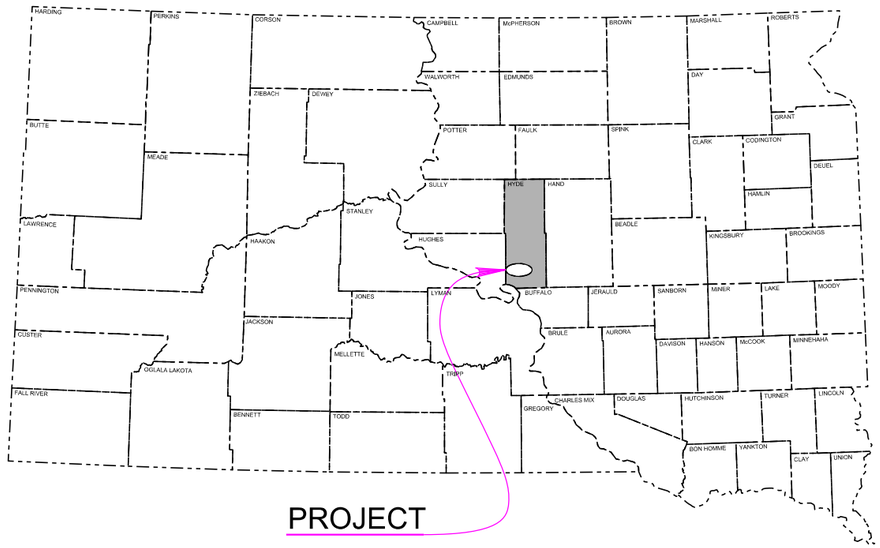


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT P 0034(206)245
S.D. HIGHWAY 34
HUGHES & HYDE COUNTIES

COLD MILLING ASPHALT CONCRETE,

ASPHALT CONCRETE RESURFACING,

FULL DEPTH RECLAMATION OF SHOULDER

PCN 06R0

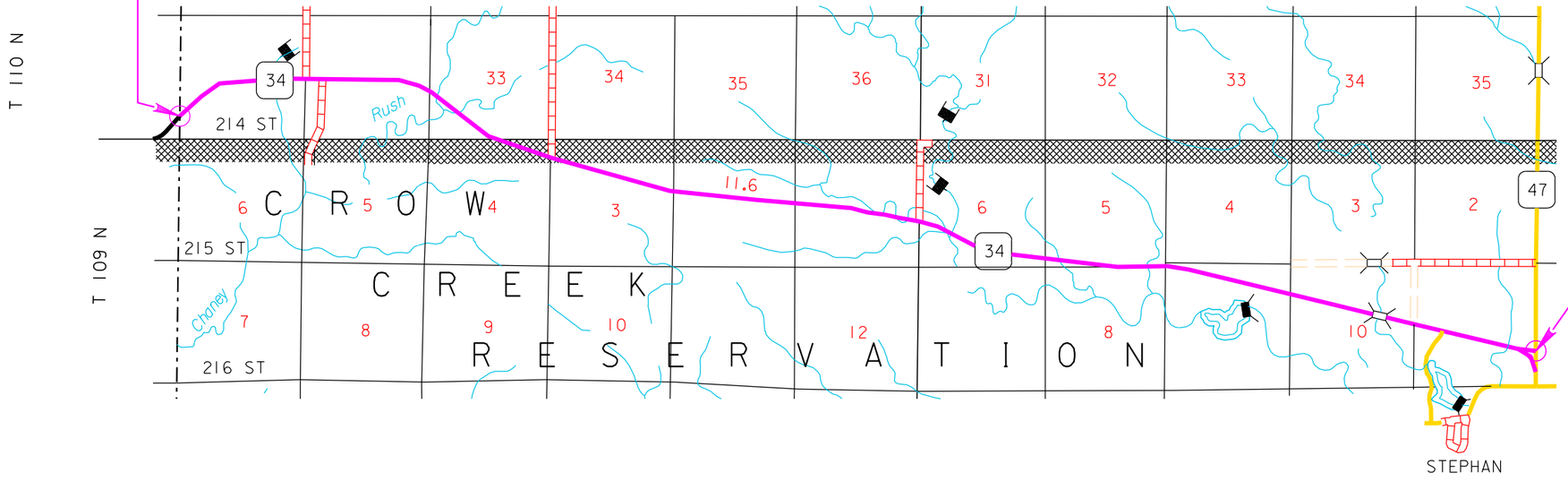
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	1	27

Plotting Date: 09/25/2023

INDEX OF SHEETS

BEGIN P 0034(206)245
Station 49+50.00 on P 0034(115)245
MRM 245.00+0.498

END P0034(206)245
Station 659+70.00 on P 0034(115)245
MRM 257.06+0.000



DESIGN DESIGNATION

AADT (2020)	522
AADT (2040)	692
DHV	89
D	50%
DHV T%	4.5%
AADT T%	9.8%
V	65 mph

STORM WATER PERMIT
NONE REQUIRED

Gross Length	60,994.56 Feet	11.552 Miles
Length of Exceptions	0.0 Feet	0.00 Miles
Net Length	60,994.6 Feet	11.552 Miles

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April 17, 2024

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E3320	Checker	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	1,736.1	SqYd
120E0100	Unclassified Excavation, Digouts	1,157	CuYd
120E6200	Water for Granular Material	256.8	MGal
260E1010	Base Course	3,016.8	Ton
* 270E0210	Haul and Stockpile Granular Material	3,030.2	Ton
280E0020	Full Depth Reclamation, Shoulder	81,167	SqYd
320E1200	Asphalt Concrete Composite	578.7	Ton
320E1800	Asphalt Concrete Blade Laid	1,736.1	Ton
320E7008	Grind 8" Rumble Strip or Stripe in Asphalt Concrete	22.3	Mile
330E0010	MC-70 Asphalt for Prime	36.2	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	191.9	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	50.8	Ton
330E1000	Blotting Sand for Prime	10.0	Ton
330E2000	Sand for Flush Seal	601.6	Ton
332E0010	Cold Milling Asphalt Concrete	204,363	SqYd
332E0110	Cold Milling Asphalt Concrete and Placing Cold Milled Material	2,358.3	Ton
600E0300	Type III Field Laboratory	1	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	520	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	62	Gal
634E0010	Flagging	650.0	Hour
634E0020	Pilot Car	300.0	Hour
634E0110	Traffic Control Signs	479.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	46.2	Mile
900E1980	Storage Unit	1	Each

*** - Denotes Non-Participating**

ALTERNATE A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0008	PG 64-34 Asphalt Binder	2,255.3	Ton
320E1002	Class Q2 Hot Mixed Asphalt Concrete	39,369.6	Ton
320E4000	Hydrated Lime	393.0	Ton

ALTERNATE B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0008	PG 64-34 Asphalt Binder	1,999.7	Ton
320E1002	Class Q2 Hot Mixed Asphalt Concrete	40,386.9	Ton
320E4000	Hydrated Lime	393.0	Ton

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

FLEXIBLE PAVEMENT SMOOTHNESS PROVISION

All sections not excluded by the Special Provision for Flexible Pavement Smoothness will be evaluated as 2 opportunities.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight, and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

< South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species: https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

This project may be in the vicinity of multiple streams and wetlands. These waters are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that this water body is not impacted.

Action Taken/Required:

The Contractor is advised that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Agriculture and Natural Resources (DANR), apply to this project. Special construction measures will be taken to ensure the above standard(s) of the surface waters are maintained and protected.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

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

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SCOPE OF WORK

1. Install fixed location signing prior to any construction activities
2. Cold milling 0.5” of asphalt concrete
3. Full Depth Reclamation on the shoulders
4. Unclassified excavation for digouts and backfill operations
5. Blade-laid asphalt concrete
6. Asphalt concrete paving operations
7. Surfacing placement on approaches and intersecting roads
8. Flush seal
9. Permanent pavement markings
10. Remove temporary fixed location signing
11. Misc. project cleanup

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the 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.

UTILITIES

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Hyde County Sheriff and local emergency response entities to the meeting. The Contractor will assist to maintain traffic as required by these plan notes and as agreed to at that meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to modify messages on portable changeable message signs or relocate portable changeable message signs, and to provide flaggers to direct or detour traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered and additional portable signs provided. No additional payment will be made for the modification of portable changeable message sign messages or the relocation of portable changeable message signs. Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Flaggers will be paid for at the contract unit price per hour for “Flagging”.

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

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

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

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

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

The Contractor will furnish, install, maintain, and remove TRUCK CROSSING (W8-6) signs daily. The TRUCK CROSSING signs will be displayed always when haul vehicles are hauling material. When hauling conditions no longer exist, the signs will be covered or removed from view. The exact number and location will be determined during construction. Payment for additional signs will be based on the contract unit price per square foot for "Traffic Control Signs".

GROOVED PAVEMENT (W8-15) signs with MOTORCYCLE (W8-15P) plaques are required in advance of areas that have been cold milled and are not resurfaced the same day. The GROOVED PAVEMENT sign assemblies will be installed a minimum of 1000 feet in advance of cold milled sections and remain in place until the sections have been resurfaced.

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

A mobile work operation will be allowed provided the rumble strip or rumble stripe grooving, flush sealing, and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

If inappropriate or conflicting pavement markings exist, the markings will be removed and replaced with applicable temporary pavement markings when the work duration is more than 3 days. When the work duration is less than 3 days, the channelizing devices in the area where the pavement markings conflict will be placed at one-half of the normal channelizing device spacing. Pavement marking removals will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or equivalent". Temporary pavement marking will be paid for at the contract unit price per mile/foot for "Temporary Pavement Marking". The additional channelizing devices will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.

It is required that the flaggers and pilot car operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

TRAFFIC CONTROL FOR ASPHALT CONCRETE RESURFACING

The Contractor will need to install LOOSE GRAVEL (W8-7) signs with advisory speed plaques (W13-1P) in areas where loose sand is present during the flush seal operation. LOOSE GRAVEL signs have been included in these plans for this.

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W8-15	GROOVED PAVEMENT	2	48" x 48"	16.0	32.0
W8-15P	MOTORCYCLE (plaque)	2	24" x 18"	3.0	6.0
W8-17	SHOULDER DROP-OFF (symbol)	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque) (45 MPH)	2	30" x 30"	6.3	12.6
W16-2P	1000 FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	8	48" x 48"	16.0	128.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 12 MILES	2	36" x 18"	4.5	9.0
G20-1	ROAD WORK NEXT 6 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			479.2

TEMPORARY PAVEMENT MARKING

The total length of no passing zone on this project is estimated to be 1.55 miles.

It is estimated that **10** DO NOT PASS (R4-1) and **9** PASS WITH CARE (R4-2) signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

Temporary flexible vertical markers (tabs) will be used to mark dashed centerline, No Passing Zones, and applicable lane lines. Paint will not be allowed for temporary pavement marking on the asphalt concrete wear course or after application of the flush seal.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

Quantities of Temporary Pavement Markings consist of:

One pass on top of the milled surface
One pass on top of the final lift of asphalt concrete
One pass prior to the flush seal, length as determined by the Engineer
One pass after the flush seal

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

TEMPORARY PAVEMENT MARKING (CONT.)

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

TRAFFIC CONTROL FOR ASPHALT CONCRETE CORING

Coring operations will be completed during daylight hours only. Traffic control for coring operations will follow the special "Special Detail for Mobile Operations for Asphalt Coring" sheet in these plans.

TYPE III FIELD LABORATORY

Substitution of a cellular telephone for the hard-wired touch-tone telephone is not allowed, as state personnel need the ability to download information over direct phone lines. The phone is intended for state personnel usage only. Contractor personnel are prohibited from using this phone unless pre-approved by the Project Engineer. Reimbursement will not be made for fees associated with the purchase, installation, disconnection, monthly line charges, and incidentals involved in the installation, maintenance, and disconnection of the phone (including attachments). These items will be incidental to the contract unit price per each for "Type III Field Laboratory".

STORAGE UNIT

The Contractor will provide a storage unit such as a portable storage container or a semi-trailer meeting the minimum size requirements from the table below:

Project Total Asphalt Concrete Tonnage	Minimum Internal Size (Cu Ft)	Minimum External Size (L x W x H)
Less than 50,000 ton	1,166	20' x 8' x 8.6' std
More than 50,000 ton	2,360	40' x 8' x 8.6' std
All Gyratory Controlled QC/QA Projects	2,360	40' x 8' x 8.6' std

The storage unit is intended for use only by the Engineer for the duration of the project. The QC lab personnel or the Contractor will not be allowed to use the storage container while it is on the project, without permission of the Engineer.

The storage unit will be on site and operational prior to asphalt concrete production. Upon completion of asphalt concrete production, the Engineer will notify the Contractor when the storage unit can be removed from the project. The storage unit use will not exceed 30 calendar days from the completion of asphalt concrete production. The storage unit will remain the property of the Contractor.

The storage unit will be weather proof and will be set in a level position. The storage unit will be able to be locked with a padlock.

The storage unit will be placed adjacent to the QA lab, as approved by the Engineer.

The following will apply when the storage unit provided on the project is a portable storage container:

1. The portable storage container will be constructed of steel.
2. The portable storage container will be set such that it is raised above the surrounding ground level to keep water from ponding under or around the storage container.

The following will apply when the storage unit provided on the project is a semi-trailer:

1. A set of steps and hand railings will be provided at the exterior door.
2. If the floor of the semi-trailer is 18 inches or more above the ground, a landing will be constructed at the exterior door. The minimum dimensions for the landing will be 4 feet by 5 feet. The top of the landing will be level with the threshold or opening of the doorway.
3. The semi-trailer may be connected to the QA lab by a stable elevated walkway. The walkway will be a minimum of 48 inches wide and contain handrails installed at 32 inches above the deck of the walkway. The walkway will be constructed such that it is stable and the deck does not deform during use and allows for proper door operation. Walkway construction will be approved by the Engineer.

