STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

INVITATION FOR QUOTES FOR A SMALL PROCUREMENT (CONSTRUCTION RELATED)

[per AS 36.30.320(a)]

Project Name & No.: TKE Floating Concrete Breakwater Repairs ER 1/29/24 ; SDRER00571 Location: Tenakee, AK 99841	Procurement Agency and Address: State of Alaska – DOT&PF SR P.O. Box 112506 Juneau, AK 99811-2506
Procurement Officer: Christopher Goins, P.E.,C.M.	Date of Issuance: February 8, 2024

DESCRIPTION OF WORK, REQUIRED COMPLETION DATE, LISTING OF ATTACHMENTS: Funding Source: State

Inspect and make temporary repairs to the existing concrete floating breakwater located at the Tenakee Springs small boat harbor. This work consists of: underwater dive inspection of the anchor chains and connections to the breakwater, repair/restoration of anchor chains as may be warranted, placement of new chain restraints between the breakwater sections.

Please see the Scope of Work and Attachments for additional details.

The Project cost estimate is: ☐ under $10,000 ☐ $10,000 - $50,000 [X] $50,001 - $100,000 ☐ $100,001 - $200,000[1,2]

1. Quotes in excess of $200,000 will be deemed non-responsive. **2. Any project in excess of $100,000 must be bonded.**

Davis-Bacon Wages (Title 36.05): are [X] are not ☐ required on this project.

The following insurance coverages are required: [X] Workers Comp [X] General Liability [X] Automobile

Bonding Requirement: **Any project in excess of $100,000 must be bonded.**

Bid Bond (25D-14), Payment Bond (SPC-005) Performance Bond (SPC-006) & are ☐ are not ☐ required on this project.

Quotes for furnishing all labor, equipment and materials and performing all work for the above Project are invited. To be eligible for consideration, quotes must be received before 2:00 PM local time on the 13th day of February, 20 24. Late quotes cannot be accepted. Disadvantaged Business Enterprises (DBE's) may submit quotes and will not be discriminated against on the grounds of race, color, national origin or sex in consideration for an Award which results from this invitation. Any errors, omissions, or questions pertaining to solicitation procedures or Project requirements, requests for additional documents, or inquiries pertaining to site conditions or scheduled visits must be made to: Kirk Miller, P.E.

Title: Preconstruction Engineer – Southcoast Region, at: 6860 Glacier Highway, Juneau, AK 99801

Kirk.miller@alaska.gov, Telephone: (907) 465-1215;

Applicable provisions of AS 36.30 and 2 AAC 12 govern this solicitation.

SUBMITTAL OF QUOTES: Quotes for this Project must be submitted in the manner noted below. All Offerors must familiarize themselves with the *Instructions to Offerors*, page 2 of this form, prior to submitting their quote.

☐ - VERBAL QUOTES SHALL BE GIVEN TO _____ AT THE ABOVE NOTED TELEPHONE NUMBER, PRIOR TO THE STATED DEADLINE. (**See above Bonding Requirements**.)

☒ - WRITTEN QUOTES, INCLUDING AMENDMENTS OR WITHDRAWALS, MUST BE RECEIVED PRIOR TO THE ABOVE NOTED DEADLINE. QUOTES MUST BE SUBMITTED ON FORM SPC-002, QUOTE SUBMITTAL ATTACHED BID SCHEDULE, (PAGE 5 OF THIS IFQ PACKAGE). EMAIL SUBMISSION IS ACCEPTABLE (**See above Bonding Requirements**.)

Written quotes may be submitted by electronically, hand delivered, or mailed in a sealed envelope. Confidentiality is only assured for sealed quotes. Mailed quotes must allow time for delivery and the envelope must be marked as follows:

Quote for Project:		**Procurement Agency Email Address:**
Name:	TKE Floating Concrete Breakwater Repairs ER 1/29/24	srdotpfcontracts@alaska.gov
Number:	SDRER00571	cc: eric.verrelli@alaska.gov
Attn:	Eric Verrelli, Chief of Contracts	

Quote amendments or withdrawals must be made in writing to the individual of the Procurement Agency receiving the quotes, and must be received prior to the time for quote submittal.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

INVITATION FOR QUOTES FOR A SMALL PROCUREMENT (CONSTRUCTION RELATED)

INSTRUCTIONS TO OFFERORS

The State of Alaska desires that all Offerors submitting quotes on construction contracts are given a fair and equal opportunity to compete. Offerors are required to follow these instructions:

REVIEW THE PROJECT DOCUMENTS: Most construction Projects in excess of $1,000 will have some type of written documentation prepared expressly for the Work. If you are asked to submit a quote and no written information has been provided, you should ask the procurement Agency for written documentation. If the scope of services have been described to you verbally, and you are selected for Contract Award, you must ensure that the information of the services to be performed (scope of work) is put in writing prior to accepting the Contract. When providing a Quote, carefully review and consider all materials related to the solicitation and work of the contract. **By submitting a quote the Offeror warrants that they are familiar with the Project requirements, have visited or otherwise examined the site, and are aware of the conditions to be encountered.** Offeror's can verify the contents and completeness of their quote documents by contacting the procurement Agency individual named on the front of this form.

SUBMITTING THE QUOTE: The Quote must be submitted in one of the following formats as called for in the Invitation:

1. **ORALLY -** if a verbal quote is solicited, the Offeror must provide, in addition to their quote amount and mailing address -- (1) their valid Alaska Business License number, (2) if applicable, a valid Contractor's Registration number, (3) their status as an Alaskan Bidder (Offeror), (4) their intended use of Alaskan products, (5) the carrier's name and policy number for their Workers' Comp Insurance (or a statement of sole proprietorship, if applicable), and (6) the Employer (Tax) Identification Number or Social Security Number. The Procurement Agency will enter this information on the quote schedule.

2. **WRITTEN -** if a written quote is solicited, the Offeror must complete, in ink or typewritten, the *Small Procurement Quote Submittal*, Form SPC-002. Failure to acknowledge receipt of addenda or to execute the form correctly and completely may disqualify the quote.

NOTE: The *Department of Labor requires an Offeror to be licensed and registered for the required type of work prior to submitting a quote. If the procurement Agency determines the Offeror is improperly registered or licensed, their quote may be deemed nonresponsive.*

SUBCONTRACTOR LISTING: Subcontractors intended to be utilized on this contract must be listed in the response to the solicitation. Work shall not be awarded to any subcontractor without prior approval from the procurement Agency. Subcontractors may be added or removed only as approved by the procurement Agency.

DETERMINATION OF THE LOWEST RESPONSIBLE QUOTE AND CONTRACT AWARD: Following receipt and determination of all **responsive** oral, written or sealed quotes, the procurement Agency will compare the quotes and determine the lowest Offeror. If the procurement Agency discovers a discrepancy between the unit price amount and the extended amount; the unit price amount will prevail. Conditioned quotes, unless expressly requested, will not be considered. When the quote schedule is composed of a basic amount with alternates, the procurement Agency will base its determination of the low quote and the amount of the Contract Award solely upon those quotes, basic and alternates, that are priced within the extent of available construction funds. Alternates will be considered for Award in the order listed, except that if the order of Offerors is not affected, the Award may include any combination of funded alternates, or none, as may be in the best interest of the procurement Agency.

When determining the lowest quote, the procurement Agency will also give a 5% Alaska Offeror's preference and an appropriate Alaska Products preference to quotes designating the applicability of a preference. To qualify for the Offeror's preference (per AS 36.30.170) the Offeror **must** (1) hold a current Alaska Business License, (2) submit the quote under the name appearing on the license, (3) have staffed and maintained a place of business within Alaska for the previous six months and (4) be incorporated or qualified to do business under the laws of the State. In addition, if the Offeror is a partnership or joint venture, all parties must meet the criteria to be eligible for the preference. A booklet fully describing the Alaska Preferences (Bidder, Offeror, Product, Disabilities, Veteran) program is available at **http://doa.alaska.gov/dgs/pdf/pref2.pdf**. A detailed description of the Alaska Products Preference Program is available at **http://www.commerce.state.ak.us/ded/dev/prodpref/prodpref.htm**.

The procurement Agency will make a determination of **responsibility** as required by 2 AAC 12.500. If the lowest Offeror is declared responsible, the procurement Agency will execute the *Notice of Award / Notice to Proceed,* Form SPC-003, and send it to the Offeror for acknowledgement. If the lowest Offeror is found to be nonresponsible, this process will be repeated with the second lowest Offeror -- and so on until the lowest responsive and responsible Offeror is determined.

NOTICE OF AWARD AND PROTEST: A written notice will be provided on all Awards exceeding $ 25,000 (2 AAC 12.400(h)). All protests must be filed with the Commissioner of the procurement Agency (or designee) and copied to the Procurement Officer. Protest procedures are described in AS 36.30.560 and 2 AAC 12.695. The extent of the protest remedy is limited to quote preparation costs (AS 36.30.585).

TERMINATION BY DEFAULT

By signature on their proposal/bid, the offeror/bidder certifies that they will not support or participate in a boycott of the State of Israel. Failure to comply with this requirement may cause the state to reject the proposal as non-responsive or cancel the contract.

INDEMNITY AND INSURANCE – The following insurance is required for all construction contracts:

Article 1. Indemnification

The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the Contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. "Contractor" and "Contracting agency", as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term "independent negligence" is negligence other than in the Contracting agency's selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor's work.

Article 2. Insurance

Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the state shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Contracting Officer prior to beginning work and must provide for a notice of cancellation, nonrenewal, or material change of conditions in accordance with policy provisions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with, and be issued by insurers licensed to transact the business of insurance under AS 21.

2.1 Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal U.S.L. & H. and Jones Act requirements. The policy must waive subrogation against the State.

2.2 Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per claim.

2.3 Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per claim.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

SMALL PROCUREMENT QUOTE SUBMITTAL
(CONSTRUCTION RELATED)

[per AS 36.30.320(a)]

Project Name & No.: TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571 Location: Tenakee, AK 99841	Procurement Agency and Address: State of Alaska – DOT&PF SR 6860 Glacier Hwy., Juneau, AK 99801
Procurement Officer: Christopher Goins, P.E.,C.M.	Date of Issuance: 2/8/2024 Bid is Due: 2/13/2024

QUOTE: Offerors must read **all** attachments to this schedule. Per the Attached Bid Schedule.

State Wage Rates ("Little" Davis-Bacon Wages) can be downloaded from the following website: https://labor.alaska.gov/lss/pamp600.htm

I have reviewed the bid documents, with addenda _____, and understand the scope of services and conditions required for Project number ___. I agree to furnish all necessary labor, materials, and equipment for the above amount(s). The Work shall be accomplished in a professional manner acceptable to the Procurement Officer.

Contractor _____ Contractor Reg. No. _____

Authorized Signature _____ Title _____

Address _____

Business License # _____ EIN or SSN _____ Phone # _____

Offeror is Claiming: ☐ Alaska Bidder's Preference ☐ Alaska Products Pref. (worksheet)
☐ Alaska Veteran Preference (SPC-007)

Offeror to Complete this Portion

Procurement Officer: _____

Date of Receipt of Bid: _____

Bid Schedule

Section - Not Assigned to a Section

Prop Line #	Item Number	Item Description	Quantity	Unit	Unit Bid Price	Amount Bid
10	601.0001.0000	Labor and Equipment	7	Day		
20	601.0003.0000	Materials	All Required	Contingent Sum	Contingent Sum	$5,000.00
30	640.0001.0000	Mobilization and Demobilization	All Required	Lump Sum	Lump Sum	

Total Bid: _____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NOTICE OF AWARD (NOA)
SMALL PROCUREMENT CONTRACT
(CONSTRUCTION RELATED)

[per AS 36.30.320]

Project Name & No.: TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571 Location: Tenakee, AK 99841	Procurement Agency and Address: State of Alaska – DOT&PF SR 6860 Glacier Hwy., Juneau, AK 99801
Procurement Officer's Signature:	Date of Issuance:

****

TO:

FOR:
Work related to Basic Bid of: TKE Floating Concrete Breakwater Repairs ER 1/29/24, including the basic quote and alternate quote item(s):

The Contractor Must Submit:

- Insurance* ☐
- Bonding* ☐
- Certified Wages* ☐
- Dept. of Labor (Notice of Work)* ☐
- Subcontractor List* ☐

* Comments as applicable:

. . . . . .

Your quote in the amount of _____ submitted on _____, is accepted for performance of the Work described in the attached Invitation for Quotes (Form SPC-001), and the quote as submitted on the *Small Procurement Quote Submittal* (Form SPC-002), which are a part of this Contract.

The Contractor must sign, date, and return this document to the *procurement* address shown above. The Procurement Officer will then sign and return a copy to the Contractor, and the Award will be deemed made. The Work of this contract may not commence until the Notice to Proceed (NTP) is issued.

Contractor's Signature of Contract Award Acceptance: _____ Date : _____

NOTICE TO UNSELECTED OFFERORS ON PROJECTS OVER $50,000

In accordance with the protest rights afforded under 2 AAC 12.400(d)(2)(B) & (3), a copy of this Notice of Award is hereby provided to those individuals and businesses who submitted a response to the initial solicitation on which this award is made.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NOTICE OF AWARD (NOA)
SMALL PROCUREMENT CONTRACT
(CONSTRUCTION RELATED)

GENERAL CONDITIONS
[Construction Procurement under AS 36.30.320]

These terms, conditions and requirements apply to the Contract Documents describing the Work for the Project. If any provision of these Contract Documents is declared by a court to be illegal or in conflict with any law, the validity of the remaining provisions and the ensuing rights and obligations of the Parties to the contract shall not be affected.

Whenever used in these Contract Documents, the following terms shall have the indicated meaning. Any term not so defined shall have its ordinary meaning.

- **Approved or Approval** - means written approval by the Procurement Officer or authorized representative.
- **Award** - means the written acceptance of the lowest responsive and responsible quote by the Procurement Agency.
- **Contract Documents** - includes the *Invitation for Quotes for a Small Procurement,* Form SPC-001 (with Instructions - if issued), the *Notice of Award / Notice to Proceed,* Form SPC-003, any addenda, written changes, or attachments as noted in the description of the Work.
- **Procurement Officer** - the person authorized to enter into and administer the contract on behalf of the Procurement Agency.
- **Parties to the Contract** - includes the Procurement Agency, the owner Agency representing the State of Alaska, and the Contractor, being the entity contracting with the owner Agency for performance of the Work.
- **Project** - the total construction, of which the Work performed under the Contract is the whole or part.
- **Project Manager** - the Procurement Officer's authorized representative, responsible for Contract administration.
- **Work** - is the act of, and the result from, performing services, furnishing labor, furnishing and incorporating materials and equipment into the Project and performing other duties and obligations, all as required by the Contract Documents.

1. The Procurement Officer (or authorized representative) has the authority to make findings, determinations and decisions with respect to the contract; to Approve materials, Work and payment therefore; and to modify or terminate the contract on behalf of the Procurement Agency.
2. The Contractor shall have sole responsibility for the means, methods, sequences, or procedures of construction and safety precautions related to the Project. The Contractor shall conduct all Work in such a manner that protects the public and State resources.
3. The Contractor must comply with all applicable laws, regulations, codes, ordinances and written directives issued by the Procurement Officer. In addition, the Contractor must obtain applicable licenses and permits; provide supervision, labor, tools, and new materials (except as may otherwise be provided by the Procurement Agency); and utilize Alaska Products and Wood Products when applicable (see AS 36.05.010 & AS 36.30.322).
4. The Contractor shall not award Work to any subcontractor without prior Approval from the Procurement Officer.
5. The Procurement Agency reserves the right to make written changes to the Contract Documents for modifications within the general scope of the Work.
6. Any act or occurrence, be it a result of an emergency, differing site condition or change order, which may form the basis of a claim for a price or time adjustment must be reported immediately to the Procurement Officer.

7. The Department of Labor and Workforce Development, Wage and Hour Administration, must be notified in accordance with AS 36.05.010 and AS 36.05.030 if the resulting contract for repairs or construction exceeds $25,000. The Contractor must comply with the requirements noted within the Department of Labor packet entitled, "Laborers' & Mechanics' Minimum Rates of Pay." To obtain a copy of the referenced packet, contact the Procurement Agency or the Department of Labor.
8. The primary contractor working on public construction projects with an amount of $25,000 or more must file a Notice of Work and pay a one percent fee based on the estimated value of work performed by the prime contractor and one percent of the value of each subcontractor's price, to the Department of Labor and Workforce Development, Wage and Hour Administration (DOLWD) The maximum fee is $5,000.00. The notice and fees must be filed with the DOLWD before work commences on the project.

   Upon completing the construction project, the primary contractor must file a Notice of Completion (NOC) and make payment of any additional fees due to increases in the contract amounts due the primary contractor. The Notice of Work and Notice of Completion forms are available at:
   http://www.labor.state.ak.us/lss/lssforms.htm
9. The Contractor shall indemnify, save harmless, and defend the Procurement Agency, its agents and its employees in accordance with Appendix B1 below. Furthermore, the Contractor shall, prior to the Award of the contract, provide proof of Workmen's Compensation, General Liability, and Automobile Insurance in amounts as applicable under Appendix B1. These coverages shall remain in force for the duration of the Contract.

10. The Contractor shall remedy all defects in materials or workmanship that develop within a period of one year from the date of final payment.

11. The Procurement Agency will make final payment to the Contractor following approval of completion of all Work and the Contractor's submittal of all releases, warranties, record documents, permits and invoices. Liens or other claims relating to the Project may be withheld from final payment if written notice is first given to the Contractor. Acceptance of the final payment will constitute the Contractor's waiver to future claims.
12. Any dispute arising out of this Contract, which cannot be satisfactorily remedied by the Parties to the Contract, shall be resolved under AS 36.30.620 - 699.
13. Termination

a. The Procurement Officer, by written notice, may terminate this contract, in whole or in part, when it is in the best interest of the State. In the absence of a breach of contract by the contractor, the State is liable only for payment in accordance with the payment provisions of this contract for services rendered before the effective date of termination.
b. Procurement Officer may also, by written notice, terminate this contract under Administrative Order 352 if the contractor supports or participates in a boycott of the State of Israel.

APPENDIX

INDEMNITY AND INSURANCE

Article 1. Indemnification

The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the Contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. “Contractor” and “Contracting agency”, as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term “independent negligence” is negligence other than in the Contracting agency’s selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor’s work.

Article 2. Insurance

Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the state shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Contracting Officer prior to beginning work and must provide for a notice of cancellation, nonrenewal, or material change of conditions in accordance with policy provisions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with, and be issued by insurers licensed to transact the business of insurance under AS 21.

2.1 Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal U.S.L. & H. and Jones Act requirements. The policy must waive subrogation against the State.

2.2 Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per claim.

2.3 Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of $300,000 combined single limit per claim.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

NOTICE TO PROCEED (NTP)
SMALL PROCUREMENT CONTRACT
(CONSTRUCTION RELATED)

[per AS 36.30.320]

Project Name & No.: TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571 Location: Tenakee, AK 99841	Procurement Agency and Address: State of Alaska – DOT&PF SR 6860 Glacier Hwy., Juneau, AK 99801
Procurement Officer's Signature:	Date of Issuance:

****

TO:

.....

You have successfully met the requirements for submittal of all contract documents to the Procurement Agency and Dept. of Labor and Workforce Development related to the subject Project.

Upon receipt of this document, the Contractor may begin work on the subject project, in accordance with the terms of the contract. The Work of this contract must commence within 10 (weather depending) calendar days following the date of signature by the Procurement Officer, shown above (i.e., the effective date of the Contract) and all Work of the

Contract must be complete on or before April 1, 2024

Contractor's Signature of Acknowledgment: _____ Date : _____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

SUBCONTRACTOR LIST

TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571

Project Name and Number

The apparent low bidder shall complete this form and submit it so as to be received by the Contracting Officer prior to the close of business on the fifth working day after receipt of written notice from the Department.

An apparent low bidder who fails to submit a completed Subcontractor List form within the time allowed will be declared nonresponsible and may be required to forfeit the bid security.

Scope of work must be clearly defined. If an item of work is to be performed by more than one firm, indicate the portion or percent of work to be done by each.

Check as applicable: [☐] All Work on the above-referenced project will be accomplished without subcontracts

Or

[☐] List all first tier Subcontractors as follows:

FIRM NAME, ADDRESS, PHONE NO.	AK BUSINESS LICENSE NO., CONTRACTOR'S REGISTRATION NO.	SCOPE OF WORK TO BE PERFORMED

CONTINUE SUBCONTRACTOR INFORMATION ON REVERSE

For projects with federal-aid funding, I hereby certify Alaska Business Licenses and Contractor Registrations will be valid for all subcontractors prior to award of the subcontract. For projects without federal-aid funding (State funding only), I hereby certify the listed Alaska Business Licenses and Contractor Registrations were valid at the time bids were opened for this project.

Signature of Authorized Company Representative	**Title**
Company Name	**Company Address (Street or PO Box, City, State, Zip)**
Date	**Phone Number**

FIRM NAME, ADDRESS, PHONE NO.	AK BUSINESS LICENSE NO., CONTRACTOR'S REGISTRATION NO.	SCOPE OF WORK TO BE PERFORMED

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PAYMENT BOND

Bond No. _____

For

TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That _____

of _____ as Principal,

and _____

of _____ as Surety,

firmly bound and held unto the State of Alaska in the penal sum of

_____ Dollars

($_____) good and lawful money of the United States of America for the payment whereof,

well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the _____ of _____ A.D., 20_____, for construction of the above-referenced project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall comply with all requirements of law and pay, as they become due, all just claims for labor performed and materials and supplies furnished upon or for the work under said contract, whether said labor be performed and said materials and supplies be furnished under the original contract, any subcontract, or any and all duly authorized modifications thereto, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at _____, _____ this _____ day of _____ A.D., 20_____.

Principal: _____

Address: _____

By: _____

Contact Name: _____

Phone: ( ) _____

Surety: _____

Address: _____

By: _____

Contact Name: _____

Phone: ( ) _____

The offered bond has been checked for adequacy under the applicable statutes and regulations:

_____ _____

Alaska Department of Transportation & Public Facilities Authorized Representative **Date**

See Instructions on Reverse

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, shall be used whenever a payment bond is required. There shall be no deviation from this form without approval from the Contracting Officer.

2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.

3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.

4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.

5. The bond shall be signed by authorized persons. Where such persons are signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PERFORMANCE BOND

Bond No. _____

For

TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That _____

of _____ as Principal,

and _____

of _____ as Surety,

firmly bound and held unto the State of Alaska in the penal sum of

_____ Dollars

($_____) good and lawful money of the United States of America for the payment whereof,

well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the _____ of _____ A.D., 20_____, for construction of the above-named project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall well and truly perform and complete all obligations and work under said contract and if the Principal shall reimburse upon demand of the Department of Transportation and Public Facilities any sums paid him which exceed the final payment determined to be due upon completion of the project, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at _____, _____ this _____ day of _____ A.D., 20_____.

Principal: _____

Address: _____

By: _____

Contact Name: _____

Phone: ( ) _____

Surety: _____

Address: _____

By: _____

Contact Name: _____

Phone: ( ) _____

The offered bond has been checked for adequacy under the applicable statutes and regulations:

_____ _____

Alaska Department of Transportation & Public Facilities Authorized Representative **Date**

See Instructions on Reverse

INSTRUCTIONS

1. This form shall be used whenever a performance bond is required. There shall be no deviation from this form without approval from the Contracting Officer.

2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.

3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.

4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.

5. The bond shall be signed by authorized persons. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

BID BOND

For

TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571

Project Name and Number

DATE BOND EXECUTED: _____

PRINCIPAL (Legal name and business address):	TYPE OF ORGANIZATION:
	[ ] Individual [ ] Partnership [ ] Joint Venture [ ] Corporation
	STATE OF INCORPORATION:

SURETY(IES) (Name and business address):

A.	**B.**	**C.**

PENAL SUM OF BOND:	DATE OF BID:

We, the PRINCIPAL and SURETY above named, are held and firmly bound to the State (State of Alaska), in the penal sum of the amount stated above, for the payment of which sum will be made, we bind ourselves and our legal representatives and successors, jointly and severally, by this instrument.

THE CONDITION OF THE FOREGOING OBLIGATION is that the Principal has submitted the accompanying bid in writing, date as shown above, on the above-referenced Project in accordance with contract documents filed in the office of the Contracting Officer, and under the Invitation for Bids therefor, and is required to furnish a bond in the amount stated above.

If the Principal's bid is accepted and he is offered the proposed contract for award, and if the Principal fails to enter into the contract, then the obligation to the State created by this bond shall be in full force and effect.

If the Principal enters into the contract, then the foregoing obligation is null and void.

PRINCIPAL

Signature(s)	**1.**	**2.**	**3.**
Name(s) & Title(s) (Typed)	**1.**	**2.**	**3.**

Corporate Seal

See Instructions on Reverse

CORPORATE SURETY(IES)

Surety A	Name of Corporation	State of Incorporation	Liability Limit **$**
Signature(s)	**1.**	**2.**	Corporate Seal
Name(s) & Titles (Typed)	**1.**	**2.**	

Surety B	Name of Corporation	State of Incorporation	Liability Limit **$**
Signature(s)	**1.**	**2.**	Corporate Seal
Name(s) & Titles (Typed)	**1.**	**2.**	

Surety C	Name of Corporation	State of Incorporation	Liability Limit **$**
Signature(s)	**1.**	**2.**	Corporate Seal
Name(s) & Titles (Typed)	**1.**	**2.**	

INSTRUCTIONS

1. This form shall be used whenever a bid bond is submitted.
2. Insert the full legal name and business address of the Principal in the space designated. If the Principal is a partnership or joint venture, the names of all principal parties must be included (e.g., "Smith Construction, Inc. and Jones Contracting, Inc. DBA Smith/Jones Builders, a joint venture"). If the Principal is a corporation, the name of the state in which incorporated shall be inserted in the space provided.
3. Insert the full legal name and business address of the Surety in the space designated. The Surety on the bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. Individual sureties will not be accepted.
4. The penal amount of the bond may be shown either as an amount (in words and figures) or as a percent of the contract bid price (a not-to-exceed amount may be included).
5. The scheduled bid opening date shall be entered in the space marked Date of Bid.
6. The bond shall be executed by authorized representatives of the Principal and Surety. Corporations executing the bond shall also affix their corporate seal.
7. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
8. The states of incorporation and the limits of liability of each surety shall be indicated in the spaces provided.
9. The date that bond is executed must not be later than the bid opening date.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ALASKA BIDDER PREFERENCE CERTIFICATION

In response to the advertised procurement for:

Project Name and Number: TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571

Bidder/Proposer (company name): _____

Operation of Alaska Bidder Preference

Procurement preferences under the Alaska Procurement Code are benefits that the State grants only to qualified bidders. Under AS 36.30.990(2), if a bidder is an eligible "Alaska Bidder", the Department will apply a five percent preference to the price of the bidder's proposal.

Instructions regarding Alaska Bidder Preference

A bidder that claims the Alaska Bidder Preference must review and then certify that each statement appearing under the heading "Alaska Bidder Certification" is true. The individual that signs the certification shall include his/her printed name and position within bidder's organization, *e.g.*, sole proprietor, partner, etc. If a bidder fails to submit a signed certification, the Department will not apply the claimed preference.

Alaska Bidder Certification

The bidding entity for which I am the duly authorized representative:

(A) Holds a current Alaska business license;

(B) Is submitting a bid or proposal for goods, services, or construction under the name appearing on the bidder's current Alaska business license;

(C) Has maintained a place of business in the State staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the proposal;

(D) Is incorporated or qualified to do business under the laws of the State, is a sole proprietorship and the proprietor is a resident of the State, is a limited liability company organized under AS 10.50 and all members are residents of the State, or is a partnership under former AS 32.05, AS 32.06, or AS 32.11 and all partners are residents of the State; and

(E) If a joint venture, is composed entirely of ventures that qualify under the four preceding paragraphs of this Alaska Bidder Certification.

By applying my signature below, I certify under penalty of perjury that I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning its proposal, and that the foregoing statements are true and correct.

