

BINDING TERM SHEET**WATER FACILITIES INTERCONNECTION AND
LONG-TERM WATER TRANSPORTATION SERVICES**

EFFECTIVE DATE: OCTOBER 27, 2023

In furtherance of their obligations to implement a Fish and Wildlife Program (defined below) pursuant to the 1991 Agreement,¹ the Eklutna Owners (defined below) desire to transport a portion of the water reserved for hydroelectric production in their Eklutna Hydroelectric Project through the water utility tunnel and pipeline system owned by Anchorage Water and Wastewater Utility for the purpose of establishing instream water flows in the Eklutna River. Anchorage Water and Wastewater Utility is willing to allow its water utility tunnel, pipeline, and other infrastructure as appropriate to be used for this purpose should the Governor of Alaska approve the Fish and Wildlife Program inclusive of the proposed usage of Anchorage Water and Wastewater Utility's infrastructure. In entering into this Term Sheet and the Agreements (as defined below), however, Anchorage Water and Wastewater Utility does not, and shall not, take any position on whether or not using Anchorage Water and Wastewater Utility's infrastructure is the best alternative for establishing instream water flows in the Eklutna River as the foundation of the Fish and Wildlife Program. Instead, Anchorage Water and Wastewater Utility merely states its willingness to allow use of its infrastructure under the agreed terms and conditions, pursuant to a Governor-approved Fish and Wildlife Program. The parties, as Customer and Service Provider as defined below, have investigated the engineering, interconnection, operational, and regulatory requirements necessary for Service Provider to operate water facilities interconnections and long-term water transportation services to Customer and have agreed to the terms set forth below, which will be memorialized in detailed contractual agreements by March 1, 2024, subject to certain conditions precedent. This Term Sheet shall bind the parties as set forth in this Term Sheet and inure to the benefit of the respective successors and permitted assigns of each of the Parties signatory hereto; provided, however, that neither this Term Sheet nor any rights, benefits, obligations or duties hereunder may be assigned, transferred, hypothecated or otherwise conveyed without the prior express written consent of the other Party. Any such purported assignment, transfer, hypothecation or other conveyance without such prior express written consent shall be void.

1. Eklutna Owners/ Customer	Chugach Electric Association, Inc., Matanuska Electric Association, Inc., and the Municipality of Anchorage (" Eklutna Owners " or collectively, the " Customer ").
2. Service Provider	Anchorage Water and Wastewater Utility (" Service Provider " or " AWWU ", and collectively with Customer, the " Parties ").

¹ Agreement between the Municipality of Anchorage, Chugach Electric Association, Inc., Matanuska Electric Association, Inc., the United States Fish and Wildlife Service, the National Marine Fisheries Service, the State of Alaska, and the Alaska Energy Authority Relative to the Eklutna and Snettisham Hydroelectric Projects, dated August 7, 1991 (the "1991 Agreement").

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<p>3. Agreements</p>	<p>(1) Water Facilities Interconnection Agreement (“<i>Interconnection Agreement</i>”); and</p> <p>(2) Long-Term Water Transportation Services Agreement (“<i>Transportation Agreement</i>”) (collectively with the Interconnection Agreement, the “<i>Agreements</i>”).</p>
<p>4. Binding Term Sheet</p>	<p>The Parties will use commercially reasonable efforts to negotiate and execute the Agreements and associated documentation promptly following the date of this binding Term Sheet (“<i>Term Sheet</i>”) in accordance with the substantive terms set forth below. Until such time as this Term Sheet is replaced by any such further documentation, or is terminated pursuant to the terms herein, this Term Sheet remains binding on the signatory parties, and memorializes the legal and enforceable rights and obligations of, the Parties. If the Parties fail to enter into the Agreements by March 1, 2024, either Party may terminate this Term Sheet upon thirty (30) days written notice. The Parties also acknowledge that design is in its early stages and that the current concept for development of the Eklutna River Release Facility, and use of the AWWU Facilities (as defined below) may be further refined after the date of this Term Sheet. Accordingly, the substantive terms of this Term Sheet are subject to change during the course of the negotiation of the Agreements due to any material refinement of such designs and neither Party shall be in breach of this Term Sheet by seeking to change said substantive terms to address such material refinements arising out of the design process, provided that in seeking such a change or changes, such Party is operating in good faith to preserve the primary purpose of this Term Sheet that the Customer and AWWU cooperate to use AWWU Facilities to transport water from Eklutna Lake into the Eklutna River as part of the Eklutna Owners’ implementation of the Fish and Wildlife Program.</p>
<p>5. Purpose</p>	<p>The Parties intend to enter into definitive Agreements, the key terms of which are set forth in this Term Sheet (subject to the right to change said terms due to material refinements in design process provided in Article 4 above), to enable the Eklutna Owners to implement a fish and wildlife program as required by the 1991 Agreement (the “<i>Fish and Wildlife Program</i>”), upon approval by the Governor of Alaska. Specifically, the Eklutna Owners intend to reestablish and preserve instream flows of the Eklutna River to implement the Fish and Wildlife Program through</p>

	<p>two primary mechanisms, and to mitigate the impact of the Fish and Wildlife Program on AWWU’s public water system as required under Section 2 of the 1991 Agreement:</p> <p>(1) the construction of the Eklutna River Release Facility (as defined in Section 6 below), to consist of a River Release Structure (as defined below) to be owned and managed by Customer and an Isolation Valve Structure (as defined below) to be owned by Service Provider and managed in part by Service Provider and in part by Customer (as further described herein), all to be interconnected to the existing AWWU Facilities (as defined in Subsection (2) below), which shall be used for the ultimate delivery of water to the Eklutna River; and</p> <p>(2) the use of existing water transportation facilities owned and operated by AWWU on terms defined below, including but not limited to the AWWU Eklutna Lake raw water diversion bypass tunnel and pipeline (“<i>AWWU Facilities</i>”), which will allow for the transport of Customer’s water from the Injection Point to the Delivery Point defined and described below (“<i>Water Transportation Services</i>”).</p> <p>A more detailed overview of the Eklutna River Release Facility is set forth in <u>Appendix A</u>. <u>Appendix A</u> also shows:</p> <ul style="list-style-type: none">• the “<i>Injection Point</i>” (the existing “T” in the tunnel downstream of the Eklutna power plant intake in Eklutna Lake where the AWWU tunnel begins) at which the custody, control, and risk of loss of water is exchanged from Customer to Service Provider,• the AWWU Facilities, an existing tunnel and pipeline covering a distance of roughly 1.6 miles,• the “<i>Delivery Point</i>” (the outlet of a new “T” to be built in the AWWU pipeline downstream of the AWWU tunnel/pipeline transition and upstream of the AWWU portal valve) at which the custody, control, and risk of loss of water is exchanged from Service Provider back to Customer,• A 54-inch gate valve on the main segment of AWWU pipeline intended to provide dual means of
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	<p>isolation for AWWU’s pipeline segment (the “<i>AWWU Isolation Valve</i>”); and</p> <ul style="list-style-type: none"> • A 42-inch gate valve on the branch segment of AWWU pipeline intended to provide isolation to the river release structure (“<i>Customer Isolation Valve</i>”, together with the AWWU Isolation Valve, the “<i>Isolation Valves</i>”). <p>Accordingly, this binding Term Sheet sets forth key terms of definitive Agreements, wherein the Eklutna Owners desire for (1) the Parties to mutually set forth certain obligations and understandings regarding the development, construction, and operation of the Eklutna River Release Facility, which shall be connected to AWWU Facilities, and (2) compensate AWWU for the provision of Water Transportation Services.</p>
<p>6. Eklutna River Release Facility Definition</p>	<p>The “<i>Eklutna River Release Facility</i>” shall consist of the proposed Isolation Valve Structure and the River Release Structure. The “Isolation Valve Structure” shall include the tee, the Isolation Valves, controls, and communication technology to be installed in the main line of the AWWU Facilities and owned and operated by Service Provider, provided that Customer shall have coordinated control of the Customer Isolation Valve for maintenance throughout the Delivery Term; and the “River Release Structure” shall include a new pipeline, control valve, the Delivery Point Meter (as defined below) and monitoring and control equipment and will be owned and operated by Customer. The Eklutna River Release Facility shall be designed, engineered, and constructed by Customer, all potentially as shown in <u>Appendix B</u> (the 15% design), which is subject to change and approval by both Parties in all respects during the design and approval stages of project development.</p>
<p>7. Effective Dates and Conditions Precedent</p>	<p>The definitive Agreements will become effective upon execution (the “<i>Execution Date</i>”), but the construction and operational obligations set forth in the definitive Agreements will become binding upon the Parties only upon the satisfaction of the following conditions precedent (such date, the “<i>Construction Start Effective Date</i>”):</p> <p>(1) The Eklutna Owners gain final approval of their Fish and Wildlife Program by the Governor of Alaska that requires use of AWWU Facilities as contemplated in this</p>

	<p>Term Sheet without any conditions materially adverse to the Eklutna Owners or AWWU, as determined in good faith and in the exercise of commercial reasonable business judgment, and that such Eklutna Owners’ Fish and Wildlife Program and the Governor’s final approval is not subject to any pending judicial review or appeal;</p> <p>(2) The Eklutna Owners obtain all permits necessary to construct the Eklutna River Release Facility; and</p> <p>(3) The Eklutna Owners obtain or provide evidence of lawful Certificates of Appropriation from the Alaska Department of Natural Resources for the use and transport of water as contemplated under the Transportation Agreement, including but not limited to an amendment of existing water rights or other approval(s) authorizing a change of use allowing Eklutna Owners’ use of a portion of their certificated water right to establish and continue instream flows.</p> <p>The Eklutna Owners will commence final engineering and construction of the Eklutna River Release Facility on the Construction Start Effective Date, and endeavor to complete construction within a reasonable time to be defined in the Agreements following the Governor’s approval in a manner consistent with the approved Fish and Wildlife Program and the 1991 Agreement. The obligations to provide and take Water Transportation Services shall begin when the Eklutna Owners achieve Commercial Operation of the Eklutna River Release Facility. “<i>Commercial Operation</i>” means, with respect to the Eklutna River Release Facility, that all construction, testing and operational conditions have been fulfilled as evidenced by a certificate from a licensed professional engineer.</p>
<p>8. Term</p>	<p>The Agreements shall continue for 35 years from the Commercial Operation date (the “<i>Delivery Term</i>”), unless terminated earlier in accordance with the terms thereof. The “<i>Term</i>” of the Agreements shall begin on the Execution Date and continue until the expiration of the Delivery Term. At the conclusion of the Term, the Agreements shall thereafter renew on a year-to-year basis, unless terminated earlier in accordance with the terms hereof.</p>

<p>9. Interconnection Agreement</p>	<p>Commencing on Effective Date, the Parties shall take all commercially reasonable efforts to develop the Eklutna River Release Facility pursuant to the Interconnection Agreement, which shall include, but not be limited to, the following terms:</p> <p>a. Customer Responsibilities. Following the Effective Date, the Customer shall be responsible, solely at its own expense, to (i) design, engineer, permit, and construct the Eklutna River Release Facility to meet the layout and design criteria as presented in <u>Appendix B</u> (15% design), which may be updated and refined from time to time hereafter; for the avoidance of doubt, this shall include all transmission, power, and communication facilities associated with construction; (ii) provide to Service Provider the design drawings pertaining to the Eklutna River Release Facility and any updates to the specifications for the Service Provider’s review and approval; (iii) obtain all real property interests necessary for the construction, operation, and maintenance of the Eklutna River Release Facility; (iv) complete all permitting and environmental impact studies necessary for the construction, operation, and maintenance of the Eklutna River Release Facility; (v) acquire and maintain all governmental authorizations and other necessary Approvals for the design, construction, commissioning, ownership, operation, and maintenance of the Eklutna River Release Facility; achieve all milestones to be set forth in a definitive Interconnection Agreement; (vi) construct the Eklutna River Release Facility; (vii) construct security facilities (e.g., fencing, [cameras]) surrounding the Eklutna River Release Facility; (viii) enable Service Provider to have access at all times, (ix) operate the River Release Structure, which is connected to the Isolation Valve Structure at the Delivery Point, and (x) operate the Customer Isolation Valve for maintenance in close coordination with Service Provider. Upon commissioning, the Customer will provide the Service Provider with all as-built/record drawings and operation/maintenance documentation for all constructed facilities.</p>
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	<p>b. Service Provider Responsibilities. Following the Effective Date, Service Provider shall be responsible to (i) provide assistance and cooperation to all reasonable requests of Customer regarding the design, engineering, permitting, construction, installation, testing, start-up and commissioning of the Eklutna River Release Facility (including timely written review and approval of Customer’s design and engineering), and on obtaining and maintaining all governmental authorizations and third party owned real property interests necessary for the construction, operation, and maintenance of the AWWU Facilities to the Delivery Point, and (ii) operating the AWWU Facilities and the Isolation Valve Structure, but in such a way that allows Customer to access and operate the Customer Isolation Valve for maintenance on a coordinated basis. Service Provider shall further agree to not suspend or otherwise halt access to the AWWU Facilities during the period of construction, except to the extent needed to address reasonable security or safety issues and to avoid putting AWWU’s water supply at risk of interruption or contamination. The foregoing responsibilities described in this Subsection b are referred to herein as the “<i>Service Provider Responsibilities</i>”.</p> <p>c. Development Costs. The Customer shall be solely responsible for and shall pay all costs and expenses incurred in connection with performing the responsibilities necessary to build the Eklutna River Release Facility; Customer shall reimburse Service Provider for its actual costs related to or arising out of the development and construction of the Eklutna River Release Facility and related Service Provider Responsibilities, including but not limited to documented direct and indirect costs, overhead, general and administrative costs, staff time, and all other costs related to or arising out of the planning, engineering and project management associated with Eklutna River Release Facility and Service Provider Responsibilities, provided that Service Provider shall use commercially reasonable efforts to minimize such costs.</p>
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	<p>d. Tie-In / Installation Costs. Customer will be responsible for, and will pay or reimburse Service Provider, all costs required to connect the Eklutna River Release Facility to the AWWU Facilities; <u>provided</u> that, for any easements or other rights-of-way or land use permits required on AWWU-owned land to so connect AWWU Facilities to Eklutna River Release Facility, Service Provider shall provide such easements at a reasonable or no cost to Customer. To the extent necessary but not held by AWWU, Customer shall be solely responsible for obtaining and paying for any and all easements, rights-of-way, or land use rights from third parties which are necessary for the connection of the River Release Structure to the AWWU Facilities through the Isolation Valve Structure. Connection costs include but are not limited to engineering, soil testing, site preparation, demolition, implementation of civil work, mechanical improvements, structural upgrades, piping, electrical improvements, instrumentation and controls upgrades, communications improvements, safety, fire protection, environmental testing, equipment rentals, permitting, and construction support.</p>
<p>10. Transportation Agreement</p>	<p>Commencing on Commercial Operation, AWWU shall perform, and the Customer shall take, on an exclusive basis, the Water Transportation Services pursuant to the Transportation Agreement, which shall include, but are not limited to, the following terms:</p> <p>a. Amount. During the Delivery Term Service Provider shall transport Customer’s water from the Injection Point to the Delivery Point commingled with and undifferentiated from Service Provider’s raw water deliveries to the Eklutna Water Treatment Facility (“<i>EWTF</i>”). At the Delivery Point, Customer’s water (not intended for municipal water) supply may be released to the Eklutna River through the Eklutna River Release Facility. Control valves in the Eklutna River Release Facility downstream of the Delivery Point will be used to set the rate of release of Customer water to the Eklutna River, in accordance with a predetermined dynamic delivery schedule established in the final Fish and Wildlife Program</p>

	<p>documentation. The total amount released will be measured by flow meters at the Delivery Point by the Delivery Point Meter (as defined below). The maximum daily rate of conveyance (the “<i>Contract Maximum</i>”) will be determined based on hydraulic analysis of the AWWU Facilities and the Eklutna River Release Facility under various operating scenarios. The maximum daily flow available at the Eklutna River Release Facility will not inhibit the ability to deliver a flow rate of at least 41 MGD to the EWTF at a pressure sufficient to allow normal operation of the EWTF as currently configured, or exceed the hydraulic capacity or design criteria of the AWWU Facilities. The Contract Maximum shall be reduced as a result of any Excused Events, force majeure or other unforeseen outages or conditions.</p> <p>b. Control. The AWWU Facilities shall be solely operated, managed, and maintained by Service Provider or its designee materially in accordance with all governmental authorizations and in accordance with applicable law, prudent industry practices, the most current editions of the AWWU Design and Construction Practices Manual, Municipality of Anchorage Standard Specifications and Anchorage Municipal Code, provided that as part of such operation, management and maintenance, Service Provider shall cooperate and provide access as needed to Customer for Customer’s operation, management, and maintenance of Customer Isolation Valve on a coordinated basis.</p> <p>c. Costs and Exchange of Services. All costs of water transportation, operations, management and maintenance borne by AWWU (including but not limited to the use of the AWWU Facilities, the tee and the valves described above) will be exchanged on an equal basis for AWWU’s continued use of the Customer’s intake, hydrotunnel and any other facilities necessary to supply water from the Eklutna Lake to the AWWU tunnel and related water transportation, operations, management and maintenance costs borne by Customer.</p>
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	<p>d. Operating Procedures and Coordination. Service Provider shall, at Customer’s expense, develop proposed written operating procedures for the provision of Water Transportation Services (the “<i>Operating Procedures</i>”) in close coordination with the Customer as set forth in the Transportation Agreement. The Operating Procedures shall include the Parties’ respective obligations for the following considerations: (i) method of day-to-day communication and reporting; (ii) key personnel lists for Service Provider and Customer; (iii) reasonable coordination regarding timing of planned outages; (iv) reporting of emergencies, planned outages and forced outages of AWWU Facilities; (v) reporting of curtailment periods; (vi) ongoing reporting of metered quantities measured at the Delivery Point and Injection Point; and (vii) reasonable coordination regarding requisite permits and all other necessary federal, state, and local Approvals; and (viii) a clear statement of operational priority of the Service Provider’s public water supply.</p>
<p>11. Title</p>	<p>Control, custody, and risk of loss, of the Customer’s water shall transfer to Service Provider between the Injection Point and the Delivery Point. Control, custody, and risk of loss, of the Customer’s water shall then revert back to the Customer once the water is delivered to the Customer at the Delivery Point. For the avoidance of doubt, the Customer, as holders of water rights certificate ADL 44944, shall retain title at all times to all its water transported by Service Provider.</p> <p>The AWWU Facilities shall remain the property of AWWU; the Eklutna River Release Facility downstream of the Delivery Point will be owned by the Customer; the Isolation Valve Structure will be owned by AWWU, provided that Customer shall have coordinated control of the Customer Isolation Valve for maintenance throughout the Delivery Term. The Parties shall collaborate in good faith to determine the exact demarcation of ownership of the new facilities in the Interconnection Agreement.</p>
<p>12. Public Water Supply Agreement and Water Rights Application</p>	<p>a. Public Water Supply Agreement. As part of the negotiations of the Agreements, the Parties shall negotiate a new agreement to replace the Agreement for Public Water Supply and Energy</p>

	<p>Generation from Eklutna Lake, Alaska, dated February 17, 1984 (“1984 Agreement”), as amended, which expires in 2025. The 1984 Agreement and the new agreement are required by Alaska state law, AS 46.15.150, which permits AWWU’s preferred water use status only if AWWU agrees to compensate Customer, who holds a senior water right to AWWU, for damages sustained by the preferred use. Such new agreement replacing the 1984 Agreement shall provide that the Service Provider shall:</p> <ul style="list-style-type: none">(i) as required under AS 46.15.150, continue to compensate the Customer (or any individual Eklutna Owner, as applicable) for water or replacement energy and use of Customer’s facilities pursuant to substantially similar terms as those included in the 1984 Agreement; provided, however, that (x) AWWU’s compensation shall be capped at \$600,000 per year, which amount shall be adjusted annually to reflect inflationary changes as reflected in Bureau of Labor Statistics’ Consumer Price Index (CPI-U) and such compensation payments shall end upon AWWU obtaining priority water rights from Customer pursuant to Subsection b of this Section 12 below or otherwise, (y) such AWWU payments shall be payable to Chugach; and (z) all other costs and losses attributable to AWWU’s decreased compensation shall be netted out of the Municipality of Anchorage’s (MOA’s) ownership share of the water used in the Eklutna Project pursuant to provisions in the two power purchase agreements among the Eklutna Owners, effective October 30, 2020,(ii) be entitled to continued use of the Customer’s intake, hydrotunnel and any other facilities necessary to supply water to the AWWU Facilities, so long as such facilities are being used by the Eklutna Owners to generate power for the Eklutna Hydroelectric Project
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	<p>(iii) receive a first right of refusal to purchase the Customer's intake, hydrotunnel and any other of the Customer's facilities necessary to supply water to the AWWU Facilities in the event Customer's power production facilities are permanently shut down, and</p> <p>(iv) have the right to approve any successor to Customer as operator of the Eklutna River Release Facility, provided that such approval will not be unreasonably withheld, conditioned, or delayed.</p> <p>The term of the new agreement replacing the 1984 Agreement shall begin upon approval of the Fish and Wildlife Program by the Governor of Alaska and shall continue through October 30, 2060; provided, however, that in the event that litigation or other legal challenges lead to a final Fish and Wildlife Program that does not include the use of the AWWU Facilities for instream flows as contemplated in this Term Sheet, the new agreement replacing the 1984 Agreement shall be terminated and AWWU and the Eklutna Owners shall meet in good faith to negotiate a replacement agreement with terms and conditions then deemed appropriate, including compensation, risk mitigation, transfer or purchase of priority water rights, etc.</p> <p>b. Water Permit and Certificate Application. Customer acknowledges and agrees that Service Provider has a permit for preferred water use for up to 41 million gallons per day for public water supply pursuant to the Act of October 30, 1984, 98 Stat. 2823; Alaska Statutes 46.15.150(a), LAS 2569, and Certificate of Appropriation ADL 44944, and the 1984 Agreement and its successor agreement. Customer acknowledges that the Service Provider's water permit provides for public water supply priority and preference for Service Provider's permitted water rights. In addition, upon the earlier of October 31, 2055 or the MOA's sale of its interests in the Eklutna Project, AWWU may exercise an option to exchange its rights for preferred water use for public water supply for an equal portion of Eklutna Owners' priority state</p>
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	<p>water rights (i.e., Certificate of Appropriation ADL 44944), but not to exceed 41 million gallons per day, by quitclaim deed (or other then-acceptable means of transfer); provided (i) AWWU must issue notice of its intention to exercise such option no later than October 30, 2050 (which date aligns with a purchase option related to the Eklutna Project in a power purchase agreement among the Eklutna Owners); (ii) no additional compensation will be due from AWWU to the Eklutna Owners; and (iii) adjustments among the Eklutna Owners to accommodate AWWU's rights will be handled separately.</p>
<p>13. Measurement and Metering</p>	<p>Water shall be measured at the Injection Point by an existing flow meter in the AWWU Facilities (the "<i>Injection Point Meter</i>"). Water shall be measured at the Delivery Point by a new meter installed as part of the River Release Structure (the "<i>Delivery Point Meter</i>"). Delivery Point Meter measurements shall be used to calculate the amount of water received by Customer, but both Parties shall have real-time information as to such metering measurements. Reports for both the Delivery Point Meter and Injection Point Meter shall be included in a report by the Customer for each Month throughout the Delivery Term and shared with AWWU on a monthly basis.</p>
<p>14. Taxes</p>	<p>Customer shall be responsible for and shall pay any sales, use, gross receipts, occupation, and other taxes (excluding income, and franchise tax imposed upon Service Provider) from time to time payable as a consequence of the Interconnection Agreement and provision of Water Transportation Services.</p>
<p>15. Standard of Performance; Obligations re Facilities.</p>	<p>a. During the Term, the Customer shall cause the Eklutna River Release Facility to be constructed, operated, maintained, permitted and serviced in accordance with all prudent industry practices, applicable law, and the Interconnection Agreement.</p> <p>During the Term, Service Provider will cause the AWWU Facilities to be constructed, operated, maintained, permitted and serviced in accordance with all prudent industry practices, applicable law, and the Transportation Agreement.</p>

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	<p>Both Parties shall use commercially reasonable efforts to ensure that all employees and contractors engaged in connection with the maintenance, operation, service, and any future modification (to include design, construction, commissioning, and installation) to have the appropriate and necessary experience and skill, and expertise to carry out the tasks efficiently, professionally, and in accordance with prudent industry practice and applicable law.</p> <p>b. Customer shall, in its sole discretion, develop and implement at its own expense an alternative method, plan, or procedures for dealing with emergencies, maintenance, and other planned or unplanned shutdowns or partial shutdowns of the Eklutna River Release Facility, the AWWU Facilities, or any of the Customer's intake, hydrotunnel or other facilities needed for the public water supply, provided that Service Provider (i) in the case of all non-emergency shutdowns, follows the schedules and protocols to be developed pursuant to Subsection c, (ii) in the case of emergency shutdowns, (a) uses best efforts to first address the situation in such way that does not involve a shutdown that would affect the Water Transportation Services; (b) provides as much notice as is practicable prior to any shutdown that will affect the Water Transportation Services; and (c) uses best efforts to minimize the duration of such shutdown.</p> <p>c. Customer and Service Provider shall develop a schedule and protocol for routine planned shutdowns in order to allow for maintenance and inspection activities in their respective facilities to occur in a coordinated manner that minimizes impacts on Service Provider's utility water supply obligations and Customers' obligations under the Fish and Wildlife Program. Such schedule and protocol shall take into account routine hydropower operations to ensure that planned shutdowns only be scheduled at times when there is sufficient water available in Eklutna Lake to allow water releases through the maintenance gate of the diversion dam in the amounts necessary for Customer to meet its obligations under the Fish and Wildlife Program.</p>
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16. Site Access License	Service Provider shall provide Customer with a non-exclusive license for the purpose of installation, operation and maintenance of certain equipment, meters and other facilities owned by Customer and reasonable access thereto during the term of the Agreements and a reasonable right to enter upon Service Provider's property for all other purposes contemplated under the Agreements, subject to the reasonable scheduling and security requirements. Customer acknowledges that it may need to seek a site access license from one or more third parties in order to secure access the site.
17. Road and Bridges	Service Provider shall be responsible at its own expense for brushing, clearing and maintaining its access road along the AWWU Facilities, both above and below the Isolation Valve Structure. Customer may use such access road as part of its site license granted pursuant to Section 16. At eight (8) locations where such access road crosses the Eklutna River, and which are currently only accessible by ford-style crossings, Customer shall be responsible for installing at its own expense new bridges allowing the access road to cross the Eklutna River. Once installed, Service Provider shall perform, or cause to be performed, all maintenance of the bridges. The cost of such bridge maintenance shall be borne by Service Provider unless such cost is caused, directly or indirectly, by the Customer's negligence or intentional misconduct.
18. EWTF Power Production	Service Provider shall continue to be compensated for excess power it produces at the EWTF and delivers to Matanuska Electric Association (" <i>MEA</i> ") pursuant to terms consistent with the terms of 1984 Agreement, as amended, and the terms of MEA's tariff for purchasing cogenerated power.
19. Excused Events	The Parties shall negotiate and include terms related to forced or planned outages or in response to any force majeure event, emergency, or other condition determined by Service Provider in its reasonable discretion to be a threat to any of the AWWU Facilities requiring interruption or reduction of flow to Customer. An Interruption or curtailment in these cases shall be known as an " <i>Excused Event</i> " in the Agreements. It is understood that the exercise of an Excused Event will be in accordance with Agreements, Operating Procedures, and in close coordination between Parties and (i) Customer shall not interfere with or otherwise adversely affect Service

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	<p>Provider's provision of water service as a public utility, unless any such Excused Event is closely coordinated with Service Provider, and (ii) Service Provider shall not interfere with or otherwise adversely affect Customer's provision of water for instream flows pursuant to the 1991 Agreement, unless any such Excused Event is closely coordinated with Customer or, if close coordination is not possible, coordination as soon as is reasonable under the circumstances.</p>
20. Force Majeure	<p>The Agreements shall contain customary definitions of force majeure events. Neither Party shall be liable to the other Party in the event it is prevented from performing its obligations hereunder in whole or in part due to a force majeure event. The Party rendered unable to fulfill any obligation by reason of a Force Majeure event shall take all commercially reasonable actions necessary to remove such inability with due speed and diligence. Nothing herein shall be construed as permitting that Party to continue to fail to perform after said cause has been removed. The obligation to use due speed and diligence shall not be interpreted to require acceleration of labor supply or resolution of labor disputes by acceding to demands of the opposition when such course is inadvisable in the discretion of the Party having such difficulty. Neither Party shall be considered in breach or default of the Agreements if and to the extent that any failure or delay in the Party's performance of one or more of its obligations hereunder is caused by a force majeure event. The occurrence and continuation of a force majeure event shall not suspend or excuse the obligation of a Party to make any payments due hereunder.</p>
21. Liability	<p>No party to the Agreements shall be liable for any consequential, incidental, indirect, special, or punitive damages with respect to the construction of the Eklutna River Release Facility. Except for a Party's (i) gross negligence or willful misconduct, (ii) third-party indemnity obligation, or (iii) breach of any representation or warranty, the party's maximum liability under the Agreements shall be equal to amount to be set forth in the definitive Agreements.</p>

<p>22. Governmental Approvals</p>	<p>Service Provider shall be responsible for obtaining and maintaining all permits, waivers, licenses, authorizations, and governmental approvals (“<i>Approvals</i>”) required for the operations, maintenance, and management of the AWWU Facilities. The Customer shall be responsible for obtaining and maintaining all Approvals required for the construction, operations, and maintenance of the Eklutna River Release Facility, and Customer shall obtain or provide evidence of lawful Certificates of Appropriation from the Alaska Department of Natural Resources for the use and transport of water as contemplated under the Transportation Agreement, including but not limited to an amendment of existing water rights or other approval(s) authorizing a change of use allowing Eklutna Owners’ use of a portion of their certificated water right to establish and continue instream flows. Service Provider shall not object or interfere with Customer’s application for such amendment of Customer’s water rights.</p> <p>The Parties shall use commercially reasonable efforts to cooperate with each other in obtaining and retaining the foregoing Approvals and water rights amendment.</p>
<p>23. Governing Law</p>	<p>This Term Sheet and the Agreements shall be interpreted, construed, and enforced in accordance with, and otherwise governed in all respects by, the laws of the State of Alaska.</p>
<p>24. Confidentiality</p>	<p>a. The Parties agree that this Term Sheet, the contents therein, and negotiations of the Agreements shall remain confidential subject to the Common Interest Agreement, dated effective September 15, 2017, as amended and confirmed. Upon execution, however, the Agreements shall become non-confidential, subject to Subsections b-c below.</p> <p>b. The Parties agree that any public release of the Agreements and the Term Sheet, each after execution, shall be the sole responsibility of Customer, and until that date upon which the Fish and Wildlife Program is approved without any pending judicial review or appeal, any public statements to be made by AWWU about the Fish and Wildlife Program or the proposals contained therein, including but not limited to about the use of AWWU infrastructure to transport water into the Eklutna River must first be approved by the Eklutna Owners, such approval not to be unreasonably withheld or</p>

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	<p>delayed. For the purposes of any public release of such information, the Municipality of Anchorage and not AWWU, shall represent the Municipality of Anchorage in its role as an Eklutna Owner. Notwithstanding the foregoing, Service Provider may respond to any inquiries from the Municipal Assembly, RCA, and other regulatory and judicial authorities in a manner consistent with this Term Sheet and the Agreements.</p> <p>c. Service Provider shall make best efforts to ensure that all of the employees, agents, contractors and consultants of AWWU do not engage in activities as employees or agents of AWWU, including making public statements, that are reasonably likely to have an adverse effect on the public’s perception of the Fish and Wildlife Program and the proposals contained therein, including but not limited to about the use of AWWU infrastructure to transport water into the Eklutna River, it being understood by both AWWU and the Eklutna Owners that such negative public statements can undermine the ability of the Eklutna Owners to satisfy their obligations under the 1991 Agreement; provided, however, that Service Provider cannot restrict the rights of such people as private citizens.</p>
25. Representations and Warranties	Service Provider and the Customer shall provide customary representations and warranties, including (without limitation): due organization and good standing; due authorization, execution, and delivery; enforceability; solvency; and no conflicts.
26. Indemnification	Service Provider and the Customer shall provide customary reciprocal third-party indemnities for (i) any breach by such party of the Agreements, or (ii) its negligence or willful misconduct. Customer shall also indemnify and defend, and hold Service Provider harmless from any damage to AWWU’s infrastructure, including but not limited to its infrastructure downstream from the Eklutna River Release Facility (<i>i.e.</i> , scouring or erosion of the river bed or banks that damages AWWU’s water line and/or facilities). Customer shall further be solely responsible for, and shall indemnify, defend and hold Service Provider harmless from all claims or liability of any kind directly related to fish and wildlife mitigation measures and arising out of normal operation of the AWWU Facilities, the

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	Eklutna River Release Facility or any other facilities of the Service Provider, in a manner consistent with the definitive Agreements, prudent industry practices, the most current editions of the AWWU Design and Construction Practices Manual, Municipality of Anchorage Standard Specifications and Anchorage Municipal Code unless such claim or liability arose directly out of negligence, violation of law, or intentional misconduct by the Service Provider.
27. Insurance	During the Term, each Party shall maintain, at its own cost and expense, such insurance as shall be determined by the Parties in the Agreements. Notwithstanding the foregoing, Service Provider shall at all times during the Term maintain insurance coverage in compliance with Applicable Law in connection with the provision of Water Transportation Services.
28. Other Terms	The definitive Agreements will contain other usual and customary terms for transactions of a similar nature to those addressed thereby.
29. Counterparts	The Term Sheet may be executed by a number of counterparts, each of which shall be deemed an original, and all of which, together, shall constitute a single agreement.

