

SUP  
PROJECT ID:  
WITH: N/A

8120-00-70

COUNTY:  
BARRON

37

JANUARY 2023

ORDER OF SHEETS

Section No.	Title
1	Title
2	Typical Sections and Details (Includes Erosion Control)
3	Estimate of Quantities
3	Miscellaneous Quantities
<del>4</del>	<del>Right of Way Plan</del>
5	Plan and Profile
6	Standard Detail Drawings
7	Sign Plates
8	Structure Plans
9	Computer Earthwork Data
9	Cross Sections

TOTAL SHEETS = 100



STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CITY OF RICE LAKE, HAMMOND AVENUE

DRAINAGE WAY CULVERT C-03-0063

STH 48

BARRON COUNTY

STATE PROJECT NUMBER  
8120-00-70

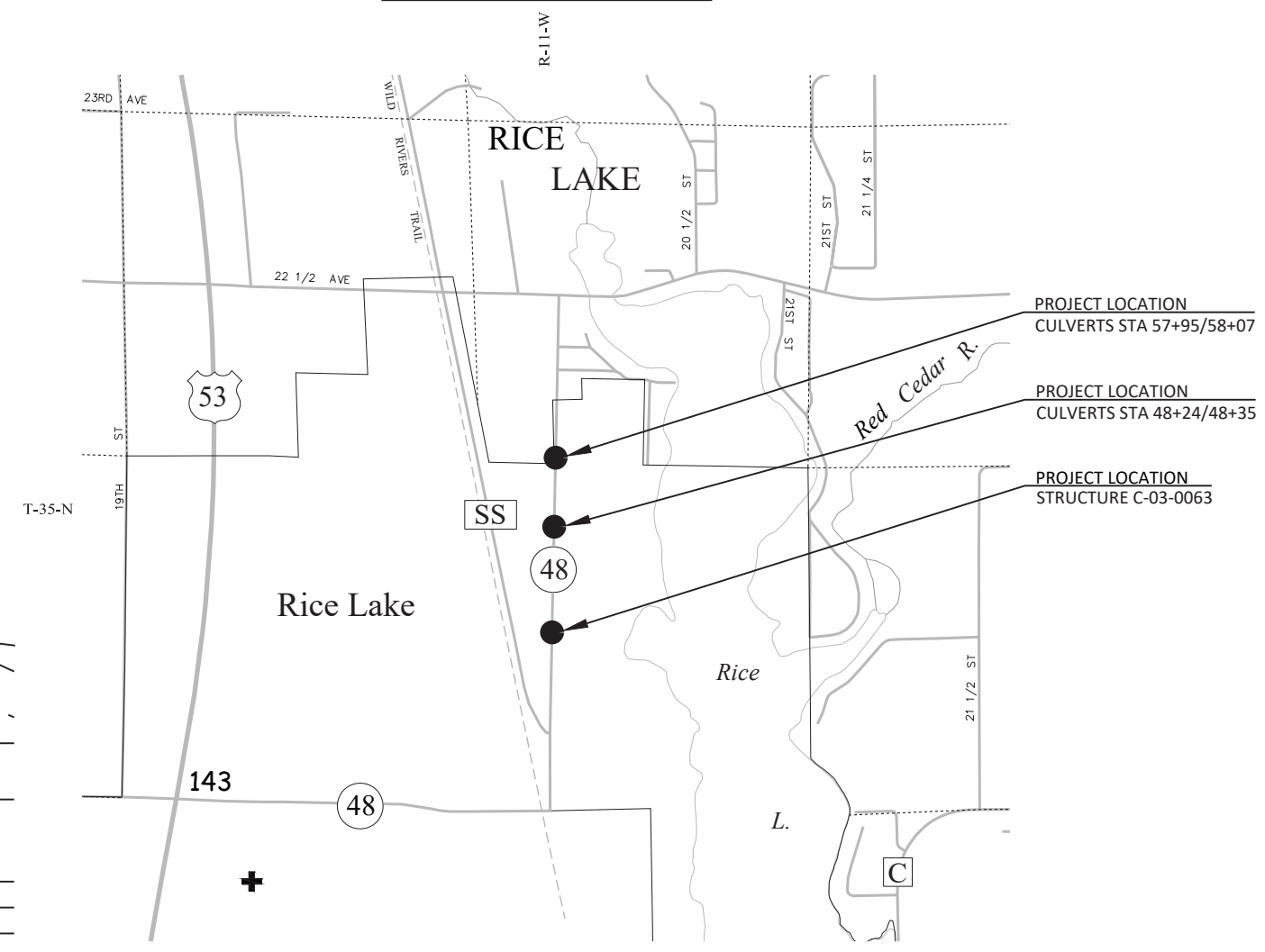
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8120-00-70	_____	_____

DESIGN DESIGNATION

A.A.D.T. (2013)	=	4400
A.A.D.T. (2043)	=	4400
D.H.V.	=	305
D.D.	=	60/40
T.	=	10.3%
DESIGN SPEED	=	45 MPH
ESALS	=	N/A

CONVENTIONAL SYMBOLS

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



LAYOUT  
SCALE 0 0.5 MI  
TOTAL NET LENGTH OF CENTERLINE = 0.000 MI

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

emcs, inc.  
500 North 17th Avenue  
Wausau, WI 54401  
715.845.1081 Fax 715.845.1099



7-19-22 Stephanie G. Christensen  
Date (Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	EMCS, INC.
Designer	EMCS, INC.	
Project Manager	MATT DICKENSON	
Regional Examiner	TOU YANG	
Regional Supervisor	JEFFREY OLSON	

APPROVED FOR THE DEPARTMENT  
DATE: 7/21/2022 Matthew J. Dickenson  
(Signature)

E

**GENERAL NOTES**

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

**AS-BUILTS USED FOR PLAN DEVELOPMENT**

PROJECT NO: S 0173 (10), CONSTRUCTION YEAR: 1962  
 PROJECT NO: 8571-01-71, CONSTRUCTION YEAR: 1987  
 PROJECT NO: 8570-03-70, CONSTRUCTION YEAR: 2014

**ORDER OF SECTION 2 SHEETS**

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL

**UTILITIES**

**COMMUNICATIONS**

CENTURYLINK  
 KYLE SCHLAMPP  
 20 SOUTH WILSON AVE  
 RICE LAKE, WI 54868  
 PHONE: (715) 475-2029  
 MOBILE: (715) 292-0082  
 KYLE.SCHLAMPP@LUMEN.COM

MOSAIC TELECOM  
 DENNIS W RUSSETT  
 401 S. 1ST ST  
 CAMERON, WI 54822  
 PHONE: (715) 458-5378  
 MOBILE: (715) 458-5518  
 DRUSSETT@EXPERIENCEMOSAIC.COM

SPECTRUM  
 RYAN NELSON  
 1810 LAKESHORE DR. E  
 ASHLAND, WI 54806  
 PHONE: (715) 597-5015  
 MOBILE: (715) 931-0238  
 RYAN.NELSON@CHARTER.COM

**ELECTRIC**

RICE LAKE MUN WATER & ELECTRIC UTIL  
 JIM SMITH  
 320 W COLEMAN ST  
 RICE LAKE, WI 54868  
 PHONE: (715) 234-7004  
 MOBILE: (715) 205-5052  
 JIMMYS@RICELAKEUTILITIES.COM

**GAS/PETROLEUM**

WE ENERGIES  
 STEVEN CHAVERS  
 104 W SOUTH ST  
 RICE LAKE, WI 54868  
 PHONE: (715) 234-9605  
 MOBILE: (715) 213-4327  
 STEVEN.CHAVERS@WE-ENERGIES.COM

**SANITARY SEWER**

RICE LAKE MUN WATER & ELECTRIC UTIL  
 COREY MARGETTA  
 1112 S WISCONSIN AVE  
 RICE LAKE, WI 54868  
 MOBILE: (715) 931-7135  
 COREYM@RICELAKEUTILITIES.COM

**WATER**

RICE LAKE MUN WATER & ELECTRIC UTIL  
 CHAD PAULSON  
 320 W COLEMAN ST  
 RICE LAKE, WI 54868  
 PHONE: (715) 234-7004  
 MOBILE: (715) 651-3374  
 CHADP@RICELAKEUTILITIES.COM

**RUNOFF COEFFICIENT TABLE**

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

TOTAL PROJECT AREA = 2.50 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.18 ACRES



Dial **811** or (800)242-8511  
[www.DiggersHotline.com](http://www.DiggersHotline.com)

**OTHER CONTACTS**

**DESIGNER CONTACT**

EMCS, INC.  
 500 NORTH 17TH AVENUE  
 WAUSAU, WI 54401  
 OFFICE: (715) 845-1081

**DNR LIAISON**

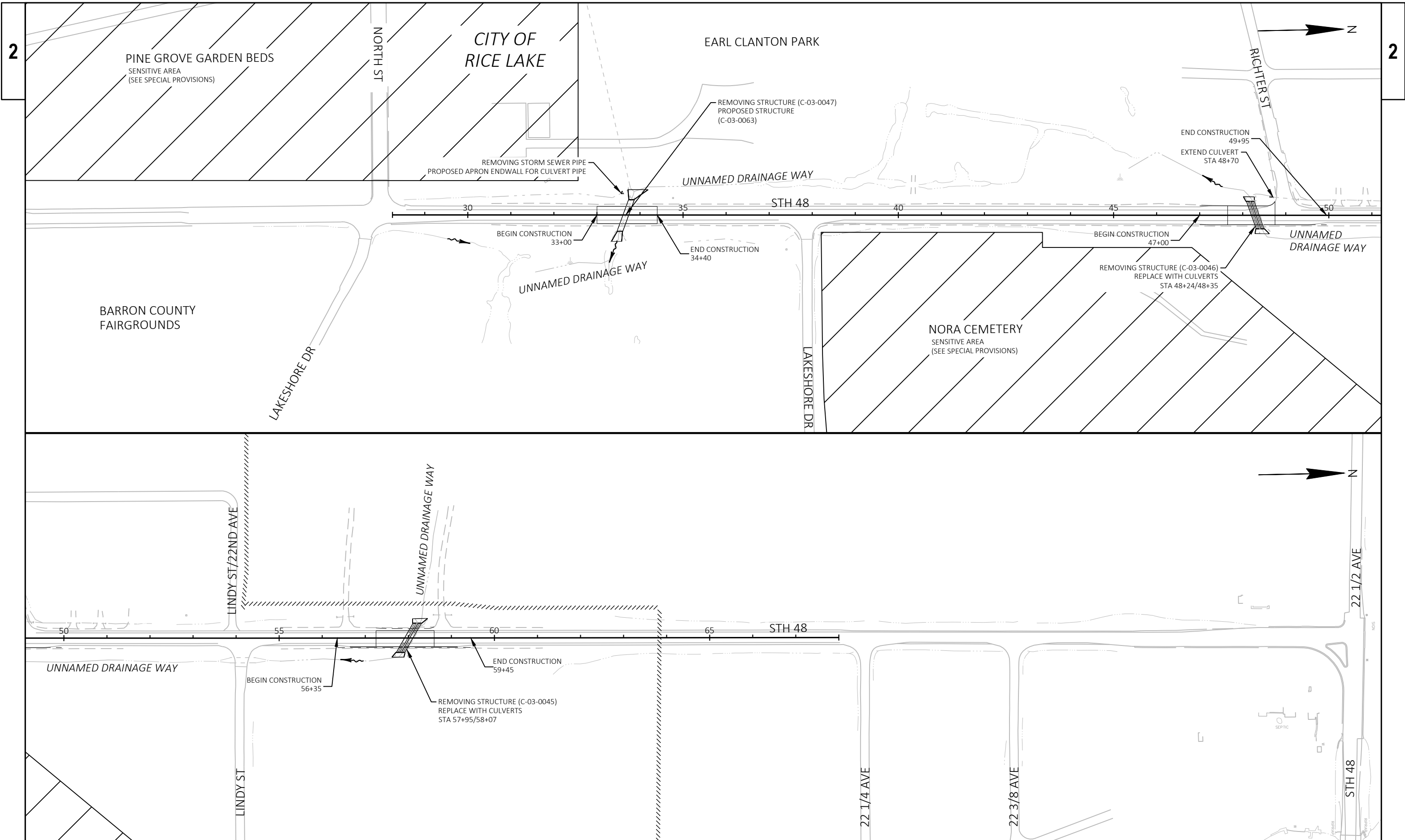
SHAWN HASELEU  
 DNR NORTHERN REGION HEADQUARTERS  
 810 W. MAPLE STREET  
 SPOONER, WI 54801  
 PHONE: (715) 635-4228  
 MOBILE: (715) 416-0478  
 SHAWN.HASELEU@WISCONSIN.GOV

**ROAD FACILITIES (STREET LIGHTING)**

CITY OF RICE LAKE STREET DEPT  
 JAMES ANDERSON  
 810 S WISCONSIN AVE  
 RICE LAKE, WI 54868  
 PHONE: (715) 234-7402  
 MOBILE: (715) 205-7432  
 JANDERSON@RICELAKEGOV.ORG

**ROAD FACILITIES (STORM SEWER)**

CITY OF RICE LAKE STREET DEPT  
 JAMES ANDERSON  
 810 S WISCONSIN AVE  
 RICE LAKE, WI 54868  
 PHONE: (715) 234-7402  
 MOBILE: (715) 205-7432  
 JANDERSON@RICELAKEGOV.ORG



PROJECT NO: 8120-00-70

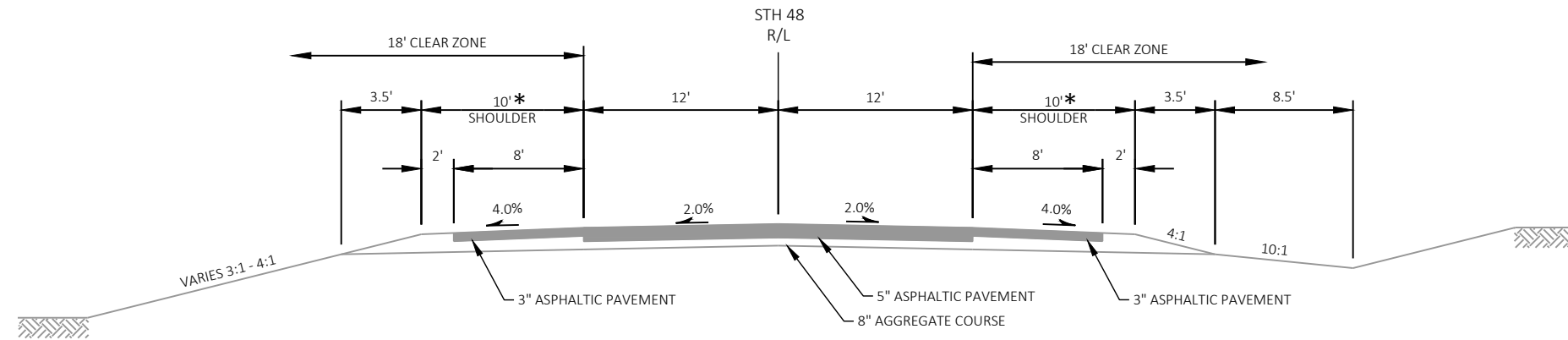
HWY: STH 48

COUNTY: BARRON

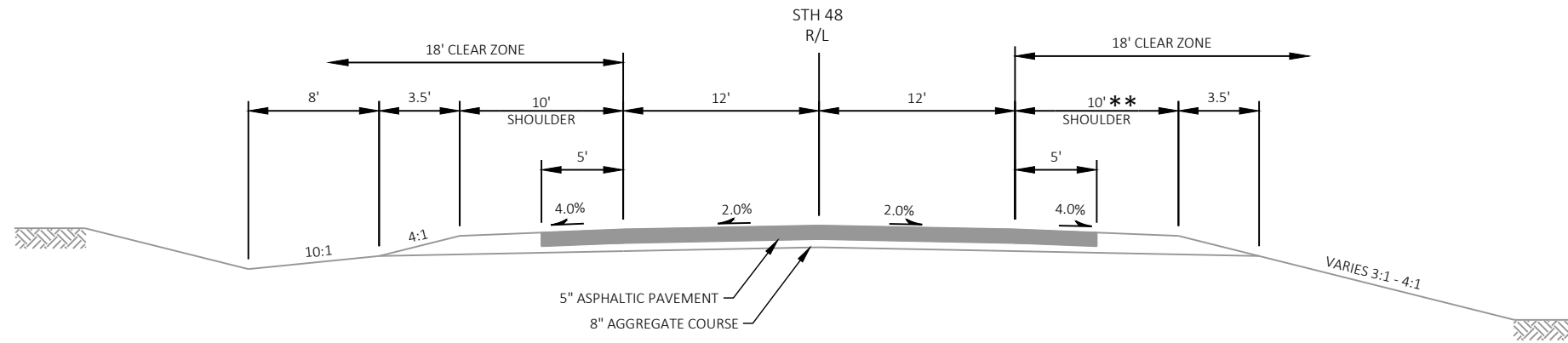
PROJECT OVERVIEW

SHEET

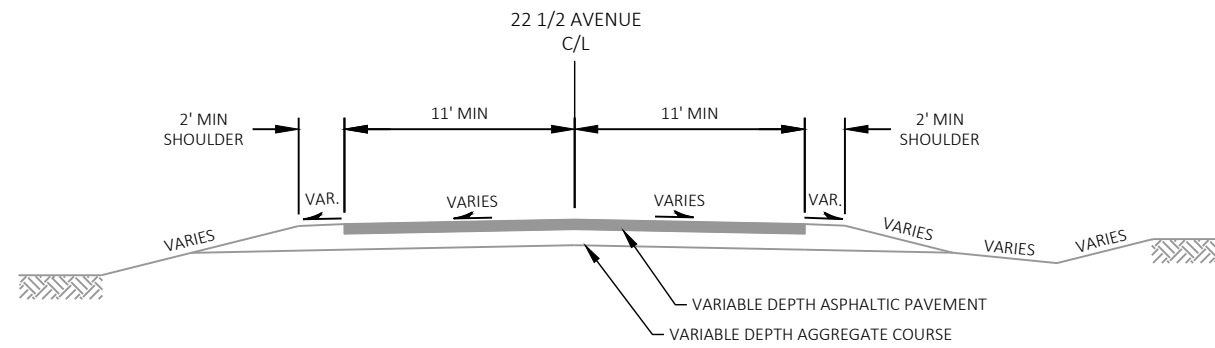
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TYPICAL EXISTING SECTION  
STA 33+00 - STA 49+54

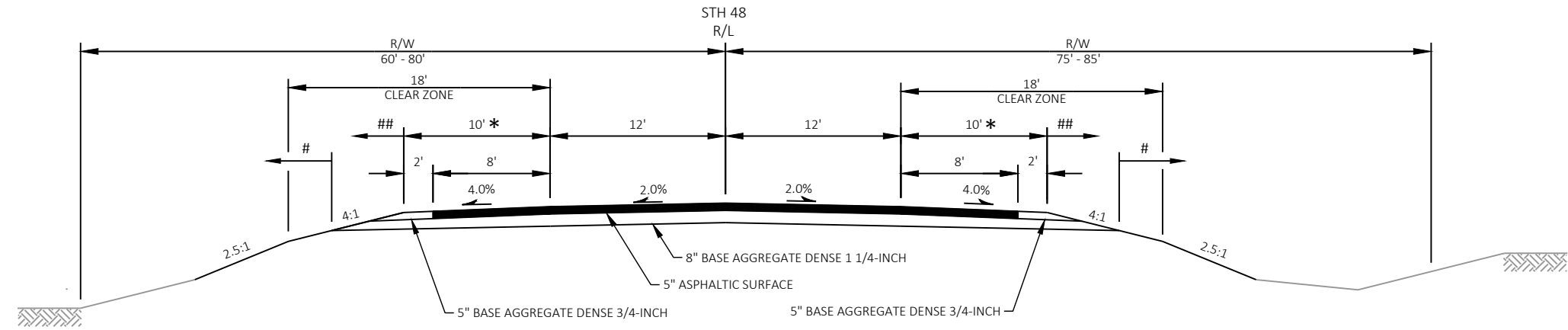


TYPICAL EXISTING SECTION  
STA 49+54 - STA 59+45

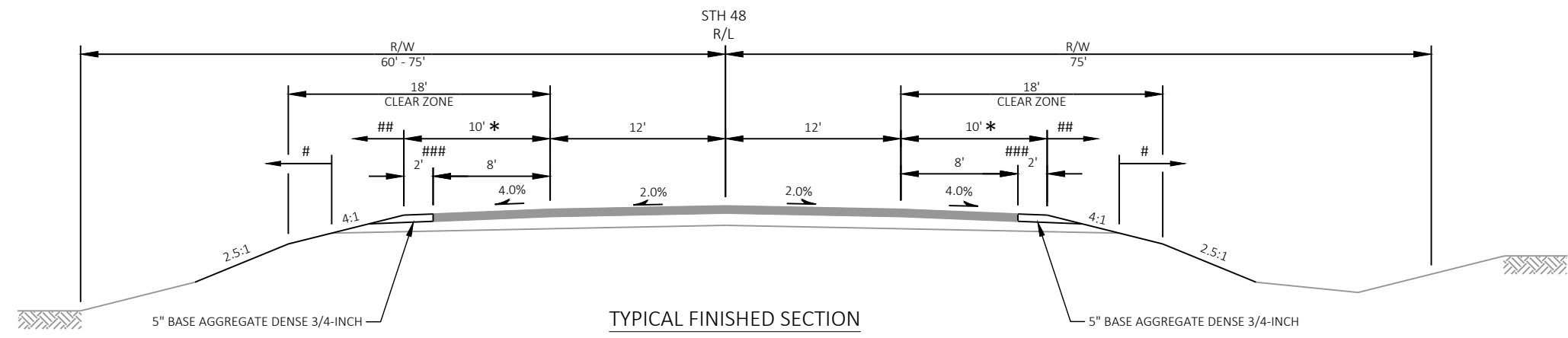


TYPICAL EXISTING SECTION  
DETOUR: CTH SS TO STH 48

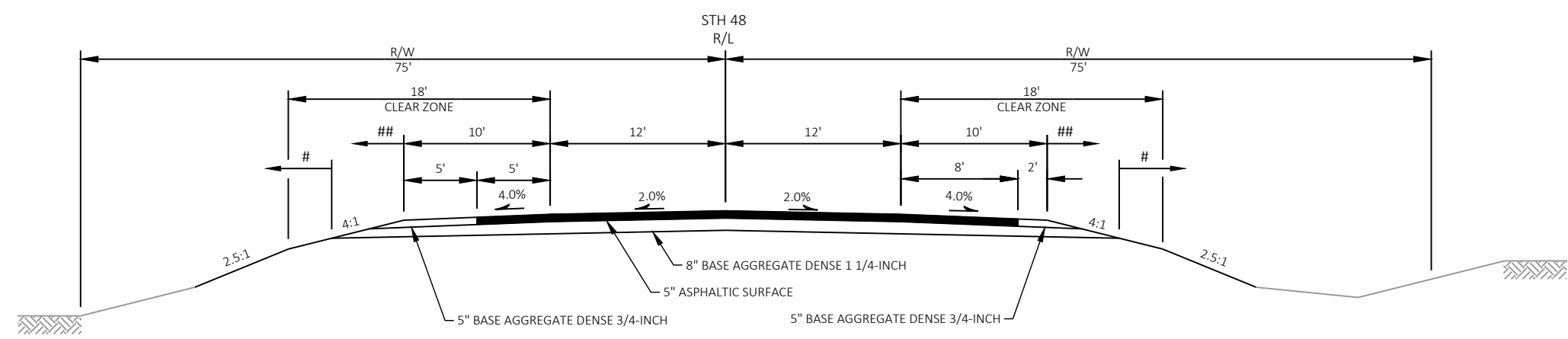
- NOTES
- \* STA 47+30 - STA 49+54, RT & STA 47+28 - STA 48+79, LT  
AT GUARDRAIL LOCATIONS 10' PAVED, 0' BASE AGGREGATE. (C-03-0046)
  - \*\* STA 56+70 - STA 59+06, RT  
AT GUARDRAIL LOCATIONS 8' PAVED, 2' BASE AGGREGATE TO FACE OF  
RAIL RT. (C-03-0045)



**TYPICAL FINISHED SECTION**  
 STA 33+00 - STA 34+40 (C-03-0063)  
 STA 47+65 - STA 48+75

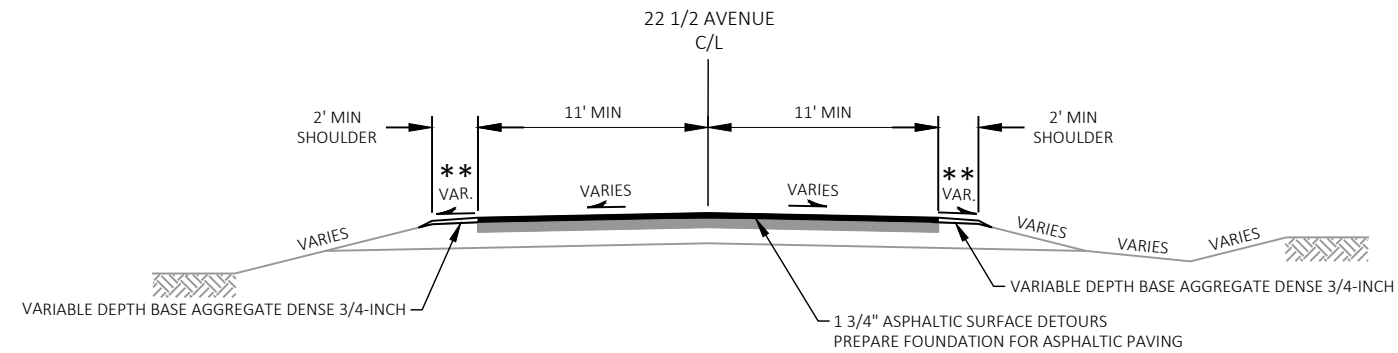


**TYPICAL FINISHED SECTION**  
 STA 47+00 - STA 47+65  
 STA 48+75 - STA 49+95, RT  
 STA 56+35 - STA 57+25, RT  
 STA 58+60 - STA 59+45, RT



**TYPICAL FINISHED SECTION**  
 STA 57+25 - STA 58+60

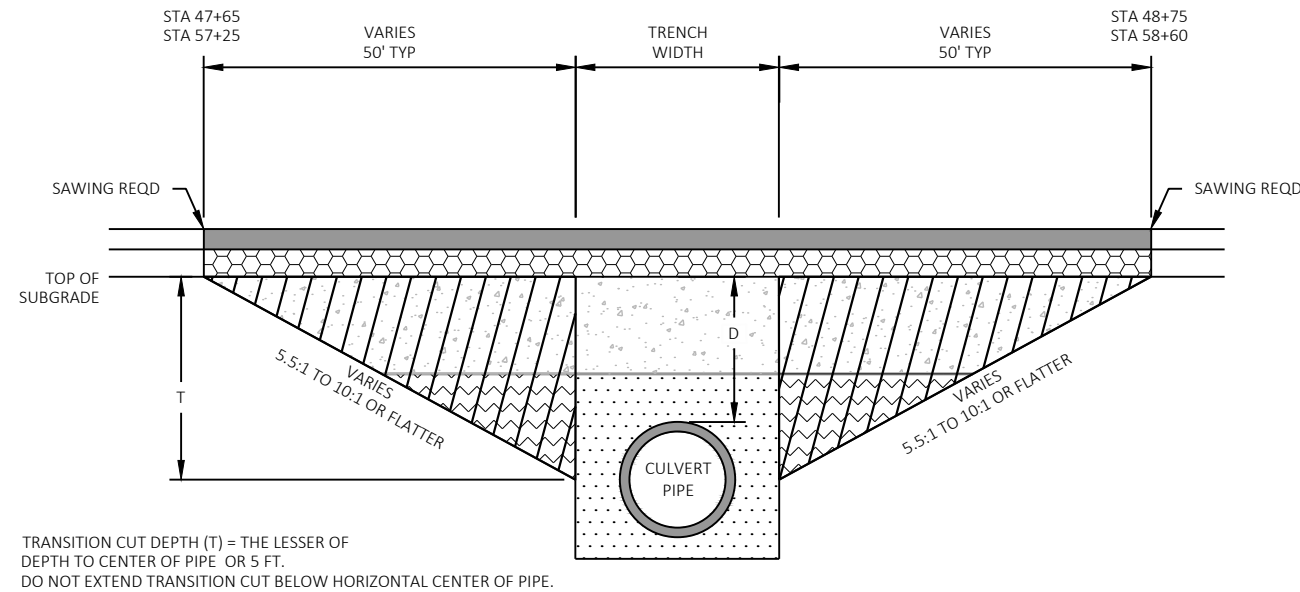
- NOTES**
- \* STA 47+16 - STA 49+54, RT & STA 47+21 - STA 48+79, LT  
10' PAVED, 0' BASE AGGREGATE.
  - # TOPSOIL AND EROSION MAT, SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION.
  - ## SEEDING AND FERTILIZER, SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION.
  - ### SAW EXISTING ASPHALT ROADWAY TO RESTORE SHOULDER, SEE SECTION 5 SHEETS.



TYPICAL FINISHED SECTION

DETOUR: CTH SS TO STH 48  
(0.333 MILES)

NOTE  
\*\* PAVE 5' BUMP OUT FOR DRIVEWAYS ALONG 22 1/2 AVENUE AND PLACE VARIABLE DEPTH BASE AGGREGATE DENSE 3/4-INCH (5' MIN) TO VERTICALLY TRANSITION TO EXISTING DRIVEWAYS.



DEPTH D < 6 FT

**CULVERT PIPE TRANSITION DETAIL**

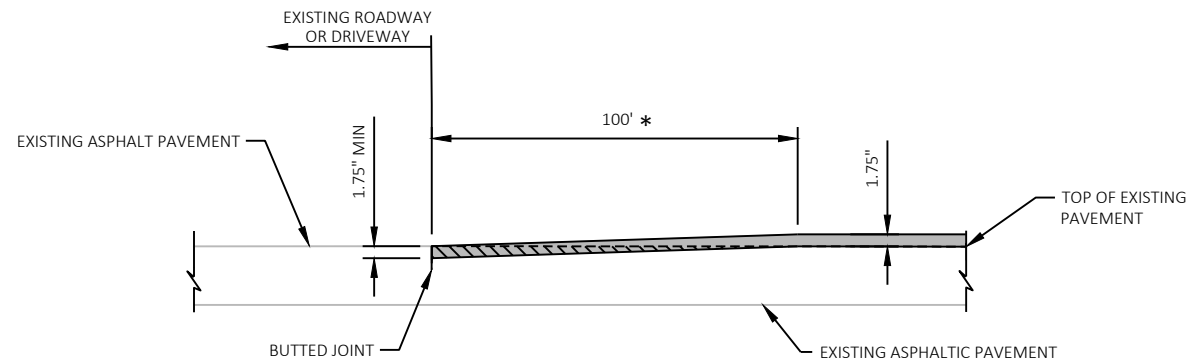
**LEGEND**

- PROPOSED SURFACE (5" ASPHALTIC SURFACE)
- PROPOSED BASE (8" BASE AGGREGATE DENSE 1-1/4-INCH)
- TRENCH BACKFILL
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)
STH 48	48+24	0.6'	72"
STH 48	48+35	0.8'	72"
STH 48	57+95	1.2'	72"
STH 48	58+07	1.4'	72"

**NOTES**

TRANSITION CUT IS PAID AS EXCAVATION COMMON.  
 TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.  
 BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

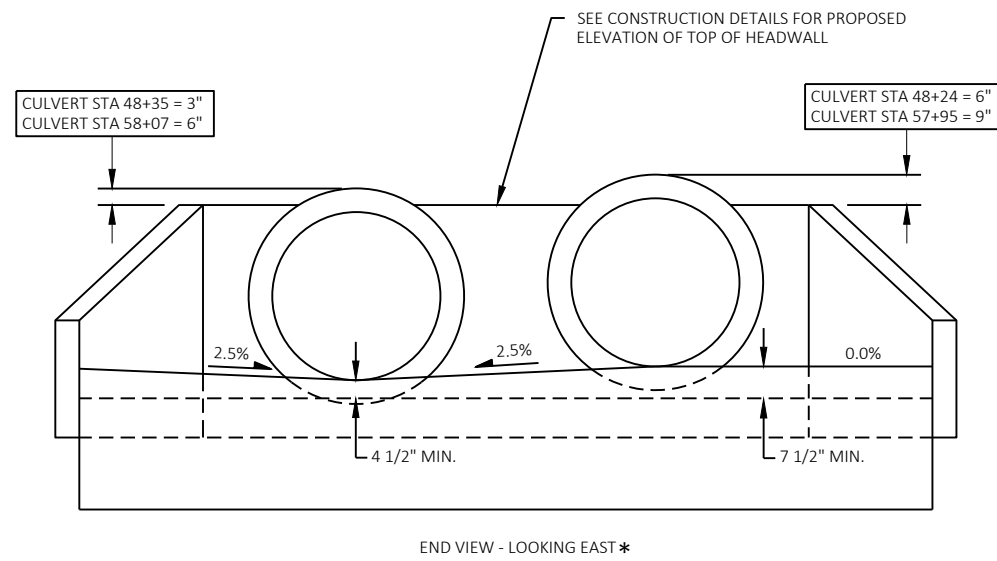


- REMOVING ASPHALTIC SURFACE BUTT JOINTS  
DO NOT REMOVE MATERIAL UNDER THIS ITEM UNTIL 24 HOURS BEFORE PAVING
- PROPOSED OVERLAY WITH ASPHALTIC SURFACE DETOURS

**BUTT JOINT AND PROFILE MATCH DETAIL**

PAVEMENT JOINT EAST OF CTH SS ON 22 1/2 AVENUE  
 PAVEMENT JOINT WEST OF STH 48 ON 22 1/2 AVENUE  
 DRIVEWAY 175' EAST OF CTH SS, SOUTH SIDE OF 22 1/2 AVENUE

**NOTE**  
 \* BUTT JOINT AT PRIVATE DRIVEWAY WILL HAVE LENGTH OF 5 FEET



CONCRETE MASONRY ENDWALLS FOR CULVERT PIPES MODIFICATIONS

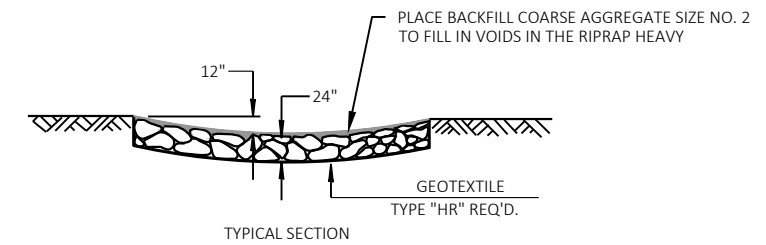
STA 48+24/48+35  
STA 57+95/58+07

NOTES

SEE SDD "CONCRETE MASONRY ENDWALLS FOR CULVERT PIPES" AND CONSTRUCTION DETAIL PLAN VIEWS FOR ADDITIONAL DIMENSIONS AND DETAILS.

\* MIRROR DETAIL FOR END VIEW - LOOKING WEST.

FORM FLOOR OF ENDWALL TO CREATE A LOW FLOW CHANNEL AT DESIGNATED PIPE LOCATION (SEE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION ON LAYOUT AND ELEVATIONS).



RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 TREATMENT AT CULVERTS

STA 48+24/48+35  
STA 57+95/58+07

NOTES

SEE CONSTRUCTION DETAILS FOR LOCATIONS AND DIMENSIONS OF RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2.

SEE STRUCTURE PLANS FOR SIMILAR TREATMENT AT C-03-0063.



**LEGEND**

- DELINEATED WETLAND BOUNDARY
- - - SLOPE INTERCEPT
- ⊖ RIPRAP HEAVY (FOR TEMPORARY USE)
- ⊖ RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE STRUCTURE PLANS)
- POLYETHYLENE SHEETING
- ▨ 6" MIN. BACKFILL COARSE AGGREGATE SIZE NO. 2

**NOTES**

TEMPORARY DIVERSION AND TEMPORARY CULVERT PIPE MUST BE CAPABLE OF CARRYING THE Q5 FLOW, WITH A FREEBOARD OF 0.5-FOOT MINIMUM DURING THE CONSTRUCTION PERIOD AND MAINTAIN A SUITABLE DEPTH AND VELOCITY TO ALLOW THE PASSAGE OF MIGRATING FISH AND AQUATIC SPECIES. SPECIES THAT BECOME STRANDED IN DEWATERED AREAS OR TEMPORARY DIVERSIONS SHOULD BE CAPTURED AND RETURNED TO THE ACTIVE CHANNEL IMMEDIATELY.

WORK FOR THE TEMPORARY BYPASS CHANNEL AND ANY TEMPORARY SANDBAGS USED AT THE BOX CULVERT OR OTHER DIVERSION TECHNIQUES IMPLEMENTED WILL BE PAID UNDER THE FOLLOWING BID ITEMS:

- ROADWAY BID ITEMS: "TEMPORARY SHORING", "POLYETHYLENE SHEETING" AND "BACKFILL COARSE AGGREGATE NO. 2"
- STRUCTURE BID ITEMS: EXCAVATION OF DIVERSION PAID UNDER "EXCAVATION FOR STRUCTURES CULVERTS C-3-63." BACKFILL OF BYPASS CHANNEL IS PAID UNDER STRUCTURAL BID ITEM "REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS C-3-47." BACKFILL NEXT TO THE CULVERT IS PAID UNDER "BACKFILL STRUCTURE TYPE B." SEE STRUCTURE PLANS FOR ADDITIONAL DETAILS.

IT IS ASSUMED THE WORK ZONE WILL BE INUNDATED FOR RAINFALL EVENTS EXCEEDING 5 YEARS. PAY LIMITS OF TEMPORARY SHORING ARE TO ELEVATION 1129.0.

SUBMIT A WATER DIVERSION PLAN IN THE EROSION CONTROL IMPLEMENTATION PLAN.

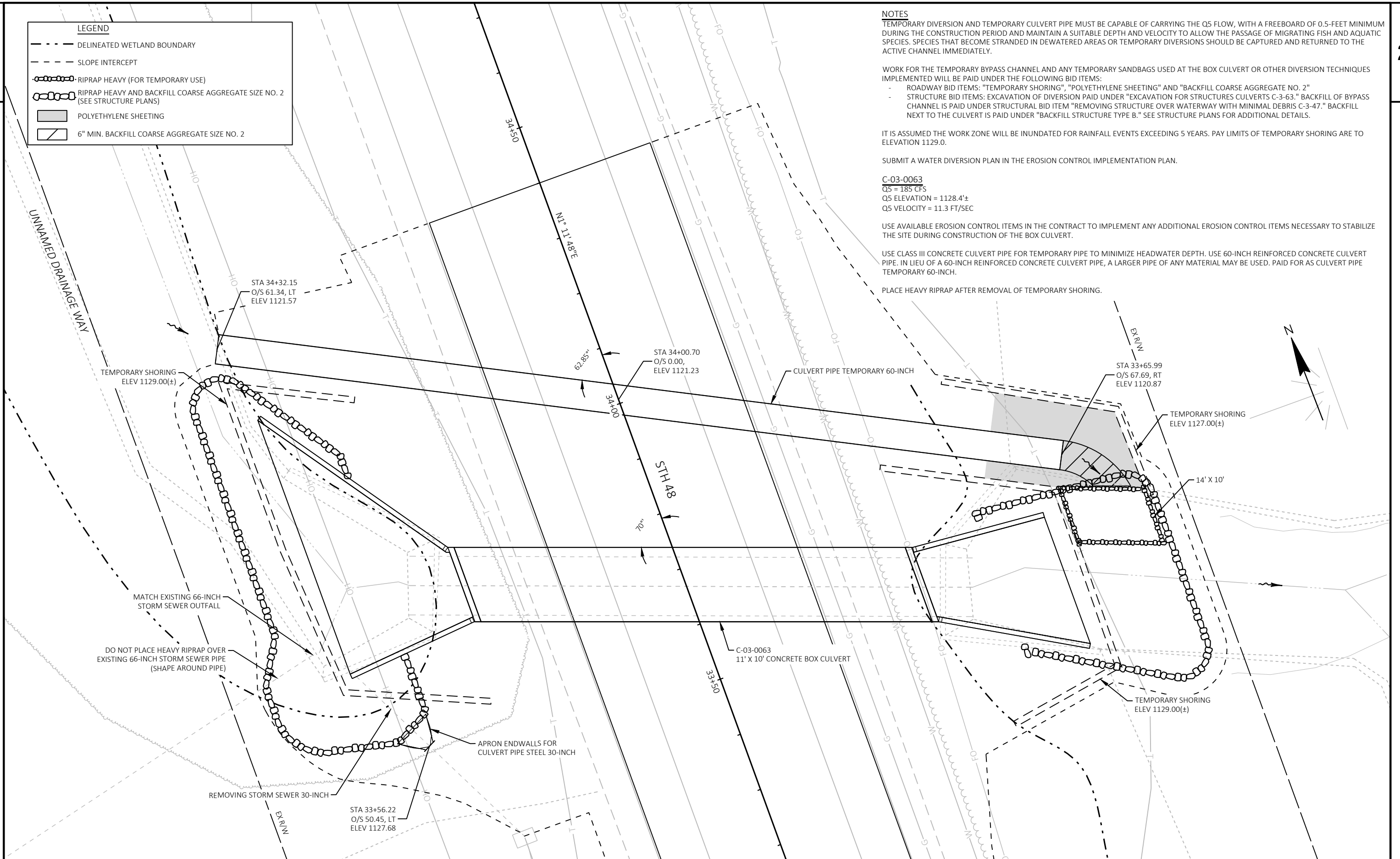
**C-03-0063**

Q5 = 185 CFS  
Q5 ELEVATION = 1128.4'±  
Q5 VELOCITY = 11.3 FT/SEC

USE AVAILABLE EROSION CONTROL ITEMS IN THE CONTRACT TO IMPLEMENT ANY ADDITIONAL EROSION CONTROL ITEMS NECESSARY TO STABILIZE THE SITE DURING CONSTRUCTION OF THE BOX CULVERT.

USE CLASS III CONCRETE CULVERT PIPE FOR TEMPORARY PIPE TO MINIMIZE HEADWATER DEPTH. USE 60-INCH REINFORCED CONCRETE CULVERT PIPE. IN LIEU OF A 60-INCH REINFORCED CONCRETE CULVERT PIPE, A LARGER PIPE OF ANY MATERIAL MAY BE USED. PAID FOR AS CULVERT PIPE TEMPORARY 60-INCH.

PLACE HEAVY RIPRAP AFTER REMOVAL OF TEMPORARY SHORING.



**LEGEND**

- DELINEATED WETLAND BOUNDARY
- - - SLOPE INTERCEPT
- ⊗ RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)

**NOTES**

TEMPORARY CONDITIONS MUST BE CAPABLE OF CARRYING THE Q5 FLOW, WITH A FREEBOARD OF 0.5- FEET MINIMUM DURING THE CONSTRUCTION PERIOD AND MAINTAIN A SUITABLE DEPTH AND VELOCITY TO ALLOW THE PASSAGE OF MIGRATING FISH AND AQUATIC SPECIES. SPECIES THAT BECOME STRANDED IN DEWATERED AREAS OR TEMPORARY DIVERSIONS SHOULD BE CAPTURED AND RETURNED TO THE ACTIVE CHANNEL IMMEDIATELY.

WORK FOR THE TEMPORARY CONDITION AND ANY TEMPORARY SANDBAGS USED AT THE CULVERT OR OTHER DIVERSION TECHNIQUES IMPLEMENTED WILL BE PAID UNDER THE FOLLOWING BID ITEMS:  
 ROADWAY BID ITEMS: EXCAVATION OF DIVERSION PAID UNDER "EXCAVATION COMMON." BACKFILL OF DIVERSION AREA IS PAID UNDER BID ITEM "REMOVING STRUCTURE C-03-0046." BACKFILL NEXT TO THE CULVERT IS PAID UNDER "CULVERT PIPE CLASS IV 72-INCH." BACKFILL PER THE CULVERT PIPE TRANSITION CONSTRUCTION DETAIL.

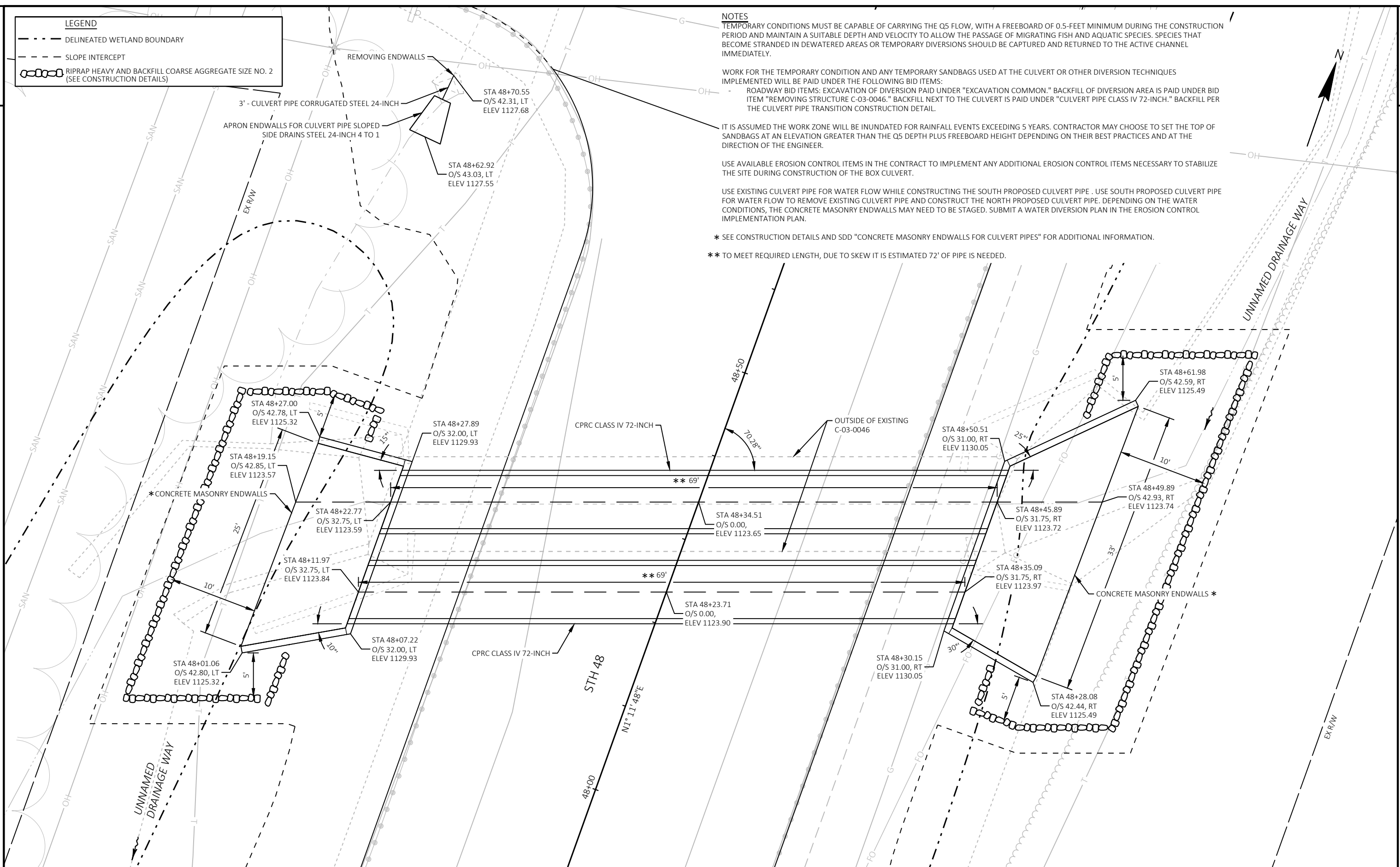
IT IS ASSUMED THE WORK ZONE WILL BE INUNDATED FOR RAINFALL EVENTS EXCEEDING 5 YEARS. CONTRACTOR MAY CHOOSE TO SET THE TOP OF SANDBAGS AT AN ELEVATION GREATER THAN THE Q5 DEPTH PLUS FREEBOARD HEIGHT DEPENDING ON THEIR BEST PRACTICES AND AT THE DIRECTION OF THE ENGINEER.

USE AVAILABLE EROSION CONTROL ITEMS IN THE CONTRACT TO IMPLEMENT ANY ADDITIONAL EROSION CONTROL ITEMS NECESSARY TO STABILIZE THE SITE DURING CONSTRUCTION OF THE BOX CULVERT.

USE EXISTING CULVERT PIPE FOR WATER FLOW WHILE CONSTRUCTING THE SOUTH PROPOSED CULVERT PIPE. USE SOUTH PROPOSED CULVERT PIPE FOR WATER FLOW TO REMOVE EXISTING CULVERT PIPE AND CONSTRUCT THE NORTH PROPOSED CULVERT PIPE. DEPENDING ON THE WATER CONDITIONS, THE CONCRETE MASONRY ENDWALLS MAY NEED TO BE STAGED. SUBMIT A WATER DIVERSION PLAN IN THE EROSION CONTROL IMPLEMENTATION PLAN.

\* SEE CONSTRUCTION DETAILS AND SDD "CONCRETE MASONRY ENDWALLS FOR CULVERT PIPES" FOR ADDITIONAL INFORMATION.

\*\* TO MEET REQUIRED LENGTH, DUE TO SKEW IT IS ESTIMATED 72' OF PIPE IS NEEDED.



**LEGEND**

- DELINEATED WETLAND BOUNDARY
- - - SLOPE INTERCEPT
- ⊞ RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)

**NOTES**

TEMPORARY CONDITIONS MUST BE CAPABLE OF CARRYING THE Q5 FLOW, WITH A FREEBOARD OF 0.5- FEET MINIMUM DURING THE CONSTRUCTION PERIOD AND MAINTAIN A SUITABLE DEPTH AND VELOCITY TO ALLOW THE PASSAGE OF MIGRATING FISH AND AQUATIC SPECIES. SPECIES THAT BECOME STRANDED IN DEWATERED AREAS OR TEMPORARY DIVERSIONS SHOULD BE CAPTURED AND RETURNED TO THE ACTIVE CHANNEL IMMEDIATELY.

WORK FOR THE TEMPORARY CONDITION AND ANY TEMPORARY SANDBAGS USED AT THE CULVERT OR OTHER DIVERSION TECHNIQUES IMPLEMENTED WILL BE PAID UNDER THE FOLLOWING BID ITEMS:  
 - ROADWAY BID ITEMS: EXCAVATION OF DIVERSION PAID UNDER "EXCAVATION COMMON." BACKFILL OF DIVERSION AREA IS PAID UNDER BID ITEM "REMOVING STRUCTURE C-03-0045." BACKFILL NEXT TO THE CULVERT IS PAID UNDER "CULVERT PIPE CLASS IV 72-INCH." BACKFILL PER THE CULVERT PIPE TRANSITION CONSTRUCTION DETAIL.

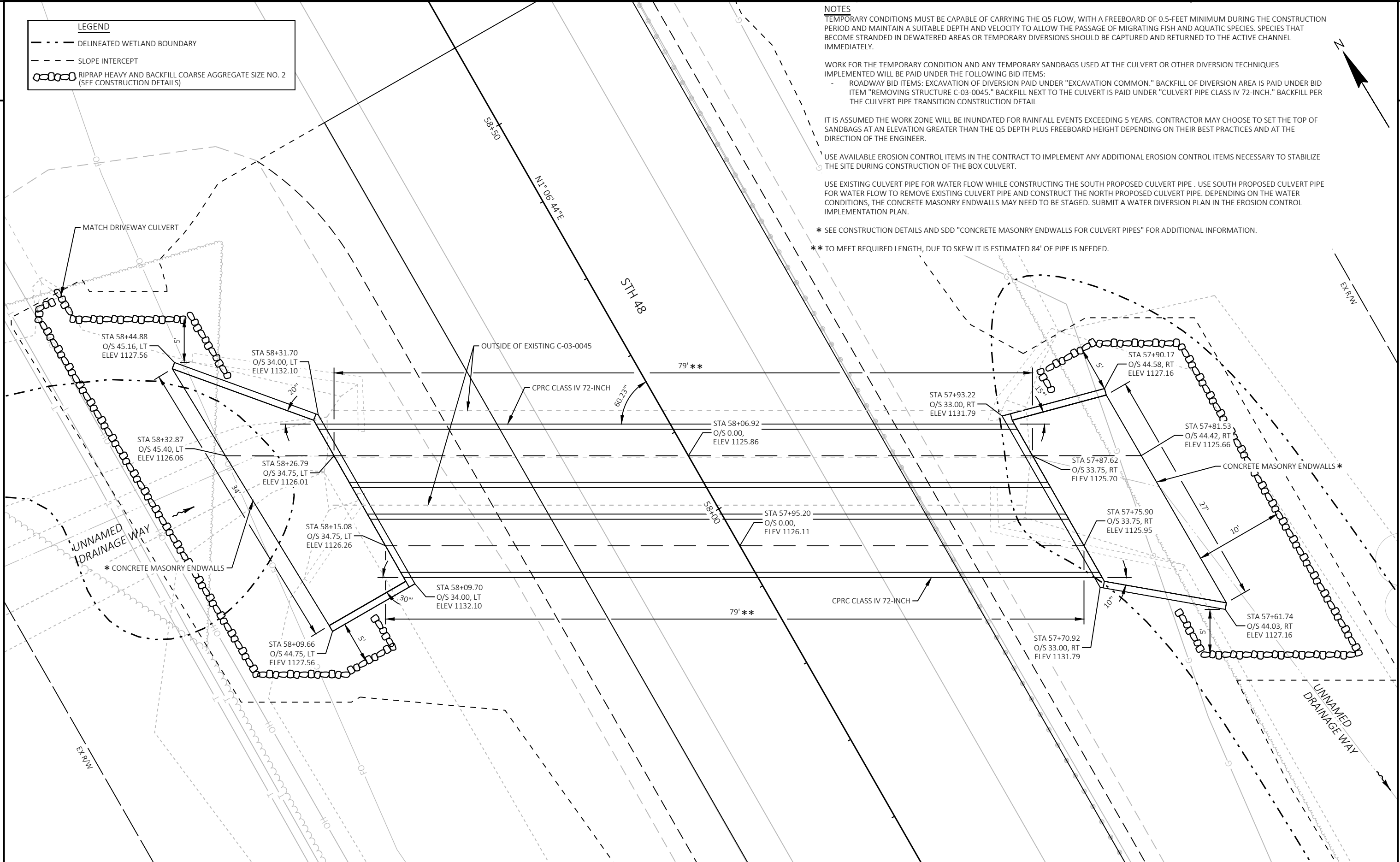
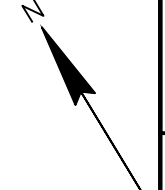
IT IS ASSUMED THE WORK ZONE WILL BE INUNDATED FOR RAINFALL EVENTS EXCEEDING 5 YEARS. CONTRACTOR MAY CHOOSE TO SET THE TOP OF SANDBAGS AT AN ELEVATION GREATER THAN THE Q5 DEPTH PLUS FREEBOARD HEIGHT DEPENDING ON THEIR BEST PRACTICES AND AT THE DIRECTION OF THE ENGINEER.

USE AVAILABLE EROSION CONTROL ITEMS IN THE CONTRACT TO IMPLEMENT ANY ADDITIONAL EROSION CONTROL ITEMS NECESSARY TO STABILIZE THE SITE DURING CONSTRUCTION OF THE BOX CULVERT.


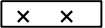

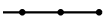




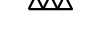
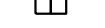

USE EXISTING CULVERT PIPE FOR WATER FLOW WHILE CONSTRUCTING THE SOUTH PROPOSED CULVERT PIPE . USE SOUTH PROPOSED CULVERT PIPE FOR WATER FLOW TO REMOVE EXISTING CULVERT PIPE AND CONSTRUCT THE NORTH PROPOSED CULVERT PIPE. DEPENDING ON THE WATER CONDITIONS, THE CONCRETE MASONRY ENDWALLS MAY NEED TO BE STAGED. SUBMIT A WATER DIVERSION PLAN IN THE EROSION CONTROL IMPLEMENTATION PLAN.

\* SEE CONSTRUCTION DETAILS AND SDD "CONCRETE MASONRY ENDWALLS FOR CULVERT PIPES" FOR ADDITIONAL INFORMATION.

\*\* TO MEET REQUIRED LENGTH, DUE TO SKEW IT IS ESTIMATED 84' OF PIPE IS NEEDED.



**LEGEND**

-  EROSION MAT URBAN CLASS I TYPE B
-  EROSION MAT CLASS II TYPE C
-  PERMITTED WETLAND IMPACTS
-  SILT FENCE
-  RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE STRUCTURE PLANS)
-  SLOPE INTERCEPT
-  INLET PROTECTION (TYPE A)
-  TEMPORARY DITCH CHECKS
-  EROSION BALE REINFORCEMENT
-  SURFACE WATER FLOW
-  DELINEATED WETLAND BOUNDARY

**NOTES**

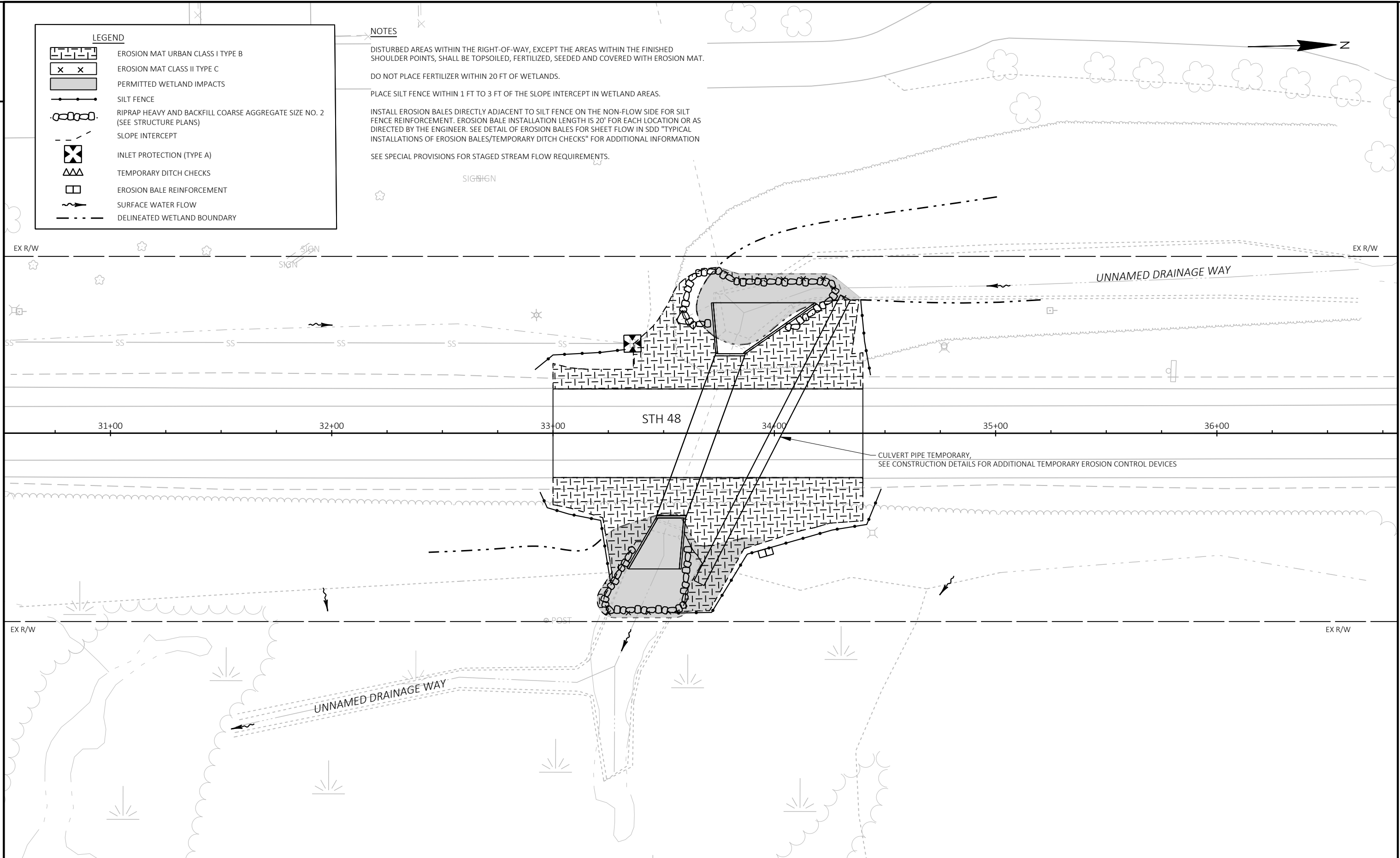
DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH EROSION MAT.

DO NOT PLACE FERTILIZER WITHIN 20 FT OF WETLANDS.


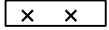

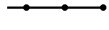
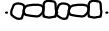
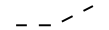

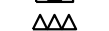

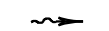
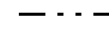
PLACE SILT FENCE WITHIN 1 FT TO 3 FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

INSTALL EROSION BALES DIRECTLY ADJACENT TO SILT FENCE ON THE NON-FLOW SIDE FOR SILT FENCE REINFORCEMENT. EROSION BALE INSTALLATION LENGTH IS 20' FOR EACH LOCATION OR AS DIRECTED BY THE ENGINEER. SEE DETAIL OF EROSION BALES FOR SHEET FLOW IN SDD "TYPICAL INSTALLATIONS OF EROSION BALES/TEMPORARY DITCH CHECKS" FOR ADDITIONAL INFORMATION

SEE SPECIAL PROVISIONS FOR STAGED STREAM FLOW REQUIREMENTS.



**LEGEND**

-  EROSION MAT URBAN CLASS I TYPE B
-  EROSION MAT CLASS II TYPE C
-  PERMITTED WETLAND IMPACTS
-  SILT FENCE
-  RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)
-  SLOPE INTERCEPT
-  INLET PROTECTION (TYPE A)
-  TEMPORARY DITCH CHECKS
-  EROSION BALE REINFORCEMENT
-  SURFACE WATER FLOW
-  DELINEATED WETLAND BOUNDARY

**NOTES**

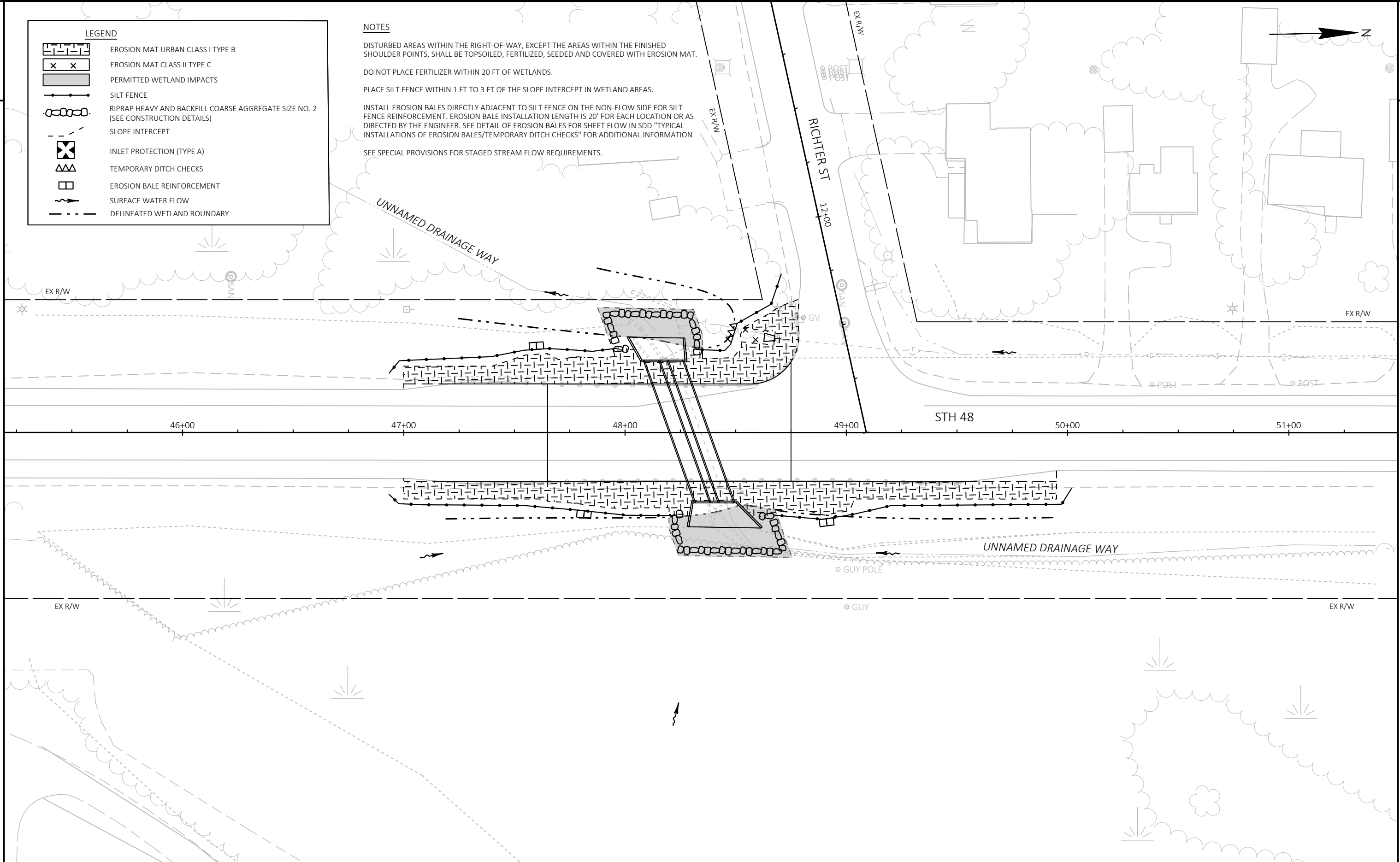
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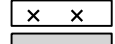
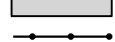

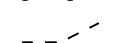

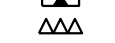
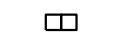

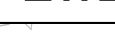

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SEE SPECIAL PROVISIONS FOR STAGED STREAM FLOW REQUIREMENTS.





