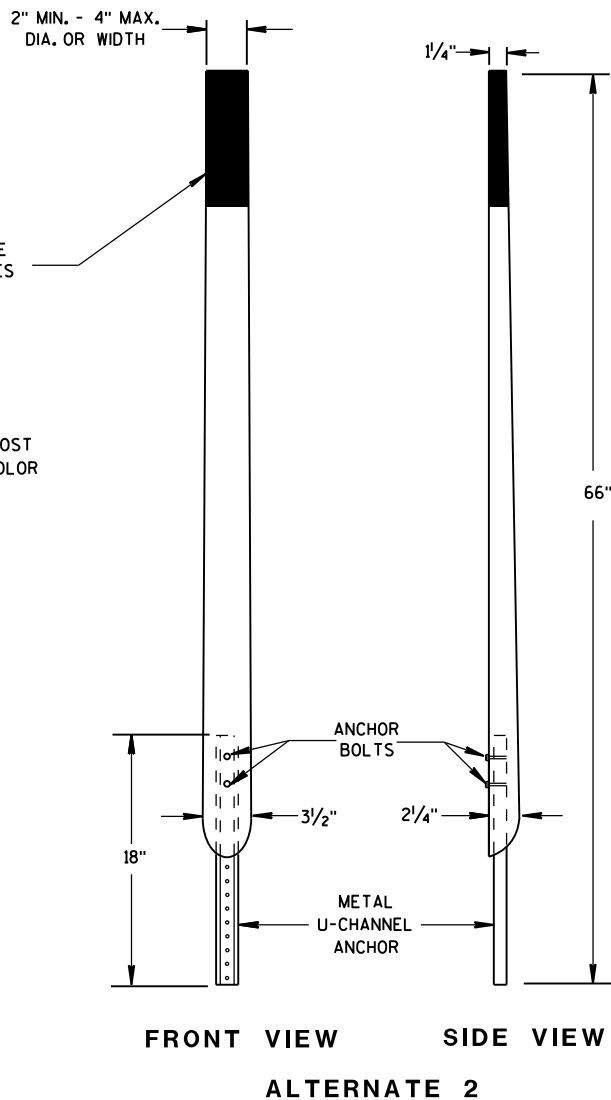
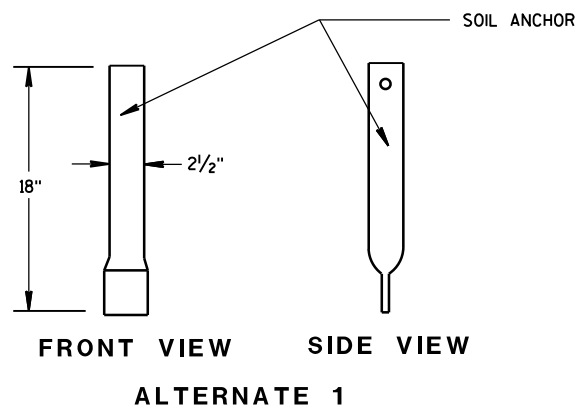
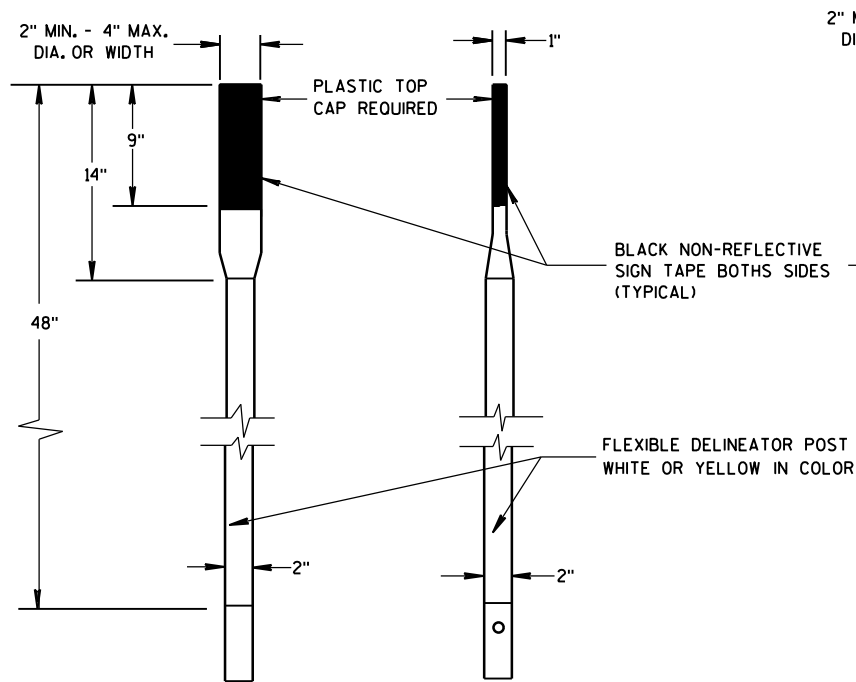
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



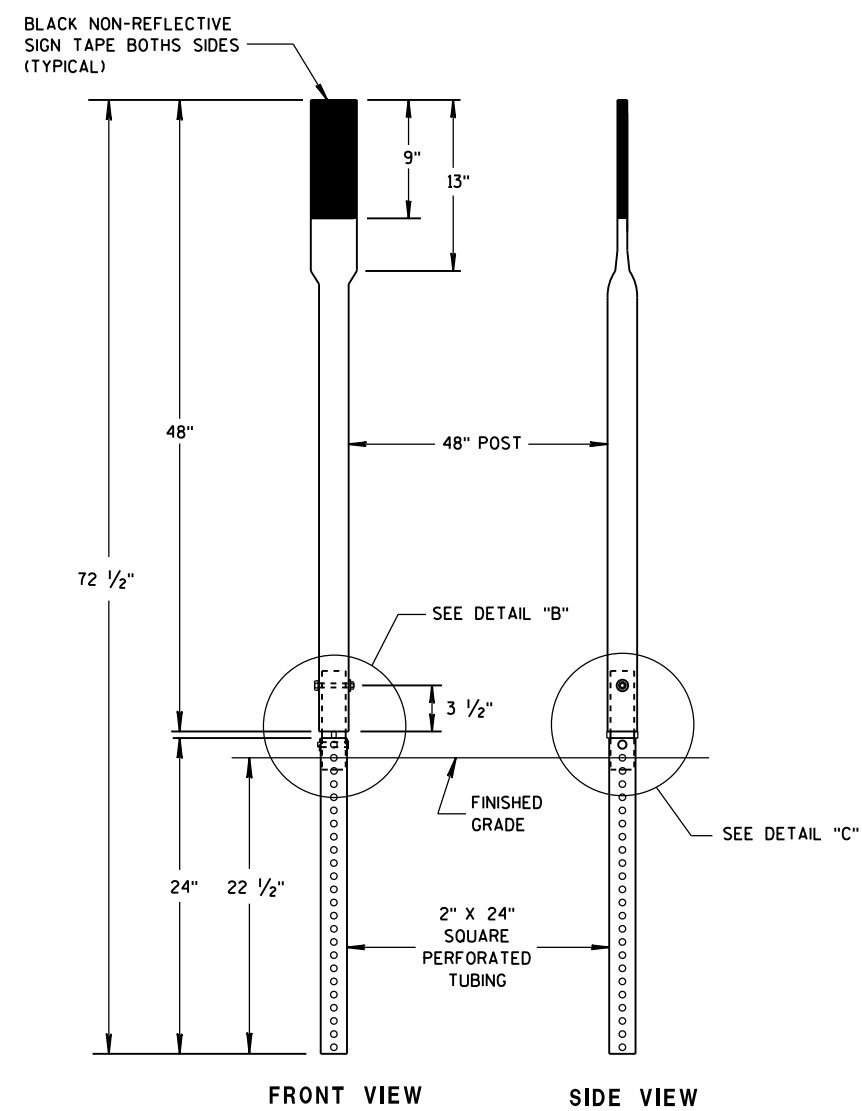
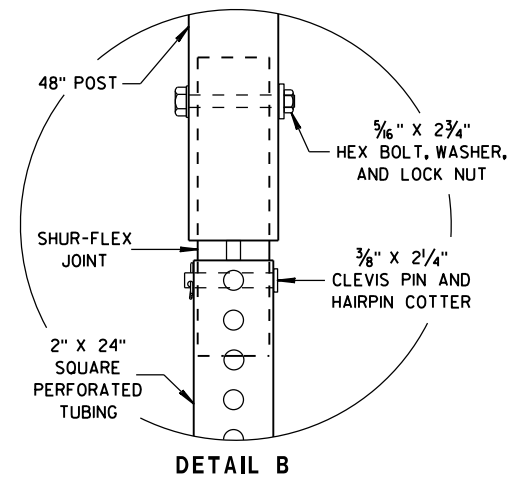
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

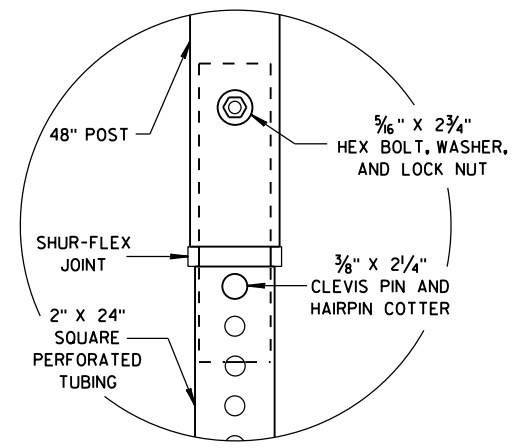
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



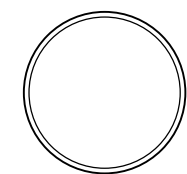
FLEXIBLE MARKER POSTS

FLEXIBLE MARKER POSTS
ALTERNATE 3

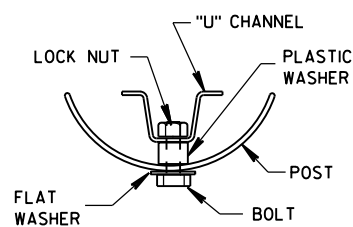
DETAIL B



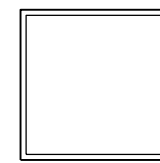
DETAIL C



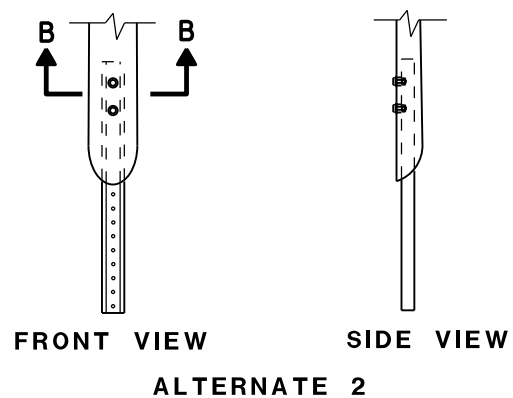
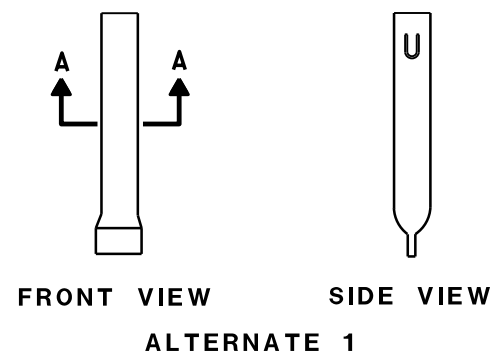
SECTION A-A



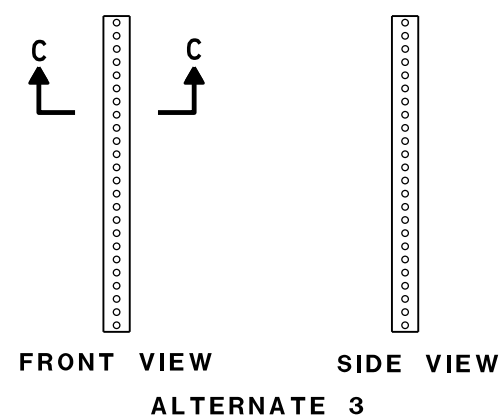
SECTION B-B



SECTION C-C



FLEXIBLE MARKER POST ANCHORS

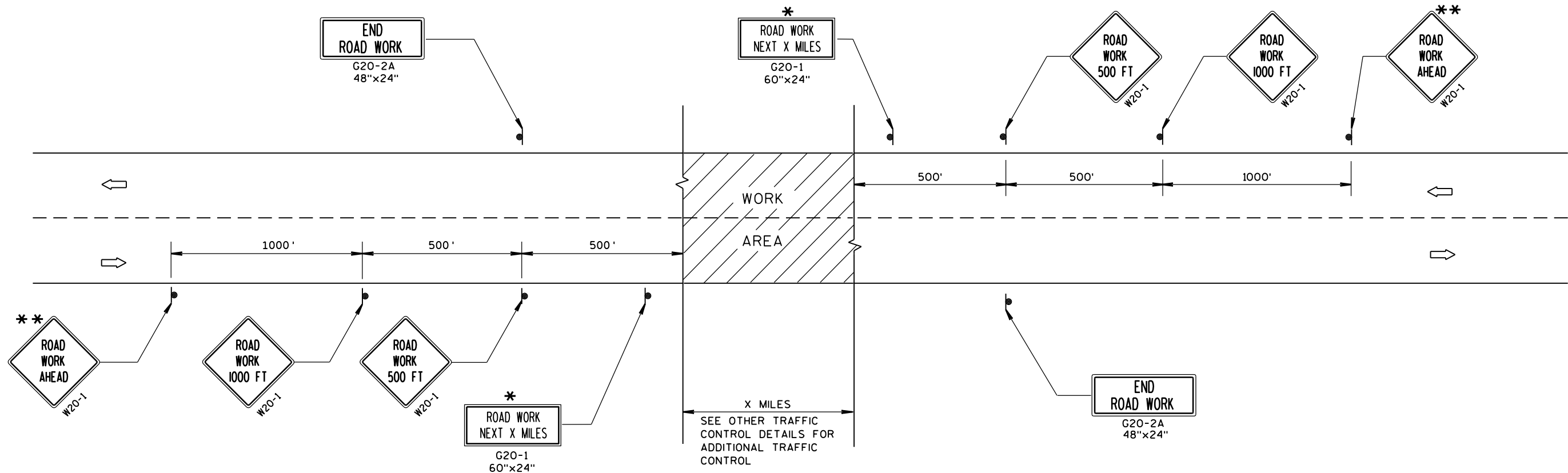
FLEXIBLE MARKER POSTS
ALTERNATE 3FLEXIBLE MARKER POST
FOR CULVERT ENDSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

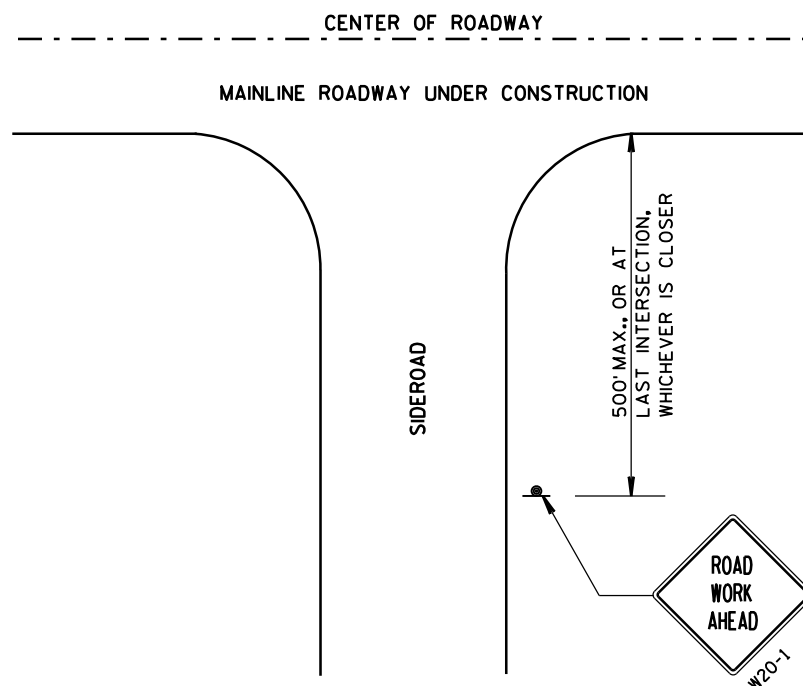
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

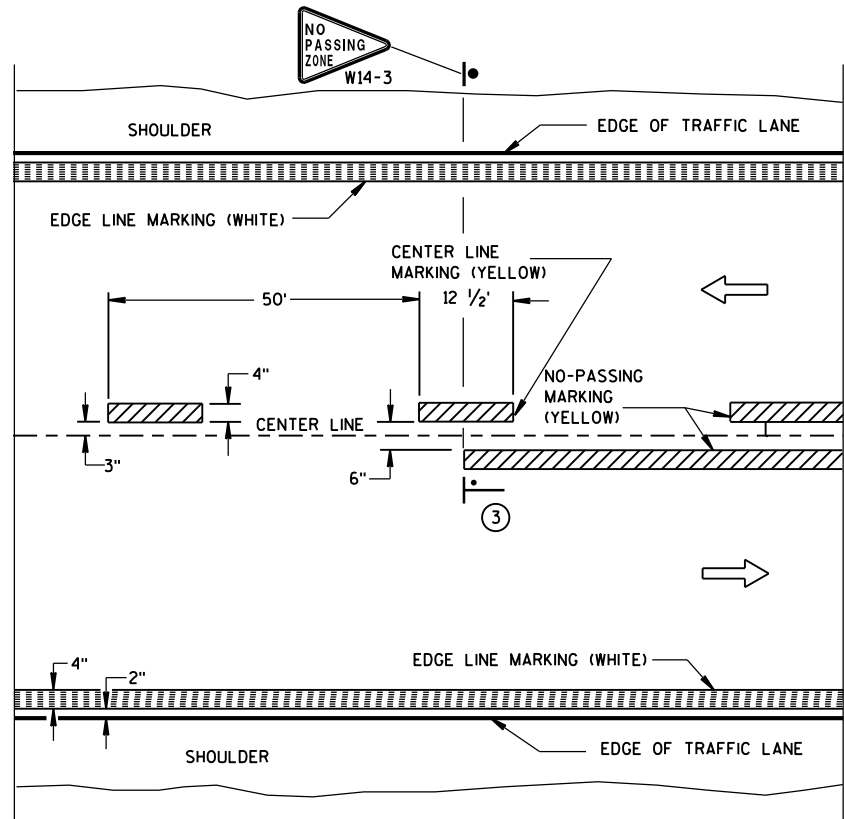
8/2013

DATE

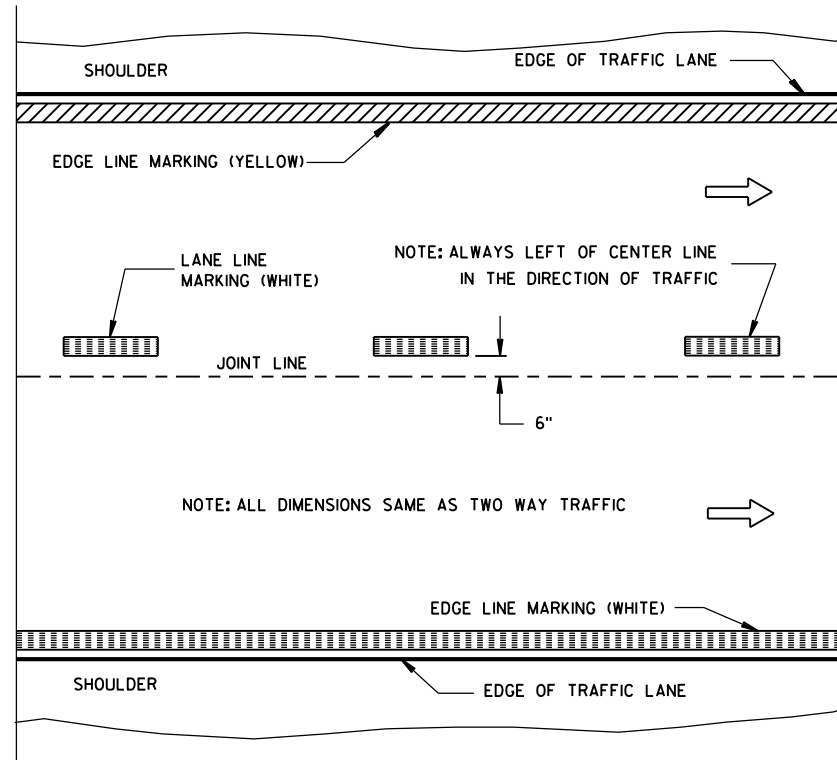
FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINEER OF DESIGN

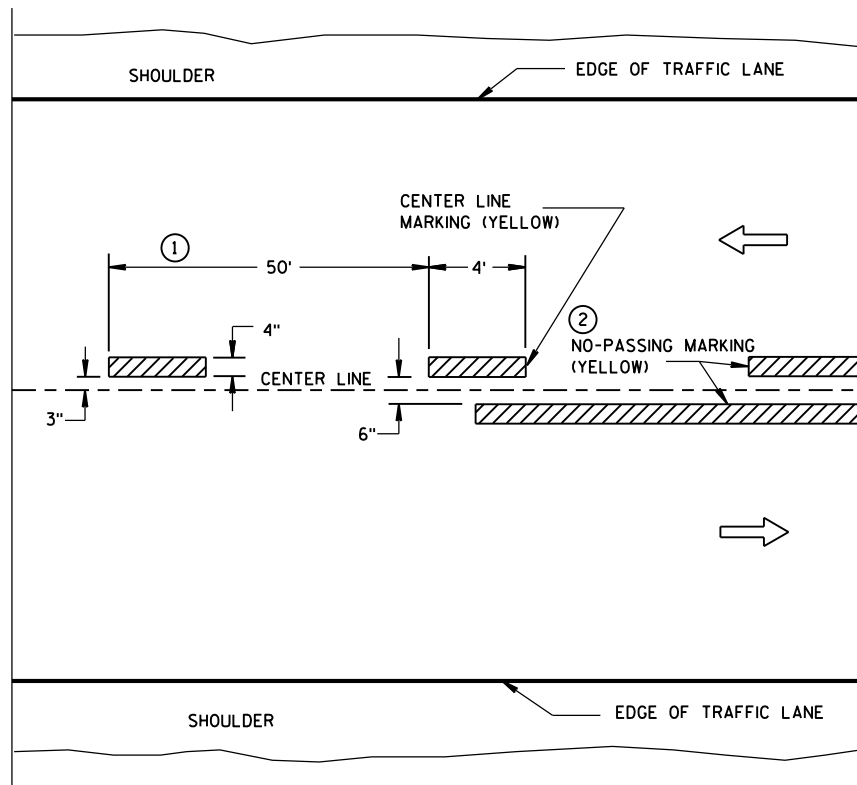


TWO WAY TRAFFIC

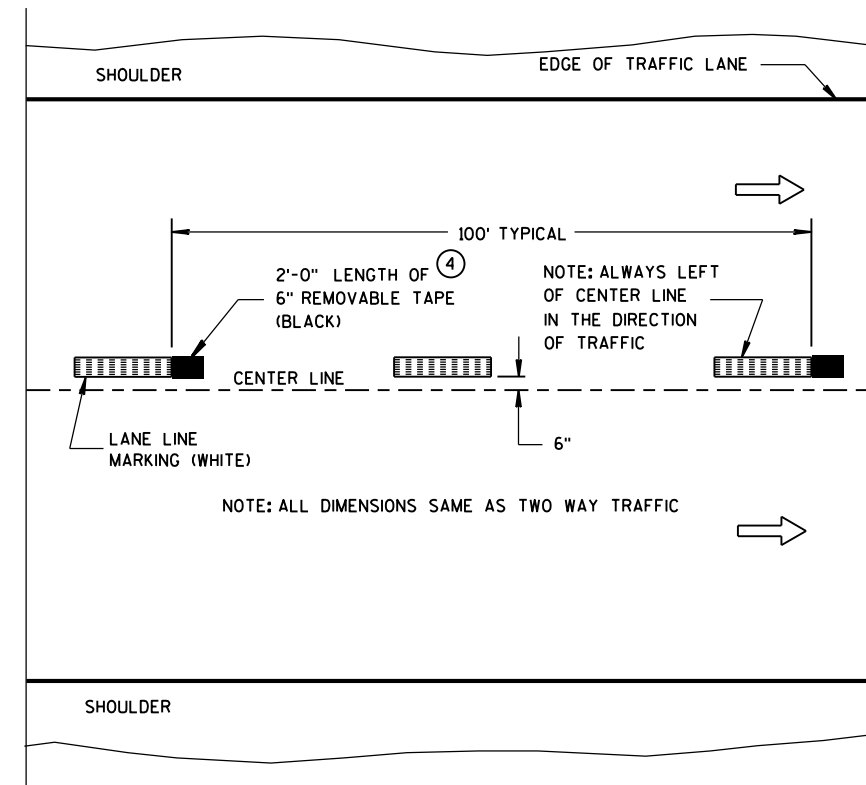


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

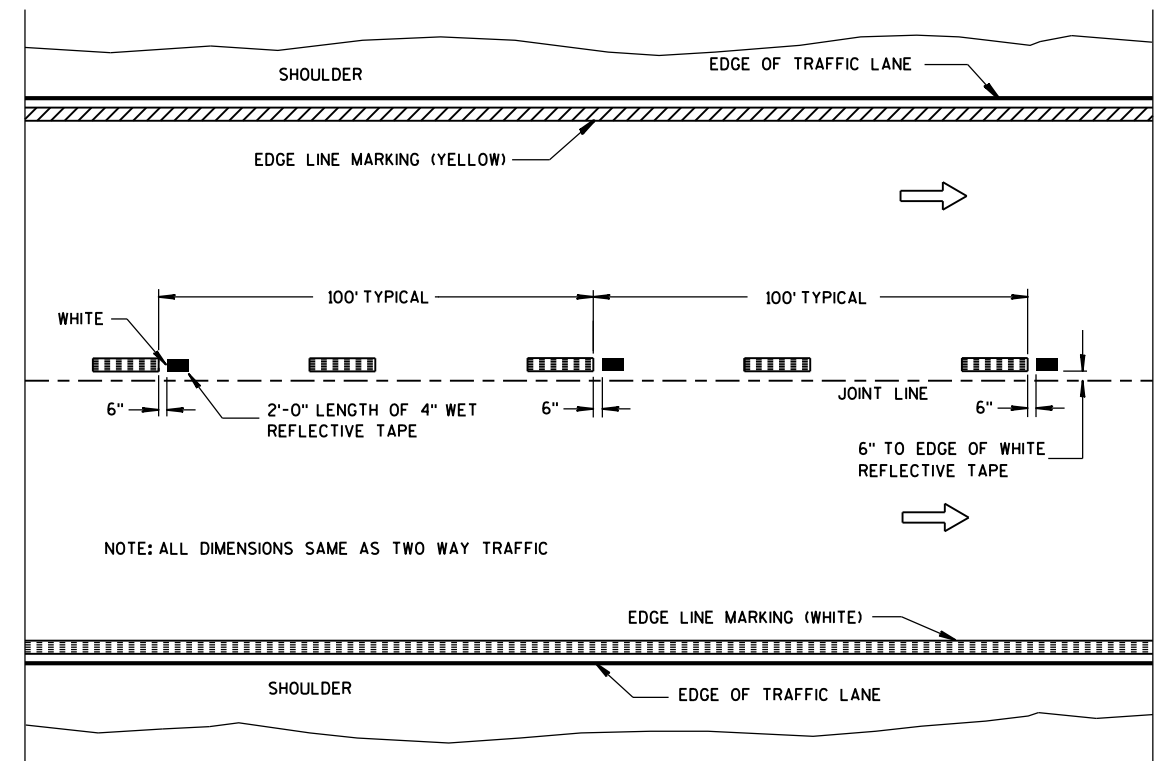
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

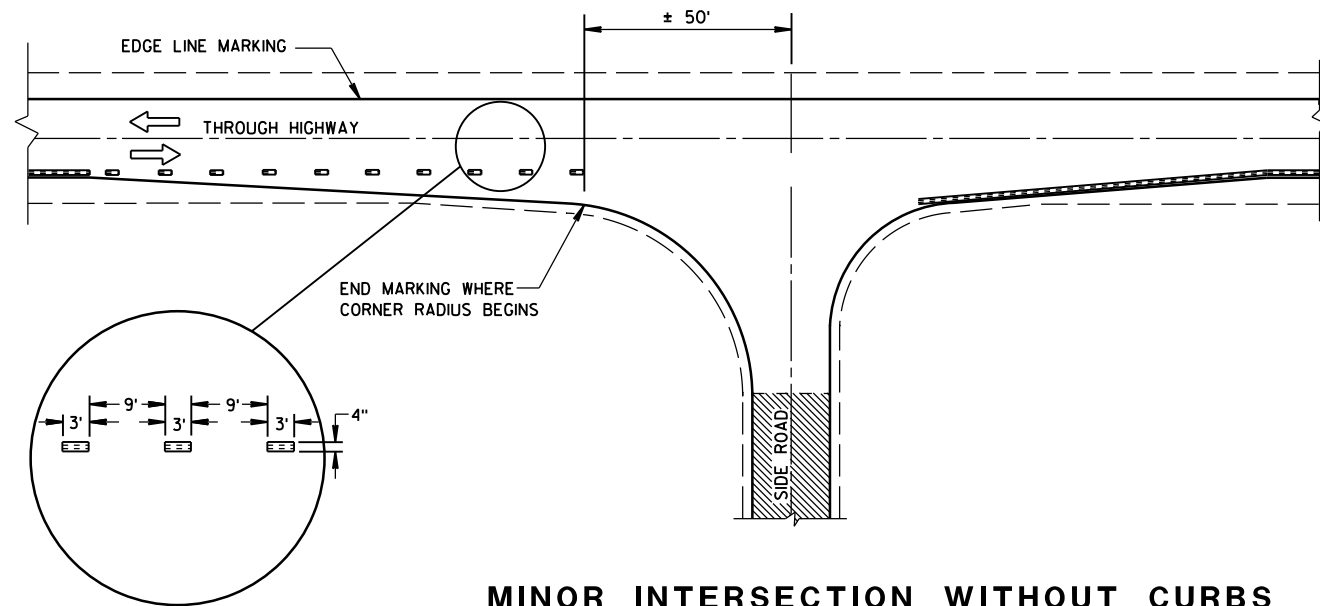
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

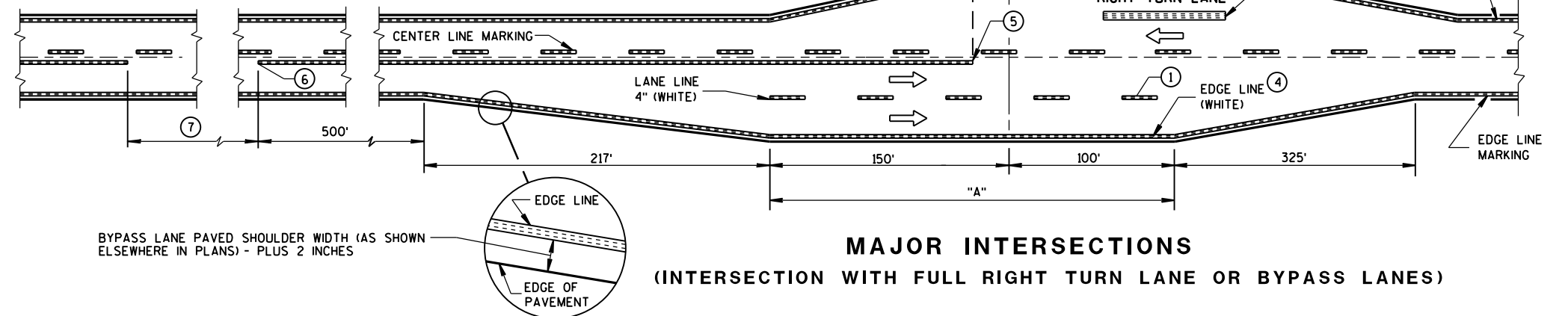
APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



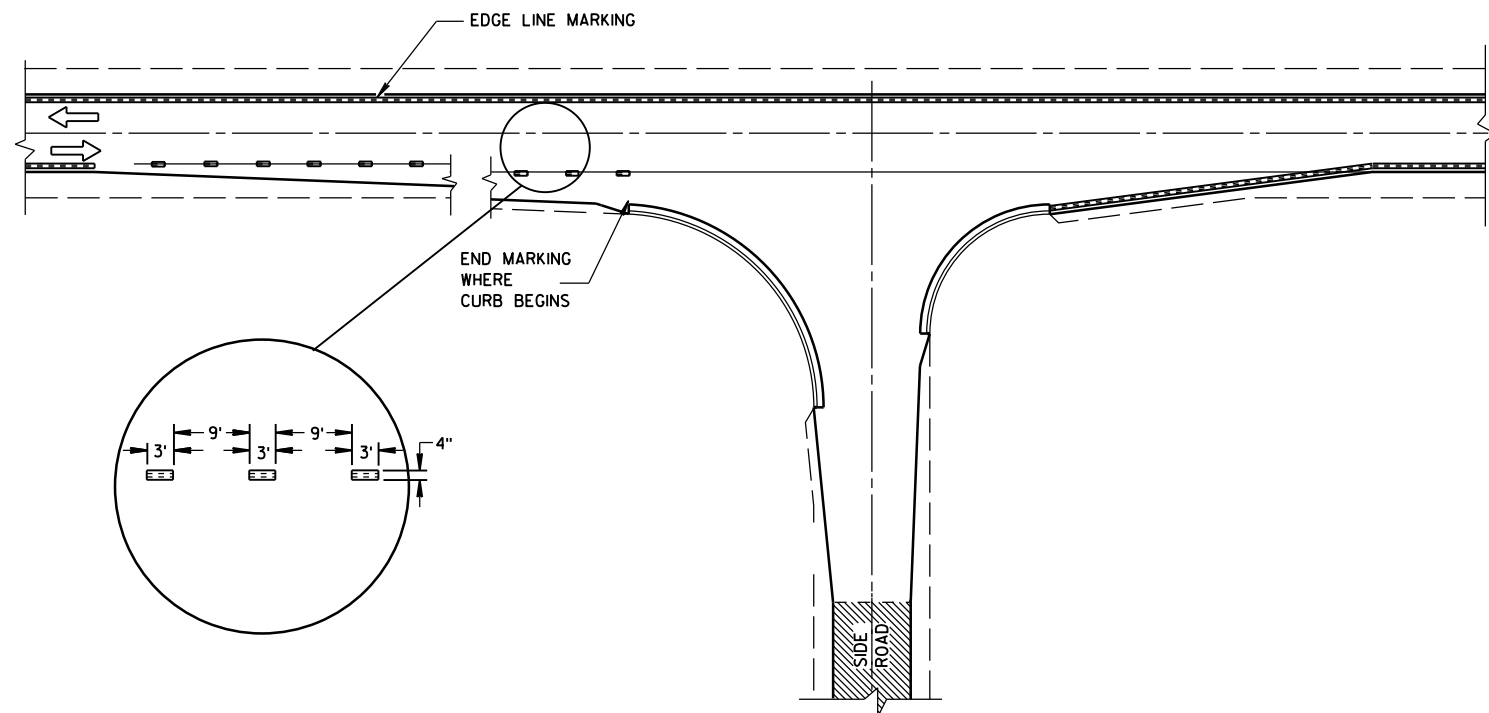
MINOR INTERSECTION WITHOUT CURBS

⑦

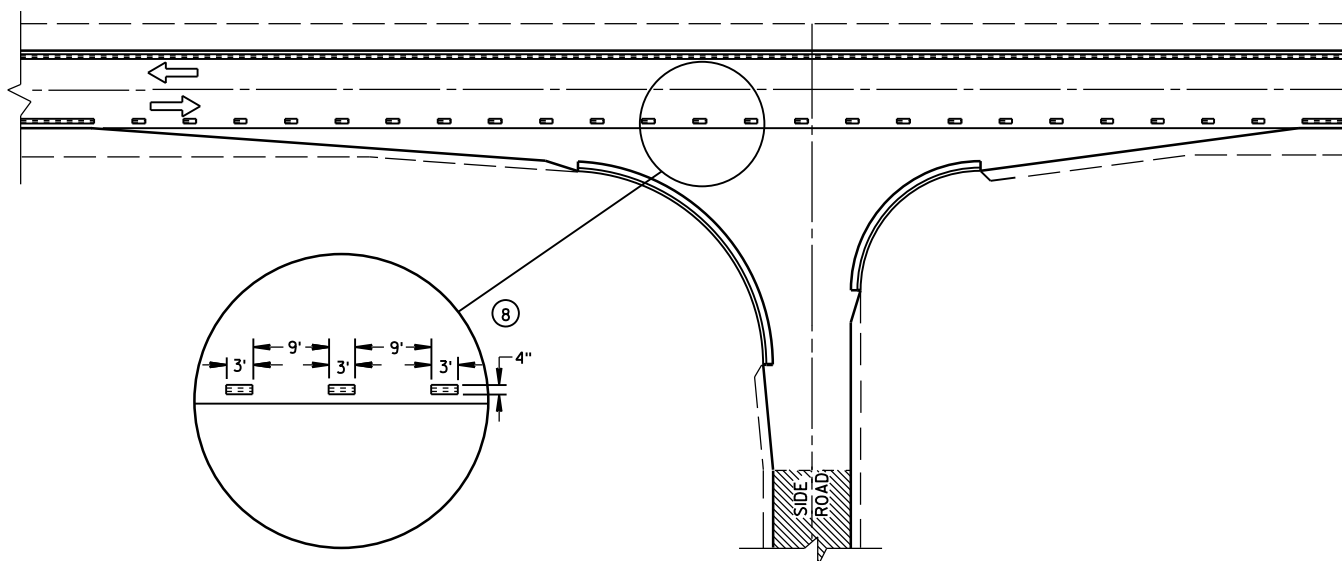
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

