Invitation to Bid (ITB)
ITB # VSW-NUP-2019-38

Department of Environmental Conservation
Village Safe Water Program

Water Treatment Plant Foundation, Nunapitchuk, Alaska

Date of Release: June 25, 2019

Bid Opening Date: July 16, 2019 at 3:00PM (Alaska Time)

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Section 1

Invitation to Bid

On behalf of the City of Nunapitchuk, the State of Alaska, Department of Environmental Conservation (DEC), Village Safe Water (VSW) Program is soliciting competitive sealed bids for the construction of pile foundations for a new water treatment plant/washeteria building and its exterior fuel tank, as well as the relocation of an existing timber foundation building. The VSW Program is the City Nunapitchuk's authorized representative for this Invitation to Bid (ITB).

Bid Submittal

Sealed Bids must be submitted at the VSW Program Office, 555 Cordova Street, 4th Floor, Anchorage, Alaska 99501 and must be time and date stamped prior to 3:00 PM Alaska Time, on **July 16, 2019**, at which time they will be publicly opened. Late Bids will not be considered.

Bidders shall bid on all bid items in order to be considered responsive. The total price shall be quoted FOB Destination; Nunapitchuk, Alaska.

Scope of Work

The purpose of this solicitation is to construct piling foundations for the support of a future water treatment plant building and fuel tank as shown in the attached plans and specifications. Work must be completed by April 30, 2020.

The work shall include the following:

1. Mobilization and Demobilization;
2. Furnish and Install HP 10x57 Piles;
3. Furnish and Install Additional Pile Length below Design Depth;
4. Furnish and Install Pile Caps;
5. Furnish and Install Pile Thermal Siphons;
6. Relocate Community Building;
7. Construction Survey.

The work completed consists of furnishing all labor, equipment and materials for the construction.

An inter-agency single source contract may be added for pile driving work for a new bulk fuel site in Nunapitchuk, however DEC does not guarantee this single source contract will be established.

A standard workweek is generally based on a 60-hour workweek, Monday through Saturday, 8:00 a.m. to 6:30 p.m. Work in excess of this may cause community complaint of noise or dust, in which event work shall need to be accomplished within the above described 60-hour work window.

Minimum Qualifications of the Bidder

The pile driver, herein referred to as Contractor, shall be a licensed general contractor with the State of Alaska in accordance with Title 8 (08.18.011) and be experienced and skilled in driving piles. The Contractor shall be qualified by broad experience in the construction of pile foundations, and shall have the necessary equipment and experience to cope with all construction problems that may arise. The Contractor shall employ competent workers for the execution of the work and all such work shall be performed with modern equipment in good mechanical condition under the direct supervision of

an experienced pile driver.

Important Information to Bidders

In order to submit a responsive bid, the bidder shall include the written documentation specified below with their bid. Failure to include this documentation with the bid or documentation identified below shall cause the bid to be deemed non-responsive and therefore not considered.

- Complete the following:
  a) Section 4, Bid Form;
  b) Attachment A, Bid Schedule, Contractor's Questionnaire, and Proposed Performance Schedule.

Pre-Bid Conference

A pre-bid conference will be held on **July 3, 2019** at 2:00 PM Alaska Time, at 555 Cordova Street (1st Floor), Anchorage, Alaska 99501. The purpose of the conference is to discuss the work to be performed with the prospective offerors and allow them to ask questions concerning the ITB. Interested bidders are encouraged to attend the pre-bid conference or call the conference line number. The conference line number is 800-315-6338, access code 75021#. Questions and answers will be transcribed and be issued as an Addendum to the ITB after the pre-bid meeting by the Procurement Officer.

Offerors with a disability needing accommodation should contact the Procurement Officer prior to the date set for the pre-proposal conference so that reasonable accommodation can be made.

Pre Award Conference

After the notice-of-intent to award, the apparent low bidder shall conference with VSW and the Engineer to discuss the project. VSW wants to confirm information in the bid and confirm that the bidder understands the project conditions.

Questions regarding this solicitation shall be addressed in writing by email (preferred) to the Procurement Officer, Fred Parrish at DECDASPROCUREMENT@alaska.gov. The deadline for submission of questions is 3:00 PM Alaska Time, **July 3, 2019.**

BIDDERS WITH DISABILITIES: The State of Alaska complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to participate in this procurement should contact the Division of Administrative, Procurement Section at one of the following numbers no later than **June 27, 2019** to make any necessary arrangements.

Telephone: 907-269-0291
Fax: 907-269-7509

END OF SECTION 1.

Section 2

Instructions to Bidders

1. All sealed bids shall be submitted prior to deadline as stated in the ITB, Section One. Bids must be submitted in sealed envelopes. Oral, faxed or emailed Bids are not acceptable. Any bids received after the scheduled closing date and time shall be deemed non-responsive and returned to the bidder unopened. Bids must be submitted in a sealed envelope marked:

From: Bidder Contract Name and Phone Number
Bidder's Address
ITB VSW-NUP-2019-38
Water Treatment Plant Foundation

To: DEC Village Safe Water (VSW) Program
Nunapitchuk Project
ITB VSW-NUP-2019-38
Attn: Fred Parrish
555 Cordova Street, 4th Floor
Anchorage, Alaska 99501

It is the responsibility of the bidder to confirm receipt by the Procurement Officer identified in this ITB. Alternative bids for anything other than what is required will be rejected unless any possible alternatives are allowed in the ITB. By submitting a bid, the bidder agrees to the terms and conditions contained in this ITB, and that the VSW Program has the sole discretion to interpret and enforce the terms and conditions of this ITB. Award is contingent upon responsiveness and responsibility being determined at a later time.

Required Documentation from Bidders:

- Completed Bid Form (one page) - **Section 4**
- Completed Bid Schedule, Contractor's Questionnaire, Proposed Performance Schedule (four pages) - **Attachment A**

Bidders that fail to submit the required documentation, as identified above, before the deadline established for this ITB shall be deemed non-responsive.

2. Bids shall be submitted on the Bid Schedule and Contractor's Questionnaire provided as Attachment A and must be signed in ink. The person signing the Bid Schedule shall initial erasures or other changes appearing on the forms. Bid prices shall be in U.S. funds and include all applicable fees and costs to provide all items identified on the Bid Schedule.

3. A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in the ITB and submit a new Bid prior to the date and time for the opening of Bids.

If within 24 hours after Bids are opened any Bidder files a duly signed written notice with the Procurement Officer and promptly thereafter demonstrates to the reasonable satisfaction of Procurement Officer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

4. Bidders shall acknowledge on the Bid Form their receipt of all ITB addendums issued during the bidding period. Failure to acknowledge addendums may result in the bid being rejected.

5. The bid must include everything necessary to fulfill all of the requirements of the ITB and other parts of the bidding documents. In the event of a difference between a price stated in words and a price stated in figures, the words shall govern. Math errors shall be corrected based on the criteria that words prevail over figures and that unit prices prevail over total prices (extensions of unit prices or bid summations). For purposes of bid comparison, no discounts will be considered.

6. The Procurement Officer reserves the right to reject any bid which is non-responsive, incomplete, or irregular; any bid which omits one or more items on the Bid Schedule; or any bid in which unit prices are unbalanced in the judgment of the VSW Program. The Procurement Officer reserves the right to waive any technicalities it deems appropriate in awarding the bid. The Procurement Officer reserves the right to reject any and all bids.

7. The VSW Program is not liable for any costs incurred by the bidder in bid preparation and submittal.

8. CRW Engineering Group, LLC is the Engineer for this project.

9. EQUIPMENT: Equipment must meet or exceed the specifications listed on the Equipment Schedule. Equipment unit rates are hourly, with unlimited hours available. Only actual operating hours shall be paid for by the Owner. Operating hours are defined as hours that the equipment is in use and is being operated by an operator. Equipment that is idling must not be charged to the project. Equipment that is inoperable or not performing correctly, per the manufacturer, must be repaired or replaced within two calendar days, or as approved by the Engineer. Substituted equipment must meet or exceed the specifications listed on the Bid Schedule, and shall be mobilized/demobilized at the Contractor's expense. Equipment down time and standby time is not paid for. Equipment servicing and maintenance (labor, parts, and expendables) must occur after hours and shall be the responsibility of the Contractor, at no cost to the Owner. Fueling of the equipment must occur after hours and shall be the responsibility of the Contractor.

10. SCHEDULE: The estimated Period of Performance is July 2019 through April 2020.

11. BID BOND INFORMATION: Reference Appendix A, Standard General Conditions of the Construction Contract, Article 11, Paragraph 11.3.

END OF SECTION 2.

Section 3

Award of Contract

1. Award will be made to the lowest responsive and responsible bidder, based on the total bid price in words on Attachment A.

2. For purposes of award, offers made in accordance with this ITB shall be good and firm for 90 days from the date of bid opening. If a contract is to be awarded, the VSW Program shall issue a Notice of Intent to Award to the lowest responsive and responsible bidder as soon as practicable.

3. Acceptance of the bidder's offer shall be by issuance of a construction services standard contract. The bidders total bid amount shall be construed as its offer, pursuant to the bid documents, to be accepted by the VSW Program. The terms and conditions of this ITB and bidders offer shall become part of any construction services standard contract resulting from this ITB. The contractor may not add additional or different terms and conditions to the ITB or any construction services standard contract resulting from this ITB.

4. Work shall commence after a notice to proceed is issued to the contractor by the VSW Program.

5. Prevailing Wages: The Contractor must comply with all requirements of Alaska Statute 36.05, entitled Public Contracts, Wage & Hour Administration, including the latest State of Alaska Department of Labor & Workforce Development - Laborers and Mechanics Minimum Rates of Pay – Pamphlet No. 600. http://www.labor.state.ak.us/lss/pamp600.htm is the website link for the current document. The Contractor is responsible for ensuring they use the most up-to- date version of Pamphlet No. 600.

6. The contractor shall furnish the following documentation to the Procurement Officer prior to contract award:

- Valid Alaska Business License;
- Valid Alaska Contractor's License;
- Subcontractor List with required documentation (see requirements below);
- Certificate of Insurance – **Appendix A, Article 11, Paragraph 11.2, General Requirements;**
- Performance Bond and Payment Bond – **Appendix A, Article 11, Paragraph 11.3, Performance Bond and Payment Bond;**
- Completed Federal Debarment Certification Form (two pages) – **Appendix B;**
- Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions Form (three pages) – **Appendix C.**

7. Subcontractors: Within five working days after identification of the apparent low bidder for a construction contract, the apparent low bidder shall submit a list of the subcontractors proposed to use in the performance of the construction contract. The list must include the name and location of the place of business for each subcontractor, evidence of each subcontractor's valid Alaska business license and evidence of each subcontractor's valid Alaska contractor's license. Bidders will not be

allowed to use subcontractors in the performance of the construction contract that do not have a valid Alaska business license and contractor's license at the date/time bids are opened.

8. Prior to beginning construction, a preconstruction conference is required. VSW Program will coordinate with the contractor to set up a date/time for the preconstruction conference.

END OF SECTION 3.

Section 4

Bid Form

ITB VSW-NUP-2019-38
Water Treatment Plant Foundation

Company_____

Address_____

Alaska Business License Number: _____

Do you qualify for MBE/WBE: [ ] Yes or [ ] No. If yes, certification number: _____ and submit appropriate certification documentation.

To the Alaska Department of Environmental Conservation, Village Safe Water Program:

In compliance with your Invitation to Bid (ITB) VSW-NUP-2019-38 dated June 25, 2019, the undersigned proposes to provide the items or services identified on the Bid Schedule.

The undersigned hereby agrees that in the performance of any contract resulting from this ITB, the contractor shall comply with all applicable federal, state, and borough regulations, codes, and laws; and be liable for all required insurance, licenses, permits and bonds; and pay all applicable federal, state and borough taxes.

The undersigned declares, under penalty of perjury under the laws of the United States, that the bid submitted was independently arrived at without collusion.

The undersigned acknowledges receipt of the following addenda to the bid documents (give number and date of each):

Addendum No. _____ Date Issued _____

Addendum No. _____ Date Issued _____

Addendum No. _____ Date Issued _____

Addendum No. _____ Date Issued _____

Addendum No. _____ Date Issued _____

_____	_____
Printed Name	Signature of Authorized Official
_____	_____
Title	Date
_____	_____
Phone Number	Email Address

Section 5

Technical Requirements

For

Water Treatment Plant Foundation

PART 1 – GENERAL

1.1 DESCRIPTION

The work covered by this Section includes the furnishing of all materials, labor, equipment and performing all operations for the construction of pile foundations as detailed in Attachment B, Technical Specifications and Attachment C, Drawings for the City of Nunapitchuk (herein referred to as Owner) located in Nunapitchuk, Alaska. The Department of Environmental Conservation (DEC) Village Safe Water (VSW) Program will act as the Owner's Representative, assume all duties and responsibilities, and have the rights and authority assigned to Owner in the Contract Documents in connection with completion of the work in accordance with the Contract Documents. CRW Engineering Group, LLC will serve as the Project Engineer, hereinafter called Engineer, and will be responsible for monitoring the performance of services provided by the Contractor.

Time is of the essence. All work shall be completed by **April 30, 2020** and be accomplished in accordance with these specifications and attached drawings. Time extensions can only be granted if there are changes in the work, or by excusable delays. No claim for extra cost shall be allowed to the Contractor for any delay created or within the control of the Contractor, including those delays caused by third parties, and beyond the control of the Owner.

Pricing provided in the Bid Schedule is to include all costs associated with completing the project, including administration, overhead, profit, etc. Bidder must include a price for all items even if the price is $0.00. Quantities referenced in the Bid Schedule are estimates only, and do not reflect the actual quantity that will be needed to complete the project. The Owner does not guarantee a minimum or maximum quantity for any of these items. The Contractor shall invoice only for quantities used.

If the Owner has provided optional items to select project work from, it will be the Owner's right to select the option best suited for the desired product. No additional fees, cost, or monies will be owed to the bidder for options <u>not</u> selected.

Prior to award, upon the request of the Owner, Owner's Representative and Engineer, the Bidder shall attend a pre-award meeting with the Owner, Owner's Representative and Engineer, and shall bring to the meeting any documents requested by the Owner, Owner's Representative and Engineer to assist the Owner in determining the Bidder's understanding of the Project. In the event the Bidder refuses to provide the requested information or attend the pre-award meeting, the Owner may reject the bid as non-responsive.

1.2 REFERENCES AND APPLICABLE SPECIFICATION STANDARDS

NOT APLLICABLE

1.3 SUBMITTALS AND SUBSTITUTIONS

1.3.1 Materials, Methods and Schedule

- Prior to materials procurement or shipment, the Contractor shall identify all proposed products and materials required by the contract and provide manufacturers specifications for those products and materials.

- The Contractor shall identify all pile-driving equipment, methods and procedures proposed for completion of the project.

- The Contractor shall provide the proposed method of shipment and a tentative timetable adequate to meet the construction start date (to be determined prior to award of contract and project completion date of **April 30, 2020**.

- Reference Attachment B, Technical Specifications for additional submittal requirements.

1.3.2 Safety and Protection

- The Contractor shall provide a Health and Safety Work Plan for review by the Owner, Owner's Representative and Engineer prior to award of contract.

- The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.

- The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

    - ✓ All employees on the work and other persons and organizations who may be affected thereby;
    - ✓ All the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
    - ✓ Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement during construction.

- The Contractor shall comply with all applicable Laws and Regulations (whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection.

- The Contractor shall notify owners of adjacent property and utilities when prosecution of the work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- The Contractor shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and program.

- Materials that contain hazardous substances or mixtures may be required for the Work. A Material Safety Data Sheet shall be made available on site by the Contractor for every hazardous product used.

- Material usage shall be accomplished with strict adherence to Occupational Safety and Health Administration (OSHA) safety requirements and all manufacturer's warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.

- The Contractor shall be responsible for coordinating any exchange of Material Safety Data Sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

- The Contractor shall notify the Engineer if it considers a specified product or its intended usage to be unsafe. This notification must be given to the Engineer prior to the product being ordered or, if provided by some other party, prior to the product being incorporated in the work.

PART 2 – PRODUCTS

2.1 Reference Attachment B, Technical Specifications for material requirements.

PART 3 – EXECUTION

3.1 GENERAL

The Contractor shall consult with the Owner's Representative and Engineer before proceeding.

3.2 TRANSPORTATION

The Contractor is made aware that the public airport is separated from the City's central business area and project site by the Johnson River. The central business is located on the east side. The Contractor shall be responsible for safely transporting workers, equipment and material across the river, regardless of weather and season.

3.3 ACCESS

The project location is located on a flat area of land located on the east side of the Johnson River, adjacent to the existing water treatment plant. As indicated, access is limited by existing surface improvements, including the boardwalks and numerous buildings and tanks. The Contractor may visit the site to assess equipment and material access needs to complete the work. The drawings may not completely indicate the locations of existing facilities. The Contractor shall be responsible for all costs associated with mobilizing equipment to the work site, including any replacement or repair of damaged boardwalks to existing conditions and any snow clearing.

3.4 BOARDWALKS

The Contractor may cross over boardwalk structures provided that sufficient protection is provided to prevent any damage. Specific access and method of boardwalk protection shall be approved by the Owner prior to mobilization of equipment. Any damage made to boardwalks in the course of construction shall be repaired immediately with new materials to existing conditions or better, and to the satisfaction of the Engineer.

3.5 LODGING

Lodging shall be the responsibility of the Contractor.

3.6 TUNDRA PROTECTION

Work shall be accomplished when the tundra is frozen. Tundra shall be protected by the Contractor to prevent compaction, rutting and ponding that may occur as a result of the Contractor's activities. Mats shall be used as required to protect the in-situ organic soils from damage if they become unfrozen during construction. Any ruts or damaged tundra shall be filled, patched, sloped to drain and seeded by the Contractor.

3.7 SITE INFORMATION

Attachment D, Geotechnical Report has been prepared for this project and is available to the Contractor to use as reference information only. No guarantee is made by Owner that such data accurately represents actual subsurface conditions.

3.8 PILE DRIVING TIME LIMITATIONS

The Contractor shall not drive piling during the following time periods:

- Between the night-time hours of 8:00 PM and 8:00 AM.

- During the time at which standardized academic testing may be administered in the school. The Contractor shall coordinate with the school principal to determine times of this testing and abide by the limitations.

3.9 MOBILIZATION AND DEMOBILIZATION

The Contractor shall be paid under a separate pay item to cover all costs for mobilization and demobilization of this project. These costs shall include all fixed costs anticipated by the Contractor to accomplish mobilization and demobilization for the project. Mobilization costs shall include erection of a USDA-Rural Development project sign as described in Section 6 and Attachment E.

3.10 TEMPORARY EROSION AND POLLUTION CONTROL

Temporary erosion and pollution control shall consist of the following:

- The Contractor shall provide temporary control measures to control temporary erosion and water pollution in accordance with local, state, and federal regulations or ordinances.

- Prior to the start of the applicable construction, the Contractor shall submit to the Engineer for acceptance, the Contractor's plan for accomplishment of temporary erosion control work, including disposal and control of water discharged during well development and pump testing. No work shall be started until the erosion control plan and proposed methods of operations have been accepted.

- This work shall involve the construction of temporary berms, dikes, dams, sediment basins, and slope drains, and the use of temporary mulches, seeding, or other control devices or methods as necessary to control erosion. Temporary pollution control measures shall be used to correct conditions that develop during construction that were not foreseen during the design stage.

- In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

- Other miscellaneous tasks described in this Section as work to be completed by the Contractor shall be considered incidental to the project and no additional compensation shall be given to the Contractor for the completion of this work.

3.11 UTILITIES

The Contractor is responsible for determining the location of all utilities and for protecting them from damage during construction. Should any marked utility be damaged or disturbed, the Contractor shall immediately notify the Owner and Engineer of the damaged utility. All damage that results from work under the contract shall be promptly repaired at the expense of the Contractor. The source of electrical power to operate the Contractor's equipment shall be the Contractor's responsibility. The Contractor shall also be responsible for obtaining water for work as needed.

3.12 MOBILIZATION, DEMOBILIZATION, AND CLEANUP OF SITE

To facilitate coordination of work, the Contractor shall notify the Owner's Representative at least 48 hours in advance of mobilizing and demobilization. The Contractor shall perform work in a manner to ensure minimal obstruction to traffic and minimal inconvenience to the general public and the Owner.

During the progress of work, the Contractor shall protect all existing vegetation, structures, boardwalks, ditches, culverts, signposts, fences, and similar items. If the Contractor must remove or disturb these facilities, provision shall be made to maintain a temporary facility serving the same purpose as that which it was intended to replace. These provisions shall include:

- Restore all areas disturbed by construction to a condition at least equal to that existing prior to construction. Excess construction materials, equipment, tools, waste excavation, and rubbish shall be removed. Excavated areas shall be graded to provide drainage as required by the drawings and specifications, or in the absence of specific requirements, to restore original drainage patterns in existence prior to construction.

3.13 DISPOSAL OF DEBRIS

There is no permitted landfill in Nunapitchuk. All debris generated by the Contractor shall be removed from the Community or disposed of in accordance with State and Federal regulations.

3.14 MEASUREMENT AND PAYMENT

The contract price for each item shall constitute full compensation for furnishing all labor, equipment, appliances, and material, and performing all operations necessary to construct and complete the items in accordance with the requirements of the specifications as full compensation notwithstanding that minor features of work to complete the item may not be mentioned.

Deviation in the actual quantities either above or below the estimated quantities shown for each item shall not be a basis for a claim for adjustment in any of the contract unit prices. Work paid for under one item will not be paid for under another item.

Payment for mobilization for construction must be made at the lump sum prices named in Attachment A, Bid Schedule under Item No. 1, which price shall constitute full compensation for completion of all transportation of Contractor's equipment, personnel, materials, tools, supplies, and the provision of all facilities for temporary power, water, fire protection, communications, and storage at the project site. This item also includes fabrication and installation of a USDA-RD project sign, and obtaining all necessary permits required by local, state, and federal governmental agencies. For purposes of pay, 80 percent of the lump sum price shall be paid for mobilization with the remaining 20 percent paid for demobilization, in accordance with the Contract Documents. Payment for this item shall be on a lump sum basis.

Furnish and Install HP 10x57 Piles shall include all labor, materials and equipment required to install piles to the depths as indicated in the Contract Documents. Payment for this item shall be for each vertical linear foot (VLF) of pile furnished, installed and accepted by the Engineer.

Furnish and Install Additional Pile Length below Design Depth shall include all labor, materials and equipment required to install piles below the depths indicated in the Contract Documents. Payment for this item shall be for each vertical linear foot of pile furnished, installed and accepted by the Engineer.

Furnish and Install Pile Caps shall include all labor, materials and equipment required to install piles caps as indicated in the Contract Documents. Payment shall be for each pile cap furnished, installed and accepted by the Engineer.

Furnish and Install Pile Thermal Siphons shall include all labor, materials and equipment required to install thermal siphons as indicated in the contract documents. Payment shall be for each thermal siphon furnished, installed and accepted by the Engineer.

Relocate Community Building shall include all labor, materials and equipment required to relocate the community building as indicated in the Contract Documents. Final location of the building is generally shown in the drawings, but shall be coordinated with the Owner prior to relocation. Work shall include relocation of building and building foundation. Foundation shall be shimmed with timber shims as necessary to provide a level surface for the building. Measurement for payment shall be percent complete as determined by the Engineer. Payment for this item shall be on a lump sum basis.

Construction Survey shall include all labor, materials and equipment required to perform a construction survey to determine the pile locations. Survey shall be performed by a professional land surveyor, licensed in the State of Alaska. Survey shall document pile location in relation to existing benchmarks and property corners.

Section 6

Supplemental Contract Requirements

1. BID SCHEDULE

1.1. This is a unit rate contract. Refer to Attachment A, Bid Schedule for the schedule of values.

2. MBE/WBE Preference

Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE).

This procurement is funded in part or fully through federal grants or cooperative agreements. It is a national policy to award a fair share of contracts to Minority Firms and Women's Business Enterprises through affirmative action. The negotiated Federal "Fair Share" percentage for **fiscal years 2018 through 2019** is 3.67% MBE and 1.54% WBE. This solicitation incorporates a five point preference for all qualified minority firms and women's business enterprises.

In order to be deemed a bona fide Minority Business Enterprise (MBE) or Women's Business Enterprise (WBE) a firm must be an independent business concern which is a least fifty-one percent (51%) owned and controlled by minority group members or women.

It is the responsibility of the offeror to include in the bid their qualifications and/or of the qualifications of their subcontractors for this preference. It is also the responsibility of the offeror claiming eligibility for this preference to pledge in the proposal that the eligible subcontractor will be **guaranteed** at least 5.21% of the proposed work.

Following is an example of how the preference points will be calculated for qualifying businesses:

MBE/WBE Offeror's Preference
[STEP 1]
Determine the number of points available to MBE/WBE eligible offerors under this preference.

Total number of points available in this example situation = 100 Points

100 x	5%	=	5
Total Points	MBE/WBE Offeror's Percentage Preference		Number of Points Available to Eligible Offerors Under MBE/WBE Preference

[STEP 2]
Add the preference points to the qualified MBE/WBE offers. In a hypothetical situation, there are three (3) offerors. After being evaluated, each received the following points:

Offeror #1 95 Points
Offeror #2 90 Points
Offeror #3 92 Points

Before preference points are calculated, offeror #1 is the apparent winner. However, in this

hypothetical situation, offeror #2 and offeror #3 are eligible for the MBE/WBE preference. After adding five (5) points to their scores, offeror #3 is the new apparent winner, with ninety-seven (97) points.

3. GRANT SPECIFIC REQUIREMENTS

USDA-RD FUNDING REQUIREMENTS

A sign shall be erected which indicates that USDA Rural Development is participating in the development of the projects. Requirements for the signage are attached, see Attachment E. A picture of the sign must be forwarded to Owner's Representative to send to USDA Rural Development. Rural Development may complete periodic inspections of the improvements during and after construction. Inspections are for the purposes of Rural Development.

American Iron and Steel

Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) applies a new American Iron and Steel requirement:

> (l) No Federal funds made available for this fiscal year for the rural water, waste water, waste disposal, and solid waste management programs authorized by the Consolidated Farm and Rural Development Act (7 U.S.C. 1926 et seq.) shall be used for a project for the construction, alteration, maintenance, or repair of a public water or wastewater system unless all of the iron and steel products used in the project are produced in the United States.
>
> (2) The term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
>
> (3) The requirement shall not apply in any case or category of cases in which the Secretary of Agriculture (in this section referred to as the "Secretary") or the designee of the Secretary finds that:
>
> a. applying the requirement would be inconsistent with the public interest;
>
> b. iron and steel products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
>
> c. inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Environmental Requirements

a. Limits of construction in wetlands will be clearly delineated with flagging, stakes, construction fencing, and silt fencing prior to the initiation of any work in or adjacent to wetlands. No vehicles or equipment will be fueled or serviced in wetlands or other aquatic areas within or adjacent to the project footprint. Fueling and service vehicles will all be equipped with adequate materials such as sorbent pads, booms, etc. to immediately contain and commence cleanup of spilled fuels and other petroleum products.

b. Clean and contaminant free sand/fill will be used, and no fill or construction or construction material shall be stockpiled on adjacent wetlands outside the project boundary.

c. Design, implement and maintain appropriate and effective erosion, sediment, and storm water controls before, during, and after construction.

d. Storm Water Pollution and Prevention Plan and Notice of Intent and National Pollutant Discharge Permit may be required if the contractor plans to disturb more than 1 acre.

e. Heavy equipment use must be limited to daytime use (10 hour).

f. All fills and disturbed areas will be permanently stabilized by using top soil, vegetation or other suitable means. Disturbed areas will be restored to the extent possible with the planting of native species.

g. Best Management Practices must be utilized during construction to minimize or avoid potential impacts to water quality or other resources.

h. In the event that historic artifacts are discovered, all work must be stopped immediately and appropriate agencies must be contacted.

i. Emissions from vehicles and equipment must be maintained below applicable state and local emission control plans;

j. Fugitive dust from construction activities must be reduced during construction by the use of water or other dust control measures;

k. Facilities will be constructed at least 1' above the maximum expected flood elevation;

In addition to the measures listed above, all applicable local, state, and federal environmental requirements will be followed.

END OF SUPPLEMENTAL CONTRACT REQUIREMENTS

Section 7

Attachments List

A. Bid Schedule, Contractor's Questionnaire, and Proposed Performance Schedule (four pages);

B. Technical Specifications (27 pages);
- 02 01 00 Maintenance of Existing Conditions
- 02 22 00 Existing Conditions Assessment
- 02 32 00 Geotechnical Investigations
- 02 43 00 Removal and Relocation
- 05 12 00 Structural Steel Framing
- 31 62 16 Steel Piles
- 31 66 19 Refrigerated Foundations (Thermosyphons)

C. Drawings (14 sheets);
- G003 Vicinity Map
- G005 Survey Control
- B101 Demolition Plan
- C102 WTP Site Plan
- C103 WTP Pile Plan
- A401 Architectural Exterior Elevations
- S100 Symbols and Abbreviations
- S101 Structural General Notes
- S102 Quality Assurance Plan
- S103 Quality Assurance Plan
- S104 Schedules
- S200 Pile Plan
- S210 First Floor Framing Plan
- S400 Foundation Details

D. Geotechnical Report (28 Pages);

E. USDA Sign Requirement (one page);

F. Community Building Photographs (four pages).

Appendices

A. Standard General Conditions of the Construction Contract (39 pages);

B. Federal Debarment Certification Form (two pages);

C. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (three pages);

D. Subcontractor List (two pages).

ATTACHMENT A
BID SCHEDULE
VILLAGE SAFE WATER NUNAPITCHUK PROJECT
(WATER TREATMENT PLANT FOUNDATION)

Bid Item	Description of item/service	Unit	Quantity*	Unit Cost ($)	Total Cost ($)
1	Mobilization and Demobilization	LS	1		
2	Furnish and Install HP 10x57 Piles	VLF	2,508		
3	Furnish and Install Additional Pile Length Below Design Depth	VLF	100		
4	Furnish and Install Pile Caps	EA	44		
5	Furnish and Install Thermal Siphons	EA	44		
6	Relocate Community Building	LS	1		
7	Construction Survey	LS	1		

* The quantities shown are approximate only and should not be taken as either representations or warranties. Since quantities in the Contract Documents are estimates only, actual quantities may increase or decrease without constituting a change in the Work.

Total Bid Amount in Words:

_____

Total Bid Price in Numerals:

_____

Company:

_____

Signature of Authorized Official:

_____

Printed Name:

_____

Title:

_____

Date:

_____

CONTRACTOR'S QUESTIONNAIRE

Project Name and Location: Water Treatment Plant Foundation, Nunapitchuk, Alaska

FINANCIAL

1. Have you ever failed to complete a contract on account of insufficient resources? If so, explain:

2. Have you made arrangements to finance the work? If so, with whom and for what amount?

EXPERIENCE

1. Have you performed contracts or subcontracts involving the installation of piles for the State of Alaska Village Safe Water Program or the City of Nunapitchuk? If so, briefly describe project on separate page with dates, scope of work, etc.

2. List five projects in the following table, or on a separate page as needed, that were completed in the past five years involving work of similar type and complexity. Include the location, dates of completion, scope of work, and total contract amount for each project.

Project (scope, location, dates, amount)	**Reference Information** (name, position, phone, email)

3. Do you intend to subcontract any portion of the work contained in this project? _____
   If so, list the types and portions of the work to be subcontracted.
   _____

Subcontractor's approximate total value $ _____

Subcontractor's percent of total bid _____

I hereby certify that the above statements are true and complete.

_____
Signature

_____
Name of Contractor

_____
Title of Person Signing

_____
Date

PROPOSED PERFORMANCE SCHEDULE

If awarded the Contract, Bidder proposes to perform the work in accordance with the following schedule.

	Approximate Date
Delivery of required submittals	_____
Material Purchase Date	_____
Delivery to Nunapitchuk	_____
Pile Driving Start Date	_____
Pile Driving Completion Date	_____

Bidder
Signature _____

SECTION 02 01 00
MAINTENANCE OF EXISTING CONDITIONS

PART 1 - GENERAL

1.1 PUBLIC AND PRIVATE UTILITIES

A. Existing above-ground utilities, including but not limited to power transmission and distribution, telephone, water and sewer piping, fuel piping, glycol heat trace, and private utility service lines, whether shown on the Plans or not, shall be protected, maintained, relocated, rerouted, removed and restored as may be necessary by the Contractor in a manner satisfactory to Owners and operators of the utilities.

B. Major aboveground/underground utilities and appurtenant structures, whether shown on the Plans or not, shall be protected, maintained, relocated, rerouted, removed and restored by the Contractor.

C. Minor aboveground/underground utility service lines, including but not limited to sanitary sewer services, fuel pipelines, water services, house or yard drains, and electricity or telephone services and driveway culverts shall be protected, maintained, relocated, rerouted, removed and restored by the Contractor with the least possible interference with such services and in no case shall the interference of such service lines be considered for extra compensation under any of the special cases listed above.

D. Public Utilities:
   1. The right is reserved by the Owner of public utilities and franchises to enter upon any street, road, right-of-way, or easement for the purpose of maintaining their property and for making necessary repairs or adjustments caused by the Contractor's operations.
   2. The Contractor shall save the Owner harmless of any costs so incurred.

1.2 QUALITY ASSURANCE

A. All work shall be performed in conformance with regulations pertaining to safety established by the applicable Federal, State, or local agencies, and as may be specified elsewhere in these specifications.

B. Underground Facilities:
   1. It is recommended that the Contractor make arrangements with the applicable utility company or department to aid in the location and maintenance of existing utilities.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 02 01 00

SECTION 02 22 00
EXISTING CONDITIONS ASSESSMENT

PART 1 - GENERAL

1.1 SITE VISITATION

A. Contractors may visit the site of work, existing buildings, review any available existing drawings, and all conditions affecting the work of this project before providing a bid proposal.

B. Contractors desiring access to existing buildings shall contact the Engineer to arrange appointments (Will Kemp or Andrea Meeks at (907) 562-3252). No guarantees are made that appointments to visit all facilities will be available. The Owner reserves the right to provide access to all potential bidders at one time at the Owner's convenience.

