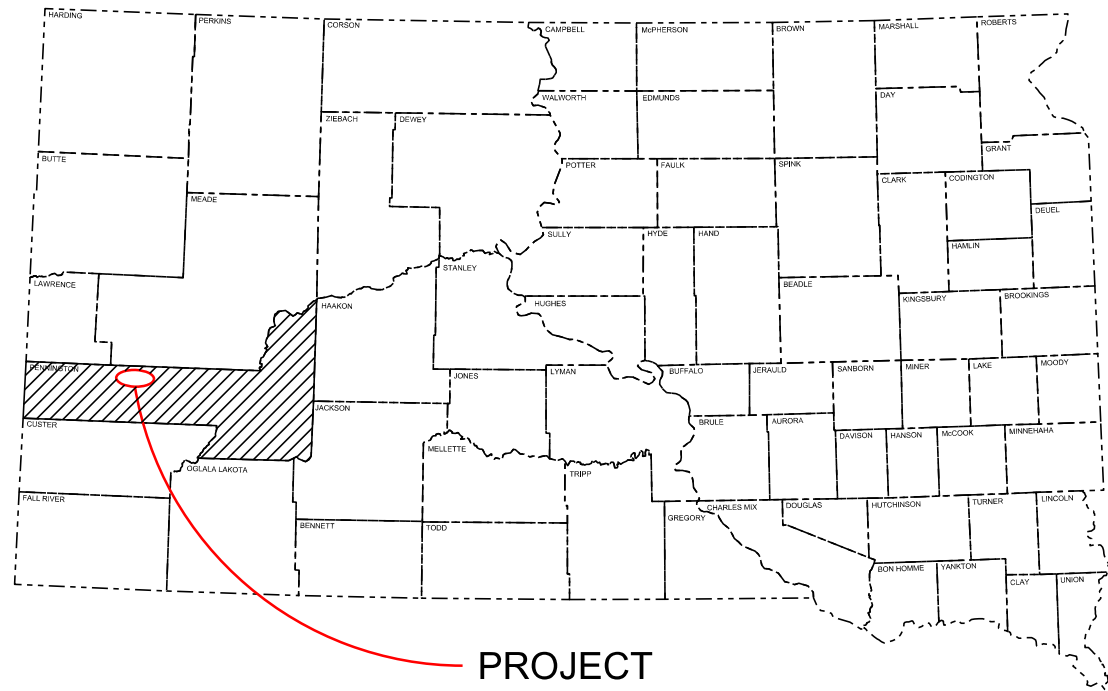


Plot Scale - 1:200

Plotted From - lrrc12247a



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECT 090 E-452
INTERSTATE 90 EASTBOUND
PROJECT 090 W-452
INTERSTATE 90 WESTBOUND
PROJECT 016B-452
US HIGHWAY 16B
PENNINGTON COUNTY

CURB AND GUTTER
EROSION CONTROL
PCN i5HX. PCN i5HY, & PCN i5R2

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------------|-------------------|-------|-----------------|
| | 090 E-452 et. al. | 1 | 17 |

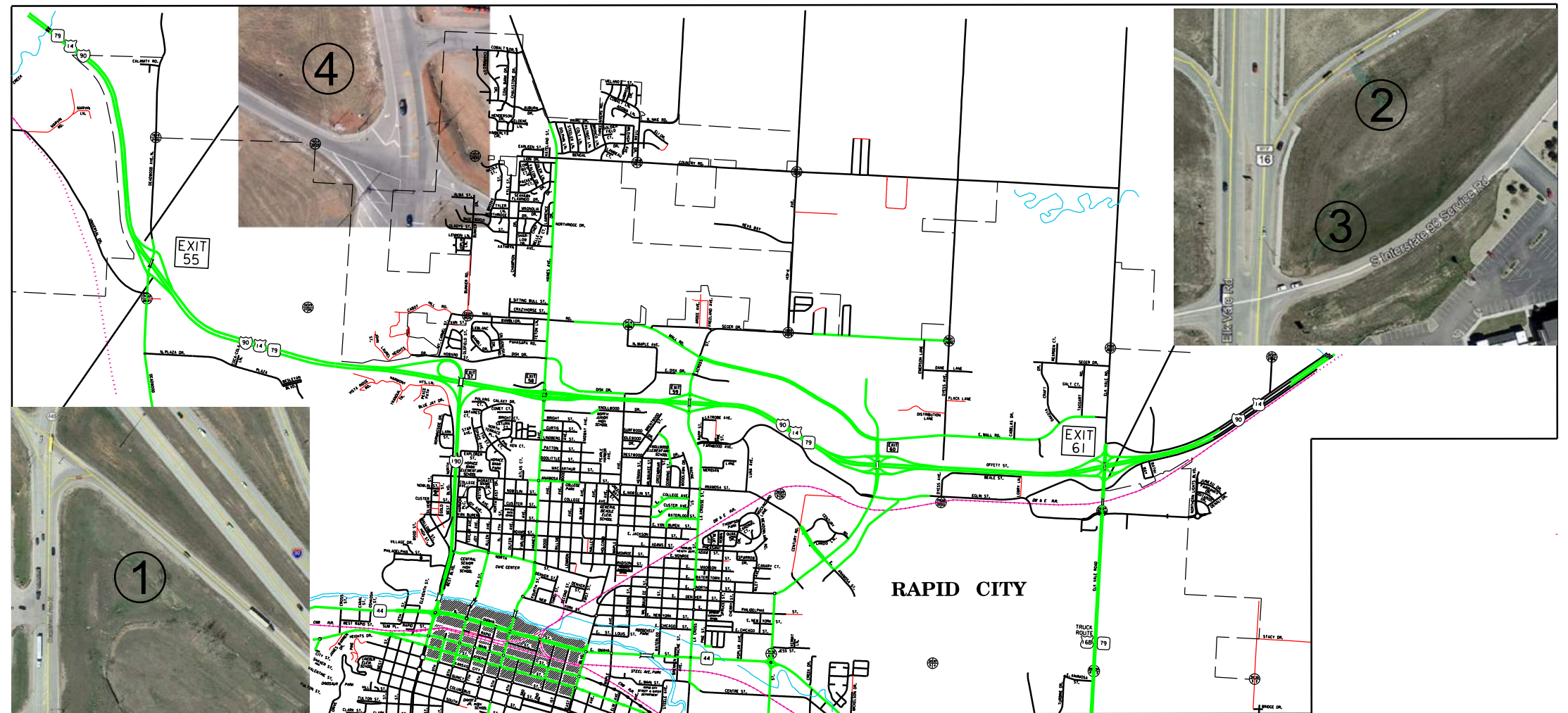
Plotting Date: 06/27/2019

INDEX OF SECTIONS

| | | |
|--------|-----|----------------------------------|
| Sheet | No. | 1: General Layout with Index |
| Sheets | No. | 2-6: Estimate, Notes, and Tables |
| Sheets | No. | 7-11: Special Details |
| Sheets | No. | 12-17: Standard Plates |



