DEPARTMENT OF TRANSPORTATION

Planning & Engineering
Office of Project Development
700 E. Broadway Avenue
Pierre, SD 57501
O: 605.773.3275
dot.sd.gov

November 8, 2024

Re: Project's CR 0294(74)114 – PCN 080D– I 29 Brookings & Moody County Variable Speed Limit and ITS Device Installation

To Whom It May Concern,

A pre-bid meeting for the Interstate 29 Brookings & Moody County Variable Speed Limit and ITS Device Installation project is being held on November 25th at 3:00 PM CST via Microsoft TEAMS. Interested contracting parties are invited to attend the meeting virtually via the Microsoft Teams Meeting Link provided below.

This meeting will include a presentation of the project covering topics such as the overall scope of work, design aspects, traffic control, and contract time. There will be an opportunity for Contractors to present questions to Department staff, consultants, and project stakeholders.

Attendance is not a requirement, but all interested contracting parties are strongly encouraged to attend.

If attending the meeting you must join the meeting via the link provided. In order to reduce sound feedback please mute the microphone on your computer. Due to the meeting being virtual we are requesting that you please enter the name of your company followed by the individuals from your company attending the meeting into the chat feature of Microsoft Teams.

Join Pre-Bid Meeting

Date: November 25, 2024

Time: 3:00-4:00 PM (CST)

Meeting ID: 232 847 099 483

Additional instructions regarding the meeting format will be provided at the beginning of the meeting.

We look forward to seeing you there!

Sincerely,
SD DOT

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DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION

NOTICE TO CONTRACTORS,

PROPOSAL, SPECIAL PROVISIONS,

CONTRACT AND CONTRACT BOND

FOR

VARIABLE SPEED LIMIT & ITS DEVICE

FEDERAL PROJECT NO. CR 0294(74)114
(PCN 080D)

INTERSTATE HIGHWAY 29

IN BROOKINGS, MOODY COUNTIES

December 11, 2024

NOTICE TO ALL BIDDERS

TO REPORT BID RIGGING ACTIVITIES, CALL: 1-800-424-9071

THE U.S. DEPARTMENT OF TRANSPORTATION (DOT) OPERATES THE ABOVE TOLL-FREE "HOTLINE" MONDAY THROUGH FRIDAY, 8:00 A.M. TO 5:00 P.M., EASTERN TIME. ANYONE WITH KNOWLEDGE OF POSSIBLE BID RIGGING, BIDDER COLLUSION, OR OTHER FRAUDULENT ACTIVITIES SHOULD USE THE "HOTLINE" TO REPORT SUCH ACTIVITIES.

THE "HOTLINE" IS PART OF THE DOT'S CONTINUING EFFORT TO IDENTIFY AND INVESTIGATE HIGHWAY CONSTRUCTION CONTRACT FRAUD AND ABUSE AND IS OPERATED UNDER THE DIRECTION OF THE DOT INSPECTOR GENERAL.

ALL INFORMATION WILL BE TREATED CONFIDENTIALLY, AND CALLER ANONYMITY WILL BE RESPECTED.

*** * * ***

PLANS, PROPOSALS AND ADDENDA

AFTER AWARD OF CONTRACT, THE LOW BIDDER WILL RECEIVE TEN (10) COMPLIMENTARY SETS OF PLANS, PROPOSALS, PROJECT Q & A FORUM, AND ADDENDA FOR FIELD AND OFFICE USE. AN ELECTRONIC COPY WILL ALSO BE PROVIDED. ANY ADDITIONAL COPIES REQUIRED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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Project Number: CR 0294(74)114

Revised 8/16/18
PCN 080D

NOTICE TO CONTRACTORS

Bid proposals for this project will be prepared, transmitted, and received electronically by the South Dakota Department of Transportation (SDDOT) via the South Dakota Electronic Bid System until 10 A.M. Central time, on December 11, 2024, at which time the SDDOT will open bids. All bids will be checked for qualifications with results posted on the SDDOT website. The South Dakota Transportation Commission will consider all bids at a scheduled Commission meeting.

The work for which proposals are hereby requested is to be completed within the following requirement(s):

FIELD WORK COMPLETION: **NOVEMBER 1, 2025**

THE DBE GOAL FOR THIS PROJECT IS: **NOT SPECIFIED**

WORK TYPE FOR THIS PROJECT IS: **WORK TYPE 10**

Bidding package for the work may be obtained at:
http://apps.sd.gov/hc65bidletting/ebslettings1.aspx#no-back-button

An electronic version of the most recent version of the South Dakota Standard Specifications for Roads and Bridges may be obtained at https://dot.sd.gov/doing-business/contractors/standard-specifications/2015-standard-specifications

The electronic bid proposal must be submitted by a valid bidder as designated by their company's https://apps.sd.gov/HC65C2C/EBS/BidAdminAuthorizationForm.pdf. A bidding administrator will have privileges in the SDEBS to prepare bids, submit bids, and authorize additional company employees to prepare and submit bids. Additionally, a bidding administrator will be responsible for maintaining the list of authorized bidders for the company and will have the ability to add employees, remove employees, and set-up bidder identifications and passwords within the SDEBS. Bidding Administrator authorization will remain in full force and effect until written notice of termination of this authorization is sent by an Officer of the company and received by the Department.

A bidder identification and password, coupled with a company identification previously assigned by the Department, will serve as authentication that an individual is a valid bidder for the company.

Contact information to schedule a preconstruction meeting prior to commencing with the work on this project.

Matt Brey
5000 9th Avenue SE PO Box 1446
Watertown, SD 57201
Phone: 605/882-5166

PROPOSAL Revised 8/10/11

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, STATE OF SOUTH DAKOTA:

Ladies / Gentlemen:

The following proposal is made on behalf of the undersigned and no others. It is in all respects fair and is made without collusion on the part of any other person, firm or corporation not appearing in the signature to this proposal.

The undersigned certifies that she / he has carefully examined the plans listed herein, the Specifications hereinbefore referred to, the Special Provisions and the form of contract, both of which are attached hereto. The undersigned further certifies that she / he has personally inspected the actual location of the work, together with the local sources of supply and that she / he understands the conditions under which the work is to be performed, or, that if she / he has not so inspected the actual location of the work, that she / he waives all right to plea any misunderstanding regarding the location of the work or the conditions peculiar to the same.

On the basis of the plans, Specifications, Special Provisions and form of contract proposed for use, the undersigned proposes to furnish all necessary machinery, tools, apparatus and other means of construction, to do all the work and furnish all the materials in the manner specified, to finish the entire project **within the contract time specified** and to accept as full compensation therefore the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit prices bid.

The undersigned understands that the quantities as shown in the Bid Schedule are subject to increase or decrease, and hereby proposes to perform all quantities of work, as increased or decreased, in accordance with the provisions of the specifications, and subject to any applicable special provisions, and at the unit prices bid.

The undersigned understands that the "Total or Gross Amount Bid" as immediately hereinbefore set forth is not the final amount which will be paid if this proposal is accepted and the work done, but that such amount is computed for the purpose of comparison of the bids submitted and the determination of the amount of the performance bond.

The undersigned further proposes to perform all extra work that may be required on the basis provided in the specifications, and to give such work personal attention in order to see that it is economically performed.

The undersigned further proposes to both execute the contract agreement and to furnish a satisfactory performance bond, in accordance with the terms of the specifications, within twenty (20) calendar days after the date of Notice of Award from the South Dakota Department of Transportation that this proposal has been accepted.

CERTIFICATION REGARDING LOBBYING

I certify, to the best of my knowledge and belief, that: No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement. If any funds other than Federal appropriated funds have been paid or will be paid to any of the above mentioned parties, the undersigned shall complete and submit Standard Form LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty or not less than $10,000 and not more than $100,000 for each such failure.

REV 10/11/24

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): CR 0294(74)114 PCN: 080D

TYPE OF WORK: VARIABLE SPEED LIMIT & ITS DEVICE

COUNTIES: BROOKINGS, MOODY

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Scott Kwasniewski, Jim Baltzer is the official in charge of the Brookings, Madison Career Center for Brookings, Moody Counties.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Drilled Shaft Construction, dated 10/30/24.

Special Provision for Contractor Staking, dated 10/30/24.

I-29 Intelligent Transportation System Special Provisions, dated 10/22/24.

Special Provision for Steel Beam Guardrail AASHTO M 180 Designation, date 10/8/24.
Special Provision for Acknowledgment and Certification Regarding Article 3, Section 12 of the South Dakota Constitution, dated 8/24/23.
Special Provision for Buy America, dated 5/1/24.
Special Provision for Liability Insurance, dated 4/21/22.
Special Provision for Responsibility for Damage Claims, dated 4/21/22.
Special Provision for Restriction of Boycott of Israel, dated 1/31/20.
Special Provision for Contractor Administered Preconstruction Meeting, dated 12/18/19.
Fuel Adjustment Affidavit, DOT form 208 dated 7/15.
Standard Title VI Assurance, dated 3/1/16.
Special Provision For Disadvantaged Business Enterprise, dated 2/9/24.
Special Provision For EEO Affirmative Action Requirements on Federal and Federal-Aid Construction Contracts, dated 2/5/24.
Special Provision For Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. October 23, 2023), dated 10/18/23.
Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. 10/23/23).
Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 10/24/19.

Wage and Hour Division US Department of Labor Washington DC. - US Dept. of Labor Decision Number SD20230032, dated 3/10/23.
Special Provision for Supplemental Specifications to 2015 Standard Specifications for Roads and Bridges, dated 9/7/22.
Special Provision for Price Schedule for Miscellaneous Items, dated 12/6/23.

Special Provision Regarding Storm Water Discharge, dated 5/8/18.
General Permit for Storm Water Discharges Associated with Construction Activities, dated 4/1/18
https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/StormWaterConstruction.aspx

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DRILLED SHAFT CONSTRUCTION

PROJECT CR 0294(84)232, PCN 080D
BROOKINGS & MOODY COUNTY

OCTOBER 30, 2024

Delete Section 465 and replace with the following:

465.1 DESCRIPTION

This work consists of all labor, materials, equipment, and services required in the construction of drilled shafts.

465.2 MATERIALS

A. Concrete: Drilled shaft concrete will conform to the requirements of Section 460, except as modified by this Section.

B. Controlled Density Fill: Section 464

C. Casing: Casing will be smooth steel of sufficient thickness to withstand handling stresses, concrete pressure, surrounding earth and fluid pressures, and live load surcharges (if applicable). The casing will be of the diameter specified and will have teeth at the bottom to facilitate proper seating of the casing into the plans specified formation.

D. Access Tubes for Crosshole Sonic Log (CSL) Testing: Access tubes will be 1.5 to 2 inch I.D. steel pipe conforming to ASTM A53. The selected pipes must have a round diameter free of defects or obstructions, including any at the pipe joints, in order to permit a free, unobstructed passage of the source and receiver probes. The pipes must be watertight and free from corrosion with clean internal and external faces to ensure smooth passage of the probes and to secure a good bond between the concrete and tubes.

The pipes will each be fitted with a watertight shoe on the bottom, which can be penetrated from the surface to allow tip grouting, and a removable cap on the top.

E. Grout: Grout for filling the access tubes after acceptance of CSL tested drilled shafts will conform to the requirements of Section 460.2 or will consist of Portland cement, water, and a water reducing admixture mixed in the following proportions:

Portland Cement Type I or II	1 Sack (94 lbs.)
Water	4.5 Gallons Maximum
Water Reducing Admixture	Manufacturer's Recommendation
Fly Ash (Optional)	20 Pounds Maximum

465.3 CONSTRUCTION REQUIREMENTS

A. Concrete Quality and Proportioning: The Contractor will design and be responsible for the performance of the concrete mix. The concrete mix will have the following characteristics:

1. Minimum cementitious content of 750 pounds per cubic yard. The maximum cementitious content (total cement, fly ash, and other cementitious admixture) content will be 800 pounds per cubic yard. The Contractor will substitute a portion of the cement with Class F modified fly ash in accordance with Section 605. The amount of cement to be replaced will be 20% to 25% by weight. The ratio of substitution of fly ash to cement will be 1:1 by weight;

2. Coarse aggregate will conform to Section 820 and be either size #1, #1A, or #15.

3. Minimum 28 day compressive strength of 4500 psi;

4. Slump at time of placement will be between 6 and 8 inches for concrete that is placed by the free-fall or tremie method. The slump at the time of placement will be between 7 and 9 inches for concrete that is pumped through a tremie. In addition, the slump will be maintained above 4 inches for 4 hours from the time of batching regardless of the placement method. Slump loss will be tested in accordance with SD 423. Slump loss will be tested within 30 days prior to placing concrete in each shaft.

5. Initial set of the concrete obtained within 12 hours of completion of placing concrete for each drilled shaft;

6. Entrained air content of 6.5% with an allowable tolerance of +1% to -1.5%.

7. The mix design will establish a maximum water cementitious material ratio for the concrete mix (never to exceed 0.44).

The use of a water reducer will be required to achieve the above properties. Water reducers conforming to AASHTO M 194 Type C (Accelerating) and Type E (Water-Reducing and Accelerating) will not be permitted.

B. Drilled Shaft Installation Plan: Not less than 30 calendar days before beginning drilled shaft construction, the Contractor will submit an installation plan to the Department for the Department's opportunity for review. Any review by the Department of the installation plan is limited to general conformance with the contract plans and specifications only. The Contractor will send an email with the installation plan attached as a PDF to the Project Engineer and Office of Bridge Design. Upon request, the Project Engineer will provide the Contractor the appropriate email addresses. Within 14 calendar days of receiving the installation plan, the Office of Bridge Design will respond to the Contractor in one of the following ways: 1) No Exceptions Noted or 2) Returned for Revision. If the Department's response states "Returned for Revision", the Contractor must make the revisions and resubmit the installation plan for review as specified above. The Contractor will not begin drilled shaft construction until the Department has confirmed, in writing, a completed review with a response of "No Exceptions Noted". The installation plan will provide the following information:

1. A list of all proposed equipment to be used and available on site including, but not limited to, cranes, casing, drill augers, pilot bits, bailing buckets, final cleaning equipment, air lifts, water trucks, dewatering pumps, tremies, concrete pump line, etc. Include the casing diameter and wall thickness in the equipment list;

2. Details of the overall shaft construction sequence in each substructure unit or group of drilled shafts;

3. A detailed explanation of how the casing is to be installed. It is required that a T-bar be on the project site such that the casing can be twisted into the specified formation to achieve as watertight of a seal as possible. Tamping or pounding the casing into the ground will not be allowed;

4. Details of shaft excavation methods to be used;

5. Methods to be used to clean the shaft excavation;

6. Details of reinforcement centering devices and their spacing;

7. Details and methods for supporting and lifting reinforcing steel cages;

8. Details of the concrete pump line and tremie tube that is to be used in the event that a wet excavation is encountered. Include all other details of concrete placement such as free fall (allowed only for shafts 36 inches in

diameter or greater), pumping, etc. A tremie tube is required to be on the project site. Details for the disposal of contaminated concrete from a wet excavation will also be included;

9. The Contractor will verify all existing ground and water elevations and establish the elevations of any work platforms, etc. that may be used. These elevations will be included in the drilled shaft installation plan; and,

10. CSL Testing Organization and Personnel: The Contractor will submit the name of the independent testing organization and the names of the personnel conducting the CSL tests. The submittal will include documentation that the qualifications specified below are satisfied. The independent testing organization and the testing personnel will meet the following minimum qualifications:

a. The testing organization will have performed CSL tests on a minimum of three deep foundation projects in the last two years.

b. Personnel conducting the tests for the testing organization will have a minimum of one year experience in CSL testing and interpretation.

C. General Requirements: A drilled shaft preconstruction meeting is required to be held a minimum of 5 working days prior to beginning drilled shaft construction. A representative from the bridge Contractor, drilled shaft subcontractor, concrete supplier, Area Office, and Office of Bridge Design is required to attend this meeting. The drilled shaft installation plan will be discussed at the meeting and the responsibilities of each of the parties involved clearly identified.

The Contractor will perform the excavation for the shafts through the various types of materials that are encountered. The excavation will be to the dimensions and elevations shown in the plans, final diameter and depth, and filled with concrete within 24 hours of encountering frictional bedrock. In the event the 24 hour timeframe will be exceeded, drilled shaft operations will cease and the office of Bridge Design will be immediately notified. To preserve the design capacity of the bedrock, the Contractor may be required to fill the excavation with controlled density fill at no additional cost to the Department.

Contractor methods and equipment will be suitable for the intended purpose and materials encountered. All of the equipment listed in the drilled shaft installation plan will be on the project site fully assembled and inspected by DOT staff prior to the start of work. The following equipment is required to be available for use on the project site at all times during drilled shaft construction:

1. Tremie and concrete pump line (if used) of sufficient length to reach from above the reinforcing cage to the bottom of the drilled shaft;

2. T-bar for installing casing;

3. Cleanout bucket of the proper size;

4. Graduated measuring device to determine excavation and water depth;

5. Pilot bit capable of drilling through rock;

6. A pump of sufficient discharge rate for filling the excavation with water when required due to caving in or water bearing soils and to remove the displaced water during underwater placement of concrete. Dewatering is a requirement prior to concrete placement by the free fall method; and,

7. Water tank(s), water truck(s), or on site water source of at least 2 times the volume of the drilled shaft.

Unless otherwise specified on the plans, the Contractor will begin drilled shaft excavation using the dry construction method. The Contractor will use the temporary casing construction method when specified on the plans or when caving soils or ground water is encountered during excavation that is begun by the dry construction method. The permanent casing construction method will be used only when specified on the plans or approved by the Office of Bridge Design.

Upon completion of the excavation of a drilled shaft, a cleanout bucket no less than 12 inches smaller than the final diameter of the shaft will be used to remove all loose material from the bottom of the shaft. Wet shaft excavations will be cleaned using an air lift system. After cleanout, the reinforcing steel will immediately be installed and the concrete placed prior to start of excavation for another drilled shaft.

For drilled shaft concrete pours of 18 cubic yards and less, the Contractor will have all of the concrete necessary to complete the drilled shaft at the project site and tested prior to placing any concrete in the drilled shaft.

Vibrations caused by any work activities that may be detrimental to the freshly placed concrete will not be allowed for at least 72 hours after placement or until the concrete has attained a minimum compressive strength of 1600 psi. If the Engineer suspects that construction activities may be causing excessive vibration, a 2 x 4 inch stake will be driven solidly into the ground adjacent to the freshly placed concrete. A small container of water will then be placed on top of the stake. If the water surface remains calm, the construction activity will be allowed to continue. When the water surface shows any movement, vibrations are reaching the freshly placed concrete and the construction activities will be either stopped or altered such that vibrations at the freshly placed concrete are eliminated.

D. Dry Construction Method: The dry construction method consists of drilling the shaft, removing loose material from the excavation and placing the concrete in a relatively dry excavation. The Engineer must be able to inspect the sides and bottom of the excavation before placing the reinforcing steel cage and concrete. The dry construction method will be approved by the Engineer when the shaft excavation has: a water accumulation rate of 3 inches or less per hour; the sides and bottom of the excavation remain stable without detrimental caving, sloughing or swelling; and loose material and water can be removed before inspection and concrete placement.

E. Temporary Casing Construction Method: The temporary casing construction method will be used when excavations, begun by the dry construction method, encounter water bearing or caving soil formations, or when specified on the plans. If, during dry drilling, the Contractor encounters caving or water bearing soils, the Contractor will stop drilling and fill the hole with water to a point above the ground water elevation. If practical, a positive 10 foot head of water will be maintained above the ground water elevation. When necessary, a temporary casing may be required to achieve this head. If caving soil is encountered, a sufficient head of water will be maintained to stop the caving. Once the hole is filled with water, the excavation will be advanced by drilling to a depth at which an impervious formation is reached. A sufficient head of water will be maintained during the drilling operation. A temporary casing will then be placed into the impervious formation by use of a T-bar and twisting the casing into the specified formation to produce a watertight seal at the bottom.

Other methods of seating the casing may be used with the Engineer's approval. The casing and the seal at the bottom of the casing will be watertight. Water will be pumped out of the temporary casing and the excavation continued using the dry construction method. During concrete placement, the casing will be withdrawn. If a watertight seal cannot be achieved at the bottom of the casing, the shaft will be drilled to the final elevation while keeping the hole full of water to maintain an adequate fluid head to control caving. Concrete will then be placed using proper underwater concrete placement methods.

1. If the Contractor elects to remove a casing and substitute a longer casing through caving soils, the excavation will be backfilled before a new casing is installed. Other methods may be used to control the stability of the excavation and protect the integrity of the foundation soils when approved by the Engineer.

2. Temporary casing will be removed before any of the drilled shaft concrete attains initial set. Before the casing is withdrawn, the level of fresh concrete in the casing will have sufficient head so all water trapped behind the casing is displaced upward without contaminating or displacing the concrete. When

water seepage cannot be stopped and water is required to maintain stability of the perimeter of the hole, the concrete will be placed in the shaft using a tremie or pump. Simultaneously extract the casing and tremie, or pump, at a slow uniform rate. Maintain a sufficient head of concrete above the bottom of the casing to overcome the hydrostatic pressure outside the casing. The bottom of the tremie, or pump, will always be embedded a minimum of 5 feet into the fresh concrete during the extraction.

3. Temporary casing will be removed at the time of concrete placement. When a casing becomes bound in the excavation, drilled shaft construction will cease and the Engineer will immediately inform the Office of Bridge Design.

F. Permanent Casing Construction Method: The permanent casing construction method will be used only when specified on the plans or approved by the Office of Bridge Design. This method consists of placing a casing to a prescribed depth before excavation begins. If full penetration cannot be attained, the Engineer may require excavation of material within the embedded portion of the casing or excavation of a pilot hole ahead of the casing or both until the casing reaches the desired penetration. Over reaming to the outside diameter of the casing may be required before placing the casing, as approved by the Engineer.

A T-bar will be used to twist the permanent casing into the specified formation to achieve a watertight seal at the bottom. Other methods of seating the permanent casing may be used with the Engineer's approval. The casing and the seal at the bottom of the casing will be watertight.

If the Contractor elects to remove a casing and substitute a longer casing through caving soils, the Engineer may require that the excavation be backfilled before a new casing is installed. Other methods may be used to control the stability of the excavation and protect the integrity of the foundation soils when approved by the Engineer.

If, during dry drilling, the Contractor encounters caving or water bearing soils, the Contractor will stop drilling and fill the hole with water to a point above the ground water elevation. If practical, a positive 10 foot head of water will be maintained above the ground water elevation. If caving soil is encountered, a sufficient head of water will be maintained to stop the caving. Once the hole is filled with water, the excavation will be advanced by drilling. A sufficient head of water will be maintained during the drilling operation.

Upon completion of drilling and cleaning, the Contractor will cut off the permanent casing to the plan shown cutoff elevation. When the cutoff elevation is not shown on the plans, the cutoff elevation is assumed to be 1 foot above flowline or ground line as appropriate.

G. Excavation and Drilling Equipment: Excavation and drilling equipment will have adequate capacity including power, torque, and downward force. The excavation and over reaming tools will be of adequate design, size, and strength to perform the work shown in the plans and described in this specification. The excavation and drilling equipment will be capable of excavating to the plans depth without the use of an extension bar. When the material encountered cannot be drilled using conventional earth augers and under reaming tools, the Contractor will provide special drilling equipment including, but not limited to, rock core barrels, rock tools, air tools, blasting materials, and other equipment as necessary to excavate the shaft to the size and depth required. Approval by the Engineer is required before any excavation by blasting is conducted.

H. Reinforcing Steel Cage Construction and Placement: The reinforcing steel cage (consisting of longitudinal bars, spirals or tie bars, cage stiffener bars, spacers, crosshole sonic log (CSL) access tubes, and centralizers) will be completely assembled and placed as a unit into the excavated shaft. Placement of the reinforcing steel cage will take place immediately after the shaft excavation is inspected and approved by the Engineer and before concrete placement.

The reinforcing steel cage will be tied and supported in the shaft so the cage will remain within the specified tolerances. Hanging the steel cage from the casing will not be allowed. Welding of the reinforcing steel cage will not be allowed. Concrete centralizers or other approved noncorrosive centering devices will be used within 1 foot of the bottom. Centralizers will also be used at intervals not exceeding 5 feet along the length of the shaft. Each level of centralizers will be rotated 45 degrees in the horizontal plane relative to the level below. Concrete centralizers will be constructed of concrete equal in quality and durability to the concrete specified for the shaft. The concrete centralizers will have the ends beveled to minimize the potential for catching on obstructions during reinforcing steel placement and they will have a minimum of two tie wires cast in the concrete. Wrapping wires around the concrete centralizers to hold them in place is not an acceptable method of attachment. Any type of steel used as centralizers will be epoxy coated. The reinforcing steel cage will not be in contact with the bottom of the shaft.

The elevation of the top of the reinforcing steel cage will be checked before and after the concrete is placed. If the reinforcing steel cage is not maintained within the specified tolerances, corrections to the cage support will be made by the Contractor, as required by the Engineer. No additional shafts will be constructed until the Contractor has modified the reinforcing steel cage support to prevent vertical movement, in a manner satisfactory to the Engineer.

I. Installation of CSL Access Tubes: The Contractor will install CSL access tubes for CSL testing in all drilled shafts to permit access for the CSL test

probes. The Contractor will install one CSL access tube for each 12 inches of shaft diameter with a minimum of 4 evenly spaded around the reinforcing cage. The CSL access tubes required in the plans without a corresponding bid item for CSL test are used for CSL testing of the drilled shaft if the Department deems the quality of the drilled shaft is suspect. The access tubes will be evenly spaced and securely attached to the interior of the reinforcement cage of the shaft as shown in the plans. The tubes will be as near to vertical and parallel as possible. Even moderate bending of the tubes will result in large regional variations of the data. The tubes will extend from 3 inches above the bottom of the drilled shaft to at least 4 feet above the construction joint. If the plans bottom of drilled shaft is lowered during drilling, the CSL tubes will also be extended. Under no circumstances will the tubes be allowed to rest on the bottom of the drilled excavation. During placement of the reinforcement cage, care will be exercised as to not damage the tubes.

