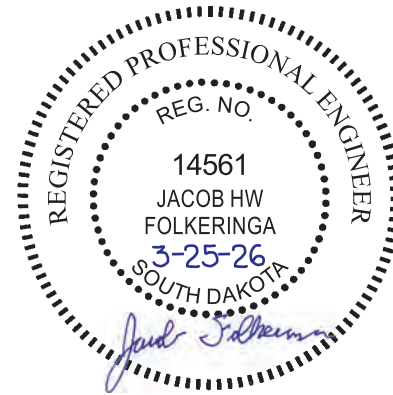
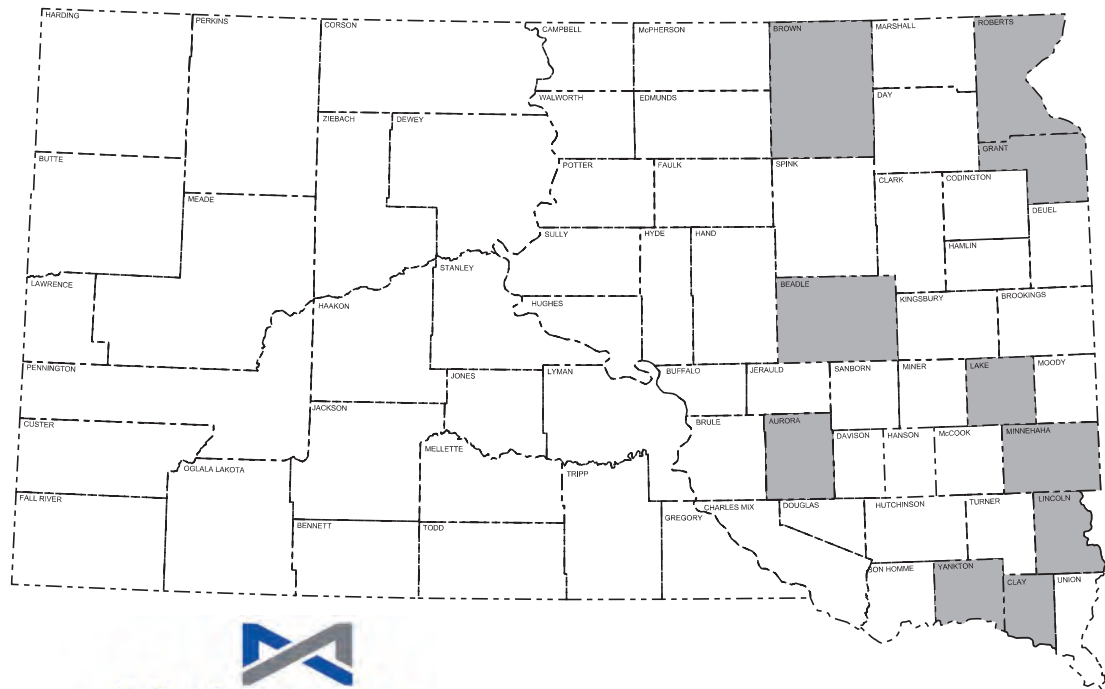


PLANS FOR PROPOSED
PROJECT CR 000S(462)
INTERSTATES 29 & 229 & 90
SD HIGHWAYS 34 & 37 & 50
US HIGHWAY 12
VARIOUS COUNTIES
DYNAMIC MESSAGE SIGNS
PCN 09L5

INDEX OF SHEETS

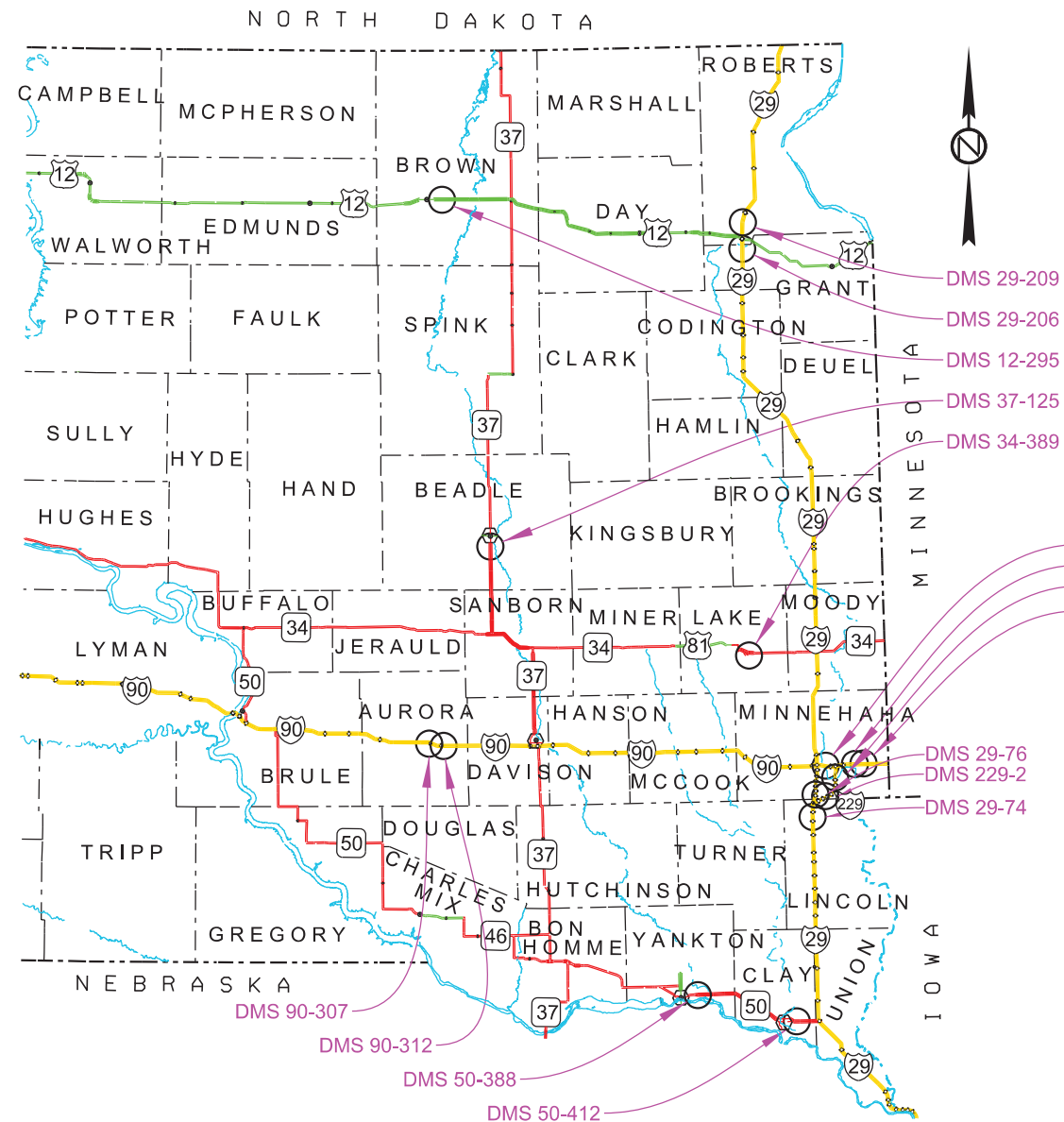
Sheet 1	Title Sheet & Layout Map
Sheets 2 - 17	Estimate of Quantities, Environmental Commitments, General Notes & Tables
Sheets 18 - 23	Traffic Control
Sheets 24 - 25	Control Data
Sheet 26	Topo Symbology & Legend
Sheets 27 - 42	DMS Layout Sheets
Sheets 43 - 57	Guardrail Layout Sheets
Sheet 58	Wire Diagram
Sheets 59 - 74	Special Details
Sheets 75 - 81	Structural Sheets
Sheets 82 - 95	Standard Plates



STORM WATER PERMIT

Major Receiving
Body of Water: Varies
Area Disturbed: 2.78 Acres
Total Project Area: 8.08 Acres

<p>DESIGN DESIGNATION I-90 at MRM 307</p> <p>AAADT (2025) 5,135 AAADT (2050) 7,744 D 1,194 D 50% DHV T% 14.0% AAADT T% 30.7% V 80 MPH</p>	<p>DESIGN DESIGNATION I-90 at MRM 312</p> <p>AAADT (2025) 5,550 AAADT (2050) 8,369 D 1,291 D 50% DHV T% 8.3% AAADT T% 18.3% V 80 MPH</p>	<p>DESIGN DESIGNATION SD 37 at MRM 125</p> <p>AAADT (2025) 9,277 AAADT (2050) 14,287 D 1,786 D 50% DHV T% 2.5% AAADT T% 5.5% V 45 MPH</p>
<p>DESIGN DESIGNATION I-90 at MRM 399</p> <p>AAADT (2025) 13,815 AAADT (2050) 23,762 D 2,467 D 51% DHV T% 5.8% AAADT T% 12.7% V 65 MPH</p>	<p>DESIGN DESIGNATION I-90 at MRM 403</p> <p>AAADT (2025) 15,545 AAADT (2050) 25,354 D 2,651 D 51% DHV T% 5.1% AAADT T% 11.2% V 80 MPH</p>	<p>DESIGN DESIGNATION I-90 at MRM 405</p> <p>AAADT (2025) 15,545 AAADT (2050) 25,354 D 2,651 D 51% DHV T% 5.1% AAADT T% 11.2% V 80 MPH</p>
<p>DESIGN DESIGNATION I-29 at MRM 74</p> <p>AAADT (2025) 25,035 AAADT (2050) 44,012 D 4,479 D 50% DHV T% 9.1% AAADT T% 19.9% V 65 MPH</p>	<p>DESIGN DESIGNATION I-29 at MRM 76</p> <p>AAADT (2025) 29,295 AAADT (2050) 53,581 D 5,349 D 53% DHV T% 8.0% AAADT T% 17.5% V 65 MPH</p>	<p>DESIGN DESIGNATION I-229 at MRM 2</p> <p>AAADT (2025) 20,385 AAADT (2050) 37,284 D 3,722 D 53% DHV T% 3.5% AAADT T% 7.7% V 65 MPH</p>
<p>DESIGN DESIGNATION I-229 at MRM 9</p> <p>AAADT (2025) 20,385 AAADT (2050) 37,284 D 3,722 D 53% DHV T% 3.5% AAADT T% 7.7% V 65 MPH</p>	<p>DESIGN DESIGNATION SD 34 at MRM 389</p> <p>AAADT (2025) 7,266 AAADT (2050) 9,577 D 1,225 D 50% DHV T% 2.0% AAADT T% 4.5% V 65 MPH</p>	<p>DESIGN DESIGNATION SD 50 at MRM 388</p> <p>AAADT (2025) 10,192 AAADT (2050) 16,613 D 1,769 D 51% DHV T% 3.8% AAADT T% 8.3% V 55 MPH</p>
<p>DESIGN DESIGNATION SD 50 at MRM 412</p> <p>AAADT (2025) 7,383 AAADT (2050) 12,253 D 1,301 D 51% DHV T% 7.7% AAADT T% 16.9% V 55 MPH</p>	<p>DESIGN DESIGNATION I-29 at MRM 206</p> <p>AAADT (2025) 3,745 AAADT (2050) 5,666 D 661 D 50% DHV T% 12.2% AAADT T% 26.9% V 80 MPH</p>	<p>DESIGN DESIGNATION I-29 at MRM 209</p> <p>AAADT (2025) 3,110 AAADT (2050) 4,052 D 483 D 50% DHV T% 14.3% AAADT T% 31.4% V 80 MPH</p>
<p>DESIGN DESIGNATION US 12 at MRM 295</p> <p>AAADT (2025) 10,744 AAADT (2050) 15,128 D 1,580 D 50% DHV T% 7.1% AAADT T% 15.5% V 65 MPH</p>		



ESTIMATE OF QUANTITIES (Non-Section)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3260	Miscellaneous Staking	Lump Sum	LS
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E3305	As-Built Survey	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	1	Each
110E7000	Remove Crossover Closure for Reset	400	Ft
110E7150	Remove Sign for Reset	2	Each
120E0600	Contractor Furnished Borrow	171	CuYd
120E7000	Select Granular Backfill	118.0	Ton
420E0400	Structure Excavation, Miscellaneous	338.8	CuYd
421E1000	Footing Undercut	63	CuYd
460E0100	Class A45 Concrete, Miscellaneous	57.1	CuYd
462E0100	Class M6 Concrete	17.6	CuYd
480E0100	Reinforcing Steel	10,942	Lb
629E0110	High Tension 4 Cable Guardrail	4,097	Ft
629E0290	High Tension Cable Guardrail Anchor Assembly	36	Each
629E9050	Reset Crossover Closure	400	Ft
632E0064	3' Diameter Fixed Support Concrete Footing	64.0	Ft
632E0092	4.5' Diameter DMS Footing	271.0	Ft
632E2510	Type 2 Object Marker Back to Back	10	Each
632E2520	Type 2 Object Marker	26	Each
632E3500	Reset Sign	2	Each
634E0110	Traffic Control Signs	1,651.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	22	Each
634E0330	Temporary Raised Pavement Markers	6,800	Ft
634E0380	Tubular Marker	65	Each
634E0420	Type C Advance Warning Arrow Board	8	Each
634E0700	Traffic Control Movable Concrete Barrier	2	Each
634E0750	Temporary Concrete Barrier End Protection	1	Each
634E1002	Detour and Restriction Signing	868.1	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	6	Each
634E1255	Contractor Furnished Vehicle Speed Feedback Sign	6	Each
635E5100	Controller Cabinet Footing	7	Each
635E5302	Type 2 Electrical Junction Box	13	Each
635E5400	Electrical Service Cabinet	16	Each
635E5461	Type 1 Communication Cabinet	7	Each
635E5590	Vehicle Radar Detector	5	Each
635E5600	Surveillance Camera	12	Each
635E6210	Install Pole Mounted Dynamic Message Sign	1	Each
635E6220	Pole Mounted Dynamic Message Sign	5	Each

ESTIMATE OF QUANTITIES (CONTINUED)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E6230	Overhead Dynamic Message Sign	5	Each
635E6240	Post Mounted Dynamic Message Sign	5	Each
635E8215	1.5" Rigid Conduit, Schedule 80	65	Ft
635E8220	2" Rigid Conduit, Schedule 80	525	Ft
635E8615	1.5" Conduit, SDR 13.5	1,700	Ft
635E8620	2" Conduit, SDR 13.5	1,475	Ft
635E9014	1/C #4 AWG Copper Wire	14,685	Ft
635E9022	1/C #12 AWG Copper Wire	2,370	Ft
734E0010	Erosion Control	Lump Sum	LS
831E1010	Geogrid Reinforcement	123	SqYd

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/doing-business/environmental/about-environmental/>>

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.

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COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

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.

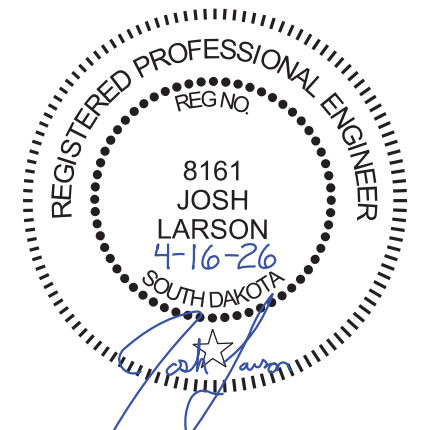
Action Taken/Required:

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

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: <https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx>

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at: < <https://sdeastwanted.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 E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance and/or work in a waterway.

Action Taken/Required:

The DANR General Permit for Stormwater Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DANR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DANR letter of approval is received.

The Contractor must adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State."

The Contractor will complete the DANR Contractor Authorization Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DANR.

The form can be found at:

< https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_CGPAppendixCCA2023Fillable.pdf >

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

Storm Water Pollution Prevention Plan

The Storm Water Pollution Prevention Plan (SWPPP) will be developed prior to the submittal of the NOI and will be implemented for all construction activities for compliance with the permit. The SWPPP must be kept on-site and updated as site conditions change. Erosion control measures and best management practices will be implemented in accordance with the SWPPP.

The DOT 298 Form will be used for site inspections and to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents and retained for a minimum of three years.

The inspection will include disturbed areas of the construction site that have not been finally stabilized, areas used for storage materials, structural control measures, and locations where vehicles enter or exit the site. These areas will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP will be observed to ensure that they are operating correctly, and sediment is not tracked off the site.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT: < <https://dot.sd.gov/doing-business/environmental/stormwater> >

DANR:< <https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/default.aspx> >

EPA: < <https://www.epa.gov/npdes> >

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.



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COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO) 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 150 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 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

Work on this project involves construction of Dynamic Message Signs (DMS) at various locations. The work includes guardrail to protect the DMS, electrical infrastructure to power the DMS, and system testing.

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 of 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.

Traffic control quantities are based on the guidance that the Contractor will have no more than three active work sites at any one time. This includes no more than two interstate sites and one non-interstate site at any one time. Deviation from these guidelines will require prior approval.

Detours will be conducted for the erecting of the sign bridges and will be completed at night as specified in the time provisions. Only one detour is allowed at any one time.

Guardrail will be installed prior to the installation of the DMS and DMS supports.

The Contractor is required to coordinate with the 85th Street Interchange construction project (PCN06JQ) for the installation of DMS 29-74. PCN06JQ will be widening the interstate at this location and installing the guardrail that will protect the sign bridge supports for DMS 29-74. The Contractor cannot install the sign bridge supports for DSM 29-74 until the guardrail has been installed with PCN06JQ. Prior to erecting the sign bridge for DMS 29-74 the Contractor is required to get approval from the Sioux Falls Area Engineer.

Likewise, the Contractor is required to coordinate with the Median Cable Barrier construction project (PCN08Q8) for the installation of DMS 29-76. PCN08Q8 will be installing median guardrail that will protect the median sign bridge support at DMS 29-76. The Contractor cannot install the sign bridge support in the median at DMS 29-76 until the guardrail median has been installed with PCN08Q8. Prior to erecting the sign bridge for DMS 29-74 the Contractor is required to get approval from the Sioux Falls Area Engineer.

CONSTRUCTION STAKING

All DMS devices, junction boxes, and conduits will be adjusted in the field to minimize impacts to existing utilities and to conform to device details. Multiple conduits running in parallel will be placed in the same trench. Where possible, locate junction boxes near each other. DMS devices including communication cabinets will be constructed as near to design location as possible. Junction boxes and conduits may be adjusted.

All costs to provide construction staking will be incidental to the contract lump sum for "Miscellaneous Staking".

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location.

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

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.

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.

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 completion of work at the site location.

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

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DETOUR SIGNING

The Contractor will furnish and install the detour signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Detour signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the detour signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the detour signs will be incidental to the contract unit price per square foot for "Detour and Restriction Signing".

ADVANCE WARNING ARROW BOARDS

The Contractor will provide 8 advance warning arrow boards to direct traffic as shown on Standard Plates 634.60, 634.63, 634.64, 634.66, and 634.70 and as directed by the Engineer.

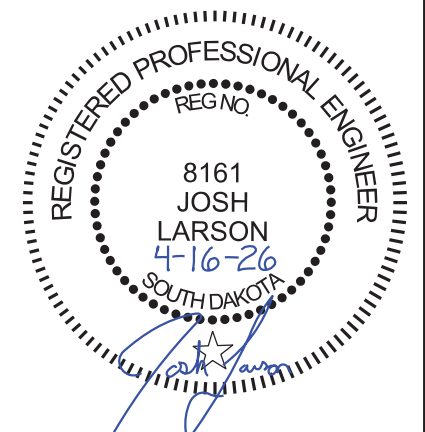
All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the advance warning arrow board from locations specified by the Engineer will be incidental to the contract unit price per each for "Type C Advance Warning Arrow Board".

CONTRACTOR FURNISHED VEHICLE SPEED FEEDBACK SIGN

The Contractor will provide 4 radar speed feedback trailers to monitor traffic speeds as shown on Standard Plate 634.63 and 634.33.

The radar speed feedback sign assembly will include a speed limit sign mounted in conjunction with the radar speed feedback display. The speed display will not flash vehicle speeds exceeding the speed limit or any other messages.

All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the radar speed feedback trailers from locations specified by the Engineer will be incidental to the contract unit price per each for "Contractor Furnished Vehicle Speed Feedback Sign".



WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

TEMPORARY RAISED PAVEMENT MARKERS

Temporary raised pavement markers will be used for marking edge lines, lane lines, and centerlines. Temporary raised pavement markers will be used on all new permanent surfacing sections of roadway and on existing surfacing where temporary marking locations are different than existing marking locations, unless noted or as directed by the Engineer.

Temporary raised pavement markers will be attached to the roadway surface with a flexible non-permanent bituminous adhesive capable of being removed from the roadway surface or with an adhesive approved by the Engineer.

All costs to furnish, install, replace if necessary, and remove the markers will be incidental to the contract unit price per foot for "Temporary Raised Pavement Markers".

TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS

Concrete barriers will be provided by the State and are available for pickup from the SDDOT Sioux Falls Maintenance Yard located at 5316 W 60th Street N, Sioux Falls, SD. The barriers will be hauled back to the SDDOT Sioux Falls Maintenance Yard when they are no longer needed on the project.

Barriers to be adjusted or moved will be disconnected from adjacent barriers to minimize damage to connecting pins. Pins damaged by the Contractor will be replaced at no cost to the Department.

Concrete barrier sections will be placed as depicted in the plans to comply with clear zone requirements and as required by the Engineer. The barriers will be pinned and bolted together as directed by the Engineer.

All costs associated with picking the barriers up from the SDDOT Maintenance Yard, transporting, setting, connecting, and hauling them back to the SDDOT Maintenance Yard will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier.

After the initial placement, the concrete barriers may need to be adjusted. Adjustment of the barriers, where they do not need to be loaded on a truck for transport, will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier.

TEMPORARY CONCRETE BARRIER END PROTECTION

Crash attenuators meeting the requirements of NCHRP 350 or MASH TL-3 will be furnished and installed by the Contractor. Attachment of the attenuators to the concrete barriers will be by approved methods.

All costs associated with furnishing, transporting, initial setup, connecting, maintaining, and removing the crash attenuators will be incidental to the contract unit price per each for Temporary Concrete Barrier End Protection.

No additional payment will be made for minor adjustments.

EROSION CONTROL

The estimated area requiring erosion control is 2.8 Acres. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, fertilizing, and mulching will be incidental to the contract lump sum price for "Erosion Control".

The limits of erosion control work will be determined by the Engineer during construction.

Mycorrhizal Inoculum

Mycorrhizal inoculum will 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 will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

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All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre.

The mycorrhizal inoculum provided will be from the approved product list. The approved product list may be viewed at the following internet site:
<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

Fertilizing

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. 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 will 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 will 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 will 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 will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The fertilizer provided will be from the approved product list. The approved product list may be viewed at the following internet site:
<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

Permanent Seeding

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, temporary easements under cultivation,

Type G Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26



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Fiber Mulching

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

An additional 2% by weight of tackifier will be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

Fiber mulch will be applied at the rate of 3,000 pounds per acre.

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

<https://apps.sd.gov/HC60ApprovedProducts/main.aspx>

SUPPLYING AS-BUILT PLANS

The Contractor will supply as-built plans, in MicroStation (.dgn) format, to the Engineer and a copy will be sent to the Region Traffic Engineer and to the SDDOT ITS Program Manager. The CADD file will accurately locate the conduit and devices within 0.5 foot in the x,y direction and note changes in depth greater than 3 feet. The as-built plans will include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans. As-built plans will be completed within 3 months of installation of last devices and conduits.

All costs to provide as-built plans will be incidental to the contract lump sum price for "As-Built Survey".

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

PDF submittals will be sent to the following email addresses for review and remarks:

JLarson@McLauryEngineering.com
 jacob.folkeringa@bolton-menk.com
 Dave.Huft@state.sd.us
 Patrick.Brueggeman@state.sd.us

TAX LIABILITY

The SD Department of Transportation is a South Dakota sales tax-exempt government entity. Therefore, a Certificate of Exemption will be provided to the successful bidding party which excuses the party from paying sales tax on the materials being furnished to the SDDOT. It is the responsibility of bidding parties to contact the SD Department of Revenue @ 1-800-829-9188 to determine tax licensure requirements.

STATE FURNISHED MATERIALS

Cellular Modems, Antennas, and Power Supply

The cellular modems, antennas, and power supplies will be pre-purchased by the Department of Transportation. The modems, antennas, and power supplies will be available for delivery on or before June 30, 2026. The Department will supply, install, and configure the modems. The make and model numbers are shown below for information.

Cellular Modems and Firewalls	Fortinet FortiGate FGR-50G-5G Rugged Cellular Modem and Firewall
Antennas	Airgain AP-RT5G-C4G-Q-B1 RECON 13 5G EZConnect antenna with MIMO 5G (600MHz – 6GHz) x 4 cellular, GNSS, threaded bolt mount, 1' coax
Antenna Cables	Airgain CCH-C4-1-5 Cable Harness 5'-SMA Airgain CCH-C4-1-30 Cable Harness 30'-SMA
Power Supplies	TDK-Lambda DPP120-24-1 24 VDC, 5A Power Supply for Cellular Modem

Seventeen total units will be purchased. Fifteen units will be installed, and Two units will be spares for SDDOT to have on hand.

The cost of the materials for tax purposes is \$42,138.00. The Contractor is responsible for paying State use tax, applicable City use tax and excise tax on these materials.

All costs associated with this work will be included in the contract unit price per each for "Type 1 Communication Cabinet" or associated DMS bid item being provided.

REMOVE TRAFFIC SIGN

Existing signs that are shown as being removed on the plans will become the property of the Contractor. Existing signposts and bases will be removed in their entirety. All existing signs, posts, and/or hardware removed will not be reused. Holes remaining from the removal of wood posts will be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes will be incidental to the contract unit price per each for "Remove Traffic Sign". Quantities will be per assembly at the contract unit price per each.

TABLE OF REMOVE TRAFFIC SIGN

Sign Description	Size (in)	Northing-Easting	(Each)
Right Lane Only	180x36	730786.714 1960835.216	1
TOTAL:			1

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs.

All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

TABLE OF REMOVE SIGN FOR RESET

Sign Description	Size (in)	Northing-Easting	(Each)
County 106 Tea Exit Only Arrow	180x138	730786.714 1960835.216	1
Exit 73	114x30	730786.714 1960835.216	1
TOTAL:			2

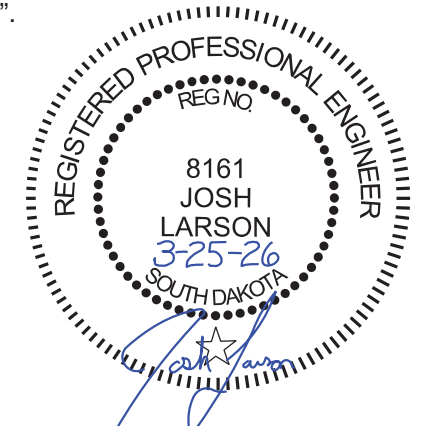
TABLE OF RESET SIGN

Sign Description	Size (in)	Location	(Each)
County 106 Tea Exit Only Arrow	180x138	Overhead DMS Structure (DMS 29-74)	1
Exit 73	114x30	Overhead DMS Structure (DMS 29-74)	1
TOTAL:			2

REMOVE CONCRETE FOOTING

Concrete footings that are to be removed will be removed by the Contractor to a minimum of 2' below the ground surface. Restoration of the disturbed area will be to the satisfaction of the Engineer.

All costs for removing the concrete footings will be incidental to the contract lump sum price for "Remove Concrete Footing(s)".



ON-SITE INSPECTION

An on-site inspection of the DMS equipment will be conducted before acceptance of each DMS, once the DMS equipment is installed and operational. The on-site inspection will be conducted by Project Engineer with the Contractor, and the ITS Engineer present. See ITS Special Provision for standalone, subsystem and system testing and acceptance.

INSTALL POLE MOUNTED DYNAMIC MESSAGE SIGN (DMS)

See Section 2.0 Dynamic Message Signs of the ITS Special Provision for DMS requirements. The Contractor will install Pole Mounted Dynamic Message Sign (DMS) where shown on the plans. The Contractor will be responsible for installing the DMS on a footing designed by the DOT and installed by the Contractor as specified in the plans.

The DMS, pole, modem, antenna, and camera to be installed is located at the DOT Sioux Falls Yard. The sign, pole, modem, antenna, and camera were removed from I29 on a previous project and stored at this location. The Contractor will pick up the existing DMS, pole, modem, antenna, and camera from the DOT Sioux Falls Yard at 5316 W 60th Street N, Sioux Falls, SD. The yard is approximately 9 miles west of the installation location. The Contractor will contact Harry Johnston of DOT Sioux Falls Area office at (605) 367-5680 at least 48 hours in advance of pick up of the items at the DOT Sioux Falls Yard. Taxes on all these items have been paid as part of a separate contract.

The DMS, pole, modem, antenna, and camera will be handled with care so that the existing equipment is not damaged during the relocation and installation processes. The Contractor will replace and pay for any damaged equipment in their care.

The DMS controller will be removed from the DMS sign and installed in the Communications Cabinet at this site. The Contractor will move the existing DMS controller from the salvaged DMS to the ground mounted Communications Cabinet (SC2). The sign will have the DMS controller mounted inside the sign. The Contractor will move the DMS controller from the sign to the Communications Cabinet, including furnishing and installing new multimode fiber optic cable between DMS controller and DMS display.

All costs for labor and material, transporting to site, installing the pole mounted DMS and camera, miscellaneous cabling, installing the DMS controller in the Communications Cabinet, and testing the Pole Mounted Dynamic Message Sign, and camera as called out on the plans and as specified in the ITS Special Provision will be incidental to the contract unit price per each for "Install Pole Mounted Dynamic Message Sign".

TABLE OF INSTALL POLE MOUNTED DYNAMIC MESSAGE SIGN

DMS ID (Hwy-MRM)	Direction	Northing-Easting	Quantity (Each)
90-403	WB	487410.730 2949751.282	1
TOTAL:			1

POLE MOUNTED DYNAMIC MESSAGE SIGN (DMS)

See Section 2.0 Dynamic Message Signs of the ITS Special Provision for DMS requirements. The Contractor will furnish and install Pole Mounted Dynamic Message Sign (DMS) as shown on the plans. The Contractor will be responsible for the design of the pole and the pole mounting to the SDDOT designed footing to support the DMS sign. The design and installation will include all wiring conduit on or within the pole and structure. The Contractor will submit a detailed plan for the complete pole mounted structure on SDDOT designed footing. The plan must be stamped by a Professional Engineer registered in South Dakota.

The following DMS, or an approved equal, will be used for the Pole Mounted Dynamic Message Sign:

Daktronics: VF-2020-96x288-20-RGB

All costs for labor and material, design, installing, miscellaneous cabling, the Multimode Fiber Optic Cable and the Outdoor Rated Cat6 Cable to the Communication Cabinet, and testing the Pole Mounted Dynamic Message Sign as called out on the plans and as specified in the ITS Special Provision will be incidental to the contract unit price per each for "Pole Mounted Dynamic Message Sign".

TABLE OF POLE MOUNTED DYNAMIC MESSAGE SIGN

DMS ID (Hwy-MRM)	Direction	Northing-Easting	Quantity (Each)
90-307	EB	506386.540 2450672.486	1
90-312	WB	502280.371 2478848.735	1
90-405	EB	487285.591 2958959.214	1
29-206	NB	547357.524 2726997.557	1
29-209	SB	562530.840 2726604.467	1
TOTAL:			5

OVERHEAD DYNAMIC MESSAGE SIGN (DMS)

See Section 2.0 Dynamic Message Signs of the ITS Special Provision for DMS requirements. The Contractor will furnish and install Overhead Dynamic Message Sign (DMS) where shown on the plans. The Contractor will be responsible for the design and installation of the support structure to the SDDOT designed footings to support the overhead DMS sign and the static signs shown in the details. The design and installation of the structure will include a lockable access ladder, maintenance catwalk with a folding handrail system, and all wiring conduit on or within the structure. The Contractor will submit a detailed plan for the complete sign bridge structure mounted on SDDOT designed footing. The plan must be stamped by a Professional Engineer registered in South Dakota.

The following DMS, or an approved equal, will be used for the Overhead Dynamic Message Sign:

Daktronics: VF-2020-96x400-20-RGB

All costs for labor and material, design, installing, miscellaneous cabling, the Multimode Fiber Optic Cable and the Outdoor Rated Cat6 Cable to the Communication Cabinet, and testing the Dynamic Message Sign as called out on the plans and as specified in the ITS Special Provision will be incidental to the contract unit price per each for "Overhead Dynamic Message Sign".

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TABLE OF OVERHEAD DYNAMIC MESSAGE SIGN

DMS ID (Hwy-MRM)	Direction	Northing-Easting	(Each)
90-399	EB	484680.114 2929245.599	1
29-74	SB	433963.559 2906920.498	1
29-76	SB	444562.504 2908450.237	1
229-2	NB	448073.921 2921155.262	1
229-9	SB	475832.907 2932609.185	1
TOTAL:			5

POST MOUNTED DYNAMIC MESSAGE SIGN (DMS)

See Section 2.0 Dynamic Message Signs of the ITS Special Provision for DMS requirements. The Contractor will furnish and install Post Mounted Dynamic Message Sign (DMS) where shown on the plans. The Contractor will be responsible for the design of the supports and the mounting of the DMS to the SDDOT designed footings to support the post mounted DMS sign. This design will follow the associated footing and erection details in these plans. The design and installation will include the supports, stiffeners, wiring conduit, and the supplying, installing and mounting of the post mounted DMS communication enclosure as detailed in the plans. The Contractor will submit a detailed plan for the support mounted on SDDOT designed footings. The plan must be stamped by a Professional Engineer registered in South Dakota.

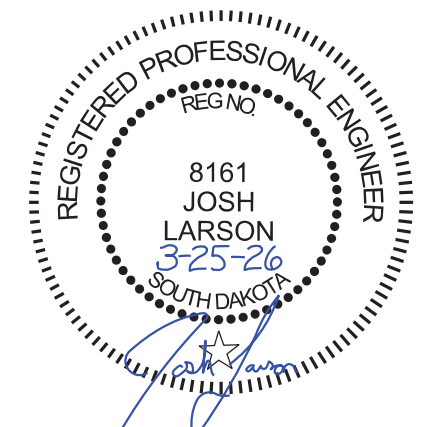
The following DMS, or an approved equal, will be used for the Post Mounted Dynamic Message Sign:

Daktronics: VF-2420-96x224-20-RGB

The following enclosure, or an approved equal, will be used for the Post Mounted DMS Communication Enclosure:

Enclose Manufacturing: ENC-6029-3

All costs for labor and material, design, installing, miscellaneous cabling, post mounted DMS communication enclosure, supports, stiffeners, mounting brackets, and testing the Post Mounted Dynamic Message Sign as called out on the plans and as specified in the ITS Special Provision will be incidental to the contract unit price per each for "Post Mounted Dynamic Message Sign".



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TABLE OF POST MOUNTED DYNAMIC MESSAGE SIGN

DMS ID (Hwy-MRM)	Direction	Northing-Easting	(Each)
37-125	SB	187082.423 2435694.754	1
34-389	EB	618242.941 2825782.003	1
50-388	EB	213793.818 2775770.173	1
50-412	EB	184205.074 2892965.850	1
12-295	EB	596704.071 2385775.821	1
TOTAL:			5

SURVEILLANCE CAMERA (CCTV)

See Section 3.0 Closed Circuit Television Cameras of the ITS Special Provision for Closed Circuit Television Camera requirements. Closed Circuit Television Cameras will be installed where shown in the plans and in accordance with the plan details and ITS Special Provision.

The Contractor will be responsible for the design and installing of the mounting brackets for the CCTV to the DMS support. The CCTV will be mounted as show on the plans. The Contractor will submit a detailed plan for the CCTV mounting brackets. The plan must be stamped by a Professional Engineer registered in South Dakota.

All costs for labor and material, including design, supplying, installing, and testing the surveillance cameras, the Outdoor Rated Cat6 Cable from the cabinet to the camera, the media converters, mounting brackets, and hardware will be included in the contract unit price per each for "Surveillance Camera".

TABLE OF SURVEILLANCE CAMERA (CCTV)

Device ID	DMS (Hwy-MRM)	Quantity (Each)
CCTV1	90-307	1
CCTV2	90-312	1
CCTV3	90-399	1
CCTV4	90-405	1
CCTV5	29-74	1
CCTV6	29-76	1
CCTV7	229-2	1
CCTV8	229-9	1
CCTV9	50-388	1
CCTV10	50-412	1
CCTV11	29-209	1
CCTV12	12-295	1
TOTAL:		12

VEHICLE RADAR DETECTOR (VRD)

Vehicle Radar Detector (VRD) will be installed where shown in the plans and in accordance with the plan details and Section 5.0 of the ITS Special Provision.

The Contractor will be responsible for the design and installing of the mounting brackets for the VRD to the DMS support. The VRD will be mounted as show on the plans. The Contractor will submit a detailed plan for the VRD mounting brackets. The plan must be stamped by a Professional Engineer registered in South Dakota.

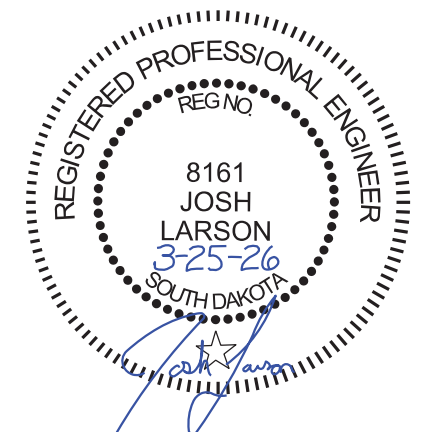
The following VRD, or an approved equal, will be used for the Vehicle Radar Detector:

Houston Radar LLC: SpeedLane Pro KIT-SLP-0003

All costs for labor and material, including design, supplying, installing, and testing the vehicle radar detector, mounting brackets, cabling, and hardware will be included in the contract unit price per each for "Vehicle Radar Detector".

TABLE OF VEHICLE RADAR DETECTOR (VRD)

Device ID	DMS (Hwy-MRM)	Quantity (Each)
VRD1	37-125	1
VRD2	29-74	1
VRD3	29-76	1
VRD4	229-2	1
VRD5	34-389	1
TOTAL:		5



DYNAMIC MESSAGE SIGN OVERVIEW TABLE

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DMS ID (Hwy-MRM)	Install Pole Mounted DMS	Pole Mounted DMS	Overhead DMS	Post Mounted DMS	Surveillance Camera	Vehicle Radar Detector
90-307		1			1	
90-312		1			1	
37-125				1		1
90-399			1		1	
90-403	1					
90-405		1			1	
29-74			1		1	1
29-76			1		1	1
229-2			1		1	1
229-9			1		1	
34-389				1		1
50-388				1	1	
50-412				1	1	
29-206		1				
29-209		1			1	
12-395				1	1	
Total:	1	5	5	5	12	5

ELECTRICAL SERVICE CABINET

The Contractor will contact and coordinate work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

To better assist the Contractor during construction, each Utility Company has been previously notified of the project. The following utility company contact information for each DMS site is as follows:

COMMUNICATION CABINETS

See Section 4.0 Communication Cabinets of the ITS Special Provision for Communication Cabinet requirements. Communication Cabinets will be installed where shown in the plans and in accordance with the plan details and ITS Special Provision.

The Contractor will install Communications Cabinets at locations as shown on the plans. Communication Cabinets will be defined as follows (Length x Width x Height):

- Type 1 Communication Cabinet – 30"x24"x66"

The following Communication Cabinet, or an approved equal, will be used:

Enclose Manufacturing: ENC-2025I

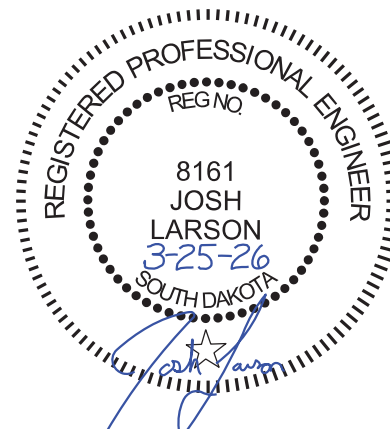
All costs for furnishing, installing, and configuring the Communications Cabinet, including all components within and attached to the cabinet, and spare conduits as specified in the plans will be incidental to the contract unit price per each for "Type 1 Communication Cabinet". All Type 1 Communication Cabinets will be installed on a "Controller Cabinet Footing" as detailed in these plans.

TABLE OF TYPE 1 COMMUNICATION CABINETS

Item ID	DMS (Hwy-MRM)	Northing-Easting	Quantity (Each)
SC1	90-399	484628.175 2929256.569	1
SC2	90-403	487410.400 2949743.529	1
SC3	90-405	487285.929 2958966.966	1
SC4	29-74	433955.983 2906865.644	1
SC5	29-76	444572.249 2908401.094	1
SC6	229-2	448035.459 2921187.265	1
SC7	229-9	475824.020 2932551.035	1
TOTAL:			7

DMS ID	Utility Company	Name	Phone Number
90-307	Central Electric Coop	Brian Bultje	(605) 996-7516
90-312	Central Electric Coop	Brian Bultje	(605) 996-7516
37-125	NorthWestern Energy	Alex Masloski	(888) 467-2669
90-399	Xcel Energy	Derreck Martin	(800) 628-2121
90-403	Sioux Valley Energy	Jason Sage	(800) 234-1960
90-405	Xcel Energy	Derreck Martin	(800) 628-2121
29-74	Southeastern Electric Coop	Troy Peters	(605) 360-5641
29-76	Xcel Energy	Derreck Martin	(800) 628-2121
229-2	Xcel Energy	Derreck Martin	(800) 628-2121
229-9	Xcel Energy	Derreck Martin	(800) 628-2121
34-389	Sioux Valley Energy	Jason Sage	(800) 234-1960
50-388	Clay-Union Electric	Allan Gauer	(605) 624-2673
50-412	Clay-Union Electric	Allan Gauer	(605) 624-2673
29-206	Otter Tail Power Company	Julie Jarman	(218) 739-8877
29-209	Whetstone Valley Electric Coop	Jon Christenson	(605) 432-5331
12-295	Northern Electric Coop	Russ Ulmer	(605) 225-0310

All costs for furnishing and installing materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket, conduit and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet".



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TABLE OF ELECTRICAL SERVICE CABINETS

Item ID	DMS (Hwy-MRM)	Northing-Easting	Electrical Service Cabinet (Each)
ESC1	90-307	506325.700 2450899.914	1
ESC2	90-312	502348.813 2478926.981	1
ESC3	37-125	187070.917 2435631.654	1
ESC4	90-399	484572.068 2929259.281	1
ESC5	90-403	487477.260 2949740.685	1
ESC6	90-405	487228.173 2959076.642	1
ESC7	29-74	433955.743 2906821.751	1
ESC8	29-76	444593.529 2908348.467	1
ESC9	229-2	447985.748 2921216.810	1
ESC10	229-9	475823.563 2932490.257	1
ESC11	34-389	618161.434 2825754.060	1
ESC12	50-388	213753.802 2775773.193	1
ESC13	50-412	184139.565 2892968.427	1
ESC14	29-206	547362.999 2727079.804	1
ESC15	29-209	562528.978 2726546.529	1
ESC16	12-295	596605.077 2385776.102	1
TOTAL:			16

UTILITY APPROVED METER SOCKETS FOR ELECTRIC SERVICE

The meter sockets will be provided where shown on the drawings and will be a utility approved meter socket appropriate for the electrical service it is connected to. All costs for coordinating and installation of meter sockets will be incidental to the contract unit price per each for "Electrical Service Cabinet".

GROUNDING RODS

The Contractor will furnish and install grounding rods at locations as shown on the plans and as specified in the special provision. The payment for supplying and installing ground rods will be incidental to the contract unit price per each for the device the ground rods are installed on.

CONDUIT INSTALLATION

Each end of each conduit will be marked with a 1/2-inch dia. x 12-inch long reinforcing bar driven flush with the finished grade, except when the conduit end terminates inside a junction box. The ends of each conduit run will be capped to prevent water and soil from entering.

MULTIMODE FIBER OPTIC CABLE

Multimode Fiber Optic Cable will meet the following requirements:

- Micro pigtail shall be designed for outdoor use.
- Storage Temperature -40 °C to 70 °C (-40 °F to 158 °F)
- Installation Temperature -30 °C to 70 °C (-22 °F to 158 °F)
- Operation Temperature -40 °C to 70 °C (-40 °F to 158 °F)
- Minimum Static Bend Radius 4.95" (12.5 cm)
- Outer Diameter 0.227" (4.9 mm)
- Fiber Count Six (6)
- Outer Jacket Material: Flame retardant PVC
- 50/125 μm MM graded index, OM3 standard compliant laser optimized
- Attenuation: 3db/KM
- 850/1310 nm wave length
- Tight buffer plenum cable
- UL Listed Type OFNP, CSA FT-6
- Meets NEC sections 770-51 (a) and 770-53 (a)

OUTDOOR RATED CAT6 CABLE

Outdoor Rated Cat6 Cable will meet the following requirements:

- Use UL listed Cables.
- Outdoor rated
- Maximum diameter less than or equal to 0.40" (10.0 mm)
- Contains four balanced twisted pair conductors with a characteristic impedance of 100 ohms, +/- 15
- Conductors are 22 to 24 AWG solid annealed bare copper, held in place by a cross web separator and surrounded by a water blocking material
- The outer jacket material is a sunlight and weather resistant black polyethylene.
- Tested and verified as being compliant with the ANSI/TIA 568-C.2 CAT 6 performance specification.

SDR 13.5 CONDUIT (HDPE)

Conduit will meet the following requirements:

- Compliant with NFPA70, National Electric Code
- UL listed
- Meets NEMA TC-7
- Have smooth interior & exterior walls

TRACER WIRE

The Contractor will furnish and install tracer wire with all conduits. The payment for supplying, installing, and testing will be incidental to the contract unit price per foot for "(Size)" Conduit, SDR 13.5" or "(Size)" Rigid Conduit, Schedule 80".

GROUNDING WIRES

Grounding wires from individual devices combine to share a common ground back from the devices back to the communication cabinets.

JUNCTION BOXES

The Contractor will furnish and install junction boxes as specified in the plans. Cabling and splices will be high quality and waterproof. If cable splices are necessary, they will be located in a junction box and meet SDDOT specifications.

The cover of the junction box will be labeled with "SDDOT" and their phone number instead of the logo as specified on the standard plate 635.65.

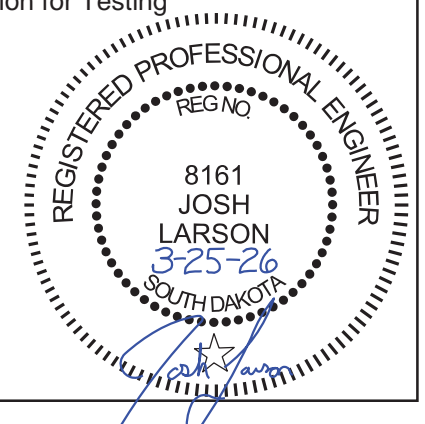
All costs to furnish and install junction boxes will be incidental to the contract unit price per each for "Type 2 Electrical Junction Box". See standard plate 635.65.

TABLE OF TYPE 2 ELECTRICAL JUNCTION BOX

Item ID	DMS (Hwy-MRM)	Northing-Easting	Quantity (Each)
JA1	90-307	506376.979 2450672.525	1
JA2	90-312	502290.300 2478848.728	1
JA3	37-125	187072.892 2435689.720	1
JA4	29-74	434427.637 2906862.906	1
JA5	29-76	445016.244 2908579.617	1
JA6	229-2	447818.103 2920824.083	1
JA7	229-9	475746.282 2932551.606	1
JA8	34-389	618224.774 2825776.313	1
JA9	50-388	213778.850 2775771.485	1
JA10	50-412	184192.034 2892966.660	1
JA11	29-206	547358.261 2727012.299	1
JA12	29-209	562530.780 2726592.743	1
JA13	12-295	596691.183 2385774.806	1
TOTAL:			13

TESTING

See Section 6.0 Testing of the ITS Special Provision for Testing requirements.



CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material will be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow" as shown in the Estimate of Quantities will be the basis of payment for this item.

Restoration of the Contractor furnished borrow excavation site will be the responsibility of the Contractor.

HIGH TENSION CABLE GUARDRAIL

The Contractor will furnish and install a high tension cable guardrail system that meets the Test Level 3 crash testing requirements of the Manual for Assessing Safety Hardware (MASH). The maximum dynamic deflection of the system will be less than 10'-0" and the maximum post spacing will be 10'-6" unless specified otherwise in the plans. High Tension 4 Cable Guardrail will be one of the following products:

- Valtir (Trinity) – CASS S3 M10
- Brifen – 4 Rope O-Post System

The Contractor will install the system according to the manufacturer's installation recommendations except where stated otherwise in the plans. A copy of the detail drawings and installation instructions for the high tension cable guardrail and anchor assemblies will be given to the Engineer a minimum of 4 weeks prior to installation of the high tension cable guardrail system.

All posts will be galvanized and inserted into driven galvanized steel sleeves with soil plates. The driven sleeves must be designed for a minimum frost depth of 42" and to resist the additional lateral component of curved cable sections.

Delineation of the high tension cable guardrail will be in conformance with standard plate 632.40.

The cables provided will be pre-stretched in the factory.

The Contractor will check and adjust the tension of the cables a minimum of 3 weeks after installation and not longer than 6 weeks after installation. Cost for this work will be incidental to the contract unit price per foot for "High Tension 4 Cable Guardrail".

High tension cable guardrail will be installed on a 10:1 or flatter slope and the embankment limits will match the high tension cable guardrail limits. The embankment quantities may vary from plans quantity.

The lengths of high tension cable guardrail stated in the plans are based on a minimum effective length (length of need). The length and location of the high tension cable guardrail at each site will need to be adjusted during construction as necessary depending on the system provided and will be approved by the Design Engineer before installation. When the Valtir (Trinity) CASS S3 M10 system is installed adjacent to one-way traffic roadways, 26' of the anchor assembly on the approach end is considered non-effective, and 51' on the non-approach end is considered non-effective; however, when the same system is installed adjacent to two-way traffic roadways, 26' of the anchor assembly on both the approach and non-approach ends is considered non-effective. For Brifen 4 Rope O-Post System installations, the anchor assembly is non-effective.

The Contractor will provide a signed letter of compliance to the Engineer upon completion of the high tension cable guardrail installation(s) stating that the high tension cable barrier system has been installed in conformance to the manufacturer installation instructions and specifications, meets the Test Level 3 crash test requirements of MASH, and is terminated with an approved anchor assembly.

The high tension cable guardrail will be measured along the centerline of the cable guardrail from the beginning to the end of the minimum effective length.

All costs for furnishing and installing the high tension cable guardrail system including all labor, materials, and equipment will be incidental to the contract unit price per foot for "High Tension 4 Cable Guardrail".

HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY

The beginning and end of each "run" of high tension cable guardrail will terminate with an anchor assembly. The High Tension Cable Guardrail Anchor Assemblies will be one of the following products:

- Valtir (Trinity) – CASS Cable Terminal (CCT)
- Brifen – MASH Gating Terminal (MGT)

The anchor footings for Valtir CCT installations will consist of driven cable release posts (CRP) with soil plates and driven post sleeves with soil plates.

The anchor footings for Brifen MGT installations will conform to the High Tension Cable Guardrail Cylindrical Anchor Footing special detail, except for installations adjacent to DMS with spread footings (DMS 229-2, DMS 12-295, and DMS 34-389). Drilled-in cylindrical anchor footings at these locations are anticipated to present constructability challenges and, therefore, a block anchor footing is recommended. If the Contractor elects to install the Brifen system at these locations, the following items will be submitted to the Office of Bridge Design for review and approval a minimum of 6 weeks prior to planned installation: design calculations, independent design check calculations, and plan details by a SD registered P.E. The following soil parameters will be used to design the concrete block footings: unit weight of 120 pcf, friction angle of 32 degrees, and cohesion of 0 psf. The lateral earth pressure for the top two feet of the concrete block footing depth will be neglected in the design. Preliminary design calculations have estimated the minimum size of the concrete block footings to be 5'-0" wide and 12'-0" long. The minimum embedment of the concrete block footings will be 5 feet. The concrete block footing will be undercut and backfilled with 12 inches Base Course.

Delineation of the high tension cable guardrail anchor assembly will be in conformance with standard plate 632.40.

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All costs for furnishing and installing the High Tension Cable Guardrail Anchor Assembly including all labor, equipment, and materials which include the anchor footing(s), hardware, and all attachments to the anchor footing(s), will be incidental to the contract unit price per each for "High Tension Cable Guardrail Anchor Assembly".

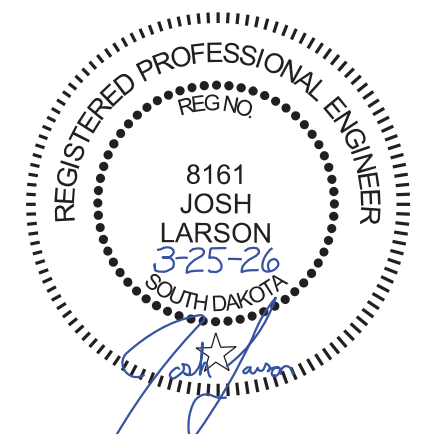


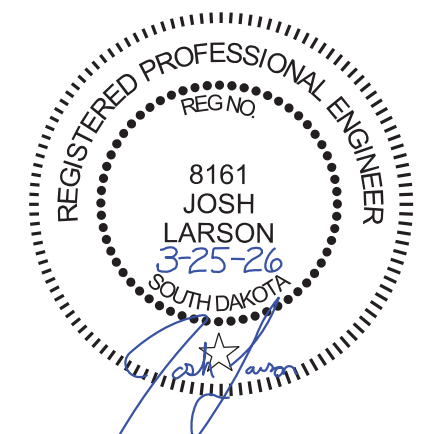
TABLE OF GUARDRAIL

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Location	High Tension 4 Cable Guardrail Feet	High Tension Cable Guardrail Anchor Assembly Each	Contractor Furnished Borrow CuYd	Type 2 Object Marker Back-to-Back Each	Type 2 Object Marker Each	Comments
PCN 09L5						
DMS 90-307 Eastbound Right Shoulder	227	2	21		2	
DMS 90-312 Westbound Right Shoulder	227	2	13		2	
DMS 37-125 Southbound Right Shoulder	227	2	8	2		
DMS 90-399 Eastbound Right Shoulder	227	2	5		2	1800' Radius
Median	227	2	10		2	
DMS 90-403 Westbound Right Shoulder	227	2	25		2	
DMS 90-405 Eastbound Right Shoulder	237.5	2	18		2	
DMS 29-76 Southbound Right Shoulder	227	2	5		2	
DMS 229-2 Northbound Right Shoulder	227	2	5		2	
Median	227	2	5		2	
DMS 229-9 Southbound Right Shoulder	227	2	10		2	7500' Radius
Median	227	2	5		2	
DMS 34-389 Eastbound Right Shoulder	227	2	5	2		
DMS 50-388 Eastbound Right Shoulder	227	2	5	2		
DMS 50-412 Eastbound Right Shoulder	227	2	13	2		
DMS 29-206 Northbound Right Shoulder	227	2	5		2	
DMS 29-209 Southbound Right Shoulder	227	2	7		2	
DMS 12-295 Eastbound Right Shoulder	227	2	6	2		
Total PCN07YC	4096.5	36	171	10	26	



STORMWATER POLLUTION PREVENTION PLAN CHECKLIST
 (The numbers left of the title headings are **reference numbers** to the
GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED
 WITH CONSTRUCTION ACTIVITIES (Stormwater Permit))

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Other (describe): Installation of DMS equipment
- **5.3 (3b): Total Project Area** 8.1 Acres
- **5.3 (3b): Total Area to be Disturbed** 2.8 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 2.8 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 75%
- **5.3 (3d): Description of Vegetative Cover** Cover Grasses (native & introduced)
- **5.3 (3e): Soil Properties:** Varies
- **5.3 (3f): Name of Receiving Water Body/Bodies** Varies
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Stabilize disturbed areas.	
Install utilities.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

Description	Estimated Start Date
<input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input type="checkbox"/> Silt Fence	
<input type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls

Description	Estimated Start Date
<input type="checkbox"/> Silt Fence	
<input type="checkbox"/> Temporary Berm/Windrow	
<input type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Sediment Barriers	
<input type="checkbox"/> Erosion Bales	
<input type="checkbox"/> Temporary Slope Drain	
<input type="checkbox"/> Turf Reinforcement Mat	
<input type="checkbox"/> Riprap	
<input type="checkbox"/> Gabions	
<input type="checkbox"/> Rock Check Dams	
<input type="checkbox"/> Sediment Traps/Basins	
<input type="checkbox"/> Culvert Inlet Protection	
<input type="checkbox"/> Transition Mats	
<input type="checkbox"/> Median/Area Drain Inlet Protection	
<input type="checkbox"/> Curb Inlet Protection	
<input type="checkbox"/> Interceptor Ditch	
<input type="checkbox"/> Concrete Washout Facility	
<input type="checkbox"/> Work Platform	
<input type="checkbox"/> Temporary Water Barrier	
<input type="checkbox"/> Temporary Water Crossing	
<input type="checkbox"/> Permanent Stormwater Ponds	
<input type="checkbox"/> Permanent Open Vegetated Swales	
<input type="checkbox"/> Natural Depressions to allow for Infiltration	
<input type="checkbox"/> Sequential Systems that combine several practices	
<input type="checkbox"/> Other:	

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Dust Controls

Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other	

Dewatering BMPs

Description	Estimated Start Date
<input type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input type="checkbox"/> Temporary Diversion Channel	
<input type="checkbox"/> Other:	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (3.18))

Description	Estimated Start Date
<input type="checkbox"/> Vegetation Buffer Strips	
<input type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input type="checkbox"/> Mulching (Grass Hay or Straw)	
<input checked="" type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> Other:	

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes No If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

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5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➤ Material Management

▪ Housekeeping

- Only needed products will be stored on-site by the Contractor.
- Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

▪ Hazardous Materials

- Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.

