

**NON-MOTORIZED
TRANSPORTATION SYSTEM
CITY AND BOROUGH OF WRANGELL**

Volume 1 of 2

**PROJECT MANUAL
Bidding Documents
Contract Documents
Technical Specifications**



JULY 27, 2023

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END OF SECTION

SECTION 00030 - NOTICE INVITING BIDS

OBTAINING CONTRACT DOCUMENTS. The Contract Documents are entitled: **NON-MOTORIZED TRANSPORTATION SYSTEM**

Notice is hereby given that the City and Borough of Wrangell, Alaska will receive sealed bids for the construction of the **Non-Motorized Transportation System** project.

The Contract Documents, including one set of reduced scale drawings, may be obtained at the office of the Capital Facilities Department, 1064 Case Avenue, Wrangell, Alaska 99929 (Ph. 907-874-3902). The Contract Documents may also be downloaded free of charge on the City and Borough of Wrangell website (www.wrangell.com) under the Bids and RFP's section. Downloading Contract Documents from the City and 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 or at clerk@wrangell.com.

OWNER: City and Borough of Wrangell

ENGINEER OF RECORD: PND Engineers, Juneau, Alaska 99801

DESCRIPTION OF WORK. WORK consists of all activities necessary to construct the Non-Motorized Transportation System project, as shown in the contract documents. Work generally includes various amounts of mobilization, clearing and grubbing, excavation and embankment, aggregate and timber trails, parking area, signage and site amenities and other miscellaneous improvements.

PROJECT FUNDING SOURCES: Funding for the construction project will be partially funded with funds from the Federal Lands Access Program (FLAP) through the Federal Highway Administration, Western Federal Lands, and is therefore subject to the Federal and State laws and regulations associated with this program.

Recipients of federal program funds must maintain a current SAM.gov registration and have a Unique Entity ID generated by SAM.gov. All Subcontractors must have a Unique Entity ID generated by Sam.gov. This information must be current during the term of the contract.

SITE OF WORK. The WORK is located in Wrangell, Alaska between the Mt. Dewey Trail and Airport Road.

COMPLETION OF WORK. The OWNER will open the work site to the CONTRACTOR following Notice to Proceed. Substantial Completion for all WORK under the contract documents shall be June 1, 2024. Final completion for all WORK under the contract documents shall be June 15, 2024.

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

Amber Al-Haddad
Capital Facilities Director
Telephone: (907) 874-3904

PRE-BID CONFERENCE. Prospective bidders are encouraged to attend a Pre-Bid Conference that will be held in Wrangell on August 15, 2023 beginning at 11:00 AM at the Capital Facilities Office, 1064 Case Avenue, Wrangell. A site walk through will be provided after the office meeting. If attending the site walk through, attendees are encouraged to be prepared to walk along a steep mountain slope and a boggy muskeg. The purpose of the conference is to acquaint Bidders with the project and the work site terrain,

SECTION 00030 - NOTICE INVITING BIDS

and to answer bidder questions on the contract documents. Attendance by videoconference and telephone will be available by the following link and phone number:

<https://us02web.zoom.us/j/83898857334?pwd=elZHcDdtb1d5aDlXYkJKbG4zUTd3UT09>

Meeting ID: 838 9885 7334

Passcode: 910409

Or dial by telephone: (253) 215-8782

Meeting ID: 838 9885 7334

Passcode: 910409

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 August 22, 2023, at which time they shall be opened and read aloud. Opening date and time may be changed to a later date or time via Addendum. Clearly mark on the outside of the envelope "**Sealed Bid for Non-Motorized Transportation System**".

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

- Subcontractor Report, Section 00360
- Alaska Contractor's License
- Alaska Business License

BID TO REMAIN OPEN. The Bidder shall guarantee the Bid for a period of sixty (60) calendar days from the date of Bid opening. Any component of the Bid including additive alternates may be awarded anytime during the sixty 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: City and Borough of Wrangell

Authorized By: Jeff Good, Borough Manager

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 Project Manager. Interpretations or clarifications considered necessary by the Project Manager in response to such questions will be issued by Addendum, mailed, faxed, or delivered to all parties recorded by the Project Manager, or OWNER, as having received the Contract Documents. Questions received less than (7) seven 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, email or posting on the Borough website. Addenda may be issued less than seven days prior to the anticipated Bid opening. The OWNER will make all reasonable attempts to ensure that all plan holders receive 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.

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 five Days of OWNER’s Notice of Intent to Award.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- b. The City and Borough of Wrangell administers the registration and assessment of sales, business personal property and business real property taxes.
- 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 does not conform to Articles 15.0 and 16.0 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, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained therein or the completeness thereof 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, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained in such drawings or the completeness thereof 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 does 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

SECTION 00100 - INSTRUCTIONS TO BIDDERS

shall fill all holes and shall clean up and restore the site to its former condition upon completion of such explorations.

- 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 legible and complete copies thereof, and shall contain the following: Sections 00300, 00310, 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 must be completed in ink or typed.
- C. Bids by corporations must 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 must 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 shall 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.

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- H. All Bidders must 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. On Projects not including Federal funding, 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 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).
- 10.0 SUBSTITUTE OR "OR-EQUAL" ITEMS.** The procedure for the submittal of substitute or "or-equal" products is specified in Section 01300 - CONTRACTOR SUBMITTALS.
- 11.0 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.
- 12.0 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.
- 13.0 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.
- 14.0 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,

SECTION 00100 - INSTRUCTIONS TO BIDDERS

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 said correction.

15.0 BID MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS.

- A. Any bidder may modify a bid in person, by mail, email (clerk@wrangell.com) or fax (**Fax: 907-874-3952**) at any time prior to the scheduled closing time for receipt of Bids, provided that such modification is received by the City and Borough of Wrangell prior to the time set for opening of Bids. Bidders are strongly advised to telephone the City and Borough of Wrangell (**Telephone: 907-874-2381**), prior to the time set for opening Bids, to confirm the successful and timely transmission of their electronic bid modification.

A bid 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 City and Borough of Wrangell until the sealed bid is opened. Modifications shall include both the modification of the unit bid price or lump sum amount and the total modification of each item modified. The City and Borough of Wrangell shall not be responsible for its failure to receive fax modifications whether such failure is caused by transmission line problems, electronically delivered device problems, operator error or otherwise.

The Bid modifications shall be provided on the **Bid Modification Form** located at the end of this Section. Multiple copies of this form may be used to accommodate the number of bid items modified. Submittal of any other form by the bidder may deem the modification unacceptable by the OWNER.

- B. Unauthorized conditions, limitations, or provisos 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.

16.0 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.

17.0 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 bid items in an individual Bid Schedule.
- B. In the event the WORK is contained in more than one Bid Schedule, the OWNER may award schedules individually or in combination. In the case of two Bid Schedules which are alternative to each other, only one of such alternative schedules will be awarded.

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- C. 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 any alternates, in any combination of alternates as 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.
- D. A Local Bidder Preference shall apply to all City and Borough of Wrangell procurements, except when restricted by state or federal regulations. To be considered a qualifying bidder, bidders shall meet the requirements of the Local Bidder Preference ordinance, according to WMC 5.10.040 (D). The Owner may request documentation to support entries made on this form.

The Wrangell Municipal Code (WMC) Article 5.10.040, Section D. LOCAL BIDDER PREFERENCE AWARD reads:

1. Unless contrary to federal or state law or regulation, or as otherwise provided in section (D)(2) of this section, a contract for, or purchase of, supplies, materials, equipment, contractual services, or public improvements shall be awarded to a local bidder where the bid by such local bidder is in all material respects comparable to the lowest responsible nonlocal bid, and if the amount bid by such local bidder does not exceed the lowest responsible nonlocal bid by more than:
 - a. Five percent of the amount bid by the lowest responsible nonlocal bidder if that nonlocal bidder's bid is \$1,000,000 or less;
 - b. Three percent of the amount bid by the lowest responsible nonlocal bidder if that nonlocal bidder's bid is \$1,000,001 or more.
2. This preference shall not be interpreted to mean that the borough is precluded from making the purchase from whatever source is most advantageous to the borough after considering all factors in the public interest even when the price quoted by the local bidder satisfies subsection (D)(1)(a) or (b) of this section.
3. "Local bidder" for purposes of the section shall mean a bidder who:
 - a. Holds a current Alaska business license;
 - b. Submits a bid for goods or services under the name appearing on the person's current Alaska business license;
 - c. Has maintained a place of business within the boundaries of the borough for a period of six months immediately preceding the date of the bid;
 - d. Is not delinquent in the payment of any utilities, taxes, charges or assessments owing to the borough on account of that business;
 - e. Is incorporated or qualified to do business under the laws of Alaska with its principal place of business in the borough, is a proprietorship and the proprietor is a resident of the borough, or is a partnership and all partners are residents of the City and Borough of Wrangell;

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- f. If a joint venture, all joint venture partners must qualify under subsection (D)(3)(a) through (e) of this section;
- g. The manager may require such documentation or verification by the person claiming to be a local bidder as is deemed necessary to establish the requirements of this section.

18.0 EXECUTION OF AGREEMENT.

- A. All Bids less than or equal to \$25,000 do not require Wrangell Borough Assembly approval. The Bidder to whom award is made for a Bid that is more than \$25,000 shall execute a written agreement with the OWNER on the Agreement form, Section 00500, and shall secure all insurance and any other documents required by the contract within 10 calendar Days from the date stated in the Notice of Intent to Award letter.
- B. All Bids greater than \$25,000 must be approved by the Wrangell Borough Assembly. After the Wrangell Borough Assembly has approved the award, the OWNER will issue a Notice of Intent to Award to the approved Bidder. 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 calendar Days from the date stated in the Notice of Intent to Award letter.
- C. 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.

19.0 LIQUIDATED DAMAGES. Provisions for liquidated damages if any are set forth in Section 00500 - Agreement.

20.0 PERMITS. The CONTRACTOR is responsible for all WORK associated with meeting any local, state, and/or federal permit requirements.

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CITY AND BOROUGH OF WRANGELL
 BOROUGH CLERK'S OFFICE
 FAX NO. 907-874-3952

BID MODIFICATION FORM

Modification Number: _____

Note: All modifications shall be made to the original bid amount(s). If more than one Modification form is submitted by any one bidder, changes from all Modification forms submitted will be combined and applied to the original bid. Changes to the modified Bid amounts will be calculated by the OWNER.

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT PRICE CHANGE – Leave Blank For Lump Sum Pay Items (indicate +/-)	TOTAL INCREASE OR DECREASE (indicate +/-)
Total Increase or Decrease			\$

Name of Bidding Firm

Responsible Party Signature

Printed Name (must be an authorized signatory for Bidding Firm)

END OF SECTION

SECTION 00300 - BID

BID TO: THE CITY AND BOROUGH OF WRANGELL

By Company Name: _____

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

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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 Addenda above. Failure to acknowledge receipt of all Addenda

SECTION 00300 - BID

will cause the Bid to be non-responsive and shall cause its rejection.

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

Dated: _____	Bidder: _____ (Company Name)
	By: _____ (Signature in Ink)
Alaska Business License No.: _____	Printed Name: _____
Contractor's License No.: _____	Title: _____
Telephone No.: _____	Address: _____ (Street or P.O. Box)
Fax No.: _____	_____ (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 within (5) calendar days of posting the apparent low bidder, the apparent low Bidder is required to complete and submit the following documents:

- Subcontractor Report, Section 00360
- Verification from Wrangell Finance Department that Subcontractors are current with City and Borough of Wrangell Sales and Property Taxes

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 calendar Days after the date stated in the “Notice of Intent to Award” letter, the following executed documents:

- Agreement Forms, Section 00500
- Performance Bond, Section 00610
- Payment Bond, Section 00620
- Certificates of Insurance, (CONTRACTOR and Subcontractors) Section 00700 and Section 00800
- Alaska Department of Labor and Wrangell Public Works, Subcontractor List per Section 00830.

END OF SECTION

SECTION 00310 - BID SCHEDULE

Bidders Please Note: Before preparing this Bid Schedule, carefully read the Invitation for Bids, Instructions to Bidders, and the Technical Specifications.

The Bidder shall insert a unit price opposite each pay item in the Bid Schedule and multiply the unit price by the estimated quantities for this contract. No price is to be tendered for any item not appearing in the Bid Schedule.

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.

A Local Bidder Preference of five percent (5%) _____ will, will not be utilized on this project.

BASE BID

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
907.02	Mobilization	LS	All Req'd				
912.10	Clearing and Grubbing	LS	All Req'd				
913.10	Trailway TSS-1 (3' Wide Aggregate Trail)	LF	125				
913.11	Trailway TSR-1 (6' Wide Aggregate Trail with Retainers and Geocell)	LF	1,283				
913.12	Trailway TSR-2 (3' Wide Aggregate Trail with Retainers and Geocell)	LF	1,350				
908.00	Construction Survey, Staking, Flagging and Cleanup	LS	All Req'd				
911.20	Borrow (Parking Area)	CY	1,150				
913.10	Base Course Surfacing (Parking Area)	CY	150				
918.40	Geosynthetic Foundation (Parking Area)	SY	1,600				
921.10	Standard Culvert (12")	LF	78				
921.10	Standard Culvert (24")	LF	70				
921.40	Treated Timber Box Culvert	EA	4				
936.40	Stairway	LS	All Req'd				
938.20	Elevated Boardwalk	LS	All Req'd				
938.30	Step and Run	LF	1,036				

SECTION 00310 - BID SCHEDULE

BASE BID

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
940.00	Shoulder Barrier Rock	EA	2				
950.00	Signage	LS	All Req'd				
962.10	Sawn Timber Stringer Trail Bridge	LS	All Req'd				
979.10	Log Crossing	EA	2				

TOTAL BASE BID AMOUNT IN FIGURES: \$ _____

TOTAL BASE BID AMOUNT IN WORDS:

COMPANY NAME: _____

ADDITIVE ALTERNATE 1

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
979.11	Install Owner Supplied Trash Can, Dog Bag Dispenser and Bench	LS	All Req'd				
979.12	Concrete Pads	LS	All Req'd				

TOTAL ADDITIVE ALTERNATE 1 BID AMOUNT IN FIGURES: \$ _____

TOTAL ADDITIVE ALTERNATE 1 BID AMOUNT IN WORDS:

COMPANY NAME: _____

ADDITIVE ALTERNATE 2

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
933.4	Barrier Rail on Post	LF	182				

TOTAL ADDITIVE ALTERNATE 2 BID AMOUNT IN FIGURES: \$ _____

TOTAL ADDITIVE ALTERNATE 2 BID 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 AND 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

NON-MOTORIZED TRANSPORTATION SYSTEM

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)

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 and all Subcontractor Sales Tax Forms by close of business on the fifth calendar day following the posting notice of Bids. 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 <u>License No.</u>	¹ <u>Contact Name</u>	<u>Type of</u>	<u>Contract</u>	√ i f D B E
<u>ADDRESS</u>	² AK Business <u>License No.</u>	² <u>Phone No.</u>	<u>Work</u>	<u>Amount</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.

SECTION 00360 - SUBCONTRACTOR REPORT

CONTRACTOR, Authorized Signature

CONTRACTOR, Printed Name

- 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 Project 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 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 and 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:

NON-MOTORIZED TRANSPORTATION SYSTEM

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

NON-MOTORIZED TRANSPORTATION SYSTEM

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.

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 and 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:

NON-MOTORIZED TRANSPORTATION SYSTEM

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

NON-MOTORIZED TRANSPORTATION SYSTEM

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.

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SECTION 00700 - GENERAL CONDITIONS

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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 provided therein.

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.

City and Borough of Wrangell 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.

SECTION 00700 - GENERAL CONDITIONS

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 City and Borough of Wrangell to perform the duties of project inspection and management. The City and Borough of 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 - The City and Borough of Wrangell 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.

SECTION 00700 - GENERAL CONDITIONS

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 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.

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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.
- 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 said commencement date.
 - 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

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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, 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. Notice Inviting Bids
 - 9. Instructions to Bidders
 - 10. General Conditions
 - 11. Technical Specifications
 - 12. 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).

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- 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.

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 are not to be relied on by the CONTRACTOR. 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 are not to be relied on by the CONTRACTOR. The CONTRACTOR is also responsible for any interpretation, interpolation, or extrapolation that it makes of any information shown in such drawings.

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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, 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.
 3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the contract.
- 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 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

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General Conditions and Section 01530 - Protection and Restoration of Existing Facilities of the General Requirements.

4.5 REFERENCE POINTS

- 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 City and Borough of Wrangell 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 Engineer may, on behalf of the OWNER, notify the surety of any potential default or liability.

5.2 INSURANCE

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- 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 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-Minus" general policy holder's rating and a Class IV financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.
- C. The CONTRACTOR shall furnish the OWNER with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be cancelled, reduced in coverage, or renewal refused until at least 30 days' prior written notice has been given to the OWNER by certified mail. All such insurance required herein (except for Workers' Compensation and Employer's Liability) shall name the OWNER, its Consultants and subconsultants and their officers, directors, agents, and employees as "additional insureds" under the policies. The CONTRACTOR shall purchase and maintain the following insurance:
1. Workers' Compensation and Employer's Liability. This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Workers' Compensation law. This policy shall include an "all states" endorsement. The CONTRACTOR shall require each Subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in such WORK unless such employees are covered by the protection afforded by the CONTRACTOR's Workers' Compensation Insurance. In case any class of employees is not protected, under the Workers' Compensation Statute, the CONTRACTOR shall provide and shall cause each Subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected.
 2. Commercial General Liability. This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees or damage to property of the OWNER or others arising out of any act or omission of the CONTRACTOR or its agents, employees, or Subcontractors. The policy shall contain no exclusions for any operations within the scope of this contract.

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3. Comprehensive Automobile Liability. This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the site of all motor vehicles licensed for highway use, whether they are owned, non-owned, or hired. Coverage for hired motor vehicles should include endorsement covering liability assumed under this Agreement.
4. Subcontractor's Commercial General Liability Insurance and Commercial Automobile Liability Insurance. The CONTRACTOR shall either require each of its Subcontractors to procure and to maintain Subcontractor's Commercial General Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Supplementary General Conditions or insure the activities of its Subcontractors in the CONTRACTOR's own policy, in like amount.
5. Builder's Risk. This insurance shall be of the "all risks" type, shall be written in completed value form, and shall protect the CONTRACTOR, the OWNER, and the ENGINEER, against risks of damage to buildings, structures, and materials and equipment. The amount of such insurance shall be not less than the insurable value of the WORK at completion. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR and the OWNER, as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the OWNER, and the ENGINEER. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external cause including flood and earthquake. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

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.

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- 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 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, there shall be no restriction on the hours during which work may occur.
- 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.
- 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.

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- 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 properly 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.
- 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 prime contract.
- 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,

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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 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, 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. The City and Borough of Wrangell Inspection number is 874-3904. 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

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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 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 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.

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- 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.
- 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

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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 Laws and Regulations, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, their Consultants, Sub-consultants and the officers, directors, employees, and agents of each and any of them, against and from all claims and liability arising under, by reason of or incidentally to the contract or any performance of the WORK, but not from the sole negligence or 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 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 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 assumed herein by the CONTRACTOR.
- 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, and other professionals and court costs including all costs of appeals) incurred by said 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

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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, shall document any change of conditions encountered on-site, and status of the WORK within each major component of the WORK. These components will be decided by the ENGINEER.

- 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 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 Wrangell Water Utilities Division, 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 Wrangell Water Utilities Division.
- 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 and Borough of Wrangell water system. The request must be submitted at least 24-hours prior to operating any valves. The Wrangell Water Utilities Division reserves the right to approve or deny the request. 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 City or any other party, caused by unauthorized operation of any valve of the City and Borough of Wrangell water system.
- 6.19 CONTRACTOR'S WORK SCHEDULE LIMITATIONS. It is unlawful to operate any sand blaster, pile driver, power shovel, pneumatic hammer, derrick, power hoist, or similar heavy construction equipment before 7:00 am or after 10:00 pm, Monday through Friday, or before 9:00 am or after 8:00 pm, Saturday and Sunday, in excess of 60 decibels at the project limits, unless a permit shall first be obtained from the Wrangell Building Official. Such permit shall be issued by the Official 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 and businesses.

ARTICLE 7 OTHER WORK

7.1 RELATED WORK AT SITE

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- 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 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.

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- 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 deal with the OWNER's right to terminate services of the CONTRACTOR.

ARTICLE 9 ENGINEER'S STATUS DURING CONSTRUCTION

- 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

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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 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.

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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.

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,

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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.

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.
- 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

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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 CONTRACTOR's failure to perform the WORK in accordance with the Contract Documents.
- 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.

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:

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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 for according to the unit 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, said 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. 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 supporting 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 said 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

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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.
 2. By mutual acceptance of a lump sum, which may 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).

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 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

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- 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.
- 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.
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

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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. 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.
 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.

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- 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 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.

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- 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.

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.
- 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 by OWNER, 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

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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 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).

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- 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 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,

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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.

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.

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- 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 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 a maximum of 85% 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

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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.

- 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, 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

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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

- 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

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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.

- 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. 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.

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- 15.3 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE). The OWNER may terminate the Agreement at any time if it is found that reasons beyond the control of either the OWNER or CONTRACTOR make it impossible or against the OWNER's interests to complete the WORK. In such a case, the CONTRACTOR shall have no claims against the OWNER except: (1) for the value of work performed up to the date the Agreement is terminated; 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 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 said 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 said 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.
- 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.

SECTION 00700 - GENERAL CONDITIONS

- 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 any waste material produced as a by-product, the City and Borough of Wrangell 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 City and Borough of Wrangell from arranging with the CONTRACTOR to produce material over and above the contract needs, payment for which shall be by written agreement between the City and Borough of Wrangell 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.

SECTION 00700 - GENERAL CONDITIONS

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

- A. Should a suit of law be entered into, either by the CONTRACTOR (or the CONTRACTOR's surety) against the OWNER, or by the OWNER against the CONTRACTOR (or the CONTRACTOR's surety), the suit of law shall be tried in the First Judicial District of Alaska.
- 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

SECTION 00700 - GENERAL CONDITIONS

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 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.

SECTION 00700 - GENERAL CONDITIONS

- 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.
- 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.

SECTION 00700 - GENERAL CONDITIONS

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 3.5 *Add* the following:

The WORK shall be constructed in accordance with the “Standard Specifications for Construction of Trails and Trail Bridges on Forest Service Projects” dated 10/30/2014 and included herein and considered part to be Technical Specifications.

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

The OWNER shall furnish to the CONTRACTOR up to 5 copies of the Contract Documents which may include bound reduced Drawings. (Note: Full size drawings (22”x34”) are not available for this project.) Additional quantities of the Contract Documents will be furnished at reproduction cost.

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

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. Field measurements and visual inspection of the existing 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
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.

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

- 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
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- 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 (thirty) days written notice prior to any cancellation or non-renewal of insurance policies required under Contract except in the event of no-payment of premium where 10 (ten) days is permissible.

- F. The City and Borough of Wrangell shall be named as an "Additional Insured" under all liability coverages listed in this Section, except for workers' compensation insurance.

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

- C. 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 at the end of this section.

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

- A. All CONTRACTORS and Subcontractors shall conform to State of Alaska's Title 36 Public Contract Requirements as published in the Wage and Hour Administration Pamphlet 400 latest edition.

- B. Special attention should be given to the ALASKA EMPLOYMENT PREFERENCE, under Alaska Statutes, Title 36, Chapter 10. Employment Preference as well as Alaska Administrative Code, Title 8. Article 3. Employment Preference, both of which requires that Alaska residents who are eligible be given a minimum of 90 percent employment preference on public works contracts throughout the state in certain job classifications.

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

C. 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.

Employment Security Tax Clearance

Date: _____

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

From: _____

Subject NON-MOTORIZED TRANSPORTATION SYSTEM

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 Good, Borough Manager
City and 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 00810- REQUIRED CONTRACT
PROVISIONS FEDERAL-AID
CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding (29 CFR 5.5)

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics,

including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records (29 CFR 5.5)

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or

subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State

Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the

corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor

set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility (29 CFR 5.5)

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

3. Withholding for unpaid wages and liquidated damages.

The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or

equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on longstanding interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance

with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders

or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant

who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is

submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier

subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.
2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

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

State of Alaska, AS 36.05, 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. Correspondence regarding Title 36 requirements may be submitted electronically or paper copies can be submitted by mail. To submit Title 36 electronically, go to <https://myalaska.state.ak.us/home/app>. If filing electronically, submit certified payrolls to ASDOL at the website above and email a copy of all certified payrolls to Amber Al-Haddad at aal-haddad@wrangell.com. If Contractor elects to submit paper copies, they should be submitted to the physical addresses below.

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
Telephone: 907.465.4839/4842

and

Amber Al-Haddad, Project Manager

Capital Facilities Director
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
Telephone: 907.874.3904
Email: aal-haddad@wrangell.com

- 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:

Amber Al-Haddad, Project Manager

Capital Facilities Director
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
Telephone: 907.874.3904
Email: aal-haddad@wrangell.com

and

Wage and Hour Section

Labor Law Compliance Division
Alaska Department of Labor
P.O. Box 020630
Juneau, AK 99802-0630
Telephone: 907.465.4839/4842

- C. Per AS 36.05 the Contractor shall file a Notice of Work and a Notice of Completion. AS 36.05 can be found at the following link: <http://labor.alaska.gov/lss/forms/Pam400.pdf>

- D. 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.

Notice of Completion of Public Works from the Department of Labor (Section 01700 – Project Closeout)

A tax clearance from the Department of Labor is required (Section 01700 - Project Closeout)

END OF SECTION

**SECTION 00840 - FEDERAL LABOR STANDARDS, REPORTING, AND
PREVAILING WAGE RATE DETERMINATION
Reporting During Contract**

- A. **Within 15 Days after Notice of Intent to Award**, the CONTRACTOR must compile and submit a list of all Subcontractors and material suppliers, showing all tiers. For each company listed include name, address, phone, employer tax number; DBE status if any; estimated subcontract amount; estimated start and finish dates; and copies of bid tabulations with firm name and number. Send the list to *Addresses B and C*.
- B. **Within 30 Days of final award**, the CONTRACTOR and each Subcontractor, who are required to file EEO-1 reports (Standard Form 100 [SF-100]), must send it to the Office of Federal Contract Compliance Programs (OFCCP) Area Office - Address C.
- C. **Certified Payrolls must be submitted every two weeks.** Before the second Friday, the CONTRACTOR and each Subcontractor must file:
 - 1. 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 the original to *Address B* and a complete copy to *Address A*.
 - 2. Weekly Employment Opportunity (EEO) Reports for the previous week to *Address A*. If the information requested (race and gender) is indicated on the copy of the payroll, then this Weekly EEO Report is hereby waived.
- D. By the 5th of each month, each CONTRACTOR and Subcontractor must complete the Monthly Employment Utilization Report (CC257) for the previous month for its aggregate workforce in Alaska (for federal and non-federal projects). Make a list of all projects (federal and non-federal) in Alaska over \$10,000. Include the firm name, name and location of project, project #, % complete, contract amount, and established date of completion. Send both the CC257 and the list of projects to *Addresses A and C*.
- E. Preparing the final payment request, the CONTRACTOR must verify that the subcontractor list is up-to-date and includes all parties submitting certified payrolls (i.e., equipment rental with operator companies, trucking services providing imported materials, surveying firms, etc.). Send a copy of amended lists to *Addresses A and B*. Submit completed Compliance Certification and Release (provided at the pre-construction conference) for the Prime Contractor and each Subcontractor to *Address A*.

<i>Address A</i>	<i>Address B</i>	<i>Address C</i>
Amber Al-Haddad, Project Manager City & Borough of Wrangell P.O. Box 531 Wrangell, AK 99929 (907) 874-3904	Wage and Hour Section Labor Standards & Alaska Dept. of Labor P.O. Box 020630 Juneau, AK 99802-0630 (907)465-4839/4842	OFCCP Area Office 605 W. 4th Ave., Room G68 Anchorage, AK 99501 (907)271-2864

END OF SECTION

SECTION 00852 – PERMITS

PART 1 – GENERAL

INDEX OF PERMITS

1. United States Army Corps of Engineers, POA-2021-00515 and POA-2021-00515-M1.
2. State of Alaska, Department of Environmental Conservation, Division of Water, Section 401 Water Quality Certification.
3. State of Alaska, Department of Transportation and Public Facilities, Driveway and Approach Road Permit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION



DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

May 3, 2023

Regulatory Division
POA-2021-00515-M1

Amber Al-Haddad
City and Borough of Wrangell
P.O. Box 531
Wrangell, Alaska 99929

Dear Ms. Al-Haddad:

Enclosed is the signed Department of the Army (DA) permit modification, file number POA-2021-00515-M1, Zimovia Straight. 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.

Please contact me via email at Andrew.W.Gregory@usace.army.mil, by mail at the address above, by phone at (907) 753-2791, or toll free from within Alaska at (800) 478-2712, if you have questions. For more information about the Regulatory program, please visit our website at www.poa.usace.army.mil/Missions/Regulatory.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Gregory".

Andrew Gregory
Project Manager

Enclosures



DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

May 3, 2023

Regulatory Division
POA-2021-00515

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number POA-2021-00515, Zimovia Straight, was issued to City and Borough of Wrangell on January 13, 2023, to construct a new parking lot and a new recreational trail connecting to the existing Mount Dewey trail. Specifically, the work will include discharge of approximately 1,770 cubic yards of fill material into 0.55-acre of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot, 26-foot-long by 54-foot-wide driveway, and a 0.48-mile-long recreational trail (2,527-foot-long by 3 to 6-foot-wide).

This is the first modification of the original permit. The permit is hereby modified as follows: Construct a 91-foot-long by 38-foot-wide driveway and a 72-foot-long by 58-foot-wide parking lot, and a 0.48-mile-long recreational trail (2,527-foot-long by 3 to 6-foot-wide). Total area of discharge of fill into 0.63-acre of palustrine wetland.

The work will be performed in accordance with the enclosed plans, sheets 1-1, dated February 23, 2023, 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; Latitude 56.480125° N, Longitude 132.378353° W; in Wrangell, Alaska.

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:

A handwritten signature in black ink, appearing to read "A. Gregory".

Andrew Gregory
Project Manager



This notice of authorization must be conspicuously displayed at the site of work.

**United States Army Corps of Engineers
Zimovia Straight**

A permit to: Construct a 91-foot-long by 38-foot-wide driveway and a 72-foot-long by 58-foot-wide parking lot, and a 0.48-mile-long recreational trail (2,527-foot-long by 3 to 6-foot-wide). Total area of discharge of fill into 0.63-acre of palustrine wetland

at: Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125°N, Longitude 132.378353° W; in Wrangell, Alaska

has been issued to: City and Borough of Wrangell

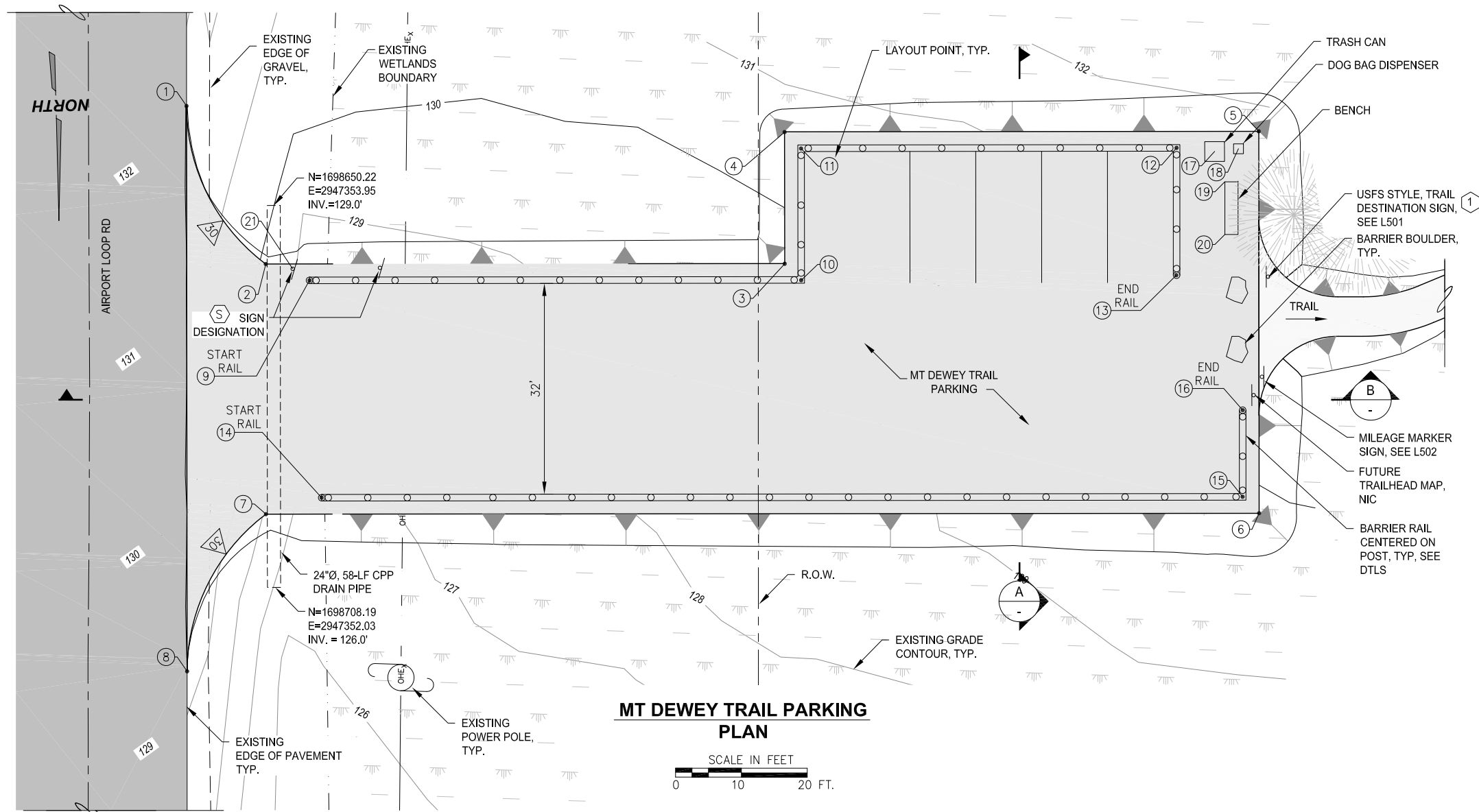
on: May 3, 2023 **and expires on:** October 31, 2027

Address of Permittee: P.O. Box 531, Wrangell, Alaska 99929

Permit Number:

POA-2021-00515-M1

**FOR: District Commander
Andrew Gregory
Project Manager
REGULATORY DIVISION**



LAYOUT TABLE ABBREVIATIONS:

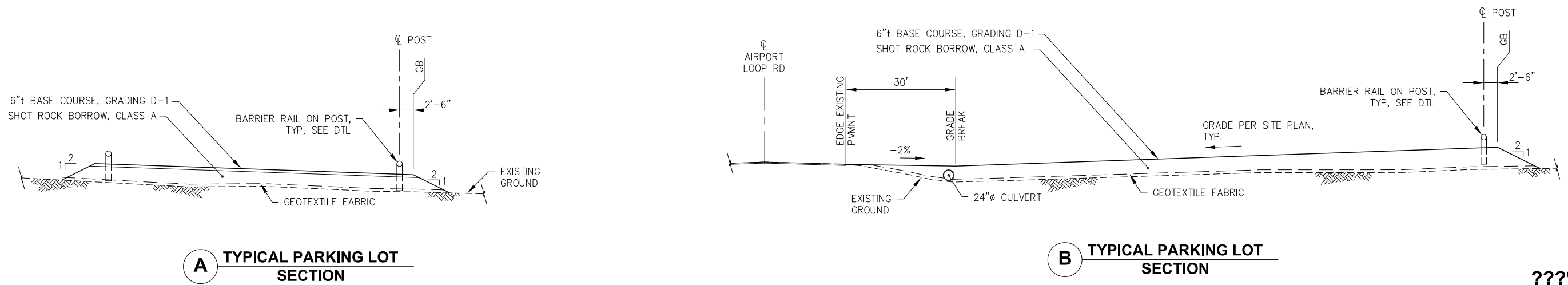
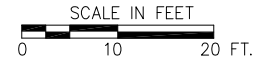
- BR BARRIER RAIL
- CL CENTER LINE
- COR CORNER
- DBD DOG BAG DISPENSER
- EBC EDGE BASE COURSE
- EP EDGE OF PAVEMENT
- ME MATCH EXISTING
- PC POINT OF CURVATURE
- PT POINT OF TANGENCY
- TC TRASH CAN

STOP SIGN SCHEDULE				
SIGN NO.	MUTCD CODE NO.	DESCRIPTION	SIGN SIZE (INCH)	POST SIZE (INCH)
(S)	R1-1	STOP SIGN	30 x 30	2.0 x 2.0 PERFORATED TUBE

NOTES:

1. MUTCD CODE NO. FROM U.S. DOT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2009.
2. SIGNS AND SIGN POSTS SHALL BE PROVIDED & INSTALLED IAW CBJ STANDARD 127A.
3. COORDINATE FINAL SIGN AND BARRIER BOULDER LOCATIONS IN FIELD WITH ENGINEER AND/ OR OWNER.

MT DEWEY TRAIL PARKING PLAN



A TYPICAL PARKING LOT SECTION

B TYPICAL PARKING LOT SECTION

??% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

PND
ENGINEERS, INC.

9360 Glacier Highway, Ste. 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: BMI CHECKED: CRS SCALE: AS SHOWN

DRAWN: PJD APPROVED: _____

DATE: 2/22/23

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

SHEET TITLE:
MT DEWEY TRAIL PARKING PLAN AND SECTIONS

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250

6

DEPARTMENT OF THE ARMY PERMIT

Permittee: City and Borough of Wrangell

Permit No.: POA-2021-00515, Zimovia Strait

Issuing Office: U.S. Army Engineer District, Alaska

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Construct a parking lot and new recreational trail connecting to the existing Mount Dewey trail. Specifically, the work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acre of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot, 26-foot-long by 54-foot-wide driveway, and a 0.48-mile-long recreational trail (2,527-foot-long by 3 to 6-foot-wide).

All work will be performed in accordance with the attached plan, sheets 1-7, dated September 2021.

Project Location:

The project site is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125° N., Longitude 132.378353° W.; in Wrangell, Alaska.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on October 31, 2027.

If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete blocks with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.
2. No stockpiling of fill materials shall occur in wetlands or other waters of the U.S. that do not have Department of the Army authorization as shown as detailed on attached project plans (Sheets 1 through 7).
3. Natural drainage patterns shall be maintained using appropriate ditching, culverts, storm drain systems, and other measures to ensure hydrology is not altered.
4. Prior to commencing the work authorized by this permit, the Permittee shall purchase 4.29 palustrine credits from Natzuhini Bay Mitigation Bank for the loss of 0.55 acre of palustrine wetlands. You must email the signed credit transaction form to mitigationmanager@usace.army.mil and to Andrew Gregory at andrew.w.gregory@usace.army.mil upon completion of credit transaction (see form attached). If you are unable to complete this transaction, you are required to obtain a permit modification prior to commencing the work authorized by this permit for approval of an alternate mitigation method.
5. Within 60 days of completion of the work authorized by this permit, the Permittee shall complete the attached "Self-Certification Statement of Compliance" form (attached) and submit it to the Corps (U.S. Army Corps of Engineers, Regulatory Division, P.O. Box 6898 JBER, Alaska 99506-0898 or via e-mail at regpagemaster@usace.army.mil). In the event that the completed work deviates in any manner from the authorized work, the Permittee shall describe the deviations between the work authorized by this permit and the work as constructed on the "Self-Certification Statement of Compliance" form. The description of any deviations on the "Self-Certification Statement of Compliance" form does not constitute approval of any deviations by the Corps.
6. The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.
7. Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit may be required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.
8. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers, Alaska District, Regulatory Office at (907) 753-2712 or Andrew Gregory at (907) 753-2791 (e-mail: andrew.w.gregory@usace.army.mil). Upon notification the Corps shall notify the appropriate Tribal Historic Preservation Office and State Historic Preservation Office (SHPO). Based on the circumstances of the discovery, equity to all parties, and consideration of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. After such notification, project activities on federal lands shall not resume without written authorization from the Corps. After such notification, project activities on tribal lands shall not resume without written authorization from the SHPO and the Corps.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

() Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

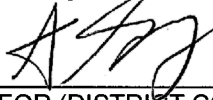
6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Amber Al-Haddad.
Amber Al-Haddad, City and Borough of Wrangell

10-20-2022
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


FOR (DISTRICT COMMANDER)
Colonel Damon A. Delarosa
Andrew Gregory
South Branch, Regulatory Division

1/13/2022
(DATE)

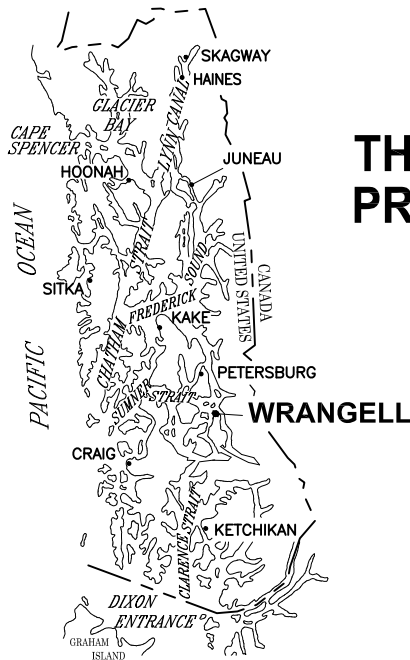
When the structures or work authorized by this permit are still in existence at the time the property is transferred the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions have the transferee sign and date below.

(TRANSFEEE)

(DATE)



LOCATION MAP



SOUTHEAST ALASKA

THIS PROJECT



VICINITY MAP



TOPOGRAPHY MAP FROM:
USGS ALASKA TOPOGRAPHIC SERIES;
PETERSBURG

PURPOSE:

TO IMPROVE PUBLIC SAFETY AND ACCESS BY INSTALLATION OF A PARKING AREA AND TRAIL SYSTEM.

