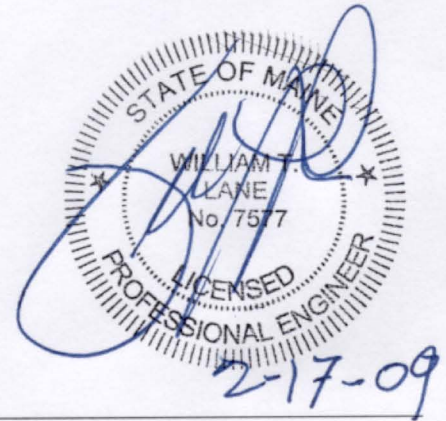


ADDENDUM #1

TO: All Isle au Haut Pier Replacement Plan Holders
FROM: Gartley & Dorsky Engineering & Surveying, Inc.
DATE: February 17, 2009
RE: Isle au Haut Pier Replacement Project
Addendum #1



This addendum is being issued to address Contract and Work items arising from the original issue of the bid package. Plan holder questions are addressed.

1) Bid Schedule:

Bids are due and Bid Opening shall be Friday, February 27, 2009 at 4:00pm.

2) Contractor Schedule:

The Owner seeks to minimize the duration their existing pier facility is out of service. The Contractor shall employ as a construction period: September 7, 2009 through November 30, 2009. The Owner shall retain access to the pier facility at all times with the exception of the specified construction window.

3) Pre-construction meeting:

The pre-construction meeting location and time may change, and will be finalized after bid opening.

4) Timber Piles:

- Fender piles shall be Greenheart.
- Section A and Section B on plan sheet 5 are typical sections. Piles bents without batter piles specified vary from the sections; details are the same except for the batter pile and chock.

5) Gangway:

The gangway width shall be 3'6" minimum between handrails.

6) Specifications:

Add the enclosed specification sections and Pile Driving Record to the contract:

Section 06131, section 03300, section 05500, Pile Driving Record

7) Freight Barge Bid Alternate:

The contractor shall provide a bid alternate to furnish a freight barge or vessel capable of handling 10 tons of freight, minimum 30 feet long on deck, at seven intervals during the construction period to be determined by the owner. The barge shall be loaded at Stonington at a location to be furnished by the owner. The contractor shall be responsible for offloading the barge at the town landing in Isle Au Haut. Please use the revised bid sheet to bid the addition alternate.

8) Acknowledge this addendum on the bid form.

TOWN OF ISLE AU HAUT: SCHEDULE OF ITEMS

CONTRACT ID: 2005271.00

PROJECT PIN: 15073.00

CONTRACTOR : _____

ALTERNATE BID

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CENTS	DOLLARS	CENTS
A1	RESET EXISTING TOWN FLOATS	LUMP SUM	N/A			
A2	REMOVE & DISPOSE PIER DEMOLITION WASTE	LUMP SUM	N/A			
A3	FURNISH AND INSTALL SITE ELECTRICAL INCLUDING HOIST POWER, RECEPTACLES, AND LIGHTING	LUMP SUM	N/A			
A4	FURNISH AND INSTALL TELEPHONE SERVICES	LUMP SUM	N/A			
A5	TRANSPORT AND MOUNT NEW HOIST SYSTEM	LUMP SUM	N/A			
A6	FURNISH AND MAINTAIN TEMPORARY FACILITIES	LUMP SUM	N/A			
A7	FURNISH FREIGHT BARGE OR VESSEL: FURNISH IN STONINGTON; DELIVER AND OFFLOAD AT TOWN LANDING	7 TRIPS				

SECTION 03300 – CONCRETE

PART 1 – GENERAL

1.0 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification sections, apply to work of this section.

1.1 SUMMARY

Scope of Work is for providing concrete precast panels.

Extent of concrete work is shown on drawings.

1.2 QUALITY ASSURANCE

- A. Codes and Standards: Comply with the more stringent provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:

MDOT Standard Specifications 2002 with revisions

ACI 301	-	Specifications for Structural Concrete for Buildings.
ACI 304	-	Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
ACI 305	-	Hot Weather Concreting.
ACI 306	-	Cold Weather Concreting.
ACI 309	-	Consolidation of Concrete.
ACI 318	-	Building Code Requirements for Reinforced Concrete.
ACI 347	-	Recommended Practice for Concrete Form work.
ASTM C 33	-	Standard Specifications for Concrete Aggregates.
ASTM C 42	-	Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's proposed mix design, including all details of mix and proportiond, specifications of admixtures. Submit test results of recent tests on this mix design where used in other projects, or submit new tests complying with ACI mix design submittal requirements. Include manufacturer's certification as may be required to show compliance with specifications.