All cost for furnishing, maintaining, and removing the storage unit including labor, equipment, and materials including any necessary walkways, landings, stairways, and handrails will be included in the contract unit price per each for Storage Unit.

SHOULDER CLEARING

Prior to mainline paving, the shoulders will be bladed and broomed of all vegetation and loose/accumulated material to the satisfaction of the Engineer. Shoulder Clearing will not be measured for payment, and all costs associated with Shoulder Clearing will be incidental to the various contract items.

Any remaining windrows of accumulated material will be re-spread evenly on the inslope adjacent to the asphalt shoulder to the satisfaction of the Engineer prior to the application of the flush seal.

The Contractor will notify the Pierre Area Office at (605) 773-5294 a minimum of two weeks prior to beginning work on this project so that SDDOT personnel can mow or spray along the shoulder inslopes. The Department will not be responsible for the effectiveness of the mowing or spraying.

FULL DEPTH RECLAMATION, SHOULDER

Prior to placing asphalt concrete on the shoulder, it is anticipated that the Contractor will be required to add approximately 150 tons of cold milled material (Cold Milling Asphalt Concrete and Placing Cold Milled Material) per mile per shoulder to the existing shoulders to meet the cross slope and inslope requirements shown in the typical sections.

The asphalt surface treatment and granular base material will be processed in place so that a uniform blend is obtained. The material will be handled to ensure that salvaged material is not lost down the inslope. The final rolling of the top surface of the materials will embed as many loose stones as possible. The finished surface will be smooth and free from waves and the Contractor will finish the surfacing materials to within 0.5% of the typical section cross slope. Shaping of the reclaimed granular surfacing materials on the shoulder will be completed after Cold Milling Asphalt Concrete to ensure that the elevation of the shoulder meets the elevation of the cold milled surface. The quantity of cold milled material added to the shoulder prior to Full Depth Reclamation, Shoulder may vary based on the cross slope of the shoulder and will be adjusted with approval from the Engineer.

The requirements of Specifications 280.3.B will not apply. All other requirements of Section 280, Full Depth Reclamation (FDR) will apply. Included in the Estimate of Quantities are 31.8 MGal of Water for Granular Material per mile for compaction.

BLOTTING SAND FOR PRIME

Included in the Estimate of Quantities are 10 tons of Blotting Sand for Prime to be used where necessary for maintenance of traffic as directed by the Engineer. (Rate = 10 lb./SqYd)

UNCLASSIFIED EXCAVATION, DIGOUTS

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts will be Asphalt Concrete and Base Course. The depth of asphalt will match the in-place thickness.

Included in the Estimate of Quantities are 100 cubic yards of Unclassified Excavation, Digouts, and 150 square yards of Remove Asphalt Concrete Pavement per mile for the removal of asphalt and unstable material throughout the project.

Included in the Estimate of Quantities are 200 tons of Base Course and 50 tons of Asphalt Concrete Composite per mile for backfill of Unclassified Excavation, Digouts.

The digouts will be extended to the shoulder and backfilled with granular material that will daylight to the inslope to allow water to escape the subsurface.

A copy of the surfacing/subgrade investigation for this project is available from the Pierre Region and Pierre Area offices.

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class Q2 Hot Mixed Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for Asphalt Concrete Composite regardless of the class of asphalt concrete used at such locations.

INTERSECTING ROADS AND ENTRANCES

Intersecting roads and entrances will be satisfactorily cleared of vegetation and shaped/compacted prior to placement of mainline surfacing. This work will be considered incidental to other contract items. Separate measurement and payment will not be made.

COLD MILLING ASPHALT CONCRETE AND PLACING COLD MILLED MATERIAL

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 24. This value was obtained from testing during construction of the in-place asphalt concrete.

Cold milling asphalt concrete will be done according to the typical section(s). In areas where maintenance patches have raised and/or widened the road, additional asphalt concrete will be milled to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas also include farm, residential, field entrances and intersecting roads. Milling will be daylighted to the outside edge of the roadway. Any additional costs associated with this additional cold milling will be incidental to the contract unit price per square yard for Cold Milling Asphalt Concrete.

Cold milling asphalt is estimated to produce 5,388.5 tons of cold milled asphalt concrete material. An estimated 2358.3 tons of cold milled asphalt concrete material will be placed directly on the shoulder for Section 2, as needed, to provide the final slope and width as shown on the typical section. The cold milled asphalt concrete will be placed on the shoulder prior to Full Depth Reclamation. The rate is estimated at 150 tons per mile per shoulder. The actual rate may vary based on the existing cross slope of the shoulder. The Contractor will be responsible for determining the quantity of cold milled asphalt concrete material required to achieve the dimensions shown in the typical section.

No separate measurement will be made for cold milled material placed on the shoulder and plans quantity will be used. Payment will be made under “Cold Milling Asphalt Concrete and Placing Cold Milled Material”.

The remainder of the salvaged asphalt concrete material (~3030 ton) will be stockpiled at the SDDOT Stephan material stockpile. All costs related to hauling and stockpiling the material will be paid for under “Haul and Stockpile Granular Material”.

HAUL AND STOCKPILE GRANULAR MATERIAL

Excess salvaged asphalt concrete material estimated at **3030.2 tons** (for informational purposes only) will be hauled and stockpiled at the SDDOT Stephan material stockpile. The stockpile is located in the Southeast 1/4 of the Northeast 1/4 of Section 11, Township 72 West, Range 109 North. A computerized scale, portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale along with a scale operator will be provided by the Contractor at the stockpile site to weigh the salvaged material prior to stockpiling.

All other costs for crushing, hauling, and stockpiling the remaining salvaged material will be incidental to the contract unit price per ton for Haul and Stockpile Granular Material.

EDGELINE RUMBLE STRIPS

The Engineer will provide the exact start and stop locations for the rumble stripe installation. Rumble strips will not be installed on bridge decks or through intersecting roads. They also will not be placed within 50 feet of any railroad crossing.

Rumble strip installation gaps at intersecting roads, as shown in the standard installation details, have been included in the measurement for the estimate of quantities.

The Contractor is responsible for inspecting project locations prior to letting to identify potential problems for installing the rumble stripes.

Any damage to the new roadway during the construction of rumble stripes will be repaired by the Contractor at no cost to the State of South Dakota or Hyde County.

The Contractor will construct rumble stripes in a uniform position according to the dimensions and at locations shown in the plans. Indentations must comply with the specified dimensions in the plans within +/- 0.06 inches in depth and 10 percent in length and width. The depressions must have well-defined edges and not snag or tear the existing pavement. The Contractor will not construct rumble stripes on structures or approach slabs.

All costs associated with grinding rumble stripes will be incidental to the contract unit price per mile for “Grind 8” Rumble Strip in Asphalt Concrete”.

GRIND RUMBLE STRIPS IN ASPHALT CONCRETE

Asphalt Concrete Rumble Strips will be constructed on the shoulders. Rumble Strips will be paid for at the contract unit price per mile for Grind 8” Rumble Strip or Stripe in Asphalt Concrete. It is estimated that 22.3 miles of asphalt concrete rumble strips will be required.

Rumble Strip installation will be completed prior to application of the Flush Seal and Permanent Pavement Markings. In the event the Flush Seal is eliminated from the contract, the Contractor will still be required to apply a Flush Seal to the newly installed 8” Rumble Strips at a width of 1’ and at the same rate as specified in this plan set. No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

RUMBLE STRIP ROADWAY CLEANING

The Contractor will be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. It will be the Contractor’s responsibility to ensure that loose material does not enter any vegetated areas and/or waterways.

All costs associated with cleaning work will be incidental to the contract unit price per mile for “Grind 8” Rumble Strip in Asphalt Concrete”.

TABLE OF 8” RUMBLE STRIPS

BEG. STATION	END STATION	L/R	QUANTITY (MI)
49+50	84+46	R	0.662
85+31	111+57	R	0.497
112+28	118+41	R	0.116
119+40	190+54	R	1.347
191+31	226+27	R	0.662
227+37	235+19	R	0.148
236+03	261+98	R	0.492
262+71	281+21	R	0.350
281+99	311+55	R	0.560
312+50	360+78	R	0.914
361+67	376+90	R	0.289
377+73	422+33	R	0.845
423+30	443+20	R	0.377
444+29	469+98	R	0.487
470+83	496+52	R	0.487
497+51	577+88	R	1.522
579+04	587+77	R	0.165
588+46	605+10	R	0.315
605+92	618+32	R	0.235
619+79	657+49	R	0.714
49+50	84+57	L	0.664
85+24	111+47	L	0.497
112+50	147+56	L	0.664
148+34	166+12	L	0.337
166+88	202+61	L	0.677
203+38	226+06	L	0.430
227+26	235+03	L	0.147
236+12	262+03	L	0.491
262+94	281+21	L	0.346
281+99	311+55	L	0.560
312+50	360+79	L	0.915
361+67	376+90	L	0.289
377+73	387+44	L	0.184
388+61	422+41	L	0.640
423+19	443+20	L	0.379
444+29	485+02	L	0.771
485+98	496+52	L	0.200
497+51	523+91	L	0.500
524+80	544+47	L	0.373
545+44	557+40	L	0.227
558+58	577+97	L	0.367
578+80	604+96	L	0.495
605+82	615+45	L	0.182
615+81	644+56	L	0.545
645+43	658+46	L	0.247

TOTAL: 22.3 MI

FLUSH SEAL

Application of flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing.

Application of flush seal may be eliminated by the Engineer. If the paved surface remains tight, the Engineer will notify the Contractor as soon as possible that the flush seal is unnecessary.

SAND FOR FLUSH SEAL

The sand application will be placed 11' wide in each lane, leaving 12" on center line and 6" on each edge line free of sand.

WATER FOR GRANULAR MATERIAL

The cost of water for compaction of any granular material will be incidental to the various other contract items. +/- 6% moisture will be required at the time of compaction unless otherwise directed by the Engineer.

ASPHALT CONCRETE, BLADE LAID

Included in the Estimate of Surfacing Quantities are 150 tons of Asphalt Concrete Blade Laid, 1.5 tons of Hydrated Lime, and 11.1 tons of PG 64-34 Asphalt Binder per mile. This will be tight-bladed on the existing 24 feet wide prior to the overlay.

Mineral Aggregate for tight-bladed material will use only the fine aggregate components combined in the same proportions as the Class Q2 Hot Mixed Asphalt Concrete mix. Quality testing is not required on the coarse aggregate (+No. 4 sieve) in this mixture.

The Asphalt Concrete Blade Laid Lift will be designed using an N_{design} Gyratory Compactive Effort of 65. The asphalt binder content will be determined so that the air voids of Asphalt Concrete Blade Laid Lift are between 3.0% and 5.0%.

Included in the Estimate of Surfacing Quantities are 62.3 tons of SS-1h or CSS-1h Asphalt for Tack for use prior to the application of the Blade Laid lift (Rate = 0.09 Gal/SqYd).

ASPHALT CONCRETE LEVELING LIFT

The Asphalt Concrete Leveling Lift will be compacted by the Specified Roller Coverage Method. All remaining requirements for Class Q2 Hot Mixed Asphalt Concrete will apply.

CLASS Q2 HOT MIXED ASPHALT CONCRETE

Mineral Aggregate:

Mineral aggregate for Class Q2 Hot Mixed Asphalt Concrete – Alternate A will conform to the requirements of Class Q2.

Mineral aggregate for Class Q2 Hot Mixed Asphalt Concrete – Alternate B will consist of a minimum of 80 percent crushed limestone ledgerock and will conform to the requirements of Class Q2.

Mix Design Criteria:

Gyratory Controlled QC/QA Mix Design requirements for Class Q2 Hot Mixed Asphalt Concrete will conform to the requirements of Class Q2 except as modified by the following

Voids in Mineral Aggregate (VMA):

	Minimum VMA (%)
Class Q2	13.0

Pay Factor Attributes – Alternate B:

Air Voids:

	Air Voids (%):
Class Q2	3.5 ± 1.0

All remaining requirements for Class Q2 will apply.

SURFACING THICKNESS DIMENSIONS

The spread rates shown in the plans will be applied in all cases where thickness varies from what is shown on the plans. At those locations where material must be placed to achieve a required elevation, the depth and quantity may be varied to achieve the required elevation.

BASE COURSE

Compaction of the Base Course placed on approaches will be to the satisfaction of the Engineer.

BASE COURSE, SALVAGED ASPHALT MIX

Base Course, Salvaged Asphalt Mix estimated at 2358.3 tons will be obtained from the cold milled material produced on this project and placed on the shoulders prior to the Full Depth Reclamation, Shoulder.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Class Q2 Hot Mixed Asphalt Concrete spread rates and taking the weigh delivery tickets as the surfacing material arrives/is placed on the roadway.

The Contractor will compute the required spread rates for each typical surfacing section as shown in the plans and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station-to-station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each work day, the Contractor will verify the following:

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

All daily tickets and summaries by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks on newly laid surfacing. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of +/- ½ inch of the depth shown in the plans, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for.

Achieving the correct depth may require picking up and moving material or other actions as required by the Engineer. All costs for providing the Contractor-furnished checker and performing all related duties will be incidental to the contract lump sum price for "Checker". No allowances will be made to the contract lump sum price for "Checker" due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

ADDITIONAL QUANTITIES

Included in the Estimate of Quantities are 1157.4 tons of Class Q2 Hot Mixed Asphalt Concrete, 11.6 tons of Hydrated Lime, 57.9 – 67.1 tons of PG 64-34 Asphalt Binder, and 2.9 tons of SS-1h or CSS-1h Asphalt for Tack (Rate = 0.09 gal/Sq.Yd.) per mile for spot leveling, strengthening, and repair of the existing surface throughout the project.

