

DESIGN DATA				
Traffic	Average Daily			
Current 2023	Pass: 5230	Trucks: 1945	Total: 7175	
Preventive Maintenance				

NORTH DAKOTA

DEPARTMENT OF TRANSPORTATION

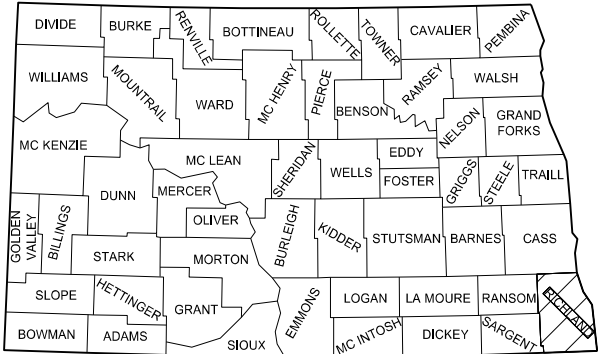
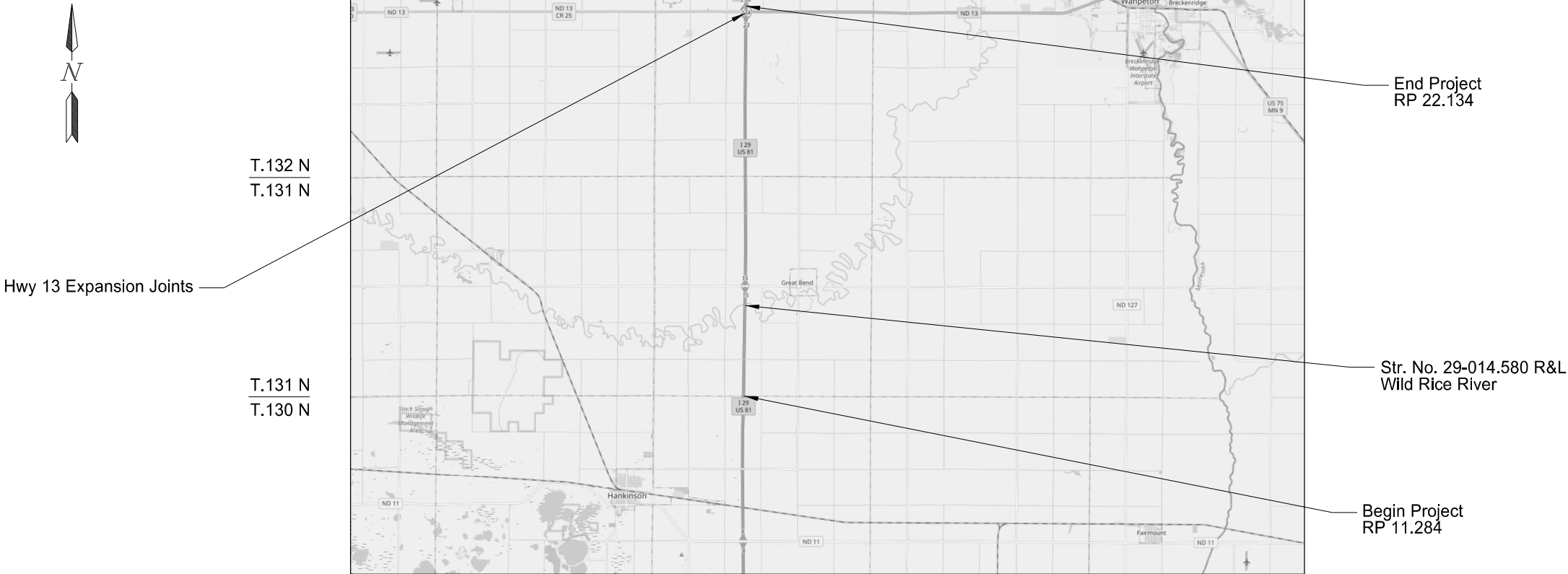
IM-8-029(214)011

11.3 Mi North of State Line
N to Jct ND 13 - NB&SB
Approach Slab-CPR-Stitching
Expansion Joint-Pavement Marking

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	23490	1	1

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	7/1/2024
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-8-029(214)011	10.824 MI	10.850 MI



STATE COUNTY MAP

R. 50 W
R. 49 W

R. 49 W
R. 48 W

DESIGNER Justin Oss, P.E
DESIGNER Gary Myers
DESIGNER

ND DEPARTMENT OF TRANSPORTATION Fargo District	Joe Peyerl 03/12/25
---	------------------------

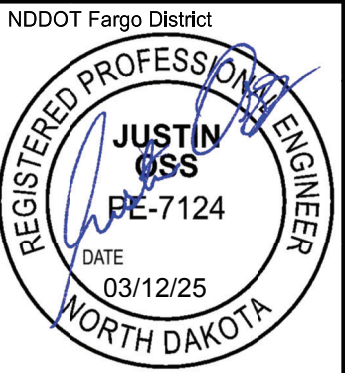
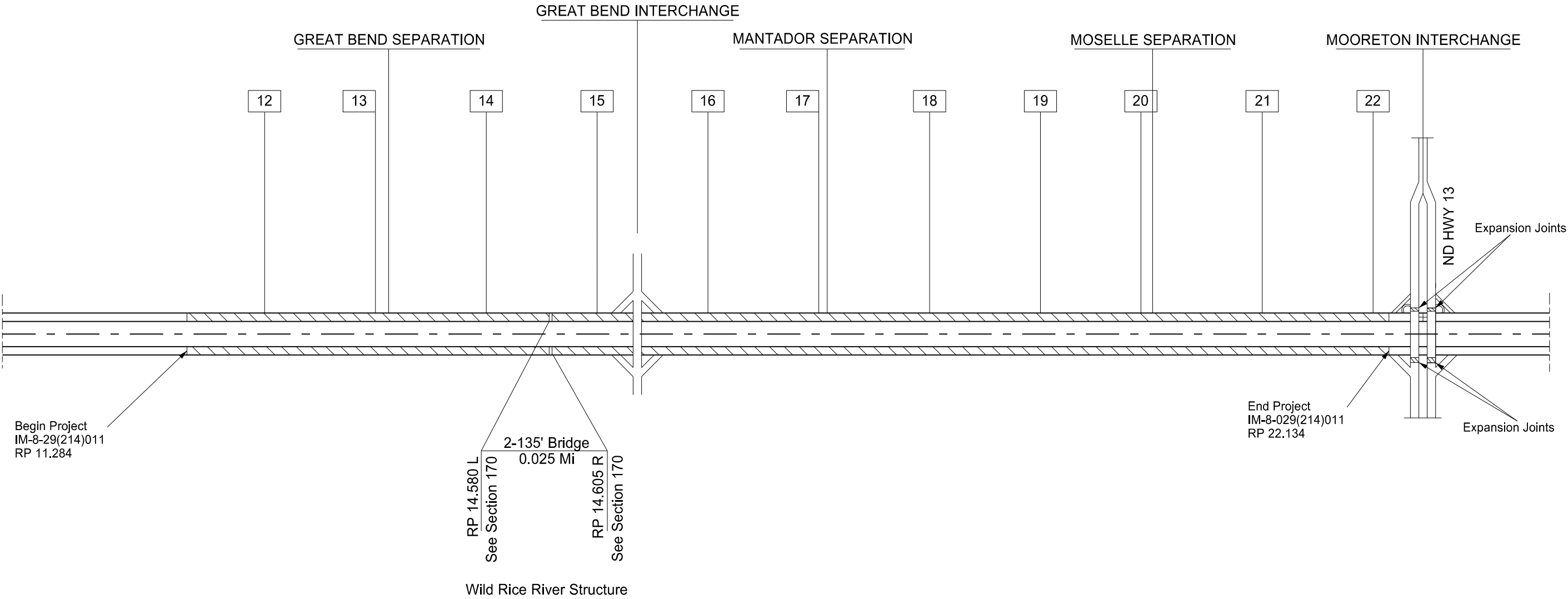
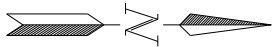


TABLE OF CONTENTS						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	IM-8-029(011)214	2	1
PLAN SECTIONS			LIST OF STANDARD DRAWINGS						
Section	Page(s)	Description	Number	Description					
1	1	Title Sheet	D-101-1, 2-4	NDDOT Abbreviations					
2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations					
4	1	Scope of Work	D-101-20, 21	Line Styles					
6	1-2	Notes	D-101-30, 31-33	Symbols					
8	1-2	Quantities	D-550-2	Longitudinal Joint Details					
10	1	Basis of Estimate	D-550-3	Transverse Contraction Joint Details					
11	1-85	Data Tables	D-704-1	Attenuation Device					
20	1-9	General Details	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube					
30	1-2	Typical Sections	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post					
100	1-7	Work Zone Traffic Control	D-704-9	Construction Sign Details - Terminal And Guide Signs					
130	1	Guardrail	D-704-10	Construction Sign Details - Regulatory Signs					
170	1-6	Bridges and Box Culverts	D-704-11, 11A	Construction Sign Details - Warning Signs					
			D-704-12	Shoulder Closure Tapers					
			D-704-13	Barricade And Channelizing Device Details					
			D-704-14	Construction Sign Punching And Mounting Details					
			D-704-18	Sign Layout For Interstate System One Lane Closure					
			D-704-34	Sign Layout For One Lane Closure					
			D-704-35	Sign Layout For One Lane Closure - Interstate System					
			D-762-2	Interstate Pavement Marking 4 Lane Divided Highway					
			D-764-1	W-Beam Guardrail General Details					
			D-764-10	Thrie Beam Transition To Double Box Beam Retrofit					
			D-764-20	Short Term End Treatment For Bridges (Attenuation Device Method)					
			D-764-22	Typical Grading At Bridge Ends With W-Beam Guardrail					

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	4	1



Indicates Area of Roadwork

Scope of Work
11.3 Mi N State Line N to Jct ND 13
NB & SB

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	6	1

NOTES

GENERAL NOTES

- 100-P03COORDINATION OF PROJECTS: Other projects are in the vicinity of this project and are under contract during the 2026 construction season.
 - I-29 NB - 8 MI South of ND 13 – Structure Paint
 - I-29 NB - Jct of Hwy 11 – Structure Paint
 - I-29 NB - 1 MI N of Hwy 11 – Structure Paint
 - I-29 NB - 6 MI S of ND 13 – Structure PaintContractors will be required to coordinate construction activities, such that conflicts do not arise from traffic control layouts or order of operations.
- 550-P013IN EXPANSION JOINT: Install expansion joints consisting of a pre-compressed polymer impregnated self-expanding polyurethane foam joint seal coated with a silicone surface providing a permanent weather tight seal. The joint seal may be:
 - Wabo FS Bridge Seal (Watson Bowman Acme);
 - BEJS Bridge Expansion Joint System (EMSEAL);
 - Iso-Flex Silfast XL (LymTal International),Prepare the joint opening and install the joint seal according to the manufacturer's recommendations.

Follow the manufacturer's recommendation for attaching the expansion joint seal to the concrete and for splicing foam together. Install the membrane sealant material into the joint, positioning it with the manufacturer's recommended recess from the top surface of the concrete. Do not stretch or compress the membrane sealant material.

Fabricate and install protection armor angles on each side of the expansion joint as shown in the Sec 20 Details. Galvanize the armor angles according to Section 854.01, "Galvanizing". Splices are permitted. Weld spliced ends. Coat weld splices or damaged coating areas with galvanizing paint according to Section 854.02, "Damaged Galvanized Coatings".

Include all work and materials associated with the expansion joint seal and protection armor angles in the contract unit price of "3 IN Expansion Joint."
- 550-P02CONCRETE SLEEPER SLAB: This work consists of constructing a concrete sleeper slab at the location of an expansion joint in the PCC pavement.

Finish the surface of the sleeper slab smooth. Allow the sleeper slab to cure for 24 hours before performing additional work on or adjacent to the slab. Cover the sleeper slab with a double layer of 4 or 6 mil polyethylene sheeting before covering the slab with the concrete roadway. Include all costs for any excavation, removal of existing sleeper slab, aggregate base, reinforcing steel, labor, and equipment in the contract unit price of "Concrete Sleeper Slab".

- 570-P01EXISTING AGGREGATE BASE: Some plant mix base course may adhere to concrete during concrete removals associated with full depth repair operations. Provide aggregate meeting Class 7, 42, or 43 (816.03 B) for use as a leveling course when constructing the grade in full depth repair areas. Repair damaged edge drains if they are disturbed during removals. Include the cost of aggregate, edge drain repair, and associated work in the unit price bid for 9IN CONCRETE PAVEMENT REPAIR – FULL DEPTH-DOWELED.
- 570-P02CONCRETE PAVEMENT REPAIR: The pay items below include a 20% additional quantity for use as directed by the engineer:

CONCRETE PAVEMENT REPAIR - FULL DEPTH - DOWELED

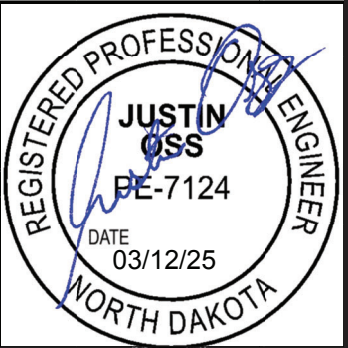
DOWELED CONTRACTION JOINT ASSEMBLIES

RANDOM PCC CRACK CLEANING AND SEALING

SPALL REPAIR-PARTIAL DEPTH
- 570-P03TRANSVERSE AND LONGITUDINAL JOINTS CLEANING AND SEALING: Saw, clean, and seal concrete repairs as indicated in the details. Include all costs for labor, equipment, and materials in the unit price bid for 9IN CONCRETE PAVEMENT REPAIR – FULL DEPTH-DOWELED.
- 704-016TRAFFIC CONTROL SUPERVISOR: Provide a traffic control supervisor.
- 704-200STATE FURNISHED MEDIAN BARRIER: Obtain (72) 2.5’ x 10’ concrete barriers. They can be picked up and returned to the Casselton yard at 15482 37th St SE in Casselton ND 58012. The hardware can be picked up and returned to the Fargo District yard at 503 38th St S in Fargo ND 58103. Contact the Fargo District office at 701-239-8900 to facilitate the exchanges.

If returning barriers with connection components, coordinate the delivery location for the connecting components with the Engineer. Some 4 inch x 4 inch boards are available at the return location. Provide any additional 4 inch x 4 inch boards necessary to stack barriers. The boards will become property of the Department.

Include all costs associated with median barriers in the contract unit price for “State Furnished Median Barrier”.
- 704-510OBLITERATION OF PAVEMENT MARKINGS: Masking of pavement marking designated for obliteration is allowed. Choose to remove markings as specified in Section 704.04 N, “Obliteration of Pavement Markings” or mask markings. Mask markings using removable, non-reflective preformed tape that is approximately the same color as the pavement surface and that overlaps the marking a minimum of 1-inch on each side.
- 704-900ATTENUATION DEVICE TYPE B: Install either of the following attenuation devices:



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	6	2

NOTES

- The barrel type shown on standard D-704-01; or
- The liquid filled attenuation device described in this note. Install liquid filled attenuation devices that are 2.5 feet wide.

Before installing devices, provide the Engineer a Certificate of Compliance stating that the devices meet NCHRP Report 350, MASH 2009, or MASH 2016, and a copy of an eligibility letter from FHWA.

Use devices rated for the MPH designation used in the item description.

Install devices according to the manufacturer's specifications.

Liquid filled attenuators may not be deployed in any portion of the months of January, February, and December, nor before the 15th of March.

If liquid filled attenuation devices are deployed after the 15th of March or in any portion of the months of April, October or November, include calcium magnesium acetate or potassium acetate in the liquid filled barrier solution. Mix the anti-icing chemicals with water as recommended by the anti-icing chemical manufacturer to protect the barrier from freezing to a temperature of 0°F. Contact the Engineer and the NDDOT Environmental and Transportation Services Division in the case of a spill leaving the roadway. Dispose of the mixture inside the device as specified in Section 107.17, "Removed Material".

Provide a full replacement set of attenuators available to the project. If the replacement devices are installed, have a set of replacement devices available to the project within 3 calendar days.

Immediately replace any damaged pieces. The Department will reimburse the Contractor for damaged pieces based on the invoice price plus 10 percent. All other costs associated with installing and maintaining replacement pieces will be at no additional cost to the Department.

704-P01 TRAFFIC CONTROL PHASING: Devices listed in Phase 1 on Section 100, Sheet 1 shows devices needed for the CPR portion of the project on I-29 NB & SB. Devices shown on Section 100, Sheet 2 show devices needed for the Hwy 13 Expansion Joint portion of the project. Phase 2 (driving lane) and Phase 3 (passing lane).

Contractor may exercise option to complete Hwy 13 work simultaneously with I-29 work.

704-P02 TRAFFIC CONTROL FOR CONCRETE PAVEMENT REPAIR: Provide traffic control consisting of a temporary lane closure and flagging. The maximum work zone length is six miles. The length of the work zone includes the daily construction area plus the longitudinal buffer space and does not include tapers. Lane closures may be less than six miles in length, dependent upon the overall length of the project.

Two work zones are allowed on I-29 but must be separated by a three mile gap. The gap is considered the distance between the sign reestablishing the normal speed limit after the first work zone and the reduced speed ahead sign for second lane closure. Place vertical panels on the roadway centerline adjacent to full depth repair areas. Place panels every 10 feet and use a minimum of two panels at each full depth repair area.

Place Type I barricades in front of each full depth removal area. Position barricades so that they do not encroach into the traffic lane.

The traffic control device list is based on two 6 mile lane closures (1 in each direction) and the following list:

1. Standard D-704-34.
2. Standard D-704-35.
3. Standard D-704-18; For approach replacement at Wild Rice River, RP 14.580.

Quantities of Type I barricades and vertical panels are based on the number of full depth repair locations and 3 vertical panels per location. The Department will pay for additional barricades and panels at the contract unit price for the devices.

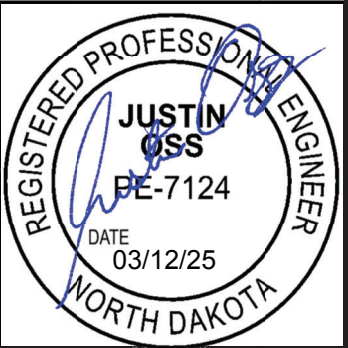
Remove or shorten lane closures after new concrete has reached the required strength for opening to traffic specified in Section 570.04 A.1.b, "Full Depth Repairs".

The Department will pay for all necessary deployed devices, regardless of the number and length of the lane closures.

Complete all concrete pavement repairs and other associated work (striping, sealing, incidental grinding, etc.) for the entire length of one closure before starting work in the adjacent lane. To operate in a manner other than described, submit a traffic control plan to the engineer for review and approval prior to starting any work.

704-P03 TRAFFIC ROUTING DURING CONSTRUCTION: Provide one lane of traffic in each direction at all times. Do not allow construction traffic to drive in the opposite direction on the adjacent lane.

704-P04 CONSTRUCTION TRAFFIC: Access the project only at interchanges. Do not operate in or through the median. Do not access the site from the opposite roadway.



ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	8	1

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	----	-----	-----
103	0100 CONTRACT BOND	L SUM	1	1
550	1013 3IN EXPANSION JOINT	LF	183	183
550	1031 CONCRETE SLEEPER SLAB	SY	124	124
570	0240 DOWELED CONTRACTION JOINT ASSEMBLY	LF	1,040.4	1,040.4
570	0709 11IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	428.4	428.4
570	0711 9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY	4,362	4,362
570	0966 RANDOM PCC CRACK CLEANING & SEALING	LF	836.4	836.4
570	1512 SPALL REPAIR-PARTIAL DEPTH	SF	31,720.8	31,720.8
570	1600 EPOXY COATED DEFORMED BARS	EA	1,300	1,300
602	1135 BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	182.2	182.2
602	1250 PENETRATING WATER REPELLENT TREATMENT	SY	1,740	1,740
602	1260 BRIDGE DECK CRACK SEALING	LF	1,690	1,690
702	0100 MOBILIZATION	L SUM	1	1
704	0100 FLAGGING	MHR	500	500
704	1000 TRAFFIC CONTROL SIGNS	UNIT	3,564	3,564
704	1043 ATTENUATION DEVICE-TYPE B-65	EA	2	2
704	1045 ATTENUATION DEVICE-TYPE B-75	EA	1	1
704	1050 TYPE I BARRICADE	EA	80	80
704	1052 TYPE III BARRICADE	EA	26	26
704	1060 DELINEATOR DRUMS	EA	176	176
704	1067 TUBULAR MARKERS	EA	484	484
704	1080 STACKABLE VERTICAL PANELS	EA	120	120
704	1087 SEQUENCING ARROW PANEL-TYPE C	EA	4	4
704	1500 OBLITERATION OF PAVEMENT MARKING	SF	68	68
704	3511 STATE FURNISHED MEDIAN BARRIER	LF	1,075	1,075
706	0500 AGGREGATE LABORATORY	EA	1	1
762	0131 EPOXY PVMT MK 6IN LINE-GROOVED	LF	229,964	229,964
762	0134 EPOXY PVMT MK 12IN LINE-GROOVED	LF	1,940	1,940
762	0420 SHORT TERM 4IN LINE-TYPE R	LF	1,600	1,600
762	1106 PVMT MK PAINTED 6IN LINE	LF	13,328	13,328
762	1124 PVMT MK PAINTED 24IN LINE	LF	120	120
762	1307 PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED	LF	28,644	28,644
764	0150 REMOVE & RESET GUARDRAIL	LF	66.4	66.4

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	8	2

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
930	9605 SPALL REPAIR - MINOR	SF	55	55
930	9639 APPROACH SLAB LIP REPAIR	LF	93.4	93.4

BASIS OF ESTIMATE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	H-8-029(214)011	10	1

Permanent Pavement Marking

Location – Type	Basis	RP Range	Quantity	
Interstate 29 - Northbound				
Centerline – Preformed Patterned Pvmt Mk 6 IN Line - Grooved	Skips 1,320 LF/Mile	RP 11.284 to 22.134	14,322	LF
White Edge Line – Epoxy Pvmt Mk 6 IN Line – Grooved	5,280 LF/Mile	RP 11.284 to 22.134	57,288	LF
Yellow Edge Line – Epoxy Pvmt Mk 6 IN Line – Grooved	5,280 LF/Mile	RP 11.284 to 22.134	57,288	LF
Interstate 29 - Southbound				
Centerline – Preformed Patterned Pvmt Mk 6 IN Line - Grooved	Skips 1,320 LF/Mile	RP 11.284 to 22.134	14,322	LF
White Edge Line – Epoxy Pvmt Mk 6 IN Line – Grooved	5,280 LF/Mile	RP 11.284 to 22.134	57,288	LF
Yellow Edge Line – Epoxy Pvmt Mk 6 IN Line – Grooved	5,280 LF/Mile	RP 11.284 to 22.134	57,288	LF
Great Bend Interchange (Exit and Entrance Ramps, Cross Rd)				
Channel Line - Epoxy Pvmt Mk Painted 12 IN Line - Grooved	5,280 LF/Mile	RP 14.736 to 15.397	1,940	LF
Dotted Line - Epoxy Pvmt Mk 6 IN Line – Grooved	Skips 1,320 LF/Mile	RP 14.736 to 15.397	812	LF
*White Edge Line - Pvmt Mk Painted 6 IN Line	5,280 LF/Mile	RP 14.736 to 15.397	4,770	LF
*Yellow Edge Line - Pvmt Mk Painted 6 IN Line	5,280 LF/Mile	RP 14.736 to 15.397	4,300	LF
Stop Line - Pvmt Mk Painted 24 IN Line	5,280 LF/Mile	RP 14.736 to 15.397	120	LF
Cross Rd Center Line – Pvmt Mk Painted 6 IN Line	Double Barrier 10,560 LF/Mile		2,000	LF
Cross Rd Edge Line – Pvmt Mk Painted 6 IN Line	5,280 LF/Mile		2,000	LF
Highway 13 (Expansion Joints EB)				
Centerline – Preformed Patterned Pvmt Mk 4 IN Line - Grooved	Skips 1,320 LF/Mile	RP 380.157 to 380.164, 380.218 to 380.225	15	LF
White Edge Line – Pvmt Mk Painted 6 IN Line	5280 LF/Mile	RP 380.157 to 380.164, 380.218 to 380.225	57	LF
Yellow Edge Line – Pvmt Mk Painted 6 IN Line	5280 LF/Mile	RP 380.157 to 380.164, 380.218 to 380.225	57	LF
Highway 13 (Expansion Joints WB)				
Centerline – Preformed Patterned Pvmt Mk 4 IN Line - Grooved	Skips 1,320 LF/Mile	RP 380.228 to 380.220, 380.166 to 380.163	36	LF
White Edge Line – Pvmt Mk Painted 6 IN Line	5,280 LF/Mile	RP 380.228 to 380.220, 380.166 to 380.163	72	LF
Yellow Edge Line – Pvmt Mk Painted 6 IN Line	5,280 LF/Mile	RP 380.228 to 380.220, 380.166 to 380.163	72	LF
Channel Line - Pvmt Mk Painted 12 IN Line	5,280 LF/Mile	RP 380.166 to 380.163	15	LF

*See Std Dwg 762-2 for Epoxy to Paint transition (Physical Gore).

Totals

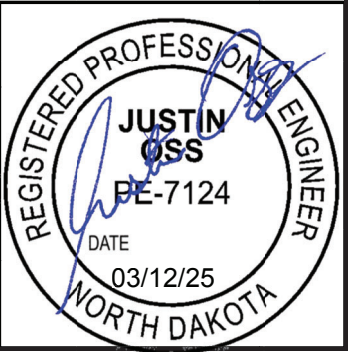
Preformed Patterned Pvmt Mk 6 IN Line – Grooved	28,644	LF
Epoxy Pvmt Mk 6 IN Line - Grooved	229,964	LF
Epoxy Pvmt Mk 12 IN Line – Grooved	1940	LF
Pvmt Mk Painted 24 IN Line	120	LF
Pvmt Mk Painted 6 IN Line	13,328	LF
Preformed Patterned Pvmt Mk 4 IN Line – Grooved	51	LF
Pvmt Mk Painted 12 IN Line	15	LF

Concrete Pavement Repairs

Totals - NB & SB, Expansion Joints				
Full Depths (SY)	Dowel Bars (EA)	Spalls (SF)	DB Baskets (LF)	Random Cracks (LF)
4,029.0	1,084.0	26,434.0	867.0	697.0
4,834.80	1300.80	31,720.80	1040.40	836.40

*Per Engineer's Discretion

20% *



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	1

Southbound													
Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
22.109	PL							2	X	2	4.0		
22.077	DL							2	X	2	4.0		
22.071	DL							2	X	2	4.0		
22.048	PL							2	X	2	4.0		
22.038	DL							2	X	2	4.0		
22.032	DL							3	X	4	12.0		
22.020	PL							2	X	2	4.0		
Mile 22 Totals					-	-	-				36.0	-	
21.996	PL							2	X	4	8.0		
21.995	DL											12	
22.993	PL							2	X	2	4.0		
21.991	PL	4	X	15	6.7	20							
21.991	DL	19	X	12	25.3	20	12						
21.989	PL							2	X	2	4.0		
21.986	DL							3	X	2	6.0		
21.984	DL							2	X	2	4.0		
21.982	PL							2	X	8	16.0		
21.977	DL							2	X	2	4.0		
21.974	PL	4	X	15	6.7	20							
21.970	DL							2	X	2	4.0		
21.954	PL							2	X	2	4.0		
21.917	PL							2	X	2	4.0		
21.826	SHLDR							2	X	2	4.0		
21.773	DL							3	X	3	9.0		
21.757	PL							2	X	2	4.0		
21.753	PL							2	X	3	6.0		
21.703	DL							2	X	2	4.0		
21.701	DL							2	X	2	4.0		
21.694	DL							2	X	2	4.0		
21.681	DL							3	X	3	9.0		
21.670	DL							2	X	2	4.0		
21.668	DL							2	X	2	4.0		
21.650	DL							2	X	3	6.0		
21.650	PL							2	X	3	6.0		
21.626	PL							2	X	2	4.0		
21.610	SHLDR							2	X	2	4.0		
21.574	DL	4	X	12	5.3	20							
21.558	DL							2	X	2	4.0		
21.540	SHLDR							2	X	2	4.0		
21.502	DL							3	X	3	9.0		
21.502	SHLDR							2	X	2	4.0		
21.490	DL							2	X	2	4.0		
21.490	SHLDR							2	X	2	4.0		
21.487	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 22.109 to 21.487



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	2

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.481	DL	4	X	12	5.3	20							
21.475	DL	6	X	12	8.0	20							
21.475	SHLDR							2	X	2	4.0		
21.466	DL	10	X	12	13.3	20							
21.466	SHLDR							3	X	3	9.0		
21.453	PL							2	X	2	4.0		
21.422	DL							2	X	2	4.0		
21.416	DL							2	X	2	4.0		
21.416	SHLDR							2	X	2	4.0		
21.414	DL							3	X	3	9.0		
21.414	SHLDR							3	X	3	9.0		
21.405	PL/DL	4	X	27	12.0	40							
21.400	DL							2	X	2	4.0		
21.400	SHLDR							2	X	2	4.0		
21.377	DL							2	X	2	4.0		
21.377	SHLDR							2	X	2	4.0		
21.365	SHLDR							2	X	2	4.0		
21.356	DL							3	X	3	9.0		
21.356	SHLDR							3	X	3	9.0		
21.354	SHLDR							2	X	2	4.0		
21.341	DL							2	X	2	4.0		
21.275	SHLDR							2	X	2	4.0		
21.258	SHLDR							2	X	2	4.0		
21.251	SHLDR							2	X	4	8.0		
21.241	DL							3	X	3	9.0		
21.241	SHLDR							3	X	3	9.0		
21.230	SHLDR							2	X	2	4.0		
21.218	SHLDR							2	X	2	4.0		
21.215	SHLDR							2	X	2	4.0		
21.212	SHLDR							2	X	2	4.0		
21.203	DL							2	X	4	8.0		
21.198	DL							3	X	3	9.0		
21.195	SHLDR							2	X	2	4.0		
21.182	SHLDR							2	X	2	4.0		
21.174	SHLDR							2	X	2	4.0		
21.171	DL							2	X	2	4.0		
21.171	SHLDR							2	X	2	4.0		
21.161	DL							3	X	3	9.0		
21.161	SHLDR							2	X	2	4.0		
21.159	SHLDR							2	X	2	4.0		
21.150	SHLDR							2	X	2	4.0		
21.147	SHLDR							2	X	2	4.0		
21.125	DL							2	X	3	6.0		
21.125	SHLDR							2	X	2	4.0		
21.117	SHLDR							2	X	2	4.0		
21.113	SHLDR							2	X	2	4.0		
21.104	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

21.481 to 21.104



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	3

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.087	DL							2	X	2	4.0		
21.076	DL							2	X	2	4.0		
21.070	SHLDR							2	X	2	4.0		
21.067	DL							2	X	2	4.0		
21.067	SHLDR							2	X	2	4.0		
21.065	SHLDR							2	X	2	4.0		
21.062	SHLDR							2	X	2	4.0		
21.059	SHLDR							2	X	2	4.0		
21.050	SHLDR							2	X	2	4.0		
21.043	SHLDR							2	X	2	4.0		
21.040	SHLDR							2	X	2	4.0		
21.000	SHLDR							2	X	2	4.0		
Mile 21 Totals					82.7	180.0	12.0				438.0	12.0	
20.999	SI							2	X	2	4.0		
20.995	DI							2	X	2	4.0		
20.995	SI							4	X	2	8.0		
20.992	SHLDR							2	X	2	4.0		
20.986	SHLDR							3	X	2	6.0		
20.980	DL							6	X	3	18.0		
20.980	SHLDR							3	X	2	6.0		
20.978	SHLDR							2	X	2	4.0		
20.975	DL							2	X	2	4.0		
20.975	SHLDR							3	X	3	9.0		
20.972	DL	4	X	12	5.3	20							
20.972	SHLDR							2	X	2	4.0		
20.960	SHLDR							2	X	2	4.0		
20.952	SHLDR							2	X	2	4.0		
20.949	DL	5	X	12	6.7	20							
20.946	DL							3	X	2	6.0		
20.946	SHLDR							2	X	2	4.0		
20.930	DL							3	X	3	9.0		
20.927	DL							3	X	2	6.0		
20.925	DL							2	X	2	4.0		
20.925	SHLDR							2	X	2	4.0		
20.919	SHLDR							2	X	2	4.0		
20.916	SHLDR							2	X	3	6.0		
20.906	SHLDR							2	X	2	4.0		
20.896	SHLDR							2	X	2	4.0		
20.892	SHLDR							2	X	2	4.0		
20.889	SHLDR							2	X	2	4.0		
20.870	SHLDR							2	X	2	4.0		
20.862	SHLDR							2	X	2	4.0		
20.853	SHLDR							2	X	2	4.0		
20.847	DL							2	X	2	4.0		
20.832	SHLDR							2	X	2	4.0		
20.821	SHLDR							2	X	2	4.0		
20.807	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 21.087 to 20.807



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	4

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.804	SHLDR							2	X	2	4.0		
20.801	DL							3	X	3	9.0		
20.779	DL							2	X	2	4.0		
20.776	SHLDR							2	X	2	4.0		
20.753	SHLDR							2	X	2	4.0		
20.738	DL							2	X	2	4.0		
20.736	DL											12	
20.726	DL	8	X	12	10.7	20							
20.712	DL							3	X	3	9.0		
20.699	PL							2	X	2	4.0		
20.686	DL							6	X	3	18.0		
20.661	DL							2	X	2	4.0		
20.658	SHLDR							2	X	2	4.0		
20.653	DL							2	X	6	12.0		
20.633	DL							3	X	4	12.0		
20.623	SHLDR							2	X	2	4.0		
20.619	SHLDR							2	X	2	4.0		
20.614	SHLDR							2	X	2	4.0		
20.594	DL							2	X	2	4.0		
20.572	DL							2	X	2	4.0		
20.567	DL							3	X	3	9.0		
20.548	DL							2	X	2	4.0		
20.536	DL							6	X	3	18.0		
20.514	SHLDR							2	X	2	4.0		
20.503	DL							3	X	3	9.0		
20.499	DL							2	X	2	4.0		
20.486	SHLDR							2	X	2	4.0		
20.477	SHLDR							2	X	2	4.0		
20.473	SHLDR							2	X	2	4.0		
20.467	SHLDR							6	X	2	12.0		
20.463	DL							3	X	3	9.0		
20.463	SHLDR							3	X	3	9.0		
20.458	SHLDR							15	X	2	30.0		
20.447	SHLDR							2	X	2	4.0		
20.445	PL							2	X	2	4.0		
20.445	SHLDR							2	X	2	4.0		
20.435	DL							3	X	2	6.0		
20.435	SHLDR							3	X	2	6.0		
20.418	DL	19	X	12	25.3	20	12						
20.379	DL							4	X	3	12.0		
20.377	DL	5	X	12	6.7	20							
20.377	SHLDR							2	X	2	4.0		
20.360	SHLDR							2	X	2	4.0		
20.347	DL							3	X	3	9.0		
20.347	SHLDR							3	X	3	9.0		
20.342	DL							3	X	4	12.0		
20.325	DL							2	X	4	8.0		

I-29 Southbound

Data Table

RP 20.299 to 19.810



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	5

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.299	SHLDR							2	X	2	4.0		
20.286	SHLDR							2	X	2	4.0		
20.271	DL							2	X	3	6.0		
20.255	DL							3	X	3	9.0		
20.247	PL/DL	6	X	27	18.0	40							
20.232	DL							3	X	3	9.0		
20.211	SHLDR							2	X	2	4.0		
20.157	DL							2	X	2	4.0		
20.157	SHLDR							2	X	2	4.0		
20.151	DL	4	X	12	5.3	20							
20.149	SHLDR							2	X	2	4.0		
20.137	SHLDR							2	X	2	4.0		
20.133	DL							2	X	4	8.0		
20.122	SHLDR							2	X	2	4.0		
20.111	DL	19	X	12	25.3	20	12						
20.108	SHLDR							2	X	2	4.0		
20.108	DL	6	X	12	8.0	20							
20.101	DL							2	X	2	4.0		
20.083	DL	19	X	12	25.3	20	12						
Mile 20 Totals					136.7	220.0	36.0				552.0	12.0	
19.996	DL							2	X	2	4.0		
19.994	DL							3	X	3	9.0		
19.994	SHLDR							3	X	3	9.0		
19.992	DL							4	X	3	12.0		
19.992	SHLDR							2	X	2	4.0		
19.982	DL							3	X	3	9.0		
19.958	DL							3	X	3	9.0		
19.948	DL							3	X	3	9.0		
19.948	SHLDR							3	X	2	6.0		
19.940	DL							2	X	4	8.0		
19.921	PL/DL	7	X	27	21.0	40							
19.907	DL							2	X	2	4.0		
19.882	DL							2	X	2	4.0		
19.882	SHLDR							2	X	2	4.0		
19.875	SHLDR							2	X	2	4.0		
19.866	SHLDR							2	X	2	4.0		
19.860	PL							2	X	2	4.0		
19.857	PL							2	X	2	4.0		
19.854	PL							2	X	2	4.0		
19.841	SHLDR							2	X	2	4.0		
19.839	PL							2	X	2	4.0		
19.839	DL							4	X	2	8.0		
19.823	SHLDR							2	X	2	4.0		
19.821	DL							3	X	3	9.0		
19.821	SHLDR							2	X	2	4.0	10	
19.812	SHLDR							2	X	2	4.0		
19.810	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 19.788 to 19.294



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	6

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.788	PL							3	X	3	9.0		
19.782	DL							2	X	2	4.0		
19.774	SHLDR							2	X	2	4.0		
19.767	DL							2	X	4	8.0		
19.758	SHLDR							2	X	2	4.0		
19.742	DL							2	X	2	4.0		
19.740	DL							2	X	2	4.0		
19.718	DL							2	X	4	8.0		
19.716	SHLDR							2	X	2	4.0		
19.703	DL							2	X	2	4.0		
19.703	SHLDR							3	X	3	9.0		
19.701	PL							2	X	5	10.0		
19.698	PL							3	X	3	9.0		
19.689	PL							2	X	2	4.0		
19.679	DL							2	X	4	8.0		
19.675	SHLDR							2	X	3	6.0		
19.648	SHLDR							2	X	2	4.0		
19.621	SHLDR							2	X	3	6.0		
19.586	SHLDR							4	X	2	8.0		
19.553	DL							2	X	3	6.0		
19.553	SHLDR							2	X	2	4.0		
19.531	DL							3	X	3	9.0		
19.524	DL							2	X	2	4.0		
19.494	DL							2	X	3	6.0		
19.492	SHLDR							2	X	2	4.0		
19.483	DL							2	X	4	8.0		
19.477	DL							2	X	4	8.0		
19.470	PL											15	
19.467	PL											15	
19.463	SHLDR							2	X	3	6.0		
19.435	DL							2	X	4	8.0		
19.435	SHLDR							2	X	2	4.0		
19.432	DL							3	X	4	12.0		
19.410	DL							2	X	2	4.0		
19.406	DL							2	X	2	4.0		
19.391	DL							3	X	3	9.0		
19.372	SHLDR							2	X	2	4.0		
19.367	DL							3	X	3	9.0		
19.357	DL							3	X	3	9.0		
19.331	DL							3	X	3	9.0		
19.331	SHLDR							3	X	2	6.0		
19.328	DL							2	X	5	10.0		
19.326	DL							4	X	4	16.0		
19.316	DL							3	X	4	12.0		
19.309	PL							2	X	2	4.0		
19.297	DL							2	X	3	6.0		
19.294	DL							3	X	3	9.0		

I-29 Southbound

Data Table

RP 19.788 to 19.294



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	7

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.294	SHLDR							2	X	3	6.0		
19.291	PL							2	X	2	4.0		
19.291	DL							2	X	2	4.0		
19.291	SHLDR							2	X	2	4.0		
19.278	DL							2	X	6	12.0		
19.276	DL							2	X	2	4.0		
19.266	PL							3	X	3	9.0		
19.257	DL							4	X	4	16.0		
19.254	PL							2	X	5	10.0		
19.254	DL							2	X	4	8.0		
19.252	DL	4	X	12	5.3	20							
19.249	DL	4	X	12	5.3	20							
19.246	SHLDR											6	
19.241	DL							6	X	3	18.0		
19.241	SHLDR							2	X	2	4.0		
19.239	DL	5	X	12	6.7	20							
19.236	DL							2	X	4	8.0		
19.228	DL							2	X	3	6.0		
19.228	SHLDR							2	X	2	4.0		
19.225	DL	7	X	12	9.3	20							
19.213	DL							6	X	3	18.0		
19.204	DL							3	X	3	9.0		
19.197	DL							3	X	4	12.0		
19.194	PL/DL	4	X	27	12.0	20							
19.191	DL							6	X	4	24.0		
19.191	PL							2	X	2	4.0		
19.188	DL							4	X	3	12.0		
19.180	DL							5	X	3	15.0		
19.177	DL							3	X	3	9.0		
19.161	DL	4	X	12	5.3	20							
19.158	DL	4	X	12	5.3	20							
19.153	PL							2	X	2	4.0		
19.153	DL							2	X	2	4.0		
19.143	DL							2	X	6	12.0		
19.141	DL							3	X	3	9.0		
19.138	DL							2	X	5	10.0		
19.135	DL							4	X	3	12.0		
19.132	DL	4	X	12	5.3	20							
19.130	DL	4	X	12	5.3	20							
19.130	SHLDR							2	X	2	4.0		
19.121	DL							5	X	3	15.0		
19.119	SHLDR							2	X	2	4.0		
19.116	DL							2	X	3	6.0		
19.116	PL							2	X	2	4.0		
19.110	DL							4	X	4	16.0		
19.107	DL							2	X	4	8.0		
19.102	DL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 19.294 to 19.102



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	8

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.094	DL							2	X	2	4.0		
19.060	DL							4	X	2	8.0		
Mile 19 Totals					81.0	220.0	-				803.0	46.0	
18.979	SHLDR							2	X	2	4.0		
18.973	SHLDR							2	X	5	10.0		
18.967	DL							2	X	3	6.0		
18.965	SHLDR							2	X	2	4.0		
18.953	SHLDR											10	
18.947	DL							2	X	2	4.0		
18.945	DL							3	X	3	9.0		
18.942	DL							2	X	3	6.0		
18.942	PL							2	X	2	4.0		
18.936	SHLDR							2	X	10	20.0		
18.933	DL							2	X	2	4.0		
18.933	SHLDR							2	X	2	4.0		
18.931	SHLDR											8	
18.926	SHLDR							4	X	2	8.0		
18.923	SHLDR											10	
18.923	DL							2	X	2	4.0		
18.921	DL							3	X	3	9.0		
18.917	PL/DL	5	X	27	15.0	40							
18.902	DL							2	X	2	4.0		
18.902	SHLDR							2	X	10	20.0		
18.890	DL							2	X	2	4.0		
18.887	DL							2	X	2	4.0		
18.884	PL							2	X	2	4.0		
18.884	SHLDR							2	X	2	4.0		
18.873	DL							2	X	2	4.0		
18.863	DL							3	X	2	6.0		
18.858	DL							3	X	3	9.0		
18.855	DL							3	X	3	9.0		
18.851	DL							2	X	3	6.0		
18.842	SHLDR							2	X	2	4.0		
18.837	SHLDR							2	X	2	4.0		
18.821	SHLDR							2	X	2	4.0		
18.818	DL							2	X	2	4.0		
18.812	SHLDR							2	X	4	8.0		
18.812	DL							2	X	2	4.0		
18.803	PL							2	X	2	4.0		
18.794	SHLDR							2	X	2	4.0		
18.794	PL							2	X	2	4.0		
18.786	DL							2	X	3	6.0		
18.786	SHLDR							2	X	2	4.0		
18.783	DL							3	X	3	9.0		
18.770	DL							6	X	4	24.0		
18.767	PL							2	X	3	6.0		
18.761	DL							3	X	3	9.0		

I-29 Southbound

Data Table

RP 19.094 to 18.761



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	9

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.758	DL	4	X	12	5.3	20							
18.749	SHLDR							2	X	2	4.0		
18.740	DL							3	X	3	9.0		
18.740	SHLDR							2	X	2	4.0	10	
18.737	DL							3	X	3	9.0		
18.733	SHLDR											10	
18.731	SHLDR							2	X	10	20.0		
18.721	SHLDR							2	X	2	4.0		
18.709	SHLDR							2	X	6	12.0	10	
18.697	DL							2	X	3	6.0		
18.691	SHLDR							2	X	2	4.0		
18.689	DL							4	X	2	8.0		
18.689	SHLDR							2	X	3	6.0		
18.683	DL							3	X	3	9.0		
18.683	SHLDR							2	X	10	20.0		
18.680	DL							2	X	2	4.0		
18.680	SHLDR							2	X	8	16.0		
18.668	DL							3	X	3	9.0		
18.665	DL							2	X	2	4.0		
18.665	SHLDR							2	X	5	10.0		
18.663	DL							2	X	2	4.0		
18.663	SHLDR							2	X	2	4.0		
18.661	SHLDR							2	X	10	20.0		
18.655	DL							2	X	3	6.0		
18.655	SHLDR							2	X	4	8.0		
18.652	SHLDR							2	X	2	4.0		
18.649	SHLDR							2	X	4	8.0		
18.643	SHLDR							2	X	2	4.0		
18.640	SHLDR							2	X	2	4.0	5	
18.634	SHLDR							2	X	5	10.0		
18.626	SHLDR							2	X	4	8.0		
18.626	DL							2	X	2	4.0		
18.616	SHLDR							2	X	2	4.0		
18.614	SHLDR							2	X	2	4.0		
18.594	DL							2	X	2	4.0		
18.567	SHLDR							3	X	3	9.0		
18.555	DL							2	X	2	4.0		
18.542	DL							3	X	3	9.0		
18.533	DL							3	X	3	9.0		
18.530	DL	10	X	12	13.3	20							
18.527	DL							3	X	3	9.0		
18.521	DL							3	X	3	9.0		
18.517	SHLDR							2	X	2	4.0		
18.511	DL							3	X	3	9.0		
18.505	DL							3	X	3	9.0		
18.498	DL							2	X	2	4.0		
18.483	DL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 18.758 to 18.483



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	10

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.471	DL							2	X	2	4.0		
18.469	SHLDR							2	X	2	4.0		
18.463	DL							2	X	2	4.0		
18.439	DL							4	X	2	8.0		
18.436	DL	8	X	12	10.7	20							
18.427	SHLDR							2	X	2	4.0		
18.409	DL							2	X	2	4.0		
18.377	PL											15	
18.375	SHLDR							2	X	2	4.0		
18.346	SHLDR							2	X	2	4.0		
18.307	SHLDR							2	X	2	4.0		
18.288	DL							2	X	2	4.0		
18.285	DL							3	X	3	9.0		
18.276	DL							2	X	2	4.0		
18.276	SHLDR							2	X	2	4.0		
18.254	SHLDR							2	X	2	4.0		
18.242	DL							2	X	4	8.0		
18.236	DL							3	X	3	9.0		
18.233	DL							3	X	3	9.0		
18.221	SHLDR							2	X	2	4.0		
18.212	SHLDR							2	X	2	4.0		
18.209	SHLDR							2	X	2	4.0		
18.206	DL							5	X	2	10.0		
18.190	DL							2	X	2	4.0		
18.190	SHLDR							2	X	2	4.0		
18.187	SHLDR							2	X	2	4.0		
18.166	DL							10	X	2	20.0		
18.148	PL							2	X	2	4.0		
18.142	DL							3	X	2	6.0		
18.142	SHLDR							2	X	2	4.0		
18.136	DL							3	X	3	9.0		
18.134	DL							3	X	3	9.0		
18.131	SHLDR							2	X	2	4.0		
18.118	DL							3	X	2	6.0		
18.115	DL							2	X	2	4.0		
18.110	DL							8	X	2	16.0		
18.098	DL							4	X	2	8.0		
18.080	DL							3	X	2	6.0		
18.078	DL							3	X	2	6.0		
18.074	SHLDR							2	X	2	4.0		
18.065	SHLDR							2	X	2	4.0		
18.062	SHLDR							2	X	2	4.0		
Mile 18 Totals					44.3	100.0	-				840.0	78.0	
17.997	DL							3	X	2	6.0		
17.969	SHLDR							2	X	2	4.0		
17.962	SHLDR							2	X	2	4.0		
17.960	DL/SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 18.471 to 17.960



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	11

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.958	SHLDR							2	X	2	4.0		
17.952	SHLDR							2	X	2	4.0		
17.947	SHLDR							2	X	2	4.0		
17.938	DL							3	X	3	9.0		
17.926	DL							2	X	4	8.0		
17.923	DL							2	X	2	4.0		
17.920	DL							2	X	2	4.0		
17.914	SHLDR							2	X	2	4.0		
17.911	DL/SHLDR							2	X	2	4.0		
17.909	SHLDR							2	X	2	4.0		
17.900	DL							2	X	2	4.0		
17.897	DL/SHLDR							2	X	2	4.0		
17.892	DL	4	X	12	5.3	20							
17.892	PL							2	X	2	4.0		
17.889	PL							2	X	2	4.0		
17.887	PL/DL							4	X	4	16.0		
17.878	DL							2	X	2	4.0		
17.862	DL/SHLDR							2	X	2	4.0		
17.857	DL							2	X	2	4.0		
17.855	DL							2	X	3	6.0		
17.842	SHLDR							2	X	2	4.0		
17.818	DL/SHLDR							2	X	3	6.0		
17.816	PL/DL	4	X	27	12.0	20							
17.813	SHLDR							2	X	2	4.0		
17.787	DL/SHLDR							2	X	4	8.0		
17.785	DL/SHLDR							2	X	4	8.0		
17.776	DL							2	X	2	4.0		
17.774	DL/SHLDR							2	X	2	4.0		
17.768	DL/SHLDR							2	X	2	4.0		
17.765	DL/SHLDR							2	X	2	4.0		
17.762	DL/SHLDR							2	X	2	4.0		
17.760	DL							2	X	3	6.0		
17.756	SHLDR							2	X	1	2.0		
17.755	SHLDR							2	X	2	4.0		
17.753	DL/SHLDR							2	X	3	6.0		
17.744	DL							2	X	3	6.0		
17.736	DL							2	X	2	4.0		
17.727	DL							2	X	2	4.0		
17.724	DL							2	X	2	4.0		
17.722	DL							2	X	2	4.0		
17.719	DL							2	X	2	4.0		
17.716	DL							2	X	2	4.0		
17.709	DL							2	X	2	4.0		
17.700	DL							2	X	2	4.0		
17.698	DL							2	X	3	6.0		
17.695	DL							2	X	2	4.0		
17.693	DL							2	X	4	8.0		

I-29 Southbound

Data Table

RP 17.958 to 17.693



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	12

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.691	DL							2	X	2	4.0		
17.688	DL							2	X	2	4.0		
17.688	SHLDR							2	X	2	4.0		
17.685	DL							2	X	3	6.0		
17.679	DL							2	X	2	4.0		
17.676	DL							2	X	2	4.0		
17.673	PL							2	X	2	4.0		
17.670	DL/SHLDR							4	X	2	8.0		
17.668	DL							2	X	3	6.0		
17.665	DL							2	X	2	4.0		
17.658	DL							2	X	2	4.0		
17.655	DL							2	X	2	4.0		
17.653	DL							2	X	2	4.0		
17.646	DL							2	X	2	4.0		
17.634	DL							2	X	2	4.0		
17.628	PL							2	X	2	4.0		
17.625	PL							4	X	2	8.0		
17.622	DL							2	X	2	4.0		
17.620	DL	5	X	12	6.7	20							
17.611	SHLDR							2	X	2	4.0		
17.607	SHLDR							2	X	2	4.0		
17.602	DL							2	X	2	4.0		
17.599	DL							2	X	3	6.0		
17.597	DL							2	X	2	4.0		
17.591	DL	4	X	12	5.3	20							
17.586	DL							2	X	2	4.0		
17.565	SHLDR							2	X	2	4.0		
17.557	DL/SHLDR							2	X	2	4.0		
17.554	DL							2	X	2	4.0		
17.542	DL							2	X	2	4.0		
17.539	SHLDR							2	X	2	4.0		
17.517	DL	4	X	12	5.3	20							
17.514	DL							2	X	2	4.0		
17.511	DL							2	X	2	4.0		
17.503	SHLDR							2	X	2	4.0		
17.499	DL							2	X	2	4.0		
17.491	DL/SHLDR							4	X	4	16.0		
17.486	DL	4	X	12	5.3	20							
17.484	DL	19	X	12	25.3	20	12						
17.479	DL							6	X	2	12.0		
17.477	DL							2	X	2	4.0		
17.472	DL							3	X	3	9.0		
17.470	DL							3	X	3	9.0		
17.447	DL							2	X	2	4.0		
17.424	DL							2	X	2	4.0		
17.405	DL							2	X	2	4.0		
17.395	DL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 17.691 to 17.395



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	13

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.380	PL/DL	4	X	27	12.0	40							
17.377	DL							2	X	2	4.0		
17.367	DL							2	X	3	6.0		
17.353	DL							2	X	2	4.0		
17.314	SHLDR							2	X	2	4.0		
17.289	SHLDR							2	X	2	4.0		
17.280	DL							2	X	2	4.0		
17.268	DL							2	X	2	4.0		
17.257	SHLDR							2	X	2	4.0		
17.244	DL/SHLDR							2	X	2	4.0		
17.233	SHLDR							2	X	2	4.0		
17.221	SHLDR							2	X	2	4.0		
17.205	SHLDR							2	X	2	4.0		
17.169	SHLDR							2	X	2	4.0		
17.156	DL							2	X	2	4.0		
17.153	DL							2	X	2	4.0		
17.147	SHLDR							2	X	2	4.0		
17.142	PL							2	X	4	8.0		
17.133	PL							2	X	2	4.0		
17.129	PL/DL	4	X	37	16.4	40							
17.118	PL							5	X	4	20.0		
17.116	PL							3	X	2	6.0		
17.116	PL	4	X	15	6.7	20							
17.113	DL							4	X	3	12.0		
17.108	PL/DL	20	X	27	60.0	40	24						
17.106	DL/SHLDR							2	X	2	4.0		
17.103	DL/SHLDR							2	X	2	4.0		
17.089	PL/DL	4	X	27	12.0	40							
Mile 17 Totals					172.4	320.0	36.0				577.0	-	
16.985	DL							2	X	3	6.0		
16.955	DL							3	X	3	9.0		
16.930	DL							2	X	3	6.0		
16.909	DL							4	X	2	8.0		
16.875	SHLDR							2	X	2	4.0		
16.873	SHLDR							2	X	2	4.0		
16.833	DL							3	X	4	12.0		
16.814	PL							2	X	2	4.0		
16.796	SHLDR							2	X	2	4.0		
16.795	DL							3	X	2	6.0		
16.773	DL							2	X	2	4.0		
16.764	DL							3	X	3	9.0		
16.754	DL							2	X	2	4.0		
16.726	SHLDR							2	X	2	4.0		
16.711	SHLDR							2	X	2	4.0		
16.698	DL							3	X	3	9.0		
16.675	DL							2	X	3	6.0		
16.672	DL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 17.380 to 16.672



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	14

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.669	DL							2	X	2	4.0		
16.663	DL							3	X	3	9.0		
16.634	DL							2	X	2	4.0		
16.593	DL							3	X	4	12.0		
16.590	DL							2	X	2	4.0		
16.572	DL							3	X	3	9.0		
16.531	SHLDR							2	X	2	4.0		
16.519	DL							2	X	2	4.0		
16.499	PL							2	X	2	4.0		
16.455	SHLDR							2	X	2	4.0		
16.452	DL	8	X	12	10.7	20							
16.427	DL							3	X	3	9.0		
16.420	PL							2	X	2	4.0		
16.418	DL							6	X	2	12.0		
16.418	DL							2	X	2	4.0		
16.416	DL							2	X	14	28.0		
16.416	PL							2	X	2	4.0		
16.413	PL							2	X	4	8.0		
16.410	PL							2	X	4	8.0		
16.410	DL							2	X	2	4.0		
16.395	DL							3	X	3	9.0		
16.394	PL							2	X	2	4.0		
16.388	PL							2	X	15	30.0		
16.388	DL							2	X	10	20.0		
16.386	PL/DL	23	X	27	69.0	40	24						
16.382	DL							2	X	6	12.0		
16.370	DL							3	X	3	9.0		
16.367	PL							2	X	2	4.0		
16.298	DL							2	X	2	4.0		
16.295	DL							4	X	3	12.0		
16.292	DL							2	X	2	4.0		
16.284	DL							4	X	2	8.0		
16.236	SHLDR							2	X	2	4.0		
16.223	DL							2	X	2	4.0		
16.207	SHLDR							2	X	2	4.0		
16.207	DL							2	X	2	4.0		
16.190	DL							2	X	2	4.0		
16.181	PL							2	X	2	4.0		
16.143	DL							2	X	2	4.0		
16.102	PL/DL/SHLDR	10	X	37	41.1	40							
16.064	DL							2	X	2	4.0		
16.036	DL							3	X	3	9.0		
Mile 16 Totals					120.8	100.0	24.0				403.0	-	
15.976	SHLDR							2	X	2	4.0		
15.965	SHLDR							2	X	2	4.0		
15.962	SHLDR							2	X	2	4.0		
15.955	DL							2	X	10	20.0		

I-29 Southbound

Data Table

RP 16.669 to 15.955



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	15

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.953	SHLDR							2	X	2	4.0		
15.951	DL							3	X	3	9.0		
15.951	SHLDR							2	X	2	4.0		
15.948	DL							2	X	2	4.0		
15.940	DL							3	X	3	9.0		
15.925	SHLDR							2	X	2	4.0		
15.907	SHLDR							2	X	2	4.0		
15.882	DL							3	X	3	9.0		
15.882	PL							2	X	2	4.0		
15.795	SHLDR							2	X	2	4.0		
15.745	SHLDR							2	X	2	4.0		
15.729	SHLDR							2	X	2	4.0		
15.722	PL											15	
15.718	SHLDR							2	X	2	4.0		
15.710	SHLDR							2	X	2	4.0		
15.696	SHLDR							2	X	2	4.0		
15.658	DL							2	X	2	4.0		
15.658	SHLDR							2	X	2	4.0		
15.644	DL							3	X	3	9.0		
15.644	SHLDR							3	X	3	9.0		
15.620	DL							2	X	2	4.0		
15.602	DL							2	X	2	4.0		
15.602	SHLDR							2	X	2	4.0		
15.597	DL							3	X	3	9.0		
15.573	SHLDR							2	X	2	4.0		
15.568	SHLDR							4	X	2	8.0		
15.543	SHLDR							2	X	2	4.0		
15.540	DL							3	X	3	9.0		
15.540	SHLDR							2	X	2	4.0		
15.537	SHLDR							2	X	2	4.0		
15.536	DL							2	X	2	4.0		
15.536	SHLDR							2	X	2	4.0		
15.533	SHLDR							2	X	2	4.0		
15.530	SHLDR							2	X	2	4.0		
15.518	SHLDR							2	X	2	4.0		
15.510	DL							2	X	2	4.0		
15.510	SHLDR							2	X	2	4.0		
15.498	SHLDR							2	X	2	4.0		
15.490	SHLDR							2	X	2	4.0		
15.488	SHLDR							2	X	2	4.0		
15.476	SHLDR							2	X	2	4.0		
15.471	SHLDR							2	X	2	4.0		
15.458	DL							2	X	2	4.0		
15.458	SHLDR							2	X	2	4.0		
15.438	SHLDR							3	X	3	9.0		
15.432	PL							2	X	2	4.0		
15.430	DL							2	X	2	4.0		
15.427	SHLDR							2	X	2	4.0		
15.422	RAMP							4	X	2	8.0		

I-29 Southbound

Data Table

RP 15.953 to 15.422



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	16

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.422	SHLDR							4	X	2	8.0		
15.419	SHLDR							2	X	2	4.0		
15.419	SHLDR							4	X	2	8.0		
15.419	RAMP							4	X	2	8.0		
15.417	SHLDR							2	X	2	4.0		
15.417	SHLDR							4	X	2	8.0		
15.417	RAMP							4	X	2	8.0		
15.414	SHLDR							4	X	2	8.0		
15.414	RAMP							4	X	2	8.0		
15.409	SHLDR							2	X	2	4.0		
15.409	SHLDR							4	X	2	8.0		
15.409	RAMP							2	X	2	4.0		
15.406	SHLDR							2	X	2	4.0		
15.406	RAMP							4	X	2	8.0		
15.397	SHLDR							2	X	2	4.0		
15.397	RAMP							4	X	2	8.0		
15.395	SHLDR							2	X	2	4.0		
15.392	SHLDR							4	X	2	8.0		
15.392	RAMP							4	X	2	8.0		
15.390	SHLDR							4	X	2	8.0		
15.390	RAMP							2	X	2	4.0		
15.387	SHLDR							4	X	2	8.0		
15.384	RAMP							2	X	2	4.0		
15.381	SHLDR							4	X	2	8.0		
15.379	PL							2	X	2	4.0		
15.376	SHLDR							2	X	2	4.0		
15.374	SHLDR							3	X	3	9.0		
15.374	SHLDR							2	X	2	4.0		
15.371	SHLDR							3	X	3	9.0		
15.371	RAMP							2	X	2	4.0		
15.369	SHLDR							2	X	17	34.0		
15.369	RAMP							3	X	8	24.0		
15.366	SHLDR							4	X	4	16.0		
15.363	SHLDR							3	X	3	9.0		
15.361	SHLDR							4	X	2	8.0		
15.361	SHLDR							4	X	2	8.0		
15.358	SHLDR							2	X	15	30.0		
15.358	RAMP							2	X	2	4.0		
15.358	SHLDR							2	X	2	4.0		
15.358	RAMP							2	X	2	4.0		
15.356	RAMP							2	X	2	4.0		
15.356	SHLDR							2	X	2	4.0		
15.355	RAMP							2	X	2	4.0		
15.354	SHLDR							3	X	3	9.0		
15.354	RAMP							2	X	2	4.0		
15.351	SHLDR							3	X	3	9.0		
15.348	SHLDR							3	X	3	9.0		
15.348	SHLDR							2	X	2	4.0		
15.347	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 15.422 to 15.347