**LEGEND**

-  EROSION MAT URBAN CLASS I TYPE B
-  EROSION MAT CLASS II TYPE C
-  PERMITTED WETLAND IMPACTS
-  SILT FENCE
-  RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)
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**NOTES**

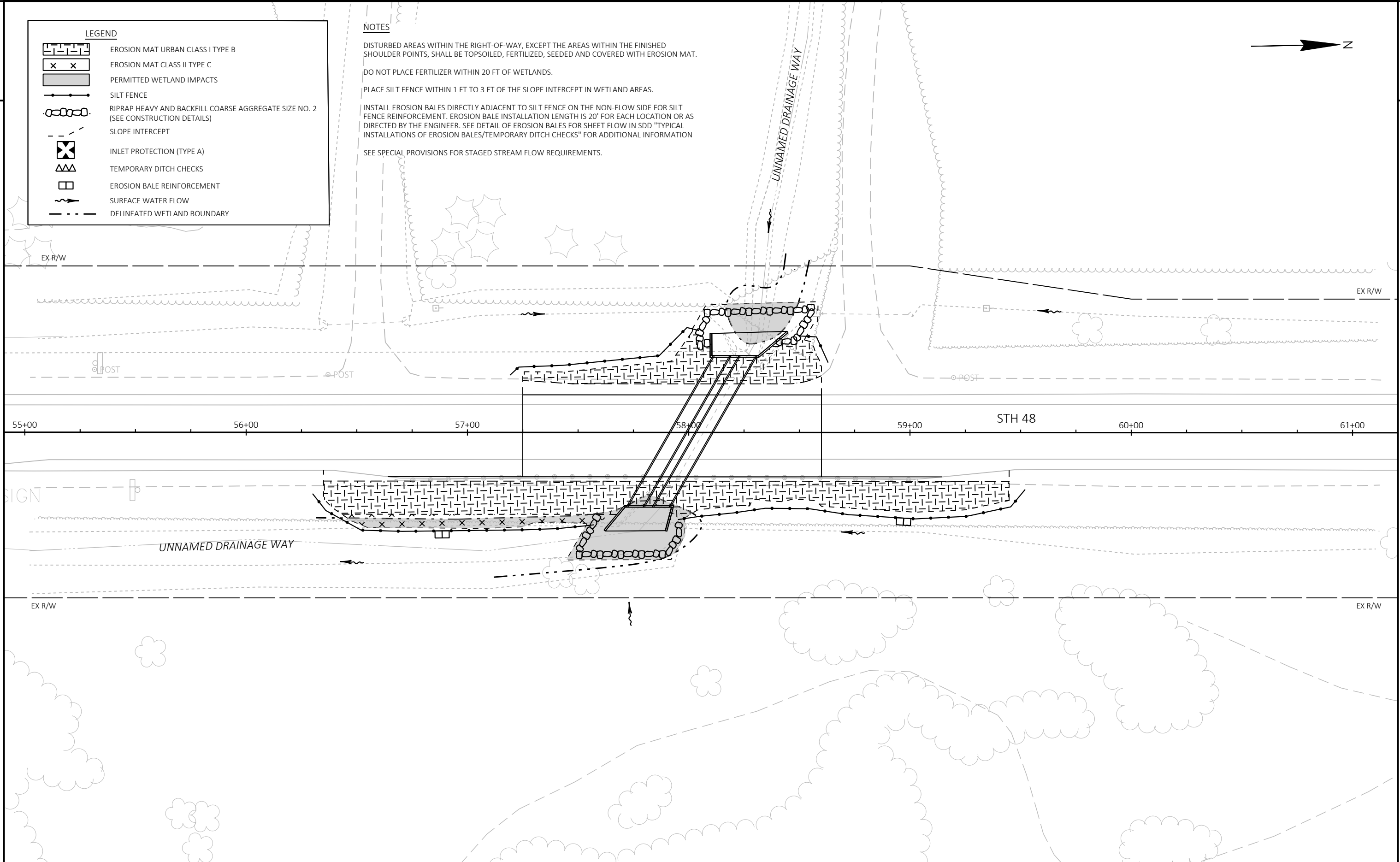
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SEE SPECIAL PROVISIONS FOR STAGED STREAM FLOW REQUIREMENTS.



**LEGEND**

1 PLACE TRAFFIC CONTROL SIGNS PER SDD "BARRICADES AND SIGNS FOR VARIOUS CLOSURES" IN SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES."

2 PLACE TRAFFIC CONTROL SIGNS PER SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES."

3 PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC" DURING WORK ON 22 1/2 AVE.

**MB** TRAFFIC CONTROL SIGNS PCMS

**---** DETOUR ROUTE

**\*** PLACE MARKING STOP LINE EPOXY PER SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING."

**TRAFFIC CONTROL SIGNS PCMS MESSAGES**

PCMS SIGN LOCATION	PRIOR TO CONSTRUCTION	
	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
STH 48 EB 0.4 MILES SOUTH OF BEGIN PROJECT LIMITS	STH 48 DETOUR BEGINS	STARTING DATE
STH 48 WB 0.4 MILES NORTH OF END PROJECT LIMITS	STH 48 DETOUR BEGINS	STARTING DATE

**PCMS GENERAL NOTES**

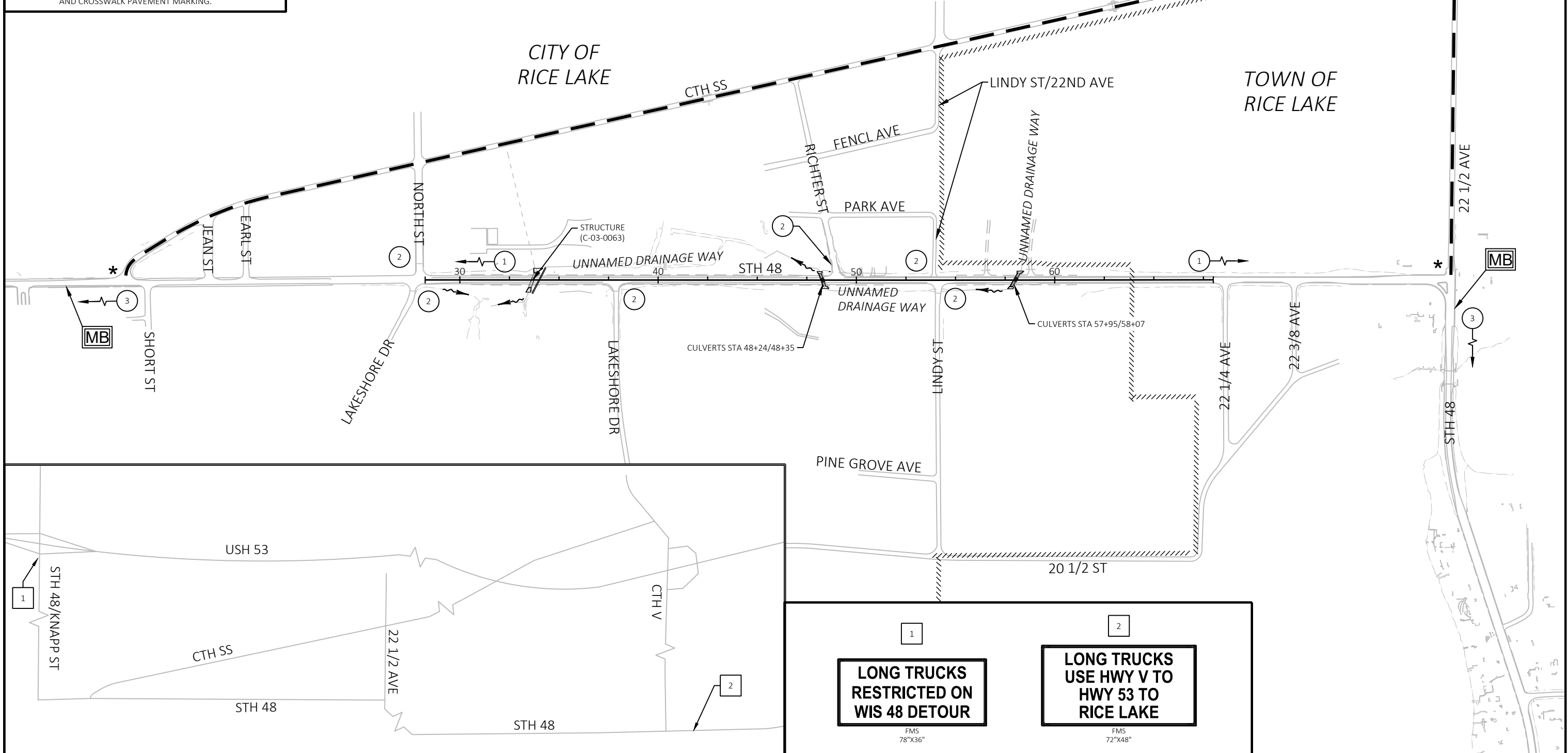
ADJUST TRAFFIC CONTROL PCMS MESSAGES AS NEEDED BASED ON CONSTRUCTION SCHEDULE.

CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1,000 FEET IN FRONT OF THE MESSAGE BOARD. PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY.

PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE DETOUR. ADJUST THE MESSAGE DATE ACCORDINGLY.

**TRAFFIC CONTROL GENERAL NOTES**

- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- ALL TYPE III BARRICADES SHALL BE EQUIPPED WITH TYPE "A" (LOW INTENSITY FLASHING LIGHTS) PER SDD'S.
- DELINEATE PRIVATE ACCESS WITH TRAFFIC CONTROL DRUMS, WHERE REQUIRED.
- EXACT LOCATIONS FOR TRAFFIC CONTROL SIGNS FOR MAINLINE CLOSURE DEPENDS ON WHICH PROJECT LOCATION IS CURRENTLY BEING CONSTRUCTED AND ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- UTILIZE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION" DURING 22 1/2 AVE WORK.



**1**

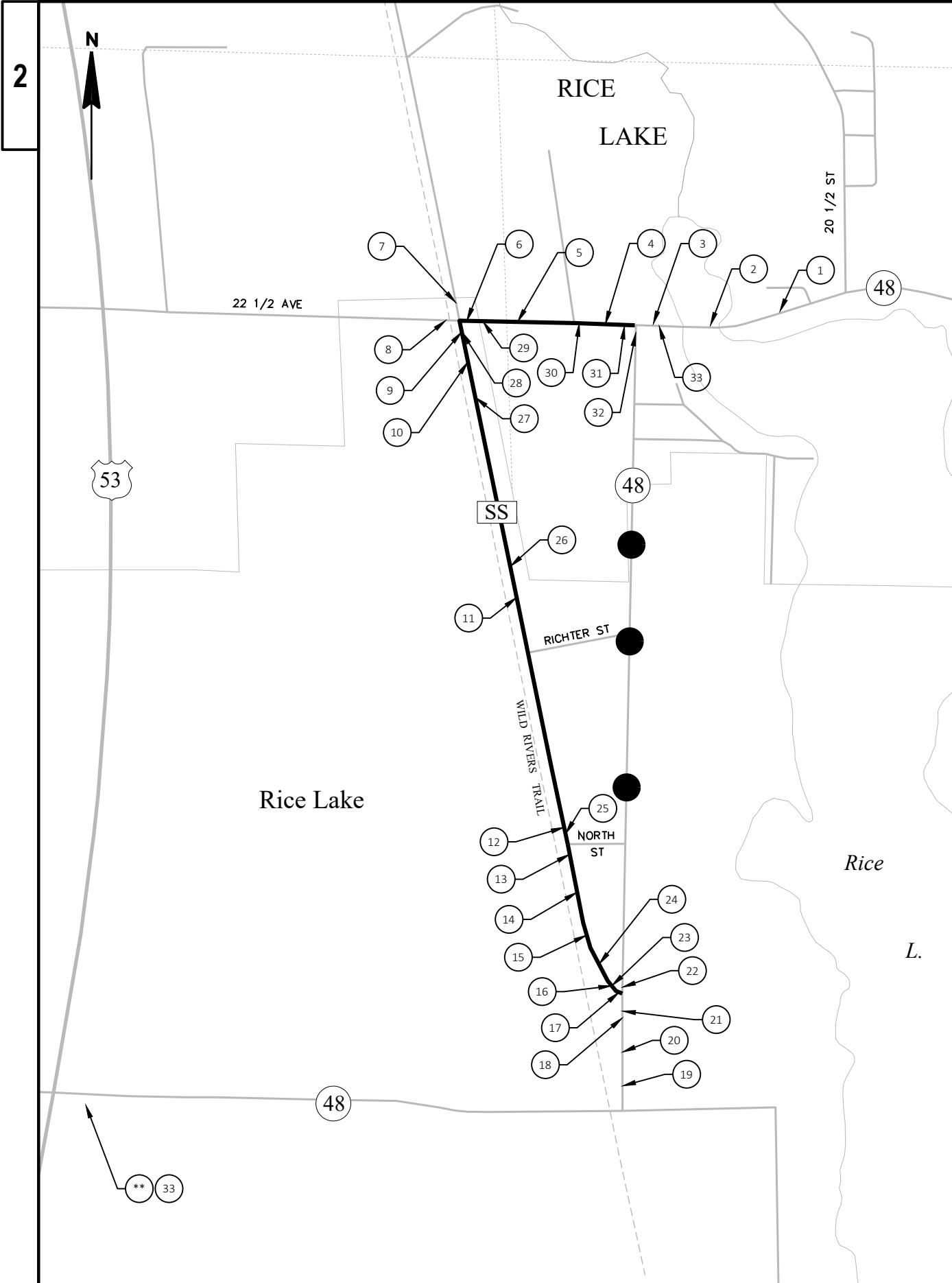
**LONG TRUCKS RESTRICTED ON WIS 48 DETOUR**

FMS 78"X36"

**2**

**LONG TRUCKS USE HWY V TO HWY 53 TO RICE LAKE**

FMS 72"X48"



**LEGEND**

- WORK ZONE
- DETOUR ROUTE

**NOTES**  
ALL TRAFFIC CONTROL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SPACING AND PLACEMENT OF SIGNS.

MARK NEW DOUBLE YELLOW CENTER LINES AND EDGE LINES ALONG DETOUR ROUTE PER SDD "LONGITUDINAL MARKING (MAINLINE)" AND MARK NEW TURN LANES PER SDD "PAVEMENT MARKING (TURN LANES)" AND MARK NEW STOP LINES PER SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING."

**NOTES (CONT)**

- \* REMOVE AND REPLACE WITH SIGNS TYPE II REFLECTIVE H OR SIGNS TYPE II REFLECTIVE F
- \*\* SEE "TRAFFIC CONTROL OVERVIEW" FOR FIXED MESSAGE SIGN DETAIL

<p>4 10</p> <p>DETOUR M4-8 24"x12" WEST M3-4 36"x18" 48 M1-6 36"x36"</p>	<p>5</p> <p>DETOUR M4-8 36"x18" WEST M3-4 36"x18" 48 M1-6 36"x36" MOS-1L 30"x30"</p>	<p>6</p> <p>DETOUR M4-8 36"x18" WEST M3-4 36"x18" STOP R1-1 36"x36" 48 M1-6 36"x36" MO6-1 30"x30"</p>	<p>7</p> <p>DETOUR M4-8 36"x18" DETOUR M4-8 36"x18" EAST WEST M3-2 24"x12" M3-4 36"x18" 48 48 M1-6 36"x36" MO6-1 30"x30" MO6-1 30"x30"</p>	<p>8</p> <p>DETOUR M4-8 36"x18" DETOUR M4-8 36"x18" EAST WEST M3-2 24"x12" M3-4 36"x18" STOP R1-1 36"x36" 48 48 M1-6 36"x36" MO6-1 30"x30" MO6-1 21"x21"</p>	<p>9 11</p> <p>25 26</p> <p>SPEED LIMIT 45 R2-1 36"x48"</p>	<p>12</p> <p>ATV CROSSING W11-50 36"x36"</p>	
<p>13 23</p> <p>SPEED LIMIT 35 R2-1 36"x48"</p>	<p>14 16</p> <p>W1-2L 36"x36"</p>	<p>15</p> <p>DETOUR M4-8 36"x18" WEST M3-4 36"x18" 48 M1-6 36"x36" MOS-1R 30"x30"</p>	<p>17</p> <p>DETOUR M4-8 24"x12" WEST M3-4 24"x12" STOP R1-1 36"x36" 48 M1-6 24"x24" MO6-1 21"x21"</p>	<p>18</p> <p>END DETOUR M4-8A 24"x18" WEST M3-4 24"x12" 48 M1-6 24"x24"</p>	<p>20</p> <p>DETOUR M4-8 24"x12" EAST M3-2 24"x12" 48 M1-6 24"x24" MOS-1L 30"x30"</p>	<p>21</p> <p>DETOUR M4-8 24"x12" NORTH EAST COUNTY SS 48 COVER WITH SIGN SHOWN MO6-1 21"x21"</p>	<p>22</p> <p>DETOUR M4-9L 30"x24" BRIDGE OUT 0.3 MILES AHEAD R11-3C 60"x24"</p>
<p>24</p> <p>DETOUR M4-8 24"x12" NORTH EAST COUNTY SS 48 M1-6 24"x24"</p>	<p>27</p> <p>DETOUR M4-8 36"x18" EAST M3-2 36"x18" 48 M1-6 36"x36" MOS-1R 30"x30"</p>	<p>28</p> <p>DETOUR M4-8 36"x18" EAST M3-2 36"x18" 48 M1-6 36"x36" MO6-1 30"x30"</p>	<p>29</p> <p>DETOUR M4-8 24"x12" EAST M3-2 24"x12" 48 M1-6 24"x24"</p>	<p>30</p> <p>DETOUR M4-8 36"x18" EAST M3-2 36"x18" STOP R1-1 36"x36" 48 M1-6 36"x36" MO6-1 30"x30"</p>	<p>31</p> <p>DETOUR M4-8 36"x18" EAST M3-2 36"x18" STOP R1-1 36"x36" ONCOMING TRAFFIC DOES NOT STOP W4-4B 42"x15" 48 M1-6 36"x36" MO6-1 30"x30"</p>	<p>32</p> <p>DETOUR M4-9R 30"x24" BRIDGE OUT 0.4 MILES AHEAD R11-3C 60"x24"</p>	<p>33</p> <p>END DETOUR M4-8A 24"x18" EAST 48</p>



Estimate Of Quantities

8120-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0220	Removing Structure (structure) 01. C-03-0047	EACH	1.000	1.000
0008	203.0220	Removing Structure (structure) 02. C-03-0045	EACH	1.000	1.000
0010	203.0220	Removing Structure (structure) 03. C-03-0046	EACH	1.000	1.000
0012	204.0115	Removing Asphaltic Surface Butt Joints	SY	500.000	500.000
0014	204.0245	Removing Storm Sewer (size) 01. 30-Inch	LF	20.000	20.000
0016	204.9060.S	Removing (item description) 01. Endwalls	EACH	1.000	1.000
0018	205.0100	Excavation Common	CY	2,102.000	2,102.000
0020	206.2001	Excavation for Structures Culverts (structure) 01. C-03-63	EACH	1.000	1.000
0022	209.0300.S	Backfill Coarse Aggregate (size) 01. No. 2	CY	41.000	41.000
0024	210.2500	Backfill Structure Type B	TON	1,885.000	1,885.000
0026	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 8120-00-70	EACH	1.000	1.000
0028	213.0100	Finishing Roadway (project) 01. 8120-00-70	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	220.000	220.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	930.000	930.000
0034	311.0115	Breaker Run	CY	112.000	112.000
0036	455.0605	Tack Coat	GAL	300.000	300.000
0038	465.0105	Asphaltic Surface	TON	480.000	480.000
0040	465.0115	Asphaltic Surface Detours	TON	425.000	425.000
0042	504.0100	Concrete Masonry Culverts	CY	177.000	177.000
0044	504.0900	Concrete Masonry Endwalls	CY	72.000	72.000
0046	505.0400	Bar Steel Reinforcement HS Structures	LB	29,310.000	29,310.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	4,510.000	4,510.000
0050	511.1100	Temporary Shoring	SF	1,830.000	1,830.000
0052	516.0500	Rubberized Membrane Waterproofing	SY	38.000	38.000
0054	520.2060	Culvert Pipe Temporary 60-Inch	LF	145.000	145.000
0056	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	1.000	1.000
0058	521.1505	Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 24-Inch 4 to 1	EACH	1.000	1.000
0060	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	3.000	3.000
0062	522.0472	Culvert Pipe Reinforced Concrete Class IV 72-Inch	LF	296.000	296.000
0064	606.0300	Riprap Heavy	CY	280.000	280.000
0066	614.0920	Salvaged Rail	LF	340.000	340.000
0068	614.0925	Salvaged Guardrail End Treatments	EACH	6.000	6.000
0070	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8120-00-70	EACH	1.000	1.000
0072	619.1000	Mobilization	EACH	1.000	1.000
0074	624.0100	Water	MGAL	10.000	10.000
0076	625.0100	Topsoil	SY	2,640.000	2,640.000
0078	628.1104	Erosion Bales	EACH	60.000	60.000
0080	628.1504	Silt Fence	LF	1,300.000	1,300.000
0082	628.1520	Silt Fence Maintenance	LF	1,300.000	1,300.000
0084	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	2,500.000	2,500.000
0090	628.2027	Erosion Mat Class II Type C	SY	140.000	140.000
0092	628.5505	Polyethylene Sheeting	SY	30.000	30.000
0094	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0096	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0098	629.0210	Fertilizer Type B	CWT	0.500	0.500

Estimate Of Quantities

8120-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	630.0130	Seeding Mixture No. 30	LB	45.000	45.000
0102	630.0160	Seeding Mixture No. 60	LB	2.000	2.000
0104	630.0500	Seed Water	MGAL	60.000	60.000
0106	633.5200	Markers Culvert End	EACH	6.000	6.000
0108	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	16.000	16.000
0110	637.2210	Signs Type II Reflective H	SF	59.840	59.840
0112	637.2230	Signs Type II Reflective F	SF	56.500	56.500
0114	638.2602	Removing Signs Type II	EACH	16.000	16.000
0116	638.3000	Removing Small Sign Supports	EACH	16.000	16.000
0118	642.5001	Field Office Type B	EACH	1.000	1.000
0120	643.0300	Traffic Control Drums	DAY	770.000	770.000
0122	643.0420	Traffic Control Barricades Type III	DAY	2,100.000	2,100.000
0124	643.0705	Traffic Control Warning Lights Type A	DAY	2,520.000	2,520.000
0126	643.0900	Traffic Control Signs	DAY	6,680.000	6,680.000
0128	643.1000	Traffic Control Signs Fixed Message	SF	43.500	43.500
0130	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0132	643.5000	Traffic Control	EACH	1.000	1.000
0134	645.0105	Geotextile Type C	SY	340.000	340.000
0136	645.0120	Geotextile Type HR	SY	600.000	600.000
0138	646.1005	Marking Line Paint 4-Inch	LF	34,100.000	34,100.000
0140	646.1020	Marking Line Epoxy 4-Inch	LF	1,100.000	1,100.000
0142	646.3005	Marking Line Paint 8-Inch	LF	300.000	300.000
0144	646.6105	Marking Stop Line Paint 18-Inch	LF	56.000	56.000
0146	650.4000	Construction Staking Storm Sewer	EACH	1.000	1.000
0148	650.4500	Construction Staking Subgrade	LF	385.000	385.000
0150	650.5000	Construction Staking Base	LF	385.000	385.000
0152	650.6000	Construction Staking Pipe Culverts	EACH	5.000	5.000
0154	650.6501	Construction Staking Structure Layout (structure) 01. C-03-0063	EACH	1.000	1.000
0156	650.9911	Construction Staking Supplemental Control (project) 01. 8120-00-70	EACH	1.000	1.000
0158	650.9920	Construction Staking Slope Stakes	LF	706.000	706.000
0160	690.0150	Sawing Asphalt	LF	540.000	540.000
0162	715.0502	Incentive Strength Concrete Structures	DOL	1,500.000	1,500.000

CLEARING AND GRUBBING ITEMS

STATION	TO	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
33+00	-	34+40	LT&RT	2	2
48+22	-	48+75	RT	1	1
56+49	-	57+98	RT	2	2
58+15	-	58+58	LT	1	1
TOTALS				6	6

REMOVING STRUCTURES

STATION	OFFSET	203.0220.02 REMOVING STRUCTURE (C-03-0046) EACH	203.0220.03 REMOVING STRUCTURE (C-03-0045) EACH
48+34	LT&RT	1	--
58+07	LT&RT	--	1
TOTALS		1	1

NOTE:  
REMOVAL OF C-03-0047 SHOWN ON STRUCTURE PLANS

REMOVING ASPHALTIC SURFACE BUTT JOINTS

LOCATION	204.0115 SY
PAVEMENT JOINT EAST OF CTH SS ON 22 1/2 AVENUE	245
PAVEMENT JOINT WEST OF STH 48 ON 22 1/2 AVENUE	245
DRIVEWAY 175' EAST OF CTH SS, SOUTH SIDE OF 22 1/2 AVENUE	10
TOTAL	500

BASE AGGREGATE ITEMS

STATION	TO	STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
33+00	-	34+40	LT&RT	26	326
47+00	-	49+95	LT&RT	48	281
56+35	-	59+45	LT&RT	57	323
22 1/2 AVENUE (DETOUR)			LT&RT	89	--
TOTALS				220	930

ASPHALTIC SURFACE ITEMS

STATION	TO	STATION	OFFSET	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	465.0115 ASPHALTIC SURFACE DETOURS TON
33+00	-	34+40	LT&RT	31	174	--
47+65	-	48+75	LT&RT	27	151	--
57+25	-	58+60	LT&RT	28	155	--
22 1/2 AVENUE (DETOUR)			LT&RT	214	--	425
TOTALS				300	480	425

EARTHWORK ITEMS

DIVISION	FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (NOTE 1) CY	SALVAGED/UNUSABLE PAVEMENT MATERIAL (NOTE 2) CY	AVAILABLE MATERIAL (NOTE 3) CY	UNEXPANDED FILL CY	EXPANDED FILL (NOTE 4) CY FACTOR 1.20	MASS ORDINATE +/- (NOTE 5) CY
1	33+00 - 34+40 56+35 - 59+45 57+25 - 58+60	ROADWAY GRADING C-03-0063	367	230	137	29	35	102
		ROADWAY GRADING	302	273	29	106	-77	
		TRANSITION CUT (NOTE 6)	659	--	--	--	--	
SUBTOTALS			1,328	503	166	117	140	26
2	47+00 - 49+95 47+65 - 48+75	ROADWAY GRADING	247	211	36	23	28	8
		TRANSITION CUT (NOTE 6)	527	--	--	--	--	
SUBTOTALS			774	211	36	23	28	8
PROJECT TOTALS			2,102	714	202	140	168	34

NOTES:  
 1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT  
 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL = (AREA OF PROJECT PAVEMENT) \* (TYPICAL DEPTH)  
 3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL  
 4) EXPANDED FILL FACTOR = (UNEXPANDED FILL) \* (FILL FACTOR)  
 5) MASS ORDINATE = AVAILABLE MATERIAL - (EXPANDED FILL); POSITIVE INDICATES AN EXCESS OF MATERIAL  
 6) THE TRANSITION CUT IS NOT PART OF THE MASS ORDINATE. SEE CONSTRUCTION DETAIL FOR TRANSITION CUT FOR ADDITIONAL INFORMATION

3

3

DRAINAGE ITEMS

STATION	OFFSET	TO	STATION	OFFSET	204.0245.01 REMOVING STORM SEWER (30-INCH) LF	204.9060.S.01 REMOVING ENDWALLS EACH	209.0300.S.01* BACKFILL COARSE AGGREGATE SIZE NO. 2 CY	504.0900 CONCRETE MASONRY ENDWALLS CY	511.1100 TEMPORARY SHORING SF	520.2060 CULVERT PIPE TEMPORARY 60-INCH LF	521.1030 APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH EACH	521.1505 APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL 24-INCH 4 TO 1 EACH	521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH LF	522.0472 CULVERT PIPE REINFORCED CONCRETE CLASS IV 72-INCH LF	628.5505 POLYETHYLENE SHEETING SY	633.5200 MARKERS CULVERT END EACH
33+56	50.45'	LT	33+74	59.36'	20	--	--	--	--	--	1	--	--	--	--	1
33+66	67.69'	RT	34+32	61.34'	--	--	2	--	1,830	145	--	--	--	--	30	--
48+12	32.75'	LT	48+35	31.75'	--	--	12	35	--	--	--	--	--	69	--	1
48+23	32.75'	LT	48+46	31.75'	--	--	--	--	--	--	--	--	--	69	--	1
48+68	42.59'	LT	48+71	42.31'	--	1	--	--	--	--	--	1	3	--	--	1
57+76	33.75'	RT	58+15	34.75'	--	--	13	37	--	--	--	--	--	79	--	1
57+88	33.75'	RT	58+27	34.75'	--	--	--	--	--	--	--	--	--	79	--	1
TOTALS					20	1	27	72	1,830	145	1	1	3	296	30	6

NOTES:  
SEE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION ON LENGTH OF 72-INCH CONCRETE PIPE REQUIRED  
\*ADDITIONAL QUANTITIES SHOWN ON STRUCTURE PLANS

RIPRAP ITEMS

STATION	TO	STATION	OFFSET	606.0300* RIPRAP HEAVY CY	645.0120* GEOTEXTILE TYPE HR SY
33+45	-	33+62	RT	10	30
47+91	-	48+71	LT&RT	70	160
57+50	-	58+58	LT&RT	75	170
TOTALS				155	360

\* ADDITIONAL QUANTITIES SHOWN ON STRUCTURE PLANS

SALVAGED RAIL ITEMS

STATION	TO	STATION	OFFSET	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH
47+26	-	48+76	LT	80	2
47+28	-	49+52	RT	125	2
56+67	-	59+03	RT	135	2
TOTALS				340	6

RESTORATION ITEMS

STATION	TO	STATION	OFFSET	625.0100 TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0160 SEEDING MIXTURE NO. 60 LB	630.0500 SEED WATER MGAL
33+00	-	34+40	LT&RT	821	797	31	0.2	14	0.5	19
47+00	-	49+95	LT&RT	594	585	9	0.1	11	0.2	14
56+35	-	59+45	LT&RT	686	618	70	0.2	11	1.0	16
UNDISTRIBUTED				540	500	30	0.1	9	0.3	11
TOTALS				2,640	2,500	140	0.5	45	2.0	60

EROSION CONTROL ITEMS

STATION	TO	STATION	OFFSET	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7504 TEMPORARY DITCH CHECKS LF	628.7005 INLET PROTECTION TYPE A EACH
32+92	-	34+48	LT&RT	8	260	260	--	1
46+93	-	50+02	LT&RT	24	420	420	15	--
56+30	-	59+52	LT&RT	16	410	410	--	--
UNDISTRIBUTED				12	210	210	15	--
TOTALS				60	1,300	1,300	30	1

3

EROSION CONTROL MOBILIZATION

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

TYPE II SIGNS AND SUPPORTS

SIGN NUMBER	SIGN CODE	SIGN DIMENSION W X H			DESCRIPTION	638.2602	638.3000	634.0616	637.2210	637.2230
		IN	X	IN		REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	POSTS WOOD 4X6-INCH X 16-FT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF
5	W3-1	36	X	36	STOP AHEAD	1	1	1	--	9.00
6	R1-1	36	X	36	STOP	1	1	1	7.46	--
8	R1-1	36	X	36	STOP	1	1	1	7.46	--
9	R2-1	24	X	30	SPEED LIMIT 45MPH	1	1	1	5.00	--
11	R2-1	24	X	30	SPEED LIMIT 45MPH	1	1	1	5.00	--
12	W11-50	36	X	36	ATV SYMBOL W/ ATV CROSSING PLAQUE	1	1	1	--	9.00
13	R2-1	24	X	30	SPEED LIMIT 35MPH	1	1	1	5.00	--
14	W1-2L	36	X	36	ROAD CURVES LEFT	1	1	1	--	9.00
15	W3-1	36	X	36	STOP AHEAD	1	1	1	--	9.00
16	W1-2L	36	X	36	ROAD CURVES LEFT	1	1	1	--	9.00
17	R1-1	36	X	36	STOP	1	1	1	7.46	--
22	R2-1	24	X	30	SPEED LIMIT 35MPH	1	1	1	5.00	--
24	R2-1	24	X	30	SPEED LIMIT 45MPH	1	1	1	5.00	--
25	R2-1	24	X	30	SPEED LIMIT 45MPH	1	1	1	5.00	--
29	W3-1	36	X	36	STOP AHEAD	1	1	1	--	9.00
30-A	R1-1	36	X	36	STOP	1	1	1	7.46	--
30-B	W4-4B	30	X	12	ONCOMING TRAFFIC DOES NOT STOP	--	--	--	--	2.50
TOTALS						16	16	16	59.84	56.50

3

TRAFFIC CONTROL ITEMS

STAGE	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.1050 TRAFFIC CONTROL SIGNS PCMS	
		NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY
PRIOR TO DETOUR	7	10	70	--	--	--	--	--	--	2	14
22 1/2 AVE CONSTRUCTION	5	--	--	--	--	--	--	20	100	--	--
CULVERT CONSTRUCTION	70	10	700	30	2,100	36	2,520	94	6,580	--	--
TOTALS			770		2,100		2,520		6,680		14

TRAFFIC CONTROL SIGNS FIXED MESSAGE

LOCATION	SIGN NUMBER	SIGN SIZE W X H IN X IN	643.1000	SIGN MESSAGE
			SF	
STH 48/KNAPP ST	1	78" X 36"	19.50	LONG TRUCKS RESTRICTED ON WIS 48 DETOUR
NORTH OF STH 48/CTH V INTERSECTION	2	72" X 48"	24.00	LONG TRUCKS USE HWY V TO HWY 53 TO RICE LAKE
TOTAL			43.50	

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WATER	
LOCATION	624.0100 MGAL
PROJECT	10
<b>TOTAL</b>	<b>10</b>



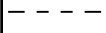


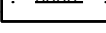
LONG LINE PAVEMENT MARKING ITEMS										
			646.1005 MARKING LINE PAINT 4-INCH		646.1020 MARKING LINE EPOXY 4-INCH			646.3005 MARKING LINE PAINT 8-INCH	646.6105 MARKING STOP LINE PAINT 18-INCH	
			SOLID WHITE	SOLID YELLOW	SOLID WHITE	12.5' LINE 37.5' SKIP YELLOW	SOLID YELLOW	SOLID WHITE	SOLID WHITE	
STATION	TO	STATION	OFFSET	LF	LF	LF	LF	LF	LF	
CTH SS (DETOUR)			LT&RT	13,420	13,945	--	--	--	300	20
22 1/2 AVE (DETOUR)			LT&RT	3,330	3,405	--	--	--	--	36
33+00	-	34+40	LT&RT	--	--	280	--	280	--	--
47+65	-	48+75	LT&RT	--	--	220	25	--	--	--
57+25	-	58+60	LT&RT	--	--	270	25	--	--	--
<b>TOTALS</b>				<b>16,750</b>	<b>17,350</b>	<b>770</b>	<b>50</b>	<b>280</b>	<b>300</b>	<b>56</b>
				34,100		1,100				

3

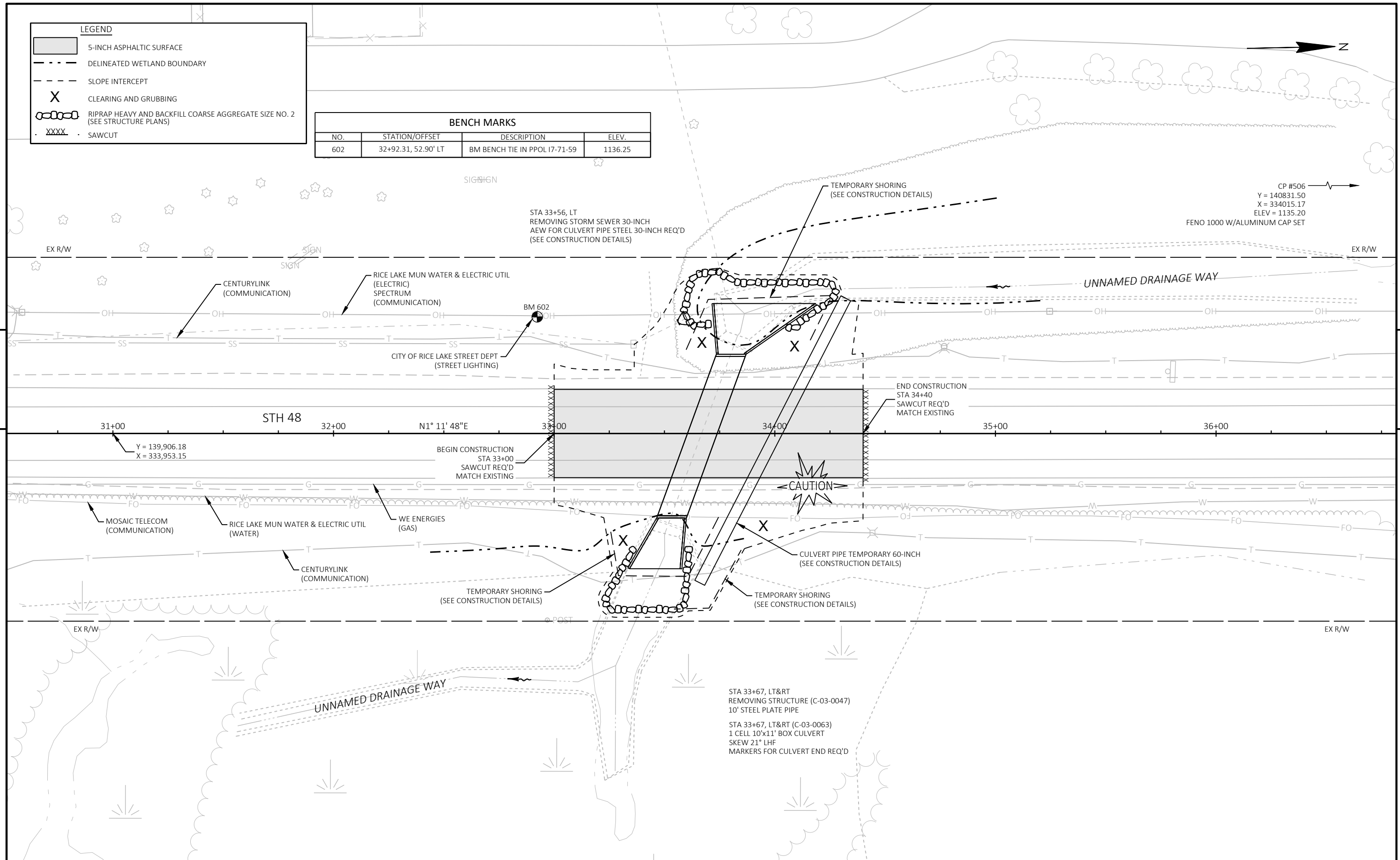
SAWING ASPHALT				
STATION	TO	STATION	OFFSET	690.0150 LF
33+00	-	34+40	LT&RT	80
47+16	-	49+56	LT&RT	270
56+64	-	59+15	LT&RT	190
<b>TOTAL</b>				<b>540</b>

CONSTRUCTION STAKING ITEMS										
				650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (C-03-0063) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (8120-00-70) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
STATION	TO	STATION	OFFSET							
33+00	-	34+40	LT&RT	--	140	140	--	--	--	140
		33+56	LT	1	--	--	--	--	--	--
		33+67	LT&RT	--	--	--	--	1	--	--
47+00	-	49+95	LT&RT	--	110	110	--	--	--	256
		48+24	LT&RT	--	--	--	1	--	--	--
		48+35	LT&RT	--	--	--	1	--	--	--
		48+68	LT	--	--	--	1	--	--	--
56+35	-	59+45	LT&RT	--	135	135	--	--	--	310
		57+95	LT&RT	--	--	--	1	--	--	--
		58+07	LT&RT	--	--	--	1	--	--	--
<b>PROJECT</b>				<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1</b>	<b>--</b>
<b>TOTALS</b>				<b>1</b>	<b>385</b>	<b>385</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>706</b>

**LEGEND**

-  5-INCH ASPHALTIC SURFACE
-  DELINEATED WETLAND BOUNDARY
-  SLOPE INTERCEPT
-  CLEARING AND GRUBBING
-  RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE STRUCTURE PLANS)
-  SAWCUT

BENCH MARKS			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
602	32+92.31, 52.90' LT	BM BENCH TIE IN PPOL I7-71-59	1136.25



STA 33+56, LT  
REMOVING STORM SEWER 30-INCH  
AEW FOR CULVERT PIPE STEEL 30-INCH REQ'D  
(SEE CONSTRUCTION DETAILS)

CP #506  
Y = 140831.50  
X = 334015.17  
ELEV = 1135.20  
FENO 1000 W/ALUMINUM CAP SET

31+00  
Y = 139,906.18  
X = 333,953.15

BEGIN CONSTRUCTION  
STA 33+00  
SAWCUT REQ'D  
MATCH EXISTING

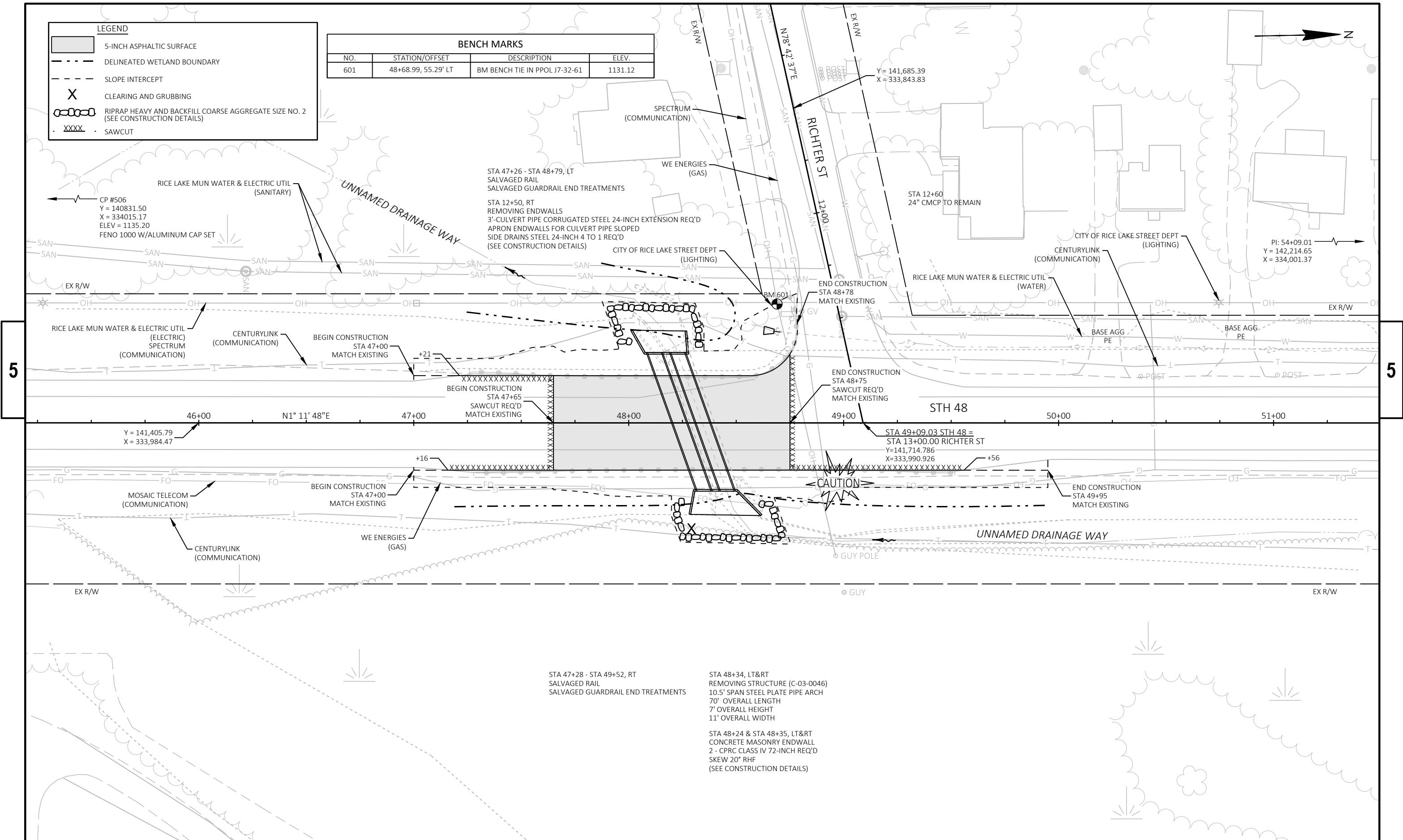
END CONSTRUCTION  
STA 34+40  
SAWCUT REQ'D  
MATCH EXISTING

STA 33+67, LT&RT  
REMOVING STRUCTURE (C-03-0047)  
10' STEEL PLATE PIPE  
  
STA 33+67, LT&RT (C-03-0063)  
1 CELL 10'x11' BOX CULVERT  
SKEW 21° LHF  
MARKERS FOR CULVERT END REQ'D

**LEGEND**

- 5-INCH ASPHALTIC SURFACE
- DELINEATED WETLAND BOUNDARY
- SLOPE INTERCEPT
- CLEARING AND GRUBBING
- RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)
- SAWCUT

BENCH MARKS			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
601	48+68.99, 55.29' LT	BM BENCH TIE IN PPOLE J7-32-61	1131.12





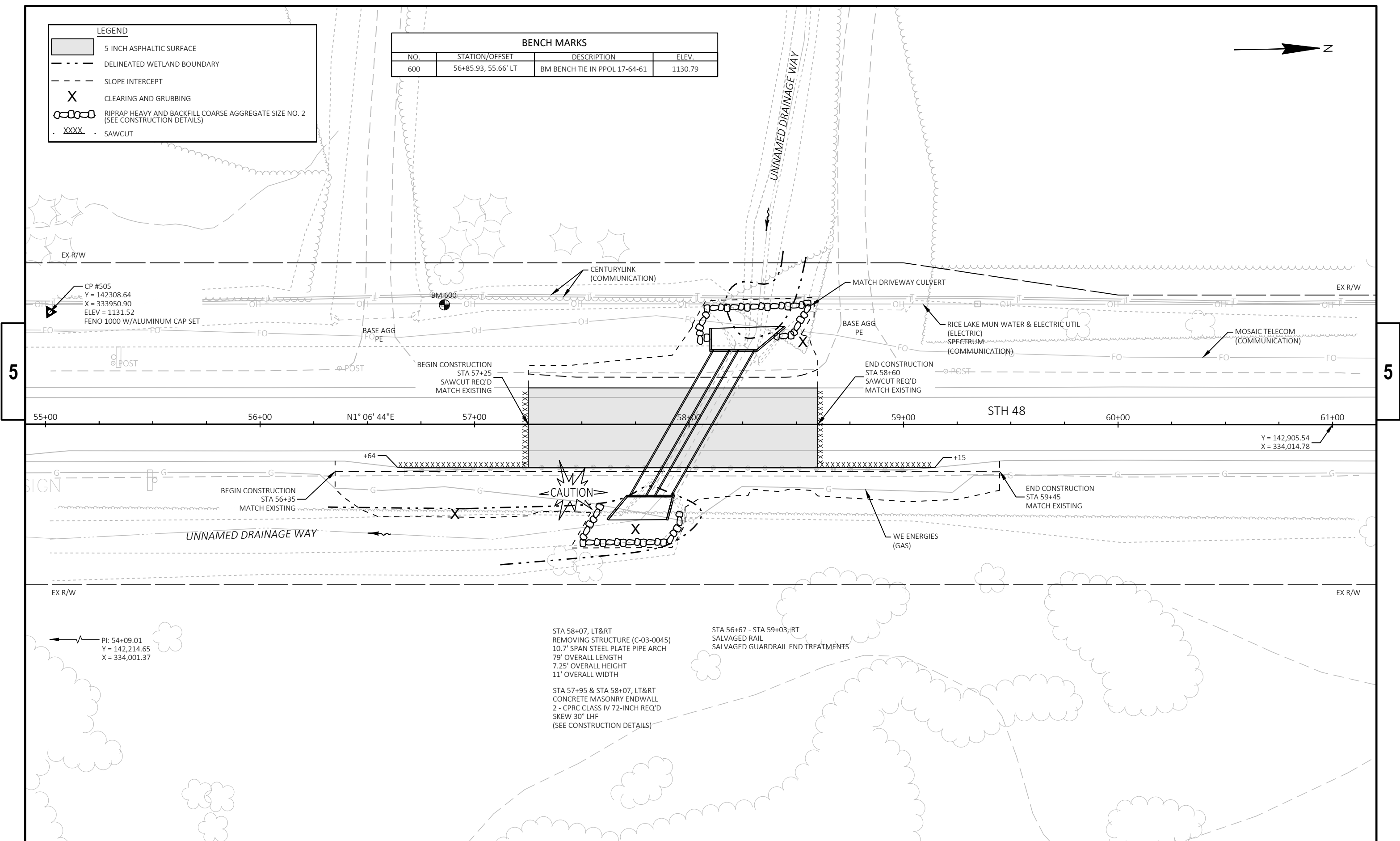


**LEGEND**

- 5-INCH ASPHALTIC SURFACE
- DELINEATED WETLAND BOUNDARY
- SLOPE INTERCEPT
- CLEARING AND GRUBBING
- RIPRAP HEAVY AND BACKFILL COARSE AGGREGATE SIZE NO. 2 (SEE CONSTRUCTION DETAILS)
- SAWCUT

**BENCH MARKS**

NO.	STATION/OFFSET	DESCRIPTION	ELEV.
600	56+85.93, 55.66' LT	BM BENCH TIE IN PPOL 17-64-61	1130.79



5

5

STA 58+07, LT&RT  
REMOVING STRUCTURE (C-03-0045)  
10.7' SPAN STEEL PLATE PIPE ARCH  
79' OVERALL LENGTH  
7.25' OVERALL HEIGHT  
11' OVERALL WIDTH

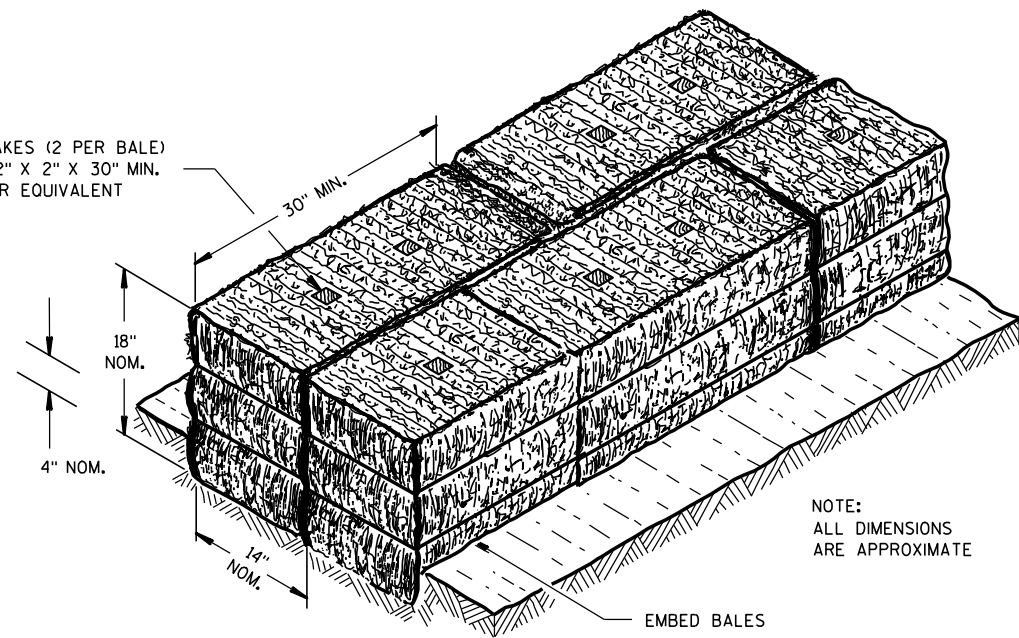
STA 57+95 & STA 58+07, LT&RT  
CONCRETE MASONRY ENDWALL  
2 - C-PRC CLASS IV 72-INCH REQ'D  
SKEW 30° LHF  
(SEE CONSTRUCTION DETAILS)

STA 56+67 - STA 59+03, RT  
SALVAGED RAIL  
SALVAGED GUARDRAIL END TREATMENTS

## Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-02	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C08-21C	PAVEMENT MARKING (TURN LANES)
15C08-21D	PAVEMENT MARKING (TURN LANES)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-05A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

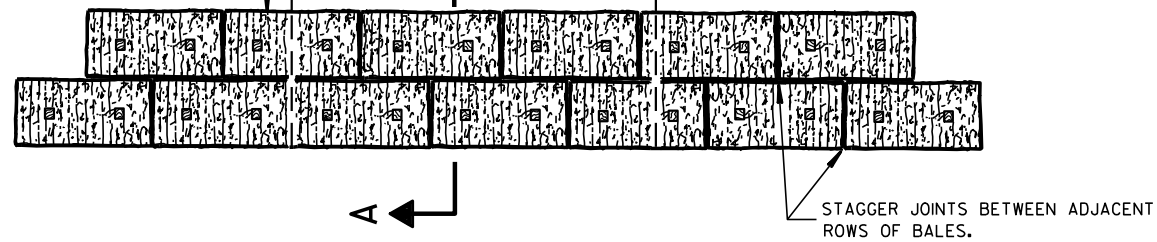
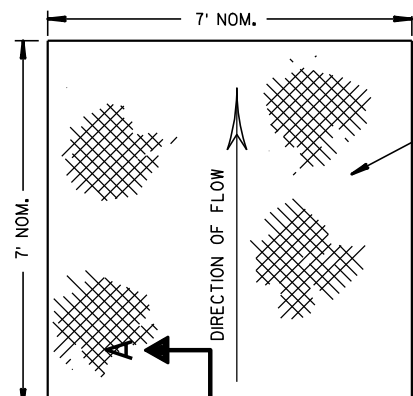
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

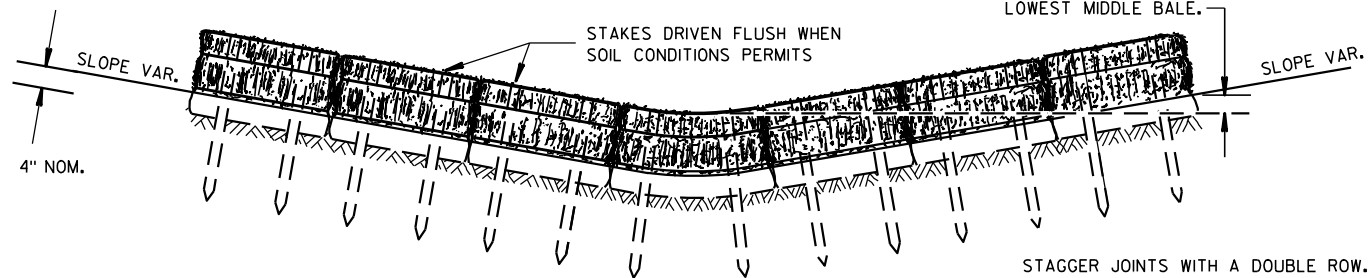
EMBED BALES

SECTION A-A



PLAN VIEW

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



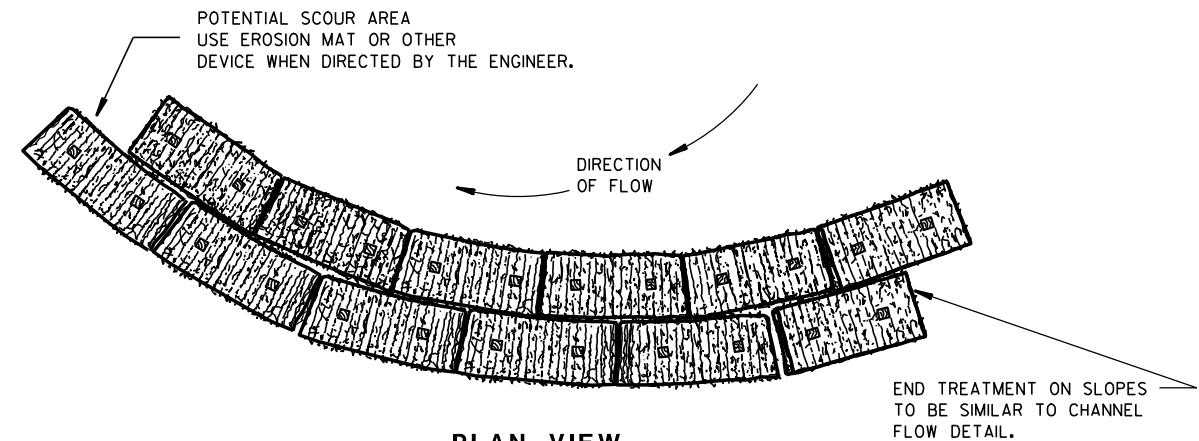
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

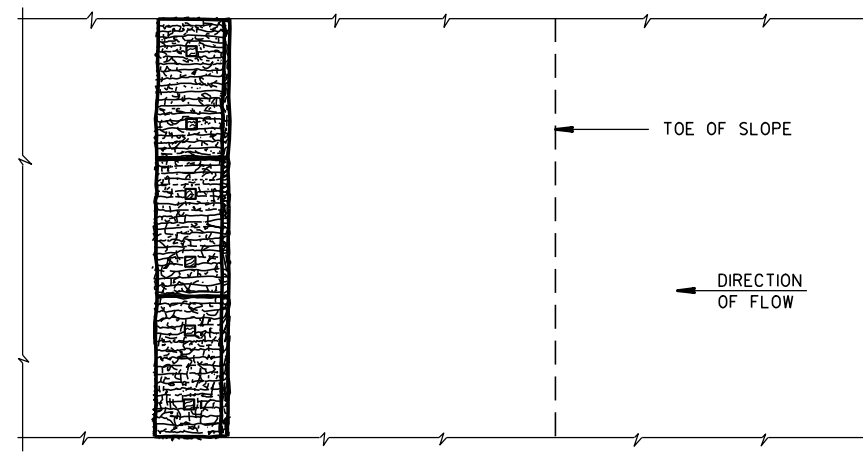
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

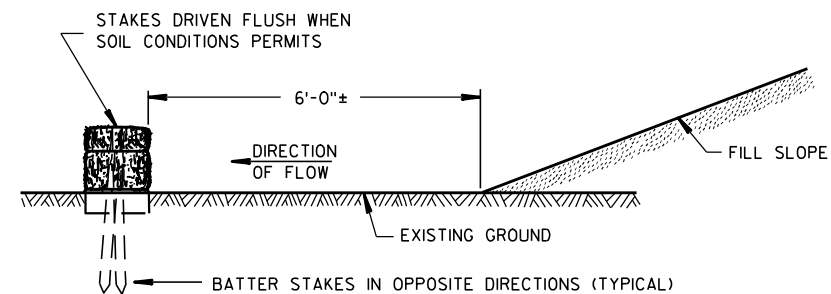


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

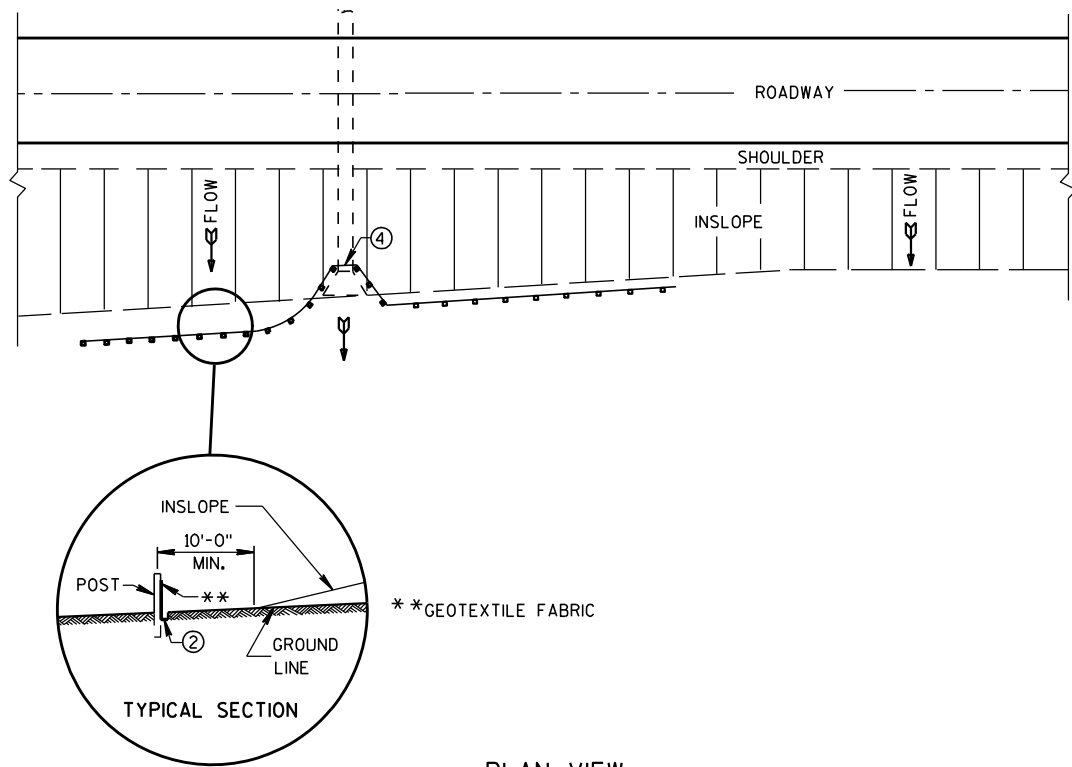
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

