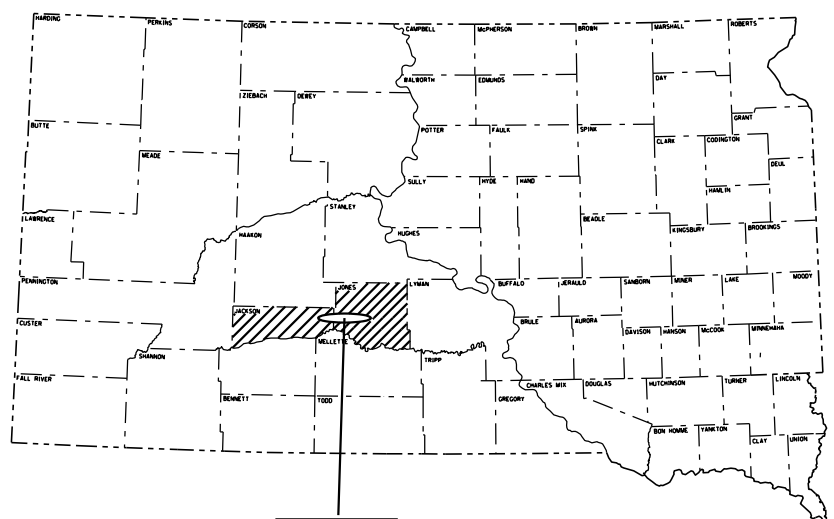


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-391 & 090W-391	1	14

Plotting Date: 02/13/2013



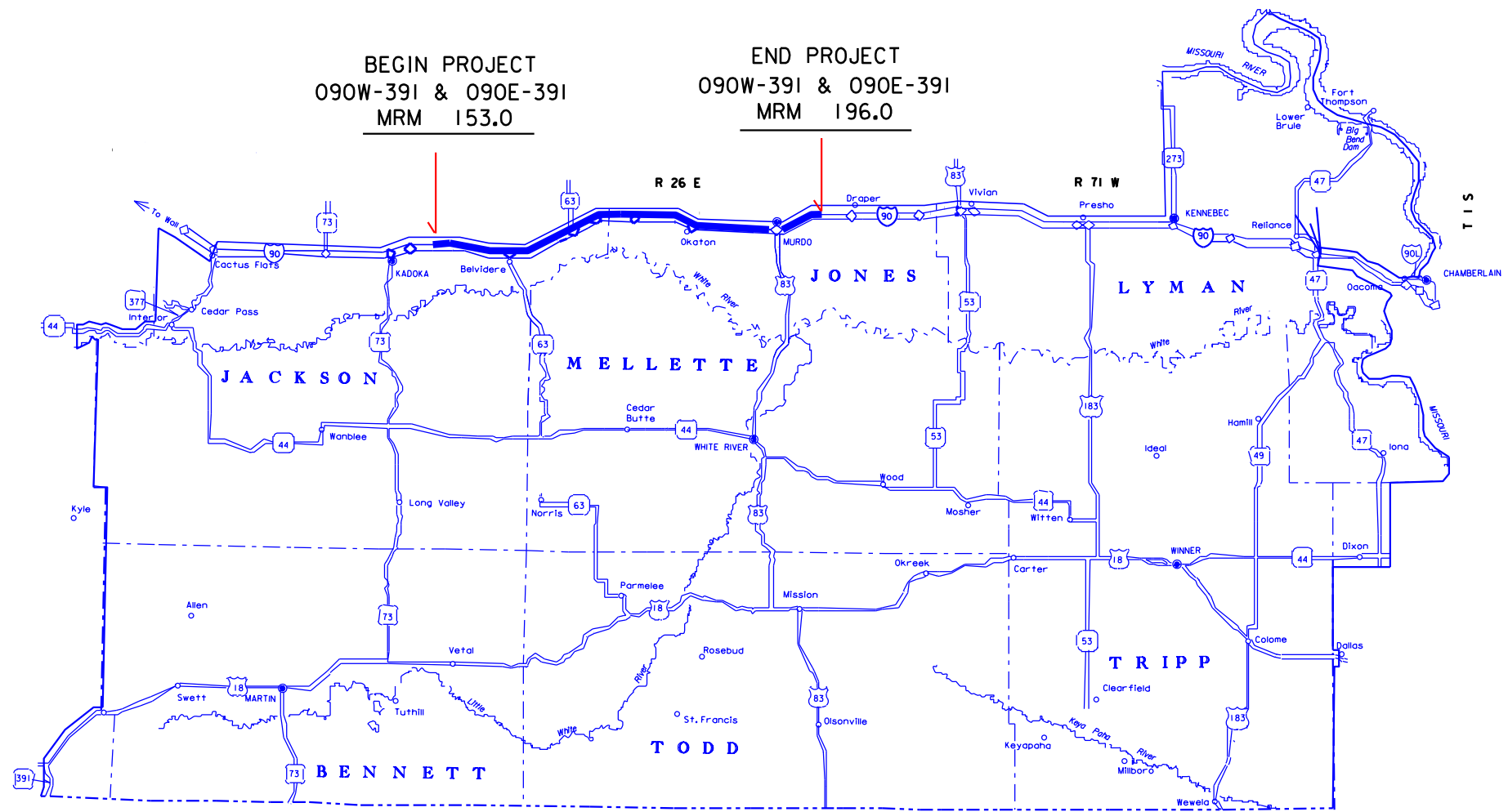
PROJECT
090E-391
090W-391

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 090E-391 & 090W-391
INTERSTATE HIGHWAY 90
JACKSON & JONES COUNTIES

FULL DEPTH CONCRETE REPAIR
PCN 12RK & 12RL

INDEX OF SHEETS

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Sheet Nos. 2-7	Estimate of Quantities & Plan Notes
Sheet Nos. 8-11	Removals & Reinforcement Details
Sheet No. 12	Fixed Location Signing
Sheet Nos. 13-14	Standard Plates



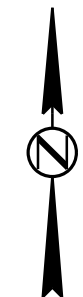
BEGIN PROJECT
090W-391 & 090E-391
MRM 153.0

END PROJECT
090W-391 & 090E-391
MRM 196.0

090E-391 &
090W-391
LYMAN & JONES COUNTIES
12RK & 12RL

DESIGN DESIGNATION

ADT (2012)	5782
ADT (2032)	6836
DHV	1121
D	50%
T DHV	13.4%
T ADT	29.4%



Plot Scale - 1:200

Plotted From - tw11m120

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ESTIMATE OF QUANTITIES

090E-391 PCN I2RK

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	130.8	SqYd
380E5100	Continuously Reinforced PCC Pavement Repair	130.8	SqYd
380E6110	Insert Steel Bar in PCC Pavement	120	Each
634E0010	Flagging	30	Hour
634E0100	Traffic Control	1,491	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each

090W-391 PCN I2RL

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	158.4	SqYd
380E5100	Continuously Reinforced PCC Pavement Repair	158.4	SqYd
380E6110	Insert Steel Bar in PCC Pavement	120	Each
634E0010	Flagging	30	Hour
634E0100	Traffic Control	1,491	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each

SPECIFICATIONS

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

SCOPE OF WORK

This project consists of full depth replacement of Continuously Reinforced Concrete (CRC) Pavement in areas where concrete pavement blowups or major failures have occurred. Full depth areas may vary in length and width throughout the project. The exact size and number of repair areas will be determined on construction by the Engineer.

SEQUENCE OF OPERATIONS

The Contractor shall submit his proposed sequence of operations for the Engineer's approval at least two weeks prior to the preconstruction meeting.

