

INDEX SPECIFICATIONS LORING

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1. GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

The contractor shall install a 100' x 12' main float and a 20' x12' transition float as the main bid. Additive Alternative 1 is to supply and install shore tie pipe piles. Additive Alternate 2 is for as many 6' x 20' shore tie floats that can be constructed with the remaining funds available after the main float is installed. If funds still remain Additive Alternate 3 is for a 10' x 16' airplane float. The Service Area may want to construct different combinations of the alternatives to get as many improvements to the float system as funds are available.

A. Contractor's duties:

1. Except as specifically noted, provide and pay for:
 - a. Labor, materials and equipment;
 - b. Tools, construction equipment and machinery;
 - c. Water, heat, and other utilities required for construction; and
 - d. Other facilities and services necessary for proper execution and completion of Work.
 - e. All fuel and lubricants for Marine vessels and equipment.
2. Pay legally required sales, consumer, and use taxes.
3. Secure and pay for, as necessary for proper execution and completion of Work, and as applicable at time of receipt of bids:
 - a. Permits;
 - b. Government fees; and
 - c. Licenses.
4. Give required notices.
5. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
6. Promptly submit written notice to Owner of observed variance of Contract Documents from legal requirements. It is not Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.
7. Enforce strict discipline and good order among employees. Do not employ on Work:
 - a. Unfit persons; and/or
 - b. Persons not skilled in assigned task.

END OF SECTION

1. GENERAL**1.01 PROJECT COORDINATION**

It shall be the responsibility of the Contractor to coordinate all work to be performed under this contract. This coordination shall encompass all work to be performed by the Contractor, his or her subcontractors, the Owner and any public agencies and utilities, which may be involved.

1.02 ACCESS TO THE WORK

Access to the work shall be provided as may be required by the Owner and his or her representatives from the Ketchikan Gateway Borough and by the Loring Service Area. The Contractor shall provide access to the work for representatives of the Alaska Department of Environmental Conservation and OSHA.

1.03 OVERTIME INSPECTION

Normal working time is defined as an eight-hour day and or forty (40) hour week including paid holidays. The contractor shall notify the Owner when overtime will be performed and the anticipated duration. Adequate time shall be allowed for the Owner to arrange for inspection. The Contractor shall not perform overtime work without the approval of the Owner. The Owner may bill the contractor for any overtime inspection required.

1.04 CONTRACTOR'S SUPERINTENDENT

The Contractor shall at all times have a competent superintendent at the job site who shall be acceptable to the Owner and capable of reading and thoroughly understanding the plans and specifications and who shall have authority to receive instructions from the Owner. The superintendent shall have full authority to execute the orders or directions of the Owner without delay, and to supply promptly such materials, tools, plant, equipment (including gas masks or other necessary safety equipment), and labor as may be required regardless of whether or not work is to be performed by the Contractor's own forces or those of a subcontractor. The fact that an approved subcontractor is performing any portion of the work shall not relieve the Contractor of this requirement.

1.05 TRESPASS

The Contractor will be solely responsible for any trespass upon adjacent property or injury thereto resulting from or in connection with his or her operations. He or she will be liable for any claims that may be made on account of trespass or the deposit of debris of any kind upon private property.

END OF SECTION

1. GENERAL**1.01 PROJECT SEGMENTS**

The construction area should be kept as compact as possible, work shall proceed quickly, and boat access shall be maintained during construction. The contractor must coordinate all work and scheduling with the Ketchikan Gateway Borough and the Loring Service Area.

1.02 CONSTRUCTION SCHEDULE RESTRICTIONS

The Contractor shall meet with Property Owners, Borough Staff, and Loring Service Area Board prior to project construction to discuss scheduling and to mitigate impacts as much as possible. Bypass traffic routes shall be discussed and agreed upon before construction.

The Contractor shall perform all work between the hours of 6:00 AM and 11:00 PM, unless otherwise approved by the Owner. The Contractor, when working before sunrise or after sunset, shall light the various parts of the work in a manner satisfactory to the Engineer and shall also comply with all regulations of the Owner and other applicable agencies. No work will be done on Saturdays or Sundays without prior approval by the Owner.

END OF SECTION

1. GENERAL**1.01 CONTENTS**

This section deals with the measurement and payment provisions of the project and gives a general description of the various bid items.

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

Unit Prices: Section 01026

2. MEASUREMENT**2.01 RESPONSIBILITY FOR MEASUREMENT**

The Owner's Resident Project Representative shall make all measurements, and determine all quantities and amounts of work done under the Contract. At the time measurements are made for quantity determinations, the Contractor or his or her authorized assistant shall be present to verify such measurements. From quantity figures so ascertained, it will be the Contractor's responsibility to prepare a monthly periodical estimate of the work accomplished to date. This estimate shall be submitted to the Resident Project Representative for his review and check no later than the twentieth (20th) day of each month. The form for such monthly estimates shall be subject to the approval of the Resident Project Representative.

2.02 DESCRIPTION OF TALLY METHOD FOR PAYMENT QUANTITIES:

- A. When items are specified to be paid for by the cubic yard, ton, or truck count, the following tally system will be used:
 - 1. All trucks to be employed on this work shall be measured by the Resident Project Representative to determine the capacity of each truck. The Contractor shall verify any such measurements. Trucks shall not haul quantities in excess of state legal load limits.
 - 2. Each truck shall be clearly numbered with no duplication numbers.
 - 3. Duplicate tally tickets shall be prepared to accompany each truckload of material delivered on the project. The tickets shall bear at least the following information:
 - a. Truck Number;
 - b. Quantity delivered in cubic yards or tons as applicable;
 - c. Driver's name and date;
 - d. Location of delivery by street and stationing on each street; and
 - e. Place for receipting by the Resident Project Representative.
 - 4. It will be the Contractor's responsibility to see that a ticket is given to the Resident Project Representative on the project for each truckload

of material delivered. Pay quantities will be prepared on a basis of said tally tickets.

- B. When the bid item stipulates quantities by weight they shall be weighed on scales that are in accordance with the requirements of the state highway department for similar use. Certified weight bills shall be furnished.
- C. If this method is impracticable, or if the bid item stipulates payment by cubic yards, then the weight of the material delivered shall be computed from the volume of material delivered on the basis of one (1) cubic yard of crushed or backfill gravel weighing 3,400 pounds and one (1) cubic yard of crushed rock weighing 3,400 pounds.

2.03 MEASUREMENT FOR PIPELINES

Measurement for payment shall be along the pipe from center to center of fittings and through the valves.