_____ _____

By (signature) Date

_____ _____

Printed name Alaska Business License Number

_____

Title:

ALASKA PRODUCT PREFERENCE WORKSHEET

(See Reverse Side for Instructions)

Project Name and Number: TKE Floating Concrete Breakwater Repairs ER 1/29/24 ; SDRER00571

Bid Phase: _____ Bidder: _____

By applying my signature below, I certify under penalty of perjury that:

1. This worksheet accurately reports the type and quantity of product(s) that: (a) qualify for application of the Alaska Product Preference under AS 36.30.321 *et seq*. and (b) this bidder will use in performing the advertised project, if awarded the contract; and
2. All listed product(s) are specified for use on the project and will be permanently incorporated; and
3. I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning its proposal.

_____ _____

By (signature) Date

PRODUCT	MANUFACTURER	CLASS & PREFERENCE PERCENTAGE	TOTAL DECLARED VALUE	REDUCTION AMOUNT
			TOTAL	

INSTRUCTIONS FOR ALASKA PRODUCTS PREFERENCE WORKSHEET

Special Notice: All procurements, except those funded from Federal sources, shall contain Contract provisions for the preference of Alaska products. To be considered for the Alaska Product Preference, each product listed by the Bidder on this worksheet must have current certification from the Alaska Products Preference Program at the time of Bid Opening or the proposal due date. A product with expired certification at the bid opening or proposal due date will not be considered eligible. Products that are not specified for use on the project will not be considered eligible.

The Alaska Product Preference Program List of certified products is available online at:
https://www.commerce.alaska.gov/web/dcra/AlaskaProductPreferenceProgram.aspx or may be obtained by contacting Dept. of Commerce & Economic Development Alaska Division of Community and Regional Affairs, Alaska Products Preference Program, 550 W. 7th Ave., Suite 1650, Anchorage AK 99501-3510; Phone: (907) 269- 4501 Fax: (907) 269-4563, E-mail: madeinalaska@alaska.gov

BIDDERS INSTRUCTIONS:

A. General. The contracting Agency may request documentation to support entries made on this form. False presentations may be subject to AS 36.30.687. All Bidder's entries must conform to the requirements covering bid preparations in general. Discrepancies in price extensions shall be resolved by multiplying the declared total value times the preference percentage and adjusting any resulting computation(s) accordingly.

B. Form Completion – BASIC BIDS.

(1) Enter project number and name, the words "Basic Bid" and the CONTRACTOR'S name in the heading of each page as provided.

(2) The Bidder shall compare those candidate products appearing on the preference listing (see Special Notice comments above) against the requirements of the technical specifications appearing in the contract documents. If the Bidder determines that a candidate product can suitably meet the contract requirements, then that product may be included in the worksheet as follows.

(3) For each suitable product submitted under the "Basic Bid" enter:

- The product name, generic description and its corresponding technical specification section number under the heading "PRODUCT",
- The company name of the Alaska producer under the heading "Manufacturer", and
- The product class (I, II, or III) and preference percentage (3, 5, or 7% respectively) under the "CLASS/% heading.

(4) For each product appearing on the list and to be utilized by the CONTRACTOR enter:

- Under the heading "TOTAL DECLARED VALUE" the manufacturer's quoted price of the product, (caution: this value is to be the manufacturer's quoted price at the place of origin and shall not include costs for freight, handling or miscellaneous charges of incorporating the product into the Work,) and
- The resulting preference – i.e. the preference percentage times the total declared value amount – under the heading "REDUCTION AMOUNT".

(5) Continue for all "suitable" basic bid products. If the listing exceeds one page enter the words "Page # __ SUB" in front of the word "TOTAL" and on the first line of the following pages enter "SUBTOTAL OF REDUCTION AMOUNT FROM PREVIOUS PAGE".

(6) On the final page of the listing enter "BASIC BID PREFERENCE GRAND" immediately before the word "TOTAL".

(7) Total the entries in the "REDUCTION AMOUNT" column for each page by commencing at the first entry for that page. If a continuation page exists, ensure that the subtotal from the previous page is computed into the running total. Number pages as appropriate.

(8) Compute a Grand Total for the Basic Bid Preference. Enter the amount on the final page of the worksheet. (Note: When solicitations require written bids this amount should also be entered on line "C" of the Basic Bid Schedule.) Submit worksheet(s) with the Bid Schedule.

C. Form Completion – ALTERNATE BIDS.

(1) Enter project number and name, the words "ALTERNATE BID #__", and CONTRACTOR'S name in the heading of each page as provided.

(2) On the first entry line enter "ADDITIONAL ALASKA PRODUCTS FOR ALTERNATE BID #__", and repeat procedures 2 through 5 under part B these Bidder's instructions except that references to "Basic Bid" shall be replaced with the words "Alternate Bid #__."

(3) Following the listing of all additional Alaska products enter the words "ADDITIONAL PRODUCTS PREFERENCE FOR ALTERNATE BID #__ - SUBTOTAL" and enter a subtotal amount for all additional products as listed. Subtotal amount to be determined by adding all additional product entries in the "REDUCTION AMOUNT" column.

(4) Skip three lines and enter "LESS THE FOLLOWING NON-APPLICABLE ALASKA PRODUCTS:

(5) Beginning on the next line, enter the product name and manufacturer of each Alaska Product appearing on the "Basic Bid" listing which would be deleted or reduced from the Project should the "Alternate Bid" be selected. Details of entry need only be sufficient to clearly reference the subject product. (i.e. "Pre-hung doors by Alaska Door Co., Anchorage.") Products being reduced shall specify the amount of the reduction. Should no products require deletion enter "None". When a product is listed as a "NON-APPLICABLE ALASKA PRODUCT" for this alternate bid and if under the basic bid the Bidder received a preference on his basic bid as a result of that product, then the applicable entries under the headings "TOTAL DECLARED VALUE" and "REDUCTION AMOUNT" (for each product and from the basic bid listing) shall also be entered into the corresponding headings of this form. Where only a portion of the products has been deleted, the entry (which will differ from those on the basic bid listing) may be "pro-rated" or as otherwise substantiated.

(6) Following the listing of all non-applicable Alaska products enter the words "NON-APPLICABLE PRODUCTS PREFERENCE FROM BASIC BID ___ SUBTOTAL" and enter a subtotal amount for all non-applicable products listed. Subtotal amount to be determined by adding all non-applicable entries in the "REDUCTION AMOUNT" column.

(7) At the bottom of the final page enter the words "ALTERNATE BID #___ PREFERENCE GRAND" immediately before the word "TOTAL".

(8) Compute a Grand Total for the Alternate Bid Preference (for Alternate #___) by subtracting the non-applicable product preference subtotal from the additional product preference subtotal. Enter on the final page. (Note: When solicitations require written bids this amount should also be entered on line "C" of the Alternate Bid Schedule.) Submit separate worksheet(s) with each Alternate Bid

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ALASKA VETERAN PREFERENCE CERTIFICATION

In response to the advertised procurement for:

Project Name and Number TKE Floating Concrete Breakwater Repairs ER 1/29/24; SDRER00571,

Bidder (Contractor) _____

Operation of Alaska Veteran Preference

Procurement preferences under the Alaska Procurement Code are benefits that the State grants only to qualified bidders. Under AS 36.30.321, an eligible entity receives a five percent preference to the price of in the bidder's proposal if the bidder meets three requirements.

The bidder must be:

1. an "Alaska Veteran";
2. a "Qualifying Entity"; and
3. an "Alaska Bidder".

Unless a bidder satisfies all three requirements and furnishes corresponding certifications, it is not eligible for the Alaska Veteran Preference. This preference may not exceed $5,000.

Instructions regarding Alaska Veteran Preference

A bidder that claims the Alaska Veteran Preference must review and complete the "Alaska Veteran Certification", the "Qualifying Entity Certification", and the "Alaska Bidder Certification". The individual that signs a certification shall include his/her printed name and position within bidder's organization, *e.g.*, sole proprietor, partner, etc. If a bidder fails to submit properly completed certifications, the Department will not apply the claimed preference.

Alaska Veteran Certification

(*To be completed by individual(s) upon whom the bidder relies in claiming the Alaska Veteran status. If bidder is a partnership, limited liability company, or corporation, then a majority of partners, members, or shareholders who are Alaska Veterans must sign this Alaska Veteran Certification for the Bidder to be eligible for this preference.*)

I hereby represent to the Department that:

I served in the armed forces of the United States, a reserve unit of the United States armed forces, the Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Naval Militia; and

I was separated from service under a condition that was not dishonorable; and

I am Alaska resident in that I am physically present in the State of Alaska with the intent to remain in the State indefinitely and to make a home in the State.

I certify under penalty of perjury that the foregoing statements are true and correct as they apply to me.

_____ _____

By (signature) Date

_____ _____

Printed name Title

Qualifying Entity Veteran Certification

The bidding entity for which I am the duly authorized representative is a:

(*Check the appropriate box*)

- ☐ sole proprietorship owned by an Alaska Veteran;
- ☐ partnership under AS 32.06 or AS 32.11 and a majority of the partners are Alaska Veterans;
- ☐ limited liability company organized under AS 10.50 and a majority of the members are Alaska Veterans; or
- ☐ corporation that is wholly owned by individuals and a majority of the individuals are Alaska Veterans.

By applying my signature below, I certify under penalty of perjury that I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning the proposal and that the statement I have acknowledged above by checking the appropriate box is true and correct.

By (signature)	Date
Printed name	Title

Alaska Bidder Certification

(*To complete your claim for the Alaska Veteran Preference, you must also submit an Alaska Bidder Certification, which the bidder can view, download, and print from the AKDOT&PF's Bid Express Proposal page.*)

TENAKEE SPRINGS FLOATING CONCRETE BREAKWATER REPAIRS
PROJECT NO. SDRER00571

SCOPE OF WORK

General

Furnish all materials and equipment to conduct underwater inspections and temporary repairs to the existing concrete floating breakwater structure located at the Tenakee Springs, Alaska small boat harbor. This structure consists of a six, post tensioned concrete sections which are each 20' wide x 60' long. Each of the concrete sections are affixed together at five joints with rubber fenders and associated steel brackets (2 each connections per joint). These connections have largely failed. Some are completely free. Others are partially connected. The structure is restrained by 12 anchor chains. There are also suspected anchor chain connection failures at possibly two locations.

Reference attached planset (Sheets 1-4), as-built drawings and site photographs.

Expected Services

Inspect all underwater anchor chain connections and the anchor chains (14 each) to extent practical (at minimum inspect all chains from the breakwater connection to the mudline) at the existing concrete breakwater. Document failures or other deficiencies and report them to the Engineer. Also conduct underwater inspection of the existing steel breakwater anchor chain connections (10 EA) if time and contract funds allow. Underwater photo or video documentation would be helpful but is not mandatory. The Department will have an on-site representative present during the course of this inspection work effort.

Repair anchor chain connections where required. One or two locations at anchor chains A and/or B on the east end may have come loose but uncertain pending underwater inspection.

Furnish and install new chain restraints between all concrete section joints as generally noted on the attached plan sheets or otherwise directed by the Engineer.

Time is of the essence as the existing breakwater is currently compromised. Further deterioration or failure of anchor chains during storm events will result in the breakwater floating into the nearby small boat harbor floats and moored vessels.

Tenakee Springs is a road-less community. ATV use on the existing trail/road is permitted. The City of Tenakee Springs has a forklift and a backhoe/loader that can be utilized by the Contractor if required. Marine and shore based fuel supply is available at the City/Ferry dock subject to posted winter operation days and times. Groceries are also available at a local store. There is no public cell phone service in Tenakee Springs. The Blue Moon Café provides wifi service and phone calls can be made at that location. Reference below website for fuel dock information.

https://tenakeespringsak.com/fuel-dock/

Expected Equipment List

- Marine vessel(s) with capability to lift and facilitate the anticipated anchor chain repairs and breakwater section joints. Re-positioning of the breakwater at the east end may be required as it is presently 5-10 feet out of alignment. Lifting capability of the anchor chains is expected to be needed for portions of the 1-3/8" anchor chain if the connection(s) have failed. The breakwater end of the chain may be lying on the seafloor. Assume at least 50-75 feet of this chain may need to be raised, re-attached to the breakwater and the length may require adjustment to help restore breakwater alignment forces.
- Marine vessel capability suitable for mobilization (delivery) of all personnel and materials to and from Tenakee Springs. Tenakee Springs also has scheduled seaplane and AMHS ferry service.
- Underwater dive team capable of making the connections and associated above and below water restoration work noted on the Plans.
- All tools required to facilitate the anticipated work. This may include but is not limited to: portable electric generator; steel cutting tools such as an oxy-acetylene torch/grinders/metal cutoff saw; drill; misc hand tools; temporary lifting cables, straps or chain, hand winch, etc. Welding is not anticipated.

Expected Materials List

The following new materials are anticipated to be required. Substitutions, size changes or other materials not noted will be considered. Payment for all new materials brought to the project site will be made regardless of use in the project. Any spare materials not utilized will be furnished to the City of Tenakee Springs for storage unless otherwise directed by the Department.

Chain materials may be new or used. However, any used materials shall be of high quality and not rusted or otherwise corroded or of loss of strength or function.

All chain shall ideally be hot-dip galvanized, however, bare steel will be considered based on availability and ability to deliver to the project in a timely manner. Stud link preferred. All shackles or Kenter links shall be hot-dip galvanized and new unless otherwise approved.

- Anchor Chain Attachment Bridles: 2 EA, 1-3/8" or 1-1/2" nominal diameter stud link chain, 21 links in length.
- Breakwater Section Chains: 6 EA, 1" nominal diameter stud link chain, 6'-0" in length.
- Breakwater Section Chains: 4 EA, 1" nominal diameter stud link chain, 16'-0" in length.
- Misc Chain: 3/4", 30 linear feet.
- Shackles (bolt or screw type with cotter pin or stainless steel wire in closure):
  8 EA, 1-3/8" or 1-1/2" (Anchor Chains)
  12 EA, 1" (Breakwater Section Chains)
  12 EA, 3/4" (Misc Rubber Fender Connection/Support (if reqd).
- Kenter Joining Links: 4 EA, 1-3/4" or 1-1/2" (Shackles may be substituted)
- Hex Bolts (with castle nut/cotter pin or double nut): 6 EA, 1-3/4" x 6"L
  6 EA, 1-1/2" x 6" L
- Rope (CWC Blue Steel or Equivalent): 3/4" or 1" diameter, 150 LF

ATTACHMENTS

Attachment A – Proposed Repair Plans (4 sheets)

The following attachments contain existing information and is supplemental information to bidders only. They do not contain any contractual work items.

Attachment B – 67907 Tenakee Springs Concrete Breakwater Mooring Repair As-built Drawings
Attachment C – 70159 Tenakee Breakwater Repair As-Built Drawings
Attachment D – Underwater Inspection Report 2011
Attachment E – Site Photographs

SPECIAL PROVISIONS
FOR

TENAKEE SPRINGS CONCRETE FLOATING BREAKWATER REPAIRS

FEBRUARY, 2024

PROJECT NO. SDRER00571

INDEX

SECTION 640

MOBILIZATION AND DEMOBILIZATION

640-1.01 DESCRIPTION. Perform work and operations necessary to:

Mobilize and demobilize to and from the work site including all personnel (labor), equipment, fuel, marine vessel transport and transport of all specified materials, tools and other resources needed to complete the project.

640-2.01 MATERIALS. Includes transport of materials.

640-4.01 METHOD OF MEASUREMENT. Lump Sum.

640-5.01 BASIS OF PAYMENT.

Payment under Item 640.0001.0000 will be made upon completion of the work considering the short duration of this this project. However, if partial payments are requested, the basis of payment is 70% upon arrival to the work site and 30% upon return to the Contractors place of residence or origin.

Payment will be made under:

Pay Item	Pay Unit
640.0001.0000 Mobilization and Demobilization	Lump Sum

SECTION 601

LABOR, EQUIPMENT AND MATERIALS

601-1.01 DESCRIPTION. Provide all labor, equipment, materials and other resources to carry out the work in accordance with the scope of work (SOW) statement, plans and as directed by the Engineer.

601-3.01 GENERAL.

Reference the attached SOW statement, project plans and other information supplied with this solicitation. This work includes the provision of labor, equipment and materials to execute the repairs.

A list of expected materials to be furnished and on site to facilitate this work has been provided. Substitutions and use of used materials, etc. is permitted subject to condition inspection and approval of the Engineer.

601-5.01 BASIS OF PAYMENT

Payment under Item 601.0001.0000 will be made by day. A day is considered a 12-hour work shift or a 24-hour period. Payment includes all labor, equipment, tools, underwater diving equipment and supplies and all other incidentals as may be required. Payment includes marine vessel(s), vessel mounted equipment and associated operational costs including fuel. Moorage fees to the City of Tenakee Springs within the small boat harbor facilities will not be charged for the period of this performance. Payment under Item 601.0001.0000 further includes all meals, lodging, perdium or other cost of living expenses as may be incurred for each day of project duration regardless of the number of persons.

Payment under Item 601.0003.0000 will be made at contingent sum based on contractor supplied invoices. The contractor will procure and purchase all new materials specified in the SOW and/or the project plans. The contractor will be reimbursed actual cost plus an allowable markup of 15%. Unused materials shall be delivered to the City of Tenakee Springs within the general harbor area uplands. Exact location to be designated by the Engineer.

Payment will be made under:

Pay Item	Pay Unit
601.0001.0000 Labor and Equipment	Day
601.0003.0000 Materials	Contingent Sum

CHAIN LENGTHS		NEW
Anchor Location	Total Chain Length (ft)	Chain added at Breakwater End (ft)
A	209.0	22.0
B	188.0	20.0
C	198.0	25.0
D	207.0	60.0
G	227.0	50.0
H	218.0	90.0
I	192.0	90.0
J	220.0	90.0
K	110.0	22.0
L	182.0	50.0
M	163.0	47.0
N	172.0	40.0
Q	174.0	60.0
P	203.0	49.0

Note: All bridles replaced w/ either new or salvaged chain.

1 / 2 2 **AS-BUILT CHAIN LENGTHS**

6 CONCRETE SECTIONS @ 60' LENGTH TYP (5 JOINTS)

REPAIR NOTES:
1. ALL EXISTING BREAKWATER SECTION JOINTS COMPROMISED. REFERENCE SHTS 2 AND 3 FOR NEW CHAIN CONNECTIONS.
2. INSPECT ALL PRIMARY ANCHOR CHAINS AND BRIDLE CONNECTIONS TO BREAKWATER.
3. MISSING RUBBER FENDERS ARE LOCATED ON SEAFLOOR. RECOVER AND RE-USE WHERE NOTED.
4. ANCHOR CHAINS A AND B ARE SUSPECTED TO HAVE FAILED CONNECTIONS TO BREAKWATER.
5. RE-ESTABLISH PRIMARY ANCHOR CHAIN CONNECTIONS TO BREAKWATER AT LOCATIONS BASED ON UNDERWATER INSPECTION AND AS DIRECTED BY THE ENGINEER.
6. ALL NEW MATERIALS NOT SHOWN. REFERENCE STATEMENT OF WORK FOR MATERIALS LIST TO HAVE ON HAND.

REFERENCE AS BUILT DRAWINGS (PROJECTS 70159 & 67907) FOR EXISTING FEATURES NOT SHOWN.

ATTACHMENT A

DO NOT S… DIMENSIONS

DESIGNED BY: J. Doley/TNH
CHECKED BY: K. Miller
DRAWN BY: JD/K. Miller
PATH: O:\Tke\67907\MF\As-Built\03-Harbo…
PLOT: Mon, 18/Sep/06 07:49AM

STATE OF ALASKA 49TH Kirk D. Miller CE-8550 REGISTERED PROFESSIONAL ENGINEER

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

Tenakee Springs Concrete Breakwater Mooring Repair

CONCRETE BREAKWATER REPAIR - SITE PLAN
Project No. SDRER00571

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION	SHT 1	2005	3	5

SALVAGED RUBBER FENDER. THREAD CHAIN THRU MIDDLE.

SALVAGED RUBBER FENDER. THREAD CHAIN THRU MIDDLE.

1" STUD LINK CHAIN LOOP w/ SHACKLE. 6'-0" LENGTH.

THREAD 1" CHAIN THRU EXIST HOLES IN TS8X8

CONCRETE SECTION JOINT REPAIR
TYP JOINTS B-P, C-Q & D-N (6 LOCATIONS)

SHT 2

REMOVE EXISTING CHANNEL WELDMENT

REUSE EXISTING 24"O.D.x 12"I.D.x9" RUBBER FENDER, 3 TOTAL PER CONNECTION

REMOVE EXISTING 1 1/4"x38 1/4" THRU BOLT, 4 TOTAL ON EACH SIDE OF CONNECTION

EXISTING STRESS STEEL TENSION ROD ANCHOR ASSEMBLY

REMOVE EXISTING FENDER BRACKET, PER CONNECTION

USE EXISTING 1 3/4"ø x5 3/8" BOLT AND NUT. PROVIDE NEW COTTER KEY.

EXISTING 1 1/4" STRESS-STEEL ROD & ANCHOR ASSEMBLY TO BE REPLACED, SEE SHEET 7.

PLAN

TOP COVER PLATE, TYPE 1

EXISTING 6"x34 1/2"x1 1/2" STEEL PLATE TO REMAIN

NOTE:
- REPLACE ALL LONGITUDINAL TENSIONING RODS, SEE SHEET 7 FOR DETAILS.
- SEE SECTION D-D ON SHT. 6
- ALL COTTER KEYS TO BE STAINLESS STEEL.

TOP COVER PLATE, TYPE 1

RUBBER FENDER

FENDER BRACKET (NEW)

BRACKET BOLTS SHALL BE TORQUED TO 390 FT./LBS.

REUSE 6 LINKS OF EXISTING 7-LINKx1 3/8" STUD LINK CHAINS

PROVIDE TWO (2) 1 3/8" SAFETY BOLT CHAIN SHACKLES WITH 3/8" COTTER KEY. (SHACKLES MUST BE PLACED BEFORE TENSIONING ANCHOR CAPS ARE INSTALLED.

PLAN

FENDER BRACKET (NEW) SEE SHEET 5 FOR DETAILS

EXISTING CONCRETE FLOATING BREAKWATER

TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8") SEE SHEET 5 FOR DETAILS

BONDING CABLE (SEE SHEET 5)

4 1/2"ø HAND HOLES, BOTH SIDES OF BRACKET SUPPORT

EXISTING ANGLE NOT SHOWN FOR CLARITY

1"ø A325 BOLT WITH DOUBLE NUT & WASHER, BOLTS SHALL BE TORQUED TO 390 FT/LBS., SEE SHEET 5 FOR DETAILS

FENDER BRACKET (NEW)

BRACKET SUPPORT, TYPE 1 (TS 8"x8"x5/8")

10 LBS. ZINC ANODE (6"x12"x1/2"). SEE SHEET 5 FOR DETAILS

NEW 1 3/4"ø - 5NCx6 3/8" A325 BOLT (2 PER JOINT, 20 TOTAL) WITH 2 3/4" THREAD LENGTH. DRILL 1/2" FROM END FOR 3/8" COTTER KEY.

TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8") SEE SHEET 5 FOR DETAILS

RUBBER FENDER

ANCHOR YOKE- 1 1/4" OR 1 3/8" GALV. STUD LINK CHAIN, 25 LINKS. (REUSE EXISTING)

CHAIN PATTERN TOWING SHACKLE. 1 3/4" "MARCHIP" (REUSE EXISTING)

1 3/8" GALV. STUD LINK ANCHOR CHAIN. (REUSE EXISTING)

EXISTING BREAKWATER FLOAT

REUSE EXISTING RUBBER FENDER

BOTTOM COVER PLATE, TYPE 1

REUSE EXISTING ANCHOR YOKE

SECTION A-A

SECTION B-B

TOP COVER PLATE, TYPE 1, SEE SHEET 6 FOR DETAILS.

TYP. 1/2

1/2"ø BOLT

EXISTING 1/2" PLATE TO REMAIN

TYP.

BONDING CABLE FOR ZINC ANODE

BRACKET SUPPORT, TYPE 1 (TS 8"x8"x5/8"), SEE SHT. 5 FOR DETAILS

1/2

TYP.

1/2

1"ø A325 BOLT WITH DOUBLE NUTS & WASHER. SEE SHEET 5 FOR BRACKET BOLTS ASSEMBLY.

TOP COVER PLATE TYPE 1

1/2

TYP.

1/2

EXISTING CONCRETE FLOATING BREAKWATER

1"ø A325 TYPE 1 BOLT WITH DOUBLE NUTS & WASHER

RUBBER FENDER

EXISTING 1/2" PLATE TO REMAIN

TOP COVER PLATE

GRIND EXISTING WELD WHERE IT CONFLICTS WITH THE INSTALLATION OF THE TOP COVER PLATE

SECTION E-E

TYP.

TYP. 1/2

BOTTOM COVER PLATE, TYPE 1, SEE SHEET 6 FOR DETAILS

3/4"±

4 1/4"±

1 1/8"±

SECTION C-C

AS-BUILT CONNECTION DETAIL

CONNECTION DETAIL
TYPE I
(Joint No. 3C,4D,5,6,7,8,9,10,11 & 12)

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

NO.	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

DESIGNED BY: D.D. Saldivar	PROJECT NO. 70159
DRAWN BY: AutoCAD / B.W.B.	DATE: [illegible] 0
CHECKED BY: J.D. Beedle	SHEET 3 OF 9

ENGINEER'S SEAL

SALVAGED RUBBER FENDER. HANG FROM NEW CHAIN WITH 3/4" CHAIN & SHACKLE

SALVAGED RUBBER FENDER. HANG FROM NEW CHAIN LOOP OR BRACKETS WITH 3/4" CHAIN & SHACKLE

1" STUD LINK CHAIN LOOP ORIENTED VERTICAL THRU TS8X8 w/ SHACKLE. 16'-0" LENGTH.

THREAD 1" CHAIN THRU VERTICAL LENGTH, INSIDE TS8X8. TYP BOTH SIDES OF BREAKWATER SECTIONS

REMOVE EXISTING CHANNEL WELDMENT

REUSE EXISTING 24"O.D.x 12"I.D.x9" RUBBER FENDER, 3 TOTAL PER CONNECTION

REMOVE EXISTING 1 1/4"x38 1/4" THRU BOLT, 4 TOTAL ON EACH SIDE OF CONNECTION

EXISTING STRESS STEEL TENSION ROD ANCHOR ASSEMBLY

REMOVE EXISTING FENDER BRACKET, PER CONNECTION

EXISTING 1 1/4" STRESS-STEEL ROD & ANCHOR ASSEMBLY TO BE REPLACED, SEE SHEET 7.

USE EXISTING 1 3/4"ø x5 3/8" BOLT AND NUT. PROVIDE NEW 3/8" COTTER KEY.

PLAN

TOP COVER PLATE, TYPE 1

EXISTING 6"x34 1/2"x1 1/2" STEEL PLATE TO REMAIN

NOTE:
- REPLACE ALL LONGITUDINAL TENSIONING RODS, SEE SHEET 7 FOR DETAILS.
- SEE SECTION D-D ON SHT. 6
- ALL COTTER KEYS TO BE STAINLESS STEEL.

TOP COVER PLATE, TYPE 1

RUBBER FENDER

FENDER BRACKET (NEW)

BRACKET BOLTS SHALL BE TORQUED TO 390 FT./LBS.

REUSE 6 LINKS OF EXISTING 7-LINKx1 3/8" STUD LINK CHAINS

PROVIDE TWO (2) 1 3/8" SAFETY BOLT CHAIN SHACKLES WITH 3/8" COTTER KEY. (SHACKLES MUST BE PLACED BEFORE TENSIONING ANCHOR CAPS ARE INSTALLED.

PLAN

FENDER BRACKET (NEW) SEE SHEET 5 FOR DETAILS

TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8") SEE SHEET 5 FOR DETAILS

TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8")

EXISTING CONCRETE FLOATING BREAKWATER

BONDING CABLE (SEE SH

4 1/2" BOTH S SUPPORT

EXISTING ANGLE NOT SHOWN FOR CLARITY

1"ø A325 BOLT WITH DOUBLE NUT & WASHER, BOLTS SHALL BE TORQUED TO 390 FT/LBS.,SEE SHEET 5 FOR DETAILS

FENDER BRACKET (NEW)

BRACKET SUPPORT, TYPE 1 (TS 8"x8"x5/8")

10 LBS. ZINC ANODE (6"x12"x1/2"), SEE SHEET 5 FOR DETAILS

RUBBER FENDER

BOTTOM COVER PLATE, TYPE 1

NEW 1 3/4"ø - 5NCx6 3/8" A325 BOLT (2 PER JOINT, 20 TOTAL) WITH 2 3/4" THREAD LENGTH. DRILL 1/2" FROM END FOR 3/8" COTTER KEY.

