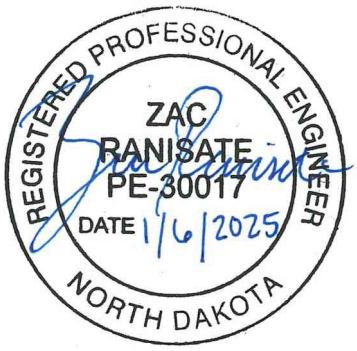

ADDENDUM NO. 2

January 6, 2025

FOR

Beach 2025 Street and Utility Project

FOR

CITY OF BEACH

This Addendum No. 2 forms a part of the Contract Documents and modifies the original Bidding Documents as noted within this Addendum. All provisions of the Contract Documents not in conflict with this Addendum shall remain in full force. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This addendum consists of three (3) pages and ten (10) attachments.

CHANGES TO DIVISION 00 – PROCUREMENT AND CONTRACT REQUIREMENTS

1. SECTION C-410 – BID FORM FOR CONSTRUCTION CONTRACT

    a. **DELETE** Bid item ~~'6" Asphalt Millings'~~ **REPLACE** 'Central Ave. & Main St. Surface Restoration'
    b. **REVISE** Bid item '1" Water Service with Curb Stop (Open Cut)' UNIT from ~~ea.~~ to l.f.
    c. **REVISE** Bid item '1" Water Service with Curb Stop (Open Cut)' Quantity from ~~157~~ to 1918.
    d. **ADD** Bid item '1" Water Service with Curb Stop (Trenchless)
    e. **DELETE** ~~Bid item '1" Water Service (Lead Line)'~~ **REPLACE** Bid Item 'Owner Allowance for 1" Water Service - Lead Line (*includes Cash Allowances – Section 01 21 00 – Paragraph 1.02)'*.
    f. **REVISE** Bid item '8" DI MJ Tee' Quantity from ~~9~~ to 10.
    g. **REVISE** Bid item '8"x6" DI MJ Tee' Quantity from ~~18~~ to 14.
    h. **REVISE** Bid item '8"x6" DI MJ Reducer' Quantity from ~~3~~ to 10.
    i. **REVISE** Bid item '8" DI MJ 90 Bend' Quantity from ~~8~~ to 11.
    j. **REVISE** Bid item '8"x8" DI Cross' Quantity from ~~5~~ to 6

2. SECTION C-801 – FUNDING AGENCY REQUIREMENTS

    a. Page 18-22; **REVISE** General Decisions sheets with updated Davis-Bacon Wages.

CHANGES TO DIVISION 01 – GENERAL REQUIREMENTS

1. SECTION 01 15 00 – SPECIAL PROVISIONS

    a. **DELETE** ~~Section J~~; **REPLACE** "1. This work consists of removing and replacing existing lead service lines indicated on the plans with new service lines, including connections to the existing water meter within the building, excavation, backfill, and restoration of all disturbed areas to their original condition. The work shall comply with all applicable federal, state, and local regulations and building codes."
    b. **ADD** Section K.2; "The contractor shall be subject to the following construction requirements:
        a. Conduct a pre-construction inspection to assess the existing service line condition and identify any unique site challenges.
        b. Notify property owners at least 48 hours before starting work on their property and receive permission to enter into the house prior to commencing work.
        c. Locate and expose the existing lead service line from the water main to the building.
        d. Remove and dispose of the lead service line in accordance with environmental regulations.
        e. Install the new service line along the same alignment or as directed by the Engineer.
        f. Connect the new service line to the water main and to the existing water meter inside the building.
        g. Ensure proper bedding and backfill to protect the new service line from damage.
        h. Restore interior finishes, including drywall, flooring, or other materials affected by the installation, to match the pre-construction condition.
        i. Minimize disruption to household utilities during the work.
        j. Restore all disturbed areas, including landscaping, driveways, sidewalks, and roadways, to their original condition or as specified in the plans."
    c. **DELETE** ~~Section K~~; **REPLACE** "For all surface restoration done as part of the project to only Central Ave and Main Street the Contractor has the following options: a. Utilize recycled asphalt pavement (RAP). RAP can be produced from a source of the contractor's choosing. RAP design specification shall comply with NDDOT Specifications, latest edition at a rate between 35 percent of the mix, by weight. b. Utilize six inches of asphalt millings.
    d. **ADD** Section K.2; "The contractor shall compact pavement in place until firm and unyielding. Contractor will not be held to density requirements."

2. SECTION 01 21 00 – ALLOWANCES

    a. **ADD** Entire section

CHANGES TO DIVISION 32 – EXTERIOR IMPROVEMENTS:

1. SECTION 32 12 16 – ASPHALT PAVING

a. Page 32 12 16 – 2; **DELETE** ~~FAA 43~~ **REPLACE** FAA 41

CHANGES TO DIVISION 33 – UTILITIES:

1. SECTION 33 11 16 – SITE WATER LINES

    a. 2.01.A.1.a; **DELETE** ~~DR 18~~ **REPLACE** DR 25

2. SECTION 33 05 97.16 – MARKERS FOR UTILITY IDENTIFICTION

    a. **DELETE** ~~Entire Section;~~ **REPLACE** Entire Section.

CHANGES TO DRAWINGS

1. SHEET C27 NORTH CENTRAL AVENUE – 2ND STREET NE TO 3RD STREET NE

    a. **DELETE** ~~'8" X 6" TEE CONNECT TO EX.'~~ **REPLACE** '8" 90**°** BEND' '8" X 6" REUCER CONNECT TO EX.'

2. SHEET C30 NORTH CENTRAL AVENUE – 5TH STREET NE TO 6TH STREET NE

    a. **DELETE** ~~'8" X 6" TEE CONNECT TO EX.'~~ **REPLACE** '8" 90**°** BEND' '8" X 6" REUCER CONNECT TO EX.'

    b. **DELETE** ~~'8" X 6" TEE CONNECT TO EX.'~~ **REPLACE** '8" X 8" CROSS' '8" X 6" REUCER CONNECT TO EX.'

3. SHEET C31 6TH STREET NW – N CENTRAL AVENUE TO 1ST AVENUE NE

    a. **DELETE** ~~'8" X 8" TEE CONNECT TO EX.'~~ **REPLACE** '8" X 8" CROSS CONNECT TO EX.'

    b. **DELETE** ~~'8" X 6" TEE CONNECT TO EX.'~~ **REPLACE** '8" X 8" TEE' '8" X 6" REUCER CONNECT TO EX.'

END OF ADDENDUM NO. 2 (SEE ATTACHMENTS)

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Attachments

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BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

City of Beach
153 Main Street, PO Box 278
Beach, ND 58621

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. In one opaque and sealed envelope labeled as described in Article 14 of C-200

1. Completed Bid Form (EJCDC D-410, 2018)
2. Bidder Qualifications Statement (EJCDC C-451, 2018)
3. MBE/WBE Subcontractor Solicitation Information; and
4. SRF Certification Regarding Debarment, Suspension, and Other Responsibility Matters.

B. In second opaque and sealed envelope labeled as described in Article 14 of C-200

1. Required Bid security;
2. North Dakota State Contractor's License or Certificate of Renewal.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices

UNIT PRICE BID

CONTRACT NO. 1 – GENERAL CONSTRUCTION

Ref.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	Bonding and Insurance	1	l.s.		
2	Mobilization	1	l.s.		
3	Erosion Control	1	l.s.		
4	Traffic Control	1	l.s.		
5	Temporary Water Service	1	l.s.		
6	Reclaim and Salvage Bituminous Pavement	15062	s.y.		
7	Remove and Dispose Concrete Curb and Gutter	2600	l.f.		
8	Remove and Dispose Concrete Sidewalk	4825	s.f.		
9	Remove and Dispose Concrete Driveway	1653	s.f.		
10	Remove and Dispose Concrete Valley Gutter	3051	s.f.		
11	Remove and Salvage 4" of Topsoil	2186	s.y.		
12	Remove and Salvage 6" of Gravel	533	s.f.		
13	Bituminous Pavement (4.5")	13299	s.y.		
14	Street Crowning	14414	s.y.		
15	8" Street Base (Type A3, Class 5 Aggregate)	13439	s.y.		
16	Concrete Curb and Gutter	2642	l.f.		
17	4" Concrete Sidewalk	4855	s.f.		
18	6" Concrete Driveway	2024	s.f.		
19	6" Concrete Valley Gutter	2815	s.f.		

20	4" Top Soil	2185	s.y.		
21	Hydroseeding and Maintenance	2185	s.y.		
22	6" Gravel (parking lot/driveway restoration)	533	s.f.		
23	Central Ave. & Main St. Surface Restoration	2234	s.y.		
24	2" PVC Water Main (C-900 DR-25)	158	l.f.		
25	4" PVC Water Main (C-900 DR-25)	163	l.f.		
26	6" PVC Water Main (C-900 DR-25)	218	l.f.		
27	8" PVC Water Main (C-900 DR-25)	9712	l.f.		
28	1" Water Service with Curb Stop (Open Cut)	1918	l.f.		
29	1” Water Service with Curb Stop (Trenchless)	2267	l.f.		
30	1" Water Service with Meter Pit	1	ea.		
31	8" DI MJ Tee	10	ea.		
32	8"x6" DI MJ Tee	14	ea.		
33	8"x4" DI MJ Tee	2	ea.		
34	8"x2" DI MJ Tee	1	ea.		
35	8"x6" DI MJ Reducer	10	ea.		
36	8"x4" DI MJ Reducer	1	ea.		
37	8" DI MJ 90 Bend	11	ea.		
38	8" DI MJ 45 Bend	1	ea.		
39	8"x8" DI Cross	6	ea.		
40	8"x4" DI Cross	1	ea.		
41	8" DI MJ Gate Valve and Box	35	ea.		
42	6" DI MJ Gate Valve and Box	14	ea.		
43	4" DI MJ Gate Valve and Box	1	ea.		

44	Fire Hydrant	11	ea.		
45	Connect to Existing Water Main	23	ea.		
46	Owner Allowance for 1" Water Service - Lead Line *(includes Cash Allowances – Section 01 21 00 – Paragraph 1.02)*	10	ea.	$15,000	$150,000

B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and

2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.02 *Total Bid Price (Lump Sum and Unit Prices)*

Total Bid Price (Total of all Lump Sum and Unit Price Bids)	$

ARTICLE 4—DELETED

ARTICLE 5—DELETED

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 **Deleted**

6.03 **Deleted**

6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda: **[Add rows as needed. Bidder is to complete table.]**

Addendum Number	Addendum Date

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, if any, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:

a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

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"General Decision Number: ND20250045 01/03/2025

Superseded General Decision Number: ND20240045

State: North Dakota

Construction Type: Heavy
HEAVY CONSTRUCTION PROJECTS

Counties: Adams, Billings, Bowman, Divide, Golden Valley, Hettinger and Slope Counties in North Dakota.

