



BRIDGE 370.7 PIER REPLACEMENT CONSTRUCTION MANAGER – GENERAL CONTRACTOR (CMGC)

VOLUME 1

REQUEST FOR PROPOSALS No. 17-12-205605

APRIL 27, 2017

ALASKA RAILROAD CORPORATION
327 WEST SHIP CREEK AVENUE
ANCHORAGE, ALASKA 99501



ALASKA RAILROAD CORPORATION
327 W. Ship Creek Ave.
Anchorage, AK 99501

April 27, 2017

Request for Proposals 17-12-205605
Bridge 370.7 Pier Replacement CMGC

Response Required: This page must be completed and returned ensuring receipt of future addenda or additional information. Please email this form to GoemerG@akrr.com. All addenda will be forwarded to the contact name and number listed below.

Firms that have not returned the cover sheet will not be informed of addenda and will only be alerted of addenda by checking with the ARRC Procurement Officer or by checking ARRC's internet site: www.alaskarailroad.com, select Suppliers and then Solicitations. Proposers must acknowledge the receipt of all issued addendums in their proposal/bid submittal as required in Chapter 00490 – RFP Addenda.

Company Name _____

Mailing Address _____

City, State, Zip _____

Contact Name _____

Phone Number _____ Fax _____

Email Address _____

The Alaska Railroad Corporation web site www.alaskarailroad.com

THIS IS NOT AN ORDER

RFP NUMBER: 17-12-205605

DATE OF RFP: April 27, 2017

REQUEST FOR PROPOSALS
ALASKA RAILROAD CORPORATION
CONTRACTS SECTION
POST OFFICE BOX 107500
ANCHORAGE, ALASKA 99510-7500
ATTENTION: PROCUREMENT

Request for Proposals No. 17-12-205605

The Alaska Railroad Corporation (ARRC) is soliciting competitive sealed proposals from qualified general contractors for the following project:

Bridge 370.7 Pier Replacement CMGC

Sealed proposals must be received by ARRC no later than 3:00 p.m., local time, on May 18, 2017 at:

Alaska Railroad Corporation
Supply Management Department
327 W. Ship Creek Ave.
Anchorage, AK 99501

One (1) original and one (1) electronic copy in a .pdf format along with five (5) copies of each proposal must be submitted. The sealed envelope or package used in submitting a proposal shall be clearly marked with the following information:

1. Proposer's Name
2. RFP No. 17-12-205605
3. Proposal for Construction Manager/General Contractor (CM/GC) Services for Bridge 370.7 Pier Replacement CMGC
4. Date & Time Scheduled for Receipt of Proposals

Proposals received after the time and date set forth above shall be rejected. All proposals submitted in response to this solicitation must be signed by an individual with the legal authority to submit the offer on behalf of the company.

A non-mandatory pre-proposal meeting and site visit will be held at 1:00 p.m. Alaska Time on May 10, 2017 at Ferry, Alaska. To participate in this meeting and site visit, interested firms must provide full name(s) and cell telephone number(s) for proposed attendees to the listed email address for communications by 4:00 p.m. Monday, May 8, 2017. Attendees will be responsible for their own transportation to an unmarked pull out approximately 10 miles north of Healy, Alaska, between mile-post 259 and 260 on the Alaska Highway. Attendees should plan on being at the pull out by 12:45 p.m. A representative of the ARRC will conduct the pre-proposal meeting and will provide an escort onto ARRC property for the site visit. Hardhats,

safety vests, protective footwear and safety glasses will be required, and must be supplied by attendees. This is not a mandatory meeting, although interested firms are encouraged to participate.

This Request for Proposals is not to be construed as a commitment of any kind nor does it commit the ARRC to pay any costs incurred in the submission of an offer or for any other costs incurred prior to the execution of a formal contract.

IMPORTANT: Work associated with this Request for Proposals will be funded in part by a grant from the Federal Emergency Management Administration (FEMA) and may be partially funded by the Federal Transit Administration (FTA), an operating administration of the United States Department of Transportation. Accordingly, any contract resulting from this solicitation shall incorporate the Required Provisions for Federal-Aid Contracts including the Buy America provisions stated in Appendix H of this RFP.

Please direct all responses and/or questions concerning this solicitation to Greg Goemer, Alaska Railroad Corporation, Supply Management Department, 327 W. Ship Creek Avenue, Anchorage, AK 99501, telephone number 907-265-2593, fax number 907-265-2439 and email address GoemerG@akrr.com.

Sincerely,

Greg Goemer
Sr. Contract Administrator

INDEX

APPENDIX A	Project Description/Scope of Work
APPENDIX B	General Requirements
APPENDIX C	Proposal Information, Conditions, Instructions & Format
APPENDIX D	Selection Process/Award Criteria
APPENDIX E	Sample CMGC Contract
APPENDIX F	CMGC General Conditions and Supplemental Conditions
APPENDIX G	Required Contract Provisions for Federal-aid Contracts
APPENDIX H	Federal and State Wage Provisions
APPENDIX I	FORMS: <ol style="list-style-type: none">1. List of Required Forms2. Price Proposal Fixed Fee Form3. Contractor's Questionnaire4. Performance Bond5. Payment Bond
APPENDIX J	Preconstruction Services and Open Book Estimating Requirements
APPENDIX K (Vol. 2)	Reference Information Documents <ol style="list-style-type: none">1. Figures2. As-built plans3. 60% design submittal4. Not Used5. ARRC Bridge 370.7 Nenana River Crossing at Ferry, Alaska6. Technical Review of Ice Forces7. Bridge Pier Survey8. Historical non-current gage data on Nenana River

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APPENDIX A PROJECT DESCRIPTION/ SCOPE OF WORK – BR 370.7 PIER REPLACEMENT

1. Introduction and Background

The Alaska Railroad Corporation's (ARRC) Bridge 370.7, which carries mainline single track across the Nenana River near Ferry, Alaska, is experiencing scour and erosion problems on a shallow founded pier.

Bridge 370.7 is a three-span structure constructed in 1925. Span one is an 80-foot through-plate girder span. Spans 2 and 3 are 200-foot steel through-truss spans. Both abutments and piers #2 and 3 are shallow founded reinforced concrete structures. In addition to the single mainline track, the bridge also carries ARRC communications utilities. The bridge includes a trainman's walk that is used by the public for pedestrian, light off-road vehicle (ORV), and snowmachine access across the Nenana River. This is not a sanctioned public access.

ARRC has determined that replacement of pier #3 of Bridge 370.7 with a deep foundation pier is necessary in order to protect the integrity of the bridge and for ARRC to continue to provide rail service between Anchorage and Fairbanks. Removal of the existing pier and removal of an older failed pier are necessary. Repairs to bank protection measures are also necessary. Previous temporary erosion control measures including riprap placement around the existing pier #3 are failing. Additionally, there is an old pier structure approximately 50 feet from the presently existing pier #3 that is contributing to scour and erosion problems and needs to be removed. ARRC also intends to repair an existing riprap revetment upstream of the bridge and provide bank protection in the vicinity of the bridge abutments and pier #2.

2. Bridge 370.7 Pier Replacement Project Description

A. Work elements for the project include:

- Preconstruction phase work elements including constructability analysis, schedule analysis, and cost estimating services
- Construction phase work elements (if authorized) include:
 - Mobilization
 - Storm water pollution prevention and environmental compliance measures
 - Traffic control, temporary access measures including pedestrian access, and protection of existing facilities
 - Removal of riprap, other failing bank protection items, debris, old pier, existing pier #3, and other items, and potential removal of abandoned train cars
 - Salvage and reuse of riprap
 - Common and muck excavation, and embankment
 - Grading, drainage, and surfacing near bridge approaches
 - Stabilization and plantings
 - Drilled shaft foundations
 - Reinforced concrete substructure
 - Bridge jacking and replacement of bearings

APPENDIX A

B. Assistance by ARRC

ARRC intends to provide the following assistance:

- Railroad flagging will be provided by ARRC
- ARRC will perform adjustments to track systems,
- Adjustments to signal systems (if needed) will be accomplished by ARRC.
- New elastomeric bearing pads will be provided by the ARRC, CMGC to install,
- New riprap, if required, may be provided by ARRC

Specifics of the above items will be addressed during the preconstruction

C. ARRC has ruled out solutions that involve a new bridge or permanent or temporary realignment of the mainline track and therefore has determined that the pier #3 must be replaced under traffic. The bridge experiences the following range of train and pedestrian/ORV traffic:

- Approximately 2 passenger trains per day and 6 freight trains per day in peak season (peak months are May to September inclusive)
- Approximately 2 to 4 passenger trains per week and 4 freight trains per day in off-peak season (off-peak months are October to April inclusive)
- Charter trains
- Summer and winter pedestrian and ORV use of the bridge to access the east side of Nenana River
- Float and/or recreational use of the Nenana River
- Pedestrian, ORV, snowmachine, and heavy equipment access across ice near bridge 370.7 during winter and spring

D. The above listed train schedule is provisional and may change. Train traffic must not be impeded. Specific work windows have not been determined; ARRC expects to work with the successful Construction Manager/ General Contractor (CMGC) during the preconstruction phase to determine appropriate work windows. ARRC has tentatively identified that 48-hour to 72-hour track outages may be feasible during off-peak months for critical Work operations.