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline, edge line, and lane lines, This list is approximate. The Contractor will be required to document and be able to relocate for replacement for all existing markings before the markings are obliterated. The cost to duplicate the existing marking locations will be incidental to the contract unit prices for the various contract items.

PAVEMENT MARKING PAINT

The application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the fog or flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads.

High Build Waterborne Pavement Marking Paint applied after October 15 must be formulated as cold-weather waterborne paint. Cold weather waterborne paint will meet the requirements of Section 980.1 C.

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RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4” line = 22.5 Gals/Mile
Dashed 4” line = 6.2 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

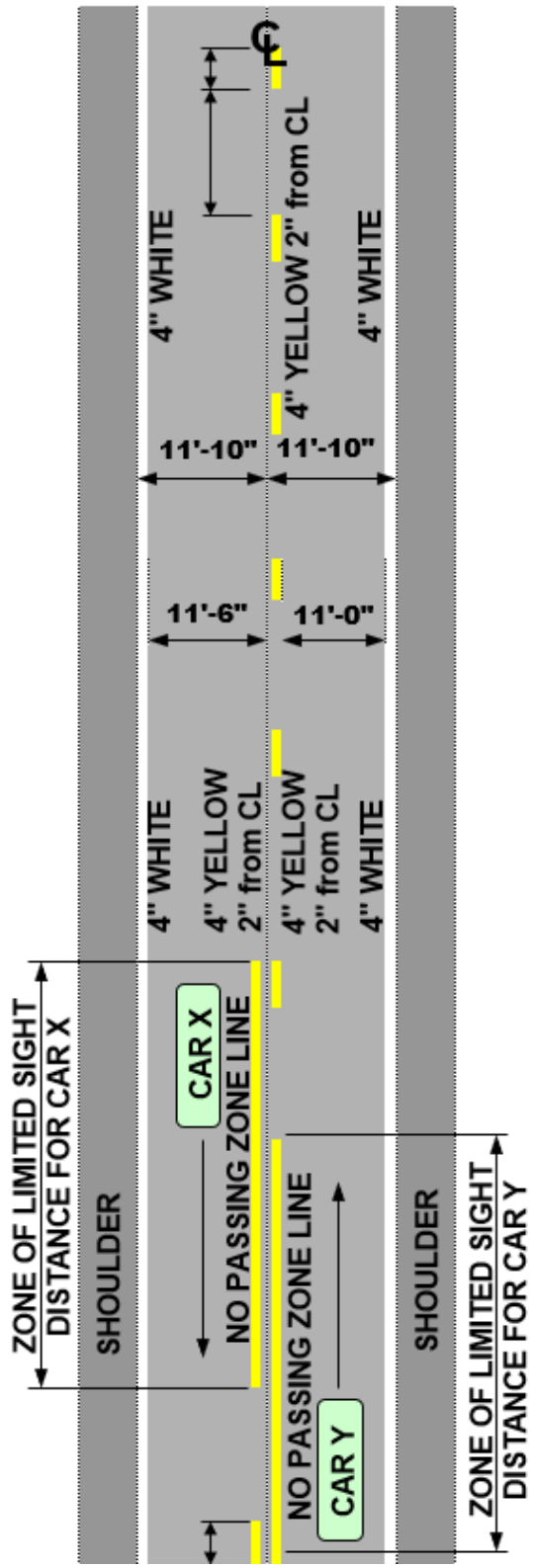
The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m^2/lux for white and 170 mc/m^2/lux for yellow

PAVEMENT MARKING DETAIL

TWO LANE ROADWAY



RATES OF MATERIALS

MAINLINE TYPICAL SECTION 1:

**Sta. 49+50 to Sta. 55+00*
Sta. 178+00 to Sta. 194+49.31
Sta 405+75.21 to Sta. 409+65.19
Sta. 653+76.46 to Sta. 657+00

**transition area*

NET LENGTH: 2,363 FT = 0.552 MI

- Cold Milling Asphalt Concrete applied at 0.5” depth and 35.25’ wide = **284.8 tons** of material produced
- SS-1h/CSS-1h Asphalt for Tack applied at 0.09 gal/SqYd and 25’ wide (prior to Blade Laid lift) = **3.1 ton**
- SS-1h/CSS-1h Asphalt for Tack applied at 0.06 gal/SqYd and 36’ wide (prior to Mainline lift) = **3.0 ton**
- SS-1h/CSS-1h Asphalt for Flush Seal applied at 0.05 gal/SqYd and 35’ wide = **2.5 ton**
- Sand for Flush Seal applied at 8 lbs/SqYd and 22’ wide = **28.7 ton**

MAINLINE TYPICAL SECTION 2:

Sta. 55+00 to Sta. 60+87.81
Sta. 88+16.81 to Sta. 147+01.60
Sta. 169+37.40 to Sta. 178+00
Sta. 209+94.14 to Sta. 272+17.93
Sta. 287+41.63 to Sta. 386+70.45
Sta. 433+50.30 to Sta. 469+25.89
Sta. 479+69.92 to Sta. 491+62.03
Sta. 508+96.23 to Sta. 641+46.86

NET LENGTH: 41,506 FT = 7.861 MI

- Cold Milling Asphalt Concrete applied at 0.5” depth and 28.25’ wide = **3,405.4 ton** of material produced
- Full Depth Reclamation of the shoulders at 8” depth = **2,358.3 ton** of Cold Milling Asphalt Concrete and Placing Cold Milled Material required
    - Total millings on project = (**5388.5 ton) – (2358.3 ton) = 3030.2 unused tons of cold milling**
- Water for Full Depth Reclamation of the shoulders applied at 31.8 MGal/mi = **250.0 MGal**

RATES OF MATERIALS (CONT.)

MAINLINE TYPICAL SECTION 2 (CONT.)

- MC-70 Asphalt for Prime on shoulders applied at 0.15 gal/SqYd and 6.5’ per shoulder = **36.2 ton**
- SS-1h/CSS-1h Asphalt for Tack applied at 0.09 gal/SqYd and 25’ wide (prior to Blade Laid lift) = **44.0 ton**
- SS-1h/CSS-1h Asphalt for Tack applied at 0.06 gal/SqYd and 36’ wide (prior to Mainline lift) = **42.4 ton**
- SS-1h/CSS-1h Asphalt for Flush Seal applied at 0.05 gal/SqYd and 35’ wide = **34.6 ton**
- Sand for Flush Seal applied at 8 lbs/SqYd and 22’ wide = **408.8 ton**

MAINLINE TYPICAL SECTION 3:

Sta. 60+87.81 to Sta. 88+16.81
Sta. 147+01.60 to Sta. 169+37.40
Sta. 386+70.45 to Sta. 405+75.21
Sta. 491+62.03 to Sta. 508+96.23

NET LENGTH: 8,604 FT = 1.630 MI

- Cold Milling Asphalt Concrete applied at 0.5” depth and 35.25’ wide = **883.4 ton** of material produced
- SS-1h/CSS-1h Asphalt for Tack applied at 0.09 gal/SqYd and 25’ wide (prior to Blade Laid lift) = **9.1 ton**
- SS-1h/CSS-1h Asphalt for Tack applied at 0.06 gal/SqYd and 36’ wide (prior to Mainline lift) = **8.8 ton**
- SS-1h/CSS-1h Asphalt for Flush Seal applied at 0.05 gal/SqYd and 35’ wide = **7.2 ton**
- Sand for Flush Seal applied at 8 lbs/SqYd and 22’ wide = **84.8 ton**

MAINLINE TYPICAL SECTION 4:

Sta. 194+49.31 to Sta. 209+94.14
Sta. 272+17.93 to Sta. 287+41.63
Sta. 409+65.19 to Sta. 433+50.30
Sta. 469+25.89 to Sta. 479+69.92
Sta. 641+46.86 to Sta. 653+76.46

NET LENGTH: 7,727 FT = 1.463 MI

- Cold Milling Asphalt Concrete applied at 0.5” depth and 35.25’ wide = **792.9 ton** of material produced
- SS-1h/CSS-1h Asphalt for Tack applied at 0.09 gal/SqYd and 25’ wide (prior to Blade Laid lift) = **8.2 ton**
- SS-1h/CSS-1h Asphalt for Tack applied at 0.06 gal/SqYd and 36’ wide (prior to Mainline lift) = **7.9 ton**
- SS-1h/CSS-1h Asphalt for Flush Seal applied at 0.05 gal/SqYd and 35’ wide = **6.4 ton**
- Sand for Flush Seal applied at 8 lbs/SqYd and 22’ wide = **76.1 ton**

CLASS Q2 HOT MIXED ASPHALT CONCRETE

LEVELING LIFT (LIFT 1), Alternate A Rates of Materials:
- Contractor-Furnished Aggregate, 1028 Ton/mile
- PG 64-34 Asphalt Binder (5.8%), 63 Ton/mile
- Hydrated Lime (1.0%), 11 Ton/mile

LEVELING LIFT (LIFT 1), Alternate B Rates of Materials:
- Contractor-Furnished Aggregate, 1064 Ton/mile
- PG 64-34 Asphalt Binder (5.0%), 56 Ton/mile
- Hydrated Lime (1.0%), 11 Ton/mile

MAINLINE LIFT (LIFT 2), Alternate A Rates of Materials:
- Contractor-Furnished Aggregate, 2055 Ton/mile
- PG 64-34 Asphalt Binder (5.8%), 127 Ton/mile
- Hydrated Lime (1.0%), 22 Ton/mile

MAINLINE LIFT (LIFT 2), Alternate B Rates of Materials:
- Contractor-Furnished Aggregate, 2129 Ton/mile
- PG 64-34 Asphalt Binder (5.0%), 112 Ton/mile
- Hydrated Lime (1.0%), 22 Ton/mile

ALTERNATE A – LEVELING LIFT (LIFT 1)

	Aggregate (100%, Contractor Furnished)	**PG 64-34 Asphalt Binder**	TOTAL Q2 AC MIX	**Hydrated Lime**	TOTAL Q2 AC MIX W/HYDRATED LIME
Section 1	567.4	34.8	**602.2**	6.0	**608.2**
Section 2	8089.0	495.2	**8584.2**	86.5	**8670.7**
Section 3	1675.6	102.7	**1778.3**	17.9	**1796.3**
Section 4	1504.0	92.2	**1596.1**	16.1	**1612.2**
TOTALS	11836.0	724.9	**12560.9**	126.5	**12687.4**

ALTERNATE B – LEVELING LIFT (LIFT 1)

	Aggregate (100%, Contractor Furnished)	**PG 64-34 Asphalt Binder**	TOTAL Q2 AC MIX	**Hydrated Lime**	TOTAL Q2 AC MIX W/HYDRATED LIME
Section 1	587.4	30.9	**618.3**	6.0	**624.3**
Section 2	8372.0	440.2	**8812.2**	86.5	**8898.7**
Section 3	1734.3	91.3	**1825.6**	17.9	**1843.5**
Section 4	1556.6	81.9	**1638.6**	16.1	**1654.7**
TOTALS	12250.3	644.3	**12894.6**	126.5	**13021.1**

ALTERNATE A – MAINLINE LIFT (LIFT 2)

	Aggregate (100%, Contractor Furnished)	**PG 64-34 Asphalt Binder**	TOTAL Q2 AC MIX	**Hydrated Lime**	TOTAL Q2 AC MIX W/HYDRATED LIME
Section 1	1134.3	70.0	**1204.3**	12.2	**1216.5**
Section 2	16154.4	990.5	**17144.8**	172.9	**17317.8**
Section 3	3349.7	207.0	**3556.7**	35.9	**3592.5**
Section 4	3006.5	185.8	**3192.3**	32.2	**3224.5**
TOTALS	23644.9	1453.3	**25098.2**	253.2	**25351.4**

ALTERNATE B – MAINLINE LIFT (LIFT 2)

	Aggregate (100%, Contractor Furnished)	**PG 64-34 Asphalt Binder**	TOTAL Q2 AC MIX	**Hydrated Lime**	TOTAL Q2 AC MIX W/HYDRATED LIME
Section 1	1175.1	61.8	**1236.9**	12.2	**1249.1**
Section 2	16728.2	880.4	**17608.6**	172.9	**17781.6**
Section 3	3470.3	182.6	**3652.8**	35.9	**3688.7**
Section 4	3114.7	163.9	**3278.6**	32.2	**3310.8**
TOTALS	24488.3	1288.7	**25777.0**	253.2	**26030.2**

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TABLE OF ADDITIONAL QUANTITIES

Descriptions/Locations	Water For Embamkment (MGal)	Cold Milling Asphalt Concrete (SqYd)	Remove Asphalt Concrete Pavement (SqYd)	Unclassified Excavation, Digouts (CuYd)	Asphalt Concrete Composite (Ton)	Base Course (Ton)	Asphalt Concrete Blade Laid (Ton)	Blotting Sand for Prime (Ton)	ALTERNATE A: Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALTERNATE A: PG 64-34 Asphalt Binder (Ton)	ALTERNATE A: Hydrated Lime (Ton)	ALTERNATE B: Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALTERNATE B: PG 64-34 Asphalt Binder (Ton)	ALTERNATE B: Hydrated Lime (Ton)	SS-1h or CSS-1h Asphalt For Tack (Ton)	SS-1h or CSS-1h Asphalt For Flush Seal (Ton)	Sand For Flush Seal (Ton)
Asphalt to R.O.W.																	
1 Intersecting Road - Chieftain Rd. (~ Sta. 619+00)		253.3							59.2	3.4	0.6	60.8	3	0.6	0.2	0.1	1.0
Granular Material to R.O.W.																	
36 Farm & Field Entrances	5.2					540.0											
6 Private Entrances	1.0					102.0											
3 Intersecting Roads	0.6					60.0											
SD34 Free Right Turn Ramp (Typ. Section 5)		608.3							114.3	6.6	1.1	117.3	5.8	1.1	0.4	0.2	2.2
Remove Asphalt Concrete Pavement & Unclassified Excavation & for Digouts			1,736.1	1157													
Asphalt Concrete Replacement & Basecourse Backfill at Digout Locations					578.7	2,314.8											
Spot Leveling, Strengthening, & Repair									1,157.4	67.1	11.6	1,157.4	57.9	11.6	2.9		
Blade Laid/Tight Blading							1,736.1								62.3		
Miscellaneous								10.0									
TOTALS =	**6.8**	**861.6**	**1,736.1**	**1,157**	**578.7**	**3,016.8**	**1,736.1**	**10.0**	**1,330.9**	**77.1**	**13.3**	**1,335.5**	**66.7**	**13.3**	**65.4**	**0.1**	**1.0**