- If surplus product must be disposed of, manufacturer's instructions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ Spill Control Practices

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➤ Spill Response

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

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- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ Waste Disposal

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➤ Hazardous Waste

- All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➤ Sanitary Waste

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

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5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

- Concrete and Portland Cement
- Detergents
- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Diesel Exhaust Fluid
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other:

Product Specific Practices

▪ **Petroleum Products**

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

▪ **Fertilizers**

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

▪ **Paints**

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

▪ **Concrete Trucks**

Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- Discharges from water line flushing.
- Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately if any one of the following conditions exists:
 - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
 - The release or spill causes an immediate danger to human health or safety
 - The release or spill exceeds 25 gallons
 - The release or spill causes a sheen on surface water
 - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
 - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
 - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
 - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Authorized Signature (See the General Permit, Section 7.4 (1))

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

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CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

➤ **Contractor Information:**

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **SDDOT Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **SDDANR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SDDANR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

➤ **SDDANR Stormwater Contact Information**

- SDDANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➤ **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➤ **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➤ **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

➤ **5.5 (5): Required Notice to Other Operators**

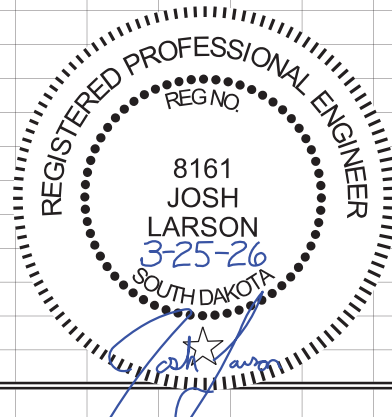
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

CONDUIT AND CABLE QUANTITIES

FOR BIDDING PURPOSES ONLY

Location to Location	Conduit		Rigid Conduit		Copper Wire						Communication Cabinet	Junction Boxes	Electrical Service Cabinet	Plotting Date: 3/25/2026
	SDR 13.5		Schedule 80									Type		
	1.5"	2"	1.5"	2"		1/C #4	1/C #12				2			
	Ft	Ft	Ft	Ft		AWG Ft	AWG Ft				Each	Each	Each	
PCN09L5														
Conduit														
ESC1	JA1	290				1320						1	1	
JA1	DMS 90-307	10				270								
ESC2	JA2	145				725						1	1	
JA2	DMS 90-312	10				270								
ESC3	JA3			65		395	295					1	1	
JA3	DMS 37-125	20				230	170							
ESC4	SC1	65				475				1			1	
SC1	DMS 90-399	20				600								
ESC5	SC2	75				515				1			1	
SC2	DMS 90-403	20				395								
ESC6	SC3	175				930				1			1	
SC3	DMS 90-405	20				395								
ESC7	SC4	50				415				1			1	
SC4	DMS 29-74	20				600								
SC4	JA4		480									1		
JA4	Existing Jbox			120										
ESC8	SC5	65				475				1			1	
SC5	DMS 29-76	20				600								
SC5	JA5		485									1		
JA5	Existing Jbox			110										
ESC9	SC6	65				475				1			1	
SC6	DMS 229-2	20				600								
SC6	JA6		430									1		
JA6	Existing Jbox			95										
ESC10	SC7	70				495				1			1	
SC7	DMS 229-9	20				600								
SC7	JA7		80									1		
JA7	Existing Jbox			200										
ESC11	JA8	75				435	325					1	1	
JA8	DMS 34-389	30				250	190							
ESC12	JA9	30				250	190					1	1	
JA9	DMS 50-388	30				250	190							
ESC13	JA10	60				375	280					1	1	
JA10	DMS 50-412	20				230	170							
ESC14	JA11	75				435						1	1	
JA11	DMS 29-206	15				290								
ESC15	JA12	55				355						1	1	
JA12	DMS 29-209	15				290								
ESC16	JA13	95				515	390					1	1	
JA13	DMS 12-295	20				230	170							
Totals This Sheet:		1,700	1,475	65	525		14,685	2,370			7	13	16	



TRAFFIC CONTROL FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 18	TOTAL SHEETS 95
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Plotting Date: 3/25/2026

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS - 09L5

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD				EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP		30"	5.2		1	36"	7.5	7.5
R2-1	SPEED LIMIT 45		24" x 30"	5.0		7	36" x 48"	12.0	84.0
R2-1	SPEED LIMIT 65		24" x 30"	5.0		8	36" x 48"	12.0	96.0
R2-1	SPEED LIMIT 80		24" x 30"	5.0		2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)		24" x 18"	3.0		12	36" x 24"	6.0	72.0
R4-1	DO NOT PASS		24" x 30"	5.0		2	48" x 60"	20.0	40.0
R4-7	KEEP RIGHT (symbol)		24" x 30"	5.0		1	36" x 48"	12.0	12.0
R5-1	DO NOT ENTER		30" x 30"	6.3		2	36" x 36"	9.0	18.0
W1-6	LARGE ARROW (one direction)		48" x 24"	8.0		1	60" x 30"	12.5	12.5
W3-5	SPEED REDUCTION AHEAD (45 MPH)		48" x 48"	16.0		6	48" x 48"	16.0	96.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)		48" x 48"	16.0		4	48" x 48"	16.0	64.0
W4-2	LEFT LANE ENDS (symbol)		48" x 48"	16.0		6	48" x 48"	16.0	96.0
W4-2	RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0	12	48" x 48"	16.0	192.0
W6-3	TWO WAY TRAFFIC (symbol)		48" x 48"	16.0		2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)		30" x 30"	6.3		2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	3	48" x 48"	16.0	48.0	13	48" x 48"	16.0	208.0
W20-5	RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0	12	48" x 48"	16.0	192.0
W20-5	LEFT LANE CLOSED AHEAD		48" x 48"	16.0		6	48" x 48"	16.0	96.0
W20-5a	2 RIGHT LANES CLOSED 1/2 MILE		48" x 48"	16.0		2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	3	48" x 48"	16.0	48.0		48" x 48"	16.0	
G20-1	ROAD WORK NEXT 1 MILE		36" x 18"	4.5		4	48" x 24"	8.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0	8	48" x 24"	8.0	64.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 169.0				EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT 1482.6			

NOTE: The only Conventional Road on this project is SD Highway 34 at DMS 34-389; all other sites are considered Interstate or Expressways.

ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING - 09L5

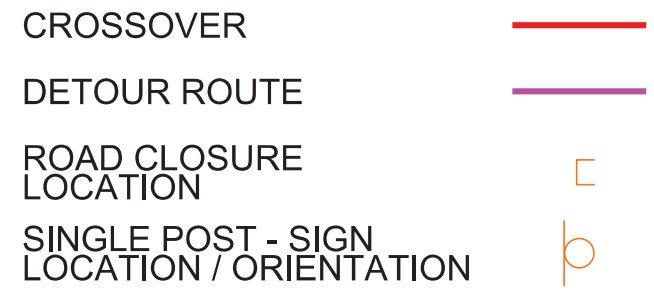
SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-2	DETOUR AHEAD	4	48" x 48"	16.0	64.0
M1-1	INTERSTATE ROUTE MARKER (2 digits)	29	36" x 36"	9.0	261.0
M1-1	INTERSTATE ROUTE MARKER (3 digits)	16	45" x 36"	11.3	180.8
M3-1	DIRECTION MARKER - NORTH	15	36" x 18"	4.5	67.5
M3-2	DIRECTION MARKER - EAST	11	36" x 18"	4.5	49.5
M3-3	DIRECTION MARKER - SOUTH	18	36" x 18"	4.5	81.0
M4-8	DETOUR	17	30" x 15"	3.1	52.7
M4-8a	END DETOUR	1	36" x 24"	6.0	6.0
M5-1	ADVANCE TURN ARROW 90° (L or R)	5	30" x 21"	4.4	22.0
M5-2	ADVANCE TURN ARROW 45° (L or R)	5	30" x 21"	4.4	22.0
M6-1	DIRECTION ARROW - Horizontal Single Head (L or R)	5	30" x 21"	4.4	22.0
M6-2	DIRECTION ARROW - 45° Single Head (L or R)	5	30" x 21"	4.4	22.0
M6-3	DIRECTION ARROW - Vertical Single Head	4	30" x 21"	4.4	17.6
		EXPRESSWAY / INTERSTATE DETOUR SIGNING SQFT 868.1			



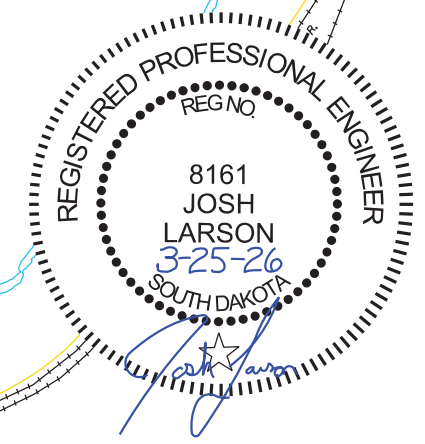
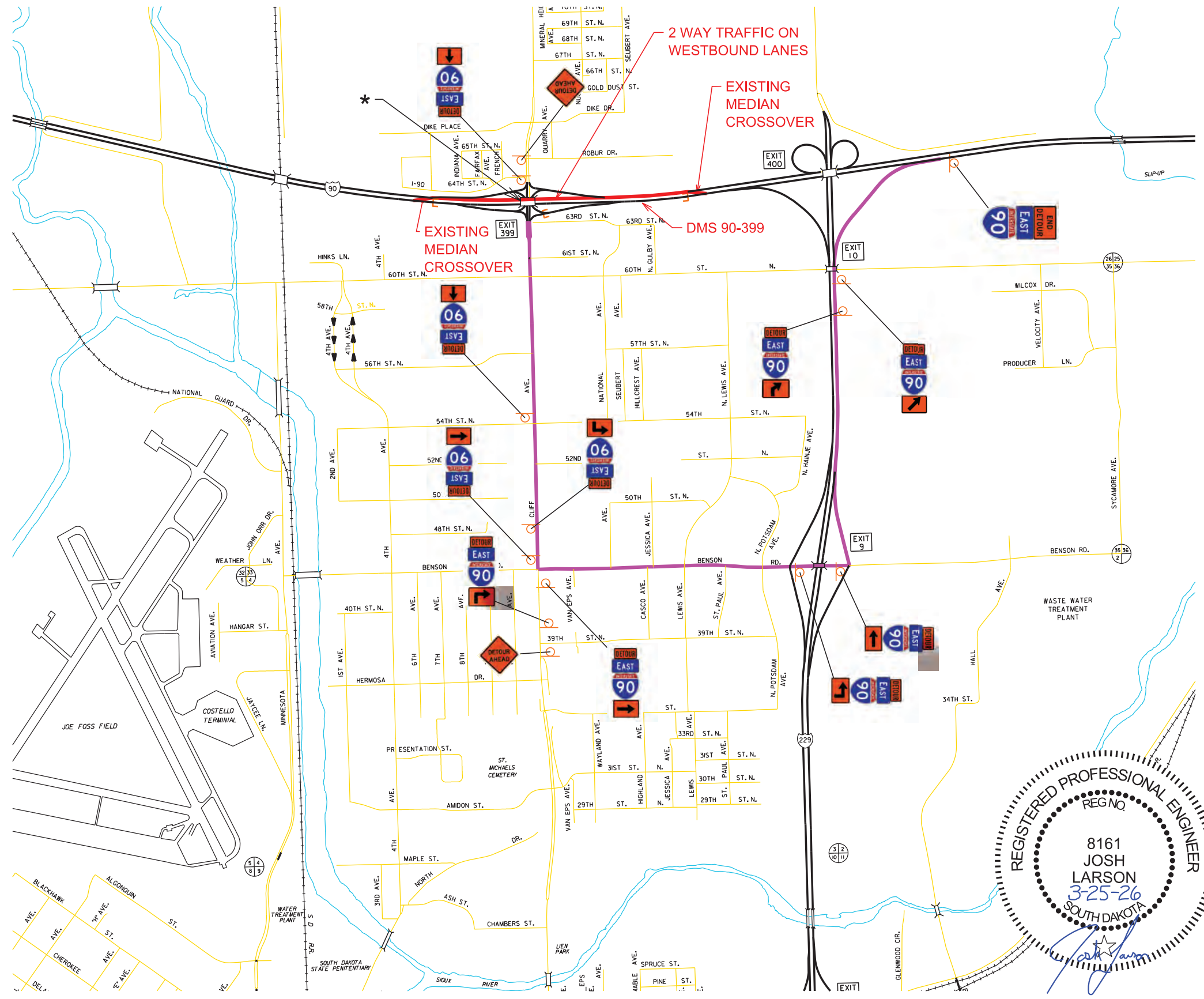
CROSSOVER & DETOUR FOR OVERHEAD DMS 90-399

FOR BIDDING PURPOSES ONLY

* Install two Traffic Control Movable Concrete Barrier and one Temporary Concrete Barrier End Protection.



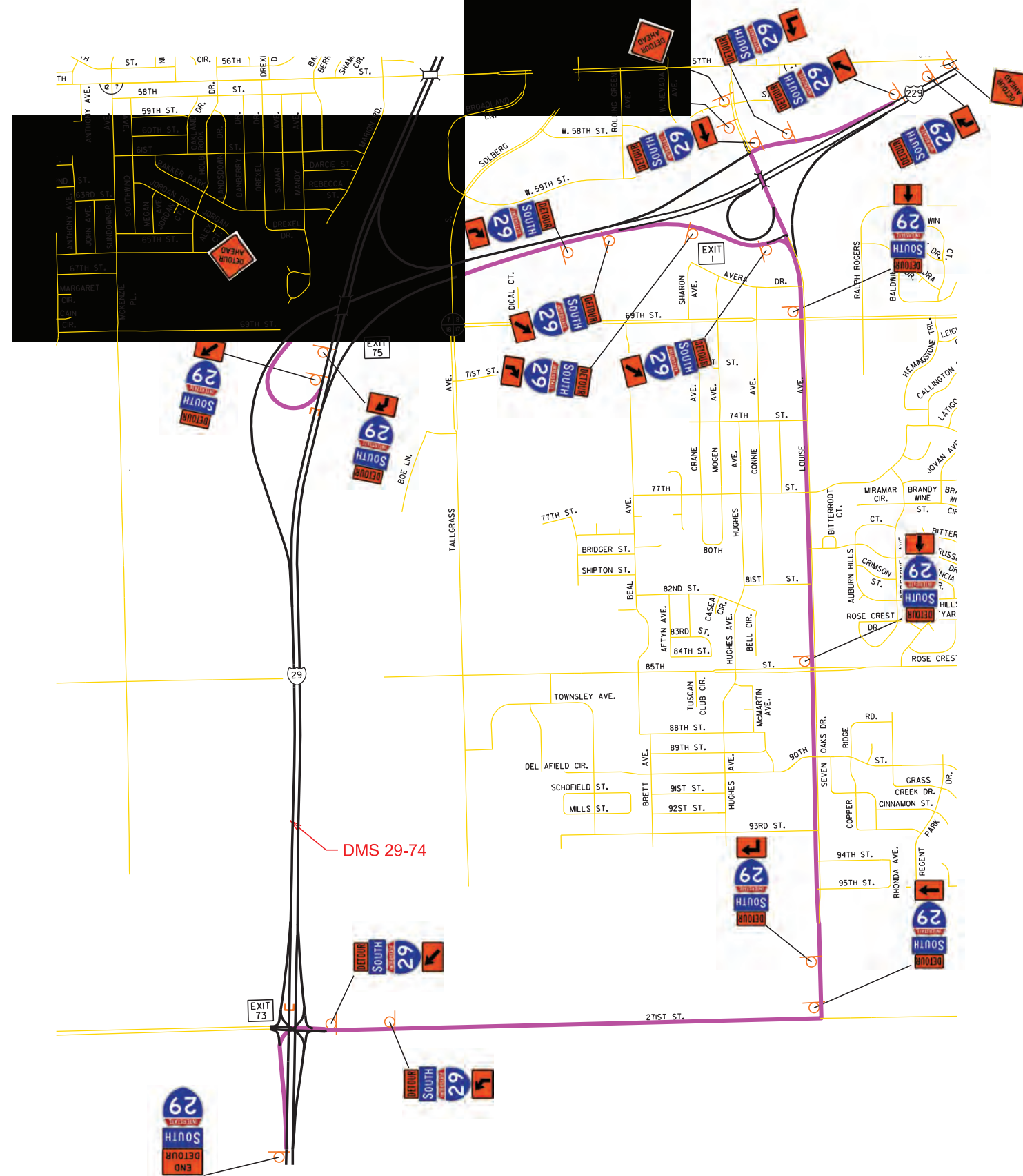
NOTES:
 Detour Layout and median corsrossover for use during nighttime closures only.
 Return traffic to normal operations during daytime hours.
 Nighttime closure and crossover to be used for crane operations for overhead DMS erection.
 See Standard Plate 634.66 for Traffic Control at Median Crossover.



DETOUR FOR OVERHEAD DMS 29-74

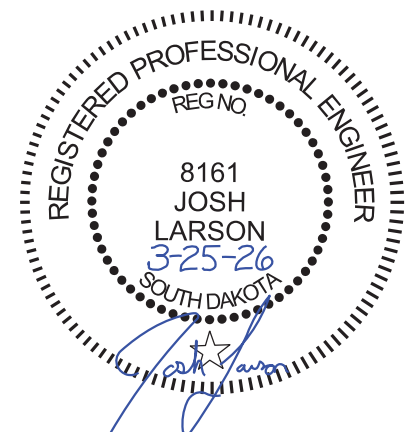
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	20	95
Plotting Date:		3/25/2026	



DETOUR ROUTE
ROAD CLOSURE LOCATION
SINGLE POST - SIGN LOCATION / ORIENTATION

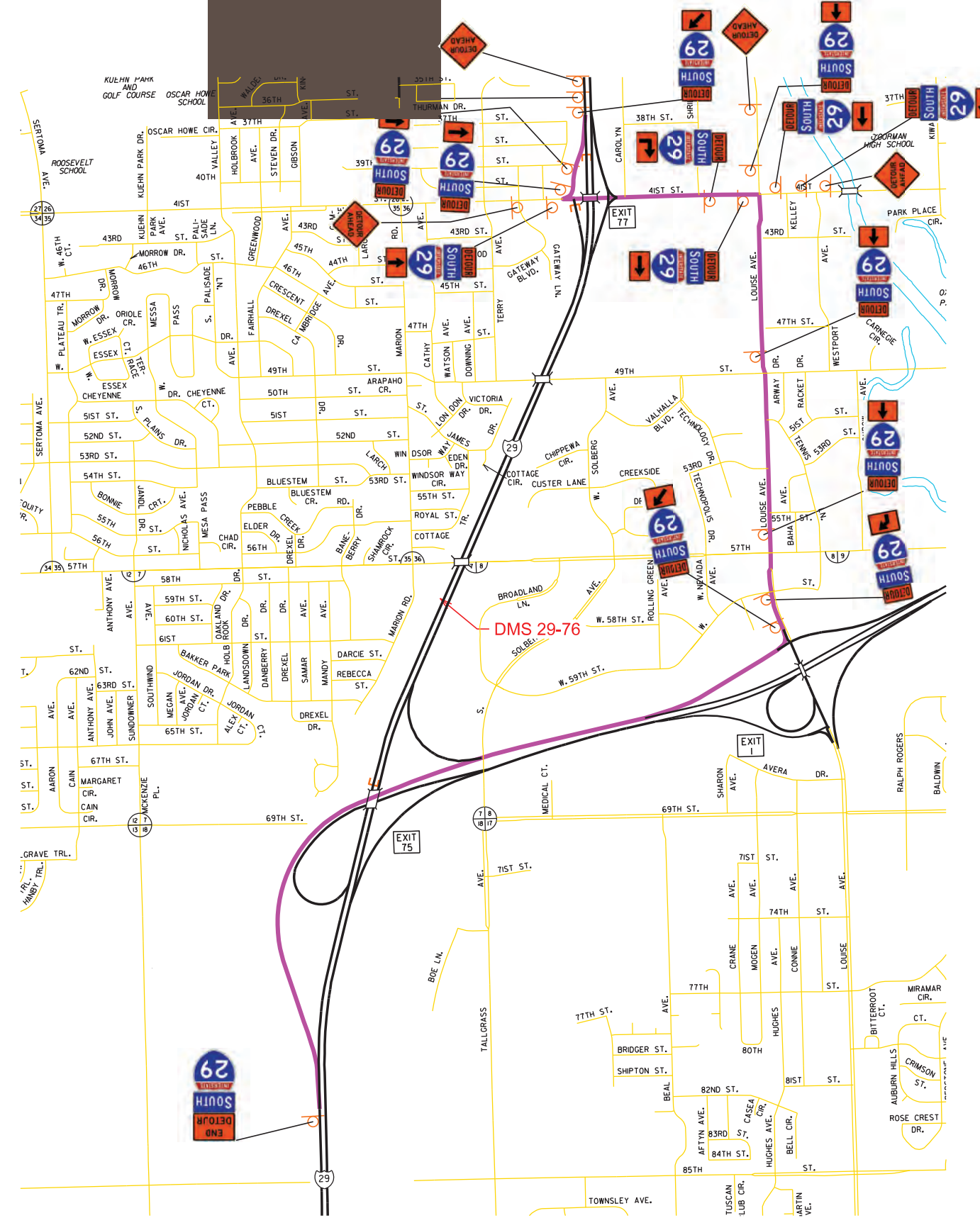
NOTES:
Detour Layout for use during nighttime closures only.
Return traffic to normal operations during daytime hours.
Nighttime closures to be used for crane operations for overhead DMS erection.



DETOUR OVERHEAD DMS 29-76

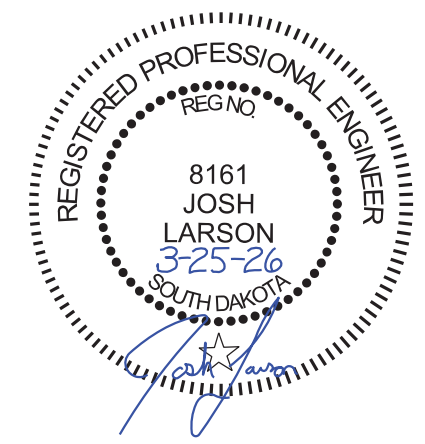
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	21	95
Plotting Date:		3/25/2026	



DETOUR ROUTE
 ROAD CLOSURE LOCATION
 SINGLE POST - SIGN LOCATION / ORIENTATION

NOTES:
 Detour Layout for use during nighttime closures only.
 Return traffic to normal operations during daytime hours.
 Nighttime closures to be used for crane operations for overhead DMS erection.

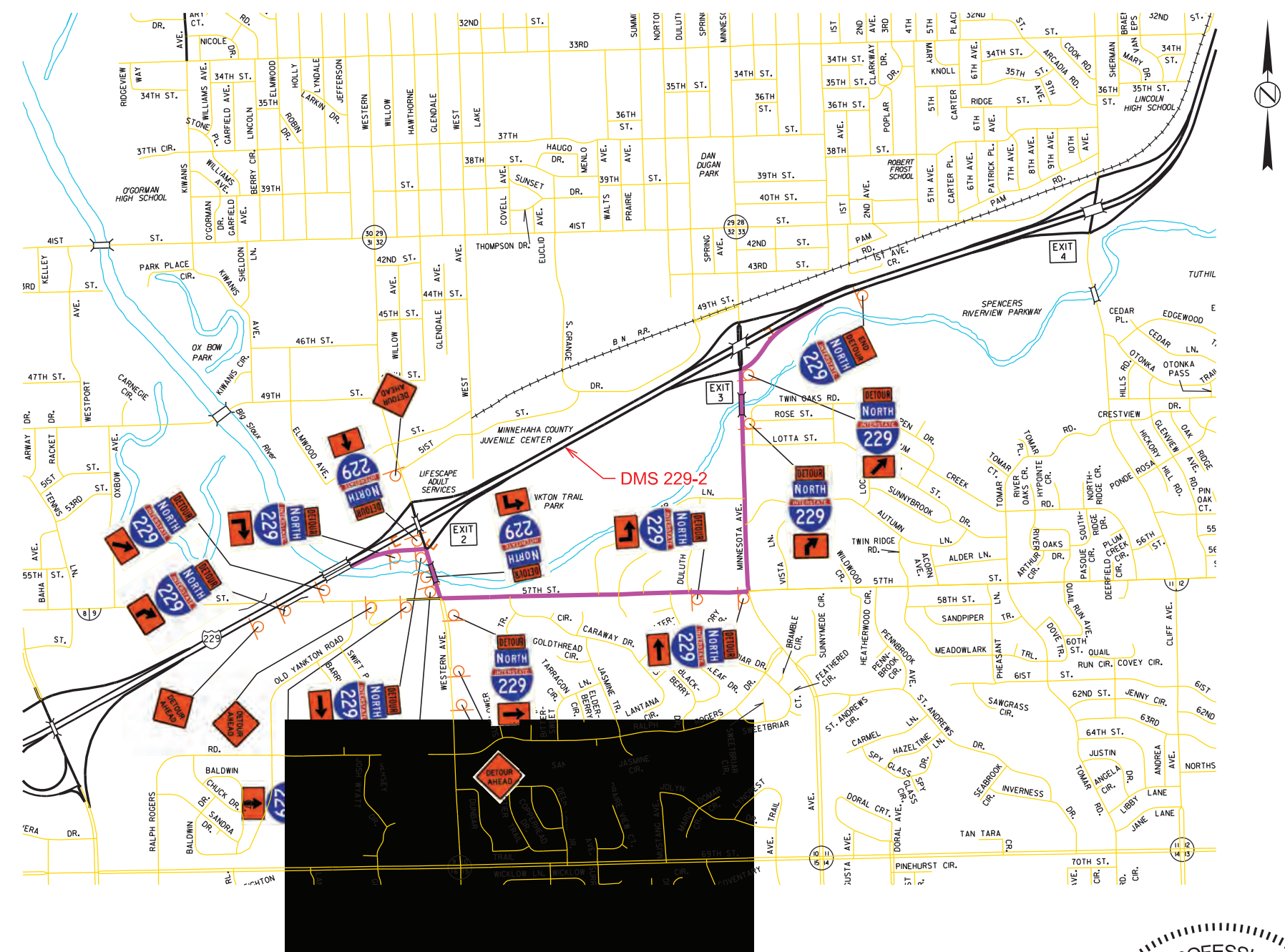


DETOUR FOR OVERHEAD DMS 229-2

FOR BIDDING PURPOSES ONLY

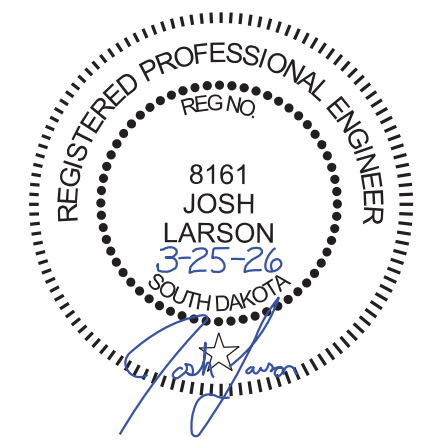
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	22	95

Plotting Date: 3/25/2026



DETOUR ROUTE
 ROAD CLOSURE LOCATION
 SINGLE POST - SIGN LOCATION / ORIENTATION

NOTES:
 Detour Layout for use during nighttime closures only.
 Return traffic to normal operations during daytime hours.
 Nighttime closures to be used for crane operations for overhead DMS erection.

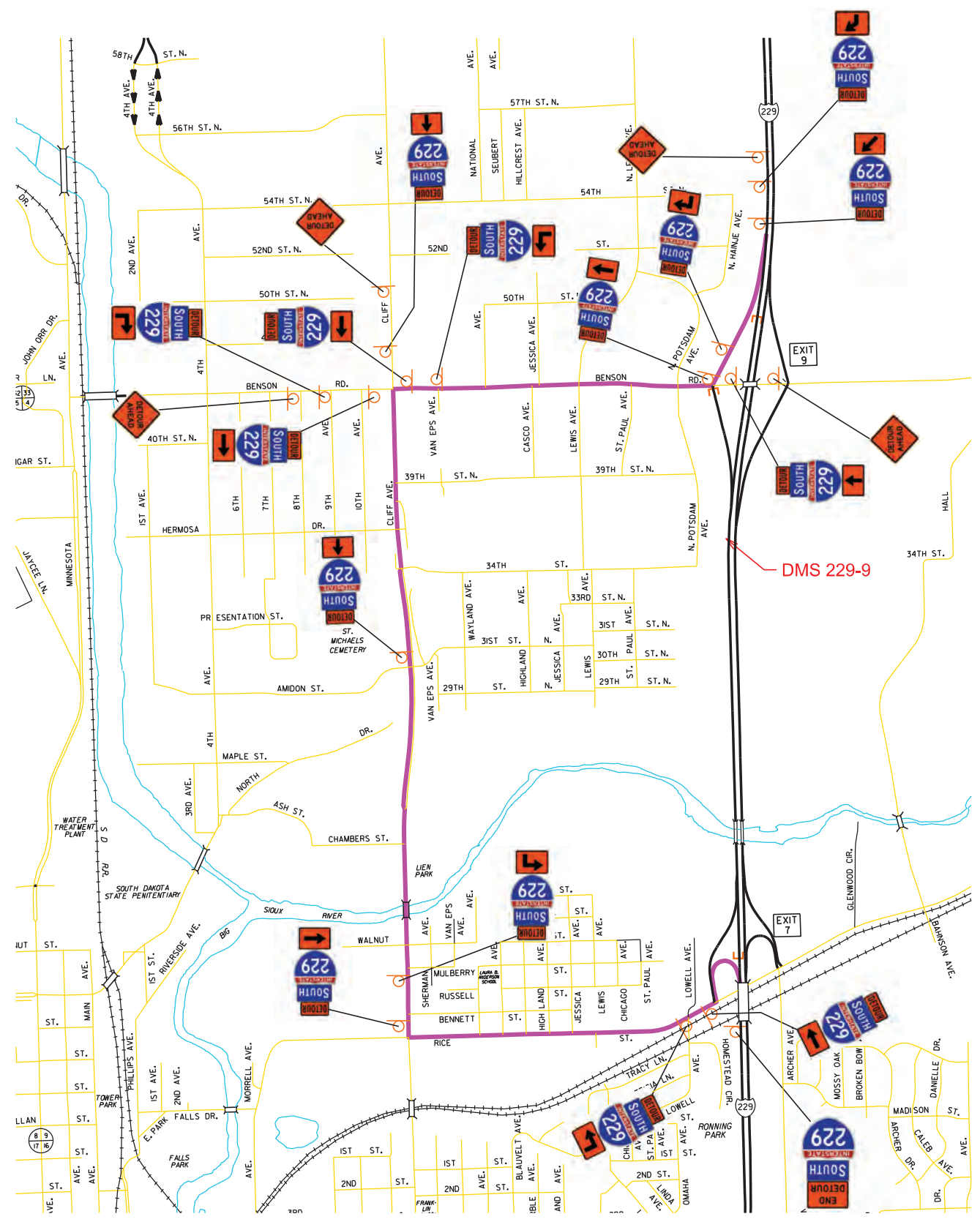


DETOUR FOR OVERHEAD DMS 229-9

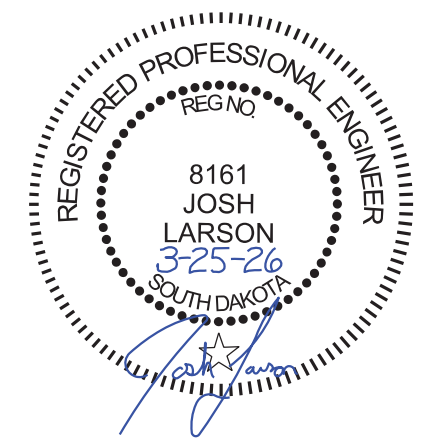
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	23	95
Plotting Date:		3/25/2026	

DETOUR ROUTE
 ROAD CLOSURE LOCATION
 SINGLE POST - SIGN LOCATION / ORIENTATION



NOTES:
 Detour Layout for use during nighttime closures only.
 Return traffic to normal operations during daytime hours.
 Nighttime closures to be used for crane operations for overhead DMS erection.



CONTROL DATA

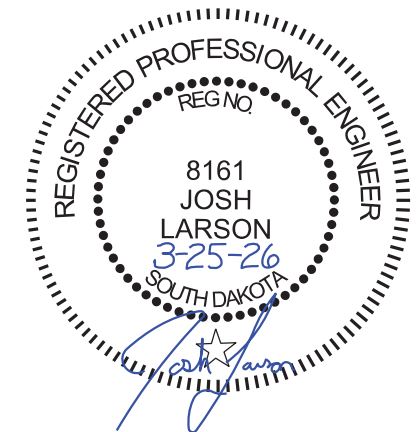
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	24	95

Plotting Date: 3/25/2026

PCN 09L5 - HORIZONTAL AND VERTICAL CONTROL POINTS					
POINT	Description	SD State Plane	NORTHING	EASTING	ELEVATION
DMS 90-307					
23	Rebar with Cap (MEI Control Point)	South Zone	506307.21	2449797.49	1540.44
24	Rebar with Cap (MEI Control Point)	South Zone	506320.86	2450559.27	1541.51
25	Rebar with Cap (MEI Control Point)	South Zone	506329.72	2451096.66	1545.14
DMS 90-312					
20	Rebar with Cap (MEI Control Point)	South Zone	502379.62	2479694.12	1478.22
21	Rebar with Cap (MEI Control Point)	South Zone	502352.97	2479038.57	1481.92
22	Rebar with Cap (MEI Control Point)	South Zone	502330.87	2478478.29	1479.70
DMS 37-125					
5	Rebar with Cap (MEI Control Point)	North Zone	187759.71	2435620.67	1284.13
6	Rebar with Cap (MEI Control Point)	North Zone	187228.18	2435639.43	1281.34
7	Rebar with Cap (MEI Control Point)	North Zone	186816.98	2435649.99	1281.35
DMS 34-389					
30	Rebar with Cap (DOT Metal Cap)	South Zone	618418.80	2825089.75	1664.89
31	Rebar with Cap (MEI Control Point)	South Zone	618035.34	2826102.90	1645.14
32	Rebar with Cap (MEI Control Point)	South Zone	617546.74	2827257.75	1629.17
DMS 50-388					
1	Rebar with Cap (MEI Control Point)	South Zone	213719.11	2775039.56	1171.18
2	Rebar with Cap (MEI Control Point)	South Zone	213744.32	2775552.78	1171.94
3	Rebar with Cap (MEI Control Point)	South Zone	213773.11	2776113.15	1171.58
DMS 50-412					
1	Rebar with Cap (DOT Metal Cap)	South Zone	184173.06	2893804.71	1242.77
2	Rebar with Cap (MEI Control Point)	South Zone	184151.39	2893196.61	1242.29
3	Rebar with Cap (MEI Control Point)	South Zone	184133.11	2892731.70	1243.84
DMS 12-295					
10	Rebar with Cap (DOT Metal Cap)	North Zone	596612.47	2386346.35	1301.54
11	Rebar with Cap (MEI Control Point)	North Zone	596621.14	2385687.93	1300.58
12	Rebar with Cap (MEI Control Point)	North Zone	596706.43	2385058.66	1303.23

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North and South Zone (NAD 1983/2011); epoch 2010.00; Geoid 12A; CSF = 0.9998804144; U.S. Survey Feet
The elevations Shown on this sheet are based on NAVD 88.



CONTROL DATA

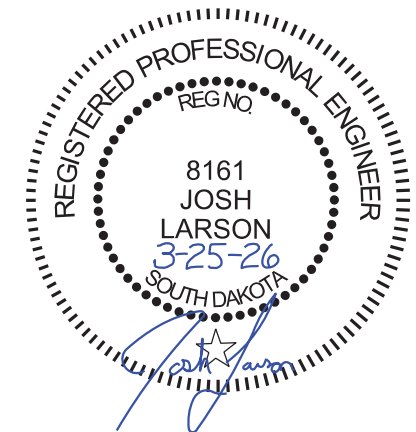
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 25	TOTAL SHEETS 95
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Plotting Date: 3/25/2026

PCN 09L5 - HORIZONTAL AND VERTICAL CONTROL POINTS					
POINT	Description	SD State Plane	NORTHING	EASTING	ELEVATION
DMS 29-209					
16	Rebar with Cap (MEI Control Point)	North Zone	563553.70	2726536.08	2013.75
17	Rebar with Cap (MEI Control Point)	North Zone	562860.32	2726543.70	2013.48
18	Rebar with Cap (MEI Control Point)	North Zone	562201.45	2726551.61	2017.61
DMS 29-206					
13	Rebar with Cap (MEI Control Point)	North Zone	546489.55	2727110.58	1960.05
14	Rebar with Cap (MEI Control Point)	North Zone	547437.30	2727048.50	1988.46
15	Rebar with Cap (MEI Control Point)	North Zone	547839.78	2727014.45	1961.06
DMS 29-76					
100	Rebar with Cap (MEI Control Point)	South Zone	445282.14	2908684.35	1469.74
101	Rebar with Cap (MEI Control Point)	South Zone	444911.22	2908553.76	1476.63
102	Rebar with Cap (MEI Control Point)	South Zone	444351.12	2908314.22	1479.10
DMS 229-2					
100	Rebar with Cap (MEI Control Point)	South Zone	447862.31	2920994.92	1407.47
101	Rebar with Cap (MEI Control Point)	South Zone	448115.22	2921436.63	1407.23
102	Rebar with Cap (MEI Control Point)	South Zone	448385.25	2921901.00	1406.06
DMS 229-9					
1	Rebar with Cap (MEI Control Point)	South Zone	476746.54	2932530.66	1463.73
2	Rebar with Cap (MEI Control Point)	South Zone	476746.51	2932530.65	1463.72
3	Rebar with Cap (MEI Control Point)	South Zone	476091.07	2932498.07	1458.57
4	Rebar with Cap (MEI Control Point)	South Zone	476094.22	2932570.55	1457.84
4A	Rebar with Cap (MEI Control Point)	South Zone	475499.38	2932490.87	1444.69
DMS 90-399					
100	Rebar with Cap (MEI Control Point)	South Zone	484580.48	2928624.74	1455.46
101	Rebar with Cap (MEI Control Point)	South Zone	484608.17	2928918.16	1456.99
102	Rebar with Cap (MEI Control Point)	South Zone	484632.77	2929211.42	1459.96
DMS 90-403					
10	Rebar with Cap (MEI Control Point)	South Zone	487464.22	2949406.80	1319.66
11	Rebar with Cap (MEI Control Point)	South Zone	487429.90	2948491.77	1310.25
12	Rebar with Cap (MEI Control Point)	South Zone	487380.27	2947861.40	1332.81
DMS 90-405					
100	Rebar with Cap (MEI Control Point)	South Zone	487214.32	2958423.37	1402.49
101	Rebar with Cap (MEI Control Point)	South Zone	487224.41	2958974.68	1404.27
102	Rebar with Cap (MEI Control Point)	South Zone	487235.20	2959264.89	1398.82
DMS 29-74					
70	Rebar with Cap (MEI Control Point)	South Zone	434994.08	2906828.74	1523.53
71	Rebar with Cap (MEI Control Point)	South Zone	434445.13	2906825.12	1523.94
72	Rebar with Cap (MEI Control Point)	South Zone	433431.00	2906817.67	1515.46

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. North and South Zone (NAD 1983/2011); epoch 2010.00; Geoid 12A; CSF = 0.9998804144; U.S. Survey Feet
The elevations Shown on this sheet are based on NAVD 88.



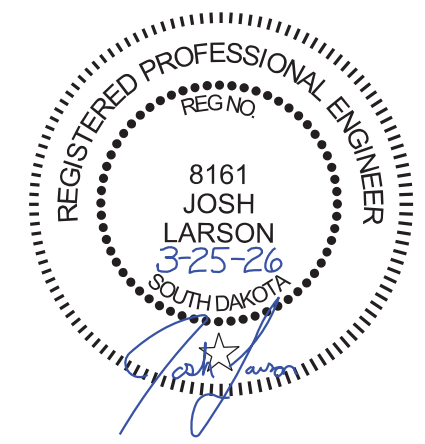
LEGEND

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	26	95
Plotting Date:		3/25/2026	

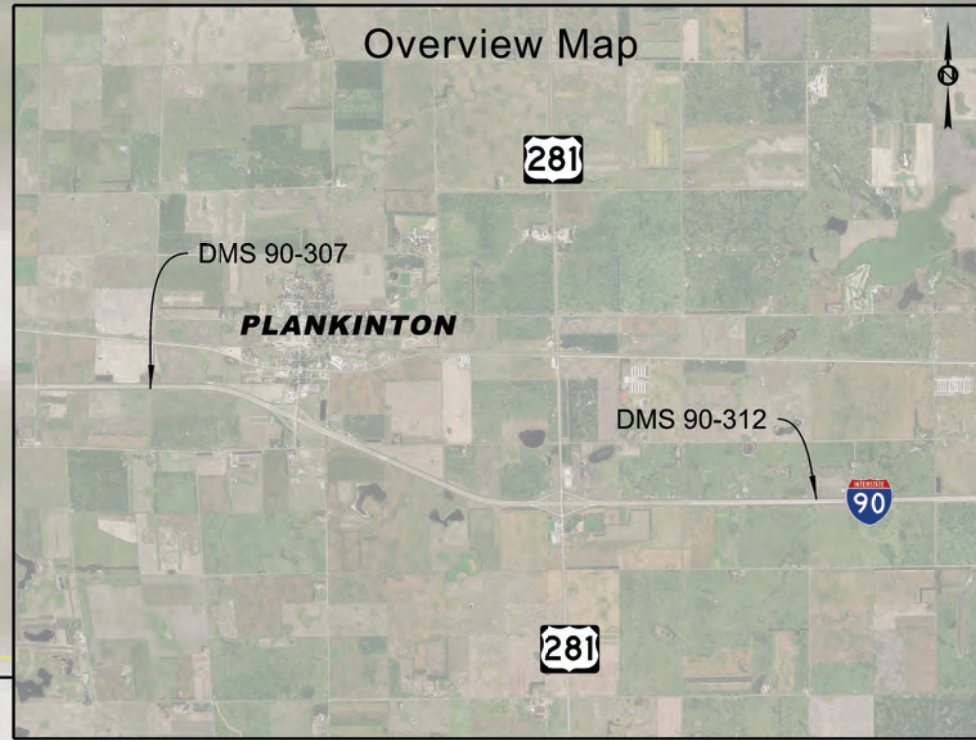
Anchor		Highway R.O.W. Marker		Shrub Tree		Identified Wetland	
Antenna		Interstate Close Gate		Sidewalk		Type 2 Electrical Junction Box	
Approach		Iron Pin		Sign Face		Existing Junction Box	
Assumed Corner		Irrigation Ditch		Sign Post		Communication Cabinet	
Azimuth Marker		Lake Edge		Slough Or Marsh		Electrical Service Cabinet	
BBQ Grill/ Fireplace		Lawn Sprinkler		Spring		Existing Electrical Service Cabinet	
Bearing Tree		Mailbox		Stream Gauge		Galvanized Steel Utility Pole	
Bench Mark		Manhole Electric		Street Marker		Existing Galvanized Steel Utility Pole	
Box Culvert		Manhole Gas		Subsurface Utility Exploration Test Hole		Meter Socket	
Bridge		Manhole Misc		Telephone Fiber Optics		Existing Meter Socket	
Brush		Manhole Sanitary Sewer		Telephone Junction Box		Conduit	
Buildings		Manhole Storm Sewer		Telephone Pole		Concrete Footing	
Bulk Tank		Manhole Telephone		Television Cable Jct Box		Camera	
Cattle Guard		Manhole Water		Television Tower		Pole Mounted Dynamic Message Sign	
Cemetery		Merry-Go-Round		Test Wells/Bore Holes		Overhead Dynamic Message Sign	
Centerline		Microwave Radio Tower		Traffic Signal		Post Mounted Dynamic Message Sign	
Cistern		Misc. Line		Trash Barrel		State Furnished Pole Mounted Dynamic Message Sign with Camera	
Clothes Line		Misc. Property Corner		Tree Belt		Vehicle Radar Detector	
Commercial Sign Double Face		Misc. Post		Tree Coniferous			
Commercial Sign One Post		Overhang Or Encroachment		Tree Deciduous			
Commercial Sign Overhead		Overhead Utility Line		Tree Stumps			
Commercial Sign Two Post		Parking Meter		Triangulation Station			
Concrete Symbol		Pedestrian Push Button Pole		Underground Electric Line			
Creek Edge		Pipe With End Section		Underground Gas Line			
Curb/Gutter		Pipe With Headwall		Underground High Pressure Gas Line			
Curb		Pipe Without End Section		Underground Sanitary Sewer			
Dam Grade/Dike/Levee		Playground Slide		Underground Storm Sewer			
Deck Edge		Playground Swing		Underground Tank			
Ditch Block		Power And Light Pole		Underground Telephone Line			
Doorway Threshold		Power And Telephone Pole		Underground Television Cable			
Drainage Profile		Power Meter		Underground Water Line			
Drop Inlet		Power Pole		Warning Sign One Post			
Edge Of Asphalt		Power Pole And Transformer		Warning Sign Two Post			
Edge Of Concrete		Power Tower Structure		Water Fountain			
Edge Of Gravel		Propane Tank		Water Hydrant			
Edge Of Other		Property Pipe		Water Meter			
Edge Of Shoulder		Property Pipe With Cap		Water Tower			
Elec. Trans./Power Jct. Box		Property Stone		Water Valve			
Fence Barbwire		Public Telephone		Water Well			
Fence Chainlink		Railroad Crossing Signal		Weir Rock			
Fence Electric		Railroad Milepost Marker		Windmill			
Fence Misc.		Railroad Profile		Wingwall			
Fence Rock		Railroad R.O.W. Marker		Witness Corner			
Fence Snow		Railroad Signs		State and National Line			
Fence Wood		Railroad Switch		County Line			
Fence Woven		Railroad Track		Section Line			
Fire Hydrant		Railroad Trestle		Quarter Line			
Flag Pole		Rebar		Sixteenth Line			
Flower Bed		Rebar With Cap		Property Line			
Gas Valve Or Meter		Reference Mark		Construction Line			
Gas Pump Island		Regulatory Sign One Post		R. O. W. Line			
Grain Bin		Regulatory Sign Two Post		New R. O. W. Line			
Guardrail		Retaining Wall		Cut and Fill Limits			
Guide Sign One Post		Riprap		Control of Access			
Guide Sign Two Post		River Edge		New Control of Access			
Gutter		Rock And Wire Baskets		Proposed ROW (After Property Disposal)			
Guy Pole		Rockpiles					
Haystack		Satellite Dish					
Hedge		Septic Tank					

NOTE: DMS and Guardrail Layout Sheet are 40 Scale



DMS LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND INTERSTATE 90 MRM 307



Westbound I90



← 12' Driving Lane

← 12' Driving Lane

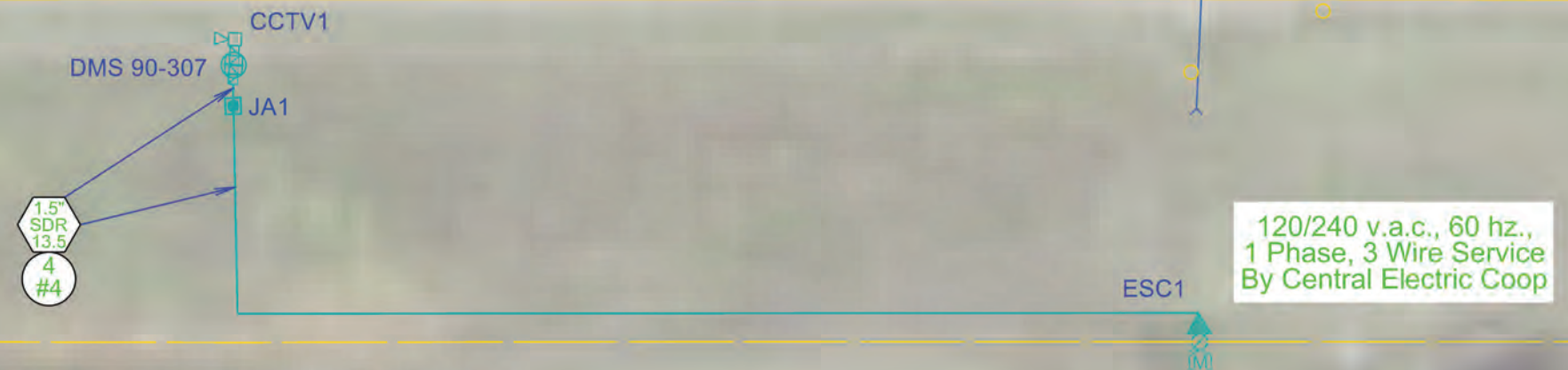
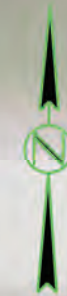
Median

Eastbound I90



12' Driving Lane →

12' Driving Lane →



ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Camera (CCTV1)	1	EACH
	Pole Mounted DMS (DMS 90-307)	1	EACH
	Type 2 Electrical Junction Box (JA1)	1	EACH
	Electrical Service Cabinet (ESC1)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	300	Ft
	1/C #4 AWG Copper Wire	1590	Ft

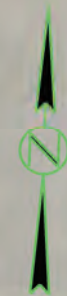




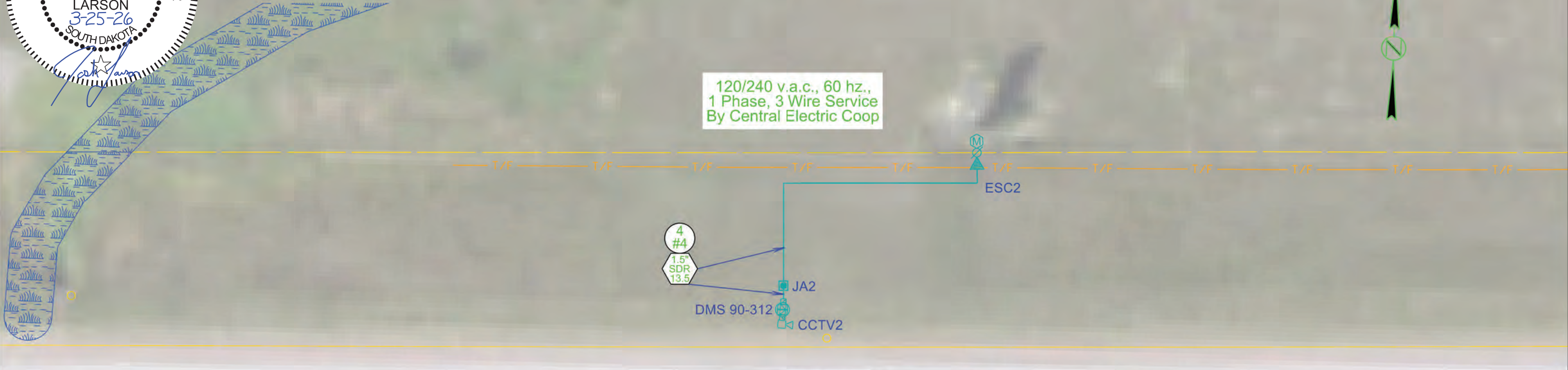
DMS LAYOUT WESTBOUND INTERSTATE 90 MRM 312

FOR BIDDING PURPOSES ONLY

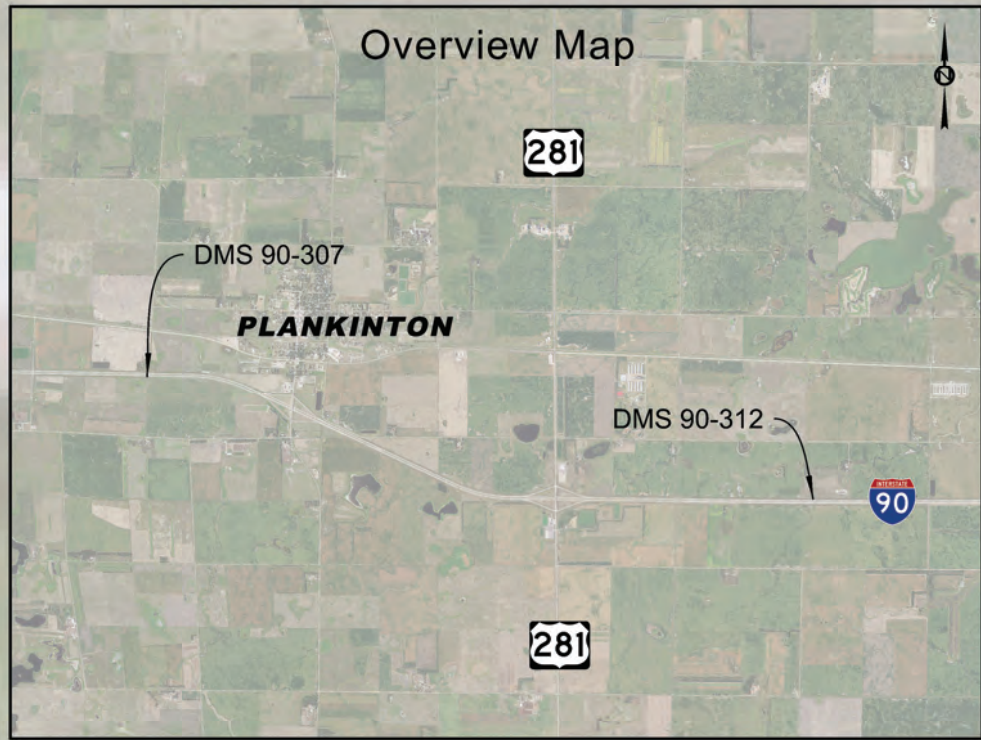
STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 28	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Central Electric Coop



Westbound I90
 ← 12' Driving Lane
 ← 12' Driving Lane



Eastbound I90
 12' Driving Lane →
 12' Driving Lane →

Median

ESTIMATE OF QUANTITIES

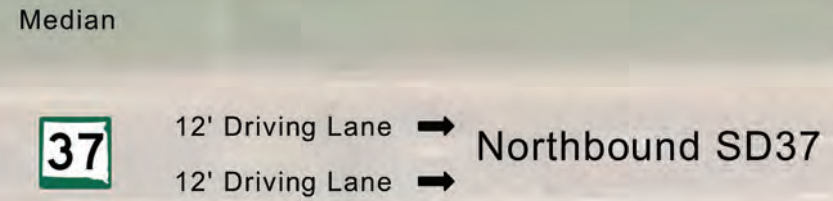
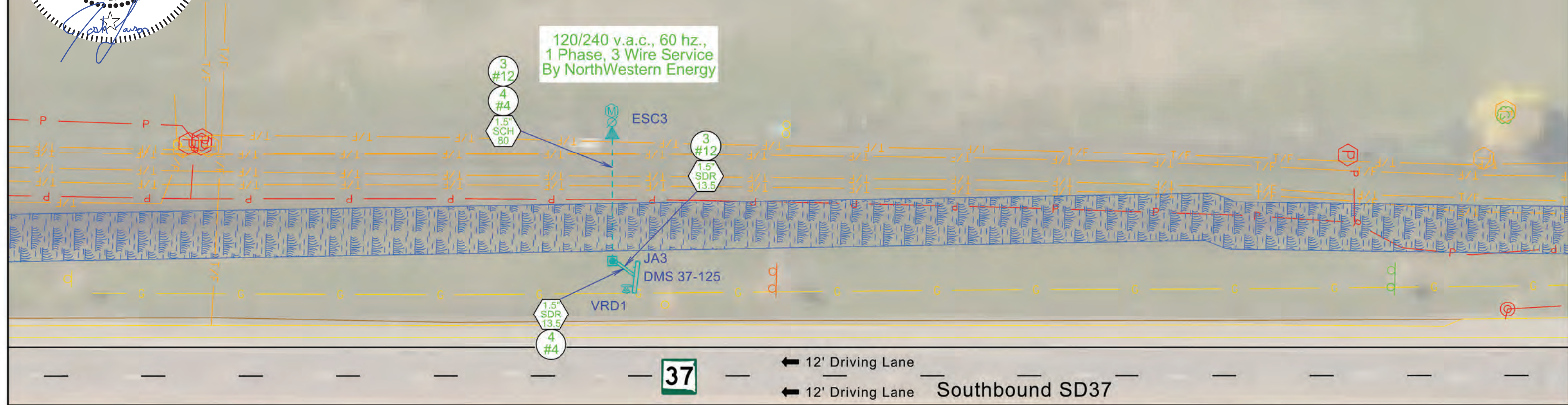
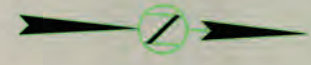
KEY	ITEM	EST QUANT	UNIT
	Camera (CCTV2)	1	EACH
	Pole Mounted DMS (DMS 90-312)	1	EACH
	Type 2 Electrical Junction Box (JA2)	1	EACH
	Electrical Service Cabinet (ESC2)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	155	Ft
	1/C #4 AWG Copper Wire	995	Ft



DMS LAYOUT SOUTHBOUND SD HIGHWAY 37 MRM 125

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 29	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Post Mounted DMS (DMS 37-125)	1	EACH
	Vehicle Radar Detector (VRD1)	1	EACH
	Type 2 Electrical Junction Box (JA3)	1	EACH
	Electrical Service Cabinet (ESC3)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Rigid Conduit, Schedule 80	65	Ft
	1.5" Conduit, SDR 13.5	20	Ft
	1/C #4 AWG Copper Wire	625	Ft
	1/C #12 AWG Copper Wire	465	Ft

DMS LAYOUT

EASTBOUND INTERSTATE 90 MRM 399

FOR BIDDING PURPOSES ONLY



← 12' Driving Lane
 ← 12' Driving Lane
 ← 12' Driving Lane

Westbound I90



Median

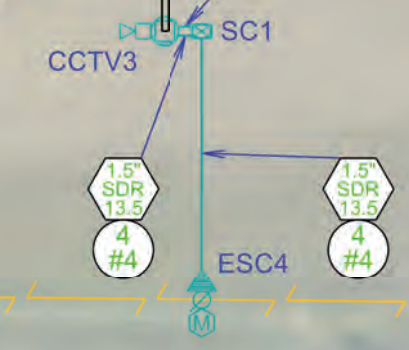
12' Driving Lane →
 12' Driving Lane →

Eastbound I90



12' Auxiliary Lane →

On Ramp



120/240 v.a.c., 60 hz.,
 1 Phase, 3 Wire Service
 By Xcel Energy

ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Overhead DMS (DMS 90-399)	1	EACH
	Camera (CCTV3)	1	EACH
	Communication Cabinet (SC1)	1	EACH
	Electrical Service Cabinet (ESC4)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	85	Ft
	1/C #4 AWG Copper Wire	1,075	Ft
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable		Not A Bid Item

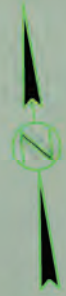




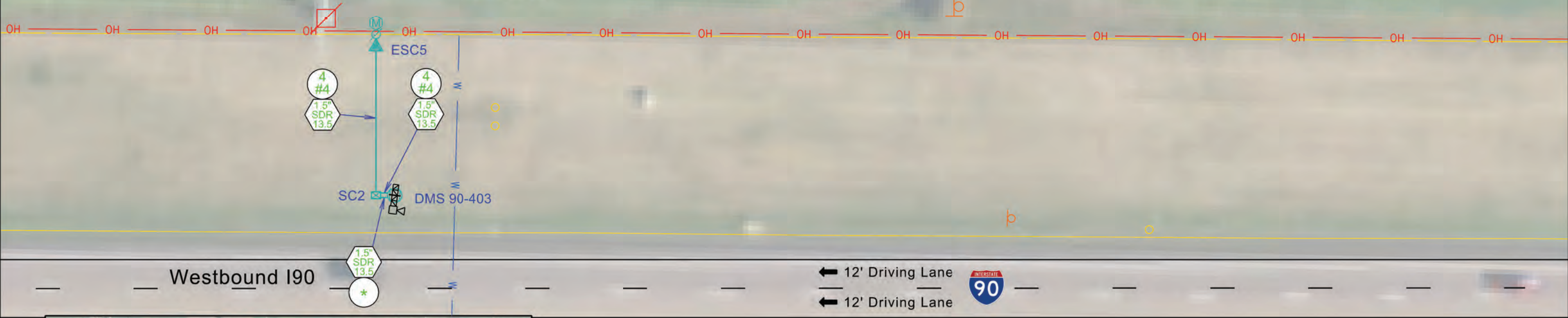
DMS LAYOUT WESTBOUND INTERSTATE 90 MRM 403

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 31	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Sioux Valley Energy