- B. Shop Drawings: Submit shop drawings for fabrication and erection of each precast concrete panel. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide layout for weld plates, reinforcement, anchors and bolt sleeves provided for installation by others.

PART 2 – PRODUCTS

2.0 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
- B. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- C. Form Ties: Provide ties which, when removed, will leave holes not larger than 1" diameter in concrete surface. And with no metal within 1" of the concrete surface.

2.1 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed, epoxy coated.
- B. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications, made from stainless steel.

2.2 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type II, or Type I with a pozzolan and corrosion inhibitor. Type III may only be used if tricalcium aluminate content (C_3A) is between 4% and 10%. Use of a high quality pozzolan to reduce cement content is recommended.
- B. Normal Weight Aggregates: ASTM C 33. Provide aggregates from a single source for exposed concrete.
- C. Water: Potable
- D. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.

- a. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

- "Air-Mix"; Euclid Chemical Co.
- "Sika Aer"; Sika Corp.
- "MB-VR or MB-AE"; Master Builders.
- "Darex AEA" or "Daravair"; W.R. Grace.
- "Edoco 2001 or 2002"; Edoco Technical Products.
- "Air-Tite"; Gifford-Hill/American Admixtures.

- E. Corrosion Inhibiting Admixture: "DCI"; W.R Grace shall be provided

2.3 RELATED MATERIALS

- A. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.

- Waterproof paper.
- Polyethylene film.
- Polyethylene-coated burlap.

2.4 PROPORTIONING AND DESIGN OF MIXES

- A. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules:

- 5000 psi 28-day compressive strength; W/C ratio, 0.40 maximum (air-entrained).

- B. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer before using in work.

- C. Admixtures

- a. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 6.0 percent, \pm 1.0 percent.
- b. Use admixtures for water-reducing in strict compliance with manufacturer's directions.
- c. Provide WR Grace DCI Corrosion Inhibiting admixture at dosage rate of 6 gallons per CY.

- D. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement: $3" \pm 1"$

2.5 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C 94
Discharge of concrete shall be completed within a maximum of one and one-half (1-1/2) hours after cement was first introduced into the mix.

During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

Provide batch ticket to Engineer, for each batch discharged and used in work, indicating project identification name and number, date mix type, mix time, quantity, and amount of water introduced.

PART 3 – EXECUTION

3.0 FORMS

- A. Design, erect, support, brace, and maintain form work to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure. Construct form work so concrete members and structures are of correct size, shape, alignment, elevation, and position. maintain form work construction tolerances complying with ACI 347.
- B. Design form work to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- C. Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures.
- D. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
- E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- F. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retightening forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

3.1 PLACING REINFORCEMENT

Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

Accurately position, support, and secure reinforcement against displacement by form work, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.

Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

3.2 CONCRETE PLACEMENT

- A. Preplacement Inspection: Before placing concrete, notify Engineer to inspect the complete form work installation and reinforcing steel and items to be embedded or cast-in. Do not place concrete until approved by Engineer.
- B. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
- C. Provide down chute or hopper with elephant trunk where drop is more than 5 feet below bottom of chute. Locate chutes or hoppers so that the horizontal flow of concrete does not exceed 5 feet.
- D. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Hand rodding alone will not be sufficient. Use equipment and procedures for consolidation of concrete in accordance with ACI 309. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement, embedded items and into corners.

Bring surfaces to correct level with straightedge and strike-off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

Maintain reinforcing in proper position during concrete placement operations.

- E. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C), and not more than 80 deg F (27 deg C) at point of placement.

Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

- F. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.3 FINISH OF FORMED SURFACES

- A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.
- B. Smooth Form Finish: For formed concrete surfaces exposed-to-view. This is as-cast concrete surface obtained with selected form material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed. All vertical concrete formed surfaces shall receive a "smooth form finish." Fill all holes greater than 1/4" size within 24 hours of stripping forms.

3.4 FINISH OF HORIZONTAL SURFACES

After screening, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small, inaccessible to power units. Check and level surface plane to a tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge placed on surface at not less than 2 different angles. Cut down high spots and fill low spots. Uniformly slope surfaces to drain. Immediately after leveling, refloat surface to uniform, smooth, granular texture.

