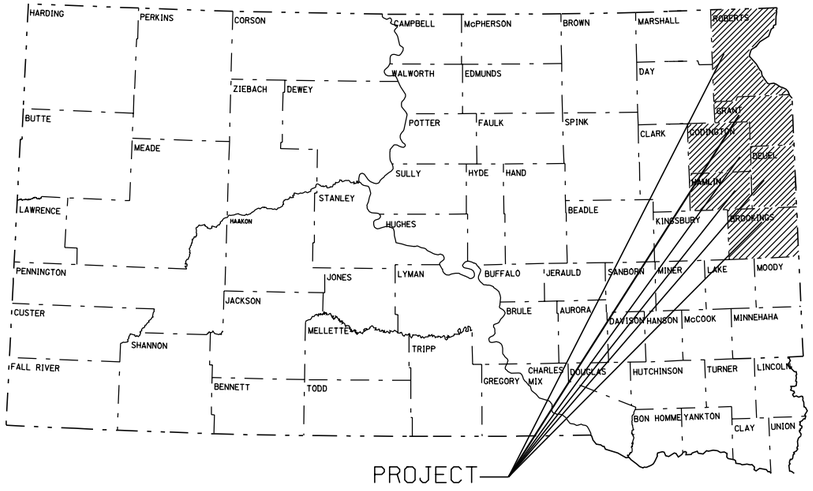


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT NO. 029 N–172, 029 S–172, 014 W–171, 014 E–171, 014–171, 081–171, 212–171 & 012–172
BROOKINGS, CODINGTON, DEUEL HAMLIN, GRANT & ROBERTS COUNTIES

CONCRETE PAVEMENT REPAIR

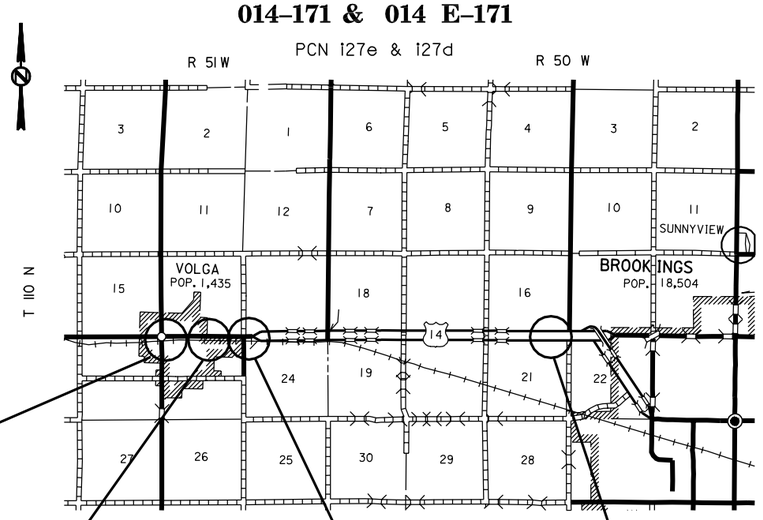
PCN i26w, i26x, i26y, i26z, i27a, i27b, i27c, i27d, i27e

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	1	28

Plotting Date: 05-MAY-2011

INDEX OF SHEETS

014–171 & 014 E–171



STORM WATER PERMIT

(None Required)

Legend:
DL = Driving Lane
PL = Passing Lane
EB = East Bound
WB = West Bound
NB = North Bound
SB = South Bound

DESIGN DESIGNATION 014-171

ADT (2010)	4075
ADT (2030)	4655
DHV	695
D	50%
T DHV	5.8%
T ADT	12.7%

DESIGN DESIGNATION 014 E-171

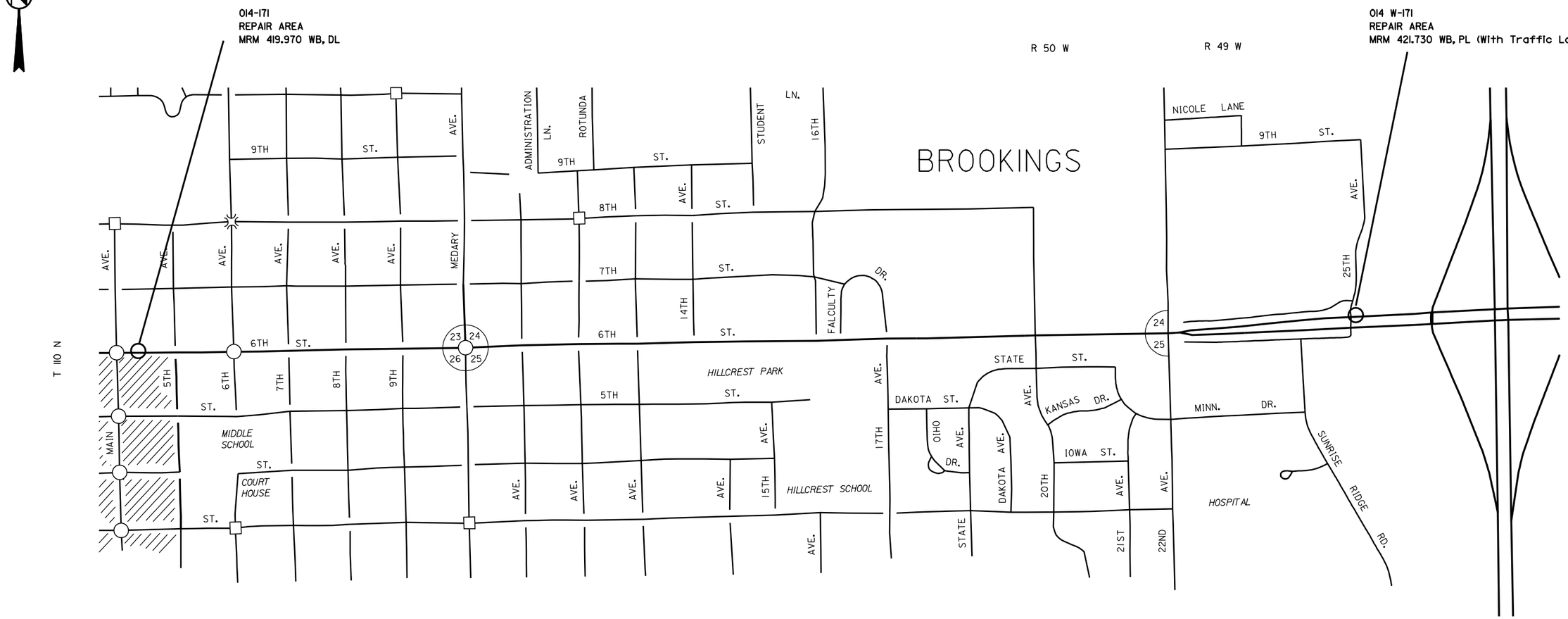
ADT (2010)	3665
ADT (2030)	4175
DHV	445
D	50%
T DHV	4.8%
T ADT	10.5%

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	2	28
Plotting Date: 05-MAY-2011			

PROJECT LAYOUT MAPS

014–171 & 014 W–171/Brookings 6th St.

PCN i27e & i27c



Legend:
DL = Driving Lane
PL = Passing Lane
EB = East Bound
WB = West Bound
NB = North Bound
SB = South Bound

DESIGN DESIGNATION

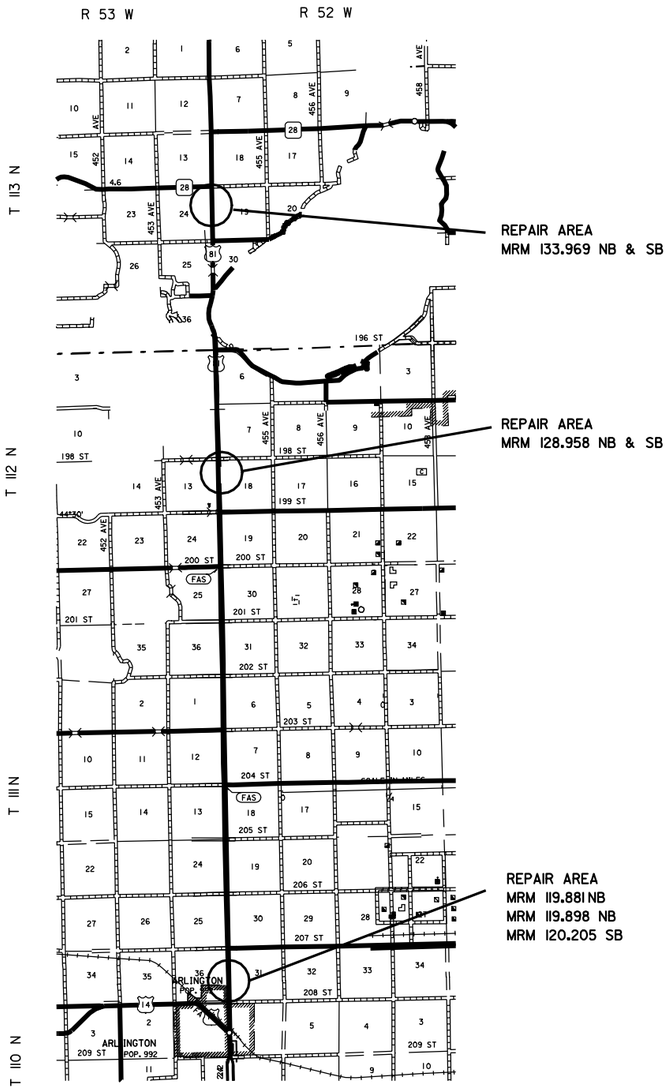
ADT (2010)	13330
ADT (2030)	15010
DHV	1810
D	50%
T DHV	0.9%
T ADT	1.9%

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	3	28
Plotting Date: 05-MAY-2011			

PROJECT LAYOUT MAPS

081–171

PCN 126y



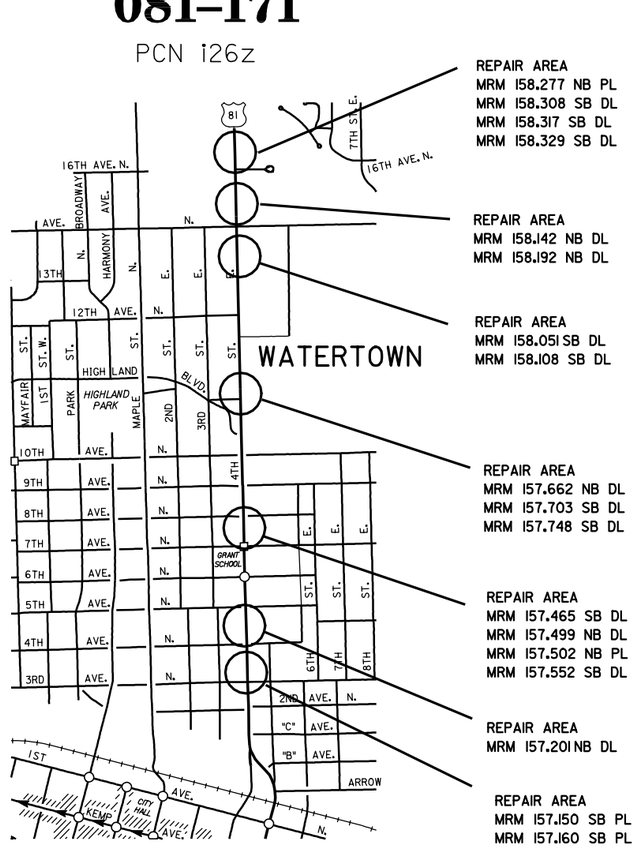
Legend:
DL = Driving Lane
PL = Passing Lane
EB = East Bound
WB = West Bound
NB = North Bound
SB = South Bound

DESIGN DESIGNATION

ADT (2010)	2195
ADT (2030)	2285
DHV	295
D	50%
T DHV	6.9%
T ADT	15.1%

081–171

PCN 126z



DESIGN DESIGNATION

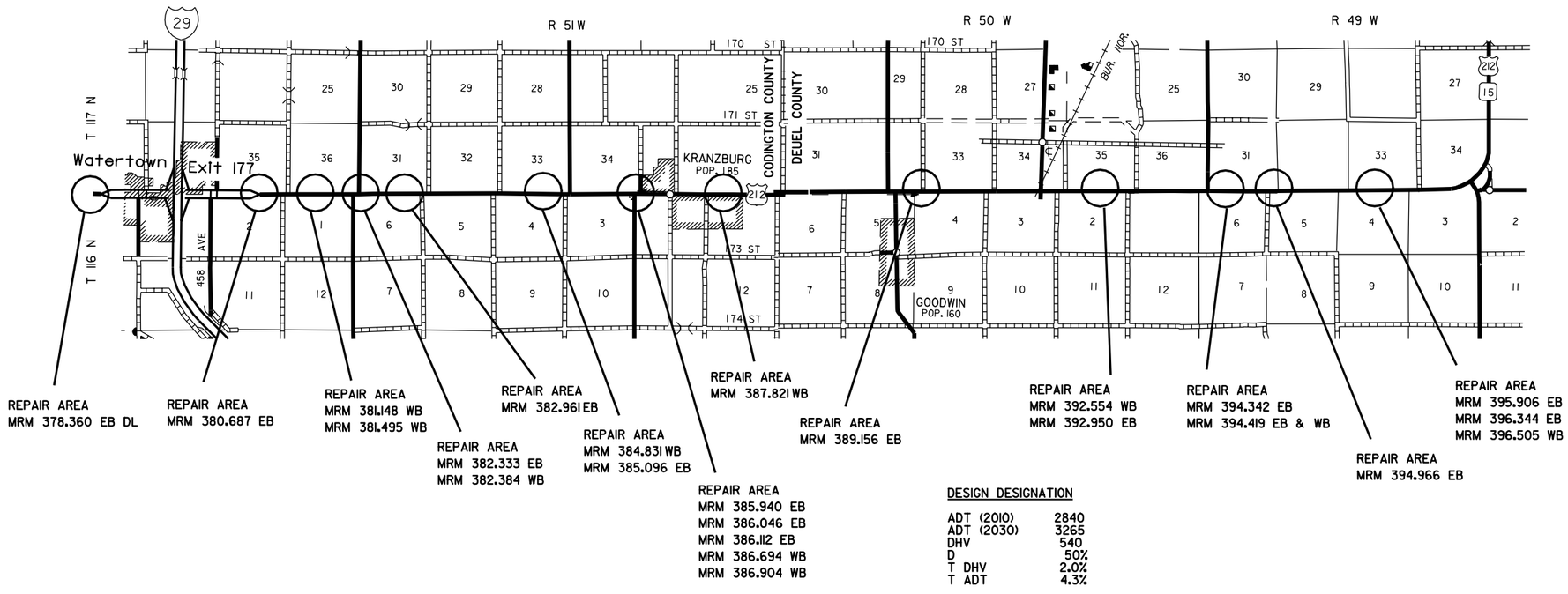
ADT (2010)	6645
ADT (2030)	7805
DHV	910
D	50%
T DHV	2.0%
T ADT	4.3%

