

CITY & BOROUGH OF WRANGELL WOOD STREET IMPROVEMENTS



PROJECT MANUAL Contract Documents and Specifications

Prepared by:



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FOR BID
APRIL 2016

WOOD STREET IMPROVEMENTS
WRANGELL, ALASKA

The engineering material and data contained in these Contract Documents were prepared under the supervision and direction of the undersigned, whose seals as professional engineers are affixed below.



25 March 2016

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PND Engineers, Inc.



28 MARCH 2016

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DIVISION 0

**BIDDING AND CONTACT REQUIREMENTS, CONTRACT
FORMS, AND CONDITIONS OF THE CONTRACT**

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SECTION 00030 - NOTICE INVITING BIDS

OBTAINING CONTRACT DOCUMENTS. The Contract Documents are entitled:

WOOD STREET IMPROVEMENTS

Notice is hereby given that the City and Borough of Wrangell, Alaska will receive sealed bids for the construction of **Wood Street Improvements**.

The Contract Documents may be downloaded free of charge on the City & Borough of Wrangell website (www.wrangell.com) under the Bids and RFPs section. Downloading Contract Documents from the City & Borough of Wrangell's website requires registration with the Borough Clerk in order to be placed on the Plan Holders List and to ensure receipt of subsequent Addenda. Failure to register may adversely affect your proposal. It is the Offeror's responsibility to ensure that they have received all Addenda affecting this Solicitation. To be registered, contact the Borough Clerk at 907-874-2381; Borough Clerks Office, 205 Brueger Street, Wrangell, Alaska 99929; or at clerk@wrangell.com.

DESCRIPTION OF WORK. WORK consists of all activities necessary to construct the Wood Street improvements as shown in the contract documents. The WORK generally includes mobilization, construction surveying, paving the roadway, sidewalks, storm runoff conveyance, fish stream culvert and realignment, replacement of two water mains, sanitary sewer system, underground electricity, and other improvements. The Engineer's Estimate for all work is approximately \$700,000-\$1,100,000.

SITE OF WORK. The WORK is located at the intersection of Zimovia Highway and Wood Street in Wrangell, Alaska.

COMPLETION OF WORK. The OWNER will open the work site to the CONTRACTOR immediately following the Notice to Proceed. Substantial completion must be reached by September 15th, 2016.

BIDDING, CONTRACT, or TECHNICAL QUESTIONS. All communications relative to this WORK, prior to opening Bids, shall be directed to the following:

Amber Al-Haddad
Public Works Director
Telephone: (907) 874-3904
Email: aal-haddad@wrangell.com

BID SECURITY. Each bid shall be accompanied by a bid bond, cashier's check or certified check made payable to the City and Borough of Wrangell in the amount of five percent of the total bid price. This serves as a guarantee that the Bidder, if its Bid is accepted, will promptly execute the Agreement. A Bid shall not be considered unless one of the forms of Bidder's security is enclosed with it.

RECEIPT OF BIDS. Sealed bids will be received by the City and Borough of Wrangell, Post Office Box 531, Wrangell, Alaska 99929, located at the Borough Clerk's Office, 205 Brueger Street, Wrangell, Alaska 99929, until 2:00 PM prevailing time on April 21, 2016. Opening date and time may be changed to a later date or time via Addendum. Clearly mark on the outside of the envelope "**Request for Bids, Wood Street Improvements, Opening Date April 28, 2016**". Proposals may not be withdrawn for 60 Days following date of opening.

OPENING OF BIDS. The Bids will be publicly opened and read on April 28, 2016 at 2:00 PM Prevailing Time in the Borough Assembly Chambers of the City and Borough of Wrangell, Alaska.

SECTION 00030 - NOTICE INVITING BIDS

SUBCONTRACTORS. The apparent low Bidder is required to complete and submit the following documentation within 5 (five) calendar days following the posting of bids by the City and Borough of Wrangell:

- Section 00360 - Subcontractor Report.

CONTRACTOR'S LICENSE. All contractors are required to have a current Alaska Contractor's License, prior to submitting a Bid, and a current Alaska Business License prior to award of the bid.

BID TO REMAIN OPEN. The Bidder shall guarantee the Bid for a period of 60 Days from the date of Bid opening. Any component of the Bid including additive alternates may be awarded anytime during the 60 Days.

OWNER'S RIGHTS RESERVED. The OWNER reserves the right to reject any or all Bids, to waive any informality in a Bid, and to make award to the lowest responsive, responsible Bidder as it may best serve the interests of the OWNER.

OWNER: The City and Borough of Wrangell

By: _____
Jeff Jabusch, City and Borough Manager

Date

END OF SECTION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1.0 DEFINED TERMS. Terms used in these “Instructions to Bidders” and the “Notice Inviting Bids” which are defined in the General Conditions have the meanings assigned to them in the General Conditions. The term “Bidder” means one who submits a Bid directly to the OWNER, as distinct from a sub-bidder, who submits a Bid to a Bidder.

2.0 INTERPRETATIONS AND ADDENDA.

A. **INTERPRETATIONS.** All questions about the meaning or intent of the Contract Documents are to be directed to the ENGINEER. Interpretations or clarifications considered necessary by the ENGINEER in response to such questions will be issued by Addendum, and emailed to all parties recorded by the OWNER as having received the Contract Documents. Questions received less than 7 Days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect.

B. **ADDENDA.** Addenda may be issued to modify the Contract Documents as deemed advisable by the OWNER. The OWNER may issue addenda by fax, with a follow-up addendum copy issued by regular mail. Addenda may be emailed less than 7 Days prior to the anticipated Bid opening. The OWNER will make reasonable attempts to provide addenda, however, it is strongly recommended by the OWNER that Bidders independently confirm the contents, number, and dates of each Addenda prior to submitting a Bid. All Bidders who submit a bid shall be deemed to have received and reviewed all addenda.

3.0 FAIR COMPETITION. More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the OWNER believes that any Bidder is interested in more than one Bid for the WORK contemplated, all Bids in which such Bidder is interested will be rejected. If the OWNER believes that collusion exists among the Bidders, all Bids will be rejected.

4.0 RESPONSIBLE BIDDER. Only responsive Bids from responsible Bidders will be considered. A Bid submitted by a Bidder determined to be not responsible may be rejected. A responsible Bidder is one who is considered to be capable of performing the WORK.

A. The general standards for responsibility are to determine the CONTRACTOR’s ability to perform WORK adequately, considering the CONTRACTOR’s

1. Financial Resources
2. Ability to Meet Delivery Standards
3. Past Performance Record
 - a. References from others on CONTRACTOR’s performance
 - b. Record of performance on prior OWNER contracts
4. Record of Integrity
5. Obligations to OWNER
 - a. Bidders must be registered as required by law and in good standing for all amounts owed to the OWNER within 5 Days of OWNER’s Notice of Intent to Award.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- B. Special standards for responsibility, if applicable, will be specified. These special standards establish minimum standards or experience required for a responsible Bidder on a specific contract.
- C. Before a Bid is considered for award, a Bidder may be requested to submit information documenting its ability and competency to perform the WORK, according to general standards of responsibility and any special standards which may apply. It is Bidder's responsibility to submit sufficient, relevant, and adequate information. OWNER will make its determination of responsibility and has no obligation to request clarification or supplementary information.

5.0 RESPONSIVE BIDS. Only responsive Bids will be considered. Bids may be considered non-responsive and may be rejected. Some of the reasons a Bid may be rejected for being non-responsive are:

- A. If the Bid is on a form other than that furnished by the OWNER, or legible copies thereof; or if the form is altered or any part thereof is detached; or if the Bid is improperly signed.
- B. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
- C. If the Bidder adds any unauthorized conditions, limitations, or provisions reserving the right to accept or reject any award, or to enter into a contract pursuant to an award. This does not exclude a Bid limiting the maximum gross amount of awards acceptable to any one Bidder at any one bid opening, provided that any selection of awards will be made by the OWNER.
- D. If the Bid does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.
- E. If the Bidder has not acknowledged receipt of each Addendum.
- F. If the Bidder fails to furnish an acceptable Bid Guaranty with the Bid.
- G. If any of the unit prices bid are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the OWNER.
- H. If a bid modification does not conform to Article 15.0 of this Section.

6.0 BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND SITE. It is the responsibility of each Bidder before submitting a Bid:

- A. To examine thoroughly the Contract Documents, and other related data identified in the bidding documents (including "technical data" referred to below):
 - 1. To visit the site to become familiar with and to satisfy the Bidder as to the general and local conditions that may affect cost, progress, or performance of the WORK;
 - 2. To consider federal, state and local laws and regulations that may affect cost, progress, or performance of the WORK;

SECTION 00100 - INSTRUCTIONS TO BIDDERS

3. To study and carefully correlate the Bidder's observations with the Contract Documents, and other related data; and
4. To notify the ENGINEER of all conflicts, errors, or discrepancies in or between the Contract Documents and such other related data.

7.0 REFERENCE IS MADE TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR IDENTIFICATION OF:

- A. Those reports of explorations and tests of subsurface conditions at the site which have been utilized by the Engineer of Record in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such reports, however, the interpretation of such technical data is the responsibility of the Bidder.
- B. Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except underground utilities) which are at, or contiguous to, the site have been utilized by the Engineer of Record in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such drawings, however, the interpretation of such technical data is the responsibility of the Bidder.
- C. Copies of such reports and drawings will be made available by the OWNER to any Bidder on request if said reports and drawings are not bound herein. Those reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which the Bidder is entitled to rely, as provided in Paragraph SGC-4.2 of the Supplementary General Conditions, are incorporated herein by reference.
- D. Information and data reflected in the Contract Documents with respect to underground utilities at or contiguous to the site is based upon information and data furnished to the OWNER and the Engineer of Record by the owners of such underground utilities or others, and the OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary General Conditions, or in Section 01530 - Protection and Restoration of Existing Facilities.
- E. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground utilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2, 4.3, and 4.4 of the General Conditions.
- F. Before submitting a Bid, each Bidder will, at its own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and underground utilities) at, or contiguous to, the site or otherwise which may affect cost, progress, or performance of the WORK and which the Bidder deems necessary to determine its Bid for performing the WORK in accordance with the time, price, and other terms and conditions of the Contract Documents.
- G. On request in advance, the OWNER will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and shall clean up and restore the site to its former condition upon completion of such explorations.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- H. The lands upon which the WORK is to be performed, rights-of-way and easements for access thereto and the lands designated for use by the CONTRACTOR in performing the WORK are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the OWNER unless otherwise provided in the Contract Documents.
- I. The submission of a Bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of Article 6, "Bidder's Examination of Contract Documents and Site" herein, that without exception the Bid is premised upon performing the WORK required by the Contract Documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the WORK.

8.0 BID FORM.

- A. The Bid shall be made on the Bid Schedule(s) bound herein, or on the yellow bid packet provided, or on legible and complete copies thereof, and shall contain the following: Sections 00300 - Bid, 00310 – Bid Schedule, and the required Bid Security. In the event there is more than one Bid Schedule, the Bidder may bid on any individual schedule or on any combination of schedules. The envelope enclosing the sealed Bids shall be plainly marked in the upper left-hand corner with the name and address of the Bidder and shall bear the words "BID FOR," followed by the title of the Contract Documents for the WORK, the name of the OWNER, the address where Bids are to be delivered or mailed to, and the date and hour of opening of Bids. The Bid Security shall be enclosed in the same envelope with the Bid.
- B. All blanks on the Bid Form and Bid Schedule(s) must be completed in ink or typed.
- C. Bids by corporations shall be executed in the corporate name by the president, a vice-president (or other corporate officer). The corporate address and state of incorporation must appear below the signature.
- D. Bids by partnerships must be executed in the partnership name and be signed by a managing partner, and the official address of the partnership must appear below the signature.
- E. The Bidder's Bid shall be signed with ink. All names must be printed or typed below the signature.
- F. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form. Failure to acknowledge Addenda shall render Bid non-responsive and shall cause its rejection.
- G. The address to which communications regarding the Bid are to be directed must be shown.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- H. All Bidders shall provide evidence of authority to conduct business in Alaska to the extent required by law.
- I. On Projects including Federal funding any contractor otherwise qualified to perform the WORK, is not required to be licensed nor to submit application for license in advance of submitting a Bid or having such Bid considered; provided, however, that such exemption does not constitute a waiver of the OWNER's right under existing license laws to require a contractor, determined to be a successful Bidder, to be licensed to do business as a contractor in the State of Alaska in connection with the award of a contract to the successful Bidder.
- J. A Bid for the WORK will not be accepted from a contractor who does not hold a valid Alaska Business License and a valid Contractor's License in Alaska (applicable to the type of work bid upon) at the time of opening Bids.

9.0 BID ALTERNATES. The project contains two alternates. Bidders shall provide prices for both Paving Alternate A and Additive Alternate B in addition to the Base Bid. Bids that fail to provide prices for both Alternates shall be considered unresponsive.

- A. Paving Alternate A. Paving Alternate A consists of replacing the asphalt paving surface with concrete surface according to Drawing C6.01. Materials and construction methods for Paving Alternate A is included in Divisions 3 of these contract documents. The alternate scope of work is outlined in the Drawings and the bid schedule. The bid schedule provides credit line items for embankment and asphalt paving that are not required if concrete paving is selected. Additional cost or savings for mobilization of concrete plant and equipment relative to asphalt plant and equipment is included as well. The total price for Paving Alternate A may therefore be positive or negative to reflect additional cost or savings relative to the asphalt surfacing in the Base Bid. The decision to take Paving Alternate A will be made at bid award by the OWNER. Paving Alternate A will be selected if the lowest responsible Bid reflects a lower price for Paving Alternate A than the asphalt surfacing in the Base Bid.
- B. Additive Alternate B. Additive Alternate B is the addition of sidewalks, curbs and gutters, storm drains, and sewer in the eastern half of the project as defined in the Drawings. Additive Alternate B includes sidewalks between Station 1+40 and Station 4+41, curbs and gutters between Station 2+34 and Station 4+41, storm drains between Station 2+34 and the end of the project, and the sanitary sewer stub. The bid schedule includes an item for separate mobilization for Additive Alternate B which shall include all mobilization costs (if any) per Section 01505 that are unique to Additive Alternate B and would not be included if Additive Alternate B is not awarded. The decision to take Additive Alternate B will be made at bid award by the OWNER.

10.0 QUANTITIES OF WORK. The quantities of WORK, or material, stated in unit price items of the Bid are supplied only to give an indication of the general scope of the WORK; the OWNER does not expressly or by implication agree that the actual amount of WORK, or material, will correspond therewith, and reserves the right after award to increase or decrease the amount of any unit price item of the WORK by an amount up to and including 25 percent of any Bid item, without a change in the unit price, and shall include the right to delete any Bid item in its entirety, or to add additional Bid items up to and including an aggregate total amount not to exceed 25 percent of the Contract Price (see General Conditions, Article 10 Changes In the Work).

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- 11.0 SUBSTITUTE OR “OR-EQUAL” ITEMS.** The procedure for the submittal of substitute or “or-equal” products is specified in Section 01300 - Contractor Submittals.
- 12.0 SUBMISSION OF BIDS.** The Bid shall be delivered by the time and to the place stipulated in the Notice Inviting Bids. It is the Bidder’s sole responsibility to see that its Bid is received in proper time. Oral, telegraphic, telephonic or faxed Bids will not be considered.
- 13.0 BID SECURITY, BONDS, AND INSURANCE.** Each Bid shall be accompanied by a certified, or cashier’s check, or approved Bid Bond in an amount of at least 5 percent of the total Bid price. The “total Bid price” is the amount of the base bid, plus the amount of alternate bids, if any, which total to the maximum amount for which the contract could be awarded. Said check or Bond shall be made payable to the OWNER and shall be given as a guarantee that the Bidder, if offered the WORK, will enter into an Agreement with the OWNER, and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond; each of said Bonds, if required, and insurance amounts shall be as stated in the Supplementary General Conditions. In case of refusal or failure to enter into said Agreement, the check or Bid Bond, as the case may be, shall be forfeited to the OWNER. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form. Bid Bonds must be accompanied by a legible power of attorney.
- 14.0 RETURN OF BID SECURITY.** Within 14 Days after award of the contract, the OWNER will return the Bid securities accompanying such of the Bids as are not considered in making the award. All other Bid securities will be held until the Agreement has been executed. They will then be returned to the respective Bidders whose Bids they accompanied.
- 15.0 DISCREPANCIES IN BIDS.** In the event there is more than one pay item in a Bid Schedule, the Bidder shall furnish a price for all pay items in the schedule, and failure to do so may render the Bid non-responsive and cause its rejection. In the event there are unit price pay items in a Bid Schedule and the “amount” indicated for a unit price pay item does not equal the product of the unit price and quantity, the unit price shall govern and the amount will be corrected accordingly, and the Bidder shall be bound by said correction. In the event there is more than one pay item in the Bid Schedule and the total indicated for the schedule does not agree with the sum of the prices bid on the individual items, the prices bid on the individual items shall govern and the total for the schedule will be corrected accordingly, and the Bidder shall be bound by the correction.
- 16.0 BID MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS.**
- A. Any Bidder may modify a Bid by mail, email (clerk@wrangell.com), or fax (**Fax: 907-874-3952**) provided that such modification is received by the OWNER prior to the time set for opening of Bids. Bid Modifications can be made as a lump sum adjustment or line by line adjustment on a copy of the project bid schedule. Bidders are strongly advised to telephone the City & Borough of Wrangell (**Telephone: 907-874-2381**) to confirm the successful and timely transmission of all email and fax Bid modifications.

An email or fax modification should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices will not be known by the OWNER until the sealed Bid is opened. Modifications shall include both the modification of the unit bid price and the total modification of each item modified. The OWNER shall not be responsible for its failure to receive fax modifications whether such failure is caused by transmission line problems, fax device problems, operator error or otherwise.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- B. Unauthorized conditions, limitations, or provisions attached to the Bid will render it informal and cause its rejection as being non-responsive. The completed bid forms shall be without interlineation, alterations, or erasures in the printed text. All changes shall be initialed by the person signing the Bid. Alternative bids will not be considered unless called for.

17.0 WITHDRAWAL OF BID. The Bid may be withdrawn by the Bidder by means of a written request, signed by the Bidder or its properly authorized representative. Such written request must be delivered to the place stipulated in the Notice Inviting Bids for receipt of Bids prior to the scheduled closing time for receipt of Bids.

18.0 AWARD OF CONTRACT.

- A. Award of a contract, if it is awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Technical Specifications and will be made to the lowest responsive, responsible Bidder whose Bid complies with all the requirements prescribed. Unless otherwise specified, any such award will be made within the period stated in the Notice Inviting Bids that the Bids are to remain open. Unless otherwise indicated, a single award will be made for all the pay items in an individual Bid Schedule.
- B. If the OWNER has elected to advertise this Project with a base bid and additive or deductive alternates, the OWNER may elect to award the contract for the base bid, or the base bid plus one or more alternates selected by the OWNER. In either case, award shall be made to the responsive, responsible Bidder offering the lowest total bid for the WORK to be awarded.
- C. Low Bidder will be determined on the basis of the lowest total of the base bid plus combinations of additive alternatives as deemed in the best interest of the OWNER.

19.0 EXECUTION OF AGREEMENT.

- A. All Bids must be approved by the Wrangell Borough Assembly. After the Assembly has approved the award, the OWNER will issue a Notice of Intent to Award to the approved Bidder within 14 days of the Bid Opening. The Bidder to whom award is made shall execute a written Agreement with the OWNER on the Agreement form, Section 00500, and shall secure all insurance and furnish all certificates and bonds required by the Contract Documents within 10 Days from the date stated in the Notice of Intent to Award letter.
- B. Failure or refusal to enter into the Agreement as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the OWNER may award the contract to the third lowest responsive, responsible Bidder. On the failure or refusal of such second or third lowest Bidder to execute the Agreement, each such Bidder's Bid securities shall be likewise forfeited to the OWNER.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- 20.0 LIQUIDATED DAMAGES.** Provisions for liquidated damages are set forth in Section 00500 - Agreement.
- 21.0 PERMITS.** The CONTRACTOR is responsible for all WORK associated with meeting any local, state, and/or federal permit requirements.

END OF SECTION

SECTION 00300 - BID

BID TO: CITY & BOROUGH OF WRANGELL

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the OWNER on the form included in the Contract Documents (as defined in Article 7 of Section 00500 - Agreement) to perform the WORK as specified or indicated in said Contract Documents entitled:

**WOOD STREET
IMPROVEMENTS**

2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the "Notice Inviting Bids" and "Instructions to Bidders," dealing with the disposition of the Bid Security.
3. This Bid will remain open for the period stated in the "Notice Inviting Bids" unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders," and will furnish insurance certificates, Payment Bond, Performance Bond, and any other documents as may be required by the Contract Documents.
4. Bidder has familiarized itself with the nature and extent of the Contract Documents, WORK, site, locality where the WORK is to be performed, the legal requirements (federal, state and local laws, ordinances, rules, and regulations), and the conditions affecting cost, progress or performance of the WORK and has made such independent investigations as Bidder deems necessary.
5. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.
6. To all the foregoing, and including all Bid Schedule and information required of Bidder contained in this Bid Form, said Bidder further agrees to complete the WORK required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefor the Contract Price based on the total bid price(s) named in the aforementioned Bid Schedule.
7. Bidder has examined copies of all the Contract Documents including the following Addenda (receipt of all of which is hereby acknowledged by the Undersigned):

Addenda No.	Date Issued	Addenda No.	Date Issued

Give number and date of each Addendum above. Failure to acknowledge receipt of all Addenda will cause the Bid to be non-responsive and shall cause its rejection.

SECTION 00300 - BID

8. The Bidder has read this Bid and agrees to the conditions as stated herein by signing its signature in the space provided below.

Dated:	_____	Bidder:	_____
			(Company Name)
Contractor's License No.:	_____	By:	_____
			(Signature in Ink)
Telephone No.:	_____	Printed Name:	_____
		Title:	_____
Facsimile No.:	_____	Address:	_____
			(Street or P.O. Box)

			(City, State, Zip)

9. TO BE CONSIDERED, ALL BIDDERS MUST COMPLETE AND INCLUDE THE FOLLOWING AT THE TIME OF THE BID OPENING:

- Signed Bid, Section 00300 (includes Addenda receipt statement)
- Completed Bid Schedule, Section 00310
- Bid Security (Bid Bond, Section 00320, or by a certified or cashier's check as stipulated in the Notice Inviting Bids, Section 00030)

10. Unless otherwise notified by the Borough Manager, the apparent low Bidder is required to complete and submit the following documents:

- Subcontractor Report, Section 00360

The apparent low Bidder who fails to submit a completed Subcontractor Report within the time specified in Section 00360 – Subcontractor Report will be found to be not a responsible Bidder and may be required to forfeit the Bid security. The OWNER will then consider the next lowest Bidder for award of the contract.

11. The successful Bidder will be required to submit, within ten Days after the date stated in the “Notice of Intent to Award” letter, the following executed documents:

- Alaska Business License
- Agreement Forms, Section 00500
- Performance Bond, Section 00610
- Payment Bond, Section 00620
- Certificates of Contractor Insurance Section 00700 and Section 00800

12. The successful Bidder will be required to submit, within ten Days after the date stated in the “Notice to Proceed” the following executed documents:

- Certificates of Subcontractor Insurance Section 00700 and Section 00800
- One executed copy of each subcontract for WORK that exceeds one half of one percent of the intended contract award amount.

END OF SECTION

SECTION 00310 - BID SCHEDULE

WOOD STREET IMPROVEMENTS BASE BID

Pay Item No.	Pay Item Description	Pay Unit	Approx. Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
01505.1	Mobilization	LS	All Req'd				
01550.1	Traffic Control	LS	All Req'd				
01570.1	Temporary Erosion and Sediment Control	LS	All Req'd				
02202.1	Clearing and Grubbing	ACRE	0.5				
02202.2	Unsuitable Excavation Including Haul	CY	5,000				
02202.3	Place Embankment	CY	5,000				
02204.1	Base Course	CY	900				
02220.1	Demolition	LS	All Req'd				
02501.2	18" Storm Drain Pipe	LF	35				
02501.3	24" Storm Drain Pipe	LF	149				
02501.4	36" Storm Drain Pipe	LF	135				
02502.1	Fish Stream Culvert and Realignment	LS	All Req'd				
02601.1	Water Main	LF	900				
02601.2	PRV Vault Relocation	LS	All Req'd				
02702.1	Construction Surveys	LS	All Req'd				
02743.1	Asphalt Concrete Pavement	SY	1150				
02801.1	Seeding	ACRE	0.25				
02910.1	Signage and Striping	LS	All Req'd				
03301.1	Concrete Sidewalk	SY	150				
16000.1	Electrical	LS	All Req'd				

PAVING ALTERNATE 'A' – CONCRETE PAVING

Pay Item No.	Pay Item Description	Pay Unit	Approx. Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
01505.1 A	Mobilization (cost or credit relative to asphalt mobilization included in Item 01505.1 above)	LS	All Req'd				
02202.3 A	Place Embankment (credit to reflect thicker concrete surfacing)	CY	-100				
02743.1 A	Asphalt Concrete Pavement (credit for removal of asphalt surfacing)	SY	-1150				
03301.1 A	Cement Concrete Pavement	SY	1150				

SECTION 00310 - BID SCHEDULE

ADDITIVE ALTERNATE 'B' – STA 1+40 TO STA 4+41 SIDEWALK, CURBS, STORM DRAIN, SEWER

Pay Item No.	Pay Item Description	Pay Unit	Approx. Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
01505.1B	Additional Mobilization	LS	All Req'd				
02501.1B	12" Storm Drain Pipe	LF	35				
02501.3B	24" Storm Drain Pipe	LF	149				
03301.2B	Concrete Sidewalk	SY	150				
02204.1B	Base Course (Credit for curb quantity)	CY	-40				
02401.1B	Gravity Sanitary Sewer	LF	80				

SECTION 00310 - BID SCHEDULE

TOTAL WOOD STREET IMPROVEMENTS BASE BID AMOUNT IN FIGURES: \$ _____

TOTAL WOOD STREET IMPROVEMENTS BASE BID AMOUNT IN WORDS:

TOTAL WOOD STREET IMPROVEMENTS PAVING ALTERNATE A AMOUNT IN FIGURES:

\$ _____

TOTAL WOOD STREET IMPROVEMENTS PAVING ALTERNATE A AMOUNT IN WORDS:

TOTAL WOOD STREET IMPROVEMENTS ADDITIVE ALTERNATE B AMOUNT IN FIGURES:

\$ _____

TOTAL WOOD STREET IMPROVEMENTS ADDITIVE ALTERNATE B AMOUNT IN WORDS:

COMPANY NAME: _____

END OF SECTION

SECTION 00320 - BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that _____

_____ as Principal, and _____

as Surety, are held and firmly bound unto the **CITY & BOROUGH OF WRANGELL** hereinafter called "OWNER," in the sum of _____ dollars, (not less than five percent of the total amount of the Bid) for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the Bid Schedule of the OWNER's Contract Documents entitled

**WOOD STREET
IMPROVEMENTS**

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders" enters into a written Agreement on the form of Agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this _____ day of _____, 20____

(SEAL) _____
(Principal)

(SEAL) _____
(Surety)

By: _____
(Signature)

By: _____
(Signature)

END OF SECTION

SECTION 00360 - SUBCONTRACTOR REPORT

LIST OF SUBCONTRACTORS

The apparent low Bidder must submit a list of Subcontractors that the Bidder proposes to use in the performance of this contract by close of business on the fifth calendar day following the posting of the Notice of Intent of Award. If the fifth calendar day falls on a weekend or holiday, the report is due by close of business on the next business day following the weekend or holiday. The list must include each Subcontractor's name, address, location, evidence of valid Alaska Business License, and valid Alaska Contractor's Registration under AS 08.18. *If no Subcontractors are to be utilized in the performance of the WORK, write in ink or type "NONE" on line (1) below.*

<u>SUBCONTRACTOR</u>	¹ AK Contractor License No.	¹ Contact Name	<u>Type of</u>	<u>Contract</u>	✓ if
<u>ADDRESS</u>	² AK Business License No.	² Phone No.	<u>Work</u>	<u>Amount</u>	<u>DBE</u>
1. _____ _____ _____	1 _____ 2 _____	_____ _____	_____ _____	\$ _____	<input type="checkbox"/>
2. _____ _____ _____	1 _____ 2 _____	_____ _____	_____ _____	\$ _____	<input type="checkbox"/>
3. _____ _____ _____	1 _____ 2 _____	_____ _____	_____ _____	\$ _____	<input type="checkbox"/>
4. _____ _____ _____	1 _____ 2 _____	_____ _____	_____ _____	\$ _____	<input type="checkbox"/>

I certify that the above listed Alaska Business License(s) and CONTRACTOR Registration(s), if applicable, were valid at the time Bids were opened for this Project.

CONTRACTOR, Authorized Signature

CONTRACTOR, Printed Name

SECTION 00360 - SUBCONTRACTOR REPORT

- A. A Bidder may replace a listed Subcontractor if the Subcontractor:
1. fails to comply with AS 08.18;
 2. files for bankruptcy or becomes insolvent;
 3. fails to execute a contract with the Bidder involving performance of the WORK for which the Subcontractor was listed and the Bidder acted in good faith;
 4. fails to obtain bonding;
 5. fails to obtain insurance acceptable to the OWNER;
 6. fails to perform the contract with the Bidder involving work for which the Subcontractor was listed;
 7. must be substituted in order for the CONTRACTOR to satisfy required state and federal affirmative action requirements;
 8. refuses to agree or abide with the Bidder's labor agreement; or
 9. is determined by the OWNER not to be a responsible Bidder.
- B. If a Bidder fails to list a Subcontractor or lists more than one Subcontractor for the same portion of WORK, the Bidder shall be considered to have agreed to perform that portion of WORK without the use of a Subcontractor and to have represented the Bidder to be qualified to perform that WORK.
- C. A Bidder who attempts to circumvent the requirements of this section by listing as a Subcontractor another contractor who, in turn, sublets the majority of the WORK required under the contract violates this section.
- D. If a contract is awarded to a Bidder who violates this section, the OWNER may:
1. cancel the contract; or
 2. after notice and a hearing, assess a penalty on the Bidder in an amount that does not exceed 10 percent of the value of the subcontract at issue.
- E. For contract award, the apparent low Bidder must submit one copy of each subcontract, to the Borough Manager, for WORK with a value of greater than one half of one percent of the intended award amount.
- F. An apparent low Bidder who fails to submit a completed Subcontractor Report within the time specified in this section will be found to be not a responsible Bidder and may be required to forfeit the Bid security. The OWNER will then consider the next lowest Bidder for award of the contract.

END OF SECTION

SECTION 00500 - AGREEMENT

THIS AGREEMENT is between THE CITY & BOROUGH OF WRANGELL (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR) OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

- A. CONTRACTOR shall complete the WORK as specified or as indicated under the Bid Schedule of the OWNER's Contract Documents entitled **WOOD STREET IMPROVEMENTS**. The WORK is generally described as follows: This project consists of providing various quantities of mobilization, construction surveying, paving the roadway, sidewalks, storm runoff conveyance, drainage culvert, fish stream culvert and realignment, replacement of two water mains, sanitary sewer system, underground electricity, and other improvements.
- B. The project contains two alternates:
1. Paving Alternate A. Paving Alternate A is replacing the asphalt paving with concrete paving. The alternate scopes of work are outlined in the Drawings, Section 00100 Instructions to Bidders, and the bid schedule. Materials and construction methods for Paving Alternates A are included in Divisions 2 and 3 of these contract documents. The decision to take Alternate A will be made at bid award by the OWNER.
 2. Additive Alternate B. Additive Alternate B is the addition of sidewalks, curbs and gutters, storm drains, and sewer in the eastern half of the project as defined in the Drawings and in Section 00100 Instructions to Bidders. The decision to take Additive Alternate B will be made at bid award by the OWNER.

ARTICLE 2. CONTRACT COMPLETION TIME.

Substantial completion by September 15th, 2016.

ARTICLE 3. DATE OF AGREEMENT

The date of this Agreement will be the later of the date of the Borough Manager signature on page three of this section and the signature of the CONTRACTOR authorized representative.

ARTICLE 4. LIQUIDATED DAMAGES.

OWNER and the CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the WORK is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual damages suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the CONTRACTOR shall pay the OWNER \$1,500.00 for each Calendar Day that expires after the substantial completion time specified in Article 2 above. The amount of liquidated damages specified above is agreed to be a reasonable estimate based on all facts known as of the date of this Agreement.

ARTICLE 5. CONTRACT PRICE.

SECTION 00500 - AGREEMENT

OWNER shall pay CONTRACTOR for completion of the WORK in accordance with the Contract Documents in the amount set forth in the Bid Schedule. The CONTRACTOR agrees to accept as full and complete payment for all WORK to be done in this contract for: **WOOD STREET IMPROVEMENTS** those Unit Price amounts as set forth in the Bid Schedule in the Contract Documents for this Project.

The total amount of this contract shall be _____, except as adjusted in accordance with the provisions of the Contract Documents.

ARTICLE 6. PAYMENT PROCEDURES.

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the ENGINEER as provided in the General Conditions.

Progress payments will be paid in full in accordance with Article 14 of the General Conditions until ninety (90) percent of the Contract Price has been paid. The remaining ten (10) percent of the Contract Price may be retained, in accordance with applicable Alaska State Statutes, until final inspection, completion, and acceptance of the Project by the OWNER.

ARTICLE 7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the WORK consist of this Agreement (pages 00500-1 to 00500-6, inclusive) and the following sections of the Contract Documents:

- Table of Contents
- Notice Inviting Bids
- Instructions to Bidders
- Bid
- Bid Schedule
- Bid Bond
- Subcontractor Report
- Performance Bond
- Payment Bond
- Insurance Certificate(s)
- General Conditions
- Supplementary General Conditions
- Alaska Labor Standards, Reporting, and Prevailing Wage Determination
- Permits
- Technical Specifications as listed in the Table of Contents
- PND Drawings consisting of 28 sheets, as listed in the Table of Contents
- Haight and Associates Drawings consisting of 3 sheets, as listed in the Table of Contents
- Addenda numbers to , inclusive.
- Change Orders which may be delivered or issued after the Date of the Agreement and which are not attached hereto

There are no Contract Documents other than those listed in this Article 7. The Contract Documents may only be amended by Change Order as provided in Paragraph 3.3 of the General Conditions.

ARTICLE 8. MISCELLANEOUS.

SECTION 00500 - AGREEMENT

Terms used in this Agreement, which are defined in Article 1 of the General Conditions, will have the meanings indicated in the General Conditions.

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such written consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents. CONTRACTOR understands and agrees that the Borough will not accept any assignment of this Contract to an LLC unless all the members of the LLC sign as guarantors of performance of this Contract.

OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents. This Agreement shall be governed by the laws of the State of Alaska. The Superior Court for the State of Alaska, First Judicial District at Wrangell, Alaska, shall be the exclusive jurisdiction and venue for any action of any kind an any nature arising out of or relating to this Agreement and all Contract documents or for any action of any kind and any nature arising out of or related to the performance of non-performance of the CONTRACTOR, and CONTRACTOR'S employees, subcontractors, consultants and representatives.

The CONTRACTOR acknowledges that the CONTRACTOR has read and understands the terms of this Agreement and the terms and conditions of all the Contract documents listed in this Agreement and has had the opportunity to review the Agreement with counsel of his/her choice, and is executing this Agreement of his/her own free will. CONTRACTOR acknowledges and agrees that CONTRACTOR is not relying on any representations by any Borough employee, the Mayor, an assembly member, the borough attorney, the borough manager or any consultant of the Borough in deciding to enter this Agreement and perform this project.

SECTION 00500 - AGREEMENT

IN WITNESS WHEREOF, OWNER and CONTRACTOR have caused this Agreement to be executed on the date listed below by OWNER.

OWNER:

CONTRACTOR:

City & Borough of Wrangell

(Company Name)

(Signature)

(Signature)

By: Jeff Jabusch, Borough Manager
(Printed Name)

By: _____
(Printed Name, Authority or Title)

Date: _____

Date: _____

OWNER's address for giving notices:

CONTRACTOR's address for giving notices:

P.O. Box 531

Wrangell, Alaska 99929

907-874-2381 907-874-3952
(Telephone) (Fax)

(Telephone) (Fax)

(E-mail address)

Contractor License No. _____

CERTIFICATE

SECTION 00500 - AGREEMENT

(if Corporation)

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Board of Directors of the

_____ a corporation existing under the laws of

the State of _____, held on _____, 20____, the following resolution was duly passed and adopted:

“RESOLVED, that _____, as _____ President of the Corporation, be and is hereby authorized to **execute the Agreement** with OWNER and this corporation and that the execution thereof, attested by the Secretary of the Corporation, and with the Corporate Seal affixed, shall be the official act and deed of this Corporation.”

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the

Corporation this _____ day of _____, 20_____.

Secretary

(SEAL)

SECTION 00500 - AGREEMENT

**CERTIFICATE
(if Partnership)**

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Partners of the
_____ a partnership existing under the laws of the State
of _____, held on _____, 20____, the following resolution was duly
passed and adopted:

"RESOLVED, that _____, as _____ of the Partnership, be and is
hereby authorized to **execute the Agreement** with the OWNER and this partnership and that the
execution thereof, attested by the _____ shall be the official act and deed of
this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of _____,
20_____.

Secretary

(SEAL)

SECTION 00500 - AGREEMENT

**CERTIFICATE
(if Joint Venture)**

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the
_____ a joint venture existing under the laws of the
State of _____, held on _____, 20____, the following resolution was duly passed and
adopted:

"RESOLVED, that _____, as _____ of the
Joint Venture, be and is hereby authorized to **execute the Agreement** with the OWNER and this
joint venture and that the execution thereof, attested by the
_____ shall be the official act and deed of this Joint Venture."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this _____, day of
_____, 20____.

Secretary

(SEAL)

END OF SECTION

SECTION 00610 - PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: That we _____
(Name of Contractor)

a _____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)
of _____, State of _____ hereinafter called the "Surety," are held and
firmly bound to the CITY & BOROUGH of WRANGELL, ALASKA hereinafter called "OWNER,"
(Owner) (City and State)
for the penal sum of _____

_____ dollars (\$ _____) in lawful money of the
United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs,
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the CONTRACTOR has
entered into a certain contract with the OWNER, the effective date of which is
_____, a copy of which is hereto attached and made a part hereof for the
construction of:

**WOOD STREET
IMPROVEMENTS**

NOW, THEREFORE, if the Principal shall truly and faithfully perform its duties, all the
undertakings, covenants, terms, conditions, and agreements of said contract during the original term
thereof, and any extensions thereof, which may be granted by the OWNER, with or without notice to the
Surety, and if it shall satisfy all claims and demands incurred under such contract, and shall fully
indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of
failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER
may incur in making good any default, then this obligation shall be void; otherwise to remain in full force
and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that
no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be
performed thereunder or the specifications accompanying the same shall in any wise affect its obligation
on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition
to the terms of the contract or to the WORK or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the OWNER and the Principal shall
abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

SECTION 00610 - PERFORMANCE BOND

**WOOD STREET
IMPROVEMENTS**

IN WITNESS WHEREOF, this instrument is issued in two (2) identical counterparts, each one of which shall be deemed an original.

CONTRACTOR:

By: _____
(Signature)

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

SURETY:

By: _____
(Signature of Attorney-in-Fact)

Date Issued: _____

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

(Affix SURETY'S SEAL)

NOTE: If CONTRACTOR is Partnership, all Partners must execute bond.

END OF SECTION

SECTION 00620 - PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: That we _____
(Name of Contractor)

_____ a _____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)

of _____, State of _____ hereinafter called the "Surety," are held and
firmly bound to the CITY & BOROUGH of WRANGELL, ALASKA hereinafter called "OWNER,"
(Owner) (City and State)

for the penal sum of _____

_____ dollars (\$ _____) in lawful money of the
United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs,
executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the CONTRACTOR has
entered into a certain contract with the OWNER, the effective date of which is
_____, a copy of which is hereto attached and made a part hereof for the
construction of:

**WOOD STREET
IMPROVEMENTS**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms,
Subcontractors, and corporations furnishing materials for, or performing labor in the prosecution of the
WORK provided for in such contract, and any authorized extension or modification thereof, including all
amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and
tools, consumed or used in connection with the construction of such WORK, and all insurance premiums
on said work, and for all labor performed in such WORK, whether by Subcontractor or otherwise, then
this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that
no change, extension of time, alteration or addition to the terms of the contract or to the work to be
performed thereunder or the specifications accompanying the same shall in any wise affect its obligation
on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition
to the terms of the contract or to the WORK or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the OWNER and the Principal shall
abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

SECTION 00620 - PAYMENT BOND

**WOOD STREET
IMPROVEMENTS**

IN WITNESS WHEREOF, this instrument is issued in two (2) identical counterparts, each one of which shall be deemed an original.

CONTRACTOR:

By: _____
(Signature)

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

SURETY:

By: _____
(Signature of Attorney-in-Fact)

Date Issued: _____

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

(Affix SURETY'S SEAL)

NOTE: If CONTRACTOR is Partnership, all Partners must execute bond.

END OF SECTION

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ARTICLE 1 DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof. Where an entire word is capitalized in the definitions and is found not capitalized in the Contract Documents it has the ordinary dictionary definition.

Addenda - Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the Contract Documents.

Agreement - The written contract between the OWNER and the CONTRACTOR covering the WORK to be performed; other documents are attached to the Agreement and made a part thereof as listed out in the Agreement.

Application for Payment - The form furnished by the ENGINEER which is to be used by the CONTRACTOR to request progress or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

Asbestos - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price or prices for the WORK.

Bonds - Bid, Performance, and Payment Bonds and other instruments which protect against loss due to inability or refusal of the CONTRACTOR to perform its contract.

Project Manager - The authorized representative of the City and Borough of Wrangell, as OWNER, who is responsible for administration of the contract.

Change Order - A document recommended by the ENGINEER, which is signed by the CONTRACTOR and the OWNER and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents - The Table of Contents, Notice Inviting Bids, Instructions to Bidders, Bid Forms (including the Bid, Bid Schedule(s), Information Required of Bidder, Bid Bond, and all required certificates and affidavits), Agreement, Performance Bond, Payment Bond, General Conditions, Supplementary General Conditions, Technical Specifications, Drawings, Permits, and all Addenda, and Change Orders executed pursuant to the provisions of the Contract Documents.

Contract Price - The total monies payable by the OWNER to the CONTRACTOR under the terms and conditions of the Contract Documents.

Contract Time - The number of successive calendar days stated in the Contract Documents for the completion of the WORK.

CONTRACTOR - The individual, partnership, corporation, joint-venture or other legal entity with whom the OWNER has executed the Agreement.

Day - A calendar day of 24 hours measured from midnight to the next midnight.

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Defective WORK - WORK that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; or WORK that has been damaged prior to the ENGINEER's recommendation of final payment.

Drawings - The Drawings, plans, maps, profiles, diagrams, and other graphic representations which indicate the character, location, nature, extent, and scope of the WORK and which have been prepared by the ENGINEER and are referred to in the Contract Documents. Shop Drawings are not within the meaning of this paragraph.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

Engineer of Record - The individual, partnership, corporation, joint-venture or other legal entity named as such in the Contract Documents.

ENGINEER - The ENGINEER is the firm or person(s) selected by the OWNER to perform the duties of project inspection and management. Wrangell will inform the CONTRACTOR of the identity of the ENGINEER at or before the Notice to Proceed.

Field Order - A written order issued by the ENGINEER which may or may not involve a change in the WORK.

General Requirements - Division 1 of the Technical Specifications.

Hazardous Waste - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 9603) as amended from time to time.

Holidays - Legal holidays occur on:

1. New Year's Day - January 1
2. Martin Luther King's Birthday - Third Monday in January
3. President's Day - Third Monday in February
4. Seward's Day - Last Monday in March
5. Memorial Day - Last Monday in May
6. Independence Day - July 4
7. Labor Day - First Monday in September
8. Alaska Day - October 18
9. Veteran's Day - November 11
10. Thanksgiving Day - Fourth Thursday and the following Friday in November
11. Christmas Day - December 25

If any holiday listed above falls on a Saturday, Saturday and the preceding Friday are both legal holidays. If the holiday should fall on a Sunday, Sunday and the following Monday are both legal holidays.

Inspector - The authorized representative of the ENGINEER assigned to make detailed inspections for conformance to the Contract Documents. Any reference to the Resident Project Representative in this document shall mean the Inspector.

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Laws and Regulations; Laws or Regulations - Any and all applicable laws, rules, regulations, ordinances, codes, and/or orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

Mechanic's Lien - A form of security, an interest in real property, which is held to secure the payment of an obligation. When referred to in these Contract Documents, "Mechanic's Lien" or "lien" means "Stop Notice".

Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date of a portion of the WORK, or a period of time within which the portion of the WORK should be performed prior to Substantial Completion of all the WORK.

Notice of Intent to Award - The written notice by the OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the requirements listed therein, within the time specified, the OWNER will enter into an Agreement.

Notice of Award - The written notice by the OWNER to the apparent successful bidder stating that the apparent successful bidder has complied with all conditions for award of the contract.

Notice of Substantial Completion - A form signed by the ENGINEER and the CONTRACTOR recommending to the OWNER that the WORK is Substantially Complete and fixing the date of Substantial Completion. After acceptance of the WORK by the OWNER's governing body, the form is signed by the OWNER and filed with the County Recorder. This filing starts the 30 day lien filing period on the WORK.

Notice to Proceed - The written notice issued by the OWNER to the CONTRACTOR authorizing the CONTRACTOR to proceed with the WORK and establishing the date of commencement of the Contract Time.

OWNER - The City and Borough of Wrangell, acting through its legally designated officials, officers, or employees.

Partial Utilization - Use by the OWNER or a substantially completed part of the WORK for the purpose for which it is intended prior to Substantial Completion of all the WORK.

PCB's - Polychlorinated biphenyls.

PERMITTEE – CONTRACTOR.

Petroleum - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

Project - The total construction of which the WORK to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Radioactive Material - Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

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Shop Drawings - All Drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR and submitted by the CONTRACTOR, to the ENGINEER, to illustrate some portion of WORK.

Specifications - (Same definition as for Technical Specifications hereinafter).

Stop Notice - A legal remedy for Subcontractors and suppliers who contribute to public works, but who are not paid for their WORK, which secures payment from construction funds possessed by the OWNER. For public property, the Stop Notice remedy is designed to substitute for mechanic's lien rights.

Sub-Consultant - The individual, partnership, corporation, joint-venture or other legal entity having a direct contract with ENGINEER, or with any of its Consultants to furnish services with respect to the Project.

Subcontractor - An individual, partnership, corporation, joint-venture or other legal entity having a direct contract with the CONTRACTOR, or with any of its Subcontractors, for the performance of a part of the WORK at the site.

Substantial Completion - Refers to when the WORK has progressed to the point where, in the opinion of the ENGINEER as evidenced by Notice of Completion as applicable, it is sufficiently complete, in accordance with the Contract Documents, so that the WORK can be utilized for the purposes for which it is intended; or if no such notice is issued, when final payment is due in accordance with Paragraph 14.8. The terms "substantially complete" and "substantially completed" as applied to any WORK refer to substantial completion thereof.

Supplementary General Conditions (SGC) - The part of the Contract Documents which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman, or vendor.

Technical Specifications - Divisions 1 through 16 of the Contract Documents consisting of the General Requirements and written technical descriptions of products and execution of the WORK.

Underground Utilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic, or other control systems.

WORK - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. WORK is the result of performing, or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

ARTICLE 2 PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS/INSURANCE CERTIFICATES. When the CONTRACTOR delivers the signed Agreements to the OWNER, the CONTRACTOR shall also deliver to the OWNER such Bonds and Insurance Policies and Certificates as the CONTRACTOR may be required to furnish in accordance with the Contract Documents.

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- 2.2 COPIES OF DOCUMENTS. The OWNER shall furnish to the CONTRACTOR the required number of copies of the Contract Documents specified in the Supplementary General Conditions.
- 2.3 COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED. The Contract Time will start to run on the commencement date stated in the Notice to Proceed.
- 2.4 STARTING THE WORK
- A. The CONTRACTOR shall begin to perform the WORK within 10 days after the commencement date stated in the Notice to Proceed, but no WORK shall be done at the site prior to the commencement date, including mobilization.
- B. Before undertaking each part of the WORK, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. The CONTRACTOR shall promptly report in writing to the ENGINEER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ENGINEER before proceeding with any WORK affected thereby.
- C. The CONTRACTOR shall submit to the ENGINEER for review those documents called for under Section 01300 - Contractor Submittals in the General Requirements.
- 2.5 PRE-CONSTRUCTION CONFERENCE. The CONTRACTOR is required to attend a Pre-Construction Conference. This conference will be attended by the ENGINEER and others as appropriate in order to discuss the WORK in accordance with the applicable procedures specified in the General Requirements, Section 01010 - Summary of Work in the General Requirements.

ARTICLE 3 CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 INTENT

- A. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR concerning the WORK. The Contract Documents shall be construed as a whole in accordance with Alaska Law.
- B. It is the intent of the Contract Documents to describe the WORK, functionally complete, to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe work, materials, or equipment such words or phrases shall be interpreted in accordance with that meaning, unless a definition has been provided in Article 1 of the General Conditions. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the OWNER,

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the CONTRACTOR, or the ENGINEER or any of their consultants, agents, or employees from those set forth in the Contract Documents.

- C. If, during the performance of the WORK, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the WORK or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, the CONTRACTOR shall report it to the ENGINEER in writing at once, and the CONTRACTOR shall not proceed with the WORK affected thereby (except in an emergency as authorized by the ENGINEER) until a clarification field order, or Change Order to the Contract Documents has been issued.

3.2 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

- A. In resolving conflicts resulting from, errors, or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:

1. Permits from other agencies as may be required by law, excepting the definition of "PERMITEE" in these permits.
2. Field Orders
3. Change Orders
4. ENGINEER's written interpretations and clarifications.
5. Agreement
6. Addenda
7. CONTRACTOR's Bid (Bid Form)
8. Supplementary General Conditions
9. Notice Inviting Bids
10. Instructions to Bidders
11. General Conditions
12. Technical Specifications
13. Drawings

- B. With reference to the Drawings the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail Drawings govern over general Drawings
3. Addenda/ Change Order drawings govern over Contract Drawings
4. Contract Drawings govern over standard drawings

- 3.3 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS. The Contract Documents may be amended to provide for additions, deletions, and revisions in the WORK or to modify the terms and conditions thereof by a Change Order (pursuant to Article 10 CHANGES IN THE WORK).

- 3.4 REUSE OF DOCUMENTS. Neither the CONTRACTOR, nor any Subcontractor or Supplier, nor any other person or organization performing any of the WORK under a contract with the OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without written consent of the OWNER.

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ARTICLE 4 AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 AVAILABILITY OF LANDS. The OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment; provided, that the CONTRACTOR shall not enter upon nor use any property not under the control of the OWNER until a written temporary construction easement, lease or other appropriate agreement has been executed by the CONTRACTOR and the property owner, and a copy of said agreement furnished to the ENGINEER prior to said use; and, neither the OWNER nor the ENGINEER shall be liable for any claims or damages resulting from the CONTRACTOR's unauthorized trespass or use of any such properties.

4.2 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES

A. Explorations and Reports. Reference is made to SGC 4.2 Physical Conditions of the Supplementary General Conditions for identification of those reports of explorations and tests of sub-surface conditions at the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, however, reports are not to be considered complete or comprehensive and nontechnical data, interpretations, and opinions contained in such reports shall be verified by the CONTRACTOR prior to bid. The CONTRACTOR is responsible for any further explorations or tests that may be necessary and any interpretation, interpolation, or extrapolation that it makes of any information shown in such reports.

B. Existing Structures. Reference is made to SGC 4.2 Physical Conditions of the Supplementary General Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Utilities referred to in Paragraph 4.4 herein) which are at or contiguous to the site that have been utilized by the ENGINEER in the preparation of the Contract Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, however, nontechnical data, interpretations, and opinions contained in such drawings shall be verified by the CONTRACTOR prior to bid. The CONTRACTOR is also responsible for any interpretation, interpolation, or extrapolation that it makes of any information shown in such drawings.

4.3 DIFFERING SITE CONDITIONS

A. The CONTRACTOR shall promptly upon discovery (but in no event later than 14 days thereafter) and before the following conditions are disturbed, notify the ENGINEER, in writing of any:

1. Material that the CONTRACTOR believes may be material that is hazardous waste, as defined in Article 1 of these General Conditions, or asbestos, PCB's,

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petroleum or any other substance or material posing a threat to human or to the environment.

2. Subsurface or latent physical conditions at the site differing from those indicated in the reports referenced in SGC 4.2 Physical Conditions.
 3. Unknown physical conditions at the site of any unusual nature, differing materially from those physical conditions ordinarily encountered in the area of project and generally recognized as inherent in the area of the project and as ordinarily encountered and inherent in WORK of the character provided for in the contract. Weather conditions specifically do not constitute any change condition under this section.
- B. The OWNER shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR's cost of, or the time required for, performance of any part of the WORK shall issue a Change Order under the procedures described in the contract.
- C. In the event that a dispute arises between the OWNER and the CONTRACTOR whether the conditions materially differ, or involved hazardous waste or other materials listed above, or cause a decrease or increase in the CONTRACTOR's cost of, or time required for, performance of any part of the WORK, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all WORK to be performed under the contract. The CONTRACTOR and OWNER shall retain any and all rights provided either by contract or by Law which pertain to the resolution of disputes and protests between the contracting parties.

4.4 PHYSICAL CONDITIONS - UNDERGROUND UTILITIES

- A. Indicated. The information and data indicated in the Contract Documents with respect to existing Underground Utilities at or contiguous to the site are based on information and data furnished to the OWNER or the ENGINEER by the owners of such Underground Utilities or by others. Unless it is expressly provided in the Supplementary General Conditions and/or Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements, the OWNER and the ENGINEER shall not be responsible for the accuracy or completeness of any such information or data, and the CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Utilities indicated in the Contract Documents, for coordination of the WORK with the owners of such Underground Utilities during construction, for the safety and protection thereof and repairing any damage thereto resulting from the WORK, the cost of which will be considered as having been included in the Contract Price.
- B. Not Indicated. If an Underground Utility is uncovered or revealed at or contiguous to the site which was not indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall identify the owner of such Underground Utility and give written notice thereof to that owner and shall notify the ENGINEER in accordance with the requirements of the Supplementary General Conditions and Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements.

4.5 REFERENCE POINTS

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- A. The ENGINEER will provide one bench mark, near or on the site of the WORK, and will provide two points near or on the site to establish a base line for use by the CONTRACTOR for alignment control. Unless otherwise specified in the General Requirements, the CONTRACTOR shall furnish all other lines, grades, and bench marks required for proper execution of the WORK.
- B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by its own employees or by its Subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of such reference points by personnel qualified under the Alaska Statute governing the licensing of Architects, Engineers, and Land Surveyors.

ARTICLE 5 BONDS AND INSURANCE

5.1 PERFORMANCE, PAYMENT, AND OTHER BONDS

- A. The CONTRACTOR shall furnish, when required, Performance and Payment Bonds on forms provided by the OWNER for the penal sums of 100% of the amount of the Bid award. The surety on each bond may be any corporation or partnership authorized to do business in the State of Alaska as an insurer under AS 21.09. These bonds shall remain in effect for 12 months after the date of final payment and until all obligations and liens under this contract have been satisfied. The CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary General Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.
- B. If the surety on any Bond furnished by the CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days thereafter substitute another Bond and Surety, which must be acceptable to the OWNER.
- C. All Bonds required by the Contract Documents to be purchased and maintained by CONTRACTOR shall be obtained from surety companies that are duly licensed or authorized in the State of Alaska to issue Bonds for the limits so required. Such surety companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions. The City Manager may, on behalf of the OWNER, notify the surety of any potential default or liability.

5.2 INSURANCE

- A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. Such insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by law, whichever are greater. All insurance shall be maintained continuously during the life of the Agreement up to the date of Final Completion and at all times thereafter when the CONTRACTOR may be

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correcting, removing, or replacing Defective WORK in accordance with Paragraph 13.6, but the CONTRACTOR's liabilities under this Agreement shall not be deemed limited in any way to the insurance coverage required.

- B. All insurance required by the Contract Documents to be purchased and maintained by the CONTRACTOR shall be obtained from insurance companies that are duly licensed or authorized in the State of Alaska to issue insurance policies for the limits and coverages so required. Such insurance companies shall have a current Best's Rating of at least an "A" (Excellent) general policy holder's rating and a Class VII financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.
- C. The City and Borough of Wrangell shall be listed as an additional insured on the CONTRACTOR'S general liability insurance policy and the CONTRACTOR'S pollution liability policy. CONTRACTOR shall furnish certificates to the Borough of such insurance and showing the Borough as an additional insured within ten days of receiving the Notice to Proceed. Failure to comply with this provision constitutes a material breach and default of the Agreement.

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

6.1 SUPERVISION AND SUPERINTENDENCE

- A. The CONTRACTOR shall supervise, inspect, and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the completed WORK complies accurately with the Contract Documents.
- B. The CONTRACTOR shall designate in writing and keep on the WORK site at all times during its progress a technically qualified, English-speaking superintendent, who is an employee of the CONTRACTOR and who shall not be replaced without written notice to the OWNER and the ENGINEER. The superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall issue all its communications to the OWNER through the ENGINEER and the ENGINEER only.
- C. The CONTRACTOR's superintendent shall be present at the site of the WORK at all times while WORK is in progress. Failure to observe this requirement shall be considered suspension of the WORK by the CONTRACTOR until such time as such superintendent is again present at the site.

6.2 LABOR, MATERIALS, AND EQUIPMENT

- A. The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. The CONTRACTOR shall furnish, erect, maintain, and remove the construction plant and any

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temporary works as may be required. The CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the WORK or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all WORK at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday, or any legal holiday without the OWNER's written consent. The CONTRACTOR shall apply for this consent through the ENGINEER.

- B. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid the CONTRACTOR for overtime work only in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes the use of overtime work and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.
- C. All costs of inspection and testing performed during overtime work by the CONTRACTOR which is allowed solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER shall have the authority to deduct the cost of all such inspection and testing from any partial payments otherwise due to the CONTRACTOR.
- D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK, including all mobilization and demobilization.
- E. All materials and equipment to be incorporated into the WORK shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of the OWNER. If required by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provisions of any such instructions will be effective to assign to the ENGINEER, or any of the ENGINEER consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C and 9.9D.
- F. The CONTRACTOR shall at all times employ sufficient labor and equipment for prosecuting the several classes of WORK to full completion in the manner and time set forth in and required by these specifications. All workers shall have sufficient skill and experience to perform property the WORK assigned to them. Workers engaged in special WORK, or skilled WORK, shall have sufficient experience in such WORK and in the operation of the equipment required to perform all WORK, properly and satisfactorily.

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- G. Any person employed by the CONTRACTOR or by any Subcontractor who, in the opinion of the ENGINEER, does not perform the WORK in a proper and skillful manner, or is intemperate or disorderly shall, at the written request of the ENGINEER, be removed forthwith by the CONTRACTOR or Subcontractor employing such person, and shall not be employed again in any portion of the WORK without the approval of the ENGINEER. Should the CONTRACTOR fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the WORK, the ENGINEER may suspend the WORK by written notice until such orders are complied with.
- 6.3 ADJUSTING PROGRESS SCHEDULE. The CONTRACTOR shall submit monthly updates of the progress schedule to the ENGINEER for acceptance in accordance with the provisions in Section 01300 - Contractor Submittals in the General Requirements.
- 6.4 SUBSTITUTES OR "OR-EQUAL" ITEMS. The CONTRACTOR shall submit proposed substitutes or "or-equal" items in accordance with the provisions in Section 01300 - Contractor Submittals in the General Requirements.
- 6.5 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS.
- A. The CONTRACTOR shall be responsible to the OWNER and the ENGINEER for the acts and omissions of its Subcontractors and their employees to the same extent as CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this Paragraph shall create any contractual relationship between any Subcontractor and the OWNER or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the Agreement and Contract documents.
- B. The CONTRACTOR shall perform not less than 40% of the WORK with its own forces (i.e., without subcontracting). The 40% requirement shall be understood to mean that the CONTRACTOR shall perform, with its own organization, WORK amounting to at least 40% of the awarded contract amount. The 40% requirement will be calculated based upon the total of the subcontract amounts submitted for contract award, and any other information requested by the OWNER from the apparent low bidder.
- 6.6 PERMITS
- A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements under this contract shall not be made the basis for claims for additional compensation. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids. The CONTRACTOR shall pay all charges of utility owners for connections to the WORK.
- B. These Contract Documents may require that the WORK be performed within the conditions and/or requirements of local, state and/or federal permits. These permits may be bound within the Contract Documents, included within the Contract Documents by reference, or included as part of the WORK, as designated in this Section. The

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CONTRACTOR is responsible for completing the WORK required for compliance with all permit requirements; this WORK is incidental to other items in the Contract Documents. Any reference to the “permittee” in the permits shall mean the CONTRACTOR. If any permits were acquired by the OWNER, this action was done to expedite the start of construction. If the CONTRACTOR does not complete the WORK within the specified permit window, the CONTRACTOR shall be responsible for the permit extension, and for completing any additional requirements placed upon the permit.

- C. These Contract Documents may require that the WORK be performed within the conditions and/or requirements of local, state and/or federal permits. These permits may be bound within the Contract Documents, included within the Contract Documents by reference, or included as part of the WORK, as designated in Section 00700 – General Conditions, Article 6.6 - PERMITS. The CONTRACTOR is responsible for completing the WORK required for compliance with all permit requirements; this WORK is incidental to other items in the Contract Documents. Any reference to the “permittee” in the permits shall mean the CONTRACTOR. If any permits were acquired by the OWNER, this action was done to expedite the start of construction. If the CONTRACTOR does not complete the WORK within the specified permit window, the CONTRACTOR shall be responsible for the permit extension, and for completing any additional requirements placed upon the permit.
- D. The OWNER shall apply for, and obtain, the necessary building permit for this project, however, the CONTRACTOR is responsible for scheduling and coordinating all necessary inspections. All other provisions of this Section remain in effect.

6.7 PATENT FEES AND ROYALTIES. The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, software or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the OWNER in the Contract Documents. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys’ fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.8 LAWS AND REGULATIONS. The CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered in this contract in relation to any such law, ordinance, code, order, or regulation, the CONTRACTOR shall report the same in writing to the ENGINEER. The CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, and their officers, agents, and employees against all claims or liability arising from violation of any such law, ordinance, code, order, or regulation, whether by CONTRACTOR or by its employees, Subcontractors, or third parties. Any particular law or regulation specified or referred to elsewhere in the Contract Documents shall not in any way limit

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the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations.

The OWNER may, per AS 36.30, audit the CONTRACTOR's or Subcontractor(s) records that are related to the cost or pricing data for this contract, all related Change Orders, and/or contract modifications.

- 6.9 TAXES. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the WORK.
- 6.10 USE OF PREMISES. The CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to (1) the Project site, (2) the land and areas identified in and permitted by the Contract Documents, and (3) the other land and areas permitted by Laws and Regulations, rights-of-way, permits, leases and easements. The CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against the OWNER or the ENGINEER by any such owner or occupant because of the performance of the WORK, the CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim through litigation. The CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold the OWNER and the ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers attorneys, and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any such owner or occupant against the OWNER, the ENGINEER, their Consultants, Sub-consultants, and the officers, directors, employees and agents of each and any of them to the extent caused by or based upon the CONTRACTOR's performance or non-performance of the WORK.
- 6.11 SAFETY AND PROTECTION
- A. The CONTRACTOR shall be 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:
1. all employees on the WORK and other persons and organizations who may be affected thereby;
 2. all the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 3. 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 in the course of construction.
- B. 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.

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- C. 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.
- D. Materials that contain hazardous substances or mixtures may be required on the WORK. A Material Safety Data Sheet shall be requested by the CONTRACTOR from the manufacturer of any hazardous product used.
- E. Material usage shall be accomplished with strict adherence to all safety requirements and all manufacturer's warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.
- F. The CONTRACTOR shall be responsible for coordinating communications on any exchange of Material Safety Data Sheets or other hazardous material information that is required to be made available to, or exchanged between, or among, employers at the site in accordance with Laws or Regulations.
- G. 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.

6.12 SHOP DRAWINGS AND SAMPLES

- A. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the CONTRACTOR shall submit to the ENGINEER for review, all Shop Drawings in accordance with Section 01300 - Contractor Submittals in the General Requirements.
- B. The Contractor shall also submit to the ENGINEER for review all samples in accordance with Section 01300 - Contractor Submittals in the General Requirements.
- C. Before submittal of each shop drawing or sample, the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the WORK and the Contract Documents.

6.13 CONTINUING THE WORK. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the OWNER. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the OWNER may otherwise agree in writing.