HEAVY CONSTRUCTION PROJECTS
Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025

CARP1091-005 05/01/2024

	Rates	Fringes
CARPENTER	$ 35.87	25.10

ELEC0714-017 07/01/2024

	Rates	Fringes
ELECTRICIAN	$ 38.94	13.21+11.5%

ENGI0049-085 10/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Backhoe/Excavator/Trackhoe	$ 32.25	20.65
Forklift	$ 32.25	20.65
Loader	$ 32.25	20.65

IRON0512-044 04/28/2024

	Rates	Fringes
IRONWORKER, REINFORCING	$ 39.80	24.47

LABO0563-007 05/01/2024

	Rates	Fringes
LABORERS (Common or General Excluding Pipeline Work)	$ 28.83	21.15

LABO0563-008 05/01/2023

	Rates	Fringes
LABORERS (Pipeline: Laborer-Common)	$ 30.80	20.45

UAVG-ND-0002 01/01/2023

	Rates	Fringes
OPERATOR: Roller	$ 30.20	18.95

SUND2017-008 07/31/2020

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 23.69	0.00
LABORER: Pipelayer	$ 26.63	9.96
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 30.51	15.60
OPERATOR: Bulldozer	$ 28.80	14.93
OPERATOR: Crane	$ 29.23	16.49
OPERATOR: Grader/Blade	$ 22.19	11.00

TRUCK DRIVER: Dump Truck.....$ 31.95 18.80

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

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 standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

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SECTION 01 15 00
SPECIAL PROVISIONS

The following Special Provisions shall be incorporated into the Work:

A. WORK SEQUENCE

B. UNIFLANGE RESTRICTION

1. Uniflanges are not permitted for installation on piping exceeding internal pressures of 40 psi.

C. UTILITY LOCATION AND PROTECTION

1. The approximate location of known existing underground utility lines and trenches are shown on the plans. Other unknown utilities may exist. The General Contractor shall be responsible for coordinating with all utility companies for location of buried utilities prior to excavation. All costs associated with the measures necessary for location and protection of all utilities during construction shall be considered incidental to the contract. All damage to utilities resulting from construction activities shall be the sole responsibility of the Contractor performing the Work and be repaired at such Contractor's expense.

2. All bracing for light/utility poles, telephone lines, gas lines, etc. required during open excavations shall be coordinated by and the responsibility of the General Contractor. All costs of equipment, vehicles, personnel, or private service shall be incidental to the cost of the project.

D. DUST CONTROL

1. Contractor shall take all measures necessary to control dust within the project limits. Contractor shall keep all haul roads/streets and all streets adjacent to the project clean and free of dirt and debris. These streets will be subject to dust control measures as requested by Engineer or Owner during construction.

2. Streets that are disturbed by construction and have a temporary gravel surface shall have dust controlled and frequencies of water application shall be conveyed by the Engineer or Owner. Contractor is responsible for the application of all dust control measures, incidental to the contract. Owner will supply the water.

3. Payment shall be incidental to the contract.

E. DEWATERING

1. The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all water entering excavations and trenches at no additional cost to Owner. Excavations and trenches shall be maintained dry during sub-grade preparation and continually thereafter until the structure is built or the pipe is installed (to the extent that no damage from hydrostatic pressure, flotation, or other detrimental effects will result).

2. All excavations or trenches below groundwater elevation shall be dewatered by lowering the water surface 12 inches below the bottom of the excavation. Surface water shall be diverted or otherwise prevented from entering excavations or trenches.

3. The Contractor shall obtain all dewatering permits to remove and dispose of water at no additional cost to Owner. The permits shall be obtained prior to the start of construction. Pumping to dewater is subject to the Water Appropriations Act.

4. All costs associated with dewatering shall be incidental to the Contract.

F. EROSION CONTROL

1. Erosion control is mandated on all construction projects by the North Dakota Department of Health under the National Pollutant Discharge Elimination System (NPDES.) The CONTRACTOR will be required to enter into NPDES storm water permit coverage with the OWNER for the project. A Storm Water Pollution Prevention Plan (SWPPP) shall be submitted by the Contractor. Erosion control measures shall be established by the Contractor at the beginning of construction and maintained during the entire project. Areas that are subject to severe erosion and off-site areas vulnerable to damage from erosion and/or sedimentation are to receive additional erosion control measures that may not be shown on the SWPPP. Failure to implement the controls and practices will result in violation of the Environmental Protection Act and Clean Water Act and is grounds for penalties. Contractor is responsible for all penalties for violations. Contractor shall be responsible for maintenance of erosion and sediment resulting from construction from the project. All land-disturbing activities shall be coordinated and conducted so as to minimize the size of the area to be exposed at any one time and to minimize the time of exposure. All land-disturbing activities shall also be coordinated and conducted so as to minimize off-site sedimentation damage. Contractor shall be responsible for periodically cleaning out and disposing of all sediment. Contractor shall also be responsible for cleaning out and disposing of all sediment at the completion of the project. Additional on-site protection may be needed so that sediment is not permitted to leave the project confines due to unforeseen conditions or accidents. The contractor is responsible for removing the temporary erosion and sediment control devices and verifying the cleaning out of all storm drainage structures, including flumes, pipes, and ditches once final stabilization has occurred. Contractor shall maintain temporary erosion control devices until permanent facilities are constructed and final stabilization has occurred. All erosion control measures shall be incidental to the other bid items.

G. TREE PROTECTION, REMOVAL AND REINSTALL, OR REPLACEMENT

1. The General Contractor is responsible for protection and care of trees within the construction limits of the Project unless otherwise indicated on the drawings. Trees identified for protection but damaged or killed as a direct result of construction activities will be replaced. Replacement of damaged trees must be of equal quality, size, and type of tree removed and grubbed during construction. If removal and reinstallation is allowed, the Contractor shall be responsible for the following provisions:
   a. Contractor is responsible for finding a holding area for temporary planting.

b. After planting at temporary holding area, work loose soil into area between the hole and tree plug to fill all air cavities. Contractor is responsible for watering and maintaining health of tree.
c. Add 3-inch layer organic mulch to surface of root ball.
d. Repeat procedure when transplanting tree to original site. Owner has final decision for location of permanent placement.
e. Contractor is responsible for the health of the trees. Trees that die during temporary or permanent transplanting shall be replaced with equal quality, size, and type of tree at Contractor's expense.

H. PROJECT WORK

1. Other projects are anticipated to be under construction concurrently with this project. Contractor shall coordinate the Work of this Project with the City, Staff, Engineer, and other Contractors, as applicable, so as not to impede or otherwise unreasonably interfere with the Work of other projects.

I. TEMPORARY WATER SERVICE CONNECTIONS

1. The contractor shall maintain water services to all residents at all times except for short periods when making the new connection. The contractor shall notify the residents 24 hours in advance when water service will be disconnected. The contractor must provide for continuous water service to adjacent property. Any method used must have the approval of the engineer. If the contractor elects to set up a temporary water supply, polyethylene pipe or another pipe approved by the engineer must be used. Rubberized garden hose may not be used. The size of the existing service lines is unknown. The new service lines shall be 1-inch diameter at a minimum or as noted on plans. All connections and fittings required to connect the new service lines to the existing service lines shall be considered incidental. The contractor shall be responsible to locate the water service line from the existing curb stop to the location of the tap on the existing watermain.

J. LEAD SERVICE LINE REPLACEMENT

1. This work consists of removing and replacing existing lead service lines indicated on the plans with new service lines, including connections to the existing water meter within the building, excavation, backfill, and restoration of all disturbed areas to their original condition. The work shall comply with all applicable federal, state, and local regulations and building codes.
2. The contractor shall be subject to the following construction requirements:
   a. Conduct a pre-construction inspection to assess the existing service line condition and identify any unique site challenges.
   b. Notify property owners at least 48 hours before starting work on their property and receive permission to enter into the house prior to commencing work.
   c. Locate and expose the existing lead service line from the water main to the building.
   d. Remove and dispose of the lead service line in accordance with environmental regulations.
   e. Install the new service line along the same alignment or as directed by the Engineer.
   f. Connect the new service line to the water main and to the existing water meter inside the building.
   g. Ensure proper bedding and backfill to protect the new service line from

damage.

h. Restore interior finishes, including drywall, flooring, or other materials affected by the installation, to match the pre-construction condition.
i. Minimize disruption to household utilities during the work.
j. Restore all disturbed areas, including landscaping, driveways, sidewalks, and roadways, to their original condition or as specified in the plans.

K. CENTRAL AVE AND MAIN STREET SURFACE RESTORATION

1. For all surface restoration done as part of the project to only Central Ave and Main Street the Contractor has the following options:
   a. Utilize recycled asphalt pavement (RAP). RAP can be produced from a source of the contractor's choosing. RAP design specification shall comply with NDDOT Specifications, latest edition at a rate between 35 percent of the mix, by weight.
   b. Utilize six inches of asphalt millings.

2. The contractor shall compact pavement in place until firm and unyielding. Contractor will not be held to density requirements.

L. STREET CROWNING

1. Asphalt for crowning application shall comply with section 32 12 16 – Asphalt Paving.

2. Streets shall be crowned as shown in plans. Refer to sheet C39.

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Allowances.

1.02 CASH ALLOWANCES

A. Submit:
   1. Proposals for purchase of products or systems included in allowance.
   2. Invoices or delivery slips to show actual prices and quantities of materials delivered to the site for use in fulfillment of each allowance.

B. The following Cash Allowance has been established for the **Contract No. 1 - General Construction**:

   1. 1” Water Service (Lead Line)
      a. The condition of the existing buried lead service lines and household basements is currently unknown. The cash allowance is designated for the installation of a new service line, including the connection to the existing water meter within the house. This allowance also includes the restoration of any affected areas, both inside the house and outside, to their original condition.
      b. Contractor shall include in the Lump Sum Bid Price an allowance of **Fifteen Thousand dollars ($15,000.00)** for each lead service line to be replaced.

C. The Contractor shall include the cash allowance amounts, as indicated in the allowance schedule, in the specified contract bid amount. The Contractor will purchase equipment/items as selected by the Owner. The Owner will make payment to Contractor in the invoiced amount for these purchases. Any monetary sum not submitted for reimbursement to the Owner shall not be paid to the Contractor. Compensation for Cash Allowance items exceeding the specified amount will be coordinated during construction.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION

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SECTION 32 12 16
ASPHALT PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.

1.02 RELATED REQUIREMENTS

A. Section 31 22 00 - Grading: Preparation of site for paving and base.

B. Section 31 23 23.23 - Backfilling: Compacted subgrade for paving.

C. Section 32 11 23 - Aggregate Base Courses: Aggregate base course.

1.03 REFERENCE STANDARDS

A. AI MS-2 - Asphalt Mix Design Methods; 2015.

1.04 PERFORMANCE REQUIREMENTS

A. Paving: Designed for H20 classification.

1.05 SUBMITTALS

A. See Section 01 33 00 for submittal procedures.

B. Product Data: Furnish properties data on aggregates, asphalt cement, bituminous mixtures, ashpalt binder, and other materials required for the mix in accordance with Sections 01 33 00 and 01 45 00 at least 7 days prior to beginning paving operations. Engineer must approve job mix formula prior to its use on Project.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with North Dakota Department of Transportation (NDDOT) standard..

B. Mixing Pland and Mixing Plant Operations: Conform to North Dakota Department of Transportation Standard Specification for Road and Bridge Construction, latest edition and The Asphalt Institute (TAI) MS-3 Asphalt Plant Manual.

C. Obtain materials from same source throughout.

D. Paved surfaces shall be warranted against any materials and/or worksmanship defection for a period of 12 months from placement.

E. The mix design and development of the Job Mix Formula shall be generated by a laboratory accredited by the AASHTO Materials Reference Laboratory (AMRL) at the contractor's expense.

F. For tack coat, ensure a sufficient bond between the surface being paved over and the overlying asphaltic course being placed.

G. Conform to applicable code for paving work on public property.

H. Allow minimum of 1 month between completion of crack sealing and paving operation to allow seal to cure. The crack sealing should be accomplished with a recessed configuration if paving is to proceed in the same season.

I. Dispose of all waste material or reject material by approved methods.

J. Conform to the Manufactureer's Material Safety Data Sheet (MSDS) for storage and handling of emulsion products.

1.07 FIELD CONDITIONS

A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F (4 degrees C), or surface is wet or frozen.

B. No work shall be permitted in the spring until the frost has disappeared and the subgrade is stable so as to support the equipment without rutting, shoving, pumping, or other displacement.

