

Department of Transportation

Mitchell Region Office

PO Box 1206
Mitchell, SD 57301-7206 605/995-8129
FAX: 605/995-8135

August 27, 2018

June Hansen
Civil Rights Officer
Department of Transportation
700 Broadway Avenue East
Pierre, South Dakota 57501

RE: 410B349, Union County – PCN I5ER
Sewage Lagoon Improvements at the I29 Exit 26 Homestead Rest Area

June,

Enclosed are a Contract Proposal and Plans for the above referenced project that is being let to contract in the Mitchell Region on September 13, 2018.

We have sent a bid invitation letter to the DBE/WBE Contractors listed below:

BX Civil & Construction Inc.

Grangaard Construction Inc.

If you know of any other interested Contractors, please advise us.

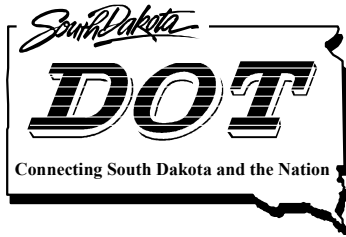
Very truly yours,

DEPARTMENT OF TRANSPORTATION
Craig Smith, Region Engineer

Monte D. Rice, Region Design Engineer

cc: Humphrey – Construction and Maintenance
Leiferman – Project Development
Gall/Rothschadl – Yankton Area

NOTICE TO CONTRACTORS



Department of Transportation

Mitchell Region Office

PO Box 1206
Mitchell, SD 57301-7206 605/995-8129
FAX: 605/995-8135

August 27, 2018

TO: Interested Bidders

RE: 410B349, Union County – PCN I5ER
Sewage Lagoon Improvements at the I29 Exit 26 Homestead Rest Area

The South Dakota Department of Transportation (SDDOT) desires to solicit bids for Sewage Lagoon Improvements at the I29 Exit 26 Homestead Rest Area. Refer to the proposal and plans (in the link below) for location and details of the work to be done.

A Contract Proposal (DOT 123) form, a Utilization of Minority Business Enterprises Clauses form and a Contractor's Affidavit/Declaration form are enclosed for submission of your bid. Be sure to have the forms signed and notarized as indicated on the forms. FAX bids will not be accepted.

The Department of Transportation in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, national origin, sex, age or disability in consideration for an award.

If bidding \$200,000 or more, bidders must be prequalified in accordance with the Special Provision for Prequalification of Bidders contained in this Proposal for: Work Type 12 – Underground & Utilities.

The required application form for prequalification of bidders can be accessed at the following link:
https://www.state.sd.us/eforms/secure/eforms/S_E0945V3-ContractorsPrequalificationStatement.pdf Submit the application to the Classification and Rating Committee in accordance with the Special Provision for Prequalification of Bidders.

The successful bidder will need to submit the DOT-208 Fuel Adjustment Affidavit (Attachment A) prior to the contract being awarded; therefore, all bidders are encouraged to submit the Fuel Adjustment Affidavit prior to or at the time of bidding.

If you submit a bid for this project, a bid bond, certified check, cashier's check, or bank draft will be required for NOT LESS THAN FIVE (5) PERCENT OF THE TOTAL AMOUNT OF THE BID. If an electronic bid bond is used, the Contractor is required to submit the bid bond identification number with the bid. Except for the lowest bidder on the project, all guarantees will be returned immediately following the receipt and checking of all bids.

The successful bidder shall furnish a performance bond in a sum equal to the full amount of the contract, prior to contract award. Therefore, please provide the performance bond as soon as possible after letting. The performance bond will not be returned for one (1) year after the completion of the project.

A Certificate of Insurance will be required from the successful bidder prior to beginning work.

Sealed bids will be received by the SDDOT through the US Postal Service at PO Box 1206 until **8:00 A.M. on Thursday, September 13, 2018** or may be hand delivered (in person or by a package delivery service) to the Department of Transportation, Mitchell Regional Office located at 1300 S Ohlman St, Mitchell, SD 57301 until **1:30 P.M. on Thursday, September 13, 2018**. Bid must be submitted in an envelope clearly indicating that the contents are a bid and the letting for which the bid applies.

If hand delivering, address the envelope to:

Monte Rice, Region Design Engineer
Department of Transportation
1300 S Ohlman St
Mitchell, SD 57301

If using the US Postal Service, address the envelope to:

Monte Rice, Region Design Engineer
Department of Transportation
PO Box 1206
Mitchell, SD 57301

Proposal and Plans (and Addenda, when applicable) can be accessed at the following link:
<http://sddot.com/business/contractors/bid/region/Default.aspx> Prior to submitting a bid, it is the bidder's responsibility to examine the project in accordance with Section 2.5 of the specifications. It is also the bidder's responsibility to acknowledge and account for any addenda issued prior to bid opening.

Questions regarding the plans and/or proposal should be directed to:
[Rod Gall \(Ext. 1302001\)](#) or [Greg Rothschadl \(Ext. 1302002\)](#) at 605-668-2931 or [Monte Rice](#) at 605-995-3302.

The SDDOT reserves the right to reject any or all bids.

Please verify that all required information is complete prior to mailing bid documents.

Very truly yours,

DEPARTMENT OF TRANSPORTATION
Craig Smith, Region Engineer

Monte D. Rice, Region Design Engineer

cc: Humphrey – Construction and Maintenance
Hansen – Civil Rights
Gall/Rothschadl – Yankton Area
Gustafson – Operations
Long – Materials
[Leiferman – Project Development](#)
R. Uckert – Banner Associates

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
CONTRACT PROPOSAL

DOT-123
July 2018
1 of 2

CODE	PROJECT			MAINT UNIT	CONTROL REFERENCE	AFE	FUNCTION	BEGIN MRM	END MRM
	PRE	ROUTE	AGR						
4	10	B349				I5ER			

CITY AND/OR COUNTY: Union County

BUDGET SOURCE: Contract Maintenance

REGION MATERIALS CERTIFICATION REQUIRED: ☒ YES ☐ NO

WIP #: _____

CERTIFIED INSPECTORS/TESTERS REQUIRED: ☒ YES ☐ NO

TO BE INSTALLED ON CM&P: ☐ YES ☒ NO

TYPE, PURPOSE AND LOCATION OF WORK: I29 Exit 26 Homestead Rest Area Sewage Lagoon Improvements

ESTIMATE OF QUANTITIES AND COST

BID ITEM NUMBER	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
009E0010	Mobilization	Lump Sum	LS	Lump Sum	
110E0520	Remove Sewer Pipe	301	Ft		
110E1960	Remove Valve Box	1	Each		
110E1965	Remove Gate Valve	1	Each		
110E7800	Remove Chain Link Fence for Reset	702	Ft		
230E0100	Remove and Replace Topsoil	Lump Sum	LS	Lump Sum	
451E1006	6" PVC Sewer Pipe	62	Ft		
451E1102	2" PVC Forcemain	92	Ft		
451E4905	Trench Stabilization Material	20	Ton		
451E4920	Pipe Bedding Material	60	Ton		
621E0520	Reset Chain Link Fence	702	Ft		
671E1048	48" Manhole	1	Each		
700E0110	Class A Riprap	12	Ton		
734E0010	Erosion Control	Lump Sum	LS	Lump Sum	
734E0602	Low Flow Silt Fence	74	Ft		
734E0610	Mucking Silt Fence	5.1	CuYd		
734E0620	Repair Silt Fence	19	Ft		
SPECIAL	Remove Concrete Splash Block	3	Each		
SPECIAL	Remove Concrete Inlet Structure	2	Each		
SPECIAL	Loading Sludge Hauling Equipment <i>* Unit is 1000 Gal</i>	3150	*		
SPECIAL	Sludge Hauling <i>** Unit is 1000 Gal-Loaded Mile</i>	9450	**		
SPECIAL	Repair Lagoon Clay Liner	80	CuYd		
SPECIAL	Inlet Headwall Structure	1	Each		
SPECIAL	Pond Level Indicator	2	Each		
SPECIAL	6" MJ Plug Valve with Flange Adaptors	1	Each		
SPECIAL	Prefill Stabilization Pond <i>*** Unit is Million-Gallon (MG)</i>	1.007	***		
SPECIAL	Warning Sign	4	Each		
TOTAL					

CONTRACTOR'S PROPOSAL STATEMENT

The undersigned agrees to offer the labor and material in the quantities, at the unit price, for the purpose, in the place, and in accordance with attached provisions. The Contractor will provide services in compliance with the Americans with Disabilities Act of 1990 and any amendments.

SUBSTANTIAL COMPLETION DATE N/A

PROPOSED START DATE _____

FIELD WORK COMPLETION DATE January 31, 2019

SIGNATURE _____

SUBSCRIBED AND SWORN TO BEFORE ME THE

PRINTED NAME _____

DAY OF _____, 20__

COMPANY _____

NOTARY _____

STR. ADDRESS _____

My Commission Expires:

CITY, STATE, ZIP _____

DATE _____ (SEAL)

FEDERAL TAX ID NUMBER _____

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

CONTRACT PROPOSAL

DOT-123

July 2018

2 of 2

CODE	PROJECT			MAINT UNIT	CONTROL REFERENCE	AFE	FUNCTION	BEGIN MRM	END MRM
	PRE	ROUTE	AGR						
4	10	B349				I5ER			

TO BE FILLED OUT BY STATE PERSONNEL:

RECOMMENDED FOR APPROVAL:

CONSTRUCTION & MAINTENANCE ENGINEER_____
DATE_____
AREA / REGION / OPS ENGINEER_____
DATE_____
DIRECTOR OF OPERATIONS_____
DATE_____
INTERNAL SERVICES / AUDITS_____
DATE

