

CITY AND BOROUGH OF WRANGELL



WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM

PROJECT MANUAL

APRIL 2023

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END OF SECTION

SECTION 00030 - NOTICE INVITING BIDS

OBTAINING CONTRACT DOCUMENTS. The Contract Documents are entitled:

Notice is hereby given that the City and Borough of Wrangell, Alaska will receive sealed bids for the construction of **WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM.**

The Contract Documents may be downloaded free of charge on the City & Borough of Wrangell website (www.wrangell.com) under the Bids and RFPs section. Downloading Contract Documents from the City & Borough of Wrangell's website requires registration with the Borough Clerk 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, email the Borough Clerk at clerk@wrangell.com.

DESCRIPTION OF WORK. WORK consists of all activities necessary to construct a city-wide surveillance network to monitor and record activities at each port, harbor and the marine center owned by the City and Borough of Wrangell. Each site is designed to be equipped with one or more surveillance cameras and a wireless connection to the surveillance system head end. The engineer's estimate for the Base Bid and all Alternates is approximately \$570,000.

PROJECT FUNDING SOURCES. Funding for the construction project will be partially funded with funds from the State Homeland Security Program (SHSP) and is therefore subject to the Federal regulations associated with this program.

Recipients of SHSP program funds must have an active SAM.gov registration and a Unique Entity ID generated by SAM.gov at the time of bid and must maintain active status throughout the term of the contract.

SITE OF WORK. The WORK is located at eight Port and Harbor sites throughout Wrangell, Alaska.

COMPLETION OF WORK. The OWNER will open the work site to the CONTRACTOR immediately following the Notice to Proceed. Substantial Completion must be reached by the date identified in Section 01010 – Summary of Work.

PREBID CONFERENCE. A prebid conference for all bidders will be held at the City and Borough of Wrangell, Capital Facilities Department Conference Room, Case Avenue, Wrangell, Alaska on Monday, May 8, 2023 at 2:00 PM, local time. A visit to each of the eight Port and Harbor project sites will be offered immediately following the meeting. Prospective bidders are encouraged to attend. To attend by teleconference, use the following dial-in information:

By Computer: <https://us02web.zoom.us/j/89593446948?pwd=VlJyNFhmaUkxVkU5dXpCbDFnYVFIQT09>

By Phone: 253-215-8782

Meeting ID: 895 9344 6948 / Passcode: 082570

TIME OF COMPLETION AND LIQUIDATED DAMAGES. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time. Work is subject to liquidated damages identified in the Agreement, Section 00500.

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) 874-3902, Email: aal-haddad@wrangell.com

BID SECURITY. Each bid shall be accompanied by a bid bond, cashier's check or certified check made payable to the City and Borough of Wrangell in the amount of five percent (5%) of the total bid price. This serves as a guarantee that the Bidder, if its Bid is accepted, will promptly execute the Agreement. A

SECTION 00030 - NOTICE INVITING BIDS

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 3:00 PM prevailing time on *May 16, 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 WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM**".

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

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

OWNER: The City and Borough of Wrangell

By: _____ Date _____
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 ENGINEER. Interpretations or clarifications considered necessary by the ENGINEER in response to such questions will be issued by Addendum and emailed to all parties recorded by the OWNER as having received the Contract Documents. Questions received less than 7 Days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect.

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

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

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

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

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

SECTION 00100 - INSTRUCTIONS TO BIDDERS

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

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

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

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

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

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

SECTION 00100 - INSTRUCTIONS TO BIDDERS

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

8.0 BID FORM.

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

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- I. On Projects including Federal funding, any contractor otherwise qualified to perform the WORK is not required to be licensed nor to submit application for license in advance of submitting a Bid or having such Bid considered; provided, however, that such exemption does not constitute a waiver of the OWNER's right under existing license laws to require a contractor, determined to be a successful Bidder, to be licensed to do business as a contractor in the State of Alaska in connection with the award of a contract to the successful Bidder.
- J. A Bid for the WORK will not be accepted from a contractor who does not hold a valid Alaska Business License and a valid Contractor's License in Alaska (applicable to the type of work bid upon) at the time of opening Bids.
- 9.0 BID ALTERNATES.** The project contains alternatives as listed in Summary of Work, Section 01010.
- 10.0 QUANTITIES OF WORK.** The quantities of WORK, or material, stated in unit price items of the Bid are supplied only to give an indication of the general scope of the WORK; the OWNER does not expressly or by implication agree that the actual amount of WORK, or material, will correspond therewith, and reserves the right after award to increase or decrease the amount of any unit price item of the WORK by an amount up to and including 25 percent of any Bid item, without a change in the unit price, and shall include the right to delete any Bid item in its entirety, or to add additional Bid items up to and including an aggregate total amount not to exceed 25 percent of the Contract Price (see General Conditions, Article 10 Changes In the Work).
- 11.0 SUBSTITUTE OR "OR-EQUAL" ITEMS.** The procedure for the submittal of substitute or "or-equal" products is specified in Section 01300 - Contractor Submittals.
- 12.0 SUBMISSION OF BIDS.** The Bid shall be delivered by the time and to the place stipulated in the Notice Inviting Bids. It is the Bidder's sole responsibility to see that its Bid is received in proper time. Oral, telegraphic, telephonic or faxed Bids will not be considered.
- 13.0 BID SECURITY, BONDS, AND INSURANCE.** Each Bid shall be accompanied by a certified, or cashier's check, or approved Bid Bond in an amount of at least 5 percent of the total Bid price. The "total Bid price" is the amount of the base bid, plus the amount of alternate bids, if any, which total to the maximum amount for which the contract could be awarded. Said check or Bond shall be made payable to the OWNER and shall be given as a guarantee that the Bidder, if offered the WORK, will enter into an Agreement with the OWNER, and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond; each of said Bonds, if required, and insurance amounts shall be as stated in the Supplementary General Conditions. In case of refusal or failure to enter into said Agreement, the check or Bid Bond, as the case may be, shall be forfeited to the OWNER. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form. Bid Bonds must be accompanied by a legible power of attorney.
- 14.0 RETURN OF BID SECURITY.** Within 14 Days after award of the contract, the OWNER will return the Bid securities accompanying such of the Bids as are not considered in making the award. All other Bid securities will be held until the Agreement has been executed. They will then be returned to the respective Bidders whose Bids they accompanied.

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15.0 DISCREPANCIES IN BIDS. In the event there is more than one pay item in a Bid Schedule, the Bidder shall furnish a price for all pay items in the schedule, and failure to do so may render the Bid non-responsive and cause its rejection. In the event there are unit price pay items in a Bid Schedule and the “amount” indicated for a unit price pay item does not equal the product of the unit price and quantity, the unit price shall govern and the amount will be corrected accordingly, and the Bidder shall be bound by said correction. In the event there is more than one pay item in the Bid Schedule and the total indicated for the schedule does not agree with the sum of the prices bid on the individual items, the prices bid on the individual items shall govern and the total for the schedule will be corrected accordingly, and the Bidder shall be bound by the correction.

16.0 BID MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS.

A. Any Bidder may modify a Bid by mail, email (clerk@wrangell.com), or fax (**Fax: 907-874-3952**) provided that such modification is received by the OWNER prior to the time set for opening of Bids. Bid modifications shall be made using the project Modified Bid Schedule form and shall be used with bid modifications made as a line by line pay item adjustment per the schedule. Bidders are strongly advised to telephone the City & Borough of Wrangell (**Telephone: 907-874-2381**) to confirm the successful and timely transmission of all email and fax Bid modifications.

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

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

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

18.0 AWARD OF CONTRACT.

A. Award of a contract, if it is awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Technical Specifications and will be made to the lowest responsive, responsible Bidder whose Bid complies with all the requirements prescribed. Unless otherwise specified, any such award will be made within the period stated in the Notice Inviting Bids that the Bids are to remain open. Unless otherwise indicated, a single award will be made for all the pay items in an individual Bid Schedule.

B. If the OWNER has elected to advertise this Project with a base bid and additive or deductive alternates, the OWNER may elect to award the contract for the base bid, or the

SECTION 00100 - INSTRUCTIONS TO BIDDERS

base bid plus one or more alternates selected by the OWNER. In either case, award shall be made to the responsive, responsible Bidder offering the lowest total bid for the WORK to be awarded.

- C. Low Bidder will be determined based on the lowest total of the base bid plus combinations of additive alternatives as deemed in the best interest of the OWNER.
- 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;

SECTION 00100 - INSTRUCTIONS TO BIDDERS

- 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;
- 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.

19.0 EXECUTION OF AGREEMENT.

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

20.0 LIQUIDATED DAMAGES. Provisions for liquidated damages are set forth in the Agreement, Section 00500.

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

END OF SECTION

SECTION 00300 - BID

BID TO: CITY & BOROUGH OF WRANGELL

For Project Name: WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM

By Company Name: _____

To the Contracting Officer, City and Borough of Wrangell:

1. In compliance with your Invitation to Bid for the above-referenced project, the undersigned proposes to furnish and deliver all the materials and to perform all the work and labor required in the construction of the Project, located in Wrangell, Alaska, according to all of the terms in the plans and specifications and for the amount and prices named herein as indicated on the Bid Schedule which is made a part of this Bid.
2. If this Bid is accepted, the undersigned does hereby agree 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.
3. This Bid will remain open for the period stated in the "Notice Inviting Bids" unless otherwise required by law. The undersigned will enter into an Agreement within the time and in the manner required in the "Notice Inviting Bids" and the "Instructions to Bidders." The undersigned agrees to commence the work within ten (10) calendar days after receipt of Notice to Proceed, unless otherwise stipulated in the contract, and to complete the work within by the Substantial Completion Date provided in the contract, after the effective date of the Notice to Proceed, unless extended in writing by the Owner.
4. The undersigned will furnish insurance certificates, Payment Bond, Performance Bond, and any other documents as required by the Contract Documents as surety for the full, complete, and faithful performance of this contract.
5. 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.
6. The Undersigned declares that they have carefully examined the contract requirements and that they have made a personal examination of the site of the work; that they understand that the quantities, where such are specified in the Bid Schedule or on the plans for this project, are approximate only and subject to increase or decrease, and that they are willing to perform increased or decreased quantities of work at unit prices bid under the conditions set forth in the Contract Documents.
7. 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.
8. 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

SECTION 00300 - BID

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 Bid Schedule.

9. The undersigned has examined copies of all the Contract Documents and acknowledges receipt of the following addenda to the drawings and/or specifications:

Addenda No.	Date Issued	Addenda No.	Date Issued

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

10. The undersigned has read the forgoing and hereby agrees to the conditions stated therein by affixing their signature below.

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

11. **DOCUMENTS REQUIRED FOR BID. TO BE CONSIDERED, ALL BIDDERS MUST COMPLETE AND INCLUDE THE FOLLOWING AT THE TIME OF THE BID OPENING:**

- Bid form, Section 00300
- Bid Schedule, Section 00310
- Bid Security, Section 00320

12. **DOCUMENTS REQUIRED AFTER NOTICE OF APPARENT LOW BIDDER.** Unless otherwise notified by the OWNER, the apparent low Bidder is required to complete and submit the following document within five (5) working days following notice of apparent low bidder:

- Current SAM.gov active registration
- Alaska Business License
- Contractor's License
- Subcontractor Report, Section 00360

SECTION 00300 - BID

13. DOCUMENTS REQUIRED FOR AWARD. To be awarded the contract, the successful Bidder must complete and submit, within ten (10) days after the date of the “Notice of Intent to Award” letter, the following executed documents:
- Agreement Form, Section 00500
 - Performance Bond, Section 00610
 - Payment Bond, Section 00620
 - Certificates of Contractor Insurance Section 00700 and Section 00800
14. DOCUMENTS REQUIRED AFTER NOTICE TO PROCEED. The successful Bidder will be required to submit, within ten (10) days after the date of the Notice to Proceed the following executed documents:
- Certificates of Subcontractor Insurance Section 00700 and Section 00800
 - One executed copy of each subcontract for WORK.

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, X will not be utilized on this project.

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM – BASE BID

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Mobilization	LS	All Req'd				
xxxx	Camera System, Head End Equipment (NVR, Client Workstation, and Software)	LS	All Req'd				
xxxx	Camera System, Reliance Harbor	LS	All Req'd				

**TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
BASE BID AMOUNT IN FIGURES: \$** _____

**TOTAL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
BASE BID AMOUNT IN WORDS:** _____

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE A

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Marine Service Center	EA	All Req'd				

**TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ALTERNATE A
AMOUNT IN FIGURES: \$** _____

**TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ALTERNATE A
AMOUNT IN WORDS:** _____

SECTION 00310 - BID SCHEDULE

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE B

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, City Dock	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ALTERNATE B AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ALTERNATE B AMOUNT IN WORDS: _____

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE C

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Heritage Harbor	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE C AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE C AMOUNT IN WORDS: _____

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE D

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Shoemaker Bay	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE D AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE D AMOUNT IN WORDS: _____

SECTION 00310 - BID SCHEDULE

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE E

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Inner Harbor	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE E AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE E AMOUNT IN WORDS: _____

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE F

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Fish and Game Float	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE F AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE F AMOUNT IN WORDS: _____

WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM - ALTERNATE G

Pay Item No.	Pay Item Description	Pay Unit	Approximate Quantity	Unit Price		Amount	
				Dollars	Cents	Dollars	Cents
xxxx	Camera System, Standard Oil Float	EA	All Req'd				

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE G AMOUNT IN FIGURES: \$ _____

TOTAL WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM ADDITIVE ALTERNATE G AMOUNT IN WORDS: _____

SECTION 00310 - BID SCHEDULE

BIDDER NAME: _____

BIDDER'S TELEPHONE: _____

END OF SECTION

SECTION 00320 - BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that _____

_____ as Principal, and _____

as Surety, are held and firmly bound unto the **CITY & BOROUGH OF WRANGELL** hereinafter called "OWNER," in the sum of _____ dollars, (not less than five percent (5%) 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

WRANGELL PORTS AND HARBORS SURVEILLANCE 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)

END OF SECTION

SECTION 003600 - SUBCONTRACTOR REPORT

LIST OF SUBCONTRACTORS

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

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

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

CONTRACTOR, Authorized Signature

CONTRACTOR, Printed Name

SECTION 003600 - SUBCONTRACTOR REPORT

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

END OF SECTION

SECTION 00500 - AGREEMENT

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

ARTICLE 1. WORK.

- A. CONTRACTOR shall complete the WORK as specified or as indicated under the Bid Schedule of the OWNER’s Contract Documents entitled **WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM** The WORK is generally described as follows:
- B. WORK consists of all activities necessary to construct a city-wide surveillance network to monitor and record activities at each port, harbor and the marine center owned by the City and Borough of Wrangell. Each site is designed to be equipped with one or more surveillance cameras and a wireless connection to the surveillance system head end.
- C. Identify Base Bid and Alternates (if applicable): _____

ARTICLE 2. CONTRACT COMPLETION TIME.

Substantial completion by _____.

ARTICLE 3. DATE OF AGREEMENT

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

ARTICLE 4. LIQUIDATED DAMAGES.

OWNER and the CONTRACTOR recognize that time is of the essence of this Agreement and that the OWNER will suffer financial loss if the WORK is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual damages suffered by the OWNER if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the OWNER and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the CONTRACTOR shall pay the OWNER \$1,000 for each Calendar Day that expires after the substantial completion time specified in Article 2 above. The amount of liquidated damages specified above is agreed to be a reasonable estimate based on all facts known as of the date of this Agreement.

ARTICLE 5. CONTRACT PRICE.

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

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

SECTION 00500 - AGREEMENT

ARTICLE 6. PAYMENT PROCEDURES.

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

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

ARTICLE 7. CONTRACT DOCUMENTS.

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

- Table of Contents
- Notice Inviting Bids
- Instructions to Bidders
- Bid
- Bid Schedule
- Bid Bond
- Subcontractor Report
- Performance Bond
- Payment Bond
- Insurance Certificate(s)
- General Conditions
- Supplementary General Conditions
- Alaska Labor Standards, Reporting, and Prevailing Wage Determination
- Permits
- Technical Specifications as listed in the Table of Contents
- RESPEC Drawings consisting of 19 sheets, as listed in the Table of Contents
- Addenda numbers ___ to ___, inclusive.
- Change Orders which may be delivered or issued after the Date of the Agreement, and which are not attached hereto.

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

ARTICLE 8. MISCELLANEOUS.

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

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

SECTION 00500 - AGREEMENT

Documents. CONTRACTOR understands and agrees that the Borough will not accept any assignment of this Contract to an LLC unless all the members of the LLC sign as guarantors of performance of this Contract.

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

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

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

OWNER:

CONTRACTOR:

_____ City & Borough of Wrangell _____

_____ _____

(Company Name)

_____ _____

(Signature)

_____ _____

(Signature)

By: Jeff Good, Borough Manager
(Printed Name)

By: _____
(Printed Name, Authority or Title)

Date: _____

Date: _____

Address: P.O. Box 531

Address: _____

Wrangell, Alaska 99929

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

_____ _____
(Telephone) (Fax)

_____ (E-mail address)

Owner Attest:

Contractor Attest:

SECTION 00500 - AGREEMENT

By: _____
Kim Lane, Borough Clerk

By: _____
Name/Title:

**CERTIFICATE
(if Corporation)**

STATE OF)
) SS:
COUNTY OF)

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

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

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

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the
Corporation this _____ day of _____, 20_____.

Secretary

(SEAL)

SECTION 00500 - AGREEMENT

CERTIFICATE
(if Partnership)

STATE OF)
) SS:
COUNTY OF)

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

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

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

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

Secretary

(SEAL)

SECTION 00500 - AGREEMENT

**CERTIFICATE
(if Joint Venture)**

STATE OF)
) SS:
COUNTY OF)

I HEREBY CERTIFY that a meeting of the Principals of the

_____ a joint venture existing under the laws of the

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

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

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

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

Secretary

(SEAL)

SECTION 00500 - AGREEMENT

CERTIFICATE
(If Limited Liability Company)

STATE OF _____)
) SS:
COUNTY OF _____)

I HEREBY CERTIFY that a meeting of the members of the

_____, a Limited Liability Company (LLC) existing under the laws of the State of _____, held on _____, 20____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, acting as _____ of the Limited Liability Company, is hereby authorized by all Members to **execute the Agreement** with the OWNER and this Limited Liability Company and that the execution thereof, attested by the _____ shall be the official act and deed of this Limited liability Company."

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

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

Secretary

(SEAL)

By: _____
(Signature of authorized Member)

(Title of person signing)

END OF SECTION

SECTION 006100 - PERFORMANCE BOND

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

_____ a _____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)

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

for the penal sum of _____

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

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

WRANGELL PORTS AND HARBORS SURVEILLANCE 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.

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

SECTION 006100 - PERFORMANCE BOND

CONTRACTOR:

By: _____
(Signature)

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

SURETY:

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

Date Issued: _____

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

(Affix SURETY'S SEAL)

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

END OF SECTION

SECTION 006200 - PAYMENT BOND

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

_____ a _____
(Corporation, Partnership, Individual)

hereinafter called "Principal" and _____
(Surety)

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

for the penal sum of _____

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

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

WRANGELL PORTS AND HARBORS SURVEILLANCE 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 006200 - PAYMENT BOND

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

CONTRACTOR:

By: _____
(Signature)

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

SURETY:

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

Date Issued: _____

(Printed Name)

(Company Name)

(Street or P.O. Box)

(City, State, Zip Code)

(Affix SURETY'S SEAL)

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

END OF SECTION

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ARTICLE 1 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

General Requirements - Division 1 of the Technical Specifications.

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

Holidays - Legal holidays occur on:

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

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

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

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

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

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

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

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

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

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

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

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

PCB's - Polychlorinated biphenyls.

PERMITTEE - CONTRACTOR.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 2 PRELIMINARY MATTERS

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

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

ARTICLE 3 CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 INTENT

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

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

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

3.2 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

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

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

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

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

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

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

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ARTICLE 4 AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

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

4.2 PHYSICAL CONDITIONS - SUBSURFACE AND EXISTING STRUCTURES

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

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

4.3 DIFFERING SITE CONDITIONS

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

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

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

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

4.4 PHYSICAL CONDITIONS - UNDERGROUND UTILITIES

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

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4.5 REFERENCE POINTS

- A. The ENGINEER will provide one benchmark, 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 benchmarks required for proper execution of the WORK.
- B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by its own employees or by its Subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of such reference points by personnel qualified under the Alaska Statute governing the licensing of Architects, Engineers, and Land Surveyors.

ARTICLE 5 BONDS AND INSURANCE

5.1 PERFORMANCE, PAYMENT, AND OTHER BONDS

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

5.2 INSURANCE

- A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. Such insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by law, whichever are greater. All

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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" (Excellent) general policy holder's rating and a Class VII financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.
- C. The City and Borough of Wrangell shall be listed as an additional insured on the CONTRACTOR'S general liability insurance policy and the CONTRACTOR'S pollution liability policy. CONTRACTOR shall furnish certificates to the Borough of such insurance and showing the Borough as an additional insured within ten days of receiving the Notice to Proceed. Failure to comply with this provision constitutes a material breach and default of the Agreement.

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

6.1 SUPERVISION AND SUPERINTENDENCE

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

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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, all WORK at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday, or any legal holiday without the OWNER's written consent. The CONTRACTOR shall apply for this consent through the ENGINEER.
- B. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid the CONTRACTOR for overtime work only in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes the use of overtime work and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.
- C. All costs of inspection and testing performed during overtime work by the CONTRACTOR which is allowed solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER shall have the authority to deduct the cost of all such inspection and testing from any partial payments otherwise due to the CONTRACTOR.
- D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK, including all mobilization and demobilization.
- E. All materials and equipment to be incorporated into the WORK shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of the OWNER. If required by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provisions of any such instructions will be effective to assign to the ENGINEER, or any of the ENGINEER consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C and 9.9D.

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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 Agreement and Contract documents.
- B. The CONTRACTOR shall perform not less than 40% of the WORK with its own forces (i.e., without subcontracting). The 40% requirement shall be understood to mean that the CONTRACTOR shall perform, with its own organization, WORK amounting to at least 40% of the awarded contract amount. The 40% requirement will be calculated based upon the total of the subcontract amounts submitted for contract award, and any other information requested by the OWNER from the apparent low bidder.
- 6.6 PERMITS
- A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements under this contract shall not be made the basis for claims for additional compensation. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the

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prosecution of the WORK, which are applicable at the time of opening of Bids. The CONTRACTOR shall pay all charges of utility owners for connections to the WORK.

- B. These Contract Documents may require that the WORK be performed within the conditions and/or requirements of local, state and/or federal permits. These permits may be bound within the Contract Documents, included within the Contract Documents by reference, or included as part of the WORK, as designated in this Section. The CONTRACTOR is responsible for completing the WORK required for compliance with all permit requirements; this WORK is incidental to other items in the Contract Documents. Any reference to the “permittee” in the permits shall mean the CONTRACTOR. If any permits were acquired by the OWNER, this action was done to expedite the start of construction. If the CONTRACTOR does not complete the WORK within the specified permit window, the CONTRACTOR shall be responsible for the permit extension, and for completing any additional requirements placed upon the permit.
- C. These Contract Documents may require that the WORK be performed within the conditions and/or requirements of local, state and/or federal permits. These permits may be bound within the Contract Documents, included within the Contract Documents by reference, or included as part of the WORK, as designated in Section 00700 – General Conditions, Article 6.6 - PERMITS. The CONTRACTOR is responsible for completing the WORK required for compliance with all permit requirements; this WORK is incidental to other items in the Contract Documents. Any reference to the “permittee” in the permits shall mean the CONTRACTOR. If any permits were acquired by the OWNER, this action was done to expedite the start of construction. If the CONTRACTOR does not complete the WORK within the specified permit window, the CONTRACTOR shall be responsible for the permit extension, and for completing any additional requirements placed upon the permit.
- D. The OWNER shall apply for, and obtain, the necessary building permit for this project, however, the CONTRACTOR is responsible for scheduling and coordinating all necessary inspections. All other provisions of this Section remain in effect.
- 6.7 PATENT FEES AND ROYALTIES. The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, software or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the OWNER in the Contract Documents. The CONTRACTOR shall indemnify, defend and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys’ fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.
- 6.8 LAWS AND REGULATIONS. The CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the

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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 or non-performance of the WORK.

6.11 SAFETY AND PROTECTION

A. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all employees on the WORK and other persons and organizations who may be affected thereby;
2. all the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and
3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

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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 or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the OWNER may otherwise agree in writing.