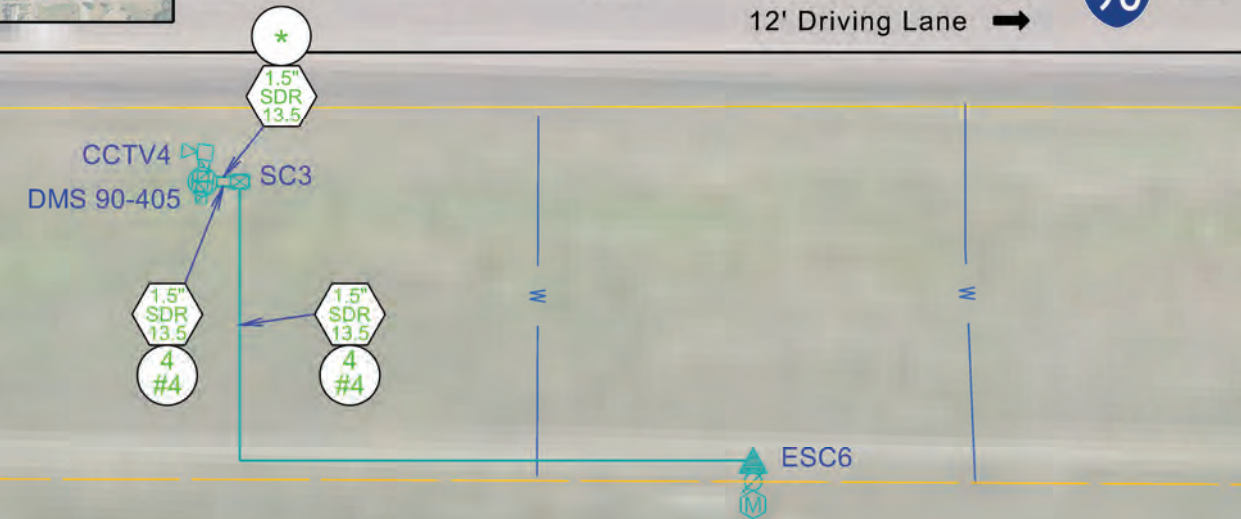
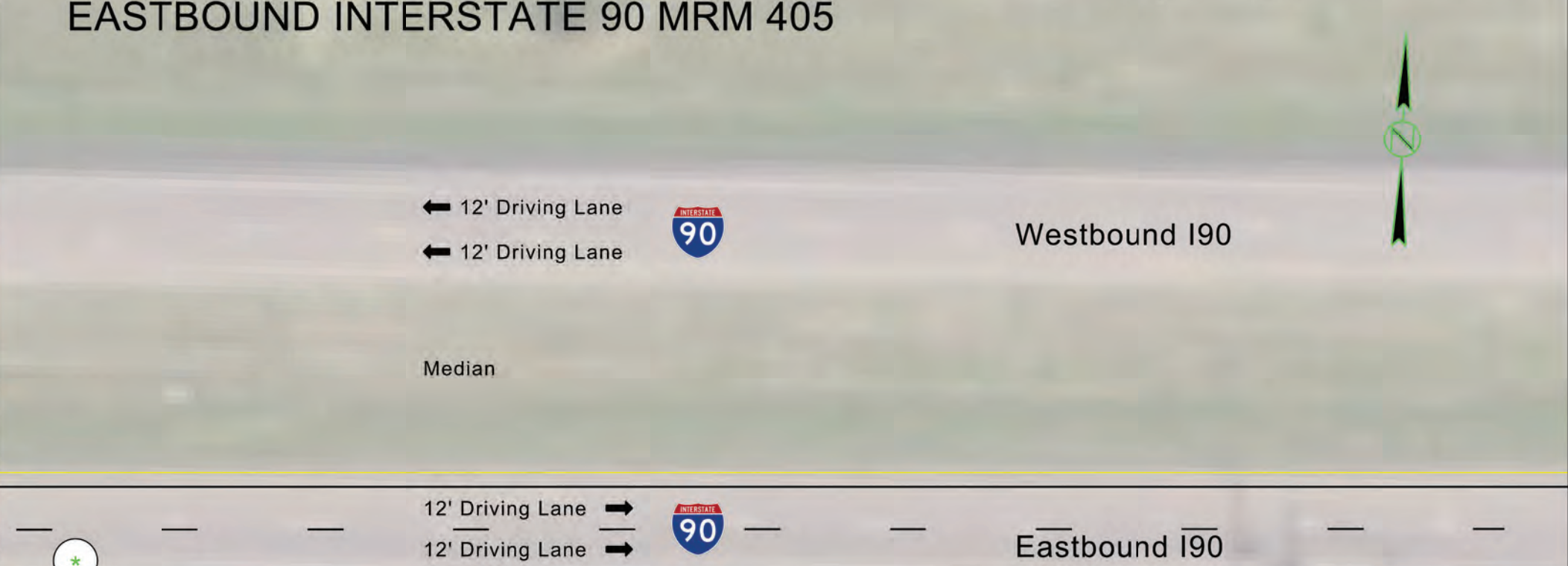


ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Install Pole Mounted Dynamic Message Sign (DMS 90-403)	1	EACH
	Communication Cabinet (SC2)	1	EACH
	Electrical Service Cabinet (ESC5)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	95	Ft
	1/C #4 AWG Copper Wire	910	Ft
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable	Not A Bid Item	

DMS LAYOUT

EASTBOUND INTERSTATE 90 MRM 405

FOR BIDDING PURPOSES ONLY



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Xcel Energy

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Pole Mounted DMS (DMS 90-405)	1	EACH
	Camera (CCTV4)	1	EACH
	Communication Cabinet (SC3)	1	EACH
	Electrical Service Cabinet (ESC6)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	195	Ft
	1/C #4 AWG Copper Wire	1,325	Ft
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable	Not A Bid Item	



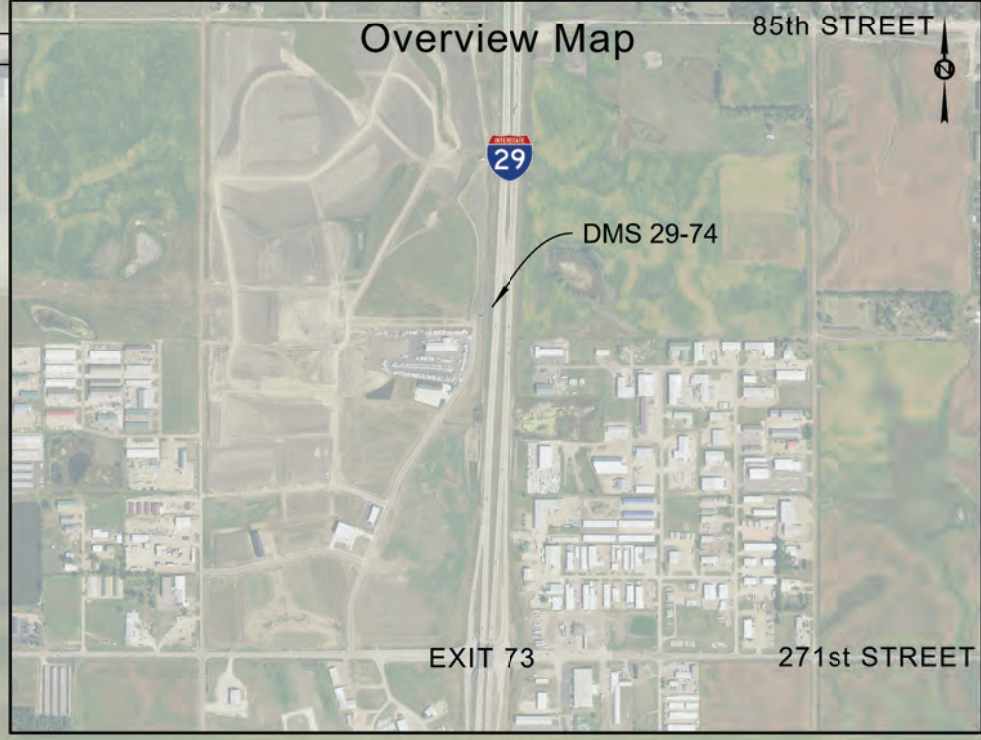
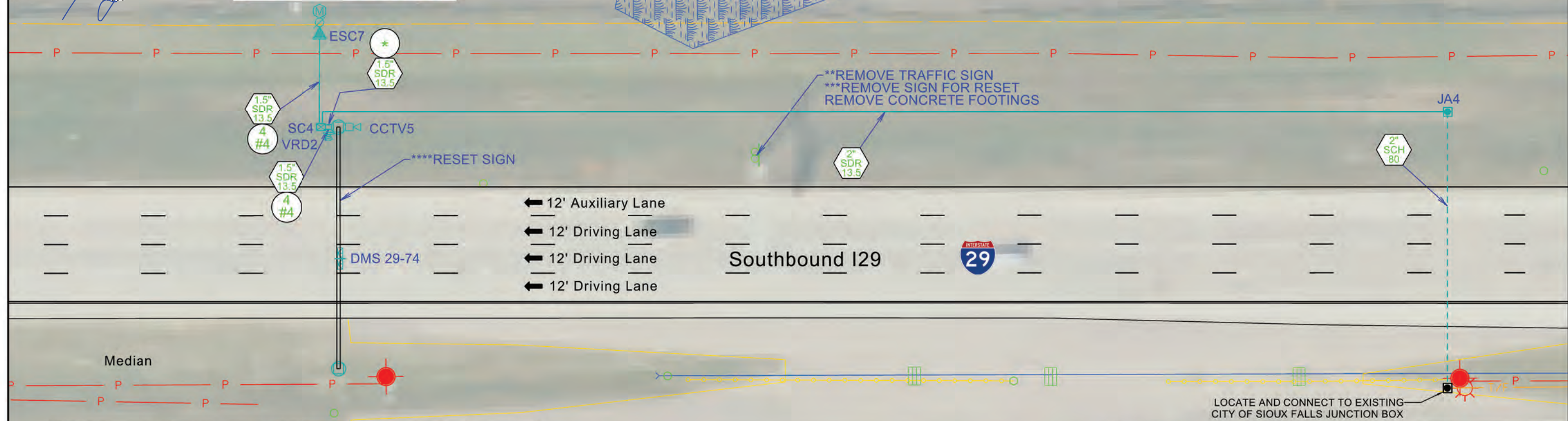
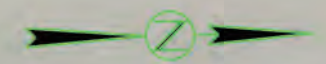


120/240 v.a.c., 60 Hz.,
1 Phase, 3 Wire Service
By Southeastern Electric Coop

DMS LAYOUT SOUTHBOUND INTERSTATE 29 MRM 74

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 33	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



12' Driving Lane →
12' Driving Lane →
12' Driving Lane →

Northbound I29

**Remove Traffic Sign - Right Lane Only
***Remove Sign for Reset - County 106 Tea Exit Only Arrow/Exit 73
****Reset Sign (on Sign Bridge) - County 106 Tea Exit Only Arrow/Exit 73

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
2" SCH 80	2" Rigid Conduit, Schedule 80	120	Ft
1.5" SDR 13.5	1.5" Conduit, SDR 13.5	70	Ft
2" SDR 13.5	2" Conduit, SDR 13.5	480	Ft
#4	1/C #4 AWG Copper Wire	1,015	Ft
*	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable	Not A Bid Item	

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
☒	Overhead DMS (DMS 29-74)	1	EACH
📹	Camera (CCTV5)	1	EACH
📡	Vehicle Radar Detector (VRD2)	1	EACH
📧	Communication Cabinet (SC4)	1	EACH
🔌	Type 2 Electrical Junction Box (JA4)	1	EACH
⚡	Electrical Service Cabinet (ESC7)	1	EACH
🏗️	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
⚙️	Meter Socket Not a Bid Item	1	EACH

LOCATE AND CONNECT TO EXISTING CITY OF SIOUX FALLS JUNCTION BOX

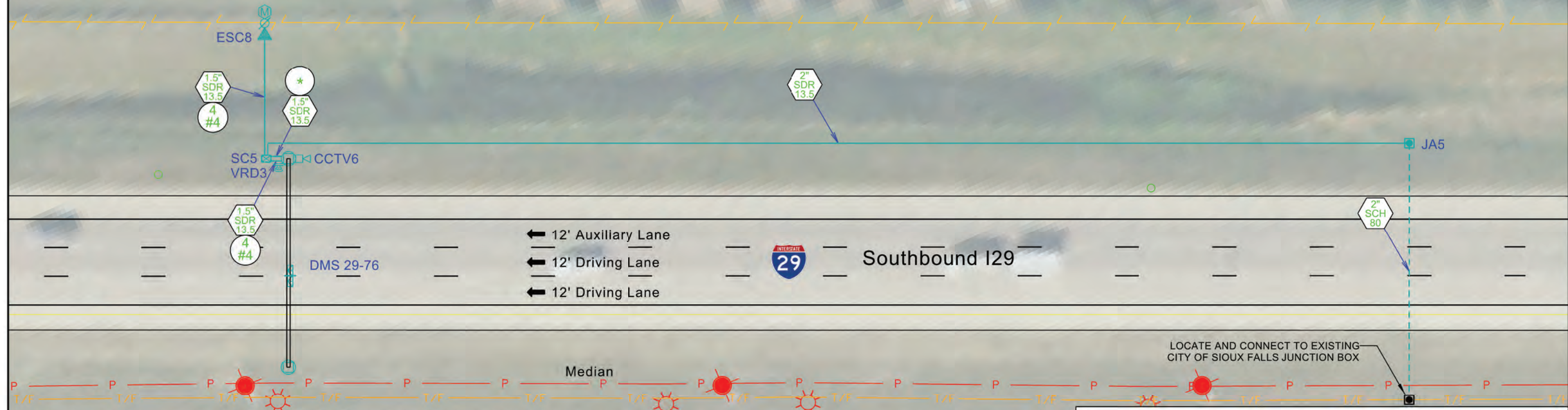


120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Xcel Energy

DMS LAYOUT SOUTHBOUND INTERSTATE 29 MRM 76

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 34	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



12' Driving Lane →
12' Driving Lane →
12' Auxiliary Lane →

Northbound I29

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Overhead DMS (DMS 29-76)	1	EACH
	Camera (CCTV6)	1	EACH
	Vehicle Radar Detector (VRD3)	1	EACH
	Type 2 Electrical Junction Box (JA5)	1	EACH
	Communication Cabinet (SC5)	1	EACH
	Electrical Service Cabinet (ESC8)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable		Not A Bid Item

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	2" Rigid Conduit, Schedule 80	110	Ft
	1.5" Conduit, SDR 13.5	85	Ft
	2" Conduit, SDR 13.5	485	Ft
	1/C #4 AWG Copper Wire	1,075	Ft

DMS LAYOUT

NORTHBOUND INTERSTATE 229 MRM 2

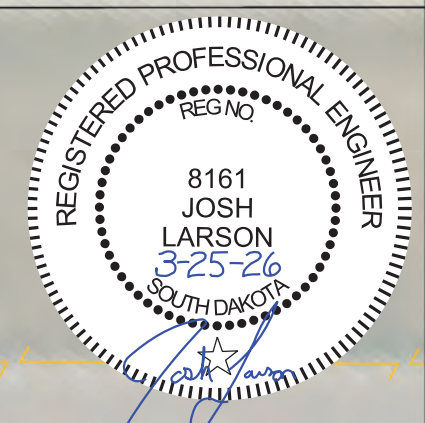
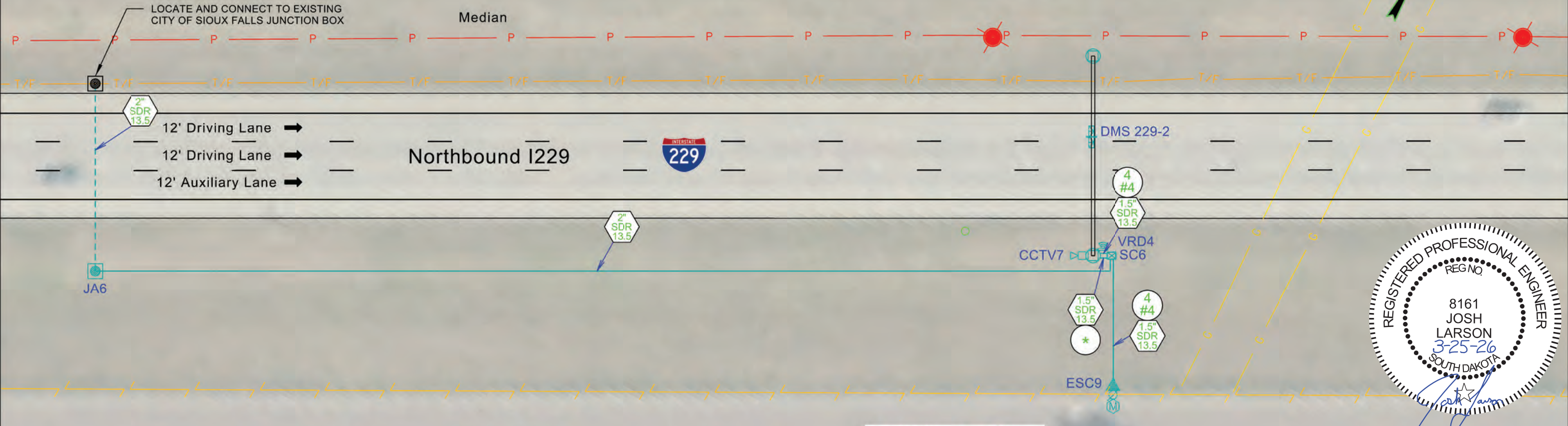
FOR BIDDING PURPOSES ONLY

- ← 12' Driving Lane
- ← 12' Driving Lane
- ← 12' Driving Lane

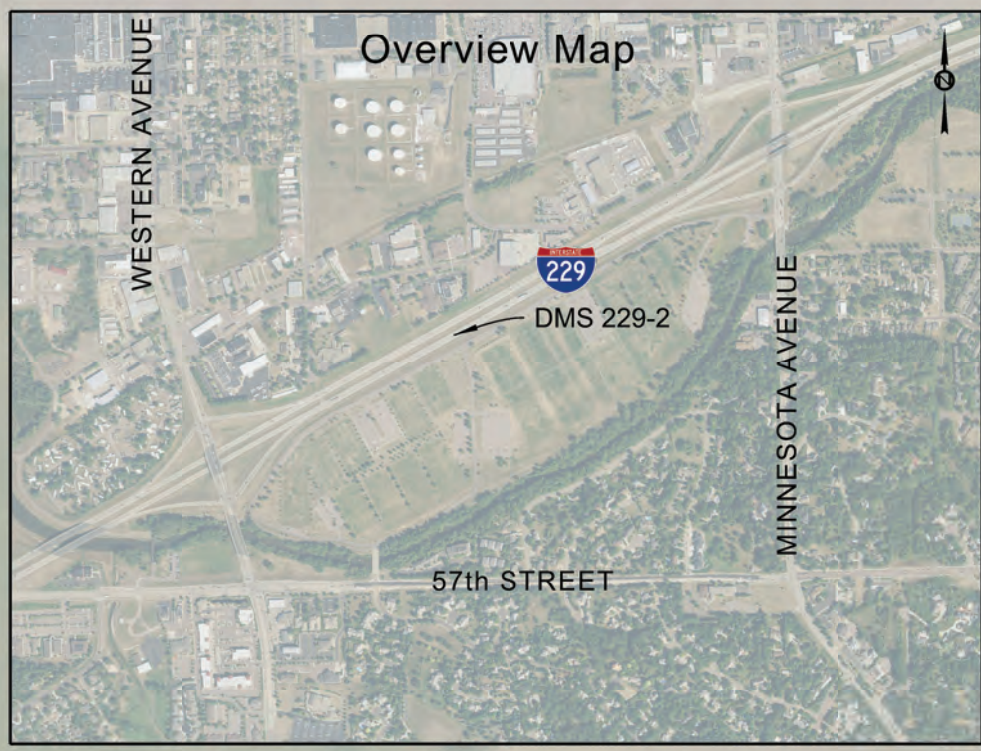
Southbound I229



Northbound I229



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Xcel Energy



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	2" Rigid Conduit, Schedule 80	95	Ft
	1.5" Conduit, SDR 13.5	85	Ft
	2" Conduit, SDR 13.5	430	Ft
	1/C #4 AWG Copper Wire	1,075	Ft
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable	Not A Bid Item	

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Overhead DMS (DMS 229-2)	1	EACH
	Camera (CCTV7)	1	EACH
	Vehicle Radar Detector (VRD4)	1	EACH
	Type 2 Electrical Junction Box (JA6)	1	EACH
	Communication Cabinet (SC6)	1	EACH
	Electrical Service Cabinet (ESC9)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH

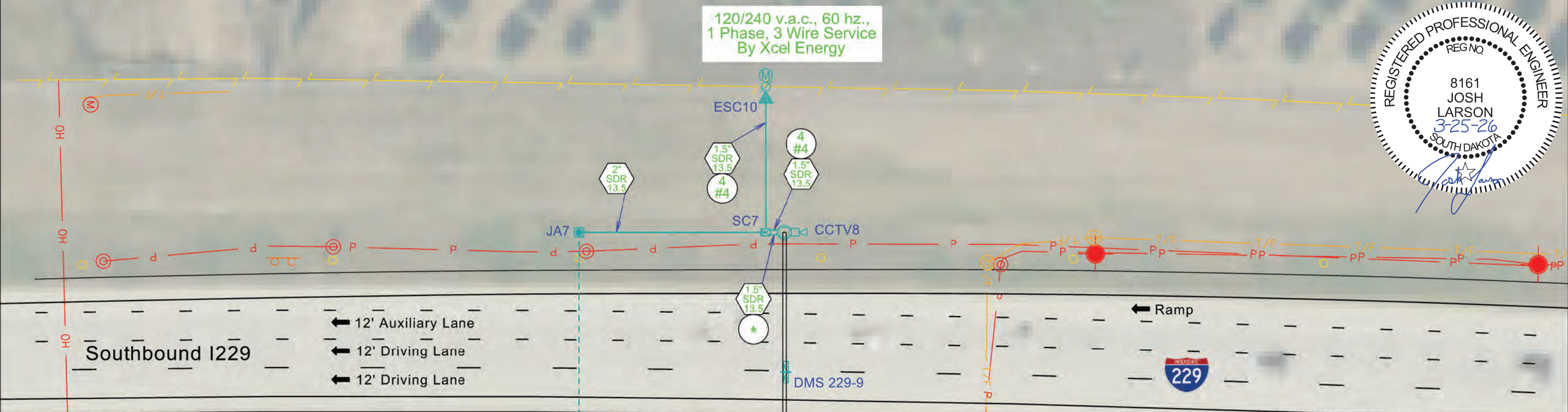
DMS LAYOUT SOUTHBOUND INTERSTATE 229 MRM 9

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 36	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Xcel Energy



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Overhead DMS (DMS 229-9)	1	EACH
	Camera (CCTV8)	1	EACH
	Type 2 Electrical Junction Box (JA7)	1	EACH
	Communication Cabinet (SC7)	1	EACH
	Electrical Service Cabinet (ESC10)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	2" Rigid Conduit, Schedule 80	200	Ft
	1.5" Conduit, SDR 13.5	90	Ft
	2" Conduit, SDR 13.5	80	Ft
	1/C #4 AWG Copper Wire	1,095	Ft
	Multimode Fiber Optic Cable and Outdoor Rated Cat6 Cable		Not A Bid Item

12' Driving Lane →
 12' Driving Lane →
 12' Auxiliary Lane →
 Ramp →

LOCATE AND CONNECT TO EXISTING
CITY OF SIOUX FALLS JUNCTION BOX

FOR BIDDING PURPOSES ONLY



DMS LAYOUT EASTBOUND SD HIGHWAY 34 MRM 389

← 12' Driving Lane
← 12' Driving Lane

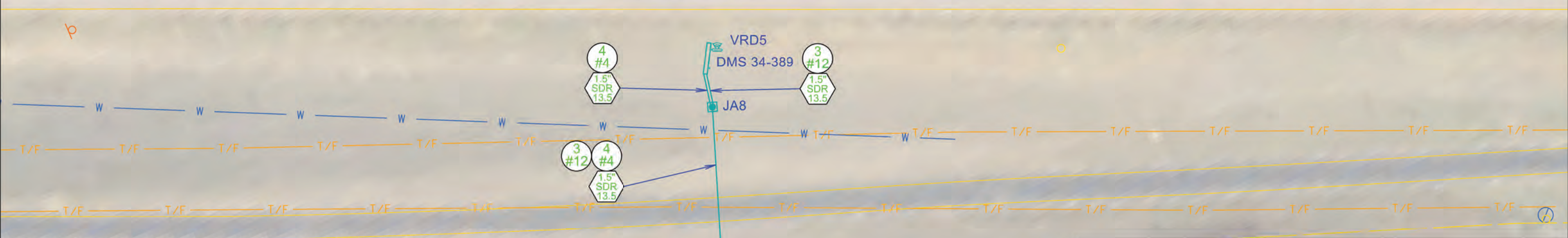
Westbound SD34



Median

Eastbound SD34

12' Driving Lane →
12' Driving Lane →



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Sioux Valley Energy

ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Post Mounted DMS (DMS 34-389)	1	EACH
	Vehicle Radar Detector (VRD5)	1	EACH
	Type 2 Electrical Junction Box (JA8)	1	EACH
	Electrical Service Cabinet (ESC11)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	105	Ft
	1/C #4 AWG Copper Wire	685	Ft
	1/C #12 AWG Copper Wire	515	Ft

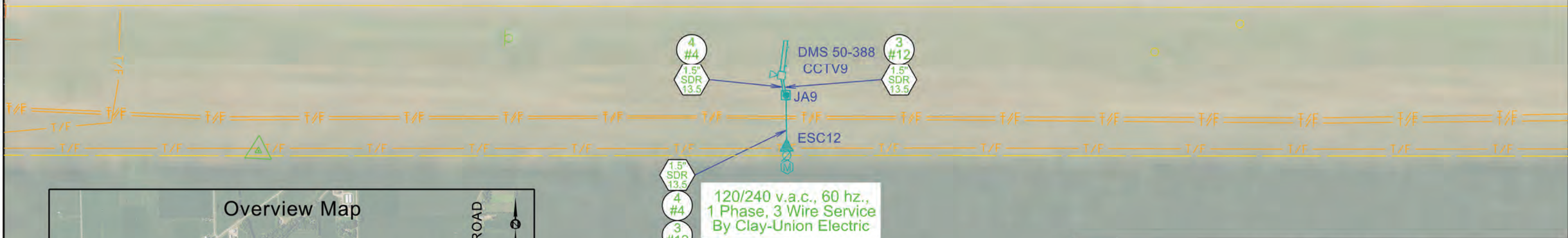
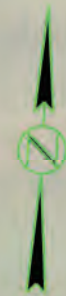




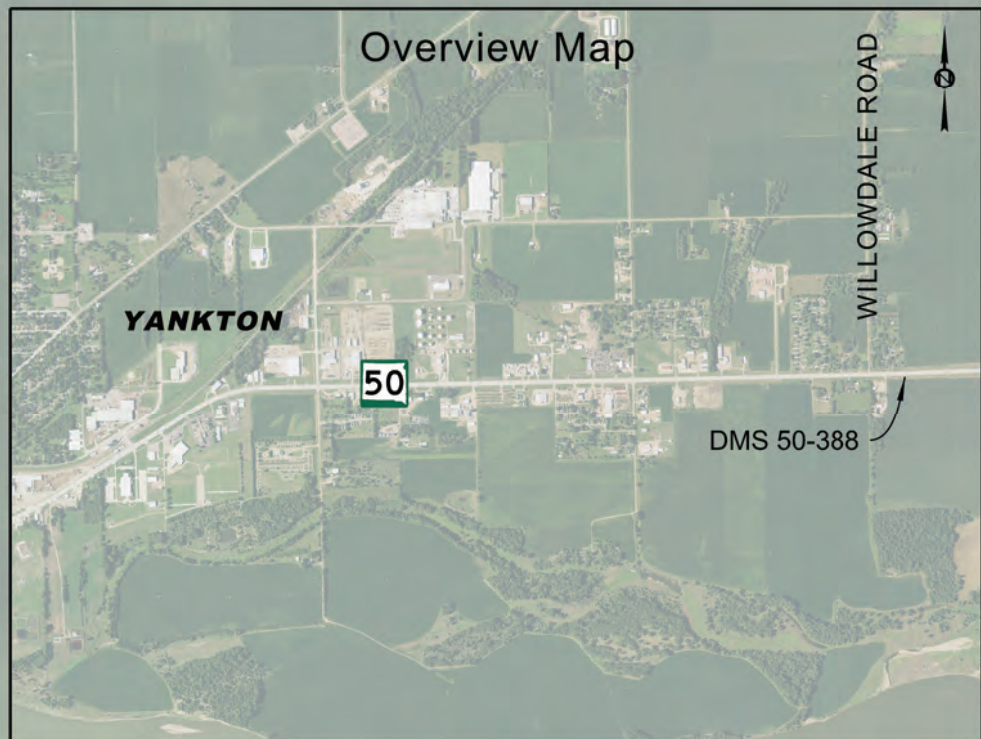
DMS LAYOUT EASTBOUND SD Hwy 50 MRM 388

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 38	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Clay-Union Electric



ESTIMATE OF QUANTITIES			
KEY	ITEM	QUANT EST	UNIT
	Post Mounted DMS (DMS 50-388)	1	EACH
	Camera (CCTV9)	1	EACH
	Type 2 Electrical Junction Box (JA9)	1	EACH
	Electrical Service Cabinet (ESC12)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	60	Ft
	1/C #4 AWG Copper Wire	500	Ft
	1/C #12 AWG Copper Wire	380	Ft

DMS LAYOUT

EASTBOUND SD Hwy 50 MRM 412

FOR BIDDING PURPOSES ONLY



Westbound SD50

50

← 12' Driving Lane

← 12' Driving Lane

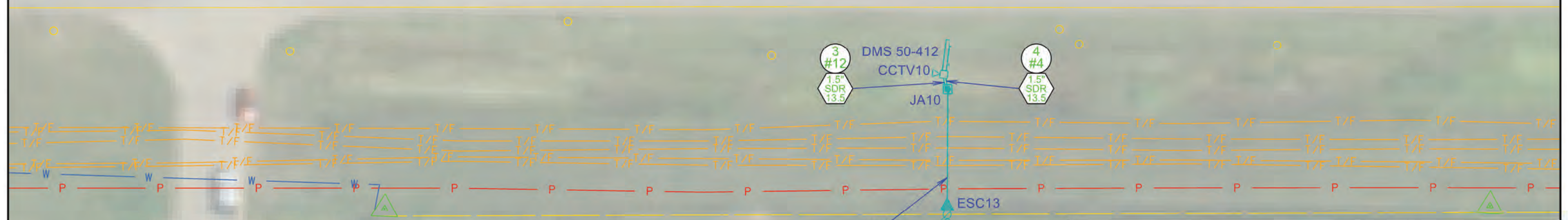
Median

Eastbound SD50

50

12' Driving Lane →

12' Driving Lane →



120/240 v.a.c., 60 hz.,
 1 Phase, 3 Wire Service
 By Clay-Union Electric

ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Post Mounted DMS (DMS 50-412)	1	EACH
	Camera (CCTV10)	1	EACH
	Type 2 Electrical Junction Box (JA10)	1	EACH
	Electrical Service Cabinet (ESC13)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	80	Ft
	1/C #4 AWG Copper Wire	605	Ft
	1/C #12 AWG Copper Wire	450	Ft



DMS LAYOUT

NORTHBOUND INTERSTATE 29 MRM 206

FOR BIDDING PURPOSES ONLY

Southbound I29



← 12' Driving Lane
← 12' Driving Lane

Median

Northbound I29

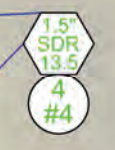


→ 12' Driving Lane
→ 12' Driving Lane



DMS 29-206

JA11



ESC14

120/240 v.a.c., 60 Hz.,
1 Phase, 3 Wire Service
By Otter Tail Power

144th Street



ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Pole Mounted DMS (DMS 29-206)	1	EACH
	Type 2 Electrical Junction Box (JA11)	1	EACH
	Electrical Service Cabinet (ESC14)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	90	Ft
	1/C #4 AWG Copper Wire	725	Ft

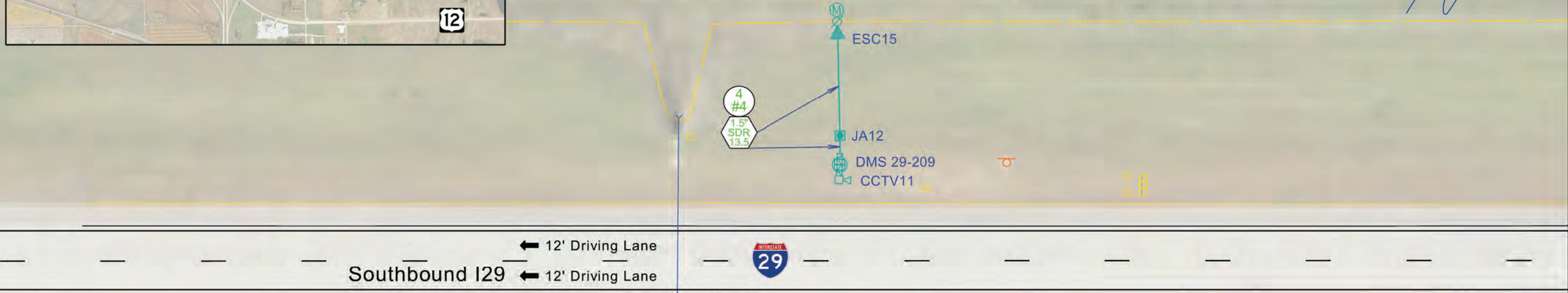
DMS LAYOUT

FOR BIDDING PURPOSES ONLY

SOUTHBOUND INTERSTATE 29 MRM 209



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Whetstone Valley Electric



← 12' Driving Lane
Southbound I29 ← 12' Driving Lane

12' Driving Lane →
12' Driving Lane → Northbound

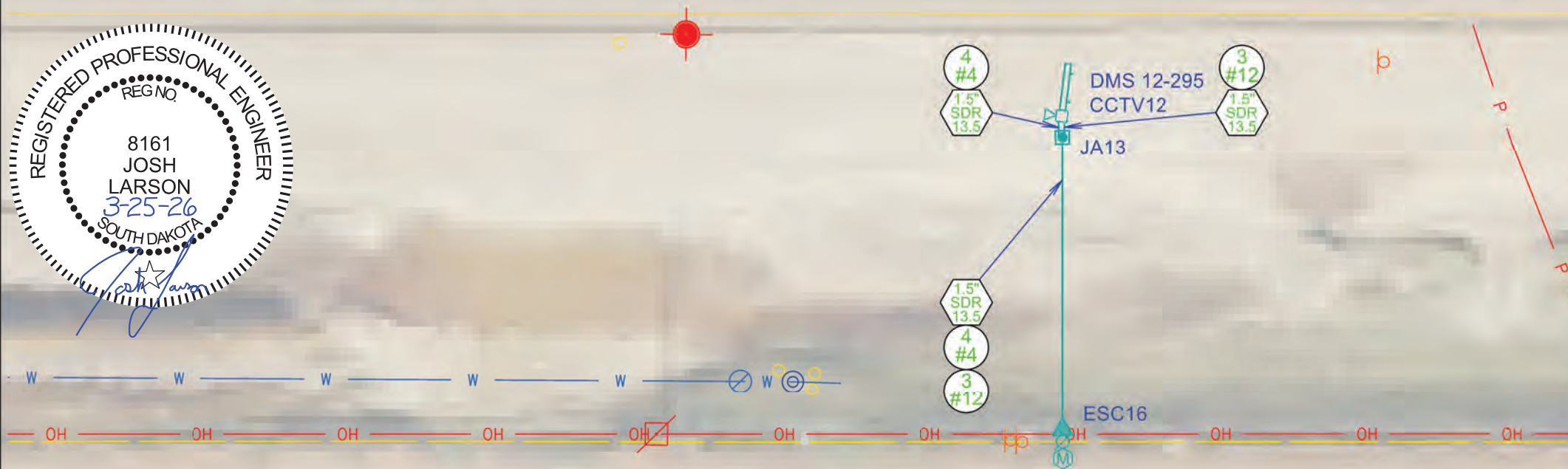
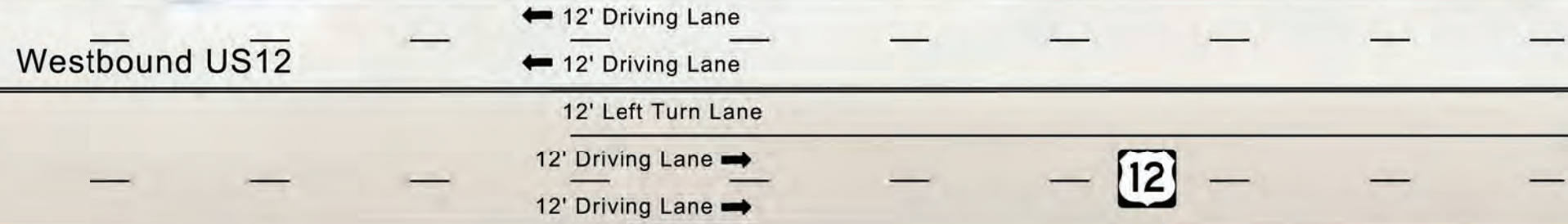
Median

ESTIMATE OF QUANTITIES

KEY	ITEM	EST QUANT	UNIT
	Pole Mounted DMS (DMS 29-209)	1	EACH
	Camera (CCTV11)	1	EACH
	Type 2 Electrical Junction Box (JA12)	1	EACH
	Electrical Service Cabinet (ESC15)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	70	FT
	1/C #4 AWG Copper Wire	645	FT

DMS LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND US HIGHWAY 12 MRM 295



120/240 v.a.c., 60 hz.,
1 Phase, 3 Wire Service
By Northern Electric Coop

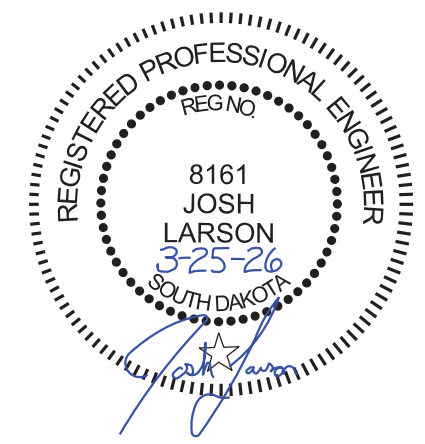
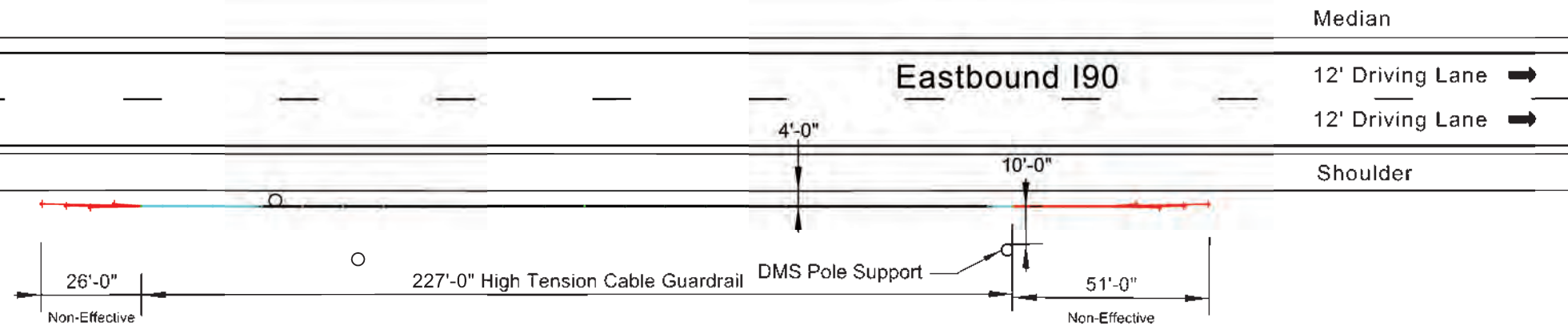
ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Post Mounted DMS (DMS 12-295)	1	EACH
	Camera (CCTV12)	1	EACH
	Type 2 Electrical Junction Box (JA13)	1	EACH
	Electrical Service Cabinet (ESC16)	1	EACH
	Galvanized Steel Utility Pole Not a Bid Item	1	EACH
	Meter Socket Not a Bid Item	1	EACH
	1.5" Conduit, SDR 13.5	115	Ft
	1/C #4 AWG Copper Wire	745	Ft
	1/C #12 AWG Copper Wire	560	Ft

GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND INTERSTATE 90 MRM 307

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 43	TOTAL SHEETS 95
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Plotting Date: 3/25/2026



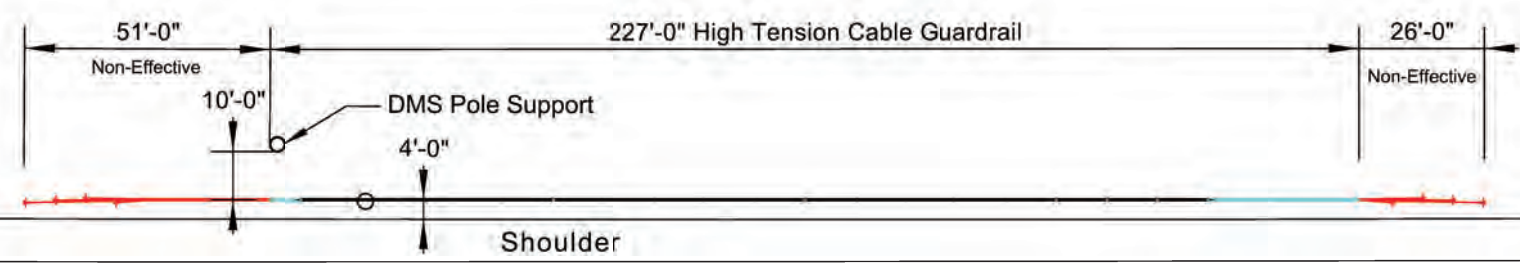
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	44	95

GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY WESTBOUND INTERSTATE 90 MRM 312

Plotting Date: 3/25/2026



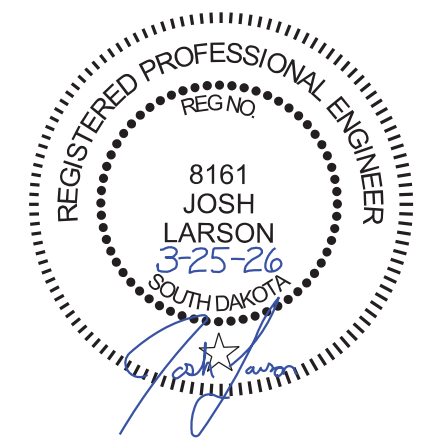
T/F T/F T/F T/F T/F T/F T/F T/F T/F T/F T/F



Westbound I90

← 12' Driving Lane
← 12' Driving Lane

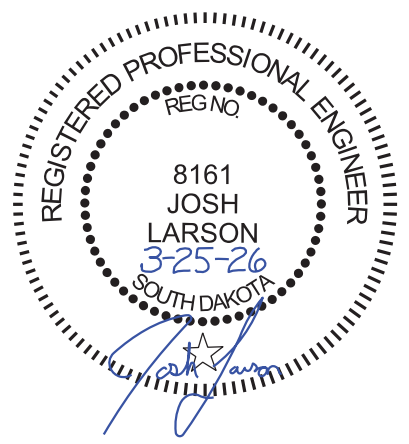
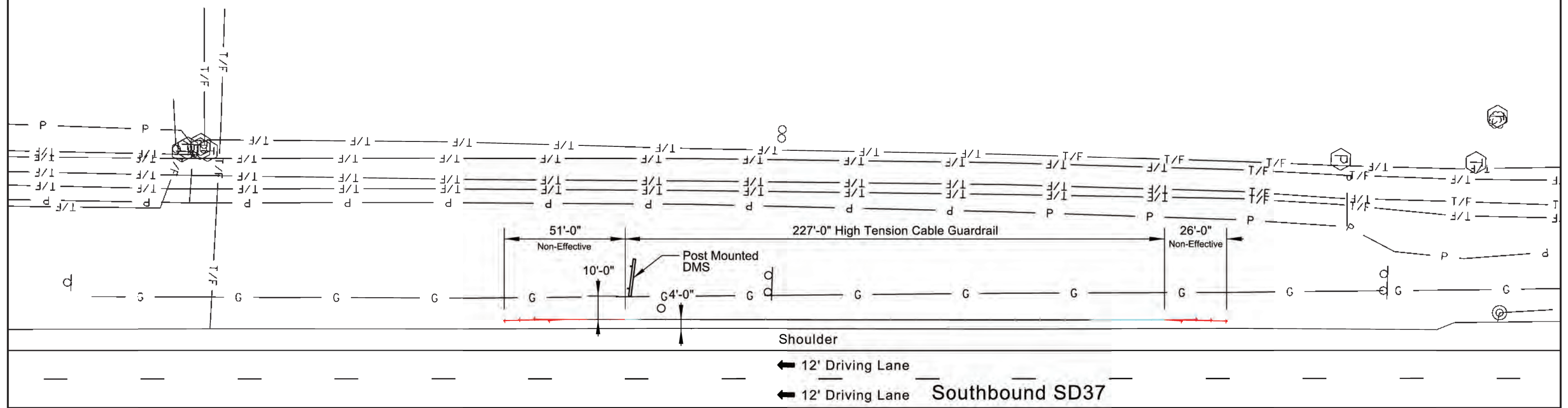
Median



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

SOUTHBOUND SD HIGHWAY 37 MRM 125

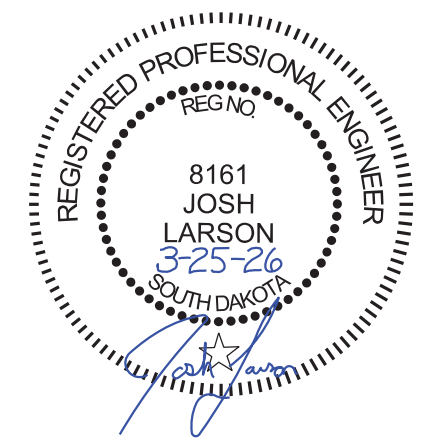
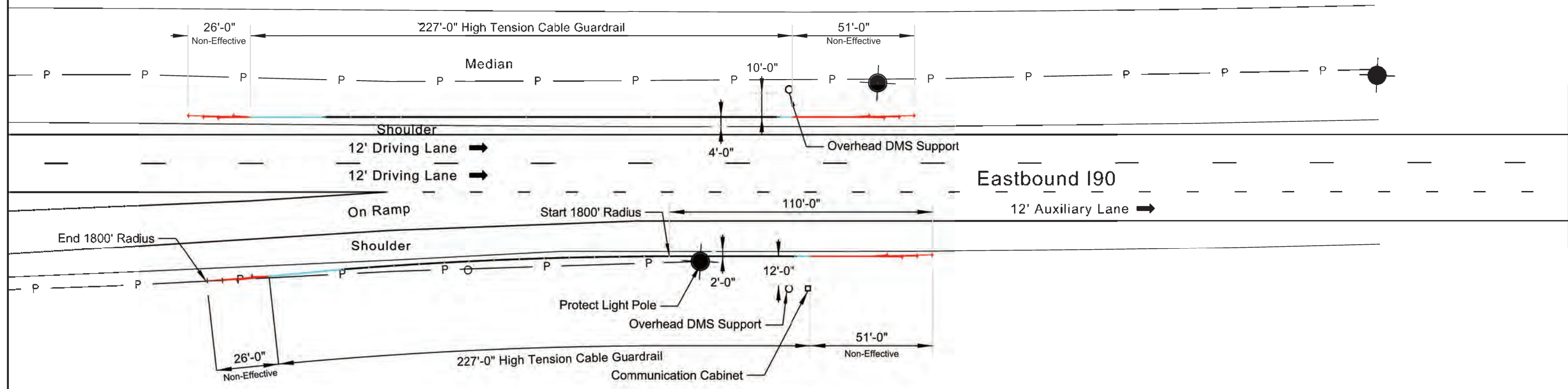
STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 45	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND INTERSTATE 90 MRM 399

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 46	TOTAL SHEETS 95
Plotting Date: 3/25/2026			

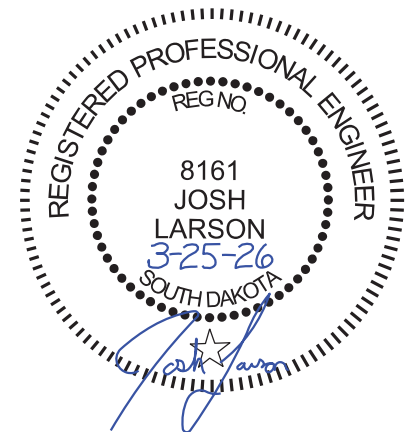
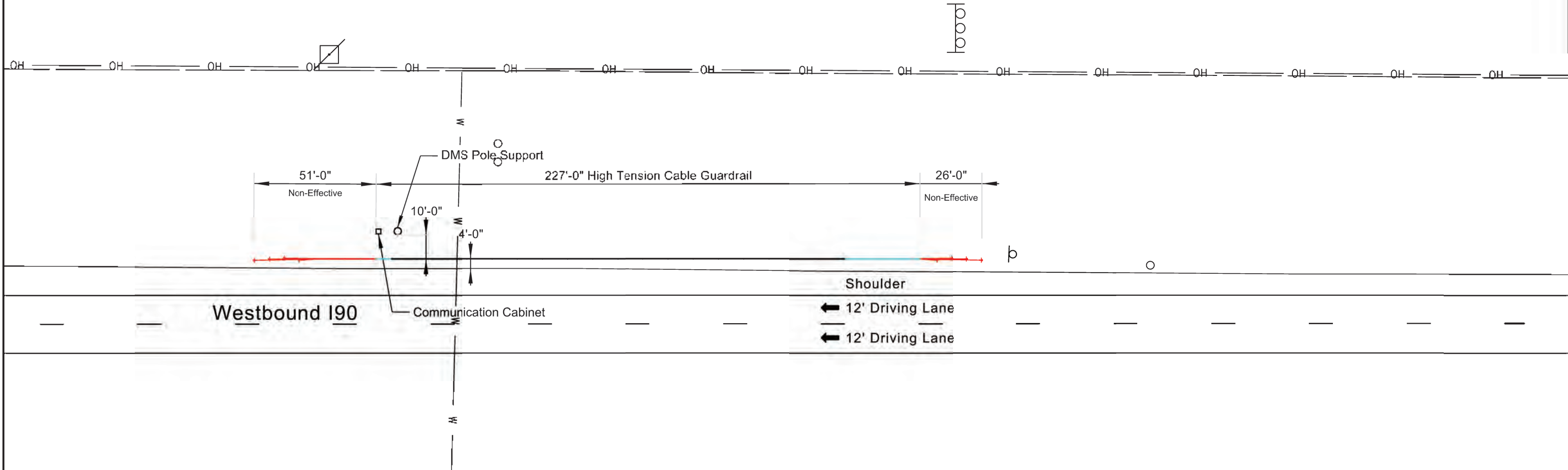


GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

WESTBOUND INTERSTATE 90 MRM 403

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	47	95

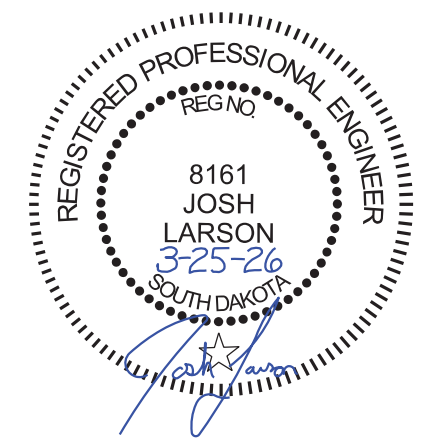
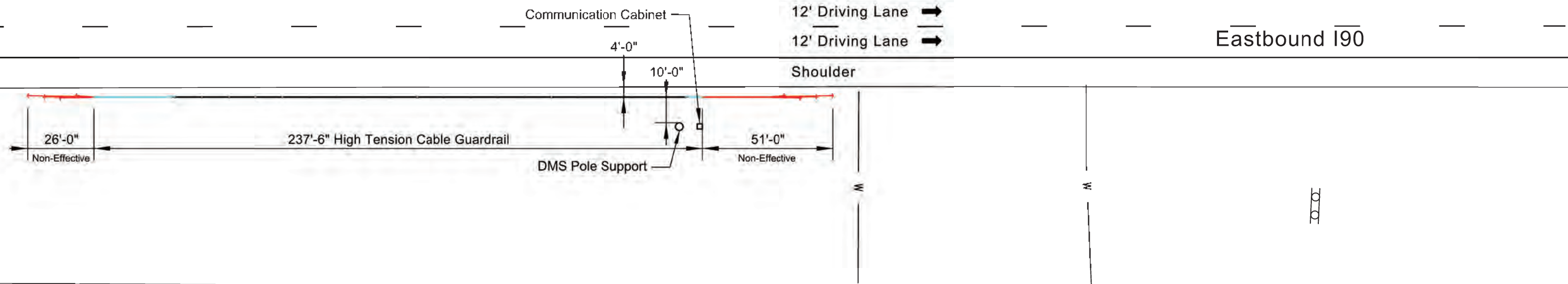
Plotting Date: 3/25/2026



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY EASTBOUND INTERSTATE 90 MRM 405

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	48	95

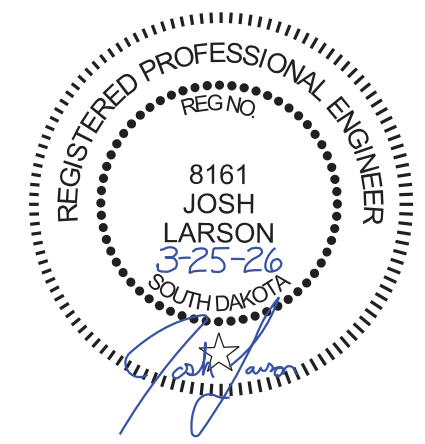
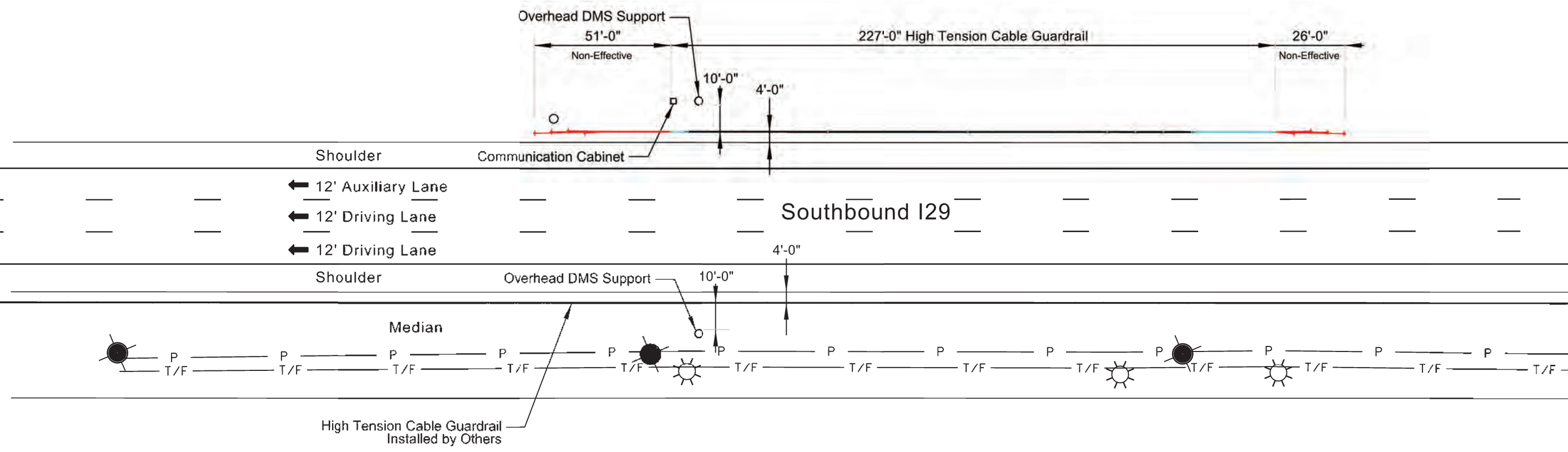
Plotting Date: 3/25/2026



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

SOUTHBOUND INTERSTATE 29 MRM 76

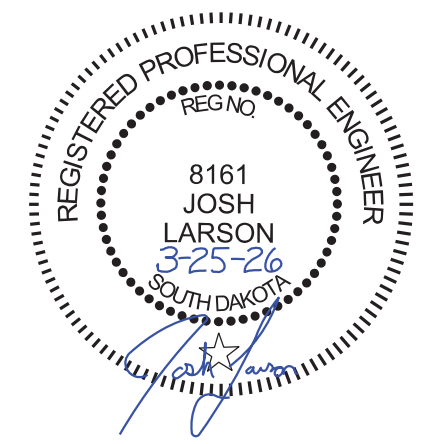
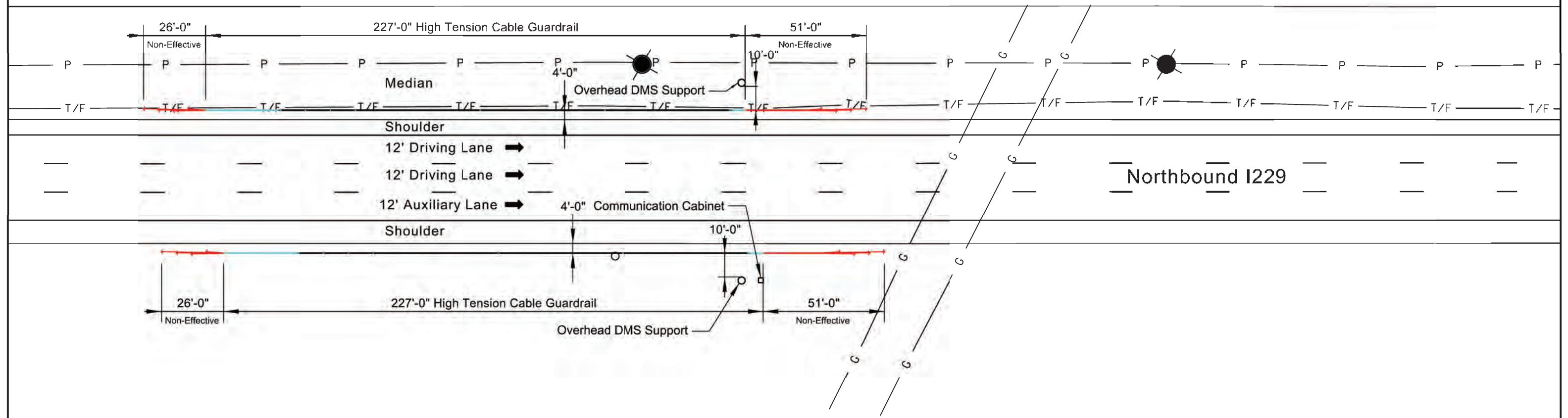
STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 49	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