6.14 INDEMNIFICATION

- A. To the fullest extent permitted by the laws of the State of Alaska, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, their Consultants, Sub-consultants and the officers, assembly members, mayor, directors, employees, and agents of each and any of them, against and from all claims, actions,

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damages, and liability of any kind and any nature arising out of or related to in any way any acts or omissions of the CONTRACTOR, including death, and including in any administrative action by any federal or state agency, except where the claim or action alleges willful misconduct of the OWNER and the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:

1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, its employees, or agents in the performance of the WORK, or non-performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, its employees, agents, or third parties;
 2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR's or Subcontractor's own employees engaged in the WORK resulting in actions brought by or on behalf of such employees against the OWNER, and the ENGINEER;
 3. Liability or claims arising directly or indirectly from or based on the violation of any federal, state or local law, ordinance, regulation, order, or decree, whether by the CONTRACTOR, its employees, or agents;
 4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its employees, or agents in the performance of this contract of any copyrighted or non-copyrighted composition, secret process, patented or non-patented invention, computer software, article, or appliance, unless otherwise specifically stipulated in this contract.
 5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the OWNER or any other parties by the CONTRACTOR, its employees, or agents;
 6. Liabilities or claims arising directly or indirectly from the willful or criminal misconduct of the CONTRACTOR, its employees, or agents; and,
 7. Liabilities or claims arising directly or indirectly from any breach of the obligations of the CONTRACTOR in the Agreement and all Contract documents.
- B. The CONTRACTOR shall reimburse the ENGINEER and the OWNER for all costs and expenses, (including but not limited to fees and charges of engineers, attorneys, experts, and other professionals and court costs including all costs of appeals) incurred by the OWNER, and the ENGINEER in enforcing the provisions of this Paragraph 6.14.
- C. The indemnification obligation under this Paragraph 6.14 shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such Subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- 6.15 CONTRACTOR'S DAILY REPORTS. The CONTRACTOR shall complete a daily report indicating total manpower for each construction trade, major equipment on site, each Subcontractor's manpower, weather conditions, etc., involved in the performance of the WORK. The daily report shall be completed on forms provided by the ENGINEER and shall be submitted to the ENGINEER at the conclusion of each work day. The report should comment on the daily progress and status of the WORK within each major component of the WORK. These components will be decided by the ENGINEER.

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- 6.16 **ASSIGNMENT OF CONTRACT.** The CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the contract or any portion thereof, or its right, title, or interest therein, or obligations thereunder, without the written consent of the OWNER except as imposed by law. If the CONTRACTOR violates this provision, the contract may be terminated at the sole option of the OWNER. In such event, the OWNER shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.
- 6.17 **CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES.** It is understood that any turn-on or turn-off, line locates and any other work or assistance necessary by the OWNER, will be at the CONTRACTOR's expense unless otherwise stated in the bid documents. All cost must be agreed to prior to any related actions, and will be considered incidental to the project cost. Billing to the CONTRACTOR will be direct from the OWNER.
- 6.18 **OPERATING WATER SYSTEM VALVES**
- A. The CONTRACTOR shall submit a written request, to the ENGINEER, for approval to operate any valve on any in-service section of the City water system. The request must be submitted at least 24-hours prior to operating any valves. The request shall specifically identify each valve to be operated, the time of operation, and the operation to be performed. The CONTRACTOR shall obtain the written approval of the ENGINEER for any scheduled operation before operating any valve.
- B. The CONTRACTOR shall be responsible for all damages, both direct and consequential, to the OWNER or any other party, caused by unauthorized operation of any valve of the City water system.
- 6.19 **CONTRACTOR'S WORK SCHEDULE LIMITATIONS.** City and Borough of Wrangell Noise Ordinance. The noise loudness measured at the boundary line of the premises used for industrial activities shall not exceed 90 decibels between the hours of 7:00 AM and 8:00 PM on weekdays and the hours of 10:00 AM and 8:00 PM on weekends and holidays, and 40 decibels at other hours, unless a permit shall first be obtained from the OWNER. Such permit shall be issued by the OWNER only upon a determination that such operation during hours not otherwise permitted hereunder is necessary and will not result in unreasonable disturbance to surrounding residents.

ARTICLE 7 OTHER WORK

7.1 RELATED WORK AT SITE

- A. The OWNER may perform other work related to the Project at the site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts therefor which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work.
- B. The CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (or the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the WORK with theirs. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to make its several parts come together properly and integrate with such

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other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and the others whose work will be affected.

- C. If the proper execution or results of any part of the CONTRACTOR's WORK depends upon the work of any such other contractor or utility owner (or OWNER), the CONTRACTOR shall inspect and report to the ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for such proper execution and results. The CONTRACTOR's failure to report such delays, defects, or deficiencies will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR's WORK except for latent or nonapparent defects and deficiencies in the other work.

- 7.2 COORDINATION. If the OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary General Conditions, and the specific matters to be covered by such authority and responsibility will be itemized and the extent of such authority and responsibilities will be provided in the Supplementary General Conditions.

ARTICLE 8 OWNER'S RESPONSIBILITIES

8.1 COMMUNICATIONS

- A. The OWNER shall issue all its communications to the CONTRACTOR through the ENGINEER.
- B. The CONTRACTOR shall issue all its communications to the OWNER through the ENGINEER.

- 8.2 PAYMENTS. The OWNER shall make payments to the CONTRACTOR as provided in Paragraphs 14.5, 14.8, 14.9 and 14.10.

- 8.3 LANDS, EASEMENTS, AND SURVEYS. The OWNER's duties in respect of providing lands and easements and providing surveys to establish reference points are set forth in Paragraphs 4.1 and 4.5.

- 8.4 CHANGE ORDERS. The OWNER shall execute Change Orders as indicated in Paragraph 10.1F.

- 8.5 INSPECTIONS AND TESTS. The OWNER's responsibility in respect of inspections, tests, and approvals is set forth in Paragraph 13.3.

- 8.6 SUSPENSION OF WORK. In connection with the OWNER's right to stop WORK or suspend WORK, see Paragraphs 13.4 and 15.1.

- 8.7 TERMINATION OF AGREEMENT. Paragraphs 15.2 and 15.3 detail the OWNER's right to terminate services of the CONTRACTOR.

ARTICLE 9 ENGINEER'S STATUS DURING CONSTRUCTION

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- 9.1 OWNER'S REPRESENTATIVE. The ENGINEER will be the OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER's representative during construction are set forth in the Contract Documents.
- 9.2 VISITS TO SITE. The ENGINEER will make visits to the site during construction to observe the progress and quality of the WORK and to determine, in general, if the WORK is proceeding in accordance with the Contract Documents. Exhaustive or continuous on-site inspections to check the quality or quantity of the WORK will not be required of the ENGINEER. The ENGINEER will not, during such visits, or as a result of such observations of the CONTRACTOR's WORK in progress, supervise, direct, or have control over the CONTRACTOR's WORK.
- 9.3 PROJECT REPRESENTATION. The ENGINEER may furnish an Inspector to assist in observing the performance of the WORK. The duties, responsibilities, and limitations of authority are as follows:

A. Duties, Responsibilities and Limitations of Authority of Inspector

General. The Inspector, who is the ENGINEER's Agent, will act as directed by and under the supervision of the ENGINEER and will confer with the ENGINEER regarding its actions. The Inspector's dealings in matters pertaining to the on-site WORK shall, in general, be only with the ENGINEER and the CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of the CONTRACTOR. Written communication with the OWNER will be only through or as directed by the ENGINEER.

Duties and Responsibilities. The Inspector will:

1. Review the progress schedule, list of Shop Drawing submittals and schedule of values prepared by the CONTRACTOR and consult with the ENGINEER concerning their acceptability.
2. Attend pre-construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with the ENGINEER and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
3. Serve as the ENGINEER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent and assist said superintendent in understanding the intent of the Contract Documents. Assist the ENGINEER in serving as the OWNER's liaison with the CONTRACTOR when the CONTRACTOR's operations affect the OWNER's on-site operations.
4. As requested by the ENGINEER, assist in obtaining from the OWNER additional details or information, when required at the site for proper execution of the WORK.
5. Receive and record date of receipt of Shop Drawings and samples, receive samples which are furnished at the site by the CONTRACTOR and notify the ENGINEER of their availability for examination.
6. Conduct on-site observations of the WORK in progress to assist the ENGINEER in determining if the WORK is proceeding in accordance with the Contract Documents.
7. Report to the ENGINEER whenever the Inspector believes that any WORK is unsatisfactory, faulty, or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspection, tests or approval required to

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- be made or has been damaged prior to final payment; and advise the ENGINEER when the Inspector believes WORK should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection, or approval.
8. Verify that the tests, equipment, and systems startups and operating and maintenance instruction are conducted as required by the Contract Documents and in presence of the required personnel, and that the CONTRACTOR maintains adequate records thereof; observe, record and report to the ENGINEER appropriate details relative to the test procedures and start-ups.
 9. Accompany visiting inspectors representing public or other agencies having jurisdiction over the WORK, record the outcome of these inspections, and report to the ENGINEER.
 10. Transmit to the CONTRACTOR the ENGINEER's clarifications and interpretations of the Contract Documents.
 11. Consider and evaluate the CONTRACTOR's suggestions for modifications in the Contract Documents and report them with recommendations to the ENGINEER.
 12. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and sample submittals, reproductions of original Contract Documents including all addenda, Change Orders, field orders, additional Drawings issued subsequent to the execution of the contract, the ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other related documents.
 13. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list all project visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of performing and observing test procedures. Send copies to the ENGINEER.
 14. Record names, addresses, and telephone numbers of the CONTRACTOR, Subcontractors, and major suppliers of materials and equipment.
 15. Furnish the ENGINEER with periodic reports as required of progress of the WORK and the CONTRACTOR's compliance with the accepted progress schedule and schedule of CONTRACTOR submittals.
 16. Consult with the ENGINEER in advance of scheduled major tests, inspections, or start of important phases of the WORK.
 17. Report immediately to the ENGINEER upon the occurrence of any accident.
 18. Review applications for payment with the CONTRACTOR for compliance with the established procedure for their submittal and forward them with recommendations to the ENGINEER, noting particularly their relation to the schedule of values, WORK completed, and materials and equipment delivered at the site but not incorporated in the WORK.
 19. During the course of the WORK, verify that certificates, maintenance and operation manuals, and other data required to be assembled and furnished by the CONTRACTOR are applicable to the items actually installed; and deliver this material to the ENGINEER for its review and forwarding to the OWNER prior to final acceptance of the WORK.
 20. Before the ENGINEER prepares a Certificate of Substantial Completion/Notice of completion, as applicable, review the CONTRACTOR's punch list items requiring completion or correction and add any items that CONTRACTOR has omitted.
 21. Conduct final inspection in the company of the ENGINEER, the OWNER, and the CONTRACTOR, and prepare a final punch list of items to be completed or corrected.
 22. Verify that all items on the punch list have been completed or corrected and make recommendations to the ENGINEER concerning acceptance.

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Limitations of Authority. Except upon written instruction of the ENGINEER, the Inspector:

1. Shall not authorize any deviation from the Contract Documents or approve any substitute material or equipment.
2. Shall not exceed limitations on the ENGINEER's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of the CONTRACTOR, Subcontractors or CONTRACTOR's superintendent, or expedite the WORK.
4. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences, or procedures of construction unless such is specifically called for in the Contract Documents.
5. Shall not advise on or issue directions as to safety precautions and programs in connection with the WORK.

9.4 CLARIFICATIONS AND INTERPRETATIONS. The ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the ENGINEER may determine necessary, which shall be consistent with, or reasonably inferred from, the overall intent of the Contract Documents.

9.5 AUTHORIZED VARIATIONS IN WORK. The ENGINEER may authorize variations in the WORK from the requirements of the Contract Documents. These may be accomplished by a Field Order and will require the CONTRACTOR to perform the WORK involved in a manner that minimizes the impact to the WORK and the contract completion date. If the CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time, the CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

9.6 REJECTING DEFECTIVE WORK. The ENGINEER will have authority to reject WORK which the ENGINEER believes to be defective and will also have authority to require special inspection or testing of the WORK as provided in Paragraph 13.3G, whether or not the WORK is fabricated, installed, or completed.

9.7 CONTRACTOR SUBMITTALS, CHANGE ORDERS, AND PAYMENTS

- A. In accordance with the procedures set forth in the General Requirements, the ENGINEER will review all CONTRACTOR submittals, including Shop Drawings, samples, substitutes, or "or equal" items, etc., in order to determine if the items covered by the submittals will, after installation or incorporation in the WORK, conform to the requirements of the Contract Documents and be compatible with the design concept of the completed project as a functioning whole as indicated by the Contract Documents. The ENGINEER's review will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto.
- B. In connection with the ENGINEER's responsibilities as to Change Orders, see Articles 10, 11, and 12.
- C. In connection with the ENGINEER's responsibilities in respect of Applications for Payment, see Article 14.

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9.8 DECISIONS ON DISPUTES

- A. The ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the WORK thereunder. Claims, disputes, and other matters relating to the acceptability of the WORK; the interpretation of the requirements of the Contract Documents pertaining to the performance of the WORK; and those claims under Articles 11 and 12 in respect to changes in the Contract Price or Contract Time will be referred initially to the ENGINEER in writing with a request for formal decision in accordance with this paragraph, which the ENGINEER will render in writing within 30 days of receipt of the request. Written notice of each such claim, dispute, and other matter will be delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise thereto. Written supporting data will be submitted to the ENGINEER within 60 days after such occurrence unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim. The failure of the CONTRACTOR to provide all supporting documentation for the claim shall result in the denial of the claim and the waiver of the claim by the CONTRACTOR.
- B. The rendering of a decision by the ENGINEER with respect to any such claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.12) will be a condition precedent to any exercise by the OWNER or the CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Law or Regulations in respect of any such claim, dispute, or other matter.

9.9 LIMITATION ON ENGINEER'S RESPONSIBILITIES

- A. Neither the ENGINEER's authority to act under this Article or other provisions of the Contract Documents nor any decision made by the ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety for any of them, or any other person or organization performing any of the WORK.
- B. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the ENGINEER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the requirements of the Contract Documents, and conformance with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the ENGINEER any duty or authority to supervise or direct the performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9C or 9.9D.
- C. The ENGINEER will not supervise, direct, control, or have authority over or be responsible for the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations, applicable to the performance of the WORK. The ENGINEER will not be responsible for the

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CONTRACTOR's failure to perform the WORK in accordance with the Contract Documents, except where the failure of the CONTRACTOR is the result of negligent acts or omissions of the ENGINEER in the ENGINEER's performance of its obligations.

- D. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR nor of any Subcontractor, supplier, or any other person or organization performing any of the WORK.

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ARTICLE 10 CHANGES IN THE WORK

10.1 GENERAL

- A. Without invalidating the Agreement and without notice to any surety, the OWNER may at any time or from time to time, order additions, deletions, or revisions in the WORK; these will be authorized by a written Field Order and/or a Change Order issued by the ENGINEER.
- B. If the CONTRACTOR believes that it is entitled to an increase or decrease in the Contract Price, or an extension or shortening in the Contract Time as the result of a Field Order, a claim may be made as provided in Articles 11 and 12.
- C. If the OWNER and CONTRACTOR agree on the value of any work, or the amount of Contract Time that should be allowed as a result of a Field Order, upon receiving written notice from the ENGINEER, the CONTRACTOR shall proceed so as to minimize the impact on and delays to the work pending the issuance of a Change Order.
- D. If the OWNER and the CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Field Order, the ENGINEER can direct the CONTRACTOR to proceed on the basis of Time and Materials so as to minimize the impact on and delays to WORK, and a claim may be made therefor as provided in Articles 11 and 12.
- E. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified, supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work as provided in Paragraph 13.3G.
- F. The OWNER and the CONTRACTOR shall execute appropriate Change Orders covering:
 - 1. changes in the WORK which are ordered by the OWNER pursuant to Paragraph 10.1A;
 - 2. changes required because of acceptance of Defective WORK under Paragraph 13.7;
 - 3. changes in the Contract Price or Contract Time which are agreed to by the parties; or
 - 4. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by the ENGINEER pursuant to Paragraph 9.8.
- G. If notice of any change is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be the CONTRACTOR's responsibility, and the amount of each applicable Bond shall be adjusted accordingly.

10.2 ALLOWABLE QUANTITY VARIATIONS

- A. In the event of an increase or decrease in Bid item quantity of a unit price contract, the total amount of WORK actually done or materials or equipment furnished shall be paid

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for according to the unit bid price established for such WORK under the Contract Documents, wherever such unit price has been established; provided, that an adjustment in the Contract Price may be made for changes which result in an increase or decrease in excess of 25% of the estimated quantity of any major item of the WORK. Major Item is defined as any bid item amount that is ten percent (10%) or more of the total contract amount.

- B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover such eliminated work, the price of the eliminated work shall be agreed upon in writing by the OWNER and the CONTRACTOR. If the OWNER and the CONTRACTOR fail to agree upon the price of the eliminated work, the price shall be determined in accordance with the provisions of Article 11.

ARTICLE 11 CHANGE OF CONTRACT PRICE

11.1 GENERAL

- A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR to complete the WORK shall be at its expense without change in the Contract Price.
- B. The Contract Price may only be changed by a Change Order approved by the Borough Assembly. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 7 days) after the start of the occurrence or the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with all supporting documentation and data shall be delivered within 14 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence or event. All claims for adjustment in the Contract Price shall be determined by the ENGINEER in accordance with Paragraph 9.8A if the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.1B.
- C. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - 1. Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved. Unit prices not specified in the contract documents shall be determined by the unit price for that item or items in the CONTRACTOR'S bid.
 - 2. By mutual acceptance of a lump sum, which may, but is not required to, include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.4.
 - 3. On the basis of the cost of work (determined as provided in Paragraphs 11.3) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.4).

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- 11.2 COSTS RELATING TO WEATHER. The CONTRACTOR shall have no claims against the OWNER for damages for any injury to WORK, materials, or equipment, resulting from the action of the elements. If, however, in the opinion of the ENGINEER, the CONTRACTOR has made all reasonable efforts to protect the materials, equipment and work, the CONTRACTOR may be granted a reasonable extension of Contract Time to make proper repairs, renewals, and replacements of the work, materials, or equipment.
- 11.3 COST OF WORK (BASED ON TIME AND MATERIALS)
- A. General. The term “cost of work” means the sum of all costs actually and necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.5 EXCLUDED COSTS.
- B. Labor. The costs of labor will be the actual cost for wages prevailing for each craft or type of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, worker’s compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. Labor costs for equipment operators and helpers shall be paid only when such costs are not included in the invoice for equipment rental. The labor costs for forepersons shall be proportioned to all of their assigned work and only that applicable to extra work shall be paid. Non-direct labor costs including superintendence shall be considered part of the mark-up set out in paragraph 11.4.
- C. Materials. The cost of materials reported shall be at invoice or lowest current price at which materials are locally available and delivered to the job in the quantities involved, plus the cost of freight, delivery and storage, subject to the following:
1. Trade discounts available to the purchaser shall be credited to the OWNER notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
 2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the ENGINEER. Mark-up except for actual costs incurred in the handling of such materials will not be allowed.
 3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on extra work items or the current wholesale price for such materials delivered to the work site, whichever price is lower.
 4. If in the opinion of the ENGINEER the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the work site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim shall be allowed by the CONTRACTOR for costs and profit on such materials.

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- D. Equipment. The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the Supplementary General Conditions. Such rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the OWNER for the total period of use. If it is deemed necessary by the CONTRACTOR to use equipment not listed in the publication specified in the Supplementary General Conditions, an equitable rental rate for the equipment will be established by the ENGINEER. The CONTRACTOR may furnish cost data which might assist the ENGINEER in the establishment of the rental rate. The CONTRACTOR shall not be entitled for any rental rate for equipment the use of which would have necessary to provide the unit of work and which should have been included in the CONTRACTOR'S bid price for that unit of work.
1. All equipment shall, in the opinion of the ENGINEER, be in good working condition and suitable for the purpose for which the equipment is to be used.
 2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the ENGINEER, in duplicate, a description of the equipment and its identifying number.
 3. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
 4. Individual pieces of equipment or tools having a replacement value of \$200 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.
 5. Rental time will not be allowed while equipment is inoperative due to breakdowns.
 6. Equipment Rental Rates. Unless otherwise agreed in writing, the CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the following reference publication: "Rental Rate Blue Book" as published by Dataquest (a company of the Dunn and Bradstreet Corporation), 1290 Ridder Park Drive, San Jose, CA 95131, telephone number (800) 227-8444.
- E. Equipment on the Work Site. The rental time to be paid for equipment on the work site shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work, or if it was not necessary to move equipment from another location to the site. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transporting costs when the equipment is used at the site of the extra work on other than the extra work. The following shall be used in computing the rental time of equipment on the work site.
1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.

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2. When daily rates are listed, any part of a day less than 4 hours operation shall be considered to be 1/2-day of operation. When owner-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraphs (3), (4), and (5), following.
 3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.3D, herein.
 4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already on the work site, or in the absence of such labor, established by collective bargaining agreements for the type of worker and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.3B, herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all other payments made to or on behalf of workers other than actual wages.
 5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.4, herein.
- F. Specialty Work. Specialty work is defined as that work characterized by extraordinary complexity, sophistication, or innovation or a combination of the foregoing attributes which are unique to the construction industry. The following shall apply in making estimates for payment for specialty work:
1. Any bid item of WORK to be classified as Specialty Work shall be listed as such in the Supplementary General Conditions. Specialty work shall be performed by an entity especially skilled in the work to be performed. After validation of invoices and determination of market values by the ENGINEER, invoices for specialty work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental costs.
 2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may, by agreement, be accepted as specialty work and accordingly, the invoices for the work may be accepted without detailed itemization.
 3. All invoices for specialty work will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.4, herein, an allowance of 5 percent will be added to invoices for specialty work.
- G. Sureties. All work performed hereunder shall be subject to all of the provisions of the Contract Documents and the CONTRACTOR's sureties shall be bound with reference thereto as under the original Agreement. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

11.4 CONTRACTOR'S FEE

- A. Extra work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the ENGINEER, plus allowances for overhead and

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profit. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, field office expense, extended overhead, home office overhead, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraph 11.3. The allowance for overhead and profit will be made in accordance with the following schedule:

Actual Overhead and Profit Allowance	
Labor	15 percent
Materials	10 percent
Equipment	10 percent

To the sum of the costs and mark-ups provided for in this Article, one percent shall be added as compensation for bonding.

- B. It is understood that labor, materials, and equipment may be furnished by the CONTRACTOR or by the Subcontractor on behalf of the CONTRACTOR. When all or any part of the extra work is performed by a Subcontractor, the allowance specified herein shall be applied to the labor, materials, and equipment costs of the Subcontractor, to which the CONTRACTOR may add 5 percent of the Subcontractor’s total cost for the extra work. Regardless of the number of hierarchical tiers of Subcontractors, the 5 percent increase above the Subcontractor’s total cost which includes the allowances for overhead and profit specified herein may be applied one time only.

11.5 EXCLUDED COSTS. The term Cost of the Work shall not include any of the following:

- A. Payroll costs and other compensation of CONTRACTOR’s officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, estimators, attorneys’ auditors, accountants, purchasing and contracting agents, expenditures, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR’s principal or a branch office for general administration of the work, or not specifically covered by paragraph 11.3, all of which are to be considered administrative costs covered by the CONTRACTOR’s fee.
- B. Expenses of CONTRACTOR’s principal and branch offices other than CONTRACTOR’s office at the site.
- C. Any part of CONTRACTOR’s capital expenses, including interest on CONTRACTOR’s capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- D. Cost of premiums for all bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by paragraph 11.4 above).
- E. Costs due to the negligence of CONTRACTOR , any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective WORK, disposal of materials or equipment wrongly supplied and making good any damage to property.
- F. Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in paragraph 11.4.

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- G. Equipment rental cost for equipment that would be needed to perform the unit of work as reflected in the bid price for that unit of work.
- H. Mobilization or demobilization for equipment that would necessarily have been used to perform that unit of work as reflected in the bid price for that unit of work.

ARTICLE 12 CHANGE OF CONTRACT TIME

12.1 GENERAL

- A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract Time (or Milestones) shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 60 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR'S written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the ENGINEER in accordance with Paragraph 9.8 if the OWNER and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph 12.1A. An increase in Contract Time does not mean that the Contractor is due an increase in Contract Price. Only Compensable time extensions will result in an increase in Contract Price.
- B. All time limits stated in the Contract Documents are of the essence of the Agreement. OWNER reserves the right to direct CONTRACTOR to accelerate his work, at no cost to OWNER, if CONTRACTOR fails to maintain contract schedule.
- C. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost on the critical path of the project due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, unprecedented weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.
- D. Where CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost on the critical path of the project due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall the OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics abnormal weather conditions, acts of God or acts or

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neglect by utility owners or other contractors performing other work as contemplated by Article 7.

- 12.2 EXTENSIONS OF TIME FOR DELAY DUE TO WEATHER. Contract Time may be extended by the ENGINEER because of delays in completion of the WORK due to unusually severe weather, provided that the CONTRACTOR shall, within 10 days of the beginning of any such delay, notify the ENGINEER in writing of the cause of delay and request an extension of Contract Time. The ENGINEER will ascertain the facts and the extent of the delay and extend the time for completing the work when, in the ENGINEER's judgment, the findings of fact justify such an extension. Unprecedented, abnormal, or unusually severe weather will be defined as an event, or events, with a greater than 50-year recurrence interval, as determined by the National Weather Service, or equivalent State or Federal agency

ARTICLE 13 WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

- 13.1 WARRANTY AND GUARANTEE. The CONTRACTOR warrants and guarantees to the OWNER and the ENGINEER that all work will be in accordance with the Contract Documents and will not be defective. Prompt notice of defects known to the OWNER or ENGINEER shall be given to the CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.
- 13.2 ACCESS TO WORK. OWNER, ENGINEER, their Consultants, sub-consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.
- 13.3 TESTS AND INSPECTIONS
- A. The CONTRACTOR shall give the ENGINEER timely notice of readiness of the WORK for all required inspections, tests, or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
 - B. If Laws or Regulations of any public body having jurisdiction other than the OWNER require any WORK to specifically be inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the OWNER's or the ENGINEER's acceptance of a Supplier of materials or equipment proposed as a substitution or (or-equal) to be incorporated in the WORK, or of materials or equipment submitted for review prior to the CONTRACTOR's purchase thereof for incorporation in the WORK. The cost of all inspections, tests, and approvals in addition to the above which are required by the Contract Documents shall be paid by the OWNER (unless otherwise specified).
 - C. The ENGINEER will make, or have made, such inspections and tests as the ENGINEER deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Contract Documents. Unless otherwise specified in the Supplementary General Conditions, the cost of such inspection and testing will be borne by the OWNER. In the event such inspections or tests reveal non-compliance with the

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requirements of the Contract Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the ENGINEER, as well as the cost of subsequent reinspection and retesting. Neither observations by the ENGINEER nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

- D. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the ENGINEER and the CONTRACTOR.
 - E. If any work (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the ENGINEER timely notice of the CONTRACTOR's intention to perform such test or to cover the same and the ENGINEER has not acted with reasonable promptness in response to such notice.
 - F. If any WORK is covered contrary to the written request of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for the ENGINEER's observation and recovered at the CONTRACTOR's expense.
 - G. If the ENGINEER considers it necessary or advisable that covered WORK be observed by the ENGINEER or inspected or tested by others, the CONTRACTOR, at the ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, material, and equipment. If it is found that such work is defective, the CONTRACTOR shall bear all direct, indirect, and consequential costs and damages of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including but not limited to fees and charges of engineers, attorneys, and other professionals. However, if such work is not found to be defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.
- 13.4 OWNER MAY STOP THE WORK. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.
- 13.5 CORRECTION OR REMOVAL OF DEFECTIVE WORK. If required by the ENGINEER, the CONTRACTOR shall promptly, either correct all defective work, whether or not fabricated, installed, or completed, or, if the WORK has been rejected by the ENGINEER, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs and damages of such correction or removal, including but not limited to fees and charges of engineers, attorneys, and other professionals made necessary thereby.

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13.6 ONE YEAR CORRECTION PERIOD

- A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, the CONTRACTOR shall promptly, without cost to the OWNER and in accordance with OWNER's written notification, (i) correct such Defective WORK, or, if it has been rejected by the OWNER, remove it from the site and replace it with non-defective work, and (ii) satisfactorily correct or remove and replace any damage to other work of others resulting therefrom. If the CONTRACTOR does not promptly comply with such notification, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the Defective WORK corrected or the rejected WORK removed and replaced, and all direct, indirect, and consequential costs and damages of such removal and replacement including but not limited to fees and charges of engineers, attorneys and other professionals will be paid by the CONTRACTOR.
- B. Where Defective WORK (and damage to other WORK resulting therefrom) has been corrected, removed or replaced under this paragraph 13.6, the correction period hereunder with respect to such WORK will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

13.7 ACCEPTANCE OF DEFECTIVE WORK. If, instead of requiring correction or removal and replacement of defective work, the OWNER prefers to accept the WORK, the OWNER may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of and determination to accept such defective work. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK, and the OWNER shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 14 PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 SCHEDULE OF VALUES (LUMP SUM PRICE BREAKDOWN). The schedule of values or lump sum price breakdown established as provided in the General Requirements shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the ENGINEER.

14.2 UNIT PRICE BID SCHEDULE. Progress payments on account of Unit Price work will be based on the number of units completed.

14.3 APPLICATION FOR PROGRESS PAYMENT

- A. Unless otherwise prescribed by law, on the 25th of each month, the CONTRACTOR shall submit to the ENGINEER for review, an Application for Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
- B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR'S Total Earnings to Date, plus the Value of Materials Stored at the Site which have not yet been incorporated in the WORK, and less a deductive adjustment for

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materials installed which were not previously incorporated in the WORK, but for which payment was allowed under the provisions for payment for Materials Stored at the Site, but not yet incorporated in the WORK.

C. The Net Payment Due the CONTRACTOR shall be the above-mentioned subtotal from which shall be deducted the total amount of all previous payments made to the CONTRACTOR. Progress payments will be paid in full in accordance with Article 14 of the General Conditions until 90% of the Contract Price has been paid. The remaining 10% of the Contract Price amount may be withheld until:

1. final inspection has been made;
2. completion of the project; and
3. acceptance of the project by the OWNER.

D. The Value of Materials Stored at the Site shall be an amount equal to the specified percent of the value of such materials as set forth in the Supplementary General Conditions. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the site or at another location agreed to in writing; provided, each such individual item has a value of more than \$5,000.00 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by an invoice (including shipping), a certification that the materials meet the applicable contract specifications, and any evidence required by the OWNER that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the OWNER. Payment for materials will not constitute final acceptance. It shall be the CONTRACTOR's responsibility to protect the material from damage, theft, loss, or peril while in storage. Unless otherwise prescribed by law, the Value of Materials Stored at the Site shall be paid at the invoice amount up to 100% of the Contract Price for those items.

14.4 CONTRACTOR'S WARRANTY OF TITLE. The CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the OWNER no later than the time of payment free and clear of all liens.

14.5 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

A. The ENGINEER will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the OWNER, or return the Application to the CONTRACTOR indicating in writing the ENGINEER's reasons for refusing to recommend payment. In the later case, the CONTRACTOR may make the necessary corrections and resubmit the Application, at which point the 7 days for ENGINEER review will begin again. If the ENGINEER still disagrees with a portion of the Application, it will submit the Application recommending the undisputed portion of the Application to the OWNER for payment and provide reasons for recommending non-payment of the disputed amount. Thirty days after presentation of the Application for Payment with the ENGINEER's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.5B) become due and when due will be paid by the OWNER to the CONTRACTOR.

SECTION 00700 - GENERAL CONDITIONS

- B. The OWNER may refuse to make payment of the full amount recommended by the ENGINEER because claims have been made against the OWNER on account of the CONTRACTOR's performance of the WORK or Liens have been filed in connection with the WORK or there are other items entitling the OWNER to a credit against the amount recommended, but the OWNER must give the CONTRACTOR written notice within 7 days (with a copy to the ENGINEER) stating the reasons for such action.

14.6 PARTIAL UTILIZATION

- A. The OWNER shall have the right to utilize or place into service any item of equipment or other usable portion of the WORK prior to completion of the WORK. Whenever the OWNER plans to exercise said right, the CONTRACTOR will be notified in writing by the OWNER, identifying the specific portion or portions of the WORK to be so utilized or otherwise placed into service.
- B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all of the WORK shall be borne by the CONTRACTOR. Upon issuance of said written notice of partial utilization, the OWNER will accept responsibility for the protection and maintenance of all such items or portions of the WORK described in the written notice.
- C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the OWNER and the CONTRACTOR's one year correction period shall commence only after the date of Substantial Completion for the WORK.

- 14.7 SUBSTANTIAL COMPLETION. When the CONTRACTOR considers the WORK ready for its intended use the CONTRACTOR shall notify the OWNER and the ENGINEER in writing that the WORK is substantially complete. The CONTRACTOR will attach to this request a list of all work items that remain to be completed and a request that the ENGINEER prepare a Notice of Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ENGINEER shall make an inspection of the WORK to determine the status of completion. If the ENGINEER does not consider the WORK substantially complete, or the list of remaining work items to be comprehensive, the ENGINEER will notify the CONTRACTOR in writing giving the reasons therefor. If the ENGINEER considers the WORK substantially complete, the ENGINEER will prepare and deliver to the OWNER, for its execution and recording, the Notice of Completion signed by the ENGINEER and CONTRACTOR, which shall fix the date of Substantial Completion.

- 14.8 FINAL APPLICATION FOR PAYMENT. After the CONTRACTOR has completed all of the remaining work items referred to in Paragraph 14.7 and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, contract releases, record as-built documents (as provided in the General Requirements) and other documents, all as required by the Contract Documents, and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the OWNER) of all liens arising out of or filed in connection with the WORK.

14.9 FINAL PAYMENT AND ACCEPTANCE

SECTION 00700 - GENERAL CONDITIONS

- A. If, on the basis of the ENGINEER's observation of the WORK during construction and final inspection, and the ENGINEER's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, the ENGINEER is satisfied that the WORK has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the ENGINEER will, within 14 days after receipt of the final Application for Payment, indicate in writing the ENGINEER's recommendation of payment and present the Application to the OWNER for payment.
- B. After acceptance of the WORK by the OWNER's governing body, the OWNER will make final payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract Documents, including the following items:
 - 1. Liquidated damages, as applicable.
 - 2. Two times the value of outstanding items of correction work or punch list items yet uncompleted or uncorrected, as applicable. All such work shall be completed or corrected to the satisfaction of the OWNER within the time stated on the Notice of Completion, otherwise the CONTRACTOR does hereby waive any and all claims to all monies withheld by the OWNER to cover the value of all such uncompleted or uncorrected items.

14.10 RELEASE OF RETAINAGE AND OTHER DEDUCTIONS

- A. After executing the necessary documents to initiate the lien period, and not more than 45 days thereafter (based on a 30-day lien filing period and 15-day processing time), the OWNER will release to the CONTRACTOR the retainage funds withheld pursuant to the Agreement, less any deductions to cover pending claims against the OWNER pursuant to Paragraph 14.5B.
- B. After filing of the necessary documents to initiate the lien period, the CONTRACTOR shall have 30 days to complete any outstanding items of correction work remaining to be completed or corrected as listed on a final punch list made a part of the Notice of Completion. Upon expiration of the 45 days, referred to in Paragraph 14.10A, the amounts withheld pursuant to the provisions of Paragraph 14.9B herein, for all remaining work items will be returned to the CONTRACTOR; provided, that said work has been completed or corrected to the satisfaction of the OWNER within said 30 days. Otherwise, the CONTRACTOR does hereby waive any and all claims for all monies withheld by the OWNER under the Contract to cover 2 times the value of such remaining uncompleted or uncorrected items.

14.11 CONTRACTOR'S CONTINUING OBLIGATION. The CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ENGINEER, nor the issuance of a Notice of Completion, nor any payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review of a Shop Drawing or sample submittal, will constitute an acceptance of work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

SECTION 00700 - GENERAL CONDITIONS

- 14.12 FINAL PAYMENT TERMINATES LIABILITY OF OWNER. Final payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less monies withheld as applicable, pursuant to Paragraph 14.10A. The acceptance by the CONTRACTOR of the final payment referred to in Paragraph 14.9 herein, shall be a release of the OWNER and its agents from all claims of liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act of neglect of the OWNER or of any person relating to or affecting the WORK, except demands against the OWNER for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 14.9 herein; and excepting pending, unresolved claims filed prior to the date of the Notice of Completion.

ARTICLE 15 SUSPENSION OF WORK AND TERMINATION

- 15.1 SUSPENSION OF WORK BY OWNER. The OWNER, acting through the ENGINEER, may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than 90 days by notice in writing to the CONTRACTOR. The CONTRACTOR shall resume the WORK on receipt from the ENGINEER of a notice of resumption of work. The CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

15.2 TERMINATION OF AGREEMENT BY OWNER (CONTRACTOR DEFAULT)

- A. In the event of default by the CONTRACTOR, the OWNER may give 10 days written notice to the CONTRACTOR of OWNER's intent to terminate the Agreement and provide the CONTRACTOR an opportunity to remedy the conditions constituting the default. It shall be considered a default by the CONTRACTOR whenever CONTRACTOR shall: (1) declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors; (2) fail to provide materials or quality of work meeting the requirements of the Contract Documents; (3) disregard or violate provisions of the Contract Documents or ENGINEER's instructions; (4) fail to prosecute the WORK according to the approved progress schedule; or, (5) fail to provide a qualified superintendent, competent workers, or materials or equipment meeting the requirements of the Contract Documents; or 5) breach any of the material terms of the Agreement or the Contract documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the OWNER may then issue the Notice of Termination.

- B. In the event the Agreement is terminated in accordance with Paragraph 15.2A, herein, the OWNER may take possession of the WORK and may complete the WORK by whatever method or means the OWNER may select. The cost of completing the WORK shall be deducted from the balance which would have been due the CONTRACTOR had the Agreement not been terminated and the WORK completed in accordance with the Contract Documents. If such cost exceeds the balance which would have been due, the CONTRACTOR shall pay the excess amount to the OWNER. If such cost is less than the balance which would have been due, the CONTRACTOR shall not have claim to the difference.

- 15.3 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE). The OWNER may terminate the Agreement at any time in its sole discretion in the best interests of the City and Borough of Wrangell. In such a case, the CONTRACTOR shall have no claims against the

SECTION 00700 - GENERAL CONDITIONS

OWNER except: (1) for the value of work performed up to the date the Agreement is terminated, which shall be based on the CONTRACTOR'S bid price for all units of work performed and in no circumstances shall exceed the bid price for each unit of work actually performed; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Agreement is terminated which would be needed in the WORK and which meet the requirements of the Contract Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the ENGINEER in accordance with the procedure prescribed for the making of the final application for payment and payment under Paragraphs 14.8 and 14.9.

- 15.4 TERMINATION OF AGREEMENT BY CONTRACTOR. The CONTRACTOR may terminate the Agreement upon 10 days written notice to the OWNER, whenever: 1) the WORK has been suspended under the provisions of Paragraph 15.1, herein, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the Agreement has not been received from the OWNER within this time period; or, 2) the OWNER should fail to pay the CONTRACTOR any monies due him as approved for payment by the ENGINEER in accordance with the terms of the Contract Documents and within 60 days after presentation to the OWNER by the CONTRACTOR of a request therefor, unless within the 10-day period the OWNER shall have remedied the condition upon which the payment delay was based. In the event of such termination, the CONTRACTOR shall have no claims against the OWNER except for those claims specifically enumerated in Paragraph 15.3, herein, and as determined in accordance with the requirements of that paragraph.

ARTICLE 16 MISCELLANEOUS

- 16.1 GIVING NOTICE. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. E-mail shall not constitute written notice.

16.2 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK

- A. The CONTRACTOR may use on the Project, with ENGINEER's approval, such stone, gravel, sand, or other material determined suitable by the ENGINEER, as may be found in the excavation. The CONTRACTOR will be paid for the excavation of such material at the corresponding contract unit price. No additional payment will be made for utilizing the material from excavation as borrow, or select borrow.
- B. The CONTRACTOR shall replace, at its own expense, with other acceptable material, all of that portion of the excavated material so removed and used which was needed for use on the project. No charge for the materials so used will be made against the CONTRACTOR except that the CONTRACTOR shall be responsible for payment of any royalties required.
- C. The CONTRACTOR shall not excavate or remove any material from within the Project location which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the ENGINEER.
- D. In the event the CONTRACTOR has processed materials from OWNER-furnished sources in excess of the quantities required for performance of this contract, including

SECTION 00700 - GENERAL CONDITIONS

any waste material produced as a by-product, the OWNER may retain possession of such materials without obligation to reimburse the CONTRACTOR for the cost of their production. When such materials are in a stockpile, the ENGINEER may require: That it remain in stockpile; the CONTRACTOR level such stockpile(s); or that the CONTRACTOR remove such materials and restore the premises to a satisfactory condition at the CONTRACTOR's expense. This provision shall not preclude the OWNER from arranging with the CONTRACTOR to produce material over and above the contract needs, payment for which shall be by written agreement between the OWNER and the CONTRACTOR.

- E. Unless otherwise provided, the material from any existing old structure may be used temporarily by the CONTRACTOR in the erection of the new structure. Such material shall not be cut or otherwise damaged except with the approval of the ENGINEER.
- 16.3 **RIGHT TO AUDIT.** If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon Subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.
- 16.4 **ARCHAEOLOGICAL OR HISTORICAL DISCOVERIES.** When the CONTRACTOR's operation encounters prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, such as shell heaps, land or sea mammal bones or tusks, or other items of historical significance, the CONTRACTOR shall cease operations immediately and notify the ENGINEER. No artifacts or specimens shall be further disturbed or removed from the ground and no further operations shall be performed at the site until so directed. Should the ENGINEER order suspension of the CONTRACTOR's operations in order to protect an archaeological or historical finding, or order the CONTRACTOR to perform extra work, such order(s) shall be covered by an appropriate contract change document.
- 16.5 **CONSTRUCTION OVER OR ADJACENT TO NAVIGABLE WATERS.** All work over, on, or adjacent to navigable waters shall be so conducted that free navigation of the waterways will not be interfered with and the existing navigable depths will not be impaired, except as allowed by permit issued the U.S. Coast Guard and/or the U.S. Army Corps of Engineers, as applicable.
- 16.6 **GRATUITY AND CONFLICT OF INTEREST.** The CONTRACTOR agrees to not extend any loan, gratuity or gift of money of any form whatsoever to any employee or elected official of the OWNER.
- 16.7 **SUITS OF LAW CONCERNING THE WORK**

SECTION 00700 - GENERAL CONDITIONS

A. The Superior Court for the State of Alaska, First Judicial District at Wrangell, Alaska, shall be the exclusive jurisdiction and venue for any action of any kind and any nature arising out of or relating to this Agreement and all Contract documents or for any action of any kind and any nature arising out of or related to the performance or non-performance of the CONTRACTOR, and CONTRACTOR'S employees, subcontractors, consultants and representatives.

B. If one of the questions at issue is the satisfactory performance of the work by the CONTRACTOR and should the appropriate court of law judge the work of the CONTRACTOR to be unsatisfactory, then the CONTRACTOR (or the CONTRACTOR's surety) shall reimburse the OWNER for all legal and all other expenses (as may be allowed and set by the court) incurred by the OWNER because of the suit of the law and, further, it is agreed that the OWNER may deduct such expense from any sum or sums then, or any that become due the CONTRACTOR under the contract.

16.8 CERTIFIED PAYROLLS

A. All CONTRACTORS or Subcontractor who perform work on a public construction contract for the OWNER shall file a certified payroll with the Alaska Department of Labor before Friday of each week that covers the preceding week (Section 14-2-4 ACLA 1949; am Section 4 ch 142 SLA 1972).

B. In lieu of submitting the State payroll form, the CONTRACTOR's standard payroll form may be submitted, provided it contains the information required by AS 36.05.040 and a statement that the CONTRACTOR is complying with AS 36.10.010.

C. A CONTRACTOR or Subcontractor, who performs work on public construction in the State, as defined by AS 36.95.010(3), shall pay not less than the current prevailing rate of wages as issued by the Alaska Department of Labor before the end of the pay period. (AS 36.05.010).

16.9 PREVAILING WAGE RATES

A. Wage rates for Laborers and Mechanics on Public Contracts, AS 36.05.070. The CONTRACTOR, or Subcontractors, shall pay all employees unconditionally and not less than once a week. Wages may not be less than those stated in Paragraph 16.8C, regardless of the contractual relationship between the CONTRACTOR or Subcontractors and laborers, mechanics, or field surveyors. The scale of wages to be paid shall be posted by the CONTRACTOR in a prominent, easily accessible place at the site of the WORK.

B. Failure to Pay Agreed Wages, AS 36.05.080. If it is found that a laborer, mechanic, or field surveyor employed by the CONTRACTOR or Subcontractor has been, or is being, paid a rate or wages less than the established rate, the OWNER may, by written notice, terminate the CONTRACTOR or Subcontractors right to proceed with the work. The OWNER may prosecute the work to completion by contract or otherwise, and the CONTRACTOR and sureties will be held liable to the OWNER for excess costs for completing the WORK. (Section 2 ch 52 SLA 1959).

C. Listing CONTRACTOR's Who Violate Contracts, AS 36.05.090. In addition, a list giving the names of persons who have disregarded the rights of their employees shall be

SECTION 00700 - GENERAL CONDITIONS

distributed to all departments of State government and all political subdivisions. No person appearing on this list, and no firm, corporation, partnership or association in which the person has an interest, may work as a CONTRACTOR or Subcontractor on a public construction contract for the State, or a political subdivision of the state, until three years after the date of publication of the list. (Section 3 ch 52 SLA 1959; am Section 9 ch 142 SLA).

16.10 EMPLOYMENT REFERENCE. Workers employed in the execution of the contract by the CONTRACTOR or by any Subcontractor under this contract shall not be required or permitted to labor more than 8 hours a day or 40 hours per week in violation of the provisions of the Alaska Wage and Hour Act, Section 23.10.060.

16.11 COST REDUCTION INCENTIVE

- A. At any time within 45 days after the date of the Notice of Award, the CONTRACTOR may submit to the ENGINEER in writing, proposals for modifying the plans, specifications, or other requirements of this contract for the sole purpose of reducing the total cost of construction. The cost reduction proposal shall not impair in any manner the essential functions or characteristics of the project, including but not limited to, service life, economy of operation, ease of maintenance, desired appearance or design and safety standards.
- B. The cost reduction proposal shall contain the following information:
 - 1. Description of both the existing contract requirements for performing the WORK and the proposed changes.
 - 2. An itemization of the contract requirements that must be changed if the proposal is adopted.
 - 3. A detailed estimate of the time required and the cost of performing the WORK under both the existing contract and the proposed change.
 - 4. A statement of the date by which the CONTRACTOR must receive the decision from the OWNER on the cost reduction proposal.
 - 5. The contract items of WORK effected by the proposed changes including any quantity variations.
 - 6. A description and estimate of costs the OWNER may incur in implementing the proposed changes, such as test and evaluation and operating and support costs.
 - 7. A prediction of any effects the proposed change would have on future operations and maintenance costs to the OWNER.
- C. The provisions of this section shall not be construed to require the OWNER to consider any cost reduction proposal which may be submitted; nor will the OWNER be liable to the CONTRACTOR for failure to accept or act upon any cost reduction proposal submitted, or for delays to the work attributable to the consideration or implementation of any such proposal.
- D. If a cost reduction proposal is similar to a change in the plans or specifications for the project under consideration by the OWNER at the time the proposal is submitted, the OWNER will not accept such proposal and reserves the right to make such changes without compensation to the CONTRACTOR under the provisions of this section.

SECTION 00700 - GENERAL CONDITIONS

- E. The CONTRACTOR shall continue to perform the work in accordance with the requirements of the contract until an executed Change Order incorporating the cost reduction proposal has been issued. If any executed Change Order has not been issued by the date upon which the CONTRACTOR's cost reduction proposal specifies that a decision should be made by the OWNER, in writing, the cost reduction proposal shall be considered rejected.
- F. The OWNER, shall be the sole judge of the acceptability of a cost reduction proposal and of the estimated net savings in Contract Time and construction costs resulting from the adoption of all or any part of such proposal. Should the CONTRACTOR disagree with OWNER's decision on the cost reduction proposal, there is no further consideration. The OWNER reserves the right to make final determination.
- G. If the CONTRACTOR's cost reduction proposal is accepted in whole or in part, such acceptance will be made by a contract Change Order, which specifically states that the change is executed pursuant to this cost reduction proposal section. Such Change Order shall incorporate the changes in the plans and specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted to be put into effect and shall include any conditions upon which the OWNER's approval is based, if such approval is conditional. The Change Order shall also describe the estimated net savings in the cost of performing the work attributable to the cost reduction proposal, and shall further provide that the contract cost be adjusted by crediting the OWNER with the estimated net savings amount.
- H. Acceptance of the cost reduction proposal and performance of the work does not extend the time of completion of the contract, unless specifically provided in the Change Order authorizing the use of the submitted proposal. Should the adoption of the cost reduction proposal result in a Contract Time savings, the total Contract Time shall be reduced by an amount equal to the time savings realized.
- I. The amount specified to the CONTRACTOR in the Change Order accepted in the cost reduction proposal shall constitute full compensation for the performance of WORK. No claims for additional costs as a result of the changes specified in the cost reduction proposal shall be allowed.
- J. The OWNER reserves the right to adopt and utilize any approved cost reduction proposal for general use on any contract administered when it is determined suitable for such application. Cost reduction proposals identical, similar, or previously submitted will not be accepted for consideration if acceptance and compensation has previously been approved. The OWNER reserves the right to use all or part of any cost reduction proposal without obligation or compensation of any kind to the CONTRACTOR.
- K. The CONTRACTOR shall bear the costs, if any, to revise all bonds and insurance requirements for the project, to include the cost reduction WORK.

END OF SECTION

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

GENERAL. These Supplementary General Conditions make additions, deletions, or revisions to the General Conditions as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SGC 2.2 COPIES OF DOCUMENTS. *Add* the following:

The OWNER shall furnish to the CONTRACTOR six (6) copies of the Contract Documents consisting of bound reduced Drawings, if any, together with three (3) sets of full-scale Drawings. Additional quantities of the Contract Documents will be furnished at reproduction cost.

SGC 4.2 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES. *Add* the following:

- C. In the preparation of the Contract Documents, the Engineer of Record has relied upon:
 - 1. The following report of exploration and tests of subsurface conditions at the site of the WORK:
 - a. PND Site Survey 3-8-2011
 - b. Wood Street Geotechnical Memo 5-9-2011
 - c. Copies of these records may be examined upon request at the office of the ENGINEER. As provided in paragraph 4.2 of the General Conditions and as identified and established above, the CONTRACTOR may rely upon the accuracy of the technical data contained in these records, which is incorporated into the Contract Documents by reference. However, the interpretation of such technical data, including any interpolation or extrapolation thereof is the responsibility of the CONTRACTOR to verify prior to bid.
 - 2. Field measurements and visual inspection of the existing structures and surface conditions.

SGC 5.2 INSURANCE AMOUNTS. The limits of liability for the insurance required by Paragraph 5.2 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- A. Workers' Compensation: (under Paragraph 5.2C.1 of the General Conditions) as in accordance with AS 23.30.045:
 - 1. State: Statutory
 - 2. Applicable Federal (e.g., Longshore): Statutory

Note: If the WORK called for in the Contract Documents involves work in or on any navigable waters, the CONTRACTOR shall provide Workers' Compensation coverage which shall include coverage under the Longshore and Harbor Workers' Compensation Act, the Jones Act, and any other coverage required under Federal or State laws pertaining to workers in or on navigable waters.

- 3. Employers Liability
Bodily Injury by Accident: \$100,000.00 Each Accident

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

Bodily Injury by Disease: \$100,000.00 Each Employee
Bodily Injury by Disease: \$500,000.00 Policy Limit

- a. CONTRACTOR agrees to waive all rights of subrogation against the OWNER and ENGINEER for work performed under Contract.
- b. If CONTRACTOR directly utilizes labor outside of the State of Alaska in the prosecution of the WORK, "Other States" endorsement shall be required as a condition of the Contract.

B. Commercial General Liability: (under Paragraph 5.2C.2 of the General Conditions):

1. Combined Single Limit

- a. General Policy \$1,000,000.00 Each Occurrence
\$2,000,000.00 Annual Aggregate
- b. Products/Completed Operations \$1,000,000.00 Each Occurrence
\$2,000,000.00 Annual Aggregate
- c. Personal Injury \$1,000,000.00 Each Occurrence

C. Commercial Automobile Liability: (under Paragraph 5.2C.3 of the General Conditions) including Owned, Hired, and Non-Owned Vehicles:

Combined Single Limit, Bodily Injury and Property Damage \$1,000,000.00

- D. Policies shall also specify insurance provided by CONTRACTOR will be considered primary and not contributory to any other insurance available to the OWNER or the ENGINEER.
- E. All policies will provide for 30 Days written notice prior to any cancellation or nonrenewal of insurance policies required under Contract except in the event of no-payment of premium where 10 Days is permissible.
- F. The OWNER and the ENGINEER shall be named as an "Additional Insured" under all liability coverages listed in this Section, except for workers' compensation insurance.

SCG 14.3 APPLICATION FOR PROGRESS PAYMENT.

- D. The Value of materials stored at the site shall be an amount equal to 100% of the invoice amount.

SGC 14.9 FINAL PAYMENT AND ACCEPTANCE. *Add* the following paragraph:

- B. Prior to the final payment the CONTRACTOR shall contact the Alaska Department of Labor (ADOL) and provide the OWNER with clearance from the ADOL for the CONTRACTOR and all Subcontractors that have worked on the Project. This clearance shall indicate that all Employment Security Taxes have been paid. A sample letter for this purpose is provided at the end of this section.

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

SGC 16.8 CERTIFIED PAYROLLS. *Change* paragraph A. to read:

- A. All CONTRACTORS or Subcontractors who perform work on a public construction contract for the OWNER shall file a certified payroll with Alaska Department of Labor. See Section 00830 - Alaska Labor Standards, Reporting, and Prevailing Wage Rate Determination.

Alaska Department of Labor
 Juneau Field Tax Office
 FAX 907-465-2374

From: _____

Subject: WOOD STREET IMPROVEMENTS

Timeframe of Contract _____

Please advise whether or not clearance is granted for the following CONTRACTOR or Subcontractor:

Name	Address

Per AS 23.20.265 of the Alaska Employment Security Act, this request is for tax liability clearance and release to make final payment for WORK performed under the subject contract. Please send your response to:

Jeff Jabusch, Borough Manager
 City & Borough of Wrangell
 PO Box 531
 Wrangell, Alaska 99929
 Telephone: (907) 874-2381
 Fax: (907) 874-3952

- Tax Clearance is granted.
- Tax Clearance is NOT granted.

Remarks: _____

Signature

Date

Title

END OF SECTION

**SECTION 00830 - ALASKA LABOR STANDARDS, REPORTING, AND
PREVAILING WAGE RATE DETERMINATION**

State of Alaska, Department of Labor, Laborers' and Mechanics' Minimum Rates of Pay, AS 36.05.010 and AS 36.05.050, Wage and Hour Administration Pamphlet No. 600, the latest edition published by the State of Alaska, Department of Labor inclusive, are made a part of this contract by reference.

The CONTRACTOR is responsible for contacting the Alaska Department of Labor to determine compliance with current regulations.

Required Reporting During Contract (to be provided by every CONTRACTOR and Subcontractor):

- A. **Certified Payrolls must be submitted every two weeks. Before the second Friday**, each CONTRACTOR and Subcontractor must file Certified Payrolls with Statements of Compliance for the previous two weeks. If there was no activity for that pay period, indicate "**No Activity.**" Indicate "**Start**" on your first payroll, and "**Final**" on your last payroll for this Project. Send to:

Wage and Hour Section
Labor Law Compliance Division
Alaska Department of Labor
P.O. Box 020630
Juneau, AK 99802-0630
(907) 465-4842

and

Project Manager
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
(907) 874-2381

- B. **Within 10 Days of "Notice of Award/Notice to Proceed"** make a list of **all** Subcontractors. Include their name, address, phone, estimated subcontract amount, and estimated start and finish dates. Send to:

Borough Clerk
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
(907) 874-2381

and

Wage and Hour Section
Labor Law Compliance Division
Alaska Department of Labor
P.O. Box 020630
Juneau, AK 99802-0630
(907) 465-4839/4842

- C. As part of the **final payment request package**:

A completed Compliance Certificate and Release form (provided in Section 01700 - Project Closeout) from every CONTRACTOR and Subcontractor.

A final Subcontractor list complete with final subcontract amounts and including all equipment rentals (with operators).

A Completion of Public Project form from the Alaska Department of Labor.

END OF SECTION

SECTION 00852 – PERMITS

PART 1 – GENERAL

1.0 COMPLIANCE WITH PERMITS

- A. All materials and construction methods must comply with the permit conditions in the permits provided in Appendix B.

1.1 ADDITIONAL PERMITS

- B. Any additional permits required to perform the WORK shall be secured by the CONTRACTOR. These may include:
 - 1. ADOT lane closure permit with required traffic safety plan submittal.
 - 2. City of Wrangell waste disposal permit for disposal of excavated material at City-owned Monofill site. This permit application is attached to this section. The disposal fee shall be waived for disposal of materials produced during the WORK. All other permit terms apply.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION



City & Borough of Wrangell
Application for Disposal Permit
Wrangell Monofill Site

INSTRUCTIONS: To use the City & Borough of Wrangell Monofill (Landfill) for disposal of unclassified land development excavation materials, users must first obtain a permit at City Hall. Unclassified excavation material means any material excavated in the process of land development, except demolition materials, trees, brush, stumps and other similar materials.

The permit authorizes use of the Monofill for the date(s) indicated. Complete and return the following:

1. Permit Application Form, including:
 - a. The quantities of material for which disposal is allowed;
 - b. The location where disposal is allowed;
 - c. The grading requirements;
 - d. Any road and yard maintenance requirements, for quantities above 150 cubic yards;
 - e. The duration of the permit;
 - f. Such other terms and conditions as the Public Works Department may require.
2. Payment: \$1.00/yard of material disposed, payable to the City & Borough of Wrangell. This is a nonrefundable fee and will be required at the time of permit approval. The \$1.00 per cubic yard of unclassified material disposal fee may be waived for the City's capital projects' disposal purposes. If fees are collected, yardage of material may be calculated by section in place.
3. Any person with a permit who disposes of any material at the Monofill in violation of the terms and conditions of the permit, or the provisions of this section, may be excluded from further use of the Monofill. In addition to any other remedies available to it, the Borough shall have the right to enforce this section by injunctive relief.
4. The Monofill use permit's grading requirements stipulate that any quantity of disposal placed shall be pushed over the existing slope in the designated disposal area in a manner that will allow a 3:1 maximum slope. For this and other reasons, City & Borough of Wrangell staff needs the ability to manage the material entering the Monfill.

Please contact the Public Works Department with any questions. Phone: 907-874-3904

City & Borough of Wrangell
PERMIT APPLICATION FORM
Direct Disposal of Unclassified Excavation Material
Wrangell Monofill Site

The City & Borough of Wrangell, the Grantor, and _____,
the Permit Holder, enter into this Agreement for Monofill disposal use from the dates subject to the
following conditions:

- a. The quantities of material _____
- b. The location where disposal is allowed _____
- c. The grading requirements _____
- d. Any access road maintenance requirements, for quantities above 150 cubic yards _____

- e. The duration of the permit: From _____ To _____
- f. Such other terms and conditions as the Public Works Department may require _____

- g. Fees collected _____

I have read the instructions of the permit for direct use of the Wrangell Monofill Disposal site and
agree to the terms and conditions as stated herein.

Permit Holder/Owner:

Approval Processed by:

Permit Holder-Printed Name Date

City & Borough of Wrangell Official Date

Signature

Permit Holder's Address

Permit Holder's Phone Number(s)

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 GENERAL

- A. The WORK to be performed under this contract shall consist of furnishing all plant, tools, equipment, materials, supplies, manufactured articles, labor, transportation and services, including fuel, power, water, and essential communications, and performing all WORK, or other operations required for the fulfillment of the contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

- B. The project scope described below includes replacement of both electrical and water mains. The ductile iron water mains in Wood Street are the direct line from the reservoir and feed the entire town. The pipes have been exposed to corrosive soils and may be fragile. Handle with care. The electrical system feeds the water treatment plant, cellular phone towers, and AICS medical clinic. Service outages of the water and electrical systems will affect the entire town and must be approved by the local utilities, City and public works director, and Wrangell Municipal Light and Power director at least 48 hours in advance.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. WORK consists of various quantities of mobilization, construction surveying, paving roadway, sidewalks, storm runoff conveyance, drainage culvert, fish stream culvert and realignment, replacement of two water mains, sanitary sewer system, underground electricity, and other improvements.

1.3 SITE OF THE WORK

- A. The site of the WORK is located in Wrangell, Alaska from the intersection of Wood Street and Zimovia Highway.

1.4 BEGINNING AND COMPLETION OF THE WORK

- A. Time is the essence of the contract. All WORK shall be completed in accordance with the following schedule:

<u>WORK DESCRIPTION</u>	<u>COMPLETION DATE</u>
Substantial Completion	September 15 th , 2016

1.5 CONTRACT METHOD

- A. The WORK hereunder will be constructed under a unit price contract.

SECTION 01010 - SUMMARY OF WORK

1.6 WORK BY OTHERS

- A. The CONTRACTOR's attention is directed to the fact that work may be conducted at the site by other contractors during the performance of the WORK under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.
- B. Interference With Work On Utilities: The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.8 CONTRACTOR USE OF PROJECT SITE

- A. The CONTRACTOR's use of the Project site shall be limited to its construction operations, including on-site storage of materials.

1.9 OWNER USE OF THE PROJECT SITE

- A. The OWNER may utilize all or part of the existing site during the entire period of construction for the conduct of the OWNER's normal operations. The CONTRACTOR shall cooperate and coordinate with the ENGINEER to facilitate the OWNER's operations and to minimize interference with the CONTRACTOR's operations at the same time. In any event, the OWNER shall be allowed access to the Project site during the period of construction.

1.10 PROJECT MEETINGS

- A. Pre-Construction Conference
 - 1. Prior to the commencement of WORK at the site, a Pre-Construction Conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR's Project manager, its superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendants will be:
 - a. ENGINEER and the Inspector.
 - b. Representatives of OWNER.
 - c. Governmental representatives as appropriate.
 - d. Others as requested by CONTRACTOR, OWNER, or ENGINEER.
 - 2. Unless previously submitted to the ENGINEER, the CONTRACTOR shall bring one copy each of the following:
 - a. Plan of Operation.
 - b. Project Overview Bar Chart Schedule.
 - c. Procurement schedule of major equipment and

SECTION 01010 - SUMMARY OF WORK

- d. materials and items requiring long lead time.
 - d. Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.
 - e. Name and telephone number of CONTRACTOR's Project Supervisor.
 - f. Schedule of Values
3. The purpose of the Pre-Construction Conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date.

The CONTRACTOR should be prepared to discuss all of the items listed below:

- a. Status of CONTRACTOR's insurance and bonds.
 - b. CONTRACTOR's tentative schedules.
 - c. Transmittal, review, and distribution of CONTRACTOR's submittals.
 - d. Processing applications for payment.
 - e. Maintaining record documents.
 - f. Critical WORK sequencing.
 - g. Field decisions and Change Orders.
 - h. Use of Project site, office and storage areas, security, housekeeping, and OWNER's needs.
 - i. Traffic control and access
 - j. Major equipment deliveries and priorities.
 - k. CONTRACTOR's assignments for safety and first aid.
4. The OWNER will preside at the Pre-Construction Conference and will arrange for keeping and distributing the minutes to all persons in attendance.
5. The CONTRACTOR and its Subcontractors should plan on the conference taking no less than 2 hours. The items listed in paragraph 3 will be covered as well as reviewing the plans and specifications, in extensive detail, with the ENGINEER and the OWNER.

B. Progress Meetings

1. The CONTRACTOR shall schedule and hold weekly progress meetings and at other times as requested by the ENGINEER, or as required by progress of the WORK. The CONTRACTOR, ENGINEER, and all subcontractors active on the site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other subcontractors.
2. The ENGINEER shall preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR is required to present any issues which may impact

SECTION 01010 - SUMMARY OF WORK

its work, with a view to resolve these issues expeditiously.

- 1.11 DEFINITIONS APPLICABLE TO TECHNICAL SPECIFICATIONS. The following words have the meaning defined in the Technical Portions of the WORK:

Furnish - means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and start-up.

Indicated - is a word used to direct the CONTRACTOR to information contained on the drawings or in the Specifications. Terms such as “shown,” “noted,” “scheduled,” and “specified” also may be used to assist in locating information but no limitation of location is implied or intended.

Install - defines operations at the site including assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, ready for the OWNER’s use.

Installer - a person or firm engaged by the CONTRACTOR or its subcontract or any subcontractor for the performance of installation, erection, or application work at the site. Installers must be expert in the operations they are engaged to perform.

