DEPARTMENT OF TRANSPORTATION

Planning & Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
O: 605.773.3275 | F: 605.773.2614
dot.sd.gov

January 24, 2025

ADDENDUM NO. 1

RE: Item #9, February 5, 2025 Letting - P 1806(23)186, PCN 06QP, Stanley County - Cold Milling, Asphalt Concrete Resurfacing, Shoulder Shaping, Pipe Work, Modify Intersection

TO WHOM IT MAY CONCERN:

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

SPECIAL PROVISIONS: Please remove the NOTICE TO CONTRACTORS dated 8/16/18 and replace with the attached NOTICE TO CONTRACTORS dated 1/24/25.

Please remove the Index of Special Provisions and replace with attached Index of Special Provisions revised 1/23/25. "Special Provision for Prosecution and Progress", dated 1/21/21 and "Special Provision for Contractor Staking", dated 1/22/25 were added.

Please add the "Special Provision for Prosecution and Progress", dated 1/21/21 and "Special Provision for Contractor Staking", dated 1/22/25 before the "Special Provision for On-The-Job Training Program", dated 3/10/16.

SDEBS BID PROPOSAL: *The electronic bid proposal for this contract has been revised to include the changes associated with this addendum. Bidders must log in to the SDEBS to retrieve and incorporate these changes into their bid.*

Bid Items were added:
Bid Item 009E3210 "Construction Staking"
Bid Item 009E3250 "Miscellaneous Staking"
Bid Item 009E3301 "Engineer Directed Surveying/Staking"
Bid Item 009E4200 "Construction Schedule, Category II"

PLANS: Please destroy sheets A1, B2, and B7 and replace with the enclosed sheets, dated 1/22/25. Sheet B29A was added.

Sheets A1 & B2: **Bid Items were added:**
Bid Item 009E3210 "Construction Staking"
Bid Item 009E3250 "Miscellaneous Staking"
Bid Item 009E3301 "Engineer Directed Surveying/Staking"
Bid Item 009E4200 "Construction Schedule, Category II"

Sheet B7: TABLE OF CONSTRUCTION STAKING was added.

Sheet B29A: CULVERT REPLACMENT DETAIL was added.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

CC: Jason Humphrey, Pierre Region Engineer
Dean VanDeWiele, Pierre Area Engineer

Project Number: P 1806(23)186

Revised 1/24/25
PCN 06QP

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 February 5, 2025, 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 14, 2025**

CONSTRUCTION SCHEDULE / PROJECT MANAGEMENT:

The project category is Category II
The project type is Surfacing
The geographic zone is Zone 2

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

WORK TYPE FOR THIS PROJECT IS: **WORK TYPE 5**

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.

Dean VanDeWiele
104 S Garfield
Pierre, SD 57501-5405
Phone: 605/773-5294

REV 1/23/25

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): P 1806(23)186 PCN: 06QP

TYPE OF WORK: COLD MILLING, ASPHALT CONCRETE RESURFACING, SHOULDER SHAPING, PIPE WORK, MODIFY INTERSECTION

COUNTY: STANLEY

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.

Bobbie Country is the official in charge of the Pierre Career Center for Stanley County.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Prosecution and Progress, dated 1/21/21.

Special Provision for Contractor Staking, dated 1/22/25.

Special Provision for On-The-Job Training Program, dated 3/10/16.

Special Provision Regarding Section 404 of the Clean Water Act, dated 1/2/25.

Fact Sheet #3.

Special Provision for Flexible Pavement Smoothness, dated 5/20/21.

Special Provision for Glass Reinforced Plastic (GRP) Ultraviolet Light (UV) Cured in Place Pipe (CIPP) Liner, dated 8/6/24.

List of Utilities.

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
PROSECUTION AND PROGRESS

JANUARY 21, 2021

Delete Section 8.3 of the specifications and replace with the following:

8.3 PROSECUTION AND PROGRESS - The Contractor will include the proposed starting date with the signed contract.

The Contractor will provide sufficient materials, equipment, and labor to complete the project within the contract time set forth within the contract.

Should the Contractor discontinue the work for any reason, the Contractor will provide at least a 24-hour notice to the Engineer prior to resuming operations.

A construction schedule is required. The project category, project type, and project geographic zone are defined in the Notice to Contractors.

For the purpose of this specification, work activities will include all Contractor, subcontractor, and utility company work related to the successful completion of the project.

This work consists of scheduling and monitoring all construction work activities. The construction schedule is an integral part of the project. The construction schedule is used as a resource for the Contractor to monitor and manage work progress. The construction schedule is also used as a resource for the Department to monitor work progress and as a resource used in time extension determinations in accordance with Section 8.7 and this specification. The Contractor will ensure operations are conducted such that the construction schedule is adhered to by all contracting parties involved regardless of the amount of work subcontracted.

A. Project Categories:

1. **Category I:** Represents the lowest level of the project ranking system with simple, low risk, short duration projects with minimal impacts on traffic.

    a. Types of projects typically include, but are not limited to, asphalt surface treatments, crack seals, rumble strip installation, bridge deck overlays, and other minor repair projects.

b. Construction schedule requirements for Category I projects are written narrative. The Department will also accept a Bar Chart Method (BCM), Critical Path Method (CPM), or Linear Schedule Method (LSM).

