

# MINNESOTA DEPARTMENT OF TRANSPORTATION LYON COUNTY

CONSTRUCTION PLAN FOR: CONCRETE OVERLAY AND AGGREGATE SHOULDERS.

**COUNTY STATE AID HIGHWAY NO. 10**

BETWEEN: C.S.A.H. 17 AND U.S. 59  
FROM: N.E. COR. SEC. 9 T113N-R42W  
TO: N.E. COR. SEC. 8 T113N-R41W

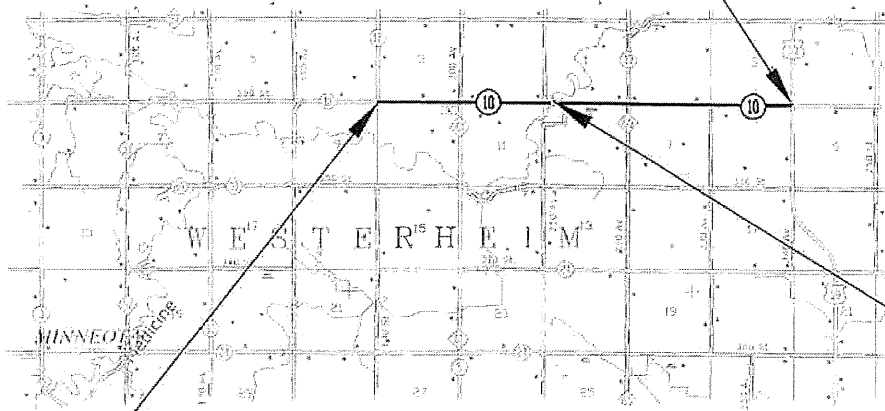
**STATE AID PROJECT NO. 042-610-042**

GROSS LENGTH	26462.27 FEET	5.012 MILES
BRIDGE LENGTH	117.00 FEET	0.022 MILES
EXCEPTIONS LENGTH	117.00 FEET	0.022 MILES
NET LENGTH	26345.27 FEET	4.999 MILES

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATED QUANTITY SHEET
SHEET NO. 3-4	TYPICAL SECTIONS SHEET
SHEET NO. 5-6	DETAILS
SHEET NO. 7	TRAFFIC CONTROL PLAN SHEET
SHEET NO. 8A-8G	BRIDGE APPROACH TREATMENT

**END S.A.P. 042-610-042  
STA. 510+75.98**

THIS PLAN CONTAINS 14 SHEETS



**BRIDGE #42579  
STA. 362+45.71 to  
STA. 363+62.71**

**BEG. S.A.P. 042-610-042  
STA. 246+13.71**

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

FUNCTIONAL CLASSIFICATION:  
RURAL MINOR COLLECTOR

DESIGN SPEED 55 MPH

ADT 270 (2017)

PROJ ADT 290 (2037)

NO. OF TRAFFIC LANES: 2

S.F. 130 %

R VALUE = 10

TON DESIGN 10

ESALS (35-YR RIGID) = 257,000

SHOULDER WIDTH 2.00'

STOPPING SITE DISTANCE BASED ON:

3.5' HEIGHT OF EYE

2.0' HEIGHT OF OBJECT

GRADED SAP 042-610-024 (1994)

SURFACED SAP 042-610-025 (1995)

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".

Signature: *Aaron VanMoer* Typed Name: Aaron VanMoer  
Design Engineer

Date: 2/15/17 License No.: 50428

*Aaron VanMoer* Date: 2/15/17  
Approved County Engineer

*Tom J. Hennrich* Date: 2/21/17  
District State Aid Engineer:  
Reviewed for Compliance with State Aid Rules/Policy

*Tom J. Hennrich* Date: 2/21/17  
Approved for State Aid Funding - for State Aid Engineer

NOTE	ITEM NO.	ITEM	UNIT	RURAL	TOTAL ESTIMATED QUANTITY
	2011.601	CONSTRUCTION SURVEYING	LUMP SUM	1.00	1.00
	2021.501	MOBILIZATION	LUMP SUM	1.00	1.00
	2051.501	MAINT. & RESTORATION OF HAUL ROADS	LUMP SUM	1.00	1.00
	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	120.00	120.00
	2221.501	SHOULDER BASE AGGREGATE CLASS 5 MOD	TON	5,300.00	5,300.00
2	2301.511	STRUCTURAL CONCRETE	CU YD	12,445.07	12,445.07
1,3	2301.504	PLACE CONCRETE PAVEMENT 5.0" (P)	SQ YD	75,354.74	75,354.74
1,3	2301.504	PLACE CONCRETE PAVEMENT 7.0" (P)	SQ YD	2,312.72	2,312.72
4	2301.538	1.0" DOWEL BAR	EACH	312.00	312.00
8	2406.553	BRIDGE APPROACH PANEL	SQ YD	160.00	160.00
5	2360.501	TYPE SP12.5 WEARING COURSE MIXTURE (3,B)	TON	710.00	710.00
	2540.602	MAIL BOX SUPPORT	EACH	13.00	13.00
6	2540.602	RELOCATE MAIL BOX	EACH	13.00	13.00
7	2563.601	TRAFFIC CONTROL	LUMP SUM	1.00	1.00
	2582.502	24" SOLID LINE EPOXY GR IN (WR)	LIN FT	14.00	14.00
	2582.502	4" SOLID LINE EPOXY GR IN (WR)	LIN FT	9,300.00	9,300.00
	2582.502	6" SOLID LINE EPOXY GR IN (WR)	LIN FT	52,000.00	52,000.00

### CONSTRUCTION NOTES

- (1) P = PLAN QUANTITY
- (2) TOTAL QUANTITY INCLUDES 30° SAFETY EDGE.
- (3) 30° SAFETY EDGE SHALL BE INCLUDED WITH THE TOTAL BID PRICE.
- (4) EPOXY COATED
- (5) SEE SHEET 6 FOR DETAILS.
- (6) CONTRACTOR MUST COORDINATE TEMPORARY LOCATION WITH THE LOCAL POSTAL AUTHORITY. MAIL BOX SHALL BE INSTALLED AT PERMANENT LOCATIONS ONCE CONSTRUCTION IS COMPLETE.
- (7) SEE SHEET 7 FOR DETAILS. ADDITIONAL DETOUR AND TRAFFIC CONTROL INCLUDED WITH PROJECT S.A.P. 042-610-040.
- (8) SEE SHEET 8A-8G FOR DETAILS. PLACE IN ACCORDANCE WITH MnDOT 2406.