REUSE EXISTING ANCHOR YOKE

RUBBER FENDER

ANCHOR YOKE- 1 1/4" OR 1 3/8" GALV. STUD LINK CHAIN, 25 LINKS. (REUSE EXISTING)

CHAIN PATTERN TOWING SHACKLE. 1 3/4" "MARCHIP" (REUSE EXISTING)

1 3/8" GALV. STUD LINK ANCHOR CHAIN. (REUSE EXISTING)

EXISTING BREAKWATER FLOAT

SECTION A-A

SECTION B-B

TOP COVER PLATE, TYPE I, SEE SHEET 6 FOR DETAILS.

1/2"ø BOLT

EXISTING 1/2" PLATE TO REMAIN

TYP.

1/2

BONDING CABLE FOR ZINC ANODE

BRACKET SUPPORT, TYPE 1 (TS 8"x8"x5/8"), SEE SHT. 5 FOR DETAILS

1"ø A325 BOLT WITH DOUBLE NUTS & WASHER. SEE SHEET 5 FOR BRACKET BOLTS ASSEMBLY.

TOP COVER PLATE TYPE I

EXISTING CONCRETE FLOATING BREAKWATER

1"ø A325 TYPE 1 BOLT WITH DOUBLE NUTS & WASHER

RUBBER FENDER

EXISTING 1/2" PLATE TO REMAIN

GRIND EXISTING WELD WHERE IT CONFLICTS WITH THE INSTALLATION OF THE TOP COVER PLATE

SECTION E-E

BOTTOM COVER PLATE, TYPE I, SEE SHEET 6 FOR DETAILS

3 1/4"±

4 1/4"±

1 5/8"±

1"ø

SECTION C-C

AS-BUILT CONNECTION DETAIL

CONNECTION DETAIL
TYPE I
(Joint No. 3C,4D,5,6,7,8,9,10,11 & 12)

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

CONCRETE SECTION JOINT REPAIR
TYP JOINTS G-M & H-L (4 LOCATIONS)

DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

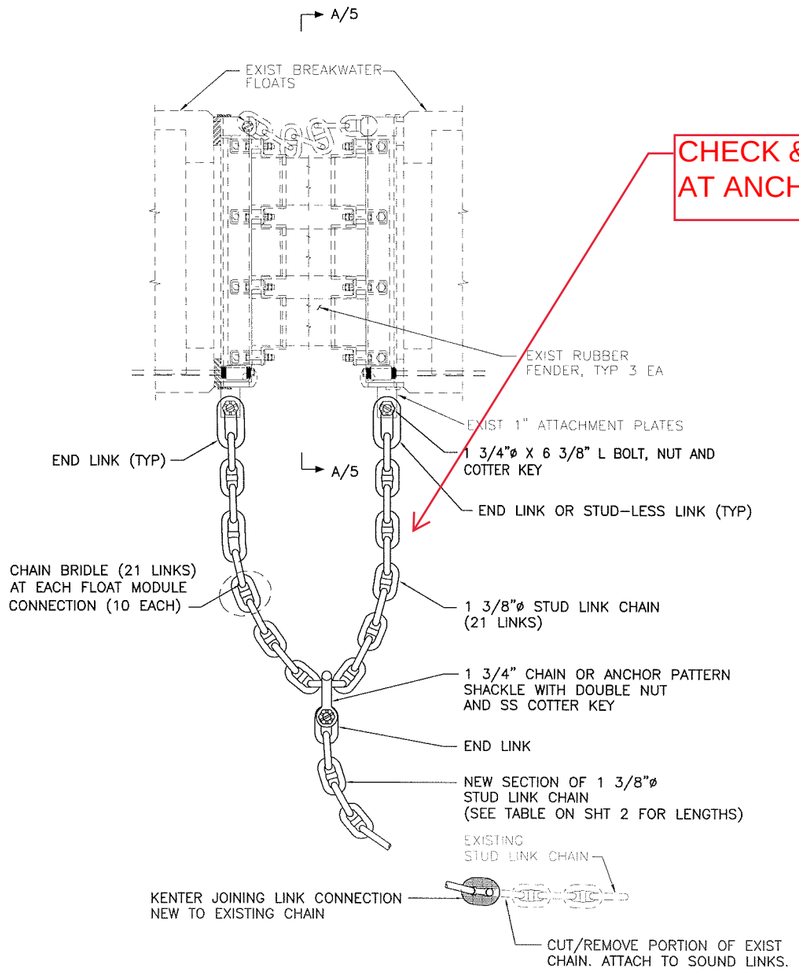
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

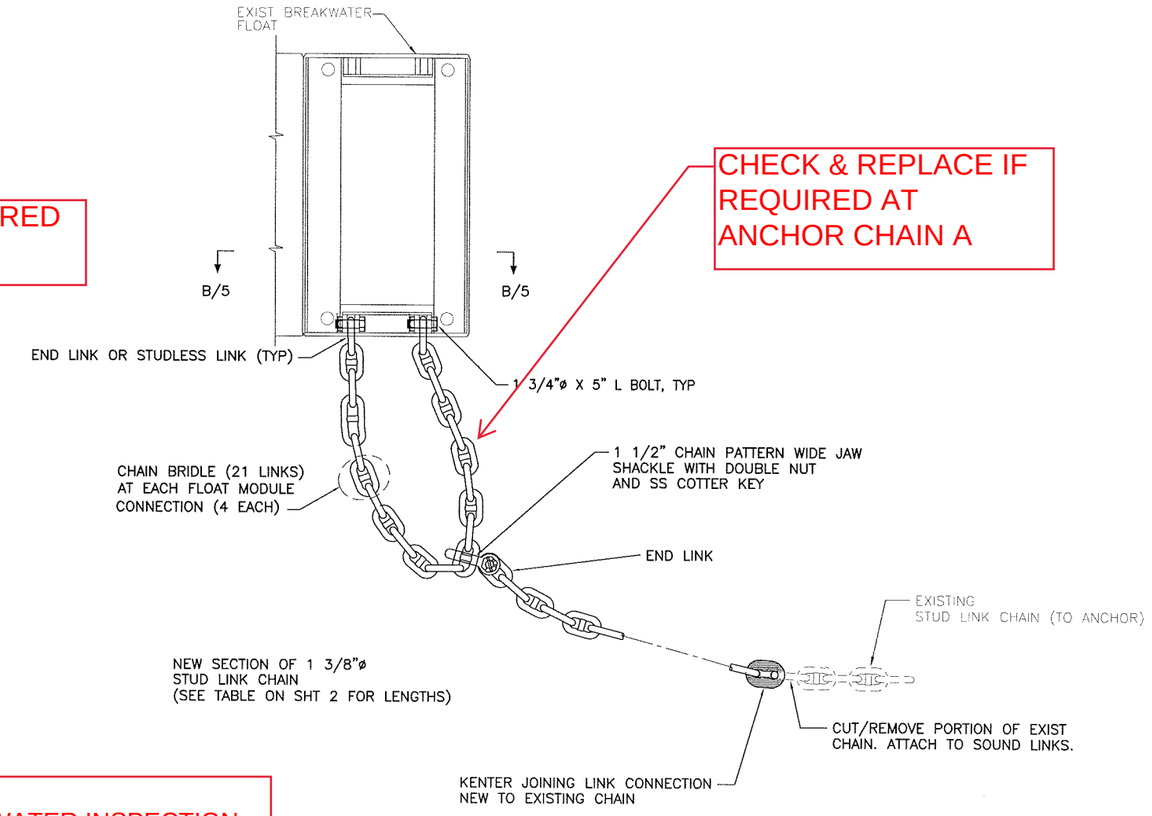
DESIGNED BY: D.D. Saldivar	PROJECT NO. 70158
DRAWN BY: AutoCAD / B.W.B.	DATE: Feb
CHECKED BY: D.D. Beedle	SHEET 3 OF 9

SHT 3

ENGINEER'S SEAL



CHECK & REPLACE IF REQUIRED AT ANCHOR CHAIN B



CHECK & REPLACE IF REQUIRED AT ANCHOR CHAIN A

NOTES:
1. CONDUCT UNDERWATER INSPECTION OF ALL ANCHOR CHAIN ATTACHMENTS TO BREAKWATER.
2. RECONNECTION/REPAIR EXPECTED AT ANCHOR CHAINS A & B.
3. REPLACE SHACKLES OR OTHER ITEMS IF DIRECTED BY THE ENGINEER BASED ON INSPECTION FINDINGS.

1 (3/4) **CONNECTION DETAIL - INTERIOR JOINTS** (SIDE VIEW)
SCALE: 3/4"=1-0"

2 (3/4) **CONNECTION DETAIL - EXTERIOR CORNERS** (END VIEW)
SCALE: 3/4"=1-0"

As-Built

GRAPHIC SCALE
1' 0 1/2" 1' 2'
(IN FEET)
SCALE: 3/4" = 1'-0"

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

DESIGNED BY: J. Datey/TNH
CHECKED BY: K. Miller
DRAWN BY: JD/K. Miller

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

Tenakee Springs Concrete Breakwater Mooring Repair

Details 1

PATH: Q:\Tke\67907\MF\As-Built\04-Conn Detail REV.dwg
PLOT: Mon, 18/Sep/06 07:50AM

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
67907	2005	4	5

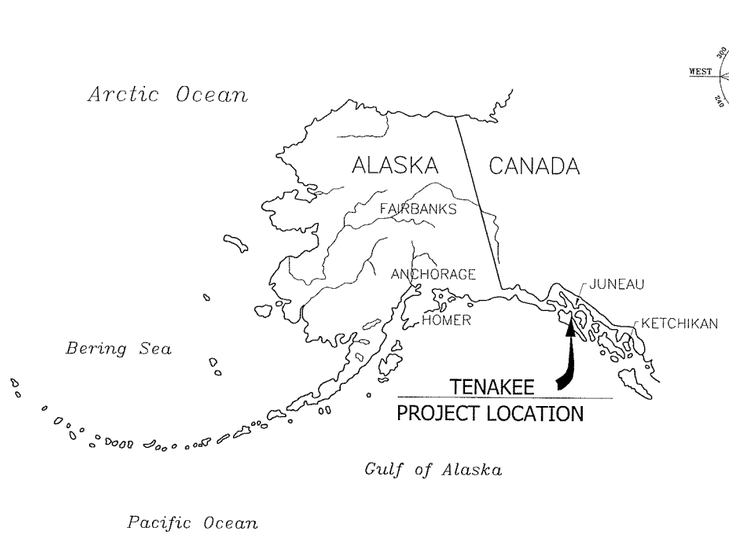
SHT 4

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
SOUTHEAST REGION

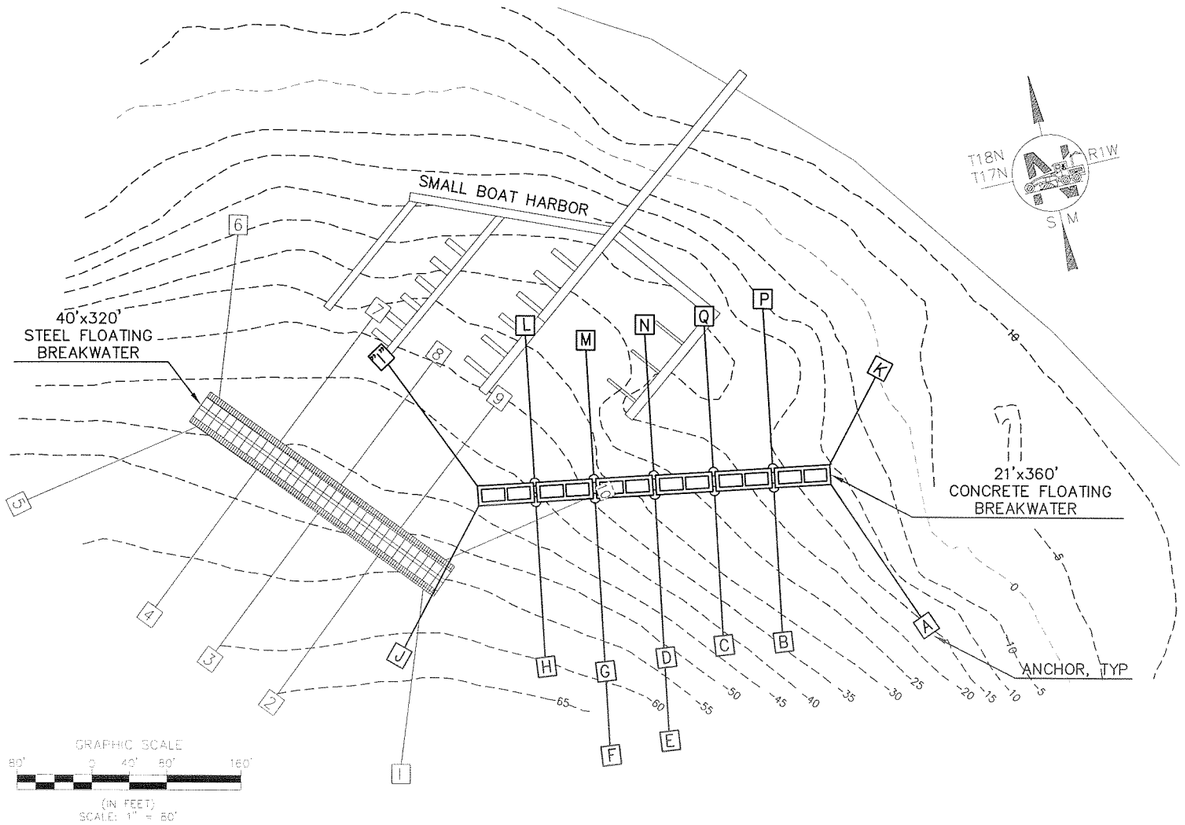
TENAKEE SPRINGS, ALASKA

FLOATING CONCRETE BREAKWATER MOORING REPAIRS

PROJECT NO. 67907



LOCATION MAP
NOT TO SCALE



TENAKEE SMALL BOAT HARBOR VICINITY MAP

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3	EXISTING SITE
4	DETAILS

As-Built
Date Completed: 06-02-05
Contractor: Western Marine Construction, Inc.

ATTACHMENT B

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
SOUTHEAST REGION

APPROVED

_____ Date _____
Regional Preconstruction Engineer
Patrick J. Kemp

APPROVED

_____ Date _____
Director, S.E. Region
Gary L. Paxton

PROJECT NUMBER:
67907
DATE:
APRIL 2005
SHEET 1 OF 5

STATE OF ALASKA
49th
Kirk D. Miller
CE-8550
REGISTERED PROFESSIONAL ENGINEER

NOTES:

SCOPE OF WORK
THE PROJECT INCLUDES FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO REPAIR/RESTORE THE MOORING CHAINS ON THE CONCRETE BREAKWATER LOCATED IN TENAKEE SPRINGS ALASKA.

SCHEDULE
COMPLETE ALL REPAIRS BY JUNE 15, 2005

EXISTING CONDITIONS
THE CONCRETE FLOATING BREAKWATER IN TENAKEE SPRINGS IS CONSTRUCTED OF SIX EACH 60 FOOT LONG BY 21 FEET WIDE MODULES. EACH MODULE IS JOINED TO THE NEXT WITH SIDE LOADED CYLINDRICAL ENERGY UNITS. THERE ARE 14 MOORING CHAINS. EACH CHAIN TERMINATES IN A 10 FOOT BY 10 FOOT BY 4-FOOT CONCRETE ANCHOR BLOCK. TWO OF THE CHAINS ON THE SOUTH SIDE HAVE DOUBLE ANCHOR BLOCKS.

THE BREAKWATER IS CONSTRUCTED FROM POST-TENSIONED CONCRETE UNITS.

THE CONCRETE BREAKWATER WAS ORIGINALLY INSTALLED AT A DIFFERENT LOCATION IN 1972. IT WAS REORIENTED IN 1976. IT WAS AGAIN REORIENTED IN 1985 AND REPAIRS WERE MADE TO THE JOINTS. IN 1990 THE BREAKWATER WAS REPAIRED. THIS INCLUDED NEW TENSION RODS AND OTHER WORK ON THE CONNECTIONS.

RECENT UNDERWATER INSPECTIONS REVEAL THAT THE CHAINS WERE IN POOR CONDITION. FOUR OF THE CHAINS WERE BROKEN. TWO OF THE CHAINS WERE CORRODED AND WORN TO THE POINT WHERE FAILURE IS IMMINENT. MANY OF THE BRIDLES SHOWED SIGNIFICANT WEAR AND CORROSION.

MATERIALS
THE FOLLOWING MATERIAL LIST IS PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. IT IS BASED ON THE METHOD OF INSTALLATION OUTLINED IN THESE PLANS. OTHER METHODS AND MATERIALS MAY BE USED IF APPROVED BY THE ENGINEER.

THE CONTRACTOR MAY ELECT TO INSTALL ADDITIONAL SHACKLES AND END LINKS IF DESIRED. IF ANOTHER INSTALLATION METHOD IS CHOSEN AND APPROVED NO ADDITIONAL PAYMENT WILL BE MADE FOR QUANTITIES OF MATERIAL DIFFERING FROM THE BELOW LIST.

PRELIMINARY MATERIALS LIST:

1-3/8" DIAMETER GRADE 2 GALVANIZED STUD LINK ANCHOR CHAIN AS FOLLOWS:

14 BRIDLES, EACH 21 LINKS LONG WITH END LINKS ON EACH END

700 FEET OF STUD LINK CHAIN. REFERENCE VARIOUS SEGMENT LENGTHS IDENTIFIED IN TABLE 2 ON THIS SHEET.

14 EACH 1-3/8" DIAMETER GALVANIZED KENTER JOINING LINKS
10 EACH 1-3/4" DIAMETER GALVANIZED CHAIN PATTERN WIDE JAW SHACKLES W/ DOUBLE NUTS AND SS COTTER PINS.
4 EACH 1-1/2" DIAMETER GALVANIZED CHAIN PATTERN WIDE JAW SHACKLES W/ DOUBLE NUTS AND SS COTTER PINS.
20 EACH 1-3/4" DIAMETER X 6-3/8" LONG GALVANIZED SNC A325 BOLTS WITH NUTS & 3/8" DIAMETER COTTER KEYS.
8 EACH 1-3/4" DIAMETER X 5" LONG GALVANIZED SNC A325 BOLTS W/ JAM NUTS & 1/8" COTTER PINS.

END LINKS MAY BE MADE BY REMOVING A STUD FROM ONE LINK.
1-1/4" DIAMETER STUD LINK CHAIN MAY BE SUBSTITUTED FOR 1-3/8" DIAMETER IF APPROVED BY THE ENGINEER DUE TO AVAILABILITY OR SCHEDULE REQMTS.

CONSTRUCTION PROCEDURES
THE SECTION OF CHAIN FROM THE BREAKWATER CONNECTION OUT TOWARD THE ANCHOR BLOCK SHALL BE REPLACED TO THE APPROXIMATE CHAIN LENGTHS SHOWN IN THESE PLANS. ALL BRIDLES SHALL BE REPLACED. END SECTIONS SHALL BE INSTALLED AT THE FOUR CORNERS OF THE BREAKWATER. TENSIONING AND UNIFORM POSITIONING OF THE BREAKWATER IS REQUIRED. AS SUCH, ACTUAL CHAIN LENGTHS MAY VARIE FROM THOSE INDICATED.

THE CONNECTION PLATES AT THE BREAKWATER SHALL BE INSPECTED FOR WEAR. THERE ARE UNUSED CONNECTION PLATES ADJACENT TO ALL EXISTING CONNECTIONS. THE CONTRACTOR SHALL USE THE BETTER OF THE TWO CONNECTION PLATES BASED ON VISUAL INSPECTION.

ALL SHACKLES AND BOLTS SHALL BE SECURED IN A MANNER THAT INCLUDE A STAINLESS STEEL COTTER KEY.

UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE CONTACTOR SHALL REPAIR THE BREAKWATER AS FOLLOWS:

STEP 1 - ALIGN EXISTING BREAKWATER AND SECURE IN PLACE WITH TEMPORARY TENSIONING DEVICES.

THE CONTRACTOR SHALL RETRIEVE THE ENDS OF THE BROKEN CHAINS AND SHALL PROVIDE TEMPORARY TENSION DEVICES ON ALL CHAINS. USE TEMPORARY WIRE ROPE OR CHAIN ATTACHMENTS, OR OTHER MEANS. THE BREAKWATER SHALL BE BROUGHT INTO A STRAIGHT ALIGNMENT IN THE EXISTING LOCATION SHOWN ON THE PLANS AND SHALL BE SECURED IN PLACE WITH THE TEMPORARY TENSIONING DEVICES.

STEP 2 - REPLACE IDENTIFIED SECTIONS OF CHAIN AND APPLY FINAL TENSION

REPLACE IDENTIFIED SECTIONS OF CHAIN ONE AT A TIME. THE NEW SECTIONS OF CHAIN SHALL BE TENSIONED TO THE APPROXIMATE VALUES SHOWN ON THE PLANS. THE TENSION VALUES ARE DEPENDENT ON THE STAGE OF THE TIDE. THE CONTRACTOR SHALL CLOSELY MONITOR THE TIDE STAGE. THE TENSION IN THE CHAIN SHALL BE MEASURED WITH AN APPROVED MEANS PRIOR TO MAKING FINAL CONNECTION. OBSERVE BREAKWATER ALIGNMENT THROUGH ONE COMPLETE TIDAL CYCLE. MAKE ADDITIONAL CHAIN LENGTH/TENSION ADJUSTMENTS AS MAY BE REQUIRED.

DIVING OPERATIONS
DIVERS WILL BE REQUIRED FOR A PORTION OF THE REPAIR. DIVING OPERATIONS SHALL CONFORM TO THE ASSOCIATION OF DIVING CONTRACTORS INTERNATIONAL (ADCI) CONSENSUS STANDARDS.

INSURANCE REQUIREMENTS
PROVIDE FEDERAL LONGSHOREMEN AND HARBOR WORKERS COMPENSATION ACT INSURANCE IN THE MINIMUM AMOUNT OF $1,000,000

SUBMITTALS
PROVIDE MANUFACTURES DATA SHEETS AND PRODUCT DATA ON:
- CHAIN
- SHACKLES
- KENTER JOINTS
- END LINKS
- BOLTS
- COTTER KEYS

PROVIDE A CONSTRUCTION SCHEDULE.

SUPPORTING INFORMATION

1. AS-BUILT PLANS FOR 1990 BREAKWATER REPAIRS (PROJECT 70159, SHTS 3 & 4). NOTE: PORTIONS OF THESE PLANS MAY NOT BE ENTIRELY ACCURATE. IN PARTICULAR, THE NEW CHAIN ATTACHMENT INDICATED BELOW THE FLOAT LEVEL IS NOT BELIEVED TO BE PRESENT.

2. UNDERWATER INSPECTION REPORT (DRAFT - DATED APRIL 2005)

DEMOLITION & REMOVAL NOTES

ALL EXISTING FEATURES MAY NOT BE SHOWN. EACH OF THE EXISTING ANCHOR ATTACHMENT POINTS HAVE CORRODED BOLTS AND SECTIONS OF EXISTING CHAIN TO BE REMOVED PRIOR TO MAKING NEW CONNECTIONS. THE BOLTS ON THE OUTER CORNERS CANNOT BE REMOVED WITHOUT CUTTING.

DISTANCE TO SET ANCHOR GIVEN: FORCE, LENGTH, DEPTH						
H/WT *1	DEPTH *2	HORIZ DIST	MAX DIST *3	H FORCE (lbs) *4	V FORCE (lbs)	TENSION (lbs)
A 114.0	27	185.3	207.2	1938	3553	4047.2
B 100.0	43	162.1	183	1700	3196	3620.2
C 100.0	52	166.9	191	1700	3366	3770.9
D 100.0	64	169.6	197.1	1700	3522.4	3911.2
G 100.0	77	178.9	213.5	1700	3859	4216.9
H 100.0	71	174.9	206.1	1700	3706	4077.3
I 118.0	50	168.1	185.4	2006	3264	3831.5
J 111.0	75	179.2	206.8	1887	3740	4189.1
K 120.0	14	105.9	109.5	2040	1876.8	2772
L 100.0	44	157.2	176.6	1700	3094	3530.3
M 100.0	42	143	157.7	1700	2774.4	3253.8
N 100.0	39	150.8	167.5	1700	2924	3382.3
O 100.0	32	154	171	1700	2958	3411.7
P 100.0	28	176	200.9	1700	3447.6	3843.9
*1: Anchor I.D.						
*2: Mudline elevation at anchor location.						
*3: Distance FBW can move from anchor and taut chain.						
*4: Horiz force with under water chain weight = 17PLF						
Note: Corner anchors I, V, K & A utilized higher "H/WT" values to yield offsetting FBW forces perpendicular to FBW CL according to their respected measured angles off the CL.						

3 / 2 2 **DISTANCE TO SET GIVEN ANCHOR**

CHAIN IDENTIFICATION													
TIDE ELEVATION	A	K	B	P	C	Q	D	N	G	M	H	L	J	I
+15'	1315	1250	1400	1375	1605	1480	1720	1565	1840	1640	1945	1715	1990	1815
+10'	770	790	942	920	1065	1050	1190	1175	1365	1290	1515	1400	1580	1495
+5'	420	450	580	585	695	730	820	860	1005	995	1170	1130	1250	1220
+0' (MLLW)	210	225	345	345	450	470	560	610	735	755	900	895	980	980

See Sheet 2 Table 3

1 / 2 2 **APPROXIMATE CHAIN TENSION VERSUS TIDE ELEVATION (TENSION IN POUNDS)**

CHAIN IDENTIFICATION													
A	K	B	P	C	Q	D	N	G	M	H	L	J	I
40'	30'	40'	40'	40'	40'	50'	40'	50'	50'	80'	50'	100'	50'

2 / 2 2 **MINIMUM CHAIN REPAIR LENGTH**

See Sheet 3

AS-BUILT

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

DESIGNED BY: J. Daley/TNH
CHECKED BY: K. Miller
DRAWN BY: JD/K. Miller

STATE OF ALASKA
49th
Kirk D. Miller
CE-8550
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

Tenakee Springs Concrete
Breakwater Mooring Repair

General Notes

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PLOT: Mon, 18/Sep/06 01:27PM

REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
67907	2005	2	5

CHAIN LENGTHS		NEW
Anchor Location	Total Chain Length (ft)	Chain added at Breakwater End (ft)
A	209.0	22.0
B	188.0	20.0
C	198.0	25.0
D	207.0	60.0
G	227.0	50.0
H	218.0	90.0
I	192.0	90.0
J	220.0	90.0
K	110.0	22.0
L	182.0	50.0
M	163.0	47.0
N	172.0	40.0
Q	174.0	60.0
P	203.0	49.0

Note: All bridles replaced w/ either new or salvaged chain.

1 / 2 2 **AS-BUILT CHAIN LENGTHS**

Access gangway

21'X360' CONCRETE FLOATING BREAKWATER

2 / 3 4 TYP.

