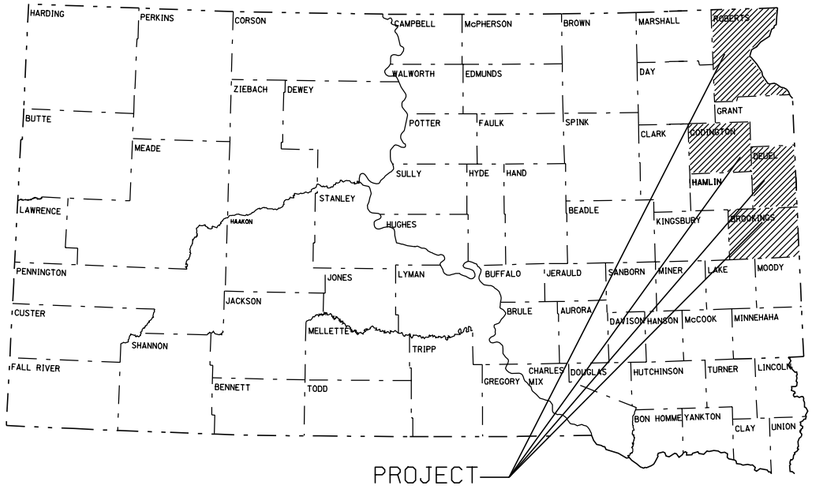
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	1	23
Plotting Date: 10-MAR-2009			

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

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

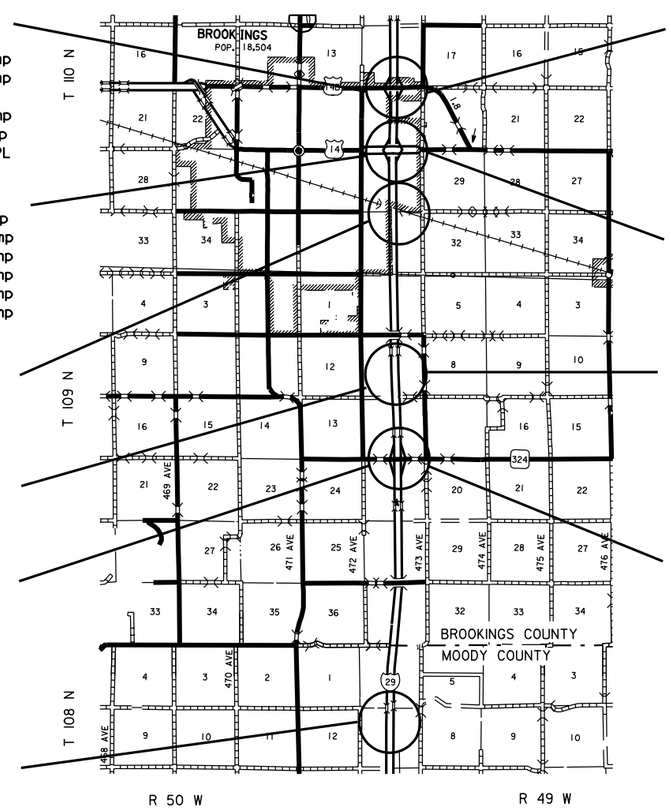
CONCRETE PAVEMENT REPAIR

PCN 116s, 116t, 116u, 116v, 116w, 116x, 116y, 116z, 117a & 117b



INDEX OF SHEETS

029 N–171 & 029 S–171
PCN 116s & 116t



REPAIR AREA
MRM 133.130 SB, DL
MRM 133.387 SB, DL
MRM 133.488 SB On-Ramp
MRM 133.592 SB On-Ramp
MRM 133.600 SB, DL
MRM 133.688 SB On-Ramp
MRM 133.710 SB On-Ramp
MRM 133.778 SB, DL & PL

REPAIR AREA
MRM 132.618 SB On-Ramp
MRM 132.693 SB On-Ramp
MRM 132.728 SB On-Ramp
MRM 132.729 SB On-Ramp
MRM 132.775 SB On-Ramp
MRM 132.782 SB On-Ramp

REPAIR AREA
MRM 131.800 SB, DL

REPAIR AREA
MRM 129.580 SB, PL
MRM 130.000 SB, DL

REPAIR AREA
MRM 128.750 SB, DL
MRM 128.800 SB, DL
MRM 128.805 SB, DL
MRM 128.850 SB, DL
MRM 128.900 SB, DL
MRM 128.913 SB, DL

REPAIR AREA
MRM 124.823 SB, DL

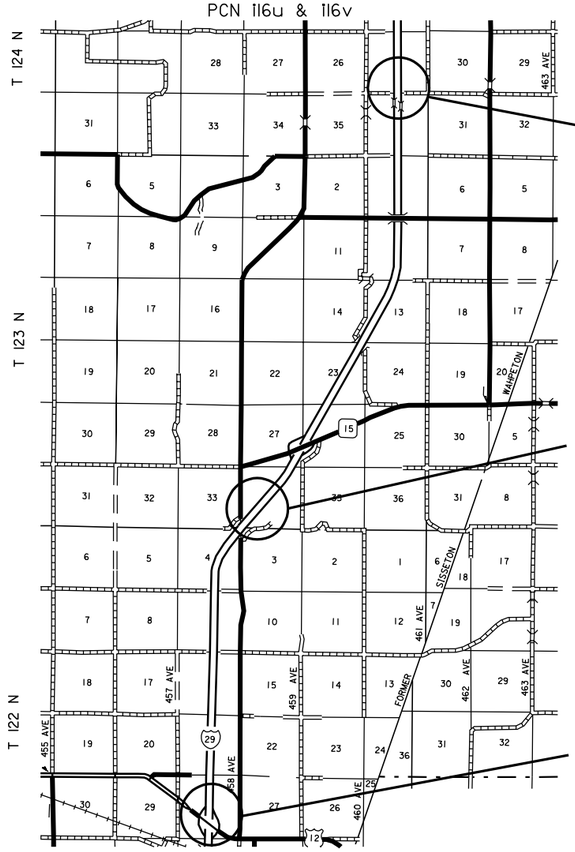
REPAIR AREA
MRM 133.730 NB Off-Ramp
MRM 133.845 NB Off-Ramp
MRM 133.847 NB Off-Ramp
MRM 133.849 NB Off-Ramp
MRM 133.873 NB On-Ramp
MRM 133.932 NB On-Ramp
MRM 134.040 NB, DL
MRM 134.088 NB, DL & PL
MRM 134.154 NB, DL

REPAIR AREA
MRM 132.421 NB Off-Ramp
MRM 132.543 NB Off-Ramp
MRM 132.830 NB Off-Ramp
MRM 132.834 NB Off-Ramp
MRM 133.011 NB On-Ramp

REPAIR AREA
MRM 129.750 NB, DL & PL
MRM 130.110 NB, DL
MRM 130.138 NB, DL
MRM 130.150 NB, DL
MRM 130.152 NB, DL
MRM 130.253 NB, DL
MRM 130.294 NB, DL

REPAIR AREA
MRM 127.528 NB Off-Ramp
MRM 127.544 NB, DL
MRM 128.290 NB, PL
MRM 128.340 NB, DL

029 N–172 & 029 S–172
PCN 116u & 116v



REPAIR AREA
MRM 219.839 SB, DL

REPAIR AREA
MRM 212.310 SB, DL

REPAIR AREA
MRM 207.290 NB On-Ramp

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

ADT (2008)	5665
ADT (2028)	9590
DHV	1305
D	100%
T DHV	8.6%
T ADT	19.0%

DESIGN DESIGNATION

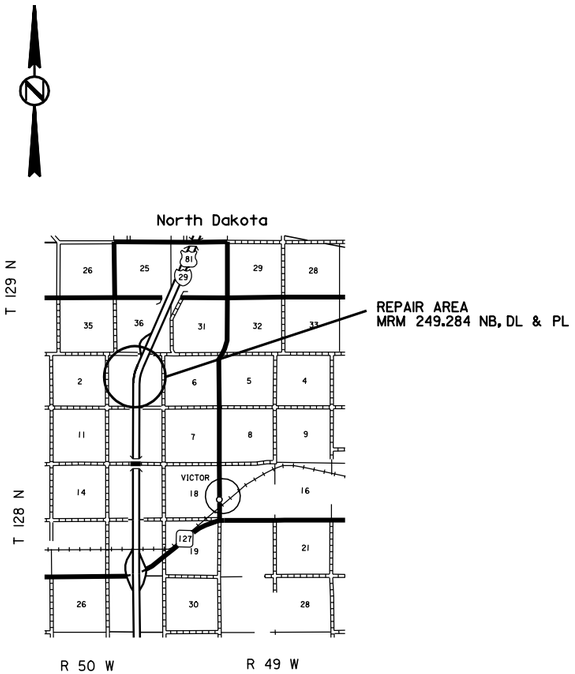
ADT (2008)	2530
ADT (2028)	4505
DHV	615
D	100%
T DHV	10.6%
T ADT	23.3%

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	2	23
Plotting Date: 27-FEB-2009			