PART 2 - VERIFICATION

2.1 CONSTRUCTION

A. Prior to commencement of work, verify all existing conditions, control points, principal lines and elevations, presence of underground utilities, at or related to the site and existing buildings, and also examine all adjacent facilities upon which the work is in any way dependent. In the event of any inconsistency or conflict, between existing conditions and the bidding documents, immediate notice of such inconsistency or conflict shall be given to the Engineer. Do not undertake any phase of the work affected by such inconsistency or conflict, pending the issuance of instructions by the Engineer.

B. Some of the elevations of existing grades, floors, tops of walls, parapets, beams and locations of existing columns, walls, pipe foundations, and the like are based on drawings of the existing building furnished by the Owner. It is the intent of the Contract Drawings to integrate new work with existing work and the Contractor shall verify actual conditions.

C. Provide protections necessary to prevent damage to existing buildings, improvements, landscaping and trees, parking, streets walks, etc. to remain in place. Restore damaged buildings, improvements, etc. to their original conditions as acceptable to the Owner.

PART 3 - EXISTING CONDITIONS

3.1 EXISTING FACILITIES

A. Existing buildings must be kept functioning during the construction period.

B. Existing utilities shall not be disconnected until new ones have been installed and completely tested and approved unless otherwise approved by the Engineer. Existing functioning utilities shall not be interrupted without written approval from the Owner. The Contractor shall give two (2) weeks written notice to the Engineer prior to planned interruption of any existing functioning utilities. The Engineer will then coordinate schedules with the Contractor for date and time of shutdown. Due to the need for continuous operation of the facilities, no guarantee is made that scheduled shutdowns can be accommodated.

C. Notify the Engineer when working in areas where utility lines may be encountered.

END OF SECTION 02 22 00

SECTION 02 32 00
GEOTECHNICAL INVESTIGATIONS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Section 316216: Steel Piles

1.2 SOIL REPORTS

A. Soil boring data has been collected for this project and a geotechnical investigation was conducted during design. A report describing soil conditions encountered during the investigation will be made available.

B. Geotechnical data about soil and/or subsurface conditions in the project area shall not be taken as a representation of all conditions that may be encountered during construction, and are based on limited information and are at best only an opinion. Consequently, such data cannot be considered complete and there is no guarantee as to its accuracy or precision.

C. Additional Investigation:
   1. Contractor may visit the site and acquaint himself with site conditions before submitting a bid.
   2. Prior to bidding, the Contractor may make his own subsurface investigations to satisfy himself with site and subsurface conditions.

1.3 QUALITY ASSURANCE

A. The Contractor shall readjust work performed that does not meet technical or design requirements.

B. The Contractor shall make no deviations from the Contract Documents without specific and written approval of the Owner.

C. The Contractor shall be responsible for obtaining approval from responsible agency(s) or property owner(s) before performing any exploratory excavations.

END OF SECTION 02 32 00

SECTION 02 43 00
REMOVAL AND RELOCATION

PART 1 - 1. GENERAL

1.1 GENERAL

A. The Contractor may visit the site to verify actual field conditions and determine the work required by inspecting the site prior to bidding.

B. The tabulation of work and equipment listed hereafter is not intended to be all inclusive, and it shall be the Contractor's responsibility to perform the work shown, specified, or which can reasonably be inferred from the Contract Documents as necessary to complete the project.

C. Any material damaged by Contractor's operations shall be replaced with new material by the Contractor at the Contractor’s expense.

1.2 TEMPORARY REMOVAL

A. General:
   1. Construction operations in certain areas may necessitate temporary removal of timber supports, boardwalk, utilities, private accesses, drains, service lines, conduits, and any other existing facilities, to facilitate building relocation.
   2. In the event that the Contractor finds it necessary to remove such items, it is to be particularly understood that it will be his responsibility to restore these items to near pre-construction conditions as possible unless otherwise indicated on the Plans.
   3. The Contractor shall maintain adequate temporary provisions for supporting the continued operation of public and private facilities including:
      a. domestic deliveries;
      b. utilities service including water and sewer service, heating, electrical power and controls;
      c. fire protection and access for fire-fighting equipment.

1.3 RELOCATION

A. Existing materials and appurtenances shown or required to be relocated or reused shall be removed and relocated and/or reused as part of the Contract.

B. Materials and equipment to be relocated and/or reused shall be removed in a manner that maintains them in a condition equivalent to their condition before being removed.

C. The Contractor shall be responsible to safeguard items to be relocated and/or reused against damage and loss during removal, handling, storage, and installation in the new location.

1.4 DEBRIS

A. Debris is defined as all waste materials resulting from removal, salvage, and relocation operations, and all material in excess of construction requirements, all material not in accordance with the specifications, and all other materials specified or designated by the Owner to be removed from the construction site as may be required to complete the project.

B. Debris resulting from removal, salvage, and relocation shall include, but not be limited to, all wood, metals, piping, and miscellaneous materials resulting from the removal of structures, and other man-made objects or from removal of subsurface obstacles.

1.5 SUBMITTALS

A. Relocation Plan: Indicate building support locations, jacking locations, transport route and transportation equipment.

B. Existing Building Photographs: Submit photographs to document existing conditions.

PART 2 - PRODUCTS

2.1 GENERAL

A. The Contractor shall provide all materials and equipment in suitable and adequate quantity as required to accomplish the work shown, specified herein, and as required to complete the project.

2.2 EQUIPMENT AND MATERIALS

A. Transport, Equipment, and Supports: Suitable for intended purpose, to achieve successful structure move.

PART 3 - EXECUTION

3.1 WORKMANSHIP

A. All work shall be performed in conformance with the laws and regulations pertaining to safety established by the applicable Federal, state, or local agencies, and as may be specified elsewhere in these specifications.

3.2 EXAMINATION

A. Verify availability and accessibility of transport routes. Verify route load limits are adequate to support moving loads of structure.

B. Identify utility services and obstructions to be removed, relocated, or abandoned during progress of the Work.

3.3 RELOCATION

A. General:
   1. Remove, relocate, and reinstall equipment as shown on the Plans, and as directed.
   2. The Owner shall disconnect all existing utility connections, including, but not limited to: electrical service, fuel line, fuel tank, building heater(s), and sanitary sewer service.

B. Inspection:
   1. Prior to commencement of relocation work, the Contractor and the Owner shall make a joint inspection of the physical condition the building specified for relocation and shall note, in writing the building condition.

3.4 PREPARATION

A. Prepare site, route of transport, and destination site.

B. Secure supplementary framing and bracing to structure.

C. Secure operating, moving, or suspended items including doors, windows, and light fixtures to prevent damage to items or to structure during move.

D. Protect elements surrounding structure from damage.

E. Owner responsibilities:
   1. Owner shall disconnect and cap existing site utility services. Owner shall remove overhead or exposed utility services for clear working and moving space around and below structure
   2. Owner shall remove building stairs if necessary prior to move.

3.5 RAISE STRUCTURE

A. Cut structure free of the foundation and any elements of the structure that cannot be moved.

B. Reinforce, brace, and raise structure to prevent damage to structure.

C. Secure structure to temporary structural support members to prevent shifting of structure during move.

3.6 MOVE STRUCTURE

A. Provide transport vehicles for moving structure to new site.

B. Move structure, control speed, and provide anchor and restraining devices to maintain integrity of structure.

C. During move, protect adjacent structures, and private and public property from damage.

3.7 REINSTALL STRUCTURE

A. Position and place structure onto new Owner provided foundation. If Owner is unable to provide new foundation, salvage and reinstall existing post and pad foundation to the maximum extent possible.

B. Remove moving equipment.

C. Leave reinforcing, framing, and bracing intact until structure is fully attached and structure loads are supported by new foundation.

D. Owner responsibilities:
   1. Owner shall reinstall building stairs removed prior to move.
   2. Owner shall anchor building to new foundation.

3.8 ORIGINAL SITE

A. Remove and dispose of any elements of the original foundation or structure remaining.

B. Where excavation is required to accomplish removal, salvage and relocation work as described in this Section, the Contractor shall backfill all such areas approximately to existing ground level, final grade, or foundation level of new construction, as applicable and as may be shown on the Plans.
   1. Timber sleepers and other construction or vegetative debris shall not be used as backfill material.
   2. In all areas not backfilled to ground level, the Contractor shall erect safety barriers around the excavation.
   3. Backfilled areas shall graded to drain and shall provide 6” additional fill (above surrounding area) to allow for future settlement.

3.9 DISPOSAL OF DEBRIS

A. All debris, materials, piping, and miscellaneous waste products from the work described in this Section shall be removed from the project as soon as possible.

B. Disposal shall be in accordance with all applicable state and federal laws.

C. The Contractor is responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

END OF SECTION 02 43 00

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Structural steel.

1.3 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

B. Seismic-Load-Resisting System: Elements of structural-steel frame designated as "SLRS" or along grid lines designated as "SLRS" on Drawings, including columns, beams, and braces and their connections.

C. Demand Critical Welds: Those welds, the failure of which would result in significant degradation of the strength and stiffness of the Seismic-Load-Resisting System and which are indicated as "Demand Critical" or "Seismic Critical" on Drawings.

1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pre-tensioned and slip-critical, high-strength bolted connections.

C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS DI.1/D1.1M, "Structural Welding Code - Steel," for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).
2. Electrode manufacturer and trade name, for demand critical welds.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Welding certificates.

C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

D. Mill test reports for structural steel, including chemical and physical properties.

E. Product Test Reports: For the following:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
2. Tension-control, high-strength, bolt-nut-washer assemblies.
3. Shear stud connectors.
4. Shop primers.

F. Field quality-control reports.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.

B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACSE.

C. Welding Qualifications: Qualified procedures and personnel according to AWS DI.1/DI.1M, "Structural Welding Code - Steel."

1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS DI.8/DI.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

D. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.
2. AISC 341 and AISC 341s1.
3. AISC 360.
4. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
2. Clean and re-lubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 992/A 992M.

B. Channels, Angles-Shapes: ASTM A 36/A 36M ASTM A 529/A 529M, Grade 50 ASTM A 913/A 913M, Grade 50.

C. Plate and Bar: ASTM A 36/A 36M.

2.3 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers; all with plain finish.

B. High-Strength Bolts, Nuts, and Washers: ASTM A 490, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers with plain finish.

C. Zinc-Coated High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.

D. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.

E. Headed Anchor Rods: ASTM F 1554, Grade 36, straight.

1. Nuts: ASTM A 563 heavy-hex carbon steel.
2. Plate Washers: ASTM A 36/A 36M carbon steel.
3. Washers: ASTM F 436, Type 1, hardened carbon steel.
4. Finish: Plain.

F. Threaded Rods: ASTM A 36/A 36M.

1. Nuts: ASTM A 563 heavy-hex carbon steel.
2. Washers: ASTM F 436, Type 1, hardened carbon steel.
3. Finish: Plain.

2.4 PRIMER

A. Primer: Fabricator's standard lead- and chromate-free, non-asphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

B. Galvanizing Repair Paint: ASTM A 780/A 780M.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS DI.1/DI.1M.

C. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

2.7 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.
3. Surfaces of high-strength bolted, slip-critical connections.
4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
5. Galvanized surfaces.
6. Surfaces enclosed in interior construction.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 3, "Power Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

D. Painting: Prepare steel and apply a one-coat non-asphaltic primer complying with SSPC- PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils.

2.8 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

2.9 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Welded Connections: Visually inspect shop-welded connections according to AWS DI.1/DI.1M and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

C. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction until cast-ii-place concrete has attained its design compressive strength.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Baseplates Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. No splicing of members is permitted.

F. Do not use thermal cutting during erection.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1. l/D1.IM and manufacturer's written instructions.

3.4 FIELD CONNECTIONS

A. High—Strength Bolts: Install high—strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened unless otherwise noted.

B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," for mill material.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Verify structural-steel materials and inspect steel frame joint details.
2. Verify weld materials and inspect welds.
3. Verify connection materials and inspect high-strength bolted connections.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

C. Bolted Connections: Inspect bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

D. Welded Connections: Visually inspect field welds according to AWS D1.1/DI.IM.

1. In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

    a. Liquid Penetrant Inspection: ASTM E 165.
    b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
    c. Ultrasonic Inspection: ASTM E 164.
    d. Radiographic Inspection: ASTM E 94.

E. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS DI .l /D1.IM for stud welding and as follows:

1. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.

2. Conduct tests according to requirements in AWS D1.1/D1.1M on additional shear connectors if weld fracture occurs on shear connectors already tested.

3.6 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780/A 780M.

B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA I for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

END OF SECTION 05 12 00

SECTION 31 62 16
STEEL PILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section includes steel H piles.

1.3 UNIT PRICES

A. Contract Sum: Base Contract Sum on number and dimensions of piles indicated from tip to cutoff, plus not less than 12 inches of overlength for cutting piles at cutoff elevations.

B. Work of this Section is affected as follows:

1. Additional payment for pile lengths in excess of that indicated, and credit for pile lengths less than that indicated, is calculated at unit prices stated in the Contract, based on net addition or deduction to total pile length as determined by Engineer and measured to nearest 12 inches.

    a. Additional payment for splices required to extend pile lengths in excess of that indicated is calculated at unit prices stated in the Contract.

2. Additional payment for number of piles in excess of that indicated, and credit for number of piles less than that indicated, is calculated at unit prices stated in the Contract.
3. Unit prices include labor, materials, tools, equipment, and incidentals for furnishing, driving, cutting off, capping, and disposing of cutoffs.
4. Test piles that become part of permanent foundation system are considered as an integral part of the Work.
5. No payment is made for rejected piles, including piles driven out of tolerance, defective piles, or piles damaged during handling or driving.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For steel H piles. Show fabrication and installation details for piles, including details of driving points, splices, and pile caps.

1. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
2. Include arrangement of static pile reaction frame, test and anchor piles, equipment, and instrumentation. Submit structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Welding certificates.

C. Mill Test Reports: For steel H piles, signed by manufacturer.

D. Pile-Driving Equipment Data: Include type, make, and rated energy range; weight of striking part of hammer; weight of drive cap; and, type, size, and properties of hammer cushion.

E. Provide WAVE analysis for pile and pile hammer.

F. Static Pile Test Reports: Submit within three days of completing each test.

G. Pile-Driving Records: Submit within three days of driving each pile.

1. Pile installation equipment and installation means and methods shall be capable of installing the piles to the design tip embedment without damaging the piles.

H. Field quality-control reports.

I. Preconstruction Photographs: Photographs or video of existing conditions of adjacent construction. Submit before the Work begins.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1. Installer's responsibility includes engaging a qualified professional engineer to prepare pile-driving records and approve contractor’s means and methods will not damage piles and provide a WAVE Equation Analysis.

B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated and accredited by IAS or ILAC Mutual Recognition Arrangement as complying with ISO/IEC 17025.

C. Welding Qualifications: Qualify procedures and personnel according to AWS DI.1/DI.1M, "Structural Welding Code —Steel."

1.7 PRECONSTRUCTION TESTING

A. General: Axial pile test is required on one installed pile on the main building. Pile tests are used to verify driving criteria and pile lengths and confirm allowable load of piles.

1. Furnish test piles 60 inches longer than production piles.
2. Determination of actual length of piles is based on results of static pile tests.

B. Pile Tests: Arrange and perform the following pile tests:

1. Axial Compressive Static Load Test: ASTM D 1143/D 1143M. Procedure A, Quick Test.
   a. Test Load: 50 kips

C. Provide pile reaction frame, anchor piles, equipment, and instrumentation with enough reaction capacity to perform tests. Notify Engineer at least 48 hours in advance of performing tests. On completion of testing, remove testing structure, anchor piles, equipment, and instrumentation.

1. Number of Test Piles: One pile.

D. Drive test piles at locations indicated to the minimum penetration or driving resistance indicated. Use test piles identical to those required for Project, and drive with appropriate pile- driving equipment operating at rated driving energy to be used in driving permanent piles.

E. Approval Criteria: Allowable load shall be the load acting on the test pile when the lesser of the following criteria are met, divided by a factor of safety of 2:

1. Net settlement, after deducting rebound, of not more than 0.01 inch/ton of test load.
2. Total settlement exceeds the pile elastic compression by 0.15 inch, plus 1.0 percent of the tip diagonal dimension.
3. A plunging failure or sharp break in the load settlement curve.

F. Test Pile-Driving Records: Prepare driving records for each test pile, compiled and attested to by a qualified professional engineer. Include same data as required for driving records of permanent piles.

G. Test piles that comply with requirements, including location tolerances, may be used on Project.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver piles to Project site in such quantities and at such times to ensure continuity of installation. Handle and store piles at Project site to prevent buckling or physical damage.

1.9 FIELD CONDITIONS

A. Protect structures, underground utilities, and other construction from damage caused by pile driving.

B. Site Information: A geotechnical report has been prepared for this Project and is included elsewhere in the Project Manual for information only.

C. Preconstruction Photographs: Inventory and record the condition of adjacent structures, underground utilities, and other construction. Document conditions that might be construed as damage caused by pile driving. Comply with Section 0132 33 "Photographic Documentation."

PART 2 - PRODUCTS

2.1 STEEL H PILES

A. High-Strength, Low-Alloy, Columbium-Vanadium Structural Steel: ASTM A 572/A 572M, Grade 50.

2.2 FABRICATION

A. Fabricate and assemble piles in shop to greatest extent possible.

B. Pile-Length Markings: Mark each pile with horizontal lines at 12-inch intervals; label the distance from pile tip at 60-inch intervals. Maintain markings on piles until driven.

C. Fabricate full-length piles to eliminate splicing during driving, with ends square.

D. Fabricate full—length piles by splicing lengths of steel H pile together. Accurately mill meeting ends of piles and bevel for welding. Maintain axial alignment of pile lengths. Maintain structural properties of pile across splice.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Site Conditions: Do not start pile-driving operations until earthwork fills have been completed.

B. Remove oil, paint, snow, ice, excessive rust, scale, mud or other deleterious substances from all exterior pile surfaces embedded below the active layer for all H-piles and Pipe piles. Prior to installing pipe piles, verify pile interior space is free of all snow and ice immediately prior to installation.

3.2 DRIVING EQUIPMENT

A. Pile Hammer: Air-, steam-, hydraulic-, or diesel-powered type capable of consistently delivering adequate peak-force duration and magnitude to develop the ultimate capacity required for type and size of pile driven and character of subsurface material anticipated.

B. Hammer Cushions and Driving Caps: Between hammer and top of pile, provide hammer cushion and steel driving cap as recommended by hammer manufacturer and as required to drive pile without damage.

C. Leads: Use fixed, semifixed, or hanging-type pile-driver leads that hold the full length of pile firmly in position and in axial alignment with hammer.

3.3 DRIVING PILES

A. General: Continuously drive piles to elevations or penetration resistance indicated or established by WAVE Equation Analysis of piles. Establish and maintain axial alignment of leads and piles before and during driving.

B. Heaved Piles: Redrive heaved piles to tip elevation at least as deep as original tip elevation with a driving resistance at least as great as original driving resistance.

C. Driving Tolerances: Drive piles without exceeding the following tolerances, measured at pile heads:

1. Location: 3 inches from location indicated after initial driving, and 3 inches after pile driving is completed.
2. Plumb: Maintain 1 inch in 48 inches from vertical, or a maximum of 4 inches, measured when pile is aboveground in leads.

D. Withdraw damaged or defective piles and piles that exceed driving tolerances, and install new piles within driving tolerances.

1. Fill holes left by withdrawn piles using cohesionless soil material such as gravel, broken stone, and gravel-sand mixtures. Place and compact in lifts not exceeding 72 inches.
2. Fill holes left by withdrawn piles as directed by Engineer.

E. Abandon and cut off rejected piles as directed by Engineer. Leave rejected piles in place, and install new piles in locations as directed by Engineer.

F. Cut off tops of driven piles square with pile axis and at elevations indicated.

G. Pile-Driving Records: Maintain accurate driving records for each pile, compiled and attested to by a qualified professional engineer. Include the following data:

1. Project name and number.
2. Name of Contractor.
3. Pile location in pile group and designation of pile group.
4. Sequence of driving in pile group.
5. Pile dimensions.
6. Ground elevation.
7. Elevation of tips after driving.
8. Final tip and cutoff elevations of piles after driving pile group.
9. Records of re-driving.
10. Elevation of splices.
11. Type, make, model, and rated energy of hammer.

12. Weight and stroke of hammer.
13. Type of pile-driving cap used.
14. Cushion material and thickness.
15. Actual stroke and blow rate of hammer.
16. Pile-driving start and finish times, and total driving time.
17. Time, pile-tip elevation, and reason for interruptions.
18. Number of blows for every 12 inches of penetration, and number of blows per 1 inch for the last 6 inches of driving.
19. Pile deviations from location and plumb.
20. Pre-boring, jetting, or special procedures used.
21. Unusual occurrences during pile driving.

H. Certified Piles Survey: Engage a land surveyor to prepare a piles survey showing final location of piles in relation to the property survey and existing benchmarks.

1. Notify Engineer when deviations from locations exceed allowable tolerances.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector and testing agency to perform special inspections on the pile foundations.

B. Tests and Inspections:
1. Pile Testing: described above.

2. Weld Testing: In addition to visual inspection, welds shall be tested and inspected according to AWS D1.1/D1.1M and inspection procedures listed below, at testing agency's option. Correct deficiencies in Work that test reports and inspections indicate do not comply with the Contract Documents.
   a. Liquid Penetrant Inspection: ASTM E 165.
   b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   c. Radiographic Inspection: ASTM E 94, minimum quality level "2-2T."
   d. Ultrasonic Inspection: ASTM E 164.

3. Investigate any sudden decrease in driving resistance for possible breakage of the pile. If a sudden decrease in driving resistance cannot be correlated to boring data or some incident in the driving, and if the pile cannot be inspected, such decrease in driving resistance will be cause for rejection of the pile.

3.5 DISPOSAL

A. Remove withdrawn piles and cutoff sections of piles from site, and legally dispose of them off Owner's property.

END OF SECTION 31 62 16

SECTION 31 66 19
REFRIGERATED FOUNDATIONS (THERMOSYPHONS)

PART 1 — GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section. Refer to Civil and Structural Plans for additional details related to steel thermosyphons.

1.2 SUMMARY

A. This Section includes the following:
   1. Supply all thermosyphons, equipment, labor, supervision and other project related requirements to supply, place, backfill, charge and as-built refrigerated thermosyphons.

B. This Section includes de-watering where required to keep water from the excavation or to prevent caving, is also part of the work and the costs associated with such measures are to be included in the bid price.

1.3 SUBMITTALS

A. Shop Drawings: Show fabrication and installation details for thermosyphons.
   1. Include dimensions, materials, welding procedures, finishes and heat transfer properties
B. Welding certificates
C. As-Built drawings showing final thermosyphon location. As-built drawings shall be prepared by a land surveyor, licensed to practice in the State of Alaska.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Source Limitations: Obtain thermoprobes through one source from a single manufacturer.

C. Welding: Qualify procedures and personnel in accordance with ASME Section IX.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Thermosyphons shall be bundled and loaded onto flats at the manufacturer's facility. Maximum bundle weight is 6,000 pounds unless approved by the Engineer prior to shipment from the manufacturer's facility

B. Store thermosyphons in orderly groups above ground and blocked during storage to prevent distortion of members. Thermosyphons exhibiting variations beyond tolerance limits will be considered distorted and may not be used in the work.

1.6 PROJECT CONDITIONS

A. Site Information: Data on indicated subsurface conditions are not intended as representations or warranties of continuity of such conditions. It is expressly understood that the Owner will not be responsible for interpretations or conclusions drawn there from by Contractor. The data are made available for convenience of Contractor.

B. Additional test borings and other exploratory operations may be made by Contractor at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 THERMOSYPHONS

A. Thermosyphons shall be two-phase liquid/vapor Thermoprobes as manufactured by Arctic Foundations, Inc. or Engineer approved equal.

1. The passive refrigerant shall be R-744.
2. The thermal conductance of each unit shall be as reported in Alaska DOT Report No. AK—RD—86—16 for a standard 35SF condenser.

B. Construction shall be in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, and ASME B3l.5 to the configuration shown on the Drawings. The minimum design metal temperature of the thermosyphon components shall be -20 °F. The thermosyphons need not be Code stamped.

1. Thermosyphon shells shall meet SA-106, Grade B. The elbows and end caps shall meet SA-234 WPB. The upper 18 feet of the vertical evaporator shall be XH weight pipe.
2. The top 20 feet of the thermosyphons and the condenser shall be protected with American Powder Coating APC E8-CM1 fusion bond epoxy applied over 3 mils minimum flame- or arc-sprayed aluminum applied per AWS C2.2.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION WORK:

A. Site Conditions: Do not install thermosyphons until earthwork in area has been brought to proper grade.

B. Inspect thermosyphons upon arrival at the site and any damage should be noted and reported to the Engineer. Repairs will be performed at the discretion of the Engineer.

3.2 THERMOSYPHON PLACEMENT

A. Place thermosyphons on a prepared site in a manner as required by manufacturer. Keep area dry and protected until thermosyphon placement. Thermosyphons shall be handled, carried, lifted and picked in accordance with the manufacturer's recommended practices.

B. Field assembly of thermosyphons is to be by the manufacturer's certified crews and in accordance with the manufacturer's written instructions. Immediately prior to installation, the thermosyphons section planned for embedment below the ground surface shall be free of all snow, ice, oils, grease or other deleterious substances.

C. Set thermosyphons at the required locations indicated on the Contract Drawings. Align the above grade condenser (finned section) per the Contract Documents or as approved by the Engineer.

D. Thermosyphon installation in welded steel cavities along HP pile web.

E. lf a casing installation procedure is used, thermosyphon to be installed in a nominal L3x3x5/16 angle fastened to HP pile web per contract drawings. The casing cavity shall be clean of all material and the thermosyphon installed in the casing annulus using centralizers at nominal 10 foot intervals starting 2 feet from the tip of the thermosyphon. Once installed in the steel casing, the casing space between the thermosyphon and the steel casing shall be backfilled with a Type I or III Portland cement grout mix, with a max water cement ratio of 0.5, or Engineer approved equivalent, using tremie methods in accordance with the manufacturer's recommended procedures

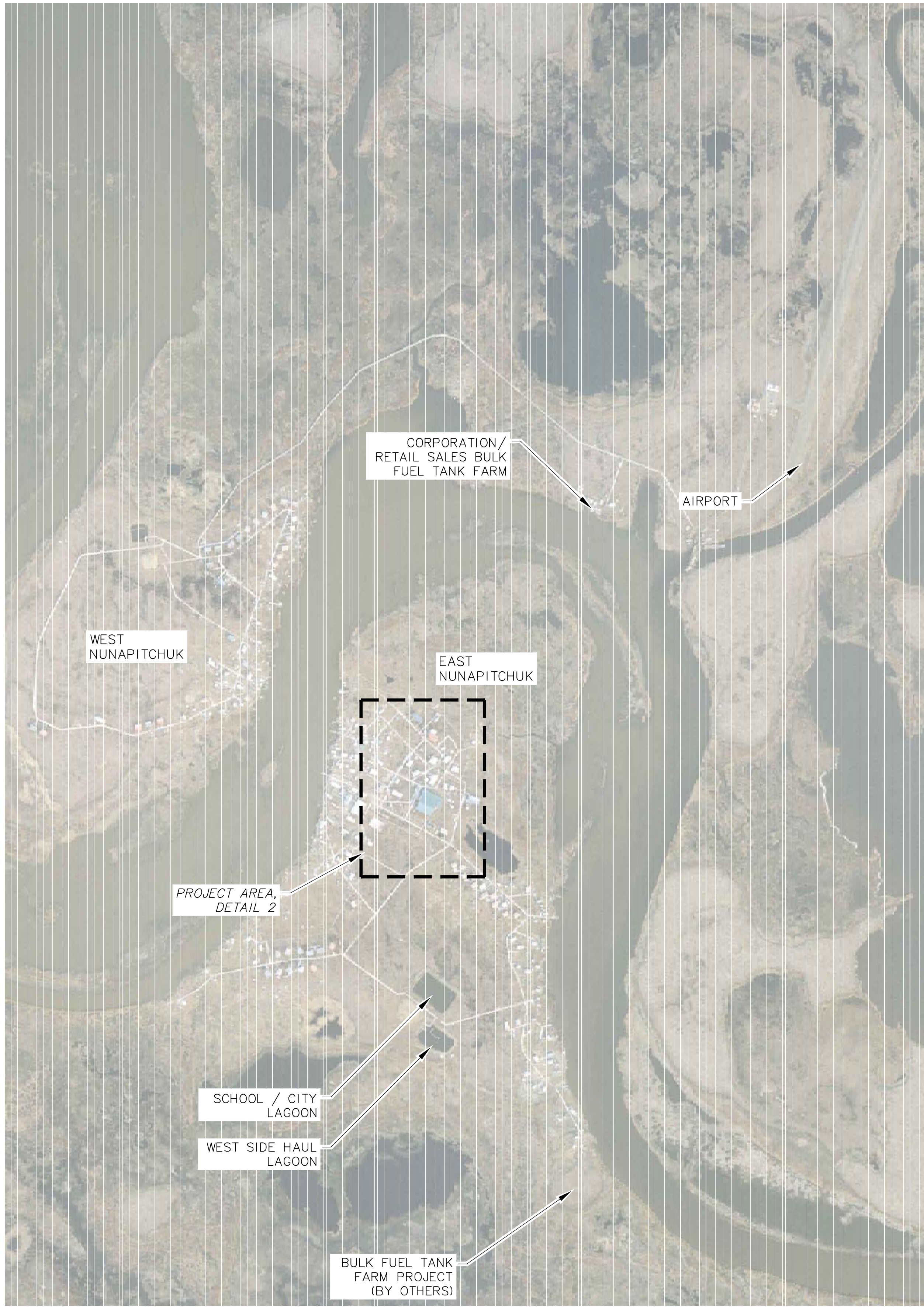
   1. The outside surface area of the casing installed below finish grade shall be in full contact with saturated mineral soil upon completion of casing installation.

F. Upon completion of the installation, the manufacturer shall inspect each thermosyphon to ensure proper gas pressures, valve operation, and all other aspects of the cooling system. A report as to the condition of finished installation and the required repairs or adjustments made shall be submitted to the Engineer upon completion of the inspection.

END OF SECTION 31 66 19

GENERAL NOTES

1. COMPLY WITH APPLICABLE FEDERAL AND STATE OSHA REGULATIONS. MAINTAIN ALL SIGNS, BARRICADES, AND WARNING LIGHTS AND OTHER PROTECTIVE DEVICES NECESSARY FOR SAFETY.
2. COORDINATE ALL WORK WITH EXISTING FACILITY OPERATORS, CONTRACTORS, SUBCONTRACTORS, THE CITY, AND STATE AND FEDERAL AUTHORITIES.
3. THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW ALL FEATURES OF THE REQUIRED WORK. PROVIDE ALL EQUIPMENT AND MATERIALS NEEDED FOR A COMPLETE SYSTEM. VERIFY EXISTING FIELD CONDITIONS PRIOR TO STARTING CONSTRUCTION, AND IMMEDIATELY CONTACT THE ENGINEER FOR CLARIFICATION OF QUESTIONABLE ITEMS OR APPARENT CONFLICTS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE U.S. ARMY CORPS OF ENGINEERS, U.S. ENVIRONMENTAL PROTECTION AGENCY, ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND STATE AND FEDERAL OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
5. EXISTING BOARDWALKS NOT BEING MODIFIED FOR THIS PROJECT SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. BOARDWALKS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO EXISTING CONDITIONS OR BETTER WITH NEW MATERIALS ACCEPTABLE TO THE ENGINEER, AT CONTRACTOR'S EXPENSE.
6. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE NSF 61 CERTIFIED.
7. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE NSF 61 AND NSF 372 WITH REGARD TO LEAD FREE REQUIREMENTS.
8. ALL CHEMICAL ADDITIVES USED IN THE PUBLIC WATER SYSTEM SHALL BE NSF 60 CERTIFIED.