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	4	28
Plotting Date: 05-MAY-2011			

PROJECT LAYOUT MAPS

212–171

PCN i27a



DESIGN DESIGNATION

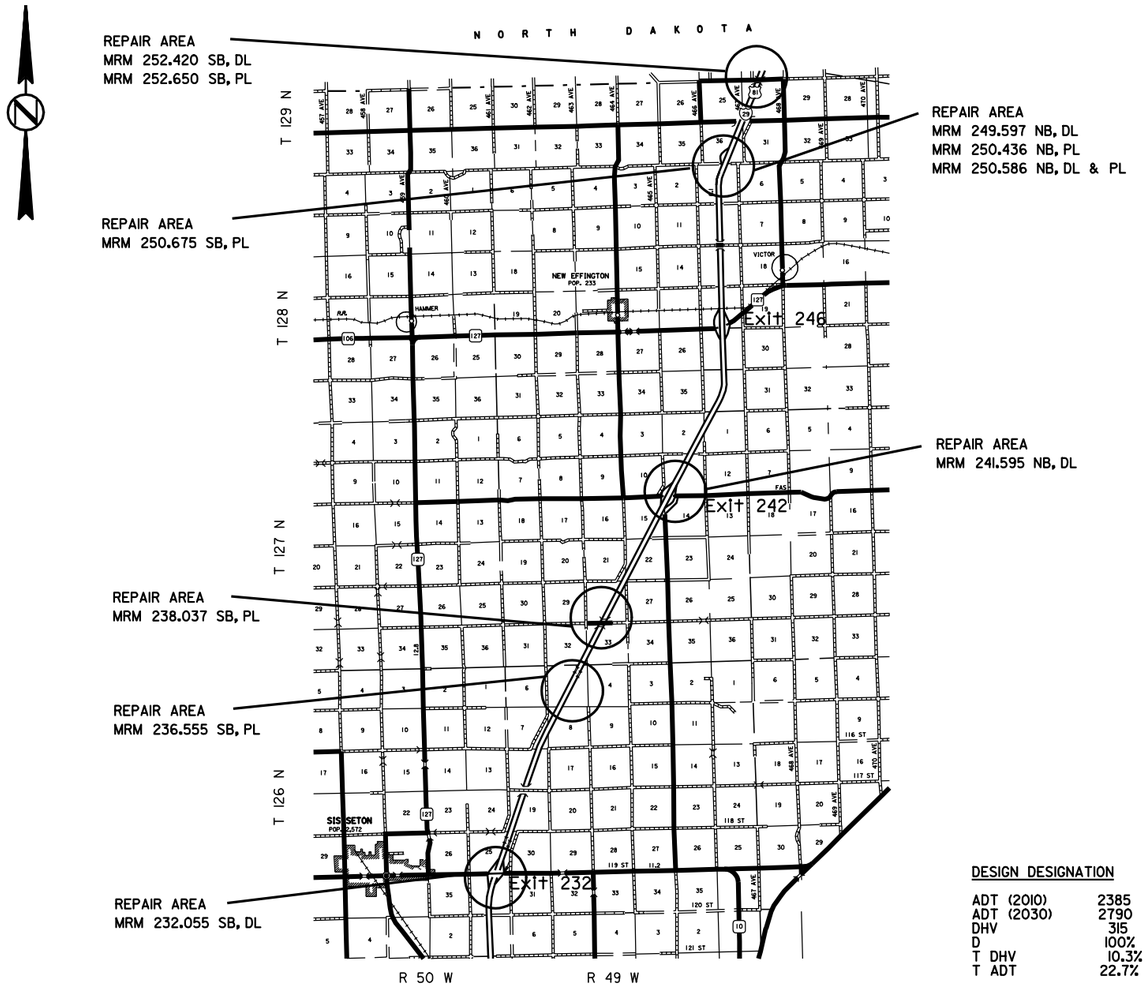
ADT (2010)	2840
ADT (2030)	3265
DHV	540
D	50%
T DHV	2.0%
T ADT	4.3%

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	5	28
Plotting Date: 05-MAY-2011			

PROJECT LAYOUT MAPS

029 N–172 & 029 S–172

PCN 126w & 126x

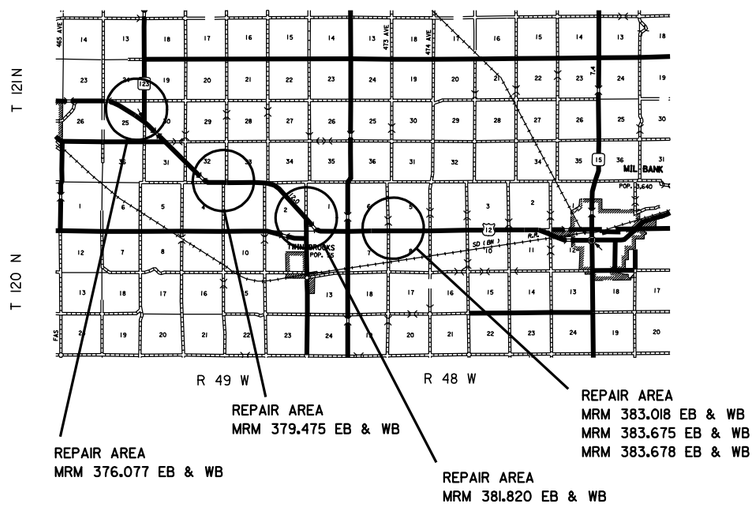


DESIGN DESIGNATION

ADT (2010)	2385
ADT (2030)	2790
DHV	315
D	100%
T DHV	10.3%
T ADT	22.7%

012–172

PCN 127b



DESIGN DESIGNATION

ADT (2010)	1340
ADT (2030)	1460
DHV	160
D	50%
T DHV	12.5%
T ADT	27.4%

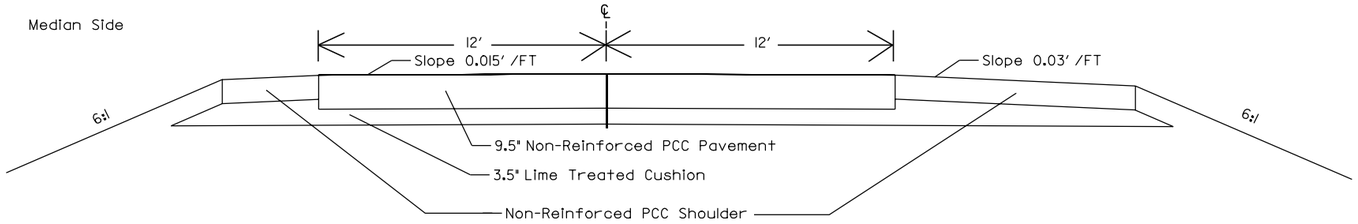
ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	029 N-172 PCN i26w	029 S-172 PCN i26x	081-171 PCN i26y	081-171 PCN i26z	212-171 PCN i27a	012-172 PCN i27b	014 W-171 PCN i27c	014 E-171 PCN i27d	014-171 PCN i27e	TOTAL QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
380E5020	Fast Track Concrete For PCC Pavement Repair	73.4	104.0	43.0	100.2	85.6	155.7	9.3	2.7	629.0	1202.9	SqYd
380E6000	Dowel Bar	0	24	51	11	69	0	12	0	91	258	Each
380E6110	Insert Steel Bar In PCC Pavement	119	147	58	252	276	228	15	9	1407	2511	Each
634E0010	Flagging	5	5	60	5	80	120	5	5	45	330	Hour
634E0100	Traffic Control	194	194	193	193	194	194	194	194	194	1744	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
634E0420	Type C Advanced Warning Arrow Panel	1	1	0	0	0	0	0	0	0	2	Each
635E5540	Sawed-In Detector Loop	0	0	0	0	0	0	1	0	0	1	Each

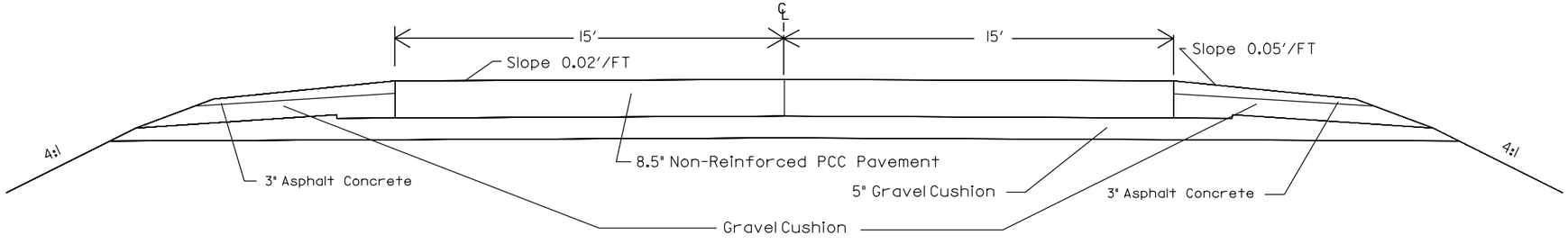
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	7	28
Plotting Date: 05-MAY-2011			

TYPICAL SECTIONS

029 N-172 & 029 S-172
INTERSTATE I-29
NON-REINFORCED PCCP
IN PLACE SURFACING SECTION
(Rural - MRM 232.055 thru 252.750)



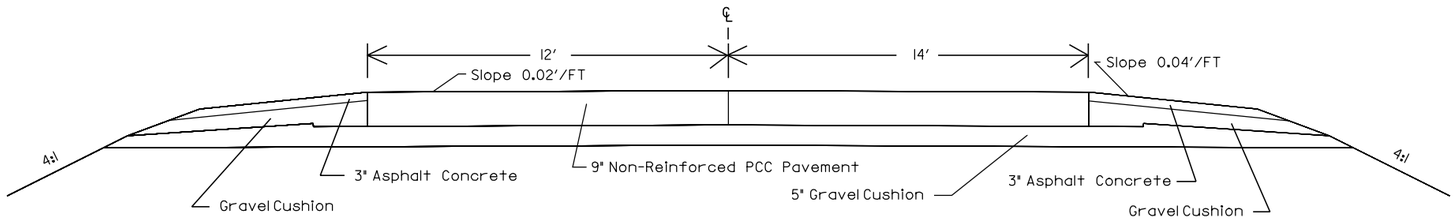
212-171
US HIGHWAY 212 MAINLINE
IN PLACE SURFACING SECTION
(MRM 380.000 thru 396.505)



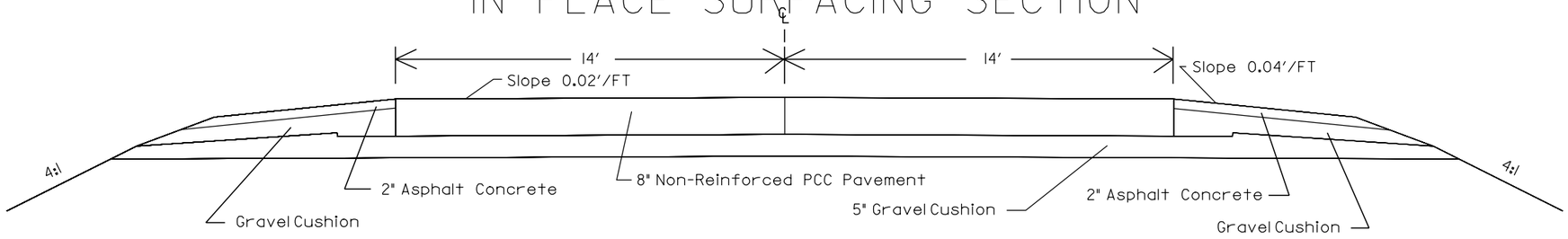
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	8	28
Plotting Date: 05-MAY-2011			

TYPICAL SECTIONS

212-171
US HIGHWAY 212
IN PLACE SURFACING SECTION
(MRM 378.360 thru 380.000)