2. **Category II:** Represents the medium level of the project ranking system with slightly complex projects that typically involve a limited number of linear, repetitive operations with typical project constraints and some traffic impact.

   a. Types of projects typically include, but are not limited to, asphalt concrete resurfacing, grading, shoulder widening, bridge replacement, concrete pavement repair, major bridge repair projects, and interstate reconstruction.

   b. Construction schedule requirements for Category II projects are BCM, CPM, or LSM.

3. **Category III:** Represents the highest level of project ranking system with complex, high risk projects with major impacts on traffic and adjacent businesses. These projects may last for more than one construction season.

   a. Types of projects typically include, but are not limited to, urban reconstruction, and interstate interchanges.

   b. Construction schedule requirements for Category III projects are CPM or LSM.

B. General:

The following will apply to all scheduling methods:

The Contractor will submit a startup schedule or construction schedule to the Engineer prior to the scheduling of the preconstruction meeting.

For Category II and III projects, the Contractor may submit a startup schedule. The startup schedule must contain a detailed breakdown of all work activities for the first 15 working days from the start of work for Category II project or 30 working days from the start of work for a Category III projects. At a minimum, the startup schedule must meet the requirements of the BCM.

If the Contractor elects to submit a startup schedule, the Contractor will schedule a construction scheduling meeting between the Department and the Contractor at the time of submitting the startup schedule. The Contractor and Engineer will review the startup schedule and the proposed construction

schedule and collaborate to include all remaining work activities for the remainder of the project, or the season if the project is a multi-year project. For multi-year projects, the same submittal requirements and timelines will apply each year.

Work activities in the construction schedule will be in chronologic order.

The Contractor will include expected adverse weather days from the Expected Adverse Weather Days chart in Section 8.3 K. of this special provision in the construction schedule. The Contractor will also include an estimate of the duration of utility company work activities identified in the plans that impact the Contractor's critical path in the construction schedule.

The Engineer will accept or may suggest revisions to the construction schedule within 5 business days of the date of receiving the construction schedule. If the Engineer does not accept or does not provide suggested revisions to the construction schedule within 5 business days of receiving the construction schedule, or a longer timeframe if mutually agreed upon by the Contractor and the Engineer, the construction schedule as submitted will be the initial accepted construction schedule.

If revisions are needed prior to acceptance of the construction schedule, the Contractor will make the required revisions and submit the revised construction schedule to the Engineer within a mutually agreed upon amount of time. The Engineer will accept or may suggest further revisions to the revised construction schedule within 2 business days of the date of receiving the revised construction schedule.

Acceptance of the construction schedule by the Engineer does not modify the contract or constitute endorsement or validation by the Engineer of the Contractor's logic, activity durations, or assumptions in creating the schedule. Acceptance of the schedule also does not relieve the Contractor of the obligation to complete all work within the contract time completion requirements.

The Contractor will preface each construction schedule with the following information:

1. Project Number;

2. PCN;

3. Contractor;

4. Original contract time allowed including phase, interim, substantial, and field work completion requirement(s) specified;

5. Type of construction schedule (startup, construction, or update); and,

6. Date of the schedule (the date the schedule was updated to) as applicable by scheduling type.

C. **Written Narrative:** The written narrative consists of:

1. Estimated starting and completion dates of each work activity;

2. Description of work to be done within each work activity including the type and quantity of equipment and labor;

3. Description of the location on the project where each work activity occurs;

4. Description of planned production rates by major work activities (example: cubic yards of excavation per day/week);

5. Description of planned workdays per week, holidays, number of shifts per day, and number of hours per shift;

6. An estimate of any periods which a work activity is idle or partially idle including the beginning and end dates of the reduced production or idle timeframe;

7. Description of expected and critical delivery dates for equipment and materials that may affect timely completion of the project;

8. Description of critical completion dates for maintaining the construction schedule; and,

9. Identification of the vendor, supplier, subcontractor, or utility company to perform the work activity including stating all assumptions made by the Contractor in the scheduling of the subcontractor's, supplier's, or utility company's work.

D. **Bar Chart Method (BCM):** The BCM construction schedule consists of:

1. **Diagram:** The Contractor must show the following in the BCM diagram:

a. Planned start and completion dates for each work activity;

b. Define and relate principle and major work activities into manageable item with durations no longer than 15 working days;

c. Work activities related to the procurement of critical (major) materials and articles of special manufacture in the order the work is to be performed;

d. Contractor work activities related to the preparation and submission of working drawings, shop plans, and other data specified for review or approval by the Engineer and resubmittal, if required;

e. Activities related to specified activities by the Department and third parties (including, but not limited to, review of working drawings and material quality, mix design, mix design verification, and compatibility test results from the Department's Central Materials Laboratory);

f. Show all critical (major) work activities that are controlling factors in the completion of the work;

g. Show the time needed to perform each work activity and the work activity's relationship in time to other work activities; and,

h. Show the expected time to complete all work.

In addition, the Contractor will provide enough space for each work activity to permit 2 additional plots parallel to the original time span plot. The Contractor will use one spot for revision of the planned time span and one spot for showing the actual time span achieved.

2. **Written Narrative:** If all of the information required in Section 8.3 C. is shown in the BCM construction schedule, the Contractor will not be required to provide a written narrative. For those items not included in the diagram, the written narrative consists of the missing information required in Section 8.3 C.

