MONTANA FISH, WILDLIFE & PARKS

ADDENDUM NO. 1

TO: ALL BIDDERS OF RECORD

PROJECT: Woods Bay FAS Dock

FWP PROJECT #: 7193701

DATE: April 27, 2023

FROM: Jackola Engineering and Architecture

Acknowledge receipt of this addendum by inserting its number and date in the Proposal Form and on the Bid Envelope. Failure to do so may subject bidder to disqualification.

This Addendum forms a part of the Contract Documents. Clarification and/or modifications area as follows:

Item 1: Bid Alternate #A.1, Provide Concrete Infill to Widen Ramp is removed from the contract. Plan Keynote 10 on S1.0 and Detail 3 on S1.2 are not required.

Item 2: Geotechnical Report: Attached is the Geotechnical Report. It was inadvertently omitted from the bid documents.

Item 3: Division 1 General Requirements are added. They were inadvertently omitted from the bid documents.

Item 4: Technical Specification 33000 Cast-In -Place Concrete is added. It was inadvertently omitted from the bid documents.

Item 5: Technical Specification 316329 Drilled Concrete Piers and Shafts is added. It was inadvertently omitted from the bid documents.

Item 6: Technical Specification 355100 Floating Construction is added. It was inadvertently omitted from the bid documents.

END OF ADDENDUM NO. 1

SECTION 011000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Dock Replacement

B. Owner's Name: Montana Fish, Wildlife & Parks.

C. Architect's Name: Jackola Architecture & Engineering.

D. The Project consists of the construction of a new floating dock.

1.02 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition and removal work is indicated on drawings.

1.03 OWNER OCCUPANCY

A. Owner intends to close the boat ramp during the construction

B. Owner intends to occupy the Project upon Substantial Completion.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. Arrange use of site and premises to allow:
   1. Owner occupancy.

B. Provide access to and from site as required by law and by Owner:
   1. Do not obstruct roadways, sidewalks, or other public ways without permit.

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.

D. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
   1. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Substitution Submittal (after award of contract):
   1. Submit substitution requests with documentation for review by the Owner and the Architect. Allow a minimum of 14 days for review.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Preconstruction meeting.

C. Progress meetings.

D. Construction progress schedule.

E. Submittals for review, information, and project closeout.

F. Number of copies of submittals.

G. Requests for Interpretation (RFI) procedures.

H. Submittal procedures.

1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Correction Punch List and Final Correction Punch List for Substantial Completion.
   7. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. Schedule meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.
   4. Project Geotechnical Engineer.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract, Owner, Contractor and Architect.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling activities of a Geotechnical Engineer.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work. Project meetings shall be held at a minimum during drilling of piers and pile installation and a final instpection for punch list gerentation.

B. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Geotechnical Engineer.
   5. Contractor's superintendent.
   6. Major subcontractors.

C. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of progress schedule.
   7. Corrective measures to regain projected schedules.
   8. Planned progress during succeeding work period.
   9. Maintenance of quality and work standards.
   10. Effect of proposed changes on progress schedule and coordination.
   11. Other business relating to work.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after joint review, submit complete schedule.

3.04 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.

B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.

3.05 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
   1. Format schedule to allow tracking of status of submittals throughout duration of construction.

3.06 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Design data.
   3. Shop drawings.
   4. Samples for selection.
   5. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.07 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.09 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.10 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
   3. Schedule submittals to expedite the Project, and coordinate submission of related items.
   4. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
   5. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
   6. Submittals not requested will not be recognized or processed.
   7. Submittals not requested will be recognized, and will be returned "Not Reviewed",

B. Product Data Procedures:
   1. Submit only information required by individual specification sections.

2. Collect required information into a single submittal.
3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

3.11 SUBMITTAL REVIEW

A. Submittals for Review: Architect and Owner will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will acknowledge receipt, but will take no other action.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. Testing and inspection agencies and services.

D. Control of installation.

E. Tolerances.

F. Defect Assessment.

1.02 REFERENCE STANDARDS

A. IAS AC89 - Accreditation Criteria for Testing Laboratories 2021.

1.03 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect, Owner and to Contractor.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Compliance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.

C. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

1.06 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Contractor shall employ and pay for services of an independent testing agency to perform specified testing.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor Employed Agency:
   1. Laboratory Qualifications: Accredited by IAS according to IAS AC89.
   2. Laboratory: Authorized to operate in the State in which the Project is located.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

B. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

C. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.

d. To provide storage and curing of test samples.

4. Notify Architect and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Owner, it is not practical to remove and replace the work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Vehicular access and parking.

E. Waste removal facilities and services.

1.02 RELATED REQUIREMENTS

A. Section 015100 - Temporary Utilities.

B. Section 015500 - Vehicular Access and Parking.

1.03 TEMPORARY UTILITIES - SEE SECTION 015100

A. Provide and pay for all electrical power, lighting, and water required for construction purposes. Water may be obtained from the Lake in complainace with the Lakeshoe Protection requirements. There is no electrical power on site.

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

A. The Woods Bay Boat ramp witll be closed during construction.

B. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

A. Construction: Contractor's option to protect the work site.

B. Construction: Commercial grade chain link fence. 6' high

1.07 VEHICULAR ACCESS AND PARKING - SEE SECTION 015500

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.08 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.09 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet (600 mm). Grade site as indicated.

C. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 015500
VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Access roads.

B. Parking.

C. Existing pavements and parking areas.

D. Maintenance.

1.02 RELATED REQUIREMENTS

A. Section 011000 - Summary: For access to site, work sequence, and occupancy.

PART 2 PRODUCTS

2.01 MATERIALS

A. Temporary Construction: Contractor's option.

PART 3 EXECUTION

3.01 ACCESS ROADS

A. Tracked vehicles not allowed on paved areas.

3.02 PARKING

A. Use of designated areas of existing parking facilities by construction personnel is permitted.

3.03 MAINTENANCE

A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.

B. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

1.02 RELATED REQUIREMENTS

A. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

F. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

3.02 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Comply with manufacturer's warranty conditions, if any.

F. Prevent contact with material that may cause corrosion, discoloration, or staining.

G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Surveying for laying out the work.

C. Cleaning and protection.

D. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 014000 - Quality Requirements: Testing and inspection procedures.

C. Section 015000 - Temporary Facilities and Controls: Temporary exterior enclosures.

D. Section 017419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

1.04 QUALIFICATIONS

A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.05 PROJECT CONDITIONS

A. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

B. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.

D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Coordinate completion and clean-up of work of separate sections.

C. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Utilize recognized engineering survey practices.

F. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

G. Periodically verify layouts by same means.

H. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.06 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.07 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean site; sweep paved areas, rake clean landscaped surfaces.

C. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.08 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

C. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

D. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Methods of trash/waste disposal that are not acceptable are:
   1. Burying on the project site.
   2. Dumping or burying on other property, public or private.
   3. Other illegal dumping or burying.

C. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 015000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

C. Section 016000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

D. Section 017000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 013000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Preconstruction meeting.

B. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

C. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

D. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 3 EXECUTION

2.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Record Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

2.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

2.03 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Concrete reinforcement.

C. Miscellaneous concrete elements.

D. Concrete curing.

1.02 REFERENCE STANDARDS

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete 1991 (Reapproved 2009).

B. ACI 301 - Specifications for Concrete Construction 2020.

C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).

D. ACI 305R - Guide to Hot Weather Concreting 2020.

E. ACI 306R - Guide to Cold Weather Concreting 2016.

F. ACI 308R - Guide to External Curing of Concrete 2016.

G. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).

H. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.

I. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.

J. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.

K. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2022a.

L. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2022.

M. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.

D. Test Reports: Submit report for each test or series of tests specified.

E. Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 218.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 FORMWORK

A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type IA - Air Entraining Portland type.

B. Fine and Coarse Aggregates: ASTM C33/C33M.

C. Fly Ash: ASTM C618, Class C or F.

D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

2.05 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
   1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
   1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

D. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: As indicated.
   2. Water-Cement Ratio: Maximum 40 percent by weight.
   3. Maximum Aggregate Size: 5/8 inch (16 mm).

2.06 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.05 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.06 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards (76 cu m) or less of each class of concrete placed.

D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

3.07 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

END OF SECTION

SECTION 316329
DRILLED CONCRETE PIERS AND SHAFTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete.

B. Steel Pier

C. Shaft liner, if required.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Requirements for concrete.

1.03 REFERENCE STANDARDS

A. ACI 336.1 - Specification for the Construction of Drilled Piers 2001.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

C. ASTM A252/A252M - Standard Specification for Welded and Seamless Steel Pipe Piles 2019.

D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.

E. ASTM A929/A929M - Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe 2018.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Installer's Qualification Statement.

C. Project Record Documents: Record actual locations of piers, pier diameter, and pier length. Accurately record the following:
   1. Sizes, lengths, and locations of piers.
   2. Sequence of placement.
   3. Final base and top elevations.
   4. Deviation from indicated locations.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

A. Casing: Temporary casings of steel complying with ASTM A283/A283M, Grade C; ASTM A36/A36M; or ASTM A929/A929M; of sufficient strength to withstand handling and drilling stresses, concrete pressures, and surrounding earth and water pressures.

B. Concrete Materials and Mix: Specified in Section 033000.

C. Equipment: Appropriate for dewatering excavated shaft.

D. Steel Piles: ASTM A500 Gr B HSS14x0.625

PART 3 EXECUTION

3.01 PREPARATION

A. Use placement method which will not cause damage to nearby structures.

B. Grade perimeter of pier and shaft area to prevent surface water from draining into soil borings. Provide temporary means and methods, as required, to maintain surface diversion until no

longer needed, or as directed by the Architect.

3.02 INSTALLATION

A. Construct piers in accordance with ACI 336.1.

B. Drill vertical pier shafts and shear rings to diameters and depths indicated.

C. Place steel casings immediately after drilling. Set firmly in place. If casing is to be temporary, install shaft liner with sufficient strength to withstand concrete pressures.

D. Clean shaft and bottom of loose material. Provide temporary means and methods, as required, to remove all water from soil borings as needed, or until directed by the Geotechnical Engineer.

E. Allow inspection of shaft and liner prior to placement of reinforcement and concrete.

F. Place steel pile in the drilled shaft, brace to prevent movment during placing the concrete.

G. Place concrete in single pour in accordance with Section 033000 using tremie methods at the bottom of the shaft and extend up to the ground surface. The steel pile shall be filled to the top. The equipment used shall be designed for vertical placement of concrete. Care should be taked to ensire all voides inside and outside of the pile shall be filled with concrete.

H. Set tops of piers and piles to elevations indicated.

3.03 TOLERANCES

A. Install piers with maximum variation from location, plumbness, bottom area, diameter, and anchorage locations as specified in ACI 336.1.

B. Maximum Variation From Design Top Elevation: Plus 3 inches (75 mm), minus 1 inch (25 mm).

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 014000 - Quality Requirements.

