

NOTICE TO BIDDERS

FOR

*Town of Swansboro
Downtown Waterfront Improvements
Swansboro, North Carolina*

ENGINEER's Project No. 23001

SCOPE OF WORK

The Town of Swansboro (TOWN OF SWANSBORO) proposes to construct a fixed timber platform, floating dock, and new floating slips at the existing waterfront access at Moore Street in downtown Swansboro. The following scope of work is expected:

- Construction of a 12' wide x 150' long timber platform.
- 5' wide timber walkway replacement.
- A 6' x 12' timber walkway extension, aluminum gangway, and an 8' x 100' floating dock.
- Two (2) 4' x 30' floating docks with tie piles.
- Removal of an existing timber bulkhead and installation of new riprap revetment.

NOTICE TO BIDDERS

Sealed bid for this work will be received by:

*Mr. Jonathan Barlow
Town Manager
Town of Swansboro
601 W Corbett Avenue
Swansboro, NC 28584
(910) 326-4428*

up to **1:00 PM**, on August 6, 2024 and immediately thereafter publicly opened and read aloud. Complete plans and specification and Contract Documents are included with this packet and can also be obtained from:

*John J. Wade, P.E.
Arendell Engineers
1004 Arendell Street
Morehead City, NC 28557
(252) 622-4338
john@arendellengineers.com*

CONTRACTORS are hereby notified that they must have a proper license under the State laws governing their respective trades in accordance with North Carolina General Statute 87.

No bid may be withdrawn after the opening of bids for a period of 30 days. Bids shall be made only on the BID/ACCEPTANCE form provided herein with all blank spaces for bids properly filled in and all signatures properly executed.

No bid may be withdrawn after the receipt of proposals for a period of 60 days. The TOWN OF SWANSBORO reserves the right to reject bids with or without cause, including failure to submit any required documentation without indicating any reasons for such rejection(s), to waive any irregularities or informalities, to solicit and re-advertise for other bid and award to the proposal deemed to be in the TOWN OF SWANSBORO's best interest. Rejection may also occur if there are unauthorized additions, conditional bids, multiple bids or alternate bids which may tend to make the bid incomplete, indefinite, or ambiguous as to its meaning as well as adding any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

The TOWN OF SWANSBORO reserves the right to withdraw this advertisement at any time without prior notice. This advertisement does not commit the TOWN OF SWANSBORO to enter into an agreement or to pay any costs incurred in the preparation of a bid. The TOWN OF SWANSBORO also reserves the right to negotiate with the apparent successful bidder concerning various alternatives.

Proposals shall be made only on the form provided herein with all blank spaces for bids properly filled in and all signatures properly executed. Bids shall include all applicable taxes and fees.

Please note on the envelope – **Bid: Town of Swansboro Downtown Waterfront Improvements**
Attn: Jonathan Barlow, Town Manager
Town of Swansboro
(Date)
(CONTRACTOR)
(License Number)

A Pre-Bid Conference will be held at the project site depending on weather on July 29, 2024 at 2:00 PM local time. Representatives of TOWN OF SWANSBORO and ENGINEER will transmit to Bidding Document holders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective until provided in writing.

The Preliminary Project Schedule is as follows:

| | |
|------------|---|
| 07/17/2024 | Advertise for Bidders |
| 07/29/2024 | Pre-Bid Conference |
| 08/06/2024 | Bid Opening |
| 08/09/2024 | Arendell Engineers issues Recommendation for Award |
| 08/13/2024 | TOWN OF SWANSBORO Awards Contract |
| 08/16/2024 | TOWN OF SWANSBORO issues Notice of Award, Contract Documents delivered to the CONTRACTOR for Execution. |
| 08/23/2024 | CONTRACTOR returns executed Contract Documents and required documents |
| 08/29/2024 | TOWN OF SWANSBORO issues Notice to Proceed – Contract Time starts |
| 09/03/2024 | Pre-Construction Conference |
| 10/16/2024 | Substantial Completion |
| 10/31/2024 | Final Completion |

BID/ACCEPTANCE FORM
FOR

Town of Swansboro
Downtown Waterfront Improvements
Swansboro, North Carolina

ENGINEER's Project No. 23001

We are in receipt of Addendum _____1 _____2 _____3 _____4

The undersigned, as bidder, proposes and agrees if this bid is accepted to contract with the Town of Swansboro for the furnishing of all materials, equipment, and labor necessary to complete the construction of the work described in the Contract Documents in full and complete accordance with plans, specifications, and Contract Documents, and to the full and entire satisfaction of the TOWN OF SWANSBORO and ENGINEER and the for the sum of:

Base Bid Lump Sum:

- Construction of a 12' wide x 150' long timber platform.
- 5' wide timber walkway replacement.
- A 6' x 12' timber walkway extension, aluminum gangway, and an 8' x 100' floating dock.
- Two (2) 4' x 30' floating docks with tie piles.
- Removal of an existing timber bulkhead and installation of new riprap revetment.

_____ (words) \$ _____ (figures)

Respectively submitted this _____ day of _____ 20 _____

Contractors Name: _____

Federal ID#: _____

By: _____

Witness: _____

Title: _____

(partner, corp. Pres. or Vice President)

Address: _____

(Proprietorship or Partnership)

Attest: *(corporation)*

Email Address: _____

(Corporate Seal)

By: _____ License #: _____

Title: _____
(Corporation, Secretary, Assistant Secretary)

ACCEPTED by the TOWN OF SWANSBORO

Base Bid Lump Sum:

_____ (words) \$ _____ (figures)

Town of Swansboro

BY: _____ TITLE: _____

BY: _____ TITLE: _____

GENERAL CONDITIONS

1. GENERAL

It is understood and agreed that by submitting a bid that the CONTRACTOR has examined these Contract Documents, drawings and specifications and has visited the site of the Work and has satisfied himself relative to the Work to be performed.

2. DEFINITIONS

TOWN OF SWANSBORO: "TOWN OF SWANSBORO" shall mean the Town of Swansboro.

CONTRACTOR: "CONTRACTOR" shall mean the entity that will provide the services for the TOWN OF SWANSBORO.

ENGINEER: The **ENGINEER(s)** are those referred to within this contract, or their authorized representatives. The **ENGINEER(s)**, as referred to herein, shall mean **ENGINEER** responsible for preparing the project plans and specifications. They will be referred to hereinafter as if each were of the singular number, masculine gender.

CONTRACT DOCUMENTS: "Contract Documents" shall consist of the Notice to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawing and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the bid; the contract; the performance bond if applicable; and insurance certificates. All of these items together form the contract.

3. INTENT AND EXECUTION OF DOCUMENTS

The drawings and specifications are complementary, one to the other. That which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a complete job. In case of discrepancy or disagreement in the Contract Documents, the order of precedence shall be: Form of Contract, specifications, large-scale detail drawings, small-scale drawings.

In such cases where the nature of the work requires clarification by the **ENGINEER**, the **ENGINEER** shall furnish such clarification. Clarifications and drawings shall be consistent with the intent of the Contract Documents, and shall become a part thereof.

4. AS-BUILT MARKED-UP CONSTRUCTION DOCUMENTS

CONTRACTOR shall provide one complete set of legible "as-built" marked-up construction drawings and specifications recording any and all changes made to the original design during the course of construction. In the event no changes occurred, submit construction drawings and specifications set with notation "No Changes." The **ENGINEER** must receive "As-built" marked-up construction drawings and specifications before the final pay request can be processed.

5. SUBMITTAL DATA

The CONTRACTOR awarded the contract shall submit all specified submittals to the TOWN OF SWANSBORO/ENGINEER. A minimum number of copies as specified by the TOWN OF SWANSBORO, of all required submittal data pertaining to construction, performance and general dimensional criteria of the components listed in the technical specifications shall be submitted. No material or equipment shall be ordered or installed prior to written approval of the submittals by the ENGINEER. Failure to provide submittal data for review on equipment listed in the technical specifications will result in removal of equipment by the CONTRACTOR at his expense if the equipment is not in compliance with the specifications.

6. SUBSTITUTIONS

In accordance with the provisions of G.S. 133-3, material, product, or equipment substitutions proposed by the bidders to those specified herein can only be considered during the bidding phase until five (5) days prior to the receipt of bids or by the date specified in the pre bid conference, when submitted to the ENGINEER with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change order.

Submittals for proposed substitutions shall include the following information:

- a. Name, address, and telephone number of manufacturer and supplier as appropriate.
- b. Trade name, model or catalog designation.
- c. Product data including performance and test data, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.
- d. Detailed comparison with specified products including performance capabilities, warranties, and test results.
- e. Other pertinent data including data requested by the ENGINEER to confirm product equality.

If a proposed material, product, or equipment substitution is deemed equal by the ENGINEER to those specified, all bidders of record will be notified by Addendum.

7. WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

The CONTRACTOR shall maintain, in readable condition at his job site one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the TOWN OF SWANSBORO, ENGINEER or his authorized representative.

The CONTRACTOR shall maintain at the job site, a day-to-day record of work-in-place that is at variance with the Contract Documents. Such variations shall be fully noted on project drawings by the CONTRACTOR and submitted to the ENGINEER upon project completion and no later than 30 days after acceptance of the project.

8. MATERIALS, EQUIPMENT, EMPLOYEES

- a. The CONTRACTOR shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, fuel, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the Contract Documents.
- b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.
- c. Upon notice, the CONTRACTOR shall furnish evidence as to the quality of materials.
- d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the CONTRACTOR may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the CONTRACTOR has the option of using any product and manufacturer combination listed. However, the CONTRACTOR shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the ENGINEER for approval or disapproval; the ENGINEER prior to the opening of bids shall make such approval or disapproval. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the TOWN OF SWANSBORO and the ENGINEER and TOWN OF SWANSBORO approves.
- e. The ENGINEER is the judge of equality for proposed substitution of products, materials or equipment.
- f. If at any time during the construction and completion of the work covered by these Contract Documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the TOWN OF SWANSBORO or ENGINEER, or if any workman be considered detrimental to the work, the CONTRACTOR shall order such parties removed immediately from grounds.
- g. The CONTRACTOR shall cooperate with the ENGINEER and the TOWN OF SWANSBORO in coordinating construction activities.
- h. The CONTRACTOR shall maintain qualified personnel and effective supervision at the site at all times during the project and exercise the appropriate quality control program to ensure compliance with the project drawings and specifications. The ENGINEER is responsible for determining compliance with the drawings and specifications.

9. CODES, PERMITS AND INSPECTIONS

The CONTRACTOR shall obtain the required permits, if required, give all notices, and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the CONTRACTOR observes that the drawings and specifications are at variance therewith, he shall promptly notify the ENGINEER in writing. If the CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the TOWN OF SWANSBORO, he shall bear all costs arising there from.

All work under this contract shall conform to the current North Carolina Building Code and other state and national codes as are applicable.

10. PROTECTION OF WORK, PROPERTY, THE PUBLIC AND SAFETY

- a. The CONTRACTORS shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the TOWN OF SWANSBORO or ENGINEER, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the TOWN OF SWANSBORO's property or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the TOWN OF SWANSBORO. All CONTRACTORS shall have access to the project at all times, except as indicated in the Supplemental General Conditions.
- b. The CONTRACTOR shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the TOWN OF SWANSBORO.
- c. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the ENGINEER and TOWN OF SWANSBORO.
- d. The CONTRACTOR shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around it. He shall barricade all walks, roads, etc., as directed by the ENGINEER to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.
- e. The CONTRACTOR shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.
- f. The CONTRACTOR shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume

39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.

- i. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the CONTRACTOR is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage. Any compensation claimed by the CONTRACTOR on account of such action shall be determined as provided for under Article 13(b).
- j. Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the CONTRACTOR. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

11. SUBCONTRACTS AND SUBCONTRACTORS

The CONTRACTOR is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or of any employee of either. The CONTRACTOR agrees that no contractual relationship exists between the subcontractor and the TOWN OF SWANSBORO in regard to the contract, and that the subcontractor acts on this work as an agent or employee of the CONTRACTOR.

12. CONTRACTOR-SUBCONTRACTOR RELATIONSHIPS

The CONTRACTOR agrees that the terms of these Contract Documents shall apply equally to each Subcontractor as to the CONTRACTOR, and the CONTRACTOR agrees to take such action as may be necessary to bind each Subcontractor to these terms. The CONTRACTOR further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to CONTRACTOR-Subcontractor relationships. The TOWN OF SWANSBORO reserves the right to limit the amount of portions of work to be subcontracted as hereinafter specified.

13. CHANGES IN THE WORK AND CLAIMS FOR EXTRA COST

- a. The TOWN OF SWANSBORO may have changes made in the work covered by the contract. These changes will not invalidate and will not relieve or release the CONTRACTOR from any guarantee given by him pertinent to the contract provisions. All extra work shall be executed under the conditions of the original contract.
- b. Except in an emergency endangering life or property, no change shall be made by the CONTRACTOR except upon receipt of an approved change order from the ENGINEER, countersigned by the TOWN OF SWANSBORO authorizing such change. No claim for adjustments of the contract price shall be valid unless this procedure is followed.

In the event of emergency endangering life or property, the CONTRACTOR may be directed to proceed on a time and material basis whereupon the CONTRACTOR shall proceed and keep accurately on such form as specified by the ENGINEER or TOWN OF SWANSBORO, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the work the change order will be prepared as outlined under either Method "c(1)" or Method "c(2)" or both.

- c. In determining the values of changes, either additive or deductive, CONTRACTOR is restricted to the use of the following methods:

1. Where the extra work involved is covered by unit prices quoted in the Bid, or subsequently agreed to by the CONTRACTOR, ENGINEER and TOWN OF SWANSBORO, the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved, except in such cases where a quantity exceeds the estimated quantity allowance in the contract by one hundred percent (100%) or more. In such cases, either party may elect to proceed under subparagraph c (2) herein. If neither party elects to proceed under c (2), then unit prices shall apply.
 2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the contract price.
- d. Under Paragraph "b" and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all CONTRACTORS (the single contracting entity (prime), his subcontractors(1st tier subs), or their sub-subcontractors (2nd tier subs, 3rd tier subs, etc.) shall be allowed a maximum of 10% on work they each self-perform; the prime CONTRACTOR shall be allowed a maximum of 5% on contracted work of his 1st tier sub; 1st tier, 2nd tier, 3rd tier, etc. CONTRACTORS shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the CONTRACTOR shall include no less than five percent (5%) profit, but no allowances for overhead.
- e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the work;
 2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.
 3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;
 4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;
 5. The actual costs of premiums for bonds, insurance, permit fees and sales or use taxes related to the work;
 6. Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the TOWN OF SWANSBORO.

- f. Should concealed conditions be encountered in the performance of the work below grade or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Contract Documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing the method of arriving at net cost as defined above.
- g. Change orders shall be submitted by the CONTRACTOR in writing to the TOWN OF SWANSBORO/ENGINEER for review and approval. The CONTRACTOR will provide such proposal and supporting_data in suitable format. The ENGINEER shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the CONTRACTOR of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the CONTRACTOR's accepted proposal including all supporting documentation required by the ENGINEER, the ENGINEER shall prepare the change order and forward to the CONTRACTOR for his signature or otherwise respond, in writing, to the CONTRACTOR's proposal. Within seven (7) days after receipt of the change order executed_by the CONTRACTOR, the ENGINEER shall, certify the change order by his signature, and forward the change order and all supporting data to the TOWN OF SWANSBORO for the TOWN OF SWANSBORO's signature. The TOWN OF SWANSBORO shall execute the change order, within seven (7) days of receipt.

At the time of signing a change order, the CONTRACTOR shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

- h. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the work.
- i. If, during the progress of the work, the TOWN OF SWANSBORO requests a change order and the CONTRACTOR's terms are unacceptable, the TOWN OF SWANSBORO, may require the CONTRACTOR to perform such work on a time and material basis whereupon the CONTRACTOR shall proceed and keep accurately on such form as specified by the ENGINEER or TOWN OF SWANSBORO, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the TOWN OF SWANSBORO from performing or to have performed that portion of the work requested in the change order.

14. ANNULMENT OF CONTRACT

If the CONTRACTOR fails to begin the work under the contract within the time specified, or the progress of the work is not maintained on schedule, or the work is not completed within the time specified, or fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the work unsuitably or shall discontinue the prosecution of the work, or if the CONTRACTOR shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or for any other cause whatsoever shall not carry on the work in an acceptable manner, the TOWN OF SWANSBORO may give notice in writing, sent by certified mail, return receipt requested, to the CONTRACTOR and his surety (if applicable) of such delay, neglect or default, specifying the same, and if the CONTRACTOR within a period of seven (7) days after such notice shall not proceed in accordance therewith, then the TOWN OF SWANSBORO shall, declare this contract in default, and, thereupon, the surety shall promptly take over the work and complete the performance of this contract in the manner and within the time frame specified. In the event the CONTRACTOR, or the surety (if applicable) shall fail to take over the work to be done under this contract within seven (7) days after being so notified and notify the TOWN OF SWANSBORO in writing, sent by certified mail, return receipt requested, that he is taking the same over and stating that he will diligently pursue and complete the same, the TOWN OF SWANSBORO shall have full power and authority, without violating the contract, to take the prosecution of the work out of the hands of said CONTRACTOR, to appropriate or use any or all contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the TOWN OF SWANSBORO, together with the costs of completing the work under contract, shall be deducted from any monies due or which may become due said CONTRACTOR and surety (if applicable). In case the expense so incurred by the TOWN OF SWANSBORO shall be less than the sum which would have been payable under the contract, if it had been completed by said CONTRACTOR, then the said CONTRACTOR and surety (if applicable) shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the CONTRACTOR and the surety (if applicable) shall be liable and shall pay to the TOWN OF SWANSBORO the amount of said excess.

15. TERMINATION FOR CONVENIENCE

- a. TOWN OF SWANSBORO may at any time and for any reason terminate CONTRACTOR's services and work at TOWN OF SWANSBORO's convenience, after notification to the CONTRACTOR in writing via certified mail. Upon receipt of such notice, CONTRACTOR shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.
- b. Upon such termination, CONTRACTOR shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by CONTRACTOR as approved by TOWN OF SWANSBORO; (3) plus ten percent (10%) of the cost of the balance of the work to be completed for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to CONTRACTOR prior to the date of the termination of this Agreement. CONTRACTOR shall not be entitled to any claim or claim of lien against

TOWN OF SWANSBORO for any additional compensation or damages in the event of such termination and payment.

16. TOWN OF SWANSBORO'S RIGHT TO DO WORK

If, during the progress of the work or during the period of guarantee, the CONTRACTOR fails to prosecute the work properly or to perform any provision of the contract, the TOWN OF SWANSBORO, after seven (7) days' written notice sent by certified mail, return receipt requested, to the CONTRACTOR from the ENGINEER, may perform or have performed that portion of the work. The cost of the work may be deducted from any amounts due or to become due to the CONTRACTOR, such action and cost of same having been first approved by the ENGINEER. Should the cost of such action of the TOWN OF SWANSBORO exceed the amount due or to become due the CONTRACTOR, then the CONTRACTOR or his surety, or both, shall be liable for and shall pay to the TOWN OF SWANSBORO the amount of said excess.

17. REQUESTS FOR PAYMENT

CONTRACTOR shall refer to the Supplemental General Conditions for specific directions on payment schedule, procedures and the name and address where to send applications for payments for this project. It is imperative that invoices be sent only to the above address in order to ensure proper and timely delivery and handling.

The ENGINEER will process all CONTRACTOR pay requests as the project progresses. The CONTRACTOR shall receive payment within thirty (30) consecutive days after ENGINEER's approval of each pay request. Payment will only be made for work performed as determined by the ENGINEER.

Retainage: If Construction costs exceed \$100,000.00, the TOWN OF SWANSBORO shall withhold a maximum rate of 5% retainage for each periodic payment up to 50% completion. Once the project is 50% complete, as determined by state statute, no funds will be retained if the work is deemed "satisfactory." If performance is "unsatisfactory," funds may be retained at a maximum rate of 5%.

Final payment will be made within forty-five (45) consecutive days after acceptance of the work, receipt of marked-up "as-built" drawings and specifications and the submission both of notarized CONTRACTOR's affidavit and final pay request. All pay requests shall be submitted to the ENGINEER for approval.

THE CONTRACTOR'S FINAL PAYMENT AFFIDAVIT SHALL STATE: "THIS IS TO CERTIFY THAT ALL COSTS OF MATERIALS, EQUIPMENT, LABOR, SUBCONTRACTED WORK, AND ALL ELSE ENTERING INTO THE ACCOMPLISHMENT OF THIS CONTRACT, INCLUDING PAYROLLS, HAVE BEEN PAID IN FULL."