PROJECT LAYOUT MAPS

029 N–172

PCN 116u

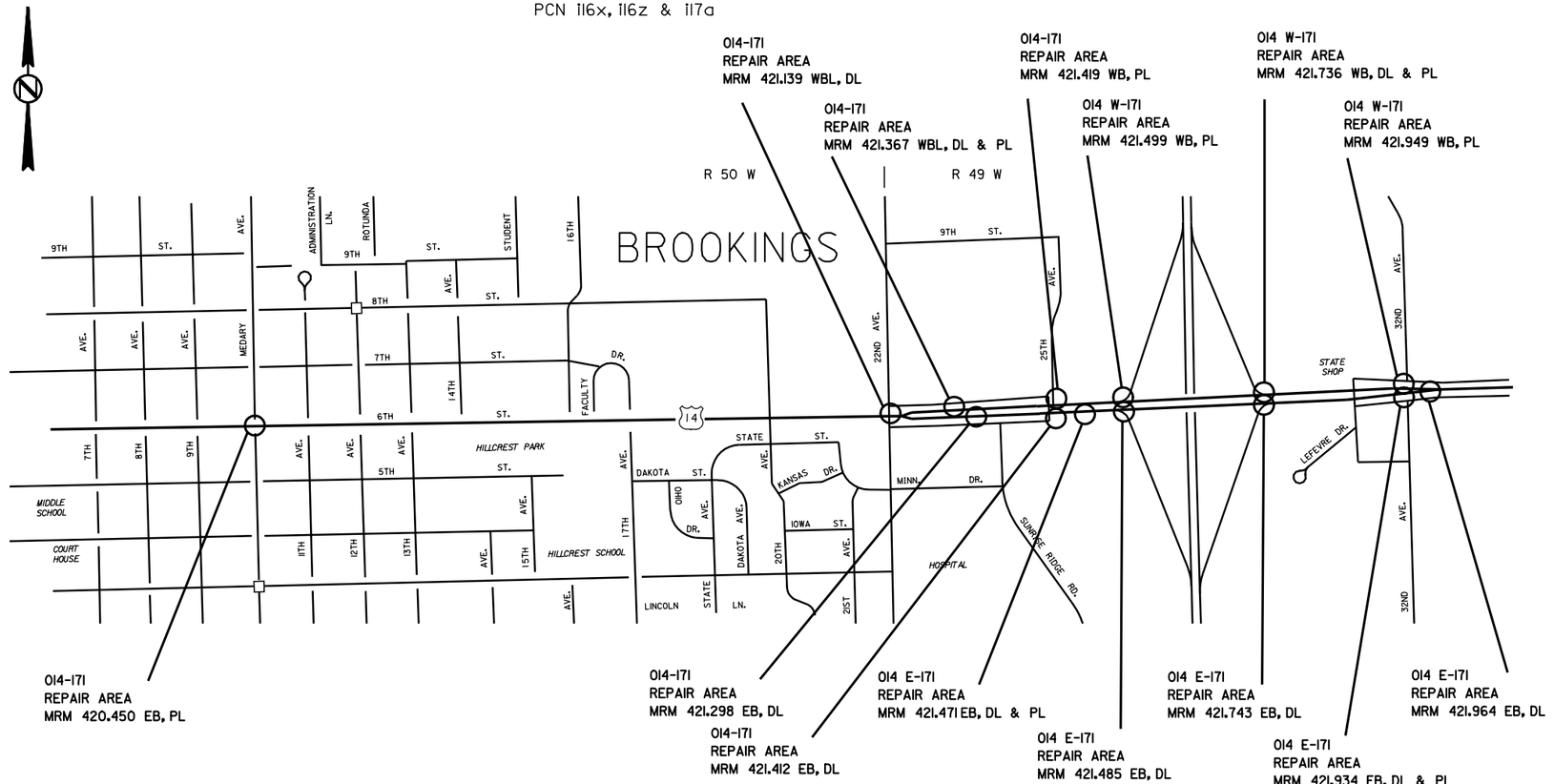


DESIGN DESIGNATION

ADT (2008)	2235
ADT (2028)	4135
DHV	565
D	100%
T DHV	15.2%
T ADT	33.3%

014–171, 014 E–171 & 014 W–171

PCN 116x, 116z & 117a



DESIGN DESIGNATION

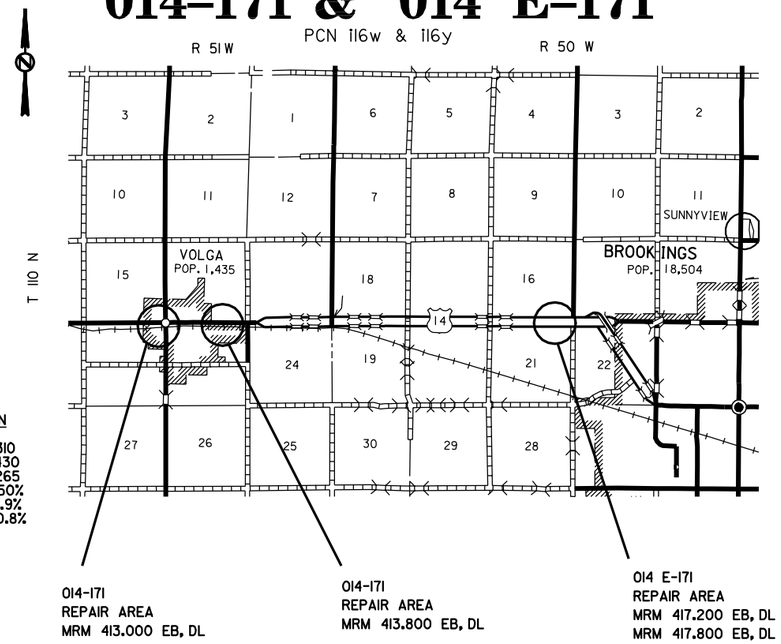
ADT (2008)	15325
ADT (2028)	17450
DHV	1835
D	50%
T DHV	2.4%
T ADT	5.3%

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	3	23
Plotting Date: 27-FEB-2009			

PROJECT LAYOUT MAPS

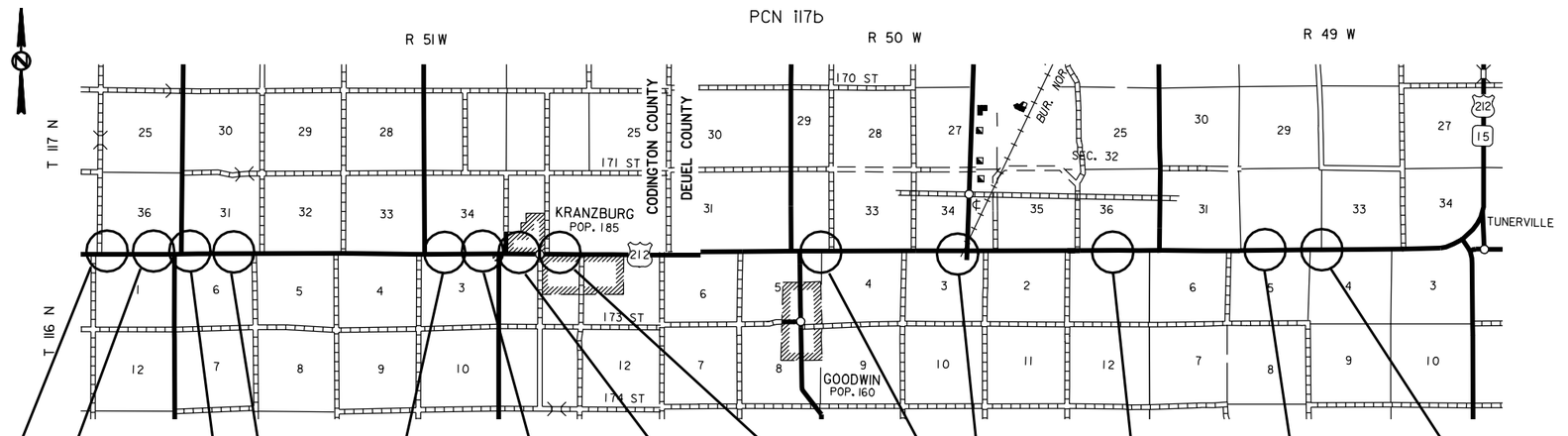
014–171 & 014 E–171



DESIGN DESIGNATION

ADT (2008)	6310
ADT (2028)	8430
DHV	1265
D	50%
T DHV	4.9%
T ADT	10.8%

212–171



DESIGN DESIGNATION

ADT (2008)	2230
ADT (2028)	3130
DHV	470
D	50%
T DHV	7.5%
T ADT	16.4%

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

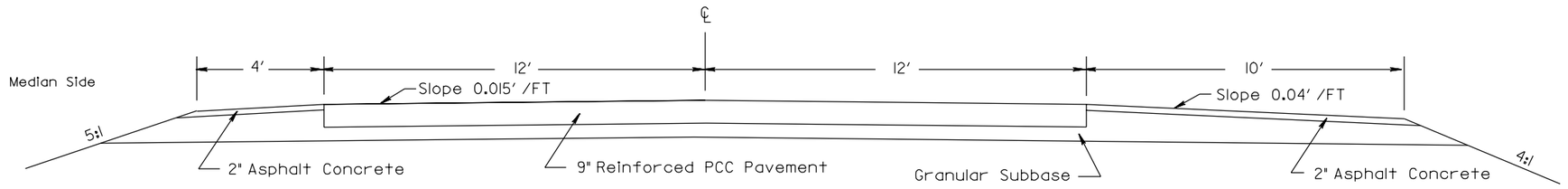
ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	029 N-171 PCN i16s	029 S-171 PCN i16t	029 N-172 PCN i16u	029 S-172 PCN i16v	014-171 PCN i16w	014-171 PCN i16x	014 E-171 PCN i16y	014 E-171 PCN i16z	014 W-171 PCN i17a	212-171 PCN i17b	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	Lump Sum	LS
110E1100	Remove Concrete Pavement	164.5	179.9	277.1	10.8	6.7	41.3	22.7	56.4	28.0	205.1	992.5	SqYd
120E0100	Unclassifiied Excavation, Digouts	0	0	75	0	0	0	0	0	0	0	75	CuYd
380E5020	Fast Track Concrete For PCC Pavement Repair	76.5	71.3	277.1	10.8	6.7	41.3	22.7	56.4	28.0	205.1	795.9	SqYd
380E5100	Continuously Reinforced PCC Pavement Repair	88.0	108.6	0	0	0	0	0	0	0	0	196.6	SqYd
380E6000	Dowel Bar	48	20	48	0	2	36	12	52	24	78	320	Each
380E6110	Insert Steel Bar In PCC Pavement	192	150	136	18	16	96	38	106	62	380	1194	Each
634E0010	Flagging	20	20	20	5	10	10	10	10	20	105	230	Hour
634E0100	Traffic Control	239	239	239	239	114	114	115	114	114	115	1642	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	Lump Sum	LS
634E0420	Type C Advanced Warning Arrow Panel	1	1	0	0	0	0	0	0	0	0	2	Each

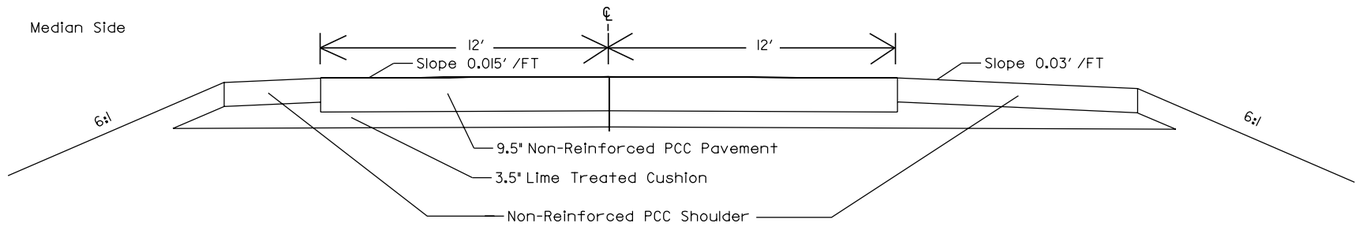
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	5	23
Plotting Date: 10-MAR-2009			