1 **VICINITY MAP**

500' 0 500' 1000'

2 **PROJECT MAP**

100' 0 100' 200'

COMMON ABBREVIATIONS	
ABBR.	DESCRIPTION
AL	ALUMINUM
APPROX.	APPROXIMATE
ATI	AT TIME OF INVESTIGATION
B	BORING
CMP	CORRUGATED METAL PIPE
CPEP	CORRUGATED POLYETHYLENE PIPE
DIA	DIAMETER
E	EASTING
E	ELECTRICAL
ELEV	ELEVATION
F.G.	FINISHED GRADE (ELEV.)
GALV.	GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HT.	HEIGHT
IE	INVERT ELEV.
INV.	INVERT
LF	LINEAR FEET
LONG.	LONGITUDINAL
MAX	MAXIMUM
ME	MATCH EXISTING (GRADE)
MFR	MANUFACTURER
MIN	MINIMUM
N	NORTHING
NFS	NON-FROST SUSCEPTIBLE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OG	ORIGINAL GROUND (ELEV.)
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PCC	PORTLAND CEMENT CONCRETE
PCMP(A)	PRE-COATED CMP (ARCH)
PL	PROPERTY LINE
PP	POWER POLE
R	RADIUS (LENGTH)
ROW	RIGHT OF WAY
R.P.	RADIUS POINT
S.S.	STAINLESS STEEL
STD	STANDARD
TBM	TEMPORARY BENCHMARK
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

LEGEND – PLAN		
PROPOSED	EXISTING	DESCRIPTION
		PROPERTY LINE
		ROW LINE
		EASEMENT
		GRAVEL ROAD
		SHOULDER
		TRAIL
		BOARDWALK
		EDGE OF WATER BODY
		STREET SIGN
		BUILDING
		GUY WIRE AND ANCHOR
		POWER POLE
		TELEPHONE PEDESTAL
	E	UNDERGROUND ELECTRIC
		ELECTRIC PEDESTAL
	OHE	OVERHEAD ELECTRIC
	T	UNDERGROUND TELEPHONE
	FO	FIBER-OPTIC CABLE
		WATER MAIN
FM	FM	FORCE MAIN
	I	PILE
		CULVERT
		FENCE
		DEMOLITION

Alaska Department of Environmental Conservation Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49 TH William M. Kemp CE-14047 7/20/2018 REGISTERED PROFESSIONAL ENGINEER

CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

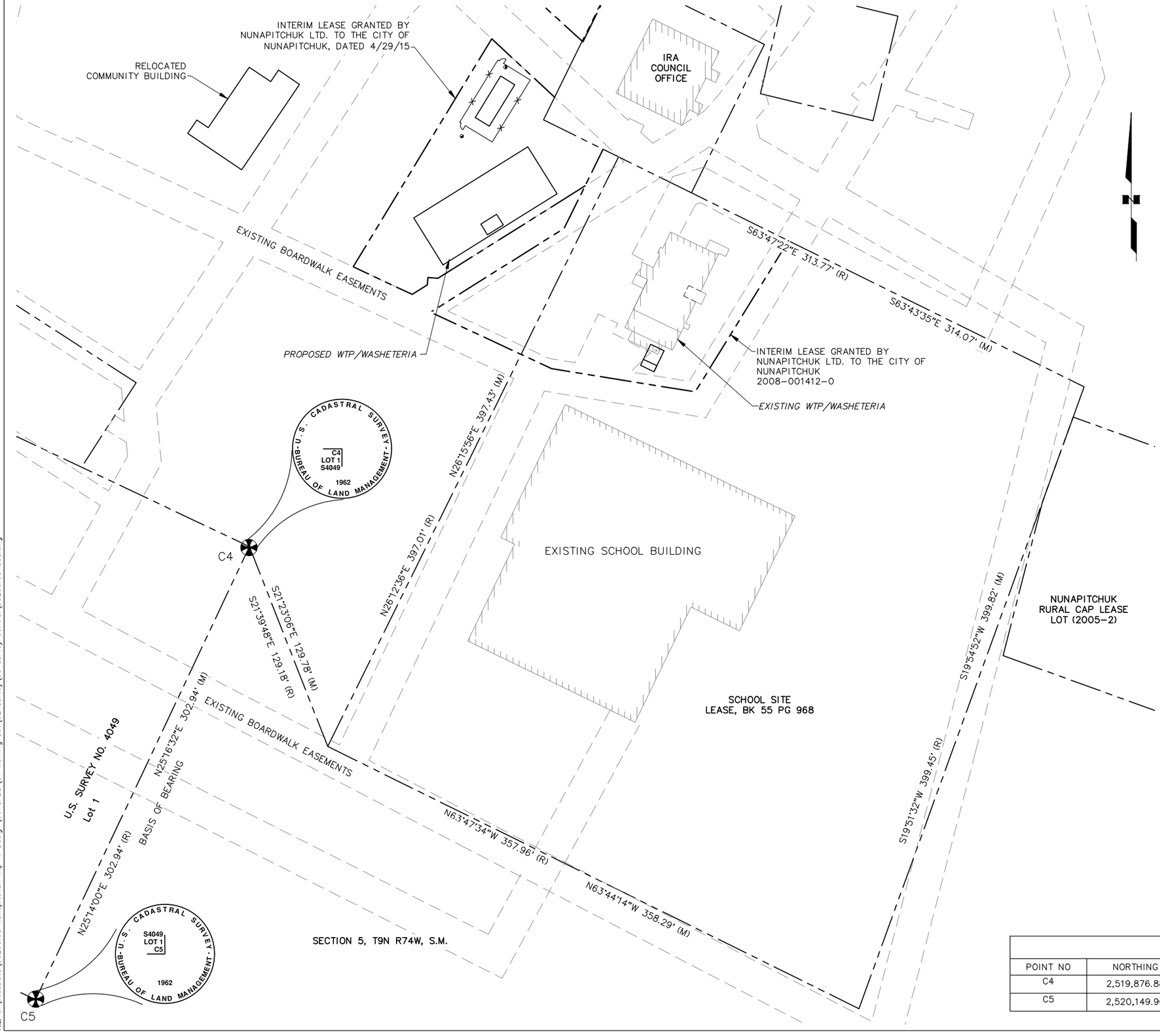
NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
VICINITY MAP

NO.	REVISION	BY	DATE
A	FINAL	WMK	07/20/18

Plot Date 7/20/18
Designed WMK
Drawn CMK
Approved ADM

Sheet No. G003

File: J:\JobsData\80203.03 Nunpitchuk WTP-W Design\00 CADD\01 Working Set\01 Civil\80203.03 Vicinity Map.dwg



HORIZONTAL CONTROL

COORDINATE SYSTEM:
A LOCAL GRID COORDINATE SYSTEM IS USED.

HORIZONTAL CONTROL			
POINT NO	NORTHING	EASTING	DESCRIPTION
C4	2,519,876.88	618,763.21	3-1/4" BRASS MONUMENT
C5	2,520,149.90	618,892.20	3-1/4" BRASS MONUMENT

Alaska Department of Environmental Conservation
Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49TH Michael L. Jakala LS-7839 7/20/2018 REGISTERED PROFESSIONAL LAND SURVEYOR

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#AECC382-AK

NUNAPITCHUK, AK

WATER TREATMENT PLANT & WASHETERIA

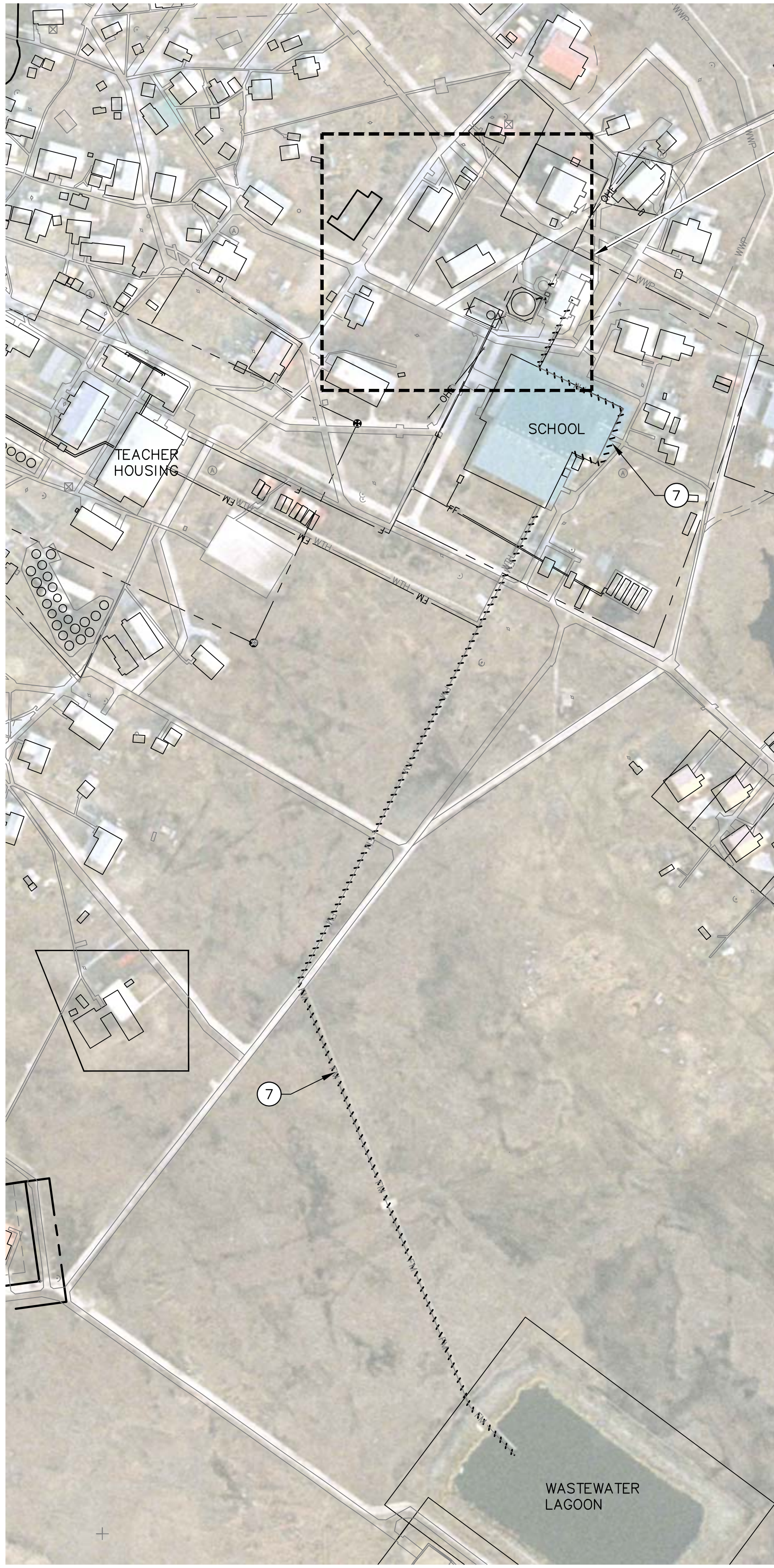
SURVEY CONTROL

NO.	REVISION	BY	DATE
A	FINAL	WMK	07/20/18

Plot Date 7/20/18
Designed WMK
Drawn CMK
Approved ADM

Sheet No. G005

File: J:\JobsData\80203.03 Nunapitchuk Wtp-ww Design\00 CADD\01 Working Set\02 Survey\03 Survey Control\80203.03 SCS.dwg

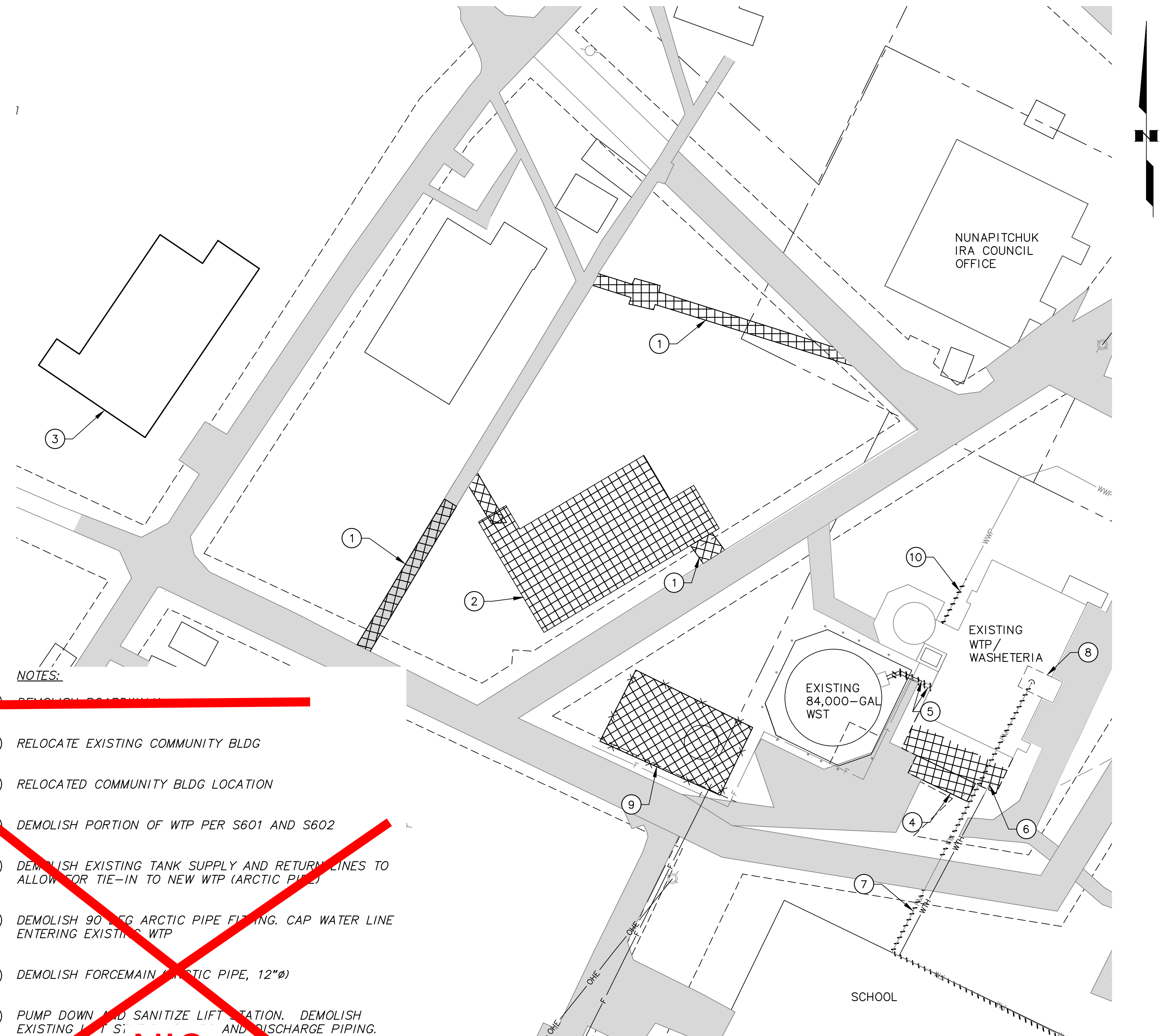


1 **DEMOLITION SITE PLAN**

100' 0 100' 200'

DEMOLITION NOTES:

ALL DEMOLITION ACTIVITIES SHALL BE SEQUENCED AND COORDINATED IN ACCORDANCE WITH THE SPECIFICATIONS TO MINIMIZE SYSTEM DOWNTIME.



NOTES:

1. ~~DEMOLISH BOARDWALK~~
2. RELOCATE EXISTING COMMUNITY BLDG
3. RELOCATED COMMUNITY BLDG LOCATION
4. DEMOLISH PORTION OF WTP PER S601 AND S602
5. DEMOLISH EXISTING TANK SUPPLY AND RETURN LINES TO ALLOW FOR TIE-IN TO NEW WTP (ARCTIC PIPE)
6. DEMOLISH 90 DEG ARCTIC PIPE FITTING. CAP WATER LINE ENTERING EXISTING WTP
7. DEMOLISH FORCEMAIN (ARCTIC PIPE, 12"Ø)
8. PUMP DOWN AND SANITIZE LIFT STATION. DEMOLISH EXISTING LIFT ST... AND DISCHARGE PIPING.
9. DECOMMISSION B...KS AND PIPING, DEMOLISH FENCE AND CONT...
10. DEMOLISH WEST SIDE WATERING POINT WATER LINE (ARCTIC PIPE, 18"Ø)

NIC

2 **WTP DEMOLITION PLAN**

20' 0 20' 40'

Alaska Department of Environmental Conservation Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49 TH William M. Kemp CE-14047 7/20/2018 REGISTERED PROFESSIONAL ENGINEER

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#AECL882-AK

NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
DEMOLITION PLAN

NO.	REVISION	BY	DATE
A	FINAL	WMK	07/20/18
B	ADDED COMMUNITY BLDG TO SCOPE	WMK	6/3/19

Plot Date 7/20/18
Designed WMK
Drawn CMK
Approved ADM

Sheet No. B101

File: J:\JobsData\80203.03 Nunapitchuk Wtp-w Design\00 CADD\01 Working Set\01 Civil\80203.03 Demolition Plan.dwg

WARNING SIGNS & INFORMATION PLACARD SCHEDULE

PROVIDE ALL SIGNS INDICATED IN THE SCHEDULE BELOW, QUANTITY & LOCATION AS INDICATED ON THE DRAWINGS. ALL SIGNS SHALL BE CONSTRUCTED FROM 0.08" ALUMINUM PLATE, AND SIZED IAW 2009 IFC. SIGN LETTERING IS SHOWN BELOW IN QUOTATIONS. PROVIDE 3/16" HOLES IN ALL FOUR CORNERS. PROVIDE NON-REFLECTIVE VINYL BACKGROUND, 3M 3650-10, WITH 3M SERIES 225 HIGH PERFORMANCE VINYL LETTERS, ONE SIDE ON GALVANIZED PLATED DIRE BACK DECALS

NIC

INDICATED. ATTACH TO FENCING WITH STAINLESS STEEL CABLE TIES. SIGNAGE S SHALL CONSIST OF HIGH QUALITY ADHESIVE STENCILS.

WARNING SIGNS – RED LETTERING ON WHITE BACKGROUND (3" HIGH X 1/2" STROKE LETTERS)

1. "DANGER FLAMMABLE LIQUID"
2. "NO SMOKING NO OPEN FLAMES"
3. "FLAMMABLE 15,000 GALLONS DIESEL"

INFORMATIONAL PLACARDS – BLACK LETTERING ON WHITE BACKGROUND (2" HIGH, 1/2" STROKE LETTERS)

4. "IN CASE OF FIRE, SPILL, OR RELEASE:"
   1. USE EMERGENCY SHUTOFF
   2. CONTACT THE CITY OF NUNAPITCHUK (907-527-5[illegible]37)
   3. REPORT ACCIDENT TO DEC (1-800-478-9300)

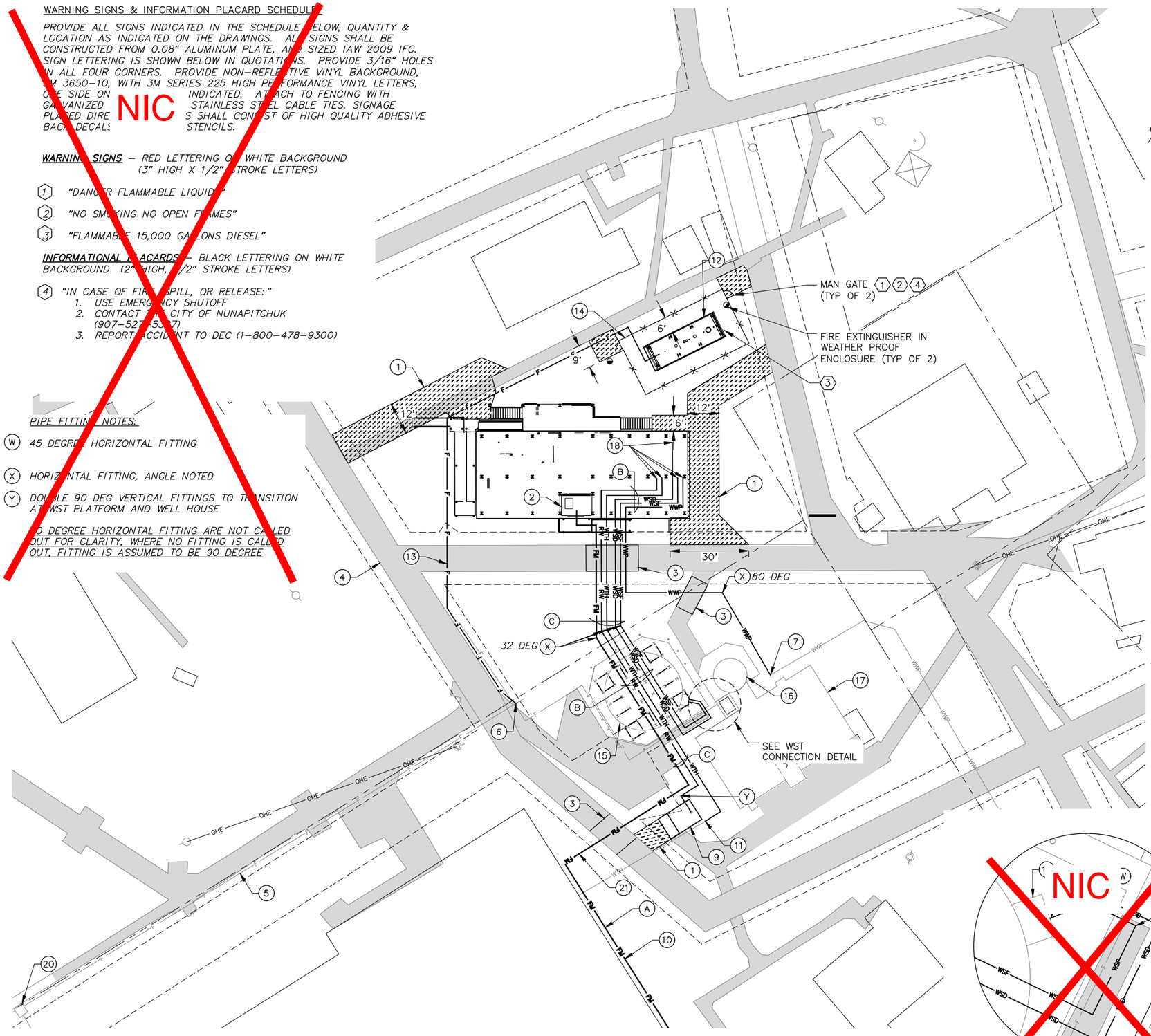
PIPE FITTING NOTES:

(W) 45 DEGREE HORIZONTAL FITTING

(X) HORIZONTAL FITTING, ANGLE NOTED

(Y) DOUBLE 90 DEG VERTICAL FITTINGS TO TRANSITION AT WST PLATFORM AND WELL HOUSE

90 DEGREE HORIZONTAL FITTING ARE NOT CALLED OUT FOR CLARITY. WHERE NO FITTING IS CALLED OUT, FITTING IS ASSUMED TO BE 90 DEGREE



WTP SITE PLAN

1 — 20' 0 20' 40'

NOTES:

1. CONSTRUCT NEW BOARDWALK PER SHEET C505
2. LIFT STATION PER SHEET D204
3. BOARDWALK RAMP OVER ARCTIC PIPES PER SHEETS C503 AND C504
4. EXISTIN TYP
5. EXISTING FUEL LINE, TYP
6. CONNECT TO EXISTING BARGE HEADER
7. CONNECT TO EXISTING WEST SIDE WATERING POINT SUPPLY/RETURN LINES WITH 90 DEG HORIZ FITTING
8. CONNECT TO EXISTING TANK SUPPLY/RETURN LINES
9. WELL HOUSE PER SHEET C501
10. FORCEMAIN PER SHEET C506
11. CONNECT TO EXISTING SCHOOL WATERLINE
12. 15,000-GAL FUEL STORAGE TANK PER MECHANICAL
13. EXTEND BARGE 3-INCH FILL LINE
14. CHAIN LINK FENCE PER C511
15. EXISTING 84,000-GAL WST
16. EXISTING 10,000-GAL WST, NO LONGER IN USE
17. EXISTING WTP/WASHETERIA
18. FLOOR PENETRATION PER C507, TYP
19. WST CONNECTION BOX PER C508
20. EXISTING FUEL MARINE HEADER VALVE BOX
21. FORCEMAIN CLEANOUT PER C509

NIC

LEGEND – PLAN		
PROPOSED	EXISTING	DESCRIPTION
WWP	WWP	WEST SIDE WATERING POINT WATER LINE
WTH	WTH	SCHOOL & TEACHER HOUSING WATER LINE
WSD	WSD	WATER STORAGE TANK DRAIN LINE
WSF	WSF	E TANK FILL LINE
RW	RW	L RAW WATER LINE
FM	FM	FORCEMAIN
F	F	FUEL

NIC

WST CONNECTION DETAIL

PIPE SUPPORT NOTES:

(A) AT LOCATIONS WHERE FORCEMAIN IS ROUTED ADJACENT TO SCHOOL SUPPORT PER 6/C508

(B) BENEATH WST AND BENEATH WTP/WASHETERIA SUPPORT PIPE FROM STRUCTURAL STEEL PER 3/C508

(C) AT ALL OTHER LOCATIONS SUPPORT PIPE WITH TIMBER SUPPORTS PER 1/C508

Alaska Department of Environmental Conservation Division of Water

Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49TH — William M. Kemp CE-16487 7/20/2018 REGISTERED PROFESSIONAL ENGINEER

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL002-AK

NUNAPITCHUK, AK

WATER TREATMENT PLANT & WASHETERIA

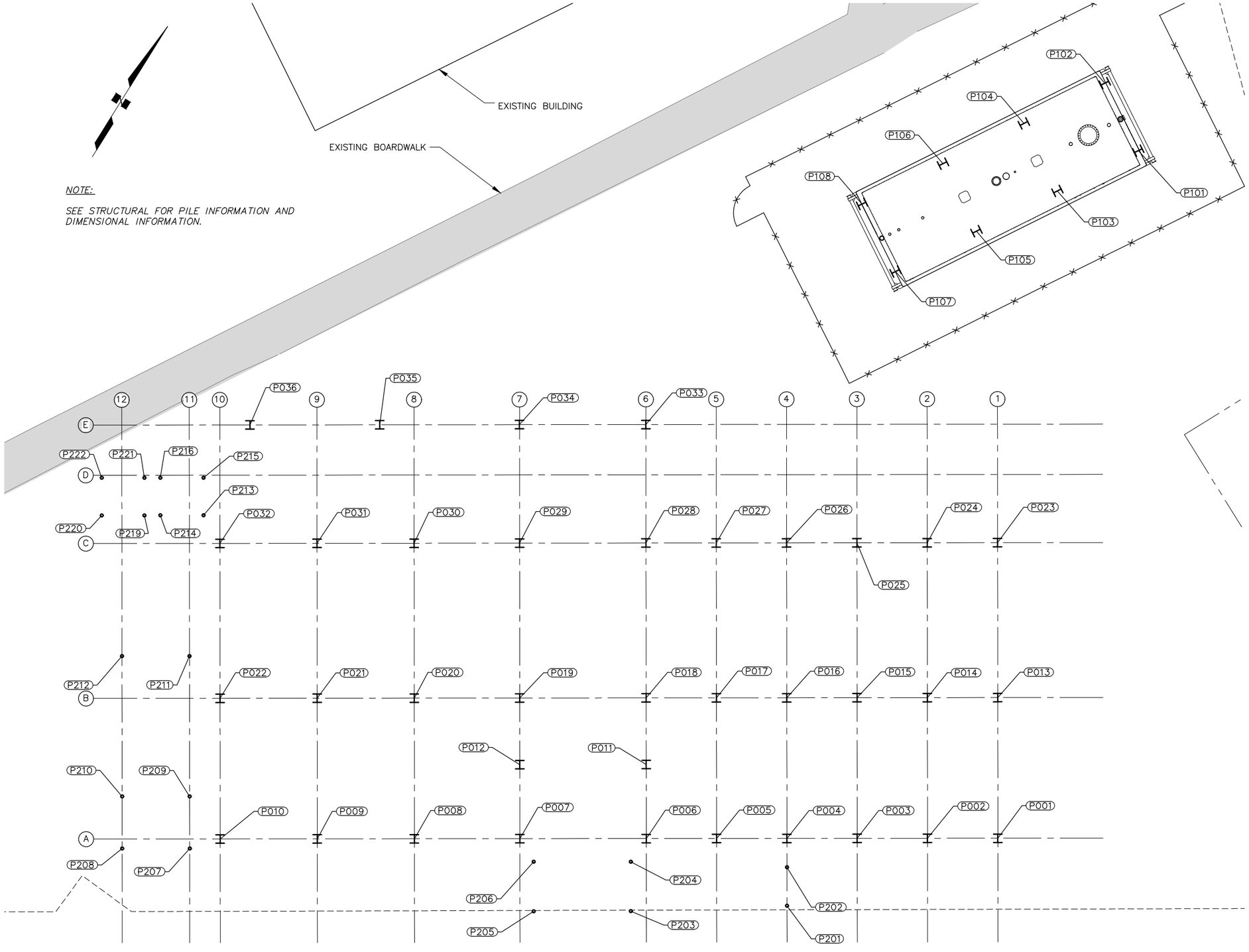
WTP SITE PLAN

NO.	REVISION	BY	DATE
A	FINAL	WMK	07/20/18

Plot Date 7/20/18 | Designed WMK | Drawn CMK | Approved ADM

Sheet No. C102

File: J:\JobsData\80203.03 Nunapitchuk Wtp-ww Design\00 CADD\01 Working Set\01 Civil\80203.03 Site Plan.dwg



NOTE:

POINTS P217 AND P218 ARE NOT USED.

NIC

1 WTP PILE PLAN

5' 0 5' 10'

Point Table		
Raw Description	Northing	Easting
P001	2520364.4988	619075.8021
P002	2520360.7894	619069.8657
P003	2520357.0800	619063.9294
P004	2520353.3705	619057.9931
P005	2520349.6611	619052.0567
P006	2520345.9517	619046.1204
P007	2520339.2835	619035.4491
P008	2520333.7194	619026.5446
P009	2520328.5968	619018.3468
P010	2520323.4742	619010.1490
P011	2520352.2060	619042.2122
P012	2520345.5379	619031.5410
P013	2520376.3715	619068.3832
P014	2520372.6621	619062.4469
P015	2520368.9526	619056.5105
P016	2520365.2432	619050.5742
P017	2520361.5338	619044.6379
P018	2520357.8243	619038.7015
P019	2520351.1562	619028.0302
P020	2520345.5920	619019.1257
P021	2520340.4695	619010.9279
P022	2520335.3471	619002.7305
P023	2520389.4456	619060.2136
P024	2520385.7361	619054.2773
P025	2520382.0267	619048.3409
P026	2520378.3178	619042.4047
P027	2520374.6078	619036.4683
P028	2520370.8984	619030.5319
P029	2520364.2303	619019.8607
P030	2520358.6661	619010.9562
P031	2520353.5435	619002.7584
P032	2520348.4210	618994.5606
P033	2520380.8983	619024.2833
P034	2520374.2302	619013.6120
P035	2520366.8554	619001.8100
P036	2520360.0107	618990.8561
P101	2520429.9709	619051.4638
P102	2520433.9047	619045.0783
P103	2520422.3043	619046.7496
P104	2520426.2382	619040.3641
P105	2520414.6378	619042.0354
P106	2520418.5716	619035.6499
P107	2520406.9712	619037.3212
P108	2520410.9051	619030.9356
P201	2520347.6817	619061.548
P202	2520350.9324	619059.5
P203	2520339.0041	619048
P204	2520343.1840	619055.0239
P205	2520333.8816	619040.4380
P206	2520338.0615	619037.8261
P207	2520321.0586	619008.0718
P208	2520317.49	619002.3651
P209	2520325.	619005.3235
P210	252	618999.6169
P211	2520	618997.9237
P212	25	618992.2170
P213	2520349.	618991.6932
P214	2520347.641	618988.0461
P215	2520353.0936	618989.7109
P216		618986.0636
P219		618986.7054
P220		618983.0935
P221		618984.
P222	2520347.7233	618981.116

Alaska Department of Environmental Conservation Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49TH
William M. Kemp
CE-14947
7/20/2018
REGISTERED PROFESSIONAL ENGINEER

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PHONE: (907) 562-3252
#AECC882-AK

NUNAPITCHUK, AK

WATER TREATMENT PLANT & WASHETERIA

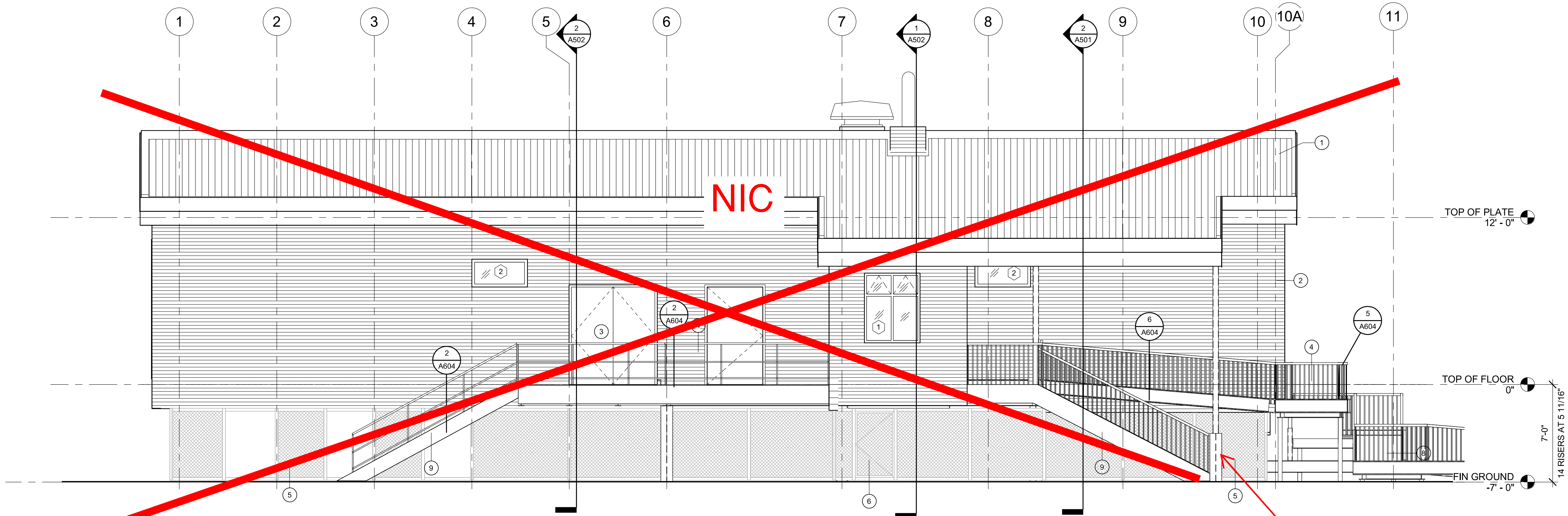
WTP PILE PLAN

NO.	REVISION	BY	DATE
A	FINAL	WMK	07/20/18
B	ADJUSTED PILE CALLOUTS	WMK	6/3/19

Plot Date 7/20/18
Designed WMK
Drawn CMK
Approved ADM

Sheet No. C103

File: J:\JobsData\80203.03 Nunapitchuk Wtp-ww Design\00 CADD\01 Working Set\01 Civil\80203.03 Site Plan.dwg