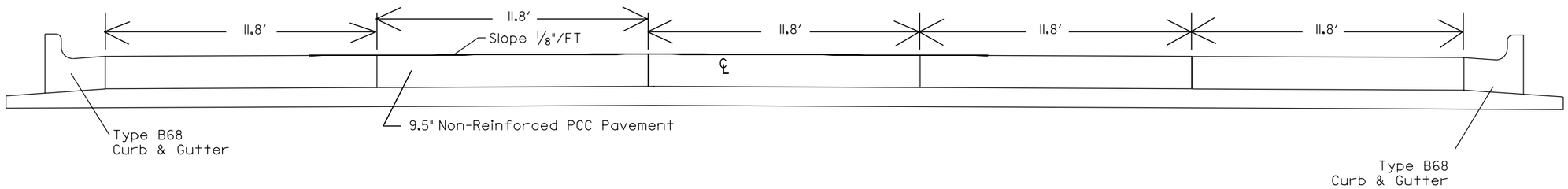
012-172
US HIGHWAY 12
IN PLACE SURFACING SECTION



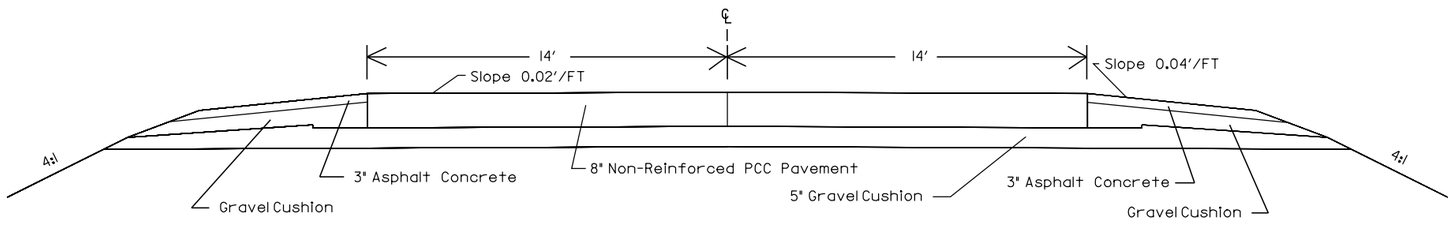
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	9	28
Plotting Date: 05-MAY-2011			

TYPICAL SECTIONS

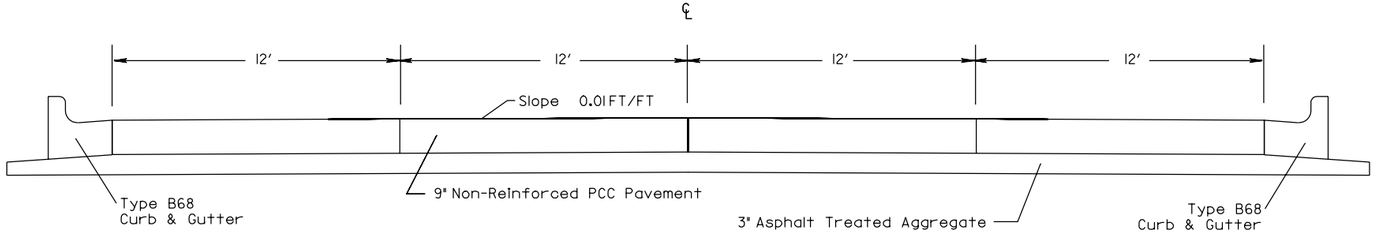
014-171
US HIGHWAY 14 MAINLINE
IN PLACE SURFACING SECTION
(Urban - Volga)



014-171
US HIGHWAY 14 MAINLINE
IN PLACE SURFACING SECTION
(Rural)



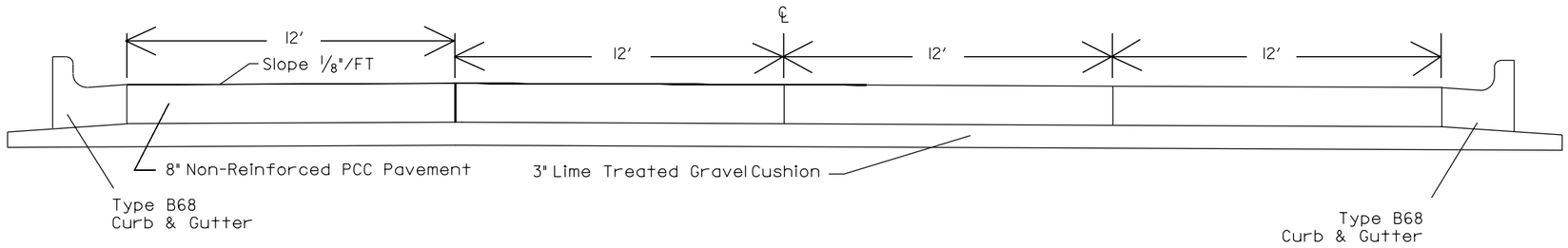
014 E-171 & 014 W-171
US HIGHWAY 14 MAINLINE
IN PLACE SURFACING SECTION
(Urban - Brookings)



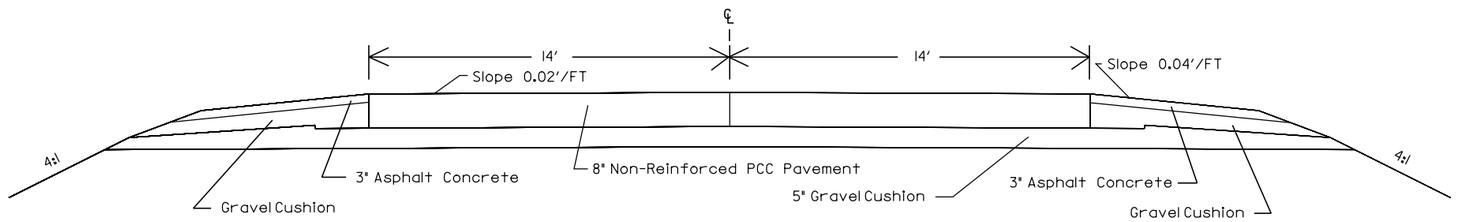
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	10	28
Plotting Date: 05-MAY-2011			

TYPICAL SECTIONS

081-171
US HIGHWAY 81 MAINLINE
IN PLACE SURFACING SECTION
(Urban - Watertown)



081-171
US 81 MAINLINE
IN PLACE SURFACING SECTION
(Rural)



SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition, and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SCOPE OF WORK

Work on this project includes, but is not limited to, removal and replacement of continuously reinforced concrete pavement and non-reinforced concrete pavement.

MAINTENANCE OF TRAFFIC

One lane of traffic shall be maintained in each direction on four-lane construction. Flagger stations shall be used in two-lane construction areas on US 81, US 12 and US 212. The Contractor shall accommodate over-width vehicles through the work areas.

Locations of signs on traffic control layouts are diagrammatic. Portable stands may be used on the shoulders or on driving lanes closed to traffic. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas.

A maximum of two closures for four lane highway and two closures for two lane highway shall be paid for. If more closures are utilized, additional cost of signing shall be at the Contractor's expense. No payment will be made for signs being reused at different repair areas.

All operations shall be confined to a 12 ft lane plus the shoulder, leaving the adjoining 12 ft lane open for thru traffic.

The Contractor will be allowed to encroach on the traffic lane approximately 3 feet if FLAGGER signs and a flagger are used. The FLAGGER signs and flagging are included in the Estimate of Quantities.

Damage to the shoulders, median or ditch due to the Contractor's operations shall be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State. This includes the routing of traffic onto these shoulders around the work zones.

Type III Barricades 8' wide shall protect PCC Pavement replacement during open excavation and concrete cure periods.

Open excavations at repair area locations shall not be allowed to be left open overnight. The Contractor shall complete the placement of PCCP on the same day as the existing PCCP is removed.

MAINTENANCE OF TRAFFIC (CONTINUED)

Not more than two Type C Advanced Warning Arrow Panels will be measured and paid for.

Maintenance of existing delineators shall be the Contractor's responsibility.

Work activities, other than traffic control flagging, during non-daylight hours are subject to prior approval.

All costs associated with furnishing and installing interim white and/or yellow edge line for a lane closure and/or for tapers shall be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS. Removal of interim white and/or yellow edge line for a lane closure shall also be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS.

Flagging stations shall be lighted during nighttime operations. Lights for this purpose shall be a flood type, shielded to prevent glare and provide a minimum of 5000 lumens (250 watt incandescent lamp). The flood lights shall be installed at a minimum height of eight feet. Cost of the flagging station flood lights shall be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS.

On I-29, the Contractor's equipment will be required to enter and leave the project only at interchanges. Crossing of the median will not be allowed.

The Contractor shall not park equipment on or along side of the roadway within a 30 foot clear distance from the edge of the driving lane. The Contractor shall remove all equipment from the roadway during non-working hours.

If interchange on-ramp traffic will encounter construction activity before reaching the "ROAD WORK AHEAD" and "RT or LT LANE CLOSED AHEAD" mainline signs, a "ROAD WORK AHEAD" sign and a "RT or LT LANE CLOSED AHEAD" sign shall be placed along the on-ramp before reaching mainline.

If interchange on-ramp traffic must enter an area with the driving lane (right hand 12') closed, the Contractor shall outline the last 100' of the on-ramp vehicle's path with channelizing devices, at 25' spacing on both sides. The Contractor shall cover any existing yield sign while the portable Yield sign is in place.

If the driving lane (right hand 12') is closed through an interchange off-ramp, the Contractor shall outline the off-ramp vehicle's path with channelizing devices at 25' spacing on both sides and erect an "Exit" sign on a portable stand at the "gore-point", to direct traffic up the off-ramp as shown on the special traffic control detail on sheet 20. In addition, the spacing of the mainline centerline channelizing devices 450' in advance of the off-ramp shall be 25'.

MAINTENANCE OF TRAFFIC (CONTINUED)

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

REMOVE CONCRETE PAVEMENT

Approximate locations of existing non-reinforced concrete pavement to be removed are provided in the Table of PCCP Repair Areas. Prior to removal the Contractor shall saw cut full depth at the limits of the removal area as directed by the Engineer.

The Contractor shall notify the Engineer two working days prior to beginning work at each location so the Engineer may mark out removal limits. The Engineer shall mark exact dimensions prior to removal of concrete pavement. Payment will be made for quantity marked out and measured in the field. Variations from plans estimated quantities and/or locations will not be considered cause for re-negotiation of the contract unit prices.

Care shall be exercised in the removal of concrete slab panels to avoid damage to adjacent pavement, manholes and growth joints. Damage to adjacent pavement, manholes and/or growth joints shall be repaired to the satisfaction of the Engineer at the Contractor's expense.

After concrete removal has been accomplished, the Contractor shall shape, water and recompact the remaining granular material prior to placement of concrete. Any additional gravel cushion required to prepare the area shall be furnished and placed by the Contractor and shall be incidental to the contract unit price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR.

Gravel cushion material shall be from a Contractor furnished source. Water content and compaction shall be to the satisfaction of the Engineer.

Removal of Concrete Pavement will be incidental to the contract unit bid price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR. This payment will be full compensation for full and partial depth sawing, concrete breakout, removal of all PCC Pavement, disposal of all removed material, and all equipment, labor, and incidentals necessary to satisfactorily complete work.

All removed concrete shall be removed from the right of way by the end of the workday and disposed of at the Contractor's waste disposal site.

ASPHALT CONCRETE SHOULDERS

To allow for form placement at locations where full depth repairs are adjacent to asphalt concrete shoulders, the Contractor shall saw cut full depth existing asphalt concrete shoulder. The saw cut shall be parallel to and no more than one foot from existing pavement edge. All costs incurred in performing the above-mentioned work, and for equipment, labor, and incidentals necessary to complete work shall be incidental to the contract unit price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR.

Upon completion of pavement repair, the Contractor shall re-establish the asphalt concrete shoulder. Asphalt Concrete Composite shall be placed at a depth that matches that of the existing asphalt concrete shoulder. All costs for furnishing and installing granular material, for Asphalt Concrete Composite, and for all equipment, labor, and incidentals necessary to complete work shall be incidental to the contract unit price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be furnished by the Contractor.

Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1; Class G, Type1; Class Q2, Q3, or Q4 Hot Mixed Asphalt Concrete specifications.

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

The asphalt binder used in the mixture shall be PG 58-28, 64-22, or 64-28 Asphalt Binder.

The Contractor shall provide a Job-Mix Formula to the Bituminous Engineer with supporting mix design data prior to production.

The asphalt binder content may be adjusted by the Engineer. Compaction of the Asphalt Concrete Composite shall be by equipment satisfactory to the Engineer.

FAST TRACK CONCRETE

Fast Track concrete shall be used for all Continuously Reinforced Concrete Pavement Repair and Nonreinforced PCC Pavement Repair.

The slump requirement prior to use of a set accelerator or super-plasticizer will be limited to 2 inches maximum and after addition of all admixtures the maximum slump shall be 8 inches and the concrete shall contain 4.5 to 7.0 percent entrained air. Coarse aggregate shall be crushed ledge rock, Size No. 1. The Contractor is responsible for the mix design used. The Contractor shall submit a mix design and supporting documentation for approval at least 2 weeks prior to use. In lieu of submitting a mix design the contractor may use the following:

	LB./CU.YD.
CEMENT (TYPE I, II, OR III)	784
FINE AGGREGATE	1162
COARSE AGGREGATE	1650

The use of a set accelerator and super-plasticizer at the manufacturer's recommended dosage will be required. Both admixtures shall be added at the project site.

The special mix shall be designed to produce a minimum compressive strength of 3800 psi in 10 to 12 hours of curing time.