Provide - is defined as furnish and install, ready for the intended use.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SCOPE

- A. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of WORK being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of PERMITS and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).
- B. No separate payment will be made for any pay item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of WORK.
- C. In addition to other incidental items of WORK listed elsewhere in the contract, the following items shall also be considered as incidental to other items of WORK under this contract:
 - 1. Removal and replacement of survey monuments and markers disturbed during construction, whether shown on the Plans or not.
 - 2. Re-vegetating areas disturbed during construction.
 - 3. Siltation, pollution control and construction entrances.
 - 4. Maintenance of all services through the Project area, including water, storm, garbage pickup, mail delivery, other deliveries and emergency vehicles.
 - 5. Miscellaneous connecting and attachment hardware as required installing new equipment.
 - 6. Transport, shipping and delivery of all materials to the project site, undamaged and in new condition.
 - 7. All fittings, valves, piping, clamps, transitions, flanges, and miscellaneous appurtenances as required for water main installation.
 - 8. Temporary shoring of trenches or bracing of existing facilities as required for constructing any/all improvements.
 - 9. Minor grading of fill materials as required to match existing grades and maintain positive surface drainage.
 - 10. Minor changes in grades to fit field conditions.
 - 11. Trench excavation including bedrock excavation and bedding as required for storm pipe and associated catch basin and manhole installations.
 - 12. Trench excavation and bedding as required for waterline and associated installations.
 - 13. Trench excavation and bedding as required for sanitary sewer and associated installations.
 - 14. Construction Surveying
 - 15. Pipe bedding materials for associated utility installation.
 - 16. Geotextile fabric.

SECTION 01025 - MEASUREMENT AND PAYMENT

1.2 MOBILIZATION (Pay Item No. 01505.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Mobilization shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- B. Payment for Mobilization under the Base Bid and Alternates shall be made at the amount shown under Pay Item No. 01505.1, which payment shall constitute full compensation for all WORK described in Section 01505 - Mobilization, as shown on the plans and as directed by the ENGINEER.
- C. Partial payments will be made as the WORK progresses as follows:
 - 1. CONTRACTOR may submit cost of securing Bonds at time of Agreement, as a portion of mobilization.
 - 2. When 5% of the total original contract amount is earned from other pay items, 50% of the amount bid for Mobilization, or 5% of the original contract amount, whichever is lesser, will be paid.
 - 3. When 10% of the total original contract amount is earned from other pay items, 100% of the amount bid for Mobilization, or 10% of the original contract amount, whichever is lesser, will be paid.
 - 4. Upon completion of all WORK on the Project, payment of any amount bid for Mobilization in excess of 10% of the total original contract amount will be paid.

1.3 TRAFFIC CONTROL (Pay Item No. 01550.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Traffic Control shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- B. Payment for Traffic Control under the Base Bid shall be made at the amount shown under Pay Item No. 01550.1, which payment shall constitute full compensation for all WORK described in Section 01550 – Site Access and Storage, as shown on the plans and as directed by the ENGINEER.
- C. Payment for Traffic Control under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 01550.1, which payment shall constitute full compensation for all WORK described in Section 01550- Site Access and Storage, as shown on the plans and as directed by the ENGINEER.

1.4 TEMPORARY EROSION AND SEDIMENT CONTROL (Pay Item No. 01570.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Temporary Erosion and Sediment Control shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.

SECTION 01025 - MEASUREMENT AND PAYMENT

- B. Construction entrances, stormwater pollution prevention plan development and implementation and protection of fish stream, silt fences and filter socks are included under this pay item.
- C. Payment for Temporary Erosion and Sediment Control under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 01570.1, which payment shall constitute full compensation for all WORK described in Section 01570-Erosion Control, as shown on the plans and as directed by the ENGINEER.

1.5 AS-BUILT SURVEYS (Pay Item 02201.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for As-Built Surveys shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete in accordance with the Contract Documents.
- B. Verifying Wood Street ROW, finished road prisms and utility locations are considered incidental to this work.
- C. Payment for As-Built Surveys under the Base Bid shall be made at the Lump Sum price named in the Bid Schedule under Pay Item No. 02201.1, which payment shall constitute full compensation for all WORK described in Section 02201 – As-Built Surveys.

1.6 CLEARING AND GRUBBING (Pay Item 02202.1) PRICE BASED ON ACRE

- A. Measurement for payment for Clearing and Grubbing shall be based upon the number of acres cleared and grubbed. The area shall be determined by surveyed limits of clearing and grubbing not to exceed the limits shown on the plans.
- B. Tree falling, root wad removal and disposal or burning of wood debris are included in this pay item.
- C. Payment for Clearing and Grubbing under the Base Bid shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02202.1, which payment shall constitute full compensation for all WORK described in Section 02202 - Excavation and Fill, as shown on the plans and as directed by the ENGINEER.

1.7 UNSUITABLE EXCAVATION INCLUDING HAUL (Pay Item No. 02202.2) PRICE BASED ON, CUBIC YARD

- A. Measurement for payment for Unsuitable Excavation Including Haul shall be based on the number of cubic yards of overburden removed and disposed offsite. This volume shall be determined by average end area method utilizing original ground survey and a survey of competent sub grade layer performed after the removal of all unsuitable material. Where impractical to measure by the average end area method, the ENGINEER may approve other acceptable methods for calculation of volume.
- B. Stockpiling, construction surveying and disposal will not be measured for payment but shall be considered incidental to this WORK.
- C. Payment for Unsuitable Excavation Including Haul under the Base Bid shall be made at

SECTION 01025 - MEASUREMENT AND PAYMENT

the Unit Price named in the Bid Schedule under Pay Item No. 02202.2, which payment shall constitute full compensation for all WORK described in Section 02202 - Excavation and Fill, as shown on the plans and as directed by the ENGINEER

1.8 PLACE EMBANKMENT (Pay Item No. 02202.3) PRICE BASED ON QUANTITY, CUBIC YARD

- A. Measurement for payment for Place Embankment shall be based on the number of cubic yards of embankment placed. This volume shall be determined by average end area method utilizing the survey of competent subgrade performed after unsuitable excavation and a subsequent survey performed of the finished road prism. Where impractical to measure by the average end area method, the ENGINEER may approve other acceptable methods for calculation of volume.
- B. Sorting, hauling, placement, crushing, surveying, and the construction of the rockery wall will not be measured for payment, but will be considered incidental to this WORK.
- C. Payment for Shot Rock Fill under the Base Bid and Alternates shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02202.3, which payment shall constitute full compensation for all WORK described in Section 02202 - Excavation and Fill, as shown on the plans and as directed by the ENGINEER.

1.9 BASE COURSE (Pay Item No. 02204.1) PRICE BASED ON QUANTITY, CUBIC YARD

- A. Measurement for payment for Base Course shall be based on the number of cubic yards of base course and topping course in place as determined by design template neat lines.
- B. Preparing subgrade, compaction, crushing, and grading will be considered incidental to this work under Section 02202- Excavation and Fill.
- C. Payment for Base Course under the Base Bid and Alternates shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02204.1, which payment shall constitute full compensation for all WORK described 02204 - Base Course as shown on the plans and as directed by the ENGINEER.

1.10 DEMOLITION (Pay Item No. 02220.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Demolition shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- B. Removal of culverts, utilities, pavements, sawcutting and other site appurtenances are part of this pay item.
- C. Payment for Demolition under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 02220.1, which payment shall constitute full compensation for all WORK described in Section 02220.1-Demolition, as shown on the plans and as directed by the ENGINEER.

1.11 GRAVITY SANITARY SEWER (Pay Item No. 02401.1) PRICE BASED ON LINEAR FOOT

SECTION 01025 - MEASUREMENT AND PAYMENT

- A. Measurement for payment for Gravity Sanitary Sewer, shall be measured by the staked length and include all side service connections, manholes, couplings, fittings, insulation, cleanouts, piping, concrete encasements, transitions, flanges and other miscellaneous appurtenances along the length of the pipe, all in accordance with the requirements of the Contract Documents.
- B. Trench excavation, manholes, sheeting and bracing, dewatering, bedding, backfill, cleaning and testing, and all other items necessary for a complete installation of Sanitary Sewer will not be measured for payment but will be considered incidental this WORK.
- C. Payment for Gravity Sanitary Sewer under the Additive Alternate shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02401.1, which payment shall constitute full compensation for all WORK described in Section 02401 – Sanitary Sewer Service, as shown on the plans and as directed by the ENGINEER.

1.12 12" STORM DRAIN PIPE (Pay Item No. 02501.1) PRICE BASED ON LINEAR FOOT

- A. Measurement for payment for 12" Storm Drain Pipe shall be measured by the staked length and include all pipe, structures, couplings, fittings, transitions, flanges and other miscellaneous appurtenances along the length of the pipe, all in accordance with the requirements of the Contract Documents.
- B. Excavation, bedrock excavation, ditch construction, ditch lining, catch basins, utility stakes, pipe bedding and porous backfill shall not be measured for payment, but shall be considered incidental to this WORK.
- C. Payment for 12" Storm Drain Pipe under the Additive Alternate shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02501.1, which payment shall constitute full compensation for all WORK described in Section 02501 – Stormwater, as shown on the plans and as directed by the ENGINEER.

1.13 18" STORM DRAIN PIPE (Pay Item No. 02501.2) PRICE BASED ON LINEAR FOOT

- B. Measurement for payment for 18" Storm Drain Pipe shall be measured by the staked length and include all pipe, structures, couplings, fittings, transitions, flanges and other miscellaneous appurtenances along the length of the pipe, all in accordance with the requirements of the Contract Documents.
- B. Excavation, bedrock excavation, ditch construction, ditch lining, catch basins, utility stakes, pipe bedding and porous backfill shall not be measured for payment, but shall be considered incidental to this WORK.
- C. Payment for 18" Storm Drain Pipe under the Base Bid shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02501.2, which payment shall constitute full compensation for all WORK described in Section 02501 – Stormwater, as shown on the plans and as directed by the ENGINEER.

SECTION 01025 - MEASUREMENT AND PAYMENT

1.14 24" STORM DRAIN PIPE (Pay Item No. 02501.3) PRICE BASED ON LINEAR FOOT

- A. Measurement for payment for 24" Storm Drain Pipe shall be measured by the staked length and include all pipe, structures, couplings, fittings, transitions, flanges and other miscellaneous appurtenances along the length of the pipe, all in accordance with the requirements of the Contract Documents.
- B. Excavation, bedrock excavation, ditch construction, ditch lining, catch basins, utility stakes, pipe bedding and porous backfill shall not be measured for payment, but shall be considered incidental to this WORK.
- C. Payment for 24" Storm Drain Pipe under the Base Bid and Additive Alternate shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02501.3, which payment shall constitute full compensation for all WORK described in Section 2501 – Stormwater, as shown on the plans and as directed by the ENGINEER.

1.15 36" STORM DRAIN PIPE (Pay Item No. 02501.4) PRICE BASED ON LINEAR FOOT

- A. Measurement for payment for 36" Storm Drain Pipe shall be measured by the staked length and include all pipe, structures, couplings, fittings, transitions, flanges and other miscellaneous appurtenances along the length of the pipe, all in accordance with the requirements of the Contract Documents.
- B. Excavation, bedrock excavation, ditch construction, ditch lining, catch basins, utility stakes, pipe bedding and porous backfill shall not be measured for payment, but shall be considered incidental to this WORK.
- C. Payment for 36" Storm Drain Pipe under the Base Bid shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02501.4, which payment shall constitute full compensation for all WORK described in Section 02501 – Stormwater, as shown on the plans and as directed by the ENGINEER.

1.16 FISH STREAM CULVERT AND REALIGNMENT (Pay Item No. 02502.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Fish Stream Culvert and Realignment shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- B. Furnishing and installing the fish stream culvert, stream bed material, fines material, and boulders will be included in this pay item. This pay item also includes Work necessary to construct the fish stream realignment section as shown on the plans.
- C. Payment for Fish Stream Culvert and Realignment under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 02502.1, which payment shall constitute full compensation for all WORK described in Section 02502 Fish Stream Culvert, as shown on the plans and as directed by the ENGINEER.

SECTION 01025 - MEASUREMENT AND PAYMENT

1.17 WATER MAIN (Pay Item No. 02601.1) PRICES BASED ON QUANTITY, LINEAR FOOT

- A. Measurement for payment for Water main shall be per linear foot actually installed, complete in place, as required by the Contract Documents and as shown on the plans.
- B. All fittings, valves, valve boxes, insulation, piping, pipe brackets, connections, transitions, flanges, hydrants, vaults and other miscellaneous water service components shall not be measured for payment, but shall be considered incidental to this WORK.
- C. Payment for Water Main under the Base Bid will be made at the Unit Price named in the Bid Schedule under Pay Item No. 02601.1, which payment will constitute full compensation for all WORK described in Section 02601 – Water System, as shown on the Plans and as directed by the ENGINEER.

1.18 PRV VAULT RELOCATION (Pay Item No. 02601.2) PRICE BASED ON LUMP SUM

- A. Measurement for payment for PRV Vault Relocation shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- B. Furnishing and installing the precast vault, valves, elbows, pipes, other fittings as well as salvage and install of existing PRV will be included in this pay item.
- C. Payment for PRV Vault Relocation under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 02601.2, which payment shall constitute full compensation for all WORK described in Section 2601.1-Water System, as shown on the plans and as directed by the ENGINEER.

1.19 ASPHALT CONCRETE PAVEMENT (Pay Item No. 02743.01) PRICE BASED ON QUANTITY, SQUARE YARD

- A. Measurement for payment for Asphalt Concrete Pavement will be based on the actual amount of ground surface covered as measured by surveyed pavement limits in accordance with the limits shown on the Plans or as otherwise directed by the ENGINEER. Tack coat, compaction, and crushing shall be considered incidental and shall not be measured for direct payment.
- B. Pavement installed without the direction and approval of the ENGINEER shall not be measured for payment.
- C. Payment for Asphalt Concrete Pavement under the Alternate will be made at the Unit Price named in the Bid Schedule under Items 02743.01, which payment will constitute full compensation for all WORK described in SECTION 02743 – ASPHALT CONCRETE PAVEMENT, as shown on the Plans and as directed by the ENGINEER.

1.20 SEEDING (Pay Item 02801.1) PRICE BASED ON ACRE

- A. Measurement for payment for Seeding shall be based upon the number of acres on surface seeded. The area shall be determined by surveyed limits of seeding not to exceed the limits of cut and fill shown on the plans and excluding trafficked areas.

SECTION 01025 - MEASUREMENT AND PAYMENT

- B. Payment for Seeding under the Base Bid shall be made at the Unit Price named in the Bid Schedule under Pay Item No. 02801.1, which payment shall constitute full compensation for all WORK described in Section 02801-SEEDING shown on the plans and as directed by the ENGINEER.

1.21 SIGNAGE AND STRIPING (Pay Item No. 02910.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Signage and Striping will be based upon the completion of the entire WORK as a Lump Sum Pay Unit, complete all sign installation and pavement markings in accordance with the requirement of the Contract Documents.
- B. Payment for Signage and Striping under the Base Bid will be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 02910.1, which payment will constitute full compensation for all WORK described in Section 02910 – Signage and Striping, as shown on the Plans and as directed by the ENGINEER.

1.22 CONCRETE (Pay Item No. 03301.1) PRICE BASED ON QUANTITY, SQUARE YARD

- A. Measurement for payment for Concrete will be based on the actual amount of ground surface covered as measured by surveyed pavement limits in accordance with the limits shown on the Plans or as otherwise directed by the ENGINEER. Saw cuts, finishing, tooling, forming, grading and curing shall be considered incidental and shall not be measured for direct payment.
- B. Pavement installed without the direction and approval of the ENGINEER shall not be measured for payment.
- C. Payment for Concrete under the Base Bid and Alternates will be made at the Unit Price named in the Bid Schedule under Items 03301.1, which payment will constitute full compensation for all WORK described in Section 03301 – Concrete Pavement and Sidewalks.

1.23 ELECTRICAL (Pay Item No. 16000.1) PRICE BASED ON LUMP SUM

- A. Measurement for payment for Electrical shall be based upon the completion of the entire WORK as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- D. Installation of all conduits, wiring, lighting, raceways, boxes and connection to existing systems shall be included in this pay item.
- E. Payment for Demolition under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. 16000.1, which payment shall constitute full compensation for all WORK described in Division 16 - Electrical, as shown on the plans and as directed by the ENGINEER.

END OF SECTION

SECTION 01070 - ACRONYMS OF INSTITUTIONS

PART 1 - GENERAL

1.1 GENERAL

- A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these Specifications, the following acronyms which may appear in these Specifications shall have the meanings indicated herein.

1.2 ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGMA	American Gear Manufacturer's Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
ATM	Alaska Test Methods
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International

SECTION 01070 - ACRONYMS OF INSTITUTIONS

BHMA	Builders Hardware Manufacturer's Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturer's Association
CGA	Compressed Gas Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DCDMA	Diamond Core Drill Manufacturer's Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
FPL	Forest Products Laboratory
HI	Hydronics Institute
IBC	International Building Code
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IOS	International Organization for Standardization
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturer's Association
MPTA	Mechanical Power Transmission Association
MTI	Marine Testing Institute
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NLGI	National Lubricating Grease Institute
NMA	National Microfilm Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SSA	Swedish Standards Association
SSBC	Southern Standard Building Code, Southern Building Code Congress

SECTION 01070 - ACRONYMS OF INSTITUTIONS

SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01090 - REFERENCE STANDARDS

PART 1 - GENERAL

1.1 GENERAL

- A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.
- B. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the WORK is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- C. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the CONTRACTOR has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the WORK; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the CONTRACTOR.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all WORK specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.
- B. References herein to "Building Code" or "International Building Code" shall mean International Building Code of the International Code Council.
- C. Similarly, references to "Mechanical Code" or "International Mechanical Code," "Plumbing Code" or "International Plumbing Code," "Fire Code" or "International Fire Code," shall mean International Mechanical Code International Plumbing Code and International Fire Code of the International Code Council. "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all addenda, modifications, amendments, or other lawful changes thereto.
- D. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought

SECTION 01090 - REFERENCE STANDARDS

to the attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor. The CONTRACTOR shall bid for the most stringent requirements.

- E. The CONTRACTOR shall construct the WORK specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.
- F. Applicable Standard Specifications: References in Contract Sections 02801 -Asphalt Concrete Pavement to Standard Specifications shall mean the Alaska Department of Transportation and Public Facilities "Standard Specifications for Highway Construction - 2004" and any supplements or amendments thereto.
- G. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
- H. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 - GENERAL

1.1 GENERAL

- A. Whenever submittals are required hereunder, all such submittals by the CONTRACTOR shall be submitted to the ENGINEER.
- B. Within 14 days after the date of commencement as stated in the Notice of Award/Notice to Proceed, the CONTRACTOR shall submit the following items to the ENGINEER for review:
 - 1. A Plan of Operation summarizing the methods and equipment to be used to complete the WORK.
 - 2. A Project Schedule as described in Section 1.7 of this specification.
 - 3. A Procurement Schedule outlining key milestones for procurement of major components of the WORK.
 - 4. A preliminary schedule of Shop Drawing, Sample and proposed Substitutes or “Or-Equal” submittals.
 - 5. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit and the expected date of submittal for the permit and the required date for receipt of the permit.
 - 6. All required Material Safety Data Sheets.
 - 7. A staging and traffic maintenance plan, as required.
 - 8. A plan for temporary erosion control and pollution control, as required.
 - 9. A letter designating the CONTRACTOR’s Superintendent, defining that person’s responsibility and authority, and providing contact information and a specimen of his signature.
 - 10. A letter designating the CONTRACTOR’s safety representative and the person’s responsibility and authority, and providing contact information.
 - 11. A blank Daily Report form.

1.2 SHOP DRAWING SUBMITTAL

- A. Wherever called for in the Contract Documents, or where required by the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER, for review, 4 copies of each shop drawing submittal unless otherwise indicated. Electronic submittal transmission may be allowed if approved in advance by the ENGINEER. The term “ Shop Drawings” as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, lists, graphs, operating instructions, catalog sheets, data sheets, and similar items.
- B. All Shop Drawing Submittals shall be accompanied by the ENGINEER’s standard submittal transmittal form. The form may be obtained in quantity from the ENGINEER. Any submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal.
- C. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer’s “package” or are so functionally related that

SECTION 01300 - CONTRACTOR SUBMITTALS

expediency indicates review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the ENGINEER.

- D. Except as otherwise provided herein, the ENGINEER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 14 calendar days following their receipt by the ENGINEER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the second submission of a submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the ENGINEER review beyond the second submittal. The ENGINEER's maximum review period for each submittal including all re-submittals will be 7 days per submission. In other words, for a submittal that requires two re-submittals before it is complete, the maximum review period for that submittal could be 28 Days.
- E. If 3 copies (or a single electronic transmission) of a submittal are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.
- F. If 3 copies (or a single electronic transmission) of a submittal are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal is not required.
- G. If one copy (or a single electronic transmission) of the submittal is returned to the CONTRACTOR marked "AMEND-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the ENGINEER.
- H. If one copy (or a single electronic transmission) of the submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the ENGINEER.
- I. Fabrication of an item may be commenced only after the ENGINEER has reviewed the pertinent submittal and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED." Corrections indicated on submittal shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the Contract requirements. Only a change order can alter the contract price, time, or requirements.
- J. All CONTRACTOR shop drawing submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the ENGINEER. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the ENGINEER of any CONTRACTOR submittal will be made for any items which have not been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

SECTION 01300 - CONTRACTOR SUBMITTALS

- K. The ENGINEER's review of CONTRACTOR shop drawing submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

1.3 SAMPLES SUBMITTAL

- A. Whenever in the Specifications samples are required, the CONTRACTOR shall submit not less than 3 samples of each item or material to the ENGINEER for acceptance at no additional cost to the OWNER.
- B. Samples, as required herein, shall be submitted for acceptance a minimum of 14 days prior to ordering such material for delivery to the job site, and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the WORK.
- C. All samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and Supplier's names for identification and submitted to the ENGINEER for acceptance. Upon receiving acceptance of the ENGINEER, one set of the samples will be stamped and dated by the ENGINEER and returned to the CONTRACTOR, and one set of samples will be retained by the ENGINEER, and one set of samples shall remain at the job site until completion of the WORK.
- D. Unless clearly stated otherwise, it is assumed that all colors and textures of specified items presented in sample submittal are from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products or equipment lines, and their selection will require an increase in contract time or price, the CONTRACTOR will clearly indicate this on the transmittal page of the submittal.

1.4 TECHNICAL MANUAL SUBMITTAL

- A. Using the outline provided in the Equipment Maintenance Summary Sheet (copy of which may be obtained from the ENGINEER), the CONTRACTOR shall include in the technical manuals for each item of mechanical, electrical, and instrumentation equipment, the following:
 - 1. Complete operating instructions, including location of controls, special tools or other equipment required, related instrumentation, and other equipment needed for operation.
 - 2. Lubrication schedules, including the lubricant SAE grade and type, temperature range of lubricants, and including frequency of required lubrication.
 - 3. Preventive maintenance procedures and schedules.
 - 4. Parts lists, by generic title and identification number, complete, with exploded views of each assembly.
 - 5. Disassembly and reassembly instructions.
 - 6. Name and location of nearest supplier and spare parts warehouse.
 - 7. Recommended troubleshooting and startup procedures.

SECTION 01300 - CONTRACTOR SUBMITTALS

8. Reproducible prints of the record drawings, including diagrams and schematics, as required under the electrical and instrumentation portions of these Specifications.
 9. Tabulation of proper settings for all pressure relief valves, (low/high) pressure switches and other related equipment protection devices.
 10. Detailed test procedures to determine performance efficiency of equipment.
 11. List of all electrical relay settings including alarm and contact settings.
- B. The CONTRACTOR shall furnish to the ENGINEER 5 identical sets of technical manuals. Each set shall consist of one or more volumes, each of which shall be bound in a standard size, 3-ring, loose-leaf vinyl plastic hard cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches. A table of contents shall be provided which indicates all equipment in the technical manuals.
- C. All technical manuals shall be submitted in final form to the ENGINEER not later than the 75 percent of construction completion date. All discrepancies found by the ENGINEER in the technical manuals shall be corrected by the CONTRACTOR within 30 days from the date of written notification by the ENGINEER.
- D. Incomplete or unacceptable technical manuals at the 75 percent construction completion point shall constitute sufficient justification to withhold payment for work completed beyond that period in accordance with Paragraph "Technical Manual Submittal" of Section 01700 - Project Closeout.

1.5 SPARE PARTS LIST SUBMITTAL

- A. The CONTRACTOR shall furnish to the ENGINEER 5 identical sets of spare parts information for all mechanical, electrical, and instrumentation equipment. The spare parts list shall include the current list price of each spare part. The spare parts list shall be limited to those spare parts which each manufacturer recommends be maintained by the OWNER in inventory at the plant site. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts to facilitate the OWNER in ordering. The CONTRACTOR shall cross-reference all spare parts lists to the equipment numbers designated in the Contract Documents. The spare parts lists shall be bound in standard size, 3-ring, loose leaf, vinyl plastic hard cover binders suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches.

1.6 RECORD DRAWINGS SUBMITTALS

- A. The CONTRACTOR shall keep and maintain, at the job site, one record set of Drawings. On these, it shall mark all Project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to indicate, fully, the WORK as actually constructed. These master record drawings, of the CONTRACTOR's representation of as-built conditions, including all revisions made

SECTION 01300 - CONTRACTOR SUBMITTALS

necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the WORK.

- B. In the case of those drawings which depict the detail requirement for equipment to be assembled and wired in the factory, such as motor control centers and the like, the record drawings shall be updated by indicating those portions which are superseded by Change Order Drawings or final Shop Drawings, and by including appropriate reference information describing the Change Orders by number and the Shop Drawings by manufacturer, drawing, and revision numbers.
- C. Record Drawings shall be accessible to the ENGINEER at all times during the construction period and shall be delivered to the ENGINEER on the 20th working day of every third month after the month in which the Notice to Proceed is given as well as upon completion of the WORK.
- D. Final payment will not be acted upon until the CONTRACTOR-prepared record drawings have been delivered to the ENGINEER.

1.7 PROGRESS SCHEDULES

- A. The progress schedule shall be in Bar Chart or Critical Path Method (CPM) form, as required by the ENGINEER.
- B. The progress schedule shall show the order in which the CONTRACTOR proposes to carry out the WORK and the contemplated date on which the CONTRACTOR and their subcontractors will start and finish each of the salient features of the work, including any scheduled periods of shutdown. The schedule shall also indicate any anticipated periods of multiple-shift work.
- C. Upon substantial changes to the CONTRACTOR's progress schedule of work or upon request of the ENGINEER, the CONTRACTOR shall submit a revised progress schedule(s) in the form required. Such revised schedule(s) shall conform with the Contract Time and take into account delays which may have been encountered in the performance of the WORK. In submitting a revised schedule, the CONTRACTOR shall state specifically the reason for the revision and the adjustments made in his schedule or methods of operation to ensure the completion of all the WORK within the Contract Time.

1.8 PROPOSED SUBSTITUTES OR "OR-EQUAL" ITEM SUBMITTAL

- A. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the item is intended to establish the type, function, and quality required. If the name is followed by the words "or-equal" indicating that a substitution is permitted, materials or equipment of other suppliers may be accepted by the ENGINEER if sufficient information is submitted by the CONTRACTOR to allow the ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named, subject to the following requirements:

SECTION 01300 - CONTRACTOR SUBMITTALS

1. The burden of proof as to the type, function, and quality of any such substitute material or equipment shall be upon the CONTRACTOR.
 2. The ENGINEER will be the sole judge as to the type, function, and quality of any such substitute material or equipment and the ENGINEER's decision shall be final.
 3. The ENGINEER may require the CONTRACTOR, to furnish at the CONTRACTOR's expense, additional data about the proposed substitute.
 4. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.
 5. Acceptance by the ENGINEER of a substitute item proposed by the CONTRACTOR shall not relieve the CONTRACTOR of the responsibility for full compliance with the Contract documents and for adequacy of the substitute item.
 6. The CONTRACTOR shall be responsible for resultant changes and all additional costs which the accepted substitution requires in the CONTRACTOR's work, the work of its subcontractors and of other contractors, and shall effect such changes without cost to the OWNER. This shall include the cost for redesign and claims of other contractor affected by the resulting change.
- B. The procedure for review by the ENGINEER will include the following:
1. If the CONTRACTOR wishes to furnish or use a substitute item of material or equipment, the CONTRACTOR shall make written application to the ENGINEER on the "Substitution Request Form" for acceptance thereof.
 2. Unless otherwise provided by law or authorized in writing by the ENGINEER, the "Substitution Request Form(s)" shall be submitted within the 21-day period after Notice of Award.
 3. Wherever a proposed substitute material or equipment has not been submitted within said 21-day period, or wherever the submission of a proposed substitute material or equipment has been judged to be unacceptable by the ENGINEER, the CONTRACTOR shall provide material or equipment named in the Contract Documents.
 4. The CONTRACTOR shall certify that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified, and be suited to the same use as that specified.
 5. The ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. In no case will this reasonable time period be less than 14 days.
 6. As applicable, no shop drawing submittals will be made for a substitute item nor will any substitute item be ordered, installed, or utilized without the ENGINEER's prior written acceptance of the CONTRACTOR's "Substitution Request Form" which will be evidenced by a Change Order.
 7. The ENGINEER will record the time required by the ENGINEER in evaluating substitutions proposed by the CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not the ENGINEER accepts a proposed substitute, the CONTRACTOR shall reimburse the OWNER for the charges of the ENGINEER for evaluating each proposed substitute.

SECTION 01300 - CONTRACTOR SUBMITTALS

- C. The CONTRACTOR's application using the "Substitution Request Forms" shall contain the following statements and/or information which shall be considered by the ENGINEER in evaluating the proposed substitution:
1. The evaluation and acceptance of the proposed substitute will not prejudice the CONTRACTOR's achievement of substantial completion on time.
 2. Whether or not acceptance of the substitute for use in the WORK will require a change in any of the Contract Documents to adopt the design to the proposed substitute.
 3. Whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty.
 4. All variations of the proposed substitute for that specified will be identified.
 5. Available maintenance, repair, and replacement service and its estimated cost will be indicated.
 6. Itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including cost of redesign and claims of other contractors affected by the resulting change.

1.9 MATERIAL CERTIFICATON SUBMITTAL

- A. The ENGINEER may permit the use, prior to sampling, inspection and testing, of certain materials or assemblies when accompanied by manufacturer's material certifications stating that such materials or assemblies fully comply with the requirements of the Contract. The certification shall be signed by the manufacturer, and will specifically reference the material's compliance with the AASHTO, ASTM and/or CBJ Standards specified in the applicable Contract Documents.
- B. Material Certifications shall be submitted to the engineer prior to incorporating the item into the WORK.
- C. Materials or assemblies used on the basis of material certifications may be sampled, inspected and/or tested at any time, and if found not in conformity with these Specifications, will be subject to rejection whether in place or not.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

(SUBSTITUTION REQUEST FORM – next page)

SECTION 01300 - CONTRACTOR SUBMITTALS

**City & Borough of Wrangell
SUBSTITUTION REQUEST FORM**

TO: _____ Project: _____
Contract No. _____
OWNER: _____

SPECIFIED ITEM:

Section	Page	Paragraph	Description
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The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request. Applicable portions of the data are clearly identified.

The undersigned states that the following paragraphs, unless modified on attachments are correct:

1. The proposed substitution does not affect dimensions shown on Drawings and will not require a change in any of the Contract Documents.
2. The undersigned will pay for changes to the design, including engineering design, detailing, and construction costs caused by the requested substitution which is estimated to be \$ _____.
3. The proposed substitution will have no adverse affect on other contractors, the construction schedule (specifically the date of substantial completion), or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The incorporation or use of the substitute in connection with the WORK is not subject to payment of any license fee or royalty.

The undersigned further states that the function, appearance, and quality of the Proposed Substitution are equivalent or superior to the Specified item.

Submitted by CONTRACTOR: _____ Reviewed by ARCHITECT/ENGINEER _____
Signature _____ Accepted Accepted as Noted
Firm: _____ Not Accepted Received Too Late
By: _____ Date: _____
Title: _____ Telephone: _____
Date: _____
Attachments: _____

END OF SECTION

**WOOD STREET IMPROVEMENTS
SUBMITTAL REGISTER
PAGE 1 of 5**

CONTRACTOR: _____

Spec. Division	Article	Description	Date Rec'd	Reviewer	Action Code	Date FWD to Cont'r	Remarks
00360	-	List of Subcontractors and Subcontractor Sales Tax forms.					
00830	A	Certified Payrolls - State					
00830	B	List of all Subcontractors					
00830	C	Compliance Certificate and Release Form					
00830	C	Final Subcontractor List					
01300	1.1	Plan of Operation					
01300	1.1	Project Schedule					
01300	1.1	Procurement Schedule					
01300	1.1	Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.					
01300	1.1	A list of all PERMITS and licenses the CONTRACTOR shall obtain.					
01300	1.1	All required Material Safety Data Sheets.					
01300	1.1	A staging and traffic maintenance plan, as required.					
01300	1.1	A plan for temporary erosion control and pollution control, as required.					

ACTION CODES:

NR: NOT REVIEWED
AN: APPROVED AS NOTED
R: REJECTED

NET: NO EXCEPTION TAKEN
MCN: MAKE CORRECTIONS NOTED

SI: SUBMIT SPECIFIED ITEM
RR: DISAPPROVED; REVISE AND RESUBMIT

NOTE: The above list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans and/or specifications or as directed by the Engineer.

**WOOD STREET IMPROVEMENTS
SUBMITTAL REGISTER
PAGE 2 of 5**

CONTRACTOR: _____

Spec. Division	Article	Description	Date Rec'd	Reviewer	Action Code	Date FWD to Cont'r	Remarks
01300	1.1	A letter designating the Contractor's Superintendent & Safety Representative.					
01300	1.1	Daily Report form					
01400	1.4	Reports Indicating Observation and Results of Tests					
01505	1.2	Breakdown which shows the estimated value of major mobilization components					
01550	1.2	Traffic Control Plan					
01550	1.3	Storage and Disposal Plan					
01550	1.3	EPA number for wastes generated at the site					
01570	1.2	Storm water Pollution Prevention Plan					
01570	3.1	Erosion Control Plan					
01600	1.6	Manufacturers Service Instructions					
01600	1.6	Log of Services					
01700	1.3	Written Guarantees					
01700	1.3	Maintenance stock items; spare parts, and special tools.					
01700	1.3	Completed Record Drawings					

ACTION CODES:

NR: NOT REVIEWED
AN: APPROVED AS NOTED
R: REJECTED

NET: NO EXCEPTION TAKEN
MCN: MAKE CORRECTIONS NOTED

SI: SUBMIT SPECIFIED ITEM
RR: DISAPPROVED; REVISE AND RESUBMIT

NOTE: The above list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans and/or specifications or as directed by the Engineer.

**WOOD STREET IMPROVEMENTS
SUBMITTAL REGISTER
PAGE 3 of 5**

CONTRACTOR: _____

Spec. Division	Article	Description	Date Rec'd	Reviewer	Action Code	Date FWD to Cont'r	Remarks
01700	1.3	Certificates of Inspection and Acceptance					
01700	1.3	Releases from all parties who are entitled to claims					
01700	1.3	Completed Certificate of Compliance and Release from all Contractors					
02201	3.1	Documentation of ROW Survey					
02202	1.2	Manufacturer's Data & Material Certificates for Geotextile Reinforcement					
02203	1.2	Insulation Board					
02204	1.2	D-1 Base Course					
02204	1.2	C-1 Base Course					
02220	1.2	Record Drawings					
02401	1.2	Gravity Sewer Pipe and Manhole Material Certifications					
02501	1.2	Storm pipes: Material Certification					
02501	1.2	Porous backfill material gradations					
02501	1.2	Catch basin material Certifications					
02502	1.2	Channel Rock					

ACTION CODES:

NR: NOT REVIEWED
AN: APPROVED AS NOTED
R: REJECTED

NET: NO EXCEPTION TAKEN
MCN: MAKE CORRECTIONS NOTED

SI: SUBMIT SPECIFIED ITEM
RR: DISAPPROVED; REVISE AND RESUBMIT

NOTE: The above list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans and/or specifications or as directed by the Engineer.

**WOOD STREET IMPROVEMENTS
SUBMITTAL REGISTER
PAGE 4 of 5**

CONTRACTOR: _____

Spec. Division	Article	Description	Date Rec'd	Reviewer	Action Code	Date FWD to Cont'r	Remarks
02502	1.2	Corrugated Metal Pipe					
02601	1.2	Water Main Pipe certifications					
02601	1.2	Fittings, Valves, Hydrants, Valve Boxes, vaults and accessories.					
02601	1.2	PRV Vault					
02601	1.2	Water Service Connections Materials					
02601	1.2	Testing and Disinfection Method					
02601	1.2	Plastic Pipe Welder Certifications					
02601	1.2	Sample Bent Strap Test per PPI procedures					
02601	1.2	Water main switch over procedure and steps					
02702	1.2	Wood Street ROW Survey					
02702	1.2	As-Built Plan Information					
02743	1.2	Asphalt mix design, tack coat, aggregate gradations and aggregate test results					
02901	1.2	Striping Paint					
02901	1.2	Signs					

ACTION CODES:

NR: NOT REVIEWED
AN: APPROVED AS NOTED
R: REJECTED

NET: NO EXCEPTION TAKEN
MCN: MAKE CORRECTIONS NOTED

SI: SUBMIT SPECIFIED ITEM
RR: DISAPPROVED; REVISE AND RESUBMIT

NOTE: The above list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans and/or specifications or as directed by the Engineer.

**WOOD STREET IMPROVEMENTS
SUBMITTAL REGISTER
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CONTRACTOR: _____

Spec. Division	Article	Description	Date Rec'd	Reviewer	Action Code	Date FWD to Cont'r	Remarks
03301	1.3	Reinforcement Bar Certifications					
03301	1.3	Concrete Mix Design					
03301	1.3	Construction Joint and reinforcement plan					
03301	1.3	Independent concrete quality control reports					
03301	1.3	Premolded joint filler certification					

ACTION CODES:

NR: NOT REVIEWED
AN: APPROVED AS NOTED
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NET: NO EXCEPTION TAKEN
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NOTE: The above list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans and/or specifications or as directed by the Engineer.

SECTION 01400 - QUALITY CONTROL

PART 1 - GENERAL

1.1 DEFINITION

- A. Specific quality control requirements for the WORK are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURE

- A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacture.
- B. The presence of the ENGINEER at the place of manufacturer, however, shall not relieve the CONTRACTOR of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR, and said duty shall not be avoided by any act or omission on the part of the ENGINEER.

1.3 SAMPLING AND TESTING

- A. Unless otherwise indicated, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, ATM, and AASHTO as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the ENGINEER will insure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.
- B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial WORK, shall not be construed as a waiver of any requirements of the Contract Documents.
- C. Notwithstanding the existence of such waiver, the ENGINEER reserves the right to make independent investigations and tests, and failure of any portion of the WORK to meet any of the requirements of the Contract Documents, shall be reasonable cause for the ENGINEER to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

1.4 INSPECTION AND TESTING LABORATORY SERVICE

- A. Inspection and testing laboratory service shall comply with the following:
 - 1. OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself unless specific quality control testing is required by the CONTRACTOR under these specifications.

SECTION 01400 - QUALITY CONTROL

2. The OWNER will appoint, employ and pay for services to perform inspections as specified in individual specification sections, unless specified otherwise.
3. Reports will be submitted by the independent firm to the ENGINEER in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
4. The CONTRACTOR shall cooperate with the ENGINEER or independent firm and furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
5. The CONTRACTOR shall notify OWNER 24 hours prior to the expected time for operations requiring inspection and laboratory testing services.
6. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the OWNER. The CONTRACTOR shall bear all costs from such retesting at no additional cost to the OWNER.
7. For samples and tests required for CONTRACTOR'S use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR'S use shall be included in the Contract Price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Inspection: The OWNER will appoint, employ and pay for services to inspect materials or equipment upon the arrival on the job site and immediately prior to installation, and reject damaged and defective items.
- B. Measurements: The CONTRACTOR shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.
- C. Manufacturer's Instructions: Where installations include manufactured products, the CONTRACTOR shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

END OF SECTION

SECTION 01505 - MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

- A. Mobilization shall include the obtaining of all permits; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:
1. Moving on to the site of all CONTRACTOR's plant and equipment required for operations.
 2. Providing all on-site communication facilities, including radios and cellular phones.
 3. Obtaining all required permits.
 4. Having all OSHA required notices and establishment of safety programs.
 5. Having the CONTRACTOR's superintendent at the job site full time.
 6. Submitting initial submittals.

1.2 PAYMENT FOR MOBILIZATION

- A. As soon as practicable after receipt of the Notice to Proceed, the CONTRACTOR shall submit a breakdown to the ENGINEER for approval, which shall show the estimated value of each major component of Mobilization. When approved by the ENGINEER, the breakdown will be the basis for initial progress payments in which Mobilization is included.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01520 - SECURITY

PART 1 - GENERAL

1.1 SECURITY PROGRAM

A. The CONTRACTOR shall:

1. Protect WORK, existing premises and OWNER's operations from theft, vandalism, and unauthorized entry.
2. Coordinate security with OWNER's operations at job mobilization.
3. Maintain program throughout construction period until OWNER's occupancy.

1.2 ENTRY CONTROL

A. The CONTRACTOR shall:

1. Control entry of persons and vehicles onto Project construction site and existing facilities.
2. Allow entry on the construction site only to authorized persons with proper identification.
3. Coordinate access of OWNER's personnel to site in coordination with CONTRACTOR's security forces.

B. OWNER will control entrance of persons and vehicles related to OWNER's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

PART 1 - GENERAL

1.1 GENERAL

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. All utility locates shall be the responsibility of the CONTRACTOR. For aid in utility location call "Dial Dig" at 811, 48 hours (two working days) prior to beginning construction.
- C. The CONTRACTOR shall verify the exact locations and depths of all utilities and the CONTRACTOR shall make exploratory excavations of all utilities that may interfere with the WORK. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR's work. Any utility or service in conflict with the WORK will be reburied by the CONTRACTOR prior beginning the WORK to avoid damage.
- D. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.2 RIGHTS-OF-WAY

- A. The CONTRACTOR shall not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, cable television, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified by the ENGINEER that the OWNER has secured authority therefore from the proper party. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the OWNER shall determine the sequence and order of the WORK. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the OWNER to the CONTRACTOR so desiring, to the extent, amount, in the manner, and at the times permitted.
- B. No such decision as to the method or time of conducting the WORK or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the WORK in Article 15 of the General Conditions of the contract.

1.3 PROTECTION OF SURVEY MONUMENTS, STREET AND/OR ROADWAY MARKERS

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey monuments, markers or points disturbed by the CONTRACTOR shall be accurately re-established, at the CONTRACTOR's expense unless provided for elsewhere in the contract, after all street or roadway resurfacing has been completed. Re-establishment of all survey monuments shall be by a Registered Alaskan Land Surveyor. Located survey markers are provided for reference in the Drawings, though it is not guaranteed that all markers have been identified.

1.4 RESTORATION OF PAVEMENT

- A. General: All paved areas, including asphalt concrete berms, cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavement shall conform to the requirements of the affected pavement owner. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The CONTRACTOR shall protect all Underground Utilities and other improvements which may be impaired during construction operations. It shall be the CONTRACTOR's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The CONTRACTOR shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

- B. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- C. Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the CONTRACTOR shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the ENGINEER and the owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- D. OWNER's Right of Access: The right is reserved to the OWNER and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this contract.
- E. Underground Utilities Indicated: Existing utility lines that are indicated or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR.
- F. Underground Utilities Not Indicated: In the event that the CONTRACTOR damages any existing utility lines that are not indicated or the locations of which are not made known to the CONTRACTOR prior to excavation, a written report thereof shall be made immediately to the ENGINEER. If directed by the ENGINEER, repairs shall be made by the CONTRACTOR under the provisions for changes and extra work contained in Articles 10, 11, and 12 of the General Conditions.
- G. All costs of locating, repairing damage not due to failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such utility facilities not shown in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the WORK which was interrupted or idled by removal or relocation of such utility facilities, and which was necessarily idled during such work will be paid for as extra work in accordance with the provisions of Articles 10, 11, and 12 of the General Conditions.
- H. Approval of Repairs: All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other work.
- I. Maintaining in Service: All oil and gasoline pipelines, power, and telephone, cable television or the communication cable ducts, gas and water mains, irrigation lines, sewer

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.6 TREES WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

- A. General: The CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs outside the limits of clearing and grubbing, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or OWNER. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the CONTRACTOR or a certified tree company under permit from the jurisdictional agency and/or the OWNER. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.
- B. Trimming: Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.
- C. Replacement: The CONTRACTOR shall immediately notify the jurisdictional agency and/or the OWNER if any tree is damaged by the CONTRACTOR's operations. If, in the opinion of said agency or the OWNER, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree at its own expense. The tree shall be of a like size and variety as the tree damaged, or, the CONTRACTOR shall pay to the owner of said tree a compensatory payment acceptable to the tree owner, subject to the approval of the jurisdictional agency or OWNER.

1.7 PROTECTION OF EXISTING STRUCTURES

- A. Compaction Equipment and Operations: The CONTRACTOR shall restrict its compaction operations as necessary to assure no damage occurs to adjacent buildings. This may require the use of smaller compaction equipment than is usually employed for trench backfill and roadway embankment compaction operations when in the vicinity of buildings sensitive to vibrating or other impact-type activities. It shall be the CONTRACTOR's responsibility to determine in which areas of the project the compaction operations must be restricted, to avoid damage to existing buildings. The CONTRACTOR is advised that some structures on the project, especially those founded on steep or unstable ground, and are especially sensitive to vibrations caused by heavy construction equipment. The foregoing restrictions on the size of, and magnitude of impact energy exerted by, compaction equipment will in no way relieve the CONTRACTOR from the compaction requirements as specified in other Sections of the contract.

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

- B. The CONTRACTOR shall notify all affected businesses and other residents in advance of any operations that will cause vibrations that may damage belongings within the buildings. All property damage caused by the CONTRACTOR's operations shall be repaired or replaced at CONTRACTOR's expense.

PART 2 PRODUCTS – (Not Used)

PART 3 EXECUTION - (Not used)

END OF SECTION

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.1 HIGHWAY LIMITATIONS

The CONTRACTOR shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the WORK. It shall be the CONTRACTOR's responsibility to construct and maintain any haul roads required for its construction operations.

1.2 MAINTENANCE OF TRAFFIC

- A. General: Unless otherwise provided, existing roadways shall be kept open to all traffic by the CONTRACTOR. Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. The CONTRACTOR shall provide unimpeded access through the Project limits for emergency vehicles and make every effort to provide minimum delay to emergency service vehicles and garbage collection vehicles.
- B. The CONTRACTOR shall submit three (3) copies of a traffic control plan to the ENGINEER for approval a minimum of two (2) weeks prior to construction. The ENGINEER reserves the right to observe these traffic control plans in use and to make any changes as field conditions warrant. Any changes shall supersede these plans and be done solely at the CONTRACTOR's expense.
- C. No street shall be closed to the public without first obtaining permission of the ENGINEER and proper governmental authority. Where so provided on the plans or otherwise approved by the ENGINEER, the CONTRACTOR may by-pass traffic over a detour route. When no longer required, the detour shall be removed and the approached obliterated.
- D. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the ENGINEER or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the WORK shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.
- E. The CONTRACTOR's equipment shall stop at all points of intersection with the traveling public unless satisfactory traffic control measures, approved in writing by the ENGINEER, are installed and maintained at CONTRACTOR's expense.
- F. When the CONTRACTOR is required to maintain traffic through grading, roadway excavation and embankment areas, the construction shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times. The surface of the roadbed shall be properly crowned for drainage. In advance of other grading operations, sufficient fill shall be placed at culverts and bridges to permit traffic to cross unimpeded. Part width construction techniques shall be employed when the traffic is routed through roadway cuts or over embankments under construction. The material shall be excavated or placed in layers and the construction activities shall be alternated from one side to the other, with traffic routed over the side opposite the one under construction.

SECTION 01550 - SITE ACCESS AND STORAGE

- G. During the removal and laying of culvert pipe, a maximum time of one hour of road closure may be permitted, providing the removal and laying of the culvert pipe cannot be completed for one-half width of the roadway and provided that a detour cannot be constructed around the culvert being laid. Closure shall be scheduled so as not to delay buses and peak hour traffic. The CONTRACTOR shall post, at the site of the closure within view of the waiting public traffic, the time the closure started and the time the road will again be open to traffic. The CONTRACTOR shall notify the Fire and Police Departments of such closures prior to commencement of work.
- H. At intervals of 48 hours and 24 hours prior to start up of construction operations, and at weekly intervals during the construction period, the CONTRACTOR shall advertise at Borough Assembly the precise location, time of commencement, and proposed completion date of the WORK scheduled for the following week which will require detouring or otherwise effect public traffic. Detours shall be described in sufficient detail to efficiently inform the traveling public of the modified traffic pattern. The cost of these advertisements shall be considered incidental to other contract bid items. The CONTRACTOR will notify the property owners 24 hours prior to commencement of WORK.
- I. When, in the opinion of the ENGINEER, conditions are such that the safety and/or convenience of the traveling public are adversely affected, the CONTRACTOR will be immediately notified in writing. The notice will state the defect(s) and the corrective action(s) required. In the event that the CONTRACTOR neglects to take immediate corrective action, the ENGINEER may suspend all work on the project until satisfactory corrective action is performed. In the event the CONTRACTOR does not take corrective action within 24 hours, the ENGINEER may order such work as deemed necessary for public convince and safety accomplished by outside forces. The cost of this work shall be deducted from any monies due or that may become due under the terms or the contract.
- J. The CONTRACTOR shall bear all expense of maintaining the traffic over adjacent existing roads, including dust control and snow plowing, and of constructing and maintaining such approaches, crossings, intersections, and other features as may be necessary, without direct compensation, except as provided below:
1. Special Detours. Contractor may detour traffic to the AISC clinic via Etolin Street to bypass the majority of construction activities. All signage and maintenance of the detour route shall be provided by the contractor. Coordinate with water department personnel to provide continuous access to the water treatment plant. Water treatment plant access may be provided via Etolin Street and the AISC clinic.
 2. Maintenance of Traffic during Suspension of WORK. The CONTRACTOR shall make passable and shall open to traffic such portions of the Project and temporary roadways as may be agreed upon between the CONTRACTOR and the ENGINEER for the temporary accommodation of necessary traffic during the anticipated period of suspension. If the suspension is seasonal (winter shutdown), thereafter, and until an issuance of an order for the resumption of construction operations, the maintenance of the temporary route of line of travel agreed upon will be the responsibility of the OWNER. Prior to the OWNER accepting the Project for winter shutdown, the CONTRACTOR shall do all work necessary to provide a roadway surface and subgrade that will not require the OWNER to perform additional maintenance work during the shutdown period, except for purpose of snow removal. If the WORK is suspended due to unfavorable weather, failure of the CONTRACTOR to correct conditions unsafe for the workers or the general public, failure to carry out provisions of the contract, or for failure to carry out orders of the ENGINEER, all costs for

SECTION 01550 - SITE ACCESS AND STORAGE

maintenance of traffic during the suspended period shall be borne by the CONTRACTOR. When WORK is resumed, the CONTRACTOR shall replace or renew any WORK or materials lost or damaged because of temporary use of the project; shall remove, to the extent directed by the ENGINEER, any WORK or materials used in the temporary maintenance; and shall complete the Project as though its prosecution had been continuous and without interference.

- K. Traffic Control: All locations requiring redirection or stopping of the traveling public shall be properly signed and/or flagged by the CONTRACTOR. For the protection of traffic in public or private streets and ways, the CONTRACTOR shall provide, flaggers and provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," (MUTCD) published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1) with the current State of Alaska supplements.
- L. The CONTRACTOR shall take all necessary precautions for the protection of the WORK and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The CONTRACTOR shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
- M. Special pedestrian detours are often necessary in areas adjacent to new construction or demolition of existing structures. The ENGINEER shall determine when walkways are required. Plans for walkways must be approved by the ENGINEER.
- N. The CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.
- O. Temporary Street Closure: If closure of any street is required during construction, the CONTRACTOR shall apply in writing to the City & Borough of Wrangell Public Works Department and Alaska Department of Transportation and Public Facilities and any other jurisdictional agency at least 30 days in advance of the required closure and again at 48 hours. A Detour and Traffic Control Plan shall accompany the application.
- P. The CONTRACTOR shall notify the Police and Fire Departments and any other affected agency of all planned street closures. Notification shall consist of giving the time of commencement and proposed date of completion of work and names of street, schedule of operations, and routes of detours. Such notification shall be given at least 48 hours before such closure is to take effect.
- Q. Temporary Driveway Closure: The CONTRACTOR shall maintain access to all residential, commercial and street approaches. Any temporary closures shall require prior approval by the ENGINEER. The CONTRACTOR shall notify the owner or occupant (if not owner-occupied) of the closure of the driveways to be closed more than one (1) eight-hour work day at least three (3) working days prior to the closure. The CONTRACTOR shall minimize the inconvenience and minimize the time period that the driveways will be closed. The CONTRACTOR shall fully explain to the owner/occupant how long the work will take and when closure is to start.
- R. On-Site Cellular Phones: The CONTRACTOR shall maintain one active cellular phone at the project site at all times with the phone number provided to the City of Wrangell

SECTION 01550 - SITE ACCESS AND STORAGE

Fire, Police and Public Works Departments. The cellular phone shall be carried by the person in charge of the field operations. The CONTRACTOR shall provide and allow the use of the CONTRACTOR's radio frequency to facilitate communication between the CONTRACTOR and the ENGINEER.

1.3 CONTRACTOR'S WORK AND STORAGE AREA

- A. The CONTRACTOR shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the WORK.
- B. Should the CONTRACTOR find it necessary to use any additional land for its camp or for other purposes during the construction of the WORK, it shall provide for the use of such lands at its own expense.
- C. The CONTRACTOR shall construct and use a separate storage area for hazardous materials used in constructing the WORK.
 - 1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are all products labeled with any of the following terms: **Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive**. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, two-part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.
 - 2. The CONTRACTOR shall develop and submit to the ENGINEER a plan for storing and disposing of the materials above.
 - 3. The CONTRACTOR shall obtain and submit to the ENGINEER a single EPA number for wastes generated at the site.
 - 4. The separate storage area shall meet all the requirements of all authorities having jurisdiction over the storage of hazardous materials.
 - 5. The separate storage area shall be inspected by the ENGINEER prior to construction of the area, upon completion of construction of the area, and upon cleanup and removal of the area.
 - 6. All hazardous materials which are delivered in containers shall be stored in the original containers until use. Hazardous materials which are delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.4 PARKING

- A. The CONTRACTOR shall direct its employees to park in areas as directed by the ENGINEER.
- B. Traffic and parking areas shall be maintained in a sound condition, free of excavated material, construction equipment, mud, and construction materials. The CONTRACTOR shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

- 1.1 DUST ABATEMENT. The CONTRACTOR shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The CONTRACTOR shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the CONTRACTOR is relieved of further responsibility by the ENGINEER.
- 1.2 RUBBISH CONTROL. During the progress of the WORK, the CONTRACTOR shall keep the site of the WORK and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The CONTRACTOR shall dispose of all rubbish and waste materials of any nature occurring at the WORK site, and shall establish regular intervals of collection and disposal of such materials and waste. The CONTRACTOR shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.
- 1.3 SANITATION
- A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes: The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations shall be disposed of away from the site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto.
- 1.4 CHEMICALS. All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer. In addition, see the requirements set forth in paragraph 6.11 of the General Conditions.
- 1.5 CULTURAL RESOURCES
- A. The CONTRACTOR's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").
- B. The CONTRACTOR shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

- C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, stop work immediately and notify the ENGINEER.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01570 - EROSION CONTROL

PART 1 - GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide for erosion control during construction. All sedimentation from on-site drainage shall be caught on-site.
- B. The WORK under this Section includes providing all labor, materials, tools and equipment necessary to construct and maintain erosion control works; including but not limited to, silt fences, settling ponds, hay or straw bale check dams, ditches, etc.

1.2 SUBMITTALS

- A. Stormwater Pollution Prevention Plan (SWPPP).

PART 2 - PRODUCTS

2.1 MATERIALS. Materials shall be suitable for the intended use and perform effectively to control silt and surface erosion. All materials shall remain the property of the CONTRACTOR.

- A. POLYETHYLENE SHEETING. Clear plastic covering shall meet the requirements of NIST voluntary product standard PS 17-69, for polyethylene sheeting having a maximum thickness of 10 mils.
- B. STRAW MULCHING. Straw Mulching shall be in an air dried condition free of noxious weeds, seeds, and other materials determined to be plant life. Hay is not acceptable. Straw mulch shall be suitable for spreading with mulch blower equipment.
- C. CONSTRUCTION ENTRANCE ROCK. Construction entrance rock shall be Class I Riprap per ADOT&PF section 611-2.01.
- D. Silt fence shall be per ADOT&PF 633-3.01.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Stormwater Pollution Prevention Plan:
 - 1. Prepare and submit NOI in accordance with Alaska DEC requirements.
 - 2. Prepare temporary construction SWPPP plan in accordance with Alaska DEC requirements.
- B. Protection:
 - 1. Survey limits of Work to install silt fence.
 - 2. Protect and maintain existing utilities that are to remain.

SECTION 01570 - EROSION CONTROL

3. Protect plant life, lawns, and other features remaining as a portion of final landscaping or interim erosion control.
4. Protect benchmarks, property corners, horizontal control, existing structures, sidewalks, railings, paving, and curbs.
5. Reference survey monuments and benchmarks, property corners, and survey control points that may be disturbed by work.
6. Protect pavement or paved areas intended to remain from damage.
7. Perform any demolition, clearing, or other work required to installing erosion control.
8. Re-establish benchmarks, monuments and property corners disturbed as part of construction.

3.2 CONSTRUCTION

A. Polyethylene (PE) Sheeting:

1. Overlap joints minimum 28 inches. Overlap in direction of drainage and prevent water from draining onto material being protected.
2. Secure sheeting in place to prevent movement and damage.
3. Provide sandbags at 2.5 feet spacing and tie the sand bags together with rope on slopes greater than 3:1.
4. Minimize driving stakes through plastic.

B. Mulch:

1. Mulch exposed soils not protected by other means with straw mulching. Provide continuous covering minimum 2 inches thick.

3.3 ADJUSTMENTS AND REVISIONS

- #### A. Adjust or move temporary swales, berms, pipes, culverts, and silt fences as necessary during construction.

3.4 PROTECTION AND MAINTENANCE

A. Protection:

1. No water from construction activities shall be allowed to discharge into the existing or realigned fish stream.
2. Where possible, maintain natural vegetation for silt control.

SECTION 01570 - EROSION CONTROL

3. Stabilize all slopes, cuts, or fill areas where Work has stopped for more than 30 days by covering with polyethylene sheeting, or other method to prevent erosion and sediment transport.
4. Keep all off-site parking areas and streets clean from construction activities. Paved surfaces shall be kept clean using mechanical sweeping equipment, hand shovels and brooms, or other accepted methods suitable of removing dirt, rock, silt, and sand. No street washing will be allowed.

B. Maintenance:

1. Monitor and maintain erosion control measures. Remove accumulation of sediment when more than 50 percent of silt storage capacity is filled.
2. Maintain all temporary erosion control facilities until need for each facility has been replaced by other stabilization methods and ENGINEER authorizes removal.
3. Inspect and repair temporary erosion control facilities. Inspect entire system to ensure proper operation a minimum of once per week, during and after storms, and before weekends and holidays.
4. Inspect public streets on a daily basis and clean as needed or directed by the ENGINEER.

3.5 CLEAN-UP

- A. Obtain ENGINEER approval for final removal of erosion control.
- B. Remove erosion control measures after permanent erosion control is complete and risk for silt erosion and silt-laden runoff is past.
- C. Restore site improvements to remain.

END OF SECTION

SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL

- A. The word "Products," as used herein, is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the WORK.

1.2 QUALITY ASSURANCE

- A. Source Limitations: To the greatest extent possible for each unit of WORK, the CONTRACTOR shall provide products, materials, or equipment of a singular generic kind from a single source.
- B. Compatibility of Options: Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment already selected. Compatibility is a basic general requirement of product/material selections.

- 1.3 **PRODUCT DELIVERY/STORAGE/HANDLING.** The CONTRACTOR shall deliver, handle, and store products in accordance with manufacturer's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the CONTRACTOR shall ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

1.4 TRANSPORTATION AND HANDLING

- A. Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in manufacturer's unopened containers or packaging.
- B. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment by methods to prevent soiling and damage.
- C. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

SECTION 01600 - MATERIALS AND EQUIPMENT

1.5 STORAGE AND PROTECTION

- A. Products shall be stored in accordance with manufacturer's written instructions, with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's written instructions.
- B. For exterior storage of fabricated products, they shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.
- C. Loose granular materials shall be stored on solid surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
- D. Storage shall be arranged in a manner to provide access for maintenance and inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.

1.6 MAINTENANCE OF STORAGE

- A. Stored products shall be periodically inspected on a scheduled basis. The CONTRACTOR shall maintain a log of inspections and shall make said log available to the ENGINEER on request.
- B. The CONTRACTOR shall verify that storage facilities comply with manufacturer's product storage requirements.
- C. The CONTRACTOR shall verify that manufacturer-required environmental conditions are maintained continually.
- D. The CONTRACTOR shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes does not occur.
- E. For mechanical and electrical equipment, the CONTRACTOR shall provide a copy of the manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.
- F. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to acceptance by the OWNER in accordance with the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01700 - PROJECT CLOSE-OUT

PART 1 – GENERAL

- 1.1 FINAL CLEAN-UP. The CONTRACTOR shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for final clean-up of the project site.
- 1.2 CLOSEOUT TIMETABLE. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.
- 1.3 FINAL SUBMITTALS. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the ENGINEER for transmittal to the OWNER:
 - A. Written guarantees, where required.
 - B. Maintenance stock items; spare parts, special tools, where required.
 - C. Completed record drawings.
 - D. Certificates of inspection and acceptance by governing agencies having jurisdiction.
 - E. Releases from all parties who are entitled to claims against the subject Project, property, or improvement pursuant to the provisions of law.
 - F. Completed Certificate of Compliance and Release for all contractors involved in the WORK. Submit the original signed document to the OWNER's Project Manager.
- 1.4 MAINTENANCE AND GUARANTEE
 - A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in Article 13 of the General Conditions.
 - B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.
 - C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the WORK and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.
- 1.5 BOND. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph "Maintenance and Guarantee" above, and Article 13 of the General Conditions.

SECTION 01700 - PROJECT CLOSE-OUT

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01704 - FINAL CLEAN-UP AND SITE RESTORATION

PART 1 - GENERAL

- 1.1 DESCRIPTION. The WORK under this Section includes providing all supervision, labor, materials, tools and equipment necessary for final clean-up and restoration of all areas disturbed by construction activities, to a condition equal to, or better than, before construction started. This does not include clean-up or restoration incidental to, or directly provided for by, other construction items.

PART 2 - PRODUCTS

- 2.1 MATERIALS. Any materials required shall conform to the appropriate Section of these Specifications.

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. The CONTRACTOR shall clean up all sites disturbed during construction of the project. This includes removal of all construction equipment, disposal of all excess materials, disposal of all rubbish and debris, removal of all temporary structures, and grading of the sites so that no standing water is evident.

END OF SECTION

DIVISION 2

SITE WORK

SECTION 02202- EXCAVATION AND FILL

PART 1 - GENERAL

- 1.1 DESCRIPTION. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for clearing and grubbing and excavation and embankment construction to the lines, grades and cross sections indicated in the Plans or as directed by the ENGINEER.
- 1.2 SUBMITTALS.
- A. Geotextile product data sheet.

PART 2 - PRODUCTS

- 2.1 UNSUITABLE EXCAVATION. Any excavated material not meeting the definition of suitable excavation. This includes all organic materials, peat, silts, clays and other deleterious materials. All unsuitable excavation shall be disposed of off site at the designated disposal site (see Plans).
- 2.2 EMBANKMENT- Where specified on the design drawings, fill shall be defined as Embankment. Embankment will be defined as Class B shot rock borrow or suitable excavation.
- 2.3 CLASS B SHOT ROCK BORROW-Class B shot rock borrow shall consist of blasted quarry rock, consist of well-graded 12 inch minus pit run shot rock having no more than 6% passing the No. 200 sieve as determined by that portion of a sample passing the 3-inch screen. Material shall not consist of predominantly all one size or an open graded mix but rather a uniform grading of shot rock material smaller than 12 inches in size. Fill may be obtained from an on-site source or City pit as designated on the plans.
- 2.3 SUITABLE EXCAVATION. Excavation shall be considered suitable if it is sands or gravels containing an estimated less than 5% fines as approved by the onsite ENGINEER.
- 2.4 GEOTEXTILE. Geotextile shall meet AASHTO M288 for separation except shall provide permittivity = 0.05 sec^{-1} .