SUMMARY OF ASPHALT CONCRETE

Description/Location	ALTERNATE A: Compaction With Specified Density for Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALTERNATE A: Compaction Without Specified Density for Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALTERNATE B: Compaction With Specified Density for Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALTERNATE B: Compaction Without Specified Density for Class Q2 Hot Mixed Asphalt Concrete (Ton)
Section 1 - 1" Leveling Lift, 2" Mainline Lift				
24.0' Finished Roadway Width	1,015.7	507.9	1,042.9	521.4
4.0' Shoulders with 1.5' Bevel		301.1		309.1
Section 2 - Shoulder FDR, 1" Leveling Lift, 2" Mainline Lift				
24.0' Finished Roadway Width	14,466.9	7,233.5	14,852.1	7,426.0
4.0' Shoulders with 1.5' Bevel	4,288.1		4,402.2	
Section 3 - Superelevated, 1" Leveling Lift, 2" Mainline Lift				
24.0' Finished Roadway Width	2,999.6	1,500.0	3,079.6	1,539.8
4.0' Shoulders with 1.5' Bevel		889.2		912.8
Section 4 - Superelevated, 1" Leveling Lift, 2" Mainline Lift				
24.0' Finished Roadway Width	2,692.4	1,346.2	2,764.2	1,382.0
4.0' Shoulders with 1.5' Bevel		798.1		819.3
Subtotals =	*25,462.7*	*12,576.0*	*26,141.0*	*12,910.4*
Table of Additional Quantities Totals =	-	*1,330.9*		*1,335.5*
TOTALS =	**25,462.7**	**13,906.9**	**26,141.0**	**14,245.9**

TABLE OF APPROACHES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	11	27

APPROACH	STATION	L/R	TYPE
1	84+84	L	Farm/Field Entrance, Gravel
2	84+84	R	Farm/Field Entrance, Gravel
3	110+95	L	Intersection (326 Ave), Gravel
4	110+95	R	Farm/Field Entrance, Gravel
5	119+00	R	Private Entrance (326 Ave), Gravel
6	147+91	L	Farm/Field Entrance, Gravel
7	166+48	L	Farm/Field Entrance, Gravel
8	191+96	R	Farm/Field Entrance, Gravel
9	201+93	L	Farm/Field Entrance, Gravel
10	226+68	L	Intersection (328 Ave), Gravel
11	226+68	R	Private Entrance (328 Ave), Gravel
12	235+58	L	Farm/Field Entrance, Gravel
13	235+58	R	Farm/Field Entrance, Gravel
14	262+40	L	Farm/Field Entrance, Gravel
15	262+40	R	Farm/Field Entrance, Gravel
16	281+66	L	Farm/Field Entrance, Gravel
17	281+66	R	Farm/Field Entrance, Gravel
18	312+00	L	Farm/Field Entrance, Gravel
19	312+00	R	Farm/Field Entrance, Gravel
20	361+28	L	Farm/Field Entrance, Gravel
21	361+28	R	Farm/Field Entrance, Gravel
22	377+39	L	Farm/Field Entrance, Gravel
23	377+39	R	Farm/Field Entrance, Gravel
24	388+00	L	Private Entrance, Gravel
25	422+77	L	Farm/Field Entrance, Gravel
26	422+77	R	Private Entrance, Gravel
27	443+73	L	Farm/Field Entrance, Gravel
28	443+73	R	Farm/Field Entrance, Gravel
29	470+39	R	Farm/Field Entrance, Gravel
30	485+48	L	Farm/Field Entrance, Gravel
31	497+02	L	Intersection (334 Ave), Gravel
32	497+02	R	Farm/Field Entrance, Gravel
33	524+34	L	Farm/Field Entrance, Gravel
34	544+88	L	Farm/Field Entrance, Gravel
35	557+92	L	Farm/Field Entrance, Gravel
36	557+92	R	Farm/Field Entrance, Gravel
37	578+33	L	Farm/Field Entrance, Gravel
38	578+33	R	Private Entrance, Gravel
39	588+09	L	Farm/Field Entrance, Gravel
40	588+09	R	Farm/Field Entrance, Gravel
41	605+44	L	Farm/Field Entrance, Gravel
42	605+44	R	Farm/Field Entrance, Gravel
43	615+60	L	Farm/Field Entrance, Gravel
44	619+00	R	Intersection (Chieftain Rd), Asphalt
45	632+13	L	Farm/Field Entrance, Gravel
46	644+97	L	Private Entrance, Gravel

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	12	27

TABLE OF SUPERELEVATED CURVES

Station	to	Station	Comments
(Begin Project)			
49+50.00		61+11.01	Normal Crown Section
61+11.01		63+07.01	Superelevation Transition
63+07.01		85+97.61	2^0 00’ 00” Curve RT 0.05 Superelevation Rate Centerline Point of Rotation
85+97.61		87+93.61	Superelevation Transition
87+93.61		147+24.80	Normal Crown Section
147+24.80		149+20.80	Superelevation Transition
149+20.80		167+18.20	2^0 00’ 00” Curve RT 0.05 Superelevation Rate Centerline Point of Rotation
167+18.20		169+14.20	Superelevation Transition
169+14.20		194+77.31	Normal Crown Section
194+77.31		196+67.31	Superelevation Transition
196+67.31		207+76.14	1^0 50’ 54” Curve LT 0.048 Superelevation Rate Centerline Point of Rotation
207+76.14		209+66.14	Superelevation Transition
209+66.14		272+85.93	Normal Crown Section
272+85.93		274+25.93	Superelevation Transition
274+25.93		285+33.63	0^0 55’ 27” Curve LT 0.03 Superelevation Rate Centerline Point of Rotation
285+33.63		286+73.63	Superelevation Transition
286+73.63		351+01.31	Normal Crown Section
351+01.31		352+13.31	Superelevation Transition
352+13.31		364+64.15	0^0 29’ 54” Curve RT 0.02 Superelevation Rate Centerline Point of Rotation
364+64.15		365+76.15	Superelevation Transition
365+76.15		387+34.46	Normal Crown Section
387+34.46		388+79.46	Superelevation Transition
388+79.46		403+66.22	1^0 00’ 19” Curve RT 0.032 Superelevation Rate Centerline Point of Rotation
403+66.22		405+11.22	Superelevation Transition
405+11.22		410+29.19	Normal Crown Section
410+29.19		411+74.19	Superelevation Transition
411+74.19		431+41.30	1^0 00’ 19” Curve LT 0.032 Superelevation Rate Centerline Point of Rotation
431+41.30		432+86.30	Superelevation Transition
432+86.30		469+89.89	Normal Crown Section
469+89.89		471+34.89	Superelevation Transition
471+34.89		477+60.92	1^0 02’ 30” Curve LT 0.032 Superelevation Rate Centerline Point of Rotation
477+60.92		479+05.92	Superelevation Transition
479+05.92		492+26.02	Normal Crown Section
492+26.02		493+71.02	Superelevation Transition
493+71.02		506+87.22	1^0 02’ 30” Curve RT 0.032 Superelevation Rate Centerline Point of Rotation
506+87.22		508+32.22	Superelevation Transition
508+32.22		642+28.46	Normal Crown Section
642+28.46		643+51.46	Superelevation Transition
643+51.46		651+71.86	0^0 45’ 00 Curve LT 0.024 Superelevation Rate Centerline Point of Rotation
651+71.86		652+94.86	Superelevation Transition
652+94.86		659+70.00	Normal Crown Section
			(End Project)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	13	27

TABLE OF PROJECT STATIONING

TYP. SECTION	STATION		TO	STATION		DESCRIPTION	GROSS LENGTH	TRANSITION LENGTH	EXCEPTION LENGTH	RESURFACING LENGTH
1	Begin Project	49+50.00	to	55+00.00		Rural 2 Lane (Transition Area)	550.00'	550.00'		550.00'
2		55+00.00	to	60+87.81		Rural 2 Lane	587.81'			587.81'
3		60+87.81	to	88+16.81		Rural 2 Lane	2,729.00'			2,729.00'
2		88+16.81	to	147+01.60		Rural 2 Lane	5,884.79'			5,884.79'
3		147+01.60	to	169+37.40		Rural 2 Lane	2,235.80'			2,235.80'
2		169+37.40	to	178+00.00		Rural 2 Lane	862.60'			862.60'
1		178+00.00	to	194+49.31		Rural 2 Lane	1,649.31'			1,649.31'
4		194+49.31	to	209+94.14		Rural 2 Lane	1,544.83'			1,544.83'
2		209+94.14	to	272+17.93		Rural 2 Lane	6,223.79'			6,223.79'
4		272+17.93	to	287+41.63		Rural 2 Lane	1,523.70'			1,523.70'
2		287+41.63	to	386+70.45		Rural 2 Lane	9,928.82'			9,928.82'
3		386+70.45	to	405+75.21		Rural 2 Lane	1,904.76'			1,904.76'
1		405+75.21	to	409+65.19		Rural 2 Lane	389.98'			389.98'
4		409+65.19	to	433+50.30		Rural 2 Lane	2,385.11'			2,385.11'
2		433+50.30	to	469+25.89		Rural 2 Lane	3,575.59'			3,575.59'
4		469+25.89	to	479+69.92		Rural 2 Lane	1,044.03'			1,044.03'
2		479+69.92	to	491+62.03		Rural 2 Lane	1,192.11'			1,192.11'
3		491+62.03	to	508+96.23		Rural 2 Lane	1,734.20'			1,734.20'
2		508+96.23	to	641+46.86		Rural 2 Lane	13,250.63'			13,250.63'
4		641+46.86	to	653+76.46		Rural 2 Lane	1,229.60'			1,229.60'
1		653+76.46	to	657+00.00	End Project	Rural 2 Lane	323.54'			323.54'
5		1+75.00	to	5+34.40		Free Right Turn Ramp @ East End	359.40'			359.40'
						PROJECT TOTALS	**61,109.40' 11.574 Miles**	**550.00' 0.104 Miles**	**00.00' 0.000 Miles**	**61,109.40' 11.574 Miles**

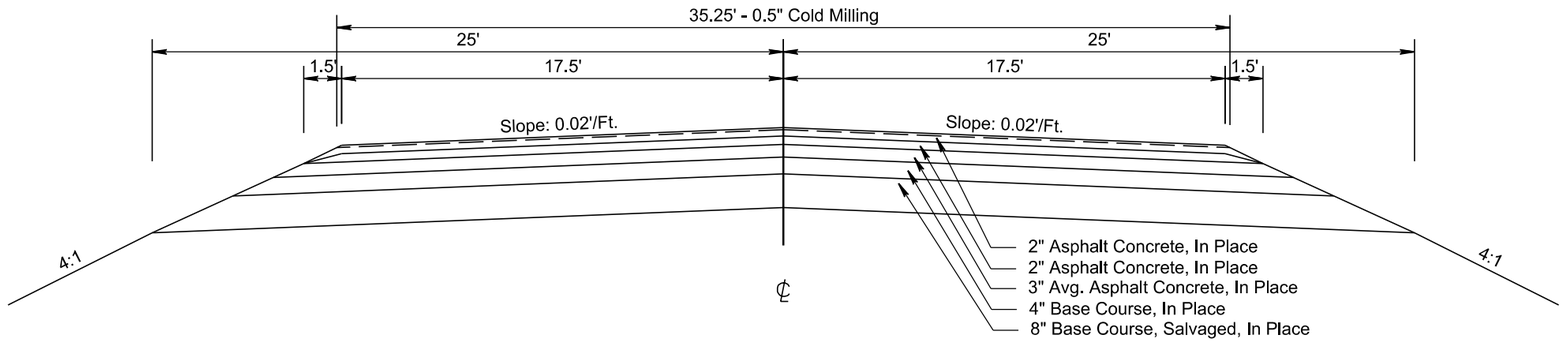
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	14	27

Plotting Date: 09/25/2023

Section 1

* Sta. 49+50 to Sta. 55+00
Sta. 178+00 to Sta. 194+49.31
Sta. 405+75.21 to Sta. 409+65.19
Sta. 653+76.46 to Sta. 657+00
In Place & Cold Milling Section