Fast Track Concrete shall be cured with white pigmented curing compound (AASHTO M 148 TYPE 2) applied as soon as practical at a rate of 125 square feet per gallon. In addition, the concrete shall be immediately covered with suitable insulation blanket consisting of a layer of closed cell polystyrene foam protected by a least one layer of plastic. The insulation blanket shall have an R value of at least 0.5, as rated by the manufacturer. The insulation blanket shall be left in place, except for joint sawing operations, until the 3800 psi strength is attained.

All concrete placed adjacent to gravel shoulders shall be formed to match the width of existing concrete pavement.

NONREINFORCED PCC PAVEMENT REPAIR

At these locations, the concrete in the repair area shall be removed and replaced and the work zone opened to traffic within 24 hours. On two lane portions of Projects 081-171, 012-172 and 212-171 repair areas shall be controlled 24 hours a day with a flagger until they can be opened to traffic.

NONREINFORCED PCC PAVEMENT REPAIR, (CONTINUED)

A broom finish will be required. A transverse metal tine finish will be required as specified by the Engineer. Prior to opening to traffic, transverse and longitudinal joints shall be temporarily sealed with a backer rod of sufficient size approved by the Engineer. The cost of the backer rod and its installation shall be incidental to the contract unit price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR. This backer rod shall be removed during permanent joint sealing operations.

All joints (longitudinal and transverse) through and around repair areas shall be sawed and sealed in accordance with the details shown in these plans. All costs incurred in performing the aforementioned work including furnishing and placing Fast Track Concrete, sawing and sealing joints, labor, tools and equipment shall be incidental to the contract unit price per square yard for FAST TRACK CONCRETE FOR PCC PAVEMENT REPAIR.

The contraction joint sawing shall be performed as soon as possible after placement of concrete to avoid random cracking. Contraction joints shall be initially sawed to the plans detailed depth and to a width of 1/8 inch.

The Contractor shall underpin the existing concrete in lieu of installing tie bars and dowel bars at locations where the condition of the surrounding concrete has deteriorated to the point when tie bar/dowel bar installation is not possible, as determined by the Engineer. The cost for underpinning shall be incidental to the various bid items

SAWED-IN DETECTOR LOOP

The repair area located at MRM 421.730 on US 14 has a traffic signal detector loop within the limits of the repair. Upon completion of the concrete repair, a new traffic signal loop shall be sawed-in to replace the existing loop and connected to the traffic signal. All costs for installation of sawed-in detector loop and connection to Traffic Controller shall be included in the contract unit bid price per each for SAWED-IN DETECTOR LOOP.

JOINT SEALANT

Low Modulus Silicone Sealant may be used in place of Hot Poured Elastic Joint Sealer on any Longitudinal or Transverse Joint.

STEEL BAR INSTALLATION

The Contractor shall install the steel bars (1 1/4 inch epoxy coated plain round dowel bars and No. 5 and No. 9 epoxy coated deformed tie bars) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

The steel bars shall be cut to the specified length by sawing and shall be free from burring or deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications and shall conform to the requirements of ASTM C 881, Type IV, Grade 3 (equivalent to AASHTO M235, Type IV, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete pavement shall be located at mid-depth of the slab and true and normal. The drill used shall be a hydraulic percussive type and not a hand held. The drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturer's designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate. Fill the drilled holes from the back to the front 1/3 to 1/2 full of epoxy or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy from running out of the horizontal hole prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Steel bars shall not be placed closer than 6 inches to any longitudinal joint or pavement edge, not closer than 18 inches to any transverse joint, and not closer than 15 inches to any construction joint.

Concrete shall be placed when the epoxy for anchoring the steel bars has hardened sufficiently to permit no movement of the steel bars as recommended by the manufacturer.

All costs for the installation of steel bars, equipment, labor, and incidentals necessary to complete work shall be incidental to the contract unit price per each for INSERT STEEL BAR IN PCC PAVEMENT.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction/demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

WASTE DISPOSAL SITE, (CONTINUED)

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

All construction debris including, but not limited to, concrete generated from removal operations shall be disposed of at the Contractor's waste disposal site prior to nightfall.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

PREQUALIFICATION

Persuant to South Dakota Administrative Rules 70:07:02, Classification and Bidding Capacity Rating for Highway Contracts, and Section 2.1 of the SDDOT Standard Specifications For Roads and Bridges, all bidders on highway construction projects over $99,999.99 shall be prequalified. Maintenance stockpile projects are excluded from this requirement.

Bidders on projects let through the informal process (being let using a DOT 123 contract form) are excluded from having to submit a request for Plans and Bid Proposal form as required in Standard Specification Section 2.3, showing the bidders status at the time as to their ability to handle the work for which they are submitting a bid. All other portions of Section 2.3 are to remain in effect.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	15	28
Plotting Date: 05-MAY-2011			

PCCP Repair Areas

029 N-172

PCN i26w

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
241.595	5	12	6.7	NB DL	4	8	8	
249.597	6	12	8.0	NB DL	4	0	16	
250.436	20	12	26.7	NB PL	16	8	8	
250.586	12	24	32.0	NB DL & PL	15	16	16	
Total			**73.4**		**39**	**32**	**48**	**0**

029 S-172

PCN i26x

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
232.055	12	12	16.0	SB DL	5	8	8	
236.555	40	12	53.3	SB PL	28	8	8	24
238.037	6	12	8.0	SB PL	4	8	8	
250.675	5	12	6.7	SB PL	4	16	0	
252.420	5	12	6.7	SB DL	4	16	0	
252.65	10	12	13.3	SB PL	6	8	8	
Total			**104.0**		**51**	**64**	**32**	**24**

081-171

PCN i26y

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
081-171								
119.881	6	11	7.3	NB		11	3	5
119.898	6	6	4.0	NB		6		4
120.205	5	4	2.2	SB		5	4	
128.958	9	14	14.0	NB	2	6		12
128.958	4	14	6.2	SB		6		12
133.969	4	7	3.1	NB		5		6
133.969	4	14	6.2	SB		10		12
Total			**43.0**		**2**	**49**	**7**	**51**

081-171

PCN i26z

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
157.150	5	5	2.8	SB PL	4	3	3	
157.160	5	5	2.8	SB PL	4	3	3	
157.182	5	5	2.8	NB DL	4	3	3	
157.201	5	5	2.8	NB DL	4	3	3	
157.465	6	6	4.0	SB DL	5	4	4	
157.499	5	5	2.8	NB DL	4	3	3	
157.502	5	5	2.8	NB PL	4	3	3	
157.552	5	12	6.7	SB DL	4	16		
157.662	14	5	7.8	NB DL	9	7	6	
157.703	5	12	6.7	SB DL	4	8	8	
157.748	5	5	2.8	SB DL		6		
158.051	5	5	2.8	SB DL	4	6		
158.108	5	5	2.8	SB DL	2	6		5
158.142	5	5	2.8	NB DL	4	3	3	
158.192	5	5	2.8	NB DL	4	3	3	
158.277	6	6	4.0	NB PL	2	7		6
158.308	5	5	2.8	SB DL	4	3	3	
158.317	19	14	29.6	SB DL	14		18	
158.329	5	14	7.8	SB DL	4	18		
Total			**100.2**		**84**	**105**	**63**	**11**

LEGEND: NB (North Bound), SB (South Bound), WB (West Bound), EB (East Bound)
DL (Driving Lane), PL (Passing Lane), TL (Turning Lane)

Note: Number of steel bars is for information only. Actual quantity to be determined on construction. Quantity of steel bars shall be paid for at the contract unit price per each for INSERT STEEL BAR IN PCC PAVEMENT.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	16	28
Plotting Date: 05-MAY-2011			

PCCP Repair Areas

212-171

PCN i27a

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
378.360	5	5	2.8	EB DL	4	3	3	
380.687	5	12	6.7	EB	4	16		
381.148	5	5	2.8	WB	4	3	3	
381.495	5	5	2.8	WB	2	6		5
382.333	5	5	2.8	EB	4	3	3	
382.384	5	5	2.8	WB	2	6		5
382.961	5	5	2.8	EB	4	3	3	
384.831	5	5	2.8	WB	4	3	3	
385.096	5	5	2.8	EB	2	6		5
385.940	5	5	2.8	EB	2	6		5
386.046	5	5	2.8	EB	2	6		5
386.112	5	5	2.8	EB	2	6		5
386.694	5	5	2.8	WB	4	3	3	
386.904	5	5	2.8	WB	4	6		
387.821	5	12	6.7	WB	2	16		12
389.156	5	5	2.8	EB	4	5	5	
392.554	5	5	2.8	WB	2	6		5
392.950	5	5	2.8	EB	2	6		5
394.342	5	5	2.8	EB	4	3	3	
394.419	5	5	2.8	WB	2	6		5
394.419	5	12	6.7	EB	2	16		12
394.966	5	5	2.8	EB	4	3	3	
395.906	5	12	6.7	EB	4	8	8	
396.344	5	5	2.8	EB	4	5	5	
396.505	5	5	2.8	WB	4	6		
Total			**85.6**		**78**	**156**	**42**	**69**

012-172

PCN i27b

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
012-172								
376.077	6	28	18.7	EB & WB	2	18	18	
379.475	6	28	18.7	EB & WB	2	18	18	
381.820	20	28	62.2	EB & WB	2	0	36	
383.018	6	28	18.7	EB & WB	2	18	18	
383.675	6	28	18.7	EB & WB	2	18	18	
383.678	6	28	18.7	EB & WB	2	18	18	
Total			**155.7**		**12**	**90**	**126**	**0**

LEGEND: EB (East Bound), WB (West Bound)
NB (North Bound), SB (South Bound)
DL (Driving Lane), PL (Passing Lane), TL (Turning Lane)

Note: Number of steel bars is for information only. Actual quantity to be determined on construction. Quantity of steel bars shall be paid for at the contract unit price per each for INSERT STEEL BAR IN PCC PAVEMENT.

014 W-171 & 014E-171/Brookings 6th St.

PCN i27c & i27d

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
014 W-171 PCN i27c								
421.730	7	12	9.3	WB PL With Traffic Loop	6	9		12
Totals			**9.3**		**6**	**9**	**0**	**12**
014 E-171 PCN i27d								
417.080	6	4	2.7	EB DL		6	3	
Totals			**2.7**		**0**	**6**	**3**	**0**

014-171/Volga & Brookings

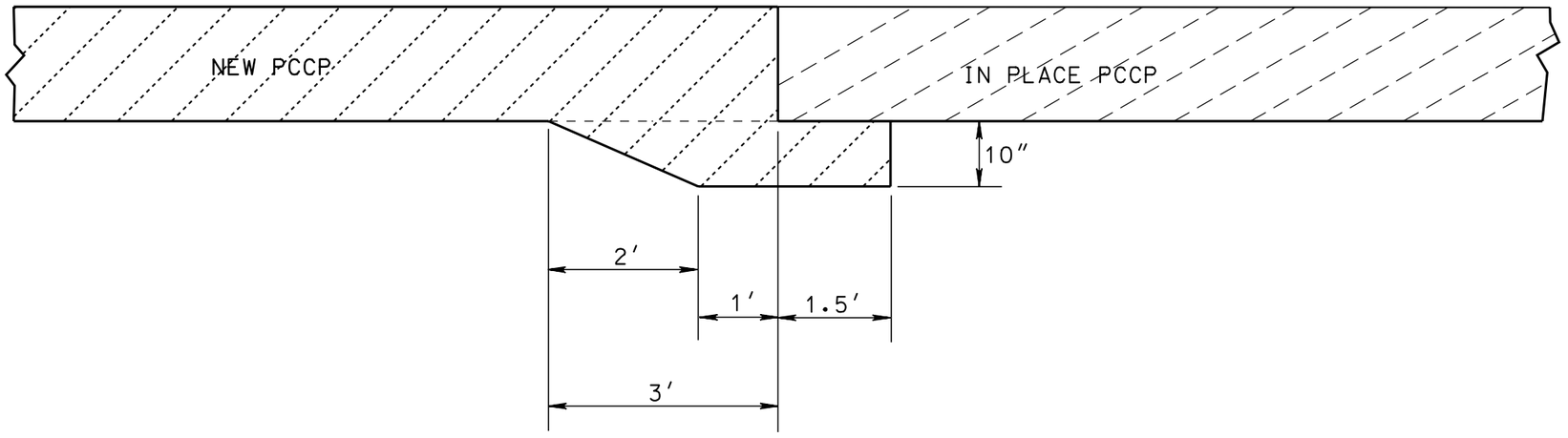
PCN i27e

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
014-171/Volga								
413.009	14	36	56.0	EB DL PL	9		72	
413.039	5	60	33.3	WB EB DL PL TL	8	40	60	
413.045	20	12	26.7	EB DL	2	6	3	
413.084	5	60	33.3	WB EB DL PL TL	8	40	60	
413.097	5	36	20.0	EB DL	6	48		
413.127	5	36	20.0	EB DL PL TL	6	48		
413.143	5	60	33.3	WB EB DL PL TL	8	40	60	
413.201	5	24	13.3	WB DL PL	2	16	24	
413.220	9	36	36.0	EB DL PL	6	24	36	
413.228	5	12	6.7	WB DL PL	2	16		12
413.229	5	24	13.3	WB DL PL	4	32		
413.316	5	36	20.0	EB DL PL TL	3	16	24	
413.397	5	36	20.0	EB DL PL TL	6	16	36	
413.397	13	24	34.7	WB DL PL	10		48	
413.542	8	24	21.3	WB DL PL	6	32		
413.614	5	36	20.0	EB DL PL TL	6	24	36	
413.648	5	24	13.3	WB DL PL	4	16	24	
413.815	20	24	53.3	EB DL PL	8		24	12
413.815	8	36	32.0	WB DL PL TL	6	24	36	
414.025	5	60	33.3	WB EB DL PL TL	12	40	60	
414.099	5	24	13.3	WB DL PL	4	16	24	
414.155	5	60	33.3	WB EB DL PL TL	12	40		60
414.174	5	36	20.0	EB DL PL TL	6	48		
414.413	6	26	17.3	WB DL PL	2	16	24	
014-171/Brookings								
419.970	6	8	5.3	WB DL	2	10		7
Totals			**629.0**		**148**	**608**	**651**	**91**