GENERAL MAINTENANCE OF TRAFFIC

Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Full depth concrete repairs shall be confined to a single lane width, leaving the adjoining lane open as a through traffic lane. Traffic shall not be routed onto the bituminous shoulders. Closure of both mainline lanes will not be permitted.

It will be permissible to work on both the eastbound and westbound lanes simultaneously.

All construction operations shall be conducted in the general direction of traffic movement.

The length of repair zones (encompassing more than one repair location) will depend on the Contractor's operation, however, the length shall not exceed 3 miles and it will be classified and signed as one repair zone by placement of continuous channelization throughout the entire length of the repair zone. Under no circumstances will the Contractor be allowed to set up two work zones in the same direction of travel which are closer than 3 miles apart.

The Contractor's vehicles and equipment will not be allowed to use the maintenance crossovers at any time during the construction of the project.

Contractor's vehicles or equipment entering or leaving a closed work area or when traveling in an open lane at speeds less than 40 MPH shall display a flashing amber light.

Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Work activities will not be allowed during non-daylight hours.

All traffic control sign locations shall be set in the field by the Contractor and verified by the Engineer prior to installation.

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

Fixed location signing placed more than two days prior to the start of construction shall be covered until the time of construction. The cost of materials, labor and equipment necessary to complete this work shall be incidental to other contract items. No separate payment will be made.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

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

The Contractor shall designate an employee whose primary responsibility is for the maintenance of traffic, 24 hours a day and 7 days a week. The designated person must have sufficient training and experience in the field of construction traffic control and be knowledgeable about the Manual of Uniform Traffic Control Devices (MUTCD). The cost of the traffic control person shall be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS. The employee selected shall be approved by the Engineer. Name, phone number, and location of person or persons shall be provided to the SD Department of Transportation, SD Highway Patrol, and the respective County Sheriff's Departments.

Traffic will be maintained on the proper directional set of lanes and ramps throughout the project during repair operations. No crossing over of traffic to the opposing set of lanes or wrong way movement on ramps will be allowed. The Contractor will so arrange the details of their operations as to cause a minimum of inconvenience and delay to the traveling public.

At interchange ramp tapers, location of signs, barricades and channelizing devices on the mainline shall be adjusted to accommodate traffic entering or leaving the work area.

Certified flaggers will be required in a work zone occupied by workers and or equipment when work activity presents a hazard to the worker or through traffic.

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

The Contractor will be paid for the actual quantity of movable signs and advance warning arrow panels used, not to exceed four repair zones, regardless of the number of times they are moved or the number of work zones. No payment will be made for signs used in traffic set ups exceeding four repair zones. Signs may use a hinged section or tabs to expedite changing the message. If hinged signs or tabs are used, cost of the hinged section and tabs shall be incidental to the contract unit price per unit for Traffic Control and shall be considered as one sign for payment purposes.

The Contractor shall place an eight foot Type III Barricade in front of each repair area prior to the removal of the concrete repair section. The Contractor will be paid for 20 Type III Barricades, providing at least 20 are in use at the same time. If the Contractor chooses to remove more than 20 repair sections at any one time, The Contractor at no expense to the State, shall furnish additional barricades.

Signs shall be removed, covered or turned from view and channelizing devices removed when no longer applicable. Resetting, temporary relocation and/or covering of existing traffic control devices as necessary to adequately maintain traffic or perform the work shall be the responsibility of the contractor and the cost shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

The Contractor is responsible to ensure that all traffic control devices are displayed in accordance with the MUTCD, corresponding plan sheets and standard plates illustrated in the plans. If a device is improperly displayed, or not displayed at all when it should be, it will be considered as an infraction upon the plans.

The Contractor may use 42" Grabber Cones for longitudinal delineation only. All tapers, lane transitions, and marking of full depth repairs shall be accomplished utilizing drums in accordance with the MUTCD.

Channelizing drums are to be of a two part type construction with breakaway bases. All individual drum locations shall be adequately marked on the roadway surface to expedite their replacement upon the event that any drums become displaced. The cost of these devices shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

Additional standard signs, as ordered by the Engineer, shall be available within 2 working days. Failure to provide signs within this time limit will result in Liquidated Damages being assessed in the amount of \$400.00 per Calendar Day. Payment for additional signs will be paid using the contract unit price per unit for Traffic Control.

All traffic control devices are to be in like new condition. Any traffic control device that warrants replacement due to its poor condition or absence shall be replaced immediately by the Contractor at his expense.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-1	48" x 24"	ROAD WORK NEXT ## MILES	4	24	96
G20-2A	36" x 18"	END ROAD WORK	4	17	68
R2-1	30" x 36"	SPEED LIMIT ##	12	23	276
R3-5	48" x 48"	REDUCE SPEED AHEAD (SYMBOL) 45 MPH	8	34	272
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	8	34	272
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	19	34	646
W20-5	48" x 48"	LT. OR RT. LANE CLOSED #### FT. OR AHEAD	8	34	272
W20-7a	48" x 48"	FLAGGER	4	34	136
SPECIAL	30" x 24"	FINES DOUBLED	8	18	144
****	***	TYPE III BARRICADE - 8 FT. SINGLE SIDED	20	40	800
TOTAL UNITS				2982	

CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR

Two alternatives of CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR are available to the Contractor. One method is the full-depth saw cut method, Alternate A. The other method, Alternate B, is a combination of full depth removal and partial removal utilizing jackhammers, leaving a portion of existing reinforcing steel intact.

Full Depth Saw Cut Method – Alternate A

The Contractor shall saw the in place concrete transversely full depth at the limits of the repair area. The area within the full depth saw cuts shall be removed by the lift out method or break out method. Damage to the face of in place concrete will not be permitted.

The Contractor shall remove and dispose of the in place concrete and shape and recompact the underlying base material prior to placement of concrete.

After removal of the in place concrete and repair of the gravel cushion subgrade, new reinforcing steel shall be installed according to the 24' Continuously Reinforced PCC Pavement Repair Area, Alternate A plan details.

No. 5 longitudinal bars shall be drilled in between every in place longitudinal steel bar. The No. 5 longitudinal bars shall overlap into the existing concrete 9" on both sides of the repair area. Drilled holes will be required and the additional longitudinal bars shall be inserted in accordance with the notes for Steel Bar Insertion. The additional longitudinal bars shall then be lap spliced with new No. 5 longitudinal bars across the length of the repair area.

No. 5 transverse bars shall be drilled in starting 6" from both ends of the repair area. The spacing shall then be 30" center to center throughout the length of the repair area. The transverse bars shall overlap 9" into the existing concrete. New No. 5 deformed steel bars shall be placed across the width of the repair area and lapped 16" minimum with the drilled in bars. The drilled holes and rebar shall be installed per the steel bar installation note.

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Full Depth / Partial Removal Method – Alternate B

The transverse boundaries are sawn to a depth of one and one-half to two inches (1-1/2 to 2”). Location of the full-depth transverse cuts will be eighteen inches (18”) inside the partial depth transverse cuts and at the longitudinal boundaries. The eighteen-inch (18”) area between the saw cuts will be the lap area for reinforcing steel.

The area inside the full-depth saw cuts will be removed by the lift-out or breakout method. Beginning at the center of the repair area, a type of pavement breaking device, such as a hydrohammer or other heavy equipment, may be used to shatter the concrete. The use of a ballbreaker will not be permitted as the large shockwaves may damage the adjacent concrete or reinforcing steel. No heavy break-up will be allowed within two feet of the full-depth saw cuts. The broken concrete may be removed by backhoe or other approved methods.