DATUM:

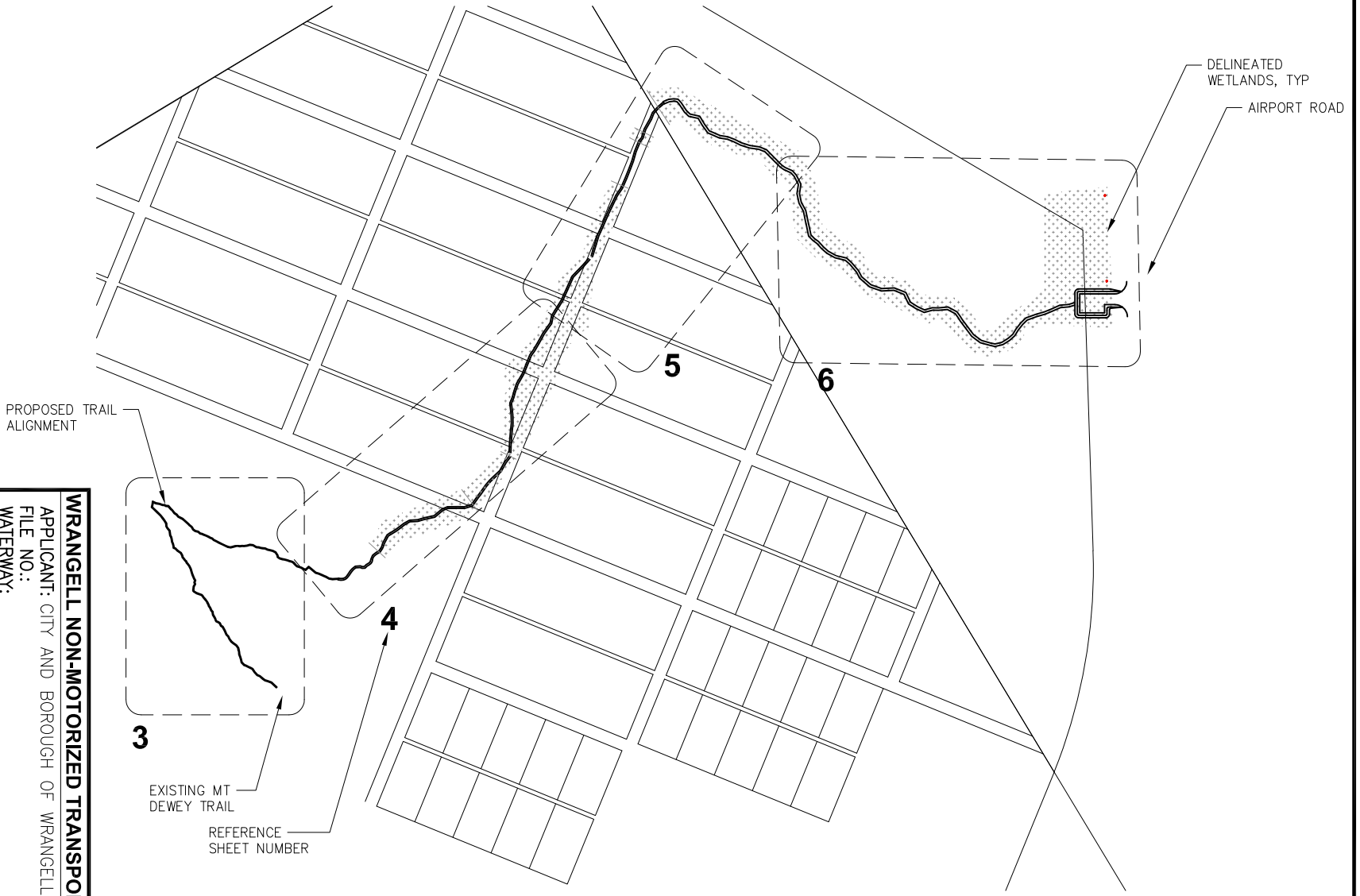
MLLW = 0.0' MHW = 14.8' HTL = 19.7'

VICINITY MAP

PND PROJECT NO. 212038.01

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
FILE NO.:
WATERWAY:
PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
LAT.: 56.480125°N LONG.: 132.378353°W
DATE: SEPTEMBER 2021, revised DEC. 20, 2021



PROPOSED TRAIL ALIGNMENT

DELINEATED WETLANDS, TYP
AIRPORT ROAD

5

6

4

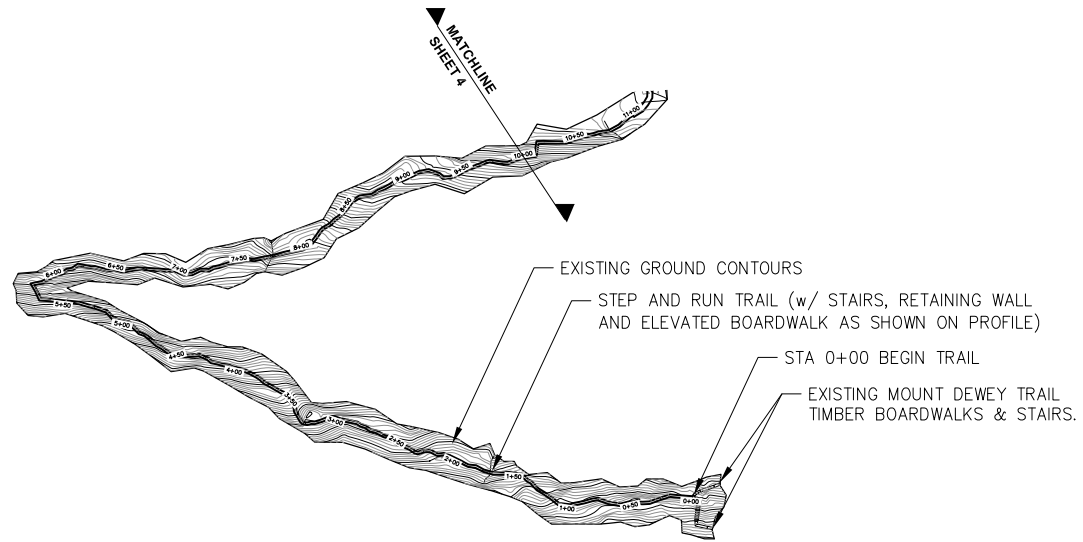
3

EXISTING MT DEWEY TRAIL
REFERENCE SHEET NUMBER

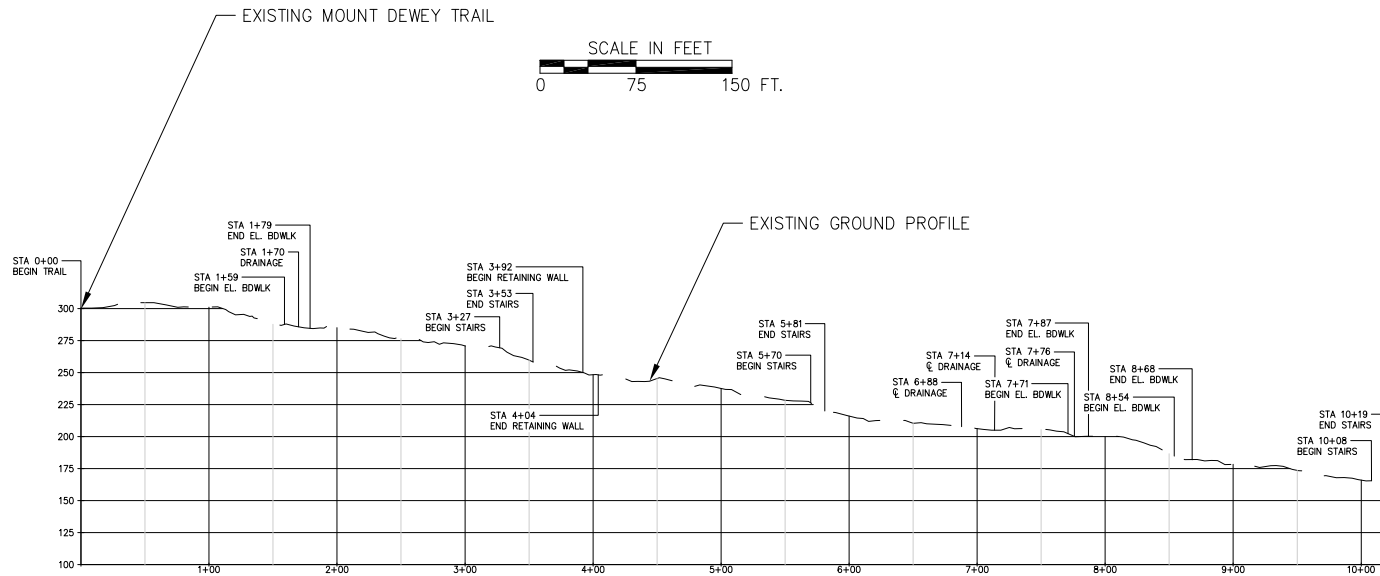
OVERALL TRAIL SITE PLAN

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC.: 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021



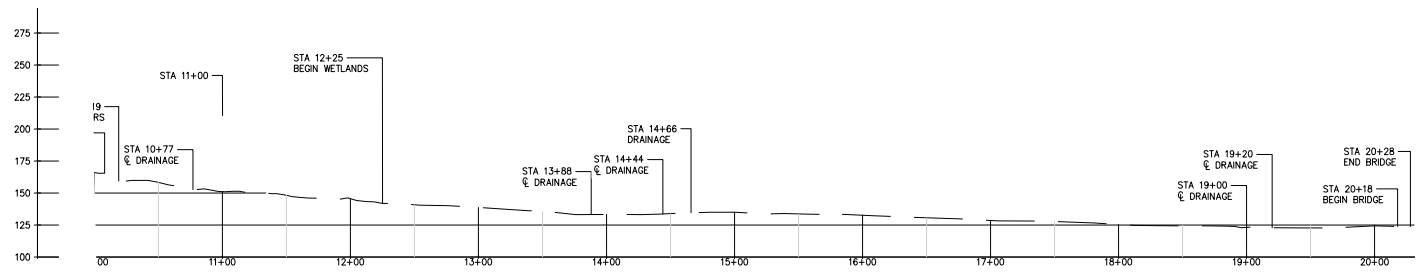
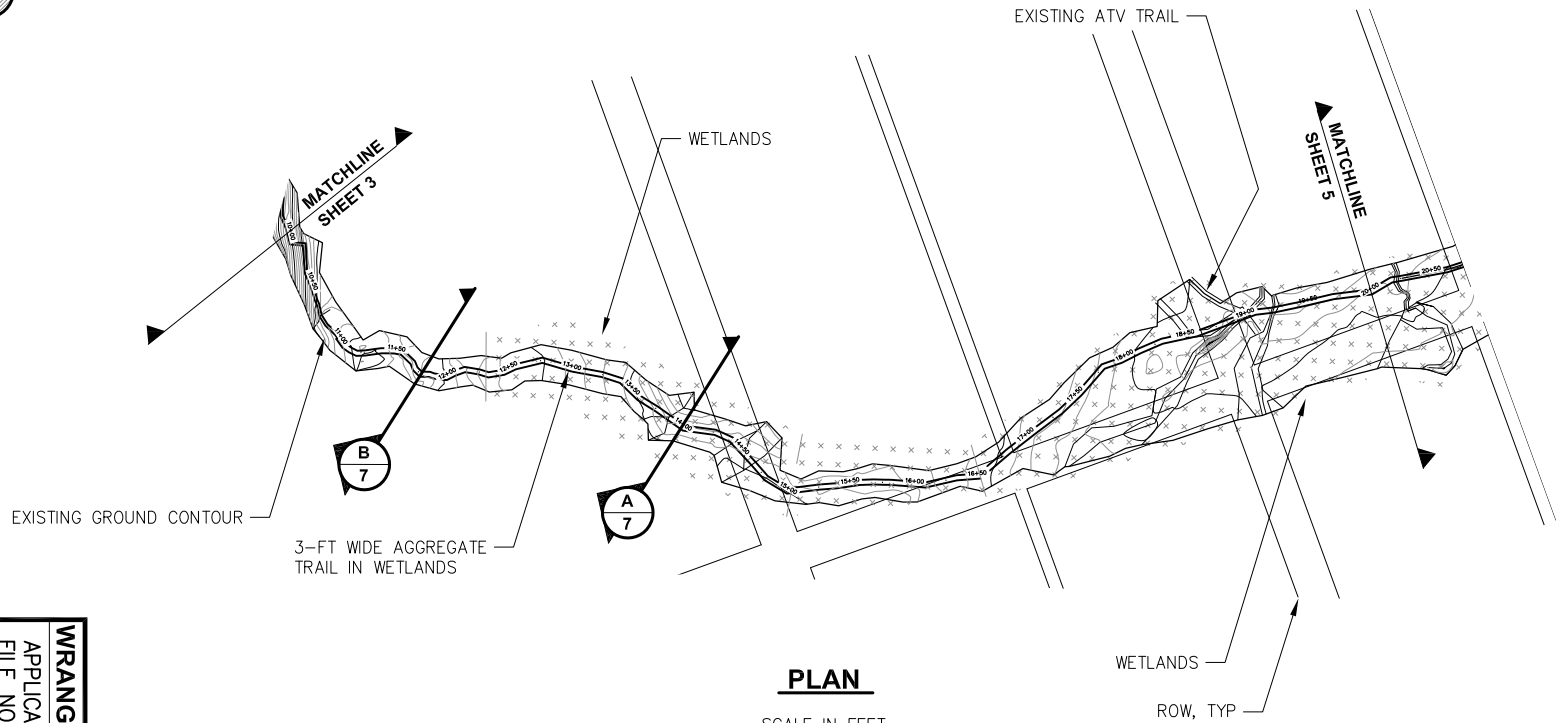
PLAN



PROFILE

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

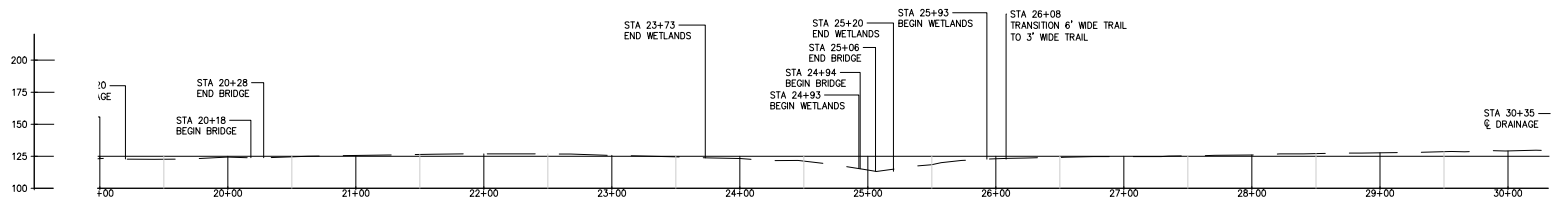
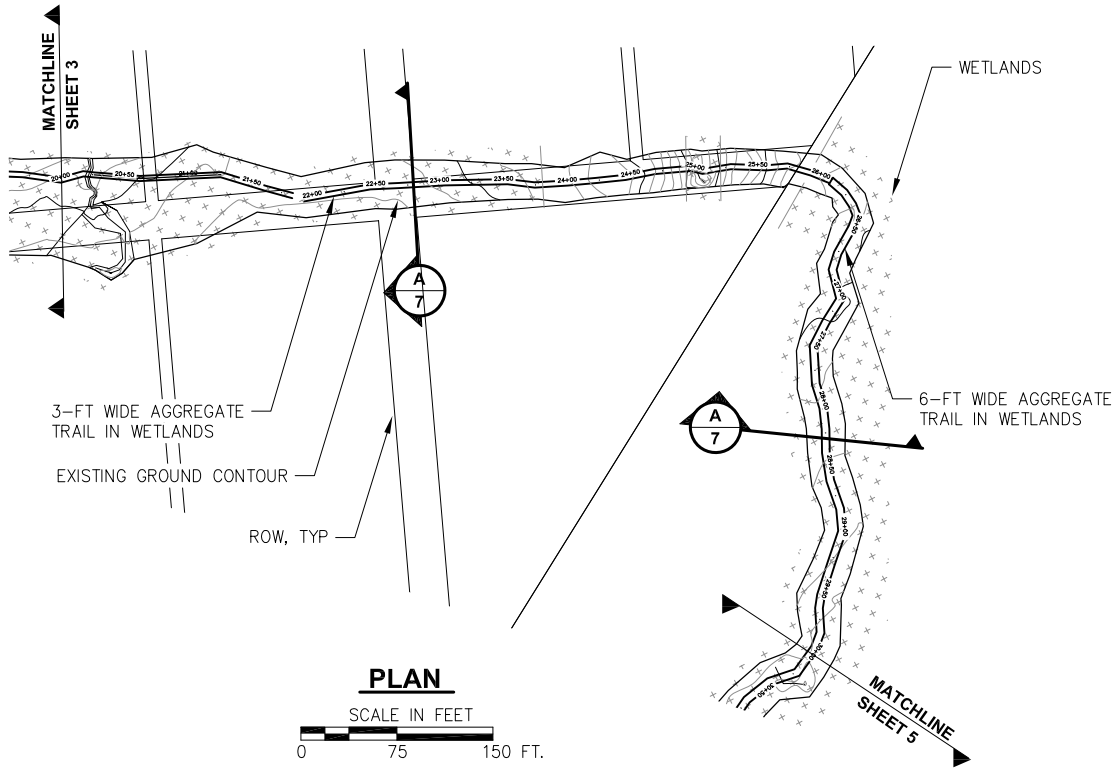
APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021



PROFILE

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

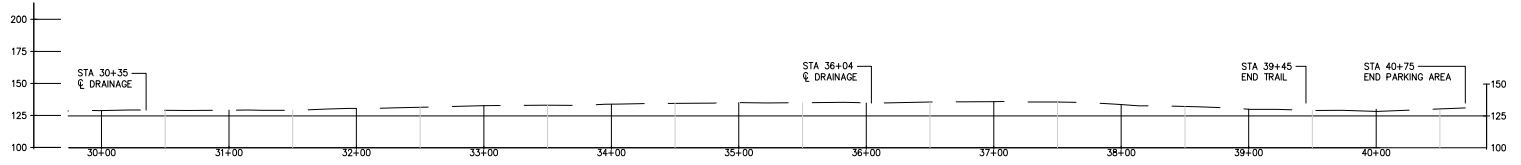
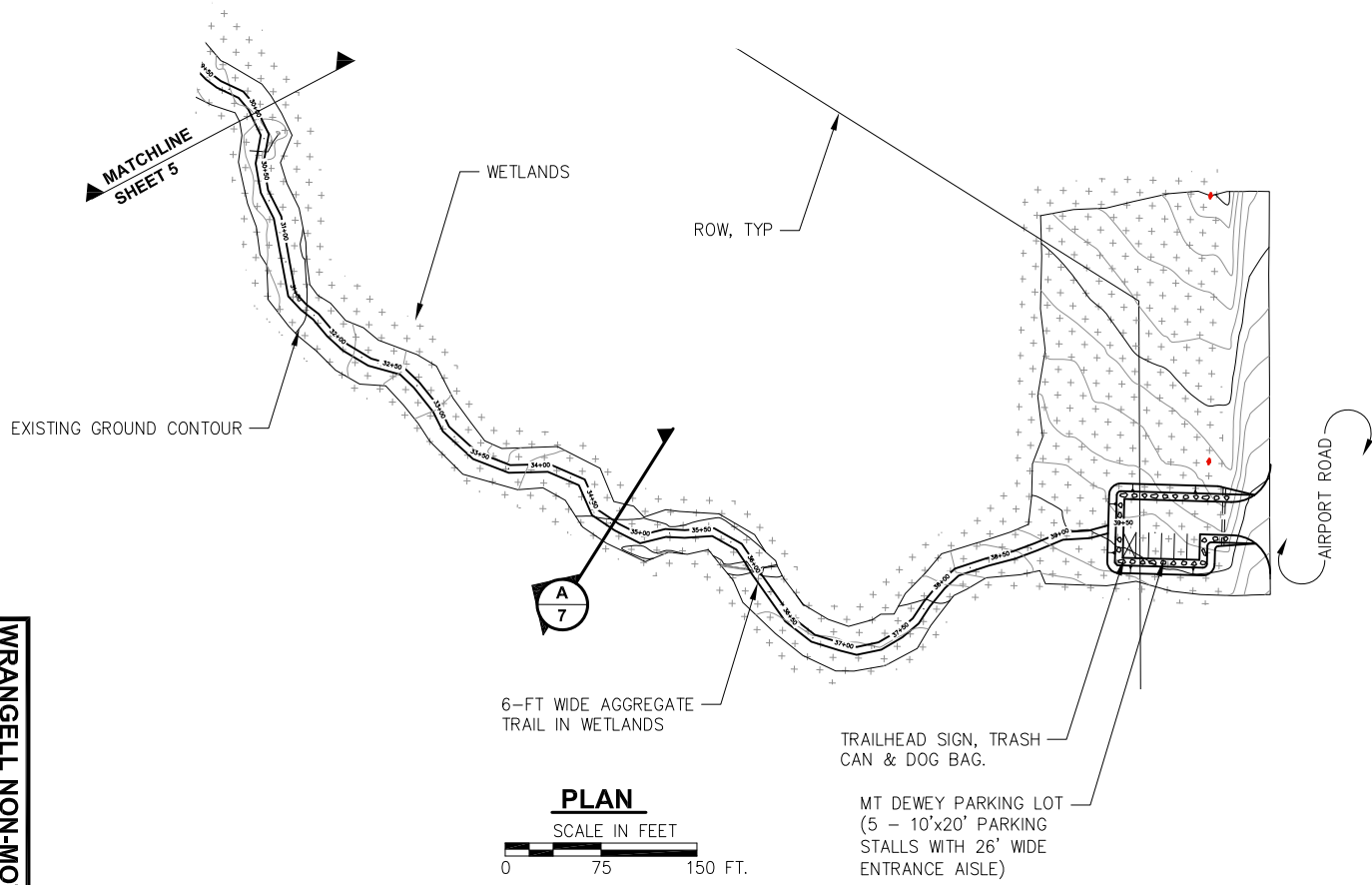
APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC.: 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
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PROFILE

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 DATE: SEPTEMBER 2021



PROFILE

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL

FILE NO.:

WATERWAY:

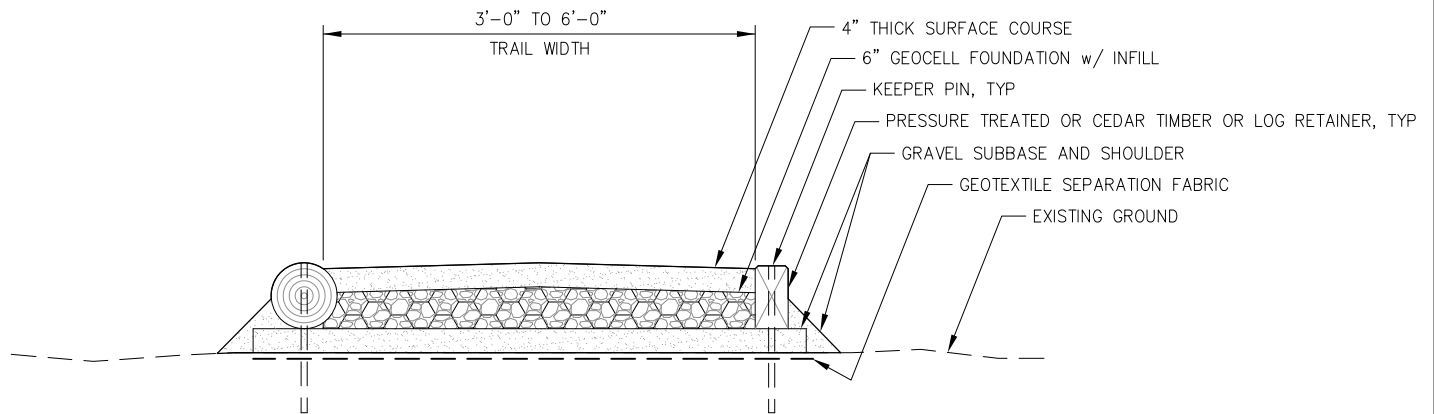
PROPOSED ACTIVITY: TRAIL IMPROVEMENTS

SEC.: 19 T. 62S R. 84E M COPPER RIVER MERIDIAN

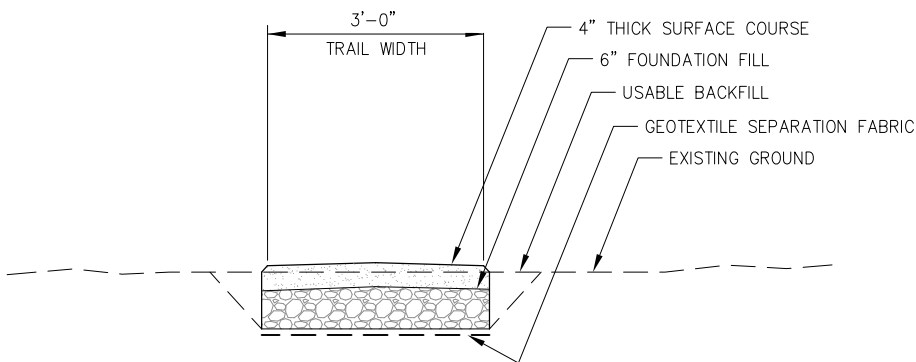
LAT.: 56.480125°N LONG.: 132.378353°W

DATE: SEPTEMBER 2021

SHEET **6** of 7



A MOUNT DEWEY TRAIL - AGGREGATE TRAIL
TYPICAL SECTION IN WETLANDS



B MOUNT DEWEY TRAIL - AGGREGATE TRAIL
TYPICAL SECTION

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021

Preliminary Jurisdictional Determination Form

This preliminary JD find that there "may be" waters of the United States on the subject project site that could be affected by the proposed activity based on the following information:

District Office File/ORM # PJD Date

State City/County

Nearest Waterbody Name and Address of Person Requesting PJD

Project Location Section(s) Township

Meridian Range

USGS Quad Map Latitude Longitude

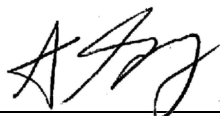
Subdivision Name, Block, Lot, Directions to Project Site

Identify (Estimate) Amount of Waters in the Review Area	Stream Flow	Name of Any Water Bodies on the Site Identified as Section 10 Waters:	Tidal: <input type="text"/>
<u>Non-Wetland Waters:</u>			Non-Tidal: <input type="text"/>
<input type="text"/> Linear ft <input type="text"/> Width <input type="text"/> Acres <input type="text"/>		<input type="checkbox"/> Office (Desk) Determination	Date of Site Visit: <input type="text"/>
<u>Wetlands</u>		<input type="checkbox"/> Field Determination	
<input type="text" value="0.55"/> Acres Cowardin Class: <input type="text" value="Palustrine, emergent"/>			

SUPPORTING DATA: Data Review for Preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below)

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data Sheet prepared by the Corps
- Corps navigable waters' study:
- USGS NHD Data.
- USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s) Cite quad name:
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National Wetlands Inventory map(s):
- State/Local Wetland Inventory map(s):
- FEMA/FIRM map(s):
- 100-year Floodplain Elevation:
- Photographs:
 - Aerial (Name & Date)
 - Other (Name & Date)
- Previous determination(s). File # and date of response letter:
- Other Information:

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.



Signature and Date of Regulatory Project Manager
(REQUIRED)

Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS: 1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time. 2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.



**US Army Corps
of Engineers** ®
Alaska District

CREDIT PURCHASE RECEIPT	
Compensatory Mitigation Type: Mitigation Bank (X) In-Lieu-Fee Program ()	
Credit Provider: Natzuhini Bay Mitigation Bank	
Service Area or Name of Mitigation Site:	
Permit Number: POA-2021-00515	USACE Project Manager: Andrew Gregory
Project: Mt. Dewey recreational site	Waterway: Zimovia Straight
Impact Site Location: Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125° N., Longitude 132.378353° W.; in Wrangell, Alaska	
MITIGATION REQUIREMENT	
Marine/Estuarine	0.00
Palustrine	4.29
Riverine/Stream	0.00
Lacustrine	0.00
TOTAL MITIGATION REQUIREMENT	4.29
CREDITS PURCHASED	
Credit Type	Number of Credits
Marine/Estuarine	
Palustrine	
Riverine/Stream	
Lacustrine	
TOTAL CREDITS PURCHASED	

City and Borough of Wrangell

Date

Natzuhini Bay Mitigation Bank

Date

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: POA-2021-00515, Zimovia Strait

Permittee's Name & Address (please print or type): _____

Telephone Number: _____

Location of the Work: _____

Date Work Started: _____ Date Work Completed: _____

PROPERTY IS INACCESSIBLE WITHOUT PRIOR NOTIFICATION: YES _____ NO _____
TO SCHEDULE AN INSPECTION PLEASE CONTACT _____
AT _____

Description of the Work (e.g. bank stabilization, residential or commercial filling, docks, dredging, etc.): _____

Acreage or Square Feet of Impacts to Waters of the United States: _____

Describe Mitigation completed (if applicable): _____

Describe any Deviations from Permit (attach drawing(s) depicting the deviations):

I certify that all work and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

Signature of Permittee

Full Name of Permittee (printed or typed)

Date



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**
DIVISION OF WATER

Wastewater Discharge Authorization
Program

February 24, 2022

Amber Al-Haddad
PO Box 531
Wrangell, AK, 99929

555 Cordova Street
Anchorage, Alaska 99501-2617
Main: 907.269.6285
Fax: 907.334.2415
www.dec.alaska.gov/water/wwdp

Re: City of Wrangell Trail Access
POA-2021-00515 Zimovia Strait

Ms. Al-Haddad:

In accordance with Section 401 of the Federal Clean Water Act of 1977 and provisions of the Alaska Water Quality Standards, the Department of Environmental Conservation (DEC) is issuing the enclosed water quality certification that the discharge from the proposed project will comply with water quality requirements for the placement of dredged and/or fill material in waters of the U.S., including wetlands and streams, associated with the development of new parking area and new trail access to Mt. Dewey Trail for recreational activities.

DEC regulations provide that any person who disagrees with this decision may request an informal review by the Division Director in accordance with 18 AAC 15.185 or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 20 days of the permit decision. Visit <http://dec.alaska.gov/commish/review-guidance/> for information on Administrative Appeals of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, PO Box 111800, Juneau, AK 99811-1800; Location: 410 Willoughby Avenue, Suite 303, Juneau within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

By copy of this letter, we are advising the U.S. Army Corps of Engineers of our actions and enclosing a copy of the certification for their use.

Sincerely,

Handwritten signature of James Rypkema in black ink.

James Rypkema
Program Manager, Storm Water and Wetlands

Enclosure: 401 Water Quality Certificate

cc: (with encl.)
Andrew Gregory, USACE, Anchorage
Brandon Ivaniwicz, PND Engineers

Kate Kanouse, ADF&G/Habitat, Anchorage
USFWS Field Office Juneau
Matthew LaCroix, EPA, AK Operations

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Water Quality Certification

In accordance with Section 401 of the Federal Clean Water Act (CWA) and the Alaska Water Quality Standards (18 AAC 70), a water quality certification is issued to City and Borough of Wrangell, Attn: Amber Al-Haddad, PO Box 531, Wrangell, AK, 99929 that the discharge from the proposed project will comply with water quality requirements for the placement of dredged and/or fill material in waters of the U.S. including wetlands and streams in association with the development of an off-road parking lot and new recreational trail to the existing Mt. Dewey Trail. Specifically, the work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acres of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot with a 26-foot-long by 54-foot-wide driveway entrance from Airport Road and a 2,527-foot-long by 3 to 6-foot-wide recreational trail leading from the proposed parking lot to the existing Mt. Dewey Trail. All work would be performed in accordance with the enclosed plan (Sheets 1-7), dated December 20, 2021.

A state issued water quality certification is required under Section 401 because the proposed activity will be authorized by a U.S. Army Corps of Engineers permit (POA-2021-00515) and a discharge of pollutants to waters of the U.S. located in the State of Alaska may result from the proposed activity. Public notice of the application for this certification was given as required by 18 AAC 15.180 in the joint Agency Public Notice POA-2021-00515 posted from January 5, 2022, to January 20, 2022.

Project Description and Location

The applicant's stated purpose is to provide parking and new trail access to Mt. Dewey Trail for recreational activities.

The applicant proposes to construct an off-road parking lot and new recreational trail to the existing Mt. Dewey Trail. The work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acres of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot with a 26-foot-long by 54-foot-wide driveway entrance from Airport Road and a 2,527 foot long by 3 to 6 foot wide recreational trail leading from the proposed parking lot to the existing Mt. Dewey Trail.

The proposed activity is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125° N., Longitude 132.378353° W.; in Wrangell, Alaska.

Antidegradation Analysis Finding

Pursuant to the Department's Antidegradation Policy and Implementation Methods at 18 AAC 70.015 and 18 AAC 70.016, DEC finds that the project would comply with the requirements for Tiers 1 and 2 regarding water quality impacts to receiving water immediately surrounding the dredge or fill material pursuant to the Corps evaluation and findings of no significant degradation under 33 U.S.C. 1344 and under 40 CFR 230. The use of appropriate best management practices and erosion and sediment control measures would adequately protect the existing water uses and the level of water quality necessary to protect existing uses. Any potential water quality degradation is expected to be temporary and limited and necessary to accommodate important social and/or economic development in the area.

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

The Department of Environmental Conservation (DEC) reviewed the application and certifies that there is reasonable assurance that the proposed activity, as well as any discharge which may result, will comply

with applicable provisions of Section 401 of the CWA and the Alaska Water Quality Standards, 18 AAC 70, provided that the following additional measures are adhered to.

Pursuant to 18 AAC 70.020(a) and the Toxics and Other Deleterious Organic and Inorganic Substances in 18 AAC 70.020(b), the following conditions are designed to reduce pollutants from construction activity to ensure compliance with the applicable water quality standards.

Pollutants/Toxics

1. Fuel storage and handling activities for equipment must be sited and conducted so there is no petroleum contamination of the ground, subsurface, or surface waterbodies.
2. During construction, spill response equipment and supplies such as sorbent pads shall be available and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills. Any spill amount must be reported in accordance with Discharge Notification and Reporting Requirements (AS 46.03.755 and 18 AAC 75 Article 3). The applicant must contact by telephone the DEC Area Response Team for Southeast Alaska 907-465-5340 during work hours or 1-800-478-9300 after hours. Also, the applicant must contact by telephone the National Response Center at 1-800-424-8802.
3. Construction equipment shall not be operated below the ordinary high-water mark if equipment is leaking fuel, oil, hydraulic fluid, or any other hazardous material. Equipment shall be inspected and recorded in a log daily for leaks. If leaks are found, the equipment shall not be used and pulled from service until the leak is repaired.
4. All solid waste and foreign debris must be eliminated by removal to an off-site DEC-approved facility or by burning (if a paper product). Waste, in this paragraph means all discarded matter, including, but not limited to: human waste, trash, garbage, litter, oil drums, petroleum, ashes and discarded equipment. Hazardous waste must not be disposed of on-site, but instead must be hauled out for disposal in a DEC-approved disposal site.

Turbidity, Erosion and Sediment Control

5. Runoff discharged to surface water (including wetlands) from a construction site disturbing one or more acres must be covered under Alaska's General Permit for Storm Water Discharges from Large and Small Construction Activities in Alaska (CGP, AKR100000, 18 AAC 83). The CGP requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For projects that disturb more than five acres, this SWPPP must also be submitted to DEC prior to construction along with the Notice of Intent (NOI). For more information see DEC's website for the CGP at <http://dec.alaska.gov/water/wastewater/stormwater/construction>, or call 907-269-6285.
6. Excavated or fill material, including overburden, shall be placed so that it is stable, meaning after placement the material does not show signs of excessive erosion. Indicators of excess erosion include gullyng, head cutting, caving, block slippage, material sloughing, etc. The material must be contained with siltation best management practices (BMPs) to preclude reentry into any waters of the U.S., which includes wetlands.
7. Include the following BMPs to handle storm water and total storm water volume discharges as they apply to the site:
 - a. Divert storm water from off-site around the site so that it does not flow onto the project site and cause erosion of exposed soils;
 - b. Slow down or contain storm water that may collect and concentrate within a site and cause erosion of exposed soils;

- c. Place velocity dissipation devices (e.g., check dams, sediment traps, or riprap) along the length of any conveyance channel to provide a non-erosive flow velocity. Also place velocity dissipation devices where discharges from the conveyance channel or structure join a water course to prevent erosion and to protect the channel embankment, outlet, adjacent stream bank slopes, and downstream waters.
8. Fill placed during winter construction within wetlands that during the summer contain surface water that is connected to natural bodies of water, must be stabilized or contained in the spring prior to breakup. This action is to ensure that silts are not carried from the fill to the natural bodies of water in the spring and summer.
9. Prior to fill placement in the spring or summer, a silt fence or similar structure shall be installed on a line parallel to and within five feet of the proposed fill toe of slope within all wetland areas that contain standing water that is connected to any natural body of water or where the fill toe is within 25 feet of such a water body. This structure shall remain in place until the fill has been stabilized or contained in another manner.

Vegetation Protection and Restoration

10. Any disturbed ground and exposed soil not covered with fill must be stabilized and re-vegetated with endemic species, grasses, or other suitable vegetation in an appropriate manner to minimize erosion and sedimentation, so that a durable vegetative cover is established in a timely manner.
11. All work areas, material access routes, and surrounding wetlands involved in the construction project shall be clearly delineated and marked in such a way that equipment operators do not operate outside of the marked areas.
12. Natural drainage patterns shall be maintained, to the extent practicable, without introducing ponding or drying.

General

13. DEC coordinates with several regulatory programs to review the impacts of construction operations. A Section 401 Certification does not release the applicant from obtaining all necessary federal, state, and local permits, nor does it limit more restrictive requirements set through any such program. It does not eliminate, waive, or vary the applicant's obligation to comply with all state water statutes and rules through construction, installation, and operation of the project or mitigation, including, but not limited to the APDES permitting program 18 AAC 83 and 18 AAC 72.
14. USACE has stated that projects shall be reviewed under the federal rules in place at the time the application is received. This project and its mitigation were reviewed under the federal and state statutes and laws in place at the time the application was received. If the USACE determines any part or condition of this Certification is not lawful or is waived and unenforceable, the determination shall apply only to the part or condition so determined. The determination shall not apply to nor invalidate any remaining parts or conditions of this Certification. If the USACE makes such a determination, the applicant remains responsible for meeting state water quality statutes and rules, and if a violation occurs, may be subject to state enforcement (18 AAC 70.010).
15. This Certification does not release the applicant from any liability, penalty, or duty imposed by Alaska or federal statutes, regulations, rules or local ordinances, and it does not convey a property right or an exclusive privilege.

16. If your project is not completed by the time limit specified under USACE Permit and will continue, or for a modification of the USACE permit, you must submit an application for renewal of this certification at least 60 days before the expiration date or any deadline established by USACE for certification action on the modification, or 60 days before the proposed effective date of the modification, whichever is sooner. (18 AAC 15.120(b), 18 AAC 15.130, 18 AAC 15.180).

Date: 2/24/2022



James Rypkema, Program Manager
Storm Water and Wetlands



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**
DIVISION OF WATER

Wastewater Discharge Authorization
Program

555 Cordova Street
Anchorage, Alaska 99501-2617
Main: 907.269.6285
Fax: 907.334.2415
www.dec.alaska.gov/water/wwdp

February 24, 2022

Amber Al-Haddad
PO Box 531
Wrangell, AK, 99929

Re: City of Wrangell Trail Access
POA-2021-00515 Zimovia Strait

Ms. Al-Haddad:

In accordance with Section 401 of the Federal Clean Water Act of 1977 and provisions of the Alaska Water Quality Standards, the Department of Environmental Conservation (DEC) is issuing the enclosed water quality certification that the discharge from the proposed project will comply with water quality requirements for the placement of dredged and/or fill material in waters of the U.S., including wetlands and streams, associated with the development of new parking area and new trail access to Mt. Dewey Trail for recreational activities.

DEC regulations provide that any person who disagrees with this decision may request an informal review by the Division Director in accordance with 18 AAC 15.185 or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 20 days of the permit decision. Visit <http://dec.alaska.gov/commish/review-guidance/> for information on Administrative Appeals of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, PO Box 111800, Juneau, AK 99811-1800; Location: 410 Willoughby Avenue, Suite 303, Juneau within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

By copy of this letter, we are advising the U.S. Army Corps of Engineers of our actions and enclosing a copy of the certification for their use.

Sincerely,

Handwritten signature of James Rypkema in black ink.

James Rypkema
Program Manager, Storm Water and Wetlands

Enclosure: 401 Water Quality Certificate

cc: (with encl.)
Andrew Gregory, USACE, Anchorage
Brandon Ivaniwicz, PND Engineers

Kate Kanouse, ADF&G/Habitat, Anchorage
USFWS Field Office Juneau
Matthew LaCroix, EPA, AK Operations

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Water Quality Certification

In accordance with Section 401 of the Federal Clean Water Act (CWA) and the Alaska Water Quality Standards (18 AAC 70), a water quality certification is issued to City and Borough of Wrangell, Attn: Amber Al-Haddad, PO Box 531, Wrangell, AK, 99929 that the discharge from the proposed project will comply with water quality requirements for the placement of dredged and/or fill material in waters of the U.S. including wetlands and streams in association with the development of an off-road parking lot and new recreational trail to the existing Mt. Dewey Trail. Specifically, the work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acres of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot with a 26-foot-long by 54-foot-wide driveway entrance from Airport Road and a 2,527-foot-long by 3 to 6-foot-wide recreational trail leading from the proposed parking lot to the existing Mt. Dewey Trail. All work would be performed in accordance with the enclosed plan (Sheets 1-7), dated December 20, 2021.

A state issued water quality certification is required under Section 401 because the proposed activity will be authorized by a U.S. Army Corps of Engineers permit (POA-2021-00515) and a discharge of pollutants to waters of the U.S. located in the State of Alaska may result from the proposed activity. Public notice of the application for this certification was given as required by 18 AAC 15.180 in the joint Agency Public Notice POA-2021-00515 posted from January 5, 2022, to January 20, 2022.

Project Description and Location

The applicant's stated purpose is to provide parking and new trail access to Mt. Dewey Trail for recreational activities.

The applicant proposes to construct an off-road parking lot and new recreational trail to the existing Mt. Dewey Trail. The work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acres of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot with a 26-foot-long by 54-foot-wide driveway entrance from Airport Road and a 2,527 foot long by 3 to 6 foot wide recreational trail leading from the proposed parking lot to the existing Mt. Dewey Trail.

The proposed activity is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125° N., Longitude 132.378353° W.; in Wrangell, Alaska.

Antidegradation Analysis Finding

Pursuant to the Department's Antidegradation Policy and Implementation Methods at 18 AAC 70.015 and 18 AAC 70.016, DEC finds that the project would comply with the requirements for Tiers 1 and 2 regarding water quality impacts to receiving water immediately surrounding the dredge or fill material pursuant to the Corps evaluation and findings of no significant degradation under 33 U.S.C. 1344 and under 40 CFR 230. The use of appropriate best management practices and erosion and sediment control measures would adequately protect the existing water uses and the level of water quality necessary to protect existing uses. Any potential water quality degradation is expected to be temporary and limited and necessary to accommodate important social and/or economic development in the area.

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

The Department of Environmental Conservation (DEC) reviewed the application and certifies that there is reasonable assurance that the proposed activity, as well as any discharge which may result, will comply

with applicable provisions of Section 401 of the CWA and the Alaska Water Quality Standards, 18 AAC 70, provided that the following additional measures are adhered to.

Pursuant to 18 AAC 70.020(a) and the Toxics and Other Deleterious Organic and Inorganic Substances in 18 AAC 70.020(b), the following conditions are designed to reduce pollutants from construction activity to ensure compliance with the applicable water quality standards.

Pollutants/Toxics

1. Fuel storage and handling activities for equipment must be sited and conducted so there is no petroleum contamination of the ground, subsurface, or surface waterbodies.
2. During construction, spill response equipment and supplies such as sorbent pads shall be available and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills. Any spill amount must be reported in accordance with Discharge Notification and Reporting Requirements (AS 46.03.755 and 18 AAC 75 Article 3). The applicant must contact by telephone the DEC Area Response Team for Southeast Alaska 907-465-5340 during work hours or 1-800-478-9300 after hours. Also, the applicant must contact by telephone the National Response Center at 1-800-424-8802.
3. Construction equipment shall not be operated below the ordinary high-water mark if equipment is leaking fuel, oil, hydraulic fluid, or any other hazardous material. Equipment shall be inspected and recorded in a log daily for leaks. If leaks are found, the equipment shall not be used and pulled from service until the leak is repaired.
4. All solid waste and foreign debris must be eliminated by removal to an off-site DEC-approved facility or by burning (if a paper product). Waste, in this paragraph means all discarded matter, including, but not limited to: human waste, trash, garbage, litter, oil drums, petroleum, ashes and discarded equipment. Hazardous waste must not be disposed of on-site, but instead must be hauled out for disposal in a DEC-approved disposal site.

Turbidity, Erosion and Sediment Control

5. Runoff discharged to surface water (including wetlands) from a construction site disturbing one or more acres must be covered under Alaska's General Permit for Storm Water Discharges from Large and Small Construction Activities in Alaska (CGP, AKR100000, 18 AAC 83). The CGP requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For projects that disturb more than five acres, this SWPPP must also be submitted to DEC prior to construction along with the Notice of Intent (NOI). For more information see DEC's website for the CGP at <http://dec.alaska.gov/water/wastewater/stormwater/construction>, or call 907-269-6285.
6. Excavated or fill material, including overburden, shall be placed so that it is stable, meaning after placement the material does not show signs of excessive erosion. Indicators of excess erosion include gullyng, head cutting, caving, block slippage, material sloughing, etc. The material must be contained with siltation best management practices (BMPs) to preclude reentry into any waters of the U.S., which includes wetlands.
7. Include the following BMPs to handle storm water and total storm water volume discharges as they apply to the site:
 - a. Divert storm water from off-site around the site so that it does not flow onto the project site and cause erosion of exposed soils;
 - b. Slow down or contain storm water that may collect and concentrate within a site and cause erosion of exposed soils;

- c. Place velocity dissipation devices (e.g., check dams, sediment traps, or riprap) along the length of any conveyance channel to provide a non-erosive flow velocity. Also place velocity dissipation devices where discharges from the conveyance channel or structure join a water course to prevent erosion and to protect the channel embankment, outlet, adjacent stream bank slopes, and downstream waters.
8. Fill placed during winter construction within wetlands that during the summer contain surface water that is connected to natural bodies of water, must be stabilized or contained in the spring prior to breakup. This action is to ensure that silts are not carried from the fill to the natural bodies of water in the spring and summer.
9. Prior to fill placement in the spring or summer, a silt fence or similar structure shall be installed on a line parallel to and within five feet of the proposed fill toe of slope within all wetland areas that contain standing water that is connected to any natural body of water or where the fill toe is within 25 feet of such a water body. This structure shall remain in place until the fill has been stabilized or contained in another manner.

Vegetation Protection and Restoration

10. Any disturbed ground and exposed soil not covered with fill must be stabilized and re-vegetated with endemic species, grasses, or other suitable vegetation in an appropriate manner to minimize erosion and sedimentation, so that a durable vegetative cover is established in a timely manner.
11. All work areas, material access routes, and surrounding wetlands involved in the construction project shall be clearly delineated and marked in such a way that equipment operators do not operate outside of the marked areas.
12. Natural drainage patterns shall be maintained, to the extent practicable, without introducing ponding or drying.

General

13. DEC coordinates with several regulatory programs to review the impacts of construction operations. A Section 401 Certification does not release the applicant from obtaining all necessary federal, state, and local permits, nor does it limit more restrictive requirements set through any such program. It does not eliminate, waive, or vary the applicant's obligation to comply with all state water statutes and rules through construction, installation, and operation of the project or mitigation, including, but not limited to the APDES permitting program 18 AAC 83 and 18 AAC 72.
14. USACE has stated that projects shall be reviewed under the federal rules in place at the time the application is received. This project and its mitigation were reviewed under the federal and state statutes and laws in place at the time the application was received. If the USACE determines any part or condition of this Certification is not lawful or is waived and unenforceable, the determination shall apply only to the part or condition so determined. The determination shall not apply to nor invalidate any remaining parts or conditions of this Certification. If the USACE makes such a determination, the applicant remains responsible for meeting state water quality statutes and rules, and if a violation occurs, may be subject to state enforcement (18 AAC 70.010).
15. This Certification does not release the applicant from any liability, penalty, or duty imposed by Alaska or federal statutes, regulations, rules or local ordinances, and it does not convey a property right or an exclusive privilege.