E. Critical Path Method (CPM): The CPM construction schedule consists of:

1. **Diagram:** The Contractor must show the following in the CPM diagram:

a. Baseline start and baseline completion dates for each work activity;

b. Duration of each work activity (stated in working days with work activities of more than 15 working days in duration broken into two or more work activities distinguished by location or some other feature);

c. Completion requirement(s) specified in the contract as the only constraints in the schedule logic;

d. Work activities related to the procurement of critical (major) materials and articles of special manufacture;

e. Contractor work activities related to the preparation and submission of working drawings, shop plans, and other data specified for review or approval by the Engineer and resubmittal, if required; and,

f. Activities related to specified activities by the Department and third parties (including, but not limited to, review of working drawings and material quality, mix design, mix design verification, and compatibility test results from the Department's Central Materials Laboratory).

2. Written Narrative: If all of the information required in Section 8.3 C. is shown in the CPM construction schedule, the Contractor will not be required to provide a written narrative. For those items not included in the diagram, the written narrative consists of the missing information required in Section 8.3 C.

F. Linear Schedule Method (LSM): The LSM construction schedule consists of:

1. Diagram: The Contractor must show the following in the LSM diagram:

a. Planned start and completion dates for each work activity;

b. All work activities longer than 3 days in duration, or an alternate longer or shorter duration per work activity as mutually agreed upon by the Contractor and the Engineer;

c. Completion requirement(s) specified in the contract as the only constraints in the schedule logic;

d. Work activities related to the procurement of critical (major) materials and articles of special manufacture;

e. Contractor work activities related to the preparation and submission of working drawings, shop plans, and other data specified for review or approval by the Engineer and resubmittal, if required; and,

f. Department activities related to specified activities by the Department (including, but not limited to, review of shop drawings by the Department and material quality, mix design, mix design verification, and compatibility test results from the Department's Central Materials Laboratory) and third parties.

2. Written Narrative: If all of the information required in Section 8.3 C. is shown in the LSM construction schedule, the Contractor will not be required

to provide a written narrative. For those items not included in the diagram, the written narrative consists of the missing information required in Section 8.3 C.

G. Construction Schedule Updates: The construction schedule and all construction schedule updates are intended to be a project management tool for the Contractor, Contractor's staff, subcontractors, suppliers, Department, and any utility companies involved. The Contractor will regularly review and continually maintain the construction schedule to verify actual start dates, actual finish dates of work activities, remaining duration of uncompleted work activities, and any proposed logic or time estimate revisions based on work production. The Contractor will keep the Engineer informed of the current construction schedule and all logic changes. The construction schedule and all construction schedule updates will be discussed during the weekly meetings or at a frequency agreed upon by the Contractor and Engineer.

The Contractor will submit an updated construction schedule for acceptance by the Engineer at least every month or when any of the following conditions occur:

1. A delay of 5 working days or 7 calendar days, as governed by the contract time requirements of the contract, occurs in the completion of a critical (major) work activity or which causes a change in a critical work activity for BCM schedules, causes a change in the critical path for CPM schedules, or causes work activity lines to cross in LSM schedules;

2. The actual prosecution of the work is different from that represented on the current construction schedule;

3. There is an addition, deletion, or revision of work activities caused by a contract change order; or,

4. There is a change in the construction schedule logic.

The Contractor will include all requirements listed in Section 8.3 B.1-6 on the updated construction schedule and will provide a comparison of the initial/baseline schedule to the current schedule of project completion.

When the construction schedule is updated, the Contractor will move the actual lost days (adverse weather days and adverse weather recovery days) from where the expected adverse weather days were originally shown, in accordance with Section 8.3 B, to the date the lost day or days occurred in accordance with Section 8.3 H.

For utility company work activities previously identified in the baseline construction schedule in accordance with Section 8.3 B, the following shall apply:

When the construction schedule is updated, the Contractor will move utility company work activity durations from where the work activities were originally shown, in accordance with Section 8.3 B, to the dates the utility company work activities actually occurred. The Contractor will also include any known delays due to utility company work activities in the construction schedule updates by showing the date of the lost day or days to identify the delays and show the impact to the critical path in accordance with Section 8.3 H. The Contractor will also include documentation of any attempts made by the Contractor to mitigate the delays caused by utility company work activities.

For unexpected or unplanned work activities which become an impact to the critical path not previously identified in the initial/baseline construction schedule including, but not limited to; 1) known utility company work activities, 2) utility conflicts not identified in the plans, 3) differing site conditions, and 4) significant changes in the character of work the following shall apply:

For each occurrence of a delay, the Contractor will add a new work activity in the line below and linked to the controlling work activity for the duration of the delay. The Contractor will include supporting information to document the delay and efforts to mitigate the delay.

The Engineer will accept or may suggest revisions to the updated construction schedule within 5 business days of the date of receiving the updated construction schedule. If the Engineer does not accept or does not provide suggested revisions to the updated construction schedule within 5 business days of receiving the updated construction schedule, or a longer timeframe if mutually agreed upon by the Contractor and the Engineer, the schedule as submitted will be the accepted updated construction schedule.

If revisions are needed prior to acceptance of the updated construction schedule, the Contractor will make the required revisions and submit the revised updated construction schedule to the Engineer within a mutually agreed upon amount of time. The Engineer will accept or may suggest further revisions to the revised updated construction schedule within 2 business days of the date of receiving the revised updated construction schedule.

