RAMP 3 APPROACH REPLACEMENT

HOMER, ALASKA

11/19/2013 - BID SET

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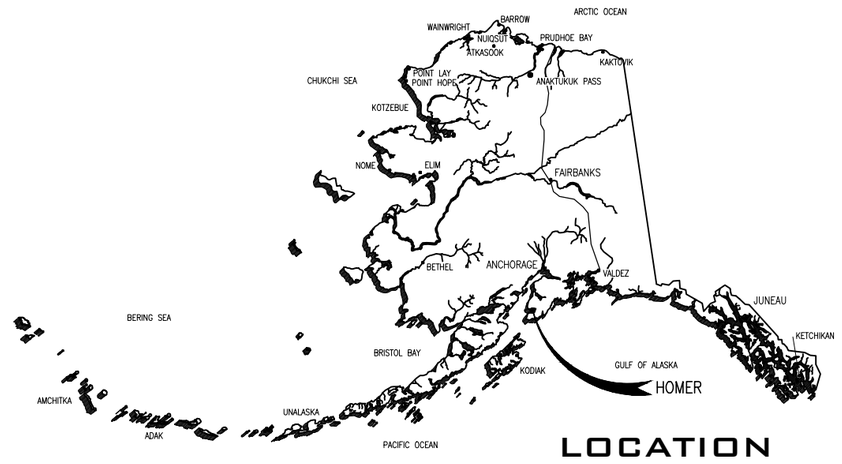
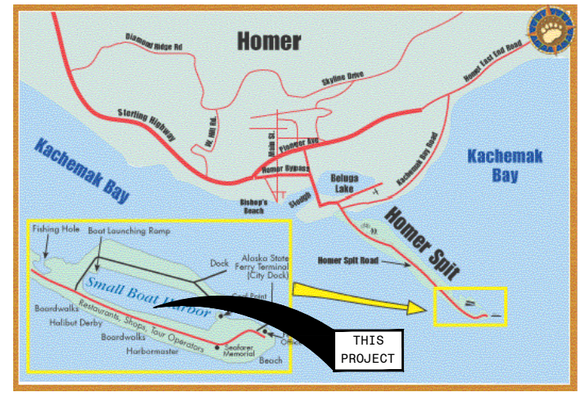


LOCATION



VICINITY

INDEX OF DRAWINGS

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GENERAL NOTES

ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, SPECIFICATIONS, SITE CONDITIONS, AND THESE NOTES SHALL BE REPORTED TO THE OWNER/ENGINEER AT ONCE. ANY FURTHER WORK BY THE CONTRACTOR ON ITEMS INVOLVING SUCH DISCREPANCIES SHALL BE DONE AT HIS OWN RISK.

SCOPE OF WORK

THE SCOPE OF WORK FOR THIS CONTRACT ENCOMPASSES UPGRADING RAMP 3 APPROACH TRESTLE AND GANGWAY AS FOLLOWS: REMOVE AND DISPOSE OF THE EXISTING TIMBER APPROACH TRESTLE APPROXIMATELY 12 FEET WIDE AND 103 FEET LONG INCLUDING PULLING ALL CREOSOTE TREATED TIMBER PILING, REMOVING CREOSOTE TREATED TIMBER PILE CAPS AND STRINGERS, REMOVING AND DISPOSING OF TREATED TIMBER DECKING, BULLRAILS, AND HANDRAILS, REMOVING AND DISPOSING OF THE EXISTING TRESTLE LIGHT POLES AND RELATED ELECTRICAL EQUIPMENT AND REMOVING AND DISPOSING OF THE EXISTING STEEL FRAMED GANGWAY APPROXIMATELY 5 FEET WIDE AND 50 FEET LONG; REMOVAL, SALVAGE AND REINSTALLATION OF THE EXISTING SIGNS LOCATED AT THE END OF THE TRESTLE; FURNISHING AND INSTALLING A NEW ACCESS TRESTLE INCLUDING HOT DIP GALVANIZED STEEL PILING AND PILE CAPS, TREATED TIMBER GLULAM STRINGERS, TREATED TIMBER DECKING AND STEEL AND TIMBER HANDRAILS; FURNISHING AND INSTALLING A NEW 6 FOOT WIDE BY 100 FOOT LONG ALUMINUM GANGWAY WITH ROOF AND SIDEWALLS; FURNISHING AND INSTALLING NEW LIGHTING FOR THE NEW TRESTLE AND GANGWAY.

DRAWING SCALES

DRAWING SCALES ARE PROVIDED ON DRAWINGS FOR CONVENIENCE. SCALES SHOWN ARE FOR FULL SIZED (22X34) DRAWINGS. REDUCED SCALED DRAWINGS SHOULD BE INTERPRETED ACCORDINGLY. DIMENSIONS AND NOTES SHALL TAKE PRECEDENCE OVER SCALES.

APPLICABLE CODES

THE CITY OF HOMER STANDARD CONSTRUCTION SPECIFICATIONS, LOCAL STATE AND CITY CODES PLUS THE FOLLOWING SPECIFICATIONS, STANDARDS AND CODES ARE PART OF THESE GENERAL NOTES:

APPLICABLE CODES:

1. INTERNATIONAL BUILDING CODE, CURRENT EDITION
2. ALUMINUM DESIGN MANUAL, CURRENT EDITION
3. AASHTO FOR PEDESTRIAN BRIDGES, CURRENT EDITION
4. AISC MANUAL, CURRENT EDITION
5. AWS D1.1 & D1.2 STRUCTURAL WELDING CODES, CURRENT EDITION
6. ASCE 7-10 MINIMUM LOADS FOR BUILDINGS AND OTHER STRUCTURES
7. APPLICABLE ASTM SPECIFICATIONS
8. AWPA STANDARDS, CURRENT EDITION
9. AITC TIMBER CONSTRUCTION MANUAL AND STANDARDS

IN THE EVENT THAT THERE IS A CONFLICT BETWEEN THE ABOVE REFERENCES AND THESE GENERAL NOTES THE FOLLOWING PRIORITY WILL BE FOLLOWED:

1. PROJECT PERMIT REQUIREMENTS
2. CONTRACT DOCUMENTS, INCLUDING THESE GENERAL NOTES & PLANS
3. LOCAL CODES
5. STANDARDS AND CODES LISTED ABOVE IN ORDER OF PRECEDENCE

TIDE LEVELS	**MLLW = 0**	**LOCAL/MULLIKAN**
HIGHEST OBSERVED	+26.1 FT.	+22.1 FT.
MEAN HIGHER HIGH WATER (MHHW)	+18.3 FT.	+14.3 FT.
MEAN HIGH WATER (MHW)	+17.5 FT.	+13.5 FT.
MEAN LOW WATER (MLW)	+1.6 FT.	-2.6 FT.
MEAN LOWER LOW WATER (MLLW)	+0.0 FT.	-4.0 FT.
LOWEST OBSERVED	-5.2 FT.	-9.2 FT.

NOTE: THE LOCATIONS AND ELEVATIONS OF THE ELEMENTS OF THIS PROJECT ARE BASED ON THE LOCAL (MULLIKAN) SURVEY PRESENTED IN THESE DRAWINGS.

POLLUTION PREVENTION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AN EROSION AND POLLUTION CONTROL PLAN AND SUBMITTING IT TO THE ENGINEER. THE PLAN SHALL INCLUDE DETAILS FOR THE PREVENTION FOR SPILLS, CONTAINMENT, CLEANUP, AND DISPOSAL OF HAZARDOUS WASTE MATERIAL. A COPY OF THE PLAN SHALL BE KEPT ONSITE DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE EROSION AND POLLUTION CONTROL PLAN AT ALL TIMES DURING CONSTRUCTION.

COORDINATION

THE CONTRACTOR SHALL CLOSELY COORDINATE WITH THE ENGINEER AND THE CITY FOR THE DEMOLITION, REMOVAL, AND RECONSTRUCTION OF THE RAMP 3 APPROACH. THIS INCLUDES COORDINATION WITH WORK ASSOCIATED WITH REPLACING THE FLOAT SYSTEM (BY OTHERS) AND WITH THE WORK ASSOCIATED WITH THE NEW HARBOR TRAIL (BY OTHERS). THE REPLACEMENT OF THE EXISTING FLOAT SYSTEM INCLUDING NEW HEADWALK AND GANGWAY FLOAT AND THE NEW TRAIL PROJECT IS PLANNED TO BE DONE IN THE APPROXIMATE TIME FRAME FOR THE RAMP 3 PROJECT. THE EXACT LOCATION OF THE NEW GANGWAY FLOAT AND ASSOCIATED LENGTH OF THE NEW TRESTLE AND POSITION OF THE NEW GANGWAY FOR THIS PROJECT MUST BE COORDINATED AND VERIFIED PRIOR TO CONSTRUCTION OF THE NEW TRESTLE. THIS WILL REQUIRE THE SUBMITTAL OF AN UPDATED PROJECT SURVEY TO THE ENGINEER PRIOR TO CONSTRUCTION.

THE ABUTMENT OF THE TRESTLE IS NEAR AN EXISTING USCG BUILDING AND BULKHEAD. THE CONTRACTOR SHALL COORDINATE THE WORK WITH THE OWNERS OF THE BUILDING AND SHALL PROTECT ALL EXISTING STRUCTURES. THIS INCLUDES THE USE OF SIGNS, BARRICADES, SHORING, AND BRACING IF REQUIRED.

THE PROJECT IS LOCATED IN AN ACTIVE HARBOR. EVERY EFFORT WILL BE MADE TO MINIMIZE DISRUPTIONS TO THE HARBOR USERS AND ADJACENT PROPERTY OWNERS. THERE ARE UNDERGROUND UTILITIES IN THE AREA. THE CONTRACTOR IS RESPONSIBLE TO CALL FOR UTILITY LOCATES PRIOR TO ANY EXCAVATION AND OR PILE DRIVING (800-478-3121). THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND UTILITIES AND OR EXISTING STRUCTURES AND SHALL REPAIR ANY SUCH DAMAGE AT NO COST TO THE OWNER.

A DETAILED WORK SCHEDULE SHALL BE SUBMITTED FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO BEGINNING SITE WORK.

SUBMITTALS

SHOP DRAWINGS, MATERIAL CERTIFICATIONS AND PRODUCT DATA SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:

1. SURVEY:
CONTRACTOR SHALL PROVIDE SURVEY AND SHALL FIELD VERIFY DIMENSIONS, LOCATIONS OF ANY NEW FLOAT SYSTEMS, BOARDWALKS, OR TRAILS (DEPENDING ON THE TIMING OF THESE THREE PROJECTS) PRIOR TO PREPARING TRESTLE SHOP DRAWINGS. SURVEY AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS. THE SURVEY SHALL BE BASED ON SIMILAR HORIZONTAL AND VERTICAL CONTROL UTILIZED FOR THIS PROJECT.

2. APPROACH TRESTLE:
A. TIMBER MATERIALS CERTIFICATE OF CONFORMANCE AND TREATMENT
B. METAL FABRICATIONS
C. HARDWARE
D. STEEL COATING & COATING REPAIR PRODUCTS & PROCEDURES
E. WELDING PROCEDURES & QUALIFICATIONS
F. PILES
G. PILE GALVANIZING CERTIFICATION
H. PILE DRIVING WORK PLAN, EQUIPMENT & PROCEDURES
I. ANODES

3. GANGWAY:
A. GANGWAY SHOP DRAWINGS, CALCULATIONS, AND MATERIALS
B. FLOORING AND ATTACHMENT ACCESSORIES - INCLUDING ONE SAMPLE
C. MOUNTING METAL FABRICATIONS & HARDWARE
D. COATINGS
E. ROOFING & SIDING MATERIAL(S)
F. POWER & LIGHTING SYSTEM

DEMOLITION

ALL ITEMS SCHEDULED FOR DEMOLITION SHALL BE REMOVED FROM THE PROJECT SITE AND SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS NOTED OTHERWISE. DETAILS OF ALL REMOVAL & SALVAGE WORK IS NOT SHOWN ON THE PLANS.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING ADEQUATE INSPECTIONS AT THE TIME OF BIDDING TO VERIFY EXISTING CONDITIONS. ASSOCIATED WORK MAY INCLUDE REMOVAL OF PILING, PILE COLLARS, UTILITIES AND OTHER ITEMS AS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL EXISTING ITEMS NECESSARY FOR COMPLETION OF THE WORK. ALL ITEMS DESIGNATED FOR REMOVAL/DISPOSAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE PROPERLY DISPOSED OF IN AN APPROVED FACILITY AND SHALL BE DONE IN STRICT ACCORDANCE WITH APPLICABLE RULES & REGULATIONS. NOTE THAT MOST TIMBER MEMBERS ARE CREOSOTE TREATED.

THE CONTRACTOR WILL CLOSELY COORDINATE ALL REMOVAL AND SALVAGE WORK WITH THE OWNERS REPRESENTATIVE. THE CONTRACTOR SHALL SUBMIT A WORK SCHEDULE TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING ANY WORK. THE WORK SHALL BE SCHEDULED IN SUCH A MANNER AS TO MINIMIZE DISRUPTIONS TO HARBOR TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES. THE OWNER RESERVES THE RIGHT TO SALVAGE ITEMS FROM THE SITE PRIOR TO THE CONTRACTOR MOBILIZATION TO THE SITE. CONTRACTOR WILL NOTIFY OWNER ONE WEEK PRIOR TO SITE MOBILIZATION TO ALLOW SALVAGE OF ANY ITEMS. REMOVE AND RELOCATE DESIGNATED SIGNS WITHIN DEMOLITION LIMITS. THE CONTRACTOR SHALL REMOVE ALL PILES INDICATED ON THE PLANS. FULL LENGTH PILE REMOVAL SHALL BE ACCOMPLISHED BY VIBRATORY HAMMER OR OTHER METHODS APPROVED BY THE ENGINEER. PILES WHICH CANNOT BE FULLY REMOVED SHALL BE CUT OFF AT MUDLINE AFTER OTHER METHODS HAVE BEEN ATTEMPTED AND APPROVED BY THE ENGINEER.

MEASUREMENT AND PAYMENT

MEASUREMENT & PAYMENT FOR DEMOLITION WILL BE BY THE LUMP SUM AND WILL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND SUPERVISION REQUIRED TO COMPLETE SHORING & PROTECTION OF ADJACENT STRUCTURES, DEMOLITION, SALVAGE, DISPOSAL, & RELOCATION AS INDICATED.

TIMBER APPROACH TRESTLE

DESIGN LOADS

DEAD LOADS: ALL (INCLUDING 200 POUND PER LINEAL FOOT UTILITY ALLOWANCE)

LIVE LOAD: 125 PSF (DISTRIBUTED)
SNOW LOAD: 40 PSF (DISTRIBUTED)
TRESTLE VEHICLE LOAD: 1600 LB/400 LB PER WHEEL ATV "4-WHEELER" (POINT LOAD)
WIND LOAD: 130 MPH 3 SECOND GUST

TIMBER MATERIALS

STRUCTURAL GLUE LAMINATED TIMBER

STRESS CLASS 24F-1.8E, AITC A190.1, FOR SIMPLE-SPAN USE, NO CAMBER REQUIRED, INDUSTRIAL APPEARANCE GRADE, MANUFACTURED WITH ADHESIVES MEETING WET-USE SERVICE REQUIREMENTS, MARKED WITH APA EWS TRADEMARK, AND WRAPPED WITH A WATER-RESISTANT COVERING FOR SHIPMENT AND STORAGE. SUBMIT CERTIFICATE, SHOWING CONFORMANCE TO AITC A190.1.INSPECTION SHALL BE IN ACCORDANCE WITH AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, AITC 200 INSPECTION MANUAL.

ALL GLU-LAMINATED TIMBER SHALL BE LAID WITH WATERPROOF ADHESIVES RATED FOR PRESSURE-PRESERVATIVE TREATING.