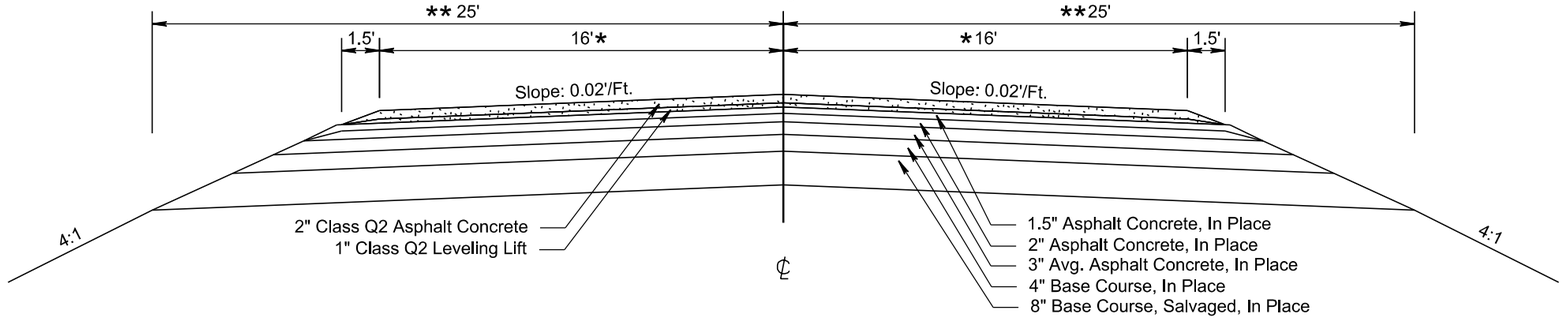


Transitions:

Sta. 49+50 to Sta. 55+00
* 10' to 16'
** 19' to 25'

Section 1

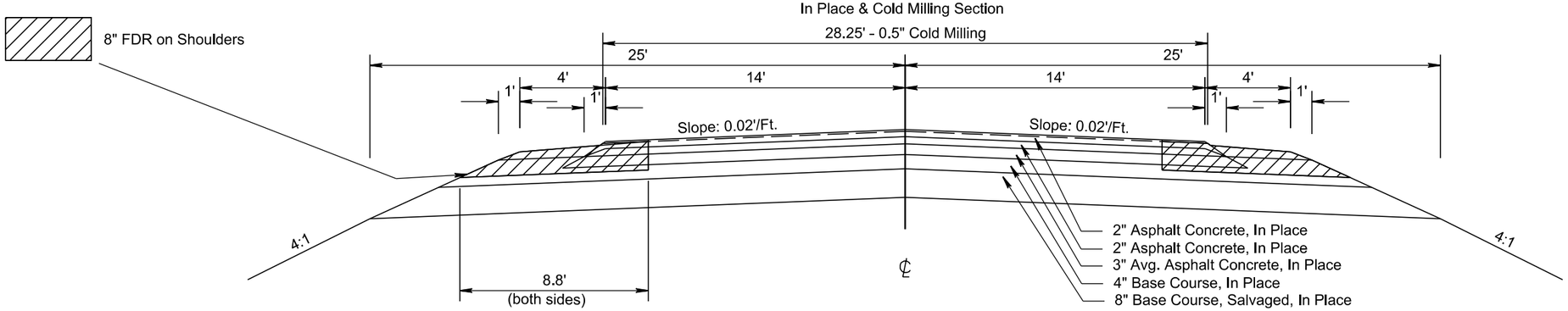
* Sta. 49+50 to Sta. 55+00
Sta. 178+00 to Sta. 194+49.31
Sta. 405+75.21 to Sta. 409+65.19
Sta. 653+76.46 to Sta. 659+70
Resurfacing Section



TYPICAL SURFACING SECTIONS

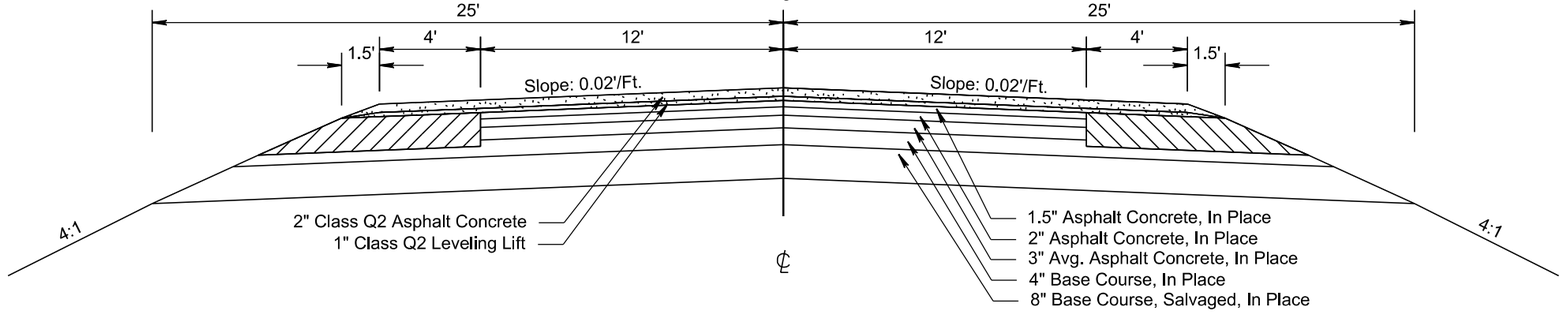
Section 2

Sta. 55+00 to Sta. 60+87.81
Sta. 88+16.81 to Sta. 147+01.60
Sta. 169+37.40 to Sta. 178+00
Sta. 209+94.14 to Sta. 272+17.93
Sta. 287+41.63 to Sta. 386+70.45
Sta. 433+50.30 to Sta. 469+25.89
Sta. 479+69.92 to Sta. 491+62.03
Sta. 508+96.23 to Sta. 641+46.86
In Place & Cold Milling Section



Section 2

Sta. 55+00 to Sta. 60+87.81
Sta. 88+16.81 to Sta. 147+01.60
Sta. 169+37.40 to Sta. 178+00
Sta. 209+94.14 to Sta. 272+17.93
Sta. 287+41.63 to Sta. 386+70.45
Sta. 433+50.30 to Sta. 469+25.89
Sta. 479+69.92 to Sta. 491+62.03
Sta. 508+96.23 to Sta. 641+46.86
Resurfacing Section



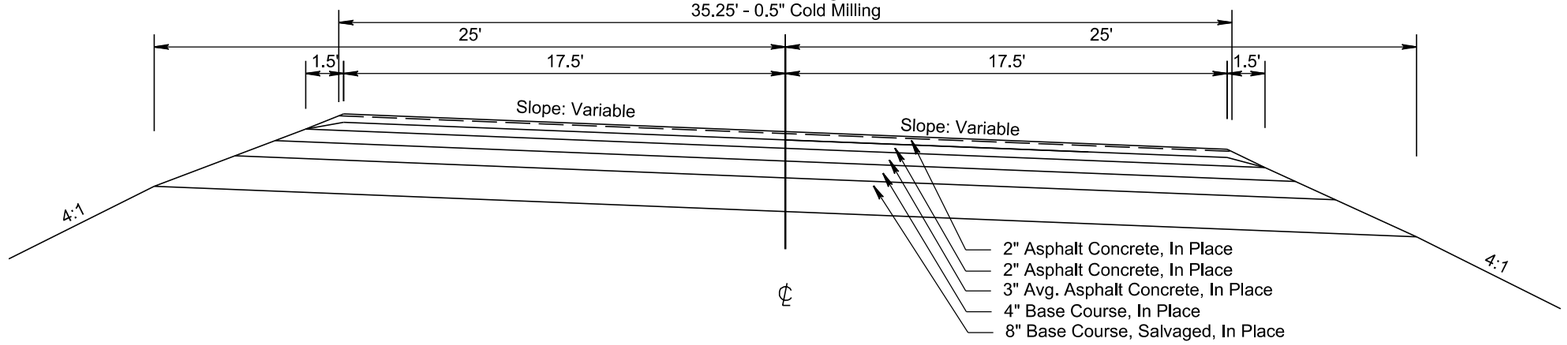
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	16	27

Plotting Date: 09/25/2023

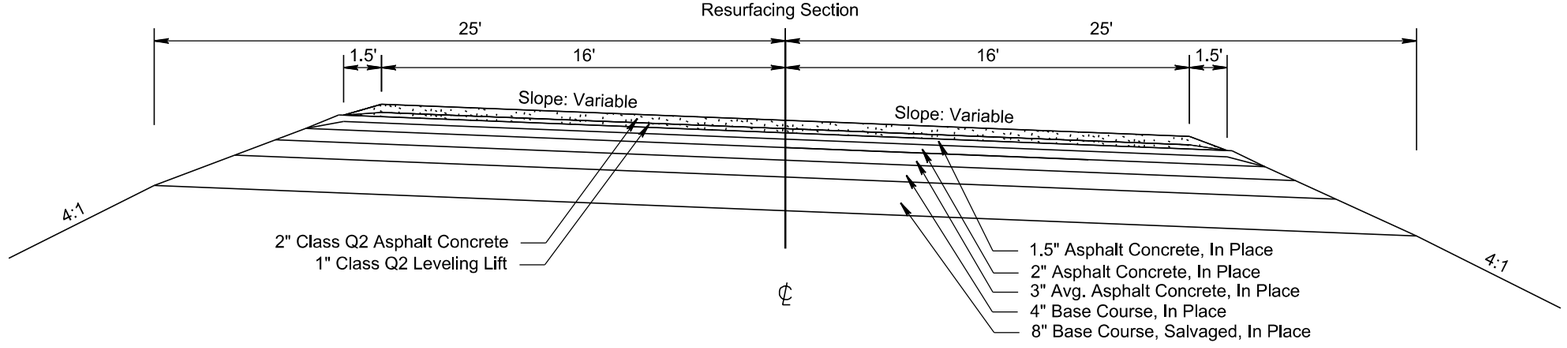
Section 3 - Superelevated Sections

Sta. 60+87.81 to Sta. 88+16.81
Sta. 147+01.60 to Sta. 169+37.40
Sta. 386+70.45 to Sta. 405+75.21
Sta. 491+62.03 to Sta. 508+96.23
In Place & Cold Milling Section
35.25' - 0.5" Cold Milling



Section 3 - Superelevated Sections

Sta. 60+87.81 to Sta. 88+16.81
Sta. 147+01.60 to Sta. 169+37.40
Sta. 386+70.45 to Sta. 405+75.21
Sta. 491+62.03 to Sta. 508+96.23
Resurfacing Section



PLOT SCALE - 1:6.00001

PLOT NAME - 3

FILE ...\06R0_TYPICALSECTIONS_1_5.DGN

PLOTTED FROM - TRPR25584

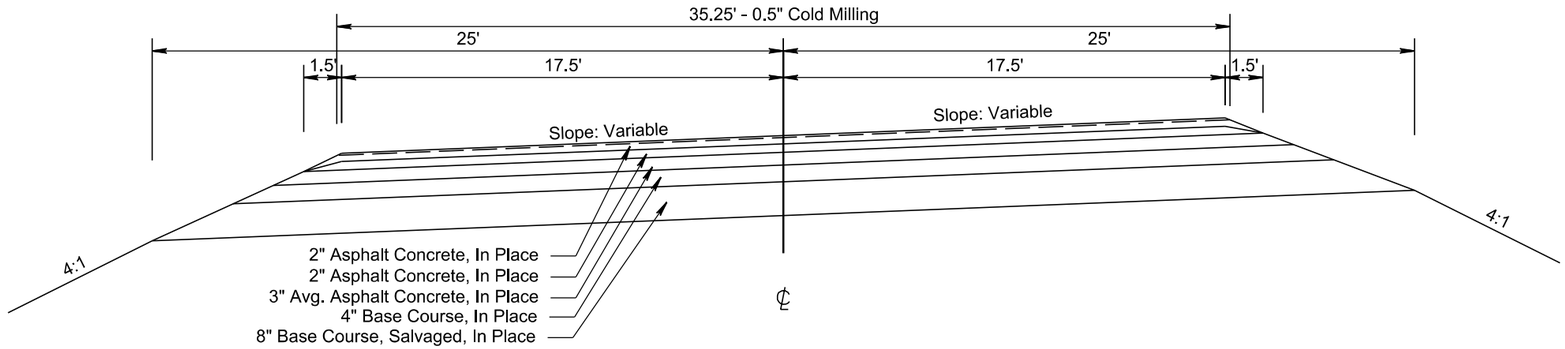
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	17	27

Plotting Date: 09/25/2023

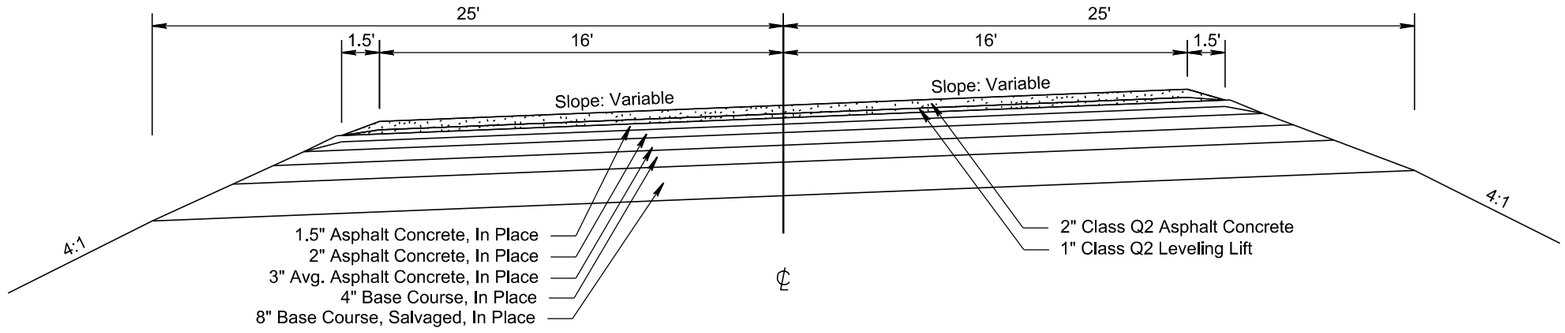
Section 4 - Superelevated Sections

Sta. 194+49.31 to Sta. 209+94.14
Sta. 272+17.93 to Sta. 287+41.63
Sta. 409+65.19 to Sta. 433+50.30
Sta. 469+25.89 to Sta. 479+69.92
Sta. 641+46.86 to Sta. 653+76.46
In Place & Cold Milling Section