3.05 UNACCEPTABLE PIERS

A. Unacceptable Piers: Piers that fail, are placed out of position, are below elevations, or are damaged.

B. Provide additional piers or replace piers failing to comply with specified requirements.

END OF SECTION

SECTION 355100
FLOATING CONSTRUCTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floating dock sections

B. Access gangway and ramp

1.02 RELATED REQUIREMENTS

A. Section -030000-cast in place concrete

B. Section -316329 drilled concrete piers and shafts

1.03 REFERENCED STANDARDS

A. ASTM D4976– PE 235 Standard Polyethylene Plastic.

B. ASTM D4883 – Standard Test Method for Density of Polyethylene

C. ASTM D638 - Standard Test Method for Tensile Properties of Plastics

D. ASTM D209 - Aluminum and Aluminum-Alloy Sheet and Plate.

E. ASTM B211 - Rolled or Cold Finished Bar, Rod and Wire.

F. ASTM B221 - Extruded Bars, Rods, Wire, Profiles and Tubes.

G. ASTM B210: Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

H. ASTM B308/b308m: AL 6061-T6 Aluminum Structural Profiles.

1.04 SUBMITTALS

A. See Section 013000 – Administrative Requirements for submittal procedures.

B. Product Data: Submittal manufacturers data on manufacturers products showing compliance the specified requirements and installation instructions

C. Shop Drawings: Summit shop drawings illustrating the layout and identifying all the required components of the dock and ramp. Shop drawings and calculation sealed by an register engineer licensed to practice in the State of Montana.

D. Experience: Submit manufacturers and installer experience demonstration that they meet the quality assurance requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer and installer shall have a minimum of 5 years of experience with projects of a similar type.

1.06 WARRANTY

A. See Section 017800 – Closeout Submittals for additional warranty requirements.

B. Provide minimum of 1 yr warrantee for workmanship. Dock components shall be provided with the manufacturers standard warranty, minimum of one year.

PART 2 PRODUCTS

2.01 FLOATING DOCK

A. Floating Dock General Requirements
   1. Manufacturers choice of standard floating dock sections with an Aluminum frame designed with sufficient capacity to support the loading specified on the drawings.
   2. Each section shall have a maximum weight of no more than 120 pounds,
   3. Shall have a draft of no more than 1” under dead load.
   4. Specified live load capabilities of 100 pounds per square foot will be supported.
   5. The percentage of the footprint of floatation to the overall footprint of the dock surface area will be no less than 75% to maximize overall stability.
   6. Once fabricated prepare materials for transportation to the site. Package and crate to prevent damage during loading, transportation and unloading

B. Floating Dock Materails
   1. Aluminum floating dock frame & deck systems:
      a. Manufacturers standard aluminum C-channel frame system with min. 0.125” wall thickness, with height of either 4” or 8” C-channel. Aluminum will be 6061-T6 marine grade. Spacing of cross member(s) will depend on desired decking, but in no circumstance be greater than 16” center to center. All sections will have corner strength gussets, and sections are pre-drilled for ease of field installation.
      b. Frame and mounting shall be provided to allow for the installation of the roller assembly to ensure that the lateral loads from the wave and wind actions be transferred to the piles.
      c. Decking: Natural Durable Wood, composite or PVC decking shall be used.
         1) Natural durable wood shall be nominal 2x6
         2) Composite (Trex Decking or approved equal) or PVC walking surface shall use deck boards measuring nominal 1-inch-thick x 5.5 inches wide with a solid cross section and an embossed simulated wood grain non-skid pattern surface on both sides of each individual deck board. Rated for a uniform live load of 100 lbs./ft² where structural performance has been demonstrated for a temperature range from -20°f to 125°f. PVC decking has a 25-year stain and fade warranty.
      d. Decking and accessories shall be installed to meeting ADA and limit tripping hazards.
   2. Float Sections
      a. Each fload section shall be composed of hand welded high-density polyethylene (HDPE) sheet plastic, using non-rotationally molded floats. Manufactured using individual sheets for sides, ends, bottoms, and tops. With a 100% guaranteed universal wall thickness of 0.150 inches (min.), and completely encapsulated expanded polystyrene (EPS) foam.
      b. Hdpe plastic will be black or white or black in color. It will incorporate an ultraviolet inhibitor of V-8 or better. All plastic material meets requirements of ASTM D4976 – PE 235 & FDA 21CFR 177.1520.
      c. The density of the section is equal to approximately 0.950 grams per cubic inch or .058 grams per cubic centimeter per ASTM D4883.
      d. The tensile strength at yield will be no less than 3800 pounds per square inch, and at break no less than 4400 pounds per square inch, per astm d638.
      e. The material will have a cold brittleness temperature at no less than -103° F
      f. Completely encapsulated eps shall be 100% virgin material and be of a closed cell nature allowing no more than 3% water penetration. This specification will ensure all sections will never sink. Floatation shall not be accomplished by use of air pockets in any form.
      g. All ESP foam blocks used in the manufacturing process will be pre-cut and hand trimmed to exact size, then hand loaded into each float section to ensure 100% foam filled, air-tight encapsulation.
      h. Floatation will be lag bolted into the bottom of the c-channel with 3/8” x 1-1/2” stainless steel lag bolts. All heavy duty sections are bolted together with 3/8” x 5”stainless steel 304 series hardware.
   3. Gangways and Ramps
      a. A 5’x20’ gangway shall be supplied to provide access to the floating dock from the shore. Ganway shall have guradrail and ADA handrail on both sides.
      b. Aluminum gangways and ramps are built with 6005-T5 marine grade Aluminum to customer’s desired length and width.
      c. Gangways and ramps are built to withstand a 50 pounds per square foot live load rating. Typically, gangway and ramp construction will be as follows:
         1) Core fabrication will be done with either 2” x .125” aluminum square ribbed tubing or 3” x .125” aluminum square ribbed tubing depending on the overall dimensions of the gangway or ramp. Gangway sides are built as a truss or beams with guardrail/handrail. For truss construction the center stanchions are typically 5’ center to center (or as close to 5’ as possible depending on the length of the gangway), and they are built into the structure of the design and

take a pre-stressed arch shape for additional strength. Underneath support trusses are included as needed, where the stanchions are composed of the same aluminum square tube as the core structure and the stringer is either 2'' x 2'' x .25''architectural angle or 3'' x 3'' x .375'' architectural angle depending on the size of the gangway or ramp. Additional 45° square tube gussets are built in on select gangway and ramp ends where extra structural stability is needed.