SAWN TIMBER

DOUGLAS FIR, NO. 1 OR BETTER PER WCLIB GRADING RULES NO. 17. TIMBER DECKING MATERIALS SHALL BE FREE FROM SPLITS, WARPS, CRACKS, AND WITH NO LOOSE KNOTS OR OTHER DEFECTS AND SHALL BE GRADED IN ACCORDANCE WITH WCLIB OR WWPA GRADING RULES, STAMPED BY AN INSPECTION AGENCY ACCREDITED BY THE AMERICAN LUMBER STANDARDS COMMITTEE (ALSC) WITH EITHER THE WWPA OR WCLIB LOGO. SURFACING SHALL BE S4S FOR ALL SAWN TIMBER EXCEPT DECKING WHICH SHALL BE S1S2E, MILLED AS INDICATED ON THE DRAWINGS. MINIMUM EXTREME FIBER IN BENDING STRENGTH OF 1,200 PSI.

TIMBER TREATMENT

TIMBER MEMBERS SHALL BE PRESSURE TREATED WITH PRESERVATIVE AS OUTLINED BELOW. ALL TIMBERS SHALL BE CUT TO LENGTH, DRILLED AND DAPPED PRIOR TO TREATMENT. ALL PRESSURE TREATMENT PROCESSES SHALL BE PERFORMED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES FOR THE SPECIFIED TREATMENT TYPE. CONFORM TO AWPA STANDARD M4 AND HAVE A COPY OF M4 AT THE PROJECT SITE. ACCREDITED ALSC THIRD PARTY INSPECTION AGENCY SHALL APPLY THEIR QUALITY MARK OR END TAG TO EACH PIECE.

1. GLUE LAMINATED STRINGERS:
FOR GLUE LAMINATED STRINGERS BELOW THE DECKING; TREAT WITH CREOSOTE IN ACCORDANCE WITH AWPA U1, USE CLASS 5A COMMMODITY SPECIFICATION F PROVIDE MINIMUM 12 PCF RETENTION.

2. TIMBER DECKING AND SAWN LUMBER IN AREAS WHERE THERE IS DIRECT PEDESTRIAN CONTACT:

SHALL BE PRESSURE TREATED WITH AMMONIACAL COPPER ZINC ARSENATE (ACZA) TO NOT LESS THAN 0.6 PCF NET DRY SALT RETENTION IN ACCORDANCE WITH AWPA U1, USE CLASS 4B (SALT SPLASH ZONE).

ALL SAWN TIMBER MEMBERS IN AREAS WHERE THERE IS NO DIRECT PEDESTRIAN CONTACT INCLUDING AREAS BELOW THE DECKING SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWPA U1, USE CLASS 5A. TREAT WITH CREOSOTE TO A MINIMUM NET RETENTION OF 20 POUNDS PER CUBIC FOOT.

3. FIELD TREATMENT

A. TREATMENT COMPOUNDS FOR HOLES AND CUTS TO TREATED TIMBER SHALL BE AS SPECIFIED BY AWPA M-4. SATURATE THE AREA WITH COPPER NAPHTHENATE OR PLUG THE HOLE WITH COPPER NAPHTHENATE SATURATED PLUG.

TRESTLE FABRICATION AND INSTALLATION NOTES

STORAGE AND HANDLING

A. THE GROUND UNDERNEATH AND IN THE VICINITY OF STORED LUMBER SHALL BE CLEARED OF WEEDS AND DEBRIS.

B. ALL LUMBER AND TIMBER SHALL BE NEATLY STACKED IN A MANNER TO PREVENT WARPING. TREATED TIMBER SHALL BE STORED CLOSE-STACKED ABOVE THE GROUND ON BLOCKS OR LAGGING.

C. TIMBER MEMBERS SHALL BE HANDLED IN A MANNER THAT PREVENTS DENTS, SCRAPES, OR OTHER DAMAGE. TIMBER SHALL NOT BE DRAGGED OR DROPPED. SLINGS AND CHOKERS USED TO HANDLE TIMBER MEMBERS SHALL BE OF THE WEB BELTING TYPE.

SHOP FABRICATION

SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. SHOP FABRICATE FOR CONNECTIONS TO THE GREATEST EXTENT POSSIBLE, INCLUDING CUTTING TO LENGTH AND DRILLING BOLT HOLES.

ALL FIELD CUTS AND HOLES MADE AFTER TREATMENT SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA RECOMMENDATIONS.

A. 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.

B. SEAL COAT: AFTER FABRICATING, SANDING, AND END-COAT SEALING, APPLY A HEAVY SATURATION COAT OF PENETRATING SEALER ON SURFACES OF EACH UNIT.

C. ALL NON-REMOVABLE ERECTION MARKS ON FABRICATED TIMBER MEMBERS SHALL BE LOCATED SO AS TO BE HIDDEN FROM VIEW IN THE COMPLETED WORK.

INSTALLATION

A. ALL MEMBERS SHALL BE ACCURATELY CUT AND FRAMED TO A CLOSE FIT SO THAT THE JOINTS WILL HAVE EVEN BEARING OVER THE ENTIRE CONTACT SURFACES WITHOUT SHIMMING.

B. ERECT STRUCTURAL GLUED-LAMINATED TIMBER TRUE AND PLUMB, AND WITH UNIFORM, CLOSE-FITTING JOINTS. PROVIDE TEMPORARY BRACING TO MAINTAIN LINES AND LEVELS UNTIL PERMANENT SUPPORTING MEMBERS ARE IN PLACE.

1. LIFT WITH PADDED SLINGS AND PROTECT CORNERS WITH WOOD BLOCKING.
2. CUTTING: AVOID CUTTING AFTER FABRICATION. WHERE FIELD FITTING IS UNAVOIDABLE, COMPLY WITH REQUIREMENTS FOR SHOP FABRICATION.

C. REPAIR DAMAGED SURFACES AFTER COMPLETING ERECTION. REPLACE DAMAGED TIMBER IF REPAIRS ARE NOT PRE-APPROVED BY THE ENGINEER.

D. NAILS SHALL BE DRIVEN WITH SUFFICIENT FORCE TO SET THE HEADS FLUSH WITH THE SURFACE OF THE WOOD. PILOT HOLES SHALL BE DRILLED PRIOR TO NAILING AT LOCATIONS WHERE SPLITTING COULD OCCUR, SUCH AS NEAR EDGES OF BOARDS.

E. HOLES FOR MACHINE BOLTS SHALL BE BORED WITH A BIT 1/16-INCH LARGER THAN THE DIAMETER OF THE BOLT. HOLES FOR LAG SCREWS SHALL BE BORED WITH A BIT WITH THE SAME DIAMETER AND LENGTH AS THE UN-THREADED BODY AND PILOT BORED USING A DRILL NOT LARGER THAN THE DIAMETER OF THE SCREW AT THE ROOT OF THE THREAD FOR THE FULL DEPTH OF THREAD PENETRATIONS. USE AUGER TYPE DRILL BITS. USE OF SPADE BITS WILL NOT BE ALLOWED.

F. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS CERTIFIED IN THE WELDING PROCESS SPECIFIED ON THE PLANS. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1.

G. ALL STRUCTURAL STEEL MEMBERS SHALL BE INSTALLED AND ERECTED IN ACCORDANCE WITH AISC M016.

METAL FABRICATIONS AND HARDWARE

A. STEEL SHAPES, BARS AND PLATES SHALL BE ASTM A36.

B. STRUCTURAL STEEL TUBING SHALL BE ASTM A500, GRADE B.

C. CONNECTION HARDWARE:

UNLESS OTHERWISE NOTED ON THE PLANS, TIMBER CONNECTION BOLTS SHALL BE HOT DIP GALVANIZED ECONOMY HEAD TYPE. NUTS FACING TIMBER SHALL HAVE GALVANIZED MALLEABLE IRON WASHERS. FOR MALLEABLE CASTINGS THE DIAMETER OF THE HEAD SHALL BE EQUAL TO FOUR TIMES THE DIAMETER OF THE BOLT AND THE THICKNESS SHALL BE EQUAL TO ONE-HALF THE DIAMETER OF THE BOLT. ALL BOLTS WITH HEADS FACING DECKING SHALL BE COUNTERSUNK. DEPTH OF COUNTERSINK TO BE EQUAL TO THE BOLT HEAD THICKNESS PLUS 1/16-INCH, WIDTH OF THE COUNTERSINK TO BE EQUAL TO THE BOLT HEAD WIDTH PLUS 1/4-INCH.

TIMBER SCREWS SHALL BE HOT DIP GALVANIZED FLAT HEAD TYPE WITH FULL SHAFT THREADS. ALL BOLTS AND NUTS CONNECTING STEEL TO STEEL CONNECTIONS SHALL BE HOT DIP GALVANIZED ASTM A325. BOLTS AND NUTS SHALL BE THE HEAVY HEX TYPE UNLESS OTHERWISE NOTED ON THE PLANS. WASHERS SHALL BE ANSI B27.2, TYPE A.

D. STEEL GALVANIZED COATINGS

ALL STRUCTURAL STEEL, PIPE, METAL FABRICATIONS, NUTS, WASHERS, BOLTS, NAILS, SCREWS AND OTHER HARDWARE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 OR A123.

REPAIR ALL FIELD WELDS, SCRATCHES, FIELD DRILLED HOLES AND ALL OTHER FIELD DAMAGED AREAS USING ZINC-BASED SOLDERS APPLIED TO 6 MIL THICKNESS MINIMUM IN ACCORDANCE WITH ASTM A780. COATING FOR STEEL PILES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATION FOR STEEL PIPE PILES.

E. STEEL WELDING

WELDING SHALL COMPLY WITH LATEST AWS D1.1 AND BE PERFORMED BY WELDERS WHO ARE QUALIFIED AS SPECIFIED IN AWS FOR THE PARTICULAR PROCESS THAT THE WELDER WILL PERFORM.
QUALIFICATIONS WILL BE IN ACCORDANCE WITH AWS D1.1 SECTION 4.1.3.
USE E70XX FILLER METAL. ALL SMAW ELECTRODES SHALL BE PROPERLY CONDITIONED LOW HYDROGEN. SUBMIT WELDER QUALIFICATIONS AND WELDING PROCEDURES TO ENGINEER FOR APPROVAL AT LEAST 15 DAYS PRIOR TO WELDING. ALL SHOP WELDS SHALL BE 100% VISUALLY INSPECTED BY THE CONTRACTOR. IN ADDITION, 10% OF ALL CJP SHOP WELDS SHALL BE TESTED BY UT EXAMINATION OR OTHER NDT METHODS APPROVED BY ENGINEER. ALL FIELD WELDS WILL BE 100% VISUALLY INSPECTED BY THE OWNER'S REPRESENTATIVE. ANY WELD FAILING INSPECTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, WHICH WILL INCLUDE THE COST FOR RETESTING.

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STATE OF ALASKA — 49TH — Duane H. Anderson — CE 4774 — 11/19/13 — REGISTERED PROFESSIONAL ENGINEER

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH | Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: SHEET SPECS

SHEET NO: **G2.0**

MEASUREMENT & PAYMENT

1. MEASUREMENT AND PAYMENT FOR "FURNISH & INSTALL TIMBER APPROACH TRESTLE" SHALL BE LIMP SUM AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT & LABOR REQUIRED TO COMPLETELY INSTALL THE TIMBER SUPERSTRUCTURE INCLUDING FRAMING, DECKING, BULL RAILS, HAND RAILS, STEEL SUPPORT STRUCTURE, PILE CAPS, GANGWAY HANGER PLATE, OTHER METAL FABRICATIONS, AND OTHER APPURTENANCES COMPLETE AND IN PLACE. MEASUREMENT AND PAYMENT FOR THIS ITEM EXCLUDES THE TRESTLE PILING, TRESTLE ABUTMENT, AND ANY OTHER WORK ITEMS COVERED BY SEPARATE BID ITEMS.

2. MEASUREMENT & PAYMENT FOR "FURNISH AND INSTALLING THE TRESTLE BACKWALL ABUTMENT" SHALL BE LUMP SUM AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETELY INSTALL THE TREATED TIMBER BACKWALL ABUTMENT INCLUDING ALL THE TREATED TIMBER BACKWALL AND EXCAVATION, FILL, GRADING, TIE-IN TO TRAILS AND TRESTLE PILING, AND ANY OTHER ITEMS REQUIRED TO COMPLETELY INSTALL AND SECURE THE TRESTLE ABUTMENT WHICH ARE NOT COVERED BY OTHER BID ITEMS

PILES AND DRIVING

STEEL PILES AND PILE DRIVING

STEEL PIPE PILES SHALL BE ROUND SEAMLESS OR LONGITUDINALLY WELDED ASTM 252 OR API 5L WITH CHEMICAL AND PHYSICAL PROPERTIES THAT ALLOW THE USE OF PRE-QUALIFIED WELD PROCEDURES. PILES SHALL BE OF THE SIZE AND ALLOWABLE YIELD STRESS INDICATED IN THE DRAWINGS. SUBMIT CERTIFIED MILL TEST REPORTS, CERTIFICATION OF INSPECTION FOR GALVANIZING COATING AND COATING REPAIR PRODUCTS AND PROCEDURES, PRODUCT DATA, SHOP DRAWINGS INCLUDING ANY PROPOSED SHOP SPLICES, AND WELD INSPECTION REPORTS.

THE CONTRACTOR SHALL PREPARE A PILE DRIVING PLAN FOR APPROVAL AT LEAST 30 DAYS PRIOR TO MOBILIZING TO THE SITE. THE PILE DRIVING PLAN SHALL CONTAIN THE FOLLOWING ITEMS AT A MINIMUM:

1. A DETAILED DESCRIPTION OF THE PLANNED INSTALLATION METHOD INCLUDING TYPES OF DRIVING EQUIPMENTAND METHODOLOGY USED TO ACHIEVE DESIGN CRITERIA.
2. A DESCRIPTION OF THE TEMPLATE OR OTHER METHODS USED TO MAINTAIN PILE ALIGNMENT AND LOCATION TOLERANCES.
3. DETAILS INCLUDING MEANS, METHODS, AND EQUIPMENT FOR ACHIEVING PILE PENETRATION. INCLUDE DETAILS TO ENSURE THE PILING WILL NOT BE DAMAGED AND WHEN TO STOP DRIVING. INCLUDE DETAILS MEANS, METHODS, AND EQUIPMENT TO ENSURE EMBEDMENT.
4. CRITERA TO CORRECT PILING THAT DO NOT MEET ACCEPTANCE CRITERIA . INCLUDED IN THIS SHALL BE A PROPOSED METHOD TO DEAL WITH OBSTRUCTIONS OR HARD DRIVING AND DAMAGED PILING.
5. A PILE MONITORING PLAN INCLUDING HOW RECORDS WILL BE KEPT.
6. A SCHEDULE OF ACTIVITIES INCLUDING WHICH PILING WILL BE DRIVEN FIRST AND ORDER OF DRIVING.

ALL PILES ON THE TRESTLE SHALL BE DRIVEN WITH AN IMPACT HAMMER AND ALL PERTINENT DRIVING INFORMATION RECORDED. THE CONTRACTOR SHALL KEEP A COMPLETE AND ACCURATE RECORD OF EACH PILE DRIVEN. INDICATE PILE LOCATION, DEVIATIONS FROM DESIGN LOCATION, CROSS SECTION SHAPE AND DIMENSIONS, GROUND ELEVATION, TIP ELEVATION, CUTOFF ELEVATION, PENETRATION IN BLOWS PER FOOT FOR THE ENTIRE LENGTH OF PENETRATION, HAMMER DATA AND ANY UNUSUAL PILE BEHAVIOR.