Consolidate concrete surface by final hand troweling operation, free of trowel marks, uniform in texture and appearance, and with surface plane tolerance not exceeding 1/8" in 10' when tested with a 10' straightedge.

Wood Float Finish: Apply a wood float finish to the top surface of concrete work. Carefully slope all surfaces for drainage and to prevent puddles.

3.5 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

- B. Curing Methods: Perform curing of concrete by keeping forms in place for 7 days. Cure top surface with moisture-retaining cover curing as follows:

Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.6 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Engineer, within 24 hrs of stripping forms.

Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

END OF SECTION

SECTION 05500 – MISCELLANEOUS METAL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General Conditions, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Definition: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings.
- B. Types of work in this section include metal fabrications for:
 - 1. Timber connections.
 - 2. Miscellaneous metal items.
 - 3. Expansion and adhesive anchors.

1.3 QUALITY ASSURANCE

- A. Field Measurements: Contractor shall take field measurements and obtain required information prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout. Include manufacturer's certification as may be required to show compliance with specifications.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Metals:

Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Steel Plates and Shapes: ASTM A 992 Grade 50 or better for all galvanized pieces.

C. Threaded Steel Rod: ASTM A 36 Grade A.

D. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

E. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A 153.

F. Fasteners:

1. General: Provide hot dipped galvanized fasteners for exterior use ASTM 153. Select fasteners for the type, grade and class required.

2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.

3. Lag Bolts: Square head type, FS FF-B-561.

4. Wood Screws: Stainless Steel.

5. Drift Pins: Epoxy coated rebar in sizes indicated.

6. Plain Washers: Round, hot dipped galvanized, carbon steel, FS FF-W-92.

7. Adhesive anchors and grouted dowels: Hilti HVA Adhesive anchor or Kelken Gold polyester adhesive anchors, or approved equal. Anchor and dowel rod material as specified on drawing.

2.2 FABRICATION, GENERAL

A. Workmanship:

Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to

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December 19, 2008

dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.

- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- C. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, Phillips flat-head (countersunk) screws or bolts.
- E. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
- F. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
- G. Galvanizing:

Provide a zinc coating for those items shown or specified to be galvanized, as follows:

1. ASTM A 153 for galvanizing iron and steel hardware.
 2. ASTM A 123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strips 1/8" thick and heavier.
 3. ASTM A 386 for galvanizing assembled steel products.
 4. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
- H. Rough Hardware:
 1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring and securing woodwork to concrete or other structures.

2. Fabricate items to sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.3 PAINTING

- A. General: Galvanize all steel, except those members indicated to be painted, or otherwise designated on drawings.
- B. Surface Preparation and Painting:
 1. SSPC-SP6 surface preparation.
 2. Primer - 1 coat of Tnemec High Build Epoxy 104 or equal
4-6 mils DFT
 3. Finish - 1 coat of Tnemec Series 73 Endurashield III Urethane enamel, 3-5 mils DFT or equal
Color - to be determined by Owner from manufacturers standard colors.
 4. Do not shop paint within 2" of any field weld.
 5. Galvanizing Repair Paint: High Zinc dust content paint for regalvanizing welds in galvanized steel, complying with the Military Specifications MIL-P-21035 (Ships).

PART 3 – EXECUTION

3.1 PREPARATION

Coordinate and provide anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION

A. General:

1. **Fastening to In-Place Construction:** Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.
2. **Cutting, Fitting and Placement:** Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
3. **Fit exposed connections accurately together to form tight hairline joints.** Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
4. **Field Welding:** Comply with AWS Code for welding procedures, appearance and quality of welds made, and methods used in correcting welding work.

3.3 ADJUST AND CLEAN

For galvanized surfaces: Clean field welds and cuts, bolted connections and abraded areas and apply 2 coats of galvanizing repair paint.

END OF SECTION

SECTION 06131 – TIMBER CONSTRUCTION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. AWPA Standards, latest editions.
- B. Standard Grading Rules for Southern Pine Lumber, latest Edition
- C. Southern Pine Council “Pressure Treated Southern Pine”

1.2 SUBMITTALS

- A. Contractor shall submit prior to purchase, the planned preservative treatment specification and treatment level. The treatment shall be previously certified to meet the published AWPA usage classification specified. In the event of newer treatment chemicals which are not in the published standards the certification status shall be shown, by test results or certification satisfactory to the Engineer, to meet the specified standards.
- B. For CCA treated members used below high water line, provide evidence of date of treatment and drying time.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with American Institute for Timber Construction "Standard for Heavy Timber Construction" AITC 108.
- B. Grading of Timber: Provide timber graded by Southern Pine Inspection Bureau, complying with requirements of American Lumber Standards Committee and PS 20 "American Softwood Lumber Standard". Use only pieces which bear inspection service's grade mark.