ACCEPTED BY SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

NAME _____

TITLE _____

DATE _____

IF FEDERAL FUNDS WILL BE EXPENDED UNDER THIS AGREEMENT, ACCEPTANCE BY PROJECT DEVELOPMENT IS REQUIRED

PROJECT DEVELOPMENT ENGINEER_____
DATE

**BIDDER MUST EXECUTE THE FOLLOWING:
PARTICIPATION BY MINORITY CONTRACTORS**

Utilization of Minority Business Enterprises Clauses

PROJECT: 410B349

PCN I5ER

COUNTY: UNION

1. The Contractor agrees to use his best efforts to carry out this policy in the award of his subcontracts to the fullest extent consistent with the efficient performance of his contract. As used in this contract, 'Minority Business Enterprise' or 'MBE' means a small business concern, as defined pursuant to section 3 of the Small Business Act and implementing regulations, which is owned and controlled by one or more minorities or women. 'Owned and controlled' means a business: (a) Which is at least 51 per centum owned by one or more minorities or women or, in the case of publicly owned business, at least 51 per centum of the stock of which is owned by one or more minorities or women; and (b) Whose management and daily business operations are controlled by one or more such individuals. 'Minority' means a person who is a citizen or lawful permanent resident of the United States and who is: (a) Black (a person having origins in any of the black racial groups of Africa); (b) Hispanic (a person of Spanish or Portuguese culture with origins in Mexico, South or Central America or the Caribbean Islands, regardless of race); (c) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (d) American Indian and Alaskan Native (a person having origins in any of the original peoples of North America); (e) Members of other groups, or other individuals, found to be economically and socially disadvantaged by the Small Business Administration under section 8(a) of the Small Business Act, as amended. Contractors may rely on written representatives by subcontractors regarding their status as minority business enterprise in lieu of an independent investigation.
2. The Contractor agrees to establish and conduct a program which will enable minority business enterprise to be considered fairly as subcontractors and suppliers under this contract. In this connection the Contractor shall . . .
 - (a) Designate a liaison officer who will administer the Contractor's minority business enterprises program.
 - (b) Provide adequate and timely consideration of the potentialities of known minority business enterprises in all "make-or-buy" decisions.
 - (c) Ensure that known minority business enterprises will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications and delivery schedules so as to facilitate the participation of minority business enterprises.
 - (d) Maintain records showing (1) procedures which have been adopted to comply with the policies set forth in this clause, including the establishment of a source list of minority business enterprises, (2) awards to minority business enterprises on the source list, and (3) specific efforts to identify and award contracts to minority business enterprises.
 - (e) Include the "Utilization of Minority Business Enterprises Clause" in subcontracts which offer substantial minority business enterprises subcontracting opportunities.
 - (f) Cooperate with the State's Contracting Officer in any studies and surveys of the Contractor's minority business enterprises procedures and practices that the State's Contracting Officer may from time to time conduct.
 - (g) Submit periodic reports of subcontracting to known minority business enterprises with respect to the records referred to in subparagraph (d) above, in such form and manner and at such time (not more often than quarterly) as the State's Contracting Officer may prescribe.
3. The Contractor further agrees to insert in any subcontract hereunder provisions which shall conform substantially to the language of this clause, including this paragraph 3 and to notify the State's Contracting Officer of the names of such subcontractors.
4. The bidder hereby certifies that should he at any time decide to subcontract a portion of the work, he will take affirmative action to seek out and consider minority business enterprises as potential subcontractors. He further certifies that he will maintain records showing the contacts made with potential minority business enterprises subcontractors and the results of such contacts.

Name of Company (print or type)

Date

By _____
Signature of Company Official

Title

BIDDER MUST EXECUTE THE FOLLOWING:

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

CONTRACTOR'S AFFIDAVIT / DECLARATION

PROJECT: 410B349 PCN **I5ER**

COUNTY: UNION

(an individual)
(a partnership)
(a corporation)

do hereby certify that I, We or any owner or partner holding a controlling interest, director or officer of the bidder; principal investigator, project director or other position involved in management of the project for which this bid is submitted, have not directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for the project, and that within the last 3 years none of the above have been suspended, debarred, voluntarily excluded or determined ineligible by any federal or state agency, been indicted, convicted, or had a civil judgment rendered against any of the above or the business entity described herein by a court of competent jurisdiction in any matter involving fraud or official misconduct for which we are currently under suspension or debarment. Nor is a proposed suspension or debarment pending against any of the above for any of the above listed reasons.

* * * *

COMPLETE SIGNATURE BLOCK A. or B. BELOW:

A. Signed _____ (an individual)
(a partnership)
(a corporation)
By _____
Title _____
County of _____)
State of _____):SS
Subscribed and sworn to before me this _____ day of _____, 20____.
(SEAL) _____
Notary Public My Commission Expires _____.

* * * *

B. Under the penalty of perjury under the laws of the United States, I hereby certify that the above statement is true and correct.
Signed _____ (an individual)
(a partnership)
(a corporation)
By _____
Title _____

**SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
MITCHELL REGION

PROPOSAL FOR

410B349
UNION COUNTY
REST AREA SEWAGE LAGOON IMPROVEMENTS
PCN I5ER**



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.

* * * *

INDEX OF SPECIAL PROVISIONS

PROJECT: 410B349 PCN **I5ER**

COUNTY: UNION

TYPE OF WORK: REST AREA SEWAGE LAGOON IMPROVEMENTS

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Lagoon Improvement Specifications, dated 8/17/18.

Special Provision for Contractor Administered Preconstruction Meeting, dated 3/15/16.

Fuel Adjustment Affidavit, DOT form 208 dated 7/15.

Standard Title VI Assurance, dated 3/1/16.

Special Provision For Implementation of Clean Air Act & Federal Water Pollution Control Act,
dated 9/1/97.

Special Provision Regarding Minimum Wage on State Funded Projects, dated 4/30/13.

Wage and Hour Division US Department of Labor Washington DC.

- US Dept. of Labor Decision Number SD180001, dated 4/6/18.

Special Provision for Supplemental Specifications to 2015 Standard Specifications for Roads and
Bridges, dated 4/18/18.

Special Provision for Errata to 2015 Standard Specifications for Roads and Bridges, dated 4/4/18.

Special Provision for Price Schedule for Miscellaneous Items, dated 6/6/18.

Special Provision Regarding Storm Water Discharge to Waters of the State, dated 5/8/18.

General Permit for Storm Water Discharges Associated with Construction
Activities, dated 4/1/18.

<http://denr.sd.gov/des/sw/IPermits/ConstructionGeneralPermit2018.pdf>

Plans for Project – Sheets 1 through 20.

* * * *

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA

PROFESSIONAL CONSULTANTS

CIVIL

Banner Associates, Inc.
14 West Main Street, Suite A
Vermillion, South Dakota 57069
(605) 692-6342 or (855) 323-6342



END OF PROFESSIONAL CONSULTANTS

SECTION 03 3053 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Grout
 - 2. Concrete Structures

1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- D. Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete."
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
 - 3. ACI 304, "Measuring, Mixing, Transporting, and Placing Concrete."
 - 4. ACI 315, "Details and Detailing of Concrete Reinforcement."
 - 5. ACI 318, "Building Code Requirements for Structural Concrete."
 - 6. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
 - 7. International Building Code (IBC).
- E. Concrete Testing Service: The Owner will engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 2 - PRODUCTS

2.1 FORMWORK

- A. Furnish formwork and formwork accessories according to ACI 301.
- B. Form-Release Agent: Commercially formulated form-release agent with a maximum of 350 g/liter volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- C. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1½ inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I/II. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class C or F.
- A. Normal-Weight Aggregates: ASTM C 33, Class 55 (severe weathering region) coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 1 inch nominal, unless otherwise noted.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- B. Water: ASTM C 94/C 94M and potable.
- C. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 3. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

2.5 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

2.6 RELATED MATERIALS

- A. Bonding Agent: ASTM C 1059, Type II, non-re-dispersible, acrylic emulsion or styrene butadiene.
- B. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements.

2.7 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 25 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing high-range or water-reducing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

2.8 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Grout:
 - 1. Minimum Compressive Strength: 3000 psi at 28 days.
 - 2. Minimum Cementitious Materials Content: 470 lb/cu.yd.
 - 3. Slump Limit: 4 inches, plus or minus 1 inch, or 8 inches for concrete with a verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture.
 - 4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch or ¾-inch nominal maximum aggregate size.
 - 5. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate but not less than a rate of 1.5 lb per cubic yard.
- C. Headwall Structures/Pond Level Indicators
 - 1. Minimum Compressive Strength: 4000 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 - 3. Slump Limit: 4 inches, plus or minus 1 inch, or 8 inches for concrete with a verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture.
 - 3. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch or ¾-inch nominal maximum aggregate size.

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

3.3 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.4 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:
 - 1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

3.5 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

3.6 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.7 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
 - 1. Do not further disturb surfaces before starting finishing operations.
- C. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.
- D. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.

3.8 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- C. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

- c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure one set of four standard cylinder specimens for each composite sample. Mold and store cylinders of laboratory cured test specimens except when field cured test specimens are required.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one laboratory-cured specimens at 7 days and two specimens at 28 days, and retain one specimen in reserve for later testing if required.
 - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
 9. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 03 3053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

- of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
 11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
 12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

3.10 REPAIRS

- A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 033053

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 13 6000 –SLUDGE LAND APPLICATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes furnishing the equipment and labor necessary to empty the contents of lagoon cells and haul and land apply the sludge in accordance with the Owner's Sludge Application Permit and the EPA Part 503 Biosolids Rule.

1.2 PROJECT CONDITIONS

- A. The lagoon cells consist of two (2) cells with the following characteristics:
1. North Lagoon Cell
 - a. 2,250,000-gallon total volume
 - b. Water Surface = 325 ft x 155 ft
 - c. 8.5 foot water depth
 2. South Lagoon Cell
 - a. 900,000 gallon total volume
 - b. Water Surface = 165 ft x 145 ft
 - c. 7.0 foot water depth
- B. Lagoon Sludge Characteristics: The depth of sludge in the bottom of the lagoons varies by lagoon and location within each lagoon. Sludge depth measurements were taken to help approximate the thickness and concentration of the compacted sludge layer. The North Pond sludge depth varied from approximately 6 inches to 24 inches at a concentration of 10% solids to 50% solids. The South Pond sludge depth varied from approximately 12 inches to 18 inches at a concentration of 35% solids to 50% solids.
- C. Sludge Application Sites: The Owner is responsible for securing sludge application sites for the Contractor's use and has final authority to dictate which applications sites are used and in what sequence. The location of the proposed site is shown on the Project Drawings. The proposed crop, approximate land area and set distance to each site is also shown. The Owner reserves the right to change the locations of the sludge application at any time during the project. Furthermore, the Owner is not responsible for delays due to the lack of available land for application of the sludge due to weather or time of year selected by the Contractor for land application.

1.3 MEASUREMENT AND PAYMENT

- A. General: Measurement and payment for the Work covered in this Section shall be covered under Loading Sludge Hauling Equipment and Sludge Hauling Bid Items.
- B. Loading Liquid/Sludge Hauling Equipment: Payment for Loading Liquid/Sludge Hauling Equipment will be per 1,000 gallons. The work included in this Bid Item will consist of project mobilizations and vehicle loading for the entire contents of the two-cell lagoon system. The volume of the lagoon system has been set at 3,150,000 gallons or 3,150 (1,000-gallon units).