C. Do not spray asphalt tack coat if weather conditions call for rain before the emulsion can cure.

PART 2 PRODUCTS

2.01 MATERIALS

A. Asphalt Cement: Shall be performance grade asphalt cement meeting the requirements of AASHTO MP1 and as shown on the plans. The asphalt used in the mix shall be FAA 41. The oil used in the asphalt mix shall be PG 58-28

B. Aggregate for Mix: Shall be in accordance with Section 430.03.B of the NDDOT Standard Specifications for Road and Bridge Construction, latest edition.

2.02 TACK COAT

A. SS1H or CSS1H Emulsion meeting the appropriate requirements of ASTM for the specific grade of emulsion. Non-tracking tack products may also be used as approved by the Engineer.

B. Storage and handling of the emulsion should be performed in accordance with MS-19.

1. Aggregate for Base Course: Shall be in accordance with the NDDOT Standard Specifications for Road and Bridge Construction, latest edition.

2.03 ASPHALT PAVING MIXES AND MIX DESIGN

A. Contractor shall develop the Superpave FAA 41 asphalt mixutre in accordance with Section 430 of the NDDOT Standard Specification for Road and Bridge Construction, latest edition, to meet the requirements of this Specification. Prior to the production of any Superpave asphalt mixutre, submit the proposed mix design with supporting test data indicating compliance with all Superpave mix

design criteria. The Contractor shall utilize an AMRL accredited testing firm for the development of the mix design, testing for the performance of the asphalt cement, gradation of the aggregate mix, and requirements of the L.A. Abrasion. The Engineer shall approve the Job Mix Formula submitted by the Contractor.

B. Traffic Levels: The type of bituminous mixture for this project shall be designed based on the traffic level of less than one (1) Million Equivalent Single Axle Loads (ESALs)

C. Layer Thickness: The lift thickness should be three times the nominal maximum size of the aggregate.

1. Asphalt Base Course: 3.0 to 6 percent of asphalt cement by weight in mixture in accordance with AI MS-2.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that compacted subgrade is dry and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

3.02 AGGREGATE BASE COURSE

A. Place and compact aggregate base course.

3.03 PREPARATION - TACK COAT

A. Apply tack coat in accordance with manufacturer's instructions.

B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of 0.10 gallons per square yared of undiluted asphalt..

C. All vertical faces shall have 2 application of tack coat prior to paving. This includes, but is not llimited to, curb and gutter faces and all longitudinal bituminous seams.

D. Coat surfaces of manhole frames with oil to prevent bond with asphalt pavement. Do not tack coat these surfaces.

E. All conventional asphalt emulsions shall be diluted with water at a 50:50 ratio and applied at twice the recommended application rate. Polymer modified and non-tracking emulsions shall not be diluted. Dilution of the emulsion product should be performed at the emulsion terminal or in a tank at the asphalt plant. Emulsions should not be diluted in the distributor at the project site.

F. Do not allow asphalt emulsion to freeze.

3.04 PLACING ASPHALT PAVEMENT

A. All mixtures shall be spread and finished with a self-propelled, bituminous paver, to the requred grade and cross section, leaving the mixutre uniformily dense,

smooth, and free from irregularities.

B. The speed of the bituminous paver shall be controlled to palce the mixture uniformly and continously without tearing or gouging. The speed shall not exceed the Manufacturer's recommendation, and shall be coordinated with the output of the plant to provide for a smooth, continous operation, minimizing starting and stopping.

C. Compact pavement by rolling to specified density as follows:

1. Compaction shall consist of initial or breakdown rolling, intermediate rolling, and final or finish rolling with rollers meeting all requirements of NDDOT Standards Specifications Section 151.01.
2. Breakdown rolling shall consist of one or more complete coverages with a vibratory steel wheel roller or a rubber tired roller.
3. Breakdown rolling shall be followed by intermediate rolling with either a rubber tired roller or a vibrarory steel wheel roller and shall be continued until the surace is tightly bound and shows no displacement under the roller.
4. Intermediate rolling shall be completed before the mat temperature falls below 185 degrees F.
5. Final rolling shall be performed with a static wheel roller and shall continue until roller marks are eliminated. Contractor may be required to modify rolling sequence to best suit the construction conditions.
6. Do not displace or extrude pavement from position. Hand compact in area inaccessible to rolling equipment.

D. Uniformly blend pavement surface into elevations at curbs, valve box castings, and other critical points of contact. Place pavement so that the pavement is 3/8 inches higher than the edge of the structure after the pavement has been compacted.

E. Do not allow drainage to be impeded or casting covers to become difficult to remove.

F. All transverse and longitudinal joints, high or low areas, and surface irregularities, shall be leveled, filled, or raked prior to compaction. Any loose material dropped on previously compacted lanes shall be removed immediately.

G. Ensure joints made during paving operations are straight, clean, vertical, and free of broken or loose material. Joints shall be tacked and constructed with adequate bond on abutting surfaces. Construction joints in successive courses shall be placed so that joints do not fall on the same vertical plane.

H. The sequence of rolling operations and the selection of type and number of rollers shall be commensurate with the production, and shall be adequate to obtain the specified density before the mat temperate falls below 185 degrees F.

I. Install all bituminous pavement 3.5-inches and greated in thickness in a minimum of two lifts. Maximum thickness of a base course lift shall be 3.0-inches.

J. Ensure surface of comleted asphalt pavement is true to lines, profiles, and elevations indicated and matches existing grade.

K. The surfaces of previously placed layers shall be swept and a tack coat applied before spreading the next layer.

L. The overall thickness shown on the Drawings shall be the minimum finished, in-place, compacted thickness of bituminous pavement.

M. Protect newly paved surfaces from traffic and mechanical damage until surface has cooled to 140 degrees F.

N. Any low or high defective areas shall be corrected immediately at the contractor's expense. Corrective work shall include patching, cutting out the surface and replace with fresh, bituminous mixture, or by milling the surface.

O. Clean up paving area.

P. Ensure manhole covers are clean of asphalt material and tack coat and returned to the condition they were prior to asphalt paving activities.

3.05 TACK APPLICATION EQUIPMENT

A. Tack distributor shall be designed, equipped, and operated so that tack material is applied at the specified rate per square yard with uniform pressure over the required application.

B. The distributor shall be equipped with an onboard computer that determines the realtionship between the distributor travel speed and pump speed to ensure a consisten application rate.

C. An accurate calibrated thermometer with a range covering the specified application termperature for tack material shall be mounted at approximately center height of the tank with the stem extending into the tack material.

D. The distributor shall have a full circulating system with a spray bar, adjustable laterally and vertically. The spray bar shall be maintained at a constant height above the pavement under variable load conditions.

E. The distributor shall have full circulation spray bars with lateral and vertical adjustments.

F. Ensure that all nozzles are of the same size, type, and angle to ensure uniform application of emulsion.

G. The distributor shall be checked and calibrated. A certificate of the calibration shall be posted in the driver's compartment stating that the distributing system is in good working condition and when used with the charts and instructions furnished by the manufacturer will give the required results. The certificate shall bear the date of the calibration and signature of the calibrating agency.

H. Use pumps with proper clearances for handling to avoid binding and seizing. Avoid repeated pump cycling or frequent pumping.

I. Do not mix different classes, grades, or types of emulsified asphalt in storage tanks, transports or distributors. Make sure tanks are clean before changing to another class, grade or type.

J. Pump from the bottom of tank.

K. Do not overheat asphalt emulsion.

3.06 APPLICATION OF TACK COAT

A. Maintain proper distributor spray bar height and spray nozzle angle for proper coverage.

B. Maintain proper distributor speed.

C. Sweep and clean surfaces to be tack coated prior to application. Provide motorized brooms with a positive means of controlling vertical pressure and with the capability to clean the road surface prior to spraying the bituminous material.

D. Do not apply more tack coating than can be covered by hte same day's operation. Perform operations only during daylight hours and not during foggy weather.

E. Do not apply tack coating or fog seal when ambient air temperature is consistentaly below 40 degrees F or when surface is wet.

F. Do not over-spread tack coating. if "fat spots" develop, spread out excess emulsion by pneumatic tire rolling before placing pavement.

G. Apply tack coat as directed in Section 401 of the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and NAPA's Best Practices for Emulsion Tack Coats. Hand spray wands and crack-sealing buckets are not acceptable method of applying tack coat emulsion except on the vertical face of an adjoining lift of pavement.

H. Apply bituminous tack coat to existing bituminous pavement and to the surface of each lift or course constructed, other than the final course. Apply in a uniform rate with no missed areas permitted.

I. The bituminous tack coat shall be applied at a uniform rate of not less than:

1. 0.10 gallons per square yard, or undiluted asphalt emulsion (as supplied from the emulsion terminal); application rate shall be adjusted if necessary to attain bond between courses.
2. 0.20 gallons per square yard, for diluted asphalt emulsion (with water added at the terminal or plant emulsion tank).

J. The temperature of emulsion shall be between 70 and 160 degrees F at the time of application.

K. Apply immediately prior to the placement of the next bituminous course or lift. Do not allow public traffic on tack coated areas. The tack coat shall be applied in a manner that offers the least inconvenience to traveling public.

L. Apply the tack coat on the same day as the proposed surfacing is to be performed. Where emulsified asphalt is specified, dilute one part of water to one part of emulsion and apply the mixture at two times the undiluted rate of application. Allow water to evaporate completely before beginning paving operations. At request of Contractor, Engineer may approve a change in the dilution ratio of the water-emulsion mixture. Sampling and Testing of the emulsion product shall be done at the discretion of the Engineer.

M. Demonstrate a uniform application of asphalt emulsion producing 100 percent coverage of the surface after curing, as approved by the Engineer. Stop operations if the application demonstration does not meet the coverage requirements.

N. Contractor shall continuously check Tack Coat application rates to make necessary changes to those rates in order to make sure that the diluted emulsion absorbs into the pavement. Contractor to perform a yield check at the beginning of each project. Engineer may require additional yield checks if the application rate is questioned.

O. Do not allow traffic on the tacked surface until after the bituminous material has set and will not pick up on vehicle tires.

3.07 TOLERANCES

A. Flatness: Maximum variation of 3/16 inch measured with 10 foot (3 m) straight edge.

B. Compacted Thickness: Within 1/4 inch (6 mm) of specified or indicated thickness.

C. Variation from True Elevation: Within 1/2 inch (12 mm).

D. Transverse slope of surface course shall not vary from the slope shown on plans.

E. Asphalt cement content within 0.5 percent of approved mix design as determined by asphalt ignition testing.

3.08 FIELD QUALITY CONTROL

A. See Section 01 45 00 - Quality Control, for general requirements for quality control.

B. Perform field and laboratory testing by an independent testing laboratory appointed and paid for by the Contractor.

C. At the start of mix production, samples of all aggregate stockpiles shall be randomly collected for each aggregate used in the production mixture. The production aggregates shall be tested for the consesus properties and gradations

presented in Section 2.01 and shall conform to the JMF tolerances. Any change in aggregate source will not be allowed without written notfication of the Engineer and the submittal of a new JMF.

D. Notify testing laboratory to perform density tests when testing is to be performed during construction.

E. If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace, and retest. Contractor to bear all costs associated with defective pavement Work.

F. Pavement Density Determination:

Daily Production	Lot Determination
TON	Lots
270-545	1
546-910	2
911-1,455	3
1,456-3,275	4
3,276-4,545	5
4,546	6

G. The Engineer may require additional density lots be established to isolate area affected by factors that may affect the normal compaction perations:

1. Obtain two cores in each lot. Core samples will be taken from random locations selected by the Engineer

H. Density determination shall be made by the end of the next working day after placement and compaction or as directed by the Engineer. If multiple layers are placed in a single day, cores shall be sawn and separated for each layer by sawing, tested, and reported by the end of next working day unless directed otherwise by the Engineer.

I. The Contractor shall cut pavement samples from the completed work with power equipment and restore the surface by the end of the next working day with new, well compacted mixture without additional compensation.

