DEPARTMENT OF TRANSPORTATION

Planning & Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
O: 605.773.3275 | F: 605.773.2614
dot.sd.gov

October 30, 2024

ADDENDUM NO. 1

RE: Item #7, November 6, 2024 Letting - PT 0908(105)349, PCN 07W6, Hanson, McCook County - Spot Grading, PCC Surfacing, Crossover, Structures (8x8 CIP or Precast RCBC, 2-9x4 Precast RCBC, 11x5 Precast RCBC)

TO WHOM IT MAY CONCERN:

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

SPECIAL PROVISIONS: Please remove the Index of Special Provisions and replace with attached Index of Special Provisions revised 10/18/24.

Please remove the "Special Provision for Contract Time", dated 10/7/24 and replace with the "Special Provision for Contract Time", dated 10/18/24.
Disincentive assessment was changed to $4000 per calendar day.

SDEBS BID PROPOSAL: *The electronic bid proposal for this contract has been revised to include the changes associated with this addendum. Bidders must log in to the SDEBS to retrieve and incorporate these changes into their bid.*

Bid Items were added:
Bid Item 110E0100 for "Remove Concrete Footing(s)"

Quantities for Bid Items were changed:
Bid Item 120E6200 "Water for Granular Material" changed from 316.3 to 338.7 MGal
Bid Item 260E2010 "Gravel Cushion" changed from 18,254.2 to 20,027.5 Ton
Bid Item 632E1340 "2.5"x2.5"" Perforated Tube Post" changed from 36.8 to 61.0 Ft

Fixed Price Bid Items were changed:
Bid Item 009E1000 "Incentive Disincentive Pay" changed from $2,000 to $4,000 Day

PLANS: Please destroy sheets A2, B5, F2, F3, F4, F6, F26, F27, S2, and S5 and replace with the enclosed sheets, dated 10/28/24 and 10/29/24.

Sheet A2: **Bid Items were added:**
Bid Item 110E0100 for "Remove Concrete Footing(s)"

Quantities for Bid Items were changed:
Bid Item 120E6200 "Water for Granular Material" changed from 316.3 to 338.7 MGal
Bid Item 260E2010 "Gravel Cushion" changed from 18,254.2 to 20,027.5 Ton
Bid Item 632E1340 "2.5"x2.5"" Perforated Tube Post" changed from 36.8 to 61.0 Ft

Sheet B5: RECYCLED CONCRETE AGGREGATE (RCA) USED AS CONTRACTOR FURNISHED BORROW EXCAVATION note was added & note placement was adjusted.

Sheet F2: **Quantities for Bid Items were changed:**
Bid Item 120E6200 "Water for Granular Material" changed from 316.3 to 338.7 MGal
Bid Item 260E2010 "Gravel Cushion" changed from 18,254.2 to 20,027.5 Ton

Sheet F3: RECYCLED CONCRETE AGGREGATE (RCA) note was added.

Sheet F4: CONSTRUCTION HAUL ROAD note was added, and ALKALI SILICA REACTIVITY table was revised.

Sheet F6: TABLE OF MATERIAL QUANTITIES was revised.

Sheet F26: STANDARD CRC PLACEMENT DETAIL tables were revised.

Sheet F27: CRC PAVEMENT CHAIR DETAIL tables were revised.

Sheet S2: **Bid Items were added:**
Bid Item 110E0100 for "Remove Concrete Footing(s)"

Quantities for Bid Items were changed:
Bid Item 632E1340 "2.5"x2.5"" Perforated Tube Post" changed from 36.8 to 61.0 Ft

Sheet S5: SIGN TABLE was revised.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

CC: Travis Dressen, Mitchell Region Engineer
Jay Peppel, Mitchell Area Engineer

REV 10/18/24

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): PT 0908(105)349 PCN: 07W6

TYPE OF WORK: SPOT GRADING, PCC SURFACING, CROSSOVER, STRUCTURES (8X8 CIP OR PRECAST RCBC, 2-9X4 PRECAST RCBC, 11X5 PRECAST RCBC)

COUNTIES: HANSON, MCCOOK

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Devon Bartscher, Sara Garbe is the official in charge of the Mitchell, Sioux Falls Career Center for Hanson, McCook Counties.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Contract Time, dated 10/18/24.

Special Provision for Prosecution and Progress, dated 1/21/21.

Special Provision Regarding Section 404 of the Clean Water Act, dated 10/8/24.

Fact Sheet #14.

Special Provision for Contractor Furnished Mix Design for PCC Pavement, dated 8/30/18.

Special Provision for Durable Pavement Markings, dated 9/25/24.

Special provision for PI PCC Pavement Smoothness with 0.2" Blanking Band, dated 11/30/18.

Special Provision for Contractor Staking with Machine Control Grading Option, dated 10/9/24.

List of Utilities.

Special Provision for Steel Beam Guardrail AASHTO M 180 Designation, date 10/8/24.
Special Provision for Acknowledgment and Certification Regarding Article 3, Section 12 of the South Dakota Constitution, dated 8/24/23.
Special Provision for Buy America, dated 5/1/24.
Special Provision for Liability Insurance, dated 4/21/22.
Special Provision for Responsibility for Damage Claims, dated 4/21/22.
Special Provision for Restriction of Boycott of Israel, dated 1/31/20.
Special Provision for Contractor Administered Preconstruction Meeting, dated 12/18/19.
Fuel Adjustment Affidavit, DOT form 208 dated 7/15.
Standard Title VI Assurance, dated 3/1/16.
Special Provision For Disadvantaged Business Enterprise, dated 2/9/24.
Special Provision For EEO Affirmative Action Requirements on Federal and Federal-Aid Construction Contracts, dated 2/5/24.
Special Provision For Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. October 23, 2023), dated 10/18/23.
Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. 10/23/23).
Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 10/24/19.
Wage and Hour Division US Department of Labor Washington DC. - US Dept. of Labor Decision Number SD20230032, dated 3/10/23.
Special Provision for Supplemental Specifications to 2015 Standard Specifications for Roads and Bridges, dated 9/7/22.
Special Provision for Price Schedule for Miscellaneous Items, dated 12/6/23.

Special Provision Regarding Storm Water Discharge, dated 5/8/18.
General Permit for Storm Water Discharges Associated with Construction Activities, dated 4/1/18

https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/StormWaterConstruction.aspx

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACT TIME

PROJECT PT 0908(105)349; PCN 07W6
HANSON & MCCOOK COUNTY

OCTOBER 17, 2024

March 3, 2025 Work Restriction

The Contractor will not begin work on the project prior to March 3, 2025.

March 31, 2025 Work Restriction

The Contractor will not begin any work requiring 2-lane 2-way traffic or closing 257th St the project prior to March 31, 2025.

November 14, 2025 Interim Completion Requirement

The Contractor will complete all work except permanent pavement markings and the Contractor will restore unimpeded traffic to all roadways by the November 14, 2025 interim completion date.

If the Contractor does not complete the work by the interim completion requirement, the Department will make a disincentive assessment in the amount of $4000 per calendar day. A contract item for incentive/disincentive pay is included in the bid schedule for the Department's use in assessing disincentive. The Department will use a negative quantity of days for assessing disincentives. The Department will count calendar days in accordance with Section 8.6 B.

In addition, if the Contractor does not complete the work by the interim completion requirement, the Department will also assess liquidated damages in accordance with Section 8.8 Table A. The Department will assess liquidated damages for each calendar day the work is late until the Contractor completes the work required.

Field Work Completion

The Contractor will complete the project by the June 30, 2026 field work completion date.

Failure to Complete on Time

The Contractor will complete all work on the project prior to the field work completion requirement. If the Contractor does not complete all work by the field work completion requirement, the Department will assess liquidated damages in accordance with Section 8.8. The Department will assess liquidated damages for each working day the work (project) is late until the Contractor completes all field work.

In the event the Contractor does not complete all field work on time, the Department will count working days in accordance with Section 8.6 C.