After placement of the reinforcement cage, the tubes will be filled with clean water as soon as possible and the tube tops capped to keep debris out. The tubes must be filled with water and capped before the pouring of the concrete, otherwise debonding of the access tubes from the concrete will occur resulting in data which indicates poor quality concrete. The Contractor will ensure the tubes remain filled until grouting occurs. Care will be taken during the removal of the caps from the pipes after installation so as not to apply excessive torque, hammering, or other stresses which could break the bond between the tubes and the concrete.

J. Concrete Placement: Concrete must be continuously agitated in the hauling unit and be discharged within 105 minutes after the cement has been placed in contact with the aggregates for the first load and then 135 minutes after the cement has been placed in contact with the aggregates for all remaining loads. When the concrete temperature is 80°F or above, the time limitation will be reduced to the first load discharged within 75 minutes then 105 minutes for all remaining loads. The interval between batches will not exceed 30 minutes.

For delivery of concrete in remote locations where the preceding concrete delivery requirements will be difficult to meet, the Contractor may be allowed to use a set retarding admixture to control initial set when approved by the Engineer. When set retarding admixtures are allowed, the concrete delivery requirements may be adjusted with approval from the Department's Concrete Engineer.

The drilled shaft concrete will be placed immediately after the reinforcing steel cage is placed.

Concrete placement will be continuous until the shaft is full and uncontaminated concrete flows out of the top of the shaft, as determined by the Engineer. The

use of spud vibrators or other vibrating tools in the drilled shaft concrete will not be permitted.

The free fall method of concrete placement is allowed for shafts 36 inches in diameter or greater provided that all of the following conditions are met:

The water accumulation rate in the excavation is 3 inches or less per hour;

There is no caving or sloughing of the excavation;

The excavation is dewatered immediately prior to concrete placement such that there is no more than 3 inches of standing water in the bottom of the excavation; and,

The concrete placement is directed through a hopper with a drop tube such that the concrete fall is vertical down the center of the shaft and the concrete is not allowed to hit the sides of the shaft or the reinforcing steel cage.

K. Underwater Placement of Concrete:

1. **Tremie:** The tremie pipe will be a minimum of 0.25 inch thick wall steel pipe, with a minimum inside diameter of 7 3/4 inches for up to 6 foot diameter drilled shafts. The tremie pipe will be a minimum of 0.375 inch thick wall steel pipe, with a minimum inside diameter of 9 3/4 inches for drilled shafts larger than 6 foot diameter. The tremie pipe will be smooth and thoroughly cleaned of any hardened concrete, rust, and all other contaminants. The tremie pipe will be marked to allow determination of depth to the mouth of the tremie. Joints between sections of tremie pipe will be gasketed and bolted to be watertight under placement conditions. Instead of bolted joints, welded joints may be used if a smooth finish is maintained on the inside of the tremie pipe at the weld location.

   A crane or other lifting device will be available to remove the tremie from the water for resealing or horizontal relocation.

   Placement of underwater concrete will be a continuous operation. If an interruption of placement occurs, the interruption will not exceed 30 minutes without removal of the tremie and restarting the concrete placement according to the paragraph below. An interruption in concrete placement will not exceed the time for the concrete to change to a 4” slump or less. If the concrete attains the initial set before the concrete placement is completed, concrete placement will cease and the concrete in the shaft will be rejected and removed from the shaft.

   Starting/Restarting of the concrete placement by tremie will begin by sealing the bottom of the tremie with a watertight seal before placing the tremie into

the water. The watertight seal will prevent water from entering the tremie, yet will be dislodged when concrete flow is initiated. The empty tremie pipe will be sufficiently heavy to be negatively buoyant when empty. The tremie pipe will be sealed, lowered to the bottom of the shaft or embedded at least 5 feet into the concrete, and completely filled with concrete. Fill the tremie slowly to avoid entrapped air and bridging. When full, the tremie will be slowly lifted 6 inches off the bottom to start concrete flow. The concrete supply will be continuous until soundings indicate the tremie has the required embedment. After being dislodged, the sealing device will either remain on the bottom or be retrieved by the Contractor.

The mouth of the tremie will always remain embedded in the fresh concrete a minimum of 5 feet unless the tremie is being completely removed from the water. At no time will the concrete be allowed to fall through water.

A tremie will not be moved horizontally while concrete is flowing through it. To relocate a tremie, lift it from the water, reseal, relocate, and restart as required above.

All vertical movements of the tremie will be made slowly and will be carefully controlled to prevent loss of seal. If loss of seal occurs, placement through that tremie will be halted immediately. The tremie will be removed, resealed, replaced, and restarted as directed above.

2. **Concrete Pump:** Concrete pumps can be used for underwater concrete placement if surging of the pump line can be controlled to keep the pump line sufficiently embedded into the fresh concrete. If surging of the line cannot be controlled, a concrete pump will not be used.

   The pump line will be not less than 5 inches in diameter. The portion of the pump line that penetrates the deposited concrete will be a rigid steel line (pipe) at least the same diameter as the pump line.

   An approved plug will be inserted into the pump line, near the pump, in such a way that there is fresh concrete against the plug, with no air or water between the plug and concrete. The plug will be advanced down the pump line using pressure from the concrete pump to the bottom of the shaft.

   Placement will begin with the pump line within 6 inches of the bottom of the shaft. After pumping begins, the pump line will be kept within 6 inches of the bottom until soundings indicate that the pump line is embedded at least 5 feet into fresh concrete. The end of the pump line may be raised with the rising column of concrete as long as the end of the pump line remains embedded at least 5 feet into the concrete. At no time will the concrete be allowed to fall through water.

Placement of concrete will be a continuous operation. Interruptions of placement will not exceed 30 minutes or the time of initial set of the concrete whichever is shorter. If the time of initial set is exceeded, the concrete will be rejected and removed from the shaft.

If the pump line is allowed to come out of or is removed from the concrete once placement has begun, restarting will require a tremie. Restarting of the concrete placement by tremie will begin by sealing the bottom of the tremie with a watertight seal before placing the tremie into the water. The watertight seal will prevent water from entering the tremie yet will be dislodged when concrete flow is initiated. The empty tremie pipe will be sufficiently heavy to be negatively buoyant when empty. The tremie pipe will be sealed, lowered to the bottom of the shaft or embedded at least 5 feet into the concrete, and completely filled with concrete. Fill the tremie slowly to avoid entrapped air and bridging. When full, the tremie will be slowly lifted 6 inches off the bottom to start concrete flow. The concrete supply will be continuous until soundings indicate the tremie has the required embedment. After being dislodged, the sealing device will either remain on the bottom or be retrieved by the Contractor.

L. CSL Testing: The Contractor will coordinate CSL testing on all drilled shafts with a bid item for CSL test included in the plans. In addition, The Contractor will coordinate CSL testing on all drilled shafts without a bid item for CSL test if the Department deems the quality of the drilled shaft is suspect and the Department determines CSL testing necessary. Measurement and payment of any additional CSL testing will be in accordance with the measurement and payment portion of this specification.

For the Department to determine if CSL testing is necessary, no subsequent work above the construction joint will be allowed for 7 days or until authorized by the Engineer, whichever comes first.

All equipment, testing, and reporting procedures will be provided and performed in accordance with ASTM D6760 and the following.

1. Testing: The testing and analysis will be performed by an independent testing organization proposed by the Contractor and approved by the Engineer.

The CSL testing will be performed after the shaft concrete has cured at least 48 hours. Additional curing time prior to testing may be required if the shaft concrete contains admixtures, such as set retarding admixture or water reducing admixture. The additional curing time prior to testing required under these circumstances will not be grounds for additional compensation or extension of time to the Contractor.

After placing the shaft concrete and before beginning CSL testing of a shaft, the Contractor will inspect the access tubes. Each access tube that the test probe cannot pass through will be replaced, at the Contractor's expense, with a 1.5 to 2 inch diameter hole cored through the concrete for the entire length of the shaft. Location of the core hole will be determined by the CSL testing firm and will not damage the shaft reinforcement. Descriptions of inclusions and voids in cored holes will be logged and a copy of the log will be submitted to the Engineer. Findings from cored holes will be preserved, identified as to location, and made available for inspection by the Engineer.

2. **Equipment:** CSL equipment will consist of the following components:

   A digitizing card for conversion of analog CSL data to digital;

   A microprocessor based CSL system for recording, processing, analyzing, displaying and log printing of digitally converted CSL data;

   Ultrasonic source and receiver probes capable of logging 1.5 to 2 inch I.D. pipes;

   An ultrasonic voltage pulser to excite the source combined with a synchronized triggering system to prompt the recording system;

   A depth measuring device used to correlate records with depth; and,

   Appropriate filter/amplification and cable systems for CSL testing.

3. **Procedure:** For the CSL test, information on the shaft bottom and top elevations and length, along with construction dates must be provided to the testing organization before or at the time of testing. Ultrasonic transmitter/receiver probes are then lowered to the bottom of a pair of access tubes. All slack is removed from the cable in order to assure accurate depth measurements. The two probes are then pulled simultaneously as to maintain a near horizontal ray path between them. Measurement will be made at 0.2 foot intervals or less as the probes ascend the tube pairs. This process is repeated for all test paths along the outer perimeter as well as across the inner diagonals of the shaft. The data is analyzed and anomalies/defects characterized by longer travel times and lower signal amplitudes should be reported to the Engineer at the time of testing.

4. **CSL Results:** The CSL results will be presented in report form. Digitized raw data files will also be submitted with the report. This report will contain CSL logs and waterfall diagrams for each tube pair tested combined with an analysis of the first arrival time and compressional wave velocity along

with the signal amplitude of the pulse versus depth. Any anomaly/defect zones will be discussed in the report where appropriate.

The report will identify and provide detailed discussion of each anomalous zone detected by the CSL. Anomalous zones are areas where velocity reduction exceeds 20% of the shaft average velocity. Within these zones collect and process additional data to construct three-dimensional color-coded tomographic images with two-dimensional cross-sections between tubes within the anomalous zone.

Upon completion of the CSL testing and acceptance of the drilled shaft by the Engineer, the water will be removed from the access tubes and any other drilled holes. The access tubes and drilled holes will then be completely filled with grout. The access tubes and drilled holes will be filled using grout tubes that extend to the bottom of hole. The access tubes will be cut off flush with the top of the drilled shaft.

M. Acceptance of CSL Tested Drilled Shafts: The acceptance of each drilled shaft will be the decision of the Engineer, based on the results of the CSL reports and other information about the shaft placement. De-watering and grouting of the access tubes and any subsequent work above the construction joint of the drilled shaft will not be done until after the acceptance of each shaft. The Engineer will provide a response to the Contractor within 5 business days after receiving the test results and analysis submittal. Rejection of the shaft based on CSL will require conclusive evidence that a defect exists in the shaft which will result in inadequate or unsafe performance under service loads. If the CSL records are complex or inconclusive the Engineer may require coring or excavation of the shaft to verify shaft conditions. If no defect is encountered, the state will pay for all coring or excavation costs, including the grouting of all core holes.

In the case that any shaft is determined to be unacceptable, the Contractor will submit a plan for remedial action to the Engineer for review. Any modifications to the foundation shafts and load transfer mechanisms caused by the remedial action will require calculations and working drawings stamped by a SD registered Professional Engineer for all foundation elements affected. All labor and materials required to perform remedial shaft action will be provided at no cost to the Department and with no extension of the contract time.

N. Construction Tolerances: The following tolerances apply to drilled shafts:

The drilled shaft will be within one twelfth of the shaft diameter or 3 inches, whichever is less, of the plan shown horizontal position, at the plan elevation of the top of the shaft.

The bottom of the shaft will be drilled to the plan shown elevation, within a tolerance of plus or minus 6 inches.

The vertical alignment of the shaft excavation will not vary from the plan alignment by more than 1/4 inch per 1 foot of depth or 3 inches of length or, whichever is less.

After all concrete is placed, the top of the reinforcing steel cage will be no more than 6 inches above nor more than 3 inches below plan position.

The diameter of the completed shaft will be the plan diameter with a tolerance of minus 0 inch, plus 2 inches.

The top of the shaft will be built to plan elevation with a tolerance of plus or minus 1 inch. The plan shown elevation of the top of shaft will not be changed without prior permission from the Office of Bridge Design.

Excavation equipment and methods will be designed so the completed shaft excavation will have a relatively flat bottom.

465.4 METHOD OF MEASUREMENT

A. Class A45 Concrete, Drilled Shaft: The plan quantity will be the quantity paid for unless a change is ordered in writing. If a change is ordered, measurement will be according to neat line dimensions specified in the change and quantities computed to the nearest 0.1 cubic yard.

B. Drilled Shaft Excavation: The plan quantity will be the quantity paid for unless a change is ordered in writing. If a change is ordered, measurement will be according to the neat line dimensions specified in the change and quantities computed to the nearest 0.1 cubic yard.

C. Permanent Casing: The length of casing from the plan shown cutoff elevation to the bottom of the casing unless otherwise specified in the plans. Permanent Casing will be measured to the nearest 0.1 linear foot, for each specified size of casing.

D. Crosshole Sonic Log (CSL) Test: CSL testing will only be measured once per shaft tested. The accepted quantity of CSL tests will be the plan quantity unless additional CSL testing is ordered by the Engineer. Measurement will be made only once per shaft tested.

When no bid item for crosshole sonic log (CSL) test is included in the plans, the following will apply:

If the CSL testing shows the shaft is sound with no anomalies, the Department will pay for the CSL testing by CCO. If the CSL test shows anomalies with the shaft, the Department will not make payment for the CSL testing or pay for the cost of any remedy necessary.

465.5 BASIS OF PAYMENT

A. Class A45 Concrete Drilled Shaft: The accepted quantities of concrete will be paid for at the contract unit price per cubic yard. Payment will be full compensation for labor, equipment, tools, materials, and all incidentals required. All costs for furnishing, installing, cutting off, and grouting the CSL access tubes will be incidental to the unit price bid for Class A45 concrete drilled shaft. Payment will be for plan quantity regardless of the amount placed. If a change is ordered, payment will be for the changed quantity at the contract unit price.

B. Drilled Shaft Excavation: The accepted quantities of excavation will be paid for at the contract unit price per cubic yard. Payment will be full compensation for labor, equipment, tools, materials, and all incidentals required, including blasting equipment and temporary casings. Payment will be for plan quantity regardless of the amount placed. If a change is ordered, payment will be for the changed quantity at the contract unit price

C. Permanent Casing: The accepted quantities of casing will be paid for at the contract unit price per linear foot, for each specified size. Payment will be full compensation for labor, equipment, tools, materials, and all incidentals required.

D. Crosshole Sonic Log (CSL) Test: Payment will be full compensation for all labor, equipment, tools, materials, services, and incidentals required to perform the tests and analyze the results. Payment will be made only once per shaft tested.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR STAKING

PROJECT CR 0294(84)232, PCN 080D
BROOKINGS & MOODY COUNTY

OCTOBER 30, 2024

Delete Section 5.8 of the specifications and insert the following:

SECTION 5.8
CONSTRUCTION STAKES, LINES AND GRADES
CONTRACTOR GRADE STAKING

A. DESCRIPTION

The Contractor will perform all construction staking. The staking work includes, but is not limited to, establishing or re-establishing the project centerline; establishing control points and benchmarks as needed; setting additional benchmarks as needed; taking original and final cross sections of all Contractor secured borrow sources and State designated borrow sources; taking cross sections of all topsoil stockpiles; and staking right-of-way, easements, and fence.

The Contractor will perform all construction layout and reference staking necessary for the accurate control and completion of all grading, paving, drainage, median crossovers, signing, pavement marking, permanent benchmarks, detours, fence, and all other appurtenances required for the complete construction and acceptance of the work. The layout will include, but is not limited to, staking clearing line, and performing the miscellaneous staking as described in the plans and in this specification.

Horizontal and vertical control has been established as shown on the plans. Each horizontal and vertical control point will be preserved or reset out of the work limits and available during and after construction is complete. Prior to the Department's final acceptance of the project, the Contractor will replace or reset any control that is disturbed during the construction of the project. The Contractor will provide the Department a list of the in-place control points, including coordinates and elevations relevant to the project control, at the end of the project.

The Contractor will perform the staking work in accordance with the Department's Survey Manual, except as modified by this specification.

B. MATERIALS

The Contractor will furnish all staking materials of adequate quality for the purpose intended including all stakes, stake chasers, paint, field note books, and all other materials and equipment necessary to perform the required work.

C. CONSTRUCTION REQUIREMENTS

1. **General:** The Contractor will perform all staking work under the supervision of a qualified surveyor or engineer who is experienced and competent in road and bridge construction surveying and staking. The surveyor or engineer will be available to review work, resolve problems, and make decisions in a timely manner. A crew chief, competent to perform all required surveying duties, will supervise the staking in the absence of the surveyor or engineer from the project. The Contractor will submit the qualifications and work experience history of the surveyor or engineer who will supervise the construction survey work to the Engineer for review at least 14 calendar days prior to beginning the staking work.

   The Contractor will also submit the proposed starting date of the staking and the anticipated surveying work schedule.

   The Contractor will furnish, set, and properly reference all stakes, references, lines, grades, and batter boards required. Minimum reference notations will be for type, location, and alignment (when there are multiple alignments in the same area). The Contractor will perform the survey and staking work in a manner consistent with standard engineering practices and approved by the Engineer.

   The Contractor is solely responsible for the accuracy of the survey and staking work. The Contractor will notify the Engineer of any errors and discrepancies found in previous surveys, plans, specifications, or special provisions prior to proceeding with the survey work.

   The Contractor will be responsible for the supervision of the construction staking personnel. The Contractor will correct any deficient survey or staking work that results in construction errors at no additional cost to the Department.

   The Contractor will keep field notes in conventional handwritten notebooks or in a computerized form acceptable to the Engineer in a clear, orderly, and neat manner. The notebooks will become the property of the Department upon completion of the project. The notebooks will provide enough information such

that quantity measurements are verifiable by the Department. Field notes are subject to inspection by the Engineer at any time.

The Contractor is required to submit any remaining required quantity calculations and notes to the Engineer no later than 60 calendar days after completion of the survey and staking work.

The Department will set reference control points. The Contractor is responsible for the preservation of ties and references to all control points necessary for the accurate re-establishment of all base lines and centerlines shown in the plans, whether established by the Contractor or found on or adjacent to the project. The Department will also establish benchmark elevations. It is the responsibility of the Contractor to verify the accuracy of the benchmark elevations prior to use on the project.

The Contractor will furnish stakes of sufficient length to provide a solid set in the ground. Stakes set not meeting these requirements will be reset at the Contractors expense. The Contractor will replace stakes damaged, destroyed, or made unusable at no additional expense to the Department.

The Engineer may check the accuracy and control of the Contractor's survey and staking work at any time. The checks performed by the Engineer will not relieve the Contractor of the responsibility for the accuracy of the survey layout or the construction work. If the random checks show the grade is out of tolerance, the Engineer may require the Contractor to set additional stakes, at the discretion of the Engineer, at no additional cost to the Department. If the Engineer orders additional stakes, the Contractor will perform the additional staking until the Contractor can show the staking operations achieve the specified grade tolerances.

Prior to any project staking, the Contractor will run a level circuit to check the plan benchmarks the full length of the project.

2. **Miscellaneous Staking:** Miscellaneous staking includes the following work:

   a. Approach road staking and all tie-in checks. The Contractor will submit profiles and elevations of all approach roads and other tie-ins throughout the project to the Engineer at least 3 business days prior to staking;
   b. Topsoil measurement and computation of quantities;
   c. Special ditch staking;
   d. Staking of signs, delineators, pavement markings, guardrail, curb & gutter, light poles, conduit, junction boxes, and related items (Staking is for all aspects, i.e. detours, temporary and permanent);
   e. Right-of-way staking including easement lines and fence post panels;
   f. Pipe and storm sewer staking including drop inlets, manholes, cattle passes, and related items. If additional pipe, storm sewer, drop inlets,

manholes, or cattle passes are required which are not shown on the plans, the staking will be paid for at the contract unit price per hour for Engineer Directed Surveying/Staking;

g. Mark limits of removal items (trees, foundations, curb & gutter, sidewalk, etc.);

h. Detours, roadway diversions, and crossovers. (This work includes all design and staking notes required to design and stake the detour, roadway diversion, or crossover in accordance with the plan requirements. The Contractor will submit the completed design including profile and alignment and staking notes to the Engineer at least 3 business days prior to staking.);

i. Final and original cross sections of Contractor and State furnished borrow pits and computations. The Contractor will perform earthwork computations by the average end area method, surface-to-surface method, or alternate computation method approved by the Engineer;

j. Resetting horizontal and vertical control, if disturbed;

k. Approach slab and sleeper slab staking;

l. Staking of sidewalks and curb ramps; and,

m. Staking of steps and wheel chair ramps.

The Contractor will perform the pipe staking so the pipe will fit the field conditions. The plans show only approximate pipe locations and grades. The Contractor will not install pipe prior to gaining the Engineer's approval of minor location and grade adjustments necessary for proper staking of the pipe.

The Contractor will stake the slope catch points to determine the inlet and outlet locations, set reference stakes for the inlet and outlet locations, and stake ditches and special inlet and outlet grades to ensure proper drainage. The staking of manholes and drop inlets will be included in pipe and storm sewer staking. The Contractor will stake precast cattle passes similar to drainage pipes.

The horizontal tolerance for the pipe and storm sewer staking is $\pm$0.05 foot and the vertical tolerance is $\pm$0.03 foot.

The Contractor will keep pipe staking notes on a DOT Form 214.

3. **Engineer Directed Surveying/Staking:** The use of the engineer directed surveying/staking contract item is intended for surveying/staking not included in the plan notes and this special provision. The Contractor may use a survey crew to perform additional survey/staking work caused or required by the Department. The Engineer will use a written order to authorize the hourly engineer directed surveying/staking item and describe the surveying/staking work required of the Contractor.

D. METHOD OF MEASUREMENT

Refer to the Table of Contractor Staking in the plans for more detail on how quantities were calculated.

1. **Miscellaneous Staking:** The Department will not measure miscellaneous staking. The Department will pay the plan quantity as the final quantity.

2. **Engineer Directed Surveying/Staking:** The Department will measure engineer directed surveying/staking to the nearest 0.1 hour with the following restrictions:

   The use of engineer directed surveying/staking will be for the work ordered by the Engineer. The measured quantity will be the actual time the survey crew is working on the project, physically performing the field survey/staking work. The Department will not include travel time for the survey crew in the measurement.

   The Engineer will issue a DOT 75 ticket for the hours authorized for engineer directed surveying/staking.

E. BASIS OF PAYMENT

Payment for all of the survey items will be considered full compensation for furnishing all necessary personnel, vehicles, surveying equipment, supplies, materials, recording fees, transportation, and incidentals to accurately and satisfactory complete the work.

The Department reserves the right to omit any of these bid items without providing compensation to the contractor if the Department deems the bid prices are unreasonable.

1. **Miscellaneous Staking:** The Department will pay miscellaneous staking at the contract unit price per mile.

   The Department will make partial payment as follows:

   a. Upon submission of the name, experience, and qualifications of the surveyor or engineer who will supervise the staking, the proposed starting date, and the staking schedule, the Department will pay the Contractor 25 percent of the plan quantity for the miscellaneous staking.

   b. The Department will make intermediate payments based on the amount of the staking work completed.

   c. The Department will make full payment at the plan quantity for miscellaneous staking upon completion of all surveying and staking and

when the Contractor has furnished all field notebooks and records to the Engineer.

The Department will not adjust the contract unit price or plan quantity for miscellaneous staking due to overruns or under runs in the other contract items.

2. **Engineer Directed Surveying/Staking:** The Department will pay engineer directed surveying/staking on an hourly basis as per the Price Schedule for Miscellaneous Items. The value listed in the Price Schedule for Miscellaneous Items includes salaries, travel time, equipment, staking supplies, payroll additive, and all incidental expenses related to providing the survey crew.

* * * * *

1 PROJECT OVERVIEW

The South Dakota Department of Transportation (SDDOT) has embarked on project PCN 080D to improve safety and operations on Interstate 29 in Moody County and Brookings County. SDDOT will deploy various Intelligent Transportation Systems (ITS), including the state's first variable speed limit section, between Mileage Reference Markers (MRM) 114 and 136.

SDDOT's Advanced Traffic Management System (ATMS), established separately from this project, will monitor and control the roadside devices constructed in project PCN 080D for integrated traffic monitoring, incident management, special event management, and the dissemination of traveler information.

1.1 ITS SUBSYSTEMS

Project PCN 080D includes the following key subsystems:

- Variable Speed Limit Signs (VSL): In place of ordinary static speed limit signs, electronic signs installed on both left and right of mainline traveled lanes will dynamically display the active regulatory speed limit, which will be 80mph under normal conditions but sometimes lower depending on road and weather conditions, traffic congestion, traffic incidents, road work, or other situations affecting safe travel.
- Dynamic Message Signs (DMS): Two existing dynamic message signs will be upgraded with new electronics and full color matrix displays under a separate construction contract. One of these dynamic message signs will need to be installed by project PCN 080D (the other is already installed at MRM 136).
- Road Weather Information Systems (RWIS): Three environmental sensor stations (ESS) spaced along the corridor will report atmospheric weather and road surface conditions to help determine whether and how much speed limits should be adjusted.
- Closed Circuit Television Cameras (CCTV): High resolution pan, tilt, and zoom (PTZ) cameras will enable surveillance of road conditions and verification of traffic incidents throughout the corridor.
- Vehicle Detection and Classification Systems (VDS and VCS): Vehicle Detection Systems (VDS) will continuously monitor traffic. For real-time traffic management, each VDS will immediately report to SDDOT's Advanced Traffic Management System (ATMS) the date, time, lane, and speed of each vehicle detected in every mainline lane. For historical traffic monitoring, each VDS will report traffic volume, speed, and occupancy for daily retrieval by SDDOT using manufacturer-supplied software. In addition, Vehicle Classification Stations (VCS) will report vehicle classification.
- Freeway and Ramp Gate Management Systems: One mainline road closure gate and advance warning signs will be installed at Exit 133 to close northbound I-29 during severe winter weather or other situations requiring road closure. Electronics will monitor the state of southbound mainline and ramp closure gates at Exit 130 and the northbound mainline and ramp closure gates at Exit 133. At Exits 114, 121, and 127, which will not have road closure gates, signs with beacons at the entrance of on-ramps will inform travelers when I-29 is closed.
- Communication Cabinets: Communication cabinets located throughout the corridor will supply power and communications to nearby roadside devices.