PILE LENGTHS: PILES SHALL BE FURNISHED BY THE CONTRACTOR IN SUFFICIENT QUANTITY TO MEET THE REQUIREMENTS FOR THE PILE TYPES SHOWN ON THE PLANS. THE LENGTHS SHOWN ON THE DRAWINGS ARE BASED ON LENGTHS, WHICH ARE ASSUMED TO REMAIN IN THE COMPLETED STRUCTURE. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, INCREASE THE LENGTHS GIVEN TO PROVIDE FOR FRESH HEADING AND FOR SUCH ADDITIONAL LENGTH AS MAY BE NECESSARY TO SUIT THE CONTRACTOR'S METHOD OF OPERATIONS.

PROTECTIVE COATINGS

ALL PIPE PILES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-123 WITH A MINIMUM COATNG THICKNESS OF 2.3 OUNCES PER SQUARE FOOT. PILES TOO LONG FOR AVAILABLE GALVANIZING EQUIPMENT MAY BE GALVANIZED IN PIECES AND THEN SPLICED. SUCH SPLICES SHALL BE SHOP SPLICED AND GALVANIZED USING HOT APPLIED GALVANIZED COATINGS APPLIED TO 6 MIL MINIMUM THICKNESS PER AWS C2.23.

FIELD SPLICES (IF ANY), WELDS AND DAMAGED AREAS SHALL BE REPAIRED USING ZINC-BASED SOLDERS APPLIED TO 6 MIL THICKNESS MINIMUM IN ACCORDANCE WITH ASTM A780.

SHOP FABRICATION

A. FABRICATE THE PILES IN THE LONGEST LENGTHS PRACTICABLE. ALL PILE SPLICE WELDS SHALL DEVELOP THE FULL STRENGTH CAPACITY OF THE PIPE. FIELD SPLICING IS NOT ANTICIPATED AND WILL ONLY BE USED IF UNEXPECTED DRIVING CONDITIONS ARE DISCOVERED.

B. WHERE SPLICES ARE REQUIRED, PROVIDE SPLICES OF THE FULL PENETRATION WELD TYPE USING 1.4 INCH MINIMUM BACKING RING AND A SINGLE VEE OR SINGLE BEVEL GROOVE WELD AS REQUIRED BY AND IN ACCORDANCE WITH AWS D1.1. SPLICES WILL NOT BE PERMITTED FOR PILE LENGTHS UNDER 40 FEET. CONSTRUCT SPLICES TO MAINTAIN THE TRUE ALIGNMENT AND POSITION OF THE PILE SECTIONS. SPLICES SHALL DEVELOP THE FULL STRENGTH OF THE PILE IN BOTH BEARING AND BENDING.

C. ALL WELDING SHALL BE IN ACCORDANCE WITH, AND BY WELDERS CURRENTLY CERTIFIED IN ACCORDANCE WITH AWS D1.1 FOR THE TYPE OF WELDING SPECIFIED. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1.

D. INSPECTION: ALL FIELD AND SHOP WELDS SHALL BE VISUALLY INSPECTED (100% VISUAL INSPECTION). ALL FIELD AND SHOP PILE SPLICE WELDS SHALL ALSO BE ULTRASONICALLY TESTED (100% ULTRASONIC TESTING). INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH THE REFERENCED STANDARDS BY AN AWS-CERTIFIED WELDING INSPECTOR FROM AN INDEPENDENT INSPECTION SERVICE. WELD INSPECTION REPORTS PREPARED BY THE INSPECTOR SHALL BE PROVIDED FOR EACH WELD. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

INSTALLATION

A. CONDUCT PILE DRIVING RAMP-UP PROCEDURED AS REQUIRED BY THE PERMIT.

B. INSPECT PILES WHEN DELIVERED TO SITE AND WHEN IN THE LEADS IMMEDIATELY BEFORE DRIVING. PILES SHALL BE HANDLED IN A MANNER TO PROTECT PILE AND COATINGS. CUT PILES AT CUTOFF GRADE BY AN APPROVED METHOD.

C. PILES SHALL BE DRIVEN TO THE MINIMUM PENETRATION AS SHOWN ON THE PLANS.

D. PILES SHALL BE DRIVEN TO WITHIN THE TOLERANCES SPECIFIED.

E. PILE DRIVER LEADS, TEMPLATES, OR HAMMER CARRIAGES CONSTRUCTED IN SUCH A MANNER AS TO AFFORD FREEDOM OF MOVEMENT OF THE HAMMER SHALL BE USED. LEADS SHALL ALSO BE HELD IN SUCH A MANNER TO PROVIDE LATERAL SUPPORT TO THE PILE DURING DRIVING. THE LEADS IN GENERAL SHALL BE OF SUFFICIENT LENGTH TO MAKE THE USE OF A FOLLOWER UNNECESSARY. TEMPLATES SHALL BE LINED WITH A PLASTIC OR TIMBER BEARING SURFACE DESIGNED TO PROTECT THE COATING.

F. PILE HEADS SHALL BE CUT SQUARELY AND A DRIVING CAP PROVIDED TO HOLD THE AXIS OF THE PILES IN LINE WITH THE AXIS OF THE HAMMER.

G. PILES SHALL BE DRIVEN WITH AIR, HYDRAULIC, OR DIESEL HAMMERS OF AN APPROVED TYPE WITH A CAPACITY AT LEAST EQUAL TO THE HAMMER MANUFACTURER'S RECOMMENDATION FOR THE TOTAL WEIGHT OF PILE AND CHARACTER OF SUBSURFACE CONDITIONS THAT ARE EXPECTED TO BE ENCOUNTERED.

H. PILES SHALL BE DRIVEN WITH THE HEAVIEST HAMMER THAT, IN THE JUDGMENT OF THE ENGINEER, CAN BE USED TO SECURE THE SPECIFIED PENETRATION WITHOUT DAMAGE TO THE PILE.

I. TOTAL ENERGY FOR DIESEL HAMMERS WITH ENCLOSED RAMS SHALL BE TAKEN AS 90 PERCENT OF MANUFACTURER'S MAXIMUM RATING. FOR DIESEL HAMMERS WITH UNRESTRICTED REBOUND OF RAM, TOTAL ENERGY SHALL BE TAKEN AS THE PRODUCT OF THE RAM WEIGHT AND THE MAXIMUM HEIGHT OF FALL.

J. THE VALVE MECHANISM AND OTHER PARTS OF THE HAMMER SHALL BE MAINTAINED IN GOOD CONDITION SO THAT LENGTH OF STROKE AND NUMBER OF BLOWS PER MINUTE FOR WHICH THE HAMMER IS DESIGNED WILL BE OBTAINED. INEFFICIENT HAMMERS SHALL BE REMOVED FROM THE WORK.

K. FOR SPECIAL TYPES OF PILES, DRIVING HEADS, MANDRELS OR OTHER DEVICES, THE MANUFACTURER'S RECOMMENDATIONS SHALL BE PROVIDED SO THAT THE PILE MAY BE DRIVEN WITHOUT DAMAGE. SUBMIT TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL.

L. OPERATE HAMMER AT MANUFACTURER'S RATED SPEED, AND DRIVE PILE WITHOUT INTERRUPTION TO REACH A PILE TIP ELEVATION OR MINIMUM DEPTH OF PENETRATION INDICATED ON THE DRAWINGS. IF, IN DRIVING, IT IS FOUND THAT PILE IS NOT OF SUFFICIENT LENGTH TO GIVE THE CAPACITY OR PENETRATION SPECIFIED, NOTIFY THE ENGINEER, WHO WILL DETERMINE THE PROCEDURE TO BE FOLLOWED.

M. CONTINUOUS SURVEILLANCE AND INSPECTION OF THE PILE DRIVING OPERATION BY THE OWNER'S REPRESENTATIVE IS REQUIRED. NO PILE SHALL BE DRIVEN IN ABSENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF THE DRIVING SCHEDULE AT LEAST 72 HOURS PRIOR TO DRIVING ANY PILES.

N. THE CONTRACTOR SHALL SELECT A HAMMER THAT WILL ADVANCE THE PILE TIPS TO THE SPECIFIED ELEVATIONS AS INDICATED ON THE CONTRACT DRAWINGS WITHOUT DAMAGING THE PILES. DATA SHALL BE LOGGED IN ACCORDANCE WITH PARAGRAPH RECORDS OF THIS SECTION, FOR ALL PILES. THE CONTRACTOR SHALL COORDINATE AND MARK THE PILES AT THE REQUEST OF THE OWNER'S REPRESENTATIVE.

O. EACH PERMANENT PILE SHALL BE DRIVEN WITHOUT INTERRUPTION FROM THE FIRST BLOW OF THE HAMMER UNTIL THE REQUIRED TIP ELEVATION HAS BEEN ATTAINED. DEVIATION FROM THIS REQUIREMENT WILL BE PERMITTED ONLY FOR UNFORESEEN CAUSES, WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

P. HARD DRIVING AND OBSTRUCTIONS TO DRIVING:

1. ANY ROCK OR OTHER OBSTRUCTION UP TO A DEPTH OF 10 FEET BELOW EXISTING GRADE SHALL BE DUG OUT AND REMOVED AS REQUIRED TO FACILITATE PILE DRIVING. REMOVAL OF ROCK SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM.
2. ANY OBSTRUCTION TO DRIVING IN-WATER PILING SHALL BE REMOVED BY USE OF INDUSTRY STANDARD MEANS SUCH AS WITH A CRANE AND SLING OR BUCKET, SPUDDING, OR OTHER MEANS. OBSTRUCTIONS WITHIN 10 FEET OF EXISTING MUDLINE SHALL BE REMOVED AND SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM.
3. IF THE SPECIFIED PENETRATION AND CAPACITY CANNOT BE OBTAINED BY THE DRIVING METHODS AND EQUIPMENT UTILIZED BY THE CONTRACTOR, NOTIFY THE OWNER'S REPRESENTATIVE BEFORE PULLING OR RE-DRIVING THE PILE. THE OWNER'S REPRESENTATIVE MAY ACCEPT PILES AT A LESSER PENETRATION WHEN, IN THE JUDGMENT OF THE OWNER'S REPRESENTATIVE, THE ADEQUACY AND SAFETY OF THE RESULTING STRUCTURE WILL NOT BE JEOPARDIZED BY SUCH ACCEPTANCE.
4. IF IN THE JUDGMENT OF THE OWNER'S REPRESENTATIVE, THE ACHIEVED PENETRATION IS INADEQUATE, THE OWNER'S REPRESENTATIVE MAY ORDER A REPLACEMENT PILE OR PILES TO BE DRIVEN FOR WHICH THE CONTRACTOR WILL BE PAID IN ACCORDANCE WITH THE UNIT PRICES OF THE CONTRACT. THE UNCOMPLETED PILE SHALL BE PULLED OR CUT OFF AT THE ELEVATION DIRECTED BY THE OWNER'S REPRESENTATIVE.

Q. DAMAGED AND MISDRIVEN PILES:

1. THE METHOD USED IN DRIVING PILES SHALL NOT SUBJECT THEM TO EXCESSIVE AND UNDUE ABUSE RESULTING IN DEFORMATION OF THE STEEL. MANIPULATION OF THE PILES TO FORCE THEM INTO PROPER POSITION WILL NOT BE PERMITTED.
2. ANY PILE DAMAGED IN DRIVING BY REASON OF INTERNAL DEFECT, DAMAGED BY IMPROPER DRIVING, OR DRIVEN OUT OF ITS PROPER LOCATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE BY ONE OF THE FOLLOWING METHODS APPROVED BY THE ENGINEER FOR THE PILE IN QUESTION:
   a. THE PILE SHALL BE WITHDRAWN AND REPLACED BY A NEW PILE, AND WHEN NECESSARY LONGER PILE.
   b. THE PILE SHALL BE CUT OFF AND SPLICED AS PROVIDED HEREIN.
   c. PILE SHALL BE CUT OFF AND A SECOND PILE DRIVEN AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
3. SHOULD THE CONTRACTOR DAMAGE THE PILE TOP DURING DRIVING SO AS TO INTERFERE, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, WITH THE SATISFACTORY DRIVING OF THE PILE, THE DRIVING SHALL BE DISCONTINUED, THE PILE SHALL BE CUT PERPENDICULAR TO ITS AXIS, AND THE DRIVING SHALL THEN BE RESUMED. ANY PILE WHICH IS DAMAGED IN DRIVING (OTHER THAN AT THE TOP) SHALL BE WITHDRAWN AND ANOTHER PILE SHALL BE SUBSTITUTED; OR, IF PERMITTED BY THE OWNER'S REPRESENTATIVE, THE DAMAGED PILE MAY BE SPLICED AT SOME POINT SUCH THAT THE COMPLETED PILE WILL BE SATISFACTORY, ALL AT THE EXPENSE OF THE CONTRACTOR.

PILE CUT-OFFS

A. AFTER THE PILES ARE DRIVEN AND ACCEPTED, THEY SHALL BE CUT OFF TO THE PLANES AND ELEVATIONS SHOWN ON THE DRAWINGS. CUTTING METHODS SHALL BE USED WHICH WILL NOT DAMAGE THE PORTION OF THE PILE TO BE LEFT IN PLACE.

B. PILE TOPS SHALL BE CUT OFF WITHIN +/- 1/16 INCH OF THE ELEVATION INDICATED ON THE PLANS. IN LIEU OF CUTTING THE TOPS OF PILES AT THE INDICATED ELEVATION, THE CONTRACTOR MAY DRIVE ADDITIONAL DEPTHS TO THE DESIRED CUT-OFF ELEVATION.

C. STEEL PILE TOPS SHALL BE REPAIR COATED AFTER DRIVING OR CUT-OFF USING FLAME SPRAY GALVANIZING METHOD IN ACCORDANCE WITH ASTM A780 AND AWS C2.23.

D. PILE CUT-OFFS AND WITHDRAWN PILES SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE OWNER'S PROPERTY AT THE COMPLETION OF THE WORK.

MEASUREMENT & PAYMENT

MEASUREMENT & PAYMENT FOR FURNISHING OF GALVANIZED STEEL PIPE PILE SHALL BE IN FEET FROM INSTALLED PILE TIP TO PLAN CUT OFF ELEVATION FOR EACH TYPE AND SIZE OF PIPE PILE INCLUDED IN THE COMPLETED STRUCTURE AND DOESN'T INCLUDE EXCESS PILE LENGTH ORDERED BY CONTRACTOR FOR PLANNED CUTOFFS NEEDED FOR INSTALLING THE PILES.

PAYMENT FOR DRIVING PILES IS PER EACH PILE INSTALLED AND ACCEPTED, AND INCLUDES ALL MATERIALS, EQUIPMENT, CREW TIME, LABOR, ANY PILE SHOES, CAPS, SPLICER, EQUIPMENT RENTAL, HAMMERING ACCESSORIES, ETC.

TOLERANCES IN DRIVING

PILES SHALL BE DRIVEN AS ACCURATELY AS PRACTICABLE IN THE CORRECT LOCATIONS, TRUE TO LINE BOTH LATERALLY AND LONGITUDINALLY. THE FOLLOWING TOLERANCES APPLY IN ORDER OF PRIORITY.

1. TRESTLE / GANGWAY PLATFORM PILES SHALL BE DRIVEN SO THAT THE TOP AT CUTOFF POSITION IS WITHIN A 3" RADIUS OF THE DESIGN POSITION. TRESTLE / GANGWAY PLATFORM PILES SHALL NOT DEVIATE FROM THE INDICATED BATTER BY MORE THAN 1/4 INCH IN THREE FEET.
2. A VARIATION OF NOT MORE THAN 1/8" INCH PER FOOT OF PILE LENGTH FROM THE VERTICAL FOR PLUMB PILES WILL BE PERMITTED.

MANIPULATION OF PILES WILL NOT BE PERMITTED.

FULL-LENGTH PILES SHALL BE DRIVEN WITHOUT FIELD SPLICES. DRIVE SO THAT SHOP SPLICES ARE LOCATED IN THE UPPER PORTION OF THE PILE AND NOT NEAR THE MUDLINE.

INSPECT PILES FOR HEAVE. RE-DRIVE HEAVED PILES TO THE REQUIRED TIP ELEVATION.