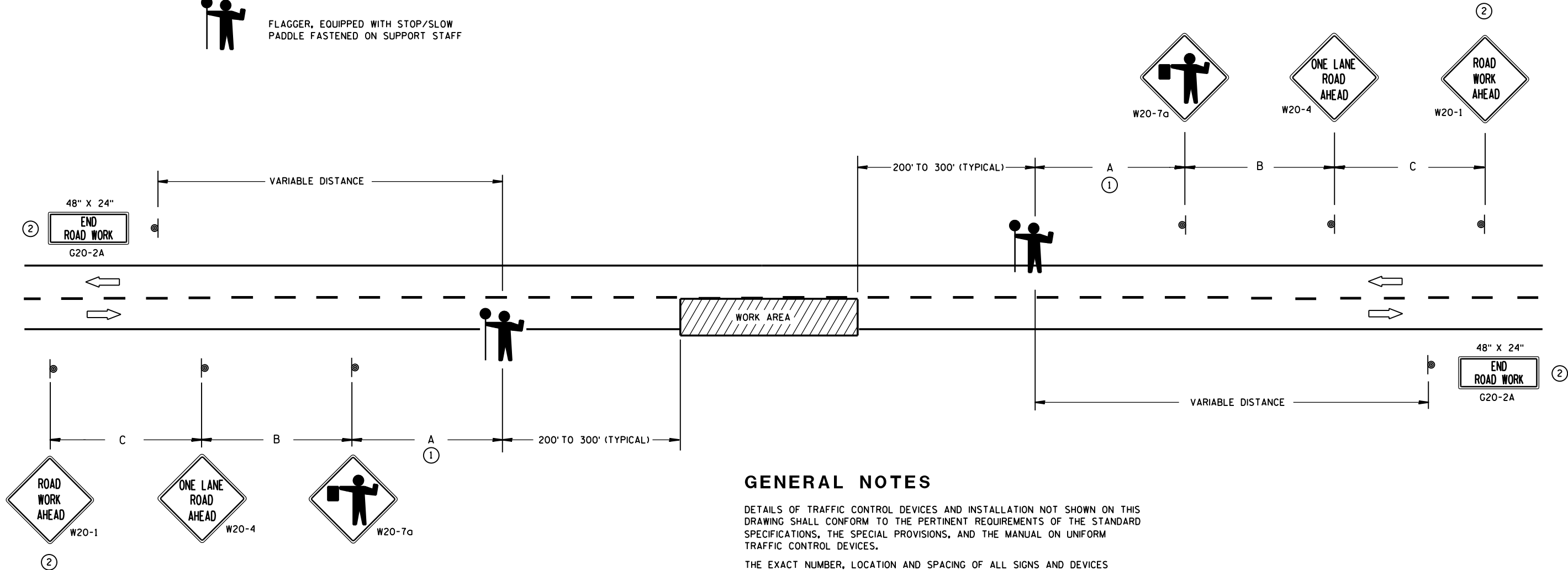
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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



- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

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

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

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

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

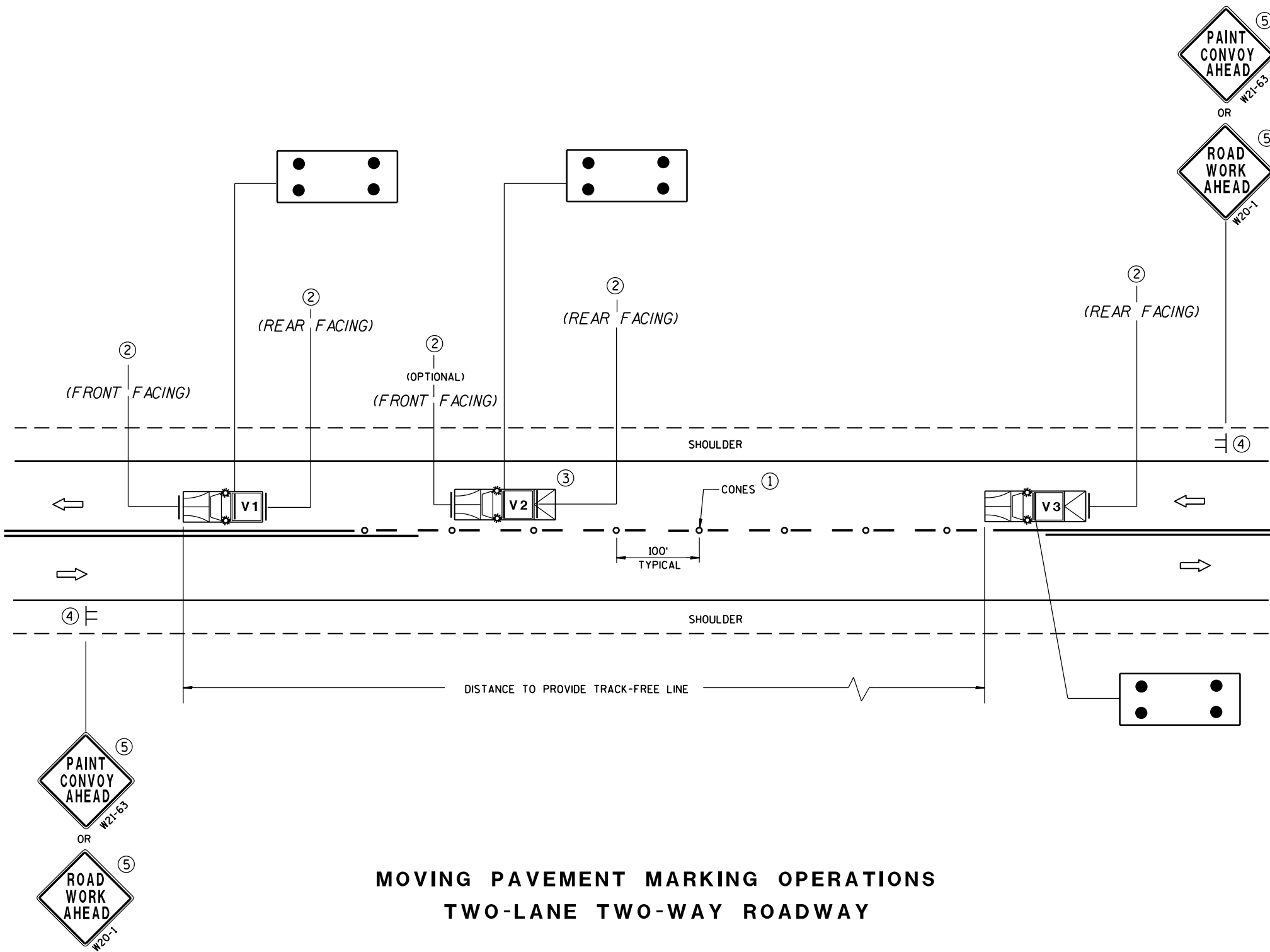
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

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

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

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

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

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

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

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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

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

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
 OR 
W21-64 W21-64
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

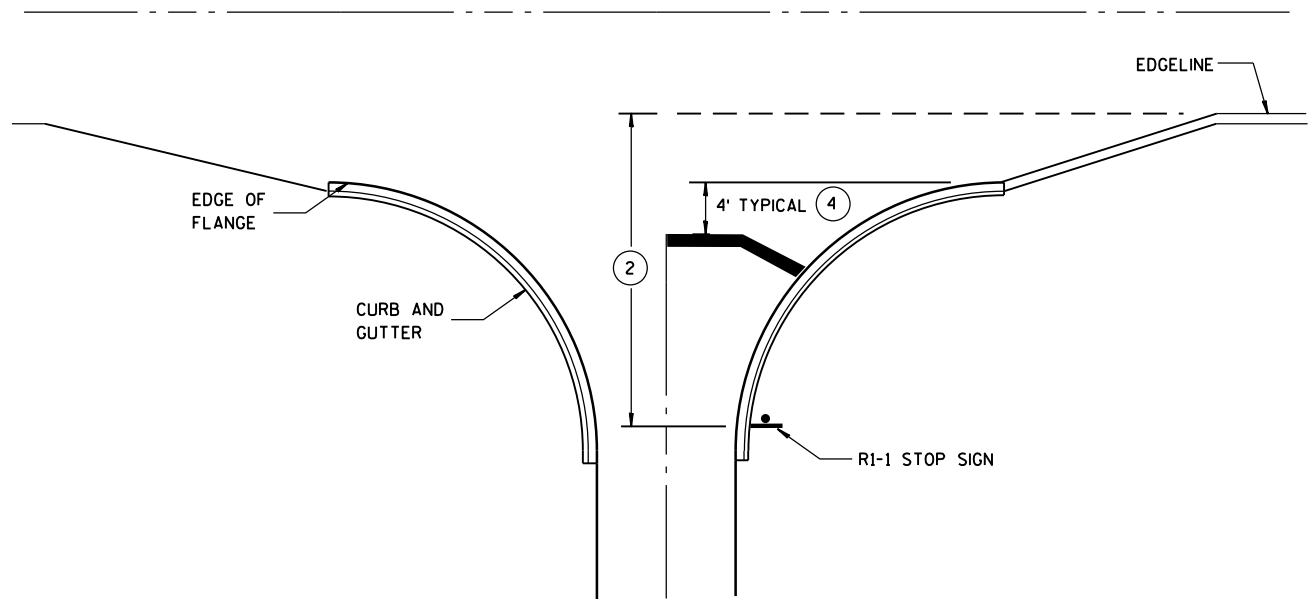
LEGEND

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

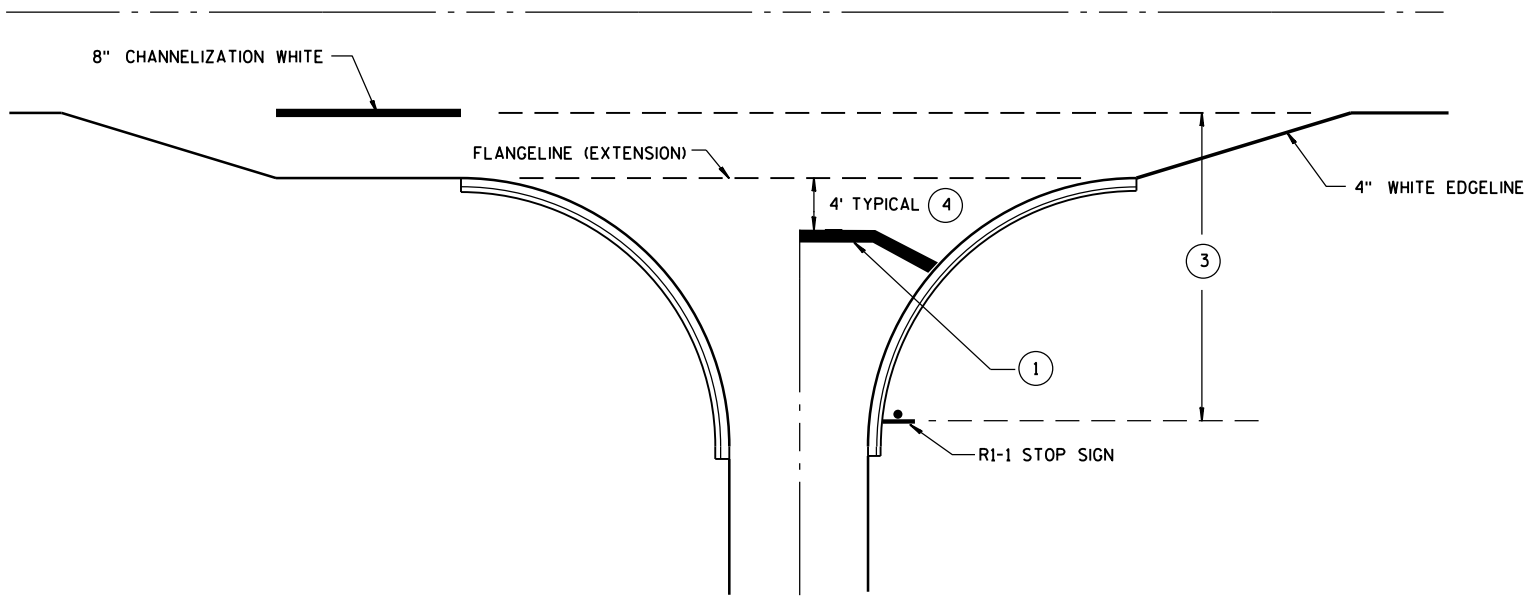
MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

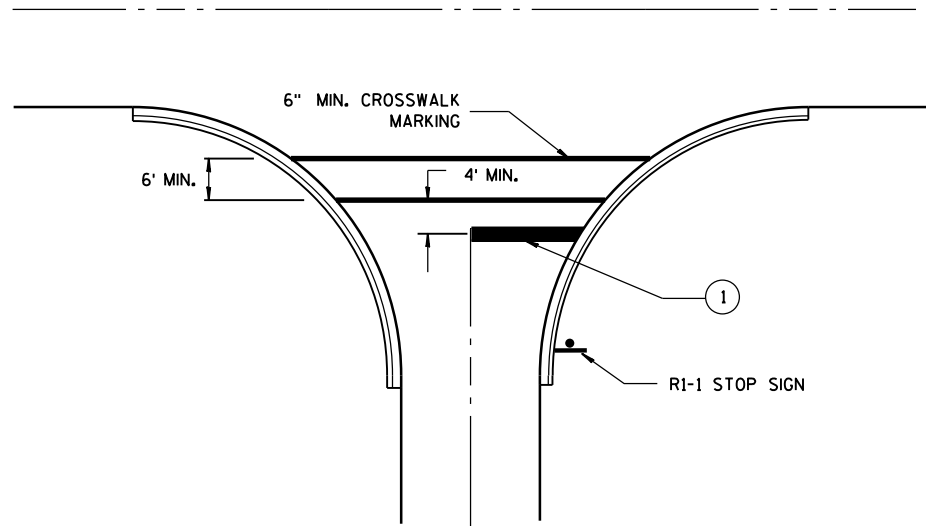
APPROVED
5/3/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



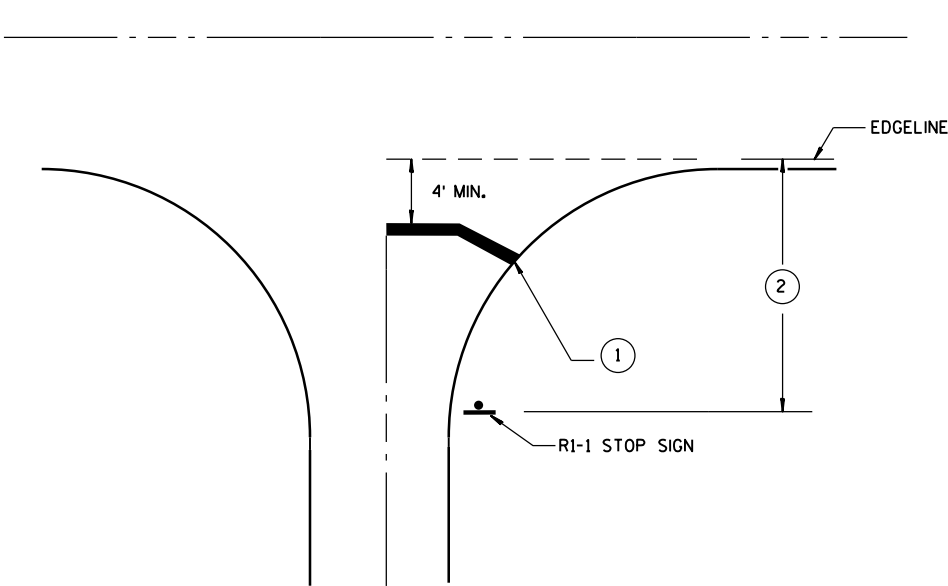
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013 DATE /S/ Travis Feltz
STATE TRAFFIC ENGINEER
FHWA

LEGEND

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



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

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

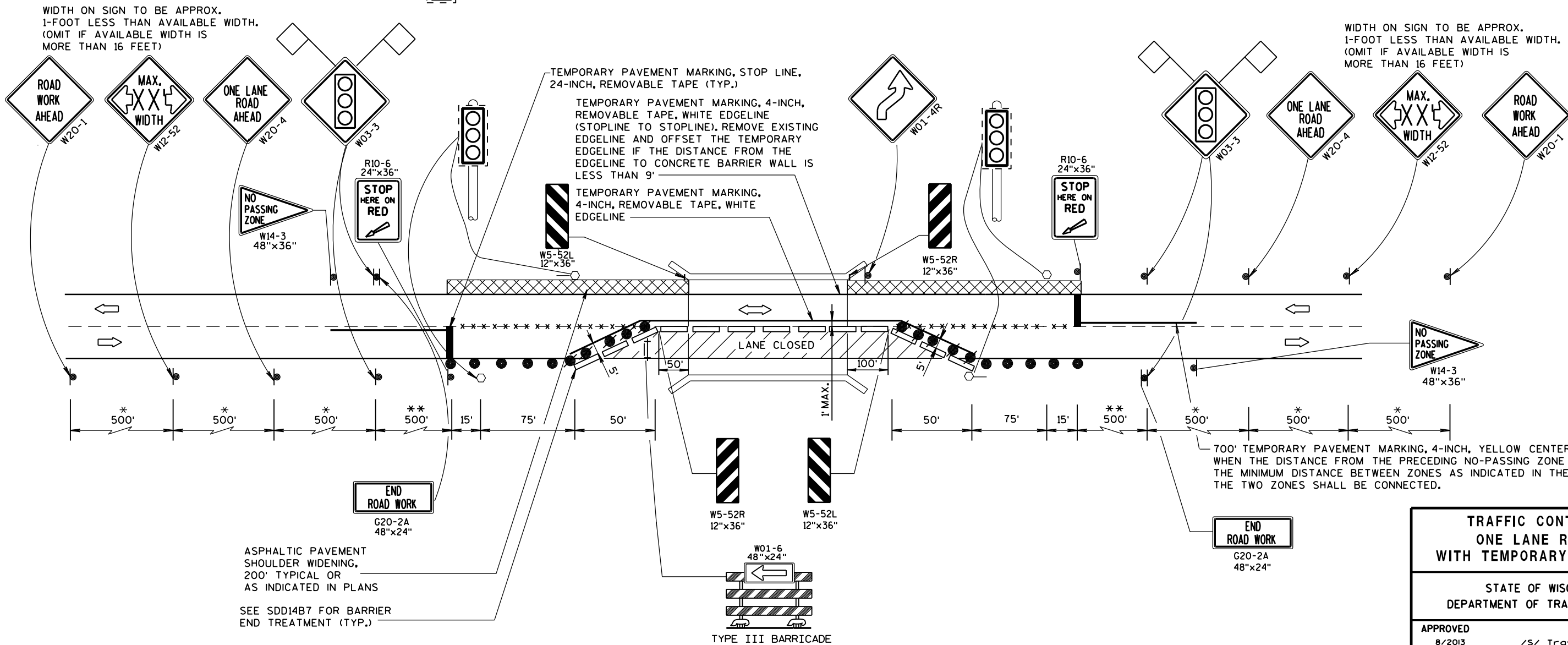
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

6



6

TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

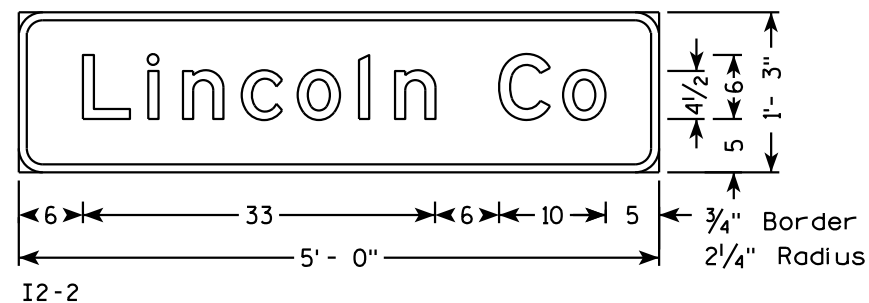
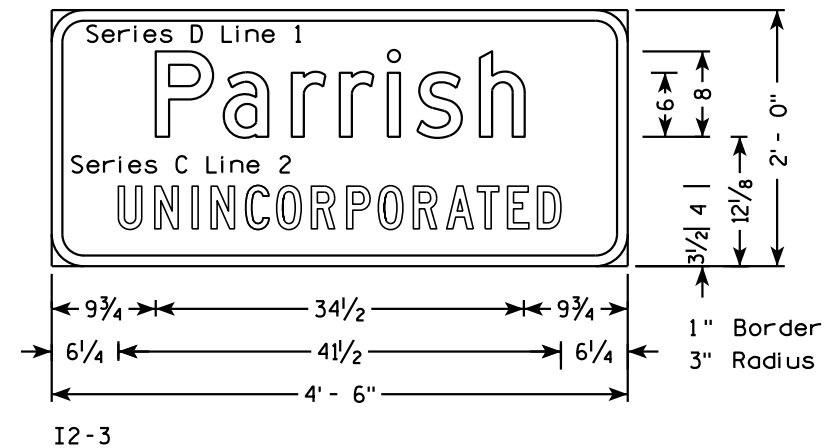
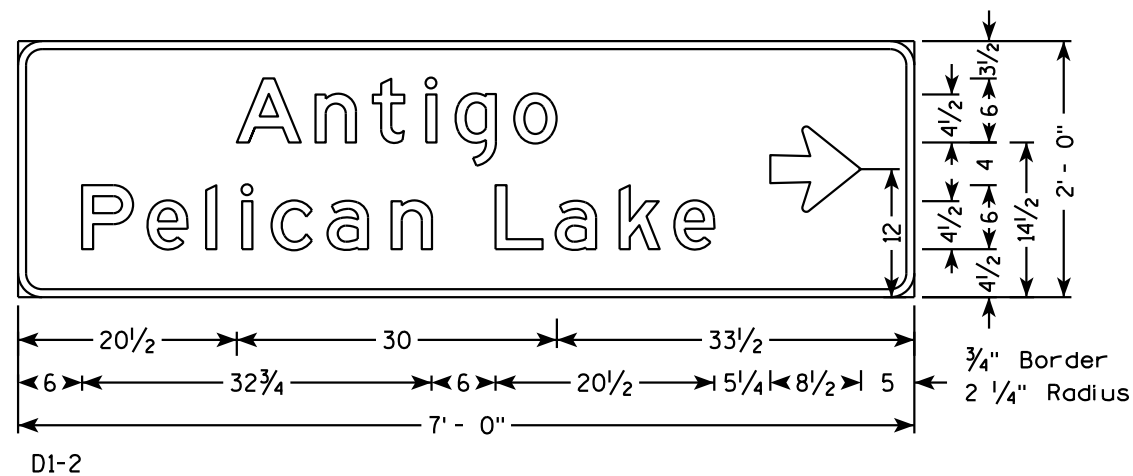
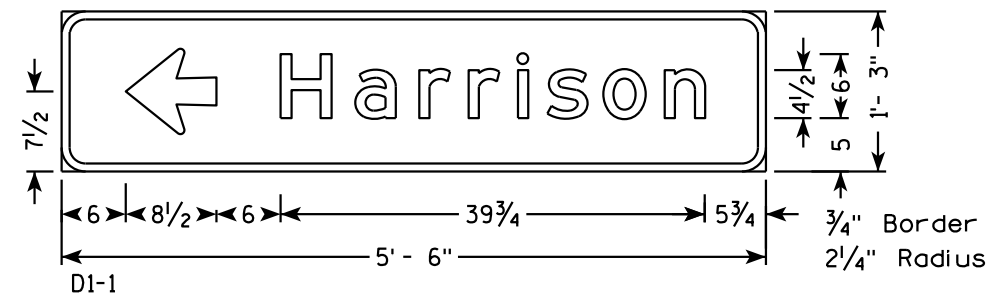
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

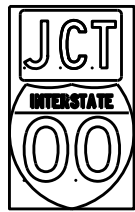


NOTES

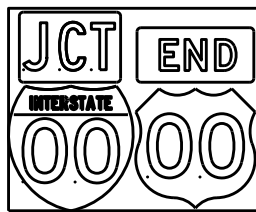
1. All Signs - Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E except as Shown



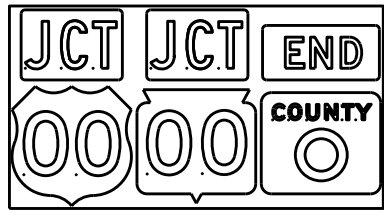
TYPICAL ASSEMBLIES



J1-1



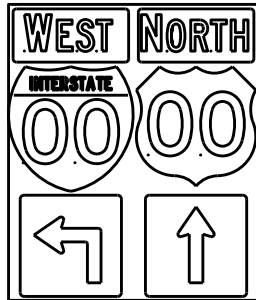
J1-2



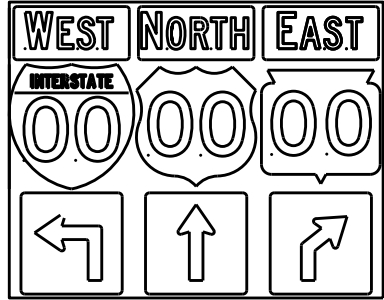
J1-3



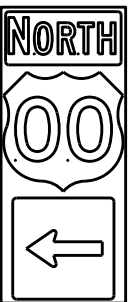
J2-1



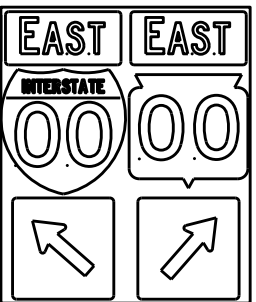
J2-2



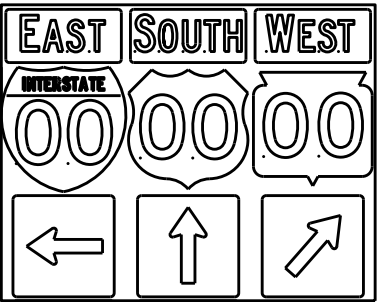
J2-3



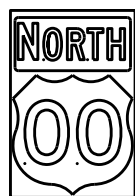
J3-1



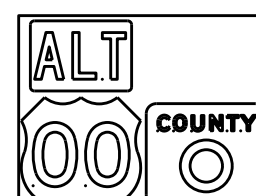
J3-2



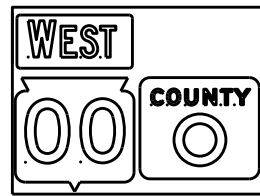
J3-3



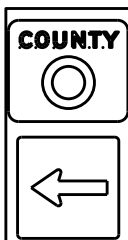
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

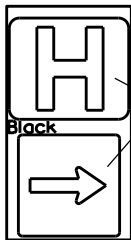


J22-1



JV

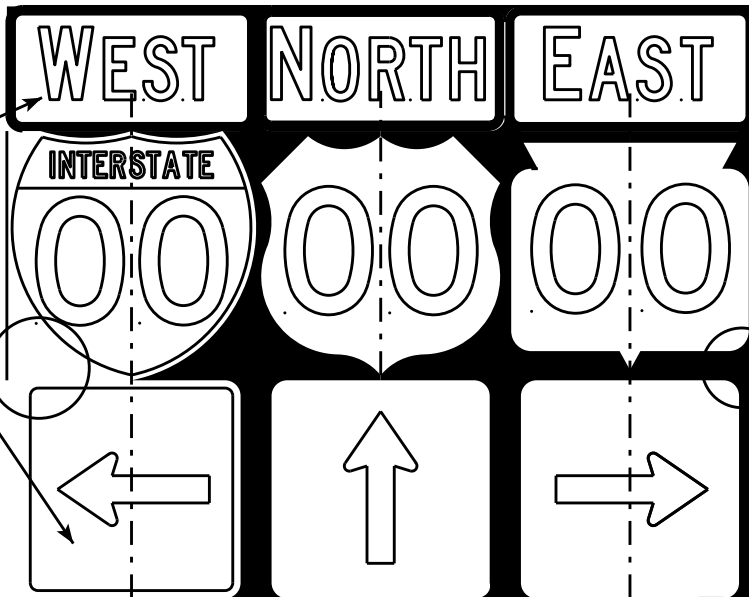
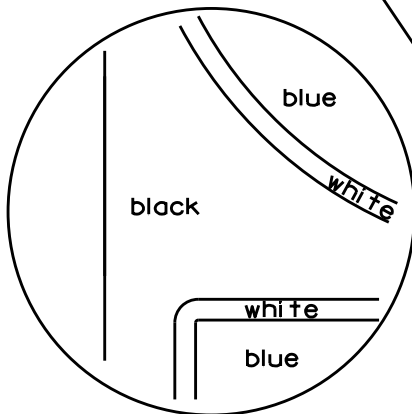
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

NOTES

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

PROJECT NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN

PLOT DATE : 06-FEB-2014 14:10

PLOT BY : mscs.ja

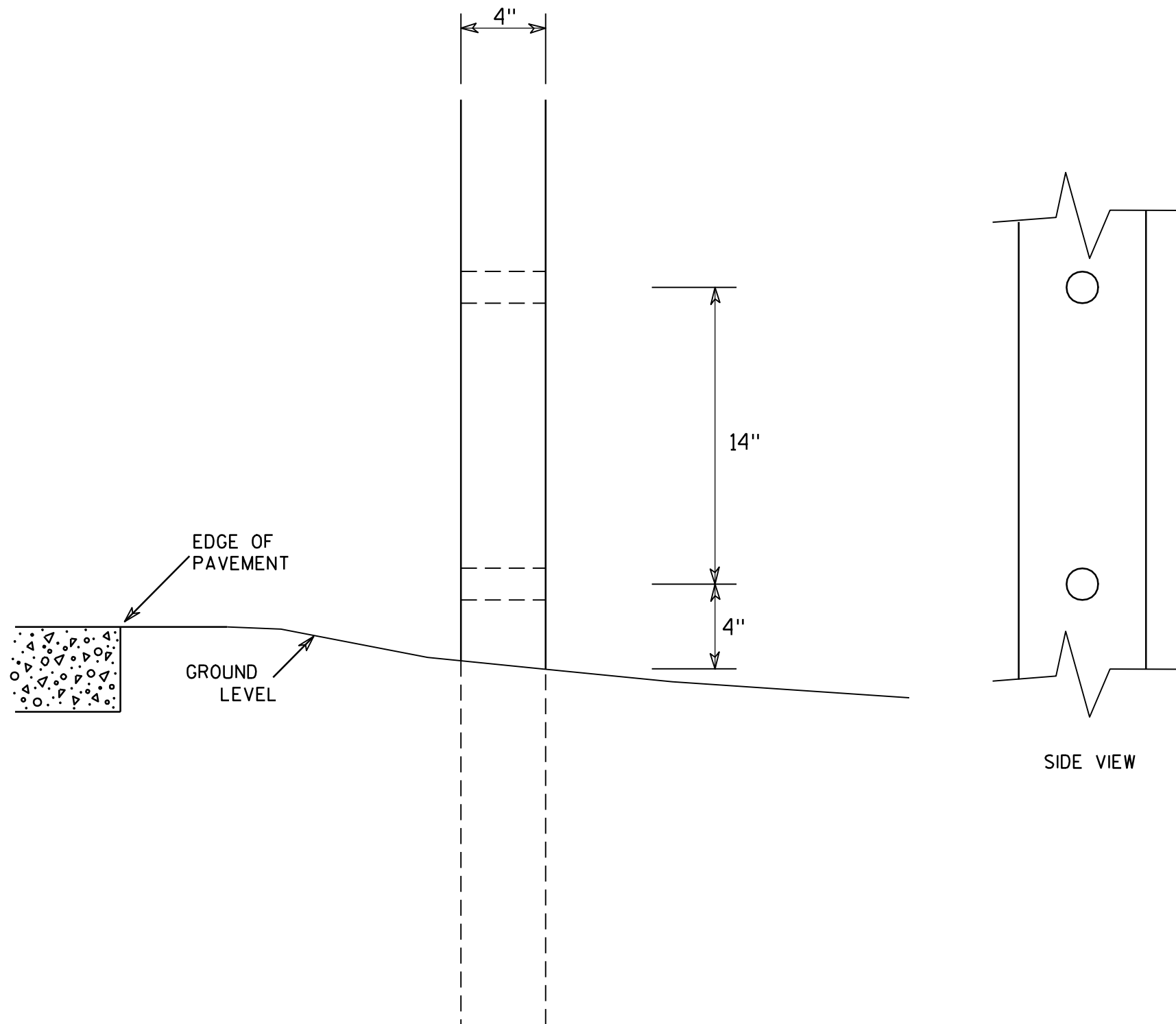
PLOT NAME :

SHEET NO:

E

WISDOT/CADDs SHEET 42

7



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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

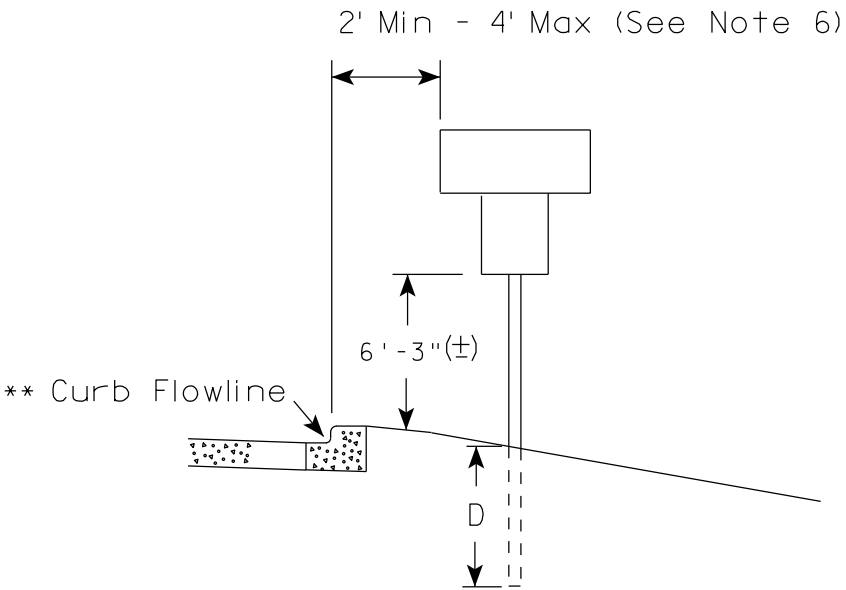
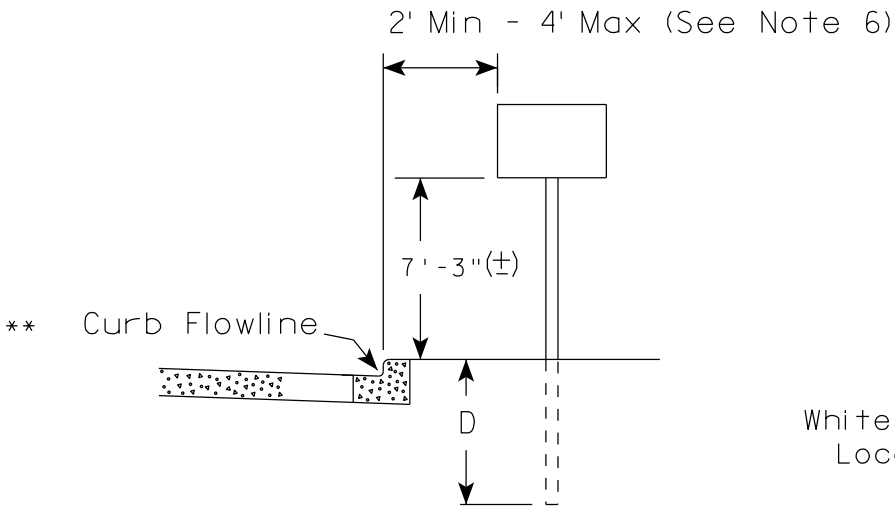
HWY:

COUNTY:

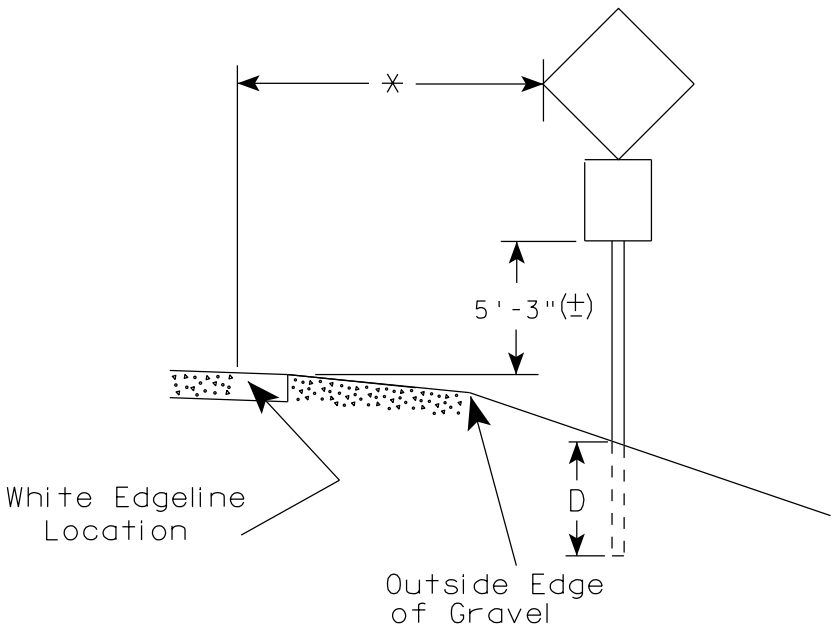
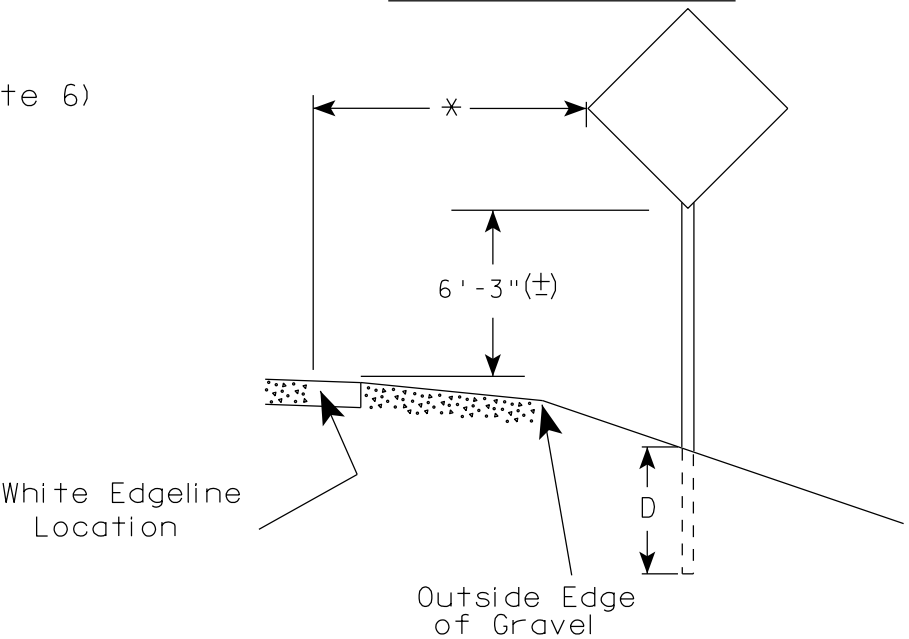
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

×× 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.