2.04 TEMPLATE QUANTITIES

Where pay limit dimensions are shown on the Contract Drawings for excavation, re-paving, bedding, or other work, the quantity to be measured for payment shall be the lesser of actual quantities furnished, or computed quantities to pay limit lines.

2.05 SCHEDULE OF VALUES

When bid units are lump sum the Owner's may request and approve a Schedule of Values for each bid item to assist in the evaluation and development of payments for Contractors pay requests.

2.06 MEASUREMENT FOR LUMP SUM ITEMS

Measurement shall be the Resident Project Representative's estimate of percentage completion for line items in the approved Schedule of Values.

2.07 MEASUREMENT FOR FITTINGS

Where pipe fittings are paid by weight, the weight shall be the manufacturer's published fitting body weight, exclusive of bolts, glands, gaskets, linings, or coatings. No separate payment will be made for fasteners, gaskets, or standard glands for MJ fittings.

2.08 VALUE OF ON-SITE MATERIALS

For purposes of progress payment computations, the value of On-Site Materials shall be taken as 90 percent of invoice amount including freight only for materials landed in Ketchikan.

3. PAYMENT**3.01 PROGRESS PAYMENTS**

Monthly payments, based on the estimated progress of the work, will be made to the Contractor. The Resident Project Representative will make an estimate of the amount of work completed and of value of such completed work. He shall also make an estimate of the amount and value of acceptable material to be incorporated in the completed work, which has been delivered and properly stored at or near the site or at a location acceptable to the Owner.

With this estimate as a base, a partial payment shall be made to the Contractor, which partial payment shall be equal to the value of completed work as computed from the above estimate plus the value of accepted materials which are in a condition or state of fabrication ready to be incorporated into the completed structure and which are held in storage on or near the work, less such amounts as may have been previously paid, less such other amounts as may be deductible or as may be owing and due to Owner for any cause and less an amount to be retained in protection of Owner's interests.

Quantities used for progress estimates shall be considered only approximate and provisional, and shall be subject to recalculation, adjustment and correction by the Resident Project Representative in subsequent progress estimates and in final estimates. Payment for materials, inclusion of any quantities in progress estimates, or failure to disapprove the work at the time of progress estimates shall not be construed as acceptance of the corresponding work or materials.

The estimates upon which partial payments are based are not represented to be accurate estimates and all quantities shown therein are subject to correction in the final estimate. If the Contractor uses such estimates as a basis for making payment to subcontractors, he or she does so at his or her own risk, and he or she shall bear all loss that may result.

No material, supplies, or equipment incorporated into the work shall be purchased subject to chattel mortgage, under a conditional sale, or other agreement by which an interest therein, or in any part thereof, is retained by the seller, material person, or the supplier. The Contractor, by accepting a progress or final payment, as applicable, warrants good title to all materials and supplies purchased for or incorporated into the work.

3.02 PAYMENT FOR UNIT PRICE ITEMS

- A. Payments to be made to the Contractor will be made according to the unit price schedule in Section 01026.

END OF SECTION

1. GENERAL**1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE**

Measurement and Payment: Section 01025.

1.02 DESCRIPTION OF BID ITEMS

- A. The bid items described herein are applicable where the bid item is listed in the Bid Form unless otherwise provided in the contract documents. Payment will be made only for items listed in the proposal. All other items required for the work shall be considered as incidental to the construction.

Incidental work includes, but is not limited to: traffic control; survey layout; temporary maintenance of utilities; testing.

- B. Unless specifically stated otherwise in this section, the unit prices bid shall constitute full compensation for all labor, equipment, and materials required to furnish and install each item.

1.03 ESTIMATED QUANTITIES

- A. The estimated quantities shown in the bid forms are estimates only, being given only as the basis for the comparison of bids, and the Owner does not warrant, expressly or by implication, that the actual amount of work will correspond therewith. The right to increase or decrease the amount of any class or portion of work or to make changes in the work required as may be deemed necessary is reserved by the Owner as provided elsewhere in these Specifications. The basis of payment will be the actual unit bid items of work performed and measured in accordance with the contract.

Pipeline quantity estimates included on the bid forms are based on horizontal distances plus an allowance of 2 percent for slope.

Rock excavation estimates included on the bid forms are based upon the template pay limits shown on the contract drawings, with rock surface at the pipe centerline projected from and assumed equal to the rock surface elevation, of the nearest probe, test pit, or boring, and assumed to vary linearly between data points. Actual elevations may vary considerably from assumed. An arbitrary five (5) percent increase in the computed quantity was added as a contingency.

Borrow quantity estimates included on the bid forms are based upon template pay limits for trench excavation less pipe, bedding, pavement, and base course.

Estimated foundation gravel quantities are based on an arbitrary volume approximately equal to the area of the trench bottom times an assumed depth of six inches.

SECTION 01026**UNIT PRICE**

- B. Certain bid items may be included in the Contract Proposal to establish a unit price should the use of those items become necessary during construction. Allowance will not be made for loss of anticipated profits or additional compensation should the use of these items be deemed unnecessary.

END OF SECTION

1. GENERAL**1.01 INSPECTION BY OWNER**

Inspection and construction contract administration for this project will be performed by the Owner through designated authorized employees or by contract with the Engineer.

1.02 RESIDENT PROJECT REPRESENTATIVE

The Owner shall designate an authorized employee to act as Resident Project Representative at the time of Notice to Proceed. The Resident Project Representative shall be responsible for daily coordination with the Contractor, and for furnishing instructions to Contractor's field superintendent regarding the location and nature of desired improvements.

He shall also monitor equipment and workmen at the site, review Contractor quantity estimates and communicate with Contractor regarding Owner authorizations and instructions regarding mobilization, demobilization, and adjustments to the scope of work.

The Resident Project Representative may be assisted by one or more inspectors, surveyors, or technical support staff.

1.03 AUTHORITY OF INSPECTORS

- A. Where the term "inspectors" is used in this section, it shall mean the Resident Project Representative, inspectors, surveyors, or technical support staff.

Inspectors may be on the job to keep the Owner informed as to the progress of the work and the manner in which it is being done; to keep the records; act as liaison between the Contractor and the Owner; also to call the attention of the Contractor to any deviations from the Contract Documents.

- B. Inspectors may reject or accept materials and equipment to be incorporated in the work.