Expected Adverse Weather Days

The Department has provided Attachment 1 for information purposes only as a guide to bidders. This table depicts the typical number of adverse weather days expected for any given month, based on historical records. The Department will consider this project a grading project in Zone 5.

The Department will consider expected adverse weather days cumulative in nature over the time period when the Contractor is actively pursuing completion of the work. The Department will not consider adverse weather days during an extended period of time when the Contractor is not pursuing completion of the work. When considering a time extension for interim completion or field work completion of the project, the Engineer will compare the total number of expected adverse weather days against the total number of actual adverse weather days for the time period during which the work was being completed.

* * * * *

ATTACHMENT 1

Figure A - Expected Adverse Weather Days for South Dakota

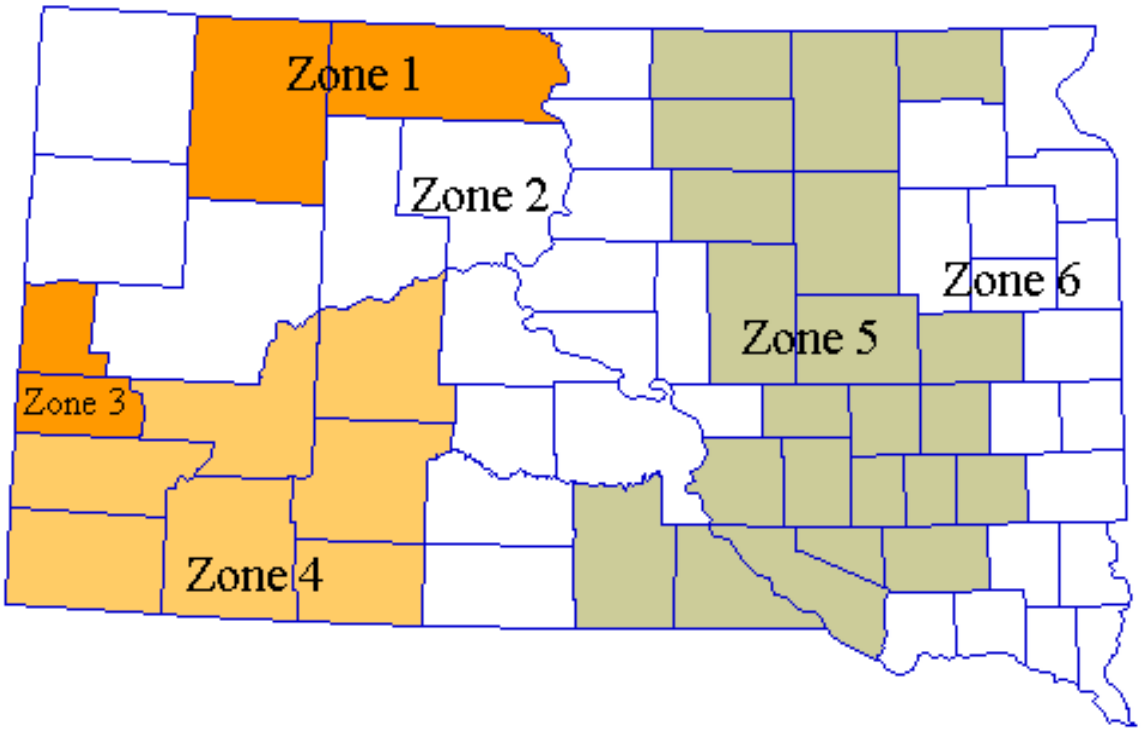


Table 1 - Expected Adverse Weather Days for South Dakota

	Grading Projects						Surfacing and Structural Projects					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Jan	18	18	16	16	22	24	18	18	15	16	21	23
Feb	19	18	12	14	19	21	19	18	12	14	19	21
Mar	12	10	9	8	11	13	12	10	9	8	10	12
Apr	6	5	8	5	6	6	5	4	6	4	4	4
May	6	6	8	6	6	6	5	5	6	4	4	5
Jun	7	6	7	6	7	8	5	5	5	4	5	6
Jul	5	5	6	5	6	7	4	4	5	3	4	5
Aug	4	4	5	4	5	6	3	3	4	3	4	4
Sep	3	3	4	3	4	5	2	2	3	2	3	4
Oct	4	3	5	3	4	4	3	3	4	2	3	3
Nov	11	9	8	7	10	12	11	9	8	7	10	11
Dec	21	19	15	14	20	22	21	19	15	14	20	22

NOTE: Includes Holidays and Weekends.

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0908(105)349	A2	A5

Plotting Date: 10/29/2024 Rev 10-28-2024 JRF

Section E – Structure

Structure Numbers 44-052-140 & 44-065-126

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	112	CuYd
421E0200	Box Culvert Undercut	437	CuYd
560E0156	11'x5' Precast Concrete Box Culvert, Furnish	44.0	Ft
560E0157	11'x5' Precast Concrete Box Culvert, Install	44.0	Ft
560E1156	11'x5' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1157	11'x5' Precast Concrete Box Culvert End Section, Install	2	Each
560E2090	2-9'x4' Precast Concrete Box Culvert, Furnish	170.0	Ft
560E2091	2-9'x4' Precast Concrete Box Culvert, Install	170.0	Ft
560E3090	2-9'x4' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E3091	2-9'x4' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	95.8	Ton
831E0110	Type B Drainage Fabric	122	SqYd
831E0300	Reinforcement Fabric (MSE)	496	SqYd

Structure Number 44-054-126 Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	76	CuYd
421E0200	Box Culvert Undercut	312	CuYd
460E0120	Class A45 Concrete, Box Culvert	214.1	CuYd
460E0380	Install Dowel in Concrete	22	Each
480E0100	Reinforcing Steel	35,234	Lb
700E0210	Class B Riprap	24.0	Ton
831E0110	Type B Drainage Fabric	35	SqYd
831E0300	Reinforcement Fabric (MSE)	437	SqYd

Structure Number 44-054-126 Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	64	CuYd
421E0200	Box Culvert Undercut	291	CuYd
560E0116	9'x8' Precast Concrete Box Culvert, Furnish	216.0	Ft
560E0117	9'x8' Precast Concrete Box Culvert, Install	216.0	Ft
560E1116	9'x8' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1117	9'x8' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	25.7	Ton
831E0110	Type B Drainage Fabric	37	SqYd
831E0300	Reinforcement Fabric (MSE)	406	SqYd

Section F - Surfacing

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
110E7020	Remove Interim Crossover Closure for Reset	224	Ft
120E6200	Water for Granular Material	338.7	MGal
120E9000	Pit Run	4,685.7	Ton
260E1010	Base Course	3,456.0	Ton
260E2010	Gravel Cushion	20,027.5	Ton
320E1200	Asphalt Concrete Composite	1,508.4	Ton
380E0050	8" Nonreinforced PCC Pavement	4,476.1	SqYd
380E0100	10.5" Nonreinforced PCC Pavement	4,559.8	SqYd
380E0550	10.5"Continuously Reinforced PCC Pavement	28,484.0	SqYd
380E0800	PCC Shoulder Pavement	12,430.9	SqYd
380E6000	Dowel Bar	4,683	Each
380E6110	Insert Steel Bar in PCC Pavement	192	Each
450E4749	15" CMP 16 Gauge, Furnish	204	Ft
450E4750	15" CMP, Install	204	Ft
450E5005	15" CMP Elbow, Furnish	2	Each
450E5006	15" CMP Elbow, Install	2	Each
450E5402	15" CMP Safety End, Furnish	1	Each
450E5403	15" CMP Safety End, Install	1	Each
450E6119	15" Slotted CMP 16 Gauge, Furnish	260	Ft
450E6120	15" Slotted CMP, Install	260	Ft
451E3115	15" Pipe Cap	1	Each
462E0100	Class M6 Concrete	25.7	CuYd
464E0100	Controlled Density Fill	9.6	CuYd
629E9010	Interim Crossover Closure	368	Ft
629E9060	Reset Interim Crossover Closure	224	Ft
831E0210	Non-woven Separator Fabric	5,010	SqYd