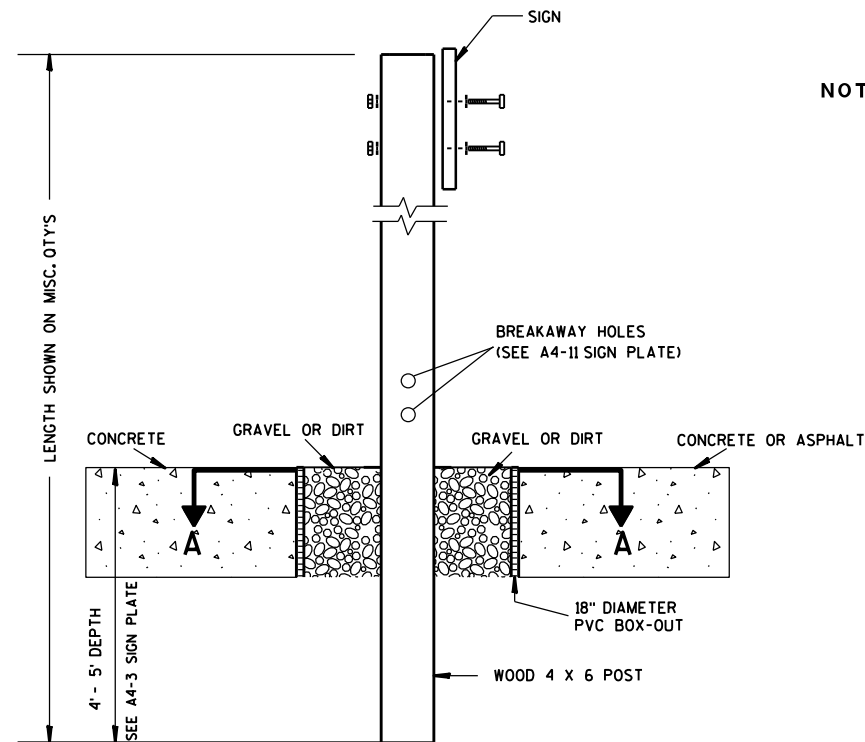
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

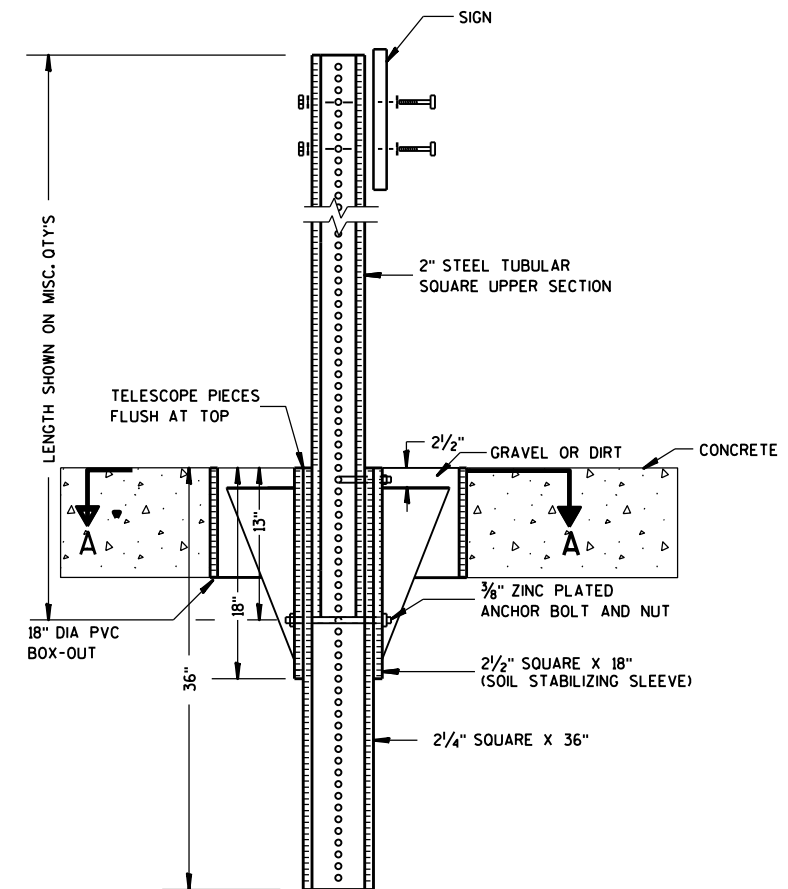
DATE 9/30/13 PLATE NO. A4-3.18



ELEVATION VIEW

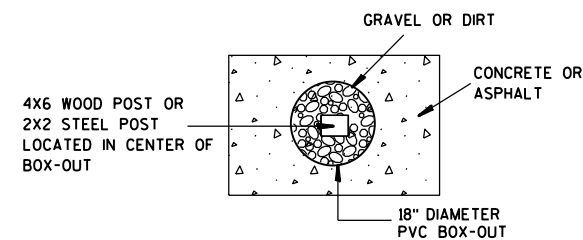
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

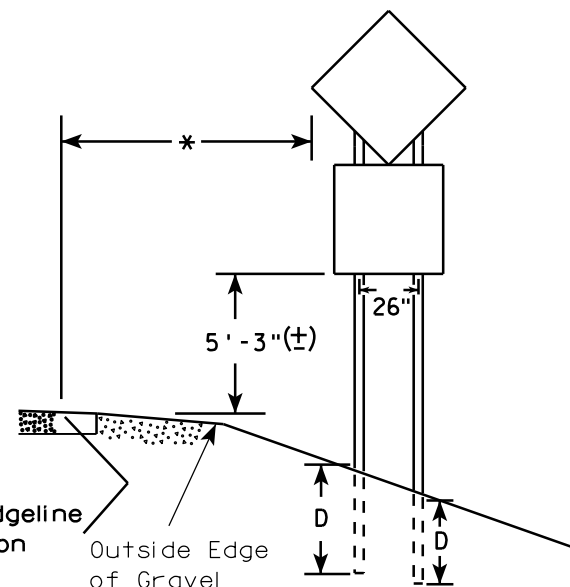
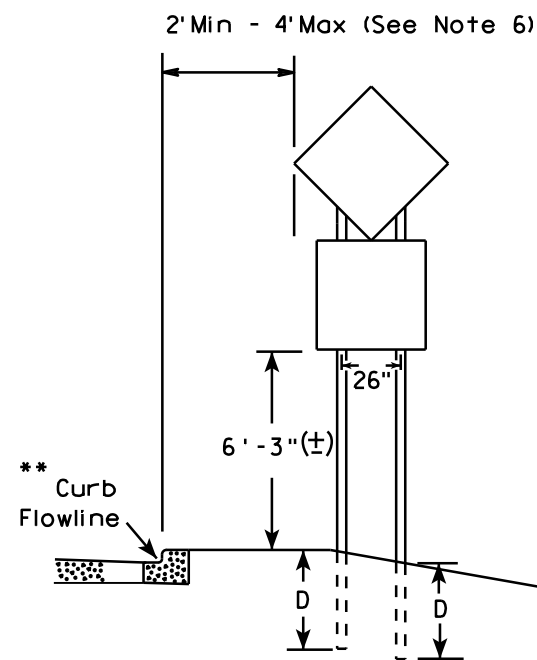
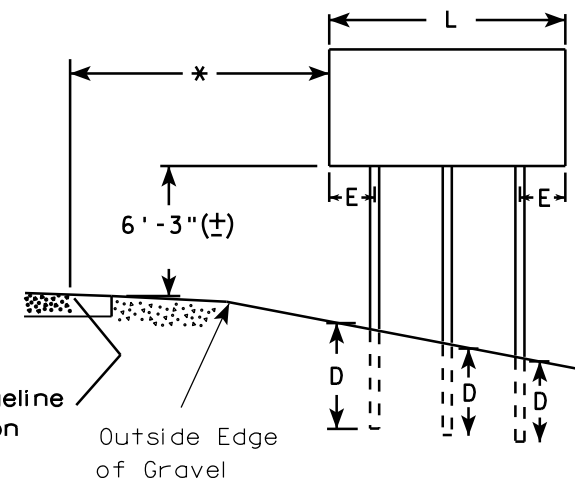
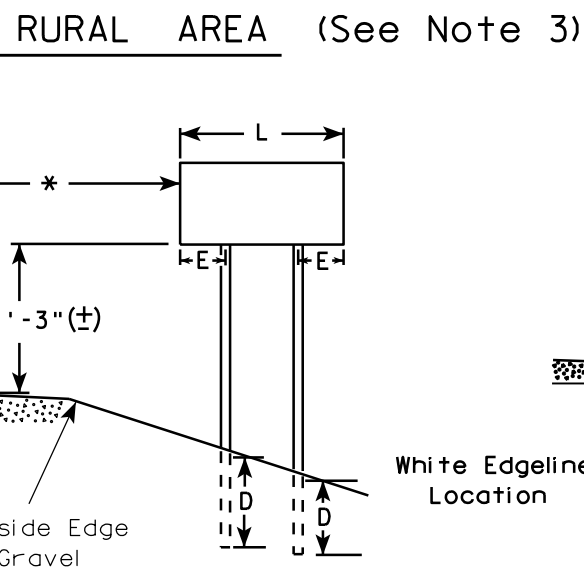
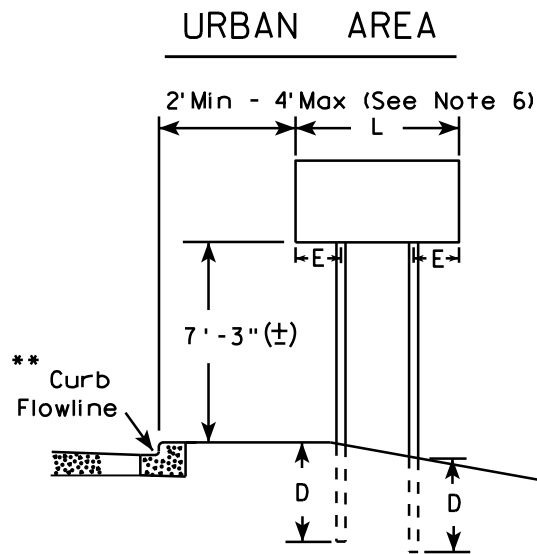
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

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

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

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

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

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/29/14 PLATE NO. A4-4.13

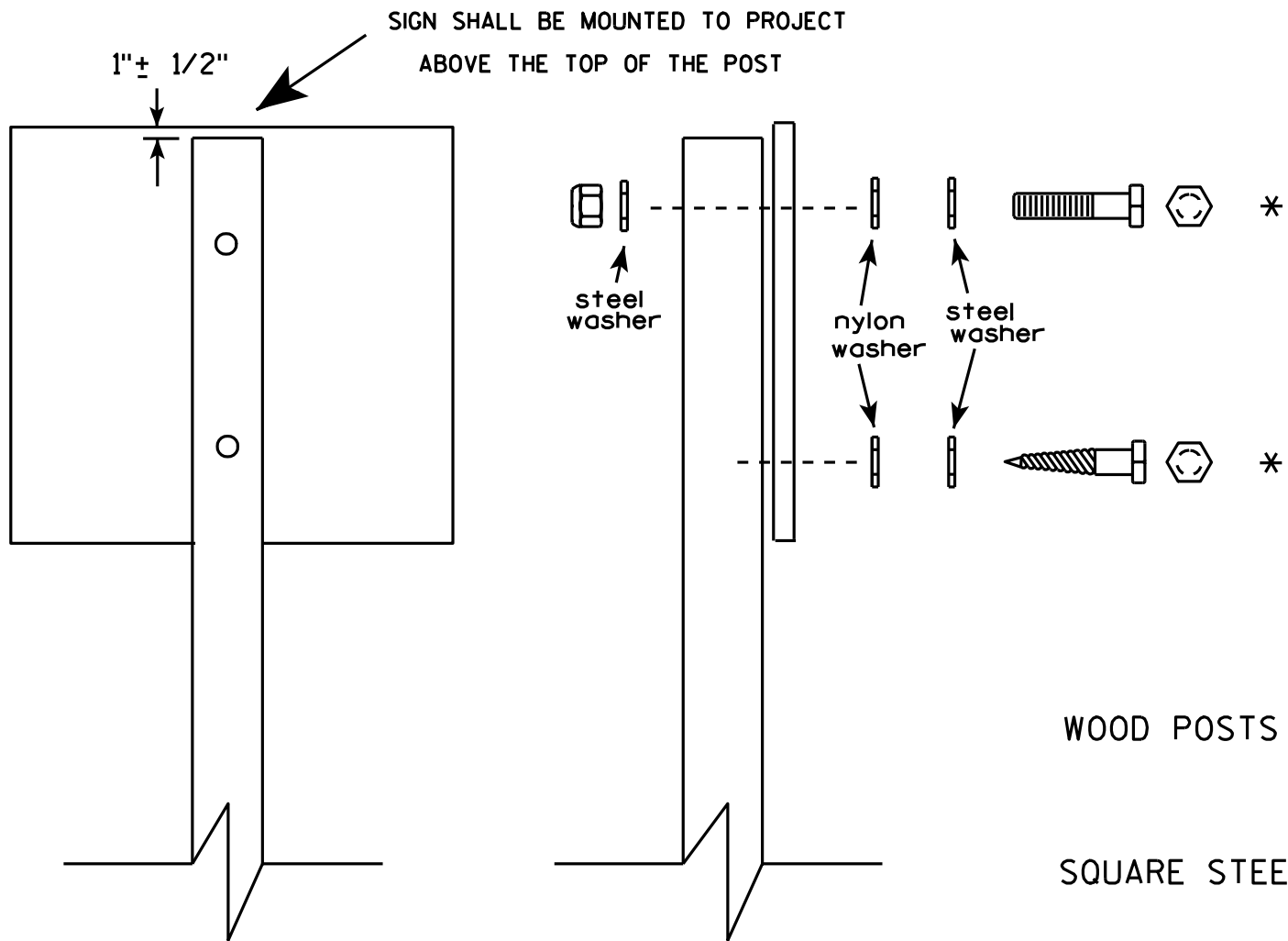
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

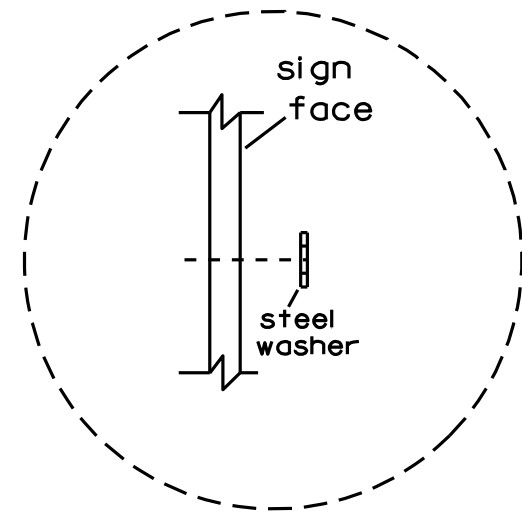


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

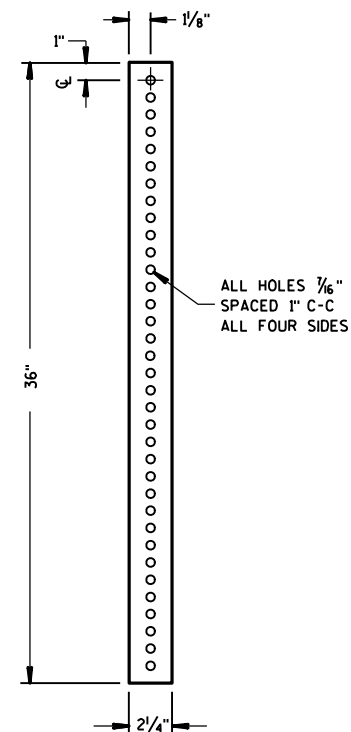


Washer Placement when Sign Has Other Than Type H or Type F Face

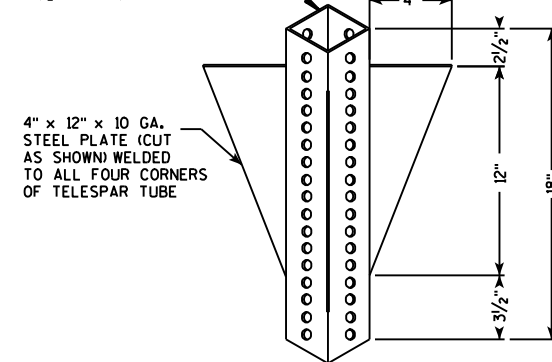
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

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



2 1/2" or 2 1/4" TELESPAR TUBE



SIGN

SEE SIGN PLATE
A4-8 FOR BOLT
WASHER, & NUT
MATERIAL

2" STEEL TUBULAR
SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ "
SPACED 1" C-C
ALL FOUR SIDES

TELESCOPE PIECES
FLUSH AT TOP

$\frac{3}{8}$ " ZINC PLATED CORNER
ANCHOR BOLT AND NUT

$\frac{2}{2}$ " GRAVEL OR DIRT

$\frac{3}{8}$ " ZINC PLATED
ANCHOR BOLT AND NUT

$\frac{2}{2}$ " SQUARE X 18"
(SOIL STABILIZING SLEEVE)

$\frac{2}{4}$ " SQUARE X 36"

18" DIA PVC
BOX-OUT

LENGTH SHOWN ON MISC. QTY'S

36"

18"

13"

A

B

LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

TELESCOPE PIECES FLUSH AT TOP

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

12"

18"

36"

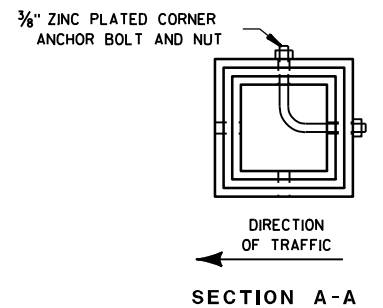
$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

$2\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)

$2\frac{1}{4}$ " SQUARE X 36"

A

A



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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:

HWY:

COUNTY:

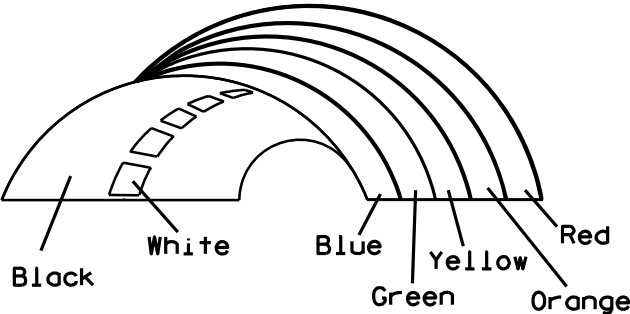
SHEET NO:

E



* VARIES

Background Colors of Symbol*



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

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
Line 1 - Red
Line 2 - Black
Line 3-5 - Blue
6. Line 1 - Dutch 8011L
Line 2 - Series E
Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

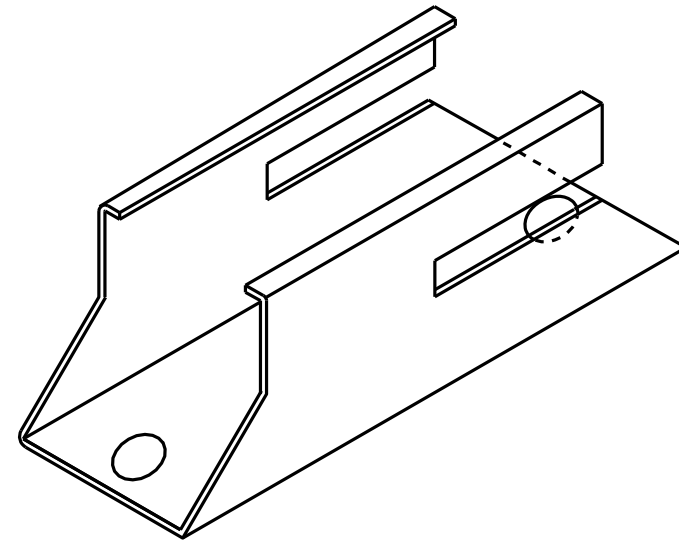
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

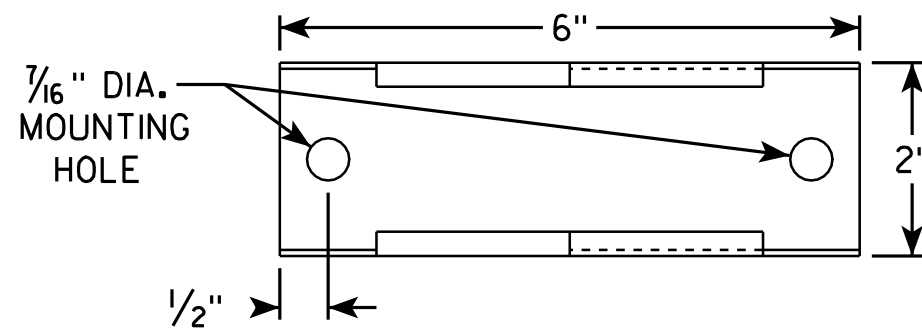
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/27/11 PLATE NO. I55-56.3

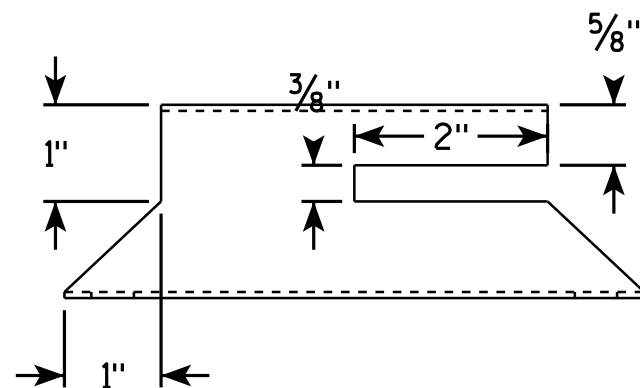
ISOMETRIC VIEW



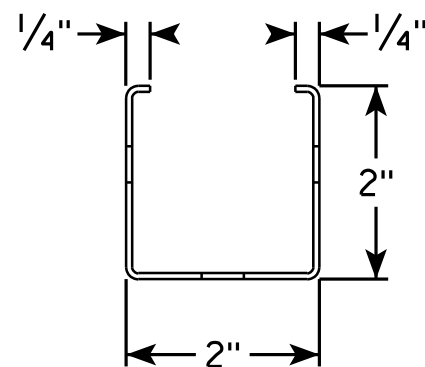
TOP VIEW



SIDE VIEW



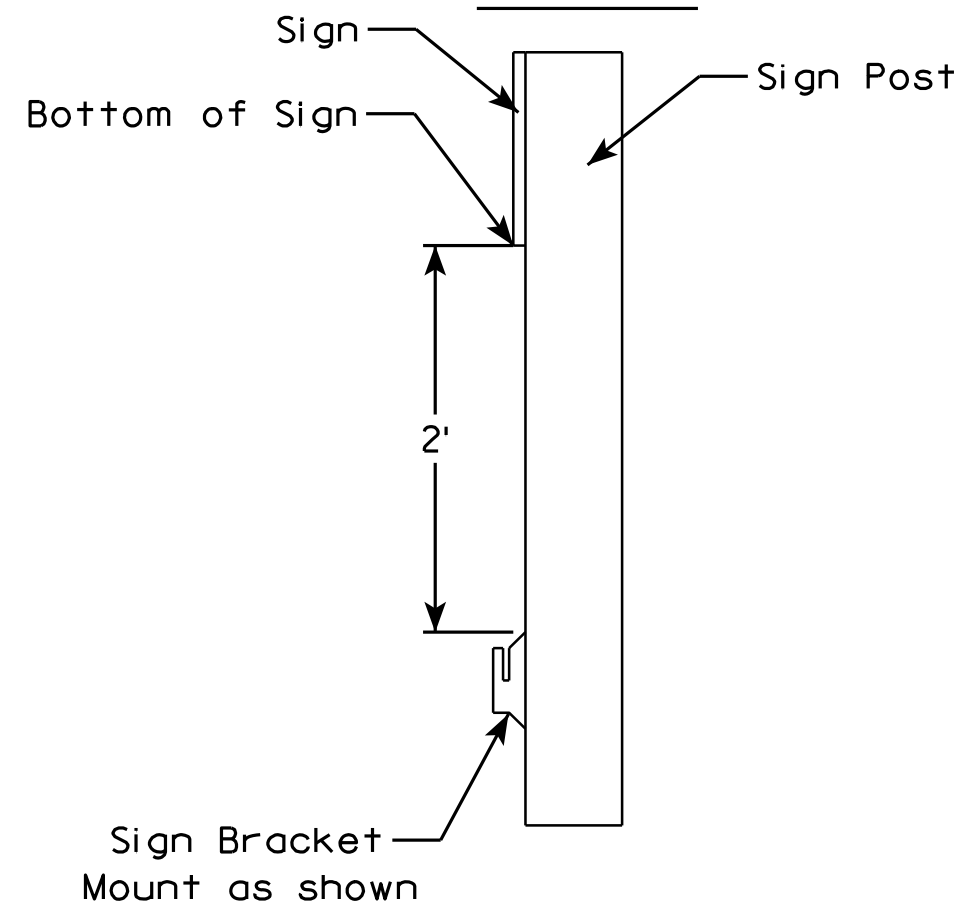
END VIEW



NOTES

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

SIDE VIEW



ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO:

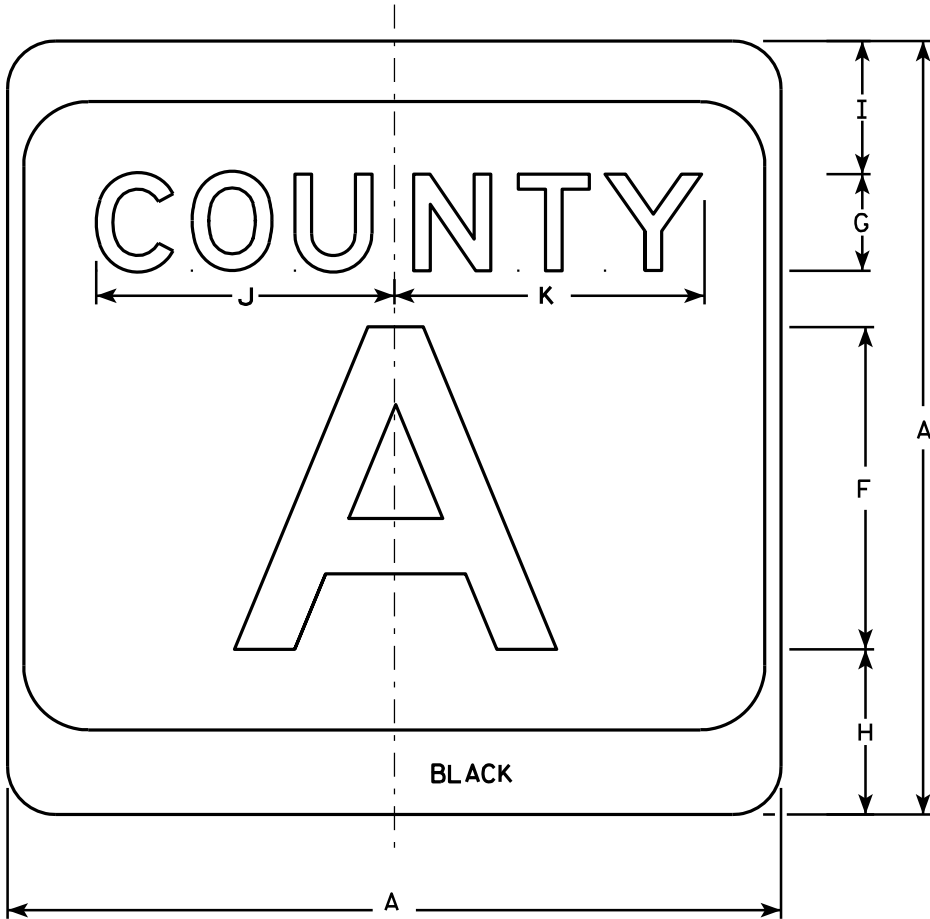
HWY:

COUNTY:

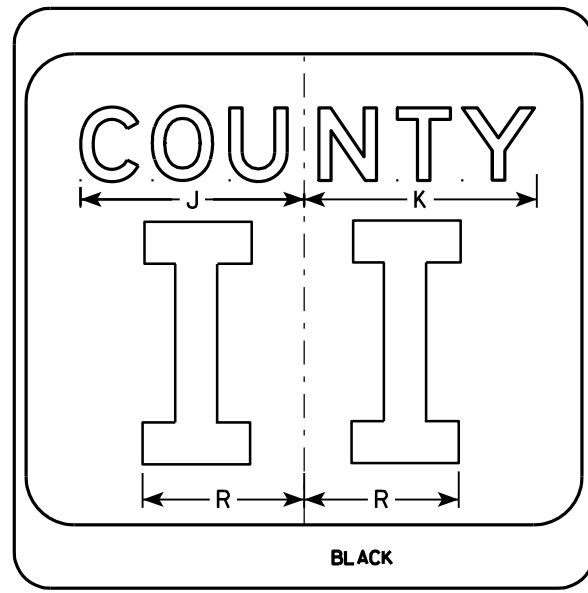
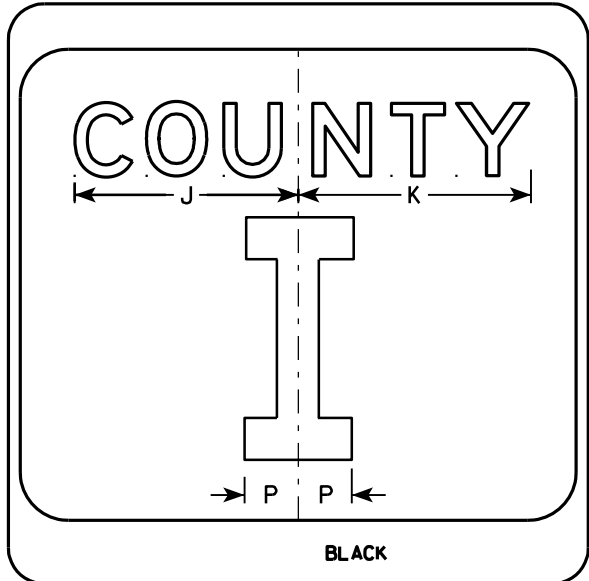
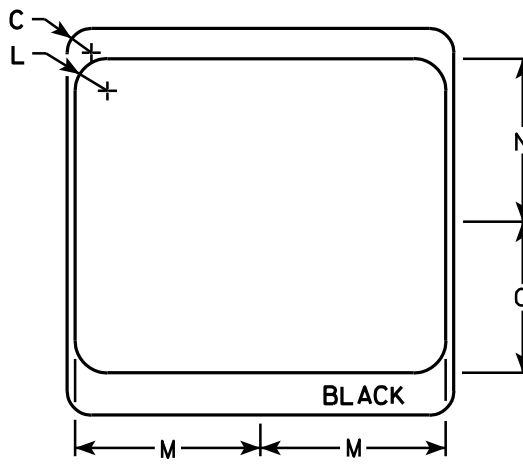
SHEET NO:

E

7



M1-5A



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

HWY:

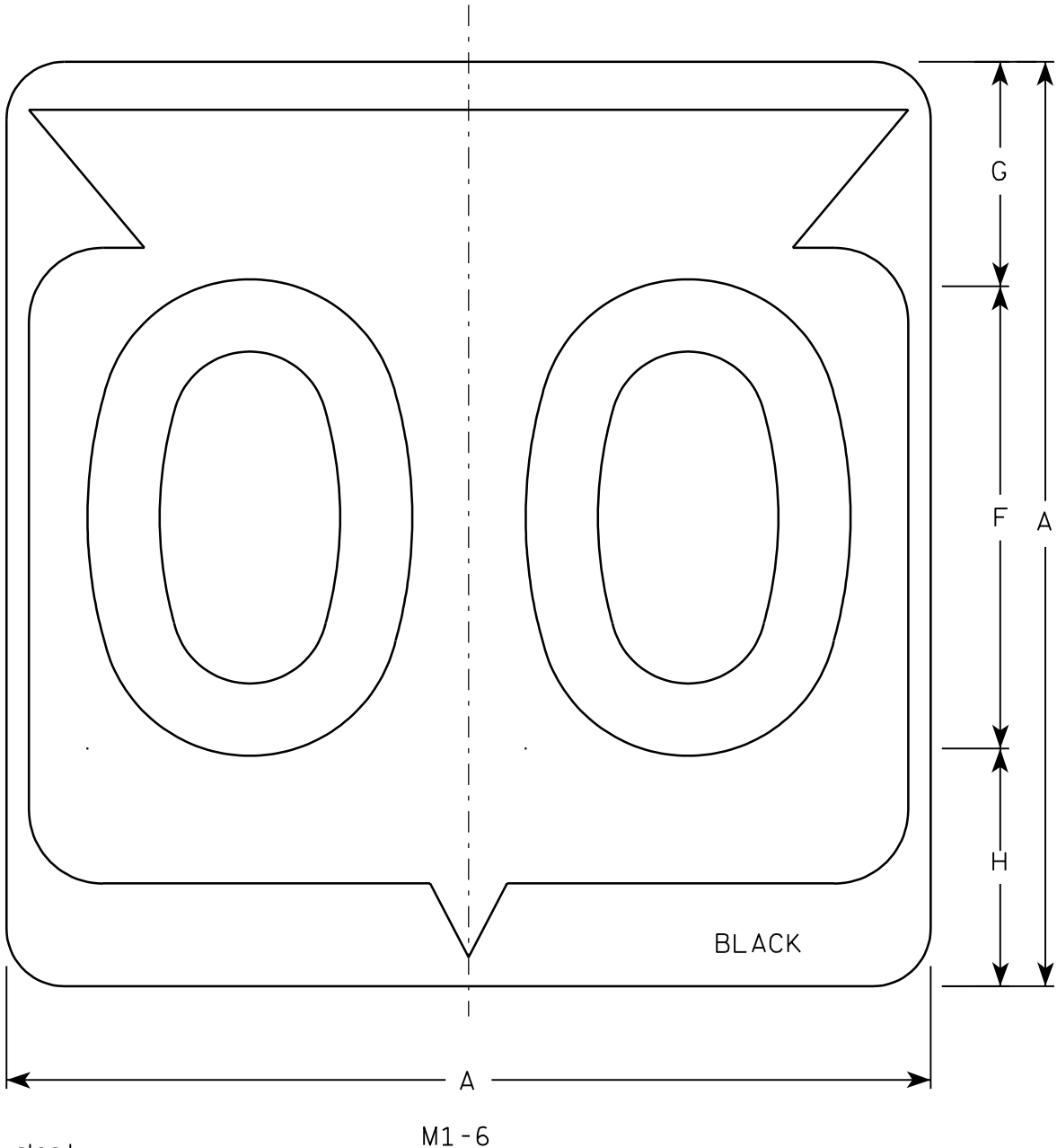
COUNTY:

SHEET NO:

E

7

7



Metric equivalent
for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

FILE NAME : C:\Users\Projects\tr_stdp\late\M16.DGN

PLOT DATE : 13-OCT-2005 14:55

PLOT BY : DITJPH

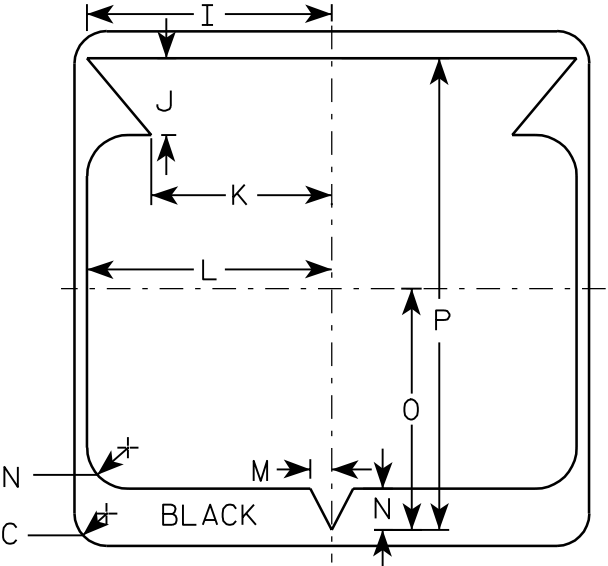
PLOT NAME :

PLOT SCALE : 6.715871:1.000000

WISDOT/CADDs SHEET 42

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

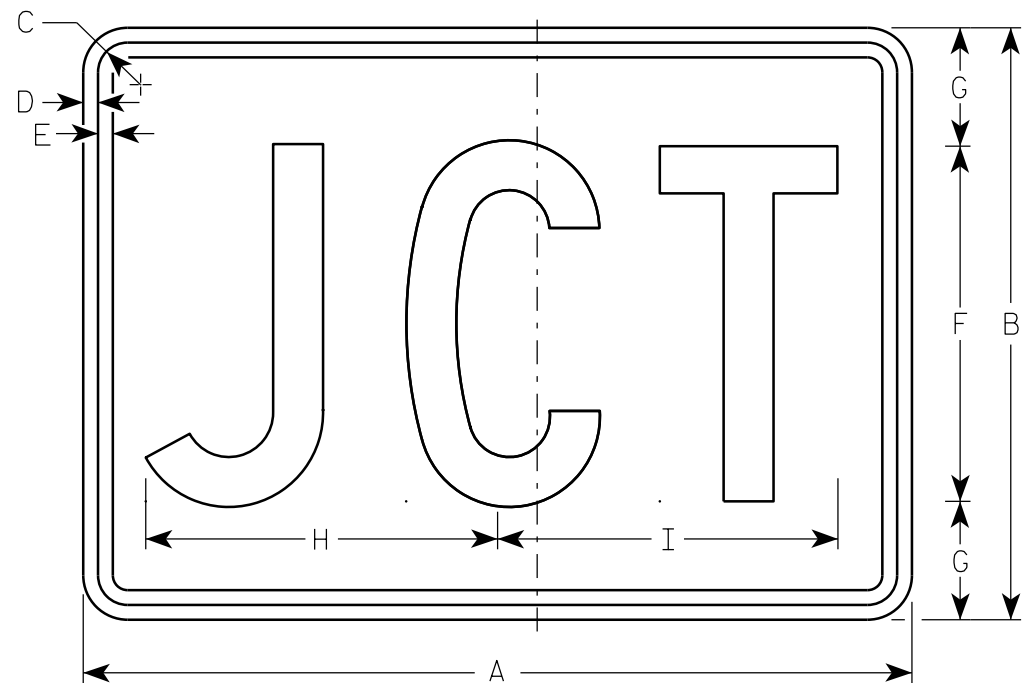
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

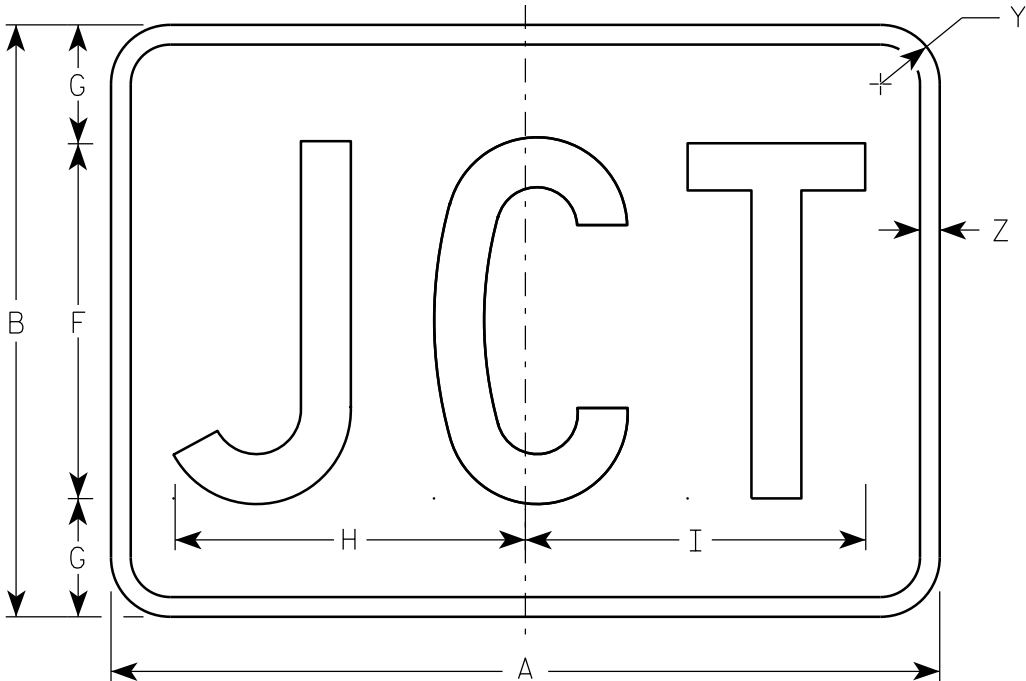
Chester J. Spang
for State Traffic Engineer

DATE 3/20/02

PLATE NO. M1-6.9



M2-1
MK2-1
MM2-1
MN2-1
MR2-1



MB2-1

NOTES

- 1. Sign is Type II - Type H
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MR2-1 Background - Brown
 Message - Yellow

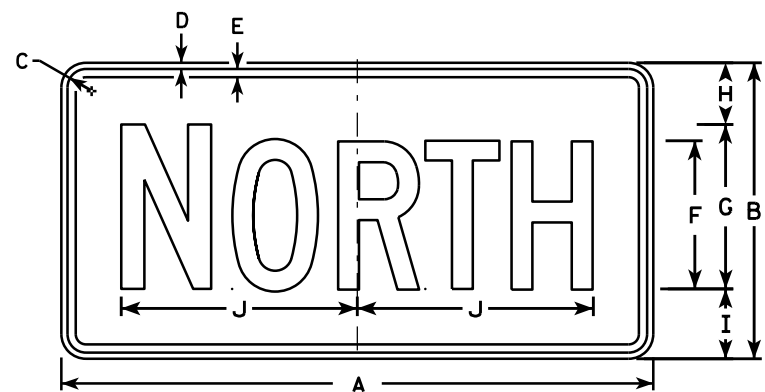
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

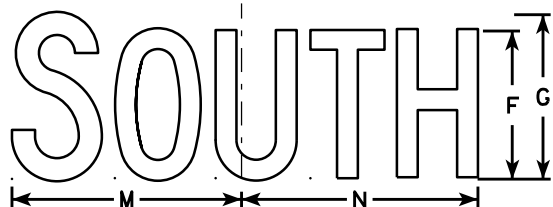
DATE 6/30/14 PLATE NO. M2-1.11



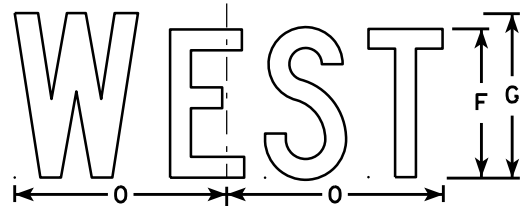
M3-1
MK3-1
MM3-1
MN3-1



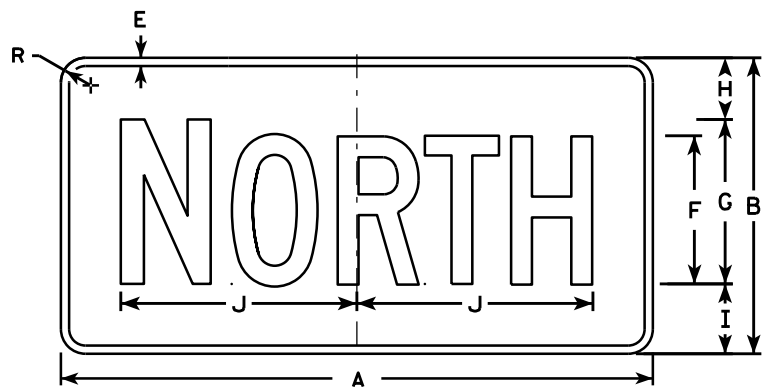
M3-2
MK3-2
MM3-2
MN3-2



M3-3
MK3-3
MM3-3
MN3-3



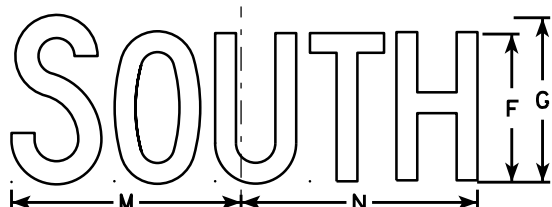
M3-4
MK3-4
MM3-4
MN3-4



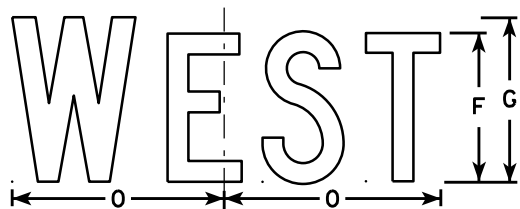
MB3-1



MB3-2



MB3-3



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

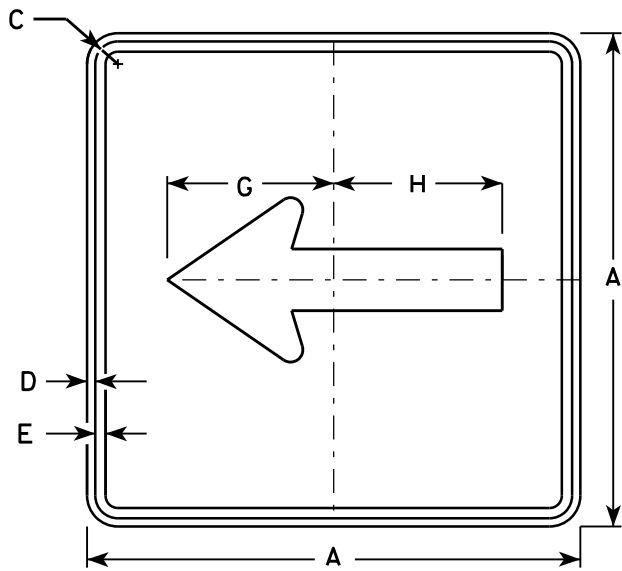
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS M3-1 thru M3-4 SERIES

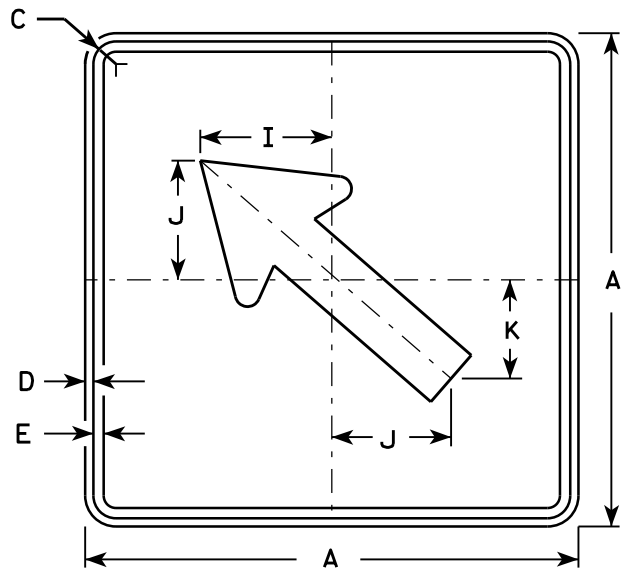
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

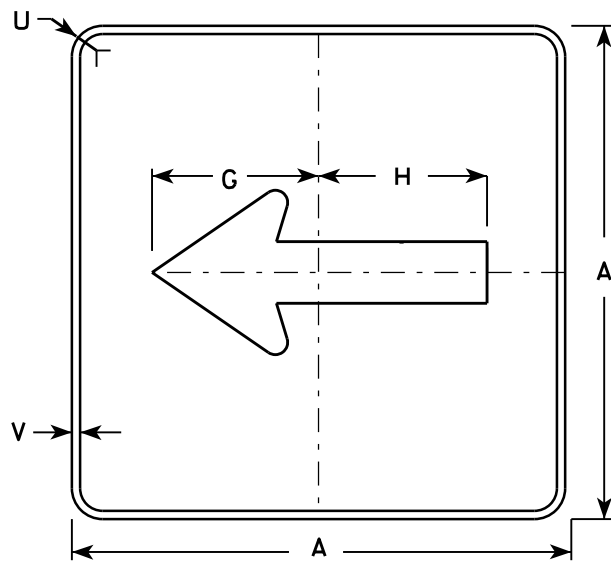
DATE 6/30/14 PLATE NO. M3-1.13



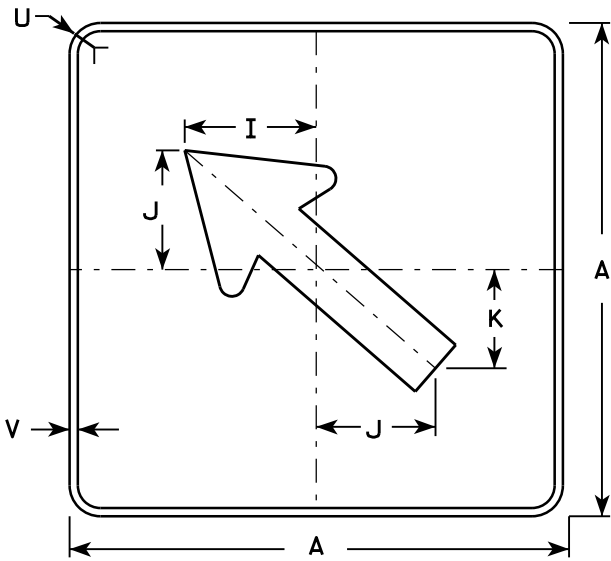
M6 - 1
MK6 - 1
MM6 - 1
MN6 - 1
M06 - 1
MP6 - 1
MR6 - 1



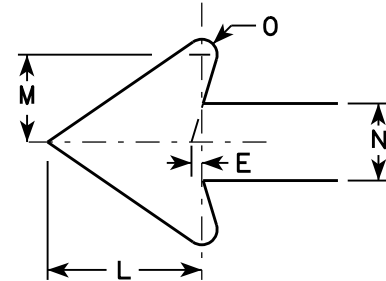
M6 - 2
MK6 - 2
MM6 - 2
MN6 - 2
M06 - 2
MP6 - 2
MR6 - 2



MB6 - 1



MB6 - 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
MG6-1 and MG6-2 Background - Green
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

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

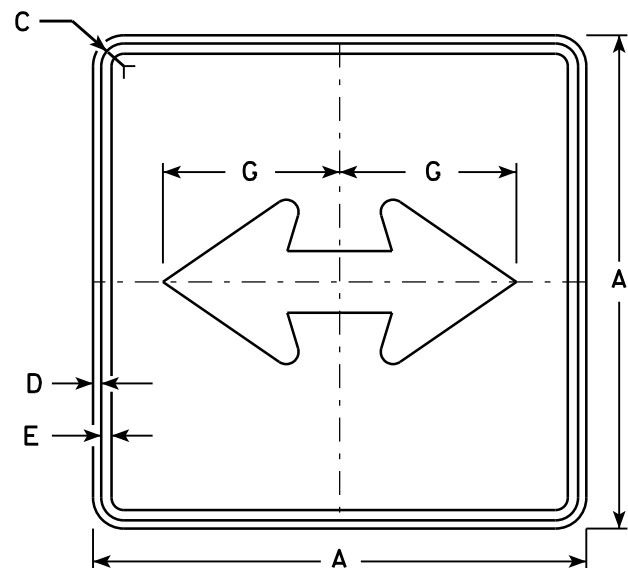
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

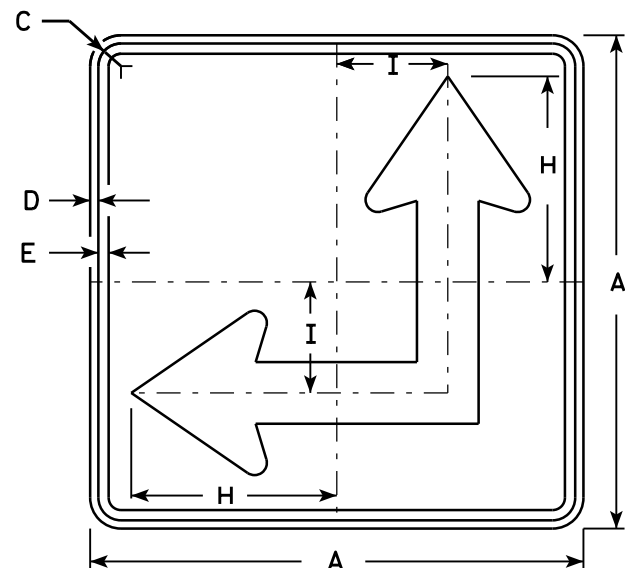
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

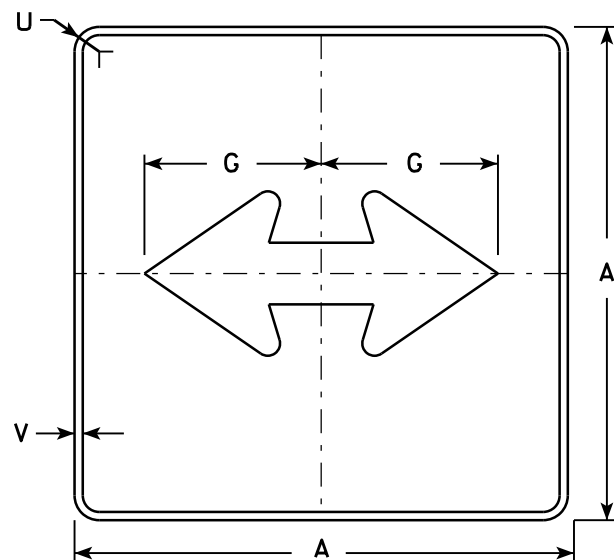
DATE 7/03/14 PLATE NO. M6-1.14



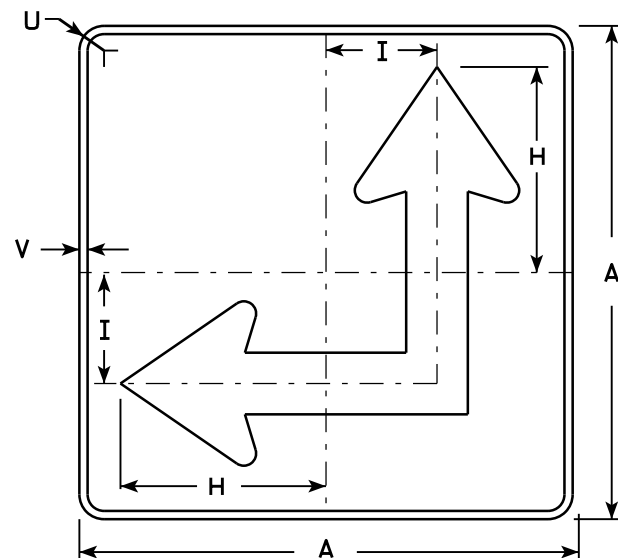
M6 - 4
MK6 - 4
MM6 - 4
MN6 - 4
MO6 - 4
MP6 - 4
MR6 - 4



M6 - 6
MK6 - 6
MM6 - 6
MN6 - 6
MO6 - 6
MP6 - 6
MR6 - 6



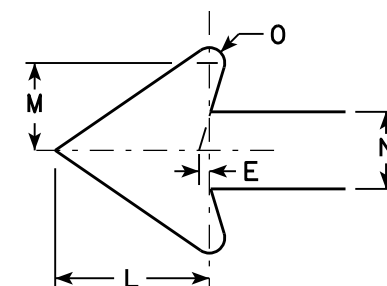
MB6 - 4



MB6 - 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
MO6-4 and MO6-6 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.



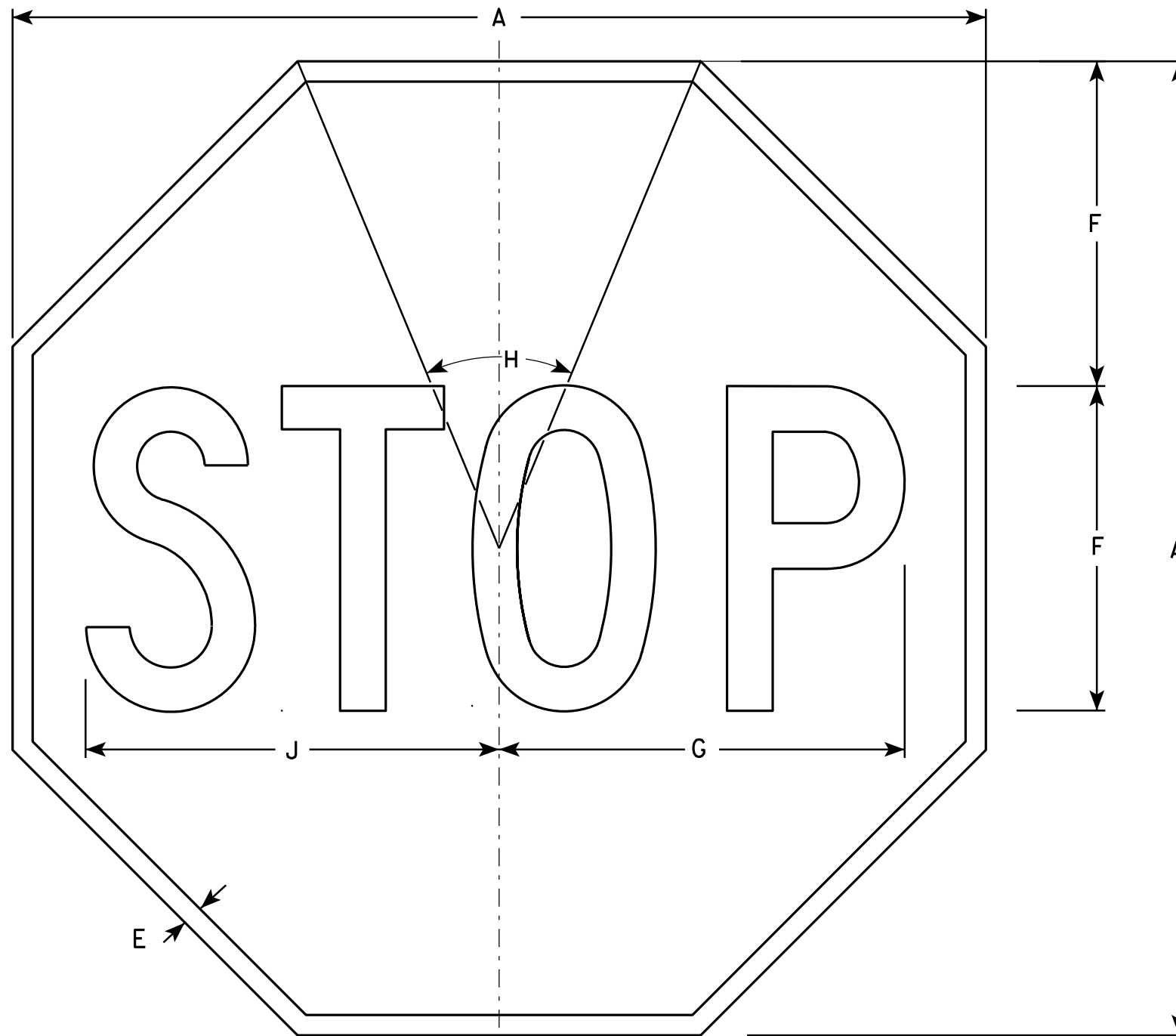
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12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

STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/03/14 PLATE NO. M6-4.9



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				$\frac{3}{8}$	8	10	45°		10 $\frac{1}{4}$																	3.31
2S	30				$\frac{5}{8}$	10	12 $\frac{1}{2}$	45°		12 $\frac{3}{4}$																	5.18
2M	36				$\frac{3}{4}$	12	15	45°		15 $\frac{3}{8}$																	7.46
3	36				$\frac{3}{4}$	12	15	45°		15 $\frac{3}{8}$																	7.46
4	48				1	16	20	45°		20 $\frac{1}{2}$																	13.25
5	48				1	16	20	45°		20 $\frac{1}{2}$																	13.25
6	18				$\frac{3}{8}$	6	7 $\frac{3}{4}$	45°		7 $\frac{3}{4}$																	1.86
7	12				$\frac{1}{4}$	4	5	45°		5 $\frac{1}{8}$																	0.78

STANDARD SIGN R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

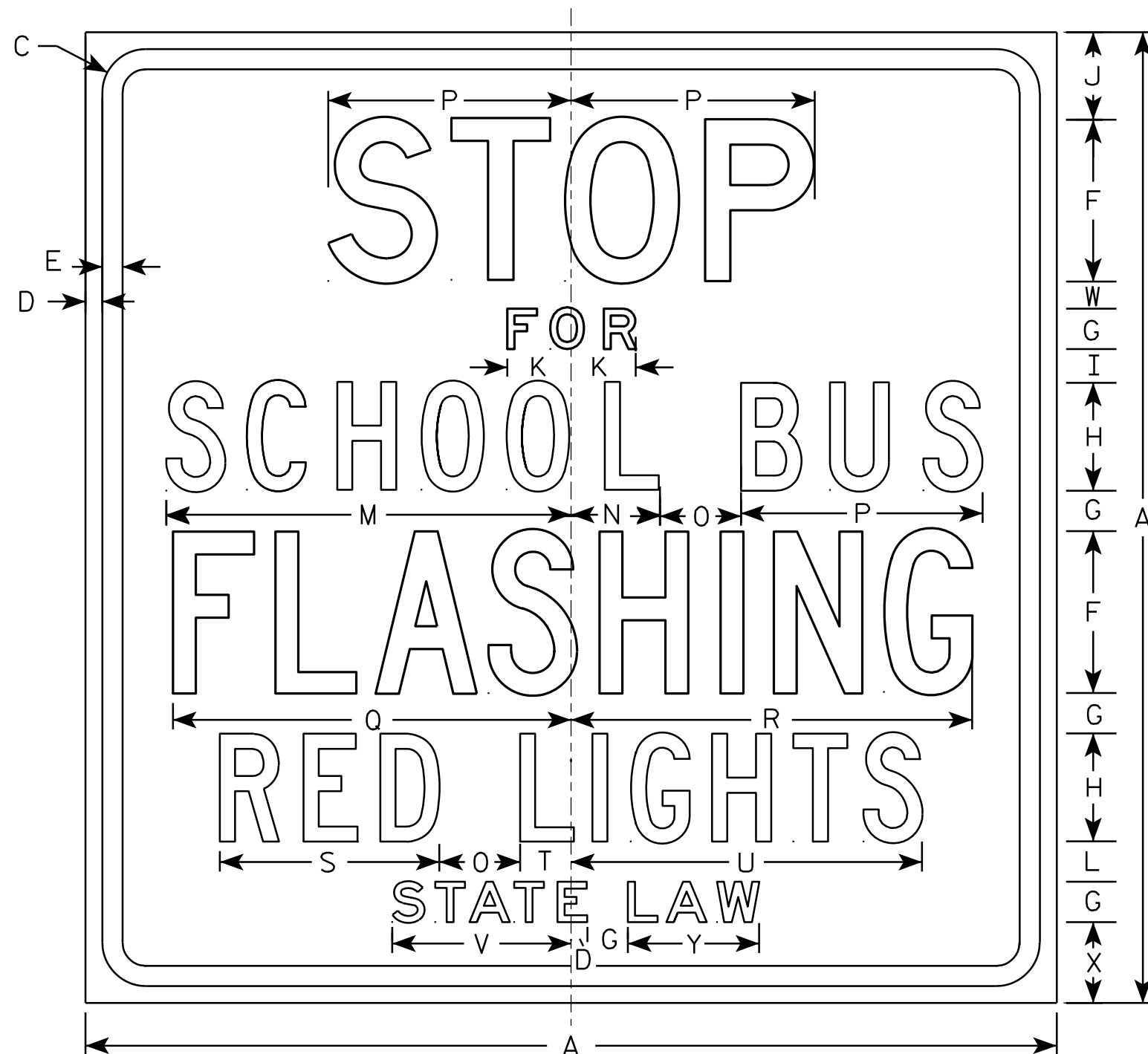
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R59-51

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 - 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
Lines 2 & 6 are Series E
Line 3, 4 & 5 are Series C

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

STANDARD SIGN R59-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 3/30/11

PLATE NO. R59-51.10

PROJECT NO:

HWY:

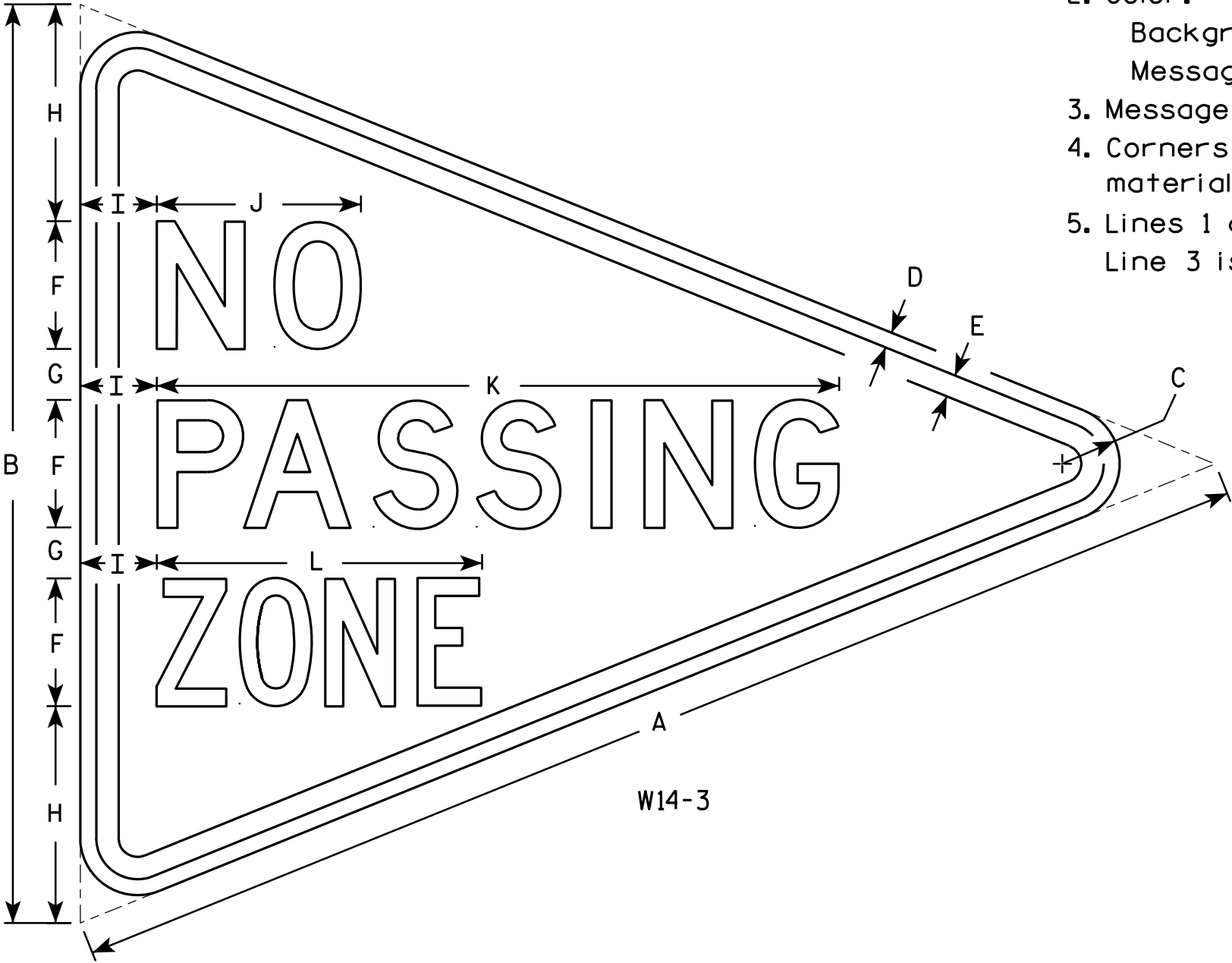
COUNTY:

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



W14-3

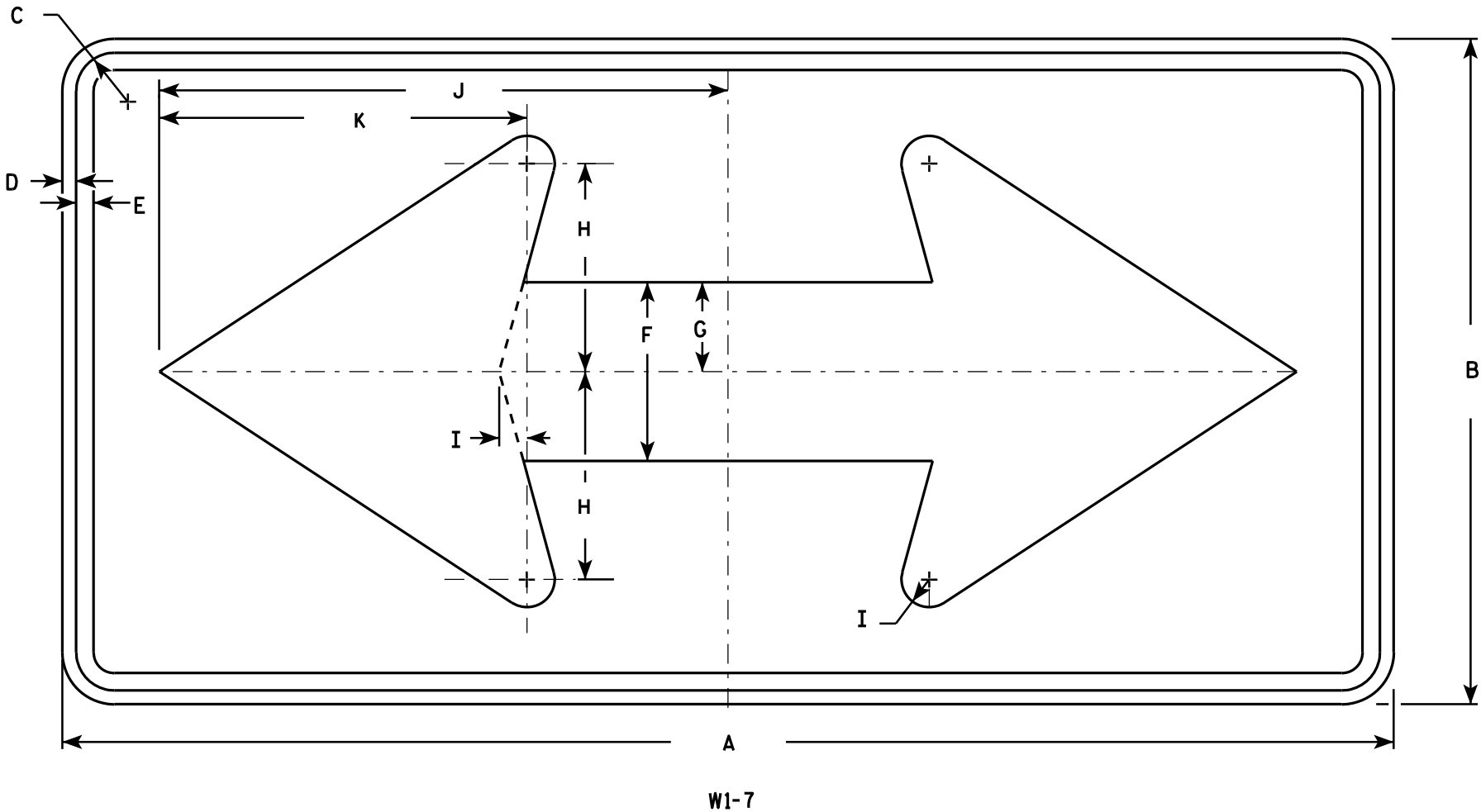
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2														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

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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



NOTES

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

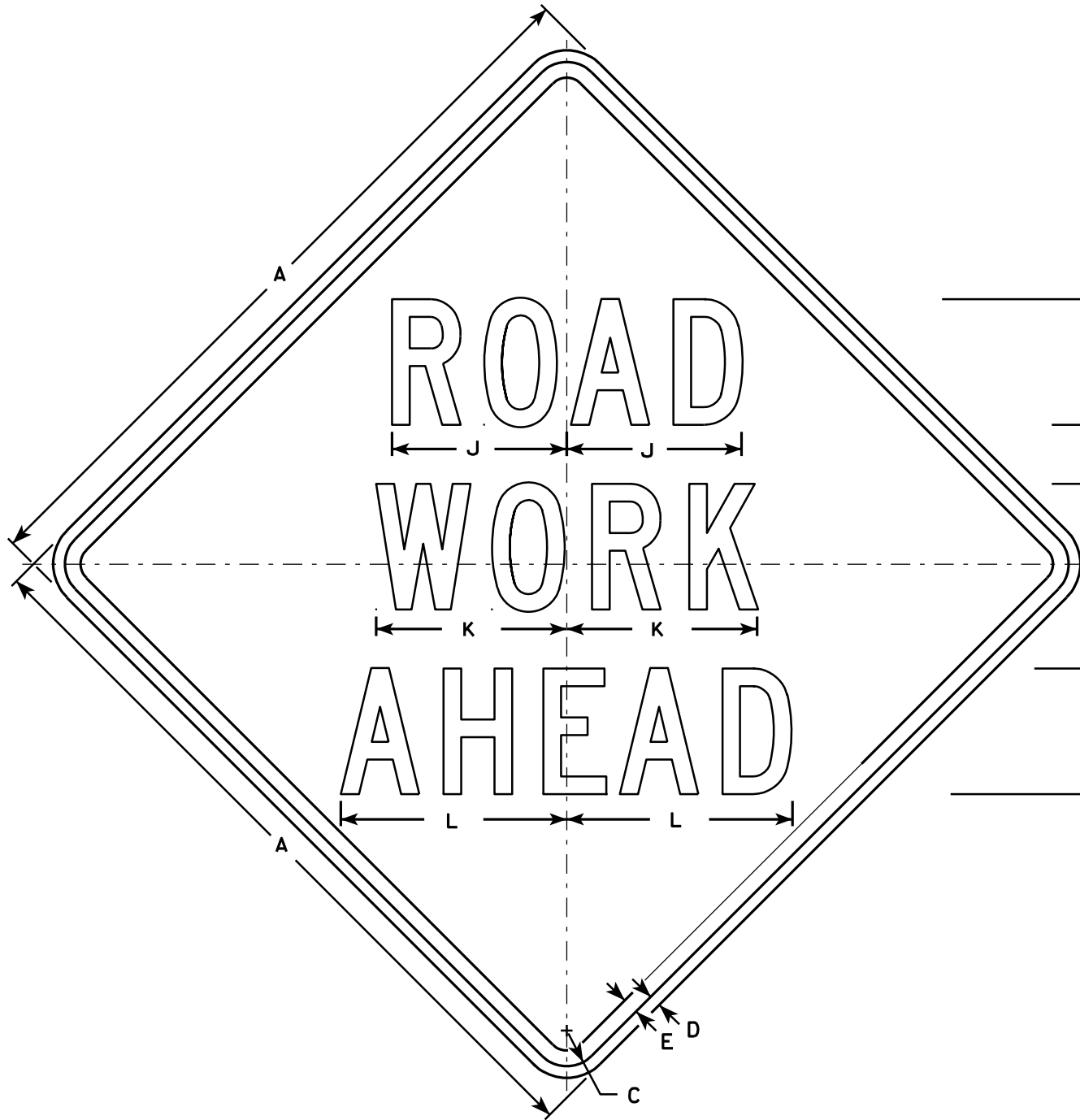
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1 - 7

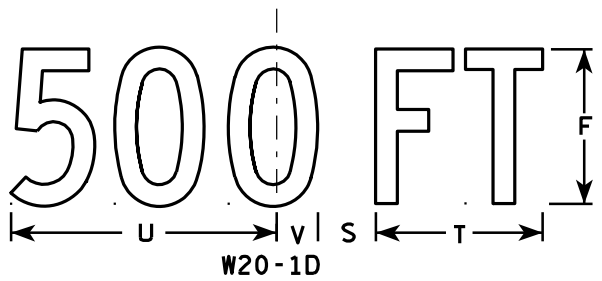
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

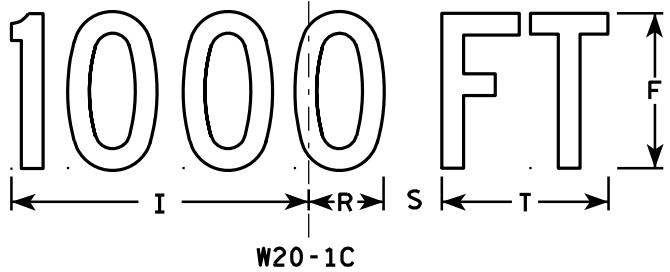
DATE 6/7/10 PLATE NO. W1-7.7



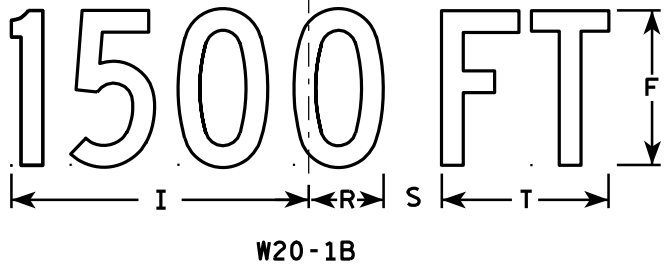
W20-1A



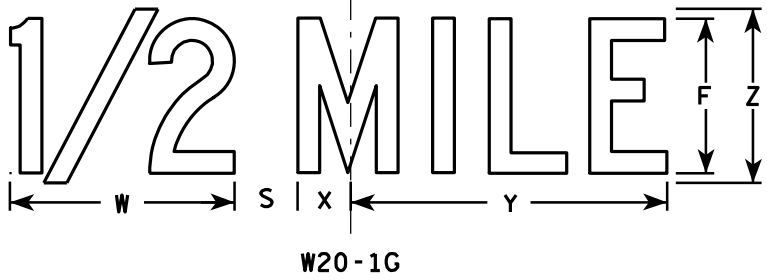
W20-1D



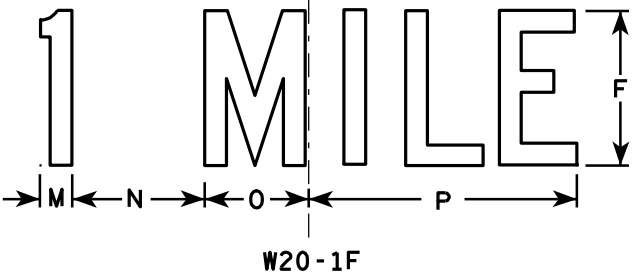
W20-1C



W20-1B



W20-1G



W20-1F

NOTES

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

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

PROJECT NO:

SHEET NO:

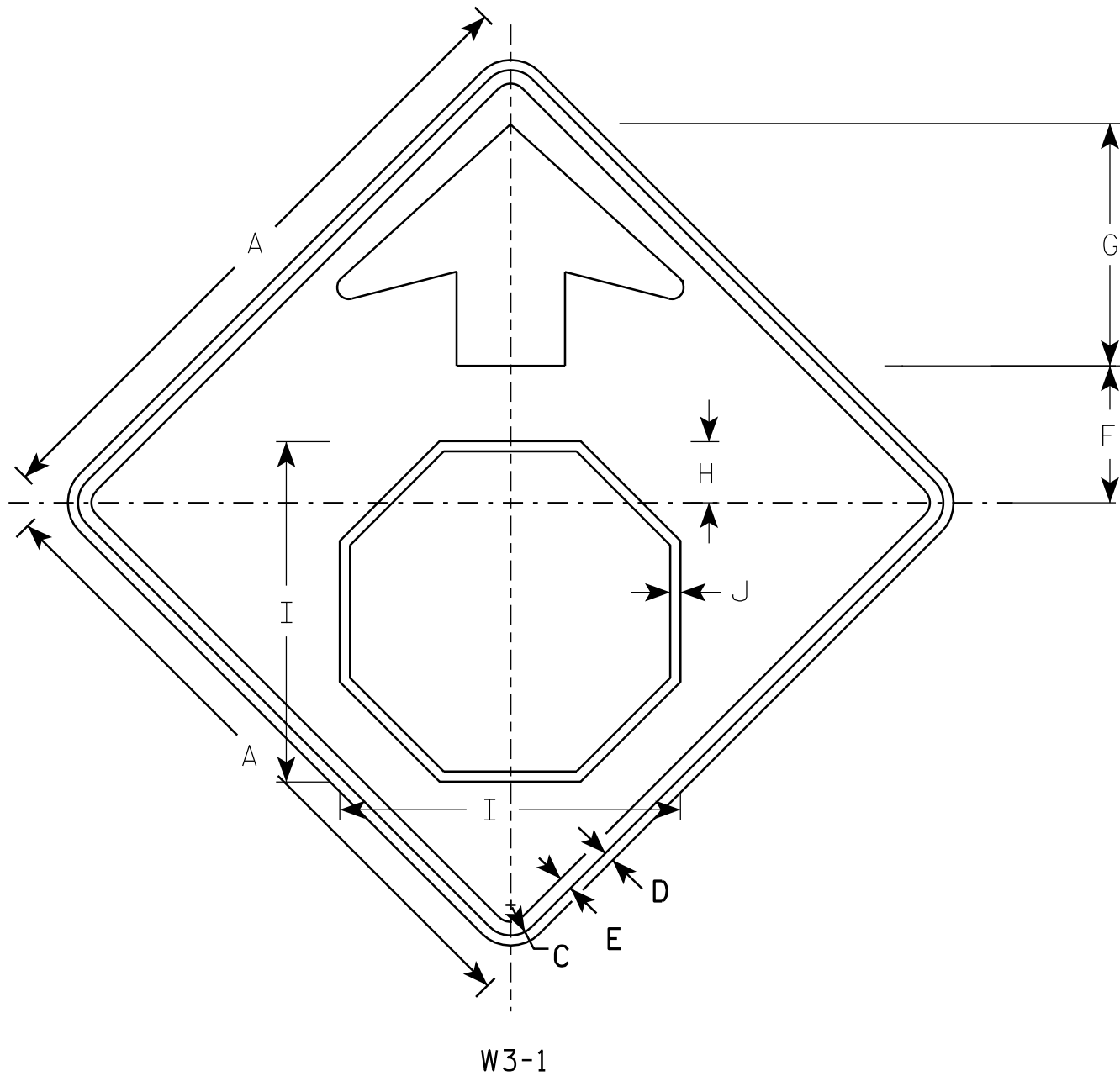
E

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

WISCONSIN DEPT OF TRANSPORTATION

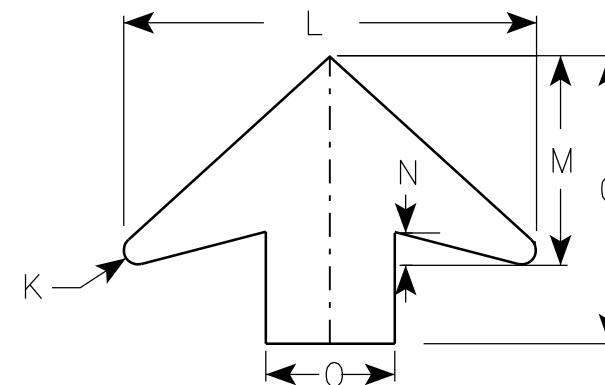
APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 3/18/11
PLATE NO. W20-19



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 ³ / ₈	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

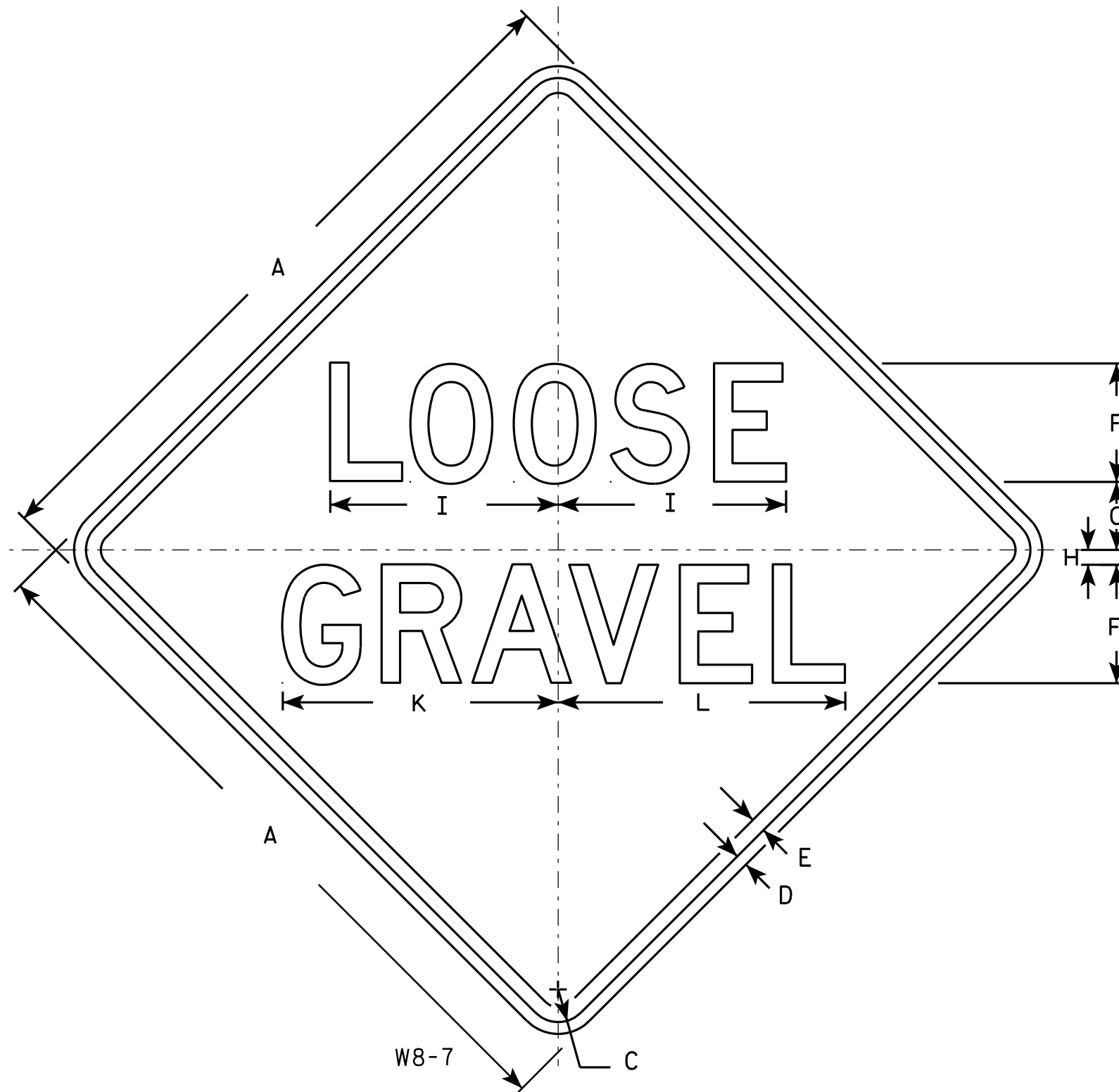
PROJECT NO:

STANDARD SIGN W3-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

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.

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

STANDARD SIGN

W8-7

WISCONSIN DEPT OF TRANSPORTATION

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

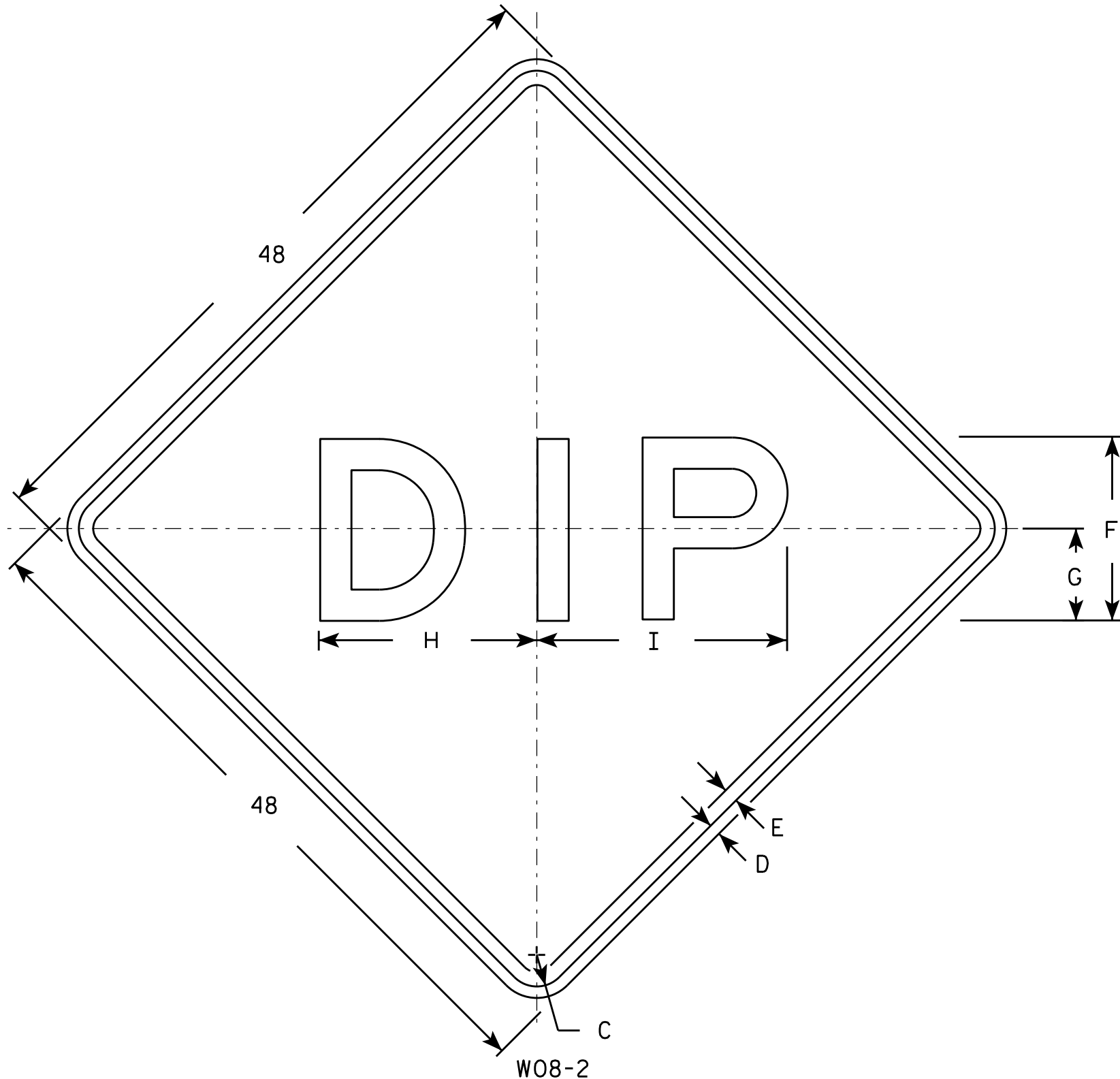
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

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

STANDARD SIGN

W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13

PLATE NO. W08-2.1

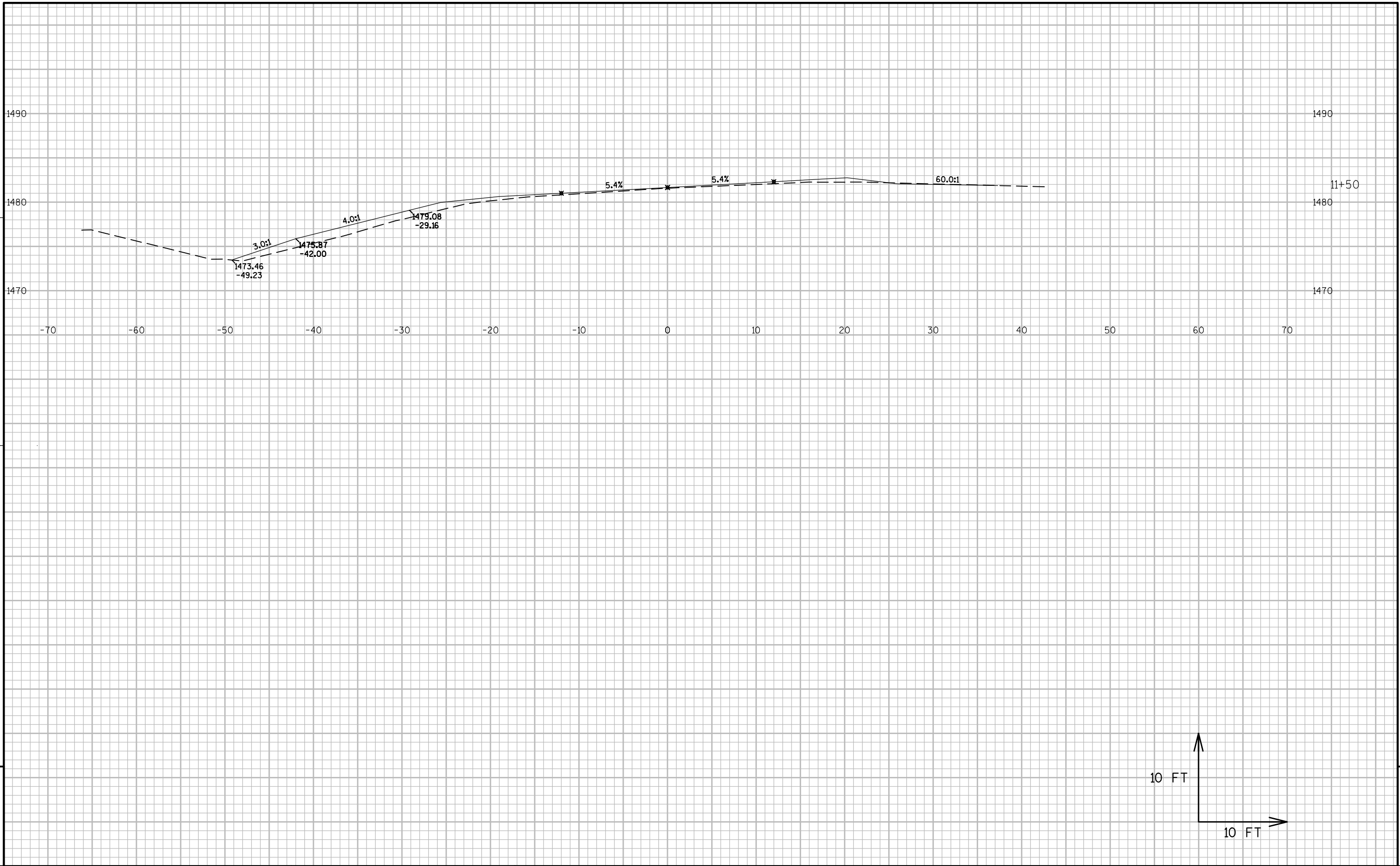
PROJECT NO:

HWY:

COUNTY:

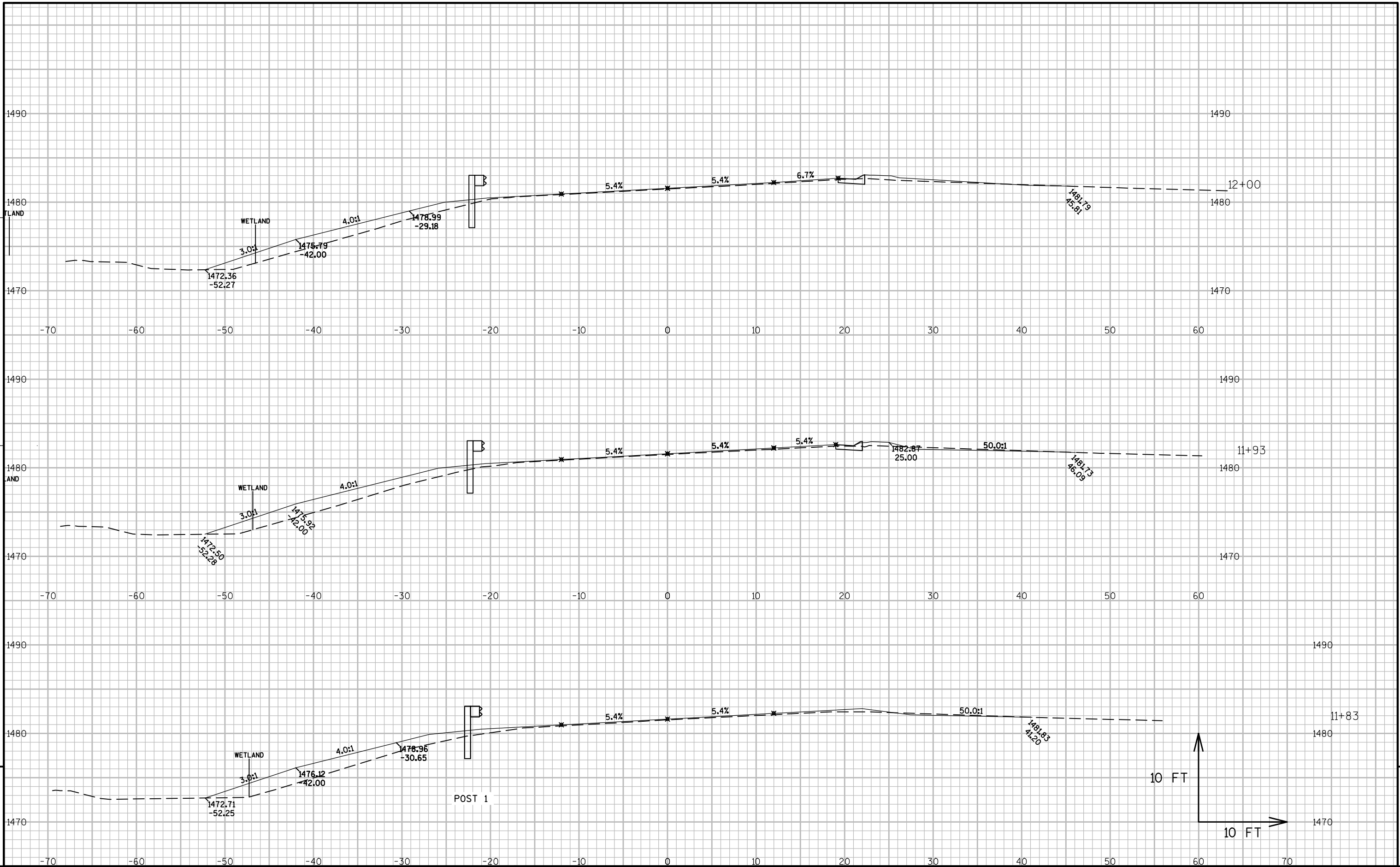
SHEET NO:

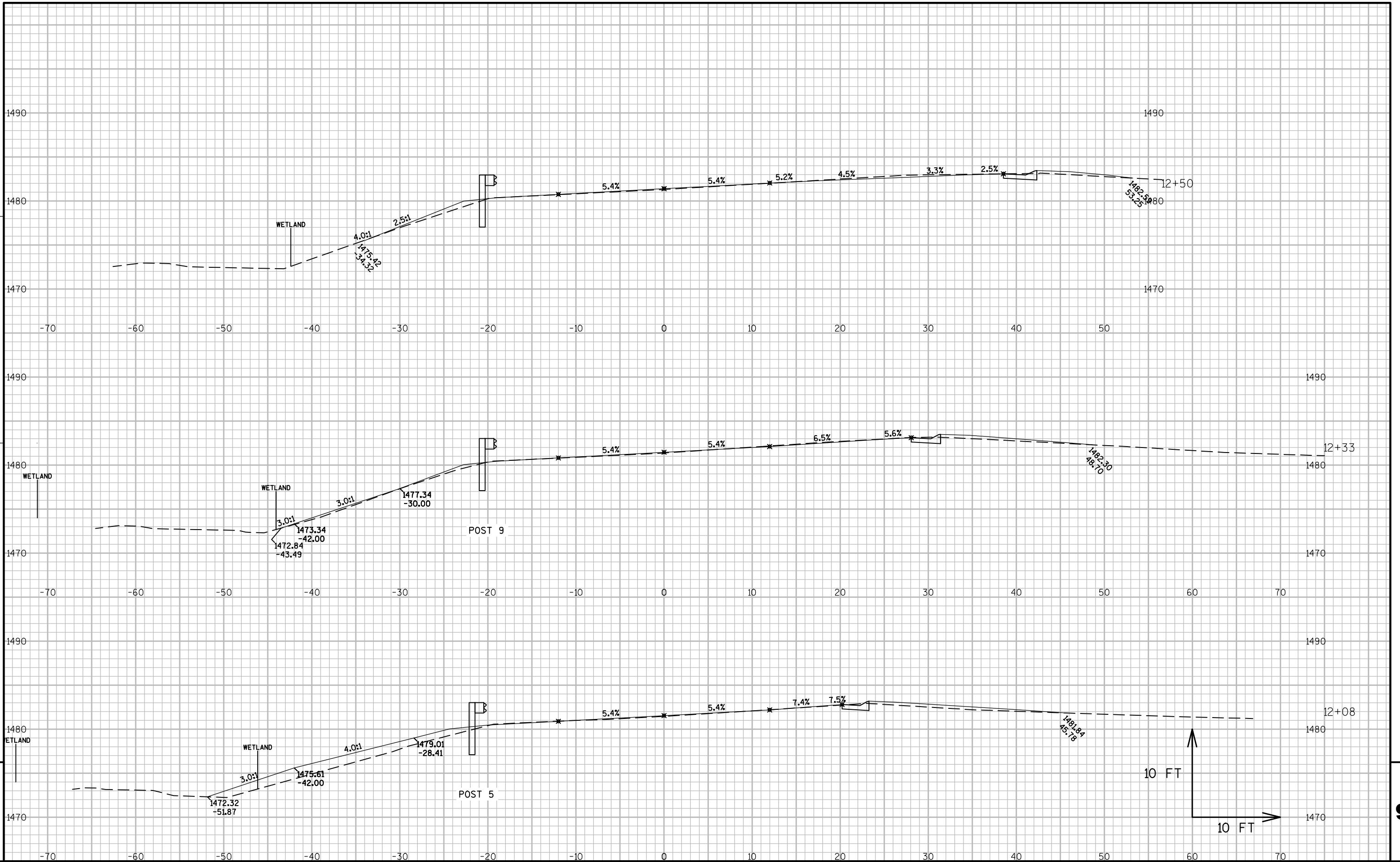
E

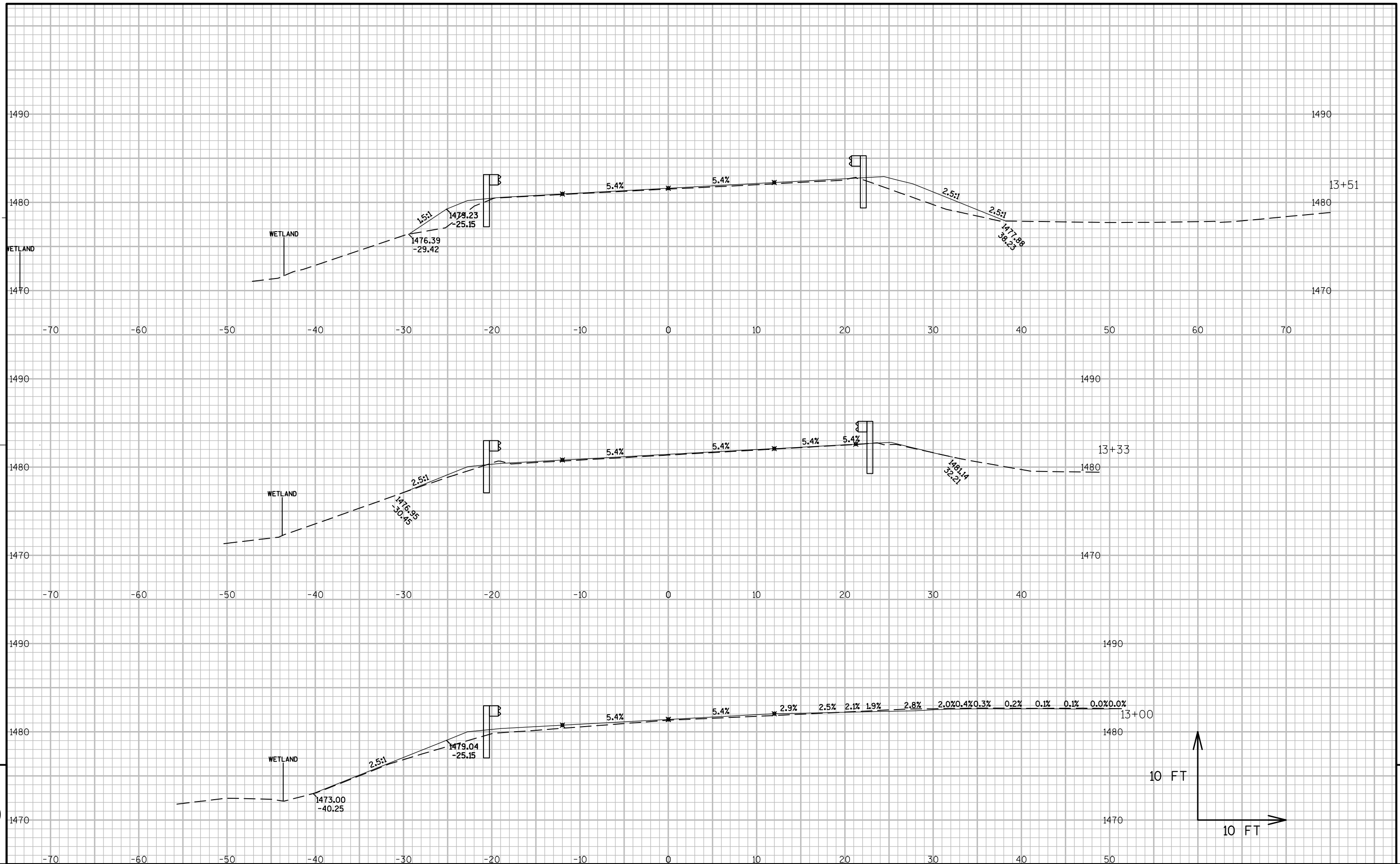


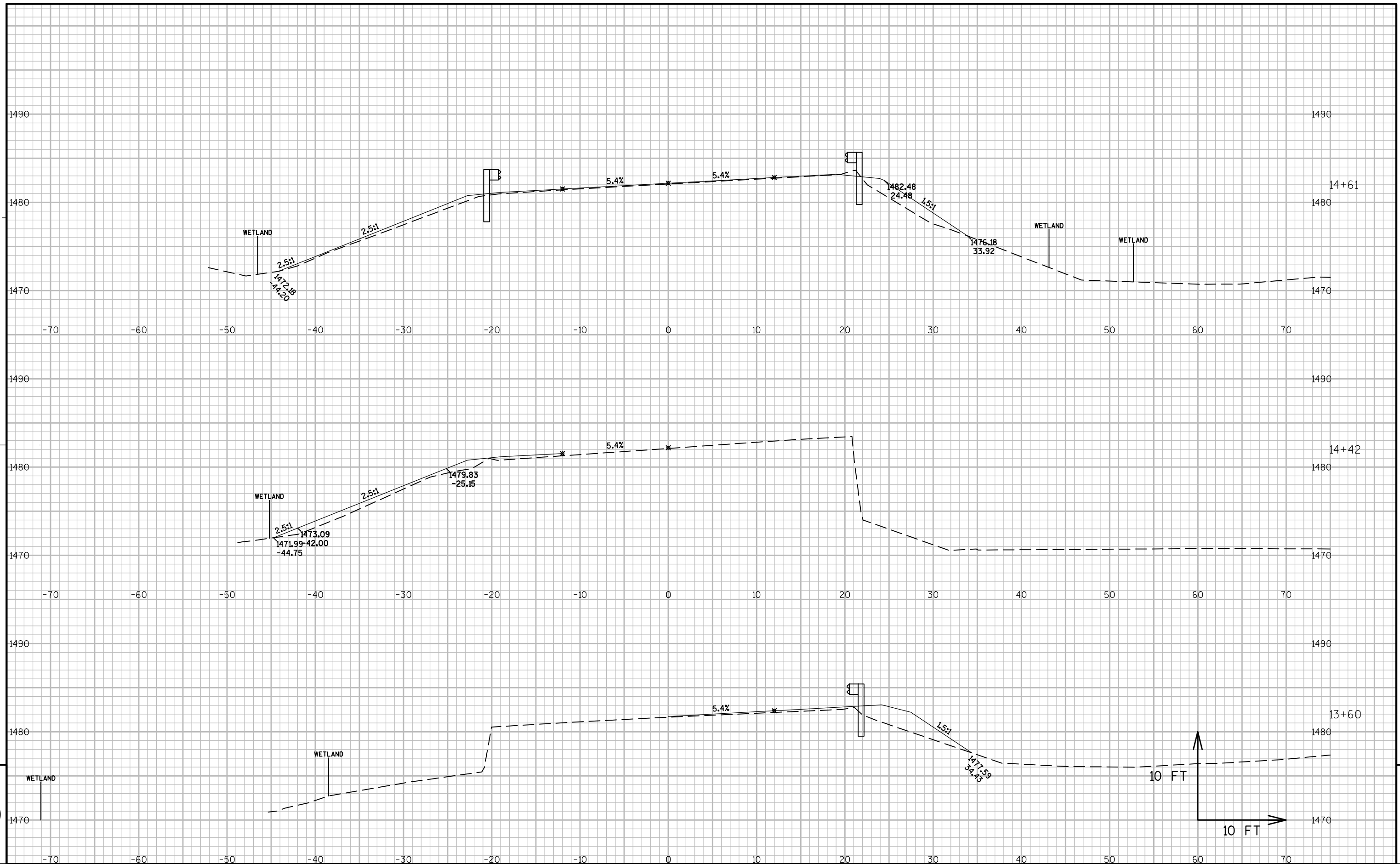
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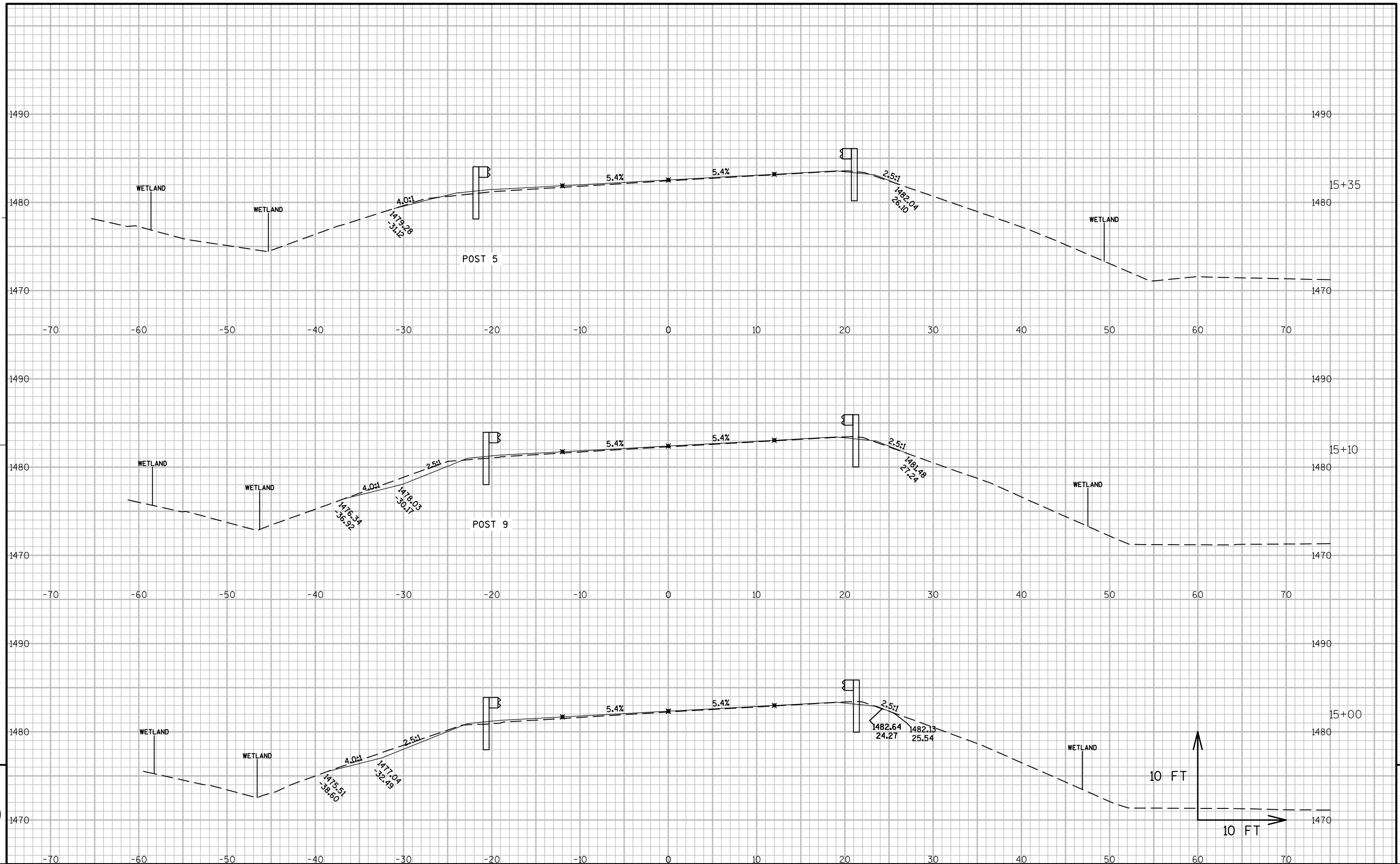
9