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	17

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.347	RAMP							4	X	2	8.0	60	
15.340	SHLDR							2	X	2	4.0		
15.335	SHLDR							2	X	2	4.0		
15.332	SHLDR							2	X	2	4.0		
15.322	SHLDR							2	X	2	4.0		
15.322	GORE											10	
15.320	SHLDR							4	X	2	8.0		
15.315	SHLDR							2	X	2	4.0		
15.310	SHLDR							4	X	2	8.0		
15.309	SHLDR							2	X	2	4.0		
15.307	DL							2	X	2	4.0		
15.304	SHLDR							2	X	2	4.0		
15.302	SHLDR							4	X	2	8.0		
15.300	SHLDR							2	X	2	4.0		
15.293	SHLDR							3	X	3	9.0		
15.290	SHLDR							2	X	2	4.0		
15.282	SHLDR							2	X	2	4.0		
15.279	SHLDR							2	X	2	4.0		
15.267	SHLDR							2	X	2	4.0		
15.261	SHLDR							3	X	3	9.0		
15.259	SHLDR							3	X	3	9.0		
15.249	SHLDR							2	X	2	4.0		
15.247	SHLDR							2	X	2	4.0		
15.240	SHLDR							2	X	2	4.0		
15.238	SHLDR							2	X	2	4.0		
15.233	SHLDR							4	X	2	8.0		
15.232	DL							2	X	2	4.0		
15.231	SHLDR							2	X	2	4.0		
15.222	SHLDR							3	X	4	12.0		
15.219	SHLDR							2	X	2	4.0		
15.210	SHLDR							2	X	2	4.0		
15.207	SHLDR							2	X	2	4.0		
15.202	SHLDR							2	X	2	4.0		
15.199	SHLDR							2	X	2	4.0		
15.190	SHLDR							2	X	2	4.0		
15.187	SHLDR							2	X	2	4.0		
15.178	SHLDR							2	X	2	4.0		
15.174	DL							2	X	2	4.0		
15.157	DL							2	X	2	4.0		
15.155	DL/SHLDR	4	X	22	9.8	20							
15.153	SHLDR											10	
15.151	SHLDR							4	X	2	8.0		
15.146	SHLDR							2	X	2	4.0		
15.143	SHLDR							2	X	2	4.0		
15.140	DL							2	X	2	4.0		
15.140	SHLDR							2	X	2	4.0		
15.131	SHLDR							2	X	2	4.0		
15.129	DL							3	X	3	9.0		
15.129	SHLDR							3	X	3	9.0		

I-29 Southbound

Data Table

RP 15.347 to 15.129



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	18

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.117	SHLDR							2	X	2	4.0		
15.102	DL							3	X	3	9.0		
15.102	SHLDR							3	X	3	9.0		
15.100	SHLDR							2	X	2	4.0		
15.097	SHLDR							2	X	2	4.0		
15.088	SHLDR							2	X	2	4.0		
Mile 15 Totals					9.8	20.0	-				929.0	95.0	
14.992	DL							2	X	2	4.0		
14.992	SHLDR							2	X	2	4.0		
14.976	DL											16	
14.971	DL							3	X	3	9.0		
14.971	SHLDR							3	X	3	9.0		
14.968	SHLDR							2	X	2	4.0		
14.961	DL	4	X	12	5.3	20							
14.959	SHLDR							2	X	2	4.0		
14.954	SHLDR							2	X	2	4.0		
14.952	SHLDR							2	X	2	4.0		
14.951	SHLDR							2	X	2	4.0	16	
14.944	SHLDR							2	X	2	4.0		
14.941	SHLDR							2	X	2	4.0		
14.932	SHLDR							2	X	2	4.0		
14.920	SHLDR							2	X	2	4.0		
14.917	SHLDR							2	X	2	4.0		
14.898	SHLDR							2	X	2	4.0		
14.895	SHLDR/RAMP							2	X	2	4.0		
14.895	RAMP	183	X	22.772	463.0	20	144						15 SB on-ramp
14.890	DL							2	X	2	4.0		
14.890	SHLDR/RAMP							2	X	2	4.0		
14.878	SHLDR/RAMP											3	
14.872	SHLDR/RAMP							2	X	2	4.0		
14.866	SHLDR/RAMP							2	X	2	4.0		
14.863	SHLDR/RAMP							2	X	2	4.0		
14.861	SHLDR/RAMP							2	X	2	4.0		
14.856	RAMP							4	X	2	8.0		
14.853	RAMP							2	X	2	4.0		
14.850	RAMP							2	X	2	4.0		
14.848	SHLDR/RAMP							2	X	2	4.0		
14.845	PL							2	X	2	4.0		
14.844	PL	4	X	15	6.7	20							
14.844	SHLDR/RAMP							2	X	2	4.0		
14.841	RAMP							3	X	3	9.0		
14.839	RAMP							2	X	3	6.0		
14.837	DL							2	X	2	4.0		
14.837	SHLDR/RAMP							2	X	2	4.0		
14.835	RAMP							2	X	2	4.0		
14.829	RAMP							2	X	2	4.0		
14.826	RAMP							2	X	2	4.0		
14.823	RAMP							2	X	2	4.0		
14.821	RAMP							3	X	3	9.0		

I-29 Southbound

Data Table

RP 15.117 to 14.821



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	19

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.818	RAMP							3	X	3	9.0		
14.817	SHLDR/RAMP							2	X	2	4.0		
14.816	RAMP							2	X	4	8.0		
14.815	SHLDR/RAMP							3	X	2	6.0		
14.813	RAMP							2	X	2	4.0		
14.811	RAMP							4	X	4	16.0		
14.807	RAMP							3	X	2	6.0		
14.804	RAMP							2	X	2	4.0		
14.803	SHLDR/RAMP							4	X	2	8.0		
14.802	RAMP							2	X	3	6.0		
14.801	DL							2	X	2	4.0		
14.799	RAMP							3	X	3	9.0		
14.792	DL							2	X	4	8.0		
14.792	DL							2	X	3	6.0		
14.790	RAMP							2	X	2	4.0		
14.790	SHLDR/RAMP							2	X	2	4.0		
14.784	RAMP							2	X	2	4.0		
14.780	SHLDR/RAMP							2	X	2	4.0		
14.778	RAMP							2	X	2	4.0		
14.778	SHLDR/RAMP							2	X	2	4.0		
14.771	RAMP							2	X	2	4.0		
14.768	SHLDR/RAMP							2	X	2	4.0		
14.765	DL							3	X	3	9.0		
14.765	SHLDR/RAMP							3	X	2	6.0		
14.753	SHLDR/RAMP							3	X	3	9.0		
14.740	DL							3	X	3	9.0		
14.731	PL							2	X	2	4.0		
14.729	DL							3	X	3	9.0		
14.725	DL	36	X	12	48.0	20	24						
14.717	SHLDR							2	X	2	4.0		
14.711	DL							2	X	2	4.0		
14.705	PL							2	X	2	4.0		
14.703	PL							2	X	2	4.0		
14.703	SHLDR							2	X	2	4.0		
14.702	SHLDR											12	
14.698	SHLDR							2	X	2	4.0		
14.695	DL							2	X	2	4.0		
14.690	SHLDR							2	X	2	4.0		
14.687	DL							2	X	2	4.0		
14.687	SHLDR							2	X	2	4.0		
14.684	DL							2	X	2	4.0		
14.684	SHLDR							2	X	2	4.0		
14.680	DL							2	X	2	4.0		
14.679	DL							2	X	5	10.0		
14.677	SHLDR							2	X	2	4.0		
14.674	SHLDR							2	X	2	4.0		
14.665	SHLDR							2	X	2	4.0		
14.652	SHLDR							2	X	2	4.0		
14.649	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 14.818 to 14.649



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	20

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.646	DL							3	X	3	9.0		
14.639	PL							2	X	10	20.0		
14.594	DL							2	X	2	4.0		On approach slab
14.581	PL							2	X	3	6.0		
14.579	PL	10	X	15	16.7	20							
14.579	SHLDR	19	X	10	21.1								
14.578	DL							2	X	2	4.0		
14.573	PL							2	X	2	4.0		
14.573	DL							4	X	5	20.0		
14.573	SHLDR							2	X	2	4.0		
14.570	PL							2	X	2	4.0		
14.570	DL							4	X	3	12.0		
14.569	DL							2	X	6	12.0		
14.567	DL							3	X	4	12.0		
14.565	SHLDR							2	X	2	4.0		
14.564	DL							2	X	2	4.0		
14.562	SHLDR							2	X	2	4.0		
14.559	PL							2	X	2	4.0		
14.553	DL							2	X	4	8.0		
14.547	SHLDR							2	X	2	4.0		
14.544	SHLDR							2	X	2	4.0		
14.544	DL	10	X	12	13.3	20							
14.532	DL							2	X	2	4.0		
14.531	DL							2	X	2	4.0		
14.527	DL							2	X	2	4.0		
14.527	SHLDR							2	X	2	4.0		
14.524	SHLDR							2	X	2	4.0		
14.520	DL							2	X	2	4.0		
14.515	SHLDR							2	X	2	4.0		
14.513	SHLDR							2	X	2	4.0		
14.511	DL							2	X	2	4.0	10	
14.507	PL							2	X	2	4.0		
14.507	DL							2	X	2	4.0		
14.505	DL							2	X	2	4.0		
14.504	SHLDR							2	X	2	4.0		
14.492	DL							2	X	2	4.0		
14.492	SHLDR							2	X	2	4.0		
14.484	DL							2	X	2	4.0		
14.469	DL							2	X	2	4.0		
14.469	SHLDR							2	X	2	4.0		
14.460	DL							4	X	2	8.0		
14.460	SHLDR							2	X	2	4.0		
14.445	SHLDR							2	X	2	4.0		
14.436	PL							2	X	2	4.0		
14.436	DL							2	X	2	4.0		
14.436	SHLDR							2	X	2	4.0		
14.433	SHLDR							2	X	2	4.0		
14.425	DL							2	X	2	4.0		
14.425	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 14.646 to 14.425



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	21

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.419	PL							2	X	2	4.0		
14.412	DL							4	X	2	8.0	10	
14.401	PL							2	X	2	4.0		
14.398	DL							3	X	3	9.0		
14.398	SHLDR							2	X	2	4.0		
14.389	DL							3	X	3	9.0		
14.389	SHLDR							2	X	2	4.0		
14.487	DL							2	X	2	4.0		
14.378	SHLDR							2	X	2	4.0		
14.374	DL											12	
14.365	DL											12	
14.353	DL							2	X	2	4.0		
14.333	DL							2	X	2	4.0		
14.330	DL							3	X	3	9.0		
14.330	SHLDR							2	X	2	4.0		
14.321	DL							2	X	2	4.0		
14.321	DL							2	X	2	4.0		
14.319	DL							3	X	3	9.0		
14.306	SHLDR							2	X	2	4.0		
14.303	PL							2	X	2	4.0		
14.298	SHLDR							2	X	2	4.0		
14.295	DL							2	X	2	4.0		
14.295	SHLDR							2	X	2	4.0		
14.289	PL							2	X	2	4.0		
14.283	DL							3	X	3	9.0		
14.283	SHLDR							2	X	2	4.0		
14.274	PL							2	X	3	6.0		
14.274	DL							2	X	2	4.0		
14.274	DL							5	X	5	25.0		
14.274	SHLDR							2	X	2	4.0		
14.268	DL							3	X	3	9.0		
14.263	DL							3	X	3	9.0		
14.263	SHLDR							2	X	2	4.0		
14.260	PL							2	X	2	4.0		
14.260	DL							2	X	3	6.0		
14.260	SHLDR							2	X	2	4.0		
14.252	SHLDR							2	X	2	4.0		
14.249	DL							4	X	3	12.0		
14.249	SHLDR							2	X	2	4.0		
14.246	DL							6	X	3	18.0		
14.243	DL							2	X	5	10.0		
14.240	DL							3	X	3	9.0		
14.240	SHLDR							2	X	2	4.0		
14.237	DL							3	X	3	9.0		
14.237	SHLDR							2	X	2	4.0		
14.235	DL							2	X	2	4.0		
14.235	SHLDR							2	X	2	4.0		
14.232	DL							2	X	2	4.0		
14.229	DL							2	X	4	8.0		

I-29 Southbound

Data Table

RP 14.419 to 14.229



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	22

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.229	DL							3	X	3	9.0		
14.229	SHLDR							2	X	2	4.0		
14.224	PL							2	X	2	4.0		
14.224	DL							4	X	4	16.0		
14.224	DL							4	X	3	12.0		
14.218	DL							2	X	2	4.0		
14.218	SHLDR							2	X	2	4.0		
14.216	DL							3	X	3	9.0		
14.216	SHLDR							2	X	2	4.0		
14.209	PL							2	X	2	4.0		
14.209	DL							2	X	4	8.0		
14.207	DL							2	X	2	4.0		
14.207	SHLDR							2	X	2	4.0		
14.204	SHLDR							2	X	2	4.0		
14.198	PL							3	X	2	6.0		
14.198	DL							3	X	5	15.0		
14.196	PL							2	X	2	4.0		
14.196	SHLDR							2	X	2	4.0		
14.195	DL							2	X	2	4.0		
14.193	PL							2	X	2	4.0		
14.193	DL	4	X	12	5.3	20							
14.191	DL							3	X	3	9.0		
14.188	DL							2	X	2	4.0		
14.188	SHLDR							2	X	2	4.0		
14.185	DL							2	X	2	4.0		
14.185	SHLDR							2	X	2	4.0		
14.176	DL							2	X	2	4.0		
14.176	SHLDR							2	X	2	4.0		
14.173	DL							2	X	2	4.0		
14.173	SHLDR							2	X	2	4.0		
14.167	DL							2	X	2	4.0		
14.165	PL							2	X	2	4.0		
14.162	DL							2	X	2	4.0		
14.162	SHLDR							2	X	2	4.0		
14.156	PL							2	X	2	4.0		
14.156	DL							2	X	2	4.0		
14.153	DL							3	X	3	9.0		
14.151	DL							2	X	3	6.0		
14.151	SHLDR							2	X	2	4.0		
14.149	DL							10	X	2	20.0	10	
14.147	DL							3	X	3	9.0		
14.142	DL							5	X	3	15.0		
14.142	SHLDR							2	X	2	4.0		
14.140	DL							9	X	2	18.0		
14.139	DL							2	X	3	6.0		
14.139	SHLDR							2	X	2	4.0		
14.138	DL	6	X	12	8.0	20							
14.134	DL							24	X	2	48.0		
14.128	DL							5	X	2	10.0		

I-29 Southbound

Data Table

RP 14.229 to 14.128



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	23

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.124	PL							2	X	2	4.0		
14.124	DL							5	X	5	25.0		
14.121	DL							5	X	4	20.0		
14.119	DL							10	X	3	30.0		
14.119	SHLDR							2	X	2	4.0		
14.118	DL							3	X	3	9.0		
14.117	DL							4	X	2	8.0		
14.117	DL							2	X	2	4.0		
14.117	DL							14	X	2	28.0		
14.115	DL							5	X	4	20.0		
14.115	PL							2	X	2	4.0		
14.115	DL							2	X	3	6.0		
14.110	DL							5	X	3	15.0		
14.109	DL							11	X	2	22.0		
14.108	DL							5	X	3	15.0		
14.106	PL							2	X	2	4.0		
14.106	DL							10	X	2	20.0		
14.099	DL							2	X	2	4.0		
14.097	DL							3	X	3	9.0		
14.094	PL							2	X	2	4.0		
14.090	DL							2	X	2	4.0		
14.088	DL							3	X	3	9.0		
14.087	PL							3	X	3	9.0		
14.087	DL							3	X	3	9.0		
14.080	PL							4	X	3	12.0		
14.080	DL							3	X	3	9.0		
14.080	DL							2	X	2	4.0		
14.070	DL							3	X	3	9.0		
Mile 14 Totals					587.5	160.0	168.0				1,646.0	101.0	
13.996	PL							2	X	2	4.0		
13.993	PL							3	X	2	6.0		
13.993	DL							2	X	3	6.0		
13.990	DL							2	X	2	4.0		
13.988	DL							3	X	3	9.0		
13.988	SHLDR							2	X	2	4.0		
13.984	DL							4	X	2	8.0		
13.976	DL							2	X	4	8.0		
13.973	DL							8	X	2	16.0		
13.970	DL							3	X	3	9.0		
13.967	DL							6	X	4	24.0		
13.967	SHLDR							2	X	2	4.0		
13.964	DL							5	X	3	15.0		
13.962	PL							2	X	2	4.0		
13.962	DL							6	X	4	24.0		
13.959	DL							2	X	4	8.0		
13.957	DL							5	X	2	10.0		
13.954	DL							2	X	2	4.0		
13.954	DL							4	X	3	12.0		
13.954	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 14.124 to 13.954



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	24

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.948	DL							6	X	3	18.0		
13.945	DL	8	X	12	10.7	20							
13.942	DL							5	X	3	15.0		
13.940	PL							3	X	2	6.0		
13.940	DL	5	X	12	6.7	20							
13.938	DL											13	
13.936	PL							2	X	2	4.0		
13.931	DL							4	X	2	8.0		
13.928	DL							11	X	2	22.0		
13.925	DL							5	X	3	15.0		
13.923	DL							9	X	3	27.0		
13.921	PL							2	X	2	4.0		
13.921	DL							6	X	3	18.0		
13.921	SHLDR							2	X	2	4.0		
13.919	DL							12	X	2	24.0		
13.911	DL							2	X	3	6.0		
13.909	DL							3	X	3	9.0		
13.909	SHLDR							2	X	2	4.0		
13.906	DL							3	X	3	9.0		
13.903	DL							4	X	3	12.0		
13.900	DL							6	X	4	24.0		
13.900	SHLDR							2	X	2	4.0		
13.898	DL							6	X	3	18.0		
13.898	SHLDR							2	X	2	4.0		
13.891	DL	10	X	12	13.3	20							
13.889	SHLDR							2	X	2	4.0		
13.888	SHLDR							2	X	2	4.0		
13.887	PL							3	X	2	6.0		
13.887	PL							2	X	10	20.0		
13.880	SHLDR							2	X	2	4.0		
13.868	DL							2	X	2	4.0		
13.868	SHLDR							2	X	2	4.0		
13.861	PL							2	X	2	4.0		
13.856	DL							3	X	3	9.0		
13.856	SHLDR							2	X	2	4.0		
13.853	DL							3	X	3	9.0		
13.853	SHLDR							2	X	2	4.0		
13.850	DL							2	X	2	4.0		
13.848	DL							2	X	3	6.0		
13.848	SHLDR							2	X	2	4.0		
13.829	SHLDR							2	X	2	4.0		
13.813	DL							2	X	2	4.0		
13.813	SHLDR							2	X	2	4.0		
13.805	DL							2	X	2	4.0		
13.805	SHLDR							2	X	2	4.0		
13.799	DL							2	X	3	6.0		
13.799	SHLDR							2	X	2	4.0		
13.793	SHLDR							2	X	2	4.0		
13.784	DL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 13.948 to 13.784



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	25

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.782	DL							3	X	3	9.0		
13.782	SHLDR							2	X	2	4.0		
13.779	DL							5	X	3	15.0		
13.779	SHLDR							2	X	2	4.0		
13.777	DL							2	X	3	6.0		
13.774	DL							3	X	3	9.0		
13.774	SHLDR							2	X	2	4.0		
13.771	DL							3	X	3	9.0		
13.771	SHLDR							2	X	2	4.0		
13.766	DL							2	X	5	10.0		
13.760	DL							3	X	3	9.0		
13.757	DL							6	X	3	18.0		
13.754	DL							2	X	4	8.0		
13.754	DL							6	X	3	18.0		
13.751	DL							3	X	2	6.0		
13.741	PL							2	X	2	4.0		
13.741	DL							2	X	2	4.0		
13.736	DL							2	X	3	6.0		
13.733	DL							2	X	2	4.0		
13.727	DL							2	X	2	4.0		
13.724	DL							2	X	2	4.0		
13.706	DL							3	X	3	9.0		
13.706	SHLDR							2	X	2	4.0		
13.703	DL							2	X	2	4.0		
13.703	DL							4	X	3	12.0		
13.703	SHLDR							2	X	2	4.0		
13.701	DL							3	X	2	6.0		
13.699	DL							6	X	2	12.0		
13.697	DL							4	X	2	8.0		
13.695	DL							2	X	2	4.0		
13.695	SHLDR							2	X	2	4.0		
13.693	DL							3	X	3	9.0		
13.693	SHLDR							2	X	2	4.0		
13.690	DL							2	X	2	4.0		
13.689	DL							3	X	2	6.0		
13.685	DL							9	X	3	27.0		
13.678	DL							2	X	2	4.0		
13.673	DL							2	X	2	4.0		
13.673	SHLDR							2	X	2	4.0		
13.670	PL							2	X	2	4.0		
13.670	DL							3	X	2	6.0		
13.670	SHLDR							2	X	2	4.0		
13.664	DL							2	X	2	4.0		
13.662	DL							2	X	2	4.0		
13.652	DL							10	X	2	20.0		
13.650	SHLDR							2	X	2	4.0		
13.648	DL							5	X	2	10.0		
13.635	DL							2	X	2	4.0		
13.633	DL							2	X	3	6.0		

I-29 Southbound

Data Table

RP 13.782 to 13.633



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	26

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.633	DL							2	X	3	6.0		
13.627	DL							3	X	3	9.0		
13.623	DL							3	X	3	9.0		
13.623	SHLDR							2	X	2	4.0		
13.620	DL							2	X	2	4.0		
13.618	DL							2	X	3	6.0		
13.615	DL							2	X	3	6.0		
13.613	DL							4	X	3	12.0		
13.613	SHLDR							2	X	2	4.0		
13.606	DL							2	X	2	4.0		
13.604	DL							8	X	3	24.0		
13.602	DL							2	X	2	4.0		
13.602	SHLDR							2	X	2	4.0		
13.594	DL							2	X	2	4.0		
13.594	SHLDR							2	X	2	4.0		
13.578	DL							3	X	3	9.0		
13.578	SHLDR							2	X	2	4.0		
13.568	DL							2	X	2	4.0		
13.568	SHLDR							2	X	2	4.0		
13.559	DL							2	X	2	4.0		
13.556	DL							4	X	3	12.0		
13.556	SHLDR							2	X	2	4.0		
13.555	DL							3	X	2	6.0		
13.553	SHLDR							2	X	2	4.0		
13.551	DL							4	X	4	16.0		
13.549	DL	19	X	12	25.3	20	12						
13.541	DL							6	X	3	18.0		
13.538	DL							3	X	2	6.0		
13.536	PL							2	X	2	4.0		
13.533	DL							2	X	2	4.0		
13.530	DL							3	X	3	9.0		
13.527	DL							2	X	2	4.0		
13.527	DL							3	X	3	9.0		
13.524	DL							4	X	23	92.0		
13.521	DL							2	X	3	6.0		
13.521	DL							2	X	3	6.0		
13.519	DL							2	X	2	4.0		
13.519	SHLDR							2	X	2	4.0		
13.516	DL							2	X	2	4.0		
13.513	DL	21	X	12	28.0	20	12						
13.509	PL							2	X	3	6.0		
13.507	PL							3	X	8	24.0		
13.507	DL							3	X	2	6.0		
13.504	DL							2	X	2	4.0		
13.495	SHLDR							2	X	2	4.0		
13.492	DL							2	X	3	6.0		
13.486	DL							2	X	2	4.0		
13.486	SHLDR							2	X	2	4.0		
13.474	DL/SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 13.633 to 13.474



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	27

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.471	SHLDR							2	X	2	4.0		
13.468	DL							4	X	2	8.0		
13.465	DL							3	X	4	12.0		
13.460	DL							3	X	2	6.0		
13.460	SHLDR							2	X	2	4.0		
13.451	DL							2	X	2	4.0		
13.441	DL							2	X	2	4.0		
13.438	DL							3	X	3	9.0		
13.438	SHLDR							2	X	2	4.0		
13.435	DL							6	X	3	18.0		
13.435	SHLDR							2	X	2	4.0		
13.433	PL							2	X	2	4.0		
13.433	DL							3	X	3	9.0		
13.432	DL							5	X	2	10.0		
13.270	DL							5	X	3	15.0		
13.424	DL							2	X	2	4.0		
13.413	PL							2	X	2	4.0		
13.413	SHLDR							2	X	2	4.0		
13.409	PL							2	X	2	4.0		
13.409	DL							2	X	4	8.0		
13.401	PL							2	X	2	4.0		
13.401	SHLDR							2	X	2	4.0		
13.391	SHLDR							2	X	2	4.0		
13.381	DL							2	X	2	4.0		
13.379	DL							2	X	3	6.0		
13.376	DL							3	X	3	9.0		
13.369	DL							2	X	2	4.0		
13.328	DL							2	X	2	4.0		
13.325	DL							2	X	3	6.0		
13.325	SHLDR							2	X	2	4.0		
13.319	DL							2	X	2	4.0		
13.316	DL							2	X	4	8.0		
13.313	DL							7	X	3	21.0		
13.313	SHLDR							2	X	2	4.0		
13.310	DL							2	X	4	8.0		
13.306	DL							12	X	2	24.0		
13.306	DL							6	X	3	18.0		
13.306	DL							5	X	2	10.0		
13.299	DL							2	X	2	4.0		
13.299	SHLDR							2	X	2	4.0		
13.283	DL							3	X	3	9.0		
13.280	DL							2	X	3	6.0		
13.274	DL							2	X	2	4.0		
13.274	SHLDR							2	X	2	4.0		
13.271	DL/SHLDR							2	X	2	4.0		
13.262	PL							3	X	3	9.0		
13.259	PL							3	X	3	9.0		
13.250	SHLDR							2	X	2	4.0		
13.238	DL							3	X	3	9.0		

I-29 Southbound

Data Table

RP 13.471 to 13.238



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	28

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.245	SHLDR							2	X	2	4.0		
13.222	SHLDR							2	X	2	4.0		
13.213	SHLDR							2	X	2	4.0		
13.210	SHLDR							2	X	2	4.0		
13.198	SHLDR							2	X	2	4.0		
13.192	DL							2	X	2	4.0		
13.189	DL							3	X	3	9.0		
13.187	SHLDR											10	
13.186	DL/SHLDR							2	X	4	8.0		
13.183	DL							2	X	2	4.0		
13.181	DL							5	X	3	15.0		
13.181	SHLDR							2	X	2	4.0		
13.178	SHLDR							2	X	2	4.0		
13.173	DL							4	X	2	8.0		
13.172	DL							2	X	2	4.0		
13.172	DL							2	X	2	4.0		
13.167	DL							2	X	4	8.0		
13.167	DL							2	X	2	4.0		
13.163	PL							2	X	2	4.0		
13.163	DL							2	X	2	4.0		
13.161	DL							2	X	2	4.0		
13.159	DL							14	X	3	42.0		
13.158	SHLDR							2	X	2	4.0		
13.155	DL	20	X	12	26.7	20	12						
13.155	SHLDR							2	X	2	4.0		
13.152	SHLDR							2	X	2	4.0		
13.139	DL							2	X	2	4.0		
Mile 13 Totals					110.7	120.0	36.0				1,840.0	23.0	
12.945	SHLDR							2	X	2	4.0		
12.937	DL/SHLDR							2	X	3	6.0		
12.935	DL							2	X	2	4.0		
12.931	DL							8	X	2	16.0		
12.929	DL							3	X	3	9.0		
12.929	SHLDR							2	X	2	4.0		
12.926	DL							4	X	3	12.0		
12.926	SHLDR							2	X	2	4.0		
12.923	DL							2	X	2	4.0		
12.920	DL/SHLDR							2	X	2	4.0		
12.918	DL							3	X	3	9.0		
12.918	SHLDR							2	X	2	4.0		
12.907	DL	4	X	12	5.3	20							
12.904	SHLDR							2	X	2	4.0		
12.897	DL	19	X	12	25.3	20	12						
12.897	SHLDR							2	X	2	4.0		
12.890	SHLDR							2	X	2	4.0		
12.889	PL							4	X	2	8.0		
12.880	DL/SHLDR							2	X	6	12.0		
12.871	DL							2	X	3	6.0		
12.868	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 13.245 to 12.868



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	29

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.867	DL	4	X	12	5.3	10							
12.859	PL							2	X	2	4.0		
12.859	PL							3	X	3	9.0		
12.857	PL							3	X	2	6.0		
12.857	SHLDR							2	X	2	4.0		
12.855	SHLDR							2	X	2	4.0		
12.854	DL							2	X	2	4.0		
12.851	DL/SHLDR							2	X	4	8.0		
12.848	PL							2	X	2	4.0		
12.845	DL							3	X	3	9.0		
12.845	SHLDR							2	X	2	4.0		
12.836	SHLDR							2	X	2	4.0		
12.824	DL							3	X	3	9.0		
12.824	SHLDR							2	X	2	4.0		
12.821	DL							4	X	3	12.0		
12.821	SHLDR							2	X	2	4.0		
12.818	DL							2	X	2	4.0		
12.813	DL							2	X	3	6.0		
12.811	DL							3	X	3	9.0		
12.898	DL							10	X	2	20.0		
12.807	DL							24	X	2	48.0		
12.801	DL							3	X	3	9.0		
12.801	SHLDR							2	X	2	4.0		
12.798	DL							4	X	2	8.0		
12.798	DL							3	X	3	9.0		
12.798	SHLDR							2	X	2	4.0		
12.794	DL							5	X	3	15.0		
12.791	DL							10	X	2	20.0		
12.790	DL							2	X	2	4.0		
12.789	SHLDR							2	X	2	4.0		
12.787	DL/SHLDR							2	X	4	8.0		
12.781	DL							2	X	2	4.0		
12.781	SHLDR							2	X	2	4.0		
12.779	DL/SHLDR							2	X	3	6.0		
12.776	SHLDR							2	X	2	4.0		
12.773	DL							5	X	4	20.0		
12.770	DL							2	X	3	6.0		
12.768	DL							2	X	2	4.0		
12.768	DL/SHLDR							2	X	5	10.0		
12.765	SHLDR							2	X	2	4.0		
12.754	PL							2	X	2	4.0		
12.754	DL							3	X	3	9.0		
12.754	SHLDR							2	X	2	4.0		
12.745	SHLDR							2	X	2	4.0		
12.742	DL/SHLDR							2	X	3	6.0		
12.740	DL							2	X	2	4.0		
12.734	DL							2	X	3	6.0		
12.731	DL							3	X	3	9.0		
12.731	SHLDR							2	X	2	4.0		

I-29 Southbound

Data Table

RP 12.867 to 12.731



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	30

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.725	PL							2	X	2	4.0		
12.725	DL							2	X	2	4.0		
12.722	DL							3	X	3	9.0		
12.719	PL							2	X	2	4.0		
12.719	DL							4	X	3	12.0		
12.719	SHLDR							2	X	2	4.0		
12.710	SHLDR							2	X	2	4.0		
12.707	SHLDR							2	X	2	4.0		
12.698	SHLDR							2	X	2	4.0		
12.695	DL							3	X	3	9.0		
12.695	SHLDR							2	X	2	4.0		
12.693	DL							2	X	3	6.0		
12.684	SHLDR							2	X	2	4.0		
12.674	PL							2	X	2	4.0		
12.658	SHLDR							2	X	2	4.0		
12.642	SHLDR							2	X	2	4.0		
12.640	DL							3	X	2	6.0		
12.640	SHLDR							2	X	2	4.0		
12.609	DL							2	X	2	4.0		
12.605	SHLDR							2	X	2	4.0		
12.600	DL							2	X	2	4.0		
12.566	SHLDR							2	X	2	4.0		
12.557	SHLDR							2	X	2	4.0		
12.554	DL							2	X	2	4.0		
12.545	DL/SHLDR							2	X	3	6.0		
12.529	DL							2	X	2	4.0		
12.527	DL							2	X	2	4.0		
12.520	PL							2	X	2	4.0		
12.507	PL							2	X	2	4.0		
12.505	DL/SHLDR							2	X	3	6.0		
12.502	PL							2	X	2	4.0		
12.502	DL							2	X	2	4.0		
12.502	DL							4	X	3	12.0		
12.493	DL							2	X	3	6.0		
12.481	DL							3	X	3	9.0		
12.478	DL							3	X	3	9.0		
12.475	PL							2	X	2	4.0		
12.468	PL							2	X	2	4.0		
12.468	DL							2	X	2	4.0		
12.465	DL/SHLDR							2	X	2	4.0		
12.456	DL							4	X	3	12.0		
12.453	PL							2	X	2	4.0		
12.453	DL							3	X	3	9.0		
12.451	DL							2	X	2	4.0		
12.445	PL							2	X	2	4.0		
12.445	DL							2	X	2	4.0		
12.445	DL							2	X	2	4.0		
12.442	DL							3	X	3	9.0		
12.439	PL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 12.725 to 12.439



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	31

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.432	DL							2	X	2	4.0		
12.430	DL							2	X	2	4.0		
12.424	PL							2	X	2	4.0		
12.419	DL							2	X	2	4.0		
12.415	DL							2	X	2	4.0		
12.412	DL							3	X	3	9.0		
12.412	DL							3	X	3	9.0		
12.407	DL							2	X	2	4.0		
12.404	PL							2	X	2	4.0		
12.404	DL							2	X	2	4.0		
12.404	DL							3	X	3	9.0		
12.400	PL							2	X	2	4.0		
12.400	DL							2	X	2	4.0		
12.398	PL							2	X	2	4.0		
12.398	DL							2	X	2	4.0		
12.398	DL/SHLDR							2	X	4	8.0		
12.395	DL							2	X	2	4.0		
12.389	DL							2	X	2	4.0		
12.386	PL							2	X	2	4.0		
12.386	SHLDR							2	X	2	4.0		
12.383	DL							3	X	3	9.0		
12.380	PL							2	X	2	4.0		
12.367	DL							6	X	2	12.0		
12.363	DL							6	X	2	12.0		
12.363	DL							6	X	3	18.0		
12.359	DL							3	X	3	9.0		
12.359	DL							3	X	3	9.0		
12.357	DL							2	X	2	4.0		
12.357	DL							3	X	3	9.0		
12.354	PL							2	X	2	4.0		
12.350	PL							2	X	2	4.0		
12.350	DL							3	X	3	9.0		
12.350	SHLDR							2	X	2	4.0		
12.348	DL							3	X	3	9.0		
12.348	SHLDR							2	X	2	4.0		
12.345	PL							2	X	2	4.0		
12.339	DL							3	X	3	9.0		
12.336	DL							2	X	2	4.0		
12.334	PL							2	X	2	4.0		
12.334	DL							2	X	2	4.0		
12.331	DL							3	X	2	6.0		
12.328	DL							2	X	3	6.0		
12.324	DL							2	X	2	4.0		
12.323	DL							2	X	2	4.0		
12.309	DL	6	X	12	8.0	20							
12.294	PL							2	X	2	4.0		
12.292	DL							2	X	2	4.0		
12.288	DL							2	X	2	4.0		
12.282	PL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 12.432 to 12.282



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	32

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.282	DL							2	X	2	4.0		
12.260	DL							3	X	3	9.0		
12.254	PL							2	X	2	4.0		
12.254	DL							3	X	3	9.0		
12.245	DL							2	X	2	4.0		
12.238	PL							2	X	2	4.0		
12.233	PL							2	X	2	4.0		
12.224	DL							2	X	2	4.0		
12.221	PL							2	X	2	4.0		
12.221	DL							2	X	2	4.0		
12.221	DL							2	X	2	4.0		
12.215	PL	4	X	15	6.7	20							
12.215	DL							2	X	2	4.0	3	
12.206	DL							2	X	2	4.0		
12.158	DL							2	X	2	4.0		
12.155	DL/SHLDR							2	X	2	4.0		
12.415	DL							2	X	2	4.0		
12.412	DL							2	X	2	4.0		
12.124	DL							2	X	2	4.0		
12.118	DL							2	X	2	4.0		
12.093	DL							2	X	2	4.0		
12.080	DL							2	X	2	4.0		
Mile 12 Totals					50.7	90.0	12.0				1,129.0	3.0	
11.944	DL							2	X	2	4.0		
11.941	PL							2	X	2	4.0		
11.941	DL							2	X	2	4.0		
11.941	DL/SHLDR							2	X	2	4.0		
11.940	DL											13	
11.932	DL							3	X	2	6.0		
11.908	DL/SHLDR							2	X	2	4.0		
11.895	DL	4	X	12	5.3	20							
11.892	DL	8	X	12	10.7	20							
11.886	DL							2	X	2	4.0		
11.882	DL	5	X	12	6.7	20							
11.881	PL							2	X	2	4.0		
11.878	PL							2	X	2	4.0		
11.869	DL							2	X	2	4.0		
11.867	DL											10	
11.858	DL											8	
11.857	PL							2	X	3	6.0		
11.849	DL	4	X	12	5.3	20							
11.838	PL	4	X	15	6.7	20							
11.837	DL	4	X	12	5.3	20							
11.837	DL							2	X	2	4.0		
11.826	DL	4	X	12	5.3	20							
11.824	PL/DL	4	X	27	12.0	20							
11.819	DL	4	X	12	5.3	20							
11.808	PL/DL	6	X	27	18.0	20							
11.806	PL							2	X	2	4.0		

I-29 Southbound

Data Table

RP 12.282 to 11.806



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	33

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
11.789	PL	4	X	15	6.7	20							
11.784	DL	10	X	12	13.3	20							
11.780	PL/DL	8	X	27	24.0	40							
11.779	DL							3	X	5	15.0		
11.775	PL	4	X	15	6.7	20							
11.771	PL	4	X	15	6.7	20							
11.769	DL	4	X	12	5.3	20							
11.753	DL	4	X	12	5.3	20							
11.752	PL							2	X	2	4.0		
11.752	DL							2	X	2	4.0		
11.748	PL	4	X	15	6.7	20							
11.746	PL	4	X	15	6.7	20							
11.741	PL	21	X	15	35.0	20	12						
11.741	DL	5	X	12	6.7	20							
11.736	PL							2	X	2	4.0		
11.733	DL							2	X	2	4.0		
11.724	PL	4	X	15	6.7	20							
11.724	DL	21	X	12	28.0	20	12						
11.711	PL/DL	5	X	27	15.0	40							
11.696	DL							2	X	2	4.0		
11.693	PL							2	X	2	4.0		
11.691	PL/DL	5	X	27	15.0	20							
11.682	PL/DL	12	X	27	36.0	40							
11.670	DL	4	X	12	5.3	20							
11.665	DL	4	X	12	5.3	20							
11.649	PL/DL	4	X	27	12.0	40							
11.646	PL/DL	4	X	27	12.0	40							
11.644	PL/DL	4	X	27	12.0	40							
11.636	PL	4	X	15	6.7	20							
11.636	DL	8	X	12	10.7	20							
11.632	PL/DL	4	X	27	12.0	40							
11.629	DL	4	X	12	5.3	20							
11.623	PL	7	X	15	11.7	20							
11.619	PL	10	X	15	16.7	20							
11.619	DL	4	X	12	5.3	20							
11.615	PL/DL	4	X	27	12.0	40							
11.606	PL											16	
11.600	PL	4	X	15	6.7	20							
11.594	PL	4	X	15	6.7	20							
11.591	PL/DL	6	X	27	18.0	40							
11.587	PL	4	X	15	6.7	20							
11.585	PL/DL	8	X	27	24.0	40							
11.574	PL/DL	8	X	27	24.0	40							
11.571	PL/DL	4	X	27	12.0	40							
11.562	PL/DL	5	X	27	15.0	40							
11.558	DL	19	X	12	25.3	20	12						
11.544	DL	4	X	12	5.3	20							
11.535	DL							3	X	3	9.0		
11.529	DL							3	X	3	9.0		

I-29 Southbound

Data Table

RP 11.789 to 11.529



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	34

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
11.523	PL							2	X	2	4.0		
11.499	DL							2	X	2	4.0		
11.475	PL							2	X	2	4.0		
11.463	DL							2	X	2	4.0		
11.447	DL							2	X	2	4.0		
11.433	DL	4	X	12	5.3	20							
11.415	DL							2	X	2	4.0		
11.397	PL							2	X	2	4.0		
11.390	PL							2	X	2	4.0		
11.388	PL							2	X	2	4.0		
11.382	PL							2	X	2	4.0		
11.382	DL							2	X	2	4.0		
Mile 11 Totals					580.3	1,260.0	36.0				157.0	47.0	

I-29 Southbound

Data Table

RP 11.523 to 11.382



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	11	35

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
11.302	DL							2	X	2	4.0		
11.314	DL							2	X	2	4.0		
11.339	PL							2	X	2	4.0		
11.339	DL							2	X	2	4.0		
11.349	DL							4	X	2	8.0		
11.355	DL							2	X	2	4.0		
11.357	DL							2	X	2	4.0		
11.369	DL							3	X	3	9.0		
11.375	DL							2	X	3	6.0		
11.381	DL							2	X	2	4.0		
11.383	DL							2	X	2	4.0		
11.401	PL							2	X	2	4.0		
11.403	DL							2	X	2	4.0		
11.405	DL							2	X	2	4.0		
11.423	DL							3	X	3	9.0		
11.426	DL							2	X	2	4.0	8	
11.448	PL							2	X	2	4.0		
11.450	DL							2	X	2	4.0		
11.469	DL							2	X	2	4.0		
11.499	DL							2	X	2	4.0		
11.558	DL							2	X	2	4.0		
11.559	DL							2	X	2	4.0		
11.562	SHLDR							2	X	2	4.0		
11.563	DL											12	
11.564	PL							2	X	2	4.0		
11.577	SHLDR							2	X	2	4.0		
11.577	PL							2	X	2	4.0		
11.577	DL							2	X	2	4.0		
11.588	DL	4	X	12	5.3	20.0							
11.589	DL							2	X	2	4.0		
11.591	DL	6	X	12	8.0	20.0							
11.596	DL											12	
11.597	DL							2	X	2	4.0		
11.598	DL							2	X	12	24.0		
11.599	DL							2	X	3	6.0		
11.599	SHLDR							2	X	2	4.0		
11.608	DL							2	X	2	4.0		
11.610	DL							2	X	2	4.0		
11.615	PL							2	X	3	6.0		
11.615	PL							2	X	2	4.0		
11.615	DL	5	X	12	6.7	20.0							
11.641	PL							2	X	2	4.0		
11.646	DL							3	X	3	9.0		
11.647	DL							2	X	2	4.0		
11.655	DL							2	X	2	4.0		
11.658	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 11.302 to 11.658



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	36

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
11.689	DL	4	X	12	5.3	20.0							
11.691	DL							2	X	2	4.0		
11.695	DL							2	X	2	4.0		
11.697	DL							2	X	2	4.0		
11.697	SHLDR							2	X	2	4.0		
11.699	DL	4	X	12	5.3	20.0							
11.709	DL							2	X	2	4.0		
11.709	SHLDR							2	X	2	4.0		
11.714	DL							2	X	2	4.0		
11.717	DL							2	X	2	4.0		
11.721	DL											4	
11.735	DL							4	X	4	16.0		
11.741	DL							2	X	2	4.0		
11.765	DL							2	X	2	4.0		
11.777	PL							2	X	2	4.0		
11.780	PL							2	X	2	4.0		
11.804	PL							2	X	2	4.0		
11.811	DL	4	X	12	5.3	20.0							
11.814	DL											6	
11.849	DL							2	X	2	4.0		
11.916	DL											12	
11.922	DL							2	X	2	4.0		
Mile 11 Totals					36.0	120.0	-				285.0	54.0	
12.026	DL	5	X	12	6.7	20.0							
12.028	DL							2	X	2	4.0		
12.034	DL							2	X	2	4.0		
12.146	DL							2	X	2	4.0		
12.146	SHLDR							2	X	2	4.0		
12.148	SHLDR							2	X	2	4.0		
12.159	SHLDR							2	X	2	4.0		
12.164	PL							2	X	2	4.0		
12.195	PL							2	X	2	4.0		
12.234	DL							2	X	2	4.0		
12.234	DL							2	X	2	4.0		
12.261	DL							2	X	2	4.0		
12.267	SHLDR							2	X	2	4.0		
12.285	PL							2	X	2	4.0		
12.327	DL							3	X	2	6.0		
12.330	PL/DL	4	X	27	12.0	40.0							
12.333	DL							2	X	2	4.0		
12.333	DL							2	X	2	4.0		
12.341	PL							2	X	2	4.0		
12.341	DL							2	X	2	4.0		
12.350	PL							2	X	2	4.0		
12.358	SHLDR							2	X	2	4.0		
12.358	PL							2	X	2	4.0		
12.418	DL							2	X	2	4.0		
12.433	DL							2	X	2	4.0		
12.433	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 11.689 to 12.433



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	37

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.433	PL							2	X	2	4.0		
12.461	DL							2	X	2	4.0		
12.476	PL							4	X	2	8.0		
12.481	DL							2	X	2	4.0		
12.508	DL							2	X	2	4.0		
12.508	SHLDR							2	X	2	4.0		
12.540	DL							2	X	2	4.0		
12.540	SHLDR							2	X	2	4.0		
12.541	PL											15.0	
12.554	DL							2	X	2	4.0		
12.564	DL							2	X	2	4.0		
12.572	PL							2	X	2	4.0		
12.600	DL							2	X	2	4.0		
12.602	DL							2	X	2	4.0		
12.602	SHLDR							2	X	2	4.0		
12.611	DL							2	X	2	4.0		
12.617	DL							2	X	2	4.0		
12.623	DL							4	X	3	12.0		
12.638	DL							3	X	3	9.0		
12.638	SHLDR							3	X	3	9.0		
12.674	DL							3	X	3	9.0		
12.720	SHLDR							2	X	2	4.0		
12.726	DL							2	X	2	4.0		
12.756	DL							3	X	3	9.0		
12.768	DL							2	X	2	4.0		
12.768	SHLDR							2	X	2	4.0		
12.773	SHLDR							2	X	4	8.0		
12.779	DL							2	X	3	6.0		
12.779	SHLDR							2	X	2	4.0		
12.790	DL							2	X	2	4.0		
12.790	SHLDR							2	X	2	4.0		
12.815	DL							2	X	2	4.0		
12.815	SHLDR							2	X	2	4.0		
12.829	SHLDR							2	X	2	4.0		
12.842	SHLDR							2	X	2	4.0		
12.847	SHLDR							2	X	2	4.0		
12.847	PL							2	X	2	4.0		
12.849	DL							4	X	2	8.0		
12.849	SHLDR							2	X	2	4.0		
12.851	DL							3	X	3	9.0		
12.857	SHLDR							2	X	2	4.0		
12.859	SHLDR							2	X	2	4.0		
12.864	SHLDR							2	X	2	4.0		
12.867	SHLDR							2	X	2	4.0		
12.876	SHLDR							2	X	2	4.0		
12.878	SHLDR							2	X	2	4.0		
12.887	SHLDR							2	X	2	4.0		
12.890	SHLDR							2	X	2	4.0		
12.902	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 12.433 to 12.902



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	38

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
12.908	PL							2	X	2	4.0		
12.909	SHLDR							2	X	2	4.0		
12.912	SHLDR							2	X	2	4.0		
12.921	SHLDR							2	X	2	4.0		
12.923	SHLDR							2	X	2	4.0		
12.933	PL							2	X	2	4.0		
12.933	SHLDR							2	X	2	4.0		
12.944	SHLDR							2	X	2	4.0		
Mile 12 Totals					18.7	60.0	-				369.0	15.0	
13.009	SHLDR							2	X	2	4.0		
13.011	SHLDR							2	X	2	4.0		
13.026	DL							2	X	2	4.0		
13.026	SHLDR							2	X	2	4.0		
13.029	DL	4	X	12	5.3	20.0							
13.032	DL	4	X	12	5.3	20.0							
13.033	SHLDR							2	X	2	4.0		
13.036	PL							2	X	2	4.0		
13.036	SHLDR							2	X	2	4.0		
13.038	SHLDR							4	X	2	8.0		
13.042	DL	6	X	12	8.0	20.0							
13.043	SHLDR							2	X	2	4.0		
13.047	SHLDR							2	X	2	4.0		
13.055	DL							2	X	2	4.0		
13.055	SHLDR							4	X	2	8.0		
13.061	DL							2	X	2	4.0		
13.067	SHLDR							2	X	2	4.0		
13.075	SHLDR							2	X	2	4.0		
13.083	PL							2	X	2	4.0		
13.102	PL							2	X	2	4.0		
13.111	DL							2	X	2	4.0		
13.134	SHLDR							2	X	2	4.0		
13.143	SHLDR							2	X	2	4.0		
13.143	PL							2	X	2	4.0		
13.146	SHLDR							2	X	2	4.0		
13.157	SHLDR							2	X	2	4.0		
13.163	DL							2	X	2	4.0		
13.166	DL							2	X	2	4.0		
13.168	SHLDR							2	X	2	4.0		
13.168	PL							2	X	2	4.0		
13.179	SHLDR							2	X	2	4.0		
13.192	SHLDR							2	X	2	4.0		
13.200	SHLDR							2	X	2	4.0		
13.211	SHLDR							2	X	2	4.0		
13.236	SHLDR							2	X	2	4.0		
13.242	SHLDR							2	X	2	4.0		
13.244	PL							2	X	2	4.0		
13.244	SHLDR							2	X	2	4.0		
13.259	SHLDR							2	X	2	4.0		
13.266	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 12.908 to 13.266



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	39

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.269	DL							2	X	2	4.0		
13.276	DL							2	X	2	4.0		
13.276	SHLDR							2	X	2	4.0		
13.288	SHLDR							2	X	2	4.0		
13.290	DL							2	X	2	4.0		
13.290	SHLDR							2	X	2	4.0		
13.299	DL							2	X	2	4.0		
13.299	SHLDR							2	X	2	4.0		
13.304	DL							4	X	2	8.0		
13.309	DL							2	X	2	4.0		
13.309	SHLDR							2	X	2	4.0		
13.316	PL							2	X	2	4.0		
13.318	PL/DL	4	X	27	12.0	40.0							
13.323	SHLDR							2	X	2	4.0		
13.334	SHLDR							2	X	2	4.0		
13.336	SHLDR							2	X	2	4.0		
13.345	SHLDR							2	X	2	4.0		
13.347	SHLDR							2	X	2	4.0		
13.359	SHLDR							2	X	2	4.0		
13.362	PL							2	X	2	4.0		
13.367	SHLDR							2	X	2	4.0		
13.370	SHLDR							2	X	2	4.0		
13.376	SHLDR							2	X	2	4.0		
13.378	SHLDR							2	X	2	4.0		
13.384	PL							2	X	2	4.0		
13.387	SHLDR							4	X	2	8.0		
13.389	SHLDR							2	X	2	4.0		
13.411	SHLDR							2	X	2	4.0		
13.414	DL							2	X	2	4.0		
13.424	SHLDR							2	X	2	4.0		
13.432	SHLDR							2	X	2	4.0		
13.435	SHLDR							2	X	2	4.0		
13.438	SHLDR							2	X	2	4.0		
13.441	PL							2	X	2	4.0		
13.443	DL							2	X	2	4.0		
13.443	SHLDR							2	X	2	4.0		
13.454	SHLDR							2	X	2	4.0		
13.456	SHLDR							2	X	2	4.0		
13.465	SHLDR							2	X	2	4.0		
13.491	DL							3	X	3	9.0		
13.491	SHLDR							2	X	2	4.0		
13.499	SHLDR							2	X	2	4.0		
13.508	SHLDR							2	X	2	4.0		
13.510	SHLDR							2	X	2	4.0		
13.535	SHLDR							2	X	2	4.0		
13.544	DL							2	X	2	4.0		
13.544	SHLDR							2	X	2	4.0		
13.546	SHLDR							2	X	2	4.0		
13.557	DL							3	X	3	9.0		

I-29 Northbound

Data Table

RP 13.269 to 13.557



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	40

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.557	SHLDR							2	X	2	4.0		
13.563	DL							2	X	2	4.0		
13.565	SHLDR							2	X	2	4.0		
13.568	DL							2	X	2	4.0		
13.571	SHLDR							2	X	2	4.0		
13.576	SHLDR							2	X	2	4.0		
13.578	SHLDR							2	X	2	4.0		
13.588	SHLDR							2	X	2	4.0		
13.597	SHLDR							2	X	2	4.0		
13.599	SHLDR							2	X	2	4.0		
13.611	SHLDR							2	X	2	4.0		
13.617	DL							2	X	2	4.0		
13.617	SHLDR							4	X	2	8.0		
13.619	SHLDR							2	X	2	4.0		
13.621	SHLDR							2	X	2	4.0		
13.627	DL							2	X	2	4.0		
13.627	SHLDR							2	X	2	4.0		
13.629	SHLDR							2	X	2	4.0		
13.632	SHLDR							2	X	2	4.0		
13.641	SHLDR							4	X	2	8.0		
13.643	SHLDR							2	X	2	4.0		
13.649	SHLDR							2	X	2	4.0		
13.651	SHLDR							2	X	2	4.0		
13.656	SHLDR							2	X	2	4.0		
13.659	SHLDR							4	X	2	8.0		
13.663	SHLDR							2	X	2	4.0		
13.667	DL							2	X	2	4.0		
13.667	SHLDR							2	X	2	4.0		
13.670	SHLDR							2	X	2	4.0		
13.679	SHLDR							2	X	2	4.0		
13.687	PL							2	X	2	4.0		
13.687	SHLDR							2	X	2	4.0		
13.689	PL							2	X	2	4.0		
13.695	DL							3	X	2	6.0		
13.710	SHLDR							2	X	2	4.0		
13.721	SHLDR							2	X	2	4.0		
13.724	DL							2	X	2	4.0		
13.727	DL							5	X	4	20.0		
13.728	DL							2	X	2	4.0		
13.728	SHLDR							2	X	2	4.0		
13.730	DL							2	X	2	4.0		
13.730	DL							3	X	4	12.0		
13.730	SHLDR							2	X	2	4.0		
13.739	SHLDR							2	X	2	4.0		
13.741	SHLDR							2	X	2	4.0		
13.747	DL							2	X	2	4.0		
13.749	DL							4	X	2	8.0		
13.749	SHLDR							4	X	2	8.0		
13.751	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 13.557 to 13.751



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	41

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
13.754	PL							2	X	2	4.0		
13.760	SHLDR							2	X	2	4.0		
13.763	SHLDR							2	X	2	4.0		
13.772	DL							3	X	3	9.0		
13.772	DL							2	X	2	4.0		
13.772	SHLDR							2	X	2	4.0		
13.774	SHLDR							2	X	2	4.0		
13.780	DL							3	X	3	9.0		
13.780	SHLDR							2	X	2	4.0		
13.782	SHLDR							2	X	2	4.0		
13.785	SHLDR							2	X	2	4.0		
13.794	DL							2	X	2	4.0		
13.794	SHLDR							2	X	2	4.0		
13.796	SHLDR							2	X	2	4.0		
13.803	SHLDR							2	X	2	4.0		
13.805	SHLDR							2	X	2	4.0		
13.814	SHLDR							2	X	2	4.0		
13.825	DL	5	X	12	6.7	20.0							
13.825	SHLDR							2	X	2	4.0		
13.840	PL							2	X	2	4.0		
13.849	DL	4	X	12	5.3	20.0							
13.857	SHLDR							2	X	2	4.0		
13.870	SHLDR							2	X	2	4.0		
13.872	SHLDR							2	X	2	4.0		
13.881	SHLDR							2	X	2	4.0		
13.884	SHLDR							2	X	2	4.0		
13.892	SHLDR							2	X	2	4.0		
13.895	SHLDR							2	X	2	4.0		
Mile 13 Totals					42.7	140.0	-				722.0	-	
14.001	DL							2	X	2	4.0		
14.001	SHLDR							2	X	2	4.0		
14.005	SHLDR							2	X	2	4.0		
14.015	SHLDR							2	X	2	4.0		
14.023	SHLDR							2	X	2	4.0		
14.025	DL							2	X	2	4.0		
14.035	SHLDR							2	X	2	4.0		
14.037	SHLDR							3	X	3	9.0		
14.045	SHLDR							2	X	2	4.0		
14.048	SHLDR							2	X	2	4.0		
14.056	SHLDR							2	X	2	4.0		
14.069	SHLDR							2	X	2	4.0		
14.071	SHLDR							2	X	2	4.0		
14.074	DL							3	X	3	9.0		
14.074	SHLDR							3	X	3	9.0		
14.076	PL/DL	6	X	27	18.0	40							
14.080	SHLDR							2	X	2	4.0		
14.090	SHLDR							2	X	2	4.0		
14.092	SHLDR							2	X	2	4.0		
14.100	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 13.754 to 14.100



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	42

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.103	SHLDR							2	X	2	4.0		
14.114	SHLDR							2	X	2	4.0		
14.120	DL							2	X	2	4.0		
14.120	SHLDR							2	X	2	4.0		
14.122	SHLDR							2	X	2	4.0		
14.143	SHLDR							2	X	2	4.0		
14.154	SHLDR							2	X	2	4.0		
14.157	SHLDR							2	X	2	4.0		
14.168	SHLDR							2	X	2	4.0		
14.177	SHLDR							2	X	2	4.0		
14.179	SHLDR							2	X	2	4.0		
14.187	SHLDR							2	X	2	4.0		
14.190	DL							2	X	2	4.0		
14.190	SHLDR							2	X	2	4.0		
14.199	SHLDR							2	X	2	4.0		
14.201	SHLDR							2	X	2	4.0		
14.209	SHLDR							2	X	2	4.0		
14.212	SHLDR							2	X	2	4.0		
14.220	DL							2	X	2	4.0		
14.220	SHLDR							2	X	2	4.0		
14.222	SHLDR							2	X	2	4.0		
14.231	SHLDR							2	X	2	4.0		
14.240	SHLDR							2	X	2	4.0		
14.241	SHLDR							2	X	2	4.0		
14.244	SHLDR							2	X	2	4.0		
14.256	SHLDR							2	X	2	4.0		
14.268	SHLDR							4	X	2	8.0		
14.274	SHLDR							2	X	2	4.0		
14.268	SHLDR							4	X	2	8.0		
14.288	SHLDR							2	X	2	4.0		
14.288	PL							2	X	2	4.0		
14.300	SHLDR							2	X	2	4.0		
14.321	SHLDR							2	X	2	4.0		
14.323	SHLDR							2	X	2	4.0		
14.335	SHLDR							2	X	2	4.0		
14.344	SHLDR							2	X	2	4.0		
14.351	SHLDR							2	X	2	4.0		
14.353	SHLDR							2	X	2	4.0		
14.354	SHLDR							4	X	2	8.0		
14.356	DL							3	X	3	9.0		
14.356	SHLDR							3	X	3	9.0		
14.365	SHLDR							2	X	2	4.0		
14.367	SHLDR							4	X	2	8.0		
14.379	SHLDR							2	X	2	4.0		
14.385	SHLDR							2	X	2	4.0		
14.387	SHLDR							2	X	2	4.0		
14.396	SHLDR							2	X	2	4.0		
14.398	SHLDR							2	X	2	4.0		
14.410	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 14.103 to 14.410



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	43

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.416	SHLDR							2	X	2	4.0		
14.418	SHLDR							2	X	2	4.0		
14.428	SHLDR							2	X	2	4.0		
14.431	SHLDR							2	X	2	4.0		
14.439	SHLDR							2	X	2	4.0		
14.442	SHLDR							2	X	2	4.0		
14.451	SHLDR							2	X	2	4.0		
14.453	SHLDR							2	X	2	4.0		
14.462	SHLDR							2	X	2	4.0		
14.474	SHLDR							2	X	2	4.0		
14.477	SHLDR							4	X	2	8.0		
14.486	SHLDR							2	X	2	4.0		
14.488	DL	19	X	12	25.3	20.0	12						
14.488	SHLDR											10	
14.493	SHLDR							2	X	2	4.0		
14.499	PL	4	X	15	6.7	20.0							
14.499	SHLDR							3	X	3	9.0		
14.501	PL							4	X	3	12.0		
14.504	PL							4	X	2	8.0		
14.504	DL	6	X	12	8.0	20.0							
14.546	PL							2	X	4	8.0		
14.546	DL							2	X	2	4.0		
14.546	SHLDR							2	X	2	4.0		
14.548	D,P	6	X	27	18.0	40.0							
14.554	SHLDR							2	X	2	4.0		
14.559	PL							2	X	2	4.0		
14.562	DL	10	X	12	13.3	20.0							
14.565	DL							3	X	2	6.0		
14.566	SHLDR							2	X	2	4.0		
14.566	DL							3	X	2	6.0		
14.567	DL	19	X	12	25.3	20.0	12						
14.570	DL							10	X	2	20.0		
14.571	SHLDR							4	X	2	8.0		
14.573	SHLDR							4	X	2	8.0		
14.574	SHLDR							2	X	2	4.0		
14.576	SHLDR							2	X	2	4.0		
14.576	DL/SHLDR	10	X	22	24.4	20							
14.584	SHLDR							2	X	2	4.0		
14.585	DL							10	X	2	20.0		
14.587	DL							15	X	3	45.0		
14.589	SHLDR							4	X	2	8.0		
14.590	DL							15	X	3	45.0		
14.590	SHLDR							2	X	2	4.0		
14.597	DL							2	X	2	4.0		
14.597	SHLDR							4	X	2	8.0		
14.599	SHLDR							4	X	2	8.0		
14.612	DL							2	X	2	4.0		
14.612	SHLDR							2	X	2	4.0		
14.617	SHLDR							4	X	2	8.0		