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 13 6000 –SLUDGE LAND APPLICATION

1. The cost of lagoon mixing to mix the sludge with the pond liquid shall be considered incidental to Loading Liquid/Sludge Hauling Equipment.
 2. The cost of removing all sludge from the bottom of the pond that is not removed during mixing shall be incidental Loading Liquid/Sludge Hauling Equipment.
- C. Sludge Hauling: Payment for Sludge Hauling will be a Unit Price Bid Item in the units of 1,000 Gallon-Loaded Mile. The work included in this Bid Item will consists of sludge hauling and land application for the entire contents of the two-cell lagoon system. The following paragraphs describe the methods of measurement for this Bid Item.
1. Total Volume Measurement: The volume of liquid/sludge hauled shall equal the volume presented in Section 1.3.B.
 2. Volume Measurement per Site: The volume hauled to each site will be based on the recorded number of trips to each site and the actual volume of the sludge application vehicle(s). However, payment of the total sludge volume hauled shall not exceed the set volume of the two-cell lagoon system.
 3. Distance Measurement: The distance that sludge is hauled will be based on a loaded mile. Each currently available site is shown on the Project Vicinity Map and the distance to each of those sites has been set and will be used for the final calculation. If the Owner chooses to add additional sites to the Project, the distance to each of the new sites will be determined as described below:
 - a. The loaded mile distance to each new sludge application site will be based on an Owner/Contractor agreed upon distance by measuring the distance from the lagoon load out location at the Homestead Rest Area to the entrance of each application site added or relocated, with an automotive odometer.

PART 2 - PRODUCTS

2.1 LAGOON CLEANING AND LAND APPLICATION EQUIPMENT

- A. Pumps: The Contractor shall be responsible for furnishing, operating and maintaining all pumps and pumping equipment necessary for removal of the lagoon contents. This shall include but not be limited to; fuel, electricity, lubricants, pumps, pipe and other equipment needed for removal of the lagoon contents but not mentioned herein.
- B. Mixers: The Contractor shall be responsible for furnishing, operating and maintaining all mixers and mixing equipment necessary to provide adequate mixing and suspension of lagoon sludge for loading purposes. This shall include but not be limited to; fuel, electricity, lubricants, mixers, pumps, pipe and other equipment needed for mixing of the lagoon contents but not mentioned herein.
- C. Pipe: The Contractor shall be responsible for furnishing, operating and maintaining all piping and equipment necessary for removal of the lagoon contents. This shall include but not be limited to; pipe, fittings, pipe restraints and other equipment needed for removal of the lagoon contents but not mentioned herein.
- D. Land Application Vehicle(s): The Contractor shall be responsible for furnishing, operating and maintaining all land application vehicle(s) needed for proper hauling and land application of the lagoon contents in accordance with the Owner's Sludge Permit, EPA Part 503 Biosolids Rule and possible local load limit postings. This shall include but not be limited to; vehicle, tanker, fuel, lubricants and other

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 13 6000 –SLUDGE LAND APPLICATION

equipment needed for removal, hauling and land application of the lagoon contents but not mentioned herein.

- E. Labor: The Contractor shall be responsible for furnishing all labor necessary for removal of the lagoon contents and cleaning of the lagoons. This shall include but not be limited labor required for pumping, washing, hauling, land application, record keeping required and other labor needed for contents removal, hauling and land application of the lagoon contents but not mentioned herein.
- F. Miscellaneous Labor and Equipment: The Contractor shall be responsible for furnishing all labor and equipment necessary for lagoon contents removal, hauling, land application, final sludge removal, record keeping and all other labor and equipment needed for the project but not mentioned herein.

PART 3 - EXECUTION

3.1 OWNERS RESPONSIBILITIES

- A. The Owner is responsible for providing all land, soil testing and sludge testing necessary for the land application of the lagoon contents. The Owner will instruct the Contractor on the application rate allowed for the application of the sludge. Furthermore, the Owner will prepare, endorse and submit all paperwork required under their Sludge Application Permit and EPA Part 503 Biosolids Rule.
- B. The Project Drawings show locations of available land for the application of the lagoon contents. The Owner reserves the right to change the locations of the sludge application at any time during the project. Furthermore, the Owner is not responsible for delays due to the lack of available land for application of the sludge.

3.2 CLEANING AND LAND APPLICATION CONTRACTORS RESPONSIBILITIES

- A. The Contractor is responsible for providing all equipment, materials and labor necessary for the land application of the lagoon contents while following the requirements of the Owner's Sludge Application Permit and EPA Part 503 Biosolids Rule. The Contractor is responsible for applying the sludge at the rates indicated by the Owner.
- B. The Contractor is responsible for providing the Owner will all necessary paperwork required for the Owner to prepare, endorse and submit all paperwork required under their Sludge Application Permit and EPA Part 503 Biosolids Rule.

END OF SECTION 13 6000

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Earth moving work for stabilization pond rehabilitation.

1.2 DEFINITIONS

- A. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill. The Owner has furnished a stockpile at the Junction City DOT Maintenance Shop.
- B. Unclassified Excavation: Removal of clay liner material that is damaged as a result of the structure removal process.
 - 1. Authorized Additional Excavation: Excavation below elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Unauthorized Excavation: Excavation below elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- C. Fill: Soil materials used to replace the clay liner as shown on the Drawings or directed by the Engineer.
- D. Riprap: Quarried ledge rock to provide armored erosion control on the dike inslopes and around structures.
- E. Geotextiles: Geotextiles are permeable fabrics which, when used in association with soil, have the ability to separate, filter, stabilize, or drain. Typically made from synthetic polymers, geotextile fabrics come in two basic forms: woven and non-woven.

1.3 PROJECT CONDITIONS

- A. Treatment Facility: The wastewater treatment facility consists of one 1.25 acre cell and one 0.70 acre cell. Dikes are established with riprap installed on the inslopes with no gravel surfacing and includes perimeter fencing with a lockable gate. Water levels in the cells vary with the time of year in relation to discharging of the cells.
- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Engineer's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

- C. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

1.4 TESTING AND INSPECTION SERVICE

- A. It shall be the responsibility of the Owner to employ a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing. Additionally, the following tests are required for pond rehabilitation construction:
 - 1. Moisture-density (Standard Proctor) and compaction tests of the soil seal and dike embankment, gravity sewer and access roads.
 - 2. Percolation or permeability tests of the lagoon.
- B. The following tests are required for the clay lining of the existing pond:
 - 1. Moisture-density (Standard Proctor) and compaction tests of the clay liner seal.
 - 2. Percolation or permeability tests of the clay liner.

1.5 DEWATERING SITE

- A. A Temporary Water Right Permit may be required if the following types of water need to be pumped out of the construction site:
 - 1. Ground water;
 - 2. Surface water.
- B. A Temporary Water Right Permit is not required if dewatering the construction site is due to precipitation. Refer to General Permit for Storm Water Discharges Associated with Construction Activities.
- C. Permits and termination notices may be obtained from the South Dakota Department of Environment and Natural Resources, Pierre, South Dakota. Contact DENR Water Rights Program at (605) 773-3352.
- D. The Contractor shall be responsible for obtaining the permit and any costs relating there to.

1.6 GUARANTEE

- A. During a period of one year from and after the date specified in the Certificate of Substantial Completion of the work embraced by this Contract, the Contractor shall make all needed repairs or replace as necessary any damage caused by settlement, at no additional cost to the Owner.

1.7 SOIL INVESTIGATIONS

- A. Soils investigations were conducted at the borrow site. Copies of the complete report are available upon request and may be reviewed at the Engineer's office during normal business hours. Contractor shall review geotechnical report and comply with recommendations contained therein.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, SM, and CL or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Topsoil: Friable clay loan surface soil free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
- E. Imported Clay Material for Lagoon Liner Reconstruction: Clay material stockpiled at the SD DOT Junction City Maintenance Shop.

2.2 GEOTEXTILES

- A. Geotextile shall consist of long-chain synthetic polymers, composed of at least 95 percent by weight of polyolefins or polyesters. The geotextile shall be woven fabric designed for use to provide separation and stabilization to the subgrade under structures.
- B. Geotextiles shall conform to AASHTO M288, Class 1 standards with the following Minimum Average Roll Valves (MARV):

Class 1

<u>Mechanical Property</u>	<u>Test Method</u>	<u>Units</u>	<u>MARV¹</u>
Grab Strength	ASTM D4632	lbs	315
Sewn Seam Strength	ASTM D4632	lbs	284
Puncture Strength	ASTM D6241	lbs	619
Tear Strength	ASTM D4533	lbs	113

Separation and Stabilization

<u>Hydraulic Property</u>	<u>Test Method</u>	<u>Units</u>	<u>Requirement</u>
Permittivity ²	ASTM D4491	sec ⁻¹	0.05
Apparent Opening Size ³	ASTM D4751	US Std Sieve ⁴⁰	

²Permittivity of the geotextile should be greater than that of the soil. The Engineer may also require the permeability of the geotextile to be greater than that of the soil.

³Apparent opening size represents maximum average roll valves.

<u>Endurance Property</u>	<u>Test Method</u>	<u>Units</u>	<u>Requirements</u>
UV Stability	ASTM D4355	%	50% after 500 hrs of exposure

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
 UNION COUNTY, SOUTH DAKOTA
 SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

2.3 GEOTEXTILES FOR PLACEMENT UNDER RIPRAP

- A. Approved geotextile shall be a needle-punched non-woven fabric similar to Mirafi 180N or Engineer approved equal.
- B. Geotextiles shall conform to AASHTO M288, Class 1 standards with the following Minimum Average Roll Valves (MARV):

<u>Mechanical Property</u>	<u>Test Method</u>	<u>Units</u>	<u>MARV¹</u>
Grab Strength	ASTM D4632	lbs	202
Sewn Seam Strength	ASTM D4632	lbs	180
Puncture Strength	ASTM D6241	lbs	430
Tear Strength	ASTM D4533	lbs	80

<u>Hydraulic Property</u>	<u>Test Method</u>	<u>Units</u>	<u>Requirements</u>		
			% in Situ Soil Passing No. 200 Sieve		
			<u><15</u>	<u>15 to 50</u>	<u>>50</u>
Permittivity ²	ASTM D4491	sec ⁻¹	0.7	0.2	.01
Apparent Opening Size ³	ASTM D4751	US Std Sieve	No. 40 max	No. 60 Max	Site Specific

²Based on grain size analysis of in situ soil in accordance with AASHTO T88.

²Default filtration property values are based on the predominant particle size of in situ soil. Engineer may require permeability and/or performance testing based on engineering design for drainage systems in problematic soil environments.

³Apparent opening size represents maximum average roll valves.

<u>Endurance Property</u>	<u>Test Method</u>	<u>Units</u>	<u>Requirements</u>
UV Stability	ASTM D4355	%	50% after 500 hrs of exposure

PART 3 - EXECUTION

3.1 SITE PREPARATION

- A. The Engineer will establish construction lines and designate all trees, shrubs, plants and other items to remain. All surface objects and all trees, stumps, roots and other obstructions not designated to remain, shall be cleared as required and properly disposed of.
- Upon completion of the pipe and structure removals, the Engineer shall review the clay liner to determine what areas are damaged and identify the areas for replacement.
 - The Contractor shall be responsible for the proper removal, care and resetting of all portable culverts, drainage pipe and other minor structures authorized by the Engineer for temporary relocation from alignment of the work.