Acceptance of the updated construction schedule by the Engineer does not modify the contract or constitute endorsement or validation by the Engineer of the Contractor’s logic, activity durations, or assumptions in creating the schedule. Acceptance of the updated construction schedule also does not

relieve the Contractor of the obligation to complete all work within the contract time completion requirements.

H. Contract Time: The Department will count contract time in accordance with Section 8.6 and any applicable special provision for contract time.

For the purpose of contract time related to weather delays and determining the actual adverse weather days, the Department will consider the following:

Continuing construction progress on the controlling item is defined as the Contractor's progress to complete remaining work identified as the controlling item or critical path in the current construction schedule. Remaining work is the work remaining to be completed prior to the adverse weather event. For this determination, rework caused by the adverse weather event will not be considered part of the remaining work.

Lost days are defined as the actual days lost during adverse weather and adverse weather recovery days, if applicable. An adverse weather recovery day will only be considered when continuing construction progress on the controlling item is delayed due to the effects of adverse weather.

An adverse weather recovery day must meet the following criteria:

1. Days following adverse weather days needed for project conditions to improve to a condition in which the Contractor is able to or would be expected to restart work.

2. Days following adverse weather days needed for rework of previously completed work conforming to the specifications. The Department will only consider rework necessary through no fault of the Contractor.

3. Days following adverse weather days in which the project conditions result in a delay to the Contractor in continuing construction progress on the controlling item as scheduled prior to the adverse weather.

The Contractor will submit a request by the end of the following week and the Engineer will determine if a day meeting the above criteria will be considered an adverse weather recovery day. The determination will be based on the amount of time the Contractor would be expected to do or does work on continuing construction progress on the controlling item.

In accordance with Section 8.6, no adverse weather recovery day will be considered for any day on which conditions are such that the Contractor would be expected to do or does 6 hours or more of work continuing construction progress on the controlling item. A 1/2 adverse weather recovery day will be considered for any day on which conditions are such

that the Contractor would be expected to do or does at least 2 hours but less than 6 hours of work continuing construction progress on the controlling item. A full adverse weather recovery day will be considered for any day on which conditions are such that the Contractor would be expected to do or does less than 2 hours of work continuing construction progress on the controlling item.

The Engineer will determine which days are actual lost working days during each bi-weekly statement and the Contractor will account for those lost working days by moving the agreed upon lost adverse weather days forward in the construction schedule to the date the working days were lost.

I. Extension of Contract Time:

When considering a time extension request for contract time completion requirements, the Engineer will base the time extension determination on the impact to the initial/baseline construction schedule and all construction schedule updates resulting from the basis (as defined in Section 8.7) for the time extension.

Time extension requests for Category II and III projects must include a construction schedule demonstrating the project schedule impacts to the critical item, the critical path, and completion of the entire project due to items beyond the Contractor's control.

When considering a time extension for contract time completion requirements due to adverse weather, the Engineer will compare the total number of expected adverse weather days against the total number of actual lost days (adverse weather days and adverse weather recovery days) in the current accepted construction schedule.

J. Construction Schedule Payment and Assessments:

1. **Construction Schedule Payment:** Payment will be full compensation for the work prescribed in this section. The Engineer will make progress payments for the construction schedule in accordance with the following:

   a. 25% of the lump sum contract unit price, not to exceed 1% of the original contract amount will be paid after the construction schedule is accepted.

   b. Payment of the remaining portion of the lump sum contract unit price will be prorated based on the total work completed.

2. **Assessments:**

a. **Construction Schedule:** If the Contractor begins work prior to submitting the construction schedule as required in 8.3 B., the Engineer will make an assessment of $100 for Category I projects, $250 for Category II projects, and $500 for Category III projects for each working day until the construction schedule is submitted.

   If the Contractor chooses to use the startup schedule option, the assessment will not apply until 30 working days from start of work

b. **Construction Schedule Updates:** If the Contractor does not submit the updated construction schedule by the agreed upon date each month or as required in 8.3 G., the Engineer will make an assessment of $100 for Category I projects, $250 for Category II projects, and $500 for Category III projects for each working day until the updated construction schedule is submitted.

K. Expected Adverse Weather Days:

The Department has provided Attachment 1. This table depicts the typical number of adverse weather days expected for any given month, based on historical records. The Contractor will consider expected adverse weather days cumulative in nature over the time period when the Contractor is planning to actively pursue completion of the work. The Contractor will not include adverse weather days during extended periods of time when the Contractor is not planning to pursue completion of the work. The Contractor will use the expected adverse weather days shown in the table when establishing and updating the construction schedule.