I-29 Northbound

Data Table

RP 14.416 to 14.617



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	44

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.620	SHLDR							2	X	2	4.0		
14.624	PL							2	X	2	4.0		
14.624	DL							2	X	2	4.0		
14.625	DL							2	X	2	4.0		
14.631	SHLDR							2	X	2	4.0		
14.633	SHLDR							2	X	2	4.0		
14.642	SHLDR							2	X	2	4.0		
14.645	SHLDR							2	X	2	4.0		
14.653	SHLDR							2	X	2	4.0		
14.663	SHLDR							4	X	2	8.0		
14.666	SHLDR							2	X	2	4.0		
14.668	DL							2	X	2	4.0		
14.672	PL	4	X	15	6.7	20.0							
14.673	SHLDR							2	X	2	4.0		
14.679	DL							2	X	2	4.0		
14.679	SHLDR							2	X	2	4.0		
14.694	DL							3	X	3	9.0		
14.697	SHLDR							2	X	2	4.0		
14.697	SHLDR							4	X	2	8.0		
14.697	RAMP							4	X	2	8.0		
14.697	SHLDR							3	X	3	9.0		
14.702	DL							4	X	15	60.0		
14.719	DL							2	X	2	4.0		
14.719	SHLDR							3	X	3	9.0		
14.719	RAMP							2	X	2	4.0		
14.722	RAMP							2	X	2	4.0		
14.725	DL							2	X	2	4.0		
14.725	RAMP							2	X	2	4.0		
14.728	RAMP							2	X	2	4.0		
14.730	SHLDR							2	X	2	4.0		
14.730	RAMP							2	X	2	4.0		
14.737	DL							12	X	3	36.0		
14.738	DL							2	X	2	4.0		
14.738	SHLDR							2	X	2	4.0		
14.738	SHLDR							2	X	2	4.0		
14.738	RAMP							2	X	2	4.0		
14.739	DL							10	X	2	20.0		
14.740	SHLDR							2	X	2	4.0		
14.740	RAMP							2	X	2	4.0		
14.741	DL							2	X	2	4.0		
14.742	SHLDR							2	X	2	4.0		
14.743	DL							2	X	2	4.0		
14.745	DL							2	X	2	4.0		
14.745	SHLDR							4	X	2	8.0		
14.748	SHLDR							2	X	2	4.0		
14.748	SHLDR							2	X	2	4.0		
14.749	DL	4	X	12	5.3	20.0							
14.750	SHLDR							2	X	2	4.0		
14.750	RAMP							2	X	2	4.0		

I-29 Northbound

Data Table

RP 14.620 to 14.750



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	45

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
14.752	SHLDR							2	X	2	4.0		
14.752	RAMP							2	X	2	4.0		
14.755	RAMP							2	X	2	4.0		
14.758	DL							3	X	3	9.0		
14.758	RAMP							2	X	2	4.0		
14.760	DL							3	X	3	9.0		
14.760	SHLDR							2	X	2	4.0		
14.766	DL							3	X	2	6.0		
14.768	DL							2	X	2	4.0		
14.768	SHLDR							2	X	2	4.0		
14.770	DL							2	X	2	4.0		
14.770	SHLDR							2	X	2	4.0		
14.770	SHLDR							2	X	2	4.0		
14.770	RAMP							2	X	2	4.0		
14.773	DL							2	X	2	4.0		
14.775	DL							5	X	3	15.0		
14.775	RAMP							2	X	2	4.0		
14.778	DL							2	X	2	4.0		
14.778	SHLDR							2	X	2	4.0		
14.778	SHLDR							2	X	2	4.0		
14.780	RAMP							2	X	2	4.0		
14.780	RAMP							2	X	2	4.0		
14.780	SHLDR							2	X	2	4.0		
14.780	GORE	4	X	15	6.7								
14.791	SHLDR							2	X	2	4.0		
14.791	PL							2	X	2	4.0		
14.803	SHLDR							2	X	2	4.0		
14.805	SHLDR							2	X	2	4.0		
14.814	SHLDR							2	X	2	4.0		
14.825	SHLDR							2	X	2	4.0		
14.845	SHLDR							2	X	2	4.0		
14.857	PL							2	X	2	4.0		
14.857	SHLDR							2	X	2	4.0		
14.859	SHLDR							2	X	2	4.0		
14.868	SHLDR							2	X	2	4.0		
14.870	SHLDR							2	X	2	4.0		
14.875	SHLDR							2	X	2	4.0		
14.877	DL							2	X	2	4.0		
14.877	SHLDR							2	X	2	4.0		
Mile 14 Totals					157.8	240.0	24.0				1,142.0	10.0	
15.002	SHLDR							2	X	2	4.0		
15.011	SHLDR							2	X	2	4.0		
15.013	DL							2	X	2	4.0		
15.013	SHLDR							6	X	2	12.0		
15.020	SHLDR							3	X	2	6.0		
15.023	SHLDR							2	X	2	4.0		
15.026	SHLDR							2	X	2	4.0		
15.029	DL							2	X	2	4.0		
15.029	SHLDR							2	X	2	8.0		

I-29 Northbound

Data Table

RP 14.752 to 15.029



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	46

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.031	SHLDR							4	X	2	8.0		
15.032	SHLDR							4	X	2	20.0		
15.034	DL							10	X	2	20.0		
15.038	SHLDR							2	X	2	4.0		
15.048	DL							10	X	2	20.0		
15.049	SHLDR							2	X	2	4.0		
15.058	SHLDR							2	X	2	4.0		
15.059	SHLDR							2	X	2	4.0		
15.066	PL											15	
15.066	DL							2	X	2	4.0		
15.071	SHLDR											20	
15.077	SHLDR							2	X	2	4.0		
15.080	SHLDR											10	
15.870	SHLDR							2	X	2	4.0		
15.088	DL	19	X	12	25.3	20	12						
15.089	SHLDR							2	X	2	4.0		
15.090	DL	19	X	12	25.3	20	12						
15.097	DL							2	X	2	4.0		
15.097	SHLDR							2	X	2	4.0		
15.099	SHLDR							2	X	2	4.0		
15.110	SHLDR							2	X	2	4.0		
15.119	SHLDR							2	X	2	4.0		
15.120	DL							3	X	2	6.0		
15.121	DL							2	X	2	4.0		
15.121	SHLDR							2	X	2	4.0		
15.121	DL							12	X	2	24.0		
15.123	PL	4	X	15	6.7	20							
15.123	SHLDR							4	X	2	8.0		
15.124	DL							10	X	2	20.0		
15.128	DL							3	X	3	9.0		
15.128	SHLDR							2	X	2	4.0		
15.131	SHLDR							4	X	2	8.0		
15.133	DL							2	X	2	4.0		
15.133	SHLDR							2	X	2	4.0		
15.140	SHLDR							2	X	2	4.0		
15.142	SHLDR							2	X	2	4.0		
15.144	SHLDR							2	X	2	4.0		
15.151	SHLDR							2	X	2	4.0		
15.153	DL							3	X	3	9.0		
15.153	SHLDR							3	X	3	9.0		
15.156	DL							2	X	2	4.0		
15.162	DL							2	X	2	4.0		
15.162	SHLDR							2	X	2	4.0		
15.165	SHLDR							2	X	2	4.0		
15.165	DL							4	X	2	8.0		
15.173	SHLDR							2	X	2	4.0		
15.175	DL							3	X	3	9.0		
15.175	SHLDR							3	X	3	9.0		
15.178	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 15.031 to 15.178



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	47

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.182	DL							2	X	2	4.0		
15.184	SHLDR							2	X	2	4.0		
15.187	DL							4	X	4	16.0		
15.187	SHLDR							4	X	2	8.0		
15.192	SHLDR							2	X	2	4.0		
15.195	SHLDR							2	X	2	4.0		
15.198	SHLDR							2	X	2	4.0		
15.204	SHLDR							2	X	2	4.0		
15.207	SHLDR							2	X	2	4.0		
15.216	DL							2	X	2	4.0		
15.216	SHLDR							2	X	2	4.0		
15.218	SHLDR							2	X	2	4.0		
15.220	SHLDR							2	X	2	4.0		
15.221	DL							2	X	2	4.0		
15.221	SHLDR							4	X	2	8.0		
15.222	DL							4	X	2	8.0		
15.223	DL							8	X	2	16.0		
15.225	PL							2	X	2	4.0		
15.226	DL							8	X	2	16.0		
15.227	DL							2	X	2	4.0		
15.227	GORE							10	X	4	40.0		
15.227	RAMP							14	X	4	56.0		
15.229	SHLDR							4	X	4	16.0		
15.229	SHLDR											6	
15.229	GORE											10	
15.231	GORE											10	
15.231	DL							2	X	2	4.0		
15.232	SHLDR							2	X	2	4.0		
15.232	SHLDR							4	X	2	8.0		
15.233	DL							2	X	2	4.0		
15.233	SHLDR							2	X	10	20.0		
15.233	RAMP							14	X	4	56.0		
15.235	DL							2	X	2	4.0		
15.234	GORE											8	
15.236	GORE											8	
15.236	RAMP							14	X	4	56.0		
15.238	RAMP											14	
15.239	GORE							14	X	3	42.0		
15.241	RAMP							14	X	4	56.0		
15.242	DL							2	X	2	4.0		
15.242	SHLDR							2	X	2	4.0		
15.242	SHLDR							4	X	2	8.0		
15.243	RAMP							14	X	4	56.0		
15.245	SHLDR							4	X	2	8.0		
15.245	DL							2	X	2	4.0		
15.246	RAMP							15	X	4	60.0		
15.246	SHLDR							2	X	2	4.0		
15.248	RAMP							15	X	4	60.0		
15.248	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 15.182 to 15.248



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	48

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.248	SHLDR							2	X	2	4.0		
15.248	SHLDR							2	X	2	4.0		
15.250	DL							15	X	4	60.0		
15.251	RAMP							15	X	4	60.0		
15.251	SHLDR							2	X	2	4.0		
15.251	SHLDR							2	X	2	4.0		
15.252	DL							8	X	4	32.0		
15.253	RAMP							15	X	4	60.0		
15.253	SHLDR							2	X	2	4.0		
15.255	RAMP							15	X	4	60.0		
15.255	SHLDR							2	X	2	4.0		
15.257	RAMP	19	X	17	35.9	20	12						
15.257	SHLDR							2	X	2	4.0		
15.260	RAMP	19	X	16	33.8	20	12						
15.260	SHLDR							2	X	2	4.0		
15.260	SHLDR							2	X	2	4.0		
15.260	DL							2	X	2	4.0		
15.263	RAMP	19	X	15	31.7	20	12						
15.264	SHLDR							2	X	2	4.0		
15.265	RAMP							15	X	4	60.0		
15.269	SHLDR							6	X	6	36.0		
15.272	SHLDR							2	X	2	4.0		
15.273	SHLDR							2	X	2	4.0		
15.273	RAMP							2	X	2	4.0		
15.276	SHLDR							3	X	2	6.0		
15.277	SHLDR							6	X	2	12.0		
15.278	SHLDR							2	X	2	4.0		
15.280	SHLDR							6	X	2	12.0		
15.280	SHLDR							2	X	2	4.0		
15.282	SHLDR							10	X	2	20.0		
15.284	SHLDR							10	X	2	20.0		
15.284	SHLDR							3	X	3	9.0		
15.284	SHLDR							2	X	2	4.0		
15.287	SHLDR							3	X	3	9.0		
15.287	SHLDR							2	X	2	4.0		
15.290	SHLDR							2	X	2	4.0		
15.291	SHLDR							2	X	4	8.0		
15.293	SHLDR							3	X	3	9.0		
15.293	SHLDR							3	X	3	9.0		
15.294	SHLDR											10	
15.295	SHLDR							2	X	4	8.0		
15.295	RAMP							2	X	2	4.0		
15.298	SHLDR							2	X	2	4.0		
15.298	RAMP							2	X	2	4.0		
15.300	SHLDR							10	X	2	20.0		
15.302	SHLDR							10	X	2	20.0		
15.304	SHLDR							10	X	2	20.0		
15.304	SHLDR							2	X	2	4.0		
15.306	RAMP							2	X	2	4.0		

I-29 Northbound

Data Table

RP 15.248 to 15.306



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	49

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.306	SHLDR	15	X	10	16.7								
15.310	SHLDR							6	X	2	12.0		
15.316	RAMP							2	X	2	4.0		
15.321	SHLDR							2	X	2	4.0		
15.321	DL							2	X	2	4.0		
15.324	SHLDR							2	X	2	4.0		
15.326	DL							2	X	2	4.0		
15.326	RAMP							2	X	4	8.0		
15.326	SHLDR							2	X	2	4.0		
15.330	RAMP							4	X	2	8.0		
15.332	DL							2	X	2	4.0		
15.332	SHLDR							3	X	3	9.0		
15.332	SHLDR							2	X	2	4.0		
15.332	RAMP							2	X	4	8.0		
15.335	SHLDR							2	X	2	4.0		
15.335	SHLDR							2	X	4	8.0		
15.335	RAMP							2	X	4	8.0		
15.337	SHLDR							2	X	2	4.0		
15.337	RAMP							2	X	2	4.0		
15.339	DL							2	X	2	4.0		
15.339	SHLDR							2	X	4	8.0		
15.339	RAMP							2	X	4	8.0		
15.341	RAMP							2	X	2	4.0		
15.344	SHLDR							3	X	3	9.0		
15.344	RAMP							2	X	2	4.0		
15.350	SHLDR											4	
15.352	DL							2	X	2	4.0		
15.352	SHLDR							2	X	2	4.0		
15.352	SHLDR							2	X	2	4.0		
15.352	RAMP							2	X	2	4.0		
15.355	DL							2	X	2	4.0		
15.355	SHLDR							3	X	3	9.0		
15.355	SHLDR							2	X	2	4.0		
15.358	SHLDR							2	X	4	8.0		
15.359	SHLDR							2	X	2	4.0		
15.363	DL							2	X	2	4.0		
15.363	SHLDR							3	X	3	9.0		
15.365	SHLDR							6	X	2	12.0		
15.366	SHLDR							2	X	2	4.0		
15.369	SHLDR							2	X	2	4.0		
15.369	SHLDR							4	X	2	8.0		
15.369	RAMP							2	X	2	4.0		
15.369	SHLDR							2	X	2	4.0		
15.371	SHLDR							15	X	4	60.0		
15.371	SHLDR							4	X	2	8.0		
15.371	RAMP							2	X	2	4.0		
15.374	SHLDR							15	X	4	60.0		
15.378	SHLDR							15	X	4	60.0		
15.381	SHLDR							15	X	4	60.0		

I-29 Northbound

Data Table

RP 15.306 to 15.381



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	50

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.384	SHLDR							15	X	4	60.0		
15.386	SHLDR							15	X	4	60.0		
15.389	SHLDR							15	X	4	60.0		
15.392	SHLDR							15	X	4	60.0		
15.395	SHLDR							15	X	4	60.0		
15.397	SHLDR							15	X	4	60.0		
15.400	SHLDR							10	X	2	20.0		
15.403	SHLDR							15	X	4	60.0		
15.406	SHLDR							15	X	4	60.0		
15.411	DL							2	X	2	4.0		
15.411	SHLDR							2	X	2	4.0		
15.413	SHLDR							2	X	2	4.0		
15.416	SHLDR							3	X	3	9.0		
15.418	SHLDR							3	X	2	6.0		
15.419	DL							2	X	2	4.0		
15.419	SHLDR							2	X	2	4.0		
15.420	SHLDR							2	X	2	4.0		
15.426	SHLDR							2	X	2	4.0		
15.440	SHLDR							2	X	2	4.0		
15.452	DL							2	X	2	4.0		
15.452	SHLDR							2	X	2	4.0		
15.460	SHLDR							2	X	2	4.0		
15.475	DL							2	X	2	4.0		
15.475	SHLDR							2	X	2	4.0		
15.484	SHLDR							10	X	2	20.0		
15.488	DL							2	X	2	4.0		
15.494	DL							2	X	2	4.0		
15.496	DL							4	X	2	8.0		
15.497	DL							2	X	2	4.0		
15.497	SHLDR							2	X	2	4.0		
15.499	DL							2	X	2	4.0		
15.500	DL							4	X	2	8.0		
15.505	SHLDR							2	X	2	4.0		
15.507	SHLDR							2	X	2	4.0		
15.519	DL							3	X	3	9.0		
15.519	SHLDR							2	X	2	4.0		
15.521	DL							2	X	2	4.0		
15.524	SHLDR							2	X	2	4.0		
15.527	SHLDR							2	X	2	4.0		
15.529	DL							3	X	3	9.0		
15.529	SHLDR							3	X	3	9.0		
15.529	SHLDR							2	X	2	4.0		
15.530	SHLDR							4	X	2	8.0		
15.545	SHLDR							2	X	2	4.0		
15.557	DL							2	X	2	4.0		
15.557	SHLDR							2	X	2	4.0		
15.558	DL							2	X	2	4.0		
15.561	SHLDR							4	X	2	8.0		
15.562	SHLDR							15	X	2	30.0		

I-29 Northbound

Data Table

RP 15.384 to 15.562



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	51

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.566	DL							15	X	2	30.0		
15.567	SHLDR							2	X	2	4.0		
15.568	DL							15	X	2	30.0		
15.569	PL							2	X	2	4.0		
15.569	SHLDR							2	X	2	4.0		
15.570	DL							15	X	2	30.0		
15.573	DL							8	X	2	16.0		
15.575	SHLDR											4	
15.576	DL							3	X	2	6.0		
15.577	DL							3	X	3	9.0		
15.577	SHLDR							2	X	2	4.0		
15.578	DL							4	X	2	8.0		
15.580	SHLDR							2	X	2	4.0		
15.581	DL							2	X	2	4.0		
15.586	PL							2	X	2	4.0		
15.587	PL							3	X	3	9.0		
15.587	SHLDR							4	X	2	8.0		
15.589	SHLDR							4	X	2	8.0		
15.593	DL							10	X	2	20.0		
15.596	DL	14	X	12	18.7	20							
15.597	SHLDR							2	X	2	4.0		
15.599	DL	19	X	12	25.3	20	12						
15.600	PL							2	X	2	4.0		
15.600	SHLDR							2	X	2	4.0		
15.604	SHLDR							4	X	2	8.0		
15.607	DL							2	X	2	4.0		
15.608	SHLDR							2	X	2	4.0		
15.610	DL							2	X	2	4.0		
15.610	SHLDR							2	X	2	4.0		
15.611	SHLDR							2	X	2	4.0		
15.618	SHLDR							2	X	2	4.0		
15.618	SHLDR							2	X	2	4.0		
15.620	SHLDR							2	X	2	4.0		
15.623	DL							2	X	2	4.0		
15.623	SHLDR							4	X	2	8.0		
15.625	DL							2	X	2	4.0		
15.625	SHLDR							2	X	2	4.0		
15.631	SHLDR							2	X	2	4.0		
15.634	SHLDR							4	X	2	8.0		
15.635	SHLDR							6	X	2	12.0		
15.643	PL							2	X	2	4.0		
15.643	DL							3	X	3	9.0		
15.643	SHLDR							3	X	3	9.0		
15.643	SHLDR							2	X	2	4.0		
15.644	SHLDR							3	X	2	6.0		
15.649	SHLDR							2	X	2	4.0		
15.650	DL							10	X	2	20.0		
15.652	SHLDR							2	X	2	4.0		
15.655	DL							3	X	3	9.0		

I-29 Northbound

Data Table

RP 15.566 to 15.655



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	52

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.655	SHLDR							3	X	3	9.0		
15.659	SHLDR							15	X	2	30.0		
15.663	SHLDR							2	X	2	4.0		
15.666	DL							2	X	2	4.0		
15.669	SHLDR							2	X	2	4.0		
15.672	SHLDR							2	X	2	4.0		
15.674	PL							2	X	2	4.0		
15.674	SHLDR							2	X	2	4.0		
15.677	SHLDR							2	X	2	4.0		
15.679	DL							2	X	2	4.0		
15.679	SHLDR							2	X	2	4.0		
15.681	SHLDR							2	X	2	4.0		
15.682	DL							2	X	2	4.0		
15.682	SHLDR							2	X	2	4.0		
15.683	SHLDR							6	X	2	12.0		
15.688	PL/DL	4	X	27	12.0	40							
15.688	SHLDR											10	
15.695	DL							2	X	2	4.0		
15.697	DL							10	X	2	20.0		
15.698	SHLDR							2	X	2	4.0		
15.699	SHLDR							6	X	2	12.0		
15.700	DL							3	X	3	9.0		
15.700	SHLDR							2	X	2	4.0		
15.703	SHLDR							2	X	2	4.0		
15.707	DL							3	X	3	9.0		
15.707	SHLDR							2	X	2	4.0		
15.710	DL							2	X	2	4.0		
15.710	SHLDR							2	X	2	4.0		
15.714	SHLDR							2	X	2	4.0		
15.715	DL	19	X	12	25.3	20	12						
15.717	SHLDR							2	X	2	4.0		
15.718	SHLDR							2	X	2	4.0		
15.718	SHLDR							2	X	2	4.0		
15.719	DL							2	X	2	4.0		
15.719	SHLDR							4	X	2	8.0		
15.721	PL							3	X	3	9.0		
15.727	SHLDR							2	X	2	4.0		
15.736	DL							3	X	3	9.0		
15.736	SHLDR							2	X	2	4.0		
15.739	SHLDR							2	X	2	4.0		
15.743	SHLDR							2	X	2	4.0		
15.746	SHLDR							2	X	2	4.0		
15.748	DL							2	X	2	4.0		
15.748	SHLDR							2	X	2	4.0		
15.750	DL							2	X	2	4.0		
15.751	DL							2	X	2	4.0		
15.753	SHLDR							2	X	2	4.0		
15.756	DL							3	X	3	9.0		
15.756	SHLDR							3	X	3	9.0		

I-29 Northbound

Data Table

RP 15.655 to 15.756



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	53

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
15.760	DL											6	
15.761	SHLDR							2	X	2	4.0		
15.763	DL							3	X	3	9.0		
15.763	SHLDR							2	X	2	4.0		
15.766	SHLDR							2	X	2	4.0		
15.774	DL							2	X	2	4.0		
15.774	SHLDR							2	X	2	4.0		
15.776	DL							2	X	2	4.0		
15.776	SHLDR							2	X	2	4.0		
15.784	SHLDR							2	X	2	4.0		
15.787	SHLDR							2	X	2	4.0		
15.798	DL							2	X	2	4.0		
15.798	SHLDR							2	X	2	4.0		
15.805	SHLDR							2	X	2	4.0		
15.806	DL							3	X	3	9.0		
15.806	SHLDR							2	X	2	4.0		
15.808	DL							2	X	2	4.0		
15.808	SHLDR							2	X	2	4.0		
15.814	DL							2	X	2	4.0		
15.814	SHLDR							4	X	2	8.0		
15.816	DL							2	X	2	4.0		
15.817	SHLDR							2	X	2	4.0		
15.820	SHLDR							2	X	2	4.0		
15.821	SHLDR							2	X	2	4.0		
15.821	DL							2	X	2	4.0		
15.823	PL							2	X	2	4.0		
15.826	SHLDR							2	X	2	4.0		
15.828	DL							2	X	2	4.0		
15.828	SHLDR							2	X	2	4.0		
15.830	DL							6	X	2	12.0		
15.835	SHLDR							4	X	2	8.0		
15.843	SHLDR							2	X	2	4.0		
15.846	DL							2	X	2	4.0		
15.850	SHLDR							2	X	2	4.0		
15.850	DL							2	X	2	4.0		
15.850	SHLDR							2	X	2	4.0		
Mile 15 Totals					256.7	220.0	84.0				3,743.0	135.0	
16.000	DL							3	X	3	9.0		
16.000	SHLDR							2	X	2	4.0		
16.008	SHLDR							2	X	2	4.0		
16.011	DL							10	X	2	20.0		
16.011	SHLDR							2	X	2	4.0		
16.012	DL							6	X	2	12.0		
16.015	DL							6	X	2	12.0		
16.015	SHLDR							2	X	2	4.0		
16.018	DL							2	X	2	4.0		
16.018	SHLDR							2	X	2	4.0		
16.021	DL							5	X	2	10.0		
16.021	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 15.760 to 16.021



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	54

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.022	DL							2	X	2	4.0		
16.029	DL							2	X	2	4.0		
16.037	DL							3	X	3	9.0		
16.039	DL							2	X	2	4.0		
16.039	SHLDR							2	X	2	4.0		
16.047	DL							2	X	2	4.0		
16.050	DL							3	X	3	9.0		
16.050	SHLDR							2	X	2	4.0		
16.051	DL							5	X	2	10.0		
16.051	SHLDR							2	X	2	4.0		
16.060	DL							4	X	2	8.0		
16.060	DL							2	X	2	4.0		
16.062	SHLDR							2	X	2	4.0		
16.068	DL	8	X	12	10.7	20							
16.068	SHLDR							4	X	3	12.0	6	
16.068	PL							2	X	2	4.0		
16.068	DL							3	X	2	6.0		
16.069	SHLDR							2	X	2	4.0	8	
16.070	SHLDR							2	X	2	4.0		
16.072	SHLDR											10	
16.081	DL							2	X	2	4.0		
16.089	PL							2	X	2	4.0		
16.089	DL							2	X	2	4.0		
16.089	SHLDR							2	X	2	4.0		
16.091	SHLDR							2	X	2	4.0		
16.091	DL							2	X	2	4.0		
16.094	PL							2	X	2	4.0		
16.094	DL							2	X	2	4.0		
16.096	DL							2	X	2	4.0		
16.099	DL							3	X	3	9.0		
16.099	SHLDR							4	X	2	8.0		
16.101	PL							2	X	2	4.0		
16.101	DL							2	X	2	4.0		
16.101	SHLDR							2	X	2	4.0		
16.102	PL	4	X	15	6.7	20							
16.102	DL							2	X	2	4.0		
16.109	DL							2	X	2	4.0		
16.112	PL							2	X	2	4.0		
16.112	SHLDR							2	X	2	4.0		
16.121	DL							2	X	2	4.0		
16.121	SHLDR							2	X	2	4.0		
16.123	SHLDR							2	X	2	4.0		
16.132	SHLDR							2	X	2	4.0		
16.134	SHLDR							2	X	2	4.0		
16.140	SHLDR							2	X	2	4.0		
16.140	PL							2	X	2	4.0		
16.141	SHLDR							2	X	2	4.0		
16.144	DL							2	X	2	4.0		
16.144	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 16.022 to 16.144



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	55

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.148	DL							12	X	2	24.0		
16.154	DL							10	X	2	20.0		
16.154	PL							4	X	2	8.0		
16.154	SHLDR							2	X	2	4.0		
16.155	DL							15	X	2	30.0		
16.159	DL							3	X	3	9.0		
16.159	PL							3	X	3	9.0		
16.160	DL							10	X	2	20.0		
16.160	SHLDR							2	X	2	4.0		
16.162	DL							2	X	2	4.0		
16.164	DL							15	X	2	30.0		
16.166	PL							2	X	2	4.0		
16.166	SHLDR							2	X	2	4.0		
16.167	DL							4	X	2	8.0		
16.169	DL							3	X	3	9.0		
16.170	DL							10	X	3	30.0		
16.171	PL							4	X	2	8.0		
16.171	SHLDR							2	X	2	4.0		
16.172	DL							10	X	2	20.0		
16.173	DL							2	X	2	4.0		
16.174	DL							3	X	2	6.0		
16.175	DL							3	X	3	9.0		
16.177	DL							3	X	2	6.0		
16.178	DL							2	X	2	4.0		
16.178	SHLDR							2	X	2	4.0		
16.180	DL							3	X	3	9.0		
16.180	SHLDR							4	X	2	8.0		
16.180	DL							2	X	2	4.0		
16.182	DL							3	X	3	9.0		
16.183	DL							4	X	2	8.0		
16.187	SHLDR							2	X	2	4.0		
16.188	SHLDR							4	X	2	8.0		
16.190	DL							2	X	2	4.0		
16.190	SHLDR							4	X	2	8.0		
16.191	DL							2	X	2	4.0		
16.192	DL							2	X	2	4.0		
16.192	SHLDR							2	X	2	4.0		
16.194	DL							2	X	2	4.0		
16.195	SHLDR							2	X	2	4.0		
16.195	DL							2	X	2	4.0		
16.197	SHLDR							2	X	2	4.0		
16.199	DL							5	X	3	15.0		
16.199	SHLDR							2	X	2	4.0		
16.200	DL							6	X	2	12.0		
16.201	DL							2	X	2	4.0		
16.201	SHLDR							4	X	2	8.0		
16.208	DL							2	X	2	4.0		
16.209	PL							2	X	2	4.0		
16.209	DL							3	X	3	9.0		

I-29 Northbound

Data Table

RP 16.148 to 16.209



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	56

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.211	DL							12	X	3	36.0		
16.213	DL							15	X	3	45.0		
16.214	SHLDR							2	X	2	4.0		
16.215	DL							15	X	3	45.0		
16.216	SHLDR							2	X	2	4.0		
16.217	DL							15	X	3	45.0		
16.218	SHLDR							2	X	2	4.0		
16.219	DL							12	X	2	24.0		
16.223	SHLDR							2	X	2	4.0		
16.225	DL							3	X	3	9.0		
16.225	SHLDR							4	X	2	8.0		
16.228	PL							2	X	2	4.0		
16.228	DL							3	X	3	9.0		
16.228	SHLDR							2	X	2	4.0		
16.229	DL							12	X	2	24.0		
16.230	DL							3	X	3	9.0		
16.232	SHLDR							2	X	2	4.0		
16.232	SHLDR							2	X	2	4.0		
16.233	DL							15	X	2	30.0		
16.234	SHLDR							2	X	2	4.0		
16.234	DL							2	X	4	8.0		
16.235	DL							12	X	2	24.0		
16.236	SHLDR							4	X	2	8.0		
16.236	PL							2	X	2	4.0		
16.237	DL							12	X	2	24.0		
16.237	DL							3	X	3	9.0		
16.237	DL							2	X	3	6.0		
16.238	DL							13	X	2	26.0		
16.239	SHLDR							2	X	2	4.0		
16.240	DL							4	X	2	8.0		
16.241	SHLDR							2	X	2	4.0		
16.241	PL/DL	6	X	27	18.0	40							
16.243	DL							2	X	2	4.0		
16.243	SHLDR							2	X	2	4.0		
16.249	DL							2	X	2	4.0		
16.249	SHLDR							2	X	2	4.0		
16.250	DL							3	X	3	9.0		
16.250	SHLDR							2	X	2	4.0		
16.253	SHLDR							2	X	2	4.0		
16.258	SHLDR							2	X	2	4.0		
16.260	SHLDR							2	X	2	4.0		
16.272	SHLDR							2	X	2	4.0		
16.276	DL							10	X	2	20.0		
16.276	PL							2	X	2	4.0		
16.276	SHLDR							2	X	2	4.0		
16.279	SHLDR							2	X	2	4.0		
16.279	DL							2	X	2	4.0		
16.281	PL							2	X	2	4.0		
16.287	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 16.211 to 16.287



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	57

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.288	SHLDR							2	X	2	4.0		
16.290	SHLDR							2	X	2	4.0		
16.294	DL							3	X	3	9.0		
16.294	PL							2	X	2	4.0		
16.295	SHLDR							2	X	2	4.0		
16.298	DL							3	X	3	9.0		
16.298	SHLDR							3	X	3	9.0		
16.298	SHLDR							2	X	2	4.0		
16.300	SHLDR							2	X	2	4.0		
16.302	DL							4	X	2	8.0		
16.304	DL							4	X	2	8.0		
16.304	DL							12	X	2	24.0		
16.306	PL							2	X	2	4.0		
16.306	SHLDR							2	X	2	4.0		
16.306	PL							4	X	2	8.0		
16.306	DL							15	X	2	30.0		
16.307	PL							2	X	2	4.0		
16.307	DL							3	X	3	9.0		
16.307	DL							15	X	2	30.0		
16.310	PL							2	X	2	4.0		
16.312	DL							15	X	2	30.0		
16.312	DL							2	X	2	4.0		
16.312	PL							2	X	2	4.0		
16.314	DL							12	X	2	24.0		
16.314	SHLDR							2	X	2	4.0		
16.317	DL							15	X	2	30.0		
16.317	SHLDR							2	X	2	4.0		
16.323	PL							2	X	2	4.0		
16.325	DL							3	X	3	9.0		
16.325	SHLDR							2	X	2	4.0		
16.325	PL							2	X	2	4.0		
16.325	DL							3	X	3	9.0		
16.325	SHLDR							2	X	2	4.0		
16.327	DL							15	X	2	30.0		
16.327	PL							2	X	2	4.0		
16.329	DL							10	X	2	20.0		
16.329	SHLDR							2	X	2	4.0		
16.332	DL							3	X	3	9.0		
16.332	SHLDR							2	X	2	4.0		
16.335	DL							3	X	3	9.0		
16.335	SHLDR							2	X	2	4.0		
16.337	DL							2	X	2	4.0		
16.337	DL							2	X	2	4.0		
16.339	SHLDR							2	X	2	4.0		
16.339	DL							2	X	2	4.0		
16.341	DL							2	X	2	4.0		
16.341	SHLDR							2	X	2	4.0		
16.344	DL							2	X	2	4.0		
16.344	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 16.288 to 16.344



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	58

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
16.346	SHLDR							4	X	2	8.0		
16.346	PL							2	X	2	4.0		
16.351	DL							2	X	2	4.0		
16.351	SHLDR							2	X	2	4.0		
16.353	DL							3	X	3	9.0		
16.353	SHLDR							2	X	2	4.0		
16.366	DL							2	X	2	4.0		
16.366	SHLDR							2	X	2	4.0		
16.373	DL	19	X	12	25.3	20	12						
16.377	SHLDR							2	X	2	4.0		
16.379	DL							3	X	3	9.0		
16.379	SHLDR							2	X	2	4.0		
16.380	DL							15	X	3	45.0		
16.380	DL	4	X	12	5.3	20							
16.380	DL	6	X	12	8.0	20							
16.383	DL							3	X	3	9.0		
16.383	SHLDR							2	X	2	4.0		
16.385	DL							2	X	2	4.0		
16.385	SHLDR							2	X	2	4.0		
16.385	PL							2	X	2	4.0		
16.396	DL							3	X	3	9.0		
16.396	SHLDR							2	X	2	4.0		
16.398	DL							2	X	2	4.0		
16.398	SHLDR							2	X	2	4.0		
16.403	SHLDR							2	X	2	4.0		
16.405	DL							2	X	2	4.0		
16.405	DL							2	X	2	4.0		
16.405	SHLDR							2	X	2	4.0		
16.413	DL							2	X	2	4.0		
16.413	SHLDR							2	X	2	4.0		
16.415	DL							3	X	3	9.0		
Mile 16 Totals					74.0	140.0	12.0				1,896.0	24.0	
17.092	SHLDR							2	X	2	4.0		
17.092	PL							2	X	3	6.0		
17.093	DL	4	X	12	5.3	20							
17.094	PL							2	X	15	30.0		
17.094	SHLDR	15	X	10	16.7								
17.095	PL							2	X	3	6.0		
17.096	SHLDR	30	X	10	33.3								
17.097	PL							2	X	15	30.0		
17.098	DL											12	
17.101	SHLDR							15	X	2	30.0		
17.103	PL							4	X	2	8.0		
17.104	SHLDR							16	X	2	32.0		
17.104	PL							2	X	3	6.0		
17.106	PL							4	X	4	16.0		
17.107	DL											12	
17.107	SHLDR							15	X	2	30.0		
17.109	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 16.346 to 17.109



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	59

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.110	DL							2	X	2	4.0		
17.110	DL							3	X	3	9.0		
17.110	SHLDR							2	X	2	4.0		
17.113	DL							2	X	2	4.0		
17.113	PL							2	X	2	4.0		
17.114	DL							15	X	2	30.0		
17.116	SHLDR							15	X	2	30.0		
17.118	DL							2	X	2	4.0		
17.118	SHLDR							2	X	2	4.0		
17.119	DL							15	X	2	30.0		
17.119	DL							3	X	3	9.0		
17.119	SHLDR							4	X	4	16.0		
17.120	DL							13	X	2	26.0		
17.122	DL							2	X	2	4.0		
17.123	DL							13	X	2	26.0		
17.124	DL							3	X	3	9.0		
17.125	DL							13	X	2	26.0		
17.126	PL							2	X	2	4.0		
17.126	DL							13	X	2	26.0		
17.126	SHLDR							2	X	2	4.0		
17.127	SHLDR							13	X	2	26.0		
17.127	DL							3	X	3	9.0		
17.127	SHLDR							3	X	3	9.0		
17.128	SHLDR							13	X	2	26.0		
17.130	PL							4	X	2	8.0		
17.130	SHLDR							2	X	2	4.0		
17.131	DL							10	X	2	20.0		
17.135	DL							3	X	3	9.0		
17.135	SHLDR							2	X	2	4.0		
17.137	PL							3	X	3	9.0		
17.137	DL							5	X	2	10.0		
17.138	DL							2	X	2	4.0		
17.139	DL							4	X	2	8.0		
17.139	SHLDR							4	X	2	8.0		
17.142	DL							8	X	2	16.0		
17.142	DL							3	X	3	9.0		
17.143	DL							13	X	2	26.0		
17.143	DL							3	X	3	9.0		
17.143	SHLDR							2	X	2	4.0		
17.144	PL							4	X	4	16.0		
17.145	DL							15	X	2	30.0		
17.146	SHLDR							2	X	2	4.0		
17.146	PL							2	X	2	4.0		
17.149	DL							10	X	2	20.0		
17.149	PL							2	X	2	4.0		
17.149	SHLDR							2	X	2	4.0		
17.151	DL							15	X	2	30.0		
17.153	DL							15	X	2	30.0		
17.153	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.110 to 17.153



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	60

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.156	DL							13	X	2	26.0		
17.157	DL							2	X	2	4.0		
17.157	SHLDR							2	X	2	4.0		
17.158	DL							10	X	2	20.0		
17.161	DL							4	X	2	8.0		
17.163	DL							4	X	2	8.0		
17.166	DL							15	X	2	30.0		
17.169	DL							10	X	2	20.0		
17.170	DL							2	X	2	4.0		
17.171	DL							12	X	2	24.0		
17.171	DL							3	X	3	9.0		
17.173	DL							2	X	2	4.0		
17.174	DL							15	X	2	30.0		
17.176	DL							12	X	2	24.0		
17.177	DL							3	X	3	9.0		
17.177	SHLDR							2	X	2	4.0		
17.178	DL							10	X	2	20.0		
17.178	DL							3	X	3	9.0		
17.181	DL							10	X	2	20.0		
17.183	DL							15	X	2	30.0		
17.184	SHLDR							2	X	2	4.0		
17.186	DL							15	X	2	30.0		
17.187	SHLDR							2	X	2	4.0		
17.188	DL							15	X	2	30.0		
17.188	SHLDR							2	X	2	4.0		
17.194	DL							4	X	2	8.0		
17.197	DL							4	X	2	8.0		
17.197	SHLDR							2	X	2	4.0		
17.197	DL							10	X	2	20.0		
17.200	DL							3	X	3	9.0		
17.202	DL							2	X	2	4.0		
17.203	DL							8	X	2	16.0		
17.205	DL							12	X	2	24.0		
17.206	DL							3	X	3	9.0		
17.206	SHLDR							2	X	2	4.0		
17.207	DL							15	X	2	30.0		
17.209	SHLDR							2	X	2	4.0		
17.209	DL							3	X	2	6.0		
17.214	DL							4	X	2	8.0		
17.219	DL							3	X	2	6.0		
17.240	SHLDR							2	X	2	4.0		
17.243	DL							2	X	2	4.0		
17.243	SHLDR							2	X	2	4.0		
17.243	DL							15	X	2	30.0		
17.244	PL							2	X	2	4.0		
17.244	SHLDR							2	X	2	4.0		
17.248	DL							15	X	2	30.0		
17.248	SHLDR							2	X	2	4.0		
17.248	PL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.156 to 17.248



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	61

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.252	DL							2	X	2	4.0		
17.252	SHLDR							2	X	3	6.0		
17.254	DL							2	X	2	4.0		
17.254	SHLDR							2	X	2	4.0		
17.257	PL/DL/SHLDR	5	X	37	20.6	40							
17.258	SHLDR							4	X	2	8.0		
17.260	PL							3	X	3	9.0		
17.262	SHLDR							4	X	2	8.0		
17.264	PL							4	X	2	8.0		
17.269	SHLDR							2	X	2	4.0		
17.271	SHLDR							4	X	2	8.0		
17.274	SHLDR							4	X	4	16.0		
17.277	SHLDR							4	X	4	16.0		
17.280	SHLDR							4	X	2	8.0		
17.282	SHLDR							4	X	2	8.0		
17.284	SHLDR							4	X	2	8.0		
17.286	DL							6	X	2	12.0		
17.292	DL							2	X	2	4.0		
17.292	SHLDR							2	X	2	4.0		
17.295	DL							2	X	2	4.0		
17.304	DL							2	X	2	4.0		
17.306	DL							2	X	2	4.0		
17.310	DL							2	X	2	4.0		
17.315	DL							2	X	2	4.0		
17.317	DL							2	X	2	4.0		
17.320	DL							2	X	2	4.0		
17.324	DL							2	X	2	4.0		
17.326	DL							2	X	2	4.0		
17.332	DL							3	X	3	9.0		
17.345	DL							2	X	2	4.0		
17.347	DL							2	X	2	4.0		
17.356	DL							2	X	2	4.0		
17.359	DL							3	X	3	9.0		
17.364	DL							2	X	2	4.0		
17.367	DL							2	X	2	4.0		
17.379	DL							2	X	2	4.0		
17.384	DL							2	X	2	4.0		
17.387	DL							4	X	2	8.0		
17.390	DL							2	X	2	4.0		
17.392	DL							2	X	2	4.0		
17.392	SHLDR							2	X	2	4.0		
17.397	DL							2	X	2	4.0		
17.400	DL							2	X	2	4.0		
17.408	DL							2	X	2	4.0		
17.411	DL							2	X	2	4.0		
17.413	DL							4	X	3	12.0		
17.422	DL							2	X	2	4.0		
17.434	DL							2	X	2	4.0		
17.434	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.252 to 17.434



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	62

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.436	DL							2	X	2	4.0		
17.440	DL							2	X	2	4.0		
17.445	DL							2	X	2	4.0		
17.450	DL							2	X	2	4.0		
17.453	DL							2	X	2	4.0		
17.456	DL							2	X	2	4.0		
17.465	DL							2	X	2	4.0		
17.468	DL							3	X	3	9.0		
17.473	DL							2	X	2	4.0		
17.474	DL							2	X	2	4.0		
17.476	DL							12	X	2	24.0		
17.477	DL							2	X	2	4.0		
17.481	DL							2	X	2	4.0		
17.489	DL							4	X	2	8.0		
17.491	DL							3	X	3	9.0		
17.493	DL							2	X	2	4.0		
17.499	DL							2	X	2	4.0		
17.499	SHLDR							2	X	2	4.0		
17.502	DL							2	X	2	4.0		
17.511	DL							3	X	3	9.0		
17.513	DL							3	X	3	9.0		
17.513	DL							6	X	2	12.0		
17.516	DL							2	X	2	4.0		
17.519	DL							2	X	2	4.0		
17.521	PL							2	X	2	4.0		
17.527	PL							2	X	2	4.0		
17.530	PL							2	X	2	4.0		
17.532	PL							2	X	2	4.0		
17.534	PL							2	X	2	4.0		
17.534	PL							2	X	2	4.0		
17.543	DL							2	X	2	4.0		
17.546	DL							2	X	2	4.0		
17.555	DL							2	X	2	4.0		
17.556	DL							2	X	2	4.0		
17.557	DL							2	X	2	4.0		
17.557	PL							2	X	2	4.0		
17.559	DL							2	X	2	4.0		
17.559	DL							2	X	2	4.0		
17.562	DL							2	X	2	4.0		
17.564	DL							3	X	3	9.0		
17.564	PL							2	X	2	4.0		
17.573	DL							4	X	2	8.0		
17.575	DL							2	X	2	4.0		
17.578	DL							2	X	2	4.0		
17.581	PL							2	X	2	4.0		
17.584	DL							4	X	2	8.0		
17.589	DL							2	X	2	4.0		
17.594	DL							2	X	2	4.0		
17.600	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.436 to 17.600



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	63

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.609	DL							2	X	2	4.0		
17.612	DL							3	X	3	9.0		
17.617	PL/DL	5	X	27	15.0	40							
17.619	DL							10	X	2	20.0		
17.623	DL							4	X	2	8.0		
17.626	DL							2	X	2	4.0		
17.627	DL							2	X	2	4.0		
17.628	DL							2	X	2	4.0		
17.630	DL							8	X	2	16.0		
17.631	SHLDR							2	X	2	4.0		
17.631	DL							2	X	2	4.0		
17.633	DL							2	X	2	4.0		
17.635	DL							6	X	2	12.0		
17.639	DL							3	X	3	9.0		
17.641	DL							3	X	3	9.0		
17.644	DL							15	X	2	30.0		
17.646	DL							6	X	2	12.0		
17.646	DL							3	X	3	9.0		
17.648	DL							10	X	2	20.0		
17.652	DL							3	X	3	9.0		
17.655	DL							2	X	2	4.0		
17.674	DL							2	X	2	4.0		
17.677	DL							3	X	3	9.0		
17.677	DL							2	X	4	8.0		
17.679	DL							2	X	2	4.0		
17.686	DL							2	X	4	8.0		
17.689	DL							3	X	3	9.0		
17.691	DL	4	X	12	5.3	20							
17.691	DL	4	X	12	5.3	20							
17.693	DL							4	X	2	8.0		
17.695	DL	4	X	12	5.3	20							
17.699	DL							2	X	2	4.0		
17.702	DL							2	X	2	4.0		
17.704	PL							2	X	2	4.0		
17.710	PL							2	X	3	6.0		
17.710	DL							2	X	2	4.0		
17.713	DL							2	X	2	4.0		
17.715	PL							2	X	2	4.0		
17.718	DL							2	X	3	6.0		
17.724	DL							2	X	2	4.0		
17.726	DL							3	X	3	9.0		
17.726	DL							2	X	2	4.0		
17.729	DL							3	X	3	9.0		
17.739	PL	8	X	15	13.3	20							
17.741	DL							2	X	2	4.0		
17.744	DL							2	X	2	4.0		
17.746	DL							2	X	2	4.0		
17.749	DL							3	X	3	9.0		
17.751	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.609 to 17.751



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	64

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
17.754	DL							2	X	2	4.0		
17.759	DL							2	X	2	4.0		
17.769	DL							4	X	2	8.0		
17.771	DL							3	X	3	9.0		
17.774	DL							2	X	4	8.0		
17.774	DL							3	X	3	9.0		
17.775	DL							8	X	2	16.0		
17.777	DL							3	X	3	9.0		
17.777	DL							2	X	2	4.0		
17.782	DL							3	X	3	9.0		
17.782	DL							4	X	2	8.0		
17.785	DL							2	X	2	4.0		
17.785	DL							2	X	2	4.0		
17.794	DL							3	X	3	9.0		
17.797	DL							3	X	3	9.0		
17.797	PL							2	X	2	4.0		
17.808	DL							2	X	2	4.0		
17.820	DL							2	X	2	4.0		
17.820	DL							3	X	3	9.0		
17.829	DL							2	X	2	4.0		
17.832	DL							3	X	3	9.0		
17.839	DL							4	X	2	8.0		
17.839	DL							2	X	2	4.0		
17.840	DL							2	X	2	4.0		
17.844	DL							3	X	3	9.0		
17.850	PL							2	X	2	4.0		
17.852	PL							2	X	2	4.0		
17.868	DL							2	X	2	4.0		
Mile 17 Totals					120.2	180.0	-				2,525.0	24.0	
18.003	DL							2	X	2	4.0		
18.006	DL							3	X	3	9.0		
18.016	DL							4	X	3	12.0		
18.018	DL							2	X	2	4.0		
18.027	DL							3	X	4	12.0		
18.032	PL							2	X	2	4.0		
18.034	PL							2	X	2	4.0		Weigh check area
18.034	DL							2	X	2	4.0		
18.037	DL							2	X	2	4.0		
18.040	DL							2	X	2	4.0		
18.043	DL							3	X	3	9.0		
18.043	PL							2	X	4	8.0		
18.052	DL							2	X	2	4.0		
18.055	DL							4	X	2	8.0		
18.057	DL							6	X	2	12.0		
18.060	DL							2	X	2	4.0		
18.069	DL							2	X	2	4.0		
18.069	DL							2	X	2	4.0		
18.072	DL							2	X	2	4.0		
18.075	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 17.754 to 18.075



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	65

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.076	PL/DL	4	X	27	12.0	40.0							
18.077	DL							2	X	2	4.0		
18.080	DL							2	X	2	4.0		
18.084	DL							2	X	2	4.0		
18.093	DL							2	X	2	4.0		
18.096	DL							2	X	2	4.0		
18.106	PL							2	X	2	4.0		
18.108	PL							4	X	2	8.0		
18.108	DL							2	X	4	8.0		
18.122	DL							4	X	2	8.0		
18.125	DL							2	X	2	4.0		
18.125	SHLDR							2	X	2	4.0		
18.131	SHLDR							2	X	2	4.0		
18.134	SHLDR							2	X	2	4.0		
18.136	SHLDR							2	X	2	4.0		
18.147	SHLDR							2	X	2	4.0		
18.153	SHLDR							2	X	2	4.0		
18.156	PL							2	X	2	4.0		
18.156	SHLDR							2	X	2	4.0		
18.158	SHLDR							2	X	2	4.0		
18.167	SHLDR							4	X	2	8.0		
18.175	SHLDR							6	X	3	18.0		
18.185	SHLDR							2	X	2	4.0		
18.187	SHLDR							3	X	3	9.0		
18.189	SHLDR							4	X	2	8.0		
18.196	SHLDR							2	X	2	4.0		
18.198	SHLDR							4	X	2	8.0		
18.198	DL							2	X	2	4.0		
18.200	SHLDR							5	X	2	10.0		
18.203	SHLDR							2	X	2	4.0		
18.206	SHLDR							2	X	2	4.0		
18.211	SHLDR							2	X	2	4.0		
18.214	SHLDR							2	X	2	4.0		
18.219	SHLDR							2	X	2	4.0		
18.222	SHLDR							2	X	2	4.0		
18.232	SHLDR							2	X	2	4.0		
18.235	DL							2	X	2	4.0		
18.235	SHLDR							2	X	2	4.0		
18.243	SHLDR							2	X	2	4.0		
18.247	SHLDR							3	X	3	9.0		
18.255	SHLDR							2	X	2	4.0		
18.259	DL							3	X	3	9.0		
18.259	SHLDR							2	X	2	4.0		
18.270	DL							2	X	2	4.0		
18.270	SHLDR							2	X	2	4.0		
18.282	SHLDR							6	X	6	36.0		
18.287	SHLDR							2	X	2	4.0		
18.290	SHLDR							2	X	2	4.0		
18.293	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 18.076 to 18.293



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	66

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.302	SHLDR							2	X	2	4.0		
18.305	SHLDR							2	X	2	4.0	8.0	
18.306	SHLDR							4	X	3	12.0		
18.308	DL							2	X	2	4.0		
18.313	SHLDR							2	X	2	4.0		
18.315	SHLDR							2	X	2	4.0		
18.321	SHLDR							2	X	2	4.0		
18.328	SHLDR							2	X	2	4.0		
18.334	SHLDR							3	X	3	9.0		
18.336	SHLDR							2	X	2	4.0		
18.344	SHLDR							3	X	3	9.0		
18.347	SHLDR							2	X	2	4.0		
18.352	DL							2	X	2	4.0		
18.352	DL							2	X	2	4.0		
18.354	SHLDR							2	X	2	4.0		
18.357	DL							3	X	3	9.0		
18.357	SHLDR							2	X	2	4.0		
18.359	SHLDR							2	X	2	4.0		
18.391	DL							2	X	2	4.0		
18.392	SHLDR							2	X	2	4.0		
18.394	SHLDR							2	X	2	4.0		
18.402	DL							3	X	3	9.0		
18.402	SHLDR							4	X	3	12.0		
18.403	DL							3	X	3	9.0		
18.403	SHLDR							4	X	3	12.0		
18.404	SHLDR							4	X	2	8.0		
18.408	SHLDR							4	X	2	8.0		
18.411	SHLDR							4	X	2	8.0		
18.413	SHLDR							4	X	2	8.0		
18.415	SHLDR							4	X	2	8.0		
18.419	SHLDR							6	X	2	12.0		
18.421	SHLDR							5	X	3	15.0		
18.423	SHLDR							2	X	2	4.0		
18.426	SHLDR							4	X	2	8.0		
18.427	SHLDR							2	X	2	4.0		
18.428	DL							2	X	2	4.0		
18.436	SHLDR							2	X	2	4.0		
18.439	SHLDR							2	X	2	4.0		
18.444	SHLDR							4	X	3	12.0		
18.447	DL	4	X	12	5.3	20							
18.447	SHLDR							2	X	2	4.0		
18.453	SHLDR							4	X	2	8.0		
18.455	SHLDR							4	X	2	8.0		
18.461	SHLDR							4	X	2	8.0		
18.463	SHLDR							2	X	2	4.0		
18.466	SHLDR							2	X	2	4.0		
18.470	SHLDR							2	X	2	4.0		
18.476	SHLDR							2	X	2	4.0		
18.479	SHLDR							4	X	2	8.0		

I-29 Northbound

Data Table

RP 18.302 to 18.479



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	67

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.488	DL							2	X	2	4.0		
18.488	SHLDR							4	X	2	8.0		
18.499	SHLDR							4	X	3	12.0		
18.501	SHLDR							2	X	2	4.0		
18.503	SHLDR							2	X	2	4.0		
18.510	SHLDR							3	X	3	9.0		
18.513	SHLDR							4	X	3	12.0		
18.513	DL							2	X	2	4.0		
18.514	SHLDR							4	X	2	8.0		
18.516	SHLDR							2	X	2	4.0		
18.520	SHLDR							2	X	2	4.0		
18.522	SHLDR							2	X	2	4.0		
18.529	DL	4	X	12	5.3	20							
18.532	DL							2	X	2	4.0		
18.532	SHLDR							3	X	3	9.0		
18.535	SHLDR							4	X	3	12.0		
18.536	SHLDR							4	X	2	8.0		
18.537	SHLDR							2	X	2	4.0		
18.541	SHLDR							4	X	2	8.0		
18.544	SHLDR							3	X	3	9.0		
18.544	SHLDR							2	X	2	4.0		
18.547	SHLDR							3	X	3	9.0		
18.556	SHLDR							2	X	2	4.0		
18.566	SHLDR							2	X	2	4.0		
18.571	SHLDR							2	X	2	4.0		
18.572	SHLDR							2	X	2	4.0		
18.577	SHLDR							4	X	2	8.0		
18.579	SHLDR							2	X	2	4.0		
18.581	SHLDR							2	X	2	4.0		
18.585	SHLDR							2	X	2	4.0		
18.585	DL							2	X	2	4.0		
18.587	DL							2	X	2	4.0		
18.587	SHLDR							4	X	3	12.0		
18.589	SHLDR							2	X	2	4.0		
18.589	DL							2	X	3	6.0		
18.589	SHLDR							4	X	3	12.0		
18.596	SHLDR							2	X	2	4.0		
18.597	SHLDR							4	X	2	8.0		
18.597	DL							2	X	2	4.0		
18.600	SHLDR							4	X	2	8.0		
18.607	SHLDR							2	X	2	4.0		
18.611	SHLDR							2	X	2	4.0		
18.621	PL							2	X	2	4.0		
18.621	DL							3	X	3	9.0		
18.621	SHLDR							4	X	2	8.0		
18.623	SHLDR							4	X	2	8.0		
18.623	SHLDR							2	X	2	4.0		
18.625	SHLDR							2	X	2	4.0		
18.628	SHLDR							4	X	2	8.0		

I-29 Northbound

Data Table

RP 18.488 to 18.628



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	68

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.630	SHLDR							4	X	2	8.0		
18.634	SHLDR							2	X	2	4.0	4	
18.635	SHLDR							6	X	3	18.0		
18.635	PL							2	X	2	4.0		
18.638	DL							3	X	3	9.0		
18.638	SHLDR							4	X	3	12.0		
18.640	SHLDR							4	X	2	8.0		
18.644	SHLDR							4	X	2	8.0		
18.647	PL							2	X	2	4.0		
18.647	SHLDR							2	X	2	4.0		
18.650	SHLDR							4	X	3	12.0		
18.652	SHLDR							4	X	2	8.0		
18.654	SHLDR							2	X	2	4.0		
18.656	SHLDR							4	X	2	8.0		
18.659	DL							2	X	2	4.0		
18.659	SHLDR							4	X	2	8.0		
18.661	SHLDR							4	X	2	8.0		
18.662	SHLDR							4	X	2	8.0		
18.665	SHLDR							6	X	2	12.0		
18.669	SHLDR							2	X	2	4.0		
18.670	SHLDR							4	X	2	8.0		
18.673	SHLDR							4	X	2	8.0		
18.676	DL							3	X	3	9.0		
18.676	SHLDR							10	X	2	20.0		
18.681	SHLDR							4	X	2	8.0		
18.682	SHLDR							2	X	2	4.0		
18.683	SHLDR							2	X	2	4.0		
18.687	SHLDR												
18.690	SHLDR							4	X	2	8.0		
18.692	DL							2	X	5	10.0		
18.692	SHLDR							8	X	2	16.0		
18.695	DL							2	X	4	8.0		
18.695	SHLDR							10	X	3	30.0		
18.696	PL							3	X	3	9.0		
18.700	DL							5	X	2	10.0		
18.700	SHLDR							5	X	2	10.0		
18.702	PL							4	X	15	60.0		
18.702	SHLDR							2	X	2	4.0		
18.704	SHLDR							20	X	2	40.0		
18.707	PL							2	X	2	4.0		
18.707	PL							2	X	2	4.0		
18.709	DL							2	X	2	4.0		
18.709	SHLDR							6	X	3	18.0		
18.712	SHLDR							4	X	2	8.0		
18.712	PL							2	X	2	4.0		
18.714	DL							2	X	2	4.0		
18.714	PL							2	X	2	4.0		
18.714	SHLDR							4	X	2	8.0		
18.717	SHLDR							4	X	2	8.0		

I-29 Northbound

Data Table

RP 18.630 to 18.717



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	69

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.719	SHLDR							2	X	2	4.0		
18.721	PL	4	X	15	6.7	20							
18.723	PL/DL	4	X	27	12.0	40						6	
18.729	SHLDR							2	X	2	4.0		
18.730	SHLDR							4	X	2	8.0		
18.733	SHLDR							2	X	2	4.0		
18.735	PL	4	X	15	6.7	20							
18.743	SHLDR							4	X	3	12.0		
18.745	SHLDR							2	X	2	4.0		
18.748	SHLDR							4	X	2	8.0		
18.750	SHLDR							4	X	2	8.0		
18.753	SHLDR							2	X	2	4.0		
18.754	DL							2	X	2	4.0		
18.754	SHLDR							4	X	2	8.0		
18.758	SHLDR							2	X	2	4.0		
18.760	SHLDR							2	X	2	4.0		
18.762	SHLDR							2	X	2	4.0		
18.762	DL							2	X	2	4.0		
18.765	SHLDR							2	X	2	4.0		
18.767	SHLDR							2	X	2	4.0		
18.770	SHLDR							4	X	2	8.0		
18.773	SHLDR							4	X	3	12.0		
18.774	SHLDR							2	X	2	4.0		
18.775	SHLDR							2	X	2	4.0		
18.778	SHLDR							4	X	2	8.0		
18.778	SHLDR							2	X	2	4.0		
18.779	SHLDR							4	X	2	8.0		
18.781	DL							2	X	2	4.0		
18.781	SHLDR							2	X	2	4.0		
18.783	SHLDR							2	X	2	4.0		
18.783	DL							2	X	2	4.0		
18.783	SHLDR							5	X	2	10.0		
18.785	PL							2	X	4	8.0		
18.785	SHLDR							8	X	2	16.0		
18.791	SHLDR							2	X	2	4.0		
18.791	SHLDR							2	X	2	4.0		
18.793	SHLDR							4	X	2	8.0		
18.802	SHLDR							4	X	2	8.0		
18.802	DL							2	X	2	4.0		
18.804	DL							3	X	3	9.0		
18.804	SHLDR							4	X	3	12.0		
18.809	SHLDR							4	X	2	8.0		
18.810	DL							6	X	3	18.0		
18.813	DL							2	X	2	4.0		
18.815	DL							2	X	2	4.0		
18.815	SHLDR							5	X	3	15.0		
18.817	SHLDR							2	X	2	4.0		
18.819	DL							2	X	2	4.0		
18.819	SHLDR							5	X	2	10.0		