16. If your project is not completed by the time limit specified under USACE Permit and will continue, or for a modification of the USACE permit, you must submit an application for renewal of this certification at least 60 days before the expiration date or any deadline established by USACE for certification action on the modification, or 60 days before the proposed effective date of the modification, whichever is sooner. (18 AAC 15.120(b), 18 AAC 15.130, 18 AAC 15.180).

Date: 2/24/2022



James Rypkema, Program Manager
Storm Water and Wetlands



US Army Corps
of Engineers
Alaska District

Public Notice of Application for Permit

ANCHORAGE
Regulatory Division (1145)
CEPOA-RD
Post Office Box 6898
JBER, Alaska 99506-0898

PUBLIC NOTICE DATE:	January 5, 2022
EXPIRATION DATE:	January 20, 2022
REFERENCE NUMBER:	POA-2021-00515
WATERWAY:	Zimovia Strait

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this Public Notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the Project Manager's email as listed below or to regpagemaster@usace.army.mil. All comments should include the Public Notice reference number listed above.

All comments should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Andrew Gregory at (907) 753-2791, toll free from within Alaska at (800) 478-2712, by fax at (907) 753-5567, or by email at Andrew.W.Gregory@usace.army.mil if further information is desired concerning this notice.

APPLICANT: City and Borough of Wrangell, P.O. Box 531, Wrangell, Alaska 99929

AGENT: PND Engineers, Inc., 9360 Glacier Hwy, Juneau, Alaska 99801

LOCATION: The project site is located within Section 30, T. 62 S., R. 84 E., Copper River Meridian; Latitude 56.480125° N., Longitude 132.378353° W.; in Wrangell, Alaska.

PURPOSE: The applicant's stated purpose is to provide parking and new trail access to Mt. Dewey Trail for recreational activities.

PROPOSED WORK: Construction of an off-road parking lot and new recreational trail to the existing Mt. Dewey Trail. Specifically, the work will include discharge of approximately 1,770 cubic yards of fill material into 0.55 acres of palustrine wetland for construction of a 60-foot-long by 46-foot-wide parking lot with a 26-foot-long by 54-foot-wide driveway entrance from Airport Road and a 2,527-foot-long by 3 to 6-foot-wide recreational trail leading from the proposed parking lot to the existing Mt. Dewey Trail.

All work would be performed in accordance with the enclosed plan (Sheets 1-7), dated December 20, 2021.

APPLICANT PROPOSED MITIGATION: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

a. Avoidance: The recreational trail's path has been designed to avoid wetland areas wherever possible.

b. Minimization: The project's impact area will be delineated prior to discharge of fill material in order to reduce impact to wetland's in the vicinity.

c. Compensatory Mitigation: No compensatory mitigation is proposed. The agent, on behalf of the applicant, has stated they do not believe compensatory mitigation is warranted due to small size of the proposed project which as been designed to minimize impacts to wetlands.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation. This Public Notice and Notice of Application for State Water Quality Certification (enclosed) serves as written correspondence to the certifying authority of a reasonable period of time to act. The complete application was received on January 3, 2022; the applicable reasonable period of time to act on the certification request is 75 days; a waiver will occur on March 19, 2022 if the certifying authority fails or refuses to act on the certification request.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRs) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are no cultural resources in the permit area or within the vicinity of the permit area. The permit area has been determined to be area encompassing the proposed parking lot and recreational trail. Consultation of the AHRs constitutes the extent of cultural resource investigations by the U.S. Army Corps of Engineers (Corps) at this time, and we are otherwise unaware of the presence of such resources. The Corps has made a No Historic Properties Affected (No Effect) determination for the proposed project. This application is being coordinated with the State Historic Preservation Office (SHPO). Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work. The Corps is requesting the SHPO's concurrence with this determination.

ENDANGERED SPECIES: No threatened or endangered species are known to use the project area.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

No EFH species are known to use the project area. We have determined the described activity would not adversely affect EFH in the project area.

TRIBAL CONSULTATION: The Alaska District fully supports tribal self-governance and government-to-government relations between Federally recognized Tribes and the Federal government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Alaska District on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This Public Notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal right or resource. Consultation may be initiated by the affected Tribe upon written request to the District Commander during the public comment period.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

AUTHORITY: This permit will be issued or denied under the following authority:

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings and Notice of Application for State Water Quality Certification are enclosed with this Public Notice.

District Commander
U.S. Army, Corps of Engineers

Enclosures

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
401 Certification Program
Non-Point Source Water Pollution Control Program

ANCHORAGE

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WQM/401 CERTIFICATION
555 CORDOVA STREET
ANCHORAGE, ALASKA 99501-2617
PHONE: (907) 269-7564/FAX: (907) 334-2415

NOTICE OF APPLICATION FOR STATE WATER QUALITY CERTIFICATION

Any applicant for a federal license or permit to conduct an activity that might result in a discharge into navigable waters, in accordance with Section 401 of the Clean Water Act of 1977 (PL95-217), also must apply for and obtain certification from the Alaska Department of Environmental Conservation (ADEC) that the discharge will comply with the Clean Water Act, the Alaska Water Quality Standards, and other applicable State laws. By agreement between the U.S. Army Corps of Engineers and ADEC, application for a Department of the Army permit to discharge dredged or fill material into navigable waters under Section 404 of the Clean Water Act also may serve as application for State Water Quality Certification.

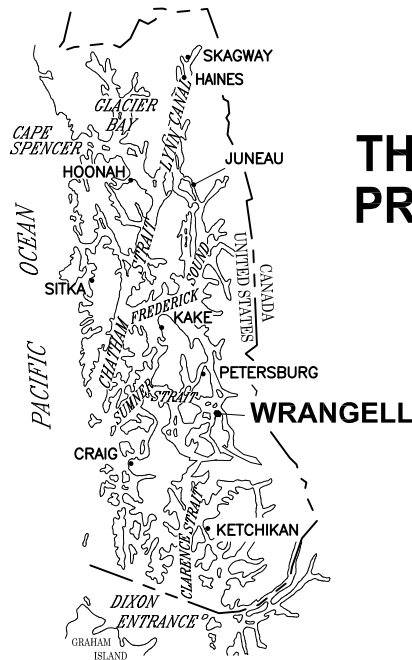
Notice is hereby given that the application for a Department of the Army Permit described in the Corps of Engineers' Public Notice No. **POA-2021-00515, Zimovia Strait**, serves as application for State Water Quality Certification from ADEC.

After reviewing the application, ADEC may certify there is reasonable assurance the activity, and any discharge that might result, will comply with the Clean Water Act, the Alaska Water Quality Standards, and other applicable State laws. ADEC also may deny or waive certification.

Any person desiring to comment on the project, with respect to Water Quality Certification, may submit written comments to the address above by the expiration date of the Corps of Engineer's Public Notice.



LOCATION MAP



SOUTHEAST ALASKA

THIS PROJECT



VICINITY MAP

SCALE IN MILES



TOPOGRAPHY MAP FROM:
USGS ALASKA TOPOGRAPHIC SERIES;
PETERSBURG

PURPOSE:

TO IMPROVE PUBLIC SAFETY AND ACCESS BY INSTALLATION OF A PARKING AREA AND TRAIL SYSTEM.

DATUM:

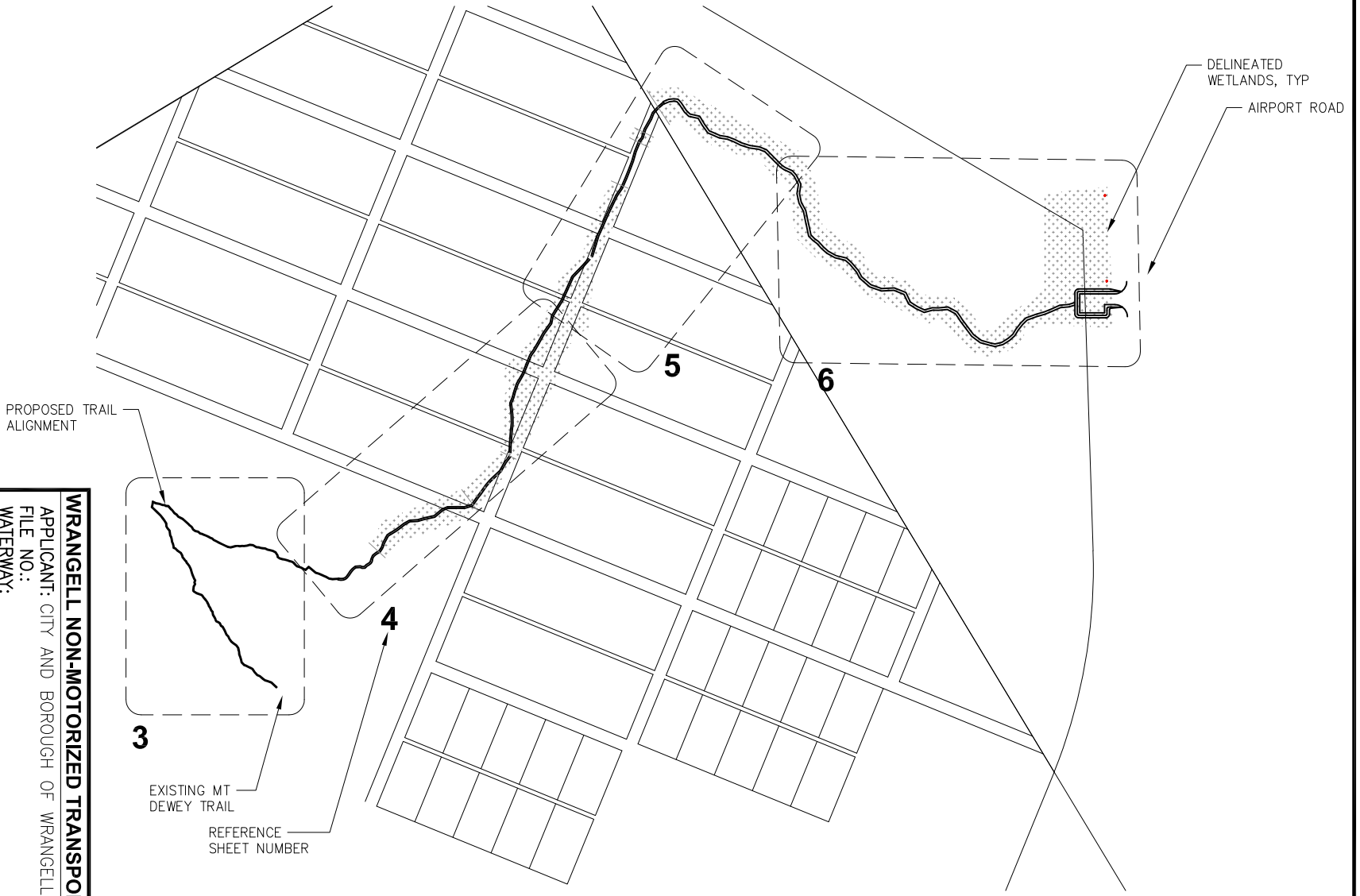
MLLW = 0.0' MHW = 14.8'
HTL = 19.7'

VICINITY MAP

PND PROJECT NO. 212038.01

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
FILE NO.:
WATERWAY:
PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
LAT.: 56.480125°N LONG.: 132.378353°W
DATE: SEPTEMBER 2021, revised DEC. 20, 2021



PROPOSED TRAIL ALIGNMENT

DELINEATED WETLANDS, TYP
AIRPORT ROAD

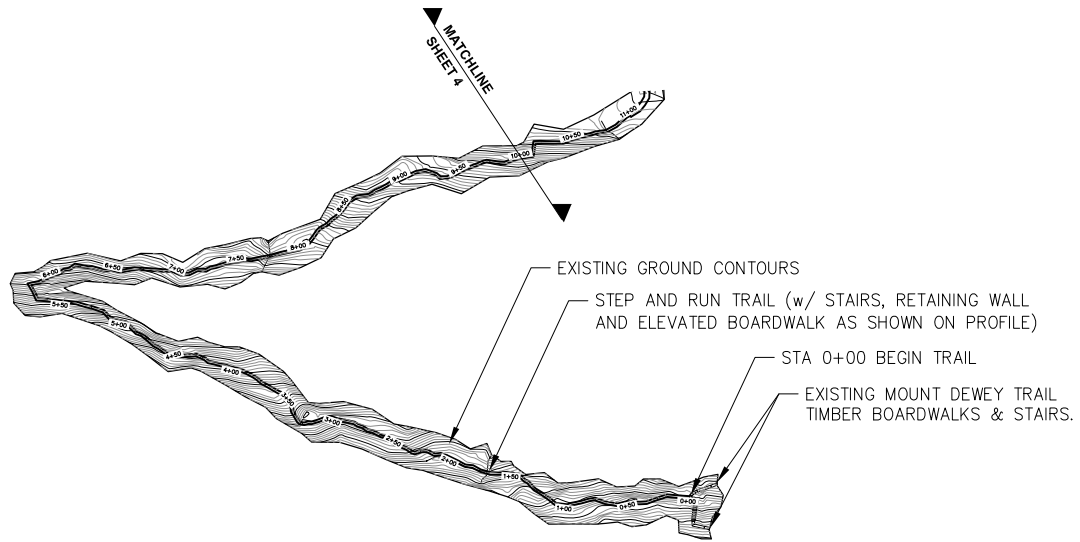
3
EXISTING MT DEWEY TRAIL
REFERENCE SHEET NUMBER

5
6

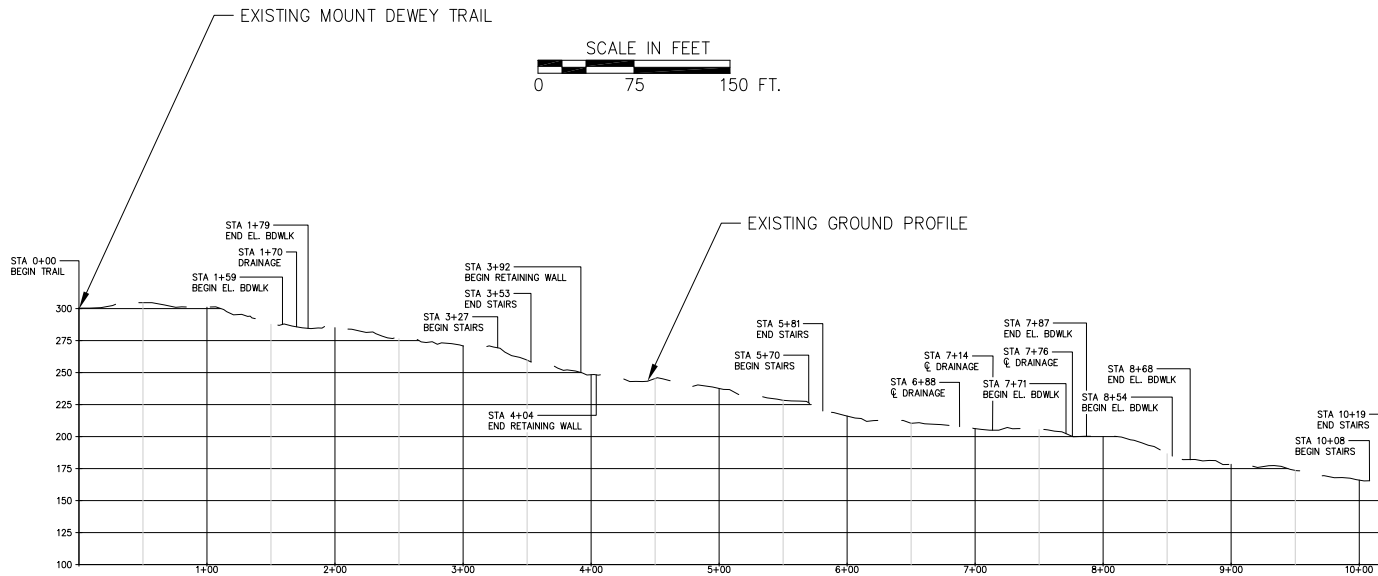
OVERALL TRAIL SITE PLAN

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC.: 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021



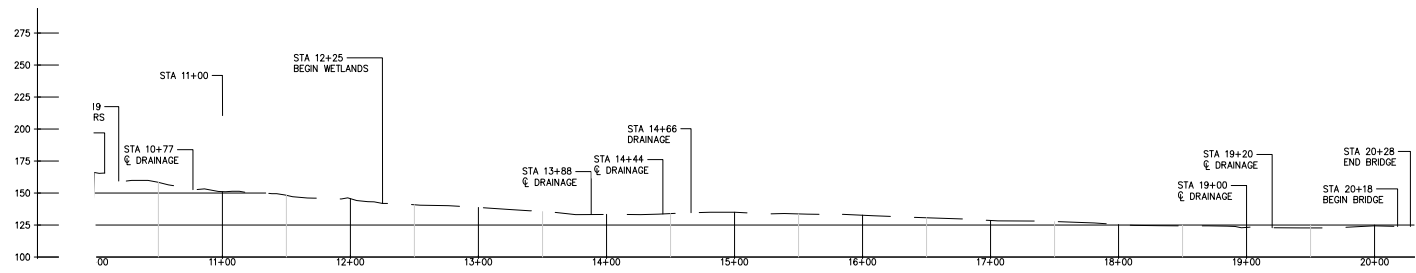
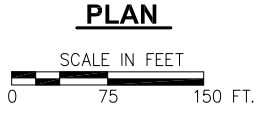
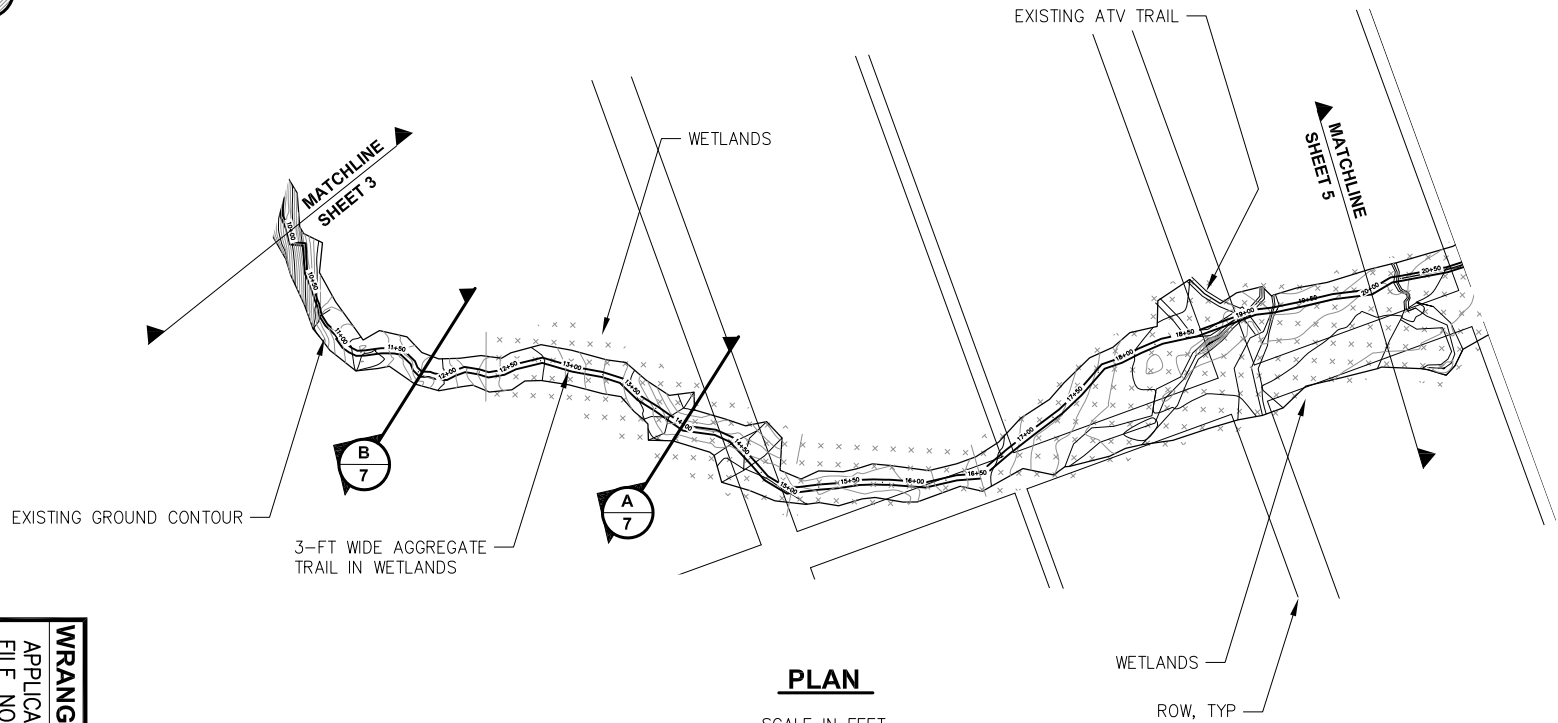
PLAN



PROFILE

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

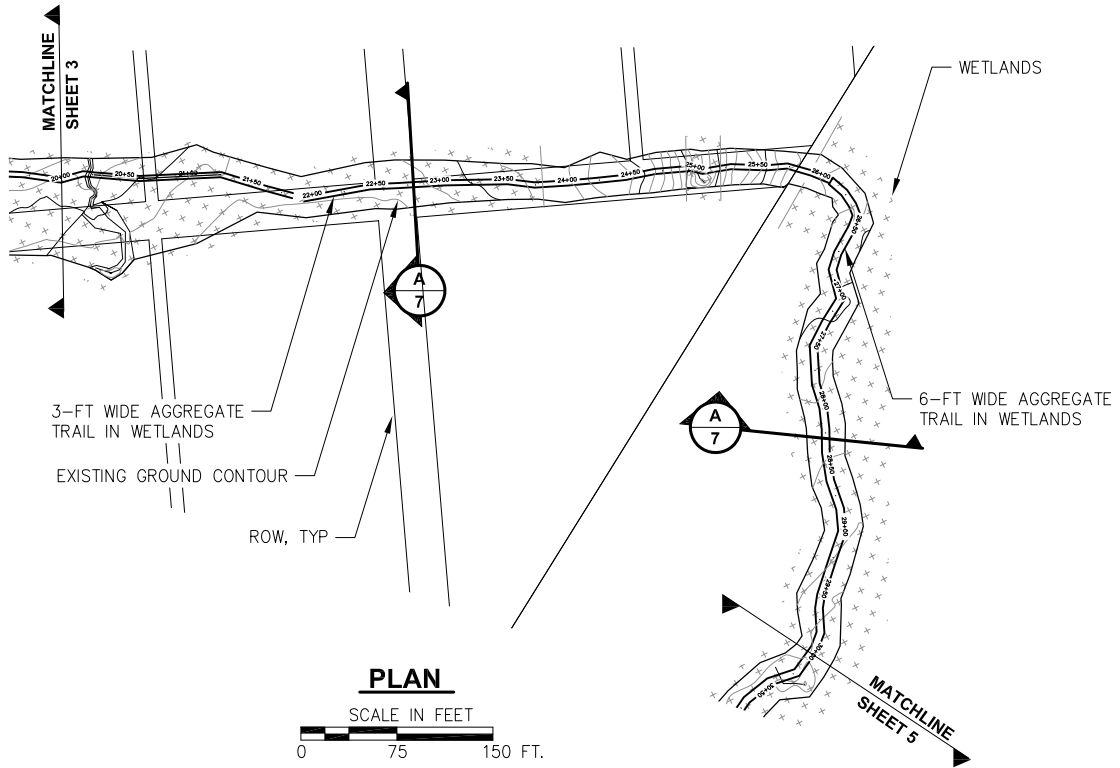
APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021



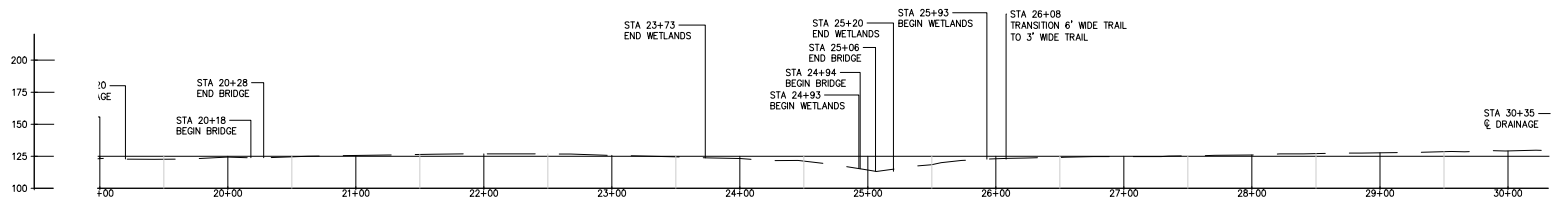
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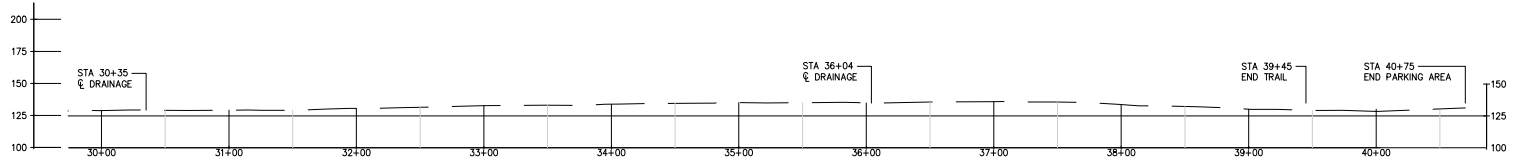
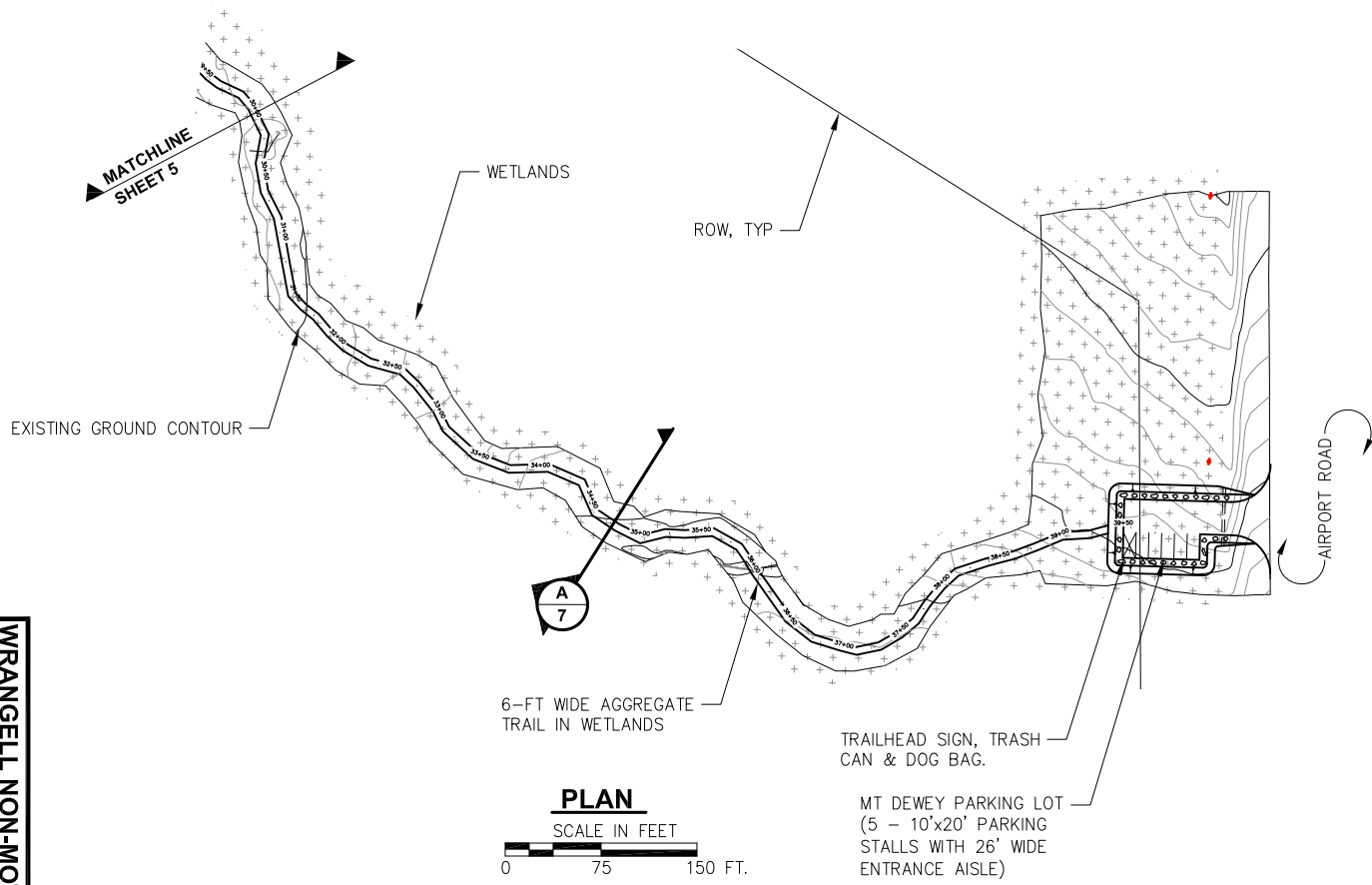
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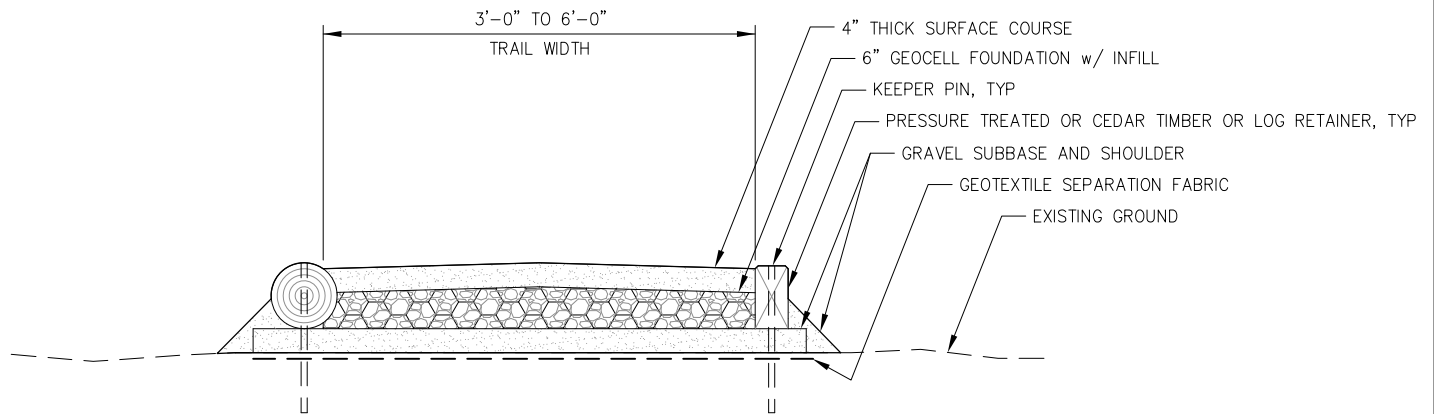
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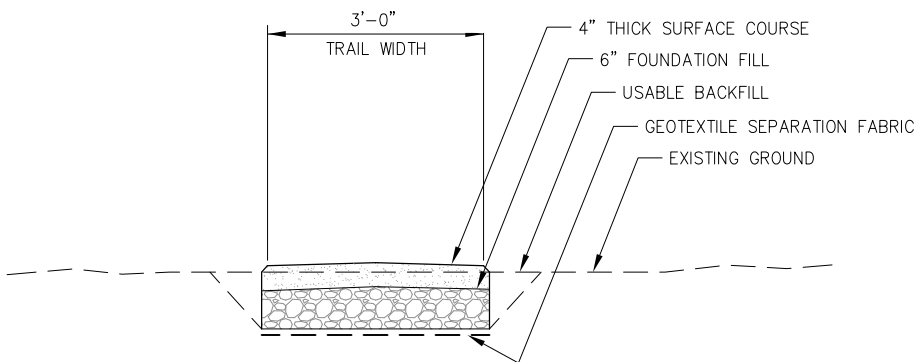
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A MOUNT DEWEY TRAIL - AGGREGATE TRAIL
TYPICAL SECTION IN WETLANDS



B MOUNT DEWEY TRAIL - AGGREGATE TRAIL
TYPICAL SECTION

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

APPLICANT: CITY AND BOROUGH OF WRANGELL
 FILE NO.:
 WATERWAY:
 PROPOSED ACTIVITY: TRAIL IMPROVEMENTS
 SEC. 19 T. 62S R. 84E M COPPER RIVER MERIDIAN
 LAT.: 56.480125°N LONG.: 132.378353°W
 DATE: SEPTEMBER 2021

State of Alaska
Department of Transportation and Public Facilities

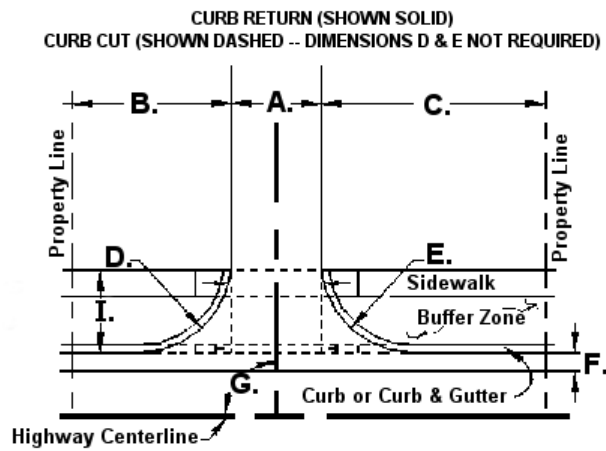
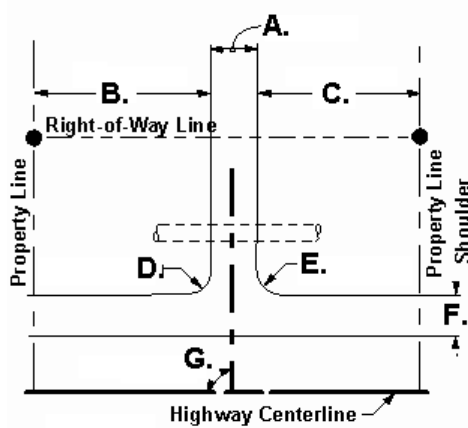
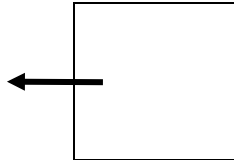
**Driveway and Approach Road
Permit**

This permit allows the permittee to construct and maintain a driveway or approach road within a State owned highway Right of Way.

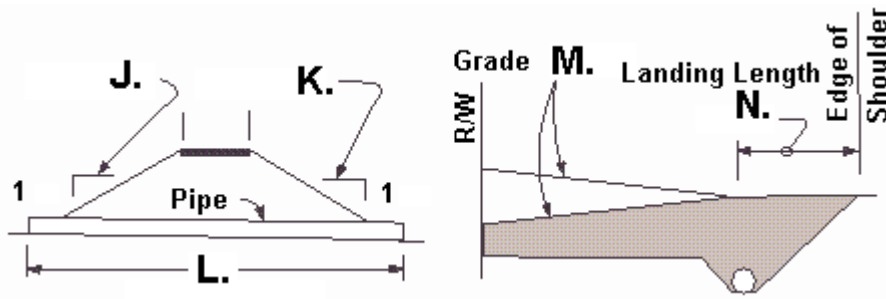
<input type="checkbox"/> Residential/Private <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Government Agency	
Applicant:	PND Engineers, Inc., on Behalf of the City and Borough of Wrangell
Mailing Address:	9360 Glacier Hwy Ste 100 Juneau, AK 99801
Contact Name:	Brandon Ivanowicz
E-mail Address:	bivanowicz@pndengineers.com
Phone:	(907) 586-2093 Fax: _____
Driveway or Approach Road location (highway, subdivision, legal description milepost, etc.) Airport Road Wrangell 99929 PAR2 Copper River 62S 84E 19 86-1	
Proposed or Existing:	Anticipated Completion Date:
PROPOSED	04/01/2023
Number of lots served:	Max. number of vehicles in any 1 hour:
1	5
Zoning Designation:	Proposed Land Use:
	Recreational Trail

Driveway Specifications

Direction of North in relation to the drawing.



A.	Driveway width	32	feet
B.	Left edge clearance	1139	feet
C.	Right edge clearance	120	feet
D.	Left return radius	30	feet
E.	Right return radius	30	feet
F.	Shoulder width	3	feet
G.	Approach angle	90	degrees
H.	Curb type	None	
I.	Curb to sidewalk distance		feet



J.	Left driveway foreslope	2:1
K.	Right driveway foreslope	2:1
L.	Culvert length	58 Feet
M.	Landing grade	2 Percent
N.	Landing length	30 Feet
O.	Culvert size	24 inches
P.	Culvert type	Plastic
Q.	Ditch depth	4 feet
R.	Shoulder type	Gravel
S.	Pavement type	Paved
T.	Driveway surface type	Gravel

Permittee upon signing this permit acknowledges and agrees to the following provisions:

This permit applies only to the State right of way.

This permit grants permission for a driveway 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 that is disturbed or destroyed during construction or maintenance of the driveway will be restored or replaced by a Land Surveyor licensed in the State of Alaska.

The Permittee will be responsible for 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.

Placement of fill material in waters of the U.S., including wetlands and streams, requires prior authorization from the U.S. Army Corps of Engineers. It is the responsibility of the owner to contact the Corps before filling activities take place.

The Permittee shall construct and maintain a driveway 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)

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.

Landings from all paved roads must be paved and maintained from edge of the road to the length of the landing as stipulated in this permit.

If a culvert is required by this driveway permit, culvert ends must be installed at the time of installation and maintained continuously by the owner.

No person shall place, leave or deposit upon any street, avenue, alley, sidewalk or other public right of way any snow or ice which has been removed from a private driveway, private parking area, or the adjacent property. Permittee is responsible for his snow removal contractor's actions concerning placement of snow from Permittee's property.

If driveway construction or maintenance 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.

While doing construction or maintenance activities 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 as stipulated in the permit must be paved and maintained from pavement edge on all paved roads.

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.

Permittee upon signing this permit acknowledges and agrees to the following conditions:

Permittee shall apply for and maintain an Encroachment permit from the Department for any lateral obstructions constructed within Right of Way.

Any signage to be installed within in Right of Way must be reviewed, approved, and permitted by the Department prior to installation.

Prior to any construction activity, permittee shall provide the indicated contractor provided TCP as stated as part of the approved application.

Permittee shall ensure no parking of vehicles within the portion of the facility constructed across DOT Right of Way and shall be responsible for the removal and any accrued fees derived from delinquent vehicles that may be the cause of the subject facility.

No track out or storm water spill-over is permissible onto the roadway. The permittee will ensure all track out or storm water be remediated from the traveled way during driveway installation.

Attachments included as part of this permit are:

REQUIRED for ALL DRIVEWAYS:

- Plat including notes of the placement of the driveway.
- Site plan.
- Proof of ownership.
- Traffic control plan.

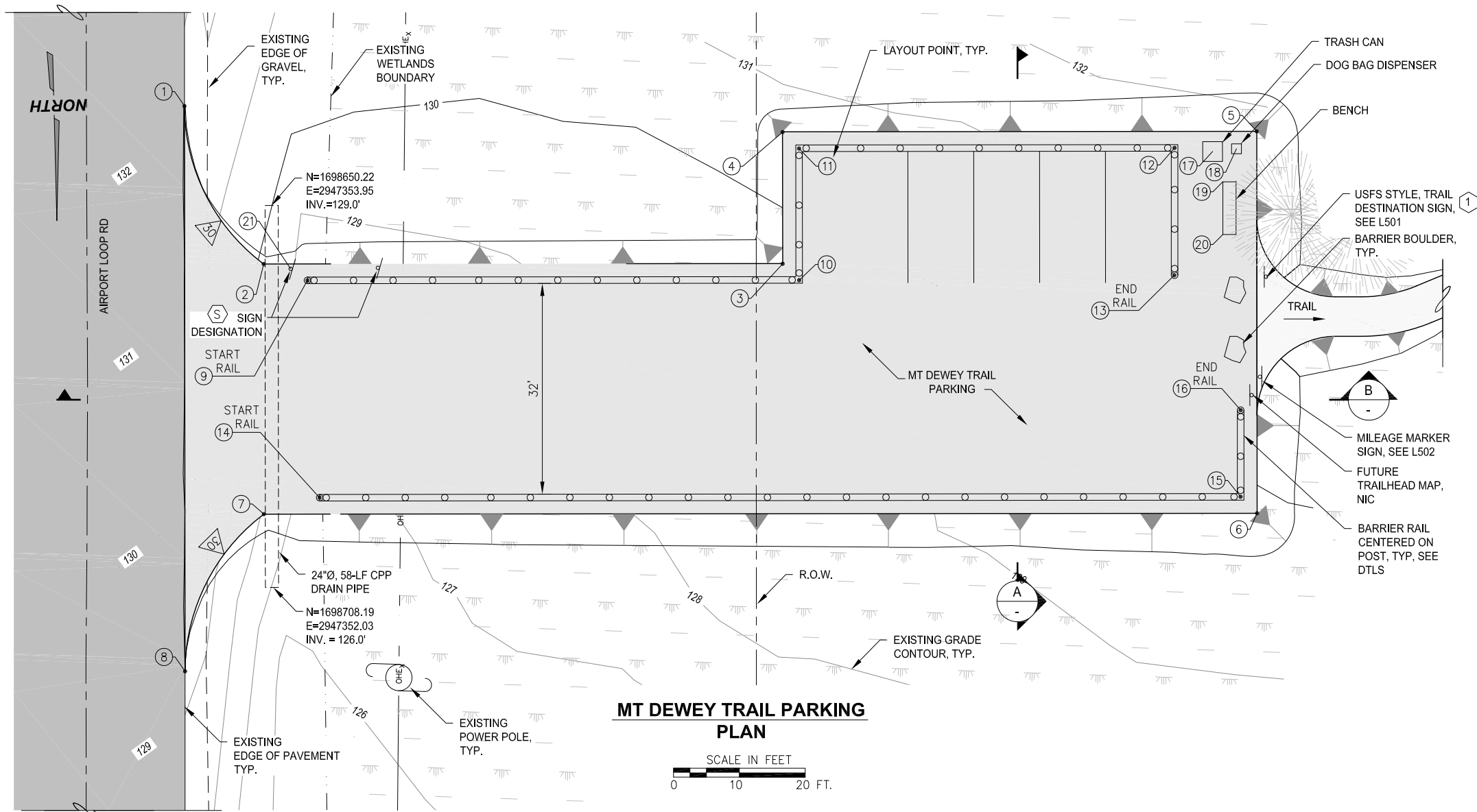
I, Amber Al-Haddad, acknowledge that I am acting on behalf of the above named organization with the full authority to do so. I further acknowledge and accept that City and Borough of Wrangell shall comply with all the provisions and conditions that the Department of Transportation and Public Facilities has included as a condition of issuing this permit.

Amber Al-Haddad
Permittee Signature Capital Facilities Director

5/2/2023
Date

[Signature]
DOT&PF Signature

05/04/2023
Date



LAYOUT TABLE ABBREVIATIONS:

- BR BARRIER RAIL
- CL CENTER LINE
- COR CORNER
- DBD DOG BAG DISPENSER
- EBC EDGE BASE COURSE
- EP EDGE OF PAVEMENT
- ME MATCH EXISTING
- PC POINT OF CURVATURE
- PT POINT OF TANGENCY
- TC TRASH CAN

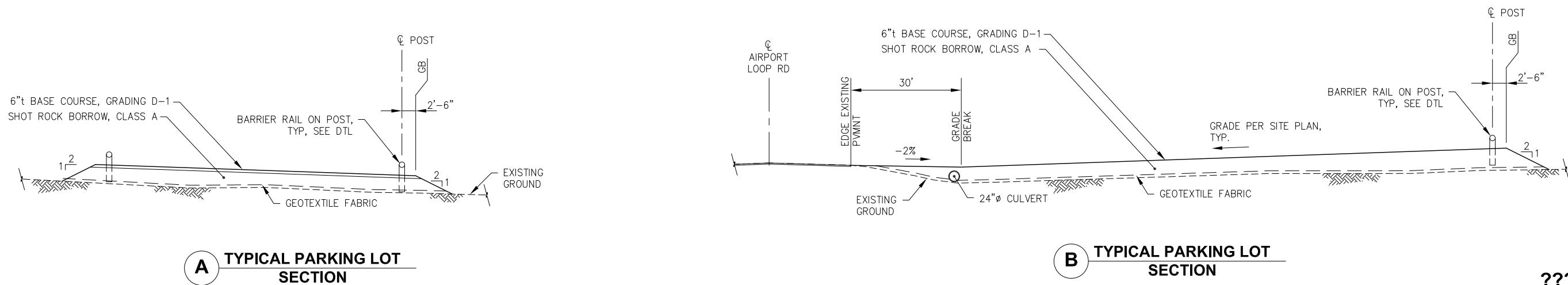
STOP SIGN SCHEDULE

SIGN NO.	MUTCD CODE NO.	DESCRIPTION	SIGN SIZE (INCH)	POST SIZE (INCH)
(S)	R1-1	STOP SIGN	30 x 30	2.0 x 2.0 PERFORATED TUBE

NOTES:

1. MUTCD CODE NO. FROM U.S. DOT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2009.
2. SIGNS AND SIGN POSTS SHALL BE PROVIDED & INSTALLED IAW CBJ STANDARD 127A.
3. COORDINATE FINAL SIGN AND BARRIER BOULDER LOCATIONS IN FIELD WITH ENGINEER AND/ OR OWNER.