* * * * *

ATTACHMENT 1

Figure A. Expected Adverse Weather Days for South Dakota

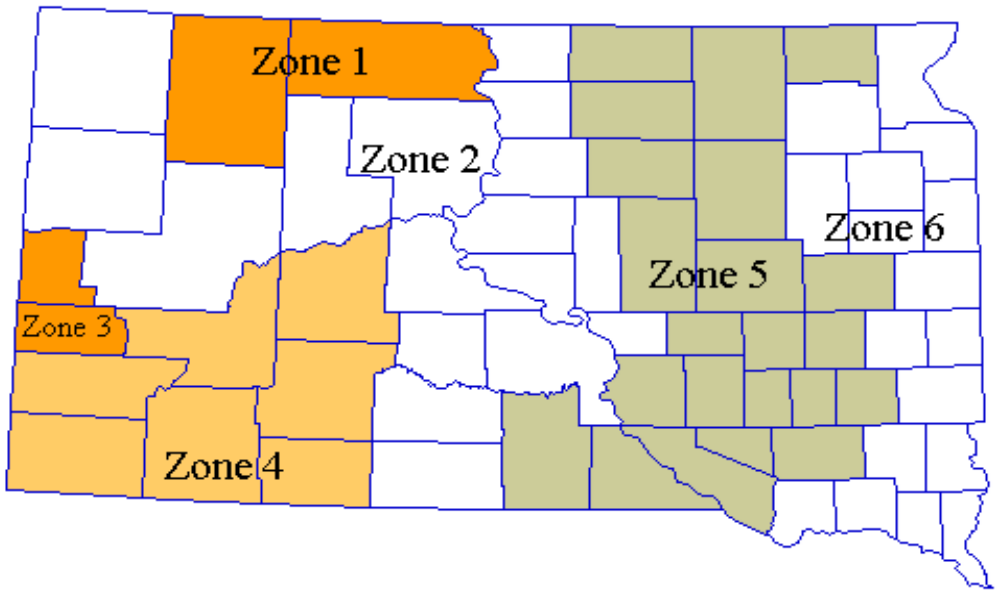

Table 1. Expected Adverse Weather Days for South Dakota

	Grading Projects						Surfacing and Structural Projects					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Jan	18	18	16	16	22	24	18	18	15	16	21	23
Feb	19	18	12	14	19	21	19	18	12	14	19	21
Mar	12	10	9	8	11	13	12	10	9	8	10	12
Apr	6	5	8	5	6	6	5	4	6	4	4	4
May	6	6	8	6	6	6	5	5	6	4	4	5
Jun	7	6	7	6	7	8	5	5	5	4	5	6
Jul	5	5	6	5	6	7	4	4	5	3	4	5
Aug	4	4	5	4	5	6	3	3	4	3	4	4
Sep	3	3	4	3	4	5	2	2	3	2	3	4
Oct	4	3	5	3	4	4	3	3	4	2	3	3
Nov	11	9	8	7	10	12	11	9	8	7	10	11
Dec	21	19	15	14	20	22	21	19	15	14	20	22

NOTE: Includes Holidays and Weekends.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONTRACTOR STAKING

PROJECT P 1806(23)186; PCN 06QP
STANLEY COUNTY

JANUARY 22, 2025

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; placing an offset line to re-establish the project centerline throughout the entire project length prior to placement of asphalt surfacing; 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. **Construction Staking:** Construction staking will consist of all staking for centerline offset and stationing stakes and miscellaneous stakes in accordance with the following:

    a. **Centerline Offset and Stationing Stakes:** The Contractor will perform all survey work necessary to establish offset points to be used for re-establishment of centerline on the entire project prior to placement of asphalt surfacing. The Contractor will place a nail and lath on one side of the roadway at an offset from centerline so as to not interfere with construction work. Once established, this offset will remain constant throughout the project length. Place the nail and lath at even 200 foot

intervals throughout the entire length of the project in tangent sections. Place the nail and lath at even 100 foot intervals throughout all horizontally curved sections. Clearly mark stationing with a permanent marker on each lath placed. The Contractor is solely responsible for the accuracy of this work.

The Contractor shall use a surveying instrument to set the offset nails at a true offset from actual centerline. A tolerance of 0.04' will be allowed on the offset nails. Original Construction plans showing locations of alignment points are available at the Area Office.

The Contractor is hereby advised that spiral curves may be present along some South Dakota Highway routes, and if found will need to be duplicated as well as normal simple curves when staking this offset line. Any deficient work which may result in staking errors shall be corrected by the Contractor at no additional expense to the Department. All costs associated with this work will be paid under the bid item construction staking.

b. Miscellaneous Staking: Miscellaneous staking includes the following work:

1) 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;
2) Topsoil measurement and computation of quantities;
3) Special ditch staking;
4) 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);
5) Right-of-way staking including easement lines and fence post panels;
6) 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;
7) Mark limits of removal items (trees, foundations, curb & gutter, sidewalk, etc.);
8) 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.);
9) 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;

10) Resetting horizontal and vertical control, if disturbed;

11) Approach slab and sleeper slab staking;

12) Staking of sidewalks and curb ramps; and,

13) 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 ±0.05 foot and the vertical tolerance is ±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. **Construction Staking:** The Department will not measure construction staking.

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. **Construction Staking:** The Department will pay construction staking at the lump sum price. 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 construction 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 construction 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 construction 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.