- ① 090 E-452
PCN i5hx
EXIT 55 ONRAMP
- ② 090 E-452
PCN i5hx
EXIT 61 ONRAMP
- ③ 016B-452
PCN i5hy
NE CORNER OF
INTERSECTION AT
INTERSTATE SERVICE RD
- ④ 090 W-452
PCN i5r2
EXIT 55 ONRAMP



ESTIMATE OF QUANTITIES

PCN I5HX

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|--------------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E0300 | Remove Concrete Curb and/or Gutter | 10 | Ft |
| 120E0010 | Unclassified Excavation | 64 | CuYd |
| 230E0100 | Remove and Replace Topsoil | Lump Sum | LS |
| 260E1010 | Base Course | 62.0 | Ton |
| 380E1000 | 6" Miscellaneous PCC Pavement | 14.0 | SqYd |
| 634E0010 | Flagging | 400.0 | Hour |
| 634E0110 | Traffic Control Signs | 155.0 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 650E1090 | Type F69 Concrete Curb and Gutter | 183 | Ft |
| 650E4689 | Modified Type P9 Concrete Gutter | 38 | Ft |
| 730E0210 | Type F Permanent Seed Mixture | 2 | Lb |
| 731E0100 | Fertilizing | 60 | Lb |
| 732E0250 | Fiber Mulching | 80 | Lb |
| 900E5147 | Articulated Concrete Mattress | 101.4 | SqYd |

PCN I5HY

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|--------------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E0300 | Remove Concrete Curb and/or Gutter | 2 | Ft |
| 110E1010 | Remove Asphalt Concrete Pavement | 98.0 | SqYd |
| 120E0010 | Unclassified Excavation | 20 | CuYd |
| 230E0100 | Remove and Replace Topsoil | Lump Sum | LS |
| 260E1010 | Base Course | 62.0 | Ton |
| 320E1200 | Asphalt Concrete Composite | 70.0 | Ton |
| 332E0010 | Cold Milling Asphalt Concrete | 32 | SqYd |
| 380E1000 | 6" Miscellaneous PCC Pavement | 8.5 | SqYd |
| 634E0010 | Flagging | 500.0 | Hour |
| 634E0110 | Traffic Control Signs | 559.8 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0275 | Type 3 Barricade | 3 | Each |
| 634E0420 | Type C Advance Warning Arrow Board | 1 | Each |
| 650E1090 | Type F69 Concrete Curb and Gutter | 1 | Ft |
| 650E4689 | Modified Type P9 Concrete Gutter | 19 | Ft |
| 730E0210 | Type F Permanent Seed Mixture | 1 | Lb |
| 731E0100 | Fertilizing | 30 | Lb |
| 732E0250 | Fiber Mulching | 40 | Lb |
| 900E5147 | Articulated Concrete Mattress | 50.7 | SqYd |

PCN i5R2

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|--------------------|------------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E0300 | Remove Concrete Curb and/or Gutter | 8 | Ft |
| 120E0010 | Unclassified Excavation | 37 | CuYd |
| 230E0020 | Contractor Furnished Topsoil | 100 | CuYd |
| 230E0100 | Remove and Replace Topsoil | Lump Sum | LS |
| 380E1000 | 6" Miscellaneous PCC Pavement | 7.0 | SqYd |
| 634E0010 | Flagging | 200.0 | Hour |
| 634E0110 | Traffic Control Signs | 109.5 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 650E1090 | Type F69 Concrete Curb and Gutter | 186 | Ft |
| 650E4689 | Modified Type P9 Concrete Gutter | 19 | Ft |
| 730E0210 | Type F Permanent Seed Mixture | 1 | Lb |
| 731E0100 | Fertilizing | 30 | Lb |
| 732E0250 | Fiber Mulching | 40 | Lb |
| 900E5147 | Articulated Concrete Mattress | 50.7 | SqYd |

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Section A 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. 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:

<http://www.sddot.com/resources/Manuals/EnvironProcManual.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 Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

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

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 Environment 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 completely 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 of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

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

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

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

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities 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 of 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 will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible 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.

COMMITMENT K: 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."

Construction activity is defined as any temporary activity 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 will include, but not be limited to, stripping of topsoil, drilling, blasting, excavation, dredging, ditching, grading, street maintenance and repair, or earth moving. It also includes stockpiles, access roads, and disposal areas. An off-site disposal area of excess material will require an additional permit.

Action Taken/Required:

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, SD 57501-3181, Phone: 605-773-3151.

The permit requires the Contractor to use reasonably available technology to control fugitive dust emissions. The Contractor is required to use control measures for track out, 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.

The Rapid City Air Quality Permit will need to be renewed annually by the Contractor until construction activities are completed.

The online form can be found at: <http://denr.sd.gov/des/aq/airpermits.aspx>

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

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 shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

SEQUENCE OF OPERATIONS

I-90 Service Road

- Two-way traffic on Service Road shall be maintained when no work is occurring.
- Set up Traffic Control to complete work on one side using Standard Plates 634.03, 634.23, 634.30, 634.42, 634.43, and the Traffic Control sheet.
- Complete curb & gutter, asphalt, and erosion control work.

- Set up Traffic Control to complete work on opposite side using Standard Plates 634.03, 634.23, 634.30, 634.42, 634.43, and the Traffic Control Sheet.
- Complete remaining concrete, asphalt and erosion control work.

Ramps

- Set up Traffic Control to complete work on one side using Standard Plates 634.03 and 634.69.
- Complete concrete and erosion control work.
- Set up Traffic Control to complete work on opposite side using Standard Plates 634.03 634.69.
- Complete remaining concrete and erosion control work.