NORTHBOUND INTERSTATE 229 MRM 2

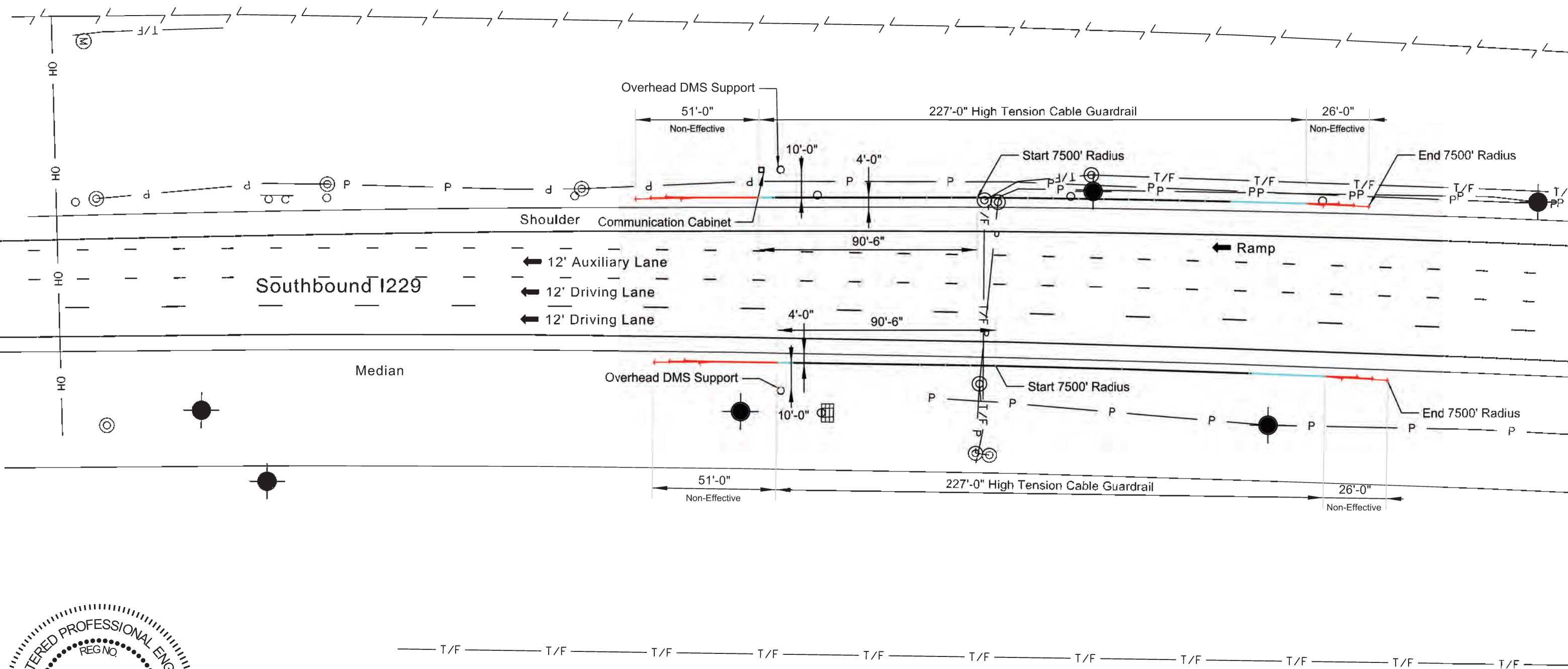
STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 50	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

SOUTHBOUND INTERSTATE 229 MRM 9

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 51	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND SD Hwy 50 MRM 388

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 53	TOTAL SHEETS 95
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Plotting Date: 3/25/2026



Westbound SD50

← 12' Driving Lane
← 12' Driving Lane

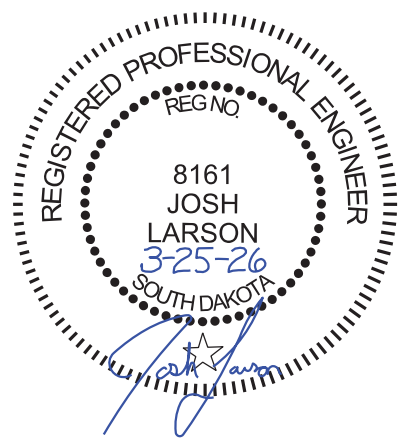
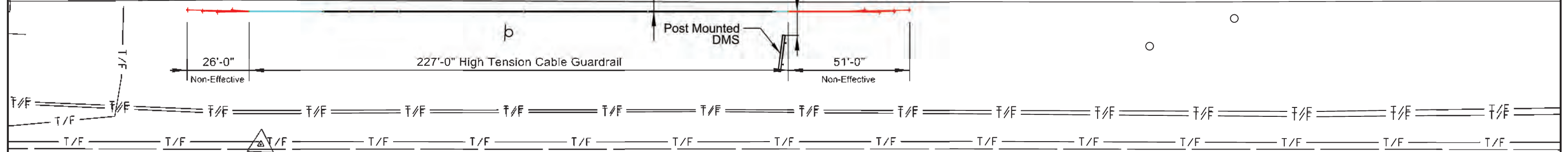
Eastbound SD50

12' Driving Lane →
12' Driving Lane →

12' Center Turn Lane

4'-0" 10'-0"

Shoulder

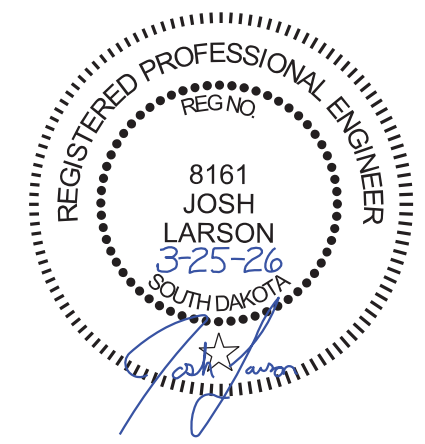
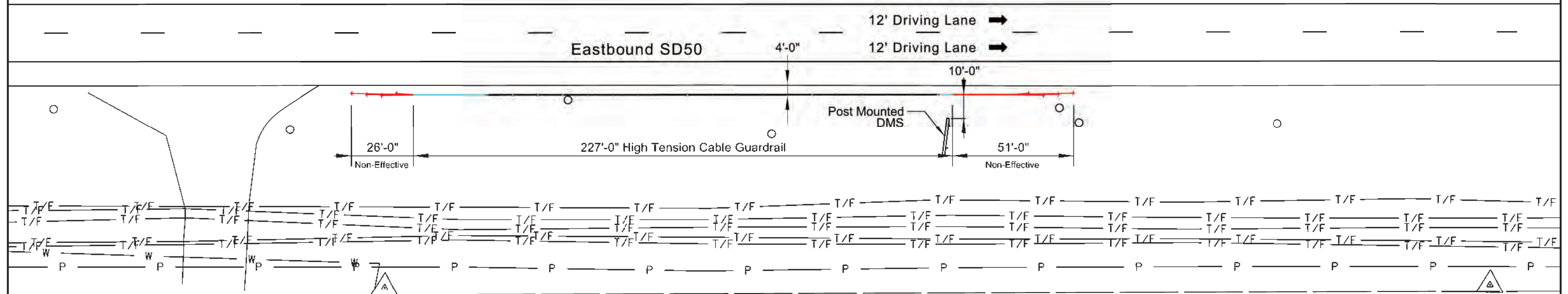


GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY

EASTBOUND SD Hwy 50 MRM 412

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 54	TOTAL SHEETS 95
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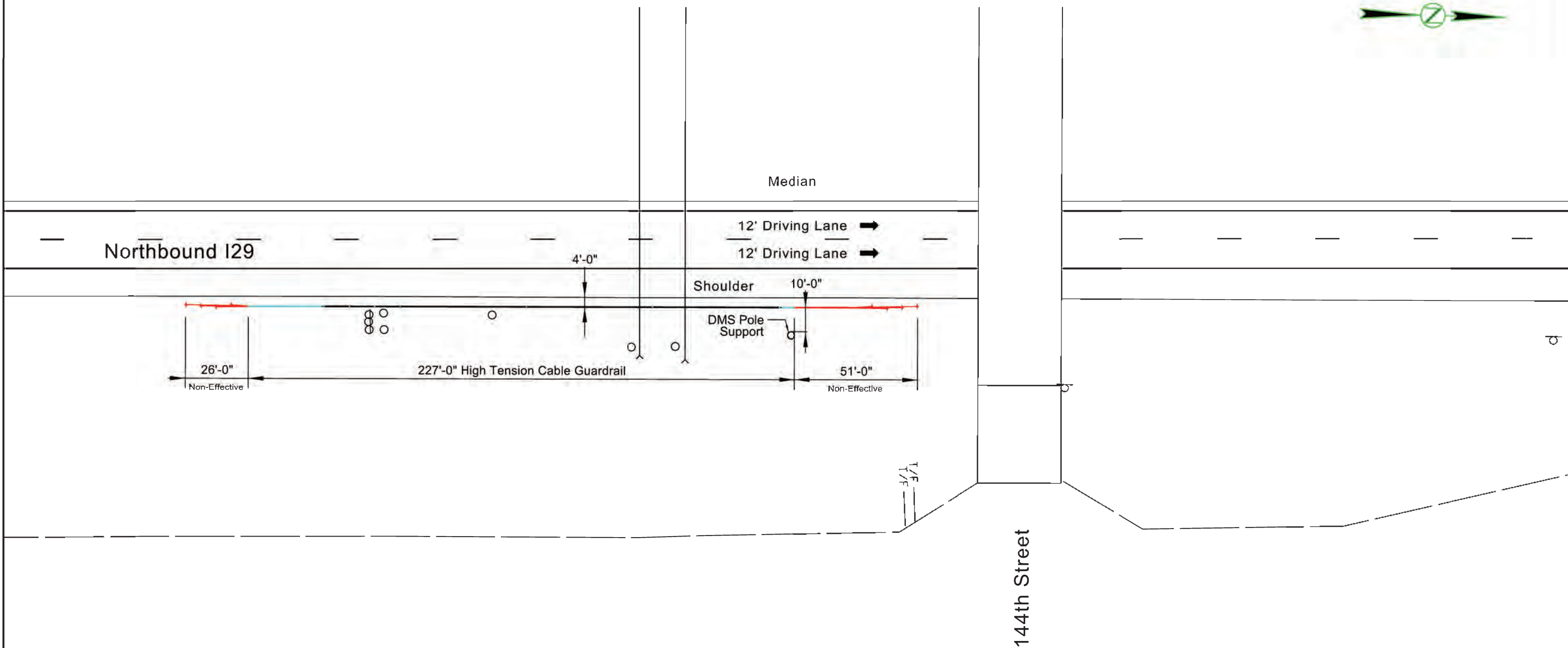
Plotting Date: 3/25/2026



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY NORTHBOUND INTERSTATE 29 MRM 206

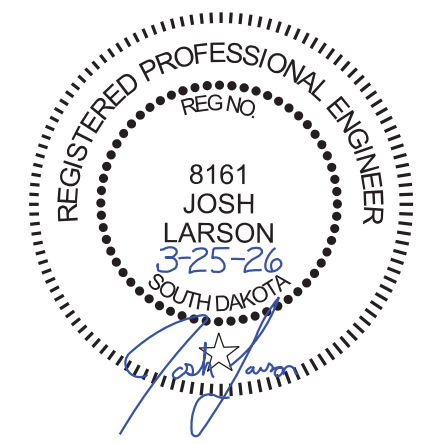
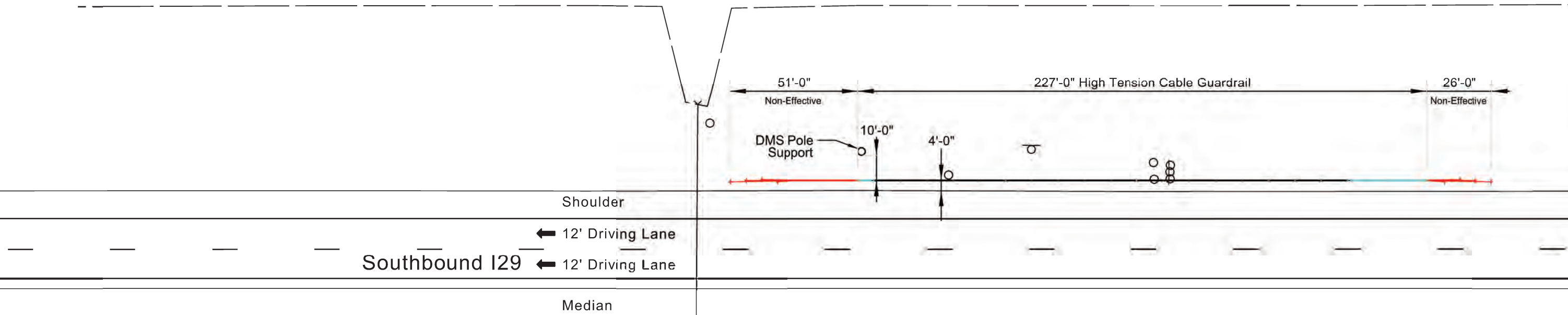
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	55	95

Plotting Date: 3/25/2026



GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY SOUTHBOUND INTERSTATE 29 MRM 209

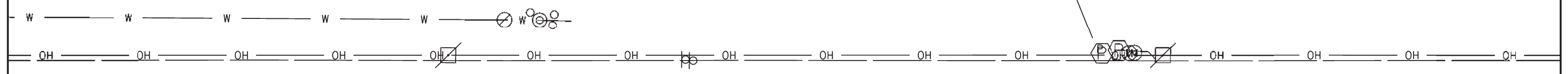
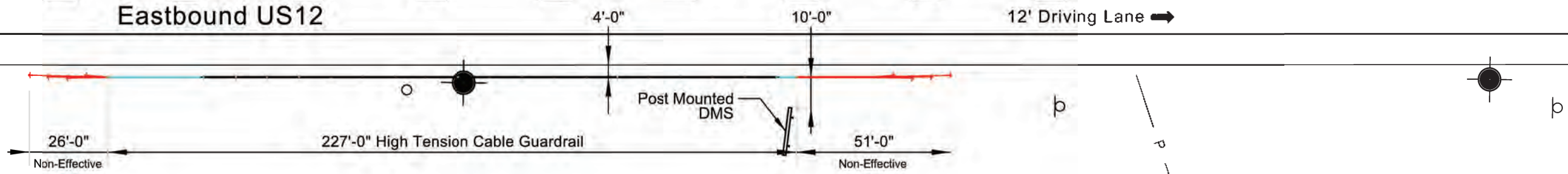
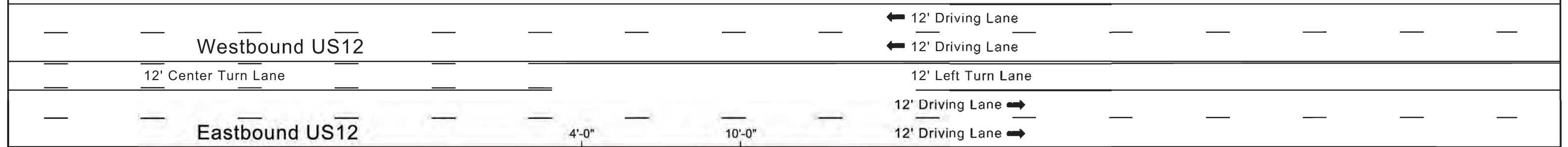
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	56	95
Plotting Date:		3/25/2026	





GUARDRAIL LAYOUT FOR BIDDING PURPOSES ONLY EASTBOUND US HIGHWAY 12 MRM 295

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	57	95
Plotting Date: 3/25/2026			



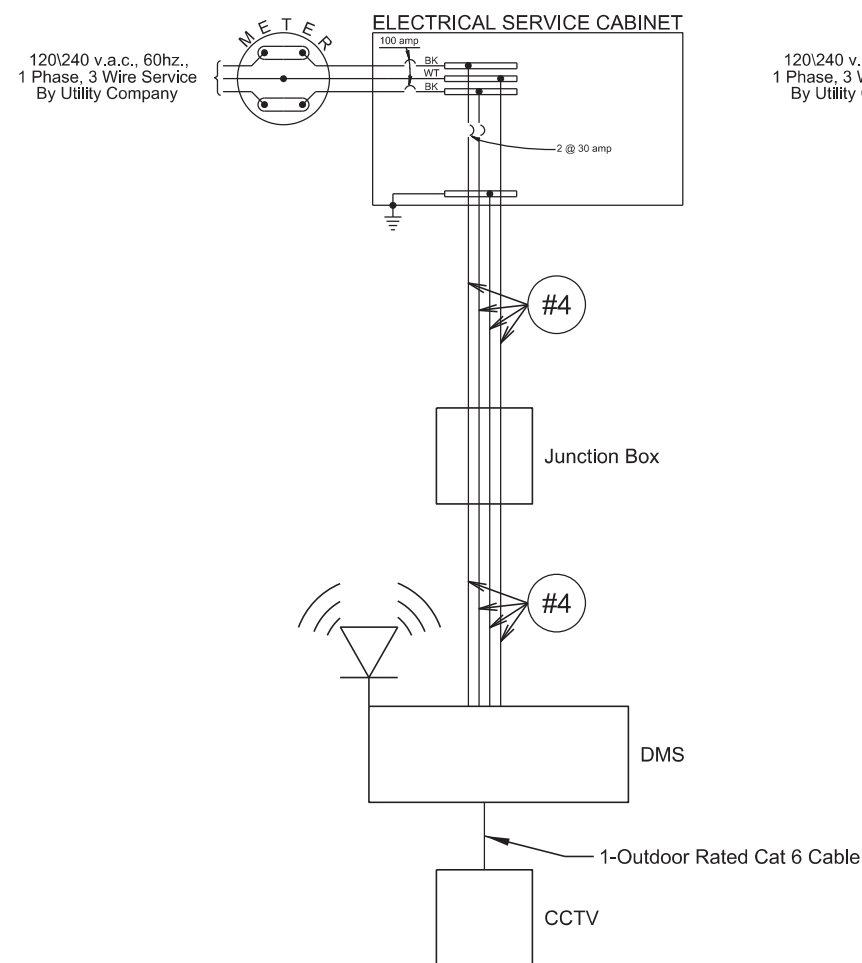


WIRING DIAGRAM

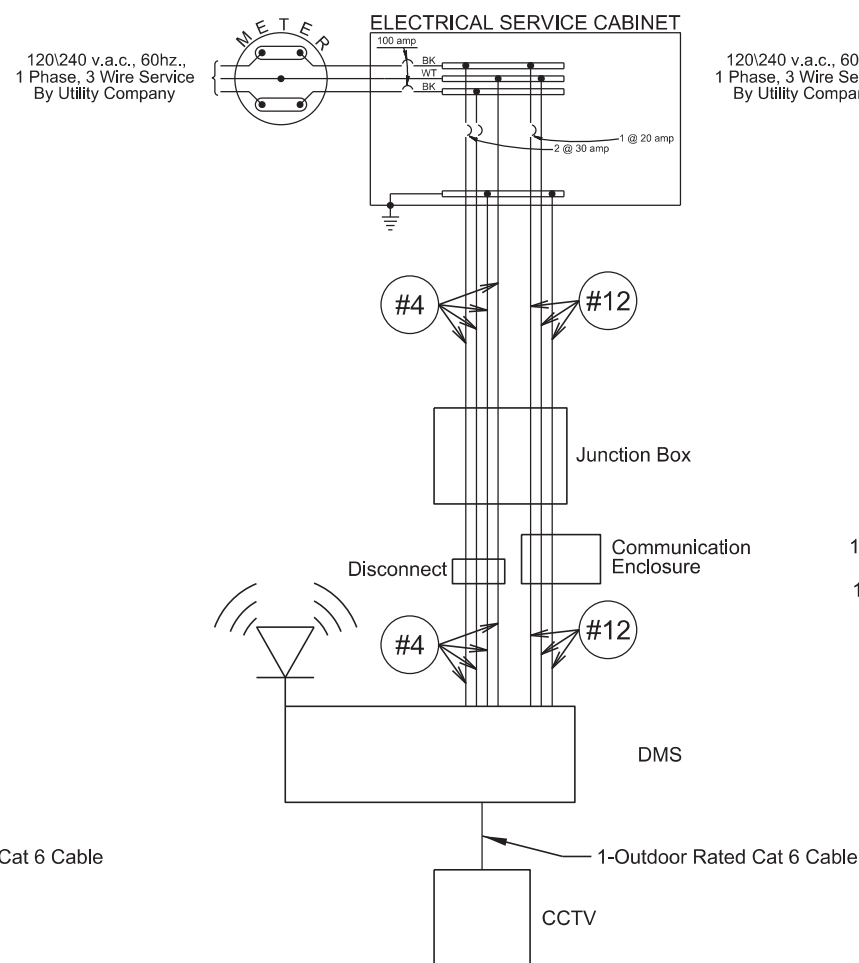
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	58	95
Plotting Date: 3/25/2026			

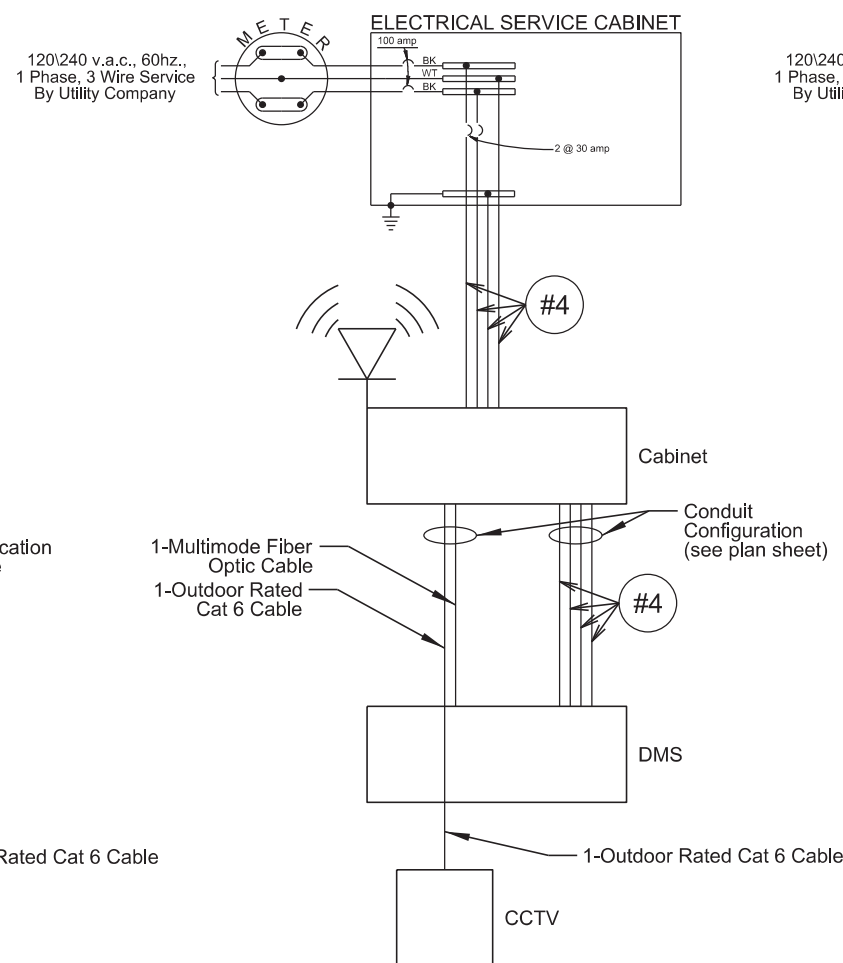
DMS Site without Communication Cabinet



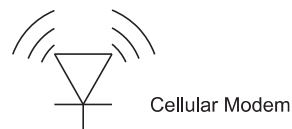
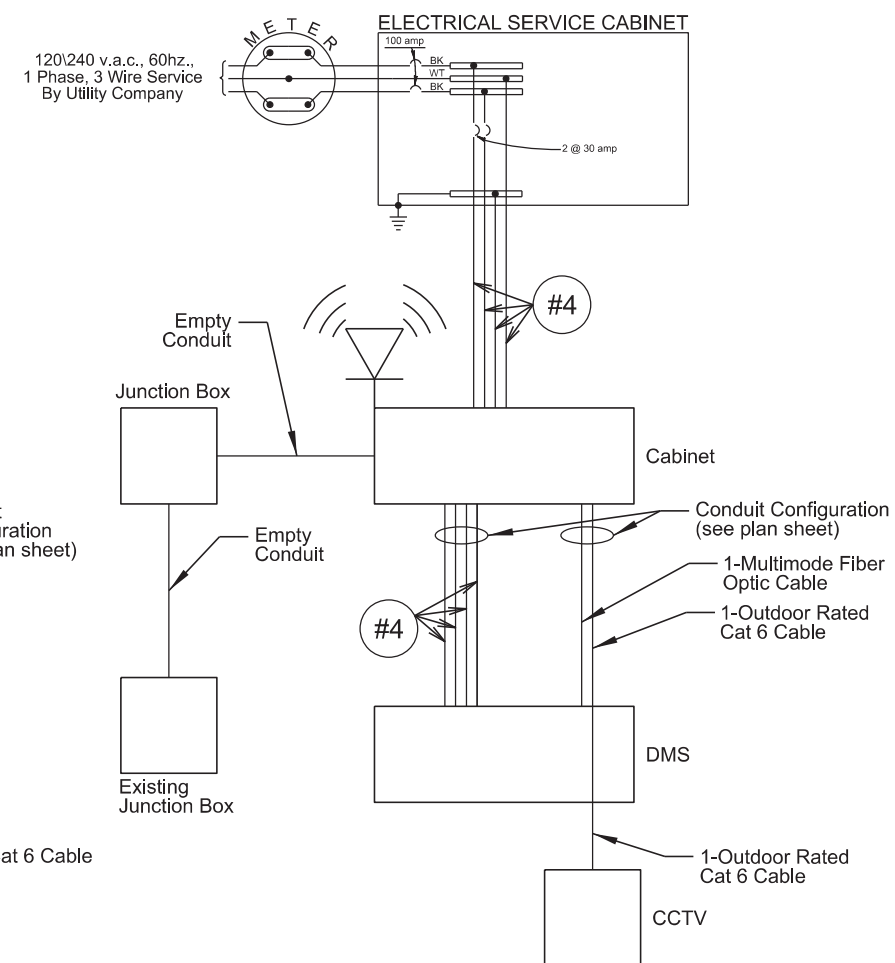
Post Mounted DMS Site with Communication Enclosure



DMS Site with Communication Cabinet



DMS Site for Future Fiber Connection



Cellular Modem

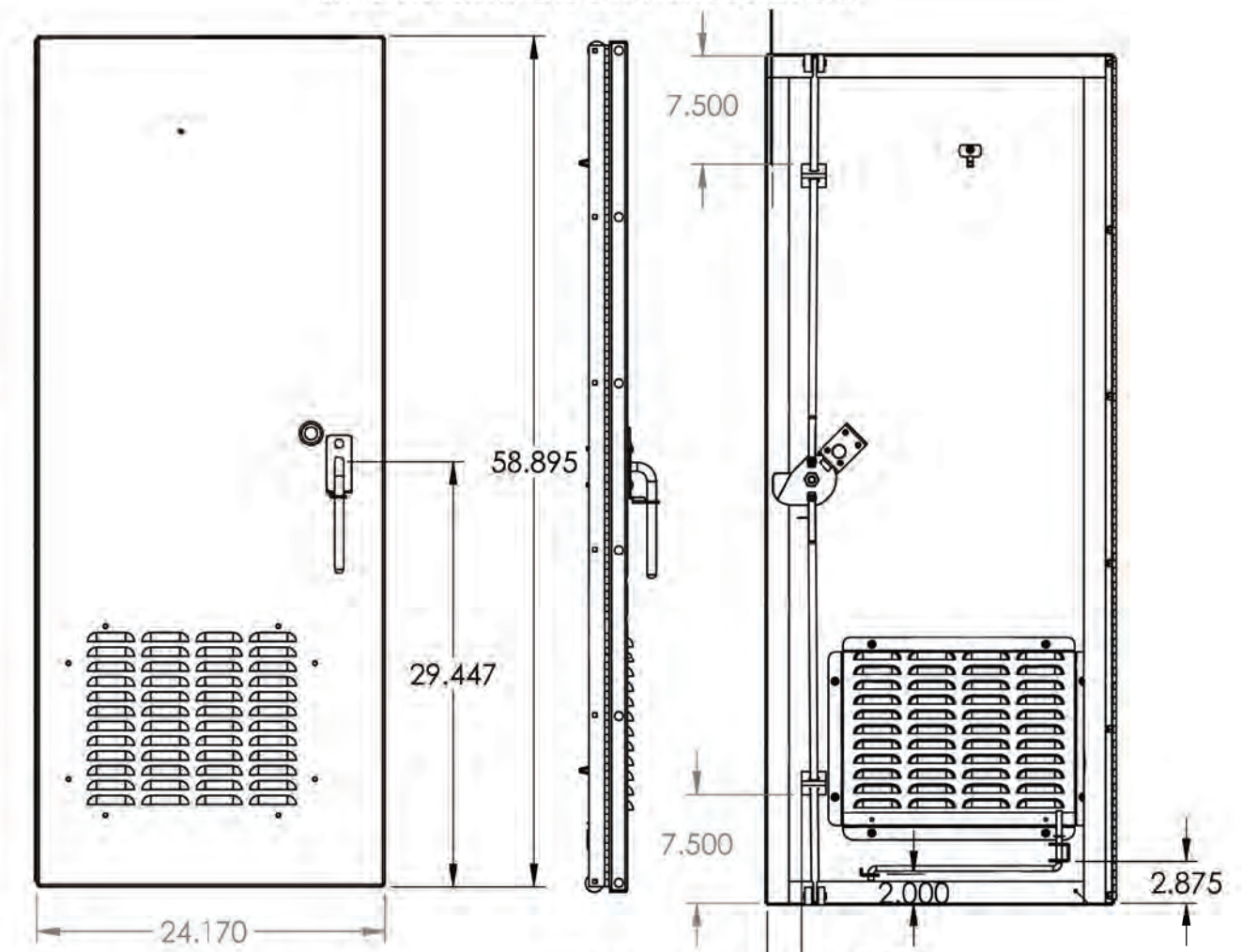
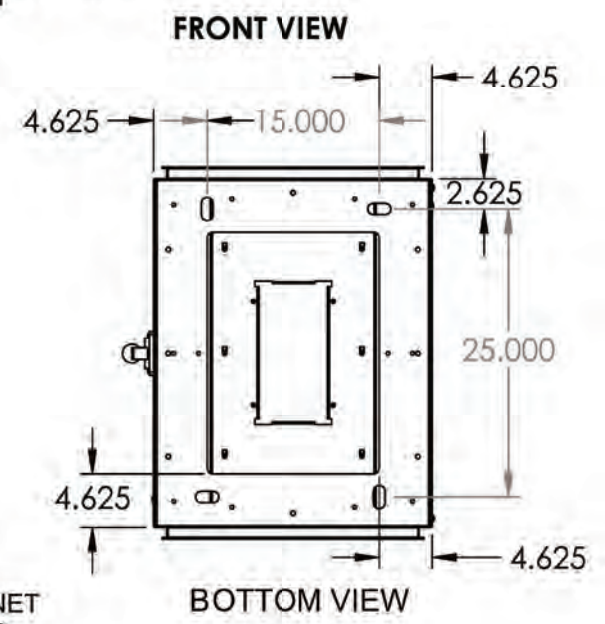
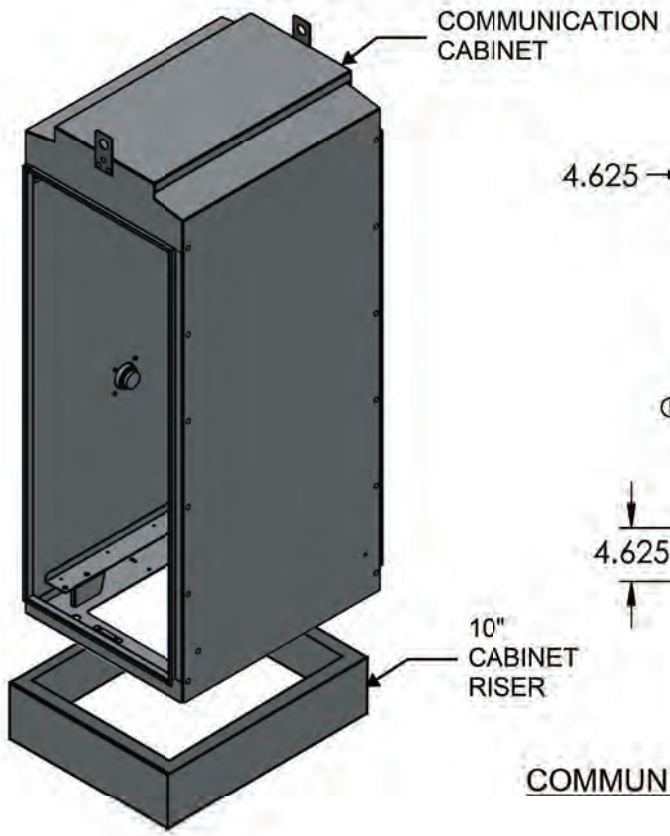
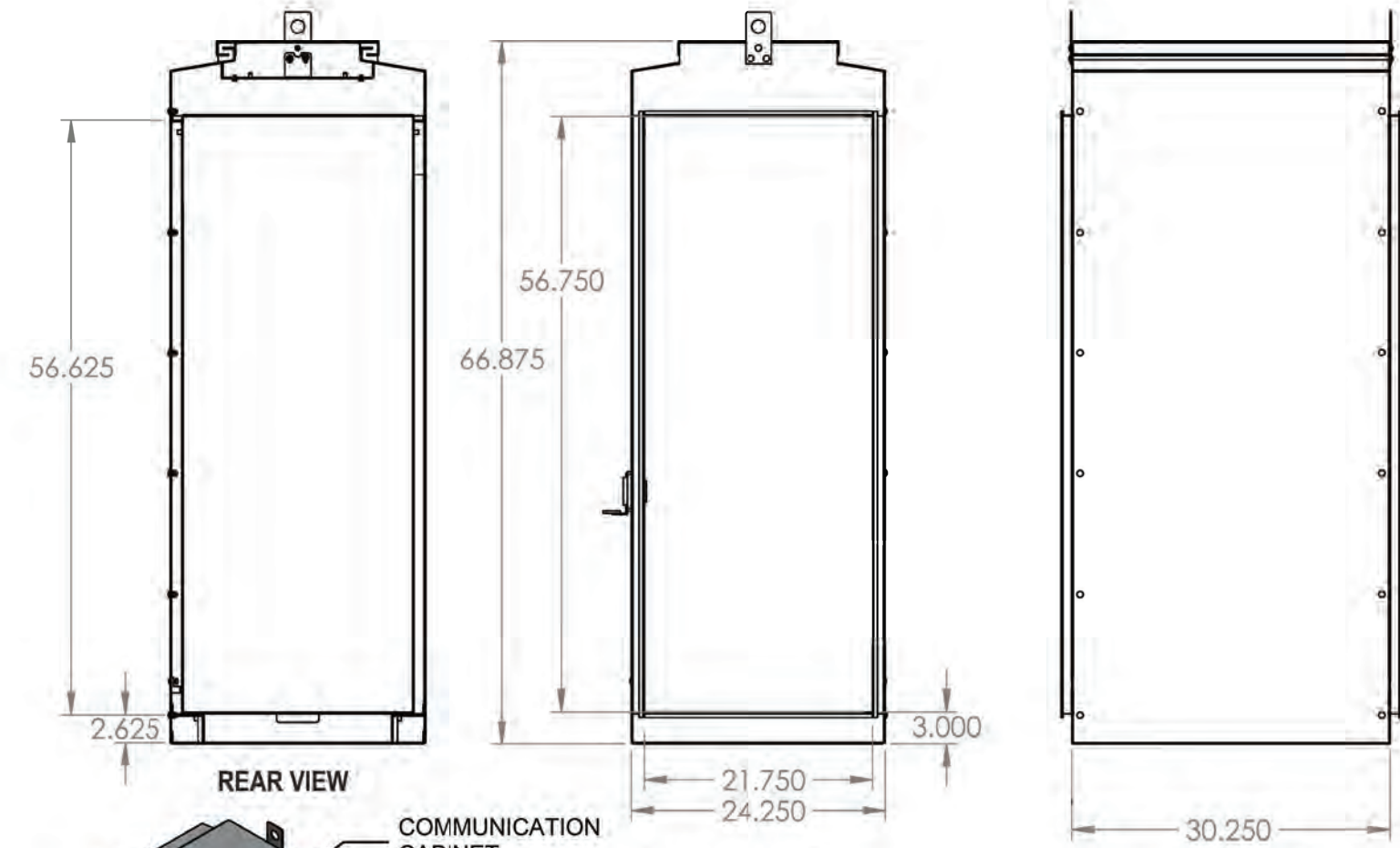
FOR BIDDING PURPOSES ONLY

COMMUNICATION CABINET DETAIL

NOTE: ALL DIMENSIONS ON THIS SHEET ARE IN UNITS OF INCHES

**ALL BOLTS, CLAMPS, FASTENERS, HINGES, LATCHES, NUTS AND SCREWS ARE TO BE STAINLESS STEEL
ALL EXTERIOR SEAMS ARE CONTINUOUSLY WELDED WITH A RADIUS OF .03 OR GREATER**

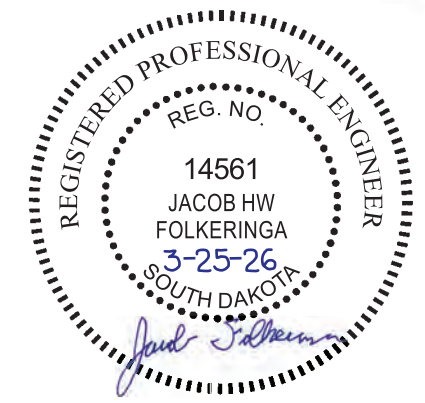
THE COMMUNICATION CABINETS WILL BE ENCLOSE MANUFACTURING ENC-20251 OR EQUIVALENT



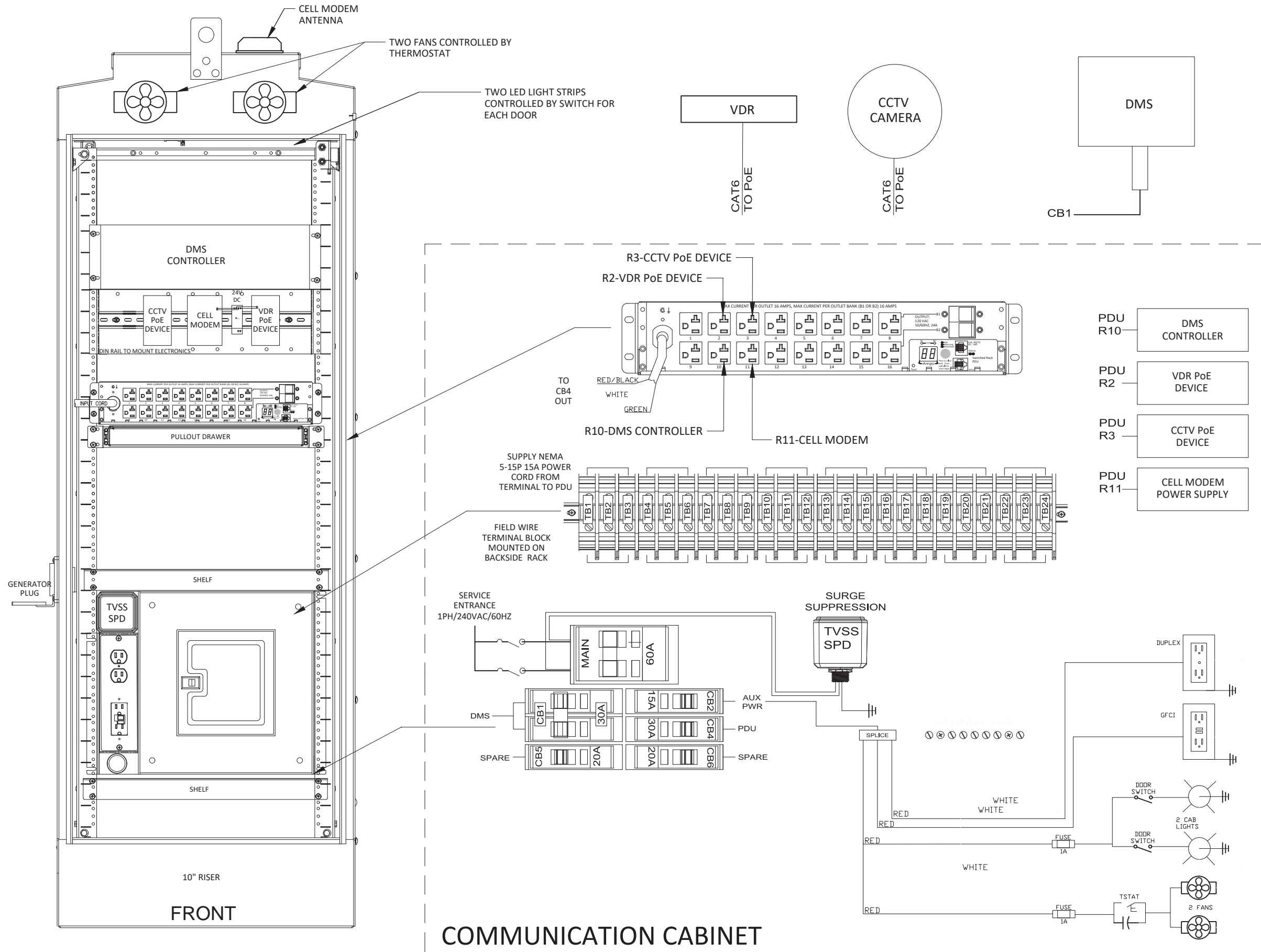
MOUNT CABINET ON 10" RISER

COMMUNICATION CABINET DETAIL

COMMUNICATION CABINET DOOR DETAIL



COMMUNICATION CABINET DETAIL - LAYOUT FOR BIDDING PURPOSES ONLY



CELL MODEM PORT SCHEDULE (TYP)	
1	SWITCHED PDU (POWER STRIP)
2	CCTV
3	DMS CONTROLLER

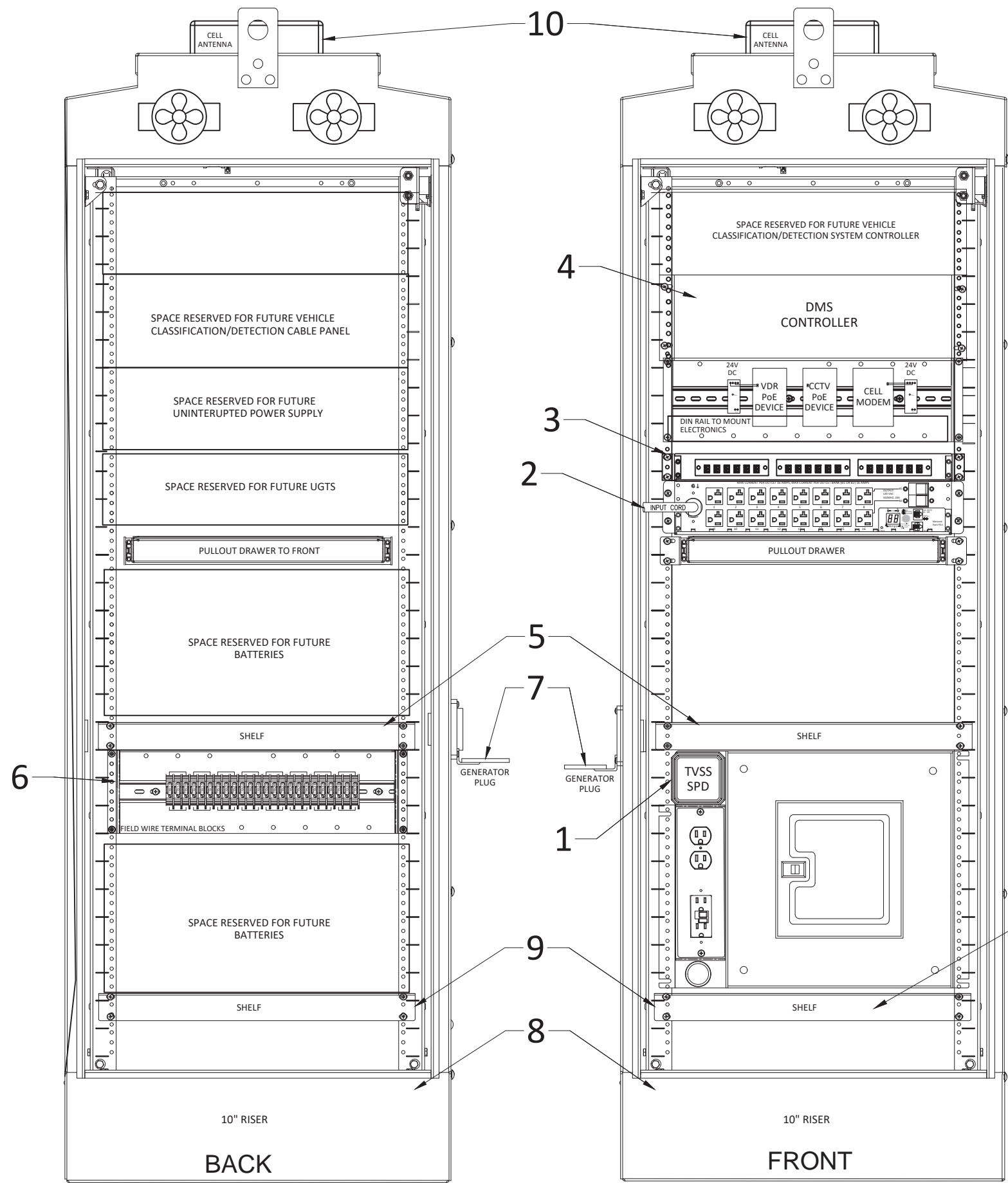


COMMUNICATION CABINET

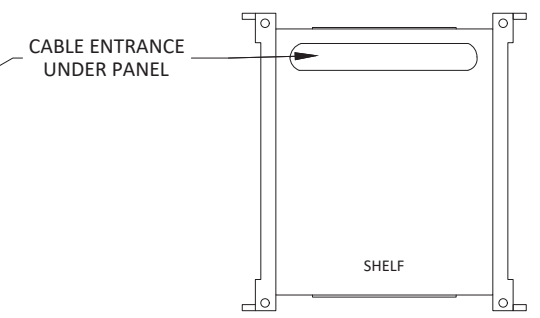
COMMUNICATION CABINET DETAIL - WIRING DIAGRAM

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	61	95
Plotting Date:		3/25/2026	



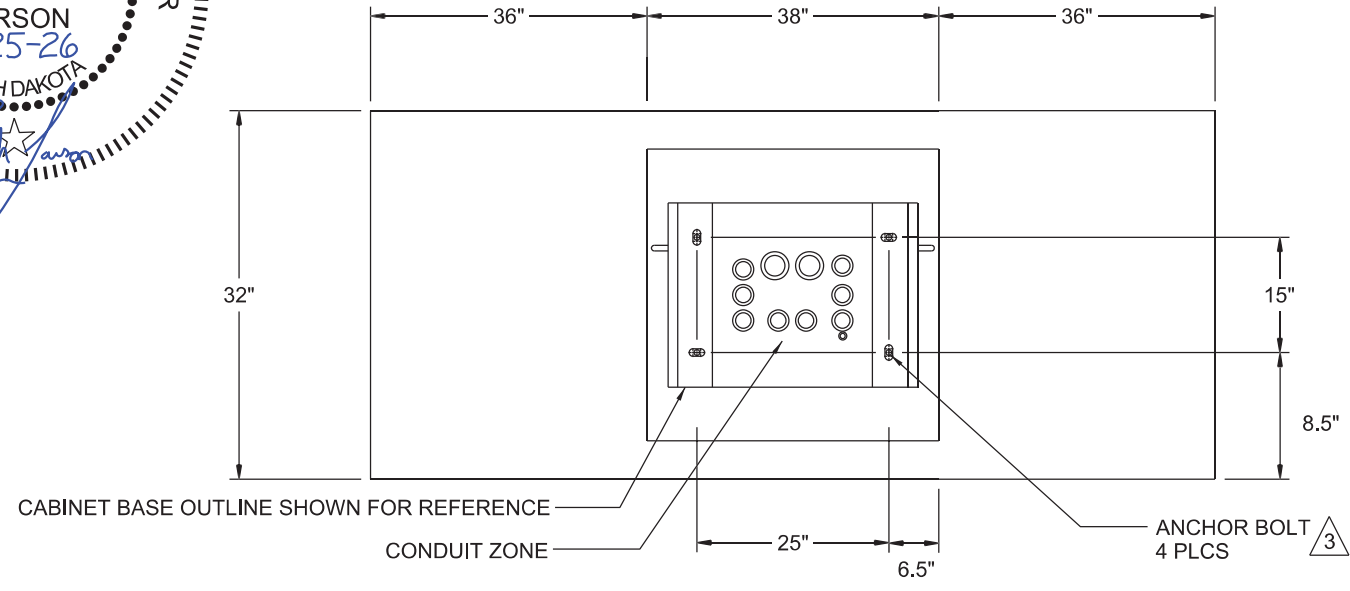
CABINET LAYOUT SCHEDULE	
NOTE NUMBER	DEVICE
1	POWER DISTRIBUTION PANEL W/ (2) GENERAL PURPOSE OUTLETS (1) GFCI, AND TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)/SURGE PROTECTION DEVICE (SPD)
2	SWITCHED PDU (POWER STRIP)
3	ETHERNET DISTRIBUTION PANEL
4	DMS CONTROLLER
5	BATTERY STORAGE SHELF
6	FIELD WIRE TERMINATION PANEL FOR PDU
7	GENERATOR PLUG IN RECEPTACLE
8	10" CABINET RISER
9	21" SHELF ASSEMBLY
10	OMNIDIRECTIONAL CELL MODEM ANTENNA



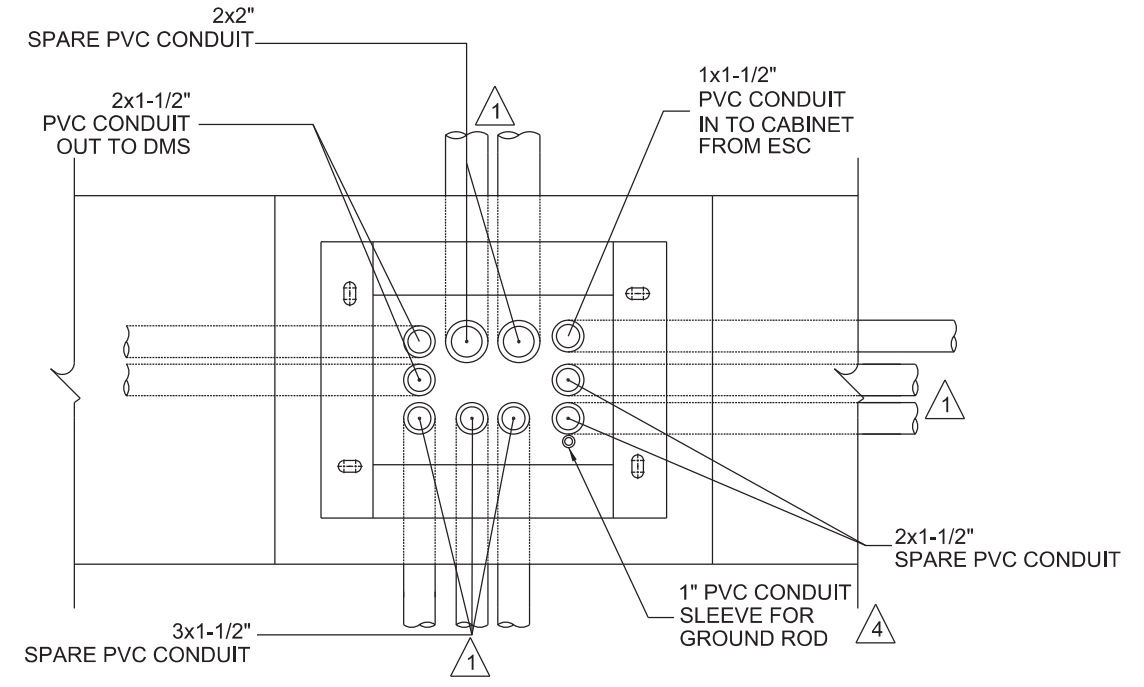


COMMUNICATION CABINET MOUNTING FOR BIDDING PURPOSES ONLY

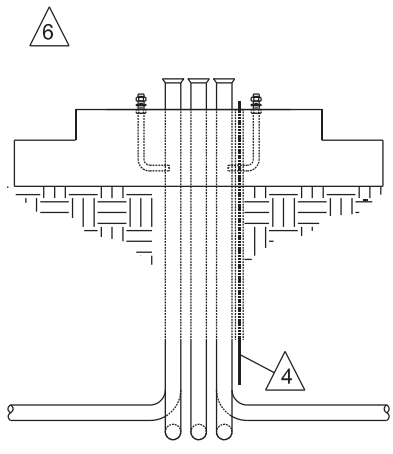
STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 62	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



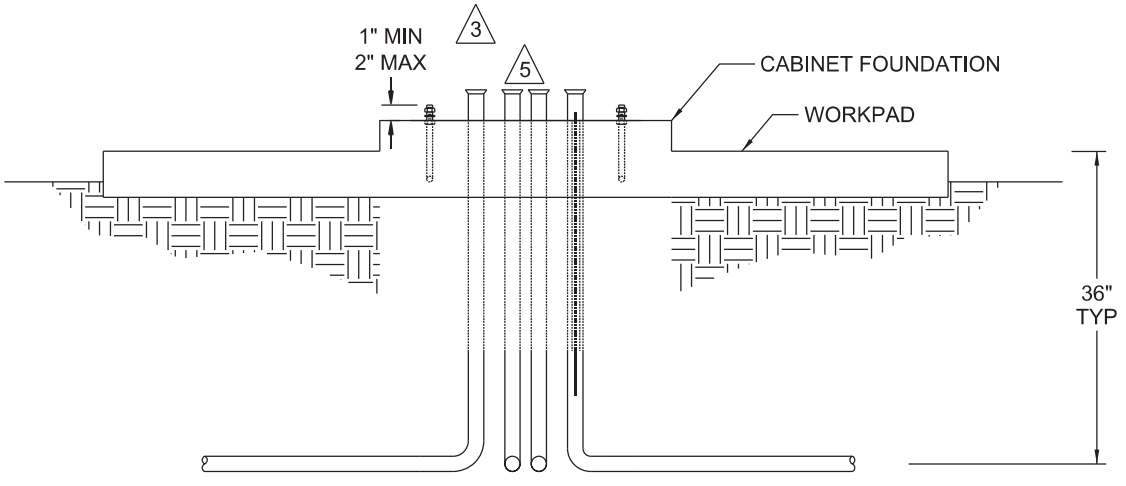
TOP VIEW - CABINET MOUNTING



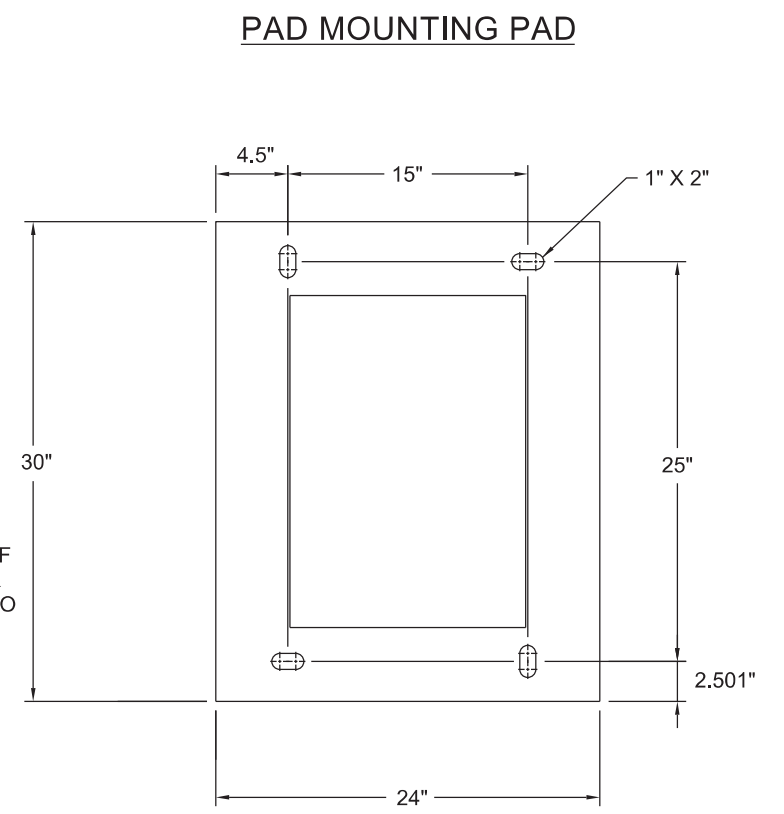
DETAIL A - TYPICAL CONDUIT LAYOUT



FRONT VIEW



SIDE VIEW



PAD MOUNTING PAD

NOTES:

- 1 SPARE CONDUIT MUST BE CAPPED, STUBBED 24" PAST FOUNDATION, AND LABELED.
- 2 ALL CONDUITS SHOWN WILL BE FURNISHED AND INSTALLED IN FOUNDATION IN ACCORDANCE WITH LOCAL CODES. CAP IF NOT USED. ADDITIONAL CONDUITS MAY BE REQUIRED. CONDUITS WILL EXIT FOUNDATION IN DIRECTION APPROPRIATE FOR SITE GEOMETRY.
- 3 CABINET ANCHORS MUST BE GALVANIZED OR STAINLESS STEEL AND WILL BE CAST IN PLACE INTO BASE. TYPICAL SIZE IS 3/4" NC x 12" x 4".
- 4 GROUND ROD MUST BE PROVIDED TO MEET LOCAL ELECTRICAL CODE.
- 5 SEAL ALL CONDUIT ENDS WITH COPPER WOOL AND DUCT SEAL TO REDUCE RODENT OR INSECT INTRUSION AND MOISTURE. DO NOT USE PERMANENT SEALANT AS CONDUITS MAY NEED TO BE REENTERED IN THE FUTURE FOR CABLE REPLACEMENT OR ADDITIONS.