1.4 DELIVERY, STORAGE, HANDLING

- A. Time delivery and installation of timber work to avoid extended on-site storage, and to avoid delaying work of other trades.
- B. Keep timbers protected during fabrication, delivery, storage, handling and erection.
- C. Comply with State of Maine requirements regarding air drying of CCA treated wood products for 21 days after pressure treatment, before use below high water line.

PART 2 – PRODUCTS

2.1 TIMBER FRAMING

- A. General: Comply with grading rules of SPIB - Southern Pine Inspection Bureau.
- B. Timber Species: Southern Pine, pressure treated
- C. Timber Grade: No. 2 Grade minimum or as indicated on drawings where a better grade is required.

D. Timber Preservative Treatment:

1. Piles and Bracing, Pile Caps and Deck members indicated to be treated for Saltwater immersion or splash shall be pressure treated with CCA (Chromated Copper Arsenate) to AWPAs Use Category 5A except any timber used with any portion below extreme high water shall have a minimum retention of 2.5 pcf.

2. Members located above the water line and where contact with users may generally occur shall be a waterborne copper-based preservative suitable for AWPAs Use Category 4B. Acceptable chemicals include:

Copper Azole (CA-B or CA-C) - 0.31 pcf

Micronized Copper Azole (μ CA) – 0.23 pcf

Ammoniacal Copper Quat (ACQ-B) – 0.60 pcf

Micronized Copper Quat (MCQ)- 0.60 pcf.

3. See timber schedule for usage classification specified. The timber schedule shall take precedence over the above specifications.

- E. Moisture Content: Timber may be seasoned or unseasoned.
- F. Dressing: Timber is to be surfaced on 4 sides where exposed at deck level or above, such as for decking, curbs, chocks, handrails, and ladders. Timber shall be dressed on 2 sides where the critical dimension is in only one direction, such as for pile caps and stringers, and can be rough (undressed) on all sides where dimensional control is not required, such as for bracing.

2.2 HARDWARE, CONNECTORS, ANCHORS, ACCESSORIES

Provide fabricated structural steel (ASTM A 36) shapes, plates and bars, welded into assemblies of types and sizes indicated, with steel bolts (ASTM A 307), lag bolts, and other fasteners as required.

- A. Finish each assembly and fastener unit with hot-dip zinc coating (ASTM A 153). Galvanize after assembly.
- B. Nails: Hot-dipped galvanized in sizes and wires indicated.
- C. Drift Pins: Epoxy coated rebar in sizes indicated.
- D. Bolts: ASTM A307, hot-dipped galvanized in sizes and types shown.
- E. Washers: Galvanized dock washers, ogee washers, or plate washers, minimum 1/4" thickness. Hot-dipped galvanized.
- F. Deck Attachment: Use either:

Spikes: 60d (6") hot dipped galvanized common wire spikes. Predrill and use screws or lag screws if near end of member where splitting may occur.

OR

Stainless steel flat head countersink minimum #12 or equivalent size. Square or Star drive. Provide Style K4, self countersinking screws by GRK Canada Ltd., Thunder Bay, Ontario, 1-800-263-0463, www.grkfasteners.com, or equal.

2.3 FIELD TREATMENT FOR CUT SURFACES

Provide liquid preservative for field treating cut surfaces per AWPA M4: Cuprinal No. 10 (Green) wood preservative or equal.