3.2 REMOVAL OF WATER

- A. Permits: The Owner shall obtain all State and Federal permits required for dewatering.
- Dewatering Permit:

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

- a. Prior to dewatering, the Owner shall obtain a “Notice of Intent” permit for temporary dewatering. Upon completion, the Owner shall furnish a “Notice of Termination” for temporary dewatering. The permits and termination notices shall be obtained from the Department of Environment and Natural Resources, Pierre, South Dakota. Information concerning a dewatering permit can be obtained from DENR Surface Water Quality program by calling (605) 773-3351. The permit application forms can be found in these specifications. The Owner shall be responsible for obtaining the permit and any costs relating thereto.
 2. Temporary Water Right Permit:
 - a. A temporary water right permit may be required if the following types of water need to be pumped out of the construction site:
 - 1) Ground Water
 - 2) Surface Water
 - b. A permit is **not required** if dewatering construction site due to precipitation, provided the facility has a General Surface Water Permit for Storm Water Discharges.
 - c. Dewatering the construction site due to precipitation **will** require a permit if there is **no** General Surface Water Discharge Permit for Storm water Discharges.
 - d. Permit applications can be filled out on-line and submitted to SD DENR. On-line permit application can be found at: http://www.state.sd.us/denr/des/waterrights/temp_form.htm.
 - B. Prevent surface water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
 - C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
 - D. Drainage:
 1. The Contractor shall at all times during the construction of the site grading area provide and maintain ample equipment to remove and dispose of all water entering the excavation or other parts of the work. All grading in the vicinity of the site grading area shall be performed in such a manner as to provide positive surface drainage away from the site and to prevent surface water from flowing into the site grading area.
 - E. Dewatering
 1. Pond Dewatering: During excavation and concurrent dike embankment, the Contractor shall be prepared as necessary to provide suitable pumping equipment with well points or other special handling to keep the excavation and embankment dry as required by paragraph 3.2D, above. The Contractor shall be fully responsible for all such pumping and for any damage occurring from disposal of water. No separate measurement or payment will be made for dewatering.
- 3.3 EXPLOSIVES
- A. Explosives: Do not use explosives.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

3.4 PROTECTION OF EXCAVATION

- A. The Contractor shall provide adequate signs, barricades, flashing lights and watchmen and take all necessary precautions for the protection of the work and the safety of the public. All barricades and obstructions shall be protected at night by flashing signal lights in proper working order, which shall be kept burning from sunset to sunrise. Barricades shall be of substantial construction with reflective markings to increase their visibility at night. Suitable signs shall be so placed as to show in advance where construction, barricades or detours exist.
- B. The Contractor shall at all times so conduct his work as to insure the least possible construction to traffic and inconvenience to the general public and shall at all times maintain access to existing public and private property.

3.5 PROTECTION OF EXISTING UTILITIES

- A. Existing utilities shall be protected from damage during the excavation and backfilling operations. If damaged, the Contractor shall immediately contact the appropriate utility company. Any damage shall be repaired by the Contractor, at his expense or by the utility company, at possible expense to the Contractor. It shall be the Contractor's responsibility to arrange with each utility company known to maintain utilities in the area of work to have all underground facilities located and staked by the utility company prior to excavation.
- B. It is understood and agreed that the Contractor has considered in the bid the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans. Additional compensation will not be allowed for delays, inconvenience or damage sustained due to interference from the utility appurtenances or the operation of moving them.

3.6 RESPONSIBILITY

- A. It shall be the responsibility of the Contractor to provide all materials, including borrow, earth cover, and topsoil.

3.7 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 6 inches beneath bottom of concrete slabs on grade.
 - c. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 36 inches wide.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

3.8 FIELD QUALITY CONTROL

- A. Allow testing agency to inspect and test each subgrade and each base course layer. Do not proceed until test results for previously completed work verify compliance with requirements.
- B. Perform field in-place density tests according to ASTM D1556 (sand cone method), ASTM D 2167 (rubber ballon method), or ASTM D 2937 (drive cylinder method), as applicable. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, refer to the calibration curves furnished with the moisture gauges according to ASTM D 3017. A schedule of density tests may be submitted to the Engineer for approval.
- C. When testing agency reports that subgrades or fills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.
- D. All costs for removal, replacement, recompaction and retesting of the material shall be paid for by the Contractor.

3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations.

3.11 CLAY LINER REPAIRS

- A. Repair the clay liner as specified herein.
 - 1. Remove all vegetation, roots, damaged liner material, and rocks in the interior side slopes and the pond floor.
 - 2. Compact areas to 98% of standard proctor density at a moisture content between optimum moisture and 3% above optimum moisture content.
 - 3. Slope/blend the new clay liner into the existing clay liner
 - 4. Compact liner with a sheepsfoot roller. If removal limits are narrower than a sheepsfoot, a mini sheepsfoot roller shall be used.
 - 5. Protect existing structures and piping during the repair work. Utilize hand operated compaction equipment as necessary to protect existing structures and piping.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.13 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.14 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.
 1. All material generated by this project must be disposed of at a permitted site. Depending on what material is generated and whether it is contaminated or uncontaminated will determine which permitted facility can accept it. Permitted facilities include construction and demolition debris sites, restricted use sites, and regional landfills. Contact the SDDENR Waste Management Program at (605) 773-3153 to identify locally permitted disposal sites for various categories of contaminated and uncontaminated materials.
 2. Before final acceptance of the work the Contractor shall clear the entire work site of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. Agricultural areas shall be scarified with a farm type disc and smoothed out with an agriculture type drag. The final surface shall be smooth and free of rocks and debris.

3.15 PREFILL STABILIZATION POND

1. Prefilling Stabilization Pond: After completion of the liner repairs, structure installation, and riprap installation, the pond shall be prefilled with water to a minimum depth of two (2) feet. The Contractor shall be responsible for all costs associated with the prefilling operation including electrical costs. Pond prefill shall be accomplished in 14 days or less. Pumps shall be of sufficient size to efficiently move water and the discharge point shall be at one of the pond inlet structures so as not to damage the clay liner.
 - a. The Contractor can use the water service available at the Homestead Rest Area and purchase water from Clay Rural Water. The Homestead Rest Area is served by a 6" line which reduces down to a 3" line at the entrance to the Rest Area. The Contractor shall coordinate with Clay Rural Water regarding flow, connection points, etc.
 - b. The Contractor may be able to use an existing well at the Junction City DOT Maintenance Shop and transfer the water via forcemain. The Contractor will need to coordinate with the

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

DOT Maintenance Supervisor and the Homestead Rest Area on-site construction manager for approval.

- c. If the Contractor chooses not to prefill the ponds by this method, the Contractor must complete the pond prefill through other methods at the pond prefill unit price stipulated in the Bid. The Contractor is responsible for visiting the site and determining their means and methods for completing the prefill. Other methods may include but are not be limited to: approved adjacent rivers and streams, construction site water, or a temporary well. The Contractor is responsible for all labor, tools, permits and equipment required associated with the method chosen by the Contractor to prefill the ponds. Any temporarily installed wells or other equipment shall be removed by the Contractor at no additional cost the Owner. Any dewatering methods of installation, operation and abandonment shall be in accordance with all State and Federal laws.

PART 4 - MEASUREMENT AND PAYMENT

4.1 REPAIR LAGOON CLAY LINER

- A. Payment shall be made at the Contract unit price per cubic yard for "Repair Lagoon Clay Liner", as stipulated in the Bid, which price and payment shall be full compensation for all labor, tools, materials and equipment required to complete the work including dewatering, excavation, hauling material from the Owner furnished stockpile site, site grading, placing and compacting of clay liner material, disposal of waste material, water, cleanup and other incidentals required to complete the work in accordance with the Specifications and Drawings.

4.2 GEOTEXTILE FABRIC

- A. No separate measurement will be made for geotextile fabric. Furnishing and installing the geotextile fabric shall be incidental to other bid items.

4.3 PREFILL STABILIZATION POND

- A. Payment shall be made at the Contract unit price per million-gallon to nearest one-thousandth (0.001) of a million-gallon for "Prefill Stabilization Pond", as stipulated in the Bid, which price and payment shall be full compensation for all labor, tools, materials and equipment required to complete the work including labor, tools, permits and equipment required associated with prefilling the ponds to the specified depths.

END OF SECTION 31 2000

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2000 – EARTH MOVING FOR POND REHABILITATION

This Page Intentionally Left Blank

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Excavating and backfilling for utility trenches.

1.2 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Pipe bedding material placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Pipe bedding material: Aggregate course placed over the excavated subgrade in a trench before laying pipe.
- C. Trench Stabilization Material: Aggregate used where soft, spongy, unstable or other similar material is encountered and removed upon which the pipe bedding material or pipe is to be placed.
- D. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment without systematic drilling, ram hammering, ripping, or blasting, when permitted.
- E. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- F. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.3 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Engineer's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

1.4 TESTING AND INSPECTION SERVICE

- A. It shall be the responsibility of the Owner to employ a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

1.5 GUARANTEE

- A. During a period of one year from and after the date specified in the Certificate of Substantial Completion of the work embraced by this Contract, the Contractor shall make all needed repairs or replace as necessary any damage caused by settlement, at no additional cost to the Owner.

1.6 DEWATERING PERMIT

- A. Prior to dewatering, the Owner shall obtain a “Notice of Intent” permit for temporary dewatering. Upon completion, the Owner shall furnish a “Notice of Termination” for temporary dewatering. The permits and termination notices shall be obtained from the Department of Environment and Natural Resources, Pierre, South Dakota. Information concerning a dewatering permit can be obtained from SDDENR Surface Water Quality program by calling (605) 773-3351. The Owner shall be responsible for obtaining the permit and any costs relating thereto.