2) Standard Decking will be 1'' x 12'' 6005-T5 aluminum ribbed and knurled non-skid aggressive surface, with decking supports at no more than 24" on centers. On each end of the deck boards, the boards will be supported by a 1'' x 1'' x .125'' architectural angle which spans the distance of the gangway or ramp. All decking members will be welded to these pieces of angle, and thus will be welded to the structure of the gangway. No deck screws will be used to attach standard aluminum decking.

3) On gangways, the distance from the standing surface of the decking to the top of the side truss/fuarrail will be no less than 42''

d. Gangway and Ramp Attachment:

1) Dockside Hinge Attachment – A piano hinge design made up of various lengths of dock connector welded to the face of a piece of flat bar and with a 1-1/4" sch 80 aluminum pipe hinge pin with a pvc pipe bushing. Hinges to have no more than 1/8" gap between knuckles (dock connector) horizontally, and to have smooth transition as to not create a trip hazard. Dockside hinge material shall be either 3" x 3" x .25"structural angle or 9" x .375" flat bar. The gangway or ramp side of the hinge material is typically 3'' x .5'' flat bar or 4'' x .5'' flat bar depending on the size of the gangway or ramp.

2) Landside Roller Attachment – These roller assemblies are attached to the underside of the gangway or ramp and land on the shore to allow the dock to rise and fall with fluctuating water levels. The roller assembly is composed of two tabs that are composed of 2'' x .375'' flat bar that are welded to the underside of the gangway or ramp. Also, there is a 5/8'' stainless steel round rod that is used as the axel going through the roller and the flat bar tabs. The roller is a 12'' long by 2-3/8''diameter polyurethane round tube. The number of roller assemblies attached to the gangway or ramp depends on its width.

4. Accessories

a. Accessories will bolt directly into the framing system on every float section. All accessories will bolt in the framing system with 304 series stainless steel hardware.

b. Aluminum S-cleats 8" s-cleats with ½" mounting hardware installed anywhere along the perimeter of the floating dock system.

c. Pile Guide Rollers: Piles will be located inside the perimeter of the dock. Provide manufacturers standard pile guide roller assemblies to provide sufficient capacity to transfer the loads from the frame to the piles. Roller guides shall be sized to provide ability of dock to accommodate the change in the level of the lake and remain in place on the lake bed during low water.

d. Bumpstrip – will be installed with 5/16" carriage bolts and a double-sided adhesive tape on the exterior wall of the aluminum frame on specified float sections per the drawings. Bumpstrip will have a p profile with either a clay tone or beige color.

PART 3 EXECUTION

3.01 EXAMINATION:

3.02 VERIFY LINES LEVELS AND DIMENSIONS BEFORE PROCEEDING WITH WORK IN THIS SECTION.

A. Verify pile locations and field conditions

3.03 PREPARATION

A. Material: Unload and store materials per manufacturers requirement.

3.04 INSTALLATION

A. Dock to be installed per manufacturer recommendation in coordination with the pile layout.

B. Sections to be attached together with the recommended attachment method which will be covered under warranty.

C. All attachment methods shall have the ability to bolt directly into the framing system on every float section.

D. All attachments will bolt into the framing system with 304 series stainless steel hardware.

E. Anchoring to pilings: all attachment methods will not have a specified location where they must be attached. During field installation, the installer will have the ability to move the ability to move the location of the attachment method.

END OF SECTION

Slopeside Engineering

December 15, 2021

Jackola Engineering and Architecture
2250 US 93 South
Kalispell, MT, 59901

Subject: **Geotechnical Investigation**
Woods Bay Dock Project
Woods Bay, Montana
Job No. 21-435

Dear Mr. Karl Henshaw,

At your request, Slopeside Engineering, LLC (Slopeside) has conducted a Geotechnical Investigation in the vicinity of planned dock at the Woods Bay fishing access site, in Woods Bay, Montana. The Vicinity Map, Figure 1, shows the general location of the site. The investigation was conducted to evaluate subsurface materials, observe conditions at the site, and develop recommendations for embedment depths of pipe piles supporting a floating dock. The investigation included a review of existing subsurface information for the site vicinity, subsurface explorations, field observations, and engineering analyses. This report describes the work accomplished and provides our conclusions and recommendations for use in the design and construction of the proposed project. Slopeside has strived to perform the investigation and develop recommendations in a manner consistent with the degree of care that is presently standard to the geotechnical engineering profession.

slopesideeng@gmail.com *406-270-3480* *181 Deerfoot Trail*
Kalispell, MT, 59901

PROJECT DESCRIPTION

The project site is located at the State of Montana, Fish, Wildlife, and Parks, Woods Bay fishing access, just north of 33401 Whitecap Lane, in Woods Bay, Montana. The location of the site is shown on the attached Vicinity Map, Figure 1. Available design details indicate a new floating dock with fixed piles as anchors, will be located adjacent to the existing boat launch. The dock will be a floating dock and will be connected to the piles in a way that allows for raising and lowering with the lake's water level. Pile loading was provided by Jackola Engineering and Architecture.