E. The CMGC will be required to participate in constructability analyses to minimize environmental impacts in order to optimize obtaining permits and obtaining reasonable and favorable permit terms. The CMGC will be required to review all final draft permit applications and provide input so that information in the permit applications accurately reflects the CMGC's intended construction methods and approach.

ARRC owns 200 feet total width of right-of-way (ROW) approximately centered on the mainline track. Construction solutions that exceed this amount of width may trigger additional Alaska Department of Natural Resources (ADNR) permitting that the ARRC wishes to avoid. Construction solutions that impact waters of the U.S. or state-owned lands outside of the ROW are not desirable. Accordingly, proposers should develop an approach to project execution that avoids use of lands outside the ARRC owned ROW. Additionally, use of any upland staging areas that the proposer deems necessary will require the proposer to enter into a land use agreement with the landowner.

APPENDIX A

ARRC intends to obtain the following permits (the tentative timeline for obtaining these permits is shown below in Section 4):

- U.S. Army Corps of Engineers, Section 404 Permit
- Alaska Department of Environmental Conservation, Clean Water Act Certification
- Alaska Department of Fish and Game, Fish Habitat Permit
- U.S. Coast Guard, Bridge Permit (if needed)

The CMGC will be responsible for obtaining all construction related permits, including but not necessarily limited to the following:

- ADNR, Temporary Land Use Permit (for work on State owned lands outside of the ARRC ROW)
- ADNR, Temporary Water Use Permit
- Alaska Department of Environmental Conservation, Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit
- Other construction related permits

F. ARRC is advancing regulatory permit applications and program management services through its consultant, HDR.

G. ARRC is advancing final design of pier #3 through its consultant, Wilson & Company.

3. Reference Information Documents

The following reference documents are provided for information only; see Appendix K for reference information documents

1. Figures
2. As-built plans (ARRC, 1925)
3. 60% design submittal (Wilson & Co, January 9, 2017)
4. Not Used
5. ARRC Bridge 370.7 Nenana River Crossing at Ferry, Alaska (Golder Assoc., March 3, 2017)
6. Technical Review of Ice Forces (HDR, May 21, 2015)
7. Bridge Pier Survey (TerraSond, April 2, 2015)
8. Historical non-current gage data on Nenana River (USGS)

4. Schedule

The following provisional schedule is provided for information; it may be adjusted by ARRC as conditions warrant. Note: During pre-construction the CMGC and the ARRC will work to develop a mutually agreeable schedule for the Work. The ARRC desires to complete this Project in 2017. However, conditions beyond the ARRC’s control such as permit delays or other Project delays may require construction activities to continue into 2018. The provisional schedule set forth below is based on 2017 substantial completion.

Item	Description	Target Date
1	Advertisement date	As listed in the RFP
2	Proposals Due	As listed in the RFP
3	Award	Within 30 days of Proposal due date
4	60% cost estimate	Within 2 weeks of award
5	ARRC submits regulatory permits	June 30, 2017
6	Regulatory permits obtained (target only – not in ARRC control)	August 31, 2017
7	75% milestone review	August 10, 2017
8	95% milestone review	September 10, 2017
9	GMP	September 30, 2017
10	Construction Mobilization	September 30, 2017
11	Substantial completion	December 31, 2017
	Final completion	June 30, 2018

5. Construction Manager/ General Contractor (CMGC) Delivery Method Scope of Work

A. General

The ARRC intends to advance pre-construction phase services and potentially construction phase services through a Construction Manager/ General Contractor (CMGC) delivery method. Problems to be resolved during the preconstruction phase may include:

- Minimizing interruptions to access including pedestrian and other local access to east side of the Nenana River
- Minimizing third party impacts
- Minimizing environmental impacts and construction footprint
- Minimizing train operations interference and interruptions
- Providing cost efficiencies in replacement pier
- Providing cost efficiencies in bank protection measures; including strategies for salvage and re-use of riprap
- Investigating other factors that the CMGC believes will be likely to enhance value and improve efficiencies for the project
- Development of acceptable schedule for the Work

APPENDIX A

- Development of acceptable work-windows for accommodating the Work without affecting train schedules

The CMGC shall provide consulting, scheduling and estimating, and cost control services, and will function as one of the key team members (Project Team) consisting of ARRC, the program management consultant, the Engineer of Record (A/E or EOR) and the CMGC. The CMGC's Key Personnel participating in the Pre-Construction Phase shall be made available for the Construction Services if awarded to the CMGC, and any Key Personnel changes shall require prior written approval of the ARRC (the required Key Personnel are shown in Appendix D, Section C, Proposed Key Personnel). The CMGC will be responsible for:

1. developing a Guaranteed Maximum Price (GMP) during the Pre-Construction Phase to construct the Project; and
2. scheduling, estimating and recommending optimal Construction Work phasing and sequences.

Additional detailed preconstruction services and open book estimating requirements are set forth in Appendix J, Preconstruction Services and Open Book Estimating Requirements.

If awarded a construction phase amendment, the CMGC will be responsible for:

1. performing and delivering the Project to ARRC within the approved GMP and within the approved schedule; and
2. self-performing or subcontracting certain minimum percentages, as set forth within this RFP, for the Construction Work related to completing the Project

B. Use of Cost of the Work Estimate and GMP

The detailed cost breakdown structure will be the basis for developing the Construction Cost Estimates during pre-construction and for preparing the GMP and for any Change Order work.

C. Fixed Fee

The CMGC shall propose a fixed fee for the Work expressed as a percentage of the Cost of the Work. The fixed-fee percentage will include the CMGC's profit and the home office overhead allocated to the Project. The fixed-fee percentage proposed in the RFP will be used in the GMP as well as any Early Work Amendments and any Change Orders.

The profit component of the fixed fee is to include any bonuses and incentives but excludes all costs associated with direct Project construction activities, including but not limited to risk or Risk Contingency. Home office overhead is defined as all auditable costs that are allocated to all of the CMGC's ongoing projects, including insurance that is maintained by the CMGC as a general cost of doing business.

The fixed fee shall not include any field indirect costs or direct costs of the Project.

The fixed-fee percentage shall be applied to the total estimated construction cost.

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**APPENDIX B
GENERAL REQUIREMENTS**

1. Insurance Requirements. The selected CMGC must meet the following insurance requirements:

The CM/GC shall carry and maintain throughout the life of the Project, at its own expense, insurance not less than the amounts and coverage herein specified. ARRC shall be named as an additional insured on all insurance policies except the workers compensation policy. The minimum coverages and limits required are as follows:

- (a) Worker's Compensation insurance in accordance with the statutory coverages required by the State of Alaska and Employers Liability insurance with limits not less than \$1,000,000.
- (b) Commercial General Liability with limits not less than \$2,000,000 per occurrence and \$2,000,000 aggregate for Bodily Injury and Property Damage, including coverage for Premises and Operations Liability, Products and Completed Operations Liability, Contractual Liability, Broad Form Property Damage Liability, and Personal Injury Liability. Coverage shall not contain any exclusions of Explosion, Collapse, or Underground.
- (c) Commercial Automobile Liability on all owned, non-owned, hired, and rented vehicles with limits of liability of not less than \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage per each accident or loss.
- (d) During the Early Work and/or Construction Services Phase of the Project, the CMGC will be required to provide Pollution Liability Insurance with a Project limit of not less than \$2,000,000 to include coverage for Asbestos, Hazardous Materials, Lead, or other related environmental hazards.
- (e) During the Early Work and/or Construction Services Phase of the Project, the CMGC may be required to provide Builder's Risk Insurance if mutually agreed. If required, coverage shall be provided on an "All Risk" completed value basis and protect the interests of ARRC, the CMGC, and its subcontractors. Coverage shall include all materials, equipment and supplies that are intended for specific installation in the Project while such materials, supplies and equipment are located at the Project site and in transit to jobsite and while temporarily located away from the Project site.
- (f) During the Early Work and/or Construction Services Phase of the Project, the CMGC will be required to provide Railroad Protective Insurance: Coverage requirements will be developed during preconstruction.

All insurance policies as described above are required to be written on an "occurrence" basis. In the event occurrence coverage is not available, the CM/GC agrees to maintain "claims made" coverage for a minimum of two years after Project Completion. Each policy of insurance required by this section shall provide for no less than thirty (30) days' advance notice to ARRC prior to cancellation or material modification and contain a waiver of subrogation against ARRC.

2. Project Bonding Requirements. For the Early Work and/or Construction Services Phase of the Project, the CMGC shall furnish a one hundred percent (100%) performance bond and a one hundred percent (100%) payment bond on the forms provided in this RFP with a qualified corporate surety. No bid bond is required with this RFP response.