MT DEWEY TRAIL PARKING PLAN



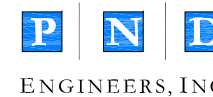
A TYPICAL PARKING LOT SECTION

B TYPICAL PARKING LOT SECTION

??% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



9360 Glacier Highway, Ste. 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: BMI CHECKED: CRS SCALE: AS SHOWN
DRAWN: PJD APPROVED: _____

DATE: 2/22/23

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

SHEET TITLE: MT DEWEY TRAIL PARKING PLAN AND SECTIONS

Wrangell Non-Motorized Transportation System Traffic Control Plan

The successful Contractor's Work Site Traffic Supervisor will devise and submit for approval the written Traffic Control Plan (TCP). The TCP will describe the placement, size, mounting height, etc. for all devices used such as flagging, cones and signage conforming to the MUTCD. The TCP will indicate the date and time of construction and address vehicular, pedestrian and bicycle traffic in the area through public notices and advertisements.

State of Alaska



Patent

No. 9598

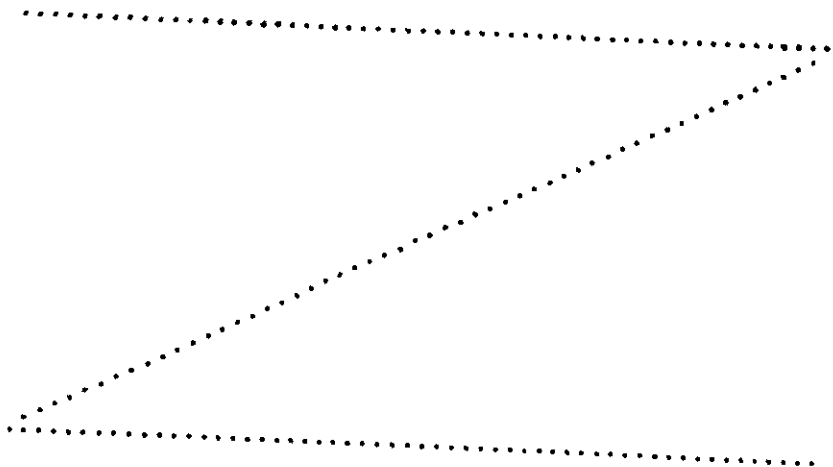
Know Ye By These Presents that the State of Alaska, pursuant to A.S. 38.05.810 and the regulations promulgated thereunder, in consideration of the sum of TEN AND NO/100 DOLLARS lawful money of the United States, and other good and valuable consideration, now paid, the receipt whereof is hereby acknowledged, does hereby grant to The CITY OF WRANGELL, P.O. Box 531, Wrangell, Alaska 99929, its successors and assigns, all that real property situated in the Wrangell Recording District, State of Alaska, and described as follows:

PARCELS 1, 2, 3A, 3B, 4A, 4B, 5, 6, 7, 8 AND 9 OF ALASKA STATE LAND SURVEY NO. 84-83, CONTAINING 288.728 ACRES, MORE OR LESS, ACCORDING TO THE SURVEY PLAT FILED IN THE WRANGELL RECORDING DISTRICT ON JANUARY 30, 1986 AS PLAT 86-1.

Subject to:

Platted easements and reservations.

The Grantee is granted the authority to manage easements reserved, to limit, restrict, or close easements in order to protect public health, safety, wildlife values, or the environment.



88-230

RECORDED - FILED 13-
 WRANGELL REC DIST
 DATE 5-16 1988
 TIME 2:40 P.M.
 Requested by City of
 Address Wrangell

Save and Except, those restrictions appearing in the Federal Patent or other conveyance by which the Grantor acquired title;

And Further, Alaska, as Grantor, hereby expressly saves, excepts and reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, all oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils of every name, kind or description, and which may be in or upon said lands above described, or any part thereof, and the right to explore the same for such oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils, and it also hereby expressly saves and reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, the right to enter by itself, its or their agents, attorneys, and servants upon said lands, or any part or parts thereof, at any and all times for the purpose of opening, developing, drilling, and working mines or wells on these or other lands and taking out and removing therefrom all such oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils, and to that end it further expressly reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, the right by its or their agents, servants and attorneys at any and all times to erect, construct, maintain, and use all such buildings, machinery, roads, pipelines, powerlines, and railroads, sink such shafts, drill such wells, remove such soil, and to remain on said lands or any part thereof for the foregoing purposes and to occupy as much of said lands as may be necessary or convenient for such purposes hereby expressly reserving to itself, its lessees, successors, and assigns, as aforesaid, generally all rights and power in, to, and over said land, whether herein expressed or not, reasonably necessary or convenient to render beneficial and efficient the complete enjoyment of the property and rights hereby expressly reserved.

To Have And To Hold the said land, together with the tenements, hereditaments, and appurtenances thereunto appertaining, unto the said Grantee and ~~heirs and assigns forever~~ its successors and assigns forever.

In Testimony Whereof the State of Alaska has caused these presents to be executed by the Director of the Division of Land and Water Management, Department of Natural Resources, State of Alaska, pursuant to delegated authority, this 6th day of May, 1988

For the Carol L. Shobe
Director, Division of Land and Water Management

State of Alaska)
THIRD Judicial District) ss.

This Is To Certify that on the 6th day of May, 1988, appeared before me

Carol L. Shobe who is known to me to be the Director of the Division of Land and Water Management, Department of Natural Resources, State of Alaska, or the person who has been lawfully delegated the authority of said Director to execute the foregoing document; that he executed said document under such legal authority and with knowledge of its contents; and that such act was performed freely and voluntarily upon the premises and for the purposes stated therein.

K. H. R. Knight
Notary Public in and for Alaska
My Commission expires 4-4-89



ADL No. 100553
Patent No. 9598
Location Index:
T. 62 S., R. 83 E., C.R.M.
Section 24
T. 62 S., R. 84 E., C.R.M.
Sections 19, 20, 29, 30 and 31 Page 1 of 2

Return Document to:
City Clerk
City of Wrangell
PO Box 531
Wrangell, AK 99929

State of Alaska

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

Payment received from: 04/12/2023

*

Amber Al-Haddad, City of Wrangell

*

Reference **DW 32377**

Payment received for:

- Encroachment Application Processing Fee (Non-Refundable) \$
-
- Encroachment Renewal Fee (Non-Refundable) \$
-
- Driveway Permit Application Fee (Non-Refundable) \$100.00
-
- Driveway Performance Bond (Refundable) \$500.00
-
- Lane Closure Permit (Non-fundable) \$

Form of Payment:

- Check / Cashier's Check / Money Order
-
- Visa #3099 Exp. Date 10/24 Sec.051
-
- Mastercard # Exp. Date Sec.
-
- American Express # Exp. Date Sec.
-
- Discover # Exp. Date Sec.

Total Amount Paid: \$600.00

Thank you for your payment!

Dept. of Transportation – Southcoast Region
Right of Way Section
P.O. 112506
Juneau, AK 99811-2506
ATTN: Arthur Drown
(907) 465-4517

SECTION 01010 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 GENERAL

A. 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 that 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.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. WORK consists of all activities necessary to construct the Non-Motorized Transportation System, as shown in the contract documents. Work generally includes various amounts of mobilization, clearing and grubbing, excavation and embankment, aggregate and timber trails, parking area, signage and site amenities and other miscellaneous improvements.

1.3 SITE OF THE WORK

A. The site of the WORK is located at between the Mt. Dewey Trail and Airport Road in Wrangell, Alaska.

1.4 BEGINNING AND COMPLETION OF THE WORK

A. Time is the essence of the contract. In accordance with the provisions of Article 2 of SECTION 00500 - AGREEMENT, the CONTRACTOR shall begin the WORK on the date specified in the written Notice to Proceed from the OWNER, and shall complete all the WORK in accordance with the following schedule:

B. WORK DESCRIPTION	DATE
1. Substantial Completion All Work	June 1, 2024
2. Final Completion All WORK under the Contract Document	June 15, 2024

1.5 CONTRACT METHOD

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

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.

SECTION 01010 – SUMMARY OF WORK

- 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.

1.7 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.

1.8 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.

1.9 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 CPM Schedule in GANTT bar chart format
 - c. Procurement schedule of major equipment and 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.
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.
4. The CONTRACTOR should be prepared to discuss all of the items listed below:
 - a. Status of CONTRACTOR's insurance and bonds.

SECTION 01010 – SUMMARY OF WORK

- 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. Major equipment deliveries and priorities.
 - j. CONTRACTOR's assignments for safety and first aid.
5. The OWNER will preside at the Pre-Construction Conference and will arrange for keeping and distributing the minutes to all persons in attendance.
 6. 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 regular on-site progress meetings at least weekly 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 that may develop. During each meeting, the CONTRACTOR is required to present any issues that may impact its WORK, with a view to resolve these issues expeditiously.

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

- A. Furnish: means to supply and deliver to the site, to unload and unpack ready for assembly, installation, testing, and start-up.
- B. Indicated: 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
- C. Install: defines operations at the site including; assembly, erection, placing, anchoring, applying, shaping to dimension, finishing, curing, protecting, and cleaning, that prepare items in the manner intended by the Contract Documents for the OWNER's use.

SECTION 01010 – SUMMARY OF WORK

- D. 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.
- E. 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

STANDARD
SPECIFICATIONS FOR
CONSTRUCTION OF
TRAILS AND TRAIL
BRIDGES ON
FOREST SERVICE
PROJECTS

U.S. Customary Units

National Technology and Development Program

10/30/2014

Supersedes the 1996 Standard Specification for Construction and Maintenance of Trails

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911.40.	Slide Maintenance
911.50.	Slough and Berm Removal
911.60.	Obliteration of Abandoned Trails
911.70.	Retainers
912.00.	Clearing Limits
912.10.	Clearing and Grubbing
912.20.	Brush Cutting
912.30.	Logging Out
912.40.	Hazard Tree Removal
912.50.	Loose Rock Removal
912.60.	Rock and Root Removal
913.00.	Surfacing
913.10.	Aggregate Surfacing and Base Course
913.20.	Hot Asphalt Surfacing
913.30.	Cold Asphalt Surfacing
913.40.	Grid Unit Surfacing
913.50.	Riprap Surfacing
913.60.	Chunk Wood Surfacing
913.70.	Imported Clay Surfacing
913.80.	Surface Maintenance

- 914.00. Climbing Turn
 - 914.10. Climbing Turn
 - 914.20. Climbing Turn Maintenance
- 915.00. Talus Section
 - 915.10. Talus Section
 - 915.20. Talus Section Maintenance
- 916.00. Turnout and Passing Section
 - 916.10. Turnout and Passing Section
 - 916.20. Turnout and Passing Section Maintenance
- 917.00. Fords
 - 917.10. Natural Ford
 - 917.20. Constructed Ford with Rock Structure
 - 917.30. Constructed Ford with Log Structure
 - 917.40. Stepping Stones
 - 917.50. Ford Maintenance
- 918.00. Foundations
 - 918.10. Rock Foundations
 - 918.20. Gabion Basket Foundations
 - 918.30. Crib Foundations
 - 918.40. Geosynthetic Foundations
 - 918.50. Corduroy Foundations
 - 918.60. Foundation Maintenance
- 919. Reserved for Trailway Special Project Specifications

920. Drainage Structures

- 921.00. Culverts
 - 921.10. Standard Culvert
 - 921.20. Standard Culvert with Headwalls
 - 921.30. Rock Culvert
 - 921.40. Treated Timber Box Culvert
 - 921.50. Open-Top Drain
 - 921.60. Bottomless Arch Culvert
 - 921.70. Log Culvert
 - 921.80. Culvert Maintenance
- 922.00. Waterbars
 - 922.10. Rock Waterbar
 - 922.20. Log or Treated Timber Waterbar
 - 922.30. Belted Waterbar
 - 922.40. Waterbar Maintenance
- 923.00. Spillways
 - 923.10. Rock Spillway
 - 923.20. Rock Spillway Maintenance
- 924.00. Underdrains
 - 924.10. Rock Underdrain
 - 924.20. Sheet Underdrain
 - 924.30. Underdrain Maintenance

- 925.00. Ditches
 - 925.10. Side Ditch
 - 925.20. Leadoff Ditch
 - 925.30. Ditch Maintenance
- 926.00. Berms
 - 926.10. Berm
 - 926.20. Berm Maintenance
- 927.00. Drain Dips
 - 927.10. Drain Dip
 - 927.20. Drain Dip Maintenance
- 928.00. Check Dams
 - 928.10. Check Dam
 - 928.20. Check Dam Maintenance
- 929. Reserved for Drainage Structures Special Project Specifications

930. Trail Structures

- 931.00. Switchbacks
 - 931.10. Type 1 – Radius Switchback
 - 931.20. Type 2 – Circular Landing Switchback
 - 931.30. Type 3 – Rectangular Landing Switchback
 - 931.40. Switchback Maintenance
- 932.00. Turnpikes
 - 932.10. Type 1 – Standard Turnpike
 - 932.20. Type 2 – Standard Turnpike with Foundation
 - 932.30. Turnpike Maintenance
- 933.00. Side Barriers
 - 933.10. Stacked Rock Barrier
 - 933.20. Masonry Rock Barrier
 - 933.30. Barrier Rail on Grade
 - 933.40. Barrier Rail on Post
 - 933.50. Curbs
 - 933.60. Guardrail
 - 933.70. Side Barrier Maintenance
- 934.00. Puncheons
 - 934.10. Standard Puncheon
 - 934.20. Puncheon Without Decking
 - 934.30. Puncheon Maintenance
- 935.00. Retaining Walls
 - 935.10. Log Crib
 - 935.20. Stacked Rock Retaining Wall
 - 935.30. Wire Basket Retaining Wall
 - 935.40. Masonry Rock Retaining Wall
 - 935.50. Cast-in-place Concrete Retaining Wall
 - 935.60. Retaining Wall Maintenance

- 936.00. Stairways
 - 936.10. Individual Steps
 - 936.20. Overlapping Steps
 - 936.30. Crib Ladder
 - 936.40. Staircase
 - 936.50. Ladder
 - 936.60. Stairway Maintenance
- 937.00. Railing System
 - 937.10. Railing System
 - 937.20. Railing System Maintenance
- 938.00. Boardwalks
 - 938.10. Standard Boardwalk
 - 938.20. Elevated Boardwalk
 - 938.30. Step and Run
 - 938.40. Boardwalk Maintenance
- 939. Reserved for Trail Structures Special Project Specifications
- 940. Restriction Devices**
- 941.00. Fences
 - 941.10. Post and Wire Fence
 - 941.20. Post and Rail Fence
 - 941.30. Woven Wire Fence
 - 941.40. Jack Leg Fence
 - 941.50. Stacked Rail (Worm) Fence
 - 941.60. Remove and Reset Fence
 - 941.70. Fence Maintenance
- 942.00. Gates
 - 942.10. Wire Gate
 - 942.20. Swing Gate
 - 942.30. Loose Rail Gate
 - 942.40. Accessible Gate – Kissing Gates
 - 942.50. Accessible Gate – Chicanes
 - 942.60. Gate Maintenance
- 943.00. Cattle Guards
 - 943.10. Standard Cattle Guard
 - 943.20. Above Ground Cattle Guard
 - 943.30. Cattle Guard Maintenance
- 944.00. Stiles
 - 944.10. Stiles
 - 944.20. Stile Maintenance
- 945.00. Bollards
 - 945.10. Bollards
 - 945.20. Bollard Maintenance
- 949. Reserved for Restriction Devices Special Project Specifications

950. Signs and Markers

- 951.00. Signs
 - 951.10. Signs
 - 951.20. Sign Repair and Replacement Maintenance
- 952.00. Route Markers
 - 952.10. Route Markers
 - 952.20. Route Marker Maintenance
- 953.00. Reassurance Markers
 - 953.10. Standard Forest Service Blaze
 - 953.20. Manufactured Blazer
 - 953.30. Reassurance Marker Maintenance
- 954.00. Mileage Markers
 - 952.10. Mile Markers
 - 952.20. Mileage Marker Maintenance
- 955.00. Cairns
 - 955.10. Cairns
 - 955.20. Cairn Maintenance
- 959. Reserved for Route Markers and Signs Special Project Specifications

960. Trail Bridges

- 961.00. Log Stringer Trail Bridge
 - 961.10. Single Log Stringer Trail Bridge
 - 961.20. Multiple Log Stringer Trail Bridge
- 962.00. Sawn Timber Trail Bridge
 - 962.10. Sawn Timber Stringer Trail Bridge
 - 962.20. Longitudinal Nail-Laminated Timber Trail Bridge
- 963.00. Glulam Trail Bridge
 - 963.10. Glulam Stringer Trail Bridge
 - 963.20. Longitudinal Glulam Deck Panel Trail Bridge
- 964.00. Prefabricated Steel Trail Bridge
- 965.00. Trail Bridge Substructures
 - 965.10. Timber Sill on Geocell Pad
 - 965.20. Timber Sill on Gabion Basket
 - 965.30. Timber Sill on Timber Cribbing
 - 965.40. Concrete Leveling Pad on Bedrock
- 966.00. Trail Bridge Maintenance
- 969. Reserved for Trail Bridge Special Project Specifications

970. Specialty Structures

- 971. Reserved for Snow Sheds
- 972. Reserved for Tunnels
- 979. Reserved for Specialty Structures Special Project Specifications

980. Incidentals

- 981.00. Seeding, Fertilizing and Mulching
- 982.00. Erosion Control Blankets
- 983.00. Removal of Structures and Obstructions
- 989.00. Reserved for Incidentals Special Project Specifications

990. Material

- 991.00. Rock, Grid Pavement Unit, Aggregate and Asphalt
 - 991.01 Rock
 - 991.02 Gabion and Revet Mattress Rock
 - 991.03 Grid Pavement Unit
 - 991.04 Pit-Run Aggregate
 - 991.05 Screened Aggregate
 - 991.06 Crushed Aggregate for Base or Surface Course
 - 991.07 Asphalt
 - 991.08 Cement
- 992.00. Pipe Material
- 993.00. Fence Material
- 994.00. Geosynthetic Material
 - 994.01 Geotextile
 - 994.02 Geonet
 - 994.03 Geogrid
 - 994.04 Geocell
 - 994.05 Sheet Drains
- 995.00. Material for Timber Structures
- 996.00. Gabion and Revet Mattress Material

Section 900

General Specifications

Section 901—Terms, Format, Abbreviations and Definitions

901.01 Meaning of Terms. These specifications are generally written in the imperative mood. In sentences using the imperative mood, the subject “the Contractor,” is implied. Also implied in this language is “shall,” “shall be,” or similar words or phrases. In material specifications, the subject may also be the supplier, fabricator, or manufacturer supplying material, products, or equipment for use on the project.

Wherever “*directed*,” “*required*,” “*prescribed*,” or similar words are used, the “*direction*,” “*requirement*,” or “*order*” of the Contracting Officer is intended. Similarly, wherever “*approved*,” “*acceptable*,” “*suitable*,” “*satisfactory*,” or similar words are used, they mean “*approved by*,” “*acceptable to*,” or “*satisfactory to*” the Contracting Officer.

The word “*will*” generally pertains to decisions or actions of the Contracting Officer.

Whenever in these specifications, or in other contract documents, the following terms (or pronouns in place of them) are used, the intent and meaning shall be interpreted as follows: reference to a specific standard, test, testing method, or specification shall mean the latest published edition or amendment that is in effect at the solicitation issue date for the public works contracts.

901.02 Specification Format These specifications are divided into Sections.

Sections 900 through 906, 908 and 909 consist of general contract requirements for which no direct payment is made. The requirements contained in Sections 900 through 906 are applicable to all contracts.

Sections 907, 908, 909 and 910 through 989 consist of construction contract requirements for specific items of work. Work under these Sections is paid for directly or indirectly according to Subsection 906.04 and the Section ordering the work. When there is no pay item in the bid schedule, no direct payment is made.

Sections 990 through 999 contain the material requirements for Sections 910 through 989. No direct payment is made in Sections 990 through 999. Payment for material is included as part of the work required in Sections 910 through 989.

The first three digits of the pay item number identify the Section under which the work is performed.

901.03 Abbreviations. Whenever these abbreviations are used in the specifications, they represent the following:

(a) Acronyms

AASHTO	American Association Of State Highway And Transportation Officials
ABS	Acrylonitrile-Butadiene-Styrene

AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
AQ	Actual Quantities
APA	American Plywood Association
ASTM	American Society For Testing And Material
AWPA	American Wood Protection Association
CO	Contracting Officer
C.F.	Cubic Feet
C.Y.	Cubic Yard
DQ	Design Quantities
EA	Each
FAR	Federal Acquisition Regulation
g	Grams
HDPE	High-Density Polyethylene
hr	Hour
kg	Kilogram
kN	Kilonewtons
lb	Pound
L.F.	Linear Feet
LS	Lump Sum
LSQ	Lump Sum Quantities
m	Meter
m ²	Square Meter
m ³	Cubic Meter
mi	Mile
mm	Millimeter
MPa	Megapascals
MSE	Mechanically Stabilized Earth
N	Newton
NBS	National Bureau Of Standards
NCMA	National Concrete Masonry Association
OSHA	Occupational Safety & Health Administration
Pa	Pascal
PE	Polyethylene
PS	Product Standard Issued By The U.S. Department Of Commerce
psi	Pounds Per Square Inch
PVC	Polyvinyl Chloride
S.F.	Square Feet
SQ	Staked Quantities
S.Y.	Square Yard
WCLIB	West Coast Lumber Inspection Bureau
WWPA	Western Wood Products Association
WWPI	Western Wood Preservers Institute

Additional abbreviations may be found in Section 101.03 of the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03).

(b) Slope notation (vertical: horizontal). For slopes flatter than 1:1, express the slope as the ratio of one unit vertical to a number of units horizontal. For slopes steeper than 1:1, express the slope as the ratio of a number of units vertical to one unit horizontal.

901.04 Definitions The following terms, or pronouns in place of them, are used in these specifications or in other contract documents, the intent and meaning are as follows:

Barriers. A fence or other obstacle that prevents movement or access.

Base Course. The layer or layers of specified material of designed thickness placed on a trailbed to support surfacing.

Batter. A backward and upward slope of the face of a wall.

Berm. The ridge of material formed on the outer edge of the trail that projects higher than the tread.

Borrow. Suitable materials taken from approved sources designated on the plans or on the ground, to be used for embankments and backfilling.

Bridge. A trail structure, including supports, erected over a depression or obstruction such as a body of water, a road, a trail, or a railroad that provides a continuous pathway and that has a deck for carrying traffic or other loads.

Cap Rock. Rock placed in the top or uppermost layer in a constructed rock structure, such as a talus or rubble rock section or rock retaining wall.

Catch Point. The outer limits of a trailway where the excavation and/or embankment intersect with the ground line.

Clearing Limit. The area over and beside the trail that is cleared of trees, limbs, and other obstructions.

Climbing Turn. A reverse in direction of trail grade without a level landing used to change elevation on a steep slope.

Compacted. Consolidation that is obtained by tamping or rolling suitable material until no noticeable displacement of material is observed.

Contracting Officer (CO). An official of the Government with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the CO acting within the limits of their authority as delegated by the CO.

Culvert. Any structure with a bottom, regardless of the fill depth, the depth of invert, or the presence of a horizontal driving surface, or any bottomless (natural

channel) structure with footings that does not have wheel loads in direct contact with the top of the structure.

Curb. A border defining the edge of the trail or trail bridge.

Cushion Material. Native or imported material generally placed over rocky section of unsurfaced trail to provide a usable and maintained traveled way.

Designated on the Ground. The location of materials, work areas, and construction items, including lines and grades, marked on the ground with stakes, flagging, tags, or paint.

Drawings. Design sheets or fabrication, erection, or construction details submitted to the Government by the Contractor according to FAR Clause 52.236-21 Specifications and Drawings for Construction. Also refers to submissions and submittals.

Duff. Organic material overlying rock or mineral soil.

Embankment. A structure of suitable material placed on the prepared ground surface and constructed to the trailbed elevation.

Excess Excavation. Material in the trailway in excess of that needed for construction of designed trailways.

Falsework. Temporary construction work on which a main work is wholly or partly built and supported until the main work is strong enough to support itself.

Ford. A water-level stream crossing constructed to provide a level surface for safe traffic passage.

Full Bench. Trailbed constructed entirely on undisturbed material.

Gabion Basket. Rectangular wire baskets filled with rock used as pervious, semiflexible building blocks for slope and foundation stabilization.

Grade. The vertical distance of ascent or descent of the trail expressed as a percentage of the horizontal distance.

Hazard Tree. An unstable tree that is likely to fall across the trail.

Header Rock. Rock laid with the narrow end towards the face of the wall.

Inslope. Where the trail tread is sloped downward toward the backslope.

Leave Tree. Trees designated to be left or to remain undisturbed after trail construction.

Mineral Soil. Soil or aggregate that is free from organic substances and contains no particles larger than 2 inches at their greatest dimension.

Outslope. Where the trail tread is sloped downward toward the embankment or daylight side of the trailway.

Plans. The contract plans furnished by the Government showing the location, type, dimensions, and details of work.

Retainers. Embedded border of wood or rock used to retain fill and/or surface material.

Sideslope. The natural slope of the ground, usually expressed as a percentage.

Slough. That material from the backslope or the area of the backslope that has raveled onto the trailbed.

Slump. Where the trailbed material has moved downward, causing a dip in the trail grade.

Special Contract Requirements. Specifications that detail the conditions and requirements peculiar to an individual project, including additions and revisions to the standard specifications.

Standard Plans. Detailed plans approved for repetitive use and included as part of the plans.

Standard Specifications. The Standard Specifications for Construction of Trails on Federal Projects approved for general application and repetitive use.

Surfacing. Material placed on top of the trailbed or base course that provides the desired tread.

Suitable Material. Rock that can be accommodated in the trail structure, and soil free of duff with a recognizable granular texture.

Switchback. A reverse in direction of trail grade with a level landing used to change elevation on a steep slope, usually involving special treatment of the approaches, barriers, and drainages.

Trailbed. The finished surface on which base course or surfacing may be constructed. For trails without surfacing the trailbed is the tread.

Trailway. The portion of the trail within the limits of the excavation and embankment.

Tread. The surface portion of the trail upon which traffic moves.

Turnout. A short section of extra trail width to provide for passage of trail users.

Waterbar. A structure used for turning water off the trail, usually made of logs or stones.

Water Courses. Any natural or constructed channel where water naturally flows or will collect and flow during spring runoff, rainstorms, etc.

Additional definitions may be found in Section 101.03 of the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03).

Section 902—Intent of Contract

902.01 Intent of Contract. The intent of the contract is to provide for the construction and completion of the work described. The precise details of performing the work are not stipulated except as considered essential for the successful completion of the work. Furnish all labor, material, equipment, tools, transportation, and supplies necessary to complete the work according to the contract.

Section 903—Control of Work

903.01 Specifications and Drawings. Follow the requirements of FAR Clause 52.236-21 Specifications and Drawings for Construction.

(a) General. Prepare drawings as necessary to construct the work. Drawings include, but are not limited to, layouts that show the relative position (vertical and horizontal as appropriate) of work to be performed, fabrication details for manufactured items and assemblies, installation and erection procedures, details of post-tensioning and other systems, detailed trench and excavation procedures that conform to OSHA requirements, traffic control implementation drawings, and methods for performing work near existing structures or other areas to be protected. Show all the drawing dimensions in United States customary units.

Drawings shall be a minimum size of 11 by 17 inches and a maximum size of 24 by 36 inches. All text should have a minimum height of 1/8 inch for 24 by 36 inch drawings (D size sheets). Include on each drawing and calculation sheet, the project number, name, and other identification as shown in the contract.

Furnish 5 sets of drawings and supporting calculations for acceptance before performing work covered by the drawings. If drawings are returned for revision, correct and resubmit for acceptance. Allow 40 days per submission for railroad structures and 30 days per submission for all other structures. The review time as specified is applied separately to each drawing submitted. The CO may request additional specific drawings for unique situations in order to clarify layout, construction details, or methodology. If drawings must be resubmitted, the time for acceptance starts over. Obtain written approval before changing or deviating from the accepted drawings.

(b) Specific requirements for concrete and miscellaneous structures.

(1) Furnish drawings for the following:

- (a) Site-specific layouts for all wall types and gabion installations;
- (b) Gabion and revet mattress details and installation procedures;
- (c) Forms and falsework for reinforced concrete box culverts less than or equal to 6 feet in height;

- (d) Fabrication drawings for bridge railings and parapets;
 - (e) Fabrication drawings for prestressed members;
 - (f) Fabrication and installation drawings for expansion joint assemblies;
 - (g) Fabrication drawings for bearing assemblies;
 - (h) Construction joint location and concrete deck placement sequences not shown on the plans;
 - (i) Erection diagrams for Soil-Corrugated Metal Structure interaction systems (multi-plate structures);
 - (j) Structural steel fabrication drawings;
 - (k) Utility hangar details; and
 - (l) Fabrication and installation drawings for precast items.
- (2) Furnish drawings that bear the seal and signature of a professional engineer proficient in the pertinent design field for the following:
- (a) Erection plans;
 - (b) Reinforced soil slopes details;
 - (c) MSE wall and crib wall details;
 - (d) Details and installation procedures for proprietary wall systems;
 - (e) Temporary bridge structures for public use;
 - (f) All bridge forms except for railings, parapets, and components less than 6 feet in height;
 - (g) Shoring systems and cofferdams greater than 6 feet in height;
 - (h) All shoring systems that support traffic loadings;
 - (i) Forms and falsework for all structures greater than 6 feet in height;
 - (j) Post-tensioning systems;
 - (k) Ground anchors, soil nail, and rock bolt assembly details, layout, and installation and testing procedures;
 - (l) Tie back wall details; and
 - (m) Alternate retaining wall details.
- (3) Furnish drawings that bear the seal and signature of a professional engineer who is proficient in forms and falsework

design and licensed in the state where the project will be constructed for the following:

- (a) Falsework for any structure with a span exceeding 16 feet;
- (b) Falsework for any structure with a height exceeding 14 feet; and
- (c) Falsework for structures where traffic, other than workers involved in constructing the structure, will travel under the structure.

Section 904—Control of Materials

904.01 Handling Materials. Transport and handle all materials to preserve their quality and fitness for the work. Stockpile, load, and transport aggregates in a manner that will preserve specified gradation and avoid contamination.

Store materials to assure the preservation of their quality and fitness for the work. Locate stored materials to facilitate their prompt inspection. Sites on Government-administered land that are not already designated may be used for storage purposes and for placing of equipment only when approved in advance by the CO. Restore all storage sites in accordance with requirements SHOWN ON THE PLANS or as otherwise specified. Arrangements for storage on other than designated sites are the responsibility of the contractor.

904.02 Material Sources

(a) Designated Sources. Sources for materials such as, but not limited to, soil, rock, or logs that are not available from trailway excavation or clearing operations will be designated. Sources of local materials designated in the SPECIAL CONTRACT REQUIREMENTS or SHOWN ON THE PLANS are guaranteed by the Government for the quality and quantity of material in the source.

Use all needed suitable material from the source. The designation of a source includes the right to use areas SHOWN ON THE PLANS for the purposes designated (such as plant sites, stockpiles, and haul roads). Operations are restricted to the confines of the area(s) designated.

Comply with the requirements of 30 CFR 56, subparts B and H. When required, re-establish vegetation in disturbed areas according to section 981.

(b) Contractor-Furnished Sources. Furnish material that produces an end product equivalent in performance to that specified.

904.03 Restoration. Shape and grade borrow areas on Government-administered land to make them stable and to minimize future erosion. Dispose of debris resulting from development of material sources by scattering, unless otherwise specified. Do not scatter debris within the clearing limits of trails or within roadsides. Cut off stumps to less than 12 inches above the ground as measured on the uphill side of the stump.

Section 905—Quality Assurance and Quantity Measurement

Description

905.01 This work consists of providing certification that the quality and quantity of construction conform to the plans, specifications, and requirements of the contract.

Construction

905.02 Certification and Measurements

(a) Offsite-Produced Materials. Furnish signed certificates executed by the manufacturer, supplier, or vendor, stipulating that all offsite-produced materials incorporated in the work meet applicable requirements SHOWN ON THE PLANS or stated in the specifications. Furnish a certificate for each commodity or invoice.

(b) Quantity Measurements. Submit quantities to the CO for periodic progress payments, and the CO will compute payments. Quantities are subject to verification.

905.03 Records. Maintain a set of contract plans depicting as-built conditions resulting from approved changes. Maintain the plans in a current condition and indicate changes from the original contract plans in red. Give the plans to the CO upon the completion of the contract work.

Measurement

905.04 Method. There will be no separate measurement for this item.

Payment

905.05 Payment will be considered incidental to other pay items in this contract.

Section 906—Measurement and Payment

906.01 General. Measurement and payment for contract work will be made only for and under those pay items included in the SCHEDULE OF ITEMS. All other work and materials will be considered incidental and included in the payment of the PAY ITEMS in the SCHEDULE OF ITEMS.

When more than one class, size, or thickness is specified in the SCHEDULE OF ITEMS for any PAY ITEM, suffixes will be added to the item number to differentiate between the items.

906.02 Determination of Quantities. The following measurements and calculations are to be used to determine contract quantities for payment:

Make measurements for seeding, geotextiles, and erosion control blankets along slope lines.

For retaining walls, measure by the square foot of front wall face.

Measure structures according to neat lines SHOWN ON THE PLANS or as altered by the CO in writing to fit field conditions. Make measurements along the centerline and parallel to the specified grade or foundation or as SHOWN ON THE PLANS.

Deduct lengths for stairways, turnpike, puncheon, retaining walls, wire baskets, switchbacks, bridges, and bridge approaches from the measurement of excavation in Section 911 unless these items are specified as incidental to excavation in Section 911.

For standard manufactured items, such as fence, wire, plates, rolled shapes, and pipe conduits identified by gage, weight, section dimensions, and the like, such identification shall be considered the nominal weights or dimensions. Manufacturer's tolerances will be accepted unless controlled by tolerances in the cited specifications.

906.03 Units of Measurement. Payment will be made by units defined and determined according to U.S. Customary measure and by the following:

- (a) Cubic Yard. A measurement computed by one of the following methods:
 - (1) Excavation, embankment, or borrow. The measurement computed by the average-end-area method from measurements made longitudinally along a centerline or other reference line.
 - (2) Material in place or stockpiled. The measurement computed with the dimensions of the in-place material using average-end-area method or prismoidal formula.
 - (3) Material in the Delivery Vehicle. The measurement computed using measurements of material in the hauling vehicles at the point of delivery.

Vehicles shall be loaded to at least their water-level capacity. Leveling of the loads may be required when vehicles arrive at the delivery point.

- (b) Each (EA). One complete unit, which may consist of one or more parts.
- (c) Lump Sum (LS). The quantities that denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job.

906.04 Methods of Measurement. One of the following methods of measurement for determining final payment is DESIGNATED ON THE SCHEDULE OF ITEMS for each PAY ITEM:

(a) Designed Quantities. These quantities denote the final number of units to be paid for under the terms of the contract. They are based upon the original design data available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, and plans. Changes in the number of units DESIGNATED IN THE SCHEDULE OF ITEMS may be authorized under the following conditions:

- (1) As a result of changes in the work approved by the CO.
- (2) As a result of the CO determining that errors exist in the original design that cause a PAY ITEM quantity to change by 15 percent or more.
- (3) As a result of the contractor submitting to the CO a written request showing evidence of errors in the original design that cause a PAY ITEM quantity to change by 15 percent or more. The evidence must be verifiable and consist of calculations, plans, or other data that show how the designed quantity is believed to be in error.

- (b) Staked Quantities (SQ). These quantities are determined from staked measurements prior to the construction.
- (c) Actual Quantities (AQ). These quantities are determined from measurement of completed work.
- (d) Vehicle Quantities. These quantities are measured or weighed in hauling vehicles.
- (e) Lump Sum Quantities (LSQ). These quantities denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job.

906.05 Government-Furnished Materials. When materials are furnished by the Forest Service, the note "Government-Furnished Materials" will be added to the description of the PAY ITEM.

Section 907—Mobilization

Description

907.01 This work consists of moving personnel, equipment, material, and incidentals to the project and performing all work necessary before beginning work at the project site. Mobilization includes the costs associated with obtaining permits, insurance, and bonds. Mobilization is not intended to pay for the costs of materials before they are used on the project site.

Payment

907.02 The accepted quantity, measured as provided in Subsection 906.02, will be paid at the contract price per unit of measurement for the Section 907 pay item shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section.

Progress payments for mobilization lump sum will be paid as follows:

- (a) Bond premiums will be reimbursed according to FAR Clause 52.232-5, Payments Under Fixed-Price Construction Contracts, after receipt of the evidence of payment. Reimburse for bond premiums before issuing the Notice to Proceed if evidence of payment is received.
- (b) When 5 percent of the original contract amount is earned from other bid items, 50 percent of the mobilization item, or 5 percent of the original contract amount, whichever is less, will be paid.
- (c) When 10 percent of the original contract amount is earned from other bid items, 100 percent of the mobilization item, or 10 percent of the original contract amount, whichever is less, will be paid.
- (d) Any portion of the mobilization item in excess of 10 percent of the original contract amount will be paid after final acceptance. Pay any unpaid amount for mobilization upon final acceptance of all work items.

Section 908—Construction Staking, Flagging, and Cleanup

Description

908.01 This work consists of establishing any control points needed in addition to existing staking, and removing and disposing of all construction stakes, tags, flagging, and plastic ribbon from the project area.

Construction

908.02 General. The Government will set initial construction stakes or flagging, and control points, and furnish the contractor with all necessary information relating to lines, slopes, and grades. These stakes and flagging constitute the field control.

Furnish and maintain additional stakes, flagging, templates, batter boards, and other materials and supplies necessary for marking and maintaining points and lines established. Do not perform work in the absence of control points. If any construction control points are destroyed, displaced, or erroneous, notify the CO. Uniformly contour alignment and construct grade from control point to control point.

Remove all construction stakes, tags, flagging, and plastic ribbon from the project area within 7 days after the final inspection of all other work on the project. Dispose of all stakes, tags, flagging, and plastic ribbon off Government-administered lands unless otherwise designated.

Measurement

908.03 There will be no separate measurement for this item.

Payment

908.04 Trail staking, flagging, and cleanup will be considered incidental to other pay items in this contract, and additional payment will not be made.

Section 909— Maintenance for Traffic and Temporary Construction Access

Description

909.00.01 This work consists of maintaining existing trails that are undergoing improvements open and maintained in such a condition as to safely accommodate traffic and providing temporary construction access to the site. Maintaining the trail for traffic and temporary access may be covered by subsection:

909.10	Maintenance for Traffic
909.20	Temporary Construction Access

Measurement

909.00.02 There will be no separate measurement for these items.

Payment

909.00.03 Maintaining the trail for public access and providing temporary construction access will be considered incidental to other pay items in this contract, and additional payment will not be made.

909.10 - Maintenance for Traffic

Description

909.10.01 Keep existing trails that are undergoing improvements open and maintained in such a condition as to safely accommodate traffic. Provide and maintain temporary detours, approaches, or crossings and intersections with trails, roads, businesses, parking lots, and campgrounds in a safe and passable condition. Perform no work that interferes or conflicts with traffic until a plan for handling traffic has been submitted and approved. Specific requirements for detours or closures are SHOWN ON THE PLANS or in the SPECIAL CONTRACT REQUIREMENTS.

Before any suspension of work, take precautions necessary to prevent damage to the project, such as temporary detours, approaches, crossings, or intersections, and make provisions for normal drainage and to minimize erosion. Leave all trailways in a condition suitable for traffic unless otherwise specified.

The Government may permit use of portions of the project during periods when operations are shut down. All maintenance attributable to permitted use during periods of work suspension will be provided by the Government. The contractor is responsible for any maintenance that is not attributable to use or that is necessary during suspensions resulting from fault or negligence of the contractor.

909.20 - Temporary Construction Access

Description

909.20.01 The government may provide temporary access for the contractor from another route or trail other than the trail being constructed. The contractor will be responsible for maintaining the temporary access, removing and rehabilitating the temporary access route and any damaged area after construction is completed.

Section 910—Trailways

Section 911 - Trail and Prism

Description

911.00.01 This work consists of constructing trails, restoration of existing trails or obliteration of abandoned trails. The earthwork and associated trail tread and prism work may be covered by one or more of the following subsections:

911.10.	Excavation and Embankment
911.20.	Borrow
911.30.	Existing Trail Restoration
911.40.	Slide Maintenance
911.50.	Slough and Berm Removal
911.60.	Obliteration of Abandoned Trails
911.70.	Retainers

Measurement

911.00.02 Measure the section 911 items listed in the bid schedule according to subsection 906.

Payment

911.00.03 The accepted quantities will be paid at the contract price per unit of measurement for the section 911 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

911.10 - Excavation and Embankment

Description

911.10.01 This work consists of the excavation and placement of excavated material, regardless of its nature, from within the trailway or from other sources, except for material included under other pay items SHOWN IN THE SCHEDULE OF ITEMS.

Includes excavation, embankment, and backfill construction required to shape and finish the trailbed, ditches, backslopes, fill slopes, drainage dips, trail passing sections, and turnouts. Also includes excavation and embankment work required to construct culverts, trail bridges, shallow stream fords and gully crossings, talus and rubble rock sections, and climbing turns.

Materials

911.10.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

911.10.03 Use and Disposal of Excavated Material. Conserve and use all suitable material for specified work. Conserve excess excavated rock suitable for specified project work and use in place of materials from designated sources.

Remove all duff and debris from within trailway limits and uniformly spread outside the clearing limits, not more than 4 inches in depth (unless otherwise SHOWN ON THE PLANS). Do not obstruct drainage or create piles, berms, or windrows of debris.

Place excess and unsuitable excavation beyond the downslope edge of the trailbed Do not obstruct drainage and spread to a depth not exceeding 4 inches. This includes any material removed in the grubbing operation and deposited in the same area.

Place rocks over 4 inches in greatest dimension not used in construction beyond the hinge point on the downslope side. Place rocks so that the tops are at least 6 inches lower than the trailbed surface. Ensure that no blockage of drainage or creation of a windrow effect occurs.

911.10.04 Trailway Excavation and Embankment. Minor deviations of \pm 12 inches in vertical alignment and 36 inches in horizontal alignment with smooth transitions of at least 30 feet on each side of the deviation are acceptable unless otherwise SHOWN ON THE PLANS.

Construct embankments with suitable compacted material. Compact all disturbed soil within the trailbed area.

Remove any rock within or above the backslopes that is unstable. Use or dispose of rock in accordance with Subsection 912.03.

Leave the finished slope in a uniform and roughened condition.

Make necessary adjustments of horizontal or vertical alignment, within the tolerances specified in this subsection, to produce the designed trailway section and balance earthwork. Such adjustments shall not be considered as changes.

911.10.05 Trailbed Finish. Fill holes with suitable material, compact, and cut high points to provide a uniform trailbed finish.

911.10.07 Ditches. Construct ditches to be free of loose rocks, roots, sticks, and other obstructions.

911.10.08 Geosynthetics. Where SHOWN ON THE PLANS, place geosynthetics flat and parallel to centerline of the trail before placing embankment. Overlap geosynthetics a minimum of 24 inches. Install anchors or fasteners as recommended by the geosynthetic manufacturer.

911.20 - Borrow

Description

911.20.01 This work consists of placing select borrow material on the trailbed.

Materials

911.20.02 Requirements. Obtain borrow materials from locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Obtain CO's approval before using borrow from other locations. Suitable material from slough and berm removal may also be used as borrow material. Use suitable borrow material and aggregate under 2 inches in the greatest dimension.

Construction

911.20.03 General. On sideslopes where water can drain away from the trailbed, provide a sufficient depth of borrow material to obtain the outslope as SHOWN ON THE PLANS.

Across meadows and on turnpike sections, provide a sufficient depth of borrow material to produce a crowned trailbed as SHOWN ON THE PLANS.

Compact all material placed. Compact borrow material placed on the approaches of bridges and puncheon to provide a smooth surface and a smooth transition from the structure to the adjoining trail tread surface.

Cover any culvert surfaces that have become exposed with a minimum depth of 6 inches of suitable material over the full length of the exposed culvert and of sufficient length along the trail to present a uniform trail grade.

Provide free-draining borrow sites and backslopes no steeper than 1 1/3:1.

911.30-Existing Trail Restoration

Description

911.30.01 This work consists of restoring the original trail template, including clearing, removing slough and berm, borrow, filling ruts and troughs, reshaping backslopes, excavation, reshaping trail tread, restoring drainage and other trail structures, constructing check dams, and removing protruding rocks, roots, stumps, slough, and berms.