#### BASIS FOR ESTIMATED QUANTITIES

(2221)SHOULDER BASE AGGREGATE CL 5 MOD  
 SHOULDERING QUANTITIES BASED ON 1.89 TONS PER C.Y. COMPACTED VOLUME ASSUMED  
 TOTAL QUANTITY INCLUDES 475 TONS FOR ENTRANCES.

(2301)STRUCTURAL CONCRETE  
 5" CROSS-SECTIONAL AREA = 11.04 S.F.  
 7" CROSS-SECTIONAL AREA = 15.47 S.F.

(2301)CONCRETE PAVEMENT (5.0")  
 TOTAL WIDTH = 26'-7"

(2301)CONCRETE PAVEMENT (7.0")  
 TOTAL WIDTH = 26'-7"

(2360)BITUMINOUS WEAR COURSE MIXTURE  
 BITUMINOUS MATERIAL FOR MIXTURE (MAXIMUM DENSITY)  
 110LBS./SQ.YD./INCH OF DEPTH

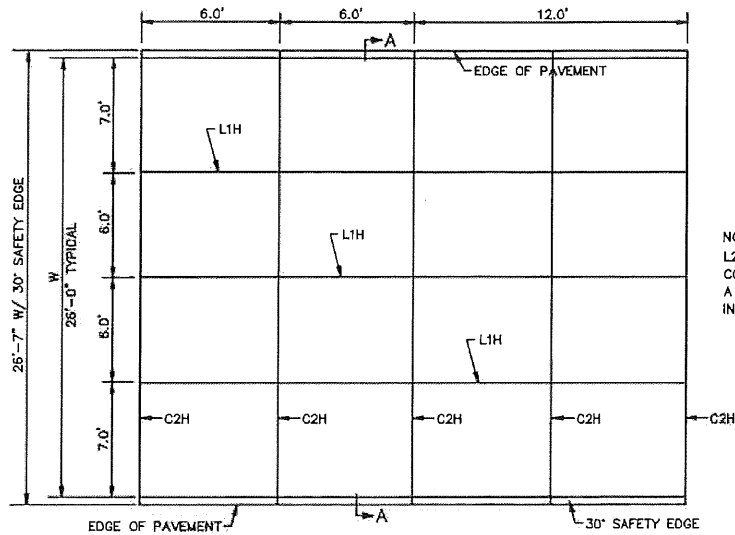
(2360)TACK COAT  
 BITUMINOUS MATERIAL FOR TACK COAT .05 GALS. PER SQ.YD.

STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

#### STANDARD PLATES

PLATE NO.	DESCRIPTION
8000 J	CHANNELIZERS
9000 E	APPROACHES AND ENTRANCES
1070 M	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103 K	TYPICAL DOWEL BAR ASSEMBLY
1150 R	CONSTRUCTION OF HEADER JOINTS

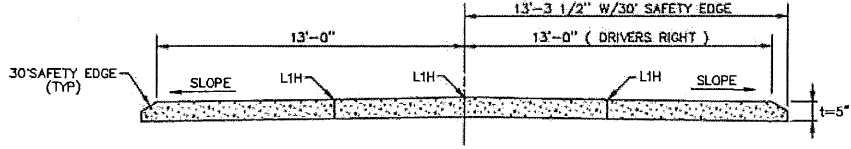




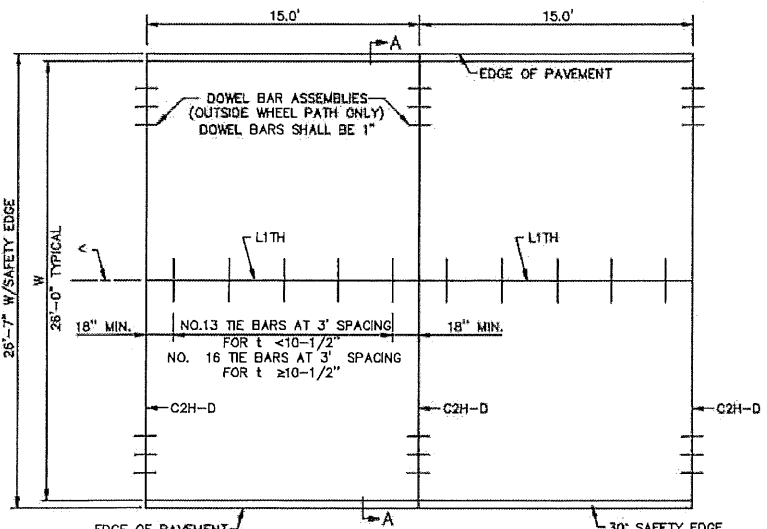
NOTE:  
L2H JOINT REQUIRED AT CENTERLINE IF THE CONTRACTOR CHOOSES TO PAVE ONE LANE AT A TIME. TIE BARS SHALL BE CONSIDERED INCIDENTAL TO CONCRETE PAVEMENT (5" OR 7").

**MAINLINE PAVEMENT - 5" WHITETOPPING**  
NOT TO SCALE

STA. 246+13.71 to STA. 256+79.21 (11,065.50')  
STA. 356+79.21 to STA. 510+25.98 (14,446.77')