3. Wage Rate Requirements. The higher of the most current prevailing wage rates as defined by the (1) Federal Wage Decision or (2) State of Alaska, Department of Labor, Laborers' & Mechanics' Minimum Rates of Pay Pamphlet are required on this Project. Rates current as of the date of advertisement are contained in Appendix H of this RFP. Wage rates prevailing at time of award (if any) of Early Work and/or Construction Services Phase of the Project will prevail for construction services.

4. Licenses and Registration. The CMGC must have a current Alaska Business License together with a current Alaska Contractor's License.

5. Required Submittals. To be considered responsive, Proposers must submit the following documents with their proposals:

- (a) Contractor's technical proposal in accordance with the provisions of Appendix D, Section I, Items A-D.
- (b) Bidder/Offeror Questionnaire, Appendix I.
- (c) Certification Regarding Use of Contract Funds for Lobbying contained in Appendix G, item 25.
- (d) FTA Buy America Certification contained in Appendix G, item 22.
- (e) Contractor's Fee proposal in accordance with the provisions of Appendix D, Section I, Item E1.
- (f) Contractor's Pre-construction Phase Services proposal in accordance with the provisions of Appendix D, Section I, Item E2.

**APPENDIX C
PROPOSAL INFORMATION, CONDITIONS, INSTRUCTIONS & FORMAT**

1. **Pre-Submission Proposal Inquires.** Proposers shall promptly notify ARRC of any ambiguity, inconsistency, conflict, or error which they may discover upon examination of the solicitation documents. Verbal inquiries regarding this RFP are not permitted. All inquiries must be made in writing and received at ARRC's offices prior to 5 days before time for submission of proposals and the written inquiries must be submitted as follows:

Mr. Greg Goemer
Sr. Contract Administrator
Alaska Railroad Corporation
327 W. Ship Creek Ave.
Anchorage, Alaska 99501
Tel.: 907-265-2593
Fax: 907-265-2439
Email: GoemerG@akrr.com

ARRC will respond to all or part of the written inquiries received through the issuance of a written Addendum to the RFP, if in the opinion of ARRC, such information is deemed necessary to submit proposals or if the lack of it would be prejudicial to other prospective proposers. Oral and all other non-written responses, interpretations, and clarifications shall not be legally effective or binding. Any Proposer who attempts to use or uses any means or method other than those set forth above to communicate with the ARRC or any director, officer, employee, or agent thereof, regarding this RFP shall be subject to disqualification.

2. **Pre-Proposal Meeting and Site Visit.** ARRC staff will conduct a non-mandatory pre-proposal meeting and escorted site visit for prospective Proposers as stated in the Request for Proposals.

Proposers shall not trespass on private or ARRC property in the project vicinity, and may not be on ARRC property without an escort.

3. **Proposal Submission Deadline.** Sealed proposals must be received by ARRC no later than 3:00 p.m., local time, **May 18, 2017** at:

Alaska Railroad Corporation
Attention: Mr. Greg Goemer
Sr. Contract Administrator
327 W. Ship Creek Ave.
Anchorage, Alaska 99501

APPENDIX C

One (1) original, one (1) electronic copy (in a .pdf format) and five (5) copies of each proposal must be submitted. The sealed envelope or package used in submitting a proposal shall be clearly marked with the following information:

1. Proposer's Name
2. RFP No. 17-12-205605
3. Sealed Proposal: Proposal for Bridge 370.7 Pier Replacement CMGC
4. Date and Time Scheduled for Receipt of Proposals

Proposals received after the time and date set forth above shall be rejected and returned to Proposer unopened. All proposals submitted in response to this solicitation must be signed by an individual with the legal authority to submit the offer on behalf of the company.

4. Proposal Open and Subject to Acceptance. All proposals shall remain open and subject to acceptance by ARRC for sixty (60) days after the deadline for proposal submission.

5. Proposal Opening. Proposals will be opened privately at ARRC's convenience on or after the proposal due date.

6. Reserved Rights. In addition to other rights in this RFP, ARRC reserves, holds and may exercise at its sole discretion, the following rights and options:

- (a) To supplement, amend, or otherwise modify or cancel this RFP with or without substitution of another RFP.
- (b) To issue additional or subsequent solicitations for proposals.
- (c) To conduct investigations of the Proposers and their proposals, including inspection of their facilities.
- (d) To clarify the information provided pursuant to this RFP.
- (e) To request additional evidence or documentation to support the information included in any proposal.
- (f) To reject any and all proposals, or parts thereof, and/or to waive any informality or informalities in any of the proposals or the proposal process for the RFP, if such rejection or waiver is deemed in the best interest of ARRC.
- (g) To award a contract or contracts resulting from this solicitation to the responsible Proposer whose proposal conforming to this solicitation will be most advantageous to ARRC.
- (h) To negotiate any rate/fee offered by a Proposer. ARRC shall have the sole right to make the final rate/fee offer during contract negotiations. If the selected Proposer does not accept ARRC's final offer, ARRC may, in its sole discretion, reject the proposal and start negotiations with the next highest ranked Proposer.
- (i) If an award is made and, prior to entering into a contract, subsequent information indicates that such award was not in the best interest of ARRC, ARRC may rescind the award without prior notice to proposers and either award to another proposer or reject all proposals or cancel the RFP.

APPENDIX C

7. **Proposal Costs.** Each Proposer shall be solely responsible for all costs and expenses associated with the preparation and/or submission of its proposal, and ARRC shall have no responsibility or liability whatsoever for any such costs and expenses. Neither ARRC nor any of its directors, officers, employees or authorized agents shall be liable for any claims or damages resulting from the solicitation or collection of proposals. By submitting a proposal, Proposer expressly waives (i) any claim(s) for such costs and expenses, and (ii) any other related claims or damages.

8. **Taxes.** Pursuant to AS 42.40.910, ARRC is exempt from all forms of state or local sales, property and other taxes. Accordingly, any Proposer who submits a proposal shall not include any such tax in any of its proposal prices or in any calculation thereof.

9. **Proposal Format.** Interested firms shall submit the following:

- (a) One (1) original proposal, one (1) electronic copy (in a .pdf format) and five (5) copies, containing a statement of qualifications and a concise narrative that addresses each evaluation criterion.
- (b) Proposals shall have a maximum of **fifteen (15) pages**, exclusive of cover sheets, cover letter, table of contents, forms required by ARRC, resumes, or other attachments/exhibits.
- (c) A signed cover letter of a maximum **two (2) pages** should introduce the proposed firm or Joint Venture, summarize the main qualifications of the firm, and include any other information the Proposer deems will emphasize the its ability to successfully perform the services required and demonstrate why selection of Proposer would be advantageous to ARRC.
- (d) Fonts and page layouts shall be easily readable. Excessively small fonts will detract from proposal scoring.
- (e) A limited number of larger (11x17 inch) sheets are acceptable for graphics or charts and shall be counted as **one page** under the page limitation criteria indicated above.

Important Instructions-Required Submittals: To be considered responsive, Proposers must submit the following documents with their proposals:

- (a) **Contractor's technical proposal in accordance with the provisions of Appendix D, Section I, Items A-D.**
- (b) **Bidder/Offeror Questionnaire, Appendix I.**
- (c) **Certification Regarding Use of Contract Funds for Lobbying contained in Appendix G, item 25.**
- (d) **FTA Buy America Certification contained in Appendix G, item 22.**
- (e) **Contractor's Fee proposal in accordance with the provisions of Appendix D, Section I, Item E1.**
- (f) **Contractor's Pre-construction Phase Services proposal in accordance with the provisions of Appendix D, Section I, Item E2.**

10. Capacity to Perform. Any Proposer considered for award as a result of this solicitation may be required to make assurance to the Contract Administrator concerning the Proposer's capacity and capability to perform. Previous contracts of a like nature, financial solvency, and other information may be requested of the considered Proposer. Failure to provide assurances requested in a timely manner may be cause for rejection of the Proposal.

11. Purchase Obligation. ARRC and responding firms expressly acknowledge and agree that ARRC has made no express or implied promises to expend any dollar amounts with respect to the services addressed by this RFP. By submitting a proposal in response to this RFP, each firm acknowledges and agrees that the provisions of this RFP, and/or any communication, statement, act or omission by representatives of ARRC (including consultants) in the selection process, shall not vest any right, privilege, or right of action in any Proposer.

12. Exceptions to Terms, Conditions and Specifications. Each Proposer shall indicate all exceptions to terms, conditions, and specifications of this solicitation individually in its proposal. Exceptions received or placed after the proposal submission date will be considered as counter offers and as such will render the entire proposal non-responsive.

13. Public Information. All submitted proposals will be considered confidential until notice of intent to award is issued. After notice of intent to award is issued, all proposals will become public information.