Jackhammers used to remove concrete in the lap area shall not exceed 30 pounds, with 15-pound jackhammers to be used along vertical walls and around existing reinforcing steel. Bending or damaging the existing reinforcing steel will not be permitted. Reinforcing steel damaged during removal of the lap area will require lap area extension at the Contractor’s expense.

No. 5 transverse bars shall be drilled in starting 6” from both ends of the repair area. The spacing shall then be 30” center to center throughout the length of the repair area. The transverse bars shall overlap 9” into the existing concrete. New No. 5 deformed steel bars shall be placed across the width of the repair area and lapped 16” minimum with the drilled in bars. The drilled holes and rebar shall be installed per the steel bar installation note.

New no. 5 longitudinal reinforcing steel shall be installed according to the 24’ Continuously Reinforced PCC Pavement Repair Area, Alternate B plan details. The No. 5 longitudinal bars shall overlap the existing reinforcing steel 16” on both sides of the repair area.

CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR – GENERAL

The Engineer will mark the location of the area to be repaired on construction.

The Contractor shall remove and dispose of the in place concrete and shape and recompact the underlying base material prior to placement of concrete.

Existing exposed reinforcing steel and concrete faces shall be cleaned by sandblasting and compressed air to remove dirt and debris prior to placement of concrete.

The quantity estimated for the CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR, was based on the full depth / partial depth removal, Alternate B. The quantity may vary if a different method of removal is used, as the quantity for the full depth / partial depth removal, Alternate B includes the removal of extra concrete for splicing rebar. Payment for this item will be calculated based on actual measurements taken by the Engineer on site.

The Engineer will mark locations of the areas to be repaired in the field. The Contractor must understand that it is impossible to estimate the exact quantities of CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR. It is the Contractor’s responsibility to examine the project limits prior to the bid letting to become familiar with the work involved. There will be no absolute quantities established and the Engineer may increase or decrease the removal listed without additional compensation for the bid item for CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR.

Concrete placed adjacent to asphalt concrete shoulders shall be formed full depth to match the width of existing concrete pavement. Care shall be taken to limit the amount of shoulder damaged during concrete removal and form placement. The excavated area of the asphalt concrete shoulder adjacent to repair areas shall be filled with asphalt concrete cold millings furnished by the State and located in the Murdo Maintenance Yard. Payment for loading, hauling and any incidentals required for placing the cold millings shall be incidental to the contract unit price per square yard for “Continuously Reinforced PCC Pavement Repair”.

CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR – GENERAL (CONTINUED)

A central stationary plant site or truck mixers, or self contained, mobile, continuous mixers, meeting the requirements of Section 460.3D or 460.3E, shall be used for all concrete repair work unless otherwise approved by the Engineer. Either delivery method must ensure that all requirements pertaining to delivery and placement of the concrete as noted in the Standard Specifications Section 380.3.G and 380.3.H are met.

To allow the adjacent concrete to reach its maximum expansion, concrete shall not be placed in the repair areas before 12:00 (noon) or as directed by the Engineer.

Any saw cuts that extend beyond the boundaries of the repair area will be filled with a non-shrinkage mortar mix at the Contractor’s own expense.

Upon placement of the concrete, all repair areas will be straight edged to ensure a smooth riding surface and shall be textured transversely with the pavement by finishing with a stiff broom. Repair areas longer than ten (10) feet shall be checked with a ten (10) foot straight edge. The permissible longitudinal and transverse surface deviation shall be 1/8 inch in 10 feet.

New pavement thickness shall be equal to existing pavement thickness of 8”.

Concrete shall meet the requirements of the Standard Specifications Section 380, except as modified by the following notes:

The slump requirement will be limited to 3" maximum after water reducer is added and the concrete shall contain 4.5% to 7.0% entrained air. The concrete mix shall contain a minimum of 50% coarse aggregate by weight. Coarse aggregate shall be crushed ledge rock, Size No. 1 unless an alternative gradation is approved by the Concrete Engineer as part of the mix design submittal. The concrete mix shall contain at least 750 lbs of cementitious material per cubic yard. The minimum 28 day compressive strength shall be 4,000 psi. 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.

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**CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR
- GENERAL (CONTINUED)**

The use of a water reducer at manufacturer's recommended dosage will be required.

Concrete shall be cured with white pigmented curing compound (AASHTO M148, Type 2) applied as soon as practical at a rate of 125 square feet per gallon. Concrete shall be cured for a minimum of 48 hours before opening to traffic. The 48 hours is based upon a concrete surface temperature of 60° F or higher throughout the cure period. If the concrete temperature falls below 60° F, the cure time shall be extended or other measures shall be taken, at no additional cost to the State. In addition to the curing requirements, a strength of 4,000 psi must be attained prior to opening to traffic.

Concrete shall be covered with suitable insulation blanket consisting of a layer of closed cell polystyrene foam protected by at least one layer of plastic. Insulation blanket shall have an R-value of at least 0.5, as rated by the manufacturer. Insulation blanket shall be left in place, except for joint sawing operations, until the 4000 psi is attained. Insulation blanket shall be overlapped on to the existing concrete by 4'. The initial contraction joint sawing shall be performed as soon as practical after placement to avoid random cracking.

Locations and quantities of Continuously Reinforced PCC Pavement Repair are subject to change in the field at the discretion of the Engineer.

Continuously Reinforced Pavement Repair will be measured to the nearest tenth of a foot and computed to the nearest tenth of a square yard.

Continuously Reinforced Pavement Repair, measured as provided above, will be paid for at the contract unit price per square yard. This will be full compensation for all labor, equipment, materials, and incidentals necessary for the saw cutting, removing of material, preparation of removed area, furnishing and placing concrete, finishing and curing of Continuously Reinforced Pavement Repair.

Cost for the reinforcing steel, ties, labor and equipment shall be incidental to the contract unit price per square yard for "Continuously Reinforced PCC Pavement Repair".

**CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR
- GENERAL (CONTINUED)**

Cost for the epoxy resin adhesive, drilling of holes, applying the adhesive, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars for the No. 5 longitudinal bars shall be incidental to the contract unit price per square yard for "Continuously Reinforced PCC Pavement Repair".

Cost for the epoxy resin adhesive, drilling of holes, applying the adhesive, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars for the No. 5 transverse bars shall be incidental to the contract unit price per each for "Insert Steel Bar in PCC Pavement".

RESTORATION OF GRAVEL CUSHION

After removal of full depth concrete pavement, an inspection of the gravel cushion subgrade is to be made. Areas of excess moisture are to be dried to the satisfaction of the Engineer. Loose material shall be removed and disturbed areas leveled and compacted to the satisfaction of the Engineer.

If additional gravel cushion material is required, the Contractor shall furnish, place and compact gravel cushion to the satisfaction of the Engineer.

Gravel Cushion material shall be approved by the Engineer and shall be furnished by the Contractor. Gravel Cushion material shall conform to Section 882.

Cost of this work, including gravel cushion material, shall be incidental to the contract unit price bid per square yard for "Continuously Reinforced PCC Pavement Repair".

STEEL BAR INSERTION

The Contractor shall insert steel bars into drilled holes in the joints as specified. An epoxy resin adhesive must be used to anchor the steel bar into the drilled hole.

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

STEEL BAR INSERTION (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 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 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.

A rigid frame or mechanical device will be required to guide the drill to ensure proper horizontal and vertical alignment of the steel bars in the drilled holes.