Construction

911.30.03 Clearing and Grubbing. Clear and grub in accordance with the requirements of section 912 and as SHOWN ON THE PLANS.

911.30.04 Excavation and Embankment. Excavate and place all excavated material in accordance with the requirements of section 911.10.04 and as SHOWN ON THE PLANS.

911.30.05 Rock and Root Removal. Uniformly scatter the removed rocks and roots below the trailway and distribute to ensure no blockage of watercourses or creation of a windrow. Fill holes with suitable material and compact.

911.30.06 Slough and Berm Removal and Excess Material. Use suitable slough and berm material within the trailway to restore the trailbed as SHOWN ON THE PLANS. Place all unsuitable and excess material beyond the downslope edge of the trailbed and uniformly spread to a depth not exceeding 4 inches and so as not to obstruct drainage or interfere with the drainage of outsloped tread.

Remove berm when daylight can be obtained within a distance of 5 feet from the outslope edge of finished tread unless otherwise DESIGNATED ON THE GROUND or SHOWN ON THE PLANS.

911.30.07 Fill Material and Borrow. Use suitable material to fill ruts, troughs, and potholes in the tread that cannot be leveled and outsloped through performance of work in Subsection 915.06. Compact and shape as SHOWN ON THE PLANS.

Obtain borrow from areas SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

911.30.08 Drainage. Restore drainage dips and ditches to reestablish drainage as SHOWN ON THE PLANS by removing obstructions such as rocks, roots, and sticks to make ditches and culverts free draining.

Restore rock spillways in accordance with section 923 and as SHOWN ON THE PLANS.

911.30.09 Stream Channel Cleaning. Clean channel of obstructions in areas SHOWN ON THE PLANS. Remove debris and rocks from the stream channel and scatter outside of the side slopes of the stream channel and beyond the clearing limits.

911.30.10 Check Dams. When constructing check dams for gullies, use dimensional lumber, sound peeled logs, or a row of stones placed across the gully in the subgrade with the ends securely embedded in the banks as SHOWN ON THE PLANS and at locations STAKED ON THE GROUND.

Use suitable material for backfill as SHOWN ON THE PLANS. Place and compact backfill to meet the density of the existing trailbed and to form a smooth tread.

911.30.11 Switchbacks. Restore switchbacks in accordance with section 914 and as SHOWN ON THE PLANS.

911.30.12 Waterbars. Restore waterbars in accordance with section 922 and as SHOWN ON THE PLANS. Reestablish drainage by removing accumulated material and replacing loose or missing rocks, unsuitable logs, and deteriorated rubber belting.

911.30.13 Turnpikes. Restore turnpikes in accordance with section 913 and as SHOWN ON THE PLANS by replacing missing, rotten, or loose retainer logs and stakes, or missing or loose retainer rocks. Backfill with suitable material.

911.30.14 Trail Structures. Restore all trail structures at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

911.30.15 Reshaping and Finishing Trailbed and Backslopes. Provide a firm and uniformly finished trailbed in accordance with cross-sections SHOWN ON THE PLANS.

Provide a uniform and roughened surface on disturbed backslopes in accordance with cross-sections SHOWN ON THE PLANS. Cut all roots flush.

911.40 - Slide Maintenance

Description

911.40.01 This work consists of the removal and disposal of slide material from the trailbed and the restoration of all sections of trail that have been damaged.

Maintenance

911.40.02 General. Conserve and use suitable material from the slide on the trailbed for tread surfacing. Spread this material at a maximum depth of 3 inches for a distance not exceeding 100 feet in each direction from the site of the slide unless otherwise SHOWN ON THE PLANS.

Place all excess and unsuitable material beyond the downslope edge of the trailbed. Uniformly spread unsuitable material to a depth not exceeding 4 inches and do not obstruct drainage.

Reshape the backslope that contributed to the slide to reduce future sloughing and to conform to adjacent undamaged sections unless otherwise SHOWN ON THE PLANS.

Re-grade sections of trailbed that have been damaged to a width and finish that conform to adjacent undamaged sections unless otherwise SHOWN ON THE PLANS.

911.50 - Slough and Berm Removal

Description

911.50.01 This work consists of the removal and disposal of slough and berm material that has accumulated on the trailway.

Construction

911.50.02 Slough and Berm Removal and Excess Material. Remove all slough material within the trailway. Remove all material from the trailbed when daylight can be obtained within a distance of 4 feet from the outsloped edge of the finished tread unless otherwise DESIGNATED ON THE GROUND or SHOWN ON THE PLANS. Conserve and use suitable material to restore the trail tread as SHOWN ON THE PLANS.

Place all excess and unsuitable material beyond the downslope edge of the trailbed. Uniformly spread to a depth not exceeding 4 inches and do not obstruct drainage or interfere with the drainage of outsloped tread.

911.60 - Obliteration of Abandoned Trails

Description

911.60.01 This work consists of removal and disposal of existing structures, including turnpikes, walkways, bridges, culverts, signs and posts, and other material within the trailway, above or below ground. Work also includes salvaging DESIGNATED materials and backfilling the resulting trenches, holes, and pits.

Construction

911.60.02 Removal of Culverts and Bridges. Remove existing culverts within embankment areas at locations SHOWN ON THE PLANS.

Remove existing structures down to the natural stream bottom, and remove parts outside the water course to at least 12 inches below natural ground surface or finish ground surface, whichever is lower. Where portions of an existing structure lie wholly, or in part, within the limits of a new structure, remove parts to accommodate the installation of the proposed structure.

Avoid damage to bridges being dismantled for salvage. Match mark steel and/or wood members and prepare drawings showing the structural location of each member.

911.60.03 Signs and Posts. Remove signs, posts, and associated hardware at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Backfill post hole, compact, and contour area to match existing ground.

911.60.04 Removal of Other Obstructions. Remove other obstructions at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

911.60.05 Disposal. Dispose of native log and rock material by scattering below the trailway and outside clearing limits. Do not place debris in water courses, snow ponds, lakes, meadows, or locations where it could impede the flow to, through, or from the drainage structures. Dispose of metal, treated timber, and other manufactured products by removing from Government-administered lands and placing in approved waste disposal sites.

911.70 - Retainers

Description

911.70.01 This work consists of furnishing and installing log, sawn timber and rock retainers, including excavation and backfill, wood stakes and/or metal anchors and selecting and hauling of retainer materials.

Materials

911.70.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

Construction

911.70.03 General. Place log, sawn timber, or rock retainers in continuous rows. Bed retainers along their entire length and so they are stable. When retainers are constructed of logs or sawn timber use lengths greater than or equal to 10 feet.

Section 912 - Clearing Limits

Description

912.00.01 This work consists of clearing, grubbing, trimming, removing, and treating trees, logs, limbs, branches, brush, plants, and other vegetation along with removal of rocks, undermined roots and hazard trees within the clearing limits. Clearing and removal of trees, vegetation and rocks may be covered by one or more of the following subsections:

912.10.	Clearing and Grubbing
912.20.	Brush Cutting
912.30.	Logging Out
912.40.	Hazard Tree Removal
912.50.	Loose Rock Removal
912.60.	Rock and Root Removal

Measurement

912.00.02 Measure the section 912 items listed in the bid schedule according to subsection 906.

Payment

912.00.03 The accepted quantities will be paid at the contract price per unit of measurement for the section 911 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

912.10 - Clearing and Grubbing

Description

912.10.01 This work consists of clearing, grubbing, trimming, removing, and treating trees, logs, limbs, branches, brush, plants, and other vegetation within the clearing limits. Work includes the felling and treatment of designated trees outside the clearing limits. Also, included are the protection from injury or defacement of trees and other objects not designated for removal and treatment of damaged trees.

Construction

912.10.02 Clearing Limits. Clear to the dimensions SHOWN ON THE PLANS or 12 inches beyond the fill and backslope catch points, whichever is greater.

912.10.03 Material to Be Cleared. Remove and dispose of trees, logs, limbs, branches, brush, herbaceous plants, and other vegetation within the clearing limits, except for the following:

- a) Live, sound, and firmly rooted trees of the size SHOWN ON THE PLANS.
- b) Live brush, herbaceous plants, and trees between the trailway and the clearing limits that are less than 12 inches in height and less than ½ inch in diameter at ground line.

Except as provided above, cut all limbs and branches more than ½ inch in diameter that extend into the clearing limits. Cut limbs flush with the tree trunks or stems or cut at the ground surface as SHOWN ON THE PLANS.

Fall and limb designated trees.

912.10.04 Damaged Trees. When felling, cutting, or trimming, do not cause bark damage to standing timber. If damage does occur to standing trees, treat the injured trees as SHOWN ON THE PLANS. Remove and dispose of trees with major roots exposed by construction that are rendered unstable.

912.10.05 Removal of Stumps. Remove all stumps within the trailbed. Remove stumps located between the edge of the trailbed and the edge of the trailway that cannot be cut flush with the finished slope or that are not tightly rooted.

912.20 - Brush Cutting

Description

912.20.01 This work consists of removing brush, trees less than 4 inches in diameter, and shrubs within the clearing limits.

Construction

912.20.02 General. Remove all limbs of shrubs and trees that extend across or into the clearing limits as SHOWN ON THE PLANS. Saw or cut limbs flush with the tree trunk. Make cuts in a manner that will not tear or strip bark from the trees.

Cut and remove from the clearing limits all woody plants exceeding ½ inch in stem diameter or 12 inches in height. The maximum size material to be cut under this specification is 4 inches in diameter when measured at a height of 6 inches above the ground on the uphill side of the stump.

Cut all brush and small, woody plants as near flush to the ground surface as possible. When impractical to cut plants flush, the maximum stem length shall be 2 inches.

Remove all woody material for a minimum of 3 inches below the trail tread surface. Fill holes in the trail tread caused by removing woody material with suitable material.

Scatter the clearing debris removed from the clearing limits outside and below the clearing limits. Do not place materials in stream channels, drainage ways, ditches, culvert inlets, or other locations where they would prevent the free flow of water away from the trailbed.

912.30 - Logging Out

Description

912.30.01 This work consists of removing brush, logs, and down trees from the clearing limits.

Construction

912.30.02 Clearing Out. Cut and remove all logs that extend across or into the clearing limits. The portions of cut logs that remain on the upper side of the trail shall be either firmly anchored to prevent sliding or rolling onto the trailway or moved across the trail to the lower side and scattered outside the clearing limits.

Fell all trees over 4 inches in diameter that are leaning into the clearing limits and that are within 10 feet above the trailbed. Stump height of leaning trees that are cut outside the clearing limits shall not exceed 12 inches as measured on the uphill side of the stump. Disposal and payment for the leaning trees described above will be the same as for down logs and trees. Remove roots and stumps from trees within the trailway that have been uprooted.

Rerouting the trail around windfalls, uprooted trees, and other obstacles will not be permitted. Ramp or reroute sections of the trail tread that have been damaged by uprooted stumps as necessary to provide safe passage on the trail. Payment for such work will be incidental to the specified work item, and no extra payment will be made.

Remove sticks or wood chunks exceeding 2 inches in diameter and 12 inches in length that have fallen onto the trailbed.

Scatter the down trees on the lower side of the trailway outside the clearing limits. Do not place such materials in stream channels, drainage ways, ditches, culvert catch basins or other locations where they would prevent the free flow of water away from the trailbed.

912.40 - Hazard Tree Removal

Description

912.40.01 This work consists of felling, bucking, and limbing trees and scattering slash.

Construction

912.40.02 Hazard Trees. Remove trees and snags that are broken off or that are in a leaning, unstable position over the trailway to designated areas as SHOWN ON THE PLANS. Cut designated danger trees so that stump heights do not exceed 12 inches as measured on the uphill side of the stump. Maximum stump height of designated trees within 4 feet of the trail centerline is 4 inches. Do not leave felled trees parallel with the trail unless there are sufficient barriers to keep them from rolling or sliding onto the trail. Lop limbs to reduce slash concentration and scatter the clearing debris outside and below the clearing limits. If the trunk or a portion thereof, falls within the trailway, remove that portion within 4 feet of either side of the trail centerline and scatter a minimum distance of 4 feet beyond and below the trail centerline.

912.50 - Loose Rock Removal

Description

912.50.01 This work consists of removal and disposal of loose rock from the trail tread.

Construction

912.50.02 General. Remove loose rocks that are larger than 2 inches at their greatest dimension from the trailbed. Remove any loose rock in drainage dips or ditches that may impede water flow off the trail. Loose rocks are rocks that are not firmly embedded in the trail and can be removed by hand. Where the trailbed consists predominantly of rock with little or no soil present, remove all loose rock larger than 3 inches.

Fill any holes remaining from rock removal with suitable material and compact. If the rock removed is not needed for other items of maintenance work, scatter the rock by side-casting to the lower side of trailway beyond the clearing limits, and distribute rock to ensure that no blockage of drainage or creation of a windrow occurs. Do not dispose of waste materials in water courses.

912.60 - Rock and Root Removal

Description

912.60.01 This work consists of removal and disposal of rocks and roots from the tread.

Construction

912.60.02 Rock Removal. Remove surface rocks that are larger than 2 inches at their greatest dimension, and rocks that project more than 2 inches above the surface of the trail tread, when removal can be accomplished by hand or when rocks can be pried out with a pick mattock, shovel, pry bar, or similar tool. Where the trailbed consists predominantly of rock with little or no soil present, remove loose rock in excess of 3 inches.

Shatter any protruding rocks in trail tread that are too large to be pried out with a pick and bar by using either a rock sledge or explosives. Remove the protrusion down to the level of the tread surface. Fill any resulting depressions with suitable material and compact by tamping. If rock removed is not needed for other items of maintenance work, scatter the rock by side-casting to the lower side of the trailway and beyond the clearing limits and distribute rock to ensure that no blockage of drainage

or creation of windrow occurs. Do not dispose any waste material in water courses.

912.60.03 Root Removal. Remove exposed tree roots on or in the trail tread that are greater than 1 inch in diameter. Cut embedded roots that project more than 2 inches above the trail tread flush with the trail tread. Scatter removed roots on the lower side of the trailway beyond the clearing limits and outside of water courses.

Fill holes caused by rock and root removal with suitable material and compact to form a smooth trail tread.

Maintain trail tread to the width as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Section 913 – Surfacing

Description

913.00.01 This work consists of furnishing, hauling, watering, placing, and compacting surfacing and other associated work. Trail surfacing may be covered by one or more of the following subsections:

- 913.10. Aggregate Surfacing and Base Course
- 913.20. Hot Asphalt Plant Mix Trail Surfacing
- 913.30. Cold Asphalt Mix Trail Surfacing
- 913.40. Grid Unit Surfacing
- 913.50. Riprap Surfacing
- 913.60. Chunk Wood Surfacing
- 913.70. Imported Clay Surfacing
- 913.80. Geosynthetic Surfacing
- 913.90. Surface Maintenance

Materials

913.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

913.00.02 Preparation of Subgrade. Prepare and finish trailbed as required under section 911. Obtain written approval of the CO before placing aggregate.

913.00.03 Retainers. Construct retainers in accordance with Section 911.70 and as SHOWN ON THE PLANS.

Measurement

913.00.04 Measure the section 913 items listed in the bid schedule according to subsection 906.

Payment

913.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the section 913 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

913.10 - Aggregate Surfacing and Base Course

Description

913.10.01 This work consists of furnishing, hauling, watering, placing, and compacting aggregate surfacing or base course; furnishing and installing retainers; and geosynthetics.

Materials

913.10.02 Materials. Produce aggregate by pit run, screening, or crushing. Obtain materials from sources SHOWN ON THE PLANS or other sources approved by the CO in writing.

913.10.03 Handling Materials. Stockpile, remove, transport, and spread aggregates in a manner that will preserve specified gradation and avoid contamination. Do not intermingle stockpiles of aggregate having different gradations.

913.10.04 Sampling Aggregate. Submit test results and a Certificate of Compliance verifying that aggregate gradation meets contract requirements.

Sample the material before incorporation into the work as follows:

- (a) for onsite-produced materials at crushing or screening plants, after additions of any necessary blending material.
- (b) for commercially produced aggregates, at the producer's plant or stockpile.

The sampling will not be considered a final acceptance and will not preclude later sampling and testing after final processing of the material. Such sampling does not relieve the contractor of responsibility of providing quality control measures to ensure compliance with contract requirements.

Construction

913.10.05 Preparation of Subgrade. Prepare and finish trailbed as required under section 912. Obtain written approval of the CO before placing aggregate.

913.10.06 Spreading and Compacting. Use aggregate that is uniformly mixed at optimum moisture content and spread and compact in layers to the final thickness and width SHOWN ON THE PLANS. The maximum thickness of any one layer shall be 3 inches. Obtain compaction by one of the following methods as SHOWN IN THE SCHEDULE OF ITEMS:

- (a) by hand, using non-mechanized compaction tools over the full area of each layer until visual displacement ceases;
- (b) by mechanical vibratory compactors over the full area of each layer until visual displacement ceases, but not fewer than three complete passes;
- (c) by using a roller or mechanical hand tamper until the density is at least 90 percent of the maximum density, as determined by AASHTO T 99, Method C or D.

Immediately following final spreading, smoothing, and compacting, correct any irregularities or depressions that develop by adding or removing material until the surface is smooth, uniform, and compacted.

913.10.07 Acceptance, Testing, Sampling, and Tolerances. Do not vary the total compacted thickness of the aggregate by more or less than $\frac{3}{4}$ inch from the specified thickness or place it consistently below or above the specified depth.

Do not vary the aggregate width by more than ± 3 inches from the specified width or place it consistently narrower or wider than the specified width.

913.20 - Hot Asphalt Plant Mix Trail Surfacing

Description

913.20.01 This work consists of constructing a single course of hot asphalt plant mix on a prepared base course or trailbed and furnishing or installing retainers and geosynthetics.

Materials

913.20.02 Materials. Use hot plant mix design that is currently in use by the local State department of transportation, the county, or city, and submit a certificate of compliance that the mix meets their requirements. Certify the locations of past projects for the CO's inspection prior to approval.

Construction

913.20.03 Weather Limitations. Do not place the asphalt mixture when weather conditions prevent the proper compaction of the mixture, the base course is frozen, or the average temperature of the underlying surface upon

which the asphalt mixture is to be placed is less than 55°F. Do not place when it is raining or snowing.

913.20.04 Mixing. Do not allow the temperature of the mix to exceed 320°F when discharging from the mixer.

913.20.05 Surface Preparation. Remove loose aggregate, soil, or other deleterious materials from the surface to be paved. Prepare base or trailbed by shaping, watering, and compacting before placing plant mix. Obtain the CO's approval before placing plant mix on prepared base.

913.20.06 Placement and Compaction. Place and compact plant mix to meet the lines, grades, and thicknesses SHOWN ON THE PLANS. Avoid segregation of the mix. Hand or small machine placement of mix is permitted, except where the use of asphalt paving machines is required for areas SHOWN ON THE PLANS. Use only self-contained, power-propelled paving machine units, provided with an adjustable activated screed or strike-off assembly, heated if necessary, and capable of spreading and finishing courses of asphalt plant mix to the required widths and thicknesses.

Start compaction when the mix is above 230°F. Compact the mix with at least three passes over the entire trail surface. Use a steel wheel power roller that is of a minimum weight of 1 ton. Use vibratory plate compactors in areas that are not accessible to rollers. Continue compaction over the full width of the layer until visible deformation of the layer ceases.

913.20.07 Thickness. Do not vary the thickness of the compacted hot mix by more or less than 15 percent from the thickness SHOWN ON THE PLANS and not consistently above or below the specified thickness.

913.30 - Cold Asphalt Mix Trail Surfacing

Description

913.30.01 This work consists of constructing a single course of cold bituminous mix on a prepared base course or trailbed and furnishing and installing retainers.

Materials

913.30.02 Requirements. Use cold bituminous mix design that is currently in use by the local State department of transportation, the county, or city, and submit a certificate of compliance that the mix meets their requirements. Certify the locations of past projects for the CO's inspection prior to approval.

Use either MC250 liquid asphalt that conforms to AASHTO M 82 or CMS-2 emulsion that conforms to AASHTO M 208.

For the cold bituminous mix, use aggregate with a maximum size of ¾ inch and no more than 10 percent by weight passing the No. 200 sieve.

Construction

913.30.03 Weather Limitations. Place cold asphalt concrete on an unfrozen, reasonably dry surface. Place when the air temperature in the shade is above 50°F, the temperature of the road surface is above 40°F, and it is not raining or snowing or predicted to rain or snow within 24 hours after placement.

913.30.04 Surface Preparation. Clean the surface to be paved of all loose aggregate, soil, or other deleterious materials. Shape, water, and compact the base course or trailbed with a compactor to prepare the base and subgrade just before placing cold mix. Obtain the CO's approval before placing mix on prepared bases.

913.30.05 Mixing. If liquid asphalt is used, use aggregate that contains no more than 3 percent moisture and is at a temperature between 60 and 220°F during mixing. If emulsified asphalt is used, use aggregate that is at a temperature between 60 and 175°F during mixing.

Mix the aggregate and bituminous material until the aggregates are thoroughly coated and the mass is a uniform color.

913.30.06 Placement and Compaction. Place and compact the mix to meet the lines, grades, and cross-section SHOWN ON THE PLANS. Avoid segregation of the mix. Hand or small machine placement of mix is permitted, except where the use of bituminous paving machines is required for areas SHOWN ON THE PLANS. Use self-contained, power-propelled paving machine units, provided with an adjustable activated screed or strike off assembly, heated if necessary, and capable of spreading and finishing courses of bituminous plant mix to the required widths and thicknesses.

Compact the mix with at least three passes over the entire trail surface. Use a steel wheel power roller that is of a minimum weight of 1 ton. Use vibratory plate compactors in areas that are not accessible to rollers. Continue compaction over the full width of the layer until visible deformation of the layer ceases.

913.30.07 Thickness. Do not vary the thickness of the compacted hot mix by more or less than 15 percent from the thickness SHOWN ON THE PLANS and not consistently above or below the specified thickness.

913.40 - Grid Unit Surfacing

Description

913.40.01 This work consists of furnishing and installing grid pavement units, including excavation, backfilling, and geosynthetics.

Construction

913.40.02 Excavation and Embankment. Perform excavation and embankment in accordance with section 911 and as SHOWN ON THE PLANS.

Excavate to the depth of the grid pavement units to be installed after first removing all duff and debris.

Stockpile all excavated suitable material adjacent to the trail for later use as backfill.

Obtain approval before placing grid pavement units.

913.40.03 Laying Grid Block. Place and bed blocks so they rest firmly against adjacent blocks, are stable, and form a smooth and uniform tread surface. Blocks designed to be interlocked must be interconnected. Fill void areas to full depth with fractured or cut pieces of block on curves or where needed to establish the grid pavement units in which native surface areas are no larger than 6 inches in greatest dimension. Bury beginning and ending blocks at a 30° angle to the tread.

Dispose of unused block material by removing from Government-administered lands to an appropriate site or by burying it at a location DESIGNATED ON THE GROUND.

913.40.04 Backfilling. After approval of the grid block installation by the CO, place and compact suitable material into holes between and around grid pavement units. For block surfacing used in shallow stream fords and gully crossings, substitute native gravels for suitable materials.

913.50 - Riprap Surfacing

Description

913.50.01 This work consists of construction of riprap surfacing, including excavation, furnishing, hauling, and placing rock and aggregate, compacting surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

913.50.02 Construct riprap surfacing as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

913.60 - Chunk Wood Surfacing

Description

913.60.01 This work consists of construction of chunk wood surfacing, including excavation, furnishing, hauling, and placing chunk wood, compacting surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

913.60.02 Construct chunk wood surfacing as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

913.70 - Imported Clay Surfacing

Description

913.70.01 This work consists of construction of imported clay surfacing, including excavation, furnishing, hauling, and placing clay, compacting surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

913.70.02 Construct imported clay surfacing as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

913.80 - Geosynthetic Surfacing

Description

913.80.01 This work consists of construction of geosynthetic surfacing, including excavation, furnishing, hauling, and placing geosynthetics and aggregate, compacting surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

913.80.02 Construct geosynthetic surfacing as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

913.90 – Surface Maintenance

Description

913.90.01 This work consists of maintenance of surfacing, including excavation, furnishing, hauling, and placing rock, aggregate and other surfacing, compacting surfacing, and associated barriers, ditches, and retaining walls to bring surface up to good condition.

Maintenance

913.90.02 Perform maintenance of surfacing as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

914 - Climbing Turn

Description

914.00.01 This work consists of construction or maintenance of climbing turns, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections. Construction or maintenance of the climbing turn may be covered by one or more of the following subsections:

- 914.10. Climbing Turn
- 914.20. Climbing Turn Maintenance

Materials

914.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

914.00.03 Preparation of Subgrade. Prepare and finish trailbed as required under section 911 and/or as SHOWN ON THE PLANS. Obtain written approval of the CO before placing aggregate.

914.00.04 Retaining Walls. When SHOWN ON THE PLANS, construct retaining walls in accordance with section 935.

914.00.05 Barriers. When SHOWN ON THE PLANS, construct barriers at each climbing turn in accordance with section 933.

914.00.06 Ditches. When SHOWN ON THE PLANS, construct ditches in accordance with section 925.

Measurement

914.00.07 Measure the section 914 items listed in the bid schedule according to subsection 906.

Payment

914.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the section 914 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

914.10 - Climbing Turn

Description

914.10.01 This work consists of construction of climbing turns, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

914.10.02 Construct climbing turn as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

914.20 - Climbing Turn Maintenance

Description

914.20.01 This work consists of maintenance of climbing turns, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections to bring the climbing turn up to good condition.

Maintenance

914.20.02 Perform maintenance of climbing turn as required under the construction section of 914.00. and/or as SHOWN ON THE PLANS.

915 - Talus Section

Description

915.00.01 This work consists of furnishing, hauling, and placing rock and aggregate, and compacting aggregate surfacing and through talus or rubble rock sections of trail. Construction or maintenance of the talus section may be covered by one or more of the following subsections:

- 915.10. Talus Section
- 915.20. Talus Section Maintenance

Materials

915.00.02 Materials. Use materials meeting the requirements of the following sections:

- | | |
|--|-----|
| Rock, Grid Pavement Units, and Aggregate | 991 |
| Geosynthetics | 994 |
| Material for Timber Structures | 995 |

Construction

915.00.03 Preparation of Subgrade. Prepare and finish trailbed as required under section 911. Obtain written approval of the CO before placing aggregate

915.00.04 Talus or Rubble Rock Sections. Through talus or rubble rock slide areas, fill all voids with suitable material to the depth SHOWN ON THE PLANS. Use cap rocks that weigh a minimum of 130 lbs and have a length of at least twice their width. At least 50 percent of all hand-placed outer rocks should weigh a minimum of 130 lbs. Construct tread by building out rather than by removing material from the inner bank.

Measurement

915.00.05 Measure the section 915 items listed in the bid schedule according to subsection 906.

Payment

915.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the section 915 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

915.10 - Talus Section

Description

915.10.01 This work consists of construction of talus section, including furnishing, hauling, and placing rock and aggregate, and compacting aggregate surfacing and through talus or rubble rock sections of trail.

Construction

915.10.02 Construct talus section as required under the construction section 915.00., and and/or as SHOWN ON THE PLANS.

915.20 - Talus Section Maintenance

Description

915.10.01 This work consists of maintenance of talus section, including furnishing, hauling, and placing rock and aggregate, and compacting aggregate surfacing and through talus or rubble rock sections of trail.

Maintenance

915.10.02 Perform maintenance of talus section as required under the construction section 915.00., and/or as SHOWN ON THE PLANS.

916 - Turnout and Passing Section

Description

916.00.01 This work consists of construction or maintenance of turnout and passing sections, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections. Construction or maintenance of the turnout and passing section may be covered by one or more of the following subsections:

- 916.10. Turnout and Passing Section
- 916.20. Turnout and Passing Section Maintenance

Materials

916.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

916.00.03 Preparation of Subgrade. Prepare and finish trailbed as required under section 911 and/or as SHOWN ON THE PLANS. Obtain written approval of the CO before placing aggregate.

916.00.04 Retaining Walls. When SHOWN ON THE PLANS, construct retaining walls in accordance with section 935.

916.00.05 Barriers. When SHOWN ON THE PLANS, construct barriers at each switchback in accordance with section 933.

916.00.06 Ditches. When SHOWN ON THE PLANS, construct ditches in accordance with section 925.

Measurement

916.00.07 Measure the section 916 items listed in the bid schedule according to subsection 906.

Payment

916.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the section 916 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

916.10 - Turnout and Passing Area

Description

916.10.01 This work consists of construction of turnout and passing sections, including furnishing, hauling, and placing rock and aggregate, and compacting aggregate surfacing and through talus or rubble rock sections of trail.

Construction

916.10.02 Construct turnout and passing sections as required under the construction section 916.00., and/or as SHOWN ON THE PLANS.

916.20 - Turnout and Passing Area Maintenance

Description

916.10.01 This work consists of maintenance of turnout and passing sections, including furnishing, hauling, and placing rock and aggregate, and compacting aggregate surfacing and through talus or rubble rock sections of trail.

Maintenance

916.10.02 Perform maintenance of turnout and passing sections as required under the construction section 916.00., and /or as SHOWN ON THE PLANS.

917 – Fords

Description

917.00.01 This work consists of construction or maintenance of fords or stepping stones, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections. Construction or maintenance of the ford or stepping stones may be covered by one or more of the following subsections:

917.10.	Natural Ford
917.20.	Constructed Ford
917.30.	Stepping Stones
917.40.	Ford Maintenance

Materials

917.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

917.00.03 Preparation of Subgrade. Prepare and finish trailbed as required under section 911 and 912 and/or as SHOWN ON THE PLANS. Obtain written approval of the CO before placing aggregate.

917.00.04 Retaining Walls. When SHOWN ON THE PLANS, construct retaining walls in accordance with section 935.

917.00.05 Barriers. When SHOWN ON THE PLANS, construct barriers at each ford in accordance with section 933.

917.00.06 Ditches. When SHOWN ON THE PLANS, construct ditches in accordance with section 925.

Measurement

917.00.07 Measure the section 917 items listed in the bid schedule according to subsection 906.

Payment

917.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 917 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

917.10 - Natural Ford

Description

917.10.01 This work consists of construction of natural ford, approaches and surfacing, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

917.10.02 Construct natural ford, approaches and surfacing as required under the construction section 917.00., and/or as SHOWN ON THE PLANS.

917.20 - Constructed Ford

Description

917.20.01 This work consists of construction of ford, approaches and surfacing, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

917.20.02 Construct ford, approaches and surfacing as required under the construction section 917.00., and/or as SHOWN ON THE PLANS.

917.30 - Stepping Stones

Description

917.30.01 This work consists of construction of stepping stones and approaches, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, ditches, retaining walls, and approach sections.

Construction

917.30.02 Construct stepping stones and approaches as required under the construction section 917.00., and/or as SHOWN ON THE PLANS.

917.40 – Ford Maintenance

Description

917.40.01 This work consists of maintenance of fords and approaches, including excavation, furnishing, hauling, and placing rock and aggregate, compacting aggregate surfacing, and associated barriers, retaining walls, and approach sections to bring the ford up to good condition.

Maintenance

917.40.02 Maintain stream fords and gully crossings as SHOWN ON THE PLANS. Remove debris and loose rocks over 3 inches from existing stream crossings to provide the tread width. Maintain and replace missing or rotted log or rock barriers that form the dam at fords and gully crossings. Level and smooth the stream bottom with gravel or rock less than 3 inches in greatest dimension to provide a crossing.

Re-grade or fill the approaches to the stream fords and gully crossings to provide for safe use. Replace missing stepping stones.

918.00. – Foundations

Description

918.00.01 This work consists of construction or maintenance of foundations for trailways, including excavation, furnishing, hauling, placing and compacting rock, aggregate, geosynthetics, wire baskets and timber materials, and associated barriers, ditches, retaining walls, and approach sections. Construction or maintenance of the foundations may be covered by one or more of the following subsections:

918.10.	Rock
918.20.	Geosynthetics
918.30.	Gabion Basket
918.40.	Crib Foundation
918.50.	Corduroy Foundation
918.60.	Foundation Maintenance

Materials

918.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995
Wire Basket Materials	996

Construction

918.00.03 Preparation of Subgrade. Prepare and finish subgrade as required under section 911 and/or as SHOWN ON THE PLANS. Obtain written approval of the CO before placing rock, geosynthetics, gabion baskets or crib foundations.

918.00.03 Foundation Construction. Construction foundation as SHOWN ON THE PLANS, construct with approved backfill material in accordance with section 911 and 912.

918.00.04 Retaining Walls. When SHOWN ON THE PLANS, construct retaining walls in accordance with section 935.

918.00.05 Barriers. When SHOWN ON THE PLANS, construct barriers at each switchback in accordance with section 933.

918.00.06 Ditches. When SHOWN ON THE PLANS, construct ditches in accordance with section 925.

Measurement

918.00.07 Measure the section 918 items listed in the bid schedule according to subsection 906.

Payment

918.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 918 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 906.04.

918.10. – Rock

Description

918.10.01 This work consists of construction of rock foundation for trailways, including excavation, furnishing, hauling, and placing rock, aggregate, and geosynthetics.

Construction

918.10.02 Construct foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

918.20. – Geosynthetics

Description

918.20.01 This work consists of utilizing geosynthetics for foundation construction for trailways, including excavation, furnishing, hauling, and placing rock, aggregate, and geosynthetics.

Construction

918.20.02 Construct foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

918.30. - Gabion Basket

Description

918.30.01 This work consists of utilizing wire baskets for foundation construction for trailways, including excavation, furnishing, hauling, and placing rock, aggregate and wire baskets.

Construction

918.30.02 Construct foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

918.40. - Crib Foundation

Description

918.40.01 This work consists of utilizing timber cribs for foundation construction for trailways, including excavation, furnishing, hauling, and placing rock, aggregate and timber cribs.

Construction

918.40.02 Construct foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

918.50. – Corduroy Foundation

Description

918.50.01 This work consists of utilizing corduroy for foundation construction for trailways, including excavation, furnishing, hauling, and placing logs, aggregate and geosynthetics.

Construction

918.50.02 Construct foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

918.60. - Foundation Maintenance

Description

918.60.01 This work consists of maintenance of foundation for trailways, including excavation, furnishing, hauling, placing and compacting rock, aggregate, geosynthetics, wire baskets and timber materials, and associated barriers, ditches, retaining walls, and approach sections.

Maintenance

918.60.02 Perform maintenance on foundation as required under the construction section 918.00. and/or as SHOWN ON THE PLANS.

Section 920—Drainage Structures

921 – Culverts

Description

921.00.01. This work consists of furnishing and installing culverts, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins, and headwalls. Construction of culverts may be covered by one or more of the following subsections:

921.10.	Standard Culvert
921.20.	Standard Culvert with Headwall
921.30.	Rock Culvert
921.40.	Treated Timber Box Culvert
921.50.	Open-Top Drain
921.60.	Bottomless Arch Culvert
921.70.	Culvert Maintenance

Materials

921.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Drainage Pipe	992
Geosynthetics	994
Material for Timber Structures	995

Construction

921.00.03 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

921.00.04 Placement. Place culverts to provide for unobstructed inlet and outlet flow. Remove logs, debris, soil, rock, and other obstructions above and below the culvert that would impede flow into the culvert or away from the trailway. Minimize disturbance to streambeds.

Construct a catch basin to facilitate flow from trail ditches into the culvert.

921.00.05 Installation. Install culverts of the types and at the locations SHOWN ON THE PLANS or as DESIGNATED ON THE GROUND.

(a) Placing. Skew ditch relief culverts as staked to provide a downgrade equal to or greater than the uphill ditch. Place culverts at stream crossings in the natural streambed on stream grade.

Attach end sections to the pipe by connecting bands or other means as recommended by the manufacturer.

(b) Bedding. Excavate and remove all unsuitable material and rocks over 3 inches to a minimum depth of 6 inches below the pipe invert and to a minimum width of 1.5 pipe diameters. Bed pipe with compacted suitable material free of

rocks larger than 3 inches and in a stable foundation of undisturbed or compacted soil. Make the bed shaped to fit the lower quadrant of the pipe exterior and provide uniform continuous support along the entire length of the pipe.

921.00.06 Backfilling. Backfill and compact around culverts with suitable material that is free of rocks over 3 inches. Provide for the cover height as SHOWN ON THE PLANS.

Measurement

921.00.07 Measure the section 921 items listed in the bid schedule according to section 906.

Payment

921.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 921 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

921.10 - Standard Culvert

Description

921.10.01 This work consists of furnishing and installing culverts without headwalls, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins.

Construction

921.10.02 Install culverts as required under construction section 921.00 and/or as SHOWN ON THE PLANS.

921.20 - Standard Culvert with Headwalls

Description

921.20.01 This work consists of furnishing and installing culverts with headwalls, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins.

Construction

921.20.02 Install culverts and headwalls as required under construction section 921.00 and/or as SHOWN ON THE PLANS.

921.20.03 Headwalls. Install headwalls at the locations SHOWN ON THE PLANS or as DESIGNATED ON THE GROUND.

Provide a compacted bench as a foundation for the wall.

Select rocks that have a general rectangular shape with flat top and bottom faces. Place the largest rocks on the bottom. Lay each rock stable on the course that supports it, interlocking with surrounding rocks. Do not break, jar, or displace rocks already set. Place the exposed face of each rock parallel to the face of the wall. Stagger vertical joints a minimum of 4 inches horizontally from vertical joints in adjoining courses.

921.30 - Rock Culvert

Description

921.30.01 This work consists of furnishing and installing rock culverts, including excavation and backfill, selecting and hauling of rock material, and constructing catch basins.

Construction

921.30.02 Install culverts as required under construction section 921.00 and/or as SHOWN ON THE PLANS.

921.30.03 Rock Culverts. Install rock culverts at the locations SHOWN ON THE PLANS or as DESIGNATED ON THE GROUND.

Firmly embed selected sidewall rocks below the natural ground or streambed as SHOWN ON THE PLANS. Use flat cover rocks long enough to bridge between outside faces of the sidewalls. Select and place rocks so as to fit snugly with firm bearing on underlying rocks. Fill voids with small rock to prevent entry of soil into the culvert.

921.40 – Treated Timber Box Culvert

Description

921.40.01 This work consists of furnishing and installing treated timber box culverts, including excavation and backfill, and constructing catch basins.

Construction

921.40.02 Install culverts as required under construction section 921.00 and/or as SHOWN ON THE PLANS.

921.40.03 Treated Timber Box Culverts. Install treated timber box culverts at the locations SHOWN IN THE PLANS or as DESIGNATED ON THE GROUND.

Place the box culvert walls on a firm foundation of undisturbed or compacted suitable material shaped to fit the bottom of the culvert walls and free of rocks larger than 3 inches in size.

921.50 - Open-Top Drain

Description

921.50.01 This work consists of furnishing and installing open-top drains, including excavation and backfill, and constructing catch basins.

Construction

921.50.02 Install open-top drains as required under construction section 921.00 and/or as SHOWN ON THE PLANS.

921.60 - Bottomless Arch Culvert

Description

921.50.01 This work consists of furnishing and installing bottomless arch culverts, including excavation and backfill, selecting and hauling of log and rock materials for headwalls, and constructing catch basins.

Construction

921.50.02 Install culverts as required under construction section 921.00 and as SHOWN ON THE PLANS.

921.70. - Culvert Maintenance

Description

921.50.01 This work consists of maintenance of culverts, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins, and headwalls.

Maintenance

921.50.02 General. Where trail drainage facilities have been plugged and the water has been diverted from the intended channel, remove the debris causing the diversion and return the drainage to the channel. Divert water off and away from the trailbed. If washing or ponding of water has been or is occurring, dig a shallow ditch sloped 2 percent to 5 percent to the downstream side of the trail and 3 inches minimum deep and 12 inches minimum wide across the trail at the point where water enters the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

921.50.03 Remove debris and soil from catch basins and inlet and outlet ditches and inside culverts to permit the unobstructed flow of water into, through and away from the culvert. Replace any missing or loose rocks or logs in culvert headwalls. Fit replacement rocks for rock culverts so that they have a firm bearing on adjacent and underlying rocks. Place rocks snugly and fill voids with small rocks to prevent material from sifting into the drain. Fill and compact with suitable material all disturbed areas in the trail tread over or adjacent to rock culverts.

922 - Waterbars

Description

922.00.01 This work consists of installing and maintaining waterbars, including excavation and backfill; selecting and hauling of log and rock materials; and furnishing treated timber, belting, and other materials. Construction and maintenance of waterbars may be covered by one or more of the following subsections:

922.10.	Rock Waterbar
922.20.	Log or Treated Timber Waterbars
922.30.	Belted Waterbar
922.40.	Waterbar Maintenance

Materials

922.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Drainage Pipe	992
Geosynthetics	994
Material for Timber Structures	995

Use rubber belting that is single-ply, non-reinforced material 3/8 inch to 1/2 inch thick.

Construction

922.00.03 General. Install waterbars of the types and at the locations SHOWN ON THE PLANS or as DESIGNATED ON THE GROUND.

922.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911. Around waterbars, backfill and compact suitable material that is free of rocks larger than 3 inches in size. Compact material on the downgrade side of rock, log, and treated timber waterbars, flush with the top of waterbars.

Outslope the trailbed on the upgrade side of the waterbar with a slope equal to or greater than the trail grade leading into the waterbar. Provide a uniform outsloped plane that forms a gutter against the waterbar.

Measurement

922.00.05 Measure the Section 922 items listed in the bid schedule according to section 906.

Payment

922.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 922 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

922.10 - Rock Waterbar

Description

922.10.01 This work consists of installing rock waterbars, including excavation and backfill; selecting and hauling of rock materials; and other materials.

Construction

922.10.02 Install rock waterbars as required under construction section 922.00 and/or as SHOWN ON THE PLANS.

922.10.03 Rock Waterbar. Tightly embed selected rocks into the trailbed. Place waterbar rocks with tops relatively even, with no sharp points. Use rocks with lengths greater than or equal to 1.5 times the width.

922.20 - Log or Treated Timber Waterbars

Description

922.20.01 This work consists of installing log or treated timber waterbars, including excavation and backfill; selecting and hauling of log materials or furnishing treated timbers and other materials.

Construction

922.20.02 Install waterbars per as required under construction section 922.00 and/or as SHOWN ON THE PLANS.

922.20.03 Log or Treated Timber Waterbars. Embed peeled native logs or treated timbers into the trailbed to form a waterbar across the trail. Use anchor methods as SHOWN ON THE PLANS at log or treated timber ends outside the trail tread. Pre-drill pilot holes (for steel pins) through timbers prior to treatment. Anchor stakes firmly in the ground, and tightly nail to the log without splitting. In the absence of a backslope, anchor the upgrade end of the log or timber waterbar in the same manner as the downgrade end.

922.30 - Belted Waterbar

Description

922.30.01 This work consists of installing belted waterbars, including excavation and backfill; furnishing treated timbers and other materials.

Construction

922.30.02 Install waterbars as required under construction section 922.00 and/or as SHOWN ON THE PLANS.

922.30.03 Rubber Belting Waterbars. Tightly secure one continuous piece of rubber belting between treated timbers as SHOWN ON THE PLANS.

922.40. - Waterbar Maintenance

Description

922.40.01 This work consists of maintenance of waterbars, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins, and headwalls.

Maintenance

922.40.02 General. Where trail drainage facilities have been plugged and the water has been diverted from the intended channel, remove the debris causing the diversion and return the drainage to the channel. Divert water off and away from the trailbed. If washing or ponding of water has been or is occurring, dig a shallow ditch sloped 2 percent to 5 percent to the downstream side of the trail and 3 inches minimum deep and 12 inches minimum wide across the trail at the point where water enters the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

922.40.03. Clean the upgrade side of all existing waterbars and maintain them as SHOWN ON THE PLANS. Remove material accumulated against rubber belting waterbars. Use and compact suitable material removed from the upgrade side of all waterbars to bring the trail tread flush with the top of those waterbars on the downgrade side. Remove all debris from the lead-off area of all waterbars that restricts the free flow of water away from the trail. Firmly embed replacement rocks for rock waterbars into the trailbed and fit the rocks together. Make the tops of the rocks even, with no sharp points. Peel native replacement logs before using them. Anchor stakes tightly in the ground without splits and nail tightly to the log.

923 – Rock Spillways

Description

923.01 This work consists of constructing or maintenance of spillways, including selecting, excavating, and placing geotextile and rock material. Construction and maintenance of spillways may be covered by one or more of the following subsections:

- 923.10. Rock Spillway
- 923.20. Rock Spillway Maintenance

Materials

923.02 Requirements. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Drainage Pipe	992
Geosynthetics	994
Material for Timber Structures	995

Construction

923.03 General. Construct rock spillways at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Construct spillways so the flow of water from the facility being drained is centered on and flows down the full length of the spillway.

923.04 Excavation. Excavate for the spillway in accordance with Section 911. Construct a horizontal bench into undisturbed material and compact it as a foundation for the toe of the rock spillway.

923.05 Geotextile Placement. Place geotextile under the rock as required or as SHOWN ON THE PLANS.

923.06 Rock Placement. Construct the spillway by hand-placing rock, with the larger rock in the bottom layers. Place each rock to provide a stable course. Interlock each rock with adjacent rocks, and minimize voids. Use small rocks to fill voids. Do not break, jar, or displace rocks already set.