18. PAYMENTS WITHHELD

The ENGINEER with the approval of the TOWN OF SWANSBORO may withhold payment for the following reasons:

- a. Faulty work not corrected.
- b. The unpaid balance on the contract is insufficient to complete the work in the judgment of the ENGINEER.

- c. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- d. The Town Manager may authorize the withholding of payment for the following reasons:
 - i. Claims filed against the CONTRACTOR or evidence that a claim will be filed.
 - ii. Evidence that subcontractors have not been paid.

When grounds for withholding payments have been removed, payment will be released. Delay of payment due at the rate of 8 percent per annum. The TOWN OF SWANSBORO shall not be liable for interest on payments withheld by the TOWN OF SWANSBORO for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the TOWN OF SWANSBORO or reasonable evidence that a third-party claim will be filed.

19. MINIMUM INSURANCE REQUIREMENTS

The work under this contract shall not commence until the CONTRACTOR has obtained all required insurance and verifying certificates of insurance have been approved in writing by the TOWN OF SWANSBORO. These certificates shall document that coverages afforded under the policies will not be cancelled, reduced in amount or coverages eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the TOWN OF SWANSBORO of such alteration or cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

a. **Worker’s Compensation and Employer's Liability**

The CONTRACTOR shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of \$100,000.

b. **Public Liability and Property Damage**

The CONTRACTOR shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by the CONTRACTOR or by any subcontractor, or by anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury: \$500,000 per occurrence
 Property Damage: \$100,000 per occurrence / \$300,000 aggregate

In lieu of limits listed above, a \$500,000 combined single limit shall satisfy both conditions.

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the work performed under the contract.

c. **Property Insurance (Builder's Risk/Installation Floater)**

The CONTRACTOR shall purchase and maintain property insurance until final acceptance, upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the TOWN OF SWANSBORO, the CONTRACTOR, the subcontractors and sub-subcontractors in the work and shall insure against the perils of fire, wind, rain, flood, extended coverage, and vandalism and malicious mischief. If the TOWN OF SWANSBORO is damaged by failure of the CONTRACTOR to purchase or maintain such insurance, then the CONTRACTOR shall bear all reasonable costs properly attributable thereto; the CONTRACTOR shall effect and maintain similar property insurance on portions of the work stored off the site when request for payment per articles so includes such portions.

d. **Deductible**

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the CONTRACTOR.

e. **Other Insurance**

The CONTRACTOR shall obtain such additional insurance as may be required by the TOWN OF SWANSBORO or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

f. **Proof of Carriage**

The CONTRACTOR shall furnish the TOWN OF SWANSBORO with satisfactory proof of carriage of the insurance required before written approval is granted by the TOWN OF SWANSBORO.

20. ASSIGNMENT

No assignment of the CONTRACTOR's obligations or the CONTRACTOR's right to receive payment hereunder shall be permitted. However, upon written request approved by the TOWN OF SWANSBORO and solely as a convenience to the CONTRACTOR, the TOWN OF SWANSBORO may: (1) forward the CONTRACTOR's payment check directly to any person or entity designated by the CONTRACTOR, and (2) include any person or entity designated by CONTRACTOR as a joint payee on the CONTRACTOR's payment check. In no event shall such approval and action obligate the TOWN OF SWANSBORO to anyone other than the CONTRACTOR, and the CONTRACTOR shall remain responsible for fulfillment of all contract obligations.

21. CLEANING UP AND RESTORATION OF SITE

The CONTRACTOR shall keep the sites and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the TOWN OF SWANSBORO. Before final inspection and acceptance of the project, the CONTRACTOR shall thoroughly clean the sites, and completely prepare the project and site for use by the TOWN OF SWANSBORO.

At the end of construction, the CONTRACTOR shall oversee and implement the restoration of the construction site to its original state. Restoration includes but not limited to walks, drives, lawns, trees and shrubs, corridors, stairs and other elements shall be repaired, cleaned or otherwise restored to their original state.

22. GUARANTEE

The CONTRACTOR shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of five (5) years following the final acceptance of the work and shall replace such defective materials or workmanship without cost to the TOWN OF SWANSBORO.

Where items of equipment or material carry a manufacturer's warranty for any period in excess of five (5) years, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The CONTRACTOR shall replace such defective equipment or materials, without cost to the TOWN OF SWANSBORO, within the manufacturer's warranty period.

Additionally, the TOWN OF SWANSBORO may bring an action for latent defects caused by the negligence of the CONTRACTOR, which is hidden or not readily apparent to the TOWN OF SWANSBORO at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.

23. STANDARDS

Where reference is given to codes, standard specifications or other data published by regulating agencies including, but not limited to, national electrical codes, North Carolina State building codes, federal specifications, ASTM specifications, various institute specifications, etc. it shall be understood that such reference is to the latest edition including addenda published prior to the date of the contract documents.

24. INDEMNITY

The CONTRACTOR shall defend, indemnify, save and hold harmless the TOWN OF SWANSBORO, its officers, employees, and agents, from and against any and all claims, demands, causes of action, orders, decrees, judgments, losses, damages, and liabilities (including all costs and attorney's fees incurred in defending any claim, demand, or cause of action) occasioned by, growing out of, or arising or resulting from (a) CONTRACTOR, its subcontractors, agents or employees in the performance of this Agreement or their provision of any services required herein to be performed by the CONTRACTOR or its subcontractors, agents or employees, and (b) any act or omission of CONTRACTOR, or its subcontractors, agents or employees. The CONTRACTOR shall assume sole liability for any injuries or damages caused to a third party as a result of the fulfillment of this Agreement.

25. NON-DISCRIMINATION

The bidder shall, when applicable, comply with the requirements of all Federal, State, and local laws, ordinances and regulations relating to minimum wages, social security, unemployment compensation insurance, and Workman's Compensation, and shall not discriminate against any employee or applicant for employment because of race, sex, creed, color, or national origin.

28. GOVERNING LAWS

This contract is made under and shall be governed by and construed in accordance with the laws of the State of North Carolina. The CONTRACTOR shall comply with all applicable federal, State and local laws, statutes, ordinances and regulations.

29. CONTRACTOR EVALUATION

The CONTRACTOR's overall work performance on the project shall be fairly evaluated for determining qualifications to bid on future Town projects. In addition to final evaluation, an interim evaluation may be prepared during the progress of project. The TOWN OF SWANSBORO may request the CONTRACTOR's comments to evaluate the ENGINEER.

SUPPLEMENTARY GENERAL CONDITIONS

TIME OF COMPLETION

The CONTRACTOR shall commence work to be performed under this Contract on 09/17/2024 and shall fully complete all work hereunder by 10/31/2024. For each day in excess of the Final Completion date, the CONTRACTOR shall pay the TOWN OF SWANSBORO the amount of Two-hundred Dollars (\$200.00) as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the TOWN OF SWANSBORO should the CONTRACTOR fail to complete the Work within the time specified.

If the CONTRACTOR is delayed at any time in the progress of his work by any act or negligence of the TOWN OF SWANSBORO, his employees or his separate CONTRACTOR, by changes ordered in the work; by abnormal weather conditions; by any causes beyond the CONTRACTOR's control or by other causes deemed justifiable by TOWN OF SWANSBORO, then the contract time may be reasonably extended in a written order from the TOWN OF SWANSBORO upon written request from the CONTRACTOR within ten days following the cause for delay. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the TOWN OF SWANSBORO do not entitle the CONTRACTOR to compensable damages for delays. Any CONTRACTOR claim for compensable damages for delays is limited to delays caused solely by the TOWN OF SWANSBORO or its agents.

CONSTRUCTION SCHEDULE:

| | |
|------------------------|------------|
| Commence Construction | 09/03/2024 |
| Substantial Completion | 10/16/2024 |
| Final Completion | 10/31/2024 |

PAYMENTS

The CONTRACTOR may submit monthly pay requests to the ENGINEER for approval and recommendation to the TOWN OF SWANSBORO for payment. Retainage will be withheld in accordance with North Carolina State Statutes. Application for Payments are to be submitted on the EJCDC document provided to the CONTRACTOR including the Schedule of Values. ENGINEER will have 10 days after receipt of each Application for Payment to review and either indicate in write a recommendation of payment and present the Application to the TOWN OF SWANSBORO or return the Application to the CONTRACTOR indicating in writing the ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

UTILITIES

TOWN OF SWANSBORO may provide certain utilities such as power or water with connections and extensions by the CONTRACTOR. CONTRACTOR shall provide temporary toilets.

USE OF SITE

No uncompleted work or repairs will be allowed to remain during non-work hours unless: (a) fully secured and protected by safety devices in accordance with normal safety procedures for construction sites an OSHA regulations, (b) fully secured and protected, as necessary, from the weather by tarps and/or plastic sheeting. The CONTRACTOR shall be responsible for protecting areas adjacent to the work area. The CONTRACTOR shall provide measures to accommodate the safe and reasonable use of the hallways and

rooms by the TOWN OF SWANSBORO during both work and non-work hours. All work areas will be protected with satisfactory safety measures at all times and supervised during work hours. During non-work hours, the CONTRACTOR shall provide satisfactory safety measures to protect the interior and exterior portions of the project site.

Site is unsecured. The security of the CONTRACTOR's materials and supplies is his responsibility. TOWN OF SWANSBORO will not be responsible for damage, losses or replacement of materials. Damaged or lost material shall be replaced at no additional cost to the TOWN OF SWANSBORO.

The CONTRACTOR shall be responsible for providing all safety measures (OSHA and otherwise) and provide any devices necessary to ensure protection of the workers and the general public. The CONTRACTOR shall provide a clean-up of the site daily and a final work area and site clean-up at the end of the project.

DOWNTOWN WATERFRONT IMPROVEMENTS

TOWN OF SWANSBORO

SWANSBORO, NORTH CAROLINA

ONslow COUNTY

DRAWINGS

| | |
|---|-----------|
| COVER SHEET | C1 OF 12 |
| SPECIFICATIONS SHEET 1 OF 3 | C2 OF 12 |
| SPECIFICATIONS SHEET 2 OF 3 | C3 OF 12 |
| SPECIFICATIONS SHEET 3 OF 3 | C4 OF 12 |
| EXISTING CONDITIONS | C5 OF 12 |
| SITE PLAN | C6 OF 12 |
| WALKWAY EXTENSION FRAMING AND DECKING PLAN | C7 OF 12 |
| PLATFORM FRAMING AND DECKING PLAN | C8 OF 12 |
| DOCK "A" FRAMING PLAN & SECTIONS | C9 OF 12 |
| DOCK "B" FRAMING PLAN & SECTIONS | C10 OF 12 |
| PROPOSED RIP-RAP AREA DEMO AND CONSTRUCTION DETAILS | C11 OF 12 |
| | C12 OF 12 |

PROJECT DATA

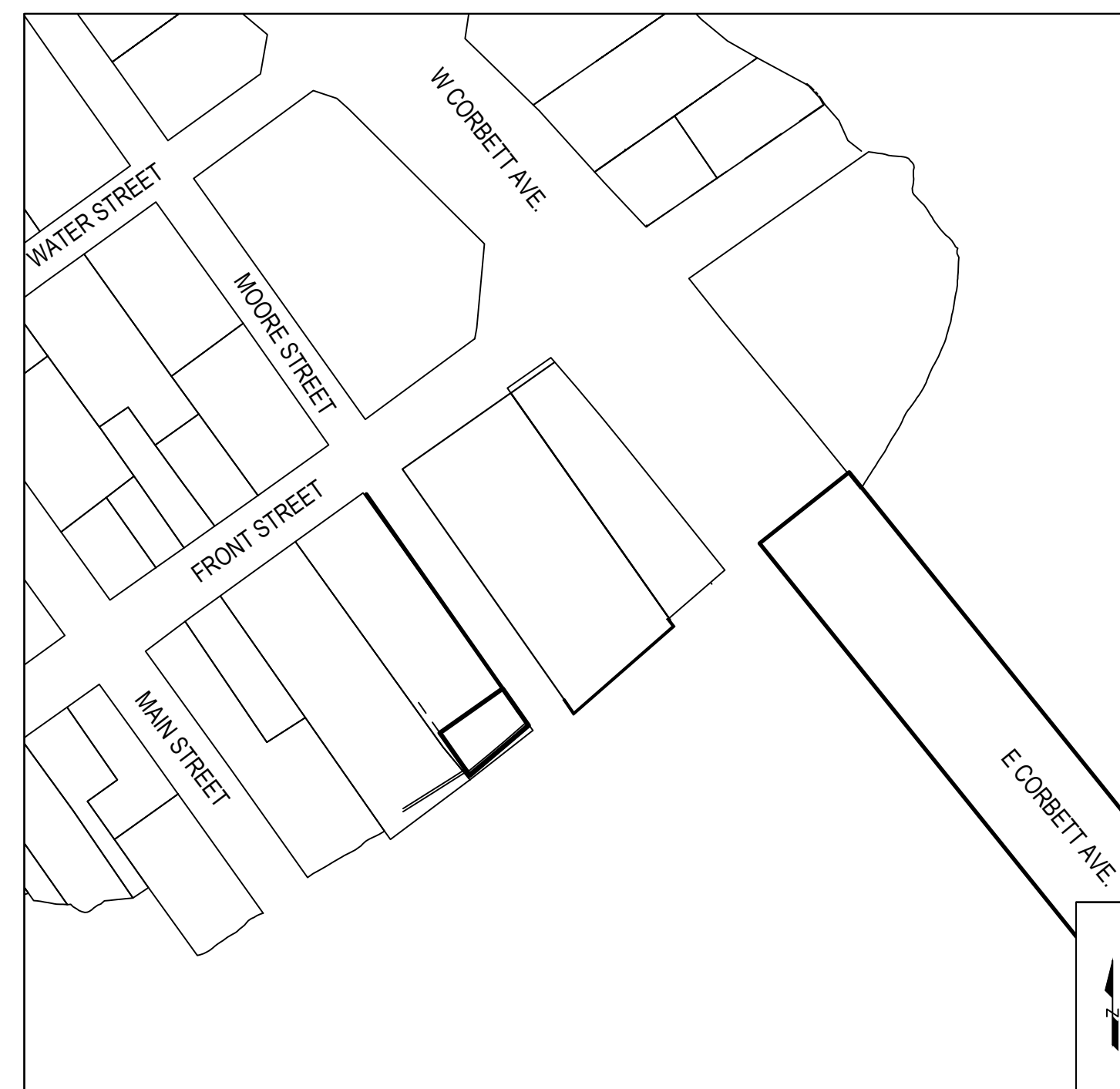
NAME OF PROJECT:
DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

PREPARED BY:
ARENDELL ENGINEERS
1004 ARENDELL STREET
MOREHEAD CITY, NC 28557
PHONE: (252) 622-4338
EMAIL: JOHN@ARENDELLENGINEERS.COM

OWNER:
TOWN OF SWANSBORO
601 W. CORBETTE AVENUE
SWANSBORO, NC 28584

SURVEYOR:
LANIER SURVEYING COMPANY
624-4 CORBETT AVENUE
SWANSBORO, NC 28584
(910) 325-8324
FIRM REGISTRATION #0124

DATUMS:
VERTICAL: NAVD88
HORIZONTAL: NC STATE PLANE COORDINATE SYSTEM



VICINITY MAP

SCALE: 1" = 50'

SYMBOLS & ABBREVIATIONS

| | |
|--------|--------------------------------------|
| AEC | AREA OF ENVIRONMENTAL CONCERN |
| ALT | ALTERNATE |
| APPROX | APPROXIMATE |
| CAMA | COASTAL AREA MANAGEMENT ACT |
| ECM | EXISTING CORNER MARKER |
| EIP | EXISTING IRON PIN |
| ELEV | ELEVATION |
| EX | EXISTING |
| GALV | GALVANIZED |
| MHW | MEAN HIGH WATER |
| MIN | MINIMUM |
| MLW | MEAN LOW WATER |
| NAVD88 | NORTH AMERICAN VERTICAL DATUM - 1988 |
| N/F | NOW OR FORMERLY |
| NHW | NORMAL HIGH WATER |
| NIC | NOT IN CONTRACT |
| O.C. | ON CENTER |
| PVC | POLYVINYL CHLORIDE |
| REINF | REINFORCED |
| STA | STATION |
| W | WITH |
| Ø | DIAMETER |
| G.V. | GATE VALVE |
| ⊕ | GATE VALVE |
| ⊕ | WATERLINE |
| ⊕ | EX. HYDRANT |
| ⊕ | PROPOSED HYDRANT |
| ⊕ | MINIMUM BUILDING SETBACK LINE |
| ⊕ | OVERHEAD ELECTRIC LINE |
| ⊕ | FIBER OPTIC LINE |



Know what's below.
Call before you dig.

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

| | |
|------------------|------------|
| PROJECT MANAGER: | JJW |
| DESIGNED: | JJW |
| DRAWN BY: | JST |
| CHECKED: | JJW |
| SCALE: | AS SHOWN |
| DATE: | 06/10/2024 |



1004 Arendell Street
Morehead City, NC 28557
(252) 622-4338
Fax: (252) 622-4505

www.arendellengineers.com

North Carolina Certification No. C-1509

OWNER:

TOWN OF SWANSBORO
601 W. CORBETTE AVENUE
SWANSBORO, NC 28584

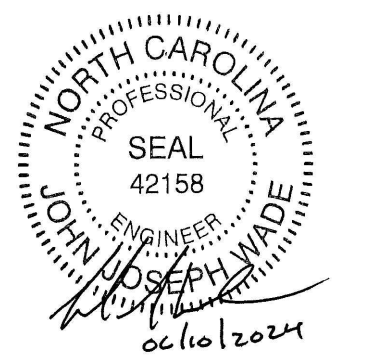
PROJECT:

DOWNTOWN WATERFRONT
IMPROVEMENTS
SWANSBORO, NORTH CAROLINA

ONslow COUNTY, NC

DRAWING:

COVER SHEET



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C1

OF: 12

JOB NO. 23001

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: N/A
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

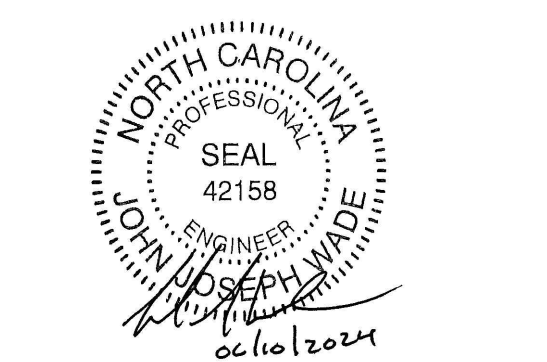
www.arendellengineers.com
 North Carolina Certification No. C-1509

TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:
 SPECIFICATIONS SHEET 1 OF 3



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C2

OF: 12
 JOB NO. 23001

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 01060
REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL: Contractor is not relieved from requirements to comply with regulations, applicable permits, laws, codes, ordinances and regulations not identified in this section. It is the responsibility of the Contractor to comply with all applicable state, federal or local regulations including terms and conditions of permits issued for the work.

1.2 REFERENCES:

A. Owner Procured (attached to this specification):

- State of North Carolina, Division of Coastal Management, Major CAMA Permit No. Permit No. 112-05, dated December 14, 2022.

B. Contractor Procured (at his expense):

- Current business license
- Building Permits, Town of Swansboro, Onslow County.
- Current contractor's license for operations in the State of North Carolina
- Permit for hauling and disposal of debris and waste
- Permit to exceed load limits on certain bridges if they are on haul routes and have low load limits
- Mining Permits for sand borrow pits

1.3 SUBMITTALS: Contractor shall provide reports, documents, plans and fees as required for obtaining all contractor procured permits at no additional cost to the Owner.

1.4 QUALITY ASSURANCE: Contractor shall conduct inspections of construction operations to insure compliance and report all violations to the Engineer.

1.5 SITE CONDITIONS:

A. Contractor shall practice and be fully responsible for good housekeeping activities and procedures to prevent oil spills, hazardous waste contamination and spills, unauthorized environmental pollution and safety violations.

B. There are no restroom facilities available to the Contractor on the site. Contractor shall make arrangements for restroom facilities for employees at no additional costs to the Owner. Disposal of waste from portable restroom facilities shall be in accordance with applicable local, state and federal regulations.

C. Contractor shall assure reasonable access to the site for Owner's Site Representative, Engineer, and regulatory agency personnel.