1.2 POWER

To ensure continuous operation through electrical power outages, each Communication cabinet will be fed with line power and equipped with a hookup for a backup generator. Each cabinet will also be equipped with an uninterruptible power supply (UPS) to maintain and condition power from both line and generator.

Communication cabinets will be equipped with power distribution units to allow SDDOT to remotely control and monitor connected devices individually or as a group.

1.3 COMMUNICATIONS

1.3.1 Maintenance of Communications

The Contractor will maintain power, signal, and communication to existing ITS devices within the project throughout construction. Any work requiring downtime of existing ITS devices or infrastructure will be brought to the notice of SDDOT's Intelligent Transportation Systems Program at least 48 hours prior. After the new infrastructure is completed, all salvaged existing ITS equipment will be returned to SDDOT. All other items will be disposed of at the contractor's expense.

1.3.2 Communication Infrastructure and Topology

Communications from SDDOT's ATMS software to roadside ITS devices will be accomplished through cellular modems. Cellular modems and communication switches will be provided by SDDOT and installed and configured by SDDOT and the South Dakota Bureau of Information and Telecommunications (SDBIT) in each Communication cabinet.

1.4 PROJECT LAYOUT

The project PCN 080D extent and roadside devices are shown in the plans.

1.5 SPECIFICATIONS

1.5.1 SDDOT Standard Specifications

Standard Specifications for Roads and Bridges, South Dakota Department of Transportation, 2015[1] will apply to the contractual and construction processes for this project. The Contractor will also abide by the latest SDDOT standard plates available during construction.

1.5.2 I-29 ITS Special Provisions

The Contractor will also abide by the detailed special provisions for ITS systems included as separate sections of this document:

- Section 2 Variable Speed Limit Signs
- Section 3 Dynamic Message Signs
- Section 4 Road Weather Information System
- Section 5 Closed Circuit Television Cameras
- Section 6 Vehicle Detection and Classification Systems
- Section 7 Freeway and Ramp Gate Management Systems
- Section 8 ITS Cabinets
- Section 9 ITS Testing

[1] https://dot.sd.gov/media/documents/2015_SDDOT_SpecBook.pdf

2 VARIABLE SPEED LIMIT SIGNS

2.1 DESCRIPTION

Project PCN 080D includes Variable Speed Limit Signs to dynamically display the active regulatory speed limit. SDDOT will set the speed limit in response to weather and road conditions, traffic incidents, special events, and other situations affecting travel. SDDOT's Active Traffic Management System (ATMS) will communicate electronically with the signs to set the speed limit and monitor the signs' operational status.

2.2 FUNCTIONAL REQUIREMENTS

2.2.1 The Contractor will furnish and install electronic variable speed limit (VSL) signs at locations indicated in the plans.

2.2.2 The VSL sign will consist of a static MUTCD-compliant reflective sign panel, a full matrix LED display, an attached enclosure, and flashing beacon.

2.2.3 The VSL sign will include an integral sign controller that does not require continuous communication with external control software to perform most variable speed limit sign functions.

2.2.4 The Contractor will supply two VSL signs as spares. Both VSL signs will be tested and made functional and then provided to the SDDOT Intelligent Transportation Systems Program.

Static Sign Panel

2.2.5 The static sign panel will display the words "SPEED LIMIT" in FHWA Series E, 8" upper case black letters against white reflective sheeting as shown in the design plans.

LED Display

2.2.6 The LED display will be legible within a distance range of 150 feet to 1000 feet when mounted according to the manufacturer's instructions.

2.2.7 The LED display will be legible 24 hours per day, including dawn and dusk hours when sunlight shines directly on the display face or the sun is directly behind the sign, and in most normally encountered weather conditions.

2.2.8 The LED display will display two-digit speed limits comprising any combination of numeric digits and three-digit speed limits comprising a leading one followed by any combination of numeric digits.

2.2.9 The LED display will display speed limit digits 18" high.

2.2.10 The LED display will display speed limit digits in either white on black or black on white.

Enclosure

2.2.11 Each VSL sign will be equipped with an enclosure attached to the sign post to house a state-supplied cellular modem. The enclosure will include a ground bar, 120VAC dual outlet, and cable entrances. The state will also supply a DC power supply for the cellular modem.

2.2.12 Each VSL sign will be equipped with a post-mounted 30 amp NEMA 3R safety switch.

Flashing Beacon

2.2.13 Each VSL sign will be equipped with a flashing beacon that can be configured to automatically activate when a reduced speed limit is posted.

Sign Controller

2.2.14 Each VSL sign will be controlled and monitored by its own microprocessor-based sign controller not requiring continuous communication with external control software to perform most control functions.

2.2.15 The sign controller will mount within the sign housing.

2.2.16 The sign controller's firmware will monitor all external and internal sensors and communication inputs and control the display modules as directed by external control software.

2.2.17 The sign controller will natively support NTCIP 1203 without external protocol converter or translator devices.

2.2.18 The sign controller will activate a sign message when:

- an operator using NTCIP-compatible control software instructs a particular message to be activated
- the internal time-based scheduler activates a message at a date and time previously configured using the control software per the NTCIP 1201 and NTCIP 1203 standards
- an event activates a pre-configured message

2.2.19 The sign controller will display a message on the sign until:

- the scheduled message duration expires
- the controller receives a command to change the message
- the controller receives a command to blank the sign
- the schedule stored in the controller's memory indicates that it is time to activate a different message
- an event triggers a different message

2.2.20 The sign controller will be able to assign a priority level to any message and override any non-priority message.

2.2.21 The sign controller will support changing or replacing preinstalled fonts from the central software using NTCIP.

2.2.22 The sign controller will automatically adjust LED brightness to match ambient light levels.

2.2.23 The sign controller will change the display brightness to one of at least 100 selectable levels of the display matrix manually via external control software.

2.2.24 The sign controller will change the display brightness automatically based on ambient light detected by sensors in the sign.

2.2.25 The sign brightness mode and level will be reported to the external control software.

2.2.26 The sign controller will have at least 2 GB non-volatile electronically changeable memory for storing schedules, at least 500 stored messages, and other needed files for at least 30 days following a power loss.

2.2.27 The sign controller will contain a battery-backed-up computer-readable clock that is accurate to within one minute per month and automatically adjusts for daylight savings time and leap year.

2.2.28 The sign controller will continuously monitor the temperature of the air in the display housing over a range of -40° F to +176° F.

2.2.29 The sign controller will monitor the status of sign components and subsystems and report it via NTCIP to control software upon request.

2.2.30 The sign controller will monitor and display the currently active message in a WYSIWYG format.

2.2.31 Automatically and upon command from the external control software, the sign controller will test all the LED pixels without disrupting the message being displayed.

2.2.32 The sign controller will automatically report via external control software the occurrence of events and subsystem failures, including over-temperature shutdown, controller restart, power loss, power system failure, and communication loss.

2.2.33 The sign controller will monitor a temperature sensor on each LED display module and automatically shut down the module if the temperature exceeds a configurable threshold, which may be overridden for high priority or emergency messages.

2.2.34 The sign controller will provide cybersecurity measures, including password protection, to limit access to authorized users.

2.2.35 The Contractor will provide manufacturer-supplied control software to fully operate the VSL signs in lieu of an ATMS.

2.3 MATERIALS

2.3.1 All equipment and materials will be new.

2.3.2 Where allowed, equivalents must be approved by the SDDOT's Intelligent Transportation Systems (ITS) Program in writing prior to installation.

2.3.3 The VSL sign will be a Daktronics Vanguard VS-5360-40x60-16-RGB or equivalent.

2.3.4 The VSL sign will meet the environmental requirements defined in the National Electrical Manufacturers Association (NEMA) *Standards Publication TS 4, Hardware Standards for Dynamic Message Signs*.

2.3.5 All printed circuit boards will be sealed with acrylic conformal coating.

2.3.6 Total VSL sign weight will not exceed 145 lbs.

2.3.7 All VSL sign components will operate throughout the temperature range of -30°F to +165°F and a relative humidity range of 0 to 99% non-condensing and will not be damaged by storage or temporary operational exposure to a temperature range of -40°F to +185°F.

2.3.8 The VSL sign will meet WL9 wind load requirements.

Static Sign Panel

2.3.9 The static sign panel will comply with the Manual of Uniform Traffic Control Devices (MUTCD).

2.3.10 The static sign panel will be a 48" wide by 60" high aluminum alloy panel at least 0.10" thick.

2.3.11 The static sign panel will be reflective white sheeting with black vinyl lettering.

2.3.12 The static sign panel will have a cut out area that matches the size of the active area of the LED display matrix.

LED Display

2.3.13 The active area of the LED display matrix will be at least 25" wide and 38" high.

2.3.14 LEDs will use AlInGaP semiconductor technology and emit red, green, and blue light with the ability to produce 16.7 million colors. Other pixel technologies, such as fiber optic, flip disk, combination flip disk-fiber optic, combination flip disk-LED, liquid crystal, LED lenses, and incandescent lamp, will not be accepted.

2.3.15 Each pixel will contain the number of discrete LEDs needed to output white colored light at a luminous intensity of at least 12,400 candelas per square meter.

2.3.16 The LEDs will be rated by the LED manufacturer to have a minimum lifetime of 100,000 hours of continuous operation while maintaining at least 70% of the original brightness.

2.3.17 The distance between centers of adjacent pixels, both horizontal and vertically, will be 0.62 inches (16 mm).

2.3.18 All LEDs will be from the same manufacturer and of the same part number, except for the variations in the part number due to the intensity and color.

2.3.19 LEDs will have a nominal viewing cone of 60 degrees with a half-power angle of 30 degrees measured from the longitudinal axis of the LED. Viewing cone tolerances will be as specified in the LED manufacturer's product specifications and will not exceed ± 5 degrees.

2.3.20 The LED manufacturer will sort LEDS into bins by color and light intensity. Each color of LEDs will be obtained from no more than two (2) consecutive color or intensity bins as defined by the LED manufacturer.

2.3.21 LEDs from the LED color and intensity bins will be distributed evenly throughout the sign and will be consistent from pixel to pixel.

2.3.22 Constant current LED driver integrated circuits will be used to limit forward current to the manufacturer's recommended forward current for 100,000-hour lifetime.

2.3.23 LED pixels will be driven using pulse width modulation of the drive current to control the display intensity. The drive current pulse will be modulated at a frequency high enough to provide flicker-free operation and at least 200 brightness levels.

2.3.24 LED driver circuitry will detect individual LED strings or pixels that are stuck off and report pixel status to the sign controller.

2.3.25 The failure of an LED string or pixel will not cause the failure of any other LED string or pixel.

2.3.26 The LED display will be constructed of multiple display modules placed adjacently in a two-dimensional matrix.

2.3.27 LED display modules will be mounted parallel to the front wall of the static sign panel to optimize the legible LED viewing area.

2.3.28 Each display module will attach to the display housing with two latching mechanisms each actuated by a quarter-turn latching point on the front face of the module.

2.3.29 The front of each display module will be black with a protective mask that does not block any portion of the LED viewing area.

2.3.30 Display modules and internal components will be removable and replaceable by a single technician through the front face of the sign.

2.3.31 Removal of the display modules will provide access to the interior of the display housing.

2.3.32 Display modules will be environmentally sealed to an IP67 rating.

2.3.33 Addressing of each LED display module will be configured via the communication wiring harness and connector without on-board addressing jumpers or switches.

2.3.34 Mounting a display module upside-down or in another incorrect position within the display matrix will not be possible.

2.3.35 All display modules will be identical and interchangeable throughout the sign.

2.3.36 Removal or failure of any display module will not affect the operation or structural integrity of any other module or sign component.

Display Housing

2.3.37 The electronic display housing will attach to the rear of the static sign panel.

2.3.38 The thickness of the housing containing all electronic components will not exceed 7 inches.

2.3.39 All external surfaces on the rear and sides of the display housing, including mounting brackets, will be natural mill finish aluminum.

2.3.40 The display housing will be dustproof and waterproof in conformance with International Protection Code IP66 and NEMA 4X.

2.3.41 Internal components will be dustproof and waterproof in conformance with International Protection Code IP66 IP65/67.

2.3.42 The display housing structural frame will be constructed of aluminum alloy members permanently attached to each other with structural rivets or chemically bonding structural adhesive.

2.3.43 All sides of the display housing exterior, except the front of the LED modules, will be aluminum alloy sheet at least 0.090 inches thick, attached to the structural framework with structural rivets or chemically bonding structural adhesive.

2.3.44 The display housing bottom side will contain weep holes, screened to prevent the entrance of insects and small animals, to drain water that accumulates due to condensation.

2.3.45 The display housing will contain redundant regulated switching power supplies to power all electronic sign components.

2.3.46 The display housing will have a thermostatically controlled ventilation system designed to keep internal air temperature below +140°F when outdoor ambient temperature is +115°F or less.

2.3.47 Each ventilation fan will contain a sensor to monitor and report its rotational speed.

VSL Communication Cabinet

2.3.48 The VSL signs will be equipped with a small enclosure to house communication equipment mounted on the outside post of the VSL sign on the outside shoulder.

2.3.49 This VSL Communication Cabinet will be a NEMA Type 4X rated.

2.3.50 The VSL Communication Cabinet will be made of non-glass-filled polyester material.

2.3.51 The VSL Communication Cabinet will have a removable door mounted with snap hinges and snap-on hinge retainers.

2.3.52 The VSL Communication Cabinet will be padlockable.

2.3.53 The VSL Communication Cabinet will be large enough to contain the modem, power receptacle, and all cables as indicated on the plans.

2.3.54 The Contractor will seal all holes cut into the cabinet to ensure the enclosure is watertight.

2.3.55 The VSL Communication Cabinet will be a Daktronics Control Board Enclosure VCB II or approved equal.

2.3.56 The cabinet will have one (1) 120VAC NEMA Type 5-15R duplex receptacle powered by the VSL sign vi a 3/C #14 AWG cable.

Wiring

2.3.57 Power cables to the VSL signs will be spliced inside of a roadside junction box as indicated on the plans using a 1-sided, 2-port aluminum multiple tap connector.

2.3.57.1 The multiple tap connector will be a Burndy 1PL2/02 or approved equal.

2.3.57.2 The multiple tap connector will have a UV rated covering over an AL6061-T6 aluminum body.

2.3.57.3 The multiple tap connector will have ports that allow a #4 cable input and two #8 cable outputs.

2.3.58 Ethernet cables between the two VSL signs at a given site will be 600V rated when sharing conduit with electric cables.

2.3.59 The contractor will install a 30A NEMA 3R safety switch on the sign post to allow power to the sign to be shut off without accessing the VSL Communication Cabinet.

2.4 INSTALLATION

2.4.1 The first pair of VSL signs of this project will be installed with on-site supervision of a qualified representative of the VSL manufacturer and SDDOT Intelligent Transportation Systems Program staff.

2.4.2 The Contractor will install the VSL signs in accordance with the manufacturer's instructions and the plans.

2.4.3 Prior to installation, the Contractor will configure the VSL signs in collaboration with the SDDOT Intelligent Transportation Systems Program.

2.4.4 All power, signal, and communication cables will be identified by durable labels securely attached near the cables' termination.

2.4.5 All power, signal, and communication lines will be equipped with surge protection devices.

2.5 ELECTRICAL

2.5.1 All wiring and connections will conform to the National Electrical Code, local ordinances, and local utility company rules.

2.5.2 The VSL signs will operate on 120VAC power from the power distribution unit (PDU) in the nearest Communication Cabinet as shown in the plans

2.5.3 AC power demand will not exceed 300 watts when sign controller, ventilation system, and the display matrix are operational and fully loaded.

2.5.4 All power and communication cable conduit will enter the VSL signs via watertight connections.

2.5.5 All bonding and grounding will be in accordance with the National Electrical Code and with the manufacturers' instructions. Grounding and surge protection will be installed following the recommendations set forth by IEEE Std 1422, NFPA 780, and Motorola R56 which specify a design goal for ground resistance of 5 ohms or less for sensitive electrical equipment.

2.6 COMMUNICATION

2.6.1 The Contractor will furnish and install a CAT 6 Ethernet cable from the state-supplied cellular modem located in the VSL Communication Cabinet to the VSL controller.

2.6.2 The contractor will install the state furnished cellular modem and power supply inside the VSL Communication Cabinet on a DIN rail inside the cabinet. All communication cables will be properly terminated.

2.6.3 The sign controller will contain at least one (1) 10/100Base-T Ethernet communication port with RJ45 connector for communicating with the external control system.

2.6.4 Ethernet communication will be by NTCIP 2202 Internet transport profile and the NTCIP 2104 Ethernet subnetwork profile using TCP/IP and UDP/IP protocols.

2.6.5 NTCIP 2104 (Ethernet) networks will use a configurable static IP address.

2.6.6 The Ethernet communication port will be protected with internally integrated surge protection between each signal line and ground.

2.6.7 VSL signs will enable local activation and control using a notebook computer.

2.7 MANUFACTURER QUALIFICATIONS

2.7.1 The VSL sign manufacturer will have been in the business of manufacturing large outdoor permanently mounted LED VSL signs used to manage roadway traffic for at least 10 years prior to the contract bid date.

2.7.2 The VSL sign manufacturer will have been in business under the same corporate name for at least ten years prior to the contract bid date.

2.7.3 The VSL sign manufacturer will have in operation as of the contract bid date at least ten independently owned and operated VSL sign systems each containing at least 10 permanently mounted signs that use the National Transportation Communications ITS Protocol (NTCIP) as their primary communication protocol.

2.7.4 The VSL sign manufacturer will have in place a Quality Management System certified to ISO 9001:2008 or the latest released standard of ISO 9001.

2.7.5 The VSL sign manufacturer will have a customer service department staffed from 8 am to 5 pm central time at a minimum to provide technical support and services.

2.7.6 The VSL sign manufacturer will offer bench-level repair services for failed components and will stock most parts for replacement.

2.8 SYSTEM TESTING

2.8.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

2.9 DOCUMENTATION

2.9.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

2.9.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers' installation instructions, and show how they will be integrated.

2.9.3 Prior to installation, the Contractor will provide background information about the VSL sign manufacturer, including full corporate name and address; contact information; names and qualifications of primary project team members; number of years in business under the current corporate name; the manufacturer's in-house quality management system; the manufacturer's certified welding procedure; general corporate literature; VSL sign product literature; the company's ISO 9001 certification; and a description of its available customer support services.

2.9.4 The Contractor will submit the VSL sign manufacturer's self-certification, including a statement of conformance and copies of test reports, documenting successful testing of the following National Transportation Communication for ITS Protocol (NTCIP) standards:

- NTCIP 1201: NTCIP Global Object Definitions
- NTCIP 1203: Object Definitions for Dynamic Message Signs (including Amendment 1)

- NTCIP 2101: Point to Multi-Point Protocol Using RS-232 Subnetwork Profile.

2.9.5 The NTCIP testing will have been completed such as the NTCIP Exerciser, Trevilon's NTester, Intelligent Devices' Device Tester, and/or Frontline's FTS for NTCIP. Tests must include sub-network communications functionality, all mandatory objects in all mandatory conformance groups, and a subset of the remaining objects.

2.9.6 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the VSL signs.

2.9.7 The Contractor will supply the test documentation required in Section 9 "ITS Testing".

2.9.8 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

2.9.9 Prior to final acceptance, the Contractor will supply as-built wiring diagrams depicting all components and power, signal, and communication lines for each installation.

2.10WARRANTY

2.10.1 The Contractor will certify the continued availability of electronic components for at least 10 years.

2.10.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

2.10.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

2.10.4 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

2.10.5 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

2.10.6 The Contractor will assign all warranties and guarantees offered by electrical and mechanical equipment manufacturers to SDDOT upon Final Acceptance.

2.10.7 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

2.11BASIS OF PAYMENT

2.11.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

2.11.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following bid items:

Bid Item Number	Item	Basis of Payment	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
632E3610	Variable Speed Limit Sign	Each	40%	70%	100%

2.11.3 The unit of measurement will be “each”, covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

2.11.4 All hardware, cables, and other materials used to install the VSL signs will be incidental to the Variable Speed Limit Sign bid item.

3 DYNAMIC MESSAGE SIGNS

3.1 DESCRIPTION

Two existing dynamic message signs within the limits of project PCN 080D will be upgraded with new electronics and full color matrix displays under a separate construction contract. These signs will be integrated into the power and communication systems by project PCN 080D.

The sign near MRM 136 along southbound I-29 is already in place and will require no structural work. The work under PCN 080D will consist of moving the sign controller from the sign housing to the nearby ground mounted Communication Cabinet, moving the DMS mounted CCTV Camera from the DMS to the RWIS tower, and reconfiguring power and communication connections.

The other sign, to be located along northbound I-29 near MRM 129, was formerly installed on I-29 and is now stored at the SDDOT's Brookings office along with its support pole. Under PCN 080D, the sign and pole will be transported to its new location and installed on a foundation provided by the Contractor for PCN 080D. The sign controller will be moved from the sign housing to the nearby ground mounted Communication Cabinet connections to power and communications will be made to the nearby ground mounted Communication Cabinet.

3.2 FUNCTIONAL REQUIREMENTS

3.2.1 The Contractor will install Dynamic Message Signs (DMS) at locations indicated in the design plans.

3.2.2 The Contractor will install a single pole structure to support the display housing in a center-mounted "butterfly" configuration as shown in the design plans.

3.3 MATERIALS

3.3.1 The support structure, sign, sign controller, and camera will be provided by SDDOT.

3.4 COMMUNICATION

3.4.1 The DMS controller will connect to the communication switch within the Communication Cabinet for remote data transmission and control.

3.4.2 Communication from the sign controller to the DMS will use fiber optic cable with the following specifications:

- 50.0/125 µm diameter
- LC-style connectors
- rated for indoor/outdoor use
- UL-rated
- PVC outer jacket
- tight buffer inner jacket
- operating temperature range: –40°F to +185°F

3.5 SYSTEM TESTING

3.5.1 The Contractor will follow procedures set for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

3.6 DOCUMENTATION

3.6.1 The Contractor will provide required documents to the SDDOT ITS Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

3.6.2 The Contractor will supply installation and field acceptance test procedures and results.

3.6.3 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

3.6.4 Prior to final acceptance, the Contractor will supply as-built wiring diagrams depicting all components and power, signal, and communication lines for each installation.

3.7 WARRANTY

3.7.1 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

> During the first two (2) years following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures happening as a result of the work performed under this contract, will be made at the Contractor's sole cost.

3.7.2 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty at the time of the notice of contract award.

3.7.3 Warranties and guarantees offered by electrical and mechanical equipment manufacturers will be assigned to SDDOT upon Final Acceptance.

3.7.4 The Contractor will inform the SDDOT ITS Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

3.7.5 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

3.8 BASIS OF PAYMENT

3.8.1 Payment will be staged with the first payment upon delivery of equipment, the second upon installation and field acceptance, and the third upon final acceptance, including demonstration of full functionality for 30 consecutive days.

3.8.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following items:

Bid Item Number	Item	Basis of Payment	Upon Installation	Upon Successful Unit Testing	Upon Successful Acceptance Testing
635E6210	Install Dynamic Message Sign with Pole	Each	40%	70%	100%

3.8.3 All hardware, cables, and other materials used to install the DMS will be incidental to the Install Dynamic Message Sign with Pole bid item.

3.8.4 All hardware, cables, and other materials used to mount and install the surveillance camera will be incidental to the Surveillance Camera bid item.

4 ROAD/WEATHER INFORMATION SYSTEM

4.1 DESCRIPTION

Project PCN 080D includes Road/Weather Information Systems (RWIS) to continuously monitor weather and road surface conditions. Road and weather data will be communicated electronically to SDDOT's Active Traffic Management System (ATMS), where it will be used to manage variable speed limits and to inform travelers of road and weather conditions.

4.2 FUNCTIONAL REQUIREMENTS

Support Tower

4.2.1 The Contractor will furnish and install a 30' high support tower to support sensors, RWIS system enclosure, and closed-circuit television (CCTV) camera where indicated on the plans.

4.2.2 The support tower will be designed to withstand wind speeds of 100 miles per hour with the sensors, RWIS system enclosure, and CCTV camera mounted on it.

4.2.3 The support tower will fold to enable sensor installation and maintenance at ground level.

4.2.4 Each support tower will fold within five degrees of the direction indicated on the plans to avoid extending over slopes or interfering with other structures.

4.2.5 The support tower will include anti-climb panels to deter unauthorized access to tower-mounted sensors.

System Enclosure

4.2.6 The Contractor will furnish and install a system enclosure to house and protect RWIS electronic components.

4.2.7 The system enclosure will mount securely to the support tower using manufacturer-supplied hardware.

4.2.8 The system enclosure will be dustproof and waterproof in conformance with International Protection Code IP66 and NEMA 4X.

4.2.9 All power, sensor, and communication cable conduit will enter the system enclosure via watertight connections.

4.2.10 The system enclosure will be equipped with a solar radiation shield to protect the enclosure from excessive sunlight and falling material.

4.2.11 The system enclosure door will be equipped with dual hinges and wind lock.

4.2.12 The system enclosure door will be equipped with dual keyed locks supplied by the manufacturer.

4.2.13 All enclosures supplied for this project will be keyed identically.

Road Weather Station

4.2.14 The Contractor will furnish and install a road weather station that powers, controls, and reports data from sensors for present weather and visibility, atmospheric weather, and pavement surface condition.