PLOT SCALE - 19361.893584:1.000000

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	17	28
Plotting Date: 05-MAY-2011			

UNDERPINNING DETAIL



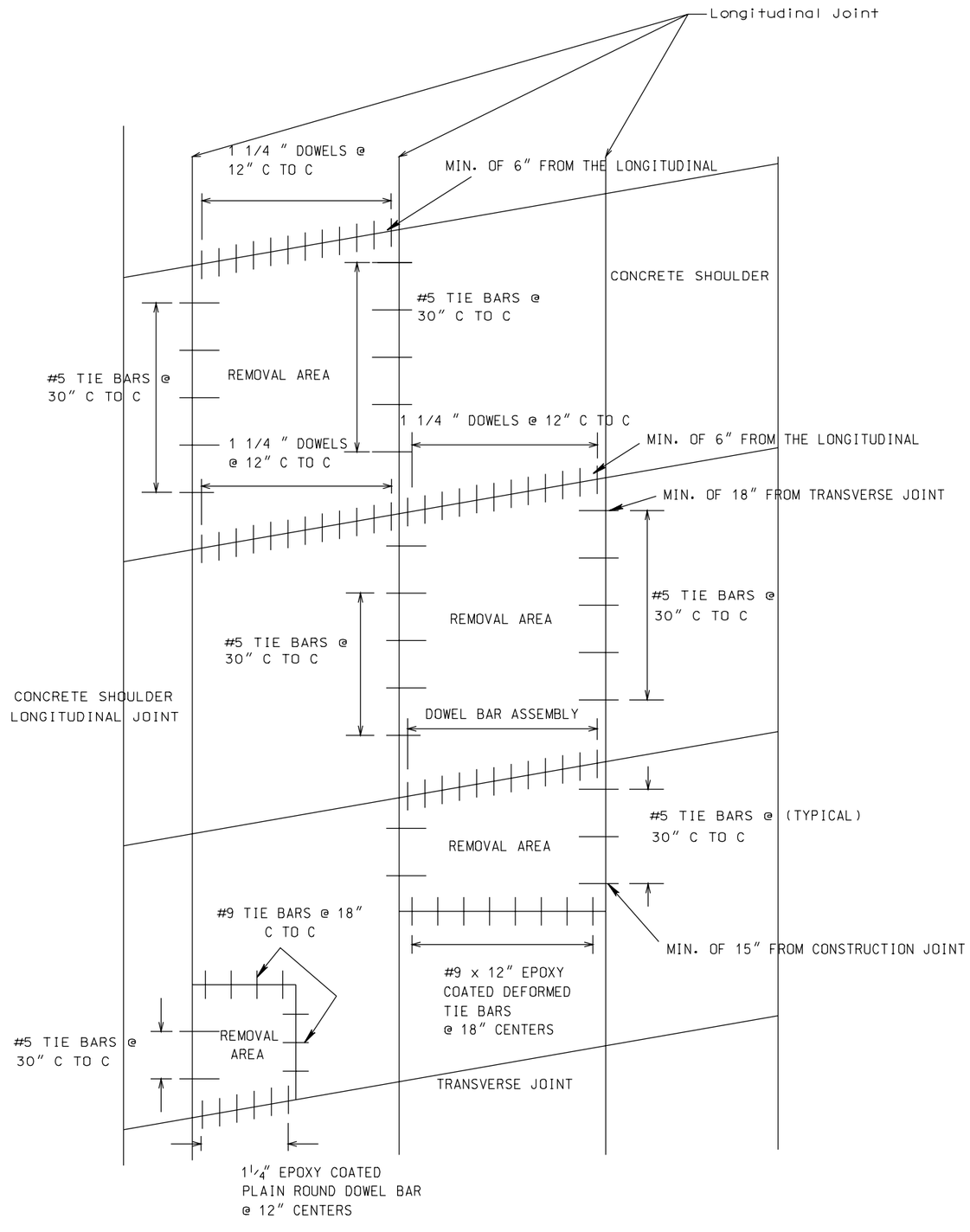
PLOTTED FROM - TRBRINT12

PLOT NAME - UNDERPINNING
FILE - H:\PLANS\2011 CONCRETE REPAIR\UNDERPINNING.DGN

PLOT SCALE - 7747.121013:1.000000
PLOTTED FROM - TRBR1NT12

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	18	28
Plotting Date: 05-MAY-2011			

FULL DEPTH CONCRETE PAVEMENT REPAIR

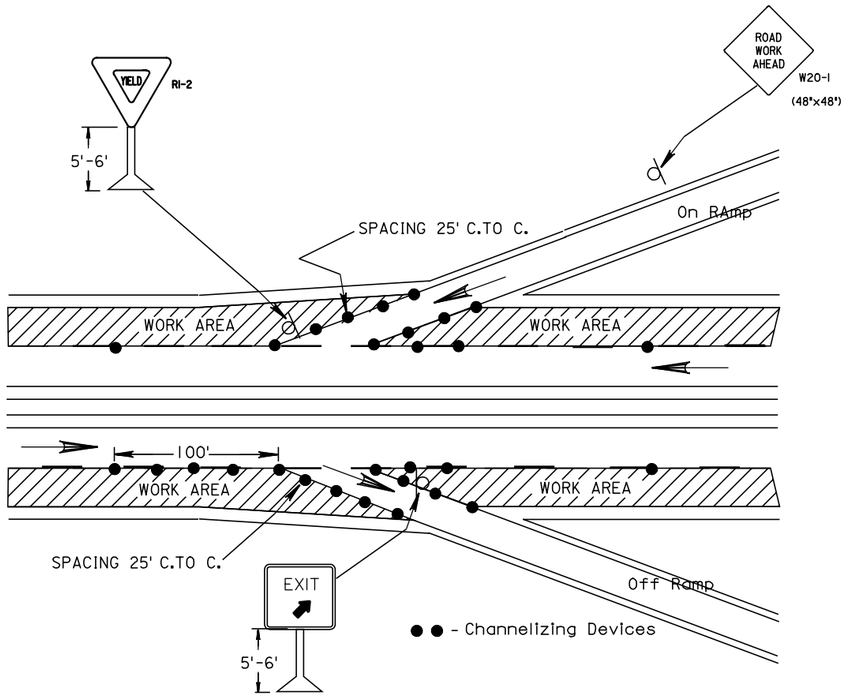


PLOT NAME - CRCP-1
FILE - H:\PLANS\2011 CONCRETE REPAIR\CRCP-1.DGN

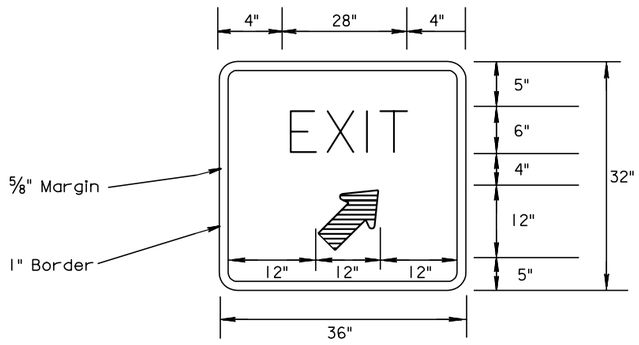
GUIDES FOR TRAFFIC CONTROL DEVICES

RAMP SIGNING DETAILS

ON-RAMP AND OFF-RAMP



DETAILS FOR SPECIAL SIGN



Legend - White (High Intensity)
Background - Green (High Intensity)
Sign Blank - 0.100" Aluminum

NOTE: Quantity included in the Sign Tabulation.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	20	28

Plotting Date: 05-MAY-2011

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

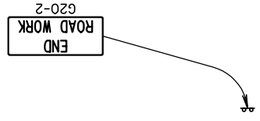
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

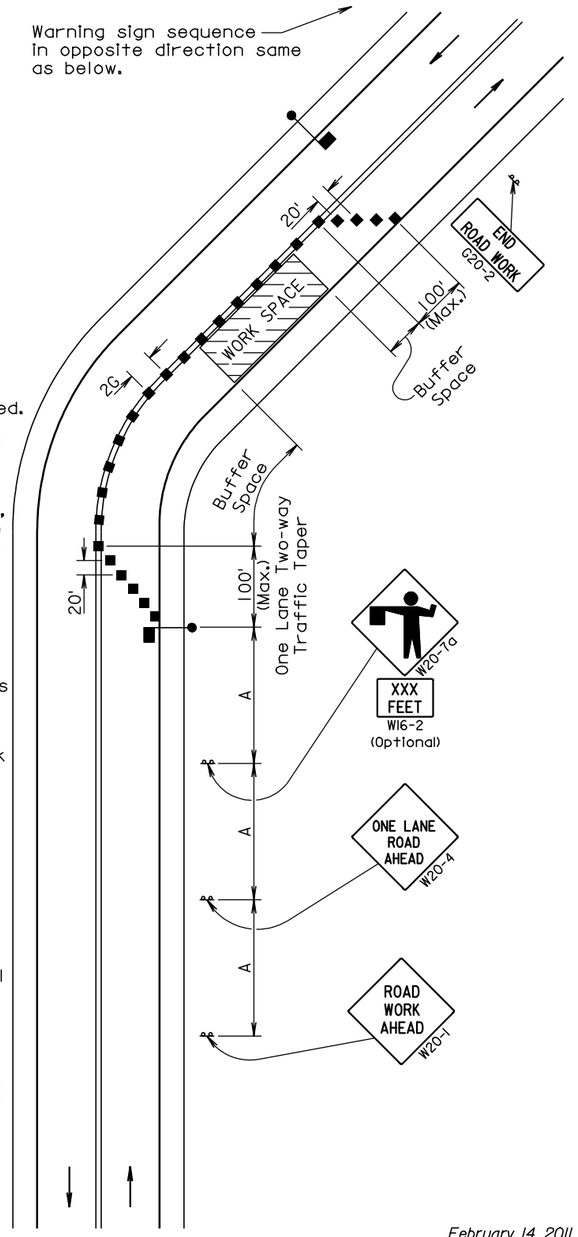
The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.



February 14, 2011

Published Date: 2nd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1

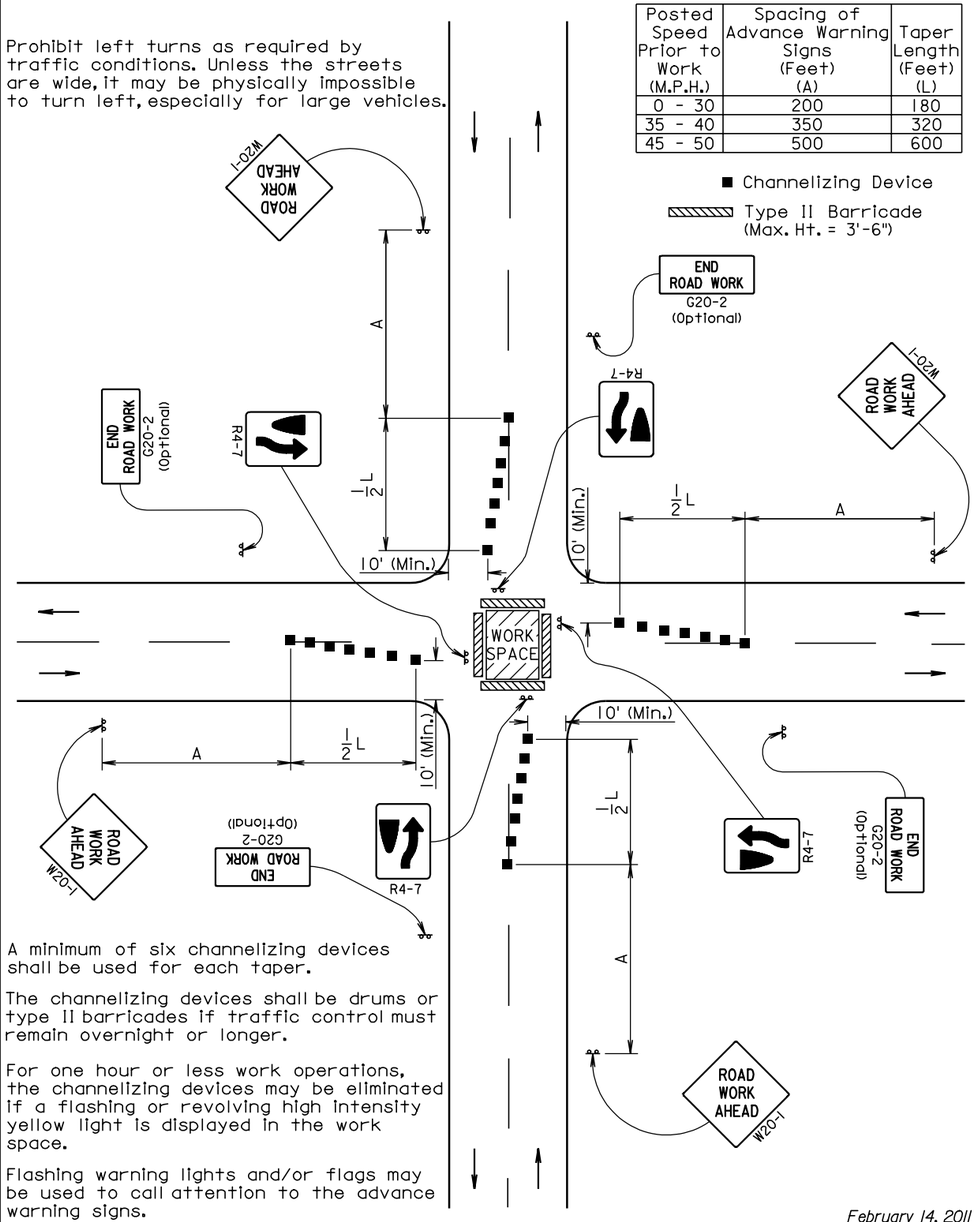
Plotting Date: 05-MAY-2011

Prohibit left turns as required by traffic conditions. Unless the streets are wide, it may be physically impossible to turn left, especially for large vehicles.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600

Channelizing Device

Type II Barricade (Max. Ht. = 3'-6")



A minimum of six channelizing devices shall be used for each taper.