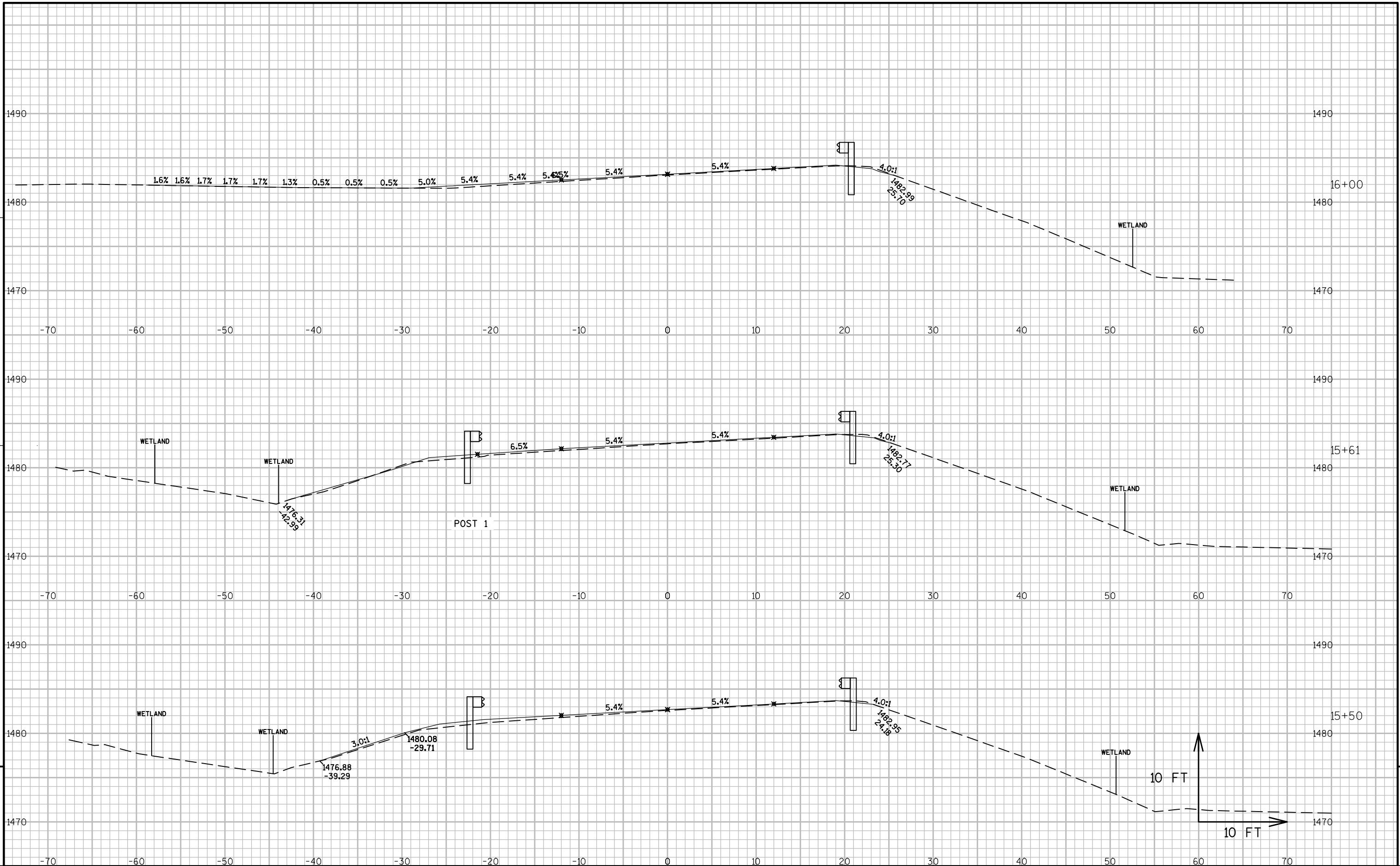


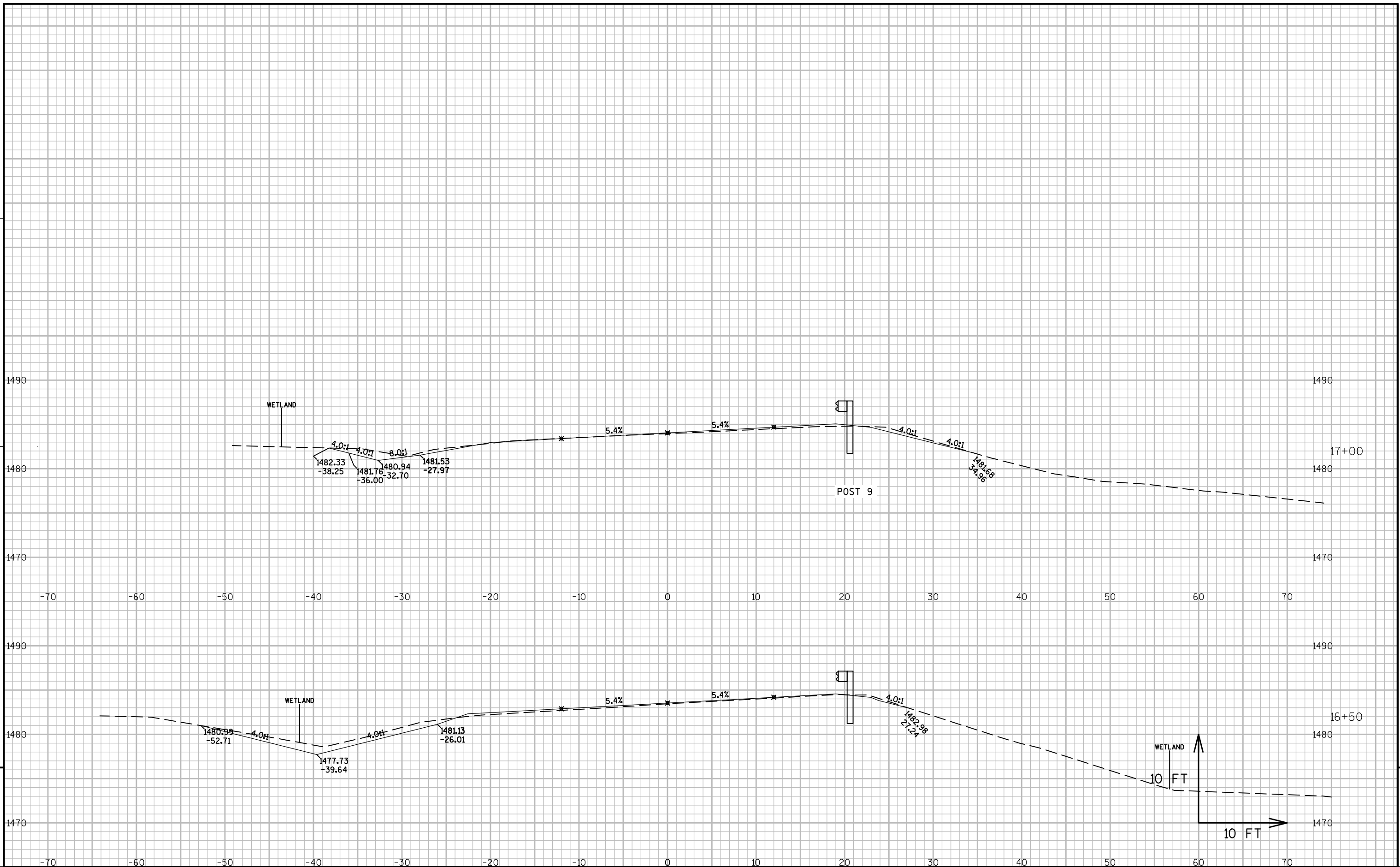


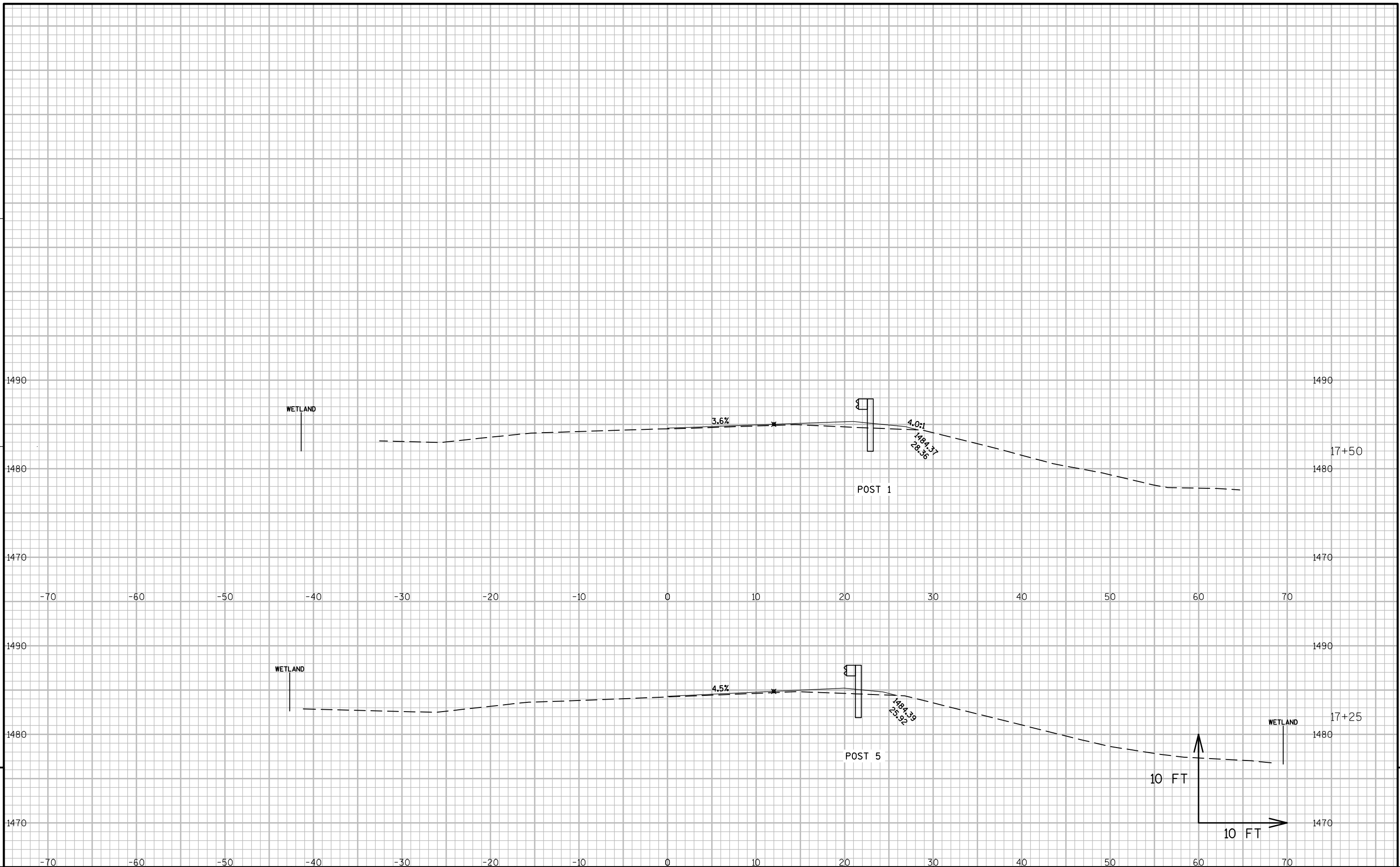


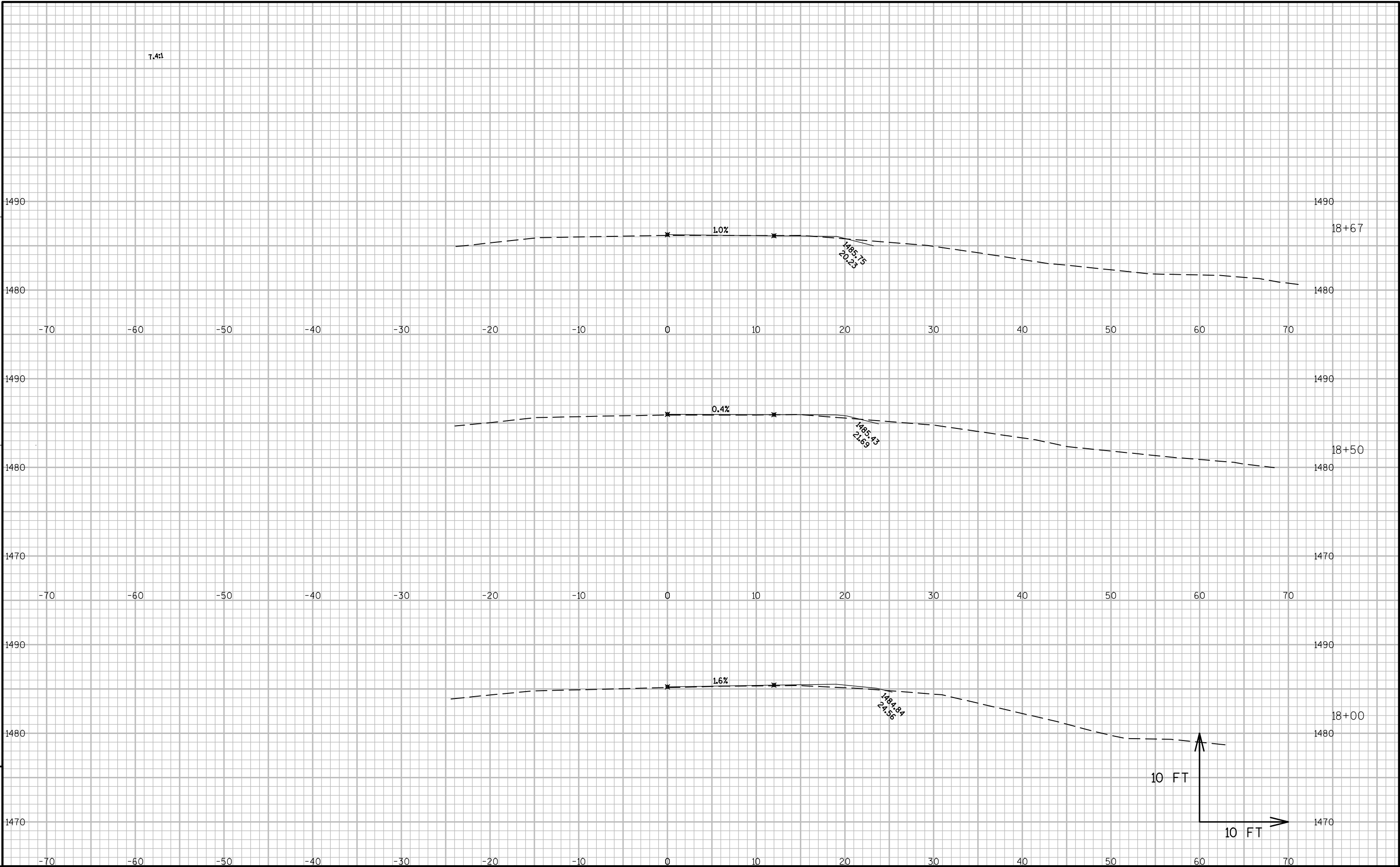


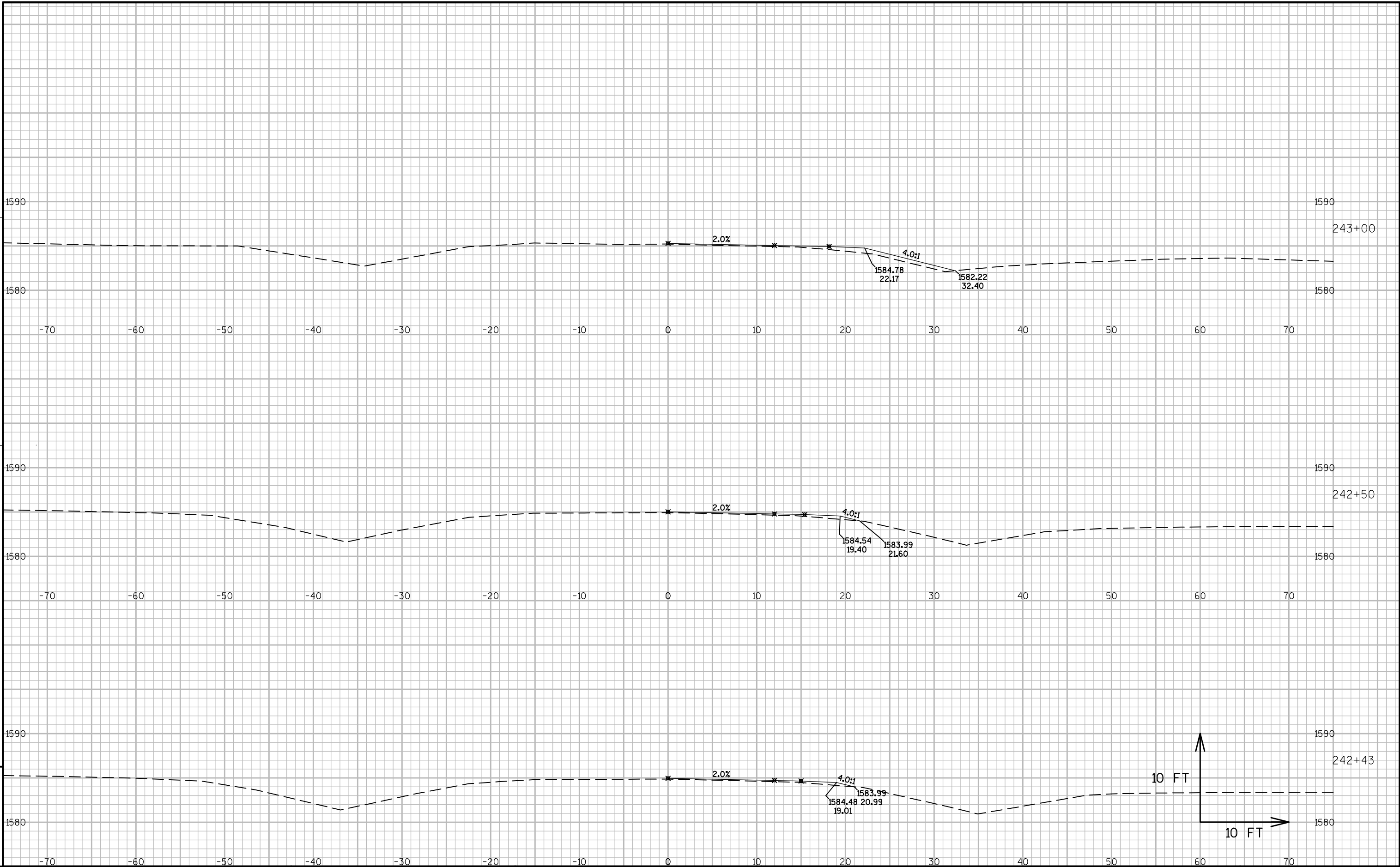


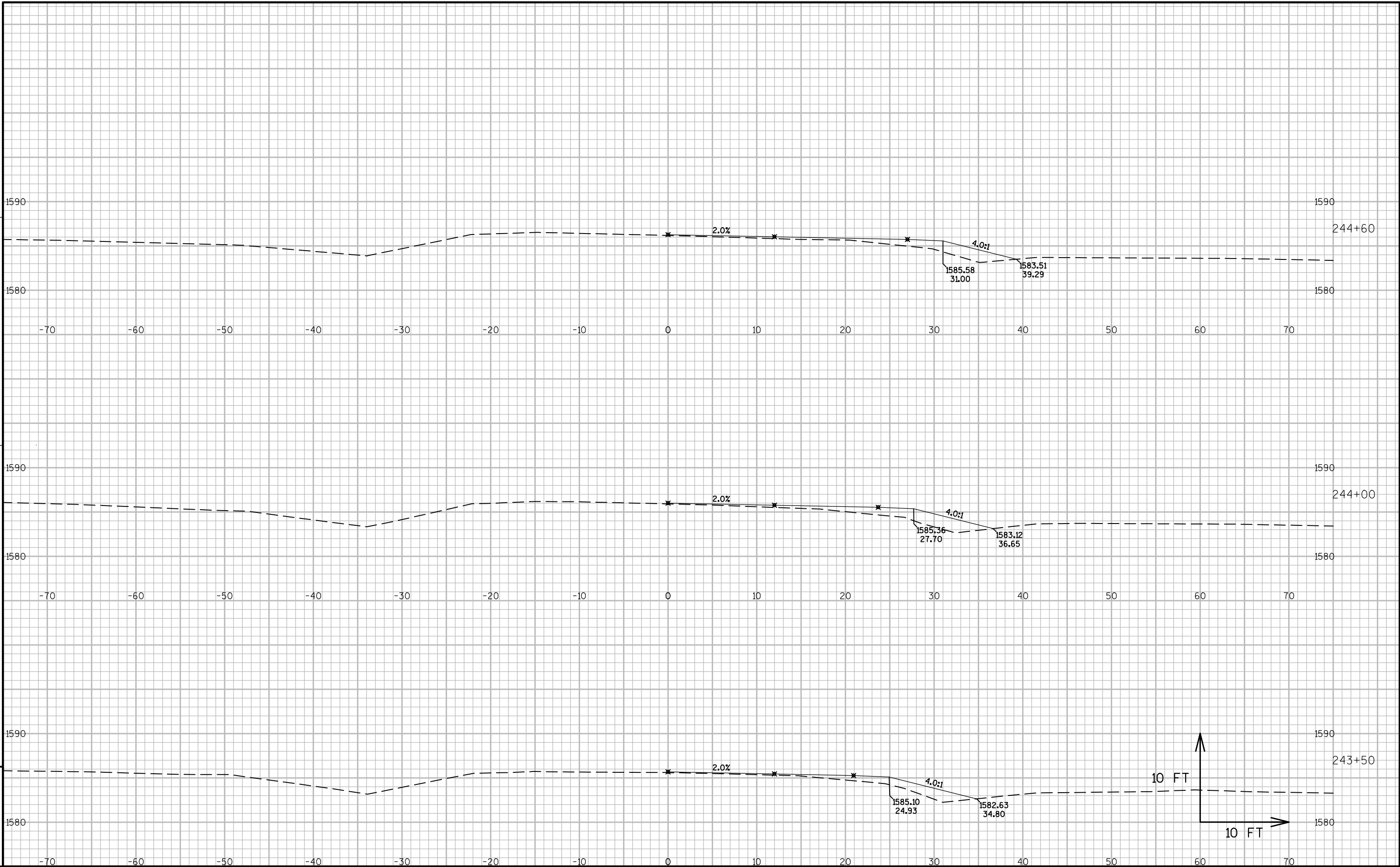


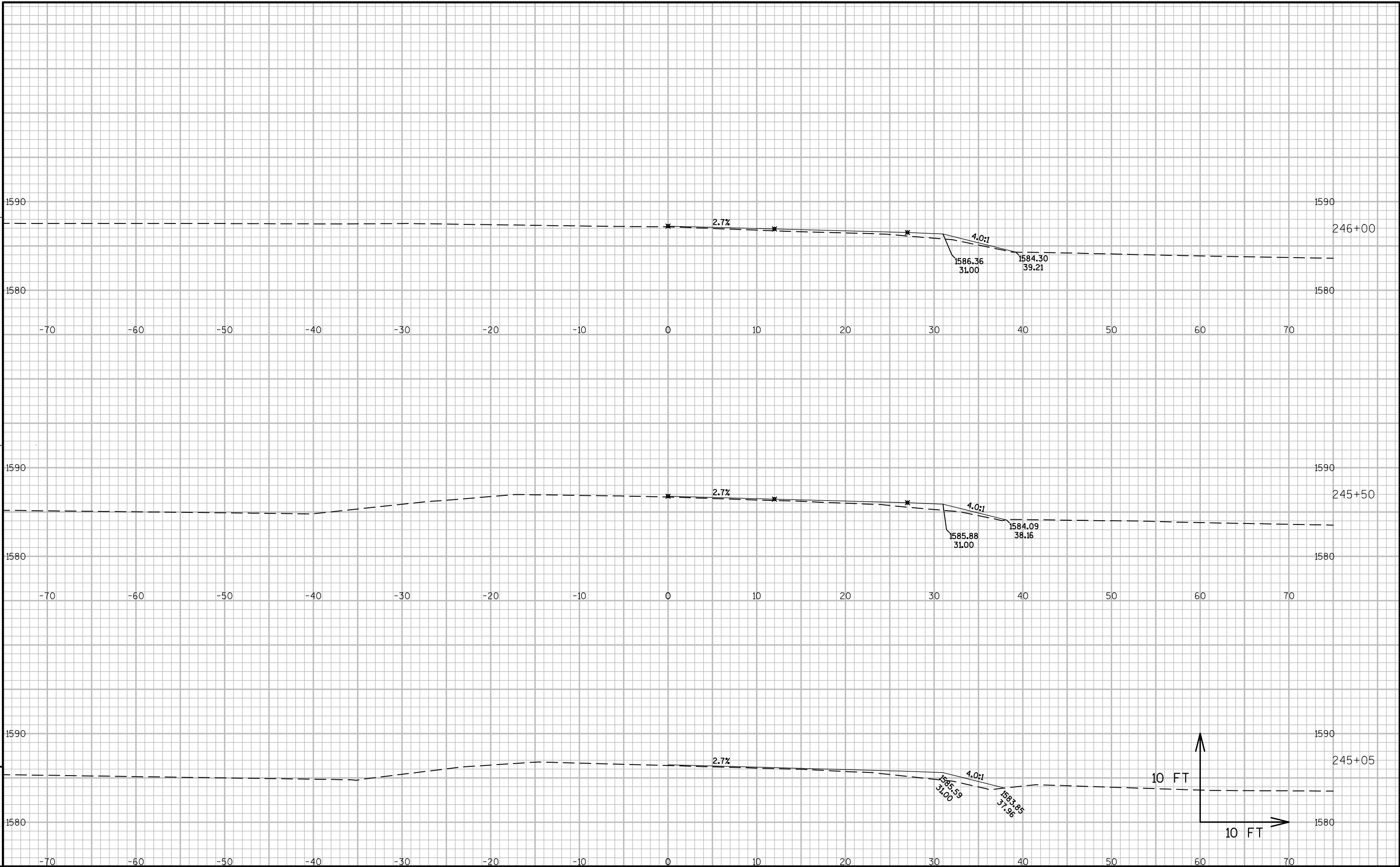


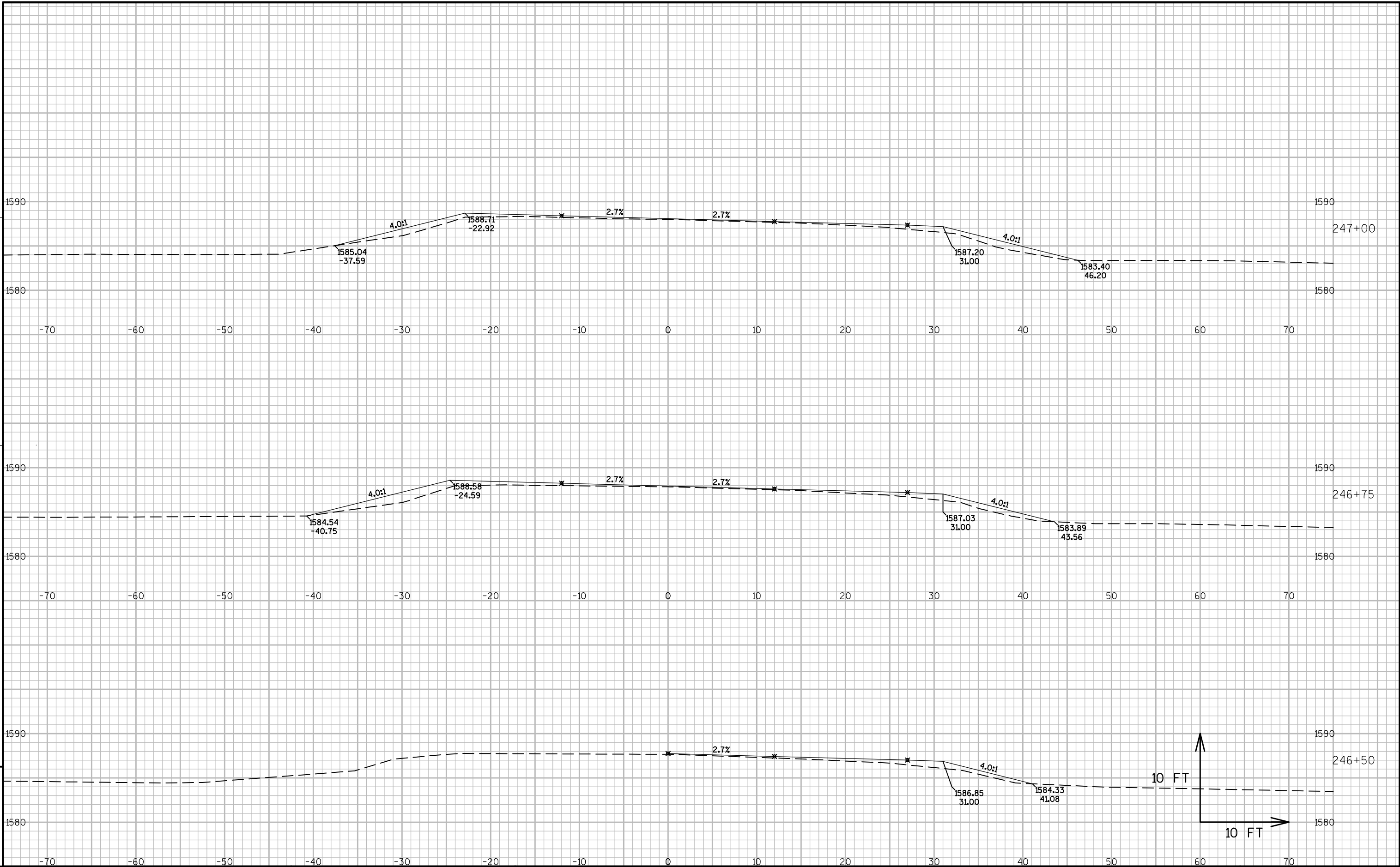


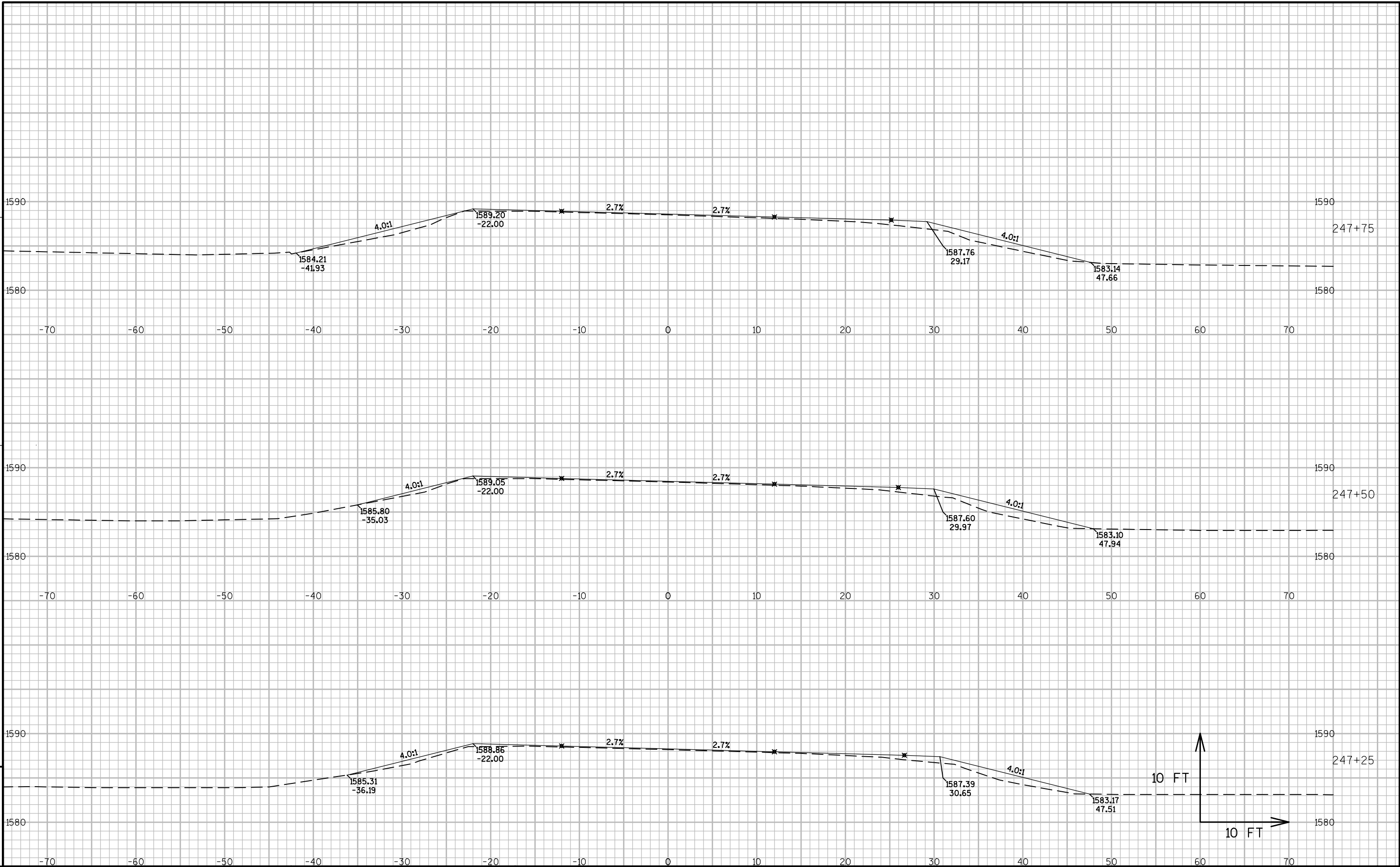


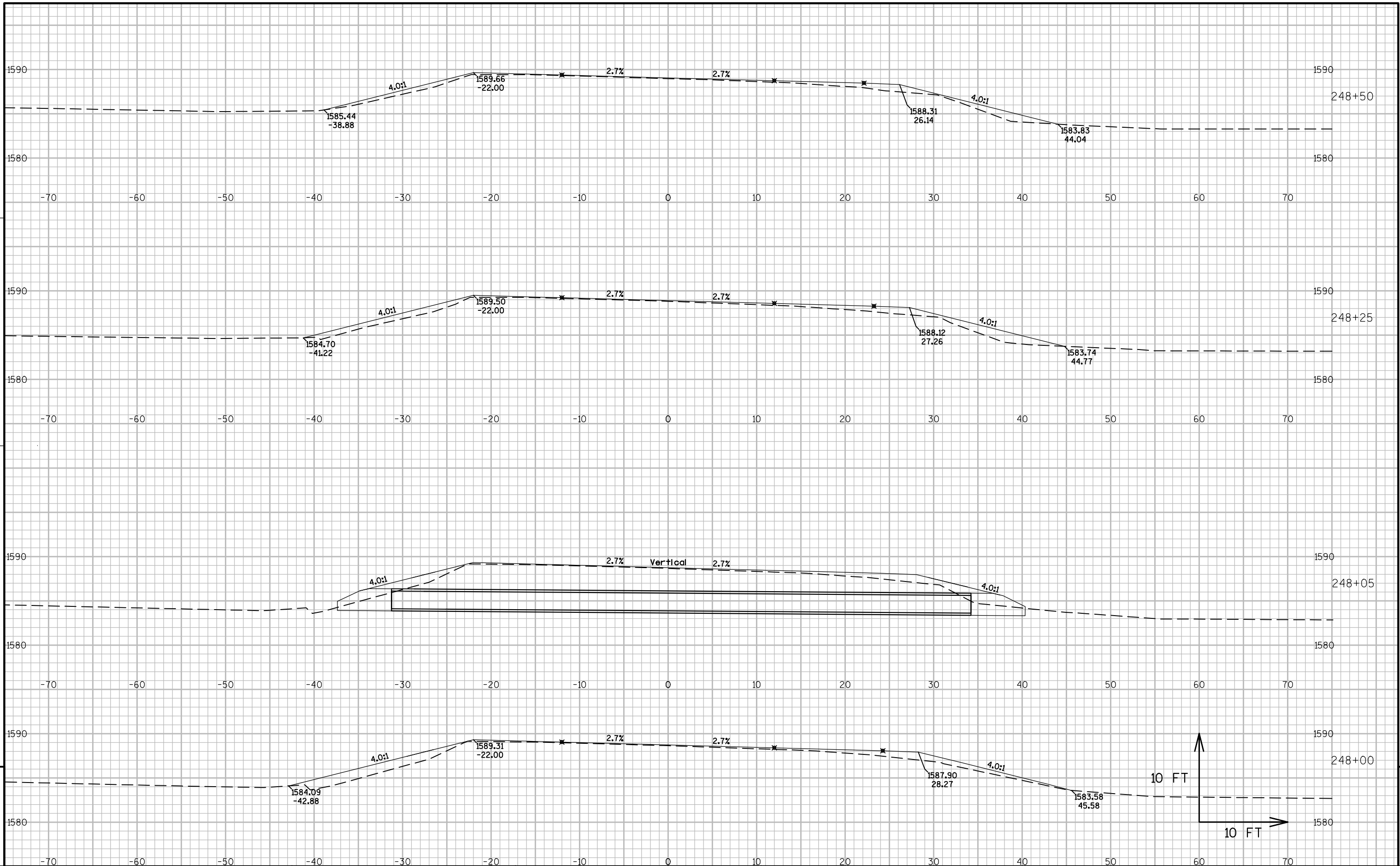


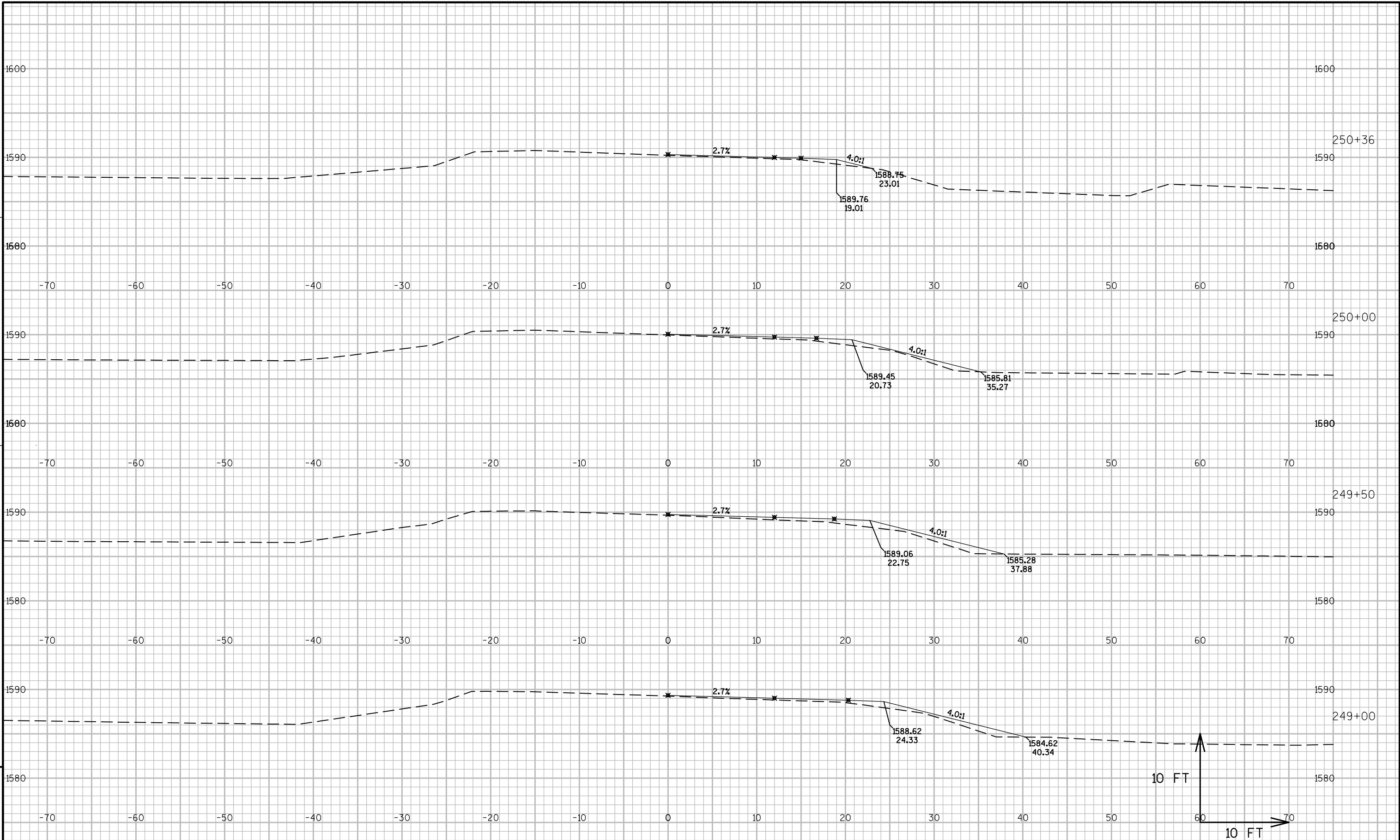












PROJECT NO: 9030-09-71

HWY: STH 17

COUNTY: LANGLADE / LINCOLN

CROSS SECTIONS: CULVERT PIPE 35-017-062 AND BYPASS LANE

SHEET

E

FILE NAME : N:\PDS\C3D\90300931\SHEETSP\LAN\090202_XS - CTH B.DWG
LAYOUT NAME - 090217_XS

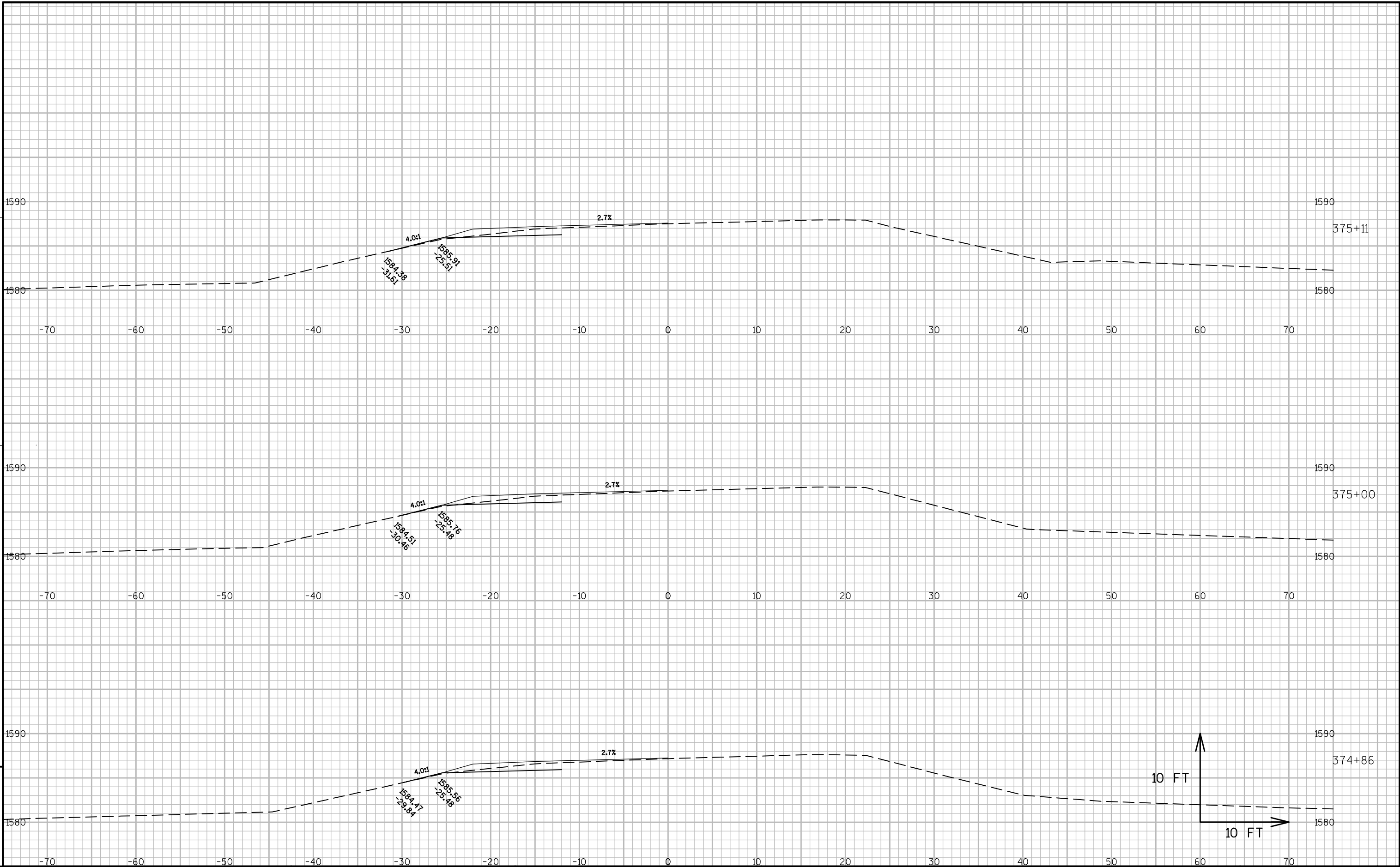
PLOT DATE : 9/19/2014 9:13 AM

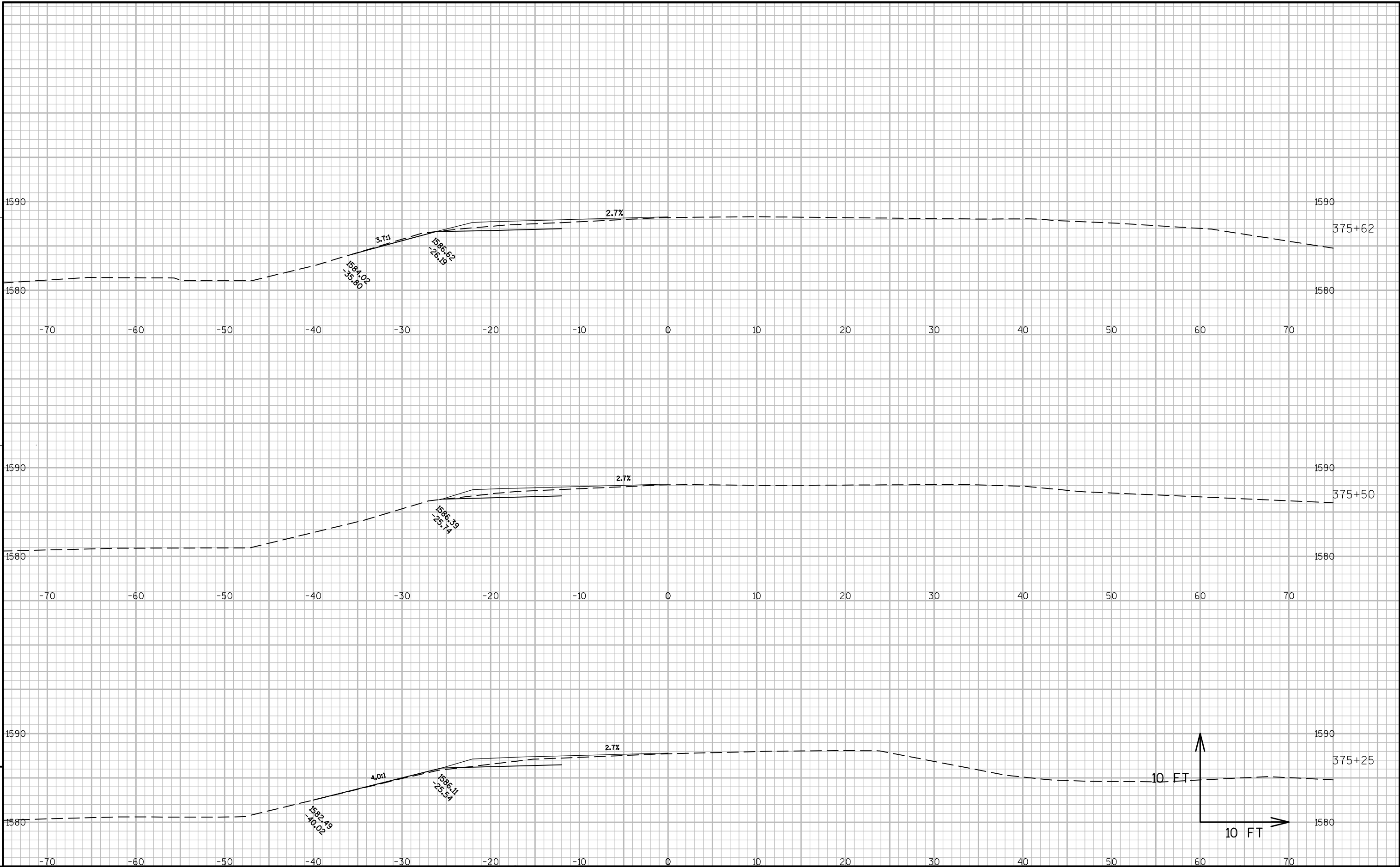
PLOT BY : LAVIN, MITCHELL L

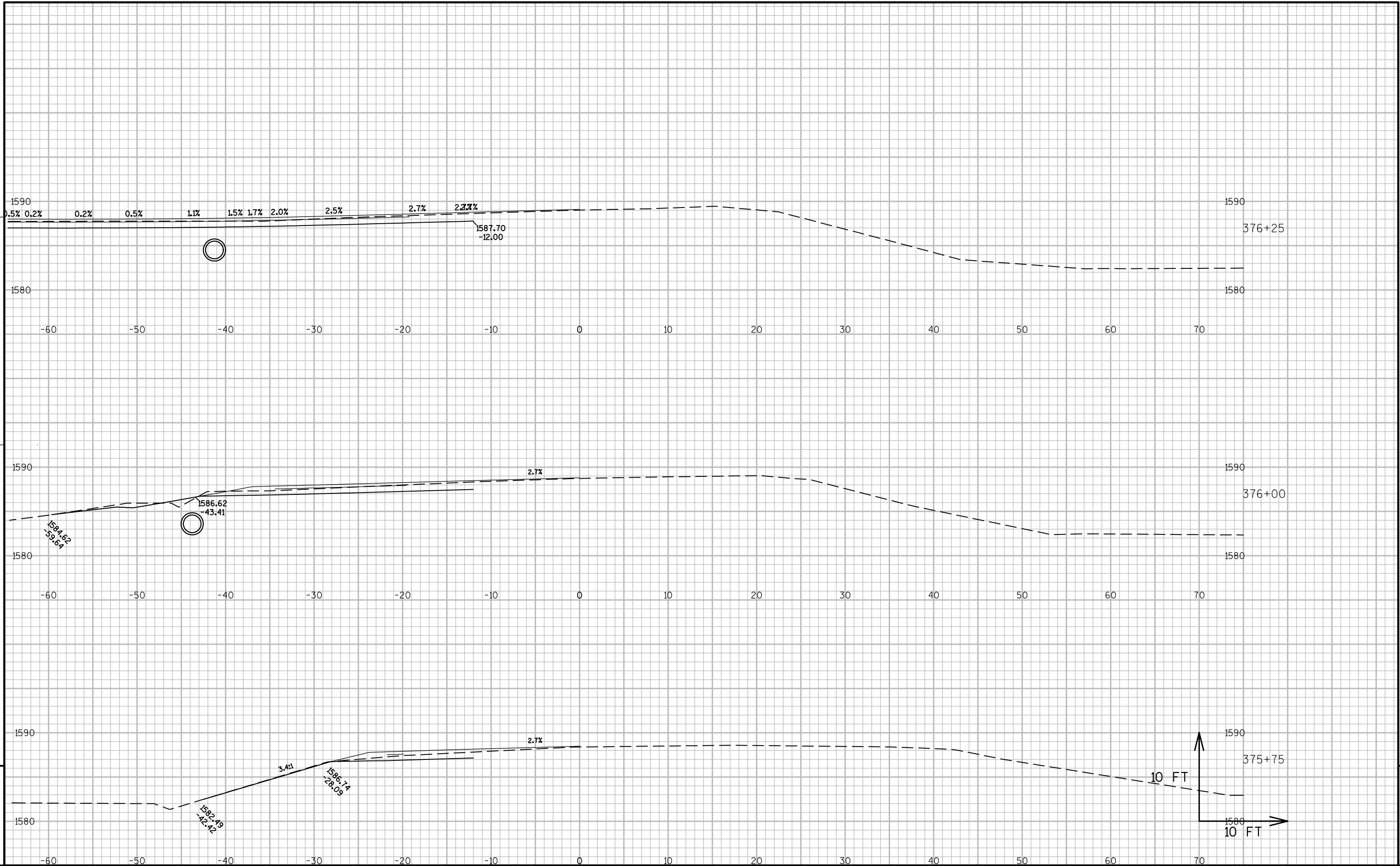
PLOT NAME :

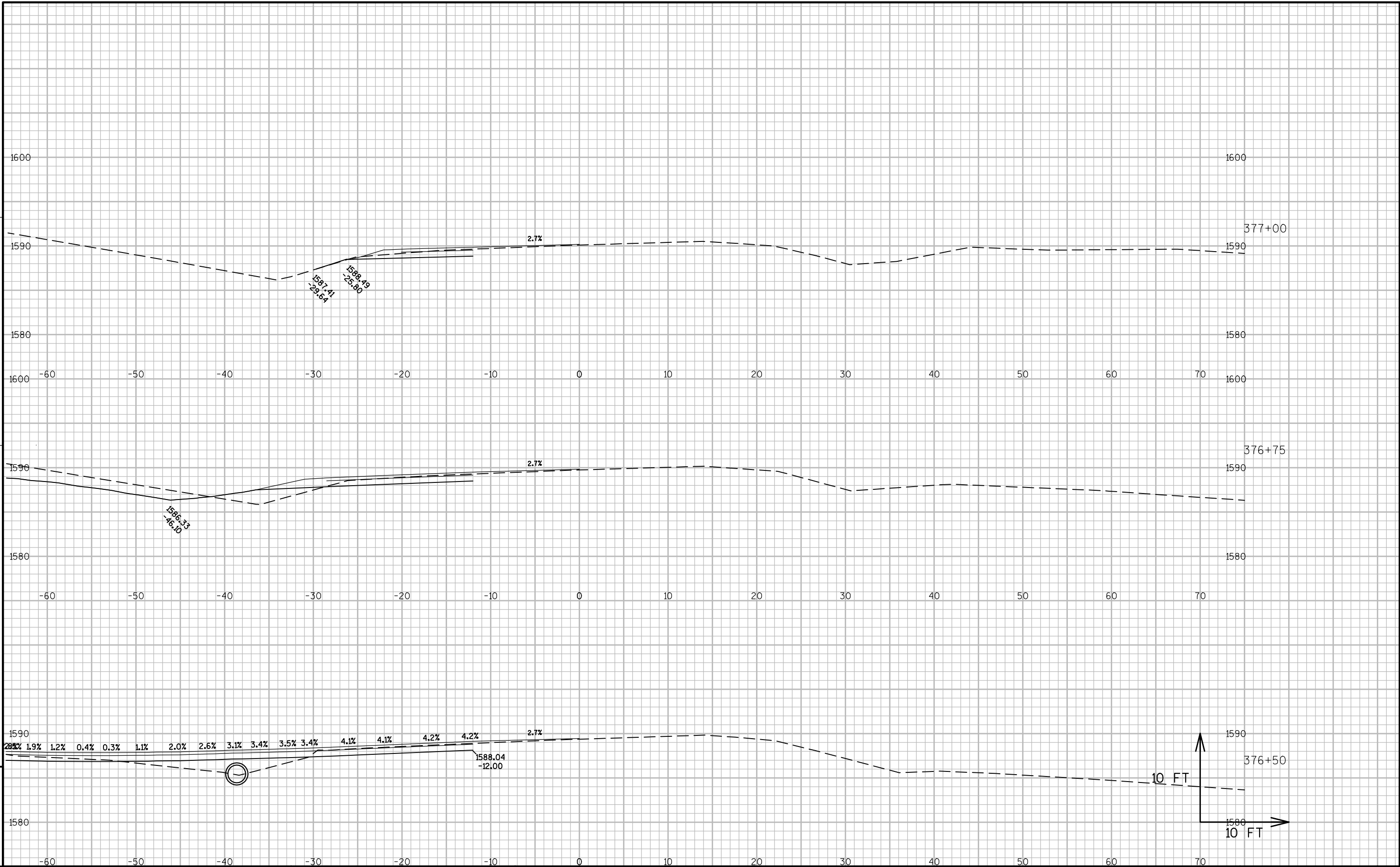
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49