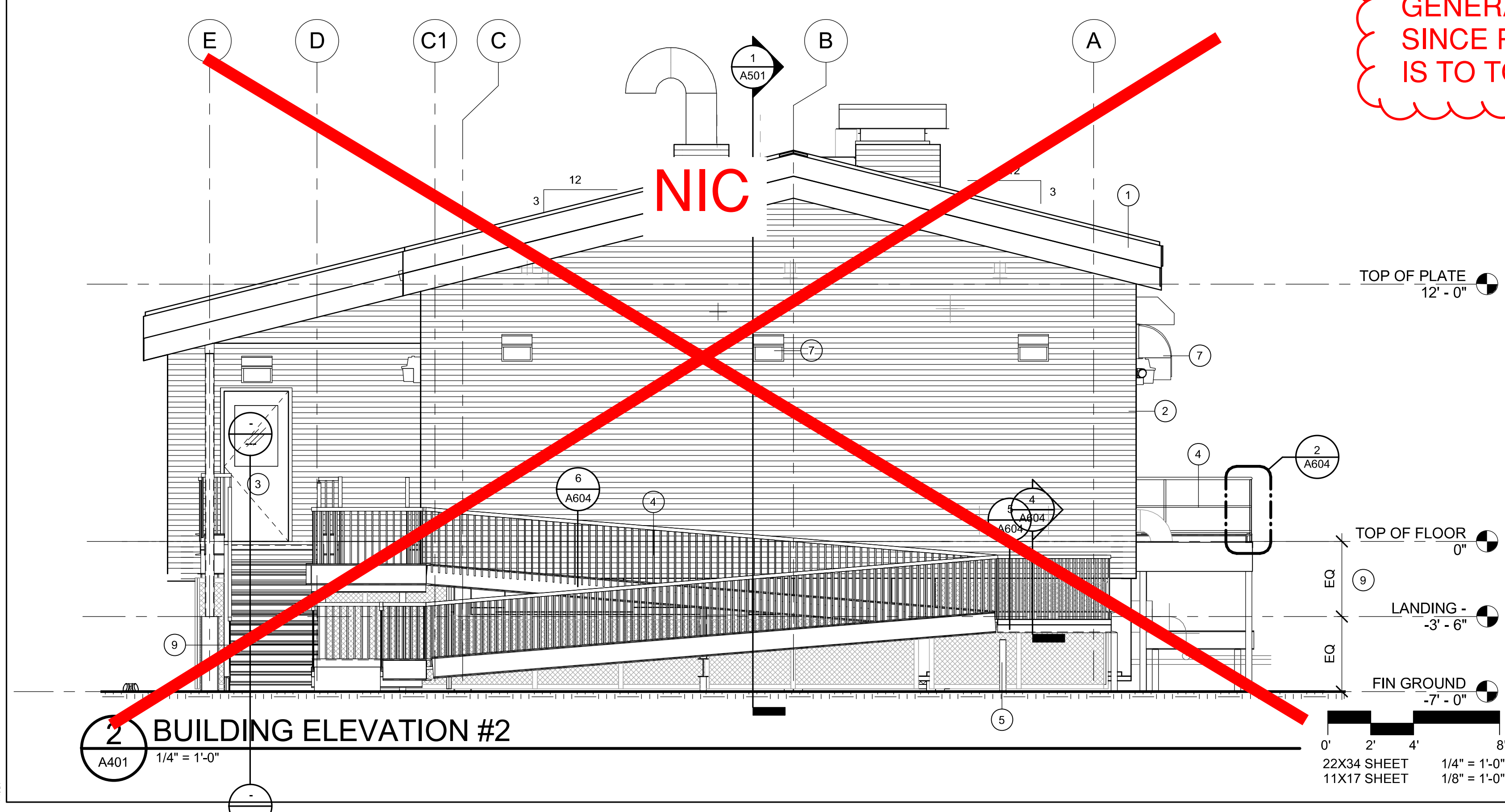


1 A401 BUILDING ELEVATION #1
1/4" = 1'-0"

0' 2' 4' 8'
22X34 SHEET 1/4" = 1'-0"
11X17 SHEET 1/8" = 1'-0"

DRAWING PROVIDED FOR GENERAL REFERENCE ONLY, SINCE PILE ELEVATION DATUM IS TO TOP OF FLOOR

CANOPY POST PILE



2 A401 BUILDING ELEVATION #2
1/4" = 1'-0"

0' 2' 4' 8'
22X34 SHEET 1/4" = 1'-0"
11X17 SHEET 1/8" = 1'-0"

SHEET NOTES

NIC

1. METAL ROOFING
2. METAL SIDING
3. INSULATED FIBERGLASS DOOR
4. STEEL RAILING
5. GALVANIZED CHAIN LINK FENCING BETWEEN PERIMETER PILES; REFER CIVIL
6. PROVIDE 3' - 6" WIDTH SWING GATES REF CIVIL
7. VENT - REFER TO MECHANICAL; TYPICAL
8. ADA RAMP: 1/12 MAX SLOPE
9. ...SER , 10" TREAD
X. ...R A701

Alaska Department of Environmental Conservation
Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA 49th John E. McCool No. 3534-A REGISTERED PROFESSIONAL ARCHITECT
11/02/18

HISTORIC ANCHORAGE TRAIN DEPOT

MCG PROJ. # 2016008

NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
ARCHITECTURAL
ARCHITECTURAL EXTERIOR ELEVATIONS

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/02/18
Designed JEM
Drawn WVZ/AVZ
Approved DDG

Sheet No.
A401

ABBREVIATIONS

&	AND
@	AT
A&B	ABOVE & BELOW
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADD'L	ADDITIONAL
ADJ	ADJACENT, ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR, ANCHORAGE
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECT, ARCHITECTURAL
ARND	AROUND
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BAL	BALANCE
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOD	BOTTOM OF DECK
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER, CHANNEL
CANT	CANTILEVER
CAP	CAPACITY
CC	CENTER-TO-CENTER
CDF	CONTROL DENSITY FILL
CF	COLD-FORMED
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT, CONSTRUCTION JOINT
CJP, CP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CP	COMPLETE PENETRATION
CRSI	CONCRETE REINFORCED STEEL INSTITUTE
CTR	CENTER, CENTERED
CY	CUBIC YARD
d	PENNYWEIGHT (NAILS)
DB	DIVIDER BEAM, DROPPED BEAM
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBN	DIAPHRAGM BOUNDARY NAILING
DEG, °	DEGREE
DEMO	DEMOLISH, DEMOLITION
DF	DOUGLAS FIR
DFL	DOUGLAS FIR-LARCH
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DP	DEEP
DTL	DETAIL
DWG	DRAWING
DWL	DOWEL
(E)	EXIST EXISTING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EMB, EMBED	EMBEDMENT
ENGR	ENGINEER
EQ	EARTHQUAKE, EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
ETC	ET CETERA
E-W	EAST-WEST
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FF	FAR FACE, FINISH FLOOR
FIN	FINISH
FLR	FLOOR
FLG	FLANGE
FOW	FACE OF WALL
FS	FAR SIDE
FT, '	FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BREAK
GEN	GENERAL
GL, GLULAM	GLUED LAMINATED MEMBER
GLB	GLUED LAMINATED BEAM
GR	GRADE
GRND	GROUND
GWB	GYPSUM WALL BOARD
HF	HEM-FIR
HGR	HANGER
HK	HOOK
HORIZ, H	HORIZONTAL
HP	HIGH POINT
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN, "	INCH
INCL	INCLUDE
INFO	INFORMATION
INT	INTERIOR
IJ	ISOLATION JOINT
JST	JOIST
JT	JOINT
K	KIP (1,000 LB)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	LENGTH, ANGLE
LB, #	POUND
LF	LINEAL FOOT
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION, LOCATE
LONGIT	LONGITUDINAL
LP	LOW POINT
LSH	LONG SLOTTED HOLE
LSL	LAMINATED STRAND LUMBER
LVL	LEVEL, OR LAMINATED VENEER LUMBER
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MPH	MILES PER HOUR
MTL	METAL
NF	NEAR FACE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NO, #	NUMBER
N-S	NORTH-SOUTH
NS	NEAR SIDE, NONSHRINK
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSH	OVERSIZED HOLE
OWJ	OPEN WEB JOIST
PC	PIECE, PRECAST
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PERP	PERPENDICULAR
PL	PLATE, PROPERTY LINE
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PLWD	PLYWOOD
PNL	PANEL
PJP, PP	PARTIAL JOINT PENETRATION
PREFAB	PREFABRICATED
PS	PRESTRESS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POINT, PRESSURE TREATED
P-T	POST-TENSIONED
PVC	POLYVINYL CHLORIDE
R	RAD RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCING
REM	REMAINDER
REQD	REQUIRED
RND	ROUND
RO	ROUGH OPENING
RTN	RETURN
SBN	SHEAR WALL BOUNDARY NAILING
SC	SLIP CRITICAL
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SPC	SPACE, SPACED, SPACING
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STAG	STAGGER, STAGGERED
STD	STANDARD
STIFF	STIFFENER
STIR	STIRRUP
STL	STEEL
STRUC	STRUCTURAL
SUPP	SUPPORT
SYM	SYMMETRICAL, SYMMETRY
SW	SHEAR WALL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TEMP	TEMPERATURE
THK	THICK, THICKNESS
THRU	THROUGH
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TR	THREADED ROD
TRANS	TRANSVERSE
TYP	TYPICAL
TWS	THREADED WELDED STUD
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W	WIDTH, WIDE FLANGE
w/	WITH
WD	WOOD
WHS	WELDED HEADED STUD
W/O	WITHOUT
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT

SYMBOLS

GENERAL SYMBOLS

GRID BUBBLE

GRID LINE

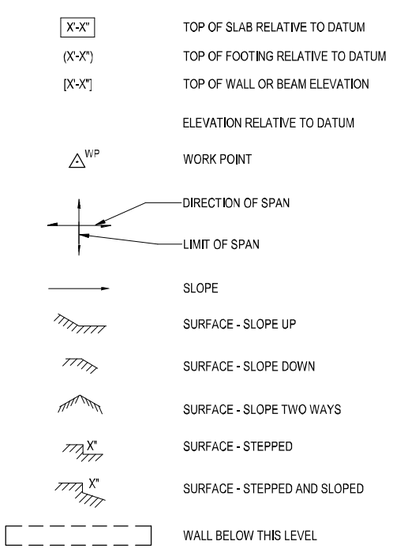
NORTH ARROW

SOIL

OPENING IN FLOOR OR WALL

DIMENSION PER ARCHITECT

DIMENSION PER MECHANICAL OR ELECTRICAL



TOP OF SLAB RELATIVE TO DATUM

TOP OF FOOTING RELATIVE TO DATUM

TOP OF WALL OR BEAM ELEVATION

ELEVATION RELATIVE TO DATUM

WORK POINT

DIRECTION OF SPAN

LIMIT OF SPAN

SLOPE

SURFACE - SLOPE UP

SURFACE - SLOPE DOWN

SURFACE - SLOPE TWO WAYS

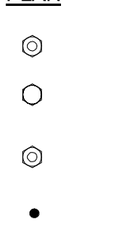
SURFACE - STEPPED

SURFACE - STEPPED AND SLOPED

WALL BELOW THIS LEVEL

CONNECTORS

PLAN SECTION



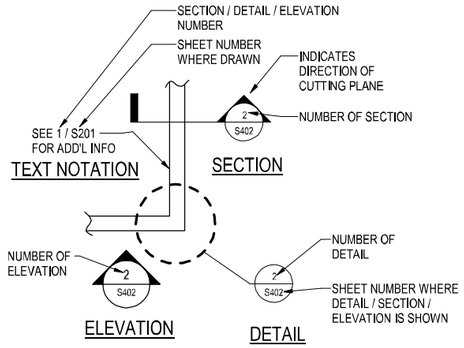
CONCRETE ANCHOR BOLT

DRILL IN CONCRETE ANCHOR

BOLT

NAIL

DETAIL IDENTIFIERS



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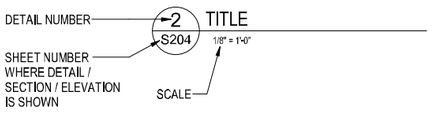
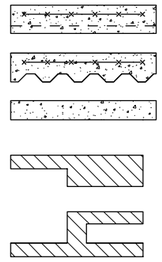


CONCRETE SYMBOLS



CONCRETE OVER STEEL FLOOR DECK-LONGITUDINAL

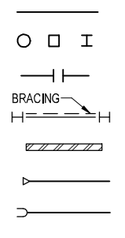
CONCRETE OVER STEEL FLOOR DECK-TRANSVERSE

CONCRETE CURB/PARTIAL HEIGHT WALL

CHANGE OF SLAB THICKNESS

RAISED SLAB

STEEL SYMBOLS



BEAM/GIRDER

COLUMN

BEAM/COLUMN SPLICE

DIAGONAL BRACING

STEEL IN CROSS SECTION

CANTILEVER MOMENT CONNECTION PER 3/S500

HINGE CONNECTION PER 3/S502

Alaska Department of Environmental Conservation
Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA
49 TH
COURTNEY A. WILLOUGHBY
No. CE13647
REGISTERED PROFESSIONAL ENGINEER
11/2/18

CRW ENGINEERING GROUP, LLC

Reid Middleton
4300 B St., Suite 302 Anchorage, AK 99503
Phone: 907 562-3439 • www.reidmiddleton.com
Corporate License #AECC598

NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
SYMBOLS AND ABBREVIATIONS

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/2/18
Designed CW
Drawn DP
Approved DS

Sheet No.
S100

GENERAL

THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AMONG THE DRAWINGS BEFORE STARTING ANY WORK OR FABRICATION. IN CASE OF DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS, REFERENCE STANDARDS, SITE CONDITIONS OR GOVERNING CODE, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCIES AND OBTAIN DIRECTION PRIOR TO PROCEEDING. NOTES ON INDIVIDUAL STRUCTURAL DRAWINGS SHALL TAKE PRIORITY OVER GENERAL STRUCTURAL NOTES. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS, BUT SHALL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS.

ALL CONSTRUCTION SHALL COMPLY WITH THE 2012 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE ALASKA STATE FIRE MARSHALL.

SAFETY - THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE AND LOCAL SAFETY STANDARDS. THE CONTRACTOR IS IN CHARGE OF ALL SAFETY MATTERS ON AND AROUND THE JOB SITE.

STRUCTURAL DESIGN DATA

STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE IBC AS AMENDED AND ADOPTED BY THE ALASKA STATE FIRE MARSHALL. OCCUPANCY CATEGORY IS II IN ACCORDANCE WITH IBC SECTION 1604.5.

REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS, SLOPES, DEPRESSIONS, NON-BEARING WALLS, FIRE-PROOFING, FASCIA, CURBS, DRAINS, RAILINGS, WATERPROOFING, FINISHES, ETC.

THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SHORING AND BRACING DURING CONSTRUCTION.

LIVE LOADS: 125 PSF, UNLESS INDIVIDUAL EQUIPMENT GOVERNS

ROOF SNOW: 34 PSF SLOPED + UNBALANCED (10 PSF LEEWARD, 48 PSF FOR 7.4' FROM RIDGE, 34 PSF FOR REMAINDER OF LEEWARD SIDE)
I_s=1.1, P_g=40 PSF, C_t=1.1, C_e=1.0

WIND LOADS: BASIC WIND SPEED (3-SECOND GUST, V_{ult})=157 MPH,
EXPOSURE C, I_w=1.0, INTERNAL PRESSURE $GC_{pi}=\pm0.18$ (FULLY ENCLOSED)

SEISMIC LOADS: SITE CLASS E, DESIGN CATEGORY E,
S_s=0.332, S_1=0.129, S_{ds}=0.495, S_{d1}=0.294, I_e=1.25, R=6.5 (LIGHT FRAMED WOOD SHEARWALLS), Ω_o=3, C_d=4, ρ=1, C_s=0.095, BASE SHEAR=9.3 KIPS.

LATERAL ANALYSIS IS LINEAR STATIC. LATERAL FORCES ARE CARRIED BY FLEXIBLE ROOF DIAPHRAGMS TO THE LIGHT FRAMED WOOD SHEARWALLS. MOMENTS, SHEARS, AND ROTATIONAL FORCES ARE DELIVERED TO THE PILES BY THE LIGHT FRAMED WOOD SHEARWALLS IN PROPORTION TO THEIR TRIBUTARY AREA.

FOUNDATIONS

PILES AND PILE DRIVING SHALL BE IN ACCORDANCE WITH THE IBC AND THE PROJECT GEOTECHNICAL INVESTIGATION REPORT, "FINAL FOUNDATION RECOMMENDATIONS, NUNAPITCHUK WASHETERIA AND WATER TREATMENT PLANT, NUNAPITCHUK, ALASKA"; GEOTECHNICAL EXPLORATION FINDINGS AND RECOMMENDATIONS", DATED AUGUST 22, 2016.

~~AFTER PLACEMENT, ... PILES, AS DETERMINED BY THE GEOTECHNICAL ... SHALL BE DYNAMICALLY (...) ... TO CONFIRM CAPACITY.~~

PRIOR TO PLACEMENT, PILES SHALL BE VISUALLY EXAMINED FOR DEFECTS, DETERMINED TO BE STRAIGHT, AND PROPERLY CLEANED TO REMOVE ANY FOREIGN MATERIAL.

TOLERANCES ON LOCATION: 3-INCHES MAXIMUM FROM PLAN CENTER

PILES:

<u>MAIN BUILDING & TANK SUPPORT, DRIVEN PILES, HP10x57</u>
PILE EMBEDMENT IS ESTIMATED TO BE 50 FEET.
AXIAL DESIGN LOAD: 35 KIPS PER PILE
LATERAL DESIGN LOAD: 3 KIPS PER PILE

<u>WALKWAYS AND RAMPS, HELICAL PIERS</u>
3 1/2-INCH OD SHAFT; ALL SURFACES HOT DIPPED GALVANIZED.
MINIMUM WALL THICKNESS: 0.3-INCH
TRIPLE HELIX SIZE, SPACING AND DEPTH: SEE S400.
DESIGN CAPACITY: 5 KIPS

PASSIVE COOLING:
THERMOSIPHON TO BE INSTALLED WITH ALL DRIVEN HP PILES. THERMOSIPHONS TO BE 1" DIAMETER STEEL PIPE ENCASED IN INTEGRAL STEEL ANGLE AFFIXED TO H-PILE AND BACKFILLED WITH A CEMENT GROUT BACKFILL CONSISTING OF TYPE I OR III PORTLAND CEMENT AND HAVING A 0.50 WATER TO CEMENT RATIO. A MINIMUM CONDENSOR AREA OF 35 SQUARE FEET IS REQUIRED. THERMOSIPHON TO EXTEND TO 40' BELOW GROUND SURFACE.

SPECIAL INSPECTION

THE OWNER SHALL ENGAGE A SPECIAL INSPECTOR PER CHAPTER 17 OF THE IBC 2012. SEE STATEMENT OF SPECIAL INSPECTIONS ON SHEET S101. COPIES OF INSPECTION REPORTS SHALL BE AVAILABLE TO THE CONSTRUCTION SITE FOR REVIEW.

DEFERRED SUBMITTALS

NIC

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THESE DRAWINGS AND REQUIRE STRUCTURAL DESIGN TO BE FURNISHED BY THE CONTRACTOR:

1. EXTERIOR CLADDING
2. ROOFING ATTACHMENT
3. SEISMIC ANCHORAGE OF MECHANICAL & ELECTRICAL EQUIPMENT
4. PREFABRICATED WOOD TRUSSES

DRAWINGS AND CALCULATIONS FOR BUILDER DESIGNED COMPONENTS, SEALED BY THE ALASKA STATE REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW FOR GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING TO BUILDING SAFETY FOR ... S OF BUILDER DESIGNED ITEMS SHALL INCLUDE LOCATIONS, MAGNITUDES, AND D... ORCES TRANSFERRED TO THE STRUCTURE. DEFERRED SUBMITTALS MUS... APPROVED BY BUILDING SAFETY PRIOR TO INSTALLATION/CONSTRUCTION.

SUBMITTALS

THE CONTRACTOR SHALL REVIEW, STAMP WITH HIS APPROVAL, DATE AND SIGN ALL SHOP DRAWINGS AND SUBMITTALS REQUIRED BY THE CONTRACT DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER. AT THE TIME OF SUBMISSION, THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION IN THE SHOP DRAWINGS FROM THE REQUIREMENTS OF THE CONTRACT DRAWINGS. DIMENSIONS AND QUANTITIES ARE CONTRACTOR'S RESPONSIBILITY AND WILL NOT BE REVIEWED.

STRUCTURAL CONCRETE

NIC

ALL CAST-IN-PLACE CONCRETE SHALL HAVE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

PORTLAND CEMENT SHALL CONF... MAXIMUM AGGREGATE SIZE SHALL BE 3/4 INCH. ALL AGGREGATE SHALL B... MATERIAL CONFORMING TO ASTM C33. WATER SHALL MEET ASTM C94, SECTION ...

CONCRETE SHALL BE PROPORTI... WORKABLE MIX THAT CAN BE PLACED WITHOUT SEGREGATION OR EXCESS FREE SURFACE WATER. COMPLY WITH IBC SECTION 1905. ALL CONCRETE MAY CONTAIN A WATER REDUCING ADMIXTURE MEETING ASTM C494, TYPE A. BEFORE THE ADDITION OF THE WATER REDUCING ADMIXTURE, THE MAXIMUM SLUMP SHALL BE 3-INCHES. MAXIMUM WATER CEMENT RATIO SHALL BE 0.46 FOR FLOOR SLABS AND 0.50 FOR ALL OTHERS.

NON-SHRINK GROUT SHALL BE NON-METALLIC, CONFORMING TO ASTM C1107.

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 301, STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE. CONCRETE PLACED DURING COLD WEATHER SHALL CONFORM TO ACI 306. ALL COLD WEATHER CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL CONTAIN AIR ENTRAINMENT PER ACI 318 TABLE 4.2.1.

ALL CONCRETE REINFORCING SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 315, ACI 318, CRSI MSP-1 AND ACI SP-66. TYPICAL REINFORCING BARS SHALL BE ASTM A615, GRADE 60.

ALL WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A185 OR ASTM A497. USE 6x6-W1.4xW1.4 SHEETS UON, IN SLABS ON METAL DECK , SUPPORTED ON APPROVED CHAIRS AND LAPPED 12-INCHES MINIMUM. FIBER REINFORCEMENT, CONFORMING TO ASTM C1116, TYPE III MAY BE USED IN LIEU OF SLAB REINFORCEMENT. USE RECOMMENDED DOSAGE OF MFR, MINIMUM OF 2.5 LB/CU. YD.

CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZE, SPACING AND PLACEMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ALUMINUM ITEMS SHALL NOT BE EMBEDDED IN CONCRETE.

POST-INSTALLED ANCHORS

NIC

INSTALLATION SHALL CONFORM TO MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS OF ICC-ES REPORT. ALL POST-INSTALLED ANCHORS SHALL HAVE A CURRENT ICC-ES REPORT AND BE AUTHORIZED FOR USE IN SEISMIC DESIGN CATEGORY D. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHORS, UON.

THREADED ROD SHALL BE ASTM A307, UON (OR ISO898 CLASS 5.8), TENSILE STRENGTH OF 60 KSI MIN, AND GALVANIZED WHERE EXPOSED TO THE WEATHER.

EXISTING BASE SHALL BE SCANNED PR... LES. EXISTING REBAR LOCATIONS SHALL BE MARKED, AND NEW ANCHOR ... TO AVOID EXISTING REINFORCING. NO REINFORCING BARS SHALL BE CUT TO ... ALL DEFECTIVE ANCHOR HOLES SHALL BE GROUTED AND A NEW HOLE DRILLED A MINIMUM OF 3 BOLT DIAMETERS AWAY.

ADHESIVE ANCHORS FOR THREADED ROD AND REBAR SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
CONCRETE:
-POWERS/DEWALT "PURE110+" (ESR-3298)
-HILTI "HIT-HY 200 SAFE SET" (ESR-...187)

EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
CONCRETE:
-HILTI "KWIK BOLT TZ" (ESR-1917)
-ITW REDHEAD "TRUBOLT +" (ESR-2427)
-SIMPSON "STRONG-BOLT 2" (ESR-3037)

SCREW ANCHORS IN CONCRETE SHALL BE ONE OF THE FOLLOWING (OR AN APPROVED EQUIVALENT):
-HILTI "KWIK HUS-EZ" (ESR-3027 CONC)
-SIMPSON "TITEN HD" (ESR-2713 CONC)
-ITW "TAPCON" (ESR-2202 CONC)
-POWERS "WEDGE-BOLT+" (ESR-2526 CONC)

POWDER- OR POWDER-ACTUATER FASTENERS (PAF) SHALL NOT BE USED TO RESIST ANY LATERAL LOAD INDUCED BY AN EARTHQUAKE. PAF SHALL BE 0.148-INCHES IN DIAMETER AND THE ANCHOR TYPE AND POWDER LOAD SHALL BE SUITED TO THE MATERIAL BEING FASTENED AND THE SUBSTRATE MATERIAL. PRODUCT SHALL BE ITW RAMSET/RED HEAD (ESR-1799, 1955 OR 2579) OR APPROVED EQUAL. SPECIAL INSPECTION IS NOT REQUIRED FOR PAF INSTALLATION.

STEEL GRATING

RAMP AND PLATFORM GRATING SHALL BE GALVANIZED TYPE 11-W-4, 1 1/4-INCH X 3/16-INCH OR EQUAL, PLAIN. STAIR TREADS SHALL BE GALVANIZED 8-W-4, 1-INCH X 3/16-ICH OR EQUAL, PLAIN, WITH NOSING. STEEL SHALL MEET ASTM A1011 AND HAVE A MINIMUM YIELD STRESS OF 30 KSI. MAXIMUM SPACING BETWEEN BEARING BARS IS 1/2-INCH.

STRUCTURAL STEEL

MATERIALS:

WIDE-FLANGE SHAPES:	ASTM A992
STRUCTURAL STEEL TUBES (HSS):	ASTM A500, GRADE B
STRUCTURAL STEEL PIPES:	ASTM A53, GRADE B
ALL OTHER SHAPES & PLATE:	ASTM A36
BOLTS, WASHERS & NUTS:	ASTM A325, F436 & A563
HARDENED WASHERS:	ASTM F436
WELDED STEEL STUDS:	ASTM A108
ANCHOR RODS:	ASTM F1554, GRADE 36

ALL DETAILING, FABRICATION AND ERECTIONS SHALL CONFORM TO AISC SPECIFICATIONS AND CODES, LATEST EDITION. FABRICATOR MUST PARTICIPATE IN THE AISC QUALITY CERTIFICATION PROGRAM. SPECIAL INSPECTIONS, AT THE CONTRACTOR'S EXPENSE, MUST BE PROVIDED IN THE FABRICATION SHOP.

ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO THE AWS D1.1 AND D1.8, LATEST EDITIONS. ALL WELDING ELECTRODES SHALL BE PROPERLY CONDITIONED 70 KSI MINIMUM TENSILE STRENGTH, WITH DIFFUSED HYDROGEN LEVELS OF 16ml/g (H16) OR LESS IN ACCORDANCE WITH AWS A4.3.

WELDS NOT SPECIFIED SHALL BE SHOP-PERFORMED CONTINUOUS OR ALL-AROUND 3/16" FILLET WELDS.

WELD FILLER METAL FOR COMPLETE-JOINT-PENETRATION GROOVE WELDS SHALL MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:

MINIMUM YIELD STRENGTH:	58 KSI
CVN TOUGHNESS:	20 FT LBS AT 0°F, 40 FT LBS AT 70°F
ELONGATION:	22% MINIMUM

WHERE BUTT WELDS OCCUR AT STEEL WITH DIFFERENT THICKNESSES OR WIDTHS, THE LARGER PIECE OF STEEL MUST BE TAPERED AT A SLOPE NOT EXCEEDING 1 ON 2.5 PER AWS D1.1.

STEEL DECK AND COLD-FORMED STEEL MAY BE WELDED WITH E60 ELECTRODES. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3, "SPECIFICATION FOR THE WELDING OF SHEET STEEL IN STRUCTURES".

THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

ALL CONNECTIONS SHALL BE SIMPLE, SINGLE PLATE SHEAR CONNECTIONS USING HIGH-STRENGTH BEARING TYPE BOLTS WITH THREADS INCLUDED IN THE SHEAR PLANE, A325-N, UON. NUTS SHALL BE SNUG-TIGHT, UON. ONE PLY OF THE CONNECTION SHALL USE SHORT-SLOTTED HOLES ORIENTED HORIZONTALLY.

ALL BEAMS, JOISTS AND TRUSSES SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS.

COMPOSITE BEAMS SHALL BE CONSTRUCTED PER ONE OF THE FOLLOWING, AT THE CONTRACTOR'S OPTION, TO PRODUCE A LEVEL AND FLAT FLOOR:
-CAMBER THE STEEL BEAMS FOR AT LEAST 75% OF THE CONCRETE WEIGHT.
-SHORE THE BEAMS UNTIL CONCRETE REACHES SUFFICIENT STRENGTH, WHILE ACCOUNTING FOR DEAD LOAD COMPOSITE BEAM DEFLECTION.
-PLACE SCREED PINS OF VARYING LENGTH BASED ON A LOAD-DEFLECTION MAP (PROVIDED UPON REQUEST) AND POUR EXTRA CONCRETE TO ADDRESS EXTRA CONCRETE THICKNESS AT CENTER OF BEAMS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES. CONSIDERATION SHOULD BE GIVEN TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS, OR COLUMNS.

ALL STEEL STUD ANCHORS SHALL BE INSTALLED AT 12" ON-CENTER AND WELDED AND INSPECTED PER AWS D1.1, SECTION 7.8. AFTER WELDING, THE CERAMIC FERRULE SHALL BE REMOVED FROM EACH STUD AND THE WELD FILLET VISUALLY INSPECTED.

ALL STEEL SHALL BE CLEANED BY METHODS COMPLYING WITH THE STEEL STRUCTURES PAINTING COUNCIL METHOD SSPC-SP3, POWER TOOL CLEANING. REMOVE OIL, GREASE, AND SIMILAR CONTAMINANTS. EXCEPT FOR MEMBERS TO BE WELDED, APPLY STRUCTURAL STEEL PRIMER PAINT IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS TO A UNIFORM DRY FILM THICKNESS OF 2.0 MILS. AFTER FINAL STEEL INSTALLATION, WIRE BRUSH EXPOSED STEEL SURFACES AND CLEAN WITH SOLVENTS BEFORE TOUCH-UP PAINTING. TOUCH-UP PAINT SHALL BE THE SAME AS SHOP PAINT. STRUCTURAL STEEL TO RECEIVE SPRAY-APPLIED FIRE-PROOFING MAY BE SUPPLIED AS BARE STEEL.

STEEL EXPOSED TO WEATHER OR INDICATED AS GALV SHALL BE HOT-DIP GALVANIZED PER ASTM A123. TOUCH-UP AND REPAIR GALVANIZATION SHALL CONFORM TO ASTM A780. FASTENERS SHALL COMPLY WITH ASTM A153.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. THESE DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR BEFORE SUBMITTAL AND SHALL SHOW SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL. ALSO SUBMIT WELDERS QUALIFICATIONS.

STRUCTURAL STEEL DECK

NIC

ALL STEEL DECKING SHALL MEET ASTM A 653-SS, GRADE 33, WITH A MINIMUM YIELD STRENGTH OF 38 KSI. ALL DECKING SHALL BE GALVANIZED PER ASTM A653-G60. ALL METAL DECK SHALL BE LAPPED A MINIMUM OF 2-INCHES.

MINIMUM DECK GAGES ARE SHOWN ON PLANS AND ARE BASED ON 3-SPAN, UNSHORED CONDITIONS. HEAVIER DECK MAY BE REQUIRED FOR OTHER CONDITIONS, DEPENDING ON THE MANUFACTURER'S AND CONTRACTOR'S LAYOUT. ALL DECK SHALL SATISFY AISI, "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS".

FASTEN STEEL DECKING PER SCHEDULE:
<u>FLOOR DECK, Q-design (ASD)=18...</u>
SUPPORTING STEEL: q3 PATTER... ER VISUAL (1/2-INCH EFFECTIVE) PUDDLE WELDS (OR SHEAR STUDS) AT ... R.
SIDE LAPS: BUTTON PUNCHED ... UM ON CENTER.

STRUCTURAL STEEL DECK CONTINUED

NIC

"PUNCHLOK" OR "DELTA-GRIP" OR OTHER ENHANCED PUNCHING CONNECTION SYSTEM MAY BE SUBSTITUTED FOR ROOF SIDE LAPS, AND MECHANICAL 'PAF' FASTENERS MAY BE SUBSTITUTED FOR SUPPORTING STEEL CONNECTIONS. CONTRACTOR SHALL SUBMIT CALCULATIONS TO SHOW UNIT SHEAR CAPACITIES OF ALTERNATE FASTENER LAYOUT EXCEEDS THE "Q-design" INDICATED ABOVE.

ALL COMPOSITE STEEL DECK SHALL HAVE WIDE RIBS SUITABLE FOR SHEAR STUD PLACEMENT WHERE STUDS ARE REQUIRED. THE CONFIGURATION OF THE STEEL DECK SHALL ALLOW THE DEVELOPMENT OF FULL SHEAR VALUES OF THE STUD. SHEAR STUDS SHALL BE WELDED THROUGH THE DECK BY PRE-QUALIFIED METHODS. IF THROUGH-DECK WELDING IS UNFEASIBLE, THE STUDS SHALL BE INSTALLED IN PRE-PUNCHED HOLES IN THE DECK. THE CONTRACTOR SHALL PROVIDE CHECKED SHOP DRAWINGS INDICATING EXACT LAYOUT OF STUDS FOR EACH BEAM TYPE, SPAN AND DECK LAYOUT.

PROVIDE CONTINUOUS METAL CLOSURES AT ALL SLAB OPENINGS AND SLAB EDGES AND CONTINUOUS DECK CLOSURE AT ALL DECK ENDS. PROVIDE, AS REQUIRED, ALL RIDGE AND VALLEY PLATES, COLUMN CLOSURES, CANT STRIPS, SUMP PLATES AT PIPING PENETRATIONS AND RECESSED SUMP PANS AT ALL ROOF DRAINS. PROVIDE SUPPLEMENTAL FRAMING AT OPENINGS AS REQUIRED FOR SUPPORT OF THE METAL DECK. ALL OPENING SIZES AND LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

THE DECK SUPPLIER SHALL CONFIRM THE DECK SIZE FOR THE ACTUAL LAYOUT AND PROVIDE THE ENGINEER WITH ENGINEERING CALCULATIONS OR PUBLI... ER'S DATA VERIFYING THE SPECIFIED DECK REQUIREMENTS.