REGULATORY REQUIREMENTS 01300-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

1.6 SEQUENCING AND SCHEDULING:

A. Contractor shall provide ample notification to regulatory agencies for scheduled construction activities and inspections, if a regulatory inspector is required for observation.

B. Contractor shall conduct operations in accordance with the sequence of operations indicated in the Contract Documents and as required by the permit conditions. Deviations from the sequence of construction shall be reported to the Engineer.

1.7 COMPLIANCE WITH APPLICABLE PERMITS: Terms and conditions of the applicable permits and regulations listed in 1.2 A of the Section are incorporated into these Contract Documents by reference. Contractor is responsible for adherence to terms and conditions of permits.

END OF SECTION

REGULATORY REQUIREMENTS 01300-2 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 01100
SUMMARY OF WORK

PART 1 - GENERAL

1.1 Work Covered by Contract Documents

Work includes the provision of labor, materials, equipment, and services required to complete construction of the Downtown Waterfront Improvements, Town of Swansboro, Swansboro, North Carolina.

1.2 Type of Work

Work consists of the following:

- Construction of a 12' wide and 150' long timber walkway and a 5' timber walkway replacement.
- Removal of existing timber retaining wall and installation of riprap slope protection. Contractor will coordinate with NCDOT for riprap delivery.
- Construction of a 6' x 12' walkway extension.
- Installation of a 8' x 100' floating dock accessed by a 4' x 30' aluminum gangway.
- Installation of two (2) 4' x 30' floating docks secured to the existing floating dock.
- Installation of six (6) tie piles.

1.3 Owner's Site Representative

A. Contractors shall cooperate with Owner's Site Representative to minimize conflict, and to facilitate Owner's operations.

B. Contractor will provide all safety fencing, signage, barricades and other measurers required to ensure protection to public.

END OF SECTION

SUMMARY OF WORK 01300-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 01300
SCHEDULES AND SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

1.1.1 Furnish for approval two (2) prints of shop drawings and submittals as called for in the Contract Documents. The Contractor shall check shop drawings prior to submittal, and where items must conform to existing work, he will verify dimensions on the job site. He shall indicate on each copy that he has checked the submittal and has found it to be in proper form and attach his signature. Shop drawings not previously checked by the Contractor will be returned unprocessed.

1.1.2 The Contractor shall consider delivery schedules when ordering materials. Delay in shipment shall not be considered grounds for an extension in the Contract Time. The Engineer will consider availability an important consideration in approving materials and reserves the right to withhold such approval when delivery is questionable.

1.1.3 Furnish one copy of Contractor obtained permits. Contractor shall supply one (1) copy of application documents to the Engineer at the time the permits are applied for.

1.1.4 Operations and Maintenance Manual: Contractor shall compile all operations and maintenance instructions, manuals and information on all project components as well as the warranty and guarantee information required into a single document to be titled "Operations and Maintenance Manual" (O&M). Contractor shall provide three (3) copies of the O&M manual to the Engineer and Owner for approval. Final Payment will not be approved until the O&M manual is submitted and approved by the Owner and Engineer.

END OF SECTION

SCHEDULES AND SUBMITTALS 01300-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 02300
PILE DRIVING

PART 1 - GENERAL

1.1 WORK INCLUDED: Install all steel pipe piles and timber piles as indicated on the drawings by driving and/or jetting

1.2 RELATED WORK: Section 02365 Marine Timber Piles for Dock Construction

1.3 PILE DRIVING RECORDS: Keep a detailed record for installation of each pile. Record pile length before installation, pile location including the dock, bent number and if pile is left or right at bent, installation method and blow count over last 4 feet of installation, final elevation of pile prior to cutoff, and any special conditions over the length of the pile penetration. Submit 2 copies of these records to the Owner & Engineer at the end of construction.

PART 2 - MATERIALS

2.1 ROUND TIMBER PILES (SOFTWOOD): Softwood timber piles for the fixed timber docks and shall be as specified in Section 02365 "Marine Timber Piles for Dock Construction". Lengths and sizes shall be as shown on the drawings.

3.1 PILE INSTALLATION:

3.1.1 Bearing Piles: Fixed timber pier piles shall be driven to the tip elevation shown on the drawings.

3.1.2 Protection of Piles: Take care to avoid damage to the piles during handling, placing the pile in the leads, and during the pile driving operations. Laterally support piles during driving, but do not unduly restrain from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving. Square the top of the pile to the longitudinal axis of the pile.

3.1.3 Jetting or Preaugering of Timber Piles: Preaugering or jetting of timber piles will be allowed but shall be discontinued when the pile is at a depth of 4 feet above the required penetration. Use preaugering above mean low water. Last 4 feet of pile penetration shall be obtained by driving.

3.1.4 Tolerances in Piles: Piles shall be driven with a variation of not more than 2 percent from the vertical. Check axial alignment of pile and leaders at start of pile driving and when the pile top is approximately 5 feet above cutoff elevation. Make intermediate checks of pile alignment if there is evidence of pile drifting. If subsurface conditions cause pile drifting beyond the allowable axial alignment tolerance, notify the Owner and Engineer and perform corrective measures as directed. Place butts within 4 inches of the location indicated. Manipulation of piles within specified tolerances is permitted, but do not manipulate piles more than 1-1/2 percent of their exposed length above the ground surface or mudline. Check all piles for heave. Piles found to be heaved shall be removed and redriven to the indicated tip elevation.

Section 02300 - Pile Driving 02300-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.1.5 Splices: Splicing of piles is not permitted for timber or steel pilings.

3.1.6 Pile Cut Offs:

3.1.6.1 Timber Piles: Cut off piles with a smooth level cut using pneumatic tools, sawing, or other suitable methods approved by the Owner or Engineer.

3.1.6.2 Steel Pipe Piles: Cur off an cap piles in accordance with Section 02368 Steel Pipe Piles.

3.1.7 Special Pile Driving Condition: Alternate pile driving techniques such as spudding or steel shoes on piles may be required due to the soil conditions at the site.

END OF SECTION

Section 02300 - Pile Driving 02300-2 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 02365
MARINE TIMBER PILES FOR DOCK CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: Furnish timber piles for fixed timber pier construction and timber tie piles as indicated.

1.2 RELATED WORK: Section 02300 Pile Driving
Section 06130 Timber Construction

1.3 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.3.1 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) PUBLICATIONS:

D25 Round Timber Piles

1.3.2 AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARDS:

C18 Standard for Softwood Pressure Treated Material in marine Construction, Piles.

M4 Standard for Care of Preservative Treated Wood Products

1.4 SUBMITTALS: Submit 2 copies of the certificates of compliance to the Government for timber piles and preservative treatment.

PART 2 - MATERIALS

2.1 PILES: Provide new Douglas Fir or Southern Pine friction cleaned peeled piles conforming to ASTM D25. Minimum butt or tip circumferences and length as indicated. Furnish length and number of piles as indicated on the drawings. Piles must be one piece. Splices will not be permitted.

PART 3 - EXECUTION

3.1 INSPECTION: Inspect timber piles for straightness, length and soundness of preservative treatment. Bent, damaged or substandard application of preservative materials shall be cause for rejection of a pile. Rejected pile shall be removed from the project site upon rejection.

Marine Timber Piles for Dock Construction 02365-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.2 PRESERVATIVE TREATMENT:

a. Treat all piles with preservative treatment conforming to AWWA C18. Preservative shall be chromated copper arsenate (CCA) to a minimum retention of 2.5 pounds per cubic foot.

b. Treatment of Field Cuts: Field cuts and holes shall be treated in accordance with AWWA M-4 with the exception the galvanized sheet metal or aluminum caps are not required. Pile cutoffs shall be treated with preservative only. Pile cutoffs of dock piles shall be treated three times after edge routing and cutoffs are completed. Longer piles may be cut for use as long as cuts are treated as required by the specification.

3.3 PILE DRIVING: Piles shall be driven in accordance with Section 02300, Pile Driving.

END OF SECTION

Marine Timber Piles for Dock Construction 02365-2 April 26, 2024

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JWJ

DESIGNED: JWJ

DRAWN BY: JST

CHECKED: JWJ

SCALE: N/A

DATE: 06/10/2024



1004 Arendell Street
Morehead City, NC 28557
(252) 622-4338
Fax: (252) 622-4505

www.arendellengineers.com

North Carolina Certification No. C-1509

OWNER:

TOWN OF SWANSBORO
601 W. CORBETTE AVENUE
SWANSBORO, NC 28584

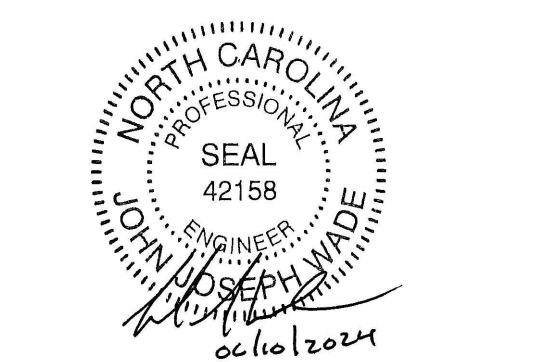
PROJECT:

DOWNTOWN WATERFRONT IMPROVEMENTS
SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:

SPECIFICATIONS SHEET 2 OF 3



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C3

OF: 12

JOB NO. 23001

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 02485
SEEDING & MULCHING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK: The work includes seedbed preparation, seeding, mulching and irrigation for temporary stabilization, permanent stabilization and temporary grassed swale lining and stabilization where indicated on the plans of all newly graded finished earth surfaces, and all areas inside or outside the limits of construction that are disturbed by the Contractor

1.2 SUBMITTALS:

1.3.1 Certificates of Compliance:

- Seed
- Fertilizer
- Topsoil
- Lime
- Mulch

1.3 DELIVERY

1.3.1 Fertilizer and Lime: Deliver materials to the site in original unopened containers bearing the manufacturer's chemical analysis, name, trade name, trademark and indication of conformance to state and federal laws. In lieu of containers, furnish fertilizer and lime in bulk with a certificate indicating the above information accompanying each delivery.

1.3.2 Seed: Deliver seed to the site in original sealed packages bearing the products guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material. Label in accordance with USDA Federal Seed Act and applicable state seed laws. Weeds, moldy, or otherwise damaged seed will be rejected.

1.4 STORAGE AND HANDLING: Store lime, fertilizer and seed in dry locations away from contaminants. Protect seed from drying out. Do not drop or dump materials from vehicles.

PART 2 - PRODUCTS

2.1 SEED: State certified seed of the latest season's crop in conformance with NCDOT specifications, Section 1060-3. Variety of seed shall be as indicated.

2.2 Topsoil: Natural friable soil representative of productive well-drained soils in the project area; free of subsoil, stumps, rocks larger than 1 inch diameter, brush, weeds, toxic substances and other material detrimental to plant growth.

2.3 Lime: Commercial agricultural limestone in accordance with NCDOT Specifications, Section 1060-2.

SEEDING & MULCHING 02485-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.4 Fertilizer: Granular fertilizer conforming to NCDOT Specifications, Section 1060-1. Granular fertilizer shall contain a minimum percentage by weight of 10 percent nitrogen, 10 percent available phosphoric acid, and 10 percent potash (10-10-10).

2.5 Mulch: Meeting NCDOT Specifications, Section 1060-4. Provide wood cellulose fiber mulch when hydroseeding.

2.6 Emulsified Asphalt: Meeting NCDOT Specifications, Section 1020-4, Grade RS-1. Use with straw mulch

2.7 Water: Fresh water suitable for irrigation free of salts, acids, oil and other substances otherwise harmful to vegetation.

2.8 Erosion Control Material: Jute matting conforming to NCDOT Specifications, Article 1060-7(B), excelsior matting conforming to NCDOT Specifications Section 1060-7(C). Wire Staples meeting NCDOT Specifications, Section 1060-7(D).

PART 3 - EXECUTION

3.1 Preparation

3.1.1 Final Grade: Immediately prior to placing topsoil, scarify the subgrade to 2 inch depth for bonding of topsoil to subsoil. Spread topsoil evenly to a minimum depth of 3 inches. Do not spread topsoil when excessively wet or frozen.

3.1.1.1 Correct irregularities in finished surfaces to eliminate depressions. Protect finished topsoil areas from damage from vehicular and pedestrian traffic.

3.1.2 Apply fertilizer, lime and asphalt tack at rates as follows:

Lime – 2 tons/ acre
10-10-10 – 1000 pounds per acre
0-20-0 – 500 pounds per acre (after seeding)
Asphalt tack – 200 gallons per ton of mulch

Soils with pH of 6 or greater should not be limed.

3.2 Seeding:

3.2.1 Seeding Conditions: Immediately before seeding, restore soil to proper grade. Do not sow seed when ground is muddy, frozen or in an unsatisfactory condition for seeding.

3.2.2 Seeding Mixture: The following mixtures of seed are permitted for the uses and seasons indicated.

February 1 to April 30
Tall Fescue 50 lbs. / ac.
Pensacola Bahiagrass 10 lbs. / ac.
Korean or Kobe lespedeza (scarified) 50 lbs. / ac.

SEEDING & MULCHING 02485-2 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

May 1 to August 31
Tall Fescue 50 lbs. / ac.
Weeping Lovegrass 5 lbs. / ac.
Korean or Kobe lespedeza (scarified) 50 lbs. / ac.
Browntop Millet 25 lbs. / ac.

September 1 to January 31
Tall Fescue 60 lbs. / ac.
Korean or Kobe lespedeza (unscarified) 80 lbs. / ac.
Rye (Grain) 25 lbs. / ac.
For slopes 2:2 or steeper, add 30 lbs./ ac. Sericea Lespedeza
And 15 lbs. of weeping lovegrass.

LANDSCAPE MIXTURE
January 1 to March 31
Common Bermudagrass (unhulled) 20 lbs. / ac.
April 1 to July 31
Common Bermudagrass (hulled) 12 lbs. / ac.

Hybrid bermudagrass sprigs or centipede sod may be used for landscaped areas.

3.2.3 Seeding Method: Apply seed within 24 hours of seedbed preparation. Sow seed with approved sowing equipment sowing at the rates indicated above. Sow half the seed in one direction, the remainder in a direction at right angles to the first sowing.

3.2.3.3 Broadcast Seeding and Drop Seeding: Use broadcast or drop seeders. Cover seed uniformly to a maximum depth of 1/4 inch in clayey soils, 1/2 inch in sandy soils. Cover seed by spike-tooth harrow, cultipacker or other approved devices.

3.2.4 Rolling: immediately after seeding, firm entire area, except for slopes in excess of 3 to 1, with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed with cultipacker-type seeder or by hydroseeding, rolling may be omitted.

3.2.5 Mulch: Except with hydroseeding, spread straw mulch evenly at the rates indicated above. Anchor by crimping mulch with serrated disk or by spraying asphalt emulsion at the rate indicated above. Take precautions to prevent asphalt materials from marking or defacing structures, pavements, utilities or plantings.

3.2.6 Erosion Control Material: Install in accordance with manufacturer's instructions.

3.3 Protection of Seeded Areas: Immediately after seeding, protect seeded areas against traffic or by otherwise erecting barricades and posting signs until final acceptance.

3.4 Restoration: Restore to original condition existing turf areas which were damaged during turfing operations.

SEEDING & MULCHING 02485-3 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.5 Turf Establishment Period:

3.5.1 Turf Establishment: Turf shall be established immediately following grading activities. Maintenance of turf areas shall continue until established turf is accepted by the Owner.

3.5.1 Maintenance: During turf establishment period, mow the seeded area to an average height of 2.5 to 3.5 inches whenever the grass reaches a height of 5 inches. Remove excess clippings, eradicate weeds, fertilize overseed and perform other operations necessary to promote turf growth. Reseed, fertilize and mulch damaged areas immediately.

3.5.2 Duration: The turf establishment period will be in effect until the seeded areas are mowed three times.

3.6 Final Acceptance:

3.6.1 Final Inspection and Acceptance: Final Acceptance will be based on a satisfactory stand of turf defined as 95 percent ground cover for the established species.

END OF SECTION

SEEDING & MULCHING 02485-4 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 02489
FLOATING DOCK

PART 1 - GENERAL

1.1 WARRANTY: The floating dock, including all structural components of the system, shall be designed for a ten (10) year life expectancy. The floating dock systems shall carry an unconditional warranty for five (5) years after project acceptance.

1.2 PRODUCTS: The following material combinations shall be permitted.

1.2.1 Floating Dock System: Timber structure and dock with either urethane or polystyrene foam filled fiberglass reinforced plastic or high density polyethylene pontoons.

1.2.2 Floating Dock Decking: Southern Yellow Pine

1.2.3 Gangway: Aluminum structure with aluminum grating walking surface.

1.2.4 Mooring System: Timber guide piles.

1.3 INTEGRATION OF GUIDE PILE SYSTEM AND FLOATING DOCK SYSTEM: The floating dock system shall be designed to be restrained by a system of guide piles. The pile guides and structural system of the docks shall be designed to transfer the pile loads between the dock system and guide piles.

1.4 WORKMANSHIP: All work shall conform to reviewed shop drawings and project drawings and this specification. Construction details, finishing details and colors of the completed floating dock system shall be consistent throughout. Wood structures shall be neatly finished so that joints match and edges of waives are flush with adjacent surfaces. Deck boards shall be set with even spacing and bark sides up. Work shall be accurately set to established lines and elevations and securely fastened in place. Cutting, drilling and punching shall produce clean true lines and surfaces. Exposed surfaces of work shall have a smooth finish. Utility systems and fixtures shall be installed in a neat and workmanlike manner.

1.5 SUBMITTALS

1.5.1 Shop Drawings and Calculations: Prior to the fabrication of the dock system components, the Contractor shall submit connecting details, sizes and locations of pontoon sections and methods for attaching utilities and accessories. Submit shop drawings for all specially fabricated items and catalog sheets for all standard manufactured items that are to be incorporated into the floating dock system.

1.5.2 Samples; Submit samples of the following:

- Cleats
- Bumper strip
- Pile cap
- Pile guides

Floating Dock Systems 02489-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

PART 2 - PRODUCTS

2.1 MISCELLANEOUS METAL:

2.1.1 All fabricated and miscellaneous steel shall conform to ASTM A 36 and shall be hot-dip galvanized after fabrication in accordance with ASTM A 123. All welding of steel shall comply with AWS D 1.1. All galvanizing shall be done only after fabrication of steel shapes.

2.1.2 All screws, bolts, nuts and lock washers shall conform to ASTM A 307 and be hot-dip galvanized in accordance with ASTM A 153. Flat washers shall comply with the requirements of ANSI B27.2 and be galvanized in accordance with ASTM A 153.

2.1.3 Mooring cleats shall be galvanized, cast-iron with lengths as shown on the drawings. Cleats shall be installed at the locations shown on the drawings.

2.2 WOOD:

2.2.1 Dressed Timber: The minimum requirements for all timber shall be #1 Southern Pine in accordance with SPIB Grading Rules. Timber shall be identified by the grade mark of a recognized association or independent inspection agency using the specific grading requirements of the association recognized as covering the species used.

2.2.2 Field cuts and holes shall be treated in accordance with AWWA M4.

2.3 ALUMINUM: All aluminum construction shall be in accordance to AA "Specification For Aluminum Structures." The material shall be temper suitable for salt water service in accordance with applicable ASTM Standards B 209, B 211, 3 221, B 308, B 429, and B 547 for various materials used. All welds shall be in accordance with AA "Specifications for Aluminum Structures." All bolts (etc) shall be Aluminum or 300 Series Stainless Steel in accordance with ASTM F 593 and F 594.

2.4 PONTOONS: Pontoon shells shall be manufactured from one of the following, as applicable:

2.4.1 Plastic Pontoons: Shells shall be manufactured from either high density polyethylene or cross-linked polyethylene material conforming to ASTM D 1248. The polyethylene shall be black in color and have a minimum wall thickness of 1/8 inch. Each pontoon shall be completely filled with foam in accordance with paragraph 2.8. Suppliers of pontoons shall present evidence that the pontoon being supplied is free of cracks and thinning of material below 1/8 inch at the corners and upper flanges of the pontoon. Pontoons shall be attached to the dock system structure so that all the edges of the pontoon upper flanges are bolted to structural members to minimize flexing and deformation of the pontoon. The use of shims or spacers between the dock system and the pontoon to achieve required flotation will not be permitted. Plastic material used shall conform to ASTM D 1248, Type III, Class A, Category J. The plastic shall be rated at not less than 800 hours when subjected to an ESCR test in conformance with ASTM D 1693.