J. Cores shall be cut using 4-inch minimum inner diameter coring device. All samples shall be marked with the lot number and core number.

K. Determination of the bulk specific gravity (G_{mb}) of the cores shall be in accordance with AASHTO T-166.

L. The percent density of each lot shall be expressed as a percent of maximum specific gravity (G_{mm}) based on individual lot. Percent density can be obtained by dividing the average G_{mb} for the lot by the G_{mm} multiplied by 100.

1. The G_{mm} value used to calculate the percentage density for the lot shall be the average value obtained from the theoretical maximum specific

gravity results from the production tests taken during that day of paving. If only one or two G_{mm} values were obtained that day, moving average value (at that test point) shall be used. If three or more G_{mm} values are obtained that day, average of those tests alone shall be used.

M. The density requirements are listed below:

1. Wear Course - at least 92 percent.
2. Non-Wear Course - at least 92 percent.

N. Perform gradation analysis of aggregate once per day as construction progresses or as required by Engineer.

O. Perform voids in mineral aggregate (VMA) analysis in accordance with NDDOT specifications; minimum frequency of one test per day as construction progresses.

3.09 SCHEDULE

A. Bituminous Pavement: Locations as shown on the Plan Drawings. Minimum compacted thickness as shown on Typical Pavement Sections.

END OF SECTION

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SECTION 33 11 16
SITE WATER LINES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:

1. Underground water main pipe, fittings, valves, fire hydrants, bedding, appurtenances, and installation.
2. Water service pipe for domestic and fire protection services, including bedding, appurtenances and installation.
3. Water main pressure testing.
4. Temporary water service.
5. Disconnection and termination of water lines.

B. Related Sections include, but are not limited to:

1. Section 01 33 00 – Submittals.
2. Section 01 60 00 – Material and Equipment.
3. Section 01 77 00 – Contract Closeout.
4. Section 31 23 16.13 - Trenching.
5. Section 33 13 00 - Disinfection of Water System.

1.02 REFERENCES

A. Reference Standards include:

1. ANSI/AWWA C104/A21.4 - Cement-Mortar Lining for Gray-Iron and Ductile-Iron Pipe and Fittings for Water.
2. ANSI/AWWA C110/A21.10 - Gray-Iron and Ductile-Iron Fittings, 3-Inch through 48-Inch, for Water and Other Liquids.
3. ANSI/AWWA C111/A21.11 - Rubber Gasket Joints for Gray-Iron and Ductile-Iron Pressure Pipe and Fittings.
4. ANSI/AWWA C 115/A21.15 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
5. ANSI/AWWA C150/A21.50 - American National Standard for Thickness Design of Ductile-Iron Pipe.
6. ANSI/AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids.
7. ANSI/AWWA C153/A21.53 - Ductile-Iron Compact Fittings, 3-Inch through 12-Inch, for Water and Other Liquids.
8. AWWA C502 - Dry Barrel Fire Hydrants.
9. AWWA C509 - Resilient-Seated Gate Valves, 3 through 12 NPS, for Water and Sewage Systems.
10. AWWA C550 - Standard for Protective Epoxy Interior Coating for Valves and Hydrants.
11. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
12. AWWA C605 - Underground Installation of PVC Pressure Pipe and Fittings.

13. AWWA C800 - Standard for Underground Service Line, Valves, and Fittings.
14. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. through 12 in., for Water.
15. AWWA C907 - Polyvinyl Chloride (PVC) Pressure Fittings for Water-4in. through 8 In.
16. AWWA C906 – Polyethylene (PE) Pressure Pipe and Fittings, 4 In. through 63 In., for Water Distribution.
17. ASTM B88 - Seamless Copper Water Pipe.
18. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop.
19. ASTM D1784 - Rigid Poly (Vinyl Chloride) Compounds and Chlorinated Poly (Vinyl Chloride) Compounds.
20. ASTM D1785 - Poly (Vinyl Chloride) Plastic Pipe, Schedules 40, 80, and 120.
21. ASTM D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR).
22. ASTM D2466 - Poly (Vinyl Chloride) (PVC) Plastic Pipe fittings, Schedule 80.
23. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
24. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil Aggregate Mixtures in Place by Nuclear Methods (Shallow Depth).
25. ASTM D3139 - Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals.
26. UL 246 - Hydrants for Fire-Protection Service.
27. NSF Standard No. 14, 60,and 61 - National Sanitation Foundation.
28. WW-T-779c - Federal Specifications.

1.03 SUBMITTALS FOR REVIEW

A. See Section 01 33 00 - Submittals

B. Product Data: Provide data on materials in accordance with Section 01 30 00 for all piping, fittings, valves, fire hydrants, corporation stops, curb stops, tapping sleeves, service and tapping saddles, transition couplings, pipe adapters, and specialties.

C. Manufacturer’s Instructions: For valves, hydrants, and specialties, furnish in accordance with Sections 01 33 00 and 01 60 00 manufacturer’s printed instruction for delivery, handling, storage, assembly, installation, adjustment, special tool requirements, and maintenance requirements.

1.04 SUBMITTALS FOR CLOSEOUT

A. Section 01 33 00: Submittals.

B. Provide all special tools required for valves, hydrants, and specialties.

C. Provide records of measured depths of water mains, service leads, valves, connections, transition couplings, adapters, thrust blocking; measured horizontal and vertical locations of underground utilities and appurtenances referenced to

permanent surface improvements; measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work; and field changes of dimension and detail.

1.05 QUALITY ASSURANCE

A. Valves: Provide manufacturer's name, valve size, and pressure rating marked on valve body.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle products to and at site under provisions of Section 01 60 00.

B. Deliver and store valves and fire hydrants in shipping containers with labeling in place.

C. Tag each fire hydrant and valve to correspond with the location shown on the Drawings.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water Pipe:

1. Polyvinyl Chloride (PVC) Pipe:
   a. AWWA C900 DR 25 for sizes 4 inches to 12 inches in diameter.
   b. All pipe to have standard cast iron pipe outside dimension.

B. Ductile Iron Fittings:

1. C900 PVC pipe (4 inches to 12 inches): Grip-Tite, SSB, ductile iron Class 350 fittings conforming to ANSI/AWWA C153/A21.53 compact push-on fittings.
2. PVC fittings maybe used in-lieu of ductile iron fittings for PVC pipe installations 12 inches and smaller. PVC fittings shall meet all applicable requirements of the latest edition of AWWA C900 and AWWA C907.
3. Provide restrained joints and fittings where so indicated on the drawings.
4. Push-on or mechanical rubber gasket joints conforming to the compression gasket ring requirements of ANSI/AWWA C111/A21.11 and ASTM D3139, and as shown on Drawings.
5. Cement line pipe fittings in accordance with ANSI/AWWA C104/A21.4.
6. Buried and submerged ductile iron pipe fittings shall have a bituminous exterior coating (asphalt coating).
7. Encase buried ductile iron fittings with polyethylene conforming to ANSI/AWWA C105/A21.5.
8. Provide stainless steel nuts, bolts, and glands.
9. Nuts, bolts, glands, and gaskets incidental.

C. Gate Valves:

1. Minimum working pressure of 200 psi for 4-inch to 12-inch valves.

2. Valve body and rubber-encapsulated wedge constructed of ductile iron or cast iron.
3. Resilient seat gate, bubbletight closure design.
4. Meet or exceed the ANSI/AWWA C509 standards.
5. Bronze stem and stem nut.
6. Epoxy-coated interior and exterior.
7. Equipped with non-rising stem with 2-inch square operating nut, open left (counter clockwise) rotation.
8. Provide two-piece adjustable valve box, riser, cover marked “Water”, T-wrench of sufficient length (one wrench for each five valves installed), and polyethylene encasement conforming to ANSI/AWWA C105/A21.5 for buried valves.
9. Provide gate valve adaptor, inc., or approved equal, to set valve box on gate valve.
10. Push-on joints for gate valves 12 inches and smaller.
11. Tapping valve should provide flanged end to connect to tapping sleeve.
12. Provide gaskets and stainless steel nuts and bolts.
13. Approved manufacturers:
    a. American Flow Control
    b. Mueller Company
    c. Waterous Valve Company
    d. A.P. Smith Valve Company
    e. M & H Valve Company
    f. American-Darling Valve
    g. Clow Valve Company
    h. Or approved equal

D. Fire Hydrants:

1. Dry barrel type manufactured in accordance with ANSI/AWWA C502 and UL 246 with breakaway traffic flange such that automatic, positive shut off of the hydrant is maintained if the hydrant is damaged.
2. Rated for minimum working pressure of 150 psig.
3. Equipped with a main valve, which opens against water system pressure. Main valve shall be bronze seated and valve seat shall have a minimum 5-inch diameter opening and thread into a non-clog bronze drain ring.
4. Removable internal hydrant parts through the hydrant barrel without need for excavation.
5. Hydrant extensions: Fabricate in multiples of 6-inches with rod and coupling to increase barrel length.
6. Provide two (2) 2-1/2 inch hose nozzle connections and one (1) 4-1/2 inch pumper nozzle connection; pumper nozzle sized to Owner’s standard.
7. Counter clockwise opening rotation; hydrant operating nut for main hydrant valve.
8. All underground nuts and bolts to be type 304 stainless steel.
9. Owner’s standard nozzle threads and operating nuts.
10. Provide 6-inch diameter push-on pipe joint connection and hydrant lead piping unless shown otherwise on Drawings or necessitated by field conditions.
11. Gate valve on hydrant lead is specified separately in this section.

12. Connect hydrants to hydrant lead piping, provide thrust restraint blocks, and, if necessary, any mechanical restraint and adapters.
13. Provide hydrant operating wrench for each hydrant,
14. Finish: Primer and two coats of enamel of color required by Owner.
15. Approved manufacturers:
    a. Pacer by Waterous Company; or
    b. Approved Equal

E. Transition Couplings:

1. Ductile iron end and center rings.
2. Epoxy or nylon coated inside and out.
3. Where pipes of dissimilar metal are joined, ensure dielectric insulation to prevent galvanic corrosion.
4. Install with stainless steel bolts.
5. Provide polyethylene encasement.
6. Approved manufacturers:
    a. Power Seal
    b. Ford
    c. Romac
    d. Or approved equal.

F. Service and Tapping Saddles:

1. All stainless steel tapped outlet, band clamps, nuts, bolts, and washers.
2. Heavy gauge type 304 stainless steel shell construction, passivated welds, double bolt type with minimum band width of 6 inches, and rubber “O”-ring gasket pad meeting ASTM D2000.
3. Meet or exceed the ANSI/AWWA C800 standards, 200 psig.
4. Approved manufacturers:
    a. Romac Industries, Inc.
    b. Dresser Industries
    c. The Ford Meter Box Company
    d. Or approved equal

G. Tapping Sleeve:

1. Stainless steel 304 full wrap around body with passivated welds.
2. All stainless steel tapped outlet, nuts, bolts, washers.
3. Gasket to provide seal around full circumference of pipe.
4. Minimum 150 psi working pressure.
5. Meeting AWWA C223 requirements.
6. Approved manufacturers:
    a. Romac Industries
    b. The Ford Meter Box Company
    c. PowerSeal Pipeline Products Corp
    d. Or approved equal.

H. Reaction Backing (Thrust Blocks):

1. Conform to details shown on Drawings for bends, tees, fire hydrants, dead end plug, and service tap connections.

2. 3,000 psi concrete for pipe, fittings, and plugs unless specifically shown otherwise on Drawings.
3. Pre-mix concrete sack for service tap connections as shown on Drawings.

I. Bedding and Backfilling:

1. Schedule: As specified in Section 31 23 23.23 and detailed on Drawings.
2. Materials: As specified in Section 31 23 23.23.