NOTES: (CONTINUED)

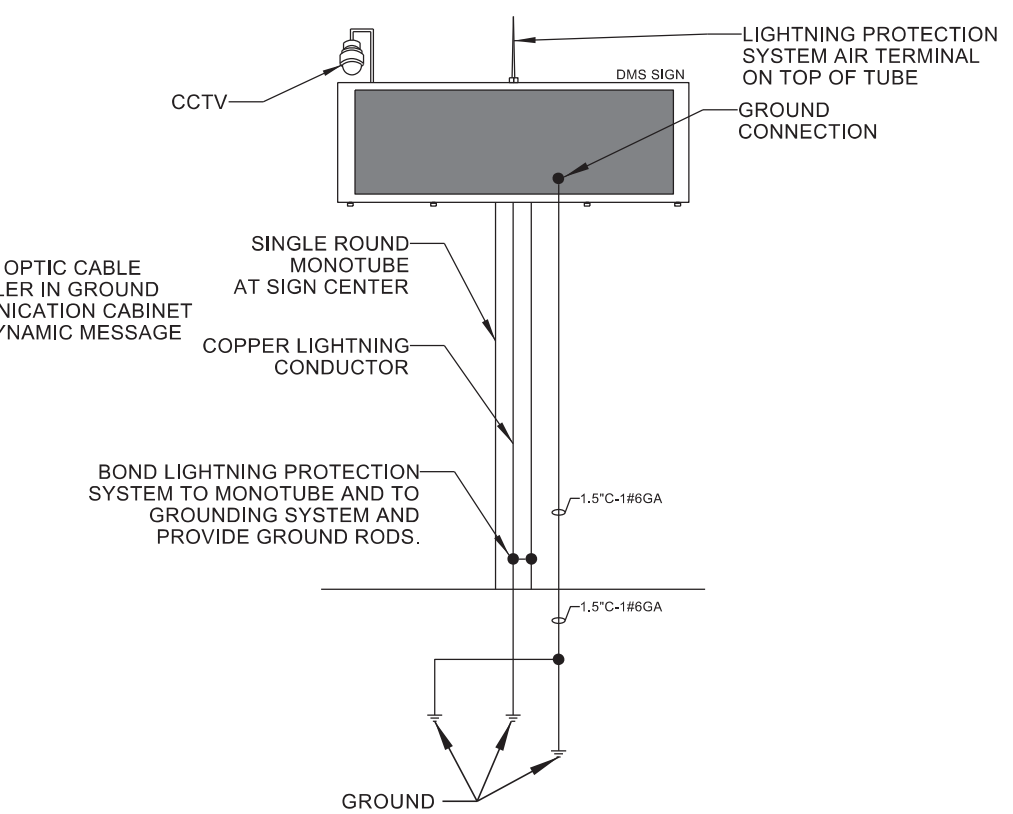
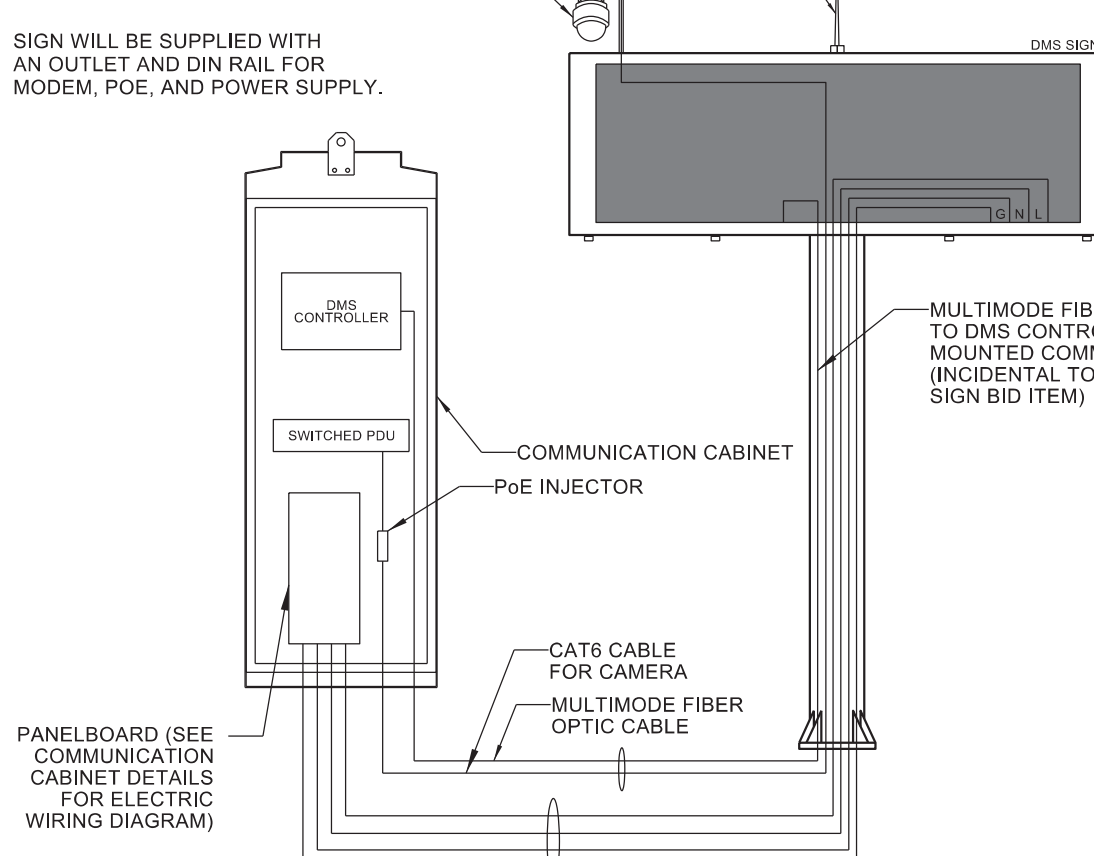
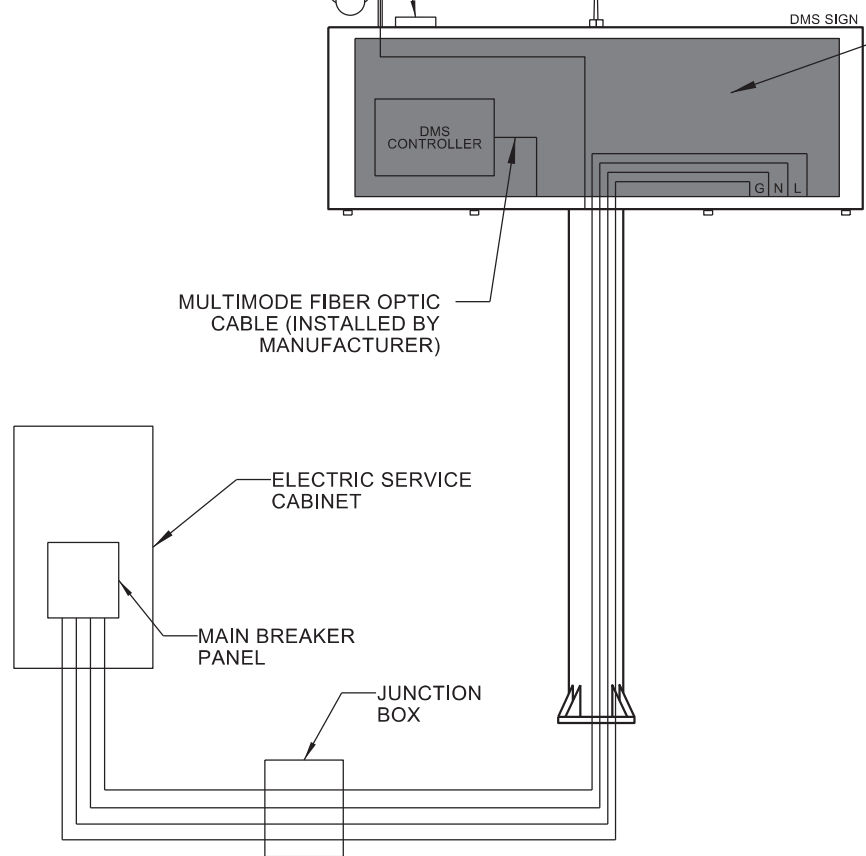
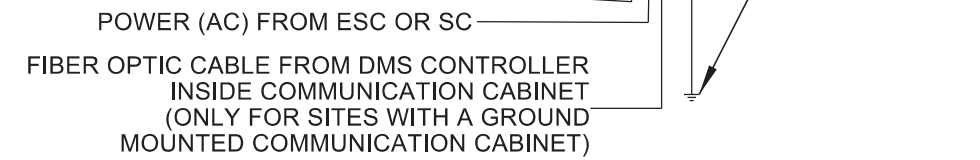
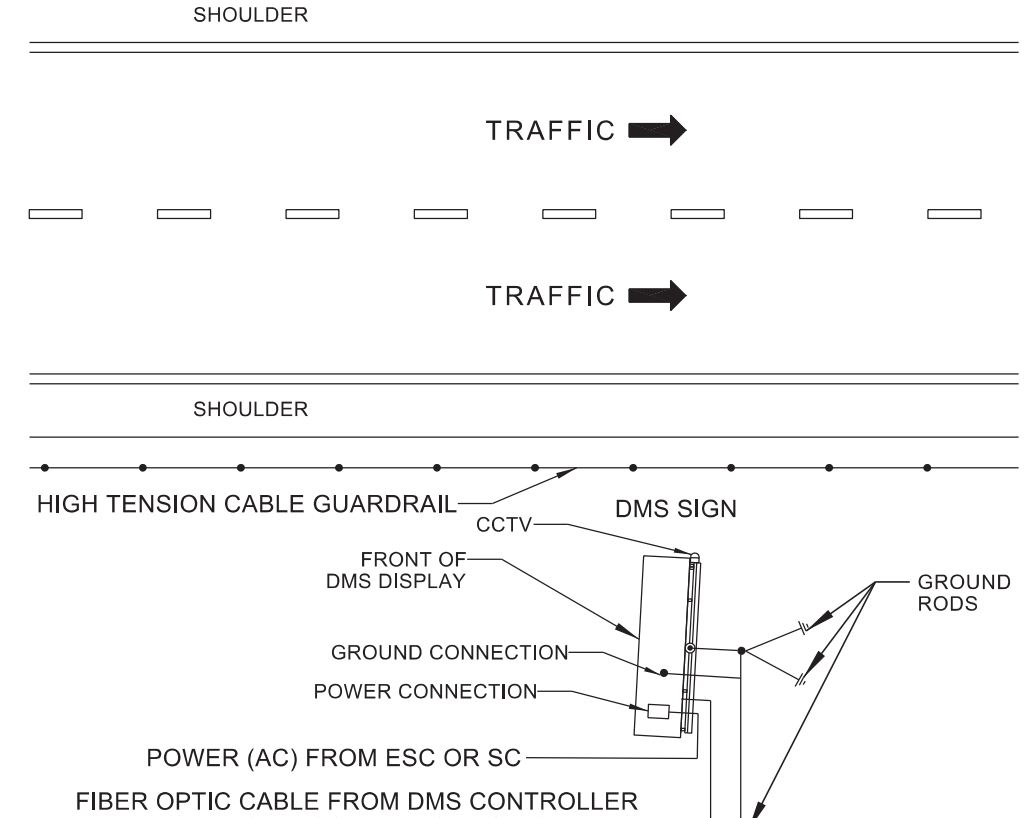
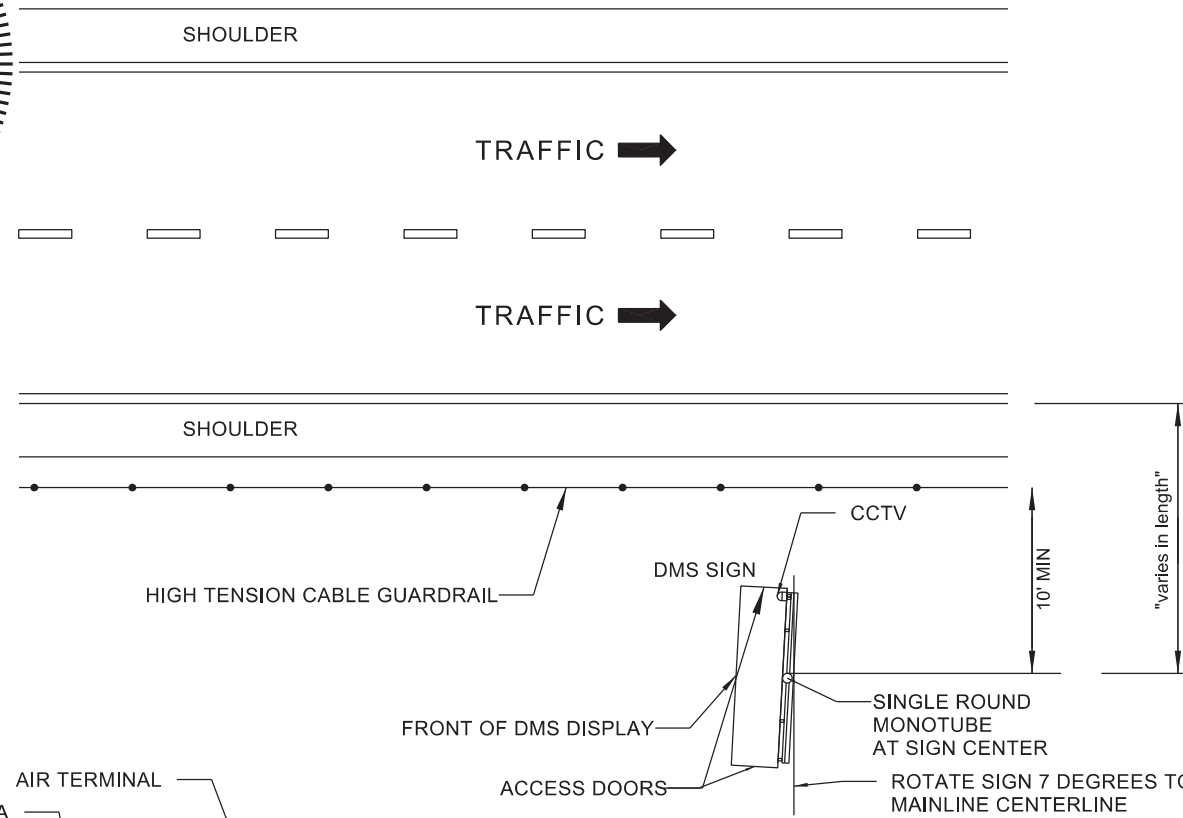
- 6 THE CABINET BASE CONDUIT MUST BE HIGHER THAN SURROUNDING PULL BOXES. THE HEIGHT OF CONDUITS ENDING IN THE CABINET MUST BE HIGHER THAN THE OTHER END TO PREVENT WATER ENTRY DUE TO HYDROSTATIC PRESSURE. ALL CONDUITS WILL HAVE END BELLS INSTALLED OR NO SHARP EDGES.
- ALL COSTS TO FURNISH AND INSTALL THE COMMUNICATION CABINET WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE PER EACH FOR "TYPE 1 COMMUNICATION CABINET"
- SEE STANDARD PLATE 635.60 FOR PAD AND FOOTING INSTALLATION DETAILS



POLE MOUNTED DYNAMIC MESSAGE SIGN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 63	TOTAL SHEETS 95
Plotting Date: 3/25/2026			



POLE MOUNTED DYNAMIC MESSAGE SIGN (DMS) WITHOUT COMM. CABINET - WIRING DIAGRAM
NO SCALE

POLE MOUNTED DYNAMIC MESSAGE SIGN (DMS) WITH COMM. CABINET - WIRING DIAGRAM
NO SCALE

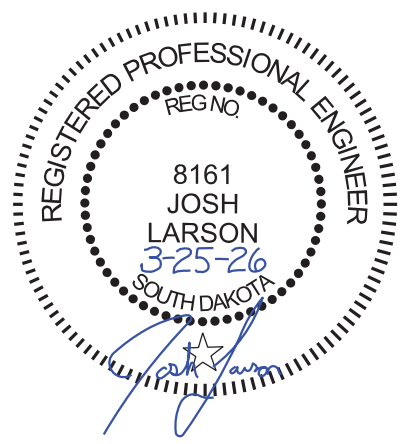
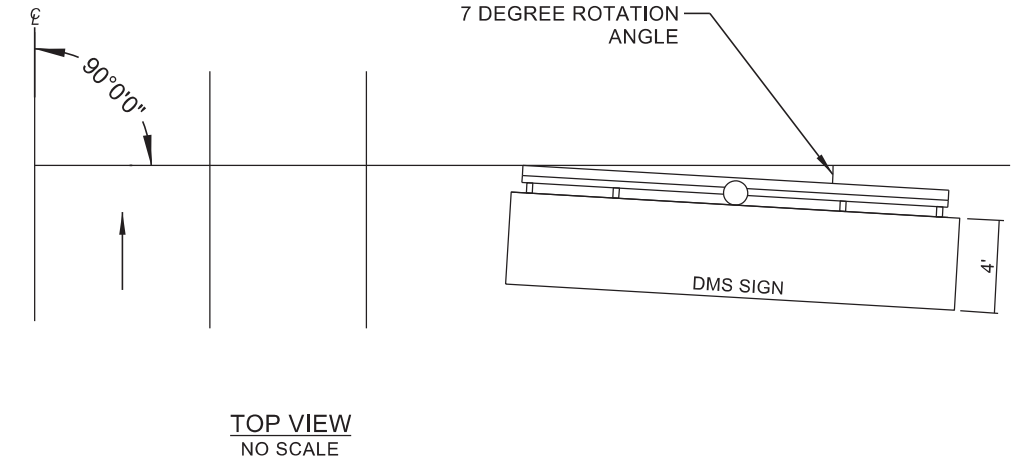
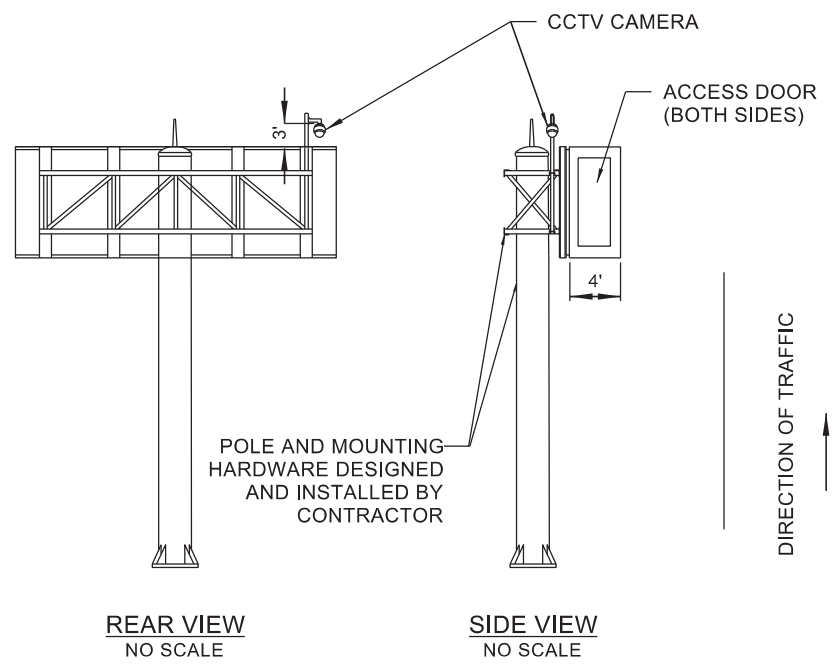
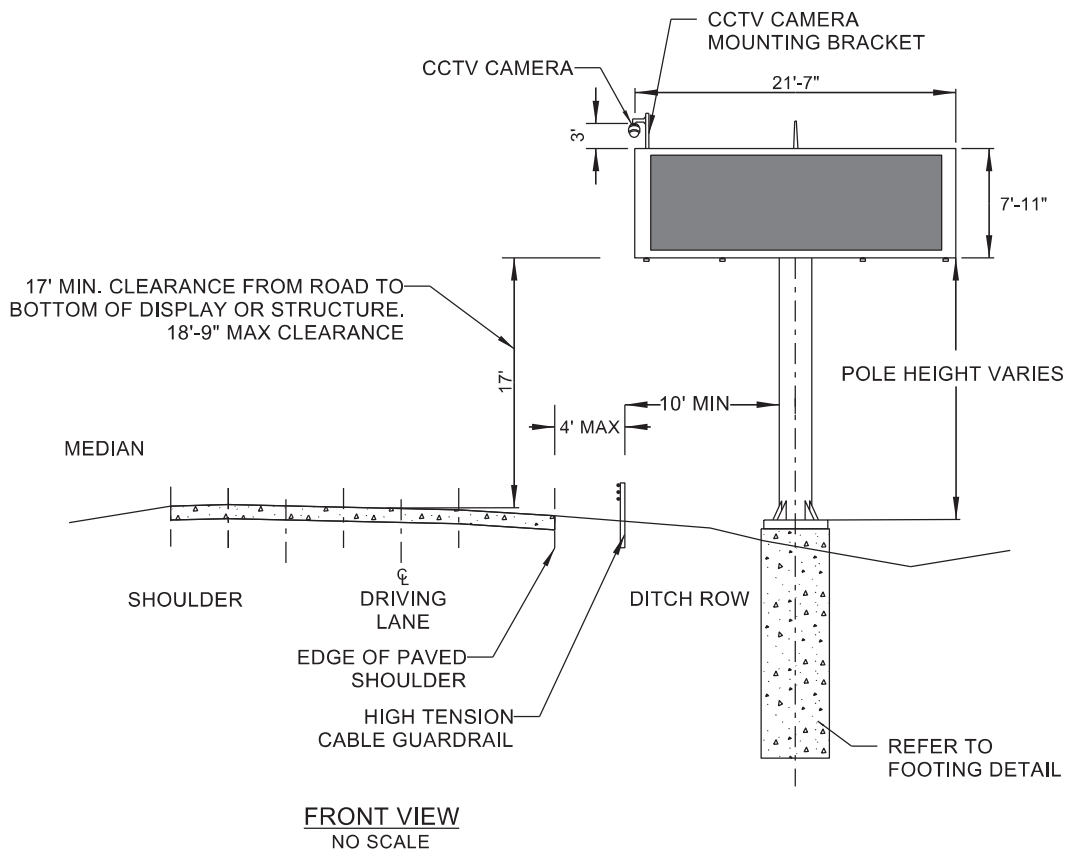
POLE MOUNTED DYNAMIC MESSAGE SIGN (DMS) - GROUNDING DETAIL
NO SCALE

POLE MOUNTED DYNAMIC MESSAGE SIGN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	64	95

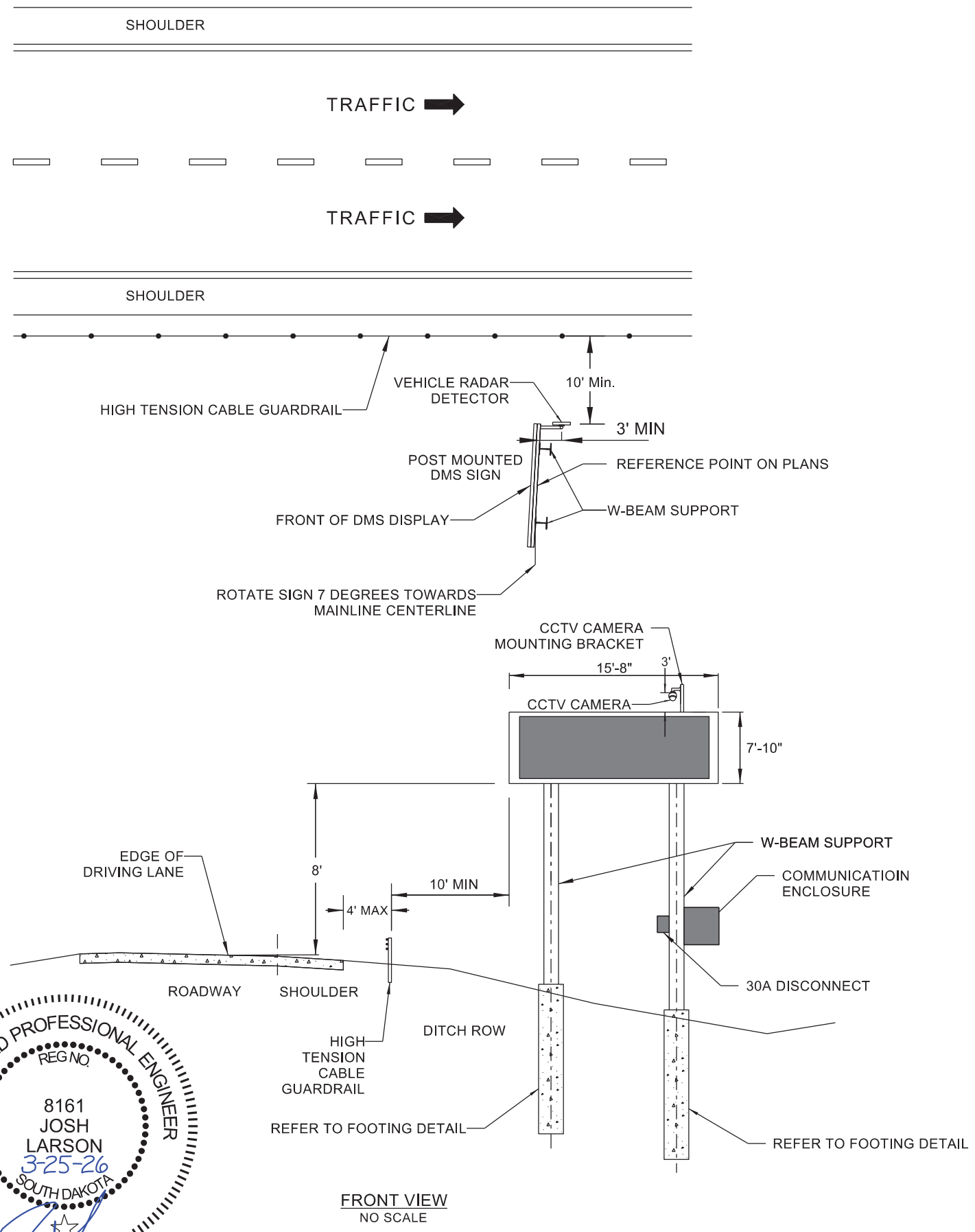
Plotting Date: 3/25/2026



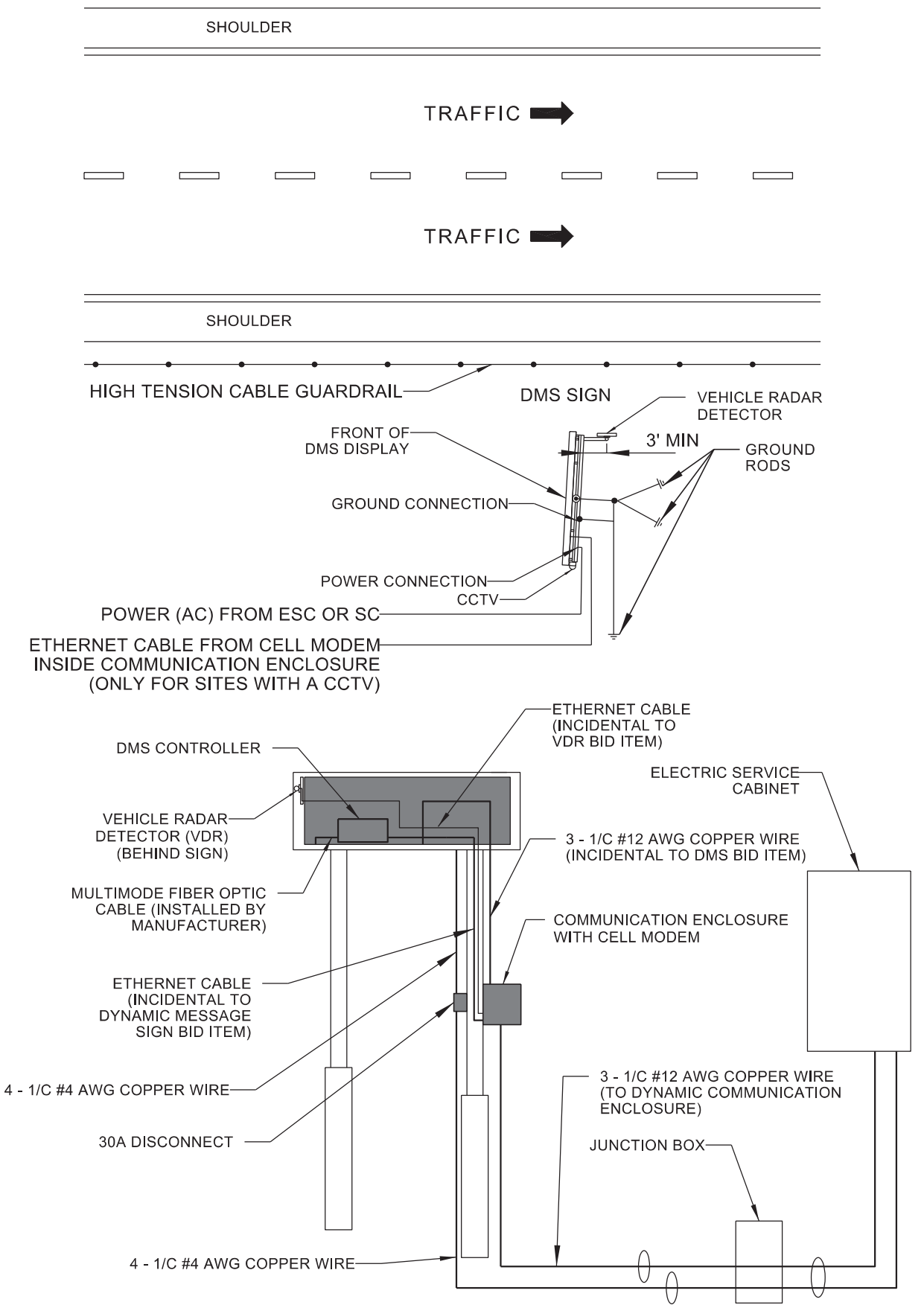
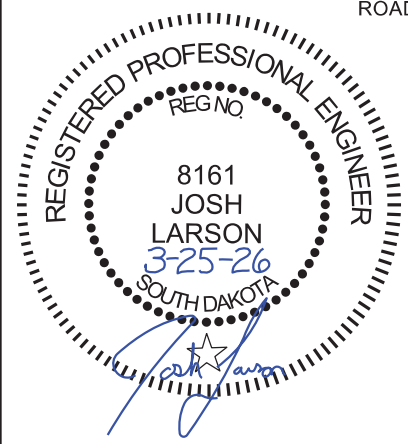
POST MOUNTED DYNAMIC MESSAGE SIGN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	65	95
Plotting Date: 3/25/2026			



FRONT VIEW
NO SCALE

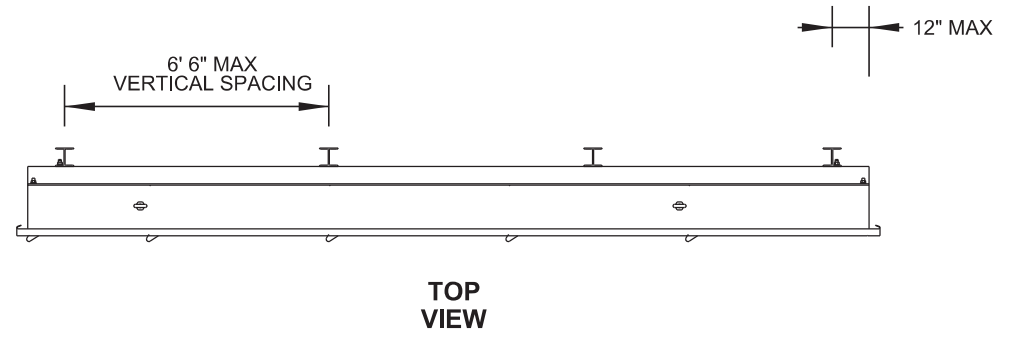


POST MOUNTED DYNAMIC MESSAGE SIGN (DMS) - WIRING DIAGRAM
NO SCALE

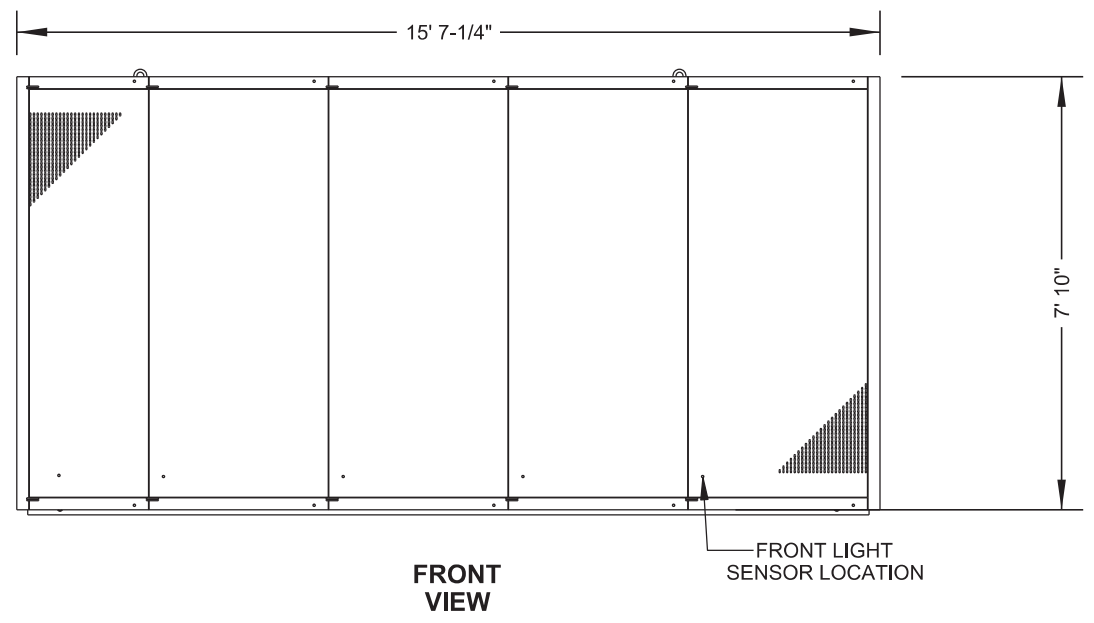
POST MOUNTED DYNAMIC MESSAGE SIGN SUPPORT

FOR BIDDING PURPOSES ONLY

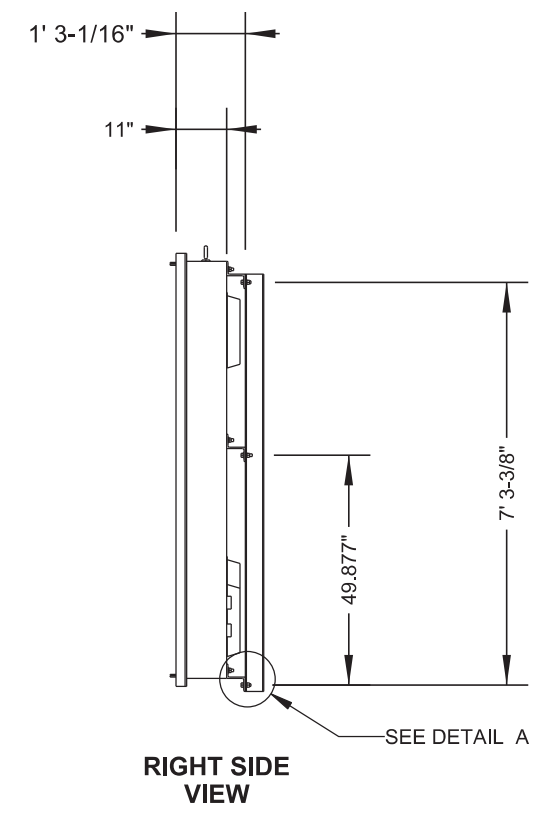
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	66	95
Plotting Date: 3/25/2026			



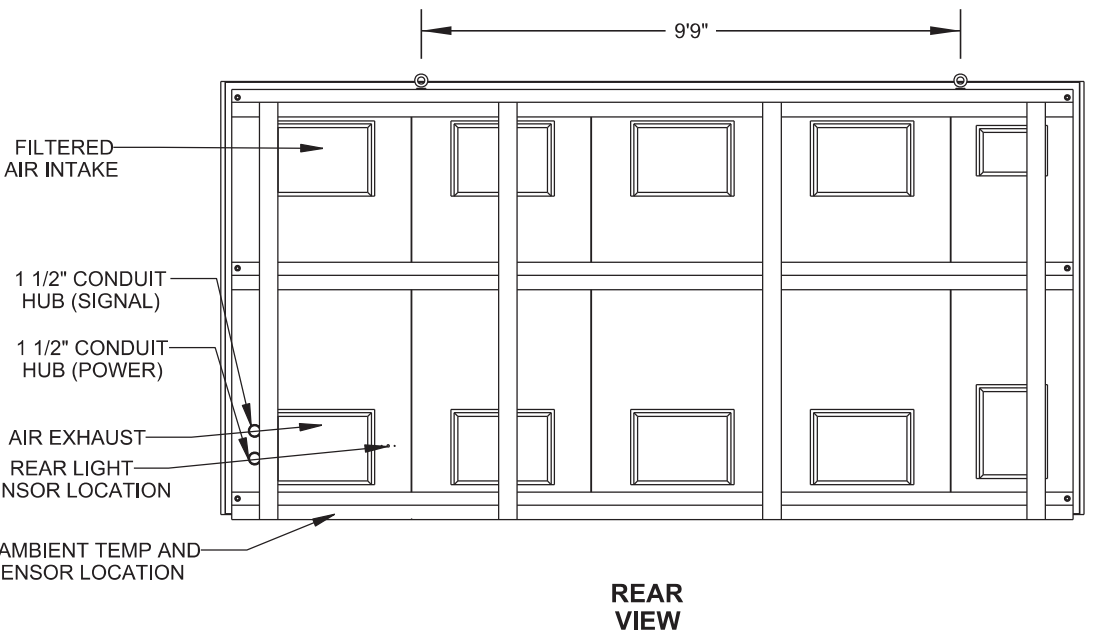
TOP VIEW



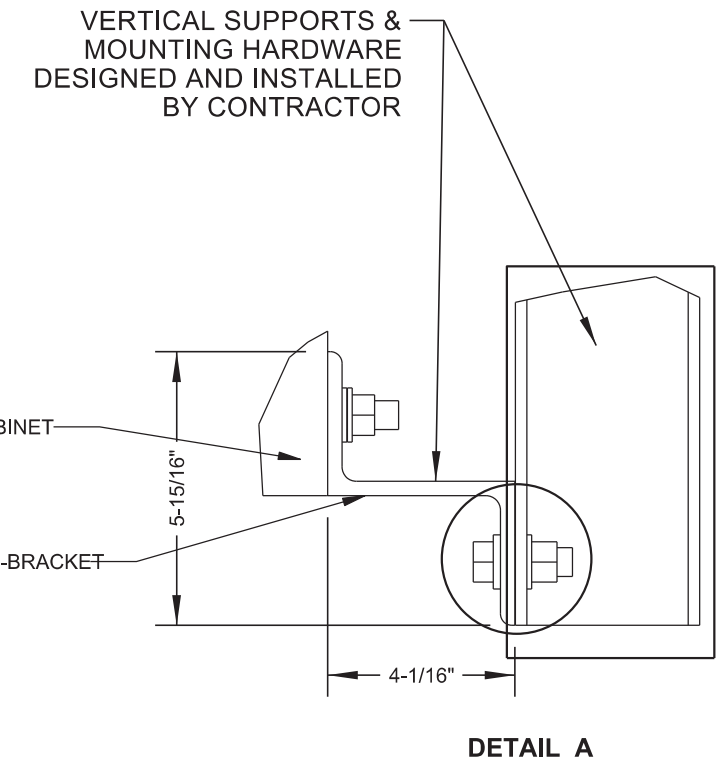
FRONT VIEW



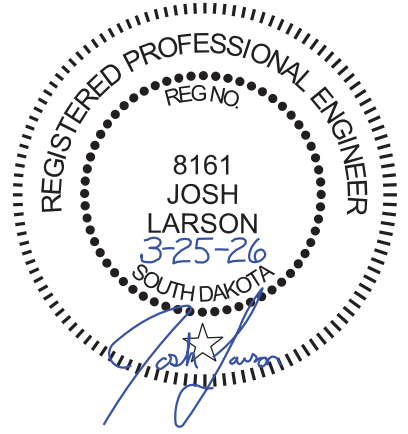
RIGHT SIDE VIEW



REAR VIEW



DETAIL A



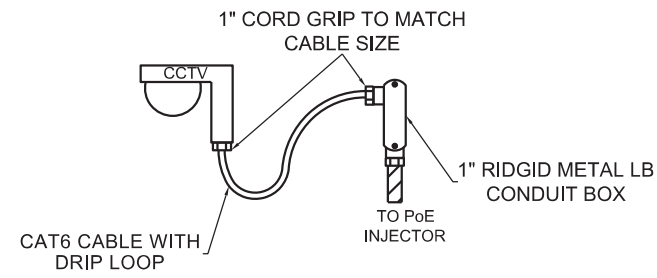
NOTES:

- ENCLOSURE IS MADE OF 0.125" ALUMINUM .
- ENCLOSURE COLOR IS LIGHT GRAY TEXTURED FINISH INSIDE AND OUT.
- STAINLESS STEEL LATCHES (PADLOCKABLE)
- NEMA/EEMAC TYPE 4, 4X, 12, 13 ENCLOSURE.
- DIMENSIONS SHOWN: INCHES.
- REMOVABLE DOOR WITH CONTINUOUS HINGE AND GASKET RETAINERS.
- SDDOT TO SUPPLY CELL MODEM, ANTENNA, AND DC POWER SUPPLY. THE CONTRACTOR WILL INSTALL.

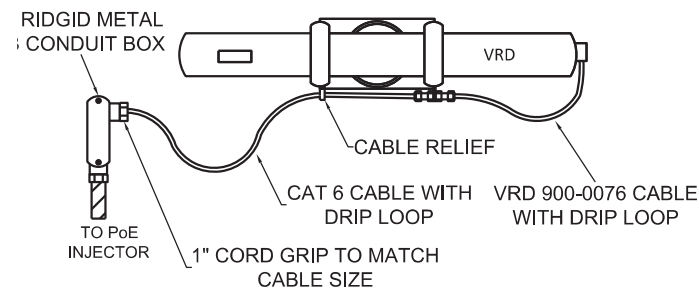
POST MOUNTED DMS COMMUNICATION ENCLOSURE DETAILS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	67	95
Plotting Date: 3/25/2026			

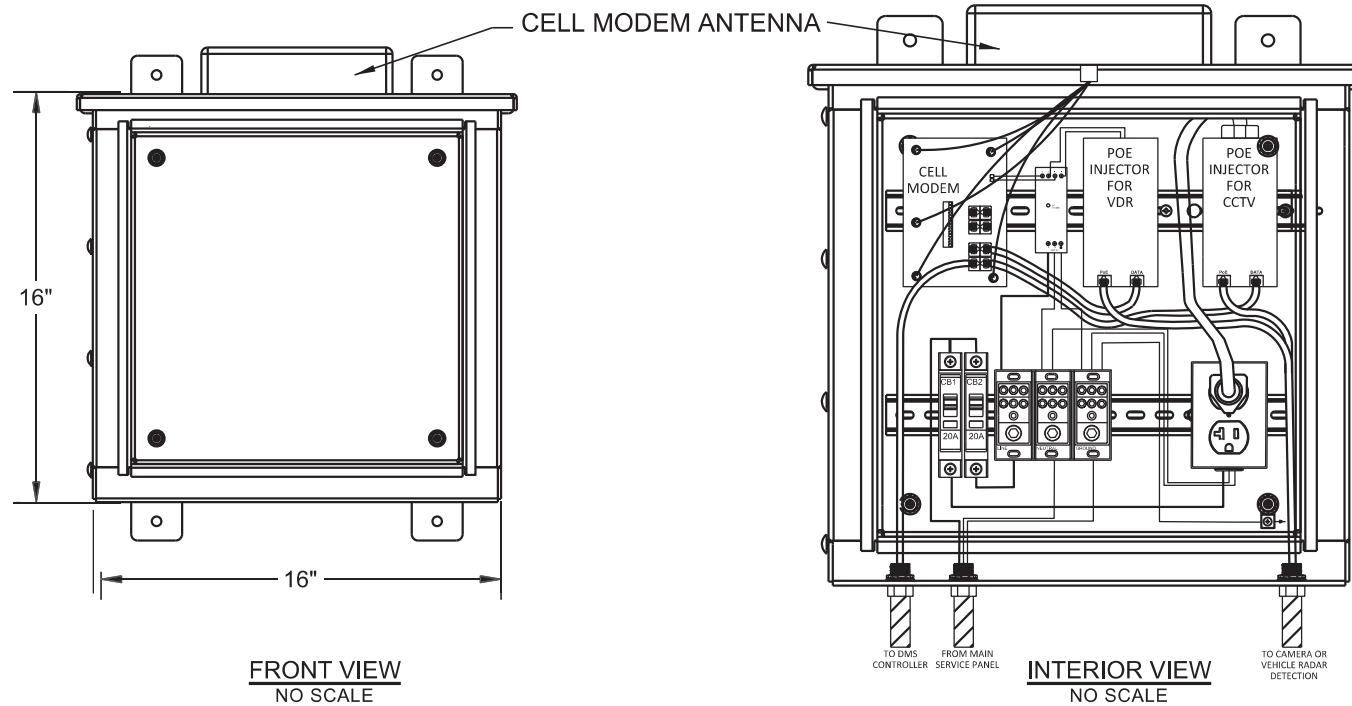
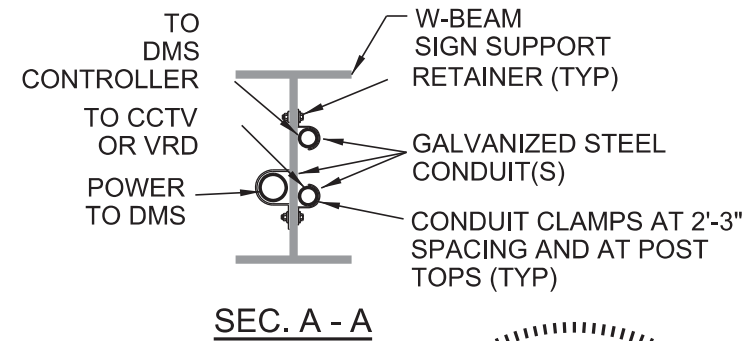
FOR BIDDING PURPOSES ONLY



CCTV ETHERNET CONNECTION DETAIL
NO SCALE

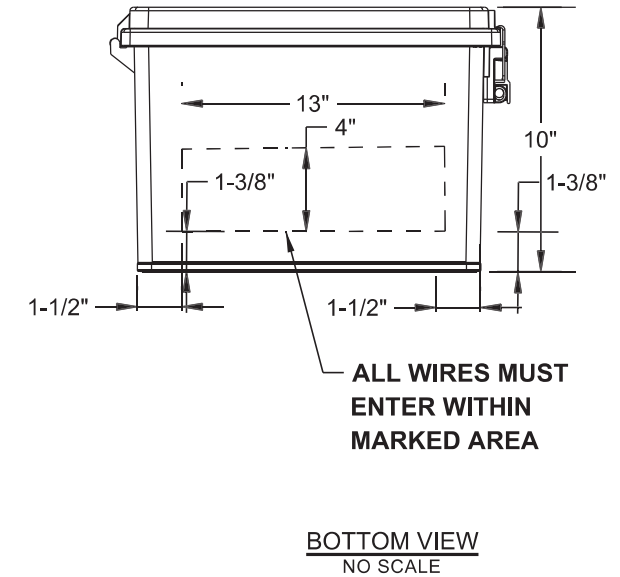


VRD ETHERNET CONNECTION DETAIL
NO SCALE



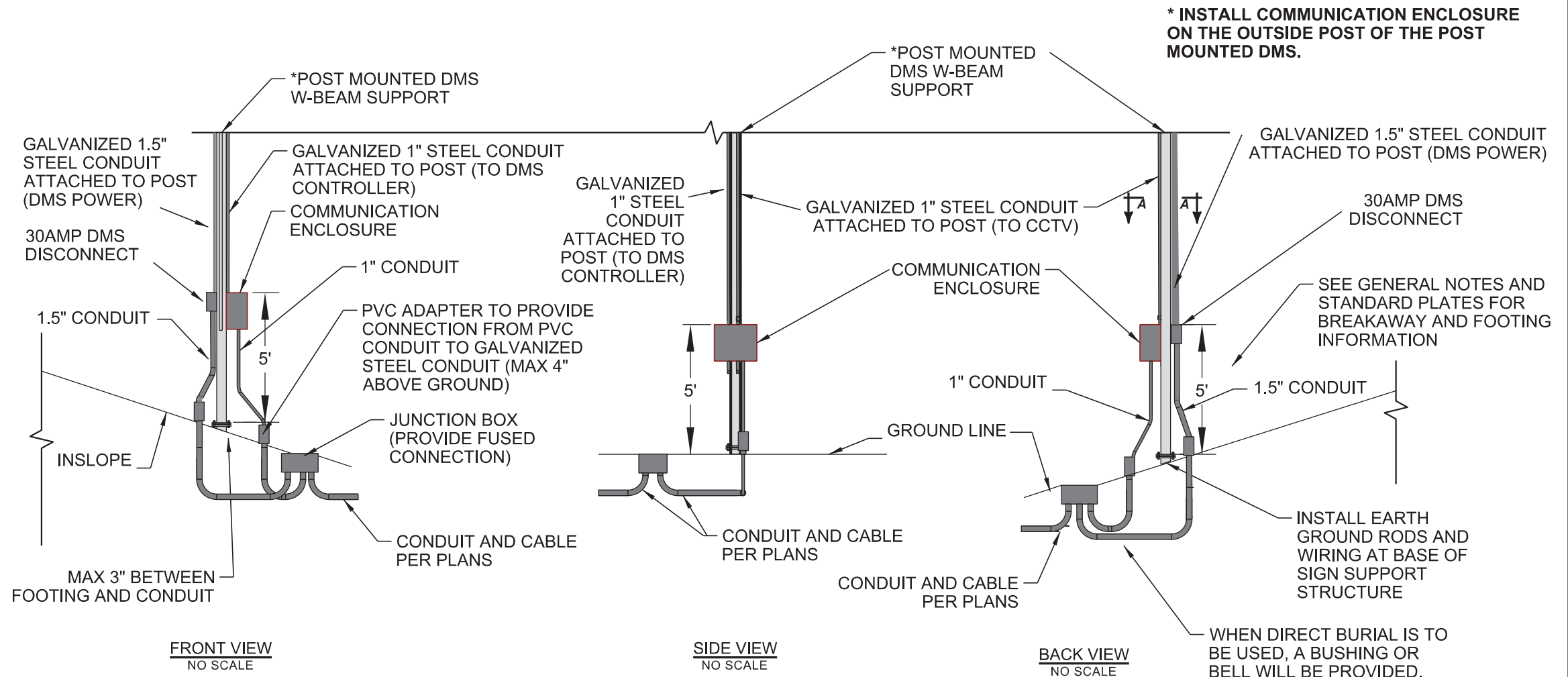
FRONT VIEW
NO SCALE

INTERIOR VIEW
NO SCALE



BOTTOM VIEW
NO SCALE

POST MOUNTED DMS COMMUNICATION ENCLOSURE



FRONT VIEW
NO SCALE

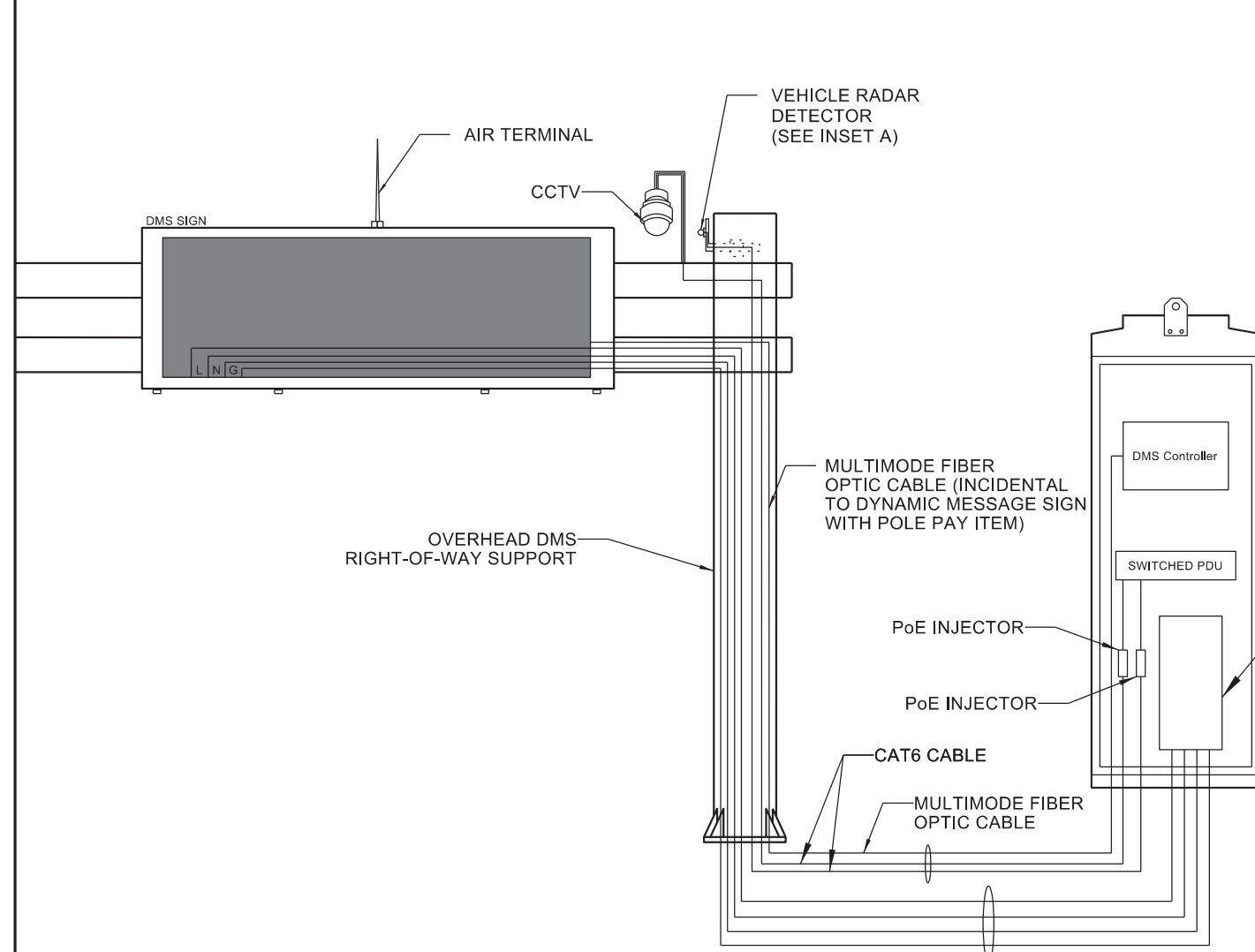
SIDE VIEW
NO SCALE

BACK VIEW
NO SCALE

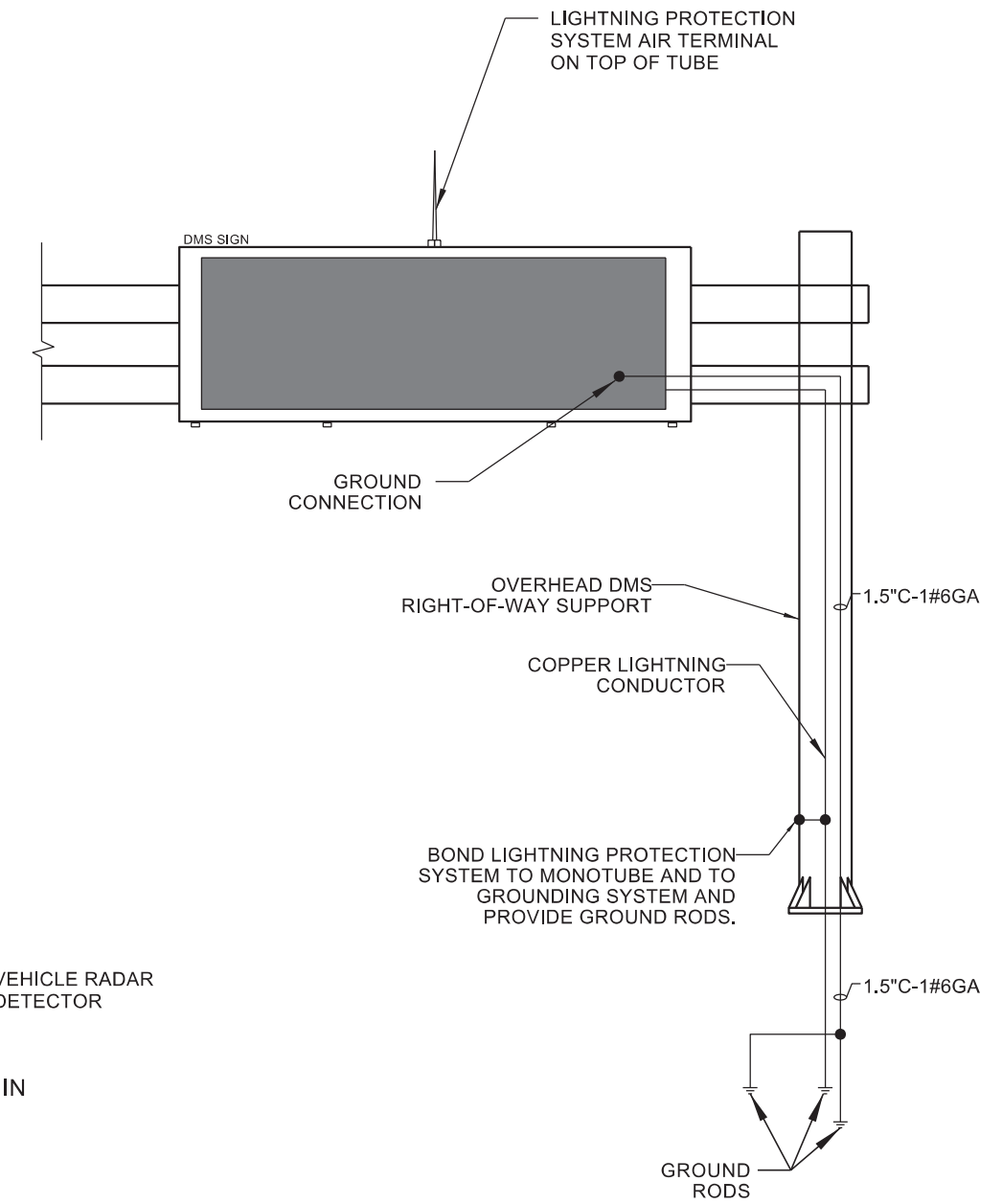
POST MOUNTED DMS COMMUNICATION ENCLOSURE MOUNTING

OVERHEAD DYNAMIC MESSAGE SIGN FOR BIDDING PURPOSES ONLY

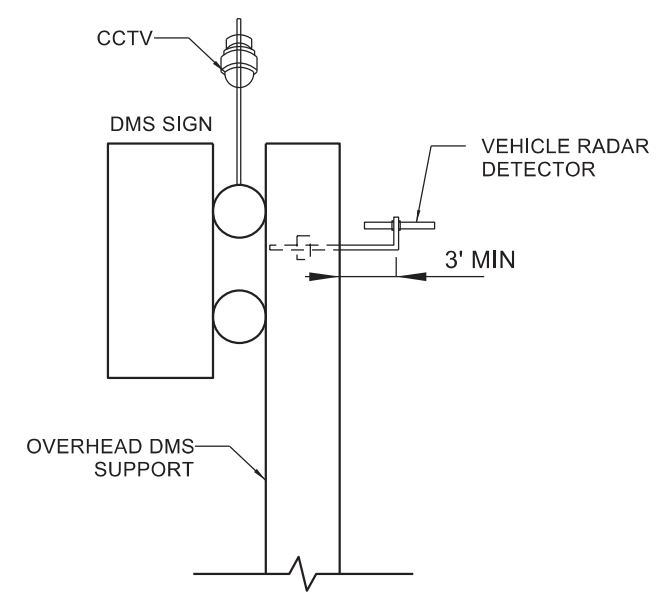
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	68	95
Plotting Date: 3/25/2026			