I-29 Northbound

Data Table

RP 18.719 to 18.819



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	70

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
18.821	PL							2	X	2	4.0		
18.821	DL							2	X	4	8.0		
18.821	DL							2	X	2	4.0		
18.821	SHLDR							4	X	2	8.0		
18.822	SHLDR							2	X	2	4.0		
18.823	DL							2	X	2	4.0		
18.823	SHLDR							4	X	2	8.0		
18.828	DL							4	X	2	8.0		
18.828	SHLDR							2	X	2	4.0		
18.831	SHLDR							2	X	2	4.0		
18.840	DL							2	X	2	4.0		
18.840	SHLDR							3	X	3	9.0		
18.842	DL							2	X	2	4.0		
18.842	SHLDR							2	X	2	4.0		
18.845	PL							2	X	2	4.0		
18.850	DL							2	X	2	4.0		
18.853	DL							2	X	2	4.0		
18.861	DL							2	X	2	4.0		
18.864	DL							2	X	2	4.0		
18.864	SHLDR							2	X	2	4.0		
18.865	DL							2	X	2	4.0		
Mile 18 Totals					48.0	160.0	-				1,910.0	18.0	
19.003	DL							2	X	2	4.0		
19.003	SHLDR							2	X	2	4.0		
19.006	SHLDR							2	X	2	4.0		
19.009	DL							3	X	2	6.0		
19.011	PL							2	X	2	4.0		
19.011	SHLDR							2	X	2	4.0		
19.014	DL							2	X	2	4.0		
19.014	SHLDR							2	X	2	4.0		
19.017	DL							2	X	2	4.0		
19.017	SHLDR							2	X	2	4.0		
19.019	DL							2	X	2	4.0		
19.025	SHLDR							2	X	2	4.0		
19.031	PL							2	X	2	4.0		
19.034	DL							2	X	2	4.0		
19.035	PL							2	X	2	4.0		
19.036	SHLDR							2	X	2	4.0		
19.039	DL							3	X	3	9.0		
19.039	SHLDR							3	X	3	9.0		
19.047	DL							3	X	3	9.0		
19.059	DL							2	X	2	4.0		
19.059	SHLDR							2	X	2	4.0		
19.062	DL							2	X	2	4.0		
19.064	DL							2	X	2	4.0		
19.067	DL							2	X	2	4.0		
19.067	SHLDR							2	X	2	4.0		
19.072	SHLDR							2	X	2	4.0		
19.075	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 18.821 to 19.075



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	71

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.077	DL							2	X	2	4.0		
19.077	SHLDR							2	X	2	4.0		
19.079	DL							2	X	2	4.0		
19.079	SHLDR							2	X	2	4.0		
19.081	DL							2	X	2	4.0		
19.083	PL	4	X	15	6.7	20							
19.086	SHLDR							2	X	2	4.0		
19.087	DL							2	X	2	4.0		
19.098	SHLDR							2	X	2	4.0		
19.101	SHLDR							2	X	2	4.0		
19.108	SHLDR							2	X	2	4.0		
19.111	SHLDR							2	X	2	4.0		
19.117	SHLDR							2	X	2	4.0		
19.119	DL							10	X	2	20.0		
19.119	SHLDR							4	X	2	8.0		
19.121	PL							2	X	2	4.0		
19.121	SHLDR							2	X	2	4.0		
19.126	PL							6	X	2	12.0		
19.128	SHLDR							2	X	2	4.0		
19.129	SHLDR							6	X	2	12.0		
19.131	SHLDR							8	X	2	16.0		
19.135	PL							3	X	3	9.0		
19.139	DL							2	X	2	4.0		
19.139	SHLDR							2	X	2	4.0		
19.142	PL							2	X	2	4.0		
19.142	SHLDR							2	X	2	4.0		
19.143	SHLDR							2	X	2	4.0		
19.144	DL							2	X	2	4.0		
19.144	DL							2	X	2	4.0		
19.150	SHLDR							2	X	2	4.0		
19.159	SHLDR							2	X	2	4.0		
19.160	SHLDR							2	X	2	4.0		
19.164	SHLDR							4	X	2	8.0		
19.167	PL							3	X	3	9.0		
19.167	DL							3	X	3	9.0		
19.167	DL							2	X	2	4.0		
19.169	SHLDR							2	X	2	4.0		
19.179	SHLDR							2	X	2	4.0		
19.180	SHLDR							2	X	2	4.0		
19.193	SHLDR							4	X	2	8.0		
19.195	DL							2	X	2	4.0		
19.197	SHLDR							2	X	2	4.0		
19.200	SHLDR							2	X	2	4.0		
19.207	DL							2	X	2	4.0		
19.212	PL	4	X	15	6.7	20							
19.212	SHLDR							2	X	2	4.0		
19.219	PL							2	X	2	4.0		
19.219	DL							2	X	2	4.0		
19.228	DL							2	X		-		

I-29 Northbound

Data Table

RP 19.077 to 19.228



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	72

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.228	SHLDR							2	X		-		
19.234	PL							2	X		-		
19.234	SHLDR							8	X	2	16.0		
19.240	SHLDR							2	X	2	4.0		
19.243	SHLDR							2	X	2	4.0		
19.253	DL							2	X	2	4.0		
19.253	SHLDR							2	X	2	4.0		
19.259	SHLDR							2	X	2	4.0		
19.262	SHLDR							2	X	2	4.0		
19.268	PL							2	X	2	4.0		
19.270	SHLDR							2	X	2	4.0		
19.277	PL							2	X	2	4.0		
19.283	SHLDR							2	X	2	4.0		
19.293	SHLDR							2	X	2	4.0		
19.296	SHLDR							2	X	2	4.0		
19.299	SHLDR							2	X	2	4.0		
19.306	SHLDR							2	X	2	4.0		
19.306	PL							2	X	2	4.0		
19.309	SHLDR							2	X	2	4.0		
19.313	DL							6	X	2	12.0		
19.316	SHLDR							10	X	2	20.0		
19.316	SHLDR							2	X	2	4.0		
19.318	SHLDR							4	X	2	8.0		
19.319	SHLDR							2	X	2	4.0		
19.326	SHLDR							2	X	2	4.0		
19.336	SHLDR							2	X	2	4.0		
19.339	SHLDR							2	X	2	4.0		
19.344	SHLDR							2	X	2	4.0		
19.348	SHLDR							2	X	2	4.0		
19.350	SHLDR							4	X	2	8.0		
19.354	DL							2	X	2	4.0		
19.359	SHLDR							2	X	2	4.0		
19.363	SHLDR							2	X	2	4.0		
19.371	DL							2	X	2	4.0		
19.371	SHLDR							2	X	2	4.0		
19.374	SHLDR							2	X	2	4.0		
19.383	SHLDR							2	X	2	4.0		
19.387	DL							2	X	2	4.0		
19.387	SHLDR							2	X	2	4.0		
19.389	DL							3	X	3	9.0		
19.389	DL							2	X	2	4.0		
19.395	PL							2	X	2	4.0		
19.396	DL	4	X	12	5.3	20							
19.397	PL							2	X	2	4.0		
19.397	PL/DL/SHLDR	19	X	37	78.1	20	24						
19.401	SHLDR							2	X	2	4.0		
19.402	PL/DL/SHLDR	19	X	37	78.1	20	24						
19.406	PL							2	X	2	4.0		
19.408	PL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 19.228 to 19.408



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	73

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.410	DL							2	X	2	4.0		
19.410	SHLDR							2	X	2	4.0		
19.413	SHLDR							4	X	2	8.0		
19.415	SHLDR							2	X	2	4.0		
19.421	SHLDR							2	X	2	4.0		
19.422	SHLDR							2	X	2	4.0		
19.422	SHLDR							2	X	2	4.0		
19.422	PL	19	X	15	31.7	20	12						
19.429	SHLDR							2	X	2	4.0		
19.431	DL							4	X	2	8.0		
19.431	SHLDR							2	X	2	4.0		
19.434	DL							2	X	2	4.0		
19.434	SHLDR							2	X	2	4.0		
19.439	SHLDR							2	X	2	4.0		
19.442	SHLDR							2	X	2	4.0		
19.445	SHLDR							2	X	2	4.0		
19.450	SHLDR							2	X	2	4.0		
19.454	SHLDR							2	X	2	4.0		
19.456	SHLDR							2	X	2	4.0		
19.461	SHLDR							2	X	2	4.0		
19.465	SHLDR							4	X	2	8.0		
19.468	SHLDR							4	X	2	8.0		
19.473	SHLDR							4	X	2	8.0		
19.475	SHLDR							10	X	2	20.0		
19.484	DL							2	X	2	4.0		
19.484	SHLDR							2	X	2	4.0		
19.486	SHLDR							2	X	2	4.0		
19.496	SHLDR							4	X	2	8.0		
19.499	DL							4	X	2	8.0		
19.499	SHLDR							4	X	3	12.0		
19.502	DL							2	X	2	4.0		
19.506	SHLDR							2	X	2	4.0		
19.506	SHLDR							4	X	2	8.0		
19.509	SHLDR							2	X	2	4.0		
19.511	DL							6	X	2	12.0		
19.511	DL							3	X	3	9.0		
19.511	SHLDR							2	X	2	4.0		
19.512	DL							10	X	2	20.0		
19.514	DL	19	X	12	25.3	20	12						
19.515	SHLDR							2	X	2	4.0		
19.516	DL							2	X	2	4.0		
19.517	DL							2	X	2	4.0		
19.517	SHLDR							2	X	2	4.0		
19.523	SHLDR							2	X	2	4.0		
19.526	SHLDR							10	X	2	20.0		
19.527	SHLDR							2	X	2	4.0		
19.528	PL							4	X	2	8.0		
19.534	DL							2	X	2	4.0		
19.534	DL							4	X	2	8.0		

I-29 Northbound

Data Table

RP 19.410 to 19.534



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	74

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.537	SHLDR							2	X	2	4.0		
19.538	DL							2	X	2	4.0		
19.540	DL							8	X	2	16.0		
19.544	SHLDR							2	X	2	4.0		
19.547	SHLDR							4	X	2	8.0		
19.551	SHLDR							10	X	2	20.0		
19.554	SHLDR							2	X	2	4.0		
19.554	SHLDR							2	X	2	4.0		
19.556	DL							6	X	2	12.0		
19.556	SHLDR							2	X	2	4.0		
19.559	SHLDR							10	X	2	20.0		
19.561	SHLDR							2	X	2	4.0		
19.563	SHLDR							4	X	3	12.0		
19.565	SHLDR							4	X	2	8.0		
19.566	SHLDR							2	X	2	4.0		
19.568	SHLDR							2	X	2	4.0		
19.570	SHLDR							6	X	3	18.0		
19.572	SHLDR							12	X	2	24.0		
19.575	DL							2	X	2	4.0		
19.581	DL							8	X	2	16.0		
19.581	SHLDR							2	X	2	4.0		
19.584	DL							8	X	2	16.0		
19.584	SHLDR							4	X	3	12.0		
19.587	SHLDR							5	X	3	15.0		
19.589	DL							10	X	2	20.0		
19.590	SHLDR							4	X	3	12.0		
19.590	DL							15	X	2	30.0		
19.591	SHLDR							6	X	3	18.0		
19.593	SHLDR							4	X	4	16.0		
19.595	SHLDR							20	X	2	40.0		
19.598	SHLDR							8	X	2	16.0		
19.600	SHLDR							2	X	2	4.0		
19.603	SHLDR							4	X	2	8.0		
19.604	SHLDR							4	X	2	8.0		
19.606	SHLDR							2	X	2	4.0		
19.606	SHLDR							2	X	2	4.0		
19.608	DL							2	X	4	8.0		
19.608	SHLDR							6	X	2	12.0		
19.614	SHLDR							6	X	2	12.0		
19.616	DL							3	X	3	9.0		
19.616	SHLDR							2	X	2	4.0		
19.617	DL							6	X	2	12.0		
19.618	SHLDR							2	X	2	4.0		
19.627	DL							2	X	2	4.0		
19.627	SHLDR							2	X	2	4.0		
19.629	SHLDR							2	X	2	4.0		
19.639	DL							2	X	2	4.0		
19.639	SHLDR							2	X	2	4.0		
19.643	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 19.537 to 19.643



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	75

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
19.653	DL							2	X	2	4.0		
19.653	SHLDR							2	X	2	4.0		
19.655	DL							4	X	2	8.0		
19.657	SHLDR							2	X	2	4.0		
19.662	DL							2	X	2	4.0		
19.662	SHLDR							2	X	2	4.0		
19.674	DL							2	X	2	4.0		
19.677	SHLDR							2	X	2	4.0		
19.687	DL							2	X	2	4.0		
19.687	SHLDR							4	X	2	8.0		
19.702	SHLDR							2	X	2	4.0		
19.712	SHLDR							4	X	2	8.0		
19.715	SHLDR							2	X	2	4.0		
19.718	PL							2	X	2	4.0		
19.722	DL							2	X	2	4.0		
19.725	SHLDR							2	X	2	4.0		
19.734	SHLDR							2	X	2	4.0		
19.737	SHLDR							2	X	2	4.0		
19.746	DL							2	X	2	4.0		
19.746	SHLDR							2	X	2	4.0		
19.755	DL							2	X	2	4.0		
19.755	SHLDR							2	X	2	4.0		
19.765	DL							3	X	3	9.0		
19.765	SHLDR							2	X	2	4.0		
19.768	DL							2	X	2	4.0		
19.768	SHLDR							2	X	2	4.0		
19.777	SHLDR							2	X	2	4.0		
19.786	SHLDR							2	X	2	4.0		
19.789	SHLDR							2	X	2	4.0		
19.799	PL							2	X	2	4.0		
19.799	DL							2	X	2	4.0		
19.804	DL	4	X	12	5.3	20.0		2	X	2	4.0		
19.807	SHLDR							2	X	2	4.0		
19.809	DL							2	X	2	4.0		
19.810	SHLDR							2	X	2	4.0		
19.819	DL							2	X	2	4.0		
19.831	DL							2	X	2	4.0		
19.831	SHLDR							2	X	2	4.0		
19.834	DL							3	X	3	9.0		
19.843	DL							3	X	5	15.0		
19.845	SHLDR							2	X	2	4.0		
19.857	SHLDR							2	X	2	4.0		
19.865	DL							3	X	3	9.0		
19.867	SHLDR							2	X	2	4.0		
19.870	SHLDR							2	X	2	4.0		
19.873	SHLDR							2	X	2	4.0		
19.888	SHLDR							2	X	2	4.0		
Mile 19 Totals					237.2	160.0	72.0				1,634.0	-	
20.018	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 19.653 to 20.018



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	76

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.024	SHLDR							2	X	2	4.0		
20.030	SHLDR							2	X	2	4.0		
20.039	DL	4	X	12	5.3	20							
20.039	SHLDR							2	X	2	4.0		
20.053	SHLDR							2	X	2	4.0		
20.056	DL							4	X	2	8.0		
20.056	PL	6	X	15	10.0	20							
20.071	SHLDR					20		2	X	2	4.0		
20.074	DL							2	X	2	4.0		
20.074	SHLDR							2	X	2	4.0		
20.090	PL	5	X	15	8.3	20							
20.091	SHLDR							2	X	2	4.0		
20.091	PL							2	X	2	4.0		
20.093	SHLDR							2	X	2	4.0		
20.101	PL							2	X	2	4.0		
20.101	SHLDR							2	X	2	4.0		
20.104	SHLDR							2	X	2	4.0		
20.106	PL	6	X	15	10.0	20							
20.113	SHLDR							2	X	2	4.0		
20.141	SHLDR							2	X	2	4.0		
20.150	SHLDR							2	X	2	4.0		
20.156	DL							3	X	2	6.0		
20.209	DL							2	X	2	4.0		
20.221	DL							2	X	2	4.0		
20.221	SHLDR							2	X	2	4.0		
20.233	DL							2	X	2	4.0		
20.233	SHLDR							2	X	2	4.0		
20.235	DL	19	X	12	25.3	20	12						
20.235	DL							3	X	3	9.0		
20.241	DL	4	X	12	5.3	20							
20.250	SHLDR							2	X	2	4.0		
20.253	SHLDR							8	X	2	16.0		
20.256	DL							2	X	2	4.0		
20.256	DL							2	X	2	4.0		
20.257	DL							2	X	4	8.0		
20.258	PL							2	X	2	4.0		
20.258	SHLDR							2	X	2	4.0		
20.261	SHLDR							2	X	2	4.0		
20.261	DL							2	X	2	4.0		
20.267	DL							2	X	2	4.0		
20.269	PL							2	X	2	4.0		
20.272	DL							2	X	2	4.0		
20.283	DL							2	X	2	4.0		
20.283	SHLDR							2	X	2	4.0		
20.285	DL							3	X	5	15.0		
20.285	DL							2	X	2	4.0		
20.285	SHLDR							2	X	2	4.0		
20.293	SHLDR							2	X	2	4.0		
20.296	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 20.024 to 20.296



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	77

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.304	SHLDR							4	X	2	8.0		
20.306	DL							6	X	2	12.0		
20.307	SHLDR							2	X	2	4.0		
20.309	DL							3	X	3	9.0		
20.310	SHLDR							6	X	2	12.0		
20.311	SHLDR							2	X	2	4.0		
20.312	DL							6	X	2	12.0		
20.314	DL							2	X	4	8.0		
20.314	SHLDR							2	X	2	4.0		
20.320	DL							3	X	3	9.0		
20.327	SHLDR							2	X	2	4.0		
20.329	DL							2	X	2	4.0		
20.331	DL							2	X	2	4.0		
20.334	SHLDR							2	X	2	4.0		
20.337	SHLDR							2	X	2	4.0		
20.342	DL							2	X	2	4.0		
20.348	SHLDR							2	X	2	4.0		
20.348	DL							2	X	2	4.0		
20.350	DL							3	X	3	9.0		
20.350	SHLDR							2	X	2	4.0		
20.350	DL							2	X	2	4.0		
20.352	DL							3	X	4	12.0		
20.352	DL							2	X	3	6.0		
20.352	SHLDR							2	X	2	4.0		
20.366	DL							4	X	2	8.0		
20.366	SHLDR							2	X	2	4.0		
20.374	SHLDR							2	X	2	4.0		
20.380	SHLDR							2	X	2	4.0		
20.383	DL							3	X	3	9.0		
20.383	SHLDR							2	X	2	4.0		
20.392	SHLDR							2	X	2	4.0		
20.395	DL							2	X	2	4.0		
20.395	SHLDR							2	X	2	4.0		
20.397	DL							8	X	2	16.0		
20.399	SHLDR							7	X	2	14.0		
20.402	DL							2	X	2	4.0		
20.405	DL							2	X	2	4.0		
20.427	SHLDR							2	X	2	4.0		
20.429	DL							2	X	2	4.0		
20.429	SHLDR							2	X	2	4.0		
20.439	PL							2	X	2	4.0		
20.449	DL							2	X	2	4.0		
20.449	SHLDR							2	X	2	4.0		
20.459	SHLDR							2	X	2	4.0		
20.470	DL							2	X	2	4.0		
20.494	DL							2	X	2	4.0		
20.498	DL							2	X	2	4.0		
20.502	PL							2	X	2	4.0		
20.517	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 20.304 to 20.517



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	78

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.521	DL							3	X	3	9.0		
20.521	SHLDR							2	X	2	4.0		
20.521	DL							2	X	2	4.0		
20.523	DL							2	X	2	4.0		
20.527	PL							2	X	2	4.0		
20.527	DL							2	X	2	4.0		
20.527	SHLDR							2	X	2	4.0		
20.530	PL							2	X	2	4.0		
20.530	SHLDR							2	X	2	4.0		
20.531	SHLDR							2	X	2	4.0		
20.535	DL							3	X	2	6.0		
20.536	SHLDR							2	X	2	4.0		
20.537	SHLDR							2	X	2	4.0		
20.540	SHLDR							2	X	2	4.0		
20.549	SHLDR							2	X	2	4.0		
20.556	SHLDR							2	X	2	4.0		
20.558	SHLDR							2	X	2	4.0		
20.561	SHLDR							2	X	2	4.0		
20.563	SHLDR							2	X	2	4.0		
20.565	DL	10	X	12	13.3	20							
20.567	PL							3	X	3	9.0		
20.567	DL	19	X	12	25.3	20	12						
20.569	DL							3	X	2	6.0		
20.573	DL							2	X	2	4.0		
20.573	SHLDR							2	X	2	4.0		
20.575	DL							3	X	3	9.0		
20.575	SHLDR							2	X	2	4.0		
20.581	DL							3	X	3	9.0		
20.581	SHLDR							2	X	2	4.0		
20.588	DL							3	X	3	9.0		
20.590	SHLDR							2	X	2	4.0		
20.598	SHLDR							2	X	2	4.0		
20.622	SHLDR							2	X	2	4.0		
20.624	SHLDR							2	X	2	4.0		
20.625	SHLDR							4	X	2	8.0		
20.633	SHLDR							4	X	2	8.0		
20.639	SHLDR							2	X	2	4.0		
20.642	SHLDR							2	X	2	4.0		
20.644	SHLDR							2	X	2	4.0		
20.644	DL							2	X	2	4.0		
20.645	SHLDR							2	X	2	4.0		
20.652	SHLDR							2	X	2	4.0		
20.653	SHLDR							4	X	2	8.0		
20.654	SHLDR							2	X	2	4.0		
20.662	SHLDR							2	X	2	4.0		
20.675	SHLDR							4	X	2	8.0		
20.677	SHLDR							4	X	2	8.0		
20.698	SHLDR							2	X	2	4.0		
20.701	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 20.521 to 20.701



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	79

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.701	SHLDR							2	X	2	4.0		
20.710	SHLDR							2	X	2	4.0		
20.722	SHLDR							2	X	2	4.0		
20.725	SHLDR							2	X	2	4.0		
20.728	SHLDR							2	X	2	4.0		
20.732	SHLDR							2	X	2	4.0		
20.734	SHLDR							2	X	2	4.0		
20.743	SHLDR							2	X	3	6.0		
20.747	SHLDR							2	X	2	4.0		
20.747	DL							2	X	3	6.0		
20.747	DL							3	X	4	12.0		
20.752	SHLDR							2	X	2	4.0		
20.754	SHLDR							2	X	2	4.0		
20.756	SHLDR							5	X	4	20.0		
20.757	SHLDR							2	X	2	4.0		
20.757	PL							2	X	2	4.0		
20.759	SHLDR							2	X	2	4.0		
20.759	PL							2	X	2	4.0		
20.768	SHLDR							2	X	2	4.0		
20.774	PL							2	X	2	4.0		
20.774	SHLDR							2	X	2	4.0		
20.779	SHLDR							2	X	2	4.0		
20.797	DL	19	X	12	25.3	20	12						
20.797	SHLDR							2	X	2	4.0		
20.800	PL							2	X	2	4.0		
20.800	DL							2	X	2	4.0		
20.800	SHLDR							2	X	2	4.0		
20.802	SHLDR							2	X	2	4.0		
20.803	SHLDR							2	X	2	4.0		
20.820	SHLDR							2	X	2	4.0		
20.824	DL							2	X	2	4.0		
20.824	SHLDR							2	X	2	4.0		
20.833	SHLDR							2	X	2	4.0		
20.836	DL							2	X	2	4.0		
20.836	SHLDR							4	X	2	8.0		
20.842	SHLDR							2	X	2	4.0		
20.845	DL							2	X	2	4.0		
20.846	DL							2	X	2	4.0		
20.851	DL							2	X	2	4.0		
20.851	SHLDR							2	X	2	4.0		
20.853	DL							2	X	2	4.0		
20.853	SHLDR							2	X	2	4.0		
20.856	SHLDR							2	X	2	4.0		
20.857	SHLDR							2	X	2	4.0		
20.859	SHLDR							2	X	2	4.0		
20.860	SHLDR							8	X	2	16.0		
20.862	DL							10	X	2	20.0		
20.863	PL							2	X	2	4.0		
20.865	PL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 20.701 to 20.865



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	80

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
20.871	SHLDR							2	X	2	4.0		
20.873	DL							4	X	2	8.0		
20.874	SHLDR							2	X	2	4.0		
20.882	SHLDR							2	X	2	4.0		
20.889	DL							2	X	2	4.0		
20.891	SHLDR							2	X	2	4.0		
20.900	DL							2	X	2	4.0		
20.900	SHLDR							2	X	2	4.0		
20.906	SHLDR							2	X	2	4.0		
20.910	DL							2	X	2	4.0		
20.915	SHLDR							2	X	2	4.0		
20.927	SHLDR							2	X	2	4.0		
Mile 20 Totals					128.3	200.0	36.0				1,039.0	-	
21.003	SHLDR							2	X	2	4.0		
21.015	SHLDR							2	X	2	4.0		
21.018	SHLDR							2	X	2	4.0		
21.030	SHLDR							2	X	2	4.0		
21.039	SHLDR							2	X	2	4.0		
21.050	SHLDR							2	X	2	4.0		
21.060	PL							4	X	2	8.0		
21.077	DL							2	X	2	4.0		
21.089	PL/DL	19	X	27	57.0	40	24						
21.093	DL							2	X	2	4.0		
21.109	PL							2	X	2	4.0		
21.146	SHLDR							2	X	2	4.0		
21.167	PL							2	X	2	4.0		
21.176	DL							2	X	2	4.0		
21.178	SHLDR							4	X	2	8.0		
21.181	DL							2	X	2	4.0		
21.186	PL							2	X	2	4.0		
21.201	PL							2	X	2	4.0		
21.212	SHLDR							2	X	2	4.0		
21.215	DL							4	X	2	8.0		
21.220	DL	7	X	12	9.3	20							
21.220	SHLDR							2	X	2	4.0		
21.231	PL							2	X	2	4.0		
21.251	DL							2	X	2	4.0		
21.251	SHLDR							4	X	2	8.0		
21.253	SHLDR							2	X	2	4.0		
21.255	PL/DL	4	X	27	12.0	40							
21.266	PL							4	X	2	8.0		
21.267	DL							2	X	4	8.0		
21.269	DL							2	X	2	4.0		
21.274	SHLDR							4	X	2	8.0		
21.276	PL							2	X	2	4.0		
21.276	SHLDR							2	X	2	4.0		
21.279	DL							3	X	3	9.0		
21.282	DL							2	X	4	8.0		
21.284	DL							5	X	3	15.0		

I-29 Northbound

Data Table

RP 20.871 to 21.284



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	81

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.284	DL							2	X	2	4.0		
21.284	SHLDR							2	X	2	4.0		
21.287	DL							4	X	10	40.0		
21.290	DL							2	X	2	4.0		
21.309	DL							2	X	2	4.0		
21.312	SHLDR							2	X	2	4.0		
21.315	SHLDR							2	X	2	4.0		
21.327	SHLDR							2	X	2	4.0		
21.335	DL							2	X	2	4.0		
21.335	SHLDR							2	X	2	4.0		
21.345	DL							4	X	2	8.0		
21.356	DL							2	X	2	4.0		
21.361	PL							2	X	2	4.0		
21.361	SHLDR							2	X	2	4.0		
21.370	SHLDR							2	X	2	4.0		
21.380	SHLDR							2	X	2	4.0		
21.395	DL							2	X	3	6.0		
21.395	SHLDR							2	X	2	4.0		
21.397	DL							2	X	2	4.0		
21.400	PL							2	X	6	12.0		
21.405	SHLDR							2	X	2	4.0		
21.409	DL							2	X	2	4.0		
21.409	SHLDR							2	X	2	4.0		
21.414	SHLDR							8	X	2	16.0		
21.416	SHLDR							15	X	2	30.0		
21.417	SHLDR							2	X	2	4.0		
21.419	PL							2	X	2	4.0		
21.419	SHLDR							2	X	2	4.0		
21.423	PL							2	X	2	4.0		
21.425	SHLDR							4	X	2	8.0		
21.428	SHLDR							4	X	2	8.0		
21.437	DL							2	X	2	4.0		
21.437	SHLDR							2	X	2	4.0		
21.440	DL							2	X	2	4.0		
21.440	SHLDR							2	X	2	4.0		
21.441	DL	19	X	12	25.3	20	12						
21.443	DL	19	X	12	25.3	20	12						
21.446	DL	19	X	12	25.3	20	12	2	X	2	4.0		
21.446	SHLDR							4	X	2	8.0		
21.447	DL	19	X	12	25.3	20	12						
21.447	SHLDR							2	X	2	4.0		
21.450	DL	19	X	12	25.3	20	12						
21.460	DL							2	X	2	4.0		
21.460	SHLDR							2	X	2	4.0		
21.470	SHLDR							2	X	2	4.0		
21.473	SHLDR							4	X	2	8.0		
21.486	SHLDR							4	X	2	8.0		
21.487	DL	19	X	12	25.3	20	12						
21.488	SHLDR							4	X	2	8.0		

I-29 Northbound

Data Table

RP 21.284 to 21.488



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	82

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.489	DL	19	X	12	25.3	20	12						
21.489	SHLDR							4	X	2	8.0		
21.491	SHLDR							2	X	2	4.0		
21.492	DL							12	X	2	24.0		
21.496	DL							2	X	2	4.0		
21.496	SHLDR							2	X	2	4.0		
21.499	PL							2	X	2	4.0		
21.499	DL							4	X	3	12.0		
21.499	SHLDR							2	X	2	4.0		
21.500	DL	4	X	12	5.3	20							
21.508	SHLDR							2	X	2	4.0		
21.514	DL							6	X	2	12.0		
21.515	DL							12	X	2	24.0		
21.516	SHLDR							2	X	2	4.0		
21.517	DL							6	X	2	12.0		
21.518	DL							2	X	2	4.0		
21.521	DL							2	X	2	4.0		
21.527	SHLDR							2	X	2	4.0		
21.530	PL							2	X	2	4.0		
21.530	DL							2	X	2	4.0		
21.530	SHLDR							6	X	2	12.0		
21.532	SHLDR							2	X	2	4.0		
21.537	DL	19	X	12	25.3	20	12						
21.537	SHLDR							2	X	2	4.0		
21.540	DL							4	X	4	16.0		
21.543	SHLDR							2	X	2	4.0		
21.549	DL							2	X	2	4.0		
21.549	SHLDR							2	X	2	4.0		
21.551	DL							4	X	2	8.0		
21.551	SHLDR							2	X	2	4.0		
21.553	DL							3	X	3	9.0		
21.553	SHLDR							2	X	2	4.0		
21.553	DL							2	X	2	4.0		
21.556	DL							2	X	2	4.0		
21.559	DL							2	X	2	4.0		
21.560	SHLDR							2	X	2	4.0		
21.564	DL							2	X	10	20.0		
21.564	SHLDR							2	X	2	4.0		
21.566	DL							2	X	12	24.0		
21.568	PL							2	X	2	4.0		
21.571	PL							2	X	2	4.0		
21.571	DL							2	X	2	4.0		
21.573	DL							2	X	2	4.0		
21.573	SHLDR							2	X	2	4.0		
21.576	SHLDR							2	X	2	4.0		
21.578	PL							2	X	2	4.0		
21.581	SHLDR							2	X	2	4.0		
21.581	PL	15	X	15	25.0	20	12						
21.582	SHLDR							5	X	2	10.0		

I-29 Northbound

Data Table

RP 21.489 to 21.582



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	83

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.582								2	X	2	4.0		
21.585	DL							2	X	2	4.0		
21.585	SHLDR							2	X	2	4.0		
21.587	DL							2	X	2	4.0		
21.587	SHLDR							2	X	2	4.0		
21.592	SHLDR							6	X	2	12.0		
21.594	PL	10	X	15	16.7	20							
21.597	DL	6	X	12	8.0	20							
21.600	SHLDR							4	X	2	8.0		
21.602	DL							6	X	2	12.0		
21.602	SHLDR							2	X	2	4.0		
21.603	DL							6	X	2	12.0		
21.611	SHLDR							4	X	2	8.0		
21.623	DL							2	X	2	4.0		
21.623	SHLDR							2	X	2	4.0		
21.625	DL							2	X	2	4.0		
21.625	SHLDR							2	X	2	4.0		
21.635	DL							2	X	2	4.0		
21.635	SHLDR							2	X	2	4.0		
21.637	DL							3	X	3	9.0		
21.639	DL	6	X	15	10.0	20							
21.640	DL							13	X	2	26.0		
21.640	SHLDR							3	X	2	6.0		
21.643	DL							15	X	4	60.0		
21.645	DL							15	X	4	60.0		
21.648	DL							15	X	4	60.0		
21.653	SHLDR							12	X	2	24.0		
21.656	SHLDR							15	X	2	30.0		
21.659	SHLDR							15	X	2	30.0		
21.661	DL							15	X	2	30.0		
21.663	DL							15	X	2	30.0		
21.668	SHLDR							2	X	2	4.0		
21.670	SHLDR							2	X	2	4.0		
21.673	SHLDR							4	X	4	16.0		
21.678	SHLDR							2	X	2	4.0		
21.681	SHLDR							2	X	2	4.0		
21.686	PL							2	X	2	4.0		
21.691	DL							3	X	3	9.0		
21.691	SHLDR							2	X	2	4.0		
21.691	PL							2	X	2	4.0		
21.691	PL							2	X	2	4.0		
21.693	SHLDR							2	X	2	4.0		
21.693	SHLDR							2	X	2	4.0		
21.693	PL							2	X	2	4.0		
21.693	PL							2	X	2	4.0		
21.696	PL							2	X	2	4.0		
21.701	PL							2	X	2	4.0		
21.701	SHLDR							2	X	2	4.0		
21.704	SHLDR							2	X	2	4.0		

I-29 Northbound

Data Table

RP 21.582 to 21.704



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	84

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.707	DL							2	X	2	4.0		
21.707	SHLDR							2	X	2	4.0		
21.715	SHLDR							8	X	2	16.0		
21.715	DL	5	X	12	6.7	20							
21.717	SHLDR							2	X	2	4.0		
21.721	SHLDR							2	X	2	4.0		
21.723	SHLDR							2	X	2	4.0		
21.724	SHLDR							2	X	2	4.0		
21.726	DL							3	X	3	9.0		
21.726	SHLDR							2	X	2	4.0		
21.728	DL							2	X	2	4.0		
21.728	SHLDR							2	X	2	4.0		
21.731	SHLDR							2	X	2	4.0		
21.739	DL							8	X	2	16.0		
21.743	SHLDR							2	X	2	4.0		
21.746	SHLDR							2	X	2	4.0		
21.749	PL							2	X	2	4.0		
21.749	SHLDR							2	X	2	4.0		
21.751	DL							2	X	2	4.0		
21.751	SHLDR							6	X	2	12.0		
21.754	SHLDR							4	X	2	8.0		
21.757	SHLDR							4	X	2	8.0		
21.760	DL							2	X	2	4.0		
21.760	SHLDR							2	X	2	4.0		
21.762	DL							2	X	2	4.0		
21.762	SHLDR							2	X	2	4.0		
21.768	DL							2	X	2	4.0		
21.771	SHLDR							2	X	2	4.0		
21.774	DL							4	X	2	8.0		
21.775	PL							2	X	4	8.0		
21.783	SHLDR							2	X	2	4.0		
21.785	SHLDR							2	X	2	4.0		
21.788	SHLDR							2	X	2	4.0		
21.799	DL							2	X	2	4.0		
21.805	DL							2	X	4	8.0		
21.807	SHLDR							2	X	2	4.0		
21.810	SHLDR							2	X	2	4.0		
21.815	SHLDR							2	X	2	4.0		
21.818	SHLDR							2	X	2	4.0		
21.828	DL							4	X	4	16.0		
21.830	DL							2	X	4	8.0		
21.837	PL	4	X	15	6.7	20							
21.837	SHLDR							4	X	2	8.0		
21.841	DL							6	X	2	12.0		
21.848	SHLDR							2	X	2	4.0		
21.851	SHLDR							2	X	2	4.0		
21.853	PL							2	X	2	4.0		
21.853	SHLDR							2	X	2	4.0		
21.856	DL							2	X	2	4.0		

I-29 Northbound

Data Table

RP 21.707 to 21.856



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	11	85

Reference Point (RP)	Lane	Full Depth Repair (ft)			SY	Dowel Bars	Joint Assembly (LF)	Spall Repair (ft)			SF Total	Random Cracks (LF)	Comments
		Length	X	Width				Length	X	Width			
21.859	DL							18	X	2	36.0		
21.863	DL	4	X	12	5.3	20		15	X		-		
21.865	DL							3	X	3	9.0		
21.865	SHLDR							3	X	3	9.0		
21.868	SHLDR							2	X	2	4.0		
Mile 21 Totals					364.7	420.0	132.0				1,672.0	-	
22.001	PL							2	X	2	4.0		
22.016	PL							2	X	2	4.0		
22.018	PL							2	X	15	30.0		
22.032	PL							2	X	2	4.0		
22.032	SHLDR							2	X	2	4.0		
22.034	SHLDR							3	X	3	9.0		
22.036	SHLDR							3	X	3	9.0		
22.039	SHLDR							2	X	2	4.0		
22.045	SHLDR							2	X	2	4.0		
22.048	SHLDR							2	X	2	4.0		
22.048	PL	6	X	15	10.0	20							
22.050	SHLDR							6	X	3	18.0		
22.055	SHLDR							2	X	2	4.0		
22.071	SHLDR							2	X	2	4.0		
22.074	SHLDR							2	X	2	4.0		
22.077	SHLDR							2	X	2	4.0		
22.080	PL							2	X	2	4.0		
22.085	DL	6	X	12	8.0	20							
22.088	SHLDR							2	X	2	4.0		
22.113	SHLDR							2	X	2	4.0		
22.116	DL							4	X	4	16.0		
22.128	SHLDR							3	X	3	9.0		
Mile 22 Totals					18.0	40.0	-				147.0	-	

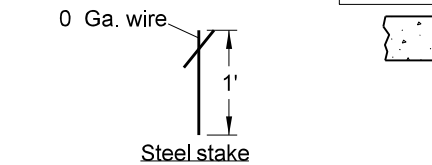
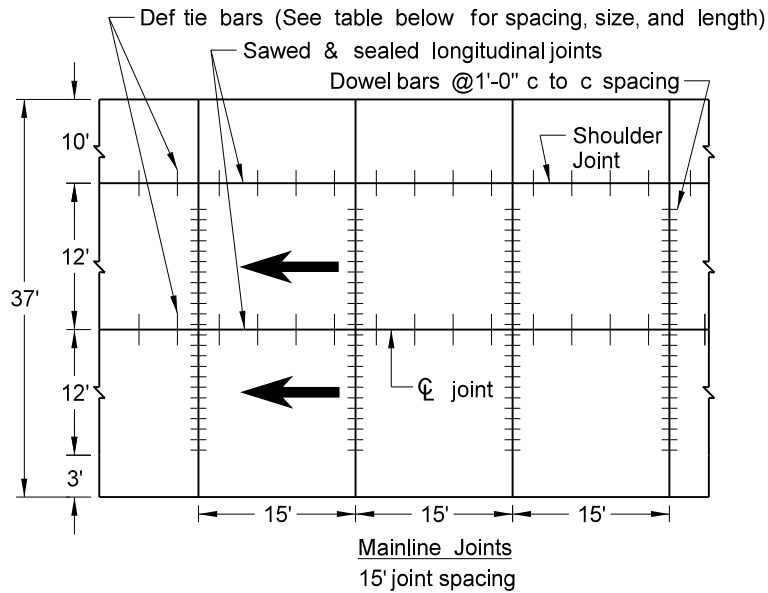
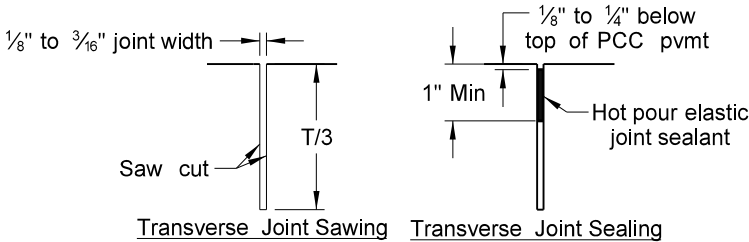
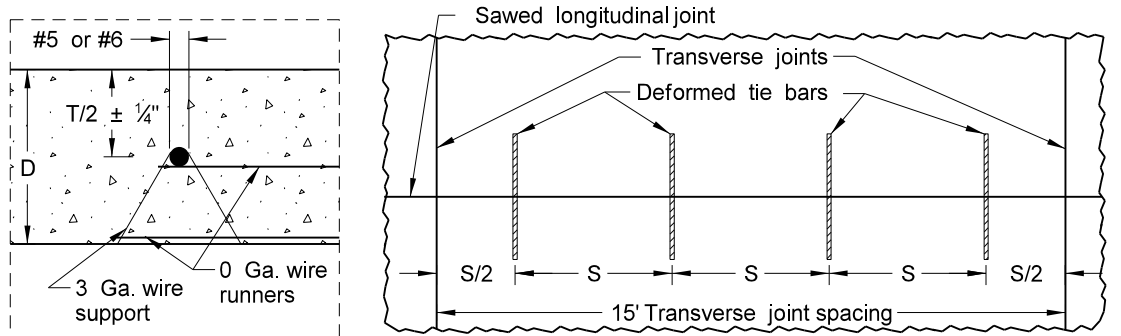
I-29 Northbound

Data Table

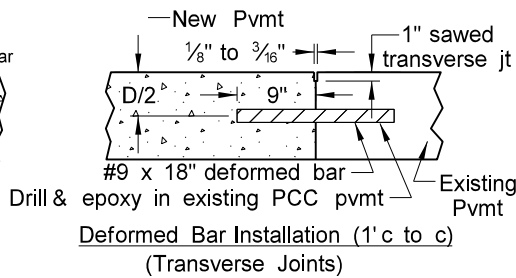
RP 21.859 to 22.128



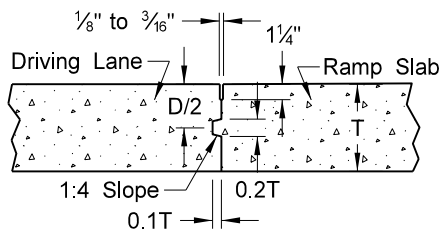
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	1



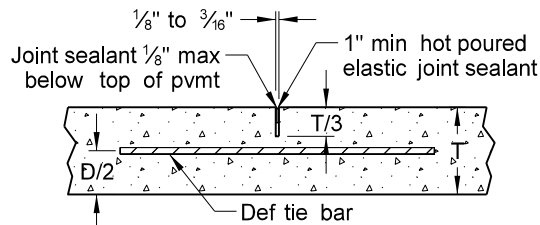
Longitudinal Joint Sawing Detail
(sawed and tied joints)



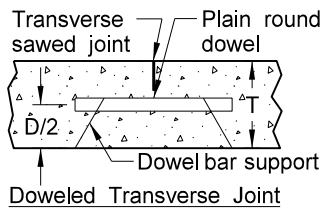
Deformed Bar Installation (1' c to c)
(Transverse Joints)



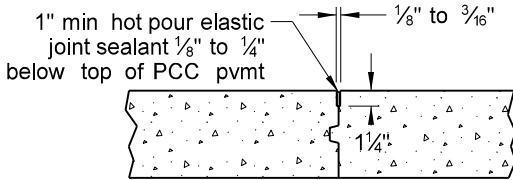
Longitudinal Joint Sawing Detail
(at ramps - non-tied keyed joints)



Longitudinal Joint Sealing Detail
(sawed and tied joints)

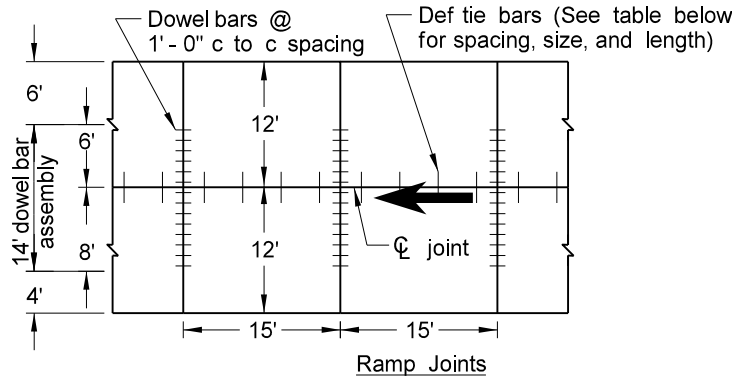


Doweled Transverse Joint



Longitudinal Joint Sealing Detail
(non-tied keyed joints)

- Notes:
1. S = Tiebar spacing
 2. D = Pavement depth
 3. Place dowels in ramp tapers also.
 4. Place no tie bar within 15" of a transverse joint.



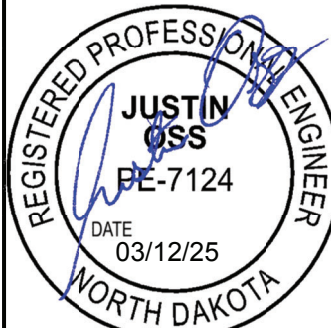
Grade 40 Longitudinal Joint Tie Bars																		
PCC Depth	6"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"		
Mainline Centerline																		
Bar Size x Length (S=30")		#5 x 30"									#6 x 36"							
Bar Size x Length (S=45")		#6 x 36"									Grade 60 Required							
Ramp/Loop Centerline																		
Bar Size x Length (S=30")		#4 x 24"			#5 x 30"							#6 x 36"						
Bar Size x Length (S=45")		#5 x 30"				#6 x 36"							Grade 60 Required					
10' Shoulder Joint																		
Bar Size x Length (S=45")	#4 x 24"																	

Grade 60 Longitudinal Joint Tie Bars																
PCC Depth	6"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"
Mainline Centerline																
Bar Size x Length (S=30")		#4 x 36"							#5 x 42"							
Bar Size x Length (S=45")		#5 x 42"					#6 x 48"									
Ramp/Loop Centerline																
Bar Size x Length (S=30")		#4 x 36"							#5 x 42"							
Bar Size x Length (S=45")		#4 x 36"					#5 x 42"						#6 x 48"			
10' Shoulder Joint																
Bar Size x Length (S=45")	#3 x 30"															

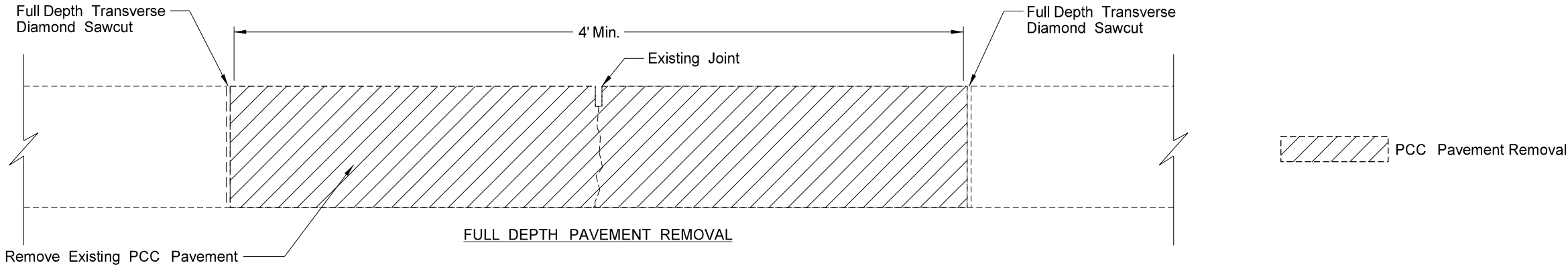
PCC Pavement - Perpendicular Joints @15'Spacing

PCC Pavement Details

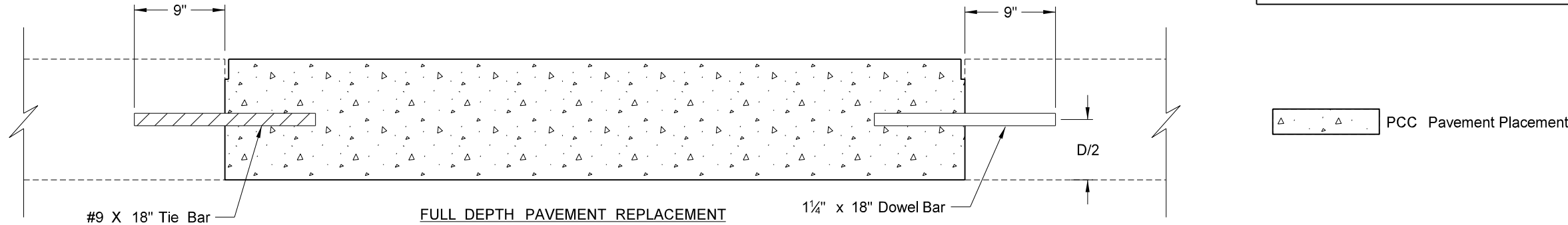
I-29 NB & SB 11.284 to 22.134



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	2

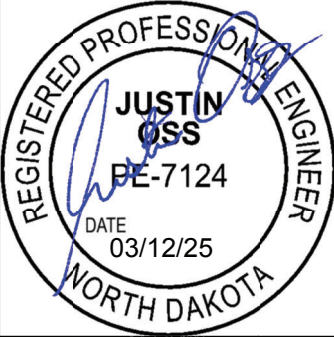


- Notes:
- Variables: D = Depth of Pavement
 - Removal and replacement also applies to full depth repairs at cracks.
 - Place dowel bars in new joint with the greatest distance to the next transverse joint or working random crack. Place dowels on approach side of repair when distance to next transverse joint or working random crack is equal for both new joints.

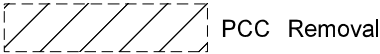
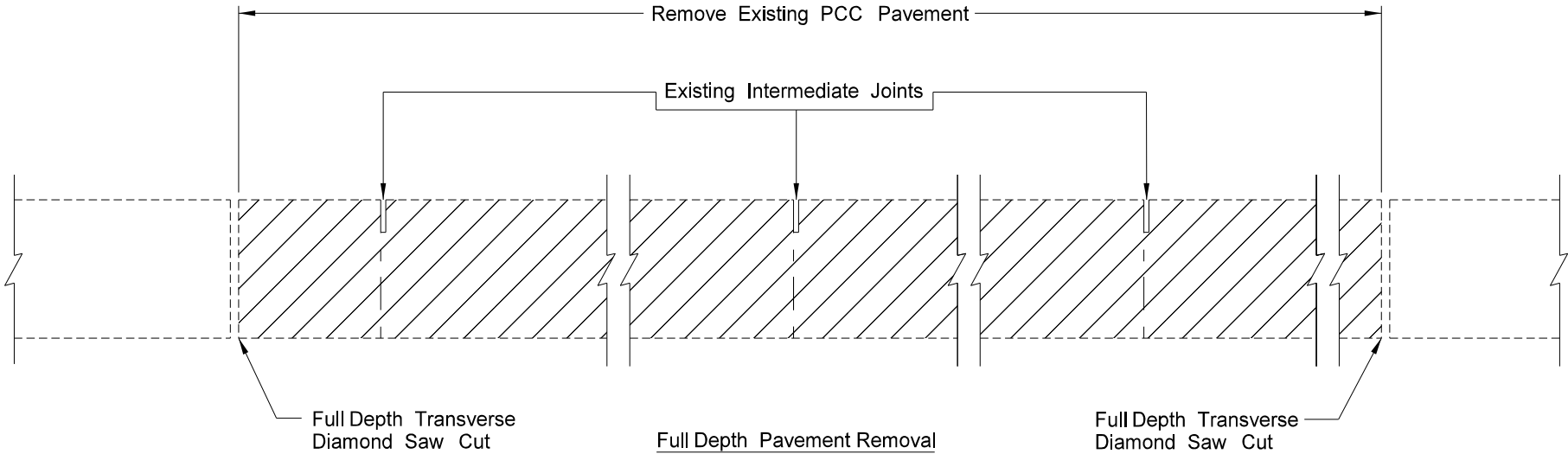


Jointed Concrete Pavement Repair
Full-Depth, Non-Reinforced PCC Pavement
Less than One Panel

I-29 NB & SB RP 11.284 to 22.134

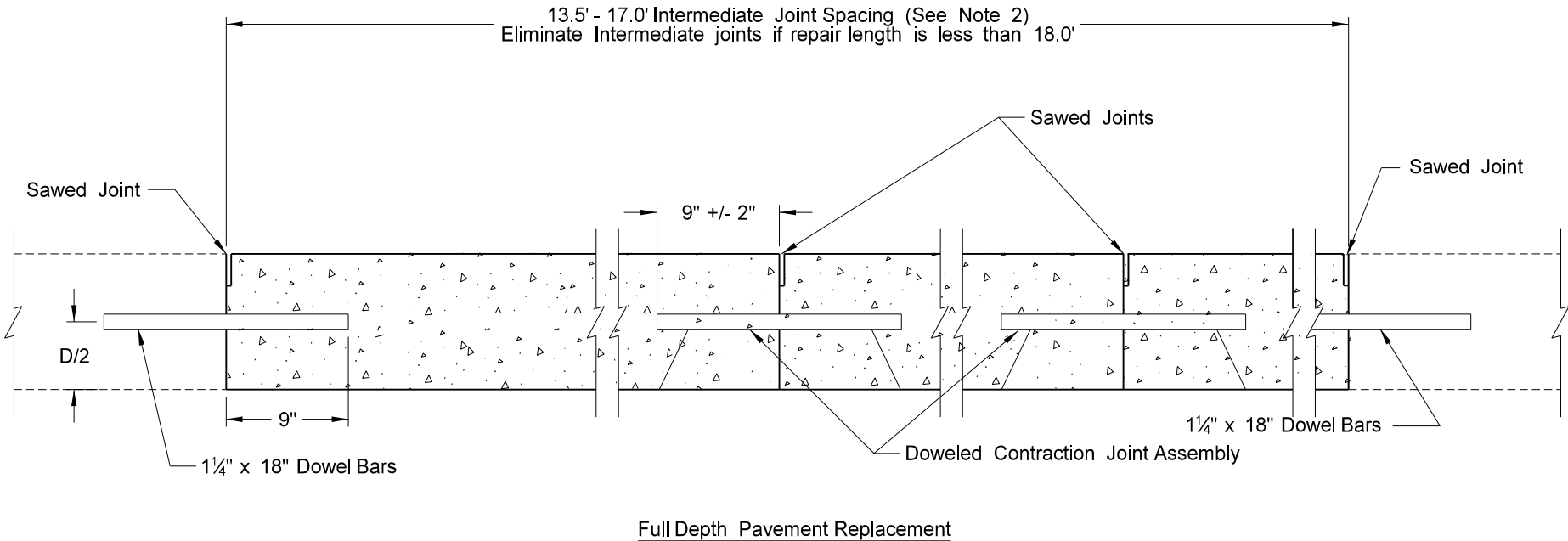


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	3



PCC Removal

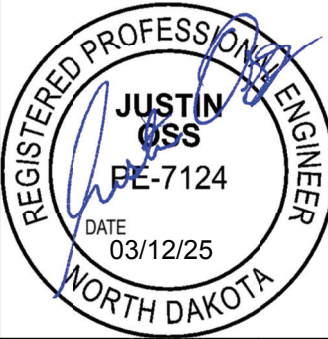
- Notes:
1. Variables: D = Pavement Depth
 2. Space joints 13.5' to 17.0'. Use a 10 foot minimum spacing when repair length requires.
 3. Place new joints to match existing joints when repair widths are less than PCC pavement width.



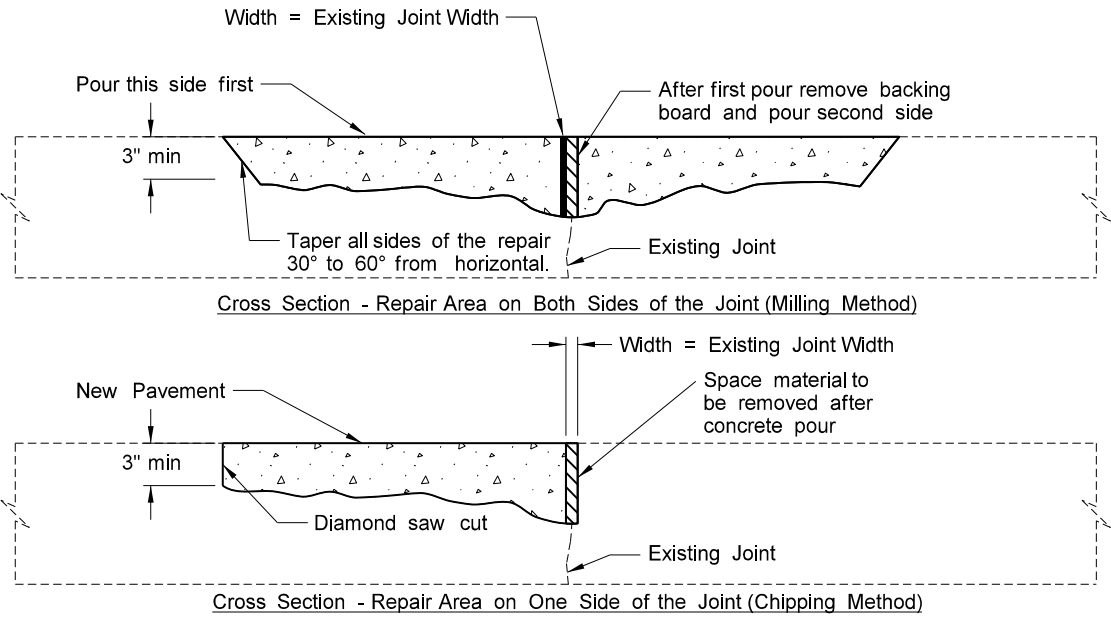
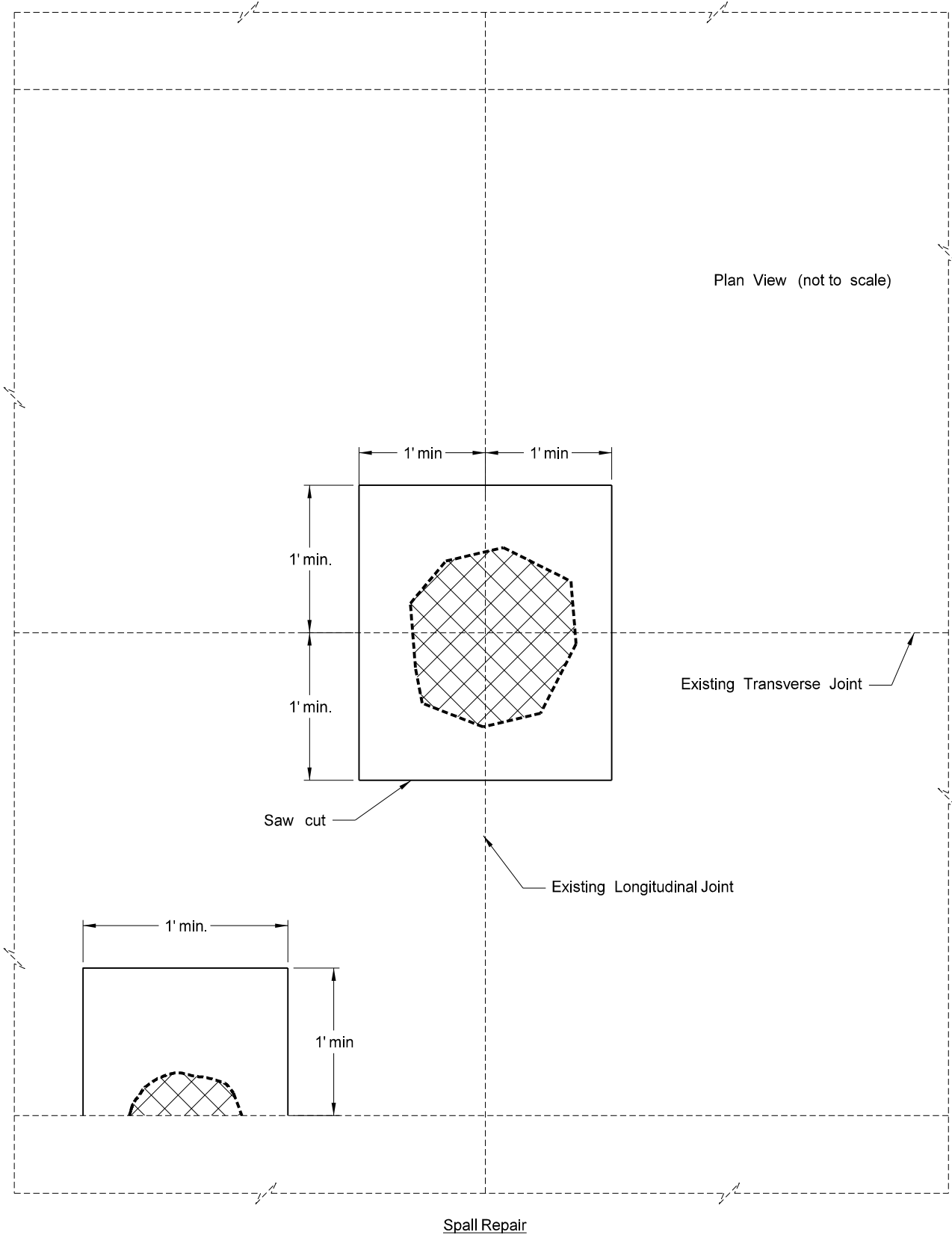
PCC Placement

Jointed Concrete Pavement Repair
Full-Depth, Non-Reinforced PCC Pavement
More Than One Panel

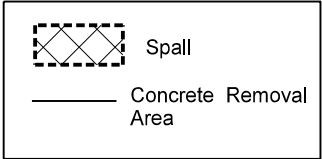
I-29 NB&SB RP 11.284 to RP 22.134



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	4



- Notes:
1. Place a spacer material on the transverse joint face to maintain the joint during the repair. Use a spacer material that has the capability of maintaining a width equal to that of the existing joint and being easily removed after the concrete placement. A bituthene waterproofing material may be used for this purpose. Provide a material that is approximately 260 mil (1/4") thick or equal to the width of the existing joint. Cut it to fit over the entire face of the existing joint to provide for expansion and prevent water from entering the joint. Press it into place to conform to the face of the existing joint.
 2. A diamond saw cut is not mandatory when using a milling machine for spall repair removals.