4.2.15 Road weather station components will be neatly and securely mounted to a manufacturer-supplied backplate installed inside the system enclosure.

4.2.16 The road weather station will communicate using current NTCIP 1201 and NTCIP 1204 protocols.

4.2.17 The road weather station will operate over the temperature range of -40° C to +60° C and relative humidity range of 5 to 100%.

4.2.18 The road weather station will operate on 90 to 130 VAC.

4.2.19 The road weather station will supply all DC and AC voltages with adequate amperage necessary to power the sensors.

4.2.20 The road weather station will provide a web user interface to enable remote maintenance and configuration.

4.2.21 The road weather station will provide the ability to control and cycle power to each sensor remotely.

Present Weather and Visibility Sensor

4.2.22 The Contractor will furnish and install a present weather and visibility sensor to report observations of visibility and current weather types.

4.2.23 The present weather and visibility sensor will securely mount to the support tower at the manufacturer's recommended height using manufacturer-supplied hardware.

4.2.24 The present weather and visibility sensor will be heated to operate over the temperature range of -40° C to +60° C.

4.2.25 The present weather and visibility sensor will measure and report visibility over an observation range of 10 to 2000 meters with an accuracy of ±10%.

4.2.26 The present weather and visibility sensor will report the following weather types—rain; drizzle; mixed rain and snow; snow; fog; precipitation of unknown type; haze from dust or smoke; and clear—according to WMO 4680 and NWS code tables.

4.2.27 The present weather and visibility sensor will report the onset of precipitation of rates of 0.05 mm per hour or greater within 10 minutes.

4.2.28 The present weather and visibility sensor will report precipitation intensity over the range of 0 to 999 mm per hour.

4.2.29 The present weather and visibility sensor will report precipitation amounts over the range of 0 to 99 mm.

4.2.30 The present weather and visibility sensor will report new snow amounts over the range of 0 to 999 mm.

Atmospheric Weather Sensor

4.2.31 The Contractor will furnish and install a multiparameter atmospheric weather sensor to report observations of barometric pressure, air temperature, relative humidity, wind speed and direction, and rainfall.

4.2.32 The atmospheric weather sensor will securely mount to the support tower at the manufacturer's recommended height using manufacturer-supplied hardware.

4.2.33 The atmospheric weather sensor will be heated to operate over the temperature range of -40° C to +60° C.

4.2.34 The atmospheric weather sensor will measure barometric pressure over the range of 600 – 1100 hPa with a resolution of 0.1 hPa and an accuracy of ±1 hPa.

4.2.35 The atmospheric weather sensor will measure air temperature over the range of -52° C to +60° C with a resolution of 0.01° C and an accuracy of 0.3° C.

4.2.36 The atmospheric weather sensor will measure relative humidity over the range of 0 to 100% with a resolution of 0.1% and an accuracy of ±5%.

4.2.37 The atmospheric weather sensor will be ultrasonic.

4.2.38 The atmospheric weather sensor will report average, minimum, and maximum wind speed over intervals of 1 to 3600 seconds.

4.2.39 The atmospheric weather sensor will measure wind speed over the range of 0 to 60 m/s with an output resolution of 0.1 m/s and an accuracy of ±3%.

4.2.40 The atmospheric weather sensor will measure wind direction over the range of 0 to 360° with a resolution of 1° and an accuracy of ±3° at 10 m/s wind speed.

4.2.41 The atmospheric weather sensor will measure rainfall amount with a resolution of 0.01 mm and an accuracy of ±5% daily accumulation.

4.2.42 The atmospheric weather sensor will measure rainfall intensity over the range of 0 to 200 mm/h with a resolution of 0.1 mm/h.

4.2.43 The atmospheric weather sensor will count hail strikes with a resolution of 0.1 hits/cm2 of sensor surface area.

Pavement Surface Condition Sensors

4.2.44 The Contractor will furnish and install four pavement surface condition sensors—one in the center of each mainline lane—at each location shown in the plans.

4.2.45 Pavement surface condition sensors will measure and report pavement temperature over the range of -40° C to +60° C to an accuracy of ±0.6° C.

4.2.46 Pavement surface condition sensors will detect and report water layer thickness over the range of 0 to 7 mm.

4.2.47 Pavement surface condition sensors will detect and report surface condition states of: Dry; Moist; Wet; Snowy; Icy; Moist and Chemical; Wet and Chemical.

4.2.48 Pavement surface condition sensors will detect and report sky conditions of: No Rain; Rain; Cloudy; Clear.

4.2.49 Pavement surface condition sensors will operate over the temperature range of -40° C to +60° C (-40° F to +140°F) in 0 to 100% relative humidity.

4.3 MATERIALS

4.3.1 All equipment and materials will be new.

4.3.2 Where allowed, equivalents must be approved by the SDDOT's Intelligent Transportation Systems (ITS) Program in writing prior to installation.

Support Tower

4.3.3 The tower will be a Great Plains Towers DT/MHLT30/12 30' Mid-Hinged Folding Lattice Tower or equivalent.

4.3.4 The tower will mount on a Great Plains Towers DT/MHLT30/12 Base Flange or equivalent.

4.3.5 The tower will affix to the foundation by a Great Plains Towers DT-ABBC-4 Welded Anchor Base Bolt Cluster or equivalent embedded in the foundation.

4.3.6 The tower will be equipped with three Great Plains Towers Anti-Climb Panels or equivalent.

4.3.7 The tower will be equipped with a Great Plains Towers Lightning Rod Kit or equivalent.

System Enclosure

4.3.8 The system enclosure will be Vaisala ENC652KIT or equivalent.

4.3.9 The system enclosure will be continuously welded stainless steel AISI 316 painted white.

4.3.10 The system enclosure back panel will be steel painted white.

4.3.11 The system enclosure radiation shield will be aluminum painted white.

4.3.12 The system enclosure will mount securely to the support tower using manufacturer-supplied hardware Vaisala ASM210998 or equivalent.

Road Weather Station

4.3.13 The road weather station will be a Vaisala Model RWS200 or equivalent.

Present Weather and Visibility Sensor

4.3.14 The present weather and visibility sensor will be a Vaisala Model PWD12 or equivalent.

Atmospheric Weather Sensor

4.3.15 The atmospheric weather sensor will be a Vaisala Model WXT-536 or equivalent.

Surface Condition Sensors

4.3.16 The pavement sensors will be Vaisala DRS511-AB Embedded Road and Runway Sensor or equivalent.

4.3.17 The pavement condition sensors will have integral factory-installed cables long enough to reach from each sensor location to the road weather station within the system enclosure without splicing.

4.3.18 The pavement sensors will be anchored into the pavement using a manufacturer-approved epoxy or cementitious grout. Hot-poured materials will not be allowed.

4.4 INSTALLATION

4.4.1 Each RWIS of this project will be installed with on-site supervision of a qualified representative of the RWIS manufacturer and SDDOT Intelligent Transportation Systems Program staff.

Support Tower

4.4.2 The Contractor will assemble and install all support tower components according to the manufacturer's instructions.

4.4.3 The Contractor will orient the anchor assembly in the concrete foundation as shown in the plans to allow the tower to fold in the direction specified in the plans, away from slopes and other structures.

System Enclosure

4.4.4 The Contractor will install the system enclosure according to the manufacturer's instructions.

4.4.5 The top of the system enclosure will be 6' above the foot of the tower.

Road Weather Station

4.4.6 The Contractor will install the road weather station according to the manufacturer's instructions.

Present Weather and Visibility Sensor

4.4.7 The Contractor will install the present weather and visibility sensor according to the manufacturer's instructions.

Atmospheric Weather Sensor

4.4.8 The Contractor will install the atmospheric weather sensor according to the manufacturer's instructions.

Pavement Surface Condition Sensors

4.4.9 The Contractor will install pavement surface condition sensors according to the manufacturer's current installation and maintenance guide.

4.4.10 Each pavement surface condition sensor cable will be securely labeled to indicate the sensor's roadway direction and lane (for example, NB Passing or SB Driving).

4.5 ELECTRICAL

4.5.1 The RWIS will obtain 120VAC power from the uninterruptible power supply (UPS) in the nearest communications hub as shown in the plans.

4.5.2 All wiring and connections will conform to the National Electrical Code, local ordinances, and local utility company rules.

4.5.3 The system enclosure will include a GFCI-protected 120v duplex outlet.

4.5.4 All cabling will be terminated with connectors that properly mate with the road weather station.

4.5.5 All power, signal, and communication cables will be identified by durable labels securely attached near the cables' termination.

4.5.6 All power, signal, and communication lines will be equipped with surge protection devices.

4.5.7 All cable shields will be properly grounded.

4.5.8 All bonding and grounding will be in accordance with the National Electrical Code and with the manufacturers' instructions. Grounding and surge protection will be installed following the recommendations set forth by IEEE Std 1422, NFPA 780, and Motorola R56 which specify a design goal for ground resistance of 5 ohms or less for sensitive electrical equipment.

4.5.9 A ⅝" diameter by 8' long ground rod will be installed at the foundation pad.

4.5.10 Connection to the ground rod will be with No. 4 AWG stranded copper wire bonded to the tower according to manufacturer's instructions.

4.6 COMMUNICATION

4.6.1 The Contractor will furnish and install two high-speed fiber optic communication cables from the nearest Layer 2 hub to the system enclosure as shown in the plans.

4.6.2 The Contractor will furnish and install any media converters necessary to connect fiber optic communication to the road weather station and surveillance camera.

4.6.3 All communication cables will be properly terminated.

4.6.4 Ethernet lines will be equipped with surge protection conforming to IEC 61000-4-5.

4.7 SYSTEM TESTING

4.7.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

4.8 DOCUMENTATION

4.8.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

4.8.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers' installation instructions, and show how they will be integrated.

4.8.3 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the RWIS.

4.8.4 The Contractor will supply the test documentation required in Section 9 "ITS Testing".

4.8.5 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

4.8.6 Prior to final acceptance, the Contractor will supply as-built wiring diagrams depicting all components, sensors, and power, signal, and communication lines for each installation.

4.9 WARRANTY

4.9.1 The Contractor will certify the continued availability of sensors and electronic components for at least 10 years.

4.9.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

4.9.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

> During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

4.9.4 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

4.9.5 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

4.9.6 The Contractor will assign all warranties and guarantees offered by electrical and mechanical equipment manufacturers to SDDOT upon Final Acceptance.

4.9.7 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

4.10 BASIS OF PAYMENT

4.10.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

4.10.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following bid items:

Bid Item Number	Item	Unit of Measurement	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
635E2540	Roadway Weather Information System Tower	Each	40%	70%	100%
009E3450	Roadway Weather Information System	Each	40%	70%	100%

4.10.3 The unit of measurement will be “each”, covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

4.10.4 All hardware, cables, and other materials used to mount and install the system enclosure and sensors will be incidental to the Road Weather Information System bid item.

5 CLOSED CIRCUIT TELEVISION CAMERAS

5.1 DESCRIPTION

Project PCN 080D includes Closed Circuit Television Cameras (CCTV) that will provide video surveillance of road and traffic conditions along Interstate 29. The pan, tilt, zoom cameras will feed live video and still images to SDDOT's Advanced Traffic Management System (ATMS) and write still images to SDDOT's secure file transfer protocol (SFTP) web site for transfer to SDDOT's 511 Traveler Information System.

5.2 FUNCTIONAL REQUIREMENTS

5.2.1 The Contractor will furnish, install, and integrate Closed Circuit Television Cameras (CCTV) at each location identified in the plans.

5.2.2 The CCTV will be at least 1920 x 1080 (HLTV 1080p) resolution.

5.2.3 The CCTV will provide 60 frames per second at all resolutions.

5.2.4 The CCTV will provide streaming video in H.254, H.265, and Motion JPEG formats.

5.2.5 The CCTV will provide video snapshots in JPEG format.

5.2.6 The CCTV will provide shutter speeds spanning the range of 1/100,000 second to 1/2 second.

5.2.7 The CCTV will provide color images at illumination levels of 0.09 lux at 50 IRE, F1.36.

5.2.8 The CCTV will provide black and white images at illumination levels of 0.008 lux at 50 IRE, F1.36.

5.2.9 The CCTV will provide integral infrared illumination to a distance of at least 300 meters for nighttime images.

5.2.10 The CCTV will provide 360° endless pan function at rates from 0.05° per second to at least 500° per second.

5.2.11 The CCTV will provide tilt of +20° to -90° at rates from 0.05° per second to at least 500° per second.

5.2.12 The CCTV will provide at least 30x optical zoom, 12x digital zoom, and 360x total zoom.

5.2.13 The CCTV will switch between any two zoom levels in less than 1 second.

5.2.14 The CCTV will provide a horizontal field of view spanning the range of 2° to 60°.

5.2.15 The CCTV will provide a vertical field of view spanning the range of 1.1° to 36.5°.

5.2.16 The CCTV will provide at least 200 preset positions.

5.2.17 The CCTV will support at least 100 guard tours.

5.2.18 The CCTV will provide password protection.

5.2.19 The CCTV will provide IP address filtering.

5.2.20 The CCTV will provide HTTPS encryption.

5.2.21 The CCTV will support secure HTTPS and SFTP communication protocols.

5.2.22 The CCTV will operate throughout the temperature range of -58° F to +122° F (-50° C to +50° C).

5.2.23 The CCTV will operate throughout the humidity range of 10 to 100% relative humidity (condensing).

5.2.24 The CCTV will upload images or videoclips on scheduled and recurring events with pre-alarm and post-alarm video and image buffering.

5.2.25 The CCTV will report device status, including: below, within, or over operating temperature; fan failure; network loss; average bit rate degradation; IP address change; PTZ malfunctions; recording ongoing; day/night mode.

5.2.26 The CCTV will support NTCIP 1205 communication protocols.

5.2.27 The Contractor will furnish and install a 30’ high pole to support the CCTV camera where indicated on the plans.

5.2.28 The pole will be designed to withstand wind speeds of 100 miles per hour with the CCTV camera mounted to it.

5.2.29 Each pole will fold in the direction indicated on the plans, and will not overextend over slopes or pavement and will not interfere with other structures or equipment.

5.3 MATERIALS

5.3.1 All equipment and materials will be new.

5.3.2 Where allowed, equivalents must be approved by the SDDOT’s Intelligent Transportation Systems (ITS) Program in writing prior to installation.

5.3.3 The CCTV will be an Axis Q6315-LE PTZ Network Camera or equivalent.

5.3.4 The CCTV will include a 60-watt Power-Over-Ethernet module with integral optical fiber to Ethernet media converter, Axis T8134 60 W Midspan or equivalent.

5.3.5 The CCTV will connect to the Power-Over-Ethernet module with outdoor rated CAT6E cable.

5.3.6 The CCTV will attach to its supporting structure using manufacturer-supplied brackets and hardware, Axis TQ5001-E or equivalent, with marine-grade stainless steel SS 316L straps, Axis TX30 or equivalent, as needed.

5.3.7 The pole will be a Great Plains Towers DT/MHP30’/6” or approved equivalent.

5.3.8 The pole will affix to the foundation by a anchor assembly with anchor bolts embedded in the foundation as indicated on the plans.

5.3.9 The entire pole assembly will be hot dipped galvanized.

5.3.10 The pole will include the following:

- 2 - Hand Holes Fabricated With 2" X 6" Rectangle Tube with Cover Plate (Must Be Special Ordered with Great Plains DT/MHP30’/6”)
- 1 - 4' Of #2 Tin Plated Copper Ground Wire
- 1 - 5/8" X 8' Copper Coated Grounding Rod
- 1 - Ground Wire Clamp
- 1 - 5/8" Ground Rod Clamp
- 1 - Welded Anchor Base Bolt Cluster ABBC-3 With 4 Bolts And 12 Nuts
- 1 - Lightning Rod
- 1 - Cold Galvanizing ASTM A780 Compliant Spray Paint
- 1 - Cable Routing Energy Chain Inside the Pole Across the Hinge Area
- 1 - Vinyl Winch Weather Protection Cover with Velcro Straps
- 1 - 4" Sleeve
- 1 - 1/2" Shackle

- 1/4" Winch Cable
- 1 - 2-3/8" O.D. X 4' Long Top Pipe
- 1 - 1800 LB Manual Stainless Steel Cable Winch Assembly
- 1 - 7/8" Two Part Bolt with Locknut
- 7/8" Hinge Bolt with Locknut
- 1 - 3/8" Stainless Steel Grounding Bolt with Locknut
- 1-5/8" x 12” Lightning Rod
- 1-Top Flange with Bolt On 2-3/”" O.D. x 4’ Pipe (1” Hole Must Be Special Ordered with Great Plains DT/MHP30’/6”)
- 1-Welded U-Shaped Steel Skirt
- 2-6” Square Tubing (A500B)
- 1-Padlock Nut Anti-Hinge System
- 1-1800 LB Manual Auto Break Stainless Steel Cable Winch
- 1-1/4” Winch Cable

5.4 INSTALLATION

5.4.1 The Contractor will install the CCTV in accordance with the manufacturer’s instructions and the plans.

5.4.2 Prior to installation, the Contractor will configure the CCTV in collaboration with the SDDOT Intelligent Transportation Systems Program.

5.4.3 All power, control, and communication cables will be identified by durable labels securely attached near the cables’ termination.

5.4.4 All power, control, and communication lines will be equipped with surge protection devices.

5.5 ELECTRICAL

5.5.1 All wiring and connections will conform to the National Electrical Code, local ordinances, and local utility company rules.

5.5.2 The CCTV will operate using a nominal input voltage ranging from 90 VAC to 135 VAC.

5.5.3 The CCTV will operate on 120VAC power from the power distribution unit (PDU) in the nearest ITS cabinet as shown in the plans.

5.5.4 Power will be fed to the CCTV via Power-Over-Ethernet.

5.6 COMMUNICATIONS

5.6.1 The CCTV will connect to a switch via 10/100 Base-T Ethernet at the ITS cabinet for remote data transmission and control.

5.6.2 Communication addresses will be programmable by the user.

5.6.3 The CCTV will provide an Ethernet connector.

5.7 SYSTEM TESTING

5.7.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

5.8 DOCUMENTATION

5.8.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

5.8.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers' installation instructions, and show how they will be integrated.

5.8.3 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the system.

5.8.4 The Contractor will supply the test documentation required in Section 9 "ITS Testing".

5.8.5 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

5.8.6 Prior to final acceptance, the Contractor will supply as-built wiring diagrams depicting all components, sensors, and power, signal, and communication lines for each installation.

5.9 WARRANTY

5.9.1 The Contractor will certify the continued availability of electronic components for at least 5 years.

5.9.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

5.9.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

> During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

5.9.4 The manufacturer's warranty of the CCTV camera will be at least 5 years.

5.9.5 The pole manufacturer will warranty workmanship for at least 2 years.

5.9.6 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

5.9.7 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

5.9.8 The Contractor will assign all warranties and guarantees offered by manufacturers to SDDOT upon Final Acceptance.

5.9.9 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

5.10BASIS OF PAYMENT

5.10.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

5.10.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following bid items:

Bid Item Number	Item	Basis of Payment	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
635E2430	30’ Hinged ITS Pole	Each	40%	70%	100%
635E5600	Surveillance Camera	Each	40%	70%	100%

5.10.3 The unit of measurement will be “each”, covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

5.10.4 All hardware, cables, and other materials used to mount and install the CCTV will be incidental to the Surveillance Camera bid item.

6 VEHICLE DETECTION AND CLASSIFICATION SYSTEMS

6.1 DESCRIPTION

Project PCN 080D includes Vehicle Detection Systems (VDS) will continuously monitor traffic. For real-time traffic management, each VDS will immediately report to SDDOT's Advanced Traffic Management System (ATMS) the date, time, lane, and speed of each vehicle detected in every mainline lane. For ramp queue detection, each VDS will report the date, time, speed, and lane occupancy. For historical traffic monitoring, each VDS will report traffic volume, speed, and occupancy for daily retrieval by SDDOT using manufacturer-supplied software.

Vehicle Classification Systems (VCS) will additionally report vehicle classification in real time and for historical traffic monitoring.

6.2 FUNCTIONAL REQUIREMENTS

6.2.1 The Contractor will furnish, install, and integrate a VDS/VCS at each location identified in the plans.

6.2.2 The VDS/VCS will detect vehicles in every mainline traffic lane using inductive loops. In addition, the VCS will use piezoelectric sensors for vehicle classification.

6.2.3 The VDS/VCS will count vehicles within 5 percent of true count in each lane when traffic flows at speeds greater than 10 miles per hour.

6.2.4 The VDS/VCS will measure vehicle speed within 5 mph of true speed in each lane.

6.2.5 The VCS will classify vehicles according to FHWA's 15-category Classification Scheme F.

6.2.6 The VDS/VCS controller will simultaneously monitor and independently report real-time and summarized historical data.

6.2.7 Within five seconds of each vehicle's passage, the VDS/VCS controller will report the vehicle's detection date, detection time, lane number, speed, headway, number of axles, and vehicle classification.

6.2.8 The VDS/VCS controller will report volume, average speed, and lane occupancy data in user-selectable intervals ranging from 10 seconds to 1 hour.

6.2.9 The VDS/VCS controller will report historical traffic monitoring data (vehicle count, speed, and classification) by lane in user-selectable intervals ranging from 1 minute to 24 hours.

6.2.10 The VDS/VCS will report vehicle count, speed, and classification data for each interval according to the formats specified in the FHWA Traffic Monitoring Guide (TMG), Updated December 2022[1].

6.2.10.1 The VDS/VCS will report hourly vehicle count data according to TMG section 4.3 *Traffic Volume Data Format*.

6.2.10.2 The VDS/VCS will report vehicle speed data in 15 speed bins according to TMG Section 4.4 *Speed Data Format*.

6.2.10.3 The VCS will report vehicle classification data in 15 categories according to TMG Section 4.5 *Vehicle Classification Data Format*.

[1] https://www.fhwa.dot.gov/policyinformation/tmguide/

6.2.10.4 The VDS/VCS will include vendor-supplied software that enables SDDOT to retrieve summarized data at scheduled times or upon demand.

6.2.11 The VDS/VCS controller will be capable of monitoring 8 lanes with a pair of inductive loops and a single piezoelectric sensor in each lane.

6.2.12 The VDS/VCS controller will accommodate at least 200 counts per second per input.

6.2.13 The VDS/VCS will detect and report failures of all sensors.

6.2.14 In the case of a failed sensor, the VDS/VCS will detect traffic volume using a single loop.

6.2.15 The VDS/VCS controller front panel will indicate operational status, fault conditions, and communication port activity and status.

6.2.16 The VDS/VCS controller will support U.S. standard and metric units.

6.2.17 The VDS/VCS controller will automatically switch to and from daylight savings time.

6.2.18 The VDS/VCS controller will include software that allows local and remote configuration and monitoring.

6.2.19 The VDS/VCS will allow users to edit previously defined configuration parameters, including size, placement, and sensitivity of detection zones using inductive loop and piezoelectric detectors.

6.2.20 The VDS/VCS will be able to save and restore its configuration data to a saved file.

6.2.21 The VDS/VCS will retain its programming in nonvolatile memory.

6.2.22 The VDS/VCS controller will operate through the temperature range of -40° F to +165° F (-40° C to +74° C).

6.2.23 The VDS/VCS controller will report when a vehicle queue has continually activated the exit ramp queue loops at Exits 132 and 133 for more than 3 seconds.

6.2.24 The VDS/VCS controller at Exit 132 will communicate via DC voltage signal from a dedicated output in the existing signal controller.

6.3 MATERIALS

6.3.1 All equipment and materials will be new.

6.3.2 Where allowed, equivalents must be approved by the SDDOT's Intelligent Transportation Systems (ITS) Program in writing prior to installation.

VDS/VCS controller

6.3.3 The VDS/VCS controller will be an Oriux ADR3500 or equivalent.

6.3.4 The VDS/VCS controller will mount within a 19" rack.

6.3.5 The VDS/VCS controller will be expandable by function with individual plug-in modules.

6.3.6 Inductive loop detector units will mount within a 19" rack.

6.3.7 Piezoelectric sensor detector units will mount within a 19" rack.

Inductive Loops

6.3.8 Pairs of 6 ft x 6 ft square inductive loops will be installed in slots sawed into the existing pavement at locations shown in the plans.

6.3.9 Inductive loops will consist of four windings of 14 AWG stranded copper wire with Type XHHW cross-linked polyethylene insulation, encased in ¼-inch polyethylene tubing, meeting the requirements of the International Municipal Signal Association (IMSA).

6.3.10 Lead-in cables will be shielded twisted-pair 14 AWG, two-conductor, stranded copper wire with polyethylene insulation, meeting the requirements of IMSA 50-2, Belden Number 8720 or equal.

6.3.11 Lead-in wires will be twisted at least five turns per foot.

6.3.12 Splices will not be made in the loop or lead-in cables except in a junction box.

6.3.13 Sawed slots will be filled with an approved loop sealant listed on the Department's Approved Products List.

6.3.14 Backer rod material will be resilient, nonabsorbent material approximately 25% larger in diameter than the width of the sawed slot to be sealed.

6.3.15 The inductive loop lead-in wires will terminate at detector cards connected to the VDS controller inside the cabinet.

Piezoelectric Sensors

6.3.16 One piezoelectric sensor 8 ft long will be installed between the two paired loops in each lane as shown in the plans.

6.3.17 Piezoelectric sensors will operate throughout the temperature range of -40° F to +160° F (-40° C to +70° C).

6.3.18 Piezoelectric sensors will be certified for output uniformity of ±20% for Class II (classification) applications.

6.3.19 Piezoelectric sensors will be 0.016" thick brass cased, made with spiral-wrapped polyvinylidene fluoride elements, TE Connectivity RoadTrax BL Piezoelectric Traffic Sensor 4-1005333-Y or equivalent.

6.3.20 Piezoelectric sensors will have integral factory-installed shielded lead-in cables long enough to reach from each sensor location to the VDS/VCS controller without splicing.