Section M – Pavement Markings

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
633E3000	Durable Pavement Marking, 4" White	14,571	Ft
633E3005	Durable Pavement Marking, 4" Yellow	11,256	Ft
633E3020	Durable Pavement Marking, 12" White	600	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	25,827	Ft
633E5110	Grooving for Durable Pavement Marking, 12"	600	Ft

Section S - Permanent Signing

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	1	Each
110E0135	Remove Delineator	83	Each
110E7150	Remove Sign for Reset	2	Each
632E1340	2.5"x2.5" Perforated Tube Post	61.0	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	20	Each
632E2004	4"x8" Amber Delineator with 1.12 Lb/Ft Post	5	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	20	Each
632E2024	4"x8" White Delineator with 1.12 Lb/Ft Post	28	Each
632E2220	Guardrail Delineator	24	Each
632E2510	Type 2 Object Marker Back to Back	14	Each
632E2520	Type 2 Object Marker	8	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	23.5	SqFt
632E3500	Reset Sign	2	Each

RECYCLED CONCRETE AGGREGATE (RCA) USED AS CONTRACTOR FURNISHED BORROW EXCAVATION

Existing PCC Pavement removed from within the project limits (estimated at 9,080.6 cu.yds.) may be used as Contractor Furnished Borrow Excavation material if the following requirements are met:

- It will be crushed to a minus 2.5-inch size.
- All in-place rebar will be separated and removed from the existing PCC Pavement.
- No existing asphalt concrete pavement will be allowed in the subgrade.
- The Contractor will blend the RCA and the borrow/excavated material at a rate of approximately 85% soil and approximately 15% RCA.
- The top 2 feet of subgrade will be constructed using this blended material.
- Field measurement of the borrow material and the RCA used on the project will be required. Total quantity of borrow material and RCA will be payment for the bid item "Contractor Furnished Borrow Excavation".

All costs to crush the PCC Pavement, remove the rebar, blend RCA and borrow material, obtaining borrow material, and placement of blended material in the subgrade will be incidental to the contract unit price per cubic yard for "Contractor Furnished Borrow Excavation".

All costs to remove the existing PCC Pavement will be incidental to the contract unit price per square yard for "Remove Concrete Pavement".

See Section F for alternative use of RCA.

EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Included in the quantity of "Unclassified Excavation" are 7053 cubic yards of excavation for installation of reinforced concrete box culverts.

All work necessary to excavate a trench for installation of reinforced concrete box culverts including labor, equipment, and incidentals will be incidental to the contract unit price per cubic yard for "Unclassified Excavation". Payment for excavation of reinforced concrete box culverts will be based only on plans quantity and measurement of these excavation quantities during construction will not be performed.

The excavation quantities for installation of reinforced concrete box culverts are not included with the earthwork balance quantities on the plans profile sheets. The quantities computed for excavation of the reinforced concrete box culverts are based on the limits shown in the drawing below.

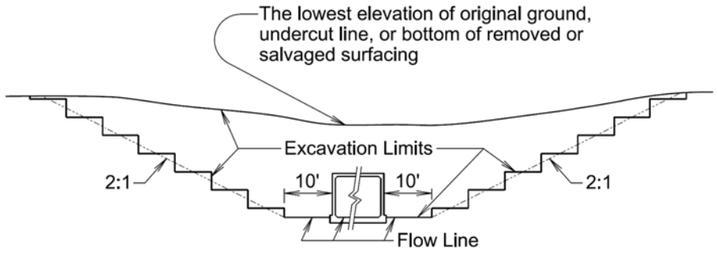


TABLE OF EXCAVATION FOR REINFORCED CONCRETE BOX CULVERT INSTALLATION

Station	Quantity (CuYd)
I 90	
496+42	4370
553+87	1980
257th St	
1+82	703
Total:	7053

PIPE CULVERT UNDERCUT

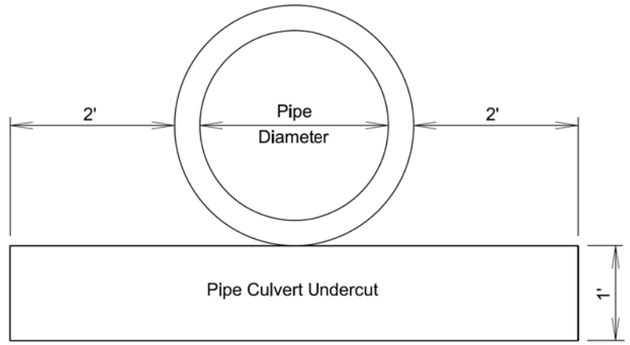
The table includes undercut for 36 inch and larger pipe culverts. The depth of undercut is an estimate and the actual depth necessary will be determined during construction. Pipes listed may or may not require undercutting and pipes not listed may require undercutting. The Engineer will determine which pipe will be undercut in accordance with Section 421 of the Specifications.

Station	Undercut Depth (Ft)	Pipe Culvert Undercut (CuYd)
Exit 357 – Ramp A		
707+83	1	28.2
I 90		
481+42	1	56.9
Total:		85.1

The table below contains the rate for one-foot depth of pipe culvert undercut per foot of pipe length and should be used as an aid in determining the actual amount of undercut to be performed during construction. The table is derived from the drawing below and conforms to the Specifications. When calculating pipe culvert undercut, the length of pipe ends should be included in the overall pipe length.

Storm sewer and approach pipes do not require undercutting unless specified otherwise in these plans.

Pipe Diameter (In)	Round Pipe Undercut Rate for 1' Depth (CuYd/Ft)	Arch Pipe Undercut Rate for 1' Depth (CuYd/Ft)
24	0.2407	0.2577
30	0.2623	0.2847
36	0.2840	0.3110
42	0.3056	0.3337
48	0.3272	0.3596
54	0.3488	0.3827
60	0.3704	0.4105
66	0.3920	---
72	0.4136	0.4630
78	0.4352	---
84	0.4568	0.5123
90	0.4784	---



INCIDENTAL WORK, GRADING

Station	Remarks
Exit 357 – Ramp A	
707+83	Take Out 30"-65' RCP
I 90	
445+95	Take Out 18"-64' CMP
444+95	Eliminate Median Crossover
481+42	Take Out 24"185' RCP
481+52 L	Take Out 18"-82' RCP
494+92 L	Take Out 18"-69' RCP
496+42	Take Out 30"-276' RCP
553+87	Take Out 24"-179' CMP
553+98 L	Take Out 18"-75' RCP
554+18	Take Out Twin 36"-177' CMP
561+81 L	Take Out 18"-71' RCP
563+96	Take Out 30"-176' CMP
568+86 L	Take Out 18"-77' RCP
257th St	
1+52	Take Out 24"-63' CMP
1+81	Take Out 30"-81' CMP

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0908(105)349	F2	F38

Revised: 28Oct24, RML

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
110E7020	Remove Interim Crossover Closure for Reset	224	Ft
120E6200	Water for Granular Material	338.7	MGal
120E9000	Pit Run	4,685.7	Ton
260E1010	Base Course	3,456.0	Ton
260E2010	Gravel Cushion	20,027.5	Ton
320E1200	Asphalt Concrete Composite	1,508.4	Ton
380E0050	8" Nonreinforced PCC Pavement	4,476.1	SqYd
380E0100	10.5" Nonreinforced PCC Pavement	4,559.8	SqYd
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380E0800	PCC Shoulder Pavement	12,430.9	SqYd
380E6000	Dowel Bar	4,683	Each
380E6110	Insert Steel Bar in PCC Pavement	192	Each
450E4749	15" CMP 16 Gauge, Furnish	204	Ft
450E4750	15" CMP, Install	204	Ft
450E5005	15" CMP Elbow, Furnish	2	Each
450E5006	15" CMP Elbow, Install	2	Each
450E5402	15" CMP Safety End, Furnish	1	Each
450E5403	15" CMP Safety End, Install	1	Each
450E6119	15" Slotted CMP 16 Gauge, Furnish	260	Ft
450E6120	15" Slotted CMP, Install	260	Ft
451E3115	15" Pipe Cap	1	Each
462E0100	Class M6 Concrete	25.7	CuYd
464E0100	Controlled Density Fill	9.6	CuYd
629E9010	Interim Crossover Closure	368	Ft
629E9060	Reset Interim Crossover Closure	224	Ft
831E0210	Non-woven Separator Fabric	5,010	SqYd

EXISTING PCC PAVEMENT

EASTBOUND LANES: The existing mainline PCC Pavement is 10" Continuously Reinforced PCC Pavement (26' wide). Reinforced with No. 4 Transverse Deformed Steel Bars spaced at 42" c-to-c and No. 6 Longitudinal Deformed Steel Bars spaced at 6 ¼" c-to-c.