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6.14 INDEMNIFICATION

- A. To the fullest extent permitted by the laws of the State of Alaska, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, their Consultants, Sub-consultants and the officers, assembly members, mayor, directors, employees, and agents of each and any of them, against and from all claims, actions, damages, and liability of any kind and any nature arising out of or related to in way any acts or omissions of the CONTRACTOR, including death, and including in any administrative action by any federal or state agency, except where the claim or action alleges willful misconduct of the OWNER and the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:
1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, its employees, or agents in the performance of the WORK, or non-performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, its employees, agents, or third parties;
 2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR's or Subcontractor's own employees engaged in the WORK resulting in actions brought by or on behalf of such employees against the OWNER, and the ENGINEER;
 3. Liability or claims arising directly or indirectly from or based on the violation of any federal, state or local law, ordinance, regulation, order, or decree, whether by the CONTRACTOR, its employees, or agents;
 4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its employees, or agents in the performance of this contract of any copyrighted or non-copyrighted composition, secret process, patented or non-patented invention, computer software, article, or appliance, unless otherwise specifically stipulated in this contract.
 5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the OWNER or any other parties by the CONTRACTOR, its employees, or agents;
 6. Liabilities or claims arising directly or indirectly from the willful or criminal misconduct of the CONTRACTOR, its employees, or agents; and,
 7. Liabilities or claims arising directly or indirectly from any breach of the obligations of the CONTRACTOR in the Agreement and all Contract documents.
- B. The CONTRACTOR shall reimburse the ENGINEER and the OWNER for all costs and expenses, (including but not limited to fees and charges of engineers, attorneys, experts, and other professionals and court costs including all costs of appeals) incurred by the OWNER, and the ENGINEER in enforcing the provisions of this Paragraph 6.14.
- C. The indemnification obligation under this Paragraph 6.14 shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such Subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.15 CONTRACTOR'S DAILY REPORTS. The CONTRACTOR shall complete a daily report indicating total manpower for each construction trade, major equipment on site, each

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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 workday. The report should comment on the daily progress and status of the WORK within each major component of the WORK. These components will be decided by the ENGINEER.

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

ARTICLE 7 OTHER WORK

7.1 RELATED WORK AT SITE

- A. The OWNER may perform other work related to the Project at the site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts therefor which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work.

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- 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.

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.

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

ARTICLE 9 ENGINEER'S STATUS DURING CONSTRUCTION

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

A. **Duties, Responsibilities and Limitations of Authority of Inspector**

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

Duties and Responsibilities. The Inspector will:

1. Review the progress schedule, list of Shop Drawing submittals and schedule of values prepared by the CONTRACTOR and consult with the ENGINEER concerning their acceptability.
2. Attend pre-construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with the ENGINEER and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
3. Serve as the ENGINEER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent and assist said superintendent in understanding the intent of the Contract Documents. Assist the ENGINEER in serving as the OWNER's liaison with the CONTRACTOR when the CONTRACTOR's operations affect the OWNER's on-site operations.
4. As requested by the ENGINEER, assist in obtaining from the OWNER additional details or information, when required at the site for proper execution of the WORK.
5. Receive and record date of receipt of Shop Drawings and samples, receive samples which are furnished at the site by the CONTRACTOR and notify the ENGINEER of their availability for examination.

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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.
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.

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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, 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.

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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. The failure of the CONTRACTOR to provide all supporting documentation for the claim shall result in the denial of the claim and the waiver of the claim by the CONTRACTOR.
- B. The rendering of a decision by the ENGINEER with respect to any such claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.12) will be a condition precedent to any exercise by the OWNER or the CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Law or Regulations in respect of any such claim, dispute, or other matter.

9.9 LIMITATION ON ENGINEER'S RESPONSIBILITIES

- A. Neither the ENGINEER's authority to act under this Article or other provisions of the Contract Documents nor any decision made by the ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety for any of them, or any other person or organization performing any of the WORK.
- B. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the ENGINEER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the requirements of the Contract Documents, and conformance with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, unless there is a specific statement indicating otherwise. The use of

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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, except where the failure of the CONTRACTOR is the result of negligent acts or omissions of the ENGINEER in the ENGINEER's performance of its obligations.
- D. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR nor of any Subcontractor, supplier, or any other person or organization performing any of the WORK.

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 bid price established for such WORK under the Contract Documents, wherever such unit price has been established; provided, that an adjustment in the Contract Price may be made for changes which result in an increase or decrease in excess of 25% of the estimated quantity of any major item of the WORK. Major Item is defined as any bid item amount that is ten percent (10%) or more of the total contract amount.
- B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover such eliminated work, the price of the eliminated work shall be agreed upon in writing by the OWNER and the CONTRACTOR. If the OWNER and the CONTRACTOR fail to agree upon the price of the eliminated work, the price shall be determined in accordance with the provisions of Article 11.

ARTICLE 11 CHANGE OF CONTRACT PRICE

11.1 GENERAL

- A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR to complete the WORK shall be at its expense without change in the Contract Price.
- B. The Contract Price may only be changed by a Change Order approved by the Borough Assembly. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 7 days) after the start of the occurrence or the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with all supporting documentation and data shall be delivered within 14 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence or event. All claims for adjustment in the Contract Price shall be determined by the

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ENGINEER in accordance with Paragraph 9.8A if the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.1B.

- C. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
1. Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved. Unit prices not specified in the contract documents shall be determined by the unit price for that item or items in the CONTRACTOR'S bid.
 2. By mutual acceptance of a lump sum, which may, but is not required to, include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.4.
 3. On the basis of the cost of work (determined as provided in Paragraphs 11.3) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.4).
- 11.2 COSTS RELATING TO WEATHER. The CONTRACTOR shall have no claims against the OWNER for damages for any injury to WORK, materials, or equipment, resulting from the action of the elements. If, however, in the opinion of the ENGINEER, the CONTRACTOR has made all reasonable efforts to protect the materials, equipment and work, the CONTRACTOR may be granted a reasonable extension of Contract Time to make proper repairs, renewals, and replacements of the work, materials, or equipment.
- 11.3 COST OF WORK (BASED ON TIME AND MATERIALS)
- A. General. The term "cost of work" means the sum of all costs actually and necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.5 EXCLUDED COSTS.
 - B. Labor. The costs of labor will be the actual cost for wages prevailing for each craft or type of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, worker's compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. Labor costs for equipment operators and helpers shall be paid only when such costs are not included in the invoice for equipment rental. The labor costs for forepersons shall be proportioned to all of their assigned work and only that applicable to extra work shall be paid. Non-direct labor costs including superintendence shall be considered part of the mark-up set out in paragraph 11.4.
 - C. Materials. The cost of materials reported shall be at invoice or lowest current price at which materials are locally available and delivered to the job in the quantities involved, plus the cost of freight, delivery and storage, subject to the following:

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1. Trade discounts available to the purchaser shall be credited to the OWNER notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
 2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the ENGINEER. Mark-up except for actual costs incurred in the handling of such materials will not be allowed.
 3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on extra work items or the current wholesale price for such materials delivered to the work site, whichever price is lower.
 4. If in the opinion of the ENGINEER the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the work site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim shall be allowed by the CONTRACTOR for costs and profit on such materials.
- D. Equipment. The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the Supplementary General Conditions. Such rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the OWNER for the total period of use. If it is deemed necessary by the CONTRACTOR to use equipment not listed in the publication specified in the Supplementary General Conditions, an equitable rental rate for the equipment will be established by the ENGINEER. The CONTRACTOR may furnish cost data which might assist the ENGINEER in the establishment of the rental rate. The CONTRACTOR shall not be entitled for any rental rate for equipment the use of which would have necessary to provide the unit of work and which should have been included in the CONTRACTOR'S bid price for that unit of work.
1. All equipment shall, in the opinion of the ENGINEER, be in good working condition and suitable for the purpose for which the equipment is to be used.
 2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the ENGINEER, in duplicate, a description of the equipment and its identifying number.
 3. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
 4. Individual pieces of equipment or tools having a replacement value of \$200 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.
 5. Rental time will not be allowed while equipment is inoperative due to breakdowns.
 6. Equipment Rental Rates. Unless otherwise agreed in writing, the CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the following reference publication: "Rental Rate Blue Book" as published by Dataquest (a company of the Dunn and Bradstreet

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Corporation), 1290 Ridder Park Drive, San Jose, CA 95131, telephone number (800) 227-8444.

- E. Equipment on the Work Site. The rental time to be paid for equipment on the work site shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work, or if it was not necessary to move equipment from another location to the site. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transporting costs when the equipment is used at the site of the extra work on other than the extra work. The following shall be used in computing the rental time of equipment on the work site.
1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.
 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.

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- 2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may, by agreement, be accepted as specialty work and accordingly, the invoices for the work may be accepted without detailed itemization.
- 3. All invoices for specialty work will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.4, herein, an allowance of 5 percent will be added to invoices for specialty work.

G. Sureties. All work performed hereunder shall be subject to all of the provisions of the Contract Documents and the CONTRACTOR’s sureties shall be bound with reference thereto as under the original Agreement. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

11.4 CONTRACTOR’S FEE

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

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specifically covered by paragraph 11.3, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

- B. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
- C. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- D. Cost of premiums for all bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by paragraph 11.4 above).
- E. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective WORK, disposal of materials or equipment wrongly supplied and making good any damage to property.
- F. Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in paragraph 11.4.
- G. Equipment rental cost for equipment that would be needed to perform the unit of work as reflected in the bid price for that unit of work.
- H. Mobilization or demobilization for equipment that would necessarily have been used to perform that unit of work as reflected in the bid price for that unit of work.

ARTICLE 12 CHANGE OF CONTRACT TIME

12.1 GENERAL

- A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract Time (or Milestones) shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 60 days after such occurrence (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR'S written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the ENGINEER in accordance with Paragraph 9.8 if the OWNER and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph 12.1A. An increase in Contract Time does not mean that the Contractor is due an increase in Contract Price. Only Compensable time extensions will result in an increase in Contract Price.
- B. All time limits stated in the Contract Documents are of the essence of the Agreement. OWNER reserves the right to direct CONTRACTOR to accelerate his work, at no cost to OWNER, if CONTRACTOR fails to maintain contract schedule.

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- C. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost on the critical path of the project due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, unprecedented weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.
- D. Where CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost on the critical path of the project due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall the OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics abnormal weather conditions, acts of God or acts or 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.

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13.3 TESTS AND INSPECTIONS

- A. The CONTRACTOR shall give the ENGINEER timely notice of readiness of the WORK for all required inspections, tests, or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. If Laws or Regulations of any public body having jurisdiction other than the OWNER require any WORK to specifically be inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the OWNER's or the ENGINEER's acceptance of a Supplier of materials or equipment proposed as a substitution or (or-equal) to be incorporated in the WORK, or of materials or equipment submitted for review prior to the CONTRACTOR's purchase thereof for incorporation in the WORK. The cost of all inspections, tests, and approvals in addition to the above which are required by the Contract Documents shall be paid by the OWNER (unless otherwise specified).
- C. The ENGINEER will make, or have made, such inspections and tests as the ENGINEER deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Contract Documents. Unless otherwise specified in the Supplementary General Conditions, the cost of such inspection and testing will be borne by the OWNER. In the event such inspections or tests reveal non-compliance with the 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,

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and testing and of satisfactory reconstruction, including but not limited to fees and charges of engineers, attorneys, and other professionals. However, if such work is not found to be defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

- 13.4 OWNER MAY STOP THE WORK. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.
- 13.5 CORRECTION OR REMOVAL OF DEFECTIVE WORK. If required by the ENGINEER, the CONTRACTOR shall promptly, either correct all defective work, whether or not fabricated, installed, or completed, or, if the WORK has been rejected by the ENGINEER, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs and damages of such correction or removal, including but not limited to fees and charges of engineers, attorneys, and other professionals made necessary thereby.
- 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.

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ARTICLE 14 PAYMENTS TO CONTRACTOR AND COMPLETION

- 14.1 SCHEDULE OF VALUES (LUMP SUM PRICE BREAKDOWN). The schedule of values or lump sum price breakdown established as provided in the General Requirements shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the ENGINEER.
- 14.2 UNIT PRICE BID SCHEDULE. Progress payments on account of Unit Price work will be based on the number of units completed.
- 14.3 APPLICATION FOR PROGRESS PAYMENT
- A. Unless otherwise prescribed by law, on the 25th of each month, the CONTRACTOR shall submit to the ENGINEER for review, an Application for Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
- B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR'S Total Earnings to Date, plus the Value of Materials Stored at the Site which have not yet been incorporated in the WORK, and less a deductive adjustment for 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. Each Application for Payment shall be submitted with an updated Progress Schedule, as required in Section 01300 Contractor Submittals. Each Application for Payment will also be accompanied by Contractor and Subcontractor certified payroll reports for periods covered by the period covered by the Application for Payment.
- D. 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.
- E. 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

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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 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.

SECTION 00700 - GENERAL CONDITIONS

- 14.7 **SUBSTANTIAL COMPLETION.** When the CONTRACTOR considers the WORK ready for its intended use the CONTRACTOR shall notify the OWNER and the ENGINEER in writing that the WORK is substantially complete. The CONTRACTOR will attach to this request a list of all work items that remain to be completed and a request that the ENGINEER prepare a Notice of Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ENGINEER shall make an inspection of the WORK to determine the status of completion. If the ENGINEER does not consider the WORK substantially complete, or the list of remaining work items to be comprehensive, the ENGINEER will notify the CONTRACTOR in writing giving the reasons therefor. If the ENGINEER considers the WORK substantially complete, the ENGINEER will prepare and deliver to the OWNER, for its execution and recording, the Notice of Completion signed by the ENGINEER and CONTRACTOR, which shall fix the date of Substantial Completion.
- 14.8 **FINAL APPLICATION FOR PAYMENT.** After the CONTRACTOR has completed all of the remaining work items referred to in Paragraph 14.7 and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, contract releases, record as-built documents (as provided in the General Requirements) and other documents, all as required by the Contract Documents, and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the OWNER) of all liens arising out of or filed in connection with the WORK.
- 14.9 **FINAL PAYMENT AND ACCEPTANCE**
- 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**

SECTION 00700 - GENERAL CONDITIONS

- A. After executing the necessary documents to initiate the lien period, and not more than 45 days thereafter (based on a 30-day lien filing period and 15-day processing time), the OWNER will release to the CONTRACTOR the retainage funds withheld pursuant to the Agreement, less any deductions to cover pending claims against the OWNER pursuant to Paragraph 14.5B.
 - B. After filing of the necessary documents to initiate the lien period, the CONTRACTOR shall have 30 days to complete any outstanding items of correction work remaining to be completed or corrected as listed on a final punch list made a part of the Notice of Completion. Upon expiration of the 45 days, referred to in Paragraph 14.10A, the amounts withheld pursuant to the provisions of Paragraph 14.9B herein, for all remaining work items will be returned to the CONTRACTOR; provided, that said work has been completed or corrected to the satisfaction of the OWNER within said 30 days. Otherwise, the CONTRACTOR does hereby waive any and all claims for all monies withheld by the OWNER under the Contract to cover 2 times the value of such remaining uncompleted or uncorrected items.
- 14.11 CONTRACTOR'S CONTINUING OBLIGATION. The CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ENGINEER, nor the issuance of a Notice of Completion, nor any payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review of a Shop Drawing or sample submittal, will constitute an acceptance of work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.
- 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

SECTION 00700 - GENERAL CONDITIONS

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

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

15.3 TERMINATION OF AGREEMENT BY OWNER (FOR CONVENIENCE). The OWNER may terminate the Agreement at any time in its sole discretion in the best interests of the City and Borough of Wrangell. In such a case, the CONTRACTOR shall have no claims against the OWNER except: (1) for the value of work performed up to the date the Agreement is terminated, which shall be based on the CONTRACTOR'S bid price for all units of work performed and in no circumstances shall exceed the bid price for each unit of work actually performed; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Agreement is terminated which would be needed in the WORK and which meet the requirements of the Contract Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the ENGINEER in accordance with the procedure prescribed for the making of the final application for payment and payment under Paragraphs 14.8 and 14.9.

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

ARTICLE 16 MISCELLANEOUS

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- 16.1 GIVING NOTICE. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. E-mail shall not constitute written notice.
- 16.2 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK
- A. The CONTRACTOR may use on the Project, with ENGINEER's approval, such stone, gravel, sand, or other material determined suitable by the ENGINEER, as may be found in the excavation. The CONTRACTOR will be paid for the excavation of such material at the corresponding contract unit price. No additional payment will be made for utilizing the material from excavation as borrow or select borrow.
 - B. The CONTRACTOR shall replace, at its own expense, with other acceptable material, all of that portion of the excavated material so removed and used which was needed for use on the project. No charge for the materials so used will be made against the CONTRACTOR except that the CONTRACTOR shall be responsible for payment of any royalties required.
 - C. The CONTRACTOR shall not excavate or remove any material from within the Project location which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the ENGINEER.
 - D. In the event the CONTRACTOR has processed materials from OWNER-furnished sources in excess of the quantities required for performance of this contract, including any waste material produced as a by-product, the OWNER may retain possession of such materials without obligation to reimburse the CONTRACTOR for the cost of their production. When such materials are in a stockpile, the ENGINEER may require: That it remain in stockpile; the CONTRACTOR level such stockpile(s); or that the CONTRACTOR remove such materials and restore the premises to a satisfactory condition at the CONTRACTOR's expense. This provision shall not preclude the OWNER from arranging with the CONTRACTOR to produce material over and above the contract needs, payment for which shall be by written agreement between the OWNER and the CONTRACTOR.
 - E. Unless otherwise provided, the material from any existing old structure may be used temporarily by the CONTRACTOR in the erection of the new structure. Such material shall not be cut or otherwise damaged except with the approval of the ENGINEER.
- 16.3 RIGHT TO AUDIT. If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon Subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such

SECTION 00700 - GENERAL CONDITIONS

representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.

- 16.4 ARCHAEOLOGICAL OR HISTORICAL DISCOVERIES. When the CONTRACTOR's operation encounters prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, such as shell heaps, land or sea mammal bones or tusks, or other items of historical significance, the CONTRACTOR shall cease operations immediately and notify the ENGINEER. No artifacts or specimens shall be further disturbed or removed from the ground and no further operations shall be performed at the site until so directed. Should the ENGINEER order suspension of the CONTRACTOR's operations in order to protect an archaeological or historical finding, or order the CONTRACTOR to perform extra work, such order(s) shall be covered by an appropriate contract change document.
- 16.5 CONSTRUCTION OVER OR ADJACENT TO NAVIGABLE WATERS. All work over, on, or adjacent to navigable waters shall be so conducted that free navigation of the waterways will not be interfered with and the existing navigable depths will not be impaired, except as allowed by permit issued the U.S. Coast Guard and/or the U.S. Army Corps of Engineers, as applicable.
- 16.6 GRATUITY AND CONFLICT OF INTEREST. The CONTRACTOR agrees to not extend any loan, gratuity, or gift of money of any form whatsoever to any employee or elected official of the OWNER.

16.7 SUITS OF LAW CONCERNING THE WORK

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

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

16.8 CERTIFIED PAYROLLS

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

SECTION 00700 - GENERAL CONDITIONS

- B. In lieu of submitting the State payroll form, the CONTRACTOR's standard payroll form may be submitted, provided it contains the information required by AS 36.05.040 and a statement that the CONTRACTOR is complying with AS 36.10.010.
- C. A CONTRACTOR or Subcontractor, who performs work on public construction in the State, as defined by AS 36.95.010(3), shall pay not less than the current prevailing rate of wages as issued by the Alaska Department of Labor before the end of the pay period. (AS 36.05.010).

16.9 PREVAILING WAGE RATES

- A. Wage rates for Laborers and Mechanics on Public Contracts, AS 36.05.070. The CONTRACTOR, or Subcontractors, shall pay all employees unconditionally and not less than once a week. Wages may not be less than those stated in Paragraph 16.8C, regardless of the contractual relationship between the CONTRACTOR or Subcontractors and laborers, mechanics, or field surveyors. The scale of wages to be paid shall be posted by the CONTRACTOR in a prominent, easily accessible place at the site of the WORK.
- B. Failure to Pay Agreed Wages, AS 36.05.080. If it is found that a laborer, mechanic, or field surveyor employed by the CONTRACTOR or Subcontractor has been, or is being, paid a rate or wages less than the established rate, the OWNER may, by written notice, terminate the CONTRACTOR or Subcontractors right to proceed with the work. The OWNER may prosecute the work to completion by contract or otherwise, and the CONTRACTOR and sureties will be held liable to the OWNER for excess costs for completing the WORK. (Section 2 ch 52 SLA 1959).
- F. 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:

SECTION 00700 - GENERAL CONDITIONS

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 affected by the proposed changes including any quantity variations.
 6. A description and estimate of costs the OWNER may incur in implementing the proposed changes, such as test and evaluation and operating and support costs.
 7. A prediction of any effects the proposed change would have on future operations and maintenance costs to the OWNER.
- C. The provisions of this section shall not be construed to require the OWNER to consider any cost reduction proposal which may be submitted; nor will the OWNER be liable to the CONTRACTOR for failure to accept or act upon any cost reduction proposal submitted, or for delays to the work attributable to the consideration or implementation of any such proposal.
- D. If a cost reduction proposal is similar to a change in the plans or specifications for the project under consideration by the OWNER at the time the proposal is submitted, the OWNER will not accept such proposal and reserves the right to make such changes without compensation to the CONTRACTOR under the provisions of this section.
- 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.

SECTION 00700 - GENERAL CONDITIONS

- H. Acceptance of the cost reduction proposal and performance of the work does not extend the time of completion of the contract, unless specifically provided in the Change Order authorizing the use of the submitted proposal. Should the adoption of the cost reduction proposal result in a Contract Time savings, the total Contract Time shall be reduced by an amount equal to the time savings realized.
- I. The amount specified to the CONTRACTOR in the Change Order accepted in the cost reduction proposal shall constitute full compensation for the performance of WORK. No claims for additional costs as a result of the changes specified in the cost reduction proposal shall be allowed.
- J. The OWNER reserves the right to adopt and utilize any approved cost reduction proposal for general use on any contract administered when it is determined suitable for such application. Cost reduction proposals identical, similar, or previously submitted will not be accepted for consideration if acceptance and compensation has previously been approved. The OWNER reserves the right to use all or part of any cost reduction proposal without obligation or compensation of any kind to the CONTRACTOR.
- K. The CONTRACTOR shall bear the costs, if any, to revise all bonds and insurance requirements for the project, to include the cost reduction WORK.

END OF SECTION

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

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

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

- C. In the preparation of the Contract Documents, the Engineer of Record has relied upon:
 - 1. The following report of exploration and tests of subsurface conditions at the site of the WORK.
 - 2. Field measurements and visual inspection of the existing structures and surface conditions.

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

A. Workers' Compensation: (under Paragraph 5.2, C.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.
 - 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 5.2, C.2 of the General Conditions):

- 1. Combined Single Limit
 - a. General Policy \$2,000,000.00 Each Occurrence
\$3,000,000.00 Annual Aggregate
 - b. Products/Completed Operations \$2,000,000.00 Each Occurrence

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

\$3,000,000.00 Annual Aggregate

c. Personal Injury \$2,000,000.00 Each Occurrence

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

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

D. Policies shall also specify insurance provided by CONTRACTOR will be considered primary and not contributory to any other insurance available to the OWNER or the ENGINEER.

E. All policies will provide for 30 Days written notice prior to any cancellation or nonrenewal of insurance policies required under Contract except in the event of no-payment of premium where 10 Days is permissible.

F. The OWNER and the ENGINEER shall be named as an "Additional Insured" under all liability coverages listed in this Section, except for workers' compensation insurance. CONTRACTOR shall furnish OWNER a certificate from the insurer showing the OWNER as an Additional Insured within ten (10) days of the CONTRACTOR receiving the Notice to Proceed. Failure of the CONTRACTOR to fully and strictly comply with this Section shall constitute a default and a material breach of the Agreement and Contract documents.

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

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

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

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

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

From: _____

Subject: **WRANGELL PORTS AND HARBORS SURVEILLANCE SYSTEM**

Timeframe of Contract _____

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

Name

Address

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

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 & 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 00801 – SHSP SUPPLEMENTAL CONDITIONS

State Homeland Security Program (SHSP) Supplemental Conditions

The following SHSP Supplemental Conditions are hereby made a part of this contract and shall supplement and/or supersede any articles of these specifications in conflict therewith.

Any subsequent and/or addenda issued after these specifications have been prepared shall supplement and/or supersede any articles of these specifications.