J. All products coming into contact with water intended for use in a public water system shall meet ANSI/NSF Standards 60 and 61. A product will be considered as meeting this standard if so certified by NSF, UL, or other organizations accredited by ANSI to test and certify such products.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building service connection and municipal utility water main size, location, and invert elevations are as indicated.

3.02 PREPARATION AND STORAGE

A. Store pipe on-site on flat surface so barrel is evenly supported. Do not stack higher than six (6) feet. Cover pipe with opaque material for extended storage. Keep ends of stored pipe covered until installation.

B. Remove scale and dirt on inside and outside of pipe, fittings, valves, and appurtenances before assembly. Inspect pipe and other materials for damage before installation.

3.03 REMOVAL OF EXISTING WATER MAIN PIPE AND APPURTENANCES

A. Remove existing pavement per Section 31 10 00.

B. Excavate trench per Section 31 23 16.13.

C. Remove water main pipe, fittings, valves, hydrants, service leads, concrete vaults, abandoned utilities, other associated appurtenances, and debris shown on Drawings or encountered along the route of removals in a manner and schedule that minimizes disruption of water distribution service and traffic.

D. Dispose of, or at Contractor’s option salvage, all other distribution system and service connection materials off-site and in accordance with all applicable laws and regulations.

E. Notify Engineer and Owner at least seven (7) days in advance of temporary disruptions of water service at locations along route of construction. Coordinate the scheduling of service disruptions and connection operations with the Owner so as to least interfere with existing water system service.

3.04 BEDDING

A. Excavate pipe trench in accordance with Section 31 23 16.13 for work of this Section. Hand trim excavation for accurate placement of pipe to elevations indicated.

B. Form and place concrete for pipe thrust restraints at any change of pipe direction, tee, plug, or hydrant. Place 3,000 psi concrete to permit full access to pipe and pipe accessories. Comply with details on Drawings for bends, tees, fire hydrants, and service tap connections.

C. Place PVC Pipe Bedding material per Section 31 23 23.23 and the details on the Drawings.

D. Place backfill per Section 31 23 23.23 and the details on the Drawings.

3.05 INSTALLATION - PIPE, VALVES, HYDRANTS, AND APPURTENANCES

A. Install all pipe and appurtenances in strict accordance with manufacturer's recommendations and in accordance with AWWA 600 and AWWA C605, as applicable.

B. Install water main, service leads, and appurtenances so as to avoid existing utilities. Maintain separation from sewer pipes as specified in SEWER CROSSING REQUIREMENTS of this Section.

C. All foreign material or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench and it shall be kept clean by approved means during and after laying.

D. Cut pipe in a neat and workmanlike manner without damaging the pipe.

E. Trench preparation shall proceed in advance of pipe installation only so far as can be backfilled the same day, or as permitted by the purchaser's specifications.

F. Contractor may, in suitable locations, install pipe by trenchless methods for convenience. If trenchless method requires substitution of pipe material, new pipe material shall meet equivalent pressure class and inside diameter of new pipe material shall be equal to or greater than specified PVC material. Damage to existing utilities resulting from trenchless installation methods shall be Contractor’s responsibility to repair damaged utility.

G. Excavate and backfill excavations, bore pits, and trenches in accordance with Section 31 23 23.23. All trenches, excavations, and boring pits shall be sheathed and braced, as necessary, so as to provide a safe place for workmen. Comply with all applicable OSHA safety requirements relating to trenching, boring operations, confined spaces, and other aspects of this type of construction.

H. Keep trenches free from surface and ground water until pipe jointing is complete.

I. Locate curb stop valves, gate valves, and hydrants a uniform distance from property line, utility easement line, back of curb, or other applicable line, when so required by municipal code or policy or so directed by Engineer.

J. All hydrants, valves, and fittings shall be set on cast in place or precast concrete blocks in order to prevent the weight from being transmitted to the pipe.

K. Form and place concrete for thrust blocking at each bend, tee, change of direction, plug, or hydrant. Thrust blocks shall bear on undisturbed trench wall.

L. When pipe laying is not in progress, the open end(s) of the pipe and fittings shall be plugged. The temporary plug shall be the same size and type used to make a permanent closure to insure a watertight plug and absolute cleanliness inside the pipe.

M. Install valve boxes plumb and directly over valve.

N. Adjust gate valve and curb stop boxes as shown on Drawings. Set boxes to allow equal movement both above and below finish grade. When in street, set valve boxes ½ inch below finish street grade. See Drawings for curb stop valve details at grade.

O. Reconnect downstream end of the curb stop and gate valves to existing services with appropriate connectors and couplers. Comply with connections and couplings shown on Drawings unless otherwise approved by Engineer.

P. Pipe and Service Lead Installation:

1. Contractor shall acquire a water tapping permit for tapping any existing water main and pay the fee for the permit. Contractor may choose to hire the City Water Department to make the tap.
2. Install water main and water service leads at a minimum depth of cover of 8 feet. Construct to lines, grades, and dimensions shown on Drawings.
3. Take up and relay any pipe disturbed from its required grade or alignment.
4. Install pipe to allow for expansion and contraction without stressing pipe.
5. Install pipe such that maximum deflections from straight line or grade do not exceed manufacturer's specifications. Install bend fittings where maximum deflections are exceeded.
6. Locate water service leads and curb stops with the property owner when such locations are not shown on the Drawings.
7. Install access fittings to permit disinfection of water system performed under Section 33 13 00.
8. Connect new water supply and/or distribution mains to existing water supply and/or distribution mains wherever necessary. Provide adequate adapters and couplers for connections of different pipe types and sizes.

Q. Encase all metallic pipe, fittings, valves, fire hydrants, service saddles, couplings, connectors, and other appurtenances in polyethylene sheeting or tubing in accordance with AWWA C105.

R. Inspection: Do not cover pipe, fittings, valves, couplings, or hydrant barrels until all bedding, joints, and polyethylene wrap have been inspected.

S. Contractor shall be responsible for cleaning and restoring to full operation of property owner's internal operation (i.e. flow meter, backflow preventer, fire protection, sprinkler line, etc.) if as a result of connecting to existing service lead internal operation is adversely affected.

T. Replace any pipe, fittings, or appurtenances found defective after installation has been completed.

U. Water main shall be installed as designated on drawings. Methods of installation include cased bore, non-cased bore and push, and open cut.

3.06 DISINFECTION OF WATER SYSTEM

A. Flush and disinfect system in accordance with Section 33 13 00.

3.07 FIELD QUALITY CONTROL

A. Section 01 45 00 - Quality Control: Field inspection and testing.

3.08 HYDROSTATIC TESTING

A. Hydrostatic testing shall be completed and passed before disinfecting the water system.

B. Subject newly laid pipe to a leakage and hydrostatic pressure test at 150 psi test pressure for a period of two hours. Provide test pump, pipe taps, connecting piping, test gauge and all necessary appurtenances.

C. Fill water main with water a minimum of 24 hours before the test and expel all air from the main.

D. Avoid development of water hammer in pipeline.

E. Add make-up water from a vessel of known volume whenever gauge pressure at the testing point falls 5 psi below the required test pressure or on a continuous basis if a suitable by-pass test pump is used, when performing the test.

F. Add make-up water shall through a corporation stop; not through fire hydrant.

G. Pressure test service leads and laterals with water mains prior to connection to user services.

H. Test against closed valves block to block.

I. Leakage shall not exceed the allowances indicated below:

J.

Nominal Pipe Size (inches)	Allowable Leakage in U.S. gallons per Hour for 1000 lineal feet (Average Test Pressure in Line: 150 psi)
1	0.09

Nominal Pipe Size (inches)	Allowable Leakage in U.S. gallons per Hour for 1000 lineal feet (Average Test Pressure in Line: 150 psi)
1.5	0.14
2	0.18
3	0.28
4	0.37
6	0.55
8	0.74
10	0.92
12	1.10

K. If pipeline test section includes various diameters, then allowable leakage shall be the sum of the computed leakage for the applicable lengths of each size.

L. Locate and repair any visible leaks and any defective areas if test fails.

M. Retest after completion of repairs.

N. Repeat procedure until tests pass.

3.09 SEWER CROSSING REQUIREMENTS

A. Install water mains no closer than a horizontal distance of 10 feet from sewer lines, except: when crown of sewer is at least 18 inches below invert of the water main and the sewer is laid in a separate trench or water main is laid to one side of common trench on a bench of undisturbed soil, separation shall be 6 feet horizontally.

B. Install water main no closer than a vertical distance of 18 inches between the invert of top pipe and crown of bottom pipe at crossings.

C. Where new water main crosses an existing sewer:

1. Center a full standard pipe length of water main over (or under) sewer if crossing is within 3 feet above sewer or below sewer.
2. No additional protection required if water main is at least 3 feet above sewer.
3. Provide thoroughly compacted backfill between pipes where a new pipe crosses a new or existing pipe for adequate support.

3.10 DATA FOR AS-BUILT RECORDS

A. In accordance with Section 01 77 00, provide records of measured depths of water mains, service leads, valves, fittings, connections, transition couplings, adapters, thrust blocking; measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements; measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work; and field changes of dimension and detail.

3.11 TEMPORARY WATER SERVICE

A. Notify Engineer and Owner at least seven (7) days in advance of the time that service disruptions and connections are scheduled. Notify all users 24 hours prior to interruption of service. Coordinate the scheduling of service disruptions and connection operations with the Owner so as to least interfere with existing water service system.

B. Provide a licensed master plumber, who will be responsible for the proper installation of the temporary water service system and is in charge of such work per the requirements of the North Dakota State Plumbing Board.

C. Provide all materials, hoses, and labor for installation of temporary water service connections where temporary service disruptions are required during construction and where service will be interrupted for more than two (2) hours.

D. Disinfect and flush temporary water materials and hoses prior to the installation of the temporary water service system.

E. Provide backflow preventive devices on temporary water supply.

F. Maintain the following 40 psi flow rates for service connections:

1. 1 gallon per minute for 1-inch or smaller services.
2. 4 gallons per minute for 2-inch services.
3. 100 gallons per minute for 4-inch services.
4. 150 gallons per minute for 6-inch services.
5. 200 gallons per minute for 8-inch services.

G. Properly protect temporary hoses crossing streets and sidewalks.

H. Place temporary hosing in locations that do not interfere with traffic.

I. Clearly mark temporary hosing with flags, cones, barricades, etc. to prevent injury to pedestrians.

END OF SECTION

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SECTION 33 05 97.16
MARKERS FOR UTILITY IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:

1. Detector Tape
2. Tracer Wire.
3. Tracer Wire Access Box.

B. Related Sections include, but are not limited to:

1. Section 01 20 00 - Measurement and Payment
2. Section 01 33 00 – Submittals.
3. Section 31 23 16.13 – Trenching.
4. Section 33 11 16 – Site Water Lines.

1.02 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Shop Drawings: Submit manufacturer's data on materials furnished indicating compliance with the specifications.

1. Tracer wire must meet requirements as per North Dakota Rural Water Systems Association Sewer/Water Utility - Tracer Wire Specification, Latest Edition.

PART 2 PRODUCTS

2.01 MATERIALS

A. Detector Tape:

1. "Terra Tape" as manufactured by REEF Industries, Inc., or approved equal.
2. Size: 3”.
3. Detector Tape Schedule and Warning Notice:

Pipeline	Warning Notice	Color
Potable Water Main	Caution Water Line Buried Below	Blue
Sanitary Sewer Main	Caution Sewer Line Buried Below	Green

B. Tracer Wire Systems:

1. Designed for Direct Bury.
2. Conductor:
   a. Wire Gauge:
      1) Open Cut: 12 AWG copper clad steel.
      2) Directional Drilled: 8 AWG copper clad steel.
   b. Wire Strength:

1) Open Cut: High strength wire with minimum break load strength of 452 pounds.
2) Directional Drilled: Extra high strength wire with minimum break load strength of 2,785 pounds.

c. All wire shall be spark tested at 7500 VAC and have a continuity check of less than 2 ohms resistance between surface access points.