* * * * *

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

Section B – Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3210	Construction Staking	34.342	Mile
009E3250	Miscellaneous Staking	34.342	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0500	Remove Pipe Culvert	266	Ft
110E0510	Remove Pipe End Section	79	Each
110E0590	Remove Cattle Pass	16	Ft
110E0595	Remove Cattle Pass End Section	2	Each
110E0600	Remove Fence	476	Ft
110E0700	Remove 3 Cable Guardrail	640	Ft
110E0730	Remove Beam Guardrail	92.0	Ft
110E7500	Remove Pipe for Reset	176	Ft
110E7510	Remove Pipe End Section for Reset	12	Each
120E0010	Unclassified Excavation	38,283	CuYd
120E0600	Contractor Furnished Borrow Excavation	24,042	CuYd
120E2000	Undercutting	4,778	CuYd
120E4100	Reprofiling Ditch	22.9	Sta
120E6100	Water for Embankment	432.3	MGal
270E0112	Salvage Granular Material	991.5	Ton
430E0700	Precast Concrete Headwall for Drain	12	Each
450E0143	24" RCP Class 3, Furnish	184	Ft
450E0150	24" RCP, Install	184	Ft
450E2008	18" RCP Flared End, Furnish	29	Each
450E2009	18" RCP Flared End, Install	29	Each
450E2016	24" RCP Flared End, Furnish	14	Each
450E2017	24" RCP Flared End, Install	14	Each
450E2024	30" RCP Flared End, Furnish	2	Each
450E2025	30" RCP Flared End, Install	2	Each
450E4768	24" CMP 14 Gauge, Furnish	86	Ft
450E4770	24" CMP, Install	86	Ft
450E4778	30" CMP 14 Gauge, Furnish	50	Ft
450E4780	30" CMP, Install	50	Ft
450E5020	30" CMP Elbow, Furnish	2	Each
450E5021	30" CMP Elbow, Install	2	Each
450E5211	18" CMP Flared End, Furnish	8	Each
450E5212	18" CMP Flared End, Install	8	Each
450E5215	24" CMP Flared End, Furnish	12	Each
450E5216	24" CMP Flared End, Install	12	Each
450E5314	30" CMP Sloped End, Furnish	1	Each
450E5315	30" CMP Sloped End, Install	1	Each
450E5826	54" CMP Arch Flared End, Furnish	16	Each
450E5827	54" CMP Arch Flared End, Install	16	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 450E8900	Cleanout Pipe Culvert	32	Each
450E8910	Cleanout for Culvert Treatment	10	Each
450E9000	Reset Pipe	176	Ft
450E9001	Reset Pipe End Section	12	Each
450E9518	18" Cured in Place Pipe	650	Ft
450E9524	24" Cured in Place Pipe	213	Ft
450E9528	36" Cured in Place Pipe	82	Ft
462E0250	Cellular Grout	20.6	CuYd
620E0020	Type 2 Right-of-Way Fence	80	Ft
620E0030	Type 3 Right-of-Way Fence	70	Ft
620E0520	Type 2 Temporary Fence	150	Ft
620E0530	Type 3 Temporary Fence	176	Ft
620E1030	3 Post Panel	4	Each
629E0110	High Tension 4 Cable Guardrail	566	Ft
629E0290	High Tension Cable Guardrail Anchor Assembly	4	Each
630E1010	Straight Class A W Beam Guardrail with Wood Posts	62.5	Ft
630E1025	Curved Class A W Beam Guardrail with CRT Posts	37.5	Ft
630E2035	W Beam Guardrail Special Anchor Assembly	1	Each
632E2510	Type 2 Object Marker Back to Back	158	Each
680E0204	4" Perforated PVC Drain Pipe with Sleeve	360	Ft
680E0224	4" PVC Outlet Pipe	160	Ft
680E2500	Porous Backfill	171.0	Ton
700E0210	Class B Riprap	99.8	Ton
720E1010	PVC Coated Bank and Channel Protection Gabion	10.5	CuYd
831E0110	Type B Drainage Fabric	160	SqYd
831E0400	Impermeable Plastic Membrane	68	SqYd
900E2030	Miscellaneous Work	11	Site

*** - Denotes Non-Participating**

Section C - Traffic Control

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
260E1030	Base Course, Salvaged	991.5	Ton
634E0010	Flagging	2,000.0	Hour
634E0020	Pilot Car	950.0	Hour
634E0110	Traffic Control Signs	951.5	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	108.1	Mile

INDEX OF SHEETS

Section D - Erosion and Sediment Control

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
230E0010	Placing Topsoil	26,936	CuYd
730E0100	Cover Crop Seeding	30.0	Bu
730E0210	Type F Permanent Seed Mixture	1,843	Lb
732E0100	Mulching	152.6	Ton
734E0102	Type 2 Erosion Control Blanket	14,342	SqYd
734E0132	Type 2 Turf Reinforcement Mat	200.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	985	Ft
734E0165	Remove and Reset Erosion Control Wattle	246	Ft
734E0510	Shaping for Erosion Control Blanket	1,265	Ft
734E0604	High Flow Silt Fence	2,224	Ft
734E0610	Mucking Silt Fence	124	CuYd
734E0620	Repair Silt Fence	446	Ft

Section E – Structure 59-388-274

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
410E0020	Structural Steel	Lump Sum	LS
700E0210	Class B Riprap	120.7	Ton
831E0110	Type B Drainage Fabric	145	SqYd

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5601
PAUL A. KNOFCZYNSKI
SOUTH DAKOTA
01/22/25