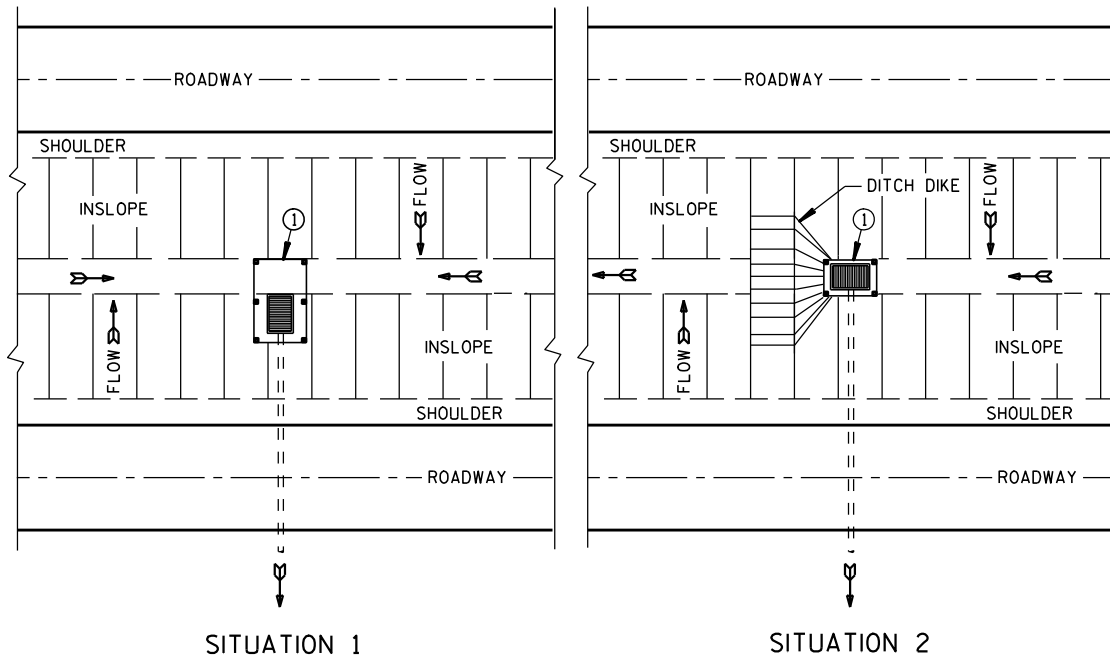
TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

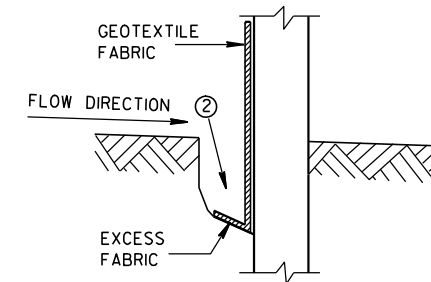


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

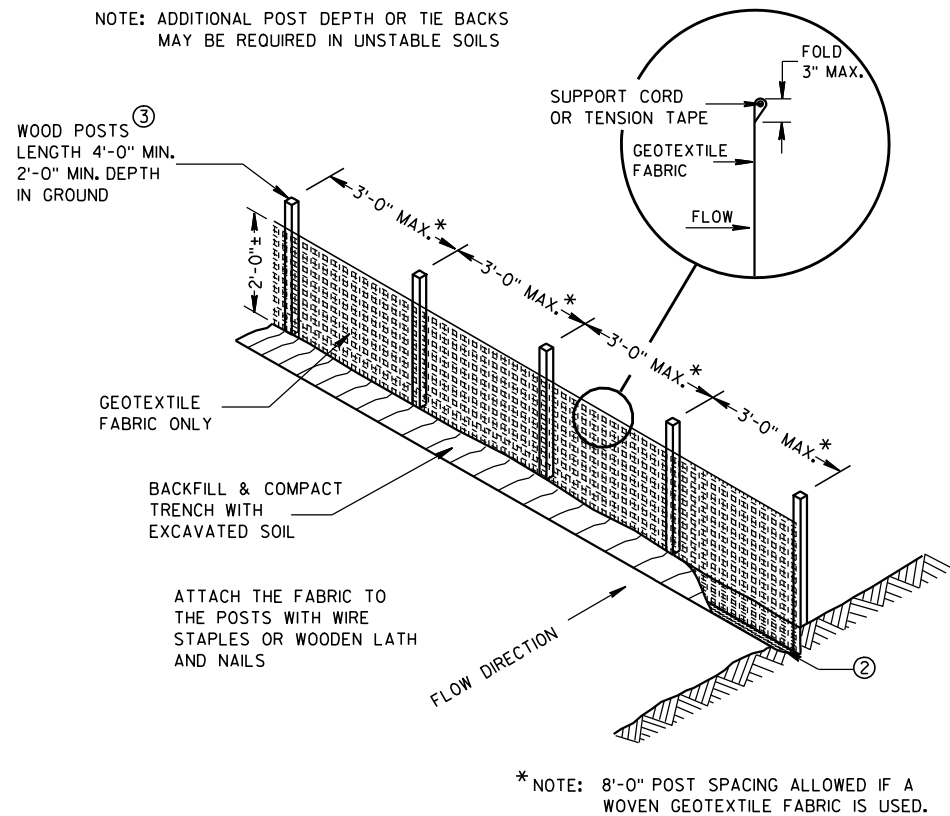
**GENERAL NOTES**

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

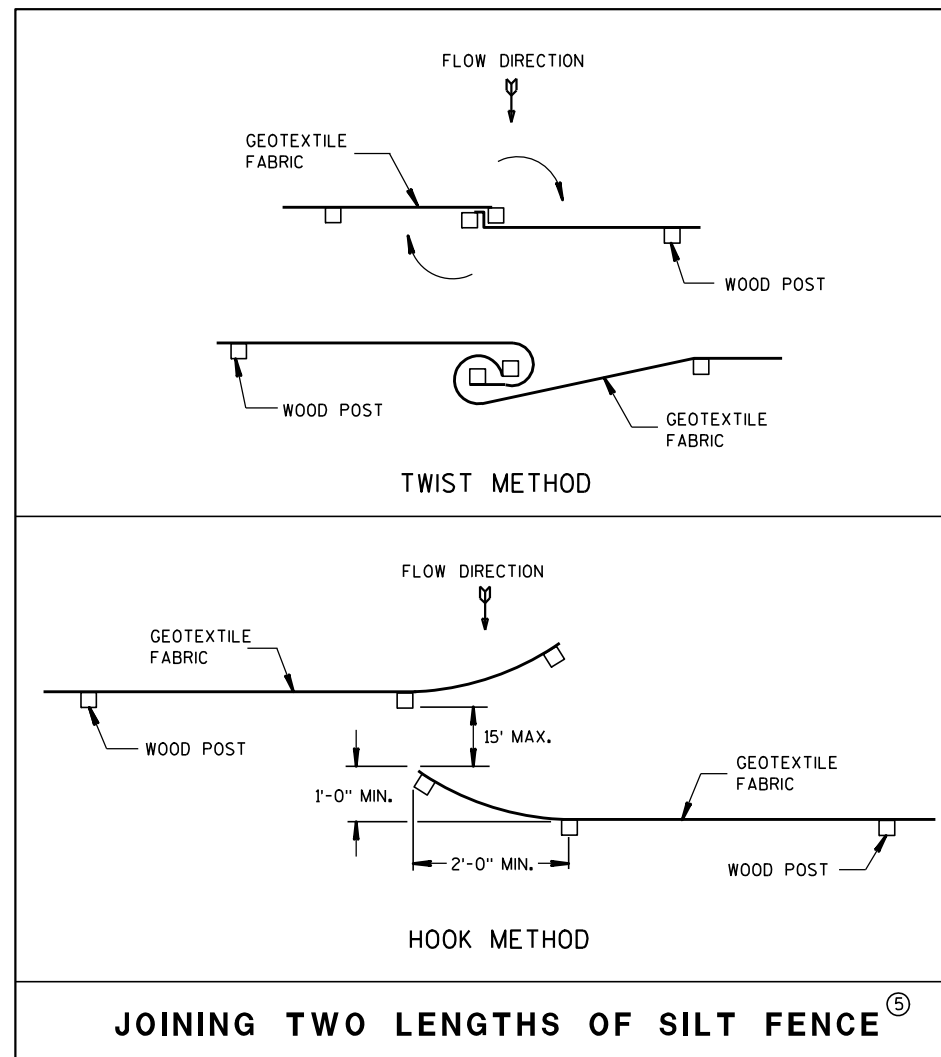
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



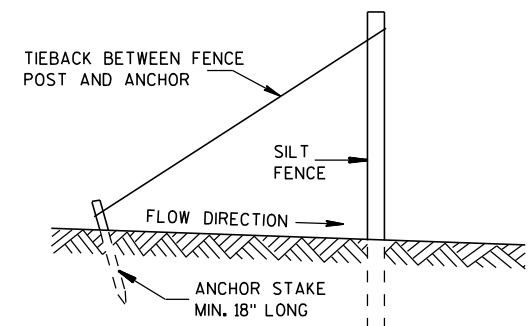
TRENCH DETAIL



SILT FENCE

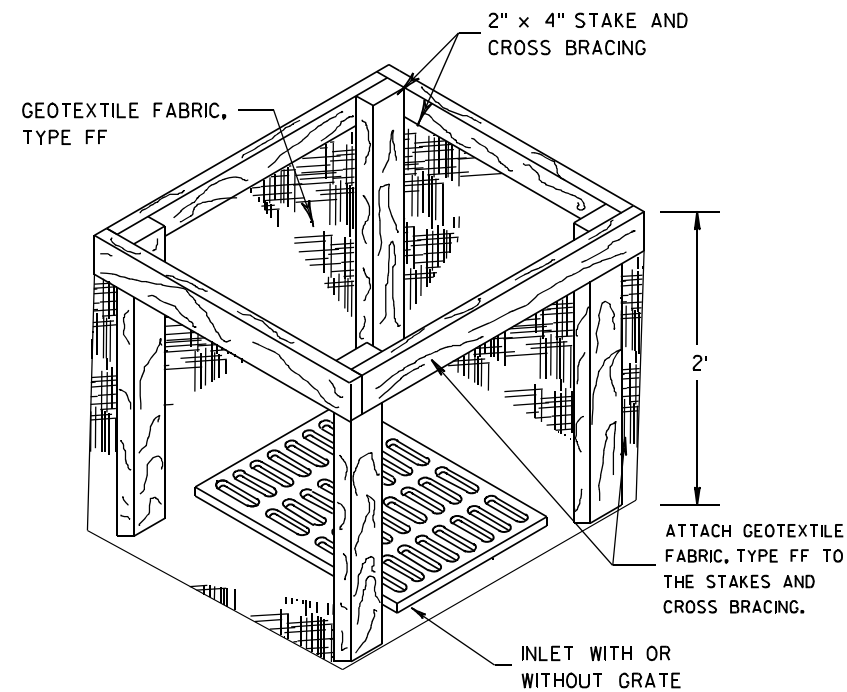
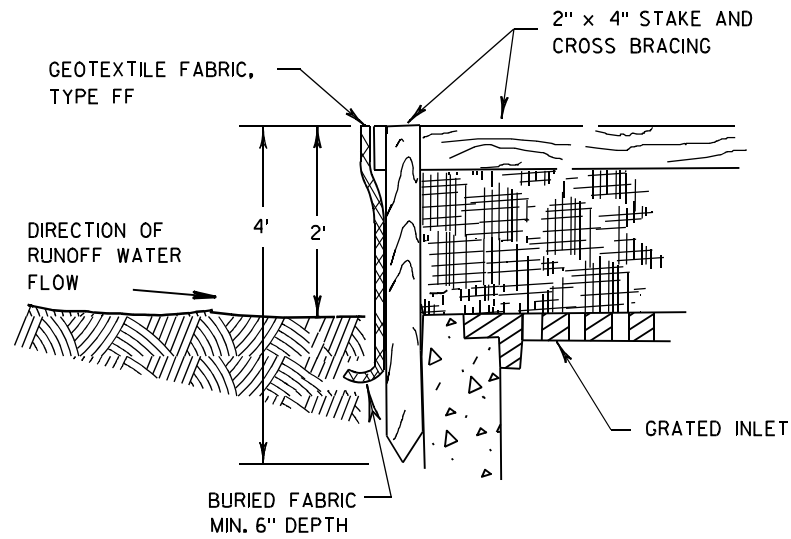


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

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



**INLET PROTECTION, TYPE A**

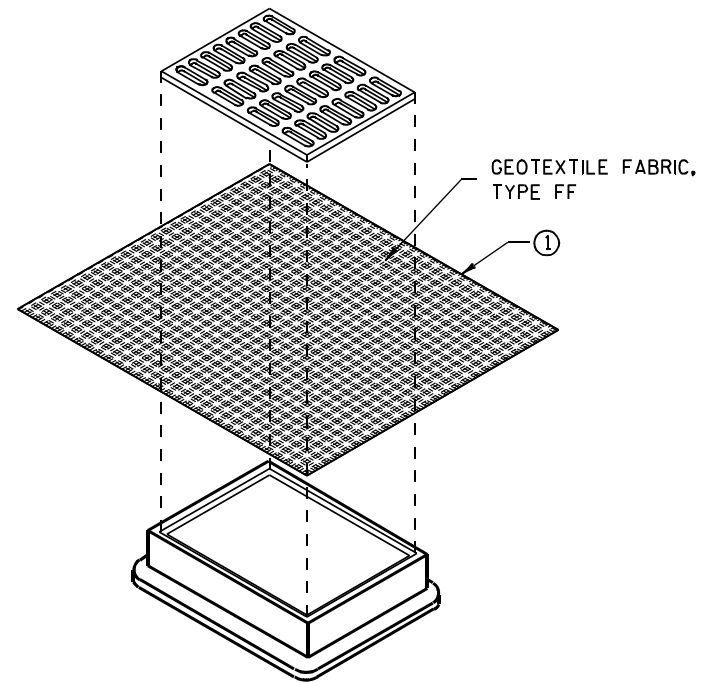
**GENERAL NOTES**

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

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

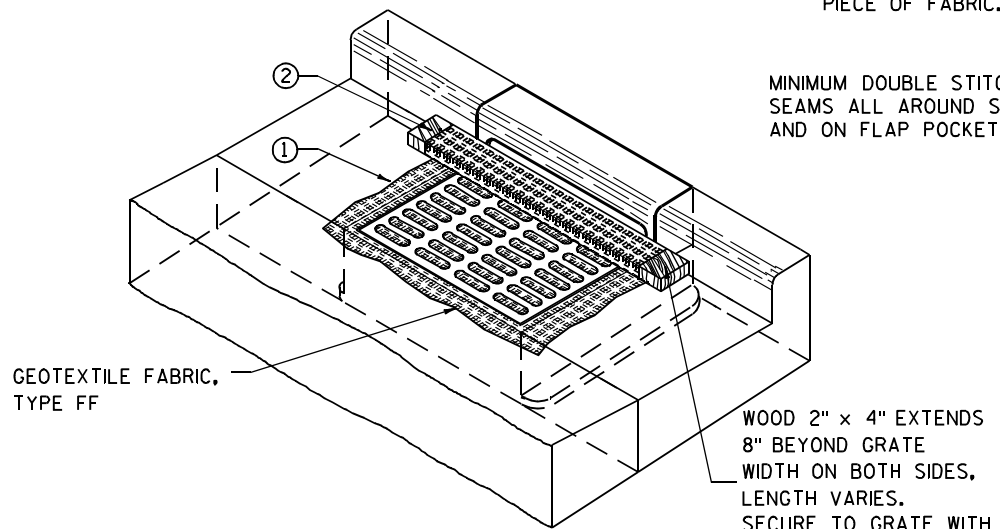
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

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

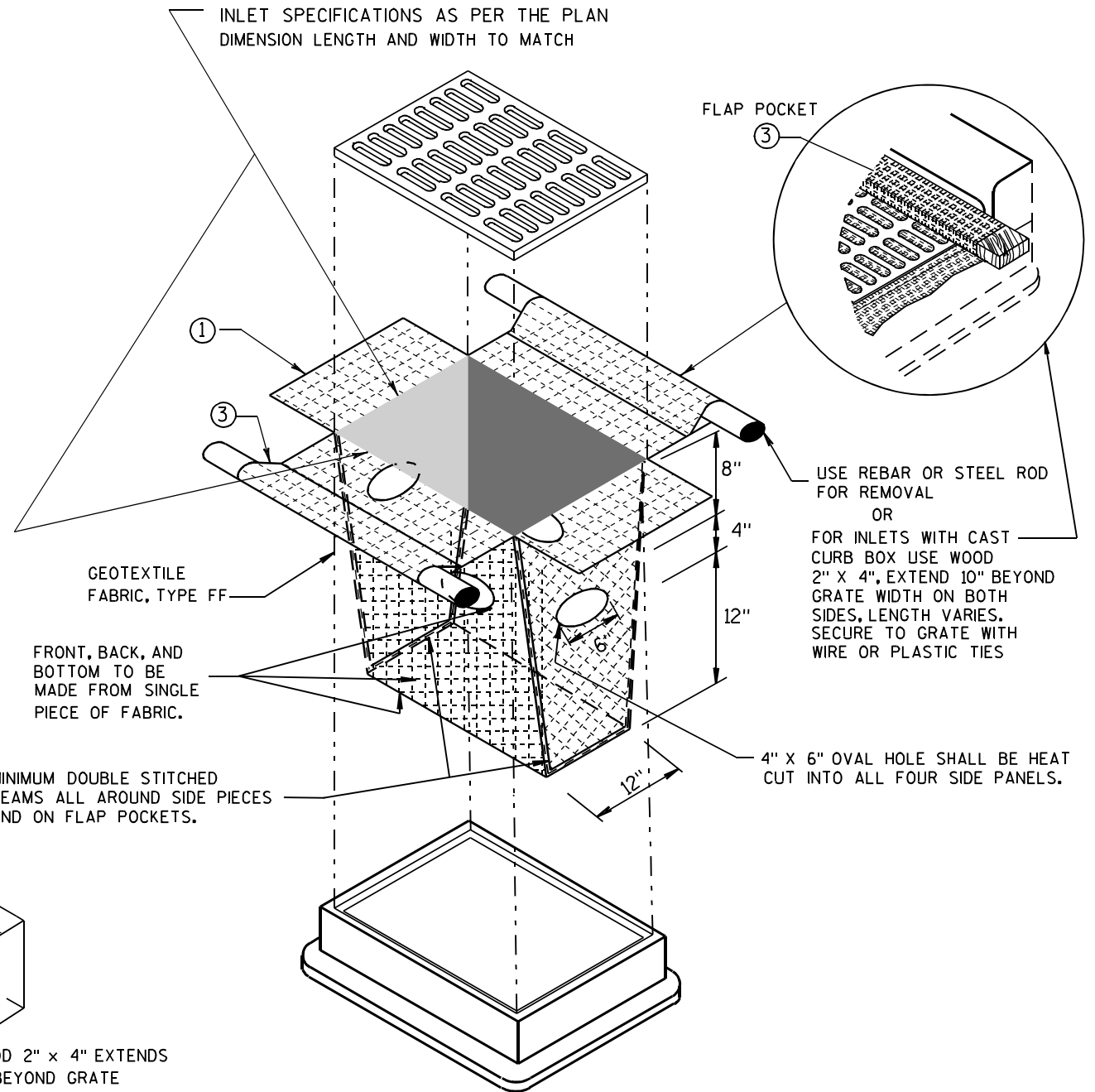
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

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

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

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



**INLET PROTECTION, TYPE D**

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

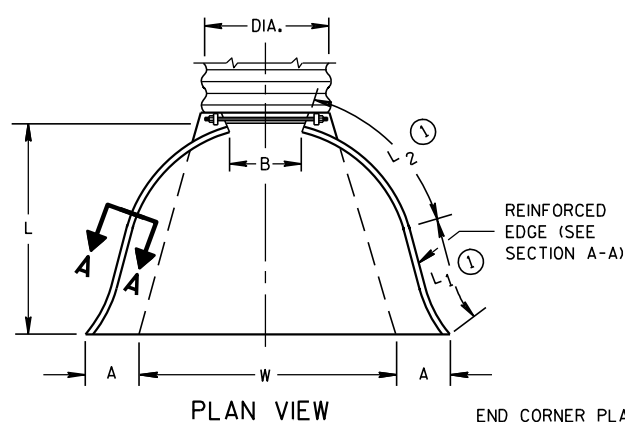
<b>INLET PROTECTION TYPE A, B, C, AND D</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/s/ Beth Connestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L1	L2	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

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

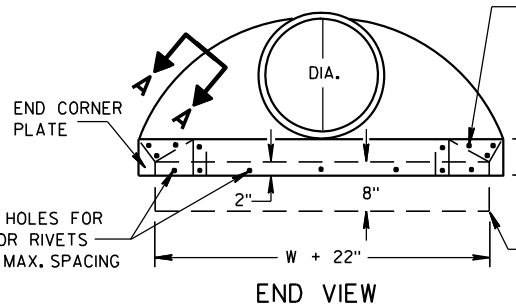
\* MINIMUM  
\*\* MAXIMUM



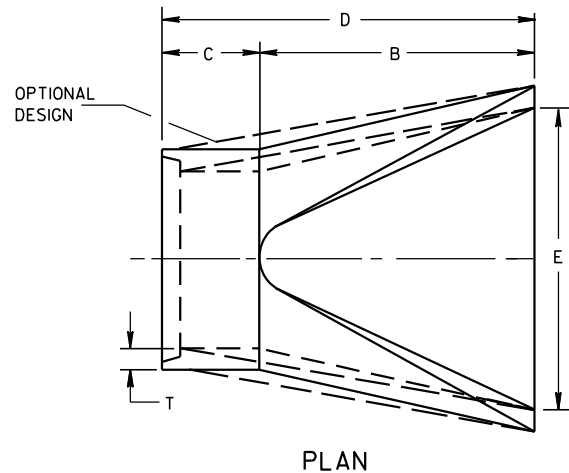
REINFORCED EDGE (SEE SECTION A-A)

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

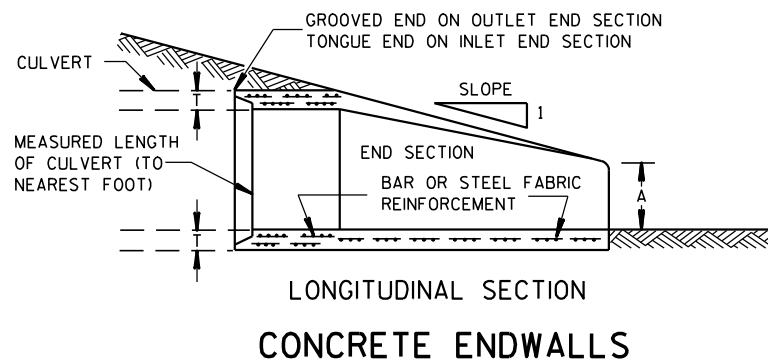
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION  
METAL ENDWALLS

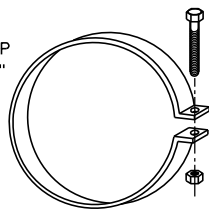


END VIEW

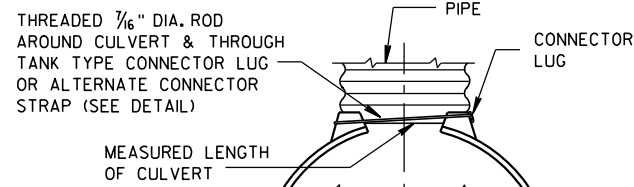


LONGITUDINAL SECTION  
CONCRETE ENDWALLS

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



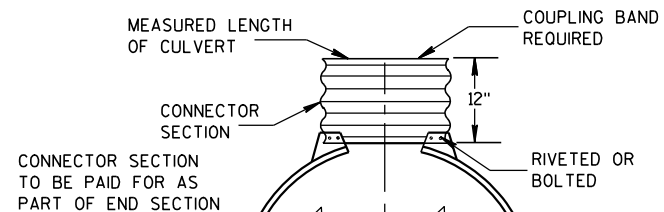
ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



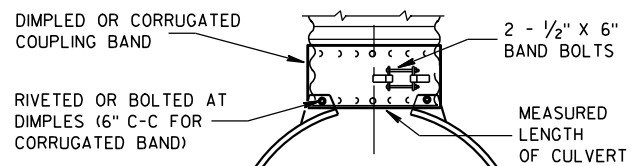
TYPE 1  
FOR 12" THRU 24" CORR. PIPE



TYPE 2  
FOR 30" THRU 96" CORR. PIPE



TYPE 3  
FOR 42" THRU 96" CORR. PIPE



TYPE 5

ALTERNATE FOR:  
ALL SIZES CORRUGATED CIRCULAR PIPE

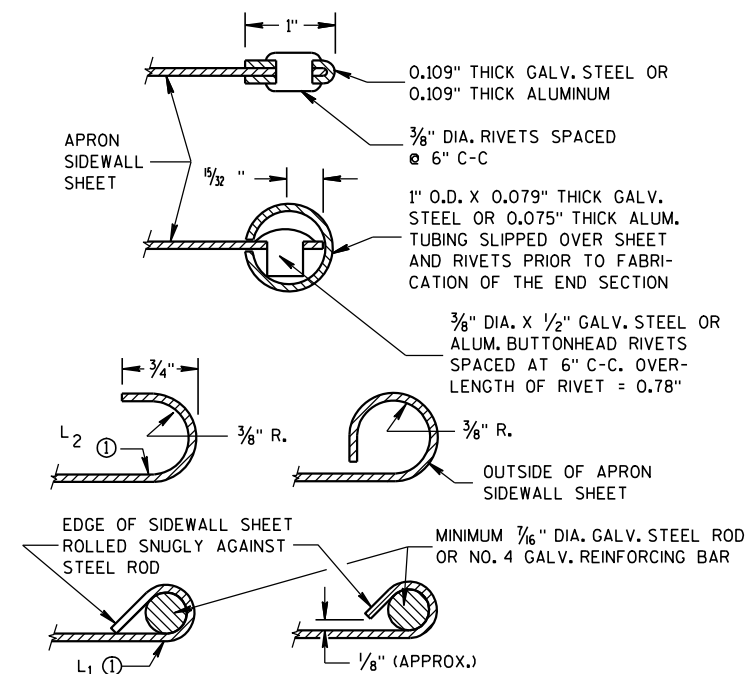
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE 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.

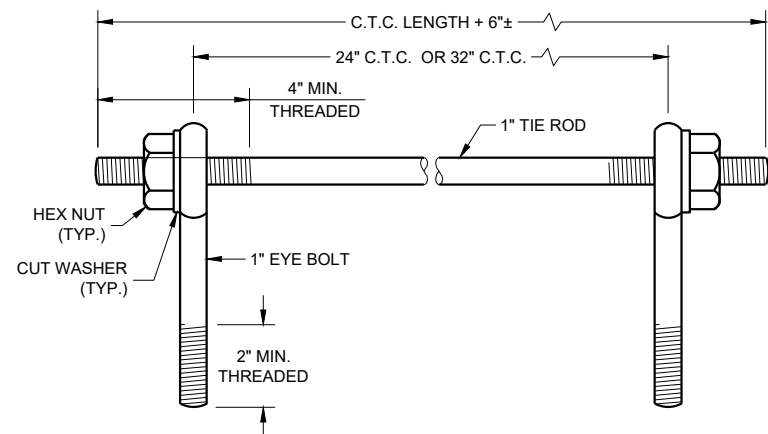
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

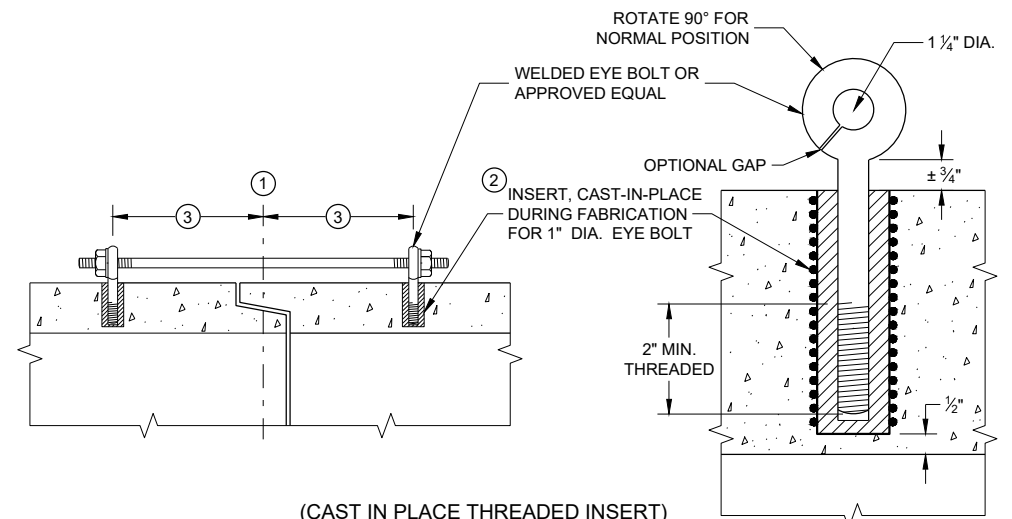
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**EYE BOLTS AND TIE ROD**

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)**



(CAST IN PLACE THREADED INSERT)  
**LONGITUDINAL SECTIONS**

**GENERAL NOTES**

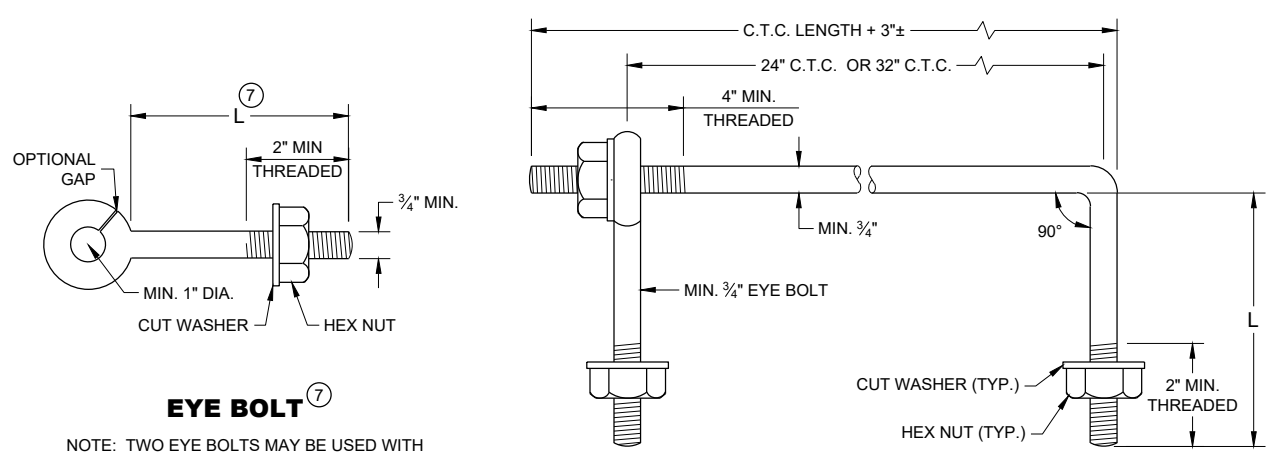
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

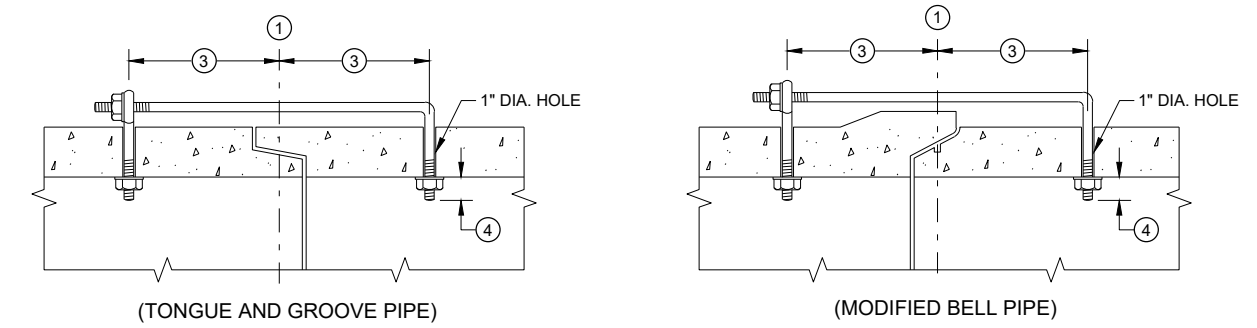
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.



**EYE BOLT** ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.

**EYE BOLT AND TIE ROD**



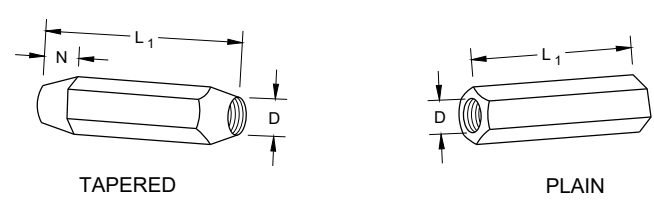
**LONGITUDINAL SECTION**  
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)**

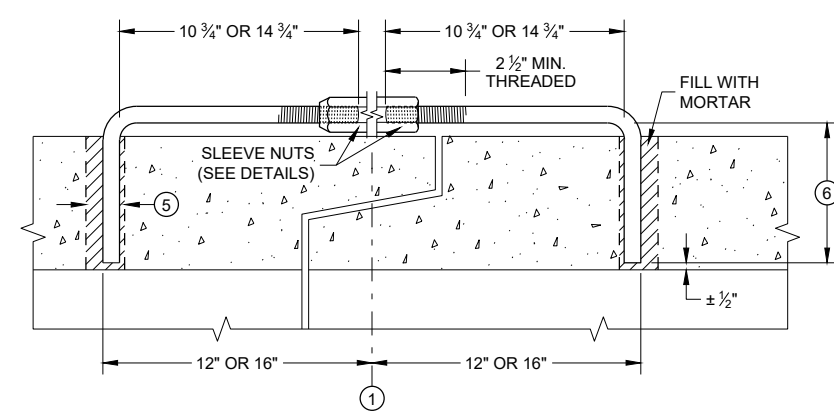
**ADJUSTABLE TIE ROD TABLE**

PIPE DIAMETER	TIE ROD DIAMETER	D	L <sub>1</sub>	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 7/16

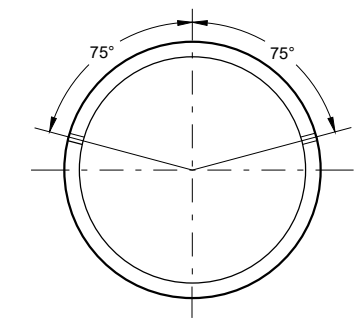
DIMENSIONS SHOWN ARE IN INCHES



**RIGHT AND LEFT THREADS SLEEVE NUTS**

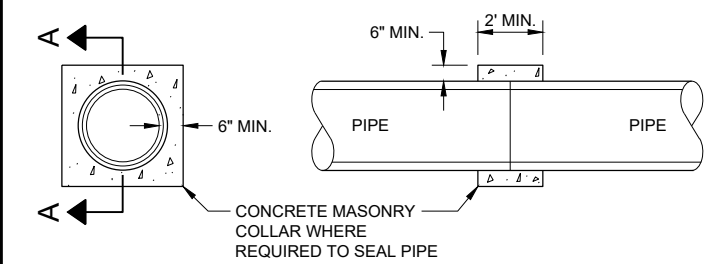


**LONGITUDINAL SECTION**  
**ADJUSTABLE TIE ROD (ALTERNATE NO. 3)**



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

**TRANSVERSE SECTION**



**SECTION A - A**  
**CONCRETE COLLAR DETAIL**

**JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

**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.

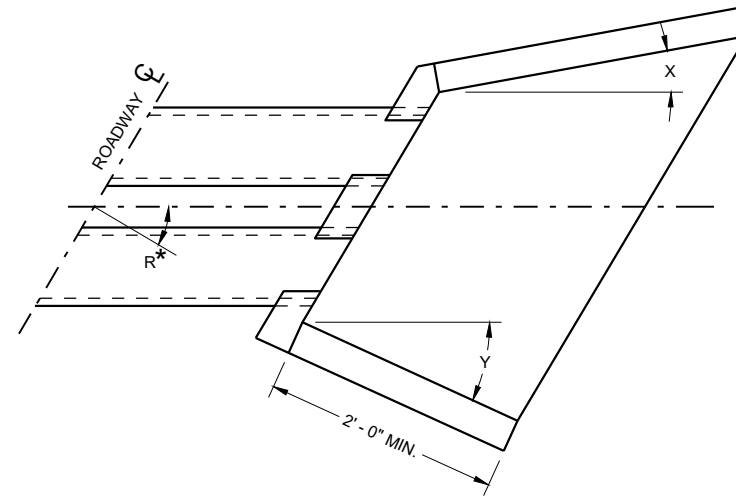
ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

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:

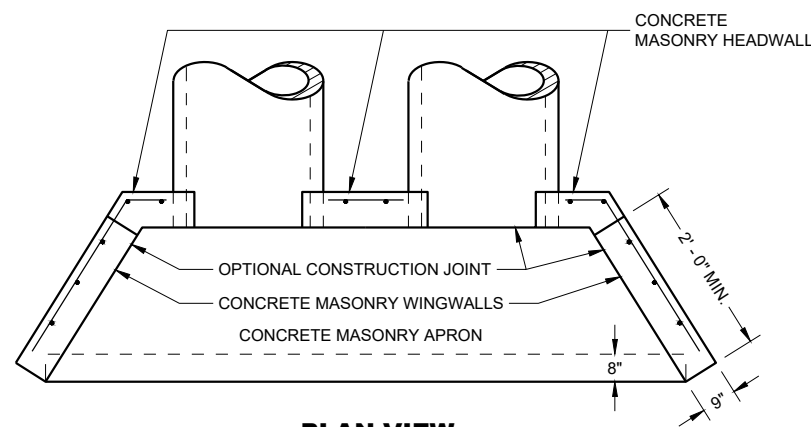
DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2' - 0"
OVER 48" TO 72"	1/2 DIA. OR SPAN
OVER 72"	3' - 0"

- ③ LIMITS OF TRENCH BACKFILL
- ④ LIMITS OF FOUNDATION BACKFILL
- ⑤ FOUNDATION AND TRENCH BACKFILL ARE MATERIALS INCLUDED IN PAYMENT FOR CULVERT PIPE, PIPE ARCH, CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPSE OR CONCRETE MASONRY ENDWALLS.
- ⑥ DO NOT PLACE FOUNDATION BACK FILL OR ANY OTHER GRANULAR BACKFILL AROUND OR BELOW CUT OFF WALL. POUR CUT OFF WALL AGAINST NATIVE SOIL.
- ⑦ MINIMUM HEIGHT SHALL BE THE GREATER OF 1'- 0" OR 1/4 HEIGHT OF CULVERT PIPE.

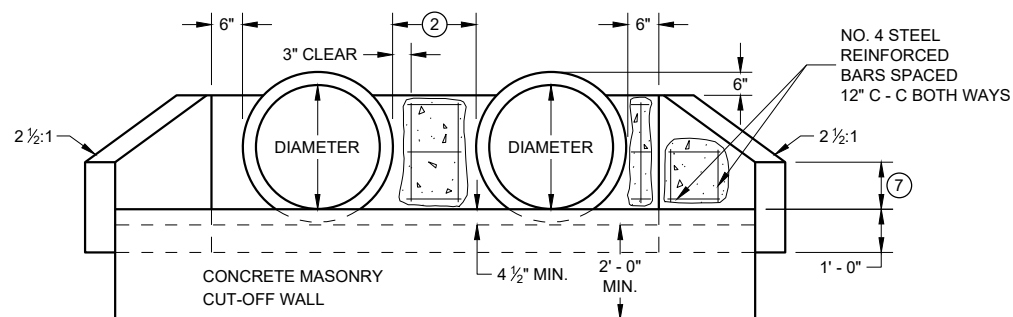


INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	30°	16 - 45°	10°	15°
23 - 37°	20°	30°	46 - 75°	5°	15°
38 - 52°	15°	30°	OVER 75°	0°	15°
53 - 67°	10°	30°			
68 - 82°	5°	30°			
OVER 82°	0°	30°			

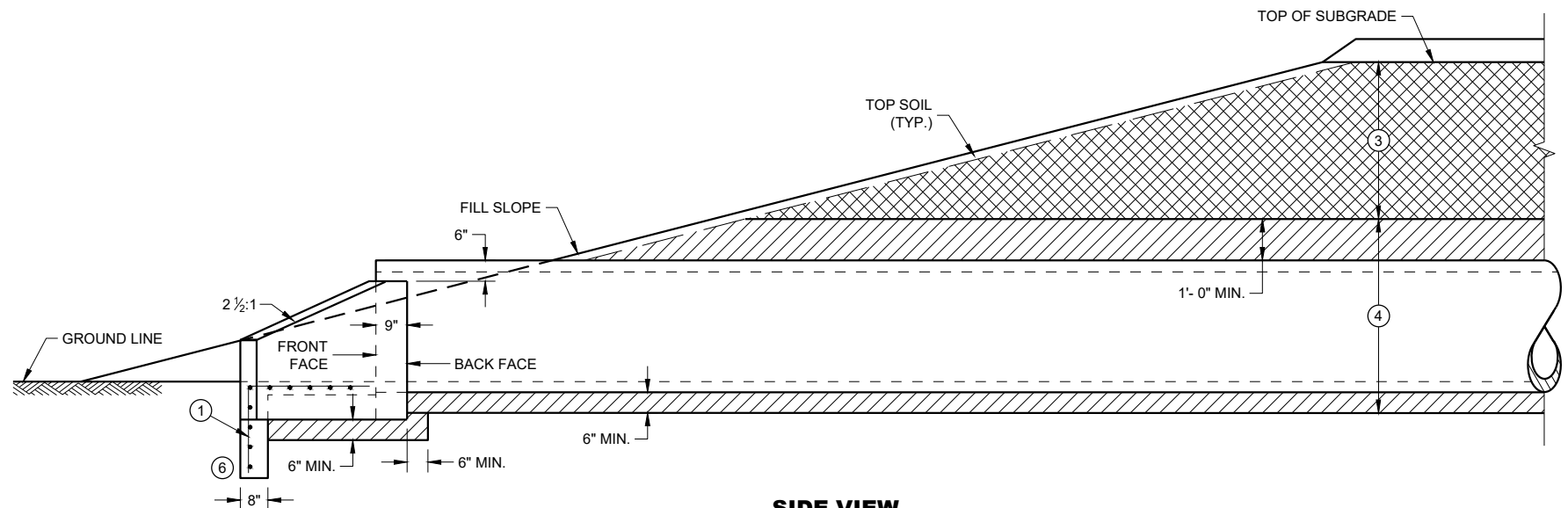
R\* = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD



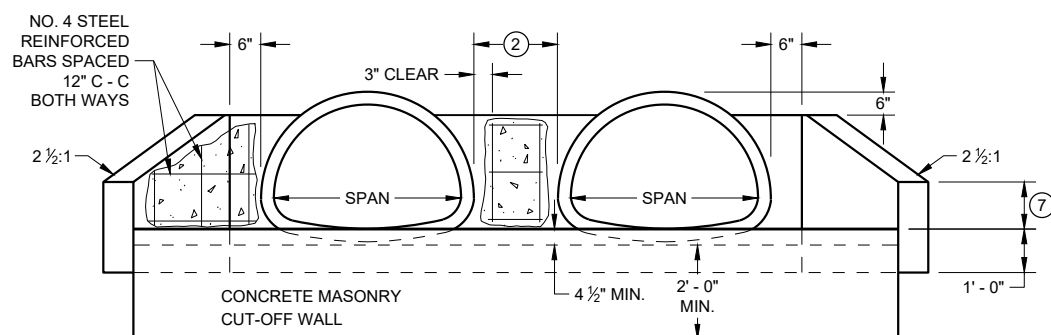
**PLAN VIEW**



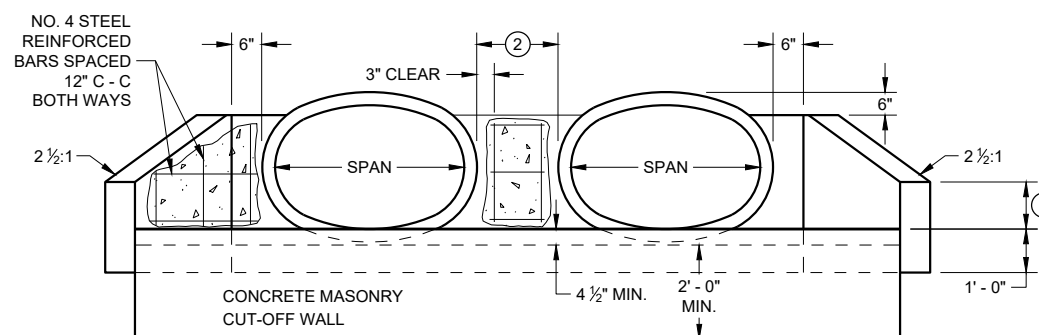
**END VIEW  
CIRCULAR PIPE**



**SIDE VIEW  
CIRCULAR PIPE, PIPE ARCH OR HORIZONTAL ELLIPSE**



**END VIEW  
PIPE ARCH**



**END VIEW  
HORIZONTAL ELLIPSE**

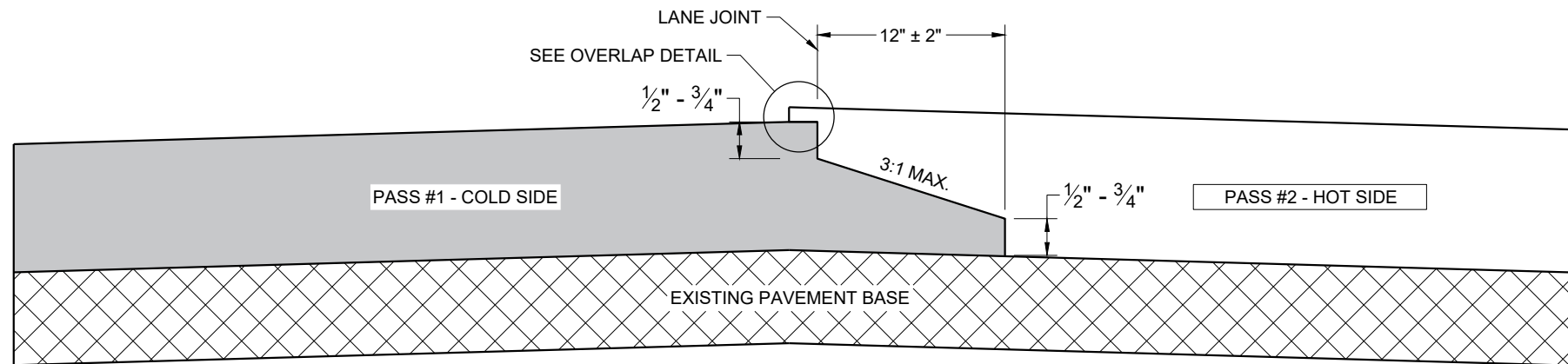
**CONCRETE MASONRY  
ENDWALLS FOR CULVERT  
PIPE AND PIPE ARCH**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

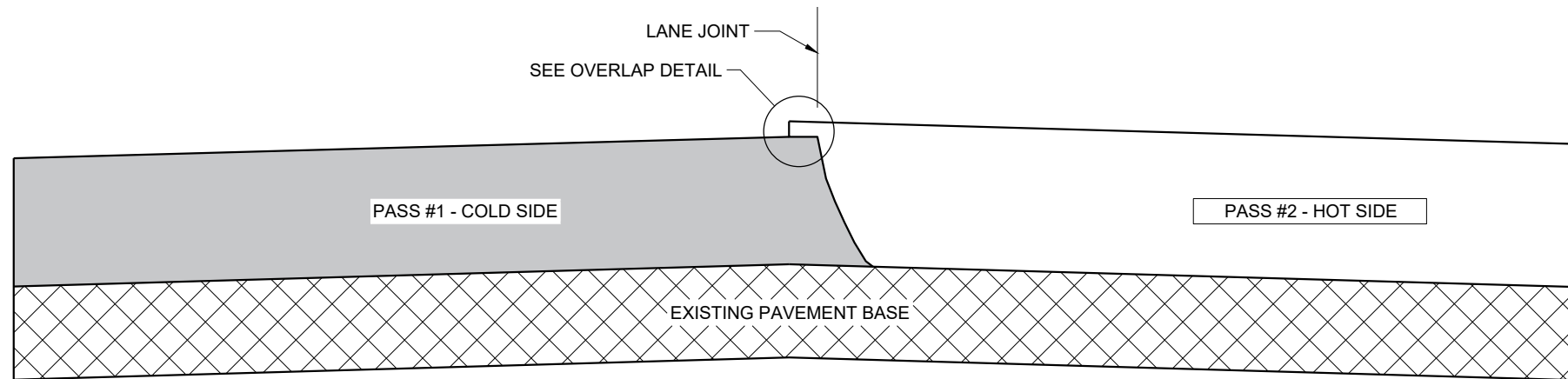
APPROVED  
May 2022 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA

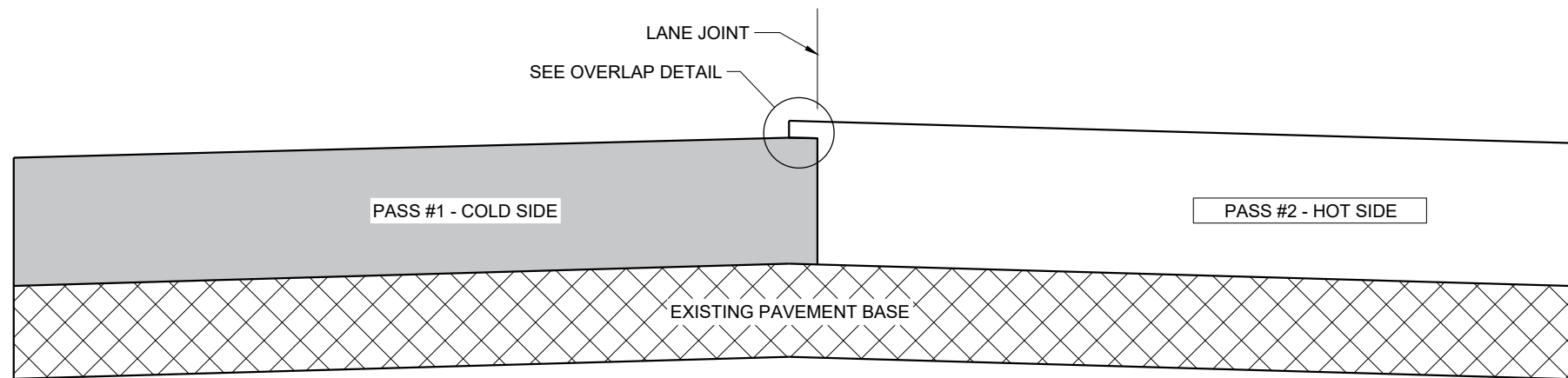




**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



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

**GENERAL NOTES**

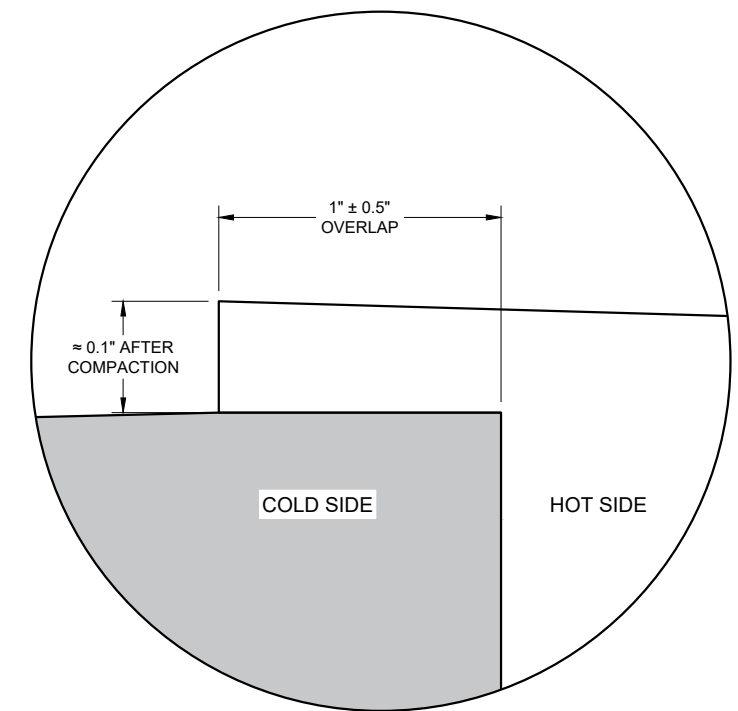
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



**OVERLAP DETAIL (TYPICAL)**

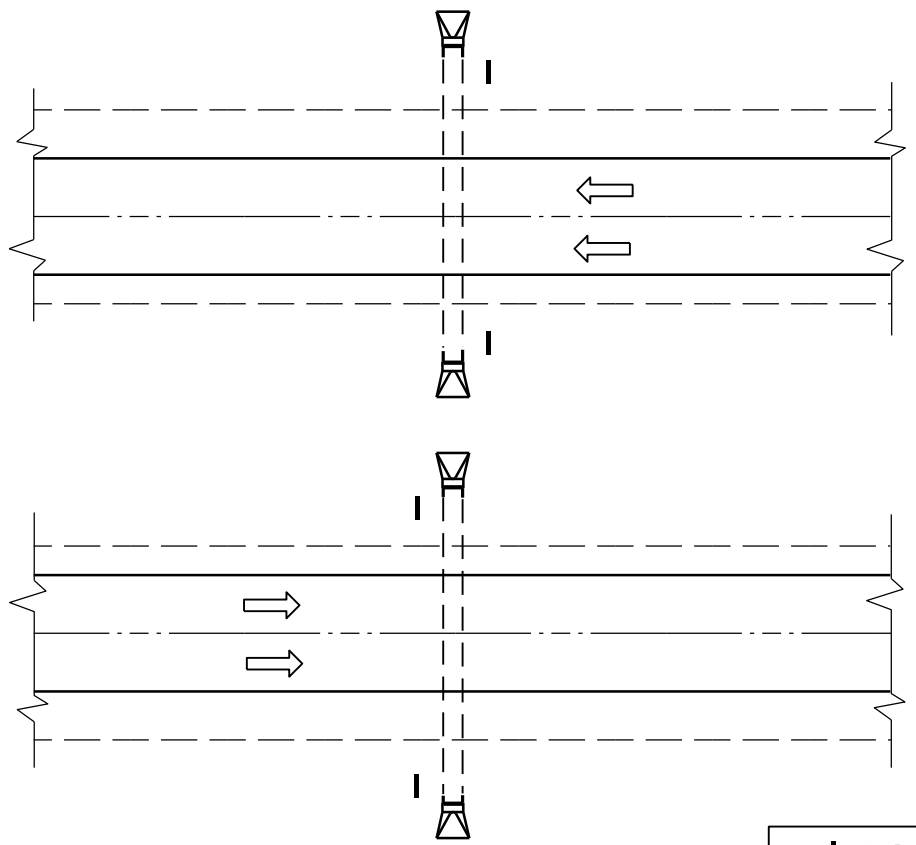
6

6

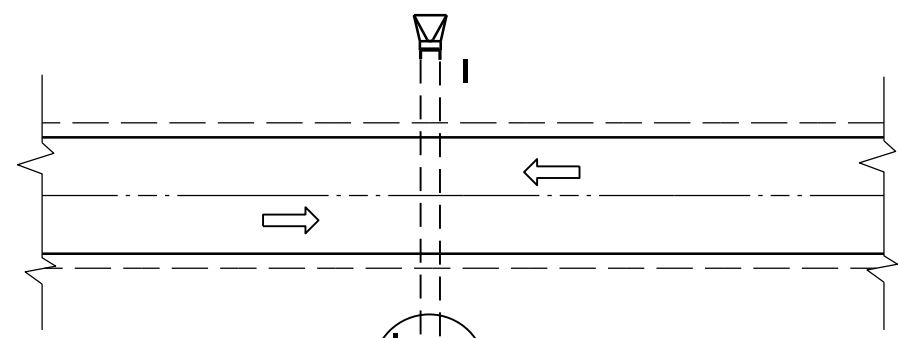
SDD 13C19 - 03

SDD 13C19 - 03

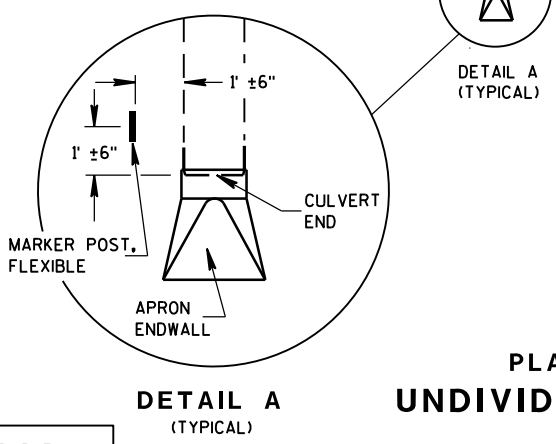
<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



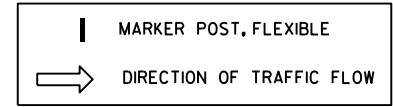
PLAN VIEW  
DIVIDED HIGHWAY



PLAN VIEW  
UNDIVIDED HIGHWAY

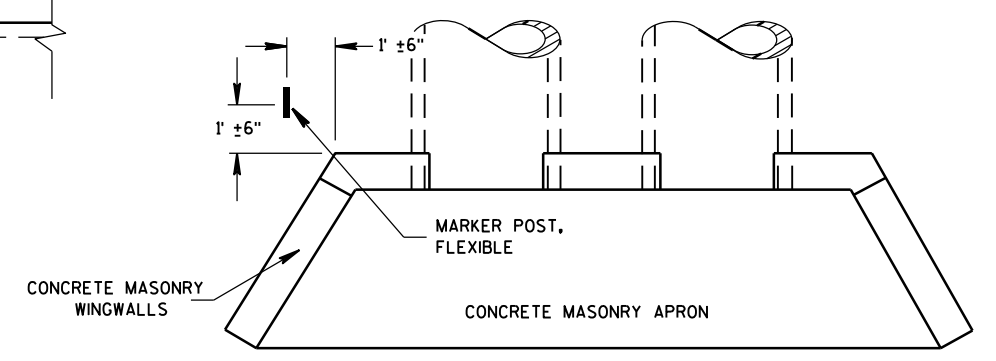


DETAIL A  
(TYPICAL)



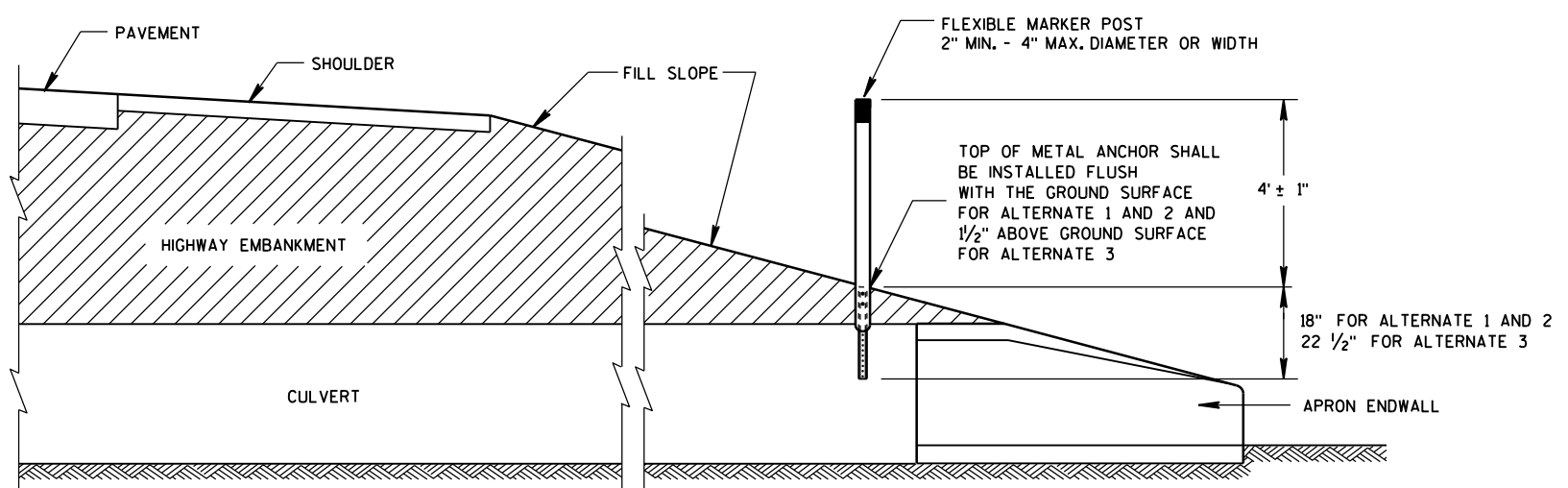
**GENERAL NOTES**

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



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

**FLEXIBLE MARKER POST LOCATION**



CROSS SECTION  
FLEXIBLE MARKER POST

**FLEXIBLE MARKER POST  
FOR CULVERT END**

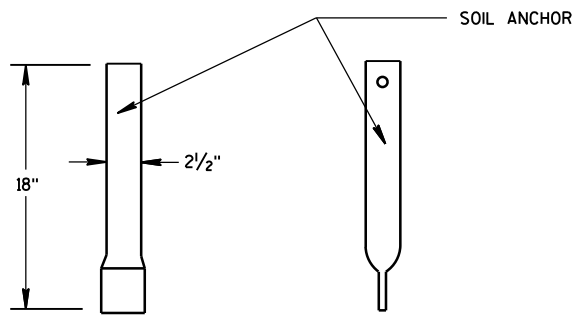
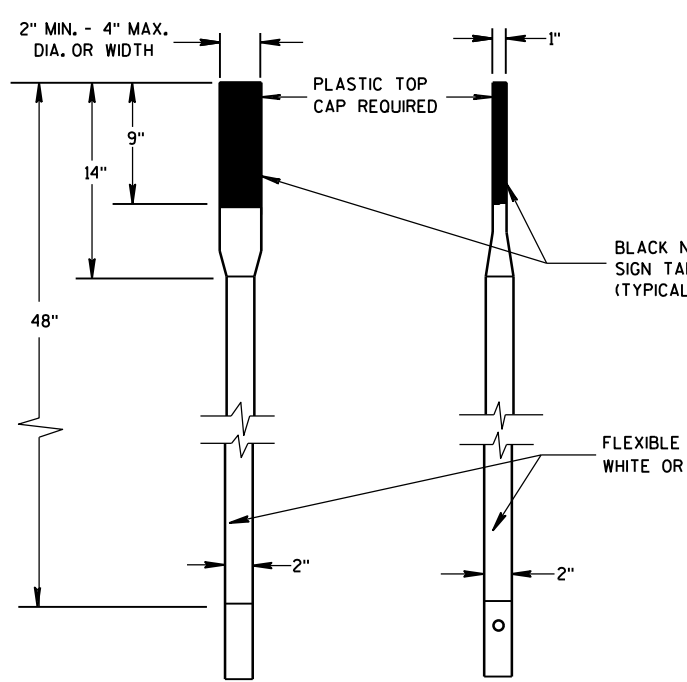
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

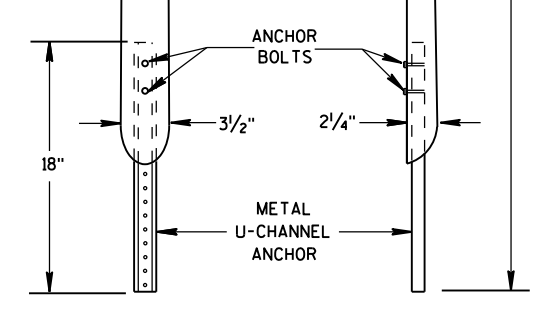
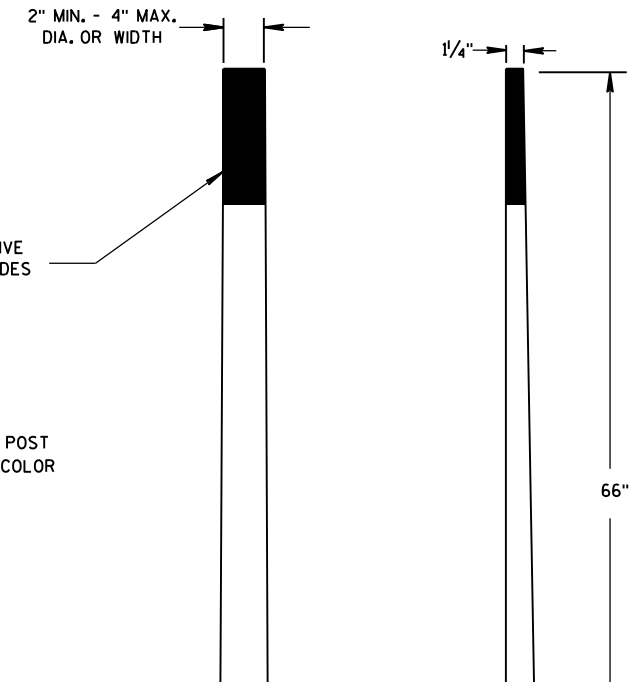
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S.D.D. 15 A 3-2a