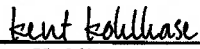
[Signature page follows]

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SERVICE PROVIDER/AWWU:

**ANCHORAGE WATER AND WASTEWATER UTILITY,
A DEPARTMENT OF THE MUNICIPALITY OF ANCHORAGE**

By: 
Name: Kent Kohlhasse
Title: Municipal Manager
and

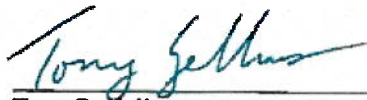
By: 
Name: Mark Corsentino
Title: General Manager

CUSTOMER/EKLUTNA OWNERS:

CHUGACH ELECTRIC ASSOCIATION

By: 
Name: Andrew Laughlin
Title: Chief Operating Officer

**MATANUSKA ELECTRIC
ASSOCIATION**

By: 
Name: Tony R. Zellers
Title: Director, Power Supply

MUNICIPALITY OF ANCHORAGE

By: 
Name: Kolby Hickey
Title: Deputy Municipal Manager

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EXHIBIT A

OVERVIEW OF EKLUTNA OWNERS' INSTREAM FLOW PROJECT

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EXHIBIT B

EKLUTNA RIVER RELEASE FACILITY



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ANCHORAGE, ALASKA

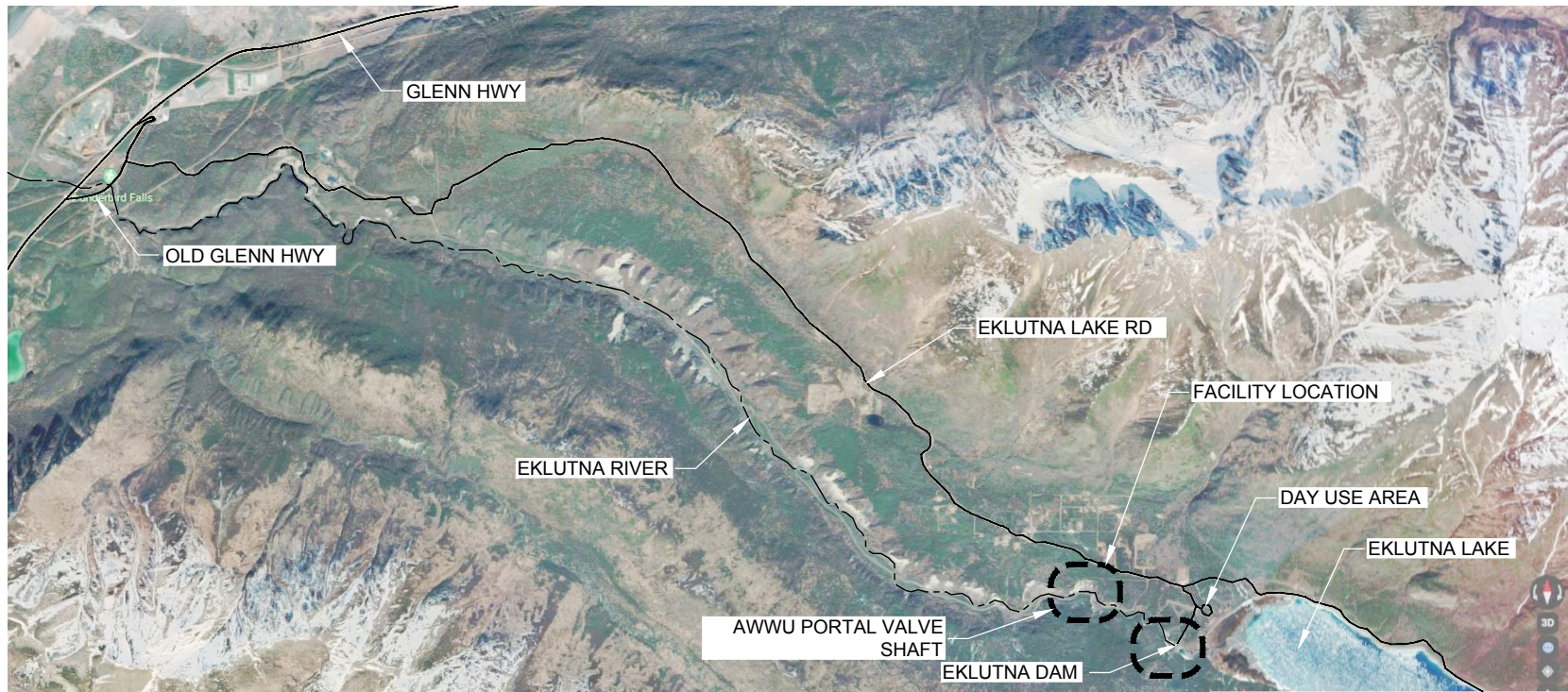
15% DESIGN
OCTOBER 2023

EKLUTNA FISH & WILDLIFE PROJECT

EKLUTNA RIVER RELEASE FACILITY 15% DESIGN



LOCATION MAP
NTS



VICINITY MAP
NTS



FACILITY MAP
NTS

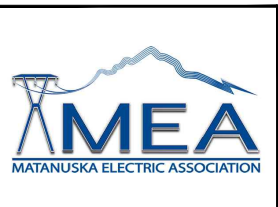


PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING

 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT	DESIGNED <u>S. ELLENSON</u>
EKLUTNA RIVER RELEASE FACILITY	DRAWN <u>F. HABER</u>
LOCATION MAP, VICINITY MAP, AND FACILITY MAP	CHECKED <u>J. BOAG</u>
	PROJECT DATE <u>10/6/23</u>

DRAWING	G001
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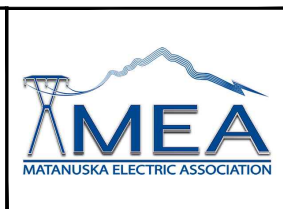
Path: C:\Vault\Chugach Electric\Portal Release Structure\G001.dwg Plot date: Sep 28, 2023 10:08am, CAD User: HaberFlavia

DRAWING INDEX			
15% SUB*	SHEET NO.	DWG NO.	DESCRIPTION
			<u>GENERAL</u>
			COVER SHEET
X	1	G001	LOCATION MAP, VICINITY MAP, AND FACILITY MAP
X	2	G002	DRAWING INDEX
X	3	G003	STANDARD ABBREVIATIONS
X	4	G004	STANDARD SYMBOLS
X	5	G005	PIPING SCHEDULE
X	6	G006	INSTRUMENTATION AND EQUIPMENT LEGEND
			<u>DEMOLITION</u>
X	7	D001	DEMOLITION KEY PLAN
X	8	D100	PORTAL VALVE SHAFT YARD DEMOLITION PLAN
			<u>CIVIL</u>
X	9	GC001	CIVIL GENERAL NOTES AND STANDARD DETAILS
X	10	C001	PORTAL VALVE SHAFT YARD EXISTING SITE PLAN
X	11	C100	PORTAL VALVE SHAFT YARD GRADING PLAN
			<u>STRUCTURAL</u>
X	12	GS001	STRUCTURAL GENERAL NOTES
X	13	GS002	STRUCTURAL STANDARD DETAILS 1
X	14	GS003	STRUCTURAL STANDARD DETAILS 2
X	15	S001	STRUCTURAL KEY PLAN
X	16	S100	ISOLATION VALVE STRUCTURAL PLAN, SECTIONS, AND DETAILS
X	17	S101	ISOLATION VALVE STRUCTURAL SECTIONS
X	18	S200	RIVER RELEASE STRUCTURE PLAN, SECTIONS AND DETAILS
X	19	S201	RIVER RELEASE STRUCTURE SECTIONS
			<u>MECHANICAL</u>
X	20	GM001	MECHANICAL EQUIPMENT SCHEDULE
X	21	GM002	MECHANICAL STANDARD DETAILS
X	22	M001	MECHANICAL KEY PLAN
X	23	M100	ISOLATION VALVE STRUCTURE MECHANICAL PLAN
X	24	M101	ISOLATION VALVE STRUCTURE MECHANICAL SECTIONS
X	25	M200	RIVER RELEASE STRUCTURE MECHANICAL PLAN, SECTIONS
			<u>ELECTRICAL</u>
X	26	GE001	ELECTRICAL ABBREVIATIONS AND DEVICE INDEXES
X	27	GE002	ELECTRICAL STANDARD SYMBOLS 1
X	28	GE003	ELECTRICAL STANDARD SYMBOLS 2
X	29	E001	ELECTRICAL SITE AND KEY PLAN
	30	E002	COMMUNICATIONS BLOCK DIAGRAM
X	31	E003	TRANSMISSION AND COMMUNICATION UPGRADES PLAN
X	32	E100	ISOLATION VALVE STRUCTURE ELECTRICAL PLAN
X	33	E200	RIVER RELEASE STRUCTURE ELECTRICAL PLAN AND SECTION

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING
IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE

EKLUTNA FISH & WILDLIFE PROJECT EKLUTNA RIVER RELEASE FACILITY
DRAWING INDEX

DESIGNED <u>S. ELLENSON</u>
DRAWN <u>F. HABER</u>
CHECKED <u>J. BOAG</u>
PROJECT DATE <u>10/6/23</u>

DRAWING
G002

A/C	AIR CONDITIONING	CKT	CIRCUIT	EXT	EXTERIOR, EXTERNAL, EXTENSION	I	INSTRUMENTATION (DWG DISCIPLINE)	N	NORTH, NEUTRAL	RESIL	RESILIENT	U	URINAL
A/E	ARCHITECT/ENGINEER	CL	CENTERLINE, CLASS, CLOSE	F TO F	FACE TO FACE	ID	INSIDE DIAMETER, INTERIOR DIMENSION	NA	NOT APPLICABLE	RET	RETAINING, RETURN	UG	UNDERGROUND
A	ARCHITECTURAL (DWG DISCIPLINE), AMP	CLR	CLEAR	FAB	FABRICATE	IE	INVERT ELEVATION	NAT	NATURAL	REV	REVISION, REVERSE	ULT	ULTIMATE
AB	ANCHOR BOLT	CMH	COMMUNICATION MANHOLE	FBO	FURNISHED BY OWNER	IF	INSIDE FACE	NC	NORMALLY CLOSED	RFL	REFLECTED, REFLECTOR	UNFN	UNFINISHED
ABC	AGGREGATE BASE COURSE	CMU	CONCRETE MASONRY UNIT	FC	FLUSHING CONNECTION	IH	INTAKE HOOD	NEG	NEGATIVE	RGS	RIGID GALVANIZED STEEL	UNO	UNLESS NOTED OTHERWISE
ABAN	ABANDON	CO	CLEAN OUT, CONCRETE OPENING	FCA	FLANGED COUPLING ADAPTER	IMP	IMPACT	NF	NEAR FACE, NON-FUSED	RH	RELIEF HOOD, RIGHT HAND, RELATIVE HUMIDITY	UTIL	UTILITY
AC	ALTERNATING CURRENT	COL	COLUMN	FCV	FIXED CONE VALVE	IN	INCH	NG	NATURAL GAS	RL	REQUIRED LAP	V	VENT, VELOCITY, VOLT
ACST	ACOUSTIC	COM	COMMON	FD	FLOOR DRAIN	INC	INCLUDE, INCANDESCENT	NIC	NOT IN CONTRACT	RND	ROUND	VA	VOLT AMPERE
AD	ADDENDUM, AREA DRAIN	COMB	COMBINATION	FDC	FLEXIBLE DUCT CONNECTION	INF	INFLUENT	NO	NORMALLY OPEN, NUMBER	RNG	RENEWABLE NATURAL GAS	VAC	VACUUM
ADDL	ADDITIONAL	COMM	COMMUNICATION	FDR	FEEDER	INSTR	INSTRUMENTATION	NOM	NOMINAL	RO	ROUGH OPENING	VAR	VARNISH, VARIABLE, VOLT AMPERES REACTIVE
ADH	ADHESIVE	COMP	COMPOSITION, COMPRESSIBLE, COMPOSITE	FE	FLANGED END	INSUL	INSULATION	NPS	NOMINAL PIPE SIZE	ROW	RIGHT-OF-WAY	VB	VAPOR BARRIER, VINYL BASE, VALVE BOX
ADJ	ADJUSTABLE, ADJACENT	CONC	CONCENTRIC, CONCRETE	FEC	FIRE EXTINGUISHER CABINET	INT	INTERIOR, INTERSECTION	NPT	NATIONAL PIPE THREAD	RPM	REVOLUTIONS PER MINUTE	VC	VERTICAL CURVE
AF	AMP FRAME, AMP FUSE	CONN	CONNECTION	FEXT	FIRE EXTINGUISHER	INTR	INTERMEDIATE, INTERIOR	NS	NEAR SIDE	RR	RAILROAD	VCT	VINYL COMPOSITION TILE, VERTICAL CENTERLINE
AFF	ABOVE FINISH FLOOR	CONST	CONSTRUCTION	FF	FAR FACE, FACTORY FINISH, FLAT FACE	INV	INVERT	NTS	NOT TO SCALE	RT	RIGHT	VEL	VELOCITY
AFG	ABOVE FINISH GRADE	CONT	CONTINUOUS, CONTINUED	FG	FINISHED GRADE	IPS	IRON PIPE SIZE	NWL	NORMAL WATER LEVEL	S	SOUTH, SINK, STRUCTURAL (DWG DISCIPLINE)	VENT	VENTILATION
AGGR	AGGREGATE	COORD	COORDINATE	FIG	FIGURE	IPT	INTERNAL PIPE THREAD	O TO O	OUT-TO-OUT	SA	SUPPLY AIR	VERT	VERTICAL
AIC	AMPS INTERRUPTING CAPACITY	CORR	CORROSIVE, CORRUGATED	FIN	FINISH	IRR	IRRIGATION	OA	OUTSIDE AIR, OVERALL	SAN	SANITARY	VS	VERSES, VAPOR SEAL
ALIG	ALIGNMENT	CP	CHECKER PLATE, CONTROL POINT	FL	FLOW, FLOW LINE	ISO	ISOMETRIC	OC	ON CENTER	SC	SOLID CORE	VOL	VOLUME
ALUM	ALUMINUM	CPLG	COUPLING	FLX	FLEXIBLE	JB	JUNCTION BOX	OCPD	OVER CURRENT PROTECTION DEVICE	SCH	SCHEDULE	VPC	VERTICAL POINT OF CURVATURE
ALT	ALTERNATE, ALTITUDE	CSK	COUNTERSINK	FLG	FLANGE	JCT	JUNCTION	OD	OUTSIDE DIAMETER	SCHEM	SCHEMATIC	VPI	VERTICAL POINT OF INTERSECTION
AMB	AMBIENT	CTR	CENTER	FLO	FLUORESCENT	JF	JOINT FILLER	OH	OVERHEAD	SCRN	SCREEN	VPT	VERTICAL POINT OF TANGENCY
ANC	ANCHOR	CTRL	CONTROL	FLR	FLOOR	JT	JOINT	OPNG	OPENING	SE	STEEL/ALUMINUM EDGE	VTR	VENT THROUGH ROOF
AP	ACCESS PANEL	CU	COPPER, CUBIC	FLS	FLASHING, FLUSH	K	KIP	OPP	OPPOSITE	SEC	SECONDARY, SECONDS	VWC	VINYL WALL COVERING
APRX	APPROXIMATE	CW	CLOCKWISE	FND	FOUNDATION	KB	KNEE BRACE	OPT	OPTIONAL	SECT	SECTION	W/	WITH
APVD	APPROVED	CY	CUBIC YARD	FNC	FENCE	KCMIL	THOUSAND CIRCULAR MILS	ORD	OVERFLOW ROOF DRAIN	SEP	SEPARATE	W/O	WITHOUT
ARCH	ARCHITECTURAL	d	PENNY (NAIL MEASURE)	FO	FINISHED OPENING	KD	KNOCK DOWN	ORIG	ORIGINAL	SF	SQUARE FOOT	W	WATT, WEST, WIDE, WINDOW, WIRE, WIDE FLANGE BEAM
ASSY	ASSEMBLY	D	DEEP, DIFFUSER	FOB	FLAT ON BOTTOM	KIUC	KAUAI ISLAND UTILITY COOPERATIVE	OVFL	OVERFLOW	SH	SHOWER	WC	WATER CLOSET, WATER COLUMN
AT	AMP TRIP	DB	DUCT BANK, DECIBEL, DRY BULB	FOC	FACE OF CONCRETE, FACE OF CURB, FIBER OPTIC CABLE	KO	KNOCK OUT	OVHG	OVERHANG	SHT	SHEET	WD	WIDTH
ATM	ATMOSPHERE	DBA	DEFORMED BAR ANCHOR	FOF	FACE OF FINISH	KSI	KIPS PER SQUARE INCH	OZ	OUNCE	SHTG	SHEATHING	WF	WIDE FLANGE, WASH FOUNTAIN
AUTO	AUTOMATIC	DBL	DOUBLE	FOM	FACE OF MASONRY	L	ANGLE, LENGTH, LAVATORY	P	PAINT, PROCESS (DWG DISCIPLINE)	SIM	SIMILAR	WG	WIRE GLASS, WATER GAGE
AUX	AUXILIARY	DC	DIRECT CURRENT	FOS	FACE OF STUDS	LAM	LAMINATE	PAR	PARALLEL, PARAPET	SL	SLOPE	WH	WALL HYDRANT, WEEP HOLE
AVE	AVENUE	DEG	DEGREE	FOT	FLAT ON TOP	LATL	LATERAL	PB	PANIC BAR, PULL BOX	SLTD	SLOTTED	WL	WATER LEVEL
AVG	AVERAGE	DEG C	DEGREE CENTIGRADE	FPT	FEMALE PIPE THREAD	LB	LAG BOLT, POUND	PBD	PARTICLE BOARD	SLV	SLEEVE	WLD	WELDED
AWG	AMERICAN WIRE GAGE	DEG F	DEGREE FAHRENHEIT	FR	FRAME	LDR	LEADER	PC	POINT OF CURVE, PIECE, PRECAST	SMLS	SEAMLESS	WM	WIRE MESH
AWWU	ANCHORAGE WATER AND WASTEWATER UTILITY	DEP	DEPRESSED	FRP	FIBERGLASS REINFORCED PLASTIC	LF	LINEAR FOOT	PCC	POINT OF COMPOUND CURVATURE	SOG	SLAB ON GRADE	WP	WATERPROOF, WORKING POINT
B/B	BACK TO BACK	DEPT	DEPARTMENT	FS	FLOOR SINK, FAR SIDE	LG	LONG	PCF	POUNDS PER CUBIC FOOT	SP	SOUNDPROOF, STANDPIPE	WTHP	WATERPROOF
BAL	BALANCE	DET	DETAIL	FT	FEET, FOOT	LH	LEFT HAND	PCT	PERCENT	SPC	SPACING	WS	WATERSTOP, WATER SURFACE
BBD	BULLETIN BOARD	DI	DROP INLET, DUCTILE IRON	FTG	FOOTING, FITTING FUR FURRED, FURRING	LIN	LINEAR	PE	PLAIN END	SPLY	SUPPLY	WSEL	WATER SURFACE ELEVATION
BC	BASE CABINET, BOTTOM CHORD, BOLT CENTER, BOLT CIRCLE	DIA	DIAMETER	FURN	FURNITURE, FURNISH	LIQ	LIQUID	PED	PEDESTAL	SPT	SET POINT	WT	WEIGHT, WATER TIGHT
BD	BOARD	DIAG	DIAGONAL, DIAGRAM	FUT	FUTURE	LL	LIVE LOAD	PEN	PENETRATION	SQ	SQUARE	WWF	WELDED WIRE FABRIC
BE	BOTH ENDS, BELL END	DIFF	DIFFERENTIAL, DIFFERENCE	FV	FACE VELOCITY	LLH	LONG LEG HORIZONTAL	PERF	PERFORATED	SR	SHORT RADIUS	XS	EXTRA STRONG
BF	BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET	DIM	DIMENSION	FW	FIELD WELD, FIRE WALL	LLV	LONG LEG VERTICAL	PERM	PERMANENT	SS	SERVICE SINK	XXS	DOUBLE EXTRA STRONG
BFV	BUTTERFLY VALVE	DISCH	DISCHARGE	FWD	FORWARD	LMLU	LIQUID MARKER LECTURE UNIT	PERP	PERPENDICULAR	SST	STAINLESS STEEL	XSECT	CROSS SECTION
BITUM	BITUMINOUS	DIST	DISTANCE, DISTRIBUTION	FWE	FURNISHED WITH EQUIPMENT	LNG	LONGITUDINAL	PF	POWER FACTOR	ST	STREET	YH	YARD HYDRANT
BKG	BACKING	DIV	DIVISION	FXTR	FIXTURE	LOC	LOCATION	PH	PHASE	STA	STATION	YS	YIELD STRENGTH
BL	BASE LINE	DL	DEAD LOAD	G	GRILLE, GROUND, GENERAL (DWG DISCIPLINE)	LP	LOW POINT	PI	POINT OF INTERSECTION	STD	STANDARD		
BLDG	BUILDING	DN	DOWN	GA	GAGE (METAL THICKNESS)	LPS	LOW PRESSURE SODIUM	PKG	PACKAGE	STIF	STIFFENER		
BLK	BLOCK	DP	DEPTH	GAL	GALLON	LR	LONG RADIUS	PL	PLATE, PROPERTY LINE	STIR	STIRRUP		
BLKG	BLOCKING	DS	DOWN SPOUT	GALV	GALVANIZED	LT	LEFT	PLBG	PLUMBING	STL	STEEL		
BM	BENCHMARK, BEAM	DT	DOUBLE TEE, DRIP TRAP ASSEMBLY	GB	GRADE BREAK	LTD	LIMITED	PLF	POUNDS PER LINEAR FOOT	STR	STRUCTURAL, STRAIGHT		
BOC	BACK OF CURB	DUP	DUPLICATE	GD	GUARD	LTG	LIGHTING	PNEU	PNEUMATIC	SUB	SUBSTITUTE		
BOD	BOTTOM OF DUCT	DWG	DRAWING	GEN	GENERAL	LTL	LINTEL	POL	POLISH	SUC	SUCTION		
BOG	BOTTOM OF GRILLE	DWL	DOWEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	LTNG	LIGHTNING	POS	POSITIVE, POSITION	SUSP	SUSPENDED		
BOL	BOTTOM OF LOUVER	E	EAST, ELECTRICAL (DWG DISCIPLINE)	GL	GLASS	LV	LOW VOLTAGE	PP	POLYPROPYLENE, POWER POLE	SY	SQUARE YARD		
BOP	BOTTOM OF PIPE	EA	EACH, EXHAUST AIR	GP	GUY POLE	LVR	LOUVER	PRC	POINT OF REVERSE CURVATURE	SYM	SYMBOL		
BOR	BOTTOM OF REGISTER	EC	ELECTRICAL CONTRACTOR	GR	GRADE	LW	LIGHTWEIGHT	PREF	PREFINISHED	SYMM	SYMMETRICAL		
BOT	BOTTOM	ECC	ECCENTRIC	GRD	GROUND	LWC	LIGHTWEIGHT CONCRETE	PREFAB	PREFABRICATED	SYN	SYNTHETIC		
BOU	BOTTOM OF UNIT	EDB	ELECTRICAL DUCT BANK	GRNG	GRATING	LWL	LOW WATER LEVEL	PRELIM	PRELIMINARY	SYS	SYSTEM		
BP	BASE PLATE	EE	EACH END	GT	GREASE TRAP	M	MECHANICAL (DWG DISCIPLINE)	PREP	PREPARE	T&B	TOP AND BOTTOM		
BRG	BEARING	EF	EACH FACE	GWB	GYPSUM WALLBOARD	MA	MIXED AIR	PRES	PRESSURE	T&G	TONGUE AND GROOVE		
BRGP	BEARING PLATE	EG	EXISTING GRADE	GYP	GYPSUM HALDBOARD	MAINT	MAINTENANCE	PROP	PROPERTY	T	TILE, TREAD		
BRKT	BRACKET	EGL	ENERGY GRADE LINE	H	HIGH	MAN	MANUAL	PROT	PROTECTION	TAN	TEMPERED AIR		
BS	BOTH SIDES	EFF	EFFLUENT, EFFICIENCY	HB	HOSE BIB	MAOP	MAXIMUM ALLOWABLE OPERATING PRESSURE	PSF	POUNDS PER SQUARE FOOT	TAN	TANGENT		
BTU	BRITISH THERMAL UNIT	EHH	ELECTRICAL HANDHOLE	HBD	HARDBOARD	MATL	MATERIAL	PSI	POUNDS PER SQUARE INCH	TBM	TEMPORARY BENCHMARK		
BTW	BETWEEN	EIFS	EXTERIOR INSULATION & FINISH SYSTEM	HC	HANDICAPPED, HOLLOW CORE, HORIZONTAL CURVE	MAX	MAXIMUM	PSIA	POUNDS PER SQUARE INCH ABSOLUTE	TEMP	TEMPORARY, TEMPERATURE		
BTWLD	BUTT WELD	EJ	EXPANSION JOINT	HDR	HORIZONTAL CENTERLINE	MB	MACHINE BOLT	PSIG	POUNDS PER SQUARE INCH GAGE	THK	THICK		
BV	BALL VALVE	EL	ELBOW, ELEVATION	HDW	HARDWARE	MBR	MEMBER	PT	POINT, POINT OF TANGENCY	THRD	THREAD		
BW	BOTH WAYS	ELEC	ELECTRICAL	HEX	HEXAGONAL	MCJ	MASONRY CONTROL JOINT	PTN	PARTITION	THRU	THROUGH		
BYP	BYPASS	EMBD	EMBEDDED	HH	HANDHOLE	MECH	MECHANICAL	PVC	POLYVINYL CHLORIDE	TOB	TOP OF BOLT, TOP OF BANK, TOP OF BEAM		
C TO C	CENTER TO CENTER	EMER	EMERGENCY	HM	HOLLOW METAL	MED	MEDIUM	PVMT	PLYWOOD	TOC	TOP OF CURB, TOP OF CONCRETE		
C&G	CURB & GUTTER	EMH	ELECTRICAL MANHOLE	HORIZ	HORIZONTAL	MFR	MANUFACTURER	PZ	PIEZOMETER	TOD	TOP OF DUCT		
C	CHANNEL SHAPE, CENTIGRADE, CONDUIT, CIVIL (DRAWING DISCIPLINE)	ENCL	ENCLOSURE	HP	HIGH POINT, HORSEPOWER	MH	MANHOLE, METAL HALIDE	Q	RATE OF FLOW	TOF	TOP OF FOOTING		
CAB	CABINET	ENGR	ENGINEER	HPC	HORIZONTAL POINT OF CURVATURE	MIR	MIRROR	QTR	QUARTER	TOG	TOP OF GRATING		
CAP	CAPACITY	ENTR	ENTRANCE	HPS	HIGH PRESSURE SODIUM	MISC	MISCELLANEOUS	QTY	QUANTITY	TOL	TOLERANCE, TOP OF LEDGER		
CAT	CATALOG	EOP	EDGE OF PAVEMENT	HPT	HORIZONTAL POINT OF TANGENCY	MJ	MECHANICAL JOINT	QUAL	QUALITY	TOM	TOP OF MASONRY		
CAV	CAVITY	EOW	EDGE OF WATER	HR	HOUR	MMB	MEMBRANE	R&R	REMOVE AND REPLACE	TOP	TOP OF PLATE		
CB	CATCH BASIN	EQ	EQUAL	HS	HEADED STUD, HIGH STRENGTH	MO	MASONRY OPENING	R&S	REMOVE AND SALVAGE	TOPO	TOPOGRAPHY		
CCB	CONCRETE BLOCK	EQUIP	EQUIPMENT	HSS	HOLLOW STRUCTURAL SHAPE	MOD	MODULAR, MODIFY	R	RADIUS, REGISTER, RISER	TOS	TOP OF SLAB, TOP OF STEEL		
CCW	COUNTER CLOCKWISE	EQUIV	EQUIVALENT	HT	HEIGHT	MON	MONUMENT	RA	RETURN AIR	TOW	TOP OF WALL		
CF	CUBIC FEET (FOOT)	ES	EACH SIDE, EQUAL SPACE, EMERGENCY SHOWER	HV	HIGH VOLTAGE	MPT	MALE PIPE THREAD	RB	RESILIENT BASE, ROCK BERM	TP	TELEPHONE POLE, TOE PLATE, TRAP PRIMER		
CHFR	CHAMFER	ESEW	EMERGENCY SHOWER AND EYE WASH	HVAC	HEATING, VENTILATION & AIR CONDITIONING	MSL	MEAN SEA LEVEL	RCPT	RECEPTACLE	TPG	TOPPING		
CHD	CHORD	ESTIMATE	ESTIMATE	HWD	HARDWOOD	MT	MOUNT	RD	ROOF DRAIN	TRANS	TRANSITION		
CHH	COMMUNICATION HANDHOLE	EW	EACH WAY, EMERGENCY EYE/FACE WASH	HWL	HIGH WATER LEVEL	MT	MASONRY UNIT	REC	RECESS	TRD	TRENCH DRAIN		
CI	CURB INLET	EWFC	ELECTRIC WATER COOLER	HYD	HYDRAULIC HZ HERTZ, CYCLES PER SECOND	MU	MASONRY UNIT	RECD	RECEIVED	TYP	TYPICAL		
CIP	CAST-IN-PLACE	EWTB	EACH WAY, TOP AND BOTTOM			MULL	MULLION	RECT	RECTANGULAR				
CIPB	CONCRETE INTERLOCKING PAVER	EXC	EXCAVATION			MV	MEDIUM VOLTAGE	RED	REDUCER				
		EXH	EXHAUST			MW	MONITORING WELL	REF	REFERENCE				
		EXIST	EXISTING					REINF	REINFORCING				
		EXP	EXPANSION, EXPOSED					REQD	REQUIRED				
CIRC	CIRCULATION, CIRCULAR												
CJ	CONSTRUCTION JOINT, CONTROL JOINT												

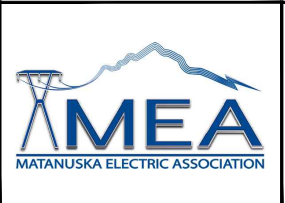
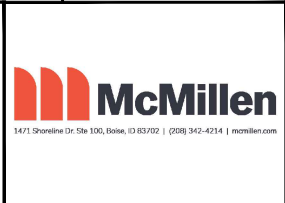
GENERAL NOTES:

- THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.
- LISTING OF ABBREVIATIONS DOES NOT IMPLY ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
- ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF THE WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION; "INC" MAY MEAN INCLUDED OR INCLUDING; "REIN" MAY MEAN EITHER REINFORCE OR REINFORCING.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

PRELIMINARY
NOT FOR CONSTRUCTION

0	10/6/23	SPE	15% DESIGN	
REV	DATE	BY	DESCRIPTION	

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

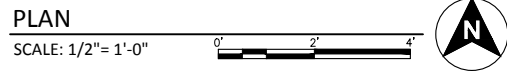


EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
STANDARD ABBREVIATIONS

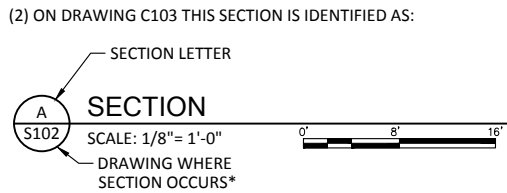
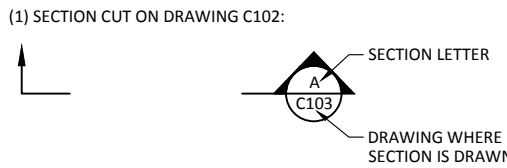
DESIGNED S. ELLENSON
DRAWN F. HABER
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
G003

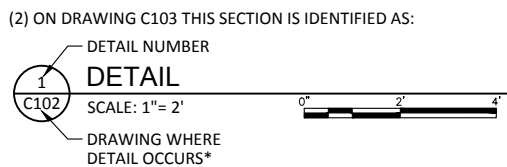
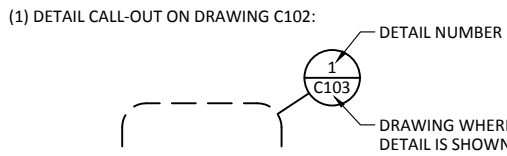
SHEET SYMBOLS



SECTION IDENTIFICATION

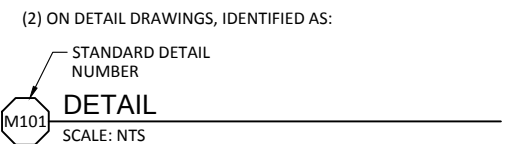
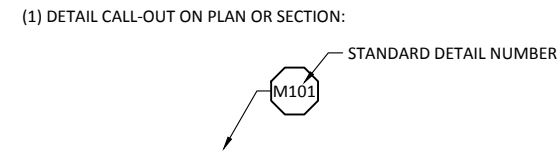


DETAIL IDENTIFICATION



*NOTE: IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING. DRAWING NUMBER IS REPLACED BY A LINE.