OVERHEAD DYNAMIC MESSAGE SIGN (DMS) - WIRING DIAGRAM
NO SCALE



OVERHEAD DYNAMIC MESSAGE SIGN (DMS) - GROUNDING DETAIL
NO SCALE



INSET A - OVERHEAD DYNAMIC MESSAGE SIGN (DMS) - SIDE VIEW
NO SCALE



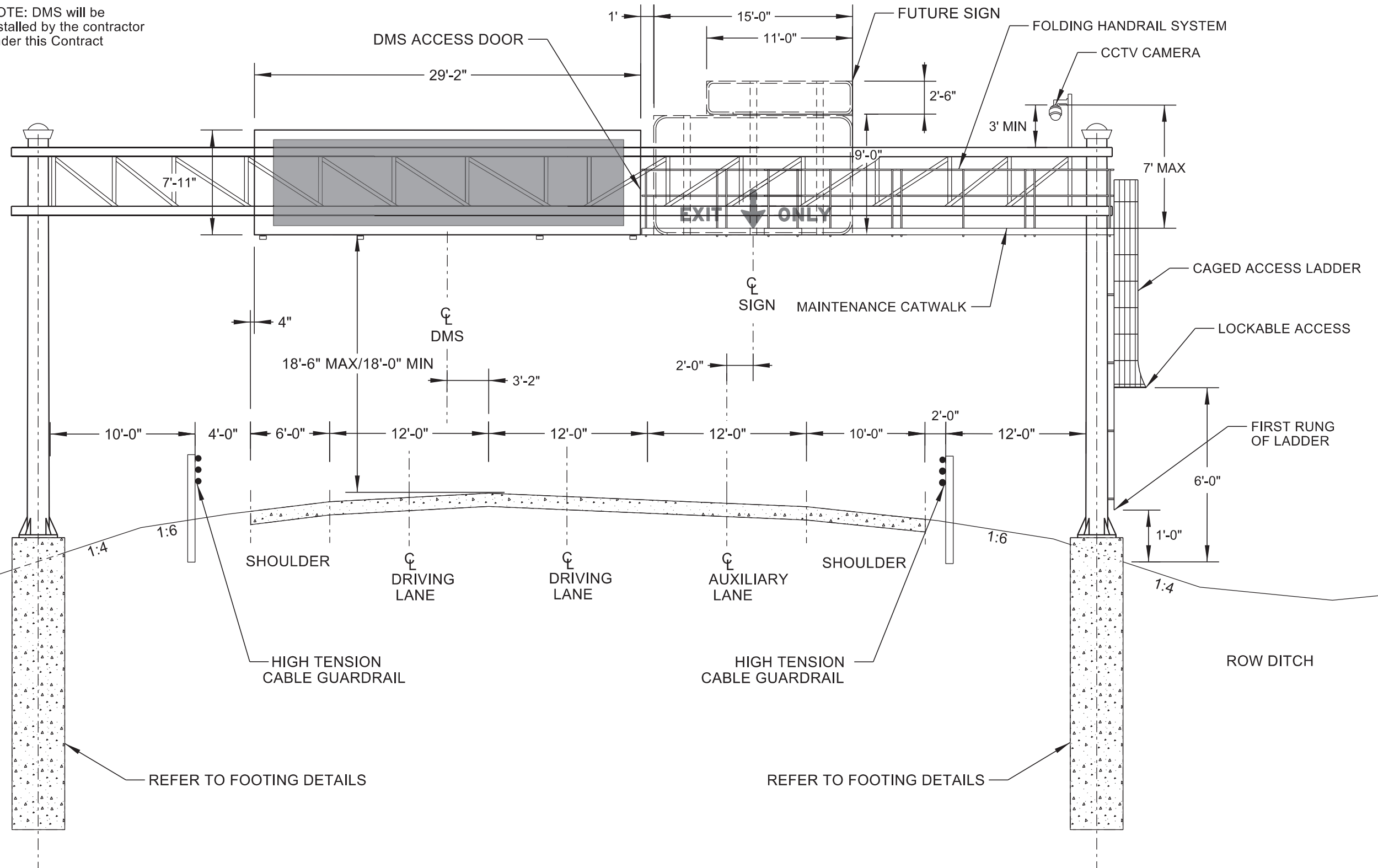


OVERHEAD DMS SUPPORTS FOR BIDDING PURPOSES ONLY

I-90 Eastbound - MRM 399
(LOOKING EAST)

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 69	TOTAL SHEETS 95
Plotting Date: 3/25/2026			

NOTE: DMS will be installed by the contractor under this Contract



NOT TO SCALE

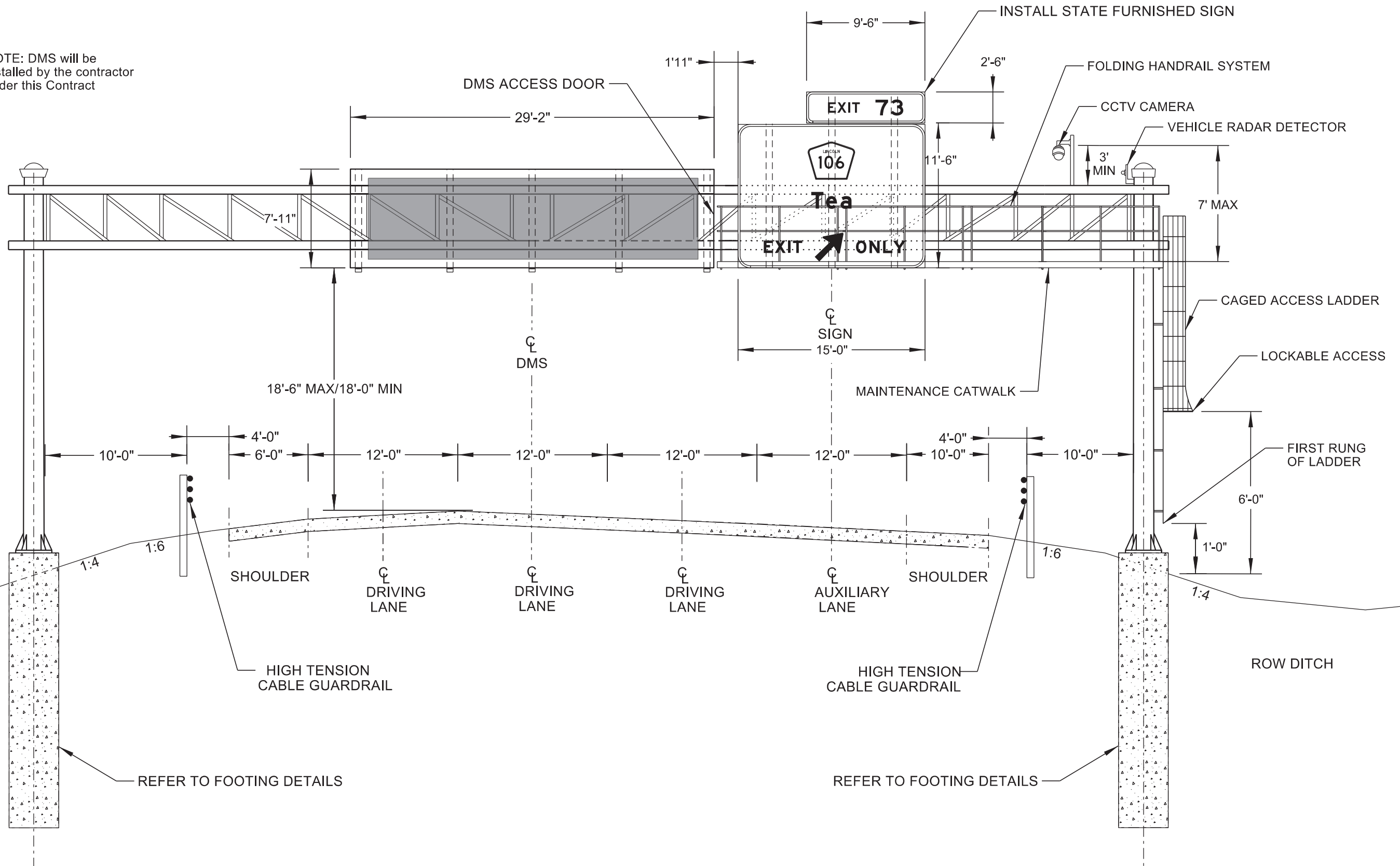


NOTE: DMS will be installed by the contractor under this Contract

OVERHEAD DMS SUPPORTS FOR BIDDING PURPOSES ONLY

I-29 Southbound - MRM 74
(LOOKING SOUTH)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CR 000S(462)	70	95
Plotting Date: 3/25/2026			



NOT TO SCALE

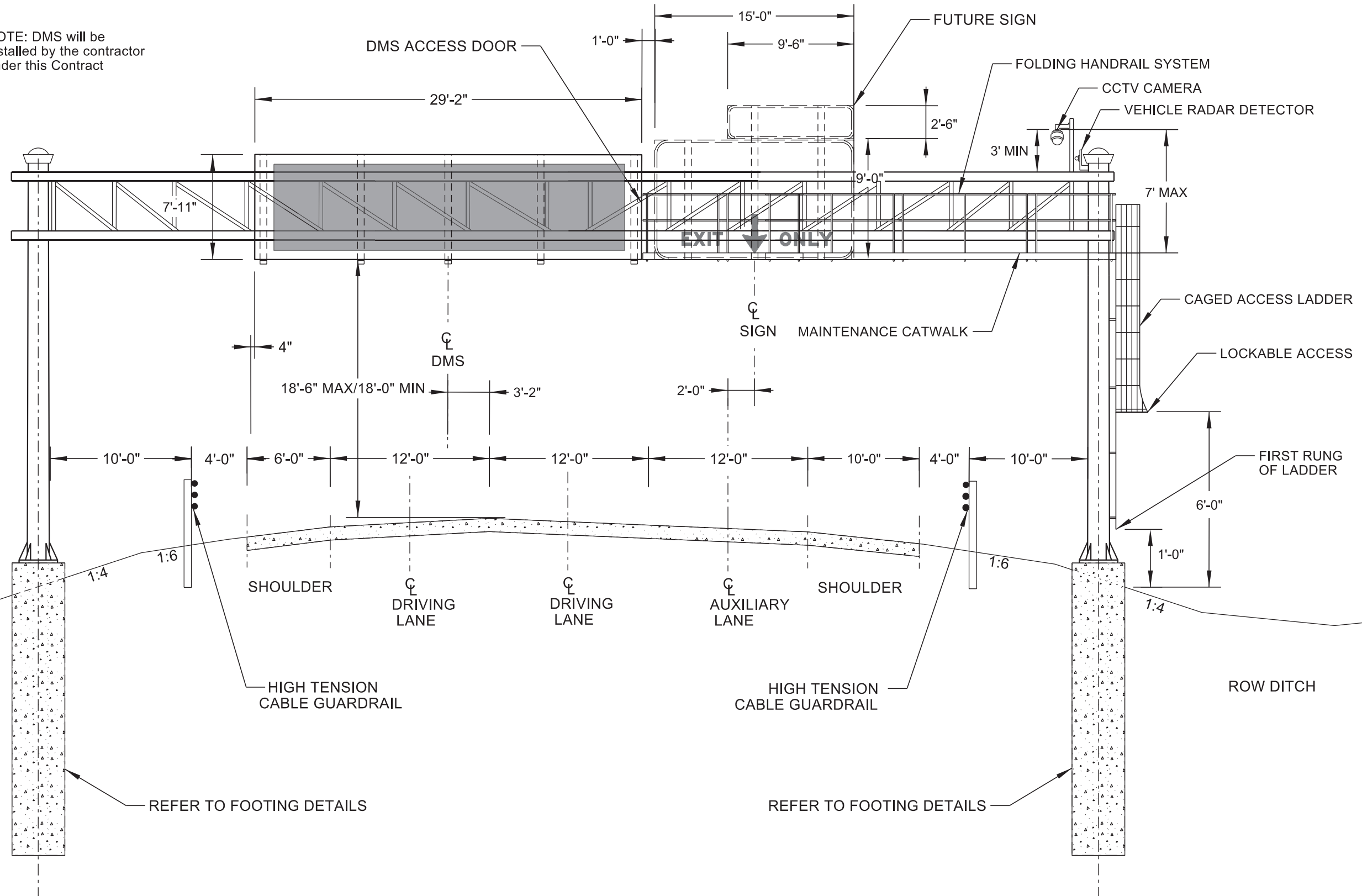


OVERHEAD DMS SUPPORTS FOR BIDDING PURPOSES ONLY

I-29 Southbound - MRM 76
(LOOKING SOUTH)

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 71	TOTAL SHEETS 95
Plotting Date: 3/25/2026			

NOTE: DMS will be installed by the contractor under this Contract



NOT TO SCALE

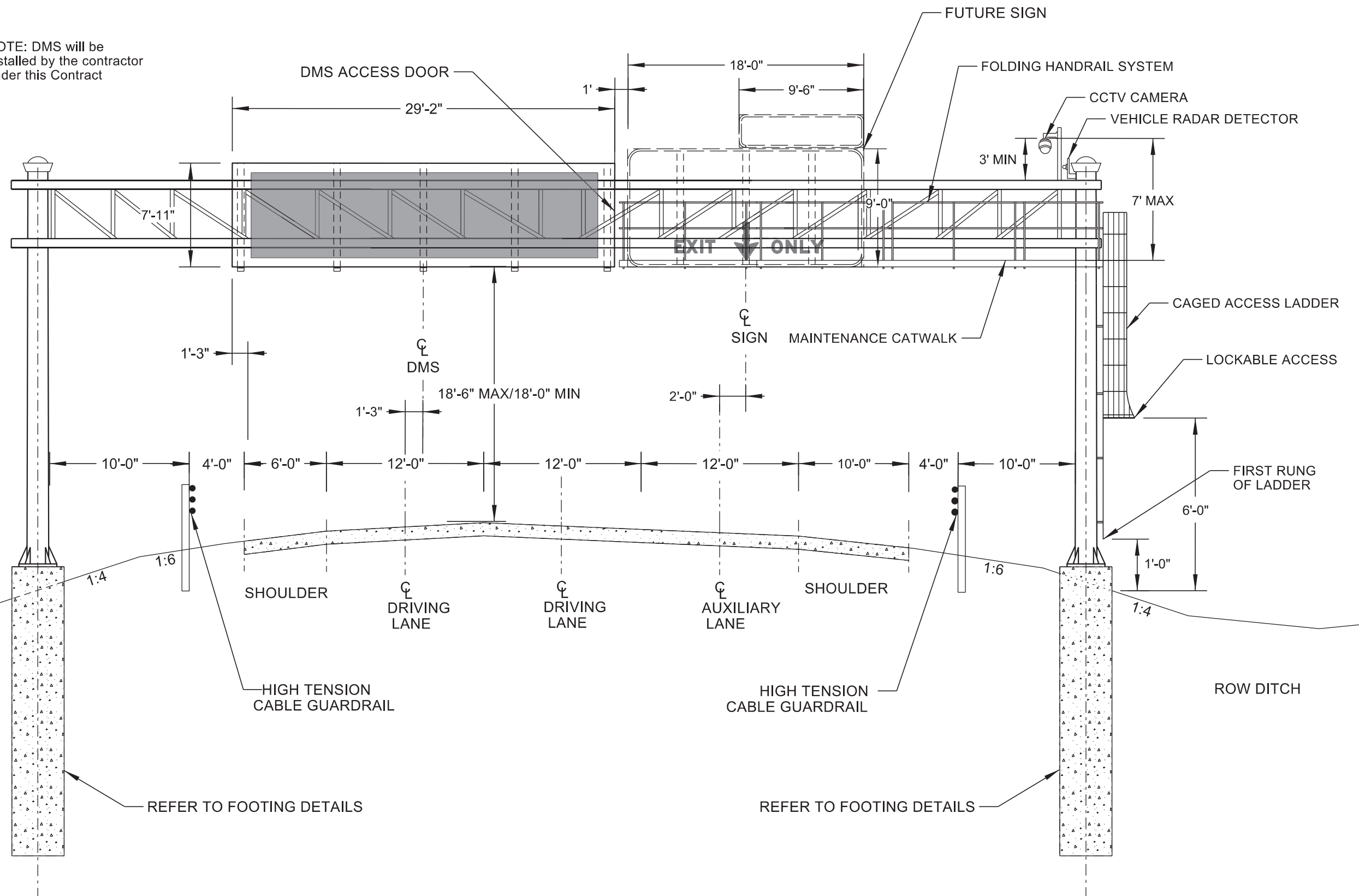


OVERHEAD DMS SUPPORTS FOR BIDDING PURPOSES ONLY

I-229 Northbound - MRM 2
(LOOKING NORTHEAST)

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 72	TOTAL SHEETS 95
Plotting Date: 3/25/2026			

NOTE: DMS will be installed by the contractor under this Contract



NOT TO SCALE

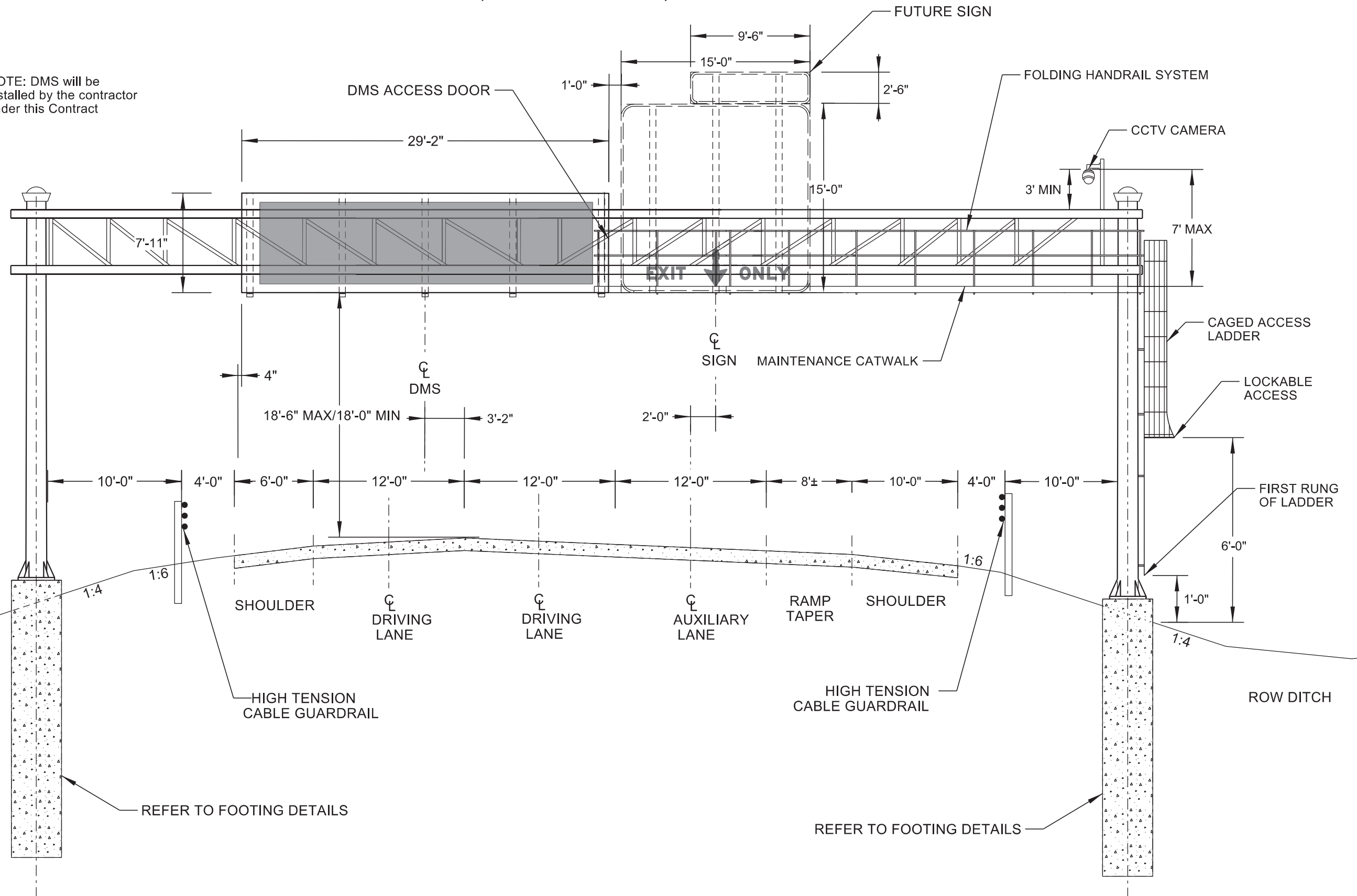


OVERHEAD DMS SUPPORTS FOR BIDDING PURPOSES ONLY

I-229 Southbound - MRM 9
(LOOKING SOUTH)

STATE OF SOUTH DAKOTA	PROJECT CR 000S(462)	SHEET 73	TOTAL SHEETS 95
Plotting Date: 3/25/2026			

NOTE: DMS will be installed by the contractor under this Contract

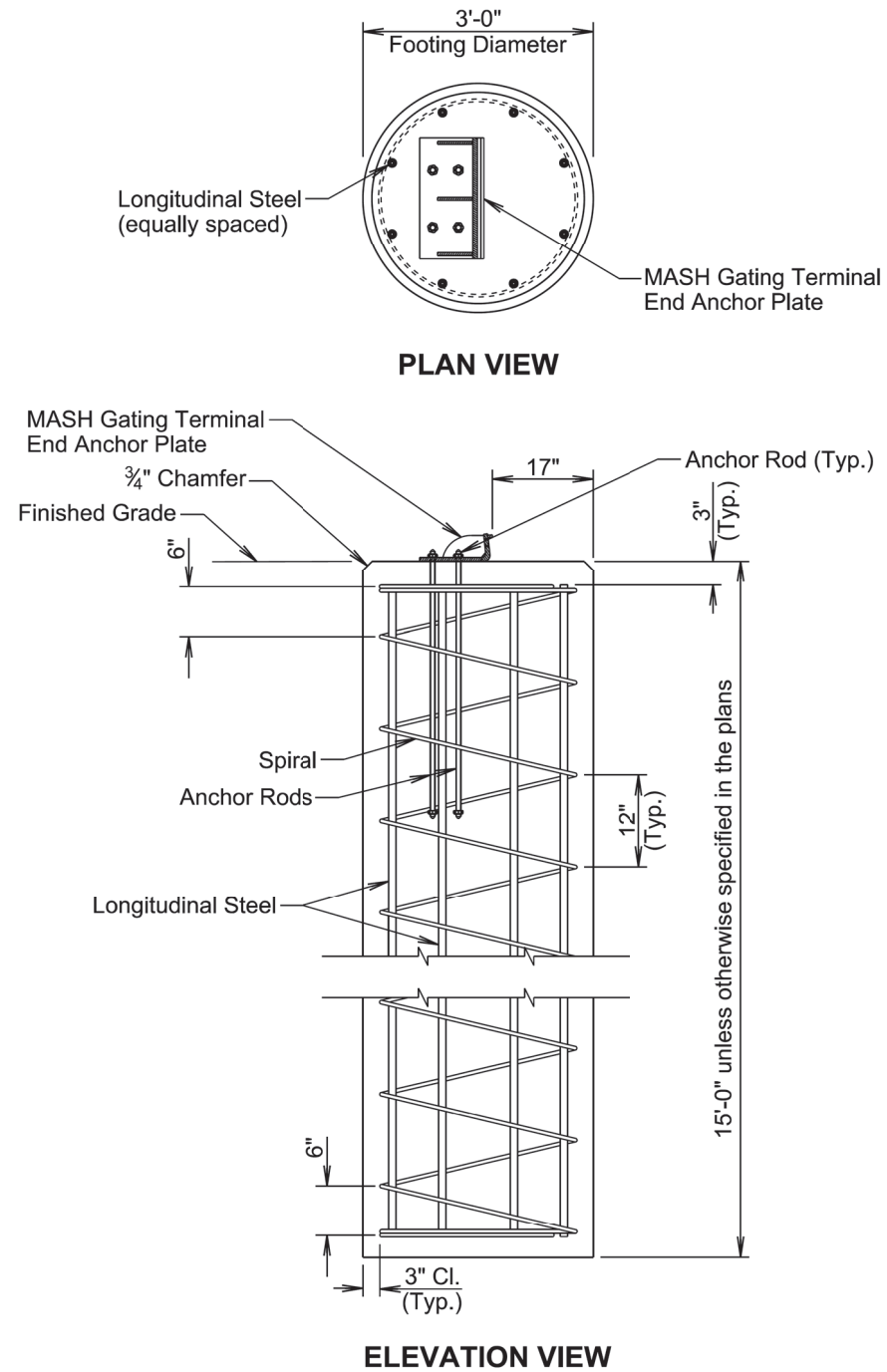


REFER TO FOOTING DETAILS

REFER TO FOOTING DETAILS

NOT TO SCALE

**HIGH TENSION CABLE GUARDRAIL
CYLINDRICAL ANCHOR FOOTING**
Sheet 1 of 2



**HIGH TENSION CABLE GUARDRAIL
CYLINDRICAL ANCHOR FOOTING**
Sheet 2 of 2

INFORMATIONAL QUANTITIES								
* Footing Dimensions		Longitudinal Steel			Spiral Steel			Concrete
Dia.	Depth	No.	Size	Length	Dia.	Size	Length	Cu. Yd.
3'-0"	12'-0"	8	10	11'-6"	2'-6"	5	114'-0"	3.1
3'-0"	13'-0"	8	10	12'-6"	2'-6"	5	122'-0"	3.4
3'-0"	14'-0"	8	10	13'-6"	2'-6"	5	130'-0"	3.7
3'-0"	15'-0"	8	10	14'-6"	2'-6"	5	138'-0"	3.9

GENERAL NOTES:

* Footing dimensions will be 3'-0" diameter and 15'-0" depth unless specified otherwise in the plans.

Circular ties may be used in lieu of the spiral ties. The No. 5 ties will be spaced 12 inches apart except for the top and bottom two which will be spaced 6 inches apart. The ties will be lapped 18 inches and the laps will be staggered around the cage.

Spiral ties will have 1-1/2 extra turns at each end.

The longer excavations are left open, the more likely caving will occur. Operations should be sequenced so that concrete placement operations closely follow excavation procedures but at a minimum placed the same working day.

The High Tension Cable Guardrail Cylindrical Anchor Footings will be constructed in accordance with the Special Provision for Cylindrical Concrete Footings, except all costs for materials, labor, and equipment necessary to construct the footings will be incidental to the contract unit price per each for "High Tension Cable Guardrail Anchor Assembly".

All exposed edges will be chamfered 3/4 inch.

All reinforcing steel will conform to ASTM A615 Grade 60.

MASH Gating Terminal end anchor plate and assembly shown is a proprietary system. The anchor hardware will be installed according to the manufacturer's installation instructions.

SPECIFICATIONS

1. Design Specifications: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition 2013 with 2019 interims.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications>

GENERAL NOTES

1. Concrete Footings will be Class M6 - f'c = 4000 p.s.i.
2. Structural Steel will conform to ASTM A36.
3. All Reinforcing Steel, except spirals, will conform to ASTM A615 Grade 60.
4. All exposed edges will be chamfered 3/4 inch.
5. Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
6. All Anchor Rods will conform to ASTM F1554, Grade 36 having a minimum yield stress of 36000 p.s.i. Anchor Bolts will be cleaned to remove any oil from the threading process before galvanizing.
7. Anchor Rods will have 7" thread length on both ends.
8. All nuts will conform to ASTM A563, DH. All nuts will be heavy hex. All washers will conform to ASTM F436.
9. All structural steel including the Steel Posts will be galvanized according to ASTM A123. The Nuts, Washers and 10" of the exposed end of the Anchor Rods will be galvanized according to ASTM F2329.
10. All Rod Holes will be drilled. All plate cuts will preferably be Saw Cuts, however, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
11. All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.

SITE LOCATION	SUBSURFACE SOIL	GROUNDWATER DEPTH
DMS 12-295 (US 12 EB)	0' - 4' Clay Silt 4' - 13' Fine Brown Silt Sand 13' - 20' Soft Gray Silt	5.0' (September 2025)

SELECT GRANULAR BACKFILL

1. Select Granular Backfill will conform to the following gradation requirements:

Passing a 2 -inch Sieve	100%
Passing a 1 1/2 - inch Sieve	90 - 100%
Passing a 1 - inch Sieve	20 - 45%
Passing a 3/4 - inch Sieve	0 - 15%
Passing a 3/8 - inch Sieve	0 - 5%
Passing a No. 4 Sieve	0 - 5%
2. All other requirements of the Specification for Select Granular Backfill will apply. Select Granular Backfill will be paid for at the unit price per ton.
3. Select Granular Backfill will be placed in six-inch lifts. Each lift will be thoroughly watered and compacted with at least four passes of a mechanical tamper, roller, or vibratory system. If adequate compaction is not achieved, increase the number of passes, increase the size of the compaction system, or decrease the thickness of the lift, as directed by the Engineer.

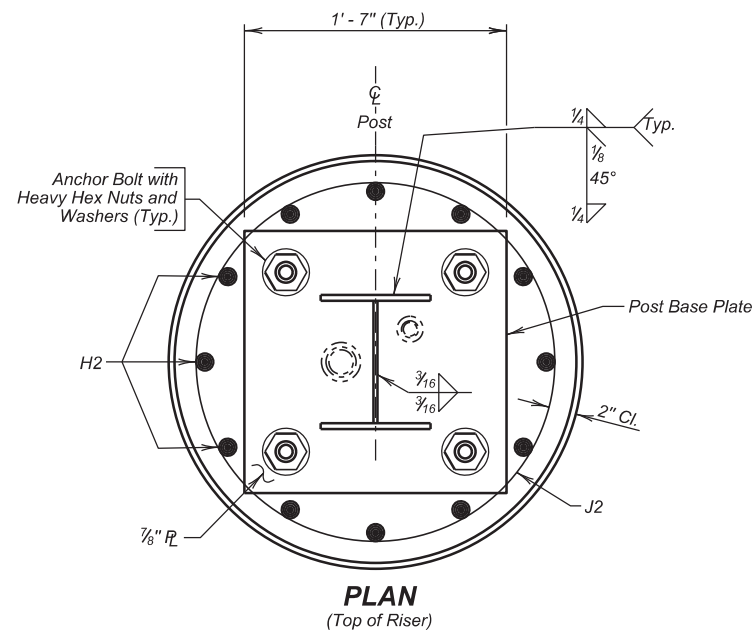
GEOGRID SPECIFICATION

1. Geogrid will be a biaxial grid of single layer construction. Vibratory welded, integrally formed or woven and coated geogrids will be acceptable. Grids with laser welded grid junctions will not be allowed. Geogrid will be certified by the supplier to meet the following specification prior to installation:

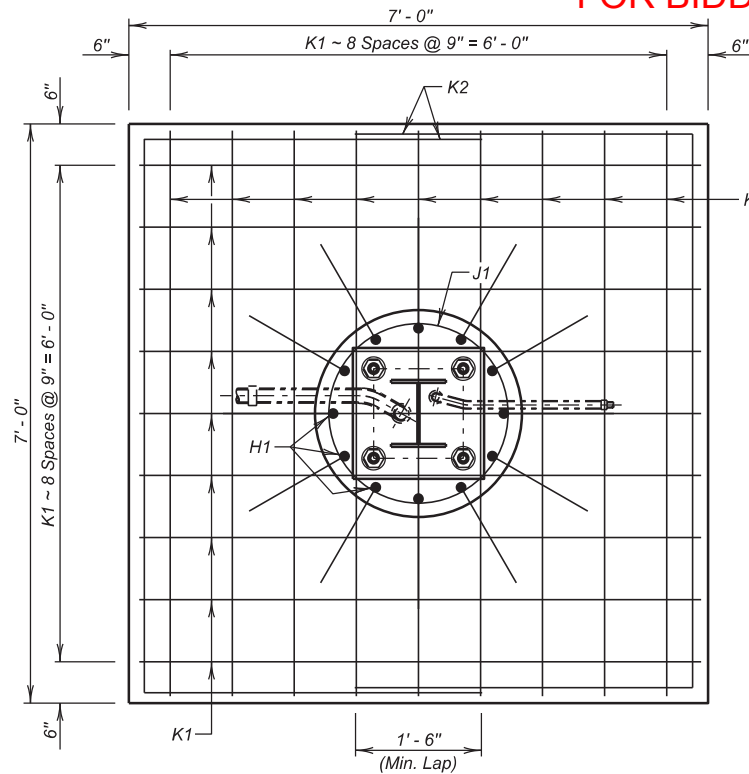
Property	Test	MARV
Wide Width Strip Tensile Strength (Ultimate)	ASTM D 6637	1,300 lb/ft MD and XD
2. Geogrid will be paid for at the contract unit price per sq. yd. for Geogrid Reinforcement. Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the geogrid only. Granular backfill materials will be paid for under a different bid item.
3. Geogrid will be placed on a level surface and overlapped a minimum of 1 foot. Seams will be positively connected with mechanical connectors such as heavy-duty zip ties, fiberglass rods, or hog rings as approved by the Engineer.
4. Geogrid will be placed as taut as possible with minimal wrinkles. Placement will be done so that subsequent granular cover material does not shove, wrinkle or distort the in place geogrid. Overlaps will be shingled in a manner that assures granular material will not be forced under the geogrid during backfilling operations.

SHOP PLANS

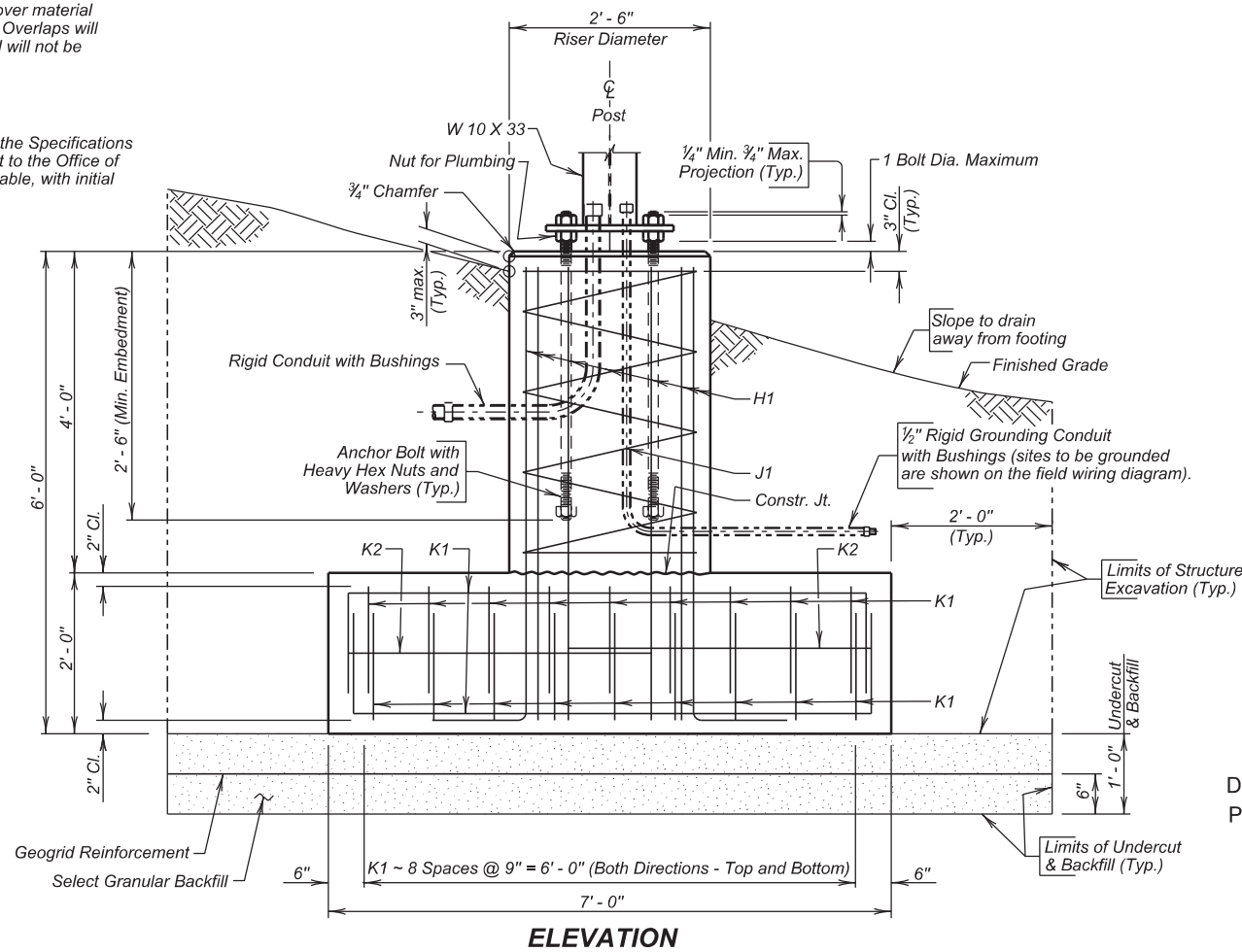
The Fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.



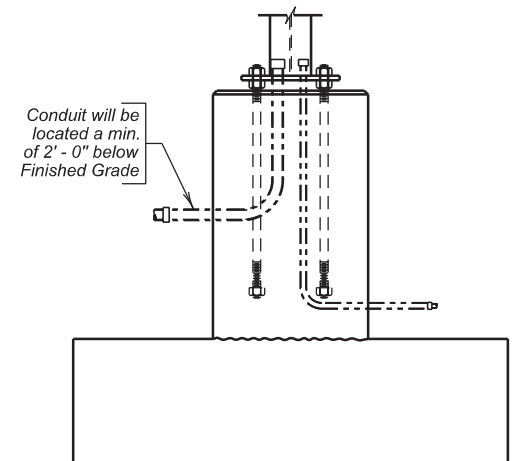
PLAN
(Top of Riser)



PLAN



ELEVATION



ELEVATION

DETAILS
FOR

SPREAD FOOTING FOR DMS SIGN

DMS 12-295
PCN 09L5

CR 000S(462)

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2025

1 OF 3

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY	CK. DES. BY	DRAFTED BY	BRIDGE ENGINEER
BB	JU	BT	Steve A. Johnson

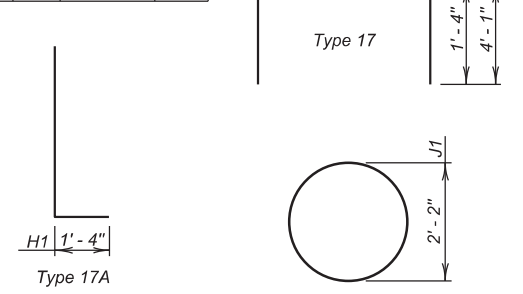
FOR BIDDING PURPOSES ONLY

Revised April 16, 2026 BB/JU

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	75	95

REINFORCING SCHEDULE
(For Two Spread Footings)

Mk.	No.	Size	Length	Type
H1	24	7	6' - 11"	17A
J1	2	4	68' - 3"	Spiral
K1	72	6	9' - 4"	17
K2	4	4	14' - 10"	17



NOTES:
All dimensions are out to out of bars.
Spirals - Use 6" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required or weld as approved by the Office of Bridge Design. Spirals may be smooth bars. Bar length shown does not include splices.

ESTIMATED QUANTITIES
(For Two Spread Footings)

ITEM	UNIT	QUANTITY
Reinforcing Steel	Lb.	1479
Class M6 Concrete	Cu. Yd.	8.8
Structure Excavation, Miscellaneous	Cu. Yd.	53.8
Select Granular Backfill	Ton	17.0
Geogrid Reinforcement	Sq. Yd.	30.9
Footing Undercut	Cu. Yd.	9.0

For estimating purposes only, a factor of 1.89 tons/cu. yd. was used to convert cu. yds. to tons.
Geogrid Reinforcement will be biaxial geogrid. Geogrid Reinforcement quantity is based on area covered plus 15% to account for overlaps.

Revised April 16, 2026 BB/JU

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	76	95

SPECIFICATIONS

- Design Specifications: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition 2013 with 2019 interims.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications>

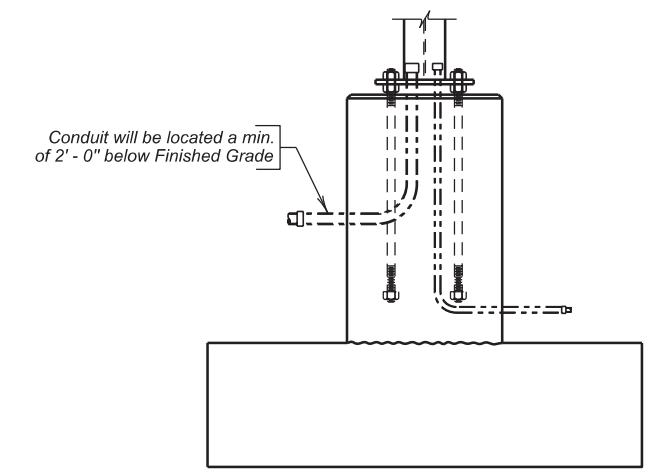
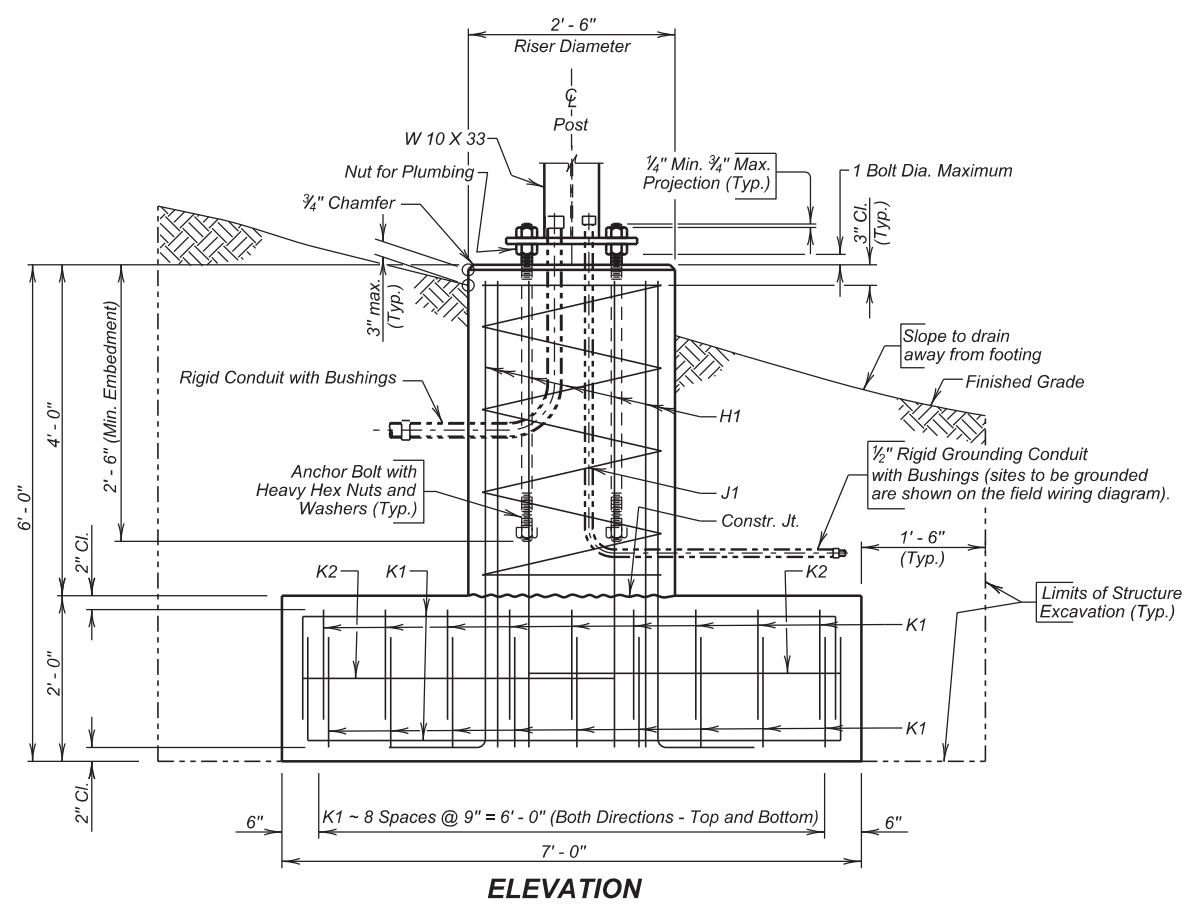
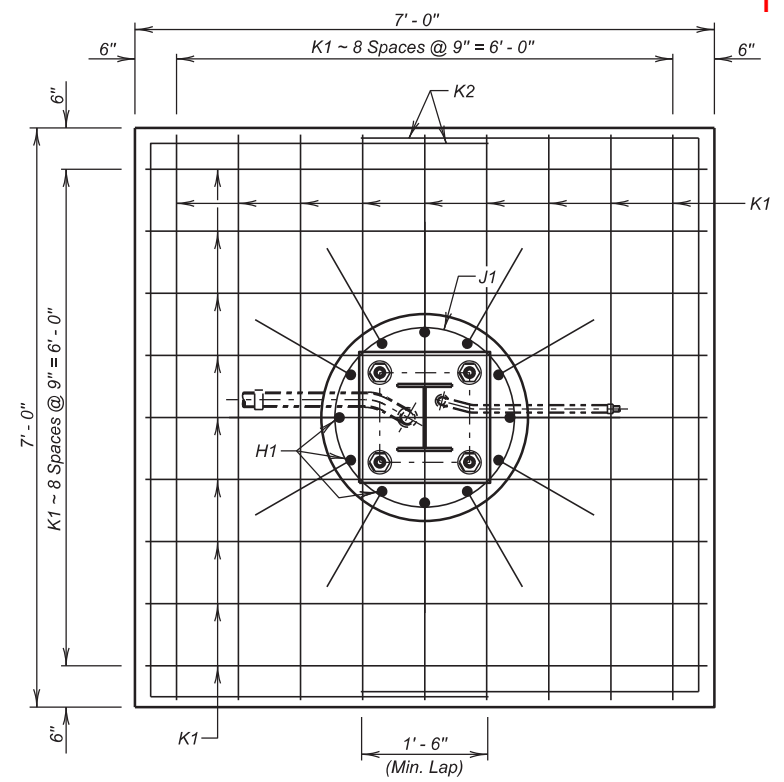
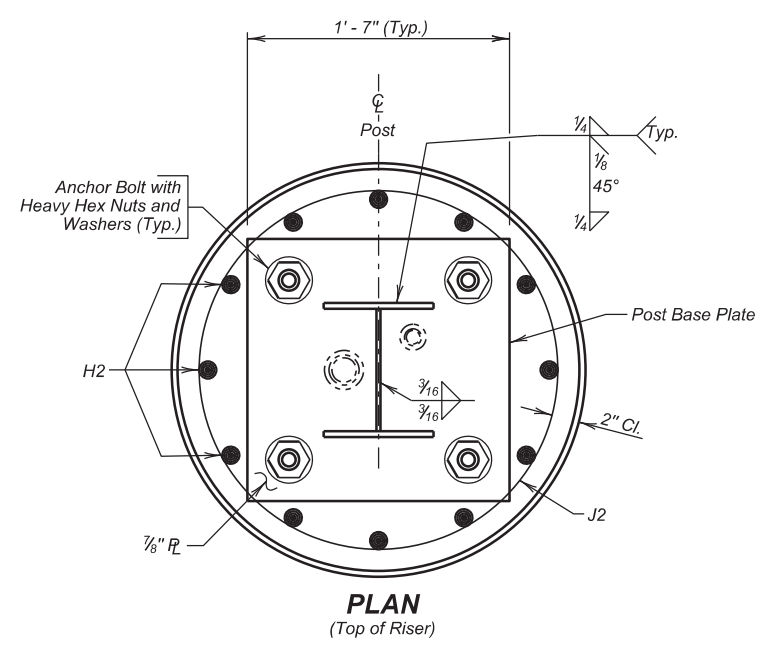
GENERAL NOTES

- Concrete Footings will be Class M6 - $f'c = 4000$ p.s.i.
- Structural Steel will conform to ASTM A36.
- All Reinforcing Steel, except spirals, will conform to ASTM A615 Grade 60.
- All exposed edges will be chamfered $\frac{3}{4}$ inch.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Anchor Rods will conform to ASTM F1554, Grade 36 having a minimum yield stress of 36000 p.s.i. Anchor Bolts will be cleaned to remove any oil from the threading process before galvanizing.
- Anchor Rods will have 7" thread length on both ends.
- All nuts will conform to ASTM A563, DH. All nuts will be heavy hex. All washers will conform to ASTM F436.
- All structural steel including the Steel Posts will be galvanized according to ASTM A123. The Nuts, Washers and 10" of the exposed end of the Anchor Rods will be galvanized according to ASTM F2329.
- All Rod Holes will be drilled. All plate cuts will preferably be Saw Cuts, however, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.
- After the excavation is completed to the bottom of footing elevation, the area will be thoroughly watered and compacted with at least four passes of a mechanical tamper, roller, or vibratory system.

SHOP PLANS

The Fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.

SITE LOCATION	SUBSURFACE SOIL	GROUNDWATER DEPTH
DMS 34-389 (SD 34 EB)	0' - 4' Brown Sand Clay 4' - 21' Brown Sand and Gravel	Caved at 12.1' (September 2025)



SPREAD FOOTING FOR DMS SIGN
DMS 34-389
PCN 09L5

CR 000S(462)

REINFORCING SCHEDULE

(For Two Spread Footings)

Mk.	No.	Size	Length	Type
H1	24	7	7' - 8"	17A
J1	2	4	68' - 3"	Spiral
K1	72	6	9' - 4"	17
K2	4	4	14' - 10"	17

Bending Details

NOTES:
All dimensions are out to out of bars.
Spirals - Use 6" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required or weld as approved by the Office of Bridge Design. Spirals may be smooth bars. Bar length shown does not include splices.

ESTIMATED QUANTITIES

(For Two Spread Footings)

ITEM	UNIT	QUANTITY
Reinforcing Steel	Lb.	1479
Class M6 Concrete	Cu. Yd.	8.8
Structure Excavation, Miscellaneous	Cu. Yd.	44.4

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

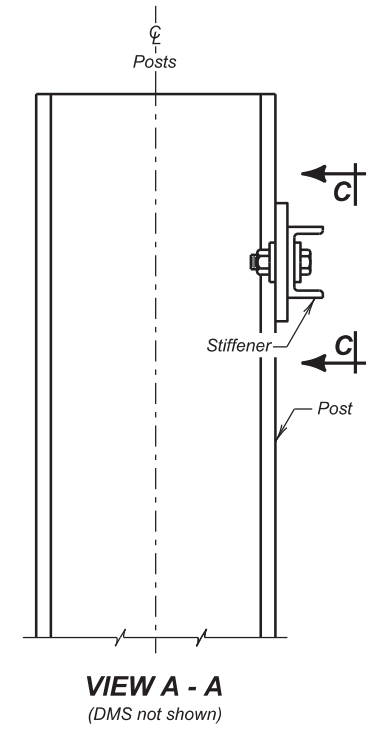
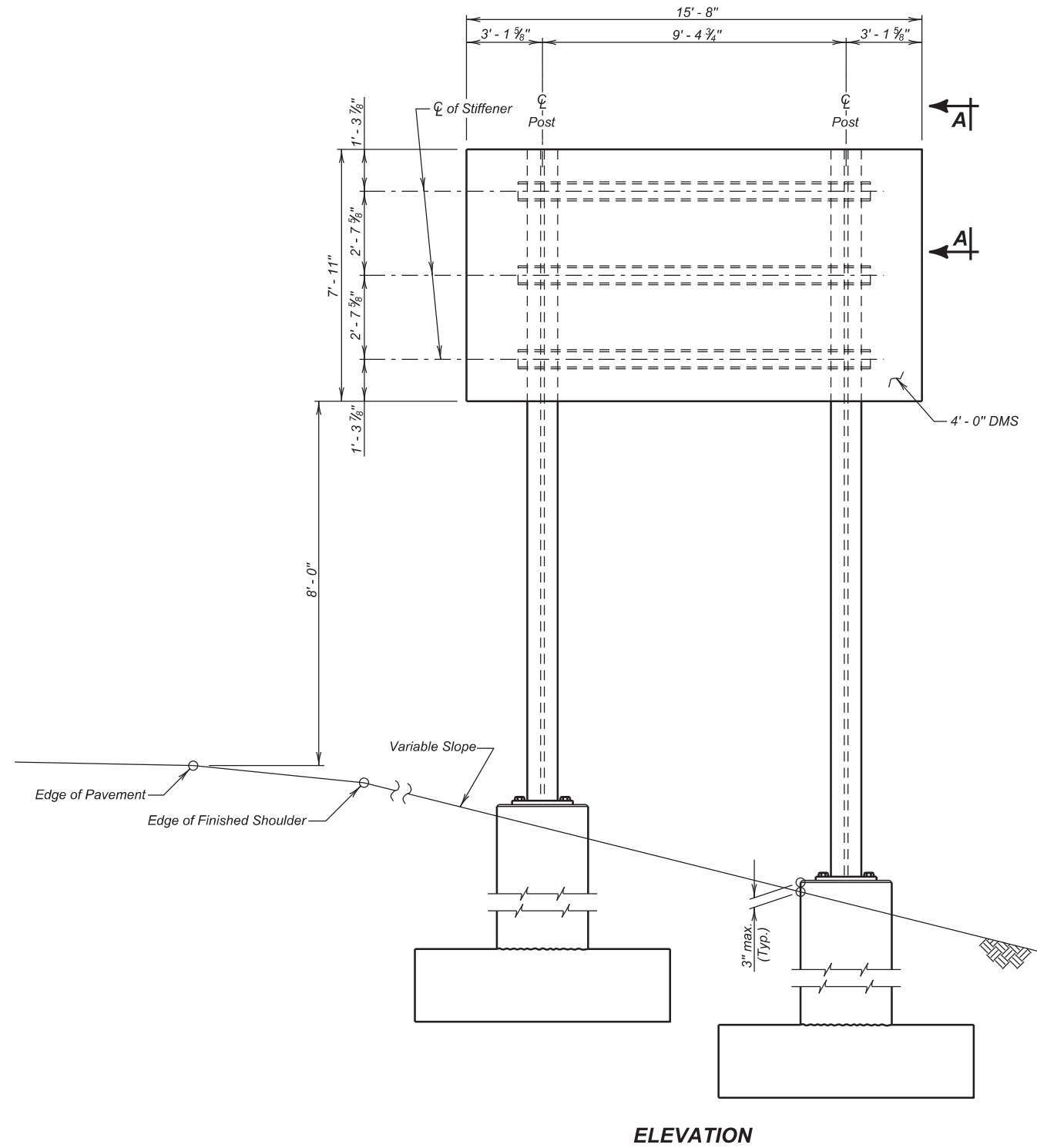
DESIGNED BY BB	CK. DES. BY JU	DRAFTED BY BT	Steve A. Johnson BRIDGE ENGINEER
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S. D. DEPT. OF TRANSPORTATION
DECEMBER 2025

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	77	95

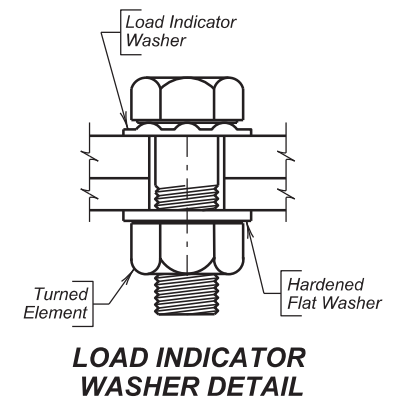
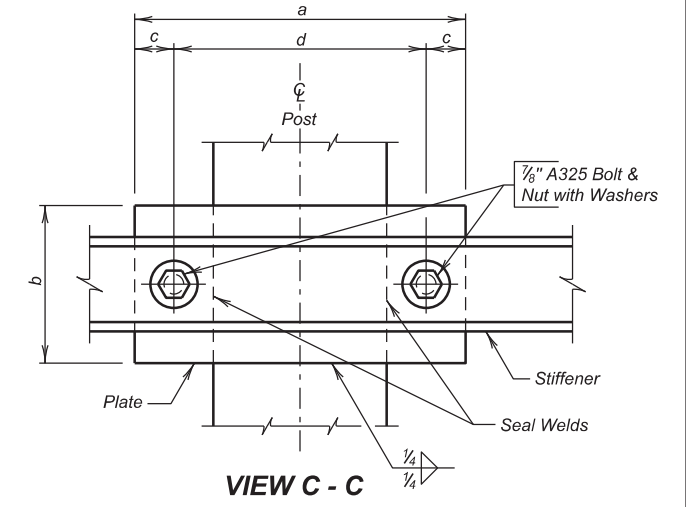
NOTE:
Fabricator will provide details for attaching DMS to posts.



STIFFENER DATA							
Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
W10X33	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" ϕ	3/8"

STIFFENER BOLTING PROCEDURE

High strength bolts will be tightened so as to obtain a minimum residual tension by the use of load indicator washers.



ERECTION DETAILS FOR FIXED SIGN SUPPORTS
CR 000S(462)
PCN 09L5

S. D. DEPT. OF TRANSPORTATION
DECEMBER 2025

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY	CK. DES. BY	DRAFTED BY	BRIDGE ENGINEER
BB	JU	BT	Steve A. Johnson

SPECIFICATIONS

- Design Specifications: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition 2013 with 2019 interims.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications>

GENERAL NOTES

- Concrete Footings will be Class A45 - f'c = 4500 p.s.i.
- Structural Steel will conform to ASTM A36.
- All Reinforcing Steel, except spirals, will conform to ASTM A615 Grade 60.
- All exposed edges will be chamfered 3/4 inch.

SELECT GRANULAR BACKFILL

- Select Granular Backfill will conform to the following gradation requirements:

Passing a 2 -inch Sieve	100%
Passing a 1 1/2 - inch Sieve	90 - 100%
Passing a 1 - inch Sieve	20 - 45%
Passing a 3/4 - inch Sieve	0 - 15%
Passing a 3/8 - inch Sieve	0 - 5%
Passing a No. 4 Sieve	0 - 5%
- All other requirements of the Specification for Select Granular Backfill will apply. Select Granular Backfill will be paid for at the unit price per ton.
- Select Granular Backfill will be placed in six-inch lifts. Each lift will be thoroughly watered and compacted with at least four passes of a mechanical tamper, roller, or vibratory system. If adequate compaction is not achieved, increase the number of passes, increase the size of the compaction system, or decrease the thickness of the lift, as directed by the Engineer.

GEOGRID SPECIFICATION

- Geogrid will be a biaxial grid of single layer construction. Vibratory welded, integrally formed or woven and coated geogrids will be acceptable. Grids with laser welded grid junctions will not be allowed. Geogrid will be certified by the supplier to meet the following specification prior to installation:

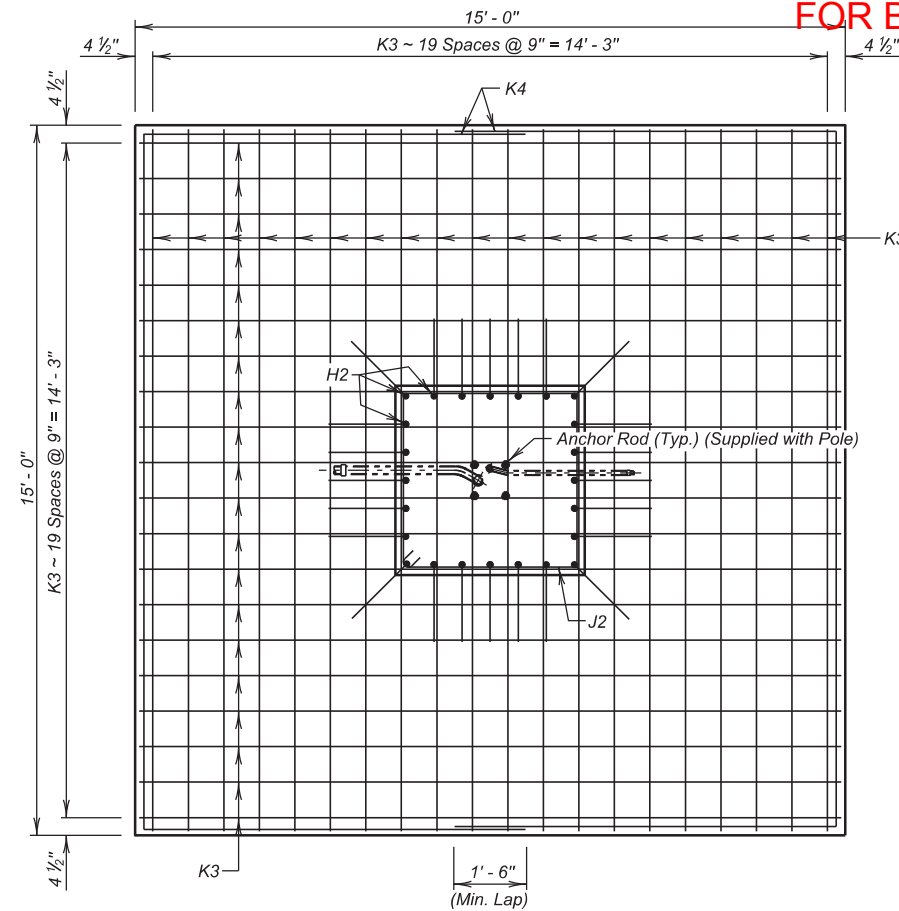
Property	Test	MARV
Wide Width Strip Tensile Strength (Ultimate)	ASTM D 6637	1,300 lb/ft MD and XD
- Geogrid will be paid for at the contract unit price per sq. yd. for Geogrid Reinforcement. Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the geogrid only. Granular backfill materials will be paid for under a different bid item.
- Geogrid will be placed on a level surface and overlapped a minimum of 1 foot. Seams will be positively connected with mechanical connectors such as heavy-duty zip ties, fiberglass rods, or hog rings as approved by the Engineer.
- Geogrid will be placed as taut as possible with minimal wrinkles. Placement will be done so that subsequent granular cover material does not shove, wrinkle or distort the in place geogrid. Overlaps will be shingled in a manner that assures granular material will not be forced under the geogrid during backfilling operations.