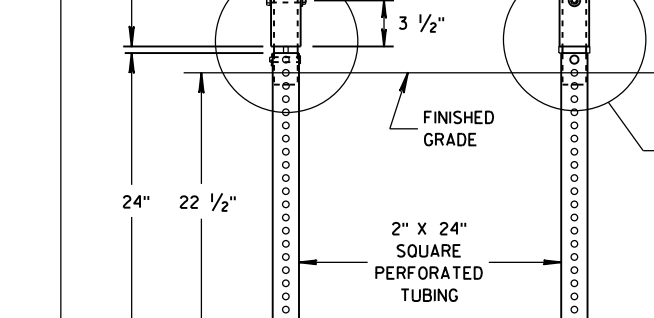
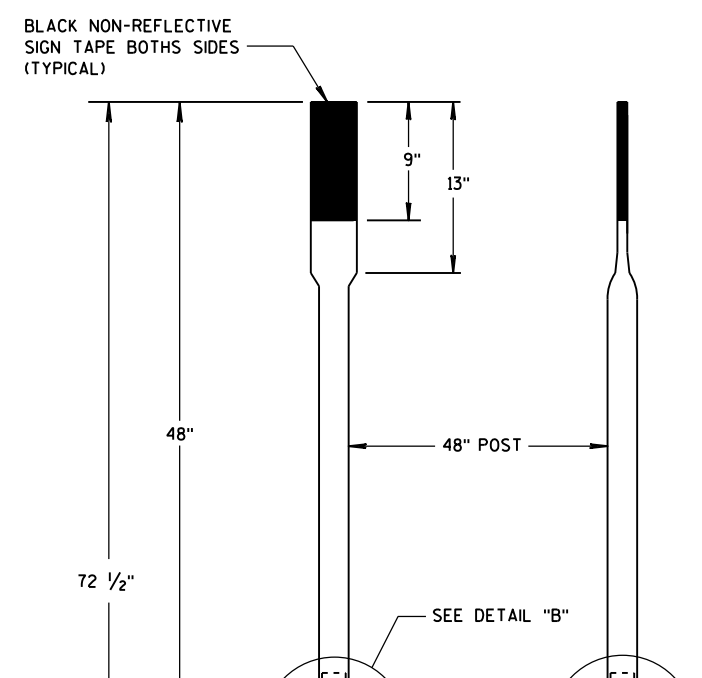
S.D.D. 15 A 3-2a



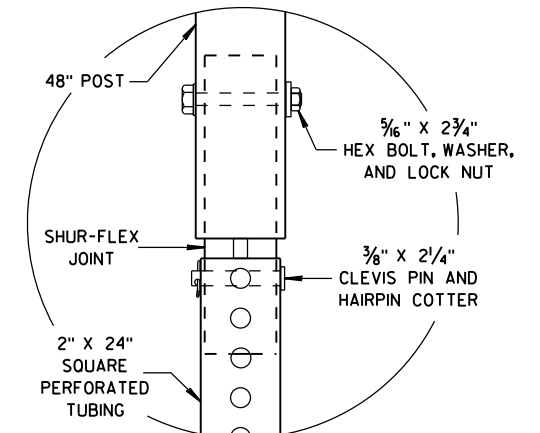
FRONT VIEW SIDE VIEW  
ALTERNATE 1



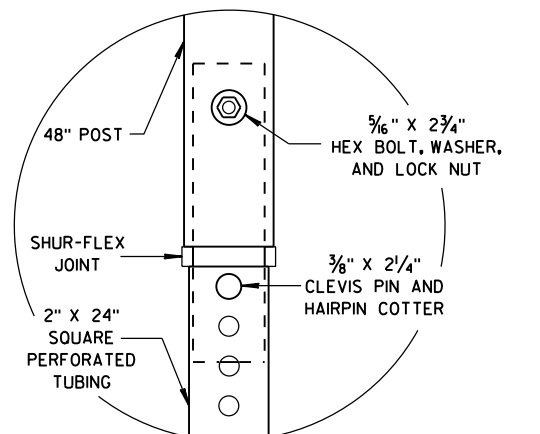
FRONT VIEW SIDE VIEW  
ALTERNATE 2



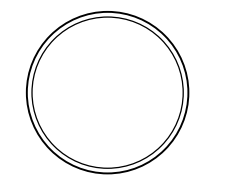
FRONT VIEW SIDE VIEW  
ALTERNATE 3



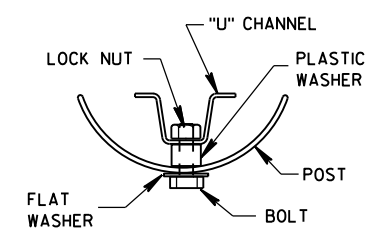
DETAIL B



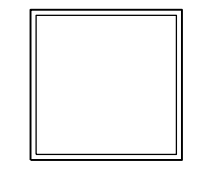
DETAIL C



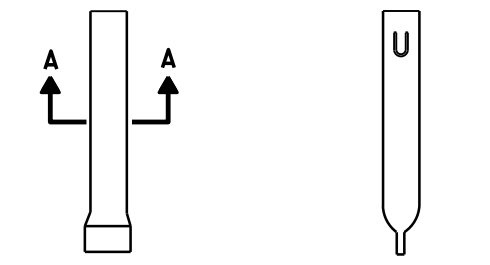
SECTION A-A



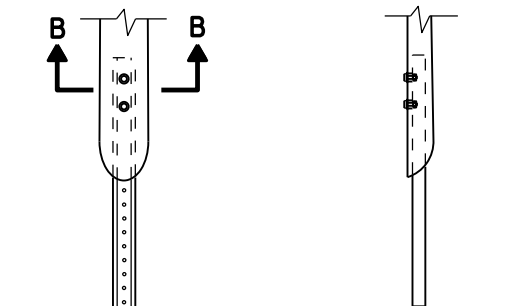
SECTION B-B



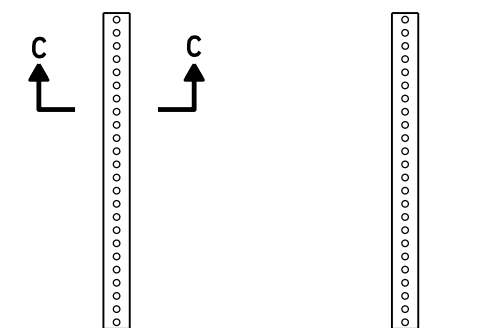
SECTION C-C



FRONT VIEW SIDE VIEW  
ALTERNATE 1



FRONT VIEW SIDE VIEW  
ALTERNATE 2



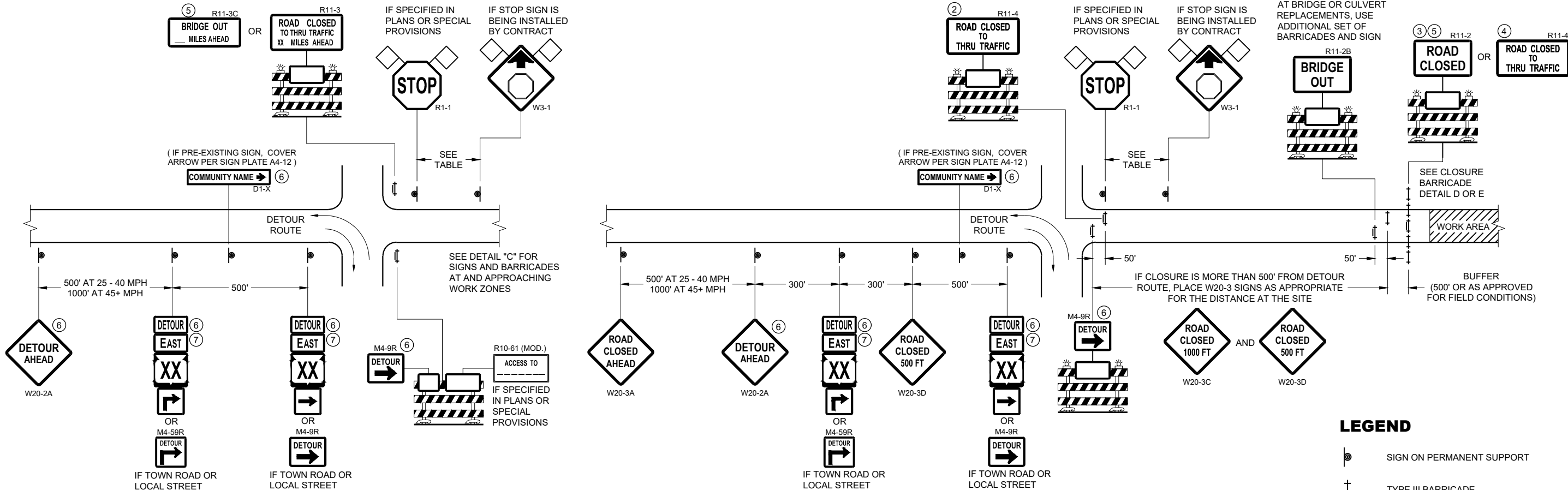
FRONT VIEW SIDE VIEW  
ALTERNATE 3

**FLEXIBLE MARKER POST ANCHORS**

**FLEXIBLE MARKER POST FOR CULVERT END**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

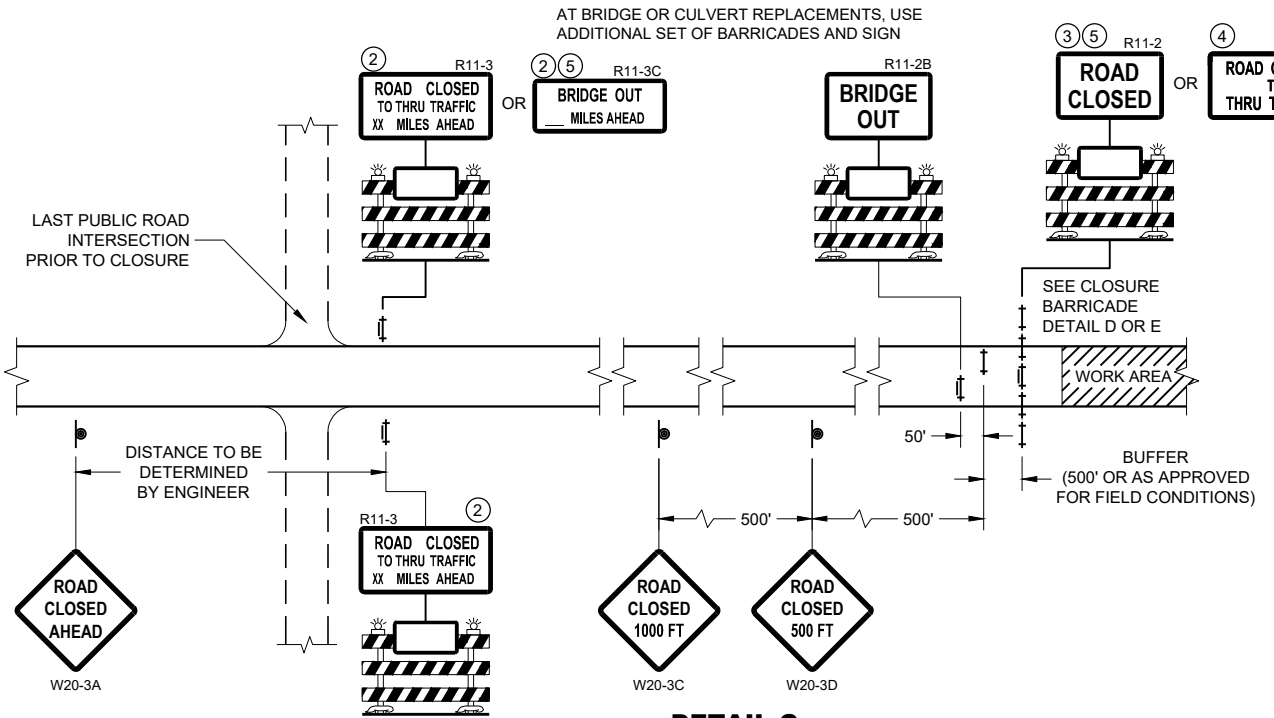
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- OR OR M1 - 4 M1 - 6 M1 - 5A
- OR M05 - 1 M06 - 1



**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

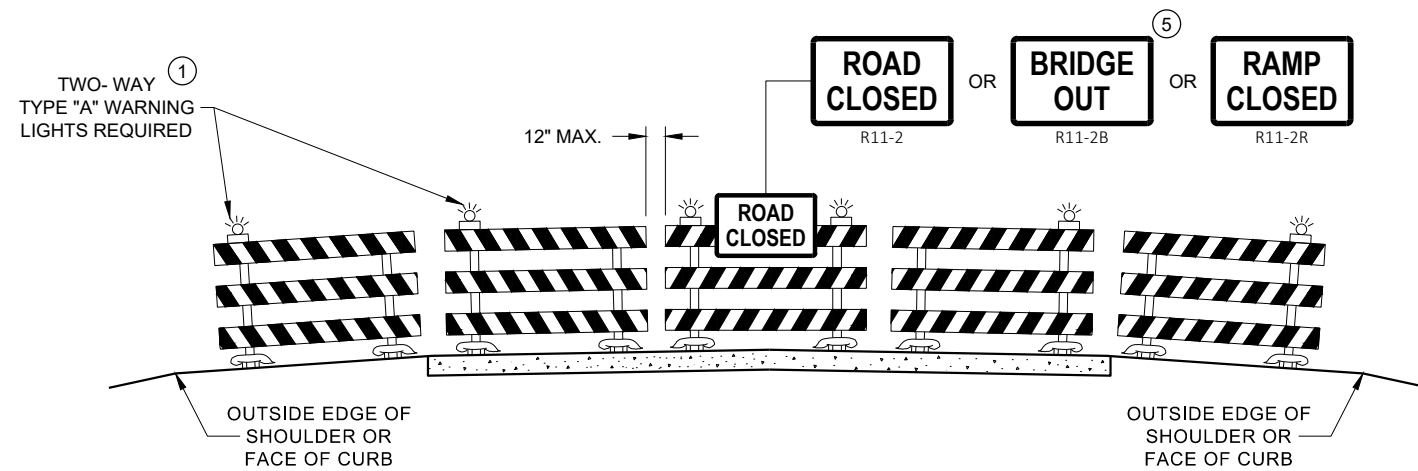
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

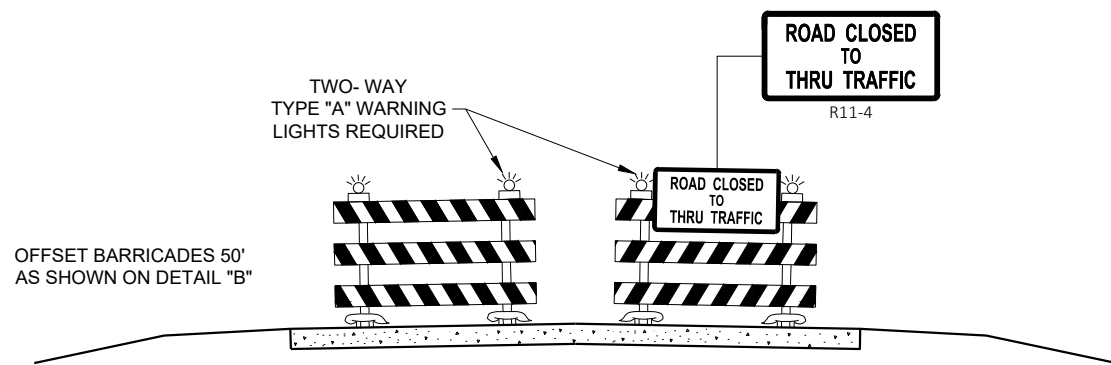
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

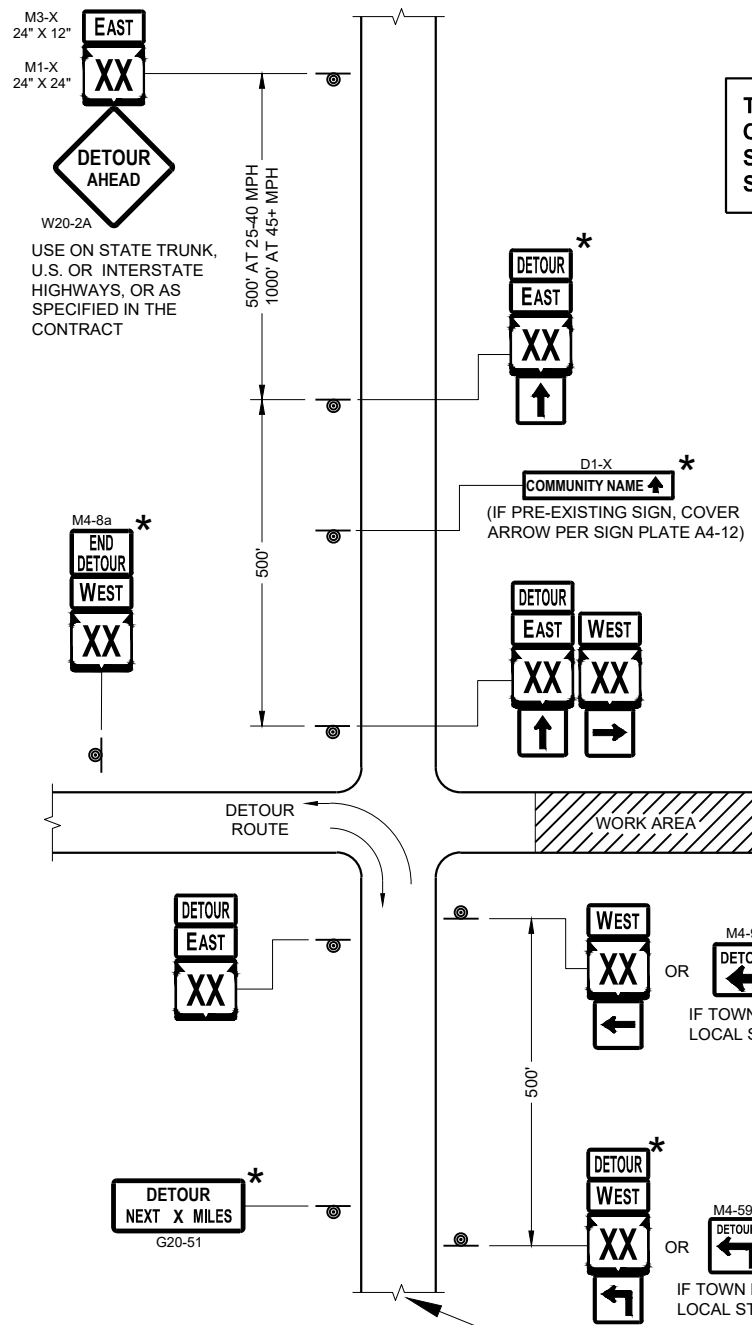
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



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

**LEGEND**

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

**GENERAL NOTES**

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

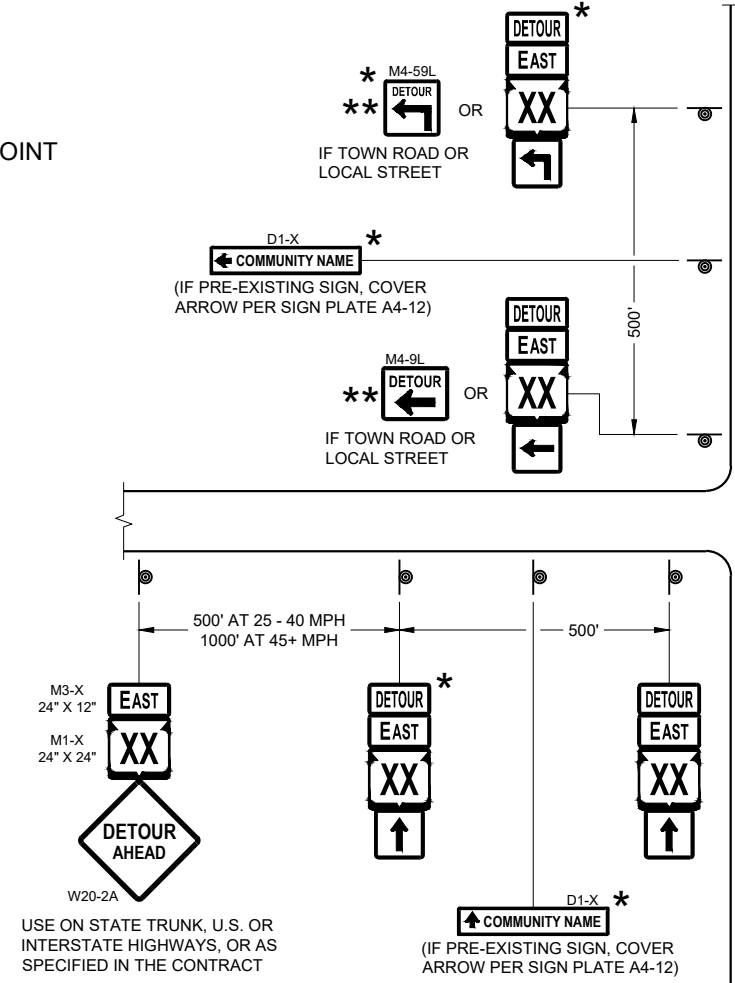
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

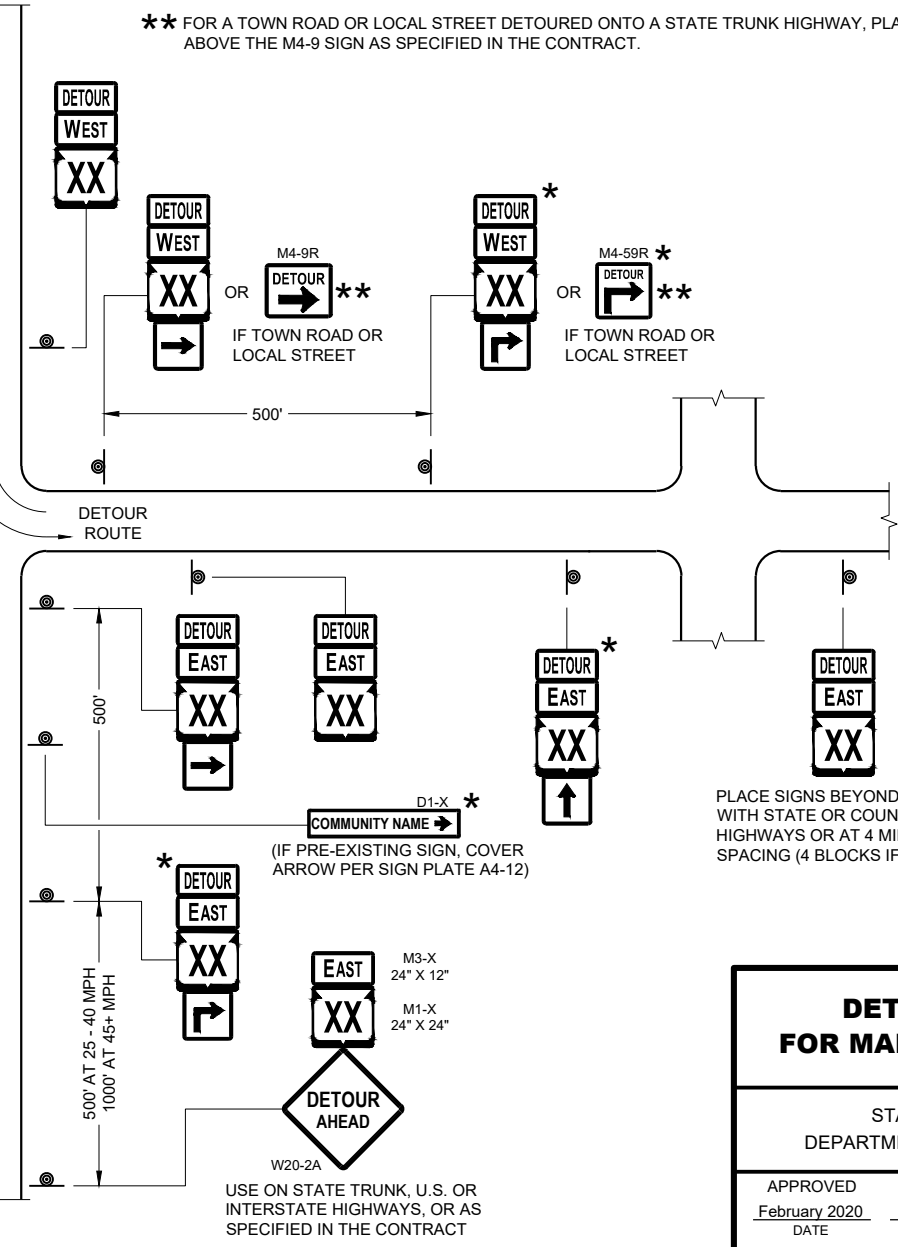
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

MATCH POINT



**DETAIL F  
DETOUR SIGNING**



**DETOUR SIGNING  
FOR MAINLINE CLOSURES**

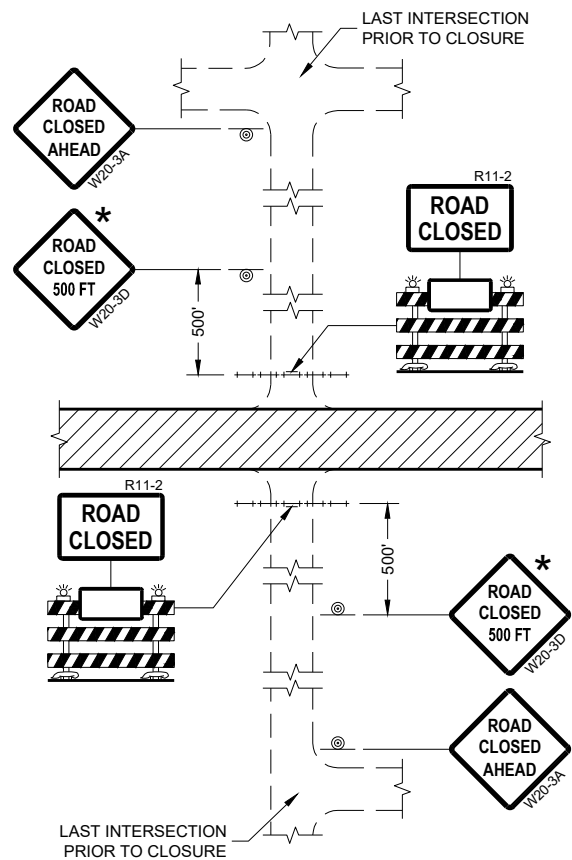
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

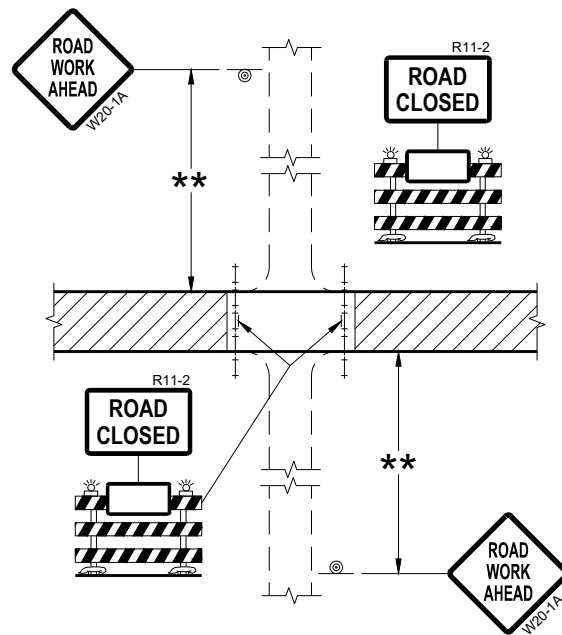
FHWA

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

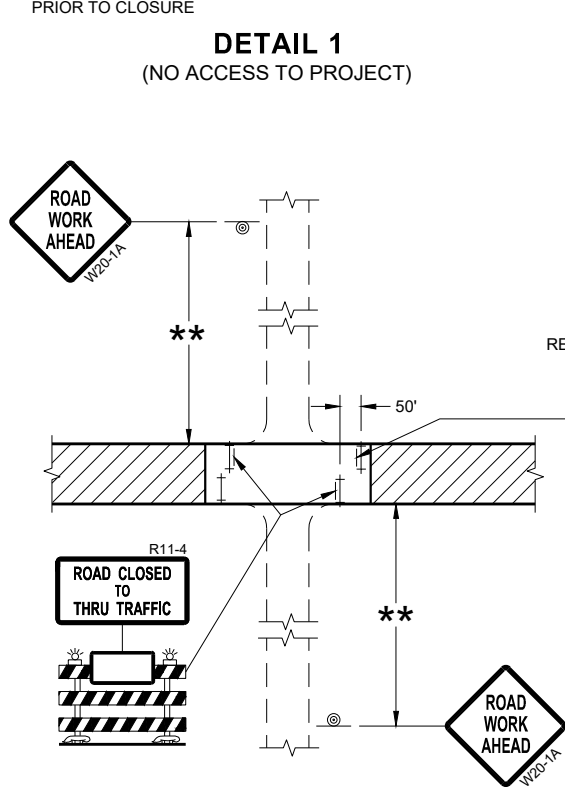
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)



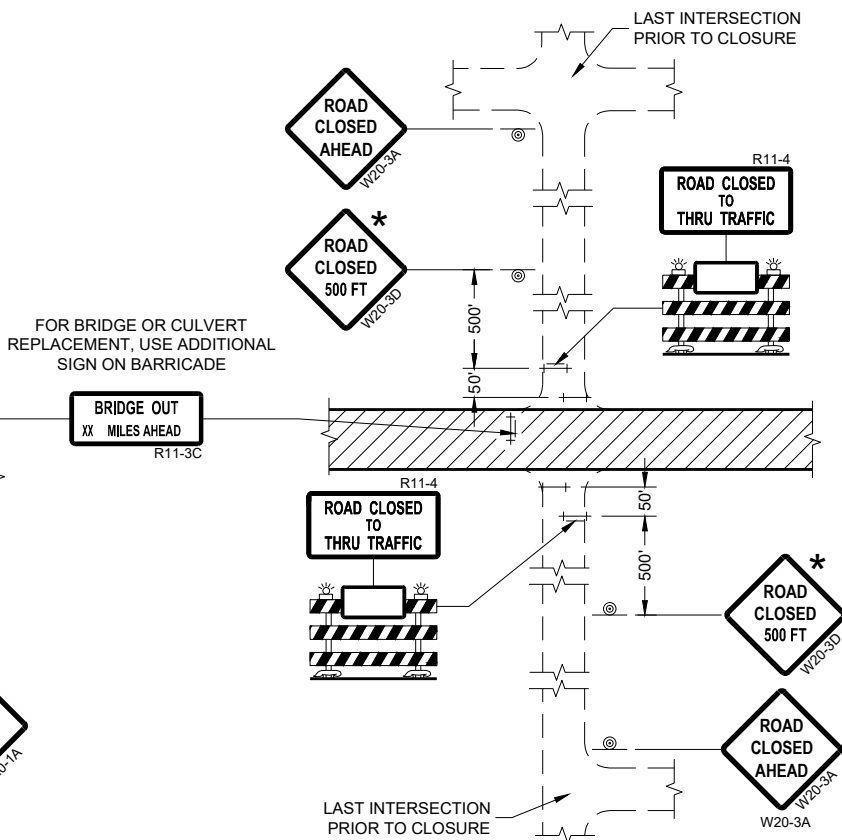
**DETAIL 1**  
(NO ACCESS TO PROJECT)



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



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



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

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:  
R11-2 SHALL BE 48" X 30".  
R11-4 AND R11-3 SHALL BE 60" X 30".

- \* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- \*\* 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

**LEGEND**

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

**BARRICADES AND SIGNS  
FOR  
SIDEROAD CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

**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" X 48" UNLESS OTHERWISE NOTED.

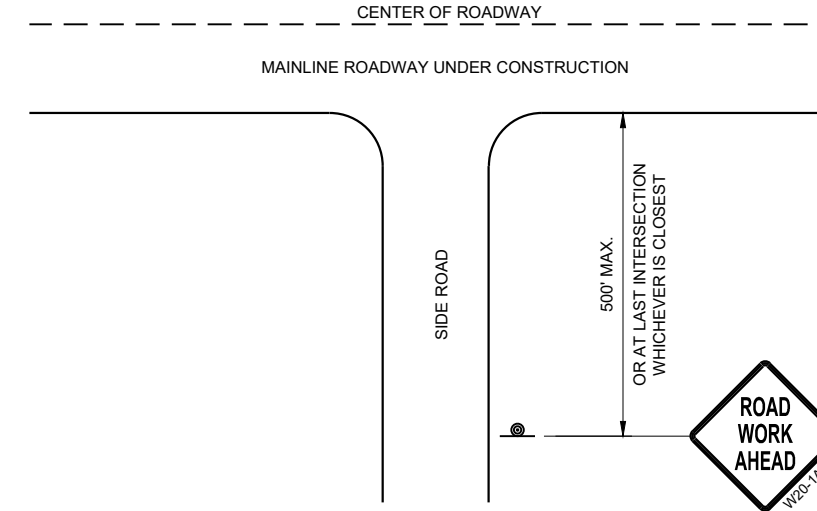
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 REESTABLISHED.

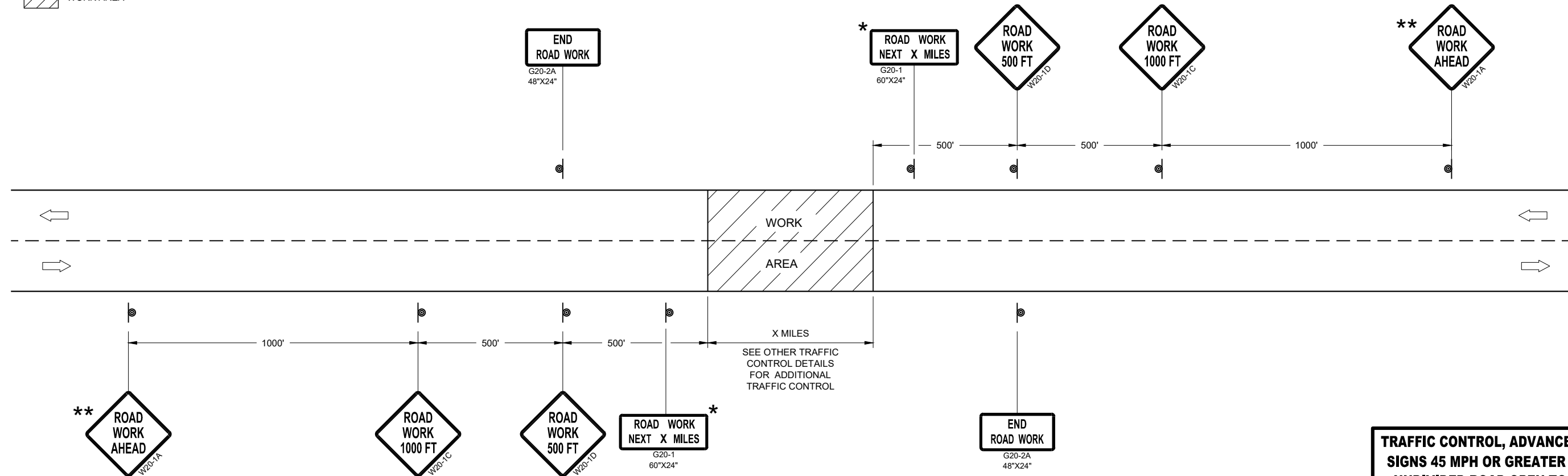
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

**LEGEND**

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



**TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL**



**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE July 2018 /S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA






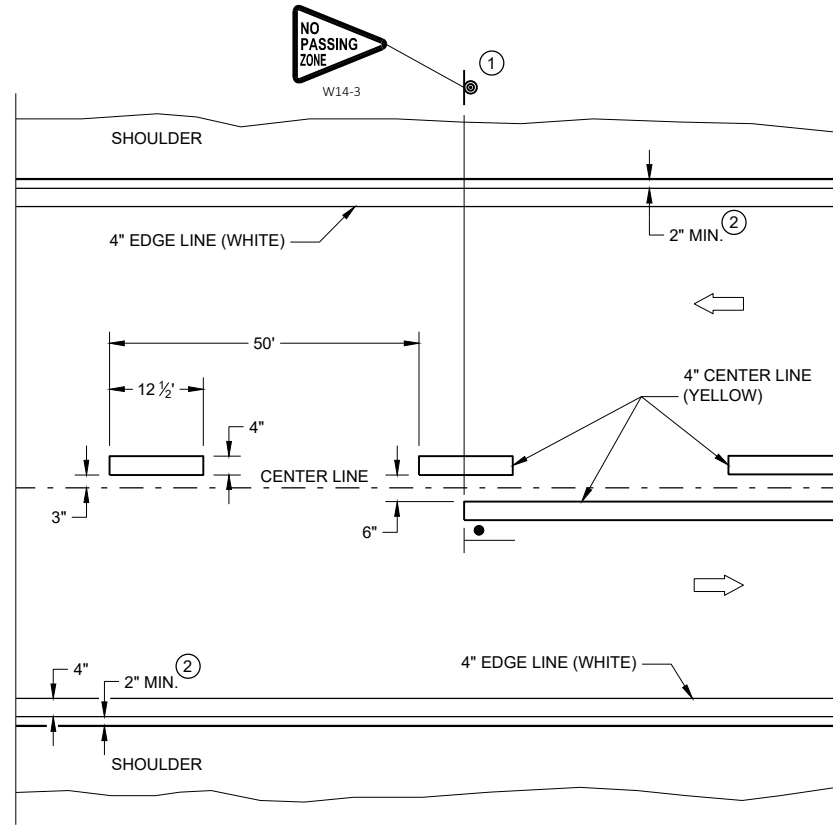
**GENERAL NOTES**

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

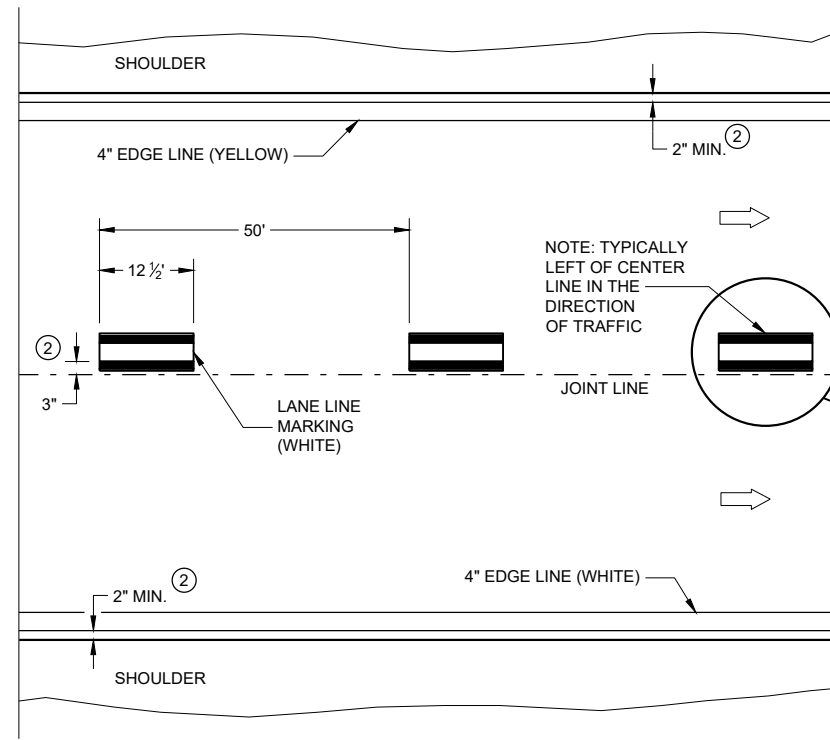
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

**LEGEND**

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

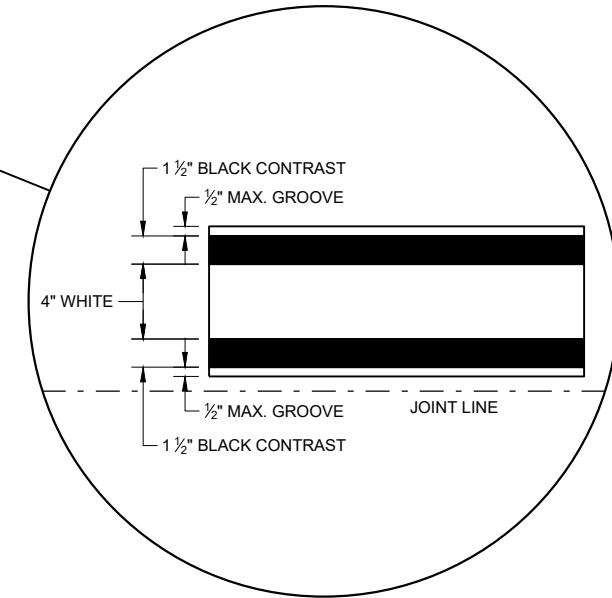


**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**

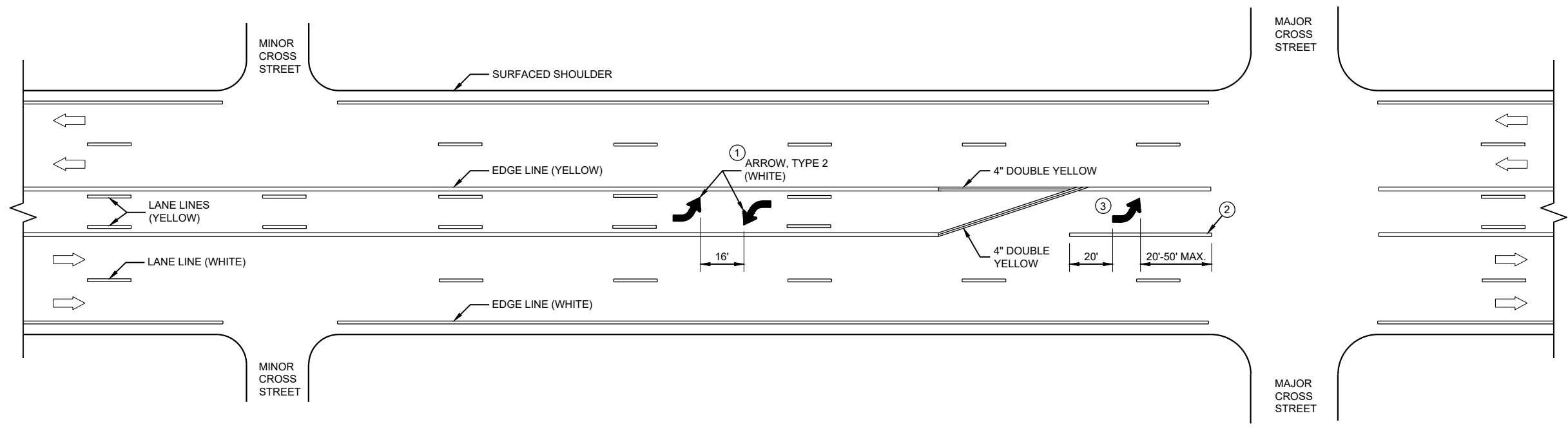


<b>PERMANENT LONGITUDINAL PAVEMENT MARKINGS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE May 2022	/S/ Jeannie Silver STATEWIDE SIGNING AND MARKING ENGINEER
<small>FHWA</small>	

**GENERAL NOTES**

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC



**TWO WAY LEFT TURN LANE**

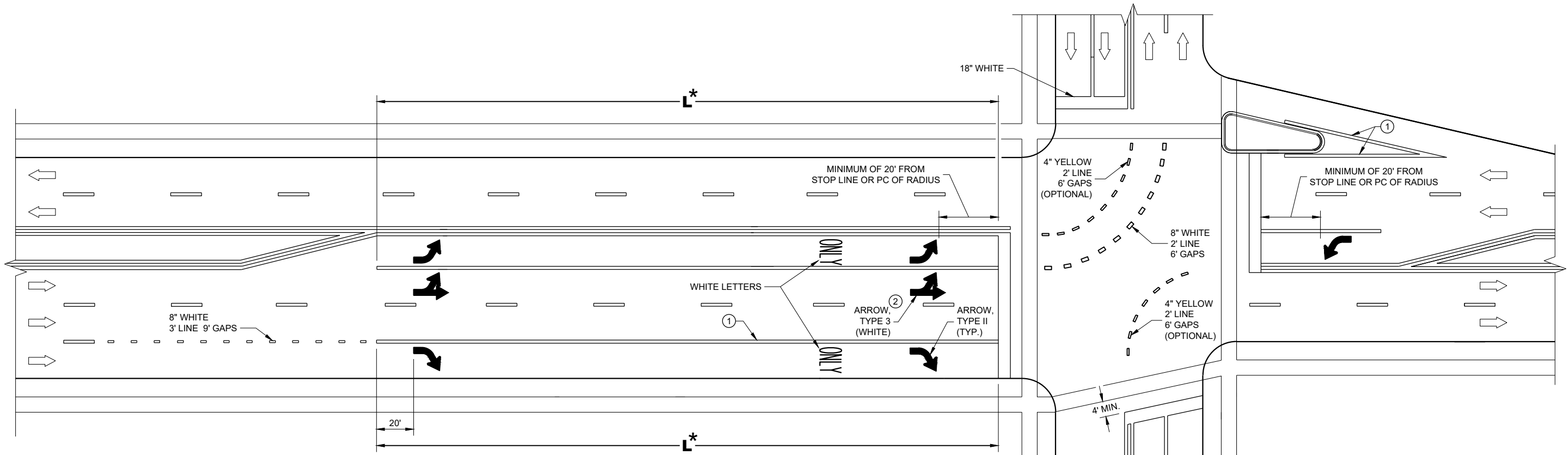
6

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SDD 15C08 - 21c

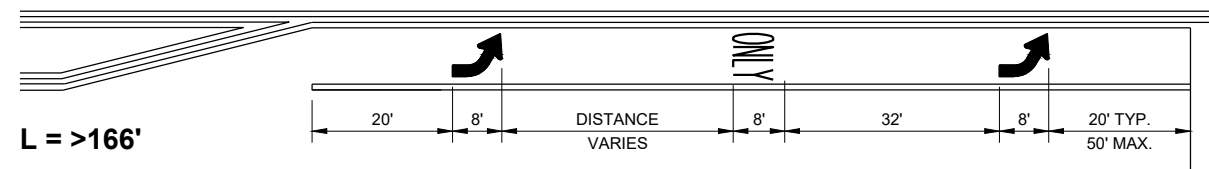
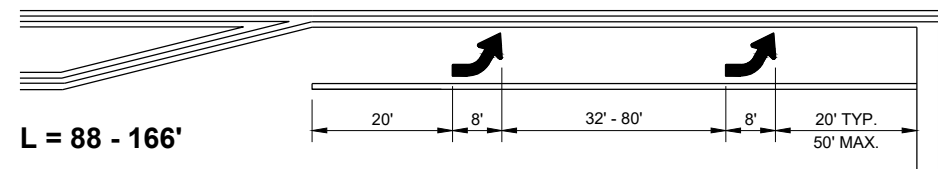
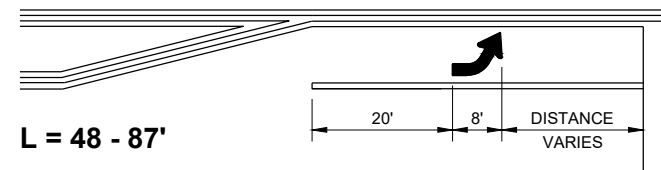
SDD 15C08 - 21c

<p><b>PAVEMENT MARKING (TURN LANES)</b></p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



**TURN LANE OPTIONS**

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



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

**GENERAL NOTES**

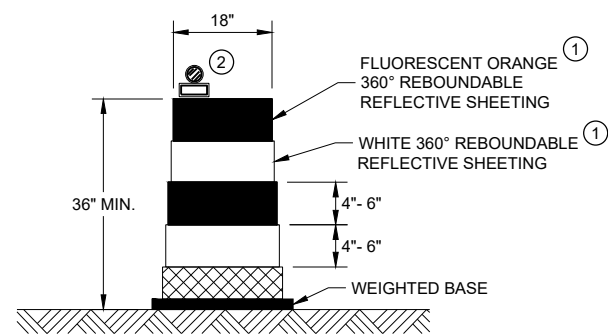
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

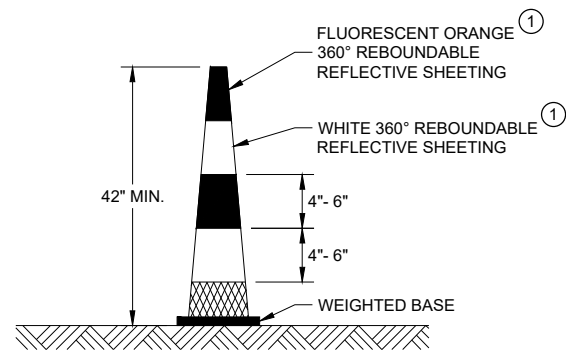
$L$  = LENGTH OF TURN BAY

**PAVEMENT MARKING (TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

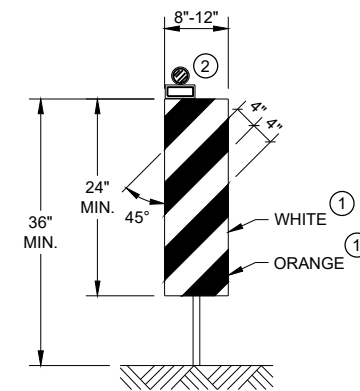


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

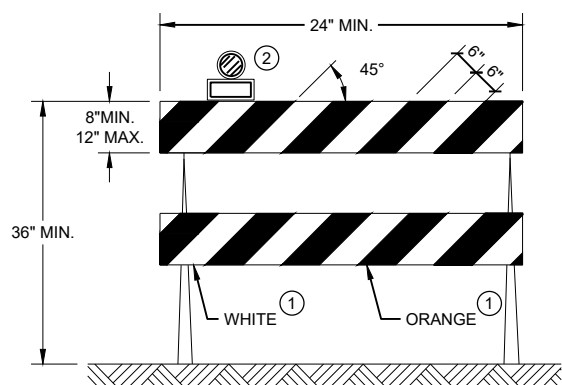


**VERTICAL PANEL**

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

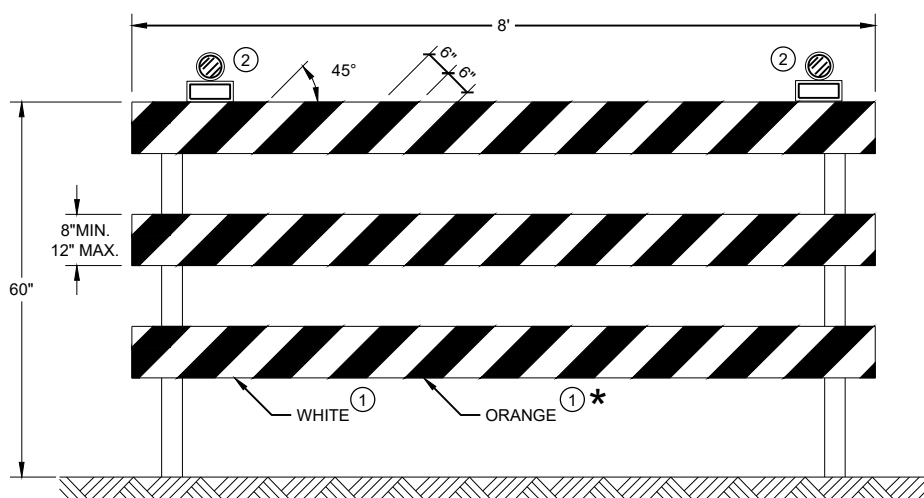
**GENERAL NOTES**

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



**TYPE II BARRICADE**

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








**TYPE III BARRICADE**

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

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

<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

**LEGEND**

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

**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.

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

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

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND 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.

**FLAGGING**

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' 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.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

**TEMPORARY PORTABLE RUMBLE STRIPS**

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

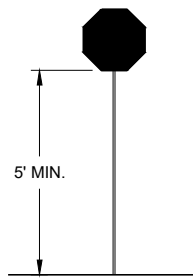
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



**STOP/SLOW PADDLE ON SUPPORT STAFF**

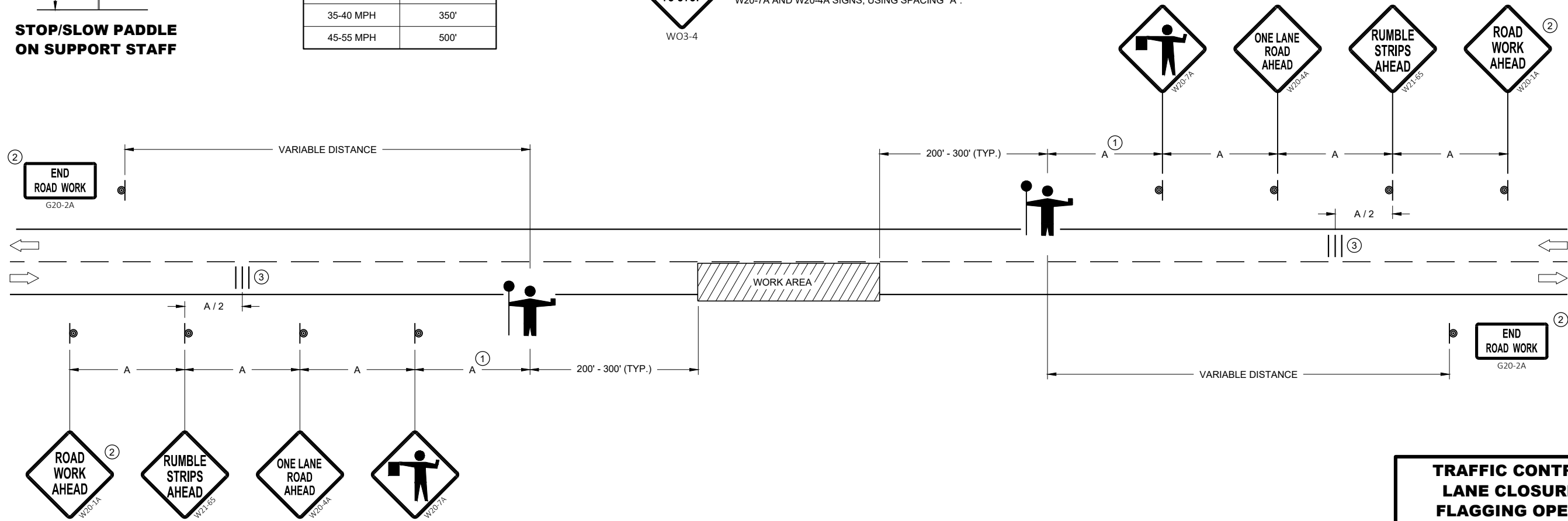
**SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE**

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



W03-4

USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".










**TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2022 /S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

**GENERAL NOTES**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL CONE 42-INCH
-  TRAFFIC CONTROL DRUM
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  **AFAD** AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

**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.

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

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

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND 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.

