

PLOT SCALE - 200,000000:1,000000

PLOTTED FROM - TRRC11639

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

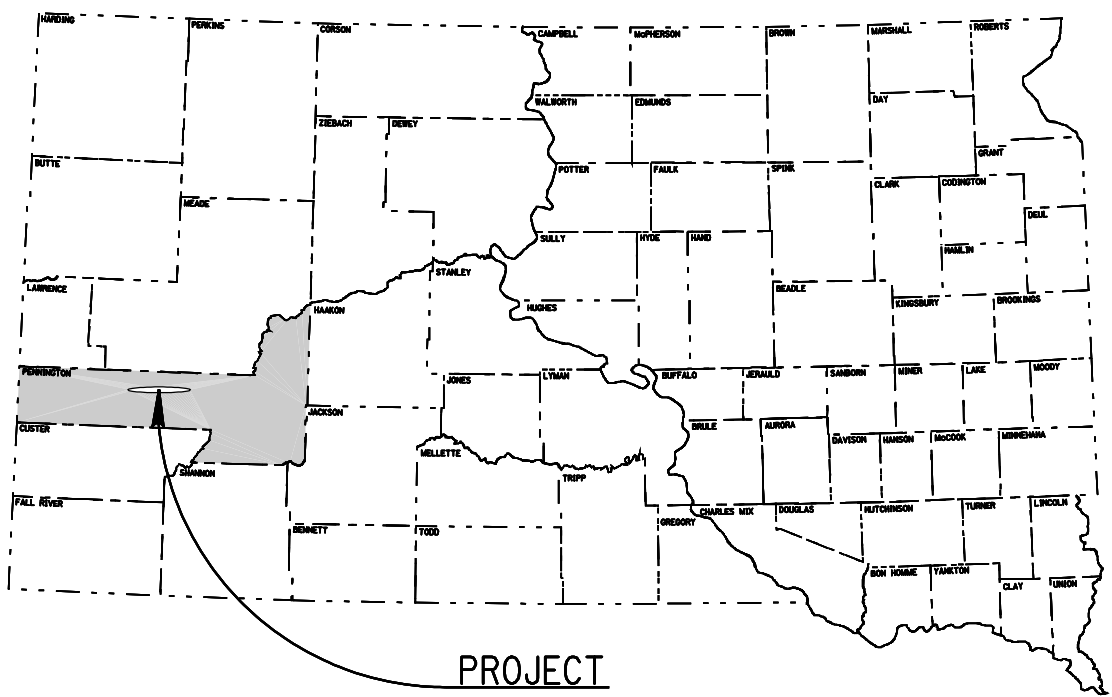
PLANS FOR PROPOSED
PROJECTS 044-452
S.D. HIGHWAY 44
PENNINGTON COUNTY
MAINTENANCE PATCHES
PCN 124X

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	044-452	01	07

Plotting Date: 17-MAR-2011

INDEX OF SHEETS

- Sheets 1: Title Sheet
- Sheets 2-4: Estimate of Quantities & Plan Notes
- Sheets 5: Pavement Repair Details
- Sheets 6-7: Standard Plates