Section 4 - Superelevated Sections

Sta. 194+49.31 to Sta. 209+94.14
Sta. 272+17.93 to Sta. 287+41.63
Sta. 409+65.19 to Sta. 433+50.30
Sta. 469+25.89 to Sta. 479+69.92
Sta. 641+46.86 to Sta. 653+76.46
Resurfacing Section



PLOT SCALE - 1:6.00001

PLOTTED FROM - TRPR25584

PLOT NAME - 4

FILE - ...\06R0_TYPICALSECTIONS_1_5.DGN

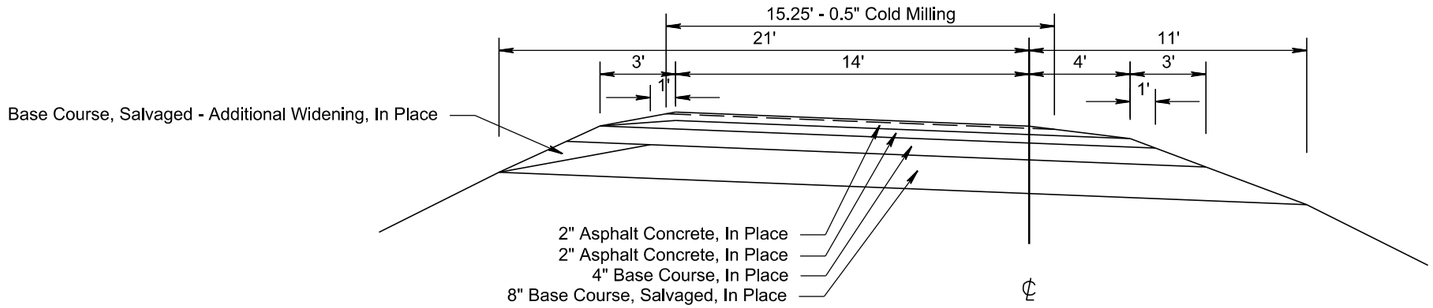
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	18	27

Plotting Date: 09/25/2023

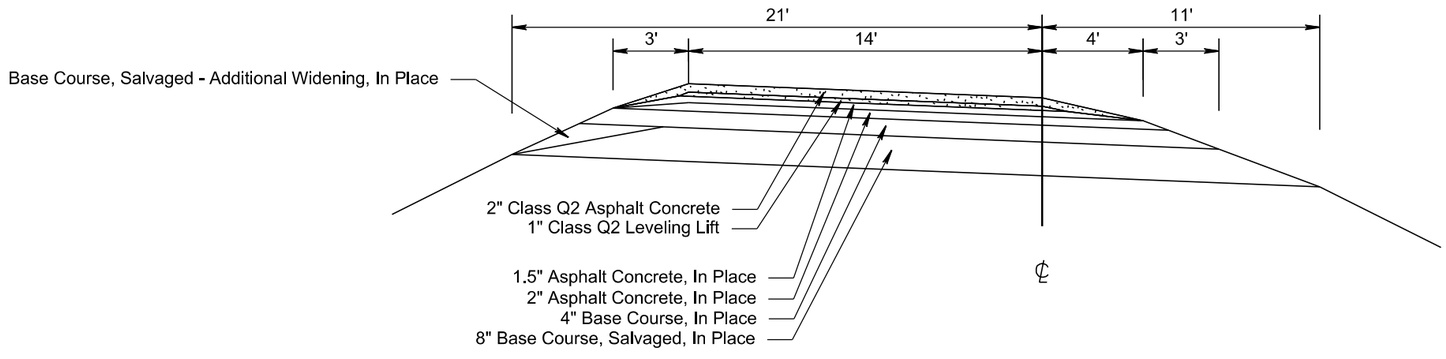
Section 5 - SD34 Free Right Turn Ramp

Sta. 1+75 to Sta. 5+34.40
In Place & Cold Milling Section



Section 5 - SD34 Free Right Turn Ramp

Sta. 1+75 to Sta. 5+34.40
Resurfacing Section



CONTROL DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	19	27

HORIZONTAL AND VERTICAL CONTROL POINTS

POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 35A	374 + 1.42	186.55 L	REBAR/CAP	707579.9300	2174196.9500	1975.42
CP 41A	429 + 96.44	74.04 R	REBAR/CAP	705725.1370	2179482.4040	1965.15

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North Zone (NAD83/4001); Epoch 2010.00; Geoid 18; SF = 0.99933. The elevations shown on this sheet are based on NAVD 8.

END PROJECT TAPER DETAIL

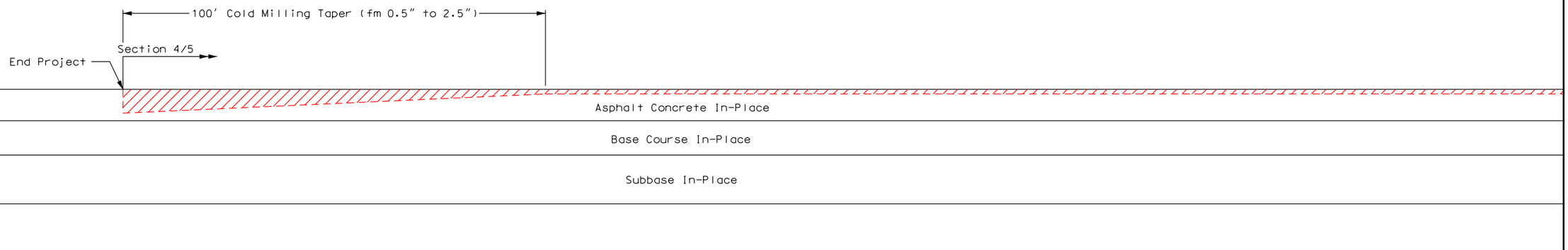
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	20	27

Plotting Date: 09/25/2023

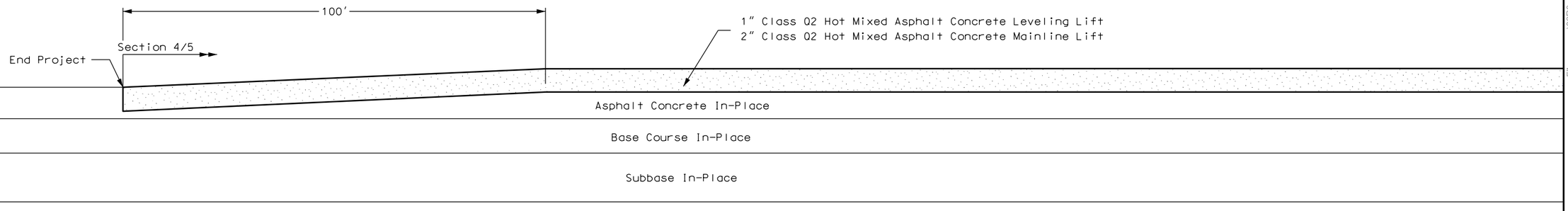
Cold Milling Asphalt Concrete

New 3" Class Q2 Hot Mixed Asphalt Concrete

COLD MILLING ASPHALT CONCRETE DETAIL



RESURFACING DETAIL



DRAWING NOT TO SCALE

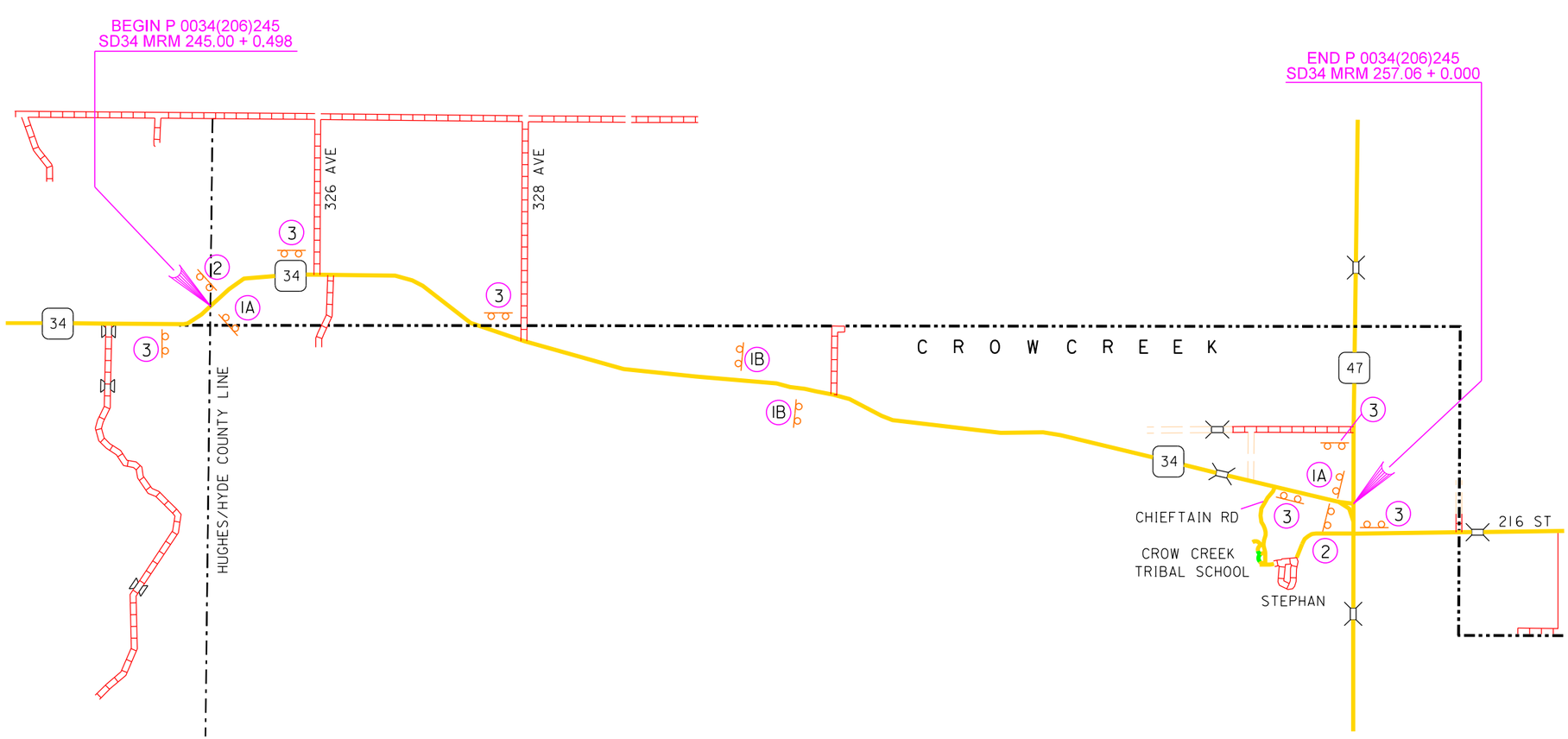
Revised 03/07/2024 JDC

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	21	27

Plotting Date: 09/25/2023

06R0 FIXED LOCATION SIGN LAYOUT - SD34

(NOT TO SCALE)



1A

ROAD WORK
NEXT 12 MILES

G20-1 (36" x 18")

1B

ROAD WORK
NEXT 6 MILES

G20-1 (36" x 18")

2

END
ROAD WORK

G20-2 (36" x 18")

3

ROAD
WORK
AHEAD

W20-1 (48" x 48")