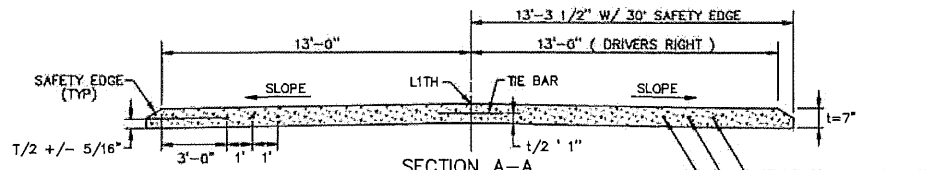


**SECTION A-A**  
CONCRETE OVERLAY (5")  
NOT TO SCALE  
TYPICAL BOTH SIDES



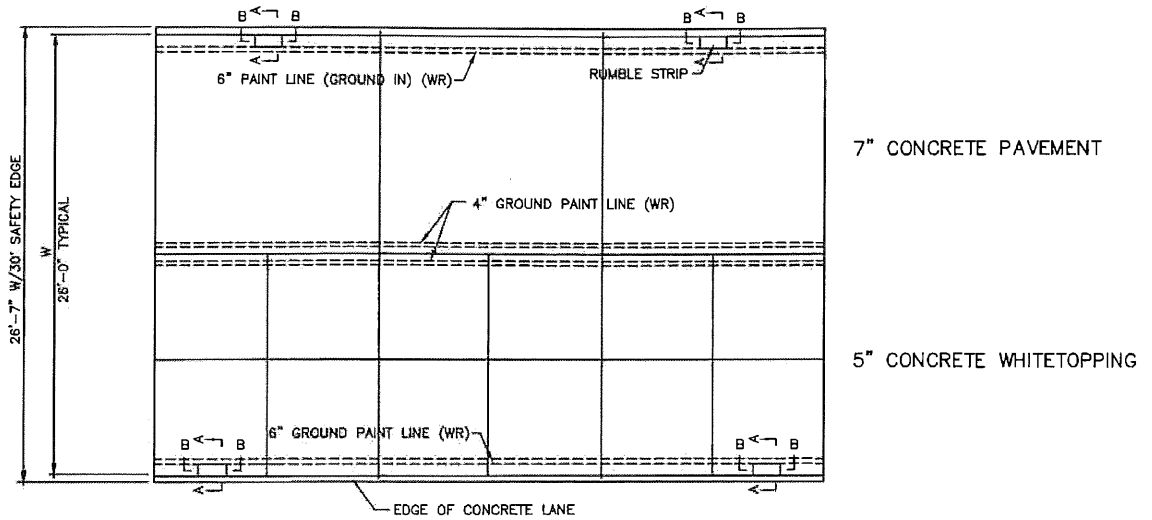
**MAINLINE PAVEMENT - NEW 7" PCC**  
DOWELED - OUTSIDE WHEEL PATH ONLY  
NOT TO SCALE

STA. 356+79.21 to STA. 262+45.71 (566.50')  
STA. 363+62.71 to STA. 365+79.21 (216.50')

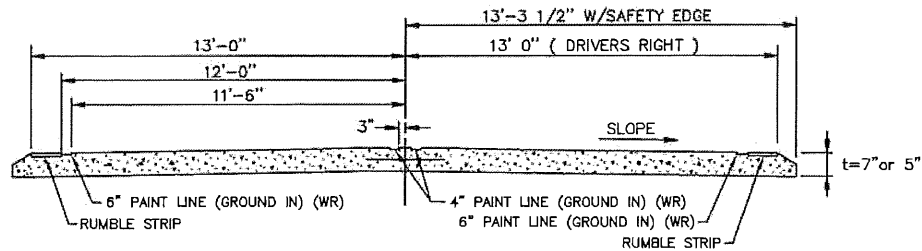


**SECTION A-A**  
DOWELED (7") - OUTSIDE WHEEL PATH ONLY  
NOT TO SCALE  
TYPICAL BOTH SIDES

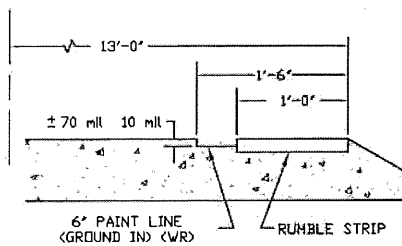
NOTES:  
1. STANDARD PLAN 5-297.217 SHALL BE MODIFIED TO INCLUDE SAFETY EDGE AND STANDARD PLATE 1103 K SHALL BE MODIFIED TO 3 BARS ONLY (INSTALLED IN THE OUTSIDE WHEEL PATH).



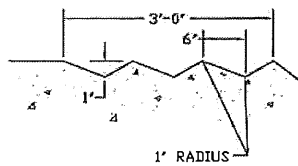
**Plan View**  
 Rumble Strip (Type 4) &  
 Ground-In Paint Line Detail  
 Scale: NONE



**Section View of Two-Lane Roadway**  
 Rumble Strip (Type 4) &  
 Ground-In Paint Line Detail  
 Scale: NONE



**Section A-A**  
 Scale: None



**Section B-B**

**RUMBLE STRIP NOTES:**

1. RUMBLE STRIP SHALL BE TYPE 4.
2. RUMBLE STRIP SHALL BE INCLUDED IN TOTAL BID PRICE OF CONCRETE PAVEMENT (5" OR 7").
3. RUMBLE STRIP SHALL BE OMITTED 200' ON EACH SIDE OF A RESIDENTIAL ENTRANCE.
4. RUMBLE STRIP SHALL BE OMITTED ON THE TURNING RADIUS OF ALL CROSSROADS.

**GROUND PAINT LINE NOTES:**

1. GROUND PAINT LINE TO THE DIMENSIONS SHOWN IN ACCORDANCE WITH SPECIFICATION 2582.502. THE GROOVE DEPTH SHALL BE 70 MIL ± 10 MIL.

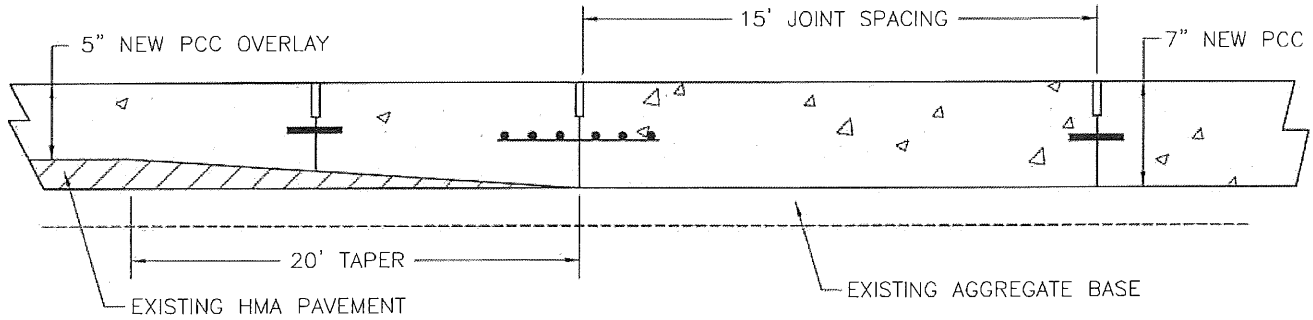
CERTIFIED BY:  LIC. NO. 50428  
 LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT NO. 042-610-042