PROVIDE ENGINEERED AND CHECKED SHOP D... IG LOCATION, GAGE, AND SIZE OF EACH PIECE OF DECKING. THE DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING AND SIDE LAP CONNECTION DETAILS.

STRUCTURAL TIMBER

MATERIALS:

DIMENSIONAL LUMBER:	HEM-FIR NO. 2 OR BETTER
GLUE-LAMINATED TIMBER:	DF/DF, 24F-V4, INDUSTRIAL GRADE
ENGINEERED LUMBER:	1.9E LVL, 2.0E PSL
POST AND HEAVY TIMBERS:	DOUG-FIR NO. 1

ROOF SHEATHING: APA RATED SHEATHING, EXTERIOR, SPAN RATED 40/20, 5/8-INCH THICK
WALL SHEATHING: APA RATED SHEATHING, EXPOSURE 1, SPAN RATED 32/16, 1/2-INCH THICK

INSTALL FLOOR AND ROOF SHEATHING WITH THE LONG DIMENSION ACROSS SUPPORTS. ALLOW 1/8-INCH SPACING AT PANEL ENDS AND PANEL EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

INSTALL WALL SHEATHING VERTICALLY OR HORIZONTALLY. ALLOW 1/8-INCH SPACING AT PANEL ENDS AND PANEL EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

SHEATHING SHALL BE USED IN ACCORDANCE WITH THE RECOMMENDATIONS OF APA, THE ENGINEERED WOOD ASSOCIATION. PLACE NAILS 3/8-INCH FROM EDGE OF PANELS

ALL ROOF DIAPHRAGMS SHALL BE NAILED:
PANEL EDGES: 10d NAILS AT 6-INCHES ON-CENTER
INTERMEDIATE SUPPORTS: 10d @ 12-INCHES ON-CENTER
BLOCKING SHALL BE 2x MIN, BUT MAY BE FLAT 2x BLOCKING.

THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL TIMBER MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR REVIEW OF THE ENGINEER.

ALL NAILS SHALL BE COMMON WIRE NAILS, UNLESS NOTED OTHERWISE. NAILING SHALL CONFORM TO TABLE 2304.9.1 OF THE IBC. SIDING (T1-11) FASTENERS SHALL BE GALVANIZED CASING NAILS UNLESS NOTED OTHERWISE. MINIMUM NAIL DIMENSIONS ARE AS FOLLOWS:

NAIL SIZE, PENNY WT	LENGTH, INCHES	DIAMETER, INCHES
8d	2-1/2	0.131
10d	3	0.148
16d	3-1/2	0.162

NAILS OR STAPLES SHALL BE DRIVEN FLUSH; HEADS SHALL NOT BE DRIVEN BEYOND TIMBER SURFACE. STANDARD ASTM A307 BOLTS SHALL BE USED IN STD HOLES. WASHERS SHALL BE USED UNDER ALL BOLT HEADS AND NUTS CONTACTING WOOD.

WALL STUDS SHALL BE SPACED AT 16-INCHES OC, UON.

WOOD PLATES OR SILLS SHALL BE AWW 2X DIMENSIONAL LUMBER BOLTED TO FOUNDATIONS WITH 5/8-INCH DIAMETER ASTM A307 GALV BOLTS. MINIMUM EMBEDMENT SHALL BE 7-INCHES AND MAXIMUM SPACING SHALL BE 4-FEET ON-CENTER.

SEE SCHED FOR SILL PLATE AND SILL BOLT REQUIREMENTS AT SHEARWALLS. SHEARWALL ANCHOR BOLTS SHALL HAVE 3 INCH X 3 INCH X 0.229 INCH THICK GALV PLATE WASHERS BETWEEN THE SILL PLATE AND THE NUT.

ALL AWW SHEATHING AND LUMBER MUST BE PRESSURE TREATED IN ACCORDANCE WITH THE AWPB-FDN OR AWPA U1 STANDARD. MEMBERS MORE THAN 8-INCHES ABOVE GROUND NEED NOT HAVE THIS SPECIAL PRESERVATIVE TREATMENT, UON. TIMBER FASTENERS USED TO FASTEN SILL PLATES SHALL BE HOT-DIP GALVANIZED, STAINLESS STEEL, SILICON BRONZE OR COPPER.

ALLOW A GAP OF 3/4-INCHES BETWEEN THE TOP OF NON-BEARING PARTITIONS AND JOISTS ABOVE. ALLOW THE JOISTS TO DEFLECT UNDER LIVE LOAD WITHOUT TOUCHING THE NON-BEARING PARTITION.

PRE-MANUFACTURED HARDWARE SHALL BE SIMPSON OR APPROVED EQUAL.

IF WALL SECTIONS ARE BUILT IN PANELS, WALL SHEATHING MAY END AT THE FACE OF A STUD. AN EQUAL STUD SHALL BE PLACED AT THE END OF THE ADJACENT PANEL. THE TWO END STUDS SHALL BE NAILED TOGETHER WITH 16d NAILS AT THE SAME SPACING AS IS REQUIRED FOR THE EDGE NAILING OF THE SHEATHING TO THE STUDS. ALTERNATE NAILING DIRECTION SO ONE-HALF OF NAILS PENETRATE EACH END STUD.

WOOD I-JOISTS

WOOD I-JOIST SIZES AND SPACING BASED ON REDBUILT RED-I45 SERIES. IF ALTERNATE PRODUCT USED, PROVIDE MANUFACTURER LOAD TABLES AND ICBO REPORTS TO ENGINEER FOR APPROVAL. SIZE FOR TOTAL DEAD LOAD OF 20 PSF. DEFLECTION UNDER TOTAL LOAD NOT TO EXCEED L/360.

Alaska Department of Environmental Conservation
Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA
49TH
COURTNEY WILLOUGHBY
No. CE13847
REGISTERED PROFESSIONAL ENGINEER
11/2/18

CRW ENGINEERING GROUP, LLC

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NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
STRUCTURAL GENERAL NOTES

NO.	REVISION	BY	DATE
A			
B			
C			

Plot 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No.
S101

SHEARWALL ACCEPTANCE

PER APA, IF LESS THAN 20% OF THE FASTENERS ON AN EDGE NAILED STUD ARE OVERDRIVEN LESS THAN 1/8-INCH, THEY MAY BE IGNORED. IF MORE THAN 20% OF THE FASTENERS ARE OVERDRIVEN BY MORE THAN 1/8-INCH ON EDGE NAILED STUD, ADD ONE NAIL FOR EVERY TWO THAT ARE OVERDRIVEN.

WHERE EDGE NAILS AT 2-INCHES OC, WHEN MORE THAN FIVE FASTENERS IN A ROW ARE OVERDRIVEN MORE THAN 1/8-INCH, A 2x STUD SHALL BE SISTERED ALONG SIDE AND NAILED TO THE SHEATHING WITH THE SAME NAILING. THIS 2x ONLY NEED EXTEND OVER THE LENGTH OF THE OVERDRIVEN FASTENERS. AGAIN, ADD ONE NAIL FOR EVERY TWO THAT ARE OVERDRIVEN.

THE INTERIOR PANEL NAILING IS ACCEPTABLE AS-IS, EVEN IF 100% OF THE NAILING IS OVERDRIVEN.

SHOP-FABRICATED WOOD TRUSSES

WOOD TRUSSES SHALL MEET THE ANSI / TPI 1 NATIONAL STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION. TRUSSES SHALL BE HANDLED, INSTALLED (TEMPORARILY AND PERMANENTLY) IN ACCORDANCE WITH TRUSS PLATE INSTITUTE DSB, "DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL-PLATE-CONNECTED WOOD TRUSSES," AND "COMPONENT SAFETY INFORMATION: GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING & BRACING METAL-PLATE-CONNECTED WOOD TRUSSES."

TRUSSES SHALL BE SUPPLIED BY THE MANUFACTURER WITH PLAN, DETAILS AND ELEVATIONS DEPICTING REQUIRED TEMPORARY AND PERMANENT LATERAL RESTRAINT AND DIAGONAL BRACING SPECIFIC TO THIS PROJECT INCLUDING SPACING, LOCATIONS, SIZES AND CONNECTIONS.

TRUSS DESIGN DRAWINGS SHALL CONFORM TO IBC 2012 SECTION 2303.4. DESIGN TRUSSES FOR THE FOLLOWING LOADS IN ADDITION TO THOSE LISTED IN STRUCTURAL DESIGN DATA:

DEAD LOADS: TOP CHORD = 10 PSF
BOTTOM CHORD = 5 PSF
WIND UPLIFT: SEE WIND UPLIFT PLAN ON S104
SNOW AND UNBALANCED SNOW PER GENERAL NOTES

LIMIT DEFLECTION UNDER TOTAL LOAD TO L/180 AND DEFLECTION UNDER SNOW LOAD TO L/240.
3/4-INCHES MAX SNOW LOAD DEFLECTION.

IN ADDITION TO THE ABOVE, THE GABLE END TRUSSES SHALL BE DESIGNED AND BRACED FOR AN ASD LATERAL WIND LOAD (OUT-OF-PLANE) OF 36 PSF.

THE DURATION FACTOR FOR SNOW LOADS SHALL BE 1.0.

EACH TRUSS SHALL BE MARKED WITH NOTES SPECIFYING THE DESIGN SNOW LOADING, MAXIMUM SPACING, AND MAXIMUM SPAN.

MANUFACTURER TO PROVIDE TRUSSES & DETAILS THAT CAN ACCOMMODATE OPENINGS LARGER THAN THE TRUSS SPACING. ALSO PROVIDE TRUSSES TO ALLOW FOR SIDE ACCESS, PER ARCH. SEE PLANS FOR SPECIFIC LOCATIONS & DIMENSIONS.

ALUMINUM GRATING

GRATING SHALL BE ALUMINUM 6063-T6 TYPE GCM, ADA COMPLIANT, 1 3/4 X 3/16 BEARING BARS SPACED AT 7/16" ON-CENTER.

GRATING SHALL HAVE A MINIMUM DESIGN LIVE LOAD CAPACITY OF 100 PSF AT THE SPANS SHOWN ON THE DRAWINGS, AND SHALL NOT DEFLECT MORE THAN 1/4" UNDER THE SAME CONDITIONS.

GRATING TO BE SECURED TO SUPPORTING STRUCTURE WITH ATTACHMENT PER MNFR.

NIC

SPECIAL INSPECTION & TESTING SCHEDULE

ITEM	C.I.	P.I.	REFERENCE STANDARD	REMARKS
PREFABRICATED ITEMS	X	X	IBC 1704.2.5	SAME AS WORK DONE ON SITE UNLESS APPROVED BY BUILDING OFFICIAL
SOILS			IBC 1705.6, TABLE 1705.6	
VERIFY: - MATERIAL BELOW FOUNDATIONS ARE ADEQUATE FOR BEARING CAPACITY - EXCAVATION DEPTH AND PROPER MATERIAL REACHED BY DEPTH - PRIOR TO COMPACTED FILL, OBSERVE SUBGRADE AND SITE PREPERATION		X		PRIOR TO REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL INSPECT AND APPROVE THE FOUNDATION EXCAVATIONS
VERIFY USE OF PROPER MATERIALS DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
DRIVEN PILE FOUNDATIONS:			PROJECT GEOTECHNICAL REPORT; IBC 1705.7, TABLE 1705.7	FOR STEEL ELEMENTS, PERFORM ADDITIONAL INSPECTIONS PER STEEL SPECIAL INSPECTION TABLE
PILE MATERIAL, SIZES AND LENGTHS	X		IBC 1810.3.5.3	
TEST PILE CAPACITY	T		IBC 1810.3.3.1.2	
DRIVING OPERATIONS	D			
LOCATION & PLUMBNESS OF EACH PILE	T			
HELICAL PILES	D			RECORD INSTALLATION EQUIPMENT, FINAL INSTALLATION TORQUE, FINAL DEPTH, AND SPLICE LOCATIONS (IF USED).
CONCRETE:			ACI 318-11, 301-10, 302.1R-04, ACI 311.1R-07; ACI 311.4R-05; IBC 1705.3, TABLE 1705.3	
REINFORCING MATERIALS AND PLACEMENT		X	ASTM AS NOTED, ACI 318 3.5, 7.1-7.7; IBC 1903.1, IBC 1907.1-1907.13	C.I. REQUIRED FOR SHEAR AND BOUNDARY REINFORCING LOCATIONS
INSPECTION OF FORMWORK FOR SHAPE, LOCATION & DIMENSIONS		X	ACI 318 6.1.1-6.1.4	
ANCHOR RODS, EMBEDDED BOLTS & INSERTS		X	IBC 1908.5	PRIOR TO AND DURING CONCRETE PLACEMENT
USE OF REQUIRED MIX DESIGN		X	ACI 318 CH.4, 5.2-5.4, 5.8; ACI 304R-00; IBC 1904.2	
CONCRETE SLUMP, AIR CONTENT, TEMPERATURE & PREPARATION OF STRENGTH TEST SPECIMENS	T		ASTM C172, C31; ACI 318 5.6; ACI 311.5-04	PROVIDE TEST ONCE EVERY 150 CY, OR EACH 5000 SQ-FT OF SLABS OR WALLS, BUT AT LEAST ONCE A DAY DURING PLACEMENT, SEE NOTE 4
CONCRETE PLACEMENT	X		ACI 318 5.9, 5.10; ACI 304.2R-96	
CONCRETE CURING		X	ACI 318 5.11; ACI 308R-01	MAINTAIN PROPER TEMPERATURE AND CURING TECHNIQUE
PROTECTION OF CONCRETE DURING COLD WEATHER (TEMPERATURE BELOW 40° F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F)		X	ACI 318 5.12-5.13; ACI 306R-88; ACI 305R-99; IBC 1905.12 & 13	
IN-SITU CONCRETE STRENGTH FOR FORM REMOVAL		T	ACI 318 6.2	
POST-INSTALLED ANCHORS		X	ACI 3.8.6, 8.1.3, 21.1.8; ICC-ES REPORT	PER MANUFACTURER REQUIREMENTS, INCLUDES THE DRILLING & CLEANING OUT OF THE HOLES & THE INSTALLATION OF THE ANCHORS. ADHESIVE ANCHORS INSTALLED OVERHEAD OR INCLINED REQUIRE CONTINUOUS INSPECTION.
WOOD:			NDS 2012; SDPWS 2008; IBC 1705.5 & 1705.11.2	
GRADE STAMPS ON LUMBER & SHEATHING		X		INCLUDING ENG. LUMBER, I-JOISTS, PREFAB TRUSSES, ETC
DETAILS OF WOOD FRAMING		X		BLOCKING, CONNECTIONS, BRIDGING, BEARING, HANGERS
NAILING OF ALL SHEAR WALLS AND ROOF DIAPHRAGMS	X		IBC 1705.11.2	INCLUDING NOMINAL SIZE OF FRAMING AT PANEL EDGES. SEE NOTE 5
SIZES AND LOCATIONS OF ALL HOLDOWNS		X		
SIZES, LOCATIONS OF ALL STRAPS		X		
SIZES SPACINGS OF SILL BOLTING	X			
NAILING ALONG DRAG STRUTS		X		
ADDITIONAL HIGH WIND INSPECTIONS:			IBC 1705.10	
ROOF CLADDING AND WALL CLADDING		X	IBC 1705.10.3	
ADDITIONAL HIGH SEISMIC INSPECTIONS			IBC 1705.11	
EXTERIOR CLADDING & VENEER, INTERIOR NON-BEARING WALLS WEIGHING MORE THAN 15 PSF		X	IBC 1705.11.5	INSPECTION NOT REQUIRED FOR CLADDING OR VANEER WEIGHING 5 PSF OR LESS, OR CLADDING 30 FEET OR LESS IN HEIGHT ABOVE GRADE
ANCHORAGE OF EMERGENCY OR STANDBY POWER UNITS		X	IBC 1705.11.6 (1)	
INSTALLATION OF PIPING OR HVAC DUCTWORK CARRYING FLAMMABLE, COMBUSTIBLE OR HIGHLY TOXIC MATERIALS		X	IBC 1705.11.6 (3) & (4)	
ANCHORAGE OF STORAGE RACKS 8-FEET OR GREATER IN HEIGHT		X	IBC 1705.11.7	

SCHEDULE NOTES:

1. ITEMS MARKED WITH AN "X" REQUIRE INSPECTION BY A SPECIAL INSPECTOR, ITEMS INDICATED WITH A "T" REQUIRE TESTING, ITEMS MARKED WITH A "D" REQUIRE SPECIFIC DOCUMENTATION PER AISC.
2. C.I. = CONTINUOUS INSPECTION DURING PROGRESS OF WORK BY SPECIAL INSPECTOR.
3. P.I. = PERIODIC INSPECTION BY SPECIAL INSPECTOR AS REQUIRED TO CONFIRM CONFORMANCE OF WORK
4. WHEN TOTAL QUANTITY OF A GIVEN CLASS OF CONCRETE IS LESS THAN 5 CY, STRENGTH TESTS ARE NOT REQUIRED.
5. SPECIAL INSPECTION NOT REQUIRED FOR SHEARWALLS OR DIAPHRAGMS, INCLUDING BOLTING, HOLDDOWNS AND OTHER FASTENINGS, WHEN THE SPACING OF NAILS IS MORE THAN 4-INCHES ON-CENTER.
6. NOT USED
7. NOT USED
8. NOT USED
9. SPECIAL INSPECTION & TESTING SCHEDULE CONTINUED ON NEXT SHEET

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STATE OF ALASKA
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NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
QUALITY ASSURANCE PLAN

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No.
S102

	ITEM	QUALITY CONTROL TASK	QUALITY CONTROL DOC	QUALITY ASSURANCE TASK	QUALITY ASSURANCE DOC	STEEL SPECIAL INSPECTION & TESTING SCHEDULE REFERENCE STANDARD	REMARKS
SPECIAL INSPECTION REQUIREMENTS AT AISC APPROVED SHOPS ARE EXEMPTED, IBC 1704.2.5.2	**STEEL:**					AISC 360-10, 348-04, 303-05, 341s1-10, & 358-10	
	VISUAL INSPECTION PRIOR TO WELDING:					AISC 341-10, TABLE J6-1; AISC 360-10, TABLE N5.4-1, AWS D1.1	
	WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	-	P	-		
	MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES	P	-	P	-		
	MATERIAL IDENTIFICATION (TYPE/GRADE)	O	-	O	-		
	WELDER IDENTIFICATION SYSTEM	O	-	O	-		
	FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	P/O	-	O	-		JOINT PREPARATION, DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL), CLEANLINESS (CONDITION OF STEEL SURFACES), TACKING (TACK WELD QUALITY AND LOCATION), AND BACKING TYPE AND FIT (IF APPLICABLE) - NOTE 5
	CONFIGURATION AND FINISH OF ACCESS HOLES	O	-	O	-		
	FIT-UP OF FILLET WELDS	P/O	-	O	-		DIMENSIONS (ALIGNMENT, GAPS AT ROOT), CLEANLINESS (CONDITION OF STEEL SURFACES), TACKING (TACK WELD QUALITY AND LOCATION) - NOTE 5
	CHECK WELDING EQUIPMENT	O	-	-	-		
	VISUAL INSPECTION DURING WELDING:					AISC 341-10, TABLE J6-2; AISC 360-10, TABLE N5.4-2, AWS D1.1	
	WPS FOLLOWED	O	-	O	-		SETTINGS ON WELDING EQUIPMENT, TRAVEL SPEED, SELECTED WELDING MATERIALS, SHIELDING GAS TYPE / FLOW RATE, PREHEAT APPLIED, INTERPASS TEMPERATURE MAINTAINED (MIN/MAX), PROPER POSITION (F, V, H, OH), INTERMIX OF FILLER MATERIALS AVOIDED UNLESS APPROVED
	USE OF QUALIFIED WELDERS	O	-	O	-		
	CONTROL AND HANDLING OF WELDING CONSUMABLES	O	-	O	-		PACKAGING, EXPOSURE CONTROL
	ENVIRONMENTAL CONDITIONS	O	-	O	-		WIND SPEED WITHIN LIMITS, PRECIPITATION AND TEMPERATURE
	WELDING TECHNIQUES	O	-	O	-		INTERPASS AND FINAL CLEANING, EACH PASS WITHIN PROFILE LIMITATIONS, EACH PASS MEETS QUALITY REQUIREMENTS
	NO WELDING OVER CRACKED TACK WELDS	O	-	O	-		
	VISUAL INSPECTION AFTER WELDING:					AISC 341-10, TABLE J6-3; AISC 350-10, TABLE N5.4-3	
	WELDS CLEANED	O	-	O	-		
	SIZE, LENGTH AND LOCATION OF WELDS	P	-	P	-		
	WELDS MEET VISUAL ACCEPTANCE CRITERIA	P	[	P	[		CRACK PROHIBITION, WELD/BASE-METAL FUSION, CRATER CROSS SECTION, WELD PROFILES AND SIZE, UNDERCUT, POROSITY
	ARC STRIKES	P	-	P	-		
	PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P	D	P	D		
	BACKING REMOVED, WELD TABS REMOVED AND FINISHED, AND FILLED WELDS ADDED (IF REQUIRED)	P	D	P	D		
	REPAIR ACTIVITIES	P	-	P	D		
	ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	D	P	D		
	NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS:						NDT IS REQUIRED ON ALL QUALIFYING WELDS REGARDLESS IF SHOP IS AISC APPROVED
	K-AREA	P	-	T	-	AISC 341-10, J6.2A; AWS D1.1, MAG PARTICLE, YOKE METHOD, ASTM E709	WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES, OR STIFFENERS HAS BEEN PERFORMED IN THE k-AREA, VISUALLY INSPECT THE WEB k-AREA FOR CRACKS WITHIN 3-INCHES OF WELD & MAG-PARTICLE TEST
	COMPLETE JOINT PENETRATION GROOVE WELDS	-	-	T	-	AISC 341-10, J6.2B; AWS D1.1, ULTRASONIC, QUALIFIED PROCEDURES PER SECTION 6, PART F (INCLUDING PARAGRAPH K3 OF ANNEX K)	100 PERCENT OF WELDS IN MATERIAL GREATER THAN 5/16-INCH THICKNESS, NOTE 4
	BASE METAL THICKER THAN 1.5-INCHES	-	-	T	-	AISC 341-10, J6.2C; AWS D1.1	ULTRASONIC TEST WHERE THE WELDED MATERIAL IS GREATER THAN 3/4", NOTE 4
	WELD TAB REMOVAL SITES	-	-	T	-	AISC 341-10, J6.2F; AWS D1.1	MAG PARTICLE TEST
	INSPECTION PRIOR TO BOLTING:					AISC 341-10, TABLE J7-1; AISC 360-10 TABLE N5.6-1	
	MANUFACTURERS CERTIFICATIONS AVAILABLE FOR FASTENER MAT	O	-	P	-		
	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	-	O	-		
	PROPER FASTENERS SELECTED FOR THE JOINT DETAIL	O	-	O	-		GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE
	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	-	O	-		
	CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	-	O	-		
	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED FOR FASTENER ASSEMBLIES AND METHODS	P	D	O	D		
	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	-	O	-		
	INSPECTION DURING BOLTING:					AISC 341-10, TABLE J7-2; AISC 360-10 TABLE N5.6-2	
	FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQ	O	-	O	-		
	JOINT BROUGHT TO THE SNUG TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	-	O	-		
	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	-	O	-		
	BOLTS ARE PRETENSIONED PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	-	O	-		FASTENERS PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION
	INSPECTION AFTER BOLTING:					AISC 341-10, TABLE J7-3; AISC 360-10, TABLE N5.6-3	
	DOCUMENT ACCEPTED AND REJECTED CONNECTIONS	P	D	P	D		
	STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE					AISC 360-10, TABLE N6.1	
	PLACEMENT AND INSTALLATION OF STEEL DECK	P	-	P	-		
	PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	-	P	-		
	ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	P	D	P	D		
	COLD FORMED DECK:					IBC 1705.2.2, IBC TABLE 1705.2.2	
	IDENTIFICATION OF MATERIALS CONFORM TO ASTM STANDARDS SPECIFIED			O			
	MANUFACTURERS CERTIFIED TEST REPORTS			O			
	FLOOR AND ROOF WELDS			O		AWS D1.3	
	OTHER INSPECTION TASKS:					AISC 341-10, TABLE J8-1	
	FIREPROOFING (SPRAY APPLIED)	D	D	-	-	ASTM E605, E736	SURFACE PREPARATION, TEMPERATURE, VENTILATION, AVERAGE THICKNESS, DENSITY, BOND STRENGTH

STATEMENT OF SPECIAL INSPECTIONS
THE FOLLOWING STRUCTURAL SYSTEMS ARE PART OF THE DESIGNATED LATERAL FORCE RESISTING SYSTEMS IN THE BUILDING AND HENCE ARE SUBJECT TO THE REQUIREMENTS OF THIS STATEMENT OF SPECIAL INSPECTIONS AND THE STRUCTURAL SPECIAL INSPECTION AND TESTING SCHEDULE IN ACCORDANCE WITH IBC 2012 SECTION 1704.3.

- PILE FOUNDATIONS
- WOOD & CONC ON MTL DECK DIAPHRAGMS
- WOOD SHEARWALLS

SPECIAL INSPECTIONS AND TESTING
THE OWNER SHALL ENGAGE A SPECIAL INSPECTOR PER CHAPTER 17 OF THE IBC 2012. SPECIAL INSPECTION AND TESTING OF THE DESIGNATED SEISMIC SYSTEMS AND OTHER BUILDING STRUCTURE COMPONENTS SHALL BE AS OUTLINED IN THE SPECIAL INSPECTIONS AND TESTING SCHEDULE. WHERE REQUIREMENTS OVERLAP, THE MORE STRINGENT IS TO BE USED.

SPECIAL INSPECTION IS NOT REQUIRED FOR COMPONENTS FABRICATED IN A SHOP APPROVED BY THE AISC TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. SPECIAL INSPECTION ON STEEL ELEMENTS THAT ARE PART OF THE LATERAL FORCE RESISTING SYSTEM MARKED WITH AN "O" SHALL BE OBSERVED ON A RANDOM DAILY BASIS PER AISC 341-10 J5.1.

DISTRIBUTION OF REPORTS
COPIES OF THE SPECIAL INSPECTION AND TEST REPORTS SHALL BE DISTRIBUTED TO THE OWNER, GENERAL CONTRACTOR, THE ENGINEER OF RECORD, AND THE ARCHITECT OF RECORD. REPORTS SHALL BE COMPLETED DAILY AND DISTRIBUTED ON A WEEKLY BASIS AND SHALL BE DISTRIBUTED BY THE MONDAY FOLLOWING THE WEEK IN WHICH THE INSPECTION OR TEST WAS COMPLETED. A COPY OF ALL SPECIAL INSPECTION REPORTS, DEFICIENCIES AND CORRECTIVE ACTIONS SHALL BE MAINTAINED AT THE JOB SITE.

STRUCTURAL OBSERVATIONS ARE NOT REQUIRED FOR THIS PROJECT

CONTRACTOR STATEMENT OF RESPONSIBILITY
CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER, IN ACCORDANCE WITH IBC 1704.4. THE STATEMENT SHALL ACKNOWLEDGE AWARENESS OF THE SPECIAL REQUIREMENTS OF THE QUALITY ASSURANCE PLAN; ACKNOWLEDGE THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS; IDENTIFY PROCEDURES FOR EXERCISING CONTROL; THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS; AND IDENTIFY PERSONS THAT WILL EXERCISE CONTROL AND THEIR QUALIFICATIONS.

SCHEDULE NOTES:

10. ITEMS INDICATED WITH A "T" REQUIRE TESTING, WITH A "D" REQUIRE SPECIFIC DOCUMENTATION, WITH AN "O" SHALL BE OBSERVED ON A RANDOM BASIS, AND WITH A "P" SHALL BE PERFORMED ON EACH CONNECTION PER AISC.
11. QUALITY CONTROL IS PERFORMED BY THE CONTRACTOR.
12. QUALITY ASSURANCE IS PERFORMED BY THE SPECIAL INSPECTOR.
13. THE AMOUNT OF ULTRASONIC TESTING MAY BE REDUCED TO 25 PERCENT OF THE WELDS IF THE REQUIREMENTS OF AISC 341 J6.2G & AISC 360 N5.5E ARE MET (REDUCTION PROHIBITED AT DEMAND CRITICAL WELDS). THE AMOUNT OF MAG-PARTICLE TESTING MAY BE REDUCED TO 10 PERCENT OF THE WELDS IF THE REQUIREMENTS OF AISC 341, J6.2H ARE MET (REDUCTION IS PROHIBITED AT WELDS IN K-AREAS, REPAIR SITES, BACKING REMOVAL SITES, AND ACCESS HOLES.
14. THE "PERFORM" REQUIREMENT MAY BE REDUCED TO "OBSERVE" IF AFTER 10 WELDS, A GIVEN WELDER HAS DEMONSTRATED UNDERSTANDING OF THESE REQUIREMENTS, IF THE WELDER'S PERFORMANCE IS DISCONTINUED, IT SHALL BE RETURNED TO A "PERFORM" QUALITY CONTROL INSPECTION.

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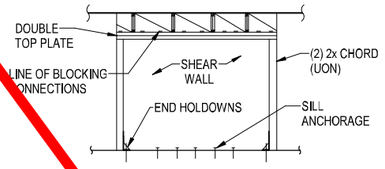
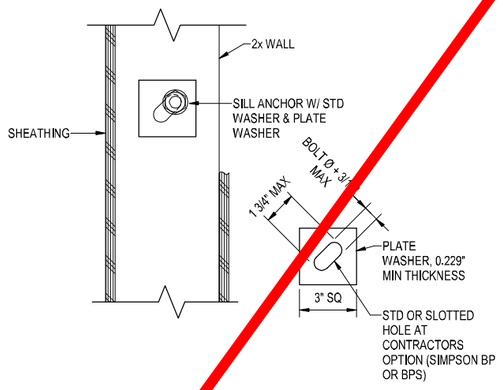
NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
QUALITY ASSURANCE PLAN

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No.
S103



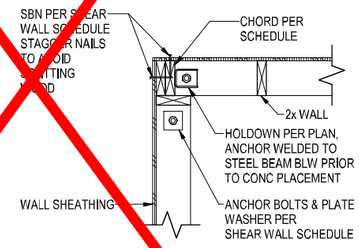


WALL SCHEDULE NOTES:
1. NAIL SPACING AT INTERIOR SUPPORTS SHALL BE 12" O.C.
2. PANELS SHALL BE APPLIED WITH LONG DIMENSION ACROSS STUDS.
3. USE MANUFACTURER RECOMMENDED FASTENERS IN ALL ANCHORS. FILL ALL HOLES WITH NAILS OR BOLTS AS RECOMMENDED.
4. BLOCK ALL PANEL EDGES IN SHEAR WALLS.
5. WHERE WALLS REQUIRE SHEATHING FOR OTHER TRADES, BUT ARE NOT SHEAR WALLS, PANELS MAY BE APPLIED WITH LONG DIMENSION VERTICAL AND PANEL EDGES BLOCKING IS NOT REQUIRED.
6. WHERE INDICATED IN DETAILS THIS NAILING CALLED OUT AS "SBN".
7. N/A
8. N/A
9. INTERIOR WALLS NOT CALLED OUT IN THE SCHEDULE BELOW CONSIST OF 16" OC.

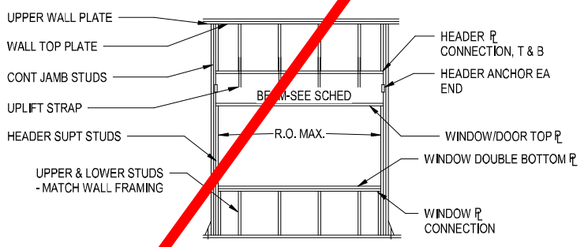
NIC

WALL SCHEDULE							
SHEAR WALL	STUD LAYOUT	MINIMUM SHEATHING	NAILING REQ'D @ PLWD EDGES (NOTE 6)	SINGLE / DOUBLE SIDED	SILL ANCHORAGE INTO CONC CURB	BLOCKING CONNECTION	REMARKS
SW6	2x6 @16" O.C.	15/32"	8d @ 6" O.C.	SINGLE	1/2"Ø TITEN HD EMBED 3-1/4" @ 16" OC	A34 @ 16" O.C.	
BW1	2x6 @16" O.C.	N/A	N/A	N/A	1/2"Ø TITEN HD EMBED 3-1/4" @ 48" OC	N/A	SEE NOTE 5

HOLDOWN SCHEDULE			
MARK	SIMPSON HOLDOWN	CHORD SIZE	ANCHOR BOLT
4	HDU4-SDS2.5	(2) 2X	5/8"

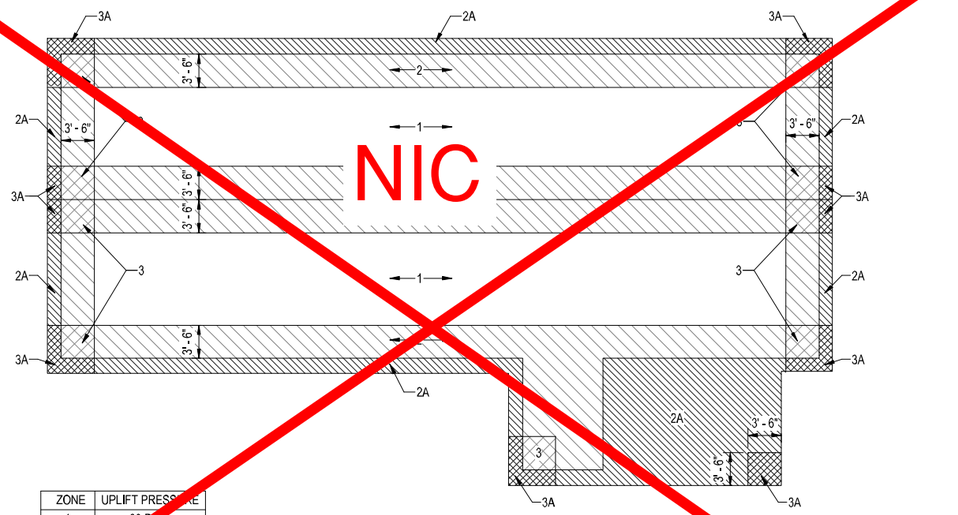


SHARED CORNER HOLDOWN



HEADER SCHEDULE NOTES:
1. METAL CONNECTOR DESIGNATED AS PER SIMPSON.
2. JAMB STUD TO PLATE & UPPER STUD ANCHORS SHALL BE THE SAME AS TYP STUD FOR WALL UNLESS OTHERWISE NOTED.
3. WHERE HEADER SIZE NOT CALLED OUT USE H1 FOR SPANS LESS THAN 5', H2 FOR SPANS LESS THAN 8', & H3 FOR ALL OTHER SPANS.
4. UPLIFT STRAPS & HEADER ANCHORS ARE NOT REQUIRED AT LOCATIONS WHERE THERE IS A STORY ABOVE THE HEADER.
5. IF HEADER SUPPORT COINCIDES WITH SHEAR WALL CHORD LOCATION, USE THE LARGER QUANTITY OF STUDS REQUIRED BETWEEN THE HOLDOWN SCHEDULE AND THE HEADER SCHEDULE.