Since inspectors cannot control how the material is used, the responsibility for its safety and proper use will be the Contractor's. Until the job is finally completed, the Contractor might do work that changes or modifies work previously done and even though at any given time a piece of work might be well done and acceptable in quality, the responsibility for keeping it in that condition until the job is completed is the sole responsibility of the Contractor. For this reason, it is impossible to accept, finally, any portion of a project until the project as a whole is acceptable and control of said project is withdrawn from the Contractor by final official written acceptance by the Owner.

- C. Any personal assistance or suggestions which an inspector, the Resident Project Representative, or the Engineer may give the Contractor will not be construed as the basis of any assumption of responsibility in any manner, financial or otherwise, by the inspector, the Owner, or the Engineer.
- D. The presence or absence of an inspector on any job will be at the sole discretion of the Owner, and such presence, or absence, of an inspector will not relieve the Contractor of his or her responsibility to obtain the construction results specified in the Contract Documents.
- E. The inspector will not be authorized to approve or accept any portion of the work or to issue instructions contrary to the Contract Documents. Such approvals, acceptances, or instructions, when given, must be in writing and signed by the Owner. The inspector will have authority to reject defective material; however, the failure of the inspector to reject defective material or any other work involving deviations from the Contract Documents will not constitute acceptance of such work.
- F. Nothing in this subsection shall in any way be so construed as to require or to place responsibility for, the method, manner or supervision of the performance of the work under this Contract upon the inspector, the Owner, or the Engineer. Such responsibility rests solely with the Contractor.

1.04 EXAMINATION OF MATERIALS

The neglect or failure on the part of Owner to condemn or reject substandard material or work shall not imply an acceptance of the materials or work.

1.05 SCHEDULING

After receipt of Notice to Proceed, but prior to equipment mobilization, Contractor's superintendent shall inspect the job site with the Resident Project Representative, at which time Owner's work priorities shall be discussed and a mobilization and initial work schedule established. Note conditions in scope for demobilization and mobilization caused by weather delays.

The Contractor's superintendent shall meet daily with the Resident Project Representative to discuss job progress, establish types of work to be accomplished, and request any necessary authorizations or instructions.

1.06 DAILY REPORTS

At the end of each day's work, the Contractor's superintendent shall prepare, in duplicate, a signed summary of estimated bid item quantities furnished that day. This summary shall be furnished to the Resident Project Representative on the same or following day.

END OF SECTION

1. GENERAL**1.01 PRECONSTRUCTION CONFERENCE**

Within twenty (20) days after the effective date of the Agreement, but before the Contractor starts work, a preconstruction conference shall be held in Ketchikan at a location to be indicated by the Owner.

1.02 ATTENDANCE

- A. The Contractor shall be represented at the conference by the following:
 - a. Job site superintendent.
 - b. Project Manager (if other than job site superintendent).
 - c. Partner, Owner, or Corporate Officer responsible for execution of contract agreements (if other than project manager or job site superintendent).
 - d. Subcontractor superintendents for subcontracts in excess of \$100,000. This requirement does not apply to equipment suppliers.
- B. The conference shall also be attended by the Owner, Engineer, and other parties as appropriate.
- C. The Owner or Engineer shall take minutes of the meeting, and distribute them to attendees.

1.02 RELATED SPECIFICATION SECTIONS

- a. General Conditions
- b. Special Conditions
- c. Section 01010, Summary of Work
- d. Section 01011, General Requirements
- e. Section 01016, Work Sequence
- f. Section 01025, Measurement and Payment
- g. Section 01026, Unit Price
- h. Section 01043, Job Site
- i. Section 01210, Preconstruction Conference
- j. Section 01400, Quality Control
- k. Section 01545, Protection of Property
- l. Section 01631, Deviations from Plans and Specifications
- m. Section 01700, Project Closeout
- n. Section 02895, Timber Floats
- o. Section 02896, Drilled Steel Pipe Pile
- p. Section 02897, Driven Steel Pipe Pile
- q. Section 05120, Structural Steel

1.03 SUBMITTALS

Within ten days after the effective date of the Agreement, Contractor shall submit to the Engineer for review:

- a. Construction Schedule
- b. A preliminary schedule of Shop Drawing and Project Data submittals

2. AGENDA

2.01 MINIMUM AGENDA

At a minimum, the following items shall be reviewed and discussed at the Preconstruction Conference.

- a. Introductions, Identify participants, affiliation, responsibility, mailing addresses, voice and facsimile telephone numbers.
- b. Review status of construction transmittals, e.g., construction drawings.
- c. Communication Procedures
- d. Shop Drawing, Project Data Submittal Procedures
- e. Payment Procedures
- f. Schedule of Values
- g. Contractor's Schedule and Work Sequence
- h. Progress Meetings
- i. Project Records
- j. Field Office Arrangements
- k. Discrepancies in Contract Documents
- l. Regulatory Requirements
- m. Authority of Inspectors

The Conference shall be followed by a joint inspection of the site by Owner, Engineer, and Contractor.

3. CONSTRUCTION SCHEDULE

The schedule shall be developed by a scheduling consultant or by the Contractor. The schedule shall be developed and updated by personnel with expertise and experience in construction scheduling. The Contractor shall determine all the information necessary for development of a schedule which accurately demonstrates the Contractor's plan for execution and completion of all work and for updating of the schedule in accordance with the requirements of this section.

The Contractor shall furnish a preliminary example of the scheduling system to be employed. The Resident Project Representative will review the scheduling system and upon determining compliance with these specifications will approve the system. All modifications and additions required by the Resident Project Representative shall be incorporated and provided by the Contractor.

The construction schedule shall:

- A. Be plotted to a calendar day based horizontal time scale.

- B. Clearly display the specific start and completion date of every activity in the schedule and the critical path of activities. At a minimum, activities shall include all activities shown in Section 01016, "Work Sequence."
- C. Show the order and interdependence of the Contractor's planned activities.
- D. Identify phases or major areas of construction by logically grouping activities.
- E. Indicate all required actions of Owner or Engineer affecting progress or completion date.
- F. Include resource utilization/availability data such as for work crews, equipment, etc., which can affect the schedule.
- G. Indicate the number and skills of personnel and the number and types of equipment to be utilized in each activity.
- H. Clearly display the precedence of the delivery of permanent material and equipment as individual activities.
- I. Include appropriate float time throughout the construction period.
- J. Indicate all effects on and interruptions to the existing operations of the existing facilities.
- K. Indicate intended date of submittal of all project data.
- L. Indicate required date of completion of review by Engineer of project data.
- M. Indicate time required for delivery of equipment and materials to job site and date and construction activity, which is dependent upon the individual related submittal/fabrication/delivery process.
- N. Include estimated dollar value of work completed for each one month period.