Floating Dock Systems 02489-2 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.5 Warranty: The pontoon used shall carry an unconditional warranty for five (5) years after project acceptance.

2.6 FOAM FILL:

2.6.1 Urethane Foam: Each pontoon shall be completely filled with "foamed-in-place," closed cell, 1.6 pcf minimum density, urethane foam conforming to ASTM D 2341.

2.7 GUIDE PILE CONNECTORS:

2.7.1 Rollers: Guide pile rollers shall consist of a mounting bracket fabricated from 1/4-inch-thick steel plate to which is attached a roller made of ultra high molecular weight plastic mounted on a stainless steel axle made from T304 alloy. Mounting bracket shall be galvanized after fabrication. Pile guides shall be galvanized steel, four (4) internal rollers fabricated so that the entire pile guide can be removed with pile in place.

2.7.2 Slides: Hardwood or high-density polymer material may be used when the material can be shown to have a useful life matching the useful life of the dock system.

2.8 PILES AND PILE DRIVING:

2.8.1 Pile Driving: Provide in accordance with Section 02300, Pile Driving.

2.9 GANGWAYS: Gangways shall be fabricated from 6061-T6 aluminum extrusions with non-skid walking surface of either aluminum or timber. Live load capacity shall be 50 pounds per square foot with a minimum deflection of L/180. Gangways shall be fixed with a hinge to the fixed timber access dock and on rollers at the floating dock end. Rollers on the floating dock shall move on an aluminum friction plate attached to the deck of the floating dock and sizes to accommodate the full range of movement of the gangways rollers and protect the deck of the floating dock from damage by the rollers. The friction plate may be built into the deck or attached to the top of the floating dock. The handrail height and configuration shall conform to applicable local handicap access code and shall include handrails which can be gripped by persons in wheel chairs.

PART 3 - EXECUTION

3.1 SYSTEM COMPONENTS

3.1.1 Floating Dock System: The minimum dimensions and layout of the floating dock system are shown on the drawings. The plan dimensions shown on the drawings for dock lengths and widths shall be the dimensions of the walking surface and not include widths of walers or other structural members that serve to connect individual flotation units together. Finger pier filets shall be equal-sided triangles with a minimum size per side equal to the finger pier width. The Contractor shall be responsible for providing a system which conforms to the dimensions indicated on the drawings, is serviceable for the intended use, and conforms to all pertinent provisions of these Specifications.

Floating Dock Systems 02489-3 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.1.2 Flotation Units: Specified flotation shall be obtained by adjusting either the pontoon spacing or size. The use of supplemental flotation units that are attached to standard pontoons by the use of either straps, adhesive bolting or rivets shall not be permitted. Special flotation units shall be provided at points of concentrated dead load to ensure that the dock system deck is level when loaded with the dead loads specified. Special flotation units shall be provided at points of extreme live load to ensure that the dock system maintains the specified minimum freeboard under maximum live load on any component.

3.1.3 Mooring System:

3.1.3.1 Floating Dock Mooring System: Guide piles to secure the floating dock system shall be provided to conform to the requirements of this Specification.

3.2 DESIGN OF SYSTEM COMPONENTS: The various components of the floating dock system shall, as individual components and as a whole, be designed for the following loads:

3.2.1 Gangways: Gangway manufacturer shall provide proof in form of certification signed and sealed by a North Carolina Professional Engineer that the gangway meets the loading requirements of Chapter 36 of the North Carolina Building Code. The gangway shall be designed for a live load of 100 pounds per square foot. Aluminum gangways shall be provided, located as shown on the marina layout. Width of the ramps shall be 60 inches. Handrails shall be placed on both sides of the ramps with a minimum clear distance between them of 42 inches. The maximum allowable slope of the ramp including transition from fixed to floating dock deck is 1:12 at normal water level. The decking shall be a non-skid surface to prevent slippage when wet and at maximum angle. The ramp connection to the fixed pier shall be able to pivot to compensate for the water level movements and any gap between the pier and ramp shall not exceed 1 inch. The ramp connection to the main floating dock shall be capable of free movement and shall be protected from damaging the dock's decking. All hardware shall be heavy duty, suitable for the intended service and appropriate for a seawater environment.

END OF SECTION

Floating Dock Systems 02489-4 April 26, 2024

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW

DESIGNED: JJW

DRAWN BY: JST

CHECKED: JJW

SCALE: N/A

DATE: 06/10/2024



1004 Arendell Street
Morehead City, NC 28557
(252) 622-4338
Fax: (252) 622-4505

www.arendellengineers.com

North Carolina Certification No. C-1509

OWNER:

TOWN OF SWANSBORO
601 W. CORBETTE AVENUE
SWANSBORO, NC 28584

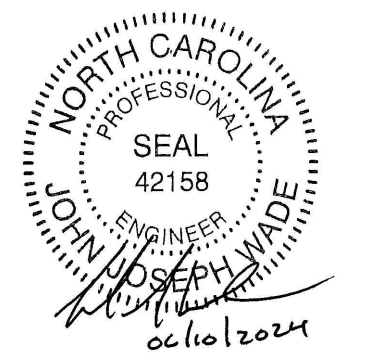
PROJECT:

DOWNTOWN WATERFRONT
IMPROVEMENTS
SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:

SPECIFICATIONS
SHEET 3 OF 3



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C4

OF: 12

JOB NO.

23001

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

SECTION 06130
TIMBER CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: Fabrication and installation of fixed timber piers.

1.2 SUBMITTALS:

1.2.1 Shop Drawings: Contractor shall submit shop drawings for approval. Shop drawings shall cover metal fabrications for timber connections. Shop drawings shall be approved before fabrication is begun. Shop drawings shall show materials, construction details, and other pertinent data.

1.3 DELIVERY AND STORAGE:

Store timber on the site in piles. Open stack untreated material on suitable skids at least 12 inches above the ground, and pile to shed water and prevent warping. Close stack treated material in a manner that will prevent long timbers or preframed materials from sagging or becoming crooked. Clear ground beneath and in the vicinity of all such piles of weeds, rubbish and combustible materials. Where required, all materials shall be protected from the weather by suitable covering. Handle treated timber carefully without sudden dropping, breaking of outer fibers, bruising or penetrating the surface with tools. Handle timbers with rope or chain slings. No cant dogs, peaveys, hooks or pike poles shall be used. Hardware received at the site shall be protected from corrosion by storing and covering.

PART 2 - PRODUCTS

2.1 WOOD:

2.1.1 Timbers: All timber in the fixed pier shall be stress rated Southern Pine No. 1 stress rated. Timber shall be identified by the grade mark of a recognized association or independent inspection agency using the specific grading requirements of the association recognized as covering the species used. Such association or independent inspection agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Fabrication of timbers shall be complete as possible before preservative treatment. All dock and bulkhead timbers shall be treated with ACQ in accordance with AWPA use rating for timber subject to saltwater splash. Preservative retention for all members shall be 0.60 pounds per cubic foot. All dock timbers shall be rough cut lumber with the nominal dimensions indicated on the plans. Lumber for bulkhead construction shall be S4S. No wane in timber water timbers will be allowed. Timbers delivered to site with wane shall be removed from the site.

2.1.2 Plant Inspection: Timbers bearing the AWPA Brand in accordance with AWPA M6 will be acceptable for the preservative treatment of timbers; however, the Owner reserves the right to perform plant inspection of the treatment process, at its discretion.

Timber Construction 06310-1 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.2 METAL PRODUCTS

2.2.1 Hardware: Hardware shall include bolts with the necessary nuts and washers, timber bolts conforming to ASTM A307. Washers shall be circular or square flat smooth and shall conform to ANSI B18.22.1. Bolts shall be provided with washers, between board and nut for all bolted connections. Heads of timber bolts shall be installed in direct contact with wood surface.

2.2.2 Steel and Iron: Use standard mill finished structural steel shapes and plates in accordance with AISC specifications. All hardware shall conform to ASTM A307.

2.2.3 Zinc Coating: All steel and hardware shall be zinc coated or galvanized by the hot-dip process in accordance with requirements of ASTM A123 and/or A153, as applicable after fabrication.

2.3 FABRICATION:

2.3.1 Unless otherwise indicated on the Drawings or the approved shop drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of each section.

2.3.2 Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush. Holes shall be drilled and not burned.

2.3.3 After fabrication is complete and prior to coating, properly clean metal surfaces.

2.3.4 All welding shall conform to AWS D1.1.

PART 3 - EXECUTION

3.1 FRAMING: Accurately cut and frame all timber in such a manner that the joints will have a close fit of the entire contact surfaces. Secure timbers and piles in their proper alignment. Bore holes for bolts with a bit 1/16 inch larger than the bolt diameter. Counter boring or countersinking shall only be allowed for installation of handrail posts at davit gate.

3.2 FASTENING: Washers of the size and type specified shall be used under all bolt heads and nuts which would otherwise come in contact with wood. Check all bolts by burring the threads after the nuts have been finally tightened. Vertical bolts shall have the nuts on the lower end. In all cases where bolts as used to fasten timber to timber, timber to concrete or timber to steel, bolt members tightly together when they are installed and retighten immediately prior to final acceptance of the work. All bolts shall have sufficient additional threading to provide at least 3/8 inch per foot thickness of timber for future tightening.

Timber Construction 06310-2 April 26, 2024

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

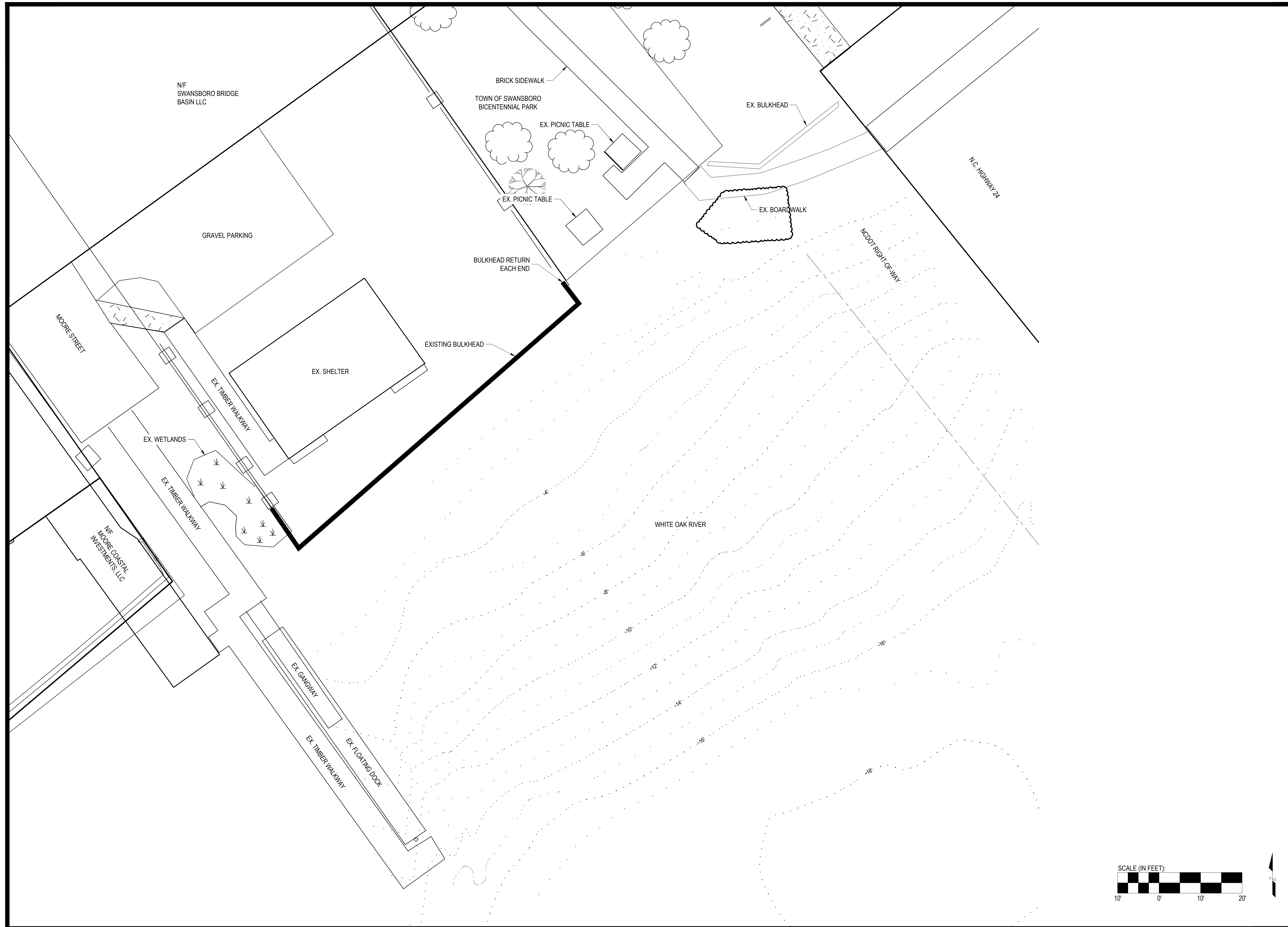
3.3 FIELD TREATMENT:

3.3.1 Timber Work: Field treat all cuts in treated timbers or pies and all abrasions in accordance with AWPA M4. Trim all cuts and abrasions before field treatment. Paint all depressions or openings including bolt holes, joints or daps, including recesses with preservative treatment solution. Exposed ends of timber piles shall be field treated two times after cutoff and milling is completed.

3.3.2 Galvanized Surfaces: Zinc coating which has been damaged to the extent that base metal is exposed, shall be repaired and recoated. Thoroughly clean the damaged area by wire brushing and remove all traces of welding flux and loose or cracked zinc coating prior to painting. Paint cleaned surfaces with two coats of Zinc-oxide Zinc dust paint, ZRC cold galvanizing compounds or approved equal. In addition to damaged areas, all exposed threaded surfaces shall be painted with two coats of zinc oxide zinc dust paint after installation of the nut.

END OF SECTION

Timber Construction 06310-3 April 26, 2024



THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: 1" = 10'
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

www.arendellengineers.com
 North Carolina Certification No. C-1509

OWNER:
 TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

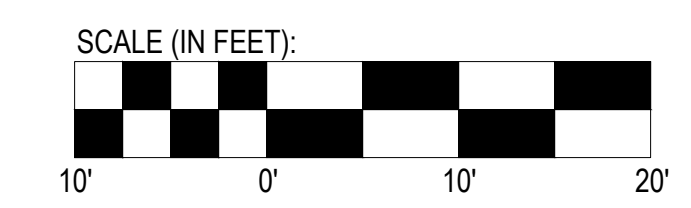
ONslow COUNTY, NC

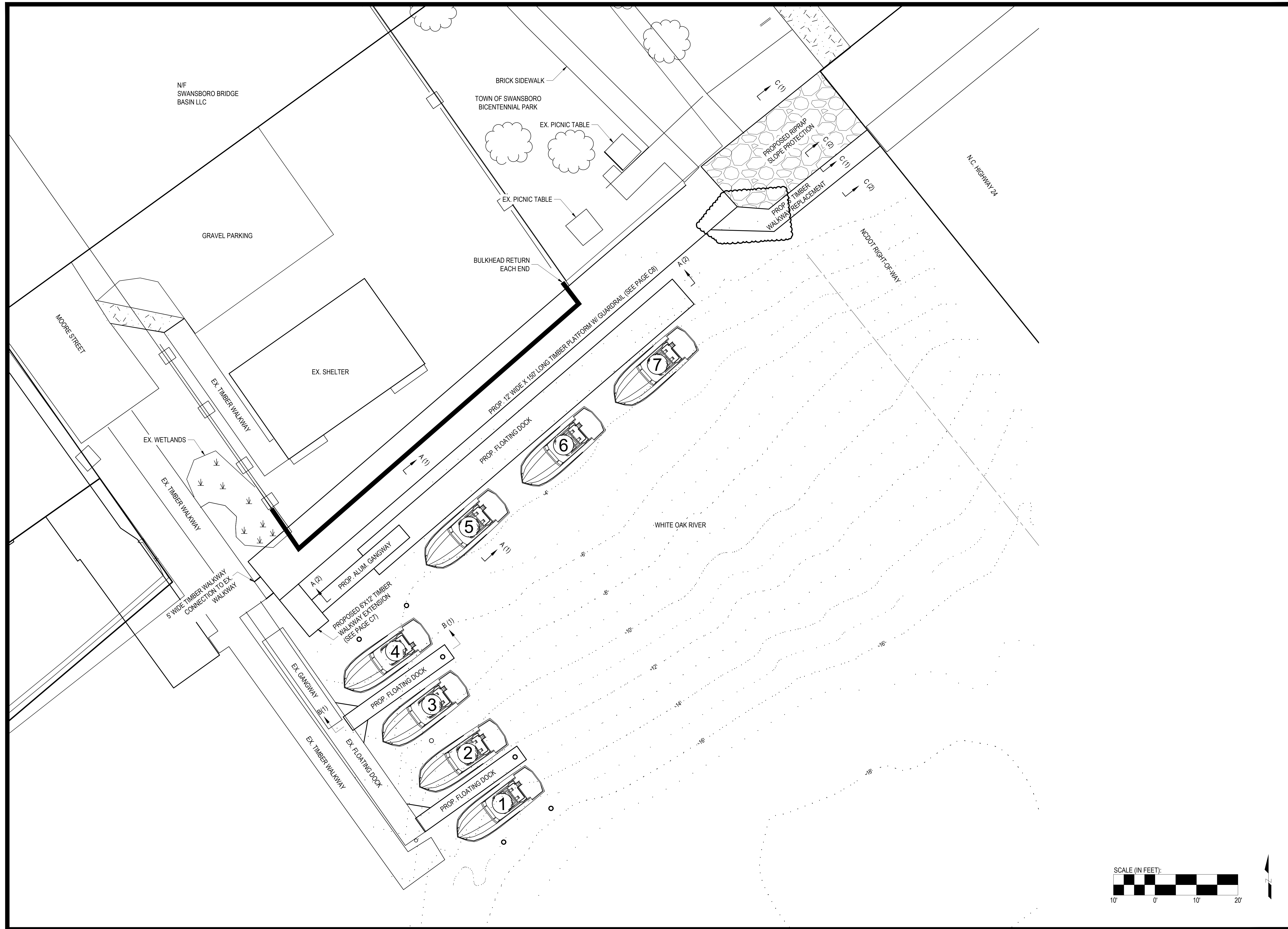
DRAWING:
 EXISTING CONDITIONS



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:
C5
 OF: 12
 JOB NO. 23001





THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: 1" = 10'
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

www.arendellengineers.com
 North Carolina Certification No. C-1509

OWNER:
 TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

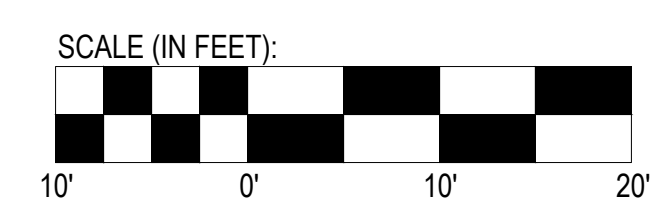
PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA
 ONSLOW COUNTY, NC

DRAWING:
 SITE PLAN



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:
C6
 OF: 12
 JOB NO. 23001



THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: 1" = 10'
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