The existing acceleration/deceleration lanes is 10" Nonreinforced PCC Pavement (transverse joint spacing = 20'). Transverse joints have 1 ¼" Plain Round dowel Bars spaced at 18" c-to-c and longitudinal joints have No. 5 Epoxy Coated Deformed Tie Bars spaced at 30" c-to-c.

The aggregate in the existing PCC Pavement is quartzite.

WESTBOUND LANES: The existing mainline PCC Pavement is 10" Continuously Reinforced PCC Pavement (26' wide). Reinforced with No. 4 Transverse Deformed Steel Bars spaced at 48" c-to-c and No. 6 Longitudinal Deformed Steel Bars spaced at 6 ½" c-to-c.

The existing acceleration/deceleration lanes is 10" Nonreinforced PCC Pavement (transverse joint spacing = 20'). Transverse joints have 1 ¼" Plain Round dowel Bars spaced at 12" c-to-c and longitudinal joints have No. 5 Epoxy Coated Deformed Tie Bars spaced at 30" c-to-c.

The aggregate in the existing PCC Pavement is quartzite.

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown in the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

NON-WOVEN SEPARATOR FABRIC

Non-woven Separator Fabric has been included in the Estimate of Quantities for the median crossover. This fabric is to be used as a separator between the Pit Run material and the Base Course to prevent migration of fines from the Base Course into the Pit Run material. If the Pit Run material contains enough fines as placed to prevent the loss of material from the Base Course, the separator fabric may be eliminated by CCO. Non-woven Separator Fabric will conform to Section 831 of the Specifications.

TABLE OF NON-WOVEN SEPARATOR FABRIC

Location	Non-woven Separator Fabric (Sq.Yds.)
Median Crossover	
Sta. 424+55	5009.9

CONTROLLED DENSITY FILL FOR MEDIAN CROSSOVERS

Controlled Density Fill for median crossovers will be placed at the locations shown in the design layouts and the Table of Controlled Density Fill for Median Crossovers in accordance with Section 464.

Plans quantity will be the basis of measurement and payment unless changes are ordered by the Engineer.

TABLE OF CONTROLLED DENSITY FILL FOR MEDIAN CROSSOVERS

Location	Controlled Density Fill (Cu.Yds.)
Median Crossover	
Sta. 424+55	9.6

CLASS M6 CONCRETE

Class M6 Concrete will be placed at the locations shown in the design layouts and the Table of Class M6 Concrete in accordance with Section 462 for Class M Concrete.

Plans quantity will be the basis of measurement and payment unless changes are ordered by the Engineer.

TABLE OF CLASS M6 CONCRETE

Location	Class M6 Concrete (Cu.Yds.)
Median Crossover	
Sta. 424+55	25.7

INTERIM CROSSOVER CLOSURE

See Median Crossover Layouts and Standard Plate for placement and construction of the interim crossover closure.

TABLE OF INTERIM CROSSOVER CLOSURE

Location	Interim Crossover Closure (Ft)
Median Crossover	
Sta. 434+55	368

See Standard Plate 629.42

REMOVE AND RESET INTERIM CROSSOVER CLOSURE

The median crossover closure will be removed for reset and then reset when traffic is no longer being carried on the crossover.

TABLE OF REMOVE & RESET INTERIM CROSSOVER CLOSURE

Location	Interim Crossover Closure (Ft)
Median Crossover	
MRM 362.04	224

See Standard Plate 629.42

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder.

Asphalt for Tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

The asphalt binder used in the mixture will be PG 58-34 or PG 64-34.

All other requirements in the Standard Specifications for Asphalt Concrete Composite will apply.

Revised: 28Oct24, RML

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course and Gravel Cushion spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway. The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding 'computed by',
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning. If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the "Checker". No allowances will be made to the contract lump sum price for Checker due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

RECYCLED CONCRETE AGGREGATE (RCA)

Portland cement concrete pavement (RCA) removed from the mainline within the project limits may be crushed and reused as granular material provided it meets the requirements for the granular material it is replacing. Payment for the RCA will be at the contract unit price per ton for the granular material that it is replacing.

All in-place rebar will be separated and removed from the RCA. There is an estimated 17,162.3 tons of RCA on this project that can be crushed and reused. This quantity is based on a unit weight of 118 lbs. per cubic foot for the recycled concrete aggregate. The Contractor will dispose of the material (including existing rebar) not utilized on the project at a site approved by the Engineer.

See Section B for alternative use of RCA.

10.5" and 8" NONREINFORCED PCC PAVEMENT

The fine aggregate will be screened over a 1-inch square opening screen just prior to introduction into the concrete paving mix. The Contractor will screen all of the aggregate to prevent the incorporation of foreign materials (i.e. mud balls) into the concrete mix.

The concrete mix will conform to the Special Provision for Contractor Furnished Mix Design for PCC Pavement.

There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement. Trimming will be performed as required by Section 380.3 C of the Specifications.

The location of joints, as shown and designated on the PCC Pavement Joint Layout(s) are only approximate locations to be used as a guide and to afford bidders a basis for estimating the construction cost of the joints. The final locations of the joints are to be designated by the Engineer during construction. Transverse contraction joints adjacent to 10.5" Continuously Reinforced Concrete will be spaced at 10' intervals. Transverse contraction joints in the 8" Nonreinforced PCC Pavement will be spaced at 13' intervals.

All ramps and acceleration/deceleration lanes will be longitudinally tined except for 6" along pavement marking locations. All other areas will be textured as directed by the Engineer.

Rumble Strips will be placed 15 inches wide 6 inches from the outside edge of the driving lane along all ramps and acceleration/deceleration lanes. Payment for forming rumble strips including labor, materials and incidentals will be incidental to the contract unit price per square yard for 10.5" or 8" Nonreinforced PCC Pavement. For informational purpose only, it is estimated that 1.22 miles of PCC Pavement rumble strip is required along Nonreinforced PCC Pavement.

The following locations will be tested for smoothness with a Contractor furnished and operated 25-foot California style profilograph in accordance with the Special Provision for PI PCC Pavement Smoothness with 0.2" Blanking Band:

Ramps:
Sta. 704+60 to Sta. 714+66.2, Ramp A
Sta. 809+01.5 to Sta. 815+06.7, Ramp B

Acceleration/Deceleration Lanes:
Sta. 488+97.9 to Sta. 507+30, I-90 EBL
Sta. 488+44.4 to Sta. 502+33.5, I-90 WBL

TRANSVERSE CONTRACTION JOINTS

See Standard Plate 380.04 for placement of Dowel Bars.

The transverse contraction joints will be perpendicular to the centerline. In multilane areas the transverse contraction joints will be perpendicular to the centerline and be in a straight line across the entire width of pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints will be removed at the Contractor's expense. Any method of placement that cannot produce these requirements will not be allowed.

10.5" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

Care will be taken not to cut, bend or otherwise damage the in place reinforcing steel. Damage to in place reinforcing steel or to in place concrete beyond the removal area will be replaced at the Contractor's expense, to the satisfaction of the Engineer.