SHEET 5 OF 8 SHEETS

## TYPICAL TRANSITION SECTION

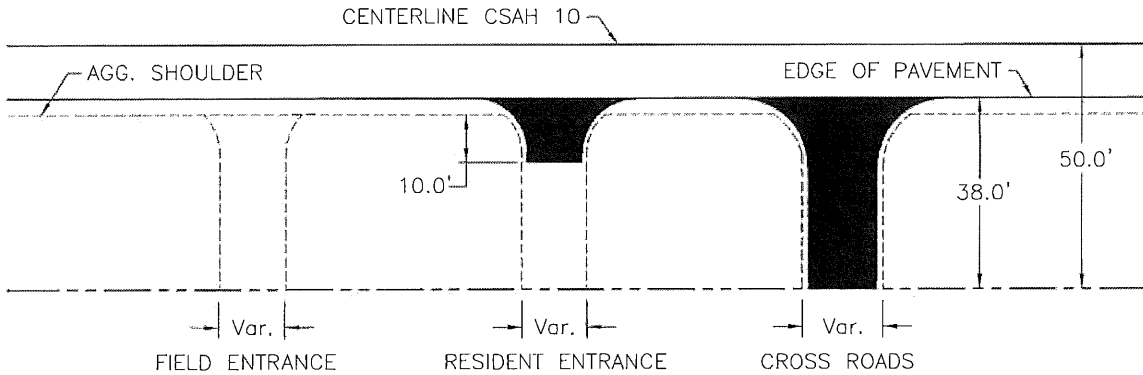
TRANSITION FROM WHITETOPPING TO NEW PPC  
(7" CONCRETE PAVEMENT TO 5" CONCRETE WHITETOPPING)



CONSTRUCT TRANSITION ACCORDING TO FIGURE 510.7 IN THE MnDOT PAVEMENT DESIGN MANUAL DATED DECEMBER 3rd, 2015.

## TYPICAL AUXILIARY APPROACH PAVING

STANDARD PLATE 9000E SHALL APPLY. FIELD ADJUST AS DIRECTED BY THE ENGINEER.



BITUMINOUS PAVEMENT SUMMARY		
ENTRANCE TYPE	#	EST. TONS
FIELD ENTRANCE	24	0
RESIDENT ENTRANCE	11	275
CROSS ROADS	9	360
CEMETERY	1	75
		710

CERTIFIED BY:

LIC. NO. 50428

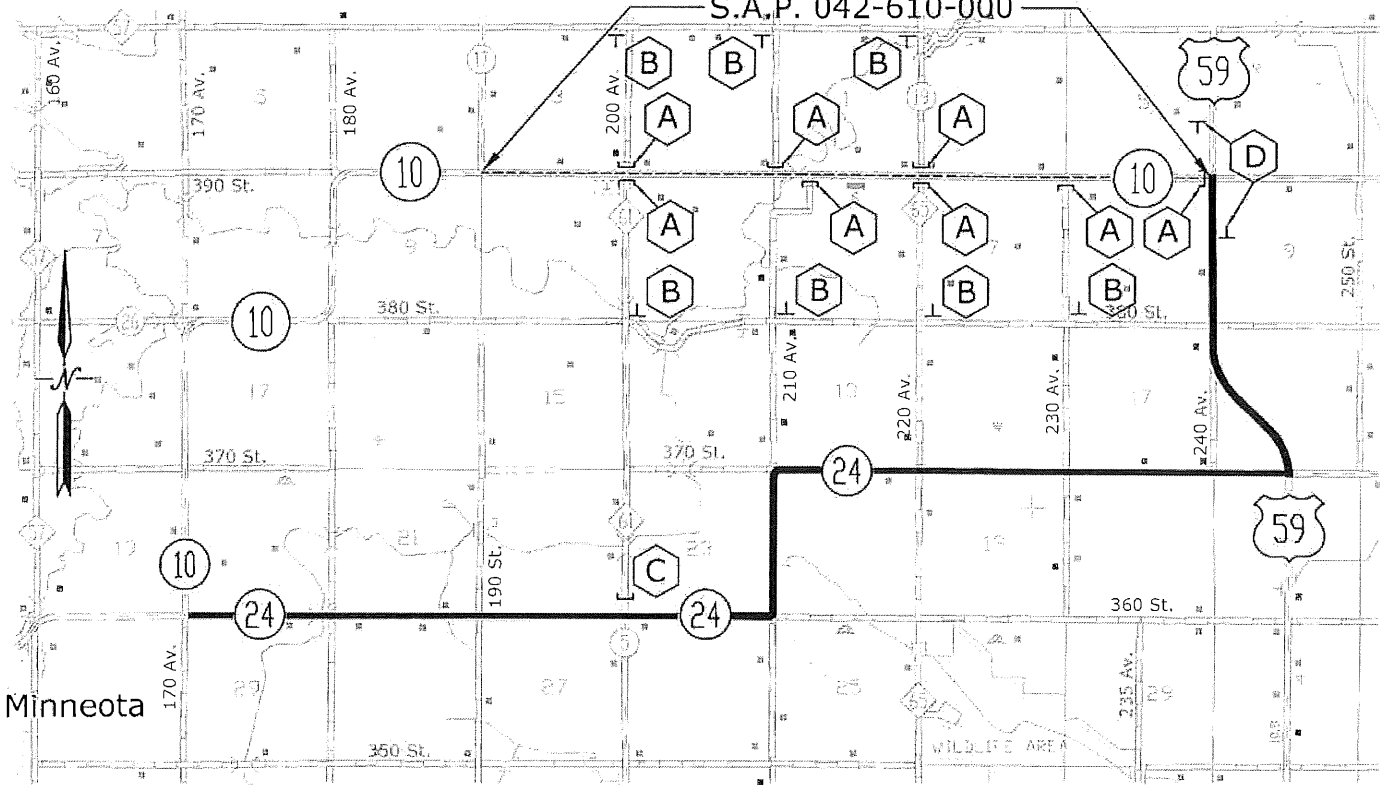
LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT NO. 042-610-042

SHEET 6 OF 8 SHEETS

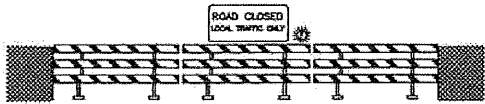
# TRAFFIC CONTROL PLAN

S.A.P. 042-610-000



Minnesota

A



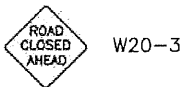
R11-4 (FRONT)  
3-TYPE 3 BARRICADE

SIGN ASSEMBLY IS FOR A COMPLETE ROAD CLOSURE.  
A MINIMUM OF 3 BARRICADES AND SAFETY FENCE IS REQUIRED.  
ALL POSTS AND HARDWARE TO INSTALL SAFETY FENCE SHALL  
BE INCLUDED WITH SIGN ASSEMBLY.