STANDARD DETAIL IDENTIFICATION



ELEVATION/IMAGE IDENTIFICATION



SITE PLAN LINE TYPES

— X — X —	FENCE LINE
— P — P —	OVERHEAD POWER
— 455 —	MAJOR CONTOUR
— 456 —	MINOR CONTOUR
— 455 —	EXIST MAJOR CONTOUR
— 456 —	EXIST MINOR CONTOUR
— ··· —	EDGE OF WATERLINE
— TOE —	TOE OF SLOPE
— TOB —	TOP OF BANK
— SS — SS —	SANITARY SEWER
— SD — SD —	STORM DRAIN
— EP — EP —	EDGE OF PAVEMENT
— EG — EG —	EDGE OF GRAVEL
— W —	WATTLE
— SF — SF —	SILT FENCE
— CF — CF —	CONSTRUCTION FENCE
— GAS —	GAS LINE
— TC —	TURBIDITY CURTAIN
— IRR — IRR —	IRRIGATION LINE
— WTR —	WATER LINE
— TEL —	TELEPHONE LINE
— COM —	COMMUNICATION LINE
— OHP —	OVERHEAD ELECTRICAL/POWER
— EUG —	UNDERGROUND ELECTRICAL
— P/L —	PROPERTY LINE
— OHP —	EXISTING OVERHEAD POWER LINE
— OHP&T —	EXISTING OVERHEAD POWER & TELEPHONE LINE
— T —	EXISTING OVERHEAD TELEPHONE LINE
— BT —	EXISTING BURIED TELEPHONE LINE EVIDENCED BY PEDESTALS & WARNING PADDLES
— X — X — X — X —	EXISTING FENCE LINE
— - - -	PROJECT BOUNDARY
— ○ — ○ — ○ — ○ —	TREE PROTECTION FENCE
— · · · · ·	LIMITS OF DISTURBANCE
— ~ ~ ~ ~ ~	SHORING

SITE PLAN SYMBOLS

	ARROW INDICATES DIRECTION OF PLAN NORTH
	CONIFER TREE: FIR, SPRUCE, LARCH OR PINE, 8" DIAMETER OR LARGER.
	DECIDUOUS TREE: COTTONWOOD, HAWTHORN, ASPEN, 8" DIAMETER OR LARGER.
	MANHOLE
	ELECTRIC BOX
	STORM DRAIN MANHOLE
	FIRE HYDRANT
	YARD HYDRANT
	SURVEY CONTROL POINT, AS NOTED.
	POLE ANCHOR
	POWER POLE
	LIGHT POLE
	SIGN
	SURVEY HUB
	SECTION CORNER
	BENCH MARK
	EXISTING HEADWALL
	EXISTING MONITORING STATION
	EXISTING FENCE
	STATE PLANE COORDINATE MARKER
	EXISTING TREE LINE
	EXISTING BUILDING, STRUCTURES
	EXISTING SECTION CORNER MONUMENT FOUND AS DESCRIBED
	EXISTING 5/8" REBAR CONTROL POINT MONUMENT, BORING LOCATION
	EXISTING HOSE BIB
	EXISTING PORTABLE IRRIGATION WATER PUMP
	EXISTING 6" WATER WELL
	EXISTING ELECTRICAL OUTLET
	EXISTING POWER POLE
	EXISTING TELEPHONE PEDESTAL
	CONTROL POINT
	PUMP
	PUMP
	TEST PIT LOCATION

MISCELLANEOUS SYMBOLS

	CHANGE OF PIPE MTL
	OR
	END OF PIPE
	CENTERLINE
	DIAMETER
	ANGLE
	PLATE
	PLUS/MINUS

GENERAL NOTES:

- ALL SYMBOLS ARE NOT NECESSARILY USED. THIS IS A STANDARD DRAWING SHOWING COMMON SYMBOLS ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH DRAWING FOR USAGE.

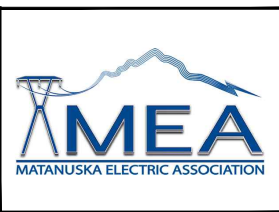
HATCH SYMBOLS

	ROCK, TYPE AS NOTED (PLAN/SECTION)
	BED ROCK
	EXISTING GRADE (SECTION)
	NEW SOIL (SECTION)
	CONCRETE EXISTING (SECTION/PLAN)
	CONCRETE 1ST STAGE (SECTION/PLAN)
	CONCRETE 2ND STAGE (SECTION/PLAN)
	SAND, GROUT (PLAN/SECTION)
	STEEL (SECTION)
	GRATING (PLAN)
	MASONRY (PLAN)
	WOOD, SIZE/TYPE AS NOTED (PLAN)
	WOOD, SIZE/TYPE AS NOTED (SECTION)
	RIP RAP (PLAN/SECTION)
	RIGID INSULATION (SECTION)
	ASPHALT CONCRETE PAVEMENT SURFACE (PLAN/SECTION)
	GRASS/VEGETATION (PLAN)
	BATT INSULATION (SECTION)
	NEW CONSTRUCTION
	EXISTING
	EXISTING TO BE REMOVED OR DEMOLISHED
	CLEARING AND GRUBBING
	ASPHALT
	GRASS/VEGETATION
	GRAVEL

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN	

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY

STANDARD SYMBOLS

DESIGNED S. ELLENSON
DRAWN F. HABER
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
G004

FLUID ABBREVIATION	FUNCTION	ALLOWABLE PIPING MATERIAL GROUP NO. (SEE NOTE 1 AND 4)				FIELD TEST REQUIREMENTS (SEE NOTE 3 AND NOTE 4)			PIPING MATERIAL SCHEDULE (SEE NOTE 1)			TYPICAL PIPE DESIGNATION: 	
	THIS LIST MAY INCLUDE FLUIDS NOT USED IN THIS PROJECT	EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MINIMUM TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)	GROUP NO.	PIPE MATERIAL	FITTINGS / JOINTS		LININGS AND COATINGS (SEE NOTE 13)
		3" DIA AND SMALLER	4" DIA AND LARGER	3" DIA AND SMALLER	4" DIA AND LARGER								
									2	STEEL, ASTM A53, SCHEDULE 40, BLACK WELDED, GALVANIZED	2 1/2" AND SMALLER, MALLEABLE IRON, ASME B16.3, THREADED, BANDED, GALVANIZED 150 PSI. 3" AND LARGER, CAST IRON, ASME B16.1, 125 PSI FLANGED OR MECHANICAL COUPLING.	SEE SECTION 40 23 15	
									8	WELDED STEEL PIPE (AWWA C200 & MODIFIED PER SECTION 331111) (ALL PIPE CALLOUT DIAMETERS ARE 'ID' OF MORTAR LINING)	WELDED STEEL, AWWA C208 MODIFIED PER SECTION 331111, FABRICATED.	SEE SECTION 33 11 11	
COMMONLY USED FUNCTIONS													
DR	DRAIN	2	2	2	2	NOTE 6	WATER	(D)					
RW	RAW WATER	2,8	2,8	8	8	150	WATER	(A)					

NOTES:

NOTE 1
ALTHOUGH SEVERAL PIPE MATERIAL GROUPS MAY BE LISTED ON THIS SHEET FOR A GIVEN FLUID SERVICE, CONTRACTOR SHALL PROVIDE ONLY THE PIPE MATERIAL GROUP SHOWN ON THE DRAWINGS AND SPECIFIED FOR THAT FLUID SERVICE.

NOTE 2
LEAKAGE ALLOWANCE IS AS FOLLOWS
A. PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE.
B. PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE FOR UNBURIED PIPE AND NOT MORE THAN 0.02 GALLON PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.
C. PIPES SO DESIGNATED SHALL NOT SHOW A LEAKAGE OF MORE THAN 0.15 GALLON PER HOUR PER INCH OF DIAMETER PER 100 FEET OF PIPE.
D. PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF PRESSURE OF MORE THAN 5 PERCENT.
E. PIPE SO DESIGNATED SHALL NOT SHOW A LOSS OF VACUUM OF MORE THAN 4 INCHES MERCURY COLUMN.

NOTE 3
FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.

NOTE 4
NO SUBSTITUTIONS U.N.O. IN THE SPECIFICATIONS.

NOTE 5
NOT USED

NOTE 6
STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.

NOTE 7
INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.

NOTE 8
NOT USED

NOTE 9
NOT USED

NOTE 10
NOT USED

NOTE 11
NOT USED

NOTE 12
CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED THUS: \rightarrow

NOTE 13
FOR FULL PIPE LINING AND COATING REQUIREMENTS, SEE SPECIFICATIONS.

NOTE 14
EXPOSED OUTDOOR PIPING SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY OWNER.

NOTE 15
NOT USED

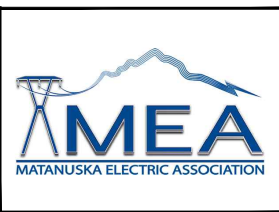
NOTE 16
NOT USED

NOTE 17
NOT USED

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
PIPING SCHEDULE

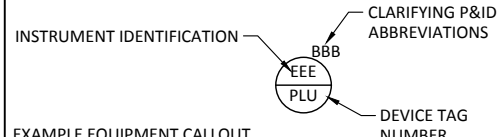
DESIGNED	S. ELLENSON
DRAWN	F. HABER
CHECKED	J. BOAG
PROJECT DATE	10/6/23

DRAWING
G005

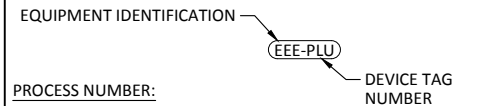
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INSTRUMENTATION / EQUIPMENT TAGS

EXAMPLE INSTRUMENT CALLOUT



EXAMPLE EQUIPMENT CALLOUT

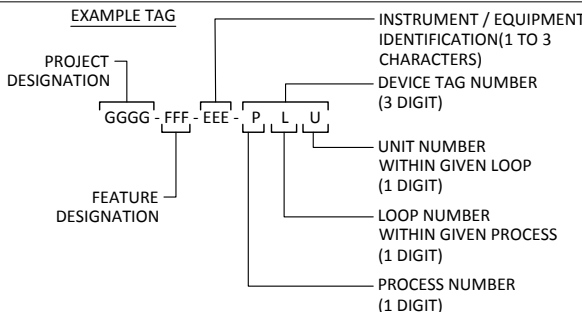


PROCESS NUMBER:

- 0 MPH COMMON
- 1 TURBINE/GENERATOR
- 2 PUMPS/MOTORS
- 3 TIV
- 4 HVAC
- 5 LUBE/WATER COOLING
- 6 HPU
- 7 PLUMBING
- 8 VFD
- 9 CONTROLS INSTRUMENTATION

NOTE:

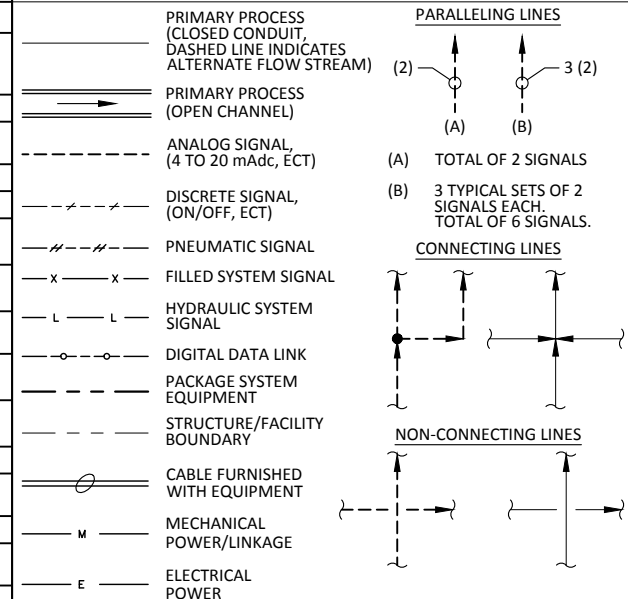
PROJECT AND FEATURE DESIGNATION FOR ALL COMPONENTS ON THIS FEATURE SET SHALL BE "EFWP-DOM" FOR "EKLTUNA FISH & WILDLIFE PROJECT - EKLTUNA RIVER RELEASE FACILITY". THIS HAS BEEN OMITTED ON THE DRAWINGS FOR BREVITY.



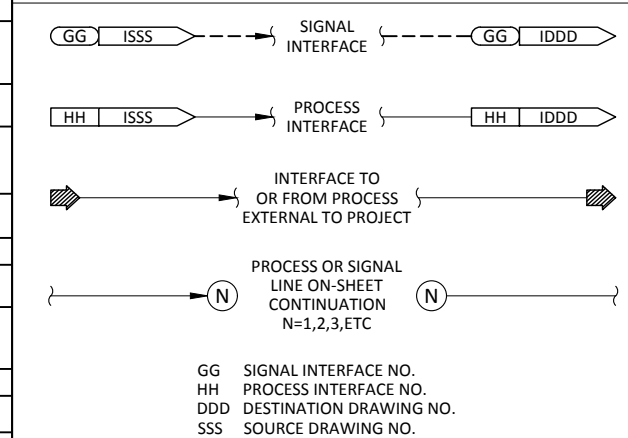
INSTRUMENTATION IDENTIFICATION TABLE (ISA)

FIRST LETTER			SUCCEEDING LETTER(S)		
LETTER	MEASURED INITIATING VARIABLE	VARIABLE MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT OR ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGE		GLASS, GAUGE, VIEWING DEVICE	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		ISOLATE	ISOLATOR	
O	USER CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE (VACUUM), PNEUMATIC		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION/ RESISTANCE (ELECTRICAL)		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI VARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	INTRUSION	X-AXIS			
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

INSTRUMENTATION LINE SYMBOLOGY



SYSTEM CONTINUATION INTERFACES



- GG SIGNAL INTERFACE NO.
- HH PROCESS INTERFACE NO.
- DDD DESTINATION DRAWING NO.
- SSS SOURCE DRAWING NO.

P&ID ABBREVIATIONS

AC	ALTERNATING CURRENT
AM	AUTO-MANUAL
COD	CHEMICAL OXYGEN DEMAND
DEV	DEVIATION
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
ECS	ENVIRONMENTAL CONTROL SYSTEM (HVAC)
EPO	EMERGENCY POWER OFF
FOC	FIBER OPTIC CABLE
FOS	FAST-OFF-SLOW
FOSA	FAST-OFF-SLOW-AUTO
FOSR	FAST-OFF-SLOW-REMOTE
HI	HIGH
HML	HIGH-MID-LOW
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
ISR	INTRINSICALLY SAFE RELAY
LEL	LOWER EXPLOSIVE LIMIT
LO	LOW
LOR	LOCAL-OFF-REMOTE
LOS	LOCKOUT STOP
LR	LOCAL-REMOTE
MC	MODULATE-CLOSE
MOA	MANUAL-OFF-AUTO
MSC	MANUFACTURER SUPPLIED CABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OC	OPEN-CLOSE(D)
OCA	OPEN-CLOSE-AUTO
OICR	OPEN-CLOSE-REMOTE
OI	OPERATOR INTERFACE
OO	ON-OFF
OQA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE
PC	PERSONAL COMPUTER
PCS	PLANT CONTROL SYSTEM
pH	HYDROGEN ION CONCENTRATION
PID	PROPORTIONAL INTEGRAL DERIVATIVE CONTROL
POT	POTENTIOMETER
RC	RUN CLOSE
RO	RUN OPEN
RL	RAISE-LOWER
RM	REMOTE MULTIPLEXING MODULE
RSL	RAISE-STOP-LOWER
RVSS	REDUCED VOLTAGE SOLID-STATE STARTER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SEL	SELECT
SET	SET POINT
SF	SLOWER-FASTER
SHC	SODIUM HYPOCHLORITE
SR	START-RESET
SS	START-STOP
SSC	SUPERVISORY SET POINT CONTROL
ST	START
SW	SEAL WATER
TC	THERMOCOUPLE
TCR	TOTAL CHLORINE RESIDUAL
TEMP	TEMPERATURE
TSP	TWISTED SHIELD PAIR
TURB	TURBIDITY
VHC	VOLATILE HYDROCARBONS
VIB	VIBRATION
VSP	VENDOR SUPPLIED PANEL
VTO	VENT TO OUTSIDE
WSEL	WATER SURFACE ELEVATION

GENERAL INSTRUMENT OR FUNCTIONAL SYMBOLS

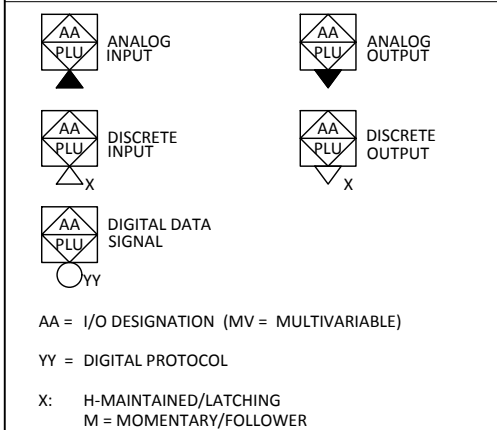
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INSTRUMENT	EEE PLU	EEE PLU	EEE PLU	EEE PLU	EEE PLU
SHARED DISPLAY SHARED CONTROL OR HMI	EEE PLU	EEE PLU	EEE PLU	EEE PLU	EEE PLU
INDICATING LIGHTS	EEE PLU	EEE PLU	N/A	EEE PLU	N/A

- (1) NORMALLY ACCESSIBLE TO OPERATOR
- (2) NORMALLY INACCESSIBLE TO OPERATOR (BEHIND-THE-PANEL)

SPECIAL CASE INSTRUMENT OR FUNCTIONAL SYMBOLS

	SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS
	RELAY INTERLOCK LOGIC - SEE SCHEMATICS OR SPECIFICATIONS FOR MORE INFORMATION
	LEVEL (FLOAT)
	LEVEL (ULTRASONIC)
	24 VDC POWER SUPPLY (SIZE AS NOTED)
	AIR SUPPLY
	PRIMARY ELECTRICAL POWER (120V / 60 HZ UNLESS INDICATED OTHERWISE)
	INDICATES VENDOR PACKAGE
	CONTROL RELAY
	LIGHTNING SURGE ARRESTOR
	MOTOR

SIGNAL SYSTEM INTERFACES



ANALOG I/O DESIGNATORS

CR	CHLORINE RESIDUAL
DP	DIFFERENTIAL PRESSURE
FL	FLOW
LE	LOWER EXPLOSIVE LIMIT
LV	LEVEL
MO	MANIPULATED OUTPUT
PH	ACIDITY
PO	POSITION
PR	PRESSURE
PV	PROCESS VARIABLE
SP	SPEED
TE	TEMPERATURE
TU	TURBIDITY

DISCRETE I/O DESIGNATORS

AM	AUTO-MANUAL
AU	AUTO
CL	CLOSED
EN	ENABLE
EL	POWER AVAILABLE
FA	FIRE ALARM
FW	FORWARD / REVERSE
HH	HI-HI LEVEL
HI	HI LEVEL
LL	LOW-LOW LEVEL
LO	LOW LEVEL
MN	MANUAL
OO	ON-OFF
OP	OPEN
RB	RUN BOOSTER
RC	RUN CLOSED
RE	REMOTE
RF	RUN FORWARD
RG	RUNNING
RN	RUN-STOP
RO	RUN-OPEN
RR	RUN-REVERSE
RV	REVERSE
YA	FAULT
SU	SUPERVISORY
SW	SELECTION
TR	TROUBLE

DIGITAL PROTOCOL DESIGNATORS

DN	DEVICENET
IP	ETHERNET /IP
MB	MODBUS RTU
PB	PROFIBUS
PL	PARALLEL
SL	SERIAL
TC	MODBUS TCP

EQUIPMENT IDENTIFICATION TABLE

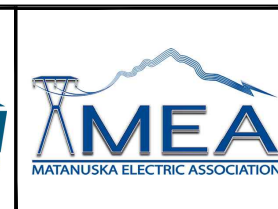
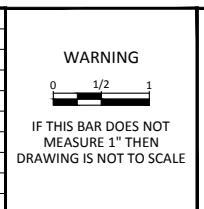
AC	AIR COMPRESSOR	GEN	GENERATOR	PV	PHOTOVOLTAIC
ACC	ACCUMULATOR	GSU	GENERATOR STEP-UP TRANSFORMER	RCT	RECTIFIER
ACT	ACTUATOR	GTC	GENERATOR POWER TERMINAL CABINET	RIO	REMOTE I/O UNIT
AF	AIR FILTER	HB	HOSE BIB	RTD	RESISTANCE TEMPERATURE DETECTOR
AFD	ADJUSTABLE FREQUENCY DRIVE	HMI	HUMAN-MACHINE INTERFACE	RTU	REMOTE TELEMETRY UNIT
AH	AIR HANDLING UNIT	HOI	HOIST/CRANE	SEC	SECURITY CONTROL PANEL
ARC	ARC PLENUM AND EXHAUST DUCT	HPU	HYDRAULIC POWER UNIT	SEP	SEPTIC SYSTEM
ATS	AUTOMATIC TRANSFER SWITCH	HTR	HEATER	SHG	SODIUM HYPOCHLORITE GENERATOR
BAT	BATTERY	INV	INVERTER	SNK	SINK
BC	BATTERY CHARGER	LCP	LOCAL CONTROL PANEL	SPU	SPEED PICKUP SENSOR
BRG	BEARING	LCS	LOCAL CONTROL STATION	STR	STRAINER
BRK	BREAKER	LPU	LUBRICATING OIL PUMP CONTROL UNIT	SVR	SERVER
CAM	CAMERA	MB	METER BASE	SWG	SWITCHGEAR
CSE	COMBINATION SERVICE ENCLOSURE	MC	MECHANICAL COUPLING	TIV	TURBINE INLET VALVE
CV	CHECK VALVE	MCC	MOTOR CONTROL CENTER	TNK	TANK
D	DAMPER	MCP	MAIN CONTROL PANEL	TOI	WATER CLOSET
DCU	DISTRIBUTED CONTROL UNIT	MES	MANAGED ETHERNET SWITCH	TRS	TRAVELING SCREEN
DS	DISCONNECT	MOV	MOTOR OPERATED VALVE	TUR	TURBINE
EAP	ENGINEERING ACCESS POINT	MS	MOTOR STARTER	UPS	UNINTERRUPTIBLE POWER SUPPLY
ECP	ENVIRONMENTAL CONTROL PANEL (HVAC)	MTR	MOTOR	UVR	UV REACTOR
EEW	EMERGENCY EYEWASH STATION	MTS	MANUAL TRANSFER SWITCH	V	VALVE
EF	EXHAUST FAN	NET	NETWORK / COMMUNICATIONS RACK	VCP	VENDOR CONTROL PANEL
EXC	EXCITER	OWS	OIL WATER SEPARATOR	VFD	VARIABLE FREQUENCY DRIVE
FAS	FIRE ALARM SYSTEM	P	PUMP	VL	VENTILATION LOUVER
FD	FLOOR DRAIN	PB	PANELBOARD / LOAD CENTER	VSP	VENDOR SUPPLIED PANEL
FIL	FILTER	PCP	PLANT CONTROL PANEL	WS	WATER SOFTENER
FOR	FIBER OPTIC REPEATER	PCU	POWER CONTROL UNIT	XFR	TRANSFORMER
FOT	FIBER OPTIC TRANSCIEVER	PFL	PRE-FILTER	XVR	TRANSCIEVER
FPP	FIBER PATCH PANEL / CONNECTOR HOUSING	PLC	PROGRAMMABLE LOGIC CONTROLLER	YLT	EVENT PILOT LIGHT
G	GATE	PRV	PRESSURE REDUCING VALVE	ZZK	SECURITY GATE INTERFACE
GBK	GENERATOR BRAKE	PS	POWER SUPPLY / ISOLATOR / CONVERTER		

NOTES:

- 1. FOR MECHANICAL ELEMENT SYMBOLS, SEE MECHANICAL LEGEND.
- 2. FOR ELECTRICAL ELEMENT SYMBOLS, SEE ELECTRICAL LEGEND.

PRELIMINARY
NOT FOR CONSTRUCTION

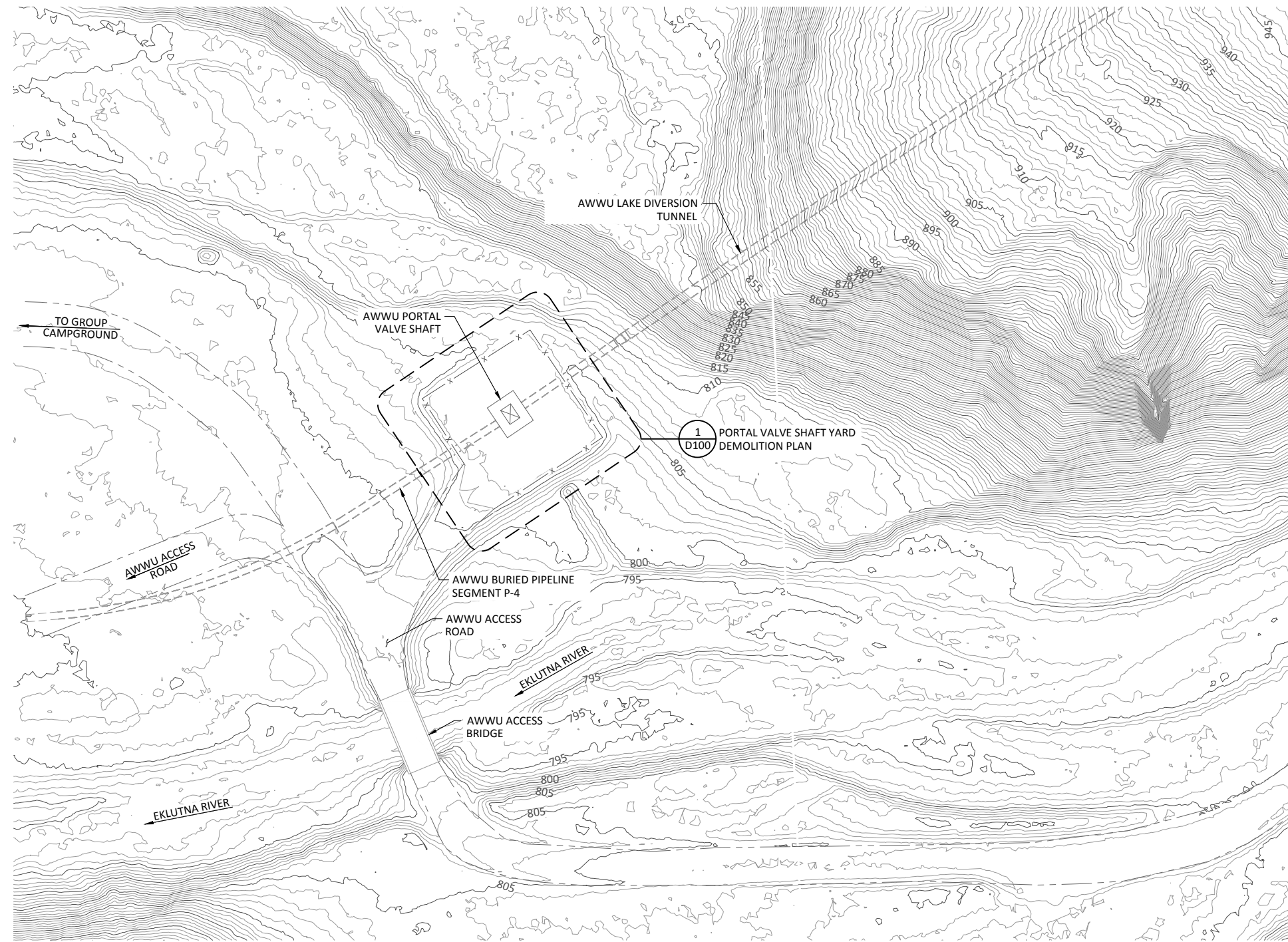
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0	10/6/23	SPE	15% DESIGN



EKLUTNA FISH & WILDLIFE PROJECT	
EKLUTNA RIVER RELEASE FACILITY	
INSTRUMENTATION AND EQUIPMENT LEGEND	

DESIGNED	S. ELLENSON	DRAWING G006
DRAWN	F. HABER	
CHECKED	J. BOAG	
PROJECT DATE	10/6/23	

SHEET NOTES:
 1. ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



DEMOLITION KEY PLAN
 SCALE: 1" = 40'



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 NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
 EKLUTNA RIVER RELEASE FACILITY
 DEMOLITION KEY PLAN

DESIGNED S. ELLENSON
 DRAWN F. HABER
 CHECKED J. BOAG
 PROJECT DATE 10/6/23

DRAWING
D001

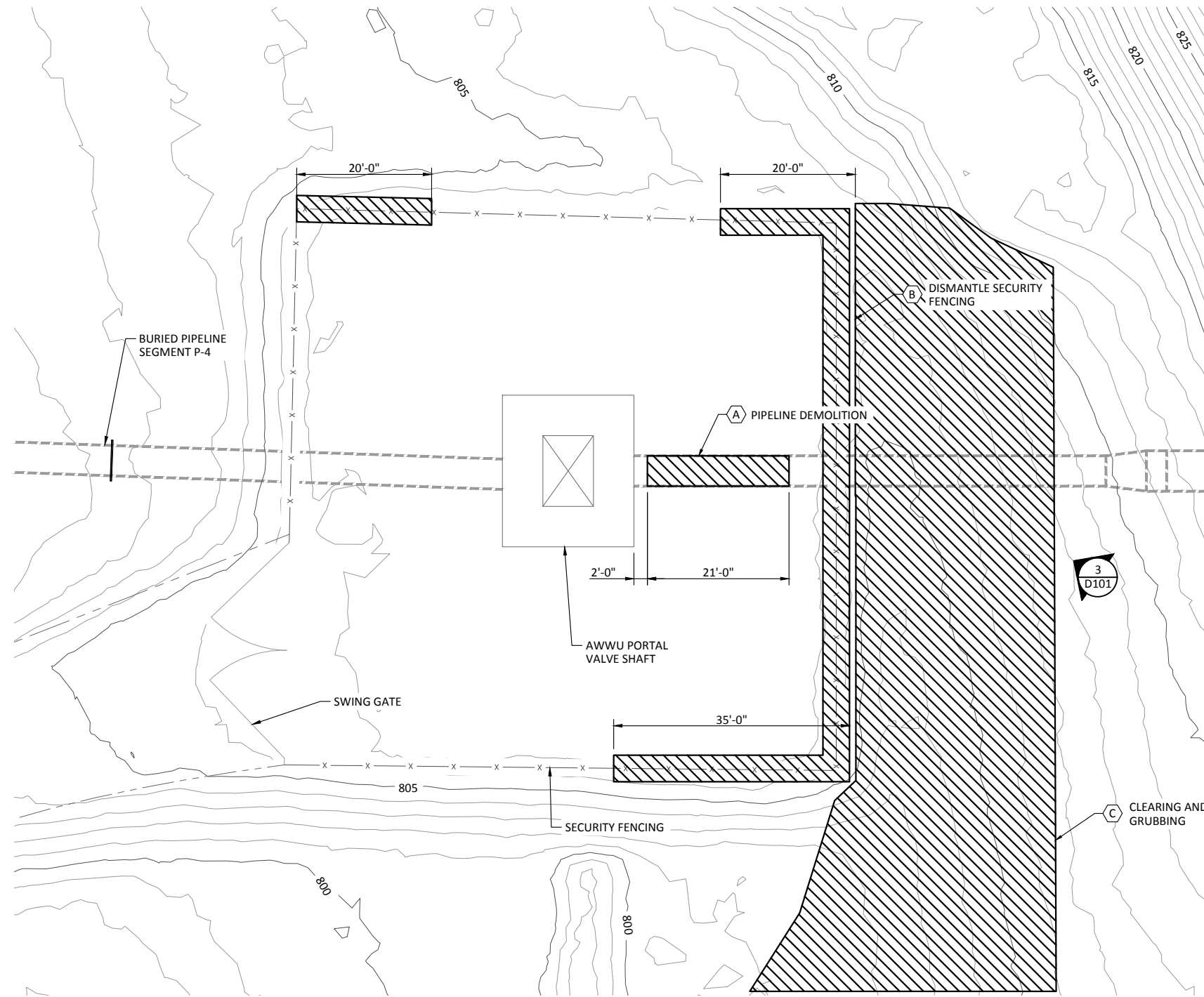
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SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

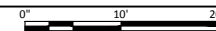
SHEET KEY NOTES:

- EXCAVATE AND EXPOSE BURIED STEEL PIPELINE UPSTREAM OF PORTAL VALVE SHAFT. DEMOLISH AND DISPOSE OF 21-FT SEGMENT OF PIPELINE.
- DISMANTLE SECURITY FENCING TO EXTENTS SHOWN. PRESERVE AND PROTECT FOR RE-INSTALLATION FOLLOWING PROJECT CONSTRUCTION.
- CLEAR AND GRUB LAND NORTHEAST OF PORTAL VALVE SHAFT TO EXTENTS SHOWN.