1.7 TEMPORARY WATER RIGHT PERMIT

- A. A temporary water right permit may be required if the following types of water need to be pumped out of the construction site:
 - 1. Ground Water
 - 2. Surface Water
- B. A permit is **not required** if dewatering construction site due to precipitation, provided the facility has a General Surface Water Permit for Storm Water Discharges.
- C. Dewatering the construction site due to precipitation **will** require a permit if there is **no** General Surface Water Discharge Permit for Storm water Discharges.
- D. Permit applications can be filled out on-line and submitted to SDDENR.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, SM, and CL or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Backfill Materials: The material obtained from the project excavations may be used as backfill unless otherwise shown on the Drawings or specified in these Specifications, provided that all organic material, rubbish, debris, frozen material, rocks greater than six (6) inches in any dimension, and other objectionable materials are first removed. Broken Portland cement concrete and bituminous type pavements obtained from the project excavations will not be permitted in the backfill. Stones larger than 3 inches in diameter shall not be placed within 2 feet of the top of the pipe.
- E. Pipe bedding material: Aggregate shall be natural and/or crushed rock meeting the gradation and properties of SDDOT coarse aggregate, Section 820.2D, size number one. LEDGE ROCK IS NOT REQUIRED
- F. Trench Stabilization Material: Aggregate shall be ¾” to 4” crushed, angular, well graded material.
- G. Topsoil: Friable clay loan surface soil free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 - 1. The Engineer will establish construction lines and designate all trees, shrubs, plants and other things to remain. All surface objects and all trees, stumps, roots and other obstructions not designated to remain, shall be cleared as required and properly disposed of.
 - 2. The Contractor shall be responsible for the proper removal, care and resetting of all portable culverts, drainage pipe and other minor structures authorized by the Engineer for temporary relocation from alignment of the work.
 - 3. Removal of surface improvements were not indicated to be removed on the plans such as street paving, curbs, gutters and sidewalks shall be held to a minimum. When it is necessary to excavate through existing asphalt or concrete paving, sidewalks, or curb and gutter; before excavating, the cut shall be first made with a concrete saw for the full depth of the existing surface. All material removed and the method employed to replace the surface improvement to its original grade, depth and alignment shall be first authorized and approved by the Engineer. Rubble material shall be considered property of the Contractor and be disposed of by the Contractor at a permitted site or a site provided by the Contractor.
- B. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

B. Drainage:

1. The Contractor shall at all times during the construction of the work provide and maintain ample equipment to remove and dispose of all water entering the excavation or other parts of the work. The excavation shall be kept dry until all work therein has been completed and backfilling commenced. All grading in the vicinity of the excavation shall be performed in such a manner as to provide positive surface drainage away from the site and to prevent surface water from flowing into the excavation.
2. No reinforcing steel shall be placed in water, and no water shall be allowed to rise over any reinforcing steel before the concrete has been placed. No water will be allowed to come in contact with any concrete within twenty-four (24) hours after placement unless shown on the Drawings or authorized by the Engineer.

C. Dewatering

1. Trench Dewatering: During trenching operations for installation of utilities, when groundwater is encountered in sufficient quantities to require continuous pumping with well points or other special handling in order to maintain a satisfactory dry trench condition, it shall be considered wet trench. In such case, the Contractor shall submit to the Engineer for approval, his proposed method of disposing of the water prior to initiating the dewatering procedure. The Contractor shall be responsible for any damage occurring from disposal of water. Trenches for utilities shall be dewatered to an elevation of at least one (1) foot below the pipe invert elevation. **No separate measurement or payment will be made for dewatering.**
2. Structure Excavation Dewatering: During excavation for structures other than utility trenches, the Contractor shall provide suitable equipment including, if necessary, pumping with well points or other special handling to keep the excavation dry as required by Trench Dewatering, above. The Contractor shall be responsible for any damage occurring from disposal of water. Excavation for structures shall be dewatered to an elevation of at least two (2) feet below the bottom of the excavation. **No separate measurement or payment will be made for dewatering.**

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 PROTECTION OF EXCAVATION

- A. The Contractor shall provide suitable sheeting, shoring, and bracing to protect all excavations to provide safe working conditions, and in strict conformance with safety regulations. Damage or injury resulting from settlement, slides, cave-ins, water pressure, or other causes shall be the responsibility of the Contractor and damage shall be repaired at his own expense.
- B. The Contractor shall provide adequate signs, barricades, flashing lights, and watchmen and take all necessary precautions for the protection of the work and the safety of the public. All barricades and obstructions shall be protected at night by flashing signal lights in proper working order, which shall be kept burning from sunset to sunrise. Barricades shall be of substantial construction with reflective markings to increase their visibility at night. Suitable signs shall be so placed as to show in advance where construction, barricades, or detours exist.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

3.5 PROTECTION OF EXISTING UTILITIES

- A. Existing utilities shall be protected from damage during the excavation and backfilling operations. If damaged, the Contractor shall immediately contact the appropriate utility company. Any damage shall be repaired by the Contractor, at his expense or by the utility company, at possible expense to the Contractor. It shall be the Contractor's responsibility to arrange with each utility company known to maintain utilities in the area of work to have all underground facilities located and staked by the utility company prior to excavation.
- B. It is understood and agreed that the Contractor has considered in the bid the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans. Additional compensation will not be allowed for delays, inconvenience or damage sustained due to interference from the utility appurtenances or the operation of moving them.

3.6 RESPONSIBILITY

- A. It shall be the responsibility of the Contractor to provide all materials, including borrow, earth cover, and topsoil.

3.7 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspection.
- B. Excavation for underground tanks, basins, manholes, and mechanical or electrical appurtenances. Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb bottom of excavation intended for bearing surface.

3.8 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations. All excavation shall be made by open cut method unless otherwise shown on the Drawings.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 - 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.
 - 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Under no circumstances will it be permissible to leave a pipeline excavation unprotected or unguarded when work is not actually in progress on the pipeline. If it becomes necessary for the Contractor to leave the pipeline excavation for any reason, it shall be the Contractor's responsibility to leave one of his employees at the site to watch the site so unauthorized personnel do not enter the excavation.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

- E. Unless otherwise required, the pipeline excavation shall be completely backfilled at the end of each days operation, and reopened when work resumes on this portion of the line. The Contractor shall be responsible to mark the end of the pipe in such a manner that it may be easily found when the ditch is reopened.
- F. Excavation for structures and accessories, including manholes, shall be of sufficient size so as to leave at least twelve (12) inches of clear space between the outer surface of the structure and the embankment or sheathing and bracing which may be used to hold and protect them. Unless otherwise shown on the Drawings or authorized by the Engineer, the bottom of the excavation shall not be undercut below the grades established. Manhole installations shall be completed and completely backfilled the same day in which the excavation was started.

3.9 FIELD QUALITY CONTROL

- A. Allow testing agency to inspect and test each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
- B. Perform field in-place density tests according to ASTM D1556 (sand cone method), ASTM D 2167 (rubber ballon method), or ASTM D 2937 (drive cylinder method), as applicable. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, refer to the calibration curves furnished with the moisture gauges according to ASTM D 3017. A schedule of density tests may be submitted to the Engineer for approval.
- C. When testing agency reports that backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained. In the event of a compaction test that does not meet the required density, the Contractor will be required to correct all areas that have been compacted since the last passing test at no cost to the Owner. The Contractor has the option of performing additional compaction tests between the last passing and the failing compaction test at no cost to the Owner.
- D. All costs for removal, replacement, recompactation and retesting of the material shall be paid for by the Contractor.

3.10 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer.

3.11 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations.

3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

- B. Place and compact pipe bedding material on trench bottoms and where indicated. Shape pipe bedding material to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Place and compact final backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe bedding material material.
 - 1. Carefully compact final backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- D. Backfill voids with satisfactory soil while installing and removing shoring and bracing.
- E. Place and compact final backfill of satisfactory soil to final subgrade elevation.

3.13 UTILITY STRUCTURES BACKFILL

- A. Backfill, or fill, as the case may be, for precast or cast-in-place structures, such as, but not limited to, manholes, transition structures, junction structures, vaults, and valve boxes shall start at the subgrade for the structure.
- B. Except where the pipe must remain exposed for leakage and exfiltration tests and subject to the provisions herein, the Contractor shall proceed as soon as possible with backfilling operations. Care shall be exercised so that the structure or pipe will not be damaged or displaced. If the pipe is supported by concrete cradle placed between the trench wall and the pipe, backfill above the concrete bedding shall not be placed nor sheeting pulled for at least 24 hours after placement of the concrete.
- C. Unless otherwise specified or authorized by the Engineer, backfill against or over the top of any cast-in-place structure shall not be placed prior to seven (7) days after completion of concrete placement.
- D. Voids left by the removal of sheeting, piles and similar sheeting supports shall be immediately backfilled with clean sand which shall be jetted into place to assure dense and complete filling of the voids.
- E. Where it is necessary for any reason to undercut below the bottom of concrete poured in place structures, the void below the bottom of the structure shall be filled with concrete at the same time and of the same quality as that of the structure itself, unless otherwise shown on the Drawing or approved by the Engineer.

3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent (+/-) of optimum moisture content. Optimum moisture will be determined in accordance with SD104.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Compaction by bucket packing is not allowed.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
 - 1. Compact backfill of fill layers in unimproved areas to a density at least equal to that of the surrounding soil.
 - 2. Compact backfill or fill layers in areas containing surface improvements or future surface improvements at the following percent maximum dry density:
 - a. Initial and Final Backfill at 98 percent.

3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.17 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

1. All material generated by this project must be disposed of at a permitted site. Depending on what material is generated and whether it is contaminated or uncontaminated will determine which permitted facility can accept it. Permitted facilities include construction and demolition debris sites, restricted use sites, and regional landfills. Contact the SDDENR Waste Management Program at (605) 773-3153 to identify locally permitted disposal sites for various categories of contaminated and uncontaminated materials.
2. Before final acceptance of the work the Contractor shall clear the entire work site of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. Agricultural areas shall be scarified with a farm type disc and smoothed out with an agriculture type drag. The final surface shall be smooth and free of rocks and debris.

PART 4 - MEASUREMENT AND PAYMENT

4.1 PIPE BEDDING MATERIAL

- A. Imported pipe bedding material furnished and placed as authorized bedding material shall be measured to the nearest one-tenth (0.1) ton, based on weight tickets provided by the Contractor, of bedding material satisfactorily furnished and placed. Weight tickets shall show weight in pounds or tons. Payment shall be made at the Contract unit price per ton for "Pipe Bedding Material" as stipulated in the Bid, which price and payment shall be full compensation for furnishing granular materials and tools, labor and equipment required to haul and install the bedding in accordance with the Drawings and Specifications. Pipe bedding material required to replace unauthorized excavated materials, or for the control of water shall be furnished and installed by the Contractor at his cost without further compensation. No payment shall be made for pipe bedding material where the material used for embedment has been taken from the excavation stockpile.

4.2 TRENCH STABILIZATION MATERIAL

- A. Trench stabilization material furnished and placed as authorized foundation material shall be measured to the nearest one-tenth (0.1) ton, based on weight tickets provided by the Contractor, of stabilization material satisfactorily furnished and placed. Payment shall be made at the Contract unit price per ton for "Trench Stabilization Material", as stipulated in the Bid, which price and payment shall be full compensation for furnishing granular material and all tools, labor and equipment required to haul and install the material in accordance with the Specifications. Stabilization material required to replace unauthorized excavated materials, or for the control of water shall be furnished and installed by the Contractor at his cost without further compensation. No payment will be made for trench stabilization material placed without prior Engineer authorization.