TYPICAL SECTIONS

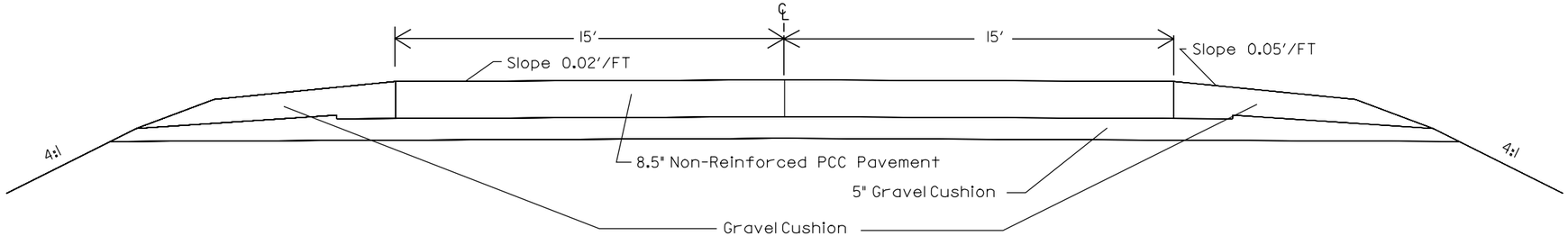
INTERSTATE I-29
CONTINUOUSLY REINFORCED PCCP
IN PLACE SURFACING SECTION
(Rural - Brookings)



INTERSTATE I-29
NON-REINFORCED PCCP
IN PLACE SURFACING SECTION
(Rural - MRM 207.290 thru 249.284)



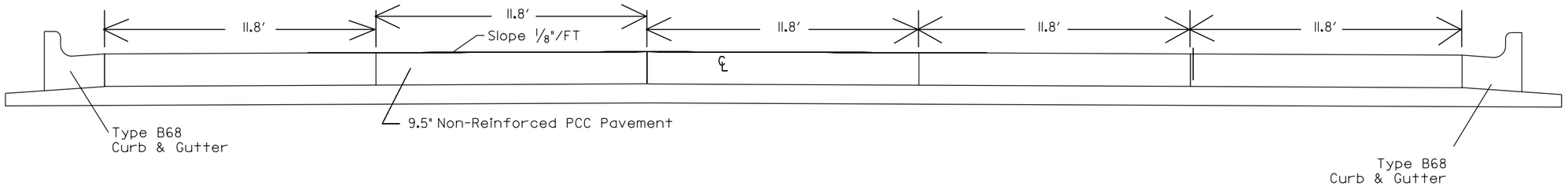
US HIGHWAY 212 MAINLINE
IN PLACE SURFACING SECTION
(Rural)



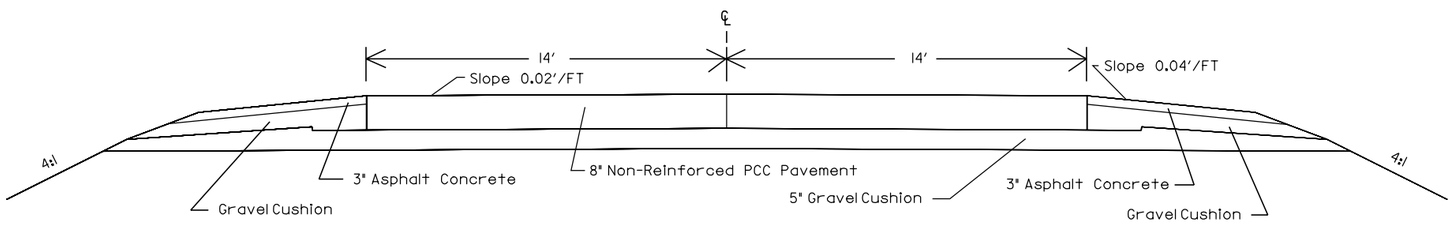
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	6	23
Plotting Date: 26-FEB-2009			

TYPICAL SECTIONS

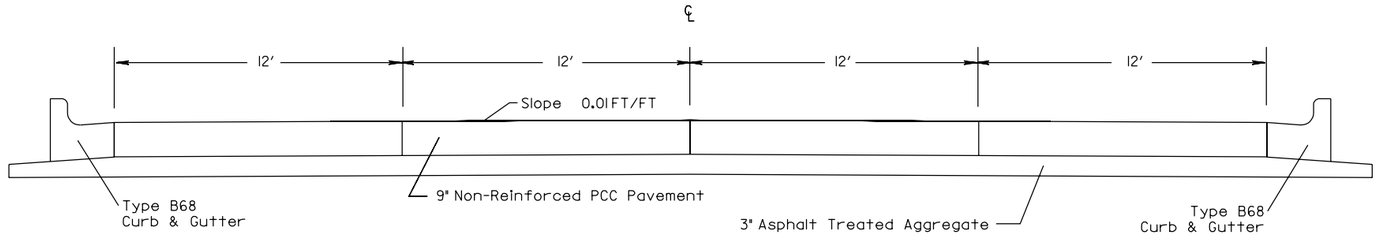
US HIGHWAY 14 MAINLINE IN PLACE SURFACING SECTION (Urban - Volga)



US HIGHWAY 14 MAINLINE IN PLACE SURFACING SECTION (Rural)



US HIGHWAY 14 MAINLINE IN PLACE SURFACING SECTION (Urban - Brookings)



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 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 plan to 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 existing 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 15. In addition, the spacing of the mainline centerline channelizing devices 450' in advance of the off-ramp shall be 25'.

MAINTENANCE OF TRAFFIC (CONTINUED)

All breakaway sign supports shall comply with FHWA NCHRP 350 crashworthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.

REMOVE CONCRETE PAVEMENT

Approximate locations of existing continuously reinforced concrete pavement to be removed are provided in the Table of PCCP Repair Areas. Prior to removal of continuously reinforced concrete pavement, the Contractor shall saw cut full depth at a distance of 22 inches inside the ends of the removal areas as directed by the Engineer. At the ends of the removal areas a partial depth saw cut (2 inch) shall be made in order to preserve a minimum of 22 inches of the longitudinal reinforcing steel for lap splices. During concrete breakout, care shall be taken not to damage the reinforcing steel to be reused. Concrete shall be chipped out to expose existing reinforcing steel.

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. Payment for this work shall be incidental to the contract unit price per square yard for REMOVE CONCRETE PAVEMENT. 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 REMOVE CONCRETE PAVEMENT.

REMOVE CONCRETE PAVEMENT (CONTINUED)

Removal of Concrete Pavement will be paid for at the contract unit price per square yard. This payment will be full compensation for full and partial depth sawing, removal of all PCC Pavement, removal of existing asphalt overlay (if applicable), 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.

EXCAVATION OF UNSTABLE MATERIAL

The existing grade underneath the repair area located on I29 at MRM 249.284 Northbound has been determined to be unstable. Following concrete removal, the Contractor shall digout and remove a minimum of 1 foot in depth of material at this location transitioning the ends of the digout to match the existing grade at a 10% slope. Additional material may be removed if the Engineer determines it to be necessary.

Removed material shall be replaced by gravel cushion meeting the requirements of Section 260 of the Standard Specifications. All costs to furnish and place gravel cushion shall be incidental to the contract unit price per cubic yard for UNCLASSIFIED EXCAVATION, DIGOUTS.

Included in the Estimate of Quantities are 75 cubic yards of Unclassified Excavation, Digouts for the necessary removal of unstable material.

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 REMOVE CONCRETE PAVEMENT.

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 and CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR, respectively.

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 Q Medium or High Volume Traffic Asphalt Concrete; 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, (CONTINUED)

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.

CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR

The concrete repair area shall be removed, replaced, and opened to traffic within 24 hours.

Reinforcing steel bars shall be placed in repair areas.

Longitudinal steel bars shall be lap spliced a minimum of 20" with the preserved existing steel. Pavement shall be poured flush in elevation with the adjacent concrete or asphalt pavement.

All existing exposed reinforcing steel and concrete faces shall be cleaned by sandblasting and compressed air to remove dirt and debris prior to placement of new concrete. All costs of cleaning the existing reinforcing steel shall be incidental to the contract unit price per square yard for CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR.

The Contractor shall underpin the existing concrete in lieu of lapping reinforcing steel at locations where the condition of the surrounding concrete/steel prevents lap splicing, as determined by the Engineer. The cost for underpinning shall be incidental to the various bid items.

CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR will be paid at the contract unit price per square yard. This payment will be full compensation for all reinforcing steel, sawing and sealing joints, underpinning, for concrete, and for equipment, labor, and incidentals necessary to satisfactorily complete the work.

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 Project 212-171 repair areas shall be controlled 24 hours a day with a flagger until they can be opened to traffic.

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

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.

STEEL BAR INSTALLATION (CONTINUED)

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.

WASTE DISPOSAL SITE, (CONTINUED)

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.

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 SHPO clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. The Contractor shall arrange and pay for this survey. In lieu of a cultural resources survey, the Contractor could request a literature search on the site and 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. Jim Donohue, State Archaeological Research Center at 605-394-1937 shall be contacted for a literature search.