PROJECT

R 7 E



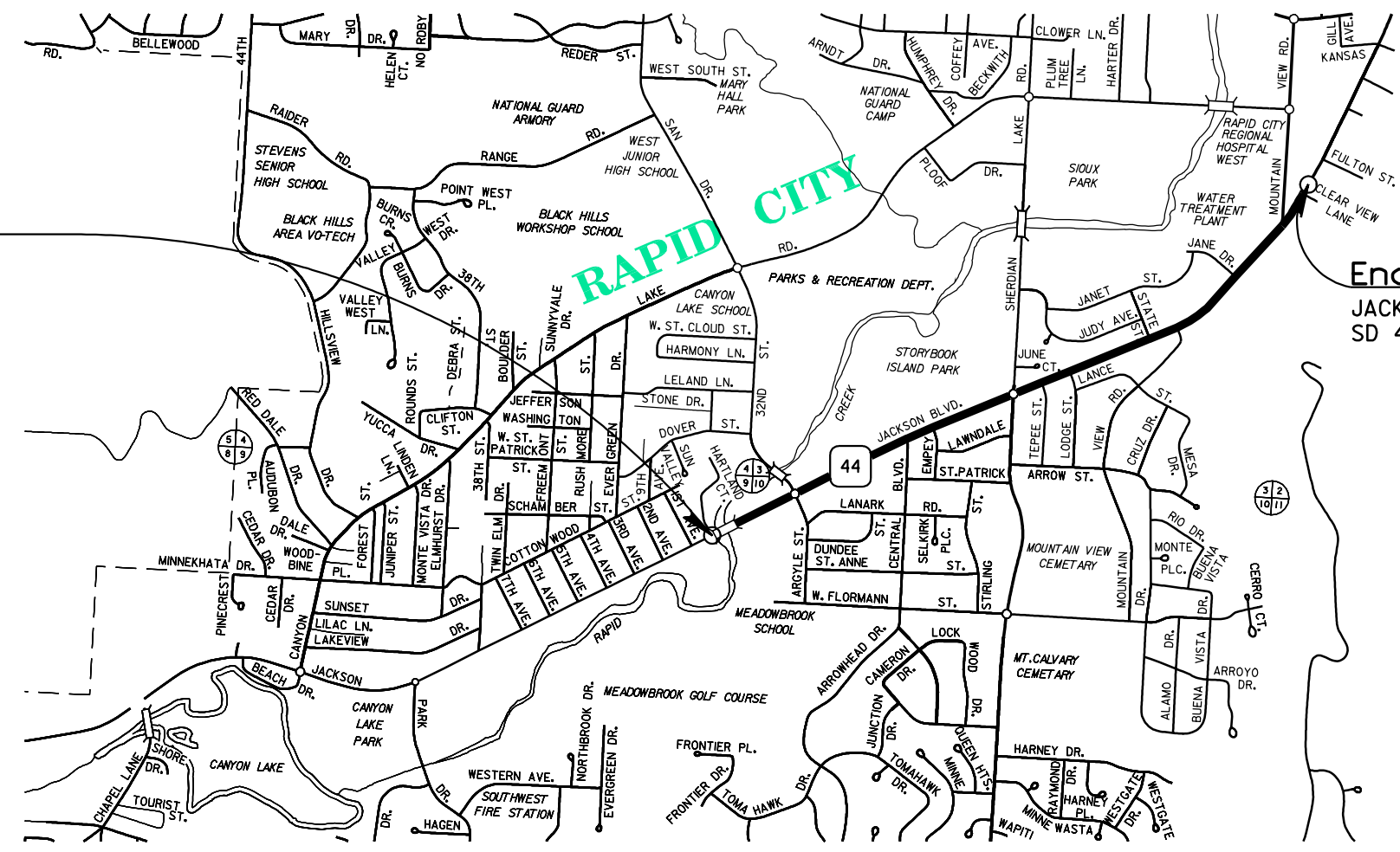
Begin 044-452
JACKSON BOULEVARD
SD 44, MRM 42.07

End 044-452
JACKSON BOULEVARD
SD 44, MRM 43.50

T 1 N

T 1 N

R 7 E



STORM WATER PERMIT
None Required

FILE - U:\REGION\RC\PR\2011\RCREGMAINT\PLANS\124X - JACKSONBLVDPATCHING\TTLER\LOGNAME - 01

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
009E0197	Mobilization 1	3	Each
380E6400	Saw Relief Joint in PCC Pavement	800.0	Ft
390E0200	Repair Type A Spall	1,151.0	SqFt
634E0010	Flagging	200	Hour
634E0100	Traffic Control	1,632	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	8	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

Work on this project includes, but is not limited to Type A Spall Repairs. Pavement Repair will include sawing PCC Pavement, removal of existing concrete and/or asphalt patching material, and placing hot mix asphalt or concrete patching material in repair areas. The scope of this project also includes repairs of the same nature over the Summer and Fall of 2011 as requested by the Area Engineer. It is possible the Contractor may not be asked to return to the project again following the initial repairs.

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:

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".

WASTE DISPOSAL SITE (CONTINUED)

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.

PERMIT FOR THE RAPID CITY AREA AIR QUALITY CONTROL ZONE

Administrative Rule of South Dakota (ARSD) 74:36:18:03 states that "no state facility or state contractor may engage in any construction activity or continuous operation activity within the Rapid City air quality control zone which may cause fugitive emissions of particulate to be released into the ambient air without first obtaining a permit issued by the board or the secretary."