Measurement

923.06 Measure the Section 923 items listed in the bid schedule according to section 906.

Payment

923.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 923 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

923.10. – Rock Spillway

Description

923.10.01 This work consists of constructing or maintenance of spillways, including selecting, excavating, and placing rock material.

Construction

923.10.02 Install rock spillway as required under construction section 923.00 and/or as SHOWN ON THE PLANS.

923.20. – Rock Spillway Maintenance

Description

923.20.01 This work consists of maintenance of spillways, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins, and headwalls.

Maintenance

923.20.02 General. Where trail drainage facilities have been plugged and the water has been diverted from the intended channel, remove the debris causing the diversion and return the drainage to the channel. Divert water off and away from the trailbed. If washing or ponding of water has been or is occurring, dig a shallow ditch sloped 2 percent to 5 percent to the downstream side of the trail and 3 inches minimum deep and 12 inches minimum wide across the trail at the point where water enters the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

923.20.03. Maintain rock spillways to conform as SHOWN ON THE PLANS. Replace missing rocks, interlocking each rock with adjacent rocks. Place the rocks to ensure that the water flows down the spillway and away from the facility being drained. Use small rocks to fill voids. Clean all material from the spillway that restricts the flow of water away from the trail.

924 – Underdrains

Description

924.00.01 This work consists of constructing or maintaining underdrains, including excavation and backfill and obtaining and installing filter rock, geosynthetics, and drainpipe with necessary fittings. Construction and maintenance of underdrains may be covered by one or more of the following subsections:

924.10.	Rock Underdrain
924.20.	Sheet Underdrain
924.30.	Underdrain Maintenance

Materials

924.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Drainage Pipe	992
Geosynthetics	994
Material for Timber Structures	995

Construction

924.00.03 General. Construct underdrains at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

924.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

924.00.05 Trench Construction. Grade underdrain trenches to provide complete drainage of the underdrain system. Obtain CO approval of the trench system prior to placement of underdrain materials.

924.00.06 Pipe Installation. Ensure positive drainage from the underdrain pipes and drainage system. Place pipe in the trench with the perforations down.

Measurement

924.00.07 Measure the Section 924 items listed in the bid schedule according to section 906.

Payment

924.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 924 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

924.10 - Rock Underdrain

Description

924.10.01 This work consists of constructing rock underdrains and associated drainage ditches, including excavation and backfill and obtaining and installing filter rock, geosynthetics, and drainpipe with necessary fittings.

Construction

924.10.02 Install underdrain as required under construction section 924.00 and/or as SHOWN ON THE PLANS.

924.20 - Sheet Underdrain

Description

924.20.01 This work consists of constructing sheet underdrains or sheet drains, including excavation and backfill and obtaining and installing filter rock, geosynthetics, and drain pipe with necessary fittings.

Construction

924.20.02 Install underdrain as required under construction section 924.00 and/or as SHOWN ON THE PLANS.

924.30. - Underdrain Maintenance

Description

924.30.01 This work consists of maintenance of rock and sheet underdrains and associated drainage ditches, including excavation and backfill and obtaining and installing filter rock, geosynthetics, and drainpipe with necessary fittings.

Maintenance

924.30.02 Perform maintenance on underdrains and associated ditches as required under construction section 924.00 and/or as SHOWN ON THE PLANS.

Where ditches have been plugged and the water has been diverted from the intended underdrain, remove the debris causing the diversion and return the drainage to the ditch.

925 – Ditches

Description

925.00.01 This work consists of construction and maintenance of ditches, including excavation and backfill. Construction and maintenance of ditches may be covered by one or more of the following subsections:

- 925.10. Side Ditch
- 925.20. Leadoff Ditch
- 925.30. Ditch Maintenance

Construction

925.00.02 General. Construct ditches at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

925.00.03 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

Measurement

925.00.04 Measure the Section 925 items listed in the bid schedule according to section 906.

Payment

925.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 925 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

925.10. - Side Ditch

Description

925.10.01 This work consists of construction of side ditches, including excavation and backfill.

Construction

925.10.02 Construct side ditches as required under construction section 925.00 and/or as SHOWN ON THE PLANS.

925.20. - Leadoff Ditch

Description

925.20.01 This work consists of construction of leadoff ditches, including excavation and backfill.

Construction

925.20.02 Construct leadoff ditches as required under construction section 925.00 and/or as SHOWN ON THE PLANS.

925.30. - Ditch Maintenance

Description

925.30.01 This work consists of maintenance of leadoff ditches, including excavation and backfill.

Maintenance

925.30.02 General. Where ditches have been plugged and the water has been diverted from the intended ditch, remove the debris causing the diversion and return the drainage to the ditch. Clean deposited material and restore ditches as SHOWN ON THE PLANS. Remove all debris from the lead-off ditches that restricts the free flow of water away from the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

926 – Berms

Description

926.00.01 This work consists of construction and maintenance of berms and associated drainage ditches, including excavation and backfill. Construction of berms may be covered by one or more of the following subsections:

- 926.10. Berms
- 926.20. Berm Maintenance

Construction

926.00.02 General. Construct berms at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

926.00.03 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

Measurement

926.00.04 Measure the Section 926 items listed in the bid schedule according to section 906.

Payment

926.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 926 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

926.10. – Berms

Description

926.10.01 This work consists of constructing berms and associated drainage ditches, including excavation and backfill.

Construction

926.10.02 Construct berms as required under construction section 926.00 and/or as SHOWN ON THE PLANS.

926.20. - Berm Maintenance

Description

926.10.01 This work consists of maintaining berms, including excavation and backfill.

Maintenance

926.10.02 Perform maintenance of berms as required under construction section 926.00 and/or as SHOWN ON THE PLANS.

927 - Drain Dips

Description

927.00.01 This work consists of construction and maintenance of drainage dips, including excavation and backfill. Construction and maintenance of drainage dips may be covered by one or more of the following subsections:

- 924.10. Drain Dip
- 924.20. Drain Dip Maintenance

Materials

927.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

927.00.03 General. Construct drainage dips at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

927.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

Measurement

927.00.05 Measure the Section 924 items listed in the bid schedule according to section 906.

Payment

927.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 924 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

927.10. - Drain Dip

Description

926.10.01 This work consists of constructing drain dips and associated drainage ditches, including excavation and backfill.

Construction

926.10.02 Construct drain dips as required under construction section 927.00 and/or as SHOWN ON THE PLANS.

927.20. - Drain Dip Maintenance

Description

927.20.01 This work consists of maintenance of drain dips, including excavation and backfill, selecting and hauling of log and rock materials, and constructing catch basins, and headwalls.

Maintenance

927.20.02 General. Where trail drainage facilities have been plugged and the water has been diverted from the intended channel, remove the debris causing the diversion and return the drainage to the channel. Divert water off and away from the trailbed. If washing or ponding of water has been or is occurring, dig a shallow ditch sloped 2 percent to 5 percent to the downstream side of the trail and 3 inches minimum deep and 12 inches minimum wide across the trail at the point where water enters the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

927.20.03 Clean deposited material and restore drainage dips as SHOWN ON THE PLANS. Remove all debris from the lead-off area of dips that restricts the free flow of water away from the trail. Use suitable material obtained by cleaning dips for fill on the downgrade side, removing rock more than 3 inches at its greatest dimension. Compact all material placed in the trail tread.

928 - Check Dams

Description

928.00.01 This work consists of construction and maintenance of check dams, including excavation and backfill, and obtaining and installing of log and rock materials. Construction and maintenance of check dam may be covered by one or more of the following subsections:

- 928.10. Check Dam
- 928.20. Check Dam Maintenance

Materials

928.00.02 Materials. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics	994
Material for Timber Structures	995

Construction

928.00.03 General. Construct check dams at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

928.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

Measurement

928.00.05 Measure the Section 928 items listed in the bid schedule according to section 906.

Payment

928.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 928 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

928.10. - Check Dams

Description

928.00.01 This work consists of construction of check dams, including excavation and backfill and obtaining and installing rocks.

Construction

928.10.02 Construct check dams as required under construction section 928.00 and/or as SHOWN ON THE PLANS.

928.20. - Check Dam Maintenance

Description

928.20.01 This work consists of maintenance of check dams, including excavation and backfill and obtaining and installing rocks.

Maintenance

928.20.02 General. Where check dams have been plugged and the water has been diverted from the intended channel, remove the debris causing the diversion and return the drainage to the channel. Divert water off and away from the trailbed. If washing or ponding of water has been or is occurring, dig a shallow ditch sloped 2 percent to 5 percent to the downstream side of the trail and 3 inches minimum deep and 12 inches minimum wide across the trail at the point where water enters the trail.

Clean ditches to permit the free flow of water into culverts and away from the trail.

Scatter all unusable or unneeded material that is cleared from the drainage structures 3 feet or more beyond and below the trail or drainage facility and out of water courses.

928.20.03 Clean deposited material and restore check dams as SHOWN ON THE PLANS. Remove all debris from the lead-off area of dips that restricts the free flow of water away from the trail. Use suitable material obtained by cleaning dips for fill on the downgrade side, removing rock more than 3 inches at its greatest dimension. Compact all material placed in the trail tread.

Section 930 – Trail Structures

Section 931 – Switchbacks

Description

931.00.01 This work consists of construction and maintenance of switchbacks, including excavation, associated barriers, ditches, retaining walls, and approach sections. Construction and maintenance of switchbacks may be covered by one or more of the following subsections:

931.10.	Type 1 – Radius Switchback
931.20.	Type 2 – Circular Landing Switchback
931.30.	Type 3 – Rectangular Landing Switchback
931.40.	Switchback Maintenance

Materials

931.00.02 Materials. Conform to the following Sections and Subsections:

Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

Construction

931.00.03 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

931.00.04 Retaining Walls. When SHOWN ON THE PLANS, construct retaining walls in accordance with Section 935.

931.00.05 Barriers. When SHOWN ON THE PLANS, construct barriers at each switchback in accordance with Section 933.

931.00.06 Ditches. When SHOWN ON THE PLANS, construct ditches in accordance with Section 925.

931.00.07 Limits of Switchback. Beginning and ending of switchback will be as SHOWN ON THE PLAN or as DESIGNATED ON THE GROUND.

Measurement

931.00.08 Measure the Section 931 items listed in the bid schedule according to section 906.

Payment

931.00.09 The accepted quantities will be paid at the contract price per unit of measurement for the Section 931 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

931.10 - Type 1 – Radius Switchbacks

Description

931.10.01 This work consists of construction of radius switchbacks, including excavation, associated barriers, ditches, retaining walls, and approach sections.

Construction

931.10.02 Construct radius switchback as required under construction section 931.00 and/or as SHOWN ON THE PLANS.

931.20 - Type 2 – Circular Landing Switchbacks

Description

931.20.01 This work consists of construction of circular landing switchbacks, including excavation, associated barriers, ditches, retaining walls, and approach sections.

Construction

931.20.02 Construct circular landing switchback as required under construction section 931.00 and/or as SHOWN ON THE PLANS.

931.30 - Type 3 – Rectangular Landing Switchbacks

Description

931.30.01 This work consists of construction of rectangular landing switchbacks, including excavation, associated barriers, ditches, retaining walls, and approach sections.

Construction

931.30.02 Construct rectangular landing switchback as required under construction section 931.00 and/or as SHOWN ON THE PLANS.

931.40 - Switchback Maintenance

Description

931.40.01 This work consists of replacing or maintaining retaining walls, trail tread, barriers, and drain ditches on existing switchbacks.

Maintenance

931.40.02 General. Perform maintenance on switchbacks as required under construction section 931.00 and/or as SHOWN ON THE PLANS.

931.40.03 Retaining Walls. When needed in rock retaining wall maintenance, use replacement rock that is sound, durable, and free from rifts, seams, laminations, and minerals that could cause deterioration through weathering.

931.40.04 Barriers. Perform barrier maintenance where needed. Use the same type of materials as in the original construction.

931.40.05 Ditches. Clear switchback ditches to permit the free flow of water. Construct ditches as SHOWN ON THE PLANS.

931.40.06 Tread. Maintain trail tread to the original designed tread width.

Section 932 – Turnpikes

Description

932.00.01 This work consists of construction and maintenance of turnpike sections, including excavation, embankment, retainers, geosynthetics, backfill, and drainage features. Construction and maintenance of turnpike sections may be covered by one or more of the following subsections:

932.10.	Type 1 – Standard Turnpike
932.20.	Type 2 – Standard Turnpike with Foundation
932.30.	Turnpike Maintenance

Materials

932.00.02 Materials. Conform to the following Sections and Subsections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics materials	994
Material for Timber Structures	995

Construction

932.00.03 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

932.00.04 Retainers. Construct retainers in accordance with Section 911.70 and as SHOWN ON THE PLANS. Place retainers in a continuous row along each shoulder of the turnpike section as SHOWN ON THE PLANS. Bed the parallel retainers so they are stable and at approximately the same top elevation.

932.00.05 Geosynthetics. Where SHOWN ON THE PLANS, place geosynthetics flat and parallel to centerline of the trail before placing embankment. Overlap geosynthetics a minimum of 2 feet. Install anchors or fasteners as recommended by the geosynthetic manufacturer.

932.00.06 Backfill. Backfill and compact with suitable material.

932.00.07 Drainage. Construct side ditches, cross-drainage, and culverts at locations SHOWN ON THE PLANS and/or DESIGNATED ON THE GROUND. Provide leadoff ditches from side ditches on the lower side of trail at points DESIGNATED ON THE GROUND or SHOWN ON THE PLANS.

Measurement

932.00.08 Measure the Section 932 items listed in the bid schedule according to section 906.

Payment

932.00.09 The accepted quantities will be paid at the contract price per unit of measurement for the Section 932 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

932.10 - Type 1 – Standard Turnpikes

Description

932.10.01 This work consists of construction of standard turnpike sections, including excavation, embankment, retainers, geosynthetics, backfill, and drainage features.

Construction

932.10.02 Construct standard turnpike sections as required under construction section 932.00. and/or as SHOWN ON THE PLANS.

932.20 - Type 2 – Standard Turnpikes with Foundation

Description

932.20.01 This work consists of construction of standard turnpike sections with foundation, including excavation, embankment, retainers, geosynthetics, rocks, backfill, and drainage features.

Construction

932.20.02 Standard turnpike sections with foundation as required under construction section 932.00. and/or as SHOWN ON THE PLANS.

932.30 - Turnpike Maintenance

Description

932.30.01 This work consists of maintaining turnpike sections.

Maintenance

932.30.02 General. Perform maintenance on turnpikes as required under construction section 932.00. and/or as SHOWN ON THE PLANS.

932.30.03 Obtain logs, staking material, and suitable material for backfill from locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

932.30.04 Replace missing rocks, or missing or decayed retaining logs or lumber, with rocks, logs, or dimensional lumber as SHOWN ON THE

PLANS. Secure loose or dislocated retainers. Drive stakes 2-3 inches in diameter and 18-24 inches in length along the outside edge of each log or lumber retainer to hold them in place at a maximum of 3 feet.

932.30.05 Clear all drainage structures of obstructions, silt, and debris so as to permit the free flow of water away from the trail.

932.30.06 If necessary, use suitable material removed from the drainage structures to build up the crown. Shape the tread with suitable material to provide a 2 inch crown measured from the top of the crown at the centerline to the top of the retainers.

Section 933 – Side Barriers

Description

933.00.01 This work consists of construction and maintenance of side barriers, including excavation, embankment, widening, debris disposal and backfill. Construction and maintenance of side barriers may be covered by one or more of the following subsections:

933.10.	Stacked Rock Barrier
933.20.	Masonry Rock Barrier
933.30.	Barrier Rail on Grade
933.40.	Barrier Rail on Posts
933.50.	Curb
933.60.	Guardrail

Materials

933.00.02 Materials. Conform to the following Sections and Subsections:

Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

Construction

933.00.03 General. Construct barriers of the type and at the locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Use logs in which the true centerline deviates no more than 2 inches from the line between the centers of the ends of the log.

933.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

933.00.05 Backfill. Backfill and compact with suitable material.

Measurement

933.00.06 Measure the Section 933 items listed in the bid schedule according to section 906.

Payment

933.00.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 933 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

933.10. – Stacked Rock Barrier

Description

933.10.01 This work consists of construction of stacked rock barrier, including excavation, embankment, widening, debris disposal and backfill.

Construction

933.10.02 Construct stacked rock barrier as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.20. – Masonry Rock Barrier

Description

933.20.01 This work consists of construction of masonry rock barrier, including excavation, embankment, widening, debris disposal and backfill.

Construction

933.20.02 Construct masonry rock barrier as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.30. – Barrier Rail on Grade

Description

933.30.01 This work consists of construction of barrier rail on grade, including excavation, embankment, widening, debris disposal and backfill.

Construction

933.30.02 Construct barrier rail on grade as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.40. – Barrier Rail on Posts

Description

933.40.01 This work consists of construction of barrier rail on posts, including excavation, embankment, widening, debris disposal and backfill.

Construction

933.40.02 Construct barrier rail on posts as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.50. – Curb

Description

933.50.01 This work consists of construction of curbing, including excavation, embankment, debris disposal and backfill.

Construction

933.50.02 Construct curbing as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.60. – Guardrail

Description

933.60.01 This work consists of construction of guardrail, including excavation, embankment, widening, debris disposal and backfill.

Construction

933.60.02 Construct guard as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.70 – Side Barrier Maintenance

Description

933.70.01 Work consists of maintaining rock, log, and timber barriers.

Maintenance

933.70.02 General. Perform maintenance on barriers as required under construction section 933.00. and/or as SHOWN ON THE PLANS.

933.70.03 Restore rock, log, and timber barriers to their original lines and grades unless otherwise SHOWN ON THE PLANS.

933.70.04 Rock Barriers. Replace missing rocks, using rocks of general rectangular shape between 45 lbs and 120 lbs, with the larger rocks placed on the bottom. Use rock chips to wedge larger rocks in place to form a stable wall. Stagger all vertical joints.

Stabilize and reset loose rocks.

Form a continuous grade with the top of the restored barrier consistent with adjacent segments of the barrier.

933.70.05 Log or Timber Barriers. Replace missing, damaged, and unsound logs or timbers using material similar to that used in the original barrier unless otherwise SHOWN ON THE PLANS. The location of trees for native timber materials will be DESIGNATED ON THE GROUND.

Stabilize and re-attach loose logs or timbers that are in sound condition.

Section 934 – Puncheons

Description

934.00.01 This work consists of construction and maintenance of puncheon, including excavation, embankment, backfill, and drainage features. Construction and maintenance of puncheon may be covered by one or more of the following subsections:

934.10.	Standard Puncheon
934.20.	No Deck Puncheon
934.30.	Puncheon Maintenance

Materials

934.00.02 Materials. Conform to the following Sections and Subsections:

Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

The location of trees for native timber materials will be SHOWN ON THE PLANS and DESIGNATED ON THE GROUND.

Construction

934.00.03 General. Construct puncheon at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Pre-drill holes for fasteners when necessary to prevent splitting and drive spikes flush.

934.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with the requirements of Section 911 and as SHOWN ON THE PLANS.

934.00.05 Mud Sills. Bury mud sills to a depth that provides a finished walking surface that is less than or equal to 3 feet above the surrounding ground. Hew sill logs to provide a bearing surface for the log stringers and to provide the log stringers with a level top surface. Do not hew sill logs more than one-third their diameter. Do not level the top surfaces of the log stringers by shimming or notching their ends.

934.00.06 Log Stringers. Use logs greater than or equal to 10 feet in length. Use logs greater than or equal to 8 inches in diameter before the top is flattened. Fasten each stringer to each mud sill with drift pins that penetrate a minimum of 4 inches into the mud sill unless otherwise SHOWN ON THE PLANS.

When plank decking is used, hew the top surfaces of log stringers up to 2 inches deep, as necessary, to provide bearing surfaces for deck planks.

934.00.07 Sawn Timber Stringers. Use sawn timber greater than or equal to 10 feet in length. Fasten each stringer to each mud sill with drift pins that penetrate a minimum of 4 inches into the mud sill unless otherwise SHOWN ON THE PLANS.

934.00.08 Finished Walkway. Construct abutting ends of sections of log or plank puncheon flush with each other. Do not slope the surface of the completed walkway to either side. Construct the puncheon with a grade that does not exceed 5 percent and where no change in grade exceeds 6 percent unless otherwise SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Construct the finished walking surface of the puncheon flush with the trail grade at each end of the structure.

934.00.09 Decking. Spike decking evenly at right angles to each stringer.

Lay split log decking alternately flat side down first, then round side down, ending with a flat side down. When round side is down, notch round log decking to provide 2 inches wide bearing surface.

Lay split and sawn deck planks on the stringer to provide bearing for the full width of the plank.

Trim protruding ends of the decking to give a straight-line appearance to the edges of the structure or as SHOWN ON THE PLANS.

934.00.10 Curbs. Construct curbs with logs or sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 6 inches half-lap joint at a spacer location. Match diameters of logs at lap joints and trim excess to provide a smooth transition between logs.

Counter bore lag screws in curbs so that heads are flush with the surface.

Finish curbs smooth and free from splinters and sharp projections.

934.00.11 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

934.00.12 Measure the Section 934 items listed in the bid schedule according to section 906.

Payment

934.00.13 The accepted quantities will be paid at the contract price per unit of measurement for the Section 934 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

934.10. – Standard Puncheon

Description

934.10.01 This work consists of construction of standard puncheon, including excavation, embankment, backfill, and drainage features.

Construction

934.10.02 Construct standard puncheon as required under construction section 934.00. and/or as SHOWN ON THE PLANS.

934.20. – No Deck Puncheon

Description

934.20.01 This work consists of construction of no deck puncheon, including excavation, embankment, backfill, and drainage features.

Construction

934.20.02 Construct no deck puncheon as required under construction section 934.00. and/or as SHOWN ON THE PLANS.

934.30. – Puncheon Maintenance

Description

934.30.01 This work consists of maintaining puncheon sections.

Maintenance

934.30.02 General. Perform maintenance on puncheon as required under construction section 934.00. and/or as SHOWN ON THE PLANS.

934.30.03 Obtain logs, staking material, and suitable material for backfill from locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

934.30.04 Replace missing rocks, or missing or decayed retaining logs or lumber, with rocks, logs, or dimensional lumber as SHOWN ON THE PLANS. Secure loose or dislocated retainers. Drive stakes 2-3 inches in diameter and 18-24 inches in length along the outside edge of each log or lumber retainer to hold them in place at a maximum of 3 feet.

934.30.05 Clear all drainage structures of obstructions, silt, and debris so as to permit the free flow of water away from the trail.

934.30.06 If necessary, use suitable material removed from the drainage structures to build up the crown. Shape the tread with suitable material to provide a 2 inch crown measured from the top of the crown at the centerline to the top of the retainers.

935 - Retaining Walls

Description

935.00.01 Work consists of construction or maintenance of retaining walls, including excavating, placing borrow, backfilling, geosynthetics, trailbed construction and slope finishing. Construction and maintenance of retaining walls may be covered by one or more of the following subsections:

935.10.	Log Crib
935.20.	Stacked Rock Retaining Wall
935.30.	Wire Basket Retaining Wall
935.40.	Masonry Rock Retaining Wall
935.50.	Cast-in-place Concrete Retaining Wall
935.60.	Post and Plank Retaining Wall (Soldier Pile)
935.70.	Retaining Wall Maintenance

Materials

935.00.02 Requirements. Use materials meeting the requirements of the following section:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics Materials	994
Material for Timber Structures	995
Wire Basket Material	996

The location of trees for native timber materials is SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Construction

935.00.03 Installation. Install retaining walls of the types and at the locations SHOWN ON THE PLANS or as DESIGNATED ON THE GROUND.

935.00.04 Excavation. Excavate in accordance with Section 911 to provide a full bench foundation of stable undisturbed soil or compacted suitable material. Construct the finished foundation grade parallel with the trail profile grade.

935.00.05 Backfill. Place geosynthetics before backfilling and compaction. Backfill and compact with suitable material.

Measurement

935.00.06 Measure the Section 935 items listed in the bid schedule according to section 906.

Payment

935.00.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 935 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

935.10 - Log Crib

Description

935.10.01 This work consists of constructing log or split timber retaining walls. Work includes excavation, notching, pre-drilling, pinning, borrow, backfilling, tread and slope finishing.

Construction

935.10.02 Install retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.10.03 Log Notching. Notch logs only on bottom side.

Do not notch sill and filler logs. Individually notch all face, rear, and header logs to fit as the wall construction proceeds vertically. Do not pre-notch.

Provide a notch depth between one-fourth and one-third the log diameter. Vary notching depth and width as required to obtain a snug fit between interlocking logs of varying diameter. Do not exceed 1/2 inch of space between filler and face logs.

935.20 - Stacked Rock Retaining Wall

Description

935.20.01 This work consists of constructing stacked rock retaining walls, including excavating, placing borrow, backfilling, tread and slope finishing.

Construction

935.20.02 Install retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.20.03 Wall Construction. Construct rock retaining walls at locations SHOWN ON THE PLANS and DESIGNATED ON THE GROUND. Stagger vertical joints a minimum of 4 inches horizontally from vertical joints in adjoining courses.

Use uniformly distributed header rocks for at least 25 percent of the rocks in the front and rear faces of the wall each having a length at least 2.5 times its width. Place all header rocks with the greatest dimension extending into the wall (at right angle to trail centerline), except at corners. At corners, lay alternating courses containing headers with greatest dimension parallel with wall.

Place the exposed face of each rock parallel to the face of the wall in which it is set.

Stabilize each rock on the course that supports it. Do not break, loosen, or displace rocks already set.

Use rocks of a general rectangular shape. Fill voids with small rock fragments or fine aggregate.

935.30 - Wire Basket Retaining Wall

Description

935.30.01 Work consists of furnishing and constructing wire basket structures, including excavating, placing borrow, backfilling, tread and slope finishing.

Construction

935.30.02 Install retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.30.03 Basket Assembly. Do not damage wire coatings during basket assembly, structure erection, cell filling, or backfilling. Rotate the basket panels into position and join the vertical edges with fasteners. Where lacing wire is used, wrap the wire with alternating single and double loops every other mesh opening. Where spiral binders are used, crimp the ends to secure the binders in place. Where alternate fasteners are used, space the fasteners in every other mesh opening.

Rotate the diaphragms into position and join the vertical edges with fasteners, lacing wire, or spiral binders as specified above.

935.30.04 Structure Erection. Place the empty baskets on the foundation and interconnect the adjacent baskets along the top and vertical edges using fasteners.

Where lacing wire is used, wrap the wire with alternating single and double loops every other mesh opening. Install the other fasteners according to Subsection 935.30.03, but space alternate fasteners in every other mesh opening.

In the same manner, interconnect each horizontal layer of baskets to the underlying layer of baskets along the front, back, and sides. Stagger the vertical joints between the baskets of adjacent rows and layers by at least one cell length.

935.30.05 Cell Filling. Remove all kinks and folds in the wire mesh and properly align all the baskets. Place rock carefully in the basket cells to prevent the baskets from bulging and to minimize voids in the rock fill.

Maintain the basket alignment and shape by placing the basket in tension during the filling operation.

Place internal connecting wires in each unrestrained exterior basket cell greater than 12 inches in height. This includes interior basket cells left temporarily unrestrained. Place internal connecting wires concurrently with rock placement.

Fill the cells in any row or layer so that no cell is filled more than 12 inches above an adjacent cell. Repeat this process until the basket is full and the lid bears on the final rock layer.

Secure the lid to the sides, ends, and diaphragms according to Subsection 935.00.04. Make all exposed basket surfaces smooth and neat, with no sharp rock edges projecting through the wire mesh.

935.30.06 Geotextile Installation. Place the geotextile as SHOWN ON THE PLANS. Ensure that the surfaces upon which geotextile is to be placed have a uniform slope and are reasonably smooth and free of obstructions, depressions, and debris that could damage the geotextile. Have the surface approved by the CO before placing geotextile.

Loosely lay the geotextile without wrinkles or creases. Sew or overlap adjacent strips a minimum of 12 inches at joints.

Insert securing pins through both strips of overlapped geotextile at maximum intervals of 36 inches, but no closer than 2 inches to each edge, to prevent the geotextile from being displaced.

935.30.07 Basket Mattresses. Construct wire baskets for mattresses less than 12 inches thick according to Subsections 935.30.03 through 935.30.05. Note that alternate fasteners for basket assembly may be used for structure erection. Anchor the mattress in place as SHOWN ON THE PLANS. Place geotextile against the vertical edges of the mattress and backfill against the geotextile, using structural backfill material or other approved material.

935.40. – Masonry Rock Retaining Wall

Description

935.40.01 This work consists of constructing masonry rock retaining walls. Work includes excavation, borrow, backfilling, tread and slope finishing.

Construction

935.40.02 Install masonry rock retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.50. – Cast-in-place Concrete Retaining Wall

Description

935.50.01 This work consists of constructing cast-in-place concrete retaining walls. Work includes excavation, borrow, backfilling, tread and slope finishing.

Construction

935.50.02 Construct cast-in-place concrete retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.60. – Post and Plank Retaining Wall (Soldier Pile)

Description

935.60.01 This work consists of constructing post and plank retaining walls. Work includes excavation, borrow, backfilling, tread and slope finishing.

Construction

935.60.02 Install post and plank retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.70 - Retaining Wall Maintenance

Description

935.70.01 This work consists of maintenance and repair of retaining wall sections.

Maintenance

935.70.02 General. Perform maintenance on retaining walls as required under construction section 935.00. and/or as SHOWN ON THE PLANS.

935.70.03 Obtain logs, rocks, and suitable material for backfill from locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

935.70.04 Replace missing rocks, or missing or decayed logs or lumber, with rocks, logs, or dimensional lumber as SHOWN ON THE PLANS. Secure loose or dislocated rocks and logs.

935.70.05 Repair walls back to a height that will provide a uniform grade consistent with segments of trail adjacent to each side of the damaged wall.

Section 936 – Trail Stairways

Description

936.00.01 This work consists of construction and maintenance of stairways, including excavation and placing embankment and constructing rock, log and treated timber riser, crib-ladder, stairways and railing systems. Construction and maintenance of stairways may be covered by one or more of the following subsections:

936.10.	Individual Steps
936.20.	Overlapping Steps
936.30.	Crib Ladder
936.40.	Staircase
936.50.	Ladder
936.60.	Stairway Maintenance

Materials

936.00.02 Requirements. Use materials meeting the requirements of the following sections:

Rock, Grid Pavement Units, and Aggregate	991
Geosynthetics Materials	994
Material for Timber Structures	995

Construction

936.00.03 General. Construct stairways of the type and at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

936.00.04 Excavation and Embankment. Excavate and place embankment in accordance with Section 911. Backfill with suitable compacted material after stairs are constructed.

Measurement

936.00.05 Measure the Section 936 items listed in the bid schedule according to section 906.

Payment

936.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 936 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

936.10. – Individual Steps

Description

936.10.01 This work consists of construction of individual steps, including excavation and placing embankment and constructing rock, log and treated timber steps.

Construction

936.10.02 Install steps as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

936.10.03 Log or Treated Timber Steps. Use single logs or timbers for the entire riser.

936.10.04 Rock Steps. Lay rock with the greatest dimension horizontally and embed a minimum of one-third the height of the rock. Use single rocks to form the entire riser, unless otherwise DESIGNATED ON THE GROUND.

936.10.05 Pinned Steps. Provide a rock base clean of loose materials, roots, soil, and other obstructions.

Drill two 3/4 inch holes into the treads from the bottom side to match the positions of the holes in the rock and provide for the correct position of the step. Do not allow holes to penetrate the top of the tread. Hew the bottom of the tread to provide a firm, solid contact with the rock base. This contact does not need to be continuous but must provide a firm solid bearing.

Place the timber tread on the reinforcing bars and drive the tread down to its solid position.

936.20. – Overlapping Steps

Description

936.20.01 This work consists of construction of overlapping steps, including excavation and placing embankment and constructing rock steps.

Construction

936.20.02 Install overlapping steps as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

936.20.03 Overlapping Rock Stairways. Construct steps starting with the bottom rock. Form the entire tread and riser with single rocks and provide two or more contact points for stability.

936.30. – Crib Ladder

Description

936.30.01 This work consists of construction of crib ladders, including excavation and placing embankment and constructing log and treated timber risers.

Construction

936.30.02 Install crib ladder as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

936.30.03 Crib Ladder Stairway. Construct by laying two carriages parallel to each other. Construct sills and risers between carriages. Excavate location for crib ladder so that the ladder is firmly supported for their entire length. Backfill around carriages and behind the risers with suitable compacted material.

936.40. – Staircase

Description

936.40.01 This work consists of construction of staircases, including excavation and placing embankment and constructing log and treated timber riser.

Construction

936.40.02 Install staircase as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

936.40.03 Plank Staircase. Construct plank staircase by laying two continuous and parallel carriages. Firmly embed the bottom of each carriage in the ground. Support each carriage by a sill at each end. Construct carriages and steps as SHOWN ON THE PLANS.

936.50. – Ladder

Description

936.50.01 This work consists of construction of ladders, including excavation and placing embankment and constructing log and treated timber riser.

Construction

936.50.02 Install ladders as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

936.60. – Stairway Maintenance

Description

936.60.01 This work consists of maintaining stairways and ladders.

Maintenance

936.60.02 Perform maintenance on stairways and ladders as required under construction section 936.00. and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed logs or lumber with logs or dimensional lumber as SHOWN ON THE PLANS. Secure loose or dislocated stairs and steps.

Section 937— Railing System

Description

937.00.01 This work consists of construction and maintenance of railing system, including fasteners, posts and railing. Construction and maintenance of railing systems may be covered by one or more of the following subsections:

- 937.10. Site-built Railing System
- 937.20. Modular Railing System
- 937.30. Railing System Maintenance

Materials

937.00.02 Materials. Conform to the following Sections and Subsections:

Material for Timber Structures	995
Steel	FP-03, Section 555

Construction

937.00.03 General. Construct Railing Systems at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

937.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with the requirements of Section 911 and as SHOWN ON THE PLANS.

937.00.05 Log Rails and Posts. Use logs greater than or equal to 10 feet in length. Use logs greater than or equal to 4 inches in diameter for rails and posts. Fasten each rail to posts with spikes that penetrate a minimum of 4 inches into the posts unless otherwise SHOWN ON THE PLANS.

937.00.06 Sawn Timber Rails and Posts. Use sawn timber rails greater than or equal to 10 feet in length. Use posts greater than or equal to 4 inches x 4 inches and rails greater than 2 inches by 4 inches. Fasten each rail to posts with spikes or fasteners as SHOWN ON THE PLANS that penetrate a minimum of 3 inches into the posts unless otherwise SHOWN ON THE PLANS. Pre-drill holes for fasteners to prevent splitting and drive spikes flush.

937.00.07 Metal Rails and Posts. Construct metal railing systems as SHOWN ON THE PLANS.

937.00.08 Finish railing systems smooth and free from splinters and sharp projections.

Measurement

937.00.09 Measure the Section 937 items listed in the bid schedule according to section 906.

Payment

937.00.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 937 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

937.10. — Site-Built Railing System

Description

937.10.01 This work consists of construction of site-built railing system, including fasteners, posts and rails.

Construction

937.10.02 Construct site-built railing system as required under construction section 937.00 and/or as SHOWN ON THE PLANS.

937.20. — Modular Railing System

Description

937.20.01 This work consists of installation of modular railing systems, including fasteners, and modular railing systems.

Construction

937.20.02 Install modular railing systems as required under construction section 937.00 and/or as SHOWN ON THE PLANS.

937.30. — Railing System Maintenance

Description

937.30.01 This work consists of maintaining railing systems.

Maintenance

937.30.02 General. Perform maintenance on railing systems as required under construction section 937.00 and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed logs or lumber with logs or dimensional lumber as SHOWN ON THE PLANS. Secure loose or dislocated curbing and railing systems.

Section 938—Boardwalks

Description

938.00.01 This work consists of construction and maintenance of boardwalks, including excavation, embankment, backfill, curbs and railing systems. Construction and maintenance of boardwalks may be covered by one or more of the following subsections:

938.10.	Standard Boardwalk
938.20.	Elevated Boardwalk
938.30.	Step and Run
938.40.	Boardwalk Maintenance

Materials

938.00.02 Materials. Conform to the following Sections and Subsections:

Material for Timber Structures	995
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Construction

938.00.03 General. Construct boardwalks of the type and at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

938.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with the requirements of Section 911 and as SHOWN ON THE PLANS.

938.00.05 Mud Sills. Bury mud sills to a depth that provides a uniform walking surface as SHOWN ON THE PLANS.

938.00.06 Piers. Construct piers as SHOWN ON THE PLANS.

938.00.06 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

938.00.07 Measure the Section 938 items listed in the bid schedule according to section 906.

Payment

938.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 938 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

938.10.—Standard Boardwalk

Description

938.10.01 This work consists of construction of standard boardwalks, including excavation, embankment, backfill, curbs and/or railing system.

Construction

938.10.02 Construct standard boardwalks as required under construction section 938.00 and/or as SHOWN ON THE PLANS.

938.10.03 Sawn Timber Stringers. Use sawn timbers that are continuous over 2 or more spans. Fasten each stringer to each mud sill with fasteners as SHOWN ON THE PLANS that penetrate a minimum of 4 inches into the mud sill unless otherwise SHOWN ON THE PLANS. Pre-drill holes for fasteners to prevent splitting and drive spikes flush.

938.10.04 Finished Walkway. Construct abutting ends of sections of boardwalk flush with each other. Do not slope the surface of the completed walkway to either side. Construct the boardwalk with a grade that does not exceed 5 percent and where no change in grade exceeds 5 percent unless otherwise SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Construct the finished walking surface of the boardwalk flush with the trail grade at each end of the structure.

938.10.05 Decking. Lay sawn deck planks on the stringer to provide bearing for the full width of the plank. Fasten decking evenly at right angles to each stringer. Trim protruding ends of the decking to give a straight-line appearance to the edges of the structure or as SHOWN ON THE PLANS.

938.10.06 Curbs and Railing Systems. Construct curbs and railing systems with sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 6 inch half-lap joint at a spacer location. Finish curbs and railing systems smooth and free from splinters and sharp projections.

938.20.—Elevated Boardwalk

Description

938.20.01 This work consists of construction of elevated boardwalks, including excavation, embankment, backfill, curbs and/or railing system.

Construction

938.20.02 Construct elevated boardwalks as required under construction section 938.00 and/or as SHOWN ON THE PLANS.

938.20.03 Sawn Timber Stringers. Use sawn timbers that are continuous over 2 or more spans. Fasten each stringer to each mud sill with fasteners as SHOWN ON THE PLANS that penetrate a minimum of 4 inches into the

mud sill unless otherwise SHOWN ON THE PLANS. Pre-drill holes for fasteners to prevent splitting and drive spikes flush.

938.20.04 Finished Walkway. Construct abutting ends of sections of boardwalk flush with each other. Do not slope the surface of the completed walkway to either side. Construct the boardwalk with a grade that does not exceed 5 percent and where no change in grade exceeds 5 percent unless otherwise SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Construct the finished walking surface of the boardwalk flush with the trail grade at each end of the structure.

938.20.05 Decking. Lay sawn deck planks on the stringer to provide bearing for the full width of the plank. Fasten decking evenly at right angles to each stringer. Trim protruding ends of the decking to give a straight-line appearance to the edges of the structure or as SHOWN ON THE PLANS.

938.20.06 Curbs and Railing Systems. Construct curbs and railing systems with sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 6 inch half-lap joint at a spacer location. Finish curbs and railing systems smooth and free from splinters and sharp projections.

938.30.—Step and Run

Description

938.30.01 This work consists of construction of step and runs, including excavation, embankment, and backfill.

Construction

938.30.02 Construct standard step and runs as required under construction section 938.00 and/or as SHOWN ON THE PLANS.

938.40.—Boardwalk Maintenance

Description

938.40.01 This work consists of maintaining boardwalks.

Maintenance

938.40.02 General. Perform maintenance on boardwalks as required under construction section 938.00 and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed lumber with dimensional lumber as SHOWN ON THE PLANS. Secure loose or dislocated decking, curbing and railing systems.

Clear boardwalk of obstructions, silt, and debris so as to permit the free flow of water away under the boardwalk. Clean decking of all dirt and debris.

940 – Restriction Devices

Section 941 – Fences

Description

941.00.01 This work consists of construction and maintenance of fences, including excavation, backfill, and associated hardware. Construction and maintenance of fences may be covered by one or more of the following subsections:

941.10.	Post and Wire Fence
941.20.	Post and Rail Fence
941.30.	Woven Wire Fence
941.40.	Jackleg Fence
941.50.	Stacked Rail (Worm) Fence
941.60.	Remove and Reset Fence
941.70.	Fence Maintenance

Material

941.00.02 Conform to the following Sections and Subsections:

Concrete	FP-03, Section 601
Fence Material	993

Construction Requirements

941.00.03 General. Clear along the fence line. Remove and dispose of trees, brush, logs, upturned stumps, roots of downed trees, rubbish, and debris according to section 912. Clear a 3 feet width for wire fence.

Grubbing is not required except where short and abrupt changes in the ground contour require removal of stumps to properly grade the fence line. Remove or close cut stumps within the clearing limits.

Perform clearing and leveling with minimum disturbance to the terrain outside the fence line.

Schedule the fence installation, provide temporary fence, or other adequate means to prevent livestock from entering the project right-of-way, easements, or adjoining properties.

At bridges, cattle underpasses, and culverts, connect new fence to structure to permit free passage of livestock under or through the structure.

941.00.04 Posts. Excavate holes for posts, footings, and anchors as SHOWN ON THE PLANS. Space posts at intervals SHOWN ON THE PLANS for the type of fence being installed. Measure post spacing interval parallel to the existing ground slope. Set posts in a vertical position. Backfill post holes in 6 inch lifts. Tamp and compact each lift.

Wood posts may be driven in place if the method of driving does not damage the

post. Metal posts may be driven. Set metal corner, gate, end, and pull posts in concrete.

Where solid rock is encountered without overburden, drill line post holes at least 14 inches deep, and end, corner, gate, and pull posts at least 20 inches deep in the solid rock. Make the hole width or diameter at least 1 inch greater than the post width or diameter. Cut the post to the required length before installation or drill the hole deep enough to set the post at the required height. Set and plumb the post and fill the hole with grout. Thoroughly work the grout into the hole to eliminate voids. Crown the grout to drain water away from the post. Metal posts set in this manner do not require anchor plates and concrete footings.

Where solid rock is covered with soil or loose rock overburden, set posts to the plan depth or to the minimum depth into the solid rock as specified above, whichever is less. When the depth of overburden is greater than 12 inches, use an anchor plate on steel line posts and backfill steel end, corner, gate, and pull posts with concrete from the solid rock to top of the ground. When the depth of overburden is 12 inches or less, anchor plates and concrete backfill are not required. Grout the portion of the post in solid rock.

Install corner posts at changes in alignment of 30 degrees or more. Where new fence joins an existing fence, set end or corner posts, as necessary, and attach in a manner satisfactory to the CO.

941.00.05 Braces. Limit fence runs to no more than 650 feet between adjacent corner braces, gate braces, end braces, or line braces. Install line braces at uniform intervals so the distance between any two braces is 650 feet or less. Construct braces before placing the fence fabric and wires on posts.

(a) Metal braces. Provide corner posts and pull posts with two braces, one each direction from the post in the main fence line. Provide end posts and gate posts with one brace in the line of the fence. Attach metal braces to the metal end, corner, pull, and gate posts and set in concrete as **SHOWN ON THE PLANS**.

(b) Wood braces. Tap the posts to receive the braces. Anchor the brace to the post with three 16d nails or a 3/8 inch by 4 inches dowel. Install brace wires as **SHOWN ON THE PLANS** and twist together until the entire assembly is taut and firm. Lightly notch the posts to position the brace wire. Drive three staples at each notch to secure wire.

Measurement

941.00.06 Measure the Section 941 items listed in the bid schedule according to section 906.

Payment

941.00.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 941 pay items listed in the bid schedule. Payment will

be full compensation for the work prescribed in this Section. See Subsection 906.04.

941.10. - Post and Wire Fence

Description

941.10.01 This work consists of furnishing and installing post and wire fence, including excavation, backfill, and any associated materials.

Construction

941.10.02 General. Construct post and wire fence as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

941.10.03 Placement. Place barbed wire on the side of the post face away from the trail. On curved alignment, place the barbed wire on the post face on the outside of the curve. Tightly stretch and fasten barbed wire to the posts.

Apply tension according to the manufacturer's recommendations using a mechanical stretcher or other device designed for such use. Do not use a motor vehicle to stretch the wire.

Splicing of barbed wire between posts is permitted provided not more than two splices, spaced a minimum of 50 feet apart, occur in any one run of fence. Use wrap or telephone type splices for barbed wire with each end wrapped around the other wire for not less than six complete turns.

941.10.04 Fastening. Terminate the barbed wire at each end, corner, gate, and pull post. Wrap each line of barbed around the post and then itself with at least four turns. Where wood posts are used, staple the wires tightly to the posts.