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 and 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 one-third to one-half 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 holes prior to steel bar insertion. Rotate the steel bar during insertion to eliminated voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Cost for the steel bars shall be incidental to the contract unit price per square yard for "Continuously Reinforced PCC Pavement Repair".

Cost for the epoxy resin adhesive, drilling of holes, applying the adhesive, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars shall be incidental to the contract unit price per each for "Insert Steel Bar in PCC Pavement".

SAW AND SEAL JOINTS

All longitudinal and transverse joints at concrete repair areas shall be sawed and sealed.

Joints shall not be sealed unless they are thoroughly clean and dry. Cleaning shall be accomplished by sand blasting and other tools as necessary. Just prior to sealing, each joint shall be blown out using a jet of compressed air to remove all trace of dust.

All joints shall be sealed with low modulus silicone sealant.

Cost for sawing and sealing of the longitudinal construction joints and transverse joints shall be incidental to the contract unit price per square yard for "Continuously Reinforced PCC Pavement Repair".

**TABLE OF PROJECT QUANTITIES
(For Information Only)**

BID ITEM	090E-391	090W-391
Mobilization	LS	LS
Remove Concrete Pavement(SqYd)	130.8	158.4
CRC Repair (Sqyd)	130.8	158.4
Insert Steel Bar in PCC Pavement (Each)	120	120
Flagging (Hour)	30	30
Traffic Control (Unit)	1491	1491
Traffic Control, Miscellaneous	LS	LS
Type C Advance Warning Arrow Panel (Each)	2	2

**TABLE OF CONTINUOUSLY REINFORCED PCC
PAVEMENT REPAIR – EASTBOUND LANES**

LOCATION	LANE	LENGTH FEET	WIDTH FEET	SQYDS
153.889	DL	4	12	5.3
153.889	PL	4	6	2.7
154.077	DL	4	6	2.7
154.557	DL	4	6	2.7
154.754	PL	4	12	5.3
156.374	DL	4	12	5.3
170.728	DL	4	6	2.7
172.079	DL	4	4	1.8
172.196	DL	4	4	1.8
172.261	DL	4	6	2.7
172.593	DL	4	6	2.7
172.786	DL	4	12	5.3
172.794	DL	4	4	1.8
172.801	DL	4	6	2.7
173.300	DL	4	6	2.7
180.375	DL	4	12	5.3
180.723	PL	4	12	5.3
180.917	DL	4	4	1.8
181.180	DL	6	12	8.0
181.256	DL	4	6	2.7
181.256	PL	4	12	5.3
181.344	DL	4	12	5.3
181.344	PL	4	12	5.3
181.515	DL	4	4	1.8
181.551	PL	4	12	5.3
183.328	DL	4	12	5.3
192.183	DL	4	5	2.2
192.349	DL	4	12	5.3
192.520	DL	4	4	1.8
192.859	DL	4	4	1.8
193.563	DL	4	4	1.8
193.613	DL	4	5	2.2
193.620	DL	4	4	1.8
193.990	DL	4	4	1.8
194.933	DL	4	4	1.8
195.012	DL	4	4	1.8
195.224	DL	4	4	1.8
195.240	DL	4	4	1.8
195.265	DL	4	12	5.3
			Total	130.8

**TABLE OF CONTINUOUSLY REINFORCED PCC
PAVEMENT REPAIR – WESTBOUND LANES**

LOCATION	LANE	LENGTH FEET	WIDTH FEET	SQYDS
WESTBOUND LANES				
191.018	DL	4	5	2.2
190.361	DL	4	5	2.2
189.823	DL	4	6	2.7
189.788	DL	4	6	2.7
189.788	DL	5	6	3.3
186.670	DL	4	12	5.3
186.664	DL	4	4	1.8
186.621	DL	4	4	1.8
186.289	DL	5	12	6.7
186.289	PL	4	6	2.7
185.882	DL	4	12	5.3
185.882	PL	4	12	5.3
185.813	DL	4	6	2.7
185.502	PL	4	6	2.7
185.481	DL	4	4	1.8
185.374	DL	4	4	1.8
185.171	DL	4	12	5.3
185.062	DL	4	12	5.3
185.062	PL	4	12	5.3
184.952	DL	4	12	5.3
184.860	PL	5	12	6.7
184.724	DL	4	6	2.7
184.371	PL	4	12	5.3
184.253	DL	6	12	8.0
184.199	DL	4	6	2.7
178.547	DL	6	8	5.3
177.317	DL	4	6	2.7
176.367	DL	4	6	2.7
168.536	DL	4	5	2.2
168.536	PL	4	12	5.3
168.533	DL	4	5	2.2
168.353	DL	6	6	4.0
167.590	DL	6	12	8.0
167.583	DL	4	4	1.8
166.600	DL	4	12	5.3
166.600	PL	4	12	5.3
163.497	DL	12	12	16.0
			Total	158.4

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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.

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.

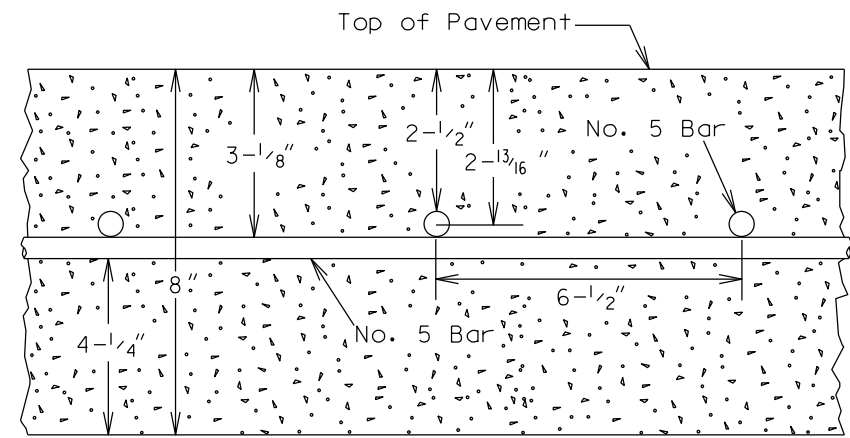
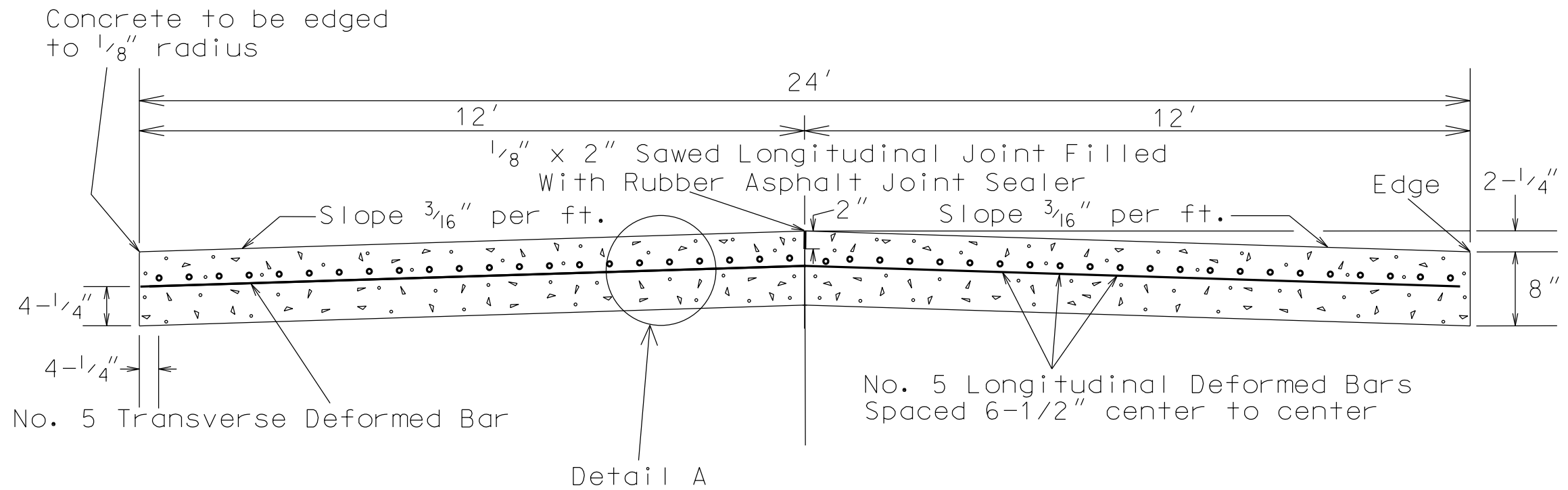
WASTE DISPOSAL SITE (CONTINUED)

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.