3. Insulation:
   a. High Density Polyethylene (HDPE) or High Molecular Weight Polyethylene (HMWPE) designed for direct bury.
   b. Minimum insulation thickness: 0.045 inch
   c. Color shall be per APWA color code:
      1) Potable Water – Blue
4. Splices and or Connectors:
   a. Capable of handling from 2 to 4 wires per connector
   b. Designated as “water-proof”. PVC adhesives or sealing compounds are not acceptable.
   c. Splice Kit/Connector Manufactures:
      1) Copperhead Industries, LLC.
      2) 3M Company DBR Connectors.
      3) Approved Equivalent.
5. Grounding:
   a. Wire shall be grounded at all dead ends and stubs.
   b. Ground wire by connecting to a magnesium grounding anode rod, minimum 1 pound.
6. Tracer Wire System Manufactures:
   a. Kris Tech Wire Co. Inc.
   b. Approved Equivalent.
7. Tracer Wire Access Box:
   a. Tracer wires shall terminate at each end in an above ground, hydrant mounted access point.
   b. Access point shall be made of polypropylene material and include a section of PVC conduit that will extend a min. of three (3) feet below grade.
   c. Tracer wires shall be routed through PVC conduit and stripped and attached to stainless steel screws mounted to the inside of the access point.
   d. Access points shall be color to meet APWA standards for Potable Water.
   e. All access points shall be connected to a 1.5-pound magnesium ground rod with 12 AWG ground rod wire. Ground rod to be buried.
   f. Tracer wire access point:
      1) Shall be placed at intervals not exceeding 500 feet.
      2) Located directly on fire hydrants flanges using a Hydrant Flange Package or as indicated by the Owner and Engineer.
      3) Tracer wire access point shall be Cobra Access Point manufactured by Copperhead Industries or Approved Equivalent.

4) Ground rod shall be ANO-12 Ground Rod manufactured by Copperhead Industries or Approved Equivalent.

PART 3 EXECUTION

3.01 INSTALLATION - DETECTOR TAPE

A. Install the detector tape 48" below finished grade directly above and parallel with transmission water and sewer pipe.

B. At each manhole, bring the detector tape up to the manhole to a point approximately 24 inches below finished grade.

3.02 INSTALLATION – TRACER WIRE

A. Tracer wire shall be installed along with all water main pipelines as described below:

B. The tracer wire shall be extended with the water main pipeline. The wire shall be installed along the top of the pipe and shall be securely anchored to the pipe every 4 feet horizontally with an adhesive tape. The tracer wire shall be brought to the surface at each valve box or hydrant and shall terminate at a connection point on the main but shall not exceed 500 feet between connection points.

C. At locations where the water pipeline is not being replaced entirely, the Contractor will splice the new wire to the existing tracer wire at the point of reconnection. In instances where a water pipeline is not being replaced entirely and the existing tracer wire is not encountered, the Contractor shall bring tracer wire to the surface with curb stop or in case of no curb stop coil approximately five feet of wire at the reconnection location(s) to facilitate a future splice.

D. All tracer wire connections shall be a continuous single wire.

E. Tracer wire, access points, and accessories shall be incidental to the pipe installation costs.

3.03 TESTING

A. All tracer wire shall be tested using low frequency (512 Hz) tracing equipment, witnessed by the Owner and Engineer.

1. Continuity testing in lieu of actual line tracing shall not be accepted.

END OF SECTION

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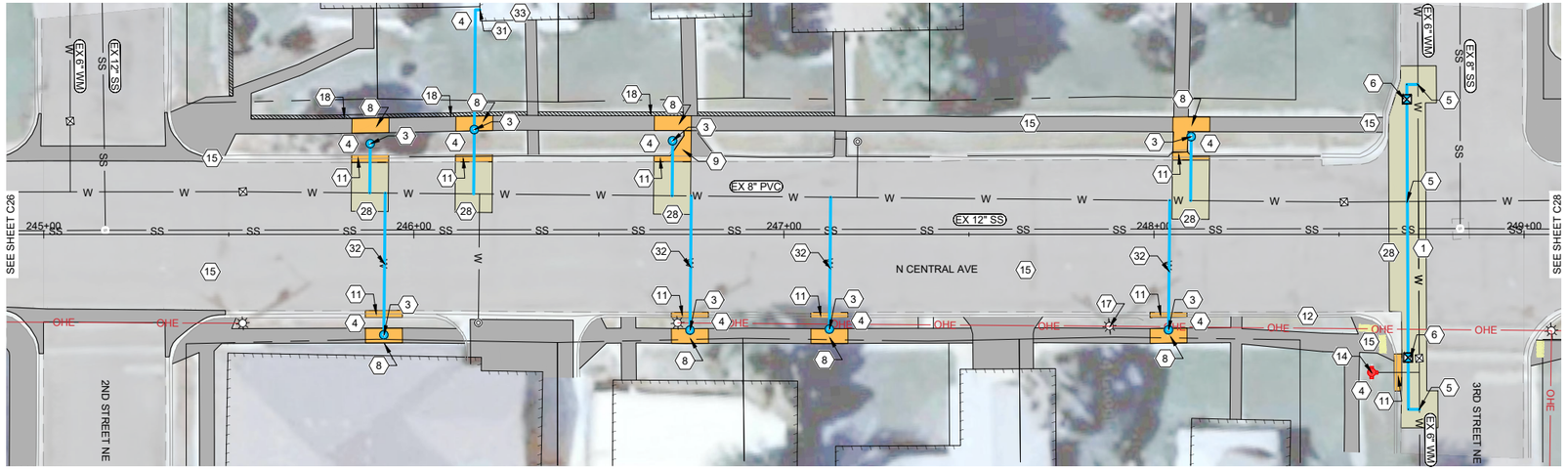


REMOVAL QUANTITIES	
ASPHALT	165 SY
CURB AND GUTTER	90 LF
CONCRETE SIDEWALK	364 SF
4" TOPSOIL	48 SY

RESTORATION QUANTITIES	
ASPHALT MILLINGS	1479 SF
CURB & GUTTER	90 LF
4" CONCRETE SIDEWALK	364 SF
4" TOPSOIL	48 SY
HYDROSEED	48 SY

WATERMAIN INSTALLATION

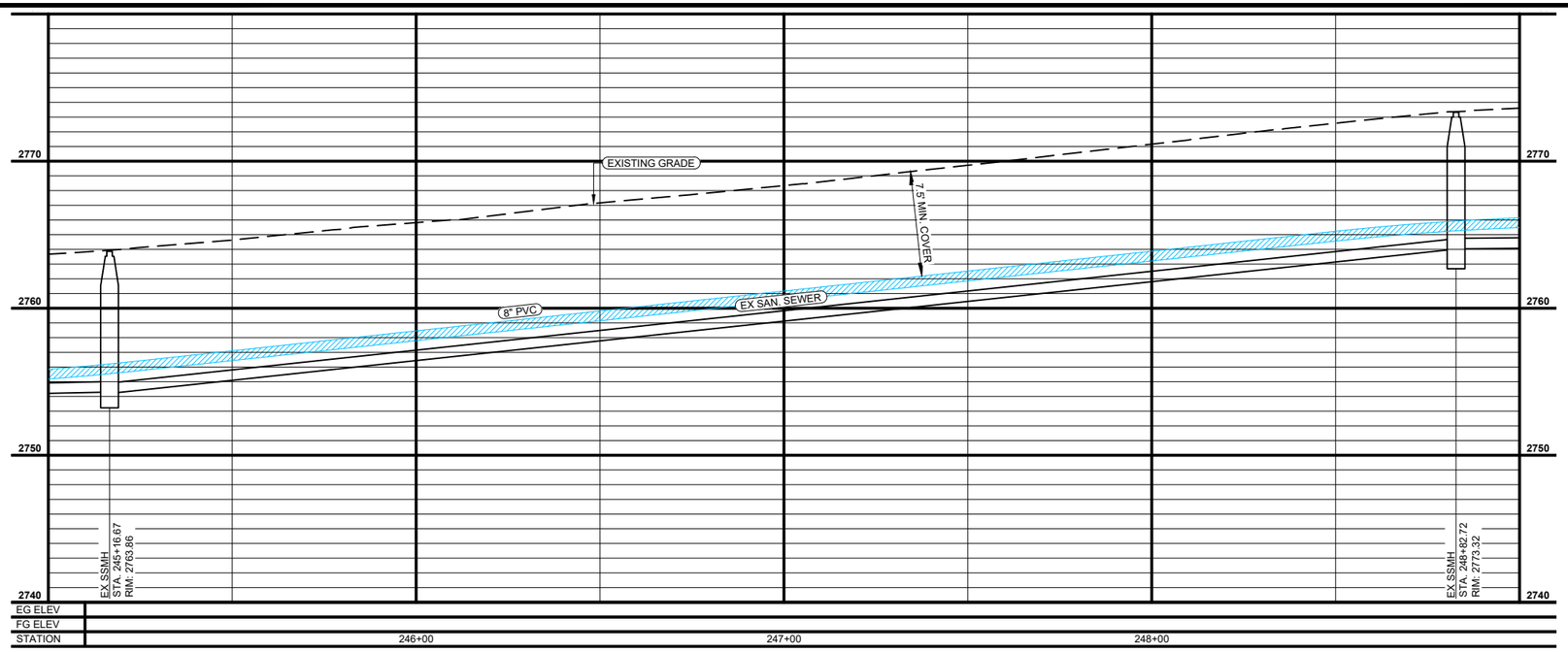
SIZE	START STATION	END STATION	LENGTH
8"	248+71.29 - 40.52' L	248+71.71 - 47.23' R	94 LF

WATER SERVICE INSTALLATION

START STATION	END STATION	DESCRIPTION	LENGTH
245+88.11 - 11.22' L	245+88.23 - 24.50' L	1.0" WM SERVICE	13 LF
245+92.28 - 11.18' L	245+91.92 - 27.12' R	1.0" WM SERVICE	38 LF
246+16.17 - 10.96' L	246+17.88 - 60.66' L	1.0" WM SERVICE	51 LF
246+69.79 - 10.45' L	246+69.93 - 25.31' L	1.0" WM SERVICE	15 LF
246+74.96 - 10.41' L	246+74.62 - 25.84' R	1.0" WM SERVICE	36 LF
247+12.63 - 10.05' L	247+12.29 - 25.58' R	1.0" WM SERVICE	36 LF
248+04.25 - 9.19' L	248+03.92 - 25.77' R	1.0" WM SERVICE	35 LF
248+09.88 - 9.13' L	248+10.04 - 26.42' L	1.0" WM SERVICE	17 LF

WATERMAIN STRUCTURE INSTALLATION

STRUCTURE	STATION	
8" 90° BEND	248+71.29 - 40.52' L	2
8" X 6" REDUCER CONNECT TO EX.	248+71.29 - 40.52' L	
8" 90° BEND	248+68.29 - 40.51' L	
8" GATE VALVE & BOX	248+68.31 - 36.51' L	
8" X 8" CROSS CONNECT TO EX.	248+68.44 - 8.88' L	
8" GATE VALVE & BOX	248+68.64 - 33.24' R	
8" 90° BEND	248+68.71 - 47.24' R	
8" 90° BEND	248+71.71 - 47.23' R	2
8" X 6" REDUCER CONNECT TO EX.	248+71.71 - 47.23' R	