Spall Repair

11.3 Mi. N of State line to ND 13 NB & SB

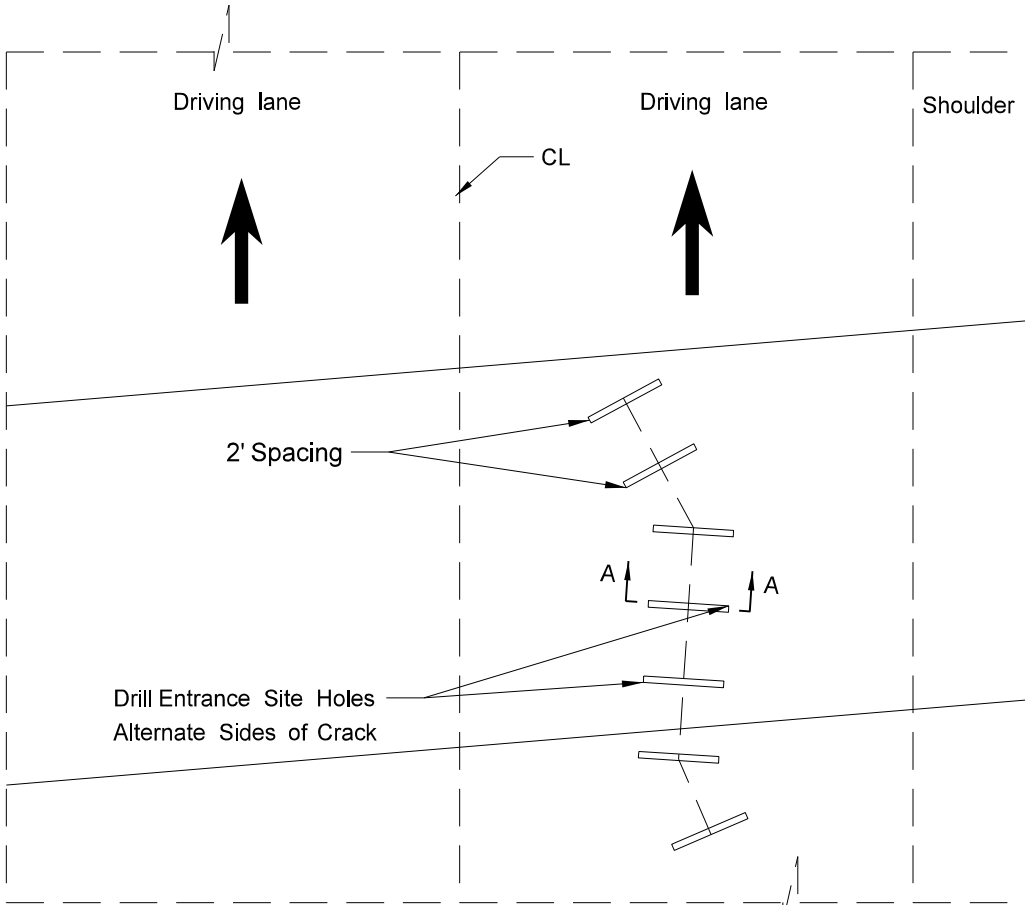
REGISTERED PROFESSIONAL ENGINEER

JUSTIN OSS

PE-7124

DATE 03/12/25

NORTH DAKOTA



Plan

Cross Stitching Bar Dimensions & Hole Locations (No 6 Bars)		
Slab Thickness (inches)	Hole Offset (inches)	Bar Length (inches)
8	5.75	9.50
8 ½	6.25	10.25
9	6.50	11.00
9 ½	7.00	11.75
10	7.25	12.50
10 ½	7.50	13.25
11	7.75	14.50
11 ½	8.25	15.25
12	8.50	16.00

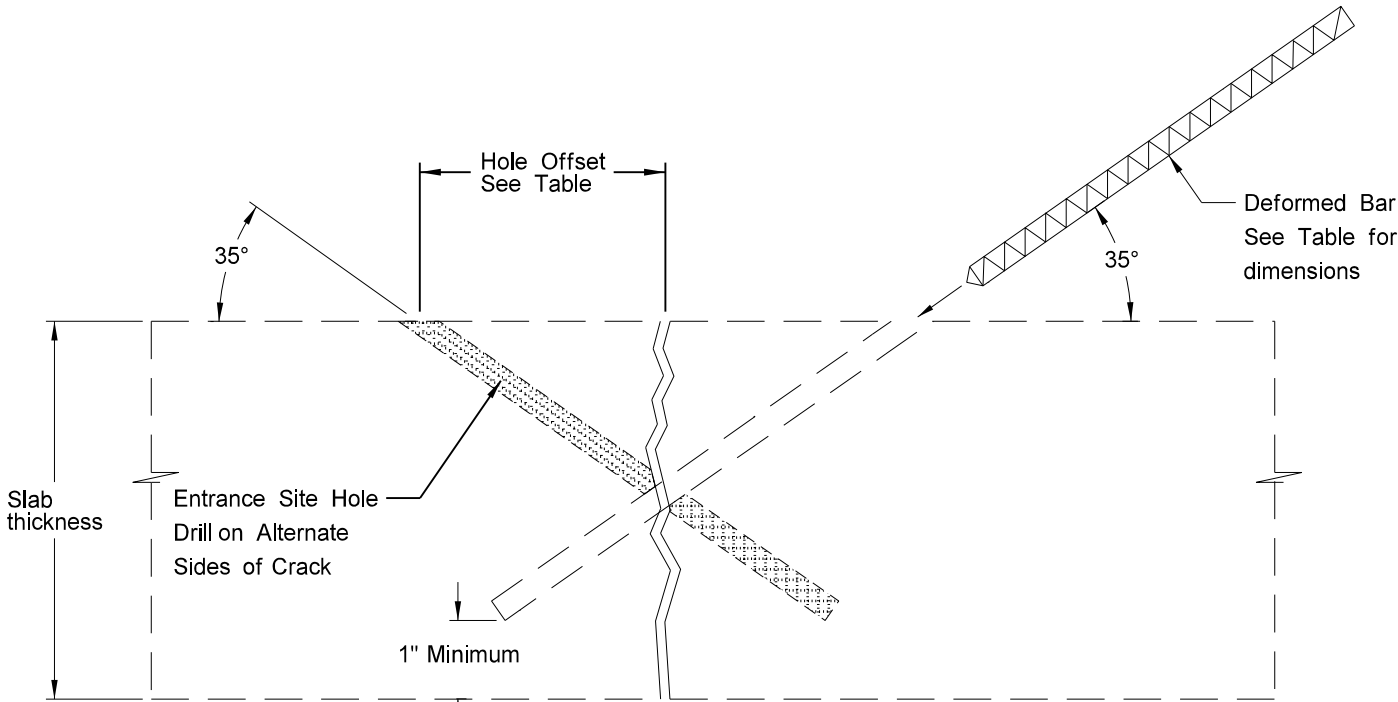
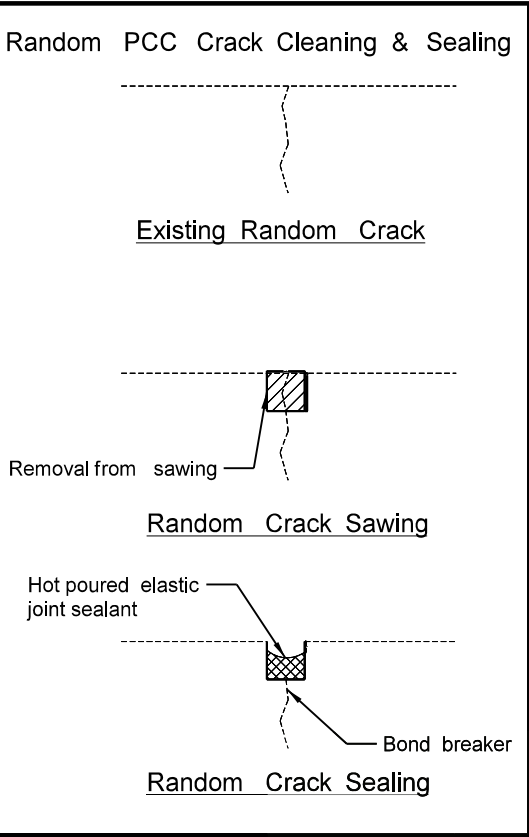
- Notes:
- Epoxy deformed bar into hole. Length shown in table provides 1-inch cover at surface and assume drilling per note 2.
 - Do not drill hole completely through slab. Stop drilling so epoxy/grout will not run out of the bottom when filling.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	20	5

Longitudinal Joint Stitching Locations

Beginning RP	Ending RP	Length (ft)	# of Bars
21.96	21.595	1927.2	963
21.546	21.439	564.96	281
21.379	21.323	295.68	147
20.75	20.655	501.6	250
20.458	20.422	190.08	94
19.6	19.561	205.92	102
			1837

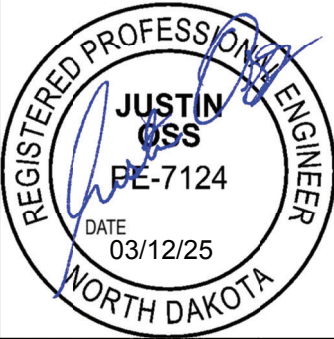
*See Plan Section 11, Data Tables, for Random Crack Locations



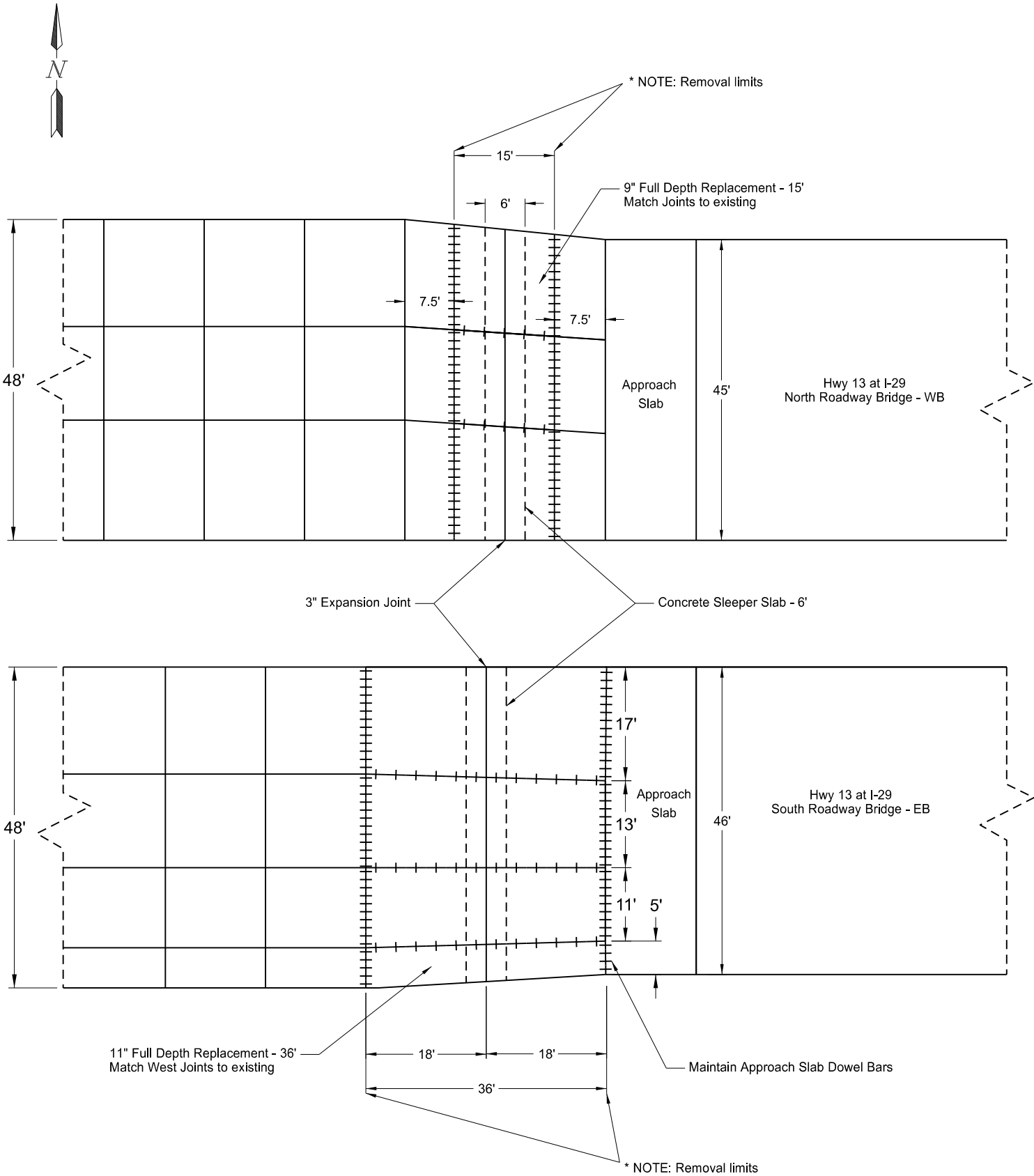
Section A-A

Longitudinal Joint and Crack Stitching Detail
Random Crack Route and Seal

11.3 Mi. N of State line to ND 13 NB & SB



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	6

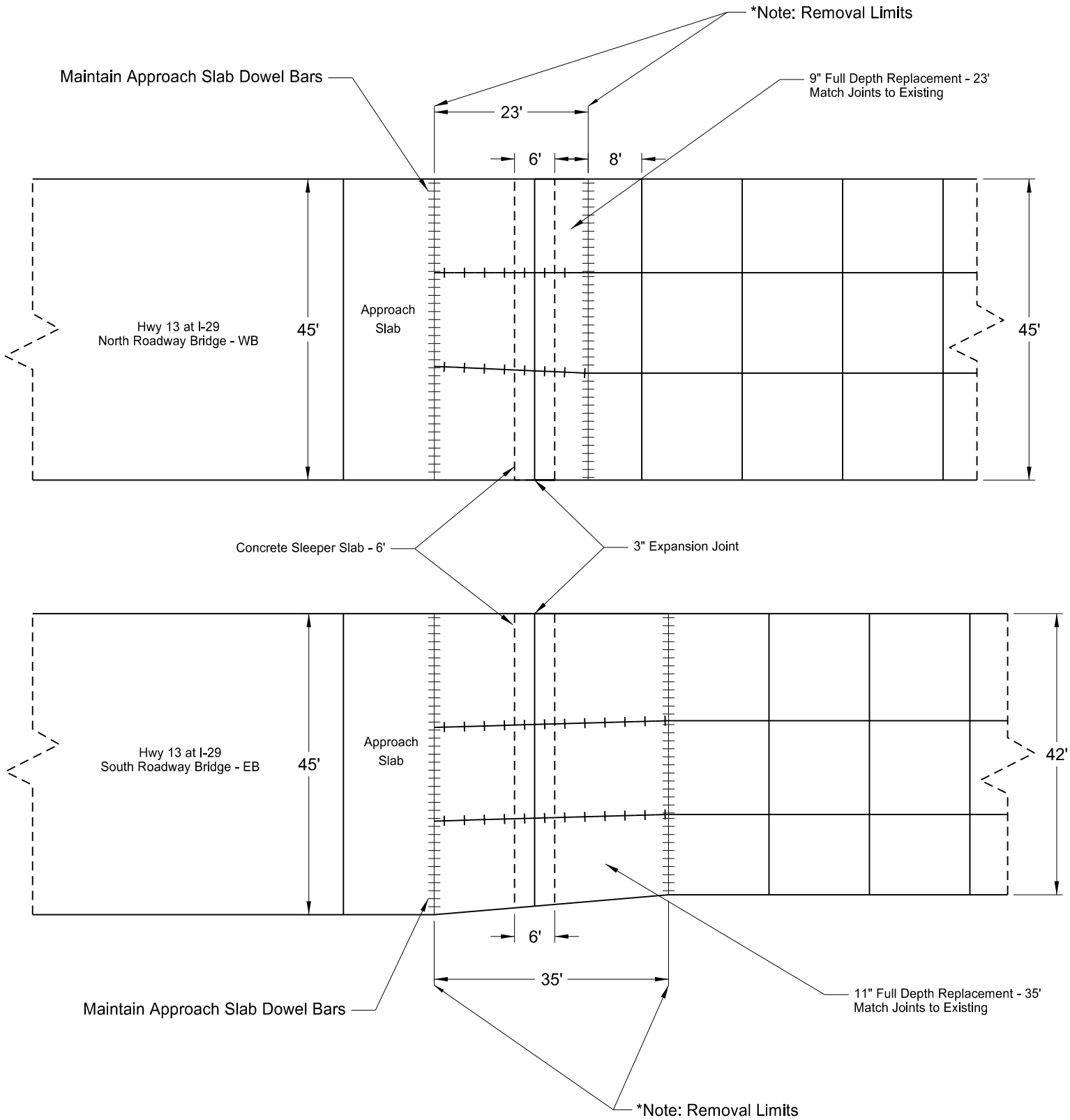


SPEC	CODE	BID ITEM	QTY	UNIT
202	0114	REMOVAL OF CONCRETE PAVEMENT	266	SY
550	1013	3 IN EXPANSION JOINT	94	LF
550	1031	CONCRETE SLEEPER SLAB	64	SY
570	0709	11 IN CONCRETE PVMT REPAIR-FULL DEPTH-DOWELED	188	SY
570	0711	9 IN CONCRETE PVMT REPAIR-FULL DEPTH-DOWELED	78	SY

Paving Details
Highway 13 Bridge at I-29
West Side
Expansion Joint



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	7

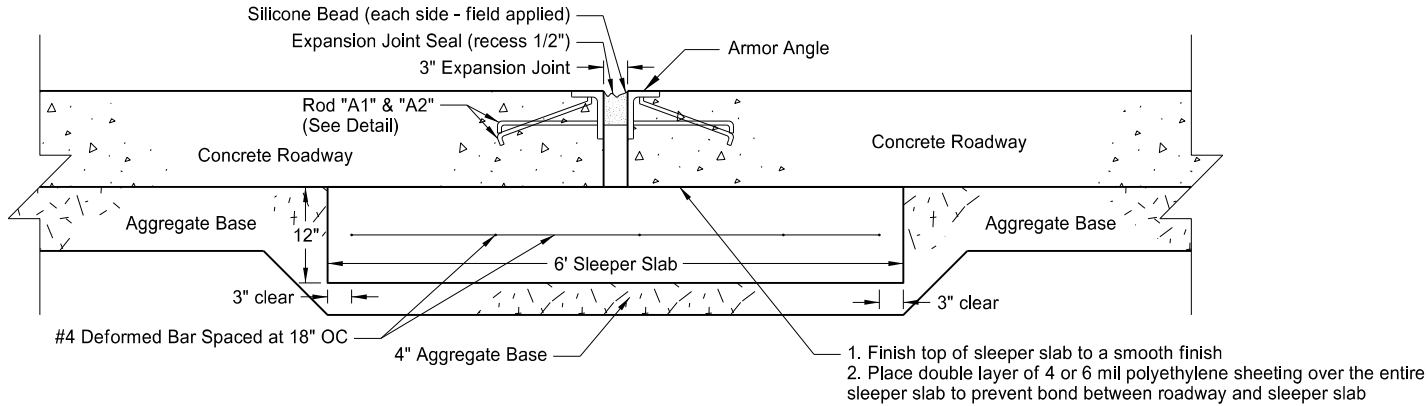


SPEC	CODE	BID ITEM	QTY	UNIT
220	0114	REMOVAL OF CONCRETE PAVEMENT	284	SY
550	1013	3 IN EXPANSION JOINT	89	LF
550	1031	CONCRETE SLEEPER SLAB	60	SY
570	0709	11 IN CONCRETE PVMT REPAIR - FULL DEPTH - DOWELED	169	SY
570	0711	9 IN CONCRETE PVMT REPAIR-FULL DEPTH-DOWELED	78	SY

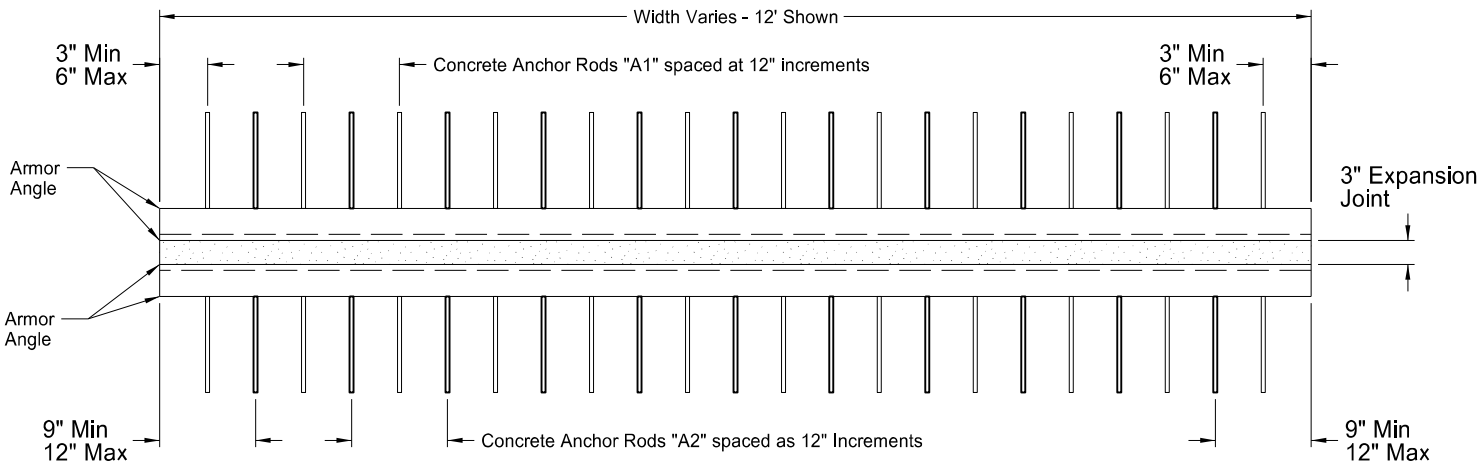
Paving Details
Hwy 13 Bridge at I-29
East Side
Expansion Joint



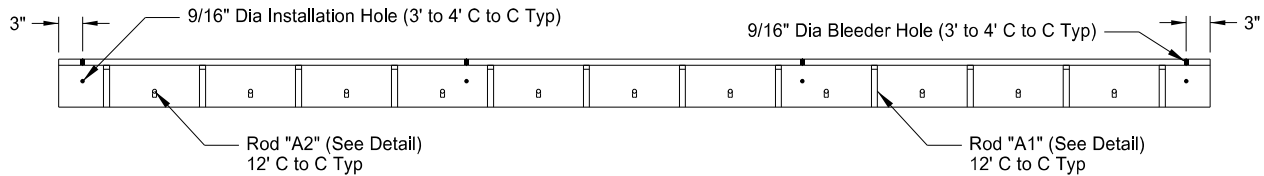
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	8



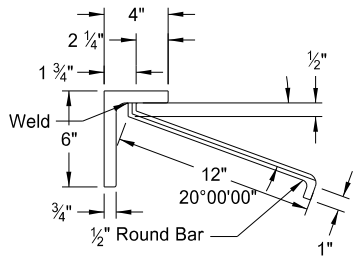
Profile View



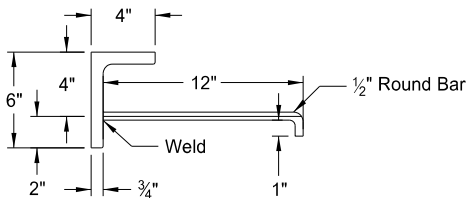
Armor Angle
Top View



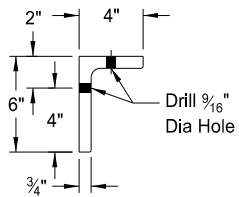
Armor Angle
Side View



Rod "A1"
L6"x4"x3/4" Angle



Rod "A2"
L6"x4"x3/4" Angle



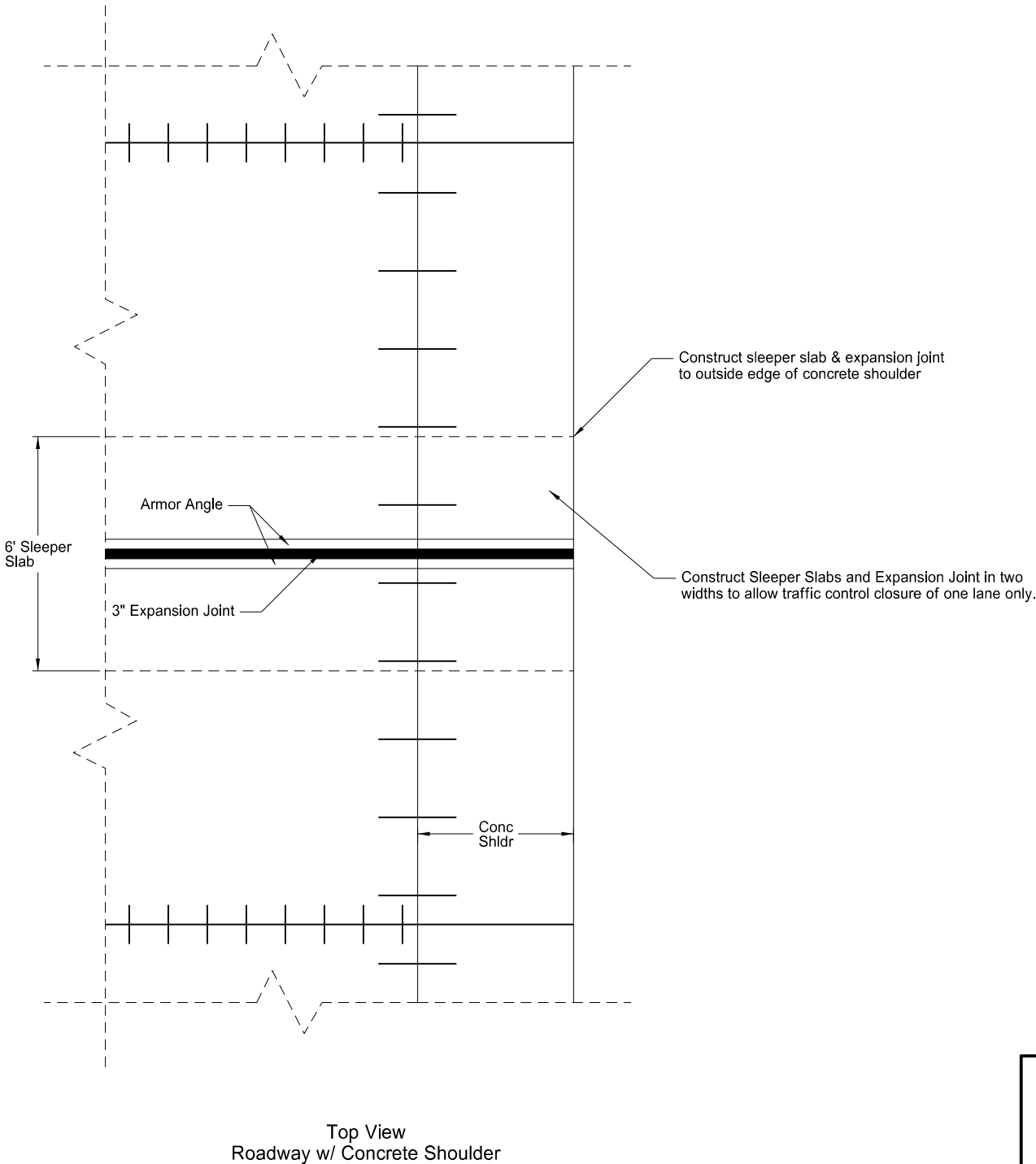
9/16" Drilled Holes
L6"x4"x3/4" Angle

Hwy 13 Bridge at I-29

Expansion Joint



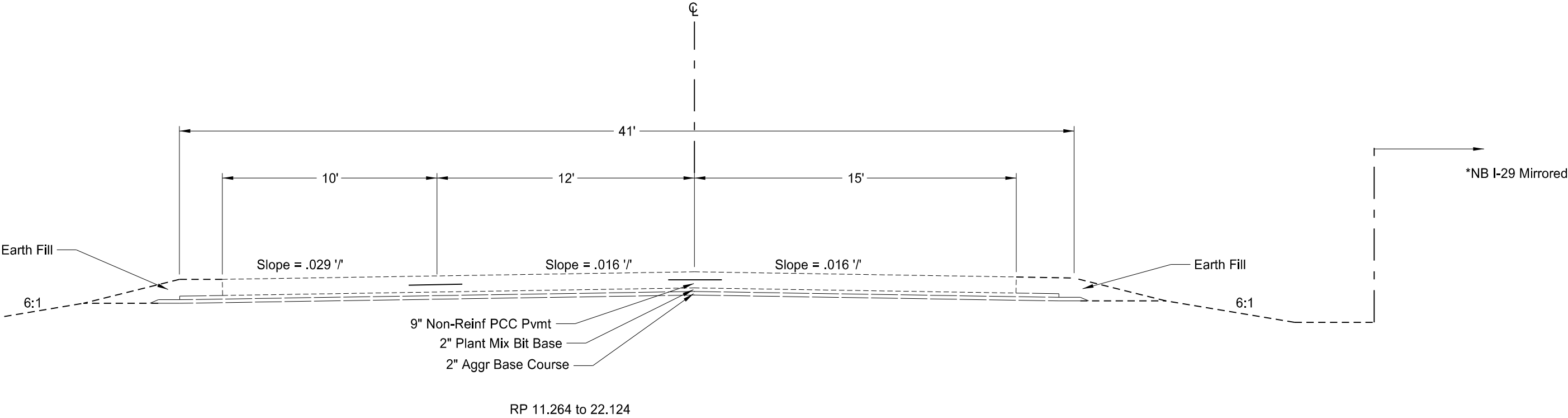
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	20	9



Concrete Sleeper Slab
&
Expansion Joint
Placement Detail



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	30	1



Existing Typical Section

11.3 Mi. N of State line to ND 13 NB & SB

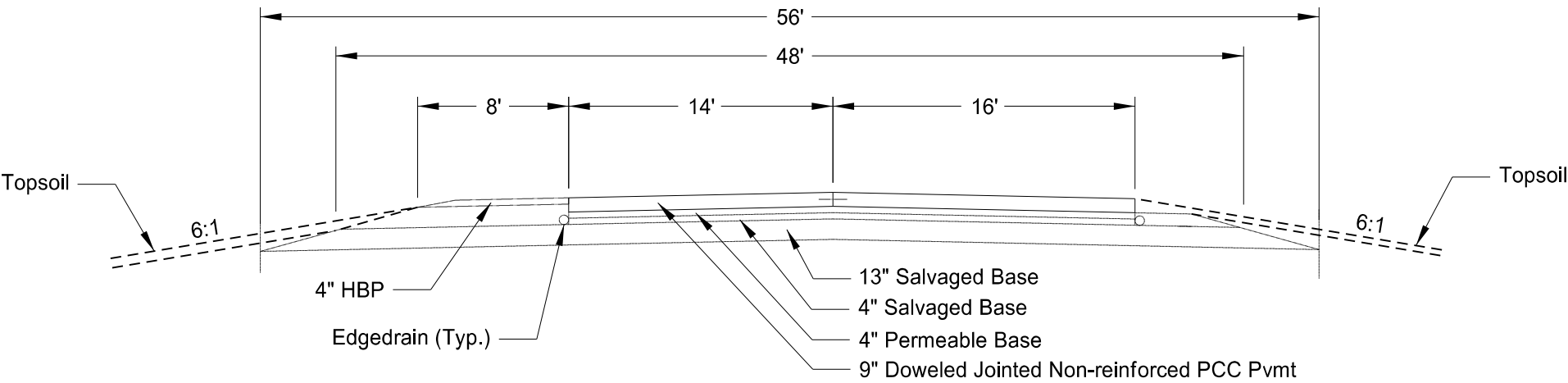
REGISTERED PROFESSIONAL ENGINEER

JUSTIN
OSS
PE-7124

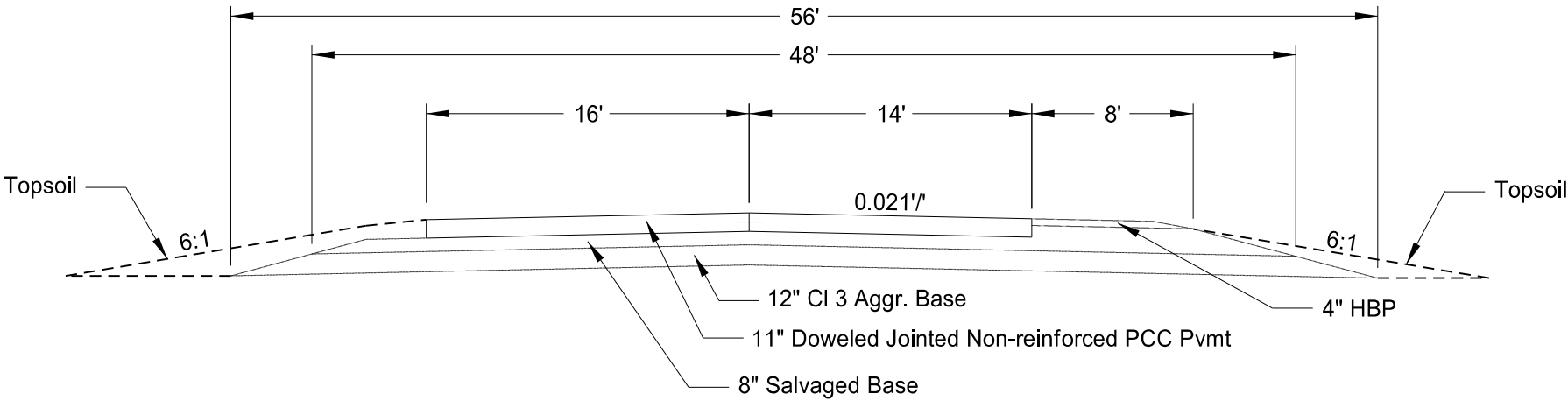
DATE
03/12/25

NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	30	2



Westbound
Existing Typical Section RP 390.721 to 384.491, RP 380.579 to RP 379.491



Eastbound
RP 379.491 to 380.171, RP 380.217 to 386.294
RP 379.910 to 380.171, RP 380.217 to 380.597

Existing Typical Section
Highway 13
Westbound & Eastbound



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	100	1

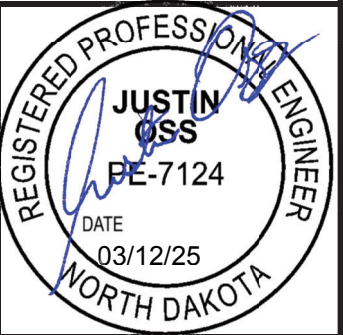
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED				TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.						
			1	2	3				
E5-1-48	48"x48"	EXIT GORE	2				2	35	70
G20-1-60	60"x24"	ROAD WORK NEXT ____ MILES						28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)						18	
G20-2-48	48"x24"	END ROAD WORK	4	4	4		4	26	104
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)						18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR						18	
G20-50a-72	72"x36"	ROAD WORK NEXT ____ MILES RT & LT ARROWS						43	
G20-52a-72	72"x24"	ROAD WORK NEXT ____ MILES RT or LT ARROW						36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	4	4	4		4	59	236
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)						11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)						10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)						10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)						7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)						7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)						7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)						7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)						7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT						15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)						7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT (Mounted on route marker post)						7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT (Mounted on route marker post)						9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)						7	
R1-1-48	48"x48"	STOP						32	
R1-2-60	60"x60"	YIELD	2	1	1		2	29	58
R2-1-36	36"x48"	SPEED LIMIT ____ (Portable only)	6	6	6		6	30	180
R2-1-48	48"x60"	SPEED LIMIT ____	8	8	8		8	39	312
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	10	10	10		10	10	100
R3-2-48	48"x48"	NO LEFT TURN						35	
R4-1-48	48"x60"	DO NOT PASS						39	
R4-7-48	48"x60"	KEEP RIGHT						39	
R5-1-48	48"x48"	DO NOT ENTER						35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)						14	
R7-1-12	12"x18"	NO PARKING ANY TIME						11	
R10-6-24	24"x36"	STOP HERE ON RED						16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)						12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)						12	
R11-3a-60	60"x30"	ROAD CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)						15	
R11-3c-60	60"x30"	STREET CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)						15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)						15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT						35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT						35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT						35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW						26	
W3-1-48	48"x48"	STOP AHEAD						35	
W3-3-48	48"x48"	SIGNAL AHEAD						35	
W3-4-48	48"x48"	BE PREPARED TO STOP						35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	4	4	4		4	35	140
W4-1-48	48"x48"	MERGING TRAFFIC		3			3	35	105
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT	4	4	4		4	35	140
W5-1-48	48"x48"	ROAD NARROWS						35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE						35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW						35	
W6-3-48	48"x48"	TWO WAY TRAFFIC						35	
W8-1-48	48"x48"	BUMP						35	
W8-3-48	48"x48"	PAVEMENT ENDS						35	
W8-7-48	48"x48"	LOOSE GRAVEL						35	
W8-11-48	48"x48"	UNEVEN LANES						35	
W8-12-48	48"x48"	NO CENTER LINE						35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL						35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY						35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ____ FT or ____ MILE						35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ____ FT or ____ MILE						35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY						35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL						35	
W13-1P-30	30"x30"	____ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)						14	
W13-4p-36	36"x36"	ON RAMP (Mounted on other sign post)	4				4	17	68
W14-3-64	64"x48"	NO PASSING ZONE						28	
W16-2P-30	30"x24"	____ FEET PLAQUE (Mounted on warning sign post)						10	
W20-1-48	48"x48"	ROAD WORK AHEAD or ____ FT or ____ MILE	4	6	6		6	35	210
W20-2-48	48"x48"	DETOUR AHEAD or ____ FT or ____ MILE						35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ____ FT or ____ MILE						35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ____ FT or ____ MILE						35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or ____ FT or ____ MILE	4	4	4		4	35	140
W20-7-48	48"x48"	FLAGGER	2	2	2		2	35	70
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	2	2	2		2	5	10
W20-52P-54	54"x12"	NEXT ____ MILES (Mounted on warning sign post)						12	
W21-1-48	48"x48"	WORKERS						35	
W21-2-48	48"x48"	FRESH OIL						35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ____ FT or ____ MILE						35	
W21-5-48	48"x48"	SHOULDER WORK						35	

[illegible][illegible]

SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	1963

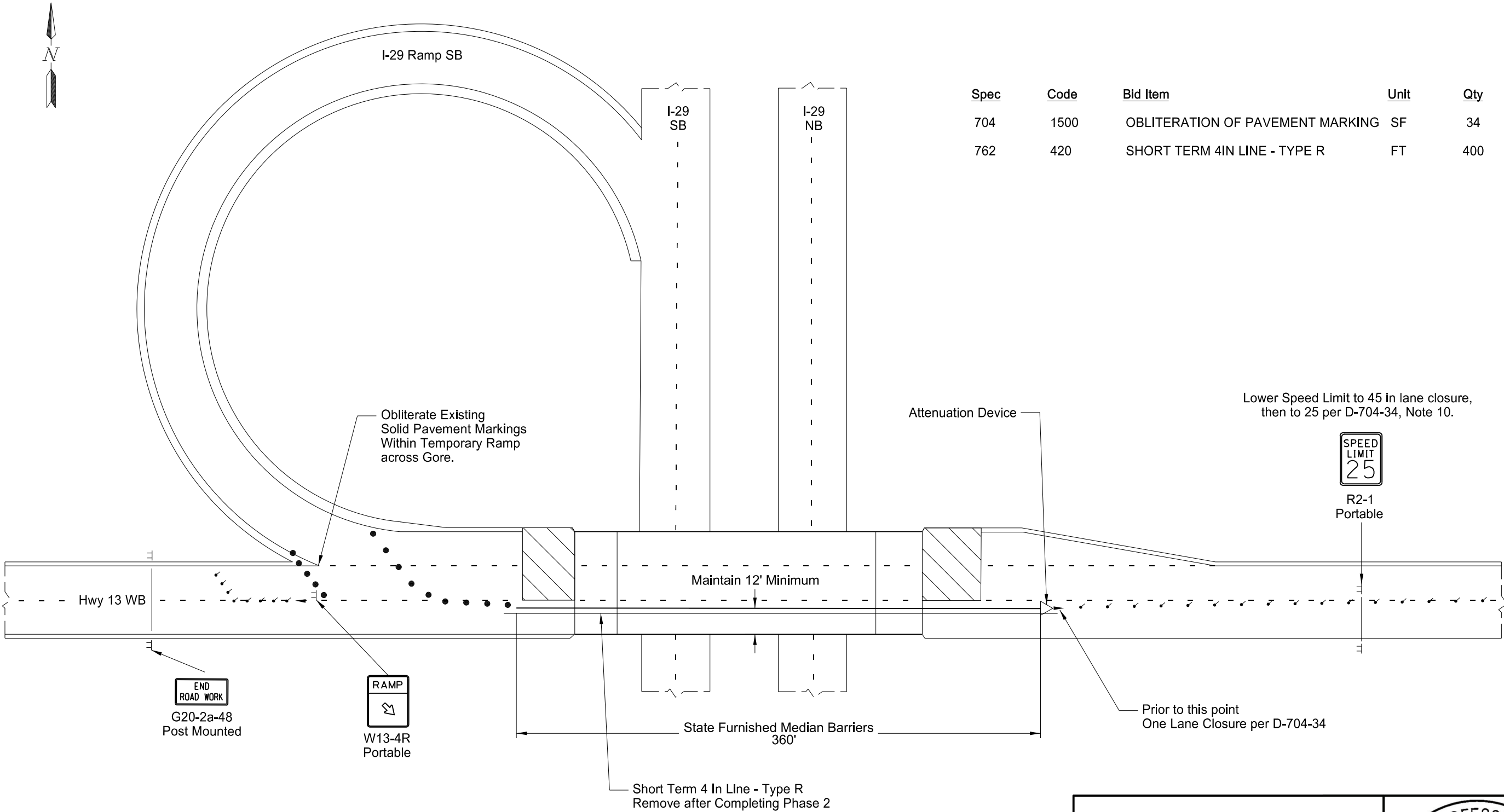
[illegible]

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	100	2



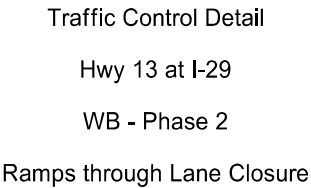
Spec	Code	Bid Item	Unit	Qty
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	34
762	420	SHORT TERM 4IN LINE - TYPE R	FT	400

Note: Not Drawn To Scale

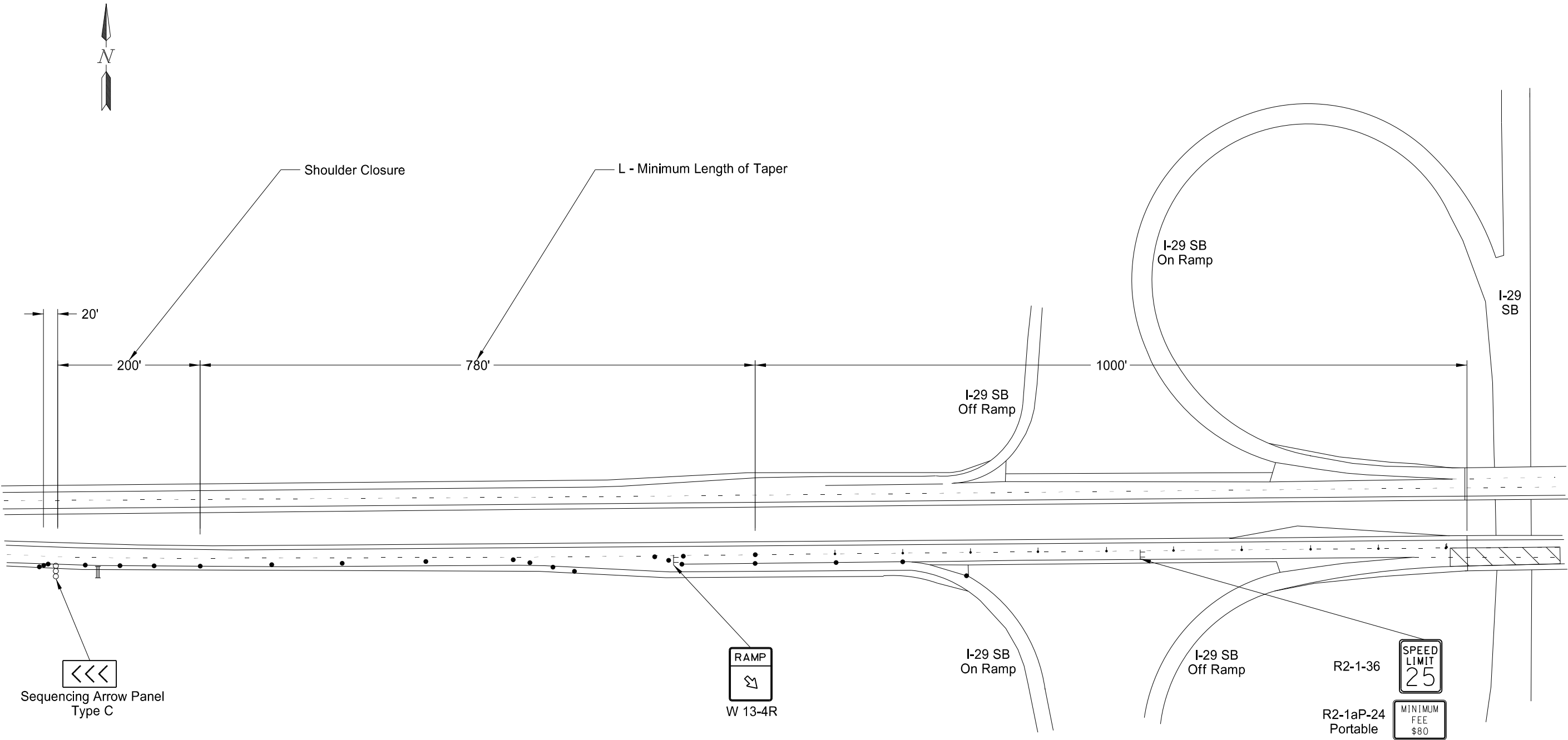
KEY	
	Type I barricade
	Type II barricade
	Type III barricade
	Sign
	Delineator drum
	Work area
	Flagger
	Sequencing arrow panel
	Tubular markers

Traffic Control Detail
Hwy 13 at I-29
WB - Phase 2





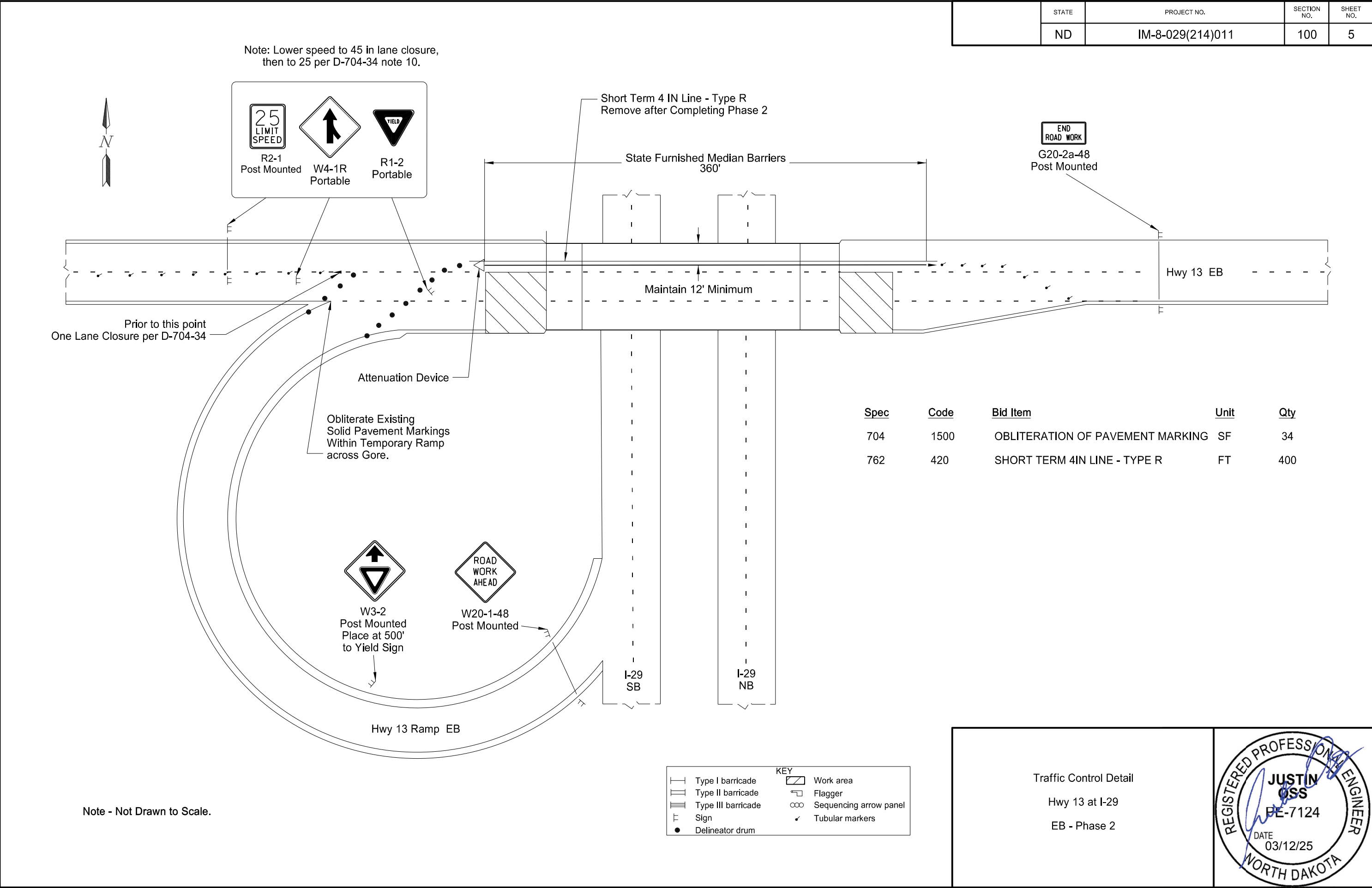
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	100	4



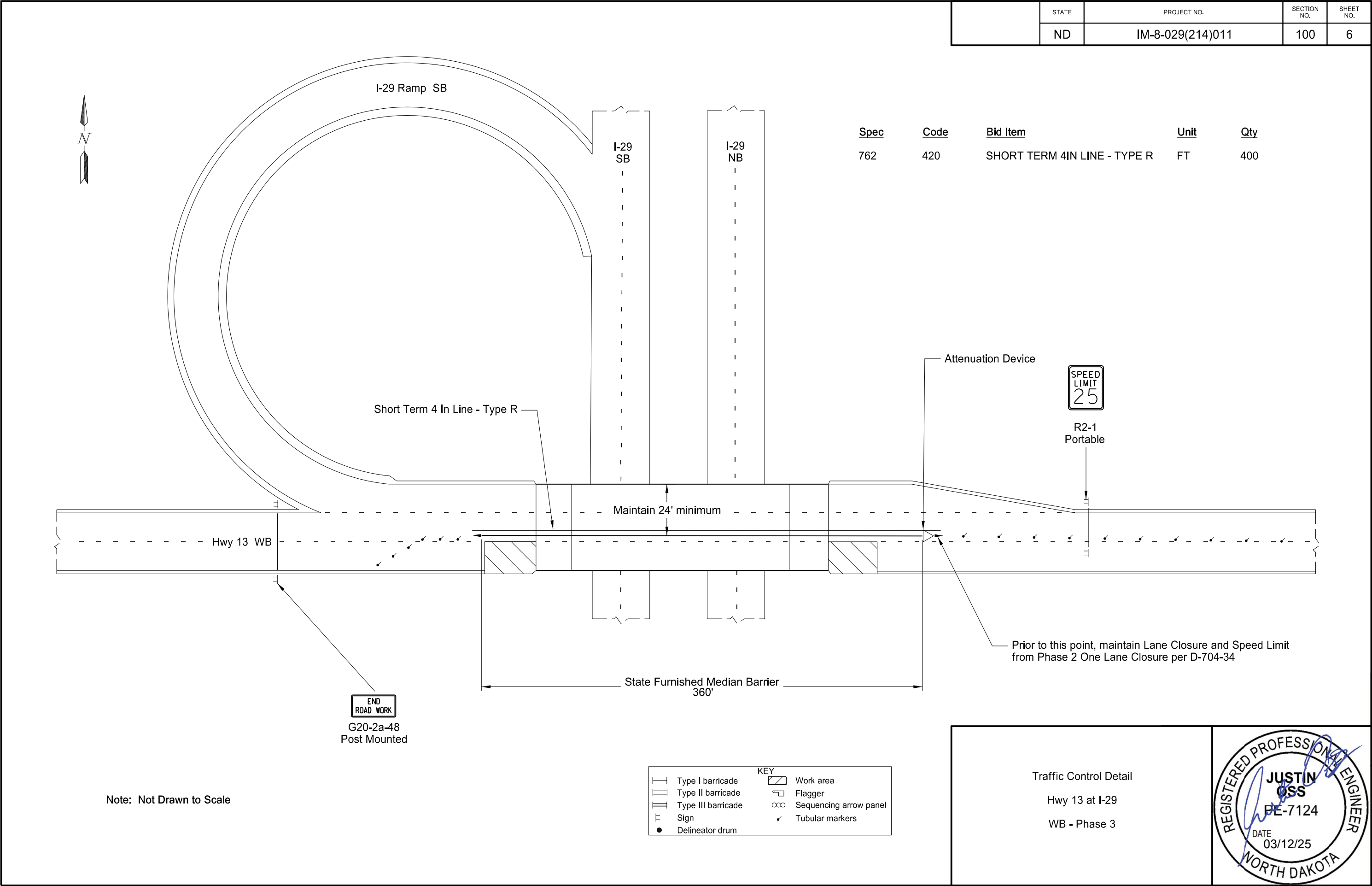
	Type I barricade		Work area
	Type II barricade		Flagger
	Type III barricade		Sequencing arrow panel
	Sign		Tubular markers
	Delineator drum		

Traffic Control Detail
Hwy 13 at I-29
EB - Phase 2
Ramps through Lane Closure





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	100	6

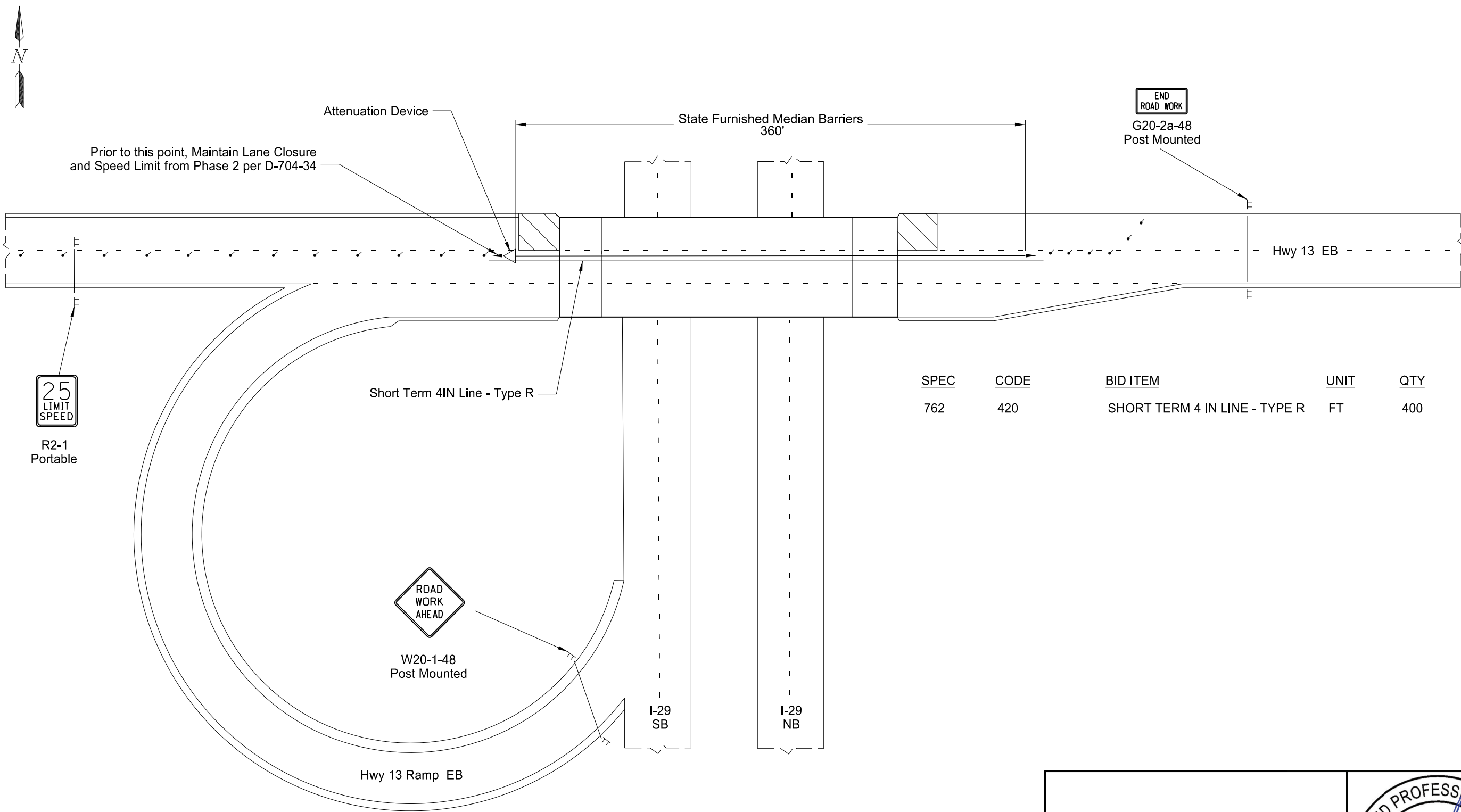


Spec	Code	Bid Item	Unit	Qty
762	420	SHORT TERM 4IN LINE - TYPE R	FT	400

Traffic Control Detail
Hwy 13 at I-29
WB - Phase 3



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	100	7



SPEC	CODE	BID ITEM	UNIT	QTY
762	420	SHORT TERM 4 IN LINE - TYPE R	FT	400

Note - Not Drawn to Scale.

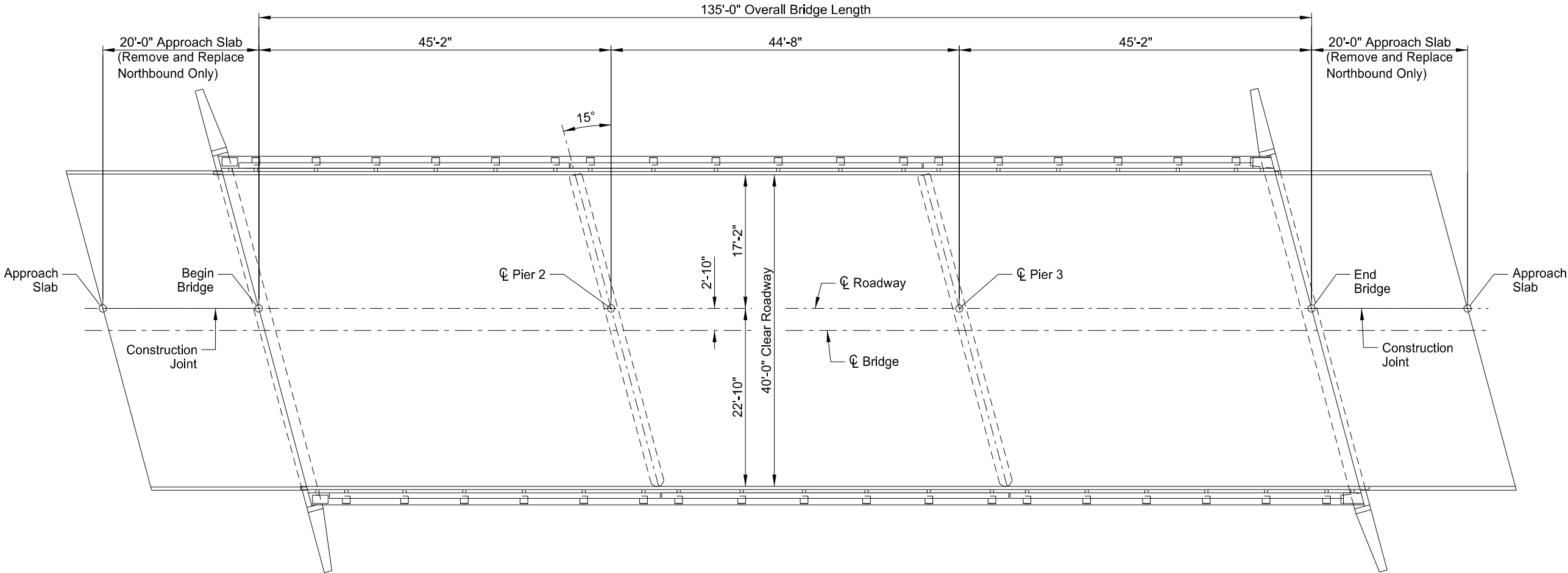
KEY	
	Type I barricade
	Type II barricade
	Type III barricade
	Sign
	Delineator drum
	Work area
	Flagger
	Sequencing arrow panel
	Tubular markers

Traffic Control Detail
Hwy 13 at I-29
EB - Phase 3



23 U.S.C. 407
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	170	1



(NORTHBOUND STRUCTURE)
PLAN

NOTE:

Southbound structure is not shown but identical to northbound structure.