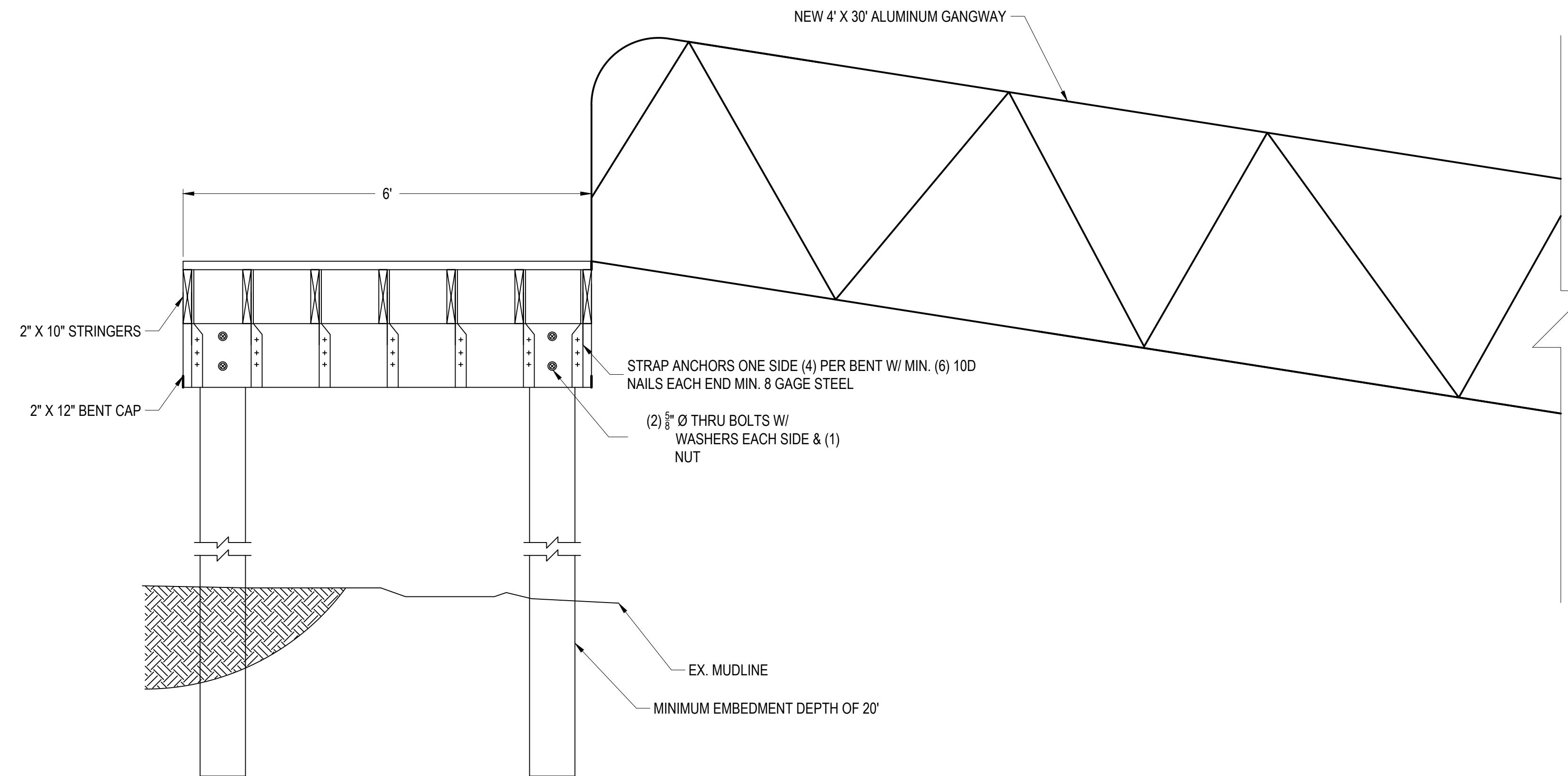
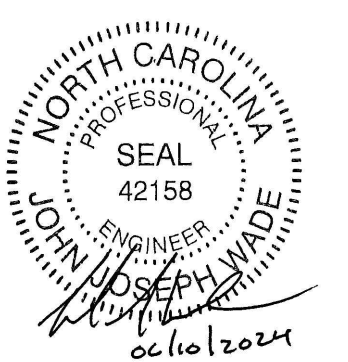
www.arendellengineers.com
 North Carolina Certification No. C-1509
 OWNER:

TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

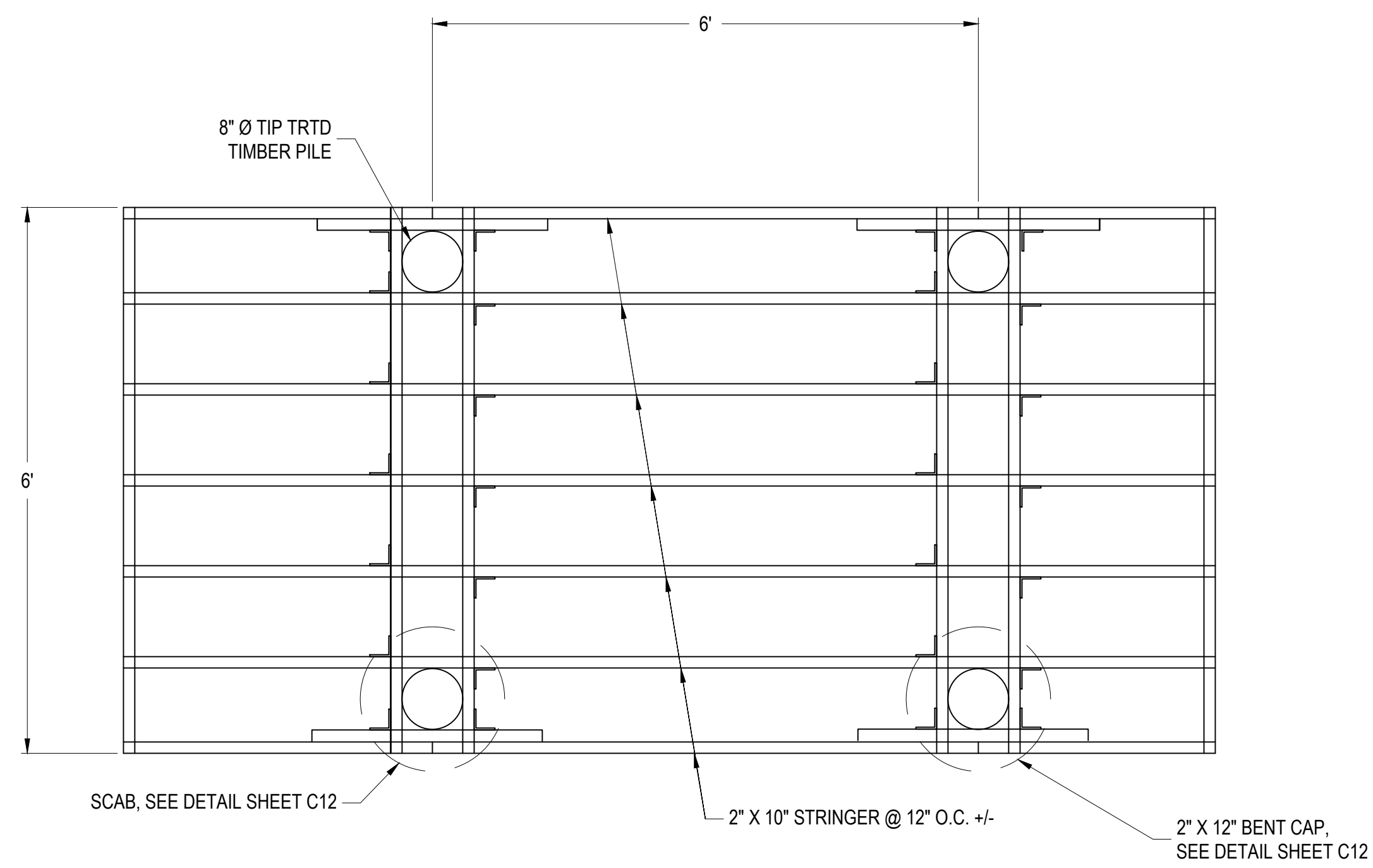
ONSLOW COUNTY, NC

DRAWING:
 WALKWAY FRAMING
 AND DECKING PLAN



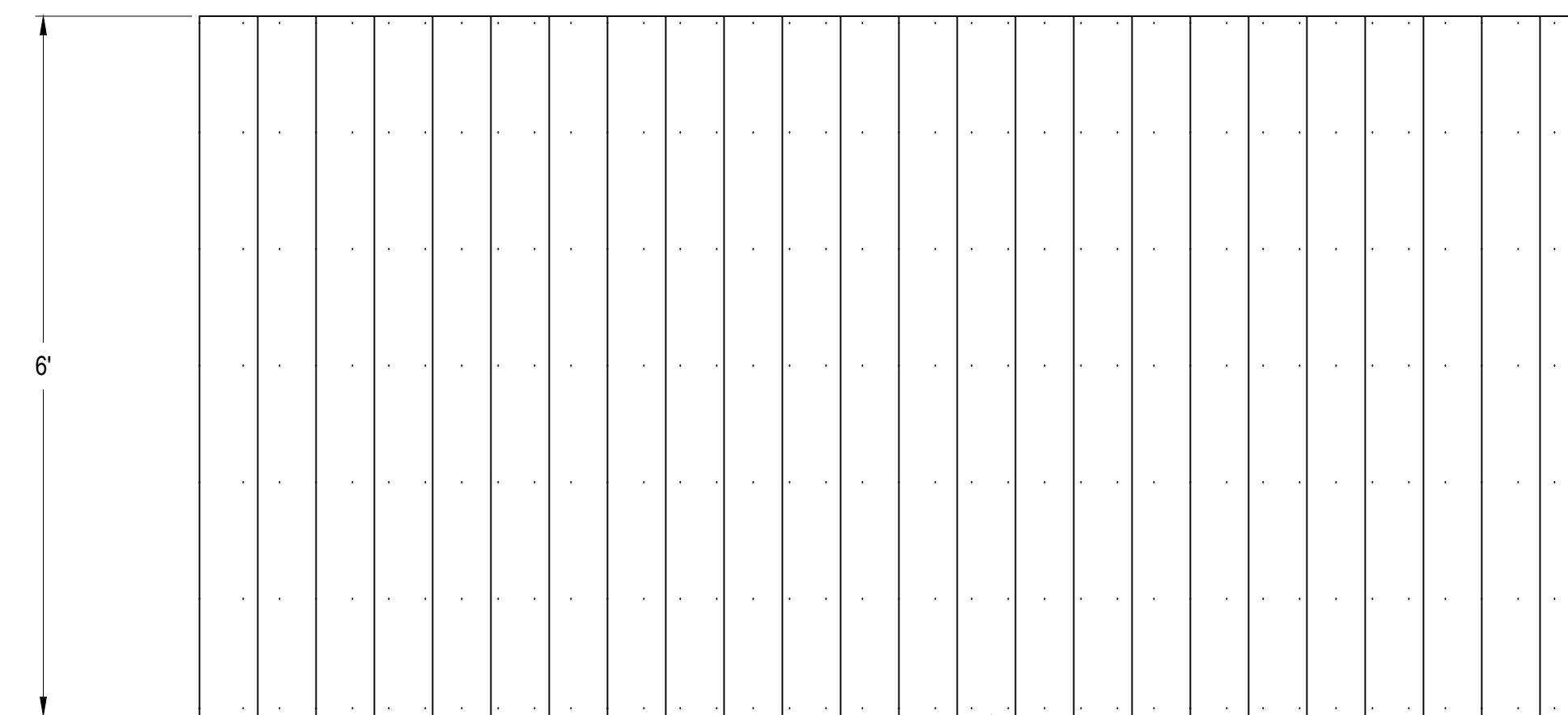
PROPOSED WALKWAY EXTENSION SECTION

SCALE: 3/4" = 1'



WALKWAY FRAMING PLAN, TYPICAL

SCALE: 3/4" = 1'



WALKWAY DECKING PLAN, TYPICAL

SCALE: 3/4" = 1'

| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C7

OF: 12
 JOB NO. 23001

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: 1" = 10'
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

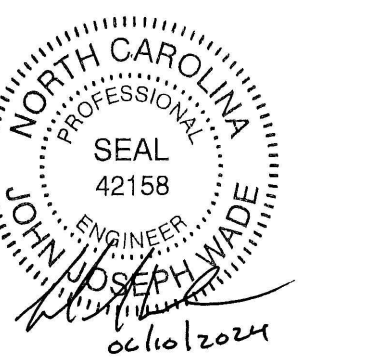
www.arendellengineers.com
 North Carolina Certification No. C-1509
 OWNER:

TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:
 PLATFORM FRAMING
 AND DECKING PLAN

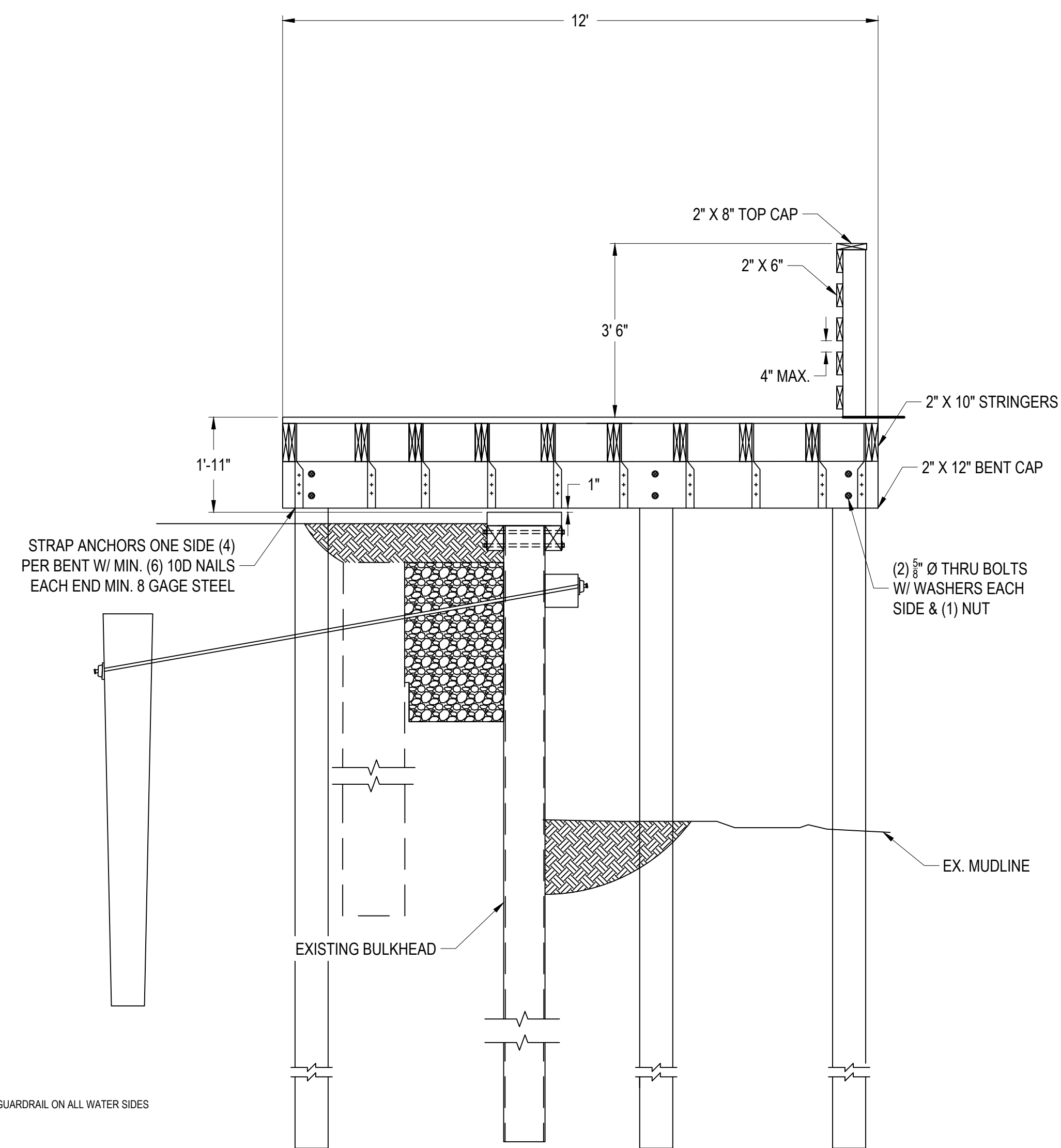


| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

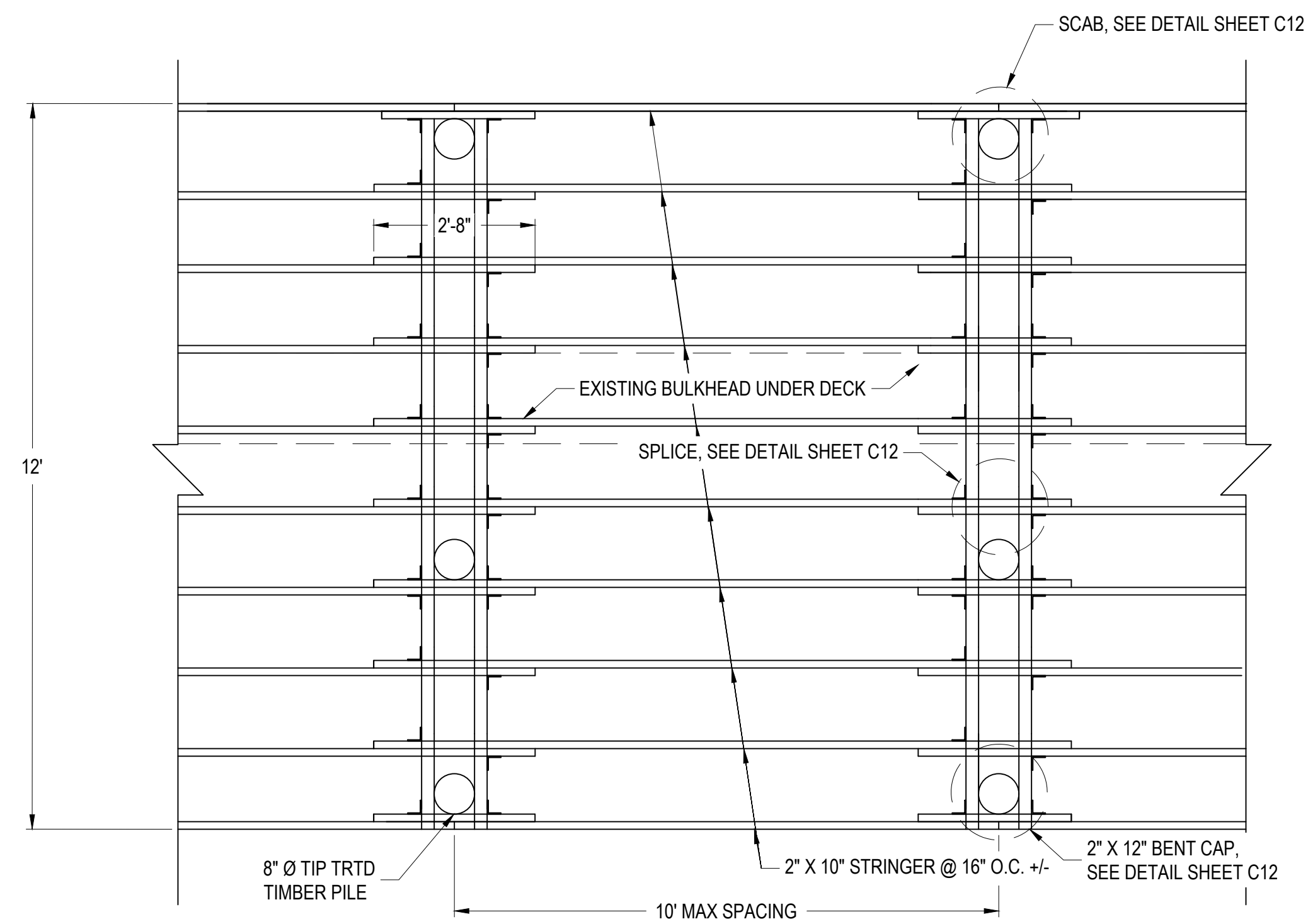
C8

OF: 12
 JOB NO. 23001

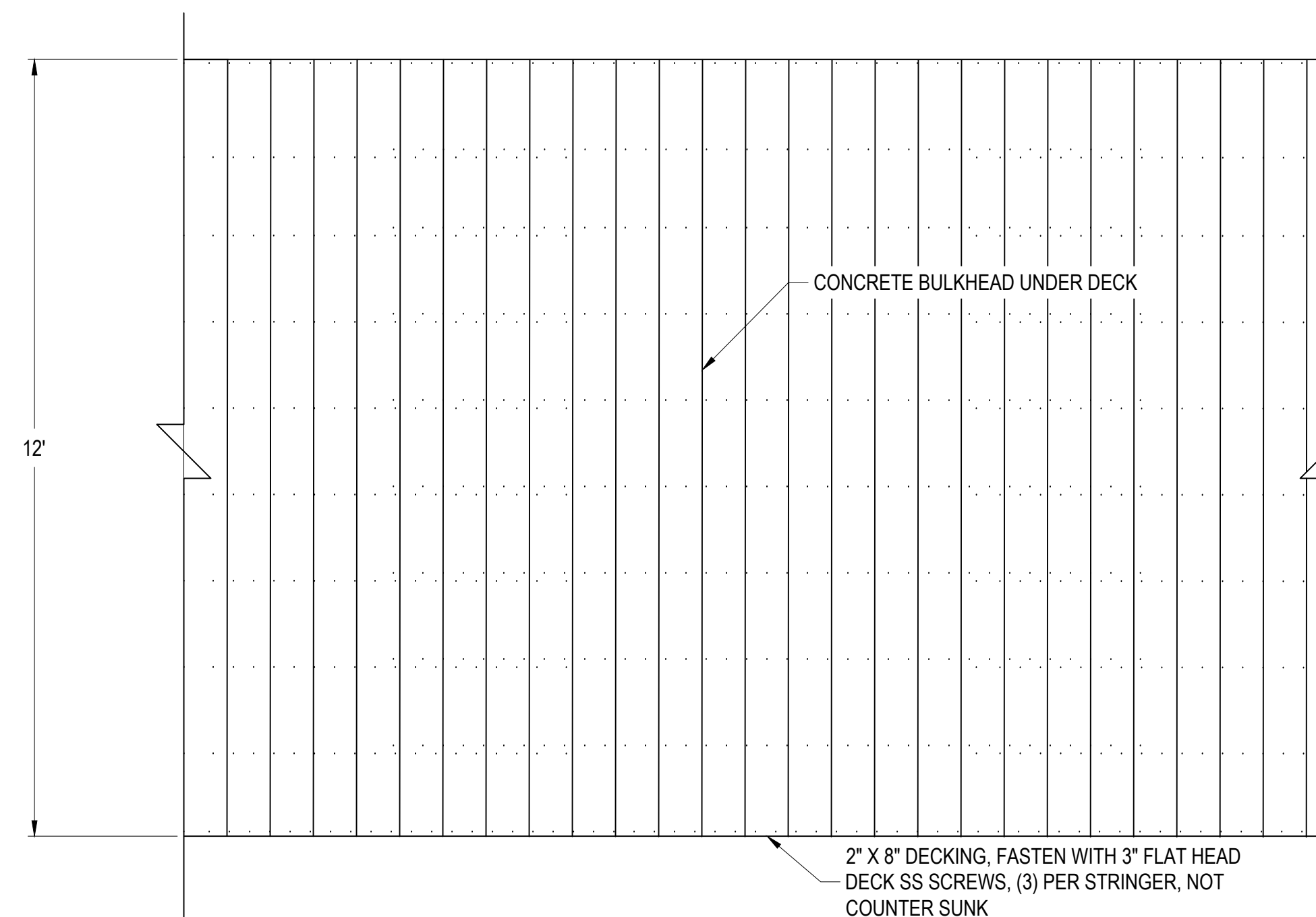


PROPOSED PLATFORM SECTION
 SCALE: 1/2" = 1'