6.3.21 Piezoelectric sensor lead-in cables will be RG 58 type with an underground/direct burial rated outer jacket.

6.3.22 Piezoelectric sensor lead-in cables will terminate at detector units connected to the VCS controller inside the cabinet.

6.3.23 Piezoelectric sensors will be embedded in the slot with grout suitable for portland cement concrete. Hot pour fillers will not be used.

6.3.24 Piezoelectric sensors will be durable to withstand more than 40 million Equivalent Single Axle Loads (ESALs).

6.4 INSTALLATION

6.4.1 The first VDS/VCS of this project will be installed with on-site supervision of a qualified representative of the VDS/VCS manufacturer and SDDOT ITS Program staff.

6.4.2 All power, signal, and communication cables will be identified by durable labels securely attached near the cables' termination.

6.4.3 All power, signal, and communication lines will be equipped with surge protection devices.

VDS/VCS controller

6.4.4 The Contractor will install the VDS/VCS controller in accordance with the manufacturer's instructions.

Inductive Loops

6.4.5 Inductive loops will be installed within a sawed slot ⅜" wide (minimum) and 2" deep (minimum), cut into the pavement in a single pass.

6.4.6 Saw cuts will be cleaned with compressed air and free of grit, oil, and moisture when wires are placed and sealant is applied.

6.4.7 The Contractor will provide sufficient clearance between detector loops and metallic objects to avoid interference with the operation of the loop.

6.4.8 Loops will be wound in the clockwise direction with the first turn placed in the bottom of the saw cut and each subsequent turn placed above the preceding turn.

6.4.9 The loop wires will be pushed into the saw cuts with a blunt non-metallic rod.

6.4.10 Loop wires will be placed in the saw cuts without kinks, curls, or straining or stretching of insulation.

6.4.11 Splices will not be made in the loop or lead-in conductors except within a junction box.

6.4.12 The clockwise end of each loop will be tagged with a durable, securely attached tag.

6.4.13 The distance from the top of the hold-down material to the pavement surface will not be less than 1½ inches.

6.4.14 The loop wires will be placed in the bottom of the saw cut without damaging the insulation.

6.4.15 Backer rod material will be cut into 1" to 2" lengths and placed no more than 2 feet apart.

6.4.16 The Contractor will prepare and apply loop sealant in accordance with the manufacturer's instructions.

6.4.17 Loop sealant will surround the ¼-inch polyethylene tube and displace all the air within the sawed slot.

6.4.18 The loop sealant will be completely cured before applying vehicular traffic.

Piezoelectric Sensors

6.4.19 The Contractor will install piezoelectric sensors at locations shown on the plans according to the manufacturer's instructions.

6.4.20 Piezoelectric sensors will be installed within a straight slot ¾" (±1/16") wide, 1½" deep, and 6 – 8" longer than the sensor wet-cut into the pavement in a single pass.

6.4.21 Saw cuts will be cleaned with compressed air and be free of grit, oil, and moisture when sensors are placed and embedment grout is applied.

6.4.22 The piezoelectric sensor will be positioned straight at a depth of ⅜" below the pavement surface throughout the slot using manufacturer-supplied installation brackets.

6.4.23 The free end and the lead cable end of the piezoelectric sensor will be bent downward, so they are beneath the pavement surface.

6.4.24 The Contractor will prepare and apply embedment grout in accordance with the manufacturer's instructions.

6.4.25 Embedment grout will surround the piezoelectric sensor and displace all the air within the saw cut.

6.4.26 The embedment grout will be completely cured before applying vehicular traffic.

Exit Ramp Queue Detection

6.4.27 The Contractor will terminate the Exit 133 Exit Ramp Queue Detection loops in a terminal block inside the Communication Cabinet. That will then be connected to the VDS/VCS controller by an electrical pigtail cable.

6.4.28 The Contractor will terminate the Exit 132 NB Exit Ramp Queue Detection loops in a terminal block inside the existing signal cabinet. That will then be connected to the existing signal controller by an electrical pigtail cable.

6.4.29 The contractor will install a relay inside the existing signal cabinet, which will connect to a dry contact output in the existing signal controller. The relay will connect to the VDS/VCS controller with a 2-conductor cable to allow the SDDOT to monitor the exit ramp queue detection.

6.4.30 The contractor will furnish and install a new Reno C1200 loop amplifier in the existing rack that will be assigned by an Engineer.

6.4.31 The Contractor will prepare and submit a revised signal plan for the signal at US-14 and the I-29 NB Exit Ramp at Exit 132 to the Engineer for approval. Update all cabinet drawings.

6.4.31.1 A green phase for NB traffic will be activated or extended when queues reach the exit ramp queue loop. Place a 30 second delay setting on the loop, and once that delay is reached a call on preempt 7 will be placed.

6.4.31.2 This green phase will continue until the queue has dissipated.

6.5 ELECTRICAL

6.5.1 The VDS/VCS controller will operate using a nominal input voltage ranging from 90 VAC to 130 VAC.

6.5.2 The VDS/VCS controller will obtain 120 VAC power from the power distribution unit fed from the uninterruptible power supply in the nearest ITS cabinet as shown in the plans.

6.5.3 The VDS/VCS controller will have built-in surge and radio frequency protection.

6.5.4 All wiring and connections will conform to the National Electrical Code, local ordinances, and local utility company rules.

6.5.5 All cable shields will be properly grounded at the VDS/VCS controller only.

6.5.6 Each detector loop will conform to the following:

6.5.6.1 Loop resistance will not exceed 5 Ω.

6.5.6.2 Insulation resistance loop to ground will be at least 10 MΩ.

6.5.6.3 Loop inductance will be between 100 to 500 µH.

6.5.7 The Contractor will verify and record the capacitance, dissipation factor, and resistance of each piezoelectric sensor according to the manufacturer's instructions before installation. Sensors failing the requirements of 6.5.7.1 through 6.5.7.3 will not be used.

6.5.7.1 The capacitance of the sensor with lead-in cable will be within ±20% of the value listed on the data sheet accompanying the sensor.

6.5.7.2 The dissipation factor will be within ±20% of the value listed on the data sheet accompanying the sensor.

6.5.7.3 The resistance across the sensor leads will be at least 20 MΩ.

6.6 COMMUNICATIONS

6.6.1 The VDS/VCS controller will connect to the communications switch within the ITS cabinet for remote data transmission and control.

6.6.2 Communication addresses will be programmable by the user.

6.6.3 The VDS/VCS controller will have two RS232 ports—one dedicated for local/direct connection and configurable for modem or direct connection to a user system—supporting serial baud rates between 300 and 38,400.

6.6.4 The VDS/VCS controller will provide RS-232 communications at rates between 300 and 115,200 baud.

6.6.5 The VDS/VCS controller will provide an Ethernet connector or include an RS-232 to Ethernet converter.

6.7 SYSTEM TESTING

6.7.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

6.8 DOCUMENTATION

6.8.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

6.8.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers' installation instructions, and show how they will be integrated.

6.8.3 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the VDS/VCS.

6.8.4 The Contractor will supply the test documentation required in Section 9 "ITS Testing"

6.8.5 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

6.8.6 Prior to final acceptance, the Contractor will supply as-built wiring diagrams in Portable Document File (PDF) format depicting all components, sensors, and power, signal, and communication lines for each installation.

6.9 WARRANTY

6.9.1 The Contractor will certify the continued availability of sensors and electronic components for at least 10 years.

6.9.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

6.9.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

> During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

6.9.4 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

6.9.5 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

6.9.6 The Contractor will assign all warranties and guarantees offered by electrical and mechanical equipment manufacturers to SDDOT upon Final Acceptance.

6.9.7 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

6.10 BASIS OF PAYMENT

6.10.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

6.10.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following items:

Bid Item Number	Item	Basis of Payment	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
900E5840	Permanent Vehicle Classification System	Each	40%	70%	100%
900E5842	Permanent Vehicle Detection System	Each	40%	70%	100%

6.10.3 The unit of measurement will be "each", covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

6.10.4 All hardware, cables, and other materials used to mount and install the VDS controller, loops, and piezoelectric sensors will be incidental to the Vehicle Classification System bid item.

7 MAINLINE AND RAMP GATE MANAGEMENT SYSTEMS

7.1 DESCRIPTION

Project PCN 080D will add a mainline road closure gate and advance warning signs at Exit 133 to close northbound I-29 during severe winter weather or other situations requiring road closure. Road closure gates are already in place at the northbound on-ramp at Exit 133 and on the southbound mainline and on-ramp at Exit 130.

The northbound mainline and ramp road closure gates at Exit 133 and the southbound mainline and ramp road closure gates at Exit 130 will be wired to enable SDDOT's Active Traffic Management System (ATMS) to monitor whether the beacons on the advance warning signs and LEDs on the gate arm are lit. Lighting will be able to be turned on and off either by a manually operated switch at the base of the gate pole or remotely by the ATMS. The gate arms will be raised and lowered by manually operated winch.

Other existing gates at Exits 130, 132, and 133 are not intended for future use and will not be integrated into the ATMS.

At Exits 114, 121, and 127, which will not have road closure gates, signs with beacons will be placed at the entrance of on-ramps to inform travelers when I-29 is closed. The signs will be controlled by the ATMS.

7.2 FUNCTIONAL REQUIREMENTS

The Contractor will furnish and install system components that satisfy the following minimum requirements on the mainline and ramp road closure gates.

Gates

7.2.1 Each road closure gate will be manually raised and lowered by mechanical winch.

Gate Lighting

7.2.2 The gate arm will be fitted with LED lights.

7.2.3 The gate arm lights will flash at a nominal rate of once per second.

7.2.4 The gate arm lights will light when switched on and off manually by a pole-mounted switch or remotely by SDDOT's ATMS.

7.2.5 The on-off state of the gate arm lights will be able to be queried by SDDOT's ATMS.

7.2.6 Gate lights will be able to be remotely monitored with a 20A surface mount, 12 VAC input current/120 VAC output solid state relay that is wired back to communications cabinet-see plans for installation.

Luminaire

7.2.7 The gate arm will be fitted with a luminaire.

7.2.8 The luminaire will illuminate the area around the gate when the gate arm lights are switched on.

Mainline Advance Road Closure Signs

7.2.9 Advance Road Closure Warning Signs will be mounted along mainline I-29 as shown in the plans.

7.2.10 Advance Road Closure Warning Signs will be equipped with two flashing beacons per sign as shown in the plans.

7.2.11 The Advance Road Closure Warning Sign beacons will flash when the gate arm lights are switched on.

Ramp Road Closure Signs

7.2.12 Ramp Road Closure Warning Signs will be installed at on-ramps at interchanges that have no ramp closure gates as shown in the plans.

7.2.13 Ramp Road Closure Signs will be equipped with two flashing beacons per sign as shown in the plans.

7.2.14 The flashing beacons will be controlled remotely through the remote relay controller located in the nearby Communication cabinet.

7.3 MATERIALS

7.3.1 All equipment and materials will be new.

7.3.2 Where allowed, equivalents must be approved by the SDDOT's Intelligent Transportation Systems (ITS) Program in writing prior to installation.

7.3.3 The gate arms will be fitted with three 6W 8.5 – 12 VDC LED lamp assemblies Aurora Part No. A30-944 or equivalent.

7.3.4 The gate arm lights will be flashed by a 6 – 24 VDC cube flasher TSC 12DC10DF or equivalent.

7.3.5 The luminaire will be a 171 W LED luminaire.

7.3.6 The remote relay controller will be a Control by Web Model X-401/W/CW I/O Controller or equivalent.

7.4 INSTALLATION

7.4.1 The gates, gate lighting, and signing beacons will be installed in accordance with the plans.

7.5 ELECTRICAL

7.5.1 The gate arm lights will operate with a 12 VDC flasher relay provided by a 120 VAC to 12 VDC transformer powered from the PDU in the nearest communications cabinet.

7.5.2 The luminaire will operate on 120 VAC fed by line power, or PDU in nearest Communication Cabinet.

7.5.3 The warning sign beacons will operate on 120 VAC provided from the nearest communications cabinet.

7.5.4 All wiring and connections will conform to the National Electrical Code, local ordinances, and local utility company rules.

7.5.5 All power, signal, and communication lines will be equipped with surge protection devices.

7.5.6 All bonding and grounding will be in accordance with the National Electrical Code and with the manufacturers' instructions. Grounding and surge protection will be installed following the recommendations set forth by IEEE Std 1422, NFPA 780, and Motorola R56 which specify a design goal for ground resistance of 5 ohms or less for sensitive electrical equipment.

7.6 COMMUNICATION

7.6.1 Each Ramp Road Closure Sign will be powered from an individual switched circuit of a managed power distribution unit connected to the SDDOT network in the nearby Communication Cabinet.

7.6.2 Each set of Mainline Advance Road Closure Signs will be powered from a dual relay and input module, Control by Web Model X-401 or equivalent, connected to the SDDOT network in the nearby Communication Cabinet.

7.6.3 The Contractor will supply a DIN rail mounted power supply to power the Control by Web Model X-401 or equivalent. Power supply will have a input voltage range of 100V-240V AC, output voltage of 24V DC, minimum output current of 2A, Input Frequency of 45-65 Hz, with a minimum operating temperature range of -25 to 70 degrees C.

7.7 SYSTEM TESTING

7.7.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these specifications.

7.8 DOCUMENTATION

7.8.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

7.8.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers' installation instructions, and show how they will be integrated.

7.8.3 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the system.

7.8.4 The Contractor will supply the test documentation required in Section 9 "ITS Testing".

7.8.5 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

7.8.6 Prior to final acceptance, the Contractor will supply as-built wiring diagrams depicting all components, sensors, and power, signal, and communication lines for each installation.

7.9 WARRANTY

7.9.1 The Contractor will certify the continued availability of electronic components for at least 10 years.

7.9.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

7.9.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

7.9.4 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

7.9.5 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

7.9.6 The Contractor will assign all warranties and guarantees offered by electrical and mechanical equipment manufacturers to SDDOT upon Final Acceptance.

7.9.7 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

7.10 BASIS OF PAYMENT

7.10.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

7.10.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following items:

Bid Item Number	Item	Unit of Measurement	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
900E0042	Road Closure Gate Automation	Each	40%	70%	100%
635E3800	Roadway Luminaire, LED	Each	40%	70%	100%

7.10.3 The unit of measurement will be "each", covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

8.0 ITS CABINETS

8.1 DESCRIPTION

Project PCN 080D includes Communication Cabinets which will serve as central hubs for power and communication to roadside ITS devices. Communication cabinets will include items such as a 19-inch EIA rack, adjustable shelves and pull-out drawer, fan and thermostat assemblies, lights, power distribution units, battery backup, automatic transfer switch, generator plug, and terminal strips. The Communication Cabinets will be ground mounted and house ITS device electronics such as network switches, traffic detection controllers, uninterruptible power supplies, etc.

8.2 MATERIALS

8.2.1 Where allowed, approved equals must be approved by the SDDOT's Intelligent Transportation Systems (ITS) Program in writing prior to installation.

8.2.2 The cabinets will be an Enclose Manufacturing ENC-2025B or approved equal.

8.2.3 All materials and equipment will be new and comply with the details shown on the plans, the requirements of this special provision, and the pertinent requirements of the following SDDOT Standard Items:

- Item 480, "Reinforcing Steel"
- Item 635, "Traffic Signals and Roadway Lighting - Conduits"
- Item 635, "Traffic Signals and Roadway Lighting - Electrical Conductors"
- Item 635, "Traffic Signals and Roadway Lighting - Foundations for Traffic Control Devices"
- Item 750, "Portland Cement"
- Item 972, "Bolts"

8.2.4 Cabinets will be identical in size, shape, and quality for each type as specified in the plans.

8.2.5 Cabinets will have a modular design and allow ITS equipment to be installed in the mounting configurations shown in the plans.

8.2.6 The equipment, design, and construction will use industry standard techniques with a minimum number of different parts, subassemblies, circuits, cards, and modules to maximize standardization and commonality.

8.2.7 Equipment will be designed for ease of maintenance, with components readily accessible for inspection and maintenance.

8.2.8 Cabinets will be constructed of welded sheet aluminum at least 0.125 in. thick meeting NEMA 3R standards.

8.2.9 Cabinets will conform to the requirements of ASTM B209M-21a for 5052-H32 aluminum sheet.

8.2.10 All exterior cabinet and door seams will be continuously welded with edges filled to a radius of 0.03125 inches minimum and exterior welds will be smoothed.

8.2.11 Welding on aluminum cabinets will be by gas metal arc (MIG) or gas tungsten arc (TIG) process using bare aluminum welding electrodes that conform to the requirements of the American Welding Society (AWS) A5.10 for ER5356 aluminum alloy bare welding electrodes.

8.2.12 Procedures, welding machines, and welding machine operators for welding on aluminum will be qualified and conform with the requirements of AWS B3.0, "Welding Procedures and Performance Qualification" and to the practices recommended in AWS C5.6.

8.2.13 Wood, wood fiber products, or flammable products will not be used in the cabinet.

8.2.14 The cabinet structure will be sealed to prevent the entry of rain, dust, dirt, insects, and rodents.

8.2.15 A sunshield will be fitted on the exterior top of the cabinet to reflect solar rays and mitigate temperature build-up inside the cabinet. The sunshield will be of 0.125 in. thick aluminum secured in four locations and will provide a minimum of 1.25 in. clearance above the top of cabinet.

8.2.16 Aluminum lifting eyes or ears will be attached to the top of cabinets to permit lifting the cabinet with a sling. Lifting eyes may be permanently fabricated to the cabinet frame if they do not interfere with the construction and operation of the sunshield.

8.2.17 Cabinets will have a smooth unpainted aluminum finish.

8.2.18 Cabinets will be equipped with one EIA 19-inch rack sized to the full height of the cabinet.

8.2.19 Cabinets will have a side panel for mounting auxiliary equipment.

Doors

8.2.20 Cabinet doors will be torsionally rigid.

8.2.21 Cabinet doors will overlap and substantially cover the face of the cabinet.

8.2.22 Doors and hinges will withstand a 100 pounds per vertical foot force applied to the outer edge of the door when open without permanent deformation or impairment of the door or cabinet body when the load is removed.

8.2.23 Door and door stop mechanisms will withstand a wind load of 5 pounds per square foot applied to both inside and outside surfaces without failure, permanent deformation, or compromising of door position.

8.2.24 The cabinet door will be fitted with a gasket made of non-absorbent material that will maintain its resiliency after long term exposure to the outdoor environment to act as a permanent and weather-resistant seal.

8.2.25 The gasket will be at least 0.25 inches thick and placed in a channel either on the cabinet or on the door. An “L” bracket is acceptable instead of a channel if the gasket is fitted snugly against the bracket to ensure a uniform dust- and weather-resistant seal around the entire door facing.

8.2.26 Cabinet doors will be attached by a minimum of 3 heavy duty hinges or full-length hinges with stainless steel hinge pins.

8.2.27 Cabinet doors will have a catch mechanism to hold the door open at preset positions.

8.2.28 Cabinet doors will be fitted with an aluminum or chrome-plated handle with at least a 0.375-inch drive pin and a 3-point latch designed so the handle cannot be released until the lock is released.

8.2.29 Cabinet doors will be fitted with number 2 locks.

Environmental

8.2.30 Cabinets will satisfy all functional requirements during and after exposure to any combination of the following conditions:

- ambient temperature range of -30° to 165°F
- temperature shock of 30°F per hour, during which the relative humidity does not exceed 95%
- relative humidity range of 95% over the temperature range of 40° to 110°F
- moisture condensation on all surfaces caused by temperature changes

8.2.31 Equipment will show no degradation of mechanical structure, soldered components, plug-in components, or satisfactory operation in accordance with the manufacturer's equipment specifications after being subjected to the vibration test as described in the NEMA standard TS2, Section 2.2.8, “Vibration Test”, or the most current version.

Ventilation

8.2.32 Cabinets will have louvered air intake vent openings located on the lower portion of both doors.

8.2.33 Intake vents will be fully covered inside with a commercially available disposable 3-layer pleated filter at least 16 inches high, 16 inches wide and 1 inch thick, securely mounted so any air entering the cabinet will pass through the filter.

8.2.34 Exhaust vents will be screened with screen openings no larger than 0.0125 square inches to prevent entry of insects.

8.2.35 Each cabinet will be vented and cooled by electric fans.

8.2.36 Fans will be thermostatically controlled with an adjustment range of 70° to 110°F.

8.2.37 Fans will be equipped with a press-to-test switch to test the operation of the fan.

Lighting

8.2.38 Cabinets will be equipped with LED light fixtures with a clear shatterproof lens inside and above both doors.

8.2.39 Enough light fixtures will be installed to provide significant illumination to all the equipment.

8.2.40 Light fixtures will be positioned to illuminate the equipment in the cabinet and not a technician's eyes.

Hardware

8.2.41 Each 19-inch equipment rack will be fitted with one adjustable shelf as shown in the plans to support electronic equipment.

8.2.42 At least 2 inches will be provided between the back and front edges of the shelf and cabinet doors to allow room for cables and connectors.

8.2.43 Each cabinet will be fitted with a slide-out drawer at least 1.75 inches high, 16 inches wide, and 14 inches deep with a hinged lid and telescoping drawer guides that allow full extension from the rack frame.

8.2.44 Each cabinet will have a recessed panel with DIN rail to front face rail mounted equipment as shown on plans.

8.2.45 All external screws, nuts, and locking washers will be stainless steel.

8.2.46 No self-tapping screws will be used unless specifically approved by the SDDOT ITS Program.

8.2.47 All parts will be made of corrosion resistant material, such as plastic, stainless steel, aluminum, or brass.

8.2.48 All materials will be resistant to fungus growth and moisture deterioration.

8.2.49 Dissimilar metals will be separated by an inert dielectric material.

8.3 ELECTRICAL

Uninterruptible Power Supply (UPS) System Backup Batteries

8.3.1 Cabinets will include Alpha FXM HP 1100 Rugged UPS equipment 0170024-001 or approved equal, including:

- Alpha FXM HP 1100 Uninterruptible Power Supply or approved equal
- Alpha Universal Generator Transfer Switch 020-166-22 UGTS, 120V, 30A with Auxiliary Contacts or approved equal
- Alpha Rack Mount Kit 740-697-21 or approved equal
- Battery Harness Kit 740-628-27 or approved equal
- Four (4) 12V AlphaCell 195XTV AGM Batteries or approved equal
- Remote Battery Monitoring System or approved equal

8.3.2 The UPS will be ruggedized with a minimum operating temperature rating of -37° C to 74° C / -35° F to 165° F.

8.3.3 Batteries will be 12V 110 Ah absorbed glass mat (AGM) technology, polypropylene container with epoxy sealed posts, and operating temperature range of -40° C to 60° C / -40° F to 140° F.

8.3.4 All battery Input and output connections will be quick connections.

8.3.5 All equipment will be 19” rack-mounted.

8.3.6 The UPS will be able to supply 1100VA of apparent power with 1.0 power factor.

8.3.7 The UPS will boost the output voltage or transfers to battery during brownout or low input line conditions and returns to normal when input power stabilizes and returns to Normal.

8.3.8 The UPS will have remote access via RS-232, USB, & network.

8.3.9 The UPS will be capable of automatically transferring power when external generator power is supplying power.

Power Distribution Unit (PDU)

8.3.10 Cabinets will include a rack-mounted power distribution unit (PDU) APC (Schneider Electric) AP7802B or approved equal.

8.3.11 The PDU will be a metered, single phase 120V 30Amp Input, with (16) NEMA 5-20 outlets that have two (2) circuit breakers, one for each row of outlets (8 per row).

8.3.12 The PDU will have line rated current of 24 Amps and a load capacity of 2880 VA

8.3.13 The PDU will be capable of remote monitoring and switching of each outlet individually via Ethernet connection to a communication network.

8.3.14 The PDU will be rack-mounted.

8.3.15 The PDU will be UL listed.

General Purpose Outlets

8.3.16 The cabinet will have one 120 VAC NEMA Type 5-15R duplex receptacles, protected by a circuit breaker, in an isolated location sufficiently recessed to avoid interference with cabinet doors.

8.3.17 The cabinet will have at least one (1) 120 VAC NEMA Type 5-15R GFCI duplex receptacle, protected by a circuit breaker, in a readily accessible location.

8.3.18 The cabinet will have a removable cover made of transparent thermoplastic material 0.125-inch thick to cover each duplex receptacles and installed to not interfere with the functional operation within the cabinet.

External Generator Service

8.3.19 The cabinet will have a 30A 125/250V AC, 3 pole, 4 wire grounding, watertight reverse service flange inlet and all manufacturer's required boxes and connectors to enable an external generator to supply power.

Circuit Breakers

8.3.20 Equipment will contain readily accessible, manually resettable or replaceable circuit protection devices such as circuit breakers or fuses for equipment and power source protection.

8.3.21 Circuit breakers or fuses will be sized so no wire, component, connector, PC board or assembly is subjected to sustained current in excess of its design limits upon failure of any single circuit element or wiring.

8.3.22 The Contractor will furnish circuit breakers, which are in addition to any auxiliary fuses, for main, accessory, spare, and equipment circuits, to protect ITS equipment as shown on the plans.

8.3.23 Circuit breakers will be Underwriters Laboratories (UL) 489 listed, capable of operating in accordance with Section 2, "Environmental Standards and Test Procedures" of NEMA TS2-2003, or most current version, with an interrupt capacity of 5,000 A. and insulation resistance of 100 megohms at 500 VDC.

8.3.24 The main circuit breaker will be sized so the load of all branch circuits is less than the main circuit breaker ampere rating in accordance with the most current version of the National Electrical Code (NEC).

Wiring

8.3.25 All cabinet wiring will be rated for at least 600 V.

8.3.26 All cabinet wiring will be identified with insulated pre-printed sleeving slipped over the wire before attaching a lug or making a connection.

8.3.27 All wires will be cut to the proper length before assembly and ensure that no wires are doubled back to take up slack.