4. APPROVAL OF SCHEDULES

The approved Construction Schedule will be acceptable to Engineer as providing an orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on Engineer responsibility for the progress or scheduling of the work nor relieve Contractor from full responsibility therefore. The approved schedule of Shop Drawing submissions will be acceptable to Engineer as providing a workable arrangement for processing the submissions.

END OF SECTION

1. GENERAL**1.01 GENERAL SAMPLING AND TESTING REQUIREMENTS**

All of the work, under this contract, shall be fully tested in accordance with the specifications. The Contractor shall furnish all labor and materials for the testing of the materials he or she proposes to employ.

It shall be the Contractor's responsibility to obtain and pay for the services of an approved testing laboratory which shall take all samples and perform all tests as stipulated, necessary for initial verification that the materials to be utilized in the construction do conform to the various specifications. The Contractor shall furnish two certified copies of the results of all tests to the Resident Project Representative and one to the Engineer.

1.02 INITIAL TESTING

All sampling and testing necessary to determine results of construction techniques and procedures shall be performed by the qualified laboratory retained by the Contractor. Such sampling and testing shall be as necessary to provide compliance with the requirements of the specifications and shall include the tests listed in the specifications and any and all additional tests which may be required or requested by the Engineer and/or Owner.

1.03 SUBSEQUENT TESTING

All sampling and testing necessary to determine results of construction and procedures shall be performed by the qualified laboratory retained by the Contractor. Such sampling and testing shall be as necessary to determine compliance with the requirements of the specifications and shall specifically include the tests listed in the specifications and any and all additional tests which may be necessary to properly identify components and control the work.

1.04 OPERATIONAL TESTING

It is the intent of the Owner to have a complete and operable system. All of the work shall be fully tested and inspected in accordance with the specifications.

1.05 PAYMENT

No separate or additional payment will be made for the work and/or materials specified herein. All costs of such work and/or materials shall be considered as incidental to the project and shall be included in the appropriate lump sum or unit price bid.

END OF SECTION

SECTION 01545

PROTECTION AND MAINTENANCE OF WORK AND PROPERTY

1. GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

1.02 PUBLIC AND PRIVATE PROPERTY

- A. The Contractor shall protect and maintain all underground or above ground utilities and structures affected by the work and all lawns, shrubs, trees, fences, rockeries, etc., and parking strips or private property crossed by or adjacent to his/her operation, and any damage shall be repaired and restored by the Contractor to the satisfaction of the Owner.
- B. The Contractor will be responsible for all damage to roads, highways, ditches, bulkheads, walls, bridges, culverts, utilities, barricades, lights, or other property, caused by the work, whether such damage be at the site of the work or caused by transporting or hauling to or from the work; and he or she shall repair or replace, or arrange for the repair or replacement of all such damage to the satisfaction of the Owner. Any material damaged by the Contractor's operations shall be replaced with new material.
- C. Whenever construction work under this Contract is undertaken on easement, right-of-way, or franchise, all work shall be confined to the limits of such easement, right-of-way, or franchise, and accomplished so as to cause the least amount of disturbance and a minimum amount of damage.
- D. Particular care shall be exercised to see that the topsoil from off road trenches is preserved and replaced in its original location. It shall be the Contractor's responsibility to strip such topsoil from the trench, or construction area, and stockpile it in such a manner that it may be replaced, by him or her, upon completion of construction.
- E. Wherever it may be necessary for the Contractor to trench through any lawn areas, the sod shall be carefully cut and rolled and replaced after ditches have been water settled, or otherwise properly compacted. All work shall be done in a manner calculated to leave the lawn area clean of earth and debris and in a condition as near as possible to that which existed before work was started.
- F. The Contractor shall not remove, even temporarily, any trees or shrubs which exist on easements across private property or in parking strips, without first having notified the property owners or authorities maintaining same.
- G. It is expressly understood that the Contractor shall in particular restore all such easements and rights-of-way to a condition equal to its original condition and in a condition satisfactory to the property owners and the Engineer. It is also understood that any private improvements made in public right-of-way are included in the above category.

1.03 CARE OF EXISTING FACILITIES

- A. The Contractor shall take adequate precautions to protect existing sidewalks, curbs,

pavements, utilities, adjoining property, and structures, and to avoid damage thereto, and he or she shall at his or her own expense completely repair any damage thereto caused by his or her operation. Access for fire-fighting equipment shall be maintained at all times.

- B. Any survey monuments disturbed by the construction shall be referenced and replaced by a surveyor licensed by the State of Alaska.

1.04 SHORING, BRACING, ETC.

The Contractor shall shore up, brace, under-pin, and protect as may be necessary, all foundations and other parts of all existing structures adjoining the site of the Project, which are in any way affected by the excavation or other operations connected with the completion of the work under this Contract. Whenever any notice is required to be given by the Owner or the Contractor to any adjoining or adjacent land owner or other party before commencement of any work under this Contract, such notice shall be given by the Contractor. The Contractor shall indemnify Owner and Engineer and save them harmless from any damages on account of settlements or the loss of lateral or subjacent support of adjoining property and from all loss or expense and all damages for which Owner may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

1.05 EMERGENCIES

Whenever the Contractor's work endangers the safety of life or property including adjoining property or property in the immediate proximity of the Project, the Contractor shall take all reasonable precautions to prevent threatened loss or injury there from.

1.06 POWER AND TELEPHONE POLES

The Contractor shall notify the affected companies prior to construction and make all necessary arrangements for protection of existing power and telephone lines in the vicinity of this Contract that interfere with construction. All costs of providing any required temporary protection shall be paid for by the Contractor.

END OF SECTION

1.01 GENERAL

Should the Contractor desire to utilize a product or design different from that required by the Plans and Specifications the Contractor shall propose such deviation and submit to the Owner for review and approval as specified.

No deviation from the requirements of the plans and Specifications shall be permitted without the express written approval of the Owner.

The Owner may elect to reject any or all request for deviation at his or her sole discretion without cause or justification. The Contractor shall immediately proceed with the work in accordance with the plans and Specifications upon notification of rejection of any request in accordance with the plans and Specifications upon notification of rejection of any request for deviation. All proposed deviations from the plans and Specifications shall conform to the original defined and implied intent of the plans and Specifications. The Contractor shall be responsible for and assume all costs of all elements involved in implementing and completing approved deviations including, but not limited to, coordination, confirming dimensions at the job site, design, preparation of plans, procurement of materials and equipment, fabrication, construction, installation and instigation of service. If, in the opinion of the Owner, the completed improvements of each deviation do not fulfill, provide and meet the defined and implied intent of the plans and Specifications, the Contractor shall provide the labor, materials and equipment as required to modify the work to the satisfaction of the Owner.