BRIDGE BID ITEMS (NORTHBOUND)

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	182.2
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	870
602	1260	BRIDGE DECK CRACK SEALING	LF	1,008
930	9605	SPALL REPAIR - MINOR	SF	24
930	9639	APPROACH SLAB LIP REPAIR	LF	93.4

BRIDGE BID ITEMS (SOUTHBOUND)

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	870
602	1260	BRIDGE DECK CRACK SEALING	LF	682
930	9605	SPALL REPAIR - MINOR	SF	31



SPECIAL PROVISIONS

SSP 2	MIGRATORY BIRD TREATY ACT
-------	---------------------------

I-29, 7 MILE N OF ND 11
WILD RICE RIVER

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson

Jason Thorenson
03/21/25

		23 U.S.C. 407 NDDOT Reserves All Objections	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
			ND	IM-8-029(214)011	170	2
NOTES						
100	SCOPE OF WORK: Work at 29-014.580L consists of repairing concrete spalls on the concrete rails and posts, sealing cracks in the bridge deck & curbs, and applying penetrating water repellent treatment to the bridge deck, curbs, posts, & rails. Work at 29-014.580R consists of removing and replacing the 20 feet of concrete bridge approach slab on both ends of the bridge, repairing the approach slab lip on both ends of the bridge, repairing concrete spalls on the concrete rails and posts, sealing cracks in the bridge deck and curbs, and applying penetrating water repellent treatment to the bridge deck, curbs, posts, & rails.					
602	CLASS AAE-3 CONCRETE: Use a design compressive strength of 4,000 psi at 28 days for Class AAE-3 Concrete.					
602	PENETRATING WATER REPELLENT TREATMENT: Apply the penetrating water repellent solution to the top of the bridge deck, the front face and top of curbs, posts, and rails, as well as the approach slabs. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry. If water washing equipment is used for cleaning, provide either a water pressure washer with 160°F water at 1,800 psi minimum nozzle pressure or a cold water pressure washer at 3,000 psi minimum nozzle pressure.					
602	CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck and curbs to determine the need for crack sealing. Mark and repair all visible cracks appearing on the top surface 0.007" or greater in width at its widest segment or as directed by the Engineer. Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.007" wide. Use Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal epoxy sealer. Include all work and materials associated with the bridge deck and curb crack sealing in the bid item "Bridge Deck Crack Sealing".					
930	SPALL REPAIR – MINOR: Repair the areas of minor spalling using a two-part Type VIII neat epoxy (no sand) compound meeting ASTM C 881, Type I or IV. Follow the repair procedure outlined below. Surface Preparation: - Remove any damaged or loose concrete using hand tools or power-driven chipping hammers (15 lb. max size). - Sand blast clean any rust on the exposed reinforcing steel. - Clean the existing concrete surface by light sand blasting or high pressure water blasting. Mixing: - Measure and mix the proper quantity of each component per the manufacturer's recommendations. - Mix the components thoroughly using a low-speed electric drill and a clean "Jiffy" type mixing paddle. Do not mix the components by hand.					
			Application: - Ensure the surface of the substrate is clean and dry prior to applying the epoxy compound. - Ensure the surface temperature of the substrate, and the ambient air temperature, are within the range specified by the manufacturer. - Brush, roll, or scrub the epoxy compound into the substrate to ensure all small voids are filled. - Cover the entire repair area, including any exposed reinforcing steel, with a minimum thickness of 20 mils of epoxy compound. Curing: - Follow the manufacturer's recommendations for curing after application of the epoxy compound. The estimated spall repair areas and locations are listed in Dwg 29-014.580L&R-3. The actual limits of the spall repairs will be determined by the Engineer. A minimum area of 1 SF will be paid at each spall repair location. Unless otherwise approved by the Engineer, complete the spall repairs without removing the existing metal railing attached to the concrete posts and railings. Include all labor, equipment, and materials needed to repair the spall areas in the unit price bid for "Spall Repair – Minor".			
						

23 U.S.C. 407
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	170	3

Estimated Repair Areas: Bridge 029-014.580L (Southbound Structure)		
West Rail & Rail Posts		
<u>Qty</u>	<u>Location</u>	
4	SF	concrete rail between posts 8 & 10
1	SF	concrete rail between posts 12 & 13
14	SF	1SF each at posts 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 17, & 18
East Rail & Rail Posts		
<u>Qty</u>	<u>Location</u>	
2	SF	concrete rail south of post 1
2	SF	concrete rail between post 9 & 10
1	SF	concrete rail between post 12 & 13
7	SF	1SF each at posts 4, 7, 9, 10, 11, 12, & 15
31	SF	Total Estimated Qty for Structure

Estimated Repair Areas: Bridge 029-014.580R (Northbound Structure)		
West Rail & Rail Posts		
<u>Qty</u>	<u>Location</u>	
2	SF concrete rail between posts 5 & 6	
3	SF concrete rail between posts 10 & 11	
4	SF concrete rail between posts 16 & 17	
7	SF 1SF each at posts 2, 3, 4, 6, 7, 9, & 12	
East Rail & Rail Posts		
<u>Qty</u>	<u>Location</u>	
2	SF concrete rail between posts 10 & 11	
6	SF 1SF each at posts 5, 6, 7, 8, 10, & 15	
24	SF Total Estimated Qty for Structure	

Note: Posts are numbered sequentially from the south end of the bridge to the north end.

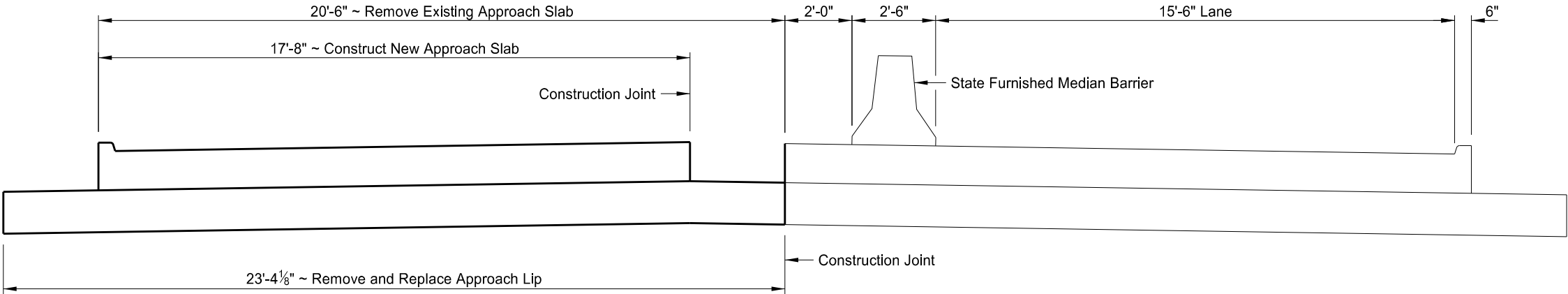


I-29, 7 MILE N OF ND 11
WILD RICE RIVER

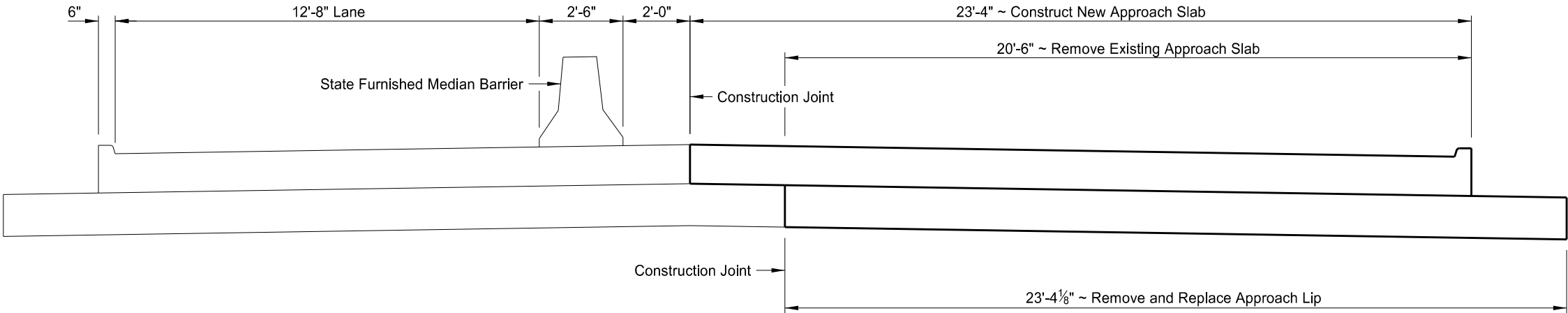
SPALL REPAIR DETAILS

23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	170	4



PHASE 1 CONSTRUCTION



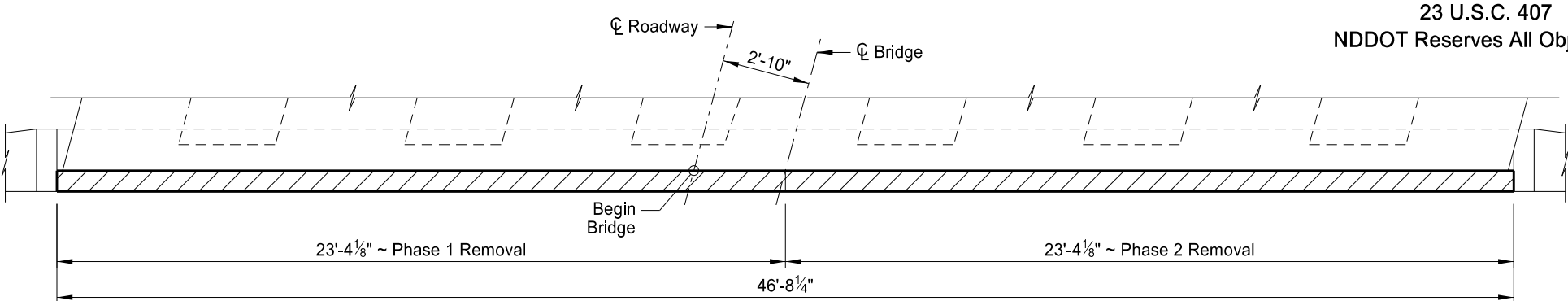
PHASE 2 CONSTRUCTION



I-29, 7 MILE N OF ND 11 WILD RICE RIVER	
CONSTRUCTION PHASING	
DRAWING NO.	29-014.580R-4

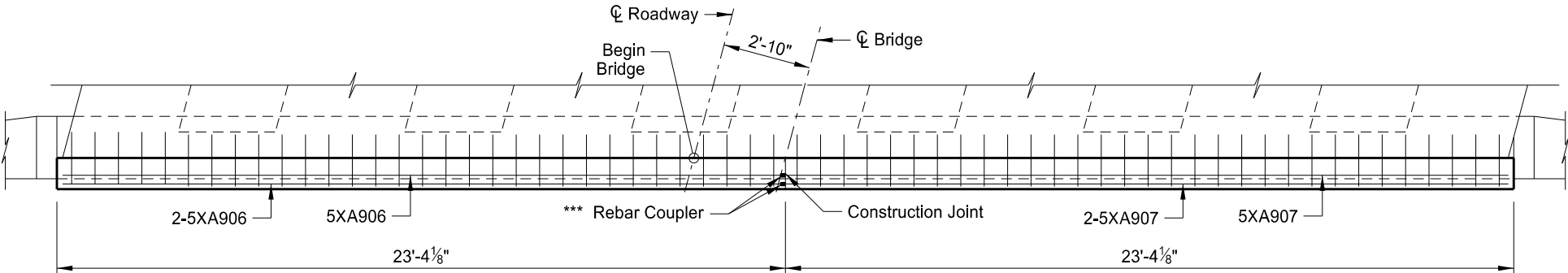
23 U.S.C. 407
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(214)011	170	5

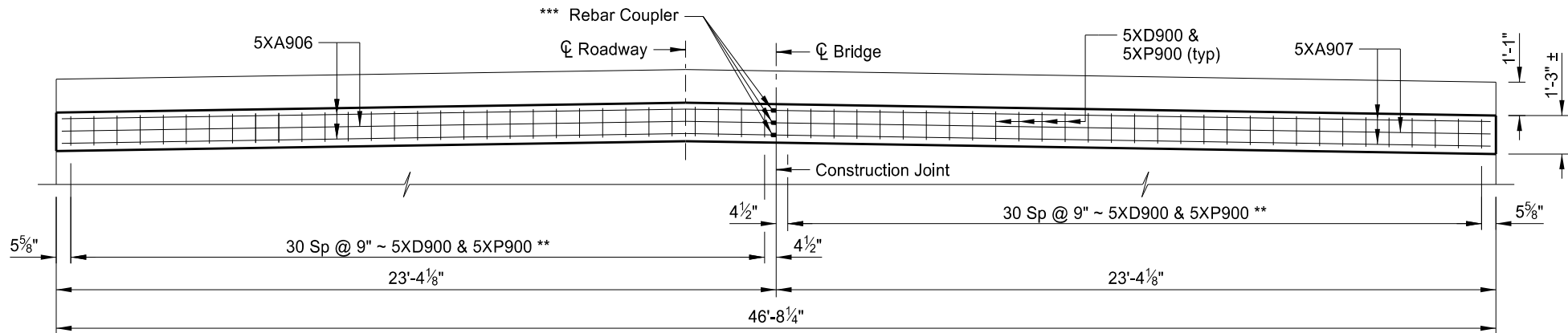


(SHOWING CONCRETE REMOVAL)
PLAN

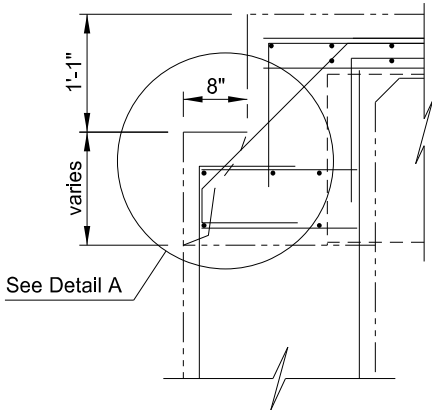
Hatched area indicates
concrete to be removed.



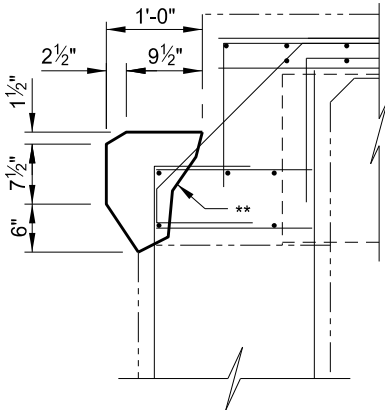
PLAN



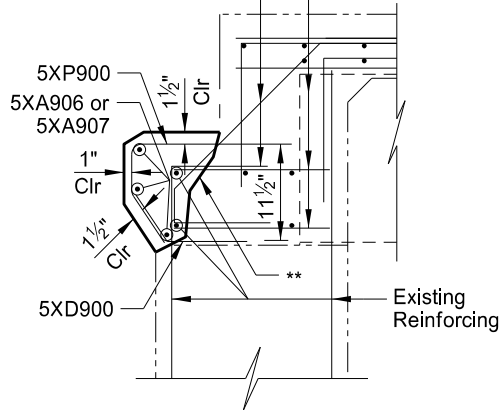
(SHOWING ONLY NEW REINFORCING)
ELEVATION



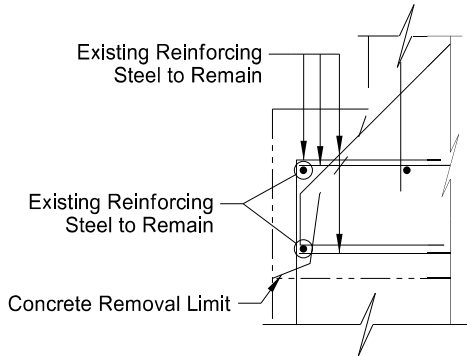
(SHOWING REMOVAL)
EXISTING APPROACH
SLAB LIP



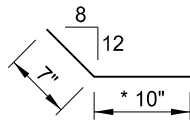
(SHOWING DIMENSIONS)
NEW APPROACH
SLAB LIP



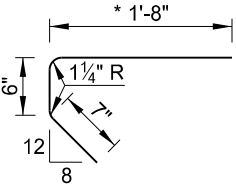
(SHOWING REINFORCING)
NEW APPROACH
SLAB LIP



DETAIL A



XD900



XP900

(DIMENSIONS SHOWN ARE OUT TO OUT)
BENT BAR DETAILS

NOTES:

Install 5XD900 and 5XP900 bars according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Sec. 806.02 of the NDDOT Standard Specifications.

Include Class AAE-3 Concrete, Grade 60 reinforcing steel, labor and equipment required to remove and build the approach slab lip in the bid item "Approach Slab Lip Repair".

Provide concrete in accordance with Section 602 and reinforcing steel in accordance with Section 612.

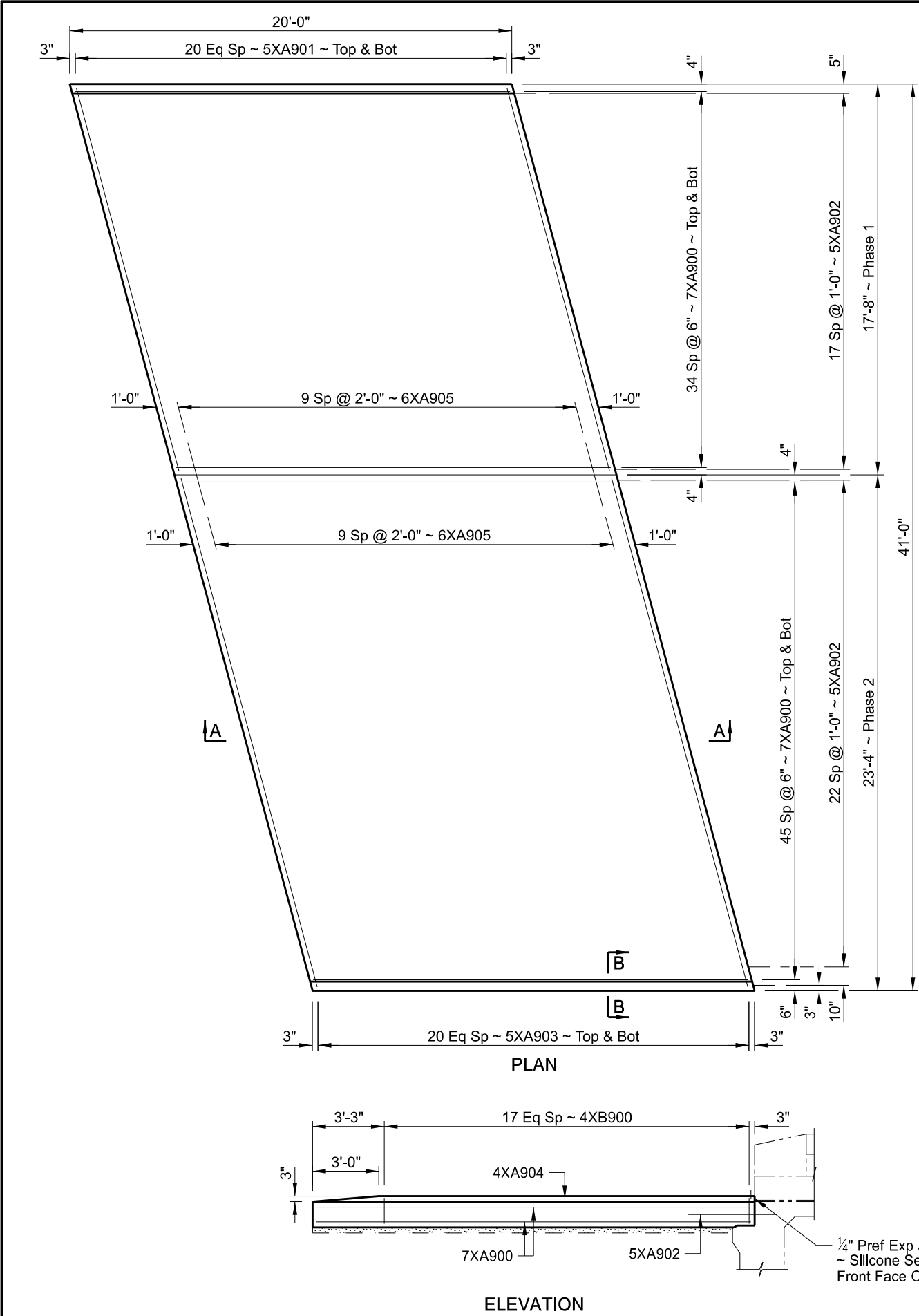
Quantities shown are for informational purposes only.

- * Length may vary depending on manufacturer's recommendations for anchorage. Provide a minimum anchorage length of 9 inches.
- ** Bush Hammer Finish: Before any concrete is placed against the existing concrete, the surface shall be prepared with a bush hammer to produce a clean rough finish. After the bush hammer finish, prepare the concrete surface in accordance with Section 602.04 H "Construction Joints."
- *** Use approved mechanical connector capable of developing 125% of the specified yield strength of the reinforcing steel

SKEW ANGLE = 15°			
BAR LIST - ONE APPROACH LIP			
SIZE	MARK	NO.	LENGTH
5	XA906	3	23'-2"
5	XA907	3	23'-2"
5	XD900	62	1'-5"
5	XP900	62	2'-9"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS)		CONCRETE (CY)	
414		1.4	

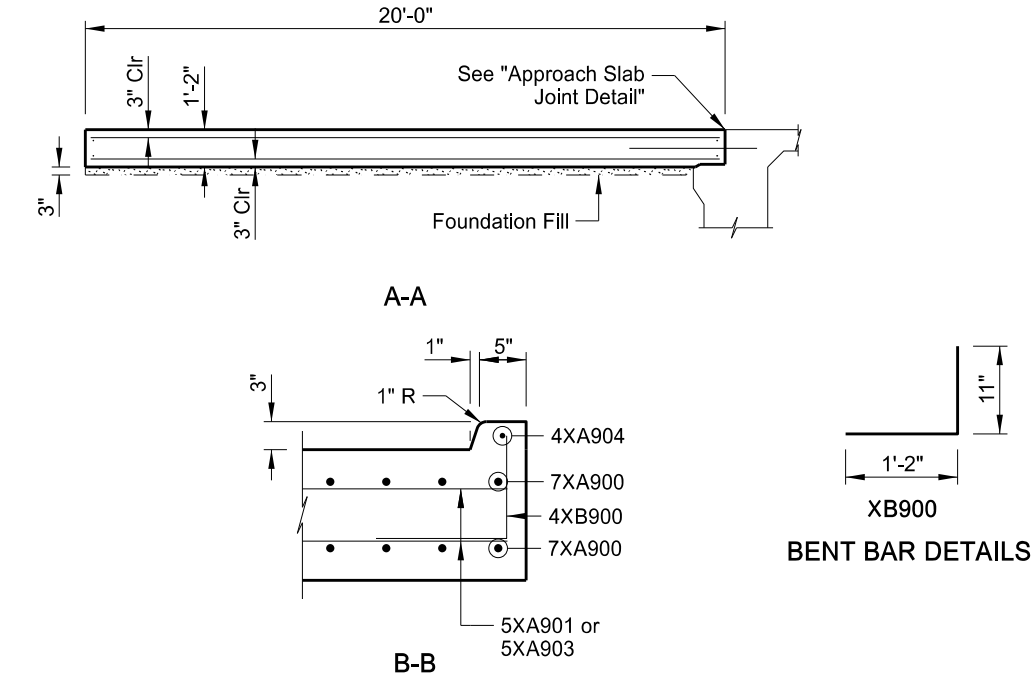


QUANTITIES (ONE APPROACH LIP)	
APPROACH SLAB LIP REPAIR	45.7 LF
I-29, 7 MILE N OF ND 11 WILD RICE RIVER (NORTHBOUND STRUCTURE) (SHOWING ENTRANCE END) APPROACH SLAB LIP REPAIR DETAILS	



23 U.S.C. 407
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(214)011	170	6



SKEW ANGLE = 15°			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
7	XA900	162	19'-8"
5	XA901	42	17'-9"
5	XA902	41	* 4'-0"
5	XA903	42	23'-11"
4	XA904	2	17'-0"
6	XA905	20	1'-3"
4	XB900	36	2'-1"
ESTIMATED MATERIAL QUANTITIES			
REINFORCING STEEL (LBS)		CONCRETE (CY)	
8,619		35.4	

* Length may increase, depending on manufacturer's recommendations for anchorage. Provide a minimum anchorage length of 1'-0".

NOTES:

The estimated material quantities shown are for informational purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, and labor required to remove and build the approach slabs and curbs in the pay item "Bridge Approach Slab-Remove and Replace." Use Class AAE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612. Use polyethylene film that meets the requirements of ASTM C171.

The dimensions shown in the "Bent Bar Details" are out to out.

Install 5XA902 bars according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage (16k min. ultimate pullout) and that meets the requirements of Section 806.02. Provide an anchorage depth of 1'-0", or the depth as recommended by the manufacturer to achieve desired capacity, whichever is greater.

An "X" preceding a bar designation indicates an epoxy coated bar.

QUANTITIES	(ONE SLAB)
APPROACH SLAB REMOVE & REPLACE	91.1 SY
I-29, 7 MILE N OF ND 11 WILD RICE RIVER (NORTHBOUND STRUCTURE) (SHOWING ENTRANCE END) APPROACH SLAB DETAILS	

D-101-1

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
04-23-18	General Revisions
09-20-18	General Revisions
12-18-20	General Revisions
06-16-22	General Revisions



NDDOT ABBREVIATIONS

D-101-2

Galv	galvanized	Ln	lane	Obsc	obscure(d)	Qty	quantity
Gar	garage	Lg	large	Ocpd	occupied	Qtr	quarter
Gs L	gas line	Lat	latitude	Ocpy	occupy		
G Reg	gas line regulator	Lt	left	O/s	offset		
GMV	gas main valve	Lens	lenses	OC	on center	Rad or R	radius
G Mtr	gas meter	Lvl	level	C	one dimensional consolidation	RR	railroad
GSV	gas service valve	Lvng	leveling	OC	organic content	Rlwy	railway
GVP	gas vent pipe	Lht	light	Orig	original	Rsd	raised
GV	gate valve	LP	light pole	O To O	out to out	RC	rapid curing
Ga	gauge	Ltg	lighting	OD	outside diameter	Rec	record
Gov	government	Liq	liquid	OH	overhead	Rcy	recycle
Grd	graded/grade	LL	liquid limit			RAP	recycled asphalt pavement
Grnd	ground	Loc	location			RPCC	recycled portland cement concrete
GWM	ground water monitor	Long.	longitude	PMT	pad mounted transformer	Ref	reference
Gdrl	guardrail	Lp	loop	Pg	pages	R Mkr	reference marker
Gtr	gutter	LD	loop detector	Pntd	painted	RM	reference monument
		Lum	luminaire	Pr	pair	RP	reference point
				Pnl	panel	Refl	reflectorized
				Pk	park	RCB	reinforced concrete box
H Plg	H piling			PSD	passing sight distance	RCES	reinforced concrete end section
Hdwl	headwall	Mb	mailbox	Pvmt	pavement	RCFES	reinforced concrete flared end section
Ht	height	ML	main line	Ped	pedestal	RCP	reinforced concrete pipe
Hel	helical	MH	manhole	Ped	pedestrian	RCPS	reinforced concrete pipe sewer
HDPE	high density polyethylene	Mkd	marked	PPP	pedestrian pushbutton post	RCTES	reinforced concrete traversable end section
HM	high mast	Mkr	marker	Pen.	penetration	Reinf	reinforcement
HP	high pressure	Mkg	marking	Perf	perforated	Res	reservation
HPS	high pressure sodium	MA	mast arm	Per.	perimeter	Res	residence
HTCG	high tension cable guardrail	Matl	material	Perm	permanent	Ret	retaining
Hwy	highway	Max	maximum	PL	pipeline	Rev	reverse
Hor	horizontal	MC	meander corner	Pl	place	Rt	right
HBP	hot bituminous pavement	Meas	measure	P&P	plan & profile	R/W	right of way
HMA	hot mix asphalt	Mdn	median	PL	plastic limit	Riv	river
Hyd	hydrant	MD	median drain	Pl or P _L	plate	Rd	road
Ph	hydrogen ion content	MC	medium curing	Pt	point	Rdbd	road bed
		MGS	Midwest Guardrail System	PE	polyethylene	Rdwy	roadway
		MM	mile marker	PVC	polyvinyl chloride	RWIS	roadway weather information system
Id	identification	MP	mile post	PCC	Portland Cement concrete	Rk	rock
Incl	inclinometer tube	Min	minimum	PP	power pole	Rt	route
IMH	inlet manhole	Misc	miscellaneous	Preempt	preemption		
ID	inside diameter	Mon	monument	Prefab	prefabricated		
Inst	instrument	Mnd	mound	Prfmd or Pref	preformed		
Intchg	interchange	Mtbl	mountable	Prep	preperation		
Intmdt	intermediate	Mtd	mounted	Press.	pressure		
Intscn	intersection	Mtg	mounting	PRV	pressure relief valve		
Inv	invert	Mk	muck	Prestr	prestressed		
IP	iron pipe			Pvt	private		
				PD	private drive		
				Prod.	production/produce		
				Prog	programmed		
				Prop.	property		
				Prop Ln	property line		
				Ppsd	proposed		
				PB	pull box		
Jt	joint	Neop	neoprene				
Jct	junction	Ntwk	network				
		N	North				
		NE	North East				
		NW	North West				
		NB	Northbound				
		No. or #	number				

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
09-03-15	General Revisions
04-23-18	General Revisions
12-18-20	General Revisions
08-16-22	General Revisions



08/16/22

NDDOT ABBREVIATIONS

D-101-3

Salv	salvage(d)	Tel	telephone
San	sanitary sewer line	Tel B	Telephone Booth
Sec	section	Tel P	telephone pole
SL	section line	Tv	television
Sep	separation	Temp	temperature
Seq	sequence	Temp	temporary
Serv	service	TBM	temporary bench mark
Sht	sheet	T	thinwall tube sample
Shtng	sheeting	Ts	topsoil
Shldr	shoulder	Traf	traffic
Sw or Sdwk	sidewalk	TSCB	traffic signal control box
SD	sight distance	Tr	trail
SN	sign number	Transf	transformer
Sig	signal	Trans	transition
Sgl	single	TT	transmission tower
SRCP	slotted reinforced concrete pipe	TES	traversable end section
SC	slow curing	Trans	transverse
SS	slow setting	Trtd	treated
Sm	small	Trmt	treatment
S	South	Qc	triaxial compression
SE	South East	TERO	tribal employment rights ordinance
SW	South West	Tpl	triple
SB	Southbound	Typ	typical
Sp	spaces		
Spcl	special	Qu	unconfined compressive strength
SA	special assembly	Ugrnd	underground
SP	special provisions	Util	utility
G	specific gravity		
Spk	spike		
SB	split barrel sample	VG	valley gutter
SH	sprinkler head	Vap	vapor
SV	sprinkler valve	Vert	vertical
Sq	square	VCP	vitrified clay pipe
Stk	stake	Vol	volume
Std	standard	VSFS	vehicle speed feedback sign
N	standard penetration test		
Std Specs	standard specifications	Wkwy	walkway
Stm L	steam line	W	water content
SEC	steel encased concrete	WGV	water gate valve
SMA	stone matrix asphalt	WL	water line
SSD	stopping sight distance	WM	water main
SD	storm drain	WMV	water main valve
St	street	W Mtr	water meter
SPP	structural plate pipe	WSV	water service valve
SPPA	structural plate pipe arch	WW	water well
Str	structure	Wrng	wearing
Subd	subdivision	WIM	weigh in motion
Sub	subgrade	W	west
Sub Prep	subgrade preparation	WB	westbound
Ss	subsoil	Wrng	wiring
SS	supplement specification	W/	with
Supp	supplemental	W/o	without
Surf	surfacing	WC	witness corner
Surv	survey		
Sym	symmetrical		

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
09-03-15	General Revisions
04-23-18	General Revisions
12-18-20	General Revisions
08-16-22	General Revisions



08/16/22

MEASUREMENTS

ac	acres
A	ampere
Bd Ft	board feet
Cd	candela
cm	centimeter
C	coulomb
CF	cubic feet
m3	cubic meter
m3/s	cubic meters per second
CY	cubic yard
CY/mi	cubic yards per mile
D or Deg	degree
F	Fahrenheit
F	farad
ft	feet/foot
Gal	gallon
G	giga
Ha	hectare
H	henry
Hz	hertz
hr	hour(s)
in	inch
J	joule
K	kelvin
kN	kilo newton
kPa	kilo pascal
kg	kilogram
kg/m3	kilogram per cubic meter
km	kilometer
K	Kip(s)
LF	linear foot
L	litre
Lm	lumen
L sum	lump sum
Lx	lux
M Hr	man hour
M	mega
m	meter
m/s	meters per second
mi	mile
mL	milliliter
mm	millimeter
mm/hr	millimeters per hour
n	nano
N	newton
Pa	pascal
lb	pounds
sec	seconds
S	siemens
SF	square feet
km2	square kilometer
m2	square meter
SY	square yard
Sta Yd	station yards
SI	Systems International

T	tesla
T/mi	tons per mile
V	volt
W	watt
Wb	weber

SURVEY DESCRIPTIONS

Az	azimuth
Bs	backsight
Brg	bearing
BP Cap	blue plastic cap
BS	both sides
BC	brass cap
CS	curve to spiral
Eq	equation
E	external of curve
FS	far side
FB	field book
Fs	foresight
Geod	geodetic
GIS	Geographical Information System
GPS	Global Positioning System
HI	height of instrument
IM	iron monument
I Pn	iron pin
LS	Land Surveyor (licensed)
LSIT	Land Surveyor In Training
L	length of curve
LC	long chord
LB	level book
Mer	meridian
M	mid ordinate of curve
NGS	National Geodetic Survey
NS	near side
Obsn	observation
Off Loc	office location
OP Cap	orange plastic cap
PK	Parker-Kalon nail
P Cap	plastic cap
PP Cap	pink plastic cap
PCC	point of compound curve
PC	point of curve
PI	point of intersection
PRC	point of reverse curvature
PT	point of tangent
POC	point on curve
POT	point on tangent
RTP	random traverse point
Rge	range
RP Cap	red plastic cap
SC	spiral to curve
ST	spiral to tangent
Sta	station
SE	superelevation
Tan	tangent
T	tangent (semi)
TS	tangent to spiral
Twp	township
TB	transit book
TP	traverse point
TP	turning point
USC&G	US Coast & Geodetic Survey
USGS	US Geologic Survey
VC	vertical curve
WGS	World Geodetic System
YP Cap	yellow plastic cap
Z	zenith

SOIL TYPES

Cl	clay
Cl F	clay fill
Cl Hvy	clay heavy
Cl Lm	clay loam
Co S	coal slack
C Gr	coarse gravel
CS	coarse sand
FS	fine sand
Gr	gravel
Lig Co	lignite coal
Lig Sl	lignite slack
Lm	loam
Rk	rock
Sd	sand
Sdy Cl	sandy clay
Sdy Cl Lm	sandy clay loam
Sdy Fl	sandy fill
Sdy Lm	sandy loam
Sc	scoria
Sh	shale
Si Cl	silt clay
Si Cl Lm	silty clay loam
Si Lm	silty loam

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	Sheet Added - Continued from D-101-3

KIRK J. HOFF

REGISTERED

PROFESSIONAL

PE-4683

ENGINEER

NORTH DAKOTA

12 18 2020

NDDOT UTILITY COMPANY AND ORGANIZATION ABBREVIATIONS

702COM	702 Communications	GT PLNS NAT GAS	Great Plains Natural Gas Company	RED RIV COMM	Red River Rural Communications
ACCENT	Accent Communications	HALS TEL	Halstad Telephone Company	RESVTN TEL	Reservation Telephone
AGASSIZ WU	Agassiz Water Users Incorporated	IDEA1	Idea1	ROBRTS TEL	Roberts Company Telephone
AGC	Associated General Contractors of America	INT-COMM TEL	Inter-Community Telephone Company	R-RIDER ELEC	Roughrider Electric Cooperative
ALL PL	Alliance Pipeline	KANEB PL	Kaneb Pipeline Company	RRVW	Red River Valley & Western Railroad
ALL SEAS WU	All Seasons Water Users Association	KEM ELEC	Kem Electric Cooperative Incorporated	S CENT REG WD	South Central Regional Water District
AMOCO PI	Amoco Pipeline Company	KOCH GATH SYS	Koch Gathering Systems Incorporated	S E W U	South East Water Users Incorporated
AMRDA HESS	Amerada Hess Corporation	LKHD PL	Lakehead Pipeline Company	SCOTT CABLE	Scott Cable Television Dickinson
AT&T	AT&T Corporation	LNGDN RWU	Langdon Rural Water Users Incorporated	SHERDN ELEC	Sheridan Electric Cooperative
B PAW	Bear Paw Energy Incorporated	LWR YELL R ELEC	Lower Yellowstone Rural Electric	SHEYN VLY ELEC	Sheyenne Valley Electric Cooperative
BAKER ELEC	Baker Electric	MCKNZ CON	McKenzie Consolidated Telcom	SKYTECH	Skyland Technologies Incorporated
BASIN ELEC	Basin Electric Cooperative Incorporated	MCKNZ ELEC	McKenzie Electric Cooperative	SLOPE ELEC	Slope Electric Cooperative Incorporated
BEK TEL	Bek Communications Cooperative	MCKNZ WRD	McKenzie County Water Resource District	SOURIS RIV TELCOM	Souris River Telecommunications
BELLE PL	Belle Fourche Pipeline Company	MCLEOD	McLeod USA	ST WAT COMM	State Water Commission
BLM	Bureau of Land Management	MCLN ELEC	McLean Electric Cooperative	STATE LN WATER	State Line Water Cooperative
BNSF	Burlington Northern Santa Fe Railway	MCLN-SHRDN R WAT	McLean-Sheridan Rural Water	STER ENG	Sterling Energy
BOEING	Boeing	MDU	Montana-dakota Utilities	STUT RWU	Stutsman Rural Water Users
BRNS RWD	Barnes Rural Water District	MIDCO	MidContinent Communications	SW PL PRJ	Southwest Pipeline Project
BURK-DIV ELEC	Burke-Divide Electric Cooperative	MIDSTATE TEL	Midstate Telephone Company	T M C	Turtle Mountain Communications
BURL WU	Burleigh Water Users	MINOT CABLE	Minot Cable Television	TCI	TCI of North Dakota
CABLE ONE	Cable One	MINOT TEL	Minot Telephone Company	TESORO HGH PLNS PL	Tesoro High Plains Pipeline
CABLE SERV	Cable Services	MISS VALL COMM	Missouri Valley Communications	TRI-CNTY WU	Tri-County Water Users Incorporated
CAP ELEC	Capital Electric Cooperative Incorporat	MISS W W S	Missouri West Water System	TRL CO RWU	Traill County Rural Water Users
CASS CO ELEC	Cass County Electric Cooperative	MNKOTA PWR	Minnkota Power	UNTD TEL	United Telephone
CASS RWU	Cass Rural Water Users Incorporated	MOR-GRAN-SOU ELEC	Mor-gran-sou Electric Cooperative	UPPR SOUR WUA	Upper Souris Water Users Association
CAV ELEC	Cavalier Rural Electric Cooperative	MOUNT-WILLI ELEC	Mountrail-williams Electric Cooperative	US SPRINT	U.S. Sprint
CBLCOM	Cablecom Of Fargo	MRE LBTY TEL	Moore & Liberty Telephone	USAF MSL CABLE	U.S.A.F. Missile Cable
CENEX PL	Cenex Pipeline	MUNICIPAL	City Water And Sewer	USFWS	US Fish and Wildlife Service
CENT PL WATER DIST	Central Pipe Line Water District	MUNICIPAL	City Of '.....'	USW COMM	U.S. West Communications
CENT PWR ELEC	Central Power Electric Cooperative	N CENT ELEC	North Central Electric Cooperative	VRNDRY ELEC	Verendrye Electric Cooperative
CENTURYLINK	CenturyLink	N VALL W DIST	North Valley Water District	W RIV TEL	West River Telephone Incorporated
COE	Corps of Engineers	ND PKS & REC	North Dakota Parks And Recreation	WAPA	Western Area Power Administration
CONS TEL	Consolidated Telephone	ND TEL	North Dakota Telephone Company	WAWSA	Western Area Water Supply Authority
CONT RES	Continental Resource Inc	NDDOT	North Dakota Department of Transportation	WEB	W. E. B. Water Development Association
CPR	Canadian Pacific Railway	NDSU SOIL SCI DEPT	NDSU Soil Science Department	WILLI RWA	Williams Rural Water Association
D O E	Department Of Energy	NEMONT TEL	Nemont Telephone	WILSTN BAS PL	Williston Basin Interstate Pipeline Company
DAK CARR	Dakota Carrier Network	NODAK R ELEC	Nodak Rural Electric Cooperative	WLSH RWD	Walsh Water Rural Water District
DAK CENT TEL	Dakota Central Telephone	NOON FRMS TEL	Noonan Farmers Telephone Company	WOLVRTN TEL	Wolverton Telephone
DAK RWD	Dakota Rural Water District	NPR	Northern Plains Railroad	XLENER	Xcel Energy
DGC	Dakota Gasification Company	NSP	Northern States Power	YSVR	Yellowstone Valley Railroad
DICKEY R NET	Dickey Rural Networks	NTH PRAIR RW	Northern Prairie Rural Water Association		
DICKEY RWU	Dickey Rural Water Users Association	NTHN BRDR PL	Northern Border Pipeline		
DICKEY TEL	Dickey Telephone	NTHN PLNS ELEC	Northern Plains Electric Cooperative Incorporated		
DNRR	Dakota Northern Railroad	NTHWSTRN REF	Northwestern Refinery Company		
DOME PL	Dome Pipeline Company	NW COMM	Northwest Communication Cooperation		
DVELEC	Dakota Valley Electric Cooperative	NWRWD	Northwest Rural Water District		
DVMW	Dakota, Missouri Valley & Western	ONEOK	Oneok gas		
ENBRDG	Enbridge Pipelines Incorporated	OSHA	Occupational Safety and Health Administration		
ENVENTIS	Enventis Telephone	OTTR TL PWR	Otter Tail Power Company		
EQUINOR	Equinor Pipeline	PAAP	Plains All American Pipeline		
FALK MNG	Falkirk Mining Company	P L E M	Prairielands Energy Marketing		
FHWA	Federal Highway Administration	POLAR COM	Polar Communications		
G FKS-TRL WD	Grand Forks-traill Water District	PVT ELEC	Private Electric		
GETTY TRD & TRAN	Getty Trading & Transportation	QWEST	Qwest Communications		
GLDN W ELEC	Golden West Electric Cooperative	R&T W SUPPLY	R & T Water Supply Association		
GRGS CO TEL	Griggs County Telephone				
GTR RAMSEY WD	Greater Ramsey Water District				

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
04-23-18	General Revisions
09-20-18	General Revisions
12-10-20	General Revisions
08-16-22	General Revisions

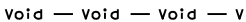
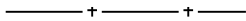
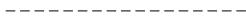
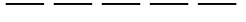


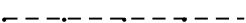
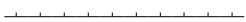
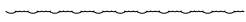
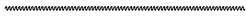
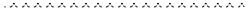
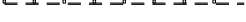
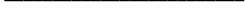
08/16/22

LINE STYLES

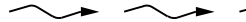
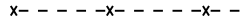
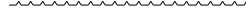
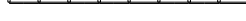
D-101-20

Existing Topography

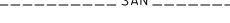
	Existing Ground Void
	Existing Cemetary Boundary
	Existing Box Culvert Bridge
	Existing Concrete Surface
	Existing Drainage Structure
	Existing Gravel Surface
	Existing Riprap
	Existing Dirt Surface
	Existing Asphalt Surface
	Existing Tie Point Line
	Existing Railroad Centerline
	Existing Guardrail Cable
	Existing Guardrail Metal
	Existing Edge of Water
	Existing Fence
	Existing Railroad
	Existing Field Line
	Exst Flow
	Existing Curb
	Existing Valley Gutter
	Existing Driveway Gutter
	Existing Curb and Gutter
	Existing Mountable Curb and Gutter

	Existing 3-Cable w Posts
	Site Boundary
	Existing Berm, Dike, Pit, or Earth Dam
	Existing Ditch Block
	Existing Tree Boundary
	Existing Brush or Shrub Boundary
	Existing Retaining Wall
	Existing Planter or Wall
	Existing W-Beam Guardrail with Posts
	Existing Railroad Switch
	Gravel Pit - Borrow Area
	Existing Wet Area-Vegetation Break
	Existing High Tension Cable Guardrail
	Existing High Tension Cable Guardrail with Posts

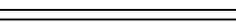
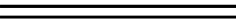
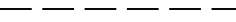
Proposed Topography

	3-Cable w Posts
	Flow
	Fence
	Remove Line
	Wall
	Retaining Wall (Plan View)
	W-Beam w Posts
	High Tension Cable Guardrail with Posts

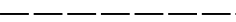
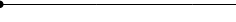
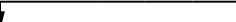
Existing Utilities

	Existing Electrical
	Existing Fiber Optic Line
	Existing TV Fiber Optic
	Existing Gas Pipe
	Existing Overhead Utility Line
	Existing Power
	Existing Fuel Pipeline
	Existing Undefined Above Ground Pipe Line
	Existing Sanitary Sewer
	Existing Sanitary Force Main
	Existing Storm Drain
	Existing Storm Drain Force Main
	Existing Culvert
	Existing Telephone Line
	Existing TV Line
	Existing Water or Steam Line
	Existing Under Drain
	Existing Slotted Drain
	Existing Conduit
	Existing Conductor
	Existing Down Guy Wire Down Guy
	Existing Underground Vault or Lift Station

Proposed Utilities

	24 Inch Pipe
	Reinforced Concrete Pipe
	Under Drain
	Edge Drain

Traffic Utilities

	Conductor
	Fiber Optic
	Existing Loop Detector
	Existing Double Micro Loop Detector
	Micro Loop Detector Double
	Existing Micro Loop Detector
	Micro Loop Detector
	Signal Head with Mast Arm
	Existing Signal Head with Mast Arm

Sign Structures

	Existing Overhead Sign Structure
	Existing Overhead Sign Structure Cantilever
	Overhead Sign Structure Cantilever

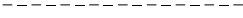
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
09-23-16	Added and Revised Items, Organized by Functional Groups
12-18-20	General Revisions



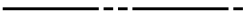
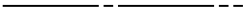
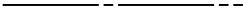
LINE STYLES

D-101-21

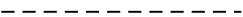
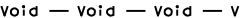
Right Of Way

	Easement
	Existing Easement
	Right of Way
	Existing Right of Way
	Existing Right of Way Railroad
	Existing Right of Way Not State Owned
	Existing Government Lot Line
	Existing Adjacent Block Lines
	Existing Adjacent Lot Lines
	Existing Adjacent Property Line
	Existing Adjacent Subdivision Lines
	Sight Distance Triangle Line
	Dimension Leader

Boundary Control

	Existing City Corporate Limits or Reservation Boundary
	Existing State or International Line
	Existing Township
	Existing County
	Existing Section Line
	Existing Quarter Section Line
	Existing Sixteenth Section Line
	Existing Centerline
	Tangent Line

Cross Sections and Typicals

	Existing Ground
	Existing Topsoil (Cross Section View)
	Existing Ground Void (Not Surveyed)
	Existing Concrete
	Existing Aggregate (Cross Section View)
	Existing Curb and Gutter (Cross Section View)
	Existing Asphalt (Cross Section View)
	Existing Reinforcement Rebar

Geotechnical

	Geotextile Fabric Type D
	Geogrid
	Geotextile Fabric Type R
	Geotextile Fabric Type R1
	Geotextile Fabric Type RR
	Geotextile Fabric Type S

	Subgrade Reinforcement
	Failure Line

Countours

	Depression Contours
	Supplemental Contour

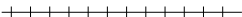
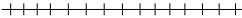
Profile

	Subgrade, Subcut or Ditch Grade
	Topsoil Profile

Striping

	Centerline Pavement Marking
	Barrier with Centerline Pavement Marking
	Barrier Pavement Marking
	Stripe 4 IN Dotted Extension White
	Stripe 8 IN Dotted Extension White
	Stripe 8 IN Lane Drop

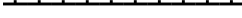
Pavement Joints

	Doweled Joint
	Tie Bar 30 Inch 4 Foot Center to Center
	Tie Bar 18 Inch 3 Foot Center to Center
	Tie Bar at Random Spacing

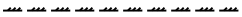
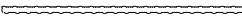
Bridge Details

	Small Hidden Object
	Large Hidden Object
	Phantom Object
	Existing Conditions Object
	Centerline Main
	Centerline Secondary
	Excavation Limits
	Proposed Ground
	Sheet Piling

Erosion Control

	Limits of Const Transition Line
	Bale Check
	Rock Check
	Floating Silt Curtain
	Silt Fence
	Excavation Limits
	Fiber Rolls

Environmental

	Wetland Mitigation
	Existing Wetland Easement USFWS
	Existing Wetland Jurisdictional
	Existing Wetland
	Tree Row

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

07-01-14

REVISIONS

DATE	CHANGE
09-23-16 12-18-20	Added and Revised Items, Organized by Functional Groups General Revisions

KIRK J. HOFF

REGISTERED

PROFESSIONAL

PE-4683

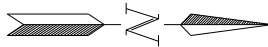
ENGINEER

NORTH DAKOTA

12 18 2020

SYMBOLS

D-101-30

 North Arrow (Half Scale)

 Alignment Data Point

 Alignment Monument

 Spot Elevation

 Existing Miscellaneous Spot

 Existing Access Control Arrow

 Existing Benchmark

 Reset USGS Marker

 Iron Monument Found

 Iron Pin R/W Monument

 Property Corner

 Iron Pin Reference Monument

   Right of Way Marker (Exst, Ppsd, Reset)

 Existing Federal Reference Corner

    Existing Section Corner (Full, Quarter, Sixteenth, Meander)

 Existing Witness Corner

   Existing Control Point (CP, GPS-RTK, TRI)

 Existing Traverse PI Aerial Panel

 Existing Reference Marker Point NGS

 Existing EFB Misc

 Existing Bush or Shrub

 Existing Large Evergreen Tree

 Existing Small Evergreen Tree

 Existing Large Tree

 Existing Small Tree

 Existing Tree Trunk

 Cairn or Stone Circle

 Existing Artifact

 Existing Satellite Dish

 Existing Weather Station

 Existing Windmill or Tower

 Reinforced Pavement

 Continuous Split Barrel Sample

 Flight Auger Sample

 Split Barrel Sample

 Thinwall Tube Sample

 Standard Penetration Test

 Inclinometer Tube

 Excavation Unit

 Existing Ground Water Well Bore Hole

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

KIRK J. HOFF

REGISTERED

PROFESSIONAL

PE-4683

ENGINEER

NORTH DAKOTA

12 18 2020

SYMBOLS

D-101-31

				Flexible Delineator					Highway Sign (Exst, Ppsd)
				Flexible Delineator Type A (Exst, Ppsd)					Mile Post Type A (Exst-Ppsd-Reset)
				Flexible Delineator Type B (Exst, Ppsd)					Mile Post Type B (Exst, Ppsd)
				Flexible Delineator Type C (Exst, Ppsd)					Mile Post Type C (Exst, Ppsd)
				Flexible Delineator Type D (Exst, Ppsd)					Object Marker Type I (Exst, Ppsd)
				Flexible Delineator Type E (Exst, Ppsd)					Object Marker Type II (Exst, Ppsd)
				Delineator Type A (Exst, Ppsd, Diamond Grade-Reset)					Object Marker Type III (Exst, Ppsd)
				Delineator Type B (Exst, Ppsd, Diamond Grade-Reset)					Existing Reference Marker
				Delineator Type C (Exst, Ppsd, Diamond Grade)					Road Closure Gate 18 Ft (Exst, Ppsd)
				Delineator Type D (Exst, Ppsd, Diamond Grade)					Road Closure Gate 28 Ft (Exst, Ppsd)
				Delineator Type E (Exst, Ppsd, Diamond Grade)					Road Closure Gate 40 Ft (Exst, Ppsd)
				Barricade (Type I, Type II, Type III)					Existing Railroad Battery Box
				Arrow Panel (Caution Mode, Double Direction, Left Directional, Right Directional, Sequencing, Truck Mounted)					Existing RR Profile Spot
				Attenuation Device					Existing Railroad Crossbuck
				Truck Mounted Attenuator					Existing Railroad Frog
				Delineator Drums					Existing Mailbox (Private, Federal)
				Flagger					
				Tubular Marker					
				Traffic Cone					
				Back to Back Vertical Panel Sign					

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions

KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
ENGINEER
NORTH DAKOTA
12 18 2020

SYMBOLS

D-101-32

	Existing Luminaire			High Mast Light Standard 3 Luminaire (Exst, Ppsd)		Existing Traffic Signal Standard			
	Luminaire LED			High Mast Light Standard 4 Luminaire (Exst, Ppsd)				Pull Box (Exst-Ppsd-Undefined)	
	Existing Light Standard Luminaire			High Mast Light Standard 5 Luminaire (Exst, Ppsd)				Intelligent Transportation Pull Box (Exst, Ppsd)	
	Relocate Light Standard			High Mast Light Standard 6 Luminaire (Exst, Ppsd)				Transformer (Exst, Ppsd)	
	Light Standard Light LED Luminaire			High Mast Light Standard 7 Luminaire (Exst, Ppsd)				Power Pole (Exst-Ppsd-with Transformer)	
	Light Standard 35 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 8 Luminaire (Exst, Ppsd)				Wood Pole (Exst, Ppsd)	
	Light Standard 50 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 9 Luminaire (Exst, Ppsd)				Pedestrian Push Button Post (Exst, Ppsd)	
	Light Standard 70 Watt High Pressure Sodium Vapor Luminaire			High Mast Light Standard 10 Luminaire (Exst, Ppsd)				Existing Pole	
	Light Standard 100 Watt High Pressure Sodium Vapor Luminaire			Overhead Sign Structure Load Center (Exst, Ppsd)				Existing Telephone Pole	
	Light Standard 150 Watt High Pressure Sodium Vapor Luminaire			Traffic Signal Controller (Exst, Ppsd)				Existing Post	
	Light Standard 200 Watt High Pressure Sodium Vapor Luminaire			Pad Mounted Traffic Signal Controller (Exst, Ppsd)					Connection Conductor (Ground, Neutral, Phase 1, Phase 2)
	Light Standard 250 Watt High Pressure Sodium Vapor Luminaire			Flashing Beacon (Exst, Ppsd)					
	Light Standard 310 Watt High Pressure Sodium Vapor Luminaire			Concrete Foundation (Exst, Ppsd)					
	Light Standard 400 Watt High Pressure Sodium Vapor Luminaire			Pipe Mounted Flasher (Exst, Ppsd)					
	Light Standard 700 Watt High Pressure Sodium Vapor Luminaire			Pad Mounted Feed Point (Exst, Ppsd)					
	Light Standard 1000 Watt High Pressure Sodium Vapor Luminaire			Pipe Mounted Feed Point with Pad (Exst, Ppsd)					
	Emergency Vehicle Detector			Pole Mounted Feed Point (Exst, Ppsd)					
	Video Detection Camera			Junction Box (Exst, Ppsd)					
				Existing Pedestrian Head with Number					
				Existing Signal Head					
				Pole Mounted Head					
				Existing Lighting Standard Pole					

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions



NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions



12 18 2020

SYMBOLS

D-101-33

			Existing Manhole (Electrical, Gas, Telephone)		Cap or Stub Exst Gas, Exst Sanitary, Exst Storm Drain, Ppsd Storm Drain, Exst Water
			Water Manhole (Exst, Exst with Valve)		Existing Pedestal Electrical, Telephone, Fiber Optic Telephone, TV, Fiber Optic TV, Undefined
			Sanitary Sewer Manhole (Exst, Ppsd, Exst with Valve)		Existing Pipe Vent Gas, Fuel, Sanitary, Storm Drain, Water, Undefined
			Sanitary Force Main Manhole (Exst, Ppsd, Exst with Valve)		Valve Exst Gas, Exst Water, Ppsd Water, Exst Undefined
			Storm Drain Manhole (Exst, Ppsd, Exst with Inlet, Ppsd with Inlet)		Pump Sanitary, Storm Drain, Exst Water
			Force Main Storm Drain Manhole (Exst, Exst with Valve)		Corrugated Metal End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
			Manhole (Ppsd, Ppsd 48 Inch, Exst Undefined)		Reinforced Concrete End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
			Existing Water Appurtenance		Existing Utility Marker
			Sprinkler Head (Exst, Ppsd)		Existing Meter
			Fire Hydrant (Exst, Ppsd)		Existing Fuel Dispensers
			Cleanout (Exst Sanitary, Underdrain)		Existing Fuel Filler Pipes
			Existing Catch Basin Inlet (Round, Square)		Existing Fuel Leak Sensors
			Existing Curb Inlet (Round, Square)		
			Existing Slotted Reinforced Concrete Pipe		
			Catch Basin (Riser 30 Inch, Beehive, Type A)		
			Inlet Mountable Curb (Type A, Type B)		
			Inlet Saddle Base (Type 1, Type 2)		
			Inlet Special (Catch Basin, Type 1, Type A)		
			Inlet (Tee, Type 1, Type 2, Type 2 Double)		
			Median Drain		
			Headwall (Exst, Ppsd, Ppsd Single with Vegetation Barrier, Ppsd Double with Vegetation Barrier)		

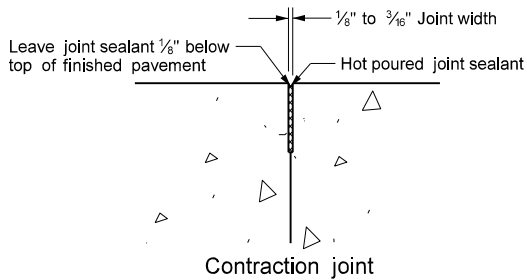
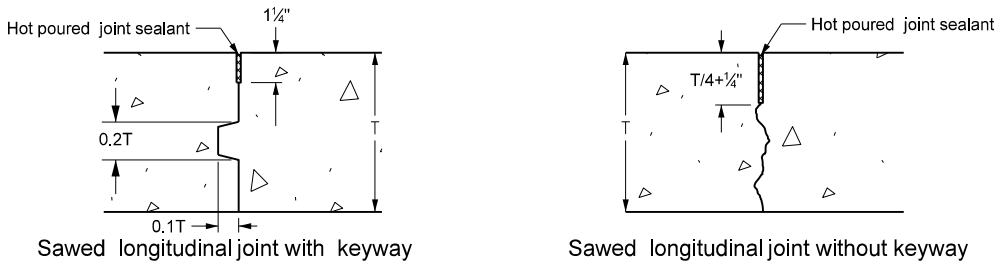
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
07-01-14	
REVISIONS	
DATE	CHANGE
12-18-20	General Revisions Sheet added - Continued from D-101-32

KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
ENGINEER
NORTH DAKOTA
12 18 2020

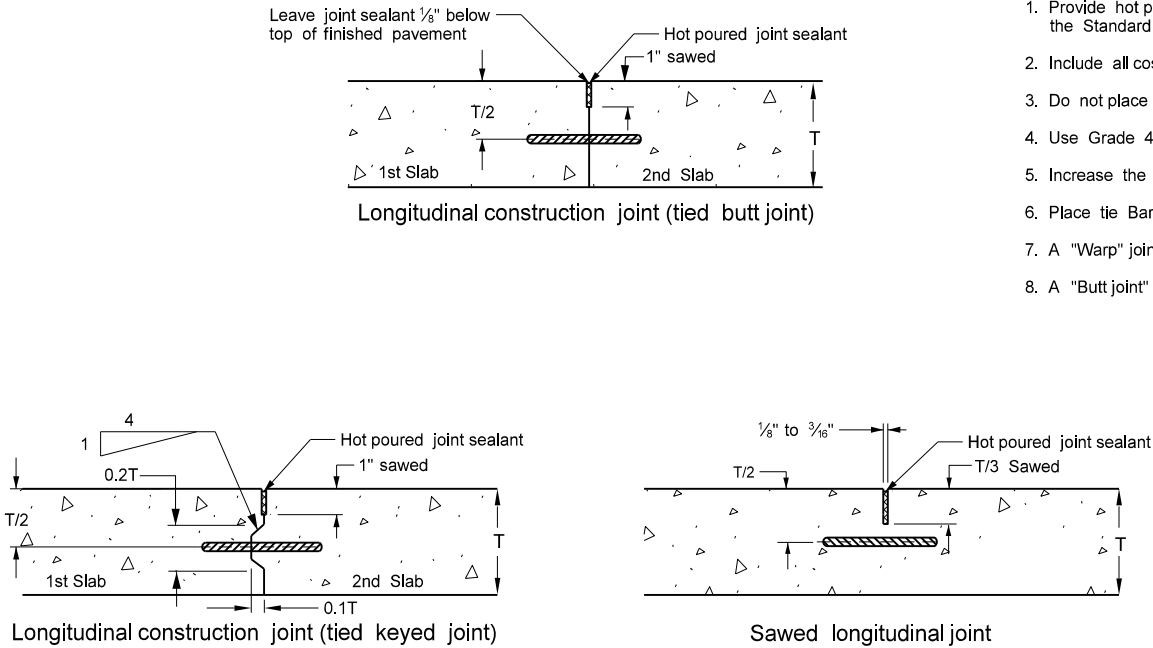
LONGITUDINAL JOINT DETAILS

D-550-2

UNTIED JOINTS



TIED JOINTS



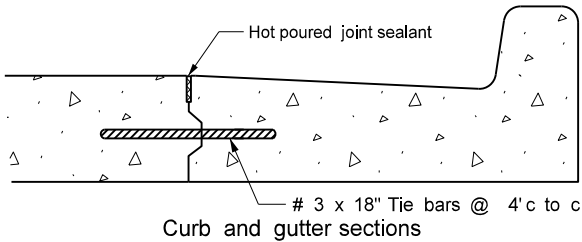
Notes:

1. Provide hot poured joint sealant meeting the requirements of Section 826.02A.2 of the Standard Specifications.
2. Include all costs of the longitudinal joint and seal in the price bid for the PCC pavement.
3. Do not place tie bars within 18 inches of a transverse skewed joint.
4. Use Grade 40 steel for tie bars installed bent and later straightened.
5. Increase the tie bar spacing up to 10%, when necessary to facilitate construction.
6. Place tie Bars at a 48 inch maximum spacing.
7. A "Warp" joint is a sawed joint or a construction joint with a keyway.
8. A "Butt joint" is a construction joint with no keyway.