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3210	Construction Staking	34.342	Mile
009E3250	Miscellaneous Staking	34.342	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E0500	Remove Pipe Culvert	266	Ft
110E0510	Remove Pipe End Section	79	Each
110E0590	Remove Cattle Pass	16	Ft
110E0595	Remove Cattle Pass End Section	2	Each
110E0600	Remove Fence	476	Ft
110E0700	Remove 3 Cable Guardrail	640	Ft
110E0730	Remove Beam Guardrail	92.0	Ft
110E7500	Remove Pipe for Reset	176	Ft
110E7510	Remove Pipe End Section for Reset	12	Each
120E0010	Unclassified Excavation	38,283	CuYd
120E0600	Contractor Furnished Borrow Excavation	24,042	CuYd
120E2000	Undercutting	4,778	CuYd
120E4100	Reprofiling Ditch	22.9	Sta
120E6100	Water for Embankment	432.3	MGal
270E0112	Salvage Granular Material	991.5	Ton
430E0700	Precast Concrete Headwall for Drain	12	Each
450E0143	24" RCP Class 3, Furnish	184	Ft
450E0150	24" RCP, Install	184	Ft
450E2008	18" RCP Flared End, Furnish	29	Each
450E2009	18" RCP Flared End, Install	29	Each
450E2016	24" RCP Flared End, Furnish	14	Each
450E2017	24" RCP Flared End, Install	14	Each
450E2024	30" RCP Flared End, Furnish	2	Each
450E2025	30" RCP Flared End, Install	2	Each
450E4768	24" CMP 14 Gauge, Furnish	86	Ft
450E4770	24" CMP, Install	86	Ft
450E4778	30" CMP 14 Gauge, Furnish	50	Ft
450E4780	30" CMP, Install	50	Ft
450E5020	30" CMP Elbow, Furnish	2	Each
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450E5211	18" CMP Flared End, Furnish	8	Each
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450E5215	24" CMP Flared End, Furnish	12	Each
450E5216	24" CMP Flared End, Install	12	Each
450E5314	30" CMP Sloped End, Furnish	1	Each
450E5315	30" CMP Sloped End, Install	1	Each
450E5826	54" CMP Arch Flared End, Furnish	16	Each
450E5827	54" CMP Arch Flared End, Install	16	Each
* 450E8900	Cleanout Pipe Culvert	32	Each
450E8910	Cleanout for Culvert Treatment	10	Each
450E9000	Reset Pipe	176	Ft
450E9001	Reset Pipe End Section	12	Each
450E9518	18" Cured in Place Pipe	650	Ft
450E9524	24" Cured in Place Pipe	213	Ft
450E9528	36" Cured in Place Pipe	82	Ft
462E0250	Cellular Grout	20.6	CuYd
620E0020	Type 2 Right-of-Way Fence	80	Ft
620E0030	Type 3 Right-of-Way Fence	70	Ft
620E0520	Type 2 Temporary Fence	150	Ft
620E0530	Type 3 Temporary Fence	176	Ft
620E1030	3 Post Panel	4	Each
629E0110	High Tension 4 Cable Guardrail	566	Ft
629E0290	High Tension Cable Guardrail Anchor Assembly	4	Each
630E1010	Straight Class A W Beam Guardrail with Wood Posts	62.5	Ft
630E1025	Curved Class A W Beam Guardrail with CRT Posts	37.5	Ft
630E2035	W Beam Guardrail Special Anchor Assembly	1	Each
632E2510	Type 2 Object Marker Back to Back	158	Each
680E0204	4" Perforated PVC Drain Pipe with Sleeve	360	Ft
680E0224	4" PVC Outlet Pipe	160	Ft
680E2500	Porous Backfill	171.0	Ton
700E0210	Class B Riprap	99.8	Ton
720E1010	PVC Coated Bank and Channel Protection Gabion	10.5	CuYd
831E0110	Type B Drainage Fabric	160	SqYd
831E0400	Impermeable Plastic Membrane	68	SqYd
900E2030	Miscellaneous Work	11	Site

*** - Denotes Non-Participating**

SALVAGE GRANULAR MATERIAL

In the heave repair areas, the Contractor will be required to salvage enough existing granular base material to provide for a 4" lift of temporary surfacing which will be utilized until the placing the asphalt concrete surfacing for the project. The temporary surfacing is estimated to require 991.5 Tons of salvaged material. Cost associated with salvaging and stockpiling the material for use as temporary surfacing is incidental to the contract unit price per ton for "Salvage Granular Material".

TABLE OF EXCAVATION QUANTITIES BY BALANCES

Location MRM to MRM	Excavation (CuYd)	* Undercut (CuYd)	* Contractor Furnished Borrow Exc. (CuYd)	Total Excavation (CuYd)
Grading at Pipe Ends	-	-	80	-
192.00+0.256 192.00+0.284	889	739	1363	1628
193.00+0.326 193.00+0.414	2398	2323	3688	4721
193.00+0.523 193.00+0.588	1866	1716	2866	3582
Inslope Modification (Sections 6-9)	1416	-	16045	1416
Totals:	6569	4778	24042	11347

* The quantities for these items are in the Estimate of Quantities under their respective contract items.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 15 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 432.3 MGal. All costs associated will be incidental to the contract unit price per MGal of "Water for Embankment".

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

Special ditch grades and other sections of the roadway different than the typical sections will be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer will contact the Designer for the proposed change.

Generally, all shallow inlet and outlet ditches as noted on the plan sheets will be cut with a 10-foot wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

UTILITIES

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

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

SHRINKAGE FACTOR: Embankment +20%

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 5601
PAUL A. KNOFCZYNSKI
SOUTH DAKOTA
01/22/25

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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HIGH TENSION CABLE GUARDRAIL ANCHOR ASSEMBLY

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

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

The footing(s) for the anchor assembly will be designed to allow for 1 inch maximum of lateral deflection. The allowable design soil pressure will be 1000 psf. The top 2 feet of soil pressure will be neglected in the design of the footing(s). The footing(s) will be a minimum of 5' deep. The footing(s) design will be submitted through proper channels to the Office of Bridge Design for a one-time approval. Any changes to the anchor assembly that could affect footing size including configuration changes such as different number of cables and different number of footings will be resubmitted for approval. The approval will be obtained a minimum of 4 weeks prior to construction of the anchor footing(s).