The fine aggregate will be screened over a 1-inch square opening screen just prior to introduction into the concrete paving mix. The Contractor will screen all of the aggregate to prevent the incorporation of foreign materials (i.e. mud balls) into the concrete mix.

The concrete mix will conform to the Special Provision for Contractor Furnished Mix Design for PCC Pavement.

There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement. Trimming will be performed as required by Section 380.3 C of the Specifications.

The continuously reinforced concrete pavement shall be paved 26 feet wide. The concrete shall be placed with equipment operating from a preset grade line. All costs for reinforcing steel will be incidental to the contract unit price per square yard for 10.5" Continuously Reinforced Concrete Pavement.

All driving surfaces of the mainline paving will be longitudinally tined from 6" each side of centerline pavement markings to 6" inside the outside pavement markings. All other areas will be textured as directed by the Engineer.

Leave-Outs, Block-Outs or Temporary gaps in the continuously reinforced concrete pavement will not be allowed.

Rumble Strips will be placed 15 inches wide 6 inches from the outside edge of the driving lane, according to Standard Plate 380.53. Payment for forming rumble strips including labor, materials and incidentals shall be incidental to the contract unit price per square yard for 10.5" Continuously Reinforced PCC Pavement. For informational purpose only, it is estimated that 1.26 miles of PCC Pavement rumble strip is required for outside shoulder.

The following mainline pavement will be tested for smoothness with a Contractor furnished and operated 25-foot California style profilograph in accordance with Section 380.3.O.2 of the Specifications.

I-90 EBL – Sta. 479+55 to Sta. 507+30 (Driving and Passing Lanes)
I-90 WBL – Sta. 479+55 to Sta. 507+30 (Driving and Passing Lanes)
I-90 EBL – Sta. 548+45 to Sta. 570+00 (Driving and Passing Lanes)
I-90 WBL – Sta. 548+45 to Sta. 570+00 (Driving and Passing Lanes)

Revised: 28Oct24, RML

OUTSIDE PCC SHOULDER PAVEMENT

In lieu of an automatic subgrader operating from a preset grade line, a motor grader or other suitable equipment may be used to bring the gravel cushion to final grade prior to placement of the concrete.

The outside shoulder adjacent to the acceleration/deceleration lanes may be poured monolithic.

Transverse contraction joints will be spaced at 10’ intervals.

Provide a heavy carpet drag finish, a metal-tine finish will not be required on the shoulders. A metal-tine finish may be applied to the shoulders poured monolithic with the acceleration/deceleration lanes.

If the shoulders are poured monolithic with the acceleration/deceleration lanes pavement, a sawed joint with tie bars will be constructed between the acceleration/deceleration lanes pavement and the shoulders.

MEDIAN PCC SHOULDER PAVEMENT

In lieu of an automatic subgrader operating from a preset grade line, a motor grader or other suitable equipment may be used to bring the gravel cushion to final grade prior to placement of the concrete.

Provide a heavy carpet drag finish, a metal-tine finish will not be required on the shoulders.

Transverse contraction joints will be spaced at 10’ intervals.

Rumble Strips will be placed 1.5 feet wide 6 inches from the outside edge of the driving lane. Payment for forming rumble strips including labor, materials and incidentals will be incidental to the contract unit price per square yard for “PCC Shoulder Pavement”. For informational purpose only, it is estimated that 1.87 miles of PCC Pavement rumble strip is required for median shoulder.

CONSTRUCTION HAUL ROAD

Included in the Estimate of Quantities are 1,000 tons of Gravel Cushion per mile, and 12 MGal of Water for Granular Material per mile for haul road construction. The use of this material will be at the discretion of the Contractor. Any additional construction and removal for the construction haul road will be the Contractor’s responsibility. The Contractor will receive no additional compensation for this work.

The Gravel Cushion used to construct the haul road will be compacted in the same manner and to the same specifications as the adjacent material below mainline.

All costs associated with construction of the haul road will be incidental to the “Gravel Cushion” quantities provided. Haul road length is estimated at 1.867 miles.

Sta. 479+55 to Sta. 507+30 EB & WB
Sta. 548+45 to Sta. 570+00 EB & WB

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (No. 6 x 72” Epoxy coated Deformed Tie Bar) into drilled holes in the existing concrete pavement. Anchoring of the steel bars in the drilled holes will conform to the Specifications.

The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

Epoxy coated deformed steel bars will be inserted between every other longitudinal bar in the transverse joint, see detail sheet for New CRC Pavement Placement Detail.

TABLE OF STEEL BAR INSERTION

LOCATION	QUANTITY OF BARS
I-90	No. 6 x 72”
Sta. 479+55 EBL	24
Sta. 507+30 EBL	24
Sta. 548+45 EBL	24
Sta. 570+00 EBL	24
Sta. 479+55 WBL	24
Sta. 507+30 WBL	24
Sta. 548+45 WBL	24
Sta. 570+00 WBL	24
Totals =	192

ALKALI SILICA REACTIVITY

Fine aggregate will conform to Section 800.2 D Alkali Silica Reactivity (ASR) Requirements.

The Department will use the running average of the last three or fewer known expansion test results for determining acceptability of the source. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with a test value less than 0.250 is discovered after letting to be 0.250 or greater, then the Department will accept financial responsibility if higher costs are incurred due to higher percent of fly ash requirement.

ALKALI SILICA REACTIVITY (CONTINUED)

Below is a list of known fine aggregate sources and the average corresponding 14-day expansion values (as of 9-18-2024):

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.146
Concrete Materials - Vellek Pit	Yankton, SD	0.411**
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Blair Pit	W of Vale, SD	0.171
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Henning – Tilstra Pit	Ash Creek, MN	0.199
Higman	Hudson, SD	0.187
Jensen	Herried, SD	0.276*
L.G. Everist	Akron, IA	0.257*
L.G. Everist	Brookings, SD	0.297*
L.G. Everist – Ode Pit	E Sioux Falls, SD	0.222
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.211
L.G. Everist	Summit, SD	0.184
Mark’s S&G – Moerke Pit	Underwood, MN	0.165
Morris – Birdsall	Blunt, SD	0.229
Morris - Leesman	Blunt, SD	0.231
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn’s Pit	E of Sturgis, SD	0.186
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.154
Opperman - Gunvordahl Pit	Burke, SD	0.363*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.230
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.157
Pete Lien & Sons	Wasta, SD	0.255*
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Valley S&G – Van Beek Pit	Rock Valley, IA	0.228
Wagner Building Supplies	Pickstown (Wagner), SD	0.251*
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type II cement with a fly ash content of 25% in the concrete mix.
** These sources will not be used.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0908(105)349	F6	F38

Revised: 28Oct24, RML

TABLE OF PCC PAVEMENT

LOCATION			1½" Dowel Bars	1¼" Dowel Bars	10.5" Continuously Reinforced PCC Pavement	10.5" Nonreinforced PCC Pavement	PCC Shoulder Pavement			8" Nonreinforced PCC Pavement
							4' Median Shoulder	8' Outside Shoulder	6' Outside Shoulder	
Station	to	Station	each	each	sq. yds.	sq. yds.	sq. yds.	Sq. yds.	sq. yds.	sq. yds.
I-90 EBL										
479+55.0	to	488+97.7			2,723.4		419.0	838.0		
488+97.9	to	507+30.0	# 1,505		5,292.7	# 2,374.2	814.3		1,221.4	
548+45.0	to	570+00.0			6,225.6		957.8	1,915.6		
I-90 WBL										
479+55.0	to	488+44.4			2,569.4		395.3	790.6		
488+44.4	to	502+33.5	# 1,348		4,013.0	# 2,185.6	617.4		926.1	
502+33.5	to	507+30.0			1,434.3		220.7	441.3		
548+45.0	to	570+00.0			6,225.6		957.8	1,915.6		
Exit 357 Ramp A										
704+60.0	to	714+66.2		1,140						2,795.0
Exit 357 Ramp B										
809+01.5	to	815+06.7		690						1,681.1
		SUBTOTAL	2,853	1,830			4,382.3	5,901.1	2,147.5	
		TOTAL	4,683		28,484.0	4,559.8	12,430.9			4,476.1