SITE DESCRIPTION

General

The project site is developed with an existing concrete boat ramp that will remain in place. A floating dock without pile anchors was previously at the planned new dock location. The dock is located in an area of the lakebed that is dry during low water levels and covered with up to about 7 ft of water during full pool.

Topography

Site observations indicate that in the vicinity of the planned dock, the ground surface slopes downward to the west at slopes flatter than 10H:1V. Signs of recent and/or past slope instability were not observed within the planned dock area. Significant wave action does appear to cause scour, erosion, and deposition in the upper 2 ft of soil.

Geology

The surficial geology of the site is glacial till and outwash deposited during alpine glaciation in this area. The till soils in the project area are ground or lateral moraine materials deposited over Precambrian bedrock. These glacial soils have generally experienced moderate to substantial preloading by the weight of glacial ice. Seepage is common, but relatively unpredictable in the till deposits. Seepage often occurs in the more weathered material near the ground surface and in random permeable zones.

Site Seismicity

The site lies within the Intermountain Seismic Belt and is mapped as a zone of potentially significant seismic ground movement. Subsurface materials encountered during this limited investigation indicate the site soils should be classified as Site Class C, in accordance with the International Building Code (IBC 2018). Based on the relatively dense nature of the soils, we anticipate the risk of liquefaction or lateral spreading is low.

SUBSURFACE CONDITIONS

General

Subsurface materials and conditions at the site were investigated on May 25, 2021, with two borings, designated B-1 and B-2. The borings were advanced to depths of 19.1 to 19.2 ft below the ground surface. The approximate locations of the subsurface explorations are shown on the Site Plan, Figure 2. Logs of the borings are provided on Figures 1A and 2A.

Soils

Near-surface soils generally consist of beach gravels and silty sand over Glacial Till soils. The Glacial Till soils are comprised of silty gravel with sand, cobbles, and boulders. The prominent strata are listed below and described more thoroughly in the following paragraphs:

1. **Poorly Graded GRAVEL**
2. **Silty SAND**
3. **GLACIAL TILL**

1. Poorly Graded GRAVEL: Beach gravels comprised of poorly graded gravel was encountered at the ground surface in both borings. The gravel is loose, subround and sorted. The gravel is relatively clean and is typically ¾ to 1½ inch in size, with some scattered coarse gravel and cobbles. The gravel extends to depths of 1 to 2 ft and is underlain by silty sand.

2. Silty SAND: Silty sand was encountered beneath the beach gravels in both borings advanced for this project. The silty sand soils are brown, medium dense, and wet. The sand is fine grained and contains scattered gravel. The sand extends to depths of 3 to 3.5 ft below the ground surface and is underlain by Glacial Till.

3. GLACIAL TILL: Glacial till comprised of silty gravel with varying percentages of sand, cobbles, and boulders was encountered beneath the silty sand in Borings B-1 and B-2. SPT blow counts of 58 blows per ft to 50 blows for 3 inches, indicate the Glacial Till soils are very dense. Visual observations indicate the Glacial Till is moist. The gravel in this soil unit is commonly fine to coarse and subround. Large boulders and rock fragments greater than 3 ft in size are present within this soil unit and should be anticipated during construction. Both borings were terminated in this soil unit at depths of 19.1 and 19.2 ft.

Groundwater

In the vicinity of the project, groundwater appears to correspond with the Flathead Lake level, and is commonly up to almost 7 ft above the ground surface at the western most planned pile location. It should be noted that groundwater seepage into the borings was slow due to the very dense Glacial Till soils.

ENGINEERING ANALYSIS and RECOMMENDATIONS

General

Based on discussions with the project team, we understand 14 inch outside diameter pipe piles with a minimum wall thickness of 0.625 inches (HSS14x0.625) are planned for the dock supports. The piles will be filled with structural concrete. Loading information provided by the project team indicates the westernmost piles (3 piles) will need to resist a 32.7 kip lateral load applied a maximum of 7 ft up from the ground surface. The remaining 4 piles will need to resist a 10 kip lateral load applied a maximum of 5.3 ft above the existing ground surface.

Pile Design and Construction

Soils encountered at the planned dock site consist of poorly graded gravel and silty sand to depths of 3 to 3.5 ft below the ground surface, where very dense Glacial Till soils were encountered. Due to the likelihood of encountering large cobbles, boulders, and possibly rock fragments at the pile locations, Slopeside recommends the piles be set in drilled shafts with a minimum diameter of 2 ft. Temporary casing of the drilled shaft will likely be necessary in the upper 5 to 10 ft. Depending on the speed of water infiltration, longer casing may be necessary, if caving of the sidewalls occurs.

Using the design loads and pile types provided by Jackola Engineering and Architecture, in addition to soil types encountered in the borings, Slopeside utilized LPile version 2019.11.09, created by Ensoft, Inc., to conduct lateral load resistance calculations to assist with recommended pile embedment depths. Based on this analysis, Slopeside recommends the piles resisting the 32.7 kip lateral load (3 westernmost piles) be embedded a minimum of 20 ft into very dense Glacial Till soils and the piles resisting the 10 kip lateral load (4 easternmost piles) be embedded a minimum of 15 ft into very dense Glacial Till. Due to anticipated soil types and freeze-thaw cycles occurring in the upper approximately 4 to 5ft of soil, Slopeside recommends the upper 5 ft of soil not be relied on for lateral support of the piles. Therefore, we anticipate embedment depths of 25 ft below ground surface for the 3 westernmost piles, and 20 ft for the 4 easternmost piles. Lateral deflection up to 1 inch should be anticipated at the ground surface; however, fixity should be anticipated 5 ft below the ground surface. The recommended embedment depths will also be sufficient to reduce the risk of frost heave adversely affecting the constructed piles.