TYPICAL SECTIONS OF IN PLACE CRC PAVEMENT MRM 153 to 198



Detail A

Plot Scale - 1:200

Inw1m20

Plotted From -

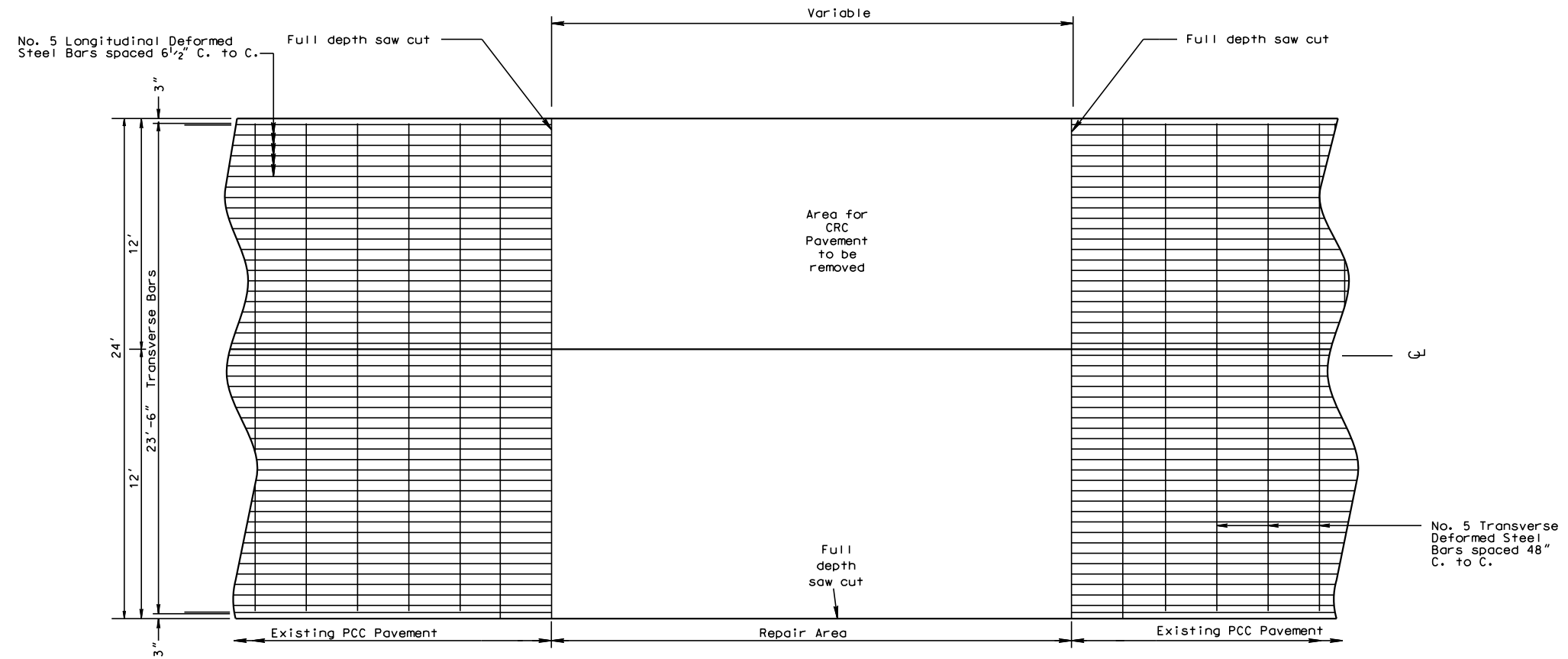
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-391 & 090W-391	9	14

Plotting Date: 03/15/2013

24' CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR AREA

MRM 153 TO 198
ALTERNATE A



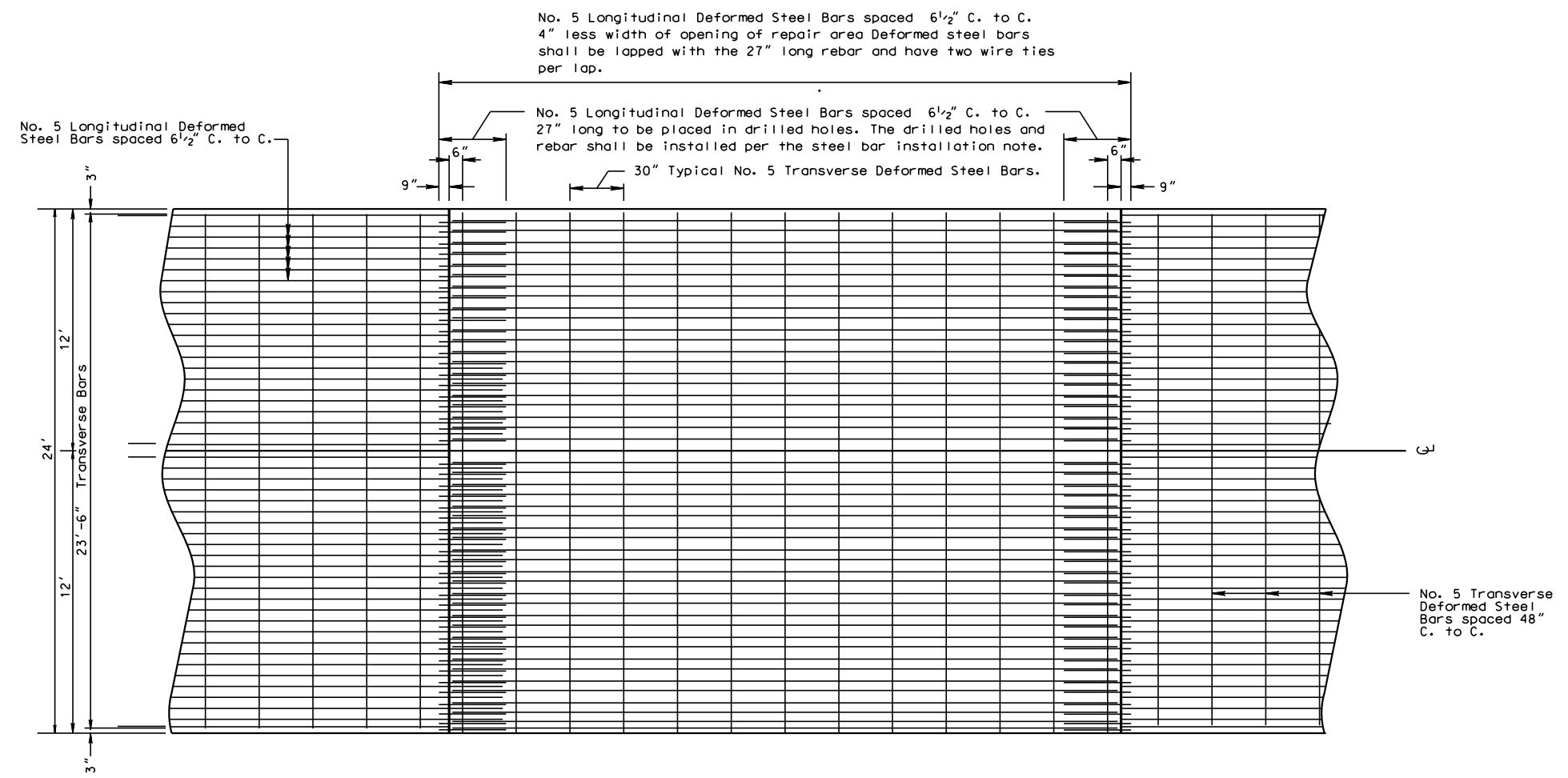
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-391 & 090W-391	10	14