Quantities for acceleration/deceleration lanes

TABLE OF MATERIAL QUANTITIES

LOCATION	WATER FOR GRANULAR MATERIAL	GRAVEL CUSHION	BASE COURSE	PIT RUN MATERIAL	ASPHALT CONCRETE COMPOSITE
	MGal	Ton	Ton	Ton	Ton
Rate A1	122.2	10,166.0			
Rate A2	14.6	1,234.2			
Rate A3	5.3	464.7			
Rate B1	15.8	1,330.1			
Rate B2	10.8	906.1			
Rate C1	5.1	417.8			
Rate C2	2.4	202.0			
Rate D1	21.4	1,785.9			
Rate D2	4.5	376.1			
Construction Haul Road Note	22.4	1867.0			
Table of Additional Quantities	114.2	1,371.3	3,456.0	4,685.7	1,508.4
Total	338.7	20,027.5	3,456.0	4,685.7	1,508.4

STANDARD CRC PLACEMENT DETAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0908(105)349	F26	F38

Plotting Date: 10/28/2024

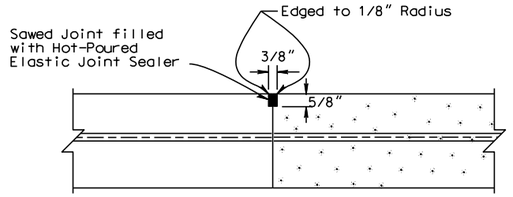
Revised: 28Oct24, RML

I-90 WBL

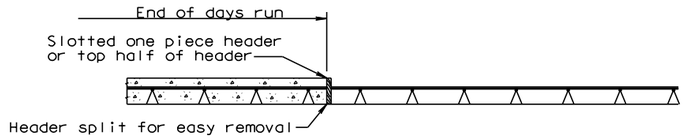
CRC Depth	CRC Width	Longitudinal Steel Size	Longitudinal Steel Spacing	Transverse Steel Size	Transverse Steel Spacing	Perimeter Bar Spacing			
T	W	(C)	(E)	(L)	(F)	(K)	(M)	(N)	(P)
10.5"	26'	6	6½"	4	42"	3¾"	6½"	6½"	4½"

I-90 EBL

CRC Depth	CRC Width	Longitudinal Steel Size	Longitudinal Steel Spacing	Transverse Steel Size	Transverse Steel Spacing	Perimeter Bar Spacing			
T	W	(C)	(E)	(L)	(F)	(K)	(M)	(N)	(P)
10.5"	26'	6	6¼"	4	42"	3"	6¾"	6¼"	5¾"

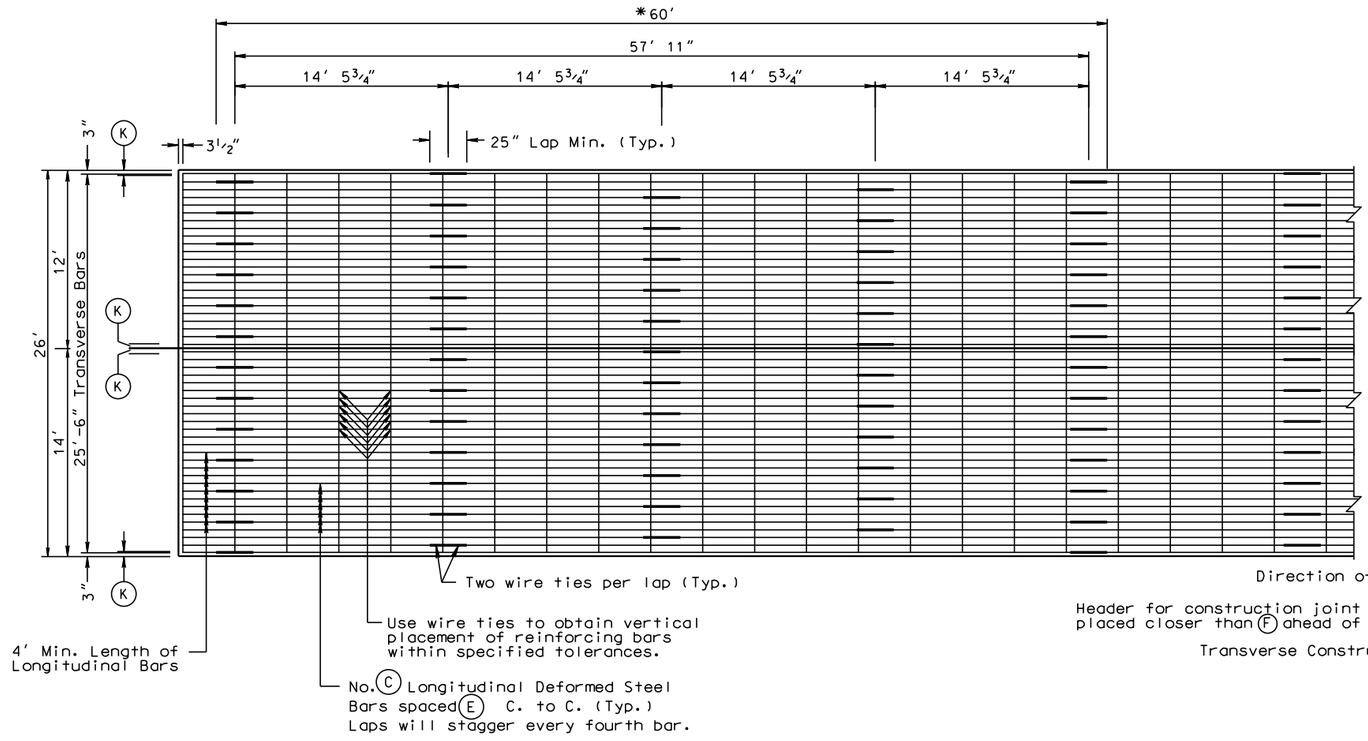


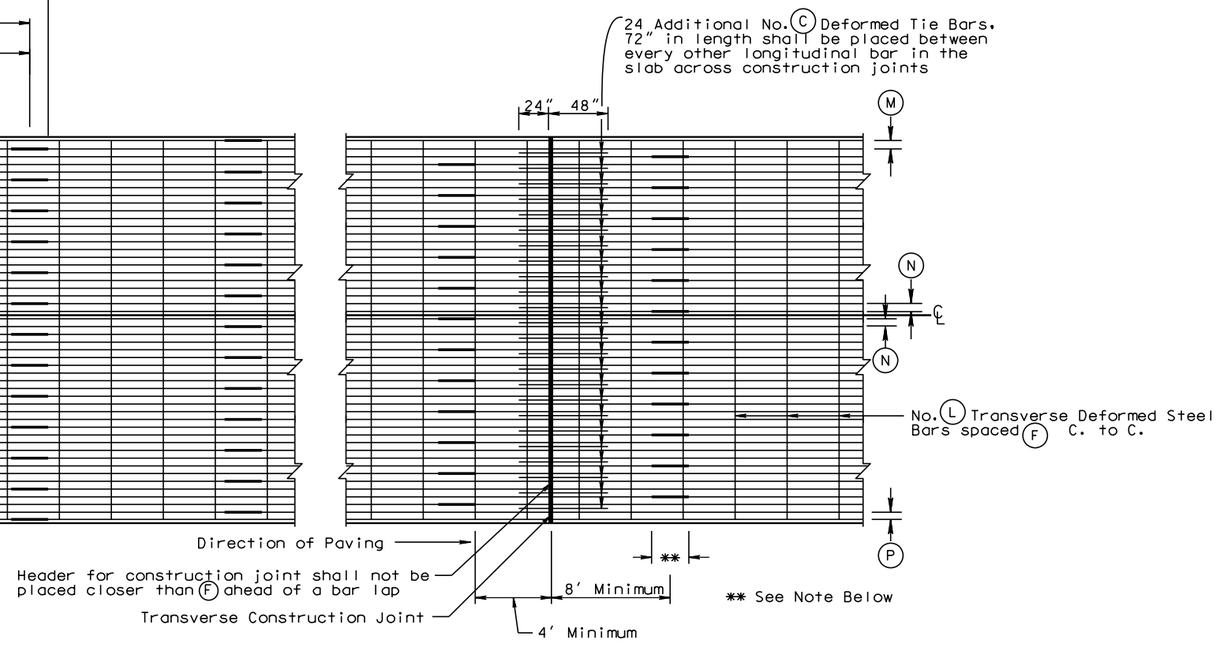
JOINT DETAIL FOR TRANSVERSE CONSTRUCTION JOINT



LONGITUDINAL SECTION FOR TRANSVERSE CONSTRUCTION JOINT

* Lap lengths are based on 60' rebar length





Note:

The center of the first lapping of longitudinal steel bars beyond a transverse construction joint will be at least eight (8) feet ahead of such joint.