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

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

Shop drawings of the individual components comprising the High Tension Cable Guardrail Anchor Assembly will be provided to the Pierre Area Office.

TABLE OF FENCE QUANTITIES

Station to Station		Side (L/R)	Remove Fence	Right-of-Way Fence		Fence Panel	Temporary Fence	
				Type 2	Type 3	3 Post	Type 2	Type 3
			Ft	Ft	Ft	Each	Ft	Ft
e 76+04	e 76+77	R	246		70	2		176
f 227+48	f 228+28	L	230	80		2	150	
TOTALS:			476	80	70	4	150	176

TABLE OF GUARDRAIL

Location	Remove 3 Cable Guardrail (Ft)	4 Cable High Tension Guardrail (Ft)	High Tension Cable Guardrail Anchor Assembly (Each)	Remove Beam Guardrail (Ft)	Straight Class A Beam Guardrail with Wood Posts (Ft)	Curved Class A Beam Guardrail with CRT Posts (Ft)	Guardrail Special Anchor Assembly (Each)
Spillway							
103+53 Lt.				92	62.5	37.5	1
Structure No. 59-234-176							
Structure Lt.	320	283	2				
Structure Rt.	320	283	2				
Totals:	640	566	4	92	62.5	37.5	1

TABLE OF CONSTRUCTION STAKING

(See Special Provision for Contractor Staking)

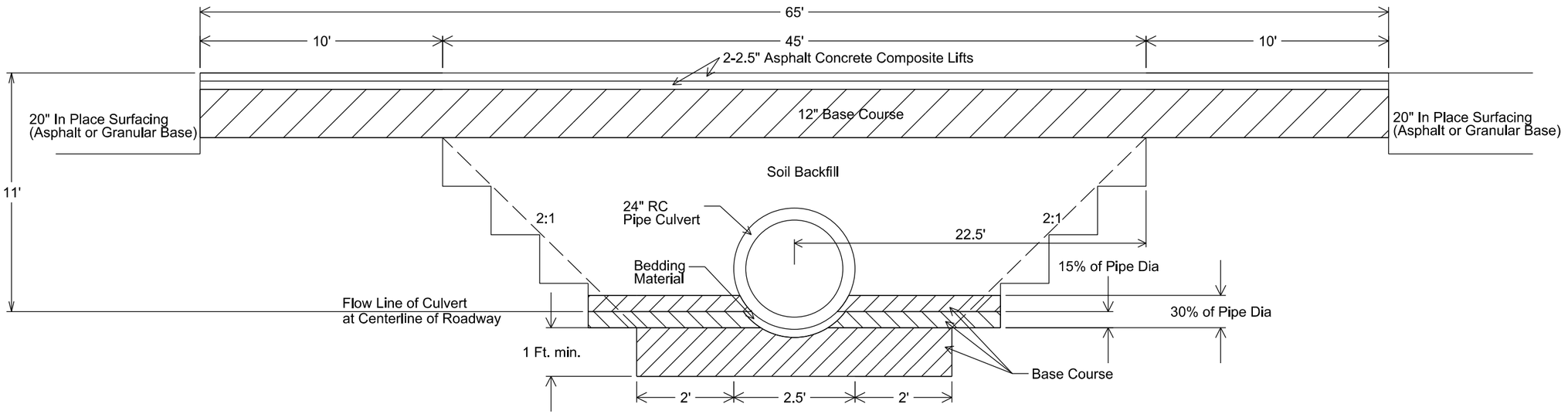
Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Length (Mile)	Construction Staking (Mile)	Miscellaneous Staking (Mile)
SD1806 beginning to first equation	1+68.90	201+13.85	2	19,944.95	3.777	3.777	3.777
SD1806 first to second equation	a -11+34.45	a 19+18.73	2	3053.18	0.578	0.578	0.578
SD1806 second to third equation	b 19+52.58	b 52+54.30	2	3301.72	0.625	0.625	0.625
SD1806 third to fourth equation	c 52+52.58	c 58+45.80	2	583.22	0.110	0.110	0.110
SD1806 fourth to fifth equation	d -0+37.64	d 106+60.40	2	10,698.04	2.026	2.026	2.026
SD1806 fifth to sixth equation	e 345+27.30	e 0+00.00	2	34,527.3	6.539	6.539	6.539
SD1806 sixth to seventh equation	f 625+27.65	f 0+00.00	2	62,527.65	11.842	11.842	11.842
SD1806 seventh to eighth equation	g 679+92.90	g 488+68.07	2	19,124.83	3.622	3.622	3.622
SD1806 eighth equation to end	h 489+08.43	h 213+52.00	2	27,556.43	5.219	5.219	5.219
					Totals:	34.342	34.342

CULVERT REPLACEMENT DETAIL

C 79+00

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 1806(23)186	B29A	B56

Plotting Date: Revised: 01-13-25 EJW



* This Detail does not show the ultimate resurfacing section which will include Cold Milling Asphalt Concrete and the 2" Class Q2R Asphalt Concrete overlay that will be accomplished after the culvert replacement has been completed.

DRAWING NOT TO SCALE