END OF SECTION 31 2300

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 31 2300 – TRENCHING, EXCAVATION AND BACKFILLING

This Page Intentionally Left Blank

SECTION 33 0513 - MANHOLES AND STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Sanitary Sewer Manholes
 - 2. Manhole Frames and Covers
 - 3. Cast-In-Place Structures

1.2 SHOP DRAWINGS

- A. Shop drawings shall be submitted for the following:
 - 1. Manholes, structures, frames and covers with details, dimensions and materials of construction.

1.3 PRECAST MANHOLES AND STRUCTURES

- A. Manholes shall be designed to withstand HS-20 AASHTO live loading. Precast structures shall be designed and reinforced by the manufacturer to support all superimposed dead loads and the design loads indicated in the Drawings. Lifting holes cast into manholes and structures shall not penetrate through the wall. At least 1-inch of wall thickness shall remain at lifting holes.

1.4 GENERAL

- A. The manholes and structures shall be installed to the dimensions and locations as shown on the Drawings. All joints and penetrations shall be sealed watertight as specified. Exposed joints on the interior shall be grouted to provide a smooth surface. Fill all lifting holes with grout. Adjustable modular mechanical type seals shall be installed in accordance with manufacturer's installation instructions. Pipe supports shall be in place prior to installation of the adjustable modular mechanical type seals. Concrete adjusting rings shall be connected to cast iron ring, riser and other adjusting rings with grout or joint sealant.

PART 2 - PRODUCTS

2.1 MANHOLES

- A. Manholes shall be constructed of precast concrete sections with cast iron frames and covers and in accordance with the Drawings.
 - 1. The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than one (1) inch per foot and not more than two (2) inches per foot.
- B. It is required that manholes be completely water-tight. Therefore, flexible manhole sleeves approved by the Engineer shall be used at pipe unions with manhole bases and walls. Precast reinforced concrete manhole sections shall conform to ASTM C478.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 0513 - MANHOLES AND STRUCTURES

- C. All joints and lift holes shall be completely filled with mortar and shall be smooth and free from surplus mortar on the inside of the manhole. Joints between precast manhole sections shall be sealed by use of Gasketed Sections in accordance with ASTM Specification C443.
 - 1. The exterior joints between precast manhole sections shall be wrapped with a polyolefin backed exterior joint wrap in accordance with ASTM E-1745 and C-900 specifications.
 - 2. Prior to placement of the exterior joint wrap, a water-based adhesive surface primer shall be applied to enhance bonding between the concrete surface and exterior joint wrap.

2.2 STRUCTURES

- A. Structures shall be constructed of precast concrete sections in accordance with the Drawings. Shop drawings and design computations shall be sealed by a Professional Engineer licensed in South Dakota and submitted to the Engineer for review of each precast structure.

2.3 MANHOLE FRAMES AND COVERS

- A. Frames and covers shall be made of cast iron conforming to ASTM A48, Class 35.
 - 1. Standard castings differing in non-essential details and approved by the Engineer will be acceptable.
 - 2. The manhole frame and cover shall be a Deeter 1158 or Engineer approved equal with self-sealing solid lid.
 - 3. The manhole covers and frames shall be set so the top of the cover will be flush with, above or below the finished grade as directed by the Engineer.
 - 4. Manhole covers and frames shall have machined bearing surfaces.
 - 5. Covers shall be solid with no vent holes.
 - 6. An improved concealed pick hole shall be provided as detailed.
 - 7. Frame shall be 24" clear opening.
 - 8. Manhole covers and frames shall be for heavy loading.

2.4 SEALANT

- A. Joint sealant shall be "Kent Seal" or Engineer approved equal. EZ Stick preformed butyl sealant or PSI Riser-Wrap or Engineer approved equal shall also be utilized in addition to joint sealant. Except where indicated otherwise on the Drawings, wall penetration seals shall be "A-LOK Manhole Pipe Connector" or "PSX Positive Seal Gasketing" or Engineer approved equal. All joints and wall penetration seals shall be watertight.

2.5 POND LEVEL INDICATOR STRUCTURES AND INLET HEADWALL STRUCTURE

- A. Structure shall be constructed of poured-in-place reinforced concrete in accordance with the Drawings. All concrete materials and concrete grout used in construction shall meet the requirements for Structural Concrete in compliance to the American Society for Testing Materials (ASTM), The American Concrete Institute (ACI), The Portland Cement Association, The Concrete Reinforcing Steel Institute, the local Building code, or other published standard, all concrete shall have a minimum 28-day compressive strength of not less than 4000 psi.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 0513 - MANHOLES AND STRUCTURES

PART 3 - EXECUTION

3.1 GENERAL

- A. The contractor shall saw cut and remove surface improvements, excavate and trench, remove water, bed, backfill, and restore surface improvements in accordance with the requirements outlined in these Specifications and details shown on the Drawings.

3.2 CONNECTIONS

- A. The Contractor shall make all connections to existing piping and structures from which wastewater is to be received or discharged.

3.3 MANHOLES

- A. Manholes shall be installed at the locations shown and in conformance with the details shown on the Drawings or as directed by the Engineer.

3.4 CONCRETE CRADLES

- A. The Contractor shall install a concrete cradle on each side of the plug valve to hold the pipe in place. Each cradle shall be lined with a 1/4" EPDM rubber liner to provide a place for the pipe to rest.

3.5 CLEAN-UP

- A. The Contractor shall maintain the work area in a clean and presentable condition during his work operation and shall clear the area of surplus construction materials, debris and rubbish resulting from his operations. The site shall be left in a satisfactory clean and neat appearance.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MANHOLES

- A. Manholes shall be measured by the number of each size and type satisfactorily furnished and installed complete in place. Payment shall be made at the Contract unit price for each "Sanitary Sewer Manhole", of the various sizes and types as stipulated in the Bid, for which price and payment shall be full compensation for furnishing all labor, tools, equipment and materials required to construct the manholes, including excavation, dewatering, bypass pumping, trenching, backfilling, compaction, concrete, concrete cradles, stub outs, casting and cover, disposal of excess material, clean-up and other incidentals required to complete the item of work in accordance with the Drawings and Specifications.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 0513 - MANHOLES AND STRUCTURES

4.2 INLET HEADWALL STRUCTURE

- A. Inlet Headwall Structures shall be measured by the number of each size and type satisfactorily furnished and installed complete in place. Payment shall be made at the Contract unit price for each "Inlet Headwall Structure", of the various sizes and types as stipulated in the Bid, which price and payment shall be full compensation for furnishing all labor, tools, equipment and materials required to construct the inlet headwall structure, including excavation, dewatering, trenching, backfilling, compaction, concrete, furnishing and installing bedding sand, reinforcement steel, formwork, curing compound, disposal of excess material, clean-up and other incidentals required to complete the item of work in accordance with the Drawings and Specifications.

4.3 POND LEVEL INDICATOR

- A. Pond Level Indicators shall be measured by the number of each size and type satisfactorily furnished and installed complete in place. Payment shall be made at the Contract unit price for each "Pond Level Indicator", of the various sizes and types as stipulated in the Bid, which price and payment shall be full compensation for furnishing all labor, tools, equipment and materials required to construct the pond level indicators, including excavation, dewatering, trenching, backfilling, compaction, concrete, furnishing and installing bedding sand, reinforcement steel, formwork, curing compound, disposal of excess material, clean-up and other incidentals required to complete the item of work in accordance with the Drawings and Specifications.

END OF SECTION 33 0513

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

SECTION 33 3000 - SANITARY SEWER UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Gravity Sewer Pipe
 - 2. Pipe System Appurtenances
 - 3. Valves

1.2 SHOP DRAWINGS

- A. Shop drawings shall be submitted for the following
 - 1. Piping, including all appurtenances and accessories, showing materials and dimensions for installation, and load tables for the class of pipe furnished.
 - 2. Valves, including all appurtenances and accessories, complete with operators, dimensions, details and materials of construction.

1.3 SEWAGE LEAKS OR SPILLS

- A. The Contractor shall notify SD DENR and be responsible for all clean up costs for sewage leaks and spills. Spill reporting requirements are to the following numbers.
 - 1. National Response Center 800-424-8802
 - 2. SD Notification 605-773-3296
 - 3. After Hours 605-773-3231

1.4 MANUFACTURER'S CERTIFICATION LETTER

- A. A letter from the pipe and fitting manufacture's stating the product(s) are supplied new from the manufacturer and is covered by the manufacturer's warranty shall be supplied to the Engineer.

PART 2 - PRODUCTS

2.1 GRAVITY SEWER PIPE

- A. General: Pipe furnished for installation on this project shall be of the size and type shown on the Drawings. The pipe shall be manufactured from one of the materials designated for the specified line and application as described in the following subsections.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

- 2.2 AWWA, C900 PVC Pipe: Polyvinyl chloride pressure pipe and fittings shall conform to the requirements of AWWA C-900 "Poly Vinyl Chloride (PVC) Pressure Pipe", Class 235 meeting the requirements of DR-18. Outside pipe diameter shall be the same as that of cast iron pipe of similar nominal size. Pipe materials shall conform to "Standard Specification for Rigid Poly (Vinyl Chloride) Compounds and Chlorinated Poly (Vinyl Chloride) Compounds" (ASTM D-1784). The pipe shall bear the National Sanitation Seal for potable water pipe. Provisions must be made for expansion and contraction at each joint with an elastomeric ring. The bell shall consist of an integral wall section with a solid cross-section elastomeric ring which meets the requirements of ASTM 1869 and E-477. The bell section shall be designed to be at least as strong as the pipe wall. Each length of pipe, including integral bell, shall be pressure tested to four times the class pressure of the pipe for a minimum of five (5) seconds. Pipe and fittings must be assembled with a non-toxic lubricant. Standard lengths shall be 20 feet for all sizes. At least 85% of the total footage of pipe of any class and size shall be furnished in standard lengths, the remaining 15% in random lengths. Random lengths shall not be less than 10 feet long. Pipe may be furnished with separate couplings in lieu of integral bell in order to achieve high deflection. Separate couplings shall pass a hydrostatic integrity test at the factory at four times the pressure class of the coupling for five seconds. All bolts used shall be stainless steel or ceramic coated bolts similar to "Cor-Blue" as manufactured by NSS Industries. Sacrificial zinc anode caps shall be provided on every other bolt at each mechanical joint. The anode caps shall be similar to "Trumball" anode caps as manufactured by Trumball Industries, Inc. C-900 pipe shall be as manufactured by Certanteed, J-M, Northern, or Engineer approved equal.