If borrow material is furnished from within the current geographical reservation boundaries or historic boundaries of the Lake Traverse, Yankton, or Flandreau-Santee reservations, the Contractor shall obtain THPO (Tribal Historical Preservation Office) clearance from the Tribal Cultural Resources Officer. This requirement is in addition to the SHPO clearance. If no Tribal contact exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO and THPO responses, the Contractor should submit a cultural resources survey report or the results of the literature search along with a legal description of the site, a topographical map with the site clearly marked, and evidence of prior site disturbance to Terrence G. Keller, DOT Environmental Supervisor, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3721). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO approval. The Contractor is responsible for obtaining all required permits and clearances for the borrow and/or waste disposal site(s) prior to commencing construction activities at the borrow and/or waste disposal site(s). The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

PCCP Repair Areas

029 N-171

PCN i16s

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
*127.528	4	8	3.6	NB Off-Ramp 127		6	6	
127.544	6	6	4.0	NB-DL				
128.290	6	12	8.0	NB-PL				
128.340	6	12	8.0	NB-DL				
129.750	6	12	8.0	NB-DL&PL				
130.110	6	6	4.0	NB-DL				
130.138	6	12	8.0	NB-DL				
130.150	6	6	4.0	NB-DL				
130.152	6	6	4.0	NB-DL				
130.253	15	6	10.0	NB-DL				
130.294	6	12	8.0	NB-DL				
*132.421	6	12	8.0	NB On-Ramp 132	2	14		12
*132.543	4	10	4.4	NB Off-Ramp 132	1	5	8	
*132.830	6	18	12.0	NB Off-Ramp 132			36	
*132.834	4	18	8.0	NB Off-Ramp 132		12		18
*133.011	4	4	1.8	NB On-Ramp 132		4	2	
*133.730	4	18	8.0	NB Off-Ramp 133		12	18	
*133.845	4	4	1.8	NB Off-Ramp 133		2	2	
*133.847	6	18	12.0	NB Off-Ramp 133		24		18
*133.849	8	8	7.1	NB Off-Ramp 133		6	6	
*133.873	4	4	1.8	NB On-Ramp 133		3	3	
*133.932	6	12	8.0	NB On-Ramp 133		8	12	
134.040	4	6	2.7	NB-DL				
134.088	6	24	16.0	NB-DL&PL				
134.154	6	5	3.3	NB-DL				
Total			**164.5**		**3**	**96**	**93**	**48**

029 S-171

PCN i16t

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
124.823	8	12	10.7	SB-DL				
128.750	6	6	4.0	SB-DL				
128.800	6	6	4.0	SB-DL				
128.805	6	6	4.0	SB-DL				
128.850	6	6	4.0	SB-DL				
128.900	6	6	4.0	SB-DL				
128.913	4	6	2.7	SB-DL				
129.580	10	12	13.3	SB-PL				
130.000	6	6	4.0	SB-DL				
131.800	6	6	4.0	SB-DL				
*132.618	4	4	1.8	SB On-Ramp 132	1	2	2	
*132.693	8	18	16.0	SB On-Ramp 132			36	
*132.728	12	18	24.0	SB On-Ramp 132			36	
*132.729	4	6	2.7	SB On-Ramp 132	2	4	6	
*132.775	4	8	3.6	SB On-Ramp 132		6	6	
*132.782	6	6	4.0	SB On-Ramp 132	2	4		2
133.130	4	4	1.8	SB-DL				
133.387	8	12	10.7	SB-DL				
*133.488	6	4	2.7	SB On-Ramp 133	2	4		2
*133.592	6	18	12.0	SB On-Ramp 133	2	24		14
133.600	6	6	4.0	SB-DL				
*133.688	6	4	2.7	SB On-Ramp 133	2	4		2
*133.710	4	4	1.8	SB On-Ramp 133	1	2	2	
133.778	20	12	26.7	SB-PL				
133.778	8	12	10.7	SB-DL				
Total			**179.9**		**12**	**50**	**88**	**20**

029 N-172

PCN i16u

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
*207.290	10	10	11.1	NB On-Ramp 207		8	8	
*249.284	63	38	266.0	NB-DL&PL&Shoulders	72		48	48
Total			**277.1**		**72**	**8**	**56**	**48**

The above repairs are in a continuously reinforced concrete pavement section, unless otherwise indicated.
* Nonreinforced PCCP

029 S-172

PCN i16v

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
*212.310	6	12	8.0	SB-DL	3		10	
*219.839	5	5	2.8	SB-DL	1	2	2	
Total			**10.8**		**4**	**2**	**12**	**0**

The above repairs are in a continuously reinforced concrete pavement section, unless otherwise indicated.
* Nonreinforced PCCP

LEGEND: NB (North Bound), SB (South Bound)
DL (Driving Lane), PL (Passing 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 INSTALL STEEL BAR IN PCC PAVEMENT.

PCCP Repair Areas

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

PCN i16x, i16z & i17a

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
014-171 PCN il6x								
420.450	16	3	5.3	EB-PL	2	12		
421.298	6	12	8.0	EB-DL	4	12		12
421.412	6	12	8.0	EB-DL	4	12		12
421.419	6	12	8.0	WB-PL	4	12		12
421.367	6	6	4.0	WB-DL&PL	2	4	6	
421.139	6	12	8.0	WB-DL	2	8	12	
Totals			**41.3**		**18**	**60**	**18**	**36**
014 E-171 PCN il6z								
421.471	8	24	21.3	EB-DL&PL	4	24		24
421.485	6	12	8.0	EB-DL	4	12		12
421.488	6	6	4.0	EB-DL	2	4	6	
421.743	6	12	8.0	EB-DL	2	8	12	
421.934	8	8	7.1	EB-DL&PL	4	8		4
421.964	6	12	8.0	EB-DL	4	12		12
Totals			**56.4**		**20**	**68**	**18**	**52**
014 W-171 PCN il7a								
421.949	6	6	4.0	WB-PL	2	4	6	
421.736	6	24	16.0	WB-DL&PL	4	24		24
421.499	6	12	8.0	WB-PL	2	8	12	
Totals			**28.0**		**8**	**36**	**18**	**24**

014-171 & 014 E-171/Volga

PCN i16w & i16y

MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
014-171 PCN il6w								
413.000	6	4	2.7	EB, DL	2	2		2
413.800	6	6	4.0	EB, DL	2	4	6	
Totals			**6.7**		**4**	**6**	**6**	**2**
014 E-171 PCN il6y								
417.200	6	6	4.0	EB, DL	2	4	6	
417.800	6	28	18.7	EB, DL	2	12	12	12
Totals			**22.7**		**4**	**16**	**18**	**12**

212-171

PCN i17b

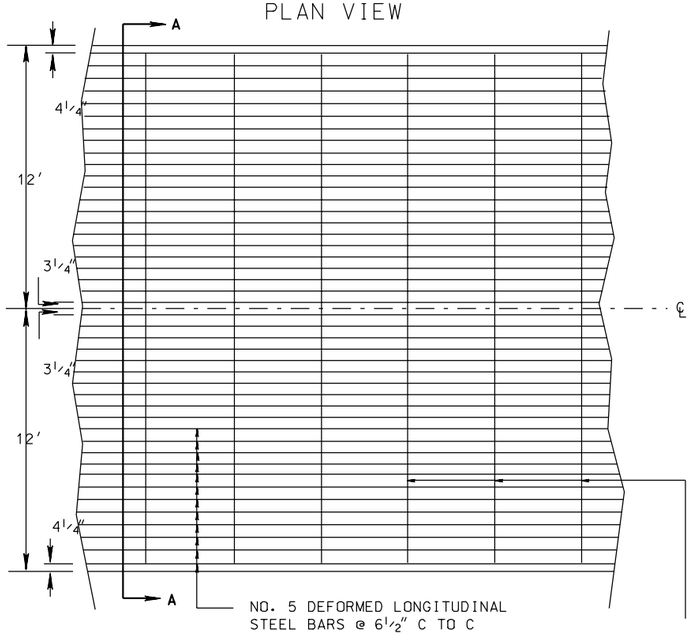
MRM	Dimensions		SQYD	Description	Bars			Dowel Bar
	L (ft)	W (ft)			#5	#9	1 1/4"	(EACH)
380.590	4	4	1.8	EB	1	2	2	
380.720	5	4	2.2	WB		5	3	
381.138	6	30	20.0	WB		16	3	6
381.474	6	6	4.0	EB		6	3	
381.866	6	14	9.3	WB	2	8	12	
382.272	6	6	4.0	EB		6	5	
382.910	4	4	1.8	EB		4	3	
384.960	5	6	3.3	EB		10		4
385.113	6	6	4.0	EB		5	3	
385.116	6	6	4.0	EB		5	3	
385.119	6	6	4.0	EB		5	3	
385.122	6	6	4.0	EB		5	3	
385.125	6	6	4.0	EB	2	6		3
385.500	100	6	66.7	WB		66	6	24
386.078	5	4	2.2	EB		4	4	
386.110	4	4	1.8	EB		4	3	
386.900	6	6	4.0	WB		8	3	
386.905	6	6	4.0	WB		8	3	
389.590	4	4	1.8	WB		8		3
389.591	4	4	1.8	WB		8		3
389.820	5	5	2.8	EB		8		4
391.990	10	14	15.6	EB	2	16		12
393.824	5	5	2.8	EB		8		4
393.827	4	4	1.8	EB		4	2	
393.830	5	10	5.6	EB		6	6	
393.840	5	5	2.8	EB		8		4
393.843	5	5	2.8	EB		8		4
394.180	4	8	3.6	WB		5	4	
395.900	6	6	4.0	WB		8	3	
395.967	4	4	1.8	EB		4	4	
396.343	6	8	5.3	EB	2	3	5	
396.524	7	6	4.7	EB		10		4
396.526	5	5	2.8	EB		8		3
Totals			**205.1**		**9**	**285**	**86**	**78**

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

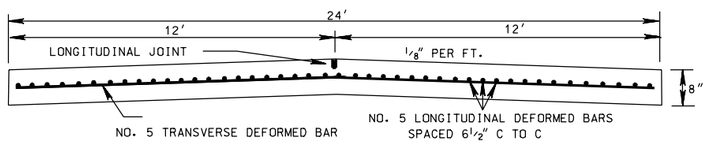
Note: Number of steel bars is for information only. Actual quantity to be determined on construction. Quantity of steel bars shall be paid for at the contract unit price per each for INSTALL STEEL BAR IN PCC PAVEMENT.