Differences in cost between approved deviations and the original requirements of the plans and Specifications shall be distributed as specified herein.

1.02 DEVIATION FROM SPECIFIED PRODUCT OR PRODUCT MANUFACTURER

Requests for approval of change of any product or manufacturer shall consist of three (3) copies of data substantiating compliance of proposed product or supplier with contract documents including:

A. Detailed description of the proposed change including:

- 1) Product identification, including manufacturer's name and address.
- 2) Manufacturer's literature:
 - a) Product description
 - b) Performance and test data
 - c) Reference standards
- 3) Samples.
- 4) Name and address of similar projects on which product was used and date of installation.

- B. Itemized comparison of proposed substitution with product or supplier specified.
- C. Data relating to conformance with construction schedule.
- D. Relation to separate subcontracts and trades.

Requests for change of products will be considered if:

- A. They are indicated or implied on project data submittals without a formal request having been submitted.
- B. Acceptance will require substantial revision to the contract documents.

1.03 DEVIATION FROM DESIGN

1. Requests for approval of change of design shall include three (3) copies of data substantiating compliance of proposed design deviation with contract documents including:
 - A. Itemized comparison of proposed design deviation.
 - B. Data relating to conformance with construction schedule.
 - C. Relation to separate subcontracts and trades.
2. Detailed description of proposed design and how it conforms to the original defined and implied intent of the Plans and Specifications.
 - A. Drawings indicating horizontal and vertical details of all architectural, structural, mechanical and electrical elements of proposed change.
 - B. Manufacturers detailed performance and construction data for all equipment.
3. Requests for change of design shall include certification by the Contractor that he or she:
 - A. Has personally investigated the proposed product or design deviation and has determined that it is equal or superior in all respects to that specified.
 - B. Will provide the same guarantee for product or design deviation as for product or design specified.
 - C. Will coordinate installation of accepted product or design deviation into work, making such changes as may be required for work to be complete in all respects.
 - D. Will be responsible for and assume all costs of all elements involved in implementing approved product and/or design deviation including, but not limited to, coordination, confirming dimensions at the job site, design, preparation of plans, procurement of materials and equipment, fabrication, construction, installation and instigation of service. If, in the opinion of the Owner, the completed improvements of each product or

design deviation do not fulfill, provide and meet the defined and implied intent of the Plans and Specifications, the Contractor shall provide the labor, materials, and equipment as required to modify the work to the satisfaction of the Owner.

Project cost savings resulting from product or design deviations shall be divided according with Paragraph 1.04, below.

1.04 DISTRIBUTION OF COST SAVINGS OF APPROVED CHANGES

- A. Savings in cost resulting from approved changes shall be shared by the Contractor and Owner on a 50 percent basis if the net capital savings is \$1,000 or more. Net capital savings is defined to be the initial construction cost minus the revised construction cost minus the development, implementation and administrative costs associated with the change.
- B. In addition to the requirements for requests for approval of changes as identified herein before the Contractor shall provide the following:
 - 1) Name of individuals associated with the development and preparation of the change.
 - 2) A summary of estimated costs to include the following:
 - a) Project construction costs before and after the deviation. This should be a detailed estimate identifying the following items for each trade involved.
 - (1) Quantities of materials and equipment
 - (2) Unit prices of materials and equipment
 - (3) Labor hours and rates for installation
 - (4) Subcontractor and prime Contractor mark-ups
 - b) Operation and maintenance costs before and after the deviation.
 - c) Costs for implementing the deviation not included in item 2a, above.
 - d) Contractor's share of the savings as described below.
 - e) Time required for executing the proposed change.

END OF SECTION

1.01 GENERAL

The Contractor shall comply with all requirements stated in the General and Special Conditions of the Contract and in the Specifications for administrative procedures for closing out the work.

1.02 SUBSTANTIAL COMPLETION

- A. When Contractor considers the Work is substantially complete, he or she shall submit to Resident Project Representative:
 - a. A written notice that the Work or designated portion thereof, is substantially complete.
 - b. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Owner will make an inspection to determine the status of completion.
- C. Should Owner determine that the Work is not substantially complete:
 - a. Owner will promptly notify the Contractor in writing, giving the reasons therefore.
 - b. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Owner.
 - c. Owner will re-inspect the Work.
- D. When the Owner finds that the Work is substantially complete, he or she will:
 - a. Prepare a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final payment.
 - b. After consideration of any objections as provided in Conditions of the Contract, and when Owner considers the Work substantially complete, he or she will execute and deliver to the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.03 FINAL INSPECTION

- A. When Contractor considers the Work is complete, he or she shall submit written certification of the following items:
 - a. Contract Documents have been reviewed.
 - b. Work has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents.
 - d. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 - e. Work is completed and ready for final inspection.

- f. Any other items required by the Special Conditions.
- B. Owner will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Owner consider that the Work is incomplete or defective:
 - a. Owner will promptly notify the Contractor in writing, listing the incomplete or defective work.
 - b. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Owner that the Work is complete.
 - c. Owner will re-inspect the Work.
- D. When the Owner finds that the Work is acceptable under the Contract Documents, he or she shall request the Contractor to make close out submittals.

1.04 REINSPECTION FEES

Should Owner perform re-inspections due to failure of the Work to comply with the claims of status of completion made by the Contractor, Owner will be authorized to deduct the amount of such re-inspection compensation for staff and/or consultants from the final payment to the Contractor.

END OF SECTION

1. GENERAL

1.1 DESCRIPTION

- A. The WORK in this section shall include all labor, materials, tools and equipment necessary to install all float anchor piles, including fiberglass caps, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.
- B. Where subsurface conditions allow driving piles to specified embedment, piles may be driven per Section 02897 or drilled per this Section at Contractor's option. No additional payment shall be made for unsuccessful attempts to drive pipe piles installation methods of this Section.

1.2 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the material of this section before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer at no additional cost to the Owner.