NOTE: GUARDRAIL TO MATCH PLATFORM GUARDRAIL ON ALL WATER SIDES



PLATFORM FRAMING PLAN, TYPICAL
 SCALE: 1/2" = 1'



PLATFORM DECKING PLAN, TYPICAL
 SCALE: 1/2" = 1'

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JYW
 DESIGNED: JYW
 DRAWN BY: JST
 CHECKED: JYW
 SCALE: AS SHOWN
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

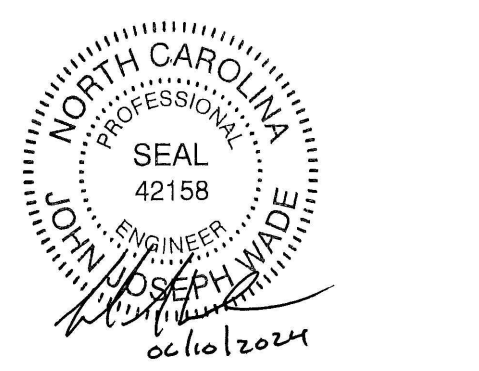
www.arendellengineers.com
 North Carolina Certification No. C-1509
 OWNER:

TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:
 DOCK "A" FRAMING
 PLAN & SECTIONS

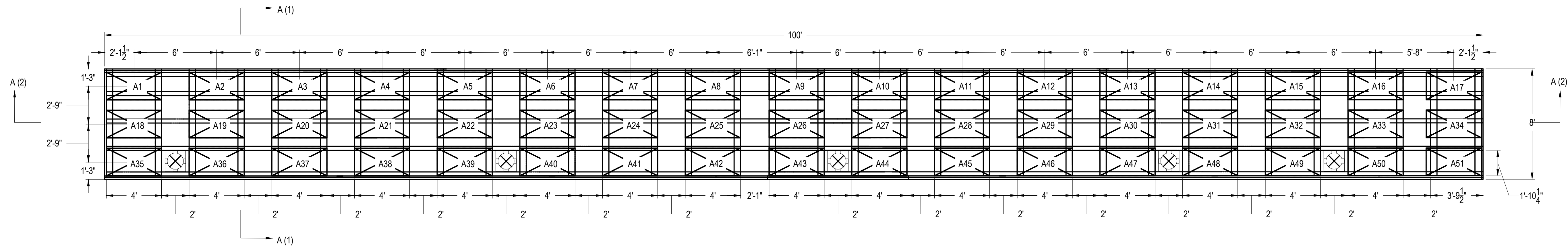


| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

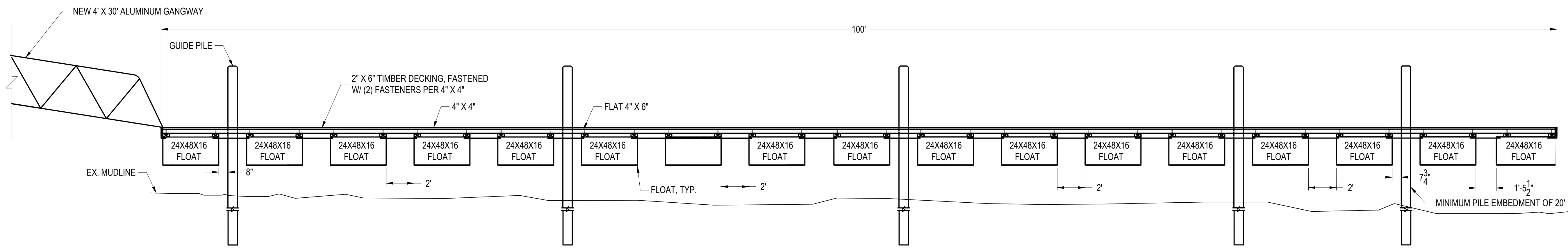
C9

OF: 12
 JOB NO. 23001



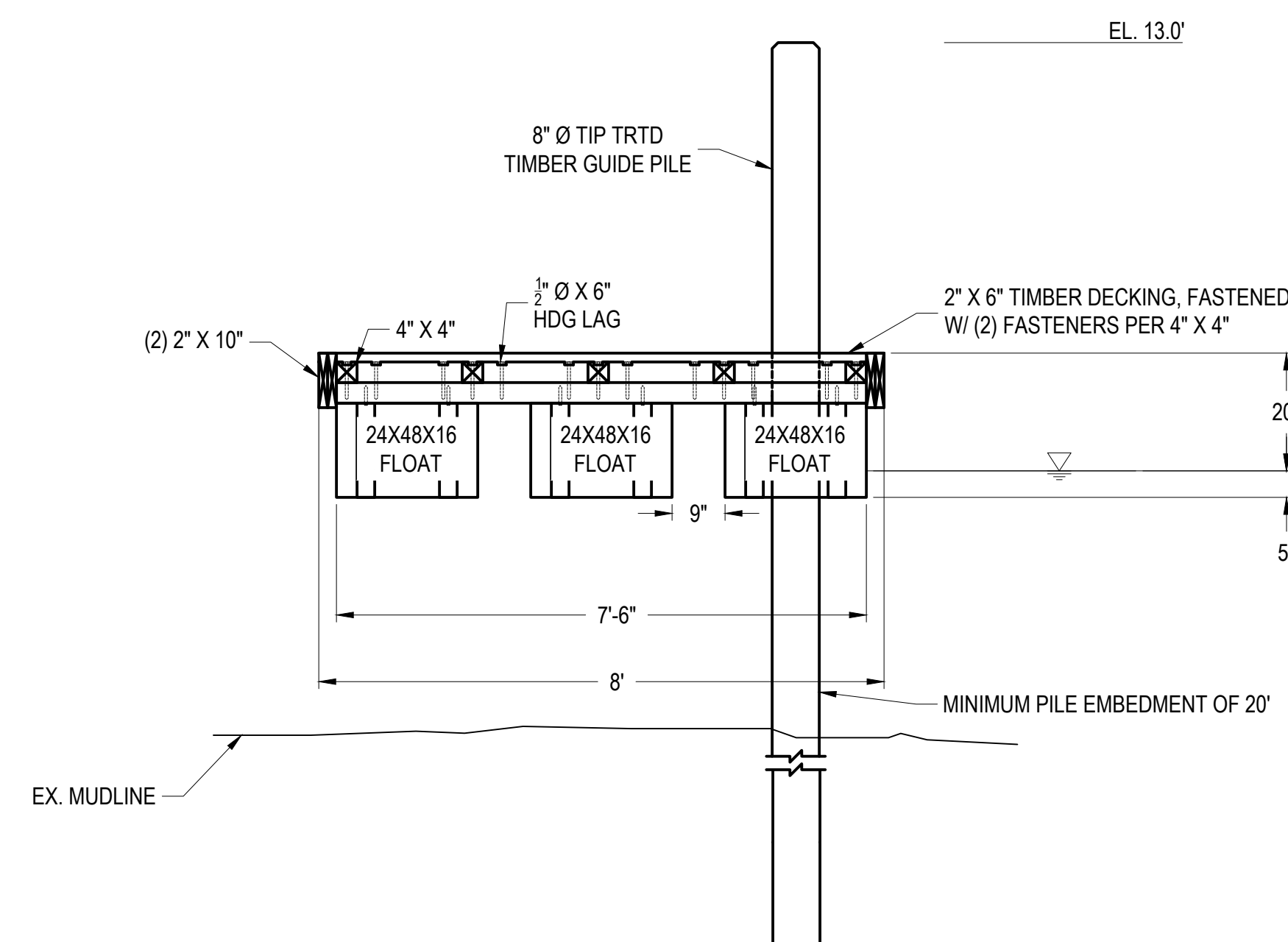
FLOATING DOCK "A" FRAMING PLAN

SCALE: 3/4" = 1'



SECTION A-A (2)

SCALE: 1/4" = 1'



SECTION A-A (1)

SCALE: 1/2" = 1'

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: AS SHOWN
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

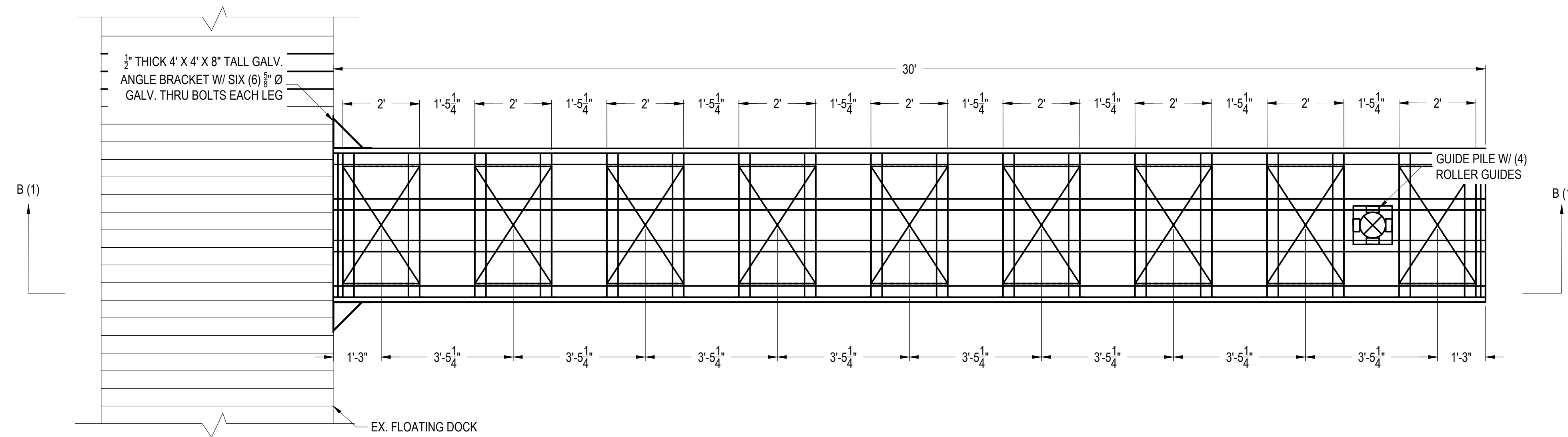
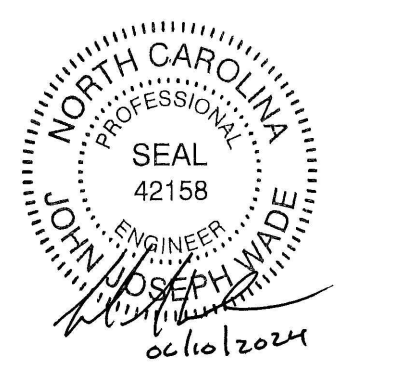
www.arendellengineers.com
 North Carolina Certification No. C-1509

OWNER:
 TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

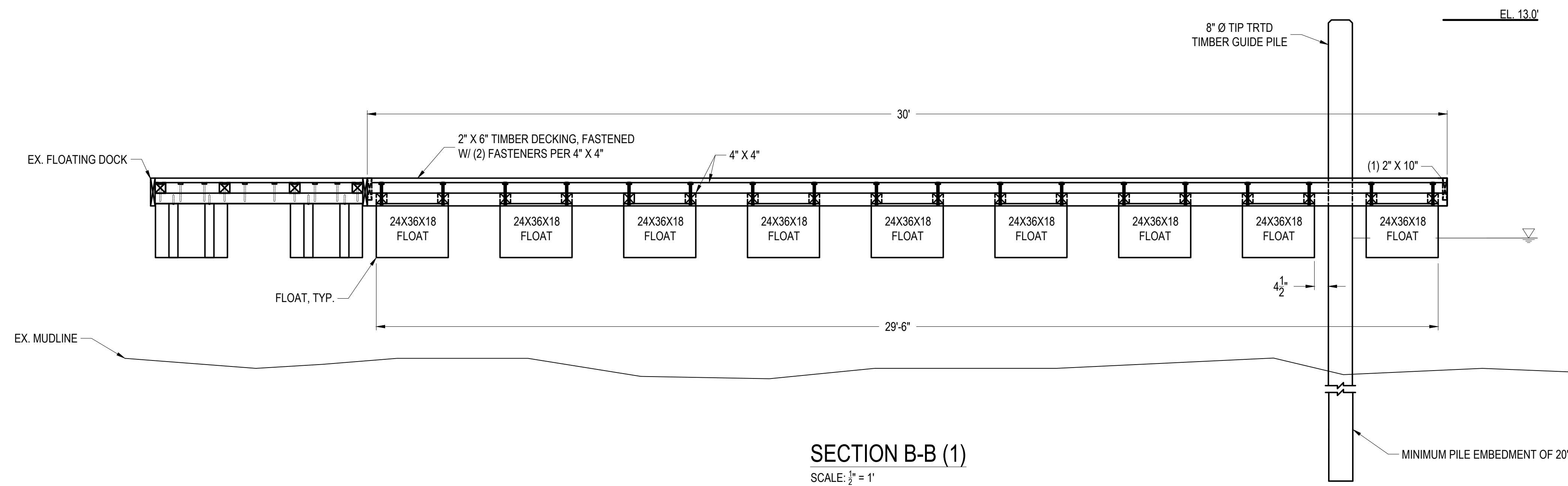
PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

ON SLOW COUNTY, NC

DRAWING:
 DOCK "B" FRAMING
 AND PLAN & SECTIONS



FLOATING DOCK "B" FRAMING PLAN
 SCALE: 1/2" = 1'



SECTION B-B (1)
 SCALE: 1/2" = 1'

| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C10

OF: 12
 JOB NO. 23001

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: AS SHOWN
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

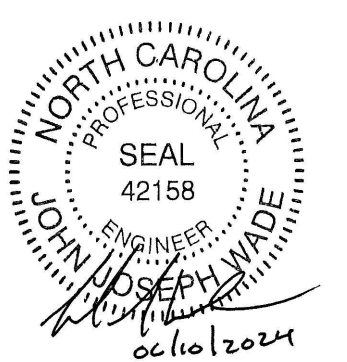
www.arendellengineers.com
 North Carolina Certification No. C-1509
 OWNER:

TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

ONSLOW COUNTY, NC

DRAWING:
 PROPOSED RIP-RAP
 AREA DEMO AND
 CONSTRUCTION

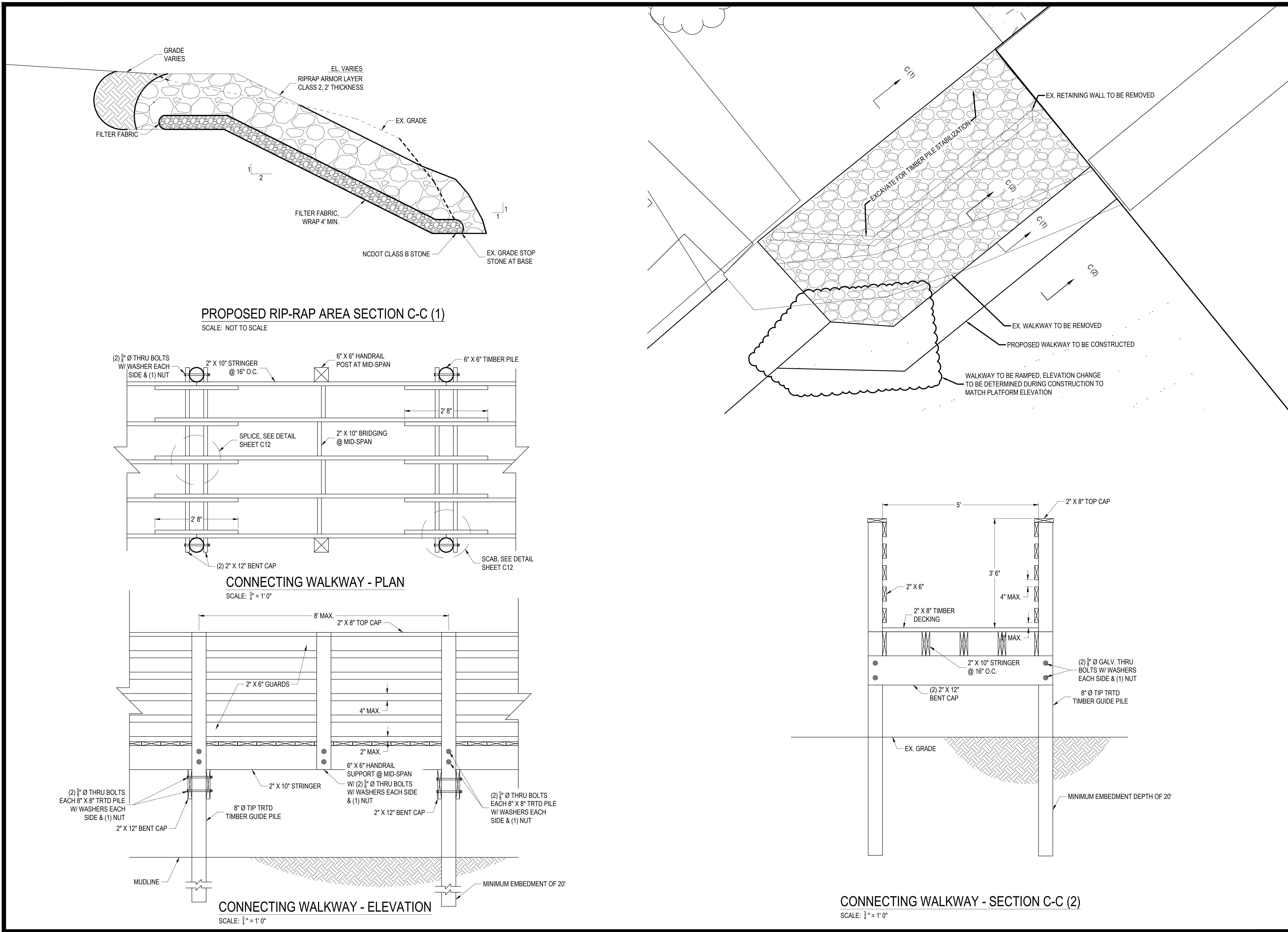


| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:

C11

OF: 12
 JOB NO. 23001



23001

THIS DRAWING IS THE PROPERTY OF ARENDELL ENGINEERS AND IS NOT TO BE REPRODUCED OR USED FOR ANY PROJECT IN WHOLE OR IN PART WITHOUT EXPRESS WRITTEN PERMISSION.