2 / 3 4 TYP. ALL CORNERS

40'X320' STEEL FLOATING BREAKWATER (NO WORK)

Concrete Breakwater 21'x360'

Mooring anchor & chain, typ

-70 -65 -60 -55 -50 -45 -40 -35 -30 -25 -20

As-Built

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

DESIGNED BY: J. Daley/TNH

CHECKED BY: K. Miller

DRAWN BY: JD/K. Miller

STATE OF ALASKA 49th Kirk D. Miller CE-8550 REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

Tenakee Springs Concrete Breakwater Mooring Repair

SITE PLAN

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REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
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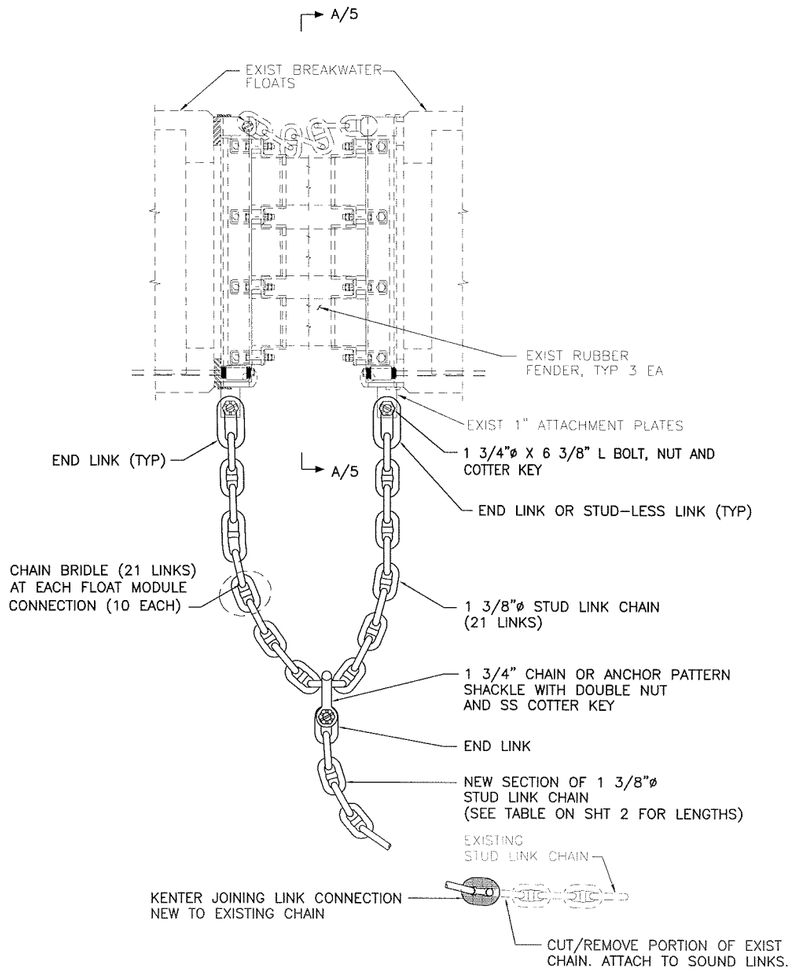
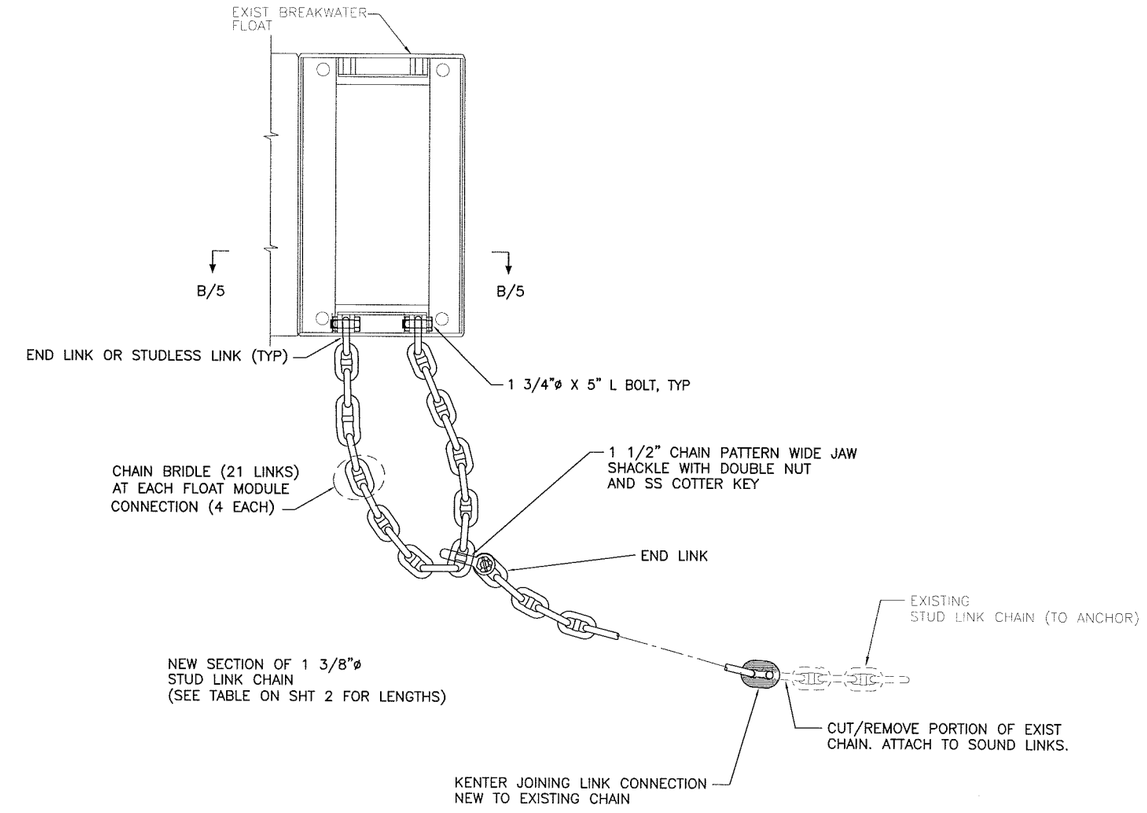


1 3/4 **CONNECTION DETAIL - INTERIOR JOINTS** (SIDE VIEW)
SCALE: 3/4"=1-0"



2 3/4 **CONNECTION DETAIL - EXTERIOR CORNERS** (END VIEW)
SCALE: 3/4"=1-0"

As-Built

GRAPHIC SCALE
1' 0 1/2" 1' 2'
(IN FEET)
SCALE: 3/4" = 1'-0"

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

DESIGNED BY: J. Datey/TNH
CHECKED BY: K. Miller
DRAWN BY: JD/K. Miller

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

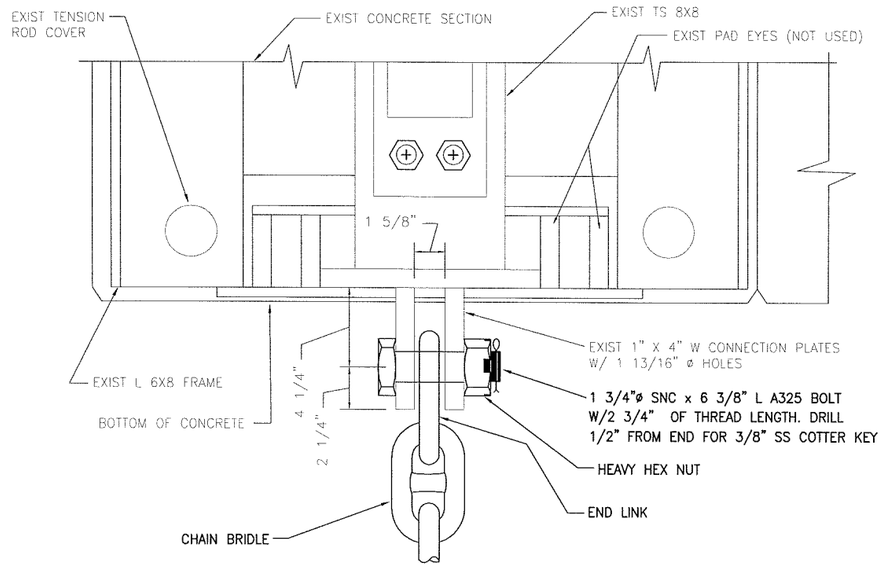
STATE OF ALASKA 49th Kirk D. Miller CE-8550 REGISTERED PROFESSIONAL ENGINEER

Tenakee Springs Concrete Breakwater Mooring Repair

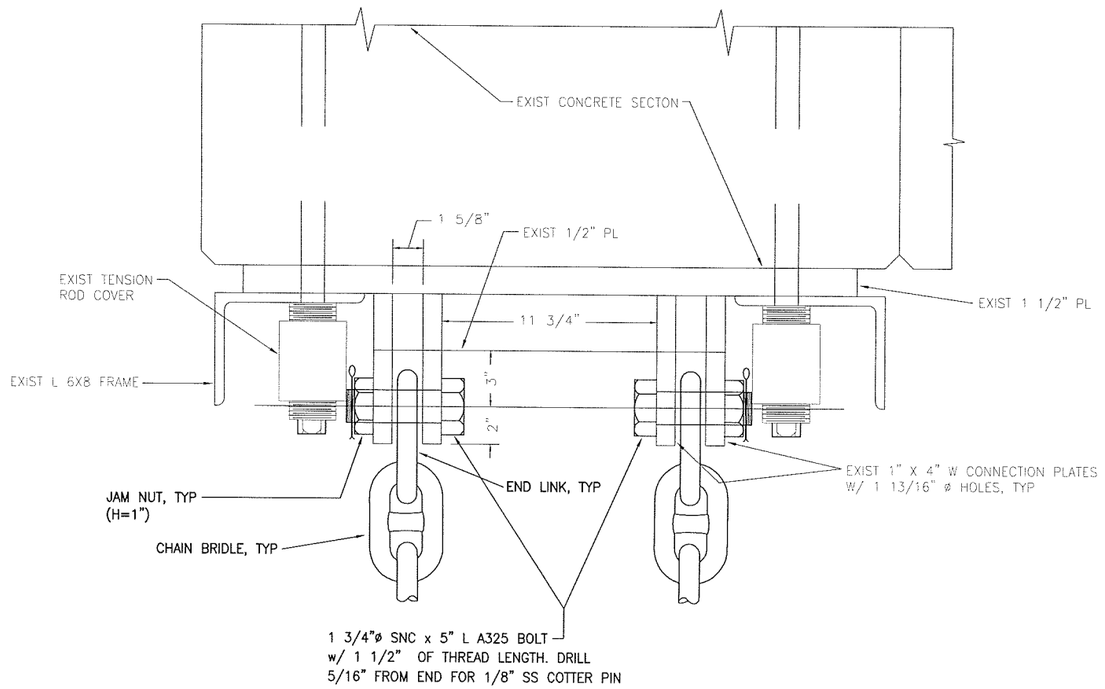
Details 1

PATH: Q:\Tke\67907\MF\As-Built\04-Conn Detail REV.dwg
PLOT: Mon, 18/Sep/06 07:50AM

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			67907	2005	4	5



A 4 4 **ELEV VIEW - TYPICAL INTERIOR JOINT CHAIN CONNECTION**



B 4 4 **PLAN VIEW - TYPICAL EXTERIOR CORNER CHAIN CONNECTION**

As-Built

DO NOT SCALE FROM THESE DRAWINGS USE DIMENSIONS

DESIGNED BY: J. Daley/TNH

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES DIVISION

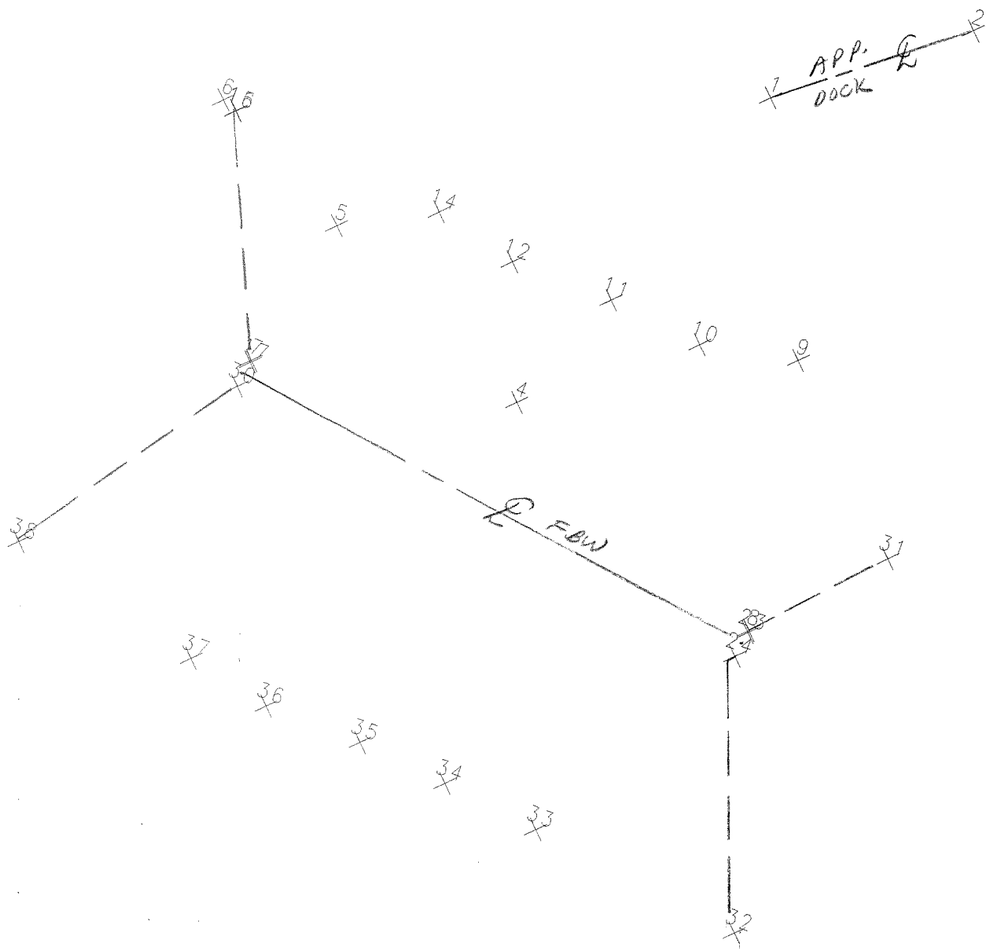
Tenakee Springs Concrete
Breakwater Mooring Repair

CHECKED BY: K. Miller
DRAWN BY: JD/K. Miller

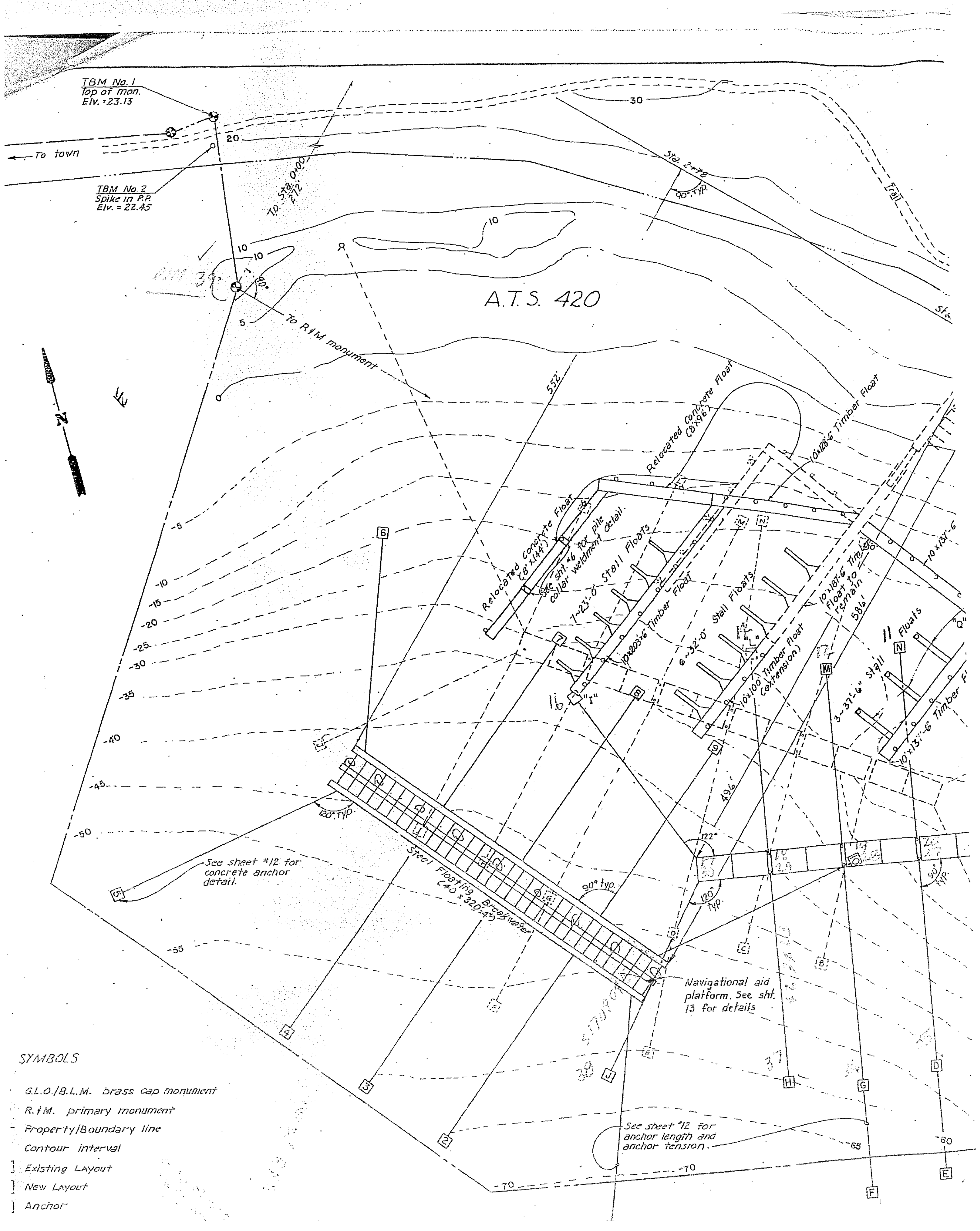
Details 2

PATH: Q:\Tke\67907\MF\As-Built\04-Conn Detail REV.dwg
PLOT: Mon, 18/Sep/06 07:37AM

REVISIONS			PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
NO.	DATE	DESCRIPTION				
			67907	2005	5	5

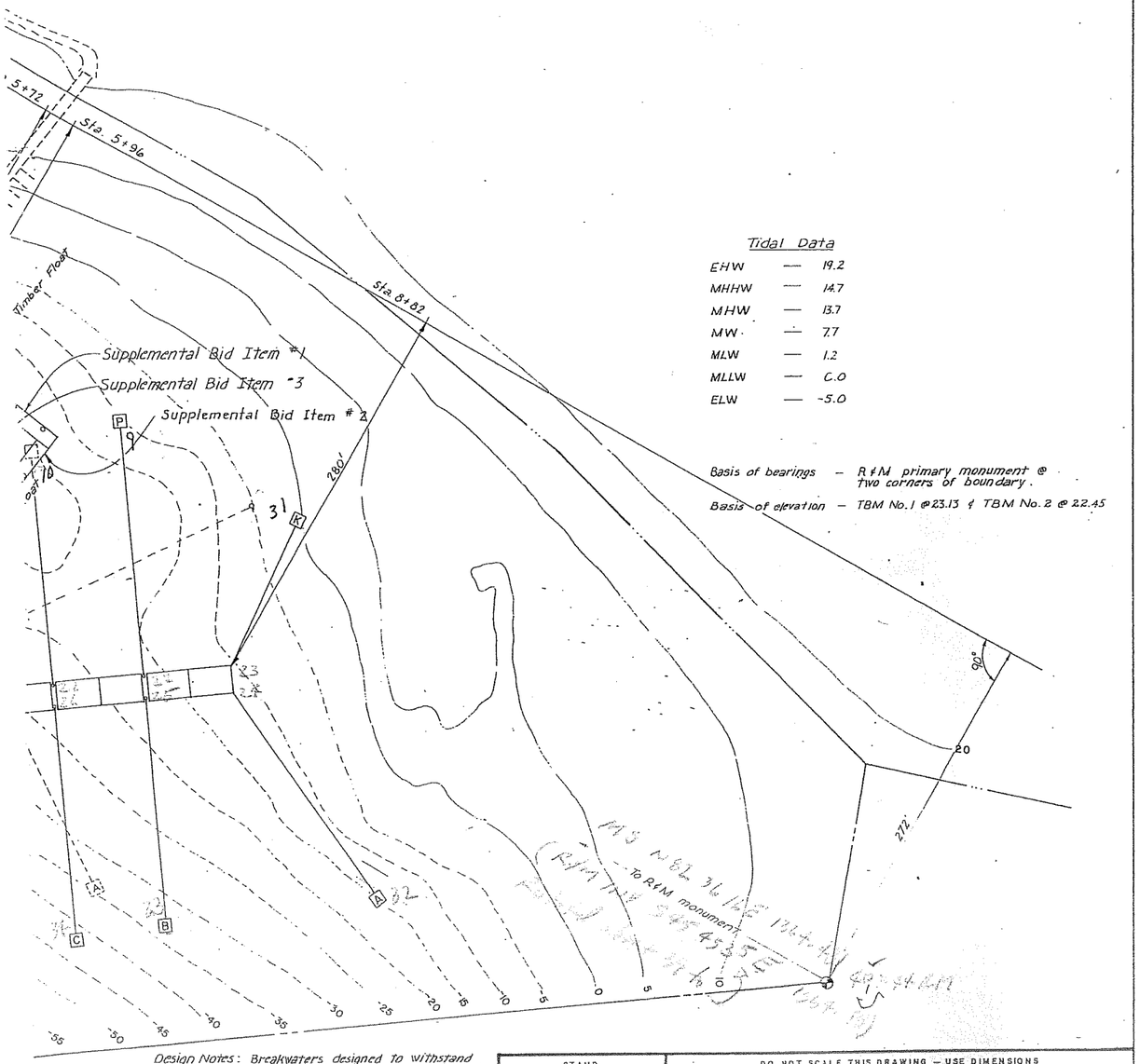


TENAKEE ANCHORS
PLOT BY DSM
5/25/05
SCALE 1"=100'



SYMBOLS

- G.L.O./B.L.M. brass cap monument
- R.&M. primary monument
- Property/Boundary line
- Contour interval
- Existing Layout
- New Layout
- Anchor



Tidal Data

EHW	—	19.2
MHHW	—	14.7
MHW	—	13.7
MW	—	7.7
MLW	—	1.2
MLLW	—	C.0
ELW	—	-5.0

Basis of bearings — R4M primary monument @ two corners of boundary.

Basis of elevation — TBM No. 1 @ 23.13 & TBM No. 2 @ 22.45

Design Notes: Breakwaters designed to withstand sea and swell condition of 5'x18'. Floating breakwater theoretically will pass a 3.4' wave attenuated to 1.3'.

160 11.6

STAMP

STATE OF ALASKA
4.9.84
Robert P. Berk
No. 4884-E
REGISTERED PROFESSIONAL ENGINEER

DO NOT SCALE THIS DRAWING — USE DIMENSIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PROJECT LAYOUT

DESIGNED	CHECKED	DRAWN	DATE
DS	RB	DS	DEC. '84

ILLER ENGG
JOB: TKEBW TIME: 10:55 DATE: 05-26-2005

Easy Survey Coordinate Editor, File ->TKEBW.CR5

Point	Northing	Easting	Elevation	- Description -
1	4489.2124	4982.1704	100.0000	CTR APP DK BY GW
2	4577.6127	5093.8472	55.3900	CTR APP DK SHORE
3	4087.0961	5433.5443	49.6748	BCH
4	4239.7880	4893.7302	49.7439	FC
5	4309.9784	4740.0993	47.7438	FC
6	4362.8499	4640.2421	48.2669	FC
7	4205.4656	4717.7933	47.7177	FBW
8	4149.1714	5091.6021	47.6388	FBW
9	4330.3148	5060.0875	0.2571	CH
10	4317.7367	4994.8023	-0.3063	CH
11	4325.6504	4929.2205	3.7530	CH
12	4327.3011	4858.2898	1.6950	CH
13	4356.2742	4802.2445	1.6877	CTR/ANKR
14	4341.9155	4800.9378	4.8499	CH – ANCHOR CHAIN @ ANCHOR SHACKLE
15	4359.0913	4650.7581	2.2324	CH
16	4358.5357	4650.4594	2.2321	CH
17	4203.9823	4717.5699	47.7177	I BW
18	4194.7494	4778.8786	47.7177	L BW
19	4185.2932	4841.6705	47.7177	M BW
20	4175.8370	4904.4625	47.7177	N BW
21	4166.3807	4967.2544	47.7177	Q BW
22	4156.9245	5030.0464	47.7177	P BW
23	4147.6917	5091.3551	47.7177	K BW
24	4129.8924	5088.6746	47.7177	A BW
25	4139.1252	5027.3659	47.7177	B BW
26	4148.5814	4964.5739	47.7177	C BW
27	4158.0377	4901.7820	47.7177	D BW
28	4167.4939	4838.9900	47.7177	G BW
29	4176.9501	4776.1981	47.7177	H BW
30	4186.1830	4714.8894	47.7177	J BW
31	4226.2820	5162.0188	34.4628	KANKR
32	3956.4212	5151.7827	33.6920	a ankr
33	3975.9538	5003.6686	33.6524	B ANKR
34	3983.9064	4936.3646	34.5675	c ankr
35	3990.1914	4873.8366	32.3060	DANKR
36	3991.6064	4806.5891	33.1758	GANKR
37	4004.5199	4748.6939	33.5189	HANKR
38	4038.8836	4613.7110	33.9658	JANKR
39	4763.0326	4463.1991	41.9922	WCMC1 ATS 1304
41	4315.8760	4188.1065	41.9922	MC "
42	3978.5145	4475.2236	41.9922	MC "
43	3831.3697	4808.2550	41.9922	MC "
44	3811.0787	5440.7396	41.9922	WCMC2 "

CALCULATED CHAIN LUG ADJ. PTS ON FBW USING FIELD MST OF INSIDE CNRS OF FBW (#7 & #8 CHN LGTHS WERE ADJUSTED AT 4 end locations to allow chain ADJ TO THE INSIDE LUG.