In order to be considered eligible for authorization to conduct a construction activity under the terms and conditions of this permit, the owner operator must submit a Notice of Intent (NOI) form. The form must be submitted to the address below at least seven business days prior to the anticipated date of beginning the construction activity.

South Dakota Department of Environment and Natural Resources
Air Quality Program
523 East Capitol, Joe Foss Building
Pierre, South Dakota 57501-3181
605-773-3151

Construction activity is defined as any temporary activity at a state facility, which involves the removal or alteration of the natural or pre-existing cover of one acre or more of land. One acre of surface area is based on a cumulative area of disturbance to be completed for the entire project. Construction activity shall include, but not be limited to, stripping of topsoil, drilling, blasting, excavation, dredging, ditching, grading, street maintenance and repair, or earth moving. Construction activity is generally completed within one year. It also includes stockpiles, access roads, and disposal areas. An off-site disposal area of excess material will require an additional permit.

The permit requires the Contractor to use reasonably available technology to control fugitive dust emissions. The Contractor is required to use control measures for trackout, paved areas, unpaved roads, unpaved parking lots, disturbed areas, and for material handling and storage. The control measures that the Contractor is required to use are listed in the permit.

PAVEMENT REMOVAL

A variety of spall repairs shall be done on Jackson Boulevard to repair the traveling surface. New spall repairs will consist of PCCP sawing and concrete removal. There are existing repairs that have been done with maintenance patches. These patches have been sawed and repaired using cold mix asphalt. Repair of these areas may not need sawing. Asphalt removal will be done to create a uniform depth for the repair. Many of the repair areas will be a combination of sawing new spalls areas adjacent to previously repaired spalls. It is estimated that 75% of the areas to be repaired are currently patched with asphalt. Material shall be removed to a minimum depth of 2" as shown on the Repair of Type A details included in these plans.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	044 - 452	02	07

PAVEMENT REMOVAL (CONTINUED)

Removal shall consist of using jackhammers and chipping hammers to remove asphalt or PCC pavement to the existing saw dimensions as marked out by the Engineer.

Existing pavement in the replacement areas shall be removed by means that minimize damage to the base and sides of remaining in place concrete. All removed material shall be removed from within the right-of-way by the end of the workday. Damage to adjacent concrete caused by the Contractor's operations shall be removed and replaced at the Contractor's expense.

Concrete sawing for the Type A Spall Repairs shall be incidental to the contract unit price per foot for "Saw Relief Joint in PCC Pavement". No actual relief joints will be completed on this project.

Both Concrete and Asphalt Pavement Removal shall be Incidental to the contract unit price per SqFt for Repair Type A Spall.

Care shall be taken during spall removal not to damage existing detector loops for intersection lighting. Any damage to detector loops shall be repaired by the contractor at no cost to the state.

REPAIR OF TYPE A SPALLS

The Contractor will have the option of using Asphalt Concrete or Portland Cement Patching Material to fill the Type A Spalls. Specifications for each are provided in these plans. All costs associated with furnishing, installing, and finishing repair shall be incidental to the contract unit price per SqFt for Type A Spall.

There is an estimated 1151 SqFt of Type A Spall repair locations along the project. Locations and size (length or width) of pavement repair areas are subject to change in the field, at the discretion of the Engineer, at no additional cost to the state. Payment will be based on actual area replaced. The intent of this work is to keep the spall repair size as small as possible within the requirements set forth in these plans.

REPAIR OF TYPE A SPALL – OPTION A

Asphalt Concrete Composite may be used to fill the Type A Spalls. Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1.

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 Asphalt Binder. SS-1h or CSS-1h Emulsified Asphalt for Tack shall be applied at the rate of 0.05 gallons per square yard.

Compaction of the Asphalt Concrete Composite shall consist of using plate packers. Compaction shall be completed to the satisfaction of the Engineer.

REPAIR OF TYPE A SPALL – OPTION B

Concrete patching material may be used to fill the Type A Spalls. The concrete patching material shall be packaged, dry, rapid-hardening cementitious mortar or concrete materials conforming to the requirements of ASTM C 928, Type R-3 and shall contain no chloride ions.

Concrete patching material as per Section 390.2.B.3 of the Supplemental Specifications will not be allowed.