1.3 SUBMITTALS

- A. Pile Installation Plan: Within two (2) days of Notice-to-Proceed, provide narrative and illustrations to fully describe complete installation plan. The plan shall address, as a minimum, all equipment, labor, complete pile socket drilling program, temporary pile support and template systems, survey control, sequence and method of installation.
- B. Drilling Log: Drilling logs shall be maintained by the Contractor for each pile installed. Make these records available to the Engineer during progress of the work; submit one copy of the Engineer the same day the pile is placed. Submit a complete a complete copy of these logs to the Owner upon completion. Drilling logs shall include the following minimum information:
 - a. Project name and number.
 - b. Name of the Contractor.
 - c. Pile number.
 - d. Pile location.
 - e. Record of unusual occurrences during pile drilling.
 - f. Pile deviations from location and plumb.
 - g. Pile dimensions.
 - h. Mudline elevation.
 - i. Final tip and cutoff elevations of pile after placement.
 - j. Type, make, model, and rated torque energy of drilling equipment.

2. PRODUCTS

2.1 STEEL PIPE PILES:

- A. Galvanized steel pipes shall be as per Section 05120.

2.2 STEEL CASTINGS:

- A. Steel pipe Casings: ASTM A283 (ASTM A283M), Grade C; or ASTM A36 (ASTM A36M) carbon-steel plate, with vertical joints full-penetration welded according to AWS D1.1
- B. Corrugated-Steel Pipe Casing: ASTM A929 (ASTM A 929M), steel sheet, zinc coated.

2.3 D-1 GRAVEL:

- A. Provide D-1 as per Alaska Department of Transportation and Public Facilities Standard Specifications (ADOT/PF), current edition.

2.4 FIBERGLASS BIRD CAPS:

- A. Fiberglass Bird Caps shall be Cheyenne fiberglass (black) adjustable piling caps or equal.

2.5 PILE DRILLING EQUIPMENT:

- A. Pile drilling equipment shall have the minimum torque capacity and downward force capacity for the contract site conditions. Existing State driving logs available on request.

2.6 PILE DRIVING EQUIPMENT:

- A. Pile driving equipment shall meet the requirements of specification section 02897 – “Driven Steel Pipe Pile Installation.”

3 EXECUTION

3.1 PROTECTION OF COATINGS

- A. Handling: Move steel piling by the use of “bridles”, “strong backs”, or other appropriate rigging which will prohibit the occurrence of permanent deformations or damage to coating system.
- B. Galvanized coating damaged due to material handling or occurring during installation shall be repaired per ASTM A780, hot-stick repair using zinc based alloys.

3.2 SEQUENCE OF WORK

- A. Excavation and installation of piles shall be performed as a continuous operation. Install pile the same day the pile excavation is completed. Excavations shall not be left open overnight.

3.3 INSTALLATION

- A. The Contractor shall submit a plan for pile installation as required in "Submittals" article. The Contractor shall allow three days for review of the plan by the Engineer. All installation methods shall meet the requirements of the permits issued for this project.
- B. The Contractor shall have suitable equipment on site to extract piles that do not meet the tolerances specified.
- C. All piles shall be installed at planned locations, through the pole hoops to assure that the floats move freely along the throughout the entire tidal range or at locations shown for shore tie floats and pile hoops installed during installation of floats. Any pile installed in a manner that caused binding between the pile and pile hoop shall be extracted and re-installed at no additional cost to the Owner. Minimum pile lengths and embedment requirements shall be as specified on the Plans.
- D. All pile installations shall be conducted with the Engineer present. The Contractor shall assist the Engineer in monitoring the pile installation.
- E. Pre-drill pile sockets and install piles through the pole hoops to assure that the floats move freely along the throughout the entire tidal range. Any pile installed in a manner that caused binding between the pile and pile hoop shall be extracted and re-installed at no additional cost to the Owner. Minimum pile lengths and embedment requirements shall be as specified on the Plans.
- F. If the required pile tip elevation is not achieved when piles are placed in predrilled pile sockets, then piles shall be driven in accordance with specification section 02897 – "Driven Steel Pipe Pile Installation", as required to achieve the pile tip elevation indicated on the Plans.
- G. Annulus around piles, once in place, shall be filled with D-1 gravel to provide solid lateral bearings. Placement of the D-1 gravel shall be achieved by pouring the gravel down the surface of the pile, around the full circumference. Place uniformly to fill the annulus evenly.
- H. Temporary Casings: Install steel casings of sufficient length and thickness to withstand compressive, displacement, and withdrawal stresses, and to maintain stability of shaft walls if raveling of the holes occurs.
 - a. Remove temporary casings after pile placement.
- I. Where soil conditions allow pile driving, the Contractor may drive piles in accordance with specification section 02897 – "Driven Steel Pipe Pile Installation", as necessary to achieve the pile tip elevation indicated on plans.

- J. The Contractor shall mark each pile at one-foot increments, with every five foot increment numbers. The marks shall be visible and readable from all sides of the pile.
- K. The Contractor shall furnish and install new fiberglass caps in accordance with the manufacturer's recommendations for each pile as indicated on the drawings.
- L. Cut off piles at the elevation indicated on the drawing. Tolerance for cutoff elevation shall be plus or minus 1 inch.
- M. All steel pipe pile cutoffs greater than five feet in length shall become the property of the Owner. The Contractor shall remove the pipe from the project site and shall neatly stack the pipe, as approved by the Engineer, at a site approved by the Engineer.

END OF SECTION

1. GENERAL

1.2 DESCRIPTION

- A. The WORK in this section shall include all labor, materials, tools and equipment necessary to install all float anchor piles, including fiberglass caps, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.
- B. Where subsurface conditions allow driving piles to specified embedment, piles may be driven per this section or drilled per section 02896 at Contractor's option. No additional payment shall be made for unsuccessful attempts to drive pipe piles per this section that required extraction and reinstalling using the drilled pile installation methods of section 02896.

1.2 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the material of this section before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary with the approval of the Engineer at no additional cost to the Owner.

1.3 SUBMITTALS

- A. Pile Installation Plan: Within two (2) days of Notice-to-Proceed, provide narrative and illustrations to fully describe complete installation plan. The plan shall address, as a minimum, all equipment including hammers, rams, driving cushions, pile caps, and cap blocks, labor, survey control, sequence and method of installation.
- B. Installation Record: Installation records shall be maintained by the Contractor for each pile installed. Make these records available to the Engineer during progress of the work; submit one copy of the Engineer the same day the pile is placed. Submit a complete a complete copy of these logs to the Owner upon completion. Driving logs shall include the following minimum information:
 - 1. Project name and number.
 - 2. Name of the Contractor.
 - 3. Pile number.
 - 4. Pile location.
 - 5. Sequence of driving.
 - 6. Record of unusual occurrences during pile drilling.
 - 7. Pile deviations from location and plumb.
 - 8. Pile dimensions.
 - 9. Mudline elevation
 - 10. Elevation of tip after driving.