14. Qualifications of Proposers. Proposers will be evaluated by ARRC based upon their experience, financial stability, appropriate equipment, responsiveness, technical knowledge and general organization. ARRC reserves the right to take any actions it deems necessary to determine if Proposers have the ability to perform the work outlined in the Scope of Services in a satisfactory manner. Such actions will include an evaluation of the Proposer's qualifications and references prior to Contract Award. Proposers may be disqualified, and their Proposals rejected, for any reason deemed appropriate by ARRC including, but not limited to, the following:

- (a) Evidence of collusion between a Proposer and any other Proposer(s).
- (b) An unsatisfactory performance record on projects for ARRC, or any other organization.
- (c) The appearance of financial instability (in the opinion of ARRC) and/or evidence that Proposer may not be financially able to complete the work required by the Project Scope in a satisfactory manner.
- (d) If Proposer has failed to complete one or more public contracts in the past.
- (e) If Proposer has been convicted of a crime arising from previous public contracts.
- (f) If Proposer is not authorized to perform work in the State of Alaska.

15. Thorough Review of RFP and Work Site. Proposers are required to carefully examine this RFP, its associated documents and the work site prior to submitting a Proposal for work outlined in the Scope of Services. Submission by Proposer of a Proposal shall be considered conclusive evidence that the Proposer fully understands all the requirements of the Scope of

APPENDIX C

Services. By submission of a Proposal, Proposer further warrants, agrees, and acknowledges all of the following:

- (a) Proposer has taken all necessary steps to determine the full scope, nature and location of the work outlined in the Scope of Services.
- (b) Proposer perceives no ambiguity in the RFP documents or the work as outlined in the Scope of Services and Specifications.
- (c) Proposer has inspected the work site and is satisfied that no conditions exist that could affect the performance and/or cost of work outlined in the Scope of Services including, but not limited to, conditions related to the following:
 1. Movement of personnel and materials on or off of the work site.
 2. Safety of personnel while on work site.
 3. The availability and accessibility of communications systems, water, and electric power at the work site.
 4. Environmental controls and/or protection from weather elements provided at the work site.
 5. Proposer is satisfied as to the character, quantity and quality of materials and services to be provided by the ARRC pursuant to this RFP.
 6. Proposer confirms that the amount of time allowed for completion of the Scope of Services is adequate.
 7. Proposer is familiar with and shall comply with all applicable Federal, State and local laws, ordinances and regulations that might affect the work associated with the Scope of Services and/or those engaged in activities related to the work.

Any failure of Proposer to take the actions described above to support the required acknowledgements associated with submission of a Proposal shall not relieve Proposer from the following responsibilities:

- (a) Proposer is responsible for properly estimating the difficulty and cost of successfully performing the work required by the Scope of Services.
- (b) Proposer is responsible for completing the work required by the Scope of Services without additional expense to ARRC.
- (c) By submission of a Proposal, Proposer agrees that ARRC will not be liable for any claims whatsoever (including, but not limited to, claims for additional payments or time) resulting from the following:
 1. Proposer's failure to investigate and become sufficiently knowledgeable of the Scope of Services and conditions under which the work is to be performed.
 2. Proposer's perception of ambiguity in this RFP document and/or the Scope of Services if:
 - (i) proposer discovers the ambiguity, but fails to notify ARRC; or,

APPENDIX C

- (ii) a particular Proposer fails to discover any ambiguity that would be discovered by any reasonably prudent Proposer in preparing a Proposal.
3. Proposer's lack of familiarity with any Federal, State, and local laws, ordinances and regulations that may, in any manner, affect cost, progress or performance of activities required by the Scope of Services.

16. ARRC Disadvantaged Business Enterprise (DBE) Program. ARRC is an equal opportunity (EO) corporation that encourages the participation of DBEs as prime contractors or subcontractors on its contracts funded in whole or in part by the relevant agencies of the United States Department of Transportation ("DOT"). ARRC has modified its DBE Program to eliminate contract goals and to establish a 100% race neutral program. Despite the fact that mandatory DBE goals will not be set on individual contracts, ARRC aspires to achieve an overall DBE participation of **3.87%** in FY 2017.

For additional information or to comment or provide input, please contact the ARRC EO Manager, Ann Courtney at (907) 265-2613. The EO office is located in the ARRC's General Office Building; 327 W. Ship Creek Avenue; Anchorage, Alaska, Monday - Friday and is open from 8:30 a.m. – 5:00 p.m.

Written comments should be addressed to the Manager, EO at P.O. Box 107500, Anchorage, Alaska 99510-7500; or emailed to Courtneya@akrr.com.

**APPENDIX D
SELECTION PROCESS/AWARD CRITERIA**

The selection of a firm to perform the CMGC services for the Project will be made by an ARRC Selection Committee that will evaluate and score the proposals in accordance with the criteria specified herein. ARRC may award a contract based solely on the initial scoring and proposals should be prepared with the intention of providing the best possible description of relevant experience, expertise, and project approach. However, ARRC reserves the right to extend the evaluation process by selecting a short list of two or more of the highest ranked firms to provide oral presentations. In the event that oral presentations are required the selected firms will be provided with additional information about the format, length, content, and scoring to be used.

I. Evaluation Criteria

Respondents will be evaluated based on their responses to the following criteria:

A. Proposed Firm/Joint Venture (JV)/Team (Total Points Available for this Criteria = 20)

This section is focused on the introduction of the proposer, and/or any significant firm or firms which constitute a team or joint venture. Describe the firm's resources, bonding capacity, and commitment to supporting and ensuring the success of this Project. The proposer should describe the firm(s) history, experience on similar projects including bridges, cold weather construction, large and/or braided rivers, alternate project delivery methods, sensitive environmental/regulatory conditions, and work in remote locations. Any projects used as reference should include total project budget and final cost, and reference information including contact phone number(s).

B. Project Approach (Total Points Available for this Criteria = 25)

Proposer shall describe overall understanding of the project and approach to CMGC management. In particular, how will the proposer handle the following:

- Planned sequencing and phasing of Work, including Early Work Packages.
- Change Management - Describe process(es) for managing change and present the project control system your firm intends to utilize to manage and control the execution of the Project.
- Decision Analysis and Resolution – Describe means and methods that will be used to support the design development and decision-making process in both the pre-construction and construction phases of the Project. Address how will the proposed processes help ARRC decide which suggestions to use, and how will the benefits and cost savings of CMGC be documented.
- Schedule Management – Address how the team will collaboratively integrate and optimize the construction schedule with the design schedule, outside constraints, and the overall controlling program management schedule.
- Subcontractor Plan – Describe the process used for development of the subcontractor selection plan, and how key sub-contractors will be selected and the possibilities for using their input during the pre-construction phase. Note any specific intentions to focus on Alaska based sub-contractors and suppliers.

APPENDIX D

C. Proposed Key Personnel (Total Points Available for this Criteria = 20)

The successful firm will provide several Key Personnel for the Project whose skills and expertise will be critical components to Project success. For this section, the proposer shall provide a narrative for the Key Personnel and other personnel identified as critical to the Project.

The required Key Personnel are:

- Project Manager
- Construction Manager
- Safety Manager
- Estimator/Scheduler

These narratives should include for each (more detailed information may be included within resumes as an appendix to the proposal):

- Describe why the named individual was selected for the stated position for this Project.
- Describe any experience in construction and management of construction on projects with similar size, complexity and challenges, scope, schedule, delivery methods, stakeholder interaction, and value.
- Describe the individual's experience in interacting and collaborating with design firms on complex projects.
- Describe the individual's experience working with public owners on the development and construction of highway and/or bridge projects.
- Describe the individual's experience with different project delivery methods, such as design-build, CMGC, CM @ Risk, etc.

The balance of the section should include additional staff at the disposal of the Project Manager, what duties these staff will perform, and at what stages or phases of Work they will perform these duties.

D. Project Innovation and Efficiencies (Total Points Available for this Criteria = 20)

In conjunction with your team's Project Approach, your team may have some innovative ideas that could increase the likelihood for Project success. The Selection Team will consider how well your innovative ideas help balance the Project goals. Describe specific technical innovations related to project execution that may further improve reaching Project goals. Address solutions for protection of existing facilities. Address safety and proposed minimization of impacts to train operations and proposed minimization of railroad flagging required. Address ability to provide adequate access to residents across the Nenana River. Address minimization of environmental footprint and impacts especially in connection with the temporary construction and access solutions proposed. Include the amount of time and money saved if the innovation(s) were to be implemented and describe the quality improvements resulting from use of the innovation(s).

E. Pricing Information (Total Points Available for this Criteria = 15)

Pricing Information (failure to provide any of the following information will be grounds to consider the proposal nonresponsive): It is recognized that sufficient information is not available to create

APPENDIX D

a meaningful “hard dollar” bid or GMP at this time. Pricing information to be submitted is limited to the following:

1. **Contractor’s Fee.** Proposers shall state their proposed Contractor’s Fee, identified as a percentage and carried out to four decimal points (e.g., 0.0000%) which will be applied to the direct cost of all Early Work and/or Construction Phase Services. The Contractor’s Fee will include all profit and home office overhead, as normally applied to projects completed by Proposer. Proposer shall provide a breakdown of all components used in establishing its Contractor’s Fee. Contractor Fees will be evaluated as follows:

$$\frac{\text{Lowest Contractor Fee \% Received}}{\text{Proposer's Contractor Fee \%}} \times 15 \text{ Points} = \text{Score}$$

Do not include Contractor Fee information in the body of your Proposal. This information shall be submitted on the provided form, in separate sealed envelope marked accordingly.