CONTINUOUS REINFORCED P.C.C.P. SECTIONS

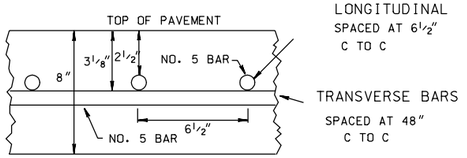
PLAN VIEW



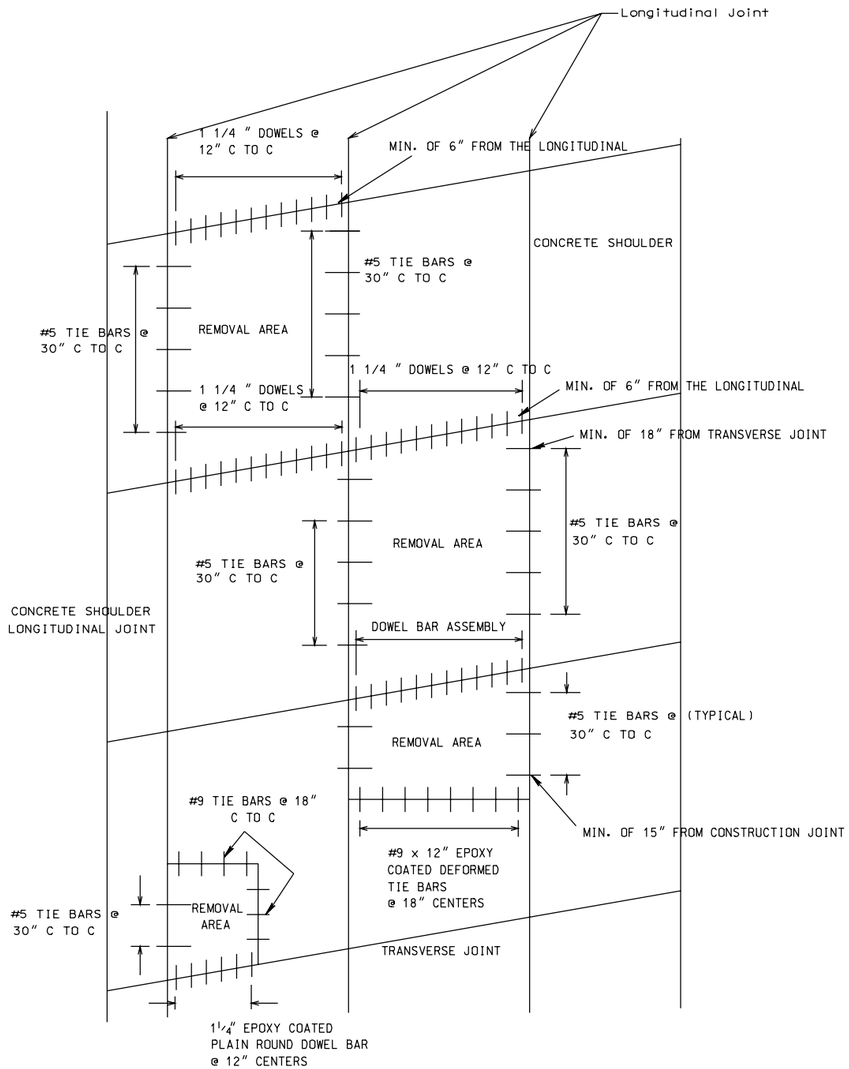
SECTION A-A



TRANSVERSE SECTION



FULL DEPTH CONCRETE PAVEMENT REPAIR



PLOT SCALE - 19370.135763:1.000000

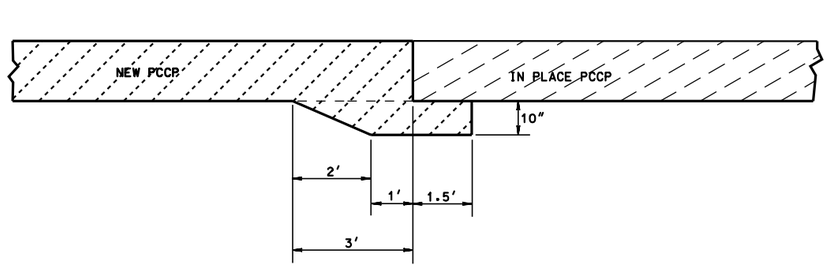
PLOTTED FROM - TRBRINT12

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	029 N-171, 029 S-171, 029 N-172, 029 S-172, 014-171, 014 E-171, 014 W-171 & 212-171	14	23
Plotting Date: 26-FEB-2009			

PLOT NAME - UNDERPINNING

FILE - H:\PLANS\2008 CONCRETE REPAIR\UNDERPINNING.DGN

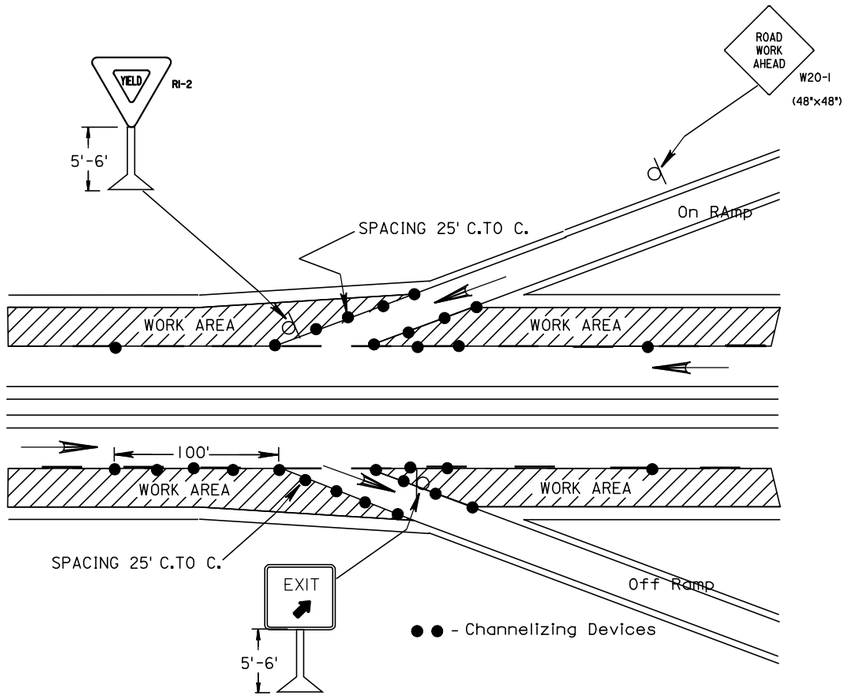
UNDERPINNING DETAIL



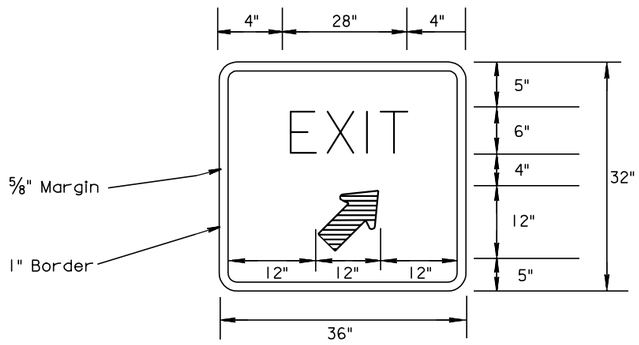
GUIDES FOR TRAFFIC CONTROL DEVICES

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.

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

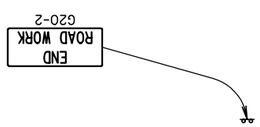
For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

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.

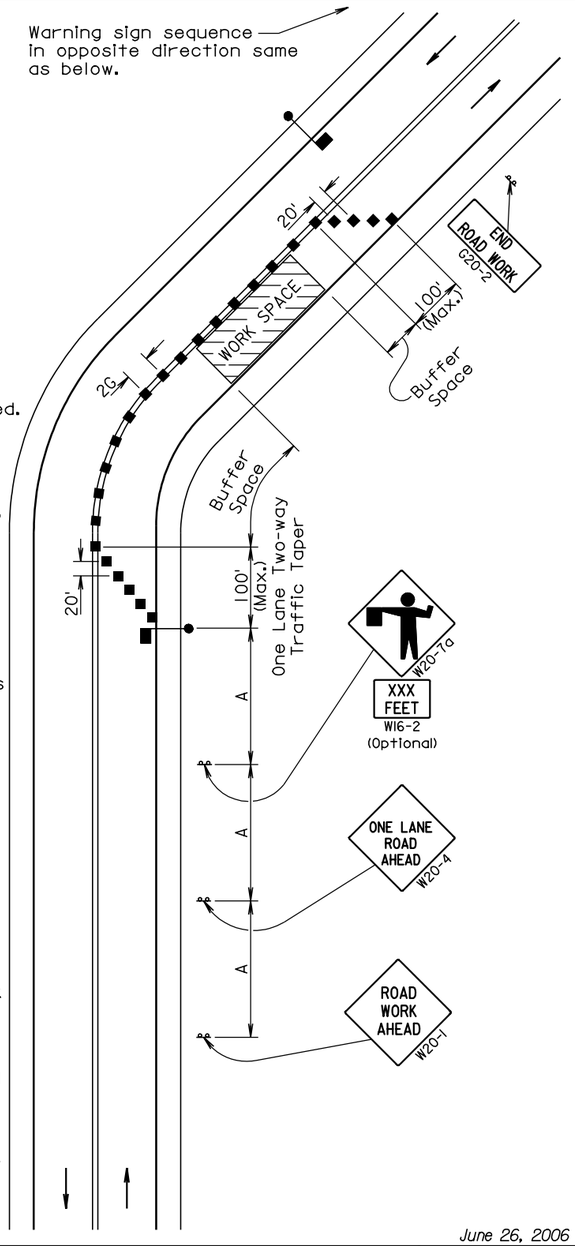
The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums or type II barricades along the centerline.



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 shall be a sufficient length so that the channelizing devices are visible to approaching traffic.



June 26, 2006

Published Date: 1st Qtr. 2009

SDDOT

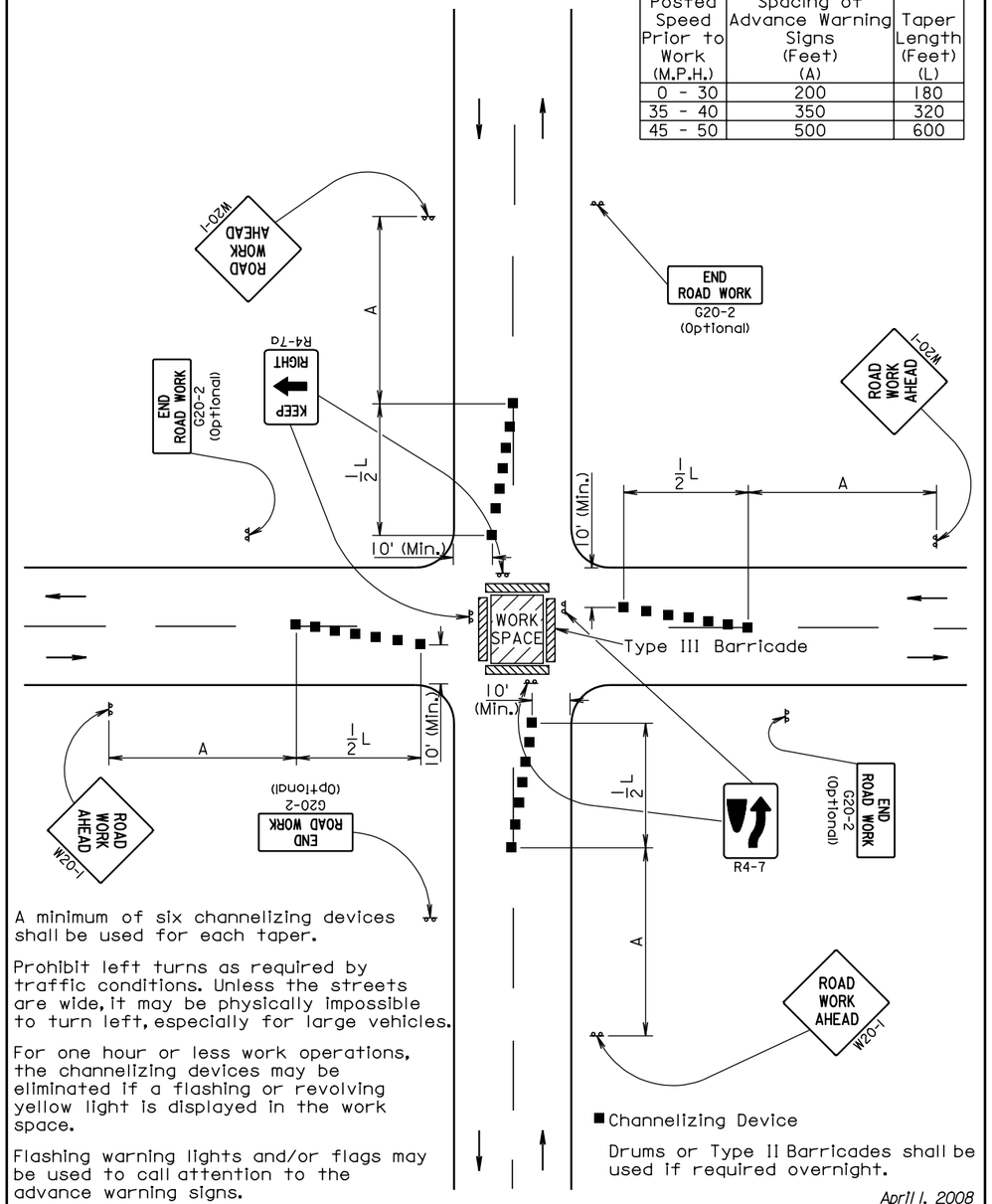
GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER 634.23