HEADER SCHEDULE								
MEMBER ID	BEAM SIZE	BEAM HEADER SUPPORT	JAMB STUD	UPLIFT STRAP (NOTE 4)	HEADER ANCHORS (NOTE 4)	UPPER HDR PL CONN	WINDOW PL CONN	REMARKS
H1	(2) 2x10	(1) 2x6	(1) 2x6	H2.5 T	(2) LTP4	(2) A34	(2) A34	
H2	(2) 2x12	(1) 2x6	(3) 2x6	H2.5 T	(2) LTP4	(2) A34	(2) A34	
H3	3-1/8x9 GLB	(1) 2x6	(4) 2x6	H2.5 T	LSTA18	(2) A34	(2) A34	
H4	5-1/8X9 GLB	(1) 2x6	(4) 2x6	H2.5 T	LSTA18	(2) A34	(2) A34	



ZONE	UPLIFT PRESSURE
1	30 PSF
2	52 PSF
2A	95PSF
3	76 PSF
3A	120 PSF

WIND UPLIFT PLAN
NTS

NOTES:
1. UPLIFT PRESSURE IS AN ASD PRESSURE (0.6"W) FOR A 10 SF EWA BASED ON A WIND SPEED Vult OF 157 MPH, EXPOSURE C, AT A 3:12 ROOF PITCH

PILE SCHEDULE			
PILE	SIZE	T.O. PILE CAP ELEVATION (RELATIVE TO 0'-0")	Comments
P001	HP10X57	-1' - 6 3/8"	
P002	HP10X57	-1' - 6 3/8"	
P003	HP10X57	-1' - 6 3/8"	
P004	HP10X57	-1' - 6 3/8"	
P005	HP10X57	-1' - 6 3/8"	
P006	HP10X57	-1' - 6 3/8"	
P007	HP10X57	-1' - 6 3/8"	
P008	HP10X57	-1' - 6 3/8"	
P009	HP10X57	-1' - 6 3/8"	
P010	HP10X57	-1' - 6 3/8"	
P011	HP10X57	-1' - 6 3/8"	
P012	HP10X57	-1' - 6 3/8"	
P013	HP10X57	-1' - 6 3/8"	
P014	HP10X57	-1' - 6 3/8"	
P015	HP10X57	-1' - 6 3/8"	
P016	HP10X57	-1' - 6 3/8"	
P017	HP10X57	-1' - 6 3/8"	
P018	HP10X57	-1' - 6 3/8"	
P019	HP10X57	-1' - 6 3/8"	
P020	HP10X57	-1' - 6 3/8"	
P021	HP10X57	-1' - 6 3/8"	
P022	HP10X57	-1' - 6 3/8"	
P023	HP10X57	-1' - 6 3/8"	
P024	HP10X57	-1' - 6 3/8"	
P025	HP10X57	-1' - 6 3/8"	
P026	HP10X57	-1' - 6 3/8"	
P027	HP10X57	-1' - 6 3/8"	
P028	HP10X57	-1' - 6 3/8"	
P029	HP10X57	-1' - 6 3/8"	
P030	HP10X57	-1' - 6 3/8"	
P031	HP10X57	-1' - 6 3/8"	
P032	HP10X57	-1' - 6 3/8"	
P033	HP10X57	-1' - 6 3/8"	
P034	HP10X57	-1' - 6 3/8"	

PILE SCHEDULE			
PILE	SIZE	T.O. PILE CAP ELEVATION (RELATIVE TO 0'-0")	Comments
P035	HP10X57	-1' - 6 3/8"	
P036	HP10X57	-3' - 6"	
P101	HP10X57	-1' - 4 3/4"	TANK PILE
P102	HP10X57	-1' - 4 3/4"	TANK PILE
P103	HP10X57	-1' - 4 3/4"	TANK PILE
P104	HP10X57	-1' - 4 3/4"	TANK PILE
P105	HP10X57	-1' - 4 3/4"	TANK PILE
P106	HP10X57	-1' - 4 3/4"	TANK PILE
P107	HP10X57	-1' - 4 3/4"	TANK PILE
P108	HP10X57	-1' - 4 3/4"	TANK PILE
P201	HELICAL PIER	-5' - 0 3/8"	
P202	HELICAL PIER		
P203	HELICAL PIER		
P204	HELICAL PIER	-1' - 3 5/8"	
P205	HELICAL PIER	-8"	
P206	HELICAL PIER	-1' - 5/8"	
P207	HELICAL PIER	-4' - 3 1/8"	
P208	HELICAL PIER	-4' - 3 1/8"	
P209	HELICAL PIER	-4' - 7 3/16"	

NIC

PILE SCHEDULE			
PILE	SIZE	T.O. PILE CAP ELEVATION (RELATIVE TO 0'-0")	Comments
P210	HELICAL PIER	-6' - 3 13/16"	
P211	HELICAL PIER	-6' - 3 13/16"	
P212	HELICAL PIER	-6' - 3 13/16"	
P213	HELICAL PIER	-2' - 4 9/16"	
P214	HELICAL PIER	-2' - 4 9/16"	
P215	HELICAL PIER	-2' - 4 9/16"	
P216	HELICAL PIER	-2' - 4 9/16"	
P219	HELICAL PIER	-6' - 9 13/16"	
P220	HELICAL PIER	-6' - 9 13/16"	
P221	HELICAL PIER	-6' - 9 13/16"	
P222	HELICAL PIER	-6' - 9 13/16"	

NIC

Alaska Department of Environmental Conservation
Division of Water
Village Safe Water Program
555 Cordova Street 4th Floor
Anchorage, Alaska 99501

STATE OF ALASKA
49 TH
COURTNEY A. WILLOUGHBY
No. CE13647
REGISTERED PROFESSIONAL ENGINEER
11/2/18

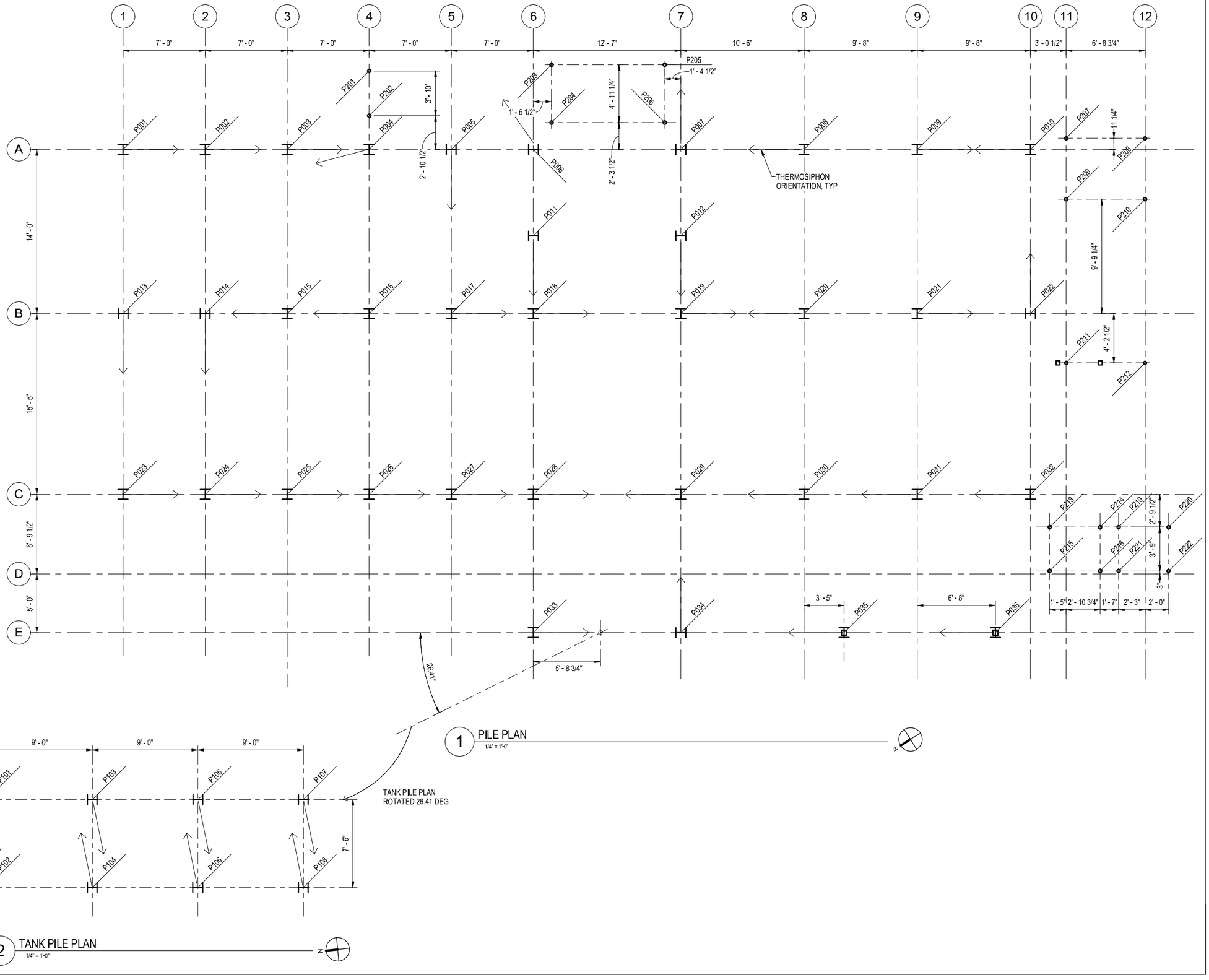
CRW ENGINEERING GROUP, LLC
Reid Middleton
4300 B St., Suite 302 Anchorage, AK 99503
Phone: 907 562-3439 • www.reidmiddleton.com
Corporate License #AECC598

NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
SCHEDULES

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No.
S104



Alaska Department of Environmental Conservation
Division of Water

Village Safe Water Program
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NUNAPITCHUK, AK

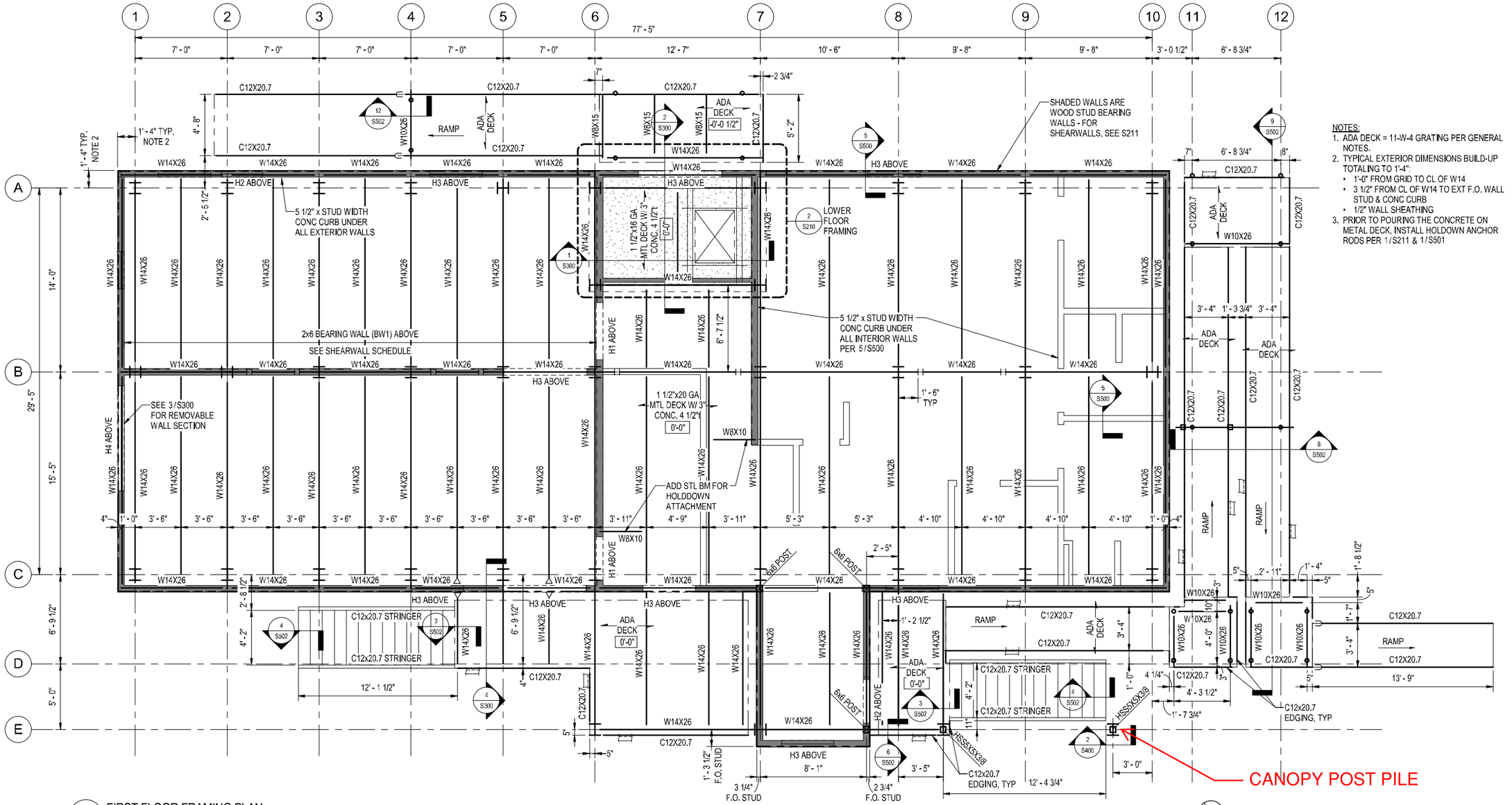
WATER TREATMENT PLANT & WASHETERIA

PILE PLAN

NO.	REVISION	BY	DATE
A			
B			
C			

Plot Date 11/2/18
Designed CW
Drawn JK
Approved DS

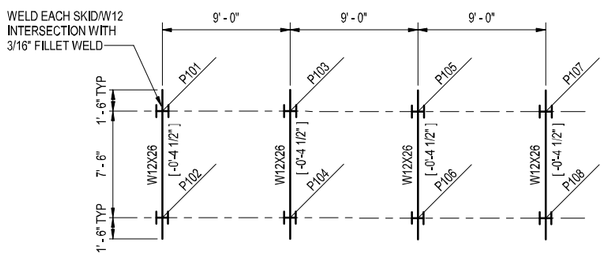
Sheet No.
S200



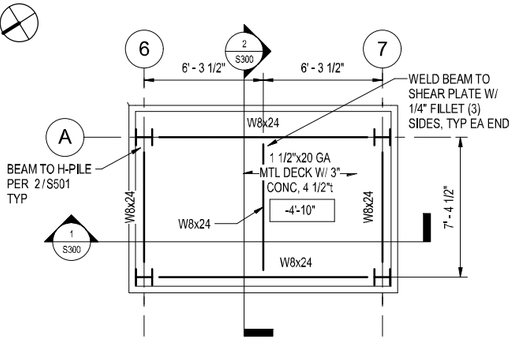
NOTES:
1. ADA DECK = 11-W-4 GRATING PER GENERAL NOTES.
2. TYPICAL EXTERIOR DIMENSIONS BUILD-UP TOTALING TO 1'-4":
   - 1'-0" FROM GRID TO CL OF W14
   - 3 1/2" FROM CL OF W14 TO EXT F.O. WALL STUD & CONC CURB
   - 1/2" WALL SHEATHING
3. PRIOR TO POURING THE CONCRETE ON METAL DECK, INSTALL HOLDOWN ANCHOR RODS PER 1/S211 & 1/S501

1 FIRST FLOOR FRAMING PLAN
1/4" = 1'-0"

FRAMING PLANS PROVIDED FOR REFERENCE ONLY.
WORK ON THIS SHEET IS NIC



3 TANK SUPPORT
3/16" = 1'-0"



2 LIFT STATION FRAMING PLAN
1/4" = 1'-0"

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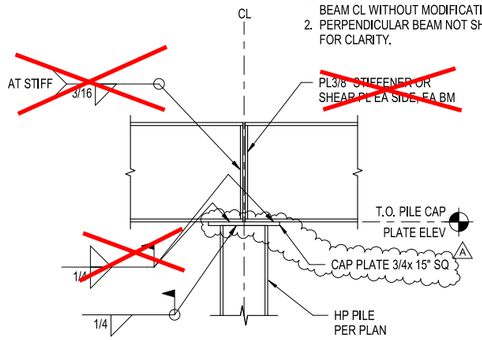
NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
FIRST FLOOR FRAMING PLAN

NO.	REVISION	BY	DATE
A			
B			
C			

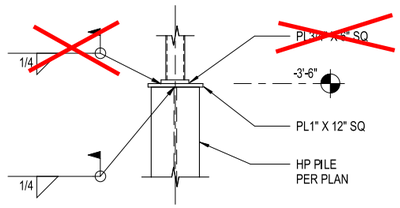
Plot Date 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No.
S210

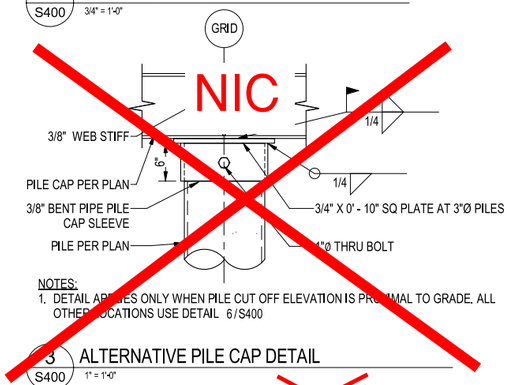
NOTES:
1. PILE MAY BE UP TO 3" OFF CENTER OF BEAM CL WITHOUT MODIFICATION.
2. PERPENDICULAR BEAM NOT SHOWN FOR CLARITY.



1 S400 W BEAMS TO PILE 3/4" = 1'-0"

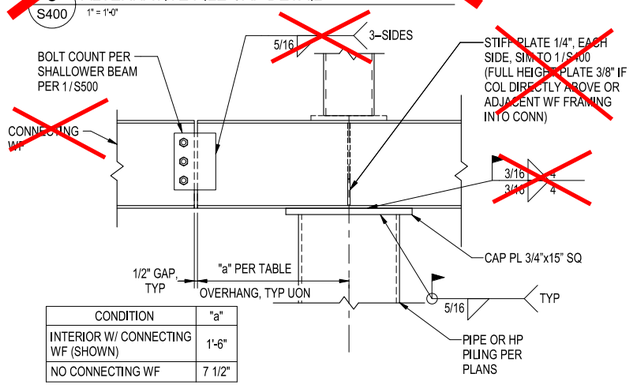


2 S400 CANOPY COL TO PILE 3/4" = 1'-0"



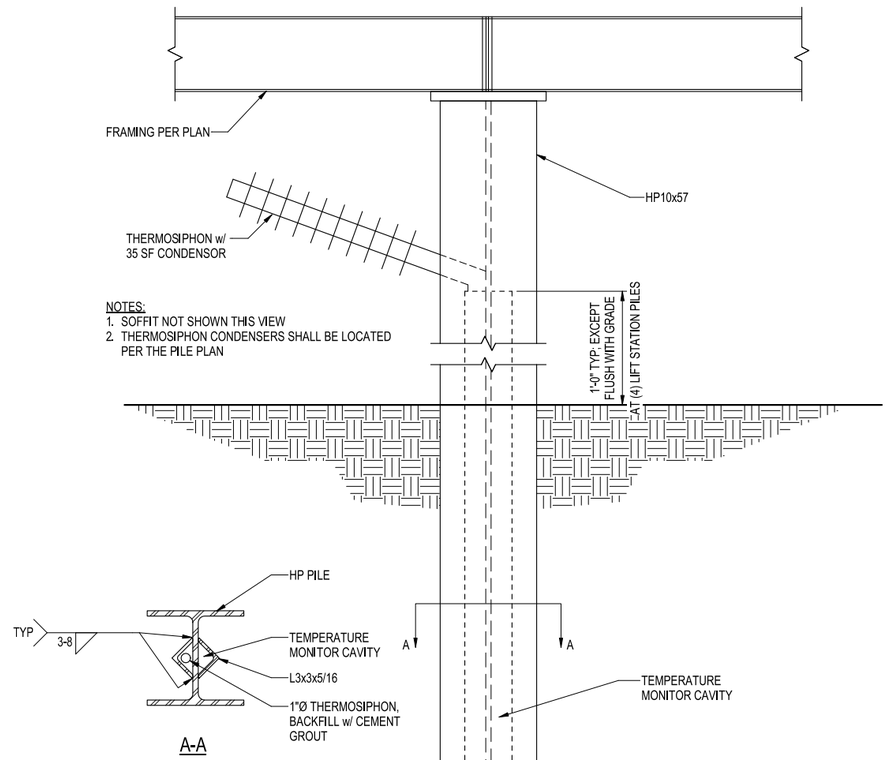
NOTES:
1. DETAIL APPLIES ONLY WHEN PILE CUT OFF ELEVATION IS PROXIMAL TO GRADE. ALL OTHER LOCATIONS USE DETAIL 6/S400

3 S400 ALTERNATIVE PILE CAP DETAIL 1" = 1'-0"



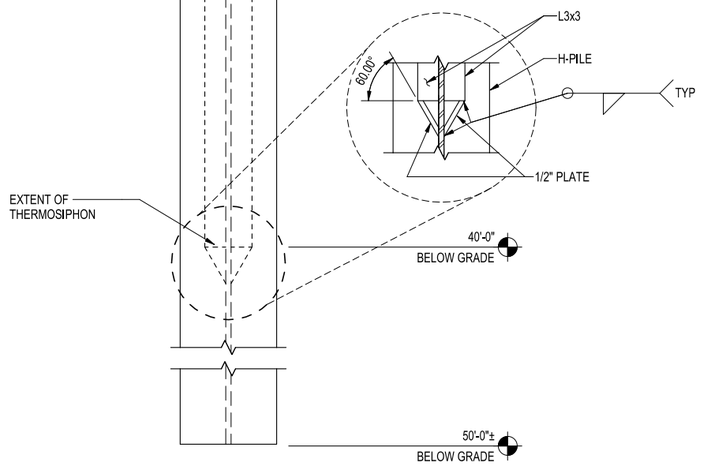
CONDITION	"a"
INTERIOR W/ CONNECTING WF (SHOWN)	1'-6"
NO CONNECTING WF	7 1/2"

4 S400 BEAM OVERHANG CONN TO PILE, TYP 1" = 1'-0"

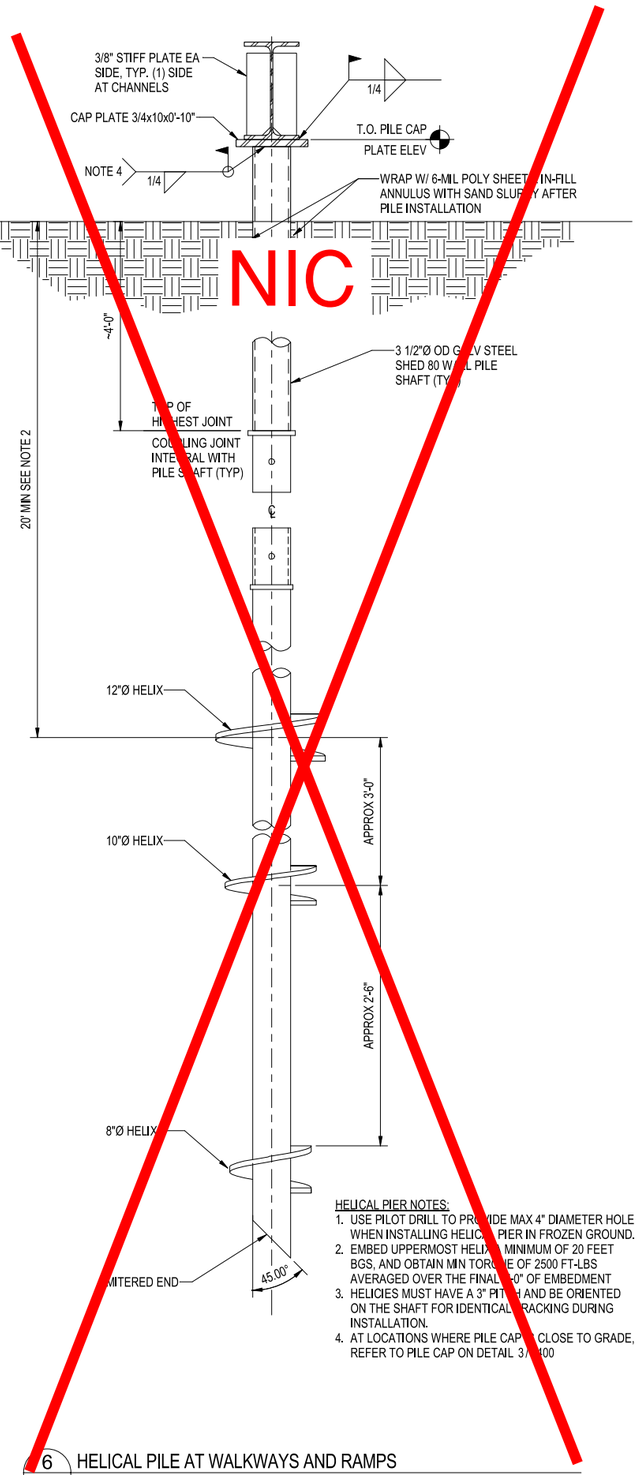


A-A

NOTES:
1. SOFFIT NOT SHOWN THIS VIEW
2. THERMOSIPHON CONDENSERS SHALL BE LOCATED PER THE PILE PLAN



5 S400 H PILE AT BUILDING AND TANK 1 1/2" = 1'-0"



HELICAL PIER NOTES:
1. USE PILOT DRILL TO PROVIDE MAX 4" DIAMETER HOLE WHEN INSTALLING HELICAL PIER IN FROZEN GROUND.
2. EMBED UPPERMOST HELIX A MINIMUM OF 20 FEET BGS, AND OBTAIN MIN TORQUE OF 2500 FT-LBS AVERAGED OVER THE FINAL 5'-0" OF EMBEDMENT
3. HELICIES MUST HAVE A 3" PITCH AND BE ORIENTED ON THE SHAFT FOR IDENTICAL TRACKING DURING INSTALLATION.
4. AT LOCATIONS WHERE PILE CAP IS CLOSE TO GRADE, REFER TO PILE CAP ON DETAIL 3/S400

6 S400 HELICAL PILE AT WALKWAYS AND RAMPS 1 1/2" = 1'-0"

Alaska Department of Environmental Conservation
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Village Safe Water Program
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NUNAPITCHUK, AK
WATER TREATMENT PLANT & WASHETERIA
FOUNDATION DETAILS

NO.	REVISION	BY	DATE
A	PILE CAP REVISIONS	CW	6/5/19

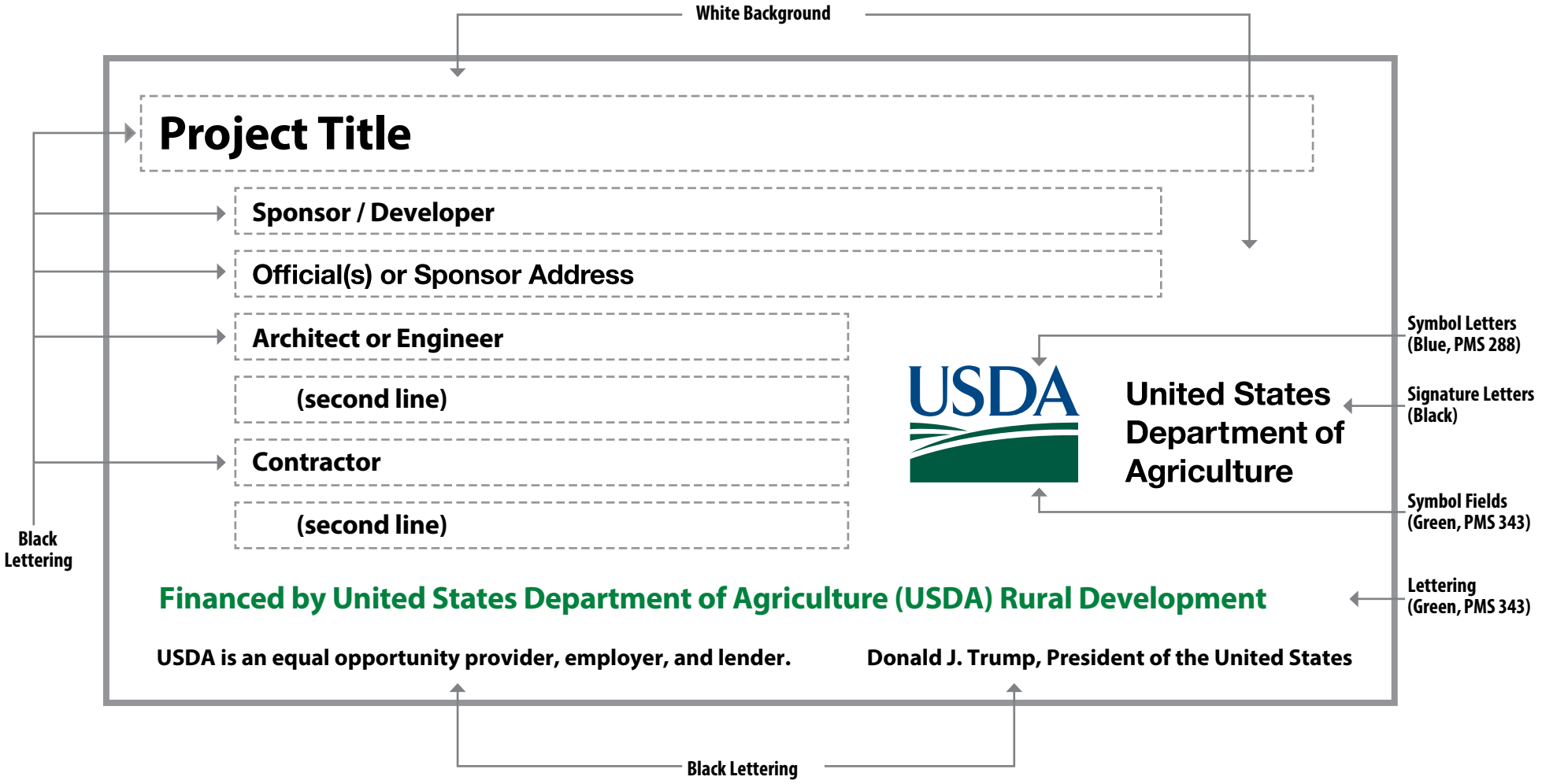
Plt Date 11/2/18
Designed CW
Drawn JK
Approved DS

Sheet No. S400

Attachment E
VSW-NUP-2019-38

TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS

Recommended Fonts: Helvetica, Arial, or Myriad Pro



SIGN DIMENSIONS: 1200 mm x 2400 mm x 19 mm (approx. 4′ x 8′ x ¾″)
PLYWOOD PANEL (APA RATED A-B GRADE–EXTERIOR)

Attachment F
VSW-NUP-2019-38
Community Building Photographs

Boardwalk side of bldg., looking Northwest

Looking West

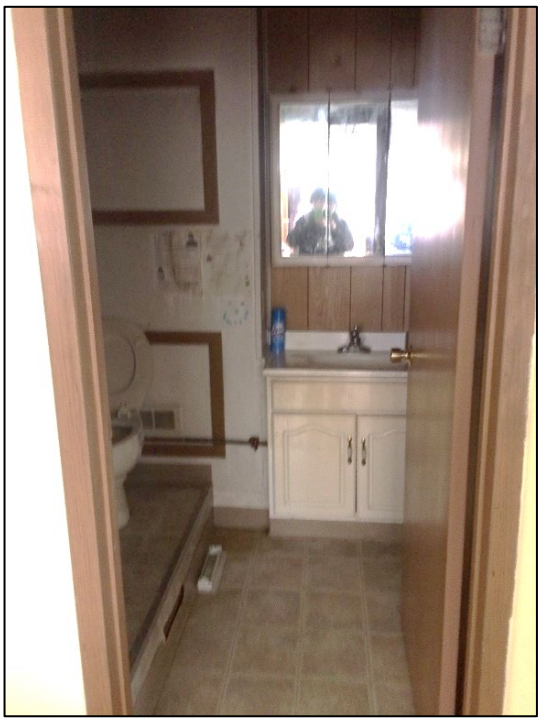

Looking Northeast


Looking East

Looking North:

Looking North

Looking Southwest



Note: Conditions in photographs do not necessarily represent current conditions.

See Drawings and Specifications for work required.