2. **Pre-Construction Phase Services Price Proposal (not scored).** Proposers shall state their fully burdened hourly rates for the Project Manager other Key Personnel, and proposed resource personnel such as staff estimator(s), schedulers(s), constructability services personnel, administrative staff, etc. identify the amount of hours in each category and any incidental expenses that the CMGC is expected to incur. Identify the multiplier used to determine the fully burdened hourly rate. The multiplier should include all overhead and profit considerations. For example, if an estimator’s hourly wage is \$20.00 per hour, and the proposed multiplier is 2.5, then the proposed rate would equal \$20.00 x 2.5 = \$50.00 per hour. Any proposed mark-ups on direct expenses should also be noted. This information shall be submitted in a separate, sealed envelope marked accordingly and will remain unopened until commencement of negotiations with the highest ranked proposer.

II. Evaluation of Proposals

A. Subjective Criteria Evaluation

Evaluation of responses to the Evaluation Criteria set forth in Section I. A through Section I. D above will be accomplished through a subjective assessment by each evaluator that results in a numerical score for each proposal. Each evaluator will individually read and rate each Proposer’s response to said criterion. Ratings will be based solely on contents of the proposal. Except as may be stated within any criterion description, evaluators will use the following qualitative rating factors for each of the RFP Evaluation Criteria:

APPENDIX D

Rating Factors

1.0	Extraordinary
0.9	Excellent
0.8	Very Good
0.7	Good
0.5	Adequate
0.4	Fair
0.2	Poor
0.0	Unsatisfactory

A rating of “0” indicates a proposal which is nonresponsive and/or provides no quality or value to ARRC. Ratings within the range indicate the level at which the proposal is responsive and/or provides quality or value to ARRC. For example, in evaluating Evaluation Criterion A. 1, should a determination of adequate be given, 0.5 would be assigned for that criterion. That evaluator's final score for that criterion would be determined by multiplying the qualitative rating factor of 0.5 by the maximum points available resulting in a score. This process will be repeated for each subjective criteria evaluation.

After completion of individual ratings, the Evaluation Committee will meet to discuss proposals. Evaluators may then alter their ratings; however, any changes shall be based solely on the Evaluation Criteria set forth herein. Evaluators may investigate and discuss factual knowledge of a Proposer's prior work experience and performance including projects referenced in the proposal, available written evaluations, etc.

An ARRC representative may contact listed references for each Proposer, or other persons knowledgeable of the Proposer's past performance. Information such as overall experience relative to the proposed contract, quality of work, control of cost, and ability to meet schedules may be requested of references, and all findings will be provided to each member of the Evaluation Committee prior to final ratings.

B. Objective Criteria Evaluation

Evaluation of responses to the Evaluation Criteria set forth in Section I. E. 1 above will be accomplished through an objective assessment by an ARRC Procurement Officer that results in a numerical score for each proposal in the manner stated in said Section.

III. Scoring and Award Process

Upon completion of the subjective scoring activity, the ARRC Procurement Officer will sum the final individual ratings of all evaluators. These summarized scores will then be divided by the total number of evaluators. The ARRC Procurement Officer will then add the objective score for the criteria listed in Section I. E.1 to the subjective scores to obtain the total combined score for each Proposer (maximum of 100 points). Proposals will be ranked in descending order (highest total score to lowest).

APPENDIX D

ARRC shall commence negotiations with the highest ranked firm. Should negotiations fail with said firm, ARRC reserves the right to enter into negotiations with next highest ranked firm, and so on, until an agreement is reached, or until ARRC exercises its right to cancel the solicitation.

Award under this RFP is anticipated to be announced within 60 calendar days of the submission date; all offers must be complete and irrevocable for 60 days following the submission date.

ARRC reserves the right to award a CM/GC contract solely on the basis of written proposal responses and reserves the right to award a contract to the successful firm without further communication.

The form of Agreement between ARRC and the selected CM/GC will be substantially equivalent to the sample GM/GC Contract form provided in Appendix E to this RFP. A contract or any subsequent agreement resulting from this RFP is not valid until executed by ARRC.

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**APPENDIX E
SAMPLE CMGC CONTRACT**

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**SAMPLE CM/GC CONTRACT
(Construction Manager/General Contractor)
Contract Number _____**

THIS CONTRACT IS BETWEEN:

OWNER: ALASKA RAILROAD CORPORATION

and

**CONSTRUCTION MANAGER/
GENERAL CONTRACTOR
(referred to as "Contractor" in the
General Conditions and herein
referred to as "the CM/GC"):**

The Project is: BR 370.7 Pier #3 Replacement - CMGC

The A&E is: Wilson & Co. Omaha, NE.

Table of Contents

<u>ARTICLE</u>		<u>PAGE</u>
1	General Contract Provisions; Defined Terms	p. 3
2	Contract Documents	p. 3
3	Work of This Contract	p. 4
4	Relationship and Role of the Parties	p. 9
5	Date of Commencement; Substantial and Final Completion	p. 10
6	Contract Price	p. 11
7	Changes in the Work	p. 14
8	Discounts, Rebates and Refunds	p. 16
9	Subcontracts and other Contracts	p. 16
10	Accounting Records	p. 18
11	Progress Payments	p. 18
12	Final Payment	p. 19
13	Termination or Suspension	p. 20
14	Representations and Warranties	p. 21
15	Miscellaneous	p. 22
16	Federal Terms & Conditions	p. 22
Schedule 1	CM/GC Key Persons	
Schedule 2	Pre-construction Phase Services Fees	
Exhibit A	General Conditions	
Exhibit B	Federal Terms & Conditions	
Exhibit C	Form of Fixed Price Amendment	
Exhibit D	Supplemental Conditions	

SAMPLE CONSTRUCTION MANAGER/GENERAL CONTRACTOR CONTRACT

This Construction Manager/General Contractor Contract ("Contract") is made and entered into by and between the Alaska Railroad Corporations ("Owner") and _____) (the "CM/GC") (collectively, the "Parties") as of the Effective Date of the Contract.

RECITALS

To be determined at a later date.

ARTICLE 1 **GENERAL CONTRACT PROVISIONS; DEFINED TERMS**

1.1 Applicable Regulatory Requirements and Standards. All Work shall be performed in accordance with the Regulatory Requirements and Standards then in effect, unless otherwise specified in the Contract Documents.

1.2 Defined Terms. All capitalized terms utilized in this Contract and all other Contract Documents are either defined in the CM/GC General Conditions for Construction attached hereto as Exhibit A (the "General Conditions") or defined in the text accompanying the term.

ARTICLE 2 **CONTRACT DOCUMENTS**

2.1 Contract Documents. For valuable consideration as stated below, Owner and the CM/GC agree to the terms of the agreement that are set forth in the Contract Documents which include this Contract, and all of the other documents enumerated in the definition of "Contract Documents" in the General Conditions. The Contract Documents (other than this Contract form) and all schedules and exhibits attached to this CM/GC Contract, are by this reference incorporated herein.

2.2 Effective Date. This Contract shall become effective on the first date on which every party has signed this Contract and shall apply to any Owner-approved preliminary Pre-construction Phase Services or Early Work and to Construction Phase Services.

2.3 The Contract; Order of Precedence. This Contract, together with the other Contract Documents, form the entire agreement between the Parties. Except as expressly otherwise provided herein, the order of precedence of the Contract Documents shall be the sequence established in Article 3.5.2 of the General Conditions, if there are inconsistent or conflicting terms among the Contract Documents.

ARTICLE 3
WORK OF THIS CONTRACT

3.1 Pre-construction Phase Services. The CM/GC agrees to provide all of the Pre-construction Phase Services described below on an ongoing basis in support of, and in conformance with, the time frames described in the Solicitation. Commencement of the Construction Phase shall not excuse CM/GC from completion of the Pre-construction Phase Services, if such services have not been fully performed at commencement of the Construction Phase.

3.1.1 The CM/GC shall provide a preliminary evaluation of the Owner's Project and budget requirements, each in terms of the other.