11. Final tip and cutoff elevations of pile after placement.
 12. Records of re-driving.
 13. Type, make, model, and rate of hammer.
 14. Weight and stroke of hammer.
 15. Type of pile-driving cap used.
 16. Cushion material and thickness.
 17. Actual stroke and blow rate of hammer.
 18. Pile-driving start and finish time, and total driving time.
 19. Time, pile-tip elevation, and reason for interruptions.
 20. Record of number of blows for each 12 inches of penetration, and number of blows per 1 inch for the last 6 inches of driving.
 21. Record preboring, jetting or special procedures used.
- C. Pile-Driving Equipment: Include type, make, maximum rated energy, and rated energy per blow of hammer; weight of striking part of the hammer; weight of drive cap; details, type, and structural properties of hammer cushion; and details of follower and jetting equipment.

PART 2 – PRODUCTS

2.1 STEEL PIPE PILES:

- A. Galvanized steel pipes shall be as per Section 05120.

2.2 PILE DRIVING EQUIPMENT:

- A. General: Furnish pile driving equipment of a type generally used in standard pile driving practice. Operate equipment at manufacturer's specified rate to develop the required rated energy. Drop hammers will not be allowed.
- B. Equipment:
1. Provide equipment of adequate size and capacity to handle, place and hold the piles to the designed alignment. This equipment shall be able to maintain the alignment of the pile with driving equipment, without damage to either.
 2. Maintain all pile driving equipment in safe operating condition at all times.
 3. Driving equipment shall be in good repair and operating condition and shall be capable of being operated as recommended by the manufacturer.
 4. Any equipment of a method which result in regular or repeated damage to the piles during driving, or is detrimental to the bearing capacity of piling already driven, will be rejected by the Engineer.
 5. Impact hammers shall be steam, air, or diesel driven that develop a rated energy of at least 15,000 ft-lbs per blow. Contractor is responsible for selecting driving equipment that will not cause damage to the piling or adjacent structures during driving.
 6. Vibratory hammers shall be of sufficient size and energy to install piles to

the required pile tip elevation.

- C. Driving Cap: Provide driving caps capable of protecting pile head and providing uniform distribution of energy to the pile head.
- D. Leads: Use fixed rigid type pile driver leads that will hold the pile firmly in position and alignment, and in axial alignment with the driving equipment. Free-swing leads will not be permitted. Extend leads to within 2 feet of the floats.

2.3 PILE DRILLING EQUIPMENT:

- A. Pile drilling equipment shall have the minimum torque capacity and downward force capacity for the contract site conditions. See Section 02896 – “Drilled Steel Pipe Pile Installation”.

2.4 FIBERGLASS BIRD CAPS:

- A. Fiberglass Bird Caps shall be Cheyenne fiberglass (black) adjustable piling caps or equal.

PART 3 – EXECUTION

3.1 PROTECTION OF COATINGS

- A. Handling: Move steel piling by the use of “bridles”, “strong backs”, or other appropriate rigging which will prohibit the occurrence of permanent deformations or damage to coating system.
- B. Galvanized coating damaged due to material handling or occurring during installation shall be repaired per ASTM A780, hot-stick repair using zinc based alloys.

3.2 INSTALLATION

- A. The Contractor shall submit a plan for pile installation as required in “Submittals” article. The Contractor shall allow three days for review of the plan by the Engineer. All installation methods shall meet the requirements of the permits issued for this project.
- B. The Contractor shall have suitable equipment on site to extract piles that do not meet the tolerances specified.
- C. All pile installations shall be conducted with the Loring representative present. The Contractor shall assist the Loring representative in monitoring the pile installation.
- D. All piles shall be installed at planned locations, through the pole hoops to assure that the floats move freely along the throughout the entire tidal range or at locations shown for shore tie floats and pile hoops installed during installation of floats. Any pile installed in a manner that caused binding between the pile and pile hoop shall

be extracted and re-installed at no additional cost to the Owner. Minimum pile lengths and embedment requirements shall be as specified on the Plans.

- a. Piles shall be driven with tip protection.
- E. Carefully plumb the leads and the pile before driving. Take care during driving to prevent and to correct any tendency of piles to twist or rotate.
- F. The Contractor shall mark each pile at one foot increments, with every five foot increment numbered. The marks shall be visible and readable from all sides of the piles.
- G. The Contractor shall furnish and install new fiberglass caps in accordance with the manufacturer's recommendations for each pile as indicated on the drawings.
- H. Cut off piles at the elevation indicated on the drawing. Tolerance for cutoff elevation shall be plus or minus 1 inch.
- I. All steel pipe pile cutoffs greater than five feet in length shall become the property of the Owner. The Contractor shall remove the pipe from the project site and shall neatly stack the pipe, as approved by the Engineer, at a site approved by the Engineer.

END OF SECTION

1. GENERAL

1.3 DESCRIPTION

All material and equipment incorporated into this project shall be new unless otherwise noted on the plans. Material not specifically noted in these General Notes or elsewhere on the drawings shall be submitted by the Supplier for approval by the Engineer. Approval will be based on conformance to current standards utilized by the Owner. All materials shall conform to good, acceptable industry standards and manufacturer's recommendations.

1.2 REFERENCES

International Code Council (ICC). "International Building Code (IBC) 2006.

- A. American Association of State Highway Bridge (AASHTO). "Standards Specifications for Highway Bridges. Seventeenth Edition, 2002".
- B. American Society for Testing and Materials (ASTM) Standards, current edition.
- C. American Institute of Steel Construction (AISC), "Manual of Steel Construction, Allowable Stress Design, Ninth Edition".
- D. American Institute of Steel Construction (AISC), "Manual of Steel Construction, Load and Resistance Factor Design, Third Edition".
- E. American Welding Society (AWS), "D1.1 Structural Welding Code – Steel, current edition."
- F. American Concrete Institute (ACI), "ACI Manual of Concrete Practice, current edition.
- G. American Concrete Institute (ACI), "318-05 Building Code Requirements for Structural Concrete and Commentary".

1.3 SUBMITTALS

The following is a partial list of required submittals for this project. The Engineer may require additional submittals.

- A. Steel certification for all steel.
- B. Coating certification for all steel.
- C. Steel coating repair methods.
- D. AWS weld procedure specifications for all welding.
- E. AWS welder qualification records for welders working on this project.
- F. On site testing of filed welding of piles.
- G. Steel fabrication shop drawings.
- H. Non slip surface sample.
- I. Mill Test reports and Manufacturer's Mill Certificate.