Sheet 1 of 1

Plotting Date: 26-FEB-2009

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



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

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.

For one hour or less work operations, the channelizing devices may be eliminated if a flashing or revolving 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.

■ Channelizing Device

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

April 1, 2008

Published Date: 1st Qtr. 2009

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
CLOSURE IN CENTER OF INTERSECTION

PLATE NUMBER 634.34

Sheet 1 of 1

Plotting Date: 26-FEB-2009

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

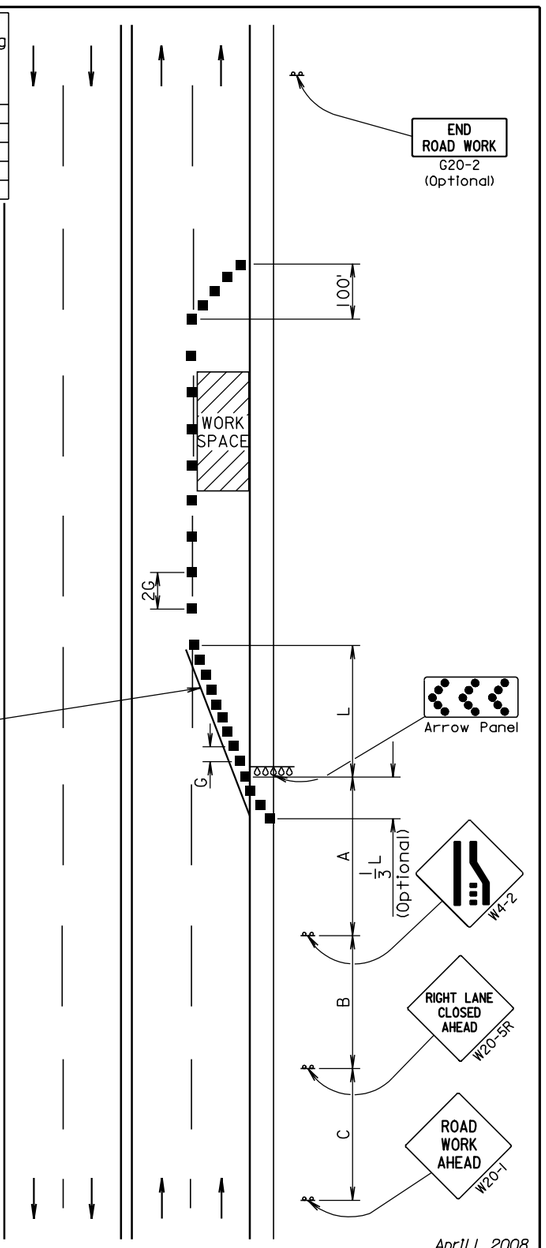
■ Channelizing Device

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

42" cones may be used along centerline

Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.

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



April 1, 2008

Published Date: 1st Qtr. 2009	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			Sheet 1 of 1

Plotting Date: 26-FEB-2009

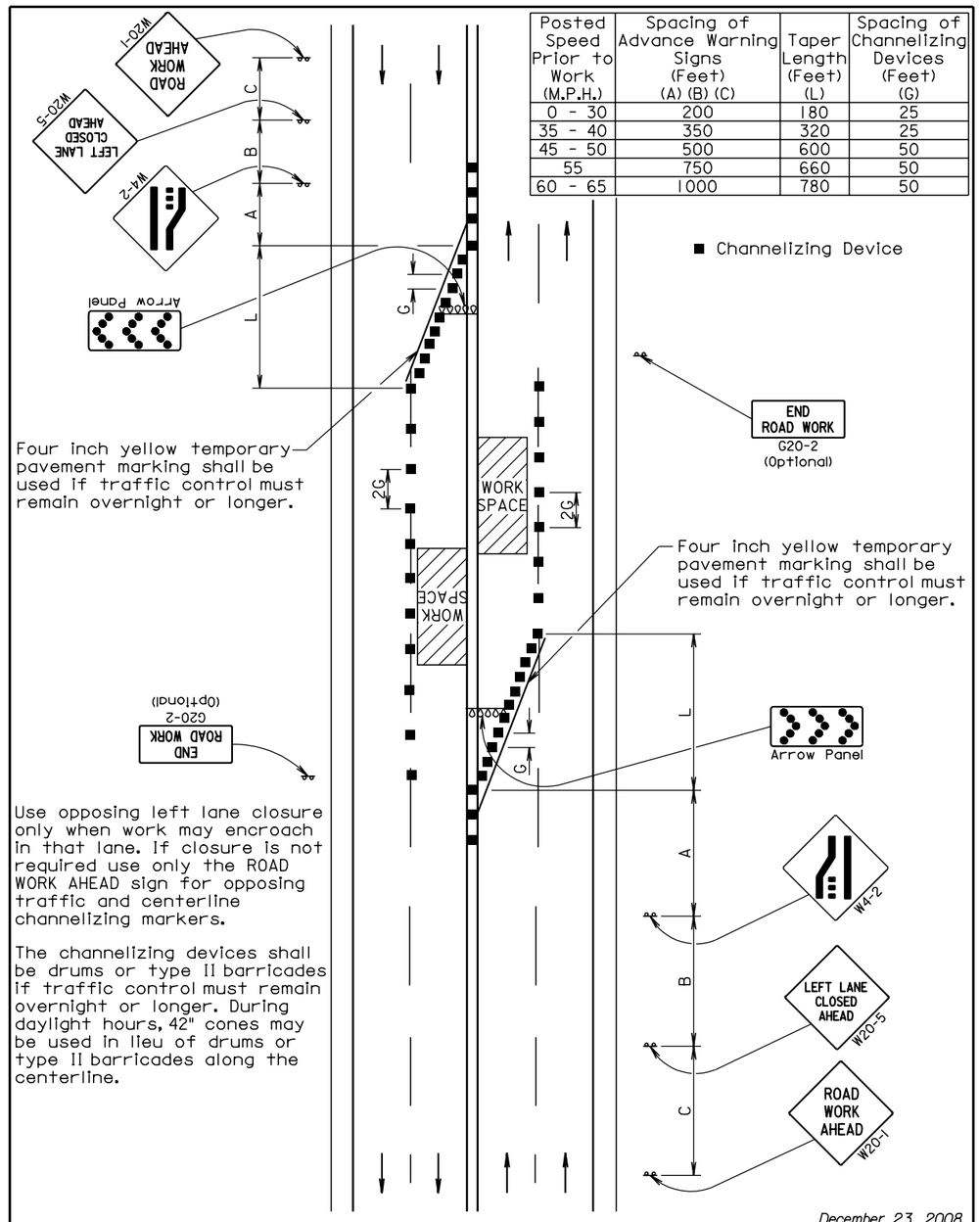
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

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

Use opposing left lane closure only when work may encroach in that lane. If closure is not required use only the ROAD WORK AHEAD sign for opposing traffic and centerline channelizing markers.

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums or type II barricades along the centerline.