Following drilling of the drilled shafts, structural concrete with a minimum compressive strength of 4,000psi shall be placed using tremie methods at the bottom of the shaft, and extend up to the ground surface. Care shall be taken to ensure all voids inside and outside of the pile are filled with concrete.

Construction Services and Quality Control

Geotechnical observation should be provided to monitor the pile construction stages of construction. Continuous Special Inspections to observe pile drilling and placement will be necessary to comply with the IBC 2018. These geotechnical services should ascertain that subsurface conditions are reasonably consistent with those determined by our investigation, and should ascertain that site and deep foundation preparation are consistent with our recommendations.

CONCLUSION

The foregoing recommendations present our initial geotechnical input for design and construction of the project. In order for these recommendations to be properly incorporated in the subsequent design and construction stages we recommend that our geotechnical engineering staff remain involved with the project to ascertain that our recommendations have been properly interpreted both during design and construction. These services will reduce the potential for misinterpretation of subsurface conditions and geotechnical design recommendations that are

important in the preparation of project plans, specifications and bid documents.

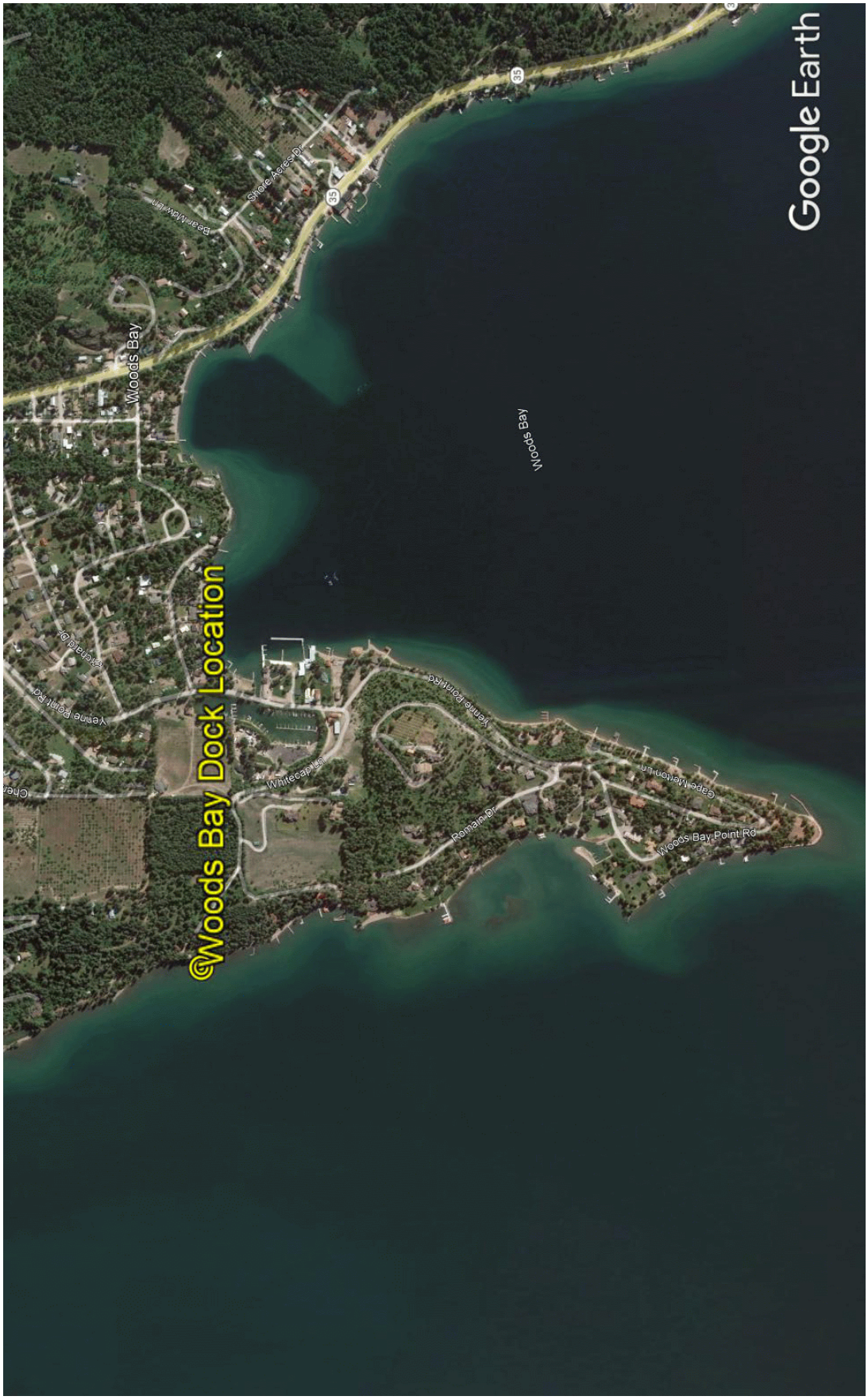
LIMITATIONS

Slopeside Engineering, LLC, has strived to prepare this report in accordance with generally accepted geotechnical engineering practices in this area solely for use by the client for design purposes and is not intended as a construction or bid document representing subsurface conditions in their entirety. The conclusions and recommendations presented are based upon the data obtained during the investigation as applied to the proposed design and construction details discussed in this report. The nature and extent of variations between the subsurface explorations may not become evident until construction. If variations are then exposed, it will be necessary to reevaluate the recommendations of this report.

If changes in the concept, design data, or location of the structures are planned, the recommendations contained in this report shall not be considered valid unless the changes are reviewed by our geotechnical engineer, and a written response is provided.