REMOVE AND REPLACE PILES DRIVEN OUTSIDE THE ABOVE TOLERANCES, DAMAGED, MISLOCATED, DRIVEN BELOW THE DESIGN CUTOFF, OR DRIVEN OUT OF ALIGNMENT, OR PROVIDE ADDITIONAL PILES, DRIVEN AS DIRECTED. RE-DRIVING THESE PILES WILL BE DONE AT NO COST TO THE OWNER. PILES DAMAGED BY MANIPULATION, PULLING, OR OTHER ACTIONS OF THE CONTRACTOR MUST BE REPLACED WITH NEW PILES AT NO COST TO THE OWNER.

REDESIGN OF PILE CAPS OR ADDITIONAL WORK REQUIRED DUE TO IMPROPER LOCATION OF PILES WILL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR.

ALUMINUM GANGWAY

GANGWAY DESIGN NOTES

GANGWAY PERFORMANCE SPECIFICATIONS ARE PROVIDED HEREIN. GANGWAY SHALL BE DESIGNED BY THE MANUFACTURER. GANGWAY DESIGN SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN ALASKA, DESIGN CALCULATIONS, SHOP DRAWINGS, AND MATERIAL SUBMITTALS WILL BE SUBMITTED TO THE ENGINEER.

DESIGN LOADS

DEAD LOADS: ALL (INCLUDING 100 POUND PER LINEAL FOOT UTILITY ALLOWANCE)

LIVE LOAD: 85 PSF (DISTRIBUTED)

SNOW LOAD: 40 PSF (DISTRIBUTED)

HANDRAIL: 50 POUNDS PER LINEAR FOOT (HORIZONTAL)

VEHICLE LOAD: 1600 LB/400 LB PER WHEEL ATV "4-WHEELER" (POINT LOAD)

WIND LOAD: 130 MPH 3 SECOND GUST

UTILITY SUPPORTS SHALL BE CAPABLE OF SUPPORTING POSSIBLE FUTURE UTILITIES INCLUDING 60#/LF OF ELECTRICAL CABLE AND 10#/LF EACH FOR WATER, SEWER, AND FIRE SUPPRESSION LINES.

GANGWAY MATERIALS

1. ALL ALUMINUM TO BE 6061 T-6 SQUARE AND RECTANGULAR TUBES, UNLESS OTHERWISE NOTED
2. STRUCTURAL STEEL - PLATES AND SHAPES SHALL BE ASTM A36
3. TRANSITION PLATES SHALL BE ALUMINUM WITH "SLIPNOT" TRACTION COATING, OR APPROVED EQUAL. UHMW-PE USED IN SKIDS & LANDING PLATE WEAR EDGE SHALL CONFORM TO ASTM 4020 AND YELLOW IN COLOR (LANDING PLATE).
4. GANGWAY FLOORING:
   FLOORING FOR GANGWAY SHALL BE FULL WIDTH, ADA-COMPLIANT GRATING EQUIVALENT TO "FIBERGRATE" BRAND SAFE-T-SPAN T2510 WITH AN INTEGRATED GRIT TRACTION SURFACE. PROVIDE STRUCTURAL SUPPORT FOR DECKING AT 2-FOOT ON CENTER, MAXIMUM.
5. ULTRA HIGH MOLECULAR WEIGHT-POLYETHYLENE (UHMW-PE) ATTACHMENT (TRANSITION PLATES & SKIDS):
   UHMW-PE SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM 4020. MATERIAL SHALL BE CHEMICALLY CROSS LINKED, ULTRA-VIOLET LIGHT STABILIZED AND SUITABLE FOR LONG TERM EXPOSURE. UHMW-PE COLOR SHALL BE YELLOW FOR TRANSITION PLATE WEAR EDGE AND BLACK FOR OTHER APPLICATIONS.
6. GANGWAY ROOF :
   PROVIDE METAL ROOF AND SIDING, SIDING SIMILAR TO ALCOA ALUMINUM MILL FINISH 4" RIB PANELS, POWDER COATED OR EQUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL.
7. GANGWAY LIGHTING:
   SAFJ SERIES LED, MANUFACTURED BY RIG-A-LITE, APPROVED EQUAL.
9. HARDWARE SHALL BE ASTM A325 AND HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.

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STATE OF ALASKA — 49TH — Duane H. Anderson — CE 4774 — 7/9/13 — REGISTERED PROFESSIONAL ENGINEER

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: SHEET SPECS

SHEET NO:
G2.1

GANGWAY FABRICATION AND INSTALLATION NOTES

ALL WELDING IS TO BE PERFORMED IN CONFORMANCE WITH AWS D1.2 (FOR ALUM.) OR AWS D1.1 (FOR STEEL) STRUCTURAL WELDING CODE (CURRENT EDITION) BY AWS QUALIFIED WELDERS.

LIFT AND INSTALL GANGWAY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ATTACH SHORE END OF GANGWAY TO END OF APPROACH TRESTLE USING 1" MIN THICK GALVANIZED STEEL PLATE, MOUNTING LUGS AND HARDWARE/SHACKLE AS INDICATED ON THE DRAWINGS. ATTACH LANDING PLATE TRACKS TO FLOAT SUCH THAT THE GANGWAY LANDING SKIDS ARE CENTERED ON THE PLATE/TRACK AT MID-TIDE LEVEL AND AT NO TIME OVER THE FULL EXTREME TIDE RANGE SHALL SKIDS COME OFF OF TRACKS. MONITOR GANGWAY AND GANGWAY SUPPORTED UTILITIES OVER SEVERAL TIDE CYCLES TO ENSURE PROPER PERFORMANCE AND NO CONFLICTS OR BINDING.

MEASUREMENT & PAYMENT

MEASUREMENT AND PAYMENT FOR GANGWAY SHALL BE LUMP SUM AND SHALL INCLUDE ALL WORK AND MATERIALS, PLAN AND LABOR REQUIRED TO COMPLETELY DESIGN, FABRICATE, TRANSPORT, & PROPERLY INSTALL THE GANGWAY AS SPECIFIED HEREIN. THIS INCLUDES ALL GANGWAY APPURTENANCES , SUCH AS ROOFING, SIDING, COATING, FLOORING, UTILITY HANGARS, ATTACHMENT LUGS AND PLATES AND OTHER ITEMS NECESSARY TO COMPLETELY INSTALL THE GANGWAY AS INDICATED HEREIN.

CATHODIC PROTECTION

THE WORK COVERED BY THIS SECTION INCLUDES ALL PLANT, LABOR, EQUIPMENT, SUPPLIES, MATERIALS, TRANSPORTATION, HANDLING, STORAGE AND PERFORMING ALL OPERATIONS NECESSARY TO FURNISH AND INSTALL A COMPLETE, OPERATING, SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEM ON PIPE PILES, AS SHOWN ON THE PLANS AND AS SPECIFIED HEREIN. SACRIFICIAL ALUMINUM ANODES SHALL BE WELDED TO ALL FLOAT PILING AS INDICATED IN THE PLANS. ALL WELDERS SHALL BE CERTIFIED IN THE PROCEDURE THEY ARE USING. SUBMIT COPIES OF THE WELDER'S CERTIFICATES PRIOR TO COMMENCING WORK.

REFERENCES

ASTM B 418	CAST AND WROUGHT GALVANIC ZINC ANODES
AWS-D3.6M	CLASS B WELDING STANDARDS
AWS D1.1/D1.1M	STRUCTURAL WELDING CODE--STEEL
NACE RP0387	METALLURGICAL AND INSPECTION REQUIREMENTS FOR CAST GALVANIC ANODES FOR OFFSHORE APPLICATIONS

SUBMITTALS

SUBMIT THE FOLLOWING

1. ANODE SHOP DRAWINGS
2. MANUFACTURER CERTIFICATE OF CONFORMITY. PROOF THAT THE MATERIALS FURNISHED UNDER THIS SECTION CONFORM TO THE SPECIFIED REQUIREMENTS CONTAINED IN THE NACE RP0387. THE LABEL OR LISTING BY THE SPECIFIED AGENCY WILL BE ACCEPTABLE EVIDENCE OF SUCH COMPLIANCE.
3. WELDER'S CERTIFICATES.

MATERIAL

ALUMINUM ALLOY ANODES. ALUMINUM GALVANIC ANODES OF THE SIZE AND WEIGHT INDICATED ON THE PLANS SHALL BE PROVIDED. FOR EACH CATHODIC SYSTEM, THE METALLIC COMPONENTS AND STRUCTURES TO BE PROTECTED SHALL BE MADE ELECTRICALLY CONTINUOUS. ALUMINUM ANODES SHALL BE INSTALLED ON PILING AT THE LOCATIONS AND INTERVALS SPECIFIED ON THE CONTRACT DRAWINGS. THE ALUMINUM ANODES SHALL HAVE THE FOLLOWING PROPERTIES:

1. ENERGY CAPACITY NOT LESS THAN 1150 AMP-HOUR PER POUND.
2. ION RATE OF NOT MORE THAN 7.5 POUNDS PER AMP YEAR.
3. AN OPEN CIRCUIT POTENTIAL AT LEAST -1.05 VOLTS VS. A SILVER/SILVER CHLORIDE REFERENCE CELL.

A. ALUMINUM ANODE COMPOSITION. ALUMINUM ANODES SHALL BE ALUMINUM-ZINC-INDIUM AND SHALL CONFORM TO NACE RP0387 AND THE COMPOSITION SHOWN IN THE FOLLOWING TABLE. SUBMIT A MANUFACTURER CERTIFICATE OF CONFORMITY.

ELEMENT/COMPONENT	CONTENT, PERCENT BY WEIGHT
ZINC (ZN)	2.8 – 6.5%
INDIUM (IN)	0.014 – 0.020%
SILICON (SI)	0.08 – 0.2%
IRON (FE)	0.12% MAXIMUM
COPPER (CU)	0.005% MAXIMUM
CADMIUM (CD)	0.002% MAXIMUM
MERCURY (HG)	0.001% MAXIMUM
TIN (SN)	0.001% MAXIMUM
ALUMINUM (AL)	REMAINDER/BALANCE

B. THE CONTRACTOR SHALL FURNISH SPECTROGRAPHIC ANAYLSIS ON SAMPLES FROM EACH HEAT OR BATCH OF ANODES USED ON THIS PROJECT

C. ANODES ARE TO BE SUPPLIED IN 200 LB UNITS, AS INDICATED ON THE DRAWINGS WHERE THIS WEIGHT REFERS TO THE WEIGHT OF THE ANODE MATERIAL NOT INCLUDING THE CORE. THE LENGTH OF THE ANODES SHALL BE BETWEEN 28 AND 36 INCHES LONG.

D. PRIOR TO ORDERING ANODES, AND WITH PRIOR APPROVAL BY THE ENGINEER, THE CONTRACTOR MAY SELECT ALTERNATE SIZE AND NUMBER OF ANODES, TO MEET THE MINIMUM TOTAL WEIGHT REQUIREMENT INDICATED PER PILE.

E. THE CORE SHALL BE A MINIMUM OF 2-INCH BY 3/8-INCH THICK MILD STEEL BAR STOCK. IT SHALL BE PLACED LONGITUDINALLY IN THE ANODE MATERIAL AND SHALL EXTEND A MINIMUM OF 4 INCHES FROM EACH END OF THE ANODE. THE CORES SHALL BE ABRASIVE BLASTED TO NEAR WHITE FINISH IN ACCORDANCE WITH SSPC SP-10 AND CAST WITH THE ANODE MATERIAL WITHIN FOUR HOURS OF BLASTING.

ANODE INSTALLATION

A. ANODES OF THE SIZE SPECIFIED SHALL BE INSTALLED TO THE DEPTH INDICATED AND AT THE LOCATIONS SHOWN. LOCATIONS MAY BE CHANGED AS REQUIRED TO CLEAR OBSTRUCTIONS, FOLLOWING APPROVAL OF THE ENGINEER.

B. GRIND LOCALIZED AREA OF GALVANIZED COATING PRIOR TO INSTALLATION TO ENSURE METALLIC CONTACT BETWEEN ANODE AND PILE. ANODES SHALL BE INSTALLED AFTER PILE DRIVING.

C. WELDING METHODS:

CONNECTIONS TO GALVANIZED PIPE PILE SHALL BE MADE BY EXOTHERMIC WELD METHODS MANUFACTURED FOR THE TYPE OF STEEL SUPPLIED. FOR COATED STEEL REMOVE A SMALL AREA OF COATING PRIOR TO WELDING. FOR ANODES INSTALLED ABOVE THE LOW TIDE LINE WELD ACCORDING TO AWS D1.1/D1.1M.

MEASUREMENT AND PAYMENT

MEASUREMENT FOR FURNISHING AND INSTALLING ALUMINUM ANODES WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH ACCEPTABLE ANODE DELIVERED IN ACCEPTABLE CONDITION ANDCORRECTLY INSTALLED, COMPLETE AND IN PLACE INCLUDING ALL WELDMENTS, AND OTHER ITEMS REQUIRED TO COMPLETELY INSTALL THE CATHODIC PROTECTION SYSTEMS AS INDICATED HEREINED.

WILDLIFE OBSERVER

THIS SPECIFICATION COVERS THE WORK NECESSARY TO PROVIDE A WILDLIFE OBSERVER FOR THE PROJECT AS REQUIRED BY CONDITION OF THE PERMIT AND AS SPECIFIED HEREIN.

REFERENCES

- US ARMY CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY PERMIT
- ENVIRONMENTAL DOCUMENT (FHWA)

SUBMITTALS

A. THE NAME AND RESUME OF THE INDIVIDUAL OR INDIVIDUALS WHO WILL PROVIDE WILDLIFE OBSERVATION FOR THE PROJECT.

B. A DAILY LOG BOOK FOLLOWING CONSTRUCTION. THE LOG BOOK SHALL LIST THE DAILY ACTIVITIES OF THE CONSTRUCTION CREW AND DOCUMENT ANY OBSERVED DESIGNATED SPECIES.

GENERAL REQUIREMENTS

A WILDLIFE OBSERVER SHALL BE ON SITE AT ALL TIMES WHEN PILE DRIVING OR PILE EXTRACTION WILL BE CONDUCTED. IF THE WILDLIFE SPECIES LISTED BELOW COMES WITHIN THE DESIGNATED RANGE LISTED BELOW, ALL PILE DRIVING SHALL CEASE UNTIL ALL INDIVIDUALS VOLUNTARILY MOVE OUTSIDE OF THE MONITORED AREA. THE WILDLIFE OBSERVER SHALL HAVE BINOCULARS, A MEANS TO ACCURATELY ESTIMATE THE DESIGNATED RANGE DISTANCE, A MEANS TO COMMUNICATE WITH THE PROJECT SUPERINTENDENT AUTHORITY TO STOP WORK, AND SHALL KEEP A LOG BOOK OF ALL ACTIVITIES. DISTANCE MARKERS COULD BE INSTALLED BY USING A RANGEFINDER TO PLACE BUOYS AT MEASURED DISTANCES FROM THE WORK SITE. THE OBSERVER SHALL HAVE NO OTHER PRIMARY DUTY THAN TO WATCH FOR AND REPORT ON EVENTS RELATED TO THE DESIGNATED SPECIES.

A. DESIGNATED RANGE: SEE USACE PERMIT.

B. WILDLIFE SPECIES: SEE USACE PERMIT.

OBSERVER QUALIFICATIONS

A WILDLIFE OBSERVER SHALL BE IN GOOD PHYSICAL CONDITION AND BE ABLE TO WITHSTAND HARSH WEATHER CONDITIONS FOR EXTENDED PERIODS OF TIME. THE OBSERVER MUST HAVE VISION CORRECTABLE TO 20-20. THE OBSERVER MUST DEMONSTRATE THE ABILITY TO POSITIVELY IDENTIFY THE DESIGNATED SPECIES.