Grout for bonding the concrete patching material to the existing concrete shall consist of equal parts by weight of Portland Cement and sand, mixed with sufficient water to form a thick slurry. A grout admixture shall be added to the grout mixture in accordance with the manufacturer's recommendations. Grout admixture shall be a one component acrylic bonding additive. The additive shall be one of the grout admixtures from the Approved Products List, or an approved equal.

Grout shall be applied on all of the existing concrete surfaces within the removal area immediately prior to placement of the concrete patching material. The grout shall be scrubbed into the surface with a stiff bristle brush in a thin and uniform coat. Care shall be taken to ensure that excess grout does not collect in low areas, that the grout is confined only to the immediate area in which concrete patching material is to be placed, and that the rate of application is limited to an amount such that the grout will be covered with concrete patching material before the grout dries.

The patching product may be extended with aggregate as recommended by the manufacturer. The aggregate extender shall meet the requirements of Section 820 of the Standard Specifications. Section 820.2 D shall not apply to the aggregate extender. The Contractor's supplier of the patching product shall provide a concrete mix design, including all additives, to meet a minimum compressive strength of 4000 psi in six hours. This mix design shall be performed with the materials that will be used on the project.

The Contractor shall provide test results to the Engineer to verify that the suppliers mix design is acceptable prior to beginning work. If the suppliers mix design is not satisfactory, the Contractor shall provide the Department with a mix design that meets the requirement prior to beginning work.

The location and size of repairs have been estimated in these plans.

Joints in approaches to signalized intersections containing vehicle detector loops shall not be sawed, sealed or otherwise disturbed.

SEQUENCE OF OPERATIONS

Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to the preconstruction meeting.

1. Set up traffic control
2. Saw and Remove Repair Areas
3. Fill Repair Areas with Asphalt Composite or Concrete Patching

MAINTENANCE OF TRAFFIC

Traffic control shall be in accordance with the Standard Specifications, applicable MUTCD standards, and all plan requirements.

A maximum of 1 work zone in each direction shall be allowed.

The maximum length of a lane closure shall be 2500'.

The quantity of signs paid shall be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups on the project.

Construction signing that remains in the same location for more than 3 days shall be mounted on fixed supports, unless approved by the Engineer.

Unless otherwise stated in these plans, no work or lane closures will be allowed during hours of darkness. Hours of darkness are defined as one-half hour after sunset until one-half hour before sunrise.

The Contractor will be required to conduct operations such that access to commercial/individual entrances and side streets is maintained at all times throughout the project.

The quantity of Type C Advance Warning Arrow Panels paid will be the most installations in place at any one time, for a maximum of 2, regardless of the number of set-ups on the project for each time the Contractor is required to mobilize to the project.

Removing, relocating, covering, salvaging and resetting of permanent 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.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. 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.

All vehicles entering and exiting closed lanes of traffic shall display a flashing amber light visible from all directions at a minimum distance of 1/4 mile.

One lane of traffic shall be maintained in each direction at all times.

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

A Type III Barricade shall be installed at the end of a lane closure taper as detailed in these plans and at a minimum spacing of 500' within the workzone. 3 drums shall be placed in front of any open concrete panel repair area, as directed by the Engineer. All lane closure openings for side streets and approaches shall be marked with a minimum of 3 drums per 12' lane on both sides of the opening.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	044 - 452	03	07

MAINTENANCE OF TRAFFIC (CONTINUED)

A Type III Barricade shall be placed on each side of a lane closure opening for side streets and far enough away from the intersection so that the sight distance is not obstructed.

Channelizing devices shall be traffic control barrels unless otherwise noted or shown in the plans. With prior permission from the Engineer on a site-specific basis, 42" tapered tube cones may be used in lieu of barrels.

Temporary Pavement Marking shown in the standard plates, and removal of the temporary pavement marking, shall be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS. Paint will not be allowed for Temporary Pavement Marking, and removal of the materials used for Temporary Pavement Marking shall be done in such a way as to not damage the surface of the concrete.

Work activities shall not be conducted simultaneously in the median turn lane and outside lane.

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.

The employee designated to maintain traffic control devices shall perform routine night and weekend inspections to ensure traffic control devices are in satisfactory condition. The Contractor shall submit a weekly log stating time and date of all such inspections. The log shall be signed by the person doing the inspections. The cost of the traffic control person shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

Work activities shall only be during daylight hours. Daylight hours are considered to be 1/2 hour before sunrise until 1/2 hour after sunset.