Plotting Date: 03/15/2013

24' CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR AREA

MRM 153 TO 198

ALTERNATE A



Plot Scale - 1:200

Plotted From - trw1m120

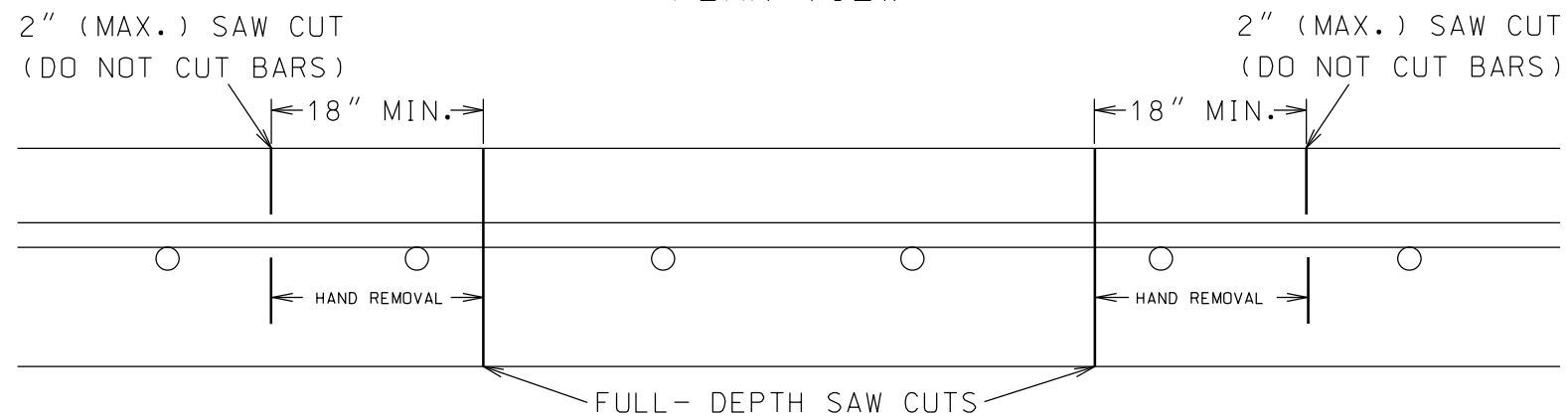
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24' CONTINUOUSLY REINFORCED PCC PAVEMENT REPAIR AREA

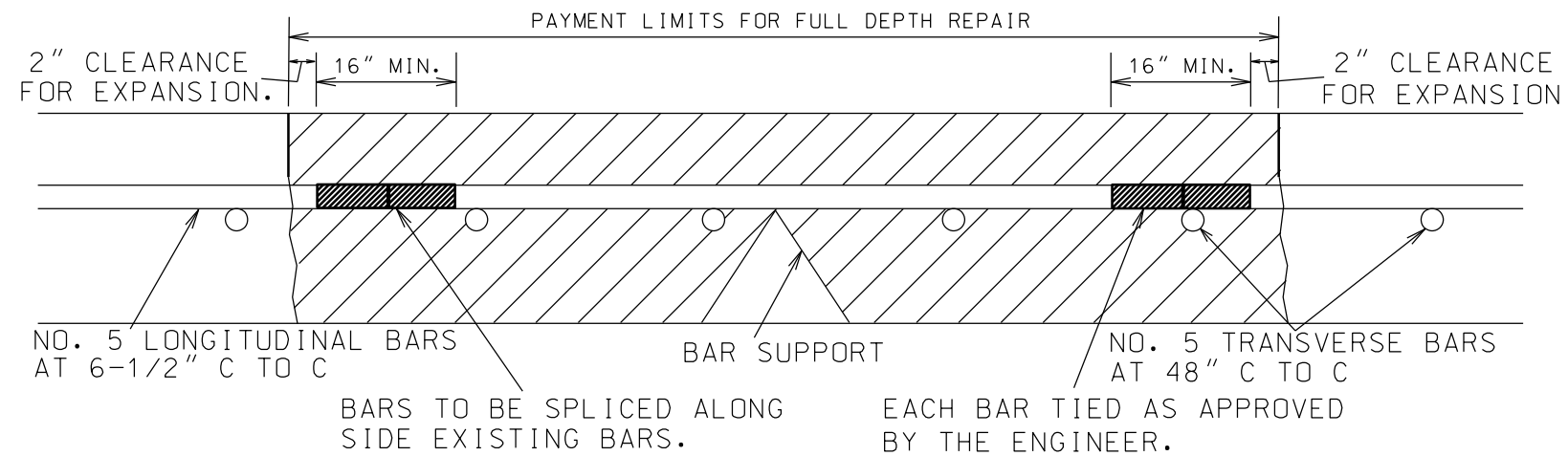
MRM 153 TO 198
ALTERNATE B



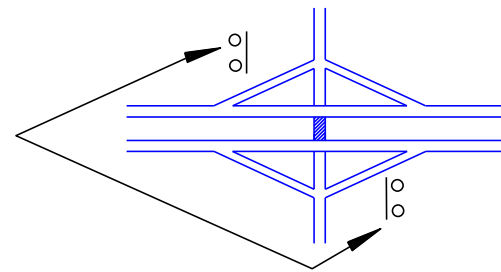
PLAN VIEW



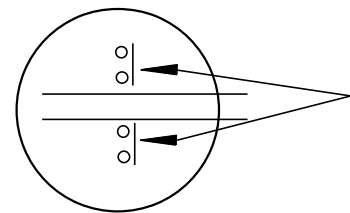
SIDE VIEWS



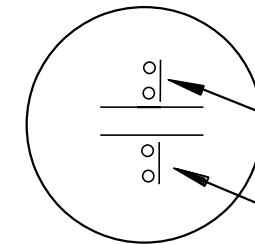
FIXED LOCATION SIGN LAYOUT



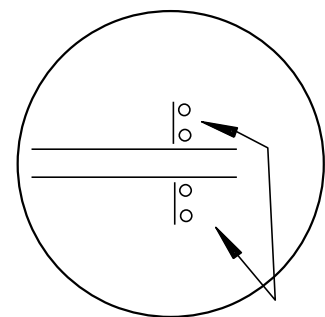
EXIT 163, 170, 172, 183, 191 & 192



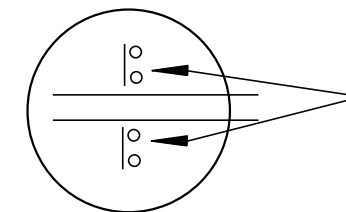
END
ROAD WORK
G20-2A
(36"x18")