- A. Title VI of the Civil Rights Act of 1964
- B. Title VIII of the Civil Rights Act of 1968, Section 504 of the Rehabilitation Act of 1973
- C. Title IX of the Education Amendments of 1972
- D. Age Discrimination Act of 1975
- E. Americans with Disabilities Act of 1990
- F. Per Executive Order 13166, the SHSP jurisdiction will take reasonable steps to ensure Limited English Proficient (LEP) persons have meaningful access to its programs and activities.
- G. Executive Order 13347 Individuals with Disabilities in Emergency Preparedness requires government to support safety and security for individuals with disabilities in situations involving disasters, including earthquakes, tornadoes, fires, flood, hurricane, and acts of terrorism.
- H. Executive Order 13224 prohibits transactions with and support to organizations associated with terrorism.
- I. Energy Policy and Conservation Act
- J. National Environmental Policy Act (NEPA) of 1969 and the Coastal Wetlands Planning, Protection, and Restoration Act of 1990 (as applicable).
- K. The USA Patriot Act of 2001
- L. Trafficking Victims Protection Act of 2000
- M. Hotel and Motel Fire Safety Act of 1990
- N. Fly America Act of 1974
- O. Subrecipients who collect Personally Identifiable Information (PII) are required to have a publicly available privacy policy that describes what PII they collect, how they use the PII, whether they will share PII with third parties, and how individuals may have their PII corrected where appropriate.
- P. Statutory requirements for Whistleblower Protections at 10 U.S.C. 2409, 41 U.S.C. 4712, and 10 U.S.C. 2324, 41 U.S.C. 4304 and 4310.
- Q. Equal treatment policies and requirements contained in 6 C.F.R. Part 19 and other applicable

SECTION 00801 – SHSP SUPPLEMENTAL CONDITIONS

statutes, regulations, and guidance governing the participants of faith-based organizations in individual DHS programs.

- R. Davis Bacon Act WD # AK20230001, Wage Determination Modification # 3, Construction, Building, Heavy, Last Revised Date: Apr 14, 2023

END OF SECTION

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

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

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

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

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

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

and

Project Manager
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
(907) 874-3902

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

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

and

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

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

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

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

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

END OF SECTION

**SECTION 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; 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. **Certified Payrolls must be submitted every two weeks.** Before each Friday, the CONTRACTOR and each Subcontractor must file:
 - 1. Certified Payrolls with Statements of Compliance for the previous week. 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*.

- C. 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 for the Prime Contractor and each Subcontractor to *Address A*.

Address A

Address B

Project Manager
City & Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929
(907)874-3494

Wage and Hour Section
Labor Standards &
Alaska Dept. of Labor
P.O. Box 020630
Juneau, AK 99802-0630
(907)465-4839/4842

END OF SECTION

SECTION 01010 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 GENERAL

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. WORK consists of various quantities of mobilization, video surveillance, electrical, and communication systems based on the following Base Bid and Alternate Bids:

Base Bid – Camera System, Reliance Harbor, Mobilization and Head End Equipment

Alternate A – Camera System, Marine Service Center

Alternate B – Camera System, City Dock

Alternate C – Camera System, Heritage Harbor

Alternate D – Camera System, Shoemaker Bay Harbor

Alternate E – Camera System, Inner Harbor

Alternate F – Camera System, Fish and Game Float

Alternate G – Camera System, Standard Oil Float

- B. The Work will consist of constructing a city-wide surveillance network to monitor and record activities at each port, harbor and the marine center owned by the City and Borough of Wrangell. Each site is designed to be equipped with one or more surveillance cameras and a wireless connection to the surveillance system head end.
- C. The surveillance system head end is designed to be located at the Harbor Master Office at Reliance Harbor. It consists of a Network Video Recorder, Network Switch, and Client Workstation.
- D. The Reliance Harbor dock will have a hardwired ethernet connection to the Surveillance System head end. The Marine Service Center, City Dock, Inner Harbor, Fish and Game Float, and Standard Oil Float will communicate via wireless point to point and/or point to multi point ethernet connections to an antenna at Reliance Harbor. Heritage Harbor and Shoemaker Bay will connect to the system via cellular to ethernet bridge as they do not have line-of-sight with Reliance Dock.
- E. The cameras are designed to be stationary dome type or multiple sensor type. The camera parameters will be specified to operate with minimal maintenance in typical Wrangell weather conditions all year, and to record clear video footage in lightless conditions and in very high definition. The surveillance system will allow for remote monitoring of all cameras from the surveillance server in the Harbor Master Office. It will be possible to record and export video data from all cameras.

SECTION 01010 - SUMMARY OF WORK

1.3 SITE OF THE WORK

A. The site of the WORK is in Wrangell, Alaska.

1.4 BEGINNING AND COMPLETION OF THE WORK

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

<u>WORK DESCRIPTION</u>	<u>COMPLETION DATE</u>
Substantial Completion	March 15, 2024
Final Completion	March 29, 2024

1.5 CONTRACT METHOD

A. The WORK hereunder will be constructed under a lump sum 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.

B. Interference With Work on Utilities: The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.8 CONTRACTOR USE OF PROJECT SITE

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

1.9 OWNER USE OF THE PROJECT SITE

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

1.10 PROJECT MEETINGS

SECTION 01010 - SUMMARY OF WORK

A. Pre-Construction Conference

1. Prior to the commencement of WORK at the site, a Pre-Construction Conference will be held at a mutually agreed time and place which shall be attended by the CONTRACTOR's Project manager, its superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendants will be:
 - a. ENGINEER and the Inspector.
 - b. Representatives of OWNER.
 - c. Governmental representatives as appropriate.
 - d. Others as requested by CONTRACTOR, OWNER, or ENGINEER.
2. Unless previously submitted to the ENGINEER, the CONTRACTOR shall bring one copy each of the following:
 - a. Plan of Operation.
 - b. Project Overview Bar Chart Schedule.
 - c. Procurement schedule of major equipment and materials and items requiring long lead time.
 - d. Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.
 - e. Name and telephone number of CONTRACTOR's Project Supervisor.
 - f. Schedule of Values
3. The purpose of the Pre-Construction Conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date.

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

- a. Status of CONTRACTOR's insurance and bonds.
 - b. CONTRACTOR's tentative schedules.
 - c. Transmittal, review, and distribution of CONTRACTOR's submittals.
 - d. Processing applications for payment.
 - e. Maintaining record documents.
 - f. Critical WORK sequencing.
 - g. Field decisions and Change Orders.
 - h. Use of Project site, office and storage areas, security, housekeeping, and OWNER's needs.
 - i. Traffic control and access
 - j. Major equipment deliveries and priorities.
 - k. CONTRACTOR's assignments for safety and first aid.
4. The OWNER will preside at the Pre-Construction Conference and will arrange for keeping and distributing the minutes to all persons in attendance.

SECTION 01010 - SUMMARY OF WORK

5. The CONTRACTOR and its Subcontractors should plan on the conference taking no less than 2 hours. The items listed in paragraph 3 will be covered as well as reviewing the plans and specifications, in extensive detail, with the ENGINEER and the OWNER.

B. Progress Meetings

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

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

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

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

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01070 - ACRONYMS OF INSTITUTIONS

PART 1 - GENERAL

1.1 GENERAL

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

1.2 ACRONYMS

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

SECTION 01070 - ACRONYMS OF INSTITUTIONS

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

SECTION 01070 - ACRONYMS OF INSTITUTIONS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01090 - REFERENCE STANDARDS

PART 1 - GENERAL

1.1 GENERAL

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

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

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

SECTION 01090 - REFERENCE STANDARDS

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 - GENERAL

1.1 GENERAL

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

1.2 SHOP DRAWING SUBMITTAL

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

SECTION 01300 - CONTRACTOR SUBMITTALS

submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the ENGINEER.

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

SECTION 01300 - CONTRACTOR SUBMITTALS

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

1.3 SAMPLES SUBMITTAL

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

1.4 TECHNICAL MANUAL SUBMITTAL

- A. The CONTRACTOR shall include in the technical manuals for each item of mechanical, electrical, and instrumentation equipment, the following:
 - 1. Complete operating instructions, including location of controls, special tools or other equipment required, related instrumentation, and other equipment needed for operation.
 - 2. Lubrication schedules, including the lubricant SAE grade and type, temperature range of lubricants, and including frequency of required lubrication.
 - 3. Preventive maintenance procedures and schedules.
 - 4. Parts lists, by generic title and identification number, complete, with exploded views of each assembly.
 - 5. Disassembly and reassembly instructions.
 - 6. Name and location of nearest supplier and spare parts warehouse.
 - 7. Recommended troubleshooting and startup procedures.
 - 8. Reproducible prints of the record drawings, including diagrams and schematics, as required under the electrical and instrumentation portions of these Specifications.

SECTION 01300 - CONTRACTOR SUBMITTALS

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

1.5 SPARE PARTS LIST SUBMITTAL

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

1.6 RECORD DRAWINGS SUBMITTALS

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

SECTION 01300 - CONTRACTOR SUBMITTALS

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

1.7 PROGRESS SCHEDULES

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

1.8 PROPOSED SUBSTITUTES OR "OR-EQUAL" ITEM SUBMITTAL

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

SECTION 01300 - CONTRACTOR SUBMITTALS

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

SECTION 01300 - CONTRACTOR SUBMITTALS

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

1.9 MATERIAL CERTIFICATON SUBMITTAL

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

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

(SUBSTITUTION REQUEST FORM – next page)

SECTION 01300 - CONTRACTOR SUBMITTALS

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

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

SPECIFIED ITEM:

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

PROPOSED SUBSTITUTION: _____

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

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

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

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

Submitted by CONTRACTOR: _____	Reviewed by ARCHITECT/ENGINEER _____
Signature _____	<input type="checkbox"/> Accepted <input type="checkbox"/> Accepted as Noted
Firm: _____	<input type="checkbox"/> Not Accepted <input type="checkbox"/> Received Too Late
By: _____	Date: _____
Title: _____	Telephone: _____
Date: _____	
Attachments: _____	

END OF SECTION

SECTION 01400 - QUALITY CONTROL

PART 1 - GENERAL

1.1 DEFINITION

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

1.2 INSPECTION AT PLACE OF MANUFACTURE

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

1.3 SAMPLING AND TESTING

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

1.4 INSPECTION AND TESTING LABORATORY SERVICE

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

SECTION 01400 - QUALITY CONTROL

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION

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

END OF SECTION

SECTION 01505 - MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

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

1.2 PAYMENT FOR MOBILIZATION

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

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01520 - SECURITY

PART 1 - GENERAL

1.1 SECURITY PROGRAM

A. The CONTRACTOR shall:

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

1.2 ENTRY CONTROL

A. The CONTRACTOR shall:

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

PART 1 - GENERAL

1.1 GENERAL

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

1.2 RIGHTS-OF-WAY

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

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

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

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey monuments, markers or points disturbed by the CONTRACTOR shall be accurately re-established, at the CONTRACTOR's expense unless provided for elsewhere in the contract, after all street or roadway resurfacing has been completed. Re-establishment of all survey monuments shall be by a Registered Alaskan Land Surveyor.

1.4 RESTORATION OF PAVEMENT

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

1.5 EXISTING UTILITIES AND IMPROVEMENTS

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

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

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

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

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

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

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

1.7 PROTECTION OF EXISTING STRUCTURES

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

SECTION 01530 - PROTECTION AND RESTORATION OF EXISTING FACILITIES

repaired or replaced at CONTRACTOR's expense.

PART 2 PRODUCTS – (Not Used)

PART 3 EXECUTION - (Not used)

END OF SECTION

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.1 HIGHWAY LIMITATIONS

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

1.2 MAINTENANCE OF TRAFFIC

- A. General: Unless otherwise provided, existing roadways and facility access points and driveways shall be kept open to all traffic by the CONTRACTOR. Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. The CONTRACTOR shall provide unimpeded access through the Project limits for emergency vehicles and make every effort to provide minimum delay to emergency service vehicles and garbage collection vehicles.
- B. On-Site Cellular Phones: The CONTRACTOR shall maintain one active cellular phone at the project site at all times with the phone number provided to the City of Wrangell Fire, Police and Public Works Departments. The cellular phone shall be carried by the person in charge of the field operations. The CONTRACTOR shall provide and allow the use of the CONTRACTOR's radio frequency to facilitate communication between the CONTRACTOR and the ENGINEER.

1.3 CONTRACTOR'S WORK AND STORAGE AREA

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

SECTION 01550 - SITE ACCESS AND STORAGE

cleanup and removal of the area.

6. All hazardous materials which are delivered in containers shall be stored in the original containers until use. Hazardous materials which are delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.4 PARKING

- A. The CONTRACTOR shall direct its employees to park in areas as directed by the ENGINEER.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

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

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL

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

1.2 QUALITY ASSURANCE

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

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

1.4 TRANSPORTATION AND HANDLING

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

SECTION 01600 - MATERIALS AND EQUIPMENT

1.5 STORAGE AND PROTECTION

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

1.6 MAINTENANCE OF STORAGE

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01700 - PROJECT CLOSE-OUT

PART 1 – GENERAL

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

SECTION 01700 - PROJECT CLOSE-OUT

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01704 - FINAL CLEAN-UP AND SITE RESTORATION

PART 1 - GENERAL

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

PART 2 - PRODUCTS

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

PART 3 - EXECUTION

3.1 CONSTRUCTION

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

END OF SECTION

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

DOCUMENT 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Copper building wire rated 600 V or less. Connectors and terminations rated 600 V and less.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.
- C. Product Schedule: Indicate type, use, location, and termination locations.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 CONDUCTORS AND CABLES

- A. Description: Flexible, insulated, and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Standards:
 - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
 - 2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- C. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- D. Conductor Insulation:
 - 1. Type XHHW-2: Comply with UL 44.

2.3 CONNECTORS

- A. Description: Factory-fabricated connectors, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Branch Circuits:
 - 1. Copper, Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Branch Circuits, Including in Crawlspace: Type XHHW-2, single conductors in raceway or Type W cable where illustrated in the Drawings.
- B. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type XHHW-2, single conductors in raceway or Type W cable where illustrated in the Drawings.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- G. Support Type W cables at the top and bottoms of gangways using lace-on stainless steel grips.

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make terminations that are compatible with conductor material.
- C. Wiring at Outlets: Install conductor at each outlet, with at least **6 inch (150 mm)**

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

END OF SECTION

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

DOCUMENT 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel slotted support systems.
2. Conduit and cable support devices.
3. Structural steel for fabricated supports and restraints.
4. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
5. Fabricated metal equipment support assemblies.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.

C. Shop Drawings: For fabrication and installation details for electrical hangers and support systems.

1. Hangers. Include product data for components.
2. Slotted support systems.
3. Equipment supports.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- ###### A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32 inch (10 mm) diameter holes at a maximum of 8 inch (200 mm) on center in at least one surface.
1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
 2. Material for Channel, Fittings, and Accessories: Galvanized steel or Stainless steel, Type 316.
 3. Channel Width: Selected for applicable load criteria.

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- B. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.
- D. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, **Grade A325** (Grade A325M).
 6. Toggle Bolts: steel springhead type.
 7. Hanger Rods: Threaded steel.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

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

PART 3 - EXECUTION

3.1 SELECTION

- A. Comply with the following standards for selection and installation of hangers and supports, except where requirements on Drawings or in this Section are stricter:
 1. NECA NEIS 101
- B. Comply with requirements for raceways specified in Section 260533.13 "Conduits for Electrical Systems."
- C. Comply with requirements for boxes specified in Section 260533.16 "Boxes and Covers for Electrical Systems."

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT as required by NFPA 70. Minimum rod size must be **1/4 inch (6 mm)** in diameter.

3.2 INSTALLATION OF SUPPORTS

- A. Comply with NECA NEIS 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: In addition to methods described in NECA NEIS 1, EMT may be supported by openings through structure members, in accordance with NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus **200 lb (90 kg)**.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 3. To Existing Concrete: Expansion anchor fasteners.
 - 4. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69, Spring-tension clamps.
 - 5. To Light Steel: Sheet metal screws.
 - 6. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

END OF SECTION 260529

SECTION 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

DOCUMENT 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type ERMC-S duct raceways, elbows, couplings, and nipples.
2. Type LFNC duct raceways.
3. Type PVC duct raceways and fittings.
4. Fittings for conduit, tubing, and cable.
5. Electrically conductive corrosion-resistant compounds for threaded conduit.
6. Solvent cements.

B. Products Installed, but Not Furnished, under This Section:

1. See Section 260553 "Identification for Electrical Systems" for electrical equipment labels.

C. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" for nonmetallic underground conduit with conductors (Type NUCC).

1.2 DEFINITIONS

A. Conduit: A structure containing one or more duct raceways.

B. Duct Raceway: A single enclosed raceway for conductors or cable.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Type ERMC-S duct raceways, elbows, couplings, and nipples.
2. Type LFNC duct raceways.
3. Type PVC duct raceways and fittings.
4. Fittings for conduit, tubing, and cable.
5. Electrically conductive corrosion-resistant compounds for threaded conduit.
6. Solvent cements.

B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturers' Published Instructions:

1. Type ERMC-S duct raceways, elbows, couplings, and nipples.
2. Type LFNC duct raceways.

SECTION 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

3. Type PVC duct raceways and fittings.
4. Fittings for conduit, tubing, and cable.
5. Electrically conductive corrosion-resistant compounds for threaded conduit.
6. Solvent cements.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 TYPE ERMCS DUCT RACEWAYS, ELBOWS, COUPLINGS, AND NIPPLES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
2. Listing Criteria: UL CCN DYIX; including UL 6.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL DYIX - Galvanized-Steel Electrical Rigid Metal Conduit (ERMC-S-G), Elbows, Couplings, and Nipples:

1. Exterior Coating: Zinc.
2. Options:
 - a. Interior Coating: Zinc.
 - b. Minimum Trade Size: Metric designator 16 (trade size 1/2).

2.3 TYPE LFNC DUCT RACEWAYS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
2. Listing Criteria: UL CCN DXOQ; including UL 1660.

B. Source Quality Control:

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1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
 2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.
- C. UL DXOQ - Layered (Type A) Liquidtight Flexible Nonmetallic Conduit (LFNC-A):
1. Additional Criteria: Type A conduit with smooth seamless inner core and cover bonded together with one or more reinforcement layers between core and cover.
 2. Options:
 - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).
- D. UL DXOQ - Integral (Type B) Liquidtight Flexible Nonmetallic Conduit (LFNC-B):
1. Additional Criteria: Type B conduit with smooth inner surface with integral reinforcement within conduit wall.
 2. Options:
 - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).
- E. UL DXOQ - Corrugated (Type C) Liquidtight Flexible Nonmetallic Conduit (LFNC-C):
1. Additional Criteria: Type C conduit with corrugated internal and external surfaces without integral reinforcement within conduit wall.
 2. Options:
 - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).

2.4 TYPE PVC DUCT RACEWAYS AND FITTINGS

- A. Performance Criteria:
1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
 2. Listing Criteria: UL CCN DZYR; including UL 651.
- B. Source Quality Control:
1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
 2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.
- C. UL DZYR - Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:
1. Dimensional Specifications: Schedule 40.
 2. Options:
 - a. Minimum Trade Size: Metric designator 16 (trade size 1/2).

SECTION 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

2.5 FITTINGS FOR CONDUIT, TUBING, AND CABLE

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL DWTT - Fittings for Type ERM, and Type PVC Duct Raceways:

1. Listing Criteria: UL CCN DWTT; including UL 514B.
2. Options:
 - a. Material: Steel.
 - b. Coupling Method: Raintight compression coupling with distinctive color gland nut.
 - c. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

2.6 ELECTRICALLY CONDUCTIVE CORROSION-RESISTANT COMPOUNDS FOR THREADED CONDUIT

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
2. Listing Criteria: UL CCN FOIZ; including UL Subject 2419.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

2.7 SOLVENT CEMENTS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
2. Listing Criteria: UL CCN DWTT; including UL 514B.

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B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

PART 3 - EXECUTION

3.1 SELECTION OF CONDUITS FOR ELECTRICAL SYSTEMS

- A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of duct raceways. Consult Architect for resolution of conflicting requirements.
- B. Outdoors:
 1. Exposed: ERMC.
 2. Exposed and installed under gangways: PVC.
- C. Duct Fittings: Select fittings in accordance with NEMA FB 2.10 guidelines.
 1. ERMC: Provide threaded-type fittings unless otherwise indicated.

3.2 INSTALLATION OF CONDUITS FOR ELECTRICAL SYSTEMS

- A. Comply with manufacturer's published instructions.
- B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:
 1. Type ERMC-S: Article 344 of NFPA 70 and NECA NEIS 101.
 2. Type LFNC: Article 342 of NFPA 70 and NECA NEIS 111.
 3. Type PVC: Article 356 of NFPA 70 and NECA NEIS 111.
 4. Expansion Fittings: NEMA FB 2.40.
 5. Consult Architect for resolution of conflicting requirements.
- C. Special Installation Techniques:
 1. General Requirements for Installation of Duct Raceways:
 - a. Complete duct raceway installation before starting conductor installation.
 - b. Install no more than equivalent of three 90-degree bends in conduit run. Support within 12 inch (300 mm) of changes in direction.
 - c. Make bends in duct raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii

SECTION 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

requirements. Provide only equipment specifically designed for material and size involved.

- d. Support conduit within **12 inch (300 mm)** of enclosures to which attached.
 - e. Do not install conduits within **2 inch (50 mm)** of the bottom side of a metal deck roof.
 - f. Keep duct raceways at least **6 inch (150 mm)** away from parallel runs of flues and steam or hot-water pipes. Install horizontal duct raceway runs above water and steam piping.
 - g. Cut conduit perpendicular to the length. For conduits metric designator 53 (trade size 2) and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs.
 - h. Install duct raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.
 - 1) Termination fittings with shoulders do not require two locknuts.
 - i. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to metric designator 35 (trade size 1-1/4) and insulated throat metal bushings on metric designator 41 (trade size 1-1/2) and larger conduits terminated with locknuts.
2. Types ERMC:
 - a. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound that maintains electrical conductivity to threads of duct raceway and fittings before making up joints. Follow compound manufacturer's published instructions.
 3. Types PVC:
 - a. Do not install Type PVC conduit where ambient temperature exceeds **122 deg F (50 deg C)**. Conductor ratings must be limited to 75 deg C except where installed in a trench outside buildings with concrete encasement, where 90 deg C conductors are permitted.
 - b. Comply with manufacturer's published instructions for solvent welding and fittings.
 4. Duct Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.
 - a. EMT: Provide setscrew, compression, steel, or cast-metal fittings. Comply with NEMA FB 2.10.
 - b. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.
 5. Identification: Provide labels for conduit assemblies, duct raceways, and associated electrical equipment.
 - a. Provide warning signs.

D. Interfaces with Other Work:

1. Coordinate installation of new products for with existing conditions.

SECTION 26 05 33.13 - CONDUITS FOR ELECTRICAL SYSTEMS

2. Coordinate with Section 260529 "Hangers and Supports for Electrical Systems" for installation of conduit hangers and supports.

3.3 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533.13

SECTION 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

DOCUMENT 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Junction boxes and pull boxes.
3. Cover plates for device boxes.

B. Products Installed, but Not Furnished, under This Section:

1. See Section 260553 "Identification for Electrical Systems" for electrical equipment labels.

C. Related Requirements:

1.2 ACTION SUBMITTALS

A. Product Data:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Junction boxes and pull boxes.
3. Cover plates for device boxes.

B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.

1.3 INFORMATIONAL SUBMITTALS

A. Manufacturers' Published Instructions:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Junction boxes and pull boxes.
3. Cover plates for device boxes.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

SECTION 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

2.2 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction and marked for intended location and application.
2. Listing Criteria: UL CCN QCIT; including UL 514A.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL QCIT - Metallic Outlet Boxes and Covers:

1. Description: Box having pryout openings, knockouts, threaded entries, or hubs in either the sides of the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
2. Options:
 - a. Material: Sheet steel, Sheet aluminum, or Cast metal.
 - b. Sheet Metal Depth: Minimum 1.5 inch (38 mm).
 - c. Cast-Metal Depth: Minimum 1.8 inch (44.5 mm).

D. UL QCIT - Metallic Conduit Bodies:

1. Description: Means for providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.

E. UL QCIT - Metallic Device Boxes:

1. Description: Box with provisions for mounting wiring device directly to box.
2. Options:
 - a. Material: Sheet steel, Sheet aluminum, or Cast metal.
 - b. Sheet Metal Depth: minimum 1.5 inch (38 mm).
 - c. Cast-Metal Depth: minimum 1.8 inch (44.5 mm).

2.3 JUNCTION BOXES AND PULL BOXES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. Listing Criteria: UL CCN BGUZ; including UL 50 and UL 50E.

SECTION 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
2. Sustainable Design Submittals: Prepare and submit the following documentation for adhesive solvents:
3. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL BGUZ - Indoor Sheet Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Options:
 - a. Degree of Protection: Type 1.

D. UL BGUZ - Indoor Cast-Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Options:
 - a. Degree of Protection: Type 1.

E. UL BGUZ - Outdoor Sheet Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Options:
 - a. Degree of Protection: Type 4X.

F. UL BGUZ - Outdoor Cast-Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Options:
 - a. Degree of Protection: Type 4X.

2.4 COVER PLATES FOR DEVICES BOXES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. Listing Criteria: UL CCN QCIT or UL CCN QCMZ; including UL 514D.
3. Wallplate-Securing Screws: Metal with head color to match wallplate finish.