8.3.28 Cable harnesses will be covered with braided cable sleeves.

8.3.29 Cables will be secured with nylon cable clamps and ties.

8.3.30 Service loops will be provided to facilitate removal and replacement of assemblies, panels, and modules.

8.3.31 Wiring containing line voltage AC will be routed and bundled separately from low voltage circuits.

8.3.32 All conductors, live terminals, or parts that could be hazardous to maintenance personnel will be covered with suitable insulation.

8.3.33 AC cabinet wiring will be colored in accordance with the most current version of the NEC.

8.3.34 Equipment that requires grounding will have ground conductors and will not use conduit for grounding.

8.3.35 All line voltage wiring will be at least 14 AWG or larger as shown in the plans.

Terminations

8.3.36 Connections of signal wires, sign control wires, and any other wires required to complete connections for an operational system will be terminated on terminal blocks.

8.3.37 Termination panels will properly interconnect all cabinet wiring related to the specific complement of equipment shown on the plans.

8.3.38 All connections to and from the electronic equipment will terminate at an intermediate inter-wiring block.

8.3.39 All termination connection lugs/blocks will be rated for 90° C / 194° F

8.3.40 Properly terminated cable harnesses will be provided for each electronic component, including any furnished by SDDOT.

8.3.41 Terminal strips will be installed in accessible locations on the panel such that inspection or connection does not require removal of electronic equipment.

8.3.42 Terminal blocks will be 2-position, multiple-pole barrier type.

8.3.43 No electrically energized components or connectors will extend beyond the protection afforded by the barriers.

8.3.44 Shorting bars and an integral marking strip will be provided in each position.

8.3.45 Terminal blocks will not interfere with the entrance, training, and connection of incoming conductors.

8.3.46 All terminals will be identified by labels permanently affixed to the terminal blocks.

8.3.47 No more than 3 conductors will be brought to any terminal screw.

8.3.48 Conductor strands will not be trimmed to fit wiring into the breaker or terminal block.

8.3.49 Terminals used for field connections to equipment will secure conductors by means of a 10-32 nickel- or cadmium-plated brass binder head screw.

8.3.50 Terminals used for inter-wiring connections will secure conductors by means of a 5-32 nickel-plated brass binder head screw.

Cabinet Internal Grounding

8.3.51 The cabinet internal ground will consist of at least one busbar permanently affixed to the cabinet and connected to the grounding electrode.

8.3.52 Bare stranded 4 AWG copper wire will connect busbars and grounding electrodes.

8.3.53 Each copper ground busbar will have at least 14 connection points, each capable of securing bare conductors ranging in size from 4 AWG to 14 AWG.

8.3.54 AC neutral and equipment ground wiring will be returned to the busbars.

AC Power Surge Protection Device (SPD)

8.3.55 An SPD will be installed in accordance with manufacturers' recommendations at the termination point closest to where the supply circuit enters the cabinet, on the load side of the cabinet power distribution panel breakers and ahead of all electronic devices.

8.3.56 The SPD Voltage Protection Rating (VPR) will not exceed 700 V on any mode (L-N, L-G, and N-G).

8.3.57 The SPD Maximum Continuous Operating Voltage (MCOV) will not exceed 150 V.

8.3.58 The SPD Surge Current Rating will equal or exceed 40kA per mode (L-N), (L-G), (N-G).

8.3.59 The SPD Short Circuit Current Rating (SCCR) will equal or exceed 50 kA, or the available short circuit current, whichever is higher.

8.3.60 The SPD will have directly connected Metal Oxide Varistors (MOV) at least 32 mm in diameter, with thermal safety disconnectors. Gas tube and spark gap SPD will not be permitted.

8.3.61 Each MOV's operational status will be capable of being monitored via visual indicator, including N-G mode.

8.3.62 The SPD will have one set of Normally Open (NO) and Normally Closed (NC) Form C contacts for remote monitoring.

8.3.63 The SPD used for AC power will not dissipate any energy or provide any series impedance during standby operation.

8.3.64 The SPD will return to its non-shunting mode after the passage of any surge and will not allow the shunting of AC power.

8.3.65 Leads will be as short as possible with all conductor bends formed to the maximum possible radius.

8.3.66 SPD ground leads will be connected directly to the ground bus. Use of wire nuts is prohibited.

Signal Cable Surge Protection

8.3.67 The Contractor will install a specialized SPD on all conductive circuits including data communication cables, coaxial video cables, and low-voltage power cables.

8.3.68 Surge protection for incoming inductive loop pairs will be mounted on the right-side panel.

8.3.69 Each inductive loop detector input channel will be protected by a Surge Protective Device that meets or exceeds the following:

- The SPD will be a three-terminal device, two connected across the signal inputs of the detector and the third connected to chassis ground to protect against common mode damage.
- The array will be designed to appear as a very low capacitance to the detector.
- The SPD will instantly clamp differential mode surges (induced voltage across the loop detector input terminals) via a semiconductor array.
- The SPD will clamp common mode surges (induced voltage between the loop leads and ground) via solid state clamping devices.
- Peak Surge Current
  - Differential Mode: 400A (8 by 20 µs)
  - Common Mode: 1000A (8 by 20 µs)
  - Estimated Occurrences: 500 @ 200A
- Response Time: 40 ns
- Input Capacitance: 35 pF typical
- Clamp Voltage: a) 30V max @ 400A (Differential Mode) b) 30V max @1000A (Common Mode)

External Cabinet Disconnect

8.3.70 The disconnect will be mount on the side of the cabinet not to interfere with the opening of the door.

8.3.71 The disconnect will be a fusible 60A, 2 pole, 240v, NEMA 3R, with factory installed neutral connection.

8.3.72 Install and Wire disconnect to NEC standards

8.4 INSTALLATION

8.4.1 Cabinets will be installed as indicated on the plans.

8.4.2 The Contractor will stake cabinet foundations and underground conduit entering the foundation before installation and secure SDDOT ITS Program approval before installing the foundation. Cabinet location may vary from the plans to accommodate field conditions with approval from the Engineer.

8.4.3 Cabinets will be mounted plumb in all directions.

8.4.4 Appropriately sized mounting plates, anchor bolts, and other necessary hardware will be furnished as recommended by the manufacturer to mount the cabinet to the foundation.

8.4.5 The cabinet will be grounded with sufficient ground rods and grounding conductors to achieve less than 5 ohms resistance as measured in accordance with IEEE 81. Additional ground rods and grounding conductors will be incidental if needed to meet grounding specifications.

8.4.6 A continuous bead of polyurethane sealant to seal the cabinet base will be installed to the foundation immediately before mounting the cabinet on the foundation.

8.4.7 Any space between conduit entering the cabinet and the foundation will be sealed with polyurethane caulk or approved sealant compound.

8.4.8 Conduits will be installed as shown on the plans or as directed and in accordance with Item 635, “Traffic Signals and Roadway Lighting - Conduits”.

8.4.9 Wiring will be installed in a neat and orderly manner grouped together with nylon tie-downs.

8.4.10 After wiring is installed, the inside ends of conduits terminated in the cabinet foundation will be sealed with a duct seal or other approved sealant to prevent moisture, dirt, insects, and rodents from entering the conduits.

8.5 TESTING

8.5.1 The Contractor will follow procedures set forth for unit, subsystem, and acceptance testing specified in Section 9 of these special provisions.

8.6 DOCUMENTATION

8.6.1 The Contractor will provide required documents to the SDDOT Intelligent Transportation Systems Program in Portable Document File (PDF) format and, as applicable, spreadsheet or design drawing file formats.

8.6.2 Prior to installation, the Contractor will provide to the SDDOT Intelligent Transportation Systems Program cut sheets and shop drawings that describe the components to be installed, list their published specifications, describe their manufacturers’ installation instructions, and show how they will be integrated.

8.6.3 Upon installation, the Contractor will supply user manuals covering installation, operation, and maintenance of each active component of the cabinet.

8.6.4 The Contractor will supply the test documentation required in Section 9 “ITS Testing”

8.6.5 Prior to final acceptance, the Contractor will supply a list of all components and sensors, including model names and numbers, serial numbers, and network addressing information.

8.6.6 Prior to final acceptance, the Contractor will supply as-built wiring diagrams in Portable Document File (PDF) format depicting all components, sensors, and power, signal, and communication lines for each installation.

8.7 WARRANTY

8.7.1 The Contractor will certify the continued availability of sensors and electronic components for at least 10 years.

8.7.2 The Contractor will supply a warranty description, including the procedure and providers of warranty service.

8.7.3 The Contractor will warrant all equipment supplied, including equipment from other manufacturers, against defective materials and workmanship. The minimum warranty will be as follows:

> During the first year (365) days following Final Acceptance by SDDOT, all repairs, including factory labor and materials necessary to correct any failures, will be made at the Contractor's sole cost.

8.7.4 The Contractor will inform the SDDOT Intelligent Transportation Systems Program of any failures, preventive and corrective maintenance activity, and calibrations performed under warranty.

8.7.5 If the Contractor's normal warranty exceeds the warranty terms specified in this section, the Contractor will supply a copy of the warranty with submission of the shop drawings.

8.7.6 The Contractor will assign all warranties and guarantees offered by electrical and mechanical equipment manufacturers to SDDOT upon Final Acceptance.

8.7.7 The warranty requirements will not apply to equipment that has been subjected to misuse, negligence, or accident by other parties.

8.8 BASIS OF PAYMENT

8.8.1 Payment will be staged with the first payment upon delivery of equipment, the second upon successful unit testing, and the third upon successful acceptance testing.

8.8.2 Payment for each item furnished, installed, and integrated to fulfill requirements will represent full compensation for all work done as specified in this Section. Payment will be made under the following bid items:

Bid Item Number	Item	Basis of Payment	Upon Delivery	Upon Successful Unit Testing	Upon Successful Acceptance Testing
635E5461	Type 1 Communication Cabinet	Each	40%	70%	100%

8.8.3 The unit of measurement will be "each", covering all components, furnishing, placement, testing, supplies, tools, labor, operational software and firmware, training, shop drawings, warranty, documentation, and incidental costs required for full compliance to these specifications.

9.0 ITS TESTING

Each installation of the ITS subsystems defined in Sections 2 through 8 of these special provisions will undergo unit, subsystem, and acceptance testing to verify compliance with the specifications. Testing will be conducted and documented using worksheets supplied by the South Dakota Department of Transportation's Intelligent Transportation Systems Program.

9.1 UNIT TESTING

9.1.1 For each subsystem installation, the Contractor will establish that every ITS device and ancillary component complies with all specifications, is properly installed, is in sound condition and working order, and performs its required functions.

9.1.2 Functional testing will be performed on the device side of the communication switch.

9.1.3 Unit testing of a subsystem installation will be deemed successful when conformance of each ITS device and ancillary component has been established.

9.2 SUBSYSTEM TESTING

9.2.1 After successful unit testing of the subsystem installation and after the South Dakota Department of Transportation (SDDOT) and after the South Dakota Bureau of Information and Telecommunications (SDBIT) have installed, configured, and tested the necessary communication switches, the Contractor will verify that the complete installation satisfies the specifications of the subsystem.

9.2.2 Functional testing will be performed using vendor-supplied software on the network side of the communication switch to ensure that all subsystem components, power management devices, and communication devices operate successfully.

9.2.3 Subsystem testing of subsystem installation is deemed successful when conformance of the complete subsystem installation has been established.

9.2.4 SDDOT reserves the right to recheck the performance of the subsystem at any time during the life of this contract.

9.3 ACCEPTANCE TESTING

9.3.1 Upon successful subsystem testing of each subsystem installation and after SDDOT and SDBIT have installed, configured, and tested the necessary switches, the Contractor will conduct an acceptance test constituting thirty consecutive days during which no remedial action is required to maintain the level of performance established during the Subsystem Test.

9.3.2 Each acceptance test will be performed in its actual operational environment using previously installed and tested system hardware and software.

9.3.3 Testing will be performed using vendor-supplied software at the Internet side of the communication switch to ensure that the complete subsystem installation—including at ITS devices and associated power management and communication components—successfully performs all required control, monitoring, and communication functions end-to-end from field devices to the Internet external to the project.

9.3.4 The acceptance test will be conducted by trained personnel and will be observed by a representative of SDDOT's Intelligent Transportation Systems Program.

9.3.5 If any element of the acceptance test fails, the 30-day period for the individual subsystem installation will restart.

9.4 ACTIVE TRAFFIC MANAGEMENT SYSTEM TESTING

9.4.1 In addition to unit, subsystem, and acceptance testing, the South Dakota Department of Transportation (SDDOT) will verify that its Active Traffic Management System (ATMS) can communicate with, monitor, and control all the devices and subsystems installed in project PCN 080D.

9.4.2 While project PCN 080D is active, SDDOT may request the Contractor to repeat unit or subsystem testing of components that fail to function properly in active traffic management system testing.

9.5 VERIFICATION METHODS

The Contractor will use one or more of the following five techniques to verify conformance to each specification, as appropriate to the specification being verified:[1]

9.5.1 Inspection: Direct observation of requirements such as construction features, workmanship, dimensions, other physical characteristics, and software language.

9.5.2 Test: Direct measurement of system operation, often using instrumentation. Inputs are defined and outputs are measured to verify that the requirements have been met. Tests are commonly used to exercise and verify component-level capabilities.

9.5.3 Demonstration: Witnessing system operation in the expected or simulated environment without need for measurement data. For example, a requirement that an alarm is issued under certain conditions could be verified through demonstration. Demonstrations are more prevalent in subsystem-level verification when subsystems or the complete system is available to demonstrate end-to-end operational capabilities.

9.5.4 Analysis: Verification using logical, mathematical, or graphical techniques. Analysis can be appropriate when verification by test or demonstration would be infeasible or prohibitively expensive. For example, a requirement that a website support up to 1,000 simultaneous users would normally be verified through analysis.

9.5.5 Certification: Verification based on review of manufacturers' published documentation or certified test results. Component certification is appropriate when testing or demonstration—for example, to verify operation over wide range of environmental conditions—is infeasible within the project setting.

9.6 SUBSYSTEM VERIFICATION PLANS

9.6.1 The Contractor will use SDDOT-supplied worksheets similar to Figure 2 and Figure 3 to test and document the testing for each installed ITS subsystem. Base worksheets are included as an attachment to these bid documents with suggested test or demonstration methods.

[1] The first four techniques are described in Systems Engineering for Intelligent Transportation Systems, Federal Highway Administration, FHWA-HOP-07-069, January 2007, p62. The fifth is added to allow verification based on review of manufacturers' specification documents and certified test results.

Project Name:	I-29 Variable Speed Limit			Project Number:	CR 0294(74)114	PCN:	080D	Verification Level:	Unit
Subsystem:	Variable Speed Limit Signs			Device Designation:	VSL1-VSL22	Location:	All signs along I-29		

Specification		Verification Method(s)	Test or Demonstration Method	Pass/ Fail	Notes	Corrective Action	Verified By	Date
Number	Statement							
General								
2.2.1	The Contractor will furnish and install electronic variable speed limit (VSL) signs at locations indicated in the design plans.	Inspection		Pass			John Doe	6/1/2024
2.2.2	The Contractor will supply two VSL signs as spares. Both VSL signs will be tested and made functional and then provided to the SDDOT Intelligent Transportation Systems Program.	Inspection	Spare signs will undergo and pass all unit testing items before delivery to SDDOT	Fail	1 of 2 spare signs had several pixels not functioning upon delivery. Contacted manufacturer who will send replacement.	Manufacturer was contacted & will send replacement	John Doe	6/9/2024
				Pass	Replacement sign arrived and passed all unit		John Doe	7/20/2024
2.2.3	The VSL sign will consist of a static MUTCD-compliant reflective sign panel and a full matrix LED display	Certification		Pass			John Doe	6/9/2024
2.2.4	The VSL sign will include an integral sign controller with front panel LCD	Inspection		Pass			John Doe	6/1/2024
Static Sign Panel								
2.2.5	The static sign panel will display the words "SPEED LIMIT" in FHWA Series E, 8" upper case black letters against white reflective sheeting as shown in the design plans	Inspection		Pass			John Doe	6/9/2024
LED Display								
2.2.6	The LED display will be legible within a distance range of 150 feet to 1000 feet when mounted according to the manufacturer's instructions	Demonstration	Messages posted on sign will be viewed from 150' to 1000' upstream	Pass			John Doe	6/9/2024
2.2.7	The LED display will be legible 24 hours per day, including dawn and dusk hours when sunlight shines directly on the display face or the sun is directly behind the sign, and in most normally encountered weather conditions.	Demonstration	Messages will be posted during the day, at dawn, dusk, and night	Pass			John Doe	6/9/2024
2.2.8	The LED display will display two-digit speed limits comprising any combination of numeric digits and three-digit speed limits comprising a leading one followed by any combination of numeric digits.	Demonstration	Messages that display integers 1-9 for each digit will be posted	Pass			John Doe	6/9/2024
2.2.9	The LED display will display speed limit digits 18" high	Inspection		Pass			John Doe	6/9/2024
2.2.10	The LED display will display speed limit digits in either white on black or black on white.	Inspection		Pass			John Doe	6/9/2024
Sign Controller								
2.2.11	Each VSL sign will be controlled and monitored by its own microprocessor-based sign controller not requiring continuous communication with external control software to perform most control functions.	Certification		Pass			John Doe	6/9/2024
2.2.12	The sign controller will mount within the sign housing.	Inspection		Pass			John Doe	6/9/2024
2.2.13	The sign controller's firmware will monitor all external and internal sensors and communication inputs and control the display modules as directed by external control software and the front panel interface.	Demonstration	Internal sensor and communication information will be shown on the front panel interface	Pass			John Doe	6/9/2024
2.2.14	The sign controller will natively support National Transportation Communications for ITS protocol (NTCIP) 1203 V03 without external protocol converter or translator devices.	Certification		Pass			John Doe	6/9/2024
2.2.15	The sign controller will activate a sign message when: - an operator using the front panel interface or NTCIP-compatible control software instructs a particular message to be activated - the internal time-based scheduler activates a message at a date and time previously configured using the control software per the NTCIP 1201 and NTCIP 1203 standards - an event activates a pre-configured message	Test	Configuration for messages will be done via the front panel interface	Pass			John Doe	6/19/2024

Figure 1: Unit Verification Plan Example

Project Name:	I-29 Variable Speed Limit			Project Number:	CR 0294(74)114	PCN:	080D	Verification Level:	Subsystem
Subsystem:	Variable Speed Limit Signs			Device Designation:	VSL1-VSL22	Location:	All signs along I-29		

Specification		Verification Method(s)	Test or Demonstration Method	Pass/ Fail	Notes	Corrective Action	Verified By	Date
Number	Statement							
2.2.13	The sign controller's firmware will monitor all external and internal sensors and communication inputs and control the display modules as directed by external control software and the front panel interface.	Demonstration	Internal sensor and communication information will be shown on external control software	Pass			John Doe	8/10/2024
2.2.15	The sign controller will activate a sign message when: - an operator using the front panel interface or NTCIP-compatible control software instructs a particular message to be activated - the internal time-based scheduler activates a message at a date and time previously configured using the control software per the NTCIP 1201 and NTCIP 1203 standards - an event activates a pre-configured message	Test	Configuration for messages will be done via the external control software	Fail	Message did not appear at pre-scheduled time.	Determine cause of error and replace components as necessary	John Doe	8/10/2024
				Pass	Clock was set to Eastern Standard Time. Changed settings and pre-scheduled message appeared at correct time.		John Doe	8/12/2024
2.2.27	The sign controller will monitor and display the currently active message in a WYSIWYG format.	Demonstration	Create and post a test message using DMS remote control software	Pass			John Doe	8/10/2024
2.2.28	Automatically and upon command from the front panel interface or external control software, the sign controller will test all the LED pixels without disrupting the message being displayed.	Demonstration	Command to test LED pixels will be given from the external control interface	Pass			John Doe	8/10/2024
2.2.29	The sign controller will automatically report via front panel interface and external control software the occurrence of events and subsystem failures, including over-temperature shutdown, controller restart, power loss, power system failure, and communication loss.	Test	Contractor will simulate controller restart, power loss, power system failure, and communication loss. Alerts will be visible on external control interface	Pass			John Doe	8/10/2024

Figure 2: Subsystem Verification Plan Example

Approvals - Subsystem Testing

Contractor Representative: _____ _____
Signature *Date*

SDDOT Representative: _____ _____
Signature *Date*

Subsystem Test Notes: *The VSL Sign subsystem passed all tests on 8/10, with the exception of 2.2.15. The clock was reset and this requirement was re-tested on 8/12. The subsystem passed this test, and the 30-Day Acceptance Test began on 8/12/2024*

30-Day Acceptance Testing

30-Day Acceptance Testing Start Date: _____
Date

30-Day Acceptance Testing End Date: _____
Date

SDDOT Representative: _____
Signature

30-Day Acceptance Testing Notes: *Power failure on 8/24/2024 was not reported in external control interface. After contacting manufacturer, the caus of this error was revealed to be a software update that disrupted reporting functions. 30-day acceptance testing component was restarted on 8/27/2024 and was closed on 9/27/2024 after no further incidents occurred.*

9.6.2 The SDDOT-supplied worksheet will identify the subsystem to be covered by the test plan and the level of testing (unit testing, subsystem testing, or acceptance testing).

9.6.3 The SDDOT-supplied worksheet will list the specification number and specification statement of every specification of the subsystem to be verified.

9.6.4 For each specification listed in the worksheet, the Contractor will propose the verification method(s) to be used to establish conformance. Suggested verification methods are included in the worksheets. The Contractor may propose a different verification method for any requirement when submitting forms to the SDDOT.

9.6.5 If more than one method will be used to verify a specification the Contractor will insert a separate worksheet row for each additional method.

9.6.6 If a specification is to be verified through test or demonstration, the Contractor will also describe:

- procedures specifying how to verify that the component or subsystem functions as intended
- test cases defining inputs, execution conditions, and expected results

9.6.7 The Contractor will submit the Subsystem Verification Plan to SDDOT's Intelligent Transportation Systems Program for approval prior to performing the tests described in the plan.

9.6.8 If SDDOT's Intelligent Transportation Systems Program does not approve the Subsystem Verification Plan, the Contractor will revise it and resubmit it for approval.

9.6.9 The Contractor may not modify any part of an approved Subsystem Verification Plan without the approval of SDDOT's Intelligent Transportation Systems Program.

9.7 SUBSYSTEM VERIFICATION RESULTS

9.7.1 The Contractor will verify each installation of each ITS subsystem at the unit testing, subsystem testing, and acceptance testing levels.

9.7.2 The Contractor will report subsystem verification results using the SDDOT-supplied worksheet.

9.7.3 For each specification, the verification worksheet will document, at a minimum:

- specification number
- specification statement
- the verification method used to establish conformance, as defined in the approved Subsystem Verification Plan
- acknowledgement of conformance with the specification or, in the case of nonconformance, a description of the deviation from the specification
- a description of the needed corrective action in the case of nonconformance
- the name of the person who performed the verification
- the date of the verification

9.7.4 If a subsystem installation includes more than one device of the same type, the verification worksheet will include a separate line for each device and uniquely identify the individual device. For example, specifications related to the pavement sensors of a Road/Weather Information System will be listed four times, once for each sensor installed in the four lanes.

9.7.5 If an item requires corrective action—which may involve repeating the test, revising the test case, repairing the system, replacing a component, or revising the specification—the Contractor

will insert another worksheet row immediately beneath the non-conforming line to document the corrective action taken and record the results of reverification.

9.7.6 The Contractor will not revise a specification statement without approval of SDDOT's Intelligent Transportation Systems Program.

9.8 EQUIPMENT FAILING TO PASS TESTING

9.8.1 When any subsystem, device, or ancillary component fails to meet specifications, the Contractor will correct the deficiency by repair or replacement at no expense to the SDDOT.

9.8.2 The Contractor will promptly bring any defects or malfunctions to the attention of the SDDOT's Intelligent Transportation Systems Program.

9.8.3 The Contractor will conduct or repeat unit testing and document results in the System Verification Plan of any repaired or replaced device or component to ensure compliance with specifications.

9.8.4 The Contractor will conduct or repeat subsystem testing and document results in the System Verification worksheet to ensure that the subsystem installation containing any repaired or replaced device or component meets subsystem specifications.

9.9 BASIS OF PAYMENT

Testing will be incidental to the respective ITS subsystems installed in this project.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
STEEL BEAM GUARDRAIL
AASHTO M 180 DESIGNATION

OCTOBER 8, 2024

Section 630.2 B. – Page 427 – Delete and replace with the following:

B. Beam Guardrail:

For all projects let prior to January 1, 2027 the following shall apply:

Beam guardrail will conform to AASHTO M 180-18, Type I, or AASHTO M 180-23, Type I, unless the plans specify another type.

For all projects let January 1, 2027 and after the following shall apply:

Beam guardrail will conform to the most recent, at the time of the letting, version of AASHTO M 180, Type I, unless the plans specify another type.

Section 630.2 C. – Page 427 – Delete and replace with the following:

C. Bolts, Nuts, and Washers:

For all projects let prior to January 1, 2027 the following shall apply:

Bolts, nuts, and washers will be as specified in AASHTO M 180-18 or AASHTO M180-23.

For all projects let January 1, 2027 and after the following shall apply:

Bolts, nuts, and washers will be as specified in the most recent, at the time of the letting, version of AASHTO M 180.

* * * * *

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACKNOWLEDGEMENT AND CERTIFICATION REGARDING
ARTICLE 3, SECTION 12
OF THE SOUTH DAKOTA CONSTITUTION

AUGUST 24, 2023

In accordance with the State of South Dakota Office of the Governor Executive Order 2023-13, the following will apply to all contracts:

The Contractor acknowledges and certifies that the following information is correct:

CERTIFICATION OF NO STATE LEGISLATOR INTEREST:

Contractor (i) understands neither a state legislator nor a business in which a state legislator has an ownership interest may be directly or indirectly interested in any contract with the State that was authorized by any law passed during the term for which that legislator was elected, or within one year thereafter, and (ii) has read South Dakota Constitution Article 3, Section 12 and has had the opportunity to seek independent legal advice on the applicability of that provision to this contract. By signing this contract, Contractor hereby certifies that this contract is not made in violation of the South Dakota Constitution Article 3, Section 12.