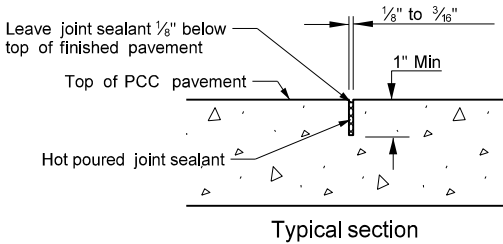
BAR SIZE
GRADE STEEL
BAR LENGTH
DIST TO FREE EDGE
JOINT TYPE
PVTM THICKNESS

TIEBAR SPACINGS (In)

S E D G E T H (F T)		# 3 BAR										# 4 BAR										# 5 BAR										# 6 BAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		GRADE 40					GRADE 60					GRADE 40					GRADE 60					GRADE 40					GRADE 60					GRADE 40						GRADE 60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		24"					30"					24"					36"					30"					42"					36"						48"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		4	6	8	10		4	6	8	10	12	14		8	10	12	14	16		8	10	12	14	16	22	24		10	12	14	16	22	24		10	12	14	16	19	22	24		10	12	14	16	19	22	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
6"	WARP BUTT		48	39			48	48					48						48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
8"	WARP BUTT	48	39	29	24		48	48	44	35	29	25	48	42	35	30	26		48	48	48	45	39	28	26		48	48	47	41	30	27		48	48	48	48	45	41		48	48	48	48	48	43	39	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48</



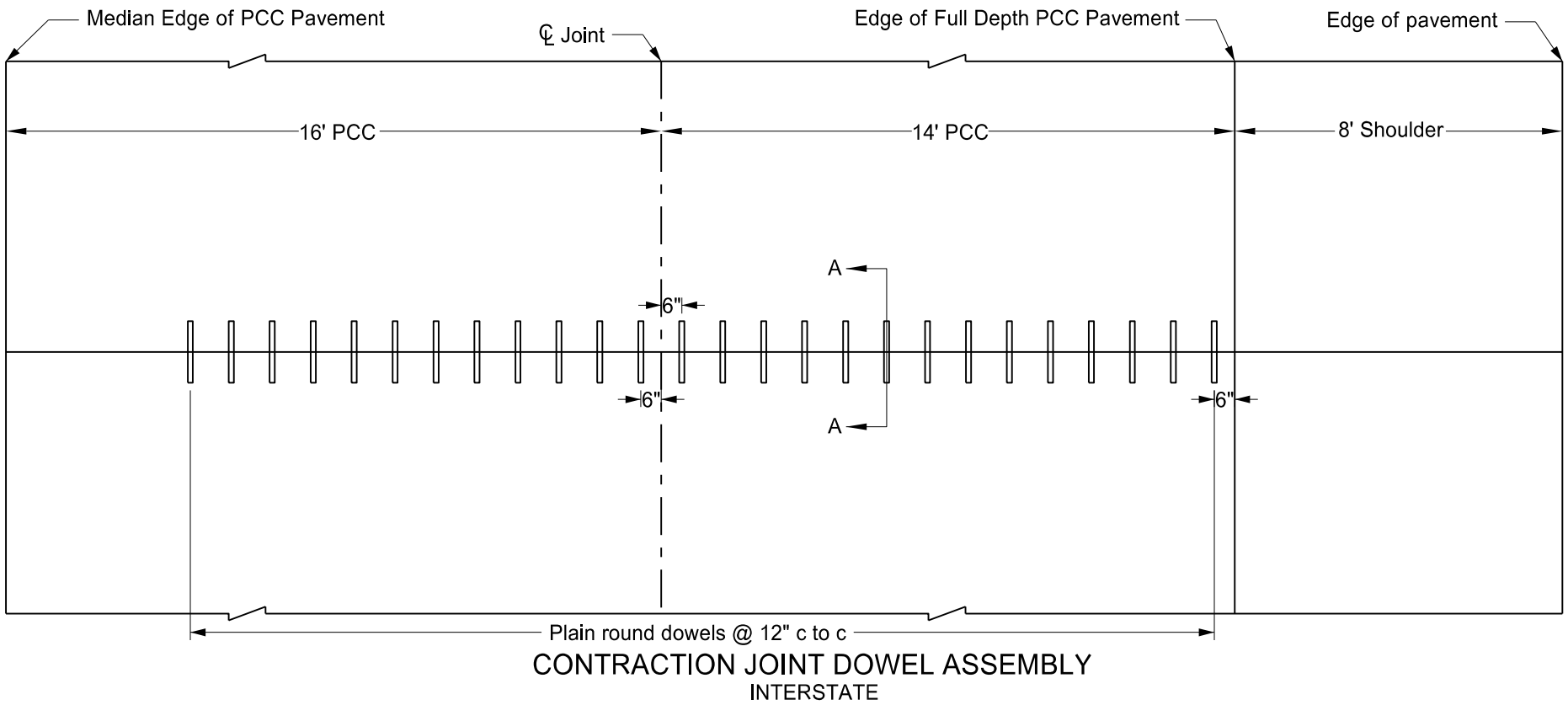
JOINT SEALER DETAILS



NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-2010	
REVISIONS	
DATE	CHANGE
10/23/2012	Expanded Tie Bar Table
03/16/2016	Updated Jt Details & notes
10/25/2019	Corrected "Typo" in Note 3

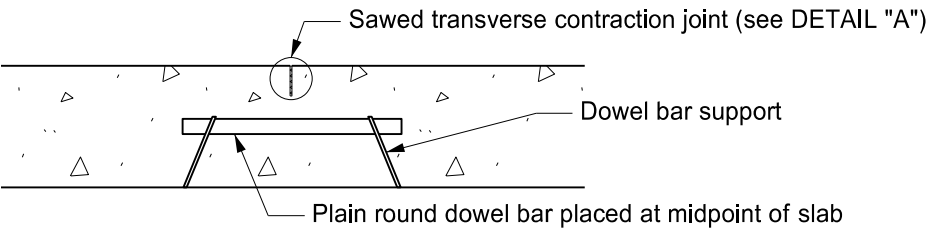
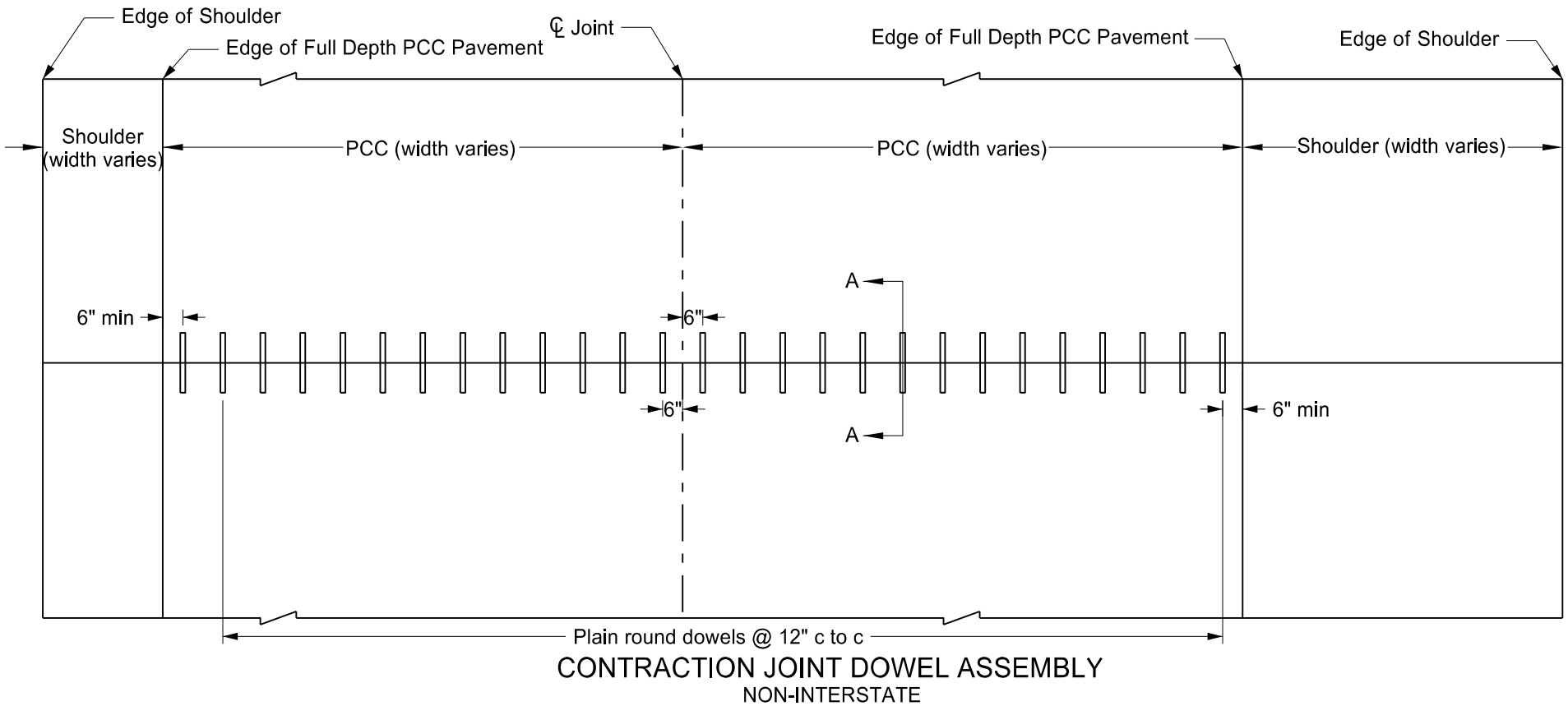
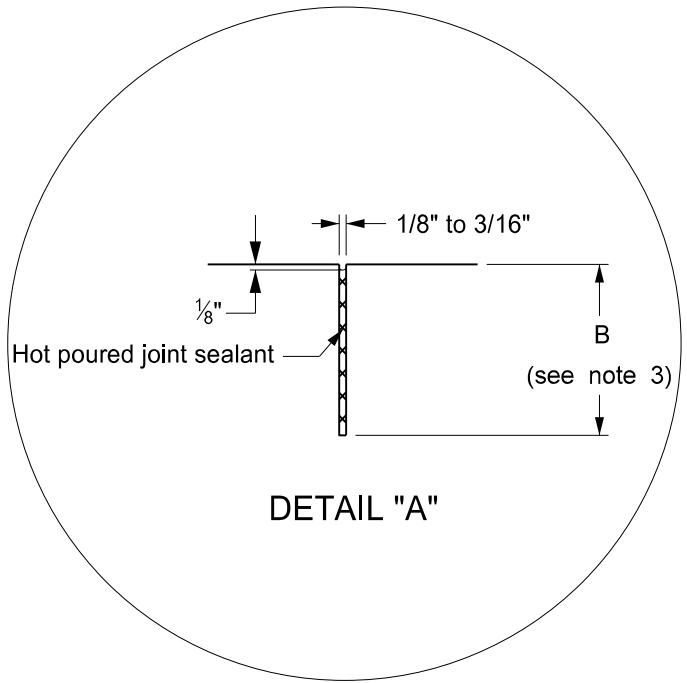
This document was originally issued and sealed by
Kirk J Hoff,
Registration Number
PE- 4683,
on 10/25/19 and the original document is stored at the
North Dakota Department
of Transportation

TRANSVERSE CONTRACTION JOINT DETAILS



Notes

1. The joint seal details apply to both doweled and non-doweled (plain) transverse joints.
2. T = Thickness of pavement.
3. $B = T/4 + 1/4"$ for AE or YE for non-doweled concrete pavement or $B = T/3$ for AAE or doweled concrete pavement



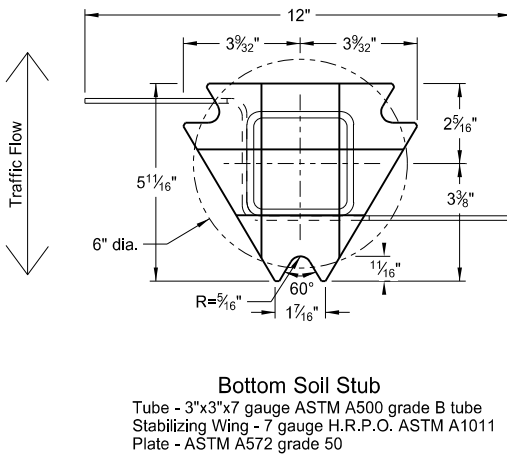
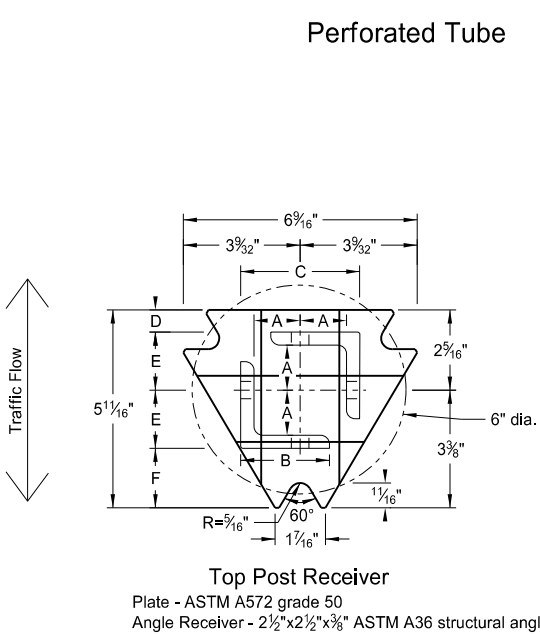
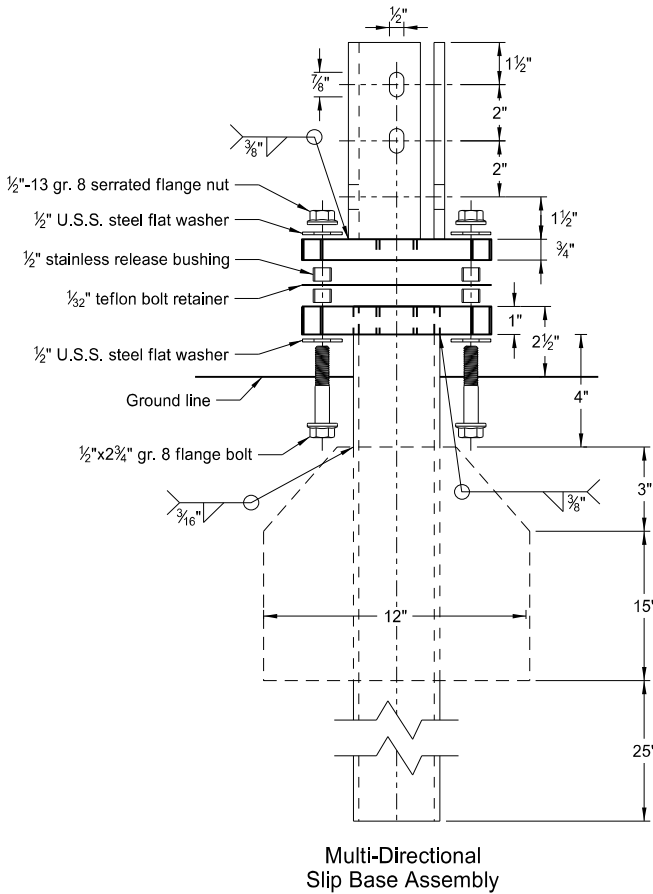
SECTION A-A

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-15-10	
REVISIONS	
DATE	CHANGE
6/23/2014	Removed dowel size reference
3/16/2016	Revised Joint Details and notes
10/25/2019	Expanded Details for clarity

This document was originally issued and sealed by
Kirk J Hoff,
Registration Number
PE- 4683,
on 10/25/19 and the original document is stored at the
North Dakota Department
of Transportation

Perforated Tube

- Notes:
1. Torque slip base bolts as specified by manufacturer.
 2. Use anchor with 43.9 KSI yield strength and 59.3 KSI tensile strength.
 3. Provide 4" vertical clearance for anchor or breakaway base. Measure the 4"x60" measurement above and below post location and back and ahead of post.
 4. In concrete sidewalk, use same anchor without wings.
 5. Provide more than 7' between the first and fourth posts of a four post sign.

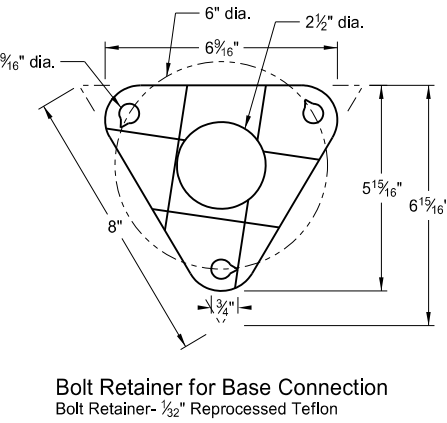
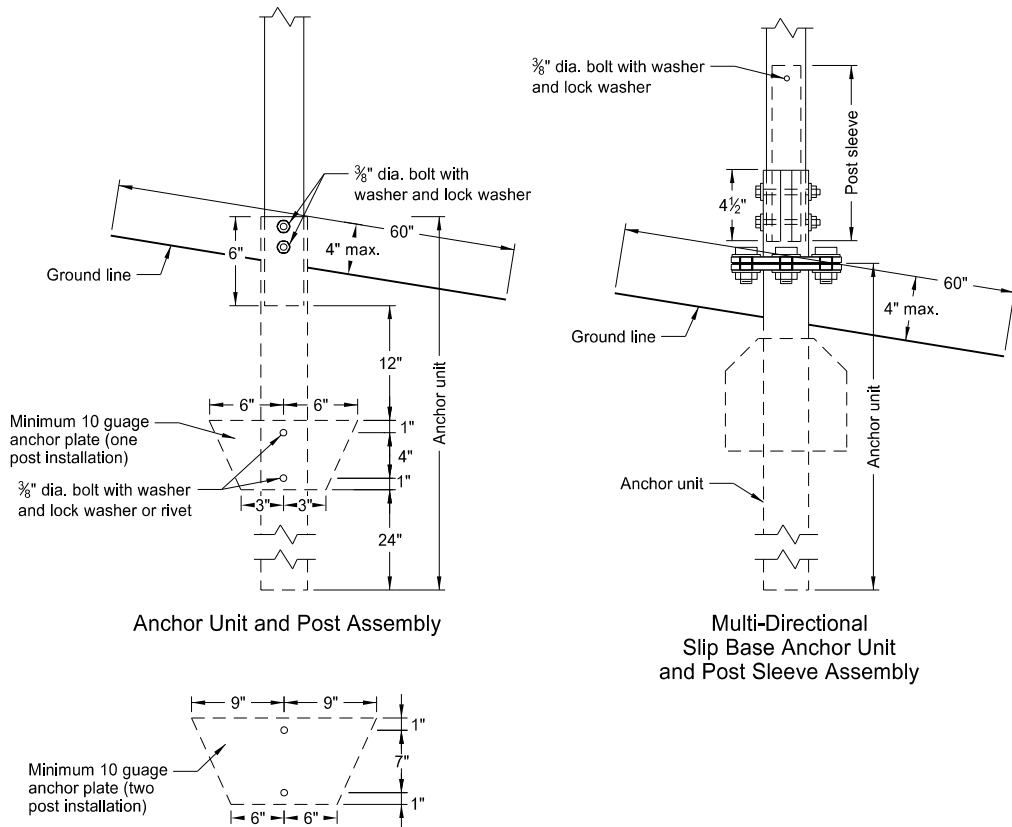


Telescoping Perforated Tube						
Number of Posts	Post Size in.	Wall Thick-ness Gauge	Sleeve Size in.	Wall Thick-ness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2 1/4
1	2 1/4	12			No	2 1/2
1	2 1/2	12			(A)	3
1	2 1/2	10			Yes	
1	2 1/4	12	2	12	Yes	
1	2 1/2	12	2 1/4	12	Yes	
2	2	12			No	2 1/4
2	2 1/4	12			No	2 1/2
2	2 1/2	12			Yes	
2	2 1/2	12			Yes	
2	2 1/4	10	2	12	Yes	
2	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/2	12			Yes	
3 & 4	2 1/2	10			Yes	
3 & 4	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/4	12	2	12	Yes	
3 & 4	2 1/2	10	2 3/16	10	Yes	

Properties of Telescoping Perforated Tube						
Tube Size in.	Wall Thickness in.	U.S. Standard Gauge	Weight per Foot lbs.	Moment of Inertia in. ⁴	Cross Sec. Area in. ²	Section Modulus in. ³
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499
2 3/8 x 2 3/8	0.135	10	3.432	0.605	0.841	0.590
2 1/2 x 2 1/2	0.105	12	3.141	0.804	0.803	0.643
2 1/2 x 2 1/2	0.135	10	4.006	0.979	1.010	0.785

Top Post Receiver Data Table						
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16"x10 ga.	1 5/16"	2 1/2"	3 1/2"	2 5/32"	1 33/64"	1 7/8"
2 1/2"x10 ga.	1 5/32"	2 1/2"	3 5/16"	5/8"	1 21/32"	1 3/4"

- (A) Use breakaway base when support is placed in weak soils. Engineer determines if soils are weak.
- (B) For additional wind load, insert the 2 3/8"x10 ga. into 2 1/2"x10 ga.



NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		This document was originally issued and sealed by Kirk J Hoff, Registration Number PE- 4683, on 10/03/19 and the original document is stored at the North Dakota Department of Transportation
2-28-14		
REVISIONS		
DATE	CHANGE	
9-27-17 10-03-19	Updated to active voice New Design Engr PE Stamp	

See Alt. A Note 4

Grade 8 bolt, nut, and lock washer (see Alt. A Note 3)

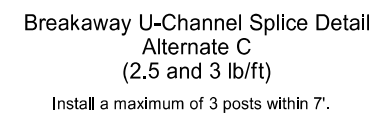
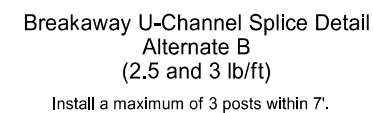
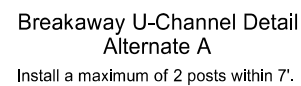
See Alt. A Note 1c

Retainer strap (see Alt. A Note 1b)

Sign post

Anchor unit

Detail A



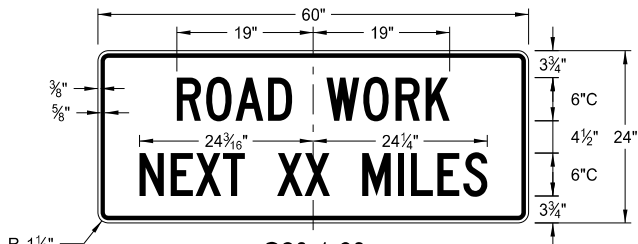
1.
 - a) Drive anchor unit to within 12" of ground level.
 - b) Establish proper assembly by lining up bottom hole of retainer strap with 6th hole from the top of the anchor unit.
 - c) Assemble strap to back of anchor unit using $\frac{5}{16}$ "x2" bolt, lock washer and nut.
 - d) Rotate strap 90° to left.
2.
 - a) Drive anchor unit to 4" above ground.
 - b) Rotate strap to vertical position.
3.
 - a) Place $\frac{5}{16}$ "x2" bolt, lock washer and nut in bottom of sign post to facilitate alignment of sign post with proper hole in anchor unit.
 - b) Alternately tighten two connector bolts.
4. Complete assembly by tightening $\frac{5}{16}$ "x2" bolt (this fastens sign post to retainer strap).
5. Properly nest base post, strap, and sign post. Proper nesting occurs when all flat surfaces of the base post, strap, and sign post at the bolts have full contact across the entire width.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
2-28-14	
REVISIONS	
DATE	CHANGE
9-27-17 10-03-19	Updated to active voice New Design Engr PE Stamp

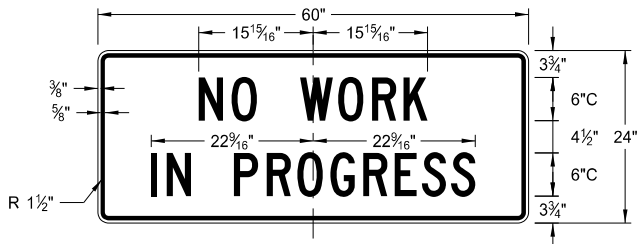
This document was originally
issued and sealed by
Kirk J Hoff,
Registration Number
PE-4683,
on 10/03/19 and the original
document is stored at the
North Dakota Department
of Transportation

CONSTRUCTION SIGN DETAILS
TERMINAL AND GUIDE SIGNS

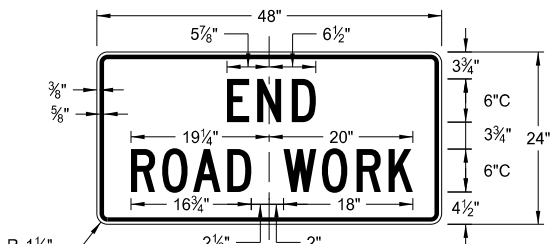
D-704-9



G20-1-60
Legend: black (non-refl)
Background: orange



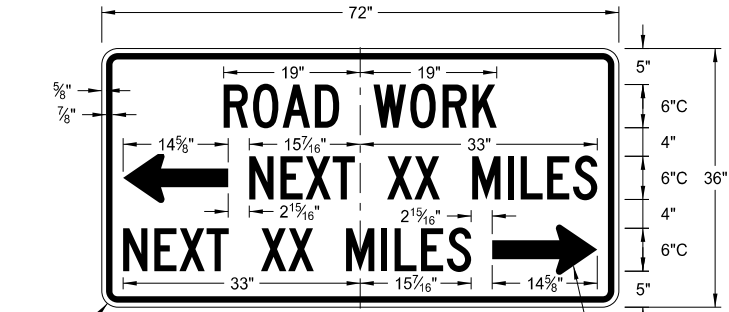
G20-1b-60
Legend: black (non-refl)
Background: orange



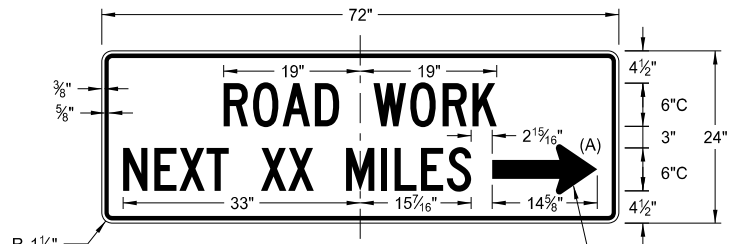
G20-2-48
Legend: black (non-refl)
Background: orange



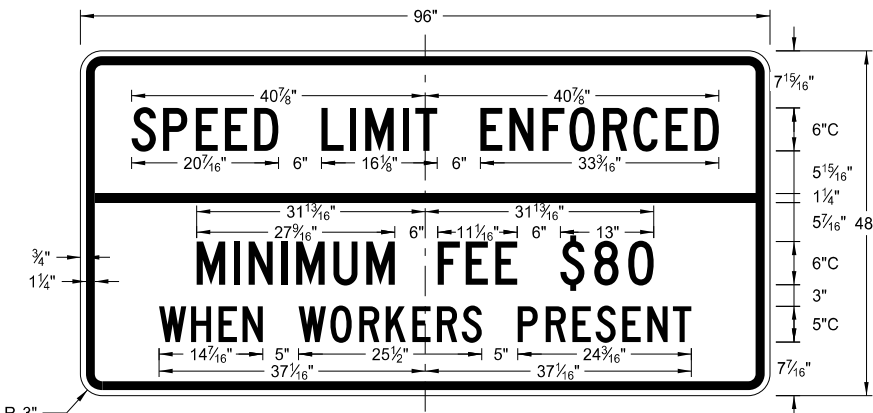
G20-4b-36
Legend: black (non-refl)
Background: orange



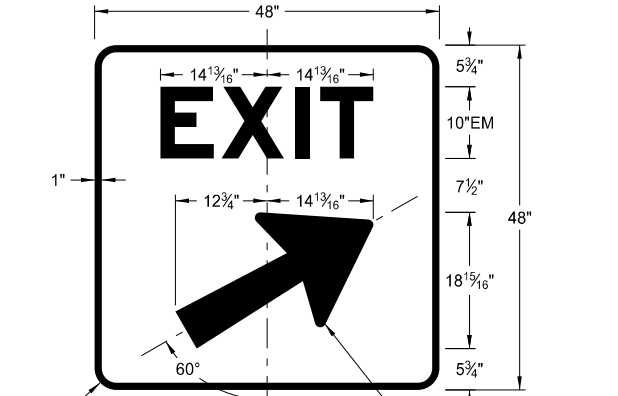
G20-50a-72
Legend: black (non-refl)
Background: orange



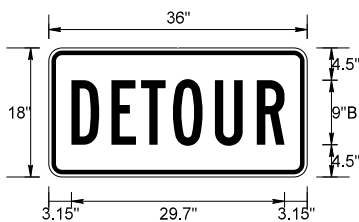
G20-52a-72
Legend: black (non-refl)
Background: orange



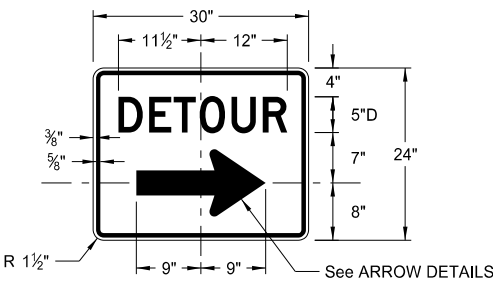
G20-55-96
Legend: black (non-refl)
Background: orange



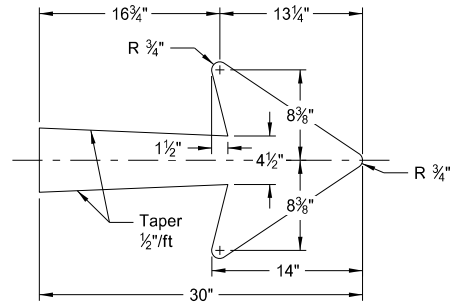
E5-1(L or R)-48
Legend: white
Background: green (orange optional)



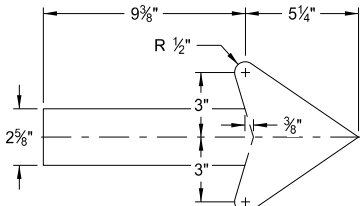
M4-8-36
Legend: black (non-refl)
Background: orange



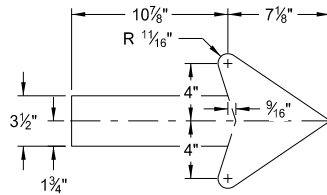
M4-9(L or R)-30 &
M4-9-30
Legend: black (non-refl)
Background: orange



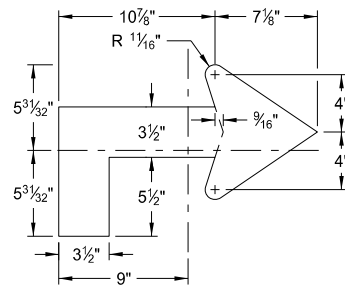
E5-1-48



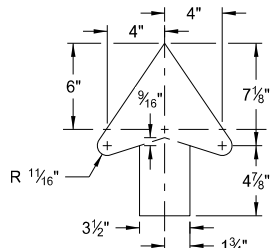
G20-50a-72
G20-52a-72



M4-9(L or R)-30
Right or Left



M4-9(L or R)-30
Advanced Right or Left



M4-9-30
Straight

ARROW DETAILS

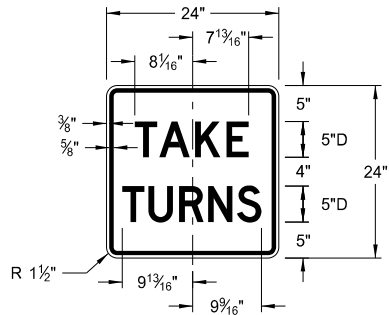
- NOTES:
- (A) Arrow may be right or left of the legend to indicate construction to the right or left.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17 10-03-19	Added sign & background color New Design Engineer PE Stamp

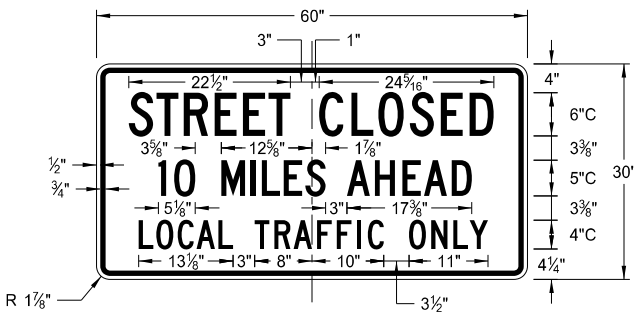
This document was originally issued and sealed by
Kirk J Hoff,
Registration Number
PE- 4683,
on 10/03/19 and the original document is stored at the
North Dakota Department
of Transportation

CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS

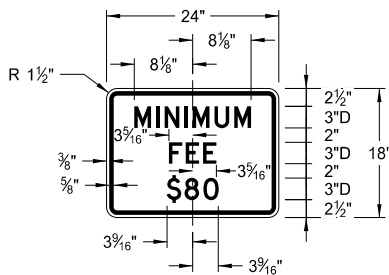
D-704-10



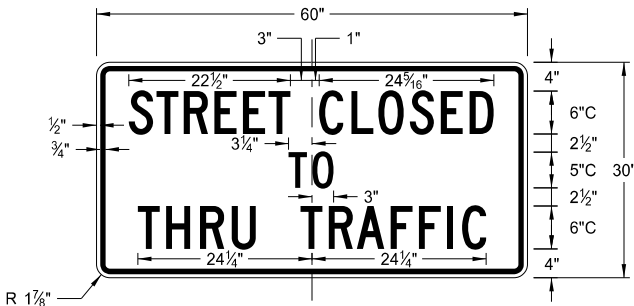
R1-50P-24
Legend: black (non-refl)
Background: white



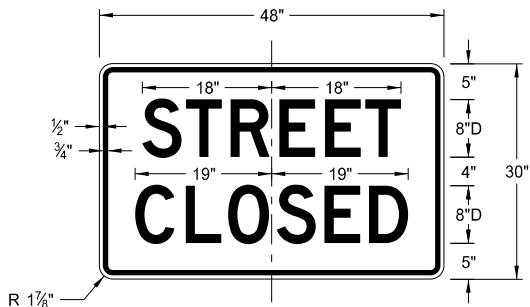
R11-3c-60
Legend: black (non-refl)
Background: white



R2-1aP-24
Legend: black (non-refl)
Background: white



R11-4a-60
Legend: black (non-refl)
Background: white



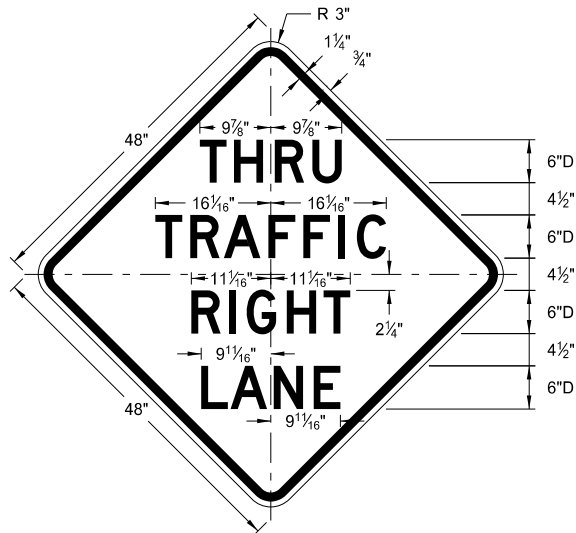
R11-2a-48
Legend: black (non-refl)
Background: white

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17 10-03-19	Revised sign number New Design Engineer PE Stamp

This document was originally
issued and sealed by
Kirk J Hoff,
Registration Number
PE- 4683,
on 10/03/19 and the original
document is stored at the
North Dakota Department
of Transportation

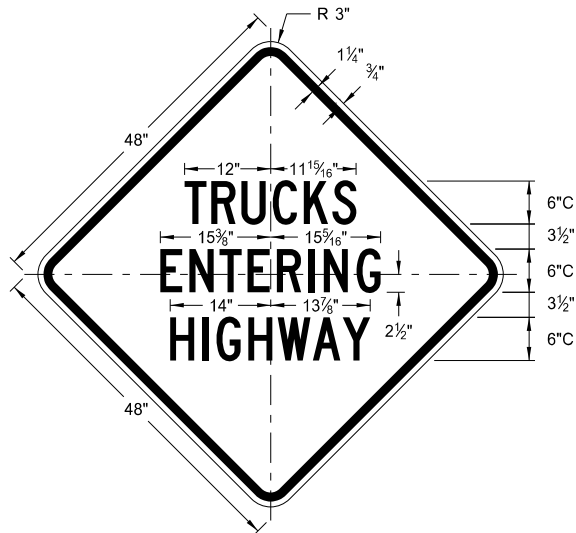
CONSTRUCTION SIGN DETAILS
WARNING SIGNS

D-704-11



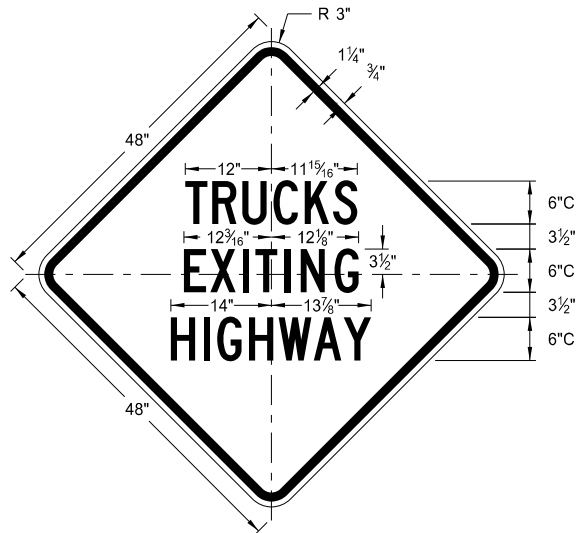
W5-8-48

Legend: black (non-refl)
Background: orange



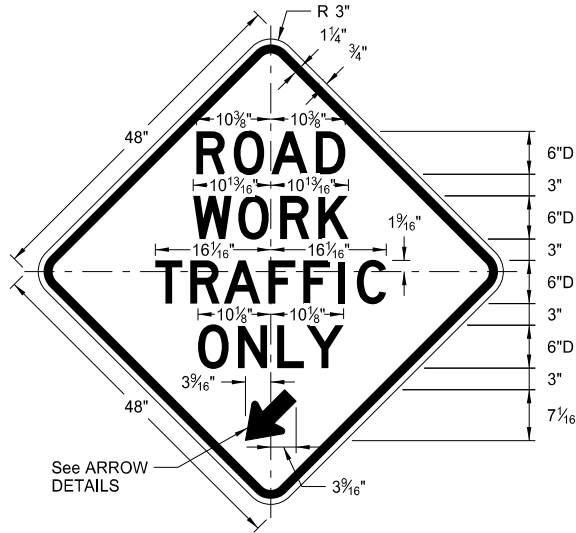
W8-53-48

Legend: black (non-refl)
Background: orange



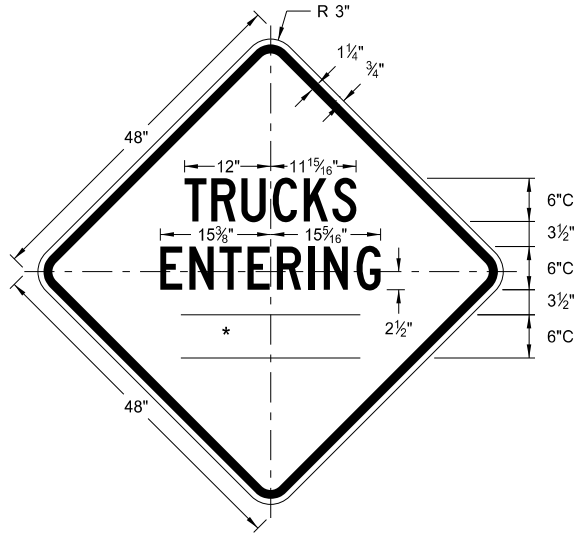
W8-56-48

Legend: black (non-refl)
Background: orange



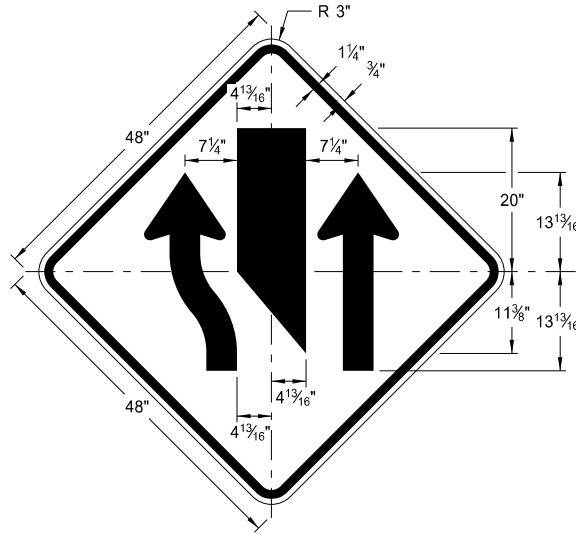
W5-9-48

Legend: black (non-refl)
Background: orange



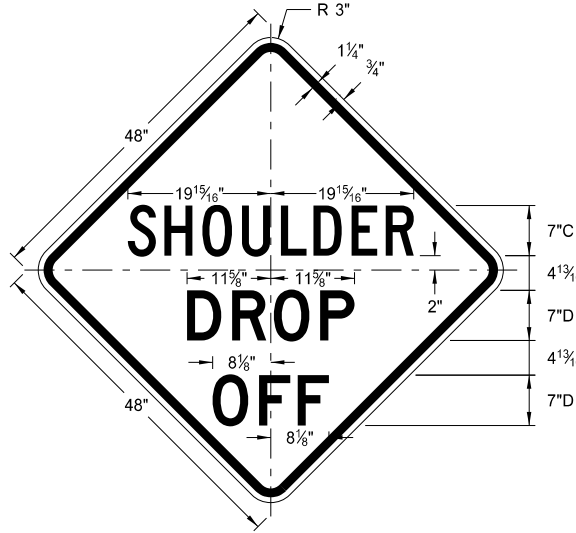
W8-54-48

Legend: black (non-refl)
Background: orange



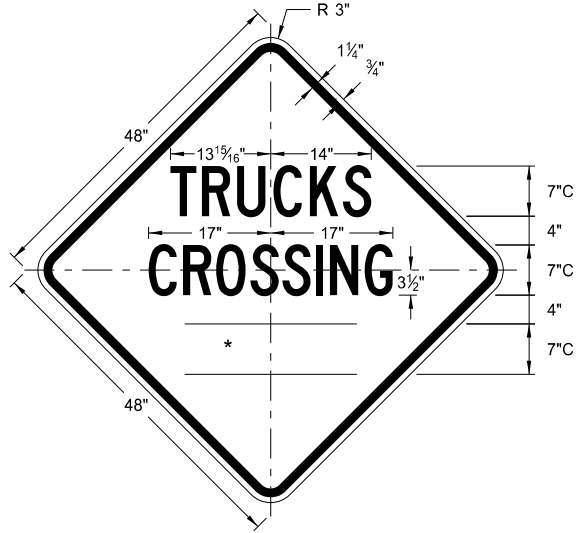
W9-3a-48

Legend: black (non-refl)
Background: orange



W8-9a-48

Legend: black (non-refl)
Background: orange

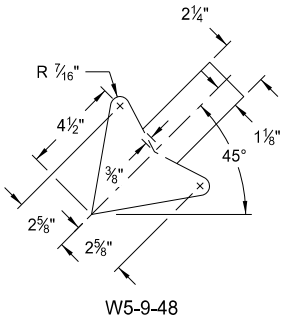


W8-55-48

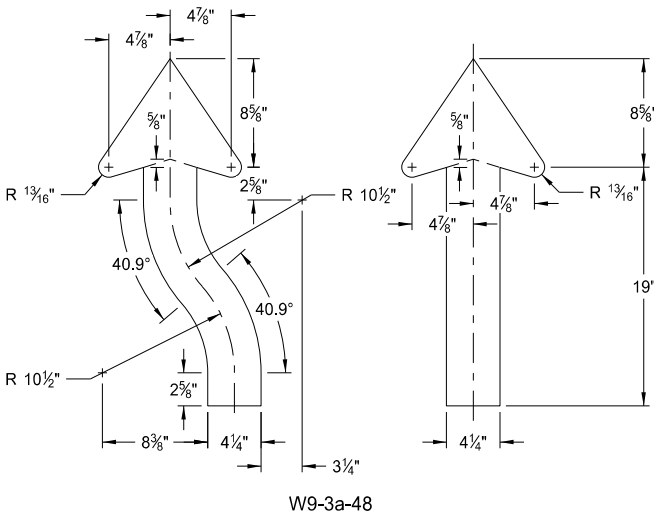
Legend: black (non-refl)
Background: orange

WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

* DISTANCE MESSAGES



W5-9-48



W9-3a-48

ARROW DETAILS

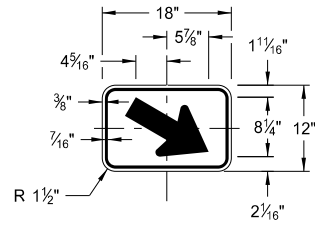
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17 5-31-18 10-03-19	Updated sign number Revised sign and arrow details New Design Engineer PE Stamp

This document was originally
issued and sealed by
Kirk J Hoff,
Registration Number
PE- 4683,
on 10/03/19 and the original
document is stored at the
North Dakota Department
of Transportation

CONSTRUCTION SIGN DETAILS
WARNING SIGNS

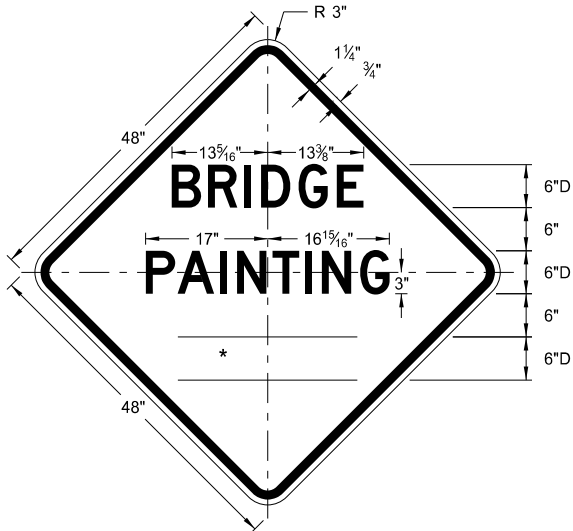
WORD	LETTER SPACING
AHEAD	Standard
200 FT	Standard
350 FT	Standard
500 FT	Standard
1000 FT	Reduce 40%
1500 FT	Reduce 40%
½ MILE	Reduce 50%
1 MILE	Standard

* DISTANCE MESSAGES



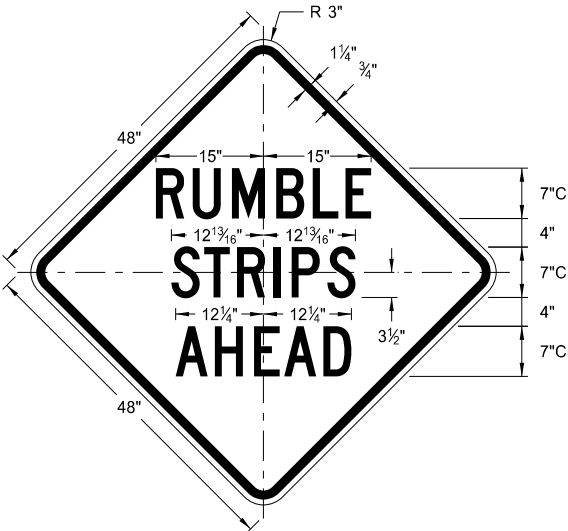
W16-7aP-18

Legend: black (non-refl)
Background: orange



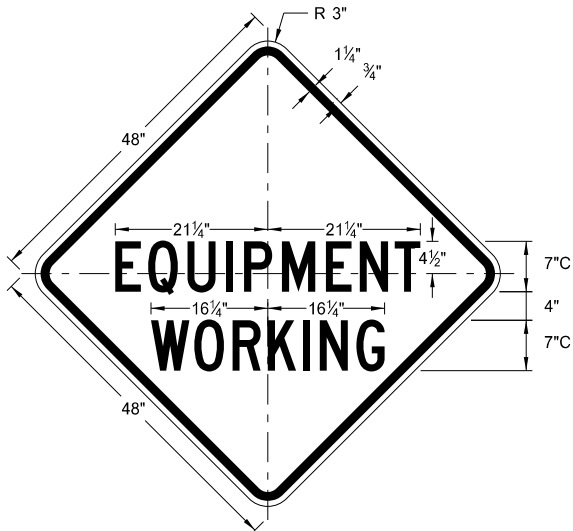
W21-50-48

Legend: black (non-refl)
Background: orange



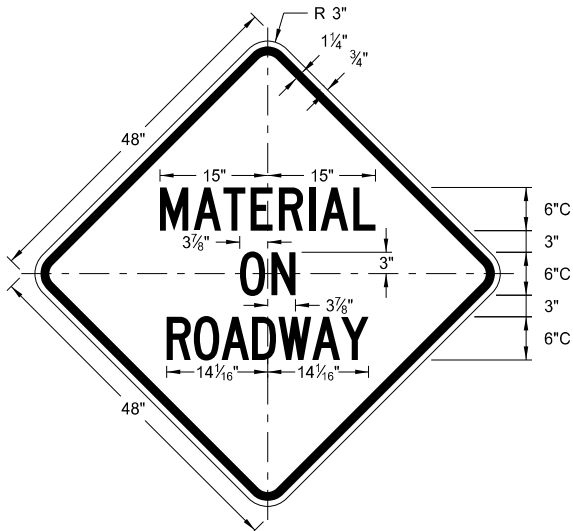
W21-53-48

Legend: black (non-refl)
Background: orange



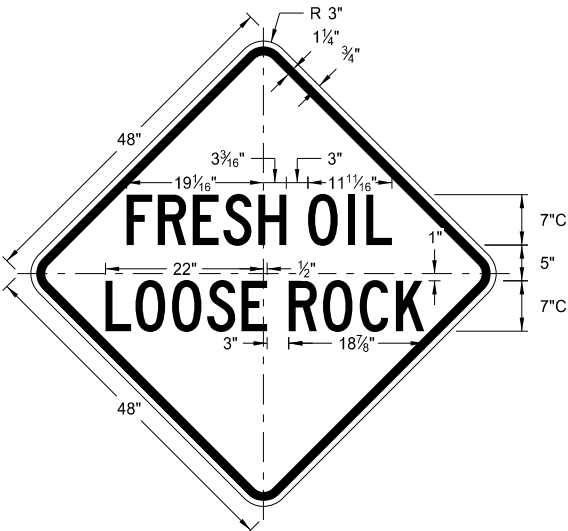
W20-51-48

Legend: black (non-refl)
Background: orange



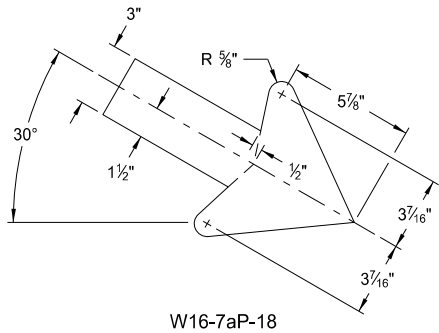
W21-51-48

Legend: black (non-refl)
Background: orange

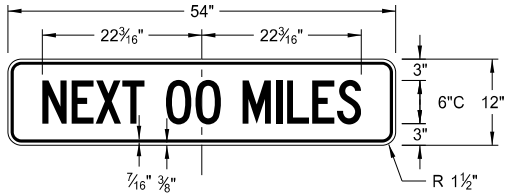


W22-8-48

Legend: black (non-refl)
Background: orange

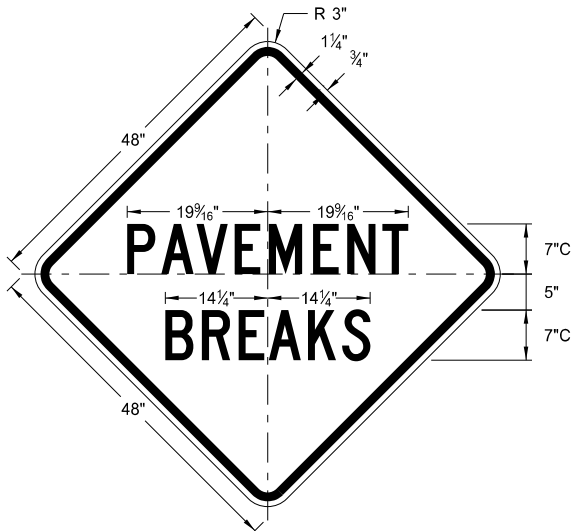


W16-7aP-18



W20-52P-54

Legend: black (non-refl)
Background: orange

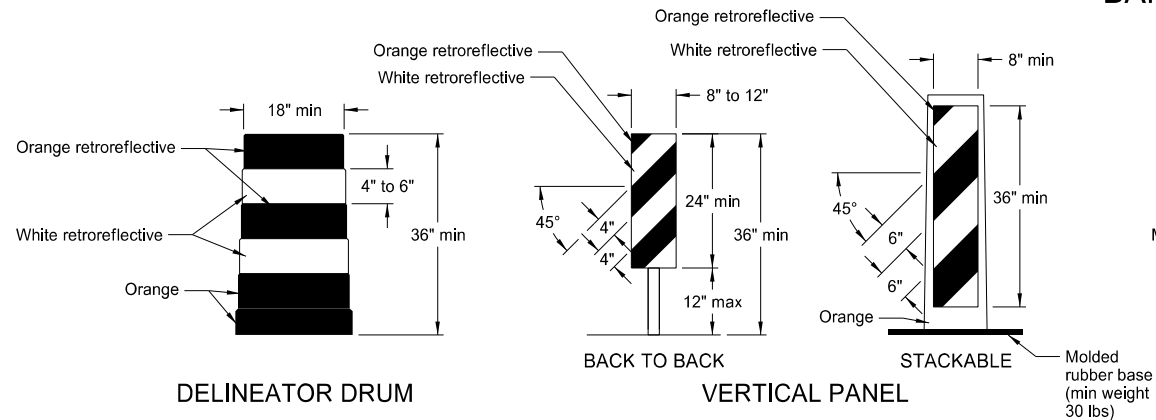


W21-52-48

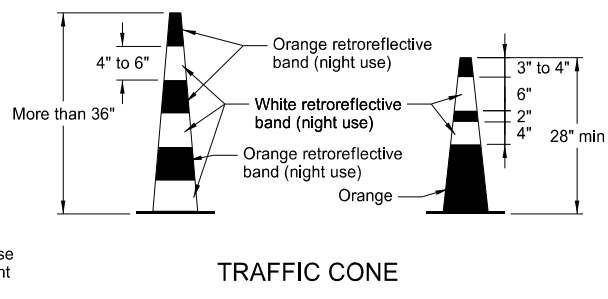
Legend: black (non-refl)
Background: orange

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		This document was originally issued and sealed by Kirk J Hoff, Registration Number PE- 4683, on 11/1/19 and the original document is stored at the North Dakota Department of Transportation
5-31-18		
REVISIONS		
DATE	CHANGE	
11-01-19	Added details for sign W16-7aP-18.	

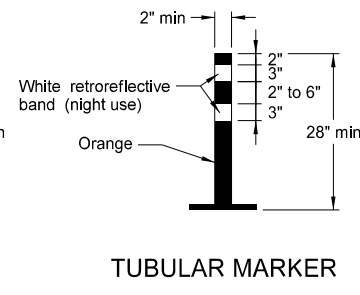
BARRICADE AND CHANNELIZING DEVICE DETAILS



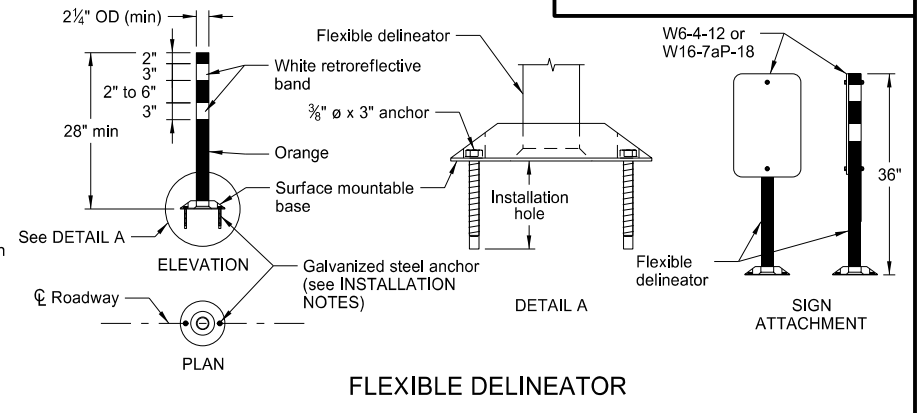
Provide horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide for drum markings. Use a minimum of two orange and two white stripes with the top stripe being orange for each drum. Do not exceed 3' nonretroreflective spaces between the horizontal orange and white stripes. Avoid placement of stripes on drum ribs or indentations. Use closed top drums that will not allow collection of debris. Do not place ballast on the top of drum.



Provide retroreflectorization of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectorized space between the orange and white stripes.

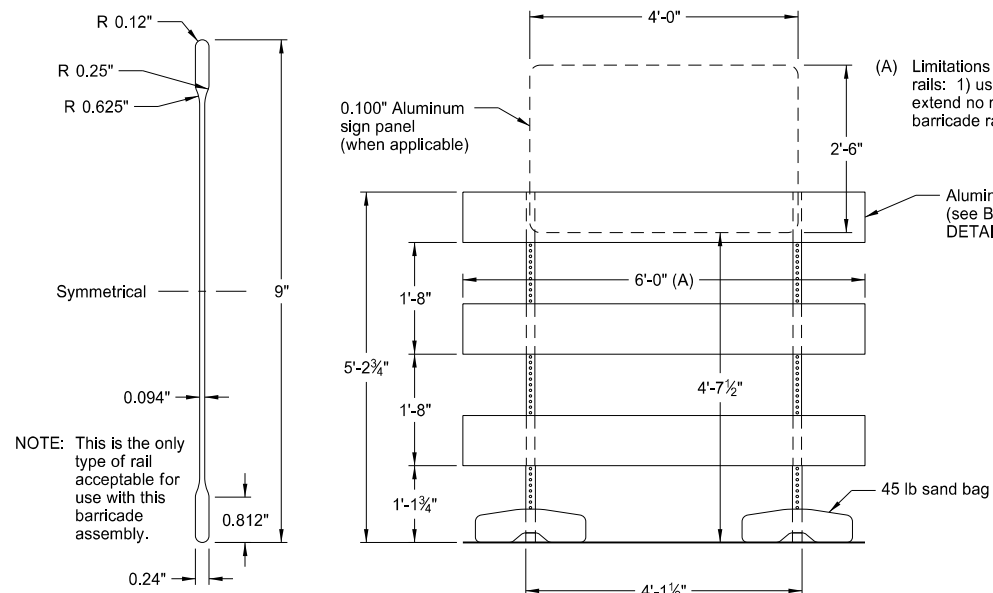


Provide retroreflectorization of tubular markers more than 42" in height by alternating four 4" to 6" wide orange and white stripes with the top stripe being orange.