3.1.2 The CM/GC shall provide the following services relating to design recommendations and construction tasks:

- (a) The CM/GC shall provide all of the Pre-construction Phase Services as described in Appendix A – Section 5.A and Appendix J of the Solicitation.
- (b) The CM/GC shall consult with, advise, assist, and provide recommendations to the Owner and the Design Team on all aspects of the planning and design of the Work.
- (c) The CM/GC shall jointly schedule and attend regular meetings with the A&E and Owner's representatives. The CM/GC shall consult with the A&E and Owner's representatives regarding proposed Project improvements, and the selection of Materials, building systems and Equipment.
- (d) The CM/GC shall provide recommendations on construction feasibility; actions designed to minimize adverse effects of labor or material shortages; time requirements for procurement, installation and construction completion; and factors related to construction cost including estimates of alternative designs or Materials, preliminary budgets and possible economies. Additionally the CM/GC shall advise the A&E and the Owner on factors affecting environmental impacts of the construction, factors affecting public and third party access during construction, and factors affecting train operations during construction.
- (e) The CM/GC shall review in-progress design documents, including the documents generally described in the industry as "schematic design documents" and Design Development Documents, and provide input and advice on construction feasibility, alternative Materials, and availability. CM/GC shall review these completed documents and timely suggest modifications to improve completeness and clarity.

APPENDIX E

- (f) Notwithstanding any other provision herein, the CM/GC shall not be responsible or liable for design errors or omissions or the adequacy of the design. However, if during its review of the Design Development Documents, the CM/GC recognizes that the Plans and/or Specifications fail to comply with applicable Regulatory Requirements, the CM/GC shall promptly notify the A&E and Owner of such noncompliance in writing.

3.1.3 The CM/GC shall provide the following services related to the Project schedule:

- (a) The CM/GC shall prepare, and periodically update, a preliminary Project schedule for the A&E's and Owner's review and approval.
- (b) The CM/GC shall coordinate and integrate the preliminary Project schedule with the services and activities of the Owner, A&E, and CM/GC. As design proceeds, CM/GC shall update the preliminary Project schedule to indicate proposed activity sequences and durations, milestone dates for receipt and approval of pertinent information, submittal of a Fixed Price proposal, preparation and processing of Shop Drawings and samples, delivery of Materials or Equipment requiring long-lead time procurement, and Owner's requirements showing portions of the Project having priority, provided that the date(s) of Substantial Completion shall not be modified without Owner's prior written approval. If preliminary Project schedule updates indicate that previously approved schedules may not be met, the CM/GC shall make appropriate recommendations to the Owner and A&E.

3.1.4 The CM/GC shall make recommendations to A&E and Owner regarding the phased issuance of Plans and Specifications to facilitate phased construction of the Work, if such phased construction is appropriate for the Project, taking into consideration such factors as economics, time of performance, and availability of labor and Materials.

3.1.5 Provide the following services relating to cost estimating:

- (a) The CM/GC shall prepare, for the review by the A&E and Owner and approval of the Owner, a preliminary cost estimate utilizing area, volume or similar conceptual or parametric estimating techniques.
- (b) When schematic design documents have been prepared by the A&E and approved by the Owner, the CM/GC shall prepare for the review by the A&E and Owner and approval of the Owner, a more detailed estimate with supporting data. During the preparation of the Design Development Documents, the CM/GC shall update and refine this estimate at appropriate intervals agreed to by the Owner, A&E and CM/GC.
- (c) When Design Development Documents have been prepared by the A&E and approved by the Owner, the CM/GC shall prepare a detailed estimate with supporting data for review by the A&E and Owner and approval by the

Owner. During the preparation of the construction documents, the CM/GC shall update and refine this estimate at appropriate intervals agreed to by the Owner, A&E and CM/GC.

- (d) If any estimate submitted to the Owner exceeds previously approved estimates or the Owner's budget, the CM/GC shall make appropriate recommendations to the A&E and Owner.
- (e) CM/GC shall notify the Owner and the Design Team immediately if any construction cost estimate appears to be exceeding the construction budget.
- (f) The CM/GC otherwise shall work with the A&E and Owner to develop a Fixed Price for the Project within the Owner's schedule and budget.

3.1.6 Perform the following services relating to Subcontractors and Suppliers:

- (a) The CM/GC shall seek to develop Subcontractor and Supplier interest in the Project, consistent with applicable legal requirements, and shall furnish to the Owner and A&E for their information a list of possible Subcontractors and Suppliers, including Suppliers who may furnish Materials or Equipment fabricated to a special design, from whom competitive bids, quotes, or proposals (collectively, "Offers") will be requested for each principal portion of the Work. Submission of such list is for information and discussion purposes only and not for prequalification. The receipt of such list shall not require the Owner or A&E to investigate the qualifications of proposed Subcontractors and Suppliers, nor shall it waive the right of the Owner or A&E later to object to or reject any proposed Subcontractor, Supplier, or method of procurement.
- (b) The CM/GC shall provide input to the Owner and the Design Team regarding current construction market bidding climate, status of key subcontract markets, and other local economic conditions. CM/GC shall determine the division of Work to facilitate bidding and award of trade contracts, considering such factors as bidding climate, improving or accelerating construction completion, minimizing trade jurisdictional disputes, and related issues. CM/GC shall advise Owner on subcontracting opportunities for minority/women/DBA firms.

3.1.7 The CM/GC shall recommend to the Owner and A&E a schedule for procurement of long-lead time items which will constitute part of the Work as required to meet the Project schedule, which shall be procured by Owner or by the CM/GC upon execution of either a Fixed Price Amendment or Early Work Amendment covering such procurement, and approval of such schedule by the Owner. The CM/GC shall expedite the delivery of long-lead time items.

3.1.8 The CM/GC shall work with the Owner in identifying critical elements of the Work that may require special procurement processes, such as prequalification of Offerors or alternative contracting methods.

3.1.9 The CM/GC shall work with the Owner and the Design Team to verify the accuracy of Owner supplied Project information and perform any required further investigations or surveys.

3.2 Construction Phase Services.

3.2.1 Upon execution of an Early Work Amendment or Fixed Price Amendment, the CM/GC shall provide Construction Phase Services as provided in the Contract Documents, including without limitation providing and paying for all Materials, tools, Equipment, labor and professional and non-professional services, and performing all other acts and supplying all other things necessary to fully and properly perform and complete the Work, as required by the Contract Documents or, as to an Early Work Amendment, to furnish such Work as is described in the Early Work Amendment. Construction Phase Services shall include CM Services performed during the Construction Phase.

3.2.2 Notwithstanding any other references to Construction Phase Services in this Contract, this Contract shall include Pre-construction Phase Services only unless (i) the Parties execute a Fixed Price Amendment or (ii) the parties execute an Early Work Amendment.

3.2.3 The parties may execute one or more Early Work Amendments identifying specific Construction Phase Services that must be performed in advance of establishment of the Fixed Price Amendment. If the Early Work Price is a not-to-exceed budget, then CM/GC shall be obligated to perform the Early Work only to the extent that the cost of Work therefore does not exceed the Early Work Price; however if the CM/CG performs Early Work with a cost in excess of the Early Work Price the CM/GC shall pay such excess cost without reimbursement. If one or more Early Work Amendments are executed, the CM/GC shall diligently continue to work toward development of a Fixed Price Amendment acceptable to Owner, which shall incorporate the Early Work Amendments. If Owner thereafter terminates the Contract prior to execution of a Fixed Price Amendment, the provisions of Article 14.4 of the General Conditions shall apply.

3.2.4 Prior to commencement of the Construction Phase, and in any event not later than ten (10) days following the mutual execution of the Fixed Price Amendment, CM/GC shall provide to Owner a full Performance Bond and a Payment Bond as required by Article 5 of the General Conditions in the amount of the Fixed Price. If an Early Work Amendment is executed, CM/GC shall provide such bonds in the amount of the Early Work Price under the Early Work Amendment. CM/GC shall provide to Owner additional or replacement bonds at the time of execution of any subsequent Early Work Amendment or Fixed Price Amendment, in each case prior to execution of the Amendment and the supplying of any labor or Materials for the prosecution of the Work covered by the

Amendment, and in each case in a sufficient amount so that the total bonded sum equals or exceeds the total Early Work Price or the Fixed Price, as the case may be. In the event of a Scope Change that increases the Fixed Price, CM/GC shall provide to Owner additional or supplemental bonds in the amount of such increase prior to performance of the additional Work.