UNCLASSIFIED EXCAVATION

The quantity of Unclassified Excavation provided in these plans is for the necessary removal of asphalt surfacing and granular base materials required to install the new Curb and Gutter. The excavated material will be used to back fill the curb and gutter.

6” MISCELLANEOUS PCC PAVEMENT

The Contractor shall place steel bars in the joints between the 6” Miscellaneous PCC Pavement and the back of the Modified Type P9 Concrete Gutter. The bars shall be installed in accordance with Standard Plate 380.11. All costs to furnish and place the steel bars shall be incidental to the contract unit price per square yard for 6” Miscellaneous PCC Pavement. The purpose of placing the steel bars is to prevent any settlement that may occur at the joint.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation for smoothness, plans tonnage may be varied to achieve the required elevation.

REMOVE AND REPLACE TOPSOIL

Prior to beginning curb and gutter installation, a 4” depth of topsoil shall be removed or bladed down the respective inslope and left in a windrow a maximum of 10’ from the edge of the existing shoulder. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

All costs associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the contract lump sum price for Remove and Replace Topsoil.

ARTICULATED CONCRETE MATTRESS

Articulated concrete mattress will be installed at locations noted in the table and at locations determined by the Engineer during construction.

Installation of the articulated concrete mattress will be in accordance with the manufacturer’s installation instructions.

All costs for furnishing and installing the articulated concrete mattress including hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per square yard for Articulated Concrete Mattress.

The articulated concrete mattress will be as shown below or an approved equal:

| Product | Manufacturer |
|-------------------|--|
| Standard Flexamat | Flexamat Permanent Site Solutions Cincinnati, Ohio Phone: (513) 772-6690 www.flexamat.com |

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum shall consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

All seed shall be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed shall be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

The mycorrhizal inoculum shall be as shown below or an approved equal:

| Product | Manufacturer |
|----------------------------|--|
| MycoApply | Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com |
| AM 120 Multi Species Blend | Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com |

FERTILIZING

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-4-4 and be USDA Certified Bio-Based. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P₂O₅) available phosphate, a minimum of 4% (K₂O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer shall be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer’s recommended method of application.

The all-natural slow release fertilizer shall be as shown below or an approved equal:

| Product | Manufacturer |
|---------------|--|
| Sustane | Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com |
| Perfect Blend | Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com |

PERMANENT SEEDING

The areas to be seeded consist of areas with minimal vegetation at various location within the project area. The Engineer will mark out the locations with minimal vegetation needing topsoil and seed.

Type F Permanent Seed Mixture shall consist of the following:

| Grass Species | Variety | Pure Live Seed (PLS) (Pounds/1000 SqFt) |
|---|---|---|
| Western Wheatgrass | Arriba, Flintlock, Rodan, Rosana, Walsh | 0.27 |
| Green Needlegrass | Lodorm, AC Mallard Ecovar | 0.15 |
| Sideoats Grama | Butte, Pierre | 0.12 |
| Blue Grama | Bad River | 0.08 |
| Oats or Spring Wheat: April through May; Winter Wheat: August through November | | 0.38 |
| Total: | | 1.0 |

FIBER MULCHING

Fiber mulch shall be applied in a separate operation following permanent seeding.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

The fiber mulch provided shall be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

WORK COORDINATION NOTE

The Contractor shall coordinate work activities with the Prime Contractor on Project IM 0901(199)10 for placement of topsoil at the Exit 55 WB On-Ramp work.

FFIC CONTROL – GENERAL NOTES

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 potential implementation.

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.

Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 2 calendar days.

All regulatory signs shall have a minimum mounting height of 5' in rural locations, even when mounted on portable supports.

All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.

The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

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

All construction operations shall 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 shall be used, as determined by the Engineer.

Reflectorized Drums shall be used for lane closure tapers or lane shift tapers.

On Standard Plate 634.43 LEFT LANE MUST TURN LEFT signs shall be replace with RIGHT LANE MUST TURN RIGHT signs.

See additional traffic control notes regarding US 16B and Service Road on Sheet 11 of 17.

TYPE C ADVANCE WARNING ARROW BOARD

The quantity of Type C Advance Warning Arrow Boards paid will be the most installations in place at any one time regardless of the number of setups on the project.

SHEETING FOR TRAFFIC CONTROL SIGNS

All fluorescent orange background material on traffic control signs, all temporary delineators, and all temporary STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), and WRONG WAY (R5-1a) signs shall conform to the requirements of ASTM D4956 Type IX or XI. All other traffic control signs and background colors shall conform to the requirements of ASTM D4956 Type IV.

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN i5HX

| | | CONVENTIONAL ROAD | | | |
|-----------|------------------|---|-----------|---------------|------|
| SIGN CODE | SIGN DESCRIPTION | NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
| W5-4 | RAMP NARROWS | 2 | 48" x 48" | 16.0 | 32.0 |
| W13-4P | ON RAMP (plaque) | 2 | 36" x 36" | 9.0 | 18.0 |
| W20-1 | ROAD WORK AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| SPECIAL | RAMP WORK AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| W21-5 | SHOULDER WORK | 2 | 48" x 48" | 16.0 | 32.0 |
| G20-2 | END ROAD WORK | 2 | 36" x 18" | 4.5 | 9.0 |
| | | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | |

PCN i5HY

| | | CONVENTIONAL ROAD | | | |
|-----------|----------------------------------|---|-----------|---------------|-------|
| SIGN CODE | SIGN DESCRIPTION | NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
| R3-20 | RIGHT TURN ONLY | 1 | 30" x 36" | 7.5 | 7.5 |
| R3-7R | RIGHT LANE MUST TURN RIGHT | 1 | 30" x 30" | 6.3 | 6.3 |
| W3-4 | BE PREPARED TO STOP | 4 | 48" x 48" | 16.0 | 64.0 |
| W4-2 | LEFT or RIGHT LANE ENDS (symbol) | 2 | 48" x 48" | 16.0 | 32.0 |
| W9-2 | LANE ENDS MERGE LEFT | 3 | 48" x 48" | 16.0 | 48.0 |
| W20-1 | ROAD WORK AHEAD | 10 | 48" x 48" | 16.0 | 160.0 |
| W20-4 | ONE LANE ROAD AHEAD | 4 | 48" x 48" | 16.0 | 64.0 |
| W20-5 | LEFT or RIGHT LANE CLOSED AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| W20-7 | FLAGGER (symbol) | 6 | 48" x 48" | 16.0 | 96.0 |
| W21-5 | SHOULDER WORK | 2 | 48" x 48" | 16.0 | 32.0 |
| G20-2 | END ROAD WORK | 4 | 36" x 18" | 4.5 | 18.0 |
| | | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | |

TYPE 3 BARRICADES

| ITEM DESCRIPTION | QUANTITY |
|-----------------------------------|----------|
| Type 3 Barricade, 8' Double Sided | 3 Each |

ARROW BOARDS

| ITEM DESCRIPTION | QUANTITY |
|------------------------------------|----------|
| Type C Advance Warning Arrow Board | 1 Each |

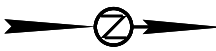
PCN i5R2

| | | CONVENTIONAL ROAD | | | |
|-----------|------------------|---|-----------|---------------|------|
| SIGN CODE | SIGN DESCRIPTION | NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
| W5-4 | RAMP NARROWS | 1 | 48" x 48" | 16.0 | 16.0 |
| W13-4P | ON RAMP (plaque) | 1 | 36" x 36" | 9.0 | 9.0 |
| W20-1 | ROAD WORK AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| SPECIAL | RAMP WORK AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| W21-5 | SHOULDER WORK | 1 | 48" x 48" | 16.0 | 16.0 |
| G20-2 | END ROAD WORK | 1 | 36" x 18" | 4.5 | 4.5 |
| | | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | |

I90 EB EXIT 61 - PCN 15HX & US 16B 15HY

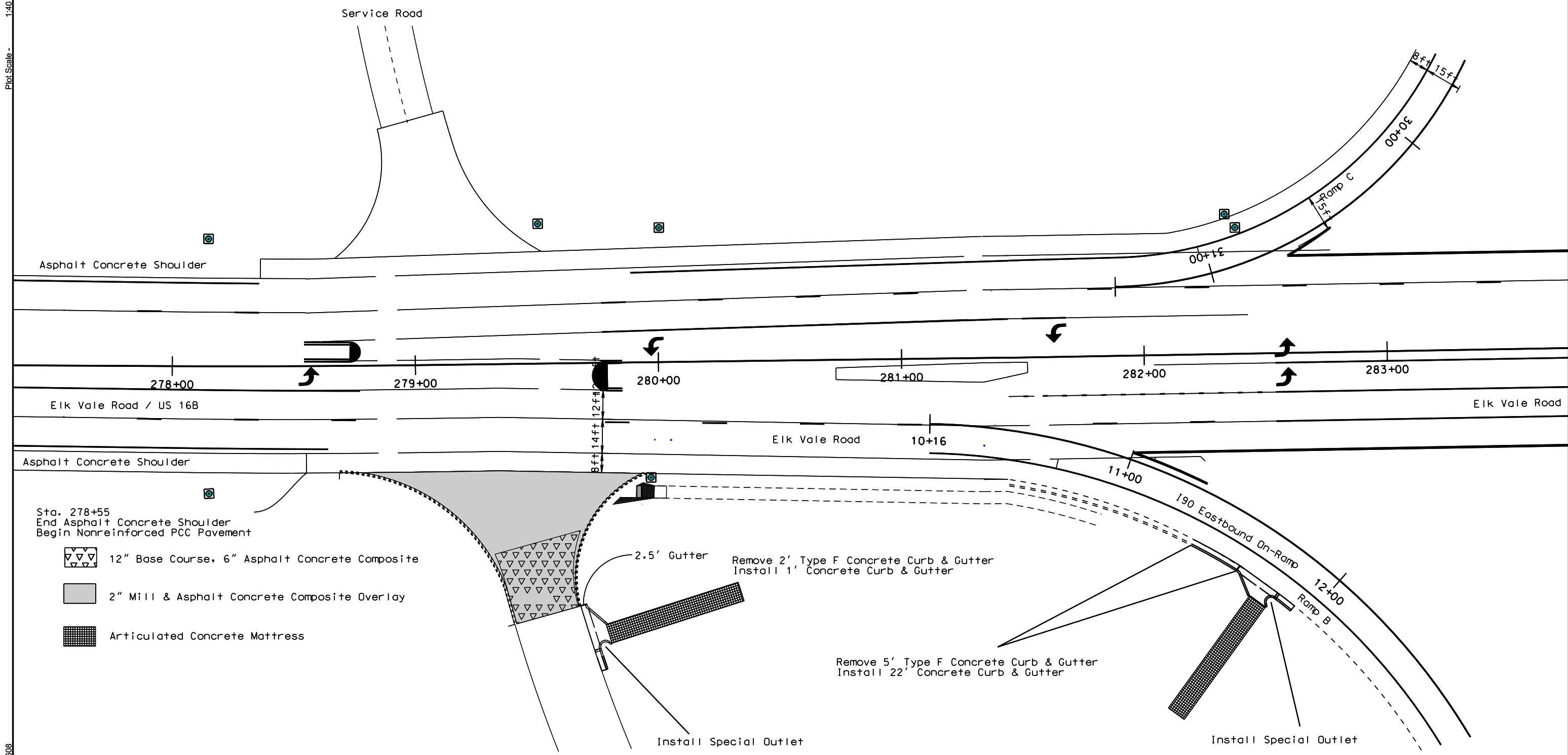
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------------|-------------------|-------|-----------------|
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Plotting Date: 06/27/2019



Plot Scale - 1:40

Plotted From - trcs12608



Sta. 278+55
End Asphalt Concrete Shoulder
Begin Nonreinforced PCC Pavement

- 12" Base Course, 6" Asphalt Concrete Composite
- 2" Mill & Asphalt Concrete Composite Overlay
- Articulated Concrete Mattress

190 EB EXIT 55 - PCN 15HX

| | | | |
|-----------------------------|-------------------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
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Plotting Date: 06/27/2019

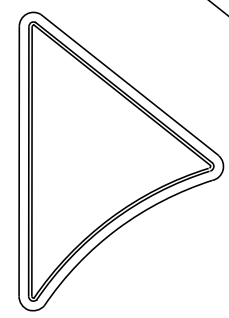


Plot Scale - 1:40


Plotted From - trcs12808

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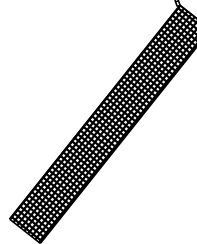
Deadwood Avenue