SECTION 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

- B. Source Quality Control:
 - 1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.
 - 2. Sustainable Design Submittals: Prepare and submit the following documentation for adhesive solvents:
 - 3. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.
- C. UL QCIT or QCMZ - Metallic Cover Plates for Device Boxes:
 - 1. Options:
 - a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
- D. UL QCIT or QCMZ - Nonmetallic Cover Plates for Device Boxes:
 - 1.
 - 2. Options:
 - a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
 - b. Wallplate Material: 0.060 inch (1.5 mm) thick, high-impact thermoplastic (nylon) with smooth finish and color matching wiring device.
- E. UL QCIT or QCMZ - Illuminating Cover Plates for Device Boxes:
 - 1. Options:
 - a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
 - b. Wallplate Material: 0.060 inch (1.5 mm) thick, high-impact thermoplastic (nylon) with smooth finish and color matching wiring device.

PART 3 - EXECUTION

3.1 PREPARATION

3.2 SELECTION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

- A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.
- B. Degree of Protection:
 - 1. Outdoors:
 - a. Type 4 unless otherwise indicated.

SECTION 26 05 33.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

2. Indoors:
 - a. Type 1 unless otherwise indicated.

3.3 INSTALLATION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

- A. Comply with manufacturer's published instructions.
- B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:
 1. Outlet, Device, Pull, and Junction Boxes: Article 314 of NFPA 70.
 2. Consult Architect for resolution of conflicting requirements.
- C. Special Installation Techniques:
 1. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures.
 2. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements.
 3. Locate boxes so that cover or plate will not span different building finishes.
 4. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.
 5. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.
 6. Identification: Provide labels for boxes and associated electrical equipment.
 - a. Identify field-installed conductors, interconnecting wiring, and components.
 - b. Provide warning signs.
 - c. Label each box with engraved metal or laminated-plastic nameplate.

3.4 PROTECTION

- A. After installation, protect boxes from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 260533.16

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

DOCUMENT 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Labels.
 - 2. Bands and tubes.
 - 3. Tapes and stencils.
 - 4. Tags.
 - 5. Cable ties.
 - 6. Miscellaneous identification products.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.
- B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.
- C. Identification Schedule: For each piece of electrical equipment and electrical system components to be index of nomenclature for electrical equipment and system components used in identification signs and labels. Use the same designations indicated on Drawings.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 PERFORMANCE REQUIREMENTS

- A. Comply with 29 CFR 1910.144 for color identification of hazards; 29 CFR 1910.145 for danger, caution, warning, and safety instruction signs and tags; and the following:
- B. Signs, labels, and tags required for personnel safety must comply with the following standards:
 - 1. Safety Colors: NEMA Z535.1.
 - 2. Facility Safety Signs: NEMA Z535.2.
 - 3. Safety Symbols: NEMA Z535.3.

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4. Product Safety Signs and Labels: NEMA Z535.4.
 5. Safety Tags and Barricade Tapes for Temporary Hazards: NEMA Z535.5.
- C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, must comply with UL 969.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

2.3 COLOR AND LEGEND REQUIREMENTS

- A. Color-Coding for Phase-Identification, 1000 V or Less: Use colors listed below for ungrounded conductors.
1. Color must be factory applied.
 2. Colors for 208Y/120 V Circuits:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Phase C: Blue.
- B. Warning labels and signs must include, but are not limited to, the following legends:
1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
- C. Equipment Identification Labels:
1. Black letters on white field.

2.4 LABELS

- A. Self-Adhesive Wraparound Labels: **3 mil (0.08 mm)** thick, flexible label with acrylic pressure-sensitive adhesive.
1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over legend. Labels sized such that clear shield overlaps entire printed legend.
 2. Marker for Labels:
 - a. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

2.5 BANDS AND TUBES

- A. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, **2 inch (50 mm)** long, with diameters sized to suit diameters and that stay in place by gripping action.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameter and shrunk to fit firmly. Full shrink recovery occurs at maximum of 200 deg F (93 deg C). Comply with UL 224.

2.6 TAPES AND STENCILS

- A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mil (0.08 mm) thick by 1 to 2 inch (25 to 50 mm) wide; compounded for outdoor use.

2.7 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch (5 mm).
 - 2. Tensile Strength at 73 deg F (23 deg C) in accordance with ASTM D638: 12,000 psi (82.7 MPa).
 - 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
 - 4. Color: Black, except where used for color-coding.
- B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch (5 mm).
 - 2. Tensile Strength at 73 deg F (23 deg C) in accordance with ASTM D638: 12,000 psi (82.7 MPa).
 - 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
 - 4. Color: Black.
- C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.
 - 1. Minimum Width: 3/16 inch (5 mm).
 - 2. Tensile Strength at 73 deg F (23 deg C) in accordance with ASTM D638: 7000 psi (48.2 MPa).
 - 3. UL 94 Flame Rating: 94V-0.
 - 4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
 - 5. Color: Black.

2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

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

PART 3 - EXECUTION

3.1 PREPARATION

- A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. System Identification for Raceways and Cables under 1000 V: Identification must completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
 - 1. Secure tight to surface of conductor, cable, or raceway.
- G. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- H. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from floor.
- I. Vinyl Wraparound Labels:
 - 1. Secure tight to surface of raceway or cable at location with high visibility and accessibility.
 - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to location and substrate.
- J. Snap-Around Labels: Secure tight to surface at location with high visibility and accessibility.
- K. Self-Adhesive Wraparound Labels: Secure tight to surface at location with high visibility and accessibility.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- L. Self-Adhesive Labels:
 - 1. Install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
 - 2. Unless otherwise indicated, provide single line of text with **1/2 inch (13 mm)** high letters on **1-1/2 inch (38 mm)** high label; where two lines of text are required, use labels **2 inch (50 mm)** high.
- M. Snap-Around Color-Coding Bands: Secure tight to surface at location with high visibility and accessibility.
- N. Heat-Shrink, Preprinted Tubes: Secure tight to surface at location with high visibility and accessibility.
- O. Marker Tapes: Secure tight to surface at location with high visibility and accessibility.
- P. Self-Adhesive Vinyl Tape: Secure tight to surface at location with high visibility and accessibility.
- Q. Laminated Acrylic or Melamine Plastic Signs:
 - 1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
 - 2. Unless otherwise indicated, provide single line of text with **1/2 inch (13 mm)** high letters on **1-1/2 inch (38 mm)** high sign; where two lines of text are required, use labels **2 inch (50 mm)** high.
- R. Cable Ties: General purpose, for attaching tags, except as listed below:
 - 1. Outdoors: UV-stabilized nylon.
 - 2. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Power-Circuit Conductor Identification, 1000 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use vinyl wraparound labels or self-adhesive vinyl tape to identify phase.
 - 1. Locate identification at changes in direction, at penetrations of walls and floors, at **50 ft (15 m)** maximum intervals in straight runs, and at **25 ft (7.6 m)** maximum intervals in congested areas.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- D. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive labels with conductor or cable designation, origin, and destination.
- E. Control-Circuit Conductor Termination Identification: For identification at terminations, provide heat-shrink preprinted tubes or self-adhesive labels with conductor designation.
- F. Auxiliary Electrical Systems Conductor Identification: Self-adhesive vinyl tape that is uniform and consistent with system used by manufacturer for factory-installed connections.
 - 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
- G. Arc Flash Warning Labeling: Self-adhesive labels.
- H. Equipment Identification Labels:
 - 1. Indoor Equipment: Laminated acrylic or melamine plastic sign.
 - 2. Outdoor Equipment: Laminated acrylic or melamine sign.

END OF SECTION

SECTION 27 05 28 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

DOCUMENT 27 05 28 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cabinets.

1.2 ACTION SUBMITTALS

- A. Product data for the following:
 - 1. Cabinets.
- B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 CABINETS

- A. Description: Enclosures for communications.
- B. General Requirements for Cabinets:
 - 1. Comply with TIA-569-D.
 - 2. Cabinets installed in wet locations shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for use in wet locations.
- C. Cabinets:
 - 1. NEMA 250, Type 4x stainless-steel box with removable interior panel.
 - 2. Hinged door in front cover with latch.
 - 3. Key latch to match panelboards.

SECTION 27 05 28 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with the following standards for installation requirements except where requirements on Drawings or in this Section are stricter:
 - 1. NECA 1.
 - 2. NECA/BICSI 568.
 - 3. TIA-569-D.
 - 4. NECA 101

3.2 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.3 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage or deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 28 20 00 - VIDEO SURVEILLANCE

DOCUMENT 28 20 00 - VIDEO SURVEILLANCE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes a video surveillance system consisting of cameras, network video recorder, network switches, client workstation, Point to Point (PTP) and Point to Multi Point (PTMP) wireless network, and cellular to ethernet bridge.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.
- B. Buy American: Certification of compliance for each product type. Identification of products that cannot comply.
- C. Shop Drawings: For video surveillance. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Functional Block Diagram: Show single-line interconnections between components for signal transmission and control. Show cable types and sizes.
 - 3. Dimensioned plan and elevations of equipment racks. Show access and workspace requirements.
 - 4. Network Information: Network topology, IP Addresses, MAC Addresses, locations of all equipment.
 - 5. UPS: Sizing calculations.
 - 6. Network Bandwidth Calculations: Show expected bandwidth requirements for all video surveillance equipment. Show that wired and wireless network design exceeds those bandwidth requirements.
 - 7. Network Video Recorder Sizing: Show expected storage requirements and estimate of total time in days video will be stored based on the size of the NVR.
 - 8. Wiring Diagrams: For power, signal, and control wiring.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports. Include proposed test procedures and checkout sheets.
- B. Product Warranty: Sample of special warranty.

SECTION 28 20 00 - VIDEO SURVEILLANCE

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For cameras, client workstation, network switches, ptp and ptmp wireless network, cellular ethernet bridge and network video recorders. In addition include the following:
 - 1. Lists of spare parts and replacement components recommended to be stored at the site for ready access.

1.5 PROJECT CONDITIONS

- A. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:
 - 1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and 20 to 90 percent relative humidity, noncondensing.
 - 2. Exterior Environment: System components installed in locations exposed to weather shall be rated for continuous operation in ambient temperatures of minus 30 to plus 122 deg F (minus 34 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation when exposed to rain as specified in NEMA 250, winds up to 85 mph (137 km/h) and snow cover up to 24 inches (610 mm) thick. Use NEMA 250, Type 4X enclosures.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of cameras, equipment related to camera operation, and control-station equipment that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BUY AMERICAN

- A. Provide products in compliance with the Buy American Act (41 U.S.C. §§ 8301-8305). Provide identification of products that cannot be procured in accordance to the Buy American Act.

2.2 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NECA 1.
- C. Comply with NFPA 70.

SECTION 28 20 00 - VIDEO SURVEILLANCE

2.3 STANDARD CAMERAS

- A. Single Sensor, Outdoor Dome Type Network cameras for video surveillance.
 1. Video Standards: minimum H.264 / H.265 / MJPEG
 2. Network Standards:
 - a. IEEE 802.3at (Power of Ethernet)
 - b. IEEE 802.1X (Authentication).
 - c. IPv4 (RFC 791).
 - d. IPv6.
 3. Video Requirements
 - a. Provide cameras with a primary stream capable of supporting the video resolution and aspect ratio and capable of generating the image framerates noted in this section.
 4. Encoding Requirements
 - a. Support compression and image quality settings from 1 to 20 to configure bandwidth utilized by the camera and desired image response. Provide user configuration of compression quality and image rate per camera.
 - b. Provide independently configured simultaneous H.264, H.265 and Motion JPEG streams (multi-stream).
 - c. Provide user configuration of compression format, compression quality, maximum bit rate, key frame interval, and image rate per camera.
 5. Image Control Requirements
 - a. User Configurations Supported:
 - 1) Automatic and manual white balance control.
 - 2) Flicker control (50 Hz, 60 Hz).
 - 3) Color saturation and sharpening.
 - 4) Motion detection sensitivity and threshold.
 - 5) Digital rotation of the image.
 - 6) Minimum Dynamic Range:
 - a) 100db.
 - b) Dynamic Range shall not change based on configured encoding.
 - b. Include detection of the following behaviors:
 - 1) Motion detection.
 - 2) Camera tampering.
 6. Network Requirements: Provide video cameras that have the following network capabilities:
 - a. Supports both fixed (static) IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
 - b. Supports user configuration of network parameters including:
 - 1) Fixed (static) IP address.
 - 2) Subnet mask.
 - 3) Gateway.
 - 4) Control port.
 - c. Provides support for both IPv4 and IPv6 Networks.
 7. Streaming Support Requirements: Provide video cameras that incorporate support for at least the following:
 - a. RTP/UDP.
 - b. RTP/UDP multicast.
 - c. RTP/RTSP/TCP.
 - d. RTP/RTSP/HTTP/TCP.
 - e. RTP/RTSP/HTTPS/TCP.

SECTION 28 20 00 - VIDEO SURVEILLANCE

- f. HTTP.
- 8. Video Overlay Requirements: Provide video cameras with the following overlay requirements:
 - a. Individually configurable privacy zones to conceal defined areas in image as non-viewable. Masks required to be dynamically adjusted based on current zoom-factor, without capability of operator bypass.
 - b. Video masked by privacy zones must be obscured prior to streaming.
- 9. Security Requirements: Provide video cameras with the following security requirements:
 - a. Support the use of the following:
 - 1) Password protection.
 - 2) HTTPS Encryption.
 - 3) Digest authentication.
 - 4) WS authentication.
 - 5) User access Log.
 - 6) SSL encryption.
- 10. Diagnostics:
 - a. Equipped with LEDs, indicating the camera's functional status, which may be user enabled or disabled.
- 11. Connectivity:
 - a. Gigabit Ethernet-port with RJ-45 socket, auto negotiation of network speed and transfer mode.
- 12. Installation and Maintenance Requirements: Provide video cameras with the following installation and maintenance requirements:
 - a. Allow firmware updates via network.
 - b. Provide Microsoft Windows based management software, allowing camera configuration, upgrade of firmware, and backup of individual camera configurations.
- 13. Outdoor Mount.
 - a. Operational Range:
 - b. Temperature: -40 degrees C to +60 degrees C [-40 F to +140 F].
 - c. Relative Humidity: 0-95 percent (non-condensing).
- B. Multiple Sensor, Dome Type Network cameras for video surveillance.
 - 1. Video Standards: minimum H.264 / H.265 / MJPEG
 - 2. Network Standards:
 - a. IEEE 802.3at (Power of Ethernet)
 - b. IEEE 802.1X (Authentication).
 - c. IPv4 (RFC 791).
 - d. IPv6.
 - 3. Video Requirements
 - a. Provide cameras capable of simultaneously delivering individual video streams for each sensor, for use when connecting to the Video Management Software for recording and live viewing.
 - 4. Encoding Requirements
 - a. Support compression and image quality settings from 1 to 20 to configure bandwidth utilized by the camera and desired image response. Provide user configuration of compression quality and image rate per camera.
 - b. Provide independently configured simultaneous H.264, H.265 and Motion JPEG streams (multi-stream).
 - c. Provide user configuration of compression format, compression quality, maximum bit rate, key frame interval, and image rate per camera.

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5. Image Control Requirements
 - a. User Configurations Supported:
 - 1) Automatic and manual white balance control.
 - 2) Flicker control (50 Hz, 60 Hz).
 - 3) Color saturation and sharpening.
 - 4) Motion detection sensitivity and threshold.
 - 5) Digital rotation of the image.
 - 6) Minimum Dynamic Range:
 - a) 100db.
 - b) Dynamic Range shall not change based on configured encoding.
 - 7) Include detection of the following behaviors:
 - a) Motion detection.
 - b) Camera tampering.
6. Network Requirements: Provide video cameras that have the following network capabilities:
 - a. Supports both fixed (static) IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
 - b. Supports user configuration of network parameters including:
 - 1) Fixed (static) IP address.
 - 2) Subnet mask.
 - 3) Gateway.
 - 4) Control port.
 - c. Provides support for both IPv4 and IPv6 Networks.
7. Streaming Support Requirements: Provide video cameras that incorporate support for at least the following:
 - a. RTP/UDP.
 - b. RTP/UDP multicast.
 - c. RTP/RTSP/TCP.
 - d. RTP/RTSP/HTTP/TCP.
 - e. RTP/RTSP/HTTPS/TCP.
 - f. HTTP.
8. Video Overlay Requirements: Provide video cameras with the following overlay requirements:
 - a. individually configurable privacy zones to conceal defined areas in image as non-viewable. Masks required to be dynamically adjusted based on current zoom-factor, without capability of operator bypass.
 - b. Video masked by privacy zones must be obscured prior to streaming.
9. Security Requirements: Provide video cameras with the following security requirements:
 - a. Support the use of the following:
 - 1) Password protection.
 - 2) HTTPS Encryption.
 - 3) Digest authentication.
 - 4) WS authentication.
 - 5) User access Log.
 - 6) SSL encryption.
10. Diagnostics:
 - a. Equipped with LEDs, indicating the camera's functional status, which may be user enabled or disabled.
11. Connectivity:
 - a. Gigabit Ethernet-port with RJ-45 socket, auto negotiation of network speed and transfer mode.

SECTION 28 20 00 - VIDEO SURVEILLANCE

12. Installation and Maintenance Requirements: Provide video cameras with the following installation and maintenance requirements:
 - a. Allow firmware updates via network.
 - b. Provide Microsoft Windows based management software, allowing camera configuration, upgrade of firmware, and backup of individual camera configurations.
13. Indoor/Outdoor Pendant Mount.
 - a. Operational Range:
 - 1) Temperature: -40 degrees C to +60 degrees C [-40 F to +140 F].
 - 2) Relative Humidity: 0–95 percent (non-condensing).

2.4 CAMERA-SUPPORTING EQUIPMENT

- A. Mounting Brackets for Fixed Cameras: Type matched to items supported and mounting conditions. Include manual pan-and-tilt adjustment.

2.5 NETWORK VIDEO RECORDERS

- A. Network Video Recorder (referred to as “NVR”) system with component, storage and application redundancy for continuous uninterrupted operation, RAID protection. Hardware Accelerated Analytics, Hardware Accelerated Protection and Hardware Accelerated Encryption. NVR offers proven capacity of minimum 25 cameras with continuous recording, based on camera configuration to Full HD (1080p) video stream resolution at 25 frames per second and a data rate of 4 megabits per second. One or more PC or laptop workstations, or External storage or internal 250-1, 500-GB hard disk drive.
- B. Computer Software Requirements:
 1. Operating Systems: Provide a 64-bit Microsoft Windows Server operating system version intended for embedded appliance use that contains a GUI interface.
 2. Windows Applications: Provide server and client software applications that are native 64-bit Microsoft Windows applications.
- C. Network Addressing: Support both IPv4 and IPv6 addressing.
- D. Video Standards: Provide simultaneous digital multi-channel live streaming and recording of video from IP cameras and IP video encoders with support for the following standards and options:
 1. Codecs:
 - a. H.264 and H.265.
 - b. MPEG-4 and MPEG-4 ASP.
 - c. MJPEG.
 - d. MxPEG.
- E. Camera-Independent Motion Detection: Provide real-time, camera-independent motion detection with:
 1. Configurable Sensitivity: Configurable and automatic motion-detection sensitivity per camera.
 2. Searchable Metadata: Searchable motion detection metadata created during motion detection.

SECTION 28 20 00 - VIDEO SURVEILLANCE

3. Exclusion Zones: Multiple motion exclusion zones definable per camera to keep irrelevant motion from triggering recording.

2.6 CLIENT WORKSTATION:

- A. Windows based desktop computer shall use a graphical user interface and a keyboard/mouse for monitoring live and recorded video.
- B. Workstation shall allow administrators to configure devices, set up users, adjust network settings, and create recording schedules.
- C. Computer Software Requirements
 1. Operating Systems: Provide a 64-bit Microsoft Windows 10 operating system.

2.7 NETWORK SWITCHES:

- A. Managed Gigabit Power over Ethernet (PoE) switch shall provide Ethernet and PoE (PoE+ or PoE++) capable of powering all proposed PoE devices.

2.8 POINT TO POINT (PTP) AND POINT TO MULTIPOINT (PTMP) WIRELESS RADIO:

- A. Wireless Radios shall provide PTP or PTMP ethernet network connections to all remote devices within line of site to wired or cellular ethernet network connections.
- B. Network bandwidth shall be adequate for all expected network loads for the video surveillance system.

2.9 CELLULAR TO ETHERNET BRIDGE:

- A. Cellular connections shall provide ethernet network connections to Heritage Harbor and Shoemaker Bay.
- B. Network bandwidth shall be adequate for all expected network loads for the video surveillance system.

2.10 UNINTERRUPTIBLE POWER SUPPLY (UPS):

- A. Provide UPS for Client Workstation, Network Video Recorder, Monitors, and the Network Switch located at the Harbor Master's Office. Size the UPS to allow for continual operation of that equipment for 1hr without input power.

2.11 SIGNAL TRANSMISSION COMPONENTS

- A. Video Surveillance Cable: CAT6 shielded and unshielded as required by equipment manufacturer.

SECTION 28 20 00 - VIDEO SURVEILLANCE

- B. Video Surveillance Cable Connectors: 8P8C Modular Connector, T568B

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine pathway elements intended for cables. Check raceways and other elements for compliance with space allocations, installation tolerance, hazards to camera installation, and other conditions affecting installation.
- B. Examine roughing-in for LAN, WAN, and IP network before device installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 WIRING

- A. Wiring Method: Install cables in raceways unless otherwise indicated.
- B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.
- C. No splicing of cables. All terminations shall be at the equipment. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- D. Grounding: Provide independent-signal circuit grounding recommended in writing by manufacturer.

3.3 VIDEO SURVEILLANCE SYSTEM INSTALLATION

- A. Install cameras level and plumb.
- B. Set pan unit and pan-and-tilt unit stops to suit final camera position and to obtain the field of view required for camera.
- C. Install auxiliary components at camera equipment panel unless otherwise indicated.
- D. Identify system components, wiring, cabling, and terminals.

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

SECTION 28 20 00 - VIDEO SURVEILLANCE

B. Tests and Inspections:

1. Inspection: Verify that units and controls are properly installed, connected, and labeled, and that interconnecting wires and terminals are identified.
2. Pretesting: pretest components, wiring, and functions to verify that they comply with specified requirements. Conduct tests at varying lighting levels, including day and night scenes as applicable. Prepare video-surveillance equipment for acceptance and operational testing as follows:
 - a. Prepare equipment list.
 - b. Verify operation of auto-iris lenses.
 - c. Set and name all cameras and views.
 - d. Set sensitivity of motion detection.
 - e. Verify operation of head end equipment.
3. Test Schedule: Schedule tests after pretesting has been successfully completed and system has been in normal functional operation for at least 24 hours. Provide a minimum of 10 days' notice of test schedule.
4. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation. Test equipment for proper operation in all functional modes.

C. Video surveillance system will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

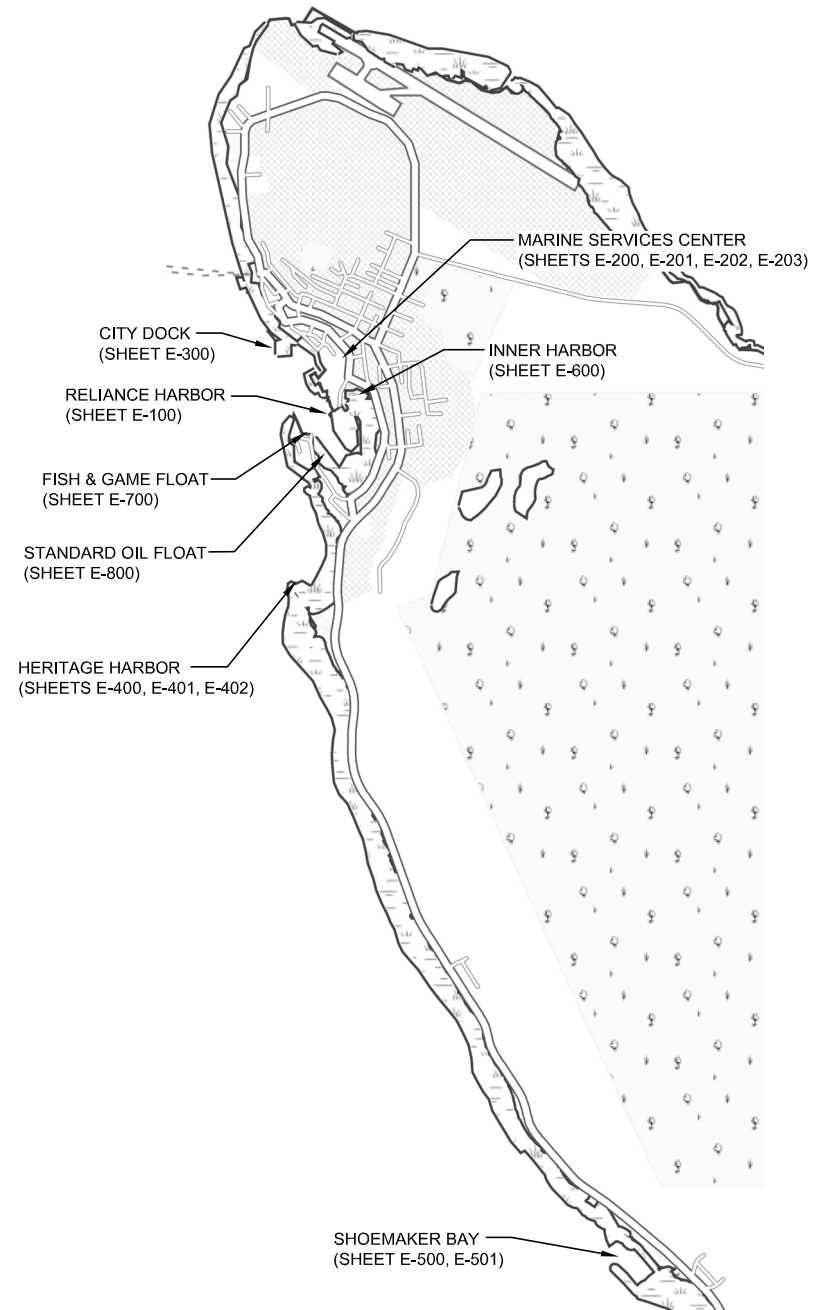
3.5 CLEANING

- A. Clean installed items using methods and materials recommended in writing by manufacturer.
- B. Clean video-surveillance-system components, including camera-housing windows, lenses, and monitor screens.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain video-surveillance equipment.