SHEET RE-ISSUED BY ADDENDUM 2

Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

REGISTERED PROFESSIONAL ENGINEER
ZAC RANISATE
PE-30017
DATE 1/6/2025
NORTH DAKOTA

SYM	DATE	STATUS:
2	1/6/2025	ADDENDUM #2

APPR	
ZR	

NORTH

0 20
Scale in Feet

CONSTRUCTION NOTES

1. REMOVE AND DISPOSE OF EXISTING WATERMAIN PIPE. IF ABANDONDED IN PLACE PLUG AND CAP PIPE ENDS. INCIDENTAL TO CONTRACT.
3. REMOVE, DISPOSE AND REPLACE WATER SERVICE LINE. CONTRACTOR SHALL REMOVE AND DISPOSE EXISTING CURB STOP. WATERMAIN AND SERVICES ARE SHOWN FOR REFERENCE ONLY AND CONTRACTOR TO FIELD LOCATE WATERMAIN AND ALL ADDITIONAL SERVICES THAT ARE NOT SHOWN ON PLANS. SEE DETAIL 2/C33.
4. REMOVE TOPSOIL, GRADE, REPLACE TOPSOIL AND HYDROSEED ALL DISTURBED AREAS. SEE DETAIL 1/C35.
5. FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES NECESSARY TO CONNECT TO EXISTING WATERMAIN.
6. FURNISH AND INSTALL NEW 8" GATE VALVE. SEE DETAILS 4/C32 AND 4/C33.
8. REMOVE AND REPLACE EXISTING CONCRETE SIDEWALK. SEE DETAIL 3/C34.
9. REMOVE AND REPLACE EXISTING 6" CONCRETE DRIVEWAY. SEE DETAILS 1/C34 AND 1/C35.
11. REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE DETAIL 5/C35.
12. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
14. REMOVE EXISTING HYDRANT AND ALL ADDITIONAL APPURTENANCES. ABANDON 6" HYDRANT LEAD IN PLACE. REMOVAL INCIDENTAL TO CONTRACT.
15. CONTRACTOR SHALL PROTECT CURB, GUTTER, SIDEWALKS AND DRIVEWAYS EXCEPT WHERE REMOVAL IS DESIGNATED. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
17. SUPPORT EXISTING POWER POLE. INCIDENTAL TO CONTRACT.
18. PROTECT EXISTING RETAINING WALL. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
28. REMOVE AND DISPOSE EXISTING BITUMINOUS PAVEMENT. FURNISH AND INSTALL NEW 6" ASPHALT MILLINGS SURFACE. SEE DETAIL 1/C35.
31. NEW SERVICE LINE SHALL TIE INTO THE EXISTING METER INSIDE THE HOUSE. CONTRACTOR SHALL COORDINATE WITH THE HOMEOWNER AND RECEIVE PERMISSION PRIOR TO ACCESSING THEIR PROPERTY TO PERFORM NECESSARY PLUMBING TIE-INS.
32. NEW SERVICE LINE SHALL BE INSTALLED USING THE TRENCHLESS METHOD.
33. PROTECT EXISTING BUILDING. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

PROJECT TITLE:
2025 STREET AND UTILITY IMPROVEMENTS

SHEET TITLE:
NORTH CENTRAL AVENUE - 2ND STREET NE TO 3RD STREET NE

CLIENT:
CITY OF BEACH
BEACH, ND

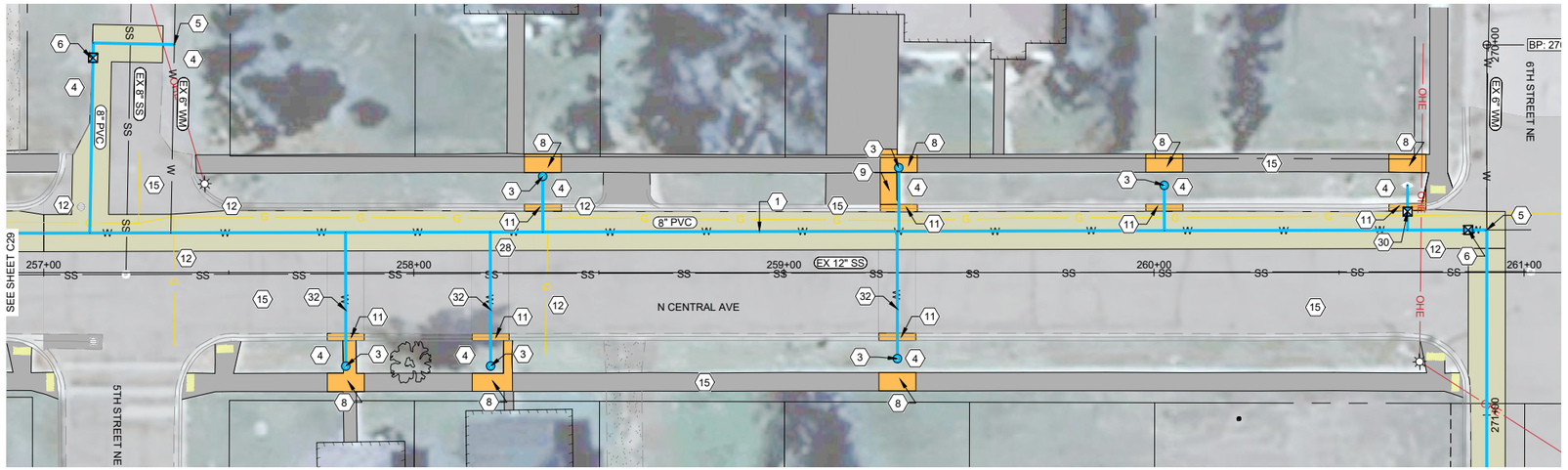
PREPARED BY: TH
CHECKED BY: JG
APPROVED BY: ZR

PROJECT NO: 05066-2022-001
DATE: NOVEMBER 2024
ALT. PROJECT NO: ----

SHEET DESIGNATOR: **CIV**
SHEET NO: **C27**

Advanced Engineering and Environmental Services, LLC www.ae2s.com

Plotted By: Canaan Knigge Date: Monday, January 6, 2025



REMOVAL QUANTITIES	
ASPHALT	512 SY
CURB AND GUTTER	70 LF
CONCRETE SIDEWALK	382 SF
CONCRETE DRIVEWAY	68 SF
4" TOPSOIL	83 SY

RESTORATION QUANTITIES	
6" ASPHALT MILLINGS	4607 SF
CURB & GUTTER	70 LF
4" CONCRETE SIDEWALK	382 SF
6" CONCRETE DRIVEWAY	68 SF
4" TOPSOIL	83 SY
HYDROSEED	83 SY

WATERMAIN INSTALLATION

SIZE	START STATION	END STATION	LENGTH
8"	257+00.00 - 10.63' L	260+89.90 - 11.49' L	390 LF
8"	257+12.44 - 10.66' L	257+35.30 - 61.57' L	73 LF
6"	260+68.50 - 11.44' L	260+68.47 - 23.53' L	12 LF

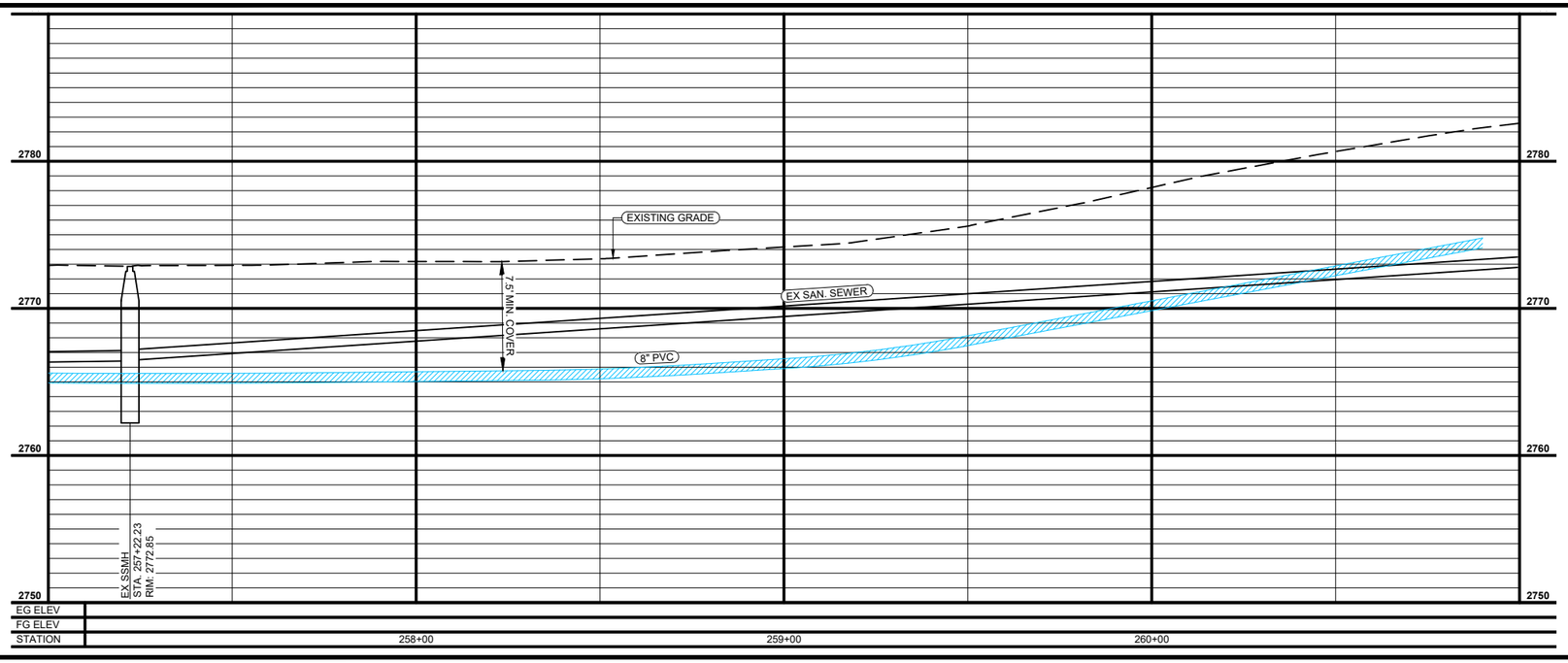
WATER SERVICE INSTALLATION

START STATION	END STATION	DESCRIPTION	LENGTH
257+81.56 - 10.81' L	257+81.64 - 25.29' R	1.0" WM SERVICE	36 LF
258+20.69 - 10.90' L	258+20.77 - 25.27' R	1.0" WM SERVICE	36 LF
258+34.88 - 10.93' L	258+34.85 - 25.94' L	1.0" WM SERVICE	15 LF
259+30.59 - 11.14' L	259+30.66 - 23.29' R	1.0" WM SERVICE	34 LF
259+31.08 - 11.14' L	259+31.04 - 28.29' L	1.0" WM SERVICE	17 LF
260+02.79 - 11.30' L	260+02.76 - 23.51' L	1.0" WM SERVICE	12 LF

WATERMAIN STRUCTURE INSTALLATION

STRUCTURE	STATION
8" X 8" TEE	257+12.44 - 10.66' L
8" GATE VALVE & BOX	257+13.34 - 57.99' L
8" 90° BEND	257+13.42 - 61.99' L
8" 90° BEND	257+35.30 - 61.57' L
8" X 6" REDUCER CONNECT TO EX.	257+35.30 - 61.57' L
8" X 6" TEE	260+68.50 - 11.44' L
6" GATE VALVE & BOX	260+68.49 - 16.44' L
8" GATE VALVE & BOX	260+84.90 - 11.48' L
8" X 8" CROSS	260+89.90 - 11.49' L
8" X 6" REDUCER CONNECT TO EX.	260+89.90 - 11.49' L
8" X 6" REDUCER CONNECT TO EX.	260+89.90 - 11.49' L