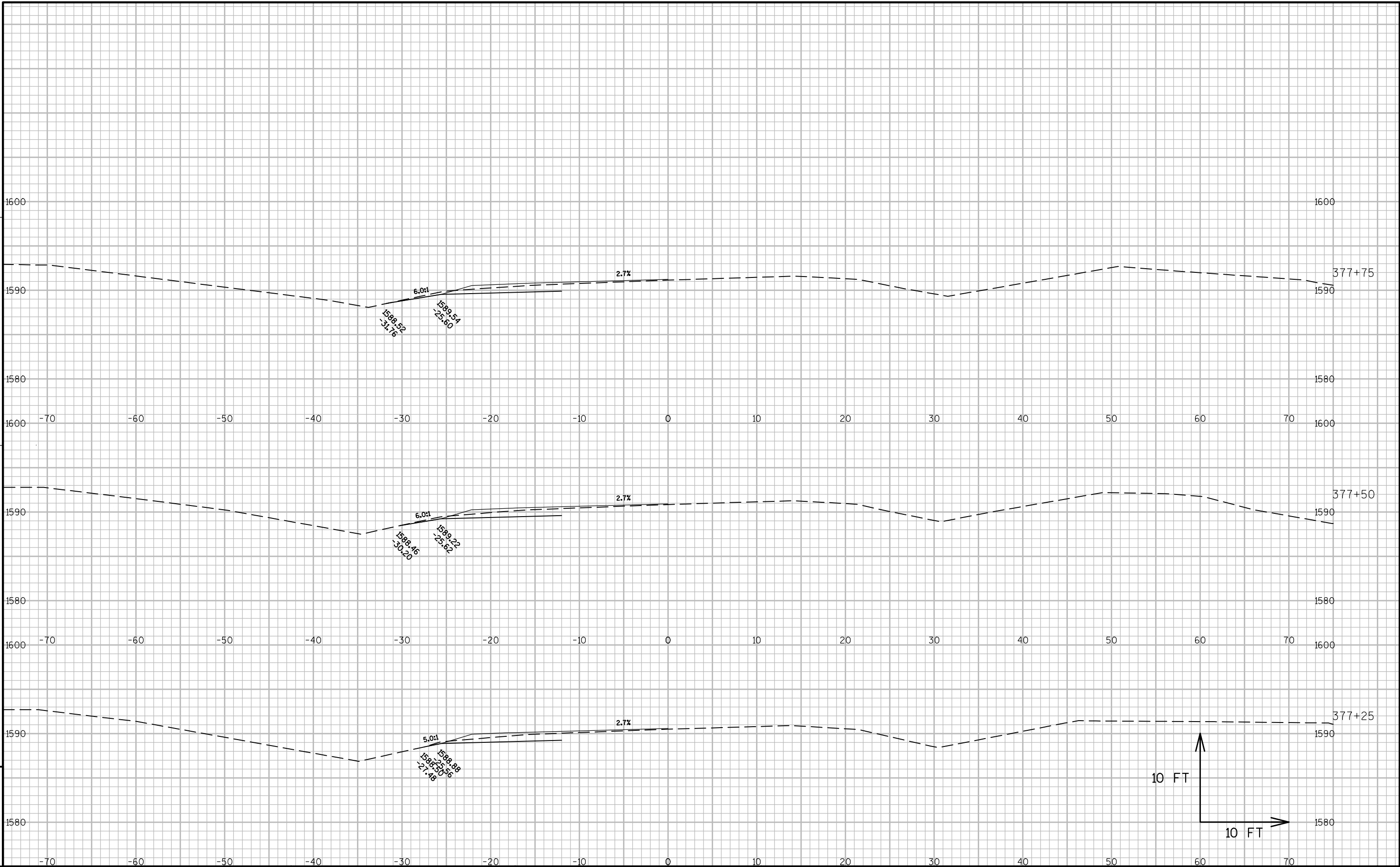


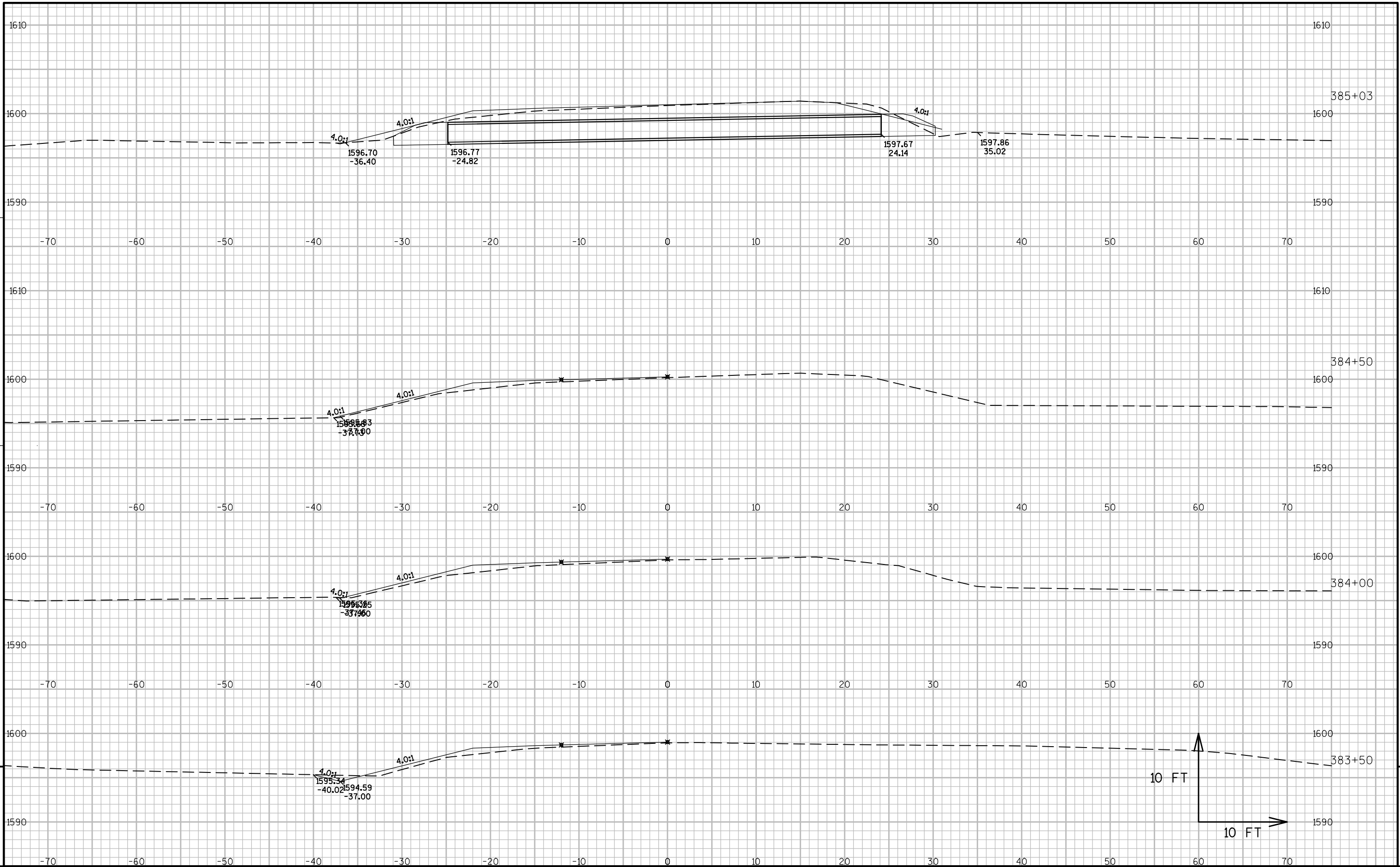


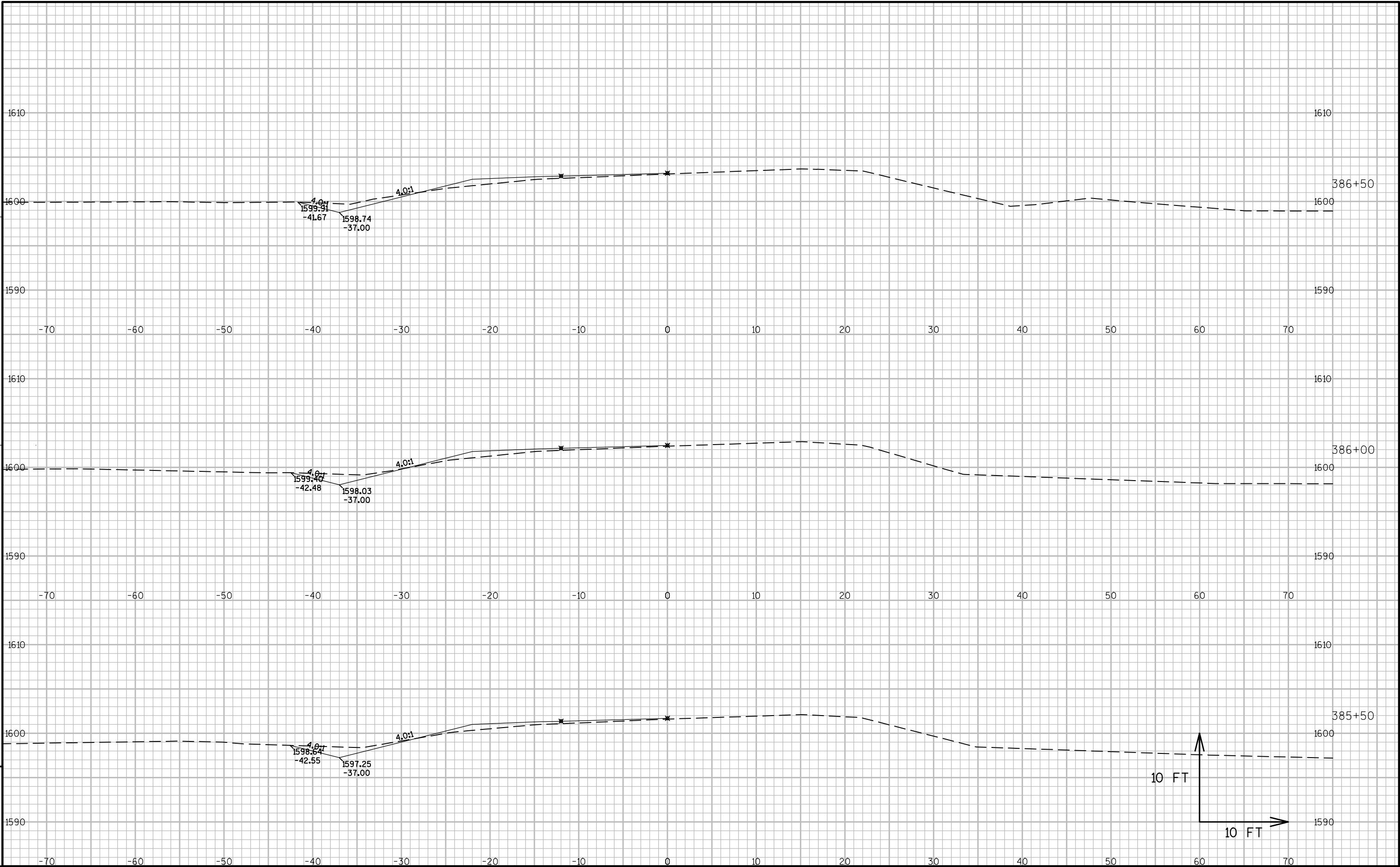
9

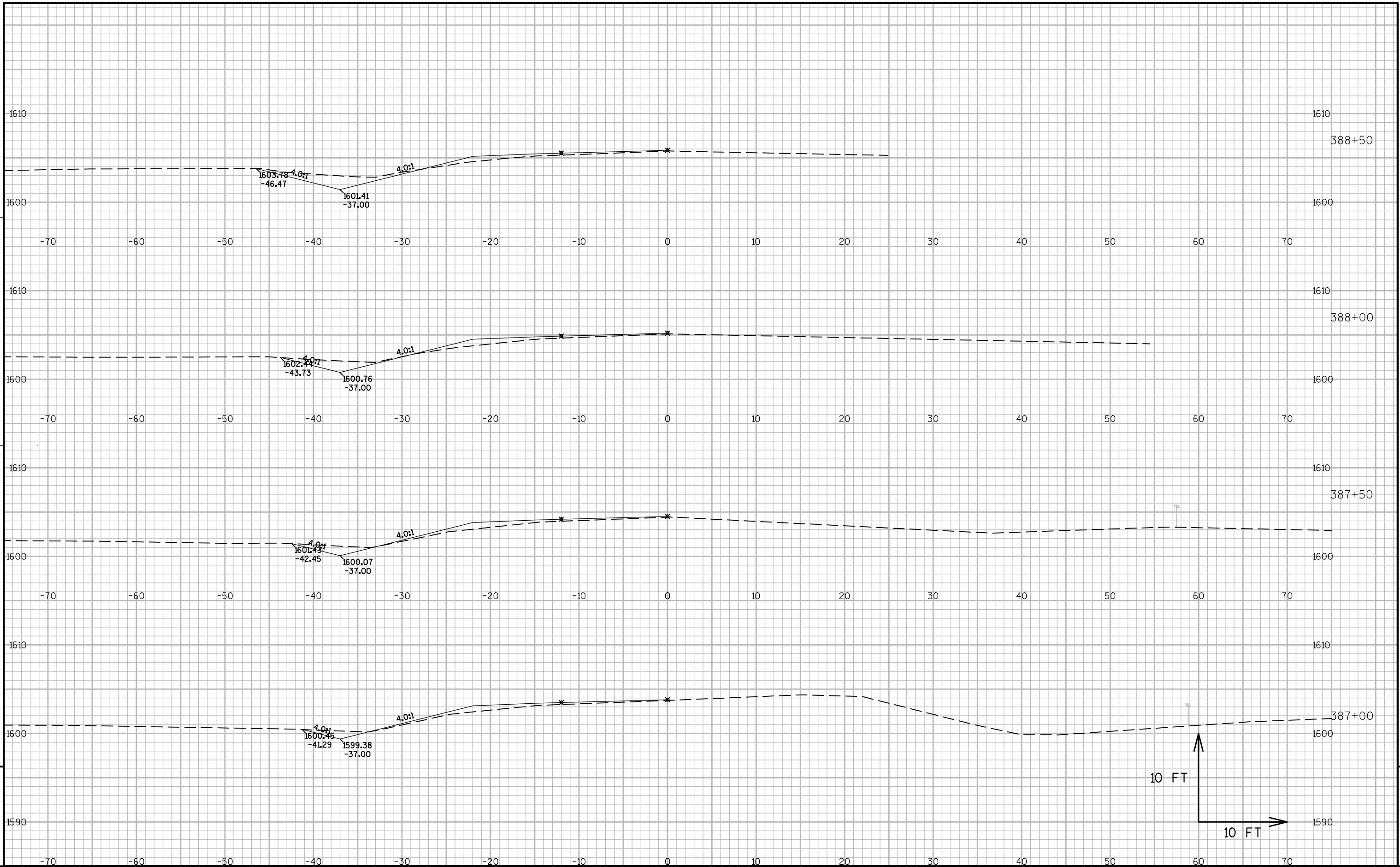
9

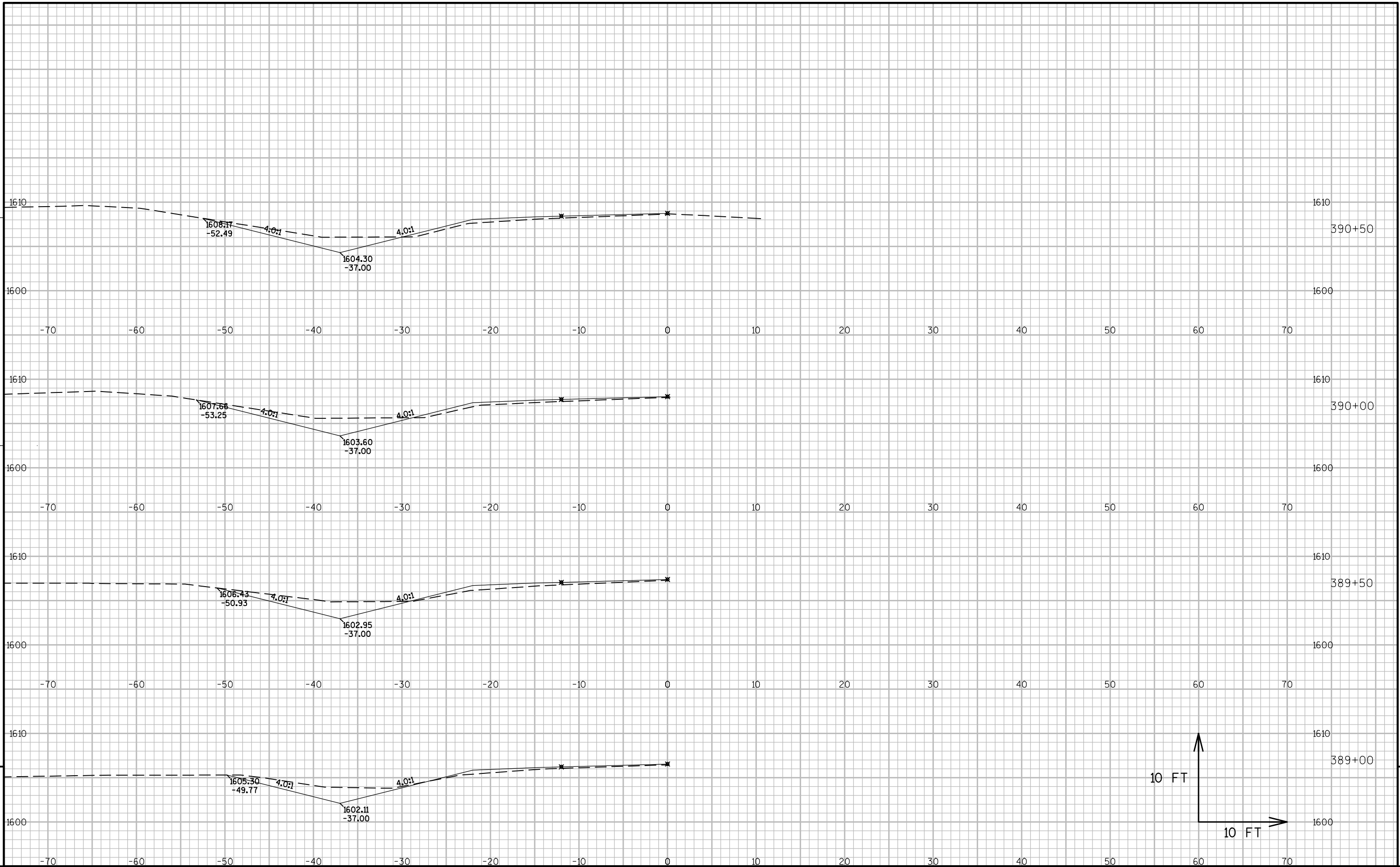
PROJECT NO:9030-09-70	HWY:STH 17	COUNTY:LANGLADE / LINCOLN	CROSS SECTIONS: STH 17 AT FIRST LAKE ROAD	SHEET	E
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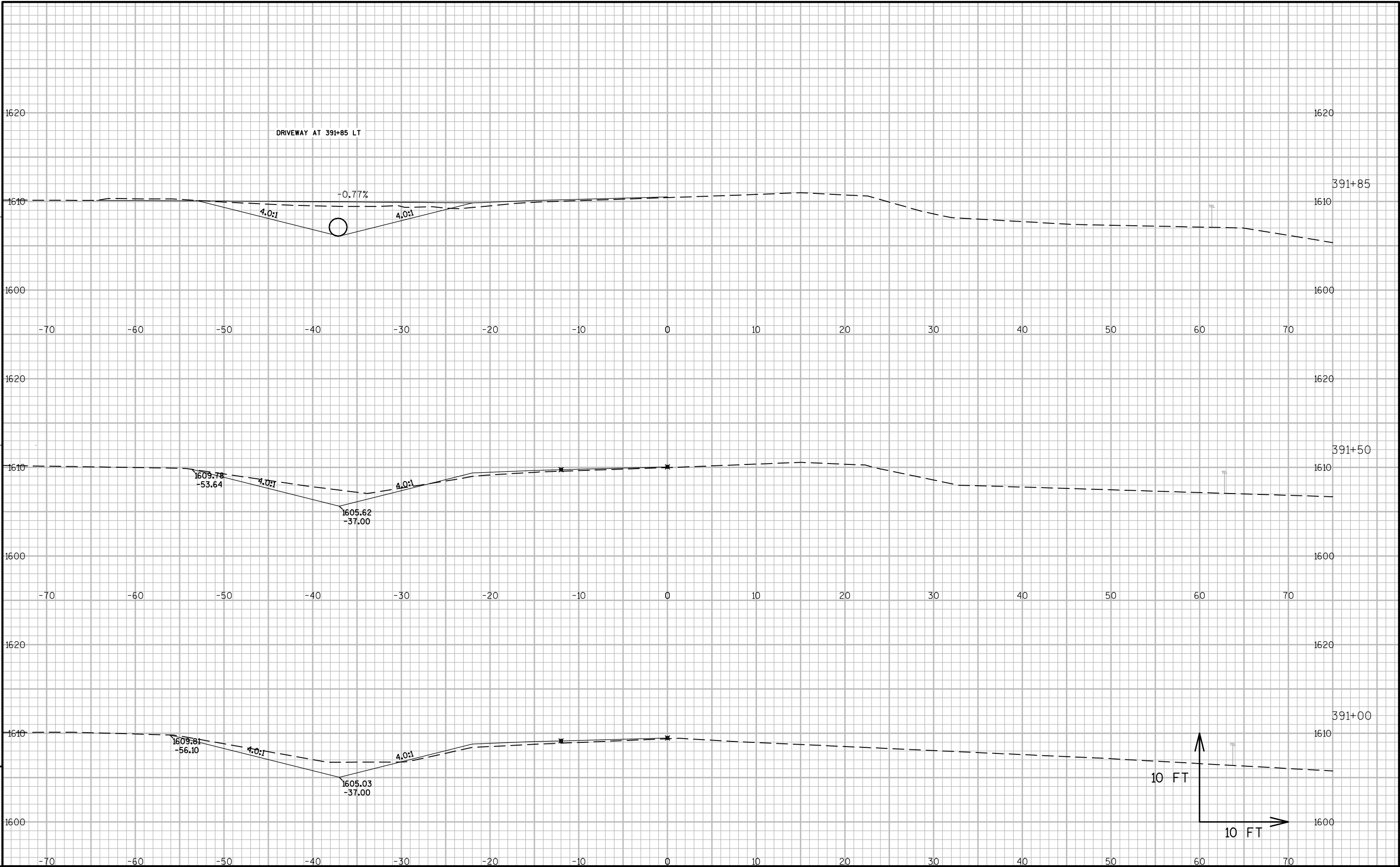


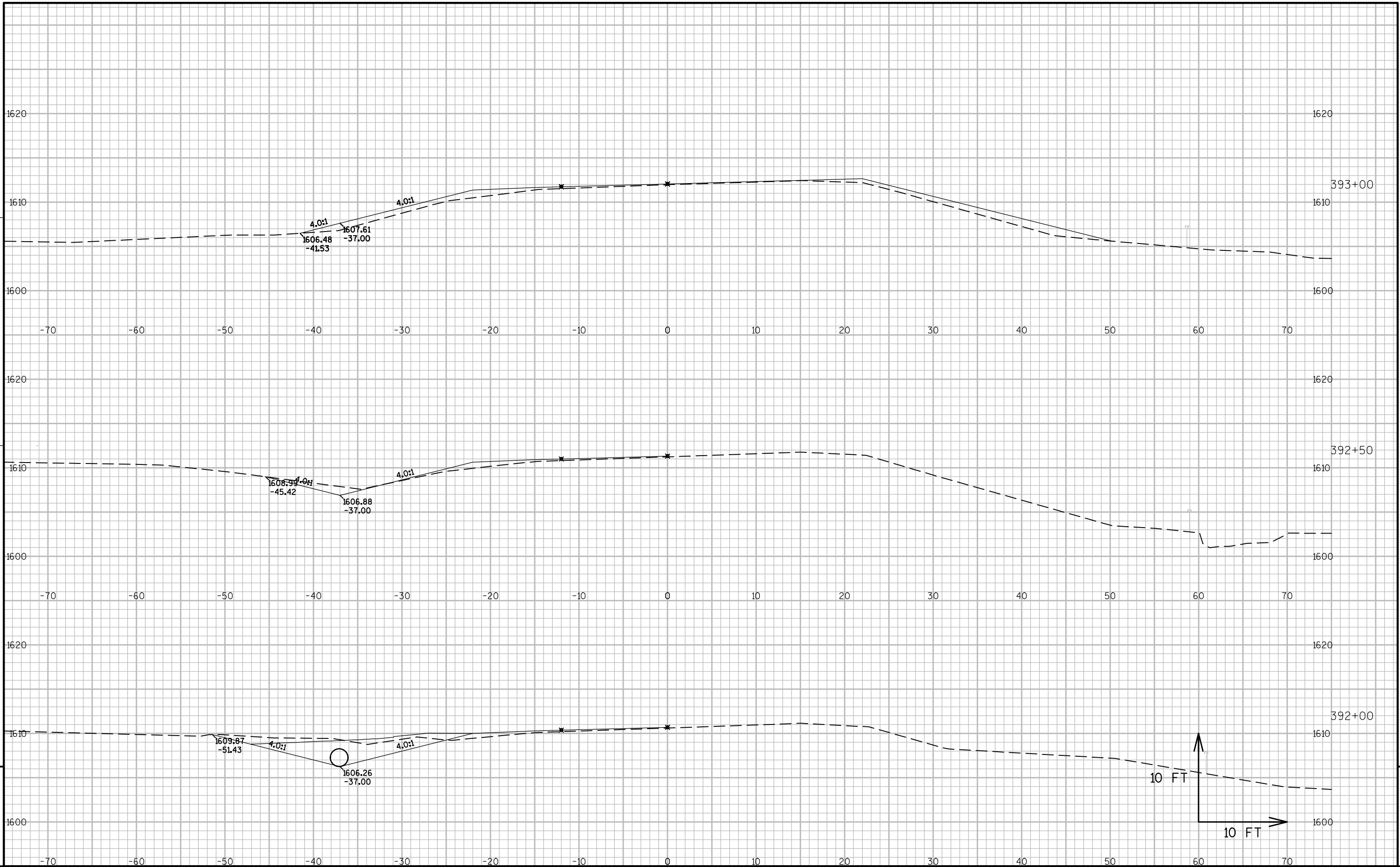


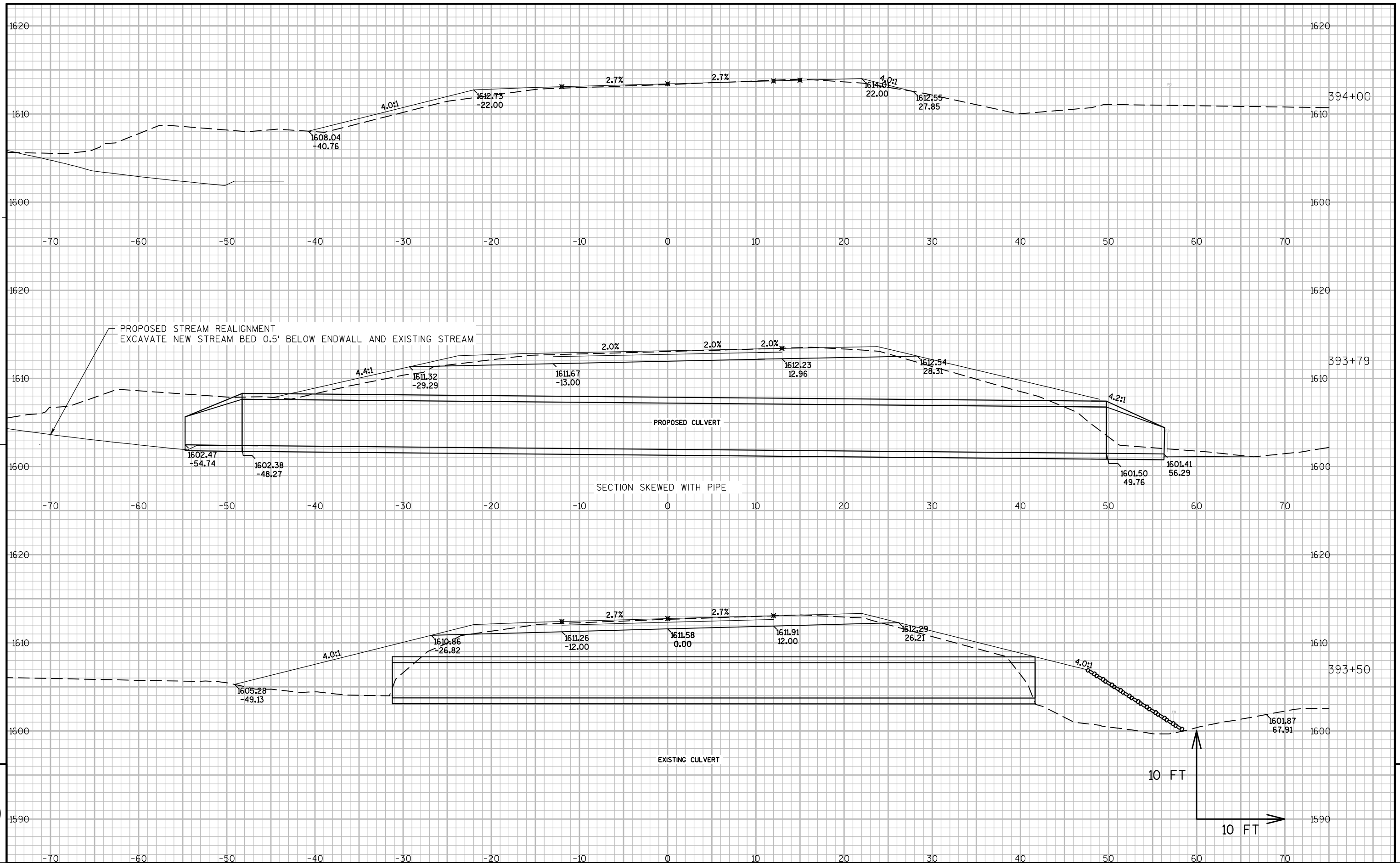












PROJECT NO: 9030-09-71

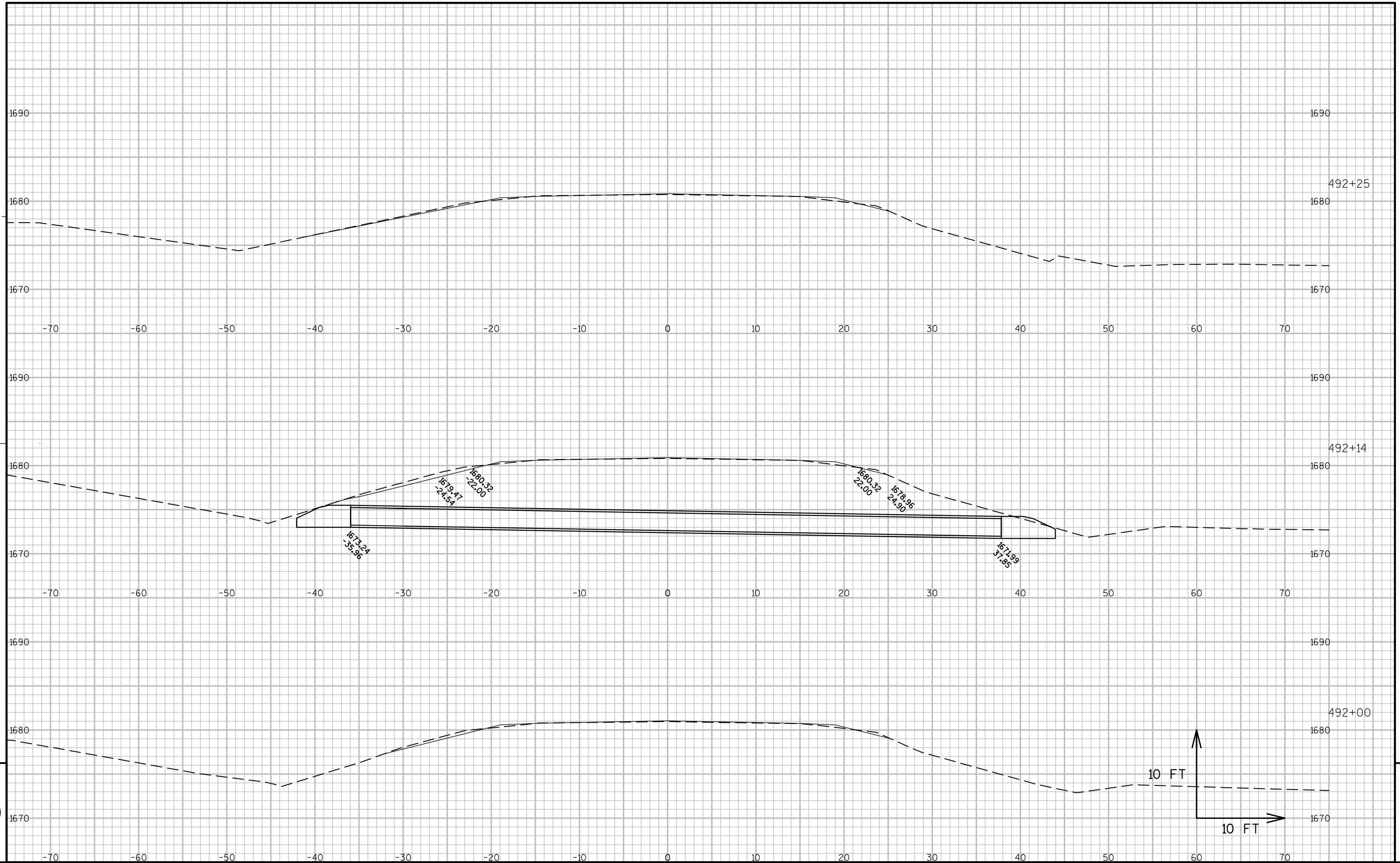
HWY: STH 17

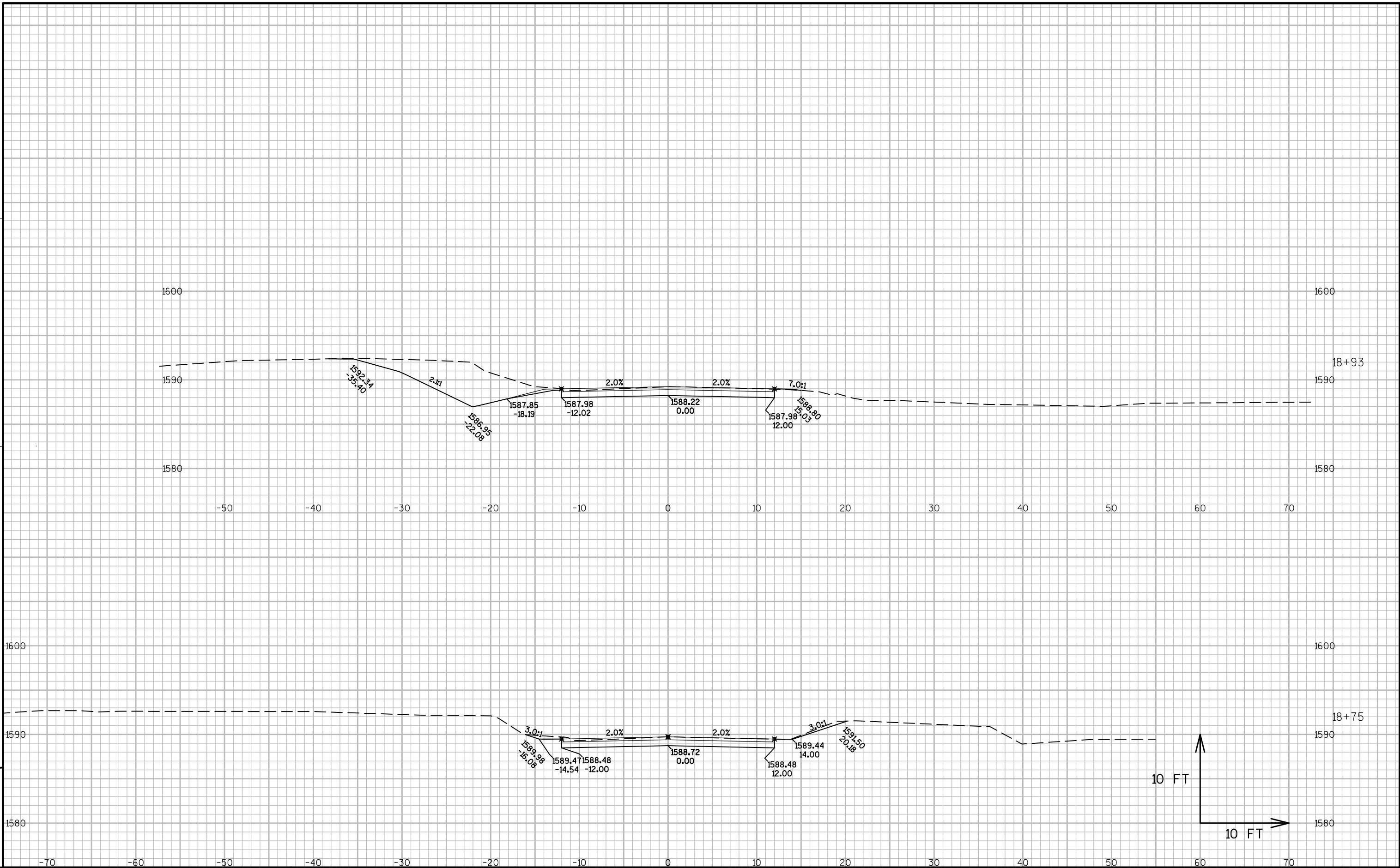
COUNTY: LANGLADE / LINCOLN

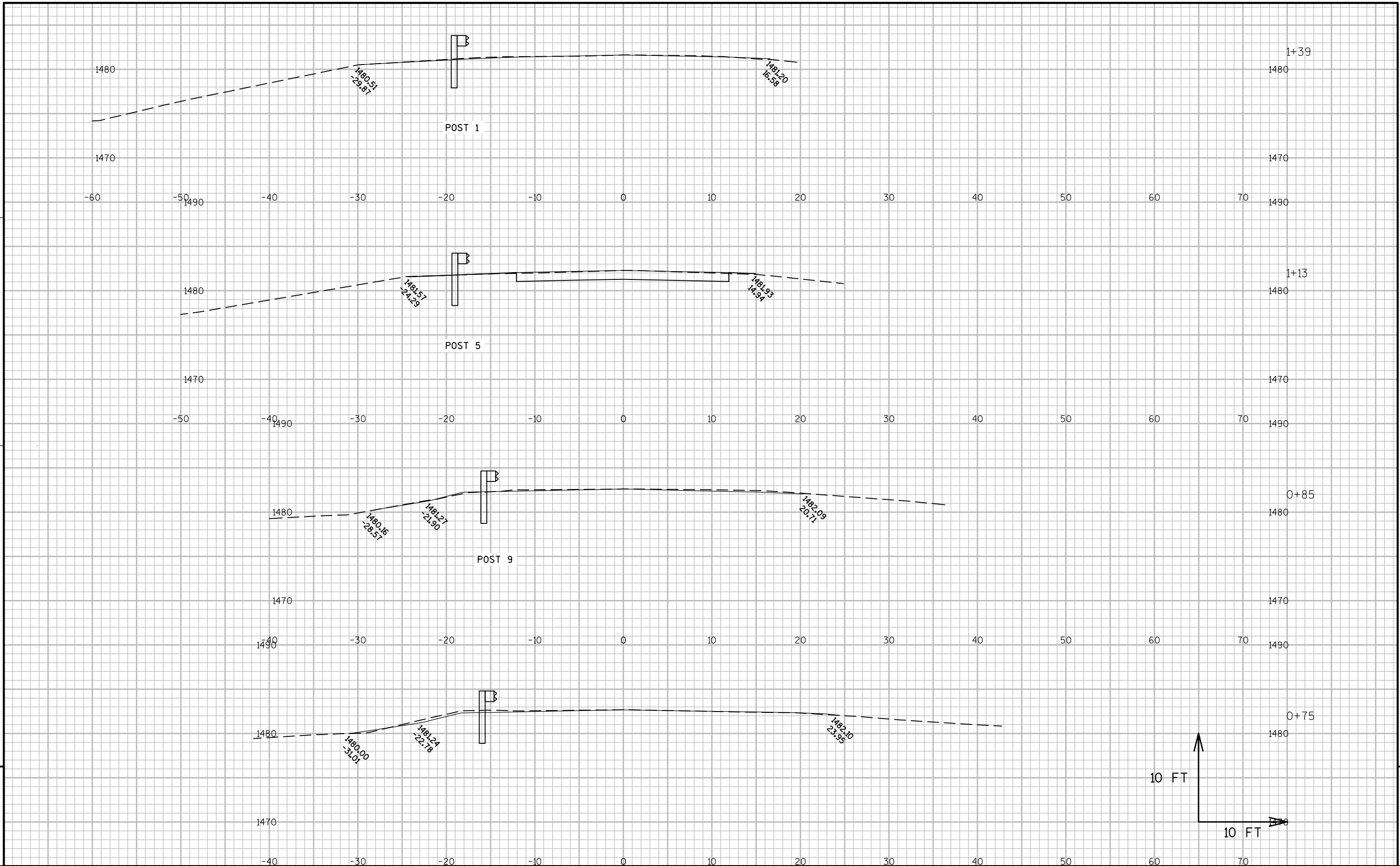
CROSS SECTIONS: STH 17

SHEET

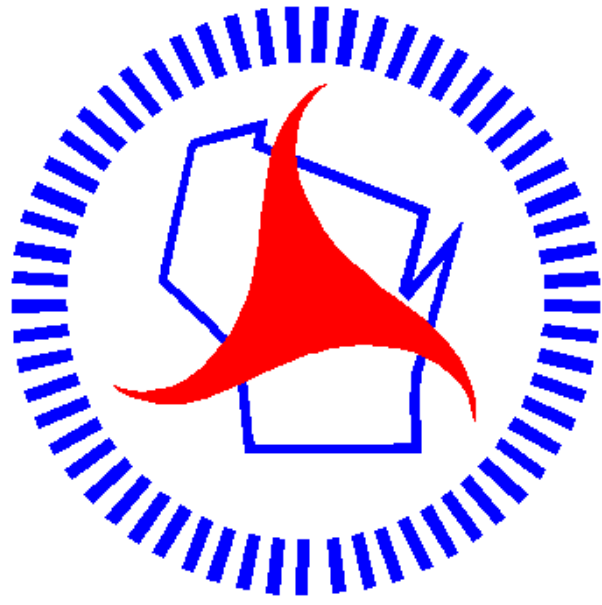
E







Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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