END OF SECTION



1
E-001 OVERALL SITE PLAN
NO SCALE

ABBREVIATIONS

- AFG ABOVE FINISHED GRADE
- GFCI GROUND FAULT INTERRUPTED
- PC PHOTOELECTRIC CELL
- PVC POLYVINYL CHLORIDE CONDUIT
- UGE UNDERGROUND ELECTRICAL
- UON UNLESS OTHERWISE NOTED
- WP WEATHERPROOF
- XFMR TRANSFORMER
- (D) DEMOLISH
- (E) EXISTING
- (N) NEW
- (R) RELOCATE

GENERAL SCHEDULE

1 E-101	DETAIL/SHEET CALLOUT
-------------------	----------------------

SHEET LIST

E-001	LEGEND
E-002	NETWORK DIAGRAM
E-100	SITE PLAN - RELIANCE HARBOR
E-200	SITE PLAN - MARINE SERVICE CENTER
E-201	ENLARGED SITE PLAN - MARINE SERVICE CENTER
E-202	ENLARGED SITE PLAN - MARINE SERVICE CENTER
E-203	ENLARGED SITE PLAN - MARINE SERVICE CENTER
E-204	SCHEDULES
E-205	SCHEDULES, DETAIL
E-300	SITE PLAN - CITY DOCK
E-400	SITE PLAN - HERITAGE HARBOR
E-401	ENLARGED SITE PLANS - UPLANDS HERITAGE HARBOR
E-402	ENLARGED SITE PLANS - MEMORIAL
E-403	SINGLE LINE DIAGRAM - SOUTH SERVICE
E-500	SITE PLAN - SHOEMAKER BAY
E-501	ENLARGED SITE PLANS - UPLANDS & DRY DOCK
E-600	SITE PLAN - INNER HARBOR
E-700	SITE PLAN - FISH AND GAME FLOAT
E-800	SITE PLAN - STANDARD OIL FLOAT

LIGHTING SYMBOLS

	EXTERIOR POLE MOUNTED LUMINAIRE
--	---------------------------------

WIRING AND LIGHTING CONTROL DEVICE SYMBOLS

	PHOTOELECTRIC CELL
	DUPLEX RECEPTACLE
	SPECIAL RECEPTACLE

POWER SYMBOLS

	JUNCTION BOX / EQUIPMENT CONNECTION
	CONDULET
	NONFUSIBLE SWITCH
	HANDHOLE
	TRANSFORMER
	METER SOCKET
	DISTRIBUTION PANELBOARD

POWER LINE TYPES

	ABOVE GRADE CIRCUITS
	CONDUIT IN FLOOR OR UNDERGROUND

ONE-LINE SYMBOLS (600V AND BELOW)

PANELBOARD PANEL_ID XXXXY/XXXV PHASE CURRENT ROOM ROOMNUM	PANELBOARD
	CIRCUIT BREAKER
	GROUND BUS
	GROUND ROD
	TERMINAL BLOCK
	METER
	TRANSFORMER
	HEATER

COMMUNICATION NETWORK

	CAT6
	WIRELESS POINT TO POINT OR POINT TO MULTIPPOINT
	CELLUR TO ETHERNET BRIDGE

SIGNALING SYMBOLS - SECURITY

	CAMERA EQUIPMENT CABINET
	CAMERA
	ANTENNA

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AECC63270



PROJECT :

**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE :

LEGEND

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 14, 2023

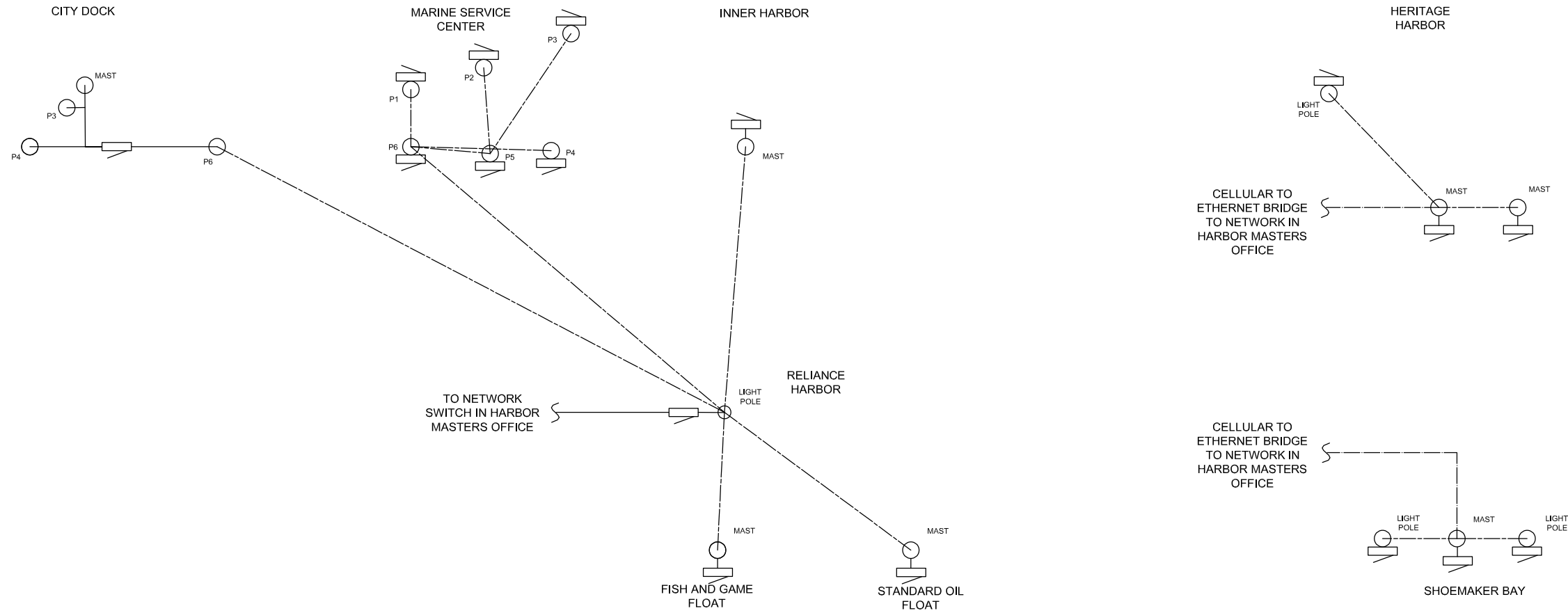
PROJECT No.
i0296.22003
SHEET NUMBER

E-001

No.	Date	Item

IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

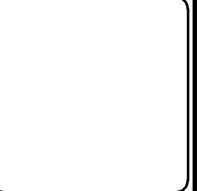
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SHEET LEGEND	
	CATEGORY 6 CABLE IN CONDUIT
	WIRELESS POINT TO POINT OR POINT TO MULTIPOINT
	CELLUR TO ETHERNET BRIDGE
SIGNALLING SYMBOLS - SECURITY	
	CAMERA EQUIPMENT CABINET
	RADIO
Px	POLE (X = NUMBER)

1 NETWORK DIAGRAM NO SCALE

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PROJECT :
WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
 WRANGELL, ALASKA

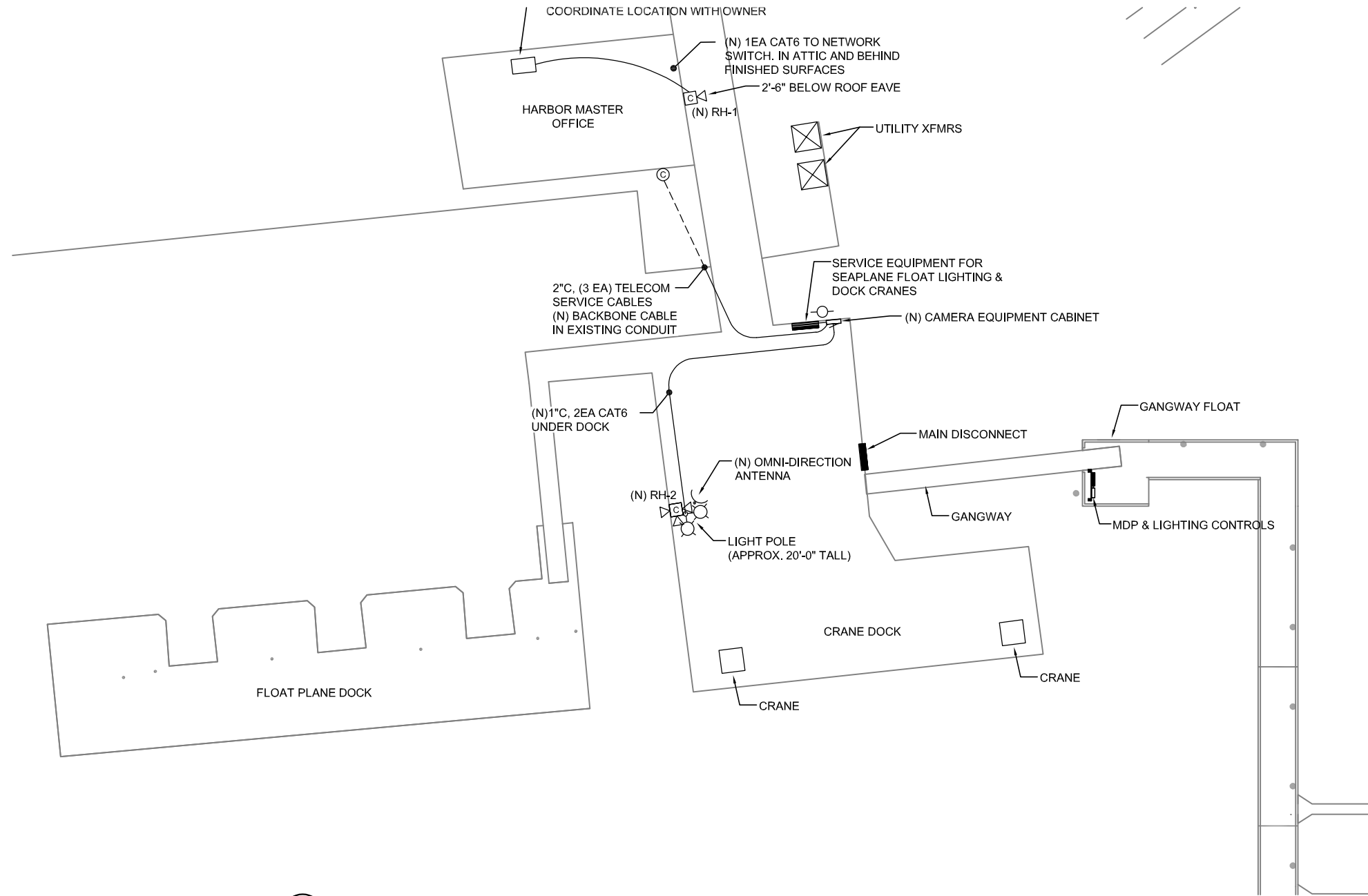
SHEET TITLE :
NETWORK DIAGRAM

No.	Date	Item

DESIGN
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 DATE APRIL 14, 2023
 PROJECT No.
i0296.22003
 SHEET NUMBER
E-002

1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

RELIANCE HARBOR CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
RH-1	HARBOR MASTERS OFFICE	DOME	1	4K
RH-2	CRANE DOCK LIGHT POLE	MULTISENSOR DOME	3	5MP

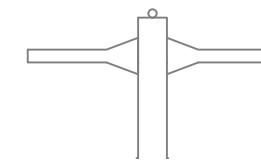


SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- THE CONDUIT BETWEEN THE HARBOR MASTERS OFFICE AND THE DOCK IS OWNED BY THE CITY. CARE SHALL BE TAKEN WHEN INSTALLING NEW CABLES NOT TO DISRUPT OR DAMAGE THE EXISTING GCI SERVICE.

1 SITE PLAN - RELIANCE HARBOR
E-100

SCALE: 0' 10' 20' 40'



DESIGN		
DRAWN		
CHECKED		
DATE	APRIL 14, 2023	
PROJECT No.	i0296.22003	
SHEET NUMBER	E-100	
No.	Date	Item
REVISIONS		

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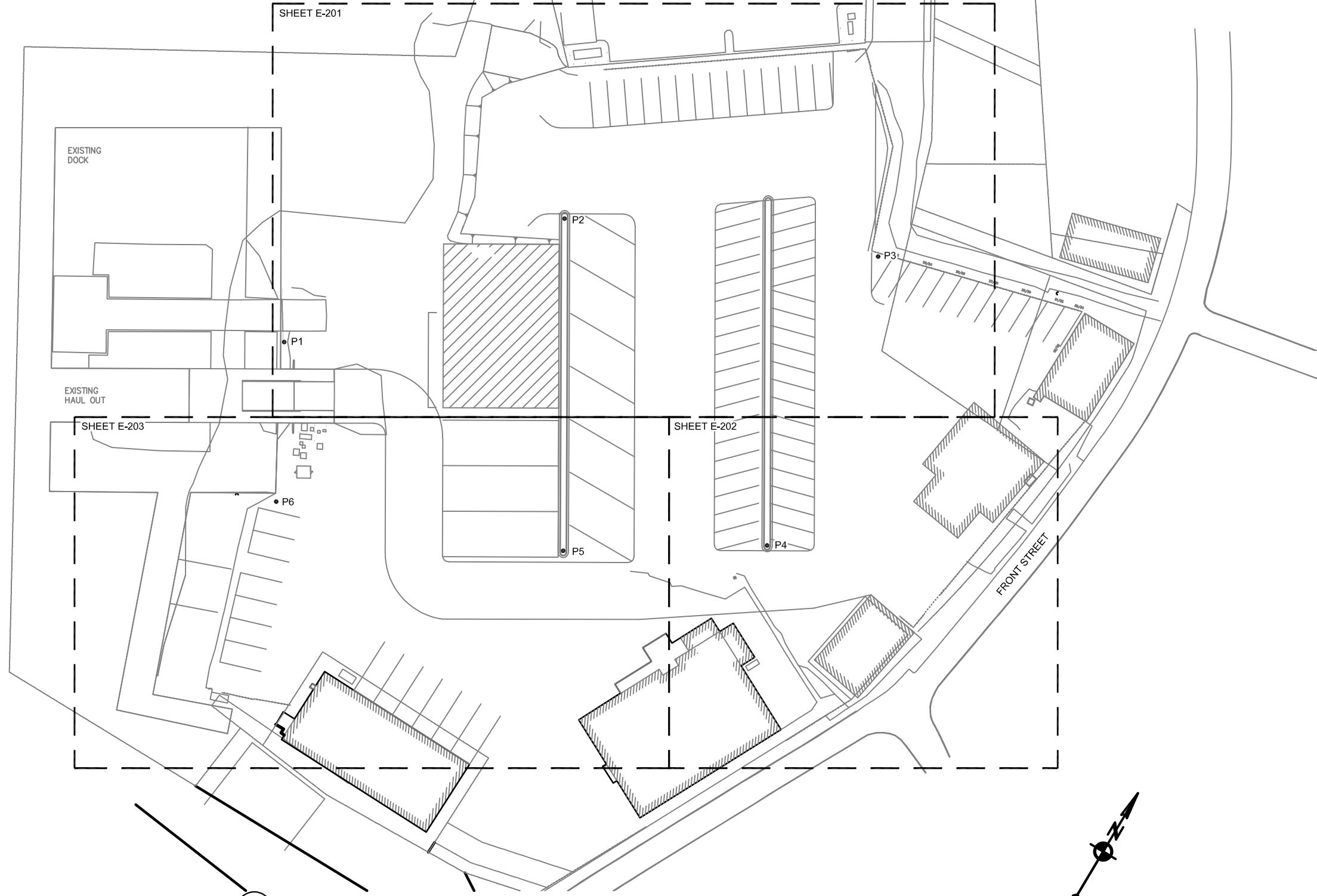
PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

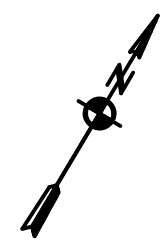
SHEET TITLE :
SITE PLAN - RELIANCE HARBOR

MARINE SERVICE CENTER CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
MSC-1	LIGHT POLE 1	MULTISENSOR DOME	4	5MP
MSC-2	LIGHT POLE 2	MULTISENSOR DOME	3	5MP
MSC-3	LIGHT POLE 3	MULTISENSOR DOME	2	5MP
MSC-4	LIGHT POLE 4	MULTISENSOR DOME	3	5MP
MSC-5	LIGHT POLE 5	MULTISENSOR DOME	3	5MP
MSC-6	LIGHT POLE 6	MULTISENSOR DOME	2	5MP



1 SITE PLAN - MARINE SERVICE CENTER



No.	Date	Item

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PROJECT :
**WRANGELL DOCKS & HARBORS
 SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE :
**SITE PLAN - MARINE SERVICE
 CENTER**

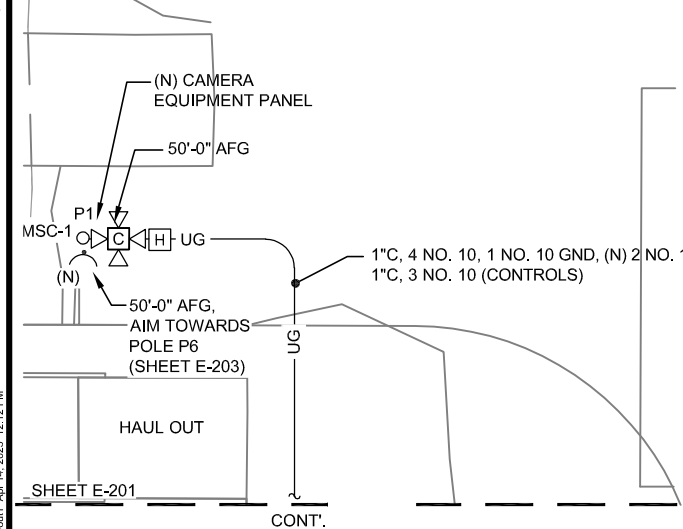
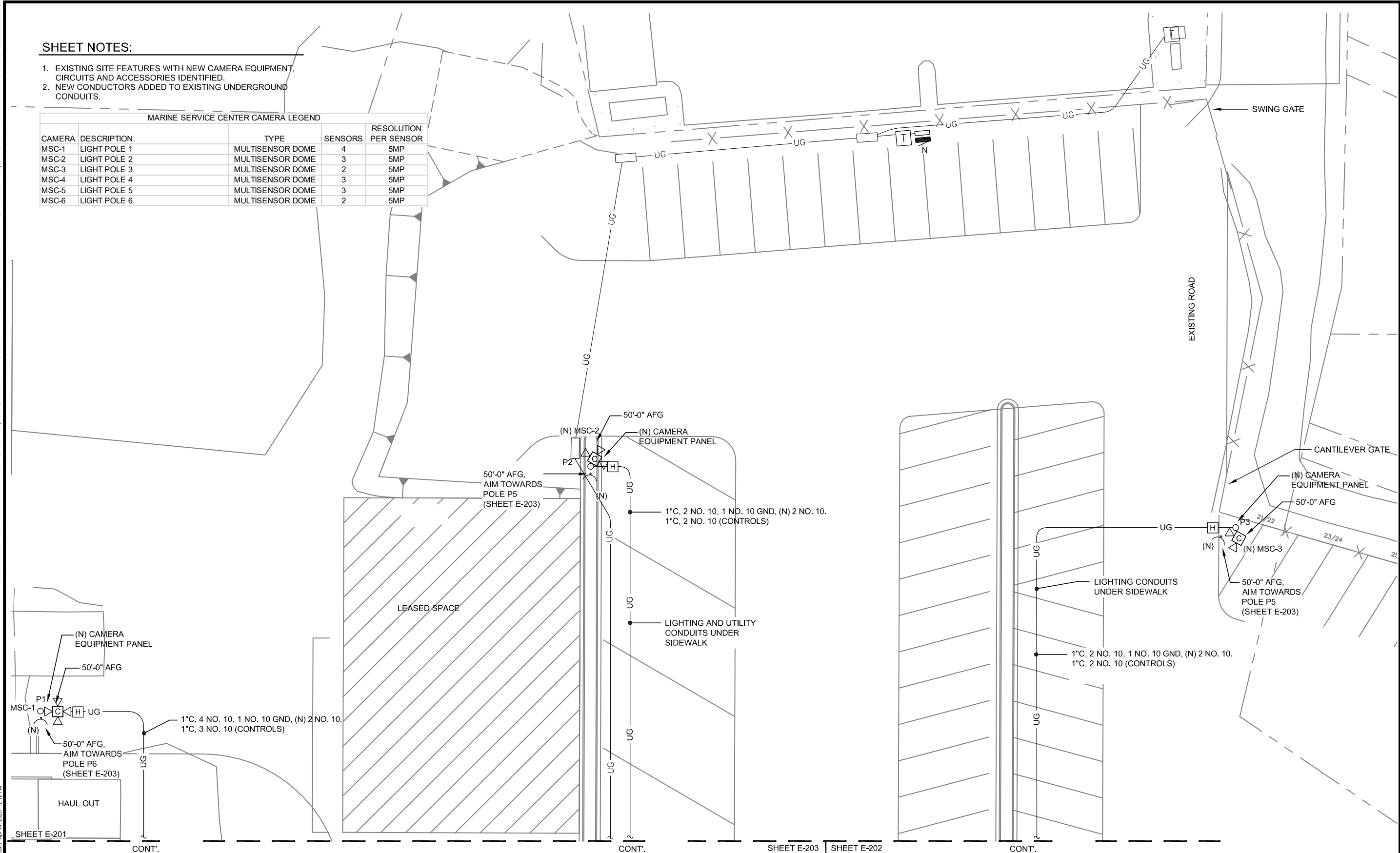
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DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-200

IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CONDUCTORS ADDED TO EXISTING UNDERGROUND CONDUITS.