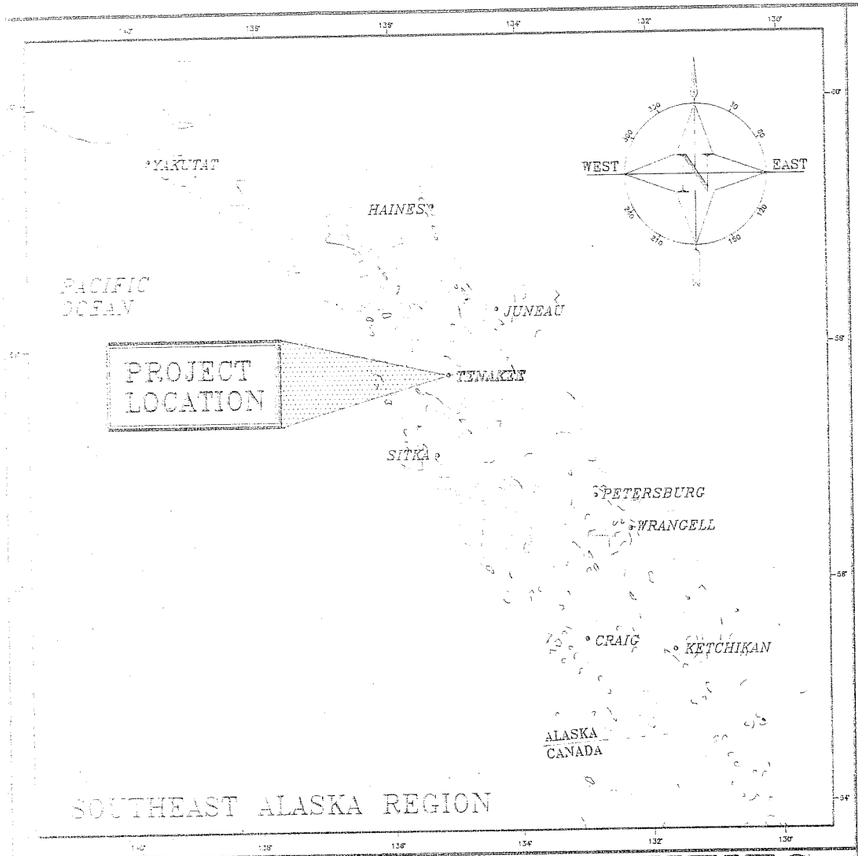
USED 1364.43 (S 45°45'35" E 1364.48)
ALSO BASIS OF BRG THIS SURVEY

AS STAMPED ON CAPS AND AS APPARENTLY USED BY OOT 12/84 BUT CAP DESIGNATION NOT AS SHOWN ON MY COPY OF ATS 1304

ATS REC. MEANDERS
BASIS OF COORDS
39–44 BASIS OF BRGS

PHONEY ELEV.'S
ELEV'S @ ANKORS DETERMINED BY SOUNDING

D S Miller, P.E.
5/26/05



ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
[illegible]	MOBILIZATION AND DEMOBILIZATION	L.S.	ALL REQ'D.
[illegible]	DBE INCENTIVE	C.S.	ALL REQ'D.
[illegible]	TENSIONING STRAND, FURNISHED (65'-0" LENGTH)	EACH	48
[illegible]	TENSIONING STRAND, INSTALLED	EACH	48
[illegible]	TRANSVERSE TENSIONING ROD, INSTALLED	EACH	6
[illegible]	BREAKWATER CONNECTION REPLACEMENT	EACH	10
[illegible]	CONCRETE REPAIRS	C.F.	10.53
[illegible]	REMOVE AND INSTALL TIMBER WALES	EACH	15

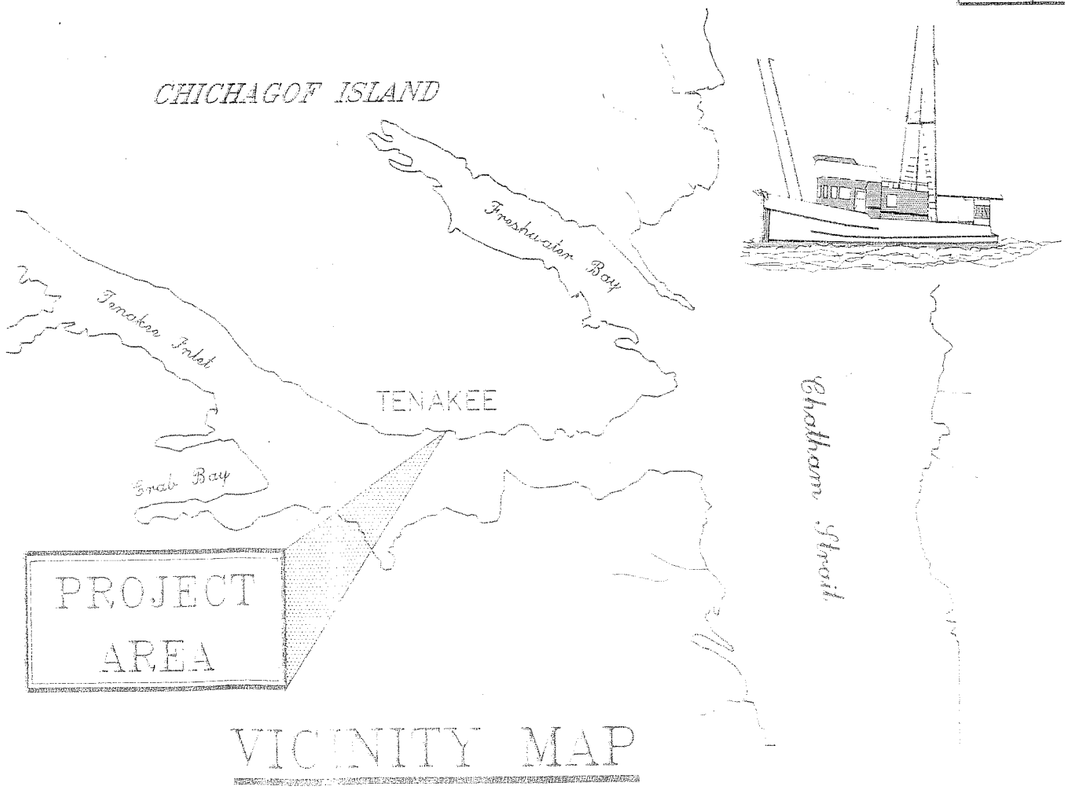
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
SOUTHEAST REGION
DESIGN AND CONSTRUCTION DIVISION

TENAKEE BREAKWATER REPAIR

PROJECT NO. 70159

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT LAYOUT
3	BREAKWATER CONNECTION REPLACEMENT, TYPE
4	BREAKWATER CONNECTION REPLACEMENT, TYPE
5	BRACKET DETAILS
6	TOP & BOTTOM COVER PLATE DETAIL
7	TENSIONING STRAND REPLACEMENT
8	TRANSVERSE ROD REPLACEMENT
9	TIMBER WALES AND CONCRETE REPAIR DETAILS



VICINITY MAP

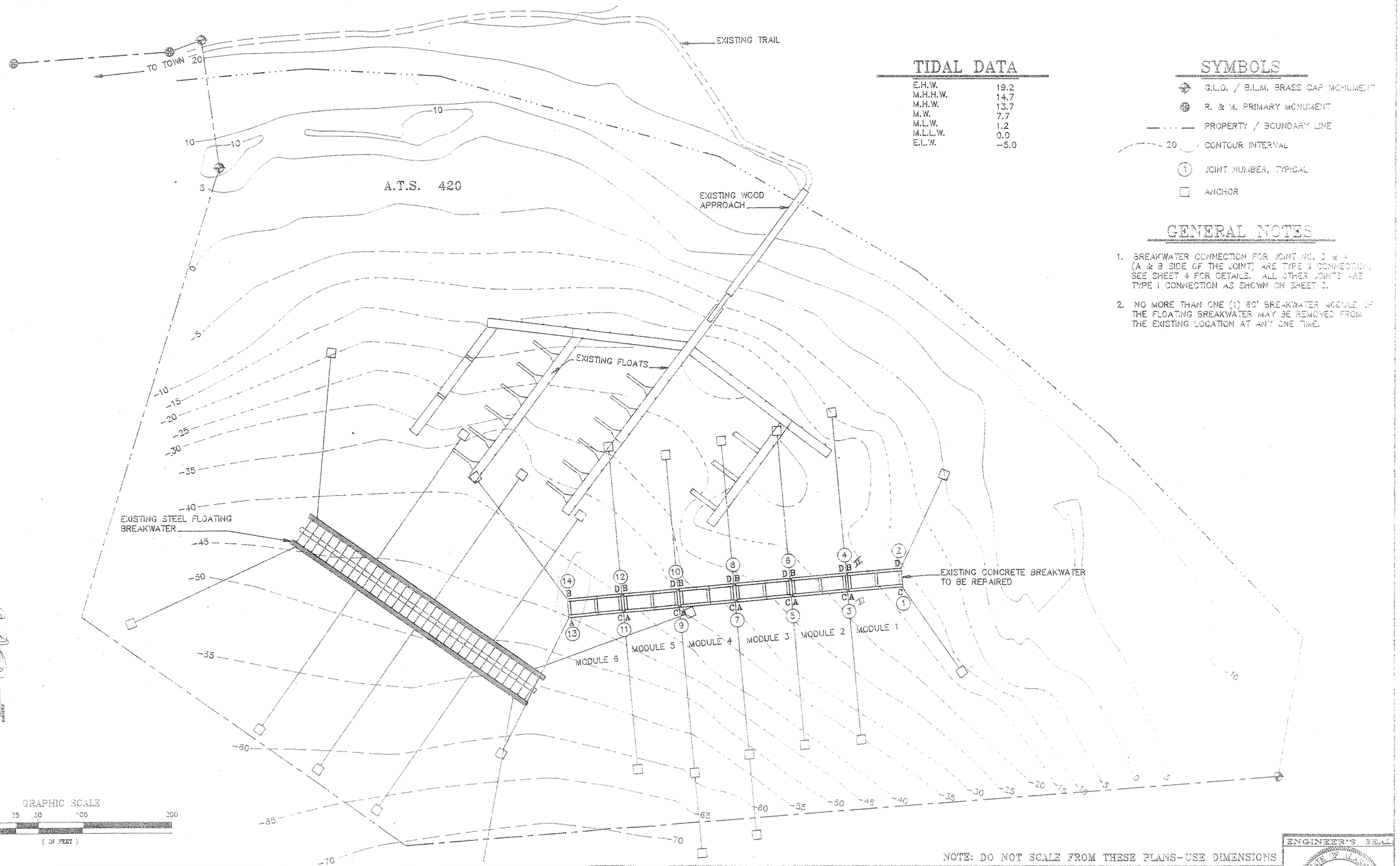
ATTACHMENT C

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
SOUTHEAST REGION DESIGN SECTION

APPROVED _____ date 3-27-90
Dist. Region Design Chief

APPROVED _____ date 3-27-90
Director, Dist. Region Design & Construction

PROJECT NUMBER: 70159
DATE: FEBRUARY 1990
SHEET 1 OF 9



TIDAL DATA

E.H.W.	19.2
M.H.H.W.	14.7
M.H.W.	13.7
M.W.	7.7
M.L.W.	1.2
M.L.L.W.	0.0
E.L.W.	-5.0

SYMBOLS

- G.L.O. / B.L.M. BRASS CAP MONUMENT
- R. & M. PRIMARY MONUMENT
- PROPERTY / BOUNDARY LINE
- 20 CONTOUR INTERVAL
- (1) JOINT NUMBER, TYPICAL
- ANCHOR

GENERAL NOTES

1. BREAKWATER CONNECTION FOR JOINT NO. 3 & 4 (A & B SIDE OF THE JOINT) ARE TYPE II CONNECTION, SEE SHEET 4 FOR DETAILS. ALL OTHER JOINTS ARE TYPE I CONNECTION AS SHOWN ON SHEET 3.
2. NO MORE THAN ONE (1) 60' BREAKWATER MODULE OF THE FLOATING BREAKWATER MAY BE REMOVED FROM THE EXISTING LOCATION AT ANY ONE TIME.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

BY:	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

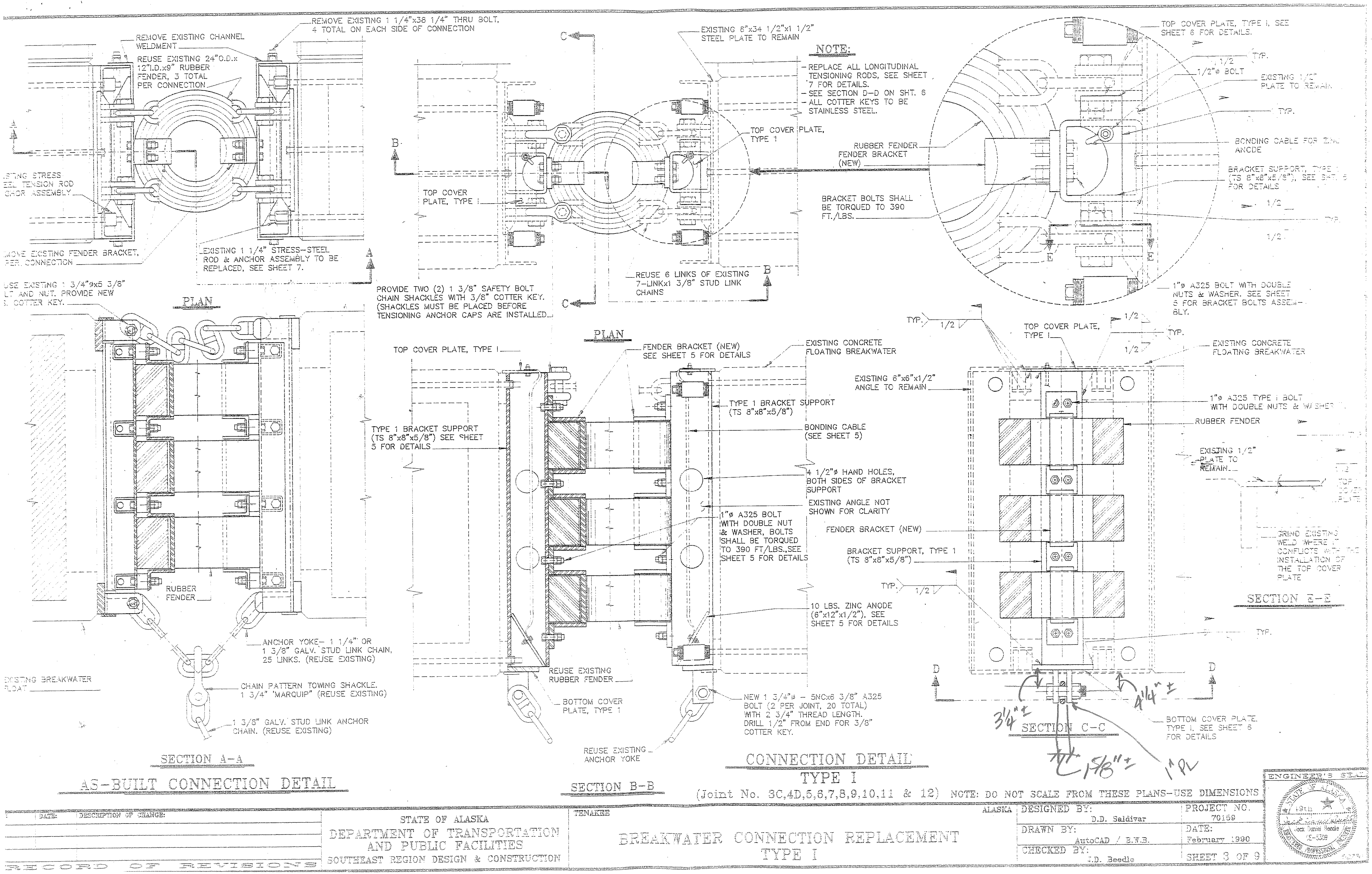
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

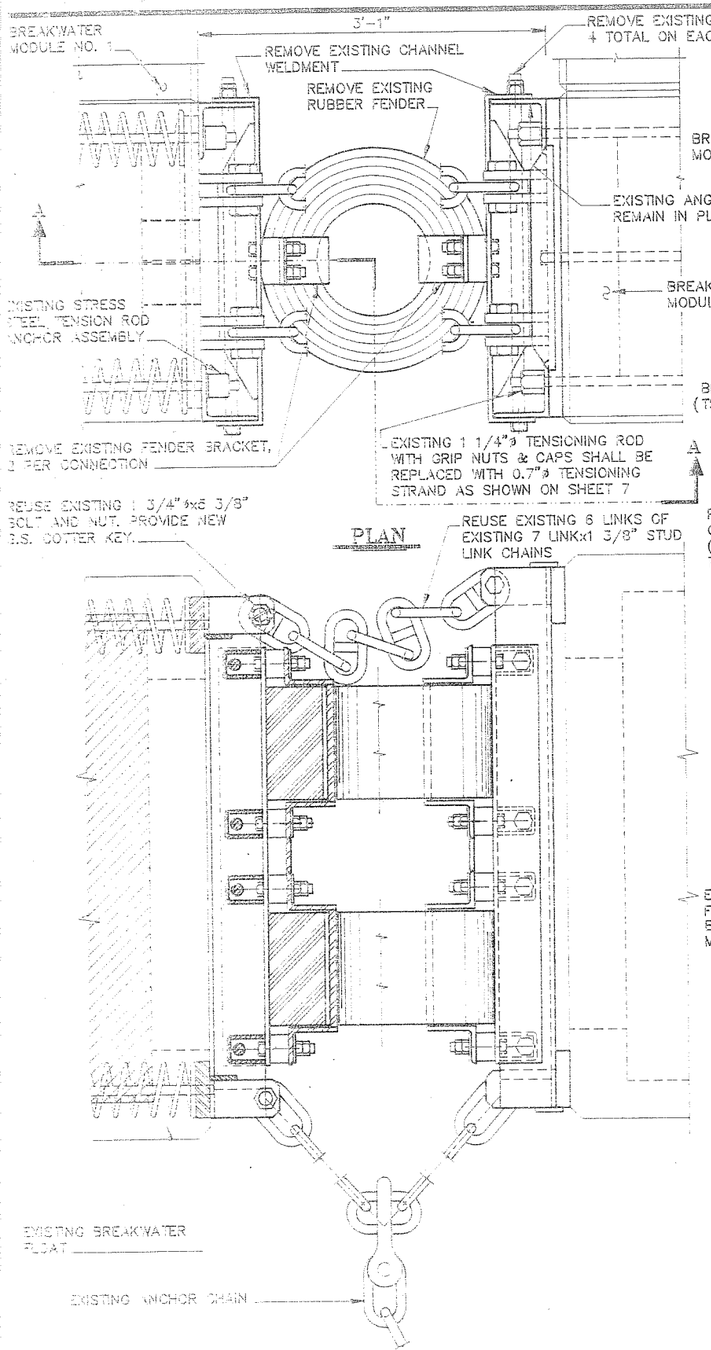
PROJECT LAYOUT

DESIGNED BY: D.S. Saldivar	PROJECT NO. 70159
DRAWN BY: AutoCAD / B.W.B.	DATE: FEBRUARY 1999
CHECKED BY: I.D. Beedle	SHEET 2 OF 9

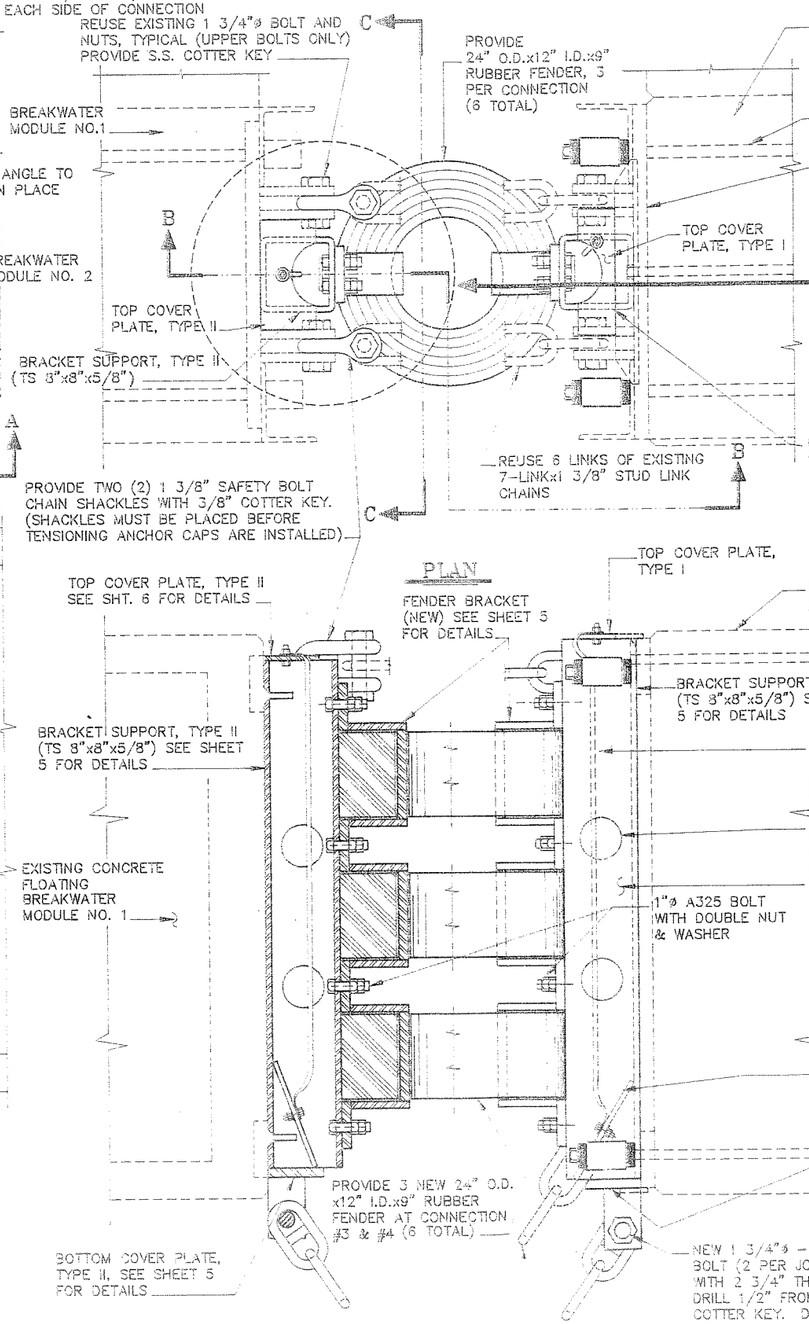
ENGINEER'S SEAL
STATE OF ALASKA



REMOVE EXISTING 1 1/4"x38 1/4" THRU BOLT, 4 TOTAL ON EACH SIDE OF CONNECTION
REMOVE EXISTING CHANNEL WELDMENT
REUSE EXISTING 24"O.D.x 12"I.D.x9" RUBBER FENDER, 3 TOTAL PER CONNECTION
EXISTING 1 1/4" STRESS-STEEL ROD & ANCHOR ASSEMBLY TO BE REPLACED, SEE SHEET 7.
PLAN
RUBBER FENDER
ANCHOR YOKE- 1 1/4" OR 1 3/8" GALV. STUD LINK CHAIN, 25 LINKS. (REUSE EXISTING)
CHAIN PATTERN TOWING SHACKLE. 1 3/4" 'MARQUIP' (REUSE EXISTING)
1 3/8" GALV. STUD LINK ANCHOR CHAIN. (REUSE EXISTING)
SECTION A-A
AS-BUILT CONNECTION DETAIL
EXISTING 6"x34 1/2"x1 1/2" STEEL PLATE TO REMAIN
NOTE:
- REPLACE ALL LONGITUDINAL TENSIONING RODS, SEE SHEET 7 FOR DETAILS.
- SEE SECTION D-D ON SHT. 6
- ALL COTTER KEYS TO BE STAINLESS STEEL.
TOP COVER PLATE, TYPE 1
TOP COVER PLATE, TYPE I
PROVIDE TWO (2) 1 3/8" SAFETY BOLT CHAIN SHACKLES WITH 3/8" COTTER KEY. (SHACKLES MUST BE PLACED BEFORE TENSIONING ANCHOR CAPS ARE INSTALLED)
REUSE 6 LINKS OF EXISTING 7-LINKx1 3/8" STUD LINK CHAINS
RUBBER FENDER
FENDER BRACKET (NEW)
BRACKET BOLTS SHALL BE TORQUED TO 390 FT./LBS.
TOP COVER PLATE, TYPE I, SEE SHEET 6 FOR DETAILS.
1/2"ø BOLT
EXISTING 1/2" PLATE TO REMAIN
BONDING CABLE FOR ZINC ANODE
BRACKET SUPPORT, TYPE I (TS 8"x8"x5/8"), SEE SHT. 5 FOR DETAILS
1"ø A325 BOLT WITH DOUBLE NUTS & WASHER. SEE SHEET 5 FOR BRACKET BOLTS ASSEMBLY.
PLAN
FENDER BRACKET (NEW) SEE SHEET 5 FOR DETAILS
EXISTING CONCRETE FLOATING BREAKWATER
TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8")
TYPE 1 BRACKET SUPPORT (TS 8"x8"x5/8") SEE SHEET 5 FOR DETAILS
BONDING CABLE (SEE SHEET 5)
4 1/2"ø HAND HOLES, BOTH SIDES OF BRACKET SUPPORT
EXISTING ANGLE NOT SHOWN FOR CLARITY
1"ø A325 BOLT WITH DOUBLE NUT & WASHER, BOLTS SHALL BE TORQUED TO 390 FT/LBS., SEE SHEET 5 FOR DETAILS
10 LBS. ZINC ANODE (6"x12"x1/2"). SEE SHEET 5 FOR DETAILS
REUSE EXISTING RUBBER FENDER
BOTTOM COVER PLATE, TYPE 1
NEW 1 3/4"ø - 5NCx6 3/8" A325 BOLT (2 PER JOINT, 20 TOTAL) WITH 2 3/4" THREAD LENGTH. DRILL 1/2" FROM END FOR 3/8" COTTER KEY.
REUSE EXISTING ANCHOR YOKE
SECTION B-B
EXISTING 6"x6"x1/2" ANGLE TO REMAIN
1"ø A325 TYPE I BOLT WITH DOUBLE NUTS & WASHER
RUBBER FENDER
EXISTING 1/2" PLATE TO REMAIN
FENDER BRACKET (NEW)
BRACKET SUPPORT, TYPE 1 (TS 8"x8"x5/8")
GRIND EXISTING WELD WHERE IT CONFLICTS WITH THE INSTALLATION OF THE TOP COVER PLATE
SECTION E-E
BOTTOM COVER PLATE, TYPE I, SEE SHEET 6 FOR DETAILS
SECTION C-C
CONNECTION DETAIL
TYPE I
(Joint No. 3C,4D,5,6,7,8,9,10,11 & 12)
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS
RECORD OF REVISIONS
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION
TENAKEE
ALASKA
BREAKWATER CONNECTION REPLACEMENT
TYPE I
DESIGNED BY: D.D. Saldivar
DRAWN BY: AutoCAD / B.N.B.
CHECKED BY: J.D. Beedle
PROJECT NO. 70159
DATE: February 1990
SHEET 3 OF 9
ENGINEER'S SEAL

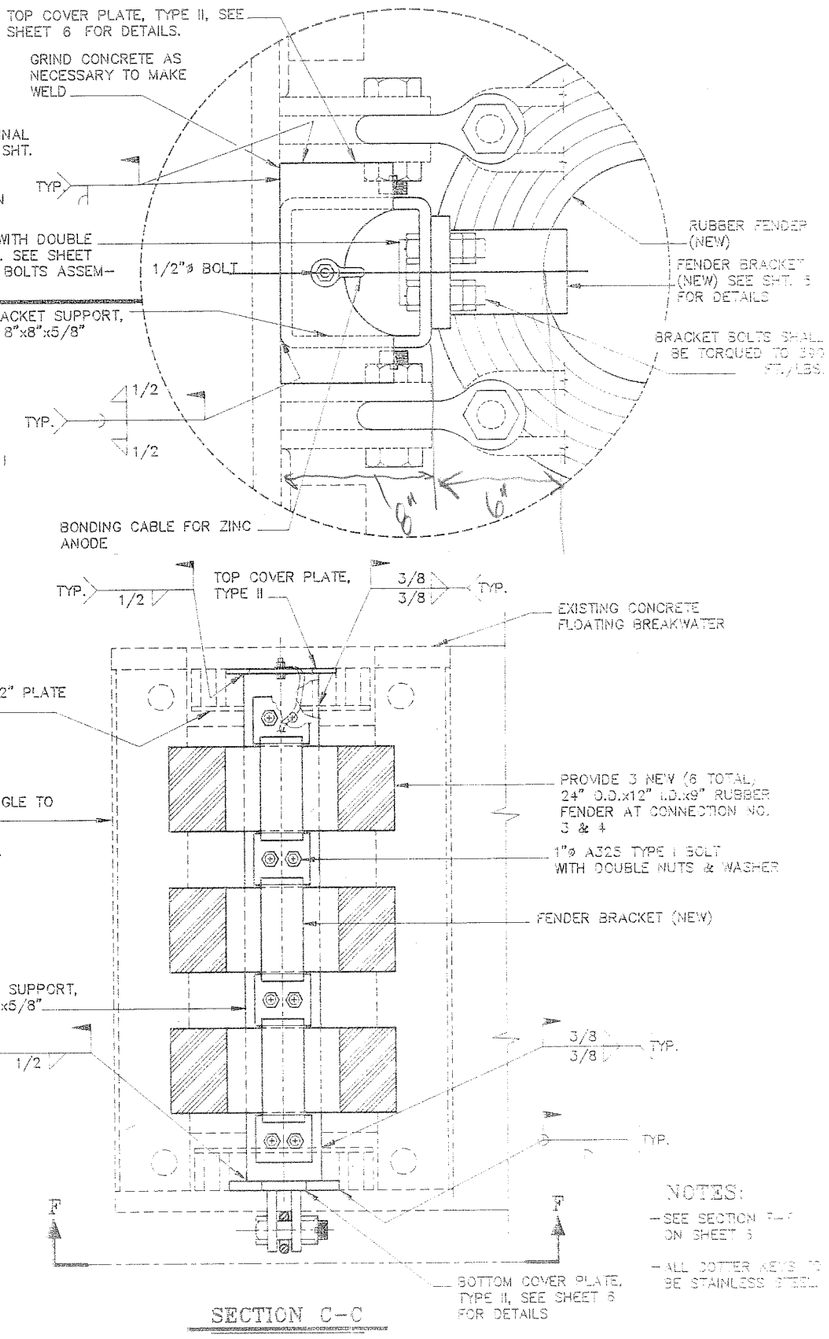


SECTION A-A



SECTION B-B

SECTION C-C



NOTES:
- SEE SECTION F-F ON SHEET 5
- ALL COTTER KEYS TO BE STAINLESS STEEL

AS-BUILT CONNECTION DETAIL
(JOINT NO. 3 & 4)