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer.

For one hour or less work operations, the channelizing devices may be eliminated if a flashing or revolving high intensity yellow light is displayed in the work space.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

February 14, 2011

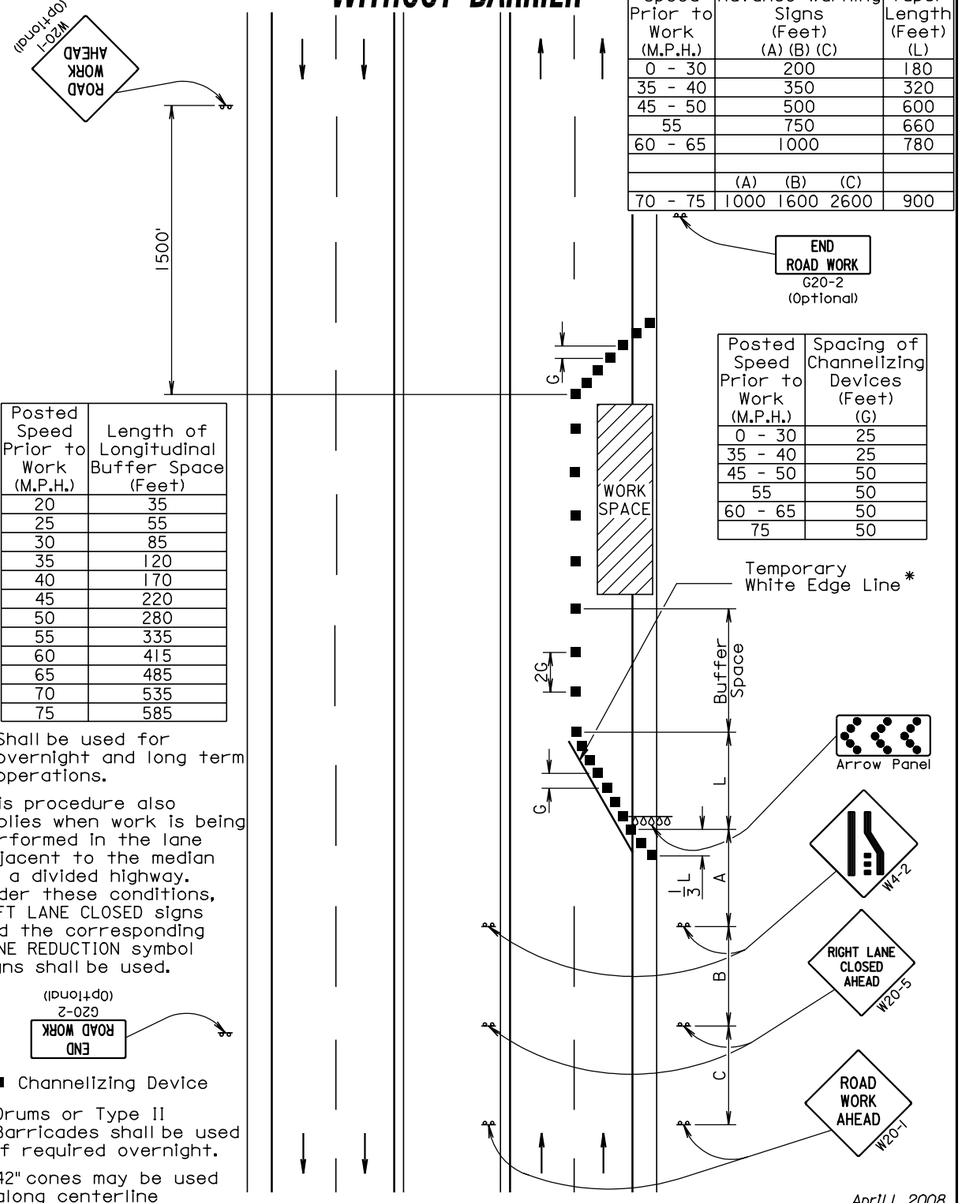
Published Date: 2nd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES CLOSURE IN CENTER OF INTERSECTION	PLATE NUMBER 634.34 Sheet 1 of 1

Plotting Date: 05-MAY-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	21	28

Plotting Date: 05-MAY-2011

WITHOUT BARRIER



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	900

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50
55	50
60 - 65	50
75	50

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

* Shall be used for overnight and long term operations.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

■ Channelizing Device

Drums or Type II Barricades shall be used if required overnight.

42" cones may be used along centerline

April 1, 2008

Published Date: 2nd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
			Sheet 1 of 1

Plotting Date: 05-MAY-2011

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B)	L
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B)	
70 - 75	1000 1600	1125

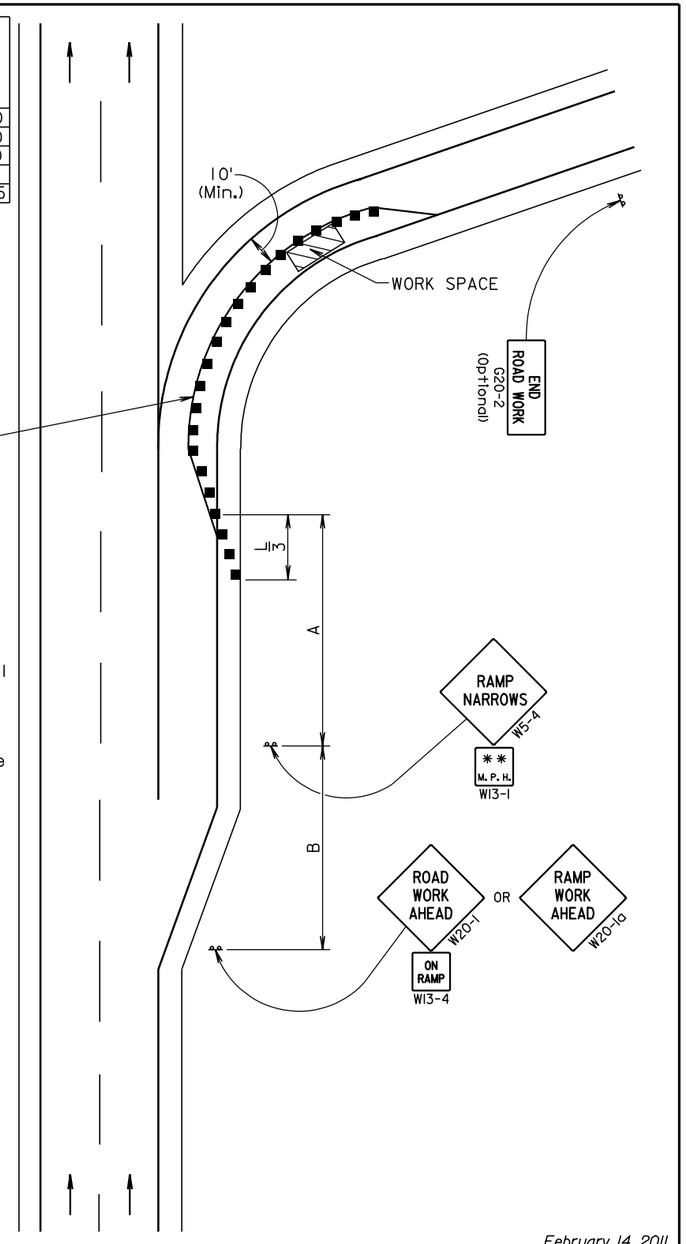
■ Channelizing Device

** Need and safe speed to be determined by the Highway Authority.

Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer.

Truck off-tracking should be considered when determining whether the 10 foot minimum lane width is adequate.



February 14, 2011

Published Date: 2nd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69
			Sheet 1 of 1

Plotting Date: 05-MAY-2011

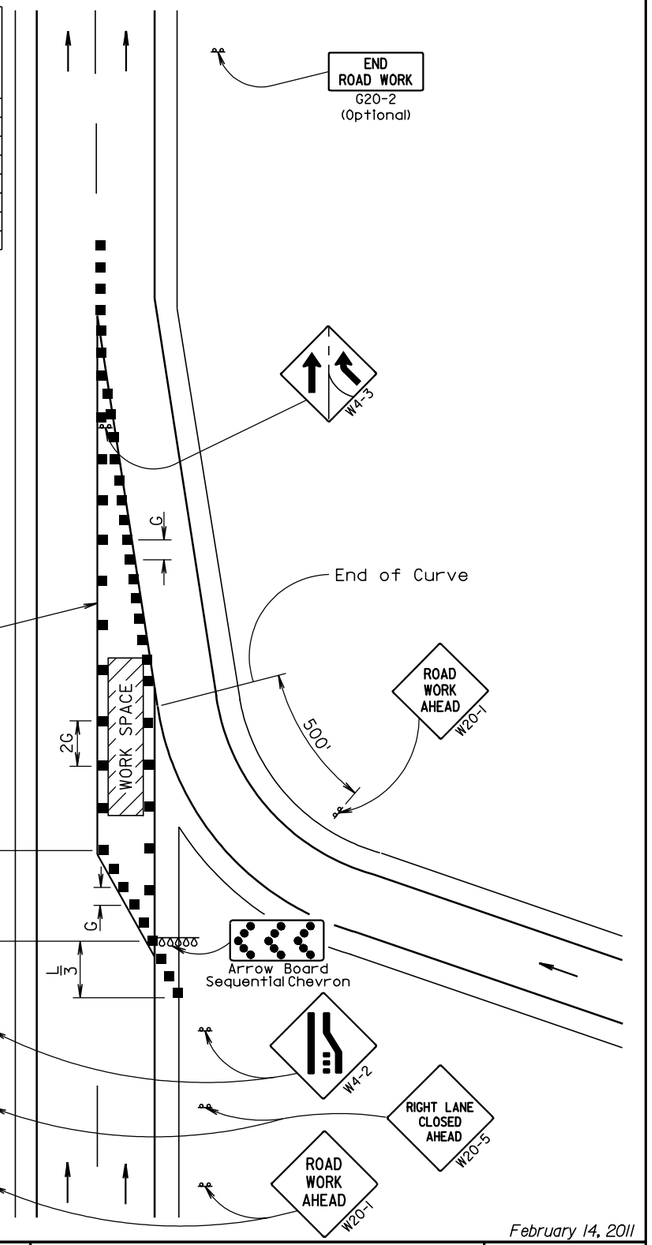
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	1125

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50
55	50
60 - 65	50

■ Channelizing Device

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer.

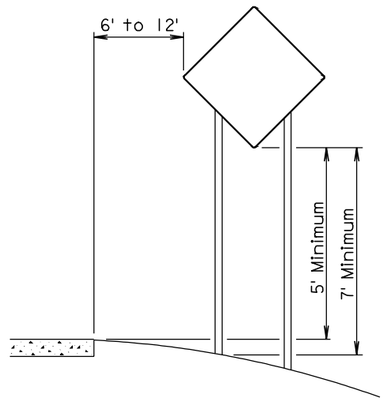
Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.