2.3 PRESSURE PIPING FOR SEWER FORCEMAINS

- A. General: Pipe furnished for installation on this project shall be of the size and type shown on the Drawings. The pipe shall be manufactured from one of the materials designated for the specified line and application as described in the following subsections.
- B. Class 160 PVC Pipe:
1. All pipe must meet the requirements as set forth in "Polyvinyl Chloride (PVC) Pressure-Rate Pipe (SDR Series)" ASTM D2241 with a standard dimension ratio (SDR) of 26.
 2. All PVC pipe shall be gasket jointed for meeting the requirements of "Standard Specification for Elastomeric Seals for Joining Plastic Pipe" with ASTM D3139, "Standard Specification for Joints for Plastic Pressure Pipe Using Flexible Elastomeric Seals".
 3. Pipe materials shall conform to "Standard Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds (ASTM D1784).
- C. Forcemain Pipe Installed by Directional Boring: Pipe provided shall be compatible with other PVC pipe installed by open cut.
1. Restrained Joint PVC Pipe or Engineer approved equal:
 - a. Pipe 3-inch diameter and smaller shall match the pressure rating and diameter of the forcemain to which it is connected.
 - b. Pipe shall be SDR-17 meeting the requirements of ASTM D2241.
 - c. Pipe shall be supplied with spline type hi-impact coupling system and elastomeric gasket.

2.4 PIPE SYSTEM APPURTENANCES

- A. General: PVC fittings and specials furnished for installation on this project shall be of the size and type shown on the Drawings.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

1. General Requirements:

- a. All tees, wyes, service line bends, plugs, etc. shall be elastomeric gasket type.
- b. All PVC fittings and specials shall be SDR 35/PS46 manufactured in accordance with ASTM D3034 and ASTM F1336. Joints and gaskets shall be in accordance with ASTM D3212 and ASTM F477 or ASTM F913.
- c. All gasketed specials and fittings shall be installed in accordance with the manufacturer's recommendations and ASTM D2321.

- B. Restrained Adapter Flange: Adapter flanges shall be installed at the locations shown on the Drawings. Flange material shall be manufactured from ductile iron ASTM A536, Grade 60-42-10 and have flange bolt circle pattern compatible with ANSI/AWWA C110/A21.10 (125#/Class 150 Bolt Pattern). Restraint for the flange adapters shall consist of numerous individual gripping wedges. Torque limiting set screws shall be used to insure proper torque of gripping wedges. Flange adapter shall be Series 2100 MEGAFLANGE® by EBAA Iron, Inc. or approved equal.

2.5 ANTI SEEP COLLARS

- A. Anti- Seep Collars shall be installed on new pipe installations where indicated in the plans. Anti- Seep Collars shall be constructed from durable ¼" thick high-density polyethylene plastic. They shall be pre-cut and drilled to fit the pipe and shall have stainless steel bolts and bands. The collars shall extend at least two feet from the pipe.

2.6 VALVES

A. Plug Valves

1. Valves shall be cast iron, ductile iron or semi-steel with heavy duty bearings to resist corrosion and prevent binding and to assure lasting easy valve operation. Plug valve shall be rectangular port with rectangular plug. The plug facings shall be constructed of a resilient material to provide tight shut-off and prevent seat damage. Valves shall have ANSI 21.15 Class 125 flanged connections. Valves shall be manufactured in accordance with AWWA standards and comply with MSS-SP-108 (Eccentric Plug Valves) in all respects including thickness and lay lengths. A large square nut shall be connected to the valve stem to permit manual operation in case of pneumatic operator failure. All plug valves in sludge lines and grit lines shall be installed with the valve shaft in the horizontal position with plug rotating to the top side of the valve when in the open position.
2. Plug valves installed on drain lines under floor slabs shall be designed for direct bury, and be installed with box, extension stem and operating nut. Contractor shall furnish three (3) valve wrenches with cross bar handle to operate direct buried plug valves.
3. Plug valves shall meet the below listed minimum Cv values and be "Standard Port" type. "Standard Port" type is to mean that the port area through the valve is not less than 100% of pipe area for 4" and smaller valves, 85% on 16" and smaller, 80% on 18"-24", and 75% on 30" and larger.

Valve Size	Cv	Valve Size	Cv
3"	320	14"	5,500
4"	560	16"	7,300
6"	1,180	18"	9,600
8"	2,030	20"	12,600
10"	3,130	24"	17,500
12"	4,140		

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

4. Stem seal packing shall be in a machined packing chamber and shall consist of multiple V-rings and an adjustable gland, or two complete sets of adjustable U-cup type seals.
5. All valves shall be as manufactured by DeZurik, Val-Matic, Milliken or Engineer approved equal.
6. Manual Actuators:
 - a. Manual actuators shall be levers with position indicators for valves 8 inches in diameter and smaller. The levers shall be furnished with an adjustable open position memory stop to permit closing and reopening to the same throttled position. All valves located more than 7 feet above the operating floor shall be equipped with chain wheel operators.
 - b. Manual actuators for valves larger than 8-inch shall have right angle gear actuators; 12-inch and larger valves shall be equipped with handwheels. All manual actuators shall be sized for the full rating of the valve in bi-directional service.
 - c. Manual actuator systems for extended shaft operation shall include the operating nut, couplings, and extension rod. Valve shall be gear operated. Gear operated valves shall have right angle gear type actuators. Nut operated shall be provided with nut extension pipe, bearing plate and couplings. Top of nut operators shall be within 2" below the top of floor. Tee wrenches shall be provided, minimum of three (3).
7. Valve Coatings:
 - a. The standard factory coating for all valves, unless otherwise indicated on the contract drawings, shall be semi-gloss water reducible enamel. One coat 1.5-2.0 mils thick. Surface preparation to SSPC-SP10 or phosphate hot water wash.
 - b. As indicated on the contract drawings, valves shall be supplied with a factory coating of Tnemec Series 141 Pota-Pox 80 Two-part epoxy, conforms to NSF 61, AWWA C-550, AWWA D102 Inside System No. 1 & 2 and AWWA C2101. Self-priming system with two (2) coats each coat consisting of 4-8 mils dry film thickness. Surface preparation to SSPC-SP10 or phosphate hot water wash.

PART 3 - EXECUTION

3.1 DELIVERY, STORAGE AND INSTALLATION

- A. Process piping and valves shall be delivered to the site in an undamaged condition. Process piping and valves shall be stored above ground and protected from weather. At all times when work is not in progress, all open ends of pipe and fittings shall be securely closed so that no trench water, earth or other substance will enter the pipe. Installation of process piping and valves and appurtenances specified herein shall be as shown on the Contract Drawings and in strict accordance with the manufacturer's recommendations. It is the intent of this section that it shall be the Contractor's option to use any of the pipe connection types listed for the pipe material type used even though the Contract Drawing details show one particular connection type. The pipe material type used shall be as indicated on the Contract Drawings.
- B. If the maximum width of the trench at the top of the pipe specified in these Specifications as shown in the Drawings is exceeded for any reason other than by direction of the Engineer, the Contractor shall, at his own cost, install such concrete encasement or granular embedment material as may be required to satisfactorily support the added backfill load.

3.2 FIELD PREPARATION

- A. Prior to assembly all bolts and nuts shall be coated by the Contractor with non-seizing compound.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

3.3 LAYING PIPE

- A. The installation of pipe shall conform to the applicable sections of the "Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe" (ASTM D2321), Uni-Bell PVC Pipe Association Specification UNI-B-3, "Recommended Practice for the Installation of Polyvinyl Chloride (PVC) Pressure Pipe), and manufacturer's recommendations.
- B. Pipe shall be carefully inspected in the field before and after laying. If any cause for rejection is discovered in a pipe after it is laid, it shall be repaired or replaced by the Contractor. Any corrective work shall be approved by the Engineer and shall be at the expense of the Contractor without additional cost to the Owner.
- C. The Engineer shall be given the opportunity to inspect existing pipe before connection to new pipe is made. Pipe shall be laid upgrade. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe. As the work progresses, the interior of the pipe shall be cleaned of all dirt and superfluous materials of every description.

3.4 JOINTING

- A. The type of joint used shall conform to the requirements for the applicable type of pipe specified. Jointing operations shall be carried out in strict adherence to the manufacturer's recommendations.

3.5 PIPE SUPPORTS

- A. Pipe Supports indicated on the Contract Drawings are the minimum allowed. More supports may be required to properly support equipment.

3.6 COUPLINGS

- A. Couplings indicated on the Plans or specified herein are the minimum number allowed. More couplings may be required by the Engineer or may be required to facilitate installation of equipment.

3.7 VALVES

- A. Valves shall be installed in strict accordance with manufacturer's instructions.

3.8 PLUG VALVES

- A. Plug valves shall be installed with the valve shaft in the horizontal position with plug rotating to the top side of the valve when in the open position.

3.9 CLEAN-UP

- A. The Contractor shall maintain the work area in a clean and presentable condition during his work operation and shall clear the area of surplus construction materials, debris and rubbish resulting from his operations. The site shall be left in a satisfactory clean and neat appearance.

HOMESTEAD REST AREA LAGOON IMPROVEMENTS
UNION COUNTY, SOUTH DAKOTA
SECTION 33 3000 - SANITARY SEWER UTILITIES

PART 4 - MEASUREMENT AND PAYMENT

4.1 GRAVITY SEWER PIPE

- A. The sewer pipe shall be measured along the horizontal projection of the pipe in lineal feet from center to center of manholes, cleanouts or fittings, and from point of connection without deduction for fittings to center of manhole for sewer pipe satisfactorily installed. Payment for sewer pipe shall be made at the Contract unit price per lineal foot for "6" PVC Sewer Pipe", as stipulated in the Bid, for the various sizes, which price and payment shall be full compensation for furnishing all labor, tools, equipment and materials required to construct the sewer lines, fittings, connections to new or existing lines, including excavation, trenching, dewatering, by-pass pumping, laying and jointing pipe, backfilling, compaction, removal and replacement of fences and culverts, protection and adjustment of utilities and landscaping which may be encountered by the work, disposal of excess excavation, clean-up, and testing of the gravity sewer pipeline in accordance with the Drawings and Specifications.

4.2 FORCEMAIN SEWER PIPE

- A. The forcemain sewer pipe shall be measured along the horizontal projection of the pipe in lineal feet for forcemain sewer pipe satisfactorily installed. Payment for forcemain sewer pipe shall be made at the Contract unit price per lineal foot for "2" PVC Forcemain", as stipulated in the Bid, for the various sizes, which price and payment shall be full compensation for furnishing all labor, tools, equipment and materials required to construct the forcemain sewer lines, fittings, connections to new or existing lines, including excavation, trenching, dewatering, by-pass pumping, laying and jointing pipe, backfilling, compaction, removal and replacement of fences and culverts, protection and adjustment of utilities and landscaping which may be encountered by the work, disposal of excess excavation, clean-up, and testing of the forcemain sewer pipeline in accordance with the Drawings and Specifications.