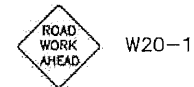
C



B



D



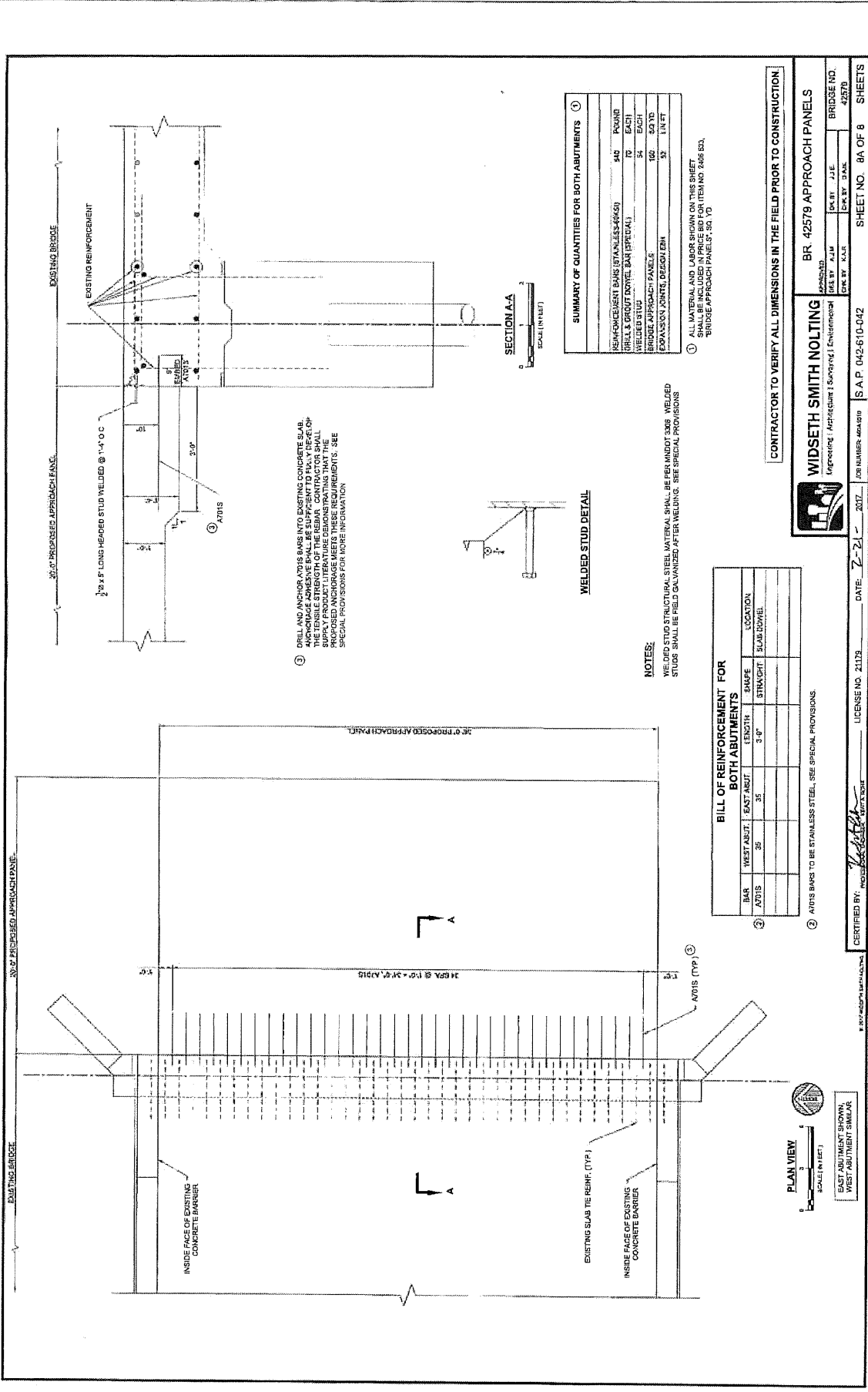
**NOTES:**

1. TRAFFIC CONTROL SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE MnMUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2. ALL NECESSARY TRAFFIC CONTROL DEVICES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE REPAIR OR REPLACEMENT OF ALL TRAFFIC CONTROL DEVICES THAT BECOME DAMAGED, MOVED, OR DESTROYED.
3. ALL INPLACE REGULATORY AND WARNING SIGNS TO REMAIN INPLACE THROUGHOUT CONSTRUCTION.
4. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE ALL TRAFFIC CONTROL DEVICES REQUIRED TO PROVIDE SAFE MOVEMENT OF LOCAL VEHICULAR TRAFFIC THROUGHOUT THE PROJECT. THE ENGINEER WILL HAVE THE RIGHT TO MODIFY THE REQUIREMENTS OF TRAFFIC CONTROL AS DEEMED NECESSARY DUE TO FIELD CONDITIONS. THE ROAD SHALL REMAIN OPEN TO LOCAL TRAFFIC AT ALL TIMES.
3. IF THE CONTRACTOR CHOOSES TO INSTALL ADDITIONAL TRAFFIC CONTROL MEASURES IT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

CERTIFIED BY:  LIC. NO. 50428  
LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT NO. 042-610-042

SHEET 7 OF 8 SHEETS



1:0460A-Alexandra Structures/1040A-1019-Lynn Co. Br. 42502 Replacement/CADD/OWNER 42579 APPROACH PANELS-SIC-BR-42579-48UT (dwg. 2/21/2017 9:55:57 AM) jacob skiba

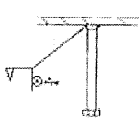
**SUMMARY OF QUANTITIES FOR BOTH ABUTMENTS**

REINFORCEMENT BARS (STAINLESS-STEEL)	#4	POUND
WELDED STUDS (MILK'S BROOK FORTIFIED BAR (FREDAL))	10	EACH
WELDED STUDS (CONCRETE)	34	EACH
BRIDGE APPROACH PANELS	100	SQ YDS
CONCRETE FOR FORTIFIED BARS	32	CU YD

① ALL MATERIAL AND LABOR SHOWN ON THIS SHEET IS FOR THE BRIDGE APPROACH PANELS, SEE 100.