Remove 4' Type F Concrete Curb & Gutter
Install 161' Concrete Curb & Gutter

 Articulated Concrete Mattress

EB On Ramp - 190 - Exit 55



Install Special Outlet

I-90 EB
I-90 WB

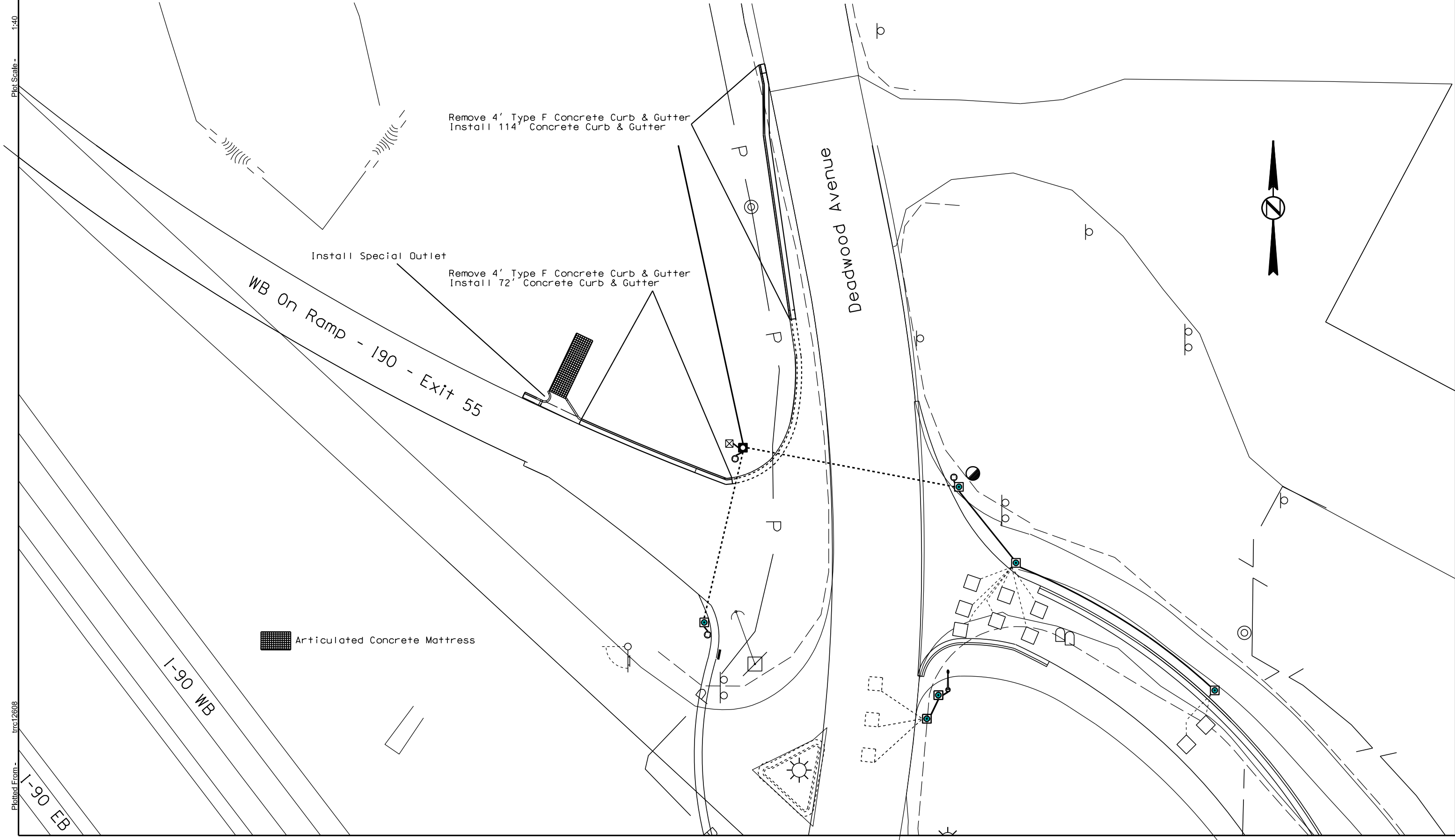
190 WB EXIT 55 - PCN 15R2

| | | | |
|-----------------------------|-------------------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 090 E-452 et. al. | 9 | 17 |

Plotting Date: 06/27/2019

Plot Scale - 1:40

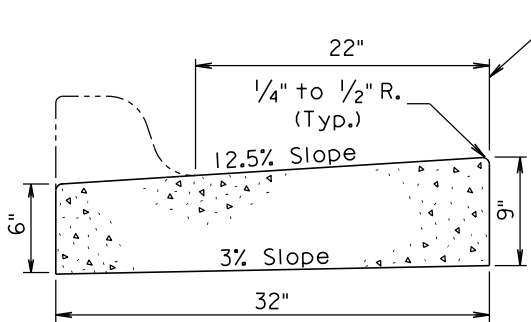
Plotted From - Ircs12608



PLOT SCALE - 1:3.54153

PLOTTED FROM - TRRC12608

MODIFIED TYPE P9 CONCRETE GUTTER



TRANSVERSE SECTION

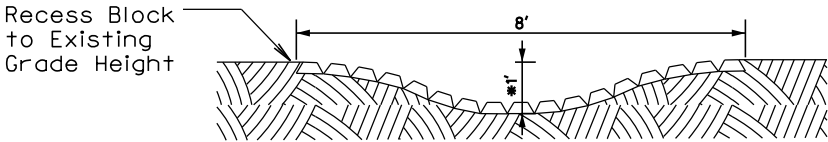
The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

| | |
|----------------------------|----------------------------|
| Cu. Yd. Per Lin. Ft. | Lin. Ft. Per Cu. Yd. |
| 0.062 | 16.1 |

GENERAL NOTES:

- The concrete for the Modified Type P9 Concrete Gutter shall comply with the requirements of the Standard Specifications for Class M6 Concrete.
- When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.
- Transverse contraction joints shall be constructed at 10' intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint shall be constructed in the concrete gutter at each mainline PCC pavement transverse contraction joint location.
- When concrete gutter is placed monolithically with mainline PCC pavement, the transverse contraction joints in the concrete gutter shall be sawed and sealed the same as the transverse contraction joints in the mainline PCC pavement.
- When concrete gutter is not placed monolithically with the mainline PCC pavement and when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete gutter shall be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete.