**FLAGGING**

IF THE AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) STOPS WORKING, FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

**TEMPORARY PORTABLE RUMBLE STRIPS**

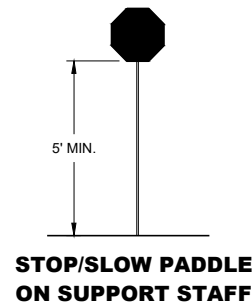
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

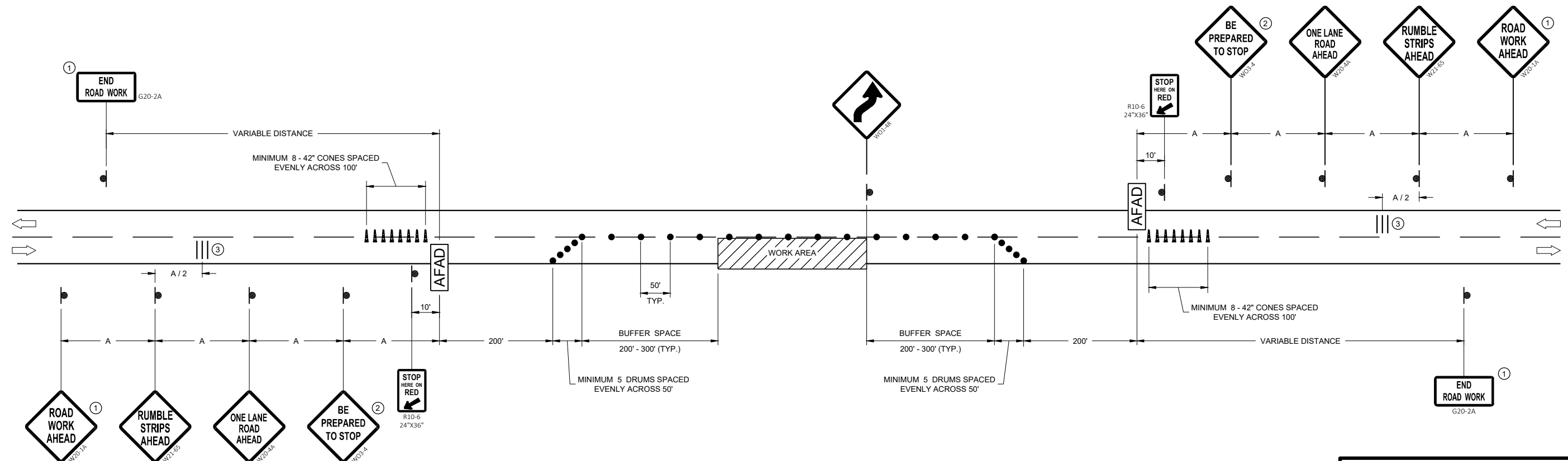
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



**SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE**

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



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SDD 15D12 - 09b

SDD 15D12 - 09b

**TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

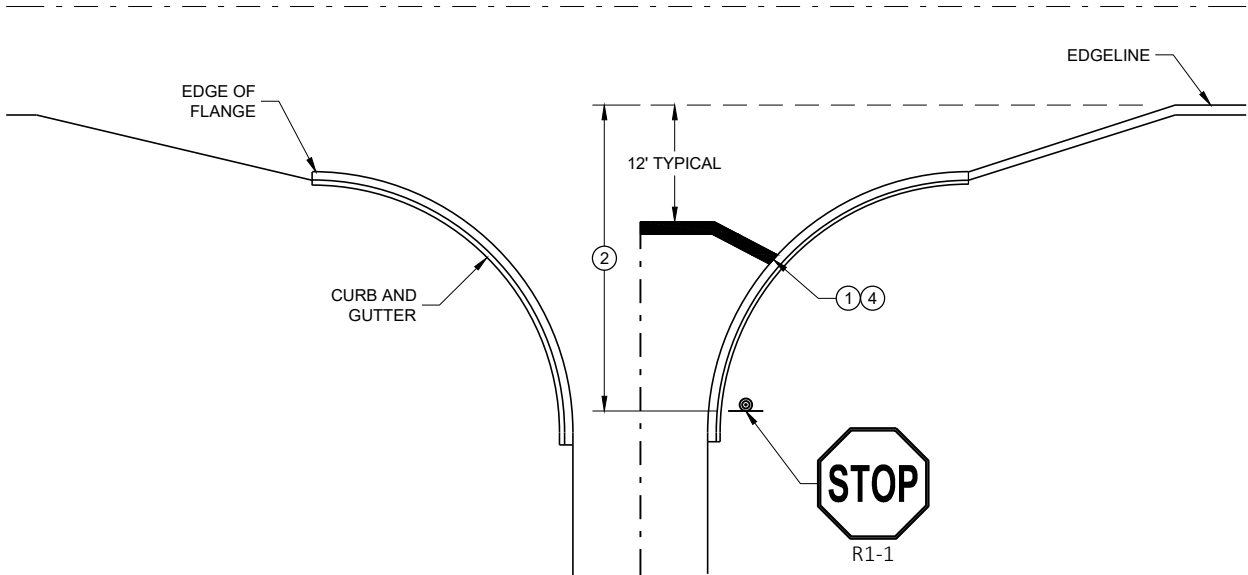
APPROVED  
May 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

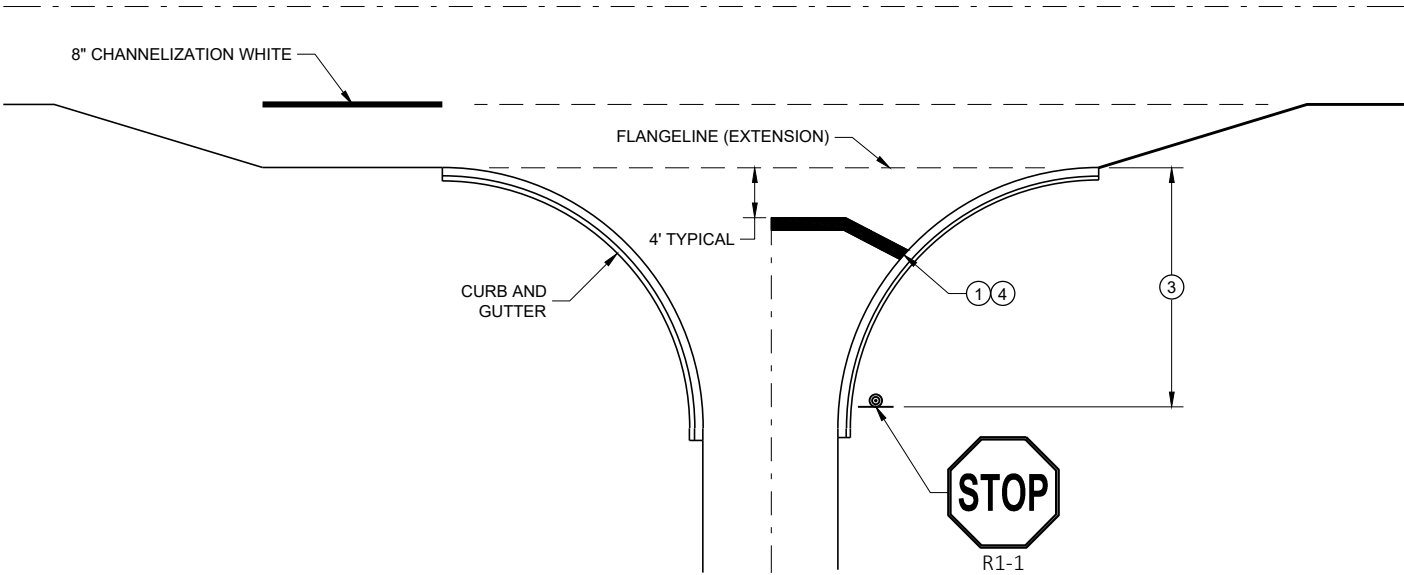
**GENERAL NOTES**

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

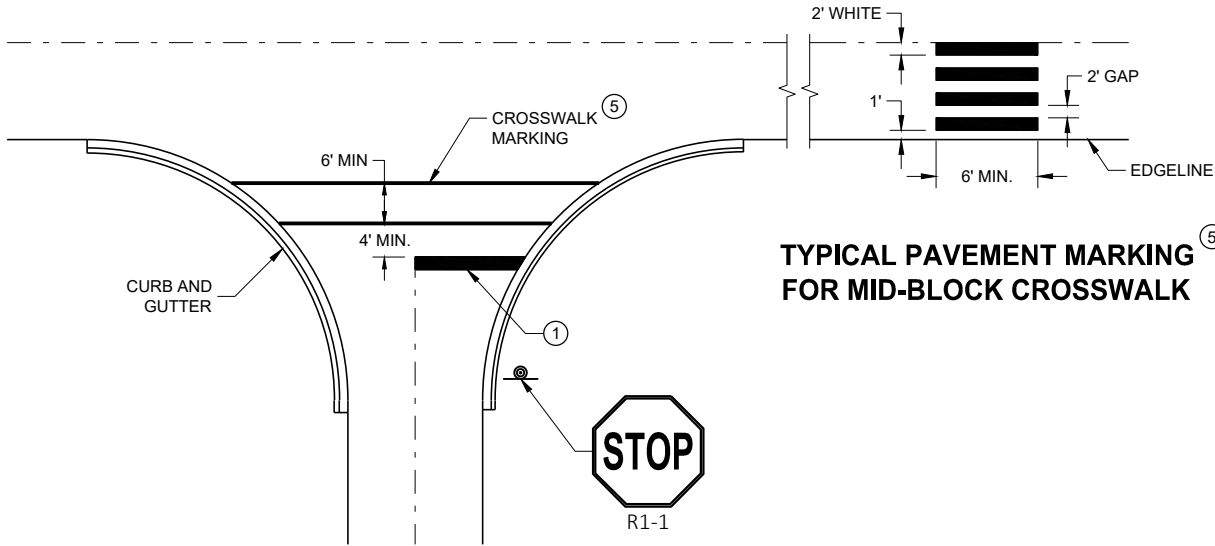
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



**TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**

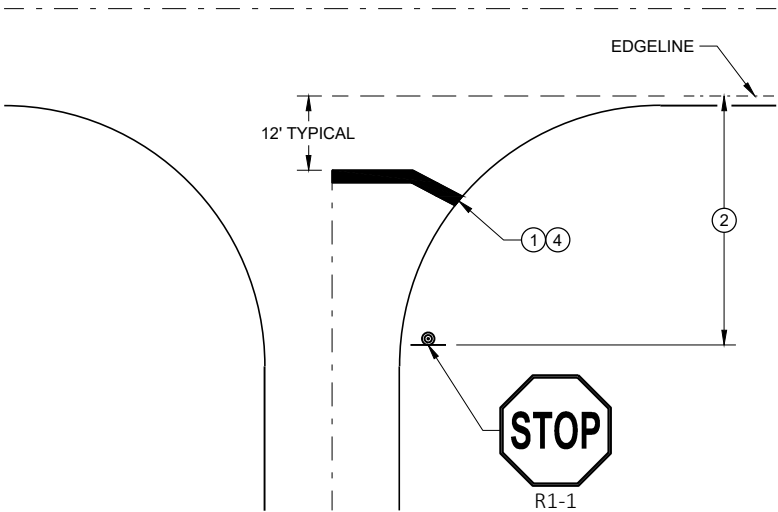


**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING**

**TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK**



**TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER**

**STOP LINE AND CROSSWALK PAVEMENT MARKING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

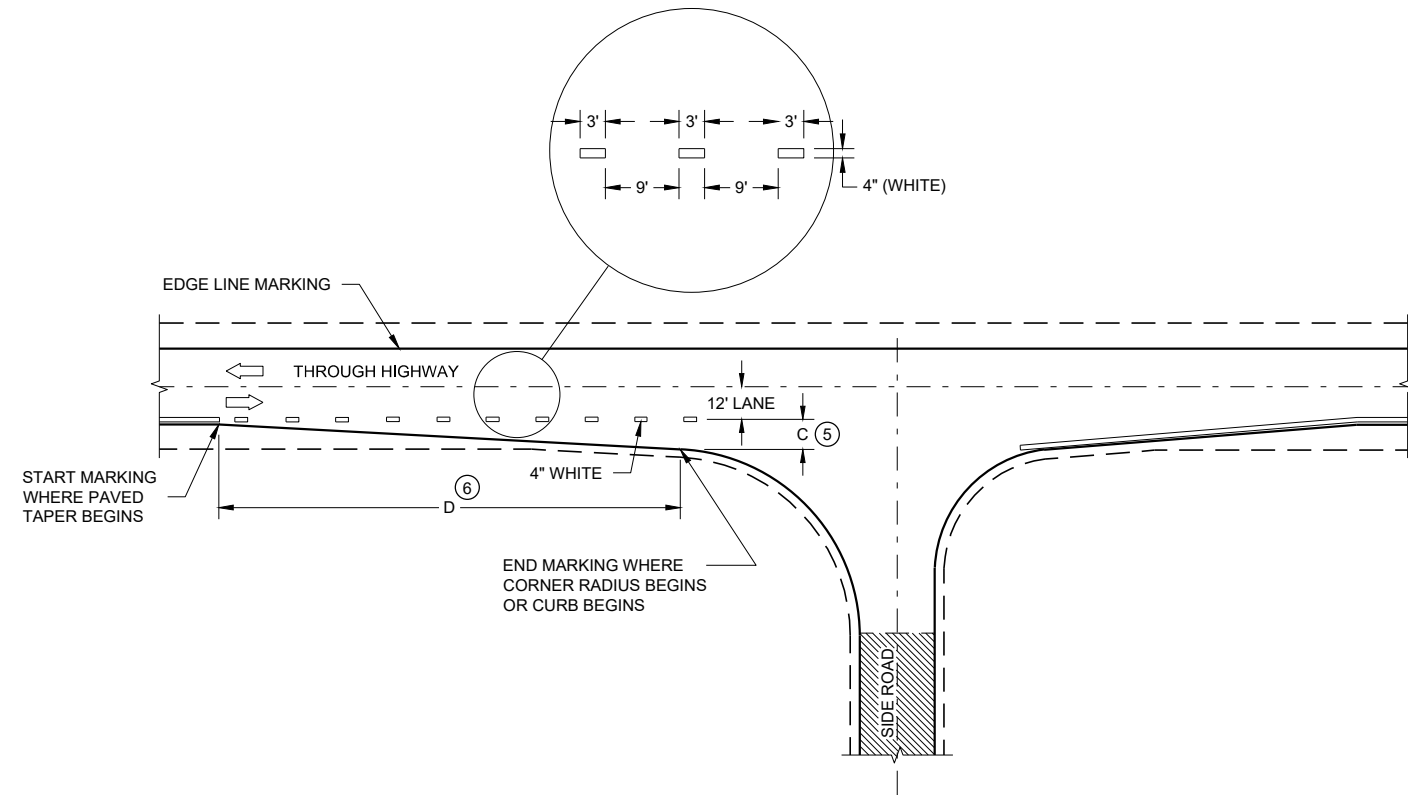
**GENERAL NOTES**

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

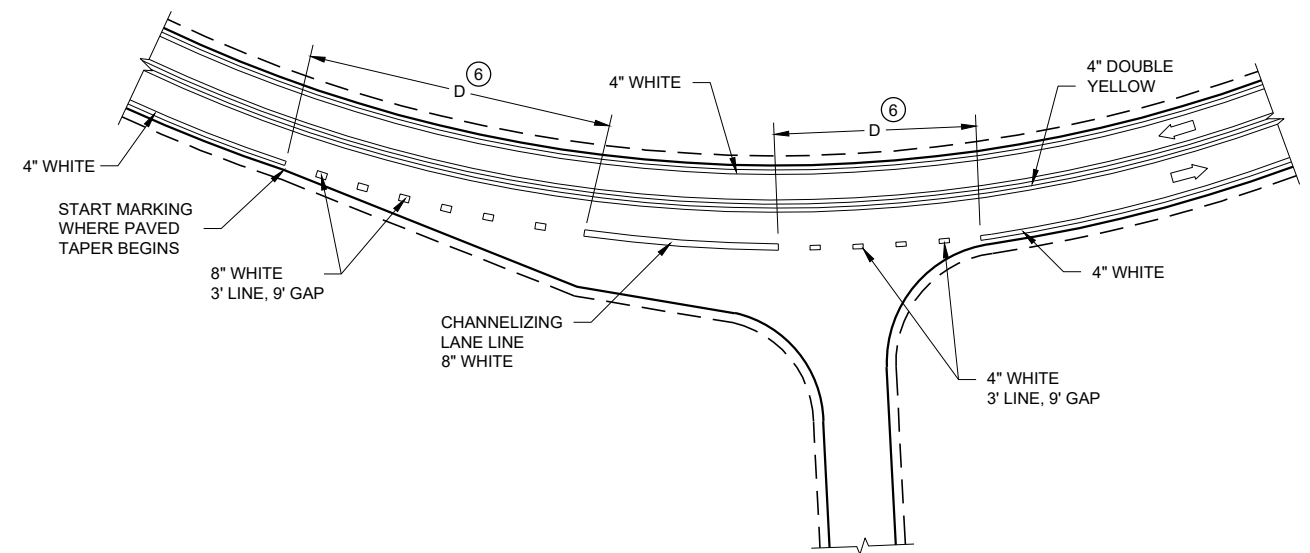
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

**LEGEND**

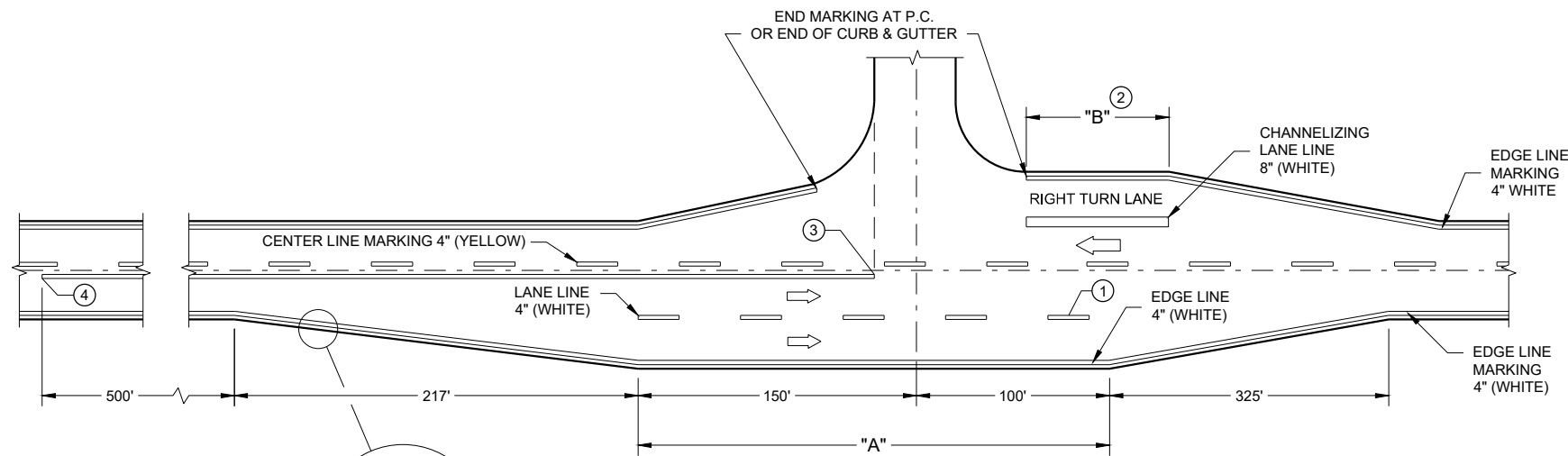
➡ DIRECTION OF TRAVEL



**MINOR INTERSECTION**

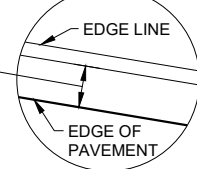


**INTERSECTION ON OUTSIDE OF CURVE**



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

BYPASS LANE PAVED SHOULDER WIDTH (AS SHOWN ELSEWHERE IN PLANS) - PLUS 2 INCHES







**PAVEMENT MARKING  
(INTERSECTIONS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

**GENERAL NOTES**

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

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

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

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

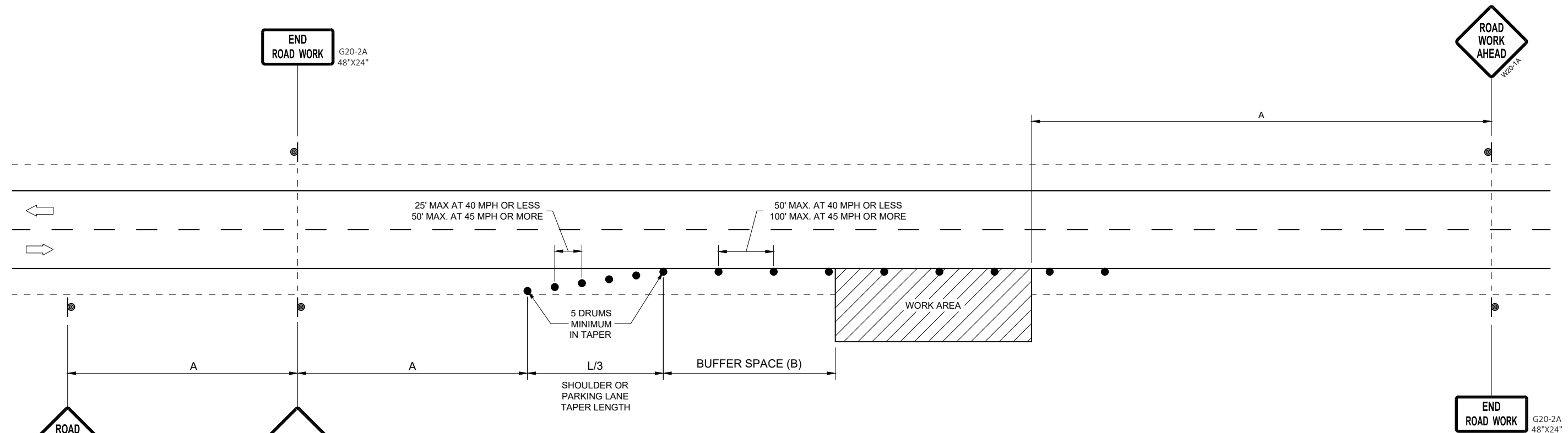
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

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POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

OR  
IF TRAFFIC CONTROL DEVICES  
ENCROACH ONTO TRAVELED WAY, USE



**TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY**

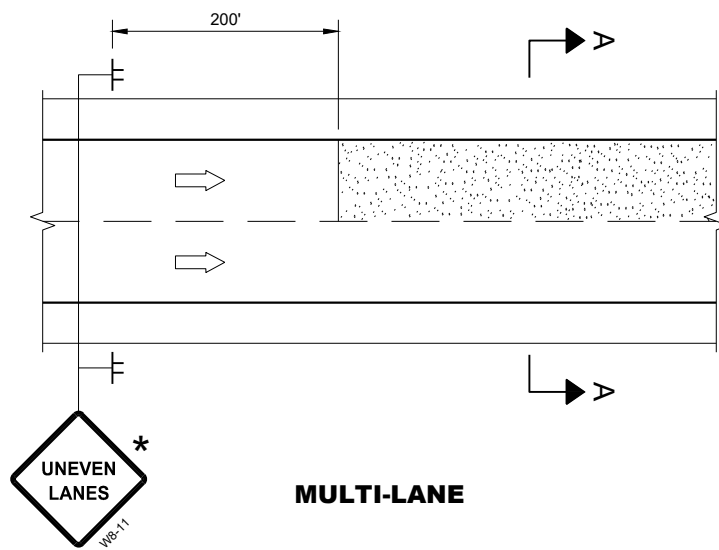
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

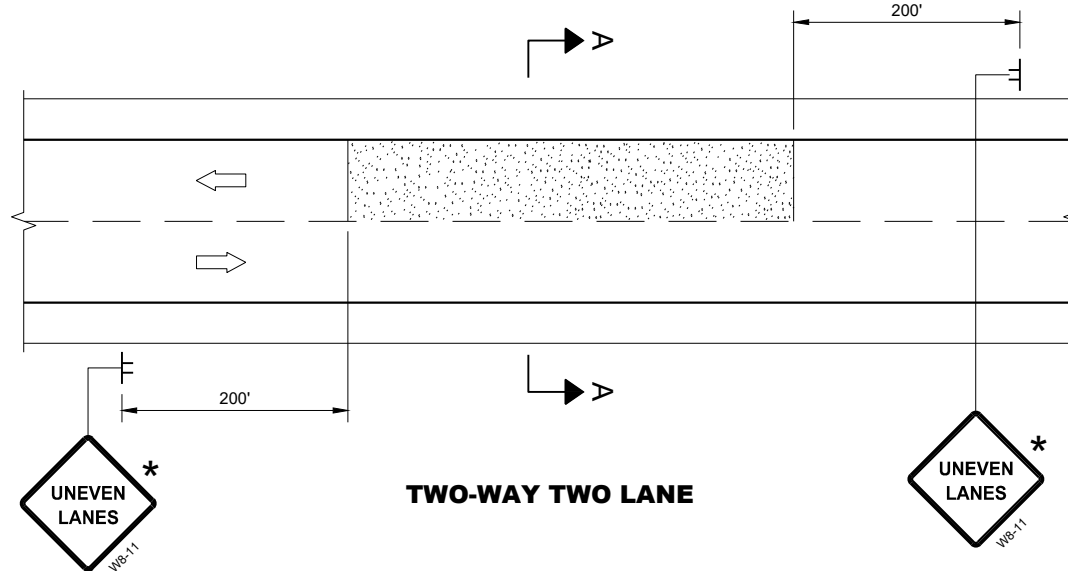
FHWA

SDD 15D28 - 04

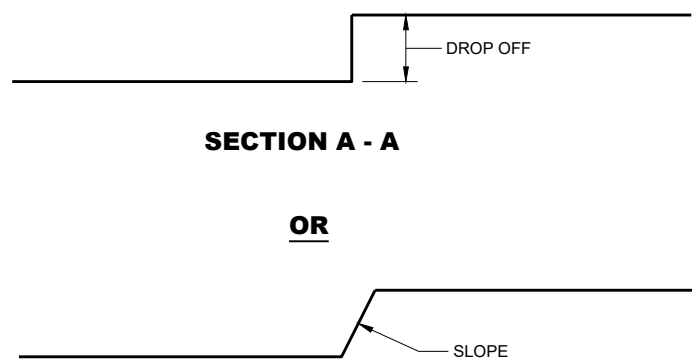
SDD 15D28 - 04



**MULTI-LANE**



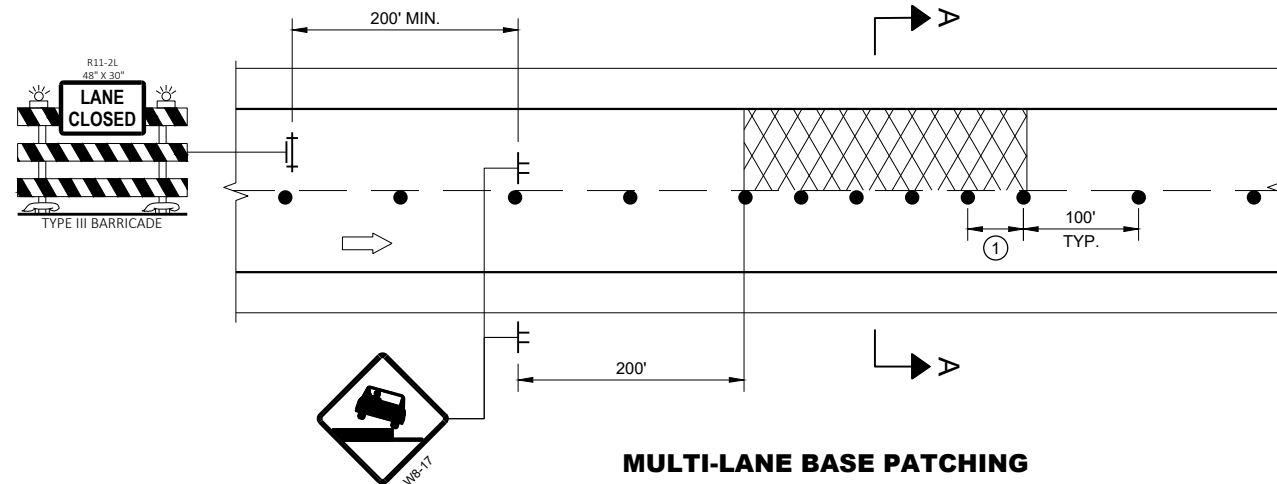
**TWO-WAY TWO LANE**



**SECTION A - A**

**OR**

**SECTION A - A**



**MULTI-LANE BASE PATCHING**

**ADJACENT LANE DROP-OFFS**

**GENERAL NOTES**

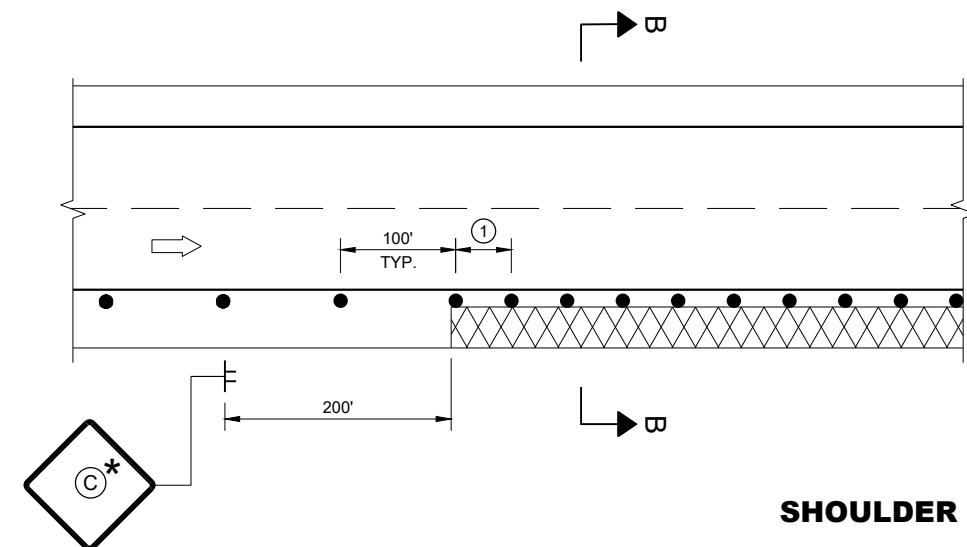
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- \* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

**LEGEND**

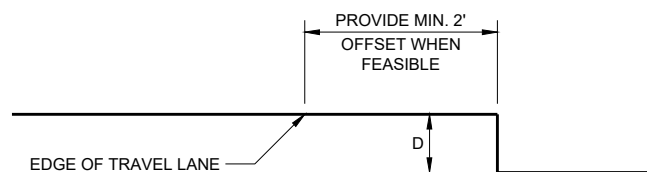
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

6

6



**SHOULDER DROP-OFFS**



**SECTION B - B**

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

SDD 15D39 - 02

SDD 15D39 - 02





**TRAFFIC CONTROL,  
DROP-OFF SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018 /S/ Andrew Heidtke  
DATE DATE WORK ZONE ENGINEER

FHWA

**LEGEND**

- V1 WORK VEHICLE
- V2 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  FLASHING ARROW PANEL (CAUTION)
-  WORK AREA
-  DIRECTION OF TRAFFIC

POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

**GENERAL NOTES**

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

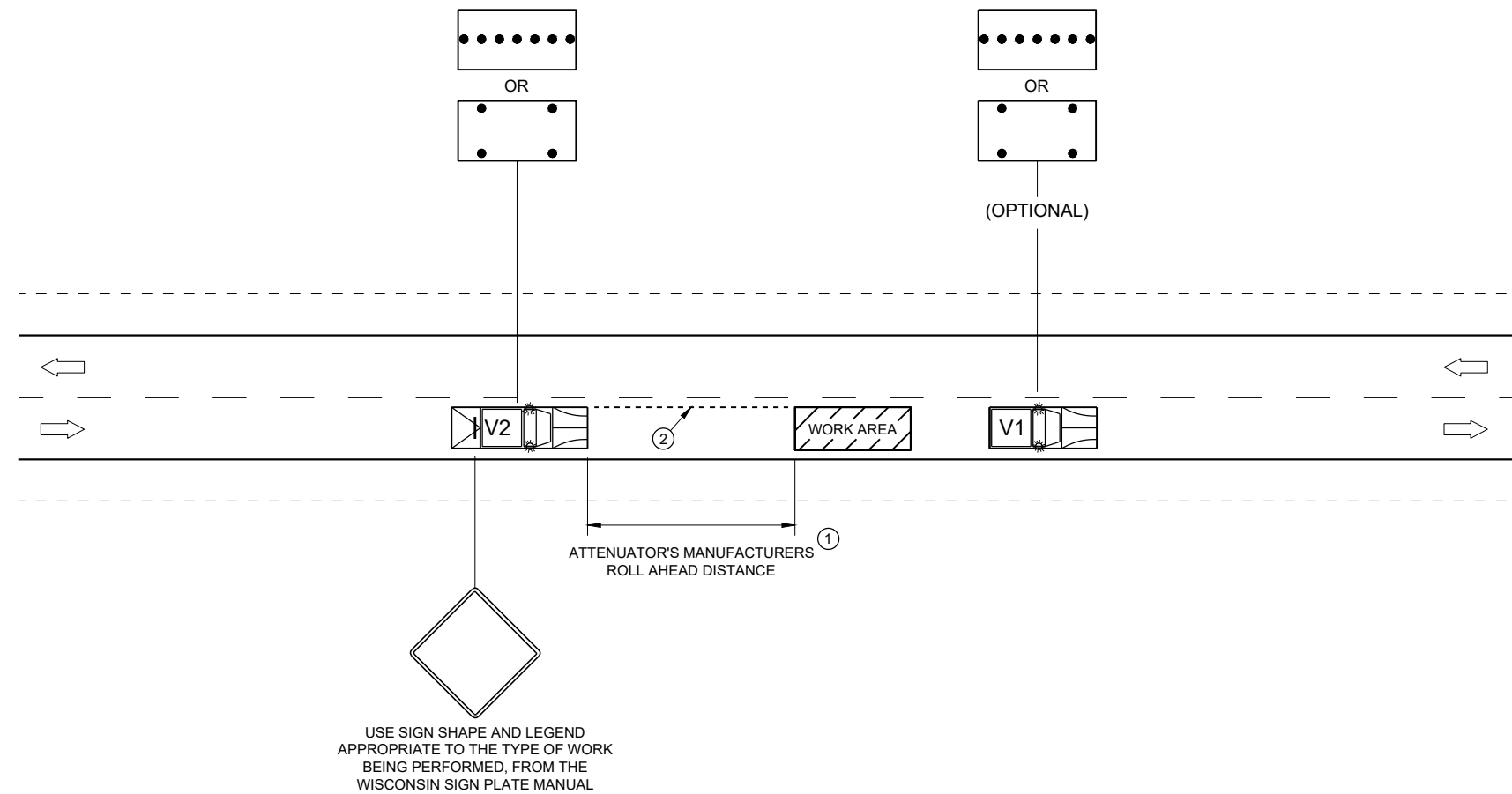
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

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

ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

- ① DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, 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.
- ② ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



6

6

SDD 15D51 - 01

SDD 15D51 - 01

**TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY**

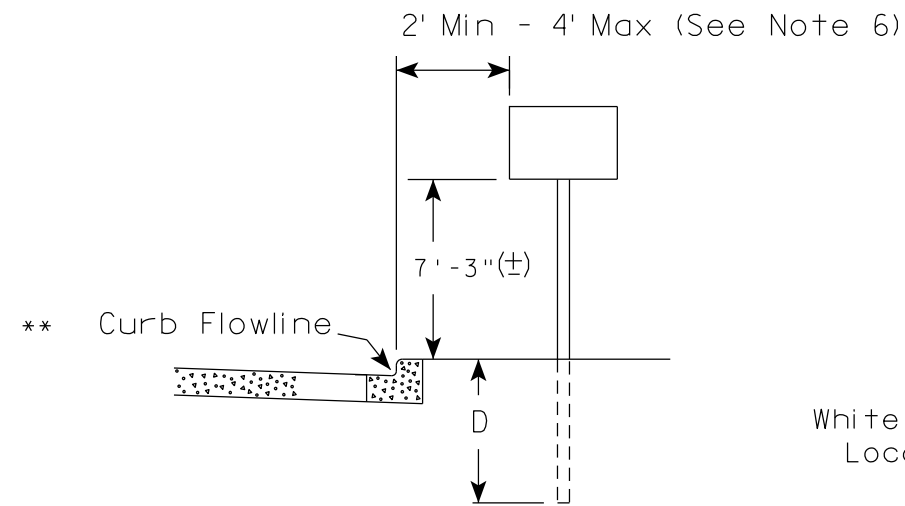
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 DATE /S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

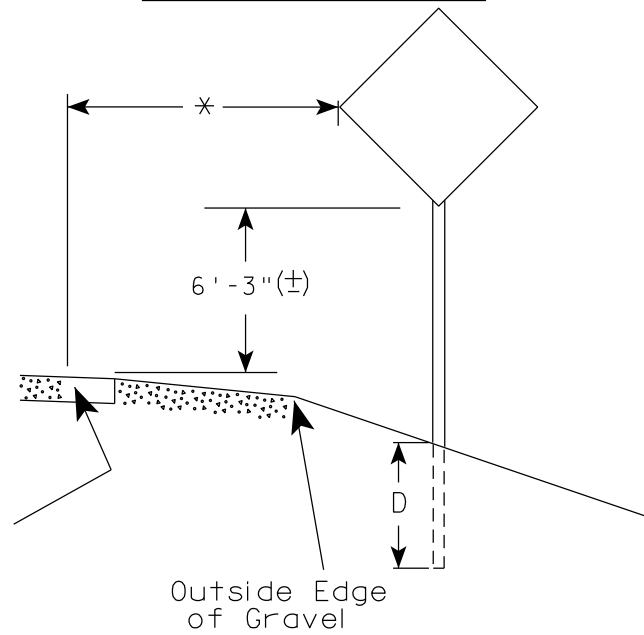
FHWA

URBAN AREA

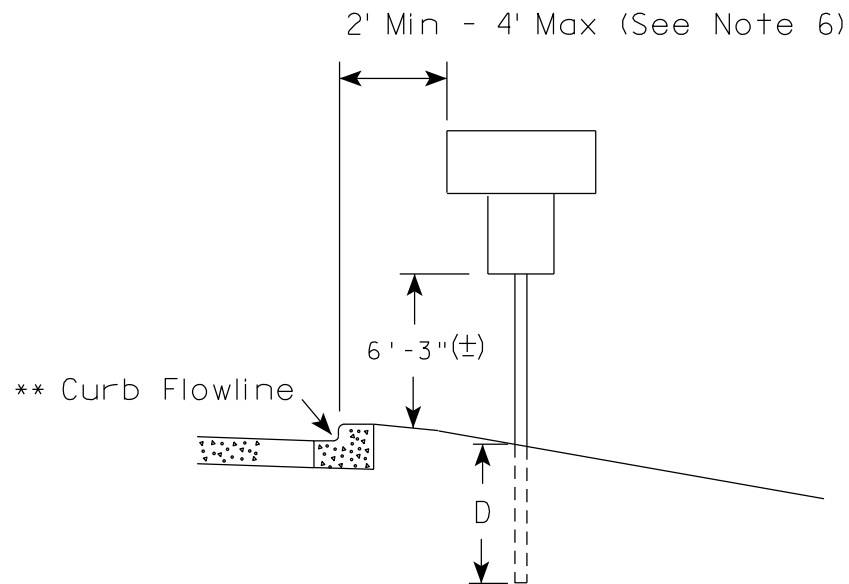
RURAL AREA (See Note 2)



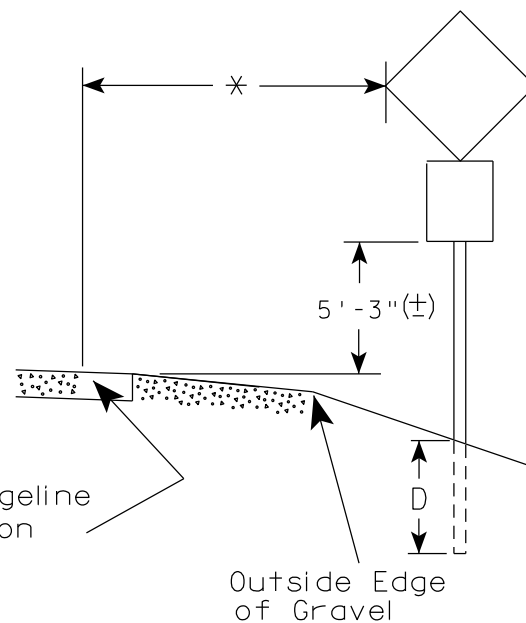
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

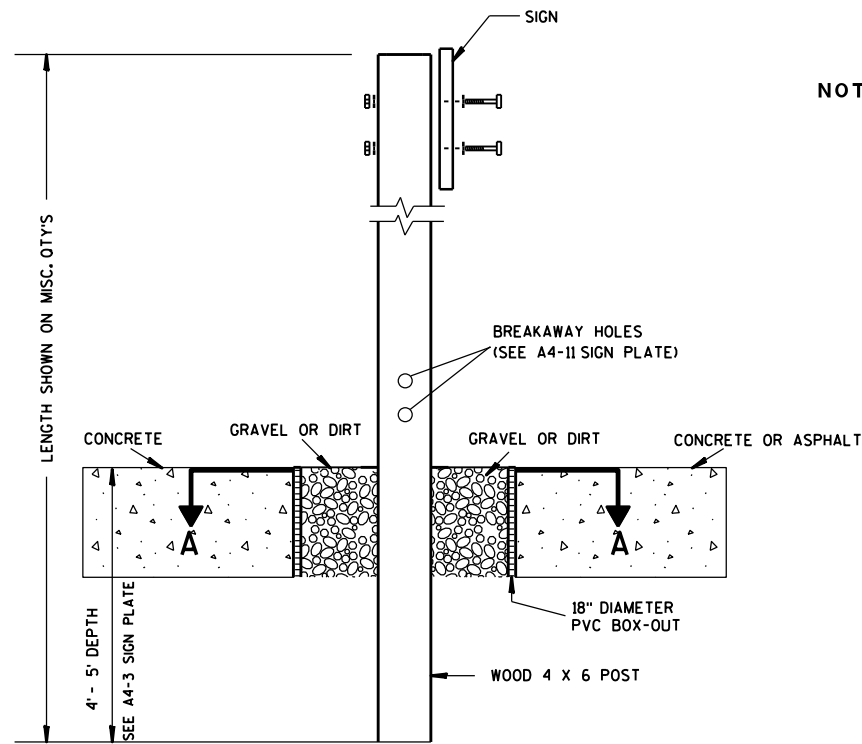
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

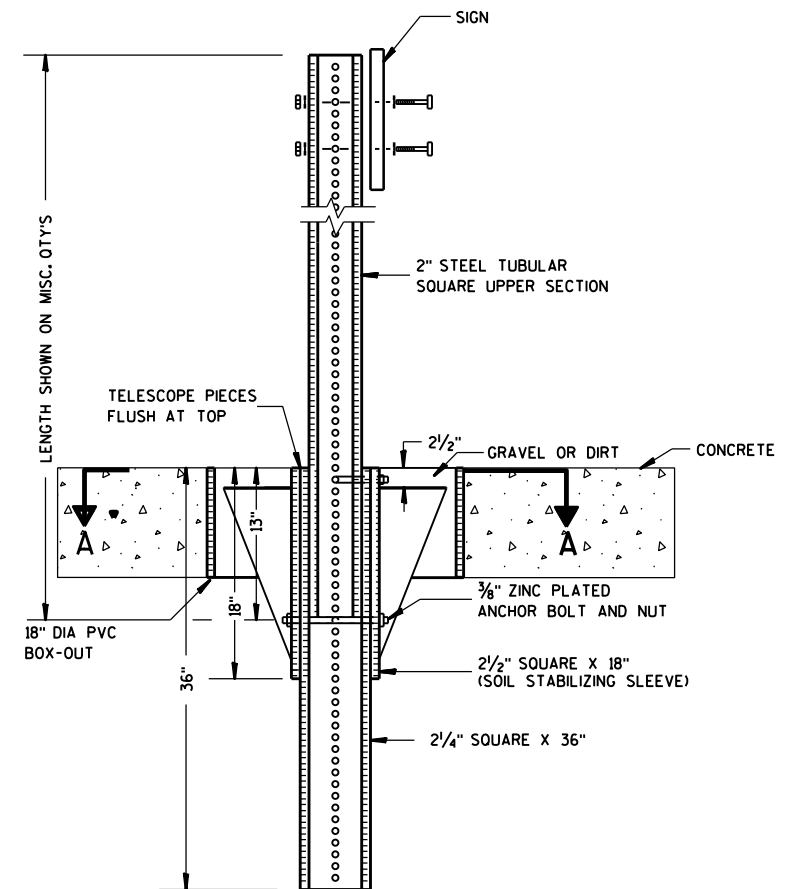
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

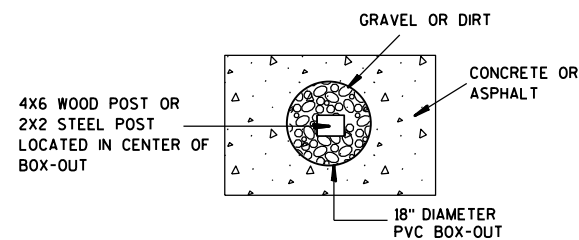
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

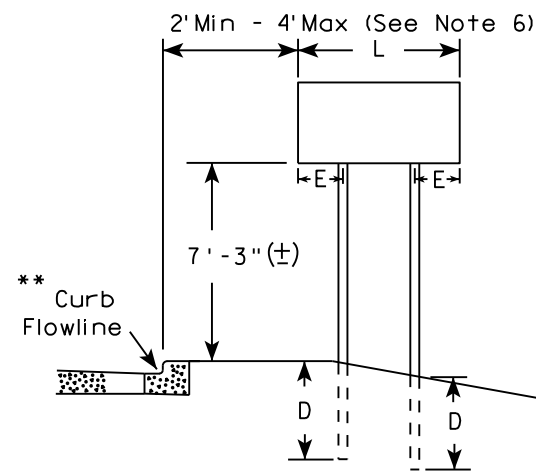
**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

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

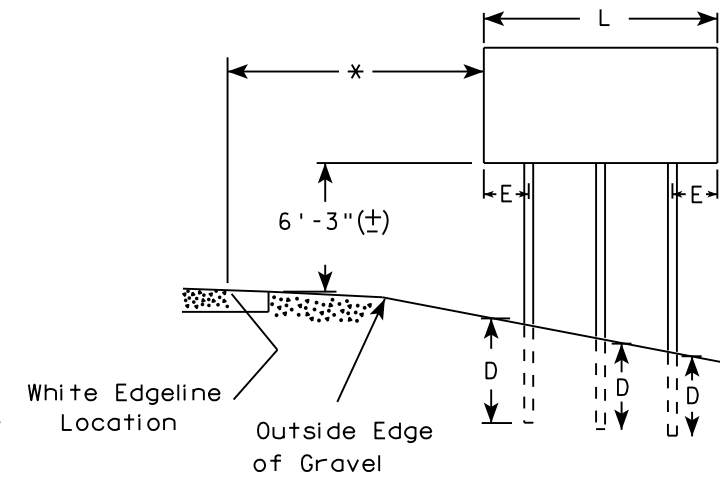
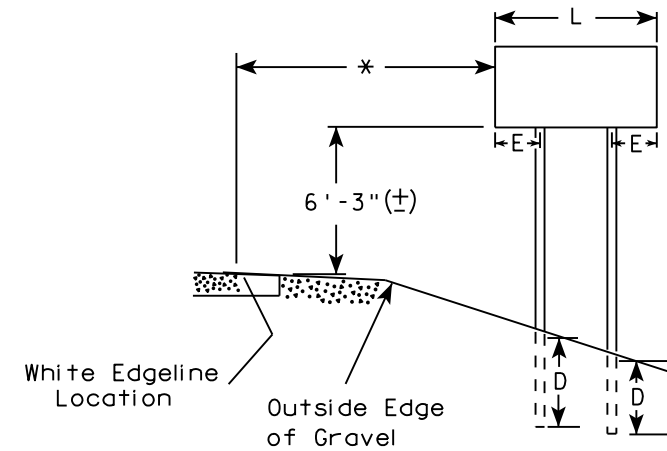
GENERAL NOTES

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

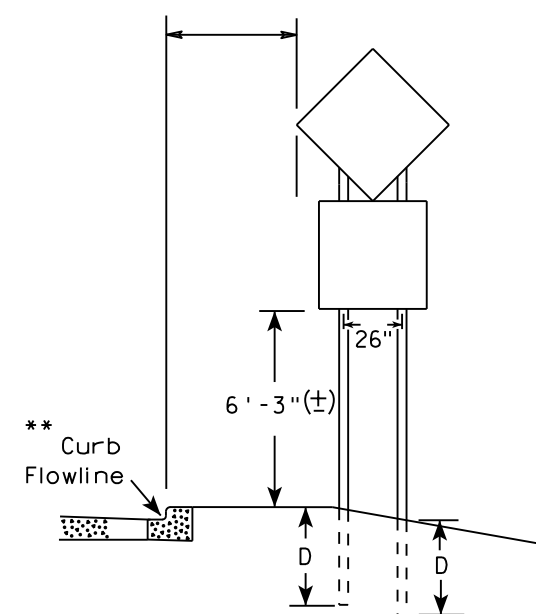
URBAN AREA



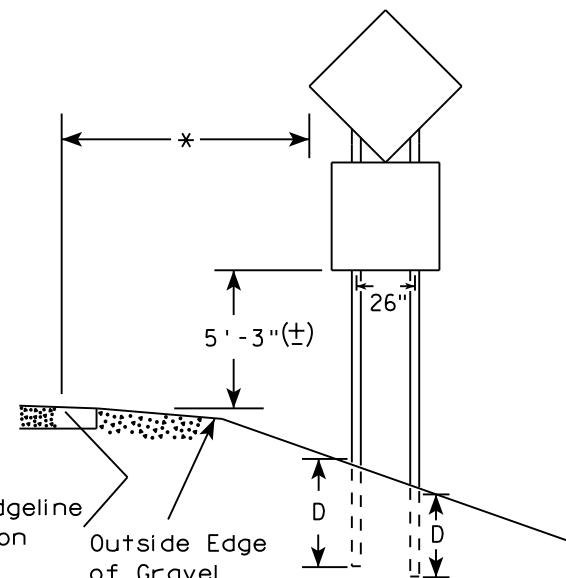
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

\*\*\*

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

POST EMBEDMENT DEPTH

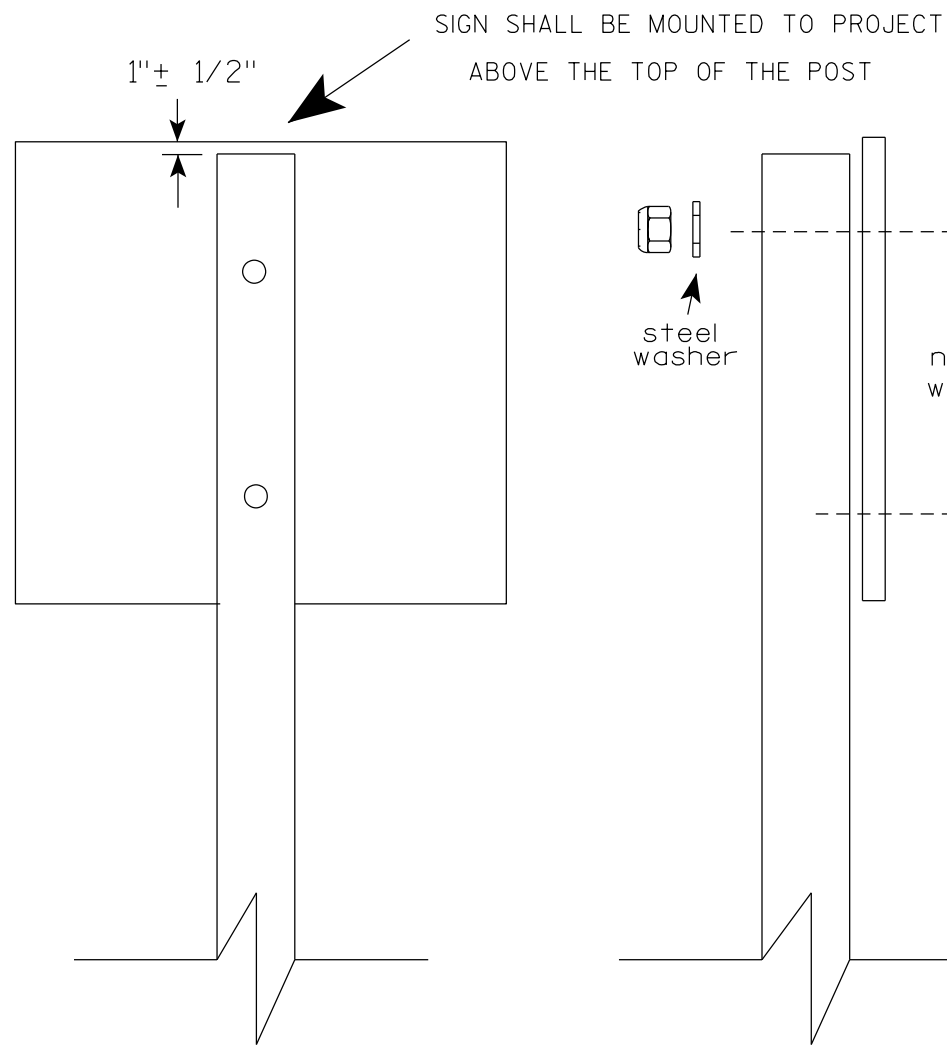
Area of Sign Installation ( Sq. Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



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

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

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

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

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

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)  
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS  
TO POSTS

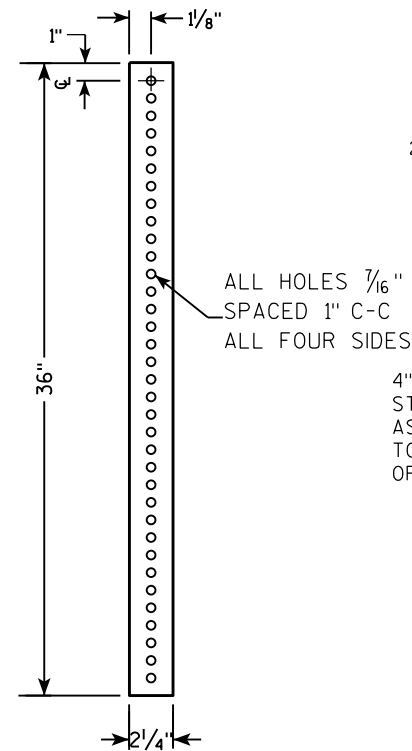
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

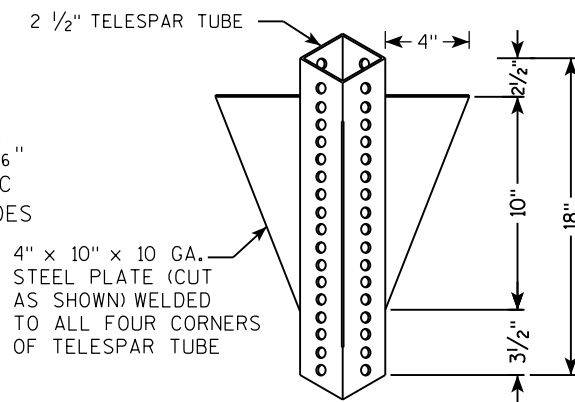
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

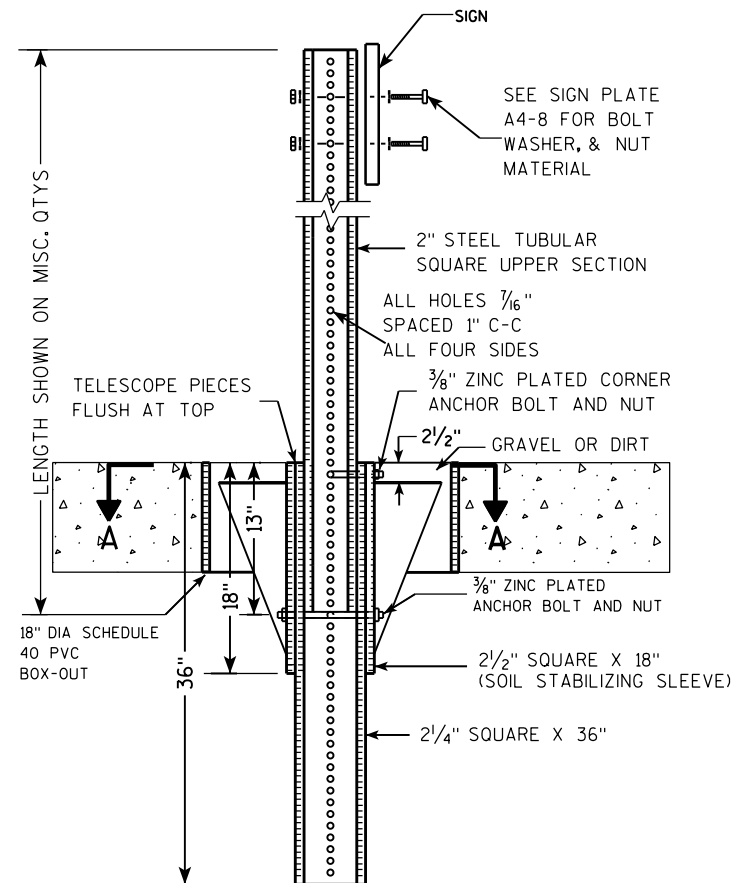
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



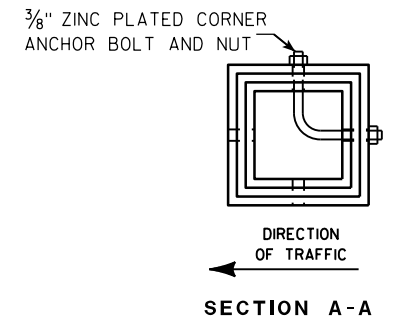
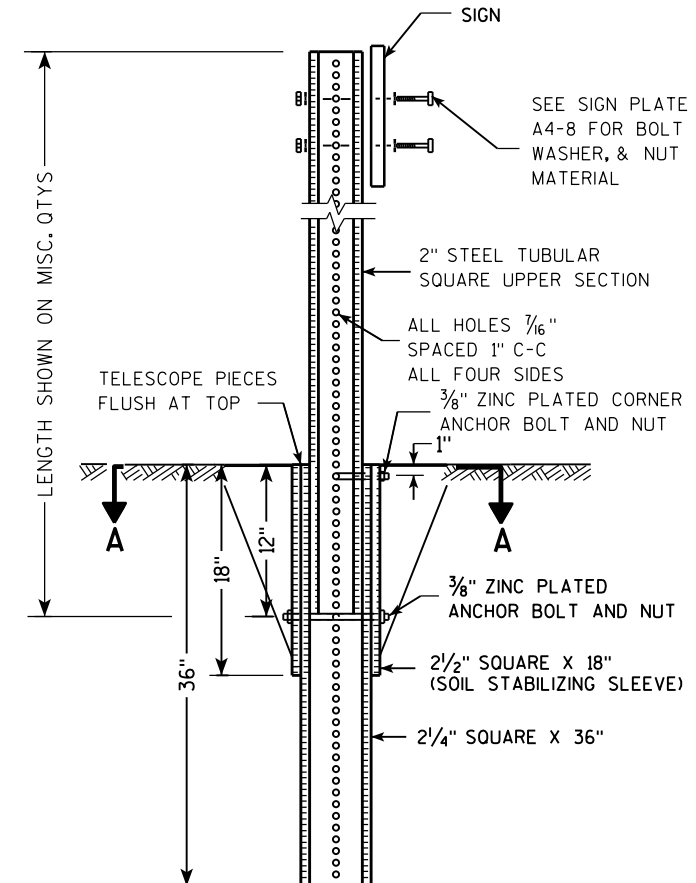
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



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



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



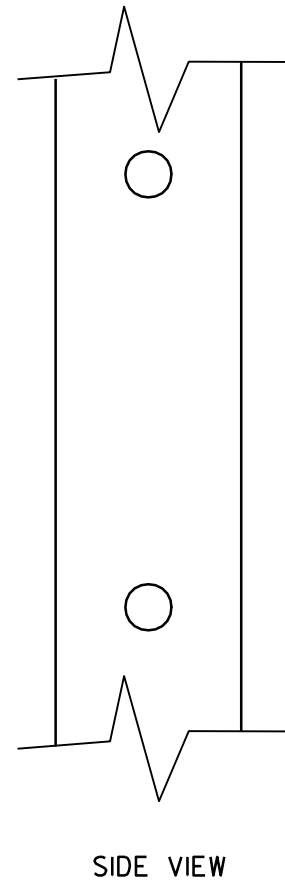
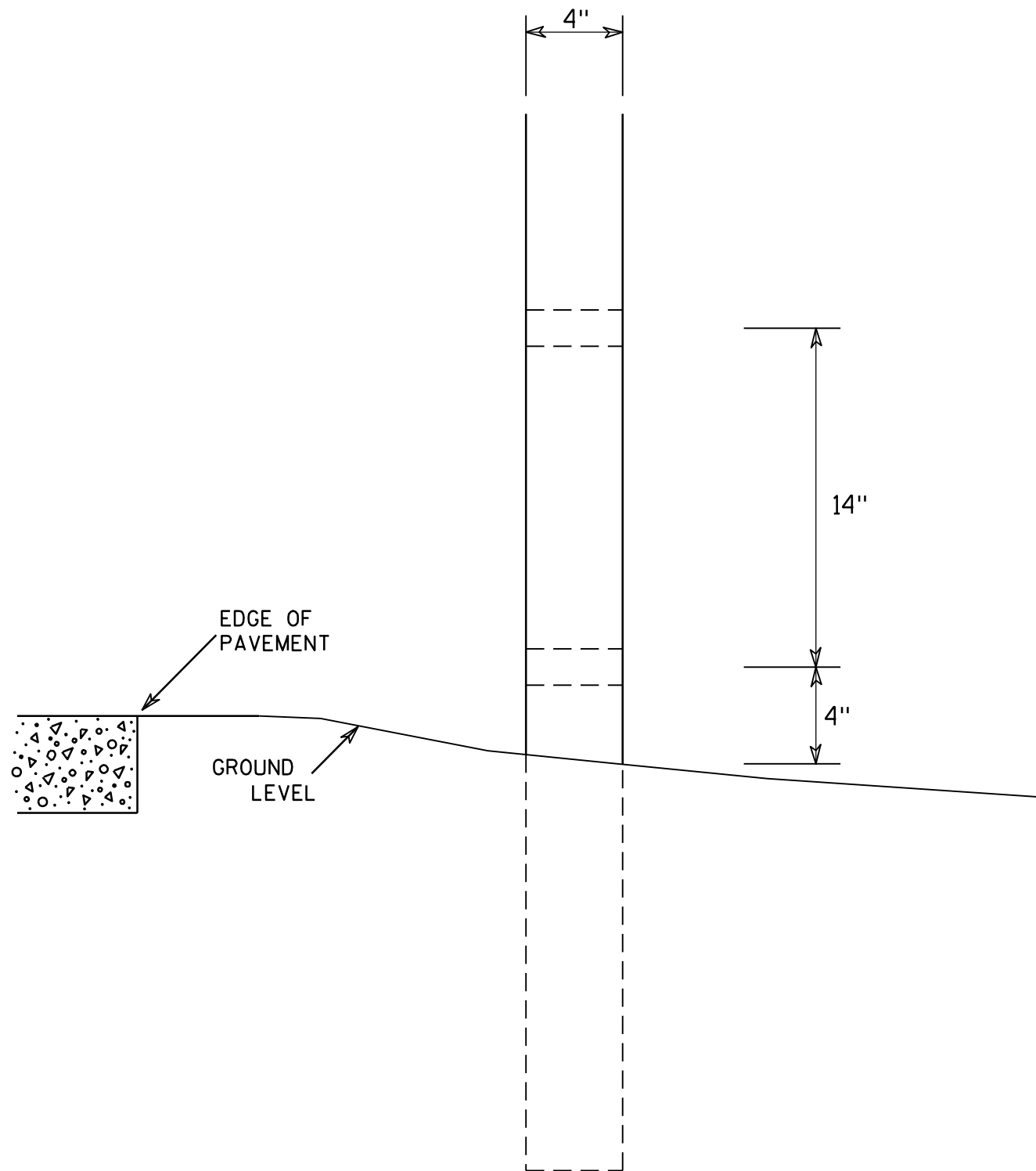
Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

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

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R Rauch*  
for State Traffic Engineer  
DATE 2/05/15 PLATE NO. A4-9.9





GENERAL NOTES

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

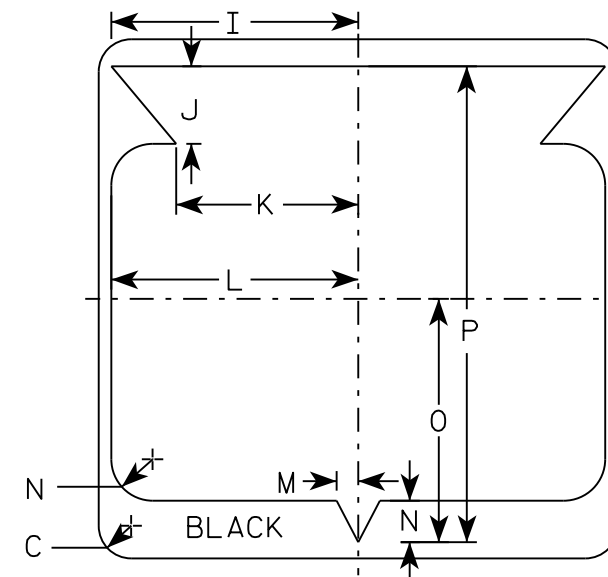
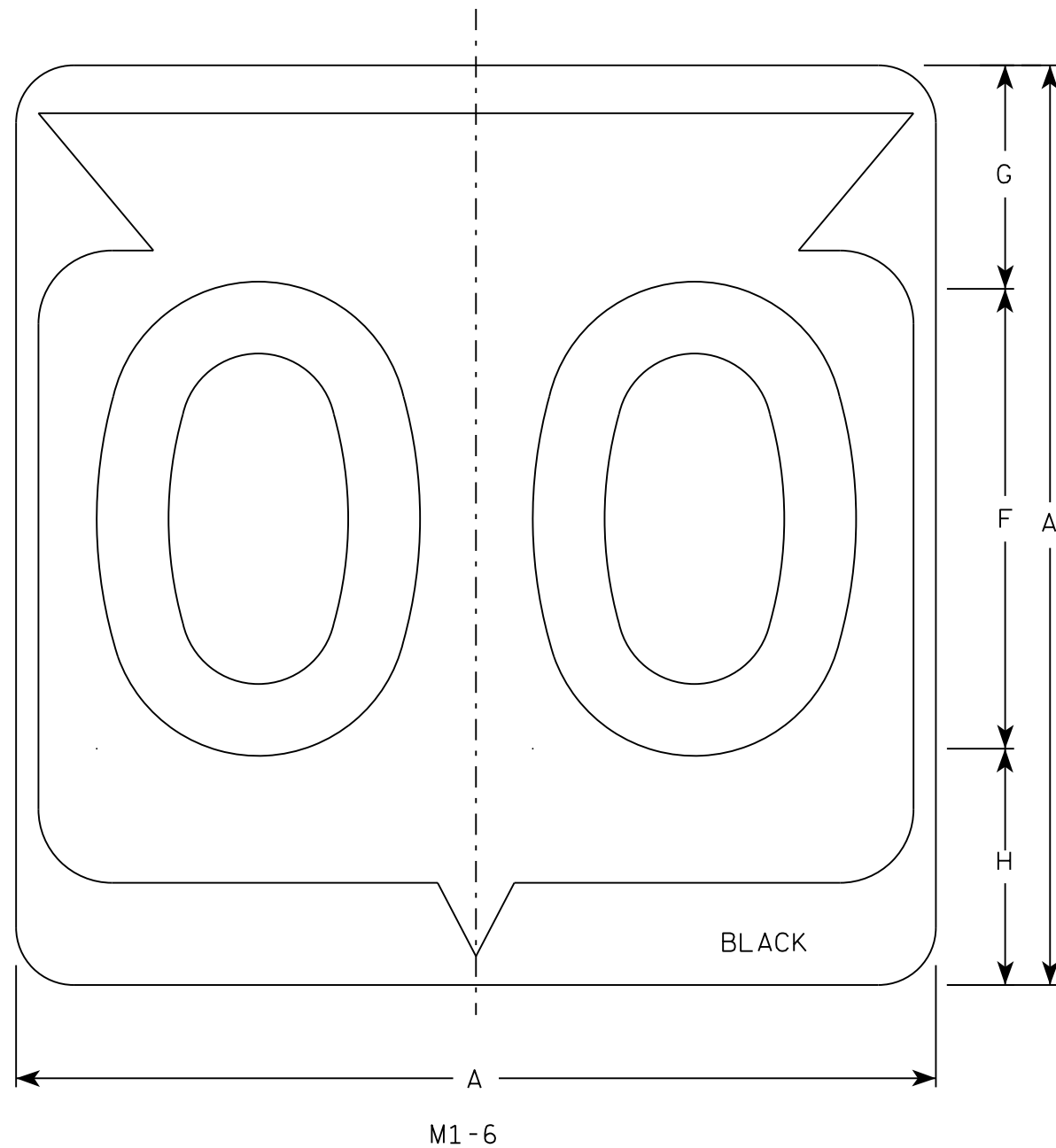
7

7

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - D except 3 number signs Series C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

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

STATE ROUTE MARKER  
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

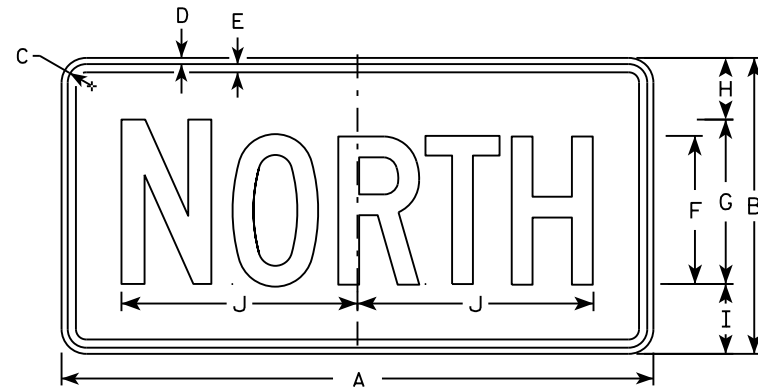
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

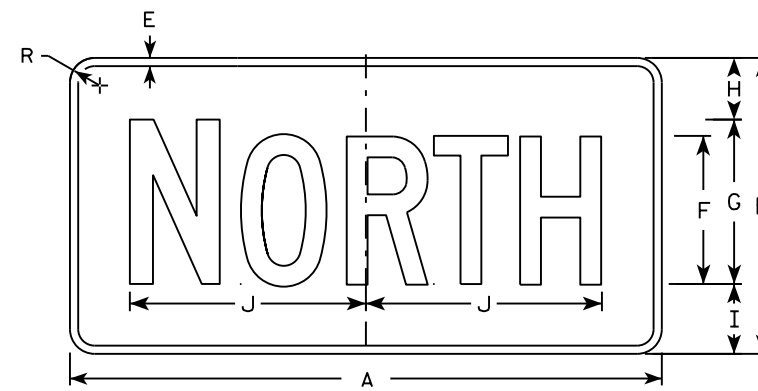
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**

NOTES

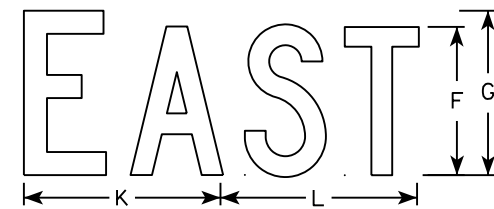
- All Signs Type II - Type H
- Color:
  - Background - See note 5
  - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White  
 Message - Black  
 MB3-1 thru MB3-4 Background - Blue  
 Message - White  
 MK3-1 thru MK3-4 Background - Green  
 Message - White  
 MM3-1 thru MM3-4 Background - White  
 Message - Green  
 MN3-1 thru MN3-4 Background - Brown  
 Message - White  
 MP3-1 thru MP3-4 Background - White  
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