③ DRILL AND ANCHOR A/TIS BARS INTO EXISTING CONCRETE SLAB. ANCHORAGE ADHESIVE SHALL BE SUPPLEMENT TO FULL DEVELOPMENT OF A/TIS BARS. SEE SPECIAL PROVISIONS FOR MORE INFORMATION. SUPPLY PRODUCT LITERATURE DEMONSTRATING THAT THE PROPOSED ANCHORAGE MEETS THESE REQUIREMENTS. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

**NOTES:**  
WELDED STUD STRUCTURAL STEEL MATERIAL SHALL BE PER MINDOT 308. WELDED STUDS SHALL BE FIELD GALVANIZED AFTER WELDING. SEE SPECIAL PROVISIONS.



**BILL OF REINFORCEMENT FOR BOTH ABUTMENTS**

BAR	WEST ABUT.	EAST ABUT.	LENGTH	SHAPE	LOCATION
A/TIS	35	35	3'-0"	STRIGHT	SLAB PANEL

② A/TIS BARS TO BE STAINLESS STEEL. SEE SPECIAL PROVISIONS.



EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR.

**WIDSETH SMITH NOLTING**  
 PREPARING: Architecture | Surveying | Environmental  
 1000 W. 10th Street, Suite 100 | Lincoln, NE 68502  
 PHONE: 402.441.1111 | FAX: 402.441.1112  
 WWW: www.wsnolting.com

BR. 42579 APPROACH PANELS  
 SHEET NO. 8A OF 8 SHEETS

DATE: 2/21/2017  
 LICENSE NO. 24138  
 S.A.P. 042-610-042





**ESTIMATED REINFORCEMENT QUANTITY FOR BRIDGE APPROACH PANELS**

TYPE	LOCATION	ESTIMATED WEIGHT
PANEL (50 TO 10')	BRIDGE TO END OF APPROACH PANEL	48.5 LB./50. YD.
PANEL SEGMENT (OVER 10')	BRIDGE TO CONTRACTION JOINT	48.5 LB./50. YD.
PANEL SEGMENT (UNDER 10')	CONTRACTION JOINT TO END OF APPROACH PANEL	38.5 LB./50. YD.
CURB	SEE DRAWING	3.0 LB./LIN. FT.
SILL	SEE DRAWING	3.0 LB./LIN. FT.

**BILL OF REINFORCEMENT FOR BRIDGE APPROACH PANELS**

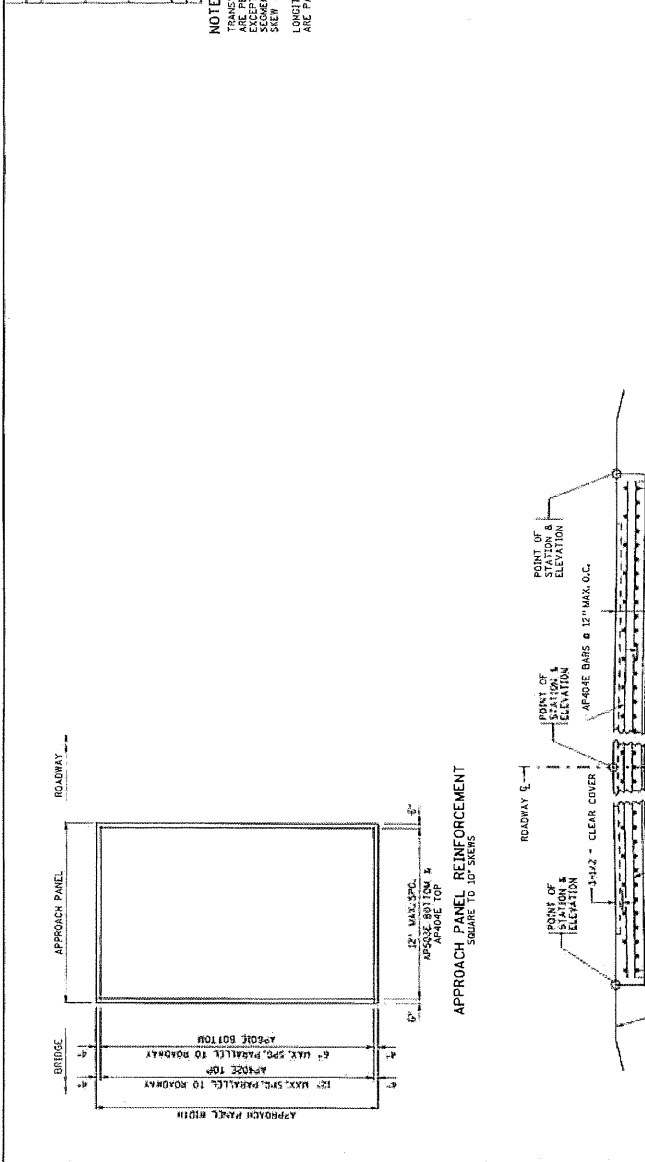
APRQ#	NO.	LENGTH	SHAPE	LOCATION
APRQ#1	---	---	---	BOTTOM LONGITUDINAL
APRQ#2	---	---	---	TOP LONGITUDINAL
APRQ#3	---	---	---	BOTTOM TRANSVERSE
APRQ#4	---	---	---	TOP TRANSVERSE
APRQ#5	---	---	---	BOTTOM TRANSVERSE
APRQ#6	---	---	---	TOP TRANSVERSE
APRQ#7	---	---	---	TOP TRANSVERSE
APRQ#8	---	---	---	TOP TRANSVERSE
APRQ#9	---	---	---	TOP TRANSVERSE
APRQ#10	---	---	---	TOP TRANSVERSE
APRQ#11	---	---	---	TOP TRANSVERSE
APRQ#12	---	---	---	TOP TRANSVERSE
APRQ#13	---	---	---	TOP TRANSVERSE
APRQ#14	---	---	---	TOP TRANSVERSE
APRQ#15	---	---	---	TOP TRANSVERSE
APRQ#16	---	---	---	TOP TRANSVERSE
APRQ#17	---	---	---	TOP TRANSVERSE
APRQ#18	---	---	---	TOP TRANSVERSE
APRQ#19	---	---	---	TOP TRANSVERSE
APRQ#20	---	---	---	TOP TRANSVERSE

**NOTES:**  
 TRANSVERSE BARS IN BOTH PANEL SEGMENTS ARE PERPENDICULAR TO ROADWAY CENTERLINE AND PARALLEL TO ROADWAY CENTERLINE. LONGITUDINAL BARS IN BOTH PANEL SEGMENTS ARE PARALLEL TO ROADWAY CENTERLINE.  
 CONCRETE IS REQUIRED TO COMPLETE THE BILL OF REINFORCEMENT. ALL DIMENSIONS ARE IN FEET AND INCHES. ALL DIMENSIONS NECESSARY TO CONSTRUCT THE PANEL SHALL BE SHOWN IN SECTION (D).  
 REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED. REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED.  
 REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED. REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED.