Flexamat Typical Section

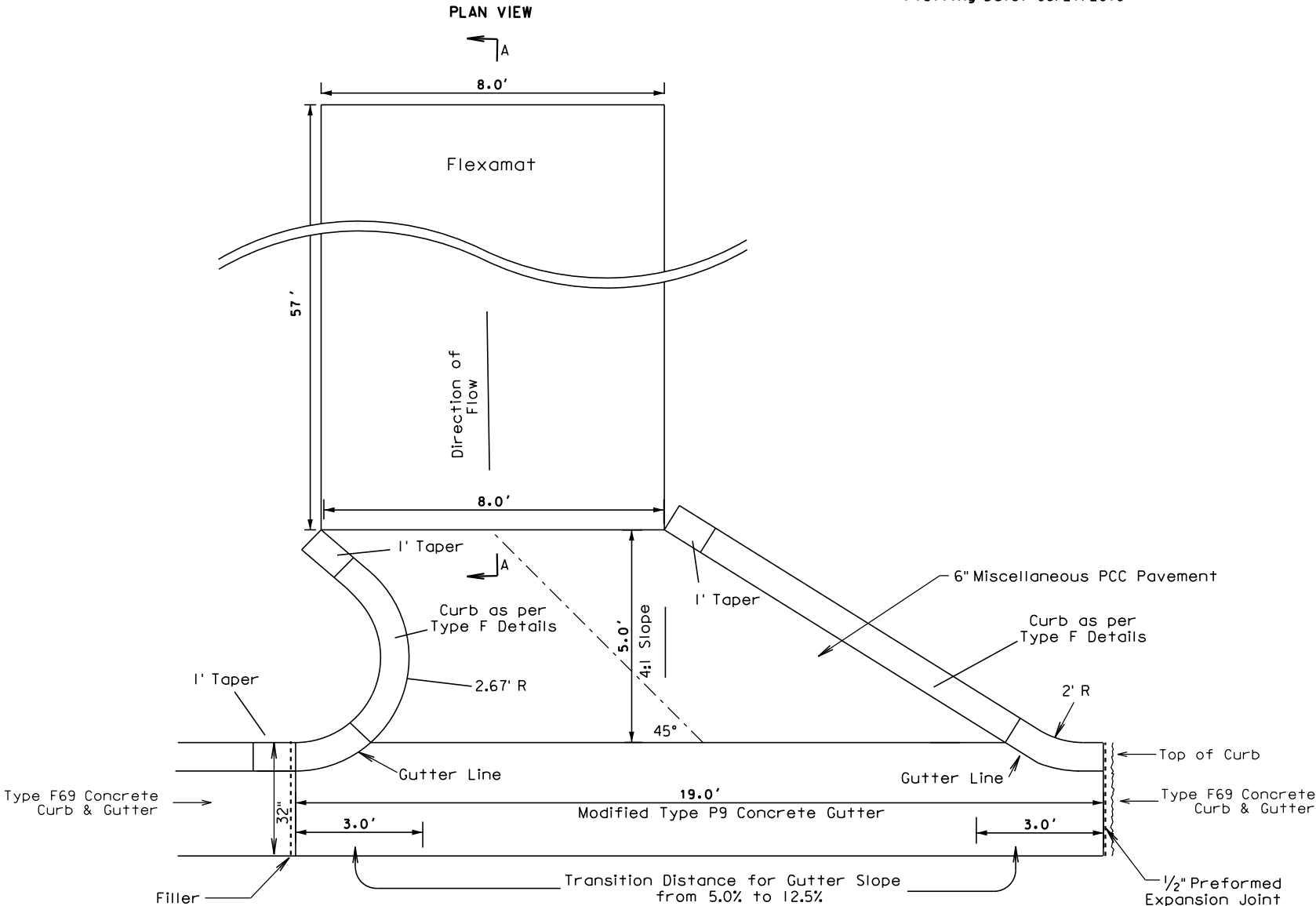


- Transition from 1' to 0' in the last 4' of Flexamat.

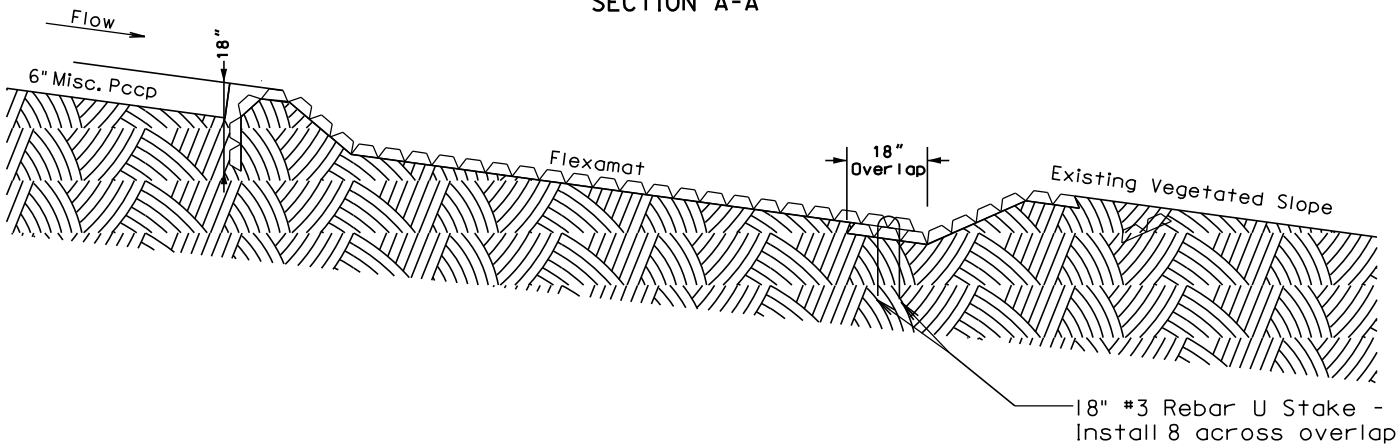
CURB OPENING DETAILS

| | | | |
|-----------------------------|-------------------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 090 E-452 et. al. | 10 | 17 |