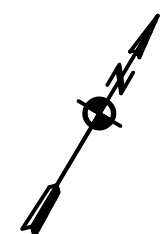
MARINE SERVICE CENTER CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
MSC-1	LIGHT POLE 1	MULTISENSOR DOME	4	5MP
MSC-2	LIGHT POLE 2	MULTISENSOR DOME	3	5MP
MSC-3	LIGHT POLE 3	MULTISENSOR DOME	2	5MP
MSC-4	LIGHT POLE 4	MULTISENSOR DOME	3	5MP
MSC-5	LIGHT POLE 5	MULTISENSOR DOME	3	5MP
MSC-6	LIGHT POLE 6	MULTISENSOR DOME	2	5MP



1 ENLARGED SITE PLAN - MARINE SERVICE CENTER

SHEET E-203 SHEET E-202

SCALE: 0' 10' 20' 40'



No.	Date	Item

CONSULTANT :

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PROJECT :
WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM

WRANGELL, ALASKA

SHEET TITLE :
ENLARGED SITE PLAN - MARINE
SERVICE CENTER

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DATE APRIL 14, 2023

PROJECT No.
i0296.22003
SHEET NUMBER

E-201

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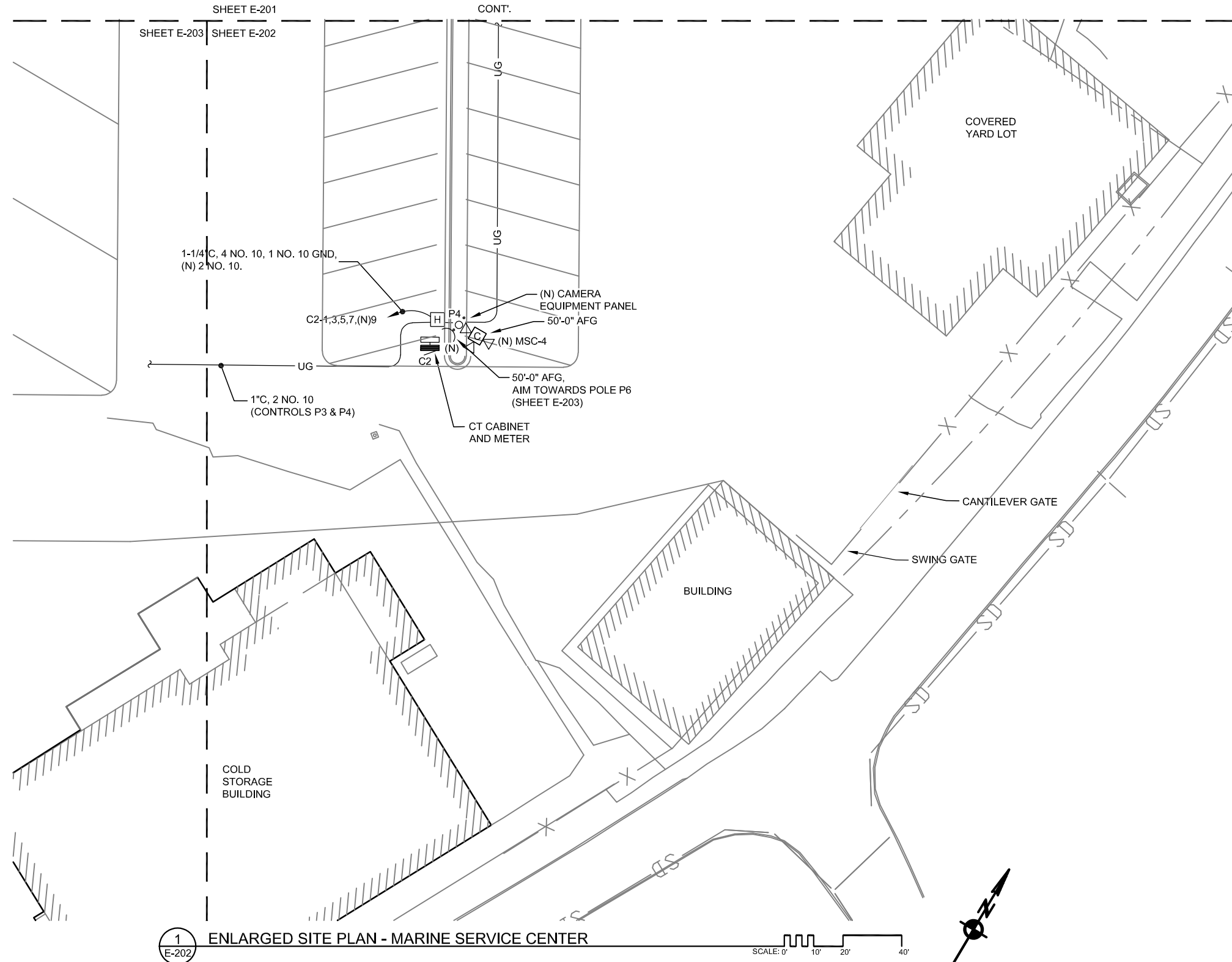
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MARINE SERVICE CENTER CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
MSC-1	LIGHT POLE 1	MULTISENSOR DOME	4	5MP
MSC-2	LIGHT POLE 2	MULTISENSOR DOME	3	5MP
MSC-3	LIGHT POLE 3	MULTISENSOR DOME	2	5MP
MSC-4	LIGHT POLE 4	MULTISENSOR DOME	3	5MP
MSC-5	LIGHT POLE 5	MULTISENSOR DOME	3	5MP
MSC-6	LIGHT POLE 6	MULTISENSOR DOME	2	5MP

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CONDUCTORS ADDED TO EXISTING UNDERGROUND CONDUITS.



1 ENLARGED SITE PLAN - MARINE SERVICE CENTER

SCALE: 0' 10' 20' 40'

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PROJECT :
**WRANGELL DOCKS & HARBORS
 SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE :
**ENLARGED SITE PLAN - MARINE
 SERVICE CENTER**

No.	Date	Item

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i0296.22003
 SHEET NUMBER
E-202

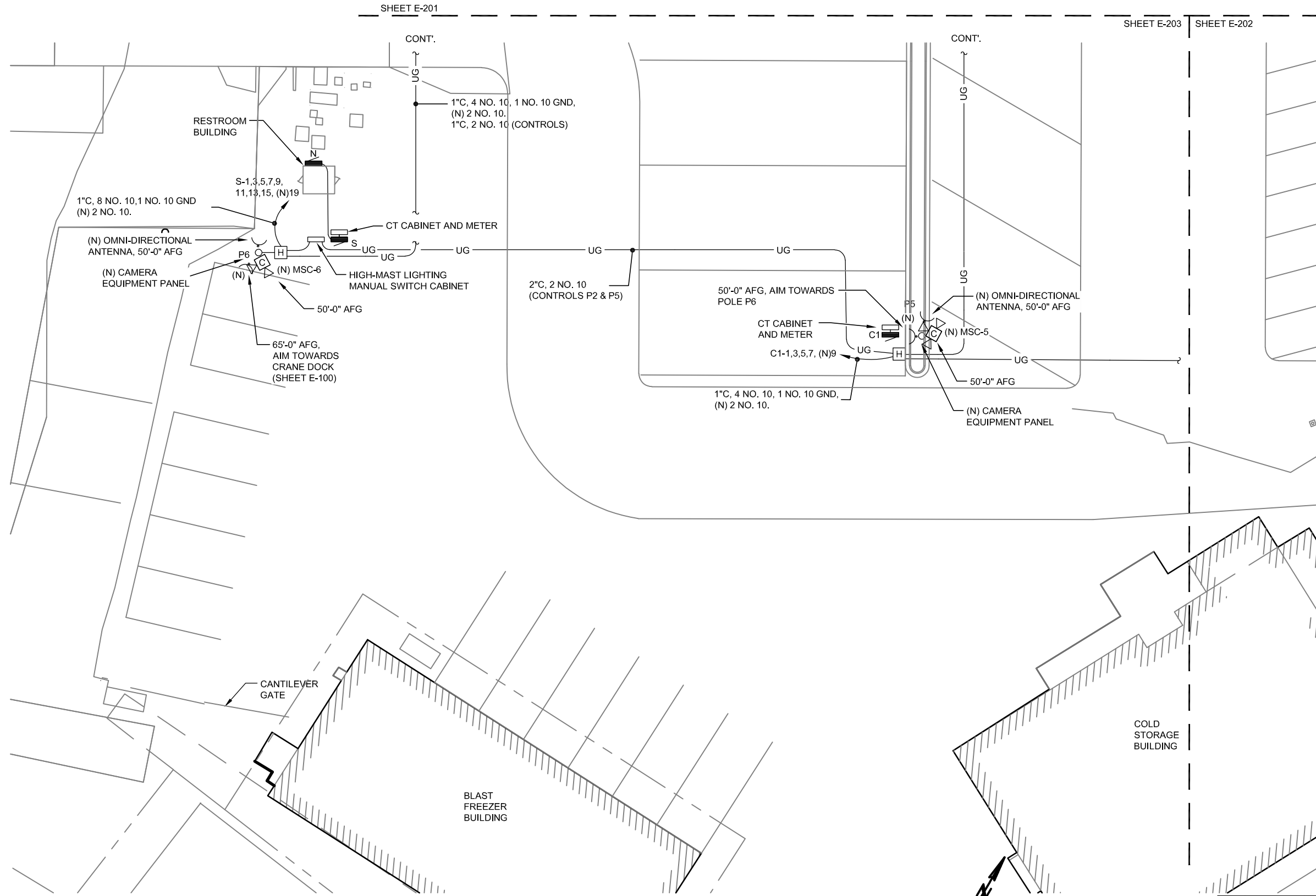
1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

MARINE SERVICE CENTER CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
MSC-1	LIGHT POLE 1	MULTISENSOR DOME	4	5MP
MSC-2	LIGHT POLE 2	MULTISENSOR DOME	3	5MP
MSC-3	LIGHT POLE 3	MULTISENSOR DOME	2	5MP
MSC-4	LIGHT POLE 4	MULTISENSOR DOME	3	5MP
MSC-5	LIGHT POLE 5	MULTISENSOR DOME	3	5MP
MSC-6	LIGHT POLE 6	MULTISENSOR DOME	2	5MP

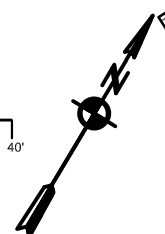
SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CONDUCTORS ADDED TO EXISTING UNDERGROUND CONDUITS.



1 ENLARGED SITE PLAN - MARINE SERVICE CENTER

SCALE: 0' 10' 20' 40'



No.	Date	Item

REVISIONS

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PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**
WRANGELL, ALASKA

SHEET TITLE :
**ENLARGED SITE PLAN - MARINE
SERVICE CENTER**

DESIGN
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DATE APRIL 14, 2023
PROJECT No.
i0296.22003
SHEET NUMBER
E-203

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PANEL C1 (E)		SIZE	VOLTS/PHASE				MAIN	LOCATION	MOUNT	
		600 AMPS	208Y/120V, 3 PH				600/3	CENTER SITE	SURFACE	
C K T NO	DESCRIPTION	BREAKER AMP/ POLE	KVA				BREAKER AMP/ POLE	DESCRIPTION	C K T NO	
			CKT	A∅	B∅	C∅				
1	POLE P2	LTG 20/2	1.0	11.4			10.4	200/3	PEDESTAL 1	2
3	---	---	1.0		11.4		10.4	---	---	4
5	POLE P5	20/2	0.8			11.2	10.4	---	---	6
7	---	---	0.8	21.6			20.8	200/3	PEDESTALS 2 & 3	8
9	(N) CAMERAS POLES P2 AND P5	20/1	0.0		20.8		20.8	---	---	10
11	SPARE	20/1	0.4			21.2	20.8	---	---	12
13	↓	20/1	0.0	20.8			20.8	200/3	PEDESTALS 4 & 5	14
15	↓	20/1	0.0		20.8		20.8	---	---	16
17	SPACE		0.0			20.8	20.8	---	---	18
19			0.0	0.0			0.0	200/3	SPARE	20
21			0.0		0.0		0.0	---	---	22
23			0.0			0.0	0.0	---	---	24
25			0.0	0.0			0.0	---	SPACE	26
27			0.0		0.0		0.0			28
29			0.0			0.0	0.0			30
31			0.0	0.0			0.0			32
33			0.0		0.0		0.0			34
35			0.0			0.0	0.0			36
37			0.0	0.0			0.0			38
39			0.0		0.0		0.0			40
41	↓		0.0			0.0	0.0			42
BALANCED CONNECTED LOAD: 160.0 KVA / 444.4 AMPS				53.8	53.0	53.2				
MAXIMUM CONNECTED LOAD: 160.0 KVA / 448.3 AMPS										

PANEL C2 (E)		SIZE	VOLTS/PHASE				MAIN	LOCATION	MOUNT	
		400 AMPS	208Y/120V, 3 PH				400/3	CENTER SITE	SURFACE	
C K T NO	DESCRIPTION	BREAKER AMP/ POLE	KVA				BREAKER AMP/ POLE	DESCRIPTION	C K T NO	
			CKT	A∅	B∅	C∅				
1	POLE P3	LTG 20/2	1.0	6.8			5.8	100/3	PEDESTALS 1 & 2	2
3	---	---	1.0		6.8		5.8	---	---	4
5	POLE P4	20/2	0.8			0.8	0	---	---	6
7	---	---	0.8	9.1			8.3	100/3	PEDESTALS 3 THRU 8	8
9	(N) CAMERAS POLES P3 AND P4	20/1	0.4		8.7		8.3	---	---	10
11	SPARE	20/1	0.0			8.3	8.3	---	---	12
13	↓	20/1	0.0	10.3			10.3	100/3	PEDESTALS 9 THRU 13	14
15	↓	20/1	0.0		10.3		10.3	---	---	16
17	SPACE		0.0			5.8	5.8	---	---	18
19			0.0	8.3			8.3	100/3	PEDESTALS 14 THRU 19	20
21			0.0		8.3		8.3	---	---	22
23			0.0			8.3	8.3	---	---	24
25			0.0	0.0			0.0	100/3	SPARE	26
27			0.0		0.0		0.0	---	---	28
29			0.0			0.0	0.0	---	---	30
31			0.0	0.0			0.0		SPACE	32
33			0.0		0.0		0.0			34
35			0.0			0.0	0.0			36
37			0.0	0.0			0.0			38
39			0.0		0.0		0.0			40
41	↓		0.0			0.0	0.0			42
BALANCED CONNECTED LOAD: 91.8 KVA / 255.0 AMPS				34.5	34.1	23.2				
MAXIMUM CONNECTED LOAD: 91.8 KVA / 287.5 AMPS										

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PROJECT :
**WRANGELL DOCKS & HARBORS
 SURVEILLANCE CAMERA SYSTEM**
 WRANGELL, ALASKA

SHEET TITLE :
SCHEDULES

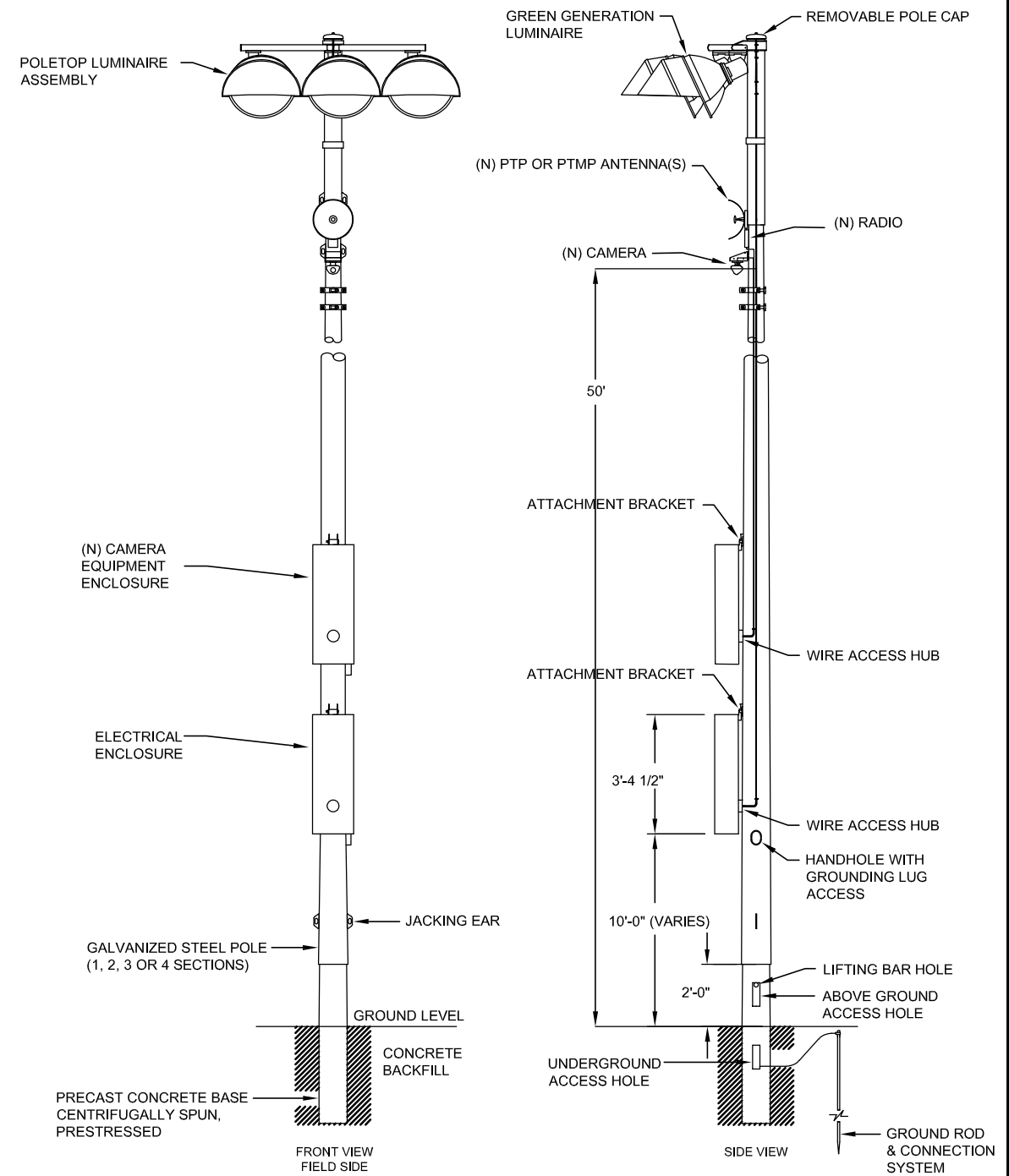
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DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-204

No.	Date	Item

IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

PANEL N (E)		SIZE	VOLTS/PHASE			MAIN	LOCATION	MOUNT			
		400 AMPS	208Y/120V, 3 PH			400/3	NORTH SITE	SURFACE			
CKT NO	DESCRIPTION	BREAKER AMP/ POLE	KVA			BREAKER AMP/ POLE	DESCRIPTION	CKT NO			
			CKT	AØ	BØ	CØ	CKT				
1	SPARE	20/1	0.0	10.4			10.4	100/3	PEDESTALS 1 THRU 4	2	
3		20/1	0.0		5.7		5.7	--	---	4	
5		20/1	0.0			5.7	5.7	--	---	6	
7		20/1	0.0	5.7			5.7	100/3	PEDESTALS 5 THRU 7	8	
9	SPACE		0.0		5.7		5.7	--	---	10	
11			0.0			5.7	5.7	--	---	12	
13			0.0	0.0			0.0	100/3	SPARE	14	
15			0.0		0.0		0.0	--	---	16	
17			0.0			0.0	0.0	--	---	18	
19			0.0	0.0			0.0		SPACE	20	
21			0.0		0.0		0.0			22	
23			0.0			0.0	0.0			24	
25			0.0	0.0			0.0			26	
27			0.0		0.0		0.0			28	
29			0.0			0.0	0.0			30	
31			0.0	0.0			0.0			32	
33			0.0		0.0		0.0			34	
35			0.0			0.0	0.0			36	
37			0.0	0.0			0.0			38	
39			0.0		0.0		0.0			40	
41			0.0			0.0	0.0			42	
BALANCED CONNECTED LOAD: 38.9 KVA / 108.1 AMPS				16.1	11.4	11.4					
MAXIMUM CONNECTED LOAD: 38.9 KVA / 134.2 AMPS											

PANEL S (E)		SIZE	VOLTS/PHASE			MAIN	LOCATION	MOUNT			
		600 AMPS	208Y/120V, 3 PH			600/3	SOUTH SITE	SURFACE			
CKT NO	DESCRIPTION	BREAKER AMP/ POLE	KVA			BREAKER AMP/ POLE	DESCRIPTION	CKT NO			
			CKT	AØ	BØ	CØ	CKT				
1	POLE P1	LTG 20/2	0.8	14.3			13.5	150/3	PEDESTALS 1 THRU 3	2	
3	---	--	0.8		14.3		13.5	--	---	4	
5	POLE P1 (HAUL OUT)	15/2	0.3			13.8	13.5	--	---	6	
7	---	--	0.3	21.1			20.8	200/3	PEDESTALS 4 & 5	8	
9	POLE P6	20/2	0.5		21.3		20.8	--	---	10	
11	---	--	0.5			21.3	20.8	--	---	12	
13	POLE P6 (HAUL OUT)	15/2	0.3	10.7			10.4	200/3	PEDESTAL 6	14	
15	---	--	0.3		10.7		10.4	--	---	16	
17	LIGHTING CONTROLS	20/1	0.2			10.6	10.4	--	---	18	
19	(N) CAMERAS POLES P1 AND P6	20/1	0.4	0.4			0.0	200/3	SPARE	20	
21	SPARE	20/1	0.0		0.0		0.0	--	---	22	
23		20/1	0.0			0.0	0.0	--	---	24	
25		20/1	0.0	0.0			0.0		SPACE	26	
27	SPACE		0.0		0.0		0.0			28	
29			0.0			0.0	0.0			30	
31			0.0	0.0			0.0			32	
33			0.0		0.0		0.0			34	
35			0.0			0.0	0.0			36	
37			0.0	0.0			0.0			38	
39			0.0		0.0		0.0			40	
41			0.0			0.0	0.0			42	
BALANCED CONNECTED LOAD: 138.5 KVA / 384.7 AMPS				46.5	46.3	45.7					
MAXIMUM CONNECTED LOAD: 138.5 KVA / 387.5 AMPS											



1 E-205 DETAIL - HIGH MAST LIGHT POLE NOT TO SCALE

N:\Projects\10296.22003\WRG_P&H_Survey\E-205_Layout1.dwg Apr 14, 2023, 12:12 PM

CONSULTANT :

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AECC63270



PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**
WRANGELL, ALASKA

SHEET TITLE :
SCHEDULES, DETAIL

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-205

No.	Date	Item

IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

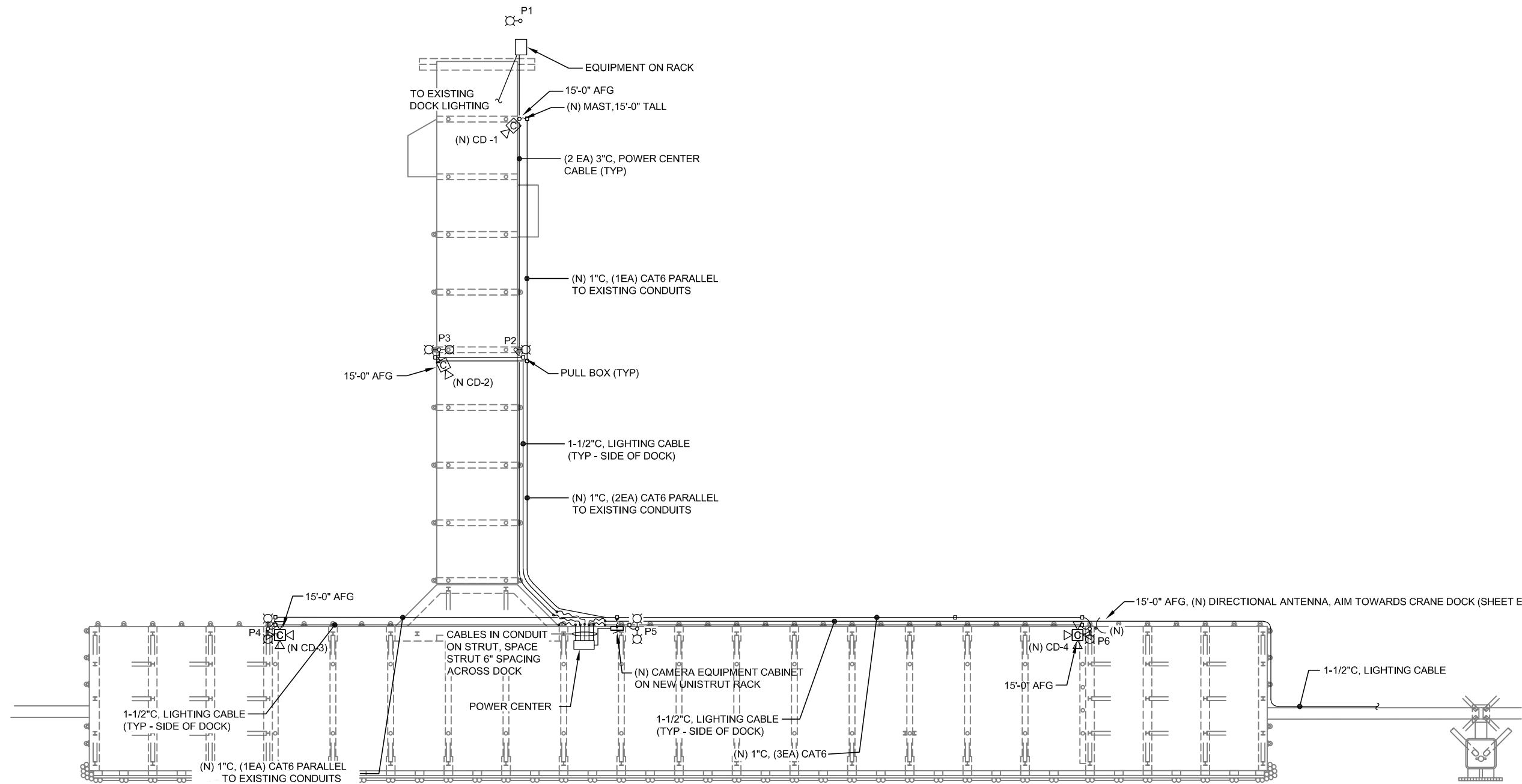
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CITY DOCK CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
CD-1	MAST 1	DOME	1	4K
CD-2	LIGHT POLE 3	DOME	1	4K
CD-3	LIGHT POLE 4	MULTISENSOR DOME	4	5MP
CD-4	LIGHT POLE 6	MULTISENSOR DOME	4	5MP

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- PROVIDE NEW CONDUITS AND CABLES FROM THE CAMERA EQUIPMENT CABINET TO CAMERAS ON POLES P3, P4, P6 AND THE MAST NEAR THE HEADLANDS.
- NEW CAMERA MAST SHALL BE 15FT TALL, 4IN SQUARE, HOT DIPPED GALVANIZED STEEL RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ FT.
- MASTS MOUNTED ON THICK CONCRETE DECKS OR PADS SHALL USE EPOXY ANCHOR BOLTS. INSTALLER SHALL LOCATE STEEL REINFORCEMENT IN CONCRETE BEFORE CUTTING OR DRILLING AND AVOID DAMAGING THE REINFORCING STEEL.