Fasten each strand of barbed wire to each line post. Use wire ties or clamps to fasten the wires to metal posts. Securely splice tie wires to the fence on both sides of the post so there are two loops behind the post and one loop in front. On wood line posts, drive U-shaped staples diagonally across the wood grain so that both points do not enter between the same grain. In depressions where wire uplift occurs, drive staples with points slightly upward. On level ground and over knolls, slope the points slightly downward. Drive the staples just short of actual contact with the wires to permit free longitudinal movement of those lines and to prevent damage to the protective coating.

At grade depressions, alignment angles, and other locations where stresses tending to pull posts from the ground or out of alignment are created, snub or guy the wire fence. Attach the guy wire to each strand of barbed wire in a manner to maintain the entire fence in its normal shape. Attach the guy wire to a deadman anchor buried not less than 24 inches in the ground or to an approved anchor at a point that best serves to resist the pull of the wire

fence. If necessary to guy the fence in solid rock, grout the guy wire in a hole 2 inches in diameter and 10 inches deep. Deadman may also be fastened to posts. Place the deadman anchors at locations as directed.

Where required, install vertical cinch stays as SHOWN ON THE PLANS. Twist the wire to permit weaving into the horizontal fence wires to provide rigid spacing. Weave barbed wires and the top, middle, and bottom wire of the woven wire, as applicable, into the cinch stay.

Where existing fence intersects the new fence, cut the existing fence materials or, splice in kind, new material as necessary, and fasten each strand of the barbed wire to a new end post in line with or immediately adjacent to the new fence line.

941.20. – Post and Rail Fence

Description

941. 20.01 This work consists of furnishing and installing post and rail fence, including any associated materials.

Construction

941. 20.02 General. Construct post and rail fence as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

941.30. – Woven Wire Fence

Description

941.30.01 This work consists of furnishing and installing woven wire fence including any associated materials.

Construction

941.30.02 General. Construct woven wire fence as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

941.40. – Jackleg Fence

Description

941.40.01 This work consists of furnishing and installing jackleg fence including any associated materials.

Construction

941.40.02 General. Construct jackleg fence as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

941.50. – Stacked Rail (Worm) Fence

Description

941.50.01 This work consists of furnishing and installing stacked rail (worm) fence including any associated materials.

Construction

941.50.02 General. Construct stacked rail (worm) fence as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

941.60. – Remove and Reset Fences

Description

941.60.01 This work consists of removing and resetting of fencing, including excavation and backfill, including any associated materials.

Construction

941.60.02 General. Remove and reset fencing at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

941.60.03 Remove and Reset Fence. Remove existing fence and reset to approximately the same condition as the original fence. Salvage material in the existing fence and incorporate the material into the reset fence. When posts are set in concrete, remove concrete from old post and reset in concrete. Replace fence material damaged beyond reuse. Firmly reset posts on new alignment. Space posts and attach the horizontal members or wires to posts the same as the original fence. Furnish and use new material to fasten members or wires to posts.

941.70. – Fence Maintenance

Description

941.70.01 This work consists of maintenance of fences including any associated materials.

Maintenance

941.70.02 General. Perform maintenance on fences as required under construction section 911 and 941.00 and/or as SHOWN ON THE PLANS.

Section 942 – Gates

Description

942.00.01 This work consists of construction and maintenance of gates, including excavation, embankment, backfill and rails. Construction and maintenance of gates may be covered by one or more of the following subsections:

942.10.	Wire Gate
942.20.	Swing Gate
942.30.	Loose Rail Gate
942.40.	Accessible Gate – Kissing Gate
942.50.	Accessible Gate - Chicane
942.60.	Gate Maintenance

Material

942.00.02 Conform to the following Sections and Subsections:

Concrete	FP-03, Section 601
Fence Material	993

Construction Requirements

942.00.03 General. Construct gates at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Provide minimum 10 feet clear width along the fence line for gate construction and operation.

Remove and dispose of trees, brush, logs, roots of downed trees, rubbish, and debris according to section 912. All stumps and roots shall be removed to allow for unhindered operation of the gate.

Schedule the gate installation, provide temporary fence, or other adequate means to prevent livestock from entering the project right-of-way, easements, or adjoining properties.

942.00.04 Posts. Excavate holes for posts and install posts at locations as SHOWN ON PLANS. Set posts in a vertical position. Backfill post holes in 6 inch lifts. Tamp and compact each lift.

Wood posts may be driven in place if the method of driving does not damage the post. Metal posts may be driven.

Where solid rock is encountered without overburden, drill gate post holes at least 20 inches deep in the solid rock. Make the hole width or diameter at least 1 inch greater than the post width or diameter. Cut the post to the required length before installation or drill the hole deep enough to set the post at the required height. Set and plumb the post and fill the hole with grout. Thoroughly work the grout into the hole to eliminate voids. Crown the grout to drain water away from the post. Metal posts set in this manner do not require anchor plates and concrete footings.

Where solid rock is covered with soil or loose rock overburden, set posts to the

plan depth or to the minimum depth into the solid rock as specified above, whichever is less. When the depth of overburden is greater than 12 inches, use an anchor plate on steel line posts and backfill steel end, corner, gate, and pull posts with concrete from the solid rock to top of the ground. When the depth of overburden is 12 inches or less, anchor plates and concrete backfill are not required. Grout the portion of the post in solid rock.

Measurement

942.00.06 Measure the Section 942 items listed in the bid schedule according to section 906.

Payment

942.00.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 942 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

942.10 – Wire Gates

Description

942.10.01 This work consists of furnishing and installing gates, including any associated hardware and materials.

Material

942.10.02 Wire gates to be constructed of the same material as the fence.

Construction

942.10.03 Construct gates as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

Provide a taut and well-aligned closure of the opening, capable of being readily opened and closed by hand.

942.20 – Swing Gates

Description

942.20.01 This work consists of furnishing and installing gates, including any associated hardware and materials.

Material

942.20.02 Swing gates to be constructed from the material SHOWN ON THE PLANS.

Construction

942.20.03 Construct gates as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

Install metal gates and fittings to gate posts previously set as SHOWN ON THE PLANS. Firmly attach the fittings to the posts and gates. Hinge each single gate to prevent removal of the gate without tools. Set the gate in an approximately horizontal plane. Set the gate so it swings freely inward and outward and fastens securely in its latch holder, or in the case of double gates, in its latch holder and gate stops. Set gates to swing open at least 90 degrees in each direction.

Install wood gates similar to metal gates and as SHOWN ON THE PLANS.

942.30 – Loose Rail Gates

Description

942.30.01 This work consists of furnishing and installing gates, including any associated hardware and materials.

Material

942.30.02 Loose rail gates to be constructed of the same material as the fence.

Construction

942.30.03 Construct gates as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

942.40 – Accessible Gate – Kissing Gate

Description

942.40.01 This work consists of furnishing and installing gates, including any associated hardware and materials.

Material

942.40.02 Gates to be constructed from the material SHOWN ON THE PLANS.

Construction

942.40.03 Construct kissing gates as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

942.50 – Accessible Gate – Chicanes

Description

942.50.01 This work consists of furnishing and installing gates, including any associated hardware and materials.

Material

942.50.02 Gates to be constructed from the material SHOWN ON THE PLANS.

Construction

942.50.03 Construct chicanes as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

942.60 – Gate Maintenance

Description

942.60.01 This work consists of maintenance of gates and latches including any associated materials.

Maintenance

942.60.02 Perform maintenance on gates and latches as required under construction section 911 and 942.00 and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed logs or lumber as SHOWN ON THE PLANS. Adjust gate hinges to allow gate to open and close and gate latches to function properly.

Section 943 - Cattle Guard

Description

943.00.01 This work consists of construction and maintenance of cattle guards, including excavation, embankment, and backfill. Construction and maintenance of cattle guards may be covered by one or more of the following subsections:

- 943.10. Standard Cattle Guard
- 943.20. Above Ground Cattle Guard
- 943.30. Cattle Guard Maintenance

Materials

943.00.02 Materials. Conform to the following Sections and Subsections:

- Steel FP-03, Section 555
- Material for Timber Structures 995

Construction

943.00.03 General. Construct cattle guards at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

943.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with the requirements of Section 911 and as SHOWN ON THE PLANS. Excavate foundation to depth with sufficient space for proper installation of formwork.

When the cattle guard is to be installed on new embankment, complete and compact the embankment according to Section 911 before excavating for footing.

943.00.05 Concrete foundation. Construct concrete foundations according to FP-03, Section 601. Concrete units may be cast-in-place or precast.

Finish stringer bearings to allow full bearing under each stringer. The cattle guard shall rest on the concrete without rocking.

943.00.06 Cattle guard. Fabricate cattle guard as SHOWN ON THE PLANS. Assemble and place guards as shown on the plans. Securely fasten the cattle guard to the foundation. Fasten the metal wings to the cattle guard as shown on the plans. Connect fences and gates according to the plans. Weld according to ANSI/AASHTO/AWS D1.5.

Standard manufactured cattle guards may be used if approved. Designs shall provide for AASHTO loading H-10. Provide suitable cleanouts. Prepare and submit drawings according to Subsection 903.01. Acceptance of the drawings covers the requirements for strength and detail only. No responsibility is assumed for errors in dimensions.

943.00.07 Painting. All metal parts shall receive one shop coat. Two additional coats are required and may be applied in the shop or in the field. Paint according to FP-03, Section 563.

943.00.08 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

943.00.09 Measure the Section 943 items listed in the bid schedule according to section 906.

Payment

943.00.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 943 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

943.10. - Standard Cattle Guard

Description

943.10.01 This work consists of furnishing and installing cattle guards, including excavation, embankment, backfill, and any associated materials.

Construction

943.10.02 Construct standard cattle guards as required under construction section 943.00 and/or as SHOWN ON THE PLANS.

943.20. – Above Ground Cattle Guard

Description

943.20.01 This work consists of furnishing and installing cattle guards, including excavation, embankment, backfill, and any associated materials.

Construction

943.20.02 Construct standard cattle guards as required under construction section 943.00 and/or as SHOWN ON THE PLANS.

943.30.—Cattle Guard Maintenance

Description

943.30.01 This work consists of maintaining cattle guards.

Maintenance

943.30.02 Perform maintenance on cattle guards as required under construction section 943.00 and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed rails as SHOWN ON THE PLANS.
Secure loose or dislocated rails.

944.00. – Stiles

Description

944.00.01 This work consists of construction and maintenance of stiles, including excavation, embankment, backfill and rails. Construction and maintenance of stiles may be covered by one or more of the following subsections:

- 944.10. Stile
- 944.20. Stile Maintenance

Materials

944.00.02 Materials. Conform to the following Sections and Subsections:

Material for Timber Structures

995

Construction

944.00.03 General. Construct stiles at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

944.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with the requirements of Section 911 and as SHOWN ON THE PLANS.

Measurement

944.00.05 Measure the Section 944 items listed in the bid schedule according to section 906.

Payment

944.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 944 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

944.10. – Stiles

Description

944.10.01 This work consists of furnishing and installing stile, including excavation, embankment, backfill, timbers and any associated hardware materials.

Construction

944.10.02 Construct stile as required under construction section 944.00. and/or as SHOWN ON THE PLANS.

944.20. – Stiles Maintenance

Description

944.20.01 This work consists of maintaining stiles.

Maintenance

944.20.02 General. Perform maintenance on stiles as required under construction section 944.00. and/or as SHOWN ON THE PLANS.

Replace missing or broken steps and rails as SHOWN ON THE PLANS.
Secure loose or dislocated steps and rails.

Section 945 – Bollards

Description

945.00.01 This work consists of construction and maintenance of bollards, including excavation, embankment, and backfill. Construction and maintenance of bollards may be covered by one or more of the following subsections:

945.10.	Bollards
945.20.	Bollard Maintenance

Materials

945.00.02 Materials. Conform to the following Sections and Subsections:

Material for Timber Structures	995
Steel	555

Construction

945.00.03 General. Construct bollards of the type and at locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

945.00.04 Bollards. Drill holes for bollards. Set posts plumb, backfill with approved material, and compact or as SHOWN ON THE PLANS.

Measurement

945.00.05 Measure the Section 945 items listed in the bid schedule according to section 906.

Payment

945.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 945 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

945.10. – Bollards

Description

945.10.01 This work consists of furnishing and installing bollards, including excavation, embankment, backfill, and any associated hardware materials.

Construction

945.10.02 Construct bollards as required under construction section 945.00 and/or as SHOWN ON THE PLANS.

945.20. – Bollard Maintenance

Description

945.20.01 This work consists of maintaining bollards.

Maintenance

945.20.02 General. Perform maintenance on bollards as required under construction section 945.00 and/or as SHOWN ON THE PLANS.

Replace missing, broken or decayed bollards as SHOWN ON THE PLANS.

Secure loose or dislocated bollards as SHOWN ON THE PLANS.

Section 949 – Reserved for Restriction Devices Special Project Specifications

950. Signs and Markers

Section 951 - Signs

Description

951.00.01 This work consists of furnishing and installing or maintaining signs and posts, including excavation, backfill, and associated materials and hardware. Construction and maintenance of signs and posts may be covered by one or more of the following subsections:

- | | |
|---------|---|
| 951.10. | Signs |
| 951.20. | Sign Repair and Replacement Maintenance |

Material

951.00.02 All materials shall conform to Forest Service EM-7100-15, *Sign and Poster Guidelines for the Forest Service* or as SHOWN ON THE PLANS.

Construction

951.00.03 General. Erect signs and posts of the type and at the locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

951.00.04 Post Installation. Excavate post hole to the depth as SHOWN ON THE PLANS. The hole width should not be more than three times the width of the post. If necessary because of obstacles, the post hole may be moved within the tolerances as SHOWN ON THE PLANS.

Set posts in a plumb position. Backfill the post holes with suitable material in 6 inch layers and compact material to produce a solid installation. Stabilize the post with concrete or rock mounds built in accordance with rock cairn specifications when approved by the CO.

951.00.05 Sign Installation. Pre-drill signs before mounting. Tighten hardware snug, but do not damage the sign panel surface.

For signs mounted on trees, remove obstructing limbs and notch the outer bark to provide a flat surface at the sign mounting position as necessary. Avoid removing the inner bark or cutting the cambium. Use 50-penny galvanized nails or spikes to fasten signs to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the sign.

Measurement

951.00.06 Measure the Section 951 items listed in the bid schedule according to section 906.

Rock cairns built to support posts will be considered incidental to the PAY ITEM for signs, and separate payment will not be made.

Payment

951.00.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 951 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

951.10 – Signs

Description

951.10.01 This work consists of furnishing and installing signs and posts, including excavation, backfill, and associated materials and hardware.

Construction

951.10.02 Install signs and posts as required under construction section 911 and 951.00 and/or as SHOWN ON THE PLANS.

951.20 – Sign Repair and Replacement Maintenance

Description

951.20.01 This work consists of repairing existing damaged signs, refastening existing signs to existing sign posts and resetting existing sign posts and furnishing and installing new replacement signs and new sign posts.

Maintenance

951.20.02 General. Repair signs at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Reattach designated signs that are out of their original position so that the lines of the sign legend are horizontal. Reset sign support posts to a plumb position and firmly tamp in place. Set sign posts designated for replacement in the ground to a depth as SHOWN ON THE PLANS at the approximate location of the original post.

Reset existing posts that are out of plumb and firmly tamp in place. Set posts that need to be reset and new replacement posts in a plumb position and to a depth of as SHOWN ON THE PLANS. Backfill and tamp holes from which posts are removed.

Pre-drill replacement signs before mounting. Tighten sign mounting bolts or lag screws to hold the sign snugly in place. Do not damage sign surface.

For signs mounted on trees, remove obstructing limbs and notch the outer bark to provide a flat surface at the sign mounting position as necessary. Avoid removing the inner bark or cutting the cambium. Use 50-penny galvanized nails or spikes to refasten signs to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the sign.

Section 952 – Route Markers

Description

952.00.01 This work consists of furnishing and installing or maintaining route markers or route markers on supports, including excavation, backfill, and associated materials and hardware. Construction and maintenance of route markers may be covered by one or more of the following subsections:

- 952.10. Route Markers
- 952.20. Route Marker Maintenance

Material

952.00.02 All materials shall conform to Forest Service EM 7100-15, *Sign and Poster Guidelines for the Forest Service* or as SHOWN ON THE PLANS.

Construction

952.00.03 General. Erect route markers of the type and at the locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Measurement

952.00.04 Measure the Section 952 items listed in the bid schedule according to section 906.

Rock cairns built to support route marker posts will be considered incidental to the PAY ITEM for route markers, and separate payment will not be made.

Payment

952.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 952 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

952.10 – Route Markers

Description

952.10.01 This work consists of furnishing and installing route markers or route markers on supports, including associated materials and hardware.

Construction

952.10.02 Construct route markers as required under construction section 952.00 and/or as SHOWN ON THE PLANS.

952.10.03 Post Installation. Excavate post hole to the depth as SHOWN ON THE PLANS. The hole width should not be more than three times the width of the post. If necessary because of obstacles, the post hole may be moved within the tolerances as SHOWN ON THE PLANS.

Set posts in a plumb position. Backfill the post holes with suitable material in 6 inch layers and compact material to produce a solid installation. Stabilize the post with concrete or rock mounds built in accordance with rock cairn specifications when approved by the CO.

952.10.04 Tree Installation. Remove obstructing limbs and notch the outer bark to provide a flat surface at the manufactured blaze mounting position as necessary. Avoid removing the inner bark or cutting the cambium.

952.10.05 Route Marker Installation. Pre-drill route markers before mounting. Tighten hardware snug, but do not damage the route marker surface. Use 50-penny galvanized nails or spikes to fasten route markers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the markers.

952.20 – Route Marker Maintenance

Description

952.20.01 This work consists of refastening existing route markers to existing marker supports, resetting existing marker support posts, and furnishing and installing new replacement route markers and new route marker supports.

Maintenance

952.20.02 General. Repair route markers at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Reattach designated route markers that are out of their original position so that the lines of the marker legend are vertical. Reset route marker support posts to a plumb position and firmly tamp in place. Set route marker posts designated for replacement in the ground to a depth as SHOWN ON THE PLANS at the approximate location of the original post.

Reset existing supports that are out of plumb and firmly tamp in place. Set supports that need to be reset and new replacement supports in a plumb position and to a depth as SHOWN ON THE PLANS. Backfill and tamp holes from which posts are removed.

Tighten route marker mounting bolts or lag screws to hold the marker snugly in place. Do not damage route marker surface.

For route markers mounted on trees, remove obstructing limbs and notch the outer bark to provide a flat surface at the marker mounting position as necessary. Avoid removing the inner bark or cutting the cambium. Use 50-penny galvanized nails or spikes to refasten markers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the marker.

Section 953 – Reassurance Markers

Description

953.00.01 This work consists of blazing trees, furnishing and installing manufactured blazers on supports, or maintaining blazed trees, manufactured blazers and/or supports, including excavation, backfill, and associated materials and hardware. Construction and maintenance of reassurance markers may be covered by one or more of the following subsections:

- 953.10. Standard Forest Service Blaze
- 953.20. Manufactured Blazer
- 953.30. Reassurance Marker Maintenance

Material

953.00.02 All materials shall conform to Forest Service EM-7100-15, *Sign and Poster Guidelines for the Forest Service* or AS SHOWN ON THE PLANS.

Construction

953.00.03 General. Construct a reassurance marker of the type and at the locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Measurement

953.00.04 Measure the Section 953 items listed in the bid schedule according to section 906.

Rock cairns built to reassurance marker posts will be considered incidental to the PAY ITEM for markers, and separate payment will not be made.

Payment

953.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 953 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

953.10 – Standard Forest Service Blaze

Description

953.10.01 This work consists of cutting, painting, branding or routing and/or scorching blazes on trees or rocks.

Construction

953.10.02 Cut, paint, brand or router and/or scorch blazes on trees or rocks as required under construction section 953.00 and/or as SHOWN ON THE PLANS.

953.20 – Manufactured Blazer

Description

953.20.01 This work consists of furnishing and installing manufactured blazers on supports.

Construction

953.20.02 Install the manufactured blazer on supports as required under construction section 953.00 and/or as SHOWN ON THE PLANS.

953.20.03 Tree Installation. Remove obstructing limbs and notch the outer bark to provide a flat surface at the manufactured blazer mounting position as necessary. Avoid removing the inner bark or cutting the cambium.

953.20.04 Post Installation. Excavate post hole to the depth as SHOWN ON THE PLANS. The hole width should not be more than three times the width of the post. If necessary because of obstacles, the post hole may be moved within the tolerances as SHOWN ON THE PLANS.

Backfill the post holes with suitable material in 6 inch layers and compact material to produce a solid and plumb installation. Stabilize the post with concrete or rock mounds built in accordance with rock cairn specifications when approved by the CO.

953.20.05 Blazer Installation. Pre-drill blazers before mounting manufactured blazers on supports. Use 50-penny galvanized nails or spikes to fasten manufactured blazers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the manufactured blazers. Tighten hardware snug for posts, but do not damage the manufactured blazer surface.

953.30 – Reassurance Marker Maintenance

Description

953.30.01 This work consists of maintaining manufactured blazers or blazed trees, including resetting supports, refastening or replacing manufactured blazers or re-blazing trees with an axe or paint.

Maintenance

953.30.02 General. Repair reassurance markers at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND and as required under construction section 953.

Reattach designated reassurance markers that are out of their original position so that the marker is vertical. Reset reassurance markers support posts to a plumb position and firmly tamp in place. Set reassurance marker supports designated for replacement in the ground to a depth as SHOWN ON THE PLANS at the approximate location of the original post.

Reset existing supports that are out of plumb and firmly tamp in place. Set supports that need to be reset and new replacement supports in a plumb position and to a depth as SHOWN ON THE PLANS. Backfill and tamp holes from which posts are removed.

Tighten route marker mounting bolts or lag screws to hold the marker snugly in place. Do not damage route marker surface.

For reassurance markers mounted on trees, remove obstructing limbs and notch the outer bark to provide a flat surface at the marker mounting position as necessary. Avoid removing the inner bark or cutting the cambium. Use 50-penny galvanized nails or spikes to refasten markers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the marker.

Section 954 – Mileage Markers

Description

954.00.01 This work consists of furnishing and installing or maintaining mileage markers or mileposts on supports, including excavation, backfill, and associated materials and hardware. Construction and maintenance of mileage markers may be covered by one or more of the following subsections:

- | | |
|--------|----------------------------|
| 954.10 | Mileage Markers |
| 954.20 | Mileage Marker Maintenance |

Material

954.00.02 All materials shall conform to Forest Service EM 7100-15, *Sign and Poster Guidelines for the Forest Service* or as SHOWN ON THE PLANS.

Construction

954.00.03 General. Erect mileage markers of the type and at the locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Measurement

954.00.04 Method. Measure the Section 954 items listed in the bid schedule according to section 906.

Rock cairns built to support mileage marker posts will be considered incidental to the PAY ITEM for markers, and separate payment will not be made.

Payment

954.00.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 954 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

954.10 – Mileage Markers

Description

954.10.01 This work consists of furnishing and installing mileage markers or mileage markers on supports, including associated materials and hardware.

Construction

954.10.02 Construct mileage markers as required under construction section 954.00 and/or as SHOWN ON THE PLANS.

954.10.03 Post Installation. Excavate post hole to the depth as SHOWN ON THE PLANS. The hole width should not be more than three times the width of the post. If necessary because of obstacles, the post hole may be moved within the tolerances as SHOWN ON THE PLANS.

Set posts in a plumb position. Backfill the post holes with suitable material in 6 inch layers and compact material to produce a solid installation. Stabilize the post with concrete or rock mounds built in accordance with rock cairn specifications when approved by the CO.

954.10.04 Tree Installation. Remove obstructing limbs and notch the outer bark to provide a flat surface at the mileage marker mounting position as necessary. Avoid removing the inner bark or cutting the cambium.

954.10.05 Mileage Marker Installation. Pre-drill mileage markers before mounting. Tighten hardware snug, but do not damage the route marker surface. Use 50-penny galvanized nails or spikes to fasten mileage markers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the markers.

954.20 – Mileage Marker Maintenance

Description

954.20.01 This work consists of refastening existing mileage markers to existing marker supports, resetting existing marker supports, and furnishing and installing new replacement mileage markers and new mileage marker supports.

Maintenance

954.20.02 General. Repair mileage markers at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Reattach designated mileage markers that are out of their original position so that the lines of the marker legend are vertical. Reset route marker support posts to a plumb position and firmly tamp in place. Set route marker posts designated for replacement in the ground to a depth as SHOWN ON THE PLANS at the approximate location of the original post.

Reset existing supports that are out of plumb and firmly tamp in place. Set supports that need to be reset and new replacement supports in a plumb position and to a depth as SHOWN ON THE PLANS. Backfill and tamp holes from which posts are removed.

Tighten route marker mounting bolts or lag screws to hold the marker snugly in place. Do not damage marker surface.

For mileage markers mounted on trees, remove obstructing limbs and notch the outer bark to provide a flat surface at the marker mounting position as necessary. Avoid removing the inner bark or cutting the cambium. Use 50-penny galvanized nails or spikes to refasten markers to trees and leave 1 inch of nail exposed to allow for tree to grow without impacting the marker.

Section 955 – Cairns

Description

955.00.01 This work consists of furnishing and installing or maintaining cairns. Construction and maintenance of cairns may be covered by one or more of the following subsections:

955.10.	Cairns
955.20.	Cairn Maintenance

Material

955.00.02 Conform to the following Sections and Subsections:

Rock, Grid Pavement Units, and Aggregate	991
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Construction

955.00.03 General. Erect cairns of the type and at the locations as SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

955.00.04 Rock Cairn Construction. Slope each rock layer toward the center. Place each rock with at least three points of contact. Do not wedge small rocks into cracks between large rocks to stabilize the large rocks.

Measurement

955.00.05 Measure the Section 955 items listed in the bid schedule according to section 906.

Payment

955.00.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 955 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

955.10 – Cairns

Description

955.10.01 This work consists of furnishing and installing cairns.

Construction

955.10.02 Construct cairns as required under construction section 955.00 and/or as SHOWN ON THE PLANS.

955.20 – Cairn Maintenance

Description

955.20.01 This work consists of maintenance of cairns.

Maintenance

955.20.02 Perform maintenance on cairns as required under construction section 955.00 and/or as SHOWN ON THE PLANS.

Section 959 – Reserved for Route Markers and Signs Special Project Specifications

960. Trail Bridges

Section 961- Native Log Stringer Trail Bridge

Description

961.00.01 This work consists of constructing native log stringer bridges, including mud sills, bulkheads, rail systems, curbs, decking, excavation, backfill, and approach fills as SHOWN ON THE PLANS. Construction of native log stringer trail bridges may be covered by one or more of the following subsections:

- 961.10. Single Log Stringer Trail Bridge
- 961.20. Multiple Log Stringer Trail Bridge

Materials

961.00.02 Materials. Conform to the following Sections and Subsections:

- Rock, Grid Pavement Units, and Aggregate 991
- Material for Timber Structures 995

The location of trees for native timber materials will be SHOWN ON THE PLANS and DESIGNATED ON THE GROUND.

Construction

961.00.03 General. Construct native log stringer trail bridges at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Pre-drill holes for fasteners when necessary to prevent splitting and drive spikes flush. Use washers with lag screws and bolts.

961.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

961.00.05 Hardware. Furnish and install hardware as SHOWN ON THE PLANS.

961.00.06 Mud Sills. Construct mud sills at each end of the span in the location staked on the ground. Construct mud sills to be level, bedded evenly, and buried to the depth necessary for the bottom of the log stringers to clear the ground surface by a minimum of 6 inches.

Hew sill logs to provide a bearing surface for the log stringers and to provide the log stringers with a level top surface. Do not hew sill logs more than one-third their diameter. Do not level the top surfaces of the log stringers by shimming or notching their ends.

961.00.07 Stringers. Fasten log stringer to each mud sill with a drift pin that penetrates a minimum of 8 inches into the mud sill.

When plank decking is used, hew the top surfaces of log stringers up to 2 inches deep, as necessary, to provide bearing surfaces for deck planks.

961.00.08 Decking. Spike decking evenly at right angles to each stringer, unless otherwise SHOWN ON THE PLANS.

Lay split log decking alternately flat side down first, then round side down, ending with a flat side down. When the round side is down, provide a bearing surface that is between 1½ inches and 2 inches wide.

Lay split and sawn deck planks on the stringer to provide bearing for the full width of the plank.

Trim protruding ends of the decking to give a straight-line appearance to the edges of the structure, except for decking that extends out to provide handrail support.

961.00.09 Curbs. Construct curbs with logs or sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 24 inch half-lap joint at a curb block location. Match diameters of logs at lap joints and trim excess to provide a smooth transition between logs.

Finish curbs smooth and free from splinters and sharp projections.

961.00.10 Rail Systems. Construct rail systems with logs or sawn timber as SHOWN ON THE PLANS and use lengths greater than or equal to 10 feet.

When rail systems are constructed of logs, splice them with a 6 inch half-lap joint at a post location. Notch surfaces of posts and rails 5/8 inch at connections. Match diameters of rails at lap joints and trim excess to provide a smooth transition between rails. Use timber bolts for fastening rails to posts as SHOWN ON THE PLANS.

When rail systems are constructed of sawn timber, splice them with a diagonal butt joint at a post location. Use S4S sawn timber, for all rails, posts, and top caps. Fasten each rail and top rail to each post with wood screws as SHOWN ON THE PLANS. Finish handrails and posts smooth and free from splinters and sharp projections.

961.00.11 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

961.00.12 Measure the Section 961 items listed in the bid schedule according to section 906.

Payment

961.00.13 The accepted quantities will be paid at the contract price per unit of measurement for the Section 961 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

961.10 – Single Log Stringer Trail Bridge

Description

961.10.01 This work consists of construction of a single log stringer bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

961.10.02 Construct single log stringer bridge as required under construction section 961.00 and as SHOWN ON THE PLANS.

961.20 – Multiple Log Stringer Trail Bridge

Description

961.20.01 This work consists of construction of a multiple log stringer bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

961.20.02 Construct multiple log stringer bridge as required under construction section 961.00 and as SHOWN ON THE PLANS.

Section 962 - Sawn Timber Trail Bridge

Description

962.00.01 This work consists of furnishing, fabricating, constructing sawn timber trail bridges, including all required lumber, hardware, sills, backwalls, rail systems, curbs, decking, excavation, backfill, and approach fills as SHOWN ON THE PLANS. Construction of sawn timber trail bridges may be covered by one or more of the following subsections:

- 962.10. Sawn Timber Stringer Trail Bridge
- 962.20. Longitudinal Nail-Laminated Trail Bridge

Materials

962.00.02 Materials. Conform to the following Sections and Subsections:

- Rock, Grid Pavement Units, and Aggregate 991
- Material for Timber Structures 995

Furnish the following compliance certificates to the CO upon delivery of the materials to the jobsite:

- (a) Verification of compliance with grading rules and species of timber and lumber. Provide certification by an agency accepted as competent by the American Lumber Standards Committee (ALSC).
- (b) Lot certification of each charge for preservative, penetration in inches, and retention in pounds per cubic foot (assay method) by a qualified independent inspection and testing agency. In addition, have the producer of the treated products provide written certification that Best Management Practices (BMP's) in accordance with "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute (WWPI) and Canadian Institute of Treated Wood, were followed, including a description and appropriate documentation of the applicable BMP's used.
- (c) Such other certifications as SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS.

Provide shop drawings in accordance with section 903 for all timber bridges 30 days in advance of fabrication when SHOWN ON THE PLANS or in the SPECIAL PROJECT SPECIFICATIONS. Show all dimensions and fabrication details for all cut, framed, or bored timbers.

Construction

962.00.03 General. Construct sawn timber trail bridges at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Furnish structural lumber and timber of the required stress grade as SHOWN ON THE PLANS.

Clear stacks of weeds, rubbish, or other objectionable material from the ground under and in the vicinity of all stored material. Place the bottom layer of material at least 8 inches above the ground level. Provide sufficient support to prevent sagging.

Open-stack untreated material to shed water. Stack material in layers on spacers (stickers) that extend across the full width of the stack to allow for free air circulation. Align all stickers vertically and space them at regular intervals.

Close-stack treated material to shed water.

Protect material from the weather. If covered, used sheet material such as water-resistant paper or opaque polyethylene film. Do not cover with impervious membranes, such as polyethylene film, during dry weather. Slit individual wrappings full length or puncture on the lower side to permit drainage of water.

Use slings or other devices to protect corners of heavy construction timbers and banded packages of heavy construction timber

962.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

962.00.05 Hardware. Furnish and install hardware as SHOWN ON THE PLANS

962.00.06 Workmanship. Cut and form all lumber and construction timbers so all joints will have even bearing over the entire contact surface. Do not use shims in making joints. Construct all joints to be closed. Drive nails and spikes to set the heads flush with the wood surface. Use the same end, face, and edge of the timber member for all layout dimensions. Bore all holes from mating faces.

962.00.06 Mud Sills. Construct mud sills at each end of the span in the location staked on the ground. Construct mud sills to be level, bedded evenly, and buried to the depth necessary for the bottom of the log stringers to clear the ground surface by a minimum of 6 inches.

962.00.07 Stringers. Stringers shall be size matched at bearings and shall be positioned so that knots near the edge will be in the top portion of the stringers. Bridging between stringers shall be neatly and accurately framed and securely fastened.

962.00.08 Curbs. Construct curbs with logs or sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 24 inch half-lap joint at a curb block location. Match diameters of logs at lap joints and trim excess to provide a smooth transition between logs.

Finish curbs smooth and free from splinters and sharp projections.

962.00.09 Rail Systems. Construct rail systems with logs or sawn timber as SHOWN ON THE PLANS and use lengths greater than or equal to 10 feet.

When rail systems are constructed of logs, splice them with a 6 inch half-lap joint at a post location. Notch surfaces of posts and rails 5/8 inch at connections. Match

diameters of rails at lap joints and trim excess to provide a smooth transition between rails. Use timber bolts for fastening rails to posts as SHOWN ON THE PLANS.

When rail systems are constructed of sawn timber, splice them with a diagonal butt joint at a post location. Use S4S sawn timber, for all rails, posts, and top caps. Fasten each rail and top rail to each post with wood screws as SHOWN ON THE PLANS. Finish handrails and posts smooth and free from splinters and sharp projections.

962.00.10 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

962.00.11 Measure the Section 962 items listed in the bid schedule according to section 906.

Payment

962.00.12 The accepted quantities will be paid at the contract price per unit of measurement for the Section 962 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

962.10 – Sawn Timber Stringer Trail Bridge

Description

962.10.01 This work consists of construction of a sawn timber stringer trail bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

962.10.02 Construct a sawn timber stringer trail bridge as required under construction section 962.00 and as SHOWN ON THE PLANS.

962.20 – Longitudinal Nail-Laminated Trail Bridge

Description

962.20.01 This work consists of construction of a longitudinal nail-laminated trail bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

962.20.02 Construct a longitudinal nail-laminated trail bridge as required under construction section 962.00 and as SHOWN ON THE PLANS.

Section 963 - Glulam Trail Bridge

Description

963.00.01 Work. This work consists of furnishing, fabricating, constructing glulam trail bridges, including all required lumber, hardware, sills, backwalls, rail systems, curbs, decking, excavation, backfill, and approach fills as SHOWN ON THE PLANS. Construction of glulam trail bridges may be covered by one or more of the following subsections:

- 963.10. Glulam Stringer Trail Bridge
- 963.20. Longitudinal Glulam Deck Panel Trail Bridge

Materials

963.00.02 Materials. Conform to the following Sections and Subsections:

- Rock, Grid Pavement Units, and Aggregate 991
- Material for Timber Structures 995

Furnish the following compliance certificates to the CO upon delivery of the materials to the jobsite:

- (a) Verification of compliance with grading rules and species of timber and lumber. Provide certification by an agency accepted as competent by the American Lumber Standards Committee (ALSC).
- (b) Lot certification of each charge for preservative, penetration in inches, and retention in pounds per cubic foot (assay method) by a qualified independent inspection and testing agency. In addition, have the producer of the treated products provide written certification that Best Management Practices (BMP's) in accordance with "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute (WWPI) and Canadian Institute of Treated Wood, were followed, including a description and appropriate documentation of the applicable BMP's used.
- (c) Certification from a qualified inspection and testing agency indicating that all glued laminated members are in accordance with the requirements of American National Standard, "Standard for Wood Products - Structural Glued Laminated Timber" (ANSI A190.1) modified as SHOWN ON THE PLANS.
- (d) Such other certifications as SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS.

Provide shop drawings in accordance with section 903 for all timber bridges 30 days in advance of fabrication when SHOWN ON THE PLANS or in the SPECIAL PROJECT SPECIFICATIONS. Show all dimensions and fabrication details for all cut, framed, or bored timbers.

Construction

963.00.03 General. Construct glulam trail bridges at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Furnish glulams and lumber of the required stress grade.

Clear stacks of weeds, rubbish, or other objectionable material from the ground under and in the vicinity of all stored material. Place the bottom layer of material at least 8 inches above the ground level. Provide sufficient support to prevent sagging.

Store and protect glued laminated timber in accordance with the recommendations for Loading and Handling, Job Site Storage, and Erection in "Recommended Practice for Protection of Structural Glued Laminated Timber During Transit, Storage, and Erection," published by the American Institute of Timber Construction, AITC 111.

Open-stack untreated material to shed water. Stack material in layers on spacers (stickers) that extend across the full width of the stack to allow for free air circulation. Align all stickers vertically and space them at regular intervals.

Close-stack treated material to shed water.

Protect material from the weather. If covered, used sheet material such as water-resistant paper or opaque polyethylene film. Do not cover with impervious membranes, such as polyethylene film, during dry weather. Slit individual wrappings full length or puncture on the lower side to permit drainage of water.

Use slings or other devices to protect corners of heavy construction timbers and banded packages of heavy construction timber.

963.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

963.00.05 Hardware. Furnish and install hardware as SHOWN ON THE PLANS.

963.00.06 Workmanship. Cut and form all lumber and construction timbers so all joints will have even bearing over the entire contact surface. Do not use shims in making joints. Construct all joints to be closed. Drive nails and spikes to set the heads flush with the wood surface. Use the same end, face, and edge of the timber member for all layout dimensions. Bore all holes from mating faces.

963.00.07 Mud Sills. Construct mud sills at each end of the span in the location staked on the ground. Construct mud sills to be level, bedded evenly, and buried to the depth necessary for the bottom of the log stringers to clear the ground surface by a minimum of 6 inches.

963.00.08 Glulam Stringers. Do not drag or skid stringers. Stringers shall be size matched at bearings and shall be positioned so that the camber is up. Bridging between stringers shall be neatly and accurately framed and securely fastened.

963.00.09 Glued Laminated Panel Decks. Do not drag or skid panels. When lifted, support panels in the weak-moment plane at a sufficient number of points to avoid overstressing, and protect the edges from damage.

When dowels are SHOWN ON THE PLANS between deck panels, use a template or drilling jig to ensure that dowel holes are accurately spaced and drilled parallel to one another and to the horizontal surfaces of the panel. Drill holes to a depth 1/4 inch greater than one-half the dowel length, and a diameter that is 3/32 greater than the dowel, unless otherwise SHOWN ON THE PLANS. Use a temporary dowel as a check for snug fit prior to production drilling. Use dowels of the size SHOWN ON THE PLANS, with the tips slightly tapered or rounded. Use an approved lubricant to facilitate the connection process.

Start the tips of all dowels partially and equally into the holes of the two panels being joined. Draw the panels together keeping the edges parallel, until the panels abut tightly. Securely fasten each panel to each stringer as SHOWN ON THE PLANS.

Assemble and match-mark panels prior to delivery to the construction site when SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS. Follow erection procedures given in FPL-263, Forest Service, Forest Products Laboratory (FPL), Madison, Wisconsin.

963.00.010 Curbs. Construct curbs with sawn timber as SHOWN ON THE PLANS. Use lengths greater than or equal to 10 feet and splice with a 24 inches half-lap joint at a curb block location. Match diameters of logs at lap joints and trim excess to provide a smooth transition between logs.

Finish curbs smooth and free from splinters and sharp projections.

963.00.11 Rail Systems. Construct rail systems with sawn timber as SHOWN ON THE PLANS and use lengths greater than or equal to 10 feet.

When rail systems are constructed of sawn timber, splice them with a diagonal butt joint at a post location. Use S4S sawn timber, for all rails, posts, and top caps. Fasten each rail and top rail to each post with wood screws as SHOWN ON THE PLANS. Finish handrails and posts smooth and free from splinters and sharp projections.

963.00.12 Approach Fills. Construct the approach fills with compacted suitable material.

Measurement

963.00.13 Measure the Section 963 items listed in the bid schedule according to section 906.

Payment

963.00.14 The accepted quantities will be paid at the contract price per unit of measurement for the Section 963 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

963.10 – Glulam Stringer Trail Bridge

Description

963.10.01 This work consists of construction of a glulam stringer trail bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

963.10.02 Construct a glulam stringer trail bridge as required under construction section 963.00 and as SHOWN ON THE PLANS.

963.20 – Longitudinal Glulam Deck Panel Trail Bridge

Description

963.20.01 This work consists of construction of a longitudinal glulam deck panel trail bridge, including excavation, embankment, backfill, curbs and/or railing system.

Construction

963.20.02 Construct a longitudinal glulam deck panel trail bridge as required under construction section 963.00 and as SHOWN ON THE PLANS.

Section 964 - Prefabricated Steel Trail Bridges

964.00.01 This work consists of designing, furnishing, fabricating, and constructing prefabricated steel trail bridges, including all required materials, hardware, sills, backwalls, rail systems, curbs, decking, excavation, backfill, and approach fills as SHOWN ON THE PLANS. Work includes all other incidental work necessary to complete the bridge installation. These specifications are for a fully engineered clear span bridge and shall be regarded as minimum standards for design and construction.

Design

964.00.02 Engineering Requirements. Structural design of the bridge structure(s) shall be performed by or under the direct supervision of a licensed professional engineer and done in accordance with recognized engineering practices and principles. The engineer shall be licensed to practice in the State in which the bridge is fabricated. The design shall be in accordance with AASHTO LRFD Bridge Design Specifications, Current Edition and as recommended in AASHTO's LRFD Guide Specifications for Design of Pedestrian Bridges, Current Edition. The design shall meet the following requirements unless otherwise SHOWN ON THE PLANS:

1. Pedestrian Load – Main supporting members shall be designed for a pedestrian live load of 90 psf.
2. Vehicle Load – When the clear deck width between railings is greater than 7 ft and less than 10 ft the bridge shall be designed for an occasional single maintenance vehicle of 10,000 lbs (H5 Design Vehicle). When clear deck width is greater than 10 feet, the bridge shall be designed for an occasional single maintenance vehicle of 20,000 lbs (H10 Design Vehicle). The vehicle load shall not be placed in combination with the pedestrian live load or snow load. A vehicle impact allowance is not required.
3. Other Loads– Other loads such as snow, equestrian, wind and fatigue loads and load combinations shall be designed for as specified in AASHTO LRFD and as SHOWN ON THE PLANS. When a snow load greater than the 90 psf pedestrian load is SHOWN ON THE PLANS the bridge shall be analyzed and designed for the controlling load.
4. Deflection – Pedestrian live load deflection shall not exceed $L/360$ for steel or as SHOWN ON THE PLANS.
5. Vibration – The fundamental frequency of the pedestrian bridge without live load shall be greater than 3.0 hertz in the vertical direction and 1.3 hertz in the lateral direction for steel bridges. The minimum fundamental frequency for loads other than pedestrian loads, such as equestrian and mule trains shall be determined by the design engineer.

6. Camber - The bridge shall have a vertical camber dimension at midspan equal to 100% of the full dead load deflection plus 1% of the full length of the bridge or as SHOWN ON THE PLANS.

964.00.03 General Features of Design. The following are the required minimum design features unless otherwise SHOWN ON THE PLANS.

1. Span -The required bridge span shall be as SHOWN ON THE PLANS.
2. Deck Width -The required bridge width between railing elements as SHOWN ON THE PLANS.
3. Truss Type - Bridge(s) shall be designed as a through (or box) "Pratt" truss with one (1) diagonal per panel and square end vertical members.
4. Through truss bridges will be designed utilizing underhung floor beams.
5. The top of the top chord shall not be less than 42 inches above the deck (measured from the high point of the riding surface) unless otherwise SHOWN ON THE PLANS.
6. Safety Rails - Horizontal safety rails shall be placed on the structure so as to prevent a 4 inch sphere from passing through the truss or as SHOWN ON THE PLANS. The safety rail system shall be designed for 50 pounds per linear foot transversely and vertically, acting simultaneously on each rail.

964.00.04 Design Drawings and Calculations. Provide design drawings and calculations for the prefabricated bridge including wind, seismic and bearing forces. The Contractor is responsible for preparing all shop drawings necessary for erection of the bridge. All design drawings and calculations shall have the signature and seal of a registered professional engineer.

The Contractor shall submit all design drawings and calculations in accordance with section 903 at least 30 days in advance of the start of fabrication to allow time for review by the CO and correction of any changes. Include plan, elevation, and section views of the pedestrian bridge superstructure, dimensions of all components, connection details, and general and specific notes regarding design and construction.

The Contractor and COR shall be provided with detailed installation instructions.