EQUIPMENT

THE WILDLIFE OBSERVER SHALL HAVE THE FOLLOWING EQUIPMENT AT A MINIMUM:

- BINOCULARS
- RANGE FINDER
- PORTABLE TWO WAY RADIO (THE SAME TYPE AND FREQUENCY AS THE CONSTRUCTION FOREMAN OR SUPERINTENDENT.)
- BUOYS WITH CHAIN AND ANCHORS
- LOG BOOK
- PERSONAL FLOATATION DEVICE
- GOOD QUALITY CAMERA WITH A ZOOM LENS
- GPS UNIT TO DOCUMENT OBSERVATION SITE LOCATION (MAY NOT BE NEEDED EVERY DAY)

EXECUTION

THE WILDLIFE OBSERVER SHALL SET UP AN OBSERVATION POST IN A LOCATION THAT AFFORDS A GOOD VIEW OF THE PROJECT AREA AND DESIGNATED RANGE. BUOYS SHALL BE PLACED TO CLEARLY MARK THE DESIGNATED RANGE IN ALL DIRECTIONS.

EACH DAY PRIOR TO COMMENCING IN WATER WORK THE OBSERVER SHALL CONDUCT A RADIO CHECK WITH THE CONSTRUCTION FOREMAN OR SUPERINTENDENT. HE/SHE SHALL BRIEF THE FOREMAN OR SUPERVISOR AS TO THE SHUTDOWN PROCEDURES IF A ANY OF THE DESIGNATED WILDLIFE SPECIES ARE OBSERVED WITHIN THE DESIGNATED RANGE AREA AND SHALL HAVE THE FOREMAN BRIEF THE REST OF THE CREW, REQUESTING THAT THE CREW NOTIFY THE OBSERVER WHEN A THE DESIGNATED WILDLIFE SPECIES IS SPOTTED. THE OBSERVER SHALL SURVEY THE AREA FOR THE PRESENCE OF THE DESIGNATED WILDLIFE SPECIES AT LEAST 1-HOUR PRIOR TO BEGINNING TO AND DURING PILE DRIVING OR EXCAVATION. THE OBSERVER SHALL NOT LEAVE THE WORK AREA EACH DAY PRIOR TO COMPLETION OF ALL PILE DRIVING OR PILE EXTRACTION.

THE OBSERVER SHALL KEEP A LOG BOOK UP TO DATE ON A DAILY BASIS. ENTRIES IN THE LOG BOOK SHALL INCLUDE THE FOLLOWING AT A MINIMUM:

- OBSERVER ARRIVAL AND DEPARTURE DATE AND TIME.
- CONTRACTOR ARRIVAL AND DEPARTURE DATE AND TIME.
- RADIO CHECK.
- TIME OF STARTING AND STOPPING IN WATER WORK.
- ANY OBSERVATIONS OF DESIGNATED WILDLIFE SPECIES. IF A DESIGNATED WILDLIFE SPECIES IS OBSERVED THE FOLLOWING ITEMS SHALL BE RECORDED: DATE AND TIME, DURATION OF OBSERVATION (HOW LONG WAS THE ANIMAL SEEN IN THE AREA), SPECIES, LOCATION OF THE ANIMAL, NUMBER OF INDIVIUDALS, DISTANCE FROM THE JOB SITE, AND BEHAVIOR OF ANIMAL (DOES ANIMAL APPEAR TO PERCEIVE A DISTURBANCE? DOES IT CHANGE DIRECTION OR SPEED OF TRAVEL IN ORDER TO MOVE AWAY FROM WORK SITE?), AND THE ACTION TAKEN BY THE CONSTRUCTION CREW.
- IF IN WATER WORK IS HALTED DUE TO THE PRESENCE OF A DESIGNATED WILDLIFE SPECIES, THE TIME OF WORK STOPPAGE AND WHEN WORK IS RESUMED SHALL BE RECORDED.
- ANY OBSERVATIONS OF VISIBLY SICK, DEAD, OR INJURED DESIGNATED WILDLIFE SPECIES. SUCH OBSERVATIONS SHOULD BE REPORTED IMMEDIATELY TO THE US FISH AND WILDLIFE AT 1-800-362-5148 DURING REGULAR BUSINESS HOURS, OR TO THE ALASKA SEALIFE CENTER AT 1-888-774-7325 OUTSIDE OF BUSINESS HOURS.

THE LOG BOOK SHALL BE AVAILABLE FOR INSPECTION AT ANY TIME BY THE OWNER, THE OWNER'S ON SITE REPRESENTATIVE, THE ENGINEER, OR THE PERMITTING AGENCY. THE LOG BOOK SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND PERMIT NO ENTRY AT THE END OF CONSTRUCTION.

MEASUREMENT AND PAYMENT

MEASUREMENT & PAYMENT FOR PROVIDING A WILDLIFE OBSERVER WILL BE BY THE LUMP SUM AND WILL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND SUPERVISION. CERTIFIED HEREIN AND ON THE PERMIT.

IF A CONFLICT BETWEEN REQUIREMENTS SPECIFIED HEREIN AND THE PERMIT EXIST, THE REQUIREMENTS OF THE PERMIT WILL SUPERCEDE.

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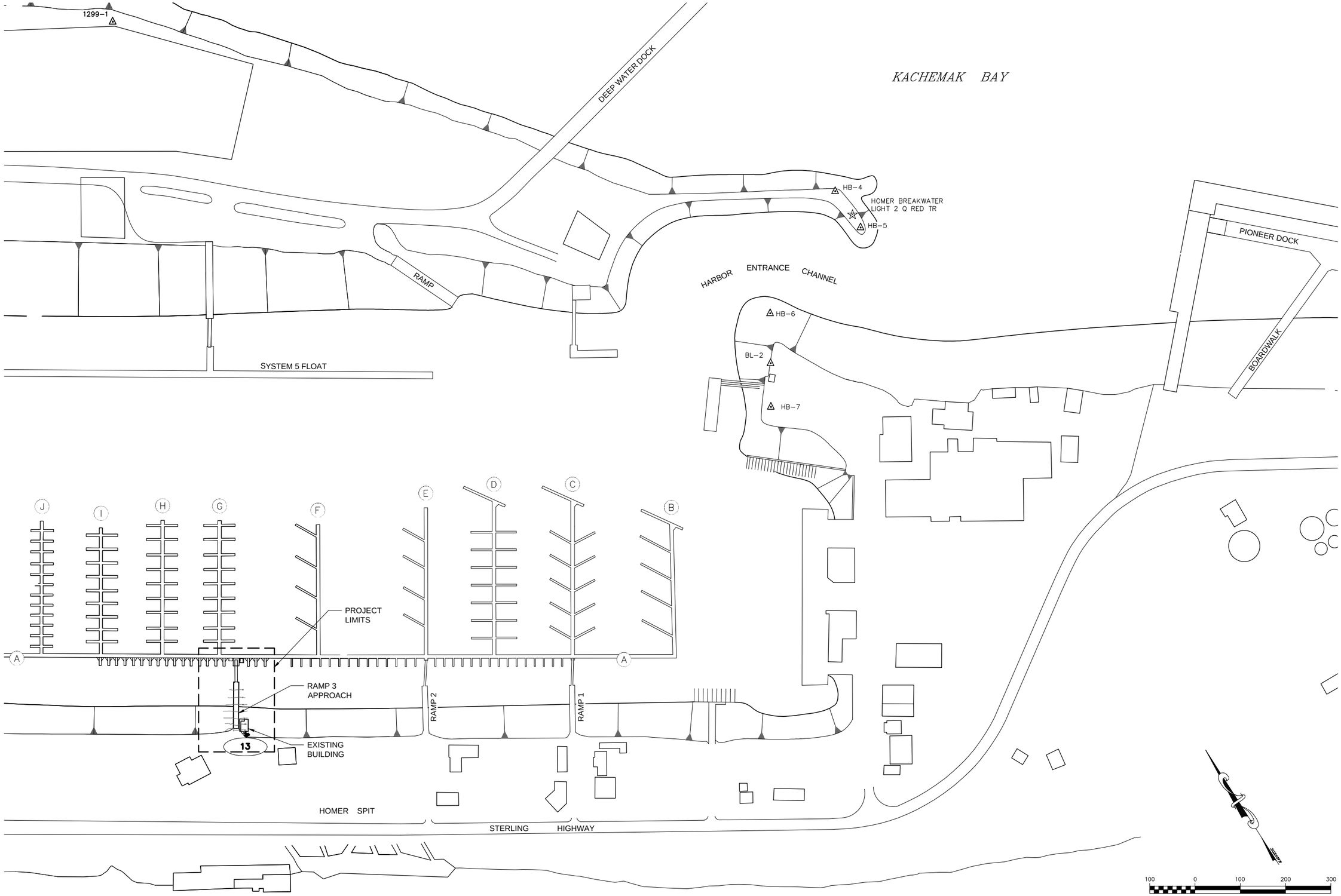
STATE OF ALASKA 49TH Duane H. Anderson CE 4774 12/9/13 Registered Professional Engineer

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: SHEET SPECS

SHEET NO: G2.2



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SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

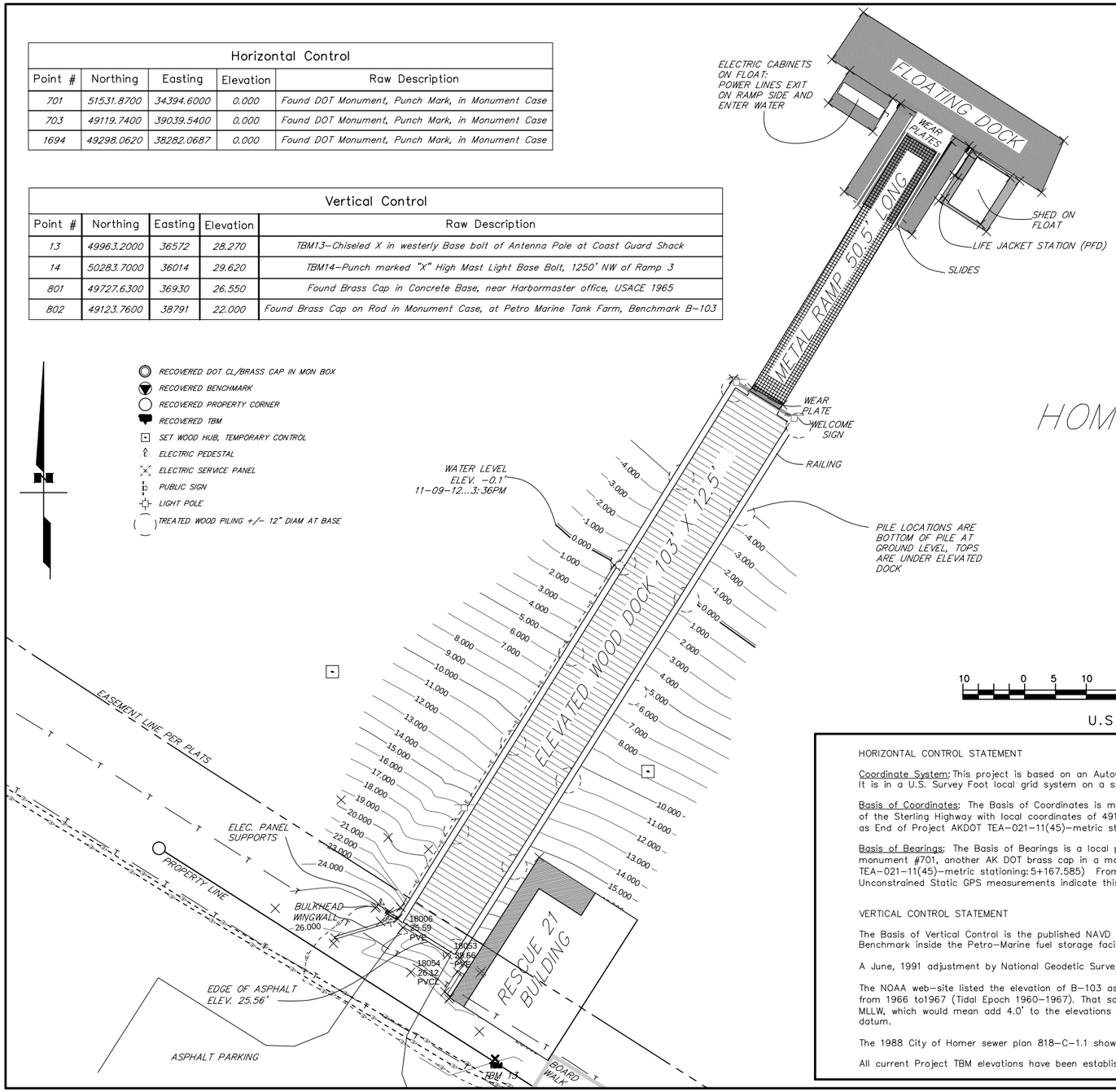
No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: EXISTING SITE

SHEET NO:
G3.0

Horizontal Control				
Point #	Northing	Easting	Elevation	Raw Description
701	51531.8700	34394.6000	0.000	Found DOT Monument, Punch Mark, in Monument Case
703	49119.7400	39039.5400	0.000	Found DOT Monument, Punch Mark, in Monument Case
1694	49298.0620	38282.0687	0.000	Found DOT Monument, Punch Mark, in Monument Case

Vertical Control				
Point #	Northing	Easting	Elevation	Raw Description
13	49963.2000	36572	28.270	TBM13–Chiseled X in westerly Base bolt of Antenna Pole at Coast Guard Shack
14	50283.7000	36014	29.620	TBM14–Punch marked "X" High Mast Light Base Bolt, 1250' NW of Ramp 3
801	49727.6300	36930	26.550	Found Brass Cap in Concrete Base, near Harbormaster office, USACE 1965
802	49123.7600	38791	22.000	Found Brass Cap on Rod in Monument Case, at Petro Marine Tank Farm, Benchmark B–103



RAMP 3
HOMER HARBOR

MULLIKIN SURVEYS
P.O. BOX 790
HOMER, ALASKA 99603
(907) 235–8975

NOTES:

1. Buried utilities, boardwalk, edges of parking, property and easement lines are from a design survey for the Spit Trail project for the City of Homer completed by Mullikin Surveys in 2012. Identical control was used for both surveys.

2. Metal ramp length of 50.5' is measured along the slope of the ramp. Not a horizontal distance.

10 0 5 10 20 30 40 50

U.S. SURVEY FEET

HORIZONTAL CONTROL STATEMENT

Coordinate System: This project is based on an AutoCad drawing provided by the Alaska Department of Transportation. It is in a U.S. Survey Foot local grid system on a state plane bearing with horizontal ground distances.

Basis of Coordinates: The Basis of Coordinates is monument #703, a DOT brass cap in a monument case at the end of the Sterling Highway with local coordinates of 49119.74' North and 39039.54' East (U.S.S. Feet). (#703 is shown as End of Project AKDOT TEA–021–11(45)–metric stationing: 6+887.985)

Basis of Bearings: The Basis of Bearings is a local plane bearing between the above–described monument #703, and monument #701, another AK DOT brass cap in a monument case in the Sterling Highway. (Project TEA–021–11(45)–metric stationing: 5+167.585) From monument #703, monument #701 bears N.62°33'25"W. 5233.91'. Unconstrained Static GPS measurements indicate this bearing is rotated –1°13'42" from true geodetic north.

VERTICAL CONTROL STATEMENT

The Basis of Vertical Control is the published NAVD 88 elevation of B–103, a U.S. Coast and Geodetic Survey Benchmark inside the Petro–Marine fuel storage facility, directly adjacent to the Tank.

A June, 1991 adjustment by National Geodetic Survey established an elevation of 22.00' for this Benchmark.

The NOAA web–site listed the elevation of B–103 as 26.03' above MLLW, based on a two year series of observations from 1966 to1967 (Tidal Epoch 1960–1967). That same sheet listed the Mean Higher High Water as 18.26' above MLLW, which would mean add 4.0' to the elevations shown hereon to compare with elevations based on the MLLW datum.

The 1988 City of Homer sewer plan 818–C–1.1 shows an elevation for B–103 of 25.61' above MLLW.