The first lap pattern for the full width of the driving lanes beyond a transverse construction joint must be lapped a minimum distance of 36 inches. In Lieu of this a bar lapping with a minimum distance of 25 inches will be permitted provided that additional No. (C) steel bars, each six (6) feet long, are placed adjacent to and centered longitudinally at each longitudinally lapped bar for full width of the driving lanes and tied with a minimum of two wire ties per bar. This will require the use of additional No. (C) x 6' deformed steel bars.

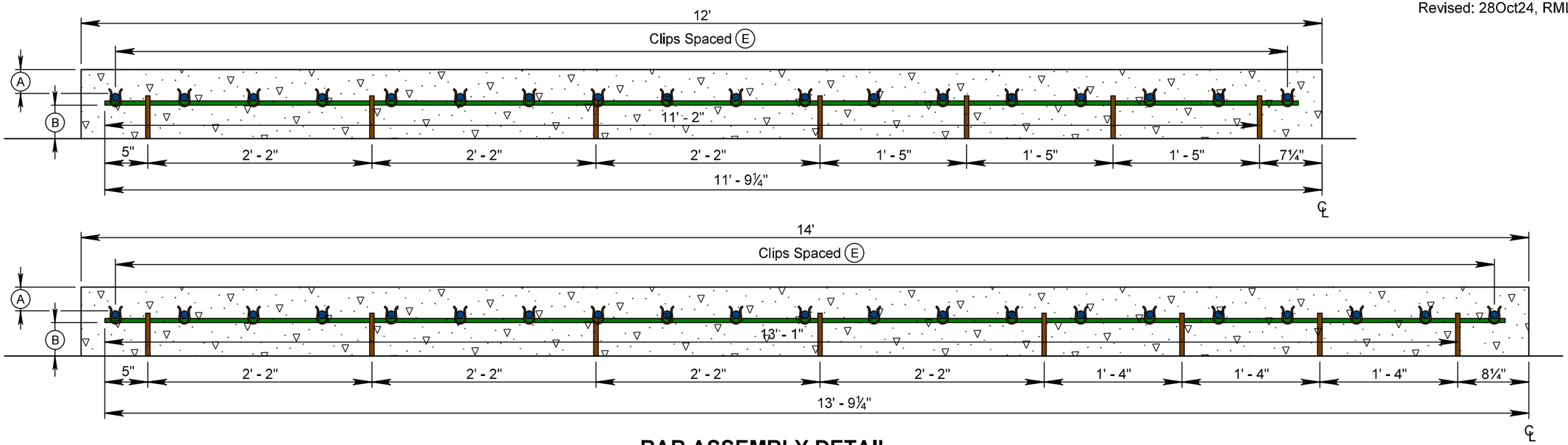
When a transverse construction joint is made, no paving will be done in this area for twelve (12) hours.

The length of the transverse deformed steel bars may vary +/- 2 inches.

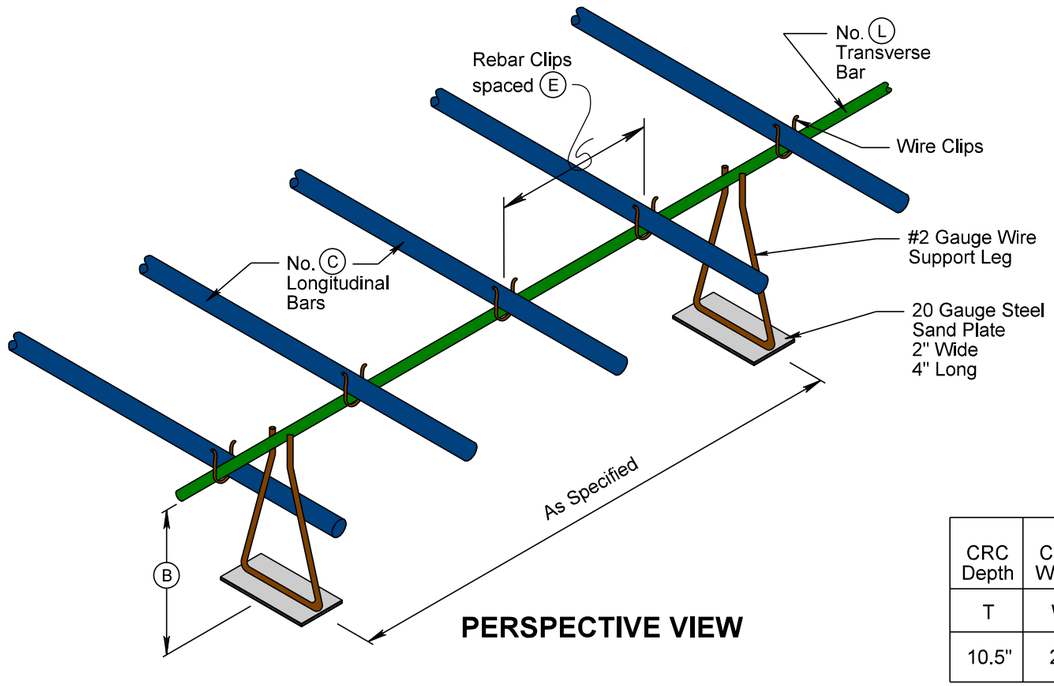
The Contractor has the option of extending one side of the transverse bar a minimum of 15" beyond centerline or splicing the transverse steel bars, at centerline only, with No. 4 x 30" deformed steel tie bars.

CRC PAVEMENT CHAIR DETAILS

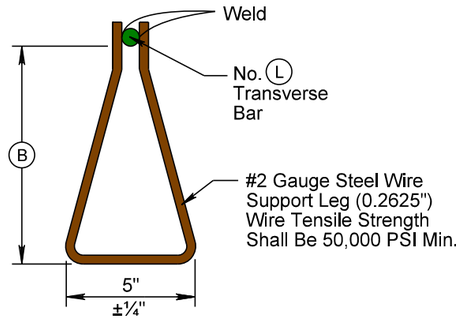
Revised: 28Oct24, RML



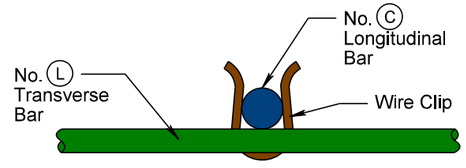
BAR ASSEMBLY DETAIL



PERSPECTIVE VIEW



CHAIR DETAIL



CLIP DETAIL

I-90 WBL

CRC Depth	CRC Width	Longitudinal Steel Size	Longitudinal Steel Spacing	Transverse Steel Size	Transverse Steel Spacing	Clearance Top	Clearance Bottom
T	W	C	E	L	F	A	B
10.5"	26'	6	6½"	4	42"	3¾"	5½"

I-90 EBL

CRC Depth	CRC Width	Longitudinal Steel Size	Longitudinal Steel Spacing	Transverse Steel Size	Transverse Steel Spacing	Clearance Top	Clearance Bottom
T	W	C	E	L	F	A	B
10.5"	26'	6	6¼"	4	42"	3¾"	5½"

ESTIMATE OF QUANTITIES

PT 0908(105)349

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	1	Each
110E0135	Remove Delineator	83	Each
110E7150	Remove Sign for Reset	2	Each
632E1340	2.5"x2.5" Perforated Tube Post	61.0	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	20	Each
632E2004	4"x8" Amber Delineator with 1.12 Lb/Ft Post	5	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	20	Each
632E2024	4"x8" White Delineator with 1.12 Lb/Ft Post	28	Each
632E2220	Guardrail Delineator	24	Each
632E2510	Type 2 Object Marker Back to Back	14	Each
632E2520	Type 2 Object Marker	8	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	23.5	SqFt
632E3500	Reset Sign	2	Each

GENERAL PERMANENT SIGNING

New sign installations will be staked in the field by the Contractor and checked by the Engineer. The Contractor will give the Engineer a minimum of one week to check staked locations prior to signpost installation. Lateral offset of signs will be as shown in the plans or as directed by the Engineer.