Plotting Date: 06/27/2019



SECTION A-A



TRAFFIC CONTROL

| | | | |
|-----------------------------|-------------------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 090 E-452 et. al. | 11 | 17 |

Plotting Date: 06/27/2019



TRAFFIC CONTROL NOTES:

- WORK IN THIS INTERSECTION SHALL NOT BEGIN UNTIL AFTER SEPTEMBER 2, 2019
- WORK IN THIS INTERSECTION SHALL BE COMPLETED FROM 8:00 PM TO 6:00 AM
- ALL TRAFFIC CONTROL SHALL BE REMOVED FROM THE ROADWAY DURING NON-WORKING HOURS
- TRAFFIC SHALL BE RETURNED TO TWO WAY ON THE SERVICE ROAD DURING NON-WORKING HOURS

1:200
Plot Scale -

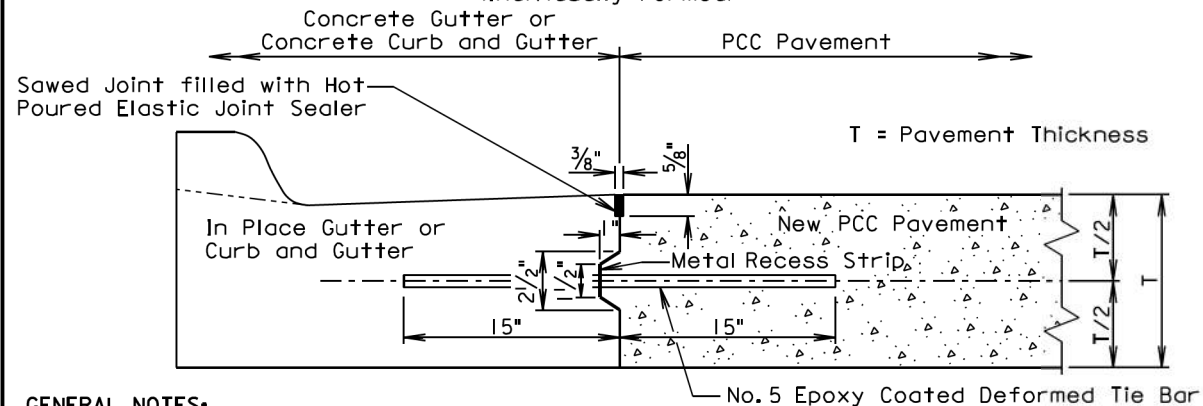
trc12608
- Plotted From -

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|-----------------------------|-------------------|-------|-----------------|
| | 090 E-452 et. al. | 12 | 17 |

Plotting Date: 06/27/2019

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS

(Individually Formed)



GENERAL NOTES:

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

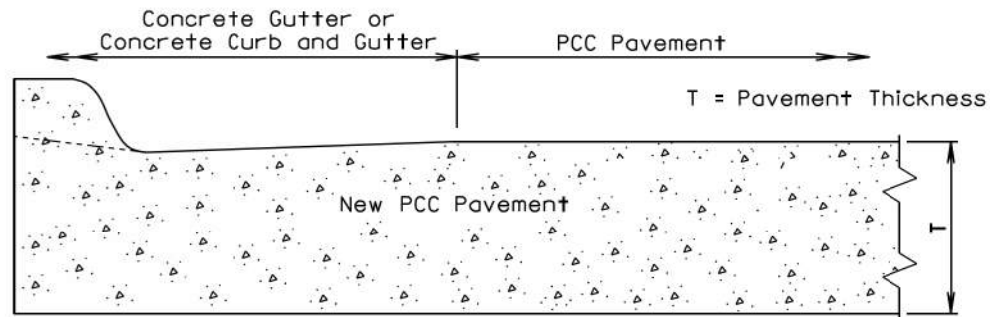
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

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

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1 1/2 inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

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

POURED MONOLITHICALLY



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 12 feet. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

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

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

June 26, 2013


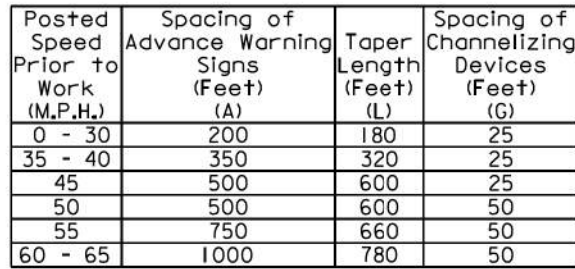
Published Date: 2nd Qtr. 2019

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**PCC PAVEMENT LONGITUDINAL CONSTRUCTION
JOINTS WITH CONCRETE GUTTER OR
CONCRETE CURB AND GUTTER**

PLATE NUMBER
380.II

Sheet 1 of 1

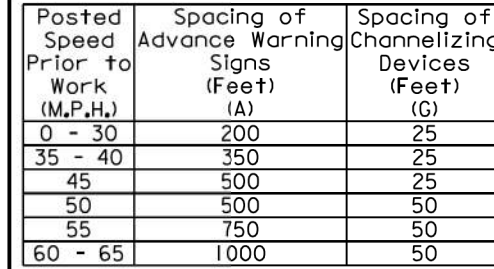


END
ROAD WORK
G20-2

—WORK SPACE

***S
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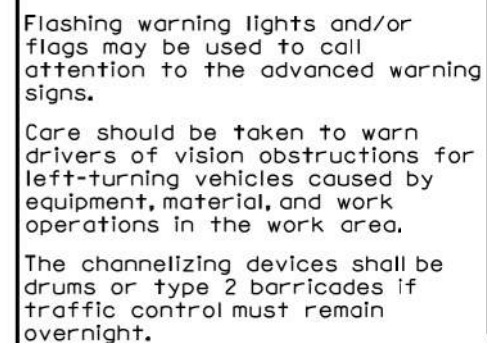
Published Date: 2nd Qtr. 2019



ROAD WORK
G20-2

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Published Date: 2nd Qtr. 2019



September 22, 2014

GUIDES FOR TRAFFIC CONTROL DEVICES LEFT LANE CLOSURE FAR SIDE OF INTERSECTION

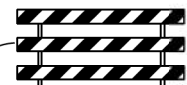
Published Date: 2nd Qtr. 2019

PLATE NUMBER
634.43

Sheet 1 of 1

- Channelizing Device

END
ROAD WORK
G20-2
(Optional)




|| ||
Type 3 Barricade



A

Variable



Arrow Board
Sequential Chevron
OR Type 3
Barricade

ROAD WORK
END
G20-2
(Optional)

LEFT LANE
MUST

R3-7

CL
A

11

| Posted Speed Prior to Work (M.P.H.) | Spacing of Channelizing Devices (Feet) (G) |
|--|--|
| 0 - 30 | 25 |
| 35 - 45 | 25 |
| 50 | 50 * |
| 55 | 50 * |
| 60 - 80 | 50 * |

* Spacing is 40' for 42" cones.