TABLE OF TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	4	17	68
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK ##### FT. CR/AHEAD	4	34	136
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. CR/AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
TOTAL UNITS					408

SUMMER MAINTENANCE REPAIRS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	044 - 452	04	07

The Contractor may be called to return to this project after the initial full repair is completed. All work shall comply with all plan notes and specifications.

If more than one location within an area is to be repaired, the Contractor will be compensated for only one mobilization per area.

Mobilization 1 is the cost of mobilization per each time the Contractor is called in by the Rapid City Area Engineer, or his designated representative, to perform Type A Spall repairs regardless of the number of sites requiring repair within the project limits.

The contract unit prices for all bid items shall be used on return repairs. Traffic Control will be paid for the most signs in place at one time for the repairs each time the contractor is requested to return to the project. No additional payment will be made for Traffic Control Miscellaneous for return repair work.

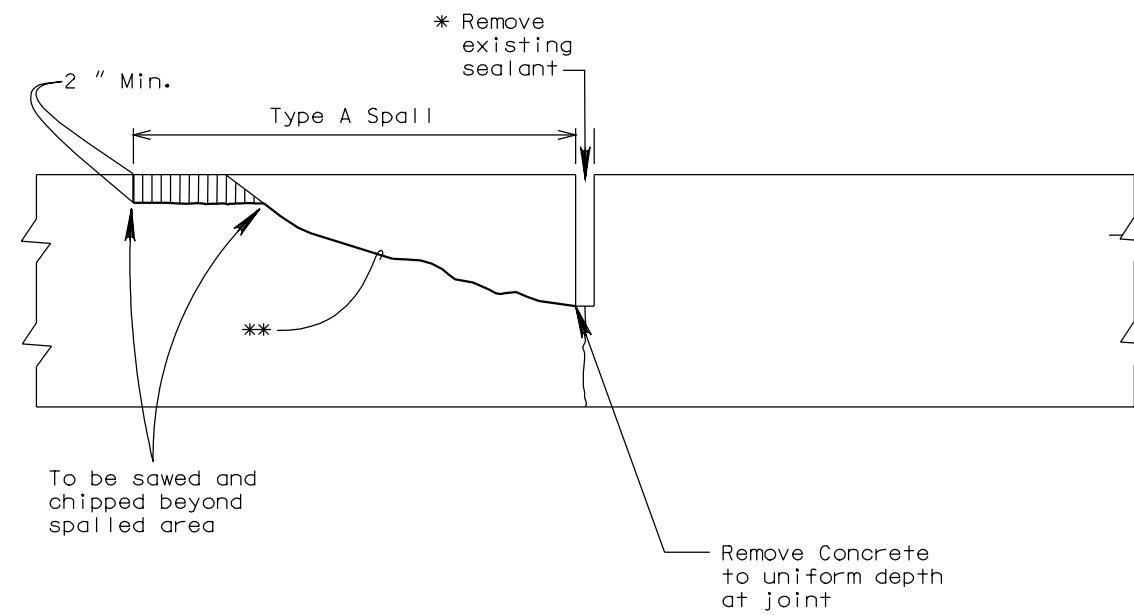
All quantities for this project are estimated and may be adjusted in the field at the direction of the Engineer. No adjustments in unit prices will be made for variations in plans quantities.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	044-452	05	07