**GENERAL NOTES:**  
 USE EPOXY COATED GRADE 60 REINFORCEMENT PER SPEC. 3201 IN APPROACH PANELS. REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED. REBAR SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED.  
 FOR VARIABLE ROADWAY WIDTHS, VARY THE LAP LENGTH OF THE REINFORCEMENT.  
 MINIMUM REINFORCEMENT LAP LENGTHS ARE AS FOLLOWS: NO. 4 BAR = 1'-11"; NO. 5 BAR = 2'-5"; NO. 6 BAR = 2'-10".  
 ALL LAP SPLICES SHALL BE STAGGERED SUCH THAT NO MORE THAN 50% OF REBAR IS SPLICED AT THE SAME LOCATION.  
 APPROACH SLAB THICKNESS IS 12" MONOLITHIC OR 10" SLAB + 2" WEARING COURSE. CHECK BRIDGE PLANS FOR CONCRETE WEARING COURSE, WHICH IS INCLUDED IN BRIDGE PLAN QUANTITIES.  
 REINFORCEMENT SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED. REINFORCEMENT SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED.  
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- APPROACH SLAB THICKNESS IS 12" MONOLITHIC OR 10" SLAB + 2" WEARING COURSE. CHECK BRIDGE PLANS FOR CONCRETE WEARING COURSE, WHICH IS INCLUDED IN BRIDGE PLAN QUANTITIES.
- REINFORCEMENT SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED. REINFORCEMENT SHALL BE EPOXY COATED UNLESS OTHERWISE SPECIFIED.
- IF THE APPROACH PANEL IS TIED TO THE BRIDGE ABUTMENT WITH REINFORCEMENT BARS, PLACE 12 MIL POLYETHYLENE SHEETING (OR 2 LAYERS OF 6 MIL UNDER THE LIMITS OF THE PANEL) TO ALLOW THE PANEL TO MOVE LONGITUDINALLY ON THE GRADE. SHEETING IS INCLUDED IN THE APPROACH PANEL PLAN QUANTITIES.
- SEE DRAWING FOR REINFORCEMENT DETAILS.
- SEE DRAWING FOR REINFORCEMENT DETAILS.

BRIDGE NO. 42579  
 BRIDGE APPROACH PANEL REINFORCEMENT DETAILS  
 (TYPE F CONCRETE BARRIER ON APPROACH PANEL)  
 STATE AID PROJ. NO. 042-610-042 SHEET NO. 8C OF 8 SHEETS



**TRANSVERSE SECTION B-B**  
 CONCRETE BARRIERS ARE SHOWN BUT MAY NOT BE PRESENT. REFER TO BRIDGE PLANS FOR END OF BARRIER LOCATIONS.

**NOTIFICATIONS REQUIRED BRIDGE AND APPROACH PANEL TO ACCOMMODATE THIS PROJECT:** DATED AND CROSSED OUT DETAILS THAT DO NOT APPLY TO THIS PROJECT.

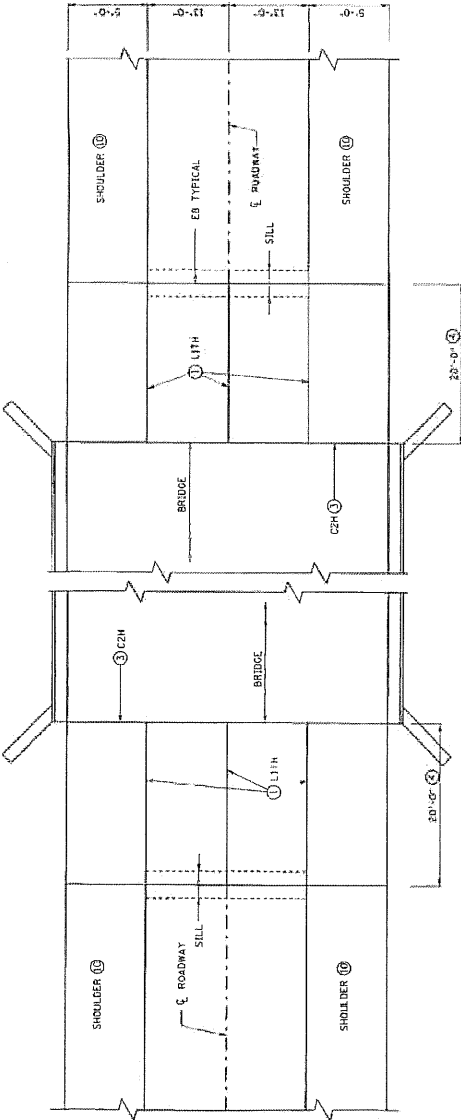
REVISION DATE: 8-22-2018  
 STANDARD PLAN SHEET NO. 5-257.225 (1 OF 2)  
 STANDARD APPROX. DATE: DECEMBER 20, 2013  
 MODIFIED: 12-17-17  
 CERTIFIED BY: [Signature]  
 LICENSE: [Number]  
 PRINTED NAME: KENT A. ROHR  
 LIC. NO. 21179



**APPROACH PANEL JOINT LAYOUT NOTES:**

- ① LITH LONGITUDINAL JOINT. SEE STANDARD PLAN 5-297.229 FOR CONSTRUCTION AND LAP LENGTH REQUIREMENTS FOR STAGED CONSTRUCTION.
- ② APPROACH PANEL JOINTS SHALL BE LOCATED AT THE CENTERLINE OF THE ROADWAY. APPROACH PANELS SHALL BE PARALLEL TO THE CENTERLINE OF THE ROADWAY. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER.
- ③ C&H CONTRACTION JOINT.
- ④ MAXIMUM PANEL LENGTH MEASURED ALONG CENTERLINE OF 20'-0" FOR UP TO 40° SKEWS. 15'-0" FOR SKEWS OVER 40°.
- ⑤ ALL JOINTS SHALL BE LOCATED IN THE CENTERLINE OF THE ROADWAY. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER.
- ⑥ SEE DRAWING FOR JOINT LAYOUT. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER.
- ⑦ 10'-0" MINIMUM.
- ⑧ SEE STANDARD PLAN 5-297.229 FOR CONSTRUCTION AND LAP LENGTH REQUIREMENTS FOR STAGED CONSTRUCTION.
- ⑨ WHEN SKEW IS OVER 40°, THE JOINT SHALL BE LOCATED IN THE CENTERLINE OF THE ROADWAY. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER. APPROACH PANELS SHALL BE SPACED AT 20'-0" ON CENTER.
- ⑩ SEE DRAWING PLAN FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.