It is understood and agreed that, if this certification is false, such false certification will constitute grounds for the Department to terminate the contract.

The Contractor further agrees to provide immediate written notice to the Department if during the term of the contract it no longer complies with this certification and agrees such noncompliance may be grounds for contract termination.

* * * * *

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
BUY AMERICA

MAY 1, 2024

Section 6.9 – Page 46 – Delete and replace with the following:

6.9 BUY AMERICA – Iron & steel, manufactured (composite) products, and construction materials must be produced in the United States in accordance with these Buy America requirements. Buy America preference applies to articles, materials, and supplies required to be consumed in, permanently incorporated into, or affixed to the completed project. Buy America preference does not apply to tools, equipment, and supplies such as temporary works and other temporary items brought to the project and removed at or before the final completion of the project. Temporary items are items that are not part of contract specifications, items that are not required in the design or final working drawings, and items that are removed or could be removed but allowed to remain in place if requested by the Contractor and approved by the Engineer.

A. Certification: The following category-based requirements will apply for each article, material, or supply.

1. **Iron & Steel:** A statement will be included on the certification stating whether the iron or steel is of domestic or foreign origin. The Department will consider iron & steel that does not require separate certification in accordance with the Department's Materials Manual as miscellaneous iron & steel. The Contractor will provide the Department a completed and signed Miscellaneous Materials Buy America Certificate stating the miscellaneous iron & steel required to be consumed in, permanently incorporated into, or affixed to the completed project complies with the Buy America requirements specified herein.

2. **Manufactured (Composite) Products:** Due to an existing nationwide waiver, manufactured (composite) products currently have no specific requirements.

3. **Construction Materials:** Construction materials and construction materials currently on the Department's Approved Products List will be treated as "Tier 1" items in accordance with the Required Samples, Tests, and Certificates (RSTC) section of the Department's Materials Manual. The

Contractor will provide the Department a completed and signed Miscellaneous Materials Buy America Certificate stating the construction materials required to be consumed in, permanently incorporated into, or affixed to the completed project complies with the Buy America requirements specified herein.

B. Determination of Material Category: The Department, in the Department's sole discretion, will classify an article, material, or supply into one of the following categories, (1) Iron & Steel, (2) Manufactured (Composite) Product, (3) Construction Material, or (4) Excluded Material. Articles, materials, and supplies will be considered to fall into only one single category of Buy America requirements. Some contract items are composed of multiple components that may fall into different categories. Individual components and composite items will be classified based on their nature when they arrive on the work site.

1. **Iron & Steel:** The Department will classify items wholly or predominantly composed of iron or steel or a combination of both as iron & steel.

   Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50% of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components.

2. **Manufactured (Composite) Products:** The Department will classify items not specifically classified as iron & steel, construction materials, or excluded materials which are fabricated, combined, or manufactured through a manufacturing process into a commercially available composite item as manufactured (composite) products. The Department will classify items consisting of 2 or more of the listed construction materials combined through a manufacturing process as a manufactured (composite) product. The Department will classify items consisting of 1 of the listed construction materials combined with a material not listed through a manufacturing process as a manufactured (composite) product.

3. **Construction Materials:** The Department will classify only the materials specifically listed as construction materials as construction materials.

   Minor additions of articles, materials, supplies, or binding agents to a construction material will not change the categorization of the construction material.

4. **Excluded Materials:** The Department will classify cement and cementitious materials; aggregates such as stone, sand, or gravel; and aggregate binding agents or additives as excluded materials.

C. Iron & Steel: Structural steel and other iron and steel products will be produced in the United States. To be considered produced in the United States, all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States. The application of a coating is interpreted to mean all processes that protect or enhance the value of material or product to which it is applied; examples are epoxy coatings, galvanizing, and painting.

Buy America does not apply to iron ore, scrap, pig iron, and processed, pelletized, and reduced iron ore.

If iron ingots or steel billets produced in the United States are sent out of the country for a subsequent manufacturing process and then are brought back into the United States, the full value of the iron or steel as it reenters the country (including the original billet cost and any coatings) will be considered foreign.

If foreign iron or steel components are combined with other components into a fabricated or assembled manufactured (composite) product, the foreign iron or steel content of the manufactured (composite) product is not only the value of the foreign iron or steel components, but also the pro-rata value of the fabrication and assembly labor and overhead used in the combining the foreign iron or steel and other components into the finished manufactured (composite) product, including coatings.

D. Manufactured (Composite) Products: Iron and Steel components of manufactured (composite) products will comply with the Buy America requirements for iron & steel. Due to an existing nationwide waiver, manufactured (composite) products without iron and steel components currently have no specific requirements.

E. Construction Materials: Construction materials will be produced in the United States. Each construction material is followed by a standard for the material to be considered produced in the United States.

A construction material is an article, material, or supply that is one of the following:

1. Non-ferrous metals. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.

2. Plastic and polymer-based products including polyvinylchloride, composite building materials, and polymers used in fiber optic cables. All manufacturing processes, from initial combination of constituent plastic or

polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.

3. Glass including optic glass. All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.

4. Fiber optic cable including drop cable. All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others.

5. Optical fiber. All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.

6. Lumber. All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States.

7. Engineered wood. All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

8. Drywall. All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

F. Unavailability of Compliant Items: If the Contractor discovers a Buy America compliant item or items does not exist or an item becomes unavailable, the Contractor will immediately notify the Department. The Contractor will furnish written documentation of the Contractor's complete efforts to obtain a compliant item. This documentation will include a complete contact log with dates and times of the Contractor's efforts to obtain a compliant item, the responses received, and any correspondence between the Contractor and potential suppliers of the item which demonstrate efforts to obtain a compliant item. If, based on review of the documentation provided, the Department determines all potential options to obtain a compliant item have been exhausted; the Department will determine the appropriate course of action.

G. Non-Compliant Items: If the Engineer, in the Engineer's sole discretion, determines an article, material, or supply provided to the project does not comply with these Buy America requirements but is available; the following will apply:

1. If the non-compliant item is not permanently incorporated into the completed work, the Contractor will not permanently incorporate the item and will replace the non-compliant item with an item that complies with the Buy America requirements specified herein at the Contractor's expense.

2. If the non-compliant item has been permanently incorporated into the completed project; the Engineer, in the Engineer's sole discretion, will determine if the non-compliant item must be removed and replaced including any completed work at the Contractor's expense or if the non-compliant item may remain in place in accordance with both of the following requirements:

   a. Minor quantities of non-compliant iron & steel may be incorporated in the Department's sole discretion based on the Department's review of the Contractor's documented invoiced material costs, provided the invoiced material costs of all non-compliant iron & steel do not exceed 0.1% of the total contract amount or $2,500, whichever is greater.

   b. Minor quantities of non-compliant iron & steel and construction materials may be incorporated in the Department's sole discretion based on the Department's review of the Contractor's documented invoiced material costs, provided the total value of the non-compliant items does not exceed 5.0% of the total applicable costs for the project or $1,000,000, whichever is less.

   The total value of the non-compliant items will include non-compliant iron & steel and non-compliant construction materials. The total value of the non-compliant items will not include excluded materials, manufactured (composite) products, or other items within the scope of an existing Buy America waiver.

   The total value of an item includes the cost of the material plus the cost of transportation to the project site, as evidenced by delivery receipt, but does not include the labor costs to assemble and install at the project site.

   The total applicable project costs will be defined as the total value of materials used in the project that are subject to a domestic preference requirement, including the total value of any iron & steel, construction materials, manufactured (composite) products, and other items within the scope of an existing Buy America waiver. The total applicable project costs will not include excluded materials.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LIABILITY INSURANCE

APRIL 21, 2022

Section 7.15 – Page 50 – Delete and replace with the following:

7.15 LIABILITY INSURANCE - The Contractor will procure and maintain at the Contractor's expense, during duration of the contract, liability insurance with an insurance company authorized to do business in the state of South Dakota, for damages imposed by law. The insurance will cover all operations under the contract, whether performed by the Contractor or by subcontractors, and will name the State of South Dakota, the Department, and the Department's officers and employees as additional insureds, but liability coverage is limited to claims not barred by sovereign immunity. The State of South Dakota, the Department, and the Department's officers and employees do not hereby waive sovereign immunity for discretionary conduct as provided by law. Before commencing the work, the Contractor will furnish certificates of insurance, certifying that the policies will not be changed or cancelled until 30 calendar days' written notice has been given to the Department.

The certificates of insurance will provide evidence that the Contractor carries sufficient liability insurance to protect the public from injuries sustained by reason of pursuing the work, and that Workers' Compensation Insurance meets the requirements of the South Dakota Workers' Compensation Law.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
RESPONSIBILITY FOR DAMAGE CLAIMS

APRIL 21, 2022

Section 7.14 – Page 50 – Delete and replace with the following:

7.14 RESPONSIBILITY FOR DAMAGE CLAIMS - The Contractor will indemnify the State of South Dakota, the Department, and the State's officers and employees, from all suits, actions, or claims of any character, including suits in which the State, Department, or the State's officers and employees are sued, brought because of any injuries or damages received or sustained by any person, persons, or property arising at least in part from the Contractor's operations; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workers' Compensation Act", or any other law, ordinance, order, or decree. The Contractor's obligation to indemnify will include the payment of reasonable attorney fees and other costs of defense. So much of the money due the Contractor under and by virtue of the contract as may be considered necessary by the Department for such purpose may be retained for the use of the State; or in case no money is due, the Contractor's surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid will have been settled and suitable evidence to that effect furnished to the Department. Money due the Contractor will not be withheld when the Contractor produces satisfactory written confirmation from the Contractor's insurer that adequate public liability insurance and property damage insurance providing coverage for such particular claims as may be made is in force, and the Contractor provides evidence the claim has been submitted to the Contractor's insurer. A copy of a certificate of insurance, without further confirmation of coverage for the particular claim being made, will not be sufficient to satisfy the requirement of written confirmation.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
RESTRICTION OF BOYCOTT OF ISRAEL

JANUARY 31, 2020

In accordance with the State of South Dakota Office of the Governor Executive Order 2020-01 the following will apply to all contracts unless the amount being bid is less than $100,000:

By submitting a bid proposal for this contract, the bidder certifies and agrees the following information is correct for the bidder and all subcontractors (all tiers) and suppliers with five (5) or more employees:

The bidder, in preparing the bid proposal or in considering proposals submitted from qualified potential suppliers and subcontractors, or in the solicitation, selection, or commercial treatment of any supplier or subcontractor; has not refused to transact business activities, has not terminated business activities, and has not taken other similar actions intended to limit its commercial relations, related to the subject matter of the bid proposal, with a person or entity on the basis of Israeli national origin, or residence or incorporation in Israel or its territories, with the specific intent to accomplish a boycott or divestment of Israel in a discriminatory manner. It is understood and agreed that, if this certification is false, such false certification will constitute grounds for the Department to reject the bid proposal submitted by the bidder on this contract and terminate any contract awarded based on the bid. The bidder agrees to provide immediate written notice to the Department if, during the term of the contract awarded to the bidder, the bidder no longer complies with this certification. The bidder further agrees such noncompliance may be grounds for contract termination.

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR ADMINISTERED PRECONSTRUCTION MEETING

DECEMBER 18, 2019

I. DESCRIPTION

This work consists of the Contractor scheduling and conducting a preconstruction meeting prior to beginning work on this contract. Additionally, this work consists of the Contractor providing the Area Engineer a completed list of required submittals.

II. MATERIALS (Not Specified)

III. CONSTRUCTION REQUIREMENTS

The Area Engineer will provide the Contractor the Authorization Form for Preconstruction Meeting (Form DOT-270) and the Contractor's Required Submittals Form (Form DOT-272) after the date of the Notice of Award and no later than 10 business days after the date of the Notice to Proceed.

The Contractor's authorized representative as indicated on the Signature Authorization Form (Form DOT-209) will complete, in its entirety, the first page of the Authorization Form for Preconstruction Meeting and will initial each proceeding section. By initialing each section, the Contractor is confirming comprehension of each section.

The Contractor's Required Submittals Form is a document outlining information required prior to the completion of the project. This list will include two types of submittals; 1) information required before scheduling a preconstruction meeting and 2) information required before the Contractor begins related work. The Department reserves the right to request additional information not included in the original list of required submittals. The list of required submittals will include, but is not limited to, proposed sequence changes, shop drawings, permits, certifications, mix designs, labor compliance, equal employment opportunity, and disadvantaged business enterprise documents. The Area Engineer will update the Contractor's Required Submittals Form with any project specific requirements and cross out or delete those that do not apply prior to providing the document to the Contractor.

Prior to scheduling the preconstruction meeting, the Contractor will complete and provide the Area Engineer all items on the list of required submittals that are

required as described in 1) above. If the Contractor cannot complete and provide a submittal item required prior to scheduling the preconstruction meeting, the Contractor will contact the Area Engineer to establish a mutually agreed upon date when the required submittal will be completed and provided to the Area office.

The Contractor will not begin work on an item until the Contractor has provided the Area Engineer with all required information for the applicable work item and the appropriate office has approved the information, if necessary. The Contractor will make every reasonable effort to deliver the required submittals at the earliest possible time.

When the Contractor has provided the Area Engineer all required submittals, except those mutually agreed upon to be provided at a later date or dates, the Contractor will schedule a preconstruction meeting with the Area Engineer.

Within 2 business days following the Contractor scheduling the preconstruction meeting, the Area Engineer will prepare and send the Contractor a meeting confirmation and the Preconstruction Meeting Outline (Form DOT-271).

The Area Engineer will edit and amend the Preconstruction Meeting Outline, as necessary, to meet the specific needs of the project. The Area Engineer will complete the project information and the Department information prior to furnishing the form to the Contractor.

The Contractor will complete the Contractor's portion of the Preconstruction Meeting Outline and will add additional discussion items as needed. The Contractor will send the meeting notice and final Preconstruction Meeting Outline to the Area Engineer, all subcontractors, utility companies, railroad companies (if applicable), and all suppliers at least 5 business days prior to the preconstruction meeting.

The Area Engineer will send the notice of the meeting and the final Preconstruction Meeting Outline of discussion items to any other government entities and other principle stakeholders involved in the project at least 3 business days prior to the preconstruction meeting.

At the discretion of the Area Engineer, the preconstruction meeting may be held in person, videoconference, or over the phone. The Contractor's competent superintendent who will be working on this project, as required by Section 5.5, or the Contractors Project Manager, as required by the Special Provision for Cooperation by Contractor and Department (if applicable), , is required to attend the preconstruction meeting.

The Contractor will lead the meeting discussion as described in the Preconstruction Meeting Outline. The Area Engineer will prepare the meeting minutes including any unresolved items and distribute the minutes to all attendees

and principle stakeholders within 5 business days following the preconstruction meeting.

IV. METHOD OF MEASUREMENT

The Department will not make a separate measurement for the preconstruction meeting.

V. BASIS OF PAYMENT

The Department will not make a separate payment for the preconstruction meeting. All costs associated with the preconstruction meeting will be incidental to other contract items.

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DOT-208
(07/15)

FUEL ADJUSTMENT AFFIDAVIT

Project Number _____
PCN _____
County _____

For project let using the SDEBS) and in accordance with Section 9.12, the bidder is not required to notify the Department at the time of submitting bids whether the Contractor will or will not participate in the fuel cost adjustment program. Prior to execution of the contract, the successful bidder must submit this completed form to the Department for approval. The Fuel Adjustment Affidavit shall include the anticipated fuel cost of subcontractors.

Does your company elect to participate in a fuel adjustment for this contract for the fuels that do not have a fixed price? No adjustments in fuel prices will be made if "No" is checked.

☐ Yes ☐ No

If yes, provide the total dollars for each of the applicable fuels. No adjustments in fuel price will be made for the fuel types that are left blank or completed with a $0.00 value.

Diesel (x) $_____

Unleaded (y) $_____

Burner Fuel (z) $_____ Type of Burner Fuel Used: _____

Sum (x + y + z) = $_____

Note: The sum of the x, y, and z may not exceed 15% of the original contract amount.

The following must be completed regardless of whether the Contractor elects to participate in the fuel adjustment affidavit

Under the penalty of law for perjury or falsification, the undersigned, _____,
(Printed Name)

_____ of _____,
(Title) *(Contractor)*

hereby certifies that the documentation is submitted in good faith, that the information provided is accurate and complete to the best of their knowledge and belief, and that the monetary amount identified accurately reflects the cost for fuel, and that they are duly authorized to certify the above documentation on behalf of the company.

I hereby agree that the Department or its authorized representative shall have the right to examine and copy all Contractor records, documents, work sheets, bid sheets, and other data pertinent to the justification of the fuel costs shown above.

Dated _____ Signature _____

Notarization is required only when the Contractor elects to participate in the fuel adjustment affidavit

Subscribed and sworn before me this _____ day of _____ , 20___.

_____ _____
Notary Public *My Commission Expires*

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STANDARD TITLE VI / NONDISCRIMINATION ASSURANCES APPENDIX A & E

MARCH 1, 2016

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations**: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination**: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment**: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports**: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance**: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions**: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or

is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
DISADVANTAGED BUSINESS ENTERPRISE

FEBRUARY 9, 2024

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of Department-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate.

I. Definitions

A. Specified Goal: A DBE participation goal for a contract as indicated by a specific numerical percentage of the total dollar amount of the contract in the bidding documents.

B. Not Specified: No specific DBE participation goal is specified for a contract.

C. Disadvantaged Business Enterprise (DBE): A for-profit small business that is certified by the Department and is listed in the DBE Directory available on the Department's web site.

D. Good Faith Effort (GFE): Efforts to achieve a DBE goal which; by their scope, intensity, and appropriateness to the objective; can reasonably be expected to meet the objective of the Department's DBE program pursuant to 49 CFR 26.1.

E. Positive Contact: Communication between the bidder and the DBE in which the bidder receives an oral or written response from the DBE stating the DBE's intention to quote or not quote a project.

F. Commitment: The dollar amount of work to be subcontracted to DBEs, according to the bidder's bid. The commitment may be compared to the dollar amount of all contract items in the bidder's bid and expressed as a percentage of the total bid amount.

G. Reasonable Effort: For projects when goals are not specified, bidders are encouraged to solicit all certified DBEs listed in the appropriate work classifications in the DBE directory that have indicated in the directory they are

willing to work in the project's geographic area and also those that are listed on the plan holders list.

II. Bidding Requirements

A bidder must not discriminate on the basis of race, color, national origin, or sex in the solicitation or award to subcontractors and material suppliers. Bidders who demonstrate a pattern of possible discrimination through consistent and repeated under-utilization of DBEs may be subject to investigation and sanctions allowed by regulation, administrative rule, or law.

The Bidder's failure to carry out the requirements of this special provision will be treated as a non-responsive bid.

On contracts that specify a specific DBE contract participation goal, all bidders must include their DBE commitment for the contract in the bidding files provided by the Department.

If the contract indicates "Not Specified," all bidders are encouraged to include their anticipated DBE utilization for the contract in the bidding files provided by the Department.

Each bidder must submit a list of all subcontractors and suppliers (DBEs and non-DBEs) the bidder received quotes from for that contract with the bid files.

A Contractor must make reasonable efforts to provide opportunities for DBEs to participate on Federal-aid contracts throughout the life of the contract.

On contracts let with a specified DBE contract participation goal, where the low bidder has not met or exceeded that goal, upon request from the Department all bidders who did not meet or exceed the goal must provide GFE documentation as indicated in Section III of this special provision.

When the DBE participation is "Not Specified" on a contract, each bidder is encouraged to use DBE Contractors; however no bidder will be required to furnish GFE documentation.

Bidders must submit GFE documentation, when requested by the Department, within 2 business days from the date bidders are contacted by the Department. Section III of this special provision provides information on the types of action bidders should make as part of their GFE to obtain DBE participation. Bidders may submit documentation with the bidding files provided all pertinent information is included. Bidders must submit any missing documentation within 2 business days from the date the Department contacts the bidder. If the bidder fails to comply with this requirement, the Department will consider the bid proposal irregular and may reject the bid proposal.

If the apparent low bidder does not provide documentation showing GFE as required by this special provision, the Department will consider that bid nonresponsive and may either award the contract to the next lowest responsible bidder with a responsive bid, or reject all bids. Subsequent to the DBE committee's decision that the apparent low bidder's efforts do not establish GFE, the apparent low bidder will be notified that the bid is not responsive. The apparent low bidder will have 2 business days from the date of notification to contact the Bid Letting Engineer to arrange a meeting with the Department Secretary, or the Secretary's designee, to present documentation and argument about why the bid should not be rejected. The Department Secretary or the Secretary's designee will issue a written decision on responsiveness of the bid within 2 business days after the meeting.

If the apparent low bid is rejected for failure to meet the GFE or other requirements, the next apparent low bidder's GFE will be reviewed, unless all bids are rejected. Unless all bids are rejected, award of the contract will be made to the lowest bidder with a responsive bid.

The lowest responsive bidder on a project with a specified goal will be required to complete form DOT-289B, as included in the contract documents, when the contract is sent for signature. This form requires a signature from each DBE identified in the low bidder's DBE commitment. A separate form will be supplied for each DBE and will be included in the contract documents.

Bidders are encouraged to assist interested DBEs in obtaining bonding, lines of credit, insurance, necessary equipment, supplies, materials, or other related services.

III. Good Faith Efforts

If a GFE package is requested on a contract with a specified goal, the bidders must submit documentation showing compliance with the following requirements:

A. The bidders will submit a contact log of all solicitation efforts including:

- Name of the DBE firm
- Name and phone number of the individual with whom contact was made
- Date, time, and manner of each and every contact (by phone, in person, fax, mail, e-mail, etc.)
- The DBE's response to the solicitation
- Result of the solicitation effort

An example of a solicitation log is available on the Department's Bid Letting website. When bidding utilizing the South Dakota Department of Transportation Electronic Bid System (SDEBS), SDEBS may be used to document the log of solicitation efforts for the project.

B. The bidders will also submit documentation that shows GFE in relation to the following requirements:

1. The bidder must select contract work items to encourage DBE participation. This includes breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise prefer to perform these work items with its own forces.

2. The bidder must solicit all certified DBEs that are listed in the appropriate work classifications in the DBE directory and that have indicated in the directory they are willing to work in the project's geographic area. Without exception, all DBEs who are listed on the plan holders list by 10 AM central time 7 calendar days prior to the bid letting must be solicited in accordance with Section III.B.3 of this special provision. If the bidder has not solicited any DBE meeting these requirements, the bidder will provide a detailed written explanation showing why the DBE was not solicited.

3. To provide adequate time for the DBE to respond with a quote in the normal course of business, the bidder must make the initial solicitation at least 6 calendar days by mail or 5 calendar days by phone, fax, or e-mail prior to the letting date. Without exception, all DBEs who are listed on the plan holders list by 10 AM central time 7 calendar days prior to the bid letting must be solicited.

4. If the bidder does not receive a positive contact from a DBE, the bidder must follow up the initial solicitation with a second solicitation by phone, fax, or e-mail to determine whether the DBE is interested in quoting. The bidder must make this second solicitation at least 2 business days prior to the letting.

5. The bidder will provide interested DBEs with adequate and timely information about plans, specifications, and requirements of the contract to assist DBEs in responding to a solicitation.

6. If a bidder rejects a DBE quote because of previous problems with a particular DBE, the bidder must prepare a detailed written explanation of the problem. Additional cost involved in finding and using DBEs is not, in itself, sufficient reason for a bidder to reject a quote. A bidder must not reject a DBE as being unqualified without sound reasons based on a thorough investigation of the DBE's capabilities.

7. Any additional information requested by the Department.

C. The bidder must consider qualified DBEs whose quotes are reasonably competitive. If the bidder rejects any quote because it is considered not to be "reasonably competitive," the bidder must provide copies of all DBE and non-

DBE quotes, and a work item price spreadsheet comparing DBE quotes to non-DBE quotes. The spreadsheet must show which quote was included in the bid for the work items being compared. The ability or desire of a bidder to perform the work with its own forces does not relieve the bidder of the responsibility to make GFE. In the event a bidder elects to use its own forces over a DBE, the bidder must include, on the spreadsheet, documentation of the costs of using the bidder's own forces. This can be shown in a number of ways, which may include submitting portions of the bidder's work sheets used to prepare the bid.

D. The bidder must explain why the specified goal could not be met.

E. The bidder must identify any additional efforts the bidder made to secure DBE participation.

IV. Counting DBE Participation

On projects with a specified goal, the contract commitment, as submitted with the bid, will be documented on form DOT-289R/C as included in the contract documents.

If the project is shown as "Not Specified," the anticipated DBE utilization, as submitted with the bid, will be documented on form DOT-289 R/N – DBE Utilization Form, as included in the contract documents. The DBE utilization shown on this form is not a commitment to use the DBE. This information will be used by the Department to track anticipated DBE usage.

Only the portion of a contract performed by the DBE's own forces will count toward DBE participation. Included is the cost of supplies and materials obtained by the DBE for the contract, including supplies purchased or equipment leased by the DBE. Supplies and equipment the DBE subcontractor purchased or leased from the Contractor or its affiliate is not allowed to be included.

When a DBE performs as a participant in an approved joint venture, only the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces will count toward DBE participation.

A bidder may count toward its DBE participation only that percentage of expenditures to DBEs that perform a commercially useful function (CUF) in the performance of a contract. A DBE performs a CUF when the DBE is responsible for execution of the work of a contract and is carrying out the DBE's responsibilities by actually performing, managing and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating prices, determining quality and quantity, ordering and installing (where applicable) the materials, and paying for the material itself. To determine whether a DBE is performing a CUF, the Department will

evaluate the amount of work subcontracted, the industry practice, and whether the amount the DBE is to be paid is commensurate with the work it is actually performing, DBE credit claimed for performance of the work, and other relevant factors.