PART 3 – EXECUTION

3.1 CLEARING AND GRUBBING

- A. Delineate extent of clearing with flagging and survey markers.
- B. Cut and dispose of all trees, down timber, brush and debris. Fall trees toward the center of area to be cleared to avoid disturbances to standing trees.
- C. All timber, wood debris and stumps shall be properly disposed of by the Contractor. Disposal methods may include but not be limited to salvage of any marketable timber, and/or offsite disposal of wood debris in accordance with local requirements. Wood debris may not be disposed of at the City monofill site.

3.2 UNSUITABLE EXCAVATION

- A. Verify clearing and grubbing has been completed.

SECTION 02202- EXCAVATION AND FILL

- B. Contractor shall excavate to competent subgrade beneath the roadway prism. The entire Wood Street road section and the layer of peat overburden shall be removed and disposed at City provided disposal site. Excavate until granular materials free of organics are encountered. The disposal site shall be kept neat and orderly. City Streets used to access the disposal site shall be kept clean and free of debris.
- C. Excavations shall be protected from erosion and maintained to drain freely at all times and ENGINEER shall approve final extent of overburden removal.
- D. Perform payment survey.

3.3 EMBANKMENT

- A. Embankments shall be constructed to a reasonably smooth and uniform shape conforming to the lines, grades and cross sections indicated on the Plans or as directed by the ENGINEER.
- B. The competent subgrade shall be properly prepared with geotextile placed prior to placing embankment material. Clearing and grubbing in embankment areas must be completed prior to embankment operations. Debris shall be removed and surface depressions or holes shall be filled with suitable material to a level uniform surface and compacted before the embankment is constructed.
- C. Embankment shall not be dumped in final position but shall be deposited on the fill and distributed by blading or dozing so that voids, pockets and bridging will be reduced to a minimum. Intervening spaces and interstices shall be filled with smaller stones and earth to form a dense, well-compacted embankment. Hauling equipment shall be uniformly routed over the entire width of the embankment.
- D. For embankments constructed with Class B Shot Rock Borrow, place in 18" maximum lifts. Compaction shall be accomplished by a minimum level of compactive effort consisting of eight complete coverage passes with a 10-ton vibratory steel drum roller suitably equipped by the manufacturer for compacting shot rock materials.
- E. For embankments constructed with sands and gravels, place in 12" maximum lifts. Compaction shall be accomplished by a minimum level of compactive effort consisting of eight complete coverage passes with a 10-ton vibratory steel drum roller.
- F. The finish subgrade surface and surface following Site Grading shall not vary more than 0.1-foot when tested using a 10-foot straightedge, nor more than 0.1-foot from established grade. Additionally, the algebraic average of all deviations from established finished subgrade elevations taken at 100-foot intervals shall be less than 0.05-foot.
- G. Shot rock larger than 12 inches in diameter but not more than 18 inches in diameter may be placed in roadway fill sections at a distance greater than two feet from utilities and greater than two feet from the roadway surface. Material meeting the criteria of shot rock class B must be used when within 2 feet of utilities of the roadway surface.

SECTION 02202- EXCAVATION AND FILL

3.4 SUITABLE EXCAVATION

- A. Excavated material shall be reused as embankment fill when it meets the criteria of suitable excavation as described in part 2.3.
- B. Excavations shall be reasonably smooth and uniform to the lines, grades and cross sections shown in the Plans or as directed by the ENGINEER. Excavations shall be conducted to insure that material outside of excavation limits remains undisturbed.
- C. Excavations shall be protected from erosion and maintained to drain freely at all times.
- F. If the CONTRACTOR fails to comply with the provisions of any city ordinance or permit pertaining to waste disposal or disposal sites; the OWNER shall have the right, after giving 30 Days written notice, to bring the disposal sites into compliance and collect the cost of the work from the CONTRACTOR, either directly or by withholding monies otherwise due under the Contract.
- D. Temporary storage of excavated materials is the responsibility of the CONTRACTOR. Comply with the requirements of 01550 - Site Access and Storage.
- H. The CONTRACTOR shall conduct all operations to prevent contaminating useable excavation with unsuitable material.
- I. When frozen material is excavated and meets all other requirements for embankment material, it shall be allowed to thaw and drain prior to placing in the embankment. This material will be considered useable excavation and no additional payment will be made.
- J. The CONTRACTOR shall provide added care including bracing and shoring as required when excavating adjacent to existing retaining walls, fences and buildings. Damage caused to existing walls, fences and buildings by the CONTRACTOR shall be repaired at the CONTRACTOR's expense.

3.5 CITY PROVIDED ROCK QUARRY

- A. Comply with attached City of Wrangell quarry use plan (see Appendix A).

3.6 FIELD QUALITY CONTROL

- A. Comply with Section 01400 – Quality Control.
- B. Compaction Testing: Proof roll placed embankment fill with loaded dump truck before placing any base course material.

END OF SECTION

SECTION 02203 – TRENCHING AND BACKFILLING

PART 1- GENERAL

1.1 GENERAL

- A. The WORK under this section includes providing all labor, materials, tools and equipment necessary for the excavation and backfill required for installation of utility piping, and other appurtenances; shoring, bedding and insulation board.

1.2 SUBMITTALS

- A. Insulation board.

PART 2- PRODUCTS

2.1 TRENCH EXCAVATION

- A. Trench excavation shall consist of all material, of whatever nature, including bedrock excavated from trenches or below structures within the limits described indicated in the plans.
- B. Shallow bedrock is anticipated at several locations throughout the project as shown on the plans. Trenching in bedrock is to be avoided from STA 0+00 to STA 1+50 because of potential disturbance to adjacent property owners. A shallow, insulated, utility trench detail shall be used in this area. Coordinate limits with ENGINEER. From STA 1+50 to end of project, excavation in rock shall be performed to the grades specified on plans. No additional compensation for bedrock encountered during trenching will be made.

2.2 BEDDING

- A. Pipe bedding material shall be Type C-1 base course per Section 02204.

2.3 BACKFILL

- A. Imported or onsite Backfill shall consist of material meeting the requirements of Shot Rock Borrow Class B as specified under Section 02202 – Excavation and Fill.

2.5 INSULATION BOARD

- A. Insulation board shall be 2 inches thick, DOW Highload 60 or approved equal.

PART 3- EXECUTION

3.1 EXCAVATION

- A. Prior to excavating trenches, all necessary clearing, grubbing, and overburden removal shall be completed in accordance with the provisions of Section 02202 - Excavation and Fill.
- B. Excavation for trenches shall conform to the lines and grades shown on the plans. The CONTRACTOR shall also do any grading necessary to prevent surface water from

SECTION 02203 – TRENCHING AND BACKFILLING

entering the trench.

- C. Excavation of any and all material more than two feet below the invert of a pipe or structure or as shown on the plans shall be done only when necessary to remove required overburden or ordered in writing by the ENGINEER. The material so excavated will be handled in the manner described below.
- D. All excavated material suitable for use as backfill shall be piled in an orderly manner separately from unsuitable material, at a sufficient distance from the edge to prevent material from sloughing or sliding back into the trench; except that when the trench is in a traveled roadway the ENGINEER may require removal and temporary storage of excavated material elsewhere.
- E. Material unsuitable for use as backfill shall be hauled to a CONTRACTOR furnished disposal site off the project or shall be disposed within the confined disposal area on site, unless otherwise directed in writing by the ENGINEER. The CONTRACTOR is responsible for securing waste disposal sites if none are indicated on the plans. The CONTRACTOR shall obtain the written permission of the landowner for use of all disposal sites, and shall either obtain any required permits or assure that they have been obtained by others. If requested by the ENGINEER, the CONTRACTOR shall furnish the permit numbers of all required permits for the disposal sites. The cost of securing such sites shall be borne by the CONTRACTOR.
- F. If the CONTRACTOR fails to comply with the provisions of any city ordinance or permit pertaining to waste disposal or disposal sites; the OWNER shall have the right, after giving 30 days written notice, to bring the disposal sites into compliance and collect the cost of the WORK from the CONTRACTOR, either directly or by withholding monies otherwise due under the Contract.
- G. No more than 150 feet of trench shall be open in advance of laying of pipe, and not more than ten feet of trench shall remain open at the end of each working period. When the trench is in a traveled roadway, it shall be completely backfilled, in accordance with the Specifications, and opened to traffic at the end of each working period.
- H. Explosives will not be used unless approved by the ENGINEER. If explosives are used, the CONTRACTOR shall obtain all necessary permits and comply with all pertinent regulations. All utility companies shall be informed a minimum of 48 hours prior to the use of explosives in the vicinity of their facilities.
- I. The CONTRACTOR shall protect and preserve all existing pavement throughout the entire construction period. No tracked equipment may be operated on any pavement without first protecting the pavement with pavement pads approved by the ENGINEER. All pavement which is damaged in any manner by the CONTRACTOR's operations shall be restored to original or better condition at the CONTRACTOR's expense.
- J. Where required to prevent caving of the trench, or by any safety law or regulation, the CONTRACTOR shall furnish and install bracing and/or sheeting to protect the excavation. This bracing and/or sheeting shall be removed as trench backfill progresses.
- K. The CONTRACTOR shall remove and dispose of all water entering the excavation.

SECTION 02203 – TRENCHING AND BACKFILLING

Disposal of water shall be done in a manner to prevent damage or nuisance to adjacent property, and in accordance with all applicable laws and regulations. Pumps shall be adequate to maintain a dry trench during the bedding, pipe installation, and initial backfill to an elevation at least one foot above the top of pipe. No backfill may be placed in standing water under any circumstance, except when the plans and/or Specifications specifically permit installation of HDPE water pipe in a wet trench.

- L. Excavations for manholes and similar structures shall be large enough to provide proper working room. Any over depth excavation shall be backfilled with concrete or other approved material at the CONTRACTOR's expense.
- M. The CONTRACTOR shall provide temporary support of existing structures, as necessary to protect the structures from settlement or other disturbances caused by construction activities. All structures disturbed by the CONTRACTOR's activities shall be returned to original condition, or better.

3.2 BEDDING

- A. Bedding shall be placed in conformance with the lines and grades shown on the plans. Before placing any bedding material, the bottom of the trench shall be hand-raked ahead of the pipe laying operation to remove stones and lumps which will interfere with smooth and complete bedding of the pipe. The specified bedding material shall then be placed in layer(s) the full width of the trench, each layer not exceeding eight inches in thickness loose measure, and compacted to 95% of maximum density as determined by AASHTO T 180 D, until the elevation of the plan grade for the pipe invert is attained. The pipe bed shall then be fine-graded by hand and compacted as above. Bell holes shall be hand dug at the location of the joints and shall be of sufficient size to allow proper making of the joint and to prevent the collar or bell of the pipe from bearing on the bottom of the trench.
- B. After the pipe has been laid and approved for covering, the specified bedding material shall be placed evenly on both sides of the pipe for the full width of the trench. Approval for covering does not imply final acceptance of the pipe, or relieve the CONTRACTOR in any way of responsibility to complete the project in conformance with the plans and Specifications. Bedding material shall be placed by hand in layers. The thickness, loose measure, of the first layer shall be either one-half the outside diameter of the pipe plus two inches or eight inches, whichever is least. This layer shall be compacted as specified above to provide solid support to the underside of the pipe. For pipe ten inches and smaller nominal diameter, the next layer shall be of the thickness required to complete placement of the bedding to a plane six inches above the pipe, after compaction as specified above.
- C. For pipe twelve inches and larger, the bedding material shall be placed and compacted in layers not more than eight inches in thickness, loose measure, up to a plane six inches above the top of the pipe.
- D. The density tests at any location will be paid for by the CONTRACTOR. If the initial test shows that the material compaction is not as specified, the CONTRACTOR shall modify the compaction methods used, as approved by the ENGINEER, and have the material retested until the tests show that the compaction meets the specification requirements. 24 hours notice shall be provided to the ENGINEER before any density

SECTION 02203 – TRENCHING AND BACKFILLING

test and results shall be reported to the ENGINEER the day of testing if the ENGINEER is not present for testing.

- E. Upon completion of bedding placement, insulation must be placed over sewer and water pipes where 5' cover cannot be achieved where directed in plans

3.3 BACKFILL

- A. The trench shall be backfilled above the bedding material, as shown on the plans, with shot rock borrow Class B. The backfill and/or suitable material from roadway excavation shall be compacted as described in Section 02202– Excavation and Embankment. Lifts shall not exceed 18 inches in depth for loose material. After backfilling of the trench is completed, any excess material from trench excavation shall be hauled to a CONTRACTOR furnished disposal site off the project.
- B. Where trenches cross roadways, streets or driveways, backfilling shall be done immediately following excavation and laying of the pipe. All crossings shall be backfilled, compacted, and open to traffic at the end of each day's WORK. Major road crossings shall be excavated and backfilled in half widths of the traveled way so that at least one-half of the roadway is open to controlled traffic at all times during the WORK. All WORK performed within a right-of-way shall be done in conformance with the appropriate permits issued by the respective agency having jurisdiction over the right-of-way.
- C. At least 24 hours prior to commencing backfilling operations, the CONTRACTOR shall notify the ENGINEER of the proposed method of compaction. No method will be approved until the CONTRACTOR has demonstrated, under actual field conditions, that such method will produce the degree of compaction required.

3.4 CONSTRUCTION QUALITY CONTROL

- A. Comply with Section 01400 – Quality Control.
- B. Compaction of backfill shall be per 02202 – Excavation and Fill.
- C. Compaction of bedding shall be verified by testing per AASHTO T310 or T224 minimum once per 150 lineal feet of pipe and a minimum of once per pipe run and once per structure.

END OF SECTION

SECTION 02204 - BASE COURSE

PART 1- GENERAL

1.1 DESCRIPTION

- A. The WORK under this section includes providing all labor, materials, tools and equipment necessary for furnishing and placing one or more layers of aggregate base on a prepared subgrade to the lines and grades shown on the Plans.

1.2 SUBMITTALS

- A. C-1 Base Course. Include source of material, sample gradation and density testing per AASHTO T180 D.
- B. D-1 Base Course. Include source of material, sample gradation and density testing per AASHTO T180 D.

PART 2- PRODUCTS

2.1 MATERIAL

- A. D-1 aggregate base course shall consist of crushed gravel or crushed stone, conforming to the quality requirements of AASHTO M 147. The aggregate shall be free from lumps, balls of clay, or other objectionable matter, and shall be durable and sound.

1. Base course shall be sampled according to "WAQTC FOP for AASHTO T2 – Sampling Aggregates" as described in the *Alaska Test Methods Manual*, published by the Alaska Department of Transportation and Public Facilities.
2. Coarse aggregate (that material retained on the No. 4 sieve) shall be crushed stone and shall consist of sound, tough, durable rock of uniform quality. Rock shall be free of schist that cleaves along preferred foliation planes. Rock shall be free of platy mineral grains. Metamorphosed rock shall be free of slaty cleavage. All material shall be free from clay balls, vegetable matter or other deleterious matters. Coarse aggregate shall not be coated with dirt or other finely divided mineral matter. All aggregates shall be free of roots and wood. In addition, coarse aggregate shall meet the following requirements:

Property	Value	Test Method
L.A. Wear, %	25 max.	AASHTO T 96
Degradation Value	45 min.	ATM 313
Fracture, %	70 min.	WAQTC FOP for AASHTO TP 61
Sodium Sulfate Loss, %	9 max.	AASHTO T 104

3. Aggregate shall not exceed eight (8) percent thin -elongated pieces as determined by ATM 306.
4. Fine Aggregate: Fine aggregate (passing the No. 4 sieve) shall meet the quality requirements of AASHTO M 29.

SECTION 02204 - BASE COURSE

5. It is known that material recently sourced from the City of Wrangell quarry has not met the material requirements above. An alternate source for D-1 base course material may be required.

B. Base course material shall conform to one of the following gradations as specified:

BASE COURSE GRADATIONS
(Percent passing by weight)

<u>Sieve Designation</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>C-1</u>	<u>D</u>	<u>D-1</u>	<u>E</u>	<u>E-1</u>
4	100							
2	85-100	100						
1 1/2				100				
1			100	70-100		100		
3/4				60-90	100	70-100		100
3/8				45-75		50-80		
No. 4	30-60	30-70	40-75	30-60	45-80	35-65		45-80
No. 8				22-52		20-50		32-80
No. 10			25-55		30-65			
No. 40				8-30		8-30		
No. 200	0-6	3-10	4-10	0-6	4-12	0-6	0-6	0-6

C. For gradings C, D, & E, at least 50% by weight of the particles retained on the No. 4 sieve shall have at least one fractured face as determined by Alaska T-4.

D. For gradings A, C-1, D-1 & E-1, at least 70% by weight of the particles retained on a No. 4 sieve shall have at least one fractured face as determined by Alaska T-4.

E. D-1 base course material may be substituted for any C-1 base course material.

PART 3- EXECUTION

3.1 CONSTRUCTION

A. Prior to placement of the base course, the underlying surface shall be prepared by dressing, shaping, wetting or drying, and compacting of the underlying material as specified under Section 02202 – Excavation and Embankment. Surfaces shall be cleaned of all foreign substances and debris.

B. Any ruts or soft yielding spots that may appear shall be corrected by loosening and removing unsatisfactory material and adding approved material as required, reshaping, and recompacting the affected areas to the lines and grades indicated on the plans. If required by the ENGINEER, the CONTRACTOR shall proof load questionable areas with a loaded truck or other piece of equipment approved by the ENGINEER.

C. Blue tops shall be set to the top of base course. They shall be set by the CONTRACTOR at breaks in grade and on even grade at intervals not to exceed 50', with additional stakes

SECTION 02204 - BASE COURSE

at vertical curves.

- D. Base course material shall be deposited and spread in a uniform layer to the required grades, and to such loose depth that when compacted to the density required, the thickness will be as indicated on the plans. Portions of the layer which become segregated shall be removed and replaced with a satisfactory mixture, or shall be remixed to the required gradation.
- E. The maximum compacted thickness of any one layer shall not exceed six inches. If the required compacted depth exceeds six inches, the base shall be constructed in two or more layers of approximately equal thickness. Each layer shall be shaped and compacted before the succeeding layer is placed.
- F. The base course shall be compacted to at least 95% of maximum density as determined by AASHTO T 180-D. In places not accessible to rolling equipment, the mixture shall be compacted with hand tamping equipment.
- G. Blading, rolling, and tamping shall continue until the surface is smooth and free from waves and irregularities. If at any time the mixture is excessively moistened, it shall be aerated by means of blade graders, harrows, or other approved equipment, until the moisture content is such that the surface can be recompacted and finished as above.
- H. The finished surface of the base course, when tested using a 10-foot straightedge, shall not show any deviation in excess of 3/8-inch between two contact points. The finish surface shall not vary more than 1/2-inch from established grade. Additionally, the algebraic average of all deviations from established grade of the finish base course surface elevations taken at 50-foot intervals shall be less than 0.02-foot.
- I. The density tests at any location will be paid for by the CONTRACTOR. If the initial test shows that the material compaction is not as specified, the CONTRACTOR shall modify the compaction methods used, as approved by the ENGINEER, and have the material retested until the tests show that the compaction meets the specification requirements. 24 hours notice shall be provided to the ENGINEER before any density test and results shall be reported to the ENGINEER the day of testing if the ENGINEER is not present for testing.

3.2 FIELD QUALITY CONTROL

- A. Comply with Section 01400 – Quality Control.
- B. Compaction Testing: As determined by AASHTO T310 or T224.
- C. Tests shall be conducted once for every 200 square yards of base course placed.

END OF SECTION

SECTION 02220- DEMOLITION

PART 1- GENERAL

1.1 DESCRIPTION

- A. WORK in this section includes demolition and removal of site improvements and pavements, disconnecting, capping and sealing, and abandoning site utilities in place, removing site utilities, filling holes and grading area of demolition.

1.2 SUBMITTALS

- A. Record Drawings:
 - 1. Accurately record actual locations of pipe runs, connections, and invert elevations. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
 - 2. Identify and describe unexpected variations to subsoil conditions or discovery or uncharted utilities.

PART 2- PRODUCTS

2.1 MATERIAL

- A. CDF: Control Density Fill.

PART 3- EXECUTION

3.1 EXAMINATION

- A. Verify erosion control is in place and operating properly.
- B. Survey the condition of utilities, site improvements and pavements to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of adjacent structures during demolition.
- C. Perform surveys as the WORK progresses to detect hazards resulting from demolition activities.

3.2 PREPARATION

- A. Protect elements surrounding WORK of this section from damage or disfiguration.
- B. Protect existing utilities from damage and disturbance. Provide shoring to support existing utilities and their support prism or remove and replace utilities where shoring is not practical. Removing and replacing to be performed per utility OWNER's standards.
- C. Existing to Remain: Protect construction to remain against damage and soiling during demolition. When permitted by the City, items may be removed to suitable, protected storage location during demolition then cleaned and reinstalled in original locations.

SECTION 02220- DEMOLITION

- D. Erect barriers and barricades to direct and protect adjacent traffic.
- E. Locate existing utilities; avoid damage or disturbance. For aid in utility location call “Dial Dig” at 811, 48 hours (two working days) prior to beginning construction. Employ and pay for a locator service to locate and mark utilities in addition to the “Dial Dig” service.
- F. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.
- G. Contact and coordinate with utility entities that remove and disconnect utilities with utility company forces (gas, power, telephone).

3.3 CONTINUITY OF SERVICE

- A. All utilities shall remain in service for the duration of the WORK. Utilities shall only be disconnected for connection to new installed replacements at schedules agreed to by the OWNER.

3.4 DEMOLITION

- A. Demolish improvements as directed on the plans.
- B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from ENGINEER. Provide alternate routes around closed or obstructed traffic way if required.
- C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
- D. Explosives: Use of explosives will not be permitted.
- E. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.
- F. Utilities:
 - 1. Locate, identify, disconnect, and seal or cap off utilities to be demolished.
 - 2. Utilities less than 4” in diameter may be abandoned in place. Any utilities 4” or greater shall be removed.
 - 3. Remove and dispose of demolition debris to a CONTRACTOR-provided, off-site disposal location.
- G. Pavement Demolition:

SECTION 02220- DEMOLITION

1. Saw cut pavement at edge of sections to remain. Construct neat straight lines.
 2. Break up pavements and dispose
- H. Filling Depressions and Grading:
1. Fill depressions and holes with base course and compact material to 95 percent.
 2. Grade and shape area within limits of WORK indicated on Drawings to provide drainage.

3.5 CLEANING

- A. Dispose of surplus or unsuitable material.
- B. Dispose of waste, surplus, and unsuitable materials according to laws, regulations, and ordinances off-site at a site obtained by CONTRACTOR.

END OF SECTION

SECTION 02401 – SANITARY SEWER SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing sanitary sewer pipe in accordance with these Specifications and in reasonably close conformity with the lines and grades shown on the Drawings or established by the ENGINEER.
- B. This WORK includes furnishings and installing connecting bands, branch connections, or other fittings, and all appurtenances required to complete the sanitary sewer.

1.2 SUBMITTALS

- A. Gravity Sewer Pipe: Material certifications stating conformance with the requirements of this Section.
- B. Gravity Sewer Manholes: Material certifications stating conformance with the requirements of this Section.

PART 2 - PRODUCTS

2.1 UNDERGROUND LOCATOR TAPE

- A. Underground locator tape shall be green, at least four (4) inches wide, four mil thick, polyethylene tape, with a metallic backing capable of being traced with locators. The tape shall have black letters with the following wording: "Caution: Sewer Line Buried Below." The locator tape shall be installed 12 inches above the top of all sewer mains and services.

2.2 PVC SEWER PIPING

- A. PVC sewer piping shall be solid wall conforming to the requirements of ASTM D 3034 SDR 35 for pipe up to 15 inch diameter and ASTM F 679, Type 1 only, for pipe sizes 18- to 27-inch-diameter.
- B. Joints for solid wall PVC pipe shall conform to the ASTM D 3212 using elastomeric gaskets conforming to ASSTM F 477.
- C. Fittings for PVC shall be injection molded, factory welded or factory solvent cemented.
- D. All Sanitary sewer pipes shall be PVC regardless of plan designation.

2.3 NONPRESSURE-TYPE TRANSITION COUPLINGS

- A. Comply with ASTM C1773, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined and corrosion-resistant-metal tension band and tightening mechanism on each end.

SECTION 02401 – SANITARY SEWER SERVICE

- B. Sleeve materials for plastic pipes shall be ASTM F477, elastomeric seal or ASTM D 5926, PVC.
- C. Coupling for dissimilar sanitary sewer pipes shall be ROMAC INDUSTRIES SS1 sewer clamp or approved equal. Gaskets shall be VIRGIN SBR compounded for water and sewer service. Bolts, washers, nuts, lug and shell shall be stainless steel. Connected pipes shall be cut perpendicular and inserted into coupling so that ends are flush.

2.4 SEWER MANHOLES

- A. Manholes shall be in accordance with ADOT&PF 604-201.

2.5 FRAMES AND GRATES

- A. Castings are to be load rated as indicated on the drawings. If not indicated, load ratings shall be HS-20.

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. Excavation, bedding, and backfill shall conform to the requirements of Section 02203 – Trenching and Backfill. Underground marking tape shall be installed as shown on the Detail.
- B. Sheeting and bracing required for trenches shall be removed to the elevation of the conduit, but no sheeting will be allowed to be pulled, removed, or disturbed below the conduit. Sheeting and bracing shall meet OSHA requirements.
- C. Before lowering into the trench, the pipe shall be inspected for defects. All cracked, chipped, or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Belled ends shall be laid upgrade. Handling of the pipe shall be accomplished in a manner that will not damage the pipe. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.
- D. Pipe shall be laid accurately to the staked line and grade. Where existing service sewers are to be connected, suitable fittings and adapters shall be provided by the CONTRACTOR.
- E. Pipe shall be cleaned of all foreign matter, and water shall be kept out of trenches until joints have been completed. When WORK is not in progress, open ends of pipe and fittings shall be securely closed to keep foreign matter and animals from entering.
- F. Each joint shall be inspected to ensure that it is properly made before backfilling is done. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made in an approved manner. The laid pipe shall be true to line and grade and, when completed, the sewer shall have a smooth and uniform invert. No section of gravity sewer, including service

SECTION 02401 – SANITARY SEWER SERVICE

connections shall have an adverse grade which would pond water in the invert of the sewer.

- G. Connections to existing sewer mains, service connections, and manholes shall be made in such a manner so as to not damage the existing facility. Such connections shall be made so that no projections or rough surfaces occur within the pipe.
- H. Install manholes per ADOT & PF section 604-3.01.

3.2 FILTRATION TEST (USING AIR)

- A. The CONTRACTOR shall furnish all facilities and personnel for conducting the test under the observation of the ENGINEER. The equipment and personnel shall be subject to the approval of the ENGINEER. Joints only may be tested in pipe 36 inches in diameter or larger, at the option of the CONTRACTOR.
- B. Immediately following the pipe cleaning, the pipe installation shall be tested with low pressure air. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches five pounds per square inch greater than the average back pressure of any ground water that may submerge the pipe. At least two minutes shall be allowed for temperature stabilization before proceeding further.
- C. The pipeline shall be considered acceptable when tested at an average pressure of four psi greater than the average pressure of any ground water that may submerge the pipe if the section under test does not lose air at a rate greater than 0.0030 cubic feet per minute per square foot of internal surface.
- D. The requirements of this Specification shall be considered satisfied if the time required for the pressure to decrease from 4.5 psi to 3.5 psi above average ground water pressure is greater than that shown on the following table:

**TIME FOR PRESSURE TO DROP FROM
4.5 TO 3.5 PSI ABOVE AVERAGE GROUND WATER PRESSURE**

Pipe Diameter	Minutes	Seconds
8"	3	57
10"	4	43
12"	5	40
15"	7	5
18"	8	30
24"	11	20
30"	14	10

- E. For other sizes, determine test time using the following formula:

$$T = 28.33 D$$

Where T = time in seconds
D = pipe diameter in inches

SECTION 02401 – SANITARY SEWER SERVICE

- F. For pipes 36 inches in diameter, or larger, if individual joints are tested, they shall hold six psi air pressure over the average back pressure of any ground water for a minimum time of 15 seconds.
- G. Pressure gauges should be incremented in not more than one-half pound increments for accurate tests.
- H. Braces shall be required to hold plugs in place and to prevent the sudden release of the compressed air. Due to the large forces that could be exerted by an escaping plug during the testing of the pipe, no one shall be allowed in the manholes in which plugs have been placed while tests are being conducted. The CONTRACTOR's testing equipment shall have a pressure relief device that will prohibit the pressure in the pipeline from exceeding ten pounds per square inch.

END OF SECTION

SECTION 02501 - STORMWATER

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing all storm drain pipe, structures and pipe culverts in accordance with the Plans.

1.2 SUBMITTALS

- A. Storm Pipe: Material certifications.
- B. Porous backfill material gradations.
- C. Catch basins.

PART 2 - PRODUCTS

2.1 CORRUGATED POLYETHYLENE PIPE

- A. Corrugated polyethylene pipe (CPP) shall be high density corrugated polyethylene, smooth interior pipe, and shall be manufactured in conformity with the latest AASHTO M-294, Type S.
- B. Fittings shall be water tight according to the requirements of AASHTO M252 and AASHTO M294, and gaskets shall meet ASTM F477.
- D. All Pipes, to assure water tightness, field performance shall be tested in accordance with ASTM F2487.

2.2 POROUS BACKFILL MATERIAL

- A. Porous backfill material shall be aggregate conforming to the following gradation:

SIEVE SIZE	% PASSING BY WEIGHT
3-Inch	100
1-Inch	0-10
No. 200	0-5

2.3 CATCH BASINS

- A. Catch basins shall be per ADOT & PF section 604-2.01.

2.4 DRAINAGE GEOTEXTILE

- A. Shall be per Section 02202 – Excavation and Fill.

SECTION 02501 - STORMWATER

SECTION 02501 - STORMWATER

PART 3 - EXECUTION

3.1 GENERAL

- A. Excavation, Bedding, and Backfill shall conform to the requirements of Section 02203 – Trenching and Backfill. All corrugated pipe shall have a minimum cover of 12 inches.
- B. The pipe laying shall begin at the downstream end of the pipe. The lower segment of the pipe shall be in contact with the shaped bedding throughout its full length. Bell or groove ends of rigid pipe and outside circumferential laps of flexible pipe shall be placed facing upstream.
- C. Pipe shall be inspected before any backfill is placed. Any pipe found to be substantially out of alignment, unduly settled, or damaged shall be removed and re-laid or replaced.
- D. Flexible conduits shall be firmly joined by approved coupling bands.
- E. Conduit shall be inspected before any backfill is placed. Any pipe found to be substantially out of alignment, unduly settled, or damaged shall be taken up and relaid or replaced.
- F. Installation of all pipes shall conform to the manufacturers' recommended procedures. These Specifications and the plans shall take precedence over the manufacturers' recommendations in the event of conflict, if more restrictive.
- G. All storm service pipes to be stubbed out shall be capped and marked with a pressure treated two inch or four inch post extending from the cap to one inch above ground surface with the top six inches painted green.
- H. All cut corrugations on CPP pipe shall be cleared of all water and completely grouted to prevent the accumulation of water.
- I. Protect storm sewer pipe against erosion at all times during placement operations until completion. Repairs to damaged storm drain pipe shall be made at no additional cost to the OWNER.
- J. Install catch basins ADOT & PF section 604-3.01.

END OF SECTION

SECTION 02502- FISH STREAM CULVERT

PART 1 - GENERAL

1.1 DESCRIPTION.

- A. The WORK under this section includes providing all labor, materials, tools and equipment necessary for furnishing and placing channel rock in the fish stream realignment and culvert.

1.2 SUBMITTALS

- A. Channel rock, source identification and sieve analysis reports.
- B. Corrugated metal pipe certifications.

PART 2 – PRODUCTS

2.1 CHANNEL ROCK

- A. All rock shall comply with information in accordance with the permit.
- B. Channel rock gradation shall be a mixture of three parts streambed material with one part fines material. Final gradation of channel rock shall have less than 50% of rock larger than 6 inches.

STREAMBED MATERIAL GRADATION

(Percent passing by weight)

<u>Sieve Designation</u>	<u>Percent Passing</u>
12 in	100
9 in	85
6 in	50
4 in	30
3 in	15

FINES GRADATION

(Percent passing by weight)

<u>Sieve Designation</u>	<u>Percent Passing</u>
3 in	100
2 in	85
0.75 in	50
0.25 in	30
#10	15

- C. Intermediate boulders shall be naturally shaped stones from rock excavation of the size specified on the plans.
- D. Rock shall be from a source approved by the ENGINEER.

SECTION 02502- FISH STREAM CULVERT

- E. All rock will be accepted or rejected at the job site based on test results and visual

2.2 CORRUGATED METAL PIPE

- A. Corrugated Metal Pipe shall be in compliance with ADOT&PF section 707-2.01.

PART 3 - EXECUTION

3.1 GENERAL

- A. All construction methods shall comply with information according to the permit.
- B. Excavation shall be completed by the CONTRACTOR and approved by the ENGINEER as specified under Section 02202 – Excavation and Fill. Slopes to be protected with bed rock shall be free of brush, trees, stumps and other objectionable material, and shall be dressed to a reasonably smooth surface.
- C. Lay culvert pipe in accordance with the construction methods in Section 02501 - Stormwater.
- D. Channel rock shall be placed to the lines and grades indicated on the permit. The finished grade shall form a uniform and regular surface equal to the slopes indicated on the drawings.
- E. Place intermediate rocks inside the fish stream culvert with geotextile wrap at the interval specified on the plans. All intermediate rocks shall be stable, keyed and interlocked with neighboring rocks. All intermediate rock shall be placed individually and in a manner to avoid displacing underlying materials or placing undue impact force on underlying material. Rock shall not be dropped.
- F. A low flow channel of approximate depth of 6” and width of 6” at the surface grade of streambed rock is to be constructed by hand placement. Use intermediate boulders of 6”-8” diameter and shaping of the streambed rock to mimic a natural, meandering channel through the culvert. Fill all voids with fines to assure adequate flow depth for all flow conditions.
- G. Final acceptance of streambed rock materials shall be in final location following field sorting, mechanical manipulation and placement.
- H. Follow all requirements of the permits in Appendix B.

END OF SECTION

SECTION 02601 – WATER SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing buried water pipe and water pipe fittings, thrust blocks, tie rods, electrical continuity, disinfection and testing. The CONTRACTOR shall install the water pipe and fittings to the horizontal and vertical alignment shown on the Plans and shall complete all associated WORK described in this Section.

1.2 SUBMITTALS

- A. Water Main Pipe.
- B. Fittings, Valves, Hydrants, Valve Boxes.
- C. Water Service Connections.
- D. Testing and Disinfection Methods.
- E. Pressure Reducing Valve (PRV) Vault Structure.
- F. HDPE Pipe Welder Certifications.
- G. To verify HDPE pipe weld procedures, submit test results from a sample weld prepared by the weld crews using the bent strap test in accordance with the Plastic Pipe Institute procedures.
- H. Water main switch over procedure and steps with minimal service outages.

PART 2 - PRODUCTS

2.1 PIPE

- A. HDPE PIPE. High-density polyethylene (HDPE) pipe shall be SDR 9 IPS in accordance with AWWA C906 and NSF 61.
- B. GENERAL. All water pipe shall be clearly marked with the manufacturer's name, type, class, and/or thickness as applicable. Lettering shall be legible and permanent under normal conditions of handling and storage.

2.2 FITTINGS

- A. HDPE FITTINGS. HDPE fittings shall be SDR 9 IPS in accordance with AWWA C906 and NSF 61.

2.3 CONNECTIONS

- A. When HDPE pipe is connected to accessories pipe a flange adapter may be used. A flange coupling adapter shall be used on accessory, HDPE flange adapters shall be manufactured by the same manufacturer as the pipe using the same resin as the pipe.
- B. Connection of the pipe and fittings shall be performed by the thermal butt fusion system. HDPE pipe lengths, fittings, and flange adapter connections to be fused shall be of the

SECTION 02601 – WATER SYSTEM

same type, grade and class of polyethylene compound and supplied by the same raw material supplier.

2.4 UNDERGROUND LOCATOR TAPE

- A. Underground locator tape shall be blue, six-inch wide, 4-mil thick, polyethylene tape with black lettering with the following wording: "Caution: Water Line Buried Below". Locator tape shall be installed twelve inches above the top of all water pipe.

2.6 DOMESTIC WATER ACCESSORIES

- A. Gate valves shall be Resilient Seated Gate Valve with bonded epoxy coating, equaling or exceeding the requirements of AWWA C515 and the specific requirements outlined in these Specifications.
- A. Corporation stops and service saddles shall be brass.
- B. Valve boxes for water system shall be of cast iron and be not less than 5-1/4 inch diameter, with an extension piece adjustable for elevation. The valve box shall be of sufficient length to be adjusted an equal amount above and below the finished grade as shown on the Standard Details. Boxes shall be dipped in coal tar pitch. The valve box shall be Tyler Pipe 6865 Series or approved equal whose parts demonstrated to be interchangeable with the Tyler Pipe 6865 Series. Valve boxes installed on water pipes shall have a cover marked "water" or "W".
- C. Fire Hydrants- Mueller Centurion or approved equal.
- D. The curb box shall be of sufficient length to be adjusted an equal amount above and below the finished grade as shown on the Standard Details. Curb box shall be Ford EA2-50-50-42R, or approved equal, with a cover marked "water" or "W".

2.7 PRV VAULT

- A. Concrete shall be per Section 03301 – Cement Concrete Pavement and Sidewalks.
- B. PRV valves and pressure gauges are to be salvaged and reinstalled from the existing vault.

PART 3 - EXECUTION

3.1 GENERAL

- A. The CONTRACTOR shall preserve and protect all existing utilities and other facilities including but not limited to: telephone, television, electrical, water and sewer utilities, surface or storm drainage, highway or street signs, mail boxes, or survey monuments. The existing pipes have been exposed to corrosive soils and may be fragile. Handle with care. The CONTRACTOR shall immediately repair or replace utilities or other facilities damaged during construction. The CONTRACTOR shall support and protect any underground utility conduits, pipes, or service lines where they cross the trench.
- B. The CONTRACTOR shall give at least 48 hours notice to the OWNER prior to:
 - 1. needing water or sewer main line locates;
 - 2. interruption of water service in any area; or
 - 3. use of water from any fire hydrant.

SECTION 02601 – WATER SYSTEM

Any water service disruption shall be restored as soon as possible. The CONTRACTOR shall notify all local radio stations and any major customers that will be affected of a planned water service disruption.

- C. CONTRACTOR and Fabricator to verify all fit-ups prior to order.
- D. Bent strap tests are to be performed in accordance with the PPI bent strap test by cutting a 1" wide section of the joint for at least 6" either side of the joint, ASTM D 2657. The joint will be bent until the ends meet per Performance Pipe Joint Procedures of PPI. If a strap test fails, the problem in the processes shall be identified and the operator will be retrained and required to make an additional set of test joints. This process will be continued until a set of test joints passes the test.

3.3 SEQUENCING

- A. Both the existing low pressure and high pressure ductile iron water mains are to remain in service until the entire new HPDE water main system is complete. The new lines will be built in parallel on the north side of the old pipes.
- B. Crossings shall be installed under the existing mains for the lines feeding the new PRV vault on the south side of the highway and one point of connection. Use extreme care when installing these crossings as existing pipes may be fragile.
- C. The Existing PRV vault contains two pressure reducing valves on parallel systems. One of the existing PRV valves is to be installed in the new vault while the other is left in service in the existing vault temporarily until the new system is in operation.
- D. After all testing and disinfection is complete on the new system, a brief system shutdown will be allowed for the final points of connection. The time and duration of the shutdown is to be dictated by the OWNER. The system is to remain in operation at all other times. The existing system shall be shut down by shutting off existing valves, and draining as shown on the plans. The existing line shall be cut to install the new point of connection.
- E. Leave existing valves in the off position, install the backup PRV valve in the new vault and demolish the rest of the existing system.

3.3 INSTALLATION

- A. Water pipe shall be installed in accordance with the manufacturer's printed specifications and instructions, and in conformance with AWWA C151.
- B. The water pipe shall be handled carefully to prevent damage to the pipe, pipe lining, or coating. Water pipe and fittings shall be loaded and unloaded using hoists and slings to avoid shock or damage, and under no circumstances shall they be dropped, skidded, or rolled. If any part of the coating or lining is damaged, repair thereof shall be made in a manner satisfactory to the ENGINEER at the CONTRACTOR's expense. All water pipe and fittings shall be inspected for defects. Damaged pipe will be rejected and the CONTRACTOR shall immediately place all damaged pipe apart from the undamaged and shall remove the damaged pipe from the site within 24 hours.
- C. Whenever it becomes necessary to cut a length of water pipe, the cut shall be made by abrasive saw or by special pipe cutter.
- D. All pipe ends shall be square with the longitudinal axis of the water pipe and shall be

SECTION 02601 – WATER SYSTEM

reamed and smoothed to assure a good connection.

- E. The water pipe shall be laid to the horizontal and vertical alignment shown on the plans. A minimum five (5) foot cover shall be maintained from finish grade to top of water pipe. Fittings shall be installed at the location shown on the plans, or as required.
- F. Water encountered during trenching operations shall be removed and/or controlled to prevent entry of water and other deleterious material into the pipe and fittings.
- G. To prevent dirt and other foreign material from entering the pipe and fittings during handling and installation, the open end of the pipe shall be protected by a water-tight plug at all times, except when jointing the next section of pipe.
- H. Under no circumstances shall pipe deflections, either horizontal or vertical, exceed the manufacturer's printed recommendations. Where deflections would exceed the manufacturer's recommendations, fittings shall be used.
- I. Vertical deflections to avoid obstructions that exceed allowable water pipe joint deflections shall be accomplished by the use of fittings, and either joint restraints or vertical thrust blocking conforming to the plans. Additional fittings to those indicated on the plans will be required to accomplish these vertical deflections.
- J. Concrete thrust blocks shall be furnished and installed in accordance with the plans.
- K. Pressurized water pipe ends shall be plugged and thrust blocks installed, in addition to the required harness assembly. Volume and bearing area of thrust blocks for end plugs shall be equal to applicable standards for bends greater than 45 degrees. Refer to the plans.
- L. All joints within 50-feet of tees, or bends greater than, or equal to 45 degrees, shall be restrained.
- M. Continuous water service shall not be interrupted except for the final point of connection as described in part 3.2.
- N. Interruption of water services, disconnected or interrupted as a part of this Project, shall be limited to four (4) hours maximum, but are subject to OWNER approval. Notification of the residents and building managers affected by any water service interruptions shall be made a minimum of 24 hours in advance of the interruption.
- O. The CONTRACTOR shall maintain continuous water service at a volume and pressure to match existing, to all structures, with either existing, temporary or new piping, except as provided in this Section.
- P. Installation of HDPE pipe shall comply with manufacturer printed specifications. The CONTRACTOR shall ensure appropriate and proper fit up prior to installation.
- Q. Where the water main crosses below sewer and storm pipes, all joints shall be shrink wrapped.

3.4 FLUSHING, TESTING AND DISINFECTION

- A. Prior to acceptance, the CONTRACTOR shall "Open-Bore" flush the water pipe, then perform hydrostatic tests, electrical continuity tests, and disinfection. Testing may be done in any sequence. However, in the event the disinfection and continuity tests have

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been performed and repairs are made to the water pipe system in order to pass the hydrostatic test, all previous tests and the "Open-Bore" flushing shall be repeated to the satisfaction of the ENGINEER.

3.5 OPEN-BORE FLUSHING

- A. Open bore flushing is required of all installed water pipes to remove any foreign matter. The CONTRACTOR shall perform flushing and shall furnish, install and remove all pumps, fittings and pipes necessary to perform the flushing; shall provide all additional excavation and backfill; and shall dispose of all water and debris flushed from the water pipe. Flushing through fire hydrants, reduced outlets or fittings shall not be permitted unless specifically authorized in writing by the ENGINEER. The CONTRACTOR shall notify the ENGINEER, in writing, 48 hours in advance of any flushing operation. All flushing will be done between the hours of 1:00 a.m. and 5:00 a.m. unless otherwise authorized by the ENGINEER. A flushing scheme shall be submitted by the CONTRACTOR for review and approval by the ENGINEER prior to flushing.

3.6 HYDROSTATIC TESTING

- A. Hydrostatic testing will be conducted in the presence of the ENGINEER on newly installed water pipes after "Open-Bore" flushing, in accordance with the requirements of AWWA C600 and as stated hereafter. The CONTRACTOR shall perform the test and furnish all assistance, equipment, labor, materials, and supplies necessary to complete the test to the satisfaction of the ENGINEER. The CONTRACTOR shall suitably valve-off or plug the outlet to existing or previously-tested water pipe prior to performing the required hydrostatic test. Prior to testing, all air shall be expelled from the water pipe. If permanent air vents are not available to accommodate testing, the CONTRACTOR shall install corporation stops and blow-off lines so the air can be expelled as the line is filled with water.
- B. The hydrostatic pressure shall be a minimum of 150 p.s.i. or 1-1/2 times the operating pressure of the water pipe, whichever is greater, unless otherwise directed by the ENGINEER. Acceptance pressure testing shall be done with all service lines installed, corporation stops open, and pressure against the closed curb stops. The duration of each DIP hydrostatic pressure test shall be one hour. Pumping will cease after the required test pressure has been reached. If the pressure remains constant for one hour without additional pumping, that section of water pipe is acceptable. HDPE pipe testing shall be performed in compliance with printed manufacturer's Specifications.
- C. If the pressure drops 5 p.s.i. or more during the initial one-hour hydrostatic pressure test of the DIP, the CONTRACTOR shall conduct a leakage test. Leakage shall be determined by measuring "make-up" water necessary to restore the specified test pressure. The quantity of water lost from the water pipe shall not exceed the number of gallons per hour as determined by the following formula:

$$\frac{ND(P)^{0.5}}{L} = 7400$$

- L= Allowable leakage in gallons per hour
N= Summation of mechanical and push-on joints in length of water pipe tested
D= Diameter of water pipe in inches
P= Test pressure in pounds per square inch

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- D. Should the tested section fail to meet the pressure test as specified, the CONTRACTOR shall locate and repair the defects and then retest the water pipe as specified above. Any specific leakage point detected shall be corrected by the CONTRACTOR to the satisfaction of the ENGINEER regardless of the allowable leakage specified above.
- E. All tests shall be made with the auxiliary gate valves open and pressure against the hydrant. After the hydrostatic test has been successfully completed, each valve shall be tested by closing in turn and relieving the pressure beyond. This test of the valves will be acceptable if there is no immediate loss of pressure on the gauge when the pressure comes against the valve being checked. The CONTRACTOR shall verify that the pressure differential across the valve does not exceed the rated working pressure of the valve.
- F. Sections to be tested shall be limited to 1,500 feet, unless otherwise approved, in writing, by the ENGINEER.
- G. Defective materials or workmanship, discovered as a result of hydrostatic tests, shall be replaced by the CONTRACTOR. Whenever it is necessary to replace defective material or correct the workmanship, the hydrostatic test shall be repeated until a satisfactory test is obtained.
- H. The ENGINEER shall be present for all hydrostatic and leakage tests. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to any test and shall notify the ENGINEER at least 2 hours in advance of the scheduled time if the test is to be canceled or postponed.
- I. After completion of testing, all test and air vent pipe shall be removed and the corporation stop closed at the water pipe, in the presence of the ENGINEER.
- J. HDPE hydrostatic testing shall be per ASTM F2164-02. Test pressure shall be 150 p.s.i..

3.7 DISINFECTION

- A. Disinfection by chlorination of all new water pipe shall be completed and a satisfactory bacteriological report obtained by the CONTRACTOR prior to placing the pipe in service. "Open-bore" flushing shall be completed before chlorination is begun.
- B. Chlorine shall be applied by one of the following methods:
 - 1. liquid chlorine gas-water mixture;
 - 2. direct chlorine gas feed; or
 - 3. hypochlorite commercial products such as HTH, Perchlolen, Macho-chlor, or approved equal.

The chlorinating agent shall be applied at the beginning of the section adjacent to the feeder connection, ensuring treatment of the entire water pipe. Water shall be fed slowly into the new water pipe with chlorine applied in amounts to produce a dosage of 50 ppm. Application of the chlorine solution shall continue until the required residual of not less than 50 ppm free chlorine is evident at all extremities of the newly constructed line.

- C. The chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device. Chlorine gas shall be fed directly from a chlorine cylinder equipped with a suitable device for regulating the rate of flow and the effective diffusion of gas within the water pipe. Hypochlorite products shall be placed or injected into the water pipe. During

SECTION 02601 – WATER SYSTEM

the chlorination process, all intermediate valves and accessories shall be operated. Valves shall be manipulated so that the strong chlorine solution in the water pipe being treated will not flow back into the pipe supplying the water.

- D. The following table is to be used as a guide for chlorinating pipes by the calcium hypochlorite and water mixture method. The given dosage per 100 feet results in a chlorine solution of 40 to 50 ppm. This dosage takes into account that contractors most frequently use granular HTH, which is 65% pure. If another chlorinating agent is used, the dosage must be adjusted.

<u>PIPE DIAMETER (in.)</u>	<u>DOSAGE (oz.) PER 100 FEET</u>
4+	0.60
6+	1.35
8+	2.75
10	4.30
12	6.19
16	11.00
20	17.00

- E. A residual of not less than 50 ppm free chlorine shall be produced in all parts of the water pipe. After 24 hours detention there shall be a minimum free chlorine residual of 25 ppm in all parts of the water pipe. This residual shall then be neutralized in the pipe by injecting an approved reducing agent such as sulfur dioxide, sodium bisulfate, sodium sulfite or sodium thiosulfate.
- F. After the water pipe system has been thoroughly flushed, samples will be taken at representative locations in the system by the ENGINEER, placed in sterile bottles, and submitted to an approved laboratory for bacteriological examination. The presence of bacteria in any sample shall be verified with a second sample at the same location. If verified, the pipe disinfection procedure shall be repeated and additional samples taken for bacteriological examination. Pipe disinfection, sampling, and testing procedures shall be repeated, at the CONTRACTOR's expense, until satisfactory results are obtained.
- G. The water shall be flushed from the water pipe at its extremities, including all curb stops, until the replacement water chlorine residuals are equal to those of the permanent source of supply. The dechlorinated water and water used for flushing shall be disposed of in a manner approved by the ENGINEER, and in conformance with current requirements of the Alaska Department of Fish and Game, and the Alaska Department of Environmental Conservation.

END OF SECTION

SECTION 02702 - CONSTRUCTION SURVEYING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary to perform all surveying and staking necessary for the completion of the project in conformance with the plans and specifications, including all calculations required to accomplish the work.
- B. The WORK shall include the staking, referencing and all other actions as may be required to preserve or restore land monuments and property corners which are situated within the project area, and to establish monuments as shown on the plans.
- C. The WORK under this Section includes providing all labor, materials, tools and equipment necessary to perform all surveying and staking necessary for the completion of excavation and embankment in accordance with Section 02202 – Excavation and Fill.

1.2 SUBMITTALS

- A. Wood Street ROW survey.
- B. All information necessary for as-built plan production from actual measurements and observations made by the CONTRACTOR's own work force, including subcontractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. All surveying involving property lines or monuments shall be done by, or under the direction of, a Registered Land Surveyor licensed to practice in the State of Alaska.
- B. The OWNER will supply information relative to the approximate locations of monuments and corners, but final responsibility for locations, referencing, and restoration shall rest with the CONTRACTOR.
- C. In the event the CONTRACTOR does not replace the survey monuments and property corners disturbed by the CONTRACTOR's operations, the OWNER may, after first notifying the CONTRACTOR, replace the monuments in question and the cost of such replacements shall be deducted from payments to the CONTRACTOR.
- D. The CONTRACTOR shall provide the OWNER with a copy of all surveyors' notes, if requested by the ENGINEER, prior to each Pay Request, which payment for Item 02702.1, Construction Surveying, is increased from the previous Pay Request.
- E. The CONTRACTOR shall provide the OWNER with a copy of all surveyors' notes, prior to the request for final payment, and include the information on the record drawings.
- F. The CONTRACTOR shall obtain all information necessary for as-built plan production

SECTION 02702 - CONSTRUCTION SURVEYING

from actual measurements and observations made by the CONTRACTOR's own work force, including subcontractors, and submit this information to the ENGINEER. As-built surveys shall include all utilities, final fill and cut slopes, and completed road surface. As-built drawings shall be prepared with all utility positions, lengths, sizes, and invert elevations.

- G. The CONTRACTOR shall use competent, qualified personnel and suitable equipment for the layout work required and shall furnish all stakes, templates, straightedges and other devices necessary for establishing, checking and maintaining the required points, lines and grades.
- H. The CONTRACTOR shall perform all staking necessary to delineate clearing and/or grubbing limits; all cross sections necessary for determination of excavation, embankment, including preliminary, intermediate and/or re-measure cross sections as may be required; all slope staking; all staking and routine monitoring of settlement monitoring devices; all staking of culverts and drainage structures, including the necessary checking to establish the proper location and grade to best fit the conditions on site; the setting of such finishing stakes as may be required; the staking of right-of-way; the staking, referencing and other actions as may be required to preserve or restore land monuments and property corners; and all other staking necessary to complete the project. Provide Engineer with submittal documentation and point out any irregularities of slope stake locations and the Plans.
- I. The CONTRACTOR's field books shall be available for inspection by the ENGINEER at any time.
- J. The ENGINEER may randomly spot-check the CONTRACTOR's surveys, staking, and computations at the ENGINEER's discretion. After the survey, or staking, has been completed, the CONTRACTOR shall provide the ENGINEER with a minimum of 72 hours notice prior to performing any work, and shall furnish the appropriate data as required to allow for such random spot-checking. The OWNER assumes no responsibility for the accuracy of the work.
- K. The ENGINEER may make minor adjustments in grades and locations of improvements based on the staking information provided by the CONTRACTOR. The CONTRACTOR shall adjust the grade stakes as required to accommodate minor changes at no additional cost to the OWNER.

END OF SECTION

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. WORK consists of the furnishing and mixing of aggregate, asphalt cement, and additives at a mixing plant and the hauling, spreading, and compaction of the asphalt concrete mixture on a previously prepared surface, all as specified in the contract and in conformance with the lines, grades and thicknesses shown on the Drawing.
- B. Asphaltic concrete mix for this Project shall be Type II and either Class A or B. See Table 02743-1.

TABLE 02743-1

ASPHALTIC CONCRETE MIX REQUIREMENTS		
DESIGN PARAMETERS	CLASS A	CLASS B
Stability, lbs.	1,800	1,800
Flow, 0.01 inch (0.25 mm)	8-14	8-14
Voids in total mix, percent	3-5	3-5
Compactions, number of blows each side of test specimen	75	50
Dust-asphalt ratio (1)	0.6-1.0	0.6-1.0
Percent oil content	5.3-6.2	5.3-6.2
Voids in the mineral aggregate (VMA) Minimum value		
Type I	13.0	12.0
Type II or IIA	14.0	13.0
Type III	15.0	14.0

(1) Dust-asphalt ratio is defined as the percent of material passing the U.S. No. 200 sieve divided by the percent of asphalt (calculated by weight of mix).

1.2 SUBMITTALS

- A. Asphalt mix design
- B. Tack Coat
- C. Aggregate gradations and test results

PART 2 - PRODUCTS

2.1 COMPOSITION OF ASPHALT CONCRETE MIXTURES - JOB MIX DESIGN

- A. Asphalt concrete mixtures shall be composed of aggregate, asphalt cement, and required additives combined within the limits for the type and class specified in the contracts.
- B. It is the CONTRACTOR's responsibility to insure that, in addition to the aggregate gradation requirements, the aggregate material meets all the requirements of this Section and asphalt concrete mixture meets the applicable design parameters, when tested according to ATM T-17.

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

- C. At least 14 days prior to the production of asphalt concrete pavement the CONTRACTOR shall submit a current mix design. The mix design shall be performed within six (6) months of the construction season. The following related items shall be submitted with the mix design:
1. Notification that aggregate proposed for the asphalt concrete mixture is available for sampling.
 2. A letter stating the proposed gradation for the Trial Job Mix Design, gradations for individual stockpiles, and blend ratio for each aggregate stockpile.
 3. A minimum of three (3) one-gallon samples of the asphalt cement proposed for use in the mixture, including name of product, manufacturer, test results as required, manufacturer's certificate of compliance, and a temperature viscosity curve for the asphalt cement.
 4. A 1/2 pint sample of the anti-strip additive proposed, including name of product, manufacturer, and manufacturer's data sheet, and current Materials Safety Data Sheet (MSDS).
 5. The CONTRACTOR shall accompany the ENGINEER during sampling, and shall furnish all the assistance needed to assure that the ENGINEER obtains representative samples.
 6. The mix design shall be 50 or 75 blow Marshall Method.
- D. The ENGINEER will evaluate the gradation for the Trial Job Mix Design and suitability of the materials submitted. If the asphalt concrete mixture conforms to the design parameters specified in Table 02743-1 when tested according to ATM T-17, the ENGINEER will approve the Trial Job Mix Design and specify a target value for the asphalt cement content, mixing temperature and additives.
- E. If the Trial Job Mix Design does not conform to the design parameters specified in Table 02743-1, when tested by the ENGINEER, the CONTRACTOR shall submit in writing to the ENGINEER another proposed gradation for a second Trial Job Mix Design. Samples of aggregate and additional asphalt cement shall be obtained in the same manner as for the original Trial Job Mix Design. The ENGINEER shall evaluate and test the second Trial Job Mix Design and either approve or disapprove the design based on the contract requirements. The above procedure shall be repeated until the Trial Job Mix Design is approved.
- F. If the CONTRACTOR proposes a change in source of aggregate material, source of asphalt cement, or a change in the gradation target values after production has started, the CONTRACTOR shall submit in writing the proposed gradation target values to the ENGINEER and request a new Trial Job Mix Design be evaluated for approval. The CONTRACTOR shall accompany the ENGINEER during sampling and shall furnish all assistance needed to assure that the ENGINEER obtains representative samples. Approval of the new Trial Job Mix Design and/or aggregate material will require testing and evaluation. Trial Job Mix Design test results will be available within 15 calendar days of submittal. If the asphalt concrete mixture conforms to the design parameters specified in Table 02743-2 when tested in accordance with ATM T-17, the ENGINEER will develop a new target value for the asphalt cement content, mixing temperature and additives. The new target values for gradation and asphalt cement content will only be in effect on asphalt concrete mixture produced after the CONTRACTOR submittal of the new gradation target values for the Trial Job Mix Design.

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

- G. The location and type of the mixing plant shall be included with the Trial Job Mix Design data. Asphalt concrete mixtures produced from different plants shall not be mixed.
- H. All trial job mix designs as required will be assessed and paid for by the CONTRACTOR.

2.2 ASPHALT AGGREGATES

A. Aggregate for Plant Mix Asphalt Pavement:

- 1. **Coarse Aggregate:** Coarse aggregate (that material retained on the No. 4 sieve) shall be crushed stone and shall consist of sound, tough, durable rock of uniform quality. Rock shall be free of schist that cleaves along preferred foliation planes. Rock shall be free of platy mineral grains. Metamorphosed rock shall be free of slaty cleavage. All material shall be free from clay balls, vegetable matter or other deleterious matters. Coarse aggregate shall not be coated with dirt or other finely divided mineral matter. All asphalt aggregates shall be free of roots and wood. In addition, coarse aggregate shall meet the following requirements:

Nordic Abrasion Value	Nordic Abrasion Test Procedures ¹	16.0 Max.
Percent of Wear	AASHTO T 96	25 max.
Degradation Value	ATM T-13	30 min.
Percent Sodium Sulfate Loss	AASHTO T 104	10 max.
Percent Fracture	ATM T-4	100 min. single face/ 80 min. double face

- 2. Asphalt concrete aggregate shall not exceed eight percent thin - elongated pieces as determined by ATM T-9.
- 3. **Fine Aggregate:** Fine aggregate (passing the No. 4 sieve) shall meet the quality requirements of AASHTO M 29. Fine aggregate angularity shall be 40 minimum as determined by AASHTO T 304.
- 4. The several aggregate fractions for the mixture shall be sized, graded, and combined in such proportions that the resulting composite blend conforms to the grading requirements of Table 02743-2. Aggregates gradations shall be determined by ATM T-7, except when the sample is obtained by extraction.
- 5. Of the sources on Island it is thought that the Alaska State Department of transportation and Public Facilities may be the only one with rock able to meet the degradation and L.A. Wear values required.
- 6. Asphalt aggregate may be a blend but shall be 80% mechanically crushed with no more than 20% natural sand.

¹ Nordic Abrasion Test Procedures will apply to both the coarse and intermediate aggregate for asphalt aggregate. Test procedures for Nordic Abrasion are available at AKDOT&PF SE Region Materials Laboratory.

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

7. The material furnished shall conform to the approved Job Mix Design within the tolerances specified, except the limits given in Table 02743-2 may not be exceeded.

<u>Sieve Size</u>	<u>Tolerance % Passing</u>
¾ inch	100
½ inch	± 6
3/8 inch	± 6
No. 4	± 6
No. 8	± 6
No. 16	± 5
No. 30	± 4
No. 50	± 4
No. 100	± 3
No. 200	± 1

TABLE 02743-2

ASPHALT CONCRETE AGGREGATE				
Percent Passing by Weight				
Sieve Design	Type I	Type II	Type II-A	Type III
1-inch	100			
¾ inch	80-95	100	100	
½ inch	60-88	80-95	86-98	100
3/8 inch	48-77	60-87	74-86	80-95
No. 4	28-63	36-48	46-58	44-81
No. 8	14-55	19-35	29-41	26-70
No. 16	9-46	10-25	18-28	16-59
No. 30	6-39	7-21	11-19	9-49
No. 50	5-29	5-20	6-14	6-36
No. 100	4-18	4-15	3-9	4-22
No. 200	2-6	2-6	2-6	2-6

2.3 ASPHALT MATERIALS

- A. The grade of asphalt cement material will be PG 58-22. The asphalt cement material shall conform to the applicable requirements of this Section and will be conditionally accepted at the source. If the material is to be conditionally accepted at the source, the CONTRACTOR shall provide a manufacturer's certificate of compliance in accordance with this section and test results of the

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

applicable quality requirements of this Section before the material is shipped. If there is a change in the source of the asphalt cement or if the kinematic viscosity (viscosity at 275°F) of the asphalt supplied for the Trial Job Mix Design by a factor of two (doubles or halves) or more, then operations shall be suspended while a new Trial Job Mix Design proposal is submitted for approval.

B. ASPHALT CEMENT

1. Asphalt cement shall be designated PG58-22 and conform to the requirements listed on the chart on the next page.

C. CUT-BACK ASPHALTS

1. Cut-back asphalts shall conform to the requirements of AASHTO M 81 and M 82 except as follows:
 - a. In Table 02743-3 of M 82, reduce the minimum absolute viscosity on residue from distillation at 60°C to 100, in the MC-30 and MC-250 columns, and revise the maximum distillate percentage by volume of total distillate at 225°C for MC-30 to read: 35%.

TABLE 02743-3

TEST FOR	SPECIFICATIONS	AASHTO TEST METHOD	SPECIFICATIONS
Penetration	(4°C [39.2°F], 200g, 60s), dmm RTFO Aged Residue Note 1	T 49	15+
Ductility	(7.2°C [45°F], 1 cm/min), cm RTFO Aged Residue	T 51	10+
Absolute Viscosity	(60°C [140°F]), P Original Binders RTFO Aged Residue	T 202 T 202	1,100+ 1,500-6,000
Kinematic Viscosity	(60°C [140°F]), RTFO Viscosity/Orig. Viscosity	T 201	275+
Absolute Viscosity Ratio	(60°C [140°F]), RTFO Viscosity/Orig. Viscosity		4.0-
Flash Point, Cleveland Open Cup	C(F) Original Binder	T 48	232°+(450°+)
Solubility in Trichloroethylene	%, Original Binder	T 44	99.0+
Ductility	(25°C [77°F], 5 cm/min), cm RTFO Aged Residue	T 51	75+

Note 1 "RTFO Aged Residue" means the asphaltic residue obtained using the rolling thin film oven test (RTFO Test), AASHTO T 240.

D. EMULSIFIED ASPHALTS

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

1. CCS-1 cationic emulsified asphalts shall comply with the requirements listed in Table 02743-4.
2. CCS-1 Cationic Emulsified Asphalt shall conform to the requirements of AASHTO M 208.

TABLE 02743-4

TESTS ON EMULSION	
Viscosity @ 77°F., SSF	30 max.
Storage Stability, 1 day, %	1 Max.
Demulsibility 35 ml. 0.8% SDS, %	25 min.
Particle Charge	Positive*
Sieve, % retained	0.10 max.
Distillation Oil by Vol. of Emulsion, %	5 max.
Distillation Residue by Wt. of Emulsion, %	45 min.
TESTS ON RESIDUE	
Penetration @ 77°F.	100-200
Ductility @ 77°F., 5 cm/min., cm	40 min.
Solubility in TCE, %	97.5 min.

* If particle charge test is inconclusive, material having a max. Ph value of 6.7 will be acceptable.