1 SITE PLAN - CITY DOCK
E-300

SCALE: 0' 10' 20' 40'



DESIGN		
DRAWN		
CHECKED		
DATE	APRIL 14, 2023	
PROJECT No.	i0296.22003	
SHEET NUMBER	E-300	
No.	Date	Item
REVISIONS		

CONSULTANT :

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PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**

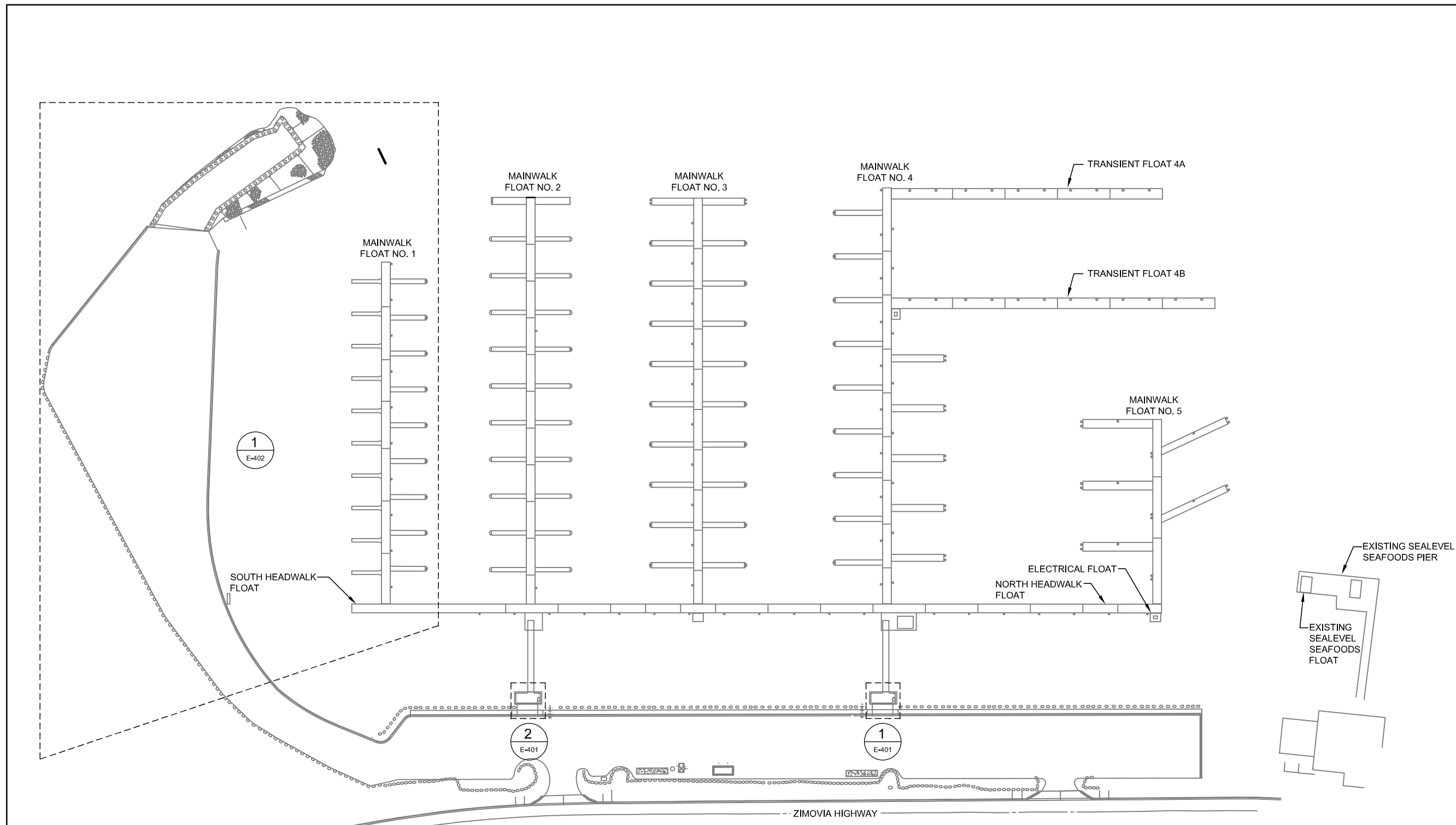
WRANGELL, ALASKA

SHEET TITLE :
SITE PLAN - CITY DOCK

1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

HERITAGE HARBOR CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
HH-1	NORTH UPLANDS MAST	DOME	1	4K
HH-2	NORTH UPLANDS MAST	DOME	1	4K
HH-3	SOUTH UPLANDS MAST	DOME </td <td>1</td> <td>4K</td>	1	4K
HH-4	SOUTH UPLANDS MAST	DOME	1	4K
HH-5	WEST LIGHT POLE	MULTISENSOR DOME	3	5MP

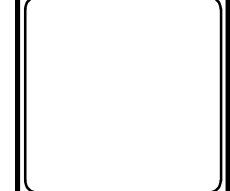


1 SITE PLAN - HERITAGE HARBOR



DESIGN		
DRAWN		
CHECKED		
DATE	APRIL 14, 2023	
PROJECT No.	i0296.22003	
SHEET NUMBER	E-400	
No.	Date	Item
REVISIONS		

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PROJECT :
WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
 WRANGELL, ALASKA

SHEET TITLE :
SITE PLAN - HERITAGE HARBOR

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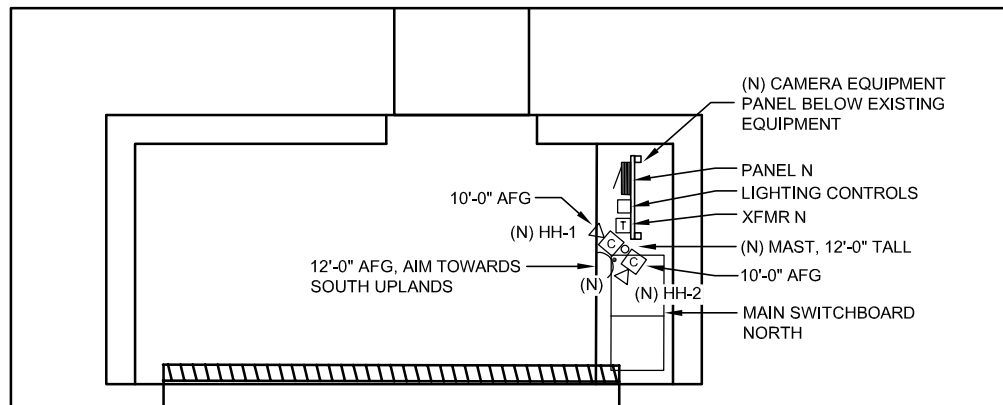
1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

HERITAGE HARBOR CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
HH-1	NORTH UPLANDS MAST	DOME	1	4K
HH-2	NORTH UPLANDS MAST	DOME	1	4K
HH-3	SOUTH UPLANDS MAST	DOME	1	4K
HH-4	SOUTH UPLANDS MAST	DOME	1	4K
HH-5	WEST LIGHT POLE	MULTISENSOR DOME	3	5MP

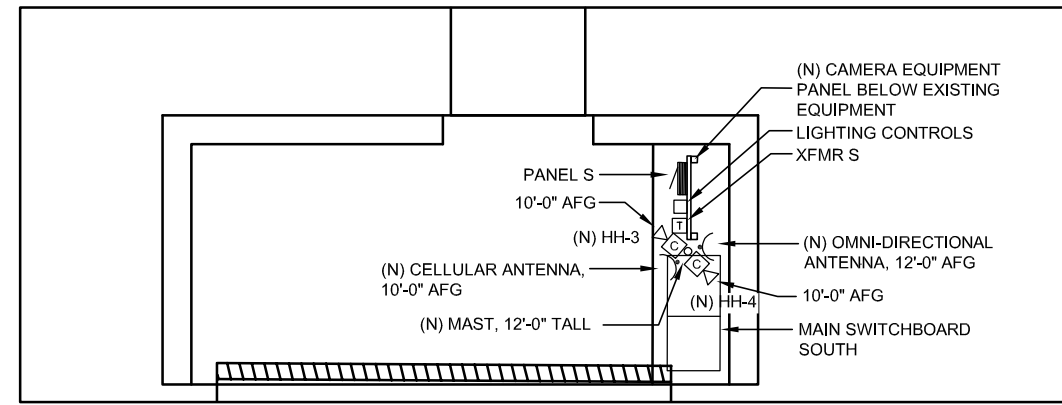
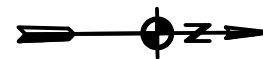
SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW MASTS AT NORTH AND SOUTH UPLANDS SHALL BE MINIMUM 10FT, 4IN SQUARE, HOT DIPPED GALVANIZED STEEL RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ FT.
- MASTS MOUNTED ON THICK CONCRETE DECKS OR PADS SHALL USE EPOXY ANCHOR BOLTS. INSTALLER SHALL LOCATE STEEL REINFORCEMENT IN CONCRETE BEFORE CUTTING OR DRILLING AND AVOID DAMAGING THE REINFORCING STEEL.
- PROVIDE CAT6 CABLES IN 3/4" CONDUIT FROM EACH CAMERA TO THEIR RESPECTIVE EQUIPMENT CABINET.



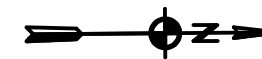
1 ENLARGED SITE PLAN - NORTH UPLANDS

SCALE: 0' 1' 3' 5' 10'



2 ENLARGED SITE PLAN - SOUTH UPLANDS

SCALE: 0' 1' 3' 5' 10'



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PROJECT :
**WRANGELL DOCKS & HARBORS
 SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE :
**ENLARGED SITE PLANS - UPLANDS
 HERITAGE HARBOR**

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-401

No.	Date	Item

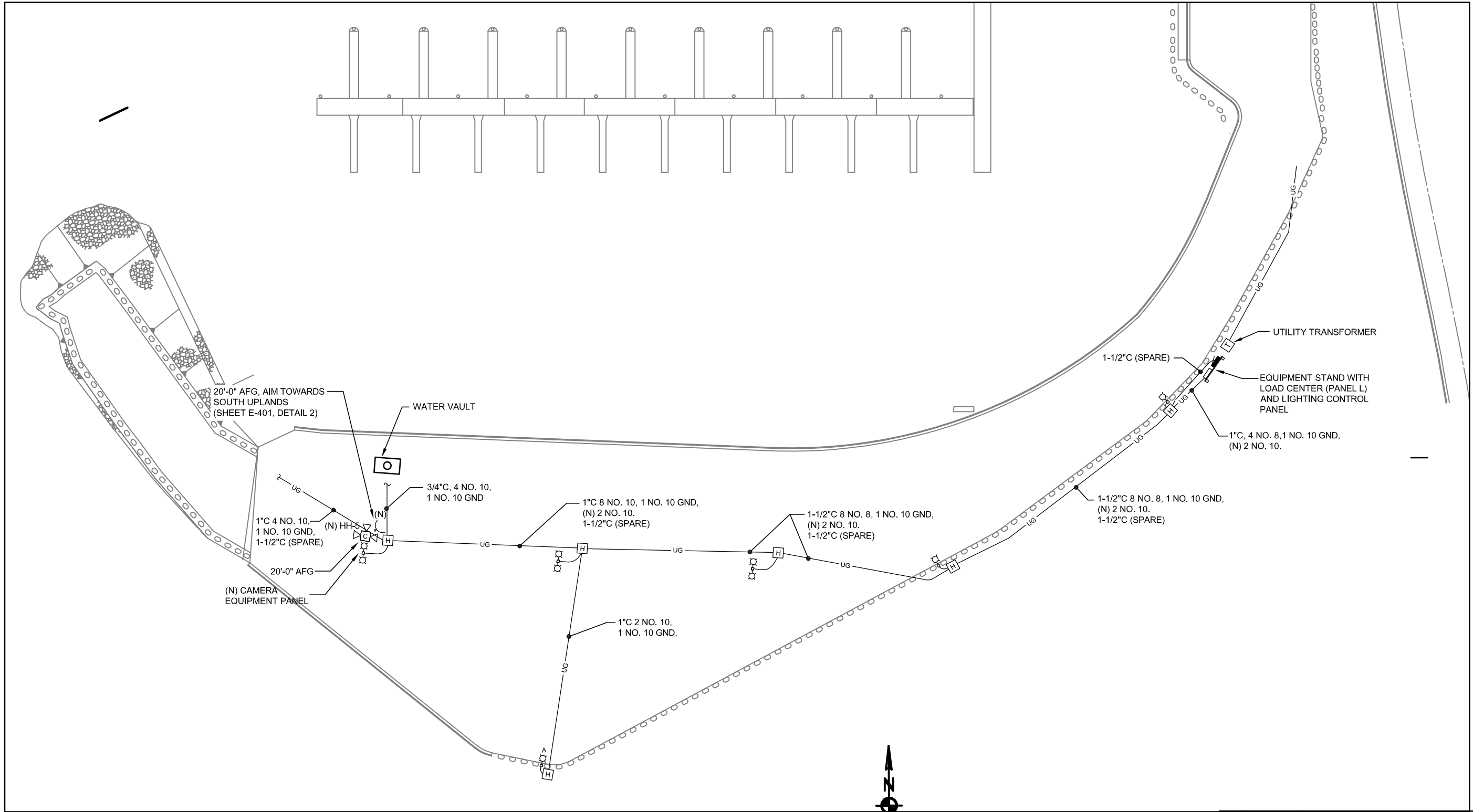
1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

HERITAGE HARBOR CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
HH-1	NORTH UPLANDS MAST	DOME	1	4K
HH-2	NORTH UPLANDS MAST	DOME	1	4K
HH-3	SOUTH UPLANDS MAST	DOME	1	4K
HH-4	SOUTH UPLANDS MAST	DOME	1	4K
HH-5	WEST LIGHT POLE	MULTISENSOR DOME	3	5MP

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CONDUCTORS ADDED TO EXISTING UNDERGROUND CONDUITS.



1 ENLARGED SITE PLAN - MEMORIAL
E-402

SCALE: 0' 15' 30' 60'



No.	Date	Item

CONSULTANT :

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 AECC 65270

PROJECT :
WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
 WRANGELL, ALASKA

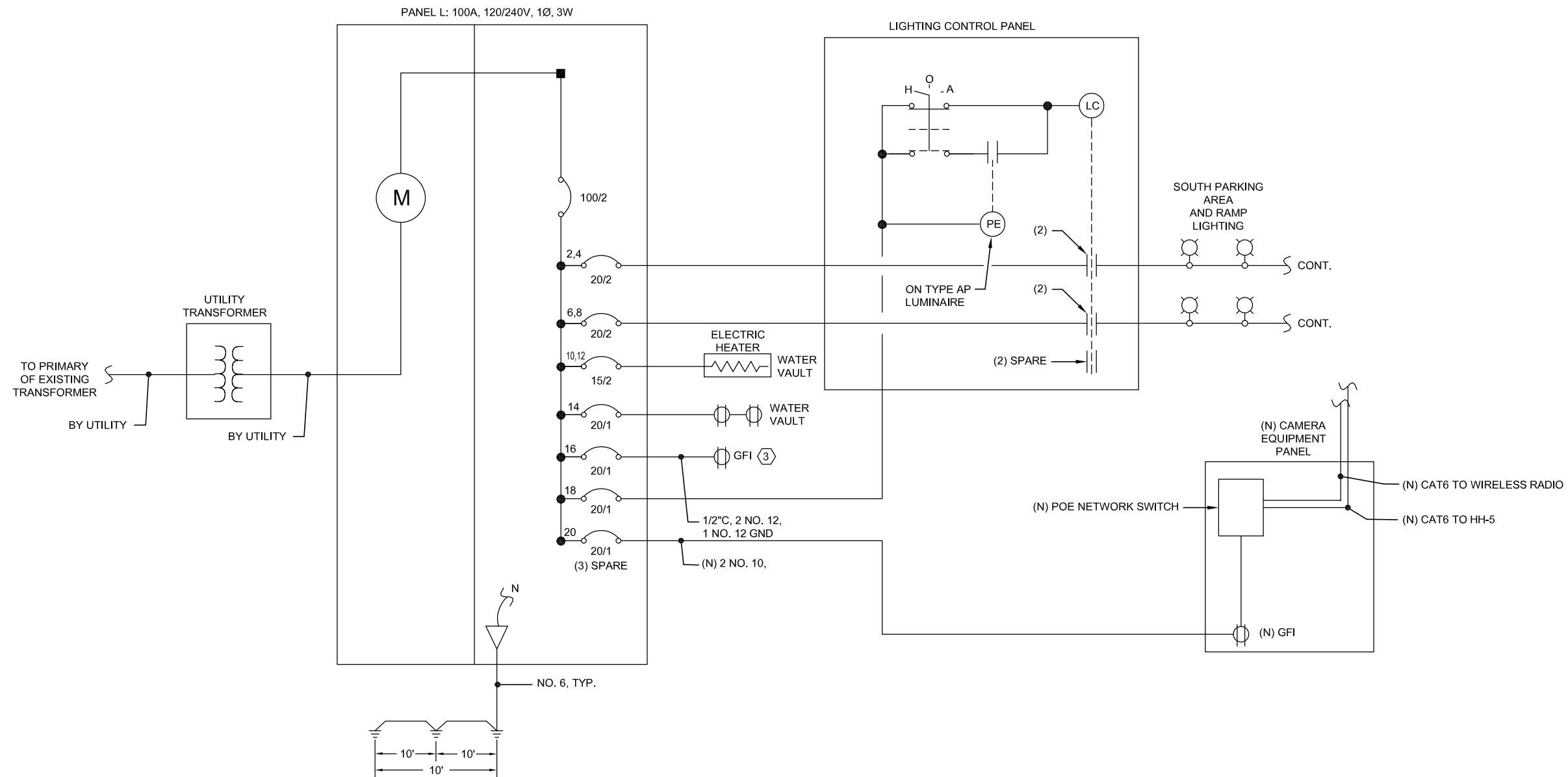
SHEET TITLE :
ENLARGED SITE PLANS - MEMORIAL

DESIGN	
DRAWN	
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DATE	APRIL 19, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-402

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IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

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1 SINGLE LINE DIAGRAM - SOUTH SERVICE NO SCALE

No.	Date	Item

REVISIONS

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	

E-403

SHEET TITLE :
SINGLE LINE DIAGRAM - SOUTH SERVICE

PROJECT :
WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM

WRANGELL, ALASKA

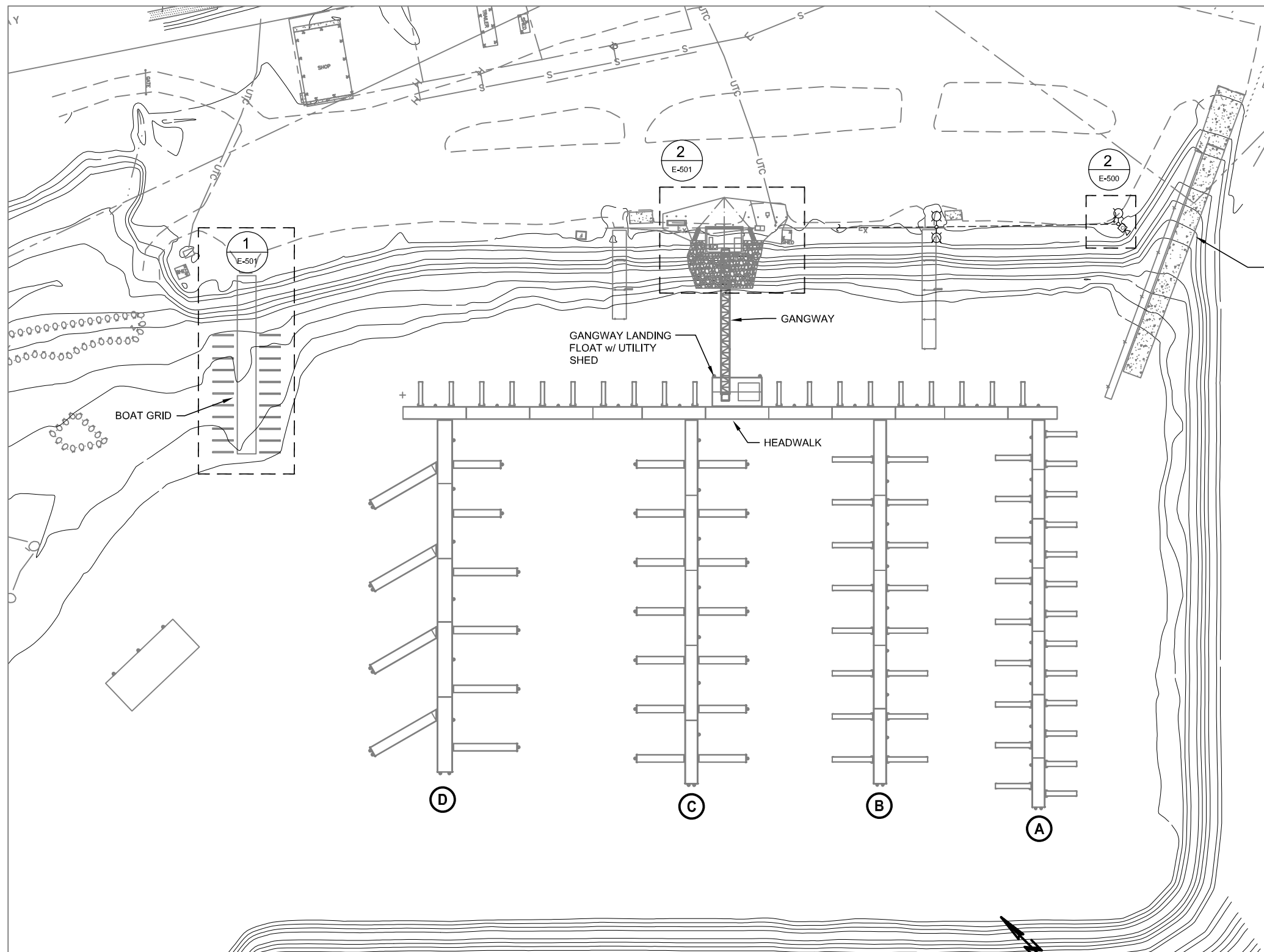
CONSULTANT :

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 9103 Mendehall Mall Rd, Ste. 4
 Juneau, AK 99901
 Phone: 907.780.0660
 Fax: 907.596.3771
 AECC63270

IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING ITS PRODUCTION, AFFECTING ALL LABELED SCALES

SHOEMAKER BAY CAMERA LEGEND

CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
SB-1	SOUTH EAST PARKING LIGHT POLE	DOME	1	4K
SB-2	UPLANDS MAST	MULTISENSOR DOME	2	5MP
SB-3	BOAT GRID LIGHT POLE	MULTISENSOR DOME	2	5MP



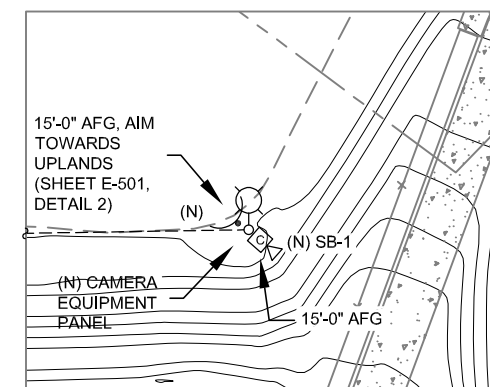
1 E-500 SITE PLAN - SHOEMAKER BAY

SCALE: 0' 25' 50' 100'

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.