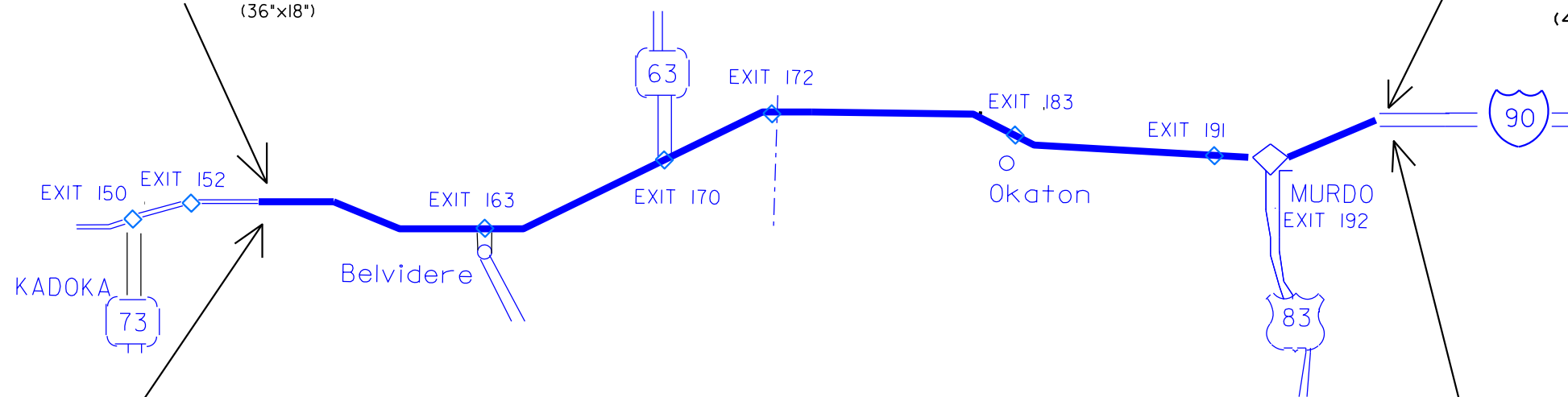
ROAD WORK
NEXT MILES
G20-1
(48"x24")



ROAD WORK
NEXT MILES
G20-1
(48"x24")

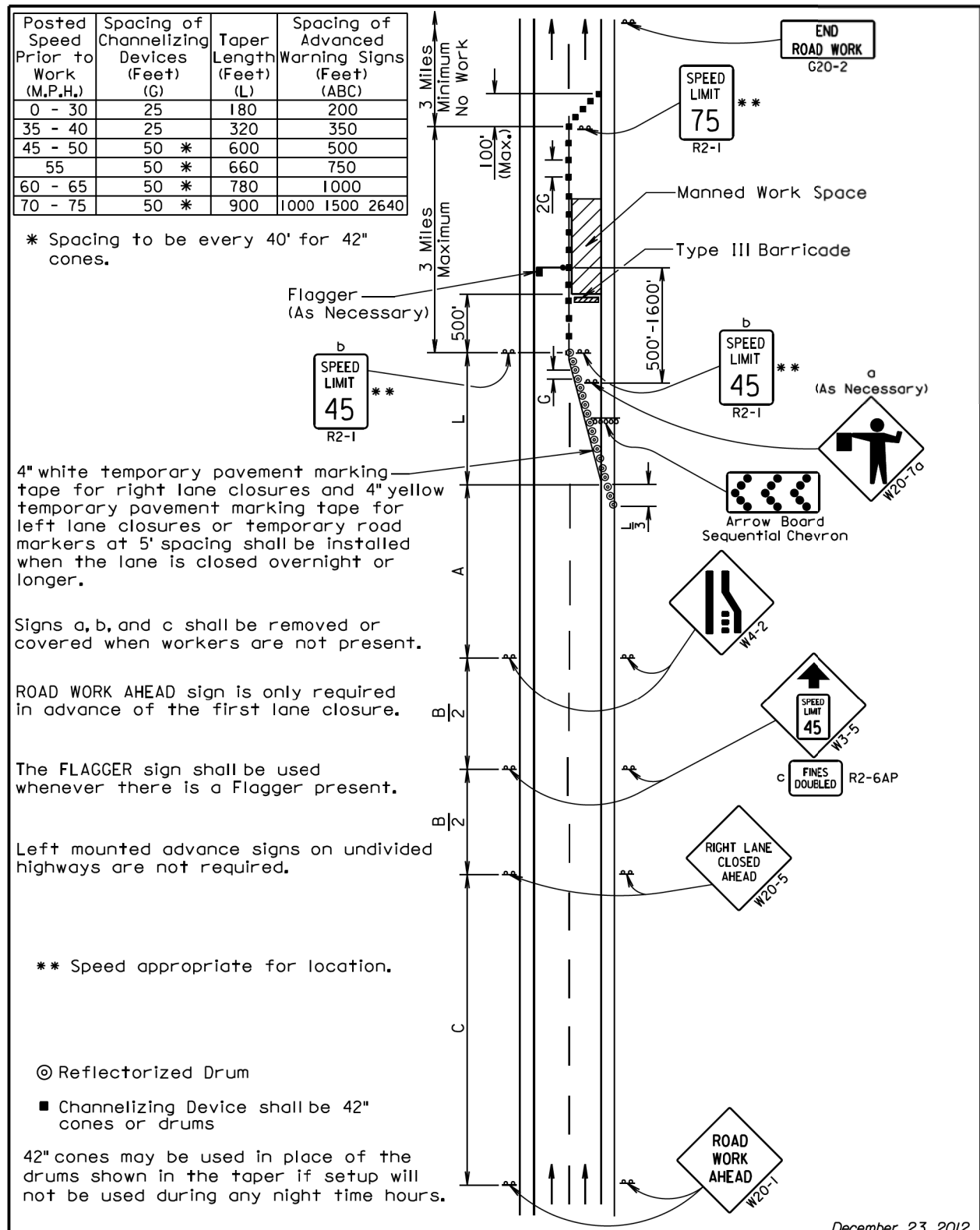


END
ROAD WORK
G20-2A
(36"x18")