2.4 FABRICATION, TIMBER FRAMING

- A. Minimize cutting after preservative treatment, to avoid untreated exposed surfaces. Use full length pieces without splices or field cuts where possible.
- B. Design of Members: Member sizes and shapes as shown are based on specified allowable stresses, and loadings shown. At Contractor's option, member sizes and shapes (but not length and spacings or locations) may be modified, but not by more than 15 percent by providing stress rated timber at either higher or lower values, and submitting engineering design data to prove equivalent strengths. Engineer will be sole judge of whether requested modifications result in equivalent strengths.
- C. Camber: Place horizontal members with natural convex bow (crown) up, so as to provide camber in the work.
- D. Shop Fabrication: Where treatment of timber work is indicated, fabricate members (cutting, drilling, surfacing and sanding) prior to treatment, to the greatest extent possible.
- E. Preservative Treatment: Pressure treat fabricated members with copper based preservative complying with these specifications and with AWPAs Standards.
 - 1. Provide at least minimum level of treatment (retention rate of preservative)
 - 2. All timber work on this project is to receive preservative treatment as shown on drawings.
 - 3. End-Cut Sealing: Immediately after end-cutting each member to final length, apply a saturation coat of end sealer to ends and other cross-cut surfaces, keeping surfaces "flood-coated" for not less than 10 minutes. Make provisions to prevent preservative from entering water.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. General: Erect framing true and plumb. Provide temporary bracing as required to maintain lines and levels until permanent supporting members are in place.
- B. Erection Tolerances: Control lines and grades of top edges to within ¼" of theoretical lines, and within ¼" for any 10 ft section measured with a straight edge.
- C. Cutting: Avoid extra cutting after fabrication. Where treated members must be cut during erection, apply a heavy brush coat of the field treatment, complying with AWWPA Standard M4.
- D. Repair damaged surfaces and finishes after completion of erection, or replace damaged members as directed where damage is beyond satisfactory repair.
- E. Drift Pins: Holes to be predrilled a small diameter than the pin itself. Drift pins to be installed with a pneumatic hammer; splitting of timber member is to be avoided.

END OF SECTION

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Complete separate form for each pile and submit to Owner/Engineer on daily basis.

Pile Location: _____

Project: _____

Section: _____

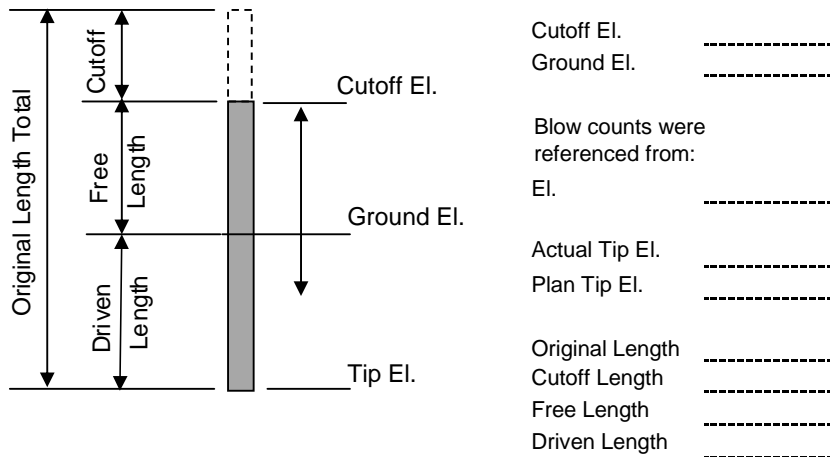
Pile Driving Record

Pile Driving Foreman: _____	Date: _____
General Contractor: _____	Pile Type / Size: _____
Pile Driving Contractor: _____	Vertical: <input type="checkbox"/>
Bearing Capacity Required: _____	Battered: <input type="checkbox"/>
Hammer Manuf. & Model: _____	Nearest Boring No.: _____
Type of Hammer: _____	Begin Driving Time: _____
Manuf. Rated Energy: _____	End Driving Time: _____
Ram Weight: _____	Inspector: _____
Stroke: _____	
Pile Cushion (Description, Type, Thickness): _____	

Depth	blows/ft.
10'	
11'	
12'	
13'	
14'	
15'	
16'	
17'	
18'	
19'	
20'	
21'	
22'	
23'	
24'	
25'	
26'	
27'	
28'	
29'	
30'	
31'	
32'	
33'	
34'	
35'	
36'	
37'	
38'	
39'	

Depth	blows/ft.
40'	
41'	
42'	
43'	
44'	
45'	
46'	
47'	
48'	
49'	
50'	
51'	
52'	
53'	
54'	
55'	
56'	
57'	
58'	
59'	
60'	
61'	
62'	
63'	
64'	
65'	
66'	
67'	
68'	
69'	

Required Blow Count			
Stroke			
Blows	Bearing		
	Pract. Ref.		
	Absol. Ref.		



Prebored / Jetted to El. _____
 Vibratory Driven to El. _____
 Rebound Noted _____
 Amount at: _____ Ft. depth _____

Calculations / Comments: _____

Signed By: _____

Printed Name: _____