All current Project TBM elevations have been established with differential leveling from B–103.

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SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: SITE SURVEY CONTROL
SHEET NO: G4.0

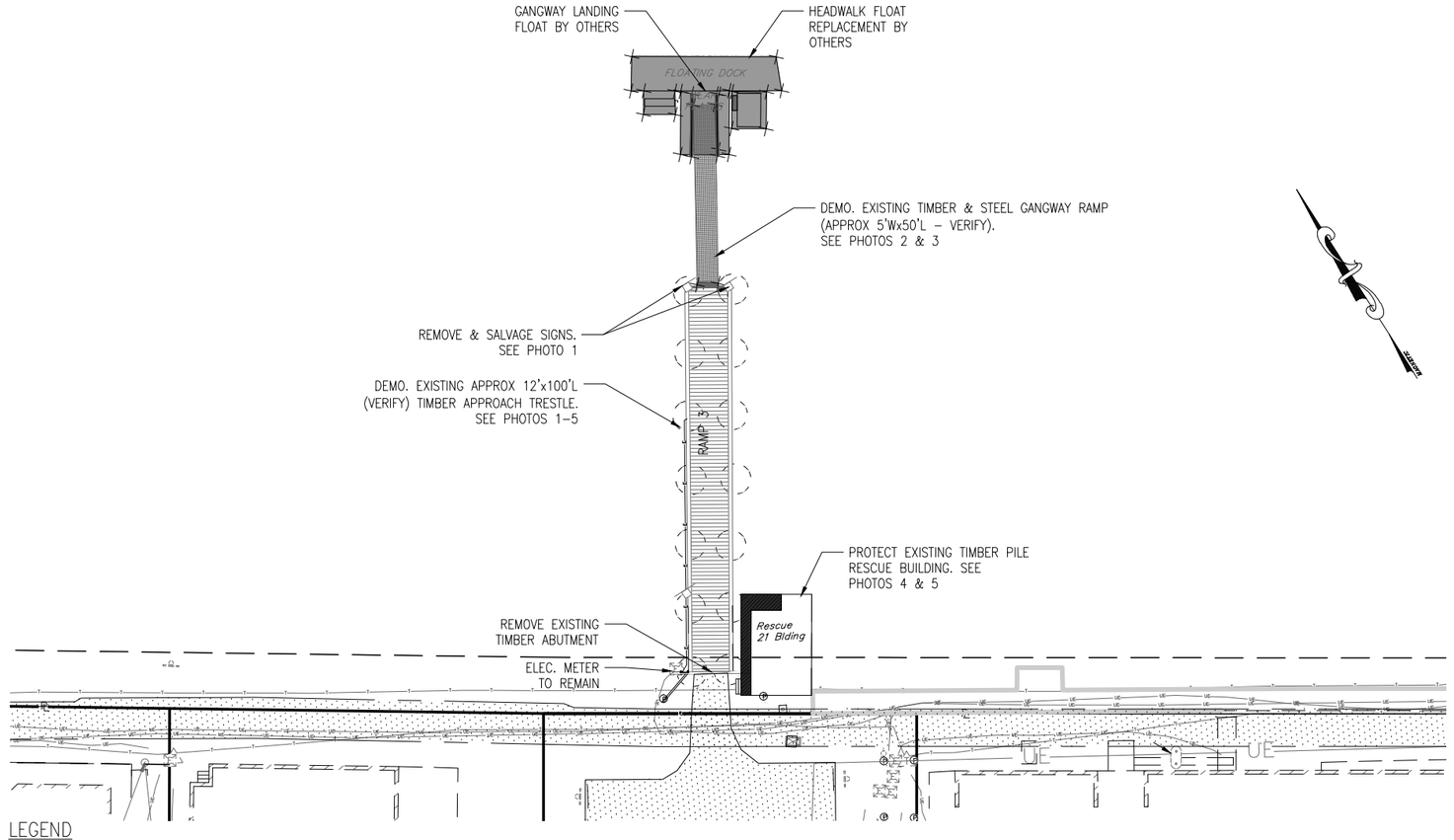
PHOTO 1

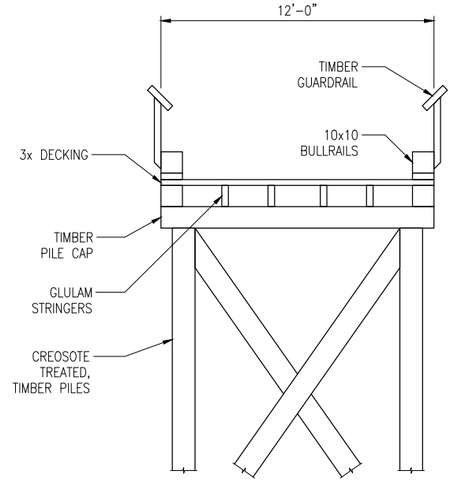
PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5





TYPICAL EXISTING TRESTLE SECTION

Scale: NTS

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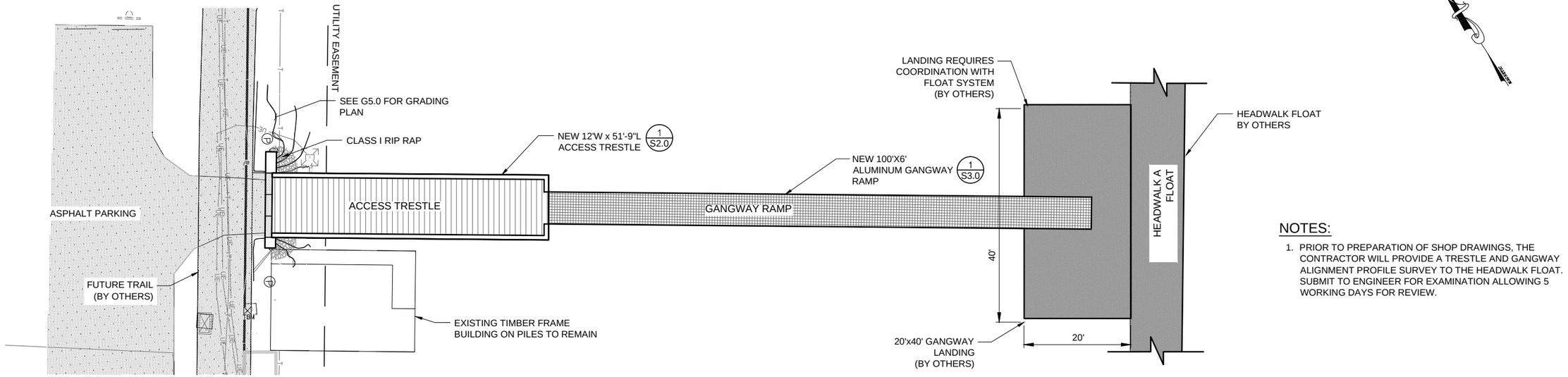
SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: DEMOLITION PLAN

SHEET NO:
D1.0

Plotted 11/19/2013 12:02 PM by Patrick Hewlett
Z:\project\1841.01 City Of Homer Port Term Ramp 3 Replacement\Civil\ACAD\1841.01 D1 Demo Plan.dwg

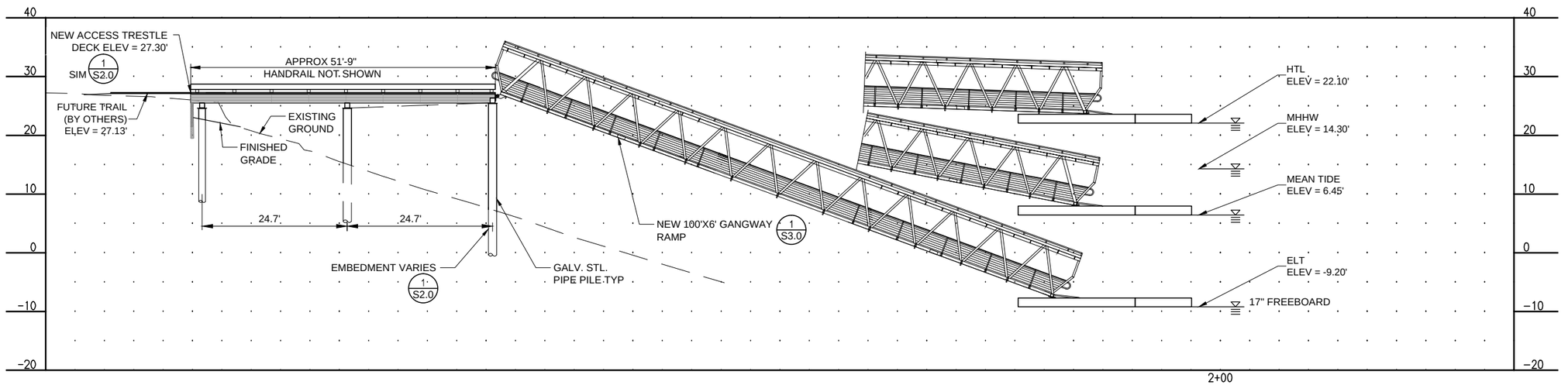


1 PLAN VIEW

Scale: 1:10

NOTES:

1. PRIOR TO PREPARATION OF SHOP DRAWINGS, THE CONTRACTOR WILL PROVIDE A TRESTLE AND GANGWAY ALIGNMENT PROFILE SURVEY TO THE HEADWALK FLOAT. SUBMIT TO ENGINEER FOR EXAMINATION ALLOWING 5 WORKING DAYS FOR REVIEW.



2 ELEVATION VIEW

Scale: 1:10

40 0 40

SCALE IN FEET

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STATE OF ALASKA 49TH Duane H. Anderson CE 4774 11/19/13 Registered Professional Engineer

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

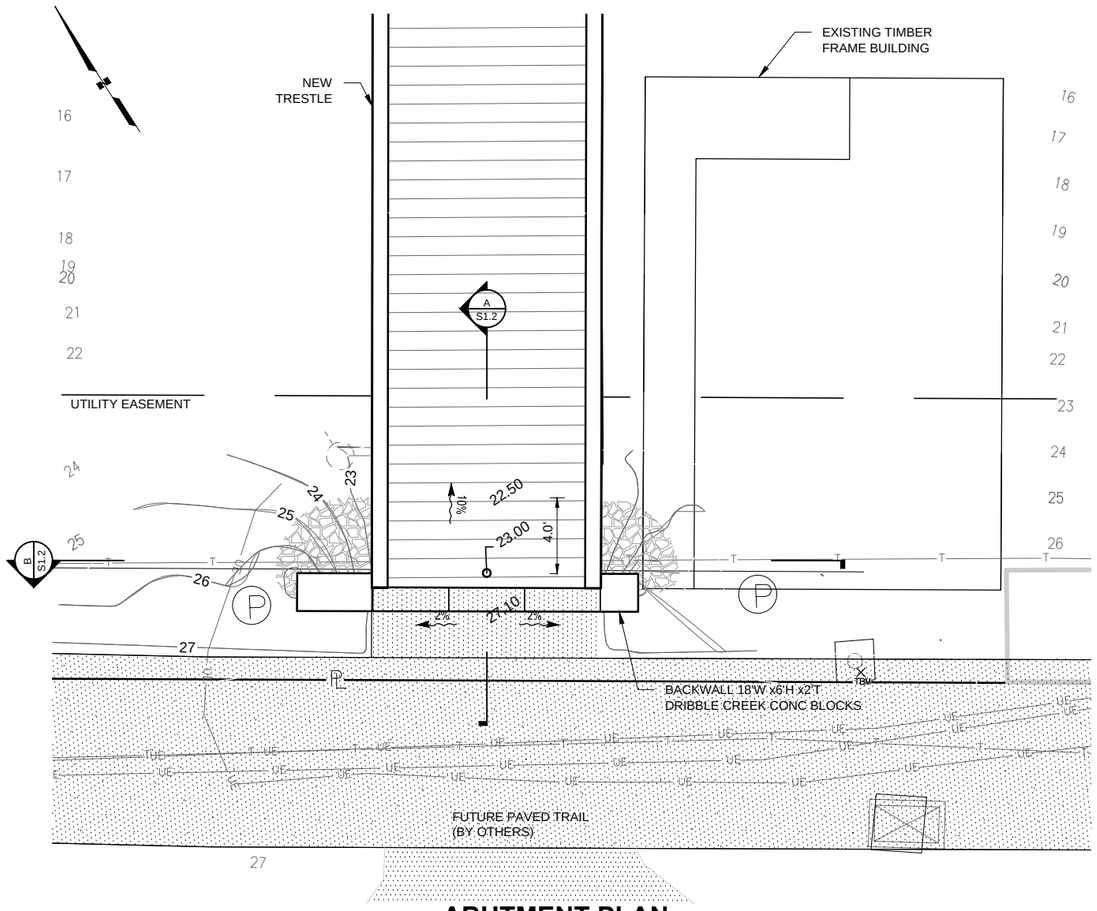
No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: TRESTLE & GANGWAY PLAN & ELEVATION

SHEET NO:

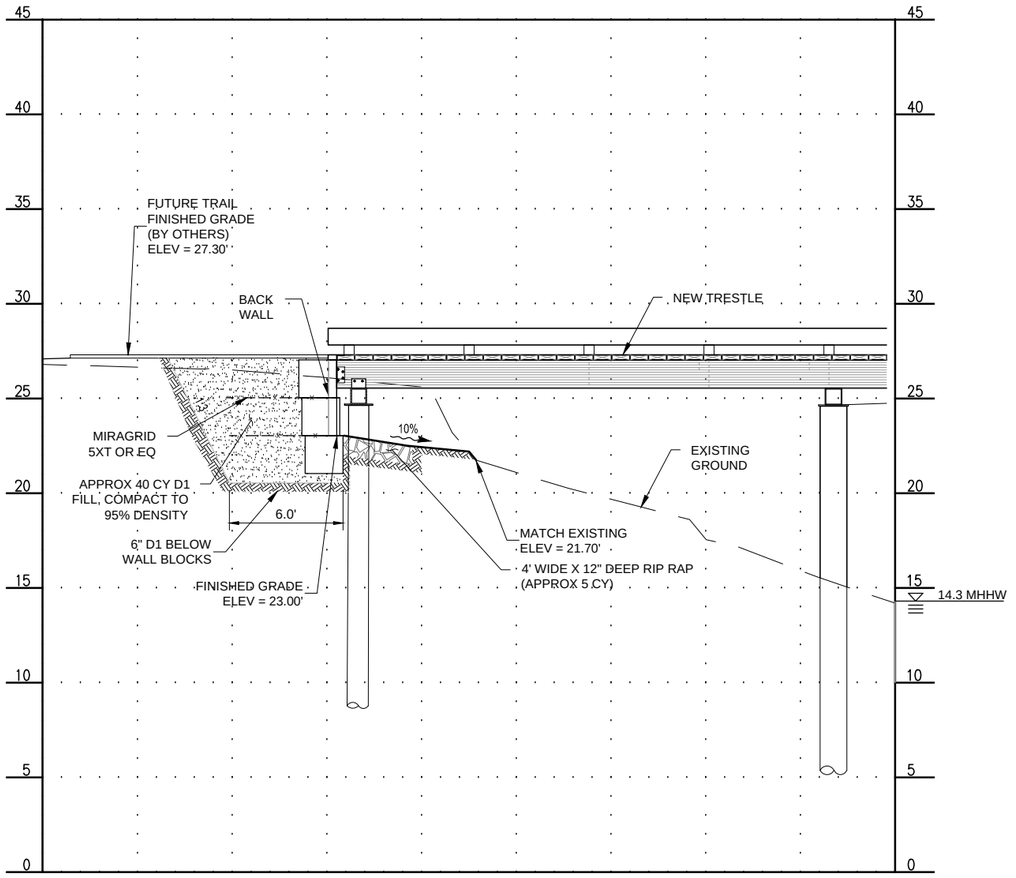
S1.0

Plotted 11/19/2013 12:03 PM by Patrick Hewlett Z:\project\1841.01 City Of Homer Port Term Ramp 3 Replacement\Civil\ACAD\1841.01 S1 Site Plan.dwg