E. STORAGE AND APPLICATION TEMPERATURES

1. Asphalt materials required by the Specifications shall be stored and applied within the temperatures ranges indicated below:

TABLE 02743-5
STORAGE AND APPLICATION TEMPERATURES

Type and Grade of Material	Spray °F	Mix °F	Storage °F
MC-30	85+		140 Max
MC-250	165+	165-220	240 Max
RC-800	200+		200 Max
CRS-2	125-175		100-175
CMS-2	125-175	120-160*	100-175
CSS-1	90-120	90-160*	50-125
AC-2.5	270+	235-280**	325 Max
AC-5	280+	250-295**	325 Max
AC-10	280+	250-315**	325 Max
STE-1	70-140	70-150	50-125
PG58-22		350 max	275-325°F

* Temperature of the emulsified asphalt in the pugmill mixture.

** As required to achieve Kinematic viscosity of 150-300 centistokes.

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

2.4 ANTI-STRIP ADDITIVES

- A. Anti-strip agents shall be used in the proportions determined by ATM T-14 and shall be included in the approved Trial Job Mix Design. At least 70% of the aggregate shall remain coated when tested in accordance with ATM T-14.

2.5 PROCESS QUALITY CONTROL

- A. The ENGINEER has the exclusive right and responsibility for determining the acceptability of all materials incorporated into the Project. It is expressly understood, however, that the CONTRACTOR is solely responsible for the sampling and testing of material for process control of the asphalt concrete mixture including screening, crushing, blending, stockpiling of the aggregate, production of the asphalt concrete mixture and monitoring compaction of the asphalt concrete mixture.
- B. The results of the acceptance testing performed by the ENGINEER may not be available to the CONTRACTOR until a period of at least seven working days has elapsed from the date of sampling.

PART 3 - EXECUTION

3.1 WEATHER LIMITATIONS

- A. The asphalt concrete mixture shall not be placed on a surface with standing water, on an unstable roadbed when the base material is frozen, or when weather conditions prevent the proper handling or finishing of the mixture. No asphalt concrete, Type II mixture shall be placed unless the surface temperature is 40°F or warmer.

3.2 EQUIPMENT

- A. All equipment shall be in good working order and free of asphalt concrete mix buildup. All equipment shall be available for inspection and demonstration 72 hours prior to placement of asphalt concrete.
- B. Bituminous Mixing Plants:
 - 1. Mixing plants shall conform to AASHTO M 156.
 - 2. Proportioning (batch) scales shall not be used for weighing material for payment. Weigh scales used in conjunction with a storage silo may be used to weigh the final product for payment, provided the scales are certified.
- C. Hauling Equipment:
 - 1. Trucks used for hauling asphalt mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimum amount of either paraffin oil, lime water solution approved by the ENGINEER. Diesel or fuel oil shall not be used.
 - 2. Each truck shall have a watertight canvas cover of such size as to extend at least one foot over the sides and end of the truck bed and be adequately secured to

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

protect the asphalt concrete mixture. The use of the canvas cover shall be at the ENGINEER's direction.

D. Asphalt Pavers:

1. Asphalt pavers shall be self-propelled units, provided with a heated vibratory screed. Grade and cross slope shall be controlled through the use of automatic grade and slope control devices. The paver screed control system shall be automatically actuated by the use of a string line, or minimum 30-foot long ski. The length of the string line shall be adjusted to produce the required surface smoothness.
2. The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed.
3. The screed assembly shall produce a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the asphalt concrete mixture. Screed extensions used for paving a constant width shall be heated and vibrated. Auger extensions shall be the same length as the rigid screed extensions.
4. The use of a pickup machine to transfer the asphalt mixture from a windrow to the paver hopper will be permitted, provided the pickup machine is capable of collection of the windrowed material without damage to the underlying course. The ENGINEER will not allow the continued use of the pickup machine if segregation, excessive temperature loss, or any detrimental effects are observed.
5. Paver hopper wings shall either be left in the top or down position throughout the paving operation. If the CONTRACTOR wishes to dump the wings during paving, the material on the wings and in the hopper shall not be incorporated into the finish mat or included in the quantity for payment.
6. The screed assembly shall have a joint compaction device and a joint edge restrainer.

E. Rollers:

1. The CONTRACTOR shall supply a sufficient number and weight of rollers to compact the mixture to the required density while maintaining the pace of the paving operations. Rollers shall be of the static steel wheel, vibratory steel wheel, and pneumatic tire type, self propelled and capable of reversing without backlash. They shall be specifically designated to compact hot asphalt concrete mixtures. The use of equipment which results in crushing of the aggregate will not be permitted. Pneumatic tire rollers shall be fully skirted; shall be at least six (6) feet wide; and shall be configured so that the rear group of tires align to cover the spaces between the front group of tires. The roller shall have an operating weight per tire of at least 3,000 pounds. Tires shall be of equal size, a minimum of 20 inches in diameter, shall be inflated to at least 80 psi and maintained so that tire pressures do not vary more than 5 psi between any two (2) tires

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

3.3 PREPARATION OF EXISTING SURFACE

- A. The existing surface shall be prepared in conformance with the Drawings and Specifications. Existing paved surfaces shall be cleaned of loose material by sweeping with a power broom, supplemented by hand sweeping, if necessary.
- B. Contact surfaces of curbing, gutters, manholes, and other structures shall be coated with a thin, uniform coating of tack coat material prior to the asphalt mixture being placed.
- C. Surfaces which have received a prime coat shall be allowed to cure such that the prime coat is not picked up by the haul vehicles. Surfaces which have received an emulsion tack coat shall be allowed to break prior to placement of asphalt concrete mixture.
- D. The grading, shaping, and strengthening where applicable, of the road surface shall be as specified in Section 02204 - Base Course.
- E. A string line installed by the CONTRACTOR at the direction of the ENGINEER will be the edges of paving.
- F. Prior to paving over any existing pavement, the surface shall be thoroughly cleaned and an application of tack coat applied that will provide a strong bond between the two layers.

3.4 PREPARATION OF ASPHALT

- A. A continuous supply of the asphalt cement shall be supplied to the mixer at a uniform temperature, within 25°F of the Job Mix Design mixing temperature.

3.5 PREPARATION OF AGGREGATES

- A. The aggregate for the asphalt concrete mixture shall be heated and dried to a temperature compatible with the mix requirements specified. Flames used for drying and heating shall be properly adjusted to avoid damage to the aggregate and to avoid the presence of unburned fuel on the aggregate. Any asphalt concrete mixture in which soot or fuel is present shall be wasted and no payment made.
- B. Drying operations shall reduce the aggregate moisture content to the extent that the moisture content of the asphalt concrete mixture, sampled at the point of acceptance for asphalt cement content, shall be no more than 0.5% (by total weight of mix), as determined by ATM T-25.

3.6 MIXING

- A. The aggregate, asphalt cement additives shall be combined in the mixer in the amounts required by the Job Mix Design.
- B. The materials shall be mixed such that a complete and uniform coating of the aggregate is obtained. For batch plants, dry aggregate shall be placed in motion immediately prior to the addition of asphalt cement. Wet mixing time shall be adequate to obtain 98% coated particles when tested in accordance with AASHTO T 195.

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- C. The temperature of the asphalt concrete mixture at the time of the mixing shall be as determined by the Job Mix Design.

3.7 TEMPORARY STORAGE OF ASPHALT CONCRETE MIXTURE

- A. Temporary storing or holding of hot asphalt concrete mixture in silo type storage bins will be permitted.
- B. All the asphalt concrete mixture drawn from the silo type storage bins shall conform to all of the requirements for asphalt concrete mixtures as if loaded directly into hauling equipment from the mixing plant. Signs of visible segregation, heat loss, changes from the Job Mix Design, change in the characteristics of asphalt cement, lumpiness or stiffness of the mixture will be cause for rejection.
- C. Unsuitable asphalt concrete mixture shall be disposed of by the CONTRACTOR at no cost to the OWNER.

3.8 SPREADING AND PLACING

- A. The CONTRACTOR shall submit a Paving Plan for the ENGINEER's review a minimum of five (5) working days prior to initiating the paving operation. The Paving Plan shall consist of, but not be limited to, the following:
 - 1. Paving schedule to include sequence of operations.
 - 2. Paving schedule distributed to residents within the Project boundary.
 - 3. Operational details to include:
 - a. Plant operating capacity and target production rate.
 - b. Number and capacity of trucks, cycle time, and delivery rate.
 - c. The manufacturer and model of the paver and pickup machine, to include information on grade followers, sensors, operating speed and production rate of the pavers.
 - d. Number, type, weight, and operating speed of rollers.
 - e. Location of longitudinal joints.
 - f. Method of constructing transverse joints.
 - g. Construction plan for paving intersections and driveways.
 - h. The manufacturers, model number, and the last certified calibration date for the CONTRACTOR's nuclear densometer gauge.
- B. The asphalt concrete mixture shall be laid upon a surface approved by the ENGINEER, spread and struck off to the required compacted thickness. Asphalt pavers shall be used to distribute the asphalt concrete mixture in lanes of such widths as to hold to a practical minimum the number of longitudinal joints required, subject to the requirements of this Section.
- C. When laying asphalt concrete mixtures, the paver shall be operated at uniform forward speeds consistent with the delivery of asphalt concrete mix to avoid unnecessary stopping and starting of the paver.

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- D. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the asphalt concrete mixture shall be spread, raked and luted by hand tools. For such areas the asphalt concrete mixture shall be placed to the required compacted thickness.
- E. Any asphalt concrete mixture which is observed to be contaminated or segregated will be rejected.
- F. When the section of roadway being paved is open to traffic, adjacent traffic lanes shall be paved to the same elevation within 24 hours unless prevented by weather or other factors beyond the CONTRACTOR's control.
- G. When multiple lifts are specified in the contract, the final lift shall not be placed until all other lower lift pavement throughout that section, as defined by the Paving Plan, has been placed and accepted. Paving shall not begin until all adjacent curb has been poured and cured for 72 hours or until satisfactory strength is achieved.

3.9 COMPACTION

- A. Immediately after the asphalt mixture has been spread, struck-off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling.
- B. Minimum compaction shall be 94% of AASHTO T 209. The target value for density will be 94 to 97% of the maximum specific gravity (MSG) as determined in accordance with AASHTO T 209 for the first sample from each lot of asphalt concrete mixture, as defined in this Section. Acceptance testing for field density will be determined in accordance with ATM T-18 or ASTM D-2950, as directed in writing by the ENGINEER.
- C. The asphalt concrete mixture, including the leveling course, shall have a minimum of three (3) complete passes with a pneumatic-tired roller prior to cooling to 175°F. A pass is defined as once over each point on the pavement surface.
- D. Areas not accessible to the rollers shall be graded with rakes and lutes and compacted with mechanical tampers. For depressed areas a trench roller may be used to achieve the required compaction.
- E. Any asphalt concrete mixture that becomes loose and broken segregated, mixed with dirt, or is any other way defective shall be removed and replaced with fresh hot asphalt concrete mixture, which shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of asphalt cement shall be removed and replaced.
- F. Rollers or other vehicles shall not be parked or left standing on pavement that has not cooled sufficiently to prevent indentation by wheels.

3.10 JOINTS

- A. Joints shall be made to ensure a continuous bond between old and new sections of the course. All joints shall present the same texture and smoothness as other sections of the course.

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- B. When joining old existing pavement and new pavement, the old pavement shall be cut in a neat line, with a power driven saw.
- C. Improperly formed joints resulting in surface irregularities or rock segregation shall be removed, full road width, replaced with new material, and thoroughly compacted. Rolling of joints after the material has cooled below 160°F shall not be allowed. All pavement removal shall be precut to a neat line using a power driven saw.
- D. A thin tack coat of asphalt cement or asphalt emulsion shall be applied on all cold joints prior to placing any fresh asphalt concrete mixture against the joint. This WORK shall be completed by the CONTRACTOR just prior to paving.
- E. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course or by using a removable bulkhead.
- F. The longitudinal joints in one layer shall offset those in the layer immediately below by at least six (6) inches. The joints in the top layer shall be at centerline or lane lines except where pre-formed marking tape striping is required, in which case the longitudinal joint in the top layer shall be offset not more than one (1) foot.
- G. The density at the joints shall not be more than 2% lower than the density specified in the lanes away from the joint.
- H. Rolling at the longitudinal joint should be done from the hot side with a vibratory roller as soon as possible. The hot side should always overlap the cold side by 1 to 1.5 inches at the joint.
- I. The finished asphalt surface along the edge of curb and gutter shall be ¼ inch above the top edge of the gutter pan.

3.11 SURFACE TOLERANCE

- A. The surface will be tested after final rolling at selected locations using a ten (10) foot straightedge. The variation of the surface from the testing edge of the straightedge between any two (2) contacts with the surface shall not exceed 3/16 inch. The asphalt concrete mixture in all defective areas shall be removed and replaced. All costs associated with removal and replacement of asphalt concrete mixture in the defective areas shall be borne by the CONTRACTOR.
- B. All asphalt surfaces segregated with single large stones void of intermediate aggregate on the surface shall be removed and replaced full lane width. The surface particles shall be consistent and conform to the contract gradation.

3.12 PATCHING DEFECTIVE AREAS

- A. Any asphalt concrete mixture that becomes contaminated with wood or foreign material or is in any way defective shall be removed. Defective materials shall be removed for the full thickness of the course. The pavement shall be saw cut so that the sides are perpendicular and parallel to the direction of traffic and so that the edges are vertical.

SECTION 02743 – ASPHALT CONCRETE PAVEMENT

Edges shall be coated with a thin tack coat. Fresh asphalt concrete mixture shall be placed in sufficient quantity so that the finished surface will conform to grade and smoothness requirements. The asphalt concrete mixture shall be compacted to the density specified. No payment shall be made for material replacing defective material. All costs associated with the patching of defective areas shall be borne by the CONTRACTOR.

3.13 ACCEPTANCE SAMPLING AND TESTING

- A. Asphalt concrete pavement will be accepted for payment based on the ENGINEER's approval of: the Job Mix Design; the materials; the placement and compaction of the asphalt concrete pavement to the specified depth, finished surface requirements, tolerances, and densities. Any area of finished surfacing that is visibly segregated, fails to meet surface tolerance requirements or specified thickness or densities, or is in any way defective, shall be removed and replaced with new asphalt concrete pavement. Removal and replacement of defective pavement shall be at no additional cost to the OWNER. The full depth of the new asphalt concrete mixture will be replaced; surface patching will not be allowed.
- B. Acceptance sampling and testing shall be performed by the ENGINEER. Acceptance testing will determine whether the materials, installation and compaction efforts used by the CONTRACTOR have met these specifications. The results of the acceptance testing performed by the ENGINEER may not be available to the CONTRACTOR until a period of at least seven working days has elapsed from the date of sampling.
- C. A lot will be the total asphalt placed on the Project per season. A subplot will be one Day's production on the Project. Each subplot shall be randomly sampled and tested in accordance with this Subsection for asphalt cement content, maximum specific gravity using the Rice Method, density, and gradation.
- D. Samples taken for the determination of asphalt cement content and gradation will be taken from behind the screed prior to initial compaction. Asphalt cement content shall be determined by ATM T-23. The cost of this sampling (one per subplot) will be borne by the OWNER. The CONTRACTOR shall pay for additional testing if not in compliance.
- E. ASTM D-2950 will be used to measure density. A minimum of six (6) random tests in locations determined by the ENGINEER will be taken from each subplot. When using ASTM D-2950, the MSG or laboratory pounds per cubic feet shall be determined by using the Rice Method, AASHTO T 209. The Rice Method, for the purposes of nuclear gauge compaction testing, replaces the Marshal Method. Acceptance testing for density will be completed by the ENGINEER in the following sequence:
 - 1. The ENGINEER will randomly sample the in-place asphalt concrete mixture with a nuclear densometer gauge. Random is defined as having no specific pattern. Frequency of this testing will be determined by the ENGINEER. The CONTRACTOR may request a re-test of any nuclear densometer sample not within Specification limits. The ENGINEER will select the sample location for the re-test. Only one (1) re-test per sample will be allowed. This acceptance testing will be paid for by the OWNER.

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2. If the random density acceptance testing indicates that the density specified has not been met, further sampling and testing will be required by the ENGINEER. At the direction of the ENGINEER, the CONTRACTOR shall cut at least one (1) full depth six (6) inch diameter core sample (per lot) from the finished mat. The samples shall be neatly cut by a core drill at the randomly selected locations. Core holes for sampling shall be backfilled and compacted with hot asphalt concrete mixture within two (2) hours of sampling. The core samples will be tested for compliance with these specifications at a certified laboratory specified by the ENGINEER. Any sampling and testing required beyond the nuclear densometer testing by the ENGINEER will be paid by the CONTRACTOR.
- F. At the direction of the ENGINEER, samples taken for the determination of aggregate gradation may be obtained from one (1) of the following locations:
1. From the combined aggregate cold feed conveyor via a diversion chute, or from the stopped conveyor belt.
 2. For dry batched aggregates, on batch plants, the pugmill shall be cleaned by dry batching at least two (2) dry batches or until no asphalt coating is found on the aggregate. One complete batch will be dropped in a loader bucket and hand mixed thoroughly with a shovel until a sample can be taken. The sample will be used for acceptance, gradation, control, and payment.
- G. Additional materials testing will be required whenever a new Trial Job Mix Design is approved. The maximum specific gravity (MSG) for each lot will be determined from the first randomly selected sample from the first subplot. Materials testing includes, but is not limited to, gradations, extractions, density testing and core analysis.
1. If field density is determined in accordance with ASTM D-2950, additional core samples will be required whenever a new Trial Job Mix Design is approved or whenever there is a change in the typical section. The MSG for each lot will be determined from the first randomly selected sample from the first subplot. Materials testing includes but is not limited to gradations, extractions, density testing and core analysis.
 2. All tests necessary to determine conformance with the requirements specified in this Section will be performed by the ENGINEER and paid for by the CONTRACTOR.
- H. The frequency of materials testing for asphalt is determined by the CBJ Materials Frequency Guide. The CA/Inspector shall meet with the Project Manager prior to paving in order to determine the appropriate testing frequency. For testing frequency circumstances not covered by the CBJ Standard Specifications, the latest edition of the Alaska Department of Transportation and Public Facilities Standard Specifications for Highway Construction shall be used and incorporated by reference herein.

END OF SECTION

SECTION 02801 - SEEDING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for preparing the ground and furnishing and applying seed, fertilizer, lime and mulch as called for in the contract, all in reasonably close conformity with these specifications and at locations shown on the Drawings or established by the ENGINEER.
- B. It is the intent of these specification that a living vegetative cover will be provided in the cut and fill slopes described in part 3.

PART 2 - PRODUCTS

2.1 SEED

- A. Seed shall be furnished separately or in mixture in standard sealed containers clearly labeled with: Seed name; lot number; net weight; percentages of purity and of germination and hard seed; and, percentage of maximum weed seed content. The CONTRACTOR shall furnish the ENGINEER duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six months of date of delivery. This statement shall include: Name and address of laboratory; date of test; lot number for each kind of seed; and results of tests as to name, percentages of purity and germination, and percentage of weed content, for each kind of seed furnished, and, in the case of a mixture, the proportions of each kind of seed.
- B. Seed mixes shall conform to one of the following:

TYPE	VARIETY	TYPE I
Red Fescue	Pennlawn Boreal Dawson	1/3
Tall Fescue		1/3
Perennial Rye	Aquarius 4	1/3

*Maximum weed seed content shall be 1%.

**Proportion to provide rapid grass cover for protection of lawn areas during inclement fall weather.

- C. Application rates shall be 3.5 pounds per 1,000 square feet. Application rate for shall be 5.0 pounds per 1,000 square feet.

2.2 FERTILIZER

- A. Fertilizer shall be a standard commercial grade fertilizer, supplied separately or in mixtures, and shall conform to all State and Federal regulations. Fertilizer shall be 10-20-20 applied at the rate of 12 pounds per 1000 square feet. The fertilizer shall contain slow release nitrogen in the form of inorganic chemicals amounting to at least 75% of the available nitrogen specified.
- B. Fertilizer shall be furnished in new, clean, sealed, moisture-proof, and properly labeled containers, clearly labeled with the name, weight, and guaranteed analysis of the contents.

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- C. Fertilizer for use in a hydraulic sprayer shall be soluble or ground to a fineness that will permit complete suspension of all insoluble particles in the water or slurry.

2.3 LIME

- A. Lime shall be agricultural ground limestone containing not less than 85% dolomite, with 95% passing through a 100-mesh screen, delivered to the site in original unopened containers labeled to show analysis.
- B. Limestone for use in a hydraulic sprayer shall be soluble or ground to a fineness that will permit complete suspension of all insoluble particles in the water or slurry.

2.4 MULCH

- A. Mulch shall be natural or cooked wood cellulose fiber which shall have the property of dispersing readily in water and shall have no toxic effect when combined with seed or other materials. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A colored dye which is noninjurious to plant growth may be used when specified. Wood cellulose fiber shall be packaged in new, labeled containers, shall have an equilibrium air-dried moisture content of 12% plus or minus 3% at the time of manufacture, and shall have a pH range of 3.5 to 5.0.

PART 3 - EXECUTION

3.1 SOIL PREPARATION

- A. After grading, and topsoiling if required, has been completed in conformity with the lines and grades shown on the Plans or staked by the ENGINEER, and before beginning seeding operations, the areas to be seeded shall be cultivated to provide a reasonably firm, but friable seedbed. Cultivation shall be carried to a depth of two inches, except on slopes steeper than 3:1, depth of cultivation may be reduced as directed by the ENGINEER. All cultivated areas shall be raked or cleared of stones two inches in diameter and larger and all weeds, plant growth, sticks, stumps, and other debris or irregularities which might interfere with the seeding operation, growth of grass, or subsequent maintenance of the grass covered areas, shall be removed.

3.2 SEEDING SEASONS

- A. All seeding shall be completed prior to August 15th, or the contract deadline, whichever is sooner. Seeding other than the specified dates will be allowed only with prior written permission of the ENGINEER.
- B. No seeding shall be done during windy conditions or when climactic conditions or ground conditions would hinder placement or proper growth.

3.3 APPLICATION METHODS

- A. Seed, fertilizer, ground limestone and mulch material shall be placed by one of the following methods.
- B. Hydraulic Method

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1. Seeding by hydraulic methods shall consist of furnishing a slurry made of seed, fertilizer, ground limestone, wood cellulose fiber mulch, and water, and applying the slurry under pressure to the designated area.
2. A slurry unit shall consist of a mixture of the following proportionate quantities of water, mulch fiber, seed, fertilizer and ground limestone:

Water	1,000 gallons
Mulch Fiber	200 pounds
Seed	35 pounds
Fertilizer	120 pounds
Ground Limestone	500 pounds

3. An adequate scale shall be provided by the CONTRACTOR to weigh the mix proportions.
4. The mixing and application shall be as follows:
 - a. Fill the tank with water to 1/3 full and agitate at half speed.
 - b. Add fertilizer, ground limestone if required, and 1/2 the required mulch fiber.
 - c. Fill the tank to 2/3 full and agitate at full speed.
 - d. Add the remaining mulch fiber.
 - e. Agitate at full speed and add water until the tank is full, then add the seed.
 - f. Begin slurry distribution after five minutes of agitation.
5. After fertilizer and seed are placed in the hydraulic seeder, the mixture shall be completely applied within one hour. Seed remaining in contact with fertilizer for more than one hour shall be rejected and additional seed at the specified rate shall be added at no additional cost.
6. The slurry mixture shall be spread uniformly (approximately one slurry unit per 10,000 square feet) upon the areas designated.
7. Hydraulic seeding equipment shall be capable of maintaining a continuous agitation so that a homogeneous mixture can be applied through a spray nozzle. The pump shall be capable of producing sufficient pressure to maintain a continuous, non-fluctuating spray capable of reaching the extremities of the seeding area with the pump unit located on the roadbed. Sufficient hose shall be provided to reach areas not practical to seed from the nozzle unit situated on the roadbed.

C. Dry Method

1. Mechanical spreaders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other mechanical spreading equipment approved by the ENGINEER may be used when seed and fertilizer are to be applied in dry form.
2. Fertilizer, and ground limestone if required, shall be spread separately at the specified rates and then incorporated in one operation to a minimum depth of two inches. Weather and soil conditions permitting, seeded areas shall be compacted, within twenty-four hours from the time the seeding is completed, by cultipacker, roller, or other equipment approved by the ENGINEER.
3. Compacting equipment shall be operated at right angles to the slope. Compaction shall not be performed when the soil is in such condition that it will be picked up by the compacting equipment, nor shall heavy soils be compacted at all if so directed by the ENGINEER.
4. Hand operated seeding devices may be substituted provided that the rate of application for both seed and nutrient is twice that of dry mechanical methods, and

SECTION 02801 - SEEDING

that the end result required is attained. Hand-operated seeding devices may be used only upon prior written approval of the ENGINEER.

3.4 MAINTENANCE OF SEEDED AREAS

- A. The CONTRACTOR shall protect seeded areas against traffic by warning signs or barricades, as approved by the ENGINEER. Surfaces gullied or otherwise damaged following seeding shall be repaired by re-grading, re-seeding, and re-mulching, as directed by the ENGINEER, and the CONTRACTOR shall otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.
- B. The seeded areas shall be watered by the CONTRACTOR as required for proper germination and growth. Equipment used in watering shall be capable of reaching all seeded areas from the traveled way.

3.5 INSPECTION AND ACCEPTANCE

- A. Acceptance of seeded areas shall be based on a uniform stand of vegetation at the time of final inspection. Areas failing to show a uniform stand after germination shall be scarified and reseeded as herein specified.

3.6 SEEDING AREAS

The following areas shall be seeded:

- A. Cut slopes H:1, where H is greater than 1. These are cut slopes in non-rock material.
- B. Fill slopes outside of the roadway recovery area.
- C. Additional areas disturbed by construction activities, including but not limited to clearing, storage or access.

The following areas shall be excluded from seeding:

- A. Roadway travel way and recovery area.
- B. Cut slopes H:1, where H is less than 1. These are cut slopes in rock material.
- C. Stockpile area designated on plans.

END OF SECTION

SECTION 02901 – SIGNAGE AND STRIPING

PART 1 – GENERAL

1.1 DESCRIPTION

The WORK in this section shall include all labor, materials, tools and equipment necessary to furnish and install all signs shown on the Drawings and as described in these Specifications. The WORK shall also include all labor materials, tools and equipment necessary to furnish and install all pavement markings and signage as described in the Contract Documents and shown on the Plans.

1.2 SUBMITTALS

- A. Paint type and colors
- B. Signs, including text, arrangement, and dimensions.

PART 2 – PRODUCTS

2.1 PAINT- Use one of the following

- A. AASHTO M 248 Type F (Alkyd Resin), or
- B. FSS TT-P-19-D(1) Paint, Latex (Acrylic Emulsion, Exterior), or
- C. The current state of Alaska DOT & PF maintenance specification for pavement marking paint.

2.2 SIGNS

- A. Comply with City and Borough of Wrangell Standards.
- B. Comply with standards set forth for sheeting and posts in ADOT & PF Section 730.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Verify weather forecast during planned time of placement is within weather limitations.
 - 2. Verify surfaces are complete and surface is ready to receive paint.
 - 3. Verify location of existing utilities and location of signs.

3.2 CONSTRUCTION

- A. Paint traffic markings per ADOT & PF sections 670.
- B. Install all signs according to the dimensions and locations required on Plans.

END OF SECTION

DIVISION 3

CONCRETE

SECTION 03301 – CEMENT CONCRETE PAVEMENT AND SIDEWALKS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing of cement concrete pavement, sidewalks, curb, gutter and minor concrete structures and associated backfill and grading, in accordance with these specifications and in reasonably close conformity with the lines, grades, details, and locations shown on the plans or established by the ENGINEER.

1.2 REFERENCES

- A. ACI (American Concrete Institute) 318 – Building Code Requirements for Reinforced Concrete
- B. ACI 301 – Structural Concrete for Buildings
- C. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
- D. ACI 306R – Cold Weather Concreting
- E. ACI 308 – Standard Practice for Curing Concrete
- F. ACI 347 – Recommended Practice for Concrete Formwork

1.3 SUBMITTALS

- A. Certifications for Reinforcement bars
- B. Concrete Mix Design
- C. Construction joint and reinforcement plan
- D. Concrete Quality Control reports
- E. Premolded joint filler certification

1.4 QUALITY CONTROL TESTING

- A. Concrete quality control testing shall be provided by an independent third party and paid for by the CONTRACTOR. Quality control reports shall be provided to the ENGINEER after each pour and cylinder test.
- B. Air content (ASTM C173), slump (ASTM C143), unit weight (ASTM C138) and compressive strength cylinders (ASTM C31) shall be sampled and tested every day or every 50 cubic yards of each pour, whichever is less.
- C. Eight compressive strength cylinders shall be collected at each sample. Three shall be tested at 7 days and three shall be tested at 28 days, with 2 additional cylinders for

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testing after 28 days if necessary. Cylinders shall be cured per ASTM C31 procedures.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portland Cement shall conform to the requirements of AASHTO M 85.
- B. Aggregate shall be clean, durable, uniformly graded sand and gravel, or crushed stone.
- C. Air-entraining admixtures shall conform to the requirement of AASHTO M 154.
- D. Curing materials shall conform to the requirements of AASHTO M 182, AASHTO M 171, or AASHTO M 148, as appropriate; except that AASHTO M 148 is modified to prohibit use of compounds utilizing linseed oil.
- E. Reinforcing Steel shall conform to the requirements of AASHTO M 31. All reinforcing steel shall be galvanized. Steel shall conform to: ASTM A706 Grade 60 for bent or welded bars; and ASTM A615 Grade 60 for straight bars.
- G. Joint Fillers shall be of the type specified in the contract, and shall conform to the appropriate following requirements:
 - 1. Poured filler - AASHTO M 173 or AASHTO M 282 as specified.
 - 2. Preformed filler - AASHTO M 213
 - 3. Hot-poured sealant - ASTM D 3405
 - 4. Hot-poured elastomeric type sealant - ASTM D 3406

2.2 COMPOSITION OF CONCRETE

- A. "Concrete International Corporation" Ashford formula or approved equal, shall be used instead of the specified curing materials. The concrete mix shall conform to the following:

Minimum Cement Content (94 lb.sacks/cy)	6.0
Maximum Water Content Ratio in Gal./Sack cement	0.50
Slump Range in Inches (after plasticizer)	2-4"
Entrained Air Range in Percentage	4-7 %
Coarse Aggregate (AASHTO Gradation)	No. 57 or 67
Fine Aggregate (AASHTO Gradation)	M-6
Minimum Design Strength, psi (f'c)	4,000

- B. Portland cement concrete will ordinarily be accepted on the basis of certification.
- C. The concrete shall develop a minimum compressive strength of 4,000 psi in 28 days.
- D. The concrete shall be subject to acceptance or rejection by visual inspection at the job site. Retempering concrete will not be permitted.

SECTION 03301 – CEMENT CONCRETE PAVEMENT AND SIDEWALKS

- E. When a commercial supplier is used the CONTRACTOR shall furnish a certification with each truck load of concrete certifying that the material and mix proportions used are in conformance with the approved mixture.
- F. Initial field tests of all materials will be made by the ENGINEER when deemed necessary, in accordance with the applicable Specifications. When the results of the field tests indicate the material does not conform to the requirements of the Specifications, the re-tests required by the ENGINEER shall be at the expense of the CONTRACTOR.

2.3 FORMS

- A. Forms shall be designed and constructed to be removed without injuring the concrete. They shall be free of bulge and warp, and constructed so the finished concrete will be of the form and dimensions shown on the plans, and true to line and grade. Forms for concrete containing a retarding admixture shall be designed for a lateral pressure equal to that exerted by a fluid weighing 150 pounds per cubic foot.

PART 3 - EXECUTION

3.1 PLACING CONCRETE

- A. 48-hour notification shall be provided to the ENGINEER before all concrete pours.
- B. All concrete shall be placed before it has taken its initial set and, in any case, within 30 minutes after mixing. Concrete shall be placed in such a manner as to avoid segregation of coarse or fine portions of the mixture, and shall be spread in horizontal layers when practicable. Special care shall be exercised in the bottom of slabs to assure the working of the concrete around nests of reinforcing steel, so as to eliminate rock pockets or air bubbles. Enough rods, spades, tampers and vibrators shall be provided to compact each batch before the succeeding one is dumped and to prevent the formation of joints between batches.
- C. Extra vibrating shall be done along all faces to obtain smooth surfaces. Care shall be taken to prevent mortar from splattering on forms and reinforcing steel and from drying ahead of the final covering with concrete.
- D. When concrete is placed by the pumping method or by tremie operations, the use of aluminum pipe or conduit for transporting the concrete will not be permitted.
- E. The intervals between deliveries of batches for a single pour shall not exceed 30 minutes.
- F. When placing concrete at or below an atmospheric temperature of 40°F the CONTRACTOR shall not place concrete on frozen ground. Thaw ground with heaters. Concrete mix temperatures shall be as shown below.
- G. The concrete may require protection for 4-7 days after pouring. If temperatures remain below freezing, insulating blanket coverage is required. If temperatures are slightly below freezing (30° min) at night and above freezing during the day, Kraft paper with complete coverage may be used in lieu of insulated blankets.

SECTION 03301 – CEMENT CONCRETE PAVEMENT AND SIDEWALKS

- H. No additives containing chlorides shall be used. Use “Pozzutec 20” by Master Builders or “Polarset” W.R. Grace or pre-approved equal.

Condition of Placement and Curing		Walls & Slabs	Footing
Min. temp. fresh concrete as mixed for weather indicated, degrees F.	Above 30°F.	60	55
	0 to 30°F.	65	60
	Below 0°F.	70	65
Min. temp. fresh concrete as placed and maintained, degrees F.		55	50
Max. allowable gradual drop in temp. throughout first 24 hours after end of protection, degrees F.		50	40

3.2 FINISHING CONCRETE SURFACES

- A. All concrete exposed surfaces shall be broom finished.

3.3 CURING CONCRETE

- A. All concrete will be cured a minimum of 7 days, or, if high early strength cement is used, a minimum of 3 days. The concrete shall be cured in accordance with ACI.

END OF SECTION

DIVISION 16

ELECTRICAL

SECTION 16060 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes grounding and bonding systems and equipment.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. [Burndy; Part of Hubbell Electrical Systems.](#)
 - 2. [Dossert; AFL Telecommunications LLC.](#)
 - 3. [ERICO International Corporation.](#)
 - 4. [Fushi Copperweld Inc.](#)
 - 5. [Galvan Industries, Inc.; Electrical Products Division, LLC.](#)
 - 6. [Harger Lightning and Grounding.](#)
 - 7. [ILSCO.](#)
 - 8. [O-Z/Gedney; A Brand of the EGS Electrical Group.](#)
 - 9. [Robbins Lightning, Inc.](#)
 - 10. [Siemens Power Transmission & Distribution, Inc.](#)

2.2 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:

SECTION 16060 - GROUNDING AND BONDING

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
4. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
5. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.5 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad, 5/8 by 96 inches (16 by 2400 mm).

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.
 1. Bury at least 24 inches (600 mm) below grade.
- C. Conductor Terminations and Connections:
 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 2. Underground Connections: Welded connectors except as otherwise indicated.
 3. Connections to Ground Rods: Bolted connectors.

3.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

- A. Comply with IEEE C2 grounding requirements.
- B. Grounding Handholes: Install a driven ground rod through handhole bottom, close to wall, and set rod depth so 4 inches (100 mm) will extend above finished grade or floor.

3.3 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.

SECTION 16060 - GROUNDING AND BONDING

3.4 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are **2 inches (50 mm)** below final grade unless otherwise indicated.
 - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
 - 2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

END OF SECTION

SECTION 16073 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.

1.3 DEFINITIONS

- A. IMC: Intermediate metal conduit.
- B. RMC: Rigid metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Steel slotted support systems.

1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

1.7 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified together with concrete Specifications.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

SECTION 16073 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. [Allied Tube & Conduit.](#)
 - b. [Cooper B-Line, Inc.](#)
 - c. [ERICO International Corporation.](#)
 - d. [GS Metals Corp.](#)
 - e. [Thomas & Betts Corporation.](#)
 - f. [Unistrut; Atkore International.](#)
 - g. [Wesanco, Inc.](#)
 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 3. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- E. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) [Hilti, Inc.](#)
 - 2) [ITW Ramset/Red Head; Illinois Tool Works, Inc.](#)
 - 3) [MKT Fastening, LLC.](#)
 - 4) [Simpson Strong-Tie Co., Inc.](#)
 2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) [Cooper B-Line, Inc.](#)
 - 2) [Empire Tool and Manufacturing Co., Inc.](#)
 - 3) [Hilti, Inc.](#)

SECTION 16073 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- 4) [ITW Ramset/Red Head; Illinois Tool Works, Inc.](#)
- 5) [MKT Fastening, LLC.](#)

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus **200 lb (90 kg)**.
- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 1. To Wood: Fasten with lag screws or through bolts.
 2. To New Concrete: Bolt to concrete inserts.
 3. To Existing Concrete: Expansion anchor fasteners.
 4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete **4 inches (100 mm)** thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than **4 inches (100 mm)** thick.
 5. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
 6. To Light Steel: Sheet metal screws.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

SECTION 16073 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated but not less than **4 inches (100 mm)** larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use **3000-psi (20.7-MPa)**, 28-day compressive-strength concrete.
- C. Anchor equipment to concrete base.
 - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
 - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of **2.0 mils (0.05 mm)**.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 16075 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification of power cables.
 - 2. Identification for conductors.
 - 3. Underground-line warning tape.
 - 4. Miscellaneous identification products.

1.3 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 - PRODUCTS

2.1 POWER CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
- B. Metal Tags: Brass or aluminum, **2 by 2 by 0.05 inch (50 by 50 by 1.3 mm)**, with stamped legend, punched for use with self-locking cable tie fastener.
- C. Write-On Tags: Polyester tag, **0.015 inch (0.38 mm)** thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
 - 1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.2 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than **3 mils (0.08 mm)** thick by **1 to 2 inches (25 to 50 mm)** wide.
- B. Write-On Tags: Polyester tag, **0.015 inch (0.38 mm)** thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

SECTION 16075 - ELECTRICAL IDENTIFICATION

1. Labels for Tags: Self-adhesive label, machine-printed with permanent, waterproof, black ink recommended by printer manufacturer, sized for attachment to tag.

2.3 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

2.4 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Baked-Enamel Warning Signs:

1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal size, 7 by 10 inches (180 by 250 mm).

D. Metal-Backed, Butyrate Warning Signs:

1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal size, 10 by 14 inches (250 by 360 mm).

2.5 CABLE TIES

A. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.

SECTION 16075 - ELECTRICAL IDENTIFICATION

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black.

2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- F. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
 1. Outdoors: UV-stabilized nylon.
- G. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.
- H. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

3.2 IDENTIFICATION SCHEDULE

- A. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, and handholes, use color-coding conductor tape to identify the phase.
 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG.

SECTION 16075 - ELECTRICAL IDENTIFICATION

- b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of **6 inches (150 mm)** from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- B. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, and handholes, use nonmetallic plastic tag holder with adhesive-backed phase tags, and a separate tag with the circuit designation.
 - C. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
 - D. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
 - E. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

END OF SECTION

SECTION 16120 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

- B. Related Requirements:

1. Section 16124 "Medium-Voltage Cables" for single-conductor and multiconductor cables, cable splices, and terminations for electrical distribution systems with 2001 to 35,000 V.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. [Alcan Products Corporation; Alcan Cable Division.](#)
2. [Alpha Wire.](#)
3. [Belden Inc.](#)
4. [Encore Wire Corporation.](#)
5. [General Cable Technologies Corporation.](#)
6. [Southwire Incorporated.](#)

- B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

- C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type XHHW-2.

- D. Multiconductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for Type SO with ground wire.

2.2 CONNECTORS AND SPLICES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

SECTION 16120 - CONDUCTORS AND CABLES

1. [AFC Cable Systems, Inc.](#)
2. [Gardner Bender.](#)
3. [Hubbell Power Systems, Inc.](#)
4. [Ideal Industries, Inc.](#)
5. [IlSCO](#); a branch of Bardes Corporation.
6. [NSi Industries LLC.](#)
7. [O-Z/Gedney](#); a brand of the EGS Electrical Group.
8. [3M](#); Electrical Markets Division.
9. [Tyco Electronics.](#)

- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Stranded Copper.
- B. Branch Circuits: Stranded Copper.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Stranded Copper.
- B. Exposed Feeders: Stranded Copper.
- C. Feeders Concealed Underground: Stranded Copper.
- D. Exposed Branch Circuits: Stranded Copper.
- E. Branch Circuits Underground: Stranded Copper.
- F. Cord Drops: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Complete raceway installation between conductor and cable termination points according to Section 16130 "Raceways and Boxes" prior to pulling conductors and cables.

SECTION 16120 - CONDUCTORS AND CABLES

- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Use oxide inhibitor in each splice, termination, and tap for all conductors.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 16075 "Electrical Identification."

END OF SECTION

SECTION 16124 - MEDIUM-VOLTAGE CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes cables and related splices, terminations, and accessories for medium-voltage electrical distribution systems.

1.3 DEFINITIONS

- A. NETA ATS: Acceptance Testing Specification.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of cable indicated. Include splices and terminations for cables and cable accessories.

1.5 INFORMATIONAL SUBMITTALS

- A. Source quality-control test reports.
- B. Field quality-control test reports.

1.6 QUALITY ASSURANCE

- A. Installer: Engage a cable splicer, trained and certified by splice material manufacturer, to install, splice, and terminate medium-voltage cable.
- B. Source Limitations: Obtain cables and accessories through one source from a single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with IEEE C2 and NFPA 70.

1.7 PROJECT CONDITIONS

- A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
 - 1. Notify Project Engineer no fewer than two days in advance of proposed interruption of electric service.
 - 2. Do not proceed with interruption of electric service without the Project Engineer's written permission.

SECTION 16124 - MEDIUM-VOLTAGE CABLES

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Cables:
 - a. [American Insulated Wire Corp.; a Leviton Company.](#)
 - b. [General Cable Technologies Corporation.](#)
 - c. [Kerite Co. \(The\); Hubbell Incorporated.](#)
 - d. [Okonite Company \(The\).](#)
 - e. [Pirelli Cables & Systems NA.](#)
 - f. [Rome Cable Corporation.](#)
 - g. [Southwire Company.](#)
 2. Cable Splicing and Terminating Products and Accessories:
 - a. [Engineered Products Company.](#)
 - b. [G&W Electric Company.](#)
 - c. [MPHusky.](#)
 - d. [Raychem Corp.; Telephone Energy and Industrial Division; Tyco International Ltd.](#)
 - e. [RTE Components; Cooper Power Systems, Inc.](#)
 - f. [Scott Fetzer Co. \(The\); Adalet.](#)
 - g. [Thomas & Betts Corporation.](#)
 - h. [Thomas & Betts Corporation/Elastimold.](#)
 - i. [3M; Electrical Products Division.](#)

2.2 CABLES

- A. Cable Type: MV105.
- B. Comply with UL 1072, AEIC CS 8 ICEA S-94-649.
- C. Conductor: Copper.
- D. Conductor Stranding: Compact round, concentric lay, Class B).
- E. Strand Filling: Conductor interstices are filled with impermeable compound.
- F. Conductor Insulation: Ethylene-propylene rubber.
1. Voltage Rating: 15 kV.
 2. Insulation Thickness: 133 percent insulation level.
- G. Shielding: Solid copper wires, helically applied over semiconducting insulation shield.
- H. Shielding and Jacket: Corrugated copper drain wires embedded in extruded, chlorinated, polyethylene jacket.

SECTION 16124 - MEDIUM-VOLTAGE CABLES

- I. Cable Jacket: Chlorosulfonated polyethylene, CPE.

2.3 SOLID TERMINATIONS

- A. Shielded-Cable Terminations: Comply with the following classes of IEEE 48. Insulation class is equivalent to that of cable. Include shield ground strap for shielded cable terminations.
 - 1. Class 1 Terminations: Heat-shrink type with heat-shrink inner stress control and outer nontracking tubes; multiple, molded, nontracking skirt modules; and compression-type connector.

2.4 SEPARABLE INSULATED CONNECTORS

- A. Description: Modular system, complying with IEEE 386, with disconnecting, single-pole, cable terminators and with matching, stationary, plug-in, dead-front terminals designed for cable voltage and for sealing against moisture.
- B. Terminations at Distribution Points: Modular type, consisting of terminators installed on cables and modular, dead-front, terminal junctions for interconnecting cables.
- C. Load-Break Cable Terminators: Elbow-type units with 200-A load make/break and continuous-current rating; coordinated with insulation diameter, conductor size, and material of cable being terminated. Include test point on terminator body that is capacitance coupled.
- D. Dead-Front Terminal Junctions: Modular bracket-mounted groups of dead-front stationary terminals that mate and match with above cable terminators. Two-, three-, or four-terminal units as indicated, with fully rated, insulated, watertight conductor connection between terminals and complete with grounding lug, manufacturer's standard accessory stands, stainless-steel mounting brackets, and attaching hardware.
 - 1. Protective Cap: Insulating, electrostatic-shielding, water-sealing cap with drain wire.
 - 2. Portable Feed-Through Accessory: Two-terminal, dead-front junction arranged for removable mounting on accessory stand of stationary terminal junction.
 - 3. Grounding Kit: Jumpered elbows, portable feed-through accessory units, protective caps, test rods suitable for concurrently grounding three phases of feeders, and carrying case.
 - 4. Standoff Insulator: Portable, single dead-front terminal for removable mounting on accessory stand of stationary terminal junction. Insulators suitable for fully insulated isolation of energized cable-elbow terminator.
- E. Test-Point Fault Indicators: Applicable current-trip ratings and arranged for installation in test points of load-break separable connectors, and complete with self-resetting indicators capable of being installed with shotgun hot stick and tested with test tool.

SECTION 16124 - MEDIUM-VOLTAGE CABLES

2.5 SEPARABLE INSULATED JUNCTIONS

- A. Description: Enclosure with a set of 200 A junctions for each phase in accordance to the Drawings and in compliance with IEEE 386, allowing loops, taps to equipment, and sectionalizing using Separable Insulated Connectors.
- B. Enclosure: Stainless steel with continuous seam welding. Top hinged, diagonally cut, removable cover. Powder coat painted. Penta-bolt fastener.
- C. Parking Stands: A minimum of four.

2.6 ARC-PROOFING MATERIALS

- A. Tape for First Course on Metal Objects: 10-mil- (250-micrometer-) thick, corrosion-protective, moisture-resistant, PVC pipe-wrapping tape.
- B. Arc-Proofing Tape: Fireproof tape, flexible, conformable, intumescent to 0.3 inch (8 mm) thick, compatible with cable jacket.
- C. Glass-Cloth Tape: Pressure-sensitive adhesive type, 1/2 inch (13 mm) wide.

2.7 SOURCE QUALITY CONTROL

- A. Test and inspect cables according to ICEA S-94-649 before shipping.
- B. Test strand-filled cables for water-penetration resistance according to ICEA T-31-610, using a test pressure of 5 psig (35 kPa).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install cables according to IEEE 576.
- B. Pull Conductors: Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
 - 1. Where necessary, use manufacturer-approved pulling compound or lubricant that will not deteriorate conductor or insulation.
 - 2. Use pulling means, including fish tape, cable, rope, and basket-weave cable grips that will not damage cables and raceways. Do not use rope hitches for pulling attachment to cable.
- C. In handholes, pull boxes, junction boxes, and cable vaults, train cables around walls by the longest route from entry to exit and support cables at intervals adequate to prevent sag.
- D. Install cable splices at pull points and elsewhere as indicated; use standard kits.
- E. Install terminations at ends of conductors with standard kits.
- F. Install separable insulated-connector components as follows:

SECTION 16124 - MEDIUM-VOLTAGE CABLES

1. Protective Cap: At each terminal junction, with one on each terminal to which no feeder is indicated to be connected.
 2. Portable Feed-Through Accessory: Three.
 3. Standoff Insulator: Three.
- G. Arc Proofing: Unless otherwise indicated, arc proof medium-voltage cable at locations not protected by conduit, cable tray, direct burial, or termination materials. In addition to arc-proofing tape manufacturer's written instructions, apply arc proofing as follows:
1. Clean cable sheath.
 2. Wrap metallic cable components with 10-mil (250-micrometer) pipe-wrapping tape.
 3. Smooth surface contours with electrical insulation putty.
 4. Apply arc-proofing tape in one half-lapped layer with coated side toward cable.
 5. Band arc-proofing tape with 1-inch- (25-mm-) wide bands of half-lapped, adhesive, glass-cloth tape 2 inches (50 mm) o.c.
- H. Ground shields of shielded cable at terminations, splices, and separable insulated connectors. Ground metal bodies of terminators, splices, cable and separable insulated-connector fittings, and hardware.
- I. Identify cables according to Section 16075 "Electrical Identification."

3.2 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.
 2. After installing medium-voltage cables and before electrical circuitry has been energized, test for compliance with requirements.
- B. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION

SECTION 16135 - UNDERGROUND DUCTS AND UTILITY STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Conduit, ducts, and duct accessories for direct-buried duct banks, and in single duct runs.
 - 2. Handholes and boxes.

1.3 DEFINITION

- A. RSC: Rigid steel conduit
- B. RNC: Rigid nonmetallic conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Duct-bank materials, including separators and miscellaneous components.
 - 2. Ducts and conduits and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
 - 3. Accessories for manholes, handholes, boxes, and other utility structures.
 - 4. Warning tape.
- B. Shop Drawings for Precast or Factory-Fabricated Underground Utility Structures: Include plans, elevations, sections, details, attachments to other work, and accessories, including the following:
 - 1. Duct entry provisions, including locations and duct sizes.
 - 2. Reinforcement details.
 - 3. Frame and cover design.
 - 4. Grounding details.
 - 5. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.

1.5 INFORMATIONAL SUBMITTALS

- A. Source quality-control test reports.

1.6 QUALITY ASSURANCE

- A. Comply with ANSI C2.
- B. Comply with NFPA 70.

SECTION 16135 - UNDERGROUND DUCTS AND UTILITY STRUCTURES

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
- B. Store precast concrete and other factory-fabricated underground utility structures at Project site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.
- C. Lift and support precast concrete units only at designated lifting or supporting points.

1.8 PROJECT CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
 - 1. Notify the Project Engineer no fewer than two days in advance of proposed interruption of electrical service.
 - 2. Do not proceed with interruption of electrical service without the Project Engineer's written permission.

1.9 COORDINATION

- A. Coordinate layout and installation of ducts, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field.
- B. Coordinate elevations of ducts and duct-bank entrances into handholes, and boxes with final locations and profiles of ducts and duct banks as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations from those indicated as required to suit field conditions and to ensure that duct runs drain to vaults and handholes, and as approved by the Project Engineer.

PART 2 - PRODUCTS

2.1 CONDUIT

- A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

2.2 PRECAST CONCRETE HANDHOLES AND BOXES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. [Carder Concrete Products.](#)
 - 2. [Christy Concrete Products.](#)
 - 3. [Elmhurst-Chicago Stone Co.](#)

SECTION 16135 - UNDERGROUND DUCTS AND UTILITY STRUCTURES

4. [Oldcastle Precast Group.](#)
 5. [Riverton Concrete Products; a division of Cretex Companies, Inc.](#)
 6. [Utility Concrete Products, LLC.](#)
 7. [Utility Vault Co.](#)
 8. [Wausau Tile, Inc.](#)
- B. Comply with ASTM C 858 for design and manufacturing processes.
- C. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover shall form top of enclosure and shall have load rating consistent with that of handhole or box.
1. Frame and Cover: Weatherproof cast-iron frame, with cast-iron cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.
 2. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 3. Cover Legend: Molded lettering, "LIGHTING"
 4. Configuration: Units shall be designed for flush burial and have open bottom, unless otherwise indicated.
 5. Extensions and Slabs: Designed to mate with bottom of enclosure. Same material as enclosure.
 - a. Extension shall provide increased depth of **12 inches (300 mm)**.

2.3 UTILITY STRUCTURE ACCESSORIES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. [Bilco Company \(The\).](#)
 2. [Campbell Foundry Company.](#)
 3. [Carder Concrete Products.](#)
 4. [Christy Concrete Products.](#)
 5. [East Jordan Iron Works, Inc.](#)
 6. [Elmhurst-Chicago Stone Co.](#)
 7. [McKinley Iron Works, Inc.](#)
 8. [Neenah Foundry Company.](#)
 9. [NewBasis.](#)
 10. [Oldcastle Precast Group.](#)
 11. [Osburn Associates, Inc.](#)
 12. [Pennsylvania Insert Corporation.](#)
 13. [Riverton Concrete Products; a division of Cretex Companies, Inc..](#)
 14. [Strongwell Corporation; Lenoir City Division.](#)
 15. [Underground Devices, Inc.](#)
 16. [Utility Concrete Products, LLC.](#)
 17. [Utility Vault Co.](#)
 18. [Wausau Tile, Inc.](#)
- B. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious to cable insulation, and workable at temperatures as low as **35 deg F (2**

SECTION 16135 - UNDERGROUND DUCTS AND UTILITY STRUCTURES

deg C). Capable of withstanding temperature of 300 deg F (150 deg C) without slump and adhering to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals.

2.4 SOURCE QUALITY CONTROL

- A. Test and inspect precast concrete utility structures according to ASTM C 1037.

PART 3 - EXECUTION

3.1 UNDERGROUND DUCT APPLICATION

- A. Ducts for Electrical Cables Over 600 V: RNC, NEMA Type EPC-40-PVC installed in direct-buried duct bank, unless otherwise indicated. Concrete-encased RNC where buried less than 24 inches depth in non-traffic areas or less than 36 inches in traffic areas.
- B. Ducts for Electrical Feeders 600 V and Less: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank, unless otherwise indicated. Concrete-encased RNC, or direct-buried RSC, where buried less than 18 inches depth in non-traffic areas or less than 36 inches in traffic areas.
- C. Ducts for Electrical Branch Circuits: RNC, NEMA Type EPC-40-PVC, in direct-buried duct bank, unless otherwise indicated. Concrete-encased RNC, or direct-buried RSC, where buried less than 18 inches depth in non-traffic areas or less than 36 inches in traffic areas.
- D. Underground Ducts for Telephone, Communications, or Data Utility Service Cables: RNC, NEMA Type EPC-40-PVC installed in direct-buried duct bank, unless otherwise indicated. Concrete-encased RNC, or direct-buried RSC, where buried less than 18 inches depth in non-traffic areas or less than 36 inches in traffic areas.
- E. Ducts within 5 feet of structures and utility poles; and exposed above grade: RSC.

3.2 UNDERGROUND ENCLOSURE APPLICATION

- A. Handholes and Boxes for 600 V and Less, Including Telephone, Communications, and Data Wiring:
 - 1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete, AASHTO HB 17, H-20 structural load rating.
 - 2. Units in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Precast concrete, AASHTO HB 17, H-10 structural load rating.

3.3 EARTHWORK

- A. Excavation and Backfill: Comply with [Section 02300 "Earthwork,"](#) but do not use heavy-duty, hydraulic-operated, compaction equipment.

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- B. Restore surface features at areas disturbed by excavation and reestablish original grades, unless otherwise indicated. Replace removed sod immediately after backfilling is completed.
- C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.

3.4 DUCT INSTALLATION

- A. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes to drain in both directions.
- B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches (1220 mm), both horizontally and vertically, at other locations, unless otherwise indicated.
- C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
- D. Duct Entrances to Vaults; and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches (250 mm) o.c. for 5-inch (125-mm) ducts, and vary proportionately for other duct sizes.
 - 1. Begin change from regular spacing to end-bell spacing 10 feet (3 m) from the end bell without reducing duct line slope and without forming a trap in the line.
 - 2. Direct-Buried Duct Banks: Install an expansion and deflection fitting in each conduit in the area of disturbed earth adjacent to manhole or handhole.
 - 3. Grout end bells into structure walls from both sides to provide watertight entrances.
- E. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure.
- F. Pulling Cord: Install 100-lbf- (445-N-) test nylon cord in ducts, including spares.
- G. Direct-Buried Duct Banks:
 - 1. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.
 - 2. Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet (6 m) of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches (150 mm) between tiers.
 - 3. Excavate trench bottom to provide firm and uniform support for duct bank. Prepare trench bottoms as specified in Section 02300 "Earthwork" for pipes less than 6 inches (150 mm) in nominal diameter.

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4. Install backfill as specified in [Section 02300 "Earthwork."](#)
5. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand-place backfill to **4 inches (100 mm)** over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction as specified in [Section 02300 "Earthwork."](#)
6. Install ducts with a minimum of **3 inches (75 mm)** between ducts for like services and **6 inches (150 mm)** between power and signal ducts.
7. Depth: Install top of duct bank at least **36 inches (900 mm)** below finished grade, unless otherwise indicated.
8. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment.
 - a. Couple steel conduits to ducts with adapters designed for this purpose.
 - b. For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of **60 inches (1500 mm)** from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

3.5 INSTALLATION OF CONCRETE HANDHOLES AND BOXES

A. Precast Concrete Handhole Installation:

1. Comply with ASTM C 891, unless otherwise indicated.
2. Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances.
3. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from **1-inch (25-mm)** sieve to **No. 4 (4.75-mm)** sieve and compacted to same density as adjacent undisturbed earth.

B. Elevations:

1. Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes **1 inch (25 mm)** above finished grade.
2. Where indicated, cast handhole cover frame integrally with handhole structure.

C. Field-Installed Bolting Anchors in Vaults and Concrete Handholes: Do not drill deeper than **3-7/8 inches (98 mm)** for manholes and **2 inches (50 mm)** for handholes, for anchor bolts installed in the field. Use a minimum of two anchors for each cable stanchion.

3.6 GROUNDING

- A. Ground underground ducts and utility structures according to [Section 16060 "Grounding and Bonding."](#)

SECTION 16135 - UNDERGROUND DUCTS AND UTILITY STRUCTURES

3.7 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 - 1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
 - 2. Pull aluminum or wood test mandrel through duct to prove joint integrity and test for out-of-round duct. Provide mandrel equal to 80 percent fill of duct. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.8 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.
- B. Clean internal surfaces of manholes, including sump. Remove foreign material.

END OF SECTION

SECTION 16140 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Weather-resistant receptacles.
 - 3. Snap switches.

1.3 DEFINITIONS

- A. GFCI: Ground-fault circuit interrupter.
- B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
 - 1. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
 - 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - 3. Leviton Mfg. Company Inc. (Leviton).
 - 4. Pass & Seymour/Legrand (Pass & Seymour).
 - 5. Molex, Inc. (Woodhead).
- B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

SECTION 16140 - WIRING DEVICES

- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
 - 1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 - 2. Devices shall comply with the requirements in this Section.

2.3 GFCI RECEPTACLES

- A. General Description:
 - 1. Straight blade, non-feed-through type.
 - 2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
 - 3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.
 - 4. Duplex GFCI Convenience Receptacles, 125 V, 20 A:

2.4 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. Switches, 120/277 V, 20 A:

2.5 WALL PLATES

- A. Single and combination types shall match corresponding wiring devices.
 - 1. Plate-Securing Screws: Metal with head color to match plate finish.
 - 2. Material for Unfinished Spaces: Galvanized steel.

2.6 FINISHES

- A. Device Color:
 - 1. Wiring Devices Connected to Normal Power System: Gray, unless otherwise indicated or required by NFPA 70 or device listing.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
 - 1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
 - 2. Keep outlet boxes free of cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.

SECTION 16140 - WIRING DEVICES

C. Conductors:

1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than **6 inches (152 mm)** in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down.

3.2 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.

SECTION 16140 - WIRING DEVICES

6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
- C. Wiring device will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION

SECTION 16211 - ELECTRICITY METERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes equipment for electricity metering by utility company.

1.3 DEFINITIONS

- A. KY Pulse: Term used by the metering industry to describe a method of measuring consumption of electricity that is based on a relay opening and closing in response to the rotation of the disk in the meter.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, store, and handle modular meter center according to NECA 400.

1.8 PROJECT CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
 1. Notify the Project Engineer no fewer than two days in advance of proposed interruption of electrical service.
 2. Do not proceed with interruption of electrical service without the Project Engineer's written permission.

1.9 COORDINATION

- A. Electrical Service Connections: Coordinate with utility companies and components they furnish as follows:

SECTION 16211 - ELECTRICITY METERING

1. Comply with requirements of utilities providing electrical power services.
2. Coordinate installation and connection of utilities and services, including provision for electricity-metering components.

PART 2 - PRODUCTS

2.1 EQUIPMENT FOR ELECTRICITY METERING BY UTILITY COMPANY

- A. Meters will be furnished by utility company.
- B. Current-Transformer Cabinets: Comply with requirements of electrical-power utility company.
- C. Meter Sockets: Comply with requirements of electrical-power utility company.
- D. Meter Sockets: Steady-state and short-circuit current ratings shall meet indicated circuit ratings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with equipment installation requirements in NECA 1.
- B. Install meters furnished by utility company. Install raceways and equipment according to utility company's written requirements. Provide empty conduits for metering leads and extend grounding connections as required by utility company.

END OF SECTION

SECTION 16410 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Molded-case circuit breakers (MCCBs).
 - 2. Enclosures.

1.3 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.
- C. SPDT: Single pole, double throw.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
 - 1. Enclosure types and details for types other than NEMA 250, Type 1.
 - 2. Current and voltage ratings.
 - 3. Short-circuit current ratings (interrupting and withstand, as appropriate).
 - 4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
- B. Shop Drawings: For enclosed circuit breakers. Include plans, elevations, sections, details, and attachments to other work.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NFPA 70.

SECTION 16410 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:
 - 1. Ambient Temperature: Not less than **minus 22 deg F (minus 30 deg C)** and not exceeding **104 deg F (40 deg C)**.
 - 2. Altitude: Not exceeding **6600 feet (2010 m)**.
- B. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
 - 1. Notify the Project Engineer no fewer than two days in advance of proposed interruption of electric service.
 - 2. Indicate method of providing temporary electric service.
 - 3. Do not proceed with interruption of electric service without the Project Engineer's written permission.

1.7 COORDINATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.1 MOLDED-CASE CIRCUIT BREAKERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. [Eaton Electrical Inc.; Cutler-Hammer Business Unit.](#)
 - 2. [General Electric Company; GE Consumer & Industrial - Electrical Distribution.](#)
 - 3. [Siemens Energy & Automation, Inc.](#)
 - 4. [Square D; a brand of Schneider Electric.](#)
- B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.
- C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- D. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.
 - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.

SECTION 16410 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

2.2 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
 - 1. Outdoor Locations: NEMA 250, Type 3R .

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Comply with requirements in Section 16075 "Electrical Identification."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

END OF SECTION

SECTION 16442 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Lighting and appliance branch-circuit panelboards.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.
- B. Handle and prepare panelboards for installation according to NECA 407.

SECTION 16442 - PANELBOARDS

1.6 PROJECT CONDITIONS

- A. Environmental Limitations:
 - 1. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
 - a. Ambient Temperature: Not exceeding **minus 22 deg F (minus 30 deg C)** to **plus 104 deg F (plus 40 deg C)**.
 - b. Altitude: Not exceeding **6600 feet (2000 m)**.
- B. Service Conditions: NEMA PB 1, usual service conditions, as follows:
 - 1. Ambient temperatures within limits specified.
 - 2. Altitude not exceeding **6600 feet (2000 m)**.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Surface-mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Outdoor Locations: NEMA 250, Type 4x, stainless steel.
 - 2. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.
- B. Phase, Neutral, and Ground Buses:
 - 1. Material: Tin-plated aluminum.
 - 2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
- C. Conductor Connectors: Suitable for use with conductor material and sizes.
 - 1. Material: Tin-plated aluminum.
 - 2. Main and Neutral Lugs: Mechanical type.
 - 3. Ground Lugs and Bus-Configured Terminators: Mechanical type.
- D. Service Equipment Label: NRTL labeled for use as service equipment for panelboards with one or more main service disconnecting and overcurrent protective devices.
- E. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

SECTION 16442 - PANELBOARDS

2.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. [Eaton Electrical Inc.; Cutler-Hammer Business Unit.](#)
 - 2. [General Electric Company; GE Consumer & Industrial - Electrical Distribution.](#)
 - 3. [Siemens Energy & Automation, Inc.](#)
 - 4. [Square D; a brand of Schneider Electric.](#)
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. [Eaton Electrical Inc.; Cutler-Hammer Business Unit.](#)
 - 2. [General Electric Company; GE Consumer & Industrial - Electrical Distribution.](#)
 - 3. [Siemens Energy & Automation, Inc.](#)
 - 4. [Square D; a brand of Schneider Electric.](#)
- B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
 - 2. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
 - a. Standard frame sizes, trip ratings, and number of poles.
 - b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
 - c. Multipole units enclosed in a single housing or factory assembled to operate as a single unit.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NECA 407.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

SECTION 16442 - PANELBOARDS

- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install panelboards and accessories according to NECA 407.
- B. Mount panelboard cabinet plumb and rigid without distortion of box.
- C. Install overcurrent protective devices and controllers not already factory installed.
- D. Install filler plates in unused spaces.
- E. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- F. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Create a directory to indicate installed circuit loads. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

END OF SECTION

SECTION 16511 - INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Interior lighting fixtures, lamps, and ballasts.