Plotting Date: 17-MAR-2011

REPAIR OF TYPE A

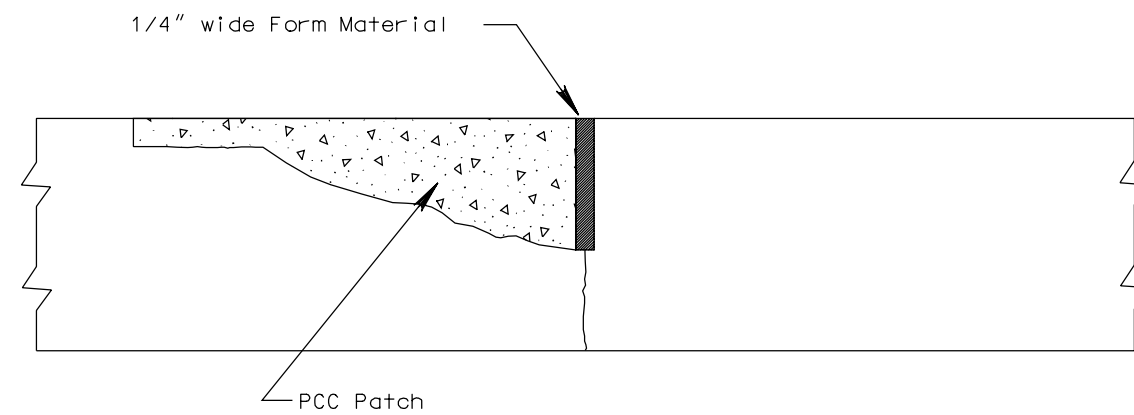
SPALL REMOVAL

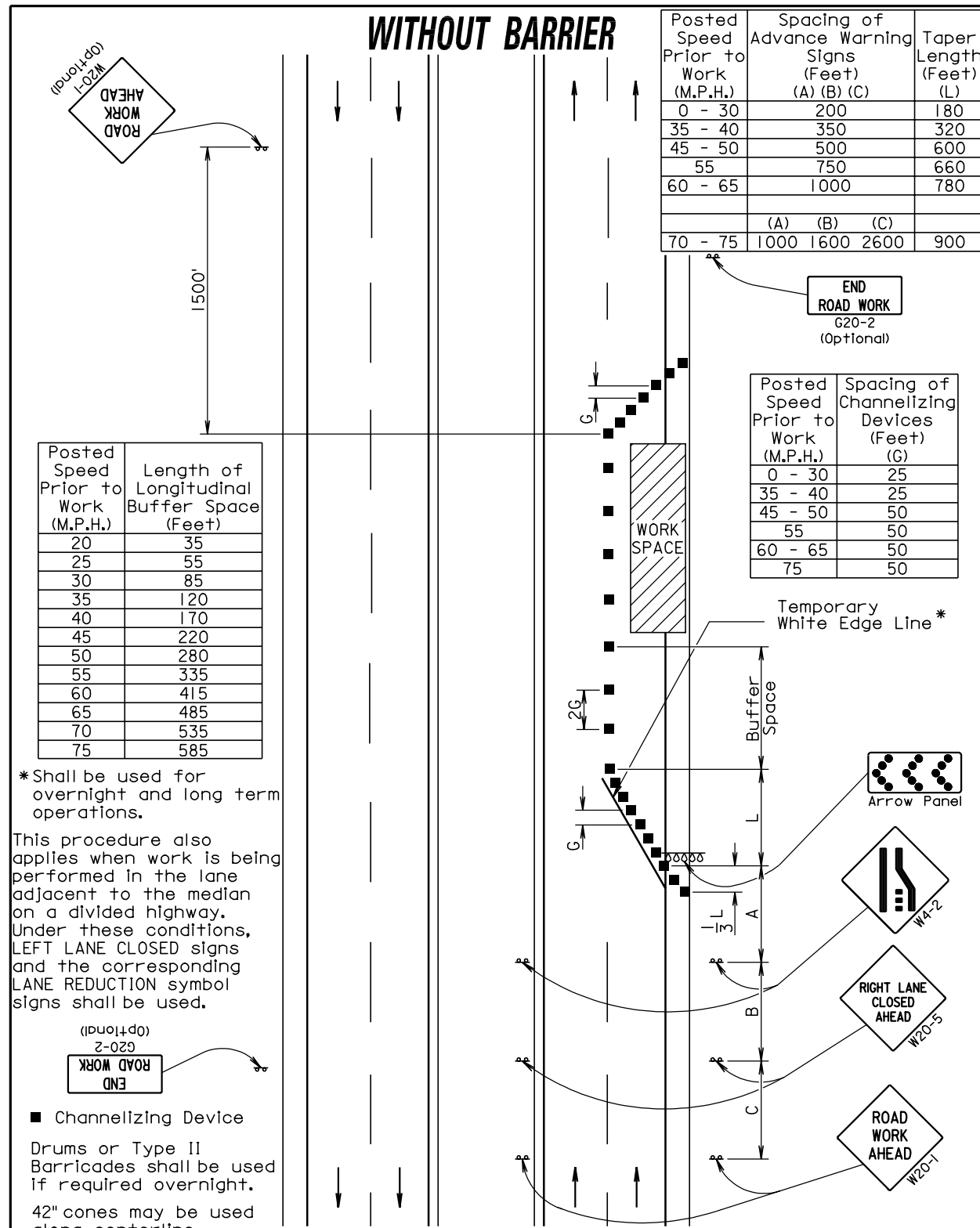


* Existing Sealant to be removed is low modulus silicone sealant with backer rod or hot poured elastic joint sealer.