EXISTING CONCRETE BOAT LAUNCH RAMP w/ BOARDING FLOAT



2 E-500 ENLARGED SITE PLAN - LIGHT POLE

SCALE: 0' 15' 30' 60'

CONSULTANT:

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 AECC 63270



PROJECT:
**WRANGELL DOCKS & HARBORS
 SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE:
SITE PLAN - SHOEMAKER BAY

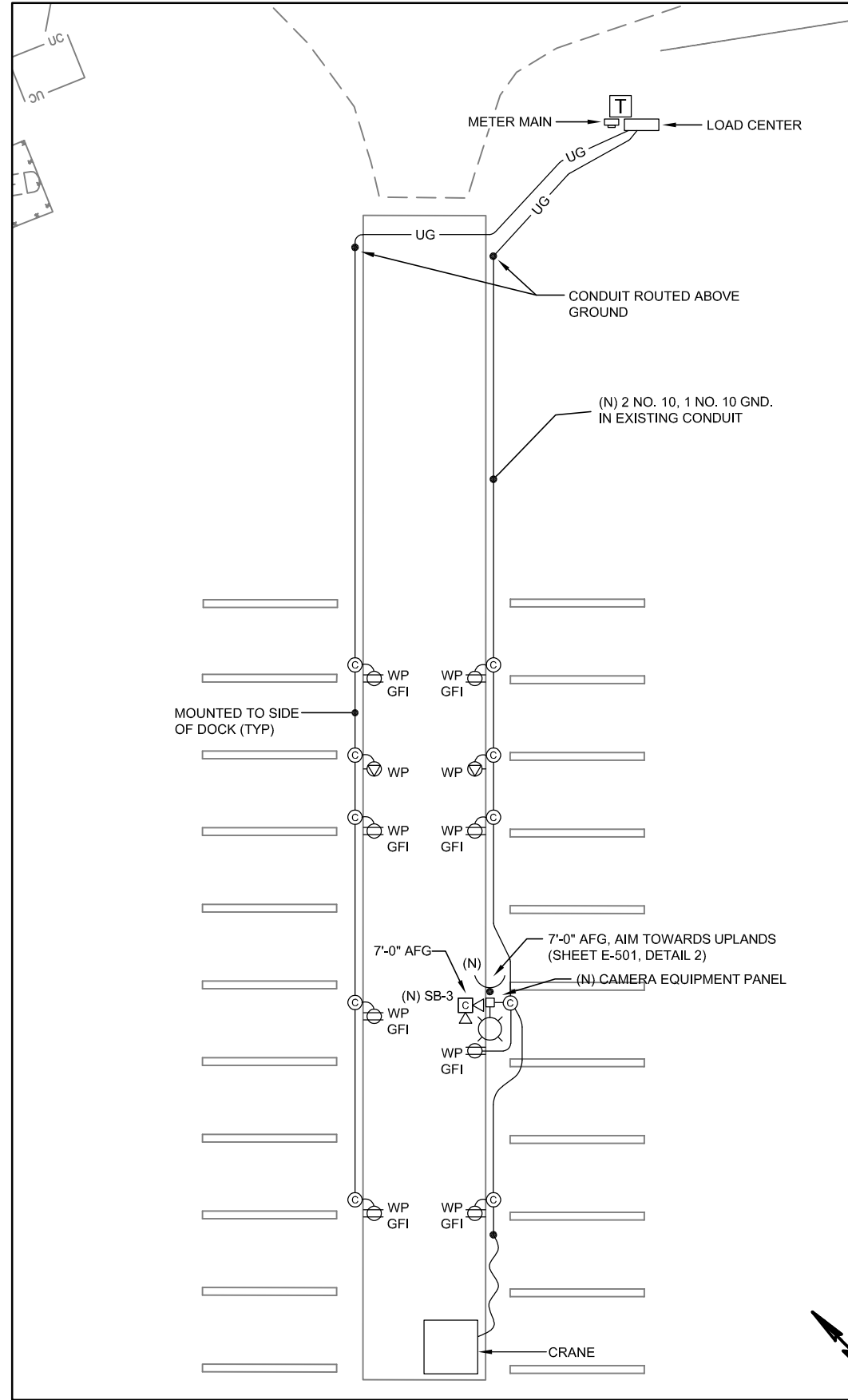
DESIGN	
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DATE	APRIL 14, 2023

PROJECT No.
i0296.22003
 SHEET NUMBER

E-500

No.	Date	Item

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1 ENLARGED SITE PLAN - BOAT GRID

SCALE: 0' 5' 10' 20'

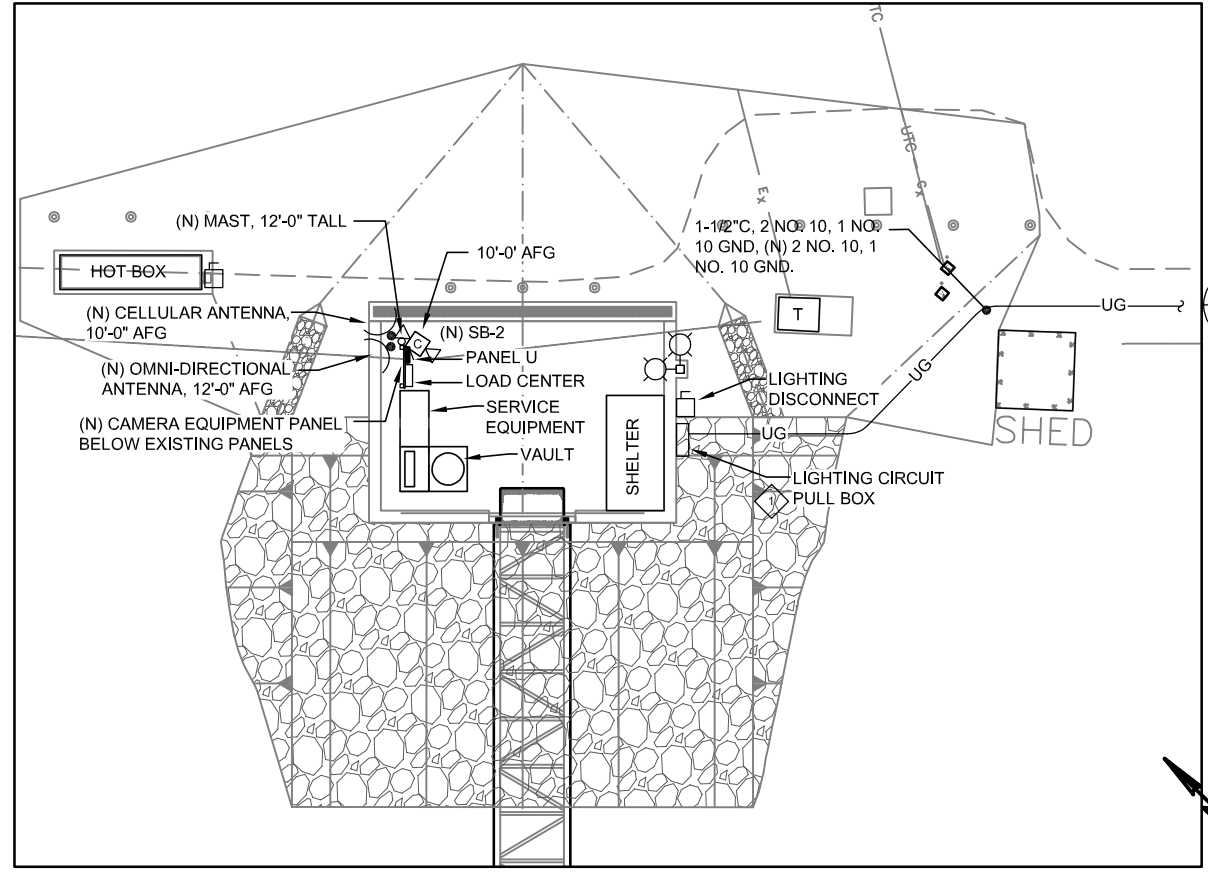
SHOEMAKER BAY CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
SB-1	SOUTH EAST PARKING LIGHT POLE	DOME	1	4K
SB-2	UPLANDS MAST	MULTISENSOR DOME	2	5MP
SB-3	BOAT GRID LIGHT POLE	MULTISENSOR DOME	2	5MP

SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CAMERA MAST SHALL BE 12FT TALL, 4IN SQUARE, HOT DIPPED GALVANIZED STEEL RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ FT.
- MASTS MOUNTED ON THICK CONCRETE DECKS OR PADS SHALL USE EPOXY ANCHOR BOLTS. INSTALLER SHALL LOCATE STEEL REINFORCEMENT IN CONCRETE BEFORE CUTTING OR DRILLING AND AVOID DAMAGING THE REINFORCING STEEL.
- PROVIDE CAT6 CABLES IN 3/4" CONDUIT FROM EACH CAMERA TO THEIR RESPECTIVE EQUIPMENT CABINET.
- NEW CONDUCTOR ADDED TO EXISTING UNDERGROUND CONDUITS.

SHEET KEYNOTES: #

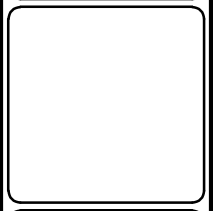
- EXTEND THE SPARE CIRCUIT IN THE LIGHTING CIRCUIT PULL BOX TO THE NEW CAMERA EQUIPMENT



2 ENLARGED SITE PLAN - UPLANDS

SCALE: 0' 5' 10' 20'

CONSULTANT :



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AECC 63270

PROJECT :
WRANGELL DOCKS & HARBORS SURVEILLANCE CAMERA SYSTEM
WRANGELL, ALASKA

SHEET TITLE :
ENLARGED SITE PLANS - UPLANDS & DRY DOCK

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 19, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-501

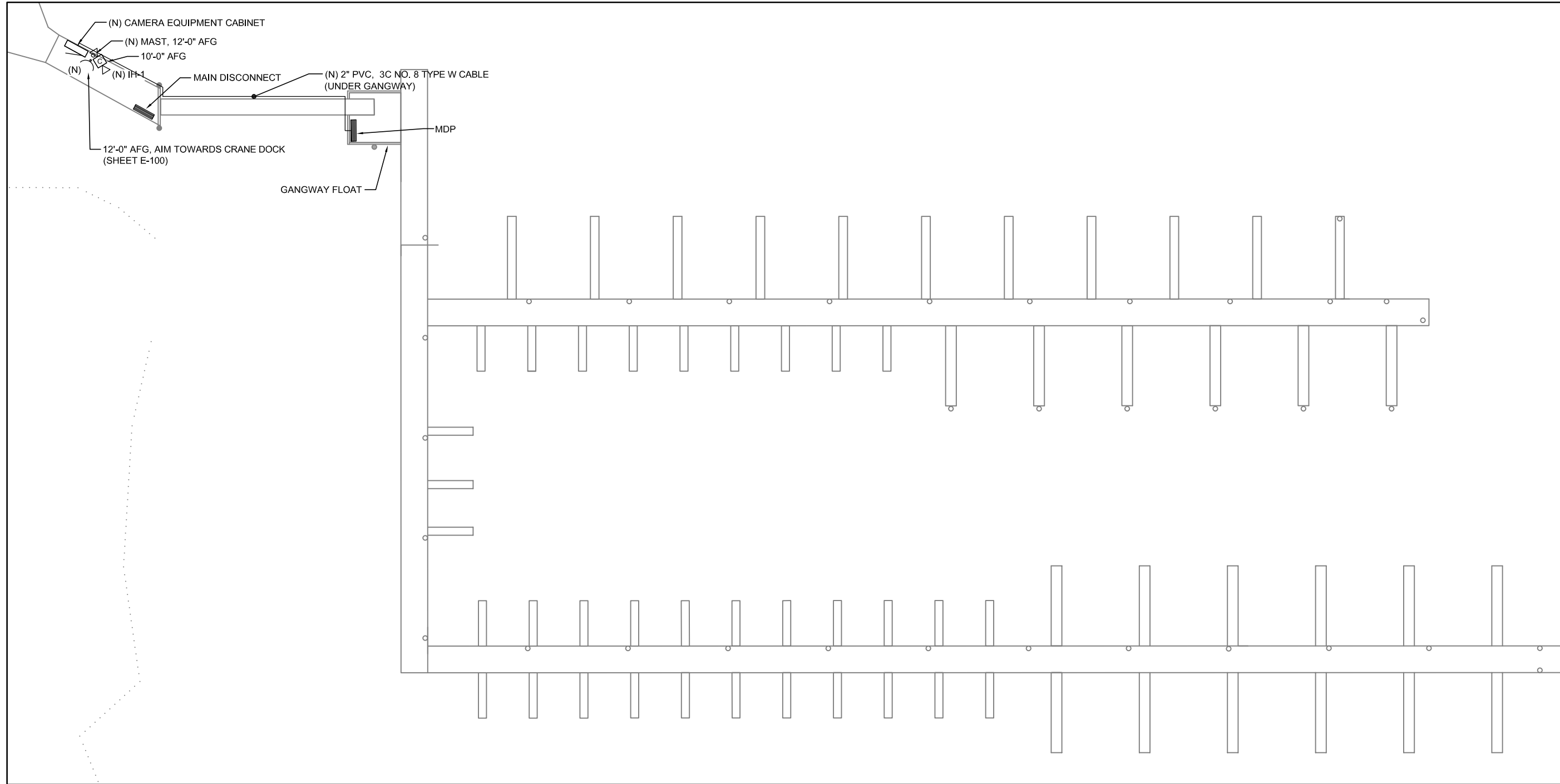
No.	Date	Item
REVISIONS		

1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION, AFFECTING ALL LABELED SCALES

INNER HARBOR CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
IH-1	GANGWAY MAST	MULTISENSOR DOME	2	5MP

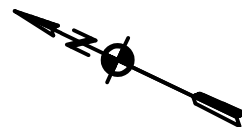
SHEET NOTES:

- EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
- NEW CAMERA MAST SHALL BE 12FT TALL, 4IN SQUARE, HOT-DIPPED GALVANIZED STEEL POLE RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ. FT.
- MASTS MOUNTED ON THIN CONCRETE OR WOODEN DOCKS SHALL BE THROUGH BOLTED WITH $\frac{1}{2}$ " IN HOT-DIPPED GALVANIZED BOLTS. PROVIDE LARGE WASHERS OR BACKING PLATE BENEATH THE DECKING.
- TERMINATING THE NEW CABLE AT THE MDP WILL REQUIRE REMOVING AND REINSTALLING DECK BOARDS.



1 SITE PLAN - INNER HARBOR
E-600

SCALE: 0' 10' 20' 40'



DESIGN		
DRAWN		
CHECKED		
DATE	APRIL 14, 2023	
PROJECT No.	i0296.22003	
SHEET NUMBER	E-600	
No.	Date	Item
REVISIONS		

CONSULTANT :

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AECC63270



PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**

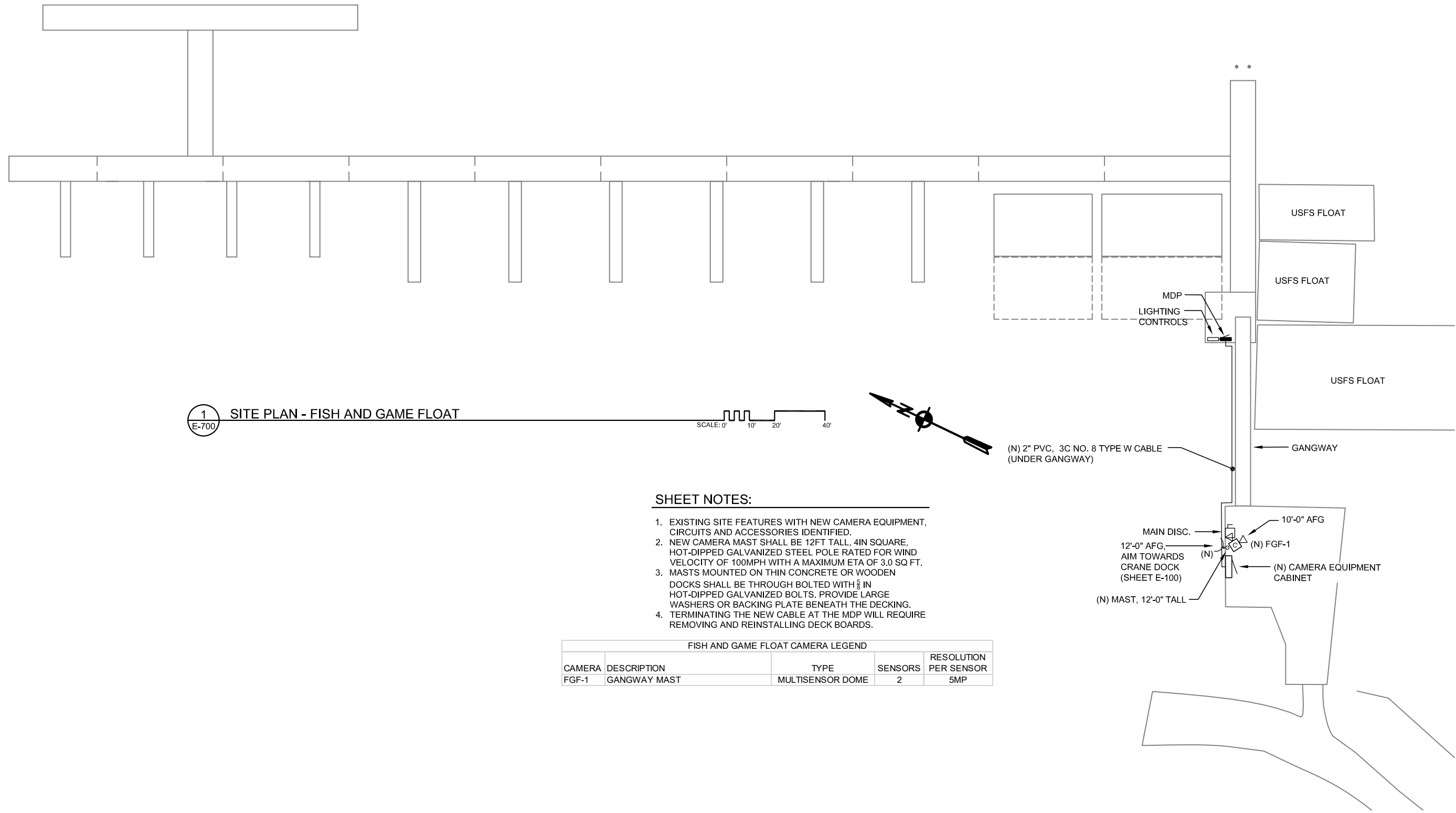
WRANGELL, ALASKA

SHEET TITLE :
SITE PLAN - INNER HARBOR

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IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING IT'S PRODUCTION. AFFECTING ALL LABELED SCALES

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1 SITE PLAN - FISH AND GAME FLOAT
E-700

SHEET NOTES:

1. EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
2. NEW CAMERA MAST SHALL BE 12FT TALL, 4IN SQUARE, HOT-DIPPED GALVANIZED STEEL POLE RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ FT.
3. MASTS MOUNTED ON THIN CONCRETE OR WOODEN DOCKS SHALL BE THROUGH BOLTED WITH $\frac{5}{8}$ IN HOT-DIPPED GALVANIZED BOLTS. PROVIDE LARGE WASHERS OR BACKING PLATE BENEATH THE DECKING.
4. TERMINATING THE NEW CABLE AT THE MDP WILL REQUIRE REMOVING AND REINSTALLING DECK BOARDS.

FISH AND GAME FLOAT CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
FGF-1	GANGWAY MAST	MULTISENSOR DOME	2	5MP

CONSULTANT :

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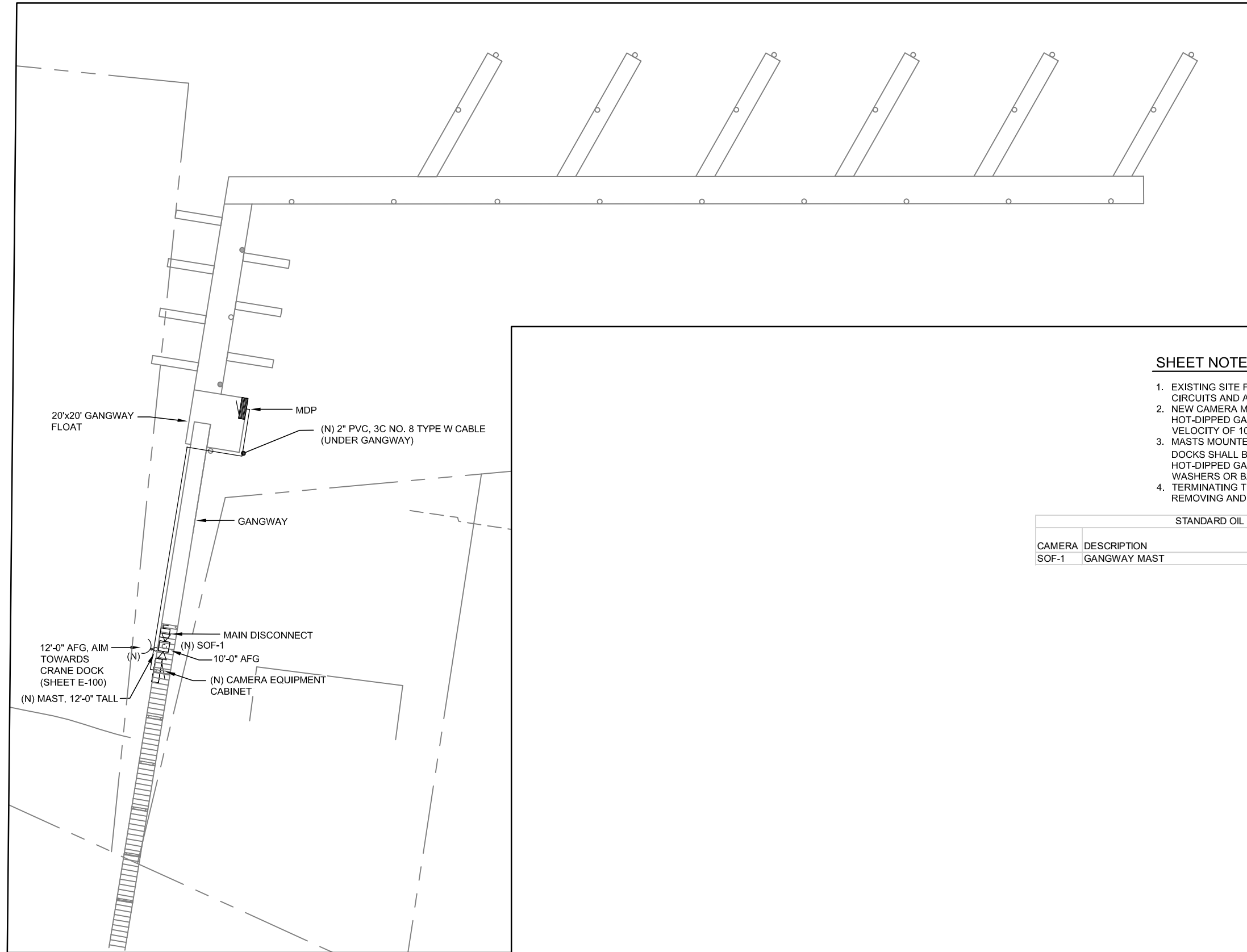


PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**
WRANGELL, ALASKA

SHEET TITLE :
SITE PLAN - FISH AND GAME FLOAT

DESIGN	
DRAWN	
CHECKED	
DATE	APRIL 14, 2023
PROJECT No.	i0296.22003
SHEET NUMBER	E-700

No.	Date	Item

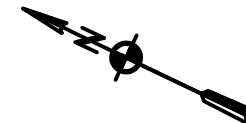
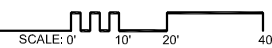


SHEET NOTES:

1. EXISTING SITE FEATURES WITH NEW CAMERA EQUIPMENT, CIRCUITS AND ACCESSORIES IDENTIFIED.
2. NEW CAMERA MAST SHALL BE 12FT TALL, 4IN SQUARE, HOT-DIPPED GALVANIZED STEEL POLE RATED FOR WIND VELOCITY OF 100MPH WITH A MAXIMUM ETA OF 3.0 SQ FT.
3. MASTS MOUNTED ON THIN CONCRETE OR WOODEN DOCKS SHALL BE THROUGH BOLTED WITH $\frac{3}{8}$ IN HOT-DIPPED GALVANIZED BOLTS. PROVIDE LARGE WASHERS OR BACKING PLATE BENEATH THE DECKING.
4. TERMINATING THE NEW CABLE AT THE MDP WILL REQUIRE REMOVING AND REINSTALLING DECK BOARDS.

STANDARD OIL FLOAT CAMERA LEGEND				
CAMERA	DESCRIPTION	TYPE	SENSORS	RESOLUTION PER SENSOR
SOF-1	GANGWAY MAST	MULTISENSOR DOME	2	5MP

1 SITE PLAN - STANDARD OIL FLOAT
E-800



DESIGN		
DRAWN		
CHECKED		
DATE	APRIL 14, 2023	
PROJECT No.	i0296.22003	
SHEET NUMBER	E-800	
No.	Date	Item
REVISIONS		

CONSULTANT :

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PROJECT :
**WRANGELL DOCKS & HARBORS
SURVEILLANCE CAMERA SYSTEM**

WRANGELL, ALASKA

SHEET TITLE :
SITE PLAN - STANDARD OIL FLOAT