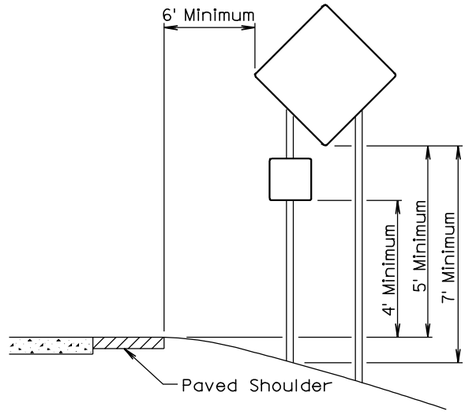
February 14, 2011

Published Date: 2nd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF ENTRANCE RAMP	PLATE NUMBER 634.70
			Sheet 1 of 1

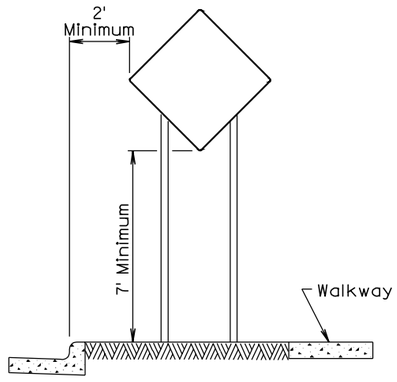
Plotting Date: 05-MAY-2011



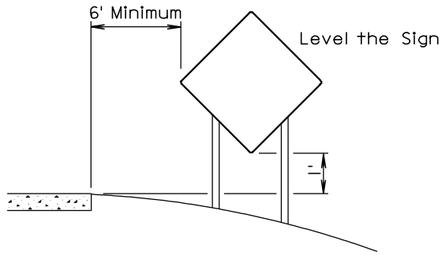
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

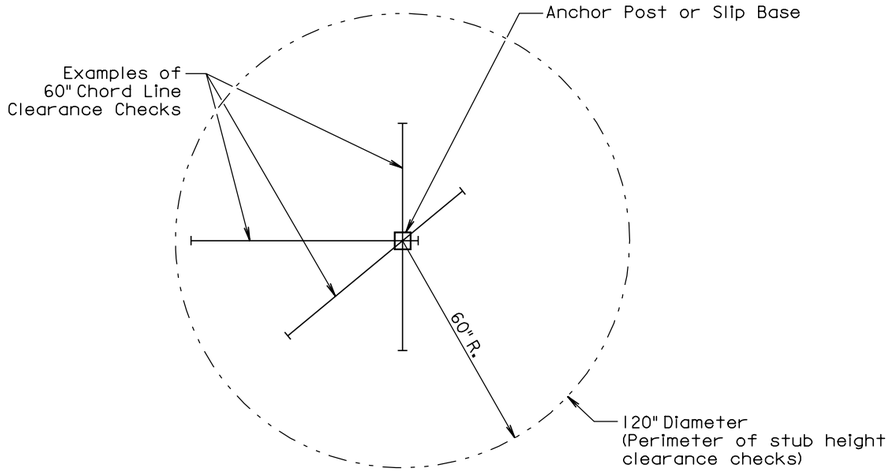


RURAL DISTRICT 3 DAY MAXIMUM

February 14, 2011

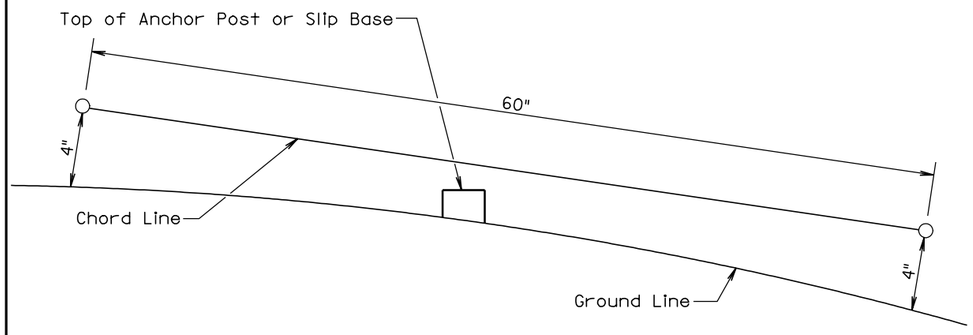
Published Date: 2nd Qtr. 2011	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

Plotting Date: 05-MAY-2011



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2011	SDDOT	**BREAKAWAY SUPPORT STUB CLEARANCE**	*PLATE NUMBER* 634.99
			Sheet 1 of 1

Plotting Date: 05-MAY-2011

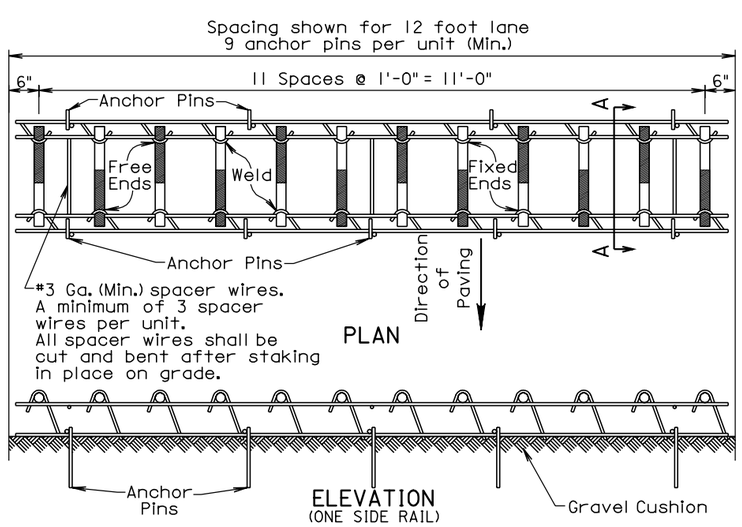
ITEMIZED LIST FOR TRAFFIC CONTROL

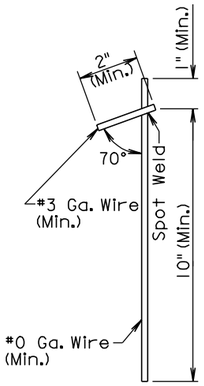
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2A	36" x 18"	END ROAD WORK	6	17	102
R1-2	48" x 48"	YIELD	1	34	34
R4-7	24" x 30"	KEEP RIGHT (SYMBOL)	1	18	18
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	4	34	136
W5-4	48" x 48"	RAMP NARROWS	1	34	34
W13-1	24" x 24"	ADVISORY SPEED PLATE	1	16	16
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	12	34	408
W20-4	48" x 48"	ONE LANE ROAD #### FT. OR AHEAD	4	34	136
W20-5	48" x 48"	LT. OR RT. LANE CLOSED #### FT. OR AHEAD	4	34	136
W20-7a	48" x 48"	FLAGGER	6	34	204
SPECIAL	36" x 32"	EXIT (WITH ARROW)	1	24	24
W13-4	24" x 24"	ON RAMP	1	16	16
*****	*****	TYPE III BARRICADE - 8 FT. SINGLE SIDED	12	40	480
				TOTAL UNITS	**1744**

If a sign is required on a project and not listed in the above inventory, the units per sign will be determined as follows:
Signs 36" x 36" will be measured at 27 units each and signs 48" x 48" will be measured at 34 units each, otherwise:
If a sign measures less than 25" high and 25" wide the units per sign will be computed as sign size (sq ft) x 3.
If a sign measures between 23H" and 37H" the units per sign will be computed as sign size (sq ft) x 1.2 +15.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	24	28

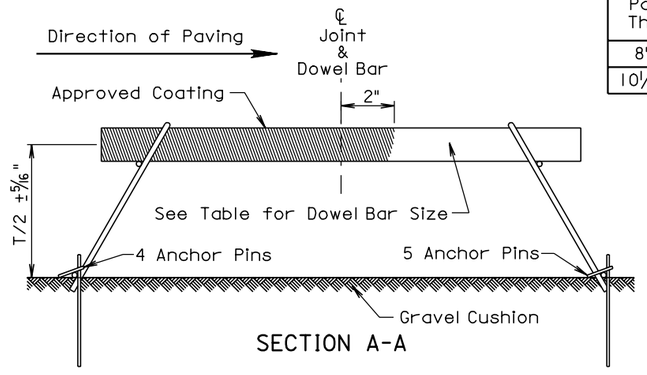
Plotting Date: 05-MAY-2011



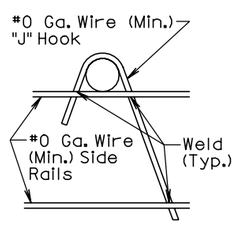


TYPICAL ANCHOR PIN

Pavement Thickness	Epoxy Coated Dowel Bar Size
8" to 10"	1¼" x 18"
10½" to 12"	1½" x 18"



SECTION A-A



SIDE RAIL DETAIL

GENERAL NOTES:

Longitudinal construction joint tie bars shall be placed a minimum of 15 inches from the transverse contraction joint.

Centerline of individual dowel bars shall be parallel to top of subgrade ±1/8 inch in 18 inches and to all other dowel bars in the assembly ±1/16 inch in 18 inches.

Centerline of individual dowel bars shall be parallel to the centerline of the roadway ±1/2 inch in 18 inches.

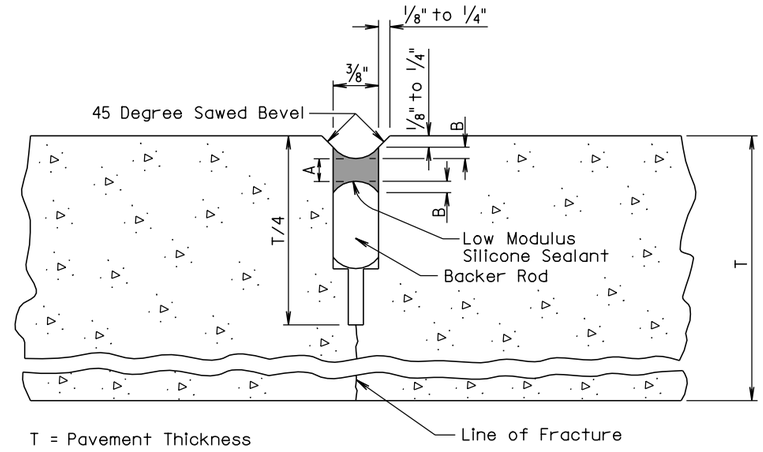
The transverse contraction joints shall be sawed perpendicular to the centerline of the roadway and the dowel bars shall be centered on the sawed joint ± 1 inch.

Supporting devices of the type shown on this sheet, or equivalent as approved by the Engineer, shall be used to maintain proper horizontal and vertical alignment of the dowel bars.

December 23, 2007

Published Date: 2nd Qtr. 2011	SDDOT	**PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS**	*PLATE NUMBER* 380.01
			Sheet 1 of 1

Plotting Date: 05-MAY-2011



LOW MODULUS SILICONE SEALANT ALLOWABLE CONSTRUCTION TOLERANCES			
A (Min.) (In)	A (Max.) (In)	B (Min.) (In)	B (Max.) (In)
3/16	5/16	1/8	1/4

GENERAL NOTES:

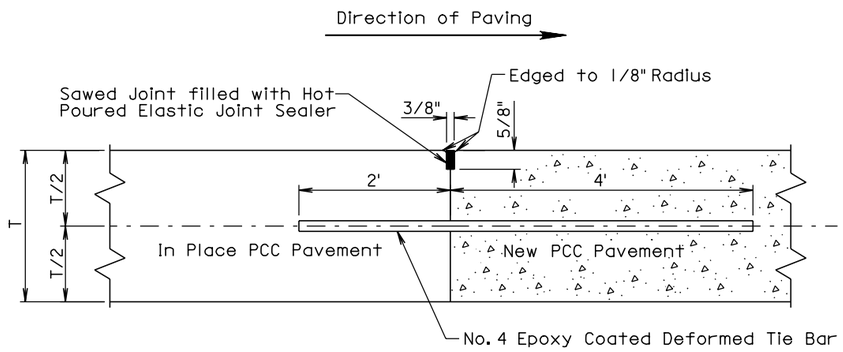
The first saw cut to control cracking shall be a minimum of 1/4 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the low modulus silicone joint sealant will be necessary.

The backer rod shall be a nonmoisture absorbing resilient material approximately 25% larger in diameter than the width of the joint to be sealed.

December 23, 2007

Published Date: 1st Qtr. 2011	SDDOT	**PCC PAVEMENT BEVELED TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY**	*PLATE NUMBER* 380.04
			Sheet 1 of 1

Plotting Date: 18-APR-2011



T = Pavement Thickness

GENERAL NOTES:

No. 4 epoxy coated deformed tie bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint shall be 5 feet.

When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

A transverse construction joint may be placed in lieu of the transverse contraction joint when shown in the plans.

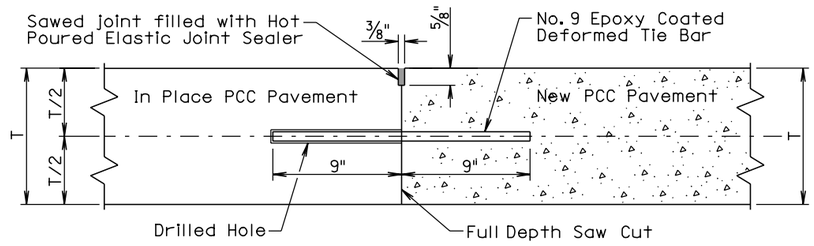
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 1st Qtr. 2011	SDDOT	*PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT*	*PLATE NUMBER* 380.05
			Sheet 1 of 1

Plotting Date: 18-APR-2011

TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

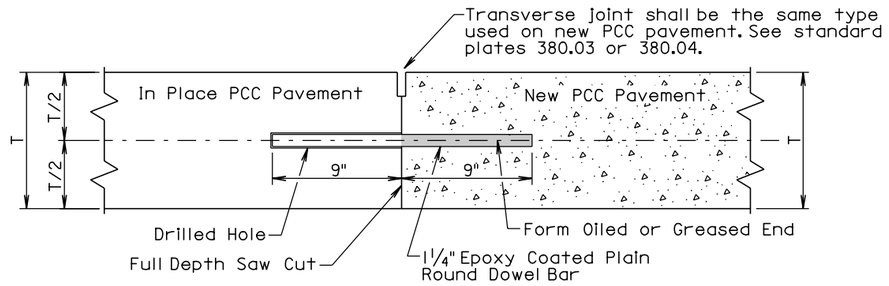
This detail shall be used when the transverse joint is less than 15 feet from the existing transverse contraction joint.

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

No. 9 epoxy coated deformed tie bars shall be spaced 18 inches center to center and shall be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

This detail shall be used when the transverse joint is 15 feet or greater from the existing transverse contraction joint.