** Remove and chip to sound concrete.

SPALL PATCH



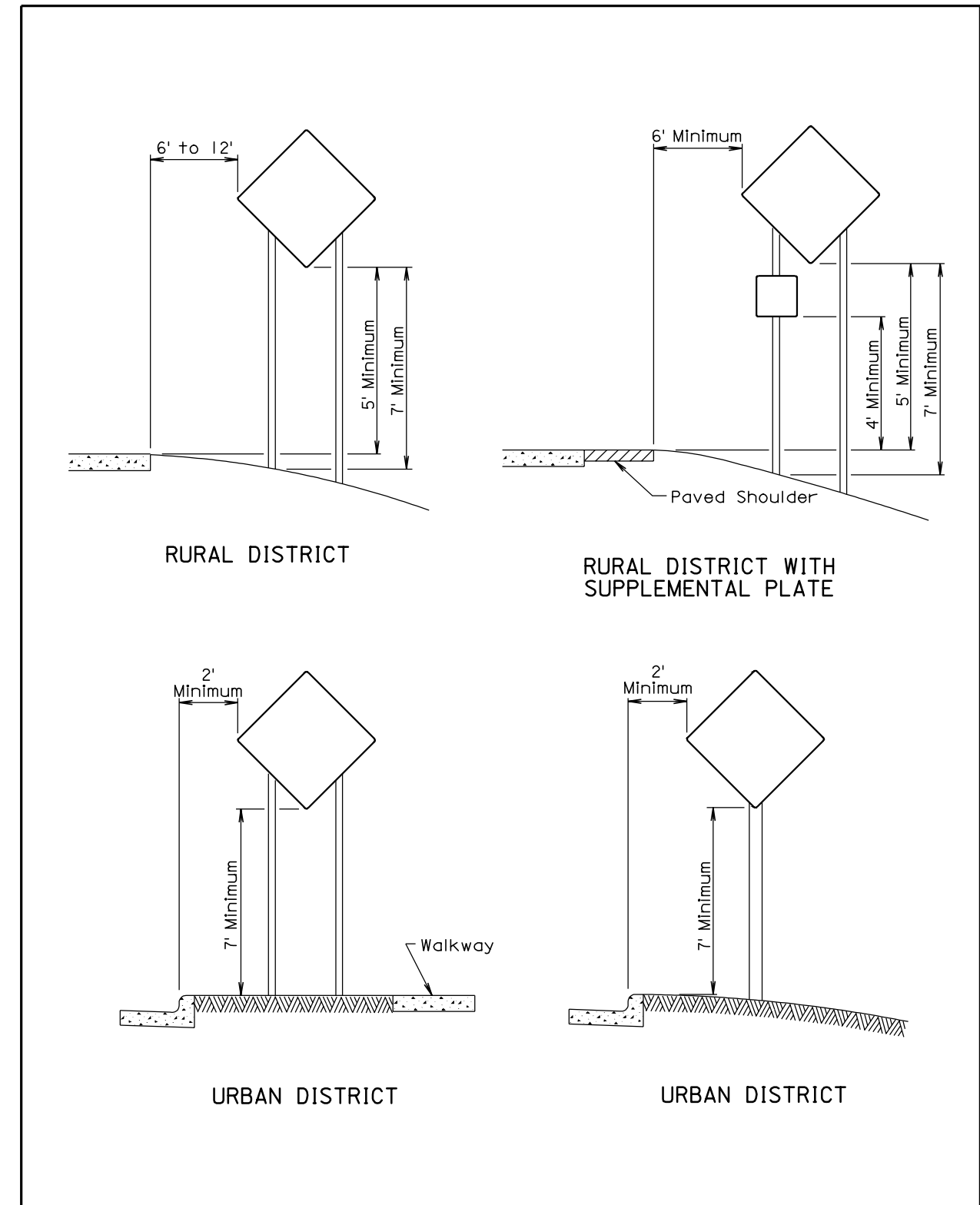


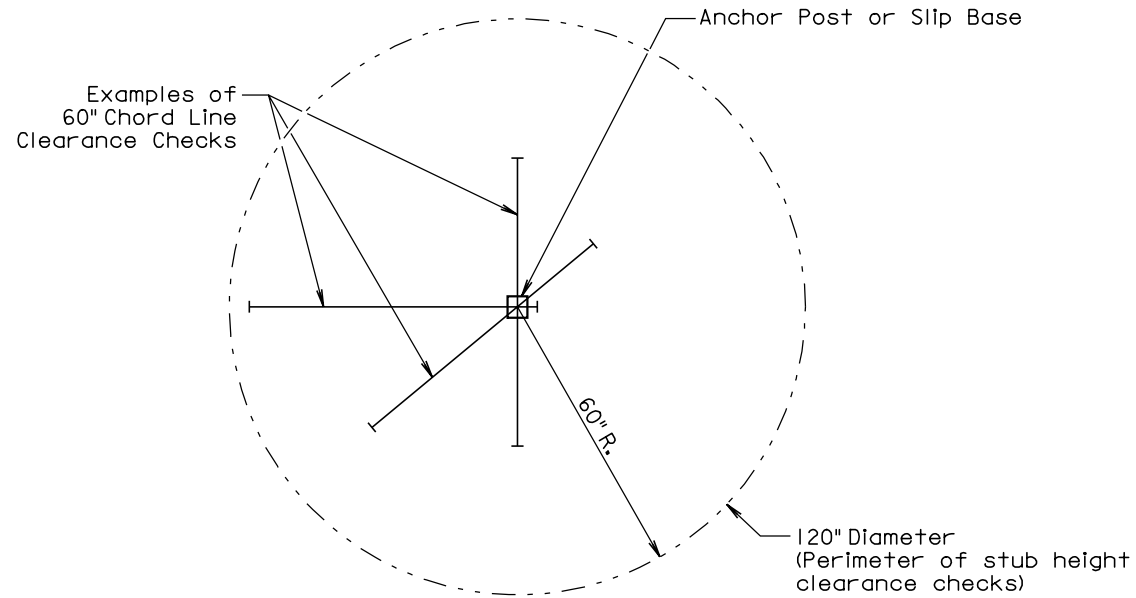
*Shall be used for overnight and long term operations.

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.

END ROAD WORK G20-2 (Optional)