CONNECTION DETAIL
TYPE II
(JOINT NO. 3A & 4B)

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

NO.	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

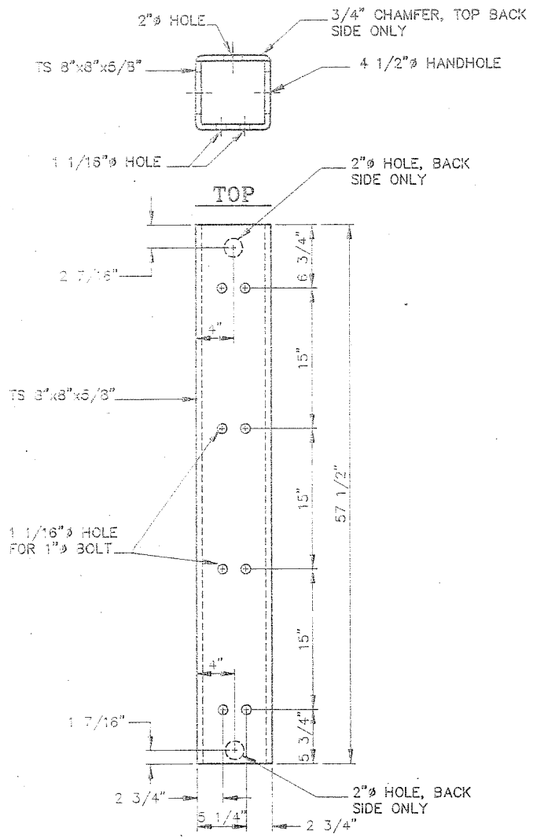
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

KETCHIKAN ALASKA

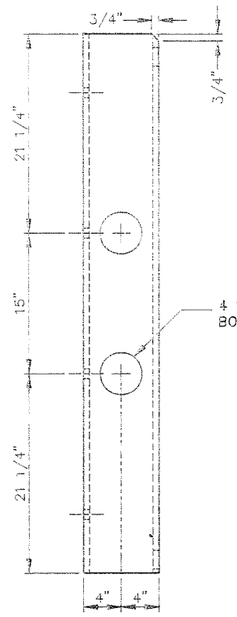
BREAKWATER CONNECTION REPLACEMENT TYPE II

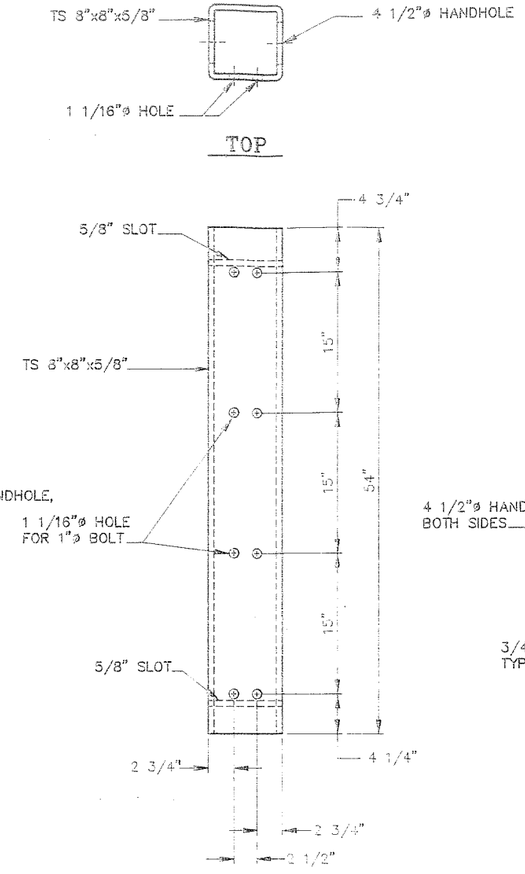
DESIGNED BY: D.D. Saldivar	PROJECT NO. 70159
DRAWN BY: AutoCAD / B.W.B.	DATE: February 1990
CHECKED BY: J.D. Beedle	SHEET 4 OF 9

ENGINEER'S SEAL
STATE OF ALASKA
19th
Jack Dean Beedle
12-5399
REGISTERED PROFESSIONAL ENGINEER

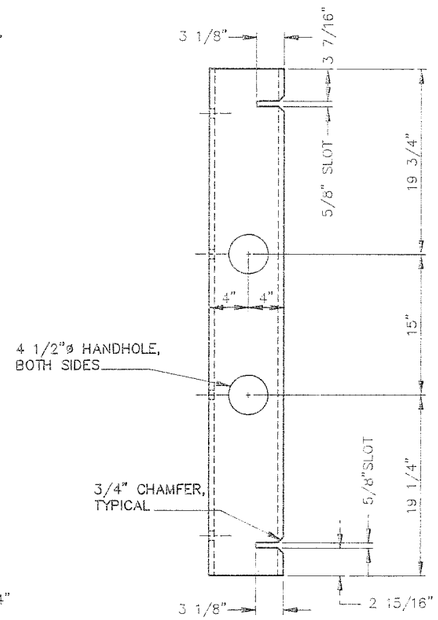


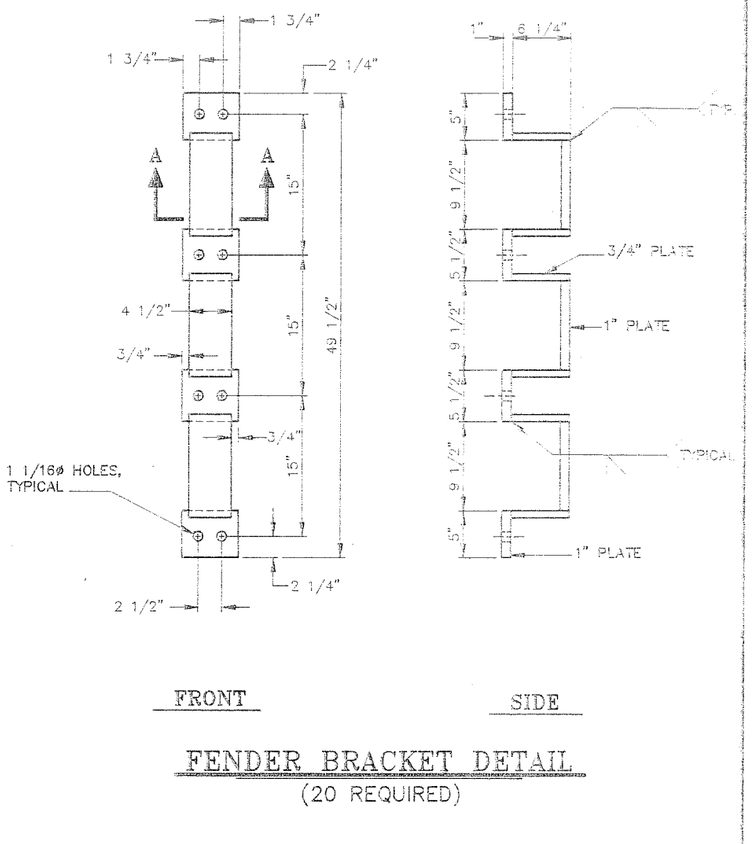
BRACKET SUPPORT TYPE I
(18 REQUIRED)



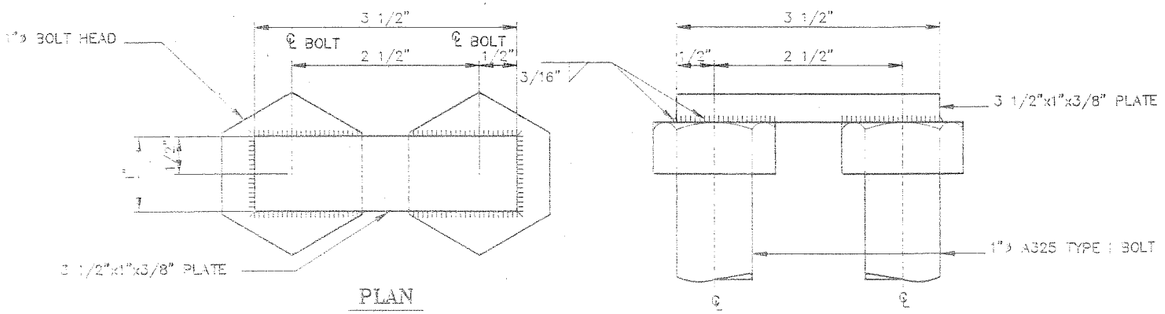


BRACKET SUPPORT TYPE II
(2 REQUIRED)

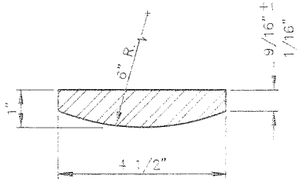




FENDER BRACKET DETAIL
(20 REQUIRED)

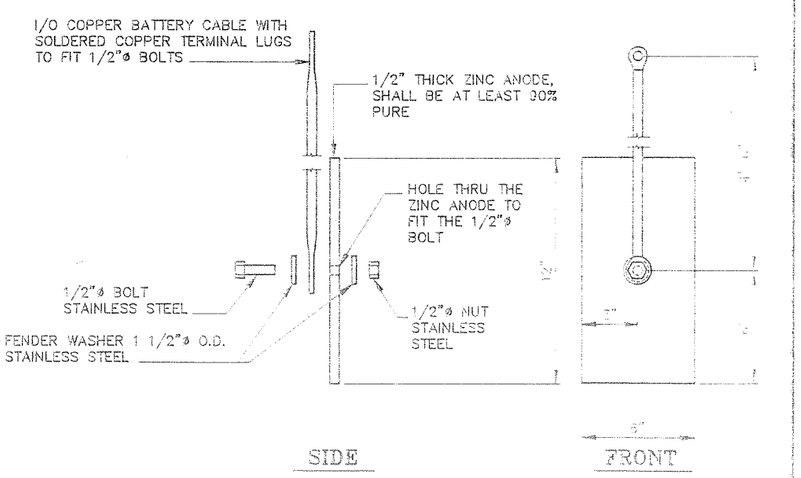


BRACKET BOLT ASSEMBLY DETAIL
(80 REQUIRED)



SECTION A-A

NOTE: CONTRACTOR MAY FABRICATE THIS COMPONENT FROM 12 3/4"ø x1/2" WALL PIPE WITH APPROPRIATE STIFFENER. SHOP DRAWING SUBMITTAL REQUIRED.



ZINC ANODE DETAIL

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA
19th
Jack Lloyd Beedle
12-5309
REGISTERED ENGINEER

DATE:	DESCRIPTION OF CHANGE:

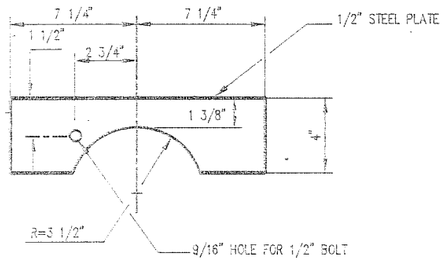
RECORD OF REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

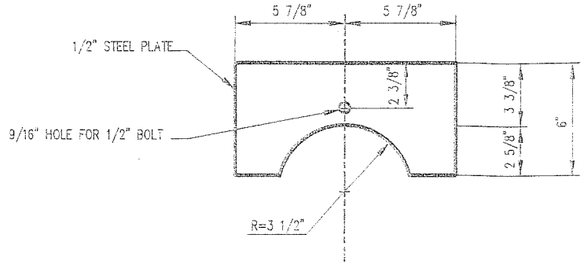
TENAKEE ALASKA

BRACKET DETAILS

DESIGNED BY: J.D. Saldivar	PROJECT NO. 70159
DRAWN BY: AutoCAD / B.W.B.	DATE: February 1990
CHECKED BY: J.D. Beedle	SHEET 5 OF 9

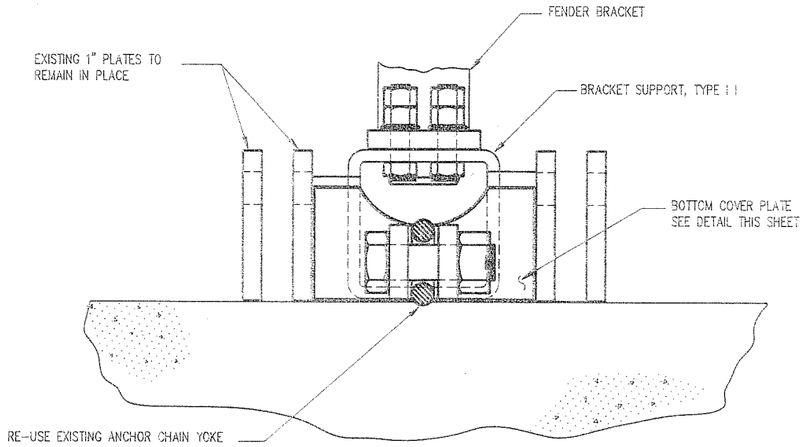


TYPE I
18-Required

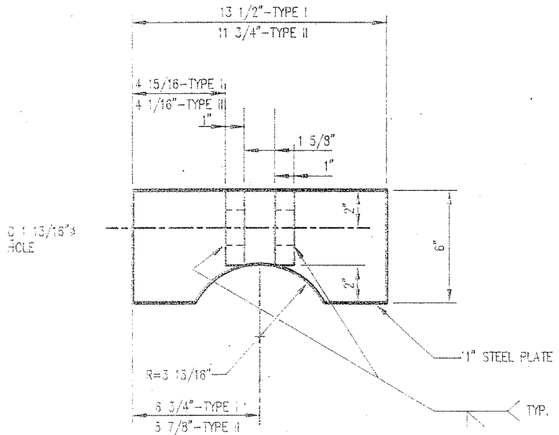


TYPE II
2-Required

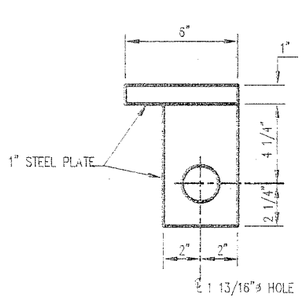
TOP COVER PLATE



SECTION F-F



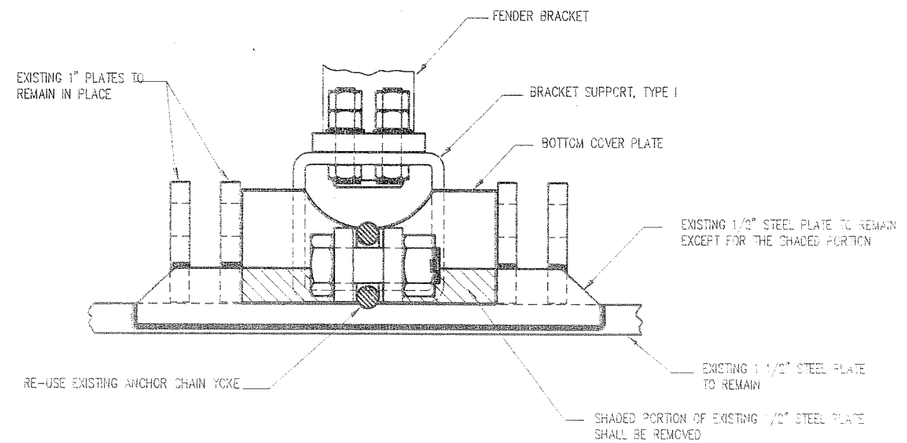
PLAN



SIDE

BOTTOM COVER PLATE

TYPE I - 18 Required
TYPE II - 2 Required



SECTION D-D

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

BY:	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

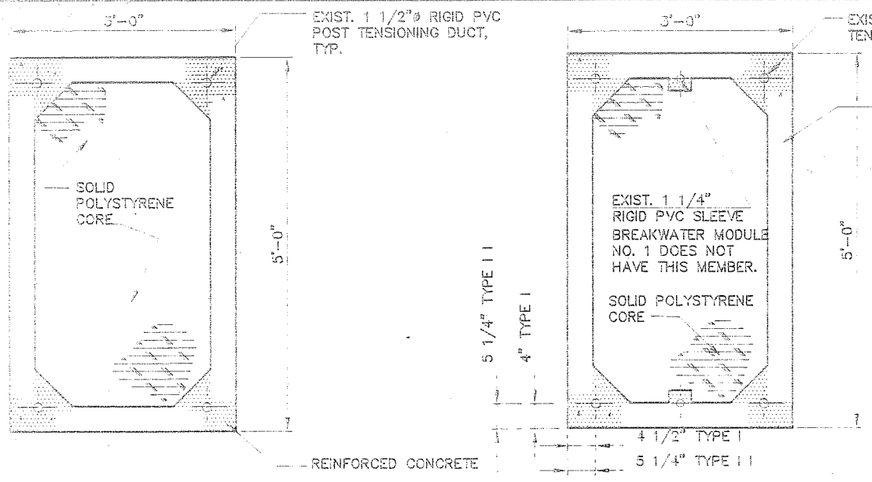
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

TOP AND BOTTOM COVER PLATE DETAIL

DESIGNED BY: D.D.S.	PROJECT NO. 70159
DRAWN BY: AUTOCADD/RKS	DATE: 2/1990
CHECKED BY: J.D.S.	SHEET 6 OF 9

ENGINEER'S SEAL

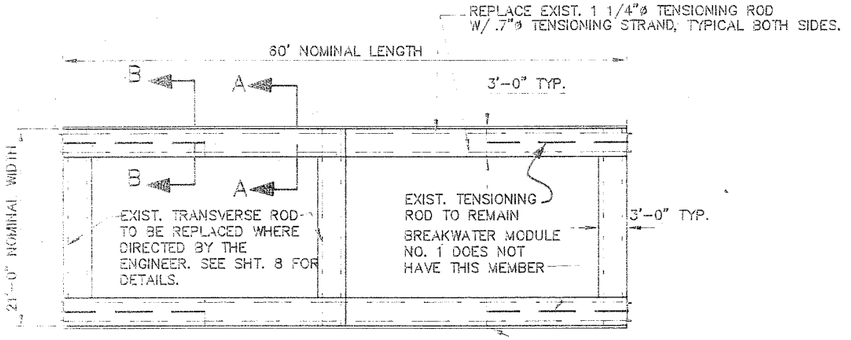


SECTION A-A

NOT TO SCALE

SECTION B-B

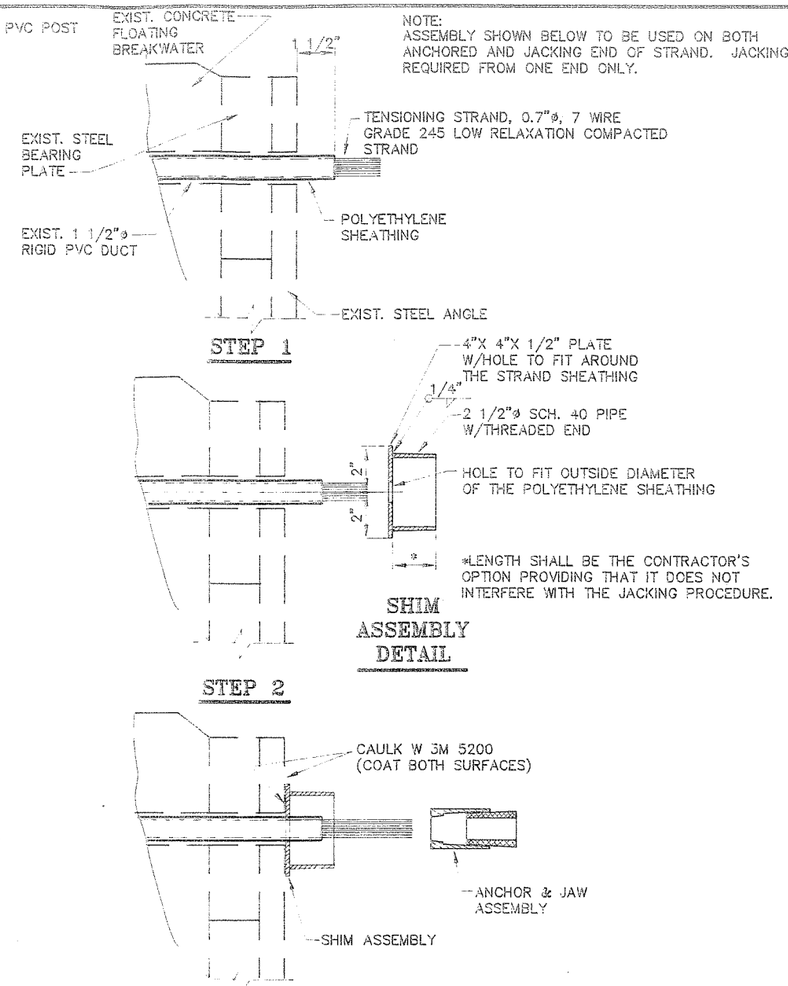
NOT TO SCALE



PLAN

BREAKWATER MODULE

NOT TO SCALE



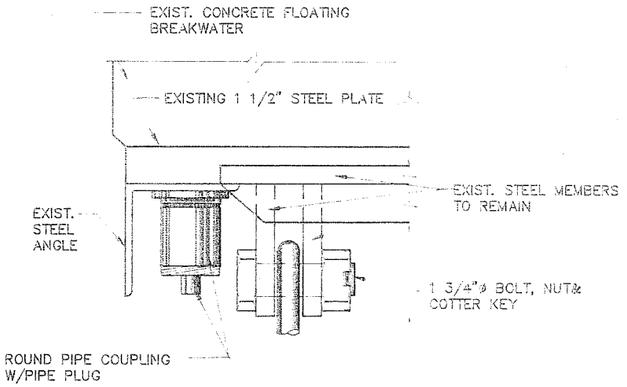
TENSIONING PROCEDURE DETAIL

NOT TO SCALE

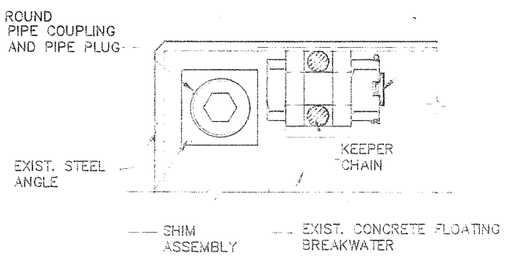
NOTE:
ASSEMBLY SHOWN BELOW TO BE USED ON BOTH ANCHORED AND JACKING END OF STRAND. JACKING REQUIRED FROM ONE END ONLY.

TENSIONING PROCEDURE

1. AFTER SHEATHED STRAND IS INSERTED INTO THE EXISTING DUCT, THE POLYETHYLENE SHEATHING SHALL BE CUT TO SHOW APPROXIMATELY 1 1/2" OF SHEATHING BEYOND THE FACE OF EXISTING ANGLE. LENGTH OF EXPOSED STRAND SHALL BE THE CONTRACTOR'S OPTION ALLOWING ENOUGH LENGTH FOR JACKING.
2. SLIDE THE SHIM ASSEMBLY AND ANCHOR AND JAW ASSEMBLY OVER THE STRAND. BEGIN TENSIONING IN 500 PSI INTERVALS OF GAUGE PRESSURE TO THE CERTIFIED CALIBRATION CURVE REQUIREMENTS.
3. STRAND SHALL BE TENSIONED TO 70% OF THE STRAND STRENGTH AFTER ALL TENSIONING LOSSES. ANCHOR AND JAW ASSEMBLY SHALL BE LOCKED INTO PLACE AFTER REACHING THE REQUIRED TENSION.
4. PIPE COUPLING AND PIPE PLUG SHALL BE INSTALLED AND GREASED AFTER THE KEEPER CHAINS OR SHACKLE IS IN PLACE, AND PRIOR TO SUBMERSION OF UNIT.
5. DRILL AN AIR VENT HOLE (THREADED FOR 3/16" BOLT) THRU COUPLING AND SHIM PLATE. WITH COUPLING GREASE FITTING EXPOSED, FILL ASSEMBLY WITH GREASE UNTIL ALL AIR IS REMOVED. PLUG THE AIR VENT HOLE WITH 3/16" STAINLESS STEEL ALLEN HEAD BOLT.



PLAN VIEW
(TYPICAL CORNER)



ELEVATION
(TYPICAL CORNER)

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

NO.	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

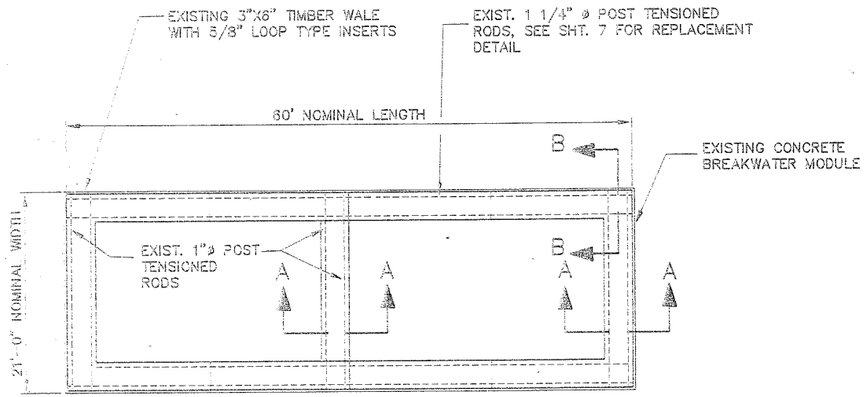
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

TENSIONING STRAND REPLACEMENT

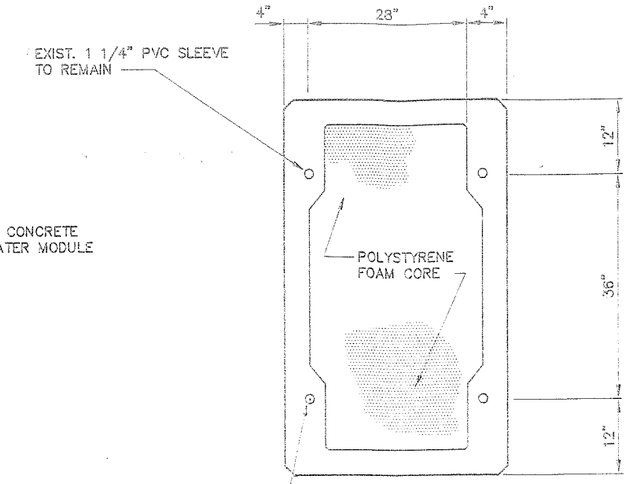
DESIGNED BY: D.SALDIVAR	PROJECT NO. 70159
DRAWN BY: AUTOCADD/CSA	DATE: FEB. 1990
CHECKED BY: T.D. BEEDLE	SHEET ~ OF ~

ENGINEER'S SEAL



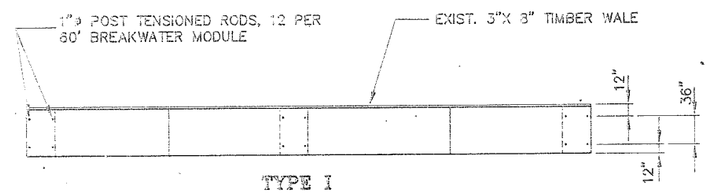
PLAN

BREAKWATER MODULE TYPE I & TYPE II



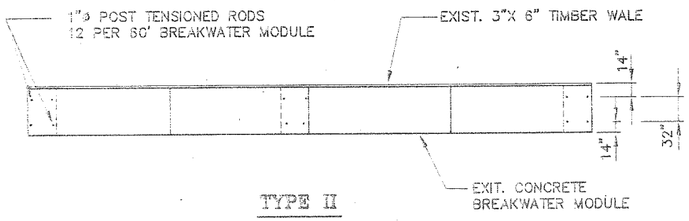
TYPE I

(MODULE 2 THRU 6)



TYPE I

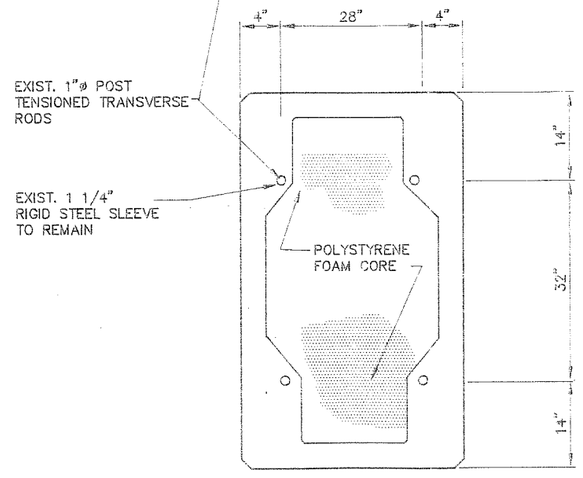
(MODULE 2 THRU 6)



TYPE II

(MODULE 1)

ELEVATION



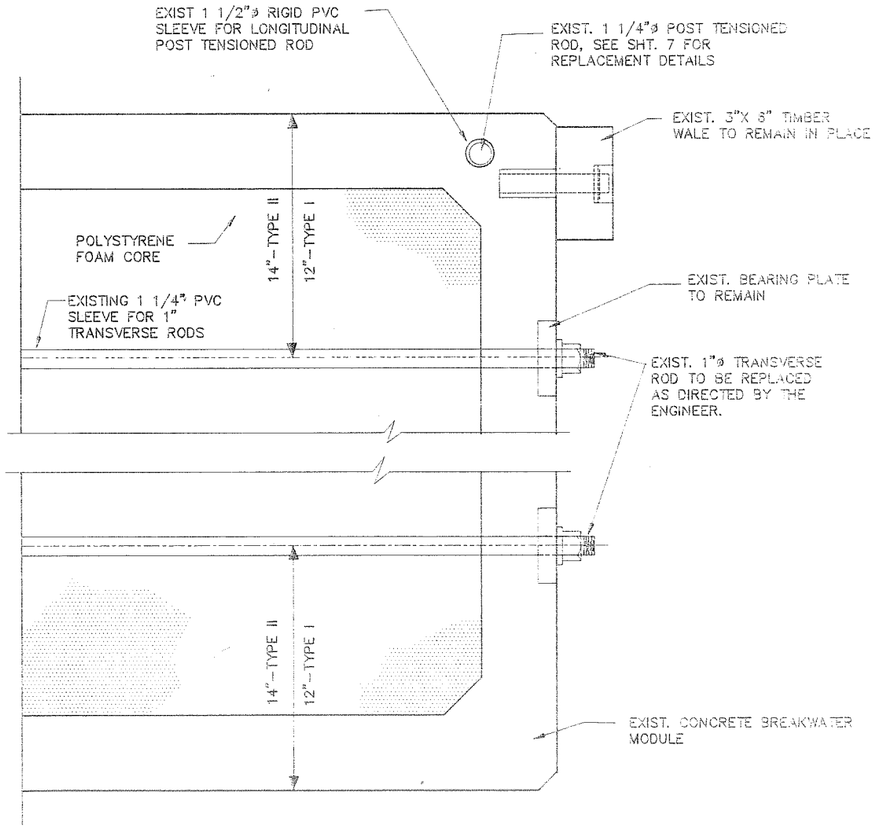
TYPE II

(MODULE 1)

SECTION A-A

NOTES

1. THE ENGINEER SHALL DETERMINE WHICH TRANSVERSE RODS (6 TOTAL) ARE TO BE REPLACED. EACH BREAKWATER MODULE CONTAINS 12 TRANSVERSE RODS.
2. THE 1"ø TRANSVERSE RODS, NUTS AND WASHERS WILL BE SUPPLIED BY THE STATE.
3. ONLY ONE TRANSVERSE ROD SHALL BE REMOVED AND REPLACED AT A TIME. TRANSVERSE RODS SHALL BE TENSIONED TO 30,000 LBS. OR TIGHTENED BY THE TURN OF THE NUT METHOD (2 1/2 TURNS FROM SNUG TIGHT CONDITION).