PLOT SCALE - 1:200

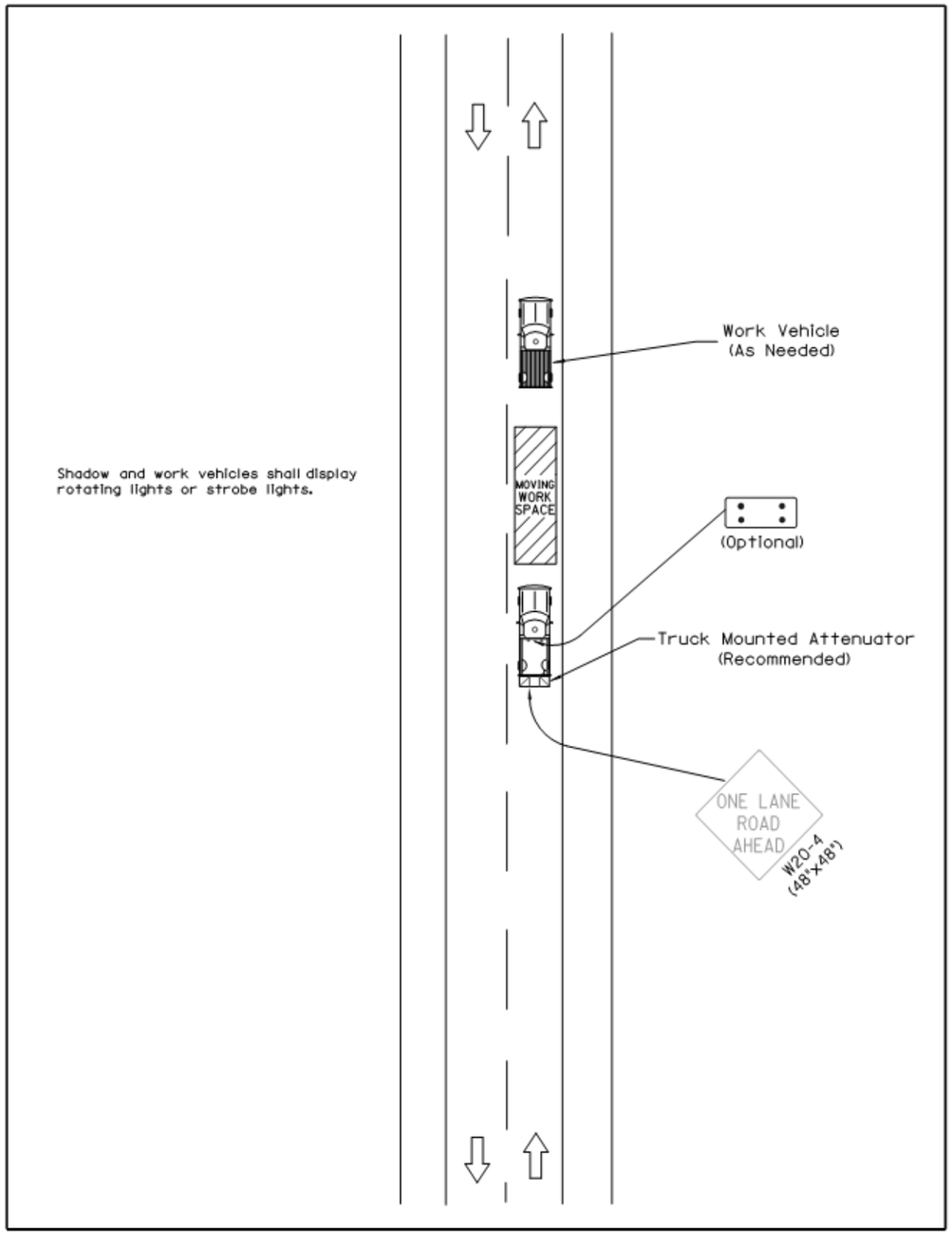
PLOT NAME - 3

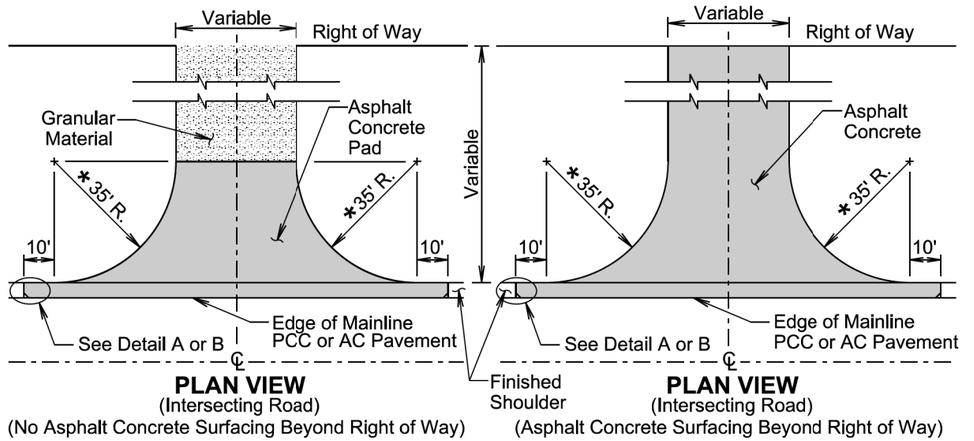
FILE - ...\06R0_FIXEDSIGN.DGN

PLOTTED FROM - TRPR25584

SPECIAL DETAIL FOR MOBILE OPERATION FOR ASPHALT CORING

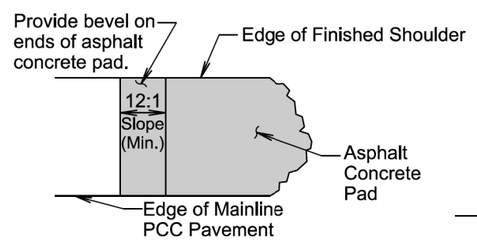
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(206)245	22	27



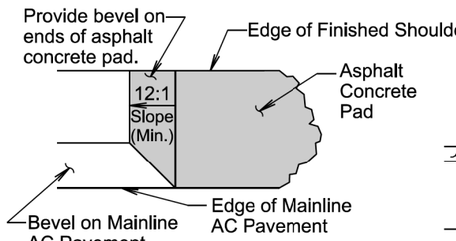


PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

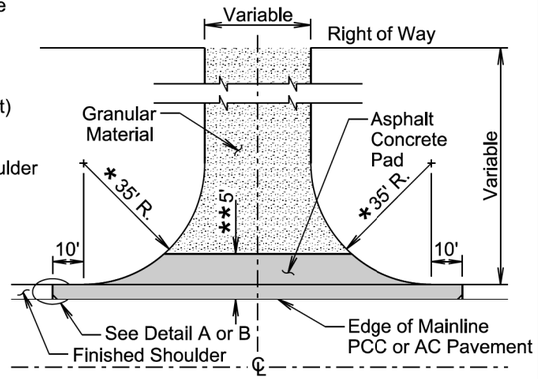
PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)



DETAIL A
(Typ. For Projects with Mainline PCC Pavement)



DETAIL B
(Typ. For Projects with Mainline AC Pavement)



PLAN VIEW
(Entrance)

GENERAL NOTES:

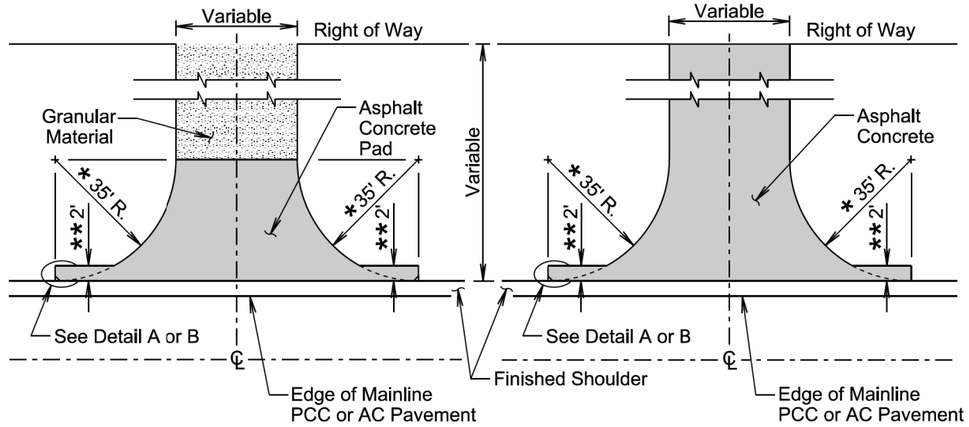
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

** For shoulder widths < 4', the Asphalt Concrete Pad width must be 5'. For shoulders widths of 4' or more, pave the full width of the shoulder only.

August 27, 2020

Published Date: 2024	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (SHOULDERS: GRANULAR MATERIAL OR COLD RECYCLED MATERIAL)	PLATE NUMBER 320.01 Sheet 1 of 1



PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)

GENERAL NOTES:

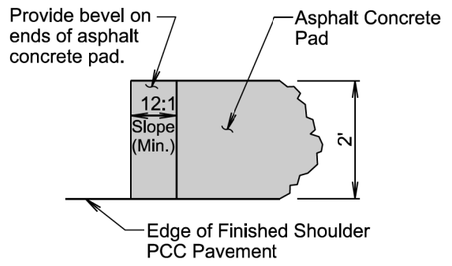
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

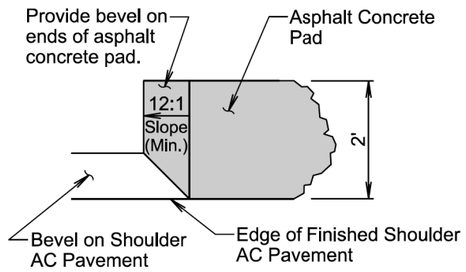
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete pads if the Engineer, in the Engineer's sole discretion, determines the pads are infeasible to construct due to site specific reasons including, but not limited to; existing inslope configuration, borrow and material availability, and right-of-way constraints.

August 27, 2020

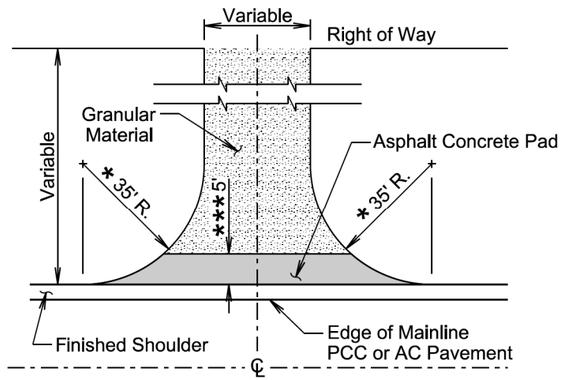
Published Date: 2024	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

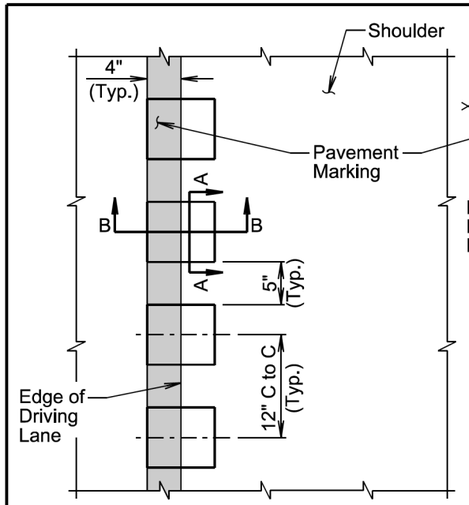


PLAN VIEW
(Entrance)

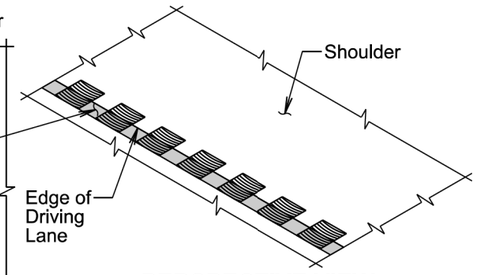
*** Not required if finished shoulder width is 4' or greater.

August 27, 2020

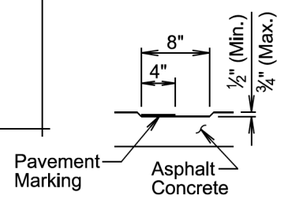
Published Date: 2024	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04
			Sheet 2 of 2



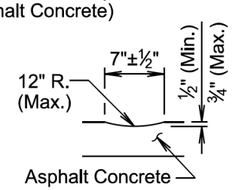
PLAN VIEW
(Typical Rumble Stripe in Asphalt Concrete)



PERSPECTIVE VIEW
(Typical Rumble Stripe in Asphalt Concrete)



SECTION B-B



SECTION A-A

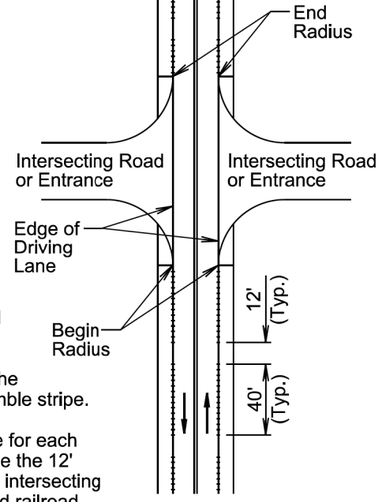
GENERAL NOTES:

A rumble stripe will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble stripe will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble stripe adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble stripe will include the 12' long segments without rumble stripes and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble stripes. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind 8" Rumble Strip or Stripe in Asphalt Concrete".



PLAN VIEW

September 14, 2019

Published Date: 2024	SDDOT	8" RUMBLE STRIPE IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.20
			Sheet 1 of 1

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

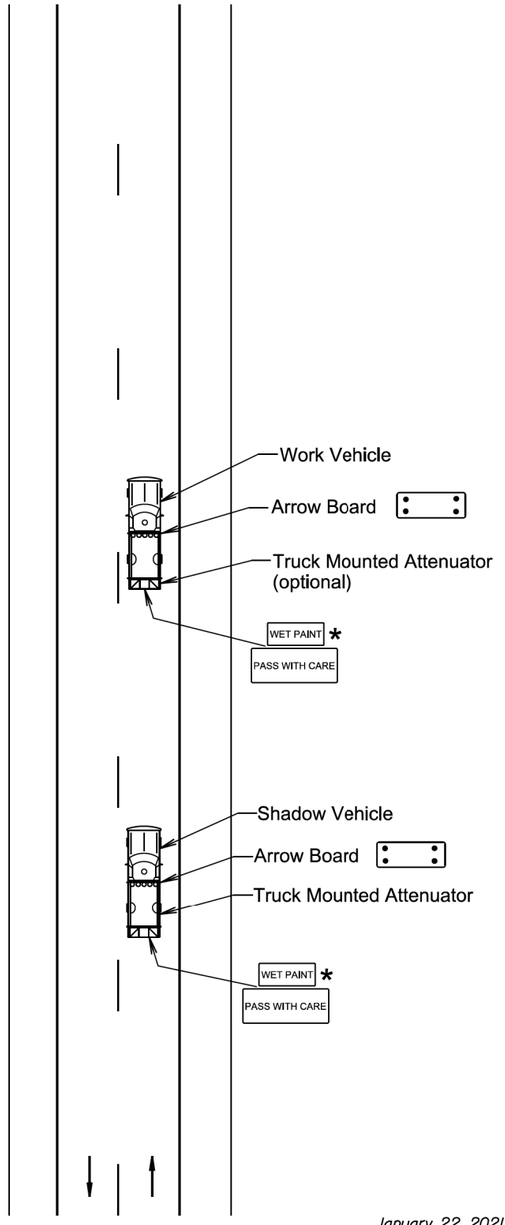
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