- Channelizing Device

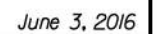
④ 4" White Temporary Pavement Marking

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

Temporary pavement markings shall be used if traffic control must remain overnight.

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

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



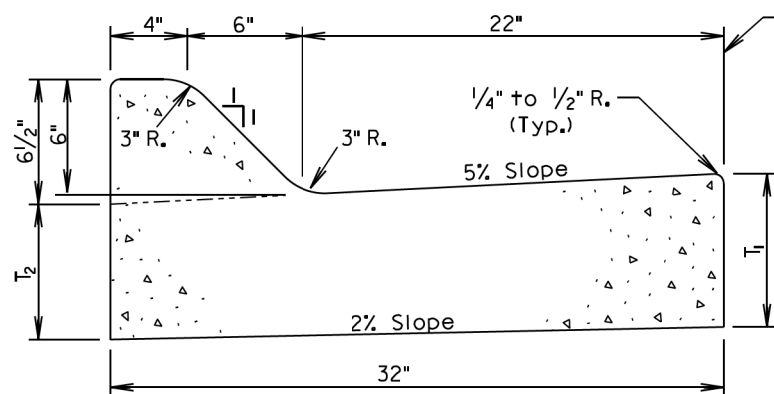
GUIDES FOR TRAFFIC CONTROL DEVICES

PARTIAL EXIT RAMP CLOSURE

Published Date: 2nd Qtr. 2019

PLATE NUMBER
634.69

Sheet 1 of 1



The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

| Type | T ₁ (Inches) | T ₂ (Inches) | Cu. Yd. Per Lin. Ft. | Lin. Ft. Per Cu. Yd. |
|--------|----------------------------|---------------------------------|----------------------------|----------------------------|
| F66 | 6 | 5 ¹ / ₁₆ | 0.057 | 17.6 |
| F67 | 7 | 6 ¹ / ₁₆ | 0.065 | 15.4 |
| F68 | 8 | 7 ¹ / ₁₆ | 0.073 | 13.6 |
| F68.5 | 8.5 | 7 ⁹ / ₁₆ | 0.077 | 12.9 |
| F69 | 9 | 8 ¹ / ₁₆ | 0.082 | 12.3 |
| F69.5 | 9.5 | 8 ⁹ / ₁₆ | 0.086 | 11.7 |
| F610 | 10 | 9 ¹ / ₁₆ | 0.090 | 11.1 |
| F610.5 | 10.5 | 9 ⁹ / ₁₆ | 0.094 | 10.7 |
| F611 | 11 | 10 ¹ / ₁₆ | 0.098 | 10.2 |
| F611.5 | 11.5 | 10 ⁹ / ₁₆ | 0.102 | 9.8 |
| F612 | 12 | 11 ¹ / ₁₆ | 0.106 | 9.4 |

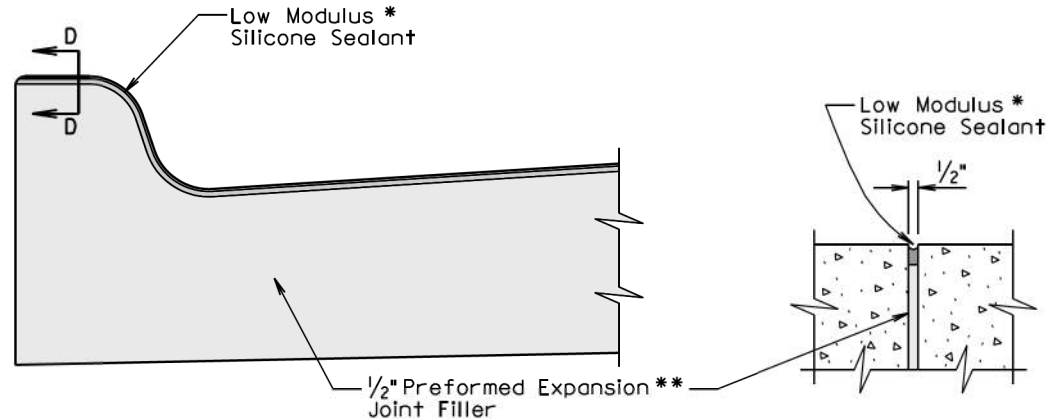
GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 6, 2008

| | | | |
|-------------------------------|-----------------------|---------------------------------|------------------------|
| Published Date: 2nd Qtr. 2019 | S D D O T | TYPE F CONCRETE CURB AND GUTTER | PLATE NUMBER 650.20 |
| | | | Sheet 1 of 1 |



SECTIONAL VIEW
(Curb and Gutter at 1/2" Preformed
Expansion Joint Filler Location)

SECTION D-D

* The silicone sealant shall be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

GENERAL NOTES:

For illustrative reason, only the type B curb and gutter is shown.

** A 1/2" preformed expansion joint filler shall be placed transversely in the curb and gutter at the following locations:

1. At each junction between the radius return of curb and gutter and curb and gutter which is parallel to the project centerline.
2. At each junction between new curb and gutter and existing curb and gutter.

Transverse contraction joints shall be constructed at 10' intervals in the concrete curb and gutter except when the concrete curb and gutter is constructed adjacent to mainline PCC pavement. When concrete curb and gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint shall be constructed in the concrete curb and gutter at each mainline PCC pavement transverse contraction joint location.

When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter shall be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete and the joint shall be sealed in accordance with the details shown above.

September 6, 2013

| | | | |
|-------------------------------|-----------------------|------------------------------------|------------------------|
| Published Date: 2nd Qtr. 2019 | S D D O T | JOINTS IN CONCRETE CURB AND GUTTER | PLATE NUMBER 650.90 |
| | | | Sheet 2 of 2 |