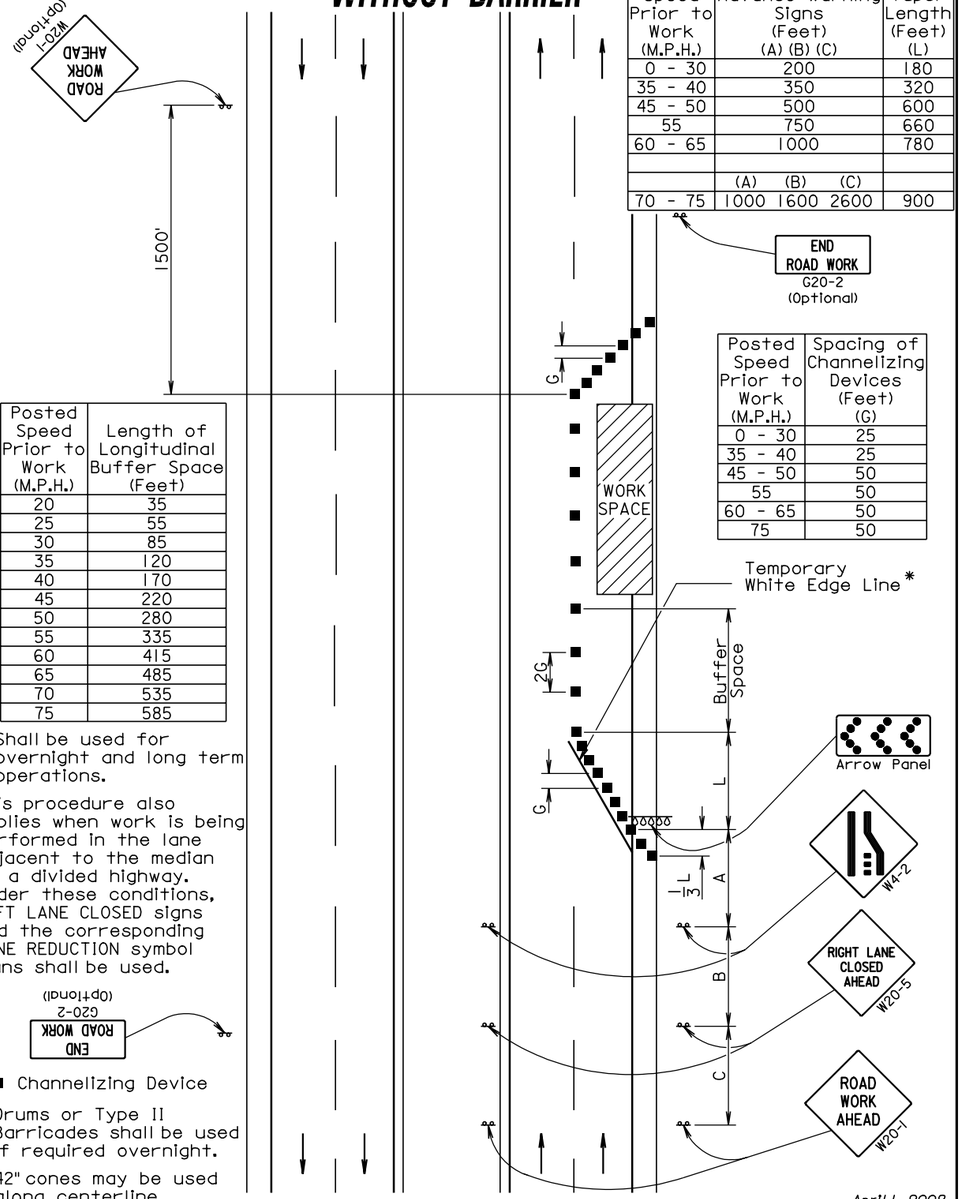


December 23, 2008

Published Date: 1st Qtr. 2009	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, LEFT LANE CLOSED	PLATE NUMBER 634.48
			Sheet 1 of 1

Plotting Date: 26-FEB-2009

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: 1st Qtr. 2009	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64 Sheet 1 of 1

Plotting Date: 26-FEB-2009

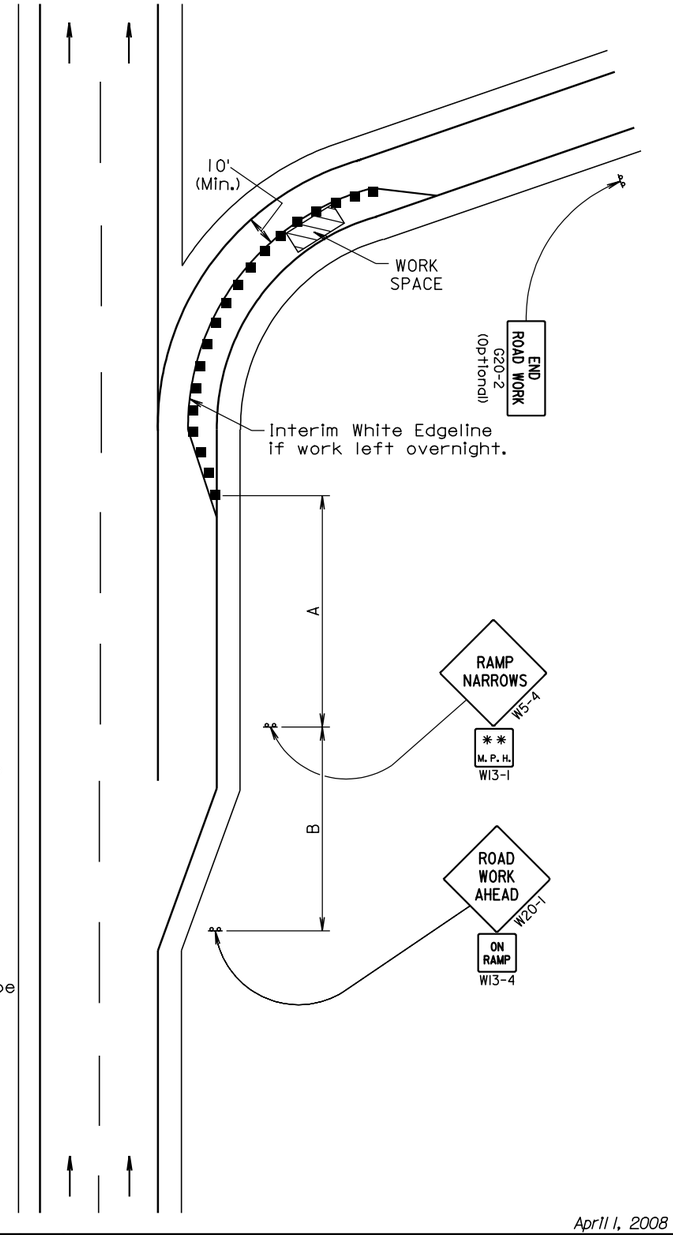
■ Channelizing Device

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

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

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

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



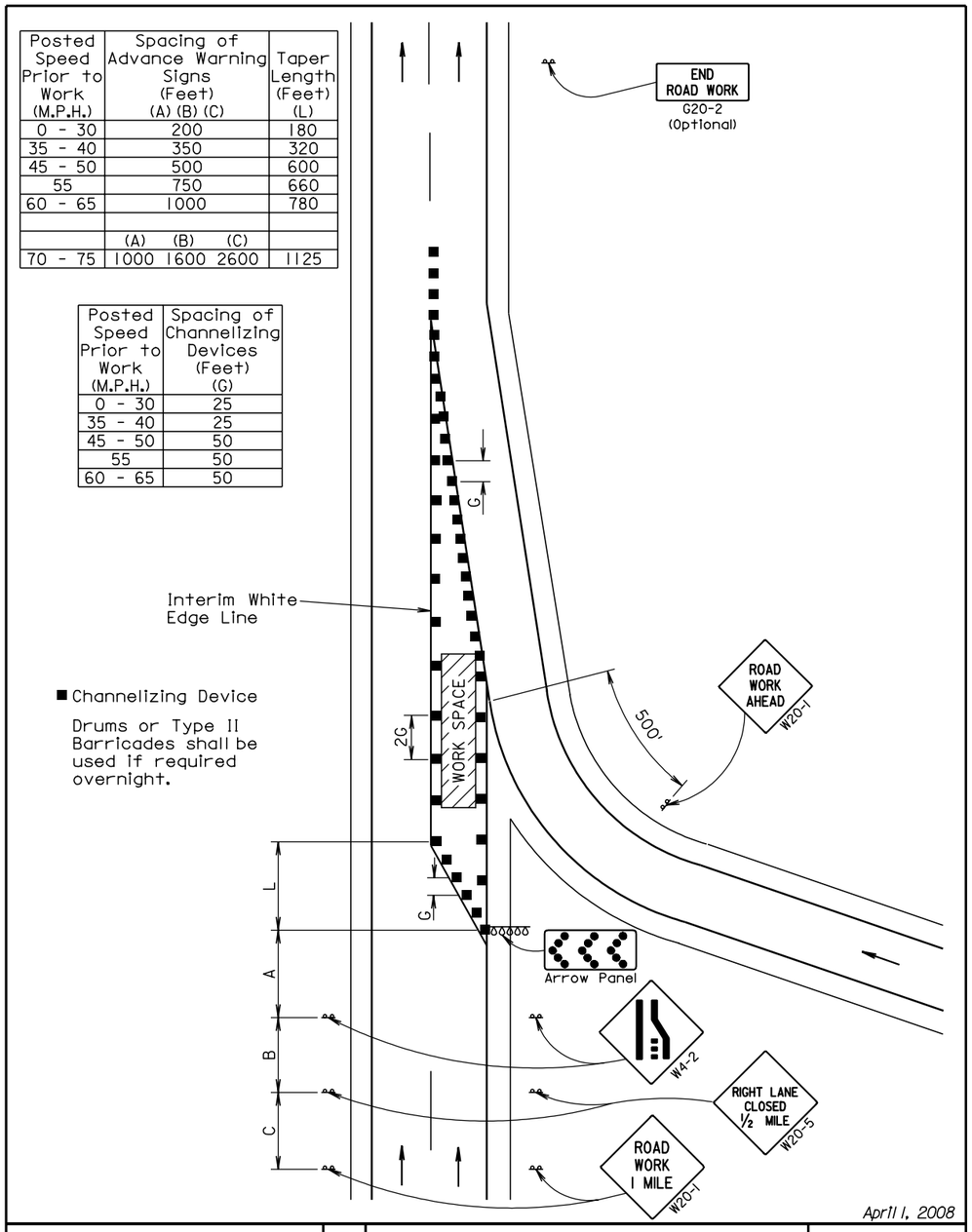
April 1, 2008

Published Date: 1st Qtr. 2009	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69 Sheet 1 of 1

Plotting Date: 26-FEB-2009

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



April 1, 2008

Published Date: 1st Qtr. 2009

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK IN VICINITY OF ENTRANCE RAMP

PLATE NUMBER
634.70

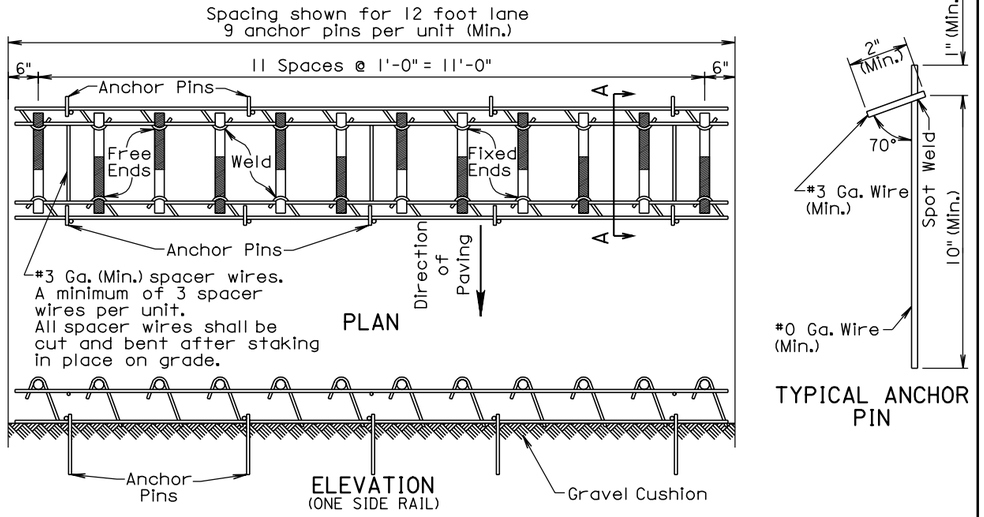
Sheet 1 of 1

Plotting Date: 26-FEB-2009

ITEMIZED LIST FOR TRAFFIC CONTROL

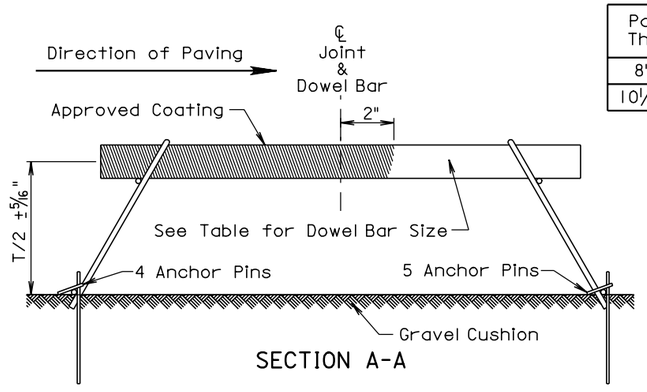
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2A	36" x 18"	END ROAD WORK	4	17	68
R1-2	48" x 48"	YIELD	1	34	34
R4-7	24" x 30"	KEEP RIGHT (SYMBOL)	1	18	18
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	4	34	136
W5-4	48" x 48"	RAMP NARROWS	1	34	34
W13-1	24" x 24"	ADVISORY SPEED 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	2	34	68
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	**1642**

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.