PORTAL VALVE SHAFT YARD DEMOLITION PLAN

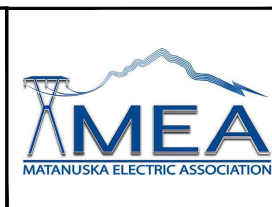
SCALE: 1" = 10'



PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
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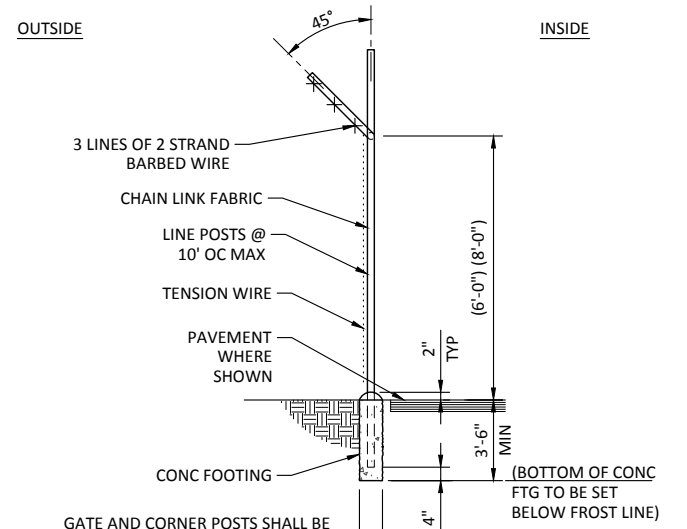
WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
PORTAL VALVE SHAFT YARD DEMOLITION PLAN

DESIGNED S. ELLENSON
DRAWN F. HABER
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
D100



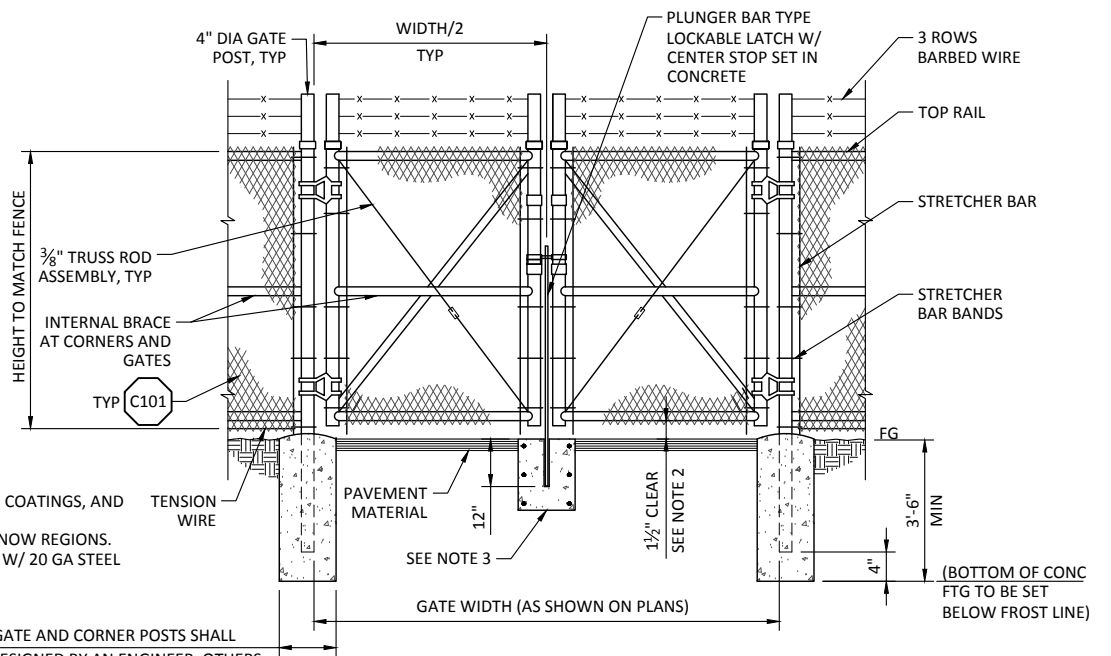
GATE AND CORNER POSTS SHALL BE DESIGNED BY AN ENGINEER. OTHERS SHALL BE 12" OR 5 X POST DIAMETER, WHICHEVER IS GREATER

- NOTES:
- SEE SPECIFICATIONS FOR FENCE MATERIAL, COATINGS, AND INSTALLATION REQUIREMENTS.
 - EXTENSION ARM MAY BE TURNED IN AT OPTION OF OWNER.

CHAIN LINK FENCE

SCALE: NTS

C101



- NOTES:
- SEE SPECIFICATIONS FOR FENCE MATERIAL, COATINGS, AND INSTALLATION REQUIREMENTS.
 - SEE SPECIFICATIONS FOR CLEARANCES IN SNOW REGIONS.
 - 12" DIAMETER x 18" DEEP CONCRETE STOP W/ 20 GA STEEL PLUNGER SLEEVE, DIA = ROD O.D. +1/2"

GATE AND CORNER POSTS SHALL BE DESIGNED BY AN ENGINEER. OTHERS SHALL BE 12" OR 5 X POST DIAMETER, WHICHEVER IS GREATER

DOUBLE LEAF GATE

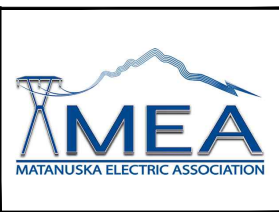
SCALE: NTS

C102

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
CIVIL GENERAL NOTES AND STANDARD DETAILS

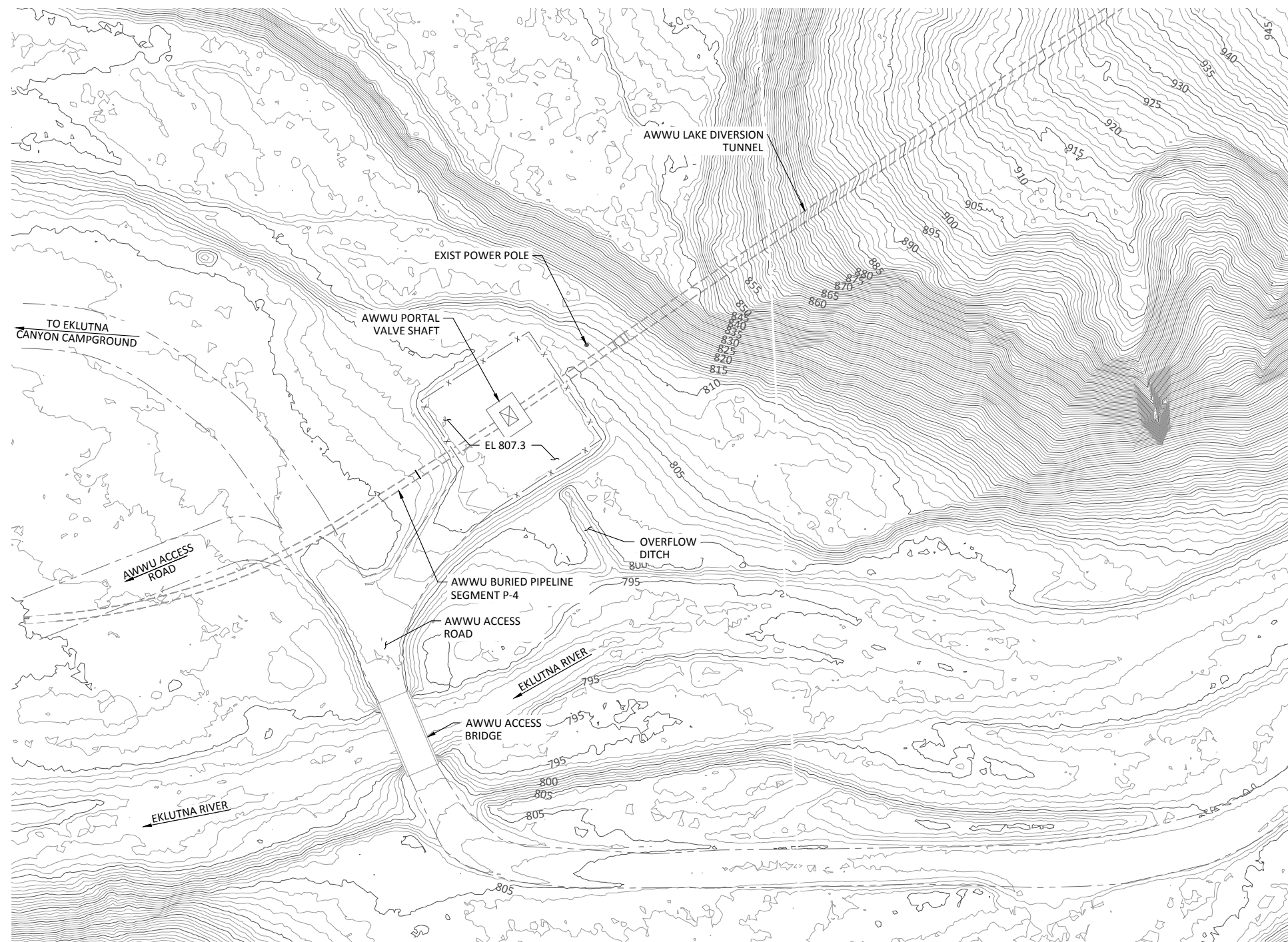
DESIGNED S. ELLENSON
DRAWN F. HABER
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
GC001

Path: C:\Vault\Chugach Electric\Portal Release Structure\GC001.dwg Plot date: Sep 28, 2023 01:12pm, CAD User: HaberFlavia

SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



PORTAL VALVE SHAFT YARD EXISTING SITE PLAN

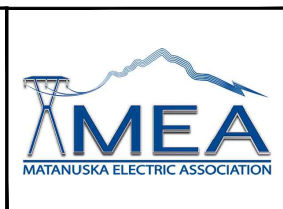
SCALE: 1" = 40'



PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING
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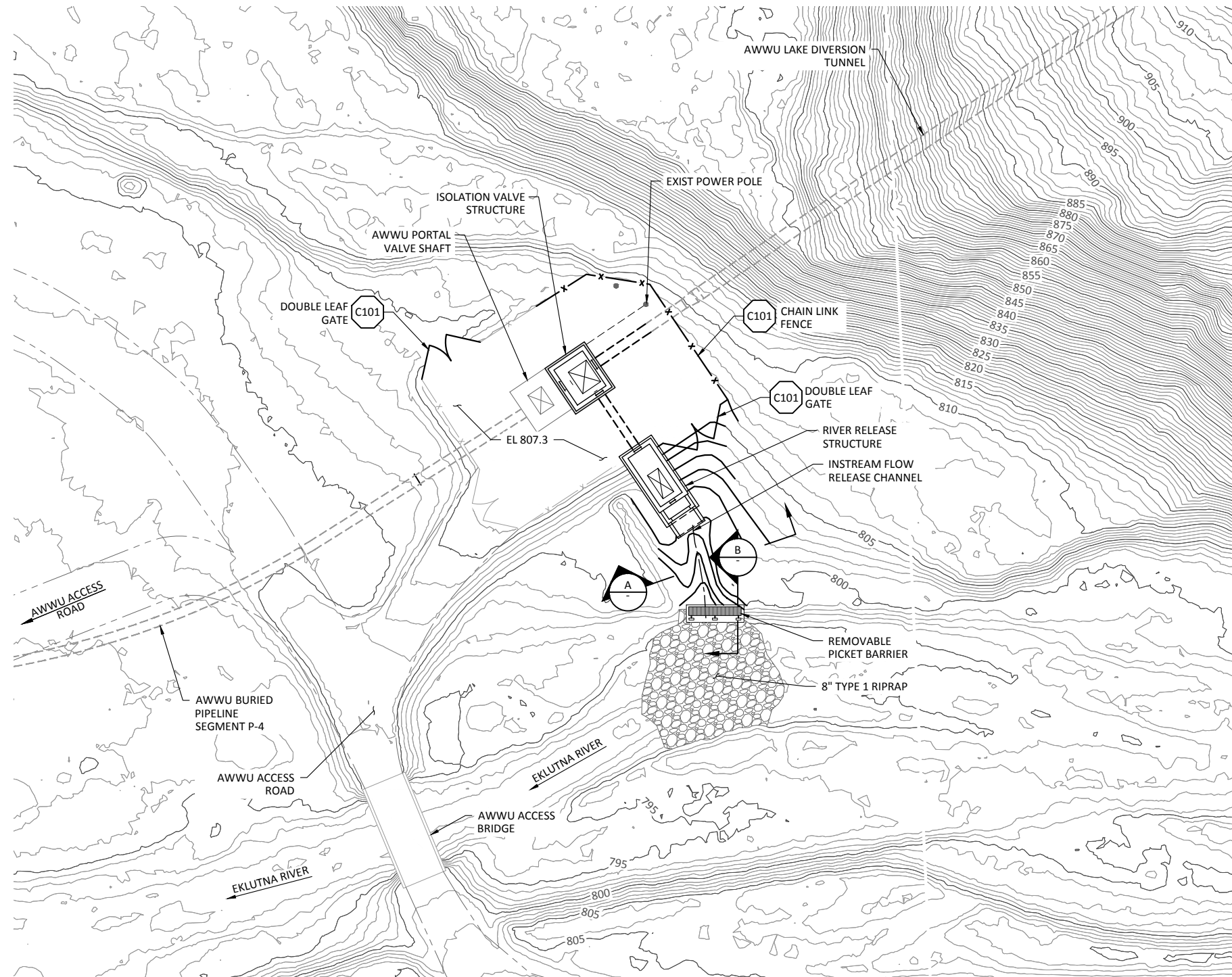
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
PORTAL VALVE SHAFT YARD EXISTING SITE PLAN

DESIGNED	S. ELLENSON
DRAWN	F. HABER
CHECKED	J. BOAG
PROJECT DATE	10/6/23

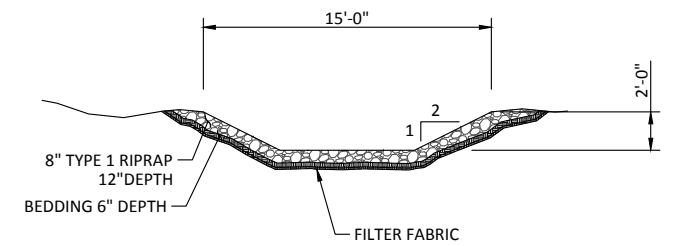
DRAWING
C001

GENERAL NOTES:

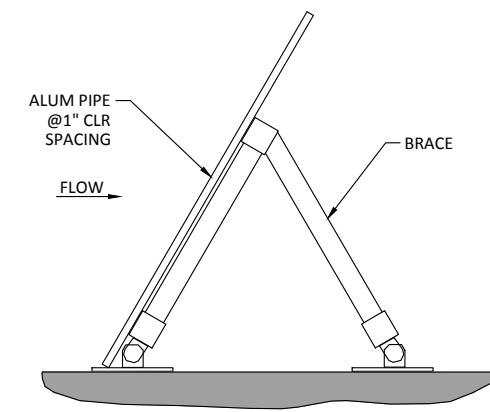
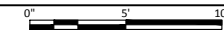
1. SURVEY BASED ON LIGHT DETECTION AND RANGING (LIDAR) AERIAL IMAGERY DATA CAPTURED IN MAY 2022.
2. ELEVATIONS ARE TO FINISHED GRADE UNLESS OTHERWISE SHOWN.
3. SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN



PORTAL VALVE SHAFT YARD EXISTING SITE PLAN
SCALE: 1" = 30'



SECTION A
SCALE: 1" = 5'

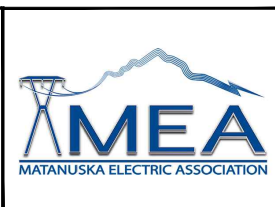


SECTION B
SCALE: NTS

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
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EKLUTNA FISH & WILDLIFE PROJECT	
EKLUTNA RIVER RELEASE FACILITY	
PORTAL VALVE SHAFT YARD GRADING PLAN	

DESIGNED	S. ELLENSON
DRAWN	F. HABER
CHECKED	J. BOAG
PROJECT DATE	10/6/23

DRAWING
C100

GENERAL STRUCTURAL NOTES:
THE FOLLOWING NOTES ARE GENERAL AND APPLY TO THE ENTIRE PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE (UNO)

- 1) GENERAL:
- A. CONSTRUCTION DOCUMENTS:
- THE CONTRACTOR SHALL REVIEW THE APPROVED CONTRACT DOCUMENTS AND NOTIFY THE ENGINEER OF ANY ERRORS OR DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY UNIDENTIFIED EXISTING UNDERGROUND UTILITIES ARE DISCOVERED.
 - THE STRUCTURAL CONTRACT DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND/OR SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC.
 - UNDER NO CIRCUMSTANCES CAN STRUCTURAL COMPONENTS BE SUBSTITUTED, OMITTED, OR ALTERED FROM THE APPROVED SET OF CONSTRUCTION DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- B. DIMENSIONS AND NOTATIONS:
- WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS.
 - ABBREVIATIONS USED ON THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE CONSIDERED TYPICAL ABBREVIATIONS FOR THE INDUSTRY. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY ABBREVIATIONS THAT ARE UNKNOWN TO THE CONTRACTOR.
- C. TYPICAL NOTES AND DETAILS:
- SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER STANDARD TYPICAL NOTES AND DETAILS.
 - STANDARD TYPICAL NOTES AND DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.
 - WORK NOT PARTICULARLY SHOWN OR SPECIFIED SHALL BE THE SAME AS SIMILAR PARTS THAT ARE SHOWN OR SPECIFIED.
- D. CODE REQUIREMENTS:
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF REGULATING AGENCIES WHICH MAY HAVE AUTHORITY OVER ANY PORTION OF THE WORK.
 - SPECIFICATIONS, CODES AND STANDARDS NOTED SHALL BE OF THE LATEST APPROVED ISSUE, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE.
 - MINIMUM UNIFORM (BLANKET) ROOF SNOW LOAD, AS DEFINED BY LOCAL BUILDING OFFICIAL OR STATE, SHALL BE DESIGNED FOR, AND IT IS THE RESPONSIBILITY OF THE ENGINEER TO CONFIRM IF ONE EXISTS BY CONTACTING THE LOCAL BUILDING OFFICIAL.
- E. DEFERRED SUBMITTALS:
- DEFERRED STRUCTURE SUBMITTAL ITEMS HAVE NOT BEEN PERMITTED UNDER THE BASE BUILDING APPLICATION.
 - THE CONTRACTOR SHALL SUBMIT COMPONENT SYSTEM DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS, STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE JURISDICTION HAVING AUTHORITY, TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND FORWARD THE REVIEWED DOCUMENTS TO THE BUILDING OFFICIAL IN COMPLIANCE WITH SECTION 107.3.4.1 OF THE CBC.
 - DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE COMPONENT SYSTEM DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
 - THE FOLLOWING CONTRACTOR-DESIGNED PROJECT ELEMENTS ARE DEFINED AS DEFERRED STRUCTURAL SUBMITTAL ITEMS:
- PRE-ENGINEERED METAL BUILDINGS

- 2) CODES, STANDARDS, AND REFERENCES:
- ASCE 7-16: MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES.
 - ACI 318-14: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
 - ACI 350-06: CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES.
 - AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.

- 3) FOUNDATIONS AND GEOTECHNICAL:
- GEOTECHNICAL DESIGN CRITERIA IS BASED ON THE RECOMMENDATIONS DOCUMENTED IN THE DESIGN DOCUMENTATION REPORT:

- 4) GRATING:
- WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS.
 - PROVIDE A MINIMUM OF 4 CLIPS PER GRATING PANEL, APPROX 4" FROM PANEL CORNERS.
 - WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'-0".
 - SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
 - PROVIDE GRATING FASTENERS AS REQUIRED.
 - THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2"
 - ALL GRATING SECTIONS, WHEN IN PLACE, SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS.
 - PROVIDE MINIMUM BEARING PER MANUFACTURERS RECOMMENDATIONS FOR ALL GRATING.
- 5) NON-SHRINK GROUT:
- ALL GROUT WORK SHALL CONFORM TO THE LATEST EDITION OF ACI 301.
 - FORMWORK: DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FORMWORK TO SUPPORT VERTICAL, LATERAL, STATIC AND DYNAMIC LOADS THAT MIGHT BE APPLIED UNTIL STRUCTURE CAN SUPPORT SUCH LOADS.
- 6) STRUCTURAL AND MISCELLANEOUS STEEL:
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:
 - WIDE FLANGE SHAPES A992, GR 50 GALV
 - OTHER SHAPES, PLATES, ANGLES AND BARS A36 GALV
 - STEEL PIPE A53, GRADE B GALV
 - HOLLOW STRUCTURAL SECTIONS A500, GRADE B GALV
 - WELDS: PROVIDE 70KSI LOW HYDROGEN ELECTRODE OR PROCESS IN ACCORDANCE WITH AWS A5.1.
 - BOLTS, U.N.O.:
 - STAINLESS STEEL: ASTM A193, GRADE 8, CLASS 2, AISI TYPE 316
 - DRILL AND EPOXY ANCHOR BOLTS:
 - STAINLESS STEEL ASTM A193, GRADE 8, CLASS 2, AISI TYPE 316 OR EQUAL APPROVED BY ENGINEER
 - EPOXY BOLT OR EXPANSION BOLT SUBSTITUTIONS FOR EMBEDDED BOLTS IS PROHIBITED WITHOUT WRITTEN CONSENT FROM THE ENGINEER.
 - UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL EPOXY BOLTS SHALL BE AS SPECIFIED.
 - ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE, EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
 - ALL STAINLESS STEEL SHALL BE TYPE 316.
 - SPlicing OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE PROJECT ENGINEER.
 - GALVANIC PROTECTION SHALL BE PROVIDED BETWEEN DISSIMILAR METALS.
 - WELDING SHOWN FOR STAINLESS STEEL ELEMENTS SHALL COMPLY WITH AWS D1.6/D1.6M.
- 7) CONCRETE:
- ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF ACI 301 AND ACI 117, EXCEPT AS MODIFIED BY THE FOLLOWING SUPPLEMENTAL REQUIREMENTS:
 - ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE.
 - CONCRETE MIX DESIGN SHALL BE ESTABLISHED IN ACCORDANCE WITH CHAPTER 5 OF ACI 350.
 - COMPRESSIVE STRENGTH (28 DAYS)
F'C 4,500 PSI
 - REINFORCEMENT FOR CONCRETE:
 - ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE"
 - CLEAR COVER
 - CONCRETE CAST AGAINST EARTH = 3"
 - ALL OTHER CONCRETE, UNO = 2"
 - SLAB-ON-GRADE REINFORCEMENT SHALL BE PLACED AT THE MID-DEPTH OF THE SLAB, UNO.
 - FORMWORK: DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FORMWORK TO SUPPORT VERTICAL, LATERAL, STATIC AND DYNAMIC LOADS THAT MIGHT BE APPLIED UNTIL STRUCTURE CAN SUPPORT SUCH LOADS.

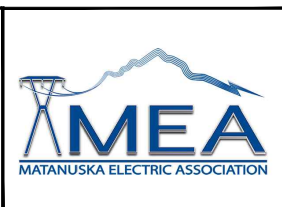
- 8) ALUMINUM:
- ALL ALUMINUM WORK SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL BY THE ALUMINUM ASSOCIATION.
 - UNLESS OTHERWISE INDICATED, ALUMINUM METALWORK SHALL BE FABRICATED FROM ALLOY 6061-T6, EXCEPT GRATING WHICH SHALL BE PER DESIGN.
- 9) REINFORCEMENT:
- ASTM A615 - FY = 60,000 PSI
 - SEE SPECIFICATIONS FOR REINFORCING PLACEMENT REQUIREMENTS.
 - ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT SPECIFIC APPROVAL FROM THE STRUCTURAL ENGINEER.
- 10) TESTS AND INSPECTIONS:
- INSPECTIONS
 - CONSTRUCTION SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL OR THE AUTHORITY HAVING JURISDICTION AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED.
 - THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE BUILDING OFFICIAL OR THE AUTHORITY HAVING JURISDICTION WHEN WORK IS READY FOR INSPECTION. IN ADDITION, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ACCESS TO AND MEANS FOR INSPECTIONS OF SUCH WORK THAT ARE REQUIRED BY THE BUILDING OFFICIAL OR AUTHORITY HAVING JURISDICTION.
 - STATEMENT OF SPECIAL INSPECTIONS
 - THE DESIGN ENGINEER HAS PREPARED AND SUBMITTED A STATEMENT OF SPECIAL INSPECTIONS TO THE BUILDING OFFICIAL SPECIFYING THE SCOPE OF WORK TO BE INSPECTED BY A SPECIAL INSPECTION AGENCY (IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL OR AUTHORITY HAVING JURISDICTION) TO SATISFY THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE, SECTION 1704. THE CONTRACTOR SHALL REVIEW THIS DOCUMENT AND SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER (OR THE OWNER'S AUTHORIZED AGENT) PRIOR TO COMMENCEMENT OF THE WORK THAT ACKNOWLEDGES AWARENESS OF THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE SPECIAL INSPECTION AGENCY. THE CONSTRUCTION OR WORK FOR WHICH SPECIAL INSPECTION OR TESTING IS REQUIRED SHALL REMAIN ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION AND TESTING PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTIONS OR TESTS.