APPENDIX A

STANDARD GENERAL CONDITIONS OF THE

CONSTRUCTION CONTRACT

1.1 BASIC DEFINITIONS

1.1.1 The Contract Documents. The contract documents consist of the construction services standard contract between the Owner and Contractor (hereinafter the agreement), conditions of the contract (general conditions, supplementary and other conditions), invitation to bid, addenda issued prior to execution of the contract, drawings, specifications, and other documents listed in the agreement and modifications issued after execution of the contract. A modification is (1) a written amendment to the contract signed by both parties, (2) a change order, (3) a construction change directive, and (4) a written order for a minor change in the work issued by the Engineer.

In the event of a conflict of provisions, the following order of precedence shall apply in resolving which provisions control:

1. Any written amendment to the construction services executed standard contract, with the more recent amendment taking precedence over the less recent amendment;
2. Construction services standard contract;
3. Standard General Conditions of the Construction Contract;
4. Solicitation document including all attachments and addendums;
5. Contractors bid including all attachments.

1.1.2 The Contract. The contract documents form the contract for construction. The contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. Except as set forth in paragraph 7.3 and 7.4, the contract may be amended or modified only by a change order. The contract documents shall not be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor, (2) between the Owner Representative and a subcontractor of any tier, or (3) between any persons or entities other than the Owner Representative and Contractor.

1.1.3 The Work. The term "work" means the construction and services required by the contract documents, whether completed or partially completed, and includes the result of performing or providing, all necessary equipment, materials, supplies, tools, freight, labor, supervision, water, heat, utilities, and transportation provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole, or a part of the project.

1.1.4 The Project. The project is the total construction of which the work performed under the contract documents may be the whole or a part and which may include construction by the Owner Representative or by separate Contractors.

1.1.5 The Drawings. The drawings are the graphic and pictorial portions of the contract documents,

wherever located and whenever issued, showing the design, location and dimensions of the work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.6 The Specifications. The specifications are that portion of the contract documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the work, and performance related services.

1.1.7 Approved. When the words "approved," "satisfactory," "proper," or "as directed" are used, approval by the Engineer shall be understood.

1.1.8 Provide. When the word "provide" is used, it shall mean to properly fabricate, complete, transport, deliver, install, erect, construct, test and furnish all necessary equipment, materials, supplies, tools, freight, labor, supervision, water, heat, utilities, transportation, and all other items necessary to properly complete and place, ready for operation or use under the terms of the specifications.

1.1.9 Knowledge. The terms "knowledge," "recognize," and "discover," when used in the contract documents in reference to the Contractor, shall mean that the Contractor knows (or should know), recognizes (or should recognize), and discovers (or should discover) in exercising the care, skill and diligence required by the contract documents.

1.1.10 Reasonably Inferable. The term "reasonably inferable" shall mean reasonably inferable by a Contractor familiar with the project and exercising the care, skill, and diligence required of the Contractor by the contract documents.

1.1.11 Persistently Fails. The phrase "persistently fails," as used in reference to the Contractor, shall be interpreted to mean any combination of acts and omissions that cause the Owner Representative or the Engineer to reasonably conclude that the Contractor will not complete the work within the contract term, for the contract sum or in substantial compliance with the requirements of the contract documents.

1.1.12 The Owner. The "Owner" is defined as the City or the Community.

1.1.13 The Owner's Representative. The "Owner's Representative" is defined as the Village Safe Water Program.

1.1.14 The Engineer. The "Engineer" is defined as the Village Safe Water Program or its authorized representative.

1.1.15 The term "Contractor" means the Contractor or the Contractor's authorized representative.

1.1.16 A "Subcontractor" is a person or entity who has a direct contract with the Contractor to perform a portion of the work at the site.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 The intent of the contract documents are to include all items necessary for the proper execution

and completion of the work by the Contractor. The contract documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the contract documents and reasonably inferable from them as being necessary to produce the intended results.

1.2.2 Organization of the specifications into divisions, sections and articles, and arrangement of drawings shall not control the Contractor in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

1.2.3 Unless otherwise stated in the contract documents, words which have well known technical or construction industry meanings are used in the contract documents in accordance with such recognized meanings.

1.2.4 In the event of inconsistencies within or between parts of the contract documents, or between the contract documents and applicable standards, codes and ordinances, the Contractor shall (1) provide the better quality or greater quantity of work, or (2) comply with the more stringent requirement in accordance with the Engineer's interpretation. The terms and conditions of this paragraph, however, shall not relieve the Contractor of any of the obligations set forth in paragraphs 3.2 and 3.7.

1.2.5 On the drawings, given dimensions shall take precedence over scaled measurements.

1.2.6 When requested by the Engineer or specified, support test data shall be submitted to substantiate compliance of any specified product with the particular standard or specification indicated in the contract documents.

1.3 INTERPRETATION

1.3.1 In the interest of brevity the contract documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

ARTICLE 2

OWNER REPRESENTATIVE

2.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER REPRESENTATIVE

2.1.1 The Owner's Representative shall secure and pay for any necessary state and federal environmental permits required for construction.

2.1.2 The Owner Representative's action or non-action shall not relieve the Contractor of the responsibility to comply with the specifications.

2.1.3 Information or services under the Owner Representative's control shall be furnished by the Owner Representative with reasonable promptness to avoid delay in orderly progress of thework.

2.2 OWNER REPRESENTATIVE'S RIGHT TO STOP THE WORK

2.2.1 If the Contractor fails to correct work which is not in accordance with the requirements of the contract documents as required by paragraph 12.2 or persistently fails to carry out work in accordance with the contract documents, the Owner Representative, by written order signed personally or by an agent specifically so empowered by the Owner Representative in writing, may order the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated. However, the right of the Owner Representative to stop the work shall not give rise to a duty on the part of the Owner Representative to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by subparagraph 6.1.3.

2.3 OWNER REPRESENTATIVE'S RIGHT TO CARRY OUT THE WORK

2.3.1 If the Contractor defaults or neglects to carry out the work in accordance with the contract documents and fails within a seven day period after receipt of written notice from the Owner Representative to commence and continue correction of such default, or neglect with diligence and promptness, the Owner Representative may, without prejudice to other remedies correct such deficiencies. In such case an appropriate change order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Engineer's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner Representative.

2.4 NO CONTROL BY OWNER REPRESENTATIVE

2.4.1 In no event shall the Owner Representative have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work, notwithstanding any of the rights and authority granted the Owner Representative in the contract documents.

ARTICLE 3

CONTRACTOR

3.1 DEFINITION

3.1.1 The Contractor shall perform the work in accordance with the contract documents and submittals approved pursuant to paragraph 3.11.

3.1.2 The Contractor shall not be relieved of obligations to perform the work in accordance with the contract documents either by activities or duties of the Engineer in the Engineer's administration of the contract, or by tests, inspections, or approvals required or performed by persons other than the Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the contract documents are complementary, before starting each portion of the work, the Contractor shall carefully study and compare the various drawings and other contract documents relative to that portion of the work as well as the information furnished by the Owner Representative pursuant to subparagraph 2.2. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the contract documents. However, any errors, inconsistencies, or omissions discovered by the Contractor shall be reported promptly to the Engineer as a request for information in such form as the Engineer may require.

3.2.2 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Engineer in response to the Contractor's notices, or requests for information pursuant to subparagraphs 3.2.1 and 3.2.3, the Contractor shall make claims as provided in subparagraphs 4.3.6 through 4.3.8. If the Contractor fails to perform the obligations of subparagraphs 3.2.1, the Contractor shall pay such costs and damages to the Owner Representative as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner Representative or Engineer for damages resulting from errors, inconsistencies, or omissions in the contract documents or for differences between field measurements or conditions and the contract documents unless the Contractor recognized such error, inconsistency, omission, or difference and knowingly failed to report it to the Engineer.

3.2.3 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the contract documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Engineer immediately.

3.2.4 Except as to any reported errors, inconsistencies or omissions, and as to concealed or unknown conditions as defined in paragraph 4.3.5, by executing the agreement, the Contractor represents the following:

3.2.4.1 The contract documents are sufficiently complete and detailed for the Contractor to (1)

perform the work required to produce the results intended by the contract documents, and (2) comply with all the requirements of the contract documents.

3.2.4.2 The work required by the contract documents including without limitation, all construction details, means, methods, procedures and techniques, use of materials, supplies, selection of equipment, and requirements of product manufacturers are consistent with: (1) good and sound practices within the construction industry; (2) generally prevailing and accepted industry standards applicable to the work; (3) requirements of any warranties applicable to the work; and (4) all laws, ordinances, regulations and/or rules which bear upon the Contractor's performance of the work.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 The Contractor shall supervise and direct the work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract, unless contract documents give other specific instructions concerning these matters. If the contract documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the job site safety thereof and, except as stated below, shall be fully and solely responsible for the job site safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner Representative and Engineer and shall not proceed with that portion of the work without further written instructions from the Engineer.

3.3.2 The Contractor shall be responsible to the Owner Representative for acts and omissions of the Contractor's employees, subcontractors of whatever tier and their agents and employees, and other persons performing portions of the work.

3.3.3 The Contractor shall be responsible for inspection of portions of work already performed under the contract to determine that such portions are in proper condition to receive subsequent work.

3.4 LABOR AND MATERIALS

3.4.1 Unless otherwise provided in the contract documents, the Contractor shall provide and pay for all necessary equipment, materials, supplies, tools, freight, labor, supervision, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the work, whether temporary or permanent and whether or not incorporated or to be incorporated in the work.

3.4.2 The Contractor may make substitutions only with the consent of the Owner Representative, after evaluation by the Engineer and in accordance with a change order.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.4.4 Prevailing Wages. The Contractor must comply with all requirements of Alaska Statute 36.05, entitled Public Contracts, Wage & Hour Administration, including the latest State of Alaska Department of Labor & Workforce Development - Laborers and Mechanics Minimum Rates of Pay – Pamphlet No. 600. http://www.labor.state.ak.us/lss/pamp600.htm is the website link for the current document. The Contractor is responsible for ensuring they use the most up-to- date version of Pamphlet No. 600.

3.4.5 Davis Bacon Act. The Contractor must comply with all requirements of the Davis Bacon Act (40 U.S.C. 3141-3144, 3146-3148 and 40 U.S.C. 276a to 276a-7).

3.4.6 Contract Work Hours and Safety Standards Act. The Contractor must comply with all requirements of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708), as supplemented by the Department of Labor regulations (29 CFR part 5).

3.4.7 Byrd Anti-Lobbying Amendment. The Contractor must comply with all requirements of the Byrd Anti-Lobbying Amendment (31 U.S.C 1352) (Appendix C). Appendix C **must be completed and submitted prior to contract award**.

3.4.8 Copeland Anti-Kick Back Act. The Contractor must comply with all requirements of the Copeland Anti-Kick Back Act (18 U.S.C. 874 and 40 U.S.C 3145) as supplemented in Department of Labor regulations (29 CFR, Part 3).

3.4.9 Solid Waste Disposal Act. The Contractor must comply with all requirements of section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act.

3.4.10 Clean Air Act and Water Pollution Control Act. The Contractor must comply with all requirements of the Clean Air Act (42 U.S.C. 7401- 7671q) including section 114 and section 308 of the Water Pollution Control Act (33 U.S.C. 1251-1388).

3.4.11 Clean Water Act. The Contractor must comply with all requirements of section 215 (Requirements for American Materials) of the Clean Water Act (33 U.S.C. 1251 et seq.) and implementing EPA regulations. The Contractor agrees that preference will be given to domestic construction materials by the Contractor, subcontractors, materialmen, and suppliers.

3.4.12 Equal Employment Opportunity. The Contractor must comply with all requirements of Executive Order 11246 (3 CFR, 1966 Comp., p. 339), entitled, "Equal Employment Opportunity," as amended by Executive Order 11375 (3 CFR, 1968 Comp., p. 321), and as supplemented by the Department of Labor regulations 41 CFR chapter 60.

3.4.13 Drug Free Workplace Act of 1988. The Contractor must comply with all requirements of the regulations implementing Sections 5151-5160 of the Drug Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C, 701 et seq.), 7 CFR Part 3017, Subpart F, Section 3017.600, Purpose. The regulations were published as Part II of the January 31, 1989 Federal Register (pages 4947-4952).

3.4.14 Americans with Disabilities Act (ADA) of 1990. The Contractor must comply with all requirements of the Americans with Disabilities Act of 1990 (42 U.S.C 12101 et seq.) and the regulations issued thereunder by the federal government. Services or activities furnished to the general public on behalf of the state must be fully accessible. This is intended to ensure that agencies are in accordance

with 28 CFR Part 35 Section 35.130 and that services, programs or activities furnished to the public through a contract do not subject qualified individuals with a disability to discrimination based on the disability.

3.4.15 Civil Rights Act of 1964. The Contractor must comply with all requirements of Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) as outlined in 7 CFR 1901 subpart E.

3.4.16 Rehabilitation Act of 1973. The Contractor must comply with all requirements of section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794).

3.4.17 Age Discrimination Act of 1975. The Contractor must comply with all requirements of the Age Discrimination Act of 1975 (42 U.S.C. 6101 et seq.).

3.4.18 Federal Debarment, Suspension, Ineligibility and Voluntary Exclusion. Expenditures from this contract may involve federal funds. The U.S. Department of Labor requires all state agencies that are expending federal funds to have a certification filed in the bid (by the bidder) that they have not been debarred or suspended from doing business with the federal government. Certification regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions (Appendix B) **must be completed and submitted prior to award.** This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98, Section 98.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211).

3.4.19 The Contractor must comply with all applicable local, Federal and State statutes, regulations, ordinances and codes, whether or not specifically mentioned herein.

3.4.20 Human Trafficking. By signature on their bid, the bidder certifies that the bidder is not established and headquartered or incorporated and headquartered in a country recognized as Tier 3 in the most recent United States Department of State's Trafficking in Persons Report.

The most recent United States Department of State's Trafficking in Persons Report can be found at the following website: http://www.state.gov/g/tip/

The Contractor must comply with this requirement, failure to comply with this requirement will cause the state to reject the bid as non-responsive, or cancel the contract.

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner Representative and Engineer that materials and equipment furnished under the contract will be of good quality and new unless otherwise required or permitted by the contract documents, that the work will be free from defects not inherent in the quality required or permitted, and that the work will conform with the requirements of the contract documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective. Work that does not conform to applicable laws, ordinances, or building codes shall be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the

Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.5.2 The Contractor shall perform the work in such manner so as to preserve any and all manufacturer's warranties. The Contractor shall assign to the Owner Representative at the time of final completion of the work any and all manufacturer's warranties relating to materials and labor used in the work.

3.6 PAYMENT OF TAXES

3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the work or portions thereof provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

3.6 PERMITS, FEES AND NOTICES

3.7.1 Except as otherwise provided elsewhere in the contract documents, the Contractor shall pay for any permits and governmental fees, licenses and inspections necessary for proper execution and completion of the work.

3.8 SUPERINTENDENT

3.8.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the project site during performance of the work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

3.9 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.9.1 The Contractor, promptly after being awarded the contract, shall prepare and submit for the Owner Representative's and Engineer's information a Contractor's construction schedule for the work. The schedule shall not exceed time limits current under the contract documents, shall be revised at appropriate intervals as required by the conditions of the work and project, shall be related to the entire project, and shall provide for expeditious and practicable execution of the work.

3.9.2 The Contractor shall prepare and keep current, for the Engineer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Engineer a reasonable time to review submittals.

3.9.3 The Contractor shall conform to the most recent schedules.

3.10 DOCUMENTS AND SAMPLES AT THE SITE

3.10.1 The Contractor shall maintain at the site for the Owner Representative one record copy of the drawings, specifications, addenda, change orders and other modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved shop drawings, product data, samples and similar required submittals. These shall be available to the Engineer and shall be delivered to the Engineer for submittal to the Owner Representative upon completion of the work.

3.11 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.11.1 Shop drawings are drawings, diagrams, schedules, and other data specially prepared for the work by the Contractor or a subcontractor of whatever tier, manufacturer, supplier, or distributor to illustrate some portion of the work.

3.11.2 Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the work.

3.11.3 Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the work will be judged.

3.11.4 Shop drawings, product data, samples, and similar submittals are not contract documents. The purpose of their submittal is to demonstrate for those portions of the work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the contract documents. Review by the Engineer is subject to the limitations of subparagraph 4.2.7. Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the contract documents. Submittals which are not required by the contract documents may be returned by the Engineer without action.

3.11.5 The Contractor shall review, approve, and submit to the Engineer shop drawings, product data, samples and similar submittals required by the contract documents with reasonable promptness and in such sequence as to cause no delay in the work or in the activities of the Owner Representative or of separate Contractors. Submittals made by the Contractor which are not required by the contract documents may be returned without action.

3.11.6 By approving and submitting shop drawings, product data, samples, and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the work and of the contract documents.

3.11.7 The Contractor shall perform no portion of the work requiring submittal and review of shop drawings, product data, samples, or similar submittals until the respective submittal has been approved by the Engineer. Such work shall be in accordance with approved submittals.

3.11.8 The work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the contract documents by the Engineer's approval of shop drawings, product data, samples, or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the Engineer has (1) given written approval to the specific deviation as a minor change in the work, or (2) a change order or construction change directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in shop drawings, product data, samples, or similar submittals by the Engineer's approval thereof.

3.11.9 The Contractor shall direct specific attention, in writing or on resubmitted shop drawings,

product data, samples, or similar submittals, to revisions other than those requested by the Engineer on previous submittals.

3.11.10 Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the contract documents.

3.11.11 When professional certification of performance criteria of materials, systems, or equipment is required by the contract documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

3.11.12 All shop drawings for any structural, mechanical, or electrical work shall be submitted to, and approved by, the Engineer.

3.12 USE OF SITE

3.12.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, and the contract documents and shall not unreasonably encumber the site with materials or equipment.

3.12.2 Protection of construction materials and equipment stored at the project site from weather, theft, or damage is solely the responsibility of the Contractor.

3.13 CUTTING AND PATCHING

3.13.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the work or to make its parts fit together properly.

3.13.2 The Contractor shall not damage or endanger a portion of the work or fully or partially completed construction of the Owner Representative or separate Contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner Representative or a separate Contractor except with written consent of the Owner Representative and of such separate Contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner Representative or a separate Contractor the Contractor's consent to cutting or otherwise altering the work.

3.14 CLEAN UP

3.14.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the contract. At completion of the work the Contractor shall remove from and about the project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.14.2 If the Contractor fails to clean up as provided in the contract documents, the Owner Representative may do so and the cost thereof shall be charged to the Contractor.

3.15 ACCESS TO WORK AND DOCUMENTS

3.15.1 The Contractor shall provide the Owner Representative and Engineer access to the work in

preparation and progress wherever located and any books, documents, papers, and records of the Contractor which are directly pertinent to the contract for the purpose of making audit, examination, excerpts, and transcriptions.

3.16 ROYALTIES AND PATENTS

3.16.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits, or claims for infringement of patent rights and shall hold the Owner Representative, the State of Alaska, its agents and employees harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the contract documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Engineer.

3.17 INDEMNIFICATION

3.17.1 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Owner Representative, the State of Alaska, its agents and employees from and against claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a subcontractor of whatever tier, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph.

3.17.2 In claims against any person or entity indemnified under paragraph 3.17 by an employee of the Contractor, a subcontractor of any tier, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation shall not be limited by a limitation on amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefit acts or other employee benefit acts.

3.17.3 The obligations of the Contractor under paragraph 3.17 shall not extend to the liability of the Engineer, the Engineer's consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Engineer, the Engineer's consultants, and agents and employees of any of them.

3.18 BUSINESS AND PROFESSIONAL REGISTRATION

3.18.1 The Contractor shall comply and ensure that its employees and subcontractors of every tier comply with all applicable laws and ordinances related to Alaska business and professional licensing.

3.18.2 The Contractor shall provide copies of licenses within seven days following a request from the Owner Representative's representative for the duration of this agreement.

3.19 PROJECT RECORDS

3.19.1 The Contractor shall maintain all records relating to the work for a period of six years from the date of final completion and shall, upon request, make such records available for inspection by Owner Representative, or the State of Alaska during regular business hours upon reasonable advance notice.

ARTICLE 4

ADMINISTRATION OF THE CONTRACT

4.1 ENGINEER

4.1.1 Any reference in the contract documents to the Engineer taking action or rendering a decision within a "reasonable time" is understood to mean no more than 14 days.

4.1.2 Duties, responsibilities, and limitations on the authority of the Engineer as set forth in the contract documents shall not be restricted, modified, or extended without the written consent of the Owner Representative.

4.2 ENGINEER'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Engineer shall provide administration of the contract as described in the contract documents, and shall represent the Owner Representative's during construction of the work at the Owner Representative's direction. The Engineer will advise and consult with the Owner Representative. The Engineer will have authority to act on behalf of the Owner Representative only to the extent provided in the contract documents, unless otherwise provided in a written agreement signed by the Owner Representative.

4.2.2 The Engineer shall visit the site as requested by the Owner Representative to determine if the work is being performed in a manner indicating that the work when completed will be in accordance with the design and specifications for the project. The Engineer will coordinate with the Contractor's qualified inspector and superintendent for these periodic reviews.

4.2.3 The Engineer will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Except as otherwise provided in the contract documents, the Engineer will not be responsible for the Contractor's failure to carry out the work in accordance with the contract documents. Except as otherwise provided in the contract documents, the Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, subcontractors, or their agents or employees, or of any other persons performing portions of the work.

4.2.4 Communications Facilitating Contract Administration. Except as otherwise provided in the contract documents, the Owner Representative and Contractor may endeavor to communicate through the Engineer. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with subcontractors of any tier and material suppliers shall be through the Contractor. Communications by and with separate Contractors shall be through the Owner Representative.

4.2.5 Based on the Engineer's observations at the site of the work and evaluations of the Contractor's applications for payment, the Engineer shall review and certify the amounts due the Contractor and shall issue certificates for payment in such amounts.

4.2.6 The Engineer will have authority to reject work which does not conform to the contract documents. Whenever the Engineer considers it necessary or advisable for implementation of the intent of the contract documents, the Engineer will have authority to require additional inspection or testing of the work in accordance with subparagraphs 13.5.2 and 13.5.3, whether or not such work is fabricated, installed, or completed.

4.2.7 The Engineer shall review and approve or take other appropriate action upon the Contractor's submittals such as shop drawings, product data, and samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. The Engineer's action will be taken with such reasonable promptness as to cause no delay in the work or in the activities of the Owner Representative, Contractor or separate Contractors. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the contract documents. The Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under paragraphs 3.3, 3.5, and 3.11. The Engineer's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Engineer, of any construction means, methods, techniques, sequences or procedures. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 Change orders and construction change directives with supporting documentation shall be completed by the Engineer upon approval and authorization from the Owner's Representative in accordance with Paragraphs 7.2, 7.3, and 7.4.

4.2.9 On behalf of the Owner Representative, the Engineer shall conduct inspections to determine the dates of substantial completion and final completion and shall issue a certificate of substantial completion. The Engineer will receive and review (and approve or disapprove, as the case may be) written guarantees, and related documents required by the contract for construction to be assembled by the Contractor, and shall issue a final certificate of payment upon compliance with the requirements of the contract documents. The Engineer shall conduct a one year warranty inspection to determine if warranty work is needed or completed.

4.2.10 If the Owner Representative and Engineer agree, the Engineer will provide one or more project representatives to assist in carrying out the Engineer's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in the agreement between the Owner Representative and the Engineer.

4.2.11 The Engineer may observe the construction at certain key periods of completion, in addition to other observations. The Contractor shall notify the Engineer five days in advance of commencing work as listed below, to allow the Engineer to schedule observations of the following, if applicable:

- Underground utilities prior to cover, including sewer, water, storm sewer, and electrical.
- Foundation reinforcing prior to concrete placement.
- Mechanical and electrical rough-in work prior to cover.

- Substantial completion.
- Final completion.

4.3 CLAIMS AND DISPUTES

4.3.1 Definition. A "claim" is a demand or assertion by the Owner Representative or Contractor seeking, as a matter of right, adjustment or interpretation of contract terms, payment of money, extension of time or other relief with respect to the terms of the contract. The term "claim" also includes other disputes and matters in question between the Owner Representative and Contractor arising out of or relating to the contract. Claims must be made by written notice. The responsibility to substantiate claims shall rest with the party making the claim.

4.3.2 Time Limits on Claims. Claims by either party must be made within 21 days after occurrence of the event giving rise to such claim. Claims must be made by written notice. An additional claim made after the initial claim has been implemented by change order will not be considered unless submitted in a timely manner. Any notice of claim must clearly identify the alleged cause and the nature of the claim and include data and information then available to the claimant that will facilitate proper verification and evaluation of the claim.

4.3.3 Continuing Contract Performance. Pending final resolution of a claim, unless otherwise agreed in writing the Contractor shall proceed diligently with performance of the contract and the Owner Representative shall continue to make payments in accordance with the contract documents.

4.3.4 Waiver of Claims and Final Payment. The making of final payment shall constitute a waiver of claims by the Owner Representative except those arising from:

4.3.4.1 Liens, claims, security interests or encumbrances arising out of the contract and unsettled;

4.3.4.2 Failure of the work to comply with the requirements of the contract documents; or

4.3.4.3 Terms of special warranties required by the contract documents.

4.3.5 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the contract documents, or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the contract documents, or (3) hazardous materials at the site contain constituents, or are present in quantities not disclosed in available information, or they have characteristics or properties not disclosed by such information, and such constituents, characteristics, properties, or quantities increase the risk of hazard to human health or the environment involved in the performance of the work under this agreement, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than two days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the work, will recommend an equitable adjustment in the contract sum or contract time, or both. If the Engineer determines that

the conditions at the site are not materially different from those indicated in the contract documents and that no change in the terms of the contract is justified, the Engineer shall so notify the Owner Representative and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Engineer has given notice of decision under this subparagraph. If the Owner Representative and Contractor cannot agree on an adjustment in the contact sum or contract time, the adjustment shall be referred to the Engineer for initial determination, subject to further proceedings pursuant to paragraph 4.4. No adjustment in the contract time or contract sum shall be permitted, however, in connection with a concealed or unknown condition which does not differ materially from those conditions disclosed or which reasonably should have been disclosed by the Contractor's prior inspections, tests, reviews, and pre-bid investigation for the project.

4.3.6 Claims for Additional Cost. If the Contractor wishes to make claim for an increase in the contract sum, written notice as provided herein shall be given before proceeding to execute the proposed additional work. Prior notice is not required for claims relating to an emergency endangering life or property arising under paragraph 10.3.

4.3.7 If the Contractor believes additional costs may be incurred for reasons including but not limited to (1) a written interpretation from the Engineer, (2) an order by the Owner Representative to stop the work where the Contractor was not at fault, (3) a written order for a minor change in the work issued by the Engineer, (4) failure of payment by the Owner Representative, (5) termination of the contract by the Owner Representative, (6) Owner Representative's suspension or, (7) other grounds, claim shall be filed in accordance with the procedure established herein.

4.3.8 Claims for Additional Time If the Contractor wishes to make claim for an increase in the contract time, written notice as provided herein shall be given. The Contractor's claim shall include an estimate of cost and of probable effect of delay on progress of the work. In the case of a continuing delay only one claim is necessary. If adverse weather conditions are the basis for a claim for additional time, such claim shall be documented by data substantiating that weather conditions were highly unusual for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction. No claim shall be allowed for weather conditions that were not highly unusual.

4.3.9 Injury or Damage to Person or Property. If either party to the contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a claim for additional cost or time is to be asserted as a result, it shall be filed as provided in subparagraphs
4.3.6 through 4.3.8.

4.3.10 If unit prices are stated in the contract documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed change order or construction change directive so that application of such unit prices to quantities or work proposed will cause substantial inequity to the Owner Representative or Contractor, the applicable unit prices shall be equitably adjusted.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 Decision of Engineer. Claims shall be referred initially to the Engineer for action as provided in paragraph 4.4 if the claimant first recognizes the claim prior to the date of final payment. A decision by the Engineer, as provided in subparagraph 4.4.3, shall be required as a condition precedent to litigation of a claim between the Contractor and Owner Representative as to all such matters arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the work, or (2) the extent to which the work has been completed. The decision by the Engineer in response to a claim shall not be a condition precedent to litigation in the event (1) the position of Engineer is vacant, (2) the Engineer has not received evidence or has failed to render a decision within agreed time limits, (3) the Engineer has failed to take action required under subparagraph 4.4.3 within 30 days after the claim is made, or (4) 45 days have passed after the claim has been referred to the Engineer.

4.4.2 The Engineer will review claims and take one or more of the following preliminary actions within 10 days of receipt of a claim: (1) request additional supporting data from the claimant, (2) submit a schedule to the parties indicating when the Engineer expects to take action, (3) reject the claim in whole or in part, stating reasons for rejection, (4) recommend approval of the claim by the other party, or (5) suggest a compromise. The Engineer may also, but is not obligated to, notify the surety, if any, of the nature and amount of the claim. The Engineer must notify the Village Safe Water Program and receive approval before rendering a decision regarding a Contractor's claim.

4.4.3 If the Engineer requests a party to provide a response to a claim or to furnish additional supporting data, such party shall respond, within 10 days after receipt of such request, and shall either provide a response or the requested supporting data, advise the Engineer when the response or supporting data will be furnished or advise the Engineer that no supporting data will be furnished. Upon receipt of the response, or supporting data, if any, the Engineer will either reject or approve the claim in whole or in part.

4.4.4 If a claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Engineer, the Engineer will notify the parties in writing that the Engineer's decision will be made within seven days. Upon expiration of such time period, the Engineer will render to the parties the Engineer's written decision relative to the claim, including any recommended change in the contract sum or contract time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Engineer may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy. The Engineer must notify the Village Safe Water Program and receive approval before rendering a decision regarding a Contractor's claim.

4.5 VENUE

4.5.1 Any lawsuit arising out of or in any way related to this project shall be exclusively brought and maintained in the Superior Court for the State of Alaska.

ARTICLE 5

SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 The term "subcontractor" is referred to throughout the contract documents as if singular in number and means a subcontractor or an authorized representative of the subcontractor. The term "subcontractor" does not include a separate Contractor or subcontractors of a separate Contractor.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Within five working days after the identification of the apparent low bidder for a construction contract, the apparent low bidder shall submit a list of the subcontractors the bidder proposes to use in the performance of the construction contract. The list must include the name and location of the place of business for each subcontractor, evidence of each subcontractor's valid Alaska business license, and evidence of each subcontractor's registration as a contractor under AS 08.18. If a subcontractor on the list did not have a valid Alaska business license and a valid certificate of registration as a Contractor under AS 08.18 at the time the bid was opened, the bidder may not use the subcontractor in the performance of the contract, and shall replace the subcontractor with a subcontractor who had a valid Alaska business license and a valid certificate of registration as a Contractor under AS 08.18 at the time the bid was opened.

5.2.2 The Contractor shall not allow a proposed person or entity to whom the Owner Representative has made reasonable objection to perform any work on the project.

5.2.3 The Contractor shall not change a subcontractor, person or entity previously selected if the Owner Representative makes reasonable objection to such change.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each subcontractor, to the extent of the work to be performed by the subcontractor, to be bound to the Contractor by terms of the contract documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these documents, assumes toward the Owner Representative and Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner Representative and Engineer under the contract documents with respect to the work to be performed by the subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the contract documents, has against the Owner Representative. Where appropriate, the Contractor shall require each subcontractor of whatever tier to enter into similar agreements with their subcontractors. The Contractor shall make available to each proposed subcontractor, prior to the execution of the subcontract agreement, copies of the contract documents to which the subcontractor will be bound, and, upon written request of the subcontractor, identify to the subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the contract documents. Subcontractors of every tier shall similarly make copies of applicable portions of such documents

available to their respective proposed subcontractors.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1 Each subcontract agreement for a portion of the work is assigned by the Contractor to the Owner Representative provided that:

5.4.1.1 Assignment is effective only after termination of the contract by the Owner Representative for cause pursuant to paragraph 14.1 and only for those subcontract agreements which the Owner Representative accepts by notifying the subcontractor in writing; and

5.4.1.2 Assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the contract.

5.4.2 Each subcontract shall specifically provide that the Owner Representative shall only be responsible to the subcontractor for those obligations of the Contractor that accrue subsequent to the Owner Representative's exercise of any rights under this conditional assignment.

ARTICLE 6

CONSTRUCTION BY OWNER REPRESENTATIVE OR BY SEPARATE CONTRACTORS

6.1 OWNER REPRESENTATIVE'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner Representative reserves the right to perform construction or operations related to the project with the Owner Representative's own forces, and to award separate contracts in connection with other portions of the project or other construction or operations on the site under conditions of the contract identical or substantially similar to these including those portions related to insurance and wavier of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner Representative, the Contractor shall make such claim as provided elsewhere in the contract documents.

6.1.2 When separate contracts are awarded for different portions of the project, or other construction, or operations on the site, the term "Contractor" in the contract documents in each case shall mean the Contractor who executes each separate Owner Representative-Contractor agreement.

6.1.3 The Owner Representative shall provide for coordination of the activities of the Owner Representative's own forces and of each separate Contractor with the work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate Contractors and the Owner Representative in reviewing their construction schedules when directed to do so.

6.1.4 Unless otherwise provided in the contract documents, when the Owner Representative performs construction or operations related to the project with the Owner Representative's own forces, the Owner Representative shall be deemed to be subject to the same obligations and to have the same

rights which apply to the Contractor under the conditions of the contract, including, without excluding others, those stated in Article 3, 6, 10, 11, and 12.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner Representative and separate Contractor's reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the contract documents.

6.2.2 If part of the Contractor's work depends for proper execution or results upon construction or operations by the Owner Representative or a separate Contractor, the Contractor shall, prior to proceeding with that portion of the work, promptly report to the Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner Representative's or separate Contractors' completed or partially completed construction is fit and proper to receive the Contractor's work, except as to defects not then reasonably discoverable.

6.2.3 Costs caused by delays, or by improperly timed activities, or defective construction shall be borne by the party responsible therefor.

6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to complete or partially completed construction, or to property of the Owner Representative, or separate Contractors as provided in subparagraph 10.2.4.