3.3 Construction Management (CM) Services. Throughout the Construction Phase of the Project, the CM/GC shall provide CM Services, generally consisting of coordinating and managing the construction process as an independent contractor, in cooperation with the Owner, A&E and other designated Project Consultants (the "Construction Principals"). CM Services shall include, but are not limited to:

3.3.1 Developing and delivering schedules, preparing construction estimates, performing constructability review, analyzing alternative designs, studying labor conditions, coordinating and communicating the activities of the Construction Principals throughout the Construction Phase to all Construction Principals;

3.3.2 Continuously monitoring the Project schedule and recommending adjustments to ensure completion of the Project in the most expeditious manner possible;

3.3.3 Working with the Owner and the A&E to analyze the design, participate in decisions regarding construction Materials, methods, systems, phasing, and costs, and suggest modifications to achieve the goals of providing the Owner with a quality Project within the budget, Fixed Price and schedule;

3.3.4 Not Used

3.3.5 Holding and conducting periodic meetings with the Owner and the A&E to coordinate, update and ensure progress of the Work;

3.3.6 Submitting weekly written reports to the Owner. Each report shall include, but shall not be limited to, Project updates including (i) explanations of significant variations; (ii) Work completed; (iii) Work in progress; (iv) changes in the Work; and (v) other information as determined to be appropriate by the Owner. Oral or written updates shall be provided to the Owner as deemed appropriate by the CM/GC or as requested by the Owner;

3.3.7 Maintaining a daily log containing a record of weather, Subcontractors working on the Site, number of workers, Work accomplished, problems encountered, safety violations and incidents of personal injury and property damage, and other similar relevant data as the Owner may reasonably require. The log shall be available to the Owner and A&E on request;

3.3.8 Developing and implementing a system of cost control for the Work acceptable to Owner, including regular monitoring of actual costs for activities in progress and estimates for uncompleted tasks and proposed changes. The CM/GC shall identify variances

between actual and estimated costs and report the variances to the Owner and A&E at regular intervals;

3.3.9 Cooperating with any and all Consultants hired by Owner;

3.3.10 At Owner's request, cooperating and performing warranty and inspection Work for the Project through the expiration date of the applicable warranty period;

3.3.11 Incorporating commissioning and inspection agents' activities into the Project schedule and coordinating Subcontractors required to participate in the commissioning and inspection process;

3.3.12 Performing all other CM obligations and providing all other CM Services set forth in the Contract Documents; and performing all other acts and supplying all other things necessary to fully and properly perform and complete the Work as required by the Contract Documents.

ARTICLE 4 **RELATIONSHIP AND ROLES OF THE PARTIES**

4.1 Independent Contractor. The CM/GC is an independent contractor and not an officer, employee, or agent of Owner.

4.2 Performance of Work. The CM/CG covenants with Owner to cooperate with the A&E and Owner and utilize the CM/GC's professional skill, efforts and judgment in furthering the interests of Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and Materials; and to perform the Work in conformance with the terms and conditions of the Contract Documents and in an expeditious and economical manner consistent with the interests of Owner.

4.3 Design Consultants. Owner has a separate contract with the A&E related to the Project. Both the CM/GC and the A&E shall be given direction by Owner through Owner's Contracting Officer or Project Manger. The CM/GC agrees to support Owner's efforts to create a collaborative and cooperative relationship among the CM/GC, A&E, other Project Consultants, and Owner's representatives.

4.4 Forms and Procedures. The Owner has developed or may develop procedures and forms for the administration and tracking of the Contract. The CM/GC agrees to abide by those procedures and use those forms.

4.5 CM/GC's Project Staff. The CM/GC's Project staff shall consist of the following personnel:

4.5.1 Key Personnel are named in the Special Provisions. These individuals will supervise and coordinate all Construction Phase and Pre-construction Phase Services of

CM/GC and participate in all meetings throughout the Project term unless otherwise directed by Owner. CM/GC represents that the Contract Manager and Project Manager each have authority to execute Change Orders and Contract Amendments on behalf of CM/GC. The names and contact information for the foregoing individuals shall be stated on Schedule 1 attached hereto.

4.6 Key Persons. CM/GC's personnel identified in Special Provisions shall be considered "Key Persons" and shall not be replaced during the Project without the written permission of Owner, which shall not be unreasonably withheld. If the CM/GC intends to substitute Key Persons, a request must be given to Owner at least 30 days (or such shorter period as permitted by Owner) prior to the intended time of substitution. When replacements have been approved by Owner, the CM/GC shall provide a transition period of at least 10 Business Days during which the original and replacement personnel shall be working on the Project concurrently. Once a replacement for any of these Key Persons is authorized, further replacement shall not occur without the written permission of Owner.

ARTICLE 5

DATE OF COMMENCEMENT; SUBSTANTIAL AND FINAL COMPLETION

5.1 Notice to Proceed. If Construction Phase Services are added to the Contract as set forth in Article 3.2, then a Notice to Proceed ("NTP") will be issued by Owner to begin the designated or full Construction Phase Services.

5.2 Completion of Project. The CM/GC shall achieve Substantial Completion and Final Completion on dates specified in the Fixed Price Amendment.

5.3 Time is of the Essence. All time limits stated in the Contract Documents are of the essence.

5.4 Time Extensions. Notwithstanding provisions for Contract time extensions in Article 11 of the General Conditions, Owner and CM/GC agree that timely completion of the Work is essential to the success of the Project, and that approval for time extension shall be granted in accordance with Supplemental Conditions 6.6 and 6.8.

5.4.1 Liquidated Damages. The CM/GC acknowledges that the Owner will sustain damages as a result of the CM/GC's failure to substantially complete the Project in accordance with the Contract Documents. These damages may include, but are not limited to delays in completion, use of the Project, and costs associated with Contract administration and use of facilities. The CM/GC and the Owner acknowledge that the actual amount of damages would be difficult to determine accurately and agree that that the following liquidated damages figure represents a reasonable estimate of such damages and is not a penalty:

5.4.2 Liquidated Damages shall be \$7,500.00 per day beyond the final completion date agreed to by Contract.

5.4.3 The CM/GC agrees to pay to the Owner the liquidated damage sums set forth above for each day of delay or any fraction thereof beyond the Substantial Completion date specified in the Fixed Price Amendment and further agrees that Owner may deduct such sums from payments the Owner otherwise owes to CM/GC under the Contract. If such deduction does not result in payment to Owner of the assessed liquidated damages in full, CM/GC shall promptly pay any and all remaining sums due to the Owner upon demand.

5.5 Incentives. Incentives, if any, shall be set forth in the Fixed Price Amendment.

ARTICLE 6 **CONTRACT PRICE AND FIXED PRICE**

6.1 Contract Price for Construction Phase. If a Fixed Price Amendment is executed, Owner shall pay the CM/GC, as payment for the Work, the Fixed Price stated therein which shall include the actual cost of the Work and the CM/GC's profit, overhead and general and administrative expenses, but not exceeding the Fixed Price as the same may be periodically adjusted in accordance with the General Conditions. Upon execution of the Fixed Price Amendment, the Fixed Price shall become the "Contract Price" payable to CM/CG for performance of the Work to complete the Project.

6.2 Pre-construction Phase Costs. The Pre-construction Costs shall be payable to CM/GC on a cost reimbursement basis based on the agreed fixed hourly rates for the CM/GC Project Manager and additional resource personnel specified in Schedule 2 attached hereto and actual expenses for Owner-approved purchases of goods or services up to and not to exceed the sum of _____. The hourly rates shall cover constructability review services, cost estimating, development of the Fixed Price, and all other Pre-construction Phase Services, as described in Article 3. If CM/GC's costs for provision of Pre-construction Phase Services exceed the amount set forth herein without receiving a written Change Order from the Owner allowing such increase, CM/GC shall pay such additional cost without reimbursement from Owner. Owner shall pay the Pre-construction Costs on an actual-hours-worked basis with each application for payment during the Pre-construction Phase. Owner owes CM/GC additional amounts for Pre-construction Services performed to date and not yet authorized for payment by Change Order. All of these outstanding amounts are due and payable upon the execution of the Fixed Price Amendment.

6.3 Not Used

6.4 Determination of Fixed Price.

6.4.1 CM/GC shall deliver to Owner a proposed Fixed Price and Fixed Price Supporting Documents at a time designated by Owner during the Pre-construction Phase. If any actual Subcontractor Offers are available at the time the Fixed Price is being established, CM/GC shall use those Offers in establishing the Fixed Price.

6.4.2 As the Plans and Specifications may not be developed to the stage of biddable design documents at the time the Fixed Price proposal is prepared, the CM/GC shall provide in the Fixed Price for further development of the Plans and Specifications by the A&E that is consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include such things as changes in scope, systems, kinds and quality of Materials, finishes or Equipment, all of which, if required, shall be incorporated by Change Order or Amendment with a corresponding Contract Price adjustment. The CM/GC shall provide a scope book with its Fixed Price proposal that identifies the basis upon which the CM/GC calculated the Fixed Price.

6.4.3 The CM/GC shall include with its Fixed Price proposal a written statement of its basis (the " Fixed Price Supporting Documents"), which shall include:

6.4.3.1 A list of the Plans and Specifications, including all addenda thereto and the conditions of the Contract, which were used in preparation of the Fixed Price proposal.

6.4.3.2 A list of Allowances and a statement of their basis. The basis shall include what is included in each Allowance and how the Allowance will be applied.

6.4.3.3 A list of the clarifications, assumptions, exclusions, conditions, unit prices, and alternates made by the CM/GC in the preparation of the Fixed Price proposal to supplement the information contained in the Plans and Specifications.

6.4.3.4 The proposed Fixed Price , including a statement of the estimated cost organized by trade categories, Allowances, contingency, and other items and the associated fees that comprise the Fixed Price.

6.4.3.5 The date of Substantial Completion upon which the proposed Fixed Price is based, and a schedule of the Contract Documents issuance dates upon which the date of Substantial Completion is based, as well as a proposed Construction Phase Baseline Schedule, which schedule shall be developed from previous schedules prepared as part of Preconstruction Phase services.