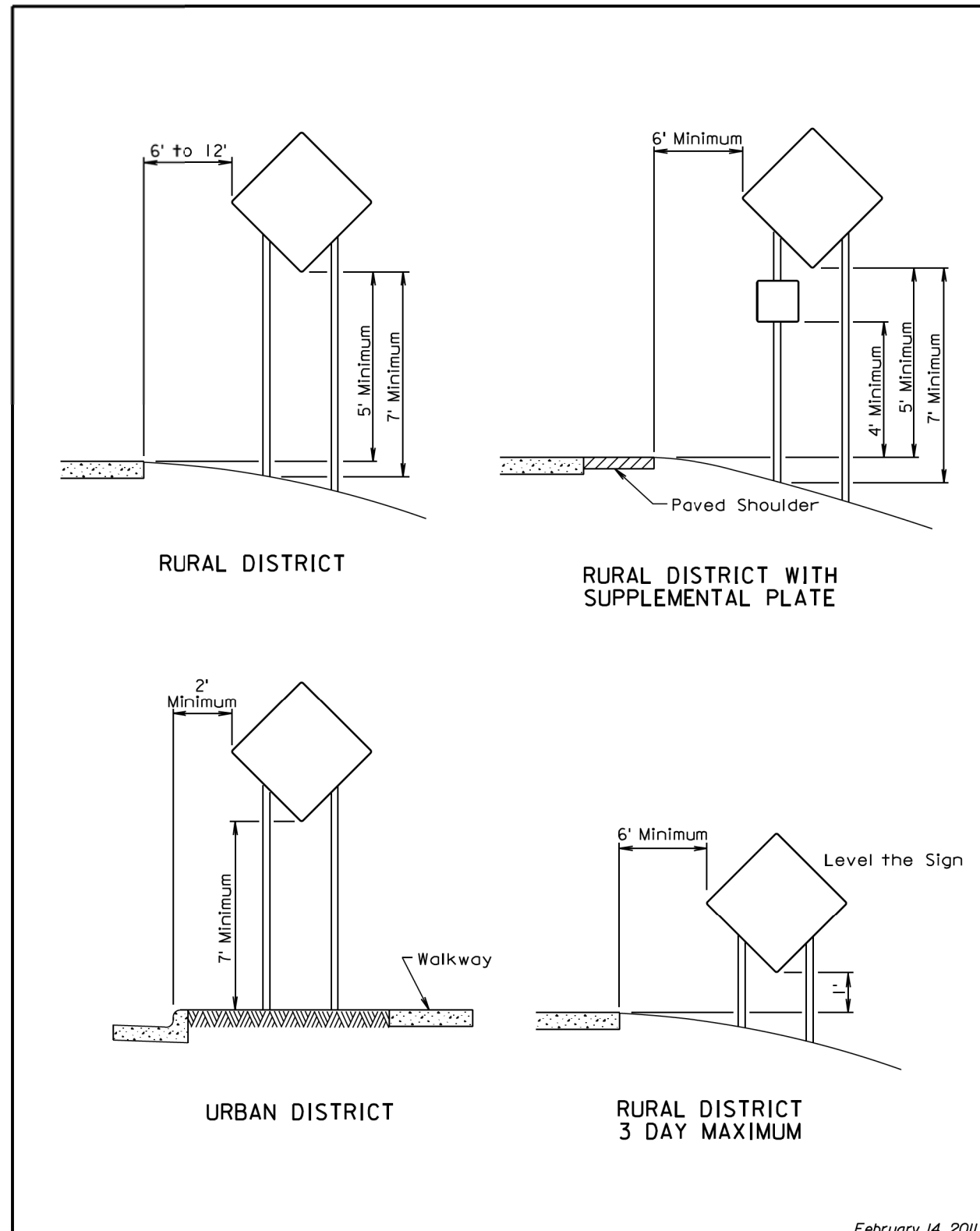
NOTES:

SIGN LOCATIONS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION



December 23, 2012

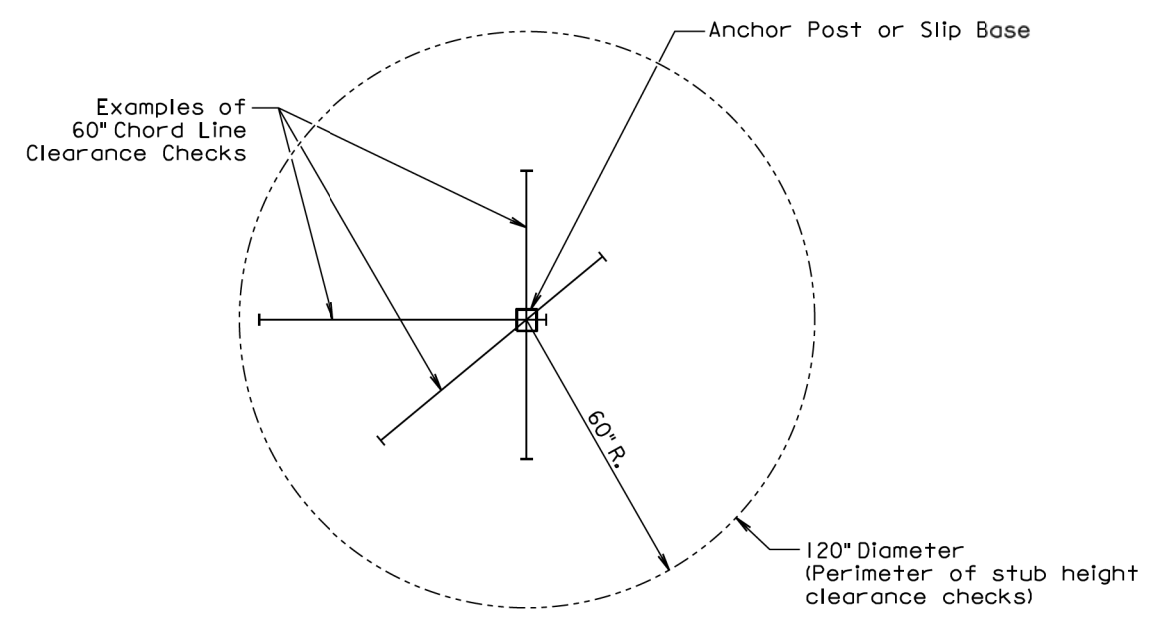
SDDOT Published Date: 1st Qtr. 2013	MANNED WORK SPACE SIGNING FOR DIVIDED AND UNDIVIDED HIGHWAYS	PLATE NUMBER 634.63
	Sheet 1 of 1	



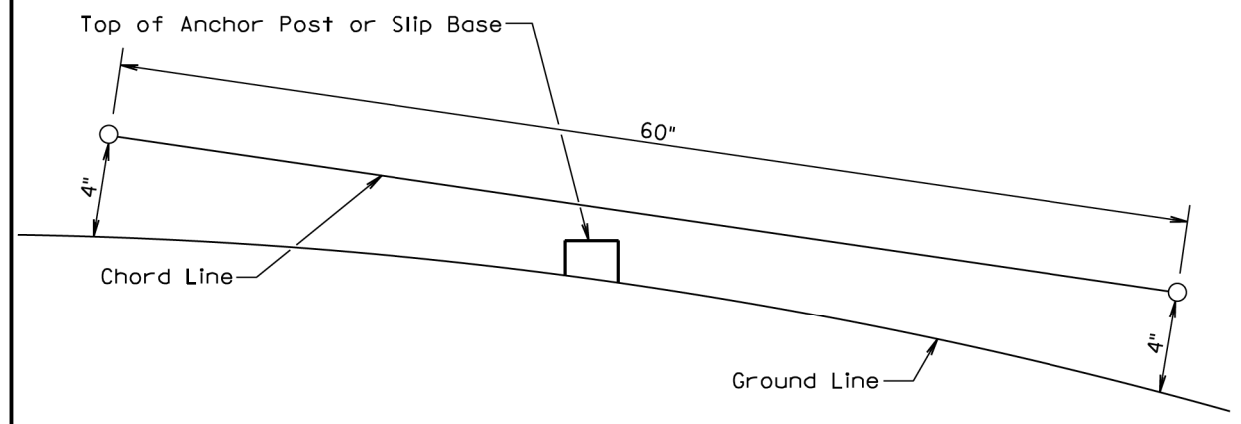
February 14, 2011

SDDOT Published Date: 1st Qtr. 2013	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
	Sheet 1 of 1	

1:200 Plot Scale - Invt1m20 - Plotted From - ...:\design\563463_563485.dgn



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

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
	Published Date: 1st Qtr. 2013	Sheet 1 of 1

Plot Scale - 1:200

Plotted From - Inw1m20

File - ...IDesign\563499.dgn