1.3 DEFINITIONS

- A. BF: Ballast factor.
- B. CCT: Correlated color temperature.
- C. CRI: Color-rendering index.
- D. LER: Luminaire efficacy rating.
- E. Lumen: Measured output of lamp and luminaire, or both.
- F. Luminaire: Complete lighting fixture, including driver if provided.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of lighting fixture including dimensions.
 - 2. Driver.
 - 3. Life, output (lumens, CCT, and CRI), and energy-efficiency data.
- B. Installation instructions.

1.5 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NFPA 70.

SECTION 16511 - INTERIOR LIGHTING

1.6 COORDINATION

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS

- A. Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5A.
- B. Metal Parts: Free of burrs and sharp corners and edges.
- C. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- D. Diffusers and Globes:
 - 1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
 - a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless otherwise indicated.
 - b. UV stabilized.
 - 2. Glass: Annealed crystal glass unless otherwise indicated.
- E. Factory-Applied Labels: Comply with UL 1598. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

2.3 DRIVERS FOR LED SOURCED LUMINAIRES

- A. A. General Requirements for Electronic Drivers:
 - 1. Comply with UL and ANSI C82.11.
 - 2. Exterior Environmental Protection: IP66 outdoor rated.
 - 3. Designed for type and quantity of lamps served.
 - 4. Drivers shall be designed for full light output unless dimmer control is indicated.
 - 5. Drivers shall operate at 60 Hz.
 - 6. Sound Rating: Class A.
 - 7. Output Voltage Regulation: 1 percent Line and 5 percent Load.
 - 8. Total Harmonic Distortion Rating: Less than 20 percent.

SECTION 16511 - INTERIOR LIGHTING

9. Current Crest Factor: 1.5, maximum.
10. Transient Voltage Protection: IEEE C62.41.1 and IEEE C62.41.2, Category A or better.
11. Lower operating frequencies are available but may interfere with default ballasts when used in proximity of infrared sensors.
12. Efficiency: 90 percent, or higher.
13. Power Factor: 0.90, or higher.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Lighting fixtures:

1. Set level, plumb, and square with ceilings and walls unless otherwise indicated.

END OF SECTION

SECTION 16521 - EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior luminaires with drivers.
 - 2. Luminaire-mounted photoelectric relays.
 - 3. Poles and accessories.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color-rendering index.
- C. LER: Luminaire efficacy rating.
- D. Luminaire: Complete lighting fixture, including ballast housing if provided.
- E. Pole: Luminaire support structure, including tower used for large area illumination.
- F. Standard: Same definition as "Pole" above.

1.4 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

- A. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices, and supporting structure, applied as stated in AASHTO LTS-4-M.
- B. Live Load: Single load of 500 lbf (2224 N), distributed as stated in AASHTO LTS-4-M.
- C. Ice Load: Load of 3 lbf/sq. ft. (145 Pa), applied as stated in AASHTO LTS-4-M Ice Load Map.
- D. Wind Load: Pressure of wind on pole and luminaire and banners and banner arms, calculated and applied as stated in AASHTO LTS-4-M.
 - 1. Basic wind speed for calculating wind load for poles 50 feet (15 m) high or less is 100 mph (45 m/s).
 - a. Wind Importance Factor: 1.0.
 - b. Minimum Design Life: 30 years.
 - c. Velocity Conversion Factors: 1.0

SECTION 16521 - EXTERIOR LIGHTING

1.5 ACTION SUBMITTALS

- A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 - 2. Details of attaching luminaires and accessories.
 - 3. Details of installation and construction.
 - 4. Luminaire materials.
 - 5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
 - a. Manufacturer Certified Data: Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - 6. Photoelectric relays.
 - 7. Drivers, including energy-efficiency data.
 - 8. LEDs, including life, output, CCT, CRI, lumens, and energy-efficiency data.
 - 9. Materials, dimensions, and finishes of poles.
 - 10. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
 - 11. Anchor bolts for poles.
 - 12. Manufactured pole foundations.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Anchor-bolt templates keyed to specific poles and certified by manufacturer.

1.6 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.
- B. Warranty: Sample of special warranty.

1.7 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

SECTION 16521 - EXTERIOR LIGHTING

- C. Comply with IEEE C2, "National Electrical Safety Code."
- D. Comply with NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store poles on decay-resistant-treated skids at least **12 inches (300 mm)** above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.
- B. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.
 - 1. Warranty Period for Luminaires: Five years from date of Substantial Completion.
 - 2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
 - 3. Warranty Period for Color Retention: Five years from date of Substantial Completion.
 - 4. Warranty Period for Poles: Repair or replace lighting poles and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
 - 1. LER Tests Fixtures: Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.
- B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.

SECTION 16521 - EXTERIOR LIGHTING

- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.
- J. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- M. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 - 2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
- N. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

2.3 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS

- A. Comply with UL 773 or UL 773A.
- B. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at **1.5 to 3 fc (16 to 32 lx)** and off at **4.5 to 10 fc (48 to 108**

SECTION 16521 - EXTERIOR LIGHTING

lx) with 15-second minimum time delay. Relay shall have directional lens in front of photocell to prevent artificial light sources from causing false turnoff.

1. Relay with locking-type receptacle shall comply with ANSI C136.10.
2. Adjustable window slide for adjusting on-off set points.

2.4 DRIVERS FOR LED SOURCED LUMINAIRES

A. A. General Requirements for Electronic Drivers:

1. Comply with UL and ANSI C82.11.
2. Exterior Environmental Protection: IP66 outdoor rated.
3. Designed for type and quantity of lamps served.
4. Drivers shall be designed for full light output unless dimmer control is indicated.
5. Drivers shall operate at 60 Hz.
6. Sound Rating: Class A.
7. Output Voltage Regulation: 1 percent Line and 5 percent Load.
8. Total Harmonic Distortion Rating: Less than 20 percent.
9. Current Crest Factor: 1.5, maximum.
10. Transient Voltage Protection: IEEE C62.41.1 and IEEE C62.41.2, Category A or better.
11. Lower operating frequencies are available but may interfere with default ballasts when used in proximity of infrared sensors.
12. Efficiency: 90 percent, or higher.
13. Power Factor: 0.90, or higher.

2.5 GENERAL REQUIREMENTS FOR POLES AND SUPPORT COMPONENTS

A. Structural Characteristics: Comply with AASHTO LTS-4-M.

1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in "Structural Analysis Criteria for Pole Selection" Article.
2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.

B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.
2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.
3. Anchor-Bolt Template: Plywood or steel.

D. Handhole: Oval-shaped, with minimum clear opening of 2-1/2 by 5 inches (65 by 130 mm), with cover secured by stainless-steel captive screws.

SECTION 16521 - EXTERIOR LIGHTING

- E. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Concrete, reinforcement, and formwork are specified in [Section 03300 "Cast-in-Place Concrete."](#)

2.6 STEEL POLES

- A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum yield of **46,000 psig (317 MPa)**; one-piece construction up to **40 feet (12 m)** in height with access handhole in pole wall.
 - 1. Shape: Round, tapered.
 - 2. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.
- B. Steel Mast Arms: Single-arm type, continuously welded to pole attachment plate. Material and finish same as pole.
- C. Grounding and Bonding Lugs: Welded **1/2-inch (13-mm)** threaded lug, complying with requirements in Section 16060 "Grounding and Bonding," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.
- D. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable times a 5.0 safety factor.
- E. Galvanized Finish: After fabrication, hot-dip galvanize complying with ASTM A 123/A 123M.

2.7 POLE ACCESSORIES

- A. Base Covers: Manufacturers' standard metal units, arranged to cover pole's mounting bolts and nuts. Finish same as pole.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

- A. Fasten luminaire to indicated structural supports.
- B. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation.

3.2 POLE INSTALLATION

- A. Alignment: Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features unless otherwise indicated on Drawings:

SECTION 16521 - EXTERIOR LIGHTING

1. Fire Hydrants and Storm Drainage Piping: 60 inches (1520 mm).
2. Trees: 15 feet (5 m) from tree trunk.

C. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer. Concrete materials, installation, and finishing requirements are specified in Section 03300 "Cast-in-Place Concrete."

D. Raise and set poles using web fabric slings (not chain or cable).

3.3 CORROSION PREVENTION

A. Steel Conduits: Comply with Section 16135 "Underground Ducts and Utility Structures." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.4 GROUNDING

A. Ground metal poles and support structures according to Section 16060 "Grounding and Bonding."

1. Install grounding conductor to rebar in foundation for each pole unless otherwise indicated.
2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

3.5 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

1. Verify operation of photoelectric controls.

END OF SECTION

APPENDIX A

City of Wrangell Quarry Use Plan

The City & Borough of Wrangell (CBW) owns a parcel of land approximately a half mile from the project that contains an existing quarry into an exposure of rock. The CBW performed an engineered analysis to determine the suitability of the rock for quarrying operations. Rock samples were put through a series of laboratory tests, including LA Abrasion loss, Degradation loss, and Sodium Sulfate soundness.

The laboratory test results have resulted in the following:

- ATM 313 - Degradation Value of Aggregates: Sediment Height = 9.4, degradation Value = 45
- ASSHTO T 96 – resistance of Degradation of Small-Size Course Aggregate by Abrasion and Impact in the LA machine, using Grading B, with crushing: Loss = 19%
- ASTM C535 – Resistance of Degradation of Small-Size Course Aggregate by Abrasion and Impact in the LA machine, using Grading 1: Loss = 21%
- Sodium sulfate test by AASHTO T106 were not provided.
- Fracture test results by AASHTO TP 61 were not provided

Requirements for Use of CBW Quarry:

1. Contractors who wish to utilize the CBW quarry rock are required to compare their project's specifications for processed rock materials to the results provided above for the available quarry rock.
2. Currently the site exhibits: a) timber and soil exposed at the top of the quarry faces, which will require development to access additional rock; b) a lack of pit floor space and an adequate quantity of benches to facilitate equipment access to certain areas for drilling and blasting. Contractors wishing to use the quarry site are required to develop access to the materials. Access may also require working around existing stockpiles of materials.
3. The CBW will charge a royalty at the rate of 10% of the quantity extracted by the Contractor. The 10% royalty shall consist of drilling, blasting, and stockpiling, within the quarry, 10% of the total quantity removed from the quarry. Royalty rates are very different than commodity market prices. Royalty gives the buyer (Contractor) the right to extract a resource, and it involves a minimal investment by the CBW. Additionally, oversight costs and management costs are responsibilities left to the Contractor.
4. An approved and comprehensive mining and management plan shall be designed and implemented, by the Contractor, to maximize the resource production, improve safety and stability during active uses, and facilitate reclamation of the site. This mining plan shall be submitted for approval prior to the commencement of mining.
5. Clearing and leveling of additional area may be necessary to accommodate processing and stockpiling of the resource, including rock of various gradations, overburden, and timber. All mining development and operations shall be performed by the Contractor.
6. When space is available, mining may be allowed by additional Contractors, for use on other projects.

APPENDIX A

7. The Contractor shall assess the availability of the CBW quarry pit floor space. If additional space is needed, the Contractor is required to coordinate use of the adjacent land owner's pit floor, to accommodate the Contractor's processing and staging. The Contractor will also be responsible for coordination with the adjacent land owner during extraction and processing.

Alternatively, the State's Wrangell Airport Quarry may be available as both a local rock source and a staging area. Contractors interested in exploring this option are encouraged to contact the State for their application and permit requirements, as well as for their usage fees and royalty requirements. The contact for the State's airport quarry is Lynette Campbell, DOT, Aviation Leasing Agent, Tel: 907-465-1785.

APPENDIX B



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898, CEPOA-RD
JBER, ALASKA 99506-0898

NOV 14 2011

Regulatory Division
POA-2010-656-M1

City and Borough of Wrangell
Attention: Ms. Amber Al-Haddad
Post Office Box 531
Wrangell, Alaska 99929

Dear Ms. Al-Haddad:

Enclosed is the signed Department of the Army (DA) permit modification, file number POA-2010-656-M1, Zimovia Strait. This is the 1st permit modification of the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

If changes to the plans or location of the work are necessary for any reason, plans must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Also enclosed is a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this DA Permit Modification (see section labeled "Initial Proffered Permit").

For additional information, please contact me at by email at Serena.E.Sweet@usace.army.mil, by telephone at (907) 753-2819; toll free from within Alaska at (800) 478-2712, or by mail at the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "Serena Sweet".

Serena Sweet
Project Manager

Enclosures



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898, CEPOA-RD
JBER, ALASKA 99506-0898

NOV 14 2011

Regulatory Division
POA-2010-656-M1

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number POA-2010-656-M1, Zimovia Strait, was issued to the City and Borough of Wrangell, to conduct the following work subject to U.S. Army Corps of Engineers Regulatory jurisdiction:

"Discharge of dredged and fill material into 6.96 acres of jurisdictional wetlands and 123 lineal feet of perennial stream to facilitate the construction of a community hospital and future medical support facilities."

This is the 1st modification of the original permit. The permit is hereby modified to authorize the applicant to conduct the following work:

1. Discharge 100 cubic yards of fill material into 0.03 acre of wetland habitat to widen and improve Wood Street from Zimovia Highway to the facility entry driveway. Additional stormwater control features would be installed to improve the system.
2. Replace an existing 27-foot long culvert with a 60-inch diameter corrugated steel pipe culvert 60-foot long. Also, up to 120 linear feet of stream will be rerouted and replaced with approximately 75 linear feet of new stream channel in order to connect to the new culvert.
3. Discharge 6,000 cubic yards of fill material into 0.47 acre of wetland habitat to extend Etohin Street and upgrade the utilities between the facility and the existing end of Etohin Avenue.
4. Utilities (including water mains and a fire hydrant, and electrical and telephone lines) will also be installed. All impacts associated with these utilities will be within the existing or proposed roadways.

The work will be performed in accordance with the enclosed plans, sheets 1-15, dated November 2011, which are incorporated in and made a part of this Permit Modification.

The project is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; USGS Quad Map Petersburg B-2; Latitude 56.4652° N., Longitude - 132.3718° W.; at the Wrangell Medical Center Site, near Wrangell, Alaska.

The following conditions apply to this permit modification:

1. Permittee shall mitigate for unavoidable impacts to waters of the U.S., as follows:
 - a. Conserve in perpetuity a minimum of 1.25 acres of land on property identified by the applicant as "Volunteer Park" to compensate for the permanent loss of 0.5 acres of jurisdictional wetlands.
 - b. Conserve in perpetuity a minimum of 0.08 acres of land on property identified by the applicant as "Volunteer Park" to compensate for the permanent loss of 120 linear feet of perennial stream.

2. Permittee shall execute and cause to be recorded with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property restrictive covenants and new plats for the conservation area, as specified in permit special condition 1, acceptable to the Corps of Engineers for the purpose of maintaining the conservation areas, as shown on the recorded plats, in their natural state in perpetuity. The permittee shall provide a copy of the recorded restrictive covenants and the new plats showing the conservation areas to the Corps of Engineers prior to the commencement of work authorized by this permit and prior to the sale, conveyance, or subdivision of any property. The following language shall be incorporated into the restrictive covenant and plat notes:

No person or entity shall perform any of the following activities on such conservation areas:

- a. fill, grade, excavate or perform any other land disturbing activities
- b. cut, mow, burn, remove, or harm any vegetation
- c. construct or place any fill trails, walkways, buildings, mobile homes, signs, utility poles or towers, or any other permanent or temporary structures with the exception of pile supported elevated walkways and signs used for the purpose of environmental education.
- d. drain or otherwise disrupt or alter the hydrology or drainage ways of the conservation area
- e. dump or store soil, trash, or other waste
- f. park any type of motorized or non-motorized vehicles or store any other objects
- g. graze or water animals, or use for any agricultural or horticultural purpose

This covenant is intended to ensure continued compliance with a mitigation condition of a Clean Water Act authorization issued by the United States of America, U.S. Army Corps of Engineers, Alaska District, permit number POA-2010-656-M1, and therefore may be enforced by the United States of America. This covenant is to run with the land, and shall be binding on the Owner, and all parties claiming under it. The permittee shall enforce the terms of the restrictive covenant and shall take no action on the conservation area described in the covenants inconsistent with the terms thereof. This covenant cannot be amended.

All other conditions under which the subject authorization was made remain in full force and effect.

This authorization and the enclosed modified plans should be attached to the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:



Serena Sweet
Project Manager



**This notice of authorization must be
conspicuously displayed at the site of work.**

United States Army Corps of Engineers

ZIMOVIA STRAIT

A permit to: UPGRADE ACCESS AND PROVIDE A UTILITY CORRIDOR

at: WRANGELL MEDICAL CENTER SITE

has been issued to: THE CITY AND BOROUGH OF WRANGELL

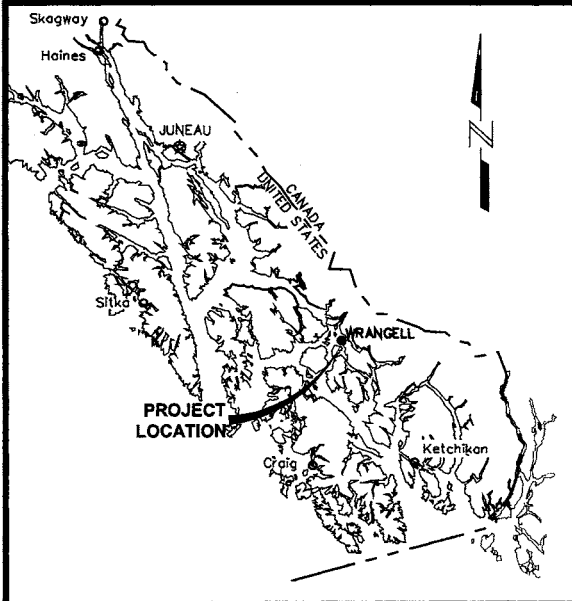
on: NOV 14 2011 **and expires on:** MARCH 31, 2016

Address of Permittee: POST OFFICE BOX 531, WRANGELL, AK 99929

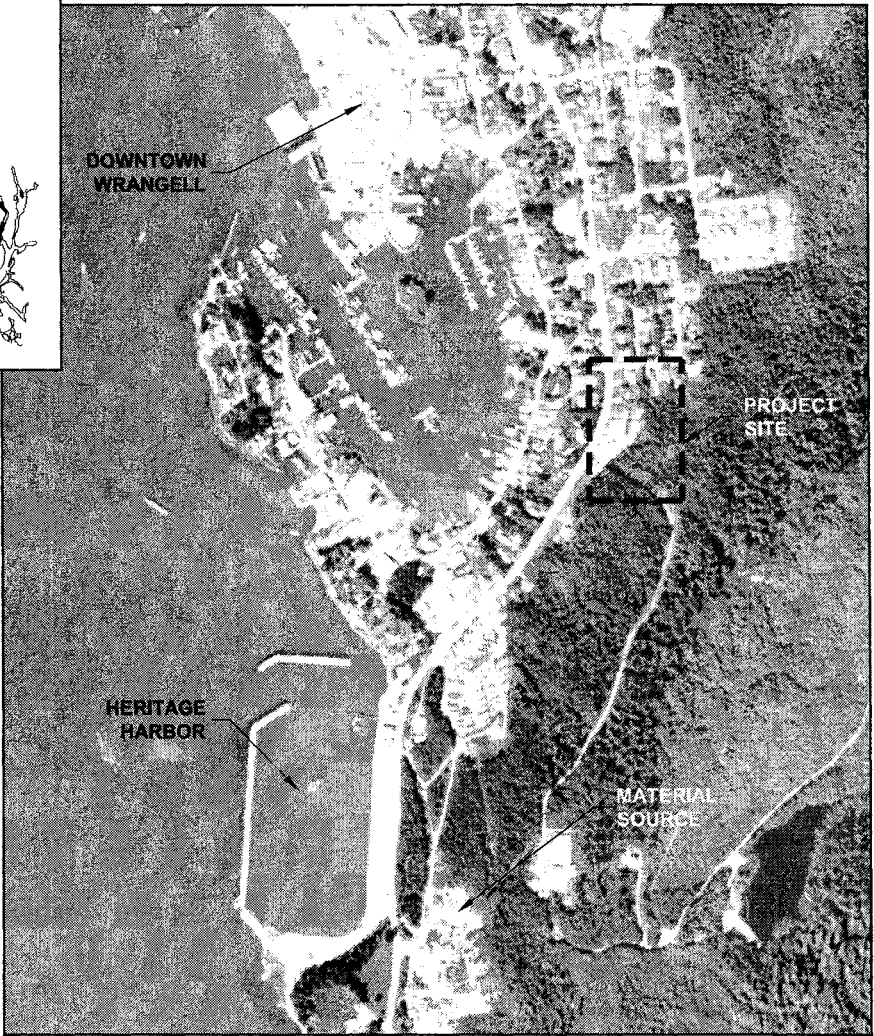
Permit Number:

POA-2010-656-M1

**FOR: District Commander
SERENA SWEET
PROJECT MANAGER
REGULATORY DIVISION**



LOCATION MAP



VICINITY MAP

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- 2 SITE PLAN AND WETLANDS MAP
- 3 WOOD STREET SITE PLAN
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- 15 TEMPORARY CULVERT BYPASS OPTION DETAILS

Drawings\2011\114018.01 - Wood Street Improvement\CORP PERMIT_WOOD_10-2011\PI.dwg

PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

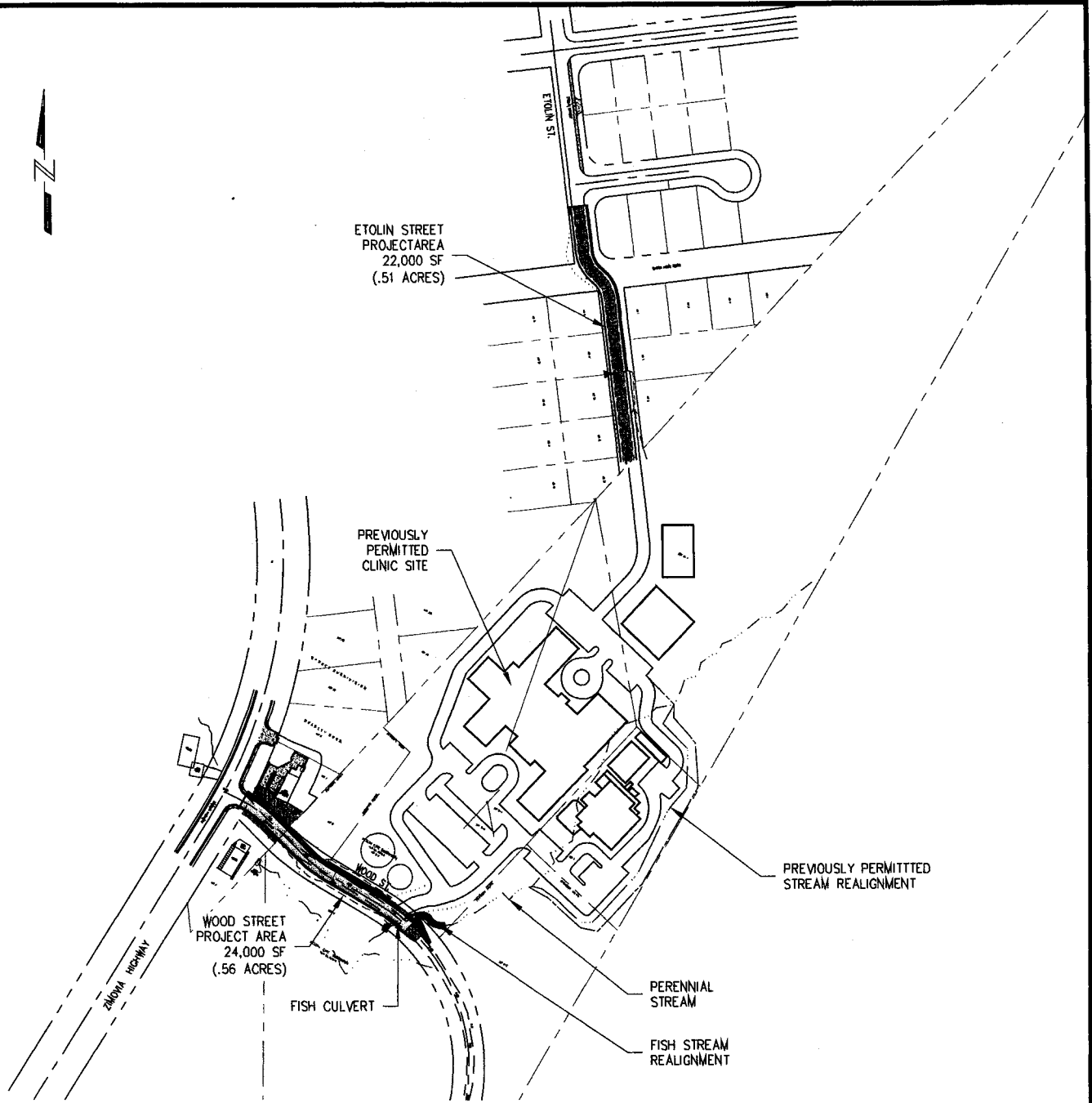
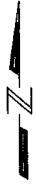
PERMIT MODIFICATION

PROJECT LOCATION

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:
WOOD STREET IMPROVEMENT
AND ETOLIN STREET EXTENSION

AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"



SITE PLAN

PURPOSE:

PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:

STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION**

**SITE PLAN AND
WETLANDS MAP**

APPLICATION BY:

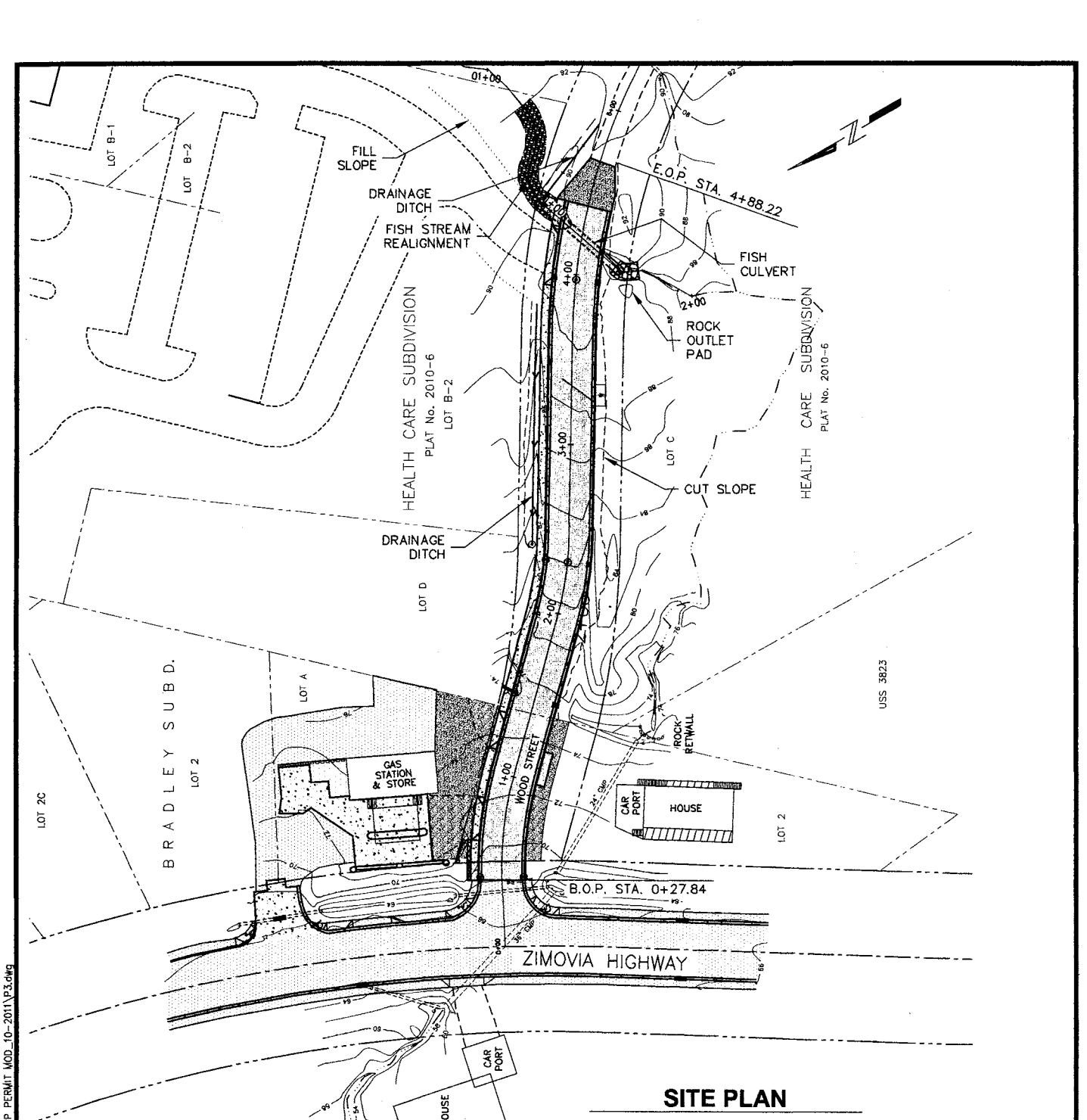
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:

WOOD STREET IMPROVEMENT
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AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
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SHEET 2 of 15 DATE: OCT. 2011



SITE PLAN

PURPOSE:
 PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
 STEVE PRUNELLA
 DELORES BRADLEY
 CITY OF WRANGELL
 PAUL TORGRAMSON

PREMIT MODIFICATION

WOOD STREET SITE PLAN

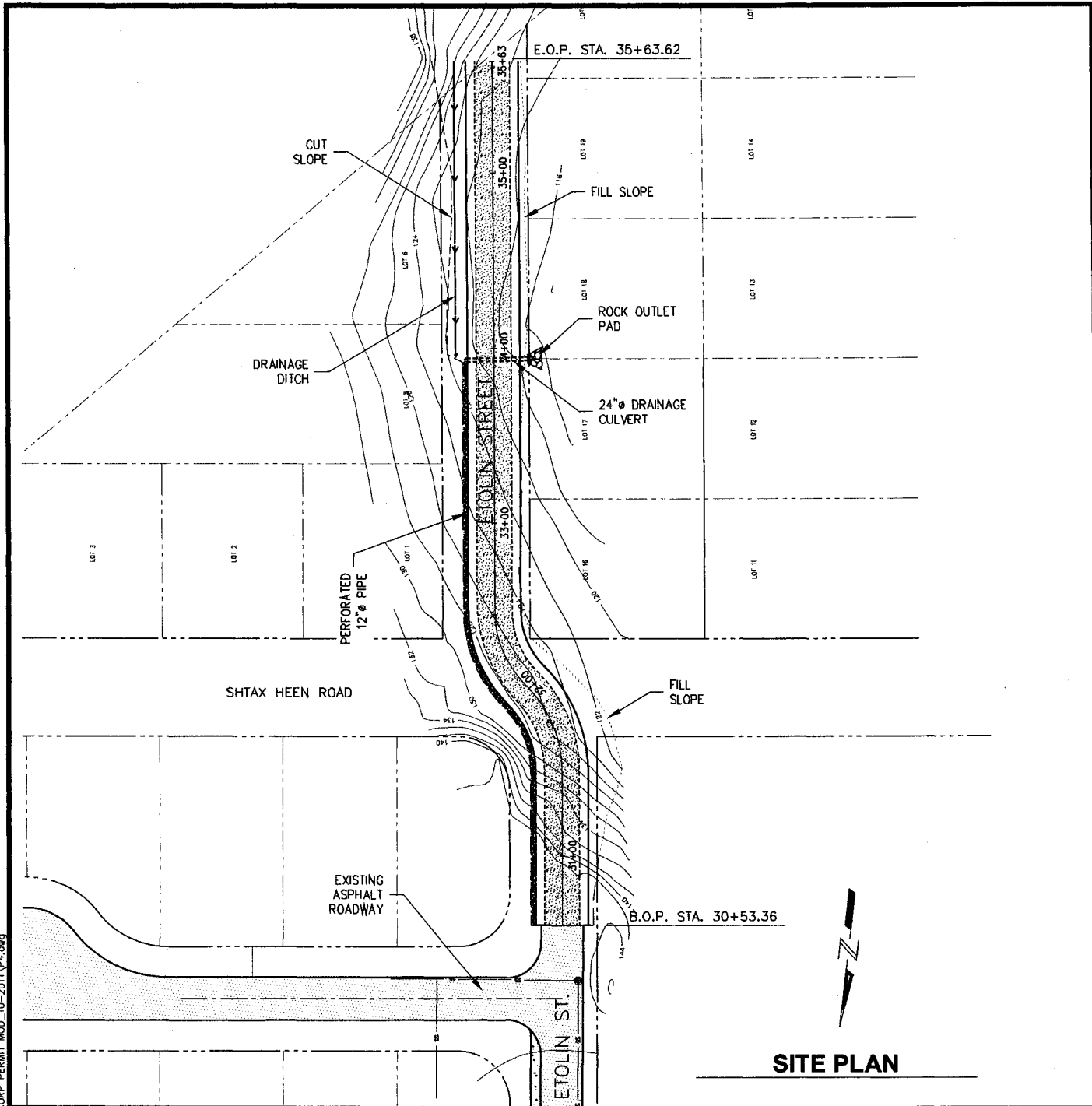
APPLICATION BY:
 CITY AND BOROUGH OF WRANGELL
 P.O. BOX 531
 WRANGELL, AK. 99929

PROPOSED:
 WOOD STREET IMPROVEMENT
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AT: WRANGELL, ALASKA
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 LAT. 56D 27' 46",
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SHEET 3 of 15 DATE: OCT. 2011

Drawings\2011\114018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\VP3.dwg



Drawings\2011\114018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\P4.dwg



SITE PLAN

PURPOSE:
 PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
 STEVE PRUNELLA
 DELORES BRADLEY
 CITY OF WRANGELL
 PAUL TORGRAMSON

PERMIT MODIFICATION

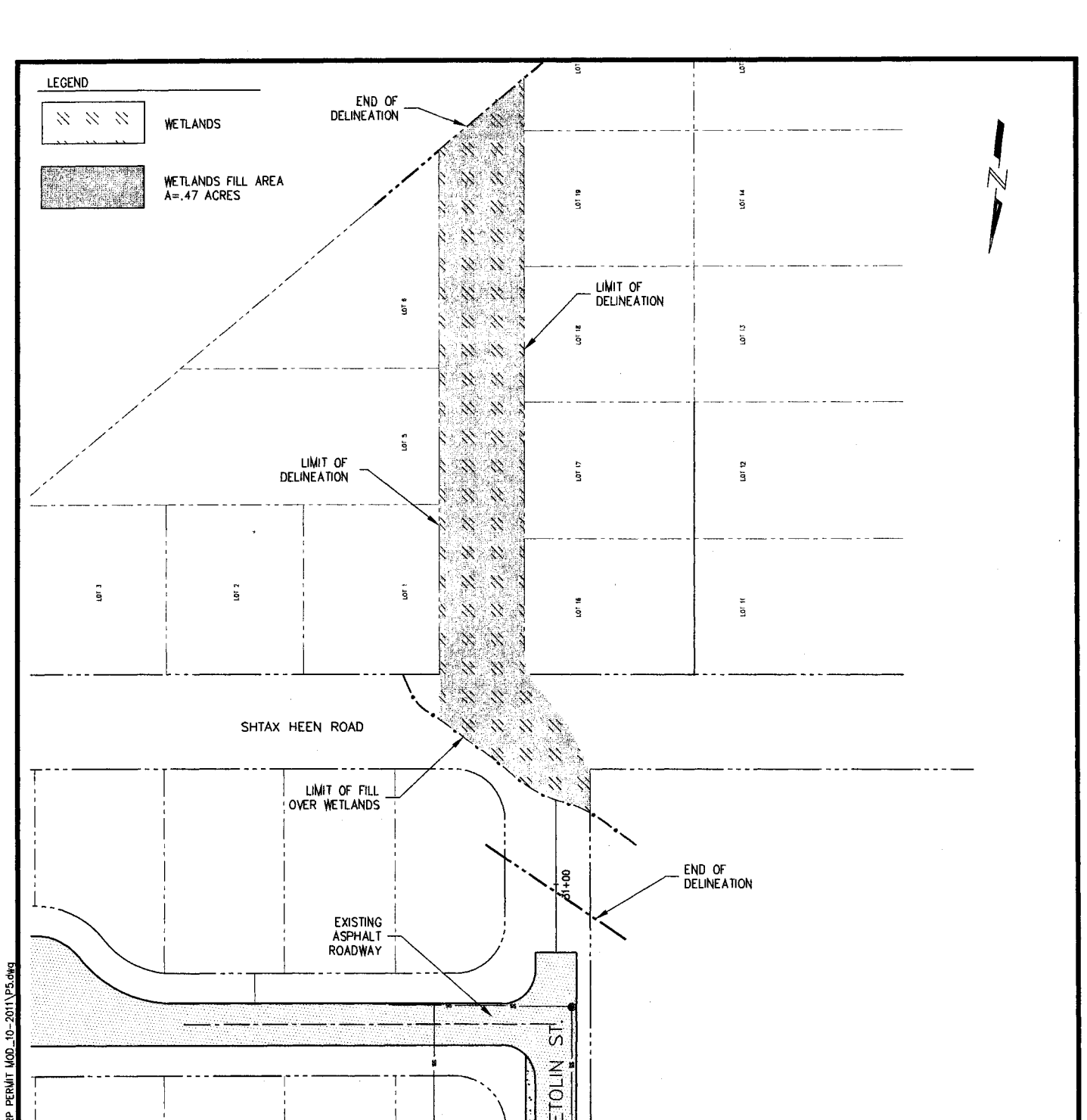
ETOLIN STREET SITE PLAN

APPLICATION BY:
 CITY AND BOROUGH OF WRANGELL
 P.O. BOX 531
 WRANGELL, AK. 99929

PROPOSED:
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 AND ETOLIN STREET EXTENSION

AT: WRANGELL, ALASKA
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SHEET 4 of 15 DATE: OCT. 2011



Drawings\2011\14018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\PS.dwg

PURPOSE:
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DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
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 CITY OF WRANGELL
 PAUL TORGRAMSON

**PERMIT
 MODIFICATION**

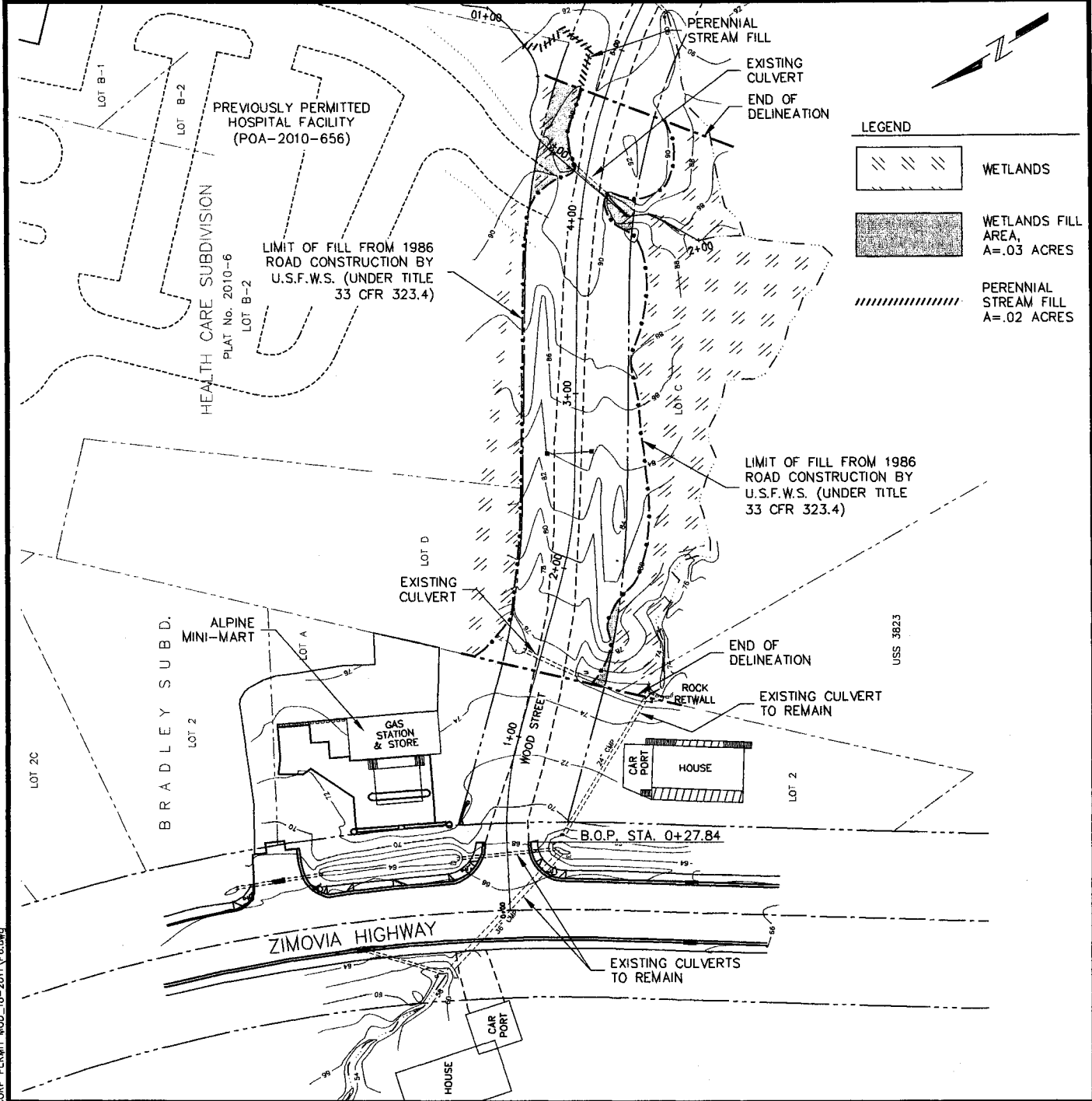
**ETOLIN STREET
 WETLAND PLAN**

APPLICATION BY:
 CITY AND BOROUGH OF WRANGELL
 P.O. BOX 531
 WRANGELL, AK. 99929

PROPOSED:
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 AND ETOLIN STREET EXTENSION

AT: WRANGELL, ALASKA
 T.62.S, R.84E, SEC. 30
 LAT. 56D 27' 46"
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SHEET 5 of 15 DATE: OCT. 2011



Drawings\2011\14018.01 - Hood Street Improvement\CORP PERMIT MOD_10-2011\PC.dwg

PERMIT No.:
 PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
 STEVE PRUNELLA
 DELORES BRADLEY
 CITY OF WRANGELL
 PAUL TORGRAMSON

**PERMIT
 MODIFICATION**

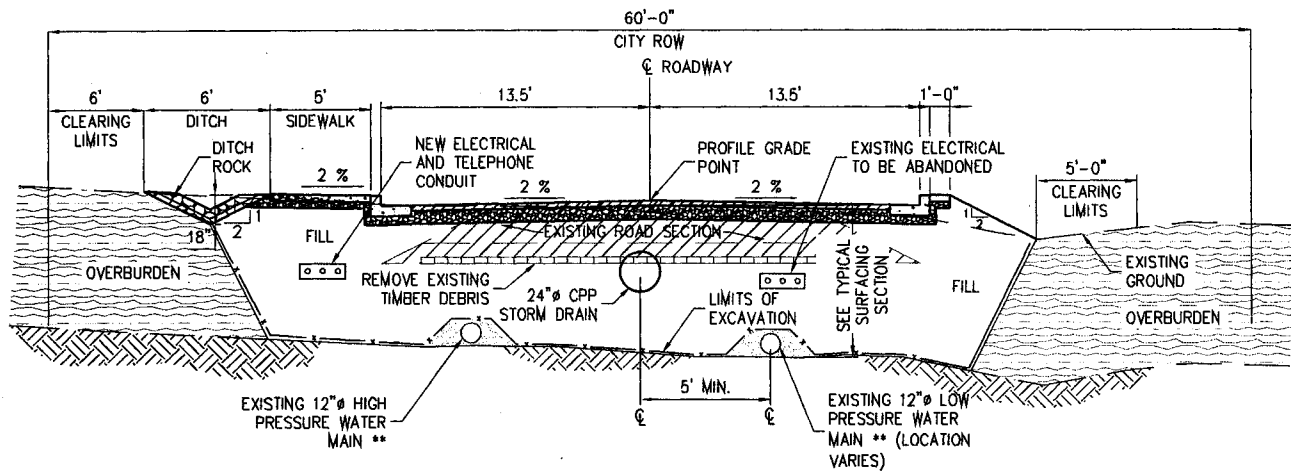
**WOOD STREET
 WETLAND PLAN**

APPLICATION BY:
 CITY AND BOROUGH OF WRANGELL
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 WRANGELL, AK. 99929

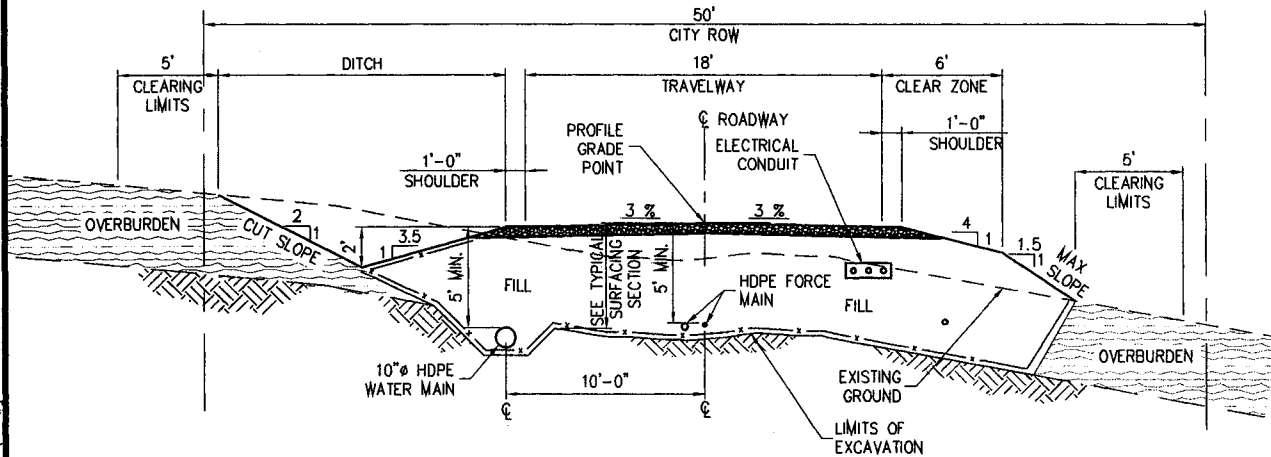
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SHEET 6 of 15 DATE: OCT. 2011



**WOOD STREET
TYPICAL SECTION**



**ETOLIN STREET
TYPICAL SECTION**

PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

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DELORES BRADLEY
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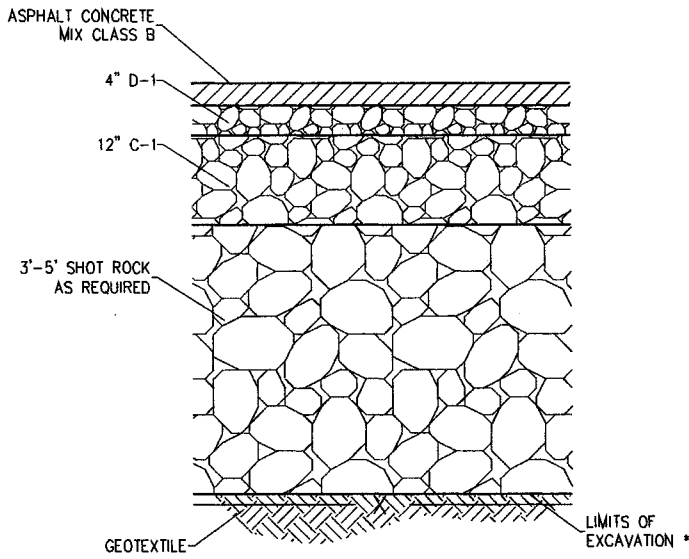
**PERMIT
MODIFICATION**

**ROADWAY
TYPICAL SECTIONS**

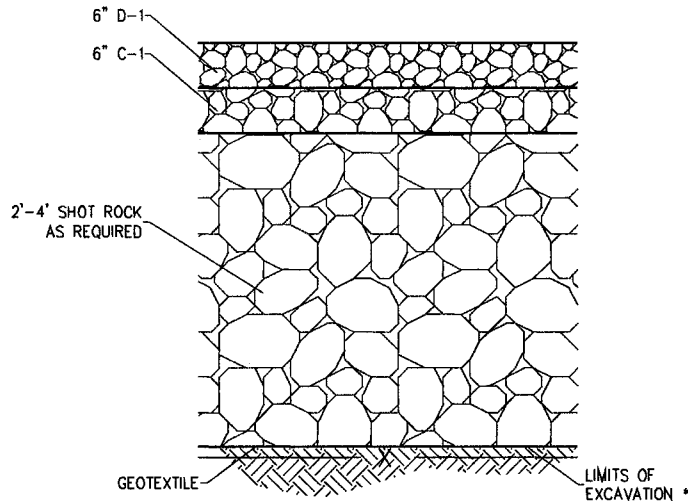
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
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WRANGELL, AK. 99929

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SHEET 7 of 15 DATE: OCT. 2011



**WOOD STREET
SURFACING SECTION**



**ETOLIN STREET
SURFACING SECTION**

* EXCAVATE TO COMPETENT BEARING LAYER
** PROTECT UTILITIES DURING EXCAVATION

PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

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DELORES BRADLEY
CITY OF WRANGELL
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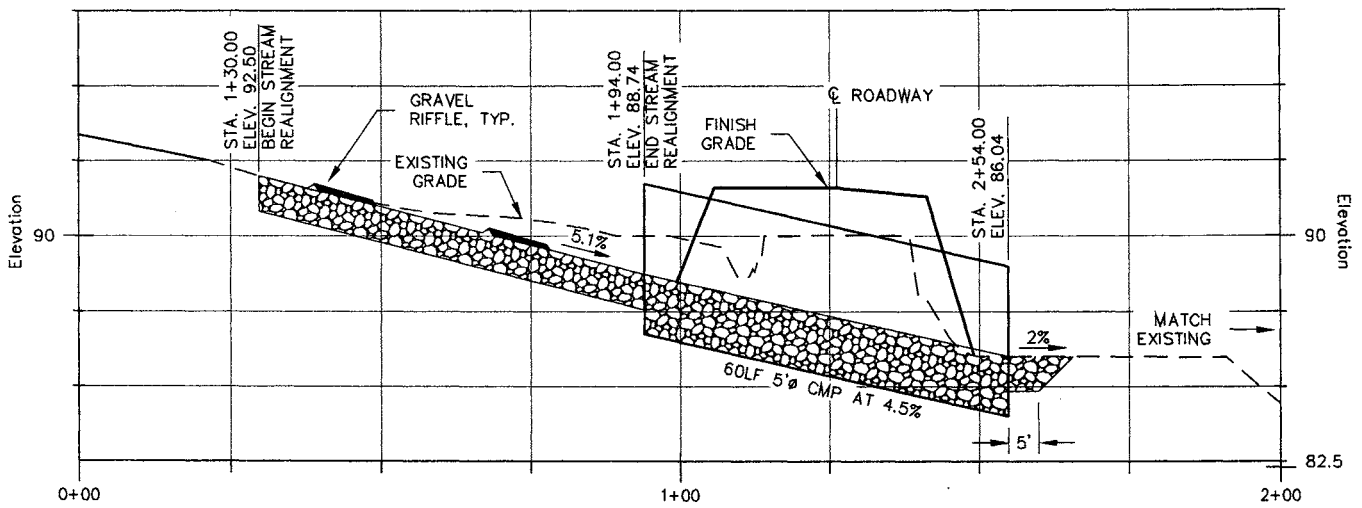
**PERMIT
MODIFICATION**

SURFACING DETAILS

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:
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SHEET 8 of 15 DATE: OCT. 2011



**WOOD STREET
FISH CULVERT PROFILE**

PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
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DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION**

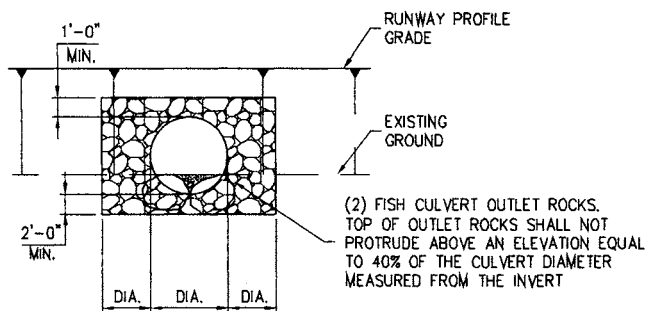
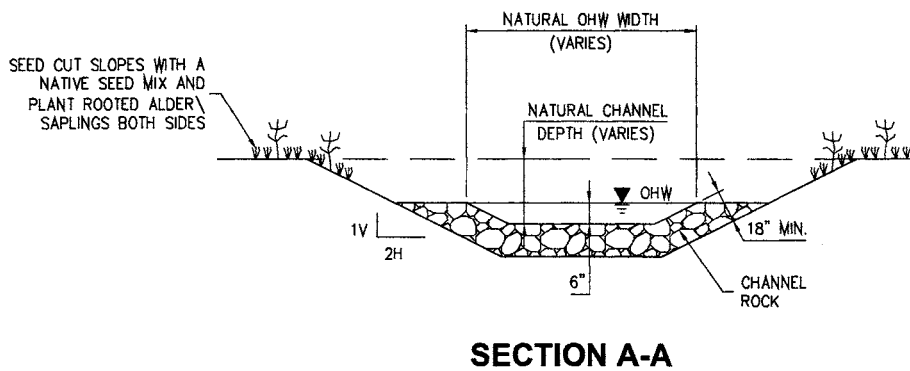
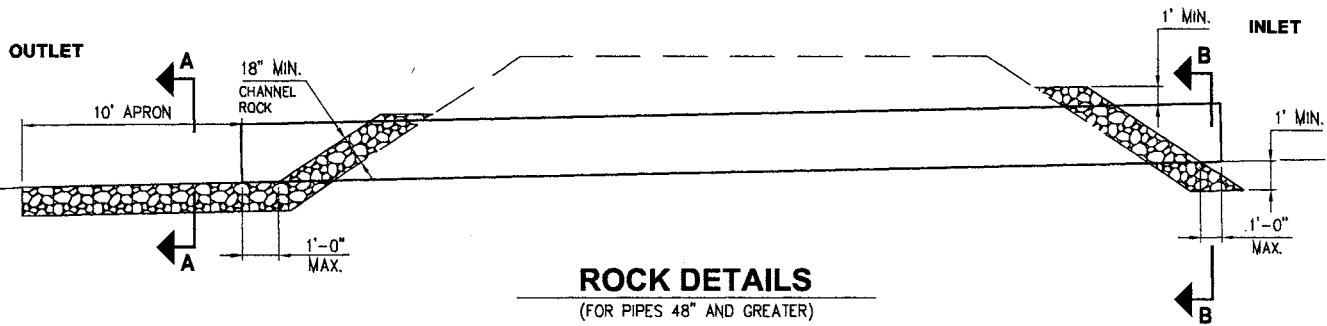
FISH STREAM PROFILE

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:
WOOD STREET IMPROVEMENT
AND ETOLIN STREET EXTENSION
AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"

SHEET 10 of 15 DATE: OCT. 2011

Drawings\2011\114018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\PI11.dwg



PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
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DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

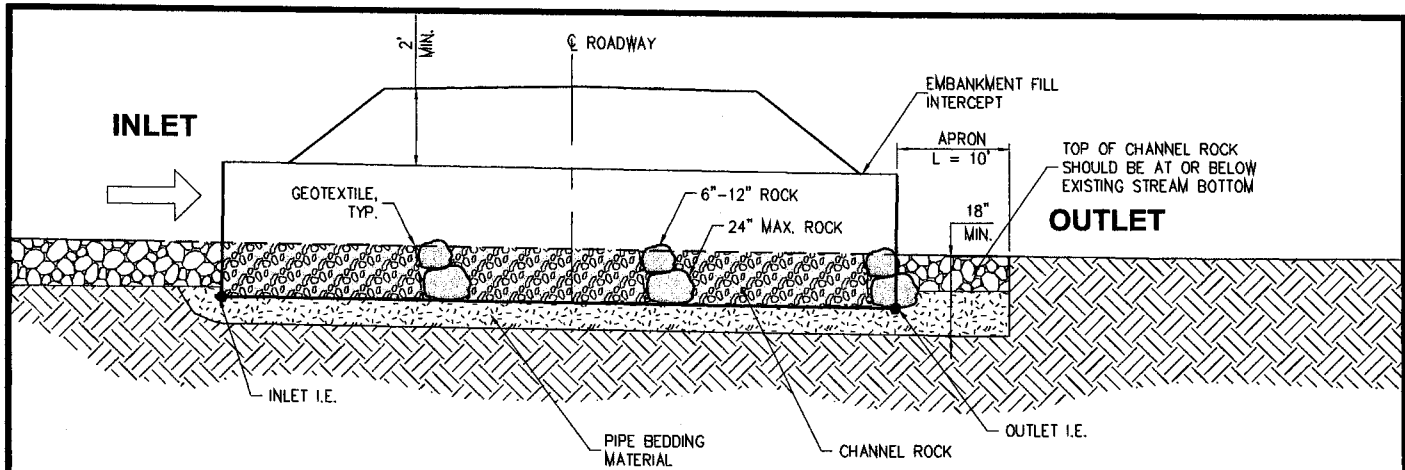
**PERMIT
MODIFICATION**

CULVERT DETAILS

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

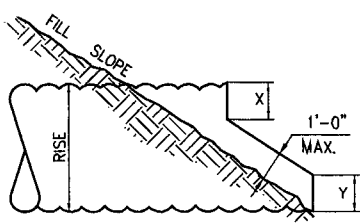
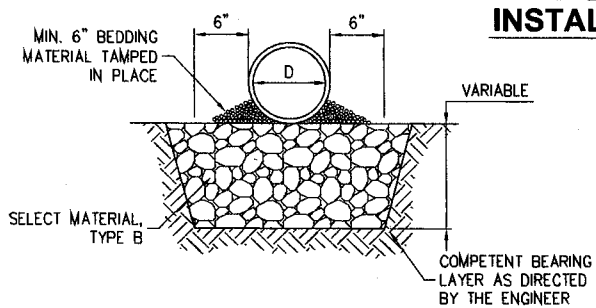
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WOOD STREET IMPROVEMENT
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T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
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SHEET 11 of 15 DATE: OCT. 2011



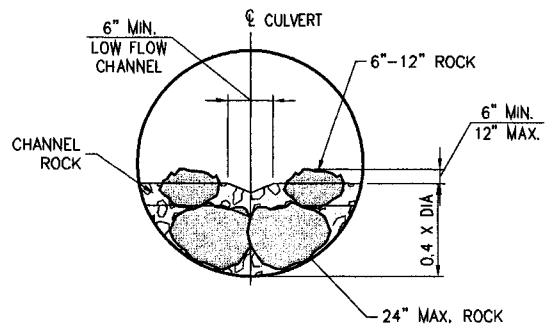
FISH CULVERT INSTALLATION DETAIL

NOT TO SCALE



STABLE SUBGRADE

SUBEXCAVATION REQUIRED



FISH CULVERT CROSS SECTION

BEVELED END DETAIL

NOT TO SCALE

- 1) STEP BEVEL ALL PIPES.
- 2) BEVEL OF PIPE SHALL MATCH THE FILL SLOPE SHOWN ON THE DRAWINGS.
- 3) THE ENDS OF CULVERT SHALL NOT BE CUT ON A SKEW UNLESS SHOWN ON THE DRAWINGS.
- 4) X = 1/4 D OR MANUFACTURERS STANDARDS.
- 5) Y = 2'

PURPOSE:
PERMIT No. POA-2010-656

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DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

PERMIT MODIFICATION

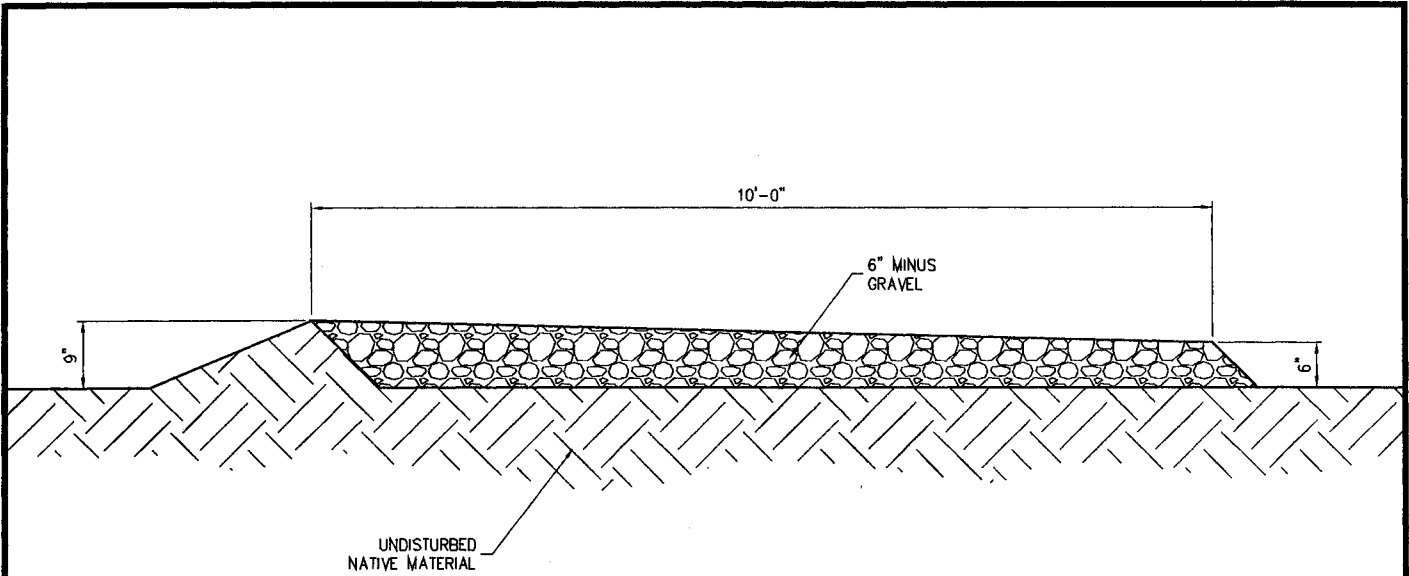
FISH CULVERT DETAILS

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

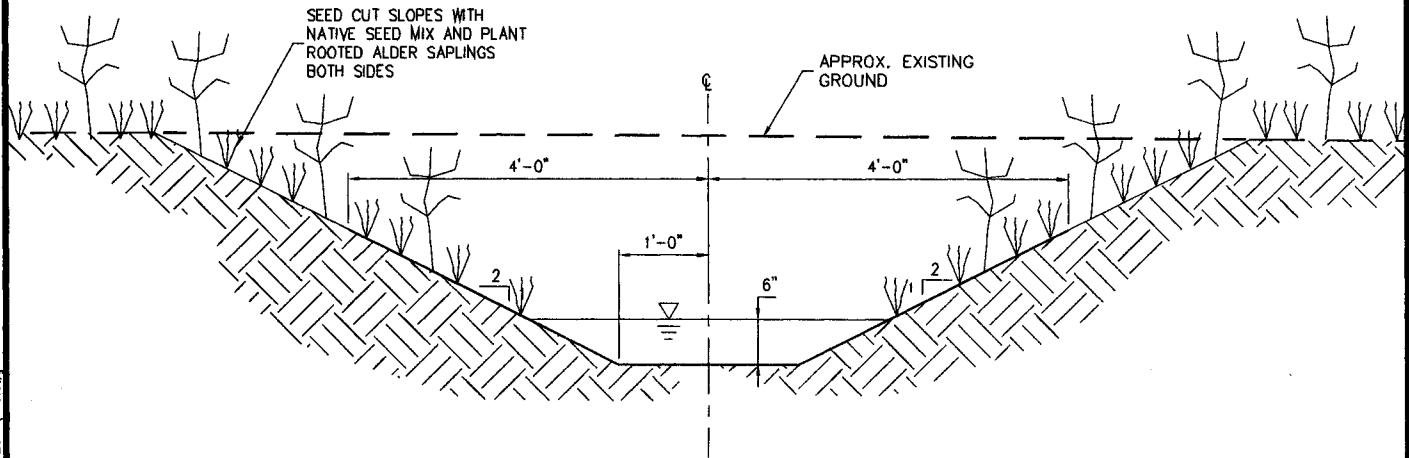
PROPOSED:
WOOD STREET IMPROVEMENT
AND ETOLIN STREET EXTENSION
AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
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SHEET 12 of 15 DATE: OCT. 2011

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GRAVEL RIFFLE DETAIL



TYPICAL FISH STREAM SECTION

Drawings\2011\114018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\PI3.dwg

PURPOSE:
PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.
ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

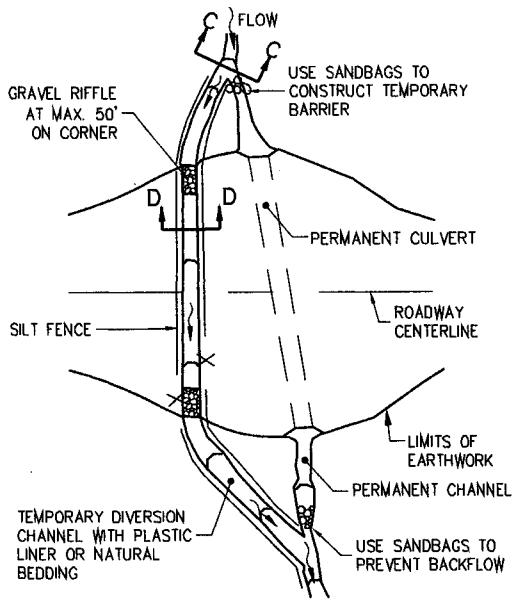
PERMIT MODIFICATION

FISH STREAM REALIGNMENT DETAILS

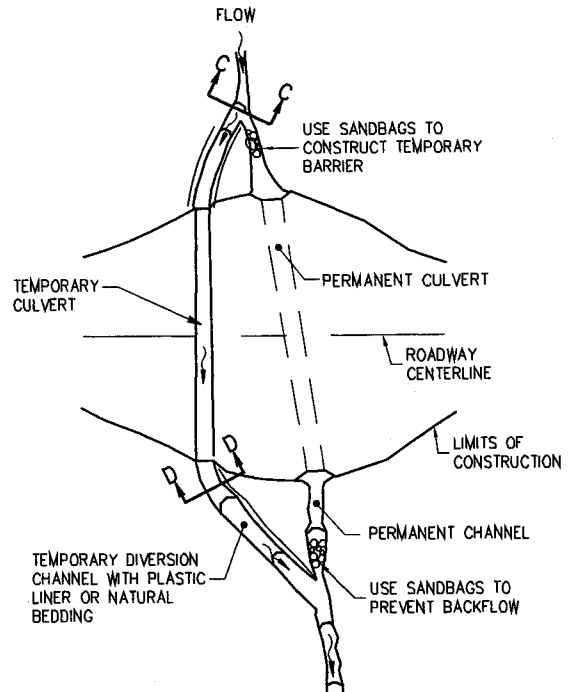
APPLICATION BY:
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P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:
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AT: WRANGELL, ALASKA
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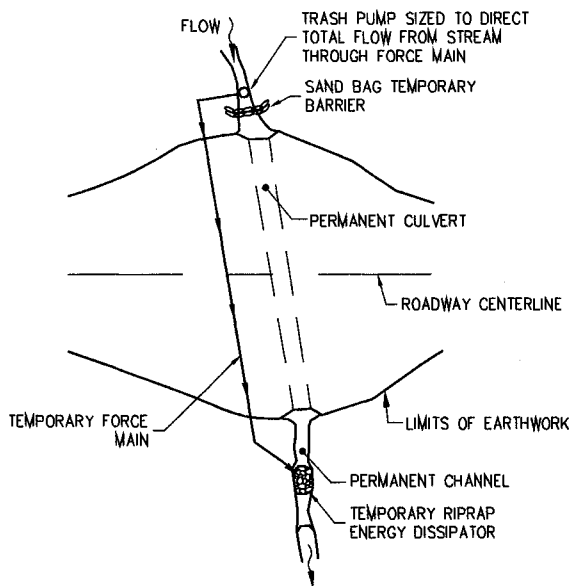
SHEET 13 of 15 DATE: OCT. 2011



TEMPORARY DIVERSION CHANNEL



TEMPORARY CULVERT DIVERSION



TEMPORARY TRASH PUMP DIVERSION

NOTE:

- 1) THESE OPTIONS WOULD BE AVAILABLE TO THE CONTRACTOR IF NECESSARY DURING CONSTRUCTION.
- 2) IF A TRASH PUMP IS USED DURING CONSTRUCTION THE INTAKE MUST BE OPERATED, AND MAINTAINED TO PREVENT FISH ENTRAPMENT, ENTRAINMENT, OR INJURY WITH THE USE OF PERFORATED PLATE AND WOVEN WIRE HAVING A MESH SIZE NOT GREATER THAN 3/32 INCHES OR PROFILE BAR AND WEDGEWIRE HAVING OPENINGS NOT GREATER THAN 1.75 MM. APPROACH VELOCITIES SHALL NOT EXCEED A PASSIVE VELOCITY OF 0.2 FEET PER SECOND (FPS) OR AN ACTIVE VELOCITY OF 0.4 FPS

PURPOSE:

PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:

STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT MODIFICATION
TEMPORARY CULVERT BYPASS
OPTION DETAILS**

APPLICATION BY:

CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

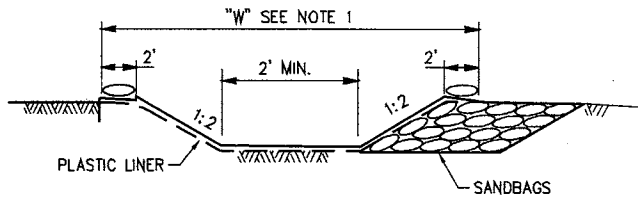
PROPOSED:

WOOD STREET IMPROVEMENT
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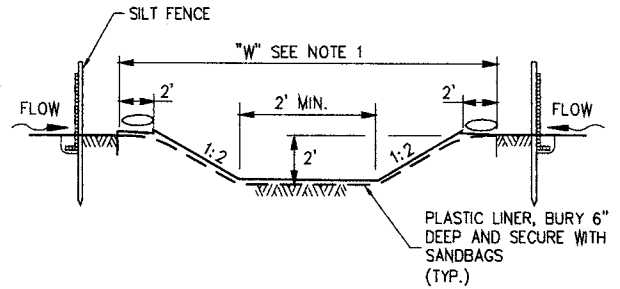
AT: WRANGELL, ALASKA
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SHEET 14 of 15 DATE: OCT. 2011

Drawings\2011\14018.01 - Wood Street Improvement\CORP PERMIT MOD_10-2011\PI14.dwg

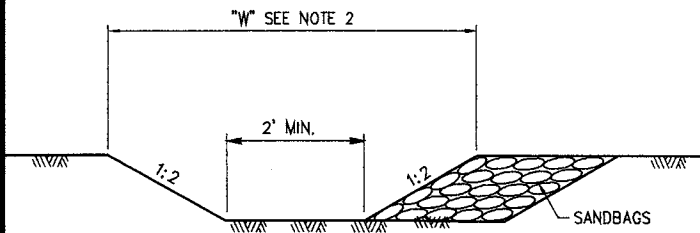


SECTION C-C

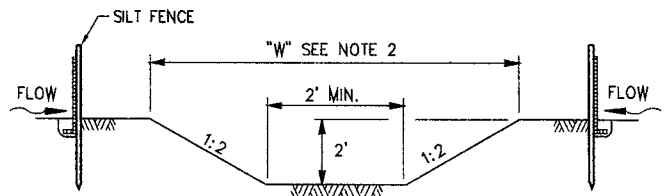


SECTION D-D

**PLASTIC LINED
DIVERSION CHANNEL**



SECTION C-C



SECTION D-D

**RIPRAP LINED
DIVERSION CHANNEL**

NOTE:

- 1) "W" - MATCH STREAM WIDTH TO EXISTING.
- 2) USE PLASTIC LINER ALONG THE ENTIRE LENGTH AND WIDTH OF THE TEMPORARY DIVERSION CHANNEL.
- 3) CONSTRUCT CHANNEL AT A MINIMUM GRADE OF 0.5 PERCENT.
- 4) DO NOT CONSTRUCT WITH LONGITUDINAL JOINTS IF USING A PLASTIC LINER. BURY THE UPSTREAM EDGE OF THE LINER A MINIMUM OF 6" DEEP AND SECURE SANDBAGS.