2. PRODUCTS

2.1 MATERIALS and CONSTRUCTION

All materials and equipment incorporated into this project shall be new unless otherwise noted on the plans. Material not specifically supply noted in these specifications or elsewhere on the drawings shall be submitted by the Supplier for approval by the

ENGINEER. Approval will be based on conformance to current standards utilized by the Owner. All materials shall conform to good workmanship, acceptable industry standards and manufacturer's recommendations.

A. Structural Steel

1. Wide Flange Shapes shall be A992 Grade 50.
2. HP Shapes shall be A572 Grade 50.
3. Plate and Flatbar shall be A572 Grade 50, unless otherwise noted.
4. Rectangular and Square HSS shall be ASTM A500 grade B
5. Round HSS shall be ASTM A500 Grade B or C.
6. Pipe sections with 12" O.D. or less shall be ASTM A53 Grade B, type E or S.
7. Channels shall be minimum ASTM A36.
8. Angles shall be minimum ASTM A36.

All steel shall be galvanized unless otherwise noted.

B. Bolts and other hardware

All connecting bolts for steel to steel shall be ASTM A325 with threads excluded from the shear plane. All steel to concrete and anchor bolts shall be ASTM F1554, Grade 55, or as specified on the drawings. All other bolts shall be ASTM A307 with heavy hex nuts or as otherwise shown on the drawings. All bolts shall be galvanized, unless otherwise noted. For bolts in treated wood, swab field drilled bolt holes with preservative before installing bolts.

All stainless steel bolts, screws, nuts, washers, piano hinge rods and miscellaneous hardware called out as stainless steel (S.S.) shall be Type 316.

Washers are required under both head and nut of all bolts unless otherwise noted. Cut washers shall be ¼ inch thick plate with diameter to match equivalent malleable iron washer. Cut washers or economy heads are required wherever bolt heads or nuts bear against wood.

Threaded sleeves shall have compatible threads to the fastener being attached. Sleeves shall be able to develop the full strength of the fasteners being attached.

C. Steel Welding

All field and shop steel welding shall conform per AWS D1.1 Structural Welding Code – Steel, current edition.

Deposited filler metal shall meet Charpy V-Notch requirements of 20 ft-lbs at -20 8F and have chemistry similar to the base metal as approved by the Engineer. Filler metals shall only be used in welding positions recommended by the manufacturer. Welding consumables shall be stored and their condition shall be maintained per AWS Section 5.

Pre-heat shall be based on material grade and thickness shown herewith, per AWS tables. Uniformity of pre-heat shall conform to AWS stipulations.

Welding personnel shall be qualified per AWS to weld procedures and weld positions necessary for the joint details specified herewith. All steel fabrication shop drawings shall reference the weld procedure specification for each weld detailed. Weld procedure specifications shall be submitted with the shop drawings. Submittals verifying welder qualifications must be transmitted to the Owner for approval prior to any welding.

No welding through galvanized coating shall be performed. The galvanizing within 2" of the weld shall be removed prior to welding and repaired as discussed in coating repair.

All welds shall be visually inspected to comply with the visual inspection criteria, for statically loaded non-tubular and tubular connections, per AWS Section 6.

Where noted by contractor's submittal, non-destructively test welds using UT (Ultrasonic Inspection), RT (Radiographic Inspection), MT (Magnetic Particle Inspection) methods, per AWS Section 6. Acceptance criteria shall be for non-cyclic loading. Welds failing shall be repaired at the Contractor's expense, which will also include all costs for retesting, to achieve passing inspection test.

D. Galvanizing

All bolts, nuts, washers, sleeves, weldments, shapes, and other miscellaneous metals and hardware shall be hot-dip galvanized per ASTM A123 or A153 as appropriate, unless otherwise noted. Fabrications and fabricated hardware shall be hot dipped galvanized after fabrication.

E. Spray Metalizing

Spray metalize with zinc per Steel Structures Painting Council (SSPC) Guide # 23. A minimum dry coating thickness of 6 mils is required for steel that is at or above elevation 21'. For steel located below elevation 21', a minimum dry coating thickness of 12 mils is required. Contractor shall mask off all areas that will be field welded such as pile, plate or stud locations. Areas of steel encased in concrete within 2" of any concrete edge may be left bare.

Spray Metalizing may also be used as an alternate to hot-dip galvanizing. The following items shall be spray metalized:

1. Floating Dock Mooring Dolphin pile caps
2. Breasting and Mooring Dolphin pile caps
3. Other specifically noted items

F. Non-Slip Surface

Non-Skid Coating. The top surfaces of all full piano hinges shall be coated with "Sure-

Grip”, or approved equal, in Safety Yellow, to a minimum 60 mil DFT. “*Sure-Grip*” is available from *Farwest Painting Manufacturing Company* in Tukwila, WA. The coating shall be applied in the shop, specifically per manufacturer’s recommendations. Finish shall have nape that provides adequate non-skid characteristics acceptable to industry standards. Damaged finish shall be cause for rejection. Supplier shall provide samples of coated, galvanized steel plate with various roughnesses to the ENGINEER for approval. Supply 2 gallons spare paint.

The following items shall have non-slip surfaces unless otherwise noted:

1. Transition plates
2. Gangway deck plate
3. Mooring Bollard attachment plates
4. Other specifically noted items.

G. Coating Repair

All damaged galvanizing and spray Metalizing, including that removed for welding, shall be repaired per ASTM A780 and modified as follows:

Repair using hot zinc sticks to a minimum thickness of 12 mils, followed with a top coat of painted on zinc rich paint (clean, warm area then rub in zinc stick, cool and brush paint zinc rich paint).

2.2 DELIVERY, STORAGE, AND PROTECTION

- A. Protect steel piles and miscellaneous metal during handling and transport to jobsite. The ENGINEER will inspect the piles after shipping from Seattle to Ketchikan and before shipping to Loring.
- B. The CONTRACTOR shall assume full responsibility for any damages or losses resulting from the handling or transporting of steel piles and/or any miscellaneous steel components during loading, shipping, transport and delivery to the fabrication and/or project site as well as the subsequent handling required on site for installation.
- C. Any steel piles and/or any miscellaneous steel components damaged during transport and delivery and/or during any other handling operations prior to final acceptance shall be repaired or replaced by the CONTRACTOR at the discretion of the ENGINEER and at no additional cost to the OWNER.

END OF SECTION