The plain round dowel bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

The 1¼" epoxy coated plain round dowel bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

September 6, 2006

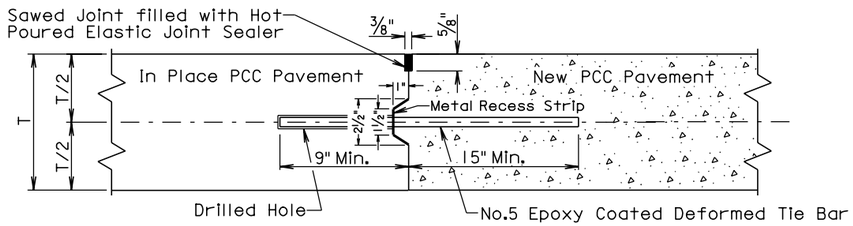
Published Date: 2nd Qtr. 2011	SDDOT	*PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS*	*PLATE NUMBER* 380.06
			Sheet 1 of 1

Plotting Date: 05-MAY-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	26	28

Plotting Date: 05-MAY-2011

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

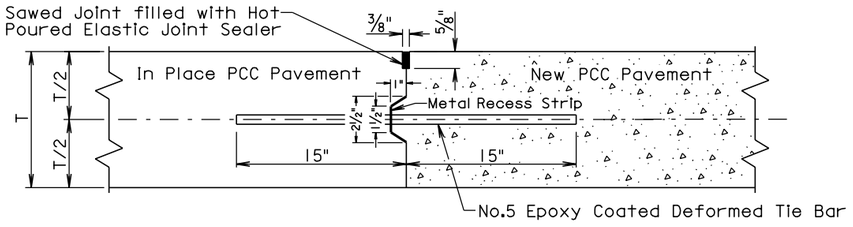
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INSERTED OR FORMED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

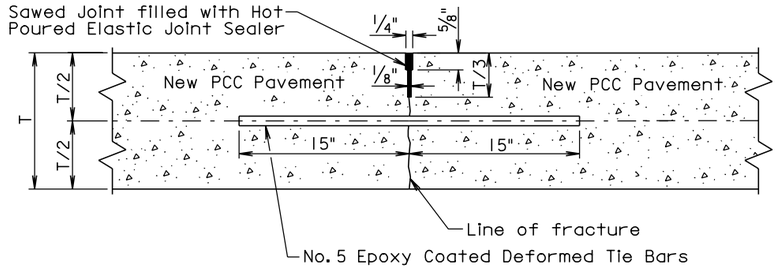
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 2nd Qtr. 2011	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 1 of 2

Plotting Date: 05-MAY-2011

SAWED LONGITUDINAL JOINT WITH TIE BARS
(POURED MONOLITHICALLY)



T = Pavement Thickness

GENERAL NOTES:

No. 5 epoxy coated deformed tie bars shall be spaced 48 inches center to center.

The tie bars shall be placed a minimum of 15 inches from the existing transverse contraction joints.

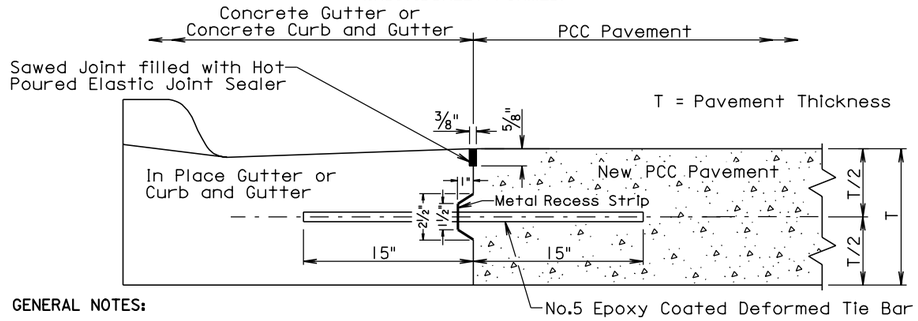
The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

September 14, 2001

Published Date: 2nd Qtr. 2011	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 2 of 2

Plotting Date: 05-MAY-2011

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INDIVIDUALLY FORMED)



GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center. The keyway shown above is a female keyway.

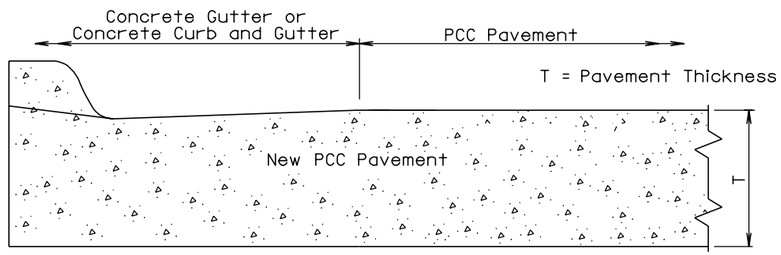
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1½" deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

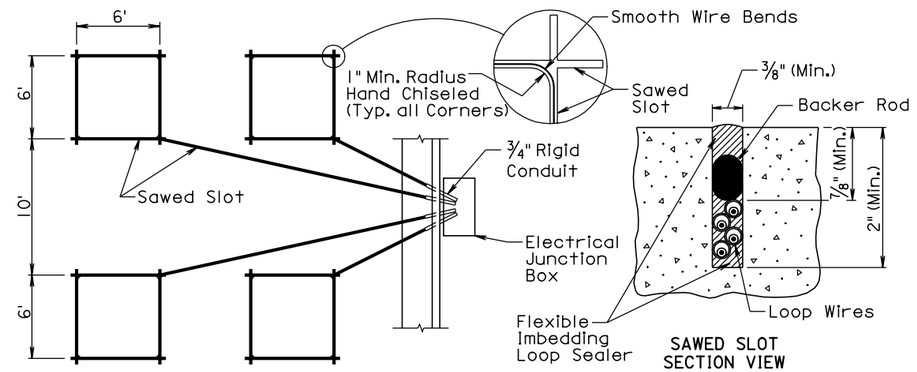
The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

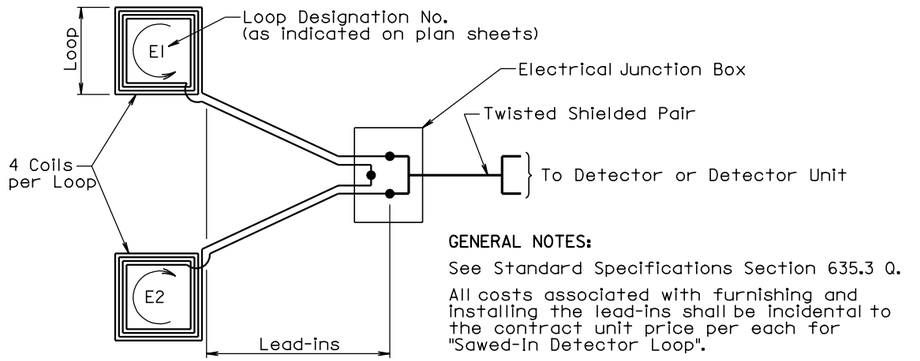
September 14, 2005

Published Date: 2nd Qtr. 2011	SDDOT	*PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER*	*PLATE NUMBER* 380.11 *Sheet 1 of 1*

Plotting Date: 05-MAY-2011



SAWED SLOT LAYOUT

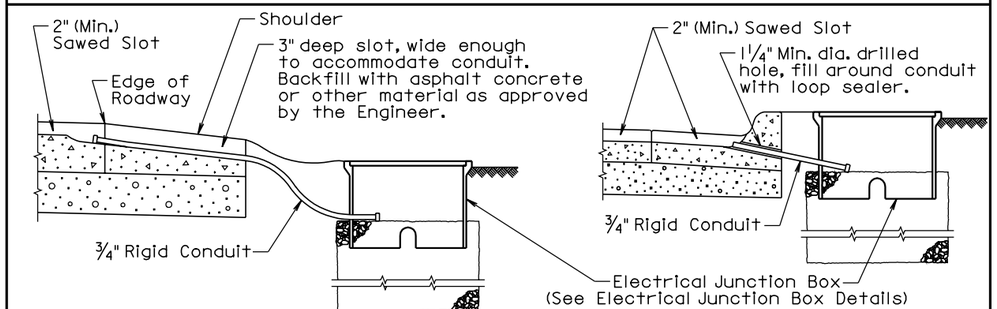


GENERAL NOTES:

See Standard Specifications Section 635.3 Q.

All costs associated with furnishing and installing the lead-ins shall be incidental to the contract unit price per each for "Sawed-In Detector Loop".

WIRING DIAGRAM



LEAD-IN THROUGH SHOULDER DETAIL

LEAD-IN THROUGH CURB AND GUTTER DETAIL

February 14, 2011

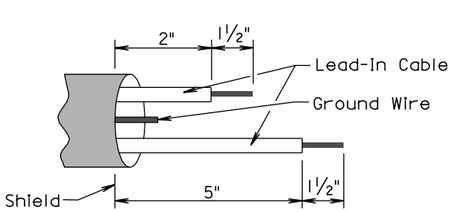
Published Date: 2nd Qtr. 2011	SDDOT	*SAWED-IN DETECTOR LOOP*	*PLATE NUMBER* 635.71 *Sheet 1 of 1*

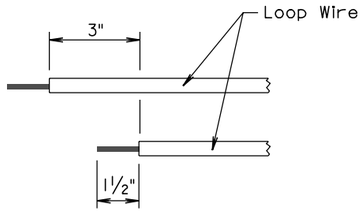
Plotting Date: 05-MAY-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-172, 029 S-172, 014 W-171, 014 E-171, 014-171, 081-171, 212-171 & 012-172	28	28

Plotting Date: 05-MAY-2011

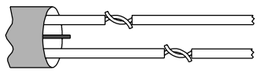
Step 1. Strip loop wires and lead-in cable.





Step 2. Connect and solder.

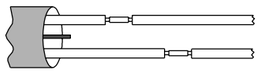
Twist bare conductors together



and solder with 60/40 (tin/lead) resin solder

OR

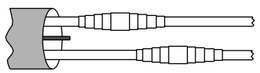
Crimp bare conductors together with an uninsulated butt connector



and solder with 60/40 (tin/lead) resin solder

Step 3. Insulate each solder joint seperately.

Electrical Tape



OR

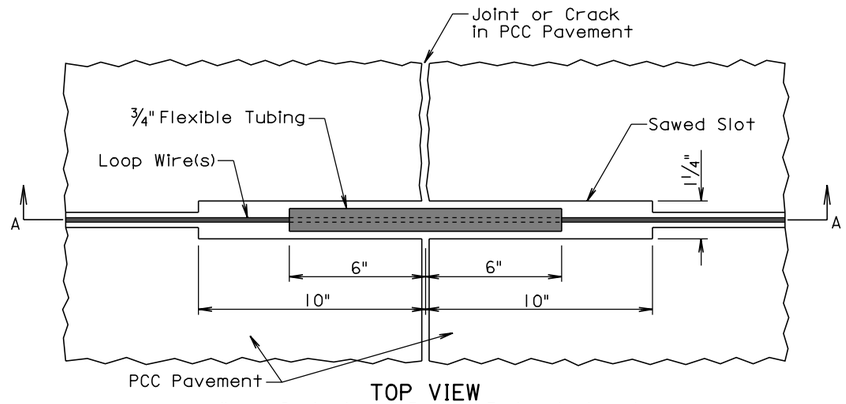
Shrink Tube

Step 4. Environmentally seal total splice against weather, moisture and abrasion. Methods for environmentally sealing the splice include heat-shrinkable tubing, special sealing kits, special forms to be filled by sealant, and tape and coating.

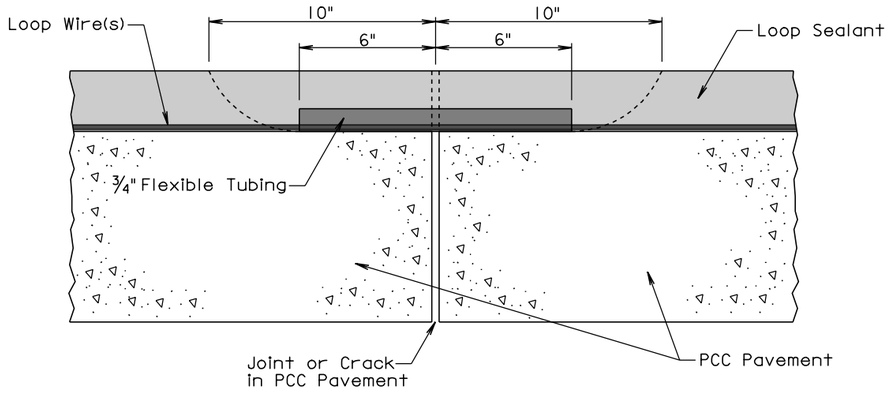
June 20, 2000

Published Date: 2nd Qtr. 2011	SDDOT	DETECTOR LOOP WIRE SPLICING	PLATE NUMBER 635.77
			Sheet 1 of 1

Plotting Date: 05-MAY-2011



TOP VIEW
(Loop Sealant and Backer Rod not shown)



SECTION A-A
(Backer Rod not shown)

GENERAL NOTE:

All costs for constructing the sawed-in detector loop protection including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sawed-In Detector Loop".

March 28, 2001

Published Date: 2nd Qtr. 2011	SDDOT	SAWED-IN DETECTOR LOOP PROTECTION AT JOINT OR CRACK IN PCC PAVEMENT	PLATE NUMBER 635.78
			Sheet 1 of 1

Plotting Date: 05-MAY-2011