M3-1  
MM3-1  
MP3-1



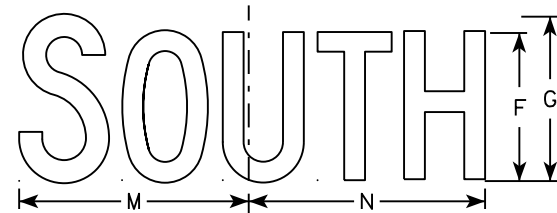
MB3-1  
MK3-1  
MN3-1



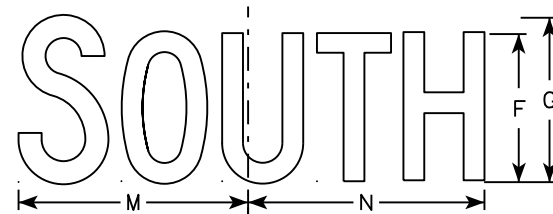
M3-2  
MM3-2  
MP3-2



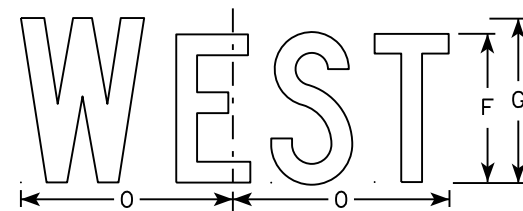
MB3-2  
MK3-2  
MN3-2



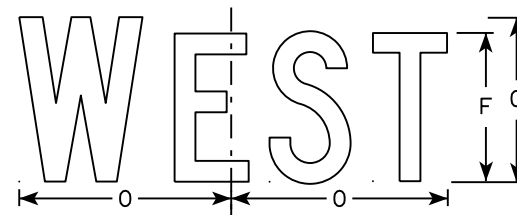
M3-3  
MM3-3  
MP3-3



MB3-3  
MK3-3  
MN3-3



M3-4  
MM3-4  
MP3-4



MB3-4  
MK3-4  
MN3-4

7

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

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

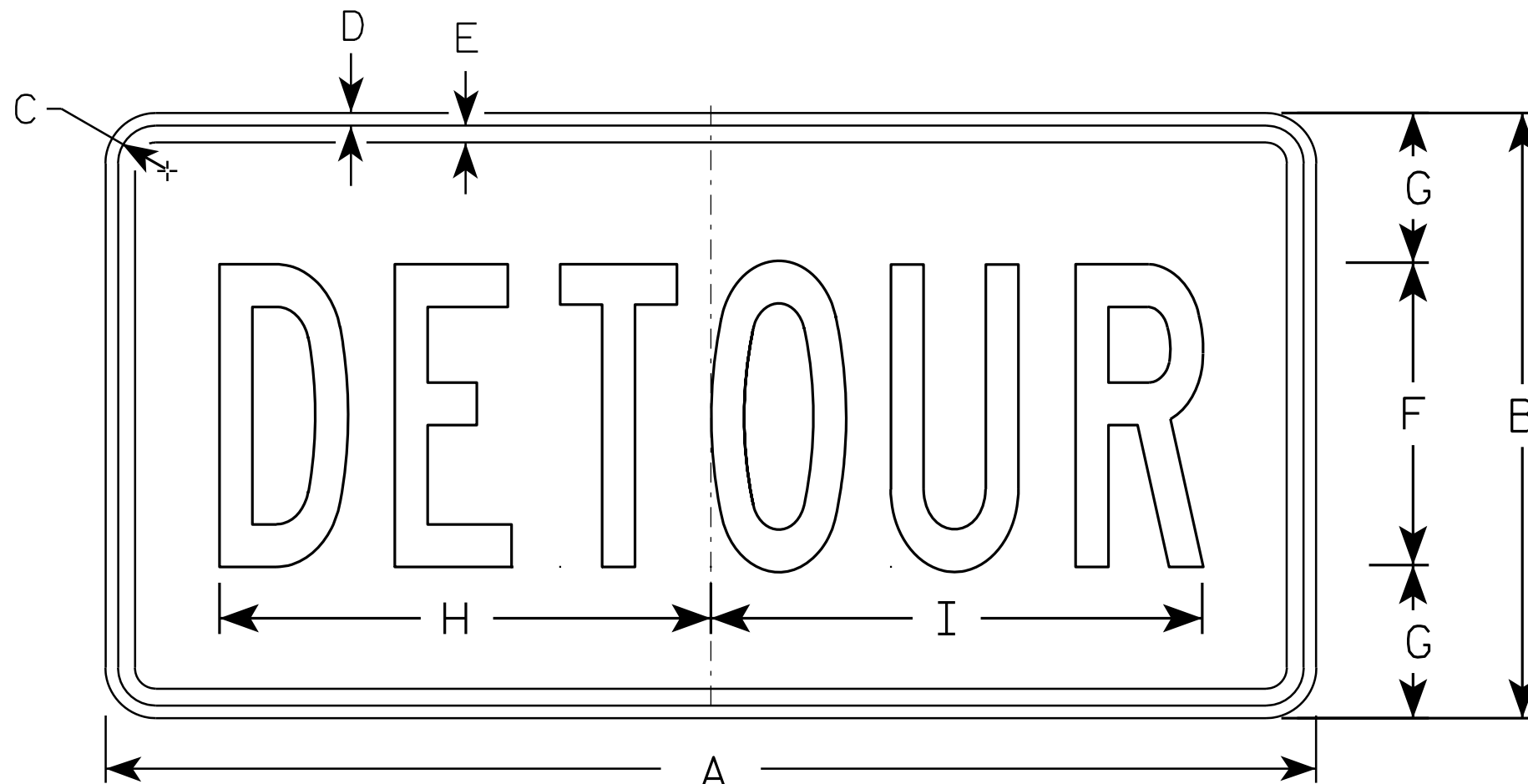
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

NOTES

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



M4-8

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

**STANDARD SIGN**  
**M4-8**

WISCONSIN DEPT OF TRANSPORTATION

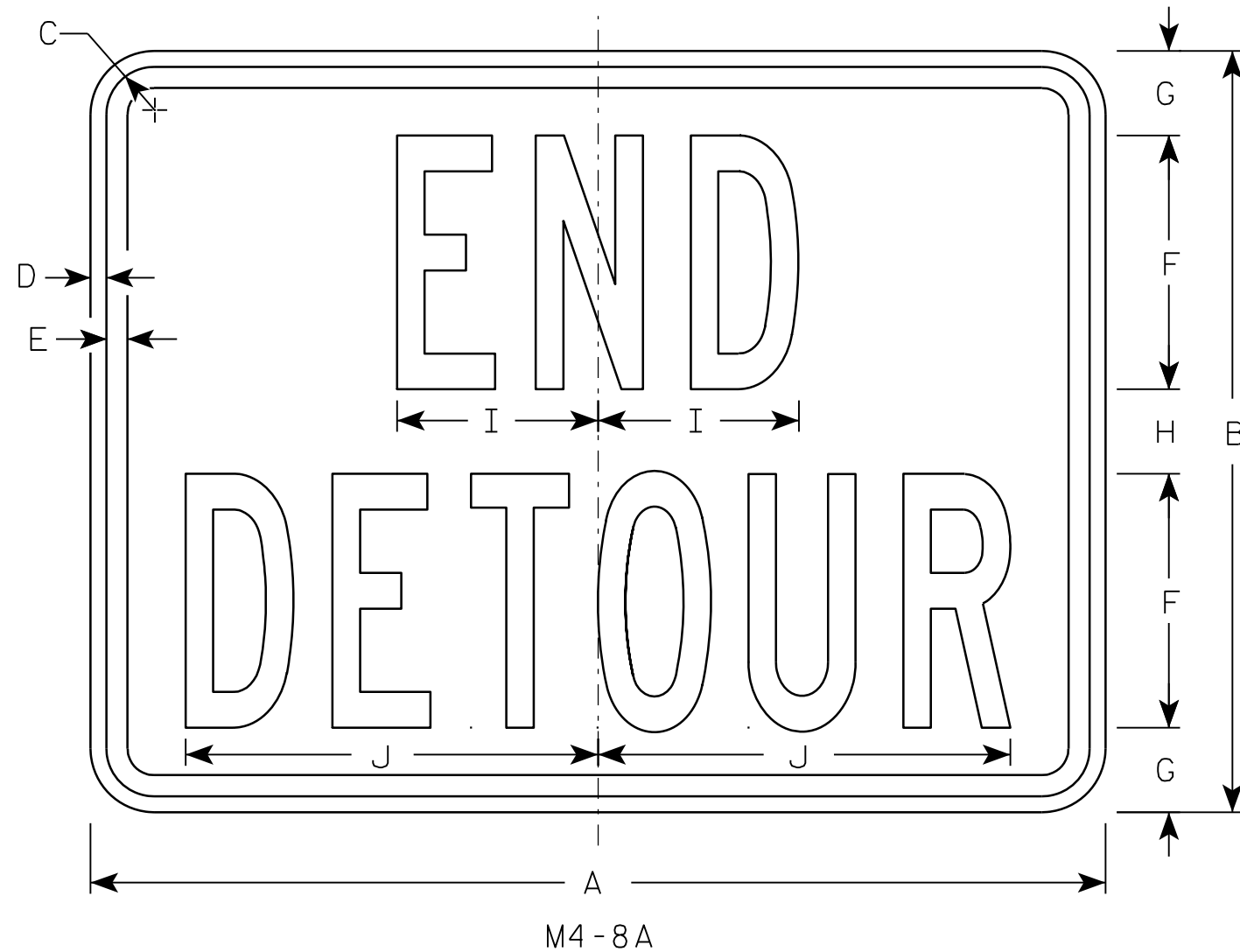
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

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



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

STANDARD SIGN  
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

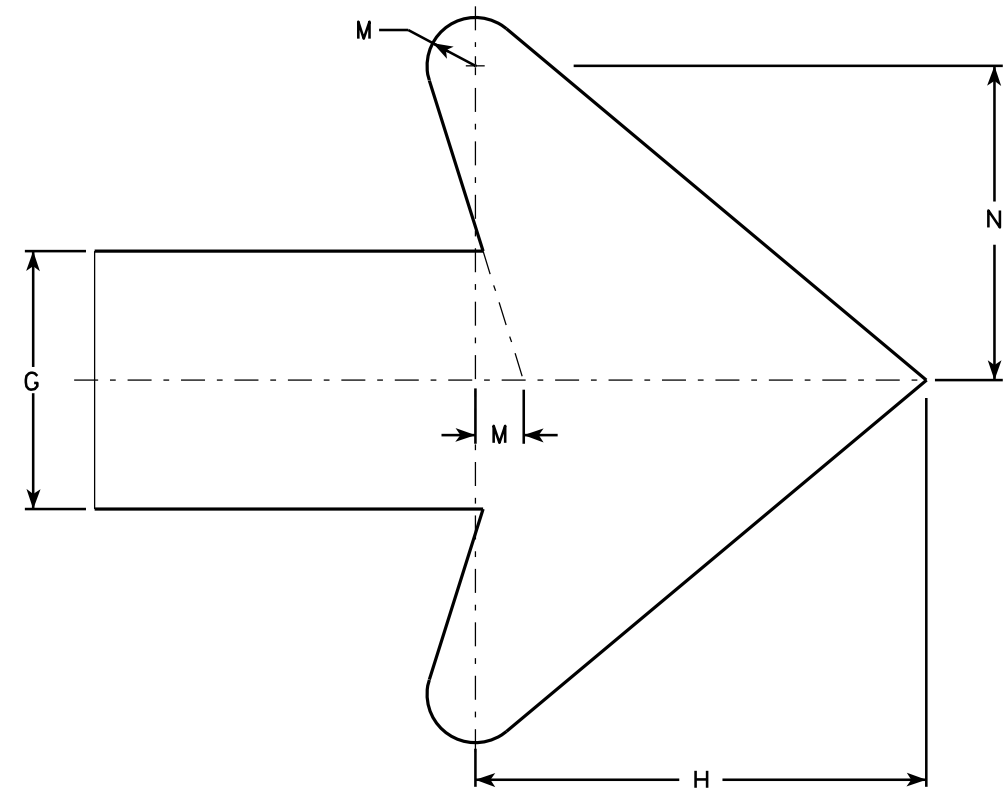
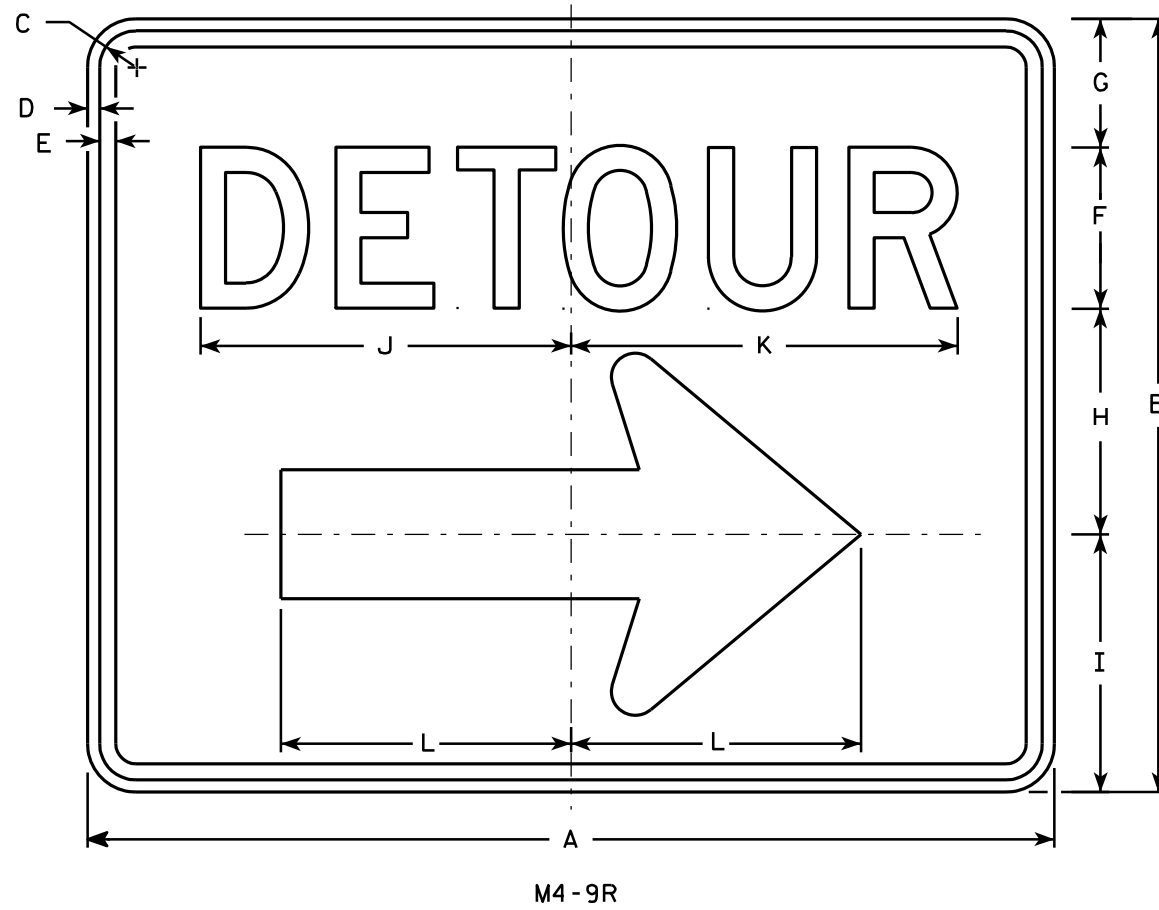
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



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																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

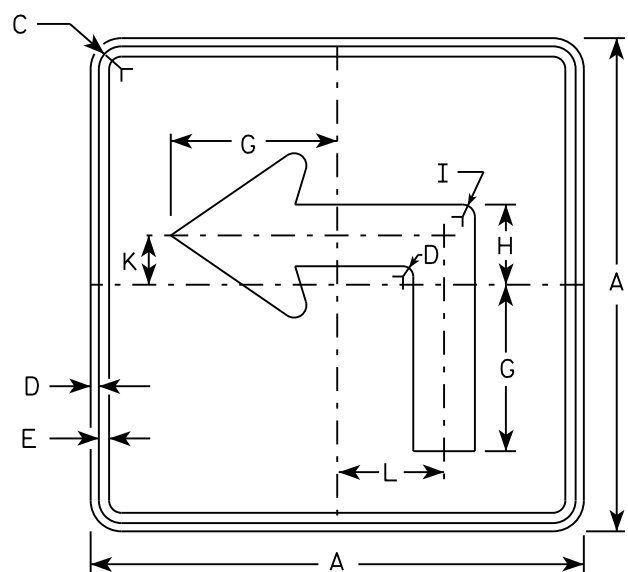
**STANDARD SIGN**  
**M4-9 R & L**

*WISCONSIN DEPT OF TRANSPORTATION*

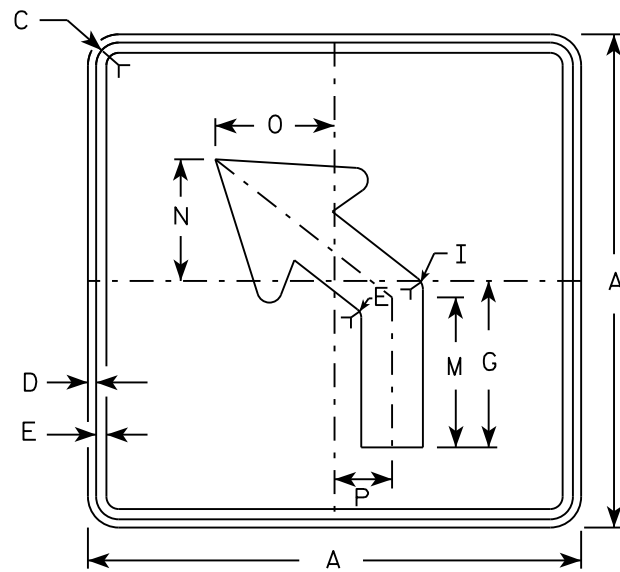
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

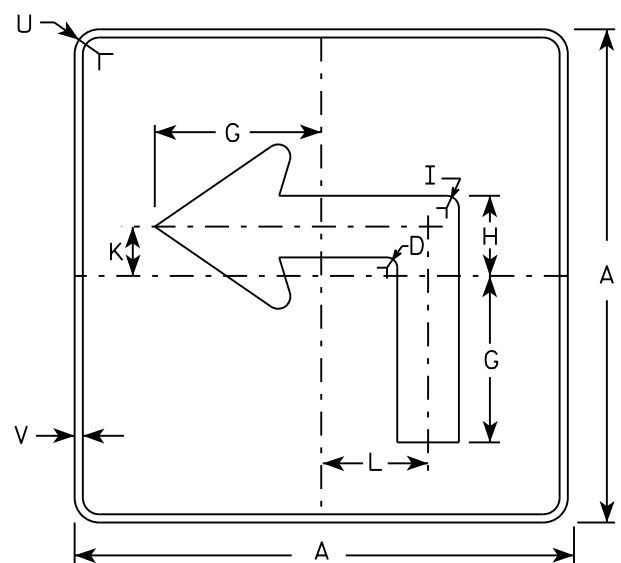
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



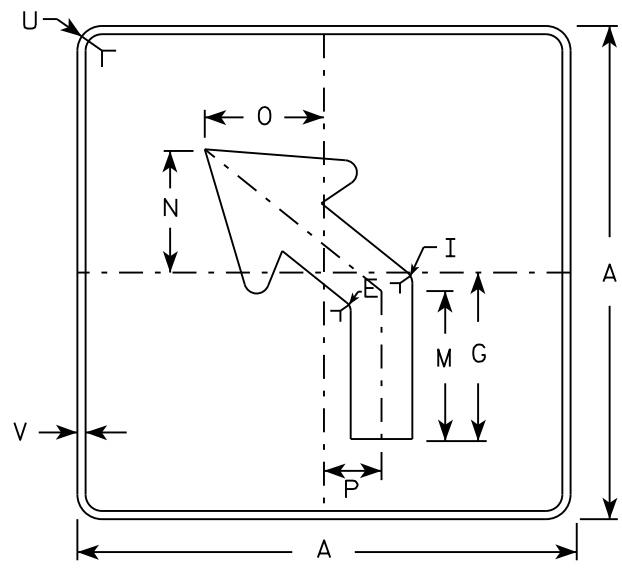
M5-1L  
MM5-1L  
M05-1L  
MP5-1L



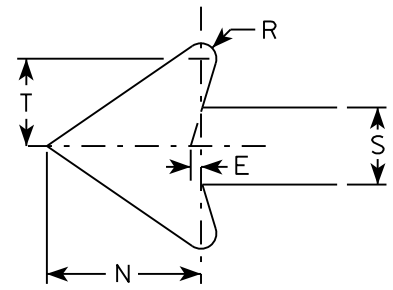
M5-2L  
MM5-2L  
M05-2L  
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
  - Background - See note 4
  - Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M5-1 and M5-2 Background - White  
Message - Black
  - MB5-1 and MB5-2 Background - Blue  
Message - White
  - MK5-1 and MK5-2 Background - Green  
Message - White
  - MM5-1 and MM5-2 Background - White  
Message - Green
  - MN5-1 and MN5-2 Background - Brown  
Message - White
  - M05-1 and M05-2 Background - Orange - Type F Reflective  
Message - Black
  - MP5-1 and MP5-2 Background - White - Type H Reflective  
Message - Blue
  - MR5-1 and MR5-2 Background - Brown  
Message - Yellow
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

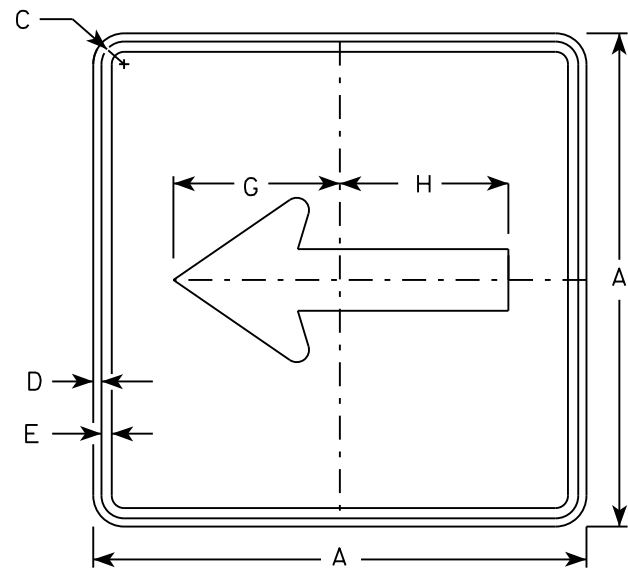
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN  
M5-1 & M5-2

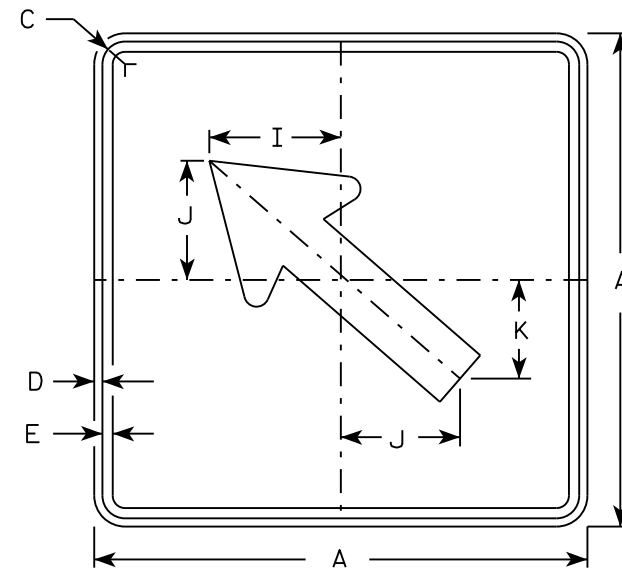
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

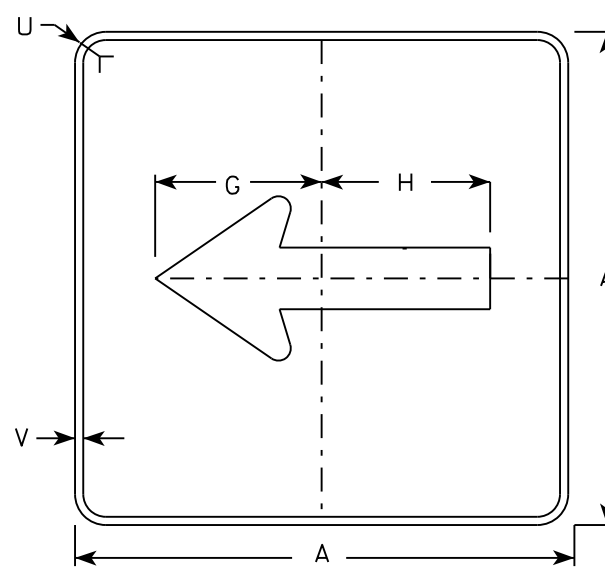
DATE 10/15/15 PLATE NO. M5-1.13



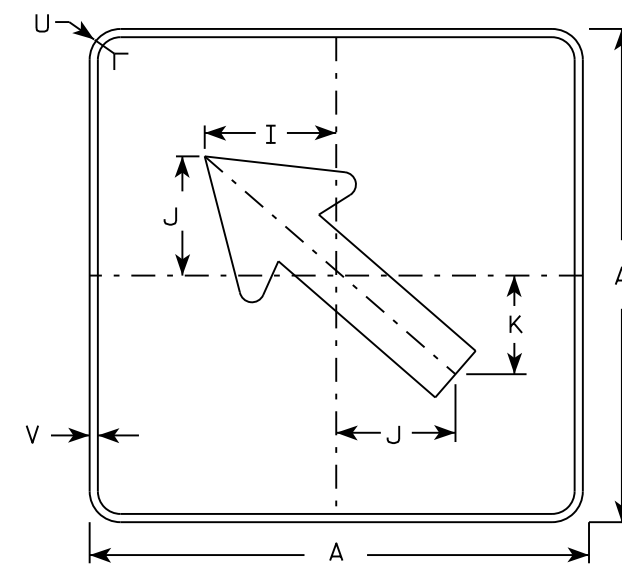
M6-1  
MM6-1  
M06-1  
MP6-1



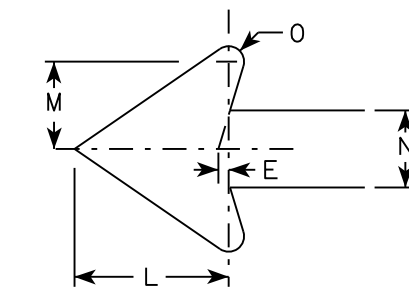
M6-2  
MM6-2  
M06-2  
MP6-2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

7

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

STANDARD SIGN  
M6-1 & M6-2  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

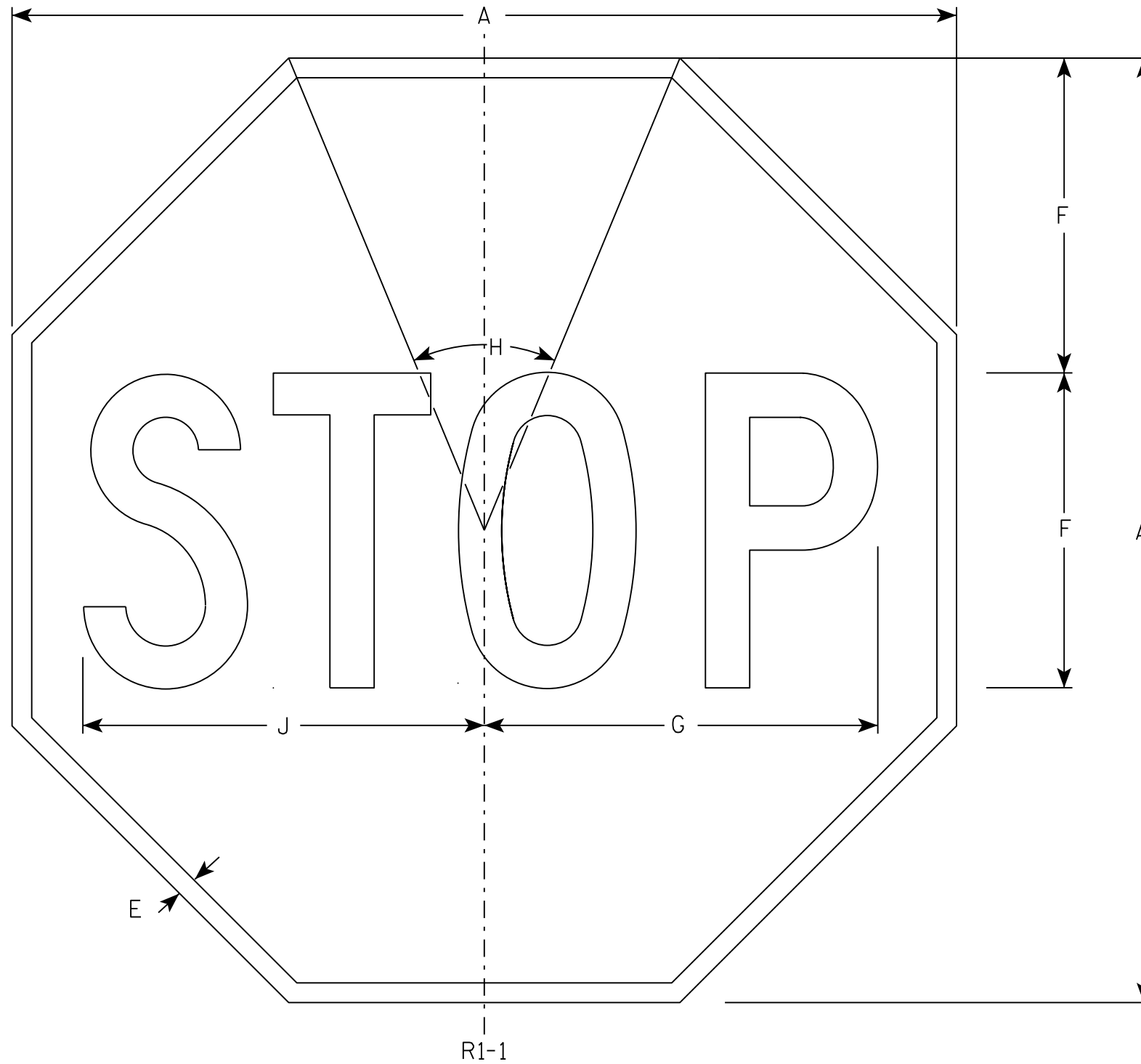
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



NOTES

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



7

7

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

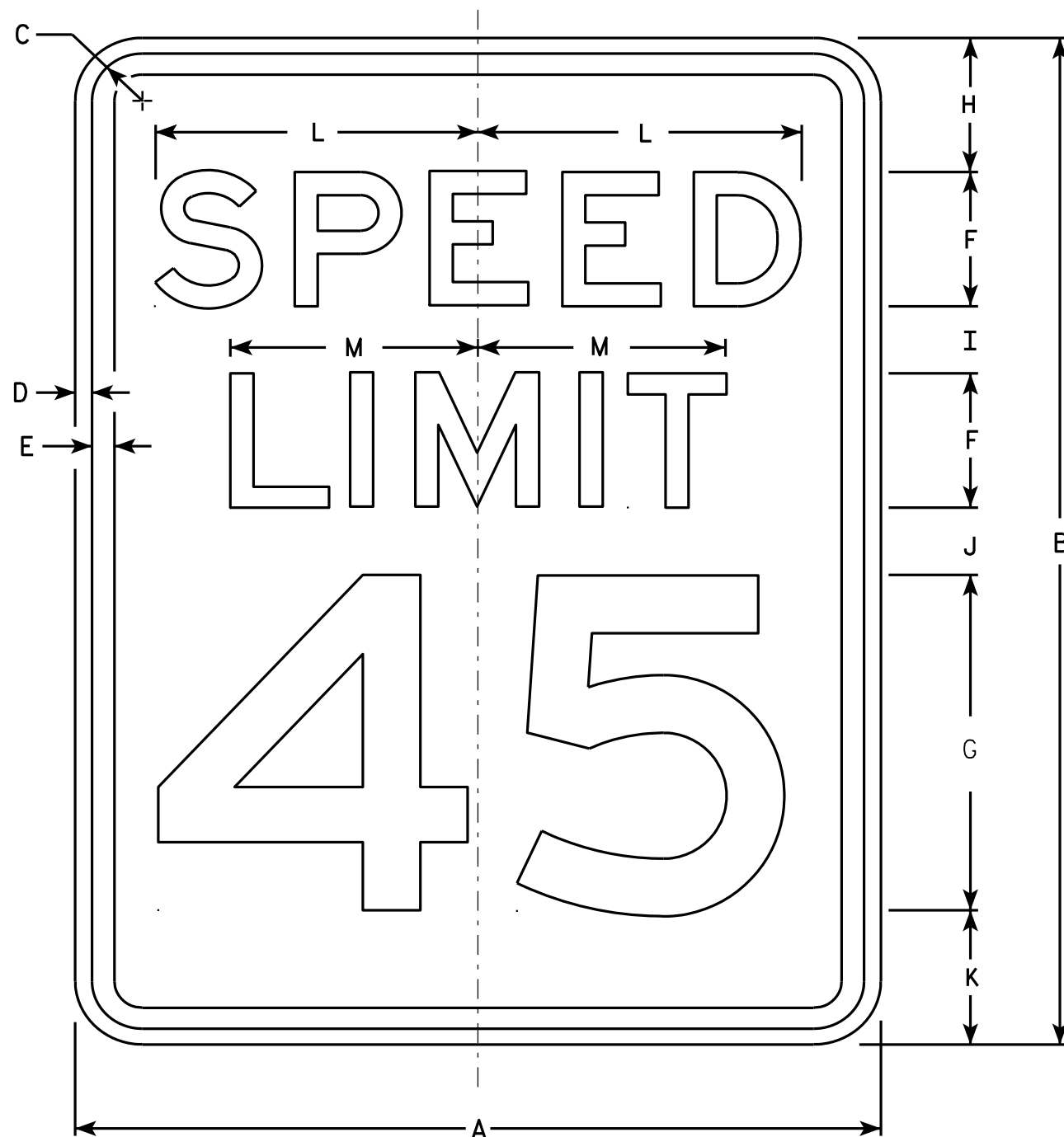
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

STANDARD SIGN  
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

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



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN  
R2-1

WISCONSIN DEPT OF TRANSPORTATION

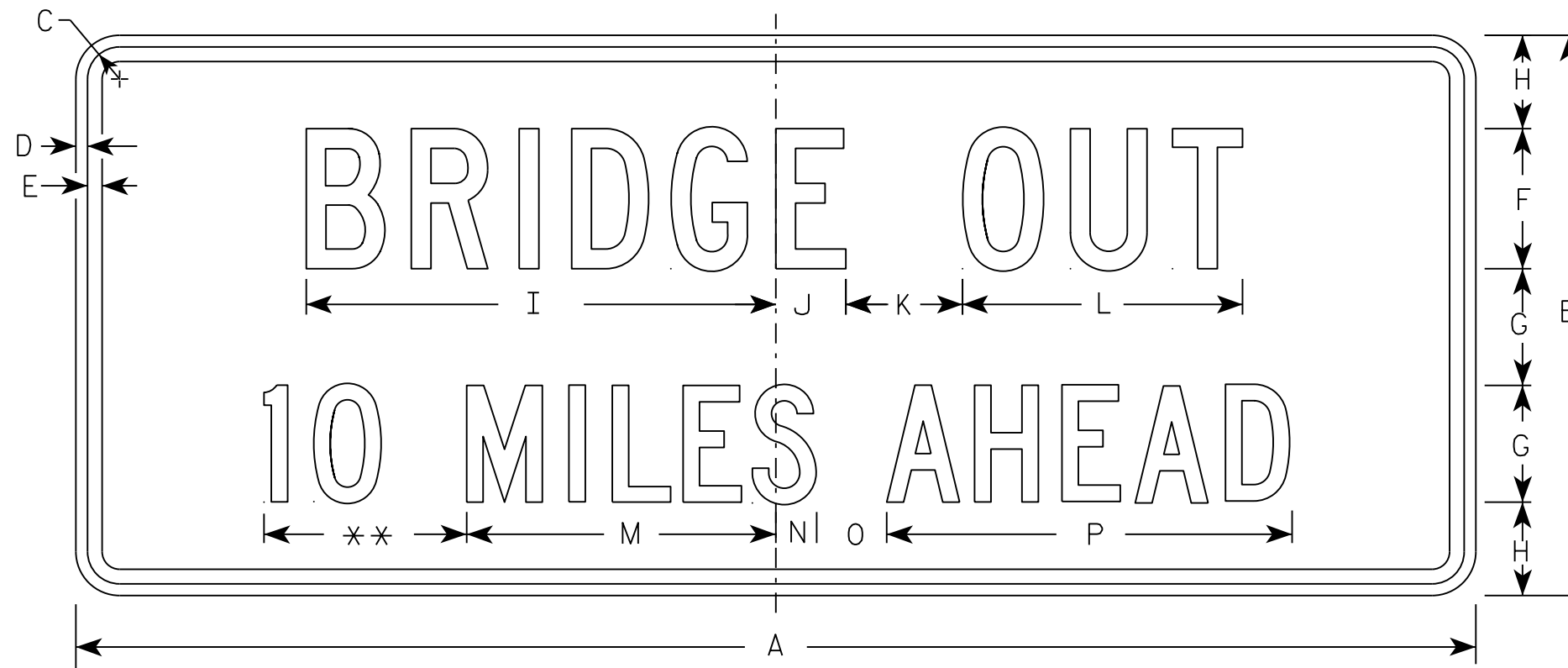
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

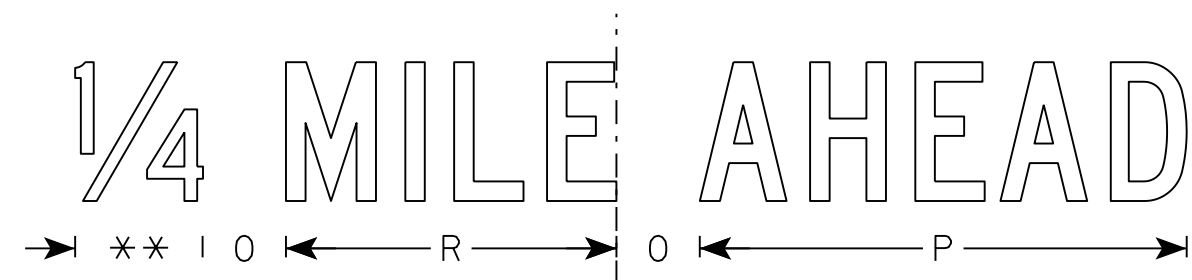
NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

\*\* See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8								3.75	
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8								10.0	
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8								10.0	
3																											
4																											
5																											

STANDARD SIGN  
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
For State Traffic Engineer

DATE 7/28/16 PLATE NO. R11-3C.3

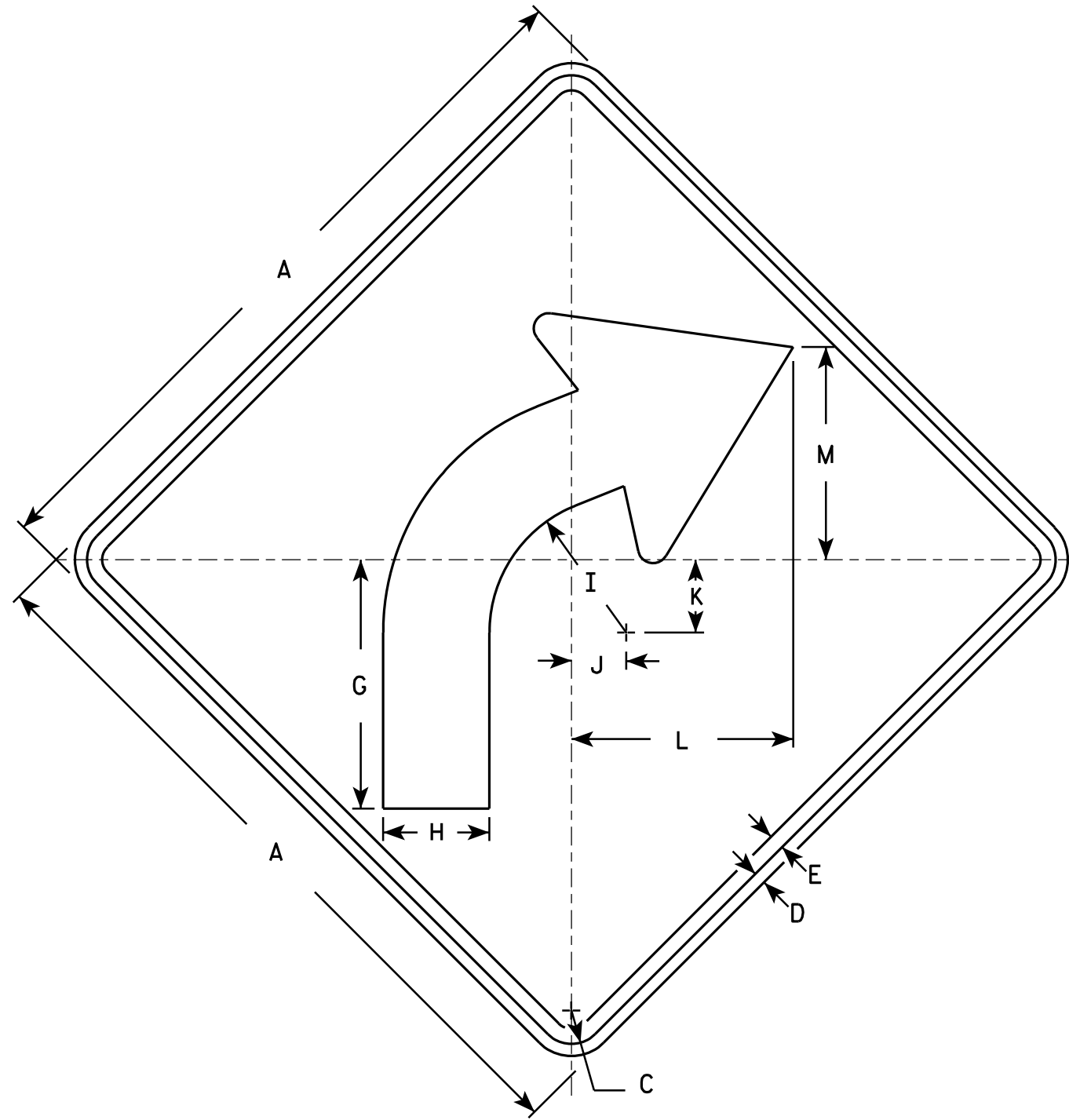
PROJECT NO:

SHEET NO:

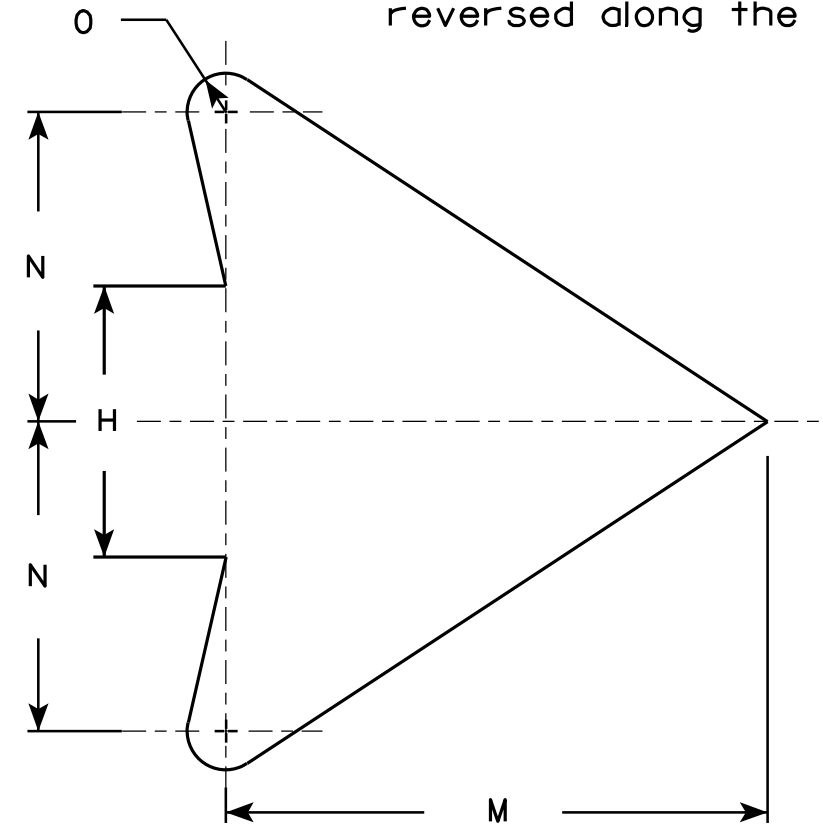
E

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. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

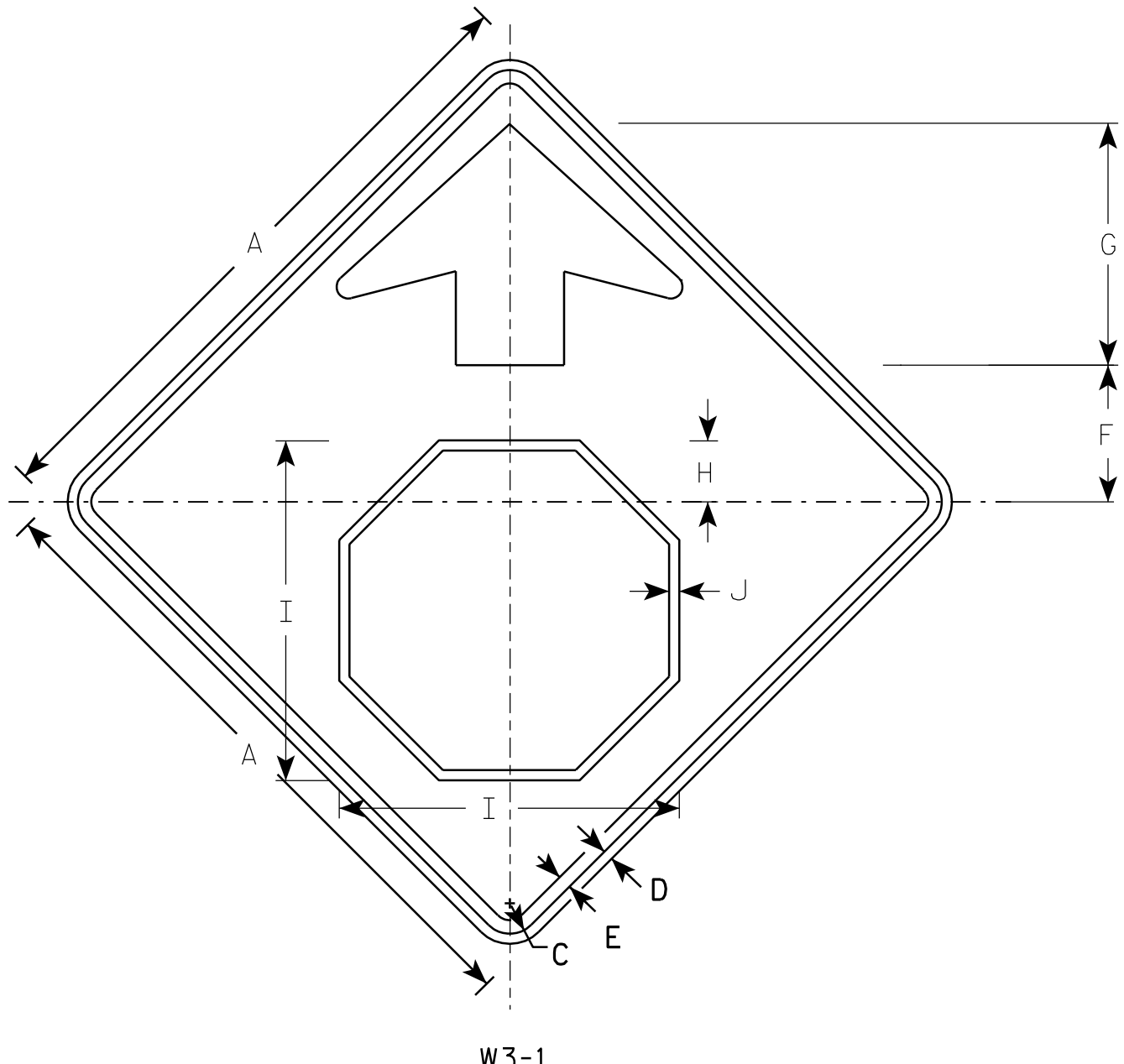
STANDARD SIGN  
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

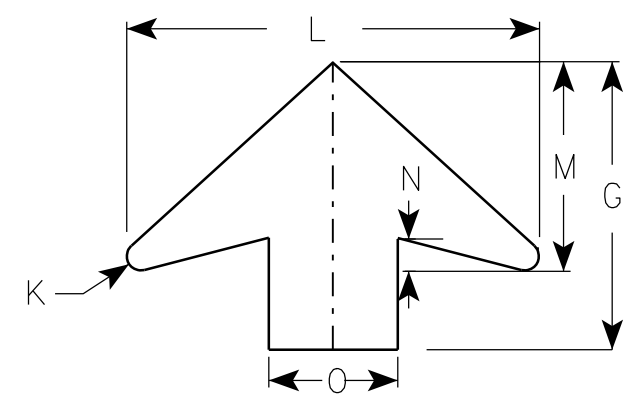
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



W3-1

NOTES

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



ARROW DETAIL

7

7

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

**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

PROJECT NO: \_\_\_\_\_ 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 - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W4-4B

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	12	1 1/8	3/8	1/2	3	2 1/4	1 1/2	12 3/8	5/8	1 1/2	10 3/8	6 1/4	2 1/4	2 1/4	6 1/4											2.5
2M	30	12	1 1/8	3/8	1/2	3	2 1/4	1 1/2	12 3/8	5/8	1 1/2	10 3/8	6 1/4	2 1/4	2 1/4	6 1/4											2.5
3	42	15	1 1/8	3/8	1/2	4	2 5/8	1 3/4	16 7/8	5/8	2 3/8	13 7/8	8 3/8	3	3 1/8	8 3/8											4.17
4	48	18	1 1/8	3/8	1/2	5	3	2	21	5/8	3 1/8	17 1/4	10 1/2	3 5/8	3 7/8	10 3/8											6.0
5																											

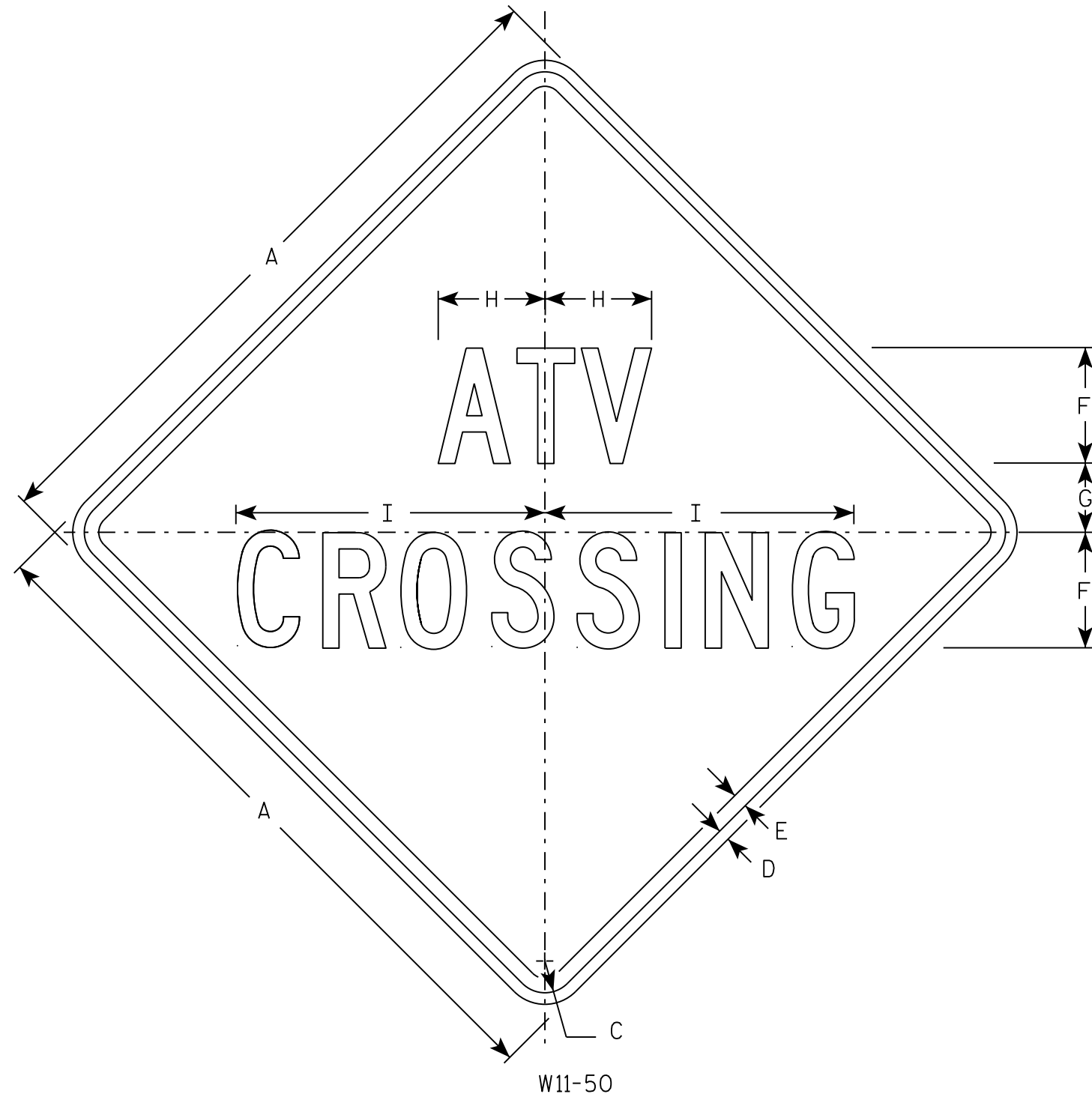
**STANDARD SIGN**  
**W4-4B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-4B.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Yellow  
Message - Black
3. Message Series - C

7

7

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

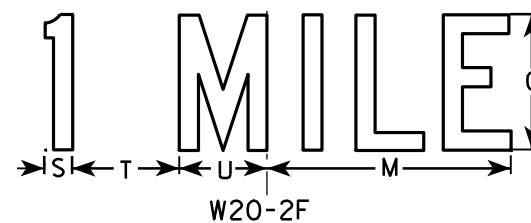
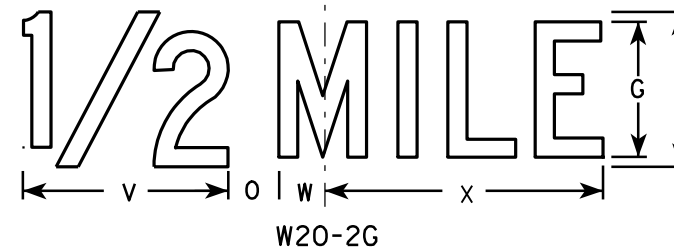
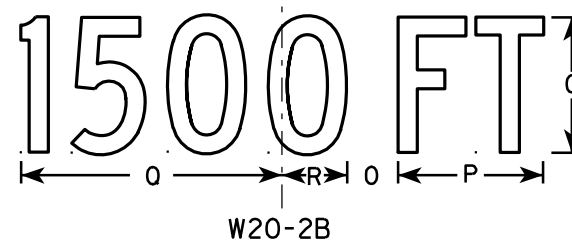
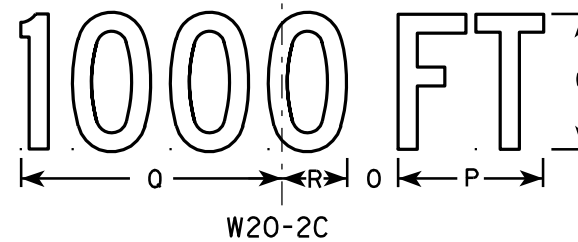
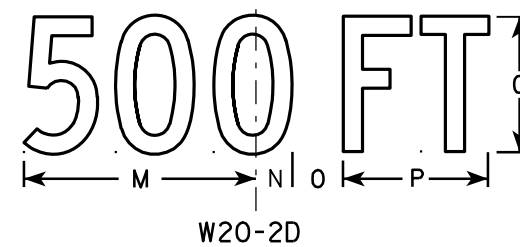
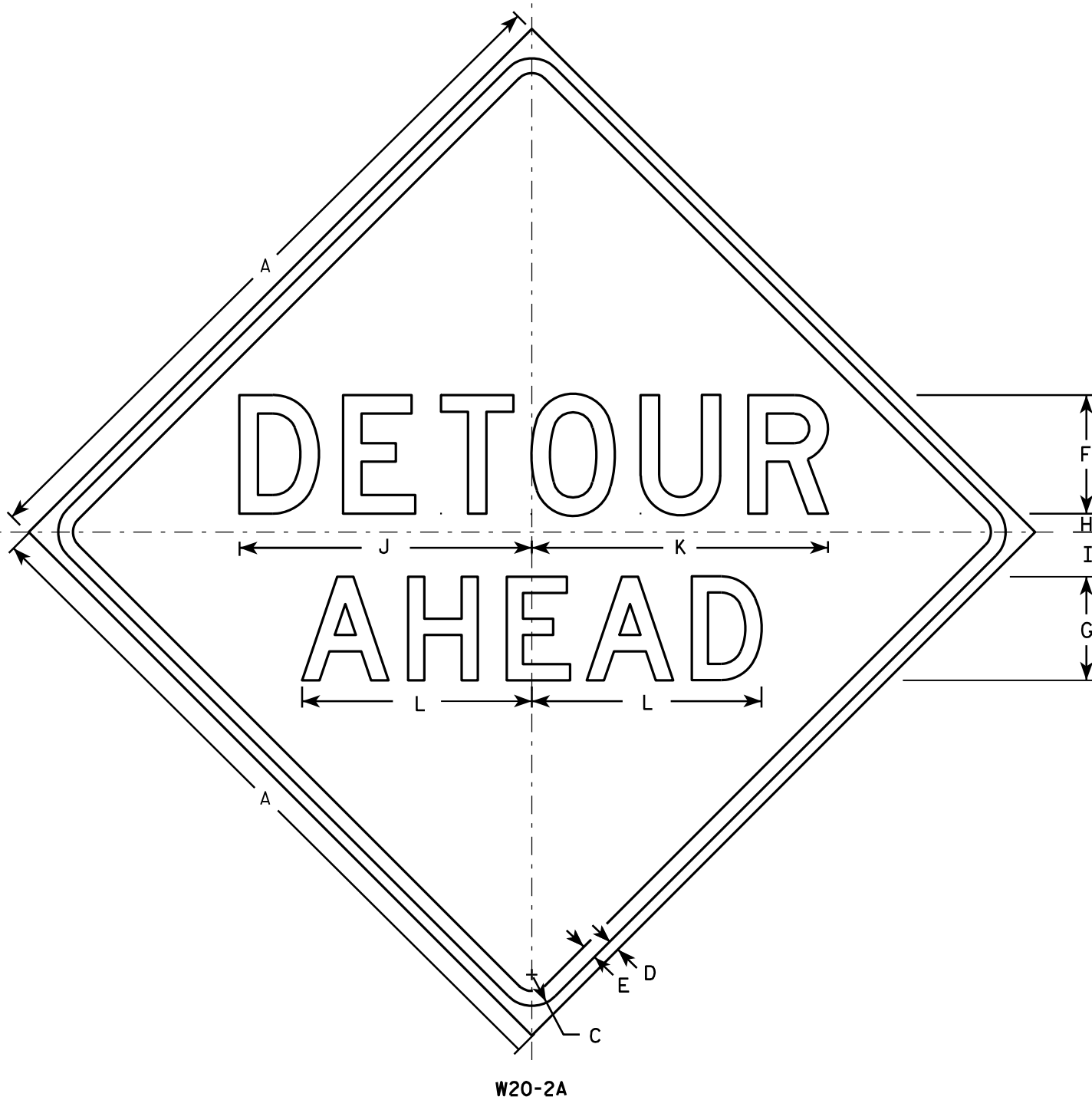
STANDARD SIGN  
W11-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/1/16 PLATE NO. W11-50.4

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.  
Line 2 is Series D for AHEAD and Series C for all other distances.