Materials

964.00.05 Materials. Conform to the following Sections:

Steel Structures	FP-03, Section 555
Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

Furnish materials that meet the following requirements:

1. Unpainted Steel - Bridges which are not to be painted shall be fabricated from high strength, low alloy, atmospheric corrosion resistant ASTM A847 cold-formed welded square and rectangular tubing and/or ASTM A588, or ASTM A242, ASTM A606 plate and structural steel shapes ($F_y = 50,000$ psi). The minimum corrosion index of atmospheric corrosion resistant steel, as determined in accordance with ASTM G101, shall be 5.8.
2. Minimum Metal Thickness – The minimum nominal metal thickness of closed structural tubular metal members shall 0.25 inches.
3. 3/8 inch weep holes are required at all low points for bottom and top chords, verticals, and diagonals for closed structural tubular metal members.
4. Hardware – All fasteners and hardware shall be in compliance with FP-03, Section 717 and as SHOWN ON THE PLANS.
5. Wood Decking - Wood decking shall be West Coast Regional Douglas Fir or Southern Pine as SHOWN ON THE PLANS. Treated wood shall meet the requirements as SHOWN ON THE PLANS.

964.00.06 Welding

1. Welding Process - Welding and weld qualification tests shall conform to the provisions of the ANSI/AWS D1.5 Structural Welding Code.
2. Welders - Welders shall be properly accredited experienced operators, each of whom shall submit certification of satisfactorily passing AWS standard qualification tests for all positions, satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the work, and who has demonstrated the ability to make uniform, sound welds of the type required.

964.00.07 Submittals

1. Welder certifications showing compliance with Section 964.00.06(2)
2. Welding procedures in compliance with Section 964.00.06(1)
3. Steel Certification - All certified mill test reports shall be furnished upon request. Mill test reports shall show the chemical analysis and physical test results for each heat of steel used in the work. All steel shall be produced in the United States of America and be AISC certified.
4. Bolt Certification - All certified mill test reports shall be furnished upon request. Mill test reports shall show the chemical analysis and physical test results for each heat of steel used in the work. All bolts shall be produced in the United States of America.
5. Wood Certifications - Furnish the following compliance certificates to the CO upon delivery of the wood materials to the jobsite:

(a) Verification of compliance with grading rules and species of timber and lumber. Provide certification by an agency accepted as competent by the American Lumber Standards Committee (ALSC).

(b) Lot certification of each charge for preservative, penetration in inches, and retention in pounds per cubic foot (assay method) by a qualified independent inspection and testing agency. In addition, have the producer of the treated products provide written certification that Best Management Practices (BMP's) in accordance with "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute (WWPI) and Canadian Institute of Treated Wood, were followed, including a description and appropriate documentation of the applicable BMP's used.

(c) Such other certifications as SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS.

Provide shop drawings in accordance with section 903 for all bridges 30 days in advance of fabrication when SHOWN ON THE PLANS or in the SPECIAL PROJECT SPECIFICATIONS. Show all dimensions and fabrication details for all cut, framed, or bored timbers.

Construction

964.00.08 General Construct a prefabricated steel trail bridge as required under construction section 964.00. and as SHOWN ON THE PLANS.

964.00.09 Excavation and Embankment. Perform all excavation and embankment work in accordance with Section 911.

964.00.10 Installation. All construction and installation shall be performed in conformance with manufacturer's recommendations and the approved shop drawings. Unprotected steel chains shall not be used as a sling for installation.

964.00.11 Performance. Provide 14 day notice prior to delivery and/or installation of prefabricated bridge.

If the prefabricated superstructure is not installed immediately upon delivery to the project site, provide appropriate equipment and labor to unload and stack, support, and store all material at the delivery point designated by the COR. Support and stack all components to prevent damage. Furnish and install blocking such that all components are supported at least 8 inches above the ground.

Measurement

964.00.12 Measure the section 964 items listed in the bid schedule according to section 906.

Payment

964.00.13 The accepted quantities will be paid at the contract price per unit of measurement for the Section 964 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

Section 965 – Trail Bridge Substructures

Description

965.00.01 This work consists of furnishing, fabricating, constructing trail bridge substructures, including all required geosynthetics, gabion baskets, concrete, lumber, hardware, excavation, and backfill as SHOWN ON THE PLANS. Construction of trail bridge substructure may be covered by one or more of the following subsections:

965.10.	Timber Sill on Geocell Pad
965.20.	Timber Sill on Gabion Baskets
965.30.	Timber Sill on Timber Cribbing
965.40.	Concrete Leveling Pad on Bedrock

Materials

965.00.02 Materials. Conform to the following Sections:

Concrete	FP-03, Section 552
Reinforcing Steel	FP-03, Section 554
Rock, Grid Pavement Units, and Aggregate	991
Geosynthetic Materials	994
Material for Timber Structures	995
Wire Basket Materials (Gabion Baskets)	996

Furnish the following compliance certificates to the CO upon delivery of the materials to the jobsite:

- (a) Verification of compliance with grading rules and species of timber and lumber. Provide certification by an agency accepted as competent by the American Lumber Standards Committee (ALSC).
- (b) Lot certification of each charge for preservative, penetration in inches, and retention in pounds per cubic foot (assay method) by a qualified independent inspection and testing agency. In addition, have the producer of the treated products provide written certification that Best Management Practices (BMP's) in accordance with "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute (WWPI) and Canadian Institute of Treated Wood, were followed, including a description and appropriate documentation of the applicable BMP's used.
- (c) Such other certifications as SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS.

Provide shop drawings in accordance with section 903 for all timber bridge substructures 30 days in advance of fabrication when SHOWN ON THE PLANS or in the SPECIAL PROJECT SPECIFICATIONS. Show all dimensions and fabrication details for all cut, framed, or bored timbers.

Construction

965.00.03 General. Construct trail bridge substructure at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

Furnish structural lumber and timber of the required stress grade as SHOWN ON THE PLANS.

Clear stacks of weeds, rubbish, or other objectionable material from the ground under and in the vicinity of all stored material. Place the bottom layer of material at least 8 inches above the ground level. Provide sufficient support to prevent sagging.

Open-stack untreated material to shed water. Stack material in layers on spacers (stickers) that extend across the full width of the stack to allow for free air circulation. Align all stickers vertically and space them at regular intervals.

Close-stack treated material to shed water.

Protect material from the weather. If covered, used sheet material such as water-resistant paper or opaque polyethylene film. Do not cover with impervious membranes, such as polyethylene film, during dry weather. Slit individual wrappings full length or puncture on the lower side to permit drainage of water.

Use slings or other devices to protect corners of heavy construction timbers and banded packages of heavy construction timber

965.00.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

965.00.05 Hardware. Furnish and install hardware as SHOWN ON THE PLANS.

965.00.06 Workmanship. Cut and form all lumber and construction timbers so all joints will have even bearing over the entire contact surface. Do not use shims in making joints. Construct all joints to be closed. Drive nails and spikes to set the heads flush with the wood surface. Use the same end, face, and edge of the timber member for all layout dimensions. Bore all holes from mating faces.

Measurement

965.00.07 Measure the Section 965 items listed in the bid schedule according to section 906.

Payment

965.00.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 965 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

965.10 – Timber Sill on Geocell Pad

Description

965.10.01 This work consists of construction of a timber sill on geocell pad including excavation, embankment, backfill, curbs and/or railing system.

Construction

965.10.02 Construct a timber sill on geocell pad as required under construction section 965.00 and as SHOWN ON THE PLANS.

965.20 – Timber Sill on Gabion Baskets

Description

965.20.01 This work consists of construction of a timber sill on gabion baskets including excavation, embankment, backfilling.

Construction

965.20.02 Construct a timber sill on gabion baskets as required under construction section 965.00 and as SHOWN ON THE PLANS.

965.30 – Timber Sill on Timber Cribbing

Description

965.30.01 This work consists of construction of a timber sill on timber cribbing including excavation, embankment, and backfilling.

Construction

965.30.02 Construct a timber sill on timber cribbing as required under construction section 965.00 and as SHOWN ON THE PLANS.

965.40 – Concrete Leveling Pad on Bedrock

Description

965.40.01 This work consists of construction of a concrete leveling pad on bedrock including rock excavation, embankment and backfilling.

Construction

965.40.02 Construct a concrete leveling pad on bedrock as required under construction section 965.00 and as SHOWN ON THE PLANS.

Section 966 - Trail Bridge Maintenance

Description

966.01 This work consists of maintenance of trail bridges, including replacing or reconstructing rail systems, curbs, decking, sills, stringers and approach fills as SHOWN ON THE PLANS.

Materials

966.02 Materials. Conform to the following Sections:

Rock, Grid Pavement Units, and Aggregate	991
Material for Timber Structures	995

Furnish the following compliance certificates to the CO upon delivery of the materials to the jobsite:

- (a) Verification of compliance with grading rules and species of timber and lumber. Provide certification by an agency accepted as competent by the American Lumber Standards Committee (ALSC).
- (b) Lot certification of each charge for preservative, penetration in inches, and retention in pounds per cubic foot (assay method) by a qualified independent inspection and testing agency. In addition, have the producer of the treated products provide written certification that Best Management Practices (BMP's) in accordance with "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute (WWPI) and Canadian Institute of Treated Wood, were followed, including a description and appropriate documentation of the applicable BMP's used.
- (c) Certification from a qualified inspection and testing agency indicating that all glued laminated members are in accordance with the requirements of American National Standard, "Standard for Wood Products - Structural Glued Laminated Timber" (ANSI A190.1) modified as SHOWN ON THE PLANS.
- (d) Such other certifications as SHOWN ON THE PLANS or called for in the SPECIAL PROJECT SPECIFICATIONS.

Maintenance

966.03 General. Maintenance of trail bridges at locations SHOWN ON THE PLANS.

Furnish structural lumber and timber of the required stress grade as SHOWN ON THE PLANS.

Clear stacks of weeds, rubbish, or other objectionable material from the ground under and in the vicinity of all stored material. Place the bottom layer of material at least 8 inches above the ground level. Provide sufficient support to prevent sagging.

Open-stack untreated material to shed water. Stack material in layers on spacers (stickers) that extend across the full width of the stack to allow for free air circulation. Align all stickers vertically and space them at regular intervals.

Close-stack treated material to shed water.

Protect material from the weather. If covered, used sheet material such as water-resistant paper or opaque polyethylene film. Do not cover with impervious membranes, such as polyethylene film, during dry weather. Slit individual wrappings full length or puncture on the lower side to permit drainage of water.

Use slings or other devices to protect corners of heavy construction timbers and banded packages of heavy construction timber

966.04 Excavation and Embankment. Perform excavation and embankment in accordance with Section 911.

963.05 Hardware. Furnish and install hardware as SHOWN ON THE PLANS.

966.06 Workmanship. Cut and form all lumber and construction timbers so all joints will have even bearing over the entire contact surface. Do not use shims in making joints. Construct all joints to be closed. Drive nails and spikes to set the heads flush with the wood surface. Use the same end, face, and edge of the timber member for all layout dimensions. Bore all holes from mating faces.

966.07 Stringers. Stringers shall be size matched at bearings and shall be positioned so that the camber is up and if possible, so that knots near the edge will be in the top portion of the stringers. Bridging between stringers shall be neatly and accurately framed and securely fastened.

Measurement

966.08 Measure the Section 966 items listed in the bid schedule according to section 906.

Payment

966.09 The accepted quantities will be paid at the contract price per unit of measurement for the Section 966 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

970. Specialty Specifications

Section 971 – Reserved for Snow Shed

Section 972 – Reserved for Tunnels

Section 979 – Reserved for Specialty Structures Special Project Specifications

980. Incidentals

Section 981 – Seeding, Fertilizing and Mulching

Description

981.01 This work consists of preparing seedbeds and furnishing and placing required seed, fertilizer, and mulch.

Materials

981.02 Seed. Conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws. Do not use wet, moldy, or otherwise contaminated or damaged seed. Furnish each seed type in separate sealed container. Clearly label each container with the following:

- (a) Name and type of seed
- (b) Lot number
- (c) Net mass
- (d) Percent of purity, germination, and hard seed
- (e) Percent of maximum weed seed content
- (f) Seed Origin
- (g) Noxious weeds present
- (h) Other crop seed
- (i) Inert matter
- (j) Name and address of seed distributor
- (k) Mixture percent of each component

Inoculate legume seed with approved cultures according to the manufacturer's instructions.

Certify that seed meets the type as SHOWN ON THE PLANS. Furnish the CO with duplicate copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within 6 months of the date of delivery.

Include in the certificate:

- (1) Name and address of the laboratory
- (2) Date of test
- (3) Lot number for each kind of seed
- (4) Percent of purity and germination for each kind of seed
- (5) Percent of weed seed content for each kind of seed
- (6) Mixture percent of each component

981.03 Fertilizer. Furnish standard commercial grade dry formulated fertilizer conforming to the standards of the Association of Official Analytical Chemists International, applicable State and Federal regulations, and required minimum percentages of available nutrients. Supply fertilizer in new, clean, sealed, and properly labeled containers with name, mass, and guaranteed analysis of contents clearly marked. Use fertilizer with the minimum percentage of available nutrients as SHOWN ON THE PLANS.

981.04 Mulch. Use commercially produced mulch as SHOWN ON THE PLANS.

(a) **Straw.** Furnish certified weed free straw from oats, wheat, rye, or other grain crops that is free from mold or other objectionable material. Furnish straw in an air-dry condition suitable for placing with mulch blower equipment.

(b) **Wood fiber.** Furnish processed wood fiber from wood chips conforming to the following:

- (1) Colored with a green dye noninjurious to plant growth
- (2) Readily dispersible in water
- (3) Nontoxic to seed or other plant material
- (4) Free of growth or germination inhibiting substances
- (5) Free of weed seed
- (6) Air dried to an equilibrium moisture content of 12 ± 3 percent
- (7) Packaged in new labeled containers
- (8) Packaged in a condition appropriate for mixing in a homogeneous slurry suitable for application with power spray equipment

(c) **Grass straw cellulose fiber.** Furnish processed grass straw fiber conforming to the following:

- (1) Colored with a green dye noninjurious to plant growth
- (2) Readily dispersible in water
- (3) Nontoxic to seed or other plant material
- (4) Free of growth or germination inhibiting substances
- (5) Free of weed seed
- (6) Air dried to a moisture content of 10 ± 0.2 percent
- (7) Air dried to a uniform mass of ± 5 percent
- (8) Packaged in new containers labeled with the manufacturer's name and air-dry mass
- (9) Packaged in a condition appropriate for mixing in a homogeneous slurry suitable for application with power spray equipment

Construction

981.05 Seeding Seasons. Seed during the seeding dates as SHOWN ON THE PLANS. Do not apply seeding materials during windy weather or when the ground is excessively wet or frozen.

981.06 Soil Preparation. Shape and finish cut slopes, fill slopes, embankments, or other areas to be seeded as required by other applicable sections or as SHOWN ON THE PLANS. Prepare soil as specified in other sections.

981.07 Mulch. Spread mulch immediately after seeding, or after seeding and fertilizing, to a loose depth of 1 1/2 inches to 3 inches at locations SHOWN ON THE PLANS.

Measurement

981.08 Measure the section 981 items listed in the bid schedule according to subsection 906.

Payment

981.09 The accepted quantities will be paid at the contract price per unit of measurement for the Section 981 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

Section 982 – Erosion Control Blankets

Description

982.01 This work consists of furnishing and installing erosion control blankets.

Material

982.02 Erosion Control Blanket. Use erosion control materials of the type and in the locations SHOWN ON THE PLANS.

(a) **Burlap.** Use burlap of standard weave with a weight of 4, $\pm 1/2$ oz/SY.

(b) **Excelsior Blanket.** Use excelsior blanket consisting of a machine-produced mat or curled wood excelsior of 80-percent, 8 inches or longer fiber length with consistent thickness and the fiber evenly distributed over the entire area of the blanket. Use blanket with mesh dimensions of 1 inch by 2 inches ± 25 percent. Provide blanket with average weight of 8 oz/SY ± 10 percent at time of manufacture.

Construction

982.03 General. Install erosion control blankets in accordance with manufacturer's recommendations at locations SHOWN ON THE PLANS.

Make the soil surface stable, firm, and free of rocks and other obstructions. Install erosion control blankets to the following minimum guidelines.

(a) Slope Installations. At the top of slope, anchor the erosion control blankets by one of the following methods:

(1) Staples. Install the erosion control blankets 3 feet over the shoulder of the slope onto flat final grade. Secure with a single row of staples on 1 foot centers.

(2) Anchor trench. Construct a 6 inch by 6 inch trench. Extend the upslope terminal end of the erosion control blankets 10 feet past the trench. Use staples on 1 foot centers to fasten the erosion control blankets into the trench. Backfill the trench and compact the soil. Secure the terminal end with a single row of staples on 1 foot centers and cover the end with soil. Apply turf establishment.

(3) Check slot. Install two rows of staples 4 inch apart on 4 inch centers across the top edge of the erosion control blankets. Drive all staple heads flush with soil surface.

Securely fasten all erosion control blankets to the soil by installing staples at a minimum rate of 1.5 per square yard.

(b) Channel Installations. At the beginning of the channel, construct a full width anchor trench according to paragraph (a)(2) above. Construct additional anchor trenches or check slots at intervals along the channel reach and at the channel end according to paragraph (a)(2) or (a)(3) and the manufacturer's installation guidelines.

Securely fasten all erosion control blankets to the soil by installing staples at a minimum rate of 2.0 per square yard. Significantly higher anchor rates may be necessary in sandy, loose, or wet soils and in severe applications.

Repair all damaged areas immediately by restoring soil to finished grade, re-applying turf establishment, and replacing the erosion control blankets.

Measurement

982.04 Measure the section 982 items listed in the bid schedule according to subsection 906.

Payment

982.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 982 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

Section 983 – Removal of Structures and Obstructions

Description

983.01 Work. Work consists of removal and disposal of existing structures, including turnpikes, walkways, bridges, culverts, signs and posts, and other material within the trailway, above or below ground. Work also includes salvaging DESIGNATED materials and backfilling the resulting trenches, holes, and pits.

Construction

983.02 Removal of Culverts and Bridges. Remove existing culverts within embankment areas at locations SHOWN ON THE PLANS.

Remove existing structures down to the natural stream bottom, and remove parts outside the water course to at least 1inch below natural ground surface or finish ground surface, whichever is lower. Where portions of an existing structure lie wholly, or in part, within the limits of a new structure, remove parts to accommodate the installation of the proposed structure.

Avoid damage to bridges being dismantled for salvage. Match mark steel and/or wood members and prepare drawings showing the structural location of each member.

983.03 Removal of Signs and Posts. Remove signs, posts, and associated hardware at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND. Backfill post hole, compact, and contour area to match existing ground.

983.04 Removal of Other Obstructions. Remove other obstructions at locations SHOWN ON THE PLANS or DESIGNATED ON THE GROUND.

983.05 Disposal. Dispose of native log and rock material by scattering below the trailway and outside clearing limits. Do not place debris in water courses, snow ponds, lakes, meadows, or locations where it could impede the flow to, through, or from the drainage structures. Dispose of metal, treated timber, and other manufactured products by removing from Government-administered lands and placing in approved waste disposal sites.

Measurement

983.06 Measure the section 983 items listed in the bid schedule according to subsection 906.

Payment

983.07 The accepted quantities will be paid at the contract price per unit of measurement for the Section 983 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 906.04.

Section 989 – Reserved for Incidentals Special Project Specifications

990. Materials

Section 990 - Materials

990.01 General. Materials specification not found in this section will be covered by the most current version of *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects*, U.S. Department of Transportation, Federal Highway Administration.

Section 991 - Rock, Grid Pavement Units, Aggregate and Asphalt

991.01 Rock. Use sound, durable rock free of rifts, seams, laminations, and minerals that could deteriorate as a result of weathering. Dress rock to remove thin or weak portions before use.

Furnish rock of the size, shape, weight, and face area necessary to produce the general characteristics and appearance SHOWN ON THE PLANS.

991.02 Gabion and Revet Mattress Rock. Ensure that rock conforms to the requirements of Section 991.01 and the following specifications.

- (a) Coarse durability index, AASHTO T 210 52 min.
- (b) Unit weight of a filled basket 100 pounds per cubic foot min.
- (c) Gradation:
 - (1) Baskets 12 inches or greater in the vertical dimension:

Maximum dimension of rock	8 inch
Minimum dimension of rock	4 inch
 - (d) (2) Baskets less than 12 inches in the vertical dimension:

Maximum dimension of rock	6 inch
Minimum dimension of rock	3 inch

991.03 Grid Pavement Units. Use concrete grid pavement units with a minimum compressive strength of 4495 lbs/in² that meet the National Concrete Masonry Association (NCMA) Designation: A-15-82: Specifications for Grid Pavers.

991.04 Pit-Run Aggregate. Use pit-run aggregates consisting of native materials that can be placed on the trail without crushing or screening. No gradation, other than a maximum size, will be required. Provide pit-run aggregate with a maximum size as SHOWN IN THE SCHEDULE OF ITEMS.

991.05 Screened Aggregate. Use screened material consisting of gravel, talus, rock, sand, shale, or other suitable material that is reasonably hard, durable, and free of organic material, mica, clay lumps, or other deleterious material. Use screened aggregate meeting the gradation requirements shown in table 961-1 and of the grading SHOWN IN THE SCHEDULE OF ITEMS.

991.06 Crushed Aggregate for Base or Surface Course. Use crushed aggregate meeting the requirements of tables 991-1 and 991-2 and SHOWN IN THE SCHEDULE OF ITEMS.

At least 50 percent, by weight, of the aggregate retained on the No.4 sieve is to have one fractured face. Naturally fractured faces may be included in the 50-percent requirement.

The CO may approve other gradations if they are similar to those specified Grade aggregate from coarse to fine within the gradation band.

Table 991-1-Crushed and screened aggregate grading requirements for base or surface courses.

Sieve	Percent Passing (AASHTO T 11 and T 27)			
	Grading A	Grading B	Grading C	Grading D
1"				
¾"	100	100		
½"	50-90	70-100		
3/8"			100	100
No.4	30-65	45-75	60-85	70-90
No.8	25-55	30-60	35-70	45-70
No.30		15-40		20-40
No.200	6-12	6-20	5-20	5-20

Table 991-2.-Crushed Aggregate Quality Requirements

Description	AASHTO Test Method	Requirement
Percent Wear	T 96	40 Max.
Durability Index, Coarse and Fine	T 211	35 Min.
Liquid Limit	T 89	35 Max.
Plasticity Index	T 91	2-11

991.07 – Asphalt. Asphalt material for trail construction shall conform to requirements of the U.S. Department of Transportation, Federal Highway Administration, Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, most current edition, Section 702 – Asphalt Material.

991.08 – Cement. Cement material for trail construction shall conform to requirements of the U.S. Department of Transportation, Federal Highway Administration, Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, most current edition, Section 701 – Cement.

Section 992 – Pipe Material

992.01 General. Use pipe, coupling bands, and special sections such as elbows, tees, and wyes made of the same material and of the same thickness as the conduit to which they are joined, unless otherwise specified.

992.02 Corrugated Steel Pipe, Pipe Arches and Underdrains

(a) **Riveted Pipe and Pipe Arches.** Use pipes meeting the requirements of AASHTO M 36.

(b) **Welded Pipe and Pipe Arches.** Use corrugated metal pipe and pipe arches fabricated by resistance spot welding meeting the applicable requirements of AASHTO M 36.

(c) **Helical Pipe.** Use un-perforated helically corrugated pipe with continuous lock or welded seams meeting the applicable requirements of AASHTO M 36.

(d) **Coupling Bands.** Use coupling bands meeting the requirements of AASHTO M 36.

(e) **Special Sections.** Use special sections such as elbows, tees, and wyes meeting the same thickness as the conduit to which they are joined and meeting the applicable requirements of AASHTO M 36.

(f) **Flared-End Sections.** Use flared-end sections for inlet and outlet ends of pipe and pipe arch culverts meeting the applicable requirements of AASHTO M 36.

(g) **Corrugated Steel Pipe for Underdrains.** Use perforated galvanized pipe meeting the requirements of AASHTO M 36. Use polymer-precoated perforated underdrains meeting the requirements of AASHTO M 245

992.03 Corrugated Aluminum Alloy Culvert Pipe, Pipe Arches, and Underdrains. Use pipe meeting the requirements of AASHTO M 196.

992.05 Aluminum-Coated (Aluminized Type 2). Use pipe and coupling bands meeting the requirements of AASHTO M 36 except that they must be made from material meeting the requirements of AASHTO M 274.

992.06 Concrete Pipe and Pipe Arches

(a) **Non-Reinforced Concrete Pipe.** Conform to AASHTO M 86M for the diameters and strength classes specified.

(b) Reinforced Concrete Pipe. Conform to AASHTO M 170M for the diameters and strength classes specified. For precast reinforced concrete end sections, conform to cited specifications to the extent they apply.

(c) Perforated Concrete Pipe. Conform to AASHTO M 175M type 1 or 2 and AASHTO M 86M for the diameters and strength classes specified.

(d) Reinforced Arch-Shaped Concrete Pipe. Conform to AASHTO M 206M for the diameters and strength classes specified.

(e) Reinforced Elliptically-Shaped Concrete Pipe. Conform to AASHTO M 207M for the diameters, placement design (horizontal or vertical), and strength classes specified.

992.07 Precast Reinforced Concrete Box Sections. Conform to AASHTO M 259M or M 273M, as applicable, for dimensions and loading conditions specified.

992.08 Plastic Pipe. Furnish perforated and non-perforated plastic pipe conforming to the following for the sizes and types specified. For watertight joints, conform to ASTM D 3212.

(a) Smooth wall polyethylene pipe. Furnish 12 to 42-inch diameter pipe conforming to ASTM F 714 and minimum cell class, ASTM D 3350, 335434C.

(b) Corrugated polyethylene pipe. Furnish 12 to 42-inch diameter pipe conforming to AASHTO M 294M. For sanitary sewer applications, furnish AASHTO M 294M type S pipe with watertight joints.

(c) Profile wall (ribbed) polyethylene pipe. Furnish 18 to 48-inch diameter pipe conforming to ASTM F 894 and minimum cell class, ASTM D 3350, 334433C or 335434C.

(d) Corrugated polyethylene drainage tubing. Furnish 3 to 10-inch diameter tubing conforming to AASHTO M 252M.

(e) Smooth wall polyvinyl chloride pipe. Furnish 4 to 15-inch diameter pipe conforming to AASHTO M 278 and minimum cell class, ASTM D 1784, 12454B or 12364C. For sanitary sewer applications, conform to ASTM D 3034.

(f) Profile wall (ribbed) polyvinyl chloride pipe. Furnish 4 to 48-inch diameter pipe conforming to AASHTO M 304M and minimum cell class, ASTM D 1784, 12454C or 12364C. For sanitary sewer applications, conform to ASTM F 794 or F 949.

(g) Acrylonitrile-butadiene-styrene (ABS) pipe. Conform to AASHTO M 264. For perforations, conform to AASHTO M 278.

Section 993 - Fence Material

993.01 Barbed Wire. Furnish galvanized wire conforming to AASHTO M 280 or aluminum coated wire conforming to AASHTO M 305 type I.

993.02 Woven Wire. Furnish galvanized fabric conforming to AASHTO M 279 or aluminum coated fabric conforming to ASTM A 584.

993.04 Fence Posts.

(a) **Wood.** Conform to AASHTO M 168 and as SHOWN ON THE PLANS.

Peel all bark, except for red cedar posts and bracing which do not require peeling. Trim all knots flush with the surface and season the wood.

For dimension lumber for fences or gates, use timber that is sound, straight, and reasonably free from knots, splits, and shakes. Provide S4S finish.

(b) **Concrete.** Conform to FP-03, Section 601.

(c) **Steel.** For line fence posts, conform to AASHTO M 281.

993.05 Fence Gates. Furnish wood gates conforming to conforming to AASHTO M 168 and as SHOWN ON THE PLANS. For dimension lumber for gates, use timber that is sound, straight, and reasonably free from knots, splits, and shakes. Provide S4S finish.

993.06 Metal Beam Rail. Conform to AASHTO-AGC-ARTBA *A Guide to Standardized Highway Barrier Hardware*.

(a) **Galvanized steel rail.** Furnish W-beam or thrie beam rail elements fabricated from corrugated sheet steel conforming to AASHTO M 180 for the designated shape, class, type, and mass of coating specified.

(b) **Corrosion resistant steel rail.** Furnish W-beam or thrie beam rail elements and associated weathering steel hardware conforming to the following:

- | | |
|-----------------------|--------------|
| (1) Shapes and plates | ASTM A 242 |
| (2) Rail elements | AASHTO M 180 |
| (3) Fasteners | AASHTO M 180 |

993.07 Guardrail Posts. Conform to AASHTO-AGC-ARTBA “A Guide to Standardized Highway Barrier Hardware.”

Do not use a wood guardrail post that has a thorough check, shake, or end slit in the same plane as, or a plane parallel to the bolt hole and extending from the top of the post to within 3 inches of the bolt hole.

For steel-backed timber rail posts, furnish 10 by 12-inch posts conforming to Subsection 710.08.

993.08 Guardrail Hardware. Conform to the AASHTO-AGC-ARTBA *A Guide to Standardized Highway Barrier Hardware*.

For angles, channels, wide flanges, and plates not contained in the above standard, conform to ASTM A 36M. For structural tubing for short steel posts, conform to ASTM A 500 or ASTM A 513 grade 1008. Galvanize soil plates and structural tubing according to AASHTO M 111. Do not punch, drill, cut, or weld the metal after galvanizing.

993.09 Temporary Plastic Fence. Furnish plastic noncorrosive fence fabricated from polyethylene (HDPE) and UV stabilized for outdoor weathering. Conform to the following:

- | | |
|-------------------|----------------------|
| (a) Height | 48 inch min. |
| (b) Mesh openings | 3 to 3.5 inches |
| (c) Color | International orange |
| (d) Mass | 0.168 lb/ft min. |

Section 994 - Geosynthetics

994.01 Geotextiles

- (a) Use geotextiles, alone or in combination with other geosynthetics that meet the following Class B requirements for subsurface drainage as specified in AASHTO M288.
- (1) Grab Strength at 50 percent elongation
ASTM D4632-91 355 N min.
 - (2) Seam Strength,
ASTM D 4632 310 N min.
 - (3) Puncture Strength,
ASTM D4833-88 110 N min.
 - (4) Mullen Burst,
ASTM D 3786-87 900 kPa min.
 - (5) Trap Tear Strength,
ASTM D4533-91 110 N min.
- (b) Use geotextile meeting the following critical physical properties, unless otherwise SHOWN ON THE PLANS.
- (1) Material Structure Nonwoven (all purposes)
or Slit Film (for reinforcement
or separation)
 - (2) Polymer Composition Polypropylene
 - (3) Apparent Opening,
ASTM D 4751-8730 mm max.
 - (4) Permittivity, ASTM
D4491-92 4060 liters/minute/m² min.
 - (5) Ultraviolet Degradation 70 at 150 hours

994.02 Geonet. Use geonet meeting the following critical physical properties unless otherwise SHOWN ON THE PLANS.

- (a) Polymer Composition of Core
(Net or Mesh)..... Medium PE or HDPE
- (b) Permeability..... 0.001cm/second min.
- (c) Geotextile Must meet all Section
994.01 requirements
- (d) Compressive Strength
of Core, ASTM D1621..... 500 kPa min.
- (e) Transmissivity with Gradient
at 0.1, Pressure at 10 kPa..... 0.0009 m²/second min.

994.03 Geogrids. Use geogrids made from polypropylene or coated polyester that meets the following critical physical properties.

- | | |
|--|---|
| (a) Polymer Type | HDPE, Polypropylene, or Polyester with Acrylic or PVC coating |
| (b) Mass per Unit Area, ASTM D5261-92... | 175 g/m ² min. |
| (c) Maximum Aperture Size | |
| (1) Direction (MD) | 100 mm |
| (2) Cross-Direction (XD) | 75 mm |
| (d) Wide-Width Strip Tensile Strength at 5 percent Strain, ASTM D4595-86 | |
| (1) Machine Direction (MD) | 8 kN/m min. |
| (2) Cross-Direction (XD) | 6 kN/m max. |

994.04 Geocells. Use geocells meeting the following physical properties.

- | | |
|---|-----------------------------|
| (a) Composition | PE or HDPE |
| (b) Geocell Weight expanded: | 1.70 kg/m ² min. |
| (c) Minimum Cell Seam Peel Strength, U.S. Army Corps of Engineers Technical Report G:-86-19, Appendix A | 800 N min. |
| (d) Expanded Dimensional Properties..... | AS SHOWN ON PLANS |

994.05 Sheet Drains. Use sheet drains meeting the following critical physical properties.

- | | |
|--|---|
| (a) Core Polymer Composition | Polystyrene, HDPE, or polypropylene attached |
| (b) Geotextile | Nonwoven on one side if core solid; on both sides if core perforated. Must meet all Section 994.01 requirements |
| (c) Core Thickness, ASTM D5199 | 10 mm min. |
| (d) Core Compressive Strength at Yield, ASTM D1621 | 650 kPa max. |

994.06 Fasteners. Use anchors or fasteners of the design recommended by the manufacturer, and install per manufacturer's specifications.

994.07 Certification. Furnish a certificate or affidavit signed by an official from the company manufacturing the geosynthetic, verifying that the geosynthetic meets specifications.

994.08 Delivery, Storage, and Handling. During shipment and storage, wrap all geosynthetics to protect them from sunlight. When storing geosynthetics, protect them from mud, soil, dust, and debris. If materials are not installed immediately after delivery to site, do not store them in direct sunlight.

Section 995 - Material for Timber Structures

995.01 Untreated Structural Timber and Lumber. Conform to AASHTO M 168. Furnish an inspection certification from an agency accredited by the American Lumber Standards Committee for the species and grade. Mark all pieces with the inspection service, grade designation, species, and inspector identity.

Season and dry all structural timber and lumber before fabrication. Do not use material that is twisted, curved, or otherwise distorted.

Do not use boxed-heart pieces of Douglas fir or redwood in outside stringers, floor beams, caps, posts, sills, or rail posts. Boxed-heart pieces are defined as timber so sawed that at any point in the length of a sawed piece the pith lies entirely inside the four faces.

Select native log stringers from designated sites on Government-administered land. Select the species and sizes of materials as **SHOWN ON THE PLANS**. Select native log stringers that are straight, sound, and free of defects. Obtain CO approval of logs and trees before felling or moving them to the site. Fell trees to prevent damage to standing timber and to minimize breakage of trees to be used. Buck logs from felled trees in such a way to minimize waste and to obtain the required length and diameter.

Peel logs, square the ends, and trim the knots and limbs flush unless otherwise **SHOWN ON THE PLANS**. Scatter the debris from the processing of timber away from the trail and so it will not block the trail or plug water courses.

Field treat the following untreated timber surfaces in accordance with AWWA standard M4.

- (a) All ends and tops, and all contact surfaces of posts, sills, and caps.
- (b) All ends, joints, and contact surfaces of bracing and truss members.
- (c) All surfaces of timber bumpers and the back faces of bulkheads.
- (d) All other timber that will be in contact with earth.
- (e) All ends of log stringers.

995.02 Holes for Bolts, Dowels, Rods & Lag Screws. Bore all holes before preservative treating the wood.

Bore holes for round drift bolts and dowels 1/16 inch smaller in diameter than that of the bolt or dowel to be used. Ensure that the diameter of holes for square drift bolts or dowels is equal to the side dimension of the bolt or dowel.

Bore holes for machine bolts 1/16 inch larger than the diameter, except when galvanized bolts are specified. In this case, drill all holes 1/8 inch greater than the bolt size.

Bore holes for lag screws 1/16 inch larger for the shank portion of the lag screw and drill the remainder of the hole approximately 75 percent of the shank diameter to a depth of 1 inch less than the length of the screw.

995.03 Hardware. Use nails of standard form (ASTM F 1667), wood screws (ANSI/ASME B 18.6.1), hex headed bolts and nuts (ASTM A307), lag screws (ASTM A307 and ANSI/ASME B18.2.1), carriage bolts (ASTM A307), and drift pins and dowels (ASTM A307) as SHOWN ON THE PLANS.

Fabricate washers from gray iron or malleable iron castings unless structural washers are specified. Use malleable iron washers with a diameter approximately four times the bolt diameter under all bolt heads or nuts in contact with wood, unless otherwise SHOWN ON THE PLANS.

Galvanize all hardware according to AASHTO M 232 or cadmium plate all hardware according to ASTM B 766 class 12, type III, unless otherwise SHOWN ON THE PLANS, except for the glued laminated deck panel dowels. Ensure that all fasteners, including nails, spikes, bolts, washers, and timber connectors, other than malleable iron, are galvanized.

Final tighten all nuts to provide proper bearing and snug tight condition. Snug tight is defined as sufficient tightness to bring faces of members into firm contact with each other. Cut off excess bolt lengths of more than 1 inch. After final tightening, check or burr all bolts effectively with a pointing tool to prevent loosening of the nuts.

995.04 Treated Structural Timber and Lumber. Furnish wood according to Subsection 995.01. Incise all wood and make all dimensional cuts and holes in the wood before pressure treatment. Use wood preservative treatment methods meeting the requirements of AASHTO M 133 as SHOWN ON THE PLANS. Treat dimensional lumber, sawn timber and glued laminated timber members according to AWPA Standards as SHOWN ON THE PLANS.

All treated stringers, decking, running planks, and handrails shall be treated after fabrication in accordance with AWPA U1, *Use Category System*, using Pentachlorophenol or Copper Naphthenate (CuN) in Light Oil, (Type C Solvent) for Use Category UC3B.

All treated substructures (sills, backing planks, cribs, timber walls, etc.) shall be treated after fabrication in accordance with AWPA U1 *Use Category System*, using Pentachlorophenol or Copper Naphthenate (CuN) in Heavy Oil (Type A Solvent) for Use Category UC4B.

Treat timber members shall comply with the requirements of the current edition of WWPI's *Best Management Practices for the Use of Treated Wood in Aquatic Environments*.

Except for pine, incise before treatment all surfaces greater than 2 inches in width and all Douglas fir and western larch surfaces. Field treat all cuts, abrasions, drilled

holes, and recesses that occur after initial preservative treatment in accordance with the requirements specified in AWWA standard M4, *Standard for the Care of Pressure-Treated Wood Products*. Plug all unused holes with preservative-treated plugs. Perform all field-applied preservation treatment with necessary precautions so as to prevent soil and/or water contamination.

All treated timber members must have an approved American Lumber Standards Committee quality mark, individually or sealed pallets, assuring that treatment conforms to the appropriate AWWA standards.

Submit a certified copy of the lot certification, by a qualified independent inspection and testing agency, to the CO for each charge of preservative, stating penetration in inches and retention in pounds per cubic foot (assay method). In addition, provide a written certification from the producer of the treated products that "Best Management Practices for Treated Wood in Western Aquatic Environments," published by the Western Wood Preservers Institute and Canadian Institute of Treated Wood, were utilized. Include a description and appropriate documentation of the Best Management Practices used.

Handle treated timber according to the Consumer Information Sheet published by AWWA. Do not cut, frame, or bore treated timber after treatment unless approved by the CO. Handle treated timbers carefully and do not drop, damage outer fibers, or penetrate the surface with tools. Do not use cant dogs, hooks or pike poles. In coastal waters, do not cut or bore timber below the highwater mark.

995.05 Structural Glued Laminated Timber. Furnish structural glued laminated timber according to American National Standard, "Standard Specifications for Structural Glued Laminated Timber of Softwood Species" (ANSI 117). Fabricate according to the combination and grade as indicated in the contract. Fabricate structural glued laminated members according to American National Standard, "Standard for Wood Products - Structural Glued Laminated Timber" (ANSI A190.1).

Manufacture members as industrial appearance grade for wet use conditions, using a phenol-resorcinol resin type of adhesive throughout. Use only single- or multiple-piece laminations with bonded edge joints.

Section 996 - Gabion and Revet Mattress Material.

996.01 Basket Mesh. Twist or weld the mesh from galvanized steel wire conforming to ASTM A 641, class 3 or aluminized steel wire conforming to ASTM A 809. Use wire with a minimum tensile strength of 60,000 pounds per square inch when tested according to AASHTO T 244. The galvanized or aluminized coating may be applied after mesh fabrication. Make the mesh openings with a maximum dimension less than 4½ inches, an area less than 10 square inches, and a size less than the gabion or revet mattress rock to be used with the mesh.

(a) Gabion baskets (1 foot or greater in the vertical dimension).

Fabricate the mesh for galvanized or aluminized coated baskets from nominal-sized 0.12-inch or greater diameter wire and fabricate the mesh for polyvinyl chloride coated baskets from nominal-sized 0.11-inch or greater diameter wire.

(1) *Twisted wire mesh.* Form the mesh in a uniform hexagonal pattern with non-raveling double twists. For galvanized or aluminized coated baskets, tie the perimeter edges of the mesh for each panel to a 0.15-inch or greater diameter selvedge wire. For polyvinyl chloride coated baskets, tie the perimeter edges of the mesh for each panel to a 0.13-inch or greater diameter selvedge wire. Make the selvedge at least the same strength as the body of the mesh. Furnish selvedge wire from the same type of material used for the wire mesh.

(2) *Welded wire mesh.* For galvanized or aluminized coated baskets, weld each connection to obtain minimum average weld shear strength of 585 pounds with no value less than 450 pounds. For polyvinyl chloride coated baskets, weld each connection to obtain minimum average weld shear strength of 472 pounds with no value less than 360 pounds.

Fabricate gabion baskets in the dimensions required with a dimension tolerance of ±5 percent. Where the length of the basket exceeds 1.5 times its width, equally divide the basket into cells less than or equal to the basket width using diaphragms of the same type and size mesh as the basket panels. Prefabricate each basket with the necessary panels and diaphragms secured so they rotate into place.

(b) Revet mattresses (less than 1 foot in the vertical dimension).

Fabricate the mesh from nominal-sized 0.086-inch or greater diameter wire.

(1) *Twisted wire mesh.* Form the mesh in a uniform hexagonal pattern with non-raveling double twists. Tie the perimeter edges of the mesh for each panel to a 0.11-inch or greater diameter selvedge wire. Make the selvedge at least the same strength as the body of the mesh. Furnish selvedge wire from the same type of material used for the wire mesh.

(2) *Welded wire mesh.* Weld each connection to obtain minimum average weld shear strength of 292 pounds with no value less than 225 pounds.

Fabricate renet baskets in the dimensions required with a dimension tolerance of ± 5 percent in length and width and ± 10 percent in height. Where the length of the basket exceeds 0.5 times its width, equally divide the basket into cells less than or equal to 0.5 times the basket width using diaphragms of the same type and size mesh as the mattress panels. Prefabricate each basket with the necessary panels and diaphragms secured so they rotate into place.

(c) Epoxy or Polyvinyl chloride coated baskets. Use either a fusion bonded or extruded coating to coat the galvanized or aluminized mesh.

Make the coating at least 0.0625 inches in thickness for epoxy and 0.125 inch thickness for PVC. Make the color black or gray and conform to the following:

(1) For epoxy coating meet:

- Abrasion resistance, ASTM D 1242, maximum weight loss 0.19 g.
- Salt crock, ASTM G 8, maximum disbondment diameter 1.75 inch, and at 90 days, 1.5 volts, and 3 percent solution.
- Chemical resistance, ASTM G 20, with 45 days at 70°F, 3 molar CaCl₂, 3 molar NaOH, saturate Ca(OH)₂, and no coating loss.
- Weatherometer, ASTM G 23, with a surface chalk and 2,000 hours.

(2) For polyvinyl coating meet:

- | | |
|---------------------------------------|---------------------|
| ▪ Specific gravity, ASTM D 792 | 1.20 to 1.40 |
| ▪ Tensile strength, ASTM D 638 | 2,300 pounds |
| per square inch | min. |
| ▪ Modulus of elasticity, ASTM D 638 | 2,000 pounds |
| per square inch | min. at 100 strain |
| ▪ Hardness — shore "A", ASTM D 2240 | 75 min. |
| ▪ Brittleness temperature, ASTM D 746 | 16 °F max. |
| ▪ Abrasion resistance, ASTM D 1242, | 12% max. |
| method B at 200 cycles, | mass loss |
| CSI-A abrader tape, 80 grit | |
| ▪ Salt spray (ASTM B 117) and | No visual effect |
| ultraviolet light exposure | (c) $\Delta < 6\%$ |
| (ASTM D 1499 and G 23 using | (d) $\Delta < 25\%$ |
| apparatus type E and 145 °F) | (e) $\Delta < 25\%$ |

- for 3000 hours
 - Mandrel bend, 360° bend at 0 °F around a mandrel 10 times the wire diameter
- (h) $\Delta < 10\%$
No breaks or cracks in coating

996.02 Permanent fasteners.

- (1) **Lacing wire.** Furnish nominal-sized 0.086-inch diameter wire of the same type, strength, and coating as the basket mesh.
- (2) **Spiral binders.** Form with wire having at least the same diameter, type, strength, and coating as the basket mesh.
- (3) **Alternate fasteners.** Furnish fasteners according to the basket manufacturer's specification that remain closed when subjected to a 585-pound tensile force while confining the maximum number of wires to be confined in the gabion structure or revet mattress. Submit installation procedures and fastener test results.

996.03 Internal connecting wire. Furnish lacing wire as described in (b)(1) above or alternate stiffeners according to the basket manufacturer's specification.