PURPOSE:

PERMIT No. POA-2010-656

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:

STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION
TEMPORARY
CUVLETT BYPASS
OPTION DETAILS**

APPLICATION BY:

CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED:

WOOD STREET IMPROVEMENT
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AT: WRANGELL, ALASKA

T.62.S, R.84E, SEC. 30

LAT. 56D 27' 46"

LONG. 132D 22' 28"

SHEET 15 of 15 DATE: OCT. 2011

Applicant: City and Borough of Wrangell		File Number: POA-2010-656-M1	Date: November 15, 2011
Attached is:			See Section below
XXX	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

THIS REQUEST FOR APPEAL FORM MUST BE RECEIVED BY: JANUARY 15, 2012

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the District Engineer. Your objections must be received by the District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or, (c) not modify the permit, having determined that the permit should be issued as previously written. After evaluating your objections, the District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the Preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

In order for a Request For Appeal to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the Notice of Appeal Process. It is not necessary to submit a Request For Appeal form to the Division office if you do not object to the decision.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

Serena E. Sweet, Project Manager
Alaska District Corps of Engineers
CEPOA-RD-S
P.O. Box 6898
JBER, AK 99506-0898
(907) 753-2819
(800) 478-2712 (toll free in AK)

If you only have questions regarding the appeal process you may also contact:

Commander
USAED, Pacific Ocean Division
ATTN: CEPOD-PDC/Linda Hihara-Endo, P.E.
Building 525
Fort Shafter, HI 96858-5440

To submit this form, mail to the address above

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898
JBER, ALASKA 99506-0898

APR 06 2012

Regulatory Division
POA-2010-656-M1

City and Borough of Wrangell
Attention: Ms. Amber Al-Haddad
Post Office Box 531
Wrangell, Alaska 99929

Dear Ms. Al-Haddad,

Enclosed is the signed Department of the Army (DA) permit modification, file number POA-2010-656-M1, Zimovia Strait. This is the first permit modification of the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

If changes to the plans or location of the work are necessary for any reason, plans must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Also enclosed is a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this DA Permit Modification (see section labeled "Initial Proffered Permit").

Please contact me via email at roberta.k.budnik@usace.army.mil, by mail at the address above, by phone at (907) 753-2785, or toll free from within Alaska at (800) 478-2712, if you have questions.

Sincerely,

A handwritten signature in black ink that reads "Roberta K. Budnik".

Roberta K. Budnik
Regulatory Specialist

Enclosures



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898
JBER, ALASKA 99506-0898

APR 06 2012

Regulatory Division
POA-2010-656-M1

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number POA-2010-656, Zimovia Strait, was issued to Timothy Rooney, City and Borough of Wrangell on March 31, 2011, for the following:

"The discharge of dredged and fill material into 6.96 acres of jurisdictional wetlands and 123 lineal feet of perennial stream to facilitate the construction of a community hospital and future medical support facilities."

This is the first modification of the original permit. The permit is hereby modified as follows:

Place 11 cubic yards of excavated native material into 0.0028-acre of waters of the U.S., in order to realign 101 linear feet of non-fish bearing perennial stream.

The work will be performed in accordance with the enclosed plans, sheets - 1-6, dated March 2012, which are incorporated in and made a part of this Permit Modification.

The project site is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; USGS Quad Map Petersburg B-2; Latitude 56.4629° N., Longitude 132.3741° W.; in Wrangell, Alaska.

The time limit for completing the work authorized ends on April 30, 2017. If you find that you need more time to complete the authorized activity, please submit your request for a time extension to the Corps of Engineers for consideration at least one month before permit expiration.

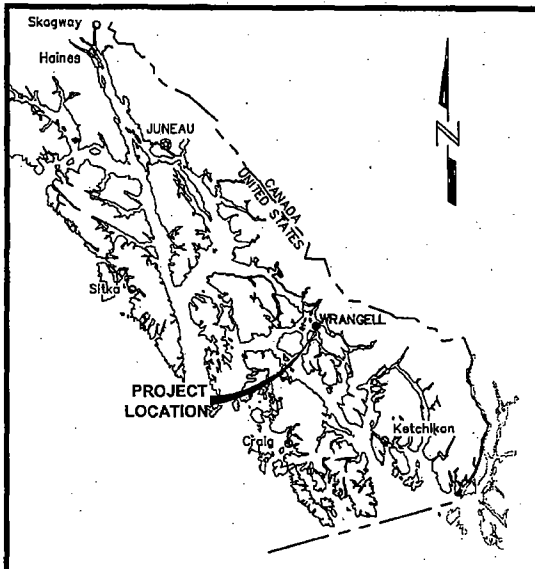
All conditions under which the subject authorization was made remain in full force and effect.

This authorization and the enclosed modified plans should be attached to the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

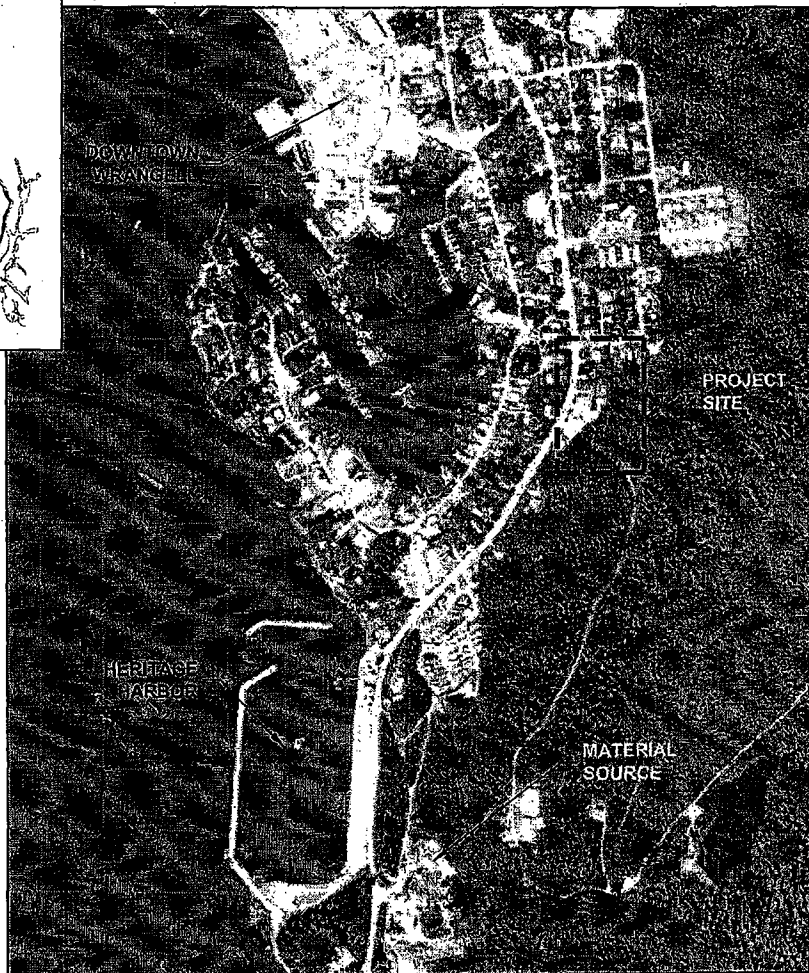
BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Roberta K. Budnik

Roberta K. Budnik
Regulatory Specialist



LOCATION MAP



VICINITY MAP

SHEET INDEX

- 1 PROJECT LOCATION
- 2 SITE PLAN
- 3 EXISTING STREAM PLAN
- 4 PROPOSED REALIGNMENT
- 5 STREAM REALIGNMENT DETAILS

Drawings\2011\4018.01 - Wood Street Improvement\CORPERMIT MOD No. 2_0312\PI1.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

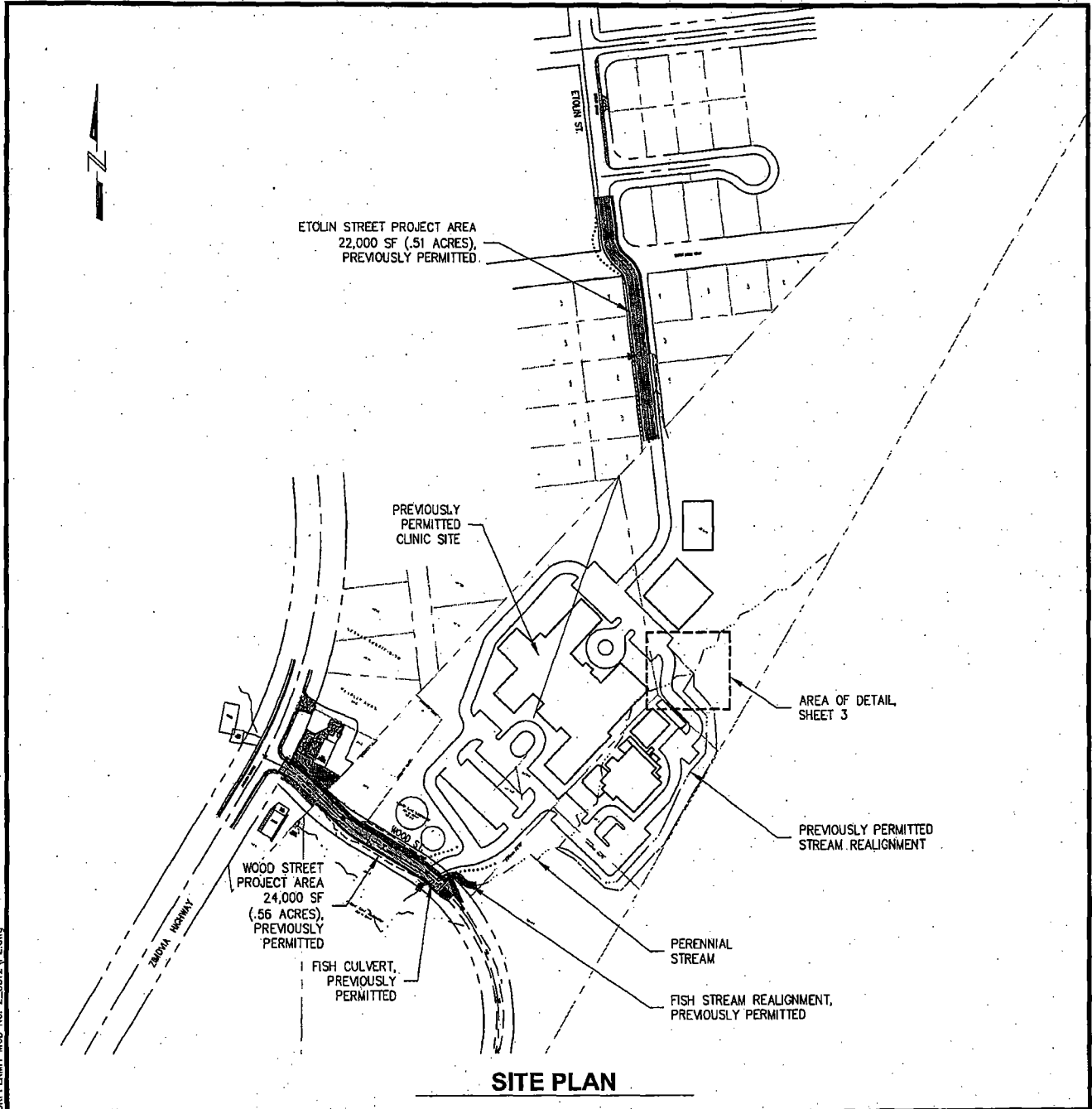
**PERMIT
MODIFICATION
FOR WRANGELL
MEDICAL CENTER
PROJECT LOCATION**

APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF
NON-FISH BEARING STREAM TO
50LF OF NEW CHANNEL
AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"

POA-2010-656-M1
Sheet 1 of 6

DATE: MAR., 2012



Drawings\2011\14018.01 - Wood Street Improvement\CORPERMIT MOD No. 2_0312\P2.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION
FOR WRANGELL
MEDICAL CENTER**

SITE PLAN

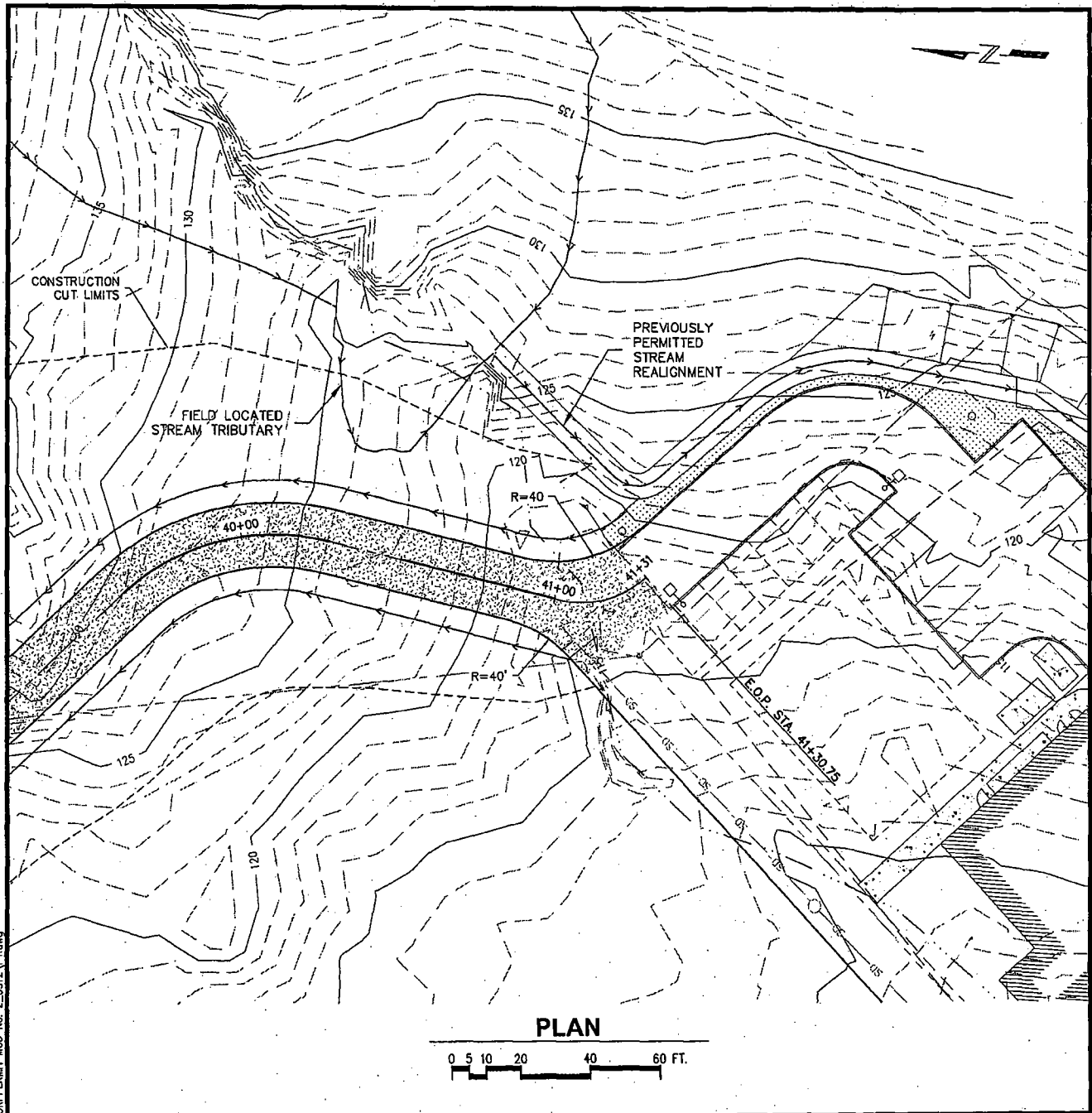
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF
NON-FISH BEARING STREAM TO
50LF OF NEW CHANNEL

AT: WRANGELL, ALASKA
T.62S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"

POA-2010-656-M1
Sheet 2 of 6

DATE: MAR., 2012



Drawings\2011\114018.01 - Wood Street Improvement\CORPERMIT 400 No. 2_0312\Pl.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION
FOR WRANGELL
MEDICAL CENTER
EXISTING STREAM**

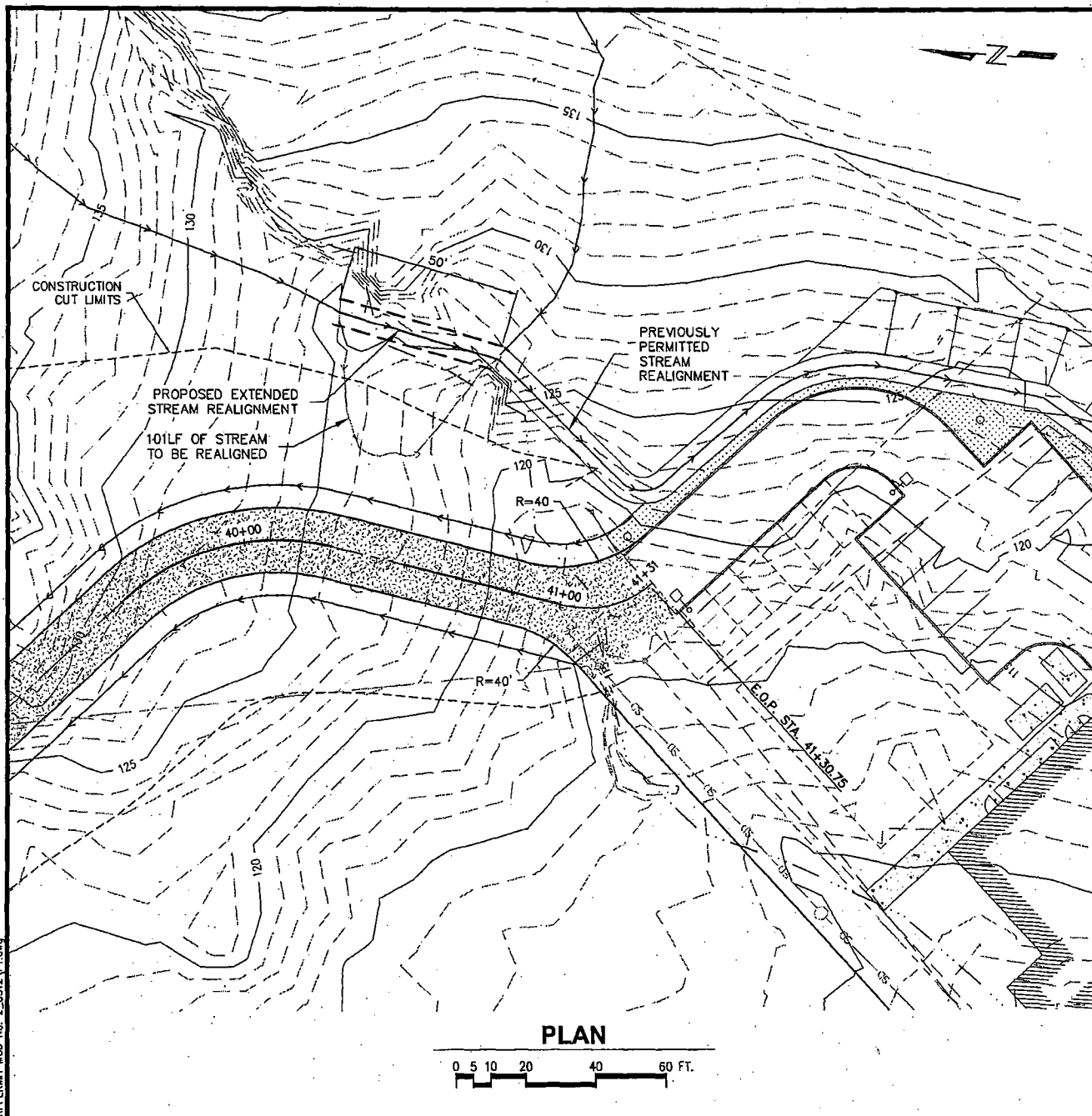
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF
NON-FISH BEARING STREAM TO
50LF OF NEW CHANNEL

AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46"
LONG. 132D 22' 28"

POA-2010-656-M1
Sheet 3 of 6

DATE: MAR., 2012



Drawings\2011\114018_01 - Wood Street Improvement\CORPERMIT_MDD No. 2_0312\Pl.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.

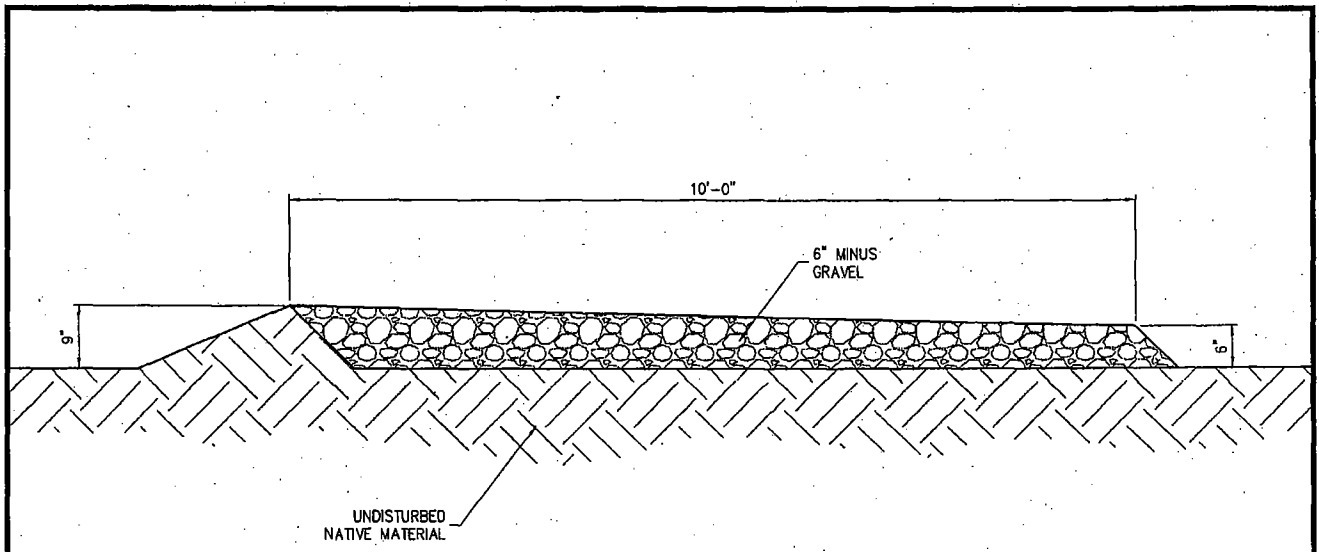
ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION
FOR WRANGELL
MEDICAL CENTER
PROPOSED
REALIGNMENT**

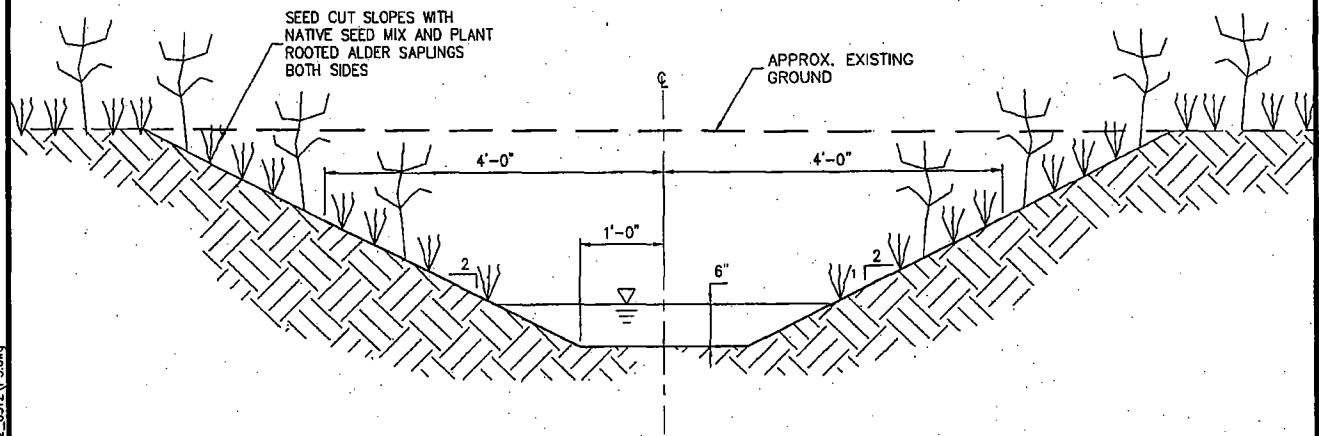
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF
NON-FISH BEARING STREAM TO
50LF OF NEW CHANNEL
AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46"
LONG. 132D 22' 28"
POA-2010-656-M1
Sheet 4 of 6

DATE: MAR., 2012



GRAVEL RIFFLE DETAIL



TYPICAL STREAM SECTION

Drawings\2011\14018.01 - Wood Street Improvement\CORPERMIT MUD No. 2_0312\F5.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.

ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

PERMIT MODIFICATION FOR WRANGELL MEDICAL CENTER STREAM REALIGNMENT DETAILS

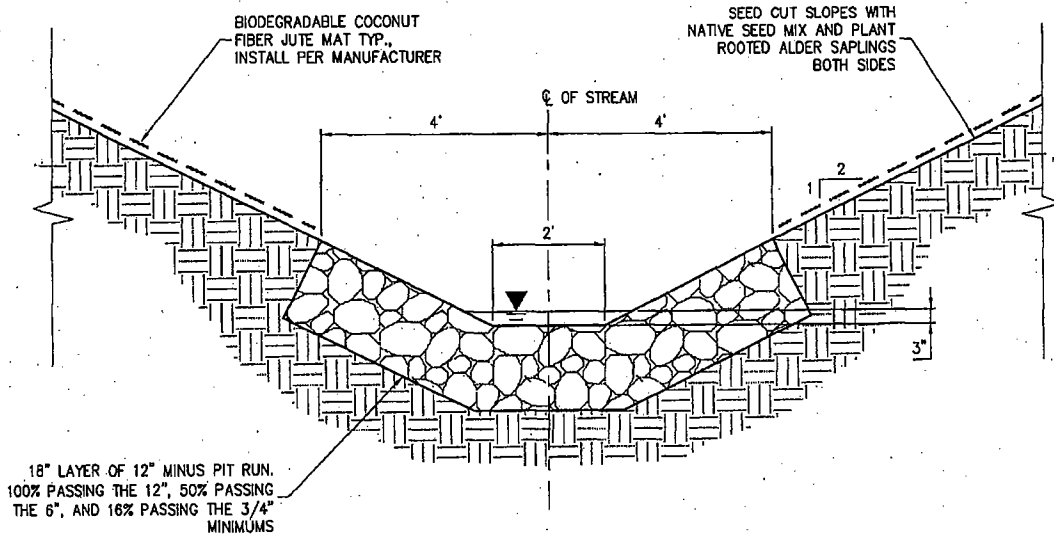
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF NON-FISH BEARING STREAM TO 50LF OF NEW CHANNEL

AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"

POA-2010-656-M1
Sheet 5 of 6

DATE: MAR., 2012



**TYPICAL
STREAM SECTION**

Drawings\2011\14018.01 - Wood Street Improvement\CORPPERMIT MCD No. 2_0312.VP5.dwg

PURPOSE:
REALIGN STREAM

DATUM: 0.0' M.L.L.W.
ADJACENT PROPERTY OWNERS:
STEVE PRUNELLA
DELORES BRADLEY
CITY OF WRANGELL
PAUL TORGRAMSON

**PERMIT
MODIFICATION
FOR WRANGELL
MEDICAL CENTER
STREAM
REALIGNMENT DETAILS**
APPLICATION BY:
CITY AND BOROUGH OF WRANGELL
P.O. BOX 531
WRANGELL, AK. 99929

PROPOSED: REALIGN 101LF OF
NON-FISH BEARING STREAM TO
50LF OF NEW CHANNEL
AT: WRANGELL, ALASKA
T.62.S, R.84E, SEC. 30
LAT. 56D 27' 46",
LONG. 132D 22' 28"
POA-2010-656-M1
Sheet 6 of 6

REVISED
DATE: MAR., 2012



**This notice of authorization must be
conspicuously displayed at the site of work.**

United States Army Corps of Engineers
ZIMOVIA STRAIT

A permit to: PLACE 11 CUBIC YARDS OF EXCAVATED NATIVE MATERIAL INTO
0.0028-ACRE OF WATERS OF THE U.S., IN ORDER TO REALIGN 101 LINEAR FEET
OF NON-FISH BEARING PERENNIAL STREAM.

at: SEC. 30, T. 62 S., R. 84 E., CRM; USGS QUAD MAP PETERSBURG B-2; LAT.
56.4629° N.; LONG. 132.3741° W.; IN WRANGELL, AK

has been issued to: CITY AND BOROUGH OF WRANGELL

on: APR 06 2012 **and expires on:** APRIL 30, 2017

Address of Permittee: POST OFFICE BOX 531, WRANGELL, ALASKA 99929

Permit Number:

POA-2010-656-M1

Roberta K. Budnik
**FOR: District Commander
Roberta K. Budnik
Regulatory Specialist
REGULATORY DIVISION**

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

**DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL HEALTH
DRINKING WATER PROGRAM**

410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, Alaska 99811-1800
Phone: (907) 465-5317
Fax: (907) 465-5362
<http://www.dec.state.ak.us/eh/dw>

June 28, 2012

Gary Watters, P.E.
PND Engineering Inc.
811 First Avenue, Suite 570
Seattle, Washington 98104

Re: Wrangell/Wood Street Improvements – Water Line Replacement
Wrangell Community Public Water System: PWSID # 120143
Conditional Approval to Construct

Dear Mr. Watters:

The Department has reviewed information submitted on January 10, 2012, requesting approval to construct water distribution lines on and near Wood Street area in Wrangell. Your request was reviewed in accordance to the State of Alaska Drinking Water Regulations, 18 AAC 80. A conditional approval to construct is granted.

Project Description:

According to submittal, the project consist of replacing the existing 12-inch diameter high pressure ductile iron main and 12-inch diameter low pressure ductile iron main with 16-inch SDR 9 HDPE to match the existing 12-inch inside diameter. Replacement will run from the intersection of Zimovia Highway 500 feet east to the new hospital approach road; this means the total length of the pipe being replaced is approximately 1000 feet.

Vertical Separation Distance: According to the submittal, vertical separation distance crossing are identified at Stations 0+41, 1+48, 2+31, 3+93, and 3+98. Creek culvert, near Station 4+30, is not a waiver issue since it is open to atmosphere at both ends. The attached table summarizes the characteristic of the crossings and based upon the information provided no vertical separation distance waivers are needed. Storm drain pipe will be ADS N12-HP and sewer pipe will be CPP.

Horizontal Separation Distance: According to submittal, the water lines are located 10 feet or greater in horizontal distance from sewer lines as well as from the storm drain lines throughout the project.

Approval to Construct and Conditions: The construction plans are approved with following conditions:

1. Ten (10) feet horizontal separation distance (from nearest outer edge to nearest outer edge) between water line and sewer/storm drain lines (including sewer manholes and storm drain catch basins) will be maintained. If the ten (10) separation distance cannot be maintained, file a waiver application addressing the issue.
2. Water line, sewer line, and storm drain line will be in separate trenches. At locations where sewer/storm drain and water lines must cross,
 - 2.a): Sewer/storm drain line uses a Type 4 or Type 5 or equivalent bedding where the elevation of water line is below the sewer/storm drain line.
 - 2.b): Water line joints must be installed at least nine feet from any sewer/storm drain line joints.
 - 2.c): Water line is at least 18 vertical inches from a sewer/storm drain line.
 - 2.d): Sewer/storm drain line is pressure tested.
3. If waiver(s) are needed for any reasons including unforeseen conditions then you must address them and obtain needed waiver(s) from DEC.
4. Deviations from approved plans which affect capacity, flow, operation, major design of units, materials of major system components, or separation distances, must be approved by the DEC in writing prior to their implementation.
5. All materials used in the construction of this water system that will be in contact with potable water must be approved for that used by the National Sanitation Foundation (NSF), Underwriter Laboratories (UL), or an equivalent organization that evaluates products using NSF Standard 61. In the absence of ANSI/NSF 61 certification, material must be approved by the Department for potable water contact on a case-by-case basis.
6. You are advised that if this development will require placing fill in wetlands or working in a stream, river or lake, permits from the U.S. Army Corps of Engineers and the Alaska Department of Fish and Game may be required. A Coastal Projects Questionnaire will help you identify other permits and approvals that may be required for your project.
7. This approval is contingent upon your receipt of any other state, federal or local authorizations which are required for your project. You are required to obtain all other necessary authorizations before proceeding with your project. Note that the disposal of construction dewatering waters and waters containing high amounts of disinfectant resulting from the disinfection process may require a permit.
8. If the applicant fails to construct, install, alter, renovate, or improve the public water system within two (2) years after the department issues an approval to construct under Drinking Water Regulations, 18 AAC 80.210(c), the approval is void and the plans and information required under 18 AAC 80.210(a) must be resubmitted for Department review and approval. If during the two-year period the site conditions, plans and information, and requirements in this chapter do not change, and if the applicant pays the fee required by 18 AAC 80.1910(b)(12), the Department will grant the applicant an extension.

9. Approval to operate the project will require the submittal of a set of the final design document, sealed, signed, and dated by the registered engineer serving as project manager. These record drawings must include verification that all applicable requirements were met during the construction and that the water system has been properly flushed, pressure tested, and disinfected in accordance with ANSI/AWWA Standards C651. Upon approval of engineered record drawings, this office will issue a completed ‘Construction and Operation Certificate.’ A public water system that has received Department approval for construction may not serve water for public consumption until the Department has issued a completed “Construction and Operation Certificate” or granted interim operational approval.

Interim Approval to Operate:

In order to receive Interim Approval to Operate, please provide following:

1. Verification that the construction/installation was completed under the direction of a registered engineer; project was substantially completed according to the approved plans including conditions.
2. Verification that the new water mains have been disinfected and flushed in accordance with the most recent version of AWWA Standard 651. Provide copies of the analytical test reports for samples taken from the finished water confirming that the system is free from coliform bacteria.
3. Confirmation that the system has been successfully pressure tested.
4. Verification that only lead-free pipe, flux, and solder was used in the construction of the water system.
5. Provide verification that all pipe and all material in contact with potable water is NSF 61 certified.

Final Approval to Operate:

As a part of your request for Final Approval to Operate, please do the following:

Provide record drawings, stamped, and signed by a registered engineer confirming that the system meets the requirements of 18 AAC 80. “Record drawings” refers to the original plans prepared for construction and departmental approval, revised to reflect how the system was constructed or installed. Also meet conditions of Interim Approval to Operate.

Approval Limitations:

This approval does not imply the granting of additional authorizations, nor obligates any federal, state, or local regulatory body to grant required authorizations. This is not an approval of omissions or oversights by this office or noncompliance with any applicable regulation. The Department’s approval does not guarantee correctness of the functional design or waiver the owner’s responsibility for continued compliance with regulations.

This letter grants a conditional approval to construct and provides the reader with a general familiarity regarding the applied regulations. However the contents of this letter are not intended to serve as a precise statement of the Statutes and Regulations of the State of Alaska pertaining to the subject matter and should not be understood by the reader as such. We strongly recommend consulting 18 AAC 80.

Appeal Process:

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195- 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. **Informal review requests** must be delivered to the Division Director, Kristin Ryan, 555 Cordova St., Anchorage, Alaska 99501, within 15 days of the permit decision. **Adjudicatory hearing requests** must be delivered to the Commissioner of the Department of Environmental Conservation, Larry Hartig, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived. More information on the Department's administrative appeals process can be found at the following website: <http://www.dec.state.ak.us/commish/ReviewGuidance.htm>.

If you have any questions, please call me at (907) 465-5317.

Sincerely,



David Khan, P.E.
Engineer

Enclosure: Construction and Operation Certificate (Construction portion signed)
Sewer/Storm Drain & Water Line Crossings Table

cc: Eric Burg, Environmental Specialist/DW/DEC-Soldotna
Joran Freeman/Engineering Associate/WW/DEC-Juneau

Determination of whether we need a waiver for Crossings

Per David Khan, the term "sewer" is used for both Sanitary and Storm.

Prepared 1/10/12

Type of utility (SS or Storm)	Station Number at Crossing					
	0+41	1+48	2+31	3+93	3+98	4+30
Sheet #	Storm 2	Storm 2	Storm 2	SS Stub 2	Storm 2	Creek Culvert ¹ 2
Water top or bottom?	bottom	bottom	bottom	bottom	bottom	bottom
Conditions required for crossings						
Min. 18" vertical separation distance edge to edge	YES	YES	YES	YES	YES	YES
Min. 9' separation water joint to sewer joint	YES	YES	YES	YES	YES	YES
The sewer line has been pressure tested (previous test OK or do a new test) to ensure watertightness ²	YES	YES	YES	YES	YES	N/A
If sewer is on top also required:						
Will use type 4 or 5 bedding	YES	YES	YES	YES	YES	YES
Water and sewer in separate trenches	YES	YES	YES	YES	YES	YES

- NOTES:**
1. Per telephone conversation with Scott Forgue on 1/11/12 the creek culvert is not subject to pressure testing requirements therefore no waiver is required. The information shown is informational only.



STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CONSTRUCTION AND OPERATION CERTIFICATE
FOR
PUBLIC WATER SYSTEMS

PWSID 120143

A. APPROVAL TO CONSTRUCT

Plans for the construction or modification of Wood Street Improvements
 ~ 1000 feet 12-inch diameter HDPE public water system located in
Wrangell, Alaska, submitted in accordance with 18 AAC 80.300
 by Gary Watters, PE/206.624.1387/PND Seattle WA have been reviewed and are

- approved.
 conditionally approved. *(See letter dated 6.28.12)*

BY David Khan Engineer TITLE 6/28/2012 DATE
 David Khan, PE

If construction has not started within two years of the approval date, this certificate is void and new plans and specifications must be submitted for review and approval before construction.

B. APPROVED CHANGE ORDERS

Change (contract order number or descriptive reference): _____ Approved by: _____ Date: _____

C. APPROVAL TO OPERATE

The "APPROVAL TO OPERATE" section must be completed and signed by the Department before this system is made available for use.

The construction of the _____ public water system was completed
 on _____ (date). The system is hereby granted **interim** approval to operate for 90 days following the completion date.

BY _____ TITLE _____ DATE _____

As-built/record drawings, submitted to the Department, or an inspection by the Department, have confirmed that the system was constructed according to the approved plans. The system is hereby granted final approval to operate.

BY _____ TITLE _____ DATE _____

- Distribution: 1. Retain original for project file
 2. Make copies for distribution

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

SOUTHEAST REGION – PRECONSTRUCTION
RIGHT OF WAY & UTILITIES

SEAN PARNELL, GOVERNOR
6860 Glacier Highway
P.O. Box 112506
JUNEAU, ALASKA 99811-2506
PHONE: (907)465-4544
FAX: (907)465-6216
1-800-575-4540

2/13/2012

Carl Johnson
City and Borough of Wrangell
PO Box 531
Wrangell AK 99929

RE: Permit No. 3-293300-12-3

Dear Mr. Johnson

Enclosed is a signed copy of utility permit 3-293300-12-3 for 7200 Volt three phase, 15 KV #2 Copper in 4" PVC Conduit

This copy is for your file, please make a copy for your construction foreman or contractor and ask them to have it available onsite during construction.

An approved traffic control plan is required prior to commencing work. The traffic control plan should be submitted for approval no later than 10 days prior to the desired date for beginning work. The traffic control plan may be scanned and attached to an Email and sent to: martin.peters@Alaska.gov

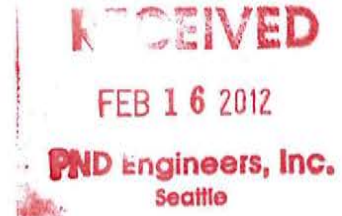
If you have any questions, or if I can be of assistance, please call me at 465-4544

Sincerely,



Martin Peters
Utility Permits Officer
Southeast Region

Enclosed Utility Permit No. 3-293300-12-3



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

UTILITY PERMIT
(MINOR)

Permit No.3-293300-12-3

Page No. 1 of 16

Approval
Recommended: Martin Peters

Date: January 26, 2012

Title: Regional Utility Permits Officer

THE STATE OF ALASKA, acting by and through the DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES, hereinafter called the DEPARTMENT, grants a Minor Utility Permit to **City and Borough of Wrangell of PO Box 531, Wrangell, AK 99929**, hereinafter called the PERMITTEE, permission to construct, install and thereafter perform routine maintenance, use and operate **7200 Volt three phase, 15 KV #2 Copper in 4" PVC Conduit** and hereinafter called the FACILITY, located as follows: State Route **293300, Zimovia Hwy. Route Mileage 0.52** across, along or under property of the DEPARTMENT, acquired and utilized in the operation and maintenance of a State Transportation System, at the aforementioned locations and/or positions, and in strict conformance with plans, specifications and special provisions attached hereto and made a part hereof, and not otherwise.

- A. In accepting this Utility Permit for the Facility, the PERMITTEE agrees to comply with the provisions of AS 02.15.102, AS 02.15.106, AS 19.25.010, AS 19.25.200, AS 35.10.210, and AS 35.10.230; the terms, requirements and regulations as set forth in 17 AAC 15 as authorized under Administrative Procedures Act, AS 44.62.010 - 44.62.650 and the applicable policies, directives and orders issued by the Commissioner of the Department.
- B. The PERMITTEE agrees to forever indemnify the State of Alaska and the DEPARTMENT, or either of them, including its agents and contractors against, and save them harmless from, all liability for damage to property, or injury to or death of persons, including all costs and expenses incident thereto arising wholly or in part from or in connection with the existence, construction, alteration, maintenance, repair, renewal, reconstruction, operation, use or removal of the said FACILITY as it pertains to DEPARTMENT property.
- C. The PERMITTEE agrees to reimburse the DEPARTMENT for actual costs of inspection and testing as required during the performance of the work proposed by the PERMITTEE. The scope of inspection and testing shall be determined by the Regional Utilities Engineer. The costs billed to the PERMITTEE will be the actual DEPARTMENT'S costs incurred while performing the inspection and testing.
- D. The DEPARTMENT, in granting the Utility Permit, reserves the right to use, occupy and enjoy its property for a public transportation system and for public transportation purposes in such a manner and at such times as it deems necessary, the same as if this instrument had not been executed by the DEPARTMENT. If any such use by the DEPARTMENT shall at any time necessitate any change in location or manner of use of said FACILITY, or any part thereof, such change or alteration shall be made by the PERMITTEE at no cost to the DEPARTMENT in accordance with provisions of AS 02.15.104(c) (4) or (5), AS 19.25.020 (c) (4) or (5), AS 35.10.220 (c) (4) or (5).

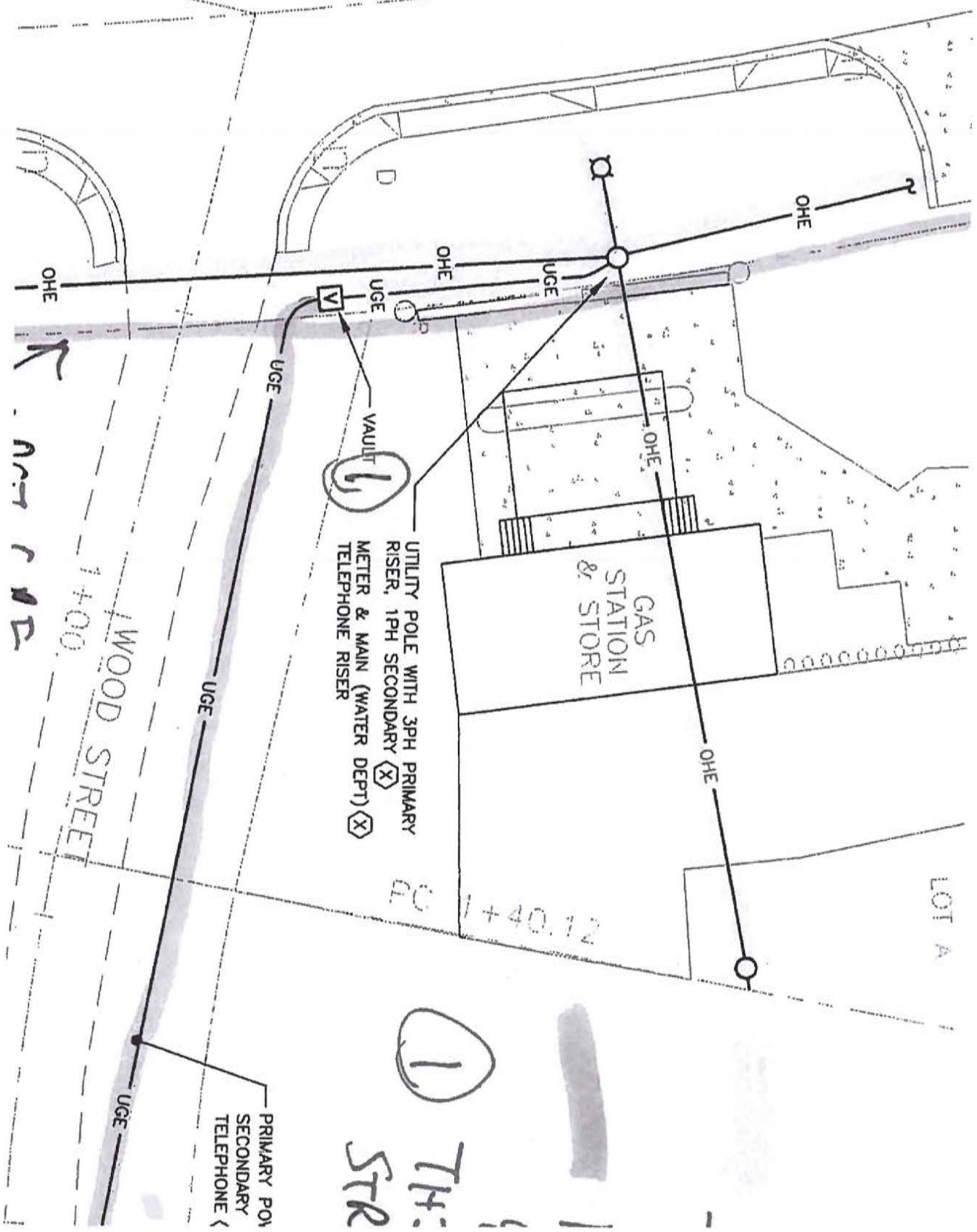
ELECTRICAL AND COMMUNICATIONS FACILITIES

OVERHEAD FACILITIES

NUMBER OF CIRCUITS: N/A
VOLTAGE AND PHASE: _____
CONDUCTOR TYPE AND SIZE: _____
STRUCTURE TYPE: _____
CROSSING ANGLE: _____ LENGTH: _____
MINIMUM VERTICAL CLEARANCE: _____
LONGITUDINAL FACILITY LENGTH: _____
OFFSET FROM HIGHWAY CENTERLINE: _____

UNDERGROUND FACILITIES

NUMBER OF CONDUCTORS (CABLES): 3
VOLTAGE AND PHASE: 7200Volts 3 phase
CONDUCTOR (CABLE) TYPE AND SIZE: 15 KV #2 copper
NUMBER AND SIZE OF CONDUITS: 1 conduit 12"
diameter _____
SIZE AND TYPE OF ENCASEMENT: Direct buried ~~1 1/2~~ ^{4"} diameter pvc
CROSSING ANGLE: N/A LENGTH: _____
DEPTH BELOW ROAD SURFACE (MIN 48"): 48"
DEPTH BELOW DITCH BOTTOM (MIN 36"): 36"
METHOD OF CROSSING INSTALLATION: BORING N/A JACKING _____ OPEN CUT _____
LONGITUDINAL FACILITY LENGTH: 5LF in DOT&PF ROW. 450' for the entire project
OFFSET FROM HIGHWAY CENTERLINE: 45' DEPTH OF BURIAL (MIN 36"): 36"
METHOD OF LONGITUDINAL INSTALLATION: TRENCHING in new roadway PLOWING _____
CONSTRUCTION CODE(S) APPLICABLE: ADOT&PF Standard Specifications for Construction
ADDITIONAL INFORMATION: _____



SPECIAL PROVISIONS

1.0 GENERAL AND ADMINISTRATION

- 1.1 The Permittee shall have a copy of this permit at the work site at all times.
- 1.2 The permit, together with these Special Provisions shall take precedence over any additional plans, exhibits, attachments, and/or schedules should discrepancies appear.
- 1.3 All contact between the Department and the Permittee's Contractor shall be through a representative of the Permittee. If the Permittee chooses to perform the work with other than its own forces, a representative of the utility shall be present at all times unless otherwise agreed to by the Department. Failure to comply with this provision is grounds for restricting any further work by the Permittee in the Department's right of way.
- 1.4 Any rights granted by this permit may not be assigned or transferred to another entity without prior written approval from the Department. If the utility is sold to another utility or merges with another utility, the new utility shall inform the Department in writing within 30 days after the date of transaction.
- 1.5 Any request for waiver or exception of Special Provision(s), or any request for change in location, alignment, or construction method, shall be submitted in writing to the Regional Utilities Engineer.
- 1.6 The Permittee agrees to furnish the Department with a set of as built plans within sixty (60) days from the completion of the work covered by this Permit.
- 1.7 The Permittee agrees to provide design locates, at no cost to the Department, upon request. If a utility locate service is not available, reference markers shall be installed and maintained at both ends of underground highway crossings, and at angle points in the alignment of the underground Facility. Where utilities are attached to a bridge, the Permittee will attach a plate on the conduit at each abutment describing the content of the pipe or conductor, and the name and phone number of the owning utility.
- 1.8 The Regional Utilities Engineer may assign an inspector or inspectors in order to insure compliance with the provisions of this utility permit. The inspector has the authority to suspend all work in the event of noncompliance.
- 1.9 The Permittee agrees to reimburse the Department for actual costs of inspections during construction of the Facility. Inspection activities will include on-site review of traffic control, highway crossings, and restoration of the right of way. Inspection may also include any testing required to verify conformance to the Department's standards, and responding to questions and/or complaints from the public or agencies. Actual direct and indirect charges shall provide the basis for billings, which include wages, benefits, per diem, travel and vehicle expenses, and lodging.

1.10 This permit will expire if construction or installation of the Facility has not started within one year after the date of approval, unless the Permittee obtains an extension of time in writing from the Department.

2.0 COORDINATION

2.1 The Permittee shall notify the Department's Regional Utility Permit Officer ten (10) days prior to beginning work:

Southeast Region
(907)465-4544
(907)465-6216 (fax)

2.2 The Permittee agrees to coordinate their work with other projects, both public and private that may occur within the project limits covered by this permit. The Permittee agrees not to interfere or hinder the work being performed by other contractors.

2.3 The Permittee shall coordinate and obtain the necessary temporary driveway permits for access to travel way from haul routes or staging areas where existing access does not exist. Contact the Department's Right-Of-Way Section at (907) 465-2838 for the driveway permit application or apply on line at www.dot.state.ak.us/permits

3.0 ENVIRONMENTAL

3.1 The Permittee is responsible for obtaining authorization from the U.S. Army Corps of Engineers for any ground disturbing activities in areas designated as wetlands.

3.2 If the Permittee, its Contractor, or Agent discovers environmental contamination in the right-of-way while constructing the Facility, they shall immediately stop work and notify the Department's Regional Utility Engineer.

3.3 The Permittee is not responsible for the cost of investigation, cleanup, or disposal of any contaminated soils it discovers during work on the Facility within the Department's right-of-way, **unless:**

a. The Permittee, its Contractor, or Agent fails to immediately notify the Department of the contamination, or;

b. The contamination is attributed to the Permittee's Facility, or actions of the Permittee, its Contractors, or its Agents.

3.4 If the Permittee, its Contractor, or Agent discovers cultural, historic or archeological resources as a result of ground altering activities, all work that would disturb these resources shall be stopped and the State Historic Preservation Office shall be contacted immediately at (907) 269-8721.

3.5 The Permittee shall not hold the Department responsible for any delay, redesign, rerouting, or additional cost due to encountering environmental contamination, or cultural, historic, or archeological resources.

3.6 The Permittee shall provide an Alaska Certified Erosion and Sediment Control Lead (AK-CESCL) trained person, with the authority to direct activities required by the SWPPP, APDES permit or other permit conditions, during all construction and maintenance activities authorized by this permit that involve ground disturbing activities. Provide proof of current AK-CESCL certification upon request.

3.7 The Permittee, on behalf of itself and its contractors, officers, officials, employees, and agents, shall indemnify, hold harmless, and defend at its sole cost and expense, the Department, its contractors, officers, officials, employees, and agents from any and all fines, costs, claims, damages, liquidated damages, judgments, or civil penalties assessed by the Department of Environmental Conservation pursuant to AS 46.03.760(E), arising wholly or in part from any action taken by the Permittee in relation to the Permittee's Facilities on Department rights of way or other permitted locations. This indemnification provision is in addition to and shall be construed as consistent with General Provision M.

4.0 NOTIFICATIONS

4.1 The Permittee is responsible for notifying businesses and residents that front the project of scheduled road and driveway closures, or any work that may affect them. Property owners shall receive the notices a minimum of 48 hours prior to commencement of the work. Notices shall include a detailed description and map of the project, anticipated construction schedule and contact name and number of a representative of the Permittee.

4.2 The Permittee shall submit weekly public information notices that identify road closures, restrictions to traffic, and detours. Coordinate this effort with the State DOT/PF Navigator Information Program.

5.0 TRAFFIC CONTROL

5.1 The Permittee shall submit a Traffic Control Plan (TCP) to the Department for approval a minimum of ten (10) days before beginning construction.

5.2 The Permittee or the Permittee's contractor shall designate a Traffic Safety Supervisor who shall be responsible for the maintenance of traffic operations on a 24-hour basis. This individual shall have received formal work zone traffic control training. The Department must be supplied with the name of this individual along with written verification of his/her credentials as well as a 24-hour telephone number where he/she can be reached.

5.3 The Permittee shall insure that flagmen are certified by either the International Municipal Signal Association (IMSA) or the American Traffic Services Association (ATSSA). Documentation of certification shall be provided if requested.

5.4 The Permittee shall provide traffic control devices, conforming to the latest addition of the Manual on Uniform Traffic Control Devices published by the U.S. Department of Transportation and Alaska Traffic Manual Supplement while constructing the Facility, or thereafter performing routine maintenance.

5.5 All traffic control devices required by the approved Traffic Control Plan, including signs, barricade, and flagmen, shall be in place prior to beginning work within the right of way.

5.6 The Permittee shall remove or cover all temporary traffic control devices as soon as practical when they are no longer needed or when work on the Facility is suspended for short periods of time.

5.7 The Permittee shall not park vehicles, equipment, or store materials on road or pathway surfaces at any time, unless specifically allowed by the traffic control plan.

5.8 At the close of each work day the construction site on non-detoured roadways shall be restored to a condition that allows two-way traffic to flow in conformance with the normal traffic patterns in that area, unless otherwise approved by the Regional Utilities Engineer.

5.9 The Permittee shall conduct periodic inspections of temporary traffic control devices left in place during non working hours. A 24 hour telephone contact number for the traffic control supervisor shall be provided to the local State Troopers of Police Departments.

5.10 All illumination and signalization shall remain operational during the construction of the Facility.

5.11 Reduced speed and two-way traffic shall be maintained on non-detoured roadways between the peak traffic hours of 7:30 a.m. to 9:00 a.m. and from 4:30 p.m. to 5:30 p.m.

6.0 EXCAVATION AND BACKFILL

6.1 The Permittee shall backfill and compact all trenches within road prisms and pathways in 6-inch lifts or as accepted by the Department. 6-inch lifts are required if no inspector is present. The backfill shall be of suitable non-frost susceptible, non-organic material (0-6% passing No. 200 sieve). All excavated non-acceptable material shall be removed from the State right-of-way or property by the Permittee.

6.2 The road prism is defined to include the finished roadway surface and underlying structural layers out to, and including, any unpaved shoulders, curbs, and attached pathways.

6.3 The Permittee shall compact all trenches within or crossing road prisms and pathways at a minimum of 95% of the optimum density. All compaction tests shall be at the Permittee's expense. A copy of each test will be submitted to the Department.

6.4 The Permittee shall backfill all trenches, bore pits, and other excavations located outside road and pathway prisms with clean, non-organic, and compactable material meeting the requirements of Select Material, Type C, as defined in the Department's Standard Specifications for Highway Construction. Existing material is acceptable as backfill provided it meets the requirements of Select Material, Type C.

6.5 The Permittee shall remove material not suitable for use as backfill from the site, t. The Permittee shall replace unsuitable backfill material with imported material meeting the requirements of Select Material, Type C.

6.6 All backfill shall be compacted to existing undisturbed soil densities or better, and graded to blend with the existing ground surface. All costs associated with removal of unusable material and placement of import material is the responsibility of the Permittee.

6.7 The top six (6) inches of the road surface or surface under pavement shall be crushed aggregate D-1

7.0 PAVEMENT REPLACEMENT AND TRAFFIC MARKINGS

7.1 Pavement cuts may be authorized from May 1st to September 30th and will only be permitted on an emergency basis from October 1st through April 30th unless the Regional Utilities Engineer approves a request for exception. Planned pavement cuts must be repaired by September 30th. No more than 2500 feet of pavement by project stationing can be disturbed without final repair

7.2 All asphalt cuts shall be permanently repaired with hot asphalt. Asphalt concrete pavement shall be Type II, Class B installed in conformance with Section 401 of the Alaska DOT&PF Standard Specifications dated 2002. The proposed job mix design shall be submitted for review and approval by the department.