7

7

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

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

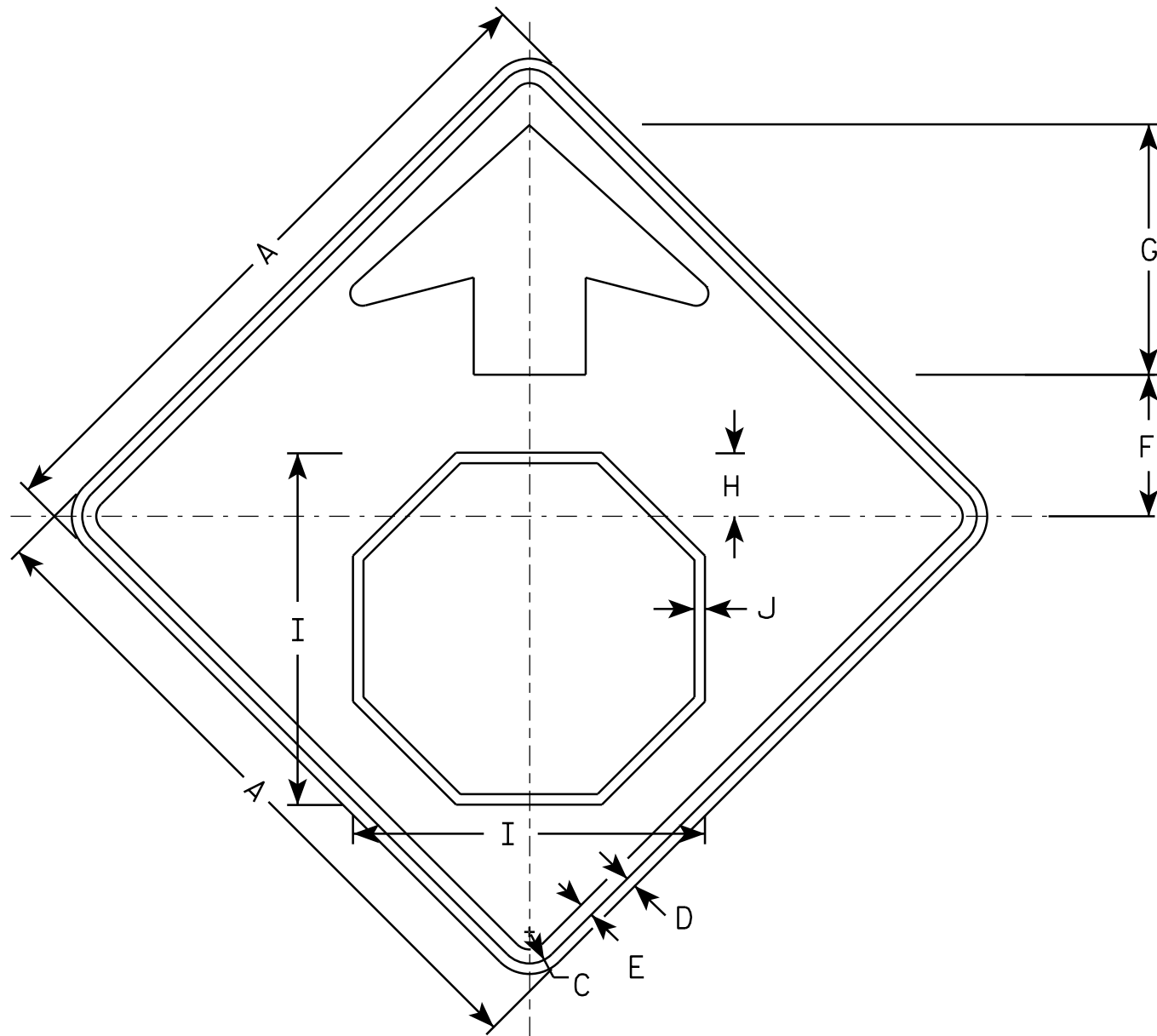
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

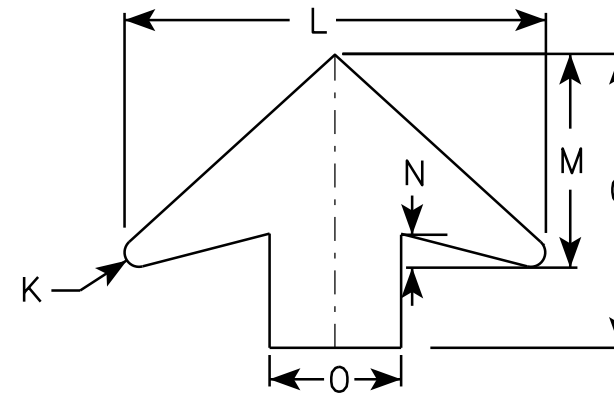




W03-1

NOTES

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



ARROW DETAIL

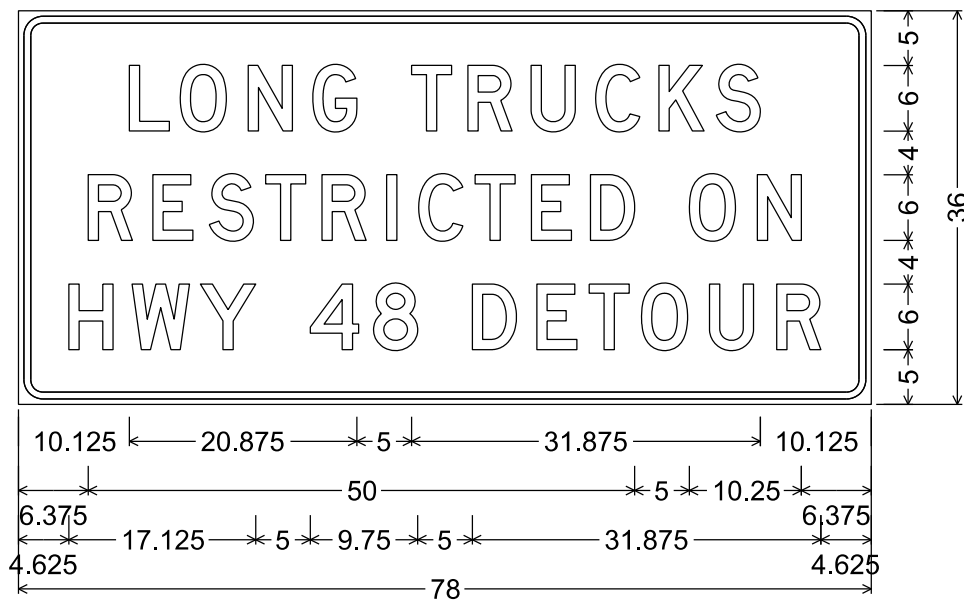
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2S	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
2M	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8	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

STANDARD SIGN  
W03-1

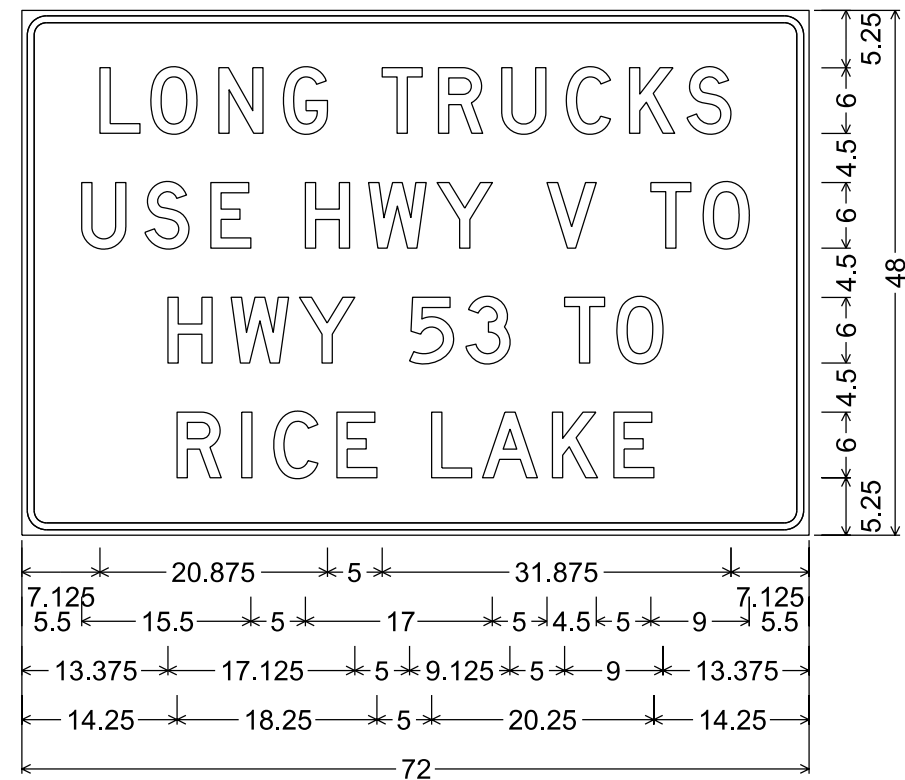
WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R Rauch*  
 for State Traffic Engineer  
 DATE 11/20/13 PLATE NO. W03-1.1

NOTES

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



2.250" Radius, 0.625" Border, 0.500" Indent



2.250" Radius, 0.625" Border, 0.500" Indent

7

7

STATE PROJECT NUMBER
<b>8120-00-70</b>
▲ SEE CORNER DETAILS ON "DETAILS" SHEET
■ NAME PLATE LOCATION (SEE "DETAILS" SHEET)
* BUILD APRON AND END OF BOX LEVEL
○ INDICATES WING NUMBER
▲ VERT. CONST. JOINT (TYP.)
■ DIMENSION MEASURED PERPENDICULAR TO R STH 48
● SEE ROADWAY PLANS FOR UTILITY COORDINATION

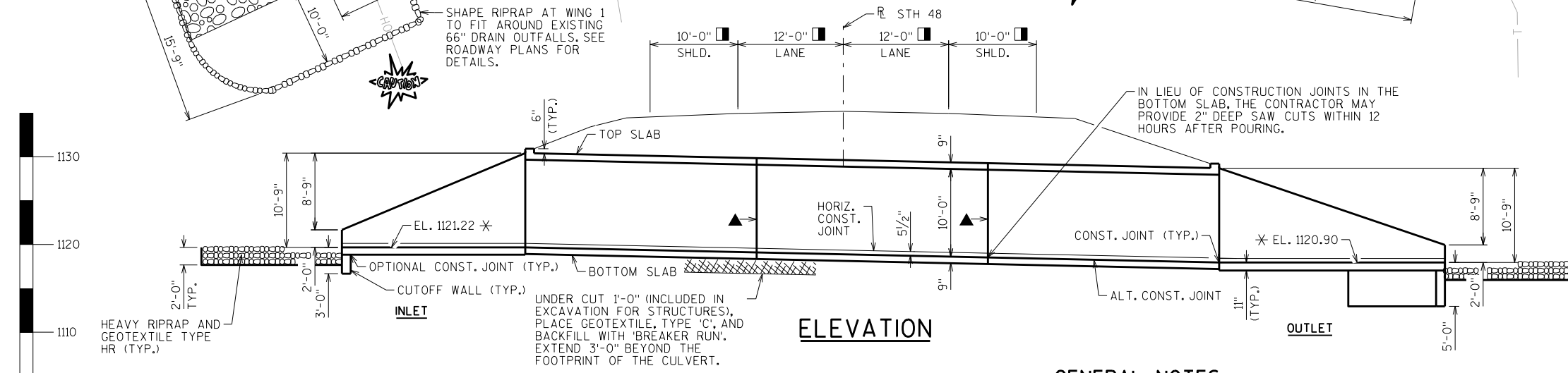
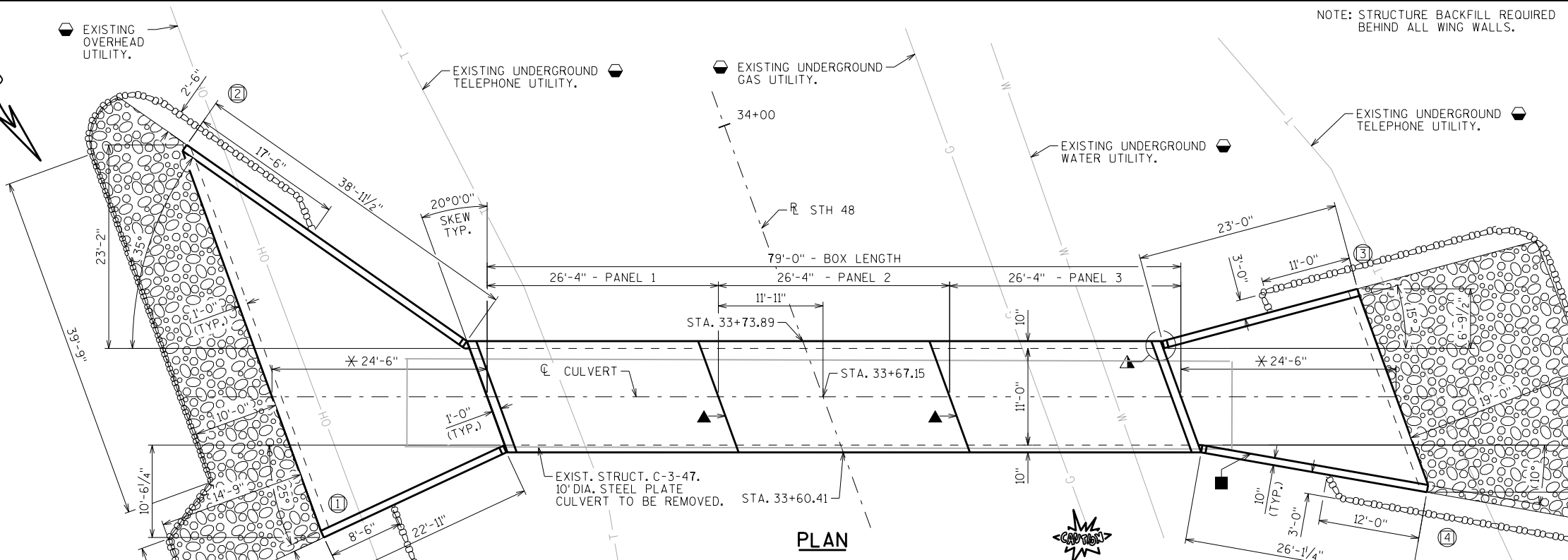
LIMITS OF HEAVY RIPRAP AND GEOTEXTILE TYPE HR (TYP.)

FILL VOIDS IN HEAVY RIPRAP WITH BACKFILL COARSE AGGREGATE WITHIN LIMITS SHOWN.

**LIST OF DRAWINGS**

- LAYOUT
- BOX DETAILS
- APRON DETAILS
- DETAILS
- SUBSURFACE EXPLORATION

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.



**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-3-63" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

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

THE CONTRACTOR MAY ELECT TO SUBSTITUTE #10R #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

**TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE C-3-47	EACH	1
206.2001	EXCAVATION FOR STRUCTURES C-3-63	EACH	1
209.0300.S	BACKFILL COARSE AGGREGATE SIZE NO. 2	CY	14
210.2500	BACKFILL STRUCTURE TYPE B	TON	1,885
311.0115	BREAKER RUN	CY	112
504.0100	CONCRETE MASONRY CULVERTS	CY	177
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	29,310
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	4,510
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	38
606.0300	RIPRAP HEAVY	CY	125
645.0105	GEOTEXTILE TYPE C	SY	340
645.0120	GEOTEXTILE TYPE HR	SY	240
NON-BID ITEMS			
	FILLER	SIZE	3/4"

**DESIGN DATA**

**LIVE LOAD:**  
 DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: RF = 1.05  
 OPERATING RATING FACTOR: RF = 1.35  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255(KIPS)

**EARTHLOAD:**  
 DESIGNED FOR 5 TO 6 FT. OF FILL.

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

**HYDRAULIC DATA**

**100 YEAR FREQUENCY**  
 $Q_{100} = 510$  C.F.S.  
 $VEL_{100} = 12.2$  F.P.S.  
 $HW_{100} = EL. 1128.16$   
 WATERWAY AREA = 110 SQ. FT.  
 DRAINAGE AREA = 2.8 SQ. MI.  
 ROADWAY OVERTOPPING = N/A  
 SCOUR CRITICAL CODE = 8

**2 YEAR FREQUENCY**

$Q_2 = 105$  C.F.S.  
 $VEL_2 = 4.20$  F.P.S.  
 $HW_2 = EL. 1124.53$

**TRAFFIC VOLUME**

**STH 48**  
 ADT = 4,400 (2043)  
 R.D.S. = 45 M.P.H.

8

**STRUCTURE DESIGN CONTACTS:**  
 MICAH BROOKS (608) 266-5080  
 LAURA SHADEWALD (608) 267-9592

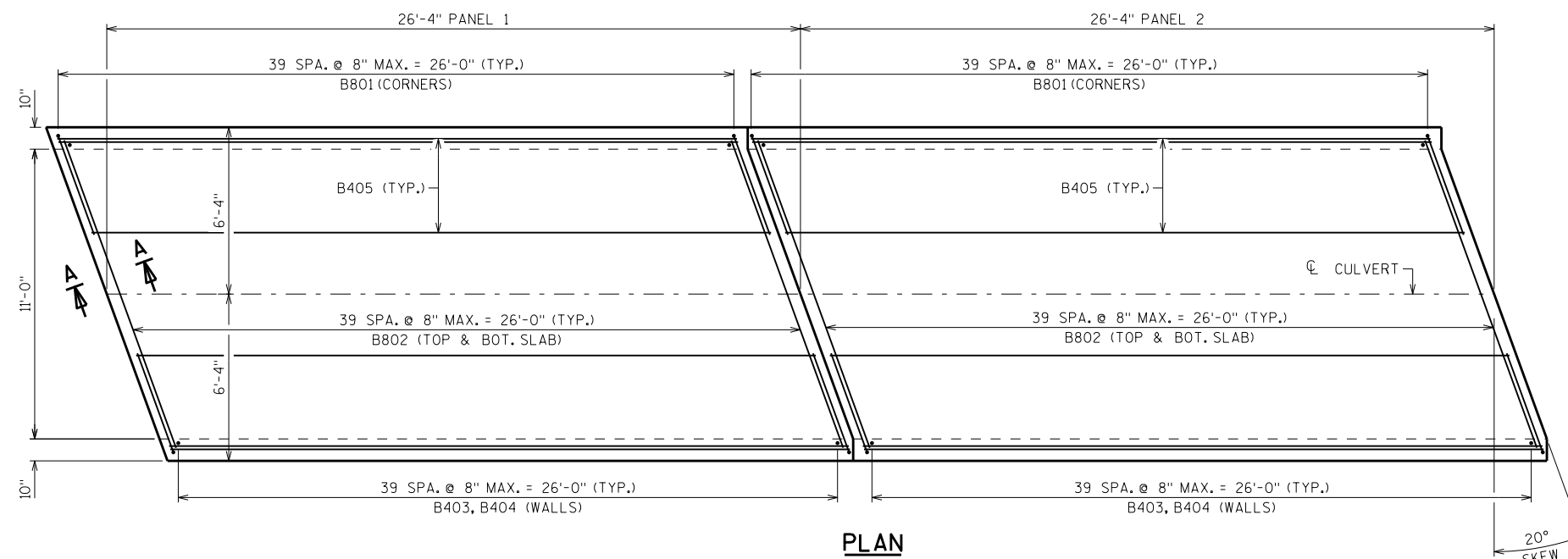
NO.	DATE	REVISION	BY
 <b>BUREAU OF STRUCTURES</b> ACCEPTED <i>[Signature]</i> <b>10/20/22</b> CHIEF STRUCTURES DESIGN ENGINEER DATE			
<b>STRUCTURE C-3-63</b>			
STH 48 OVER DRAINAGEWAY			
COUNTY	BARRON	CITY	RICE LAKE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	MWB	DRAWN BY	AA
<b>LAYOUT</b>			SHEET 1 OF 5

SCALE = 7.50

**BILL OF BARS**

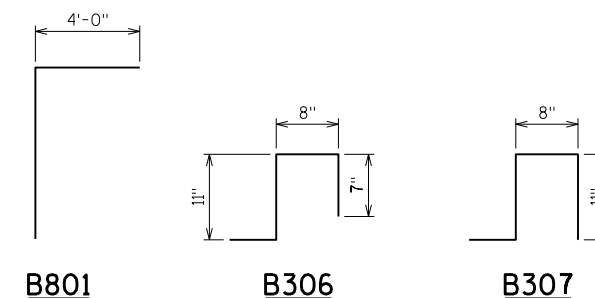
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COMT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B801		480	11'-3"	X		CORNERS
B802		240	12'-5"			TOP & BOT. SLAB - TRANS.
B403		240	2'-2"			WALLS - DOWELS
B404		240	9'-10"			WALLS - VERT.
B405		138	26'-0"			TOP & BOT. SLAB & WALLS - LONGIT.
B306		18	2'-7"	X		INLET HEADER - VERT.
B307		18	2'-11"	X		OUTLET HEADER - VERT.
B408		4	12'-11"			HEADERS - HORIZ.
B509		92	4'-0"			VERT. CONST. JOINTS



**PLAN**

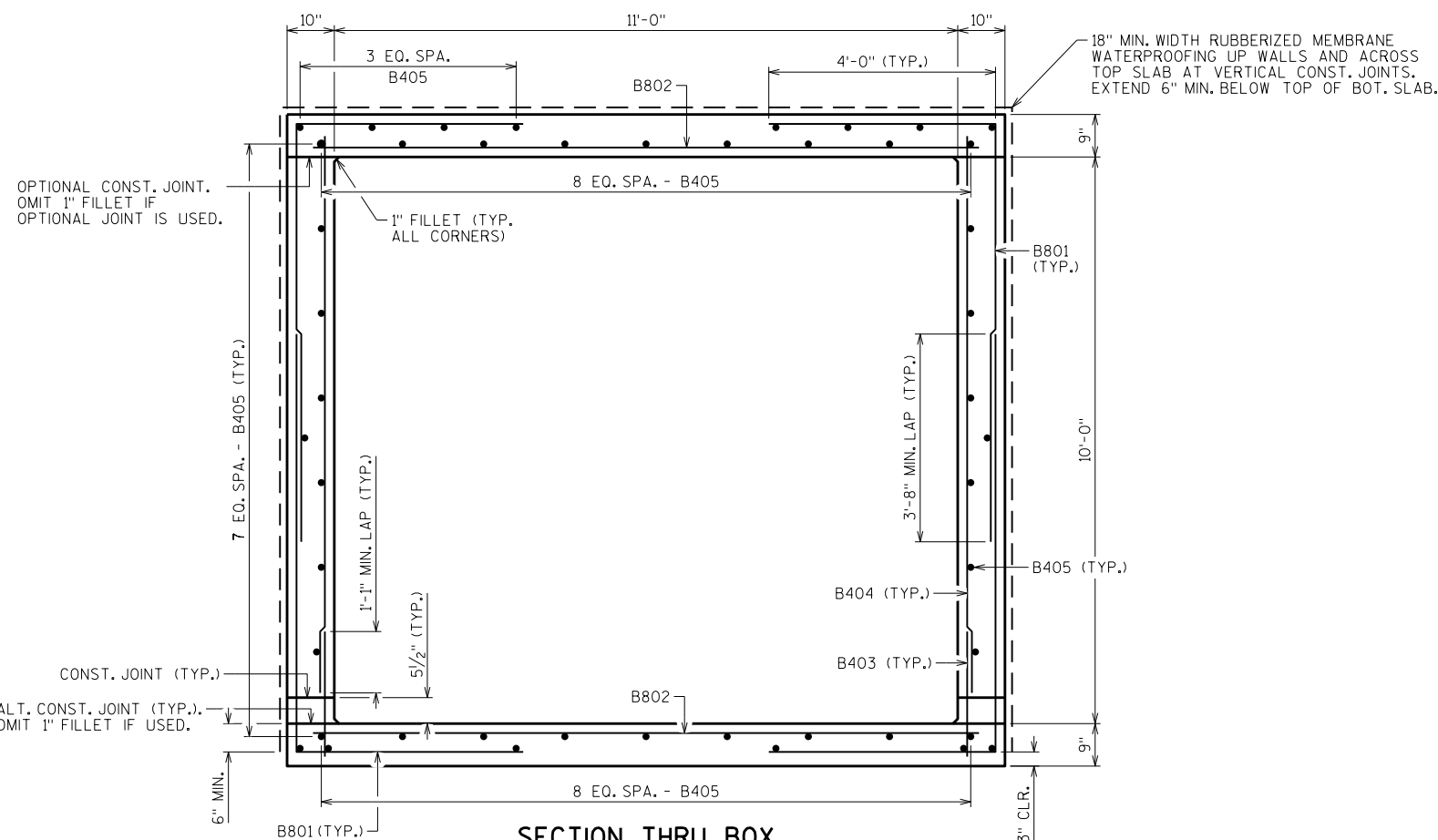
APRON AND HEADERS NOT SHOWN  
PANEL 3 SIMILAR TO PANEL 1



**B801**

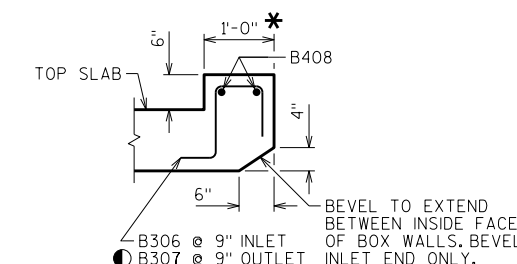
**B306**

**B307**



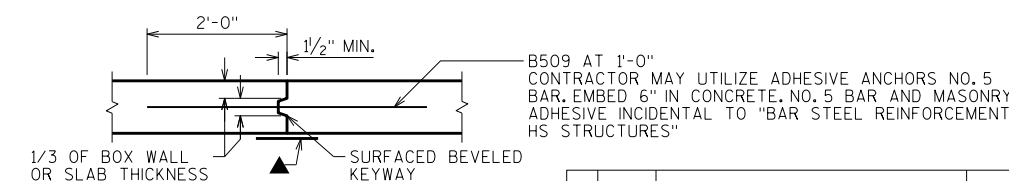
**SECTION THRU BOX**

ALL BARS NOT LABELED ARE B405 AS SHOWN



**SECTION A-A**

\* DIMENSION MEASURED PERPENDICULAR TO HEADER  
● BARS PLACED PERPENDICULAR TO HEADER, SPACING ALONG SKEW

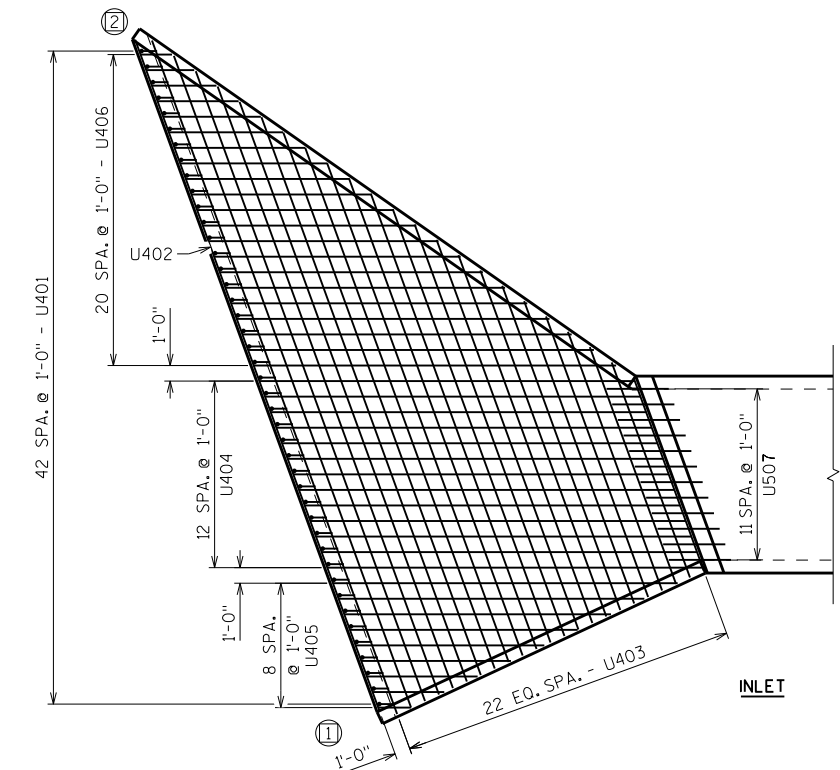


**VERTICAL CONSTRUCTION JOINT**

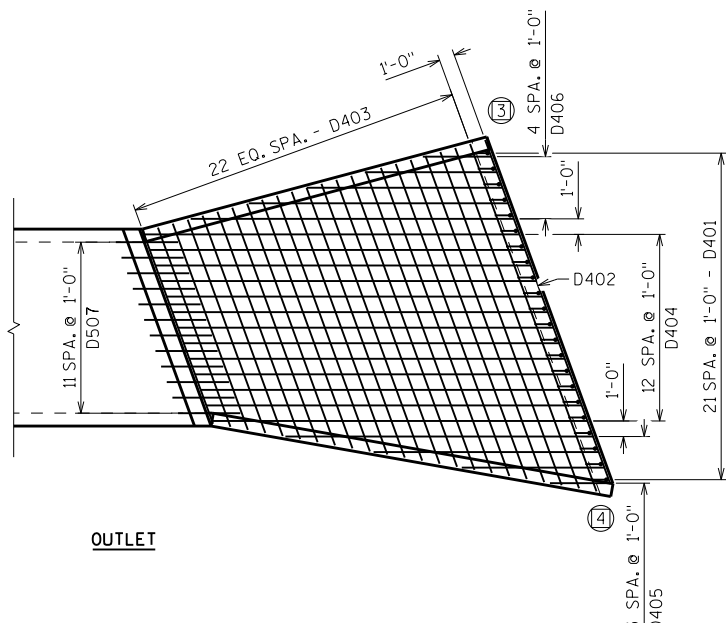
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.  
▲ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALLS AND ACROSS TOP SLAB AT VERTICAL CONST. JOINTS. EXTEND 6" MIN. BELOW TOP OF BOT. SLAB.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
<b>STRUCTURE C-3-63</b>			
DRAWN BY		PLANS CHECKED	AA
MWB		SHEET 2	
<b>BOX DETAILS</b>			

INDICATES WING NUMBER

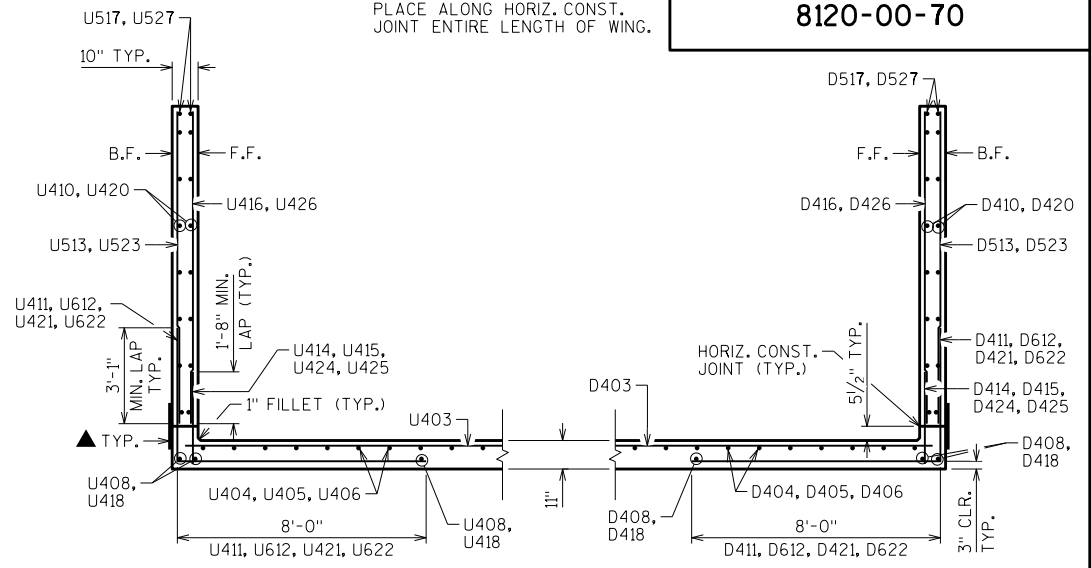


**PLAN**  
SHOWING APRON REINFORCEMENT

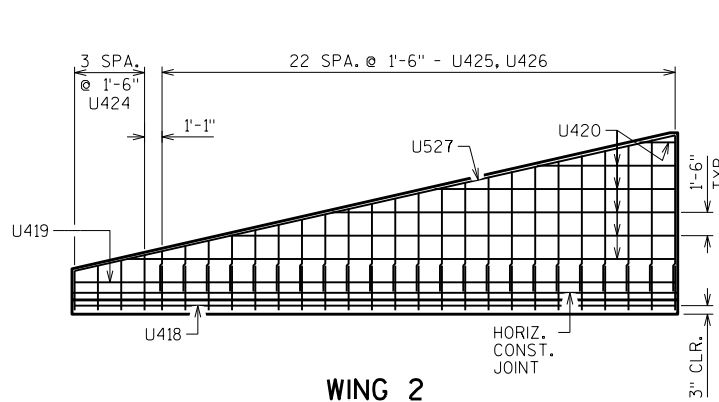
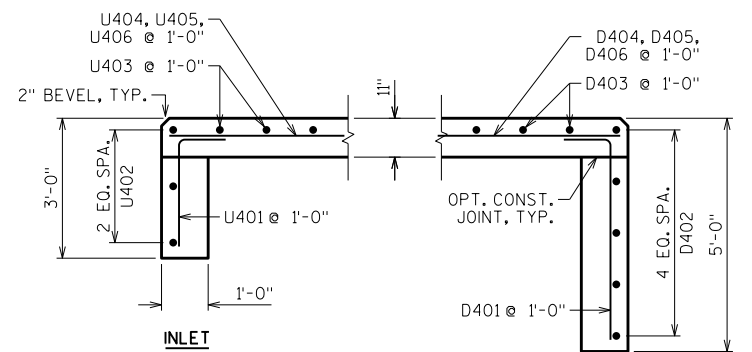


▲ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING. PLACE ALONG HORIZ. CONST. JOINT ENTIRE LENGTH OF WING.

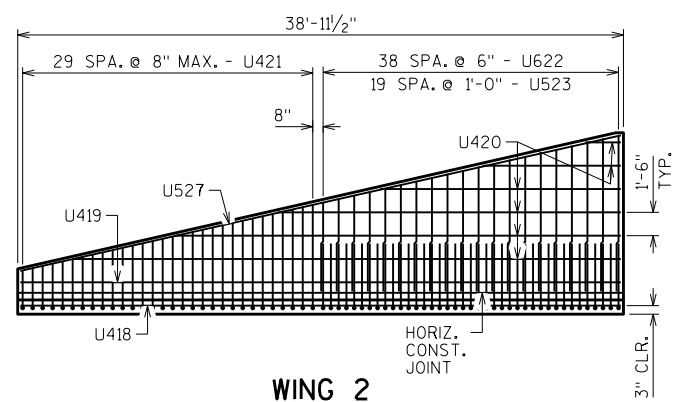
STATE PROJECT NUMBER  
**8120-00-70**



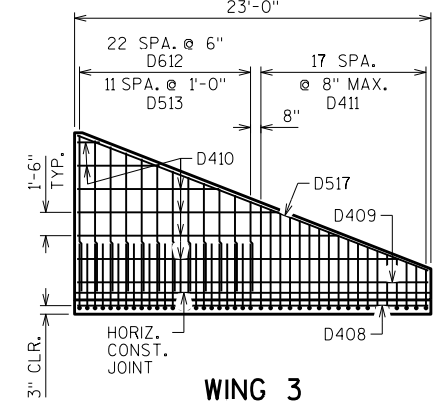
**SECTION THRU WINGS**



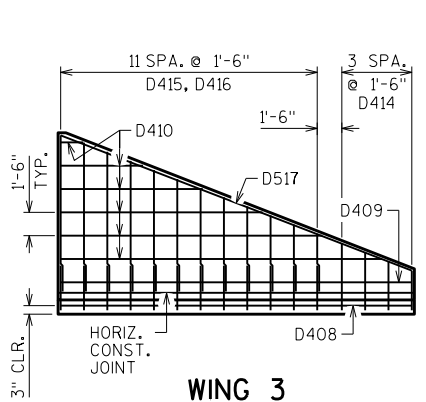
**WING 2**  
SHOWING F.F. REINFORCEMENT



**WING 2**  
SHOWING B.F. REINFORCEMENT

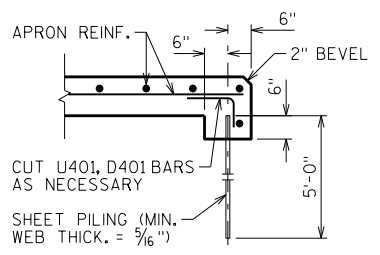


**WING 3**  
SHOWING B.F. REINFORCEMENT



**WING 3**  
SHOWING F.F. REINFORCEMENT

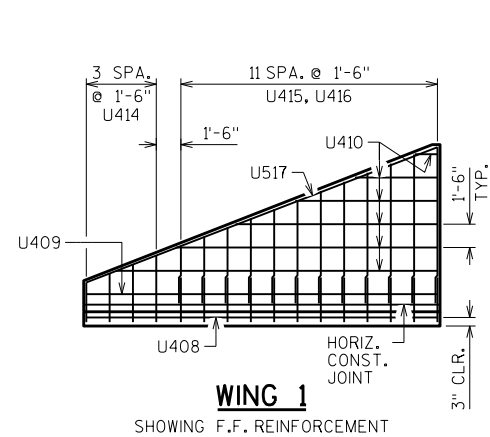
**CUT-OFF WALLS**



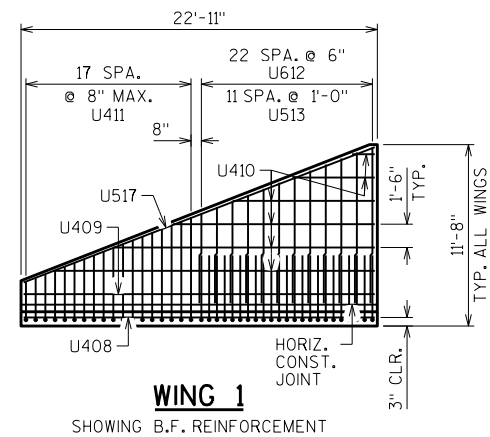
**ALTERNATE CUT-OFF WALLS**

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

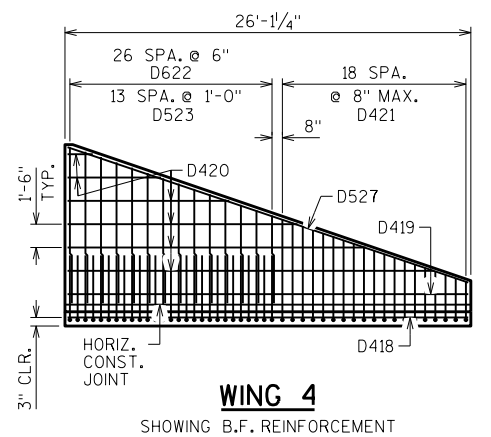
8



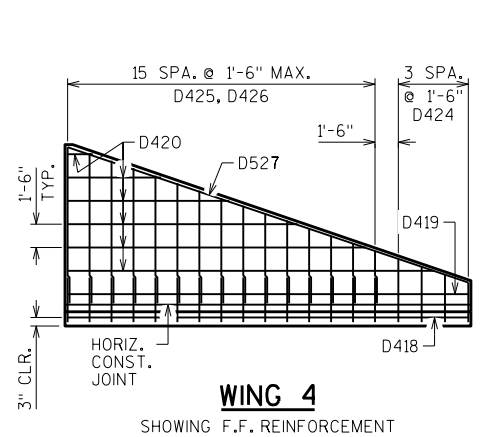
**WING 1**  
SHOWING F.F. REINFORCEMENT



**WING 1**  
SHOWING B.F. REINFORCEMENT



**WING 4**  
SHOWING B.F. REINFORCEMENT



**WING 4**  
SHOWING F.F. REINFORCEMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
<b>STRUCTURE C-3-63</b>			
DRAWN BY: MWB		PLANS CK'D: AA	
<b>APRON DETAILS</b>		SHEET 3	

8

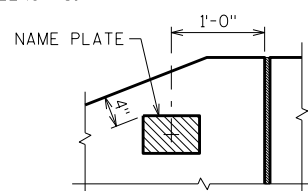
SCALE = 6.00

**BILL OF BARS**

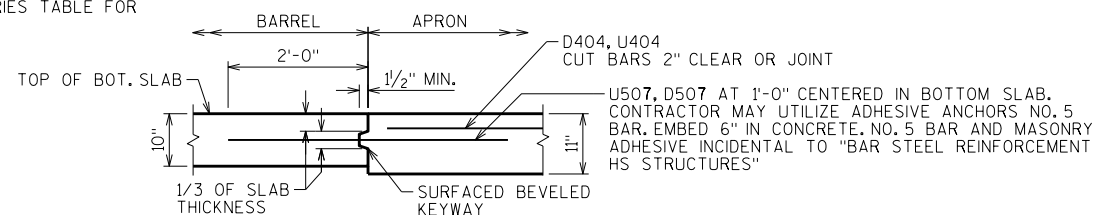
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		43	3'-7"	X		INLET CUTOFF WALL - VERT.
U402		3	46'-5"			INLET CUTOFF WALL - HORIZ.
U403		23	29'-8"	▲		INLET APRON - TRANS.
U404		13	24'-2"			INLET APRON - LONGIT.
U405		9	12'-2"	▲		INLET APRON - LONGIT.
U406		21	12'-8"	▲		INLET APRON - LONGIT.
U507		12	4'-0"			INLET APRON - CONST. JOINT
U408		3	22'-7"			WING 1 - HORIZ. - IN APRON
U409	X	2	22'-7"			WING 1 - HORIZ.
U410	X	12	11'-8"	▲		WING 1 - HORIZ.
U411	X	18	12'-7"	X	▲	WING 1 - VERT. - B.F.
U612	X	23	12'-1"	X		WING 1 - VERT. - B.F.
U513	X	12	8'-0"	▲		WING 1 - VERT. - B.F.
U414	X	4	3'-5"	▲		WING 1 - VERT. - F.F.
U415	X	12	2'-10"			WING 1 - VERT. - F.F. DOWELS
U416	X	12	6'-11"	▲		WING 1 - VERT. - F.F.
U517	X	2	24'-2"			WING 1 - TOP
U418		3	38'-7"			WING 2 - HORIZ. - IN APRON
U419	X	2	38'-7"			WING 2 - HORIZ.
U420	X	12	19'-10"	▲		WING 2 - HORIZ.
U421	X	30	12'-7"	X	▲	WING 2 - VERT. - B.F.
U622	X	39	12'-1"	X		WING 2 - VERT. - B.F.
U523	X	20	8'-0"	▲		WING 2 - VERT. - B.F.
U424	X	4	3'-1"	▲		WING 2 - VERT. - F.F.
U425	X	23	2'-10"			WING 2 - VERT. - F.F. DOWELS
U426	X	23	6'-5"	▲		WING 2 - VERT. - F.F.
U527	X	2	39'-7"			WING 2 - TOP
D401		22	5'-7"	X		OUTLET CUTOFF WALL - VERT.
D402		5	23'-7"			OUTLET CUTOFF WALL - HORIZ.
D403		23	18'-6"	▲		OUTLET APRON - TRANS.
D404		13	24'-2"			OUTLET APRON - LONGIT.
D405		4	11'-10"	▲		OUTLET APRON - LONGIT.
D406		5	12'-7"	▲		OUTLET APRON - LONGIT.
D507		12	4'-0"			OUTLET APRON - CONST. JOINT
D408		3	22'-7"			WING 3 - HORIZ. - IN APRON
D409	X	2	22'-7"			WING 3 - HORIZ.
D410	X	12	11'-8"	▲		WING 3 - HORIZ.
D411	X	18	12'-7"	X	▲	WING 3 - VERT. - B.F.
D612	X	23	12'-1"	X		WING 3 - VERT. - B.F.
D513	X	12	8'-0"	▲		WING 3 - VERT. - B.F.
D414	X	4	3'-5"	▲		WING 3 - VERT. - F.F.
D415	X	12	2'-10"			WING 3 - VERT. - F.F. DOWELS
D416	X	12	6'-11"	▲		WING 3 - VERT. - F.F.
D517	X	2	24'-2"			WING 3 - TOP
D418		3	25'-9"			WING 4 - HORIZ. - IN APRON
D419	X	2	25'-9"			WING 4 - HORIZ.
D420	X	12	13'-4"	▲		WING 4 - HORIZ.
D421	X	19	12'-7"	X	▲	WING 4 - VERT. - B.F.
D622	X	27	12'-1"	X		WING 4 - VERT. - B.F.
D523	X	14	7'-11"	▲		WING 4 - VERT. - B.F.
D424	X	4	3'-3"	▲		WING 4 - VERT. - F.F.
D425	X	16	2'-10"			WING 4 - VERT. - F.F. DOWELS
D426	X	16	6'-9"	▲		WING 4 - VERT. - F.F.
D527	X	2	27'-2"			WING 4 - TOP

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



**NAME PLATE LOCATION**  
WING 4



**APRON CONSTRUCTION JOINT**

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

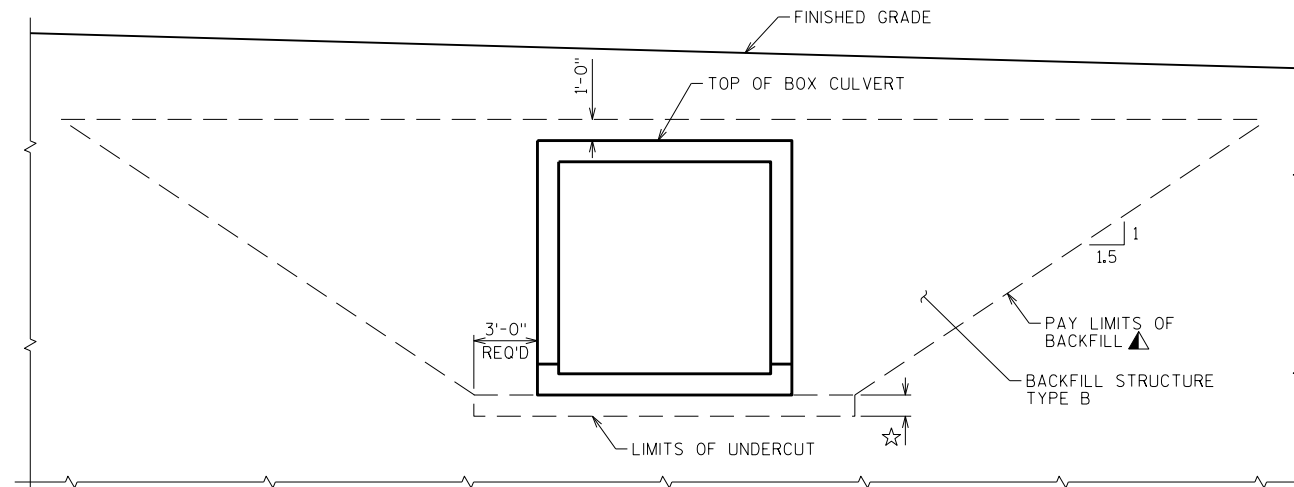
**BAR SERIES TABLE**

BAR MARK	NO. REQ'D.	LENGTH
U403	1 SERIES OF 23	13'-3" TO 46'-1"
U405	1 SERIES OF 9	2'-1" TO 22'-2"
U406	1 SERIES OF 21	2'-0" TO 23'-4"
U410	2 SERIES OF 6	2'-1" TO 21'-3"
U411	1 SERIES OF 18	10'-6" TO 14'-8"
U513	1 SERIES OF 12	5'-10" TO 10'-1"
U414	1 SERIES OF 4	2'-6" TO 4'-4"
U416	1 SERIES OF 12	3'-9" TO 10'-1"
U420	2 SERIES OF 6	3'-4" TO 36'-4"
U421	1 SERIES OF 30	10'-6" TO 14'-8"
U523	1 SERIES OF 20	5'-10" TO 10'-1"
U424	1 SERIES OF 4	2'-6" TO 3'-7"
U426	1 SERIES OF 23	2'-8" TO 10'-1"
D403	1 SERIES OF 23	13'-2" TO 23'-9"
D405	1 SERIES OF 4	3'-10" TO 19'-9"
D406	1 SERIES OF 5	4'-5" TO 20'-9"
D410	2 SERIES OF 6	2'-1" TO 21'-3"
D411	1 SERIES OF 18	10'-6" TO 14'-8"
D513	1 SERIES OF 12	5'-10" TO 10'-1"
D414	1 SERIES OF 4	2'-6" TO 4'-4"
D416	1 SERIES OF 12	3'-9" TO 10'-1"
D420	2 SERIES OF 6	2'-4" TO 24'-4"
D421	1 SERIES OF 19	10'-6" TO 14'-7"
D523	1 SERIES OF 14	5'-8" TO 10'-1"
D424	1 SERIES OF 4	2'-6" TO 4'-1"
D426	1 SERIES OF 16	3'-5" TO 10'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

**U401, D401**

**U411, U612, U421, U622, D411, D612, D421, D622**

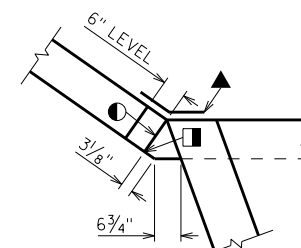


**TYPICAL SECTION**  
**THRU BOX CULVERT**

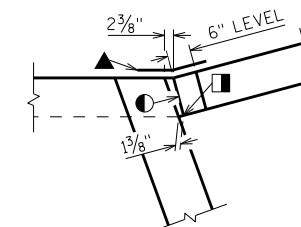
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

☆ UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

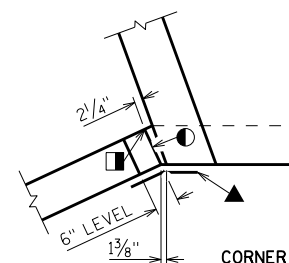
IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE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



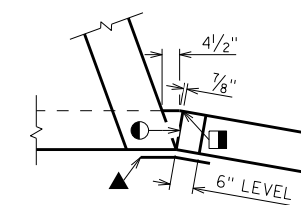
**CORNER 2**



**CORNER 3**



**CORNER 1**



**CORNER 4**

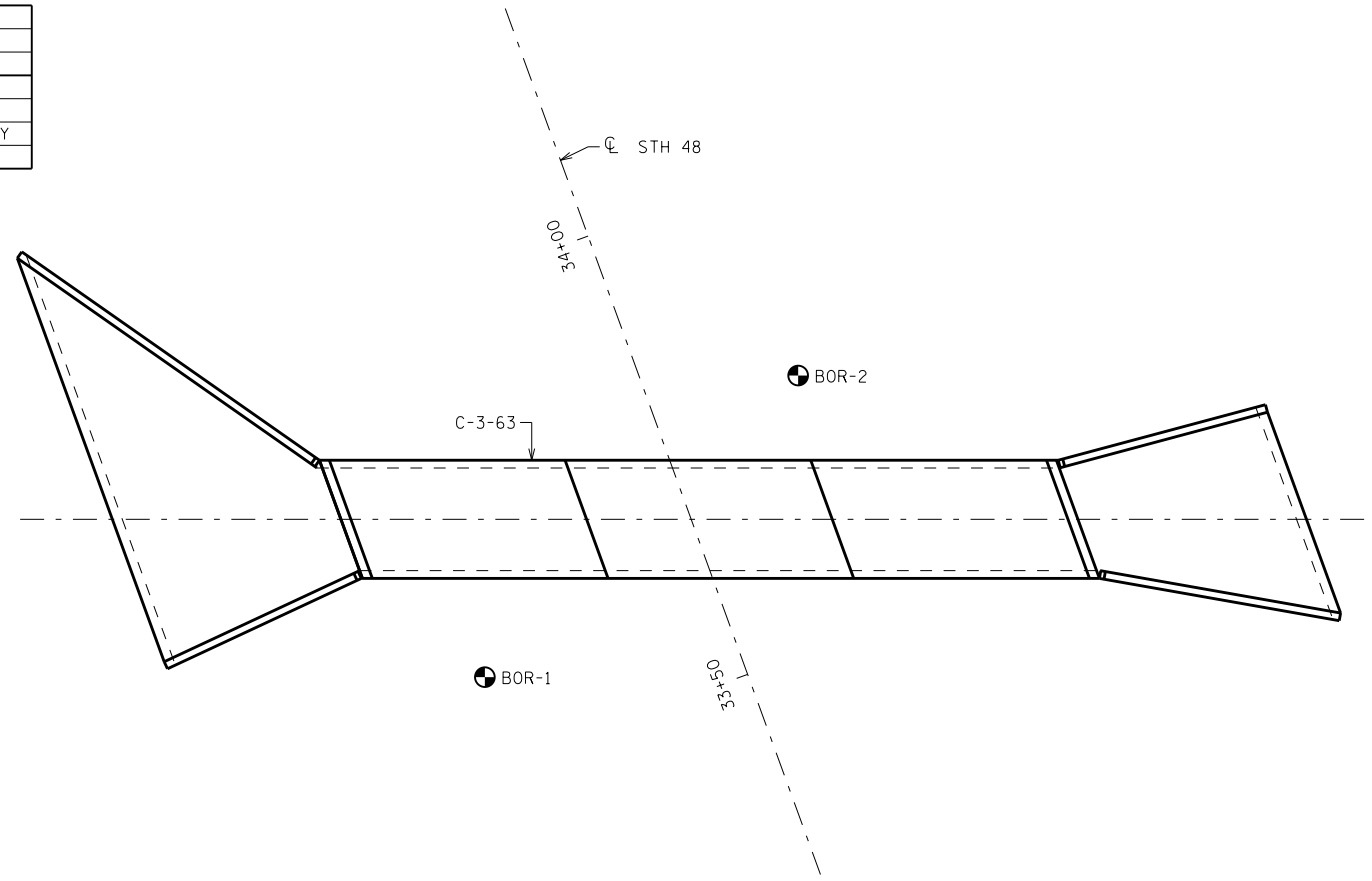
**CORNER DETAILS**

- 3/4" FILLER (TYP.) EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.
- 1" BEVEL (TYP.)
- ▲ 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WALL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
<b>STRUCTURE C-3-63</b>			
DRAWN BY		PLANS CK'D.	AA
MWB		SHEET 4	
<b>DETAILS</b>			

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	7/13/2021	140166	333932
2	7/14/2021	140184	333975

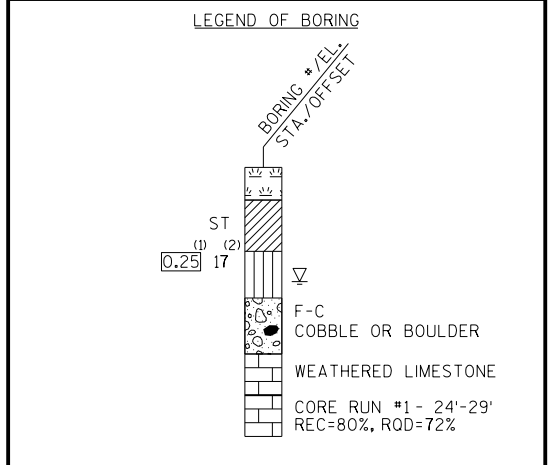
BORINGS COMPLETED BY: WISDOT  
 REPORT COMPLETED BY: WISDOT  
 ALL COORDINATES REFERENCED TO WCCS NAD 83(9D) BARRON COUNTY  
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT



STATE PROJECT NUMBER  
**8120-00-70**

**MATERIAL SYMBOLS**

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



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

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

**GROUND WATER ELEVATION**

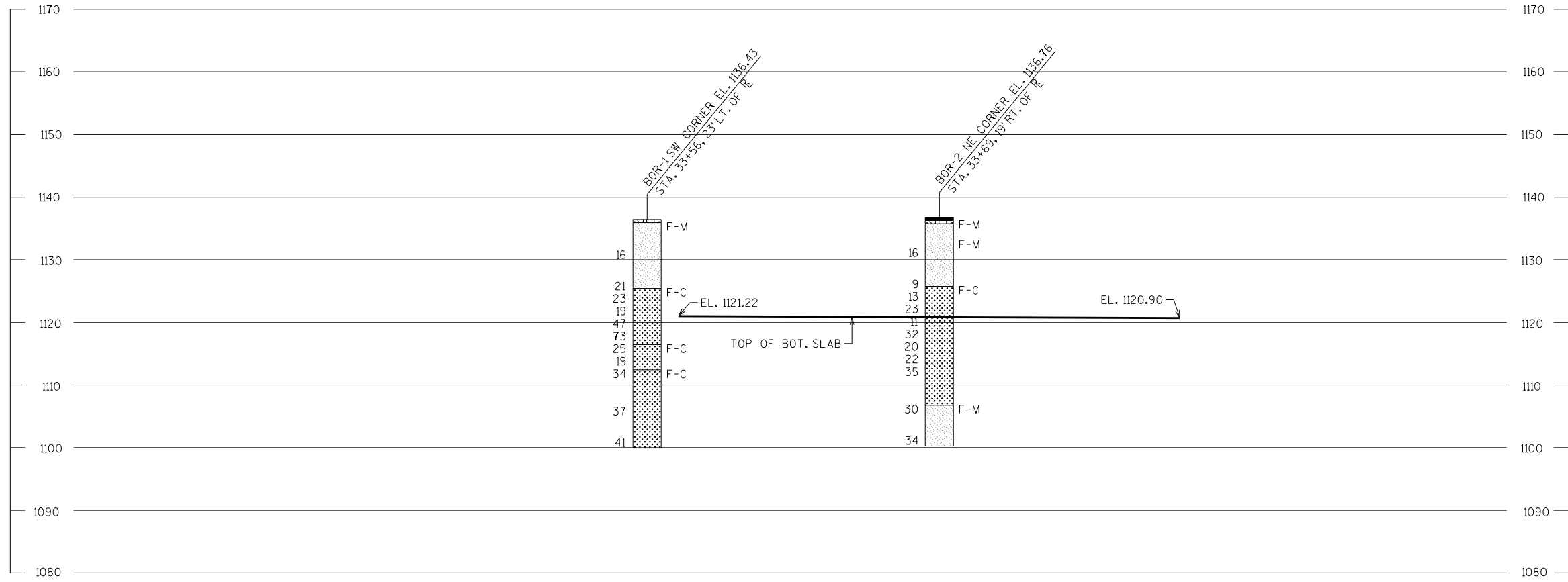
- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

**ABBREVIATIONS**

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

**SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION**

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



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION <b>STRUCTURES DESIGN SECTION</b>			
<b>STRUCTURE C-3-63</b>			
DRAWN BY TLP/MWB		PLANS CK'D. AA	
<b>SUBSURFACE EXPLORATION</b>			SHEET 5

8

8

SCALE = 10.00

DIVISION 1 SOUTH												
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE	
		CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1 1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL NOTE 3 1.20		
33+00	AH	0.00	54	0	0	0	0	0	0	0	0	
33+25		25.00	52	49	4	49	23	2	49	23	2	
33+34		9.15	60	49	6	19	17	2	68	40	5	
33+37		3.04	56	49	7	7	5	1	75	45	6	
33+47		10.18	65	49	4	23	18	2	98	63	8	
33+57		9.68	150	49	1	38	17	1	136	80	10	
33+59		2.02	178	49	1	12	4	0	148	84	10	
33+67		7.72	192	49	1	53	14	0	201	98	10	
33+72		5.58	85	49	3	29	10	0	230	108	10	
33+74		2.01	55	49	4	5	4	0	235	112	10	
33+78		3.24	53	49	2	6	6	0	241	118	10	
33+86		8.47	52	49	2	16	15	1	257	133	11	
34+00		13.91	53	49	3	27	25	1	284	158	12	
34+07		6.83	53	49	8	13	12	1	297	170	13	
34+18		11.57	68	49	16	26	21	5	323	191	19	
34+25		6.60	52	49	19	15	12	4	338	203	24	
34+33		7.82	51	49	15	15	14	5	353	217	30	
34+40	BK	7.18	51	49	15	14	13	4	367	230	35	
							367	230	29			

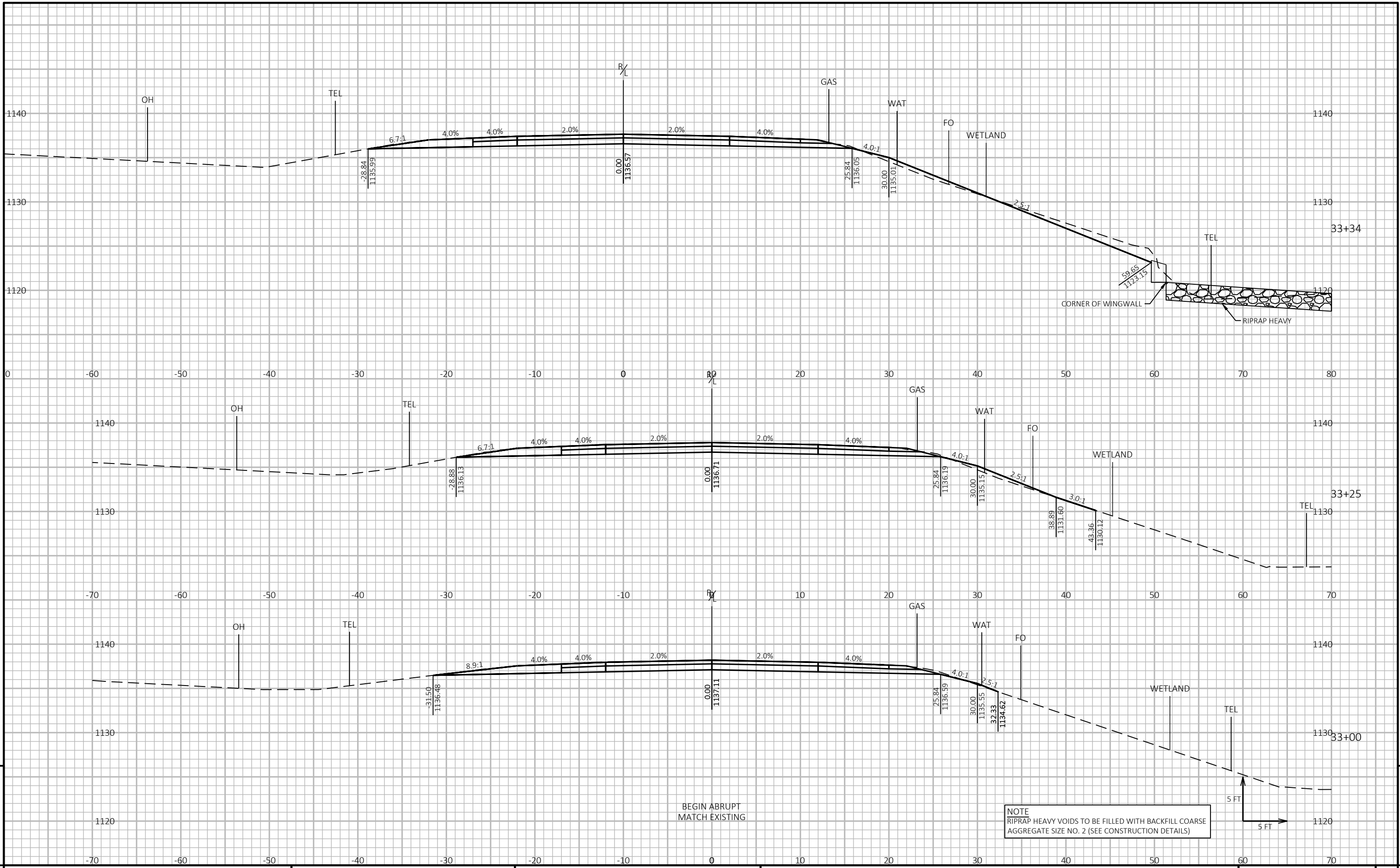
DIVISION 1 NORTH												
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE	
		CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1 1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL NOTE 3 1.20		
56+35	AH	0.00	2	0	0	0	0	0	0	0	0	
56+50		15.00	2	0	8	1	0	2	1	0	2	
56+75		25.00	2	0	11	2	0	9	3	0	13	
57+00		25.00	1	0	12	1	0	11	4	0	26	
57+25		25.00	46	46	9	22	21	10	26	21	38	
57+50		25.00	51	49	14	45	44	11	71	65	52	
57+62		11.74	52	49	16	22	21	7	93	86	60	
57+71		9.53	51	49	9	18	17	4	111	103	65	
57+90		18.89	51	49	10	36	34	7	147	137	73	
57+92		2.08	51	49	5	4	4	1	151	141	74	
58+10		17.42	66	49	1	38	31	2	189	172	77	
58+10		0.79	54	49	1	2	1	0	191	173	77	
58+31		20.97	52	49	22	41	38	9	232	211	88	
58+45		13.46	57	49	3	27	24	6	259	235	95	
58+50		5.11	52	49	6	10	9	1	269	244	96	
58+60		10.00	43	43	0	18	17	1	287	261	97	
58+75		15.00	2	0	2	12	12	1	299	273	98	
59+00		25.00	1	0	3	1	0	2	300	273	101	
59+25		25.00	1	0	3	1	0	3	301	273	104	
59+45	BK	20.00	1	0	1	1	0	1	302	273	106	
							302	273	88			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL.
2 - FILL	DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT AREA/VOLUME.
3 - EXPANDED MATERIAL	(UNEXPANDED MATERIAL)*(EXPANSION FACTOR)



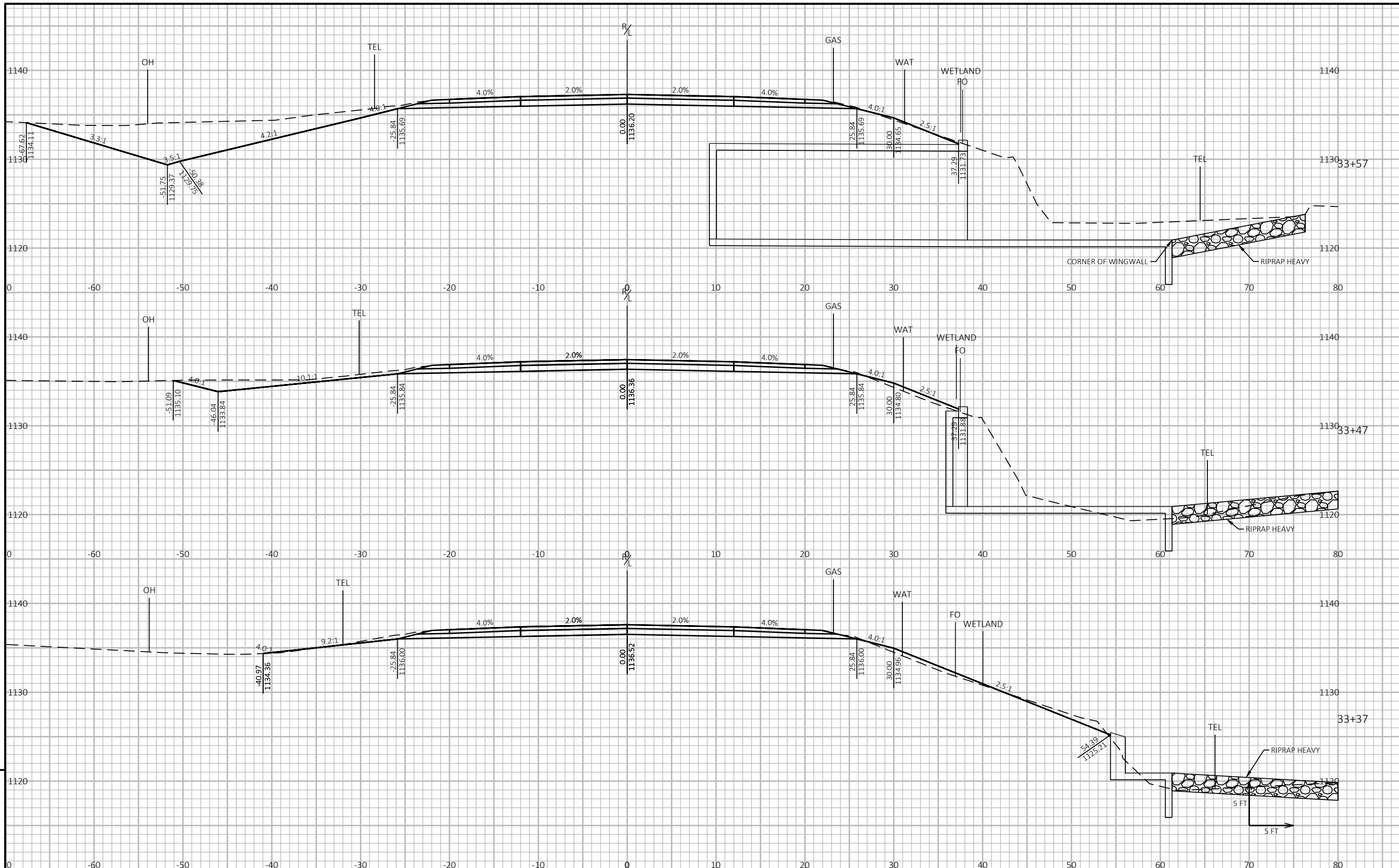
DIVISION 2 MIDDLE											
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE
		CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT NOTE 1 1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL NOTE 3 1.20	
47+00	AH	0.00	3	0	0	0	0	0	0	0	0
47+25		25.00	4	0	0	3	0	3	0	0	3
47+50		25.00	3	0	1	4	0	7	0	0	7
47+65		15.00	38	39	1	12	11	19	11	0	8
47+75		10.00	48	48	1	16	16	35	27	0	8
48+01		26.06	59	49	6	52	47	87	74	4	9
48+08		6.60	53	49	5	14	12	101	86	5	10
48+27		19.34	53	49	5	38	35	139	121	8	10
48+28		0.89	53	49	7	2	2	141	123	8	10
48+28		0.19	56	49	6	0	0	141	123	8	10
48+31		2.70	55	49	2	6	5	147	128	8	11
48+50		19.41	52	49	11	38	35	185	163	14	8
48+62		11.79	54	49	12	23	21	208	184	20	4
48+63		0.93	55	49	10	2	2	210	186	20	4
48+75		12.08	58	49	3	25	22	235	208	24	3
48+78		3.04	9	0	3	4	3	239	211	24	4
49+00		21.96	2	0	1	4	0	243	211	26	6
49+25		25.00	2	0	0	1	0	244	211	28	5
49+50		25.00	1	0	0	1	0	245	211	28	6
49+75		25.00	1	0	0	1	0	246	211	28	7
49+95	BK	20.00	1	0	0	1	0	247	211	28	8
					247	211	23				