SITE LOCATION	SUBSURFACE SOIL	GROUNDWATER DEPTH
DMS 229-2 (I-229 NB)	0' - 11' Dark Brown Silt Sand 11' Quartzite	6.3' (July 2025)

Revised April 16, 2026 BB/JU

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	78	95

FOR BIDDING PURPOSES ONLY



PLAN

REINFORCING SCHEDULE
(For Two Spread Footings)

Mk.	No.	Size	Length	Type
H2	48	9	10' - 2"	17A
J2	24	4	15' - 5"	T1
K3	160	7	18' - 4"	17
K4	4	4	30' - 10"	17

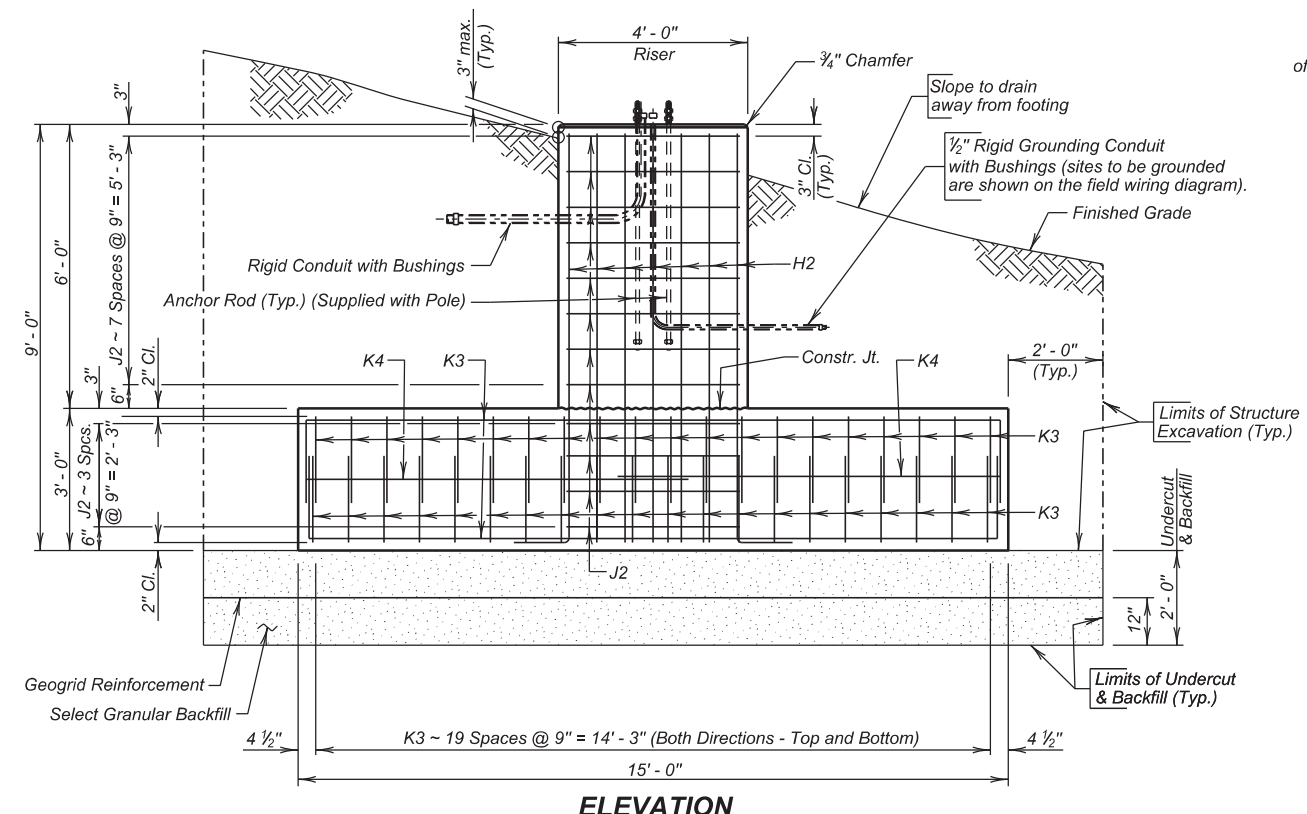
Bending Details

NOTES:
All dimensions are out to out of bars.
Spirals - Use 6" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required or weld as approved by the Office of Bridge Design. Use 4 vertical spacer bars per column. Spirals may be smooth bars. Bar length shown does not include splices.

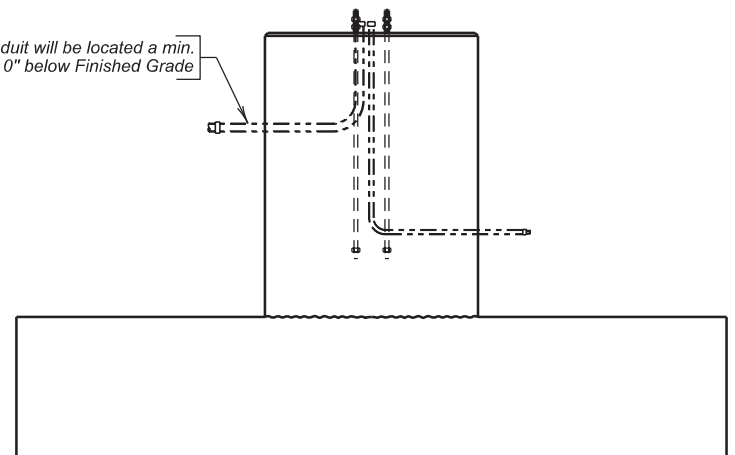
ESTIMATED QUANTITIES
(For Two Spread Footings)

ITEM	UNIT	QUANTITY
Reinforcing Steel	Lb.	7984
Class A45 Concrete	Cu. Yd.	57.1
Structure Excavation, Miscellaneous	Cu. Yd.	240.6
Select Granular Backfill	Ton	101.0
Geogrid Reinforcement	Sq. Yd.	92.3
Footings Undercut	Cu. Yd.	53.5

For estimating purposes only, a factor of 1.89 tons/cu. yd. was used to convert cu. yds. to tons.
Geogrid Reinforcement will be biaxial geogrid. Geogrid Reinforcement quantity is based on area covered plus 15% to account for overlaps.



ELEVATION



ELEVATION

DETAILS FOR SPREAD FOOTING FOR DMS SIGN
DMS 229-2
PCN 09L5
CR 000S(462)

S. D. DEPT. OF TRANSPORTATION
DECEMBER 2025

PLANS BY: OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY	CK. DES. BY	DRAFTED BY	BRIDGE ENGINEER
BB	JU	BT	Steve A. Johnson

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	79	95

SITE LOCATION	POST SIZE	FOOTING DIMENSIONS		POST BASE PLATE DIMENSIONS			ANCHOR BOLT SIZE		LONGITUDINAL STEEL QUANTITIES			# SPIRAL STEEL QUANTITIES		
		DIA.	DEPTH	"A"	"E"	THICK.	DIA.	LENGTH	NO.	SIZE	LENGTH	DIA.	LENGTH	
DMS 37-125 (SD 37 SB)	W10X33	3'-0"	11'-0"	1'-7"	1 3/4"	7/8"	1 1/2"	3'-9"	2'-6"	13	8	10'-8"	2'-8"	113'-9"
DMS 50-388 (SD 50 EB)	W10X33	3'-0"	10'-0"	1'-7"	1 3/4"	7/8"	1 1/2"	3'-9"	2'-6"	13	8	9'-8"	2'-8"	105'-4"
DMS 50-412 (SD 50 EB)	W10X33	3'-0"	11'-0"	1'-7"	1 3/4"	7/8"	1 1/2"	3'-9"	2'-6"	13	8	10'-8"	2'-8"	113'-9"

⊗ # Spirals - Use 12" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Spirals may be smooth bars. Bar length shown does not include Splices. Use 3 vertical spacer bars per footing.

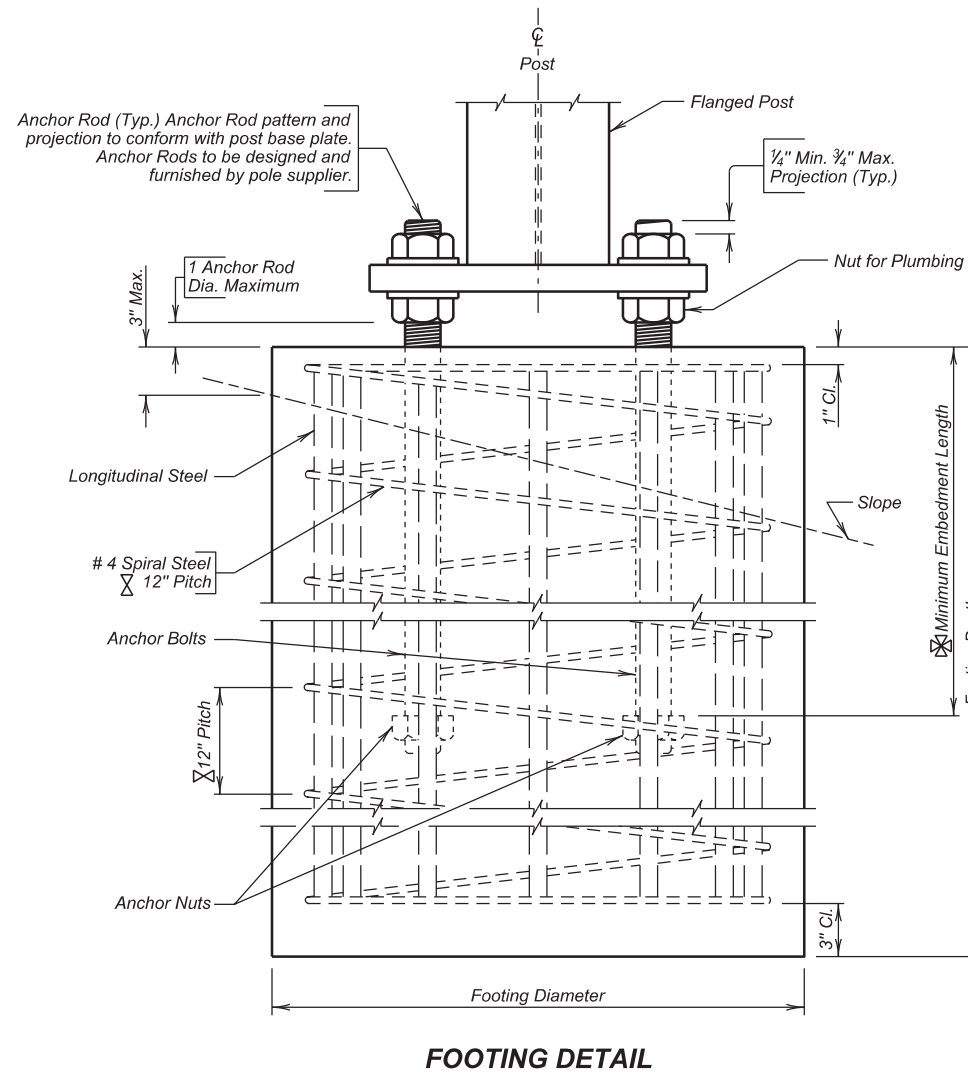
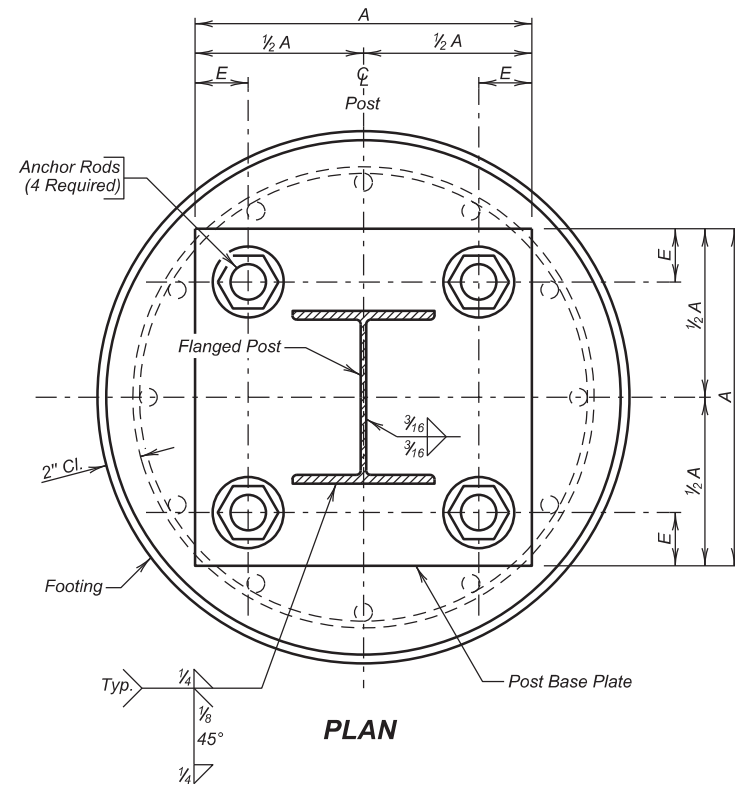
Dimensions are out to out of bars.

⊗ See Footing Detail

SITE LOCATION	SUBSURFACE SOIL	GROUNDWATER DEPTH
DMS 37-125 (SD 37 SB)	0' - 8' Brown Sand Clay 8' - 21' Gray Sand Clay	3.8' (September 2025)
DMS 50-388 (SD 50 EB)	0' - 10' Soft Brown Clay Silt 10' - 21' Fine Brown Sand	Caved at 19.0' (September 2025)
DMS 50-412 (SD 50 EB)	0' - 7' Gray Silt Clay 7' - 21' Soft Brown Clay Silt	3.9' (September 2025)

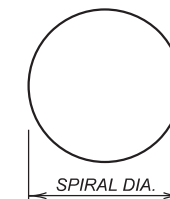
GENERAL NOTES

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition 2013 with 2019 Interims.
- Concrete Footings will be Class M6 - f'c = 4000 p.s.i.
- Structural Steel will conform to ASTM A36.
- All Reinforcing Steel, except spirals, will conform to ASTM A615 Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Anchor Rods will conform to ASTM F1554, Grade 36 having a minimum yield stress of 36000 p.s.i. Anchor Bolts will be cleaned to remove any oil from the threading process before galvanizing.
- Anchor Rods will have 7" thread length on both ends.
- All nuts will conform to ASTM A563, DH. All nuts will be heavy hex. All washers will conform to ASTM F436.
- All structural steel including the Steel Posts will be galvanized according to ASTM A123. The Nuts, Washers and 10" of one end of the Anchor Rods will be galvanized according to ASTM F2329.
- All Rod Holes will be drilled. All plate cuts will preferably be Saw Cuts, however, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection will be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.
- The Dynamic Message Sign cylindrical footings will be constructed in accordance with the Special Provision for Cylindrical Concrete Footings.
- The longer excavations are left open, the more likely caving will occur. Operations should be sequenced so that concrete placement operations closely follow excavation procedures but at a minimum placed the same working day. Concrete will be placed prior to the start of excavation at another DMS location.



SHOP PLANS

The Fabricator will submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals will be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.



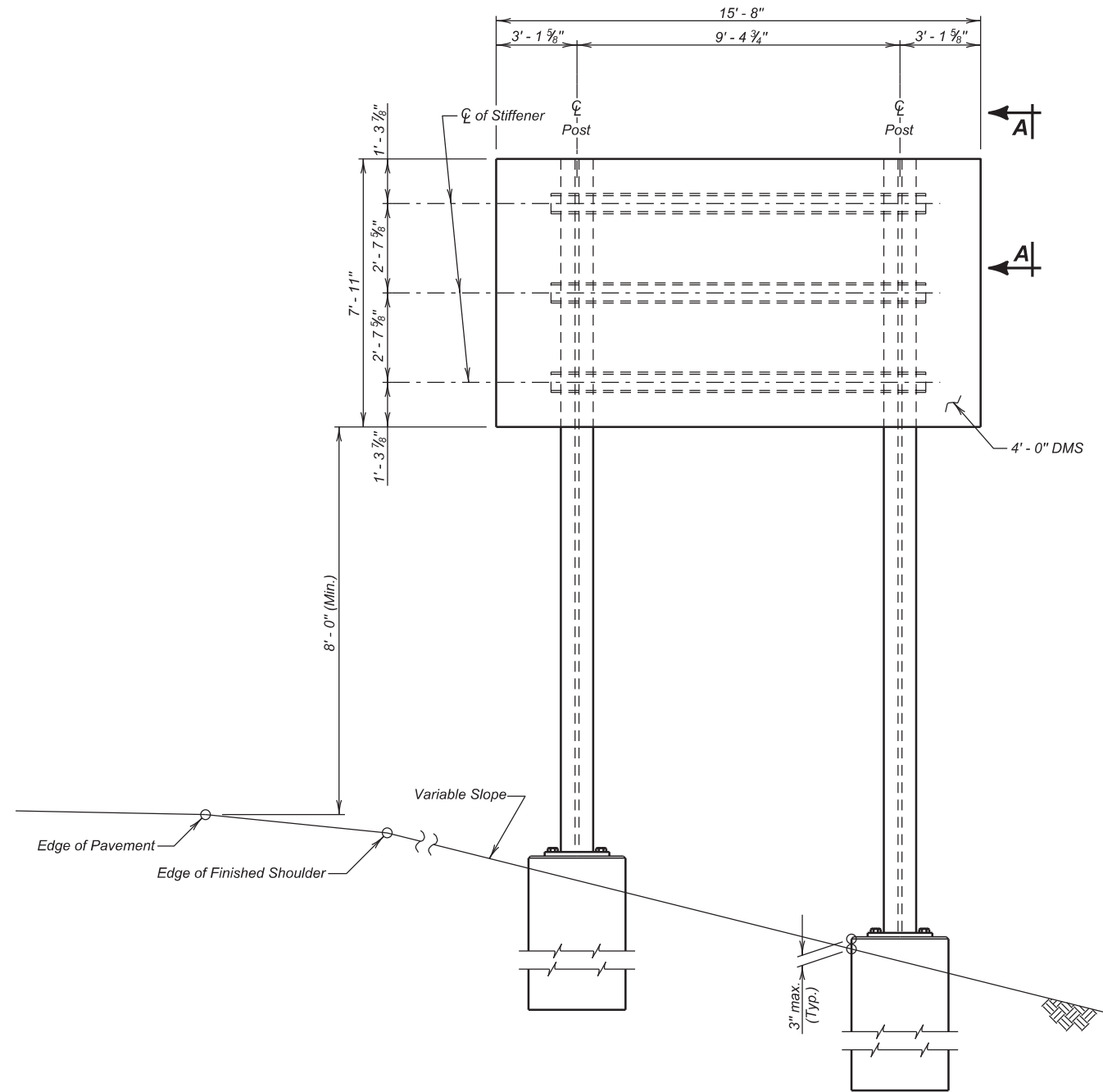
ERECTION DETAILS FOR FIXED SIGN SUPPORTS

CR 000S(462)
PCN. 09L5
S. D. DEPT. OF TRANSPORTATION
NOVEMBER 2025

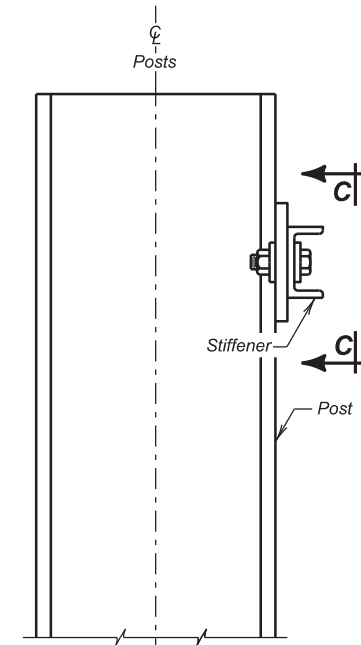
FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	80	95

NOTE:
Fabricator will provide details for attaching DMS to post.



ELEVATION

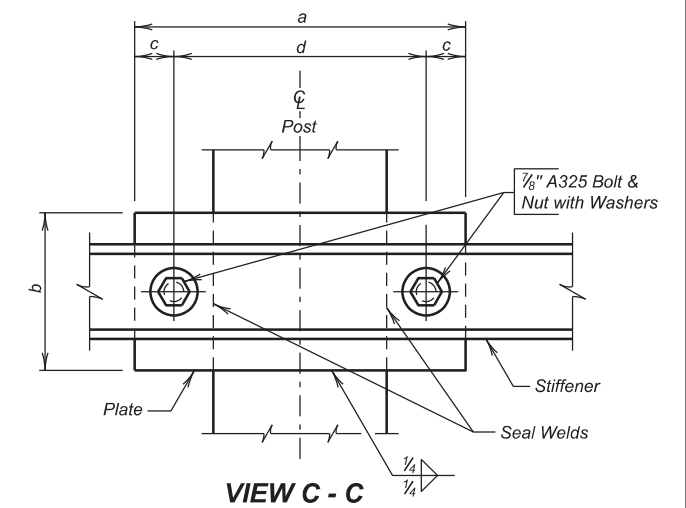


VIEW A - A
(DMS not shown)

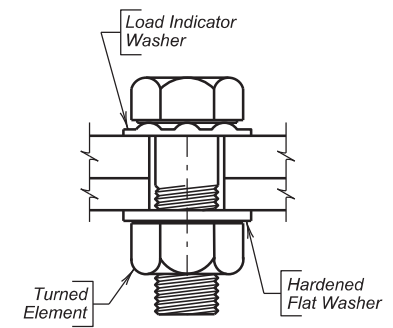
Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
W10X33	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" ϕ	3/8"

STIFFENER BOLTING PROCEDURE

High strength bolts will be tightened so as to obtain a minimum residual tension by the use of load indicator washers.



VIEW C - C



LOAD INDICATOR WASHER DETAIL

ITEM	UNIT	QUANTITY
3' Diameter Fixed Support Concrete Footing	Ft.	64

- 16.8 Cu. Yds. Class M6 Concrete, Drilled Shaft in Sign Footings.
 - 2741 Lbs. Re-Steel in Sign Footings (including 144 lbs. for spacer bars).
 - 16.8 Cu. Yds. Drilled Shaft Excavation for Sign Footings.
- Items 1 thru 3 are approximate quantities contained in the 3' Diameter Fixed Support Concrete Footing bid item and are for information only.

Each spacer bar is computed at 3/4 lbs per linear foot regardless of type furnished.

**ERECTION DETAILS
FOR
FIXED SIGN SUPPORTS**

CR 000S(462)
PCN 09L5

S. D. DEPT. OF TRANSPORTATION

NOVEMBER 2025

PLANS BY:
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY BB	CK. DES. BY JU	DRAFTED BY BB	Steve A. Johnson BRIDGE ENGINEER
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FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	CR 000S(462)	81	95

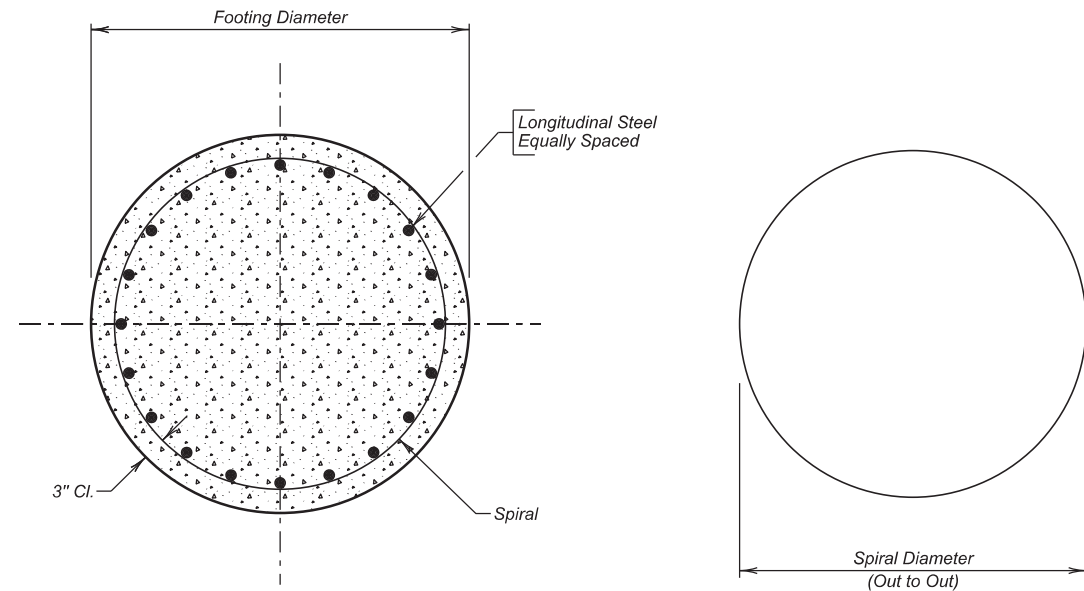
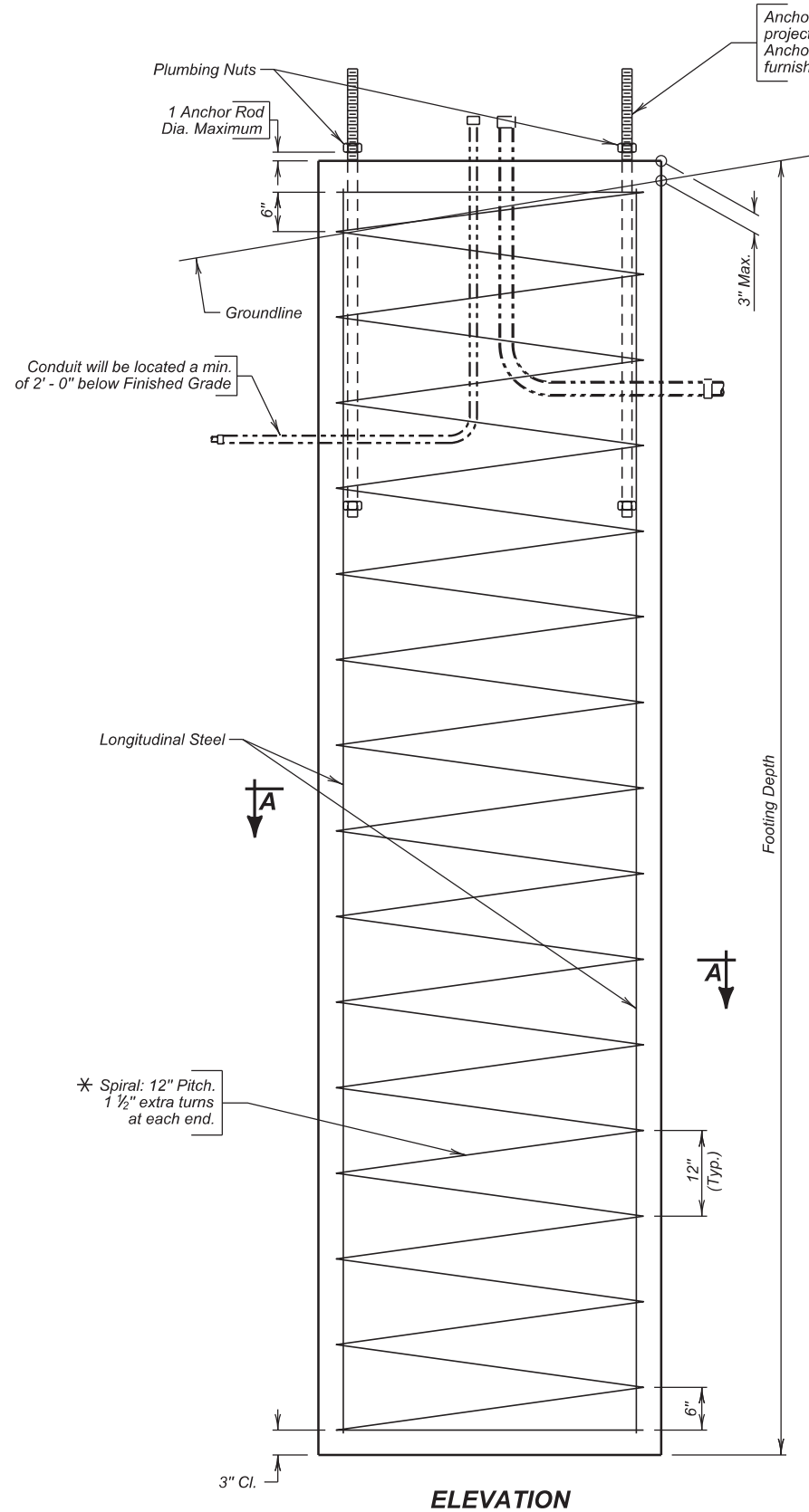
SPECIFICATIONS

- Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, 2013 Edition with 2019 interims.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at: <https://dot.sd.gov/doing-business/contractors/standard-specifications>

GENERAL NOTES

- The Dynamic Message Sign cylindrical footings will be constructed in accordance with the Special Provision for Cylindrical Concrete Footings.
- Footing locations that contain sand and/or gravel or have high water tables are potential candidates for caving soils. If caving soils are encountered during excavation procedures it may be necessary to use temporary casing or drilling fluids to maintain an open excavation during concrete placement. The Contractor will be prepared to utilize the Temporary Casing Construction Method.
- All exposed edges will be chamfered 3/4". A suitable form will be used above the existing ground line and all exposed portions will be formed to present a neat appearance.
- All reinforcing steel will conform to ASTM A615 Grade 60.
- All concrete will be Class A45, Drilled Shaft.
- Design Material Strengths: Concrete $f'c = 4500$ psi
Reinforcing Steel $f_y = 60000$ psi
- Payment for 4.5' Diameter DMS Footing will be full compensation for all Drilled Shaft Excavation; Concrete and Reinforcing Steel; for disposal of all excavated material and surplus materials; and for labor, tools, equipment and any incidentals necessary to complete this item of work.
- The longer excavations are left open, the more likely caving will occur. Operations should be sequenced so that concrete placement operations closely follow excavation procedures but at a minimum placed the same working day. Concrete will be placed prior to the start of excavation at another DMS location.
- A drilled shaft preconstruction meeting is required to be held prior to beginning construction of the Dynamic Message Sign cylindrical footings.

SITE LOCATION	SUBSURFACE SOIL	GROUNDWATER DEPTH
DMS 90-307(I-90 EB)	0' - 26' Brown Silt Clay	5.5' (July 2025)
DMS 90-312 (-90 WB)	0' - 26' Brown Silt Clay	9.3' (July 2025)
DMS 90-399 (I-90 EB)	0' - 11' Dark Brown Silt Clay 11' - 21' Lt. Brown Sand Silt 21' - 30' Brown Silt Clay	5.7' (July 2025)
DMS 90-403 (I-90 WB)	0' - 4' Brown Clay Silt 4' - 9' Fine Brown Sand 9' - 26' Soft Brown Sand Silt	15.1' (November 2025)
DMS 90-405 (I-90 EB)	0' - 26' Brown Silt Clay	2.1' (July 2025)
DMS 29-74 (I-29 SB)	0' - 6' Brown Clay Sand 6' - 25' Brown Silt Clay	1.5' (July 2025)
DMS 29-76 (I-29 SB)	0' - 26' Brown Silt Clay	1.7' (July 2025)
DMS 229-9 (I-229 SB)	0' - 4' Brown Clay Sand 4' - 12' Brown Sand Clay 12' - 25' Brown Silt Clay	16.0' (July 2025)
DMS 29-206 (I-29 NB)	0' - 18' Brown Sand Clay 18' - 26' Gray Silt Clay	4.1' (July 2025)
DMS 29-209 (I-29 SB)	0' - 21' Brown Sand Clay 21' - 27' Sand 27' - 30' Lt. Brown Silt Clay	15.2' (July 2025)



SECTION A-A

SITE LOCATION	SUPPORT DESCRIPTION	FOOTING DIMENSIONS		LONGITUDINAL STEEL			Ø SPIRAL STEEL			CONCRETE QUANTITY
		DIA.	DEPTH	NO.	SIZE	LENGTH	DIA.	SIZE	LENGTH	CU. YD.
DMS 90-307(I-90 EB)	DMS Sign Support	4' - 6"	15' - 0"	23	9	14' - 6"	4' - 0"	4	220' - 6"	8.8
DMS 90-312 (-90 WB)	DMS Sign Support	4' - 6"	15' - 0"	23	9	14' - 6"	4' - 0"	4	220' - 6"	8.8
DMS 90-399 (I-90 EB)	DMS Sign Bridge (2 Footings)	4' - 6"	22' - 0"	23	9	21' - 6"	4' - 0"	4	308' - 9"	25.9
DMS 90-403 (I-90 WB)	DMS Sign Support	4' - 6"	20' - 0"	23	9	19' - 6"	4' - 0"	4	283' - 7"	11.8
DMS 90-405 (I-90 EB)	DMS Sign Support	4' - 6"	14' - 0"	23	9	13' - 6"	4' - 0"	4	207' - 11"	8.2
DMS 29-74 (I-29 SB)	DMS Sign Bridge (2 Footings)	4' - 6"	23' - 0"	23	9	22' - 6"	4' - 0"	4	321' - 5"	27.1
DMS 29-76 (I-29 SB)	DMS Sign Bridge (2 Footings)	4' - 6"	21' - 0"	23	9	20' - 6"	4' - 0"	4	296' - 2"	24.7
DMS 229-9 (I-229 SB)	DMS Sign Bridge (2 Footings)	4' - 6"	22' - 0"	23	9	21' - 6"	4' - 0"	4	308' - 9"	25.9
DMS 29-206 (I-29 NB)	DMS Sign Support	4' - 6"	15' - 0"	23	9	14' - 6"	4' - 0"	4	220' - 6"	8.8
DMS 29-209 (I-29 SB)	DMS Sign Support	4' - 6"	16' - 0"	23	9	15' - 6"	4' - 0"	4	233' - 2"	9.4

Ø Spirals - Use a 12" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Use 3 vertical spacer bars per footing. Spirals may be smooth bars. Bar length shown does not include splices.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
4.5' Diameter DMS Footing	Ft.	271

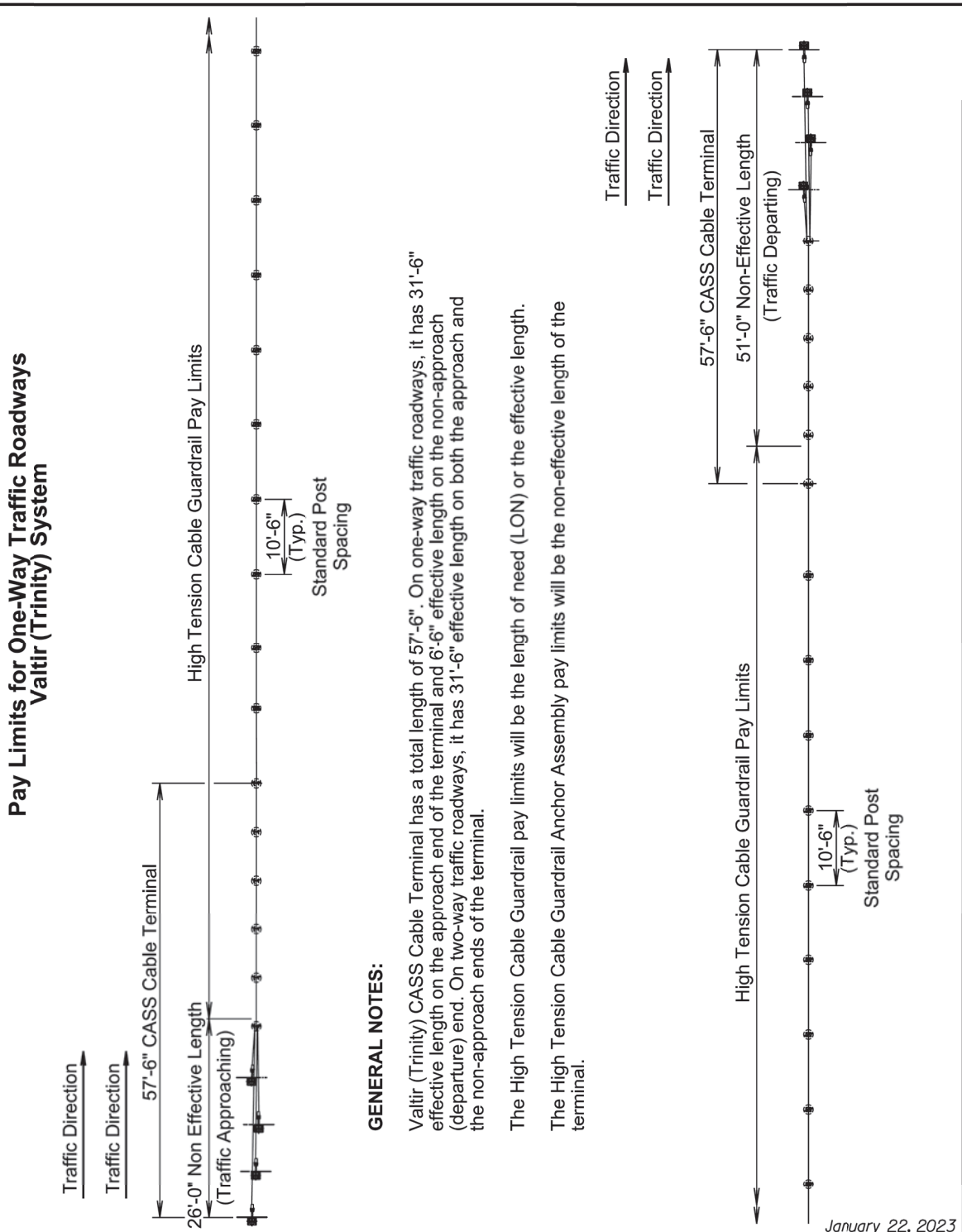
- 159.4 Cu. Yds. Class A45 Concrete, Drilled Shaft in Sign Footings.
 - 23831 Lbs. Re-Steel in Sign Footings (including 610 lbs. for spacer bars.).
 - 159.4 Cu. Yds. Drilled Shaft Excavation for Sign Footings.
- Items 1 thru 3 are approximate quantities contained in the 4.5' Diameter DMS Footing bid item and are for information only.

Each spacer bar is computed at 3/4 lbs per linear foot regardless of type furnished.

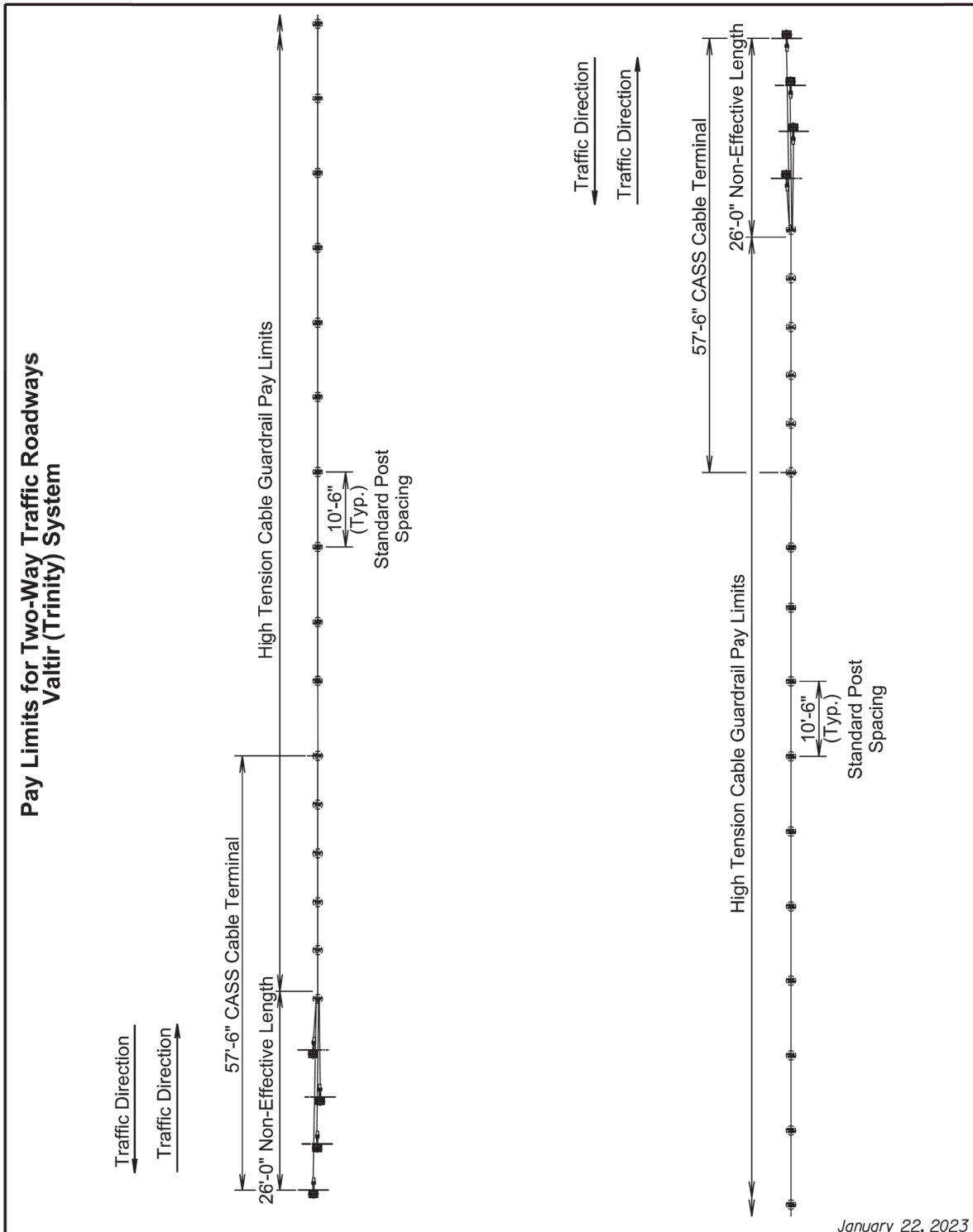
DETAILS
FOR
DMS SIGN FOOTINGS
CR 000S(462)
PCN. 09L5

S. D. DEPT. OF TRANSPORTATION
NOVEMBER 2025

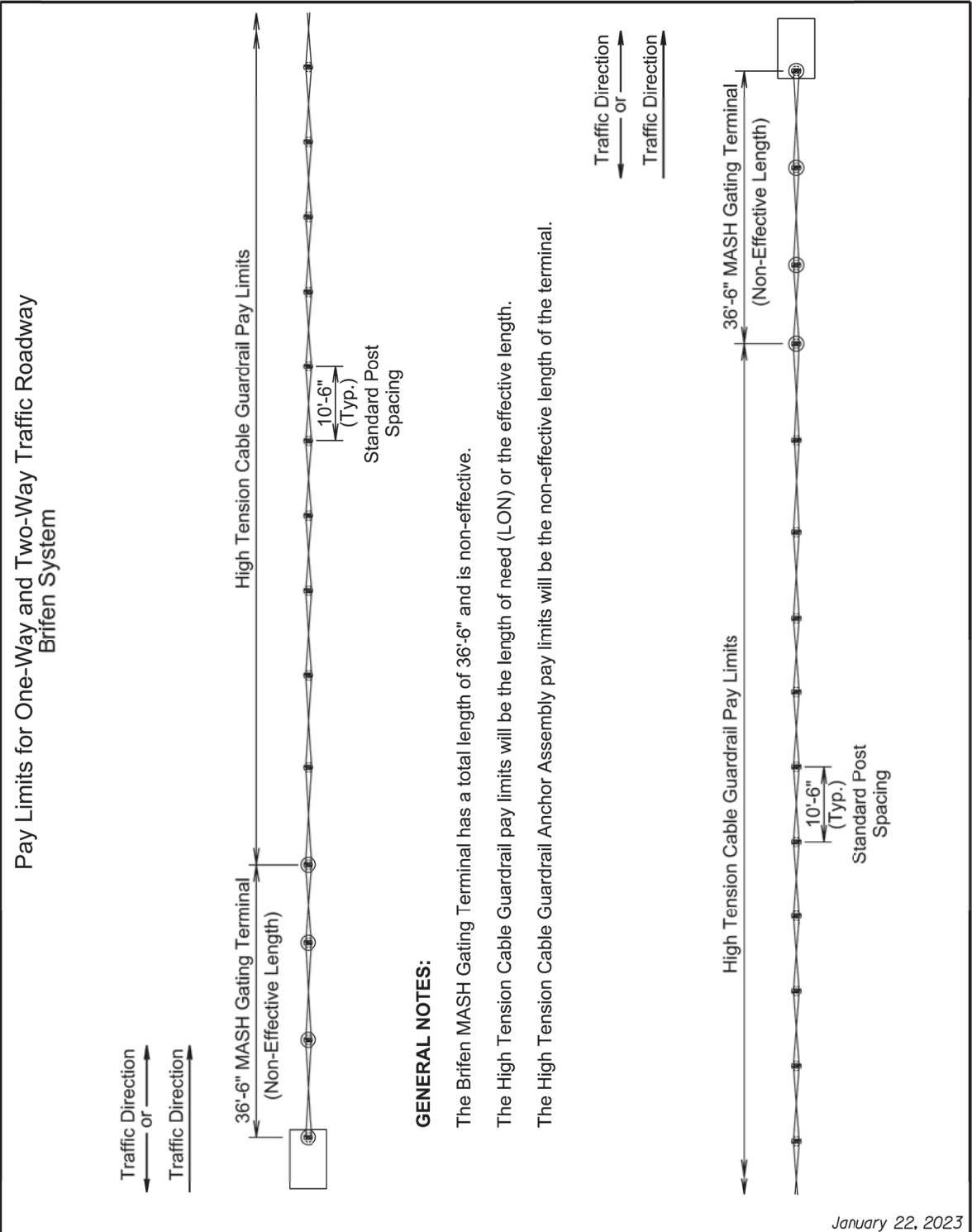
* Circular Ties may be used in lieu of Spiral Ties. The ties will be spaced 12" apart except for the top two which will be spaced 6" apart. The ties will be lapped 20" which will be staggered around the cage.



Published Date: 2026	S D D O T	HIGH TENSION CABLE GUARDRAIL	PLATE NUMBER 629.50
			Sheet 1 of 3



Published Date: 2026	S D D O T	HIGH TENSION CABLE GUARDRAIL	PLATE NUMBER 629.50
			Sheet 2 of 3

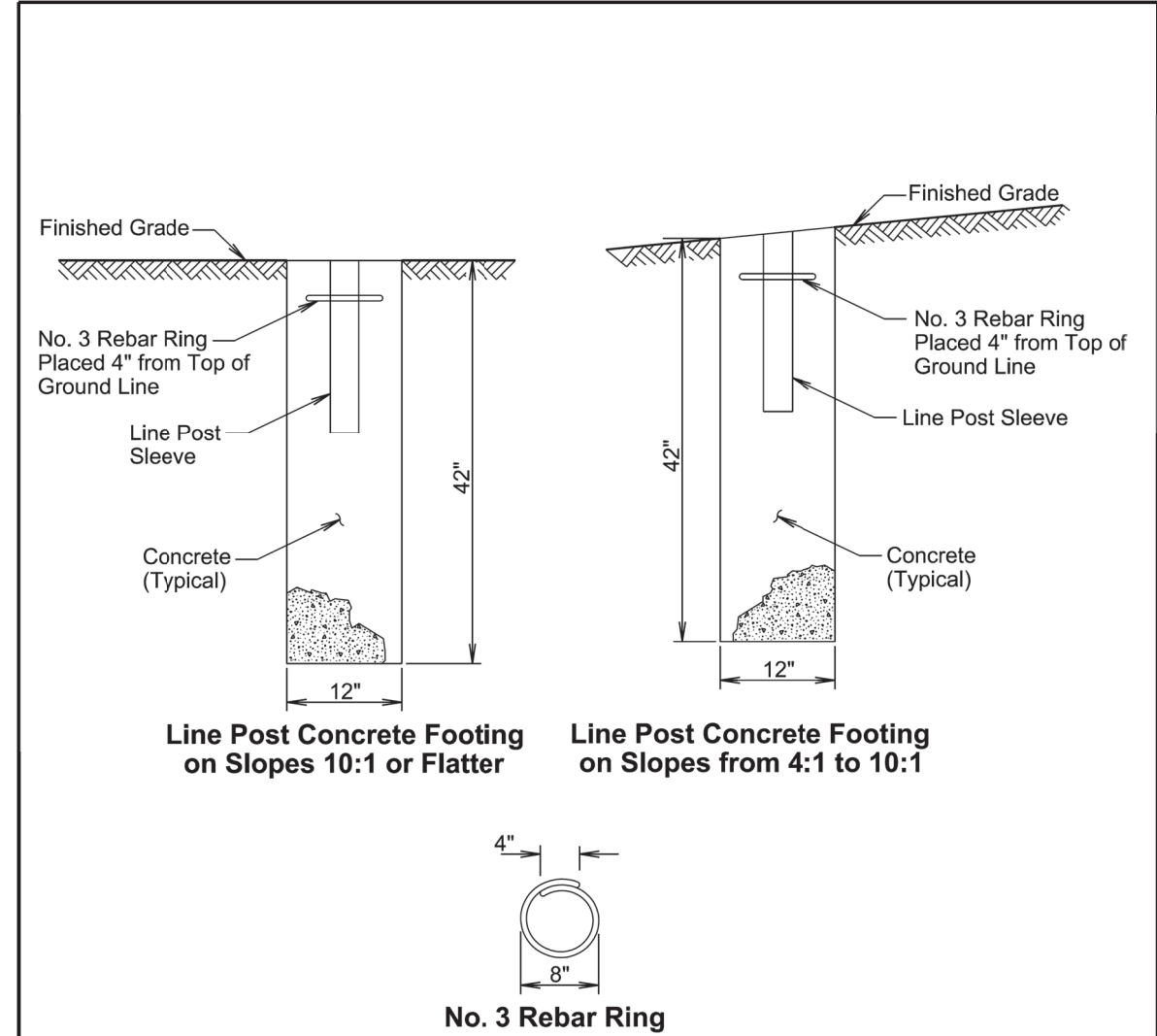


GENERAL NOTES:

The Brifen MASH Gating Terminal has a total length of 36'-6" and is non-effective.
 The High Tension Cable Guardrail pay limits will be the length of need (LON) or the effective length.
 The High Tension Cable Guardrail Anchor Assembly pay limits will be the non-effective length of the terminal.

January 22, 2023

Published Date: 2026	S D D O T	HIGH TENSION CABLE GUARDRAIL	PLATE NUMBER 629.50
			Sheet 3 of 3



GENERAL NOTES:

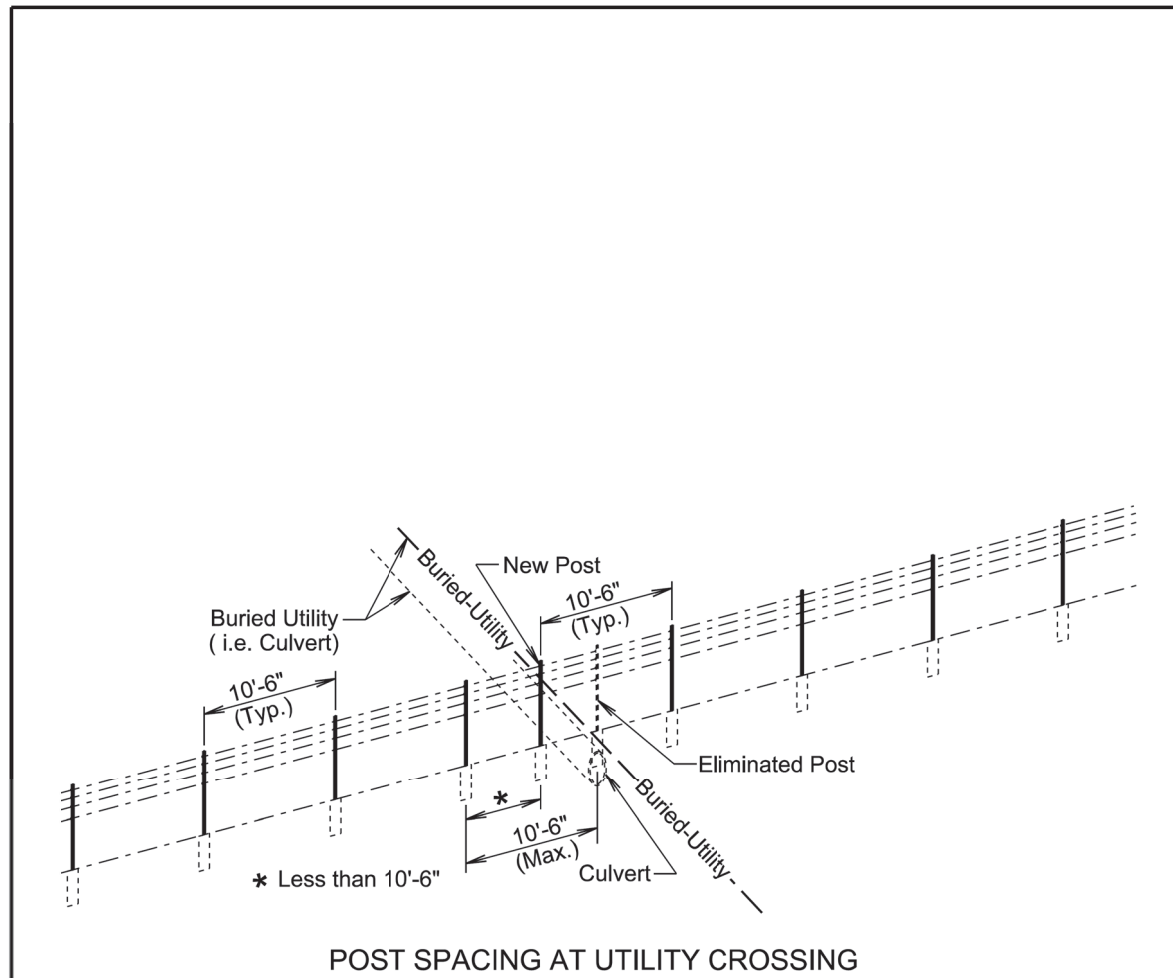
The line post sleeve will be furnished by the manufacturer.

The concrete for the post footing will be either Class M6 or a bagged mix conforming to ASTM C387 that is air entrained with a minimum 28 day compressive strength of 4,000 psi. To reduce the risk of frost heaving, the concrete at the top cannot be wider than the concrete in the lower footing.

All costs for materials, labor, equipment, and incidentals necessary to install the high tension cable guardrail line post footings will be incidental to the contract unit price per foot for "High Tension 3 Cable Guardrail" or "High Tension 4 Cable Guardrail".

March 31, 2024

Published Date: 2026	S D D O T	HIGH TENSION CABLE GUARDRAIL LINE POST CONCRETE FOOTING	PLATE NUMBER 629.60
			Sheet 1 of 1



GENERAL NOTES:

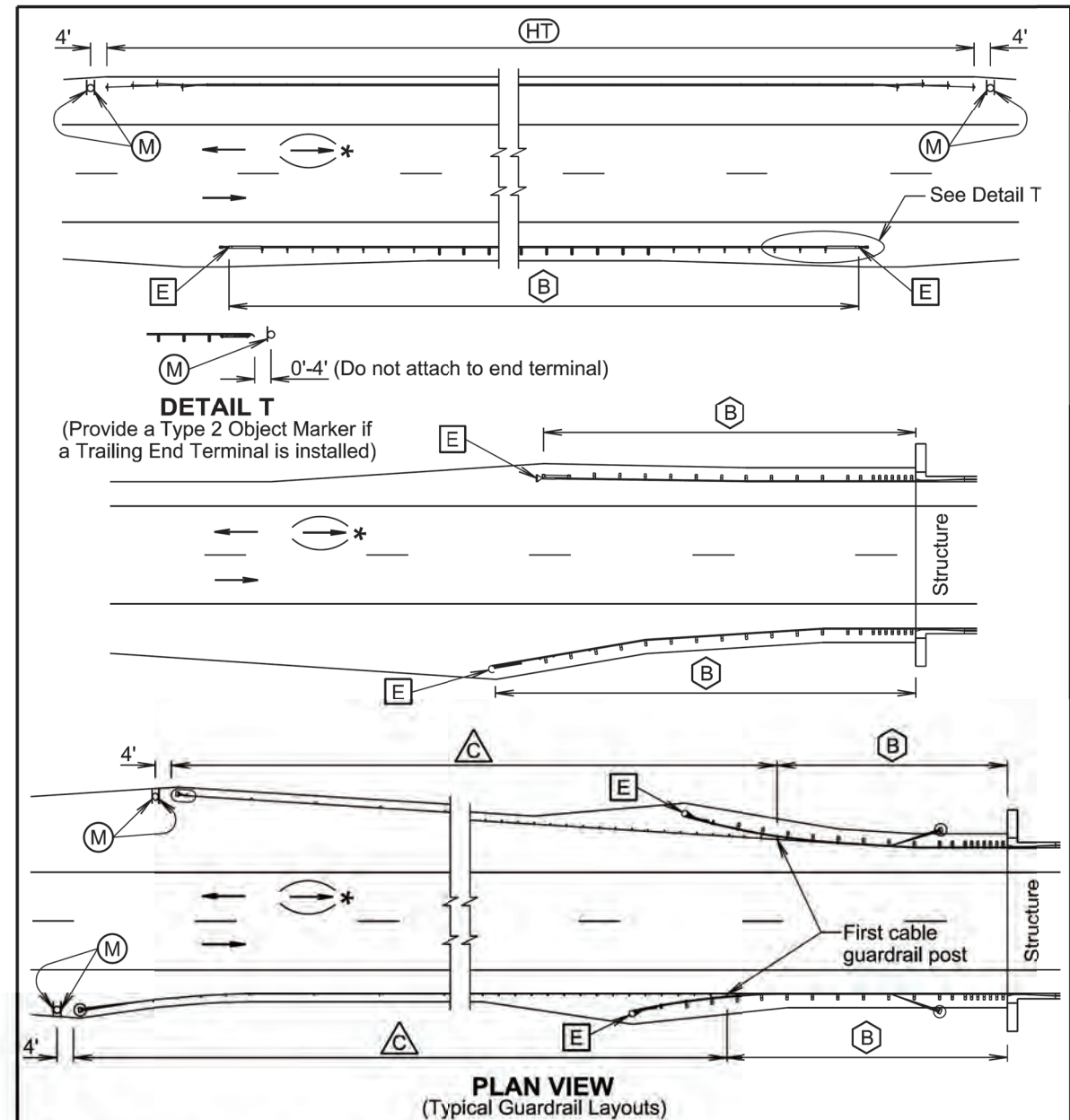
The post spacing may be modified to avoid utility conflicts; however, the post spacing will not exceed 10'-6".