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REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING

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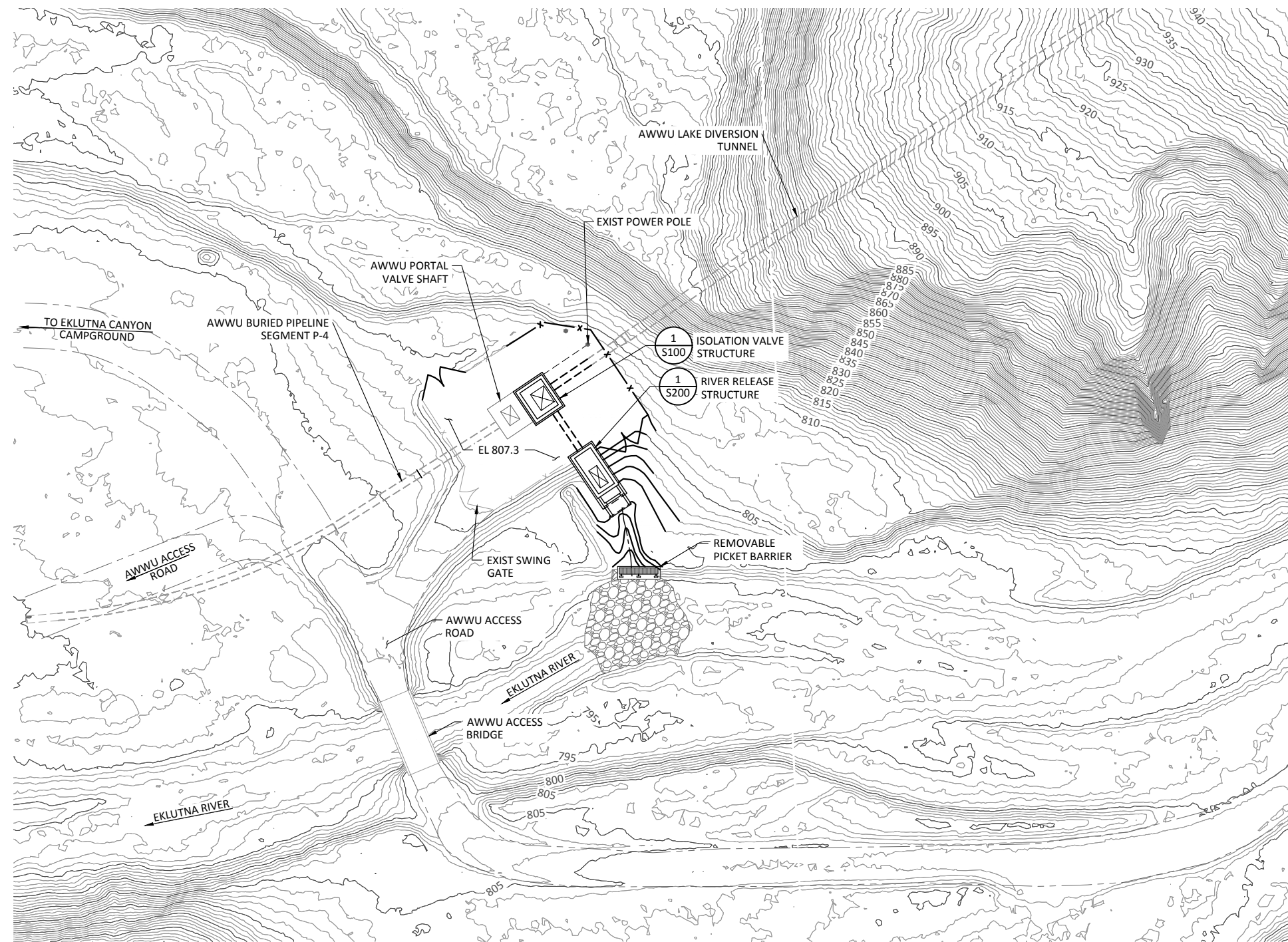
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
STRUCTURAL GENERAL NOTES

DESIGNED <u>K. HEINDEL</u>
DRAWN <u>D. JOHNSTON</u>
CHECKED <u>M. MERKLEIN</u>
PROJECT DATE <u>10/6/23</u>

DRAWING
GS001

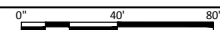
SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



STRUCTURAL KEY PLAN

SCALE: 1" = 40'

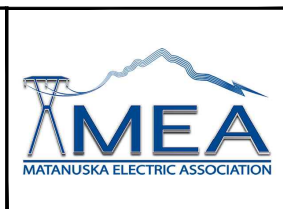


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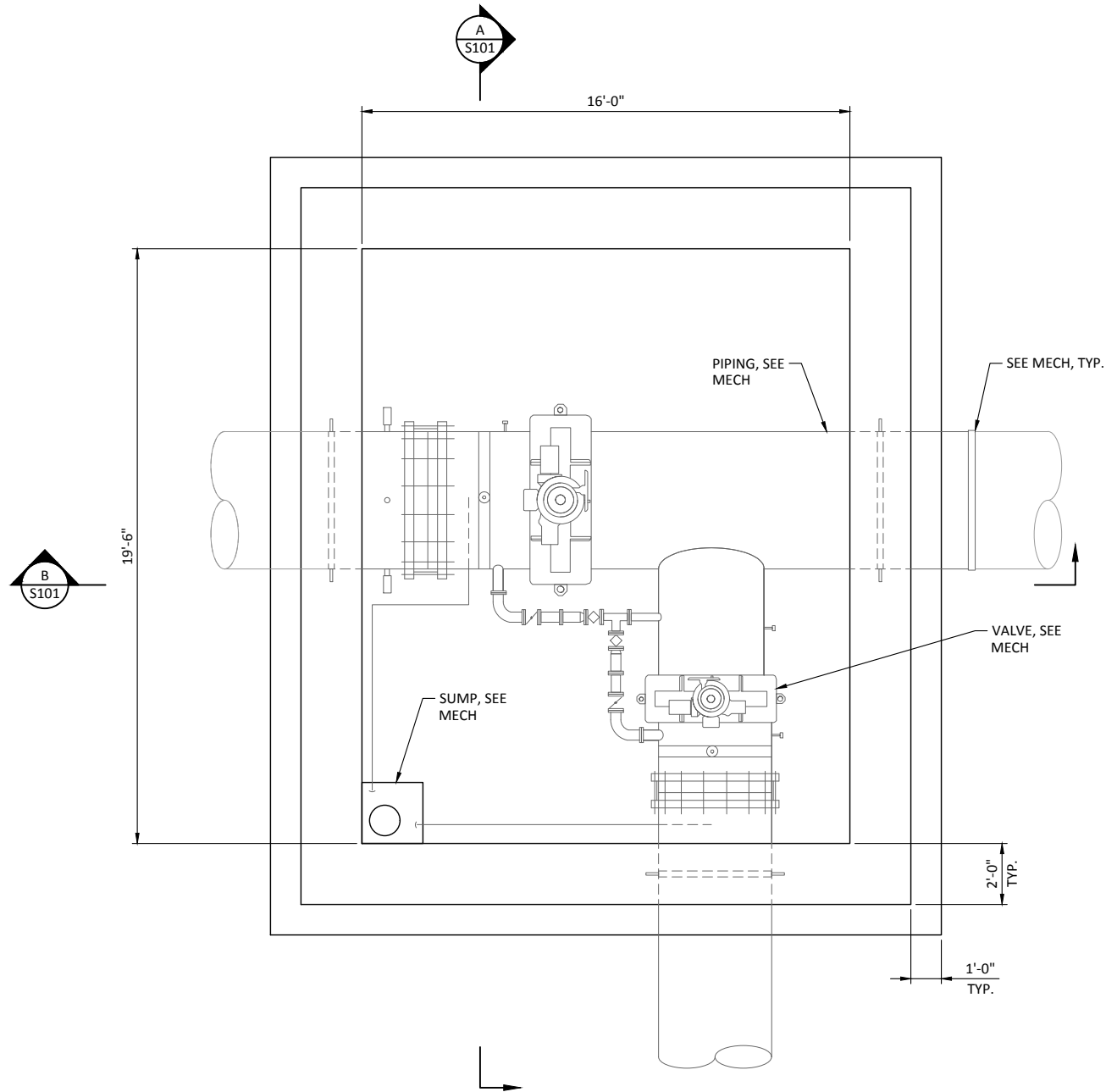
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
STRUCTURAL KEY PLAN

DESIGNED	S. ELLENSON
DRAWN	J. HOLT
CHECKED	J. BOAG
PROJECT DATE	10/6/23

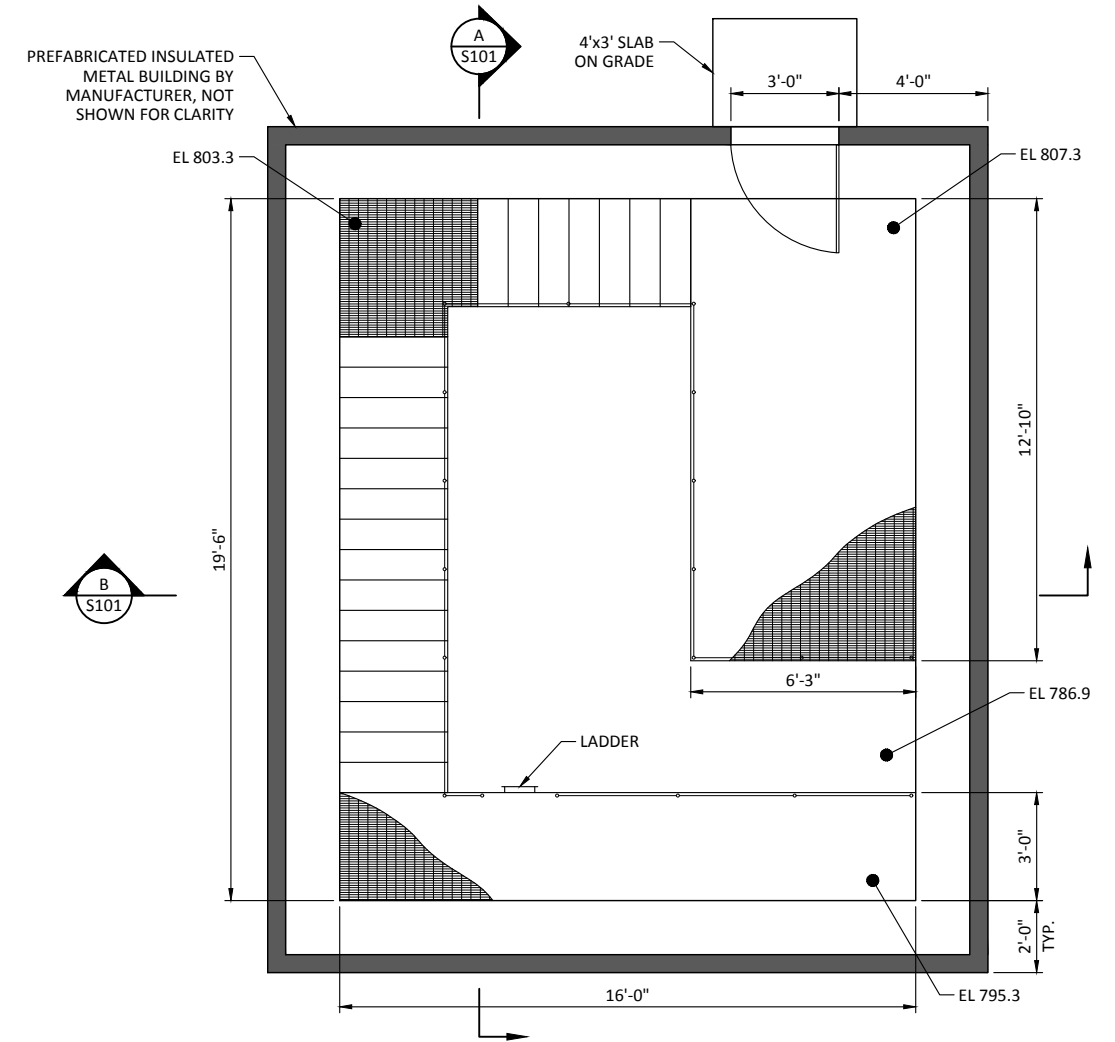
DRAWING
S001
JOB NO: 000000

SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



A S001 ISOLATION VALVE STRUCTURE FOUNDATION PLAN
SCALE: 3/8" = 1'-0"
0' 2' 4'

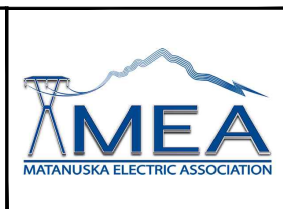


A S001 ISOLATION VALVE STRUCTURE TOP PLAN
SCALE: 3/8" = 1'-0"
0' 2' 4'

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

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EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ISOLATION VALVE STRUCTURE PLAN, SECTIONS AND DETAILS

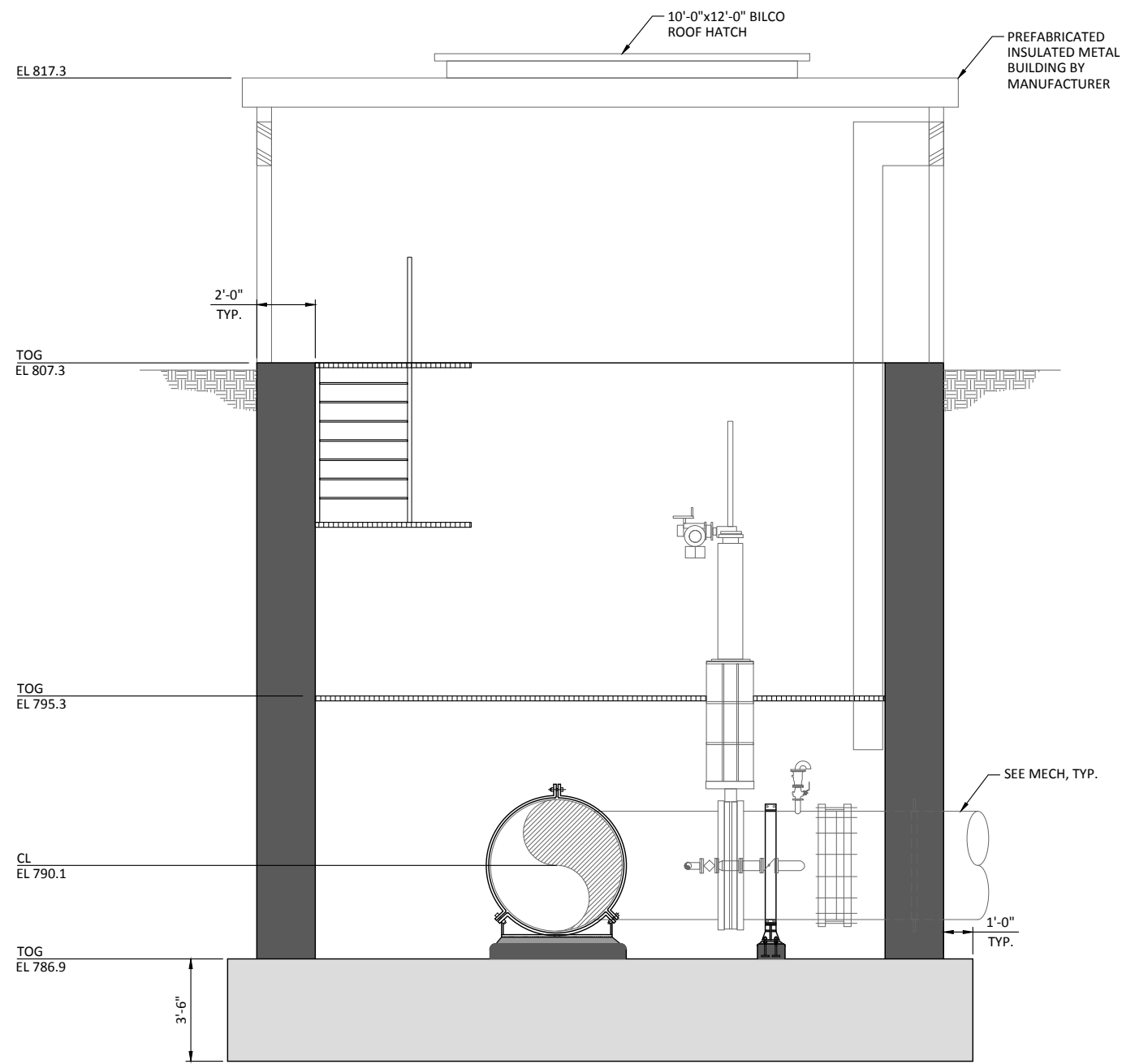
DESIGNED K. HEINDEL
DRAWN J. HOLT
CHECKED M. MERKLEIN
PROJECT DATE 10/6/23

DRAWING
S100
JOB NO: 000000

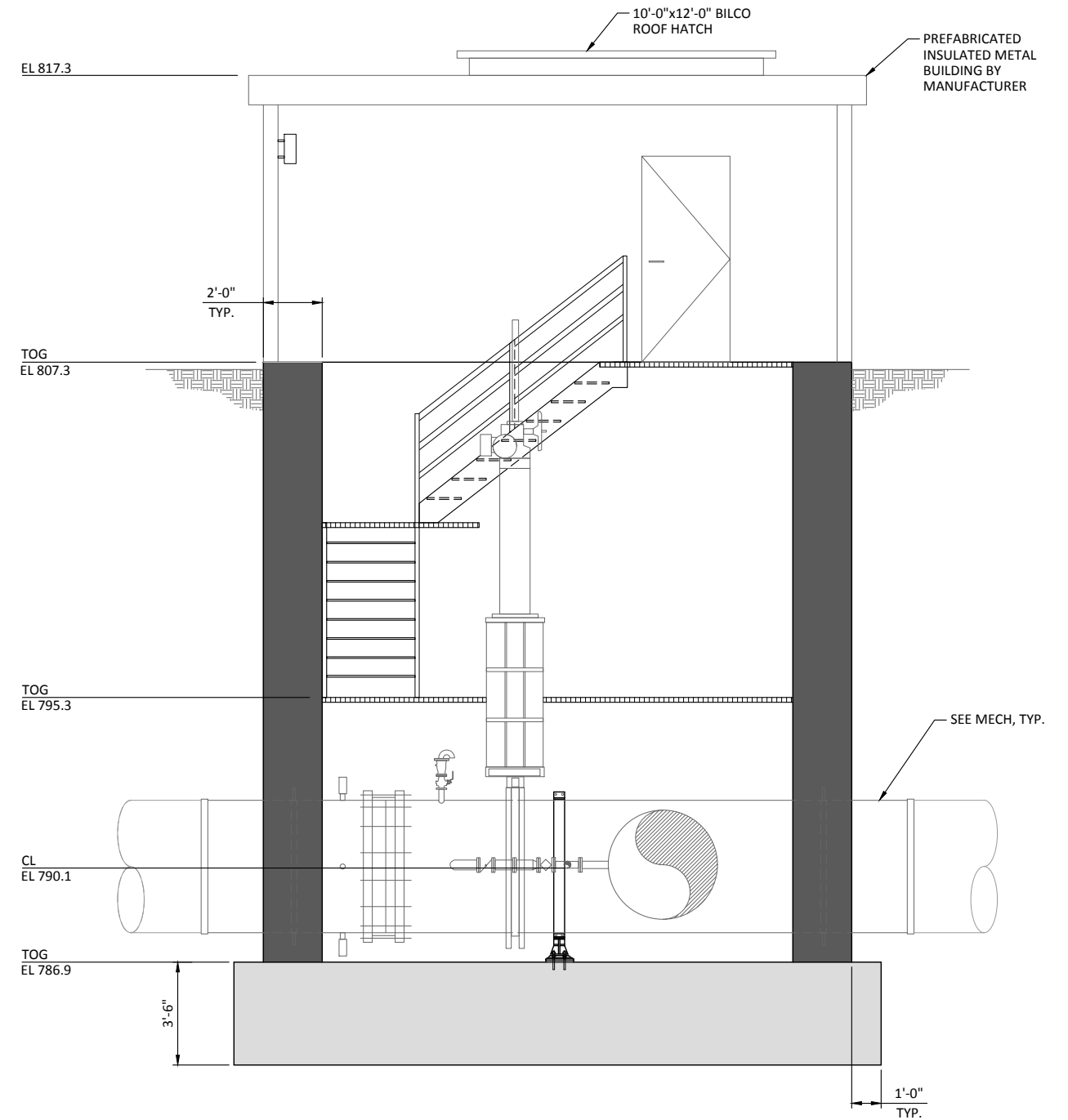
Path: C:\Vault\Chugach Electric\Portal Release Structure\S100.dwg Plot date: Sep 28, 2023 01:41pm, CAD User: HaberFlavia

SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



A SECTION
 S100 SCALE: 3/8" = 1'-0"



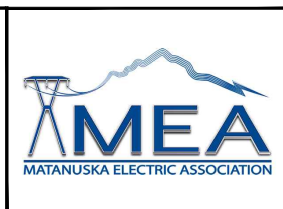
B SECTION
 S100 SCALE: 3/8" = 1'-0"

PRELIMINARY
 NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING

 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ISOLATION VALVE STRUCTURE SECTIONS

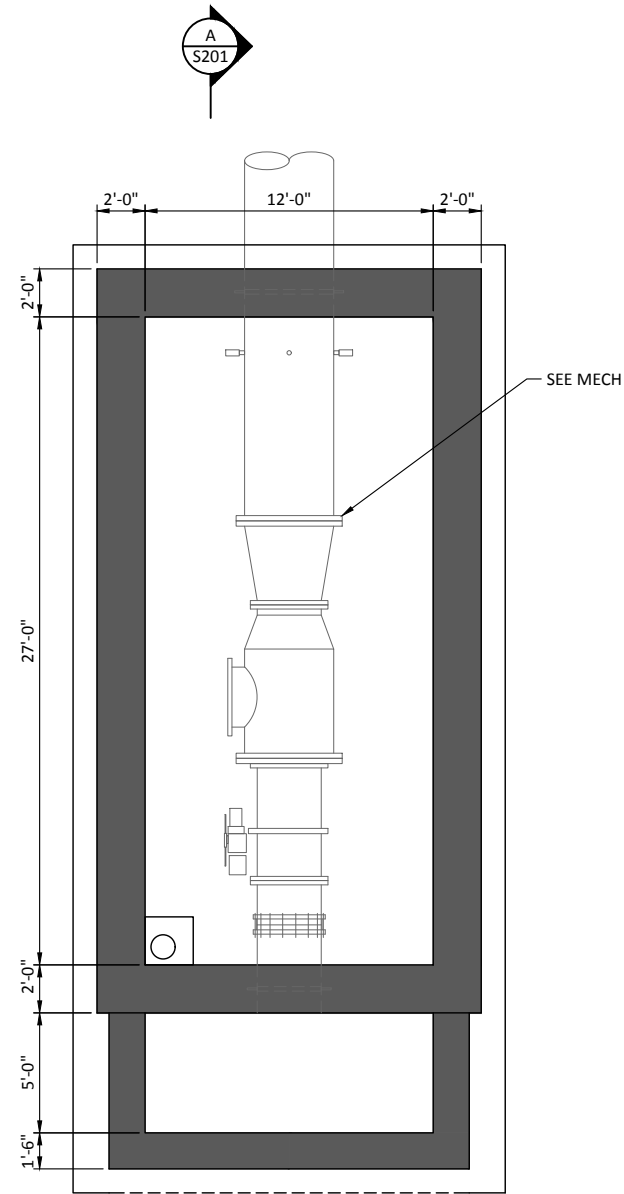
DESIGNED <u>K. HEINDEL</u>
DRAWN <u>J. HOLT</u>
CHECKED <u>M. MERKLEIN</u>
PROJECT DATE <u>10/6/23</u>

DRAWING
S101
 JOB NO: 000000

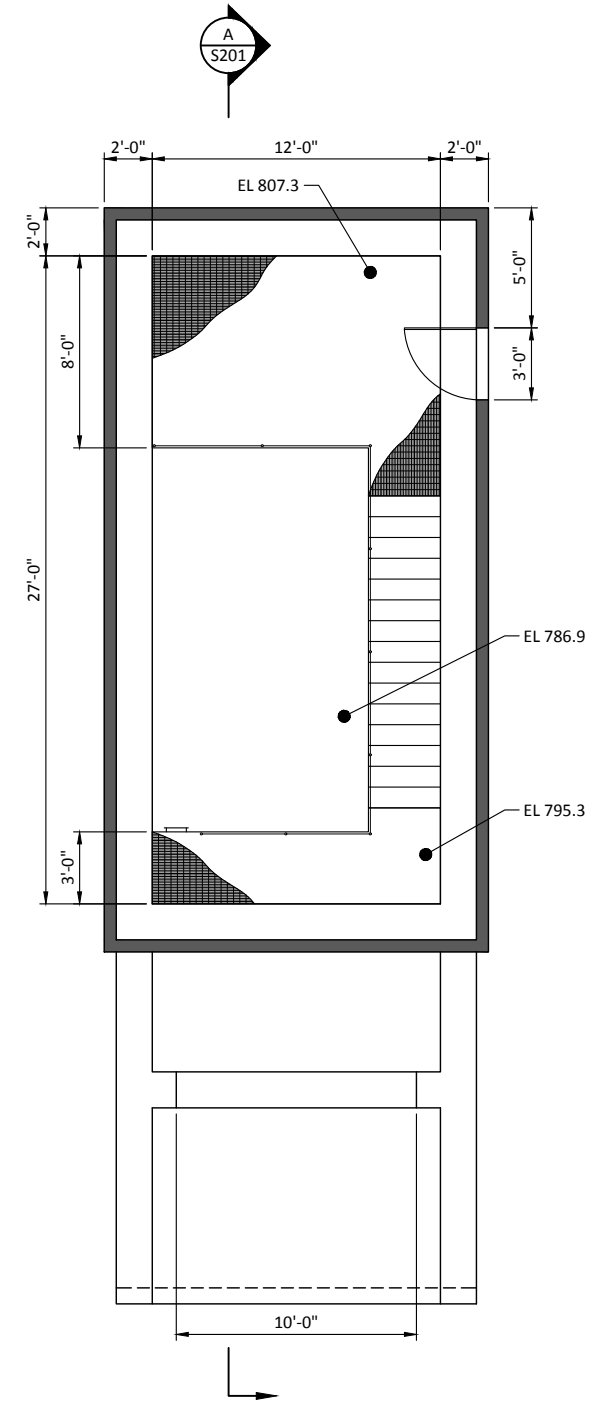
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SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



B
S001 RIVER RELEASE STRUCTURE FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

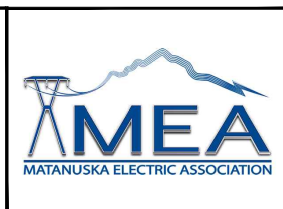


B
S001 RIVER RELEASE STRUCTURE TOP PLAN
SCALE: 1/4" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
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EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
RIVER RELEASE STRUCTURE PLAN,
SECTIONS AND DETAILS

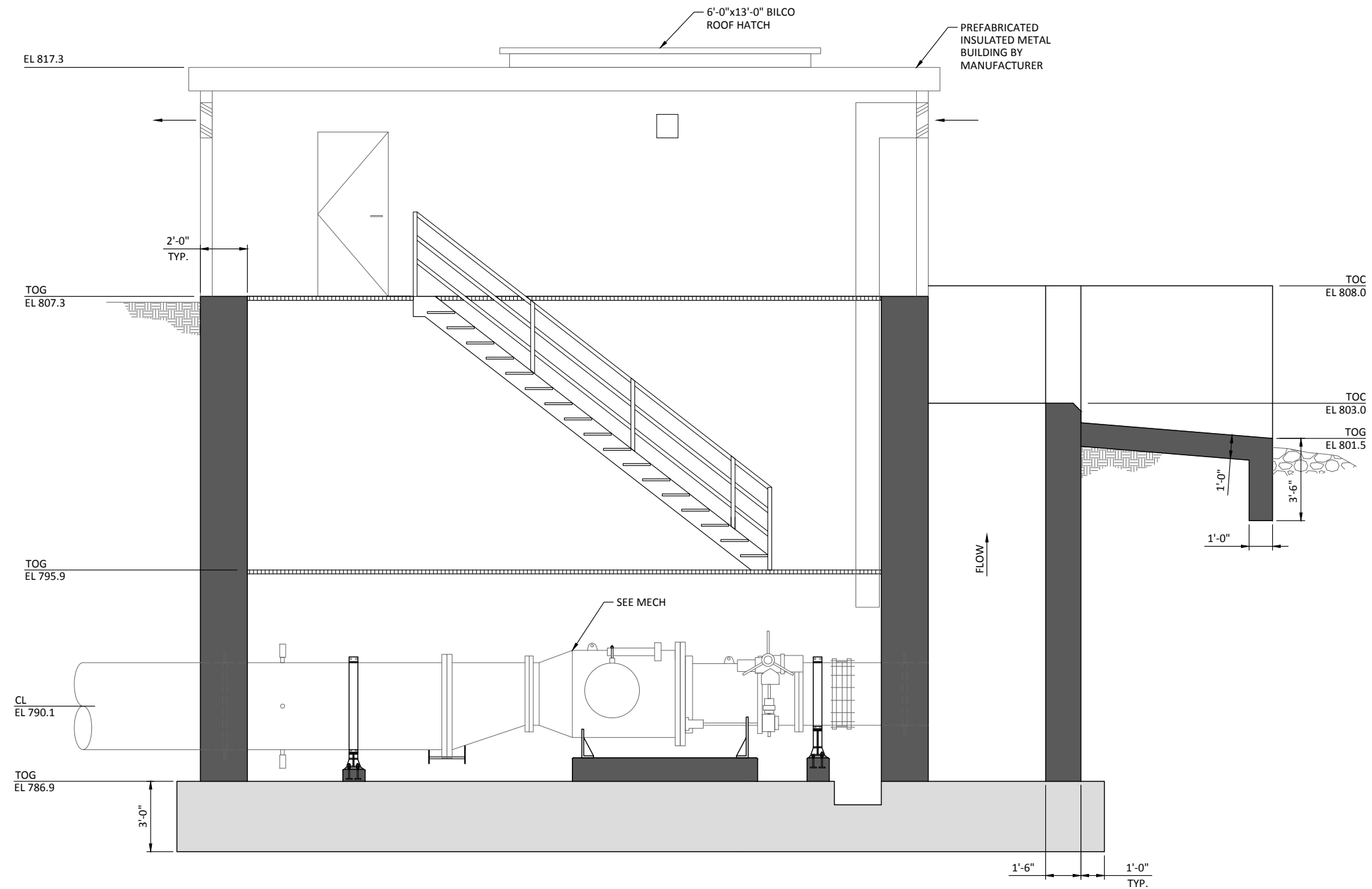
DESIGNED K. HEINDEL
DRAWN J. HOLT
CHECKED M. MERKLEIN
PROJECT DATE 10/6/23

DRAWING
S200
JOB NO: 000000

Path: C:\Vault\Chugach Electric\Portal Release Structure\S200.dwg Plot date: Sep 26, 2023 04:43pm, CAD User: HaberFlavia

SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

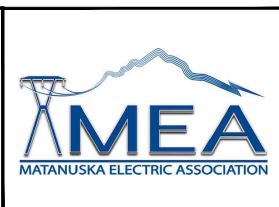


A SECTION
 S200 SCALE: 3/8" = 1'-0"
 0' 2' 4'

PRELIMINARY
 NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
 EKLUTNA RIVER RELEASE FACILITY
 RIVER RELEASE STRUCTURE SECTIONS

DESIGNED K. HEINDEL
 DRAWN J. HOLT
 CHECKED M. MERKLEIN
 PROJECT DATE 10/6/23

DRAWING
S201
 JOB NO: 000000

Path: C:\Vault\Chugach Electric\Portal Release Structure\S201.dwg Plot date: Sep 28, 2023 01:41pm, CAD User: HaberFlavia

VALVE SCHEDULE											
EQUIPMENT NUMBER	LOCATION	SERVICE	FLUID	TYPE	DIAMETER (IN)	ASME PRESSURE CLASS	ENDS	ACTUATOR TYPE (NORMAL POSITION)	MATERIAL	SPEC SECTION	COMMENTS
V-100	ISOLATION GATE STRUCTURE	ISOLATION VALVE	RAW WATER	GATE	54	150	FLXFL	ELECTRIC (OPEN)			
V-101	ISOLATION GATE STRUCTURE	BYPASS/FILLING	RAW WATER	ECC. PLUG	3	150	FLXFL	MANUAL (HANDWHEEL)			
V-102	ISOLATION GATE STRUCTURE	PRESSURE REDUCTION	RAW WATER	ORIFICE	3	150	FLXFL	N/A			
V-103	ISOLATION GATE STRUCTURE	BYPASS/ISOLATION	RAW WATER	BUTTERFLY	4	150	FLXFL	MANUAL (HANDWHEEL)			
V-104	ISOLATION GATE STRUCTURE	AIR RELEASE/VACUUM	RAW WATER	COMBO AIR VENT	2	150	FLXFL	N/A			
V-110	ISOLATION GATE STRUCTURE	ISOLATION VALVE	RAW WATER	GATE	42	150	FLXFL	ELECTRIC (OPEN)			
V-111	ISOLATION GATE STRUCTURE	BYPASS/FILLING	RAW WATER	ECC. PLUG	3	150	FLXFL	MANUAL (HANDWHEEL)			
V-112	ISOLATION GATE STRUCTURE	PRESSURE REDUCTION	RAW WATER	ORIFICE	3	150	FLXFL	N/A			
V-113	ISOLATION GATE STRUCTURE	BYPASS/ISOLATION	RAW WATER	BUTTERFLY	4	150	FLXFL	MANUAL (HANDWHEEL)			
V-114	ISOLATION GATE STRUCTURE	AIR RELEASE/VACUUM	RAW WATER	COMBO AIR VENT	2	150	FLXFL	N/A			
V-200	EKLUTNA RIVER RELEASE STRUCTURE	FLOW CONTROL	RAW WATER	SLEEVE	30	150	FLXFL	ELECTRIC (OPEN)			BAILEY MODEL B-10 OR EQUIVALENT

PUMP SCHEDULE									
EQUIPMENT NUMBER	LOCATION	SERVICE	EQUIPMENT DESCRIPTION	FLUID	FLOW CAPACITY (GPM) AND TDH (FT)	MOTOR SIZE (HP)	ELECTRICAL SERVICE (V/PH/CY)	SPEC SECTION	COMMENTS
P-100	ISOLATION GATE STRUCTURE	SUMP	SUBMERSIBLE PUMP	RAW WATER	50 @ 30	0.75	120 / 1 / 60		
P-200	RIVER RELEASE VALVE STRUCTURE	SUMP	SUBMERSIBLE PUMP	RAW WATER	50 @ 30	0.75	120 / 1 / 60		

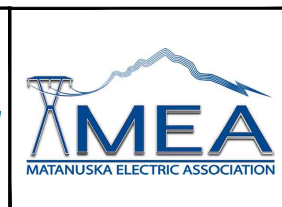
FLOW METER SCHEDULE							
ISA TAG	LOCATION	SERVICE	FLUID	EQUIPMENT DESCRIPTION	FLOW RANGE (CFS) / DIA (IN)	ELECTRICAL SERVICE (V/PH/CY)	COMMENTS
FE-100	ISOLATION GATE STRUCTURE	FLOW MEASUREMENT	RAW WATER	TRANSIT TIME UTRASONIC, 4 PATH	0 - 63/ 54"	120/1/60	
FE-200	RIVER RELEASE VALVE STRUCTURE	FLOW MEASUREMENT	RAW WATER	TRANSIT TIME UTRASONIC, 4 PATH	0 - 80/ 42"	120/1/60	