Sincerely,

Joshua C. Smith, P.E.
Principal Geotechnical Engineer

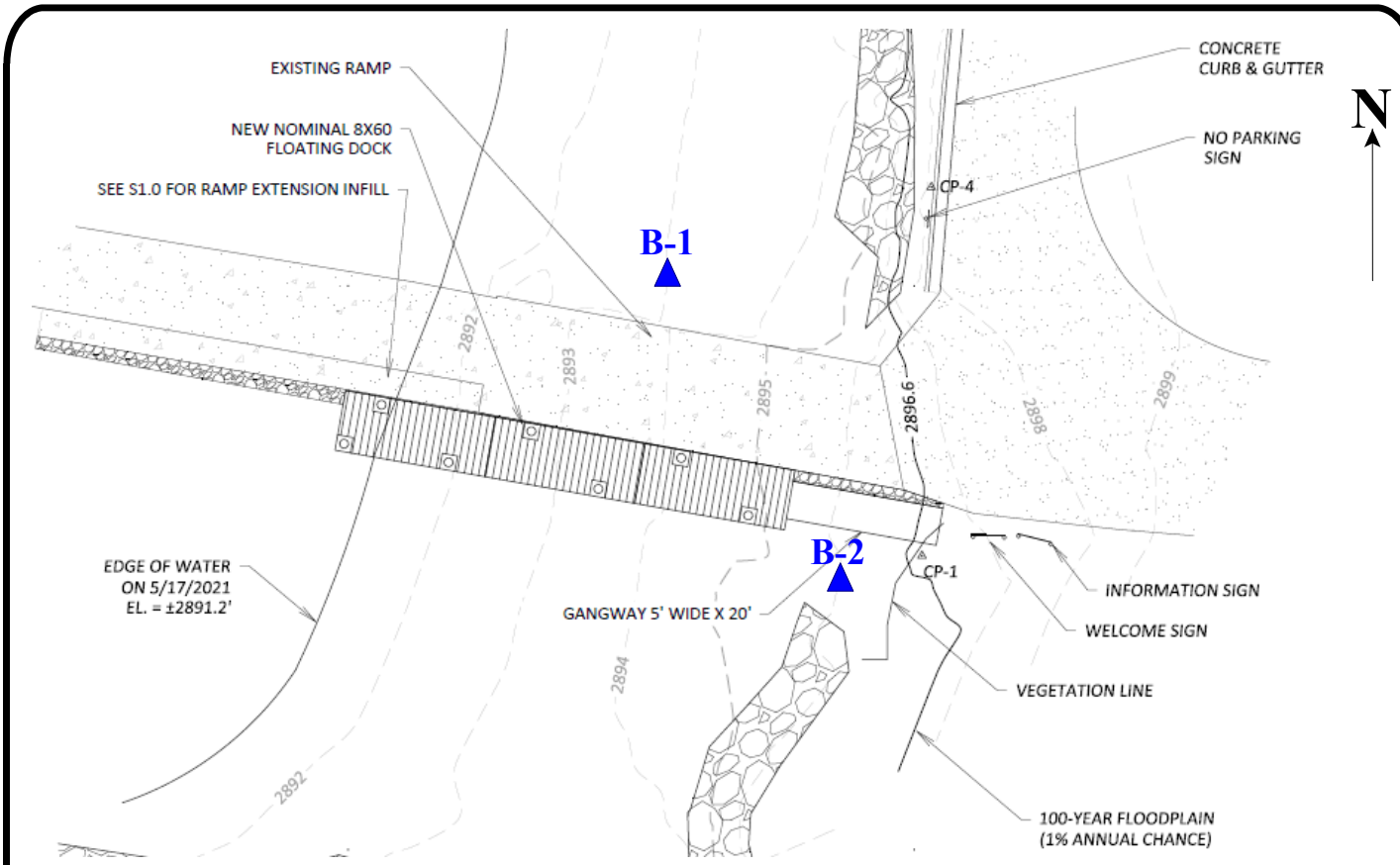


Project:	Woods Bay Dock Woods Bay, Montana	**Job Number:** **Date:**	21-435 December 3, 2021

Vicinity Map

Slopeside Engineering, LLC
Kalispell, MT
FIGURE 1

Slopeside Engineering



Project:	Woods Bay Dock Woods Bay, Montana	**Job Number:** **Date:**	21-435 December 6, 2021