SECTION B-B

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

BY:	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

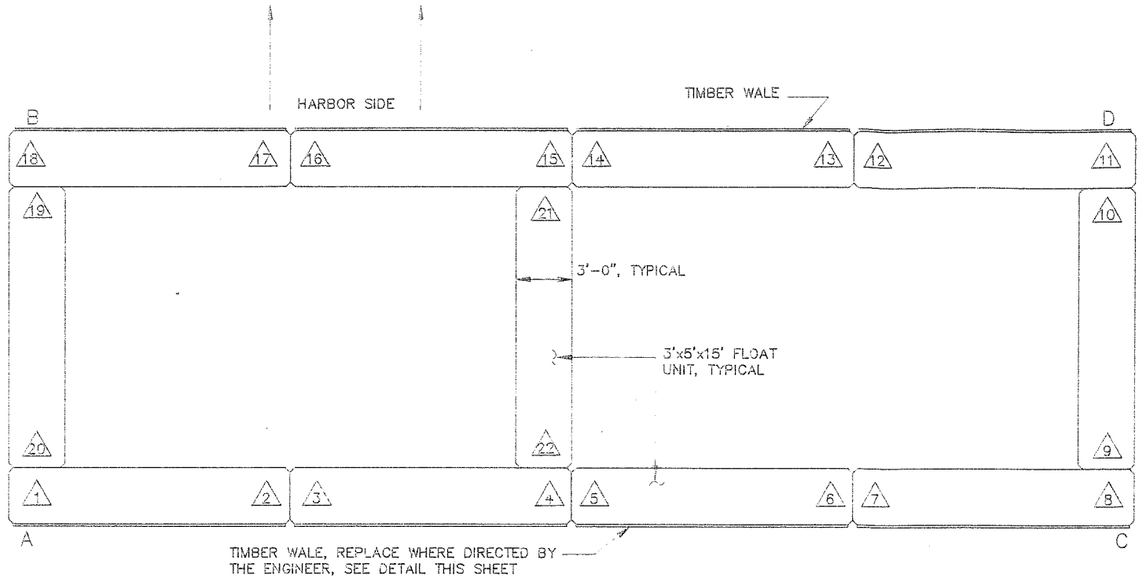
TENAKEE ALASKA

TRANSVERSE ROD REPLACEMENT

DESIGNED BY: D. SALDIVAR	PROJECT NO. 70159
DRAWN BY: AUTOCADD	DATE: FEB. 1990
CHECKED BY: J.D. BEEDLE	SHEET 3 OF 7

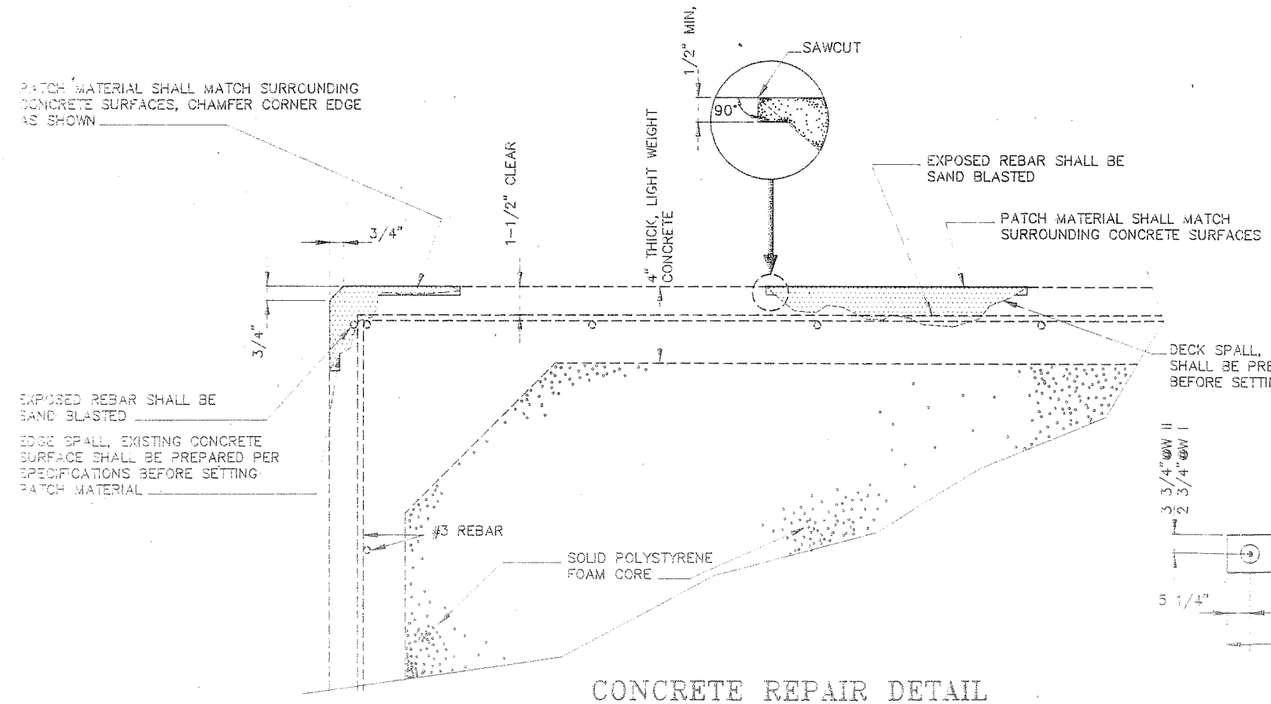
ENGINEER'S SEAL

STATE OF ALASKA
JACK DANIEL BEEDLE
REGISTERED PROFESSIONAL ENGINEER



PLAN – 60' BREAKWATER MODULE

N.T.S.



CONCRETE REPAIR DETAIL

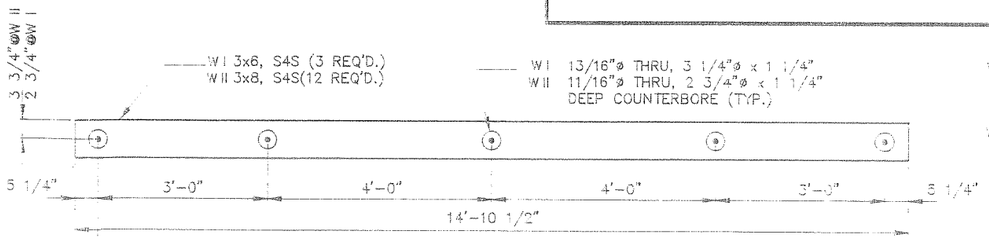
N.T.S.

Notes:

1. VOLUME OF EDGE SPALLS IS BASED ON A TRIANGULAR SHAPED PATCH.
2. CONTRACTOR SHALL ASSUME THAT SOME REBAR WILL BE EXPOSED AT EACH PATCH LOCATION.

CONCRETE REPAIR SUMMARY

Module No.	Location of Repair	Description
1	8	26" X 6" X 1" DECK SPALL
1	9	12" X 10" X 1" DECK SPALL
1	11	18" X 4" X 3" DECK SPALL
1	5	12" X 12" X 1 1/2" EDGE SPALL
1	22	6" X 6" X 6" EDGE SPALL
1	4	4" X 4" X 2" EDGE SPALL
1	20	4" X 4" X 36" EDGE SPALL
1	20	6" X 6" X 4" EDGE SPALL
2	22	8" X 3" X 36" EDGE SPALL
2	22	3" X 8" X 12" EDGE SPALL
2	22	6" X 3" X 4" EDGE SPALL
2	2	16" X 4" X 1" DECK SPALL
3	8	22" X 3" X 1 1/2" EDGE SPALL
3	21	8" X 21" X 4" EDGE SPALL
3	22	36" X 8" X 3" EDGE SPALL
4	10	36" X 12" X 4" EDGE SPALL
4	12	14" X 12" X 2" EDGE SPALL
4	14	14" X 2" X 4" EDGE SPALL
4	16	12" X 4" X 1" DECK SPALL
4	18	25" X 5" X 3" DECK SPALL
4	18	6" X 8" X 6" DECK SPALL
4	7	29" X 6" X 1 1/2" DECK SPALL
4	3 4	180" X 3" X 3" EDGE SPALL FULL LENGTH OF 15' UNIT
4	3	20" X 4" X 1 1/2" DECK SPALL
4	2	4" X 4" X 24" EDGE SPALL
5	9	44" X 4" X 8" EDGE SPALL
5	7	12" X 2" X 1" DECK SPALL
5	11	36" X 10" X 10" DECK SPALL
5	13	28" X 5" X 5" EDGE SPALL
5	15	14" X 33" 4" DECK SPALL
5	5	12" X 12" X6" EDGE SPALL
5	19	23" X 8" X 7" EDGE SPALL
5	20	18" X 8" X 7" EDGE SPALL
5	20	36" X 7" 15" EDGE SPALL
5	4	24" X 4" X 4" EDGE SPALL
6	8	8" X 4" X 1" DECK SPALL
6	19	12" X 4" X 1 1/2" DECK SPALL
6	1	12" X 12" X 1" DECK SPALL
6	2	24" X 5" X 1 1/2" DECK SPALL
		Total



TIMBER WALES

N.T.S.

15 – REQUIRED (12 – W II & 3 – W I)

BY:	DATE:	DESCRIPTION OF CHANGE:

RECORD OF REVISIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION DESIGN & CONSTRUCTION

TENAKEE ALASKA

TIMBER WALES AND CONCRETE REPAIR DETAILS

DESIGNED BY: D.S. Baldivar	PROJECT NO. 70159
DRAWN BY: AutoCAD / S.M.S.	DATE: FEBRUARY 1990
CHECKED BY: A.D. Beedle	SHEET 3 OF 9

ENGINEER'S SEAL

ATTACHMENT D

FINAL UNDERWATER INSPECTION REPORT

Tenakee Steel Breakwater

Tenakee, Alaska

Project No.: 80803/BR-NBIS (65)

80801/BR-NBIS (64)

August 2011

Prepared for:

Alaska Department of Transportation and Public Facilities
Statewide Design & Engineering Services Division
Bridge Section
Juneau, Alaska

Prepared by:

URS Corporation
700 G Street
Suite 500
Anchorage, Alaska 99501

Table of Contents

EXECUTIVE SUMMARY

Date 8-7-2011
Maximum Water Depth - 74 feet
Maximum Current - < 1 FPS
Traffic Control Used - No
Visibility – 10 feet
Air Temp - 50° F
Dive Vessel Used – MV Lite Weight
Dive Staged From - Vessel
Total # Dives 2
Approximate Time On Site – 6 hours
Debris Encountered - Yes
Debris Removal Required – No
Water Temp - 53° F
Approximate Dive Time – 1 hour 45 min
ISUs Inspected: Floating breakwater, 10 anchor chains, 10 anchor blocks, and a cathodic protection system.

Inspection Personnel: Team Leader / Diver; Daley, Diver / Forman; Rosenberger, Diver; Simonson

Critical Findings

- None.

Significant Observations

- The hanging anodes are about 50% consumed.
- The coating if failing in places and the pontoons show active corrosion

Recommendations

- Sandblast and coat the pontoons.
- Install new and additional anodes.
- The structure should be scheduled for another diving inspection in five years.

Element Rating

Unit	Item Code	Item Name	Item Rating	Comments
Chains	60	Substructure	5	
Float	60	Substructure	5	
	61	Channel	NA	

1. INTRODUCTION

Existing Structure

The steel floating breakwater in Tenakee Springs is constructed of three each 48 inch diameter by 3/8 inch wall thickness steel pipe sections. The overall length is 320 feet. The overall width is 40 feet. There are galvanized steel framing members connecting the three pontoons. There is a steel grate walkway down each side. There are timber rub strips and mooring cleats along each side. There are 10 mooring chains. Each chain terminates in a 10 foot by 10 foot by 4-foot concrete anchor block.

The steel breakwater was originally installed in 1985. There is another older floating breakwater constructed from concrete adjacent to the steel breakwater.

The naming convention used follows the 1984 design plans. The anchors are numbered 1 through 10. Number 1 is located at the southwest corner of the float. The rest of the numbers follow clockwise. Anchors 1 through 5 are on the offshore side with number 5 being located on the northwest corner. Anchors 6 through 10 are located on the inshore side with number 6 being on the northeast corner and number 10 being on the southeast corner.

NOAA publishes the following tidal statistics for nearby Juneau:

Highest observed water	24.37 feet
MHHW	16.30 feet
MHW	15.34 feet
MSL	8.58 feet
MTL	8.47 feet
MLW	1.60 feet
MLLW	0.0 feet
Lowest observed water	-5.35 feet

Inspection Program

The scope of work and Identified Substructure Units (ISUs) for the 2011 underwater inspection program included:

- A complete level I underwater inspection of 100% of the identified substructure units and a level 2 underwater inspection of 10% of the identified substructure units.
- The inspection included the anchor blocks, chains, floating breakwater, connections, and the cathodic protection system.

The field inspection was carried out by URS Alaska Inc and Global Divers in August 2011. The fieldwork was done under the direct supervision of John C. Daley, P.E., project engineer.

Method of Inspection and Equipment

The inspection consisted of a level one visual inspection of 100% of the identified substructure units (ISU) from the mudline to the water surface and 100% visual inspection of the ISU from the waterline to the top of the member. A level II close-up inspection was completed on approximately 10% of the ISU below the water surface. The close up inspection included Cathodic Protection (CP) ½ cell readings, partial marine growth removal and visual inspection. Underwater photographs were taken at representative areas.

Equipment included:
One F450 truck, surface supplied diving equipment including two diving umbilical's, two dive radios, three diving helmets, two diving air compressors, four high pressure air cylinders, one high pressure air compressor, one volume tank, one air filter, and one emergency air supply tank. Debris removal equipment included: one grapnel, misc. lines pulleys and shackles. Other equipment included a ladder, a Nikonos underwater camera system, an Olympus digital camera, a CP half-cell and multi-meter, an ultrasonic thickness meter, tape measures, an increment borer, safety vests, and other equipment.

The diving equipment was set up on the MV Lite Weight, a USCG certified, modified LCM 8, aluminum hull landing craft operated by Sea Level Transport, a Juneau Alaska based company. The truck was driven onto the deck of this vessel and the dive station was set up on the back of the truck and deck area.

Cathodic Protection Half-Cell Readings and Corrosion

Cathodic protection (CP) half-cell readings were taken with a silver silver chloride reference cell and a voltage meter. This allowed the inspector to measure the potential of the structure with respect to a reference cell and to use this measurement to evaluate the effectiveness of the cathodic protection system.

The National Association of Corrosion Engineers (NACE) publishes standards and criteria for cathodic protection. One widely used criteria for adequate CP is to maintain the structure at -0.850 volts or more negative with respect to a copper copper sulfate reference cell. Copper copper sulfate reference cells are not intended for use in seawater so it is typical to use a silver silver chloride reference cell. There is a correction factor that can be applied to correlate readings taken with a silver silver chloride cell to standards based on a copper copper sulfate cell. The correction factors vary depending on temperature, salinity, resistivity of the medium, and other factors. For the purposes of this inspection an approximate correction factor of 0.050 volts was applied so that a silver silver chloride CP readings of approximately -0.800 or more negative indicates adequate cathodic protection. It is acknowledged that this is not a rigorous correction but should be adequate to evaluate the general condition of the CP system.

Zinc and /or aluminum alloy sacrificial anodes (the most common types used in seawater) typically have a potential in seawater of between -1.000 and -1.100 volts with respect to a silver silver chloride half-cell. It is common to have CP readings approaching these values when the reference cell is held close to an anode. It is also common for the

readings to drop off with distance from the anode. CP readings more positive than -0.800 generally indicate inadequate cathodic protection. Bare steel with no CP system will often have potentials less than -0.700. This indicates active corrosion.

Corrosion typically progresses in stages based on the age of the structure and condition of the CP system. Without CP, galvanizing typically lasts 15 to 20 years in seawater. As it nears the end of its service life, patches of bare steel will become exposed, typically covered with light red colored surface rust. Bare steel will first form a layer of red rust and then will start to develop a black oxide layer under the surface layer. The black oxide can be associated with loss of section of the steel and with advanced corrosion. Fully active corrosion of bare steel will typically exhibit a hard crusty exterior layer of corrosion deposits with thick chalky black oxide underneath. Each of these layers may be over ¼" thick and may come off in small sheets. When the corrosion deposits of this type are removed there will typically be shinny bare steel underneath with pitting and measurable section loss.

Table of Contacts

The following is a list of agency contacts made prior to the field inspection:

Name	Agency	Contact Number	Comments
John Favely	AMHS General Manager	907 228-7250	Notified regarding schedule
Cheri Murphy	AMHS Operations Manager	907 228-7290	Notified regarding schedule
Ken Linder	AMHS Security Manager	907 228-7280	Notified regarding schedule
Joel Osburn	ADOT Shore Facilities	907 465-4409	Notified regarding schedule
Art Bloom	City of Tenakee Springs	907 736-2249	Notified regarding schedule

Table of Logistics

The following is a table of logistics for the field inspection;

Item	Comments
Lodging	The crew stayed on the MV Lite Weight
Travel	The dive crew drove the truck with the equipment from Anchorage to Haines. The Engineer flew from Anchorage to Juneau on Alaska Airlines and then took a Wings of Alaska flight to Haines. The Truck was loaded onto the MV Lite Weight in Haines
Rental Equipment	MV Lite Weight

2. OBSERVED CONDITIONS

Access

The dock was inspected from the dive vessel.

Traffic Control

Traffic control was not required.

Debris

Debris was noted. The debris did not interfere with the dive and was left in place.

Seabed Material

The seabed material consists of silt and sand with exposed bedrock in places.

Embankment

Not applicable.

Inspection Findings

No serious damage was noted on any of the anchor chains or anchor blocks. Each chain terminates in a chain keeper at the top of the hawse pipes. These were all intact.

Each chain can be divided into a top or active section and a lower or grounded section. The top or active section includes the portion of the chain that is suspended and the portion on the bottom that rises and falls with the tide and with routine loads from wind. Generally this includes the suspended part and about 50 feet of chain along the bottom. The bottom or grounded section is the portion of chain that traverses the bottom and generally remains in place except for occasional large loads. The top section of the chains from the pontoon to the seafloor typically had no galvanizing and active corrosion with some pitting. Significant section loss was not noted. The bottom section of the chain from the seafloor to the anchor blocks typically had 100% marine growth coverage in the exposed areas and were partially buried in places. This section of the chain appeared to be stationary on the seafloor. Active corrosion was noted on this section of the chain but no significant section loss was noted.

The chain to anchor block #10 crosses the chain to anchor block H from the concrete breakwater. There is wear at this intersection from the chains rubbing. The chain from anchor block 9 passes under the chain to anchor block I from the concrete breakwater without contact. The chain from anchor block 8 passes over the chain to anchor block I from the concrete breakwater with contact on the grounded portion of both chains bottom. No damage was noted at this intersection. None of the anchor chains contact any of the piling in the harbor.

Hanging anodes on the pontoon were partially consumed with about 50% material remaining.

The coating on the pontoons was failing. Sections of the coating had come off in small sheets. Coating blisters were noted. Approximately 70% of the coating has failed on the pontoons and approximately 25% of the coating has failed on the above water portion of the framing. The above water portion of the pontoons and framing are not protected by the CP system and showed active corrosion.

The following is a table of cathodic protection half-cell readings taken at this structure;

Table of Cathodic Protection Half-Cell Readings

Location	CP Reading (Volts)	Comments
Chain to Anchor #8 near pontoon	0.619	Active corrosion
Pontoon Near Chain 8 termination	0.612	Active corrosion

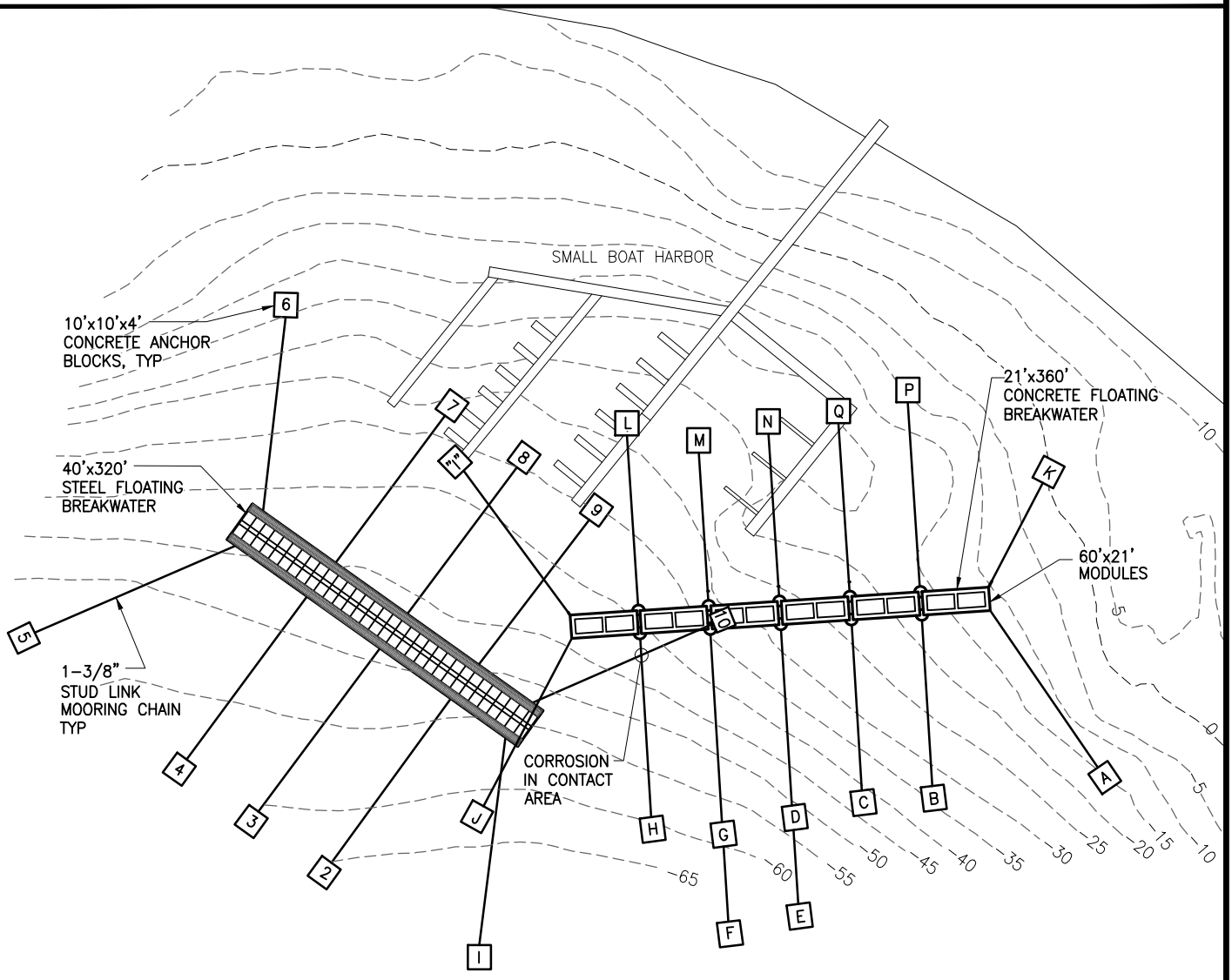
The following is a table of ultrasonic thickness (UT) readings taken at this structure;

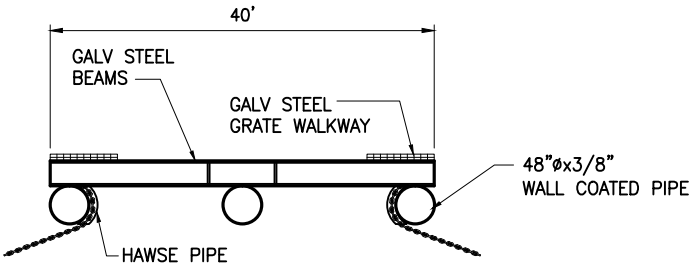
Table of Ultrasonic Thickness Readings

Location	UT Reading (Inches)
Pontoon outside near chain #8 termination	0.370
Pontoon inside near chain #8 termination	0.375

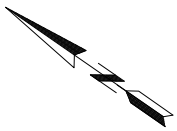
AUGUST 2011

TENAKEE STEEL BREAKWATER





PIPE PONTOON TYP



GRAPHIC SCALE

150' 0 75' 150'

(IN FEET)

CHECKED BY: **J.C.D.**	JOB NO. **26220595**
DRAWN BY: **S.J.**	DATE: **AUGUST 2011**
REV:	SHEET:
SCALE: **1" = 150'**	**1** OF **1**

PLAN VIEW

FIGURE 1

APPENDICES

Appendix A - Daily Reports and Dive Data
Appendix B - Tide Data
Appendix C - Selected Photographs

Appendix A
Daily Reports with Dive Data

Global Diving & Salvage, Inc.
5304 Eielson St
Anchorage, Alaska 99518
907.563.9006

Divers • Constructors • Salvors • Environmental Technicians

Date: Sunday, August 07, 2011

Customer: URS
Project: AK DOT Task Order 3 Inspection

Client Representative: John Daley
W/O # 106247

Time	Description
0830	Vessel departs Hoonah AK for Tenakee, AK.
1330	Arrive Tenakee Springs, AK. Contacting Harbor Master to discuss access to breakwater floats and vessel traffic.
1400	Mooring vessel to Steel Breakwater.
1415	Morning Toolbox/Safety Meeting.
1440	D#11, J Simonson, LS to inspection Steel Breakwater anchor chains on the seaward side of floating breakwater.
1511	D#11, J Simonson, RS | Depth 74 | BT 30 | Table 80/32 NoDe | RPG H | Diver completed inspection of seaward anchor chains 1-5
1525	Moving vessel shoreward side of steel breakwater.
1535	Vessel secure on shoreward side of breakwater.
1545	D#12, B Rosenberger, LS to inspect shoreward side anchor chains.
1702	D#12, B Rosenberger, RS | Depth 46 | BT 75 | Table 50/80 NoDe | RPG K | Diver completed inspection of steel breakwater.
1715	Moving vessel to concrete breakwater to begin inspection of shoreward anchor chains.
1730	Vessel secure on seaward side of concrete breakwater.
1746	D#13A, J Daley, LS to inspection shoreward side of Concrete Breakwater anchor chains.
1843	D#13A, J Daley, RS | Depth 47 | BT 56 | Table 50/63 | RPG I | Diver inspected anchors I, L, M, N, O, and P.
1845	Turning vessel around to and repositioning to access additional chains.
1911	D#13B, J Daley, LS to inspect anchor chain K and A. Inspect floats, connections, anodes, and take photographs
1948	D#13B, J Daley, RS | SI :28 | Depth 25 | BT 36 +126RNT | TBT 162 | Table 30/167 NoDe | RPG K | Diver completed inspection of shoreward anchor chains, floats, and photographs. Five anchors remaining will dive on them during next low tide.
1950	Moving Lite Weight into harbor, mooring at small boat harbor for the night. Securing dive station
2030	Vessel secure at harbor, Dive Station secure, crew off shift.