PROJECT MANAGER: JJW
 DESIGNED: JJW
 DRAWN BY: JST
 CHECKED: JJW
 SCALE: AS SHOWN
 DATE: 06/10/2024



1004 Arendell Street
 Morehead City, NC 28557
 (252) 622-4338
 Fax: (252) 622-4505

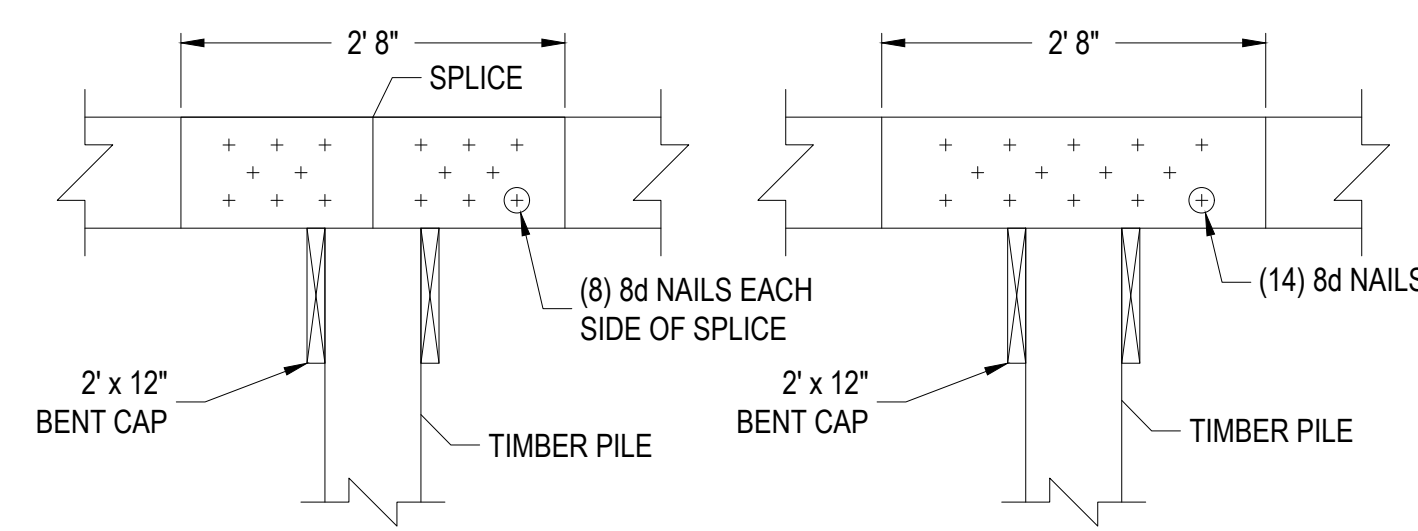
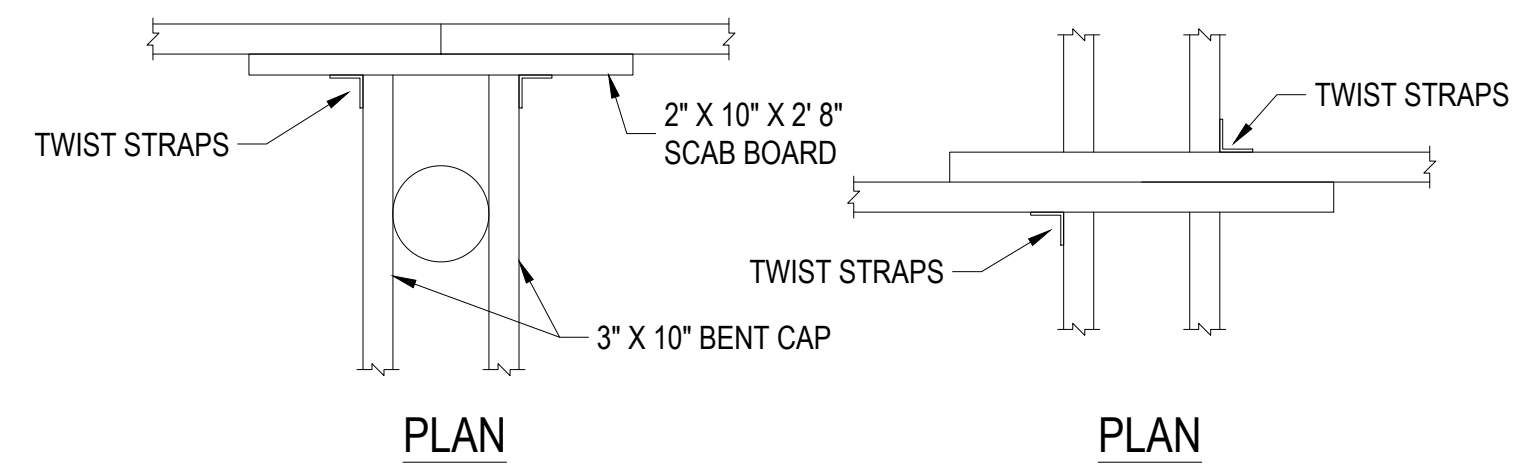
www.arendellengineers.com
 North Carolina Certification No. C-1509

OWNER:
 TOWN OF SWANSBORO
 601 W. CORBETTE AVENUE
 SWANSBORO, NC 28584

PROJECT:
 DOWNTOWN WATERFRONT
 IMPROVEMENTS
 SWANSBORO, NORTH CAROLINA

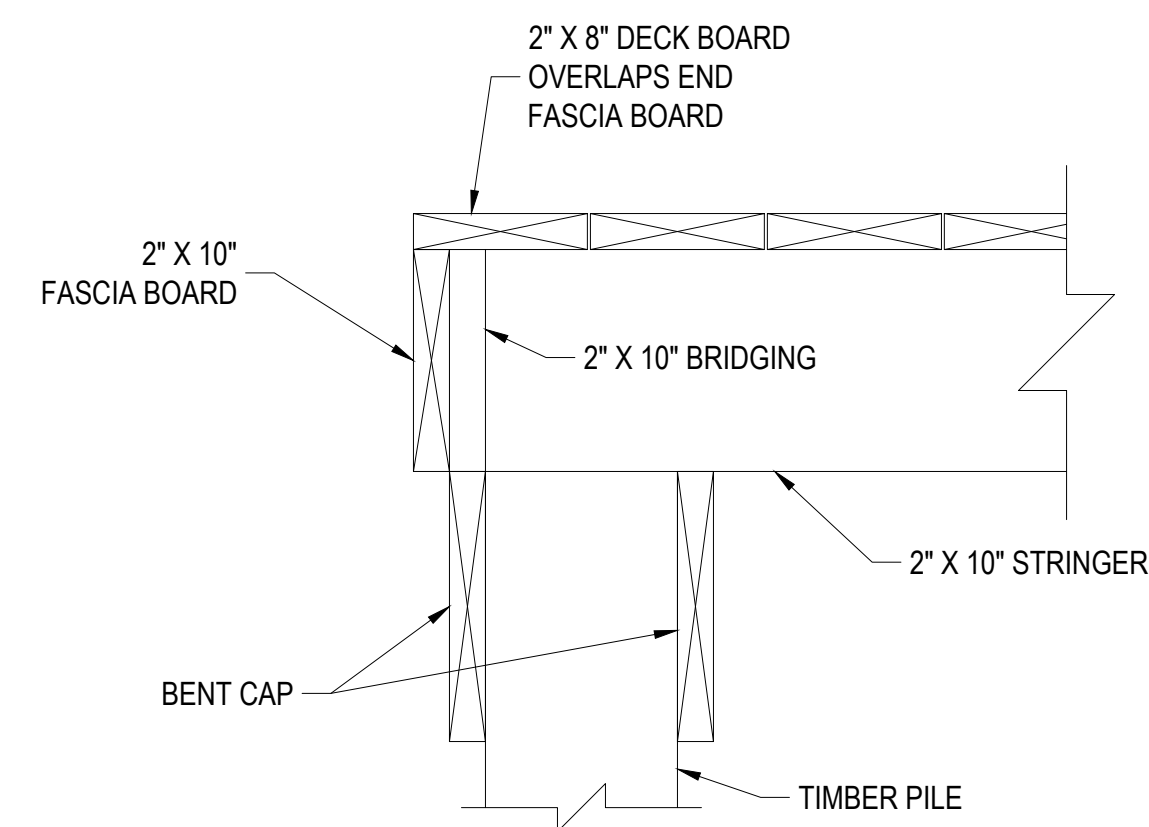
ONSLOW COUNTY, NC

DRAWING:
 DETAILS

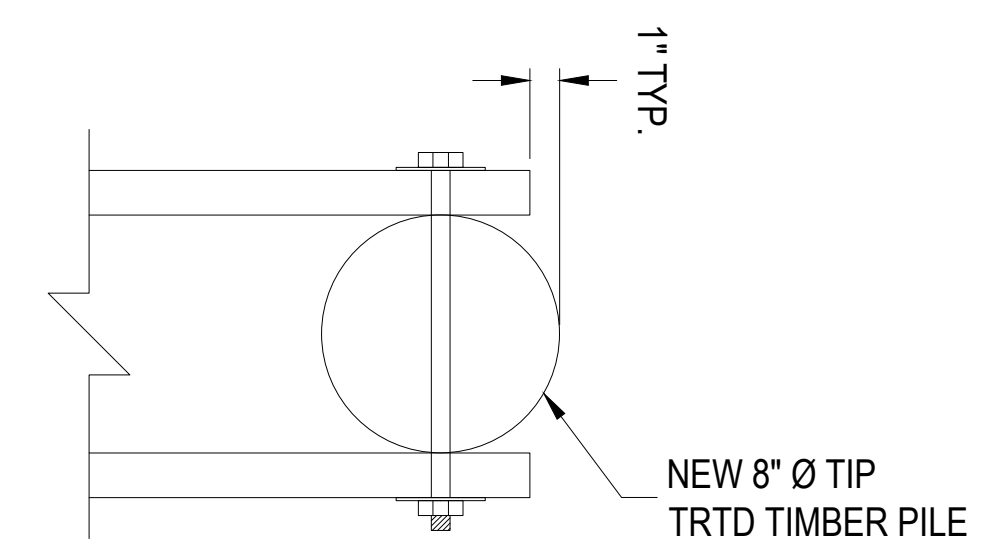


SCAB DETAILS
 SCALE: 3/4" = 1' 0"

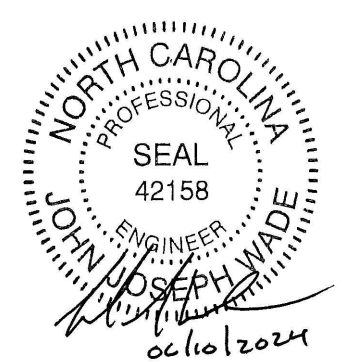
SPLICE DETAILS
 SCALE: 3/4" = 1' 0"



PIER END DETAIL
 SCALE: 1 1/2" = 1' 0"



PILE CAP END
 SCALE: NOT TO SCALE



| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

SHEET NO:
C12
 OF: 12
 JOB NO. 23001

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 GENERAL: Contractor is not relieved from requirements to comply with regulations, applicable permits, laws, codes, ordinances and regulations not identified in this section. It is the responsibility of the Contractor to comply with all applicable state, federal or local regulations including terms and conditions of permits issued for the work.

1.2 REFERENCES:

A. Owner Procured (attached to this specification):

1. State of North Carolina, Division of Coastal Management, Major CAMA Permit No. Permit No. 112-05, dated December 14, 2022.

B. Contractor Procured (at his expense):

1. Current business license
2. Building Permits, Town of Swansboro, Onslow County.
3. Current contractor's license for operations in the State of North Carolina
4. Permit for hauling and disposal of debris and waste
5. Permit to exceed load limits on certain bridges if they are on haul routes and have low load limits
6. Mining Permits for sand borrow pits

1.3 SUBMITTALS: Contractor shall provide reports, documents, plans and fees as required for obtaining all contractor procured permits at no additional cost to the Owner.

1.4 QUALITY ASSURANCE: Contractor shall conduct inspections of construction operations to insure compliance and report all violations to the Engineer.

1.5 SITE CONDITIONS:

A. Contractor shall practice and be fully responsible for good housekeeping activities and procedures to prevent oil spills, hazardous waste contamination and spills, unauthorized environmental pollution and safety violations.

B. There are no restroom facilities available to the Contractor on the site. Contractor shall make arrangements for restroom facilities for employees at no additional costs to the Owner. Disposal of waste from portable restroom facilities shall be in accordance with applicable local, state and federal regulations.

C. Contractor shall assure reasonable access to the site for Owner's Site Representative, Engineer, and regulatory agency personnel.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

1.6 SEQUENCING AND SCHEDULING:

- A. Contractor shall provide ample notification to regulatory agencies for scheduled construction activities and inspections, if a regulatory inspector is required for observation.
- B. Contractor shall conduct operations in accordance with the sequence of operations indicated in the Contract Documents and as required by the permit conditions. Deviations from the sequence of construction shall be reported to the Engineer.

1.7 COMPLIANCE WITH APPLICABLE PERMITS: Terms and conditions of the applicable permits and regulations listed in 1.2 A of the Section are incorporated into these Contract Documents by reference. Contractor is responsible for adherence to terms and conditions of permits.

END OF SECTION

SECTION 01100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 Work Covered by Contract Documents

Work includes the provision of labor, materials, equipment, and services required to complete construction of the Downtown Waterfront Improvements, Town of Swansboro, Swansboro, North Carolina.

1.2 Type of Work

Work consists of the following:

- Construction of a 12' wide and 150' long timber walkway and a 5' timber walkway replacement.
- Removal of existing timber retaining wall and installation of riprap slope protection. Contractor will coordinate with NCDOT for riprap delivery.
- Construction of a 6' x 12' walkway extension.
- Installation of a 8' x 100' floating dock accessed by a 4' x 30' aluminum gangway.
- Installation of two (2) 4' x 30' floating docks secured to the existing floating dock.
- Installation of six (6) tie piles.

1.3 Owner's Site Representative

- A. Contractors shall cooperate with Owner's Site Representative to minimize conflict, and to facilitate Owner's operations.
- B. Contractor will provide all safety fencing, signage, barricades and other measures required to ensure protection to public.

END OF SECTION

SECTION 01300

SCHEDULES AND SUBMITTALS

PART 1 GENERAL

1.1 SUBMITTALS

1.1.1 Furnish for approval two (2) prints of shop drawings and submittals as called for in the Contract Documents. The Contractor shall check shop drawings prior to submittal, and where items must conform to existing work, he will verify dimensions on the job site. He shall indicate on each copy that he has checked the submittal and has found it to be in proper form and attach his signature. Shop drawings not previously checked by the Contractor will be returned unprocessed.

1.1.2 The Contractor shall consider delivery schedules when ordering materials. Delay in shipment shall not be considered grounds for an extension in the Contract Time. The Engineer will consider availability an important consideration in approving materials and reserves the right to withhold such approval when delivery is questionable.

1.1.3 Furnish one copy of Contractor obtained permits. Contractor shall supply one (1) copy of application documents to the Engineer at the time the permits are applied for.

1.1.4 Operations and Maintenance Manual: Contractor shall compile all operations and maintenance instructions, manuals and information on all project components as well as the warranty and guarantee information required into a single document to be titled "Operations and Maintenance Manual" (O&M). Contractor shall provide three (3) copies of the O&M manual to the Engineer and Owner for approval. Final Payment will not be approved until the O&M manual is submitted and approved by the Owner and Engineer.

END OF SECTION

SECTION 02300

PILE DRIVING

PART 1 - GENERAL

1.1 **WORK INCLUDED:** Install all steel pipe piles and timber piles as indicated on the drawings by driving and/or jetting

1.2 **RELATED WORK:** Section 02365 Marine Timber Piles for Dock Construction

1.3 **PILE DRIVING RECORDS:** Keep a detailed record for installation of each pile. Record pile length before installation, pile location including the dock, bent number and if pile is left or right at bent, installation method and blow count over last 4 feet of installation, final elevation of pile prior to cutoff, and any special conditions over the length of the pile penetration. Submit 2 copies of these records to the Owner & Engineer at the end of construction.

PART 2 - MATERIALS

2.1 **ROUND TIMBER PILES (SOFTWOOD):** Softwood timber piles for the fixed timber docks and shall be as specified in Section 02365 "Marine Timber Piles for Dock Construction". Lengths and sizes shall be as shown on the drawings.

3.1 PILE INSTALLATION:

3.1.1 **Bearing Piles:** Fixed timber pier piles shall be driven to the tip elevation shown on the drawings.

3.1.2 **Protection of Piles:** Take care to avoid damage to the piles during handling, placing the pile in the leads, and during the pile driving operations. Laterally support piles during driving, but do not unduly restrain from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving. Square the top of the pile to the longitudinal axis of the pile.

3.1.3 **Jetting or Preaugering of Timber Piles:** Preaugering or jetting of timber piles will be allowed but shall be discontinued when the pile is at a depth of 4 feet above the required penetration. Use preaugering above mean low water. Last 4 feet of pile penetration shall be obtained by driving.

3.1.4 **Tolerances in Piles:** Piles shall be driven with a variation of not more than 2 percent from the vertical. Check axial alignment of pile and leaders at start of pile driving and when the pile top is approximately 5 feet above cutoff elevation. Make intermediate checks of pile alignment if there is evidence of pile drifting. If subsurface conditions cause pile drifting beyond the allowable axial alignment tolerance, notify the Owner and Engineer and perform corrective measures as directed. Place butts within 4 inches of the location indicated. Manipulation of piles within specified tolerances is permitted, but do not manipulate piles more than 1-1/2 percent of their exposed length above the ground surface or mudline. Check all piles for heave. Piles found to be heaved shall be removed and redriven to the indicated tip elevation.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.1.5 Splices: Splicing of piles is not permitted for timber or steel pilings.

3.1.6 Pile Cut Offs:

3.1.6.1 Timber Piles: Cut off piles with a smooth level cut using pneumatic tools, sawing, or other suitable methods approved by the Owner or Engineer.

3.1.6.2 Steel Pipe Piles: Cur off an cap piles in accordance with Section 02368 Steel Pipe Piles.

3.1.7 Special Pile Driving Condition: Alternate pile driving techniques such as spudding or steel shoes on piles may be required due to the soil conditions at the site.

END OF SECTION

SECTION 02365

MARINE TIMBER PILES FOR DOCK CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: Furnish timber piles for fixed timber pier construction and timber tie piles as indicated.

1.2 RELATED WORK: Section 02300 Pile Driving
 Section 06130 Timber Construction

1.3 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.3.1 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) PUBLICATIONS:

 D25 Round Timber Piles

1.3.2 AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARDS:

 C18 Standard for Softwood Pressure Treated Material in marine
 Construction, Piles.

 M4 Standard for Care of Preservative Treated Wood Products

1.4 SUBMITTALS: Submit 2 copies of the certificates of compliance to the Government for timber piles and preservative treatment.

PART 2 - MATERIALS

2.1 PILES: Provide new Douglas Fir or Southern Pine friction cleaned peeled piles conforming to ASTM D25. Minimum butt or tip circumferences and length as indicated. Furnish length and number of piles as indicated on the drawings. Piles must be one piece. Splices will not be permitted.

PART 3 - EXECUTION

3.1 INSPECTION: Inspect timber piles for straightness, length and soundness of preservative treatment. Bent, damaged or substandard application of preservative materials shall be cause for rejection of a pile. Rejected pile shall be removed from the project site upon rejection.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.2 PRESERVATIVE TREATMENT:

a. Treat all piles with preservative treatment conforming to AWPA C18. Preservative shall be chromated copper arsenate (CCA) to a minimum retention of 2.5 pounds per cubic foot.

b. Treatment of Field Cuts: Field cuts and holes shall be treated in accordance with AWPA M-4 with the exception the galvanized sheet metal or aluminum caps are not required. Pile cutoffs shall be treated with preservative only. Pile cutoffs of dock piles shall be treated three times after edge routing and cutoffs are completed. Longer piles may be cut for use as long as cuts are treated as required by the specification.