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL.
2 - FILL	DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT AREA/VOLUME.
3 - EXPANDED MATERIAL	(UNEXPANDED MATERIAL)*(EXPANSION FACTOR)



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PROJECT NO: 8120-00-70

HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - C-03-0063

SHEET

E

FILE NAME : P:\51XX\5191.DP.19.STH48.BAR\CADD\81200070\SHETSPLAN\090201-XS.DWG  
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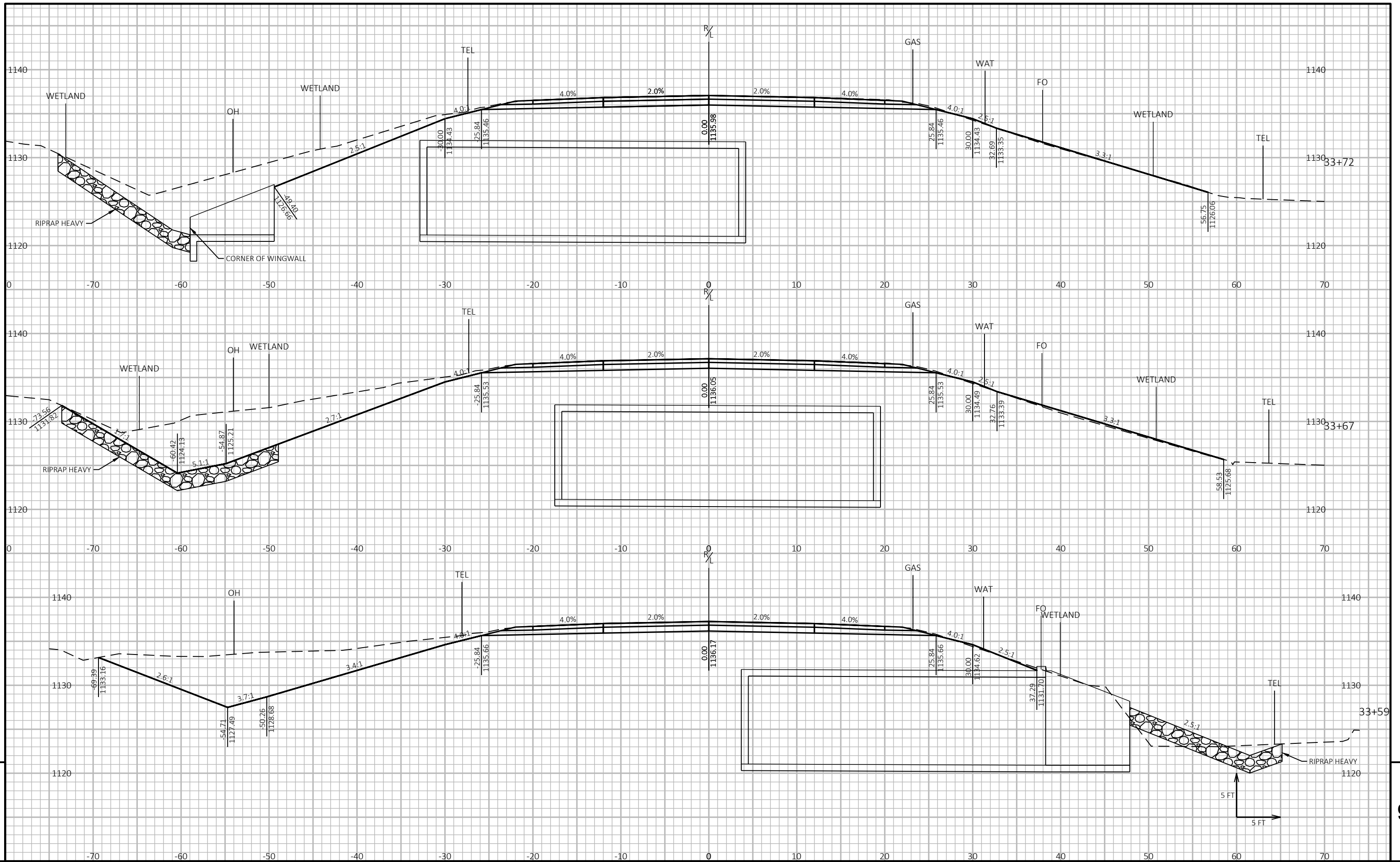
PLOT DATE : 7/27/2022 7:27 AM

PLOT BY : NICK MENNINGA

PLOT NAME :

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

WISDOT/CADD SHEET 49



9

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PROJECT NO: 8120-00-70

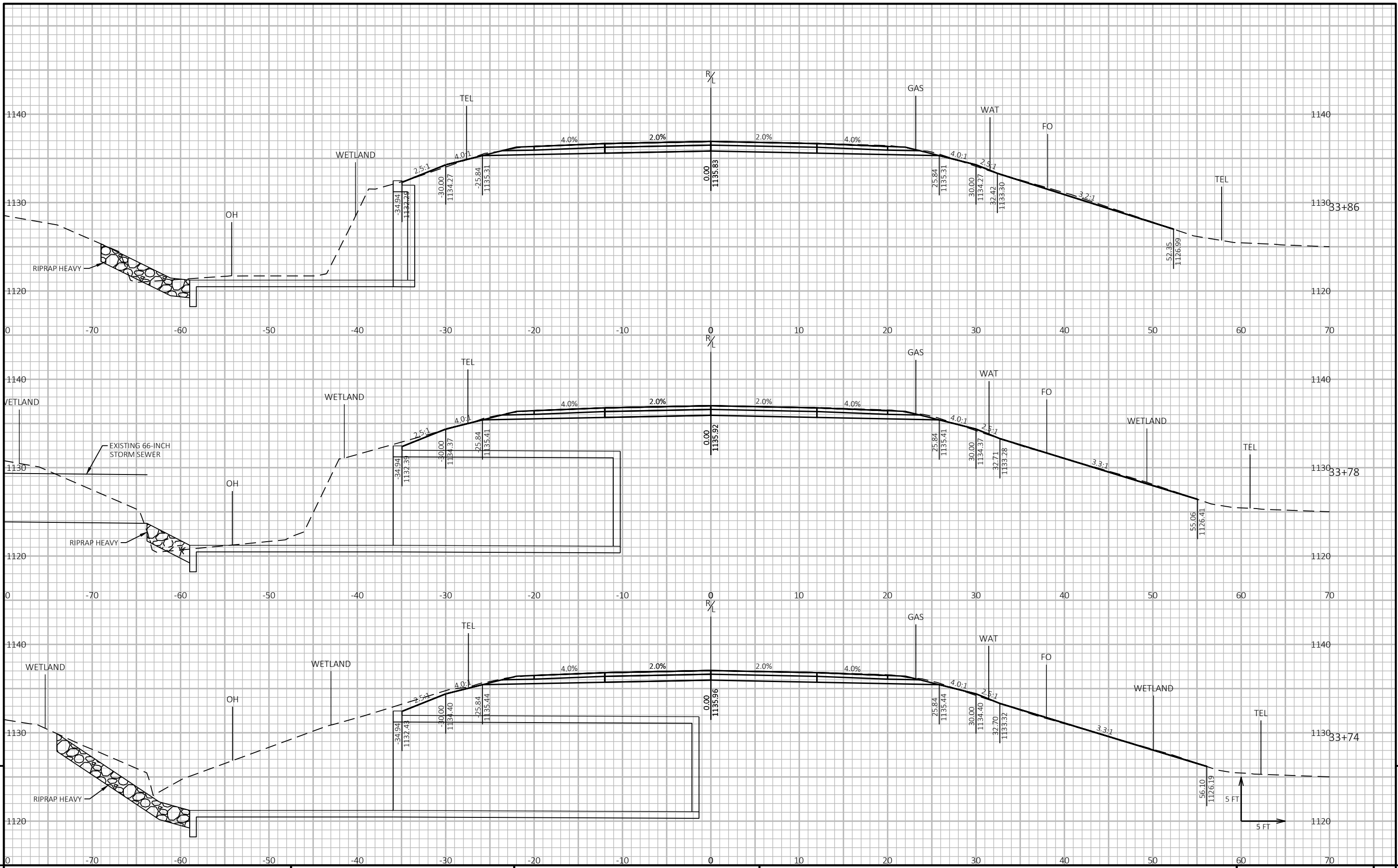
HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - C-03-0063

SHEET

E



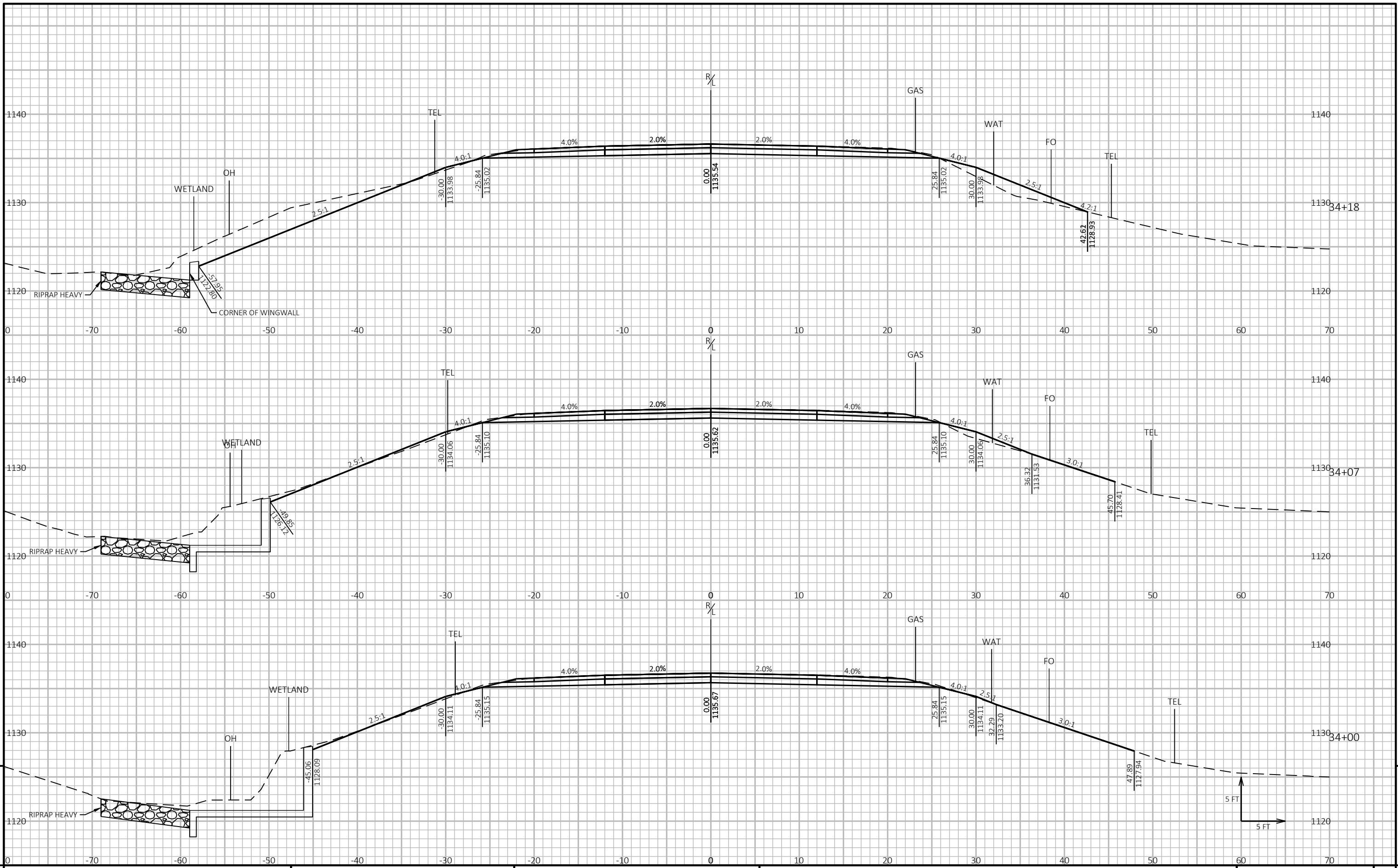
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PROJECT NO: 8120-00-70      HWY: STH 48      COUNTY: BARRON      CROSS SECTIONS - C-03-0063      SHEET      E

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LAYOUT NAME - 04



PROJECT NO: 8120-00-70

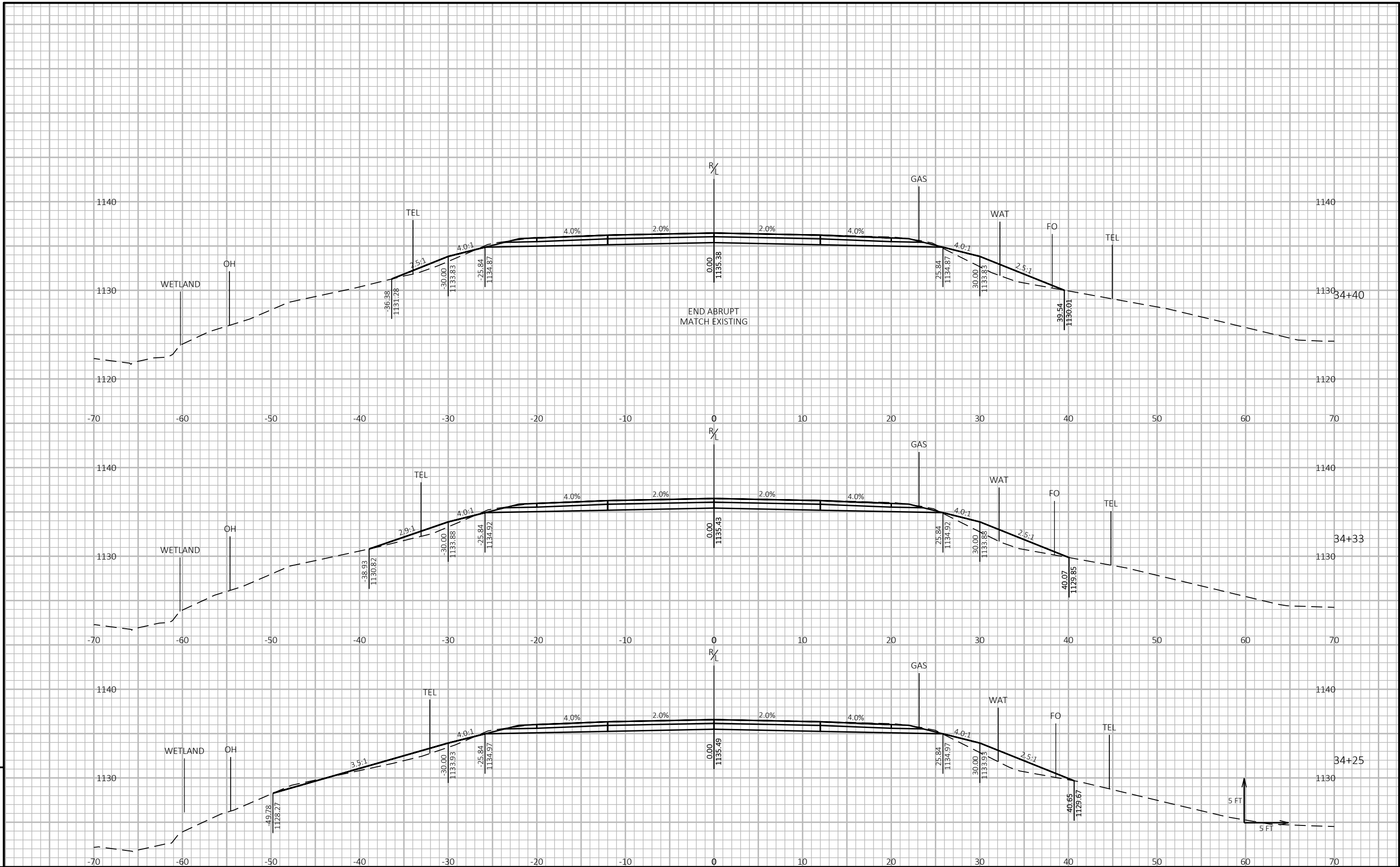
HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - C-03-0063

SHEET

E



PROJECT NO: 8120-00-70

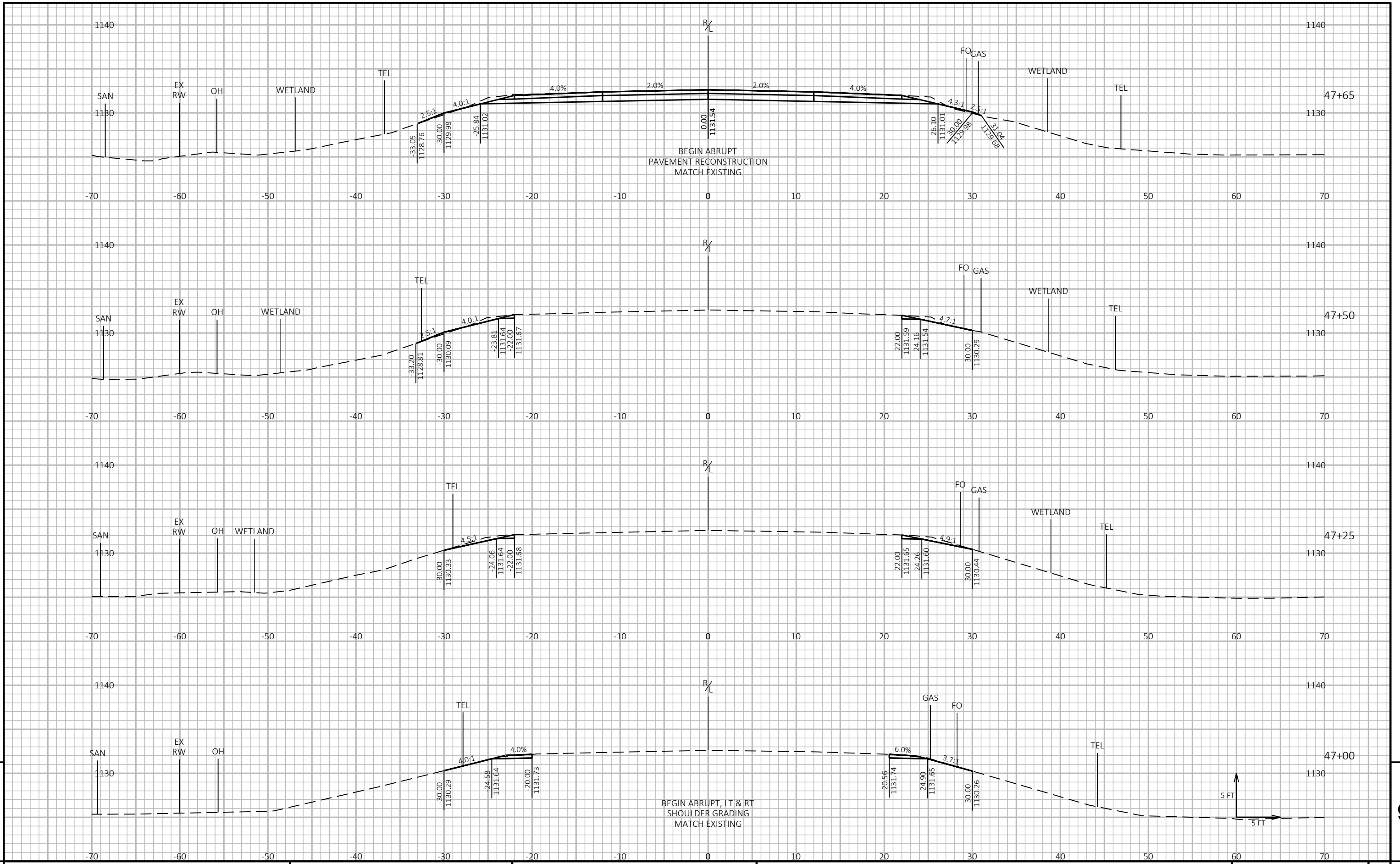
HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - C-03-0063

SHEET

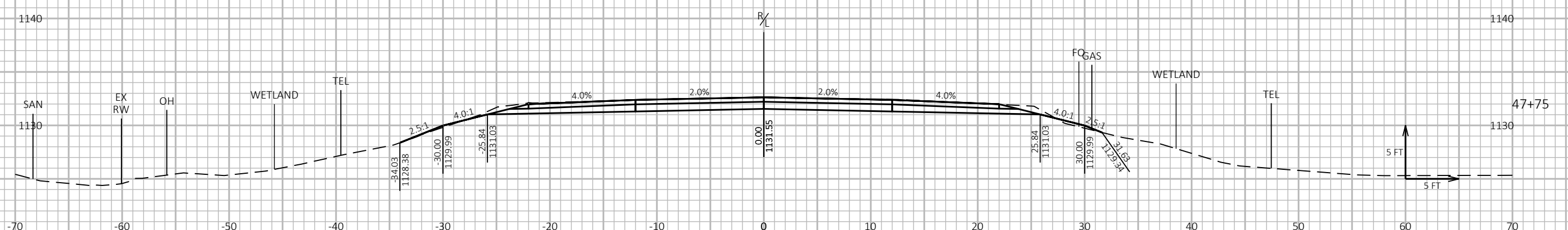
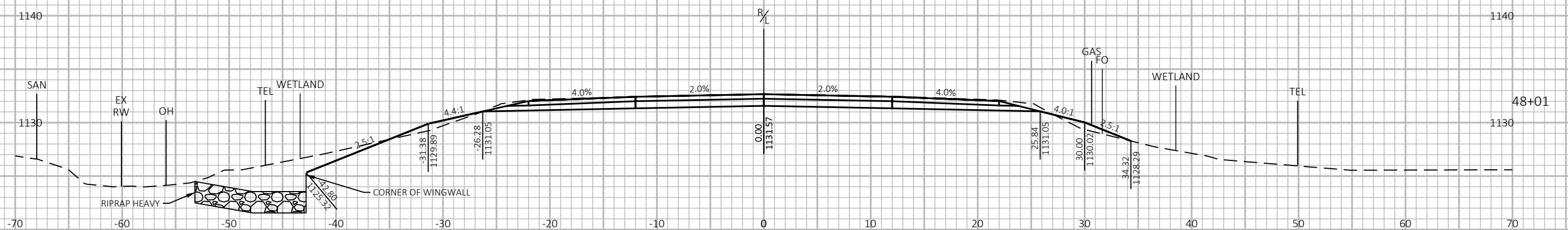
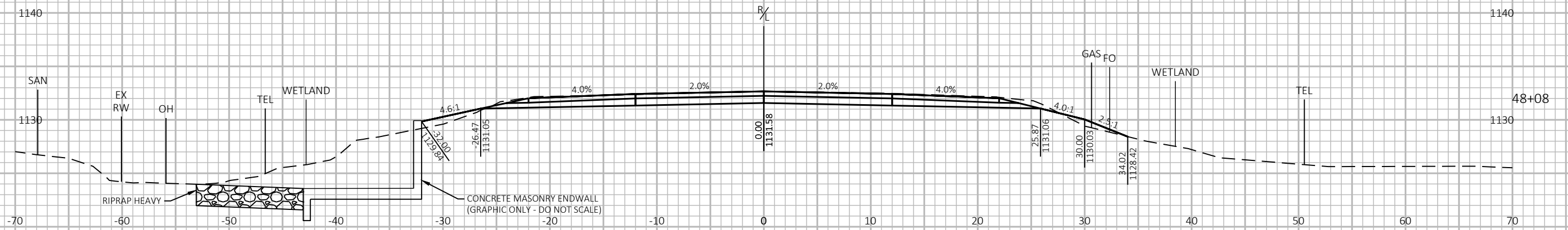
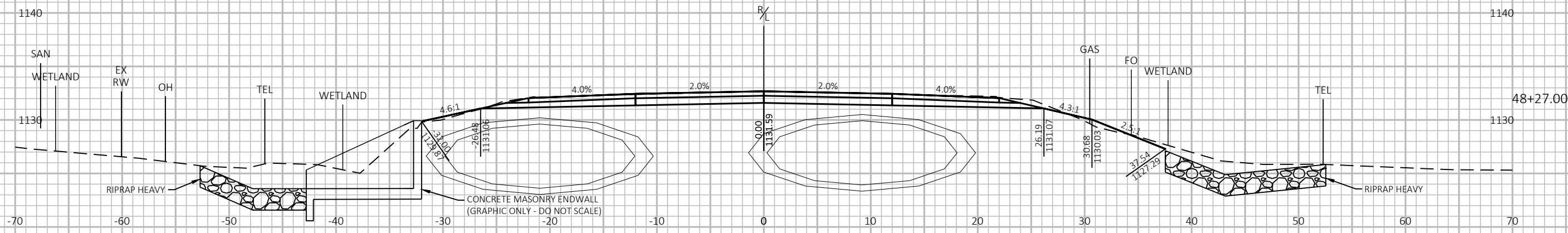
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PROJECT NO: 8120-00-70

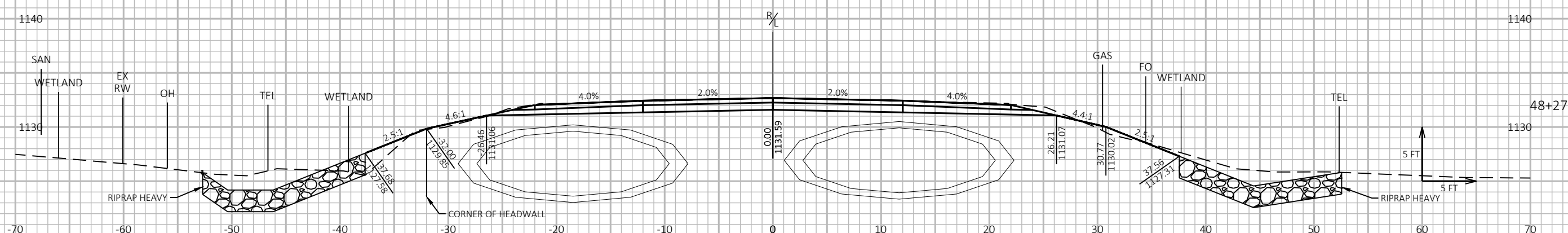
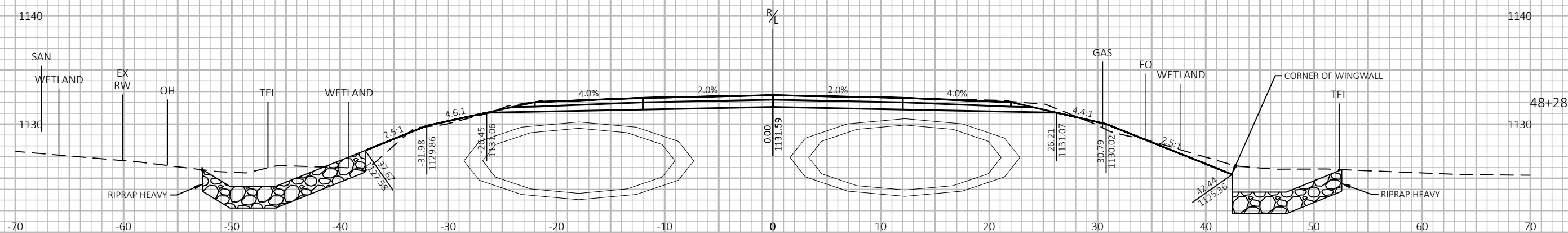
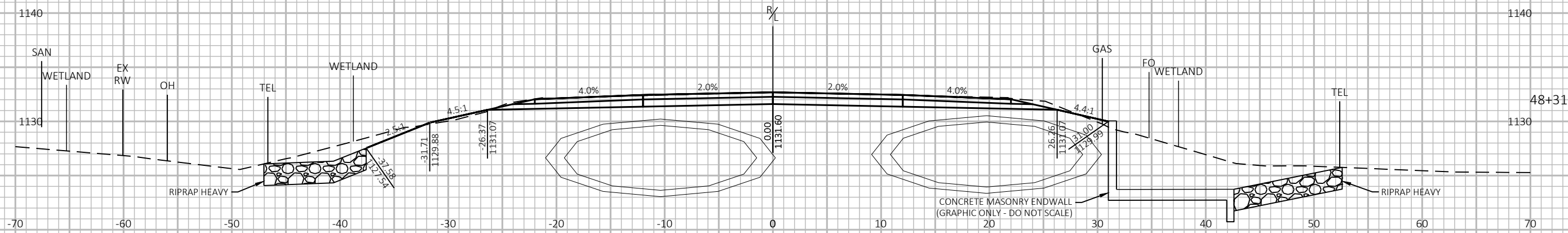
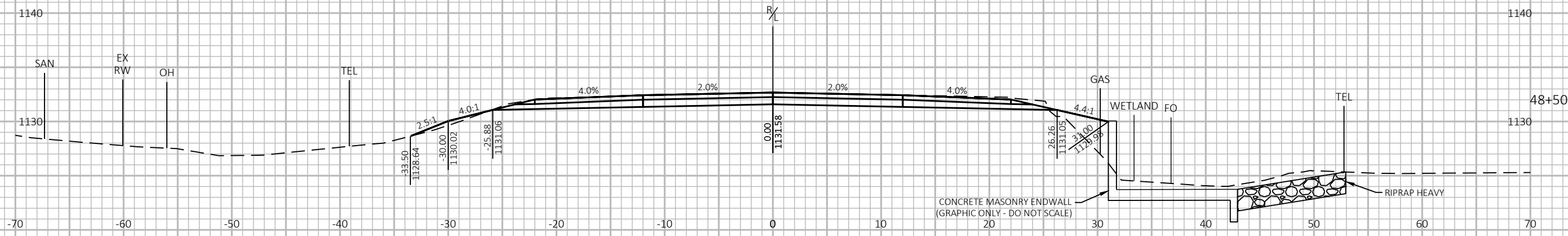
HWY: STH 48

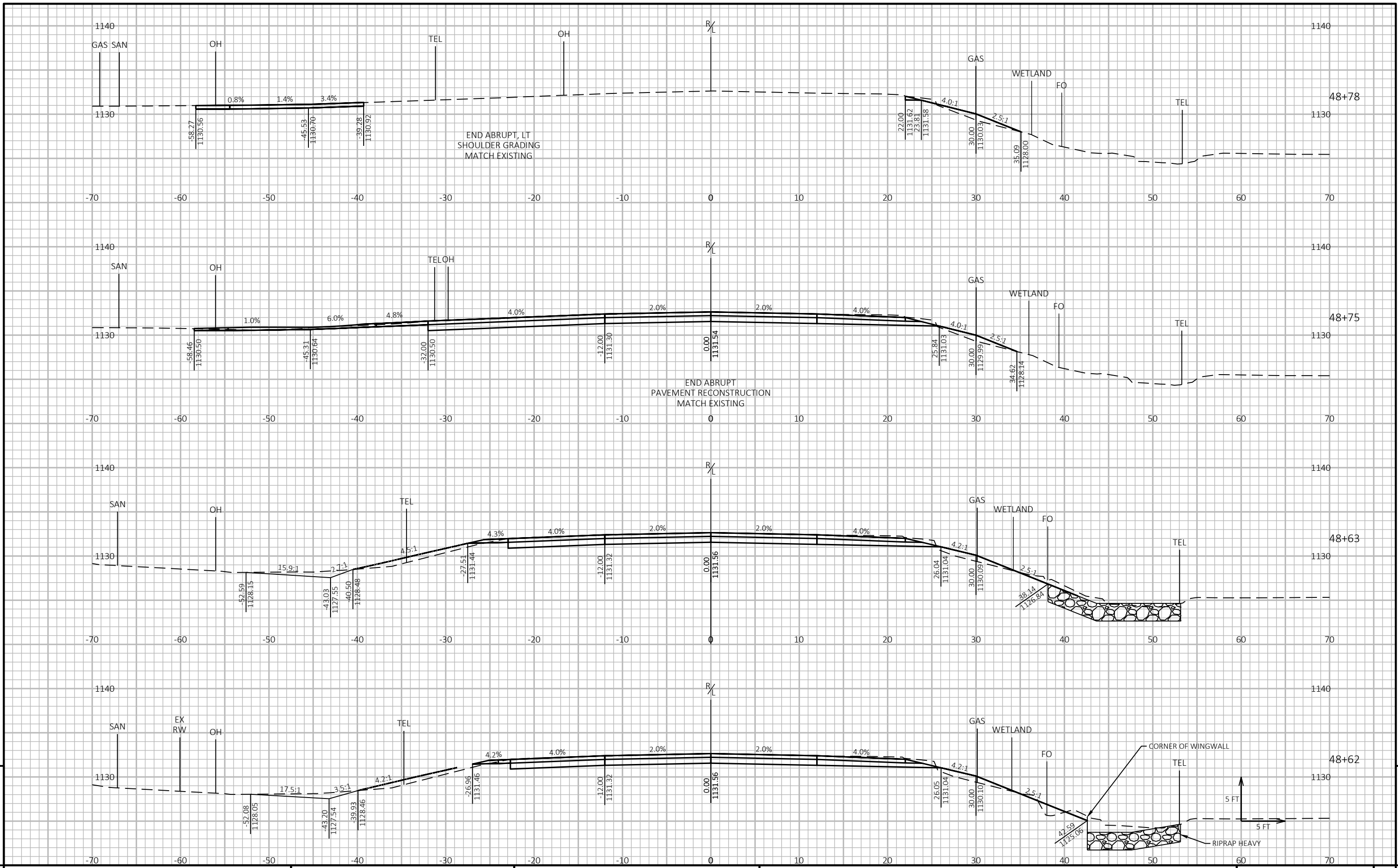
COUNTY: BARRON

CROSS SECTIONS - CULVERTS STA 48+24/48+35

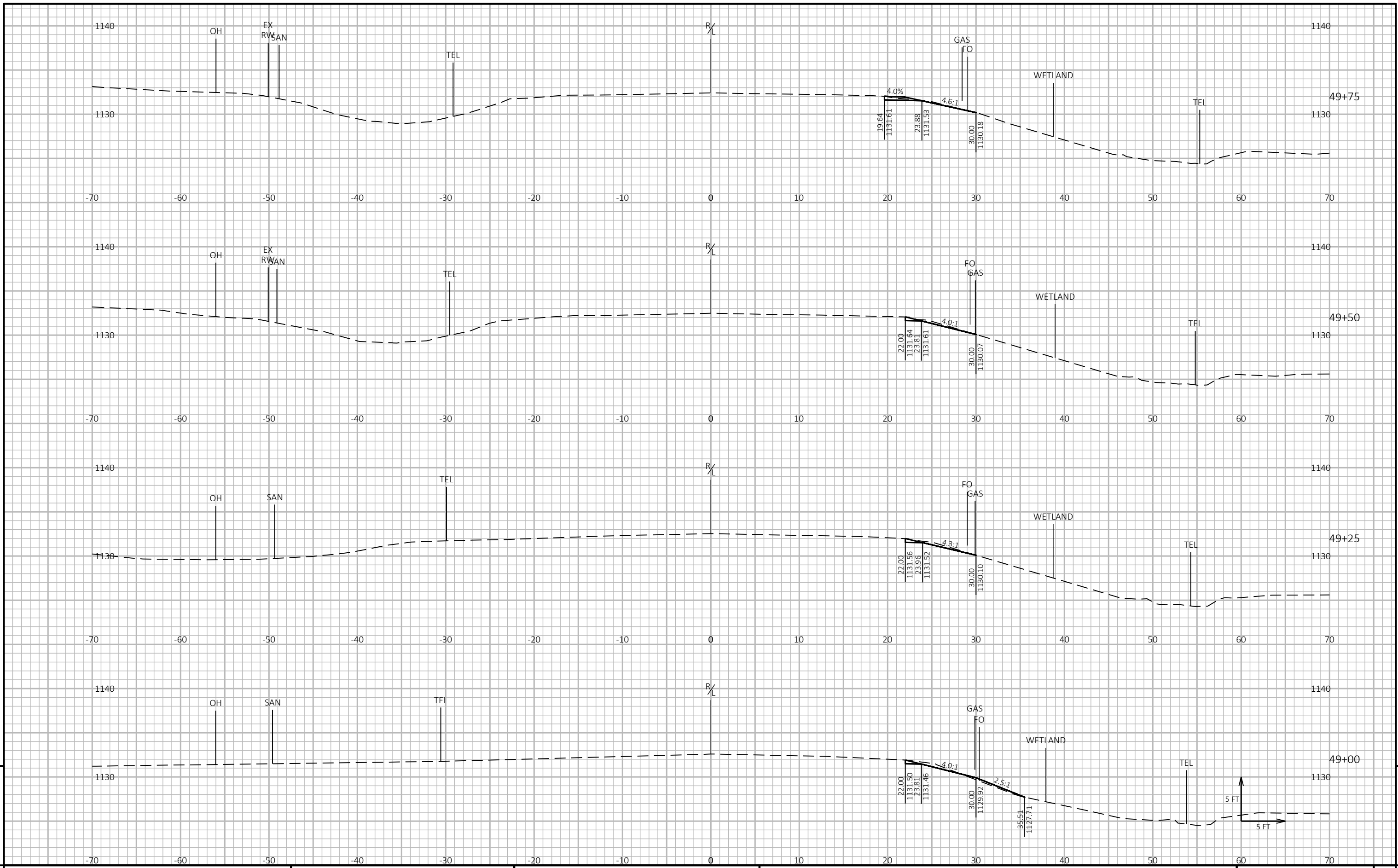
SHEET

E





PROJECT NO: 8120-00-70      HWY: STH 48      COUNTY: BARRON      CROSS SECTIONS - CULVERTS STA 48+24/48+35      SHEET      E



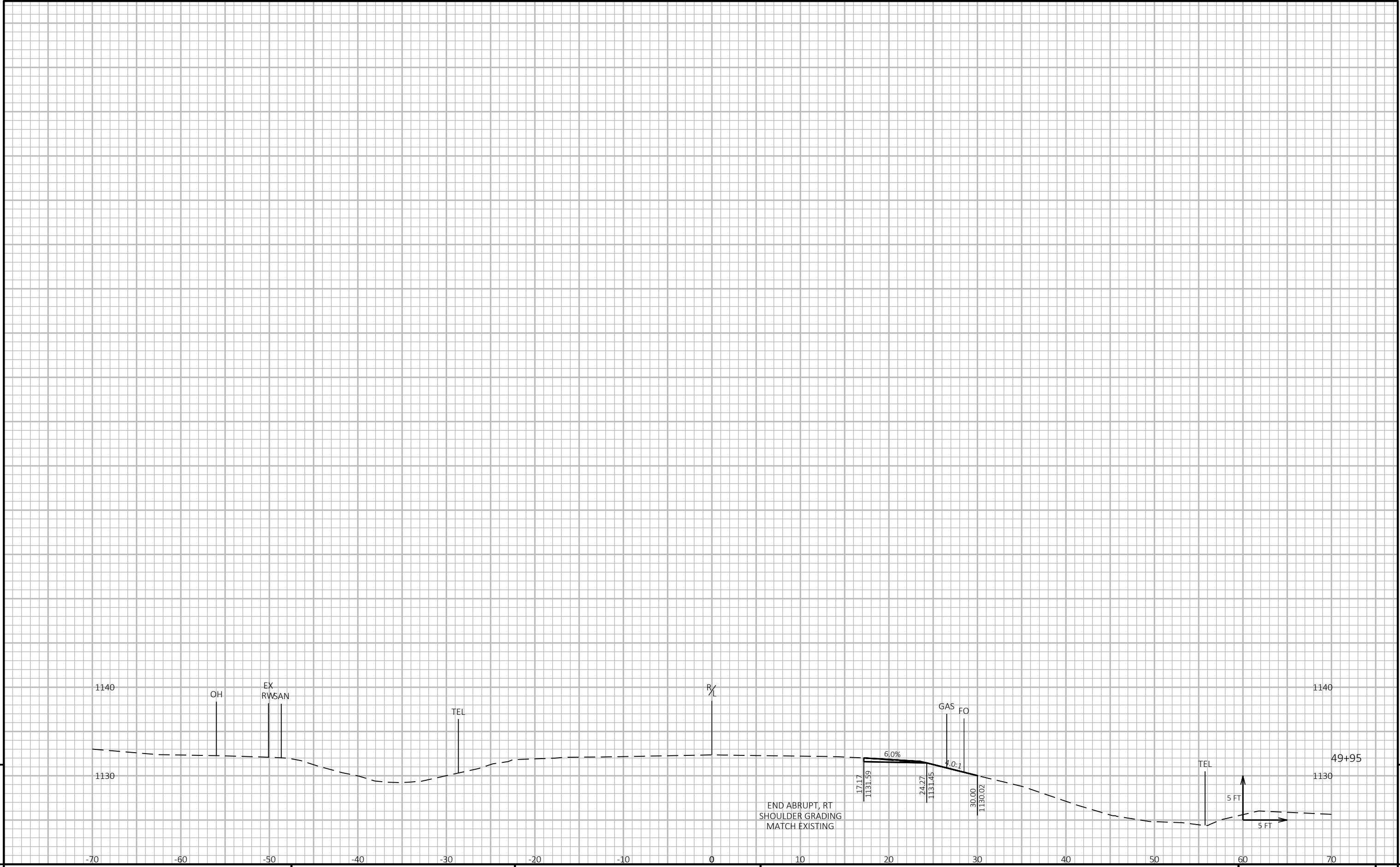
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PROJECT NO: 8120-00-70      HWY: STH 48      COUNTY: BARRON      CROSS SECTIONS - CULVERTS STA 48+24/48+35      SHEET      E

FILE NAME : P:\51XX\5191.DP.19.STH48.BAR\CADD\81200070\090201-XS.DWG      PLOT DATE : 7/27/2022 7:28 AM      PLOT BY : NICK MENNINGA      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 11



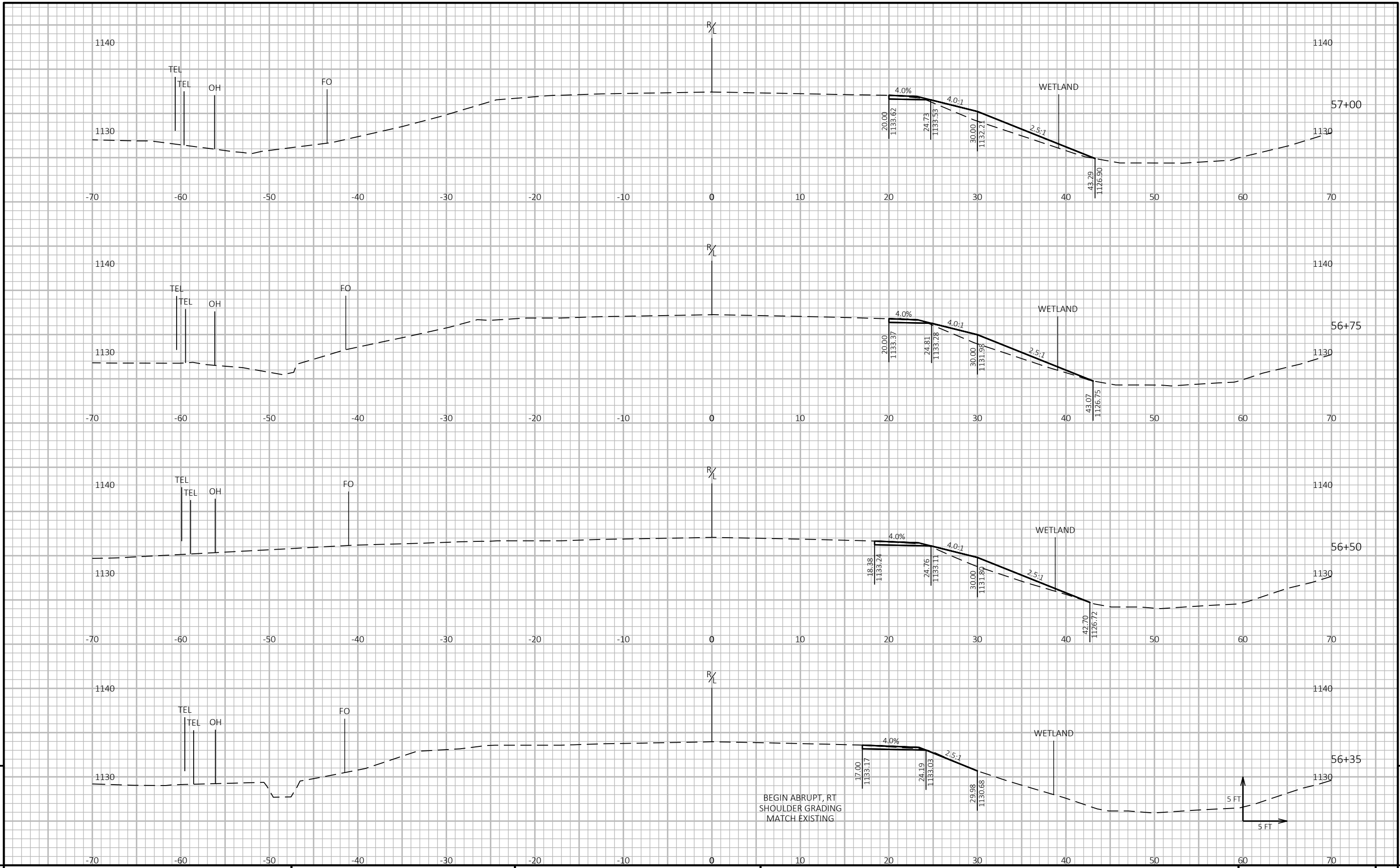
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PROJECT NO: 8120-00-70	HWY: STH 48	COUNTY: BARRON	CROSS SECTIONS - CULVERTS STA 48+24/48+35	SHEET	E
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FILE NAME : P:\51XX\5191.DP.19.STH48.BAR\CADD\81200070\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 7/27/2022 7:28 AM      PLOT BY : NICK MENNINGA      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 12



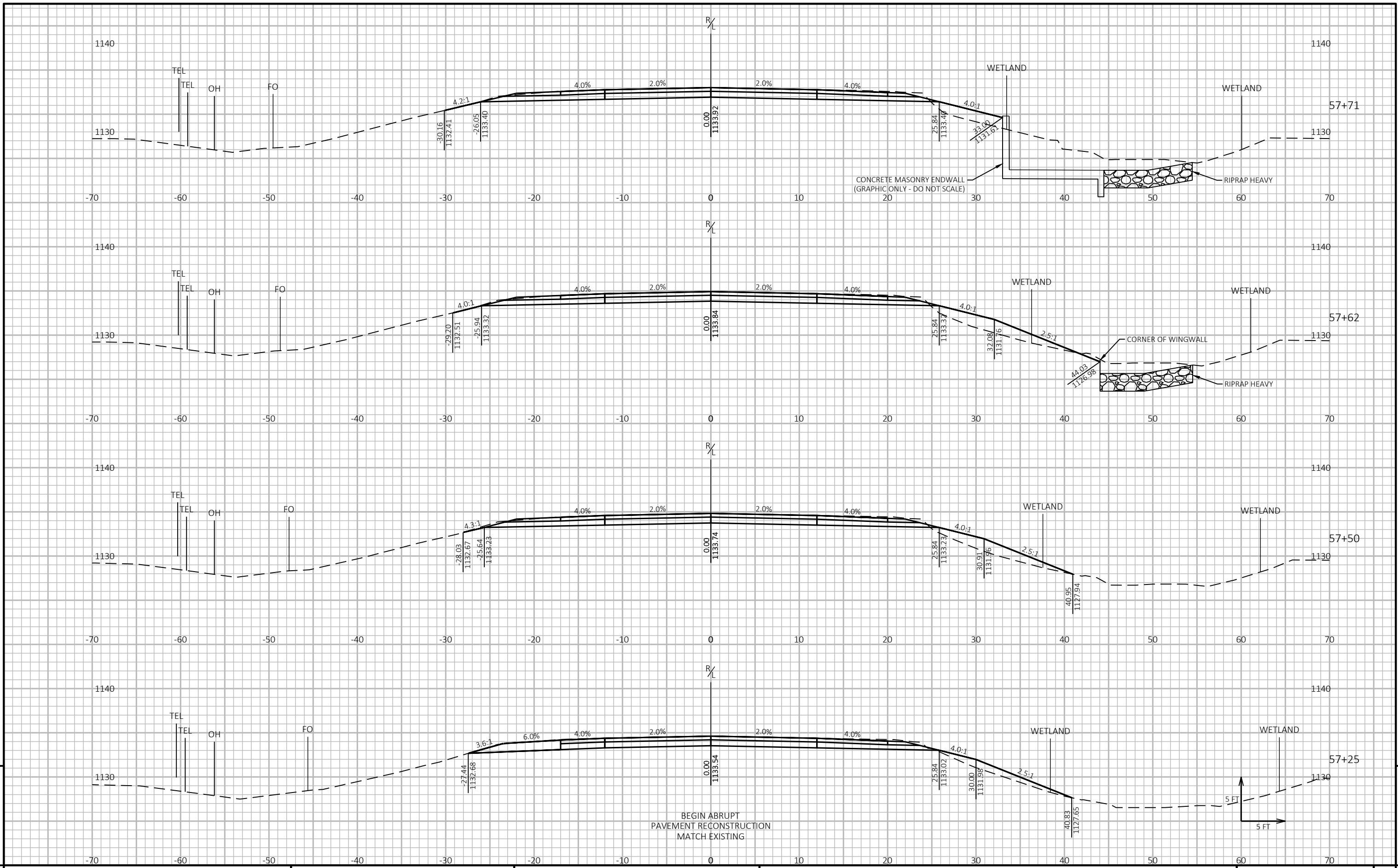
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9

PROJECT NO: 8120-00-70      HWY: STH 48      COUNTY: BARRON      CROSS SECTIONS - CULVERTS STA 57+95/58+07      SHEET      E

FILE NAME : P:\51XX\5191.DP.19.STH48.BAR\CADD\81200070\090201-XS.DWG      PLOT DATE : 7/27/2022 7:28 AM      PLOT BY : NICK MENNINGA      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT\CADD SHEET 49

LAYOUT NAME - 13



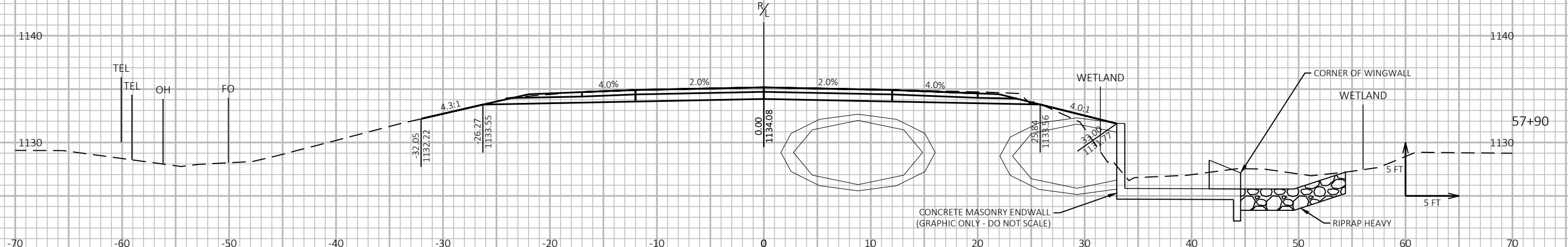
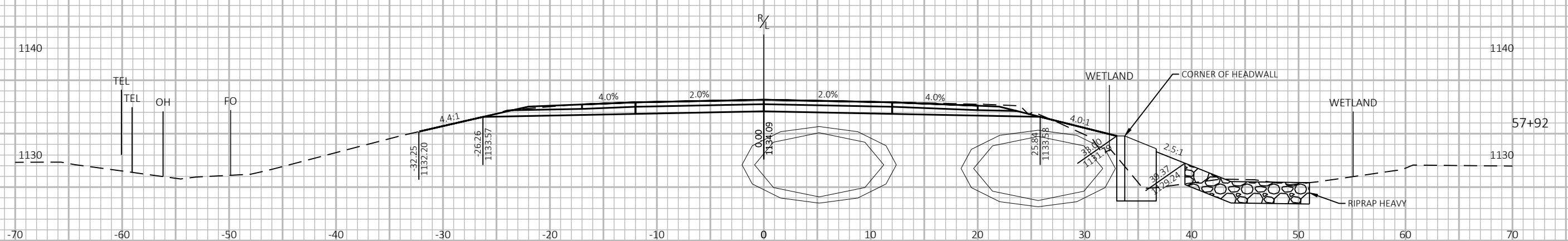
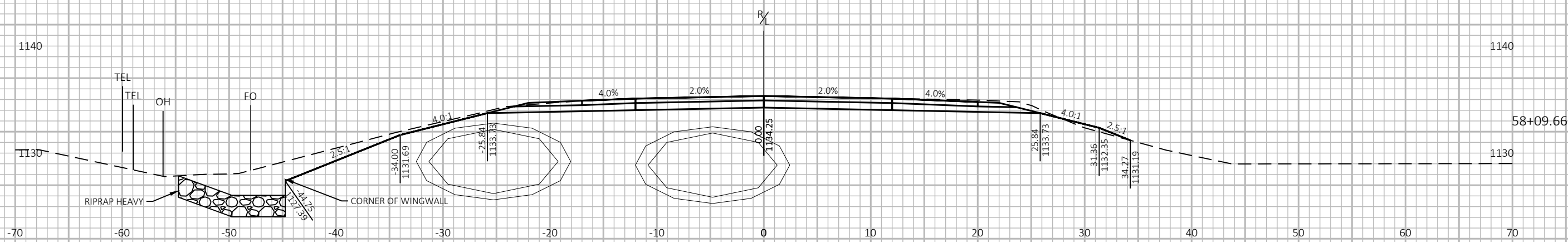
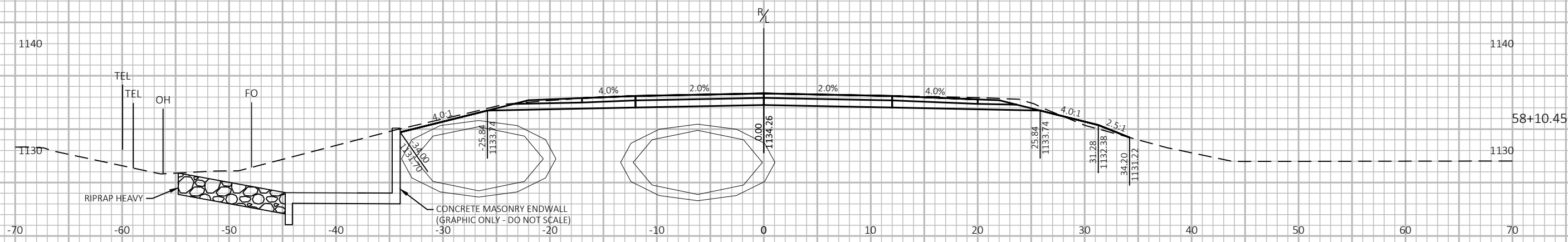
9

9

PROJECT NO: 8120-00-70      HWY: STH 48      COUNTY: BARRON      CROSS SECTIONS - CULVERTS STA 57+95/58+07      SHEET      E

FILE NAME : P:\51XX\5191.DP.19.STH48.BAR\CADDS\81200070\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 7/27/2022 7:28 AM      PLOT BY : NICK MENNINGA      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT/CADDS SHEET 49

LAYOUT NAME - 14



PROJECT NO: 8120-00-70

HWY: STH 48

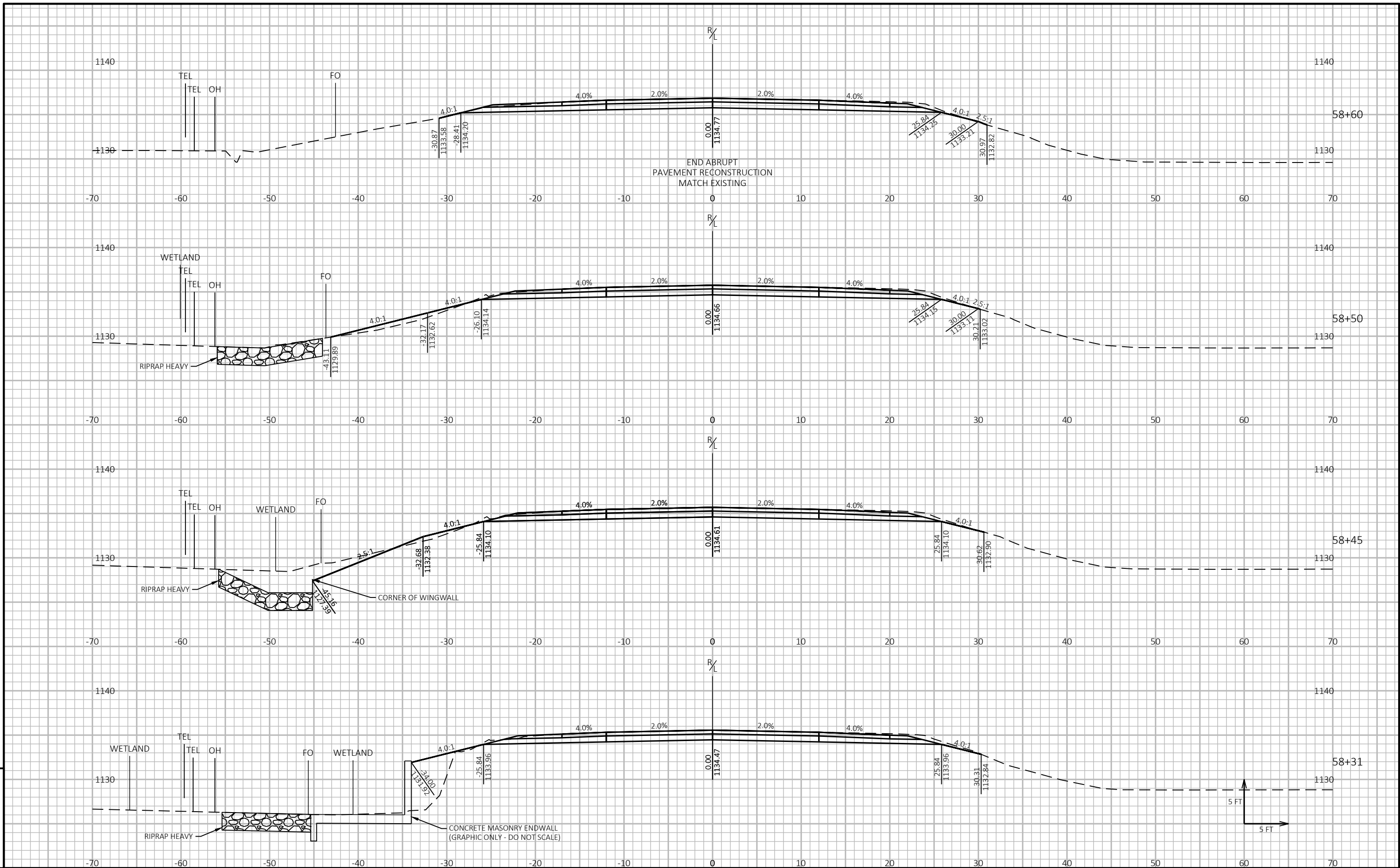
COUNTY: BARRON

CROSS SECTIONS - CULVERTS STA 57+95/58+07

SHEET

E





PROJECT NO: 8120-00-70

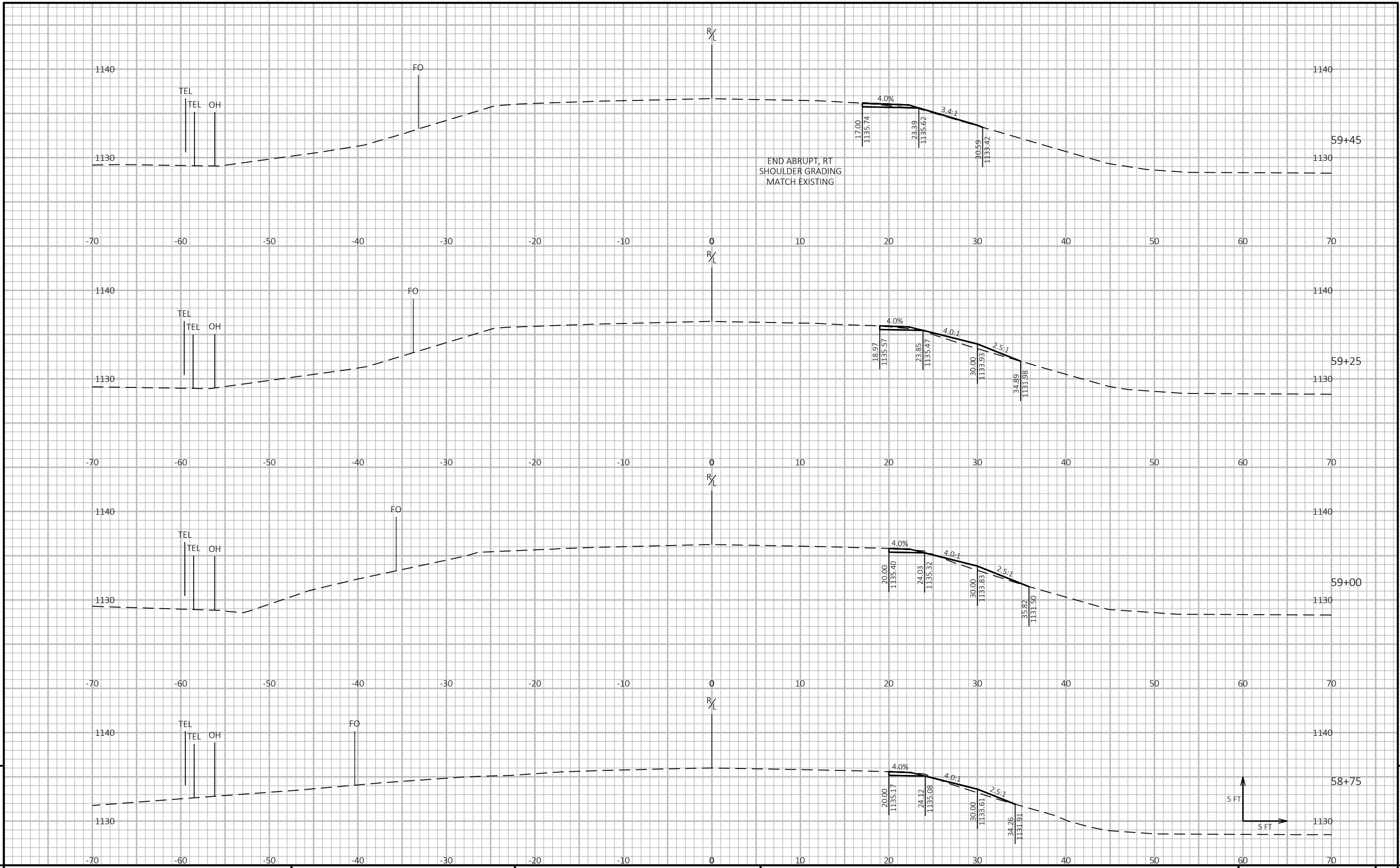
HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - CULVERTS STA 57+95/58+07

SHEET

E



PROJECT NO: 8120-00-70

HWY: STH 48

COUNTY: BARRON

CROSS SECTIONS - CULVERTS STA 57+95/58+07

SHEET

E

Notes



## ***Wisconsin Department of Transportation***

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