Safety Meetings 1 Man Hours Worked 30

Crew	Classification	Reg Hrs	OT Hrs	Depth	Travel
Bernie Rosenberger	Diving Supervisor		2		
	Diver, Wet		8	46	
James Simonson	Standby Diver		2		
	Diver, Wet		8	74	
John Daley	Standby Diver		2		
	Diver, Wet		8	47	

Equipment Onsite

Shallow Water Diving Equipment
Cathodic Protection Inspection Equipment
Cygnus Ultrasonic Thickness Meter
HP Air Compressor
2000i Honda Inverter Generator
Debris Removal Rigging
Small Toolbox - Hand Tools/Scrapers

Ford 450 Crew Cab Flat Bed

LC Lite Weight

Expenses	Total

Consumables

Weather:

Per diem: 2 Crew
Lodging:
M&IE:
Submitted By: B Rosenberger
Sign:

Global Diving & Salvage, Inc.
5304 Eielson St
Anchorage, Alaska 99518
907.563.9006

Divers • Constructors • Salvors • Environmental Technicians

Date: Monday, August 08, 2011

Customer: URS
Project: AK DOT Task Order 3 Inspection

Client Representative: John Daley
W/O # 106247

Time	Description
0700	Crew up for breakfast
0815	Morning Toolbox/Safety Meeting.
0830	Moving vessel to Tenakee Springs Ferry Terminal, Structure 1825 and Tenakee Springs City Dock, Structure 1451.
0850	Vessel secure at dock, captain makes harbor wide security announcement, lockout/tag out complete.
0905	D#14A, J Simonson, LS to inspect Structure 1451, Tenakee City dock.
1031	D#14A, J Simonson, RS | Depth 30 | BT 85 | Table 35/87 NoDe | RPG H | Diver completed inspection of Structure 1451, Tenakee City dock.
1035	Standing by for surface interval. J Daley up on dock taking photos, and conducting topside splash zone survey.
1132	D#14B, J Simonson, SI: 1:01 | RPG H to G | LS to inspect Structure 1825, Tenakee Springs Pedestrian gangway/float.
1231	D#14B, J Simonson, RS | Depth 25 | BT 58 +85RNT | TBT 143 | Table 30/145 NoDe | RPG J | Diver completed inspection of structure 1825, Tenakee Springs Pedestrian gangway/float.
1240	Moving vessel to concrete breakwater to complete the inspection of the remaining chains.
1300	Vessel secure at concrete float. Waiting on Fishing vessel to change out skiffs and move off concrete breakwater.
1340	Fishing vessel off concrete breakwater.
1343	D#15, B Rosenberger, LS to complete inspection of Concrete Breakwater anchors.
1423	D#15, B Rosenberger, RS | Depth 65 | BT 37 | Table 70/42 NoDe | RPG I | Diver completed inspection of remaining anchor chains on concrete breakwater.
1430	Securing dive station for travel.
1445	Departing Tenakee Springs, in route to Sitka, AK.
2000	Arrive Naked Island to overnight. Approximately 6 hours from Sitka, will depart early AM 8/9/11 for ETA Sitka at 1200.

Safety Meetings 1 Man Hours Worked 20

Crew	Classification	Reg Hrs	OT Hrs	Depth	Travel
Bernie Rosenberger	Diving Supervisor		2		
	Diver, Wet	8		65	
James Simonson	Standby Diver		2		
	Diver, Wet	8		30	
John Daley	Standby Diver				
	Diver, Wet				

Equipment Onsite

Shallow Water Diving Equipment
Cathodic Protection Inspection Equipment
Cygnus Ultrasonic Thickness Meter
HP Air Compressor
2000i Honda Inverter Generator
Debris Removal Rigging
Small Toolbox - Hand Tools/Scrapers

Ford 450 Crew Cab Flat Bed

LC Lite Weight

Expenses	Total

Consumables

Weather:

Per diem: 2 Crew
Lodging:
M&IE:
Submitted By: B Rosenberger
Sign:

Appendix B
Tide Data

Tides:Tenakee Springs, Tenakee Inlet

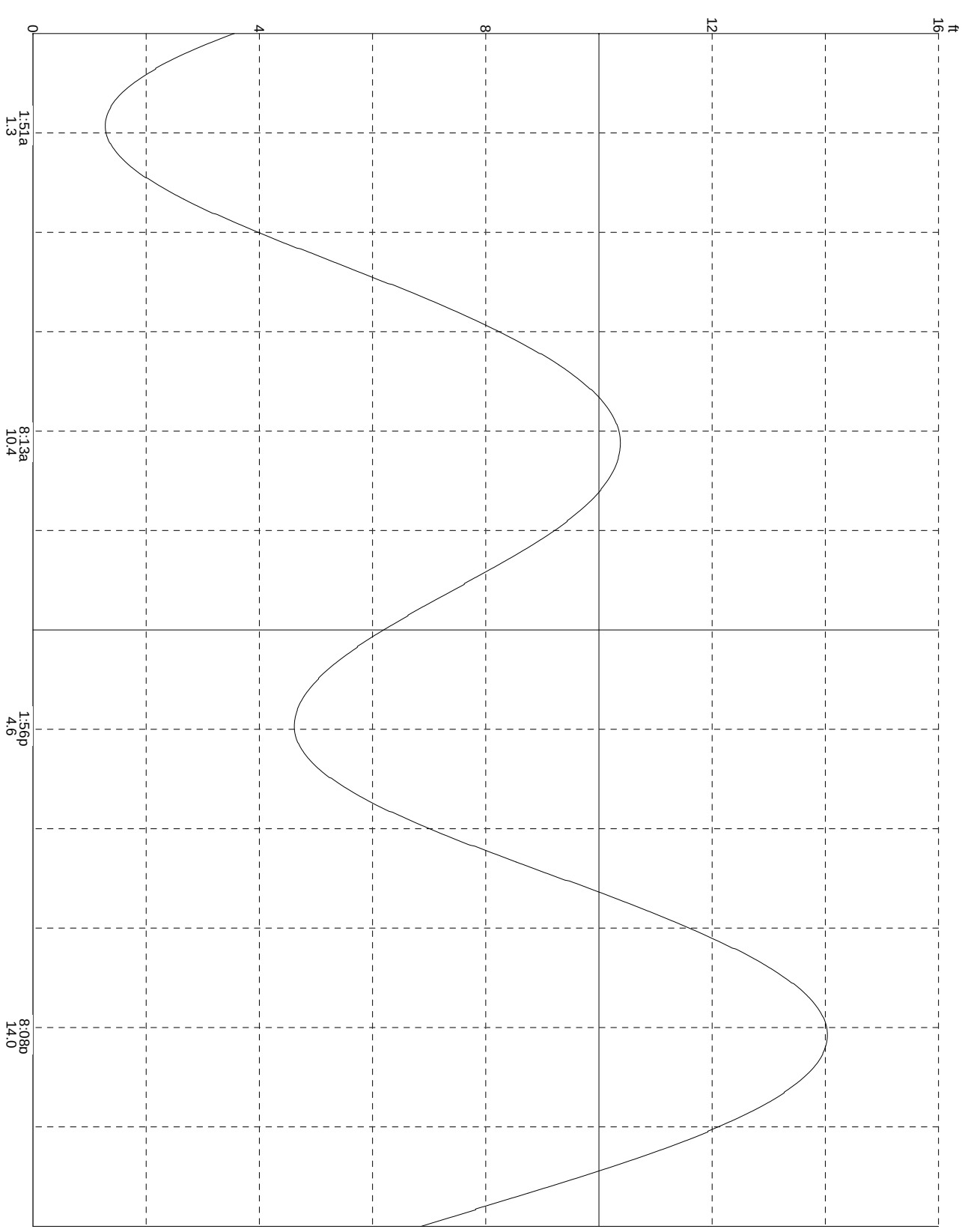
based on Juneau, Alaska (NOAA)
57° 46 48 N 135° 12 42 W

Sunday, August 7, 2011

Average Tides	
Mean Range:	12.3 ft
MHHW:	14.7 ft
Mean Tide:	7.7 ft

Daily Highs & Lows			
1:51a	1.3	ft	Low
8:13a	10.4	ft	High
1:56p	4.6	ft	Low
8:08p	14.0	ft	High

(AKDT)	Tide
12:00a	3.6 ft
12:30a	2.5 ft
1:00a	1.8 ft
1:30a	1.4 ft
2:00a	1.3 ft
2:30a	1.6 ft
3:00a	2.1 ft
3:30a	3.0 ft
4:00a	4.0 ft
4:30a	5.1 ft
5:00a	6.2 ft
5:30a	7.3 ft
6:00a	8.2 ft
6:30a	9.1 ft
7:00a	9.7 ft
7:30a	10.1 ft
8:00a	10.3 ft
8:30a	10.3 ft
9:00a	10.1 ft
9:30a	9.8 ft
10:00a	9.2 ft
10:30a	8.5 ft
11:00a	7.7 ft
11:30a	6.9 ft
12:00p	6.2 ft
12:30p	5.5 ft
1:00p	5.0 ft
1:30p	4.7 ft
2:00p	4.6 ft
2:30p	4.8 ft
3:00p	5.3 ft
3:30p	6.0 ft
4:00p	7.0 ft
4:30p	8.1 ft
5:00p	9.3 ft
5:30p	10.5 ft
6:00p	11.6 ft
6:30p	12.5 ft
7:00p	13.3 ft
7:30p	13.8 ft
8:00p	14.0 ft
8:30p	14.0 ft
9:00p	13.6 ft
9:30p	13.0 ft
10:00p	12.1 ft
10:30p	11.0 ft
11:00p	9.7 ft
11:30p	8.3 ft
12:00a	6.8 ft



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Tides:Tenakee Springs, Tenakee Inlet

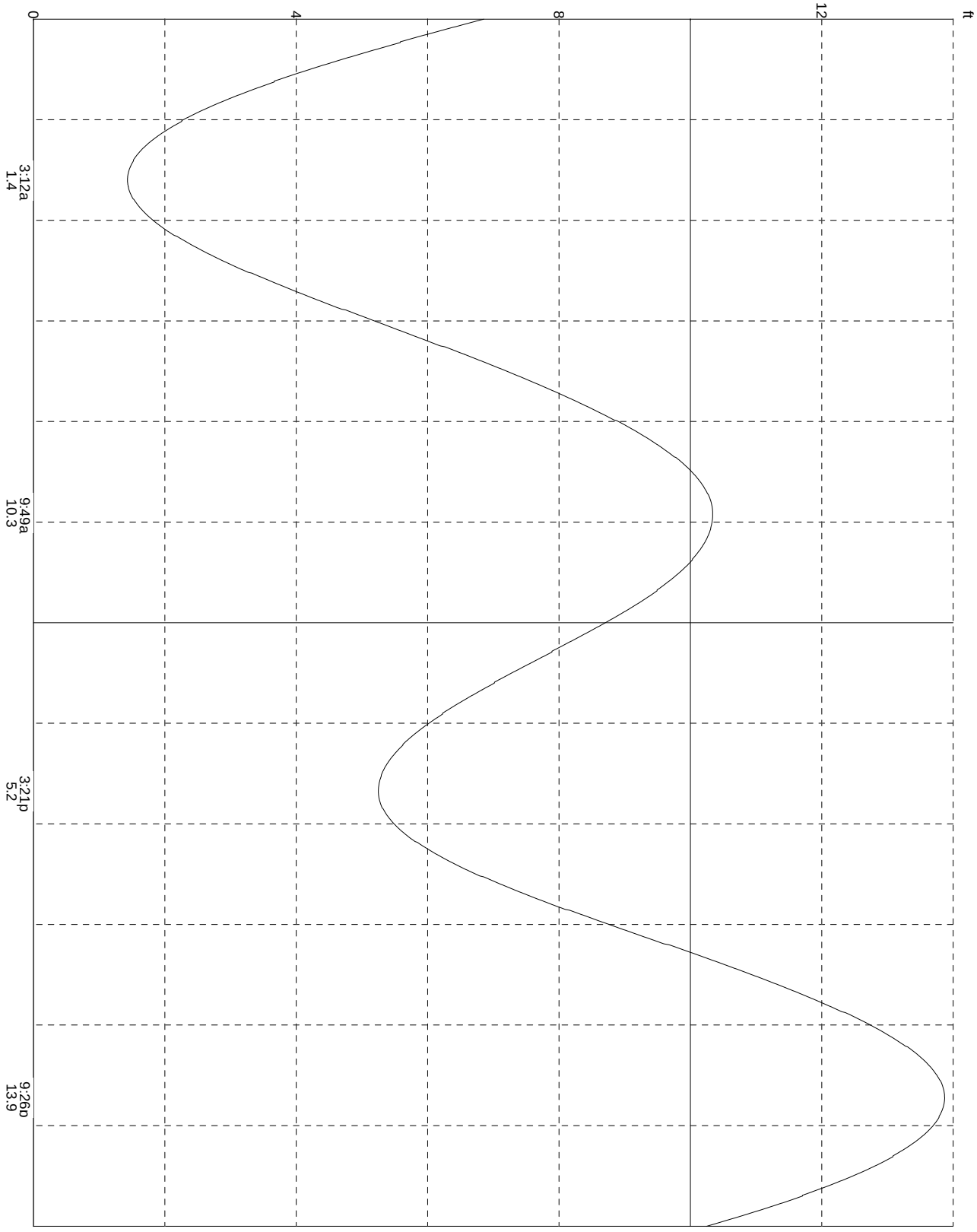
based on Juneau, Alaska (NOAA)
57° 46 48 N 135° 12 42 W

Monday, August 8, 2011

Average Tides	
Mean Range:	12.3 ft
MHHW:	14.7 ft
Mean Tide:	7.7 ft

Daily Highs & Lows			
3:12a	1.4	ft	Low
9:49a	10.3	ft	High
3:21p	5.2	ft	Low
9:26p	13.9	ft	High

(AKDT)	Tide
12:00a	6.8 ft
12:30a	5.5 ft
1:00a	4.2 ft
1:30a	3.1 ft
2:00a	2.3 ft
2:30a	1.7 ft
3:00a	1.5 ft
3:30a	1.5 ft
4:00a	1.8 ft
4:30a	2.4 ft
5:00a	3.2 ft
5:30a	4.2 ft
6:00a	5.2 ft
6:30a	6.2 ft
7:00a	7.2 ft
7:30a	8.1 ft
8:00a	8.9 ft
8:30a	9.5 ft
9:00a	10.0 ft
9:30a	10.3 ft
10:00a	10.3 ft
10:30a	10.2 ft
11:00a	9.8 ft
11:30a	9.3 ft
12:00p	8.7 ft
12:30p	8.0 ft
1:00p	7.3 ft
1:30p	6.6 ft
2:00p	6.0 ft
2:30p	5.6 ft
3:00p	5.3 ft
3:30p	5.3 ft
4:00p	5.5 ft
4:30p	6.0 ft
5:00p	6.7 ft
5:30p	7.7 ft
6:00p	8.8 ft
6:30p	9.9 ft
7:00p	10.9 ft
7:30p	11.9 ft
8:00p	12.7 ft
8:30p	13.4 ft
9:00p	13.7 ft
9:30p	13.9 ft
10:00p	13.7 ft
10:30p	13.2 ft
11:00p	12.5 ft
11:30p	11.5 ft
12:00a	10.2 ft



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Appendix C
Selected Photographs

1. Steel Breakwater

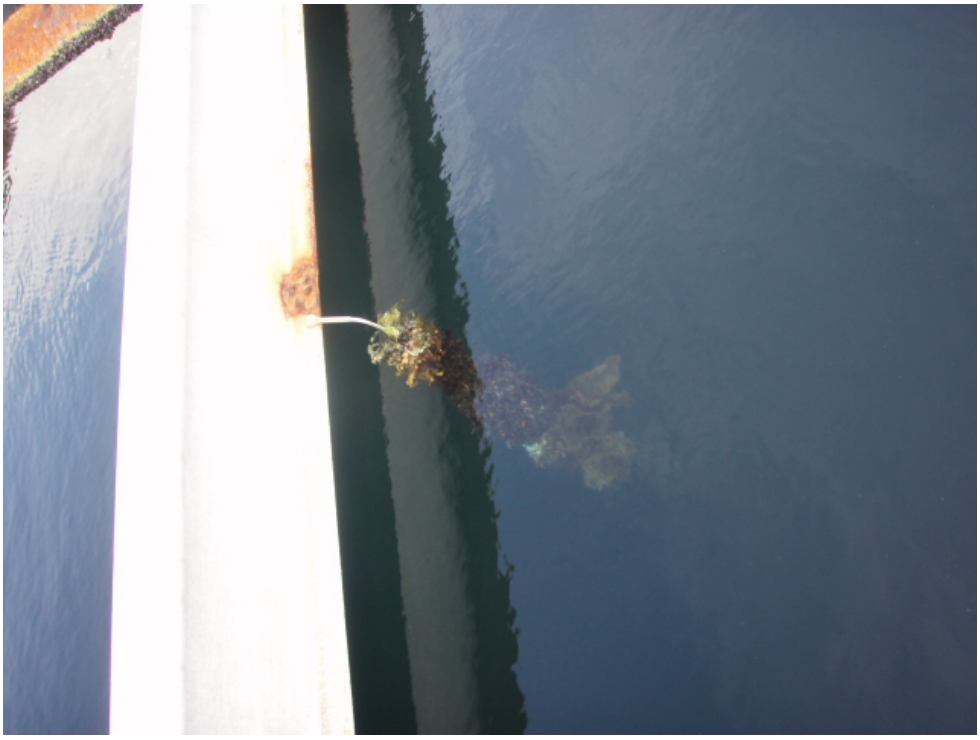
2. Steel Breakwater

3. Steel Breakwater

4. Steel Breakwater

5. Steel Pontoon

6. Hanging anode connection

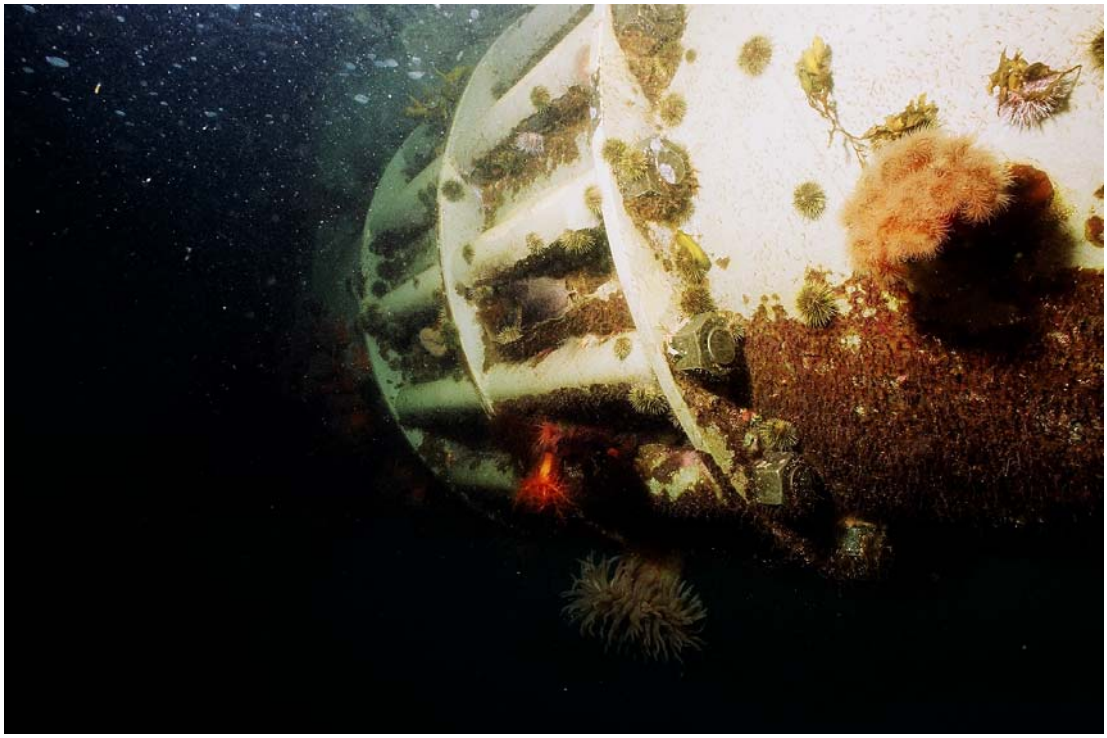


7. Hanging anode connection

8.Steel breakwater

9. Dive vessel

10. Diver



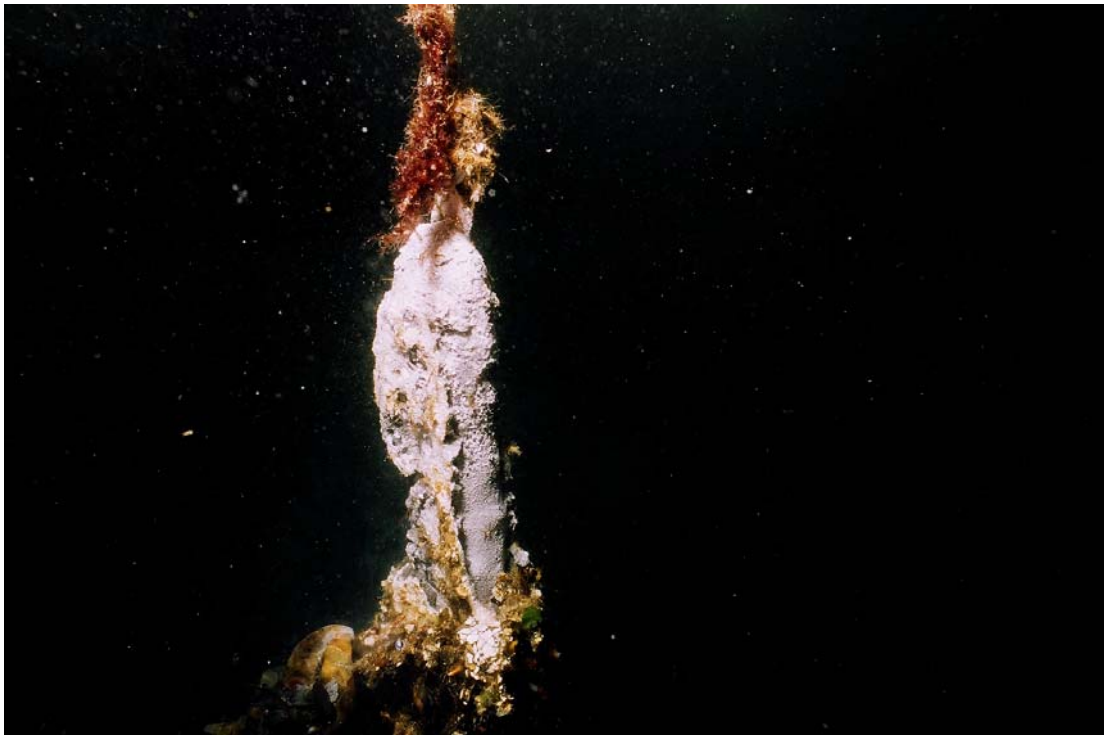
11. Pontoon connection near chain #7

12. Hawse pipe at Chain #7

13. Hull of pontoon Note coating blisters

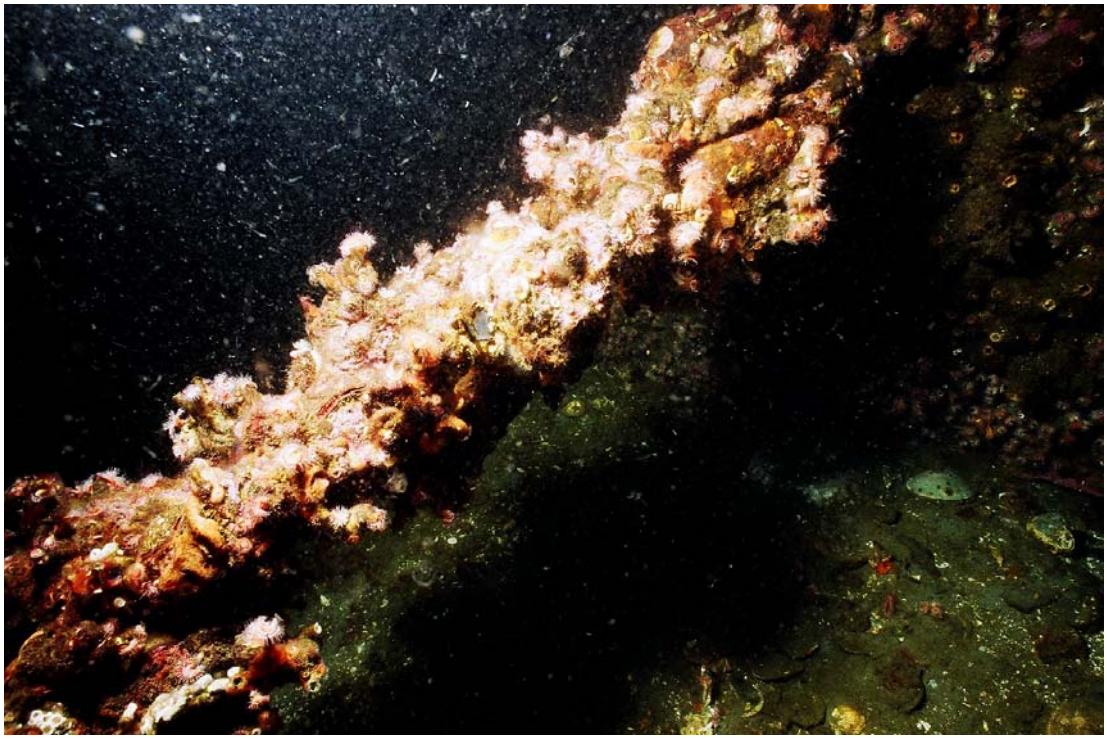
14. Chain #7

15. Hanging anode



16. Hanging anode

17. Anchor #8



18. Chain at anchor #8

19. Chain at anchor #8 cleaned

20. Center pontoon near chain #8

21. Center pontoon near chain #8

22. Center pontoon near chain #8