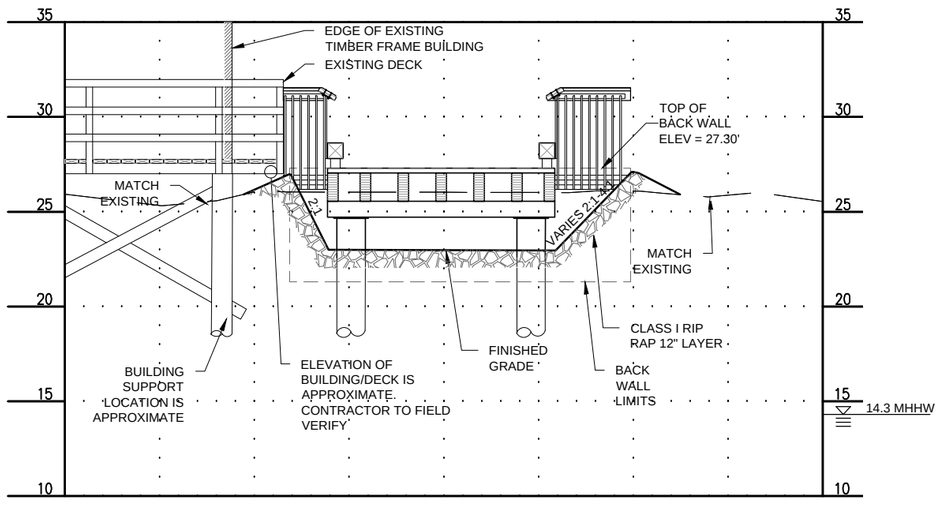
1 ABUTMENT PLAN

Scale: 1" = 4'



A SITE SECTION A

Scale: 1" = 4'



B SITE SECTION B

Scale: 1" = 4'

NOTES:

RIP RAP

THE RIP RAP ARMOR SURFACE SHALL CONSIST OF EVENLY GRADED STONES THAT ARE HARD, ANGULAR, AND HAVE NO MORE THAT 50% WEAR AT 500 REVOLUTIONS AS DETERMINED BY AASHTO T96. THE LEAST DIMENSION OF ANY PIECE OF STONE SHALL BE NOT LESS THAT ONE-FORTH ITS GREATEST DIMENSION. DO NOT USE ROUNDED BOULDERS OR COBBLES. MEET THE FOLLOWING GRADATION FOR THE CLASS SPECIFIED. PERCENTS ARE BY TOTAL WEIGHT, WEIGHTS ARE FOR EACH STONE.

CLASS I 0-50% WEIGHING UP TO 25 POUNDS
0-10% WEIGHING MORE THAN 50 POUNDS

D1 AGGREGATE

FILL BEHIND WALL SHALL BE CONSTRUCTED OF D1 AGGREGATE CONSISTING OF CRUSHED STONE OR CRUSHED GRAVEL. D1 SHALL BE FREE OF ORGANIC MATERIALS. D1 SURFACE COURSE SHALL MEET THE FOLLOWING GRADATION:

SIEVE	PERCENT PASSING BY WEIGHT
1"	100
3/4"	70-100
3/8"	50-80
#4	35-65
#8	20-50
#50	8-30
#200	0-8

SPREAD AND SHAPE THE MATERIAL TO THE REQUIRED GRADE AND SECTION. WATER OR AERATE AS NEEDED TO MAINTAIN OPTIMUM MOISTURE CONTENT FOR COMPACTION. COMPACT THE LAYER TO A DENSITY OF 95% MAXIMUM DENSITY OR GREATER. MAXIMUM 6" LIFTS. MATERIAL SHALL BE COMPACTED IN SUCH A MANNER THAT THE SURFACE IS MAINTAINED AND THE AGGREGATES ARE UNIFORMLY KEYED. THE SURFACE SHALL BE GENERALLY UNIFORM AND EVEN AFTER COMPACTING.

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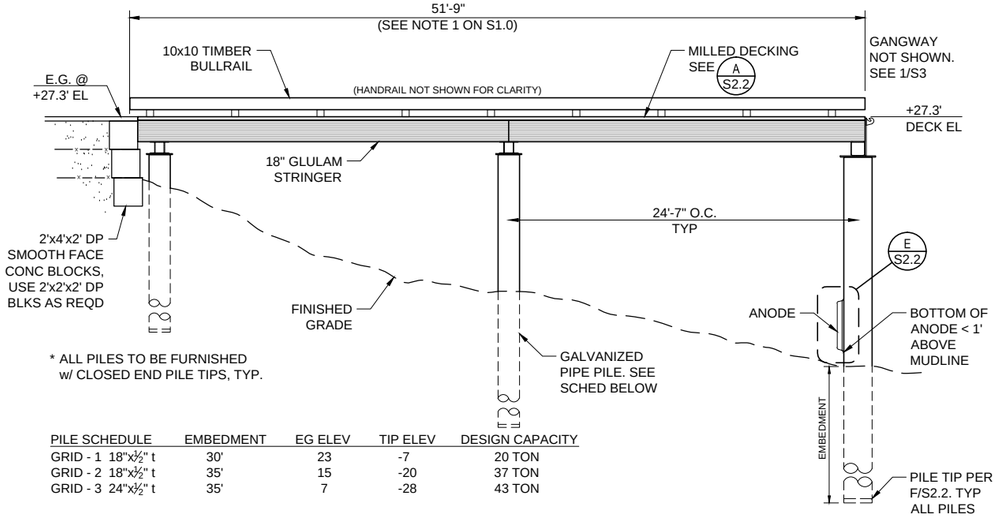
SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

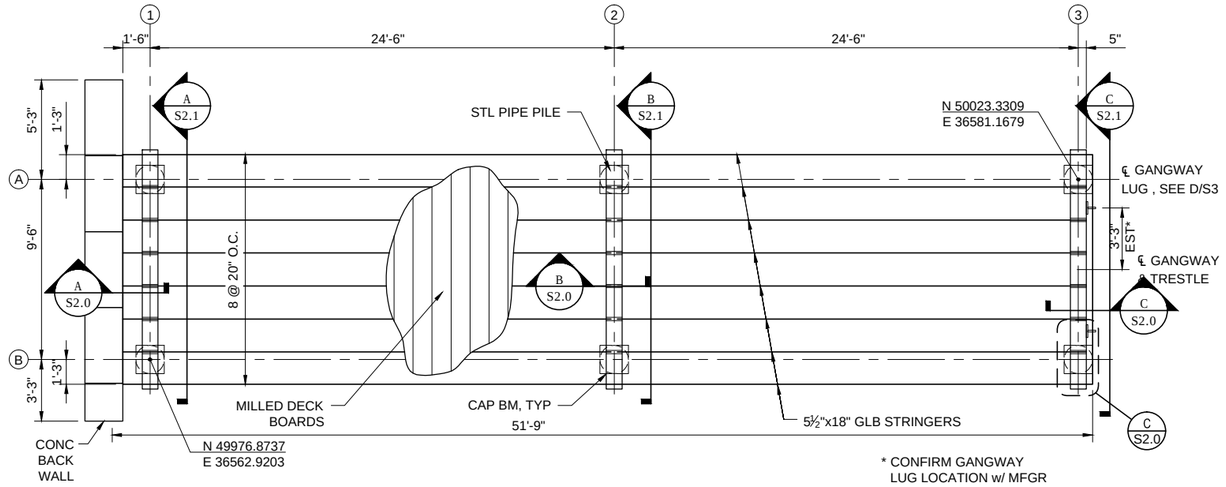
Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: BACKWALL ABUTMENT

SHEET NO: **S1.1**

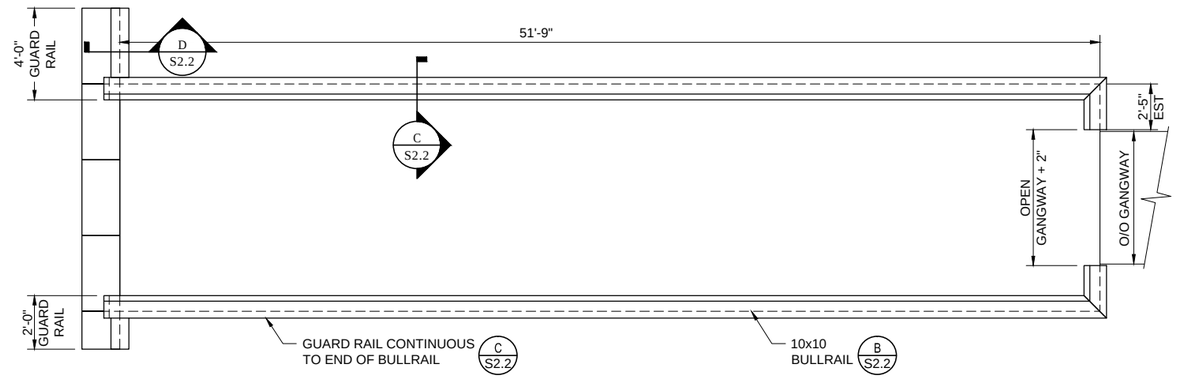


PILE SCHEDULE	EMBEDMENT	EG ELEV	TIP ELEV	DESIGN CAPACITY
GRID - 1 18"x½" t	30'	23	-7	20 TON
GRID - 2 18"x½" t	35'	15	-20	37 TON
GRID - 3 24"x½" t	35'	7	-28	43 TON

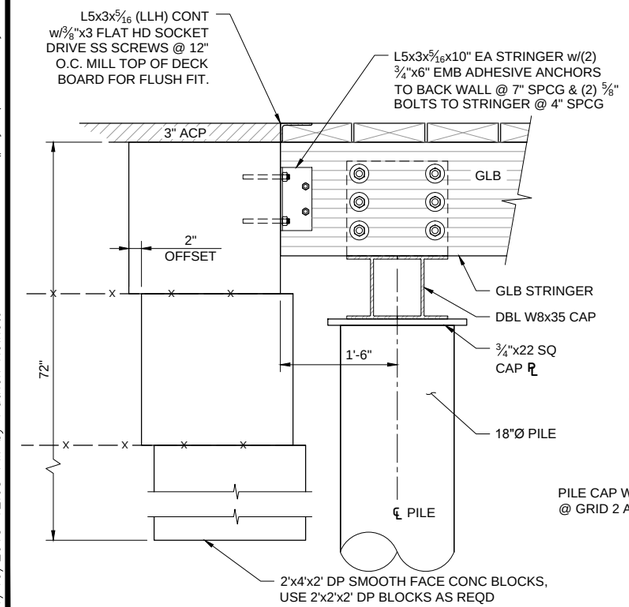
1 APPROACH TRESTLE ELEVATION
Scale: 3/16" = 1'-0"



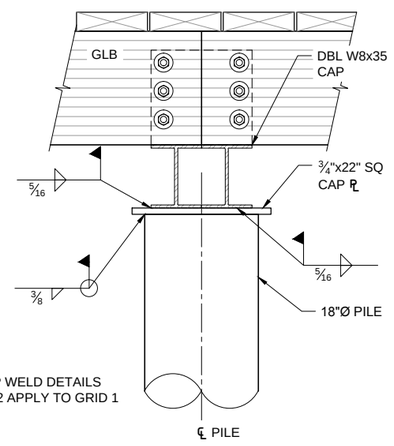
2 TRESTLE PILE & FRAMING PLAN
Scale: 1/4" = 1'-0"



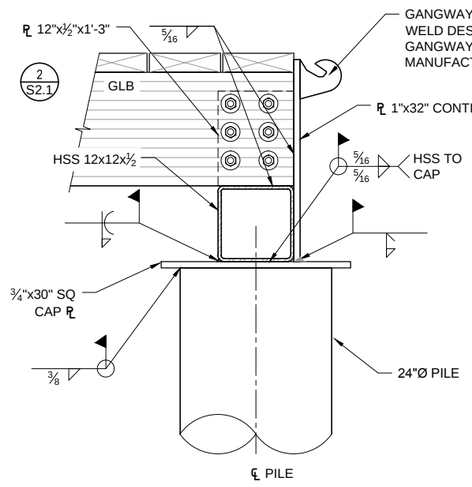
3 TRESTLE BULLRAIL/GUARDRAIL PLAN
Scale: 1/4" = 1'-0"



A SECTION @ GRID 1 BACK WALL
Scale: 1" = 1'-0"



B SECTION @ GRID 2
Scale: 1-1/2" = 1'-0"



C SECTION @ GRID 3
Scale: 1-1/2" = 1'-0"

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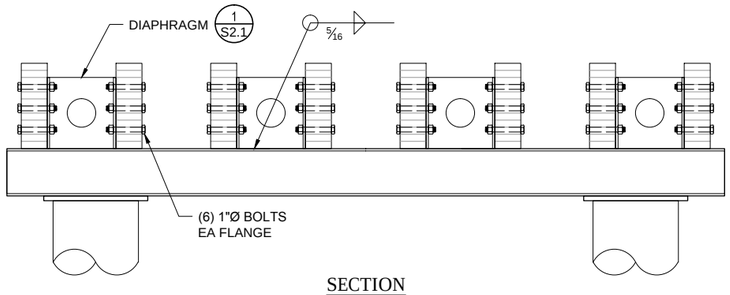
STATE OF ALASKA 49TH — Duane H. Anderson — CE 4774 — 1/9/14 — Registered Professional Engineer

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH | Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: APPROACH TRESTLE DETAILS

SHEET NO: **S2.0**



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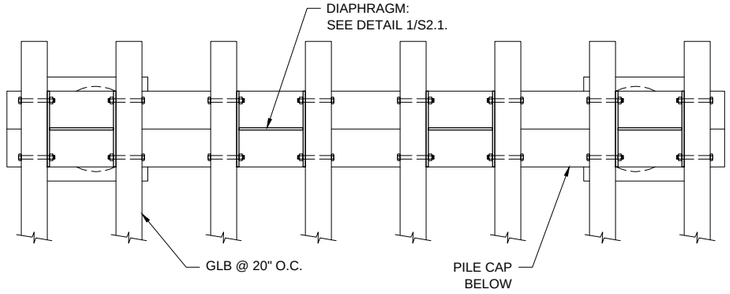
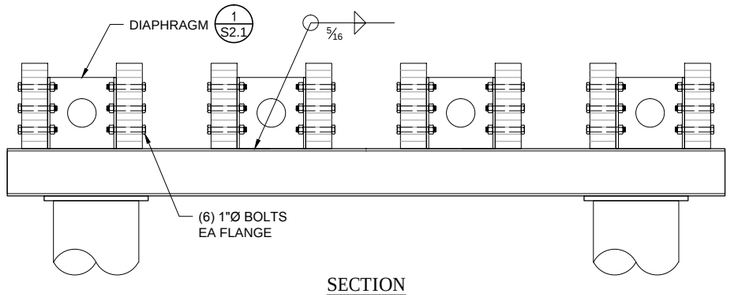


PLAN

A NEW PILE BENT AND CAP DETAILS @ GRID 1

Scale: 3/4" = 1'-0"