2



SHEET RE-ISSUED BY ADDENDUM 2

Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

REGISTERED PROFESSIONAL ENGINEER
ZAC RANISATE
PE-30017
DATE 1/6/2025
NORTH DAKOTA

STATUS:	SYM	DATE	APPR
	2	1/6/2025	ZR
		ADDENDUM #2	

NORTH

0 20
Scale in Feet

CONSTRUCTION NOTES

1. REMOVE AND DISPOSE OF EXISTING WATERMAIN PIPE. IF ABANDONDED IN PLACE PLUG AND CAP PIPE ENDS. INCIDENTAL TO CONTRACT.
3. REMOVE, DISPOSE AND REPLACE WATER SERVICE LINE. CONTRACTOR SHALL REMOVE AND DISPOSE EXISTING CURB STOP. WATERMAIN AND SERVICES ARE SHOWN FOR REFERENCE ONLY AND CONTRACTOR TO FIELD LOCATE WATERMAIN AND ALL ADDITIONAL SERVICES THAT ARE NOT SHOWN ON PLANS. SEE DETAIL 2/C33.
4. REMOVE TOPSOIL, GRADE, REPLACE TOPSOIL AND HYDROSEED ALL DISTURBED AREAS. SEE DETAIL 1/C35.
5. FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES NECESSARY TO CONNECT TO EXISTING WATERMAIN.
6. FURNISH AND INSTALL NEW 8" GATE VALVE. SEE DETAILS 4/C32 AND 4/C33.
8. REMOVE AND REPLACE EXISTING CONCRETE SIDEWALK. SEE DETAIL 3/C34.
9. REMOVE AND REPLACE EXISTING 6" CONCRETE DRIVEWAY. SEE DETAILS 1/C34 AND 1/C35.
11. REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE DETAIL 5/C35.
12. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
15. CONTRACTOR SHALL PROTECT CURB, GUTTER, SIDEWALKS AND DRIVEWAYS EXCEPT WHERE REMOVAL IS DESIGNATED. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
22. FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES NECESSARY TO CONNECT TO EXISTING WATER SERVICE LINE.
27. FURNISH AND INSTALL NEW FIRE HYDRANT AND GATE VALVE. SEE DETAILS 3/C33, 4/C33 AND 4/C32.
28. REMOVE AND DISPOSE EXISTING BITUMINOUS PAVEMENT. FURNISH AND INSTALL NEW 6" ASPHALT MILLINGS SURFACE. SEE DETAIL 1/C35.
30. FURNISH AND INSTALL NEW 6" GATE VALVE. SEE DETAILS 4/C32 AND 4/C33.
32. NEW SERVICE LINE SHALL BE INSTALLED USING THE TRENCHLESS METHOD.

PROJECT TITLE:
2025 STREET AND UTILITY IMPROVEMENTS

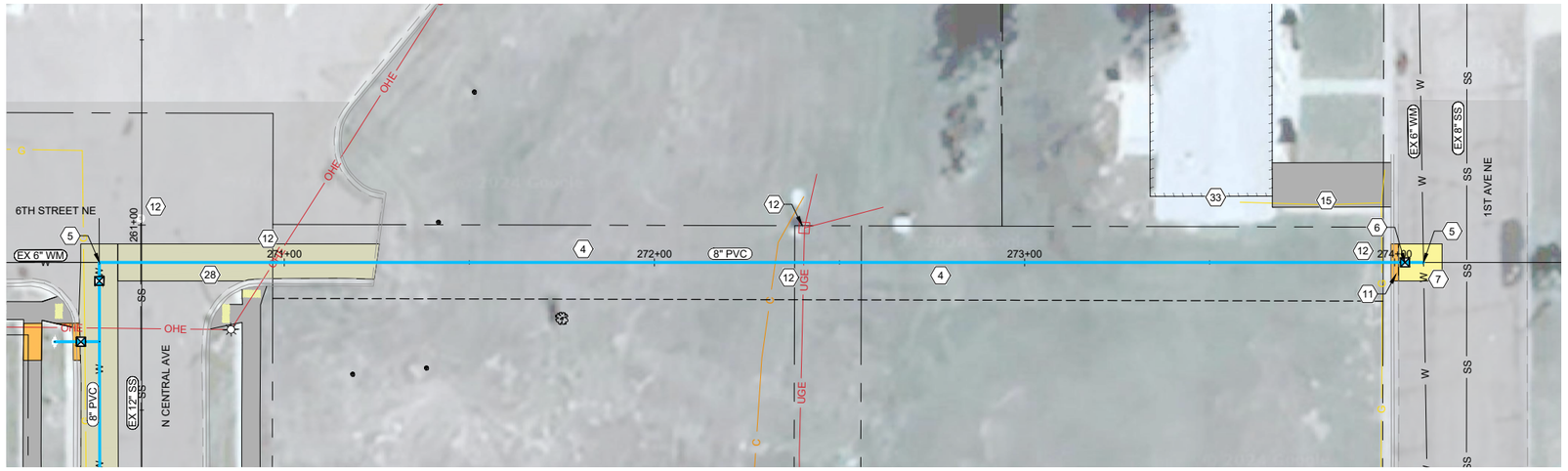
SHEET TITLE:
NORTH CENTRAL AVENUE - 5TH STREET NE TO 6TH STREET NE

CLIENT: **CITY OF BEACH**, BEACH, ND

PREPARED BY: TH
CHECKED BY: JG
APPROVED BY: ZR

PROJECT NO: 05066-2022-001
DATE: NOVEMBER 2024
ALT. PROJECT NO: ----

SHEET DESIGNATOR: **CIV**
SHEET NO: **C30**



REMOVAL QUANTITIES	
ASPHALT	88 SY
CURB AND GUTTER	10 LF
4" TOPSOIL	304 SY

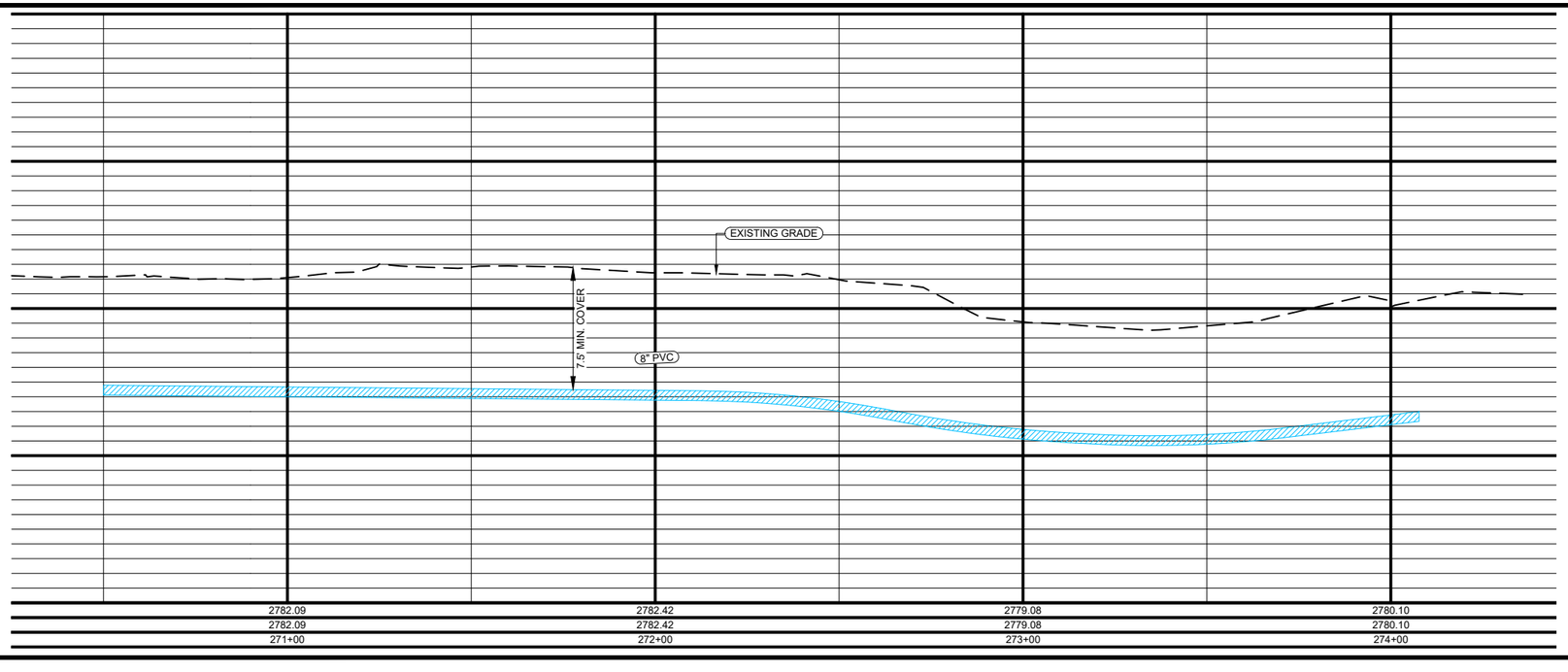
RESTORATION QUANTITIES	
4 1/2" ASPHALT	13 SY
6" CLASS 5 AGGREGATE BASE	13 SY
ASPHALT MILLINGS	678 SF
CURB & GUTTER	10 LF
4" TOPSOIL	304 SY
HYDROSEED	304 SY

WATERMAIN INSTALLATION			
SIZE	START STATION	END STATION	LENGTH
8"	270+50.00 - 0.00 R	274+07.79 - 0.00' R	358 LF

WATERMAIN STRUCTURE INSTALLATION	
STRUCTURE	STATION
8" X 8" CROSS CONNECT TO EX	270+50.00 - 0.00' R
8" GATE VALVE & BOX	274+02.79 - 0.00' R
8" X 8" TEE	274+07.79 - 0.00' R
8" X 6" REDUCER CONNECT TO EX.	274+07.79 - 0.00' R
8" X 6" REDUCER CONNECT TO EX.	274+07.79 - 0.00' R

2

2



SHEET RE-ISSUED BY ADDENDUM 2

Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

REGISTERED PROFESSIONAL ENGINEER
ZAC RANISATE
PE-30017
DATE 1/6/2025
NORTH DAKOTA

STATUS:	SYM	DATE	APPR
	2	1/6/2025	ZR
			ADDENDUM #2

NORTH

0 20
Scale in Feet

CONSTRUCTION NOTES

4. REMOVE TOPSOIL, GRADE, REPLACE TOPSOIL AND HYDROSEED ALL DISTURBED AREAS. SEE DETAIL 1/C35.
5. FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES NECESSARY TO CONNECT TO EXISTING WATERMAIN.
6. FURNISH AND INSTALL NEW 8" GATE VALVE. SEE DETAILS 4/C32 AND 4/C33.
7. REMOVE AND REPLACE EXISTING BITUMINOUS PAVEMENT. SEE DETAIL 1/C35.
11. REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE DETAIL 5/C35.
12. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
15. CONTRACTOR SHALL PROTECT CURB, GUTTER, SIDEWALKS AND DRIVEWAYS EXCEPT WHERE REMOVAL IS DESIGNATED. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
28. REMOVE AND DISPOSE EXISTING BITUMINOUS PAVEMENT. FURNISH AND INSTALL NEW 6" ASPHALT MILLINGS SURFACE. SEE DETAIL 1/C35.
33. PROTECT EXISTING BUILDING. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

PROJECT TITLE:
2025 STREET AND UTILITY IMPROVEMENTS

SHEET TITLE:
6TH STREET NW - N CENTRAL AVENUE TO 1ST AVENUE NE

CLIENT:
CITY OF BEACH
BEACH, ND

PREPARED BY: TH
CHECKED BY: JG
APPROVED BY: ZR

PROJECT NO: 05066-2022-001
DATE: NOVEMBER 2024
ALT. PROJECT NO: ----

SHEET DESIGNATOR: **CIV**

SHEET NO: **C31**

AE2S Advanced Engineering and Environmental Services, LLC www.ae2s.com