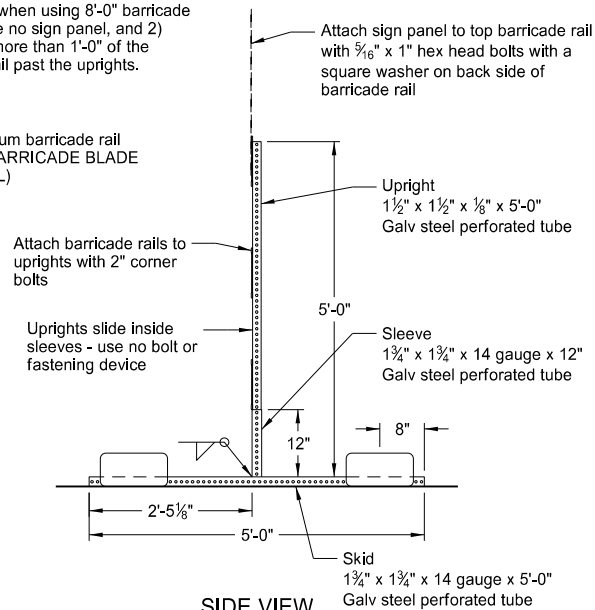


INSTALLATION NOTES:

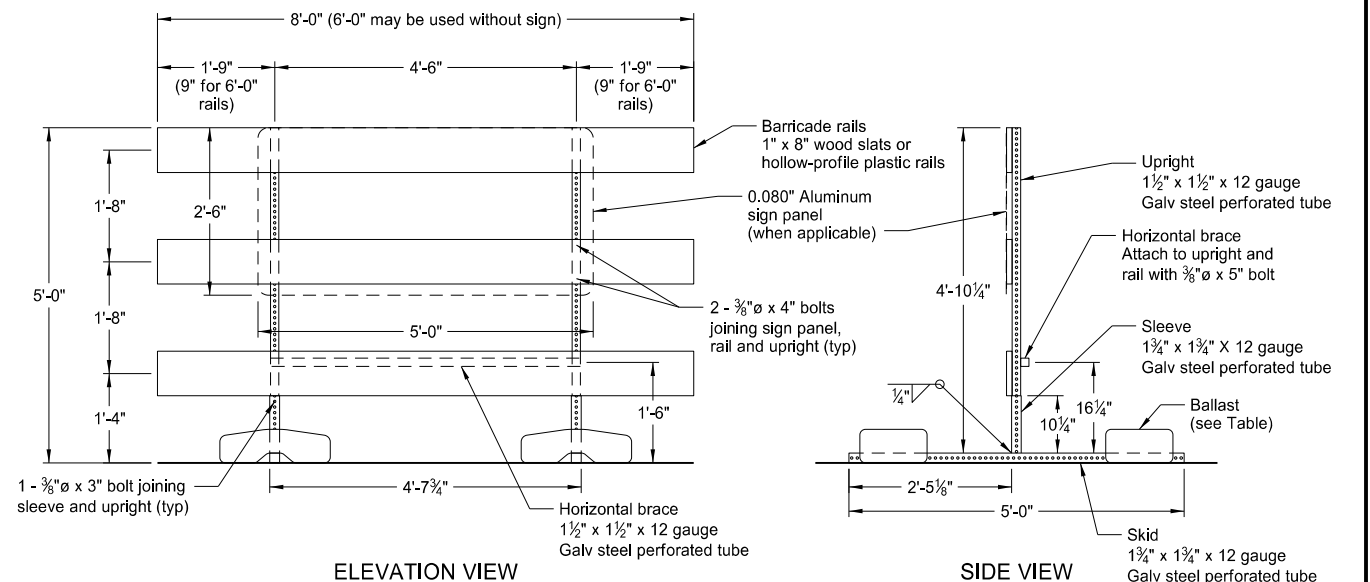
1. Drill installation holes to diameter and depth required by manufacturer's specifications.
2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
3. In lieu of bolted down base, use an 8" x 8" butyl pad or hot melt butyl. Remove butyl as close as possible to pavement surface.



BARRICADE BLADE DETAIL

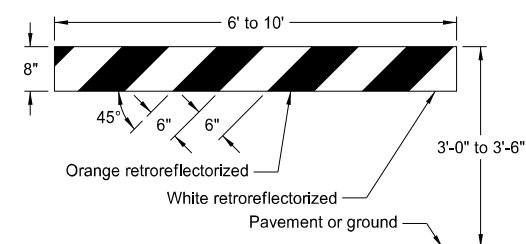


SIDE VIEW



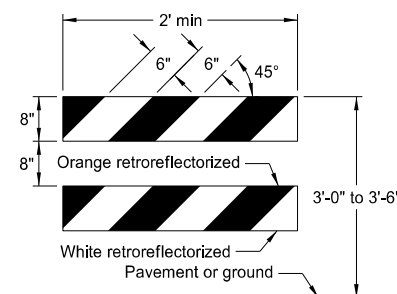
BARRICADE ASSEMBLY DETAIL (Wood or Plastic Rails)

NOTE: For barricade markings use alternating orange and white retroreflective stripes, sloping downward in the direction traffic is to pass. Place retroreflective sheeting on both sides of the rails with a minimum of 270 square inches of visible retroreflective area facing vehicular traffic. When the barricade length is less than 36", use a rail stripe width of 4".

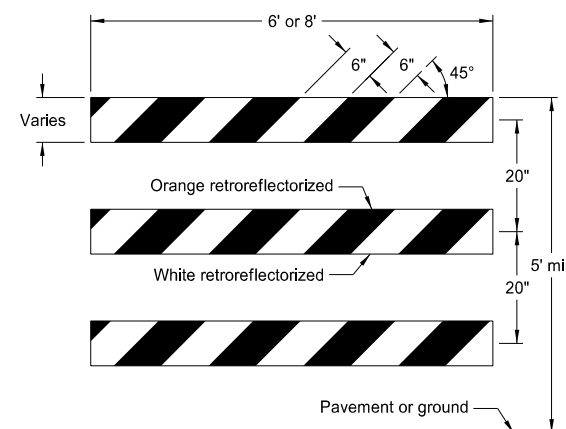


TYPE | BARRICADE

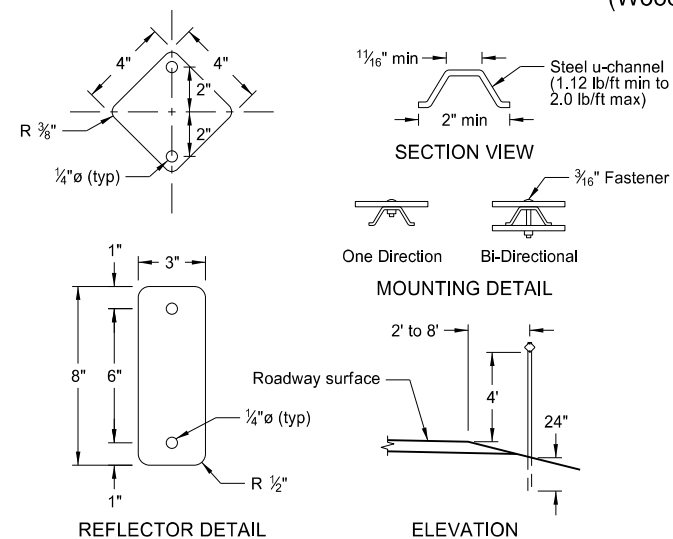
ELEVATION VIEW
BARRICADE ASSEMBLY DETAIL
(Aluminum Barricade Rails)



TYPE II BARRICADE
BARRICADE RAIL DETAILS



TYPE III BARRICADE



DELINEATORS

MINIMUM BALLAST (For each side of barricade support)	
Without Sign	4 - 25 lb sandbags
With Sign	6 - 25 lb sandbags

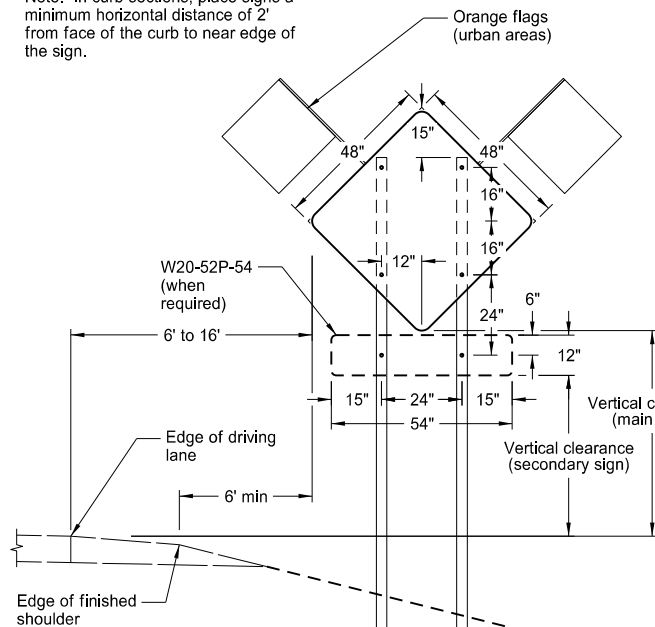
Note: Number of sandbags based on a wind speed of 55 MPH. Sandbags assumed to be placed at or near the ends of the skids.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
9-27-17 11-01-19	Updated to active voice Revised details for Flexible Delineator

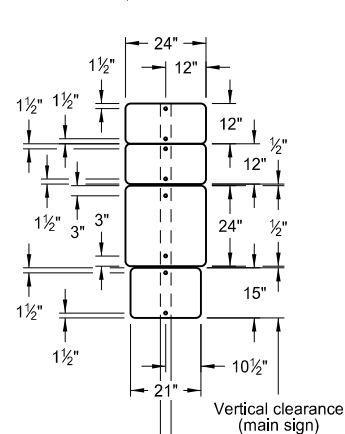
This document was originally issued and sealed by
Kirk J Hoff,
Registration Number
PE-4683,
on 11/1/19 and the original document is stored at the
North Dakota Department
of Transportation

CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

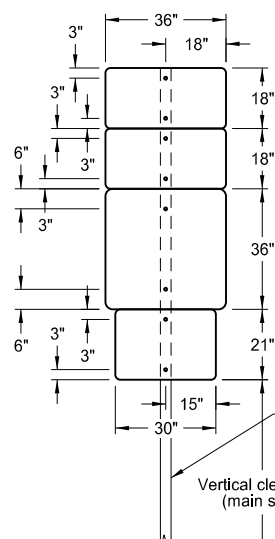
Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



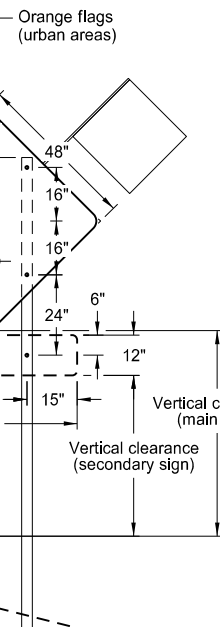
TYPICAL SECTION
(48" x 48" diamond warning sign shown)



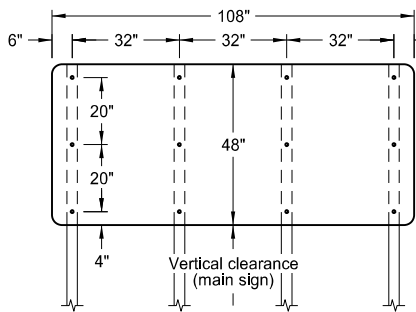
24" x 24"
ROUTE MARKER
ASSEMBLY



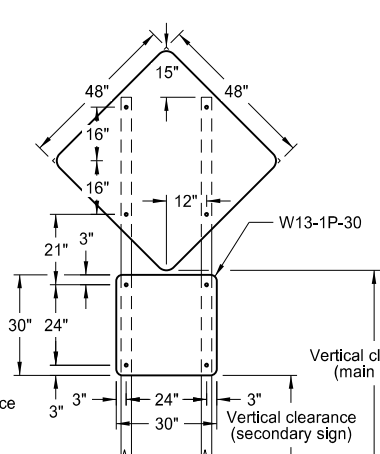
36" x 36"
ROUTE MARKER
ASSEMBLY



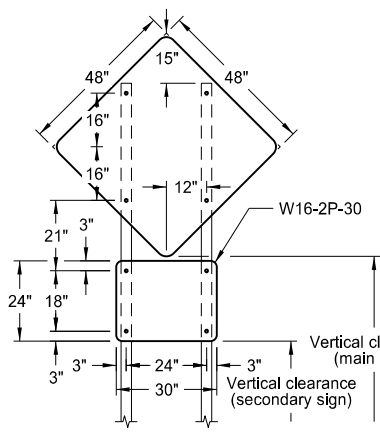
18" x 18"
DIAMOND SIGN



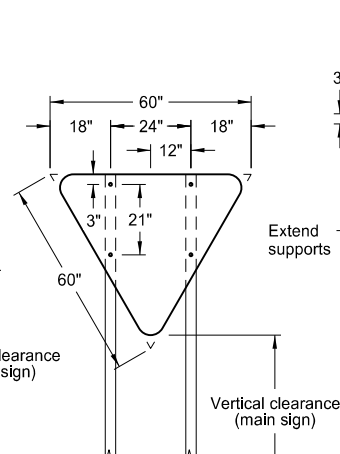
108" x 48" SIGN



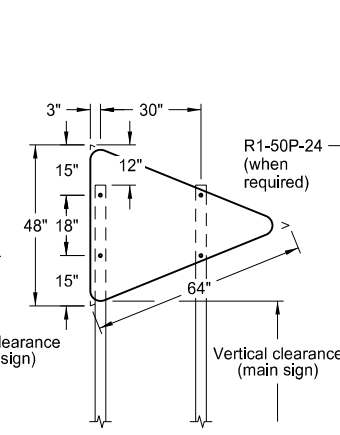
48" x 48" DIAMOND SIGN
(with 30" x 30" secondary sign)



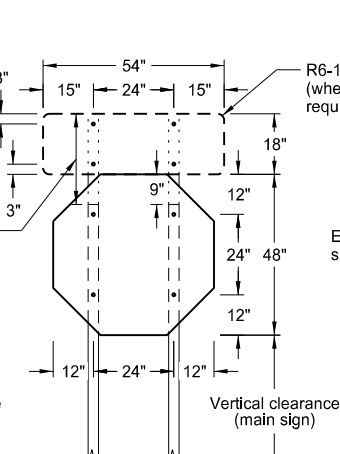
48" x 48" DIAMOND SIGN
(with 30" x 24" secondary sign)



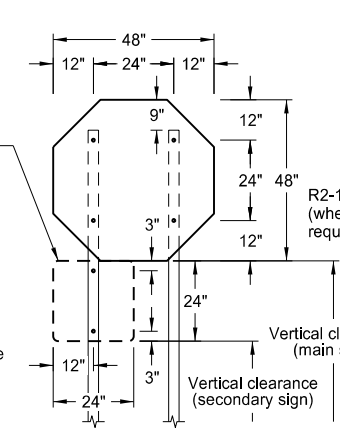
R1-2-60 - YIELD SIGN



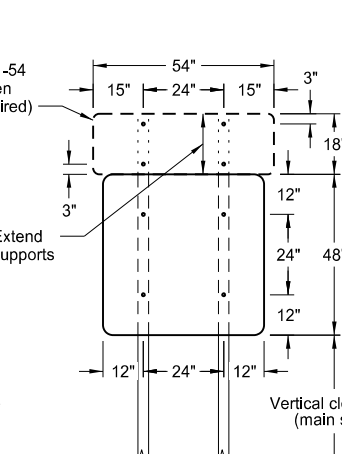
W14-3-64 - PENNANT SIGN



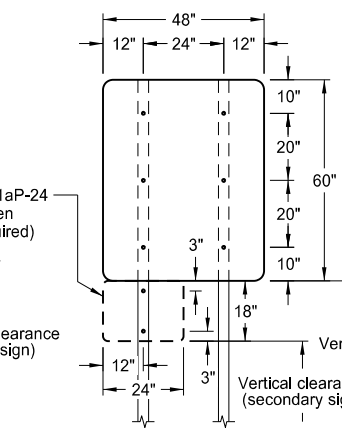
R1-1-48 - STOP SIGN
(with R6-1-54 sign as required)



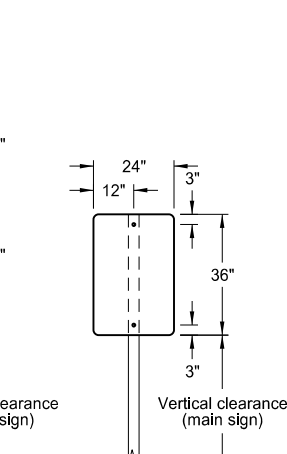
R1-1-48 - STOP SIGN
(with R1-50P-24 sign as required)



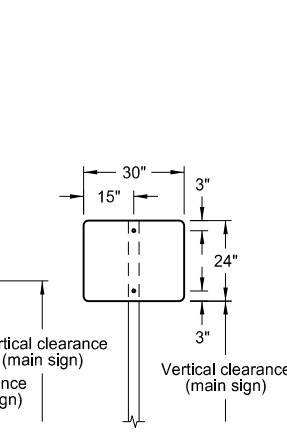
48" x 48" SIGN
(with R6-1-54 sign as required)



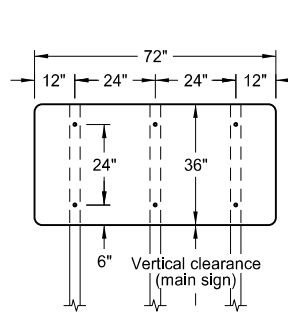
48" x 48" SIGN
(with R2-1aP-24 sign as required)



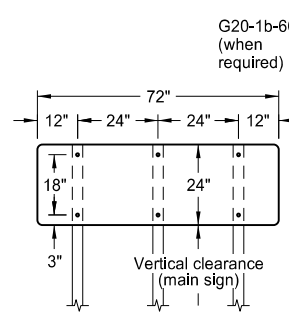
24" x 36" SIGN



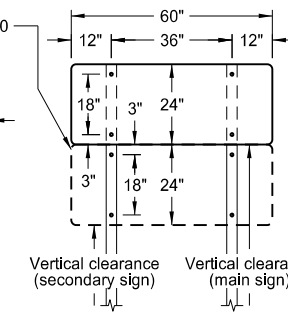
30" x 24" SIGN



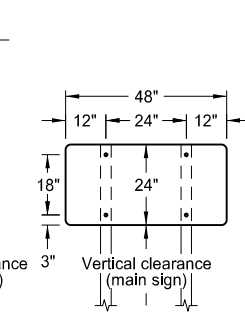
72" x 36" SIGN



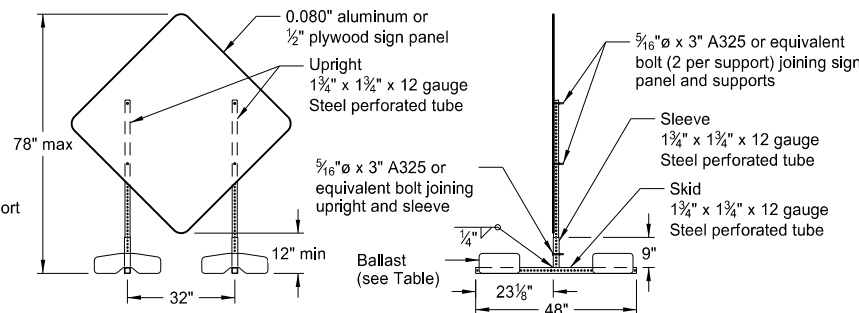
72" x 24" SIGN



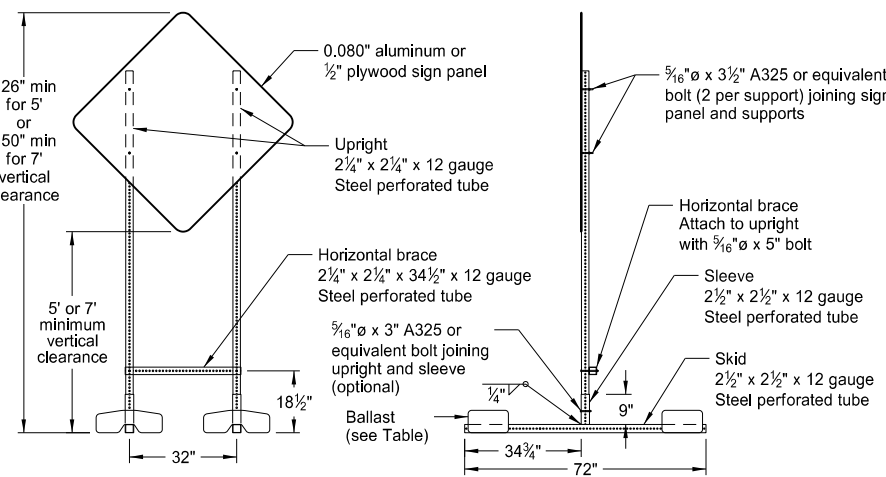
60" x 24" SIGN



48" x 24" SIGN



PORTABLE SIGN SUPPORT
LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT
HIGH-MOUNTING HEIGHT

NOTES:

1. Sign Supports: Galvanize or paint supports. Minimum post sizes are 2.5 lb/ft u-channel or 2" x 2" x 12 gauge steel perforated tube, except where noted. When installing signs on u-channel, minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes based on a wind speed of 55 MPH.

Place signs over 50 square feet on 2½" x 2½" perforated tube supports as a minimum.

Do not attach guy wires to sign supports. Attach wind beams behind sign panels when used with u-posts.
2. Sign Panels: Provide sign panels made of 0.100" aluminum, ½" plywood, or other approved material, except where noted. Punch all holes round for ⅝" bolts.
3. Alternate Messages: Install and remove alternate message signs on reflectorized plate (without borders) as required. (i.e. "Left" and "Right" message on lane closure sign)
4. Route Marker Auxiliary Signs: Provide route marker auxiliary signs, such as the cardinal direction and directional arrows, with a background and legend that match the route marker they are used with:

Interstate - white legend on blue background
Interstate Business Loop - white legend on green background
US and State - black legend on white background
County - yellow legend on blue background

5. Vertical Clearance: Install signs with a vertical clearance of 5'-0" (see TYPICAL SECTION.). In areas where parking or pedestrian movements are likely or the view of the sign may be obstructed, install signs with a vertical clearance of 7'-0" from the top of the curb or from the near edge of the driving lane in absence of a curb.

The vertical clearance to secondary signs is 1'-0" less than the vertical clearance stated above.

Provide a minimum clearance of 7'-0" from the ground at the post for signs with an area exceeding 50 square feet.

6. Portable Signs: Provide portable signs that meet the vertical clearance stated above when it is necessary to place signs within the pavement surface.

Use of low-mounting height (minimum 12" vertical clearance) portable signs for 5 days or less, is allowed as long as the view of the sign is not obstructed. Time delays caused by unforeseen circumstances, such as equipment breakdown, rain, subgrade failures, etc., will not accrue towards the 5 day period. Use of R9-8 through R9-11a series, W1-6 through W1-8 series, M4-10, and E5-1 is allowed for longer than 5 days.

Restrict signs mounted on portable sign supports shown in the LOW-MOUNTING HEIGHT and HIGH-MOUNTING HEIGHT details to a maximum surface area of 16 square feet.

MINIMUM BALLAST
(For each side of sign support base)

Sign Panel Mounting Height (ft)	Number of 25 lb sandbags for 4' x 4' sign panel
1'	6
5'	8
7'	10

Note: The number of sandbags are based on a wind speed of 55 MPH. Place sandbags at or near the ends of skids.

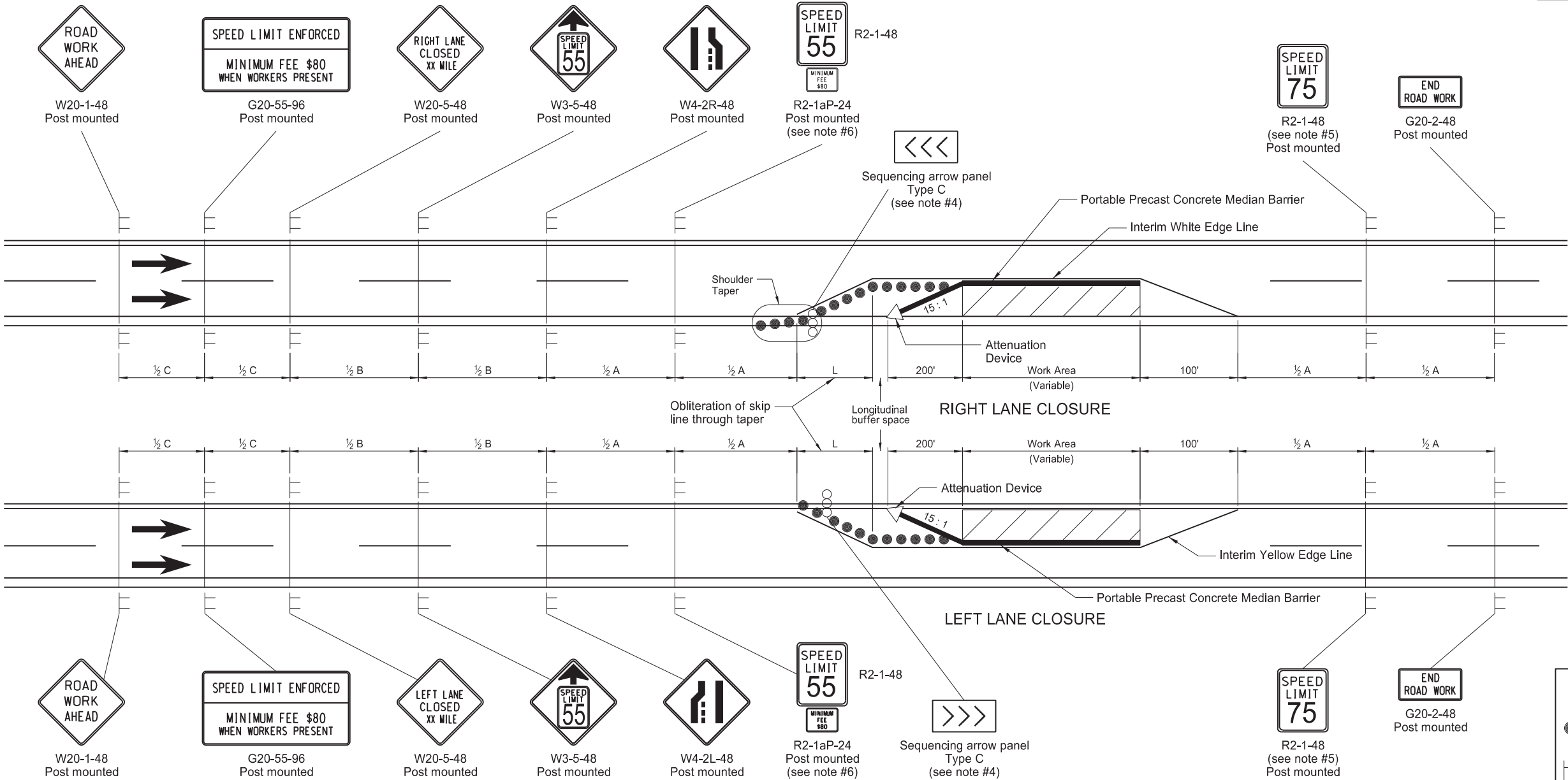
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-4-13	
REVISIONS	
DATE	CHANGE
11-14-13	Revised Note 6
9-27-17	Updated to active voice
11-01-19	Revised 60"x24" sign detail

This document was originally issued and sealed by

Kirk J Hoff,
Registration Number
PE-4683,
on 11/1/19 and the original document is stored at the North Dakota Department of Transportation

SIGN LAYOUT FOR INTERSTATE SYSTEM ONE LANE CLOSURE

D-704-18



Longitudinal Buffer Space	
*Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

* Posted speed, off-peak 85th percentile speed prior to work starting, or the anticipated operating speed in mph.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

- Notes:
- Variables
S = Numerical value of posted speed limit, off-peak 85th percentile speed prior to work starting, or anticipated operating speed in MPH.
W = The width of offset in feet.
L = Minimum taper length in feet. $S \times W$ for freeways, expressways, and roads with speeds of 45 mph or greater, or $W \times S^2 / 60$ for urban, residential, and streets with speeds of 40 mph or less.
 - Place barricades on moveable assemblies and signs on portable assemblies when located on the roadway.
 - Space delineator drums used for tapering traffic and on tangent at dimension "S".
 - Place Sequencing Arrow Panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on the roadway surface. See Shoulder Closure Standard Drawing. Use Type C on roadways with high traffic speeds and volumes (over 40 mph or 5000 ADT or greater).
 - Re-establish speed limit. Determine exact speed limit in the field, dependent on location and conditions.
 - Determine the reduced speed limit based on the in place speed limit before construction. Where speed reductions exceed 30 MPH, install a second speed limit sign with the desired speed reduction (not to exceed 30 MPH.) Place the second speed limit sign at $\frac{1}{2}$ B.
 - Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge that the flag does not touch the sign when limp.
 - Cover existing speed limit signs within a reduced speed zone.
 - As an option, use portable sign supports in lieu of post mounted signs in accordance with the Standard D-704-14.
 - Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or if work is less than 15 days.
 - Reduce speed limit further, if location and conditions dictate.

KEY

Delineator Drum

Sign

Attenuation Device

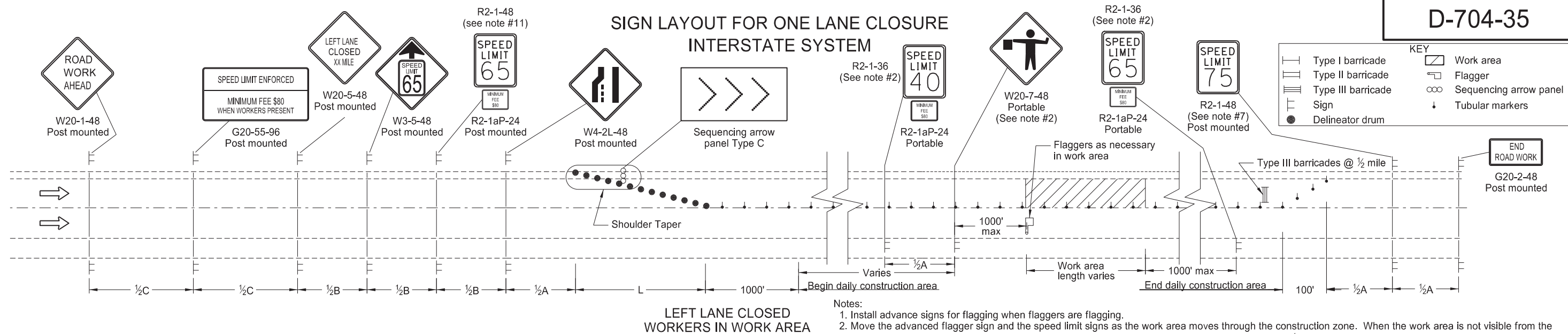
Sequencing Arrow Panel

Work Area

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
01-13-16	Changed to Interim yellow edge line
03-15-16	Removed Do Not Pass signs & updated notes
08-17-17	Updated notes & sign numbers
11-01-19	Note, sign #, & pvmt oblit change
12-08-21	Switched order of Road Work Ahead and Spd Limit Enforced & added Dollars At Work
11-29-22	Removed Dollars At Work



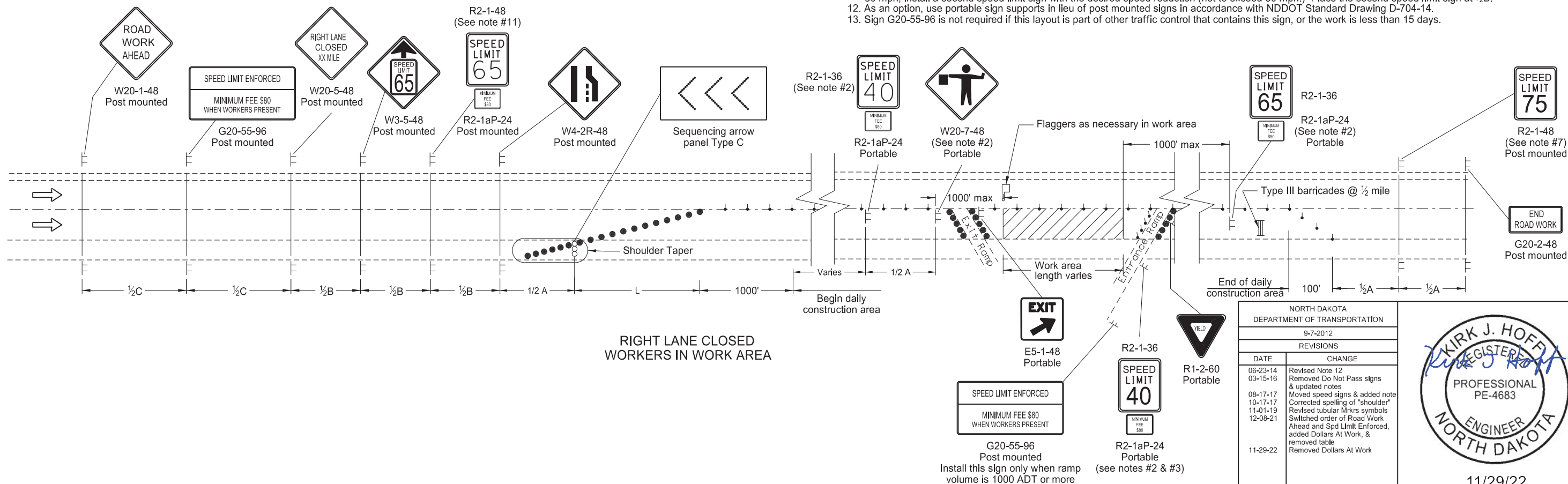
11/29/22



Notes:

1. Install advance signs for flagging when flaggers are flagging.
2. Move the advanced flagger sign and the speed limit signs as the work area moves through the construction zone. When the work area is not visible from the flagger, move the flagger station so the work area is visible. Space the 40 mph speed limit sign at $\frac{1}{2}A$ in advance of the flagger sign and move the 65 mph speed limit sign. Cover or remove the 40 mph speed limit and Minimum Fee \$80 signs and the 65 mph speed limit sign upon completion of the work day or when workers are not present.
3. RAMPs: When the work area encompasses an entrance ramp, install a 40 mph speed limit sign on the ramp and cover any existing yield sign. Install new yield sign as necessary. Remove the ramp speed limit sign when the main line 40 mph speed zone is moved past the ramp.
4. Variables:
 - S=Numerical value of speed limit or 85th percentile
 - W=The width of taper.
 - L=Minimum length of taper, or $S \times W$ for freeways, expressways, and all other roads with speeds of 45 mph or greater, or $W \times S \times 60$ for urban, residential, and other streets with speeds of 40 mph or less.
5. Space delineator drums for tapering traffic at the dimension "S". Space tubular markers used for tangents at 2 times dimension "S".
6. Place sequencing arrow panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on the roadway surface.
- Use Type C on roadways with high traffic speeds and volumes (over 40 mph or 5000 ADT or greater).
7. Re-establish the speed limit. Determine the exact speed limit in the field, dependent on location and conditions.
8. Cover existing speed limit signs within a reduced speed zone.
9. Upon approval, the Engineer will measure obliterated or covered pavement marking as Obliteration of Pavement Marking.
10. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the diamond sign, and at such a distance above the edge that the flag does not touch the sign when limp.
11. Determine the reduced speed limit dependent on the in place speed limit before construction. When speed limits are to be reduced more than 30 mph, install a second speed limit sign with the desired speed reduction (not to exceed 30 mph.) Place the second speed limit sign at $\frac{1}{2}B$.
12. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
13. Sign G20-55-96 is not required if this layout is part of other traffic control that contains this sign, or the work is less than 15 days.

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min (ft)		
	A	B	C
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

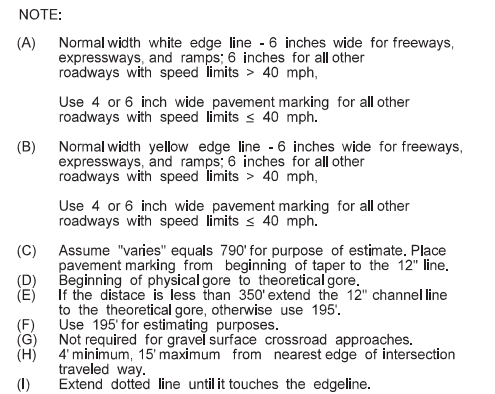


NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-7-2012	
REVISIONS	
DATE	CHANGE
06-23-14	Revised Note 12
03-15-16	Removed Do Not Pass signs & updated notes
08-17-17	Moved speed signs & added note
10-17-17	Corrected spelling of "shoulder"
11-01-19	Revised tubular Mkrs symbols
12-08-21	Switched order of Road Work Ahead and Spd Limit Enforced, added Dollars At Work, & removed table
11-29-22	Removed Dollars At Work



11/29/22

D-762-2



BASIS OF ESTIMATE		
LOCATION	ITEM	
Right or Left Side Exit Ramp TAPERED	12" White channel line	580 LF
	24" White stop line	60 LF
	6" White dotted line	148 LF
	6" White edge line	1115 LF
	6" Yellow edge line	1075 LF
Entrance Ramp TAPERED	12" White channel line	390 LF
	6" White dotted line	258 LF
	6" White edge line	1270 LF
	6" Yellow edge line	1075 LF
Right or Left Side Exit Ramp PARALLEL	12" White channel line	396 LF
	24" White stop line	60 LF
	6" White dotted line (C)	258 LF
	6" White edge line	1115 LF
	6" Yellow edge line	1075 LF
Entrance Ramp PARALLEL	12" White channel line	388 LF
	6" White dotted line	283 LF
	6" White edge line	1275 LF
	6" Yellow edge line	1075 LF
Main Line (Both Roadways)	6" White lane line, 10' line, 30' skip	2640 LF/MI
	6" White edge line	10,560 LF/MI
	6" Yellow edge line	10,560 LF/MI
Cross Road	6" White edge line	2000 LF
	6" Double yellow barrier line (4" between)	2000 LF

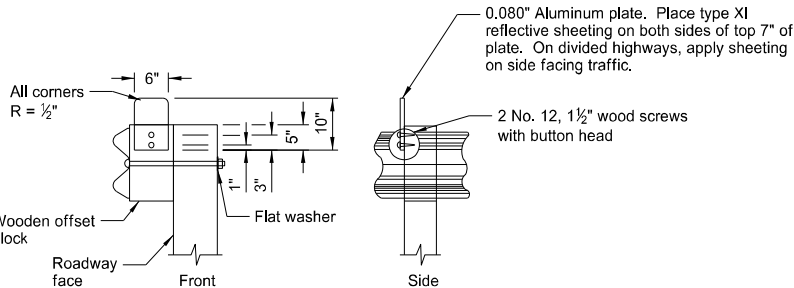
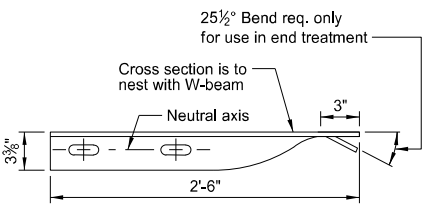
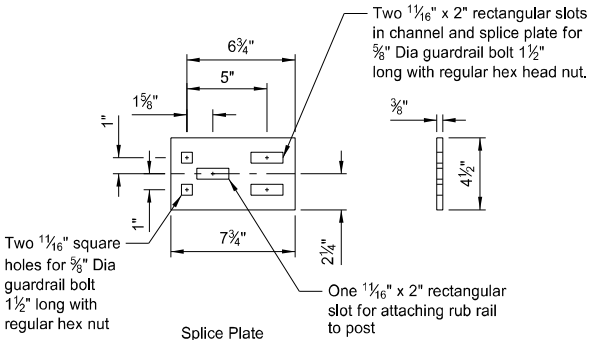
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-3-11	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice
10-25-19	Replaced 2' Max dim with Note (1)
11-05-21	Revised labels
11-22-23	Revised print marking widths
1-17-24	Revised wide print marking width



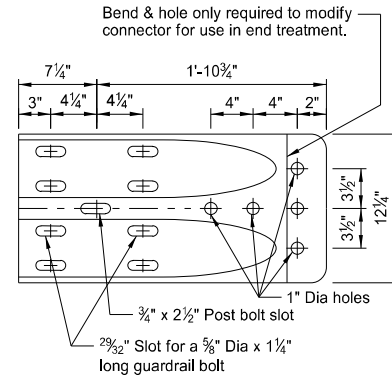
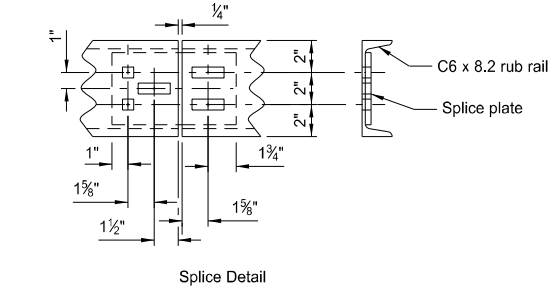
W-BEAM GUARDRAIL GENERAL DETAILS

NOTES:

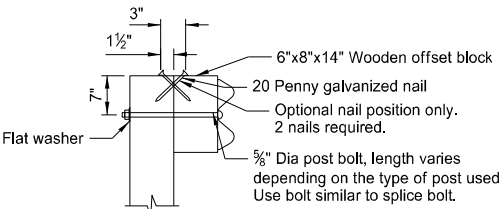
- Place reflector plates at the first post and spaced at 25' centers on guardrail less than 250' in length and at 50' centers for guardrail over 250' in length. Use reflector the same color as the pavement marking adjacent to that reflector unless noted otherwise on the plans.
- Dispose of excess earth from excavations for guard posts as directed by the engineer. Replace bituminous material where guardrail is installed after mat is placed. Include cost of excavation and replacing of bituminous material in the price bid for other items.
- Place Object Marker within the vertical edges of the Impact Plate. Use type XI retroreflective sheeting meeting the requirements of Section 894.02.E of the standard specifications. Apply sheeting to 0.100 Aluminum sheeting meeting the requirements Section 894.01.A. Attach the Object Marker to the Impact Head Plate with non-rust rivets or some other non-rust attachment device. Slope stripes downward toward the roadway side.
- Guardrail installation height tolerance = - ¼", + 1".
- Standard W-Beam rail post bolt slot spacing is 6'-3". Post bolt slot spacing of 3'-1½" is acceptable.



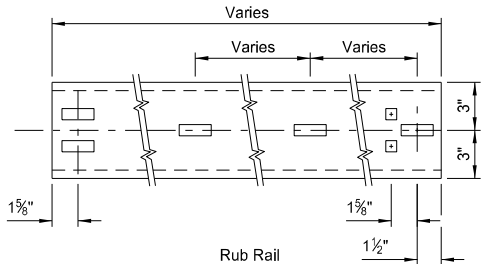
REFLECTORIZED PLATE DETAIL
Additional reflectors are added to the W-beam guardrail quantities for placement on end treatment.



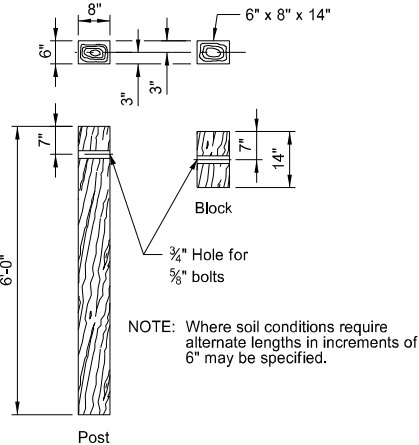
W BEAM TERMINAL CONNECTOR



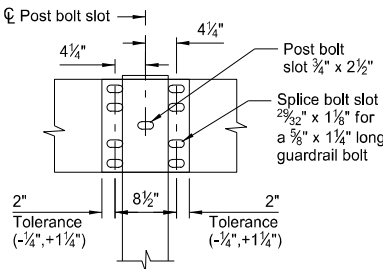
TYPICAL POST ATTACHMENT DETAIL



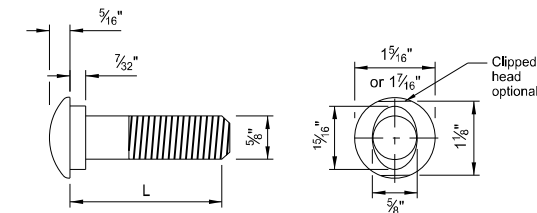
C6x8 RUB RAIL AND SPLICE PLATE



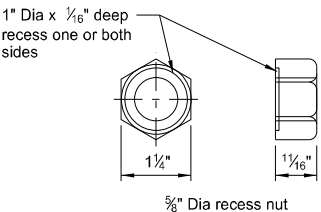
6"x8" TIMBER POST & BLOCK



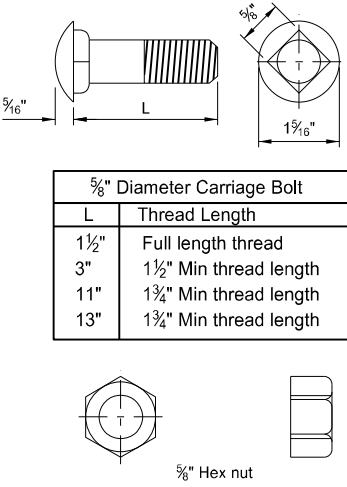
SPLICE DETAIL



5/8" Diameter Guardrail Bolt	
L	Thread Length
1 1/4"	Full length thread
2"	1 3/4" Min thread length
9 1/2"	4" Min thread length
18"	4" Min thread length
20"	4" Min thread length
22"	4" Min thread length
25"	4" Min thread length

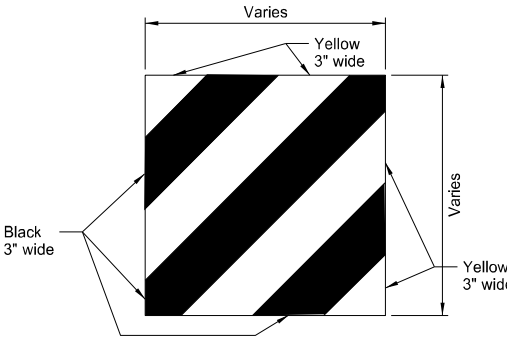


5/8" GUARDRAIL BOLT & RECESS NUT

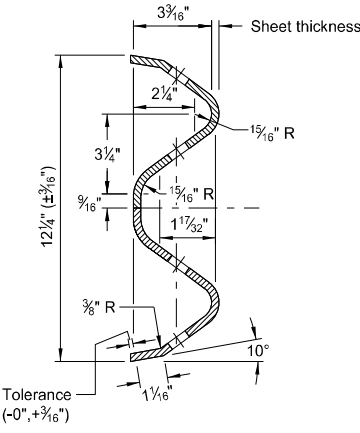


5/8" CARRIAGE BOLT & NUT

5/8" Diameter Carriage Bolt	
L	Thread Length
1 1/2"	Full length thread
3"	1 1/2" Min thread length
11"	1 3/4" Min thread length
13"	1 3/4" Min thread length



IMPACT HEAD OBJECT MARKER



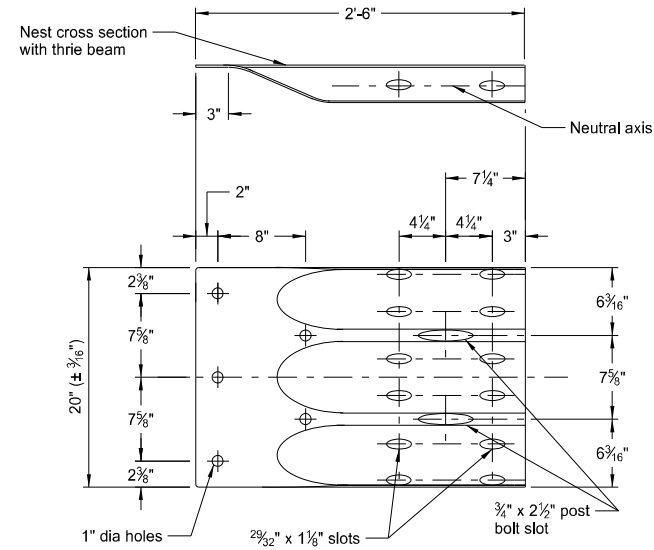
W-BEAM CROSS SECTION

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-11-13	
REVISIONS	
DATE	CHANGE
10-25-19	Updated notes to active voice and added Note 5.
12-02-20	Updated clipped head to optional

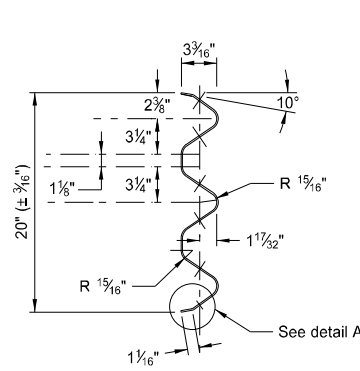
KIRK J. HOFF
REGISTERED
PROFESSIONAL
PE-4683
ENGINEER
NORTH DAKOTA
12 02 2020

THRIE BEAM TRANSITION TO DOUBLE BOX BEAM RETROFIT

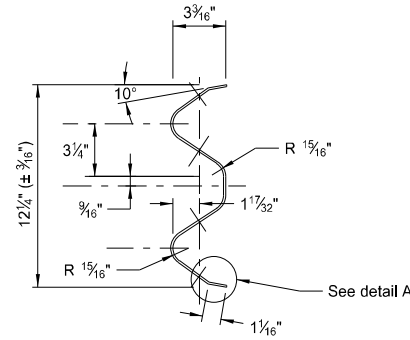
D-764-10



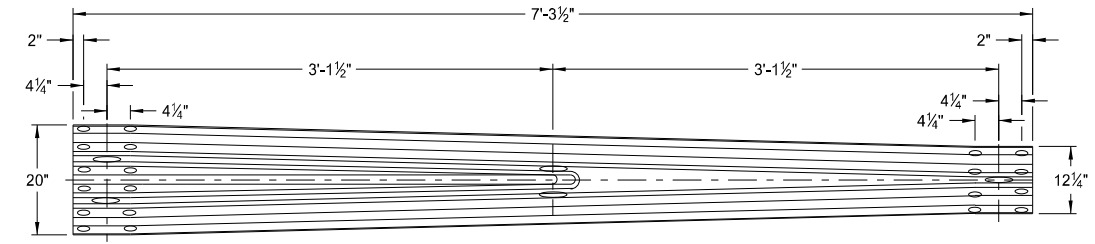
THRIE BEAM TERMINAL CONNECTOR



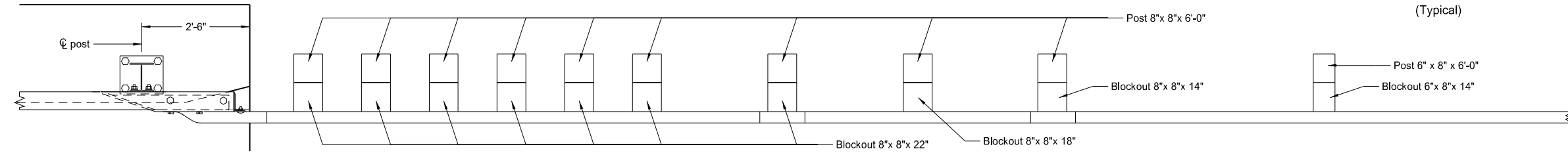
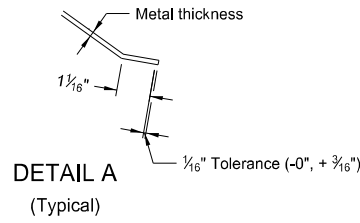
THRIE BEAM END VIEW



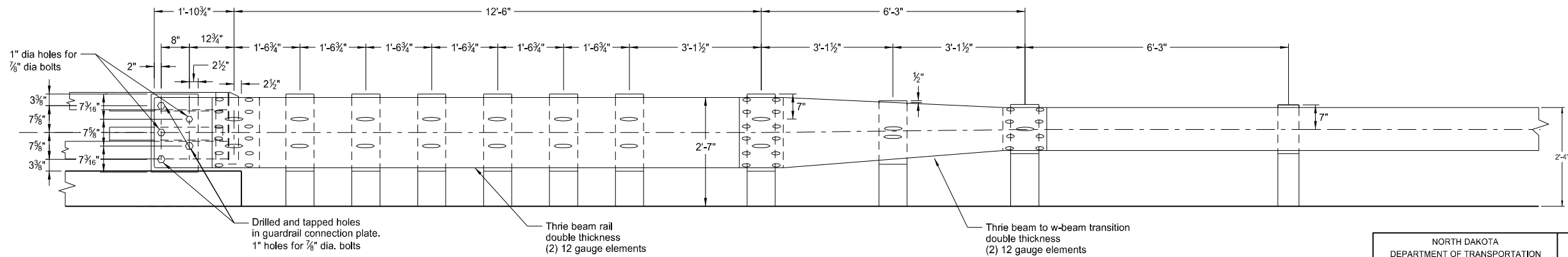
W-BEAM END VIEW



THRIE BEAM TO W-BEAM TRANSITION SECTION



PLAN



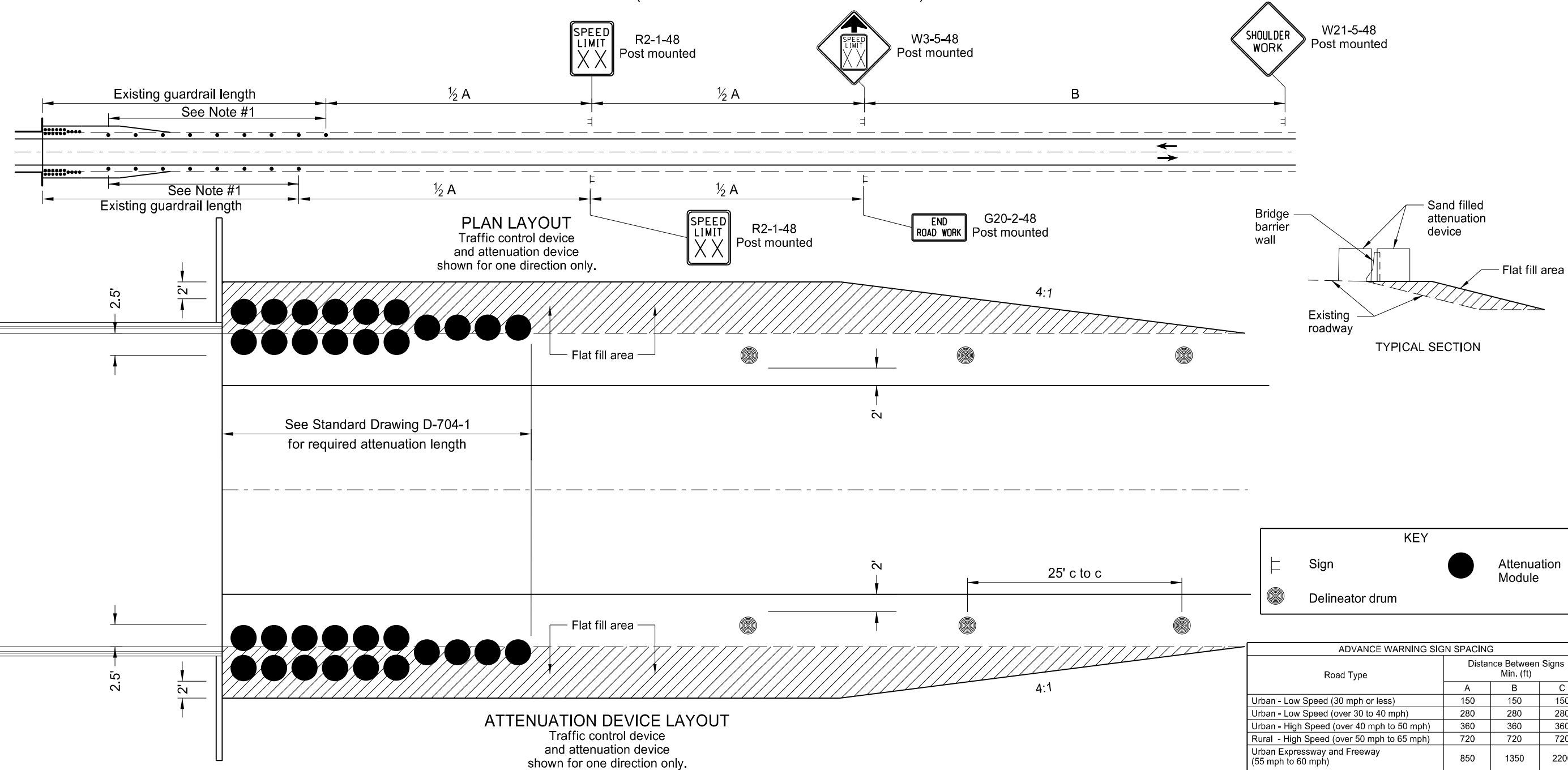
ELEVATION

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-11-13	
REVISIONS	
DATE	CHANGE
12/02/20	Updated text to active voice.



SHORT TERM END TREATMENT FOR BRIDGES
(ATTENUATION DEVICE METHOD)

D-764-20



Notes

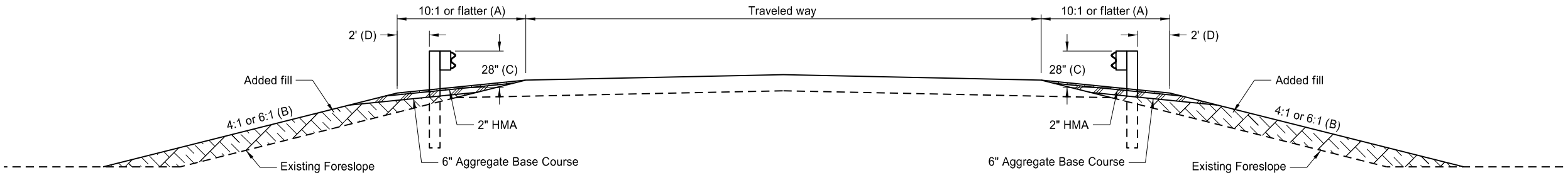
- When the shoulder width is less than 3', use vertical panels placed as far from the driving lane as possible on the finished shoulder. When there is no shoulder, place vertical panels as near as possible to the driving lane on the foreslope of the shoulder.
- When the bridge is within the construction zone signing, eliminate the reduced speed ahead sign.
- Determine the reduced speed limit dependent on the in place speed limit before construction. Where total speed reduction exceed 30 mph, reduce the speed limit in two stages with each reduction not exceeding 30 mph. Place the second speed limit sign at $\frac{1}{2}$ B.
- Re-establish speed limit. Determine exact speed limit in the field, dependent on location and conditions.
- Cover existing speed limit signs within a reduced speed zone.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-27-13	
REVISIONS	
DATE	CHANGE
12-02-20	Updated notes to active voice.

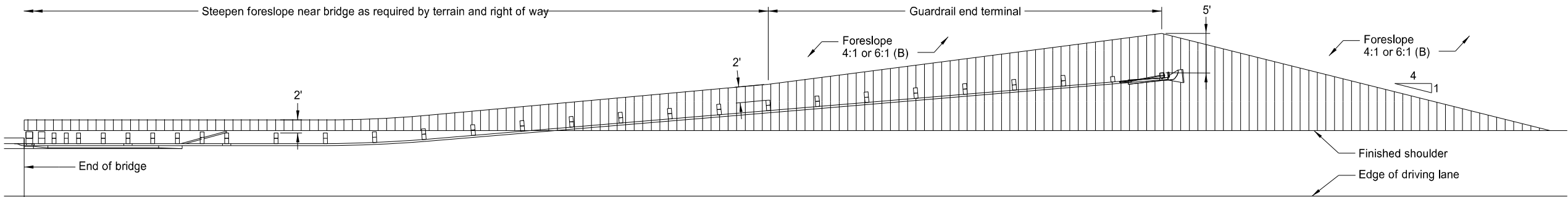


TYPICAL GRADING AT BRIDGE ENDS
WITH W-BEAM GUARDRAIL

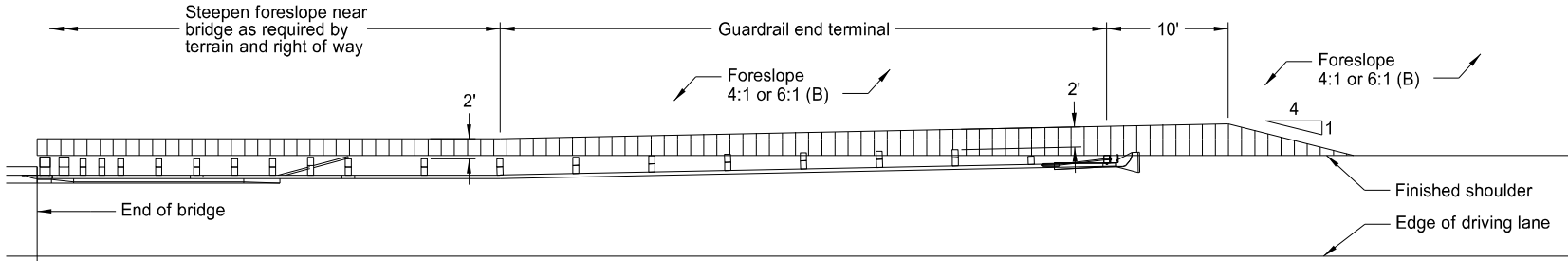
D-764-22



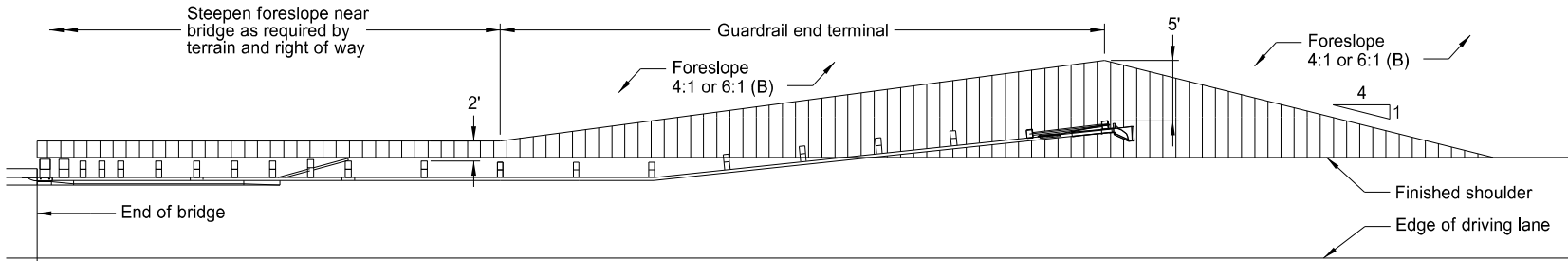
TYPICAL SECTION



PLAN LAYOUT
FLARED GUARDRAIL WITH END TERMINAL



PLAN LAYOUT
NON-FLARED GUARDRAIL WITH TANGENT END TERMINAL



PLAN LAYOUT
NON-FLARED GUARDRAIL WITH FLARED END TERMINAL

NOTES:

- (A) Use slope flatter than 10:1 when necessary to provide proper guardrail height.
- (B) When normal foreslope is 4:1, use added fill slope of 4:1. When normal foreslope is 6:1, use added fill slope of 6:1.
- (C) Measure from top of guardrail to top of surfacing at front face of guardrail.
- (D) Dimension at end terminals vary per Plan Layouts shown on this sheet.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-3-13	
REVISIONS	
DATE	CHANGE
12-02-20	Updated notes to active voice.