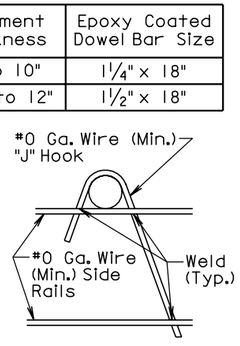


TYPICAL ANCHOR PIN

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.

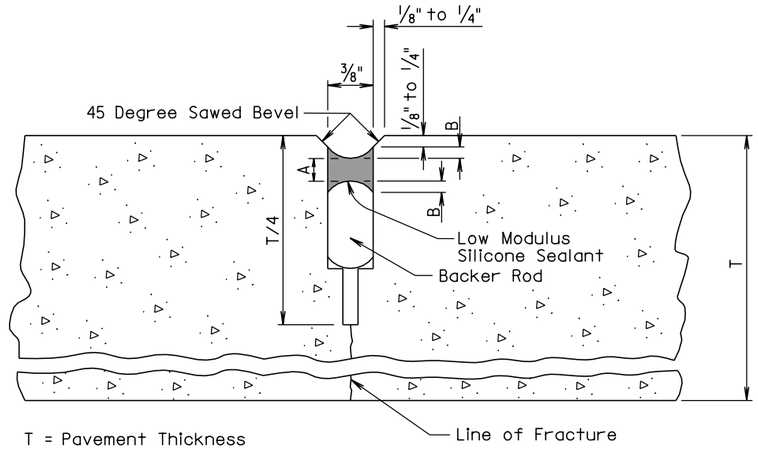
The transverse contraction joints shall be sawed perpendicular to the centerline of the roadway and the dowel bars shall be centered on the sawed joint ± 1 inch.

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: 1st Qtr. 2009	SDDOT	**PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS**	PLATE NUMBER 380.01
			Sheet 1 of 1

Plotting Date: 26-FEB-2009



T = Pavement Thickness

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:

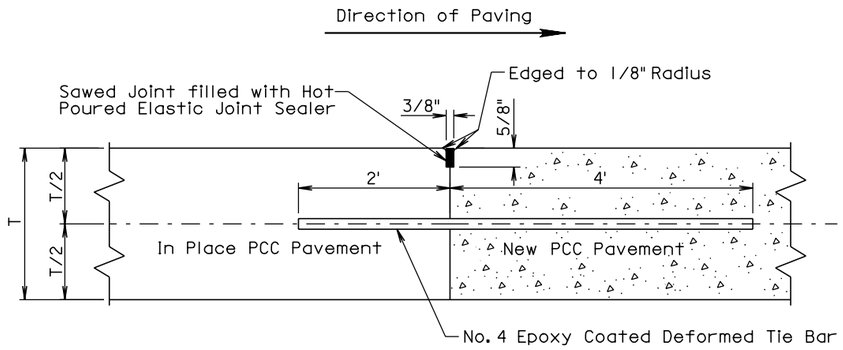
The first saw cut to control cracking shall be a minimum of 1/4 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the low modulus silicone joint sealant will be necessary.

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. 2009	SDDOT	**PCC PAVEMENT BEVELED TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY**	PLATE NUMBER 380.04
			Sheet 1 of 1

Plotting Date: 26-FEB-2009



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.

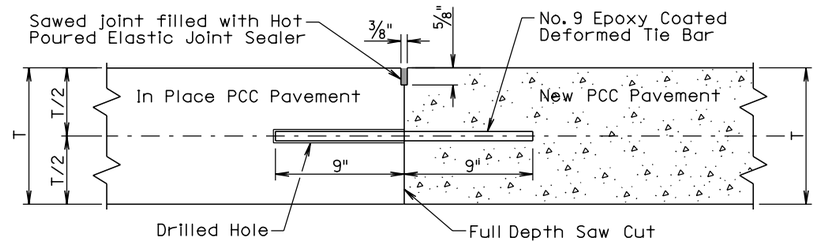
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 1st Qtr. 2009	SDDOT	**PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT**	PLATE NUMBER 380.05 Sheet 1 of 1

Plotting Date: 26-FEB-2009

TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS



T = In Place PCC Pavement and New PCC Pavement Thickness

GENERAL NOTES:

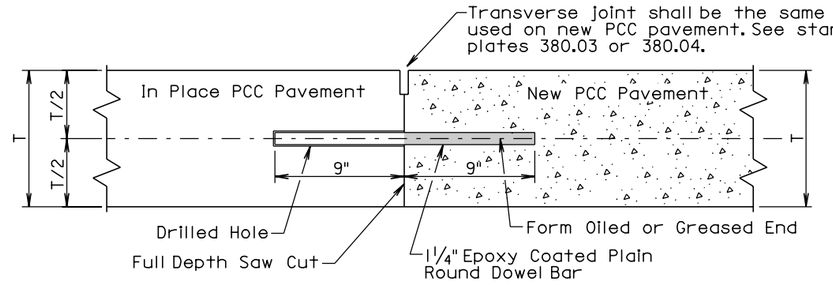
This detail shall be used when the transverse joint is less than 15 feet from the existing transverse contraction joint.

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.

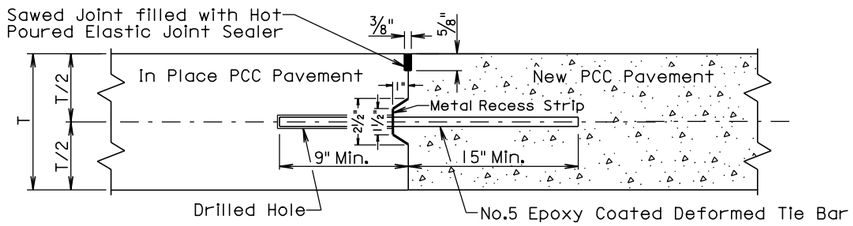
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

September 6, 2006

Published Date: 1st Qtr. 2009	SDDOT	**PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS**	PLATE NUMBER 380.06 Sheet 1 of 1

Plotting Date: 26-FEB-2009

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.

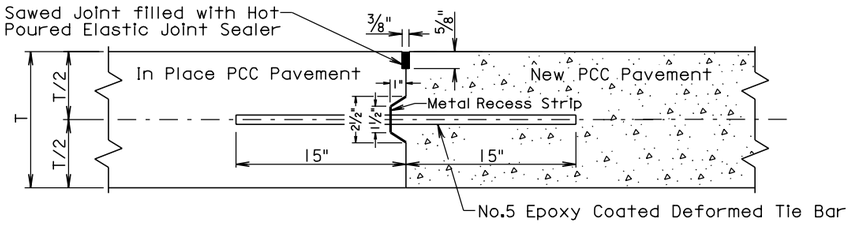
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

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.

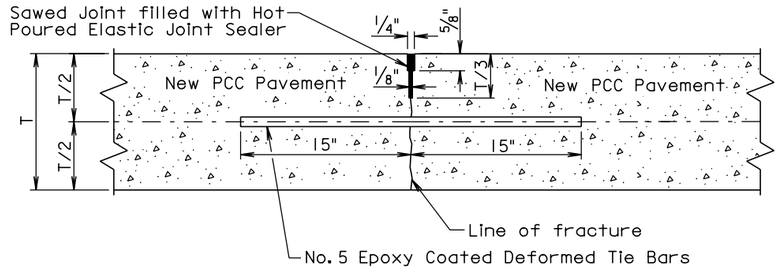
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 1st Qtr. 2009	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 1 of 2

Plotting Date: 26-FEB-2009

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.

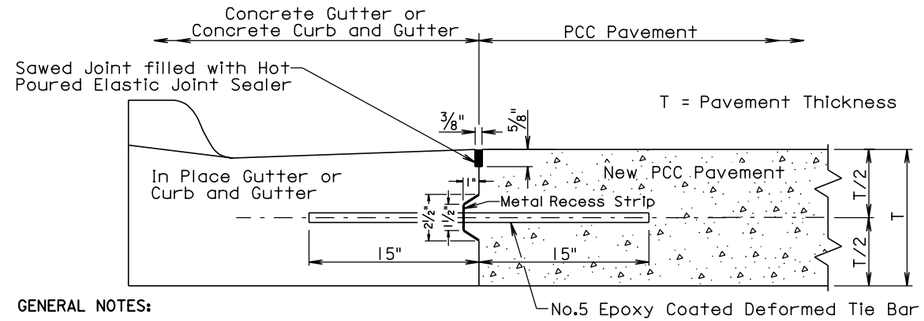
The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

September 14, 2001

Published Date: 1st Qtr. 2009	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 2 of 2

Plotting Date: 26-FEB-2009

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.

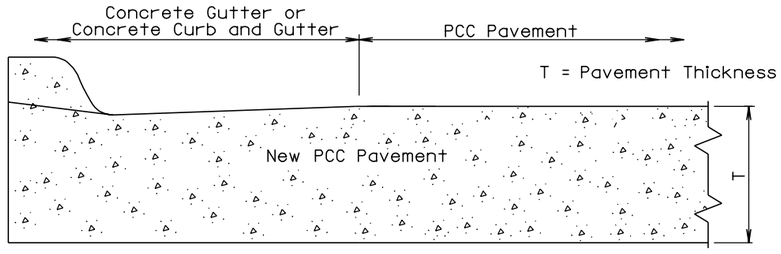
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

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: 1st Qtr. 2009	SDDOT	*PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER*	*PLATE NUMBER* 380.11 *Sheet 1 of 1*

Plotting Date: 26-FEB-2009