INSTRUMENTATION SCHEDULE									
ISA TAG	LOCATION	SERVICE	EQUIPMENT DESCRIPTION	FLUID	SIGNAL OUTPUT	ELECTRICAL SERVICE	MEASUREMENT RANGE	SPEC SECTION	COMMENTS
LE-010	ISOLATION GATE STRUCTURE	PRESSURE MEASUREMENT	PRESSURE TRANSDUCER	RAW WATER	ANALOG; 4-20 mA	24 VDC	0 - 75 PSI		
LE-011	ISOLATION GATE STRUCTURE	PRESSURE MEASUREMENT	PRESSURE TRANSDUCER	RAW WATER	ANALOG; 4-20 mA	24 VDC	0 - 75 PSI		
LE-012	ISOLATION GATE STRUCTURE	PRESSURE MEASUREMENT	PRESSURE TRANSDUCER	RAW WATER	ANALOG; 4-20 mA	24 VDC	0 - 75 PSI		

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE BY	DESCRIPTION
0	10/6/23	SPE	15% DESIGN

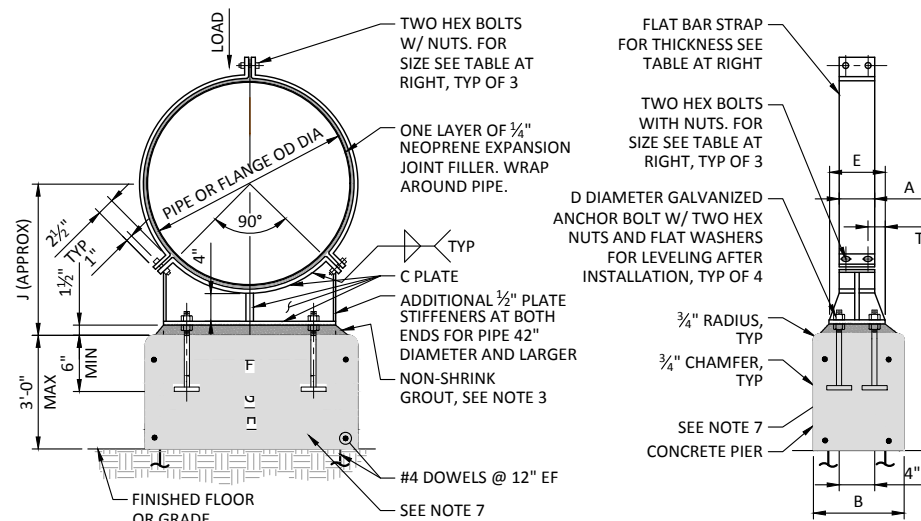
WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
MECHANICAL EQUIPMENT SCHEDULE

DESIGNED S. ELLENSON
DRAWN J. HOLT
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
GM001



NOMINAL PIPE SIZE	DIMENSIONS IN INCHES														
	A	B	C	D	E	STRAP		SUPPORTING							
						BOLT SIZE	FLAT BAR	PIPE		FLANGE					
F	G	H	J	F	G	H	J								
6	4	12	3/8	5/8	6	1/2	1/4	4 1/2	8	14	10	6 1/2	11	16	13
8	4	12	3/8	5/8	6	1/2	1/4	5	9 1/2	14	11	7 1/2	13	18	14
10	4	12	3/8	5/8	6	1/2	1/4	6	11	16	12	9	15	20	15
12	4	12	3/8	5/8	6	1/2	1/4	7	13	18	13	10	17	22	16
14	4	12	3/8	5/8	6	1/2	1/4	8	13	18	14	11	18	23	17
16	4	12	3/8	5/8	6	1/2	1/4	9	15	21	15	12	20	26	18
18	4	12	3/8	5/8	6	1/2	1/4	10	16	22	16	13	21	26	19
20	5	12	3/8	5/8	6	5/8	3/8	10	18	24	17	15	23	28	21
22	5	12	3/8	5/8	6	5/8	3/8	12	19	24	18	16	25	30	22
24	5	12	3/8	5/8	6	5/8	3/8	13	21	26	19	16	26	32	23
26	5	12	3/8	3/4	6	5/8	3/8	14	22	28	20	18	28	34	24
30	5	12	3/8	3/4	6	5/8	3/8	16	25	30	22	20	31	36	26
34	5	15	3/8	3/4	6	5/8	3/8	18	28	33	24	22	35	41	29
36	6	15	3/8	3/4	6	3/4	3/8	19	29	34	25	24	36	42	30
42	6	18	1/2	1	8	3/4	3/8	21	33	39	28	27	41	47	33
48	6	18	1/2	1	8	3/4	3/8	24	38	44	31	30	46	52	37
54	6	18	1/2	1	8	3/4	3/8	28	42	48	34	34	50	56	40
60	6	18	1/2	1 1/8	8	3/4	3/8	32	46	52	37	36	56	62	44
66	6	18	1/2	1 1/8	8	3/4	3/8	33	51	58	40	40	61	68	47
72	6	18	1/2	1 1/8	8	3/4	3/8	36	55	62	43	44	65	72	50

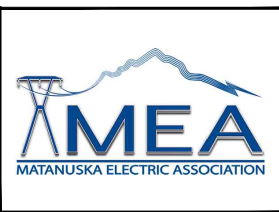
- NOTES:
1. WHEN SUPPORTING PIPE AND FLANGE ALTERNATELY ON THE SAME LINE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION 'H' FOR FLANGE SUPPORT
 2. PIPE SUPPORTS SHALL BE LOCATED IN PLAN AT POINTS MARKED THUS: (X)
 3. WHERE DIFFERENTIAL SETTLEMENT IS LIKELY TO OCCUR, OMIT GROUT AS DIRECTED BY THE ENGINEER.
 4. GALVANIZE ALL PARTS AFTER FABRICATION.
 5. WHERE DIRECTED BY THE STRUCTURAL ENGINEER, BOTTOM OF PIERS SHALL EXTEND BELOW BOTTOM OF SLAB
 6. WHERE PIPE SUPPORT OCCURS ON GRADE REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
 7. GALVANIZED ANCHOR BOLT OR CONCRETE ANCHOR WITH TWO NUTS AND ONE LOCKWASHER. PROVIDE BAR 4x1/2x4" WELDED TO BOLT, TYP OF 4. SEE SPECIFICATIONS.

M110 PIPE SUPPORT WITH STRAP
SCALE: NTS

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
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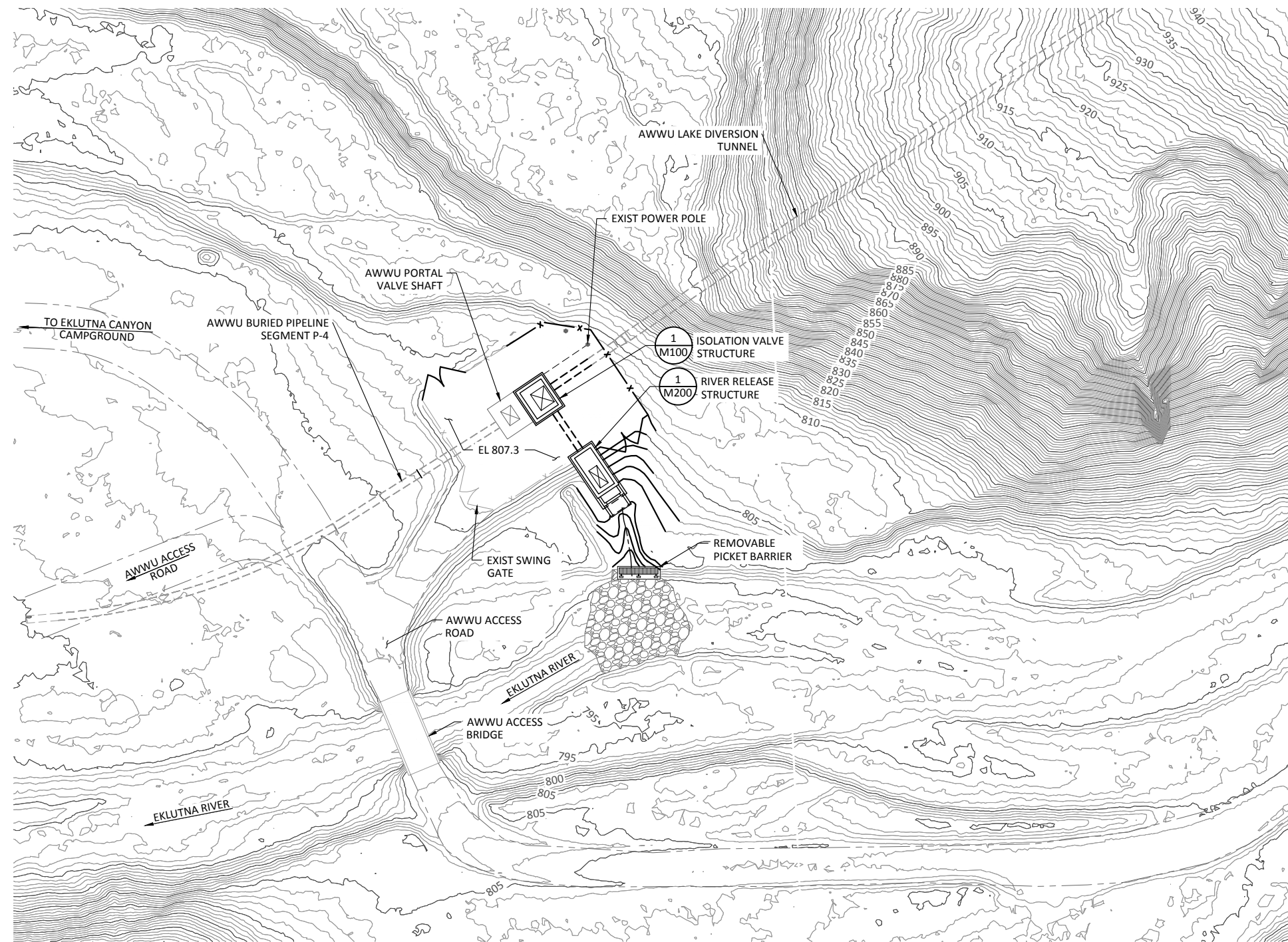
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
MECHANICAL STANDARD DETAILS

DESIGNED S. ELLENSON
DRAWN D. JOHNSTON
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
GM002

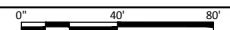
SHEET NOTES:

- ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



MECHANICAL KEY PLAN

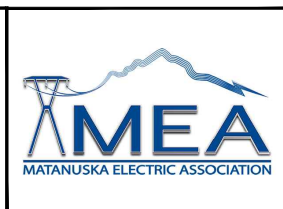
SCALE: 1" = 40'



PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
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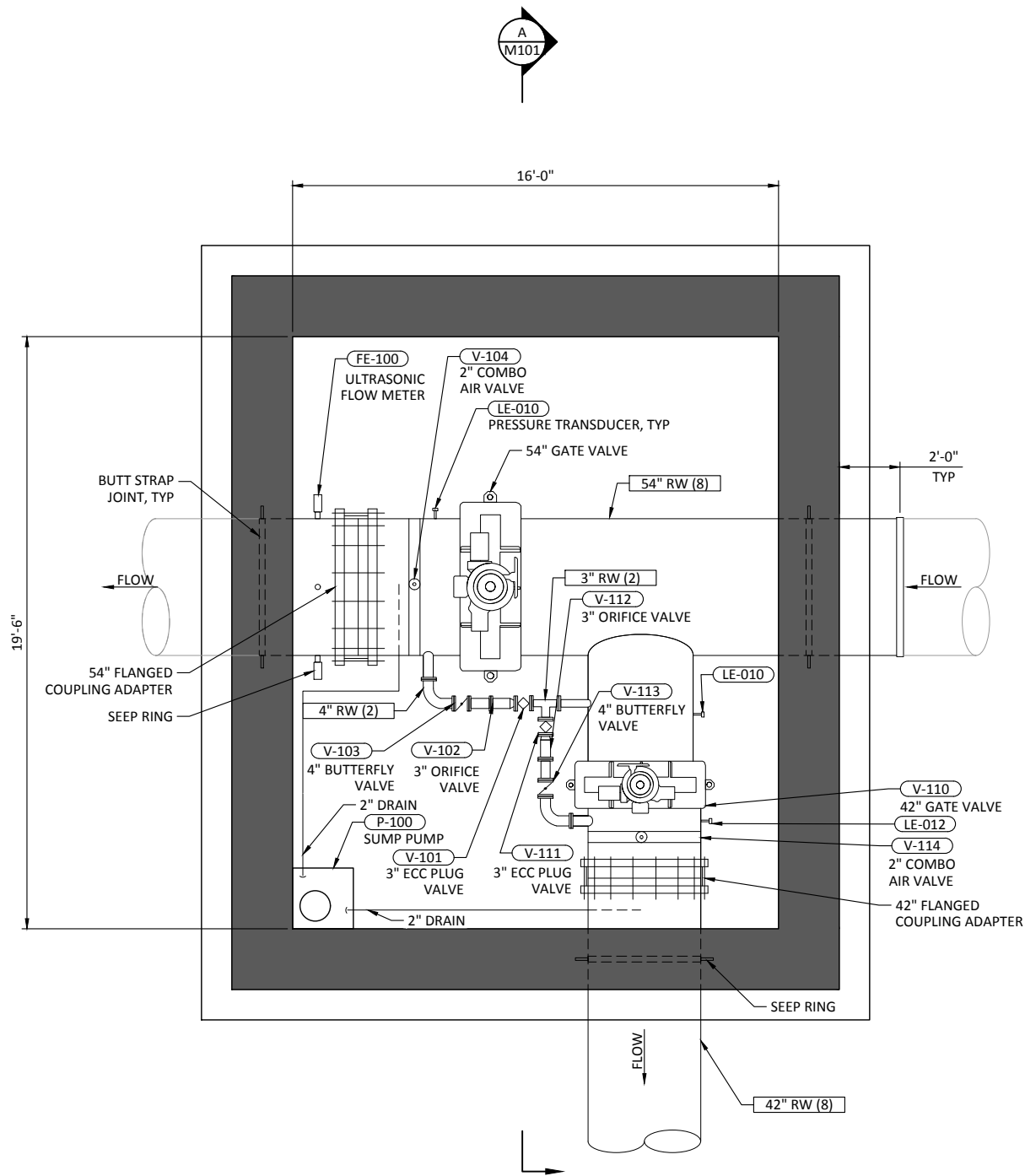
WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
MECHANICAL KEY PLAN

DESIGNED	S. ELLENSON
DRAWN	J. HOLT
CHECKED	J. BOAG
PROJECT DATE	10/6/23

DRAWING
M001

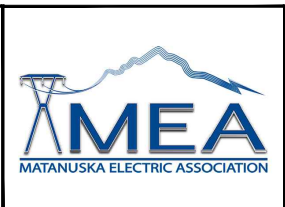
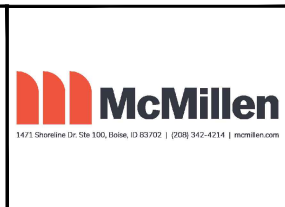


1 ISOLATION VALVE STRUCTURE MECHANICAL PLAN
 M001 SCALE: 3/8" = 1'-0"

PRELIMINARY
 NOT FOR CONSTRUCTION

REV	DATE	SPE	DESCRIPTION
0	10/6/23	BY	15% DESIGN

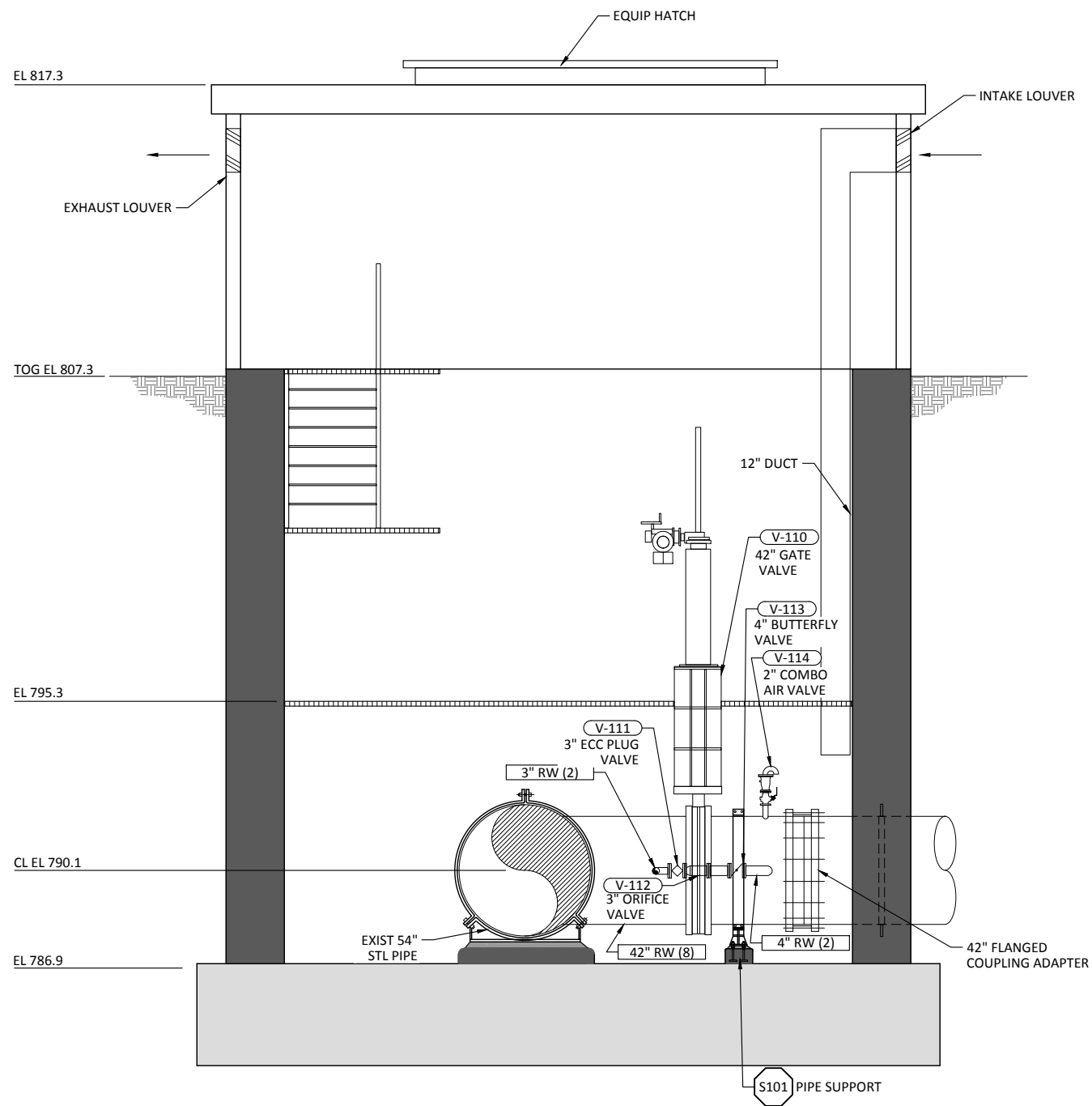
WARNING
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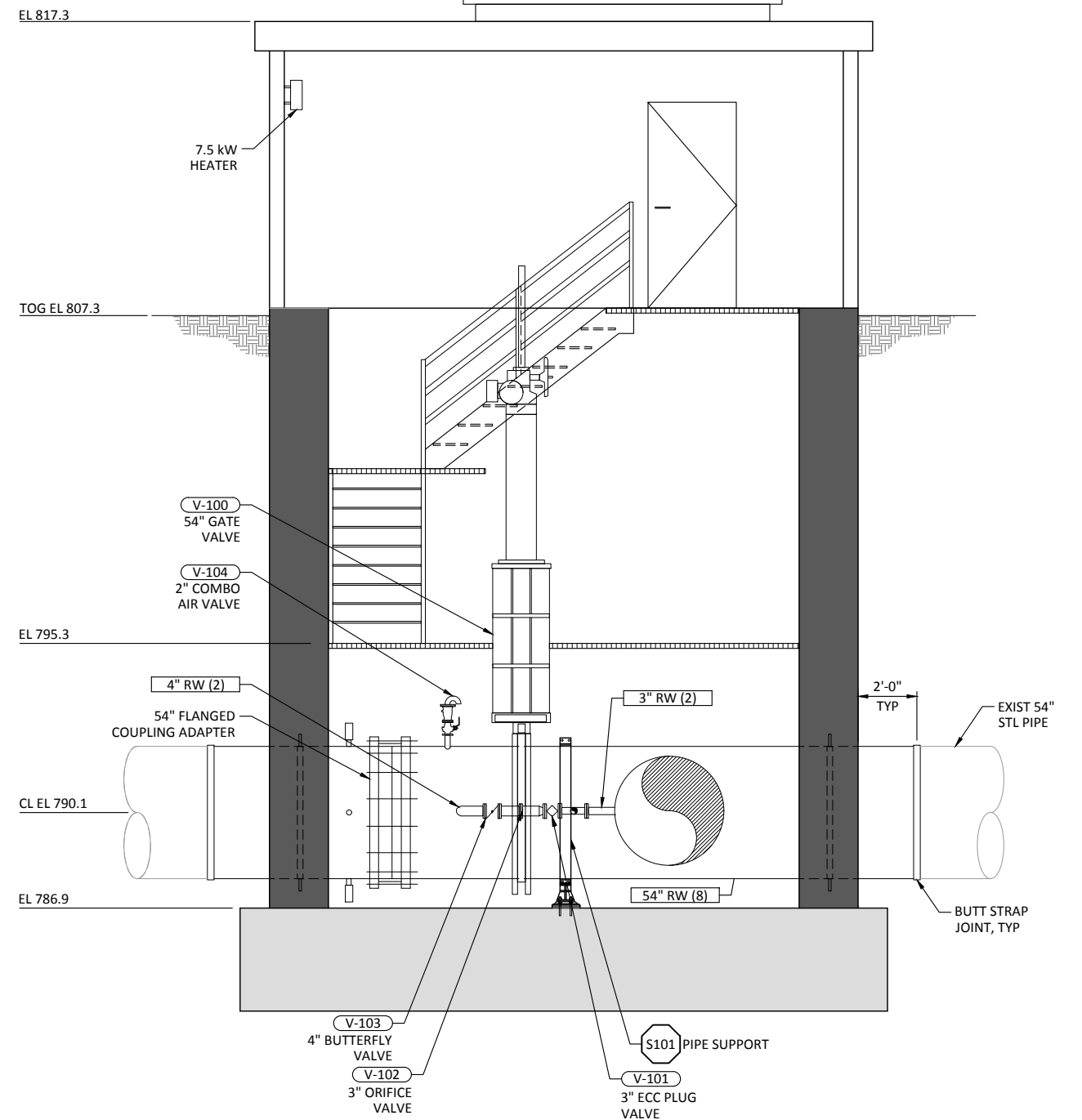
EKLUTNA FISH & WILDLIFE PROJECT
 EKLUTNA RIVER RELEASE FACILITY
 ISOLATION VALVE STRUCTURE MECHANICAL PLAN

DESIGNED S. ELLENSON
 DRAWN J. HOLT
 CHECKED J. BOAG
 PROJECT DATE 10/6/23

DRAWING
 M100



A SECTION
SCALE: 3/8" = 1'-0"

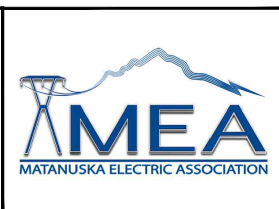


B SECTION
SCALE: 3/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	DESCRIPTION
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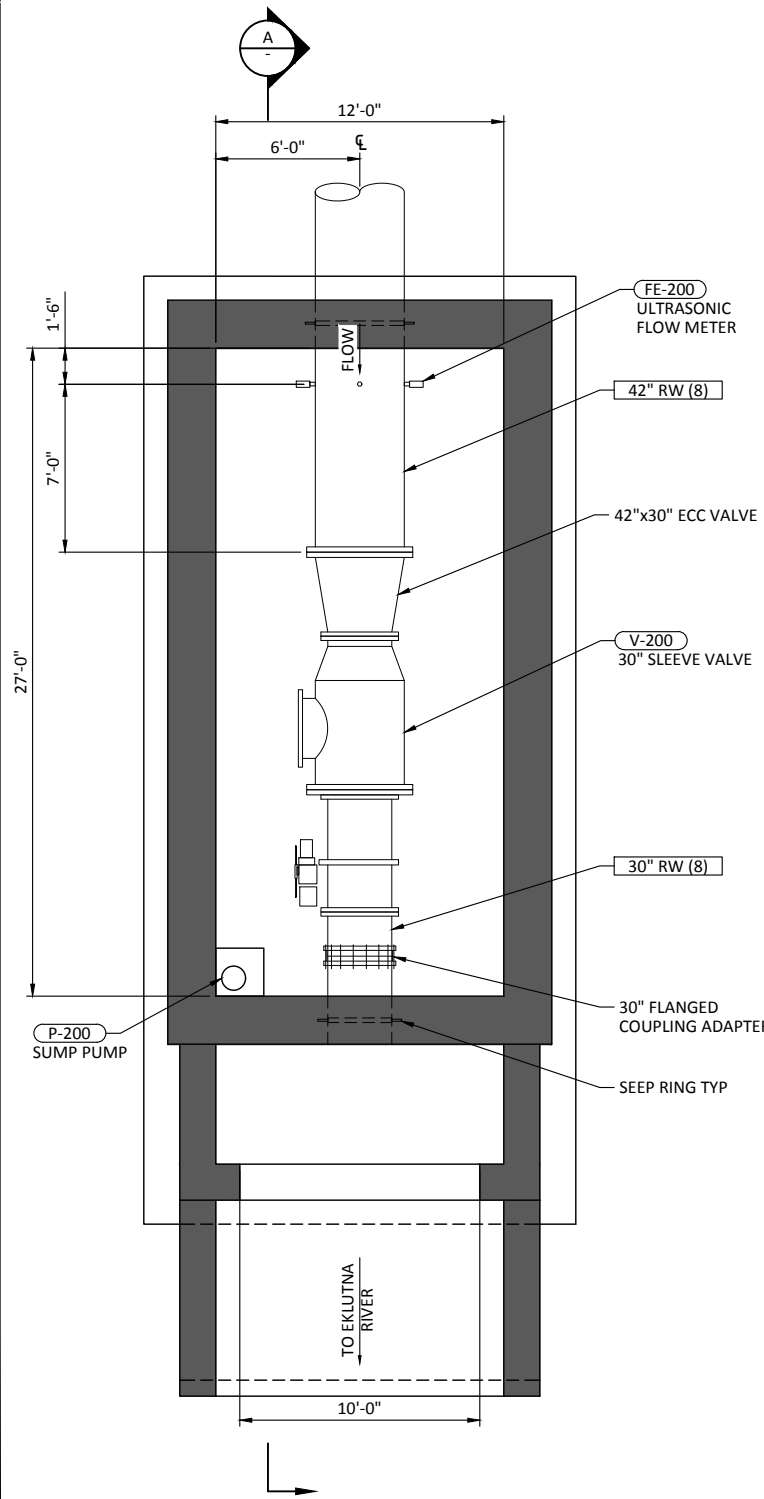
WARNING
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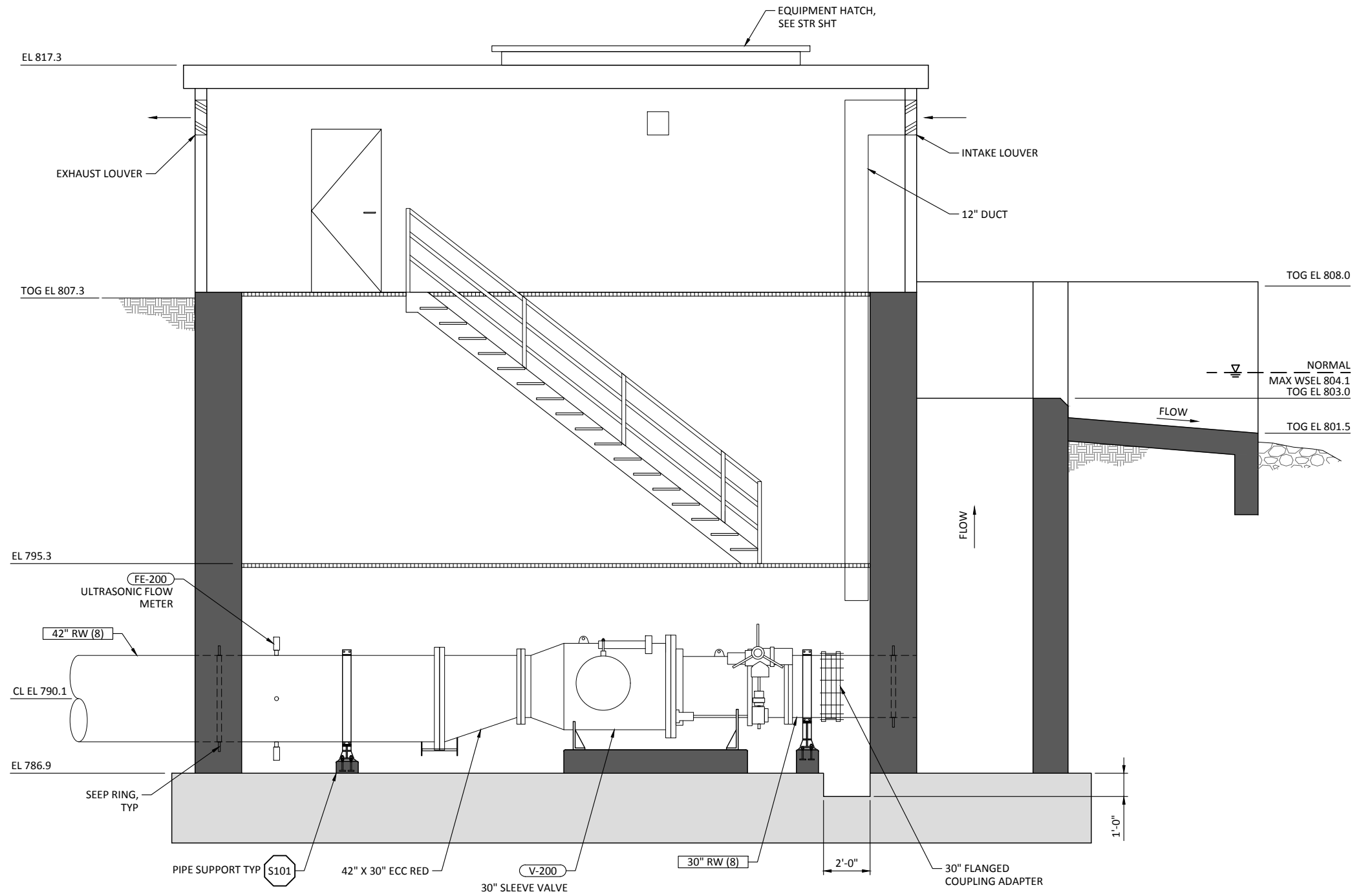
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ISOLATION VALVE STRUCTURE MECHANICAL SECTIONS

DESIGNED S. ELLENSON
DRAWN J. HOLT
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
M101
JOB NO: 000000



1 RIVER RELEASE STRUCTURE PLAN
M001 SCALE: 1/4" = 1'-0"



A SECTION
SCALE: 3/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE	J. HOLT	15% DESIGN

WARNING
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EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
RIVER PORTAL RELEASE VALVE SHAFT MECHANICAL
PLAN, SECTIONS AND DETAIL