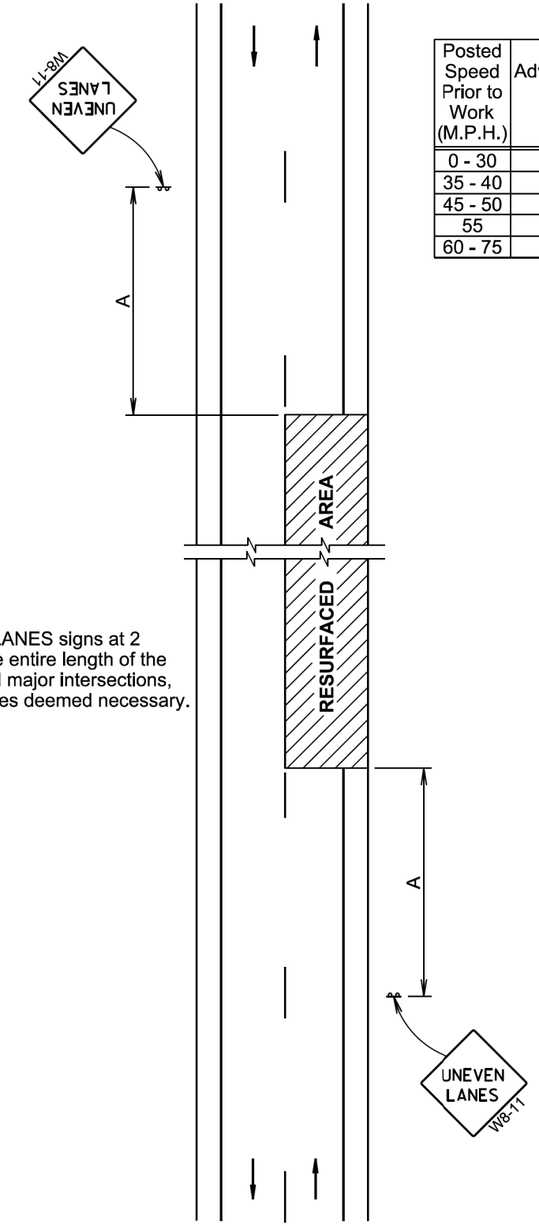


January 22, 2021

Published Date: 2024	SDDOT	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000

Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.



January 22, 2021

Published Date: 2024	SDDOT	UNEVEN ROAD SURFACE	PLATE NUMBER 634.22
			Sheet 1 of 1

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	500	25
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) will 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 will be drums or 42" cones.

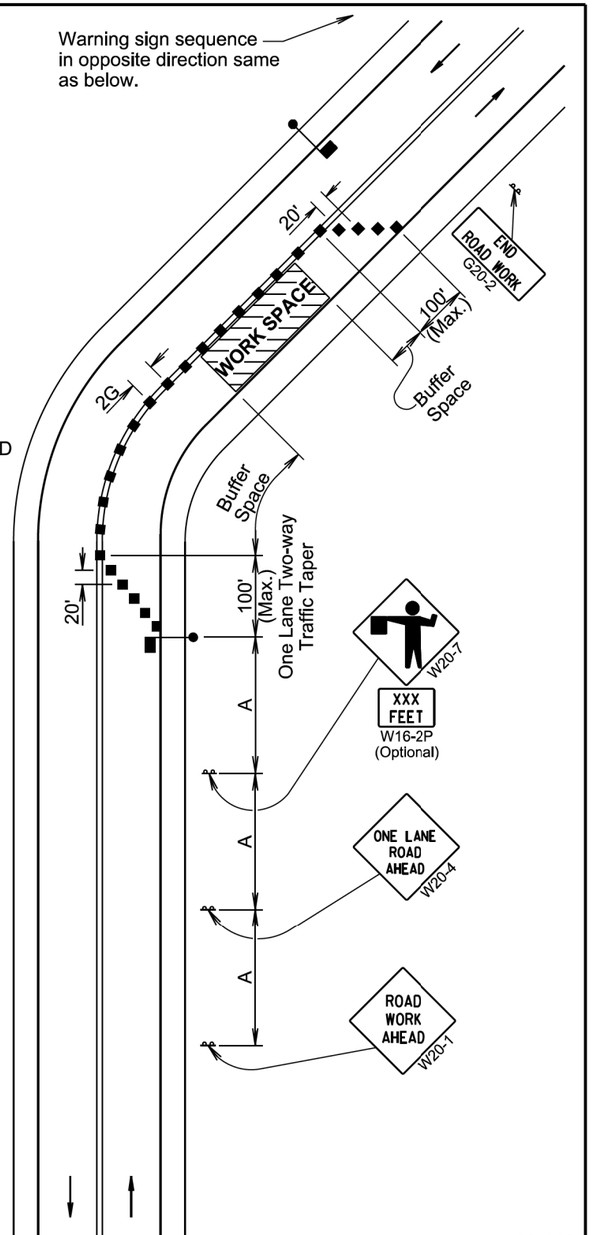
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

END ROAD WORK G20-2

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

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

The length of A may be adjusted to fit field conditions.



January 22, 2021

Published Date: 2024	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

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

Flagger

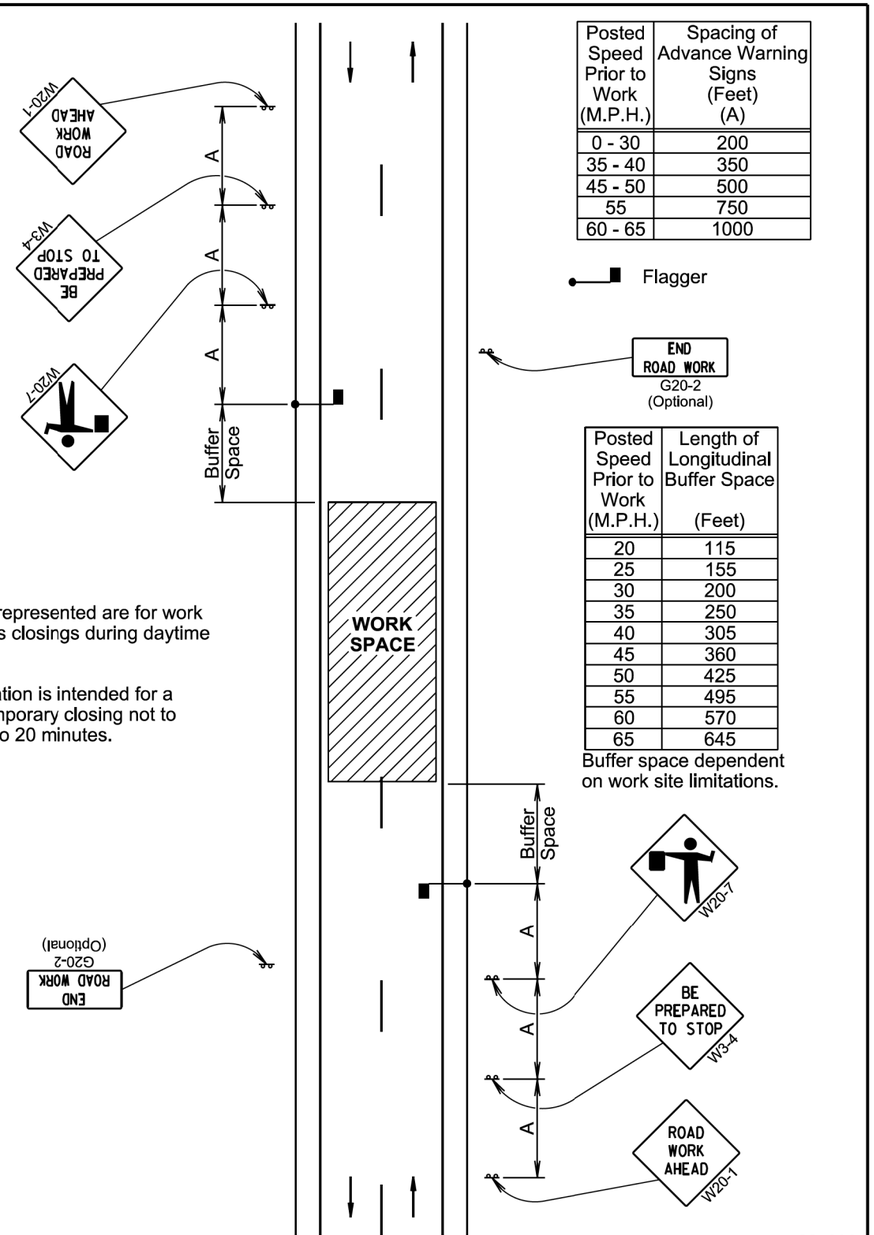
END ROAD WORK G20-2 (Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

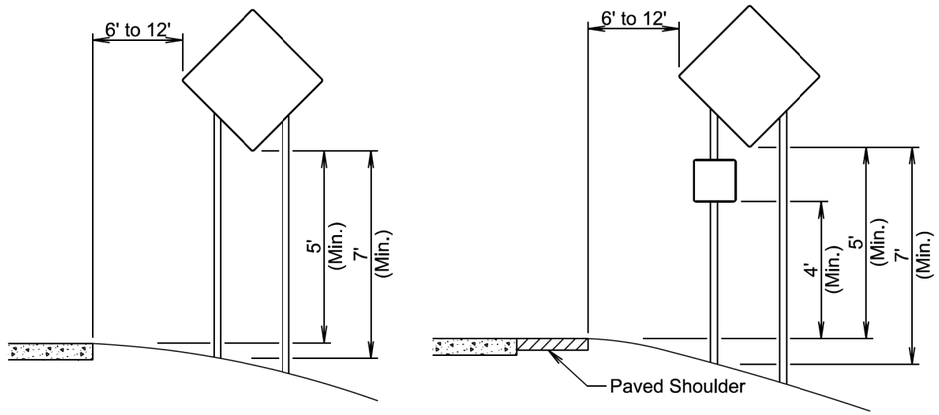
Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.



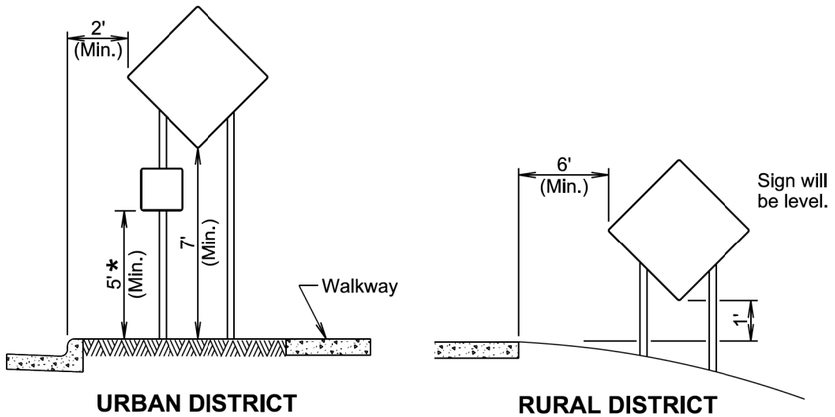
January 22, 2021

Published Date: 2024	SDDOT	TEMPORARY ROAD WORK	PLATE NUMBER 634.30
			Sheet 1 of 1



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



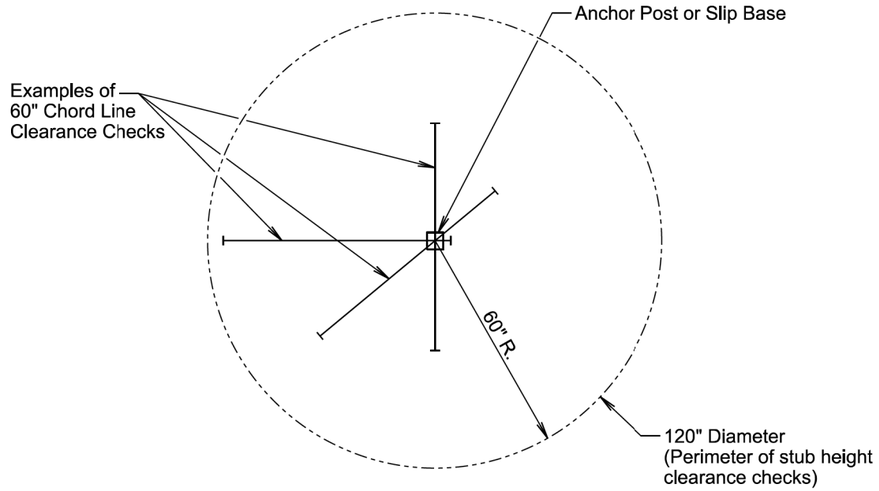
URBAN DISTRICT

RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

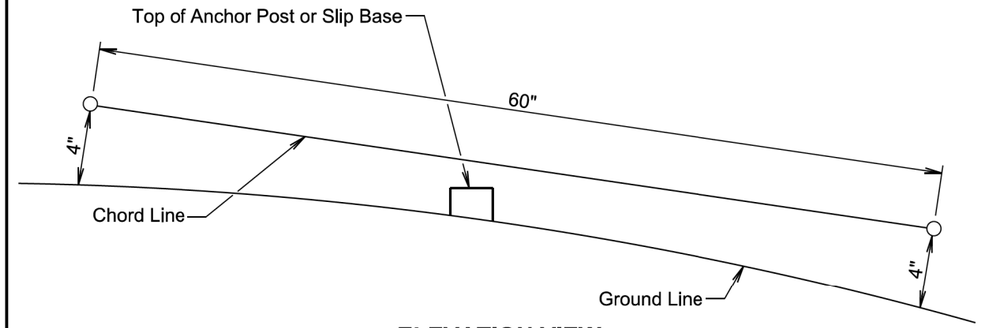
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL 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 will 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.

January 22, 2021

Published Date: 2024	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1