3.3 PILE DRIVING: Piles shall be driven in accordance with Section 02300, Pile Driving,

END OF SECTION

SECTION 02485

SEEDING & MULCHING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK: The work includes seedbed preparation, seeding, mulching and irrigation for temporary stabilization, permanent stabilization and temporary grassed swale lining and stabilization where indicated on the plans of all newly graded finished earth surfaces, and all areas inside or outside the limits of construction that are disturbed by the Contractor

1.2 SUBMITTALS:

1.3.1 Certificates of Compliance:

- a. Seed
- b. Fertilizer
- c. Topsoil
- d. Lime
- e. Mulch

1.3 DELIVERY

1.3.1 Fertilizer and Lime: Deliver materials to the site in original unopened containers bearing the manufacturers chemical analysis, name, trade name, trademark and indication of conformance to state and federal laws. In lieu of containers, furnish fertilizer and lime in bulk with a certificate indicating the above information accompanying each delivery.

1.3.2 Seed: Deliver seed to the site in original sealed packages bearing the products guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material. Label in accordance with USDA Federal Seed Act and applicable state seed laws. Weeds, moldy, or otherwise damaged seed will be rejected.

1.4 STORAGE AND HANDLING: Store lime, fertilizer and seed in dry locations away from contaminants. Protect seed from drying out. Do not drop or dump materials from vehicles.

PART 2 - PRODUCTS

2.1 SEED: State certified seed of the latest season's crop in conformance with NCDOT specifications, Section 1060-3. Variety of seed shall be as indicated.

2.2 Topsoil: Natural friable soil representative of productive well-drained soils in the project area; free of subsoil, stumps, rocks larger than 1 inch diameter, brush, weeds, toxic substances and other material detrimental to plant growth.

2.3 Lime: Commercial agricultural limestone in accordance with NCDOT Specifications, Section 1060-2.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.4 Fertilizer: Granular fertilizer conforming to NCDOT Specifications, Section 1060-1. Granular fertilizer shall contain a minimum percentage by weight of 10 percent nitrogen, 10 percent available phosphoric acid, and 10 percent potash (10-10-10).

2.5 Mulch: Meeting NCDOT Specifications, Section 1060-4. Provide wood cellulose fiber mulch when hydroseeding.

2.6 Emulsified Asphalt: Meeting NCDOT Specifications, Section 1020-4, Grade RS-1. Use with straw mulch

2.7 Water: Fresh water suitable for irrigation free of salts, acids, oil and other substances otherwise harmful to vegetation.

2.8 Erosion Control Material: Jute matting conforming to NCDOT Specifications, Article 1060-7(B), excelsior matting conforming to NCDOT Specifications Section 1060-7(C). Wire Staples meeting NCDOT Specifications, Section 1060-7(D).

PART 3 - EXECUTION

3.1 Preparation

3.1.1 Final Grade: Immediately prior to placing topsoil, scarify the subgrade to 2 inch depth for bonding of topsoil to subsoil. Spread topsoil evenly to a minimum depth of 3 inches. Do not spread topsoil when excessively wet or frozen.

3.1.1.1 Correct irregularities in finished surfaces to eliminate depressions. Protect finished topsoil areas from damage from vehicular and pedestrian traffic.

3.1.2 Apply fertilizer, lime and asphalt tack at rates as follows:

Lime – 2 tons/ acre
10-10-10 – 1000 pounds per acre
0-20-0 – 500 pounds per acre (after seeding)
Asphalt tack – 200 gallons per ton of mulch

Soils with pH of 6 or greater should not be limed.

3.2 Seeding:

3.2.1 Seeding Conditions: Immediately before seeding, restore soil to proper grade. Do not sow seed when ground is muddy, frozen or in an unsatisfactory condition for seeding.

3.2.2 Seeding Mixture: The following mixtures of seed are permitted for the uses and seasons indicated.

| | |
|--------------------------------------|---------------|
| <u>February 1 to April 30</u> | |
| Tall Fescue | 50 lbs. / ac. |
| Pensacola Bahiagrass | 10 lbs. / ac. |
| Korean or Kobe lespedeza (scarified) | 50 lbs. / ac. |

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

May 1 to August 31

| | |
|--------------------------------------|---------------|
| Tall Fescue | 50 lbs. / ac. |
| Weeping Lovegrass | 5 lbs. / ac. |
| Korean or Kobe lespedeza (scarified) | 50 lbs. / ac. |
| Browntop Millet | 25 lbs. / ac. |

September 1 to January 31

| | |
|--|---------------|
| Tall Fescue | 60 lbs. / ac. |
| Korean or Kobe lespedeza (unscarified) | 60 lbs. / ac. |
| Rye (Grain) | 25 lbs. / ac. |

For slopes 2:2 or steeper, add 30 lbs./ ac. Sericea Lespedeza
And 15 lbs. of weeping lovegrass.

LANDSCAPE MIXTURE

January 1 to March 31

| | |
|--------------------------------|---------------|
| Common Bermudagrass (unhulled) | 20 lbs. / ac. |
|--------------------------------|---------------|

April 1 to July 31

| | |
|------------------------------|---------------|
| Common Bermudagrass (hulled) | 12 lbs. / ac. |
|------------------------------|---------------|

Hybrid bermudagrass sprigs or centipede sod may be used for landscaped areas.

3.2.3 Seeding Method: Apply seed within 24 hours of seedbed preparation. Sow seed with approved sowing equipment sowing at the rates indicated above. Sow half the seed in one direction, the remainder in a direction at right angles to the first sowing.

3.2.3.3 Broadcast Seeding and Drop Seeding: Use broadcast or drop seeders. Cover seed uniformly to a maximum depth of 1/4 inch in clayey soils, 1/2 inch in sandy soils. Cover seed by spike-tooth harrow, cultipacker or other approved devices.

3.2.4 Rolling: immediately after seeding, firm entire area, except for slopes in excess of 3 to 1, with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed with cultipacker-type seeder or by hydroseeding, rolling may be omitted.

3.2.5 Mulch: Except with hydroseeding, spread straw mulch evenly at the rates indicated above.. Anchor by crimping mulch with serrated disk or by spraying asphalt emulsion at the rate indicated above. Take precautions to prevent asphalt materials from marking or defacing structures, pavements, utilities or plantings.

3.2.6 Erosion Control Material: Install in accordance with manufacturer's instructions.

3.3 Protection of Seeded Areas: Immediately after seeding, protect seeded areas against traffic or by otherwise erecting barricades and posting signs until final acceptance.

3.4 Restoration: Restore to original condition existing turf areas which were damaged during turfing operations.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.5 Turf Establishment Period:

3.5.1 Turf Establishment: Turf shall be established immediately following grading activities. Maintenance of turf areas shall continue until established turf is accepted by the Owner.

3.5.1 Maintenance: During turf establishment period, mow the seeded area to an average height of 2.5 to 3.5 inches whenever the grass reaches a height of 5 inches. Remove excess clippings, eradicate weeds, fertilize overseed and perform other operations necessary to promote turf growth. Reseed, fertilize and mulch damaged areas immediately.

3.5.2 Duration. The turf establishment period will be in effect until the seeded areas are mowed three times.

3.6 Final Acceptance:

3.6.1 Final Inspection and Acceptance: Final Acceptance will be based on a satisfactory stand of turf defined as 95 percent ground cover for the established species.

END OF SECTION

SECTION 02489

FLOATING DOCK

PART 1 – GENERAL

1.1 **WARRANTY:** The floating dock, including all structural components of the system, shall be designed for a twenty year life expectancy. The floating dock systems shall carry an unconditional warranty for five (5) years after project acceptance.

1.2 **PRODUCTS:** The following material combinations shall be permitted.

1.2.1 **Floating Dock System:** Timber structure and deck with either urethane or polystyrene foam filled fiberglass reinforced plastic or high density polyethylene pontoons.

1.2.2 **Floating Dock Decking:** Southern Yellow Pine

1.2.3 **Gangway:** Aluminum structure with aluminum grating walking surface.

1.2.4 **Mooring System:** Timber guide piles.

1.3 **INTEGRATION OF GUIDE PILE SYSTEM AND FLOATING DOCK SYSTEM:** The floating dock system shall be designed to be restrained by a system of guide piles. The pile guides and structural system of the docks shall be designed to transfer the pile loads between the dock system and guide piles.

1.4 **WORKMANSHIP:** All work shall conform to reviewed shop drawings and project drawings and this specification. Construction details, finishing details and colors of the completed floating dock system shall be consistent throughout. Wood structures shall be neatly finished so that joints match and edges of wales are flush with adjacent surfaces. Deck boards shall be set with even spacing and bark sides up. Work shall be accurately set to established lines and elevations and securely fastened in place. Cutting, drilling and punching shall produce clean true lines and surfaces. Exposed surfaces of work shall have a smooth finish. Utility systems and fixtures shall be installed in a neat and workmanlike manner.

1.5 **SUBMITTALS**

1.5.1 **Shop Drawings and Calculations:** Prior to the fabrication of the dock system components, the Contractor shall submit connecting details, sizes and locations of pontoon sections and methods for attaching utilities and accessories. Submit shop drawings for all specially fabricated items and catalog sheets for all standard manufactured items that are to be incorporated into the floating dock system.

1.5.2 **Samples;** Submit samples of the following:

- a. Cleats
- b. Bumper strip
- c. Pile cap
- d. Pile guides

PART 2 – PRODUCTS

2.1 MISCELLANEOUS METAL:

2.1.1 All fabricated and miscellaneous steel shall conform to ASTM A 36 and shall be hot-dip galvanized after fabrication in accordance with ASTM A 123. All welding of steel shall comply with AWS D 1.1. All galvanizing shall be done only after fabrication of steel shapes.

2.1.2 All screws, bolts, nuts and lock washers shall conform to ASTM A 307 and be hot-dip galvanized in accordance with ASTM A 153. Flat washers shall comply with the requirements of ANSI B27.2 and be galvanized in accordance with ASTM A 153.

2.1.3 Mooring cleats shall be galvanized, cast-iron with lengths as shown on the drawings. Cleats shall be installed at the locations shown on the drawings.

2.2 WOOD:

2.2.1 Dressed Timber: The minimum requirements for all timber shall be #1 Southern Pine in accordance with SPIB Grading Rules. Timber shall be identified by the grade mark of a recognized association or independent inspection agency using the specific grading requirements of the association recognized as covering the species used.

2.2.2 Field cuts and holes shall be treated in accordance with AWPA M4.

2.3 ALUMINUM: All aluminum construction shall be in accordance to AA "Specification For Aluminum Structures." The material shall be temper suitable for salt water service in accordance with applicable ASTM Standards B 209, B 211, 3 221, B 308, B 429, and B 547 for various materials used. All welds shall be in accordance with AA "Specifications for Aluminum Structures." All bolts (etc) shall be Aluminum or 300 Series Stainless Steel in accordance with ASTM F 593 and F 594.

2.4 PONTOONS: Pontoon shells shall be manufactured from one of the following, as applicable:

2.4.1 Plastic Pontoons: Shells shall be manufactured from either high density polyethylene or cross-linked polyethylene material conforming to ASTM D 1248. The polyethylene shall be black in color and have a minimum wall thickness of 1/8 inch. Each pontoon shall be completely filled with foam in accordance with paragraph 2.8. Suppliers of pontoons shall present evidence that the pontoon being supplied is free of cracks and thinning of material below 1/8 inch at the corners and upper flanges of the pontoon. Pontoons shall be attached to the dock system structure so that all the edges of the pontoon upper flanges are bolted to structural members to minimize flexing and deformation of the pontoon. The use of shims or spacers between the dock system and the pontoon to achieve required floatation will not be permitted. Plastic material used shall conform to ASTM D 1248, Type III, Class A, Category J. The plastic shall be rated at not less than 800 hours when subjected to an ESCR test in conformance with ASTM D 1693.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.5 Warranty: The pontoon used shall carry an unconditional warranty for five (5) years after project acceptance.

2.6 FOAM FILL:

2.6.1 Urethane Foam: Each pontoon shall be completely filled with "foamed-in-place," closed cell, 1.6 pcf minimum density, urethane foam conforming to ASTM D 2341.

2.7 GUIDE PILE CONNECTORS:

2.7.1 Rollers: Guide pile rollers shall consist of a mounting bracket fabricated from 1/4-inch-thick steel plate to which is attached a roller made of ultra high molecular weight plastic mounted on a stainless steel axle made from T304 alloy. Mounting bracket shall be galvanized after fabrication. Pile guides shall be galvanized steel, four (4) internal rollers fabricated so that the entire pile guide can be removed with pile in place.

2.7.2 Slides: Hardwood or high-density polymer material may be used when the material can be shown to have a useful life matching the useful life of the dock system.

2.8 PILES AND PILE DRIVING:

2.8.1 Pile Driving: Provide in accordance with Section 02300, Pile Driving.

2.9 GANGWAYS: Gangways shall be fabricated from 6061-76 aluminum extrusions with non-skid walking surface of either aluminum or timber. Live load capacity shall be 50 pounds per square foot with a minimum deflection of L/180. Gangways shall be fixed with a hinge to the fixed timber access dock and on rollers at the floating dock end. Rollers on the floating dock shall move on an aluminum friction plate attached to the deck of the floating dock and sizes to accommodate the full range of movement of the gangways rollers and protect the deck of the floating dock from damage by the rollers. The friction plate may be built into the deck or attached to the top of the floating dock. The handrail height and configuration shall conform to applicable local handicap access code and shall include handrails which can be gripped by persons in wheel chairs.

PART 3 – EXECUTION

3.1 SYSTEM COMPONENTS

3.1.1 Floating Dock System: The minimum dimensions and layout of the floating dock system are shown on the drawings. The plan dimensions shown on the drawings for dock lengths and widths shall be the dimensions of the walking surface and not include widths of walers or other structural members that serve to connect individual floatation units together. Finger pier fillets shall be equal-sided triangles with a minimum size per side equal to the finger pier width. The Contractor shall be responsible for providing a system which conforms to the dimensions indicated on the drawings, is serviceable for the intended use, and conforms to all pertinent provisions of these Specifications.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.1.2 Floatation Units: Specified floatation shall be obtained by adjusting either the pontoon spacing or size. The use of supplemental floatation units that are attached to standard pontoons by the use of either straps, adhesive bolting or rivets shall not be permitted. Special floatation units shall be provided at points of concentrated dead load to ensure that the dock system deck is level when loaded with the dead loads specified. Special floatation units shall be provided at points of extreme live load to ensure that the dock system maintains the specified minimum freeboard under maximum live load on any component.

3.1.3 Mooring System:

3.1.3.1 Floating Dock Mooring System: Guide piles to secure the floating dock system shall be provided to conform to the requirements of this Specification.

3.2 DESIGN OF SYSTEM COMPONENTS: The various components of the floating dock system shall, as individual components and as a whole, be designed for the following loads:

3.2.1 Gangways: Gangway manufacturer shall provide proof in form of certification signed and sealed by a North Carolina Professional Engineer that the gangway meets the loading requirements of Chapter 36 of the North Carolina Building Code. The gangway shall be designed for a live load of 100 pounds per square foot. Aluminum gangways shall be provided, located as shown on the marina layout. Width of the ramps shall be 60 inches. Handrails shall be placed on both sides of the ramps with a minimum clear distance between them of 42 inches. The maximum allowable slope of the ramp including transition from fixed to floating dock deck is 1:12 at normal water level. The decking shall be a non-skid surface to prevent slippage when wet and at maximum angle. The ramp connection to the fixed pier shall be able to pivot to compensate for the water level movements and any gap between the pier and ramp shall not exceed 1 inch. The ramp connection to the main floating dock shall be capable of free movement and shall be protected from damaging the dock's decking. All hardware shall be heavy duty, suitable for the intended service and appropriate for a seawater environment.

END OF SECTION

SECTION 06130

TIMBER CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: Fabrication and installation of fixed timber piers.

1.2 SUBMITTALS:

1.2.1 Shop Drawings: Contractor shall submit shop drawings for approval. Shop drawings shall cover metal fabrications for timber connections. Shop drawings shall be approved before fabrication is begun. Shop drawings shall show materials, construction details, and other pertinent data.

1.3 DELIVERY AND STORAGE:

Store timber on the site in piles. Open stack untreated material on suitable skids at least 12 inches above the ground, and pile to shed water and prevent warping. Close stack treated material in a manner that will prevent long timbers or preframed materials from sagging or becoming crooked. Clear ground beneath and in the vicinity of all such piles of weeds, rubbish and combustible materials. Where required, all materials shall be protected from the weather by suitable covering. Handle treated timber carefully without sudden dropping, breaking of outer fibers, bruising or penetrating the surface with tools. Handle timbers with rope or chain slings. No cant dogs, peaveys, hooks or pike poles shall be used. Hardware received at the site shall be protected from corrosion by storing and covering.

PART 2 - PRODUCTS

2.1 WOOD:

2.1.1 Timbers: All timber in the fixed pier shall be stress rated Southern Pine No. 1 stress rated. Timber shall be identified by the grade mark of a recognized association or independent inspection agency using the specific grading requirements of the association recognized as covering the species used. Such association or independent inspection agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Fabrication of timbers shall be complete as possible before preservative treatment. All dock and bulkhead timbers shall be treated with ACQ in accordance with AWPA use rating for timber subject to saltwater splash. Preservative retention for all members shall be 0.60 pounds per cubic foot. All dock timbers shall be rough cut lumber with the nominal dimensions indicated on the plans. Lumber for bulkhead construction shall be S4S. No wane in timber waler timbers will be allowed. Timbers delivered to site with wane shall be removed from the site.

2.1.2 Plant Inspection: Timbers bearing the AWPA Brand in accordance with AWPA M6 will be acceptable for the preservative treatment of timbers; however, the Owner reserves the right to perform plant inspection of the treatment process, at its discretion.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

2.2 METAL PRODUCTS

2.2.1 Hardware: Hardware shall include bolts with the necessary nuts and washers, timber bolts conforming to ASTM A307. Washers shall be circular or square flat smooth and shall conform to ANSI B18.22.1. Bolts shall be provided with washers, between board and nut for all bolted connections. Heads of timber bolts shall be installed in direct contact with wood surface.

2.2.2 Steel and Iron: Use standard mill finished structural steel shapes and plates in accordance with AISC specifications. All hardware shall conform to ASTM A307.

2.2.3 Zinc Coating: All steel and hardware shall be zinc coated or galvanized by the hot-dip process in accordance with requirements of ASTM A123 and/or A153, as applicable after fabrication.

2.3 FABRICATION:

2.3.1 Unless otherwise indicated on the Drawings or the approved shop drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of each section.

2.3.2 Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush. Holes shall be drilled and not burned.

2.3.3 After fabrication is complete and prior to coating, properly clean metal surfaces.

2.3.4 All welding shall conform to AWS D1.1.

PART 3 - EXECUTION

3.1 FRAMING: Accurately cut and frame all timber in such a manner that the joints will have a close fit of the entire contact surfaces. Secure timbers and piles in their proper alignment. Bore holes for bolts with a bit 1/16 inch larger than the bolt diameter. Counter boring or countersinking shall only be allowed for installation of handrail posts at davit gate.

3.2 FASTENING: Washers of the size and type specified shall be used under all bolt heads and nuts which would otherwise come in contact with wood. Check all bolts by burring the threads after the nuts have been finally tightened. Vertical bolts shall have the nuts on the lower end. In all cases where bolts are used to fasten timber to timber, timber to concrete or timber to steel, bolt members tightly together when they are installed and retighten immediately prior to final acceptance of the work. All bolts shall have sufficient additional threading to provide at least 3/8 inch per foot thickness of timber for future tightening.

DOWNTOWN WATERFRONT IMPROVEMENTS
TOWN OF SWANSBORO
SWANSBORO, NORTH CAROLINA

3.3 FIELD TREATMENT:

3.1.1 Timber Work: Field treat all cuts in treated timbers or pies and all abrasions in accordance with AWP A M4. Trim all cuts and abrasions before field treatment. Paint all depressions or openings including bolt holes, joints or daps, including recesses with preservative treatment solution. Exposed ends of timber piles shall be field treated two times after cutoff and milling is completed.

3.3.2 Galvanized Surfaces: Zinc coating which has been damaged to the extent that base metal is exposed, shall be repaired and recoated. Thoroughly clean the damages area by wire brushing and remove all traces of welding flux and loose or cracked zinc coating prior to painting. Paint cleaned surfaces with two coats of Zinc-oxide Zinc dust paint, ZRC cold galvanizing compounds or approved equal. In addition to damaged areas, all exposed threaded surfaces shall be painted with two coats of zinc oxide zinc dust paint after installation of the nut.

END OF SECTION