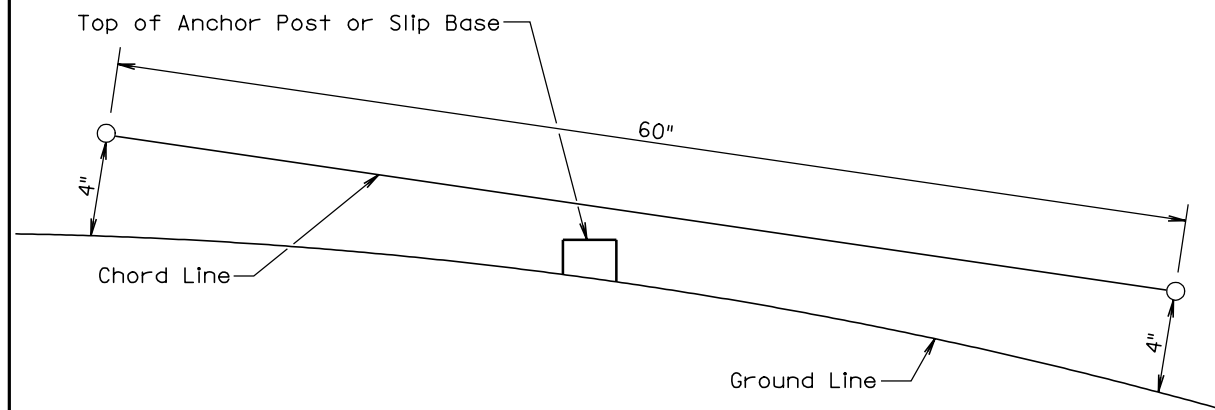
■ Channelizing Device
Drums or Type II Barricades shall be used if required overnight.
42" cones may be used along centerline





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
	<i>Published Date: 1st Qtr. 2011</i>	Sheet 1 of 1