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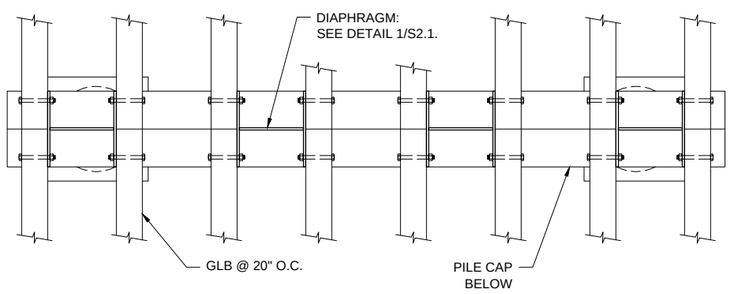
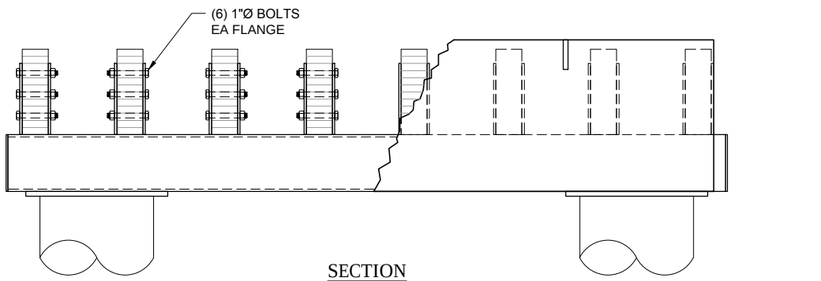


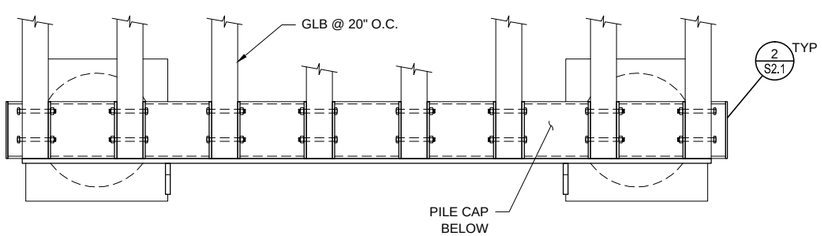
PLAN

B NEW PILE BENT AND CAP DETAILS @ GRID 2

Scale: 3/4" = 1'-0"



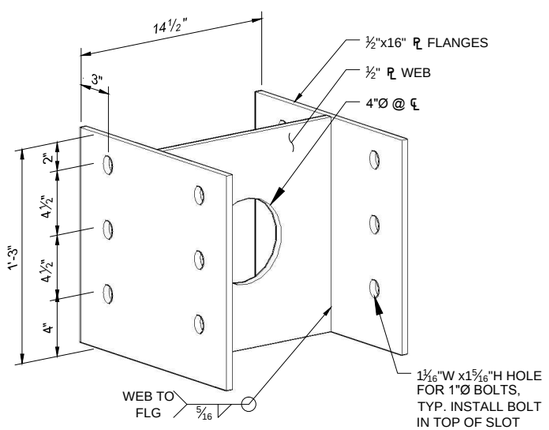
SECTION



PLAN

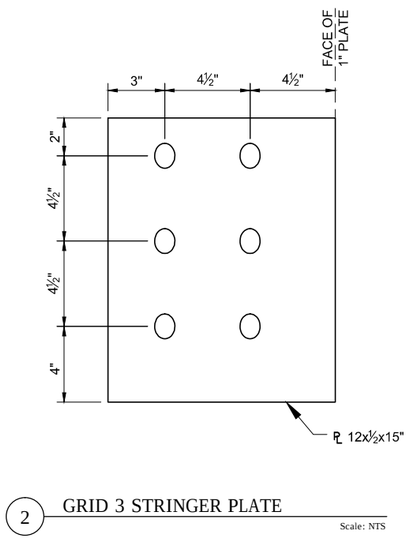
C NEW PILE BENT AND CAP DETAILS @ GRID 3

Scale: 3/4" = 1'-0"



1 DIAPHRAGM DETAIL @ GRIDS 1 & 2

Scale: NTS



2 GRID 3 STRINGER PLATE

Scale: NTS

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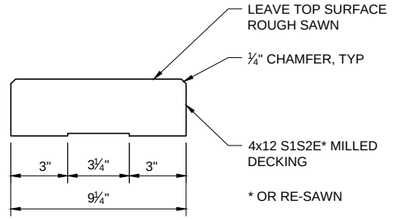
STATE OF ALASKA
49TH
Diana H. Anderson
CE 4774
11/19/13
REGISTERED PROFESSIONAL ENGINEER

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: APPROACH TRESTLE DETAILS

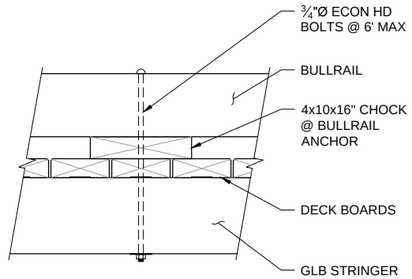
SHEET NO: S2.1



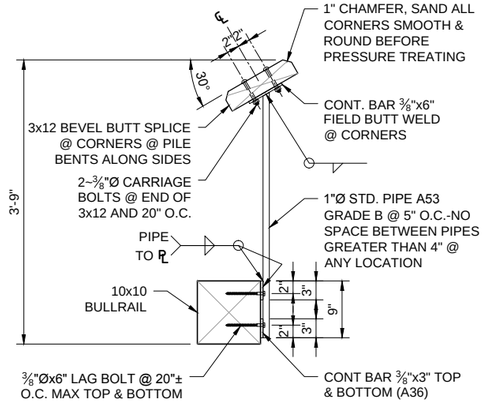
DECKING NOTES:
4x10 DECKING MILL S1S2E OR RE-SAWN ROUGH SIDE UP. MILLED SIDE SHALL BE TOWARDS THE CENTER OF THE TREE.

FASTENING SCHEDULE:
DECKING SHALL BE SPACED ⅜" APART AND SECURED WITH 2 EACH 60d GALVANIZED SPIRAL NAILS AT EACH STRINGER. PREDRILL (TYP). DO NOT SPLICE DECKING.

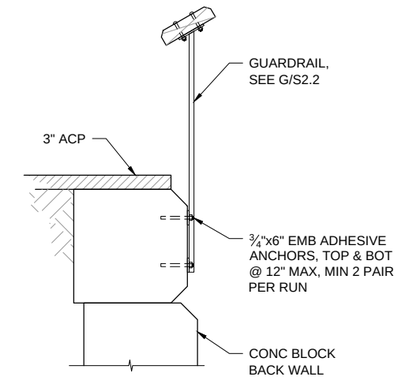
A MILLED DECKING DETAIL
Scale: 3" = 1'-0"



B BULLRAIL CONNECTION DETAIL
Scale: 1" = 1'-0"

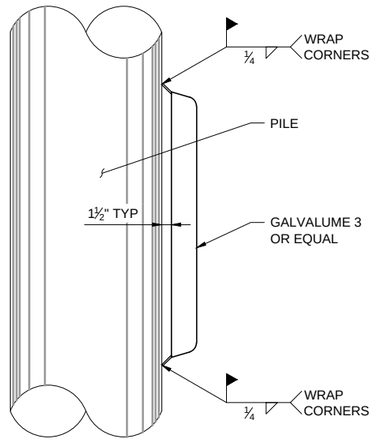


C GUARD RAIL DETAIL @ BULLRAIL
Scale: 1" = 1'-0"

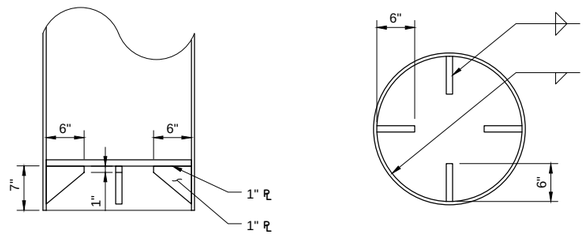


D GUARD RAIL DETAIL @ BACK WALL
Scale: 3/4" = 1'-0"

NOTE:
1. INSTALL ONE 200 LB ANODE PER PILING @ GRID 3.



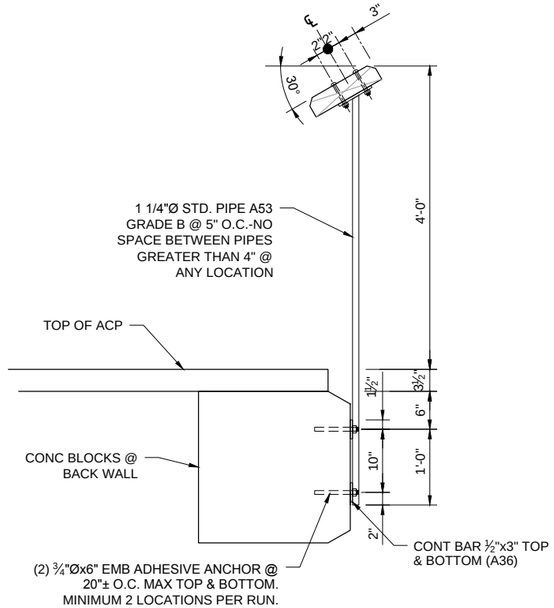
E ANODE DETAIL
Scale: 1" = 1'-0"



18" AND 24" OD PILE TYP

* ALL PILES TO BE FURNISHED w/ CLOSED END PILE TIPS, TYP

F PILE TIP DETAIL
Scale: 1" = 1'-0"



G GUARD RAIL DETAIL @ BACKWALL
Scale: 1" = 1'-0"

R&M CONSULTANTS, INC.
9101 Vanguard Drive
Anchorage, Alaska 99507
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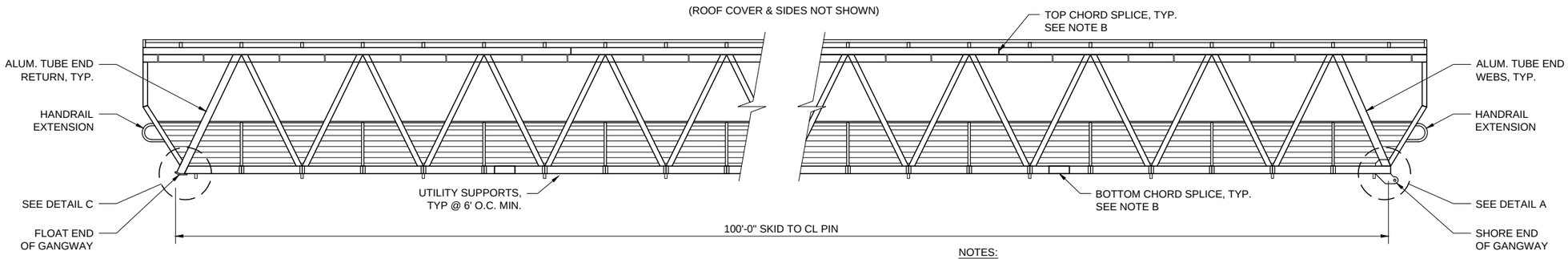
STATE OF ALASKA 49TH Duane H. Anderson CE 4774 11/19/13 REGISTERED PROFESSIONAL ENGINEER

SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: APPROACH TRESTLE DETAILS
SHEET NO: S2.2

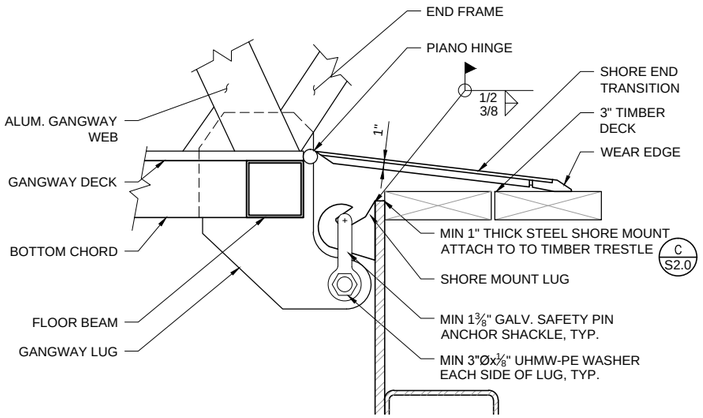


1 GANGWAY ELEVATION
Scale: 1/4" = 1'-0"

NOTES:

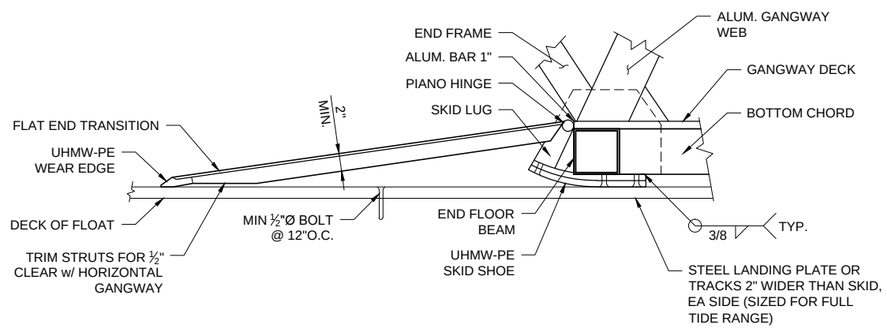
A. THIS DRAWING REPRESENTS A PERFORMANCE SPECIFICATION. NOT ALL GANGWAY DETAILS ARE SHOWN. GANGWAY SHALL BE DESIGNED BY THE MANUFACTURER'S ENGINEER IN ACCORDANCE WITH THE PROJECT SPECIFICTIONS.

B. SPLICES SHALL BE REINFORCED BY MINIMUM ⅜" THICK ALUMINUM BAR WELDED TO DEVELOP FULL STRENGTH.

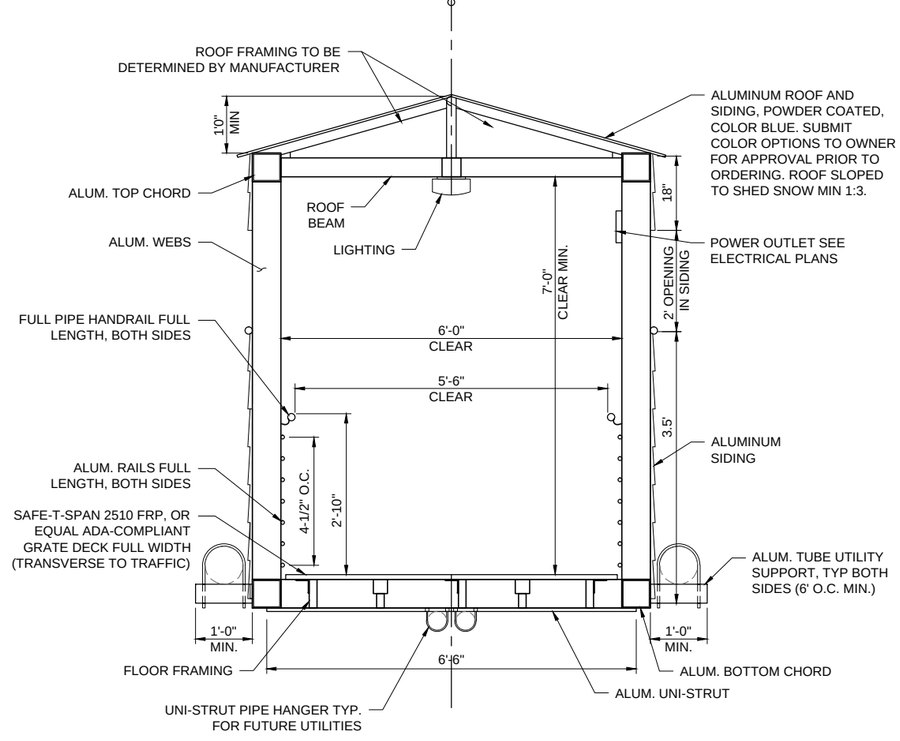


A TYPICAL SHORE END ASSEMBLY
Scale: 1-1/2" = 1'-0"

B WEAR EDGE
Scale: 1" = 1"



C FLOAT END ASSEMBLY
Scale: 1-1/2" = 1'-0"



D GANGWAY SECTION
Scale: 3/4" = 1'-0"

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SMALL BOAT HARBOR
RAMP 3 REPLACEMENT
HOMER, ALASKA

No.	Description	Date

Drawn By: PMH
Checked By: DHA
Date: NOVEMBER 19, 2013
Phase: BID SET
Project No: 1841.01
SHEET TITLE: GANGWAY PERFORMANCE DETAILS
SHEET NO: **S3.0**