All costs for materials, labor, equipment, and incidentals necessary to install the high tension cable guardrail at an utility crossing will be incidental to the contract unit price per foot for "High Tension 3 Cable Guardrail" or "High Tension 4 Cable Guardrail".

March 31, 2024

S D D O T	HIGH TENSION CABLE GUARDRAIL UTILITY CROSSING	PLATE NUMBER 629.70
		Sheet 1 of 1

Published Date: 2026



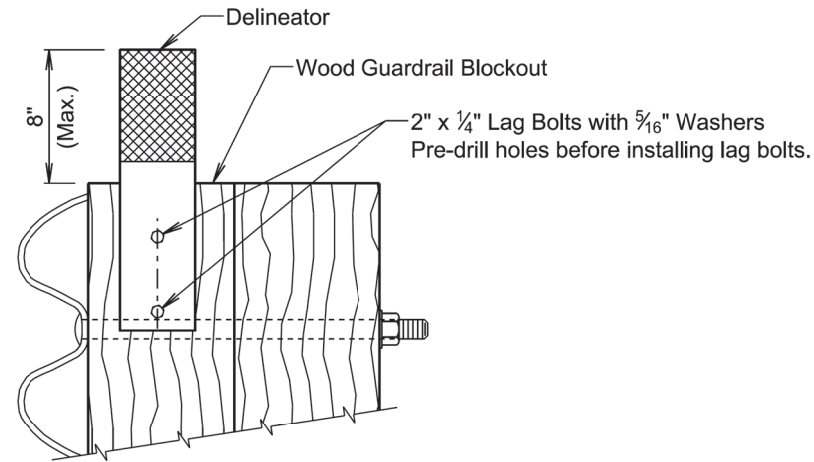
- B Steel Beam Guardrail Delineation
- E Guardrail End Terminal Object Marker
- C 3 Cable Guardrail (Low Tension) Delineation
- HT High Tension Cable Guardrail Delineation
- M Type 2 Object Marker

* For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

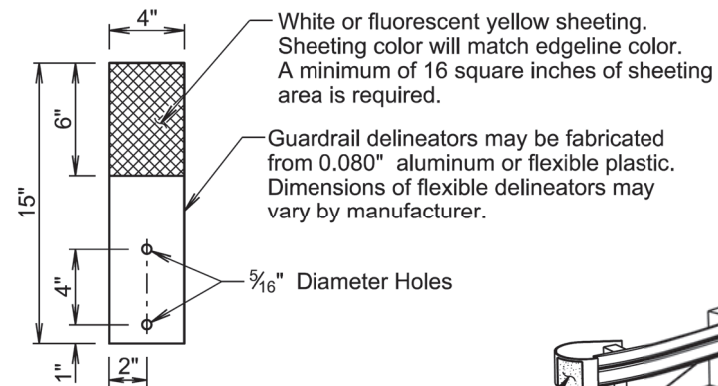
April 8, 2025

S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 1 of 4

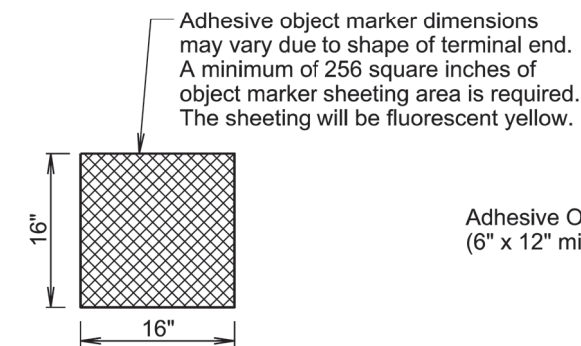
Published Date: 2026



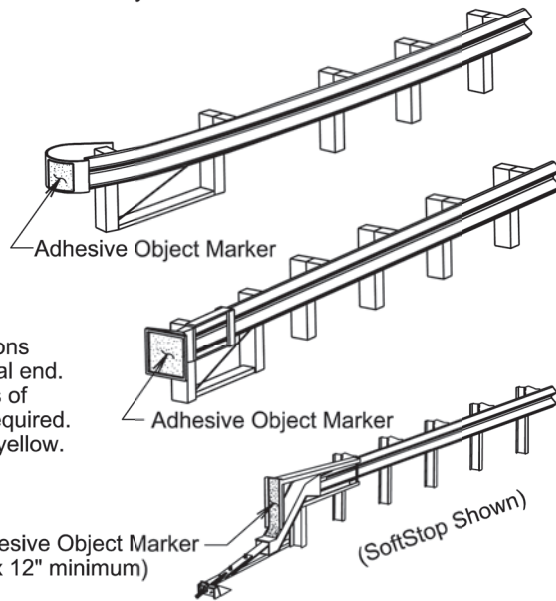
(B) STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)



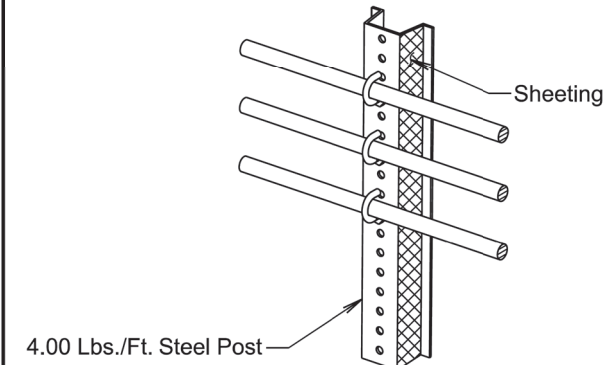
ADHESIVE OBJECT MARKER



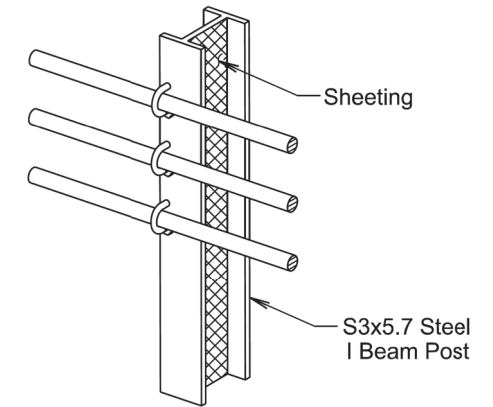
(E) GUARDRAIL END TERMINAL OBJECT MARKER

April 8, 2025

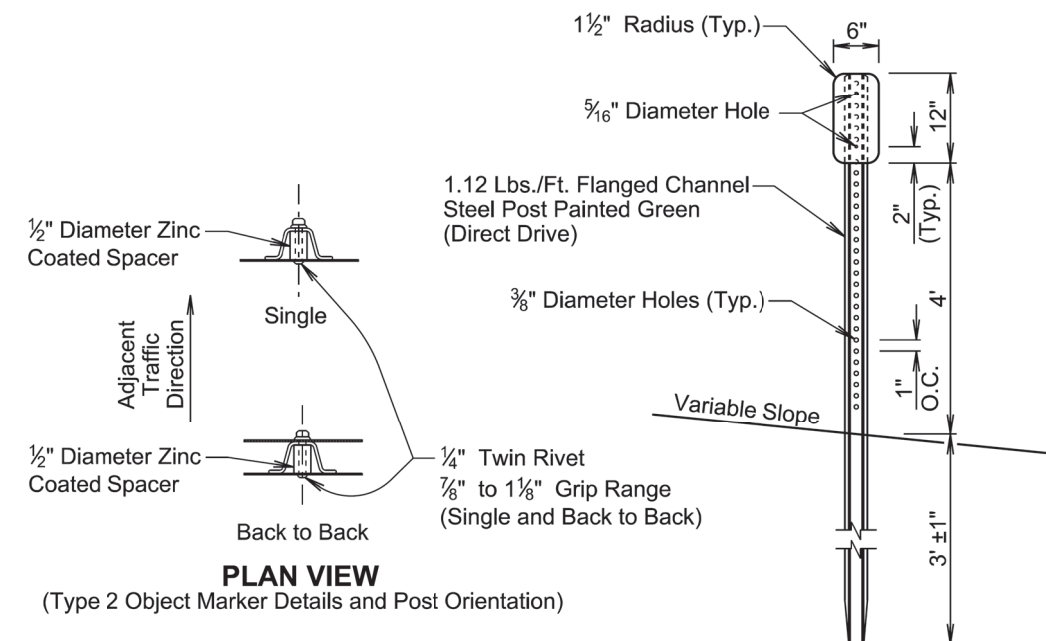
Published Date: 2026	S D D O T	DELINEATION GUARDRAIL	PLATE NUMBER 632.40
			Sheet 2 of 4



(C) 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



(C) 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



(M) (Type 2 Object Marker)
(For Marking 3 Cable Guardrail (Low Tension) Anchor, High Tension Cable Guardrail Anchor, and Trailing End Terminal)

April 8, 2025

Published Date: 2026	S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed such that the edges of the type 2 object marker and the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, or the trailing end terminal that are nearest to the roadway will be installed in line with the same lateral offset from the traveled way at the location as noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

April 8, 2025

S D D O T	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 4 of 4

Published Date: 2026

The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

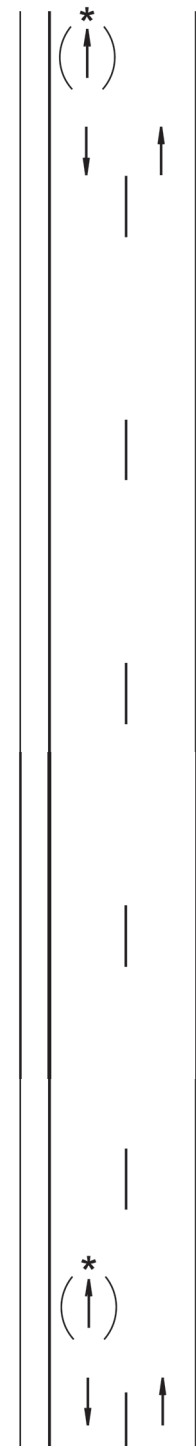
The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

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 - 80	1000



January 22, 2021

S D D O T	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
		Sheet 1 of 1

Published Date: 2026

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
70 - 80	1000	1500	2640

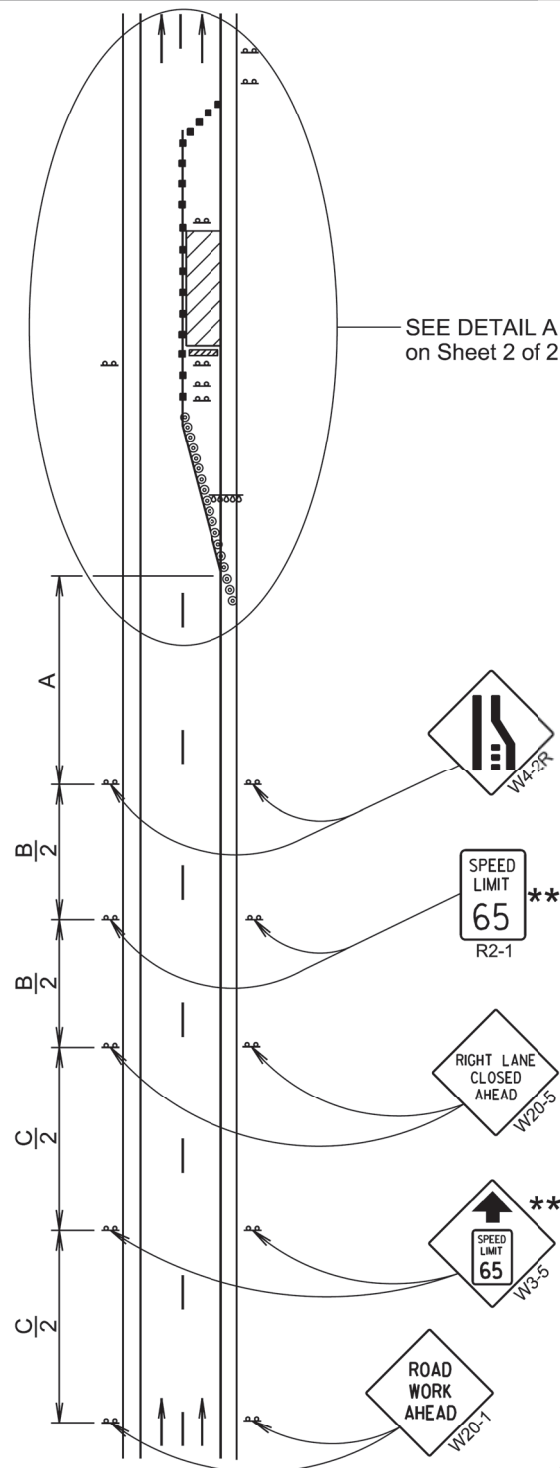
** Speed appropriate for location.

⊙ Reflectorized Drum

■ Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



April 8, 2025

Published Date: 2026

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**WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER
634.63

Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

⊙ Reflectorized Drum

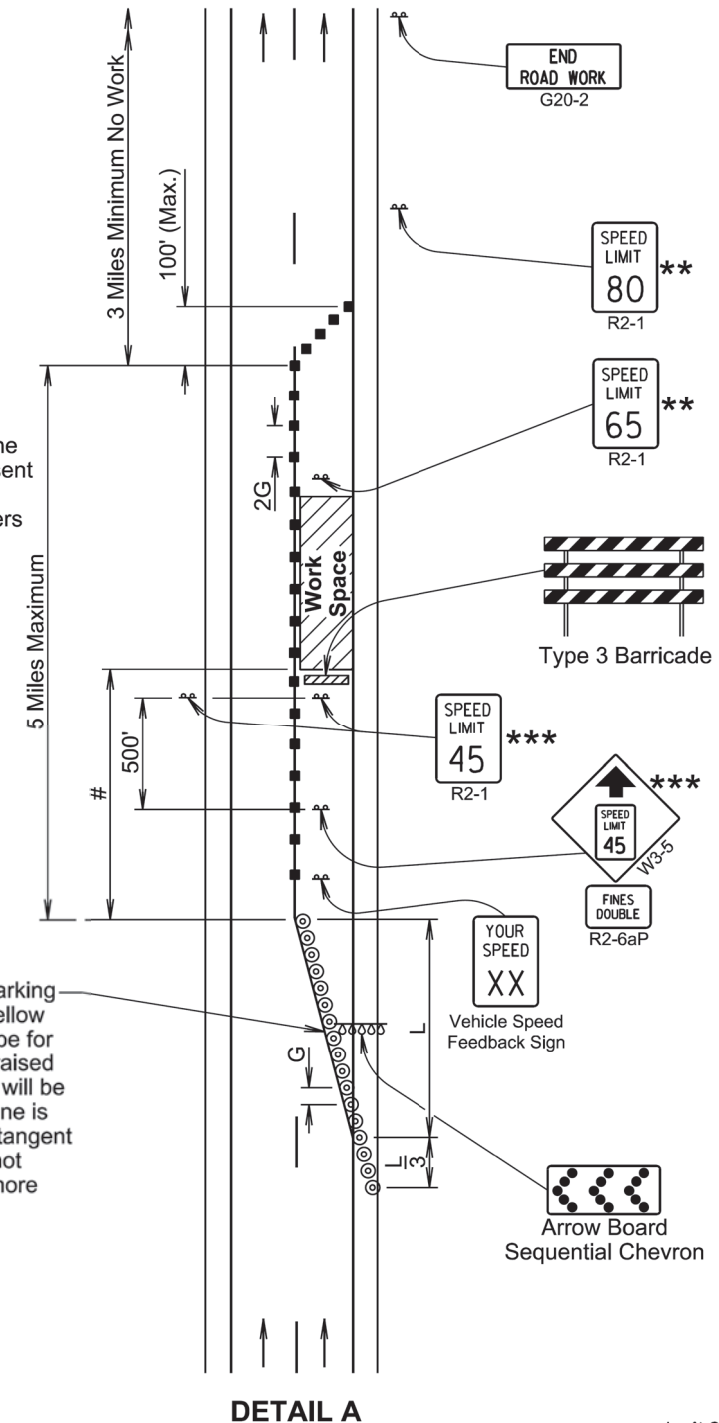
■ Channelizing Device

The Work Space will be a minimum of 500' from the end of the taper.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



April 8, 2025

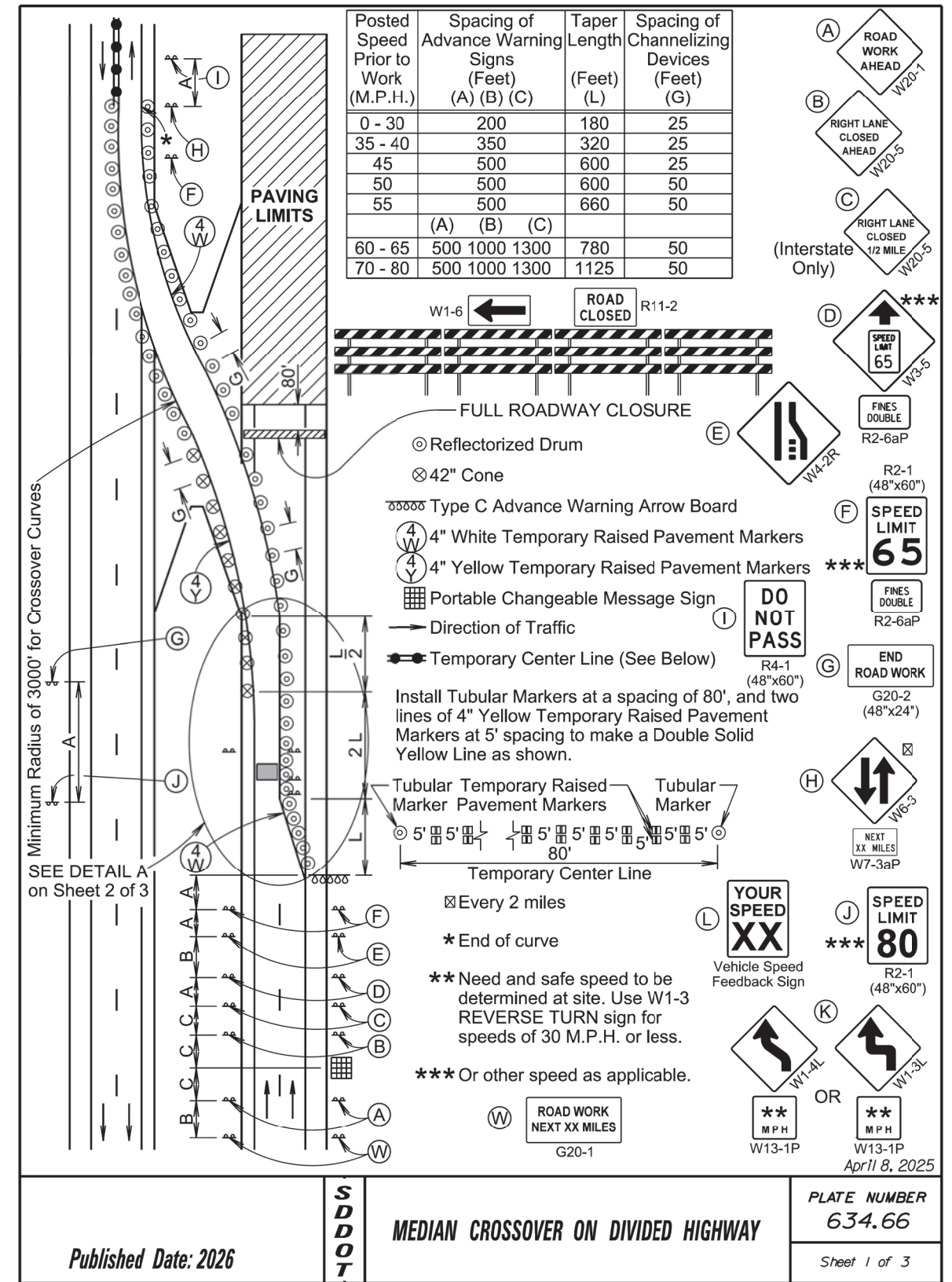
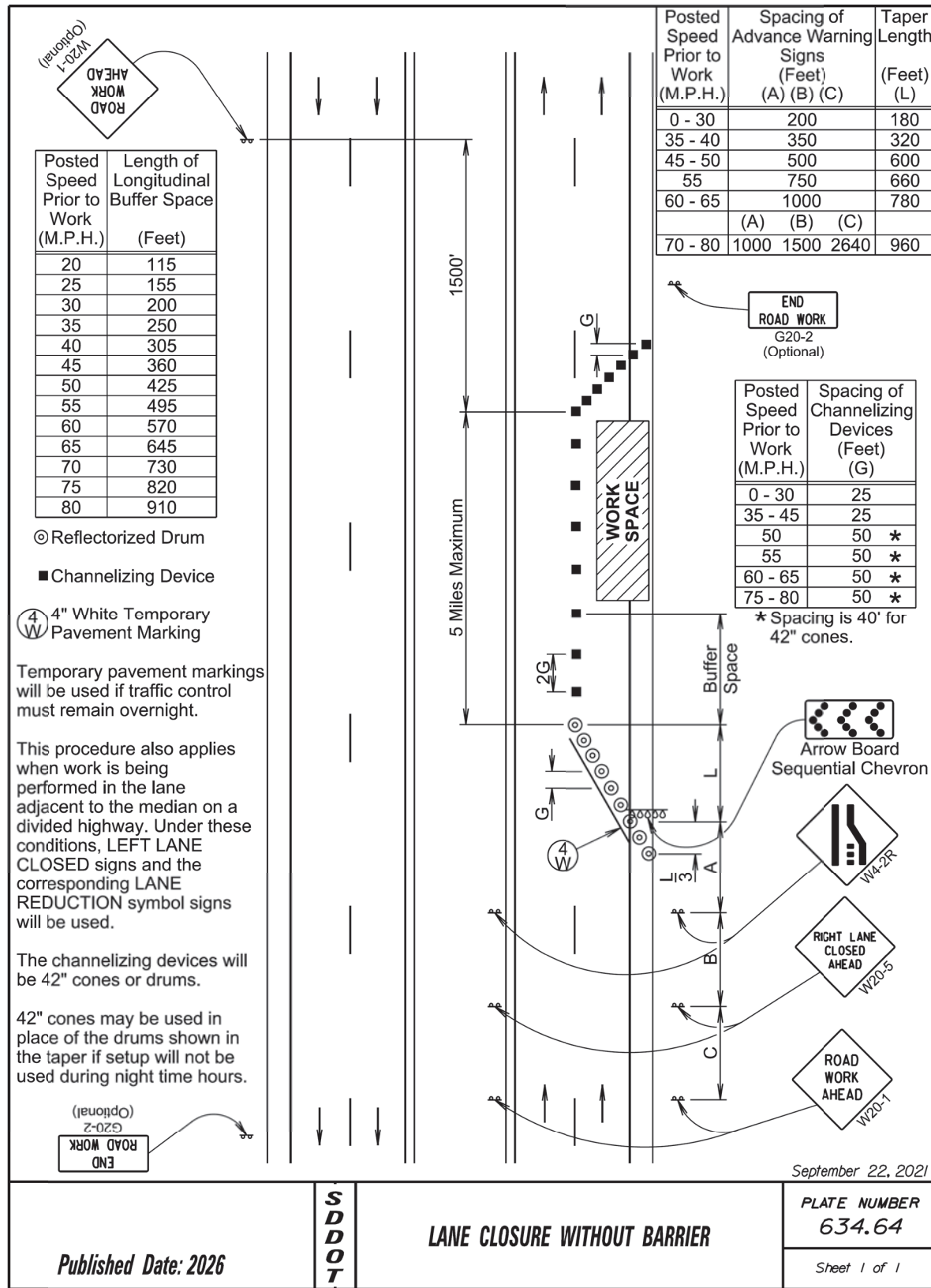
Published Date: 2026

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**WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER
634.63

Sheet 2 of 2



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
	(A)	(B)	(C)	
70 - 80	1000	1500	2640	1125

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.

⊙ Reflectorized Drum

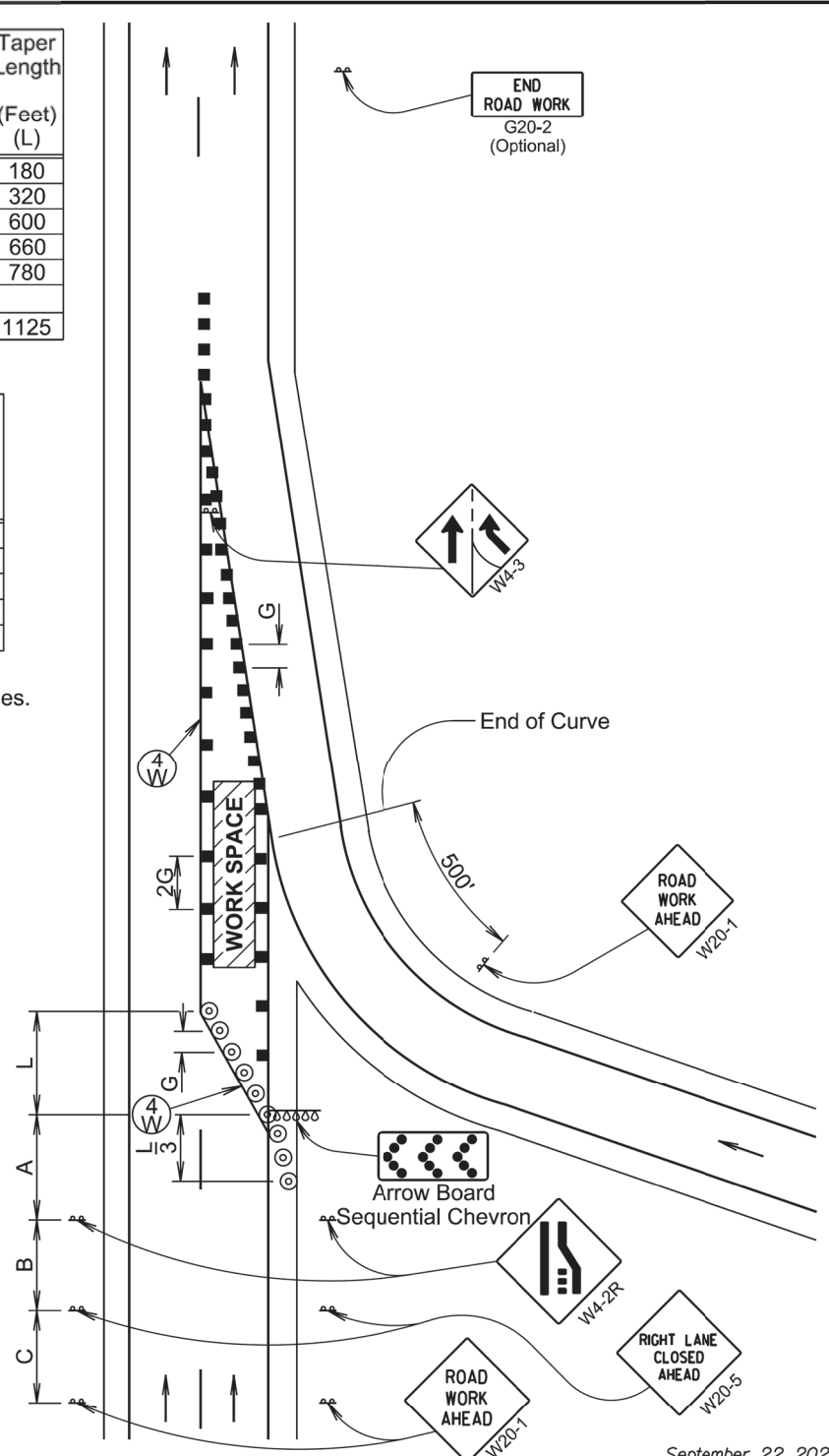
■ Channelizing Device

④ 4" White Temporary Pavement Marking

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

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

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.



September 22, 2021

S D D O T	WORK IN VICINITY OF ENTRANCE RAMP	PLATE NUMBER 634.70
		Sheet 1 of 1

Published Date: 2026

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
	(A)	(B)	(C)		
0 - 30	200			180	25
35 - 40	350			320	25
45	500			600	25
50	500			600	50 *
55	750			660	50 *
60 - 65	1000			780	50 *
	(A)	(B)	(C)		
70 - 80	1000	1500	2640	960	50 *

* Spacing is 40' for 42" cones.

** Need and safe speed to be determined on site by the Engineer.

Ordinarily, the preferred position for the second arrow board is in the closed exterior lane at the upstream end of the second merging taper. However, the second arrow board should be placed in the closed interior lane at the downstream end of the second merging taper in the following situations:

When a shadow vehicle is used in the interior closed lane and the second arrow board is mounted on a shadow vehicle.

If alignment or other conditions create any confusion as to which lane is closed by the second arrow board.

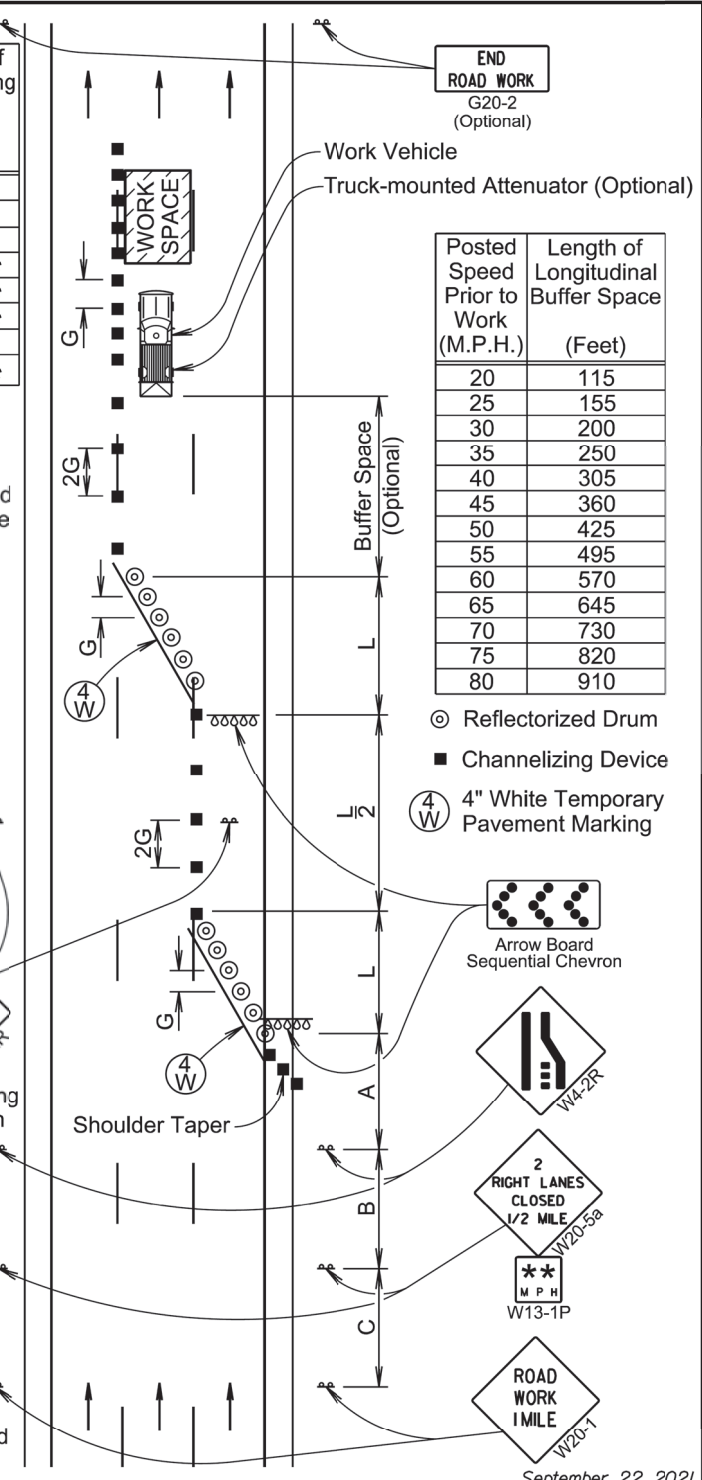
When the first arrow board is placed in the closed exterior lane at the downstream end of the first merging taper (the alternative position when the shoulder is narrow).

This procedure also applies when work is being performed in the lanes adjacent to the median on a divided highway. Under these conditions, 2 LEFT LANE CLOSED signs and the corresponding LANE ENDS symbol sign will be used.

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

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if the setup will not be used during night time hours.



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
70	730
75	820
80	910

⊙ Reflectorized Drum

■ Channelizing Device

④ 4" White Temporary Pavement Marking

Arrow Board Sequential Chevron

2 RIGHT LANES CLOSED 1/2 MILE

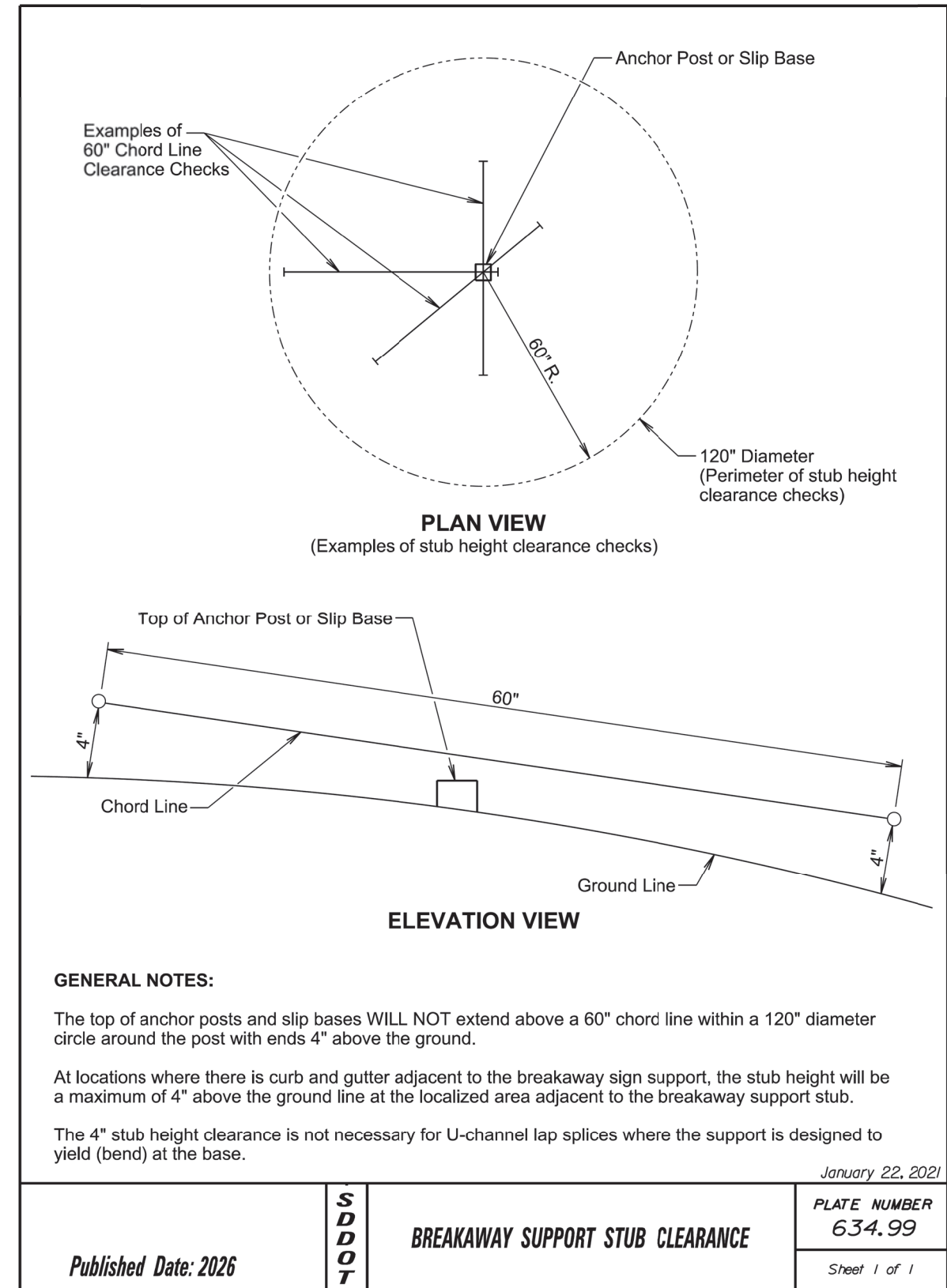
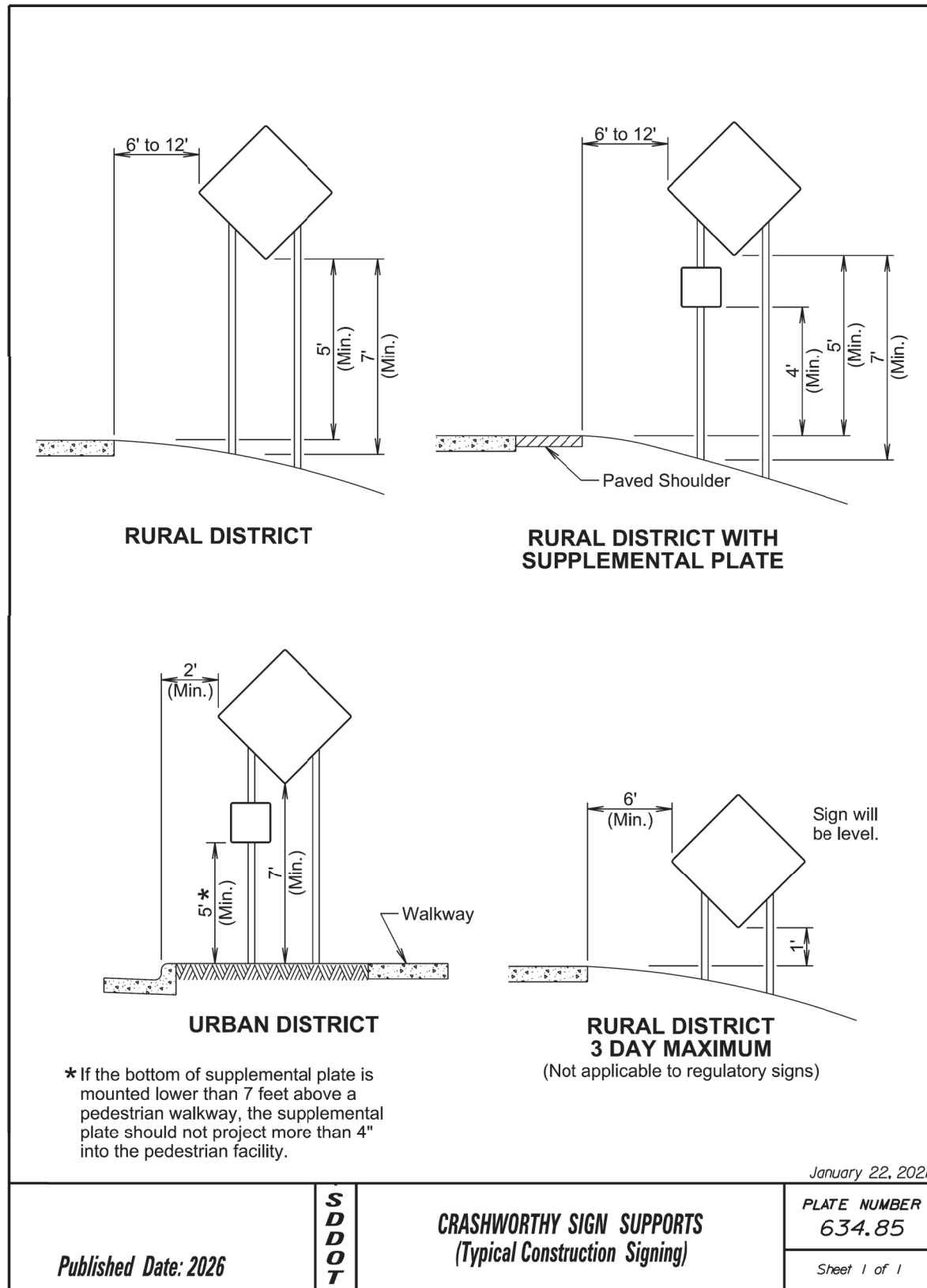
M P H
W13-1P

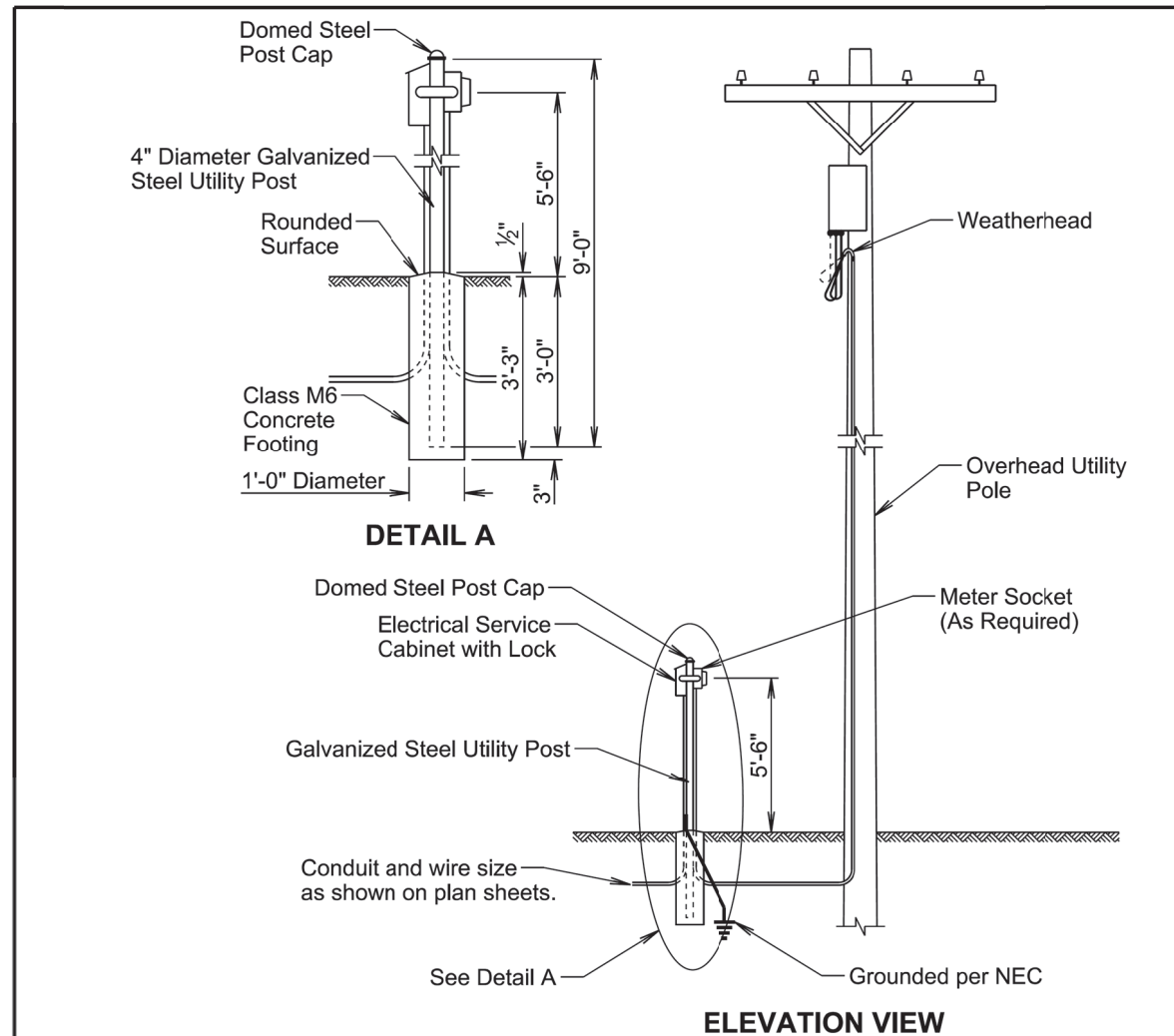
ROAD WORK 1 MILE

September 22, 2021

S D D O T	DOUBLE LANE CLOSURE	PLATE NUMBER 634.80
		Sheet 1 of 1

Published Date: 2026





GENERAL NOTES:

The concrete for the post footing will be class M6 concrete.

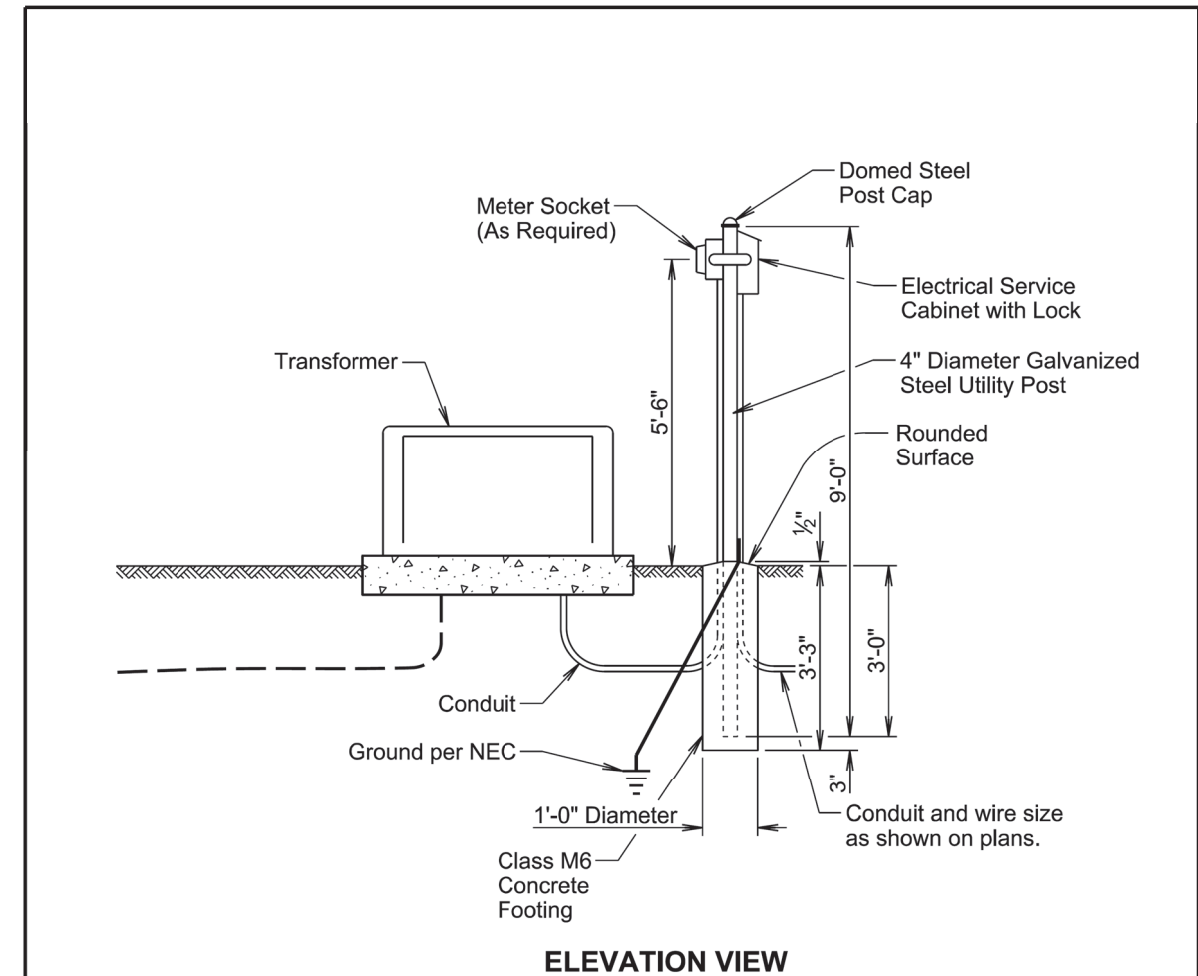
The 4" diameter galvanized steel utility post will be 9' long and will be in conformance with AASHTO Standard Specifications M181. The post will be Type 1 and either Grade 1 or Grade 2. The domed steel post cap will be in conformance with AASHTO Standard Specifications M181 and will be Type 1.

The Contractor will contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket if required, conduit, and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet".

March 31, 2024

Published Date: 2026	S D D O T	GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE	PLATE NUMBER 635.35
			Sheet 1 of 1



GENERAL NOTES:

The concrete for the post footing will be class M6 concrete.

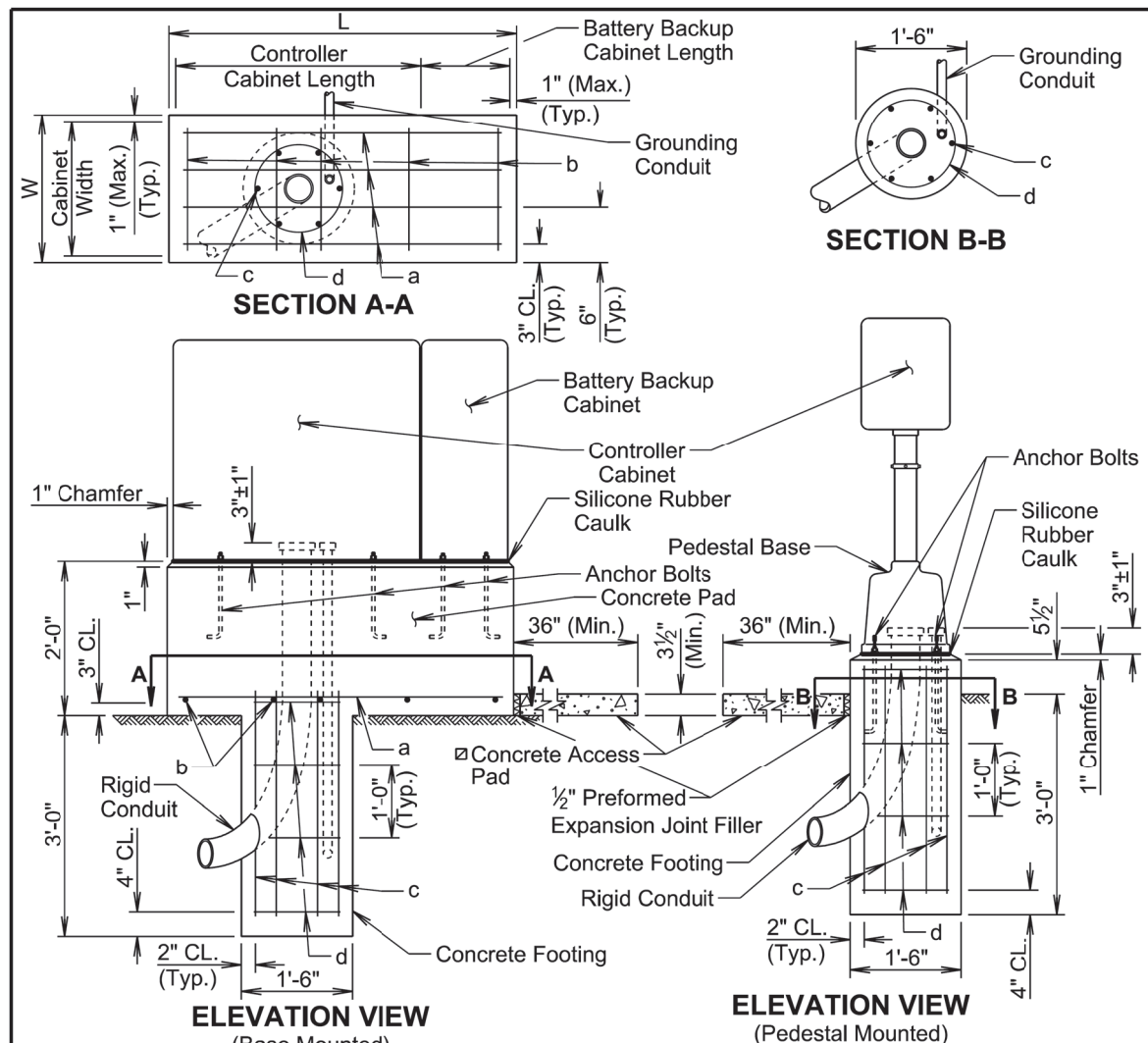
The 4" diameter galvanized steel utility post will be 9' long and will be in conformance with AASHTO Standard Specifications M181. The post will be Type 1 and either Grade 1 or Grade 2. The domed steel post cap will be in conformance with AASHTO Standard Specifications M181 and will be Type 1.

The Contractor will contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket if required, conduit, and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet".

March 31, 2024

Published Date: 2026	S D D O T	SERVICE FROM PAD MOUNTED TRANSFORMER WITH METER ON A GALVANIZED STEEL UTILITY POST	PLATE NUMBER 635.41
			Sheet 1 of 1



GENERAL NOTES:

The concrete pad will conform to the base of the controller and battery backup cabinets to the satisfaction of the Engineer.

Conduits will be sealed water-tight until the conductor cables are installed.

□ If the controller and battery backup concrete pad and footing is not located within or adjacent to an existing sidewalk, the Contractor will provide a concrete access pad as directed by the Engineer.

Anchor bolts and related hardware will conform to the controller and battery backup cabinets manufacturer's specifications.

A continuous bead of silicone rubber caulk will provide a weather-tight seal between the concrete pad or footing, and the cabinet or base.

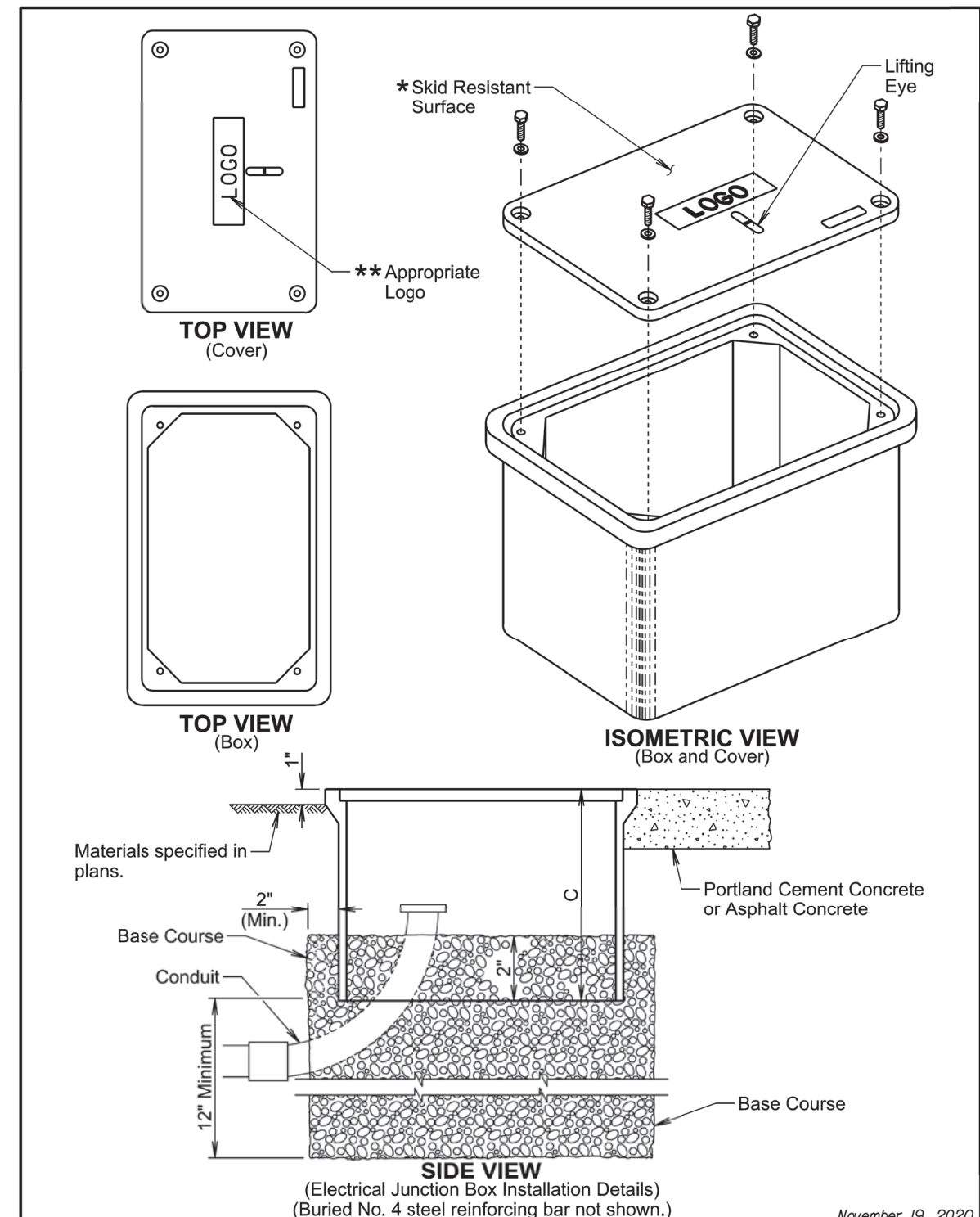
REINFORCING SCHEDULE
(for one footing)

Mk.	No.	Size	Length	Type	Bending Detail
a	*	3	L-4"	Str.	
b	*	3	W-4"	Str.	
c	6	6	3'-0"	Str.	
d	4	3	4'-0"	T3	

Note: Dimensions are out to out of bar
* Vary number of bars as required by footing size.

November 19, 2022

S D D O T	CONTROLLER CABINET AND FOOTING	PLATE NUMBER 635.60
	Published Date: 2026	Sheet 1 of 1



November 19, 2020

S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
	Published Date: 2026	Sheet 1 of 2

ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

*The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

**The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

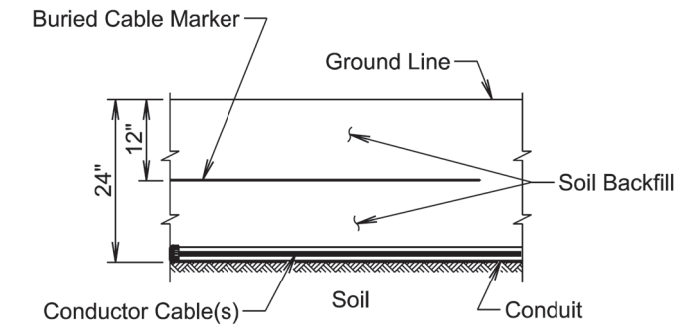
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

The electrical junction boxes will be UL listed.

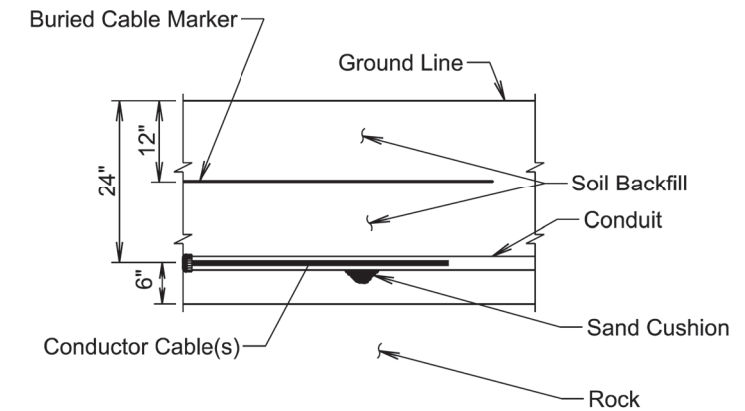
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

November 19, 2020

Published Date: 2026	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker will be plastic, approximately 6" wide, and will be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker will have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below will be printed in a contrasting color on the cable marker. The Buried Cable Marker will be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker will be incidental to the contract unit price per foot for the bid item used for the electrical conductor.

November 19, 2022

Published Date: 2026	S D D O T	CONDUIT INSTALLATION	PLATE NUMBER 635.76
			Sheet 1 of 1