7.3 If the edge of the pavement is damaged during this construction the permittee shall have his contractor replace the pavement to the centerline of the roadway at least 10 feet each side of the damaged area. If the damage is intermittent and less than 50 feet between damaged areas the permittee shall make the repair continuous to cover the damage.

7.4 For service crossings, pre-saw the area to be excavated. After completion of the utility, saw back the existing pavement a minimum of 1-1/2' over undisturbed earth on each side of the trench. Install 6" of asphalt installation hot mix which shall be spread and compacted in layers. The top layer shall not exceed a 2" compacted depth. Paint the entire area of all top-lift longitudinal joints with a 1/8" thick band of polymerized bituminous joint adhesive prior to placement the abutting lanes. The modified joint adhesive materials shall be Crafc0 Pavement Joint Adhesive No. 34524, or an approved equal. The temperatures and application method of the joint adhesive shall be per manufacturer's recommendations.

7.5 For lane replacement, pre-saw the area of pavement effected by the utility installation. Cut the pavement so that the edges are vertical, the sides are parallel and the ends are perpendicular to the direction of traffic. The depth of pavement to be replaced will match the depth of the existing pavement unless otherwise specified. The pavement will be spread in layers not to exceed 2" to the seam nearest the centerline of the roadway. Paint the entire area of all top-lift longitudinal joints with a 1/8" thick band of polymerized bituminous joint adhesive prior to placement the abutting lanes. The modified joint adhesive materials shall be Crafcro Pavement Joint Adhesive No. 34524, or an approved equal. The temperatures and application method of the joint adhesive shall be per manufacturer's recommendations.

7.6 If the contract quantity is less than 1500 tons, the asphalt concrete pavement will be accepted based upon the engineers approval of the job mix design and the placement and compaction of the asphalt concrete to the specified depth and finished surface requirements and tolerances. The engineer's approval of the job mix design does not relieve the permittee or their contractor from the responsibility to produce the approved mix and is subject to field verification testing for oil content, density and gradation. The gradation, density and asphalt content shall be determined in accordance with section 410-4.02. If a calibrated nuclear content gauge is not available, asphalt content of the mix may be determined by extraction in accordance with AASHTO T-164. A minimum of two tests shall be taken for each approved mix design or as designated by the engineer.

7.7 The finished pavement surface will be tested after final rolling at selected locations using a 16-foot straightedge. Variations of more than 3/16 inch from the testing edge between any two contacts will be corrected.

7.8 Temporary Patches

a. A Polymer modified cold mix asphalt or concrete patch may be used as a temporary patch subject to written approval of the Regional Utilities Engineer. The temporary patch will be replaced as soon as hot asphalt is available. For crossings, saw back existing pavement a minimum of 1' over undisturbed earth on each side of the trench. Paint edges with STE-1 tack coat and install 4" of polymer-modified cold asphalt. Damage to the pavement surface at locations other than crossings will be repaired by replacement of asphalt to the seam nearest centerline of the roadway with 4" of polymer-modified cold asphalt. All edges are to be saw cut and painted with STE-1 tack coat. The polymer-modified cold asphalt shall be spread and compacted in 2" lifts, each compacted to a minimum of 94% of maximum density. Asphalt patch density shall be field controlled utilizing a calibrated nuclear densometer at two locations per patch. Field testing results shall be certified by a registered engineer and forwarded to DOT&PF.

b. Temporary concrete patches shall be a minimum of 6" thick with 6" x 6", 6 gage wire mesh or suitable reinforcing steel installed 3" below the finished grade. Concrete shall be Class A, six sack mix, with a slump range of 2"-4".8

7.9 Asphalt concrete mixture that becomes contaminated with foreign material, is segregated or is in any way determined to be defective will be removed. Defective materials will be removed for the full thickness of the course.

7.10 The Permittee shall replace all damaged or removed pavement markings in kind.

8.0 DRAINAGE

8.1 The Permittee shall be responsible for assuring that all water entering the Department's storm drain facility meets the minimum criteria for water quality standards as set forth in the Alaska Administrative Code(18 AAC 70.010-.110).

8.2 The Permittee shall maintain existing drainage patterns during construction of the Facility. Ditches will be restored to the originally designed flow lines unless otherwise agreed to by the Department.

8.3 The Permittee shall be responsible for all erosion control prior to slopes becoming stabilized.

8.4 The Permittee is responsible for installing and maintaining BMPs required by the NDPES permit throughout the duration of the project.

8.5 The Permittee shall notify the Department of Transportation of drainage problems caused by the work under this Permit and will remedy the problem as directed by the Department of Transportation.

8.6 The Permittee shall replace all culverts damaged by work under this Permit with a culvert. of the same size, or 18-inch, whichever is greater.

9.0 RIGHT OF WAY PROTECTION, MAINTENANCE, AND RESTORATION

11.1 The Permittee shall cleanup within one day behind installation of the facility. The Permittee will not be allowed to trench or plow more than can be cleaned up the following day.

11.2 The Permittee or their contractor shall immediately repair any damage of existing utilities, storm drainage or other highway structures caused as a result of construction authorized by this permit.

11.3 Heavy tracked equipment operation will not be permitted on a paved roadway or shoulder, unless approved in writing by the Regional Utilities Engineer. If approved, planking or rubber tires shall be utilized between the vehicle tracks and the pavement. The Permittee shall repair damage to the pavement as a result equipment operation as directed by the Department.

11.4 The Permittee or his contractor will be responsible for winter and spring maintenance of the road shoulders, ditch lines, backslopes, road surfaces, taxiways, and runways that have not been left in a neat and clean condition, satisfactory to the Maintenance Section of the Department of Transportation.

11.5 The Permittee shall dispose of trees, brush or other natural growth by mechanical chipping or hauling away. Stumps and grubbing piles shall be loaded and hauled to a disposal site outside the Department's right of way. Trees left for the public shall be limbed and stacked in a location where loading does not interfere with the safe operation of the travel way.

11.6 Guardrail that is removed or damaged during construction shall be replaced in accordance with Section 606 AKDOT&PF Standard Specifications dated 2004, and Standard Drawings Manual.

11.7 Any Survey monument or monument accessory that will be disturbed or destroyed during construction of the Facility shall be referenced prior to beginning work, and restored or replaced by a Registered Land Surveyor licensed in accordance with AS 34.65.040. All monument records shall be reviewed by the Department prior to filing with the District Recorder.

11.8 Highway signs that are in conflict with construction shall be relocated on a temporary basis and reinstalled at the original location as soon as possible. Signs that are damaged during construction shall be replaced in kind to the Department's standards, and at no cost to the Department.

11.9 The Permittee shall replace all curbs and gutters to an existing undisturbed joint.

11.10 The Permittee shall maintain all roadways, pedestrian and bicycle facilities affected by the pavement removal in a smooth and passable condition at all times.

11.11 The Permittee shall provide street sweeping to keep free of loose material all paved portions of the roadway and haul routes open to the public, including sections of roadway off the project where your operations have deposited loose material. Use a street sweeper that can collect materials rather than eject them on the shoulder of the road.

11.12 The Permittee shall furnish, haul, and place water for dust control and pavement flushing. Use water trucks that can provide a high-pressure water stream to flush the pavement and a light-water spray to control dust. If the flushing operations contaminate or fill adjacent catch basins, clean and restore them to their original condition. Pavement flushing and dust control is required in sections off the project where flushing is required.

11.13 Upon completion of the work within the State right-of-way or State property, the Permittee shall remove all equipment, dispose of all waste material and shall leave the premises in a neat and clean condition satisfactory to the Department of Transportation.

10.0 TOPSOIL AND SEEDING

10.1 The Permittee shall replace and restore all vegetation disturbed. Unless otherwise required, re-vegetation shall consist of establishing seeded grassed slopes over the disturbed ground. The Permittee shall use all means necessary to maintain and protect the disturbed slopes from erosion until such time as the vegetation is established.

10.2 The Permittee shall replace any topsoil lost as a result of construction under this permit.

10.3 The Permittee shall re-seed all areas within the Department's right-of-way disturbed by work under this permit with a seed mix approved by the Department.

10.4 The Permittee shall re-grade all disturbed areas to blend with the existing ground surface and re-seed after completing backfill of pipe.

10.5 If re-seeding is not complete by August 15th, then re-shaping of all disturbed areas shall be completed by July 1st of the following year. The Permittee is responsible for all erosion control measures and cleaning of ditches and culverts.

11.0 OVERHEAD FACILITIES

11.1 New and relocated aerial facilities shall maintain a minimum vertical clearance of twenty feet (20') in all locations within the right of way. (17 AAC 15.201)

11.2 The Permittee shall install guy guards on all down guys installed within the right of way.

11.3 The Permittee shall remove all overhead lines abandoned as the result of this Permit.

11.4 Guy/Anchor attachment shall not be located within clear zone.

.12.0 UNDERGROUND FACILITIES

12.1 The depth of burial for underground facilities constructed or installed under pavement, roadway or runway surfaces must be at least four feet measured from the surface of the pavement to the top of the cable, conduit, pipeline or encasement.

12.2 Underground facilities constructed under other surfaces, including unlined ditches must be buried at least three feet, measured in any direction from the surface to the top of the cable, conduit, pipeline or encasement.

12.3 The Permittee shall place buried caution tape one foot directly above the Facility being installed.

12.4 The Permittee shall obtain locates for any existing traffic signals, traffic interconnect cables, street light facilities, or FAA cables prior to construction. Damages shall be repaired and restored to working order within eight hours at the Permittee's expense. Any splice must be located within a Type II Junction Box or as directed by the Department.

13.0 WARRANTY

13.1 Warrant and Warranty, for the purposes of this Permit, shall mean the Department's concurrence block authority on any warranty release issued by the Permittee.

13.2 The Permittee shall warrant the materials and workmanship of the road, and road right-of-way, to ensure completion of the construction, including the restoration of surfacing, slopes, slope treatment, drainage facilities, pathways, and right-of-way cleanup for the warranty period.

13.3 The Department will notify the Permittee of any surface deformity. The Permittee shall prepare a corrective action plan for review and approval by the Department. The corrective action plan shall include:

a) A methodology to determine if the pavement surface deformation is due to subsurface forces, such as subsidence or drainage, and;

b) A proposal for correcting the surface variation.

13.4 The Permittee shall remedy promptly, without cost to the Department, any and all defects in materials and workmanship resulting from defective materials and workmanship. If the defect, in the opinion of the Department, is of such a nature as to demand immediate repair, the Department shall have the right to take corrective action and the cost thereof shall be borne by the Permittee.

13.5 The Permittee or his designee and the Department shall perform construction inspection of the road. The Permittee or his designee shall handle any coordination with respect to inspection activities involving both the Department and Permittee.

13.6 The Warranty period shall mean a period of two (2) years from the acceptance of the road. The Warranty shall remain in effect until final inspection and acceptance by the Department.

14.0 RELEASE OF WARRANTY

14.1 The Permittee and the Department shall perform an inspection prior to the end of the warranty period. The Permittee or his designee is responsible to schedule and coordinate with the Department the final warranty inspection. The Permittee shall correct any defect in the work revealed by the warranty inspection.

14.2 Upon the Permittee's satisfactory performance of all its obligations under this Permit, the Department shall execute a written statement acknowledging performance and release of the warranty obligations. Release of the warranty shall not release the Permittee of all other provisions of the permit.

14.3 Any damage to the roadway prism, fill slopes, ditches, backslopes, structures or underground utilities determined to be a result of work authorized by this permit that becomes apparent within two (2) years after project completion and acceptance by the department shall be repaired by the Permittee.

15.0 MAINTENANCE AND OPERATIONS

15.1 The permittee shall perform routine maintenance on the utility facility on a continuing basis. Routine maintenance may be performed without prior notification of the department however closure of a highway, pedestrian facility, pathway, sidewalk or creating a detour to perform routine maintenance must be specifically authorized by permit. The permittee shall apply for an annual lane closure permit to cover routine maintenance operations. Prior authorization must be obtained from the department before performing any maintenance that requires excavation, plowing, jacking or boring within the right of way.

15.2 The Permittee may perform emergency maintenance without prior notice to the department as long as appropriate traffic control is established and maintained. If the project requires major reconstruction and or placement of traffic control devices for an extended period a lane closure permit is required. If the road surface is affected by the emergency maintenance, contact the local maintenance foreman as soon as possible and place pavement break warning signs in advance of the site until such time as the pavement has been repaired.

15.3 The Permittee is responsible for maintenance and adjustment of manhole frames, valve boxes, junction boxes or other structures located in the pavement or sidewalk.

15.4 The Permittee shall apply for a new utility permit if the facility authorized by this permit is to be reconstructed or modified substantially. If the proposed modifications are not substantial, the permittee need only apply for an amended permit. A utility permit application is required for all new service connections.

D. The PERMITTEE agrees to comply with the following provisions:

- 1. [] A certified check in the amount of \$ _____ will be submitted as a bond to be held by the DEPARTMENT until all work and cleanup has been approved by the DEPARTMENT.
- 2. [] The PERMITTEE shall commence work on or about _____ and be completed by _____.
- 3. [X] A traffic control plan shall be submitted for work performed within the highway right of way.
- 4. [X] Work area will be properly signed to be in compliance with the DEPARTMENT requirements.
- 5. [X] Flow of traffic will not be affected by any work under this permit.
- 6. [X] The road prism will not be affected by any work under this permit.
- 7. [] All work covered by this permit shall be in compliance with the attached special provisions.
- 8. [X] The PERMITTEE assumes all liabilities that may arise as a result of PERMITTEE's presence within the right of way.
- 9. [X] This permit will be on the job site at all times during construction.

Carl R Johnson

Permittee Printed Name

Carl Johnson

Permittee Signature

Date: 1-30-12

[Signature]

Permits Officer Signature

Date: 2/13/2012

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

SOUTHEAST REGION – PRECONSTRUCTION
RIGHT OF WAY & UTILITIES

SEAN PARNELL, GOVERNOR

6860 Glacier Highway
P.O. Box 112506
JUNEAU, ALASKA 99811-2506
PHONE: (907)465-4544
FAX: (907)465-6216
1-800-575-4540

RECEIVED

FEB 16 2012

PND Engineers, Inc.
Seattle

2/13/2012

Carl Johnson
City and Borough of Wrangell
PO Box 531
Wrangell AK 99929

RE: Permit No. 3-293300-12-2

Dear Mr. Johnson

Enclosed is a signed copy of utility permit 3-293300-12-2 for 12" ID HDPE High Pressure Water Main

This copy is for your file, please make a copy for your construction foreman or contractor and ask them to have it available onsite during construction.

An approved traffic control plan is required prior to commencing work. The traffic control plan should be submitted for approval no later than 10 days prior to the desired date for beginning work. The traffic control plan may be scanned and attached to an Email and sent to: martin.peters@Alaska.gov

If you have any questions, or if I can be of assistance, please call me at 465-4544

Sincerely,



Martin Peters
Utility Permits Officer
Southeast Region

Enclosed Utility Permit No. 3-293300-12-2

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
UTILITY PERMIT
(MAJOR)

Permit No.
3-293300-12-2

Page No. 1 of 18

Approval
Recommended: Martin Peters

Date: January 26, 2012

Title: Regional Permit Officer

Region: Southeast

THE STATE OF ALASKA, acting by and through the DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES, hereinafter called the DEPARTMENT, under provisions of AS 19.25.010 19.25.020, grants a Utility Permit to **City and Borough of Wrangell of PO Box 531, Wrangell, AK 99929** hereinafter called the PERMITTEE, permission to construct, install and thereafter perform routine maintenance, use and operate the **12" ID HDPE High Pressure Water Main and 12" ID HDPE Low Pressure Water Main**, hereinafter called the FACILITY, located as follows: State Route **293300, Zimovia Hwy** Route Mileage **0.52 to 0.528** across, along or under property of the DEPARTMENT, acquired and utilized in the operation and maintenance of a State Transportation System, at the aforementioned locations and/or positions and in strict conformance with plans, specifications and special provisions attached hereto and made a part hereof, and not otherwise.

A. In accepting this Utility Permit for the Facility, the PERMITTEE agrees to comply with the provisions of AS 02.15.102, AS 02.15.106, AS 19.25.010, AS 19.25.200, AS 35.10.210, and AS 35.10.230; the terms, requirements and regulations as set forth in 17 AAC 15 as authorized under Administrative Procedures Act, AS 44.62.010 - 44.62.650 and the applicable policies, directives and orders issued by the Commissioner of the Department.

B. The entire cost of routine maintenance operations of the FACILITY are to be paid for by the PERMITTEE, and said FACILITY shall comply with all applicable codes.

C. The PERMITTEE's construction, installation and maintenance operations of the FACILITY shall be accomplished with minimum interference and interruption of the use, operation and maintenance of the DEPARTMENT's right of way and/or public facility; or as hereinafter provided in the DEPARTMENT's Special Provisions, attached hereto and made a part hereof, and shall at all times in no way endanger the general public in its use of the public property. Utility Permits expire if construction or installation of the facility has not started within one year after the date of approval, unless the applicant obtains an extension of time in writing from the department. 17AAC15.011(d)

D. The DEPARTMENT, in granting the Utility Permit, reserves the right to use, occupy and enjoy its property for a public transportation system and for public transportation purposes in such a manner and at such times as it deems necessary, the same as if this instrument had not been executed by the DEPARTMENT. If any such use by the DEPARTMENT shall at any time necessitate any change in location or manner of use of said FACILITY, or any part thereof, such change or alteration shall be made by the PERMITTEE according to the terms of one of the two clauses set out below as identified by a check mark before the applicable clause.

 (1) The PERMITTEE will be reimbursed in full by the DEPARTMENT for all costs incurred in making such changes or alterations to the FACILITY that qualified under the provisions of AS 02.15.104(c), AS 19.25.020(c), or AS 35.10.220(c).

 X (2) The PERMITTEE shall promptly remove or relocate said FACILITY at no cost to the DEPARTMENT in accordance with the provisions of AS 02.15.104(c) (4) or (5), AS 19.25.020(c) (4) or (5), AS 35.10.220(c) (4) or (5).

- E. On public property being utilized for right of way on highways originally established as, or converted to, controlled access highways, ingress and egress thereto for maintenance and operation of the FACILITY is limited to the locations as designated by the DEPARTMENT. However, the DEPARTMENT may allow the PERMITTEE ingress and egress whenever such is necessary to effect repairs and maintenance of the FACILITY and when no other access is available. If the DEPARTMENT determines such access is in conflict with the use of the controlled access highway, the FACILITY will be relocated.
- F. The State of Alaska and the DEPARTMENT for the purpose of this Utility Permit, hereby disclaim any representation of implication to the PERMITTEE that the DEPARTMENT has any title in any property other than the interest conveyed to the DEPARTMENT for specific purposes as described by the instrument conveying the land to the DEPARTMENT.
- G. The PERMITTEE by these presents accepts notice and agrees that any expenses or damages incurred by the PERMITTEE through the abandonment, removal, reconstruction or alteration of any public facility, or incurred by said PERMITTEE as a result of this disclaimer shall be borne by said PERMITTEE at no expense whatsoever to the DEPARTMENT or the State of Alaska.
- H. The waiver or breach of any terms or conditions of this Utility Permit or Provisions of the Administrative Code, by the DEPARTMENT shall be limited to the act or acts constituting such breach, and shall never be construed as being continuing or a permanent waiver of any such term or condition, unless expressly agreed to in writing by the parties hereto, all of which shall remain in full force and affect as to future acts or happenings, notwithstanding any such individual waiver or any breach thereof.
- I. Only the Commissioner of the DEPARTMENT or his delegate shall have the authority to waive any term or condition herein contained.
- J. The PERMITTEE shall not assign or transfer any of the rights authorized by this Utility Permit except upon notification to and approval by the DEPARTMENT.
- K. The PERMITTEE agrees to comply with all regulations concerning present and future use of the public property acquired, or reimbursed by Federal-Aid funds.
- L. The PERMITTEE shall give the DEPARTMENT not less than ten (10) days prior written notice, unless otherwise agreed to by the parties hereto, of the PERMITTEE's intention to enter upon the DEPARTMENT's property for the purpose of major maintenance, reconstruction, altering or removal of the FACILITY, provided, however, that normal routine maintenance is excepted from this provision, and provided further, that in any instance of sudden emergency requiring prompt and immediate action to protect the public safety, or to mitigate damage to private or public property, no prior notification to the DEPARTMENT will be required. The PERMITTEE shall notify the DEPARTMENT and the Alaska State Troopers, of the location of the emergency and extent of work required by the most expeditious means of communication as soon as reasonably possible to do so, and the PERMITTEE shall take such measures as are required to protect the health and safety of the traveling public or public facility users for the duration of such emergency operations.
- M. The PERMITTEE shall indemnify and hold harmless the State of Alaska and the DEPARTMENT, or either of them, from all liability for damage to property, or injury to or death of persons, arising wholly or in part from any action taken by the PERMITTEE in relation to the PERMITTEE's FACILITIES on DEPARTMENT rights of way or other permitted locations.
- N. The PERMITTEE is subject to all previous Easements and Utility Permits and any damage to any other utility will be the PERMITTEE's responsibility.

O. The PERMITTEE agrees to be responsible for the compliance with all applicable Federal, State, and local laws, regulations, codes and ordinances.

P. The PERMITTEE agrees to be responsible for obtaining all other appropriate permits or letters of non-objection needed from Federal, State and local agencies, or conflicting lessees, property owners or utilities.

Q. The PERMITTEE may be required, within thirty (30) days after completion of any improvement placed upon or in the premises herein, deliver to the DEPARTMENT as-built drawings showing the location and construction specifications of said improvement.

R. This Utility Permit is issued under the provisions of applicable Alaska Statutes and Administrative Code, effective as of the date of execution of this instrument by the DEPARTMENT.

S. The PERMITTEE agrees that the FACILITY will be constructed in accordance with the attached:

1. Plans dated 1/1/2012 consisting of the Wood Street Improvement
2. Specifications consisting of the City of Wrangell and D.O.T. Standard Specifications
3. Other *See Below.

which, by this reference, are made a part hereof, and in accordance with the applicable codes pertaining to the FACILITY, and not otherwise, unless prior written authorization is obtained from the DEPARTMENT to do so.

T. The PERMITTEE agrees to reimburse the DEPARTMENT for actual costs of inspection and testing as required during the performance of work proposed by the PERMITTEE. The scope of inspection and testing shall be determined by the Regional Utilities Engineer. The costs billed to the PERMITTEE will be the actual DEPARTMENT's costs incurred while performing the inspection and testing.

U. The PERMITTEE agrees by entering on the DEPARTMENT's property to indemnify the DEPARTMENT and its contractors of all costs tangible or intangible that would be the result of any delay in a construction project of the DEPARTMENT caused by work done under this permit.

V. The PERMITTEE agrees to reimburse the DEPARTMENT for the length of the facility to be installed in excess of 200 feet (as indicated on the attached plans referenced to in paragraph "S" above) which is calculated to be 0 linear feet at \$1.00 per foot = \$0.00 (but not to exceed \$10,000) payable at the time the permit is executed by the DEPARTMENT unless arrangements have been made for the PERMITTEE to be billed on a monthly basis.

Added Special Conditions:

The tie in point for the low elevation water main will be accomplished far enough back from Zimovia Hwy to prevent any possible damage to or undermining of that highway.

PIPE CARRIERS

TRANSMITTANT: Water FLASH POINT: N/A

WORKING PRESSURE: 100 PSI TEMPERATURE: 40-60 degrees F

NUMBER OF CONDUITS (PIPES): 2

DIAMETER OF PIPE: 16-inch HDPE and 12-inch HDPE to match existing 8-inch DI and 10-inch DI

TYPE AND CLASS OF PIPE: new= HDPE SDR 9; old= DI AWWA CISO Class S2

ENCASEMENT	DIAMETER	AND	TYPE:
<u>N/A</u>			

VENT LOCATIONS: N/A LEFT N/A RIGHT OF HIGHWAY CENTERLINE

CATHODIC PROTECTION: N/A (plastic)

CROSSING ANGLE: 90 degrees LENGTH: 8-foot length under insulated gravity pipes

DEPTH BELOW ROAD SURFACE (MIN 48"): 60-inches

DEPTH BELOW DITCH BOTTOM (MIN 36"): 60-inches

METHOD OF CROSSING INSTALLATION: BORING X JACKING OPEN CUT

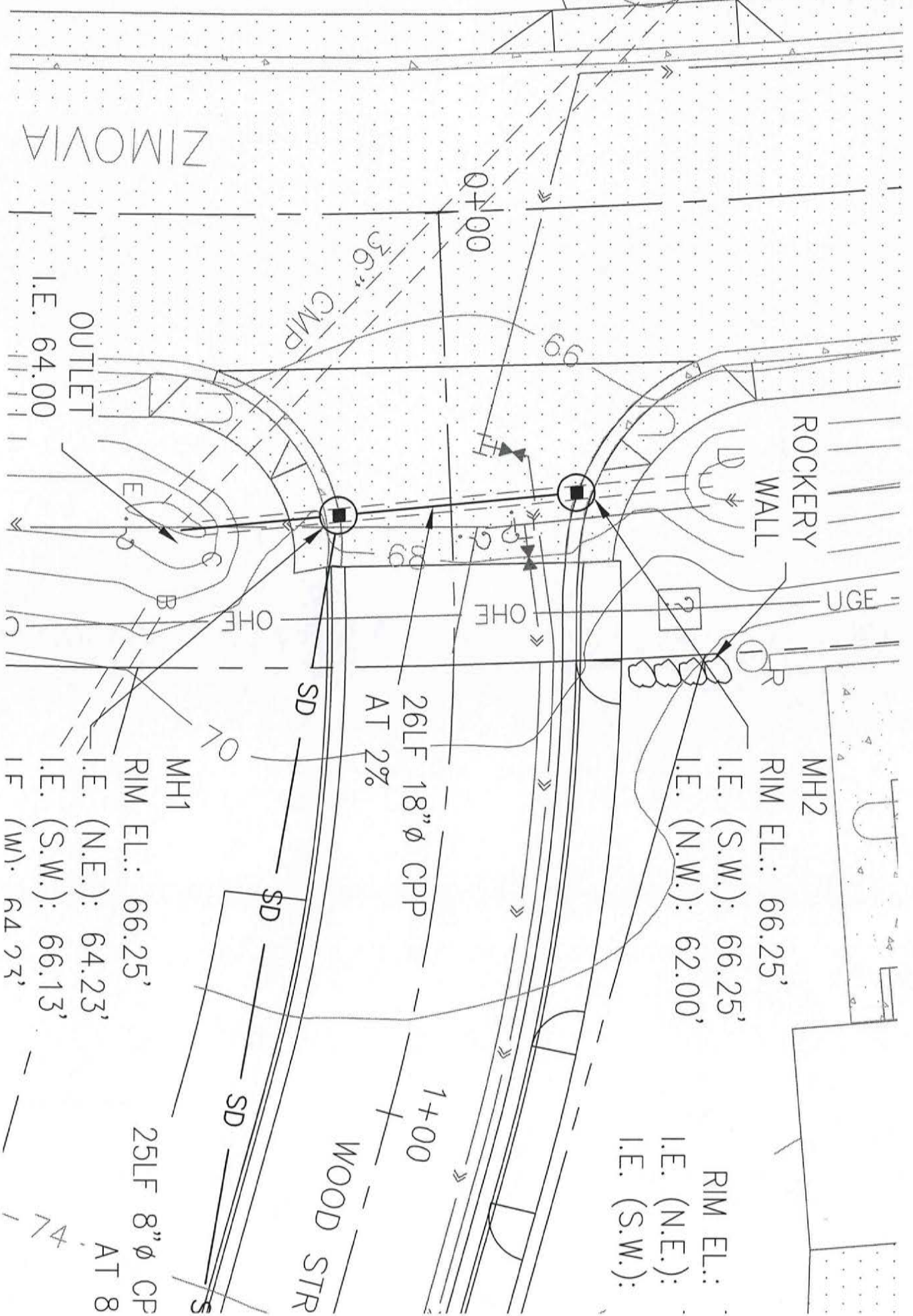
LONGITUDINAL FACILITY LENGTH: 15 feet into DOT ROW

OFFSET FROM HIGHWAY CENTERLINE: 28 feet DEPTH OF BURIAL (MIN 36"): 60 inches

METHOD OF LONGITUDINAL INSTALLATION: TRENCHING X PLOWING

CONSTRUCTION CODE(S) APPLICABLE: AK DOT&PF Standard Specifications for Construction

ADDITIONAL INFORMATION: Project is a replacement of existing domestic water line. The new plastic water main system will be fully constructed next to the existing mains while the existing system remains in service. Work in the DOT ROW will be done last in order to minimize disruption to traffic. The new system will then be connected with two hot taps and one hard connection to minimize service outages. Lastly, the existing system will be decommissioned.



ZIMOVIA

ROCKERY WALL

MH2

MH1

26LF 18" Ø CPP
AT 2%

RIM EL.: 66.25'
I.E. (N.E.): 64.23'
I.E. (S.W.): 66.13'

RIM EL.: 66.25'
I.E. (S.W.): 66.25'
I.E. (N.W.): 62.00'

RIM EL.:
I.E. (N.E.):
I.E. (S.W.):

WOOD STR

25LF 8" Ø CP
AT 8

OUTLET
I.E. 64.00

1+00

0+00

74

SPECIAL PROVISIONS

1.0 GENERAL AND ADMINISTRATION

- 1.1 The Permittee shall have a copy of this permit at the work site at all times.
- 1.2 The permit, together with these Special Provisions shall take precedence over any additional plans, exhibits, attachments, and/or schedules should discrepancies appear.
- 1.3 All contact between the Department and the Permittee's Contractor shall be through a representative of the Permittee. If the Permittee chooses to perform the work with other than its own forces, a representative of the utility shall be present at all times unless otherwise agreed to by the Department. Failure to comply with this provision is grounds for restricting any further work by the Permittee in the Department's right of way.
- 1.4 Any rights granted by this permit may not be assigned or transferred to another entity without prior written approval from the Department. If the utility is sold to another utility or merges with another utility, the new utility shall inform the Department in writing within 30 days after the date of transaction.
- 1.5 Any request for waiver or exception of Special Provision(s), or any request for change in location, alignment, or construction method, shall be submitted in writing to the Regional Utilities Engineer.
- 1.6 The Permittee agrees to furnish the Department with a set of as built plans within sixty (60) days from the completion of the work covered by this Permit.
- 1.7 The Permittee agrees to provide design locates, at no cost to the Department, upon request. If a utility locate service is not available, reference markers shall be installed and maintained at both ends of underground highway crossings, and at angle points in the alignment of the underground Facility. Where utilities are attached to a bridge, the Permittee will attach a plate on the conduit at each abutment describing the content of the pipe or conductor, and the name and phone number of the owning utility.
- 1.8 The Regional Utilities Engineer may assign an inspector or inspectors in order to insure compliance with the provisions of this utility permit. The inspector has the authority to suspend all work in the event of noncompliance.
- 1.9 The Permittee agrees to reimburse the Department for actual costs of inspections during construction of the Facility. Inspection activities will include on-site review of traffic control, highway crossings, and restoration of the right of way. Inspection may also include any testing required to verify conformance to the Department's standards, and responding to questions and/or complaints from the public or agencies. Actual direct and indirect charges shall provide the basis for billings, which include wages, benefits, per diem, travel and vehicle expenses, and lodging.

1.10 This permit will expire if construction or installation of the Facility has not started within one year after the date of approval, unless the Permittee obtains an extension of time in writing from the Department.

2.0 COORDINATION

2.1 The Permittee shall notify the Department's Regional Utility Permit Officer ten (10) days prior to beginning work:

Southeast Region
(907)465-4544
(907)465-6216 (fax)

2.2 The Permittee agrees to coordinate their work with other projects, both public and private that may occur within the project limits covered by this permit. The Permittee agrees not to interfere or hinder the work being performed by other contractors.

2.3 The Permittee shall coordinate and obtain the necessary temporary driveway permits for access to travel way from haul routes or staging areas where existing access does not exist. Contact the Department's Right-Of-Way Section at (907) 465-2838 for the driveway permit application or apply on line at www.dot.state.ak.us/permits

3.0 ENVIRONMENTAL

3.1 The Permittee is responsible for obtaining authorization from the U.S. Army Corps of Engineers for any ground disturbing activities in areas designated as wetlands.

3.2 If the Permittee, its Contractor, or Agent discovers environmental contamination in the right-of-way while constructing the Facility, they shall immediately stop work and notify the Department's Regional Utility Engineer.

3.3 The Permittee is not responsible for the cost of investigation, cleanup, or disposal of any contaminated soils it discovers during work on the Facility within the Department's right-of-way, **unless:**

a. The Permittee, its Contractor, or Agent fails to immediately notify the Department of the contamination, or;

b. The contamination is attributed to the Permittee's Facility, or actions of the Permittee, its Contractors, or its Agents.

3.4 If the Permittee, its Contractor, or Agent discovers cultural, historic or archeological resources as a result of ground altering activities, all work that would disturb these resources shall be stopped and the State Historic Preservation Office shall be contacted immediately at (907) 269-8721.

3.5 The Permittee shall not hold the Department responsible for any delay, redesign, rerouting, or additional cost due to encountering environmental contamination, or cultural, historic, or archeological resources.

3.6 The Permittee shall provide an Alaska Certified Erosion and Sediment Control Lead (AK-CESCL) trained person, with the authority to direct activities required by the SWPPP, APDES permit or other permit conditions, during all construction and maintenance activities authorized by this permit that involve ground disturbing activities. Provide proof of current AK-CESCL certification upon request.

3.7 The Permittee, on behalf of itself and its contractors, officers, officials, employees, and agents, shall indemnify, hold harmless, and defend at its sole cost and expense, the Department, its contractors, officers, officials, employees, and agents from any and all fines, costs, claims, damages, liquidated damages, judgments, or civil penalties assessed by the Department of Environmental Conservation pursuant to AS 46.03.760(E), arising wholly or in part from any action taken by the Permittee in relation to the Permittee's Facilities on Department rights of way or other permitted locations. This indemnification provision is in addition to and shall be construed as consistent with General Provision M.

4.0 NOTIFICATIONS

4.1 The Permittee is responsible for notifying businesses and residents that front the project of scheduled road and driveway closures, or any work that may affect them. Property owners shall receive the notices a minimum of 48 hours prior to commencement of the work. Notices shall include a detailed description and map of the project, anticipated construction schedule and contact name and number of a representative of the Permittee.

4.2 The Permittee shall submit weekly public information notices that identify road closures, restrictions to traffic, and detours. Coordinate this effort with the State DOT/PF Navigator Information Program.

5.0 TRAFFIC CONTROL

5.1 The Permittee shall submit a Traffic Control Plan (TCP) to the Department for approval a minimum of ten (10) days before beginning construction.

5.2 The Permittee or the Permittee's contractor shall designate a Traffic Safety Supervisor who shall be responsible for the maintenance of traffic operations on a 24-hour basis. This individual shall have received formal work zone traffic control training. The Department must be supplied with the name of this individual along with written verification of his/her credentials as well as a 24-hour telephone number where he/she can be reached.

5.3 The Permittee shall insure that flagmen are certified by either the International Municipal Signal Association (IMSA) or the American Traffic Services Association (ATSSA). Documentation of certification shall be provided if requested.

5.4 The Permittee shall provide traffic control devices, conforming to the latest addition of the Manual on Uniform Traffic Control Devices published by the U.S. Department of Transportation and Alaska Traffic Manual Supplement while constructing the Facility, or thereafter performing routine maintenance.

5.5 All traffic control devices required by the approved Traffic Control Plan, including signs, barricade, and flagmen, shall be in place prior to beginning work within the right of way.

5.6 The Permittee shall remove or cover all temporary traffic control devices as soon as practical when they are no longer needed or when work on the Facility is suspended for short periods of time.

5.7 The Permittee shall not park vehicles, equipment, or store materials on road or pathway surfaces at any time, unless specifically allowed by the traffic control plan.

5.8 At the close of each work day the construction site on non-detoured roadways shall be restored to a condition that allows two-way traffic to flow in conformance with the normal traffic patterns in that area, unless otherwise approved by the Regional Utilities Engineer.

5.9 The Permittee shall conduct periodic inspections of temporary traffic control devices left in place during non working hours. A 24 hour telephone contact number for the traffic control supervisor shall be provided to the local State Troopers of Police Departments.

5.10 All illumination and signalization shall remain operational during the construction of the Facility.

5.11 Reduced speed and two-way traffic shall be maintained on non-detoured roadways between the peak traffic hours of 7:30 a.m. to 9:00 a.m. and from 4:30 p.m. to 5:30 p.m.

6.0 EXCAVATION AND BACKFILL

6.1 The Permittee shall backfill and compact all trenches within road prisms and pathways in 6-inch lifts or as accepted by the Department. 6-inch lifts are required if no inspector is present. The backfill shall be of suitable non-frost susceptible, non-organic material (0-6% passing No. 200 sieve). All excavated non-acceptable material shall be removed from the State right-of-way or property by the Permittee.

6.2 The road prism is defined to include the finished roadway surface and underlying structural layers out to, and including, any unpaved shoulders, curbs, and attached pathways.

6.3 The Permittee shall compact all trenches within or crossing road prisms and pathways at a minimum of 95% of the optimum density. All compaction tests shall be at the Permittee's expense. A copy of each test will be submitted to the Department.

6.4 The Permittee shall backfill all trenches, bore pits, and other excavations located outside road and pathway prisms with clean, non-organic, and compactable material meeting the requirements of Select Material, Type C, as defined in the Department's Standard Specifications for Highway Construction. Existing material is acceptable as backfill provided it meets the requirements of Select Material, Type C.

6.5 The Permittee shall remove material not suitable for use as backfill from the site, t. The Permittee shall replace unsuitable backfill material with imported material meeting the requirements of Select Material, Type C.

6.6 All backfill shall be compacted to existing undisturbed soil densities or better, and graded to blend with the existing ground surface. All costs associated with removal of unusable material and placement of import material is the responsibility of the Permittee.

6.7 The top six (6) inches of the road surface or surface under pavement shall be crushed aggregate D-1

7.0 PAVEMENT REPLACEMENT AND TRAFFIC MARKINGS

7.1 Pavement cuts may be authorized from May 1st to September 30th and will only be permitted on an emergency basis from October 1st through April 30th unless the Regional Utilities Engineer approves a request for exception. Planned pavement cuts must be repaired by September 30th. No more than 2500 feet of pavement by project stationing can be disturbed without final repair

7.2 All asphalt cuts shall be permanently repaired with hot asphalt. Asphalt concrete pavement shall be Type II, Class B installed in conformance with Section 401 of the Alaska DOT&PF Standard Specifications dated 2002. The proposed job mix design shall be submitted for review and approval by the department.

7.3 If the edge of the pavement is damaged during this construction the permittee shall have his contractor replace the pavement to the centerline of the roadway at least 10 feet each side of the damaged area. If the damage is intermittent and less than 50 feet between damaged areas the permittee shall make the repair continuous to cover the damage.

7.4 For service crossings, pre-saw the area to be excavated. After completion of the utility, saw back the existing pavement a minimum of 1-1/2' over undisturbed earth on each side of the trench. Install 6" of asphalt installation hot mix which shall be spread and compacted in layers. The top layer shall not exceed a 2" compacted depth. Paint the entire area of all top-lift longitudinal joints with a 1/8" thick band of polymerized bituminous joint adhesive prior to placement the abutting lanes. The modified joint adhesive materials shall be Crafcro Pavement Joint Adhesive No. 34524, or an approved equal. The temperatures and application method of the joint adhesive shall be per manufacturer's recommendations.

7.5 For lane replacement, pre-saw the area of pavement effected by the utility installation. Cut the pavement so that the edges are vertical, the sides are parallel and the ends are perpendicular to the direction of traffic. The depth of pavement to be replaced will match the depth of the existing pavement unless otherwise specified. The pavement will be spread in layers not to exceed 2" to the seam nearest the centerline of the roadway. Paint the entire area of all top-lift longitudinal joints with a 1/8" thick band of polymerized bituminous joint adhesive prior to placement the abutting lanes. The modified joint adhesive materials shall be Crafcro Pavement Joint Adhesive No. 34524, or an approved equal. The temperatures and application method of the joint adhesive shall be per manufacturer's recommendations.

7.6 If the contract quantity is less than 1500 tons, the asphalt concrete pavement will be accepted based upon the engineers approval of the job mix design and the placement and compaction of the asphalt concrete to the specified depth and finished surface requirements and tolerances. The engineer's approval of the job mix design does not relieve the permittee or their contractor from the responsibility to produce the approved mix and is subject to field verification testing for oil content, density and gradation. The gradation, density and asphalt content shall be determined in accordance with section 410-4.02. If a calibrated nuclear content gauge is not available, asphalt content of the mix may be determined by extraction in accordance with AASHTO T-164. A minimum of two tests shall be taken for each approved mix design or as designated by the engineer.

7.7 The finished pavement surface will be tested after final rolling at selected locations using a 16-foot straightedge. Variations of more than 3/16 inch from the testing edge between any two contacts will be corrected.

7.8 Temporary Patches

a. A Polymer modified cold mix asphalt or concrete patch may be used as a temporary patch subject to written approval of the Regional Utilities Engineer. The temporary patch will be replaced as soon as hot asphalt is available. For crossings, saw back existing pavement a minimum of 1' over undisturbed earth on each side of the trench. Paint edges with STE-1 tack coat and install 4" of polymer-modified cold asphalt. Damage to the pavement surface at locations other than crossings will be repaired by replacement of asphalt to the seam nearest centerline of the roadway with 4" of polymer-modified cold asphalt. All edges are to be saw cut and painted with STE-1 tack coat. The polymer-modified cold asphalt shall be spread and compacted in 2" lifts, each compacted to a minimum of 94% of maximum density. Asphalt patch density shall be field controlled utilizing a calibrated nuclear densometer at two locations per patch. Field testing results shall be certified by a registered engineer and forwarded to DOT&PF.

b. Temporary concrete patches shall be a minimum of 6" thick with 6" x 6", 6 gage wire mesh or suitable reinforcing steel installed 3" below the finished grade. Concrete shall be Class A, six sack mix, with a slump range of 2"-4".8

7.9 Asphalt concrete mixture that becomes contaminated with foreign material, is segregated or is in any way determined to be defective will be removed. Defective materials will be removed for the full thickness of the course.

7.10 The Permittee shall replace all damaged or removed pavement markings in kind.

8.0 DRAINAGE

8.1 The Permittee shall be responsible for assuring that all water entering the Department's storm drain facility meets the minimum criteria for water quality standards as set forth in the Alaska Administrative Code(18 AAC 70.010-.110).

8.2 The Permittee shall maintain existing drainage patterns during construction of the Facility. Ditches will be restored to the originally designed flow lines unless otherwise agreed to by the Department.

8.3 The Permittee shall be responsible for all erosion control prior to slopes becoming stabilized.

8.4 The Permittee is responsible for installing and maintaining BMPs required by the NDPES permit throughout the duration of the project.

8.5 The Permittee shall notify the Department of Transportation of drainage problems caused by the work under this Permit and will remedy the problem as directed by the Department of Transportation.

8.6 The Permittee shall replace all culverts damaged by work under this Permit with a culvert. of the same size, or 18-inch, whichever is greater.

9.0 RIGHT OF WAY PROTECTION, MAINTENANCE, AND RESTORATION

11.1 The Permittee shall cleanup within one day behind installation of the facility. The Permittee will not be allowed to trench or plow more than can be cleaned up the following day.

11.2 The Permittee or their contractor shall immediately repair any damage of existing utilities, storm drainage or other highway structures caused as a result of construction authorized by this permit.

11.3 Heavy tracked equipment operation will not be permitted on a paved roadway or shoulder, unless approved in writing by the Regional Utilities Engineer. If approved, planking or rubber tires shall be utilized between the vehicle tracks and the pavement. The Permittee shall repair damage to the pavement as a result equipment operation as directed by the Department.

11.4 The Permittee or his contractor will be responsible for winter and spring maintenance of the road shoulders, ditch lines, backslopes, road surfaces, taxiways, and runways that have not been left in a neat and clean condition, satisfactory to the Maintenance Section of the Department of Transportation.

11.5 The Permittee shall dispose of trees, brush or other natural growth by mechanical chipping or hauling away. Stumps and grubbing piles shall be loaded and hauled to a disposal site outside the Department's right of way. Trees left for the public shall be limbed and stacked in a location where loading does not interfere with the safe operation of the travel way.

11.6 Guardrail that is removed or damaged during construction shall be replaced in accordance with Section 606 AKDOT&PF Standard Specifications dated 2004, and Standard Drawings Manual.

11.7 Any Survey monument or monument accessory that will be disturbed or destroyed during construction of the Facility shall be referenced prior to beginning work, and restored or replaced by a Registered Land Surveyor licensed in accordance with AS 34.65.040. All monument records shall be reviewed by the Department prior to filing with the District Recorder.

11.8 Highway signs that are in conflict with construction shall be relocated on a temporary basis and reinstalled at the original location as soon as possible. Signs that are damaged during construction shall be replaced in kind to the Department's standards, and at no cost to the Department.

11.9 The Permittee shall replace all curbs and gutters to an existing undisturbed joint.

11.10 The Permittee shall maintain all roadways, pedestrian and bicycle facilities affected by the pavement removal in a smooth and passable condition at all times.

11.11 The Permittee shall provide street sweeping to keep free of loose material all paved portions of the roadway and haul routes open to the public, including sections of roadway off the project where your operations have deposited loose material. Use a street sweeper that can collect materials rather than eject them on the shoulder of the road.

11.12 The Permittee shall furnish, haul, and place water for dust control and pavement flushing. Use water trucks that can provide a high-pressure water stream to flush the pavement and a light-water spray to control dust. If the flushing operations contaminate or fill adjacent catch basins, clean and restore them to their original condition. Pavement flushing and dust control is required in sections off the project where flushing is required.

11.13 Upon completion of the work within the State right-of-way or State property, the Permittee shall remove all equipment, dispose of all waste material and shall leave the premises in a neat and clean condition satisfactory to the Department of Transportation.

10.0 TOPSOIL AND SEEDING

10.1 The Permittee shall replace and restore all vegetation disturbed. Unless otherwise required, re-vegetation shall consist of establishing seeded grassed slopes over the disturbed ground. The Permittee shall use all means necessary to maintain and protect the disturbed slopes from erosion until such time as the vegetation is established.

10.2 The Permittee shall replace any topsoil lost as a result of construction under this permit.

10.3 The Permittee shall re-seed all areas within the Department's right-of-way disturbed by work under this permit with a seed mix approved by the Department.

10.4 The Permittee shall re-grade all disturbed areas to blend with the existing ground surface and re-seed after completing backfill of pipe.

10.5 If re-seeding is not complete by August 15th, then re-shaping of all disturbed areas shall be completed by July 1st of the following year. The Permittee is responsible for all erosion control measures and cleaning of ditches and culverts.

11.0 OVERHEAD FACILITIES

11.1 New and relocated aerial facilities shall maintain a minimum vertical clearance of twenty feet (20') in all locations within the right of way. (17 AAC 15.201)

11.2 The Permittee shall install guy guards on all down guys installed within the right of way.

11.3 The Permittee shall remove all overhead lines abandoned as the result of this Permit.

11.4 Guy/Anchor attachment shall not be located within clear zone.

12.0 UNDERGROUND FACILITIES

12.1 The depth of burial for underground facilities constructed or installed under pavement, roadway or runway surfaces must be at least four feet measured from the surface of the pavement to the top of the cable, conduit, pipeline or encasement.

12.2 Underground facilities constructed under other surfaces, including unlined ditches must be buried at least three feet, measured in any direction from the surface to the top of the cable, conduit, pipeline or encasement.

12.3 The Permittee shall place buried caution tape one foot directly above the Facility being installed.

12.4 The Permittee shall obtain locates for any existing traffic signals, traffic interconnect cables, street light facilities, or FAA cables prior to construction. Damages shall be repaired and restored to working order within eight hours at the Permittee's expense. Any splice must be located within a Type II Junction Box or as directed by the Department.

13.0 WARRANTY

13.1 Warrant and Warranty, for the purposes of this Permit, shall mean the Department's concurrence block authority on any warranty release issued by the Permittee.

13.2 The Permittee shall warrant the materials and workmanship of the road, and road right-of-way, to ensure completion of the construction, including the restoration of surfacing, slopes, slope treatment, drainage facilities, pathways, and right-of-way cleanup for the warranty period.

13.3 The Department will notify the Permittee of any surface deformity. The Permittee shall prepare a corrective action plan for review and approval by the Department. The corrective action plan shall include:

- a) A methodology to determine if the pavement surface deformation is due to subsurface forces, such as subsidence or drainage, and;
- b) A proposal for correcting the surface variation.

13.4 The Permittee shall remedy promptly, without cost to the Department, any and all defects in materials and workmanship resulting from defective materials and workmanship. If the defect, in the opinion of the Department, is of such a nature as to demand immediate repair, the Department shall have the right to take corrective action and the cost thereof shall be borne by the Permittee.

13.5 The Permittee or his designee and the Department shall perform construction inspection of the road. The Permittee or his designee shall handle any coordination with respect to inspection activities involving both the Department and Permittee.

13.6 The Warranty period shall mean a period of two (2) years from the acceptance of the road. The Warranty shall remain in effect until final inspection and acceptance by the Department.

14.0 RELEASE OF WARRANTY

14.1 The Permittee and the Department shall perform an inspection prior to the end of the warranty period. The Permittee or his designee is responsible to schedule and coordinate with the Department the final warranty inspection. The Permittee shall correct any defect in the work revealed by the warranty inspection.

14.2 Upon the Permittee's satisfactory performance of all its obligations under this Permit, the Department shall execute a written statement acknowledging performance and release of the warranty obligations. Release of the warranty shall not release the Permittee of all other provisions of the permit.

14.3 Any damage to the roadway prism, fill slopes, ditches, backslopes, structures or underground utilities determined to be a result of work authorized by this permit that becomes apparent within two (2) years after project completion and acceptance by the department shall be repaired by the Permittee.

15.0 MAINTENANCE AND OPERATIONS

15.1 The permittee shall perform routine maintenance on the utility facility on a continuing basis. Routine maintenance may be performed without prior notification of the department however closure of a highway, pedestrian facility, pathway, sidewalk or creating a detour to perform routine maintenance must be specifically authorized by permit. The permittee shall apply for an annual lane closure permit to cover routine maintenance operations. Prior authorization must be obtained from the department before performing any maintenance that requires excavation, plowing, jacking or boring within the right of way.

15.2 The Permittee may perform emergency maintenance without prior notice to the department as long as appropriate traffic control is established and maintained. If the project requires major reconstruction and or placement of traffic control devices for an extended period a lane closure permit is required. If the road surface is affected by the emergency maintenance, contact the local maintenance foreman as soon as possible and place pavement break warning signs in advance of the site until such time as the pavement has been repaired.

15.3 The Permittee is responsible for maintenance and adjustment of manhole frames, valve boxes, junction boxes or other structures located in the pavement or sidewalk.

15.4 The Permittee shall apply for a new utility permit if the facility authorized by this permit is to be reconstructed or modified substantially. If the proposed modifications are not substantial, the permittee need only apply for an amended permit. A utility permit application is required for all new service connections.

In consideration of the benefits accruing to the Permittee by reasons of the foregoing agreement, this permit is hereby accepted by the Permittee and the Permittee hereby agrees to comply with all of the terms, provisions, conditions, stipulations therein contained. Dated this 30th day of January, 20 12

The State of Alaska, acting by and through its Department of Transportation and Public Facilities has caused this Utility Permit to be executed on this 9th day of Feb, 20 12

City and Borough of Wrangell

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

By: Carl Johnson
Title: Public Works Director
Attest: Timothy Rooney
Title: Borough Manager

Southeast Region
By: [Signature]
Title: Regional Utility Engineer

ACKNOWLEDGEMENT OF
COMPANY OR PERMITTEE

ACKNOWLEDGEMENT OF DEPARTMENT

STATE OF ALASKA)
1st JUDICIAL DISTRICT)ss

STATE OF ALASKA)
1st JUDICIAL DISTRICT)ss

BE IT REMEMBERED that on this 30th day of January, 20 12, before me the undersigned, a Notary Public of the State of Alaska, personally appeared

BE IT REMEMBERED that on this 9th day of Feb, 20 12, before me, the undersigned, a Notary Public of the State of Alaska, personally appeared

Carl Johnson

Fredrik J Thorstenson

and Timothy Rooney
both to me personally known and known to me to be the identical individuals named in and who executed the foregoing permit, and acknowledged the said instrument to be the free and voluntary act and deed of the above named company for the uses and purposes therein expressed and on oath stated that they were authorized to execute said instrument.

of the Department of Transportation and Public Facilities known to me to be the identical individual who executed the foregoing permit, and he acknowledged to me that he executed the same for and on the behalf of the State of Alaska Department of Transportation and Public Facilities with full authority so to do, and for uses and purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of my office the day and year first above written.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of my office the day and year first above written.

My Commission Expires: 3/23/2014

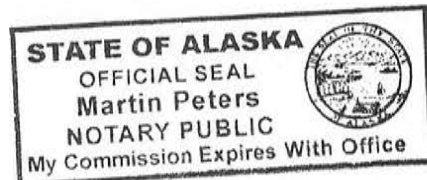
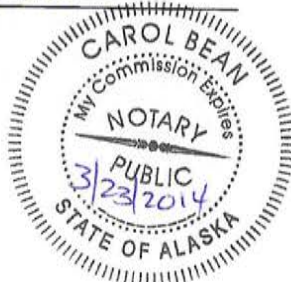
My commission Expires with office

Carol Bean

[Signature]

A Notary Public

A Notary Public



STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

SEAN PARNELL, GOVERNOR

6860 Glacier Highway

P.O. Box 112506

JUNEAU, ALASKA 99811-2506

PHONE: (907)465-2838

FAX: (907)465-6216

SOUTHEAST REGION – PRECONSTRUCTION RIGHT OF WAY & UTILITIES

Date: March 27, 2012

RE: Driveway Permit # 22560

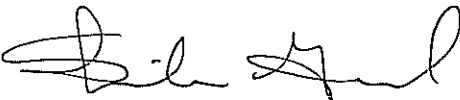
Carl R. Johnson
City of Wrangell
P.O. Box 531
Wrangell, AK 99929

Dear Mr. Johnson:

Enclosed is the signed permit for improved driveway access to Wood St. and Zimovia Highway, Wrangell Alaska. When you have completed construction of your driveway, contact me at 465 -2838 to schedule a final inspection. If you've met all the qualification and approvals of the driveway, your performance deposit will be returned to you.

If you have any questions please call me at 877 305-6630 toll free or 465-2838.

Sincerely,



Sheila Good
Right of Way Agent
Department of Transportation &
Public Facilities
907-465-2838~phone
907-465-6216~fax
Sheila.good@alaska.gov

enc: Driveway Permit # 22560

State of Alaska
Department of Transportation and Public Facilities

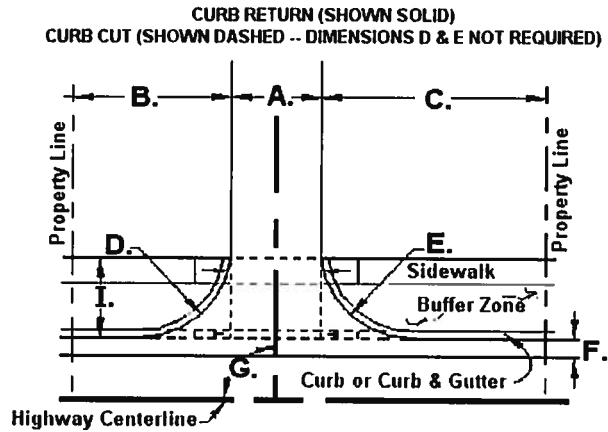
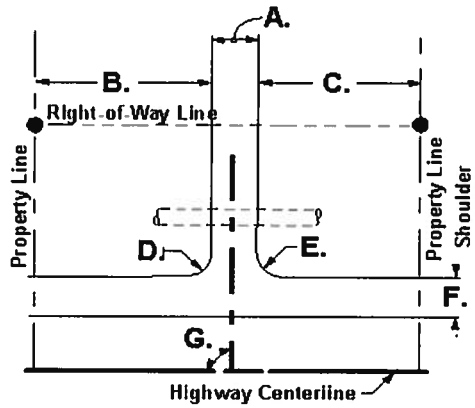
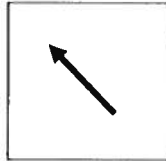
Driveway and Approach Road
Permit

This permit allows the permittee to construct and maintain a driveway or approach road within a State owned highway Right of Way.

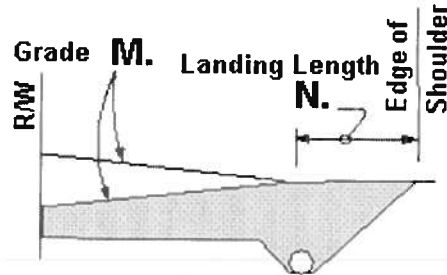
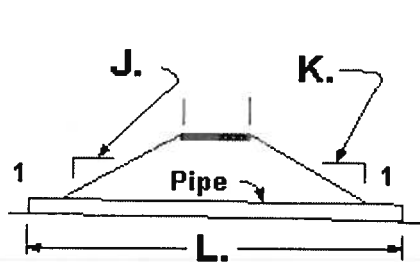
<input type="checkbox"/> Residential/Private <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Government Agency	
Applicant:	City of Wrangell
Mailing Address:	PO Box 531 Wrangell, AK 99929
Contact Name:	Carl R Johnson
E-mail Address:	
Phone:	(907) 874-3904 Fax: (907) 874-2699
Driveway or Approach Road location (highway, subdivision, legal description milepost, etc.) Improvements to existing approach road at intersection of Zimovia Hwy and Wood St. Wrangell Alaska	
Proposed or Existing:	Anticipated Completion Date:
EXISTING	12/31/2012
Number of lots served:	Max. number of vehicles in any 1 hour:
3	85
Zoning Designation:	Proposed Land Use:
	Medical Facility

Driveway Specifications

Direction of North in relation to the drawing.



A.	Driveway width	26 feet
B.	Left edge clearance	16 feet
C.	Right edge clearance	23 feet
D.	Left return radius	25 feet
E.	Right return radius	20 feet
F.	Shoulder width	4 feet
G.	Approach angle	90 degrees
H.	Curb type	Curb return with buffer
I.	Curb to sidewalk distance	23 feet



J.	Left driveway foreslope	:1
K.	Right driveway foreslope	:1
L.	Culvert length	48 Feet
M.	Landing grade	5 Percent
N.	Landing length	4 Feet
O.	Culvert size	18 inches
P.	Culvert type	Aluminum/Steel
Q.	Ditch depth	4 feet
R.	Shoulder type	Paved
S.	Pavement type	Paved
T.	Driveway surface type	Asphalt

Permittee upon signing this permit acknowledges and agrees to the following provisions:

A copy of this permit must be on site during construction of the access. If any of the conditions of this permit are violated, the State reserves the right to require the removal of all activities from the area.

The Permit grants permission for driveway construction only, allowing access to and from your property onto a State maintained highway. It does not permit the following within the right of way or within that portion of a driveway that is within the right of way: (1) Parking of vehicles "for sale"; (2) Obstructions of any kind (i.e. logs, cables, fencing, etc.); (3) Advertising signs or banners/flags; (4) Parking vehicles with signs/advertising on the side.

A driveway or approach road constructed under permit within a highway right-of-way is the property of the state, but all cost and liability arising from the construction, operation, or maintenance of a driveway or approach road is at the sole expense of those lands served. The department is not obligated to change its maintenance practices to accommodate a driveway or approach road constructed under a permit, or to incur any additional expense removing snow berms or other obstructions from a driveway or approach road within a right of way resulting from the department's activities, or activities under a permit issued under 17 AAC 15.

Permittee is responsible for adjusting or relocating the driveway or approach road without cost or liability to the department if the use or safety of the highway requires that the driveway or approach road be adjusted or relocated.

This Permit is not a property right but a temporary authorization, revocable by the State upon violation of any Permit terms or conditions, or for other reasons. All reasonable attorney's fees and costs associated with legal or enforcement actions related to the terms and conditions of this permit will be borne by the permittee.

Any survey monument or monument accessory which will be disturbed or destroyed during construction of the driveway or approach road shall be referenced prior to the disturbance and restored or replaced by a Land Surveyor licensed in the State of Alaska. The Land Surveyor must file a Monument Record in accordance with AS 34.65.040. All monument records shall be reviewed by the department prior to filing with the District Recorder.

The Permittee will obtain all necessary Federal, State, and Municipal permits and licenses required by law, pay all taxes and special assessments lawfully imposed upon the permitted area, and pay other fees and charges assessed under applicable law.

Before any filling activities take place within the right of way, or on the property adjacent to the right of way affected by this permit, please contact the U.S. Army Corps of Engineers (USACE) to see if any further authorization is necessary. Placement of fill material in waters of the U.S., including wetlands and streams, requires prior authorization in most cases. You can reach the USACE at - Anchorage: (907) 753-2712, Fax: (907) 753-5567 Toll Free 1-800-478-2712; Fairbanks: (907) 474-2166, Fax: (907) 474-2164; Juneau: (907) 790-4490, Fax: (907) 790-4499; Kenai: (907) 283-3519, Fax: (907) 283-3981. The website is <http://www.poa.usace.army.mil/reg>

A permittee shall construct and maintain a driveway or approach road in such a manner that the highway, and all of the highway's appurtenances or facilities, including drainage facilities, pipes, culverts, ditches, traffic control devices, street lights, pathways, and sidewalks are not impaired or endangered in any way by the construction or maintenance. (17 AAC 10.020(b) If you damage any improvements within the State owned right of way, you will be responsible for returning them to their previous condition. The Department will inspect and approve the restored improvements. (17 AAC 10.065)

All signs installed in State rights of way shall be fabricated, located and installed in conformance with the Alaska Traffic Manual (ATM), Alaska Sign Design Manual (ASDS), and standard drawings and specifications. Our Traffic & Safety section shall approve all variable message signs (i.e. street name signs) prior to installation.

Permittee shall indemnify, defend and hold harmless the State, and its officers, employees, and contractors, from any and all claims or actions resulting from injury, death, loss, or damage sustained by any person or personal property resulting directly or indirectly from Permittee's use of or activities in the permitted area.

If driveway construction interferes with the public's safety and/or use of facilities within State owned right of way, you will be directed to stop work until adjustments are made.

Do not park equipment or stockpile material on the shoulder during non-working hours.

Permittee is responsible for sight distance clearing of brush and obstructions adjacent to their property.

Driveway landings must be paved from pavement edge on all paved roads unless deemed otherwise by the State.

Please contact the Department for information about acceptable driveway markers (i.e., size, materials, distance, etc.) for placement within the right of way.

The State will not change its maintenance practices to accommodate your driveway or incur additional expense to clear snow berms or other obstacles resulting from the Department's activities.

You may not push or otherwise deposit snow or ice onto a highway in a manner, or in quantities, which may constitute a hazard to snow removal equipment or other traffic.

Implement the traffic control plan and maintain traffic control devices in accordance with the Alaska Traffic Manual and any provisions and conditions noted.

All sign layouts shall conform to the Alaska Sign Design Specifications.

Fabricate special signs from engineering grade reflective sheeting on either sheet aluminum or plywood panels.

Adjust sign locations in the field to provide adequate separation from existing signs. All signs shall be visible.

Traffic control devices are not required for construction more than 2 feet behind curb, or farther than 15 feet beyond the shoulder.

Remove all traffic control devices when no longer needed.

Clean up litter or debris generated as a result of this driveway construction.

An inspection is required prior to reimbursement of your performance deposit. Please contact the Department for an inspection appointment after final construction of your driveway.

REQUIRED for ALL DRIVEWAYS:

- Plat including notes of the placement of the driveway.
- Site plan.
- Proof of ownership.
- Traffic control plan.

I, Carl R Johnson, acknowledge that I am acting on behalf of the above named organization with the full authority to do so. I further acknowledge and accept that The City of Wrangell shall comply with all the provisions and conditions that the Department of Transportation and Public Facilities has included as a condition of issuing this permit.

Carl Johnson
Permittee Signature

3-21-12
Date

[Signature]
DOT&PF Signature

3-27-12
Date



PND ENGINEERS, INC.

811 First Avenue, Suite 570
 Seattle, Washington 98104
 Phone: 206-624-1387
 Fax: 206-624-1388
 mail@pndengineers.com

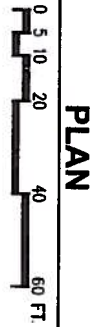
PND ENGINEERS, INC. IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. WHERE SPECIFICATIONS ARE GENERAL OR NOT CALLED OUT, THE SPECIFICATIONS SHALL CONFORM TO STANDARDS OF INDUSTRY. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

REV	DATE	DESCRIPTION

DESIGNED BY:	SR PROJECT NO:	114018.01	SHEET NO:	1 of 2
DRAWN BY:	DATE:	FEB. 2012		
CHECKED BY:	SCALE:			

DRIVEWAY ACCESS PERMIT
WOOD STREET
IMPROVEMENT DESIGN
DRIVEWAY ACCESS PLAN

PERMIT NUMBER 2250
PAGE 5 of 7



PLAN