A DBE is not performing a CUF if the DBE performs less than 30% of the total cost of its contract with its own work force, or if its role is limited to that of an extra participant in a transaction, project, or contract through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is simply an extra participant, the Department will examine similar transactions, particularly those in which DBEs do not participate.

DBE participation will be counted for trucking services as follows:

The bidder/Contractor will receive credit toward DBE participation for the total value of the transportation services the DBE provides on the contract using trucks the DBE owns, insures, and operates and which are driven by drivers the DBE employs.

A DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. When a DBE leases trucks from another DBE, the bidder/Contractor can count the total value of the transportation services the lessee DBE provides on the contract toward DBE participation.

The DBE may also lease trucks from a non-DBE firm, including an owner-operator. When a DBE leases trucks from a non-DBE, the bidder/Contractor can count toward DBE participation only the fee or commission the DBE receives as a result of the lease arrangement. The bidder/Contractor does not receive credit toward DBE participation for the total value of the transportation services, since all services are not provided by a DBE.

The bidder may count toward DBE participation expenditures to DBE firms for materials, supplies, or services as follows:

If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE participation. A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of general character described by the specifications.

If the materials or supplies are purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE participation. A regular dealer is a firm that owns, operates, or maintains a store, warehouse or other establishment in which the materials, supplies, articles, or equipment are

bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

If the materials or supplies are purchased from a DBE which is neither a manufacturer nor a regular dealer, count only the amount of fee or commission charged for assistance in the procurement of the materials or supplies or fee or transportation charges for the delivery of materials or supplies required at the job site toward DBE participation. In order to be counted, the Department must determine the fee to be reasonable and not excessive as compared to fees customarily allowed for similar services. The cost of the materials and supplies themselves will not count toward DBE goals.

The Department will not count toward DBE participation materials or services provided by a DBE who is not currently certified prior to and including the date of the Notice of Award. Additionally, the Department will not count toward DBE participation materials or services provided by a DBE who loses certification at any time after the date of the Notice of Award except in the case of a DBE whose ineligibility is cause solely by having exceeded the size standard.

No intended or actual subcontracting arrangement which is contrived to artificially inflate DBE participation is allowed. This includes, but is not limited to, DBE middlemen which serve no commercially useful function, or arrangements where a DBE is acting essentially as a broker of goods or services, but has been counted as a manufacturer, regular dealer, or subcontractor.

The Department will review and monitor projects for compliance with the bidder's intended DBE participation. Failure by the Contractor to fulfill the contract commitment constitutes a breach of contract. The Department may also investigate the form and substance of particular business arrangements between and among DBE and Contractors with regard to specific contracts. If, as a result of an investigation, the Department determines a particular business arrangement is not allowable, the dollar amount of the unallowable DBE participation will be subtracted from the Contractor's DBE participation on that project. The Contractor will be notified if the apparent DBE participation is not adequate to meet the DBE participation stated on the form DOT-289R/C. The Contractor will be directed to seek additional participation from other DBEs to meet the unallowable portion on that contract.

All Contractors and DBEs shall cooperate fully and promptly with the Department in compliance reviews, investigations, and other requests for information. If the Department determines a Contractor was a knowing and willing participant in an unallowable business arrangement, or in the event of repeated violations, falsification, or misrepresentation, the Department will impose sanctions. Sanctions may include, but are not limited to one or more of the following:

- Assessment of liquidated damages as stated in Section VII of this special provision
- Suspension of bidding privileges or debarment
- Withholding progress payments
- Securing additional DBE participation on future Federal-aid contracts sufficient to make up for the DBE participation found to be unallowable
- Referral of the matter for criminal prosecution

V. Joint Checks to DBEs

A joint check is a check issued by a prime Contractor to a DBE subcontractor and to a material supplier or another third party for items or services to be incorporated into a project. For a prime Contractor to receive DBE credit, the DBE must perform a commercially useful function and be responsible for negotiating price, determining quality and quantity, ordering materials and installing (where applicable) and paying for materials.

To ensure that the DBE is independent of the prime Contractor and in compliance with the regulation, use of joint checks will be reviewed and allowed only under following conditions:

- Issued for valid reasons only, not simply for the convenience of the prime Contractor
- Used for a specific contract or specific time frame and not long-term or open ended
- Payment is made to the DBE and not directly to the supplier
- Requested and received prior written approval from the DBE Compliance Officer.

The request must include the following:

- Name of the DBE
- The DOT contract number(s)
- The DOT PCN number(s)
- The work the DBE will be performing on each contract
- Name of the supplier(s) used by the DBE
- The specific reason(s) for issuing joint checks

The Department will review the request and verify the circumstances indicated in the request with the DBE. A copy of the request and approval will be provided to the prime Contractor and the DBE.

VI. Certification of DBE Performance and Payments

Within 30 calendar days of the date of the Acceptance of Field Work the Contractor is required to submit form DOT-289 (Certification of DBE Performance and

Payments), listing all DBEs that participated in the contract, and the total dollar amount paid (and anticipated to be paid) to each. DBE attainments are compared to commitments on form DOT-289R/C and any payments less than 90% of that commitment, without proper justification and documentation, will have liquidated damages assessed against the contract. The Contractor's final payment is not released until receipt of the form DOT-289.

Contractors are required to maintain a running tally of payments to DBEs. For reports of payments not being made in accordance with the prompt payment provision, alleged discrimination against a DBE or other similar complaint, the tally may be requested for review by the Department. The Department may perform audits of contract payments to DBEs to ensure that the amounts paid were as reported on the form DOT-289. All Contractors participating in Federal-aid contracts are expected cooperate fully and promptly with the Department in compliance reviews, investigations and other requests for information regarding payments to DBEs. Their failure to do so is grounds for appropriate sanctions or action against the Contractor.

The Department will monitor the running tally on a program basis and if reporting issues are identified, additional reporting requirements may be implemented.

The Contractor is required to report payments to DBEs twice a year from the date of the Notice to Proceed until the date of the Acceptance of Field Work. Reporting periods and deadlines for payment reporting submittals will be in accordance with the following:

Reporting Period:	**Reporting Deadline:**
October 1 to March 31	April 30
April 1 to September 30	October 31

For each reporting period, the Contractor is required to submit form DOT-289 listing all DBEs that participated in the contract, the payments to DBEs for that reporting period, and the total dollar amount paid to each DBE. For each reporting period after the Notice to Proceed, the Contractor will mark the form DOT-289 as "On-Going" when reporting payments to DBEs prior to the Date of the Acceptance of Field Work. Within 30 calendar days of the date of the Acceptance of Field Work and all DBE payments have been made, the Contractor is required to submit form DOT-289 and the Contractor will mark the form DOT-289 as "Final".

Each form DOT-289 must be provided to the Engineer by the reporting deadline stated above.

DBE payment are compared to commitment on form DOT-289R/C and any payment less than 90% of that commitment, without proper justification and documentation, will result in the Department assessing liquidated damages

against the contract. The Contractor's final payment will not be released until receipt of the form DOT-289 marked "Final".

VII. Liquidated Damages

A. If the Contractor does not meet its contract commitment documented on form DOT-289 R/C, the Department will assess liquidated damages according to the following schedule:

1. For the first $1,000 DBE deficiency, 100% of the deficiency.

2. For the next $9,000 DBE deficiency, 50% of the deficiency.

3. For the next $10,000 DBE deficiency, 25% of the deficiency.

4. For any remaining DBE deficiency in excess of $20,000, 10% of the deficiency.

This liquidated damage provision will not be applicable where actual payment to a DBE is within 90% of the commitment or where there are good and sufficient reasons, properly documented, for the deficiency such as quantity under-runs, project changes, or other unexpected occurrences.

B. If a Contractor finds it impossible, for reasons beyond its control, to meet the contract commitment on form DOT-289R/C, the Contractor may, at any time prior to completion of the project, provide a written request to the DBE Compliance Officer for a complete or partial waiver of liquidated damages. No request for a waiver will be accepted after Acceptance of Field Work has been issued.

VIII. Termination or Substitution of a DBE

The Contractor will not be allowed to terminate or substitute a DBE without the Department's prior verbal consent followed by written approval. This includes, but is not limited to, instances in where the Contractor desires to perform work originally committed to a DBE with its own forces, with an affiliated company, with a non-DBE, or with another DBE. Department approval is required when the contract contains a "specified goal" on form DOT-289R/C and the DBE to be terminated or substituted is listed as a commitment on the form DOT-289R/C.

The Department will provide written consent only if the Department agrees the Contractor has good cause to terminate the DBE listed on the form DOT-289R/C. Good cause includes the following:

- The DBE fails or refuses to execute a written contract

- The DBE fails or refuses to perform the work of the DBE subcontract in a manner consistent with normal industry standards or Department specifications unless the failure or refusal by the DBE is a result of unfair or discriminatory actions by the Contractor
- The DBE fails or refuses to meet the Contractor's reasonable nondiscriminatory bond requirements
- The DBE becomes bankrupt, insolvent, or exhibits credit unworthiness
- The DBE in ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215, and 1,200 or applicable state law
- The Department has determined that the DBE is not a responsible Contractor
- The DBE voluntarily withdraws from the project and provided the Department with a written notice of withdrawal
- The DBE is found to be ineligible to receive DBE credit for the type of work required
- A DBE owner dies or becomes disabled with the result that the DBE is unable to complete its work on the contract
- Other documented good cause that the Department determines to substantiate the termination of the DBE.

Good cause does not exist if the Contractor seeks to terminate a DBE so the Contractor can self-perform the work for which the DBE was committed, or so the Contractor can substitute another DBE or non-DBE Contractor after the contract award.

Before submitting a request to terminate or substitute a DBE to the Department, the Contractor must first provide written notice to the DBE, with a copy of the notice to the DBE Compliance Officer, of the Contractor's intent to request to terminate or substitute, and the reason for the request.

The Contractor must give the DBE 5 calendar days to respond to the notice and advise the Department and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g. safety), the Department may provide a response period shorter than 5 calendar days.

When a DBE is terminated or fails to complete its work on the contract for any reason, the Contractor must make good faith efforts to replace the committed DBE with another DBE. The Contractor must make efforts to find another DBE to perform the same amount of work under the contract as the DBE that was terminated. The letter to the Department requesting termination or substitution must include the name of the DBE and dollar amount of the replacement DBE. If the Contractor is unable to find another DBE, the Contractor must provide the

names of the DBEs it contacted and reason why they were unable to use those DBEs.

If the Contractor does not utilize or pay DBEs as required, liquidated damages will be assessed as specified in Section VII of this special provision. In addition, if the Contractor is found to have knowingly and willingly attempted to circumvent the DBE contract provisions, the Department will not make payment for the work that was originally committed to a DBE and the Department may impose sanctions referred to in Section IV of this special provision.

The Contractor does not need Department approval to terminate or substitute a DBE under the following circumstances:

- The DBE is being used on a contact with a “Specified Goal” however the DBE was not listed as a DBE commitment on form DOT-289R/C.
- The DBE was listed as an anticipated utilization on a “Not Specified” DBE goal contract on form DOT-289R/N.

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SPECIAL PROVISION FOR EEO AFFIRMATIVE ACTION REQUIREMENTS ON FEDERAL AND FEDERAL-AID CONSTRUCTION CONTRACTS

FEBRUARY 5, 2024

Notice of Requirement for Affirmative Action To Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the “Equal Opportunity Clause” and the “Standard Federal Equal Employment Specifications” set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade

Aurora	0.8%	Fall River	7.9%	Marshall	1.3%
Beadle	0.8%	Faulk	1.3%	Meade	3.4%
Bennett	7.9%	Grant	1.3%	Mellette	7.9%
Bon Homme	1.2%	Gregory	0.8%	Miner	0.8%
Brookings	0.8%	Haakon	7.9%	Minnehaha	1.2%
Brown	1.3%	Hamlin	1.3%	Moody	0.8%
Brule	0.8%	Hand	0.8%	Oglala Lakota	7.9%
Buffalo	7.9%	Hanson	0.8%	Pennington	3.4%
Butte	7.9%	Harding	7.9%	Perkins	7.9%
Campbell	7.9%	Hughes	7.9%	Potter	7.9%
Charles Mix	0.8%	Hutchinson	0.8%	Roberts	1.3%
Clark	1.3%	Hyde	7.9%	Sanborn	0.8%
Clay	1.2%	Jackson	7.9%	Spink	1.3%
Codington	1.3%	Jerauld	0.8%	Stanley	7.9%
Corson	7.9%	Jones	7.9%	Sully	7.9%
Custer	7.9%	Kingsbury	0.8%	Todd	7.9%
Davison	0.8%	Lake	0.8%	Tripp	7.9%
Day	1.3%	Lawrence	7.9%	Turner	0.8%
Deuel	1.3%	Lincoln	0.8%	Union	1.2%
Dewey	7.9%	Lyman	7.9%	Walworth	7.9%
Douglas	0.8%	McCook	0.8%	Yankton	1.2%
Edmunds	1.3%	McPherson	1.3%	Ziebach	7.9%

Goals for female participation in each trade

Statewide 6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this

second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR part 60–4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60–4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR part 60–4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the “covered area” is shown by county designation on the Title Sheet of the plans.

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

a. “Covered area” means the geographical area described in the solicitation from which this contract resulted;

b. “Director” means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. “Employer identification number” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. “Minority” includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60–4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall

document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

D. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60–3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the

Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60–4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION FOR
REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA 1273 (OCTOBER 23, 2023)

OCTOBER 18, 2023

The following are amendments to the above contract provisions.

Section I.4.

Delete this section and replace with the following:

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a Federal-aid construction project unless it is labor performed by convicts who are on parole, supervised release, or probation.

Section IV.

Delete the first three sentences of the first paragraph and replace with the following:

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway and to all portions of Transportation Alternatives Program (TAP) funded projects.

Section IV.3.b.(1)

Delete this section and replace with the following:

The Contractor and each related subcontractor must submit weekly, for each week in which any contract work is performed, an electronic certified weekly payroll report. The Contractor is responsible for the submission of certified payroll reports by all subcontractors. The payroll report must be submitted electronically to the Elation System website. The Contractor must submit a legally valid electronic signature. The Elation System website can be accessed by logging onto the State of South Dakota's single sign-on website at https://mysd.sd.gov/ or can also be accessed at https://elationsys.com/. First time users will need to use the Promotion Code SDDOT-19. The payroll report must be submitted within fourteen (14) calendar days after the end of the workweek.

Section IV.3.b.(2)

Delete the third sentence.

Section IV.3.b.(3)

Delete the first paragraph and replace with the following:

Each certified weekly payroll report must include the most recent South Dakota Department of Transportation (SDDOT) Statement of Compliance Form, signed by the Contractor or related subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract. The Instructions for the SDDOT Statement of Compliance Form are found at https://dot.sd.gov/doing-business/contractors/labor-compliance/certified-payrolls-let-after-6/5/19. The SDDOT will not accept any payroll report which does not include the most recent SDDOT Statement of Compliance Form. The SDDOT Statement of Compliance Form must certify the following:

Section IV.3.b.(4)

Delete this paragraph and replace with the following:

The weekly submission of a properly executed SDDOT Statement of Compliance Form shall satisfy the requirement for submission of the "Statement of Compliance Form" required by paragraph 3.b.(3) of this section.

Section IV.4.a.(1)

Delete the first sentence and replace with the following:

Apprentices will be permitted to work at less than the predetermined rate for the work they perform, but not less than the Common Laborer wage rate contained in the bid documents, when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA.

* * * * *

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

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XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION REGARDING
MINIMUM WAGE ON FEDERAL-AID PROJECTS

OCTOBER 24, 2019

This proposal contains a copy of the most recent United States Department of Labor (USDOL) Davis-Bacon Act Wage Decision.

The Contractor and each related subcontractor will pay their respective employees not less than the USDOL minimum wage for each work classification an employee actually performs at the site of the work.

The Contractor and each related subcontractor must submit weekly, for each week in which any contract work is performed, an electronic certified weekly payroll report. The payroll report must be submitted electronically to the Elation System website. The Elation System website can be accessed by logging onto the State of South Dakota's single sign-on website at https://mysd.sd.gov/ or can also be accessed at https://elationsys.com/. First time users will need to use the Promotion Code SDDOT-19. The payroll report must be submitted within fourteen (14) calendar days after the end of the workweek. The payroll reports submitted shall set out accurately and completely all the information required to be maintained under 29 C.F.R. 5.5(a)(3)(i). Weekly transmittals must include an individually identifying number for each employee, such as the last four digits of the employee's social security number, but these weekly transmittals must not include full social security numbers or home addresses. The Contractor is responsible for the submission of certified payroll reports by all subcontractors.

Each certified weekly payroll report must include the most recent South Dakota Department of Transportation (SDDOT) Statement of Compliance Form, signed by the Contractor or related subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract. The Instructions for the SDDOT Statement of Compliance Form are found at https://dot.sd.gov/doing-business/contractors/labor-compliance/certified-payrolls-let-after-6/5/19. The SDDOT will not accept any payroll report which does not include the most recent SDDOT Statement of Compliance Form.

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Wage and Hour Division
U.S. Department of Labor (DOL)
200 Constitution Avenue, N.W.
Washington, DC 20210

Davis-Bacon Act Wage Decisions
State: South Dakota
Construction Types: Heavy and Highway
Counties: South Dakota Statewide

Agency:	U.S. DOL
Wage Decision Number:	**SD20230032 SD1**
Counties:	SD Statewide
Wage Decision Date:	**03/10/2023 (Mod-0)**

***SUSD2023-001 01-11-2023**

	Rates	Fringes
LABORERS		
GROUP GL1		
Air Tool Operator; Common Laborer; Landscape Worker; Flagger; Pilot Car Driver; Trucks under 26,000 GVW; Blue-top Checker; Materials Checker	**22.38**	**0.00**
GROUP GL2		
Mechanic Tender (Helper); Pipe Layer (except culvert); Form Builder Tender; Special Surface Finish Applicator; Striping	**23.16**	**0.00**
GROUP GL3		
Asphalt Plant Tender; Pile Driver Leadsman; Form Setter; Oiler/Greaser	**24.41**	**0.00**
GROUP GL5		
Carpenter; Form Builder	**31.94**	**0.00**
GROUP GL6		
Concrete Finisher; Painter; Grade Checker	**26.45**	**0.00**
POWER EQUIPMENT OPERATORS		
GROUP G01		
Concrete Paving Cure Machine; Concrete Paving Joint Sealer; Conveyor; Tractor (farm type with attachments); Self Propelled Broom; Concrete Routing Machine; Paver Feeder; Pugmill; Skid Steer	**24.57**	**0.00**
GROUP G02		
Bull Dozer 80 HP or less; Front End Loader 1.25 CY or less; Self Propelled Roller (except Hot Mix); Sheepsfoot/50Ton Pneumatic Roller; Pneumatic Tired Tractor or Crawler (includes Water Wagon and Power Spray units); Wagon Drill; Air Trac; Truck Type Auger; Concrete Paving Saw	**24.68**	**0.00**
GROUP G03		
Asphalt Distributor; Bull Dozer over 80 HP; Concrete Paving Finishing Machine; Backhoes/ Excavators 20 tons or less; Crusher (may include internal screening plant); Front End Loader over 1.25 CY; Rough Motor Grader; Self Propelled Hot Mix Roller; Push Tractor; Euclid or Dumpster; Material Spreader; Rumble Strip Machine	**26.07**	**0.00**
GROUP G04		
Asphalt Paving Machine Screed; Asphalt Paving Machine; Cranes/Derricks/Draglines/Pile Drivers/Shovels 30 to 50 tons; Backhoes/Excavators 21 to 40 tons; Maintenance Mechanic; Scrapers; Concrete Pump Truck	**27.18**	**0.00**
GROUP G05		
Asphalt Plant; Concrete Batch Plant; Backhoes/Excavators over 40 Tons; Cranes/ Derricks/Draglines/Pile Drivers/Shovels over 50 tons; Heavy Duty Mechanic; Finish Motor Grader; Automatic Fine Grader; Milling Machine; Bridge Welder	**30.01**	**0.00**
TRUCK DRIVERS		
GROUP GT1		
Tandem Truck without trailer or pup; Single Axle Truck over 26,000 GVW with Trailer	**24.52**	**0.00**
GROUP GT2		
Semi-Tractor and Trailer; Tandem Truck with Pup	**25.88**	**4.28**
ELECTRICIANS		
GROUP E01		
Electrician	**29.78**	**5.04**

WELDERS – Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award, pursuant to 29 CFR 5.5(a)(1)(ii); contractors are responsible for requesting SDDOT to secure necessary additional work classifications and rates.

***** Classifications listed under an "SU" identifier were derived from survey data and the published rate is the weighted average rate of all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates.

Survey wage rates are not updated and will remain in effect until a new survey is conducted.

A COPY OF THIS DOCUMENT, COLORED TAN, MUST BE CONSPICUOUSLY POSTED AT THE PROJECT SITE

Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Davis-Bacon Act Wage Decisions
State: South Dakota
Construction Types: Heavy and Highway
Counties: South Dakota Statewide

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In the listing above, the "SU" identifier indicates the rates were derived from survey data. As these weighted average rates include all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of the survey on which these classifications and rates are based. The next number, 007 in this example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

For SDDOT Defined Work Classifications, please visit: https://dot.sd.gov/doing-business/contractors/labor-compliance

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SUPPLEMENTAL SPECIFICATIONS TO
2015 STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES

SEPTEMBER 7, 2022

The Supplemental Specifications dated September 7, 2022 are in effect for and made a part of this contract.

The Supplemental Specifications may be obtained from the Department website or the local Area Office or by contacting the Operations Support Office.

Department Website:
https://dot.sd.gov/doing-business/contractors/standard-specifications/2015-standard-specifications

Operations Support:
605-773-3571

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PRICE SCHEDULE FOR MISCELLANEOUS ITEMS

DECEMBER 6, 2023

The following unit bid prices have been established by the South Dakota Department of Transportation Commission.

These prices will be pre-entered in the bidding package for each project or will establish a standard price to be used whenever no project contract unit price exists for that item.

Each unit price listed is considered full compensation for the cost of labor, material, and equipment to provide the item of work and/or material, complete in place, including (but not limited to) royalty, waste of unsuitable materials, equipment rental, overhead, profit, and incidentals.

Items specified in this document may be paid for on progressive estimates without the benefit of a prior approved Construction Change Order.

Specification Section Number	Specification Section Name	Item Name	Price per Item
5.8	Construction Stakes, Lines, and Grades	Engineer Directed Surveying/Staking	$175.00/hour
7.7	Public Convenience and Safety	Water for Dust Control	$35.00/M.Gal
7.7	Public Convenience and Safety	Dust Control Chlorides	$0.70/lb
9.3	Payment for extra haul of Materials	Extra Haul	$0.25/ton mile (Truck) or $0.10/ cubic yard station (Scraper)
120.5 A.5.	Roadway and Drainage Exc. & Emb.	Unclassified Excavation, Digouts	$15.00/cu.yd.
120.5 H.	Roadway and Drainage Exc. & Emb.	Extra Haul	$0.25/ton mile (Truck) or $0.10/cubic yard station (Scraper)
120.5 I.	Roadway and Drainage Exc. & Emb.	Water for Embankment	$35.00/M.Gal
421.5	Undercutting Pipe & Plate Pipe	Undercutting Culverts	$20.00/cu.yd.

510.5 D.	Timber, Prestressed, and Steel Piles	Timber Pile Splice	$850.00/each
		Steel Pile Splices (*All Weights)	Splice made before either of the pieces has been driven.
		8 HP*	$200.00/each
		10 HP*	$250.00/each
		12 HP*	$275.00/each
		14 HP*	$300.00/each
		Steel Pile Splices (*All Weights)	Splice made after one of the pieces has been driven.
		8 HP*	$400.00/each
		10 HP*	$525.00/each
		12 HP*	$650.00/each
		14 HP*	$750.00/each
510.5 E.	Timber, Prestressed, and Steel Piles	Pile Shoes (Timber Pile)	$190.00/each
510.5 H.	Timber, Prestressed, and Steel Piles	Pile Tip Reinforcement (Steel Pile)	
		10” HP Tip Reinforced	$200.00/each
		12” HP Tip Reinforced	$225.00/each
		14” HP Tip Reinforced	$275.00/each
601.5	Haul Roads	Granular Material	$28.00/ton
601.5	Haul Roads	Asphalt Concrete (including asphalt)	$160.00/ton
601.5	Haul Roads	Cover Aggregate	$55.00/ton
601.5	Haul Roads	Asphalt for Prime	$1200.00/ton
601.5	Haul Roads	Asphalt (Tack, Flush & Surface Treatment)	$800.00/ton
601.5	Haul Roads	Water	$35.00/M.Gal
601.5	Haul Roads	Dust Control Chlorides	$0.70/lb
634.5	Temporary Traffic Control	Flagging	$36.03/hour
634.5	Temporary Traffic Control	Pilot Car	$52.75/hour

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STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
REGARDING
STORM WATER DISCHARGES
TO WATERS OF THE STATE

MAY 8, 2018

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Article 74:52, the State of South Dakota has been issued Permit No. SDR10#### "GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES". This permit authorizes the discharge of storm water in accordance with the conditions and requirements set forth in the permit.

The Contractor, by signing the CONTRACTOR AUTHORIZATION FORM and submitting a bid or proposal, certifies the following:

> "I certify under penalty of law that I understand and will comply with the terms and conditions of the Surface Water Discharge General Permit for Storm Water Discharges Associated with Construction Activities for the project identified above."

A copy of the full version of the General Permit for Storm Water Discharges Associated with Construction Activities, dated 04/01/2018, must be posted on the job site. The General Permit for Storm Water Discharges Associated with Construction Activities is available for downloading and printing from the SD DENR website:

https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/StormWaterConstruction.aspx

The Contractor may also obtain a printed copy of the permit from the SDDOT Project Development office or from the SDDOT Area Office assigned to this project.

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