6.2.5 The Owner Representative and each separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in paragraph 3.13.

6.2.6 Claims and other disputes and matters in question between the Contractor and a separate Contractor shall be subject to the provisions of paragraph 4.3 provided the separate Contractor has reciprocal obligations.

ARTICLE 7

CHANGES IN THE WORK

7.1 CHANGES

7.1.1 Changes in the work may be accomplished after execution of the contract, and without invalidating the contract, by change order, construction change directive, or order for a minor change in the work, subject to the limitations stated in this Article 7 and elsewhere in the contract documents.

7.1.2 A change order shall be based upon agreement among the Owner Representative and Contractor; a construction change directive is a direction from the Owner Representative and may or may not be agreed to by the Contractor; an order for a minor change in the work may be issued by the Engineer alone.

7.1.3 Changes in the work shall be performed under applicable provisions of the contract documents, and the Contractor shall proceed promptly, unless otherwise provided in the change order, construction change directive, or order for a minor change in the work. Except as permitted in paragraph 7.3, a change in the contract sum or the contract time shall be accomplished only by change order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the work, nor any claim that the Owner Representative has been unjustly enriched by any alteration or addition to the work, shall be the basis of any claim to an increase in any amount due under the contract documents or a change in any time period provided for in the contract documents.

7.2 CHANGE ORDERS

7.2.1 A change order is a written instrument prepared by the Engineer and signed by the Owner Representative, Contractor and Engineer, stating their agreement upon all of the following:

7.2.1.1 A change in the work;

7.2.1.2 The amount of the adjustment in the contract sum, if any; and

7.2.1.3 The extent of the adjustment in the contract time, if any.

7.2.2 Methods used in determining adjustment to the contract sum may include those listed in subparagraph 7.3.3.

7.2.3 Agreement on any change order shall constitute a final settlement of all matters relating to the change in the work which is the subject of the change order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the contract sum and the construction schedule. The one year warranty will apply on approved change orders.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A construction change directive is a written order prepared by the Engineer and signed by the Owner Representative and Engineer, directing a change in the work and stating a proposed basis for adjustment, if any, in the contract sum or contract time, or both. The Owner Representative may by construction change directive, without invalidating the contract, order changes in the work within the general scope of the contract consisting of additions, deletions or other revisions, the contract sum and contract time being adjusted accordingly.

7.3.2 A construction change directive shall be used in the absence of total agreement on the terms of a change order.

7.3.3 If the construction change directive provides for an adjustment to the contract sum, the adjustment shall be based on one of the following methods:

7.3.3.1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

7.3.3.2 unit prices stated in the contract documents or subsequently agreed upon;

7.3.3.3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

7.3.3.4 as provided in subparagraph 7.3.6.

7.3.4 Upon receipt of a construction change directive, the Contractor shall promptly proceed with the change in the work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the construction change directive for determining the proposed adjustment in the contract sum or contract time.

7.3.5 A construction change directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in contract sum and contract time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a change order.

7.3.6 If the Contractor does not execute the construction change directive within 10 days or disagrees with the method for adjustment in the contact sum, the method and the adjustment shall be determined by the Owner Representative on the basis of reasonable expenditures and savings of those performing the work attributable to the change, including, in case of an increase in the contract sum, a reasonable allowance for overhead and profit. In such case, and also under clause 7.3.3.3, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the contract documents, costs for the purposes of this subparagraph 7.3.6 shall be limited to the following:

7.3.6.1 costs of labor, including social security, unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

7.3.6.2 costs of equipment, materials, and supplies, including cost of transportation, whether incorporated or consumed;

7.3.6.3 Rental Costs of Machinery and Equipment. The rental value of the Contractor's own equipment shall be not more than 100% of the rates in the current edition of Equipment Watch Rental Rate Blue Book for Construction Equipment, and the aggregate amounts charged to the Owner Representative for such equipment shall not exceed 50% of its fair market value;

7.3.6.4 costs of premiums for all bond and insurance, permit fees, and sales, use or similar taxes related to the work; and

7.3.6.5 additional costs of supervision and field office personnel directly attributable to the change.

7.3.7 Pending final determination of cost to the Owner Representative, amounts not in dispute may be included in applications for payment. The amount of credit to be allowed by the Contractor to the Owner Representative for a deletion or change which results in a net decrease in the contract sum shall be actual net cost as confirmed by the Engineer. When both additions and credits covering related work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 If the Owner Representative and Contractor do not agree with the adjustment in contract time or the method for determining it, the adjustment or the method shall be referred to the Engineer for recommendation.

7.3.9 When the Owner Representative and Contractor agree with the recommendation made by the Engineer concerning the adjustments in the contract sum and contract time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate change order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Engineer may order minor changes in the work not involving adjustment in the contract sum or extension of the contract time and not inconsistent with the intent of the contract documents. Such changes shall be effected by written order and shall be binding on the Owner Representative and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8

TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, contract time is the period of time, including authorized adjustments, allotted in the contract documents for substantial completion of the work.

8.1.2 The date of commencement of the work is the date established in the agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

8.1.3 The date of substantial completion is the date certified by the Engineer in accordance with paragraph 9.7.

8.1.4 The term "day" as used in the contract documents shall mean calendar day unless otherwise specifically defined.

8.2 PROGRESS AND COMPLETION

8.2.1 Time limits stated in the contract documents are of the essence of the contract. By executing the agreement the Contractor confirms that the contract time is a reasonable period for performing the work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner Representative in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor. The date of commencement of the work shall not be changed by the effective date of such insurance.

8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve substantial completion within the contract time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in progress of the work by an act or neglect of the Owner Representative or Engineer, or of an employee of either, or of a separate Contractor employed by the Owner Representative, or by changes ordered in the work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner Representative, then the contract time shall be extended by change order to the extent such delay will prevent the Contractor from achieving substantial completion within the contract time and if the performance of the work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension in the contract time under the contract documents. Adjustments in the contract time shall be permitted for a delay only to the extent such delay is not caused, or could not have been anticipated by the Contractor, could not be limited or avoided by the Contractor's timely notice to the Owner Representative of the delay, and is of a duration of at least one day.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of paragraph 4.3.

8.3.3 This paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the contract documents. However, in no event shall the Contractor be entitled to recovery of consequential damages, lost opportunity costs, unabsorbed home office overhead, or impact damages. The Contractor's sole remedy for delay in commencement, prosecution or completion of the work, hindrance or obstruction in the performance of the work, loss of productivity or similar claims is an extension of time in which to complete the work if permitted under the contract documents and, to the extent permitted under this paragraph, an adjustment in the contract sum. Any adjustment in the contract sum pursuant to this paragraph shall be limited to the increase, if any, of direct, out of pocket, on-site labor and material costs incurred by the Contractor in performing the work as a result of that portion of any delay or delays which cause the contract time to be increased. Such direct costs shall not include profit or overhead.

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The contract sum is stated in the agreement and, including authorized adjustments, is the total amount payable by the Owner Representative to the Contractor for performance of the work under the contract documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first application for payment, the Contractor shall submit to the Engineer a schedule of values allocated to various portions of the work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's applications for payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 The Contractor shall submit to the Engineer an itemized application for payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner Representative or Engineer may require, such as copies of requisitions from subcontractors and material suppliers, and reflecting retainage if provided for elsewhere in the contract documents.

9.3.1.1 Such applications may include requests for payment on account of changes in the work which have been properly authorized by construction change directives but not yet included in change orders.

9.3.1.2 Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a subcontractor or material supplier because of a dispute or other reason.

9.3.2 The Contractor warrants that title to all work covered by an application for payment will pass to the Owner Representative no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment, all work for which certificates for payment have been previously issued and payments received from the Owner Representative shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, subcontractors of any tier, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the work.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Engineer will, within seven days after receipt of the Contractor's application for payment, either issue to the Owner Representative a certificate for payment, with a copy to the Contractor, for such amount as the Engineer believes is properly due, or notify the Contractor and Owner Representative in writing of the Engineer's reasons for withholding certification in whole or in part as provided in subparagraph 9.5.1.

9.4.2 The issuance of a certificate for payment will constitute a representation by the Engineer to the Owner Representative, based on the Engineer's observations at the site and the data comprising the application for payment, that the work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information and belief, quality of the work is in accordance with the contract documents. The foregoing representations are subject to minor deviations from the contract documents correctable prior to completion and to specific qualifications expressed by the Engineer. The issuance of a certificate for payment will further constitute a representation that the Contractor is entitled to payment in the amount certified.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Engineer shall decide not to certify payment and shall withhold a certificate for payment in whole or in part, to the extent reasonably necessary to protect the Owner Representative, if in the Engineer's opinion the representations to the Owner Representative required by subparagraph 9.4.2 cannot be made. If the Engineer is unable to certify payment in the amount of the application, the Engineer shall notify the Contractor and Owner Representative as provided in subparagraph 9.4.1. If the Contractor and Engineer cannot agree on a revised amount, the Engineer shall promptly issue a certificate for payment for the amount for which the Engineer is able to make such representations to the Owner Representative. The Engineer shall also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, shall nullify the whole or a part of a certificate for payment previously issued, to such extent as may be necessary in the Engineer's opinion to protect the Owner Representative from loss for which Contractor is responsible, including loss resulting from acts and omissions described in subparagraph 3.3.2, because of:

9.5.1.1 defective work not remedied;

9.5.1.2 third party claims filed or reasonable evidence indicating probable filing of such claims;

9.5.1.3 failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment;

9.5.1.4 reasonable evidence that the work cannot be completed for the unpaid balance of the contract sum;

9.5.1.5 damage to the Owner Representative or another Contractor;

9.5.1.6 reasonable evidence that the work will not be completed within the contract time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the

anticipated delay; or

9.5.1.7 persistent failure to carry out the work in accordance with the contract documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.6 PROGRESS PAYMENTS

9.6.1 After the Engineer has issued a certificate for payment, the Owner Representative shall make payment in the manner and within the time provided in the contract documents, and shall so notify the Engineer.

9.6.2 The Contractor shall promptly pay each subcontractor, upon receipt of payment from the Owner Representative, out of the amount paid to the Contractor on account of such subcontractor's portion of the work, the amount to which said subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such subcontractor's portion of the work. The Contractor shall, by appropriate agreement with each subcontractor, require each subcontractor to make payments to sub-subcontractors in similar manner. Owner Representative may elect, in Owner Representative's sole discretion, to make any payment requested by the Contractor on behalf of a subcontractor of any tier jointly payable to the Contractor and such subcontractor. The Contractor and subcontractor shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint payment be construed as (1) a contract between the Owner Representative and subcontractor of any tier, (2) creating any obligations to such subcontractor on the part of Owner Representative, or (3) creating any rights in such subcontractor against the Owner Representative.

9.6.3 The Engineer will, on request, furnish to a subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Engineer and Owner Representative on account of portions of the work done by such subcontractor.

9.6.4 Neither the Owner Representative nor Engineer shall have an obligation to pay or provide oversight of payments of money to a subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in subparagraphs 9.6.2, 9.6.3 and 9.6.4.

9.6.6 A certificate for payment, a progress payment, or partial or entire use or occupancy of the project by the Owner Representative shall not constitute acceptance of work not in accordance with the contract documents.

9.6.7 If the Owner Representative is entitled to reimbursement or payment from the Contractor pursuant to the contract documents, such payment shall be made promptly upon demand by the Owner Representative. If Contractor fails to promptly make any payment due the Owner Representative, or the Owner Representative incurs any costs and expenses to cure any default of the Contractor or to correct defective work, the Owner Representative shall have an absolute right to offset such amount against the contract sum and may, in the Owner Representative's sole discretion, elect either to: (1)

deduct an amount equal to that which the Owner Representative is entitled from any payment then or thereafter due the Contractor from the Owner Representative; or (2) issue a written notice to the Contractor reducing the contract sum by an amount equal to that which the Owner Representative is entitled.

9.7 SUBSTANTIAL COMPLETION

9.7.1 Substantial completion is the stage in the progress of the work when the work or designated portion thereof is sufficiently complete in accordance with the contract documents so the Owner Representative can occupy or utilize the work for its intended use.

9.7.2 When the Contractor considers that the work, or a portion thereof which the Owner Representative agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all work in accordance with the contract documents.

9.7.3 Upon receipt of the Contractor's list, the Engineer shall make an inspection to determine whether the work or designated portion thereof is substantially complete. If the Engineer's inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the contract documents, the Contractor shall, before issuance of the certificate of substantial completion, complete or correct such item upon notification by the Engineer. The Contractor shall then submit a request for another inspection by the Engineer to determine substantial completion.

9.7.4 When the work or designated portion thereof is substantially complete, the Engineer shall prepare a certificate of substantial completion which shall establish the date of substantial completion, shall establish responsibilities of the Owner Representative and Contractor for security, maintenance, heat, utilities, damage to the work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the certificate which shall identify all non-conforming, defective and incomplete work and establish the date of commencement of warranties in connection with any such work. Warranties required by the contract documents shall commence on the date of substantial completion of the work or designated portion thereof unless otherwise provided in the certificate of substantial completion.

9.7.5 The certificate of substantial completion shall be submitted to the Owner Representative and Contractor for their written acceptance of responsibilities assigned to them in such certificate. Upon substantial completion of the work or designated portion thereof, and upon application by the Contractor and certification by the Engineer, the Owner Representative shall make payment, reflecting adjustment in retainage, if any, for such work or portion thereof as provided in the contract documents.

9.8 FINAL COMPLETION AND FINAL PAYMENT

9.8.1 Upon receipt of written notice that the work is ready for final inspection and acceptance, and upon receipt of a final application for payment, the Engineer shall promptly make such inspection and, when the Engineer finds the work acceptable under the contract documents and the contract fully

performed, the Engineer shall promptly issue a final certificate for payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's observations and inspections, the work has been completed in accordance with the terms and conditions of the contract documents and that the entire balance found to be due the Contractor and noted in said final certificate is due and payable. The Engineer's final certificate for payment shall constitute a further representation that conditions listed in subparagraph 9.8.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.8.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer: (1) an affidavit that includes payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner or the Owner Representative's property might be responsible or encumbered (less amounts withheld by Owner Representative) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the contract documents to remain in force after final payment is currently in effect and will not be cancelled or allowed to expire until at least 30 days' prior written notice has been given to the Owner Representative, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the contract documents (4) consent of surety, if any, to final payment, (5) verification from the State of Alaska Department of Labor and Workforce Development ("the Department") that: (i) Contractor has complied with AS 36.05.045(a) and (b); (ii) the Department is not conducting an investigation under Title 36 of the Alaska Statutes and (iii) the Department has not issued a notice of violation of AS 36.05 to Contractor or any subcontractor working on the project, and (6), if required by the Owner Representative, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the contract, to the extent and in such form as may be designated by the Owner Representative. If a subcontractor refuses to furnish a release or waiver required by the Owner Representative, the Contractor may furnish a bond satisfactory to the Owner Representative to indemnify the Owner Representative against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner Representative all money that the Owner Representative may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.8.3 If, after substantial completion of the work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of change orders affecting final completion, and the Engineer so confirms, the Owner Representative shall, upon application by the Contractor and certification by the Engineer, and without terminating the contract, make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance for work not fully completed or corrected is less than retainage stipulated in the contract documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims. The making of final payment shall constitute a waiver of claims by the Owner Representative as provided in subparagraph 4.3.5. Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment. Such waivers shall be in addition to the waiver described in subparagraph 4.3.5. Owner Representative shall withhold from final payment an amount sufficient to pay the department's estimate of what may be needed to compensate the employees of Contractor or

any subcontractor under investigation pursuant to AS 36.05 plus any unpaid AS 36.05.045 filing fee.

9.9 RETAINAGE

9.9.1 At any time the Owner Representative finds that satisfactory progress is not being made it may retain a maximum amount equal to 10% of the total amount earned on all subsequent progress payments. This retainage may be released at such time as the Owner Representative finds that satisfactory progress is being made.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the contract.

10.1.2 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner Representative, the State of Alaska, its agents and employees from and against claims, damages, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the presence, uncovering or release of suspected or confirmed hazardous materials to the extent caused by the negligent acts or omissions of Contractor or the failure of Contractor to comply with the terms and conditions of the contract documents.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

10.2.1.1 employees on the work and other persons who may be affected thereby;

10.2.1.2 the work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's subcontractors of whatever tier; and

10.2.1.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the contract, reasonable safeguards for safety and protection, including posting danger signs and

other warnings against hazards, promulgating safety regulations and notifying Owner Representatives and users of adjacent sites and utilities.

10.2.4 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the contract documents) to property referred to in clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a subcontractor of any tier, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner Representative or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under paragraph 3.17.

10.2.5 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner Representative and Engineer.

10.2.6 The Contractor shall not loan or permit any part of the construction or site to be loaded so as to endanger its safety.

10.2.7 The Contractor shall promptly report both orally and in writing to the Owner Representative and Engineer all accidents arising out of or in connection with the work which cause death, personal injury or property damage, giving full details and statements of any witnesses.

10.3 HAZARDOUS MATERIALS

10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated bipbyenel (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop work in the affected area and report the condition to the Owner Representative and Engineer in writing.

10.3.2 The Contractor shall comply with the Federal Hazard Communications standards as well as other applicable environmental laws, including, but not limited to, all laws dealing with the removal and disposal of asbestos and soil contaminated with any hazardous substance. The Contractor shall ensure that all hazardous substances with which it deals receive safe and proper handling. The Contractor shall properly perform services in connection with decontamination of construction equipment and disposal of contaminated debris or samples.

10.4 EMERGENCIES

10.4.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in paragraph 4.3 and Article 7.

ARTICLE 11

INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this contract the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the Owner Representative shall be entitled to coverage to the extent of such higher limits. Certificates of insurance must be furnished prior to award of contract and must provide for a 30 day prior notice of cancellation, non-renewal or material change of conditions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with and be issued by insurers licensed to transact the business of insurance under AS.21. The Contractor shall not allow any subcontractor of any tier to commence work on any subcontract until the insurance required has been obtained. Each subcontract work to be performed will specifically include a provision that the Owner Representative, the State of Alaska, its agents and employees are not liable for damages or claims from damages arising from the subcontractor's performance or activities under the terms of the subcontracts.

11.1.2 **Workers' Compensation Insurance**: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS.23.30.045, and where applicable, any other statutory obligations including but not limited to Federal U.S.L.& H. and Jones Act requirements. In the case of subcontractor work, the Contractor shall provide workmen's compensation insurance for all the subcontractors' employees engaged in such work. **The policy shall provide waiver of subrogation against the State of Alaska.** The coverage shall include:

Employer's Liability Protection at $500,000 each accident/each employee and $500,000 policy limit

11.1.3 **Commercial General Liability Insurance**: The Contractor shall provide and maintain coverage for all business premises and operations used by the Contractor in the performance of services under this contract with minimum combined single limit coverage per the following schedule:

$1,000,000 each occurrence
$1,000,000 personal injury
$1,000,000 general aggregate
$1,000,000 products completed operations aggregate

The State of Alaska shall be named as an additional insured.

11.1.4 **Commercial Automobile Liability Insurance**: The Contractor shall provide and maintain coverage for all vehicles used by the Contractor in the performance of services under this contract with minimum coverage limits of $1,000,000 combined single limit per occurrence.

All of the above insurance coverage shall be considered to be primary and non-contributory to any other insurance carried by the State of Alaska, whether through self-insurance or otherwise.

11.2 GENERAL REQUIREMENTS

11.2.1 All insurance coverage procured by the Contractor shall be provided by insurance companies having policy holder ratings no lower than "excellent" in the Best's Insurance Guide, latest edition in effect as of the date of the contract, and subsequently in effect at the time of renewal of any policies required by the contract documents.

11.2.2 If the Owner Representative or the Contractor is damaged by the failure of the other party to purchase or maintain insurance required by the contract documents, then the party who failed to purchase or maintain the insurance shall bear all reasonable costs (including attorneys' fees and court and settlement expenses) attributable thereto.

11.2.3 Certificate of Insurance. Prior to commencing any work, the Contractor shall furnish certificates issued to the Owner Representative showing the type, amount, class of operations covered, effective date, and dates of expiration of such policies. Such certificates shall contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered except after 30 days' written notice has been received by the Owner Representative."

11.2.4 All certificates and policies shall contain the project title. By requiring insurance, Owner Representative makes no representation that the required coverage or limits are necessarily adequate. Such coverage and limits requirements shall not be construed as a limit on Contractor's liability or duties of indemnity.

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 The Contractor shall furnish, prior to commencing any work, performance and payment bonds furnished by a corporate surety qualified to do business in Alaska and otherwise acceptable to the Owner Representative, each with a penal sum equaling 100% of the contract sum. The performance bond shall name as obliges the Village Safe Water Project[i] and any other entity as required elsewhere in the contract documents or bidding requirements.

11.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING AND CORRECTION OF WORK

12.1.1 If a portion of the work is covered contrary to the Engineer's request or to requirements specifically expressed in the contract documents, it must, if required in writing by the Engineer, be uncovered for the Engineer's observation and be replaced at the Contractor's expense without change in the contract time.

12.1.2 If a portion of the work has been covered which the Engineer has not specifically requested to observe prior to it being covered, the Owner Representative may request to see such work and it shall be uncovered by the Contractor. If such work is in accordance with the contract documents, costs of uncovering and replacement shall, by appropriate change order, be charged to the Owner Representative. If such work is not in accordance with the contract documents, the Contractor shall pay such costs unless the condition was caused by the Owner Representative or a separate Contractor in which event the Owner Representative shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 The Contractor shall promptly correct work rejected by the Engineer, or failing to conform to the requirements of the contract documents, whether observed before or after substantial completion and whether or not fabricated, installed or completed. The Contractor shall bear costs of correcting such rejected work, including additional testing and inspections and compensation for the Engineer's services and expenses made necessary thereby.

12.3 AFTER SUBSTANTIAL COMPLETION

12.3.1 In addition to the Contractor's obligations under paragraph 3.5, if, within one year after the date of substantial completion of the work or designated portion thereof, or after the date for commencement of warranties established under subparagraph 9.7.4, or by terms of an applicable special warranty required by the contract documents, any of the work is found to be not in accordance with the requirements of the contract documents, the Contractor shall correct it promptly after receipt of written notice from the Owner Representative to do so unless the Owner Representative has previously given the Contractor a specific written acceptance of that specific condition. The Owner Representative shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming work within a reasonable time, the Owner Representative may correct it in accordance with paragraph 2.4.

12.3.1.1 This period of one year shall be extended with respect to portions of work first performed after substantial completion by the period of time between substantial completion and the actual performance of the work.

12.3.1.2 Upon completion of any repairs or replacement pursuant to this paragraph, the one year correction period in connection with the work requiring corrections shall be renewed and recommence.

12.3.1.3 If the Contractor does not proceed with correction of such nonconforming work within a reasonable time, the Owner Representative may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within 10 days after written notice, the Owner Representative may upon 10 additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Engineer's services and expenses made necessary thereby. The contract sum shall be reduced by any deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner Representative.

12.3.2 The Contractor shall remove from the site portions of the work which are not in accordance with the requirements of the contract documents and are neither corrected by the Contractor nor accepted by the Owner Representative.

12.3.3 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner Representative or separate Contractors caused by the Contractor's correction or removal of work which is not in accordance with the requirements of the contract documents.

12.3.4 Nothing contained in paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the contract documents. Establishment of the time period of one year as described in subparagraph 12.3 relates only to the specific obligation of the Contractor to correct the work, and has no relationship to the time within which the obligation to comply with the contract documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the work.

12.3.5 This obligation under this subparagraph 12.3 shall survive acceptance of the work under the contract and termination of the contract.

12.3.6 The obligations of paragraph 12.2 shall cover any repairs or replacement to any part of the work or other property caused by the defective work.

12.4 ACCEPTANCE OF NONCONFORMING WORK

12.4.1 If the Owner Representative prefers to accept work which is not in accordance with the requirements of the contract documents, the Owner Representative may do so instead of requiring its removal and correction, in which case the contract sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13

MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1.1 The contract shall be governed under the State of Alaska's Law.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner Representative and Contractor respectively bind themselves, their partners, successors, assign and legal representatives to the other party hereto and to partners, successors, assign and legal representatives of such other party in respect to covenants, agreements and obligations contained in the contract documents. Neither party to the contract shall assign the contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the contract.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual, or a member of the firm or entity, or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

13.4.1 Duties and obligations imposed by the contract documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2 No action or failure to act by the Owner Representative, Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.4.3 Owner Representative shall have until six years from the date damage to any improvement to real property constructed pursuant to this agreement is actually discovered by Owner Representative in which to bring any claim related to such damage against any person who may be liable to Owner Representative in whole or in part for such damage including, but not limited to, Contractor. Any shorter period in which to make such a claim imposed by AS 09.10.055 is expressly excluded from this agreement.

13.5 TESTS AND INSPECTIONS

13.5.1 Tests, inspections and approvals of portions of the work required by the contract documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such

tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner Representative, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so the Engineer may observe such procedures. The Owner Representative shall bear costs of tests, inspections, or approvals which do not become requirements until after bids are received or negotiations concluded, and not required because of a previously failed test or defect in the work.

13.5.2 If the Engineer, Owner Representative or public authorities having jurisdiction determine that portions of the work require additional testing, inspection, or approval not included under subparagraph 13.5.1, the Engineer shall, upon written authorization from the Owner Representative, instruct the Contractor to make arrangements for such additional testing, inspection, or approval by an entity acceptable to the Owner Representative, and the Contractor shall give timely notice to the Engineer of when and where tests and inspections are to be made so the Engineer may observe such procedures. The Owner Representative shall bear such costs except as provided in subparagraph 13.5.3.

13.5.3 If such procedures for testing, inspection, or approval under subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the work to comply with requirements established by the contract documents, the Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for the Engineer's services and expenses.

13.5.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the contract documents, be secured by the Contractor and promptly delivered to the Engineer.

13.5.5 If the Engineer is to observe tests, inspections, or approvals required by the contract documents, the Engineer shall do so promptly and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the contract documents shall be made promptly to avoid unreasonable delay in the work.

13.6 GENERAL PROVISIONS

13.6.1 Whenever possible, each provision of this agreement shall be interpreted in a manner so as to be effectively valid under applicable law. If, however, any provision of this agreement, or portion thereof, is prohibited by law or found invalid under any law, only such provision or portion thereof shall be ineffective, without in any manner invalidating or affecting the remaining provisions of this agreement or valid portions of such provision, which are hereby deemed severable.

13.6.2 Any specific requirement in this contract that the responsibility or obligations of the Contractor shall also apply to a subcontractor is added for emphasis and are also hereby deemed to include a subcontractor of any tier. The omission of a reference to a subcontractor of any tier in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate or limit any responsibilities or obligations of a subcontractor of any tier under the contract documents or the applicable subcontract.

ARTICLE 14

TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE OWNER REPRESENTATIVE FOR CAUSE

14.1.1 The Owner Representative may terminate the contract if the Contractor:

14.1.1.1 Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

14.1.1.2 Fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;

14.1.1.3 Disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;

14.1.1.4 Otherwise is guilty of substantial breach of a provision of the contract documents;

14.1.1.5 Breaches a warranty made by the Contractor under or pursuant to the contract documents; or

14.1.1.6 Fails after commencement of the work to proceed continuously with the construction and completion of the work for more than 10 days except as permitted under the contract documents.

14.1.2 When any of the above reasons exist, the Owner Representative may without prejudice to any other rights or remedies of the Owner Representative and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

14.1.2.1 Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

14.1.2.2 Accept assignment of subcontracts pursuant to paragraph 5.4; and

14.1.2.3 Finish the work by whatever reasonable method the Owner Representative may deem expedient.

14.1.3 When the Owner Representative terminates the contract for one of the reasons stated in subparagraph 14.1.1, the Contractor shall not be entitled to receive further payment until the work is finished.

14.1.4 If the unpaid balance of the contract sum exceeds costs of finishing the work, including compensation for the Engineer's services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference

to the Owner Representative. The amount to be paid to the Contractor or Owner Representative, as the case may be, shall be certified by the Engineer, upon application, and this obligation for payment shall survive termination of the contract.

14.2 SUSPENSION BY THE OWNER REPRESENTATIVE FOR CONVENIENCE

14.3.1 The Owner Representative may, without cause, order a Contractor in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the Owner Representative may determine.

14.3 TERMINATION BY THE OWNER REPRESENTATIVE FOR CONVENIENCE

14.3.1 The Owner Representative may, at any time, terminate the contract for the Owner Representative's convenience and without cause.

14.3.2 Upon receipt of written notice from the Owner Representative of such termination for the Owner Representative's convenience, the Contractor shall:

14.3.2.1 Cease operations as directed by the Owner Representative in the notice;

14.3.2.2 Take actions necessary, or that the Owner Representative may direct, for the protection and preservation of the work; and

14.3.2.3 Except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

In case of such termination for the Owner Representative's convenience, the Contractor shall be entitled to receive payment for work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

14.4 Effect of Termination

Upon termination by Owner Representative, the Contractor shall: (1) Stop work as directed by Owner Representative. Place no further orders or requests of subcontractors, if any, for goods or services; (2) Take actions necessary, or that Owner Representative may direct, for the protection and preservation of the goods or services; (3) Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the termination notice; (4) Deliver or otherwise make available to Owner Representative all data, reports, estimates, confidential information, summaries and such other information and materials, as may have been accumulated by the Contractor in performing the contract, whether completed or in process.

END OF GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

[i] Reference Project Name and number

Federal Debarment Certification Form

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98, Section 98.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211).

(BEFORE COMPLETING CERTIFICATION, READ THE INSTRUCTIONS ON THE FOLLOWING PAGE WHICH ARE AN INTEGRAL PART OF THE CERTIFICATION)

(1) The prospective recipient of Federal assistance funds certifies, by submission of this bid, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective recipient of Federal assistance funds is unable to certify to any of the Statements in this certification, such prospective participant shall attach an explanation to this Proposal.

_____

Name and Title of Authorized Representative

_____

Signature Date

Federal Debarment Certification Form Instructions

Instructions for Certification

1. By signing and submitting this Proposal, the prospective recipient of Federal assistance funds is providing the certification as set out below.

2. The certification in this class is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective recipient of Federal assistance funds knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department of Labor (DOL) may pursue available remedies, including suspension and/or debarment.

3. The prospective recipient of Federal assistance funds shall provide immediate written notice to the person to whom this Proposal is submitted if at any time the prospective recipient of Federal assistance funds learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "Proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this Proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective recipient of Federal assistance funds agrees by submitting this Proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the DOL.

6. The prospective recipient of Federal assistance funds further agrees by submitting this Proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may but is not required to check the List of Parties Excluded from Procurement or Non-procurement Programs.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the DOL may pursue available remedies, including suspension and/or debarment.

FAR 52.203-11
CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (SEPT 2007) (a) *Definitions.* As used in this provision—"Lobbying contact" has the meaning provided at 2

U.S.C. 1602(8). The terms "agency," "influencing or attempting to influence," "officer or employee of an agency," "person," "reasonable compensation," and "regularly employed" are defined in the FAR clause of this solicitation entitled "Limitation on Payments to Influence Certain Federal Transactions" (52.203-12).

(b) *Prohibition*. The prohibition and exceptions contained in the FAR clause of this solicitation entitled "Limitation on Payments to Influence Certain Federal Transactions" (52.203-12) are hereby incorporated by reference in this provision.

(c) *Certification*. The offeror, by signing its offer, hereby certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on its behalf in connection with the awarding of this contract.

(d) *Disclosure*. If any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the offeror with respect to this contract, the offeror shall complete and submit, with its offer, OMB Standard Form LLL, Disclosure of Lobbying Activities, to provide the name of the registrants. The offeror need not report regularly employed officers or employees of the offeror to whom payments of reasonable compensation were made.

(e) *Penalty*. Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by 31 U.S.C. 1352. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure required to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

CONSENT TO USE OF ELECTRONIC SIGNATURES

☐ BY CHECKING HERE, I AGREE TO THE USE OF ELECTRONIC SIGNATURES AS VALID, LEGALLY BINDING SUBSTITUTES FOR ORIGINAL, HANDWRITTEN SIGNATURES ON THIS DOCUMENT.

Company _____

Name (signature) _____

Name (printed) _____

Title _____ **Date of execution** _____

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	☐ a. bid/offer/application b. initial award c. post-award	☐ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:
☐ **Prime** ☐ **Subawardee** Tier _____, *if known*: **Congressional District**, *if known*: 4c	**Congressional District**, *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*:	**9. Award Amount,** *if known*: $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____
Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

PRINT

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employeeof a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizationallevel below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Village Safe Water Program

SUBCONTRACTOR LIST

Project Name and Number

The apparent low bidder shall complete this form and submit it so as to be received by the Procurement Officer prior to the close of business on the fifth working day after receipt of written notice from the Department of Environmental Conservation.

An apparent low bidder who fails to submit a completed Subcontractor List form within the time allowed will be declared nonresponsible and may be required to forfeit the bid security.

Scope of work must be clearly defined. If an item of work is to be performed by more than one firm, indicate the portion or percent of work to be done by each.

Check as applicable: [☐] All Work on the above-referenced project will be accomplished without subcontracts

Or

[☐] List all first tier Subcontractors as follows:

FIRM NAME, ADDRESS, PHONE NO.	AK BUSINESS LICENSE NO., CONTRACTOR'S REGISTRATION NO.	SCOPE OF WORK TO BE PERFORMED

CONTINUE SUBCONTRACTOR INFORMATION ON REVERSE

For projects with federal-aid funding, I hereby certify Alaska Business Licenses and Contractor Registrations will be valid for all subcontractors prior to award of the subcontract. For projects without federal-aid funding (State funding only), I hereby certify the listed Alaska Business Licenses and Contractor Registrations were valid at the time bids were opened for this project.

Signature of Authorized Company Representative | **Title**

Company Name | **Company Address (Street or PO Box, City, State, Zip)**

Date | **Phone Number**

FIRM NAME, ADDRESS, PHONE NO.	AK BUSINESS LICENSE NO., CONTRACTOR'S REGISTRATION NO.	SCOPE OF WORK TO BE PERFORMED