DESIGNED S. ELLENSON
DRAWN J. HOLT
CHECKED J. BOAG
PROJECT DATE 10/6/23

DRAWING
M200

IEEE STANDARD CONTROL AND PROTECTION DEVICES FUNCTION NUMBERS			
01	MASTER ELEMENT	51	AC INVERSE TIME OVERCURRENT RELAY
02	TIME-DELAY STARTING OR CLOSING RELAY (TDPU)	52	AC CIRCUIT BREAKER
03	CHECKING OR INTERLOCKING RELAY	53	EXCITER OR DC GENERATOR RELAY
04	MASTER CONTACTOR	54	TURNING GEAR ENGAGING DEVICE
05	STOPPING DEVICE	55	POWER FACTOR RELAY
06	STARTING CIRCUIT BREAKER	56	FIELD APPLICATION RELAY
07	RATE-OF-CHANGE RELAY	57	SHORT-CIRCUITING OR GROUNDING DEVICE
08	CONTROL POWER DISCONNECTING DEVICE	58	RECTIFICATION FAILURE RELAY
09	REVERSING DEVICE	59	OVERVOLTAGE RELAY
10	UNIT SEQUENCE SWITCH	60	VOLTAGE OR CURRENT BALANCE RELAY
11	MULTIFUNCTION DEVICE	61	DENSITY SWITCH OR SENSOR
12	OVER-SPEED DEVICE	62	TIME-DELAY STOPPING OR OPENING RELAY (TDDO)
13	SYNCHRONOUS-SPEED DEVICE	63	PRESSURE SWITCH
14	UNDER-SPEED DEVICE	64	GROUND DETECTOR RELAY
15	SPEED OR FREQUENCY MATCHING DEVICE	65	GOVERNOR
16	DATA COMMUNICATIONS DEVICE	66	NOTCHING OR JOGGING DEVICE
17	SHUNTING OR DISCHARGE SWITCH	67	AC DIRECTIONAL OVERCURRENT RELAY
18	ACCELERATING OR DECELERATING DEVICE	68	BLOCKING RELAY
19	STARTING-TO-RUNNING TRANSITION CONTACTOR	69	PERMISSIVE CONTROL DEVICE
20	ELECTRONICALLY OPERATED VALVE	70	RHEOSTAT
21	DISTANCE RELAY	71	LEVEL SWITCH
22	EQUALIZER CIRCUIT BREAKER	72	DC CIRCUIT BREAKER
23	TEMPERATURE CONTROL DEVICE	73	LOAD-RESISTOR CONTACTOR
24	VOLTS PER HERTZ RELAY	74	ALARM RELAY
25	SYNCHRONIZING OR SYNCHRONISM - CHECK DEVICE	75	POSITION CHANGING MECHANISM
26	APPARATUS THERMAL DEVICE	76	DC OVERCURRENT RELAY
27	UNDERVOLTAGE RELAY	77	PULSE TRANSMITTER
28	FLAME DETECTOR	78	PHASE-ANGLE MEASURING OR OUT-OF-STEP PROTECTIVE RELAY
29	ISOLATING CONTACTOR	79	AC RECLOSING RELAY
30	ANNUNCIATOR RELAY	80	FLOW SWITCH
31	SEPARATE EXCITATION DEVICE	81	FREQUENCY RELAY
32	DIRECTIONAL POWER RELAY	82	DC RECLOSING RELAY
33	POSITION SWITCH	83	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
34	MASTER SEQUENCE DEVICE	84	OPERATING MECHANISM
35	BRUSH-OPERATING OF SLIP-RING SHORT-CIRCUITING DEVICE	85	CARRIER OR PILOT-WIRE RECEIVER RELAY
36	POLARITY OR POLARIZING VOLTAGE DEVICE	86	LOCKOUT RELAY
37	UNDERCURRENT OR UNDERPOWER RELAY	87	DIFFERENTIAL PROTECTIVE RELAY
38	BEARING PROTECTIVE DEVICE	88	AUXILIARY MOTOR OR MOTOR GENERATOR
39	MECHANICAL CONDITION MONITOR	89	LINE SWITCH
40	FIELD (OVER/UNDER EXCITATION) RELAY	90	REGULATING DEVICE
41	FIELD CIRCUIT BREAKER	91	VOLTAGE DIRECTIONAL RELAY
42	RUNNING CIRCUIT BREAKER	92	VOLTAGE AND POWER DIRECTIONAL RELAY
43	MANUAL TRANSFER OR SELECTOR DEVICE	93	FIELD-CHANGING CONTACTOR
44	UNIT SEQUENCE STARTING RELAY	94	TRIPPING OR TRIP-FREE RELAY
45	ATMOSPHERIC CONDITION MONITOR	95	RESERVED FOR FUTURE APPLICATION
46	REVERSE-PHASE OR PHASE-BALANCE CURRENT RELAY	96	RESERVED FOR FUTURE APPLICATION
47	PHASE-SEQUENCE OR PHASE-BALANCE VOLTAGE RELAY	97	RESERVED FOR FUTURE APPLICATION
48	INCOMPLETE SEQUENCE RELAY	98	CREEP DETECTOR DEVICE
49	MACHINE OR TRANSFORMER THERMAL RELAY	99	RESERVED FOR FUTURE APPLICATION
50	INSTANTANEOUS OVERCURRENT OR RATE-OF-RISE RELAY		

FIRST LETTER SUFFIX OF IEEE DEVICE DESIGNATION	
A	GOVERNOR SYSTEM (OR ACTUATOR SYSTEMS - GATES)
B	BATTERY CHARGING AND MONITORING SYSTEM OR BUS
C	HIGH-VOLTAGE CABLE SYSTEM OR CLOSING RELAY/CONTACTOR
D	DATA ACQUISITION SYSTEM
E	EXCITATION SYSTEM INCLUDING TRANSFORMER AND REGULATOR BUT NOT MAIN FIELD
F	FIRE AND CO2 SYSTEM
G	MAIN GENERATOR INCLUDING AUXILIARY SYSTEMS OR GROUND
G/M	GENERATOR MOTOR INCLUDING AUXILIARY SYSTEMS IN PUMPED STORAGE APPLICATIONS
H	TURBINE OR MAIN PUMP INCLUDING AUXILIARY SYSTEMS
I	ISOLATED AND OTHER POWER BUS SYSTEMS (NOT HIGH VOLTAGE CABLE)
J	POWER CIRCUIT BREAKER INCLUDING AUXILIARY SYSTEMS
K	POWER TRANSFORMER INCLUDING AUXILIARY SYSTEMS
L	ANNUNCIATOR SYSTEM, SECURITY SYSTEM, LINE, OR LOWERING RELAY/CONTACTOR
M	MAIN PUMP MOTOR INCLUDING AUXILIARY SYSTEMS AND VARIABLE SPEED DRIVE
N	AIR (PNEUMATIC) SYSTEM OR NEUTRAL
O	OPENING RELAY/CONTACTOR
P	PENSTOCK OR DISCHARGE LINE SYSTEM
Q	OIL STORAGE, HANDLING, PURIFICATION SYSTEM
R	FIELD FLASHING SYSTEM, PHASE REVERSAL SWITCH INCLUDING AUXILIARY SYSTEM, OR RAISING RELAY/CONTACTOR
S	STATION SERVICE SUBSTATION SYSTEM INCLUDING ENGINE/GENERATOR SYSTEM
T	TONE AND TRANSFER TRIP SYSTEM OR TRANSFORMER
U	UNIT CONTROL CIRCUIT SYSTEM OR UNINTERRUPTIBLE POWER SUPPLY SYSTEM
V	INTAKE AND/OR DISCHARGE VALVE SYSTEM
W	WATER SYSTEMS INCLUDING INTAKE/OUTLET WORKS AND PLANT WATER AND SUMP SYSTEMS
X	DEFINED FOR SYSTEMS UNIQUE TO A FACILITY
Y	DEFINED FOR SYSTEMS UNIQUE TO A FACILITY
Z	DEFINED FOR SYSTEMS UNIQUE TO A FACILITY

ABBREVIATIONS			
A, AMP	AMP, AMPERE	LCP	LOCAL CONTROL PANEL
AAAC	ALL ALUMINUM ALLOY CONDUCTOR	LE	LEVEL ELEMENT
AC	ALTERNATING CURRENT	LIT	LEVEL INDICATING TRANSMITTER
AF	AMPERE FRAME SIZE	LOR	LOCAL-OFF-REMOTE
AFD	ADJUSTABLE FREQUENCY DRIVE	LP	LIGHTING PANEL
AFF	ABOVE FINISHED FLOOR	LS	LEVEL SWITCH
AH	AMPERE HOURS	LT	LEVEL TRANSMITTER
AHJ	AUTHORITY HAVING JURISDICTION	mA	MILLIAMPERES
AHU	AIR HANDLING UNIT	M	MOTOR, MAN, MANUAL
AL	ALUMINUM	MAG	MAGNETIC
A/R	AS REQUIRED	MCC	MOTOR CONTROL CENTER
AT	AMPERE TRIP	MDP	MAIN DISTRIBUTION PANEL
ATS	AUTOMATIC TRANSFER SWITCH	MFM	MULTIFUNCTIONAL METER
AVR	AUTOMATIC VOLTAGE REGULATOR	MFR	MOTOR PROTECTION RELAY
BAT	BATTERY	MTS	MANUAL TRANSFER SWITCH
C	CONDUIT	mV	MILLIVOLTS
CB	CIRCUIT BREAKER	MVA	MEGAVOLT AMPERES (APPARENT POWER)
CKT	CIRCUIT	MVAR	MEGAVARS (REACTIVE POWER)
CLF	CURRENT LIMITING FUSE	MW	MEGAWATTS (REAL POWER)
CO	CONDUIT ONLY	MWH	MEGAWATT HOUR
CP	CONTROL PANEL	NEUT	NEUTRAL
CPT	CONTROL POWER TRANSFORMER	NGR	NEUTRAL GROUNDING RESISTOR
CR	CONTROL RELAY	OHM	OHMMETER
CS	CONTROL SWITCH	OL	OVERLOAD
CT	CURRENT TRANSFORMER	OPER	OPERATOR, OPERATED
DC	DIRECT CURRENT	PB	PANELBOARD, PULLBOX, PUSH BUTTON
DCS	DISTRIBUTED CONTROL SYSTEM	PC	PHOTOCELL
DISC	DISCONNECT	PCB	POWER CIRCUIT BREAKER
DP	DISTRIBUTION PANEL	PCC	POINT OF COMMON CONNECTION
DPDT	DOUBLE-POLE, DOUBLE-THROW	PF	POWER FACTOR
DPST	DOUBLE-POLE, SINGLE-THROW	PH, Ø	PHASE
EDH	ELECTRIC DUCT HEATER	PMP	PUMP
EG	ENGINE GENERATOR	PNL	PANEL
EPT	EXCITATION POWER TRANSFORMER	PLC	PROGRAMMABLE LOGIC CONTROLLER
EUH	ELECTRIC UNIT HEATER	POI	POINT OF INTER-CONNECTION
EV	ELECTRICAL VAULT	PS	PRESSURE SWITCH
F, FU	FUSE	PTT	PUSH-TO-TEST
FA	FIRE ALARM	PWR	POWER
FACP	FIRE ALARM CONTROL PANEL	R	RELAY, REVERSE, RUN
FAS	FIRE ALARM SYSTEM	RCP	RECEPTACLE
FREQ	FREQUENCY	RIO	REMOTE I/O
FS	FLOAT SWITCH	RTD	RESISTANCE TEMPERATURE DETECTOR
FT	FLOW TRANSMITTER	RVNR	REDUCED VOLTAGE NON-REVERSING
FVNR	FULL VOLTAGE NON-REVERSING	RVR	REDUCED VOLTAGE REVERSING
FVR	FULL VOLTAGE REVERSING	S	SYNC SCOPE
GEN	GENERATOR	SA	SURGE ARRESTER
GFI	GROUND-FAULT INTERRUPTION	SC	SURGE CAPACITOR
GFP	GROUND-FAULT PROTECTION	SDP	STANDBY DISTRIBUTION PANEL
GND	GROUND	SEL	SELECTOR, SCHWEITZER ENGINEERING LABORATORIES
GPR	GENERATOR PROTECTION RELAY	SPD	SURGE PROTECTION DEVICE
GSU	GENERATOR STEP-UP TRANSFORMER	SPST	SINGLE-POLE, DOUBLE-THROW
HMI	HUMAN-MACHINE INTERFACE	SPST	SINGLE-POLE, SINGLE-THROW
HOA	HAND-OFF-AUTO	S/S	STATION SERVICE
HOR	HAND-OUT-REMOTE	SV	SOLENOID VALVE
HPU	HYDRAULIC POWER UNIT	SW	SWITCH
HTR	HEATER	SWBD	SWITCHBOARD
HZ	HERTZ (CYCLES PER SECOND)	SWG	SWITCHGEAR
IC	INTERRUPTING CAPACITY	T	THERMOSTAT
I & C	INSTRUMENTATION AND CONTROL	TB	TERMINAL BLOCK, TERMINAL BOX
I/O	INPUT/OUTPUT	TD	TEMPERATURE DETECTOR, TIME DELAY
INST	INSTANTANEOUS	TEL	TELEPHONE
INTLK	INTERLOCK	TS	THERMOSTAT
IP	INTERNET PROTOCOL	TSP	TWISTED SHIELDED PAIR
K	KEY INTERLOCK	TST	TWISTED SHIELDED TRIAD
kV	KILOVOLTS	TX	TRANSMITTER
kVA	KILOVOLT AMPERES (APPARENT POWER)	UH	UNIT HEATER
kVAR	KILOVARS (REACTIVE POWER)	UP	UTILITY POWER
kw	KILOWATTS (REAL POWER)	UPS	UNINTERRUPTIBLE POWER SUPPLY
KWH	KILOWATT HOUR	V	VOLTS
LC	LIGHTING CONTROLLER	VAC	VOLTS ALTERNATING CURRENT
		VC	VIDEO CAMERA
		VCB	VACUUM CIRCUIT BREAKER
		VDC	VOLTS DIRECT CURRENT
		VFD	VARIABLE FREQUENCY DRIVE
		W	WIRE, WATTS
		WP	WEATHER PROOF
		XD	TRANSDUCER
		XFMR	TRANSFORMER
		XLP	CROSS LINKED POLYETHYLENE
		XP	EXPLOSION PROOF

SECOND AND SUBSEQUENT LETTER SUFFIXES OF THE IEEE DEVICE DESIGNATION	
A	ABNORMAL, A.C., ACCELERATION, ADMISSION, ALARM, AMPERES, AUTOMATIC, AUXILIARIES, PHASE A, ECT.
B	BACKUP, BEARING, BLOCK, BLOWER, BOOSTER, BRAKES, BUS, BUTTON, BYPASS, PHASE B, ETC.
C	CABLE, CARRIER, CHARGER, CHECK, CHLORINATION, CLOSE, COLLECTOR, COMMON, COMPENSATOR, COMPRESSOR, CONTROL, COOLING, CURRENT, CYCLE, CYLINDER, PHASE C, CONVEYOR, ECT.
D	D.C, DECELERATION, DELAY, DEPRESS, DETECTOR, DIELECTRIC, DIFFERENTIAL, DISCHARGE, DISCONNECT, DISCORDANCE, DOMESTIC, DOWN, DOWNSTREAM, DRAFT TUBE, DRAIN, ETC.
E	EJECTOR, ELEVATOR, EMERGENCY, EXPLOSIVE, ETC.
F	FAILURE, FAN, FAULT, FEEDER, FIELD, FILTER, FIRE, FLAME, FLOW, FOLLOWER, FORWARD, FREQUENCY, FULL, FUMES, FUSE, ETC.
G	GAS, GATE, GATING (SCR), GENERATE, GROUND, GUIDE BEARING, ETC.
H	HALON, HAND, HEAT, HEATER, HIGH, HOIST, HORN, HOT, HOUSING, HYDROPNEUMATIC TANK, ETC.
I	INDICATION, INITIAL, INLET, INOUT, INSTANTANEOUS, INTAKE, INTERFACE, INTERLOCK, INTERRUPT, INVERTER, IONIZATION, ETC.
J	JACKING, JET, ETC.
K	KEY, TRANSFORMER
L	LAMPS, LEFT, LEVEL, LIGHTS, LIMITS, LINE, LIQUID, LOCAL, LOGIC, LOSS, LOUVERS, LOW, LOWER, LUBRICATION, ETC.
M	MAIN, MALFUNCTION, MANUAL, METER, METERING, MOTOR, ETC.
N	NEGATIVE, NETWORK, NEUTRAL, NORMAL, ETC.
O	OPEN, OUTLET, OUTPUT, ETC.
P	PACKING BOX, PARALLEL, PARAMETER, PENSTOCK, PHASE, PHASEBACK, PILOT, PIT, POSITION, POTENTIAL, POTHEAD, POWER, PRESSURE, PRIMARY, PROTECTION, PULSE, PUMP, PURIFICATION, PUSH, ETC.
Q	OIL, ETC.
R	RAISE, REACTOR, RECLOSE, RECORD, RECTIFIER, REED, REFRIGERATION, REGULATE, RELAY, RELEASE, RELIEF, REMOTE, RESERVOIR, RESET, RESISTOR, RIGHT, ROTATION, ROTOR, RUNNER, ETC.
S	SEALS, SECONDARY, SELECTOR, SEWAGE, SHORTING, SHUTDOWN, SIGNAL, SKIMMER, SLUDGE, SMOKE, SOLENOID, SPEED, SPIRAL OR SCROLL CASE, SPLICE, STABILIZER, STANDBY, STARTING, STATOR, STEPPING, STORAGE, STRAINER, SUCTION, SUMP, SUPPLY, SWITCH, SYNCHRONIZING, ETC.
T	TANK, TEMPERATURE, TEST, THERMAL, THRUST BEARING, THYRATRON, TIE, TIME, TRANSDUCER, TRANSER, TRANSMITTER, TRIP, TROUBLE, TRASHRAKE, ETC.
U	UNIT, UNLOADER, UNWATERING, UP, UPPER, UPSTREAM, ETC.
V	VALVE, VARS, VIBRATION. VOLTAGE, ETC.
W	WATER, WATTS, WINDINGS, ETC.
X	AUXILIARY DEVICE, ETC.
Y	AUXILIARY TO DEVICE X, ANTIPUMP RELAY, ETC.
Z	AUXILIARY TO DEVICE Y

METERING SYSTEMS AND DEVICES INDEX			
A	AMMETER	PB	PUSHBUTTON
AH	AMPERE HOUR METER	PF	POWER FACTOR METER
AS	AMMETER SELECTOR SWITCH	PH	PHASE METER
C	COUNTER	PI	POSITION INDICATOR
CMA	CONTACT MAKING AMMETER	REC	RECORDER
CMC	CONTACT MAKING CLOCK	RF	REACTIVE FACTOR METER
CMV	CONTACT MAKING VOLTMETER	RPM	SPEED INDICATOR
CS	CONTROL STATION	SW	TRANSFER SWITCH
DM	DEMAND METER	SY	SYNCHROSCOPE
ETM	ELAPSE TIME METER	T	TEMPERATURE METER
F	FREQUENCY METER	TLM	TELEMETER
G	GALVANOMETER	TOC	TRUCK-OPERATED CONTACT
GD	GROUND FAULT DETECTOR	TS	TIME SWITCH
KV	KILO-VOLTMETER	V	VOLTMETER
KW	KILO-WATTMETER	VAR	VARMETER
KWH	KILO-WATT HOUR METER	VH	VAR HOUR METER
mA	MILLI-AMMETER (TRANSDUCER)	VS	VOLTMETER SELECTOR SWITCH
MOC	MECHANISM-OPERATED CONTACT	W	WATTMETER
OHM	OHMMETER	WH	WATT HOUR METER
OSC	OSCILLOGRAPH	WHDM	WATT HOUR DEMAND METER

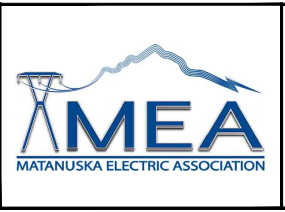
PILOT - INDICATOR LIGHT INDEX	
A	AMBER
B	BLUE
C	CLEAR
G	GREEN
NE	NEON
O	ORANGE
OP	OPALESCENT
P	PURPLE
R	RED
W	WHITE
Y	YELLOW

NOTE: "R" IN FRONT OF LETTERS INDICATES A RECORDING TYPE METER.

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EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY

ELECTRICAL ABBREVIATIONS AND DEVICE INDEXES

DRAWING	
DESIGNED	C. CURTIS
DRAWN	J. HOLT
CHECKED	J. BAKKEN
PROJECT DATE	10/6/23

GE001

Path: C:\Vault\Chugach Electric\Portal Release Structure\GE001.dwg; Plot date: Sep 26, 2023 05:07pm; CAD User: HaberFlava; JOB NO: 000000

DIAGRAMS

HIGH - MEDIUM VOLTAGE SWITCHING

- POWER CIRCUIT BRK, DRAWOUT
- POWER CIRCUIT BRK, NON-DRAWOUT
- HV ISOLATING SW MOTOR OPERATED
- HV INTERRUPTER SW FUSED
- CENTER-BREAK SW MOTOR OPERATED
- DUAL-BREAK SW MOTOR OPERATED
- LOAD-BREAK SW MOTOR OPERATED
- HORN GAP SW

TRANSFORMERS WINDING CONNECTIONS:

- DELTA 3PH3W
- DELTA CENTER TAP GND 3PH4W
- DELTA CORNER GRD 3PH3W
- BROKEN DELTA 3PH2W
- OPEN DELTA 2PH2W
- WYE 3PH3W
- WYE GRD 3PH4W
- ZIG-ZAG 3PH3W
- ZIG-ZAG GRD 3PH4W

MISC DEVICES & CONNECTIONS:

- DEVICE TERMINAL POINT
- TERMINAL BLOCK
- EXTERNAL EQUIPMENT INTERCONNECTION
- RELAY, SOLENOID, OR CONTACTOR COIL
- TRANSDUCER
- INDICATING METER
- TELEMETRY
- PUSH-TO-TEST LIGHT
- PILOT/INDIC LIGHT
- FUSE, SIZE AS INDICATED
- FUSE DUMMY
- DISC SW FUSED
- FUSIBLE LINK
- CAPACITOR
- REACTOR
- RESISTOR
- RESISTOR VARIABLE
- HEATER ELEMENT
- RECTIFIER SOLID STATE
- RECTIFIER FULLWAVE
- DC BRAKE
- GROUND
- CHASSIS GROUND
- CURRENT SHUNT

LOW VOLTAGE SWITCHING:

- DISCONNECTING SWITCH, MANUALLY GANG-OPERATED
- MOLDED CASE OR AIR CIRCUIT BREAKER
- CONTACTOR WITH THERMAL OL TRIP
- CONTACTOR WITH MAGNETIC OL TRIP
- CONTACTOR WITH THERMAL AND MAGNETIC OL TRIP
- CIR BKR DRAWOUT ELEC OPER
- CIR BKR THERMO O/L DRAWOUT ELEC OPER
- CIR BKR MAG O/L DRAWOUT ELEC OPER
- CIR BKR THERMO/MAG O/L DRAWOUT ELEC OPER

CONTROL SWITCHING:

- PB SWITCH NORM OPEN
- PB SWITCH NORM CLOSED
- SELECTOR SWITCH
- LIMIT SW NORM OPEN
- LIMIT SW NORM CLOSED
- LIMIT SW NORM OPEN HELD CLOSED
- LIMIT SW NORM CLOSED HELD OPEN
- SOLENOID
- CONTACT NORM OPEN
- CONTACT NORM CLOSED
- FLOW OPER NORM OPEN
- FLOW OPER NORM CLOSED
- LEVEL OPER NORM OPEN
- LEVEL OPER NORM CLOSED
- SWITCH NORM OPEN
- SWITCH NORM CLOSED
- TEMP ACT SW NORM OPEN
- TEMP ACT SW NORM CLOSED
- FOOT OPER NORM OPEN
- FOOT OPER NORM CLOSED
- PRESS OPER NORM OPEN
- PRESS OPER NORM CLOSED

MOMENTARY CONTACTS:

- NO SINGLE CIRCUIT
- NC SINGLE CIRCUIT
- NO & NC DOUBLE CIRCUIT

MAINTAINED CONTACTS:

- TWO SINGLE CIRCUIT
- ONE DOUBLE CIRCUIT
- ESS E-STOP, 2NC
- INSTANT OPERATION CONTACTS WITH BLOWOUT
- INSTANT OPERATION CONTACTS WITHOUT BLOWOUT
- TIMED CONTACTS - CONTACT ACTION DELAYED AFTER COIL IS ENERGIZED
- TIMED CONTACTS - CONTACT ACTION DELAYED AFTER COIL IS DE-ENERGIZED

SUPPLEMENTARY CONTACTS SYMBOLS:

- SPST, NO SINGLE-BREAK
- SPST, NO DOUBLE-BREAK
- SPST, NC SINGLE-BREAK
- SPST, NC DOUBLE-BREAK
- SPDT, SINGLE-BREAK
- SPDT, DOUBLE-BREAK
- DPST, NO, SINGLE-BREAK
- DPST, NO, DOUBLE-BREAK
- DPST, NC, SINGLE-BREAK
- DPST, NC, DOUBLE-BREAK
- DPDT, SINGLE-BREAK
- DPDT, DOUBLE-BREAK

TRANSFORMERS:

- POWER XFMR
- MAG CORE XFMR
- LOAD TAP CHANGING XFMR
- SPLIT SECONDARY XFMR
- AUTO-XFMR

HIGH - MEDIUM VOLTAGE DEVICES

- LIGHTNING ARRESTER
- WAVE TRAP
- GROUND SW MOTOR OPER
- MV CABLE TERMINATION
- CABLE POTHEAD OIL-FILLED

MISC DEVICES & CONNECTIONS:

- IN/OUT LINE
- PROTECTIVE DEVICE ELEMENT, SEE DEVICE FUNCTION INDEX
- TEST SWITCH
- TEST SWITCH, CURRENT SHORTING
- BATTERY
- GROUND
- DISCONNECTING DEVICE
- NEUTRAL CONNECTION
- ISOL PH BUS FLEX CONN
- ISOL PH BUS REMOVEABLE LINK

SELECTOR:

TWO-POSITION X-CONTACT CLOSED

THREE-POSITION X-CONTACT CLOSED

CONTACTS	SELECTOR POSITION			
	A		B	
	FREE	CONTACTS	FREE	CONTACTS
1-2	X			
3-4		X	X	X

INSTRUMENT TRANSFORMERS:

- POTENTIAL XFMR
- POTENTIAL XFMR DUAL SECONDARY
- CURRENT XFMR, QTY & RATIO AS INDICATED
- CORE BALANCE CURRENT XFMR RATIO AS INDICATED
- BUSHING CURRENT XFMR, QTY & RATIO AS INDICATED
- KILOWATT-HOUR METER

MISC DEVICES & CONNECTIONS:

- RECTIFIER SOLID STATE
- RECTIFIER FULLWAVE
- DC BRAKE
- GROUND
- CHASSIS GROUND
- CURRENT SHUNT

MACHINES:

- MOTOR-DC
- MOTOR-AC
- AC GENERATOR

PRELIMINARY NOT FOR CONSTRUCTION

NOTE:
1. "X" OR "XX" SHOWN ON SYMBOLS WILL BE SUBSTITUTED WITH DEVICE FUNCTION NUMBERS, LETTER SUFFIXES, PILOT LIGHT COLORS, OR OTHER DESCRIPTIVE TEXT, WHICH ARE DEFINED ELSEWHERE IN THESE LEGEND DRAWINGS.

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CHUGACH
POWERING ALASKA'S FUTURE

MEA
MATANUSKA ELECTRIC ASSOCIATION

MUNICIPALITY OF ANCHORAGE

EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ELECTRICAL STANDARD SYMBOLS 1

DESIGNED C. CURTIS
DRAWN J. HOLT
CHECKED J. BAKKEN
PROJECT DATE 10/6/23

DRAWING
GE002

PRIVATE TELEPHONE SYSTEM

- SWITCHBOARD
- TERMINAL CABINET
- DESK PHONE
- WALL PHONE

PRIVATE ETHERNET NETWORK SYSTEM

- DATA JACK
- VOICE/DATA JACK

PAGE/SOUND SYSTEM

- AMPLIFIER
- SPEAKER, WALL MTD
- SPEAKER, CEIL MTD
- HORN, WALL MTD
- HORN, CEIL MTD
- MICROPHONE
- HANDSET

LOW VOLTAGE ELECTRICAL MATERIALS

- CIRCUIT BREAKER SWITCH
- UNFUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- MOTOR STARTER MANUAL
- MOTOR STARTER MAGNETIC
- MOTOR STARTER MAG. COMBINATION C.B. SW.
- MOTOR STARTER MAG. COMBINATION FUSED D.S.
- VARIABLE FREQUENCY DRIVE
- PUSHBUTTON SW. EMERG. STOP
- PUSHBUTTON SW. STOP/START
- PUSHBUTTON STATION
- SELECTOR SWITCH
- CONTROL STATION
- FLOAT SWITCH
- LEVEL SWITCH
- BIN LEVEL SWITCH
- LIMIT SWITCH
- PRESSURE SWITCH
- ELECTRICAL/PNEUMATIC SWITCH
- PRESSURE TRANSMITTER
- SOLENOID VALVE
- THERMOSTAT
- TEMPERATURE SWITCH
- MOTOR
- POINT OF CONNECTION
- JUNCTION BOX OR CONDUIT FITTING
- WALL SWITCH
 - (1a) NUMBER & LETTER IN PARENTHESES INDICATES PANELBOARD CIRCUIT & SWITCHING ZONE
 - 3 THREE WAY
 - 4 FOUR WAY
 - D DIMMER
 - OS OCC SENSOR
 - T TIMER
 - XP EXPLOSIVE PROOF
 - WP WATERPROOF
- MOTOR SWITCH
 - M MOTOR RATED TOGGLE SWITCH WITHOUT OVERLOADS
 - MS MANUAL MOTOR STARTER WITH OVERLOADS
- DAYLIGHT SENSOR
- WALL MOUNTED OCCUPANCY SENSOR
- CEILING MOUNTED OCCUPANCY SENSOR
- PHOTOCELL, SUBSCRIPT INDICATES CIRCUIT
- CONVENIENCE RECEPTACLE - DUPLEX
 - C CLOCK
 - CR CORROSION RESISTANT
 - GFI GROUND FAULT INTERRUPTER
 - TL TWIST LOCK, NEMA CONFIGURATION AS INDICATED
 - U UPS FED
 - WP WEATHERPROOF
- SUBSCRIPT NUMBER AT RECEPTACLE INDICATES CIRCUIT
- QUADRUPLUX RECEPTACLE
- SINGLE RECEPTACLE
- FLOOR RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION AS INDICATED

ELECTRICAL LIGHTING FIXTURES

- SURFACE/PENDANT LINEAR FIXTURE
- SURFACE/PENDANT LINEAR FIXTURE WITH BATTERY BACKUP
- RECESSED LINEAR FIXTURE
- RECESSED LINEAR FIXTURE WITH BATTERY BACKUP
- DOWNLIGHT FIXTURE SURFACE/PENDANT CEILING MOUNT
- DOWNLIGHT OR SCONCE FIXTURE SURFACE WALL MOUNT
- DOWNLIGHT FIXTURE RECESSED CEILING MOUNT
- DOWNLIGHT OR SCONCE FIXTURE RECESSED WALL MOUNT
- HAZARDOUS AREA LIGHT FIXTURE CEILING MOUNT
- EXIT SIGN, ARROW INDICATES DIRECTION SURFACE/PENDANT CEILING MOUNT, FILLED QUARTER INDICATES NON-INDICATING FACE
- EXIT SIGN, ARROW INDICATES DIRECTION SURFACE WALL MOUNT, FILLED QUARTER INDICATES NON-INDICATING FACE
- EXIT SIGN, ARROW INDICATES DIRECTION RECESSED WALL MOUNT, FILLED QUARTER INDICATES NON-INDICATING FACE
- EMERGENCY DOWNLIGHT FIXTURE SURFACE/PENDANT CEILING MOUNT
- EMERGENCY DOWNLIGHT OR SCONCE FIXTURE SURFACE WALL MOUNT
- EMERGENCY DOWNLIGHT FIXTURE RECESSED CEILING MOUNT
- EMERGENCY DOWNLIGHT OR SCONCE FIXTURE RECESSED WALL MOUNT
- EMERGENCY LIGHTING UNIT, 1 HEAD
- EMERGENCY LIGHTING UNIT, 2 HEAD
- EMERGENCY LIGHTING UNIT, 3 HEAD
- SURFACE MTD. DISTR. PANELBOARD
- FLUSH MTD. DISTR. PANELBOARD
- POLE-MOUNTED AREA LIGHT, NUMBER OF FIXTURES AND CONFIGURATION AS SHOWN AND PER SCHEDULE
- LETTER NEXT TO LUMINAIRE INDICATES TYPE PER SCHEDULE. NUMBER AND LOWER CASE LETTER IN PARENTHESES INDICATES CIRCUIT AND SWITCHING ZONE IN PANELBOARD.