Site Plan

Slopeside Engineering, LLC
Kalispell, MT
FIGURE 2

Slopeside Engineering

Slopeside Engineering

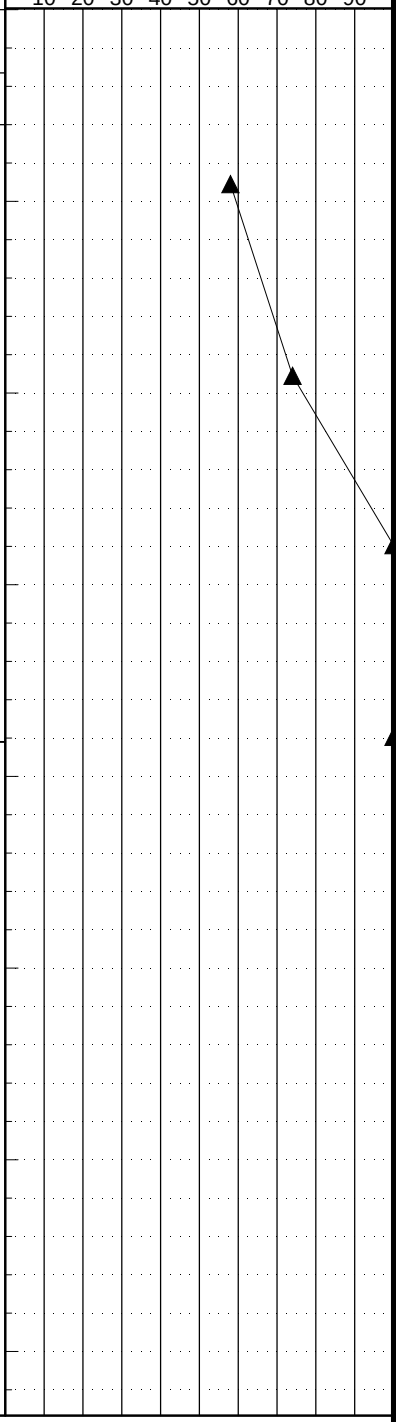
BORING LOG B-1

PROJECT: Woods Bay Dock Project | **PROJECT NO.:** 21-435
CLIENT: Jackola Engineering and Architecture | **DATE:** May 25, 2021
LOCATION: See Site Plan | **ELEVATION:** 2,893ft
SUBCONTRACTOR: Crowley Environmental Drilling | **LOGGED BY:** Joshua Smith
METHOD: Mobile B61 - Hollowstem Auger | **GW:** ▽ 1ft May 25, 2021
GW(2): ▽

DEPTH (feet)	SAMPLERS	SAMPLE NO.	DEPTH (feet)	SOIL TYPE	MATERIAL DESCRIPTION
0					
			1.0		Poorly Graded GRAVEL; loose, medium size (1 inch), damp, subround, scattered cobbles and boulders (Beach Gravel)
					Silty SAND; medium dense, brown, fine grained sand, wet
			3.0		Silty GRAVEL with Sand, Cobbles, and Boulders; very dense, fine to coarse and subround gravel, gray, moist
5		S-1			
10		S-2			
15		S-3			
		S-4			
20					Boring terminated at 19.1 ft.
25					
30					
35					

TEST RESULTS

Plastic Limit ⊢——⊣ Liquid Limit
Water Content ● (percent)
N-values ▲ (Blows per foot)
10 20 30 40 50 60 70 80 90



This information pertains only to this boring and should not be interpreted as being indicative of the site.

Groundwater seepage into drilled boring is extremely slow, even though we were only 1 ft above lake level at time of drilling.

Slopeside Engineering

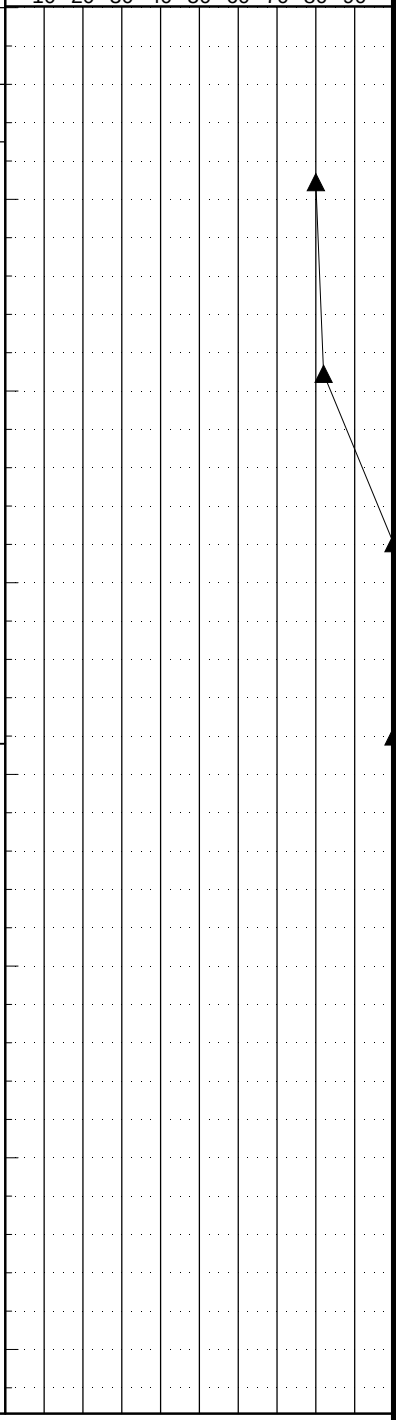
BORING LOG B-2

PROJECT: Woods Bay Dock Project
PROJECT NO.: 21-435
CLIENT: Jackola Engineering and Architecture
DATE: May 25, 2021
LOCATION: See Site Plan
ELEVATION: 2,896ft
SUBCONTRACTOR: Crowley Environmental Drilling
LOGGED BY: Joshua Smith
METHOD: Mobile B61 - Hollowstem Auger
GW: ▽ 4 May 25, 2021
GW(2): ▽

DEPTH (feet)	SAMPLERS	SAMPLE NO.	DEPTH (feet)	SOIL TYPE	MATERIAL DESCRIPTION
0					
					Poorly Graded GRAVEL; loose, medium size (1 inch), damp, subround, scattered cobbles and boulders (Beach Gravel)
			2.0		Silty SAND; medium dense, brown, fine grained sand, very moist
			3.5		Silty GRAVEL with Sand, Cobbles, and Boulders; very dense, fine to coarse and subround gravel, gray, moist to very moist
5		S-1 ▽			
10		S-2			
15		S-3			
20		S-4			Boring terminated at 19.2 ft.
25					
30					
35					

TEST RESULTS

Plastic Limit ⊢——⊣ Liquid Limit
Water Content ● (percent)
N-values ▲ (Blows per foot)
10 20 30 40 50 60 70 80 90



This information pertains only to this boring and should not be interpreted as being indicative of the site.

Groundwater seepage into drilled boring is extremely slow, even though we were only 4 ft above lake level at time of drilling.