MODIFICATIONS REVISED BRIDGE AND APPROACH PANEL TO ACCOMMODATE THIS PROJECT. DELETED AND CROSSED OUT DETAILS THAT DO NOT APPLY TO THIS PROJECT.



APPROACH PANELS - SQUARE TO 10° SKEWS ⑤

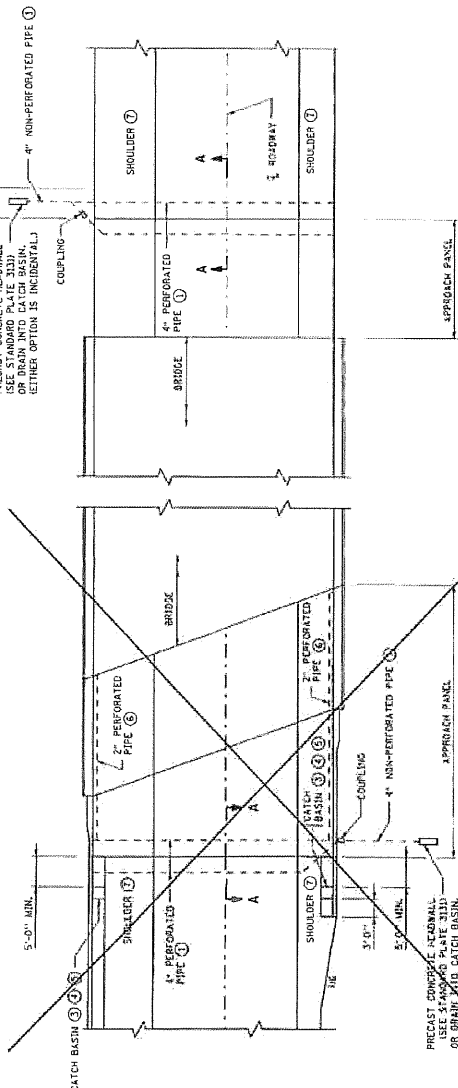
BRIDGE NO. 42579	
BRIDGE APPROACH PANEL JOINT LAYOUT (TYPE F CONCRETE BARRIER)	
REVISED DATE 8-22-2016	STANDARD PLAN SHEET NO. 5-297.228 (1 OF 2)
CERTIFIED BY <i>[Signature]</i>	STANDARD APPROVAL MARCH 23, 2011
PRINTED NAME: KENT A. ROHR	LIC. NO. 21179
STATE AID PROJ. NO. 042-610-042	BRIDGE NO. 42579
SHEET NO. 8E OF 8 SHEETS	



**NOTES:**

- ① 4-INCH NOMINAL DIAMETER THERMOPLASTIC PIPE, AS PER ASTM D1585, SCHEDULE 40, SLOPE PIPE TO DITCH, WRAP PERFORATED PIPE WITH 10-MIL POLYETHYLENE TAPE, FINISH AND INSTALLING THE DRAIN SYSTEM IS INCIDENTAL.
- ② BACKFILL WITH FINE AGGREGATE (UNDOT 3/16) MODIFIED TO 0-3% PASSING A NO. 200 SIEVE (INCIDENTAL).
- ③ 2-INCH PERFORATED PIPE TO BE INSTALLED IN THE SHOULDER OR IN THE ROADWAY.
- ④ 4-INCH PERFORATED PIPE TO BE INSTALLED IN THE SHOULDER OR IN THE ROADWAY.
- ⑤ 4-INCH NON-PERFORATED PIPE TO BE INSTALLED IN THE SHOULDER OR IN THE ROADWAY.
- ⑥ 2-INCH PERFORATED PIPE TO BE INSTALLED IN THE SHOULDER OR IN THE ROADWAY.
- ⑦ PRECAST CONCRETE HEADWALL, USE AS A DRAINAGE BASIN, OR DRAIN INTO CATCH BASIN, (EITHER OPTION IS INCIDENTAL).
- ⑧ SEE GRADING PLANS FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.

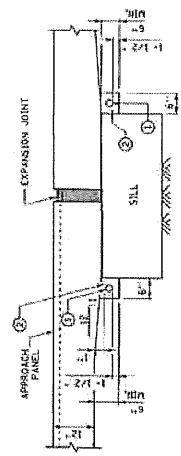
5'-0" MIN.  
 PRECAST CONCRETE HEADWALL  
 USE AS A DRAINAGE BASIN,  
 OR DRAIN INTO CATCH BASIN,  
 (EITHER OPTION IS INCIDENTAL)



**DIVIDED-URBAN ROADWAY PLAN**  
 SQUARE TO 30' SKENS

**DIVIDED-URBAN ROADWAY PLAN**  
 OVER 10' - SKENS

5'-0" MIN.  
 PRECAST CONCRETE HEADWALL  
 USE AS A DRAINAGE BASIN,  
 OR DRAIN INTO CATCH BASIN,  
 (EITHER OPTION IS INCIDENTAL)



**SECTION A-A**  
 DRAINAGE AT EXPANSION JOINT DETAIL

ADDITIONAL NOTES: BRIDGE AND APPROACH PANELS  
 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE  
 SPECIFICATIONS AND DETAILS THAT DO NOT APPLY TO THIS PROJECT.

BRIDGE NO. 42579	
BRIDGE APPROACH PANEL DRAINAGE DETAILS	
MODIFIED	TITLE
STANDARD PLAN SHEET NO. 5-287-231	
STANDARD APPROVED	DATE: MARCH 22, 2011
CERTIFIED BY: <i>[Signature]</i>	2-21-17
PRINTED NAME: KEVIN A. ROHR	LIC. NO. 21179
STATE AID PROJ. NO. 042-610-042	SHEET NO. 8C OF 8 SHEETS