4.3 PLUG VALVES

- A. Plug valves shall be measured by the number of each size actually installed. Payment for this item shall be made at the Contract unit price for each "6" MJ Plug Valve with Flange Adaptors" of various sizes as stipulated in the Bid, which price and payment shall be full compensation for all labor, tools, equipment and materials for furnishing and installation of the items including handling, excavation, jointing, joint restraints, dewatering, backfilling, compaction, and testing all in accordance with these Drawings and Specifications.

END OF SECTION 33 3000

**AGREEMENT FOR USE AND RESTORATION OF
CONTRACTOR'S HAUL ROAD**

WHEREAS, sludge and liquid removal from the Homestead Rest Area Lagoon system is needed in Union County, South Dakota,

WHEREAS, _____ (hereinafter referred to as the Contractors), in order to make improvements to said project, finds it necessary or desirable to utilize a portion of the Union County Highway System of Union County for conveyance of construction equipment and project materials, and

WHEREAS, the maintenance of the proposed route which is to be used as a haul road is the responsibility of Union County, and

WHEREAS, an inspection of the proposed route to be so utilized has been made and the inspection team has determined and recorded the existing condition of the haul road, including the width of subgrade, type, thickness, and width of surfacing material in-place and type, size location, and condition of drainage structures as well as other highway appurtenances, and

WHEREAS, Authorized representatives of Union County Highway Department (Governmental Agency), and the Contractor having made said inspection and recorded the existing condition of the haul road have all signed the inspection report, agreeing to the conditions stated therein.

NOW, THEREFORE, in consideration of the premises, the mutual, and independent covenants and any and all other requirements, agreements, and covenants, all as hereinafter more fully set forth, the parties hereto agree as follows:

That, the portion of the Union County Highway #1C as shown on the attached sheets are the portion which is planned for use as a haul road, and

That, satisfactory maintenance of said haul road as determined by the Engineer, during the period when hauling operations are in progress will be the responsibility of the Contractor, and

That, after use of said highway as a haul road for the purposes herein set forth, the Contractor hereby agrees to restore said highway roadbed and highway appurtenances to the condition, as reported in the Haul Road Inspection Report, in accordance with measurements and observations of the inspection party at time of inspection and to the satisfaction of the Engineer.

IN WITNESS WHEREOF, the said parties hereto have caused this agreement to be signed by their respective and duly authorized officers on the _____ day of _____, 2018.

Print Name: _____
Contractor's Authorized Representative

Print Name: _____
Contractor's Authorized Representative

Signature: _____

Signature: _____

Print Name: _____
Union County Highway Department

Signature: _____

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
CONTRACTOR ADMINISTERED PRECONSTRUCTION MEETING**

MARCH 15, 2016

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, 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.

* * * * *

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).

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION FOR
IMPLEMENTATION OF CLEAN AIR ACT
AND
FEDERAL WATER POLLUTION CONTROL ACT**

SEPTEMBER 1, 1997

By signing this bid, the bidder will be deemed to have stipulated as follows:

- a) That any facility to be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub. L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR, Part 15), is not listed on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
- b) That the State Transportation Department shall be promptly notified prior to contract award of the receipt by the bidder of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

* * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION REGARDING
MINIMUM WAGE ON STATE FUNDED PROJECTS**

APRIL 30, 2013

This proposal contains a copy of the most recent United States Department of Labor (USDOL) Davis-Bacon Act Wage Decision, adopted by the South Dakota Transportation Commission.

If the amount of this contract, as awarded, is \$100,000.00 or more, the following wage provisions will apply:

1. The Contractor and each related subcontractor will pay all laborers and mechanics working at the site of work unconditionally and not less than once a week, and without subsequent deduction or rebate of any account, other than permitted payroll deductions. The Contractor and each related subcontractor must compute the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment at rates not less than those rates contained in the USDOL Davis-Bacon Act Wage Decision.
2. 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.
3. The Contractor and each related subcontractor must submit weekly, for each week in which any contract work is performed, a copy of a completed certified weekly payroll report to the South Dakota Department of Transportation (SDDOT) Labor Compliance Officer (LCO), at the following mailing address, within fourteen (14) calendar days of the end of the workweek

Department of Transportation
Labor Compliance Program
700 E. Broadway Avenue.
Pierre, SD 57501-2586

4. Each submitted certified weekly payroll report must set out accurately and completely all information required by the Instructions for SDDOT Statement of Compliance & Certified Payroll Report (located on the SDDOT Labor Compliance website). Each certified weekly payroll report must include the most recent [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 SDDOT will not accept any payroll report which does not include the most recent [SDDOT Statement of Compliance Form](#).

5. The Contractor and each related subcontractor will maintain payrolls and basic records relating thereto during the course of the work and preserve these records for a period of three (3) years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, and guards working at the site of the work. These records must contain the name, address, social security number of each such worker, his or her correct work classification, and hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof). The Contractor and each related subcontractor will make these records available for inspection, copying, or transcription by the LCO and will permit the LCO to interview employees during working hours on the site of the work.
6. The SDDOT will upon its own action, or upon written request of an authorized representative of the USDOL, withhold, or cause to be withheld, from the Contractor or related subcontractor under this contract, or any other contract with the same prime Contractor, as much of the accrued payments, advances, or guarantee of funds as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers employed by the Contractor or any related subcontractor, the full amount of wages required by the contract. In the event the Contractor fails to pay any laborer or mechanic, including any apprentice, trainee, or helper employed or working on the site of the work, all or part of the wages required by the contract, the LCO may, 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 under this contract or any other contract with the same prime Contractor until such violations have ceased.

* * * * *

**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

General Decision Number: SD180001 Mod-1 04/06/2018 SD1

Agency: U.S. DOL
Wage Decision Number: SD180001 SD1
Counties: SD Statewide
Wage Decision Date: 04/06/2018 (Mod-1)

***SUSD2018-001 03-20-2018**

LABORERS

GROUP GL1

Air Tool Operator; Common Laborer; Landscape Worker; Flagger; Pilot Car Driver;
Trucks under 26,000 GVW; Blue-top Checker; Materials Checker

GROUP GL2

Mechanic Tender (Helper); Pipe Layer (except culvert); Form Builder Tender;
Special Surface Finish Applicator; Striping

GROUP GL3

Asphalt Plant Tender; Pile Driver Leadsman; Form Setter; Oiler/Greaser

GROUP GL5

Carpenter; Form Builder

GROUP GL6

Concrete Finisher; Painter; Grade Checker

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

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

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

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

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

TRUCK DRIVERS

GROUP GT1

Tandem Truck without trailer or pup; Single Axle Truck over 26,000 GVW with Trailer

GROUP GT2

Semi-Tractor and Trailer; Tandem Truck with Pup

ELECTRICIANS

GROUP E01

Electrician

<u>Rates</u>	<u>Fringes</u>
18.86	0.00
17.51	0.00
18.95	0.00
27.96	0.00
21.41	0.00
20.62	0.00
20.66	0.00
22.02	0.00
23.79	0.00
24.77	0.00
21.46	0.00
21.66	4.22
26.42	3.85

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 only as provided in the labor contract clauses (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 based on all 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 PURPLE, 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****General Decision Number: SD180001 Mod-1 04/06/2018 SD1**

=====

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: <http://www.sddot.com/business/contractors/labor/wcwr/Default.aspx>

=====

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.

=====

END OF GENERAL DECISION

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
SUPPLEMENTAL SPECIFICATIONS TO
2015 STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES**

APRIL 18, 2018

The Supplemental Specifications dated April 18, 2018 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:

<http://www.sddot.com/business/contractors/specs/2015specbook/Default.aspx>

Operations Support:

605-773-3571

* * * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
SUPPLEMENTAL SPECIFICATIONS FOR
ERRATA
TO 2015 STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES**

APRIL 4, 2018

The Supplemental Specifications for Errata dated April 4, 2018 are in effect for and made a part of this contract.

The Supplemental Specifications for Errata may be obtained from the Department website or the local Area Office or by contacting the Operations Support Office.

Department Website:

<http://www.sddot.com/business/contractors/specs/2015specbook/Default.aspx>

Operations Support:

605-773-3571

* * * * *

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
PRICE SCHEDULE FOR MISCELLANEOUS ITEMS**

JUNE 6, 2018

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	Three-Man Survey Crew	\$160.00/hour
7.7	Public Convenience and Safety	Water	\$15.00/M.Gal
9.3	Payment for extra haul of Materials	Extra Haul	\$0.15/ton mile
120.5 A.5.	Roadway and Drainage Exc. & Emb.	Unclassified Excavation Digouts	\$8.00/cu.yd.
120.5 H.	Roadway and Drainage Exc. & Emb.	Extra Haul	\$0.05/cu.yd. station
120.5 I.	Roadway and Drainage Exc. & Emb.	Water for Embankment	\$15.00/M.Gal
421.5	Undercutting Pipe & Plate Pipe	Undercutting Culverts	\$12.00/cu.yd.
510.5 D.	Timber, Prestressed, and Steel Piles	Timber Pile Splice	\$550.00/each

		Steel Pile Splices (*All Weights)	Splice made after one of the pieces has been driven.
		8 HP*	\$220.00/each
		10 HP*	\$300.00/each
		12 HP*	\$360.00/each
		14 HP*	\$420.00/each
			Splice made before either of the pieces has been driven.
		8 HP*	\$105.00/each
		10 HP*	\$125.00/each
		12 HP*	\$140.00/each
		14 HP*	\$160.00/each
510.5 E	Timber, Prestressed, and Steel Piles	Pile Shoes (Timber Pile)	\$110.00/each
510.5.H	Timber, Prestressed, and Steel Piles	Pile Tip Reinforcement (Steel Pile)	
		10" HP Tip Reinforced	\$120.00/each
		12" HP Tip Reinforced	\$140.00/each
		14" HP Tip Reinforced	\$170.00/each
601.5	Haul Roads	Granular Material	\$12.00/ton
601.5	Haul Roads	Asphalt Concrete (including asphalt)	\$80.00/ton
601.5	Haul Roads	Cover Aggregate	\$25.00/ton
601.5	Haul Roads	Asphalt for Prime	\$700.00/ton
601.5	Haul Roads	Asphalt (Tack, Flush & Surface Treatment)	\$450.00/ton
601.5	Haul Roads	Water	\$15.00/M.Gal
601.5	Haul Roads	Dust Control Chlorides	\$0.35/lb
634.5	Temporary Traffic Control	Flagging	\$28.99/hour
634.5	Temporary Traffic Control	Pilot Car	\$41.88/hour

* * * * *

**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:

<http://denr.sd.gov/des/sw/IPermits/ConstructionGeneralPermit2018.pdf>

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.

* * * * *