INTRUSION ALARM/ACCESS SYSTEM

- SECURITY ALARM
 - A POINT OF CONTACT
 - C SECURITY PROXIMITY CARD READER (+48" AFF)
 - E SECURITY ELEVATOR LOCKOUT CONTROL
 - K SECURITY KEYPAD
 - P SECURITY PANIC BUTTON (MOUNT UNDER CABINET)
- SECURITY DOOR CONTACT
 - D INTEGRAL TO DOOR HARDWARE OR HINGE. SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE
 - S SURFACE MOUNTED CONTACT/MAGNET COMBO WITH TAMPER RESISTANT METAL-CLAD PIGTAIL.
 - M FULLY RECESSED CONTACT/MAGNET COMBO INSTALLED IN DOOR FRAME HEADER/TOP OF DOOR.
- SECURITY DOOR LOCK CONNECTION (LOCK BY OTHERS)
 - D INTEGRAL TO DOOR HARDWARE OR HINGE. SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE
 - S ELECTRICAL STRIKE IN DOOR FRAME LATCH.
 - M MAGNETIC LOCK ON DOOR FRAME HEADER.
- SECURITY MOTION SENSOR - ARROW INDICATES DIRECTION OF SENSING; 360° INDICATES SENSING IN ALL DIRECTIONS
- SECURITY MONITOR AND MULTIPLEXOR/DVM
- REQUEST TO EXIT SIGNAL DEVICE
 - D INTEGRAL TO DOOR HARDWARE OR HINGE. SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE
 - P PASSIVE INFRARED DETECTOR MOUNTED ABOVE DOOR FRAME. PROVIDE J-BOX TYPE 'B' HORIZONTALLY MOUNTED 6" ABOVE DOOR.
- POWERED DOOR OPERATOR ACTUATOR

CCTV SYSTEM

- CAMERA FIXED POSITION
- CAMERA, PAN-TILT-ZOOM
- CCTV MONITOR
- CCTV MONITOR

SITE ELECTRICAL

- POLE CONCRETE
- POLE WOOD
- POLE MOUNTED TRANSFORMER
- DOWN GUY
- SIDEWALK GUY
- MANHOLE
- HANDHOLE
- VAULT
- PAD MOUNTED SWITCH
- TRANSFORMER VAULT
- PAD MOUNTED TRANSFORMER

GROUNDING

- GROUND ROD
- GROUND ROD WITH ACCESS BOX
- GROUND CONNECTION EXOTHERMIC
- GROUND CONNECTION MECHANICAL BOLTED
- GROUND CONNECTION COMPRESSION
- GROUND COIL (PIGTAIL) 5'0" (1.5M)
- GROUND GRADIENT MAT (SAFETY MAT) 4'X 4'
- GROUND GRADIENT MAT (SAFETY MAT) 4'X 6'

PLAN LINETYPES AND CONVENTIONS

- EXPOSED CONDUCTOR/CONDUIT
- CONCEALED/EMBEDDED CONDUCTOR/CONDUIT
- CONDUCTOR/CONDUIT DOWN
- CONDUCTOR/CONDUIT UP
- GROUNDING ELECTRODE CONDUCTOR, BARE COPPER
- GROUND CONNECTION, EXOTHERMIC OR WELDED
- GROUND CONNECTION, BOLTED
- OH POWER
- UG POWER
- CIRCUIT CALLOUT, CONDUIT AND CONDUCTOR SIZES AS INDICATED; "n-" IN FRONT OF CALLOUT INDICATES "n" PARALLEL SETS
- RACEWAY CALLOUT, INDEX NUMBER AS INDICATED IN RACEWAY SCHEDULE

DIAGRAM LINETYPES AND CONVENTIONS

- ENCLOSURE
- CONDUCTOR, CABLE, CIRCUIT, OR BUS
- INTERCONNECTION WITH EXTERNAL EQUIPMENT
- GANG OPERATED INTERLOCK
- CONDUCTOR, CROSSING OF PATHS OR CONDUCTORS NOT CONNECTED
- CONDUCTOR, JUNCTION OF CONNECTED PATHS, CONDUCTORS OR WIRES

PRELIMINARY
NOT FOR CONSTRUCTION

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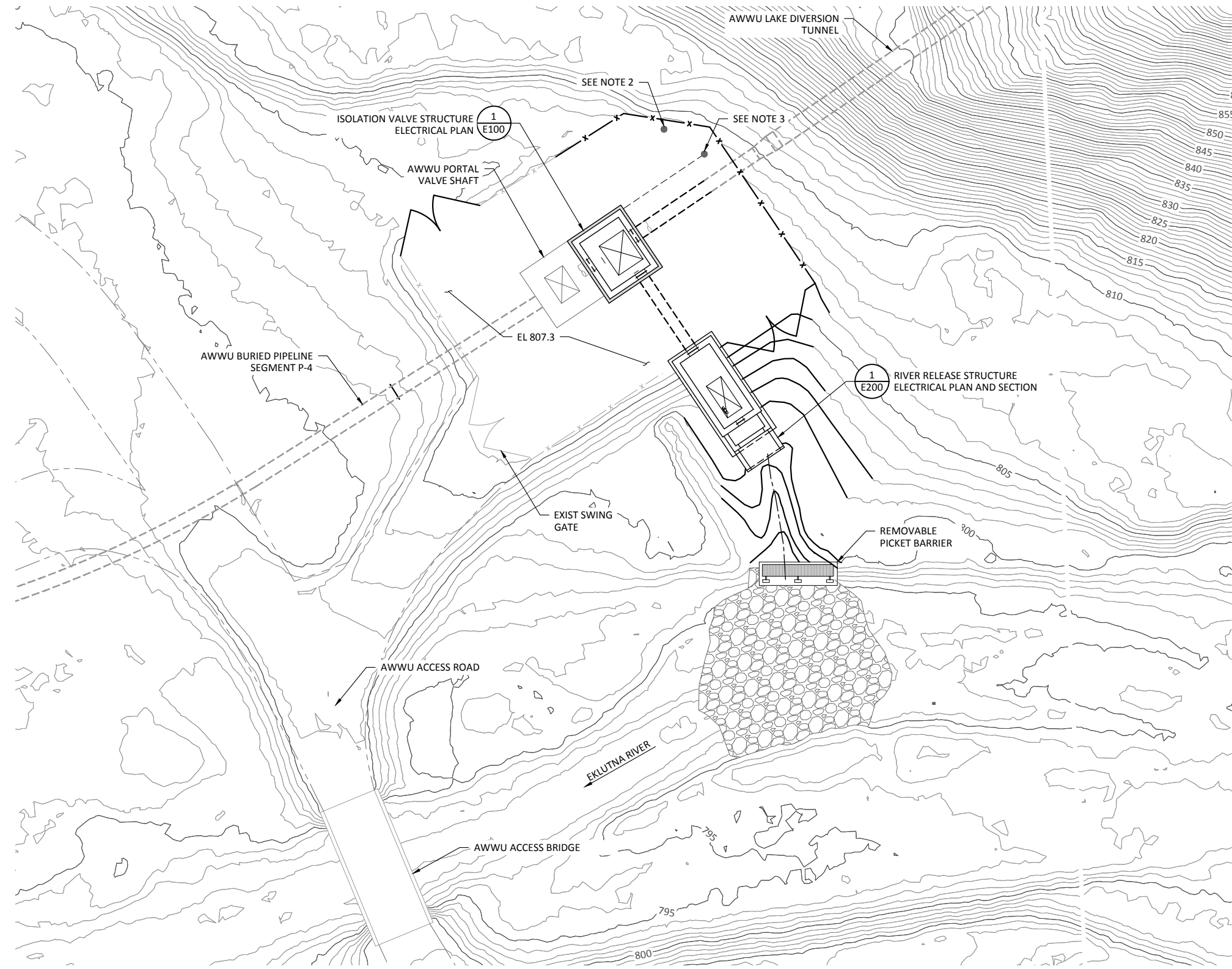
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EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ELECTRICAL STANDARD SYMBOLS 2

DESIGNED C. CURTIS
DRAWN J. HOLT
CHECKED J. BAKKEN
PROJECT DATE 10/6/23

DRAWING
GE003
JOB NO: 000000

Path: C:\Vault\Chugach Electric\Portal Release Structure\GE003.dwg Plot date: Sep 26, 2023 05:08pm, CAD User: HaberFlava



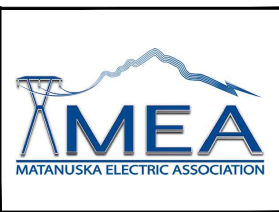
- SHEET NOTES:**
1. ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 2. EXISTING 7.2 kV SINGLE-PHASE POWER SERVICE POLE. EXTEND POWER LINE TO NEW DEAD-END POLE FOR NEW POWER SERVICE DROP.
 3. NEW POWER POLE SERVICE DROP. PROVIDE METER SOCKET AND SERVICE DISCONNECT. COORDINATE REQUIREMENTS WITH UTILITY.

ELECTRICAL SITE AND KEY PLAN
 SCALE: 1" = 20'

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WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

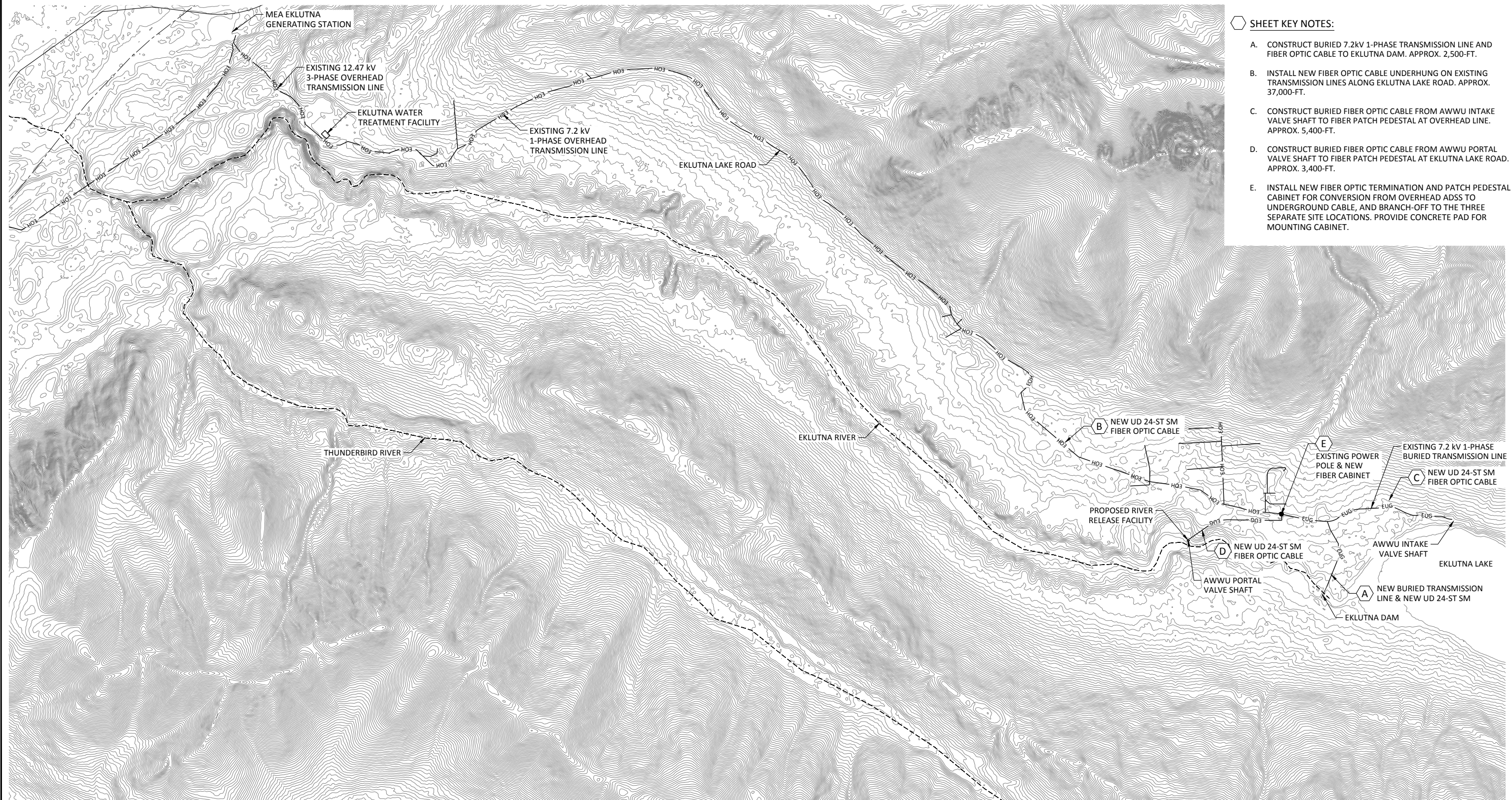


EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY
ELECTRICAL SITE AND KEY PLAN

DESIGNED <u>C. CURTIS</u>
DRAWN <u>J. HOLT</u>
CHECKED <u>J. BAKKEN</u>
PROJECT DATE <u>10/6/23</u>

DRAWING
E001

Path: C:\Vault\Chugach Electric\Portal Release Structure\E001.dwg Plot date: Sep 28, 2023 02:48pm, CAD User: Haberflavia



- SHEET KEY NOTES:**
- A. CONSTRUCT BURIED 7.2KV 1-PHASE TRANSMISSION LINE AND FIBER OPTIC CABLE TO EKLUTNA DAM. APPROX. 2,500-FT.
 - B. INSTALL NEW FIBER OPTIC CABLE UNDERHUNG ON EXISTING TRANSMISSION LINES ALONG EKLUTNA LAKE ROAD. APPROX. 37,000-FT.
 - C. CONSTRUCT BURIED FIBER OPTIC CABLE FROM AWWU INTAKE VALVE SHAFT TO FIBER PATCH PEDESTAL AT OVERHEAD LINE. APPROX. 5,400-FT.
 - D. CONSTRUCT BURIED FIBER OPTIC CABLE FROM AWWU PORTAL VALVE SHAFT TO FIBER PATCH PEDESTAL AT EKLUTNA LAKE ROAD. APPROX. 3,400-FT.
 - E. INSTALL NEW FIBER OPTIC TERMINATION AND PATCH PEDESTAL CABINET FOR CONVERSION FROM OVERHEAD ADSS TO UNDERGROUND CABLE, AND BRANCH-OFF TO THE THREE SEPARATE SITE LOCATIONS. PROVIDE CONCRETE PAD FOR MOUNTING CABINET.

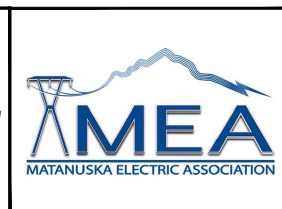
TRANSMISSION AND COMMUNICATION UPGRADES PLAN
SCALE: NTS



PRELIMINARY
NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



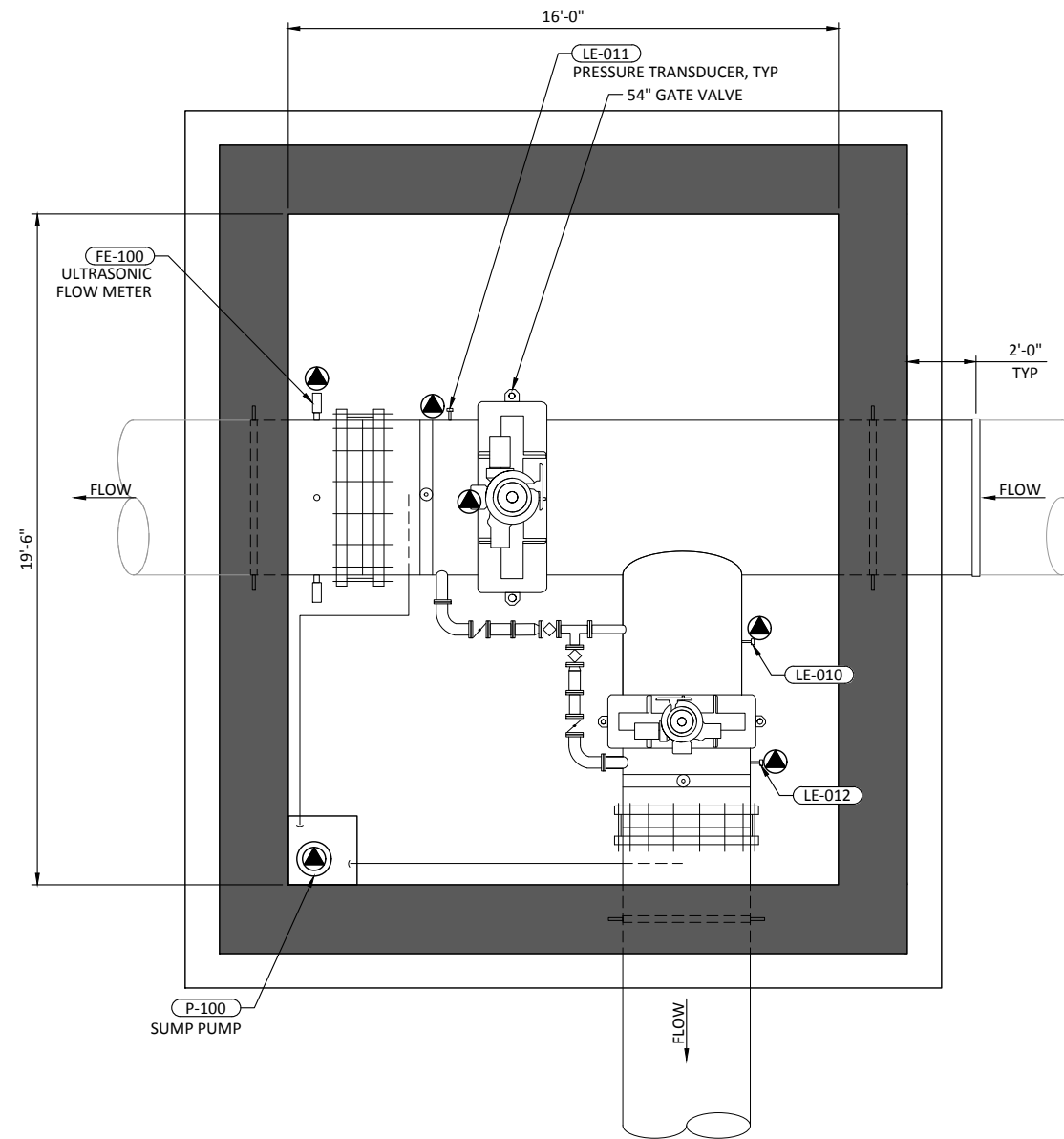
EKLUTNA FISH & WILDLIFE PROJECT
EKLUTNA RIVER RELEASE FACILITY

TRANSMISSION AND COMMUNICATION UPGRADES PLAN

DESIGNED C. CURTIS
DRAWN J. HOLT
CHECKED J. BAKKEN
PROJECT DATE 10/6/23

DRAWING
E003
JOB NO: 000000

Path: C:\Vault\Chugach Electric\Portal Release Structure\E003.dwg Plot date: Sep 28, 2023 02:57pm, CAD User: Haberflavia

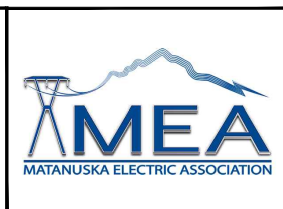


1 ISOLATION VALVE STRUCTURE ELECTRICAL PLAN
 M001 SCALE: 3/8" = 1'-0"

PRELIMINARY
 NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	SPE		15% DESIGN

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

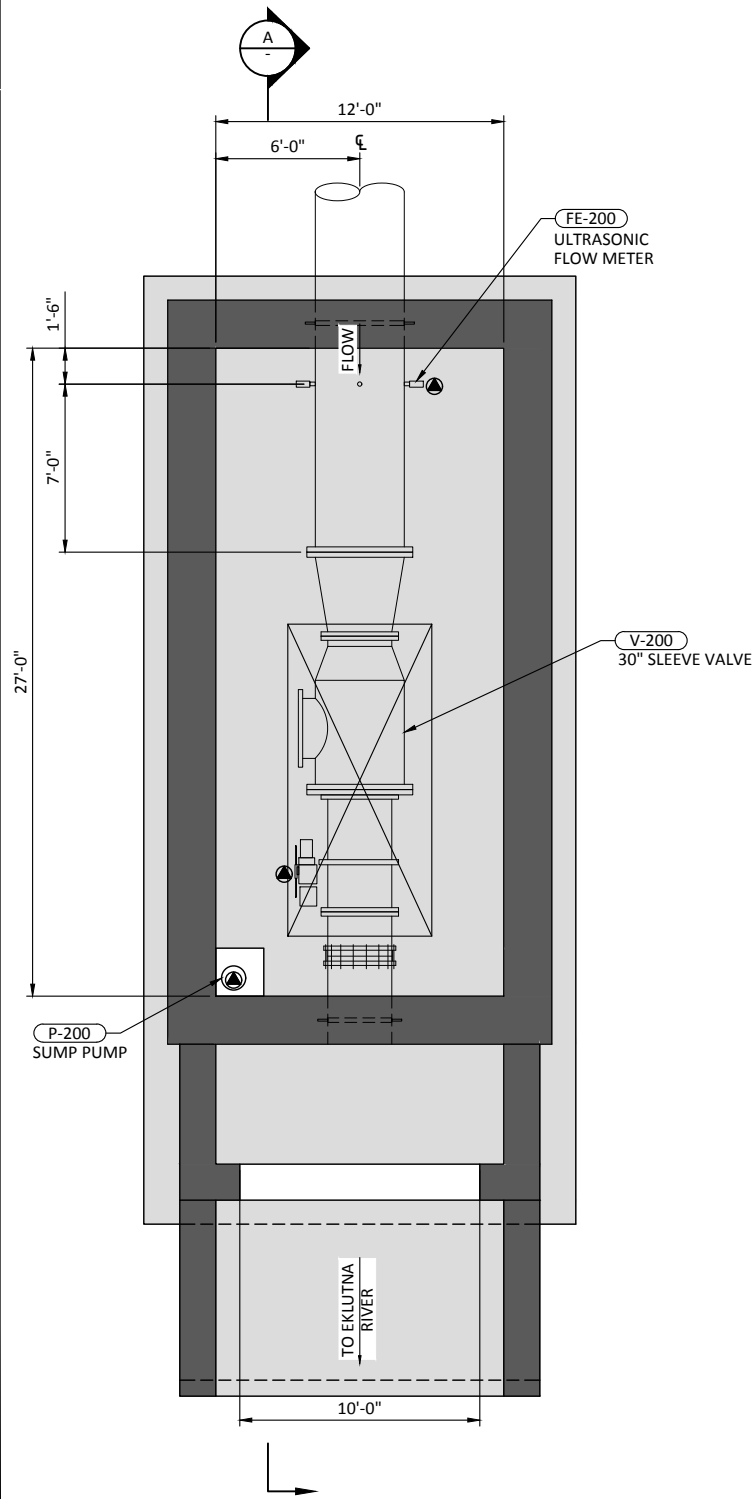


EKLUTNA FISH & WILDLIFE PROJECT
 EKLUTNA RIVER RELEASE FACILITY

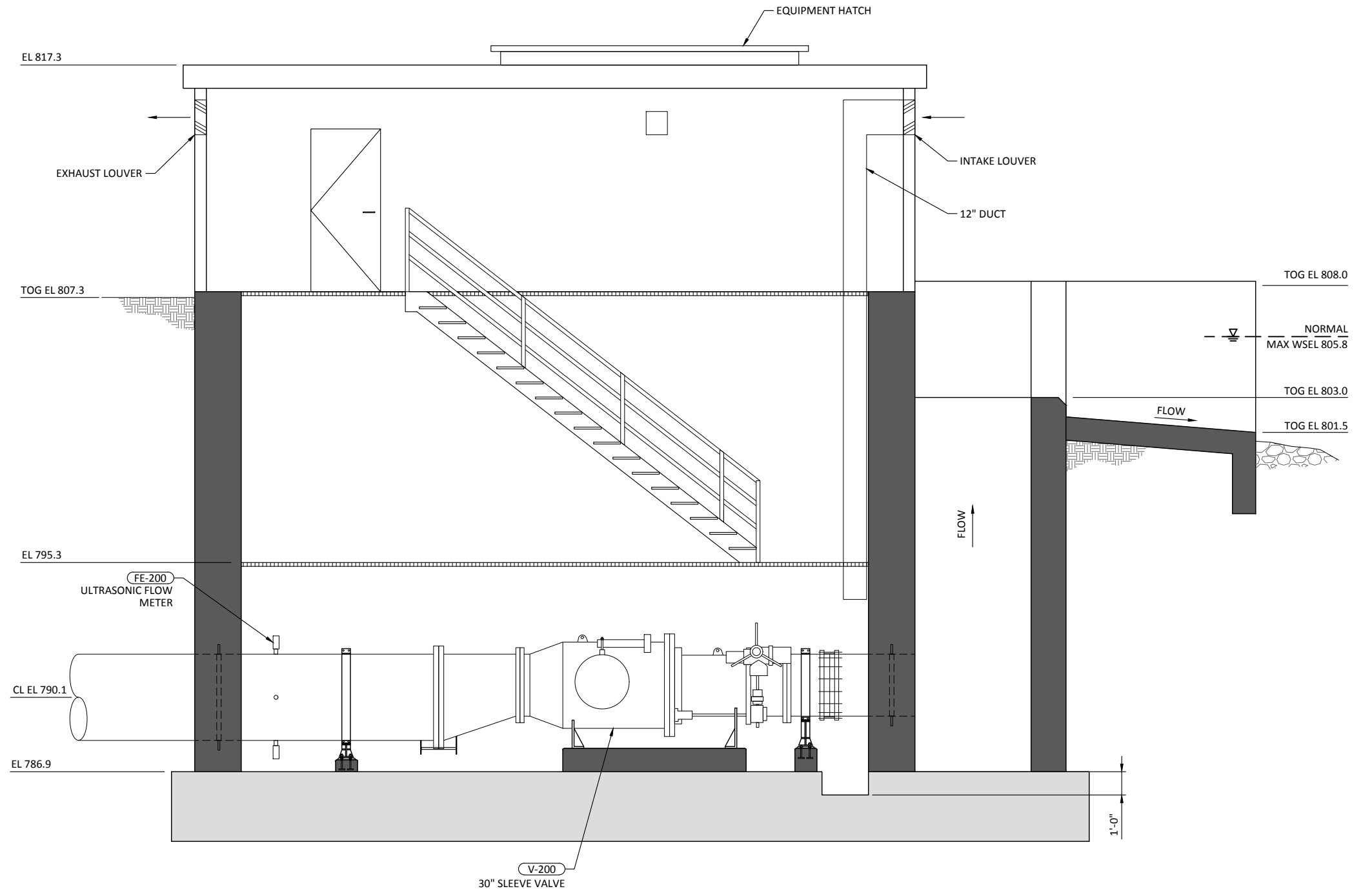
ISOLATION VALVE STRUCTURE ELECTRICAL PLAN

DESIGNED C. CURTIS
 DRAWN J. HOLT
 CHECKED J. BAKKEN
 PROJECT DATE 10/6/23

DRAWING
E100



1 RIVER RELEASE ELECTRICAL PLAN
 M001 SCALE: 1/4" = 1'-0"



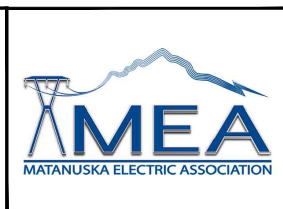
A SECTION
 SCALE: 3/8" = 1'-0"

PRELIMINARY
 NOT FOR CONSTRUCTION

REV	DATE	SPE	BY	DESCRIPTION
0	10/6/23	15% DESIGN		

WARNING

 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EKLUTNA FISH & WILDLIFE PROJECT
 EKLUTNA RIVER RELEASE FACILITY
RIVER RELEASE STRUCTURE ELECTRICAL PLAN AND SECTION

DESIGNED C. CURTIS
 DRAWN J. HOLT
 CHECKED J. BAKKEN
 PROJECT DATE 10/6/23

DRAWING
E200
 JOB NO: 000000

Certificate Of Completion

Envelope Id: E3323328BC4E4834B96FE87AE1D0E7EE	Status: Completed
Subject: Complete with DocuSign: Binding Term Sheet - Water Facilities Interconnection and Long-Term wat...	
Source Envelope:	
Document Pages: 23	Signatures: 1
Certificate Pages: 2	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelope Stamping: Enabled	Sharon Lane
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	632 W 6th Ave
	Anchorage, AK 99501
	sharon.lane@anchorageak.gov
	IP Address: 209.193.41.5

Record Tracking

Status: Original	Holder: Sharon Lane	Location: DocuSign
10/27/2023 2:41:21 PM	sharon.lane@anchorageak.gov	
Security Appliance Status: Connected	Pool: StateLocal	
Storage Appliance Status: Connected	Pool: MOA	Location: DocuSign

Signer Events

Signature	Timestamp
Kent Kohlhasse kent.kohlhasse@anchorageak.gov Municipal Manager MOA	Sent: 10/27/2023 2:45:20 PM Viewed: 10/27/2023 5:47:56 PM Signed: 10/27/2023 5:56:42 PM
Security Level: Email, Account Authentication (None)	Signature Adoption: Pre-selected Style Using IP Address: 209.193.41.5

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Sharon Lane
sharon.lane@anchorageak.gov
Mayor's Office
Security Level: Email, Account Authentication (None)



Sent: 10/27/2023 5:56:42 PM

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Witness Events

Signature

Timestamp

Notary Events

Signature

Timestamp

Envelope Summary Events

Status

Timestamps

Envelope Sent	Hashed/Encrypted	10/27/2023 2:45:20 PM
Envelope Updated	Security Checked	10/27/2023 5:42:49 PM
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Certified Delivered	Security Checked	10/27/2023 5:47:56 PM

Envelope Summary Events	Status	Timestamps
Signing Complete	Security Checked	10/27/2023 5:56:42 PM
Completed	Security Checked	10/27/2023 5:56:42 PM

Payment Events	Status	Timestamps
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Municipality of Anchorage
Mayor Dave Bronson

Office of the Municipal Manager

DATE: October 27, 2023
TO: Distribution
FROM: Kent Kohlhase, P.E, Municipal Manager
SUBJECT: Acting Manager for Anchorage Hydropower.

Effective immediately, Kolby Hickel is the designated Acting Manager of Anchorage Hydropower. Kolby has been delegated authority to sign all documents and take any needed actions on behalf of Anchorage Hydropower.

This authority is in effect until revoked in writing by the Municipal Manager.

Thank you,

Kent Kohlhase

Kent Kohlhase

Certificate Of Completion

Envelope Id: 7E29B0325EF24AB8B3B6DC05DF2225EC	Status: Completed
Subject: Complete with DocuSign: Hydropower Signature Designation.docx	
Source Envelope:	
Document Pages: 1	Signatures: 1
Certificate Pages: 2	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Sharon Lane
Time Zone: (UTC-08:00) Pacific Time (US & Canada)	632 W 6th Ave
	Anchorage, AK 99501
	sharon.lane@anchorageak.gov
	IP Address: 209.193.41.5

Record Tracking

Status: Original	Holder: Sharon Lane	Location: DocuSign
10/27/2023 12:29:04 PM	sharon.lane@anchorageak.gov	
Security Appliance Status: Connected	Pool: StateLocal	
Storage Appliance Status: Connected	Pool: MOA	Location: DocuSign

Signer Events

Signer Events	Signature	Timestamp
Kent Kohlase	<i>Kent Kohlase</i>	Sent: 10/27/2023 12:32:07 PM
kent.kohlase@anchorageak.gov		Viewed: 10/27/2023 5:59:56 PM
Municipal Manager		Signed: 10/27/2023 6:00:13 PM
MOA		
Security Level: Email, Account Authentication (None)	Signature Adoption: Pre-selected Style	
	Using IP Address: 209.193.41.5	

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Sharon Lane
sharon.lane@anchorageak.gov
Mayor's Office

COPIED

Sent: 10/27/2023 6:00:14 PM

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Kolby Hickel
kolby.hickel@anchorageak.gov
Deputy Municipal Manager

COPIED

Sent: 10/27/2023 6:00:14 PM

MOA
Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

Witness Events

Signature

Timestamp

Notary Events	Signature	Timestamp
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Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	10/27/2023 5:59:56 PM
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Completed	Security Checked	10/27/2023 6:00:14 PM

Payment Events	Status	Timestamps
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