The Contractor will be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

When signs are mounted in an assembly, they will be 1-2 inches apart vertically and horizontally.

The height of the post must not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign will be cut off. No separate payment will be made for cutting the post or for that length cut off.

Aluminum U-Channel stiffeners will be used on all signs 36 inches or greater in width and will conform to ASTM B221 Alloy 6063-T6 or 6061-T6. The U-Channel will be 2 inches in width and free of holes. The U-Channel stiffeners will also be used to connect various signs together so that an entire sign assembly can be erected on a single installation. Stiffeners may be fastened to signs by use of 1/4-inch diameter drive rivets.

The Contractor will use 3/8-inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts will extend through each post.

Prior to ordering signs, the Contractor will verify dimensions, background, border, and legend of the signs.

Prior to use, the Contractor will provide documentation for the sign support devices showing they meet the applicable NCHRP 350 or MASH requirements.

REMOVE TRAFFIC SIGN

Existing signs that are shown as being removed in the Permanent Signing Table will become the property of the Contractor. Existing signposts and bases will be removed in their entirety. All existing signs, posts, and/or hardware removed will not be reused. Holes remaining from the removal of wood posts will be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes will be incidental to the contract unit price per each for “Remove Traffic Sign”. Quantities will be per assembly at the contract unit price per each.

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs that require use of new posts as shown in the Table of Permanent Signing.

All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for “Remove Sign for Reset”. All costs for resetting the existing signs will be incidental to the contract unit price per each for “Reset Sign”. All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

Any 911 Emergency Number signs within the project work limits will not be stockpiled but temporarily repositioned at a location outside the work limits but within the immediate proximity of the existing location. To complete the project sign work, the 911 Emergency Number signs will be permanently installed at their original locations, or as near as practicable where entrances have been reconfigured by the project. The existing supports will be reused. Cost for removing, temporarily repositioning, and permanently resetting 911 Emergency Number signs will be included in the contract unit price per each for “Remove Sign for Reset” and “Reset Sign”.

NEW PERMANENT SIGNING

All signs will be manufactured in accordance with the sheeting manufacturer’s recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films.

All Flat Aluminum Signs, Nonremovable Copy High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type IV.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware will be incidental to the contract unit price per square foot for “Flat Aluminum Sign, Nonremovable Copy High Intensity”.

DIGITALLY PRINTED SIGNS

Digitally printed signs will be allowed on this project. If the Contractor elects to provide digitally printed signs, such signs will adhere to the following specifications.

PROTECTIVE OVERLAY FILM

Permanent traffic signs printed with digital ink systems will be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminate will comply with the retroreflective sheeting manufacturer’s recommendations to ensure proper adhesion and transparency and will also meet the reflective film durability as identified in Table 1.

Table 1: Retroreflective Film Minimum Durability Requirements

ASTM D4956 Type	Full Sign Replacement Term (years)	Sheeting Replacement Term (years)
I	0	7
III	7	10
IV	7	10
VIII	7	10
IX	7	12
XI	7	12

FABRICATION

Retroreflective sheeting will be applied to a properly cleaned and prepared aluminum sign blank in accordance with the retroreflective sheeting manufacturer’s recommendations. Sign legend will be applied using digital print technologies and systems in accordance with the retroreflective sheeting manufacturer’s recommendations and the requirements of these plans.

Finished signs will be free of ragged edges and must be supplied clean and free of scratches, grease, oil, lubricants or other contaminants. Minor blemishes (dirt speck, dust, etc.) may settle on the fresh ink surface or become entrapped between the sheeting surface and transparent overlay film due to static charge within the sign shop environment. Any blemish must be minor and not interfere with the communication of the sign message to the motorist. The blemish must not be visible to the naked eye when viewed from 30 feet or greater.

After application of the retroreflective sheeting, sign blanks will be stacked and packaged face to face, back to back, and protected in accordance with the sheeting manufacturer’s recommendations. Finished signs will be securely packaged to prevent damage during transit or storage according to the sheeting manufacturer’s recommendations.

TRAFFIC SIGN PERFORMANCE WARRANTY PROVISIONS

Based on the ASTM Type of sheeting specified, traffic control signs will be warranted for the duration shown in Table 1. Full product terms and conditions are as established by each sheeting manufacturer and may contain certain limitations based on sheeting and ink colors, and geographic exposure of the sign. A copy of the warranty document with complete details of terms and conditions will be supplied if requested by the Engineer.

CERTIFIED DIGITAL SIGN FABRICATOR

Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0908(105)349	S5	S16

REV. 10-29-24, JP

SIGN TABLE

I90 EB MAINLINE						632E3203	632E1340	N.A.	110E0130	110E7150	632E3500	110E0100				DOT USE	
Station Center-line	Distance from Center-line to Left Edge of Sign	Description	Sign Code	Width (Inches)	Height (Inches)	Flat Aluminum sign, Nonremovable Copy High Intensity (SQFT)	2.5"x2.5" Perforated Tube Post 12 Ga. (Ft)	(N.A.B.I.) 48" Winged Slip Base Anchor (Each)	Remove Traffic Sign (Each)	Remove Sign For Reset (Each)	Reset Sign (Each)	Remove Concrete Footing[s] (Lump Sum)	Direction Sign Faces	Current Type of Post	Remarks		
435+00	0'	MAINTENANCE AND AUTHORIZED VEHICLES ONLY	SPECIAL	24	30	5	9.5'	1					WEST	New	Install signs Back-to-Back on perforated tube post in the median near the east ground corner of the crossover.		
		MAINTENANCE AND AUTHORIZED VEHICLES ONLY	SPECIAL	24	30	5							EAST	New			
487+26	75' R	Merge Arrow	W4-1				12.7'	1		1	1		WEST	Round Steel Post	Remove and Reset per Special Sign Support Details Typical. Reset existing sign on new perforated tube post.		
506+78	75' R	EAST	M3-2	36	18	4.5	14.6'	1	1				WEST	Round Steel Post	Remove and replace existing sign assembly.		
		I-90	M1-1	36	36	9.0											
I90 WB MAINLINE																	
487+22	75' L	EXIT 357	E5-1				24.2'	1		1	1	1	EAST	2x W-Beam Steel Post	Remove and Reset per Special Sign Support Details Typical. Install on 12.1 ft posts for both the inside and outside posts. Connect extruded panel sign to perforated tube posts using clamps.		
502+21	115' L	EXIT 357	E1-5aP										EAST	2x W-Beam Steel Post	Leave sign assembly in place.		
		Bridgewater Canova (Up-Right Diag. Arrow)	SPEC.														
548+45	115' L	EXIT 357	E1-5aP										EAST	2x W-Beam Steel Post	Leave sign assembly in place.		
		Bridgewater Canova 1 MILE	SPEC.														
					TOTAL	**23.5**	**61.0**		**1**	**2**	**2**	**1**					