6.4.4 The CM/GC shall meet with the Owner and A&E to review the Fixed Price proposal and the Fixed Price Supporting Documents. If the Owner or A&E discovers any inconsistencies or inaccuracies in the information presented, they shall promptly notify the CM/GC, who shall make appropriate adjustments to the Fixed Price proposal, its basis or both.

6.4.5 Prior to the Owner's acceptance of the CM/GC's Fixed Price proposal and issuance of a Notice to Proceed, the CM/GC shall not incur any cost to be reimbursed as part of the Contract Price, except as specifically provided in an Early Work Amendment.

6.4.6 After execution of a Fixed Price Amendment, Owner shall authorize and cause the A&E to revise the Plans and Specifications to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in the Fixed Price Amendment. Such revised Plans and Specifications shall be furnished to the CM/GC in accordance with schedules agreed to by the Owner, A&E and CM/GC. The CM/GC shall promptly notify the A&E and Owner if such revised Plans and Specifications are inconsistent with the agreed-upon assumptions and clarifications.

6.4.7 The Fixed Price shall include the CM/GC's Contingency, a sum established by the CM/GC for the CM/GC's exclusive use to cover additional development of Plans and Specifications and unforeseen costs which are properly reimbursable but which are not the basis for a Change Order.

6.4.8 The CM/GC shall work with the A&E and Owner to identify and confirm components and systems not specifically shown but required for a complete, fully functional Project. Owner will direct the A&E to complete the final construction documents in accordance with the Project scope agreed upon by all Parties at the time the Fixed Price is established.

6.4.9 Notwithstanding the level of detail represented in the Fixed Price Supporting Documents, the CM/GC shall represent and warrant, at the time that it submits the Fixed Price, that the Fixed Price includes the entire cost of all components and systems required for a complete, fully functional Project as should have been reasonably anticipated in the documents used to prepare the Fixed Price.

6.4.10 In developing the Fixed Price, the CM/GC shall include and identify mutually agreeable contingencies within the Fixed Price as may be necessary to pay for unanticipated cost elements necessary to provide a complete, fully functional Project.

6.5 Failure to Furnish an Acceptable Fixed Price. If the CM/GC does not furnish a Fixed Price acceptable to Owner within Owner's budget and schedule, or if Owner determines at any time in its sole discretion that the Parties may fail to reach a timely agreement on a Fixed Price acceptable to Owner, Owner may terminate this Contract without liability, and the CM/GC shall not receive additional compensation beyond the Pre-construction Costs payable under this Contract and sums due under any Early Work Amendment. Termination under this provision shall proceed under Article 14.4 of the General Conditions as a termination for Owner's convenience. CM/GC further agrees that Owner shall not be liable for any damages whether actual, consequential or otherwise for termination of the Contract under this provision.

6.6 Acceptance of Fixed Price. Upon acceptance of the Fixed Price by Owner, the Parties shall execute a Fixed Price Amendment in a form similar to that contained in Exhibit C.

6.7 Not Used

6.8 Allowance Work.

6.8.1 CM/GC shall not perform any Allowance work without prior execution by Owner of a Change Order approving the Specifications for the Allowance work and the price thereof.

6.8.2 Owner shall be entitled to apply any Allowance line items that are not fully expended to other line item Allowances that have been fully expended, without any resulting increase in the Contract Price.

6.8.3 If the total cost of the Allowance work exceeds the total Allowances within the Contract Price, CM/GC shall not perform any Allowance work in excess of such amount until a Change Order or Amendment is executed to increase the Contract Price by the excess cost of the Allowance work.

6.8.4 The Contract Price shall not include any Allowance items not identified in the Fixed Price Amendment or the Fixed Price Supporting Documents until such Allowance item is reduced to a fixed price by Change Order or Amendment.

6.8.5 If at the Final Completion of the Project, any portion of the Allowance funds remains unexpended, the Contract Price shall be reduced by a corresponding amount via a Change Order or Amendment.

6.9 Nothing stated in the Contract shall preclude CM/GC from being able to compete for and, if successful, perform elements of the Work under the same terms and conditions being offered to potential subcontractors, or as lump sum or unit price items otherwise negotiated with the Owner.

ARTICLE 7
CHANGES IN THE WORK

7.1 Price Adjustments. Adjustments to the Contract Price required by changes in the Work shall be determined by any of the methods listed in Article 10 of the General Conditions.

7.1.1 The Owner and CM/GC can agree to an adjustment based upon fixed pricing or unit pricing.

7.1.2 The overhead, general and administrative expenses and profit markup for the CM/GC for cost reimbursable change work shall not exceed 15% ("CM/GC Markup Fee").

7.1.3 The increase or decrease in the Contract Price resulting from changes in the Work shall be calculated in accordance with Article 10 of the General Conditions.

7.1.4 In calculating adjustments to subcontracts, unless the Parties agree otherwise, the change shall be limited to the Subcontractor's Direct Costs plus the Mark-up Fee provided in Article 10.6.2 of the General Conditions.

7.2 Cost Reimbursable Adjustments to Contract Price. Adjustments to the Contract Price after execution of the Fixed Price Amendment may be made only (i) in the event of Scope Changes or (ii) as otherwise expressly provided in this Contract, and then only in accordance with the following procedure:

7.2.1 CM/GC shall review subsequent iterations of the Plans and Specifications as they are prepared to determine whether, in the opinion of CM/GC, they result in a Scope Change so that it can be determined if an adjustment to the Contract Price is warranted.

7.2.2 Changes to the Contract Price shall be initiated by written notice by one party to the other ("Contract Price Change Request"). CM/GC shall deliver any such Contract Price Change Request to the Owner promptly after becoming aware of any Scope Change if, in CM/GC's opinion, it constitutes grounds for adjustment of the Contract Price. Any Contract Price Change Request shall include a proposal as to the appropriate Contract Price adjustment with respect to the Scope Change at issue.

7.2.3 CM/GC shall submit its Contract Price Change Requests as soon as possible, and CM/GC shall not be entitled to claim a Contract Price increase unless CM/GC submitted a Contract Price Change Request to Owner within the earlier of (a) 30 Days after CM/GC has received the information constituting the basis for the claim, or (b) as to Work not yet bid or proposed, prior to submission of solicitations for such Work and as to Work already solicited, prior to commencement of the portion of the Work for which CM/GC intends to claim a Scope Change; and (c) in any event, prior to CM/GC's signing of a Change Order for the Scope Change.

7.2.4 Owner may, at any time, submit a Contract Price Change Request requesting a reduction of the Contract Price, which shall include Owner's basis for such request, which may include, for example, reduction of the CM/GC's Contingency after further development of the Plans and Specifications that form the basis for the original Fixed Price Amendment, and/or unused Allowances.

7.2.5 CM/GC shall work with A&E to reconcile all differences in its Contract Price Change Request within seven Days from the date of submission of the Contract Price Change Request. "Reconciled" means that the CM/GC and A&E have verified that their assumptions about the various categories are the same, and that identifies the reason for differences in the Contract Price Change Request and the A&E's position. CM/GC shall submit the Reconciled Contract Price Change Request to Owner, which submission shall be a condition to any CM/GC claim for a Contract Price increase.

7.2.6 If the Reconciled Contract Price Change Request is not acceptable to Owner, CM/GC agrees to work with the Owner to provide a Contract Price Change Request that is acceptable to Owner. If the Reconciled Contract Price Change Request is not

accepted by Owner, CM/GC may seek recovery of the disputed amount under the provisions of Article 15 of the General Conditions.

7.2.7 CM/GC agrees to make all records, calculations, drawings and similar items relating to Contract Price Change Request available to Owner and to allow A&E and Owner access and opportunity to view such documents at CM/GC's offices. Upon Owner's reasonable notice, CM/GC shall deliver two copies of such documents to Owner and A&E at any regular meeting or at the Site.

7.2.8 Contract Price increases, if any, shall not exceed the increased cost of Work arising from the Scope Change (whether based on agreed fixed pricing, or the estimated cost increase based on cost-reimbursable pricing), reconciled in accordance with the above provisions, as arising from the incident justifying the Contract Price increase, plus or minus the CM/GC Markup Fee applicable to such change in the Work.

7.2.9 Except as provided in this Article 7.2, adjustments to the Contract Price shall be reconciled in accordance with Article 10 of the General Conditions.

7.3 Execution by Owner. Change Orders or Amendments shall be executed by the Owner's Contracting Officer.

ARTICLE 8 **DISCOUNTS, REBATES AND REFUNDS**

8.1 Discounts, Rebates and Refunds. Only in the event of cost reimbursable changed work shall cash discounts obtained on payments made by the CM/GC accrue to Owner. Trade discounts, rebates, refunds and net amounts received from sales of surplus Materials and Equipment shall accrue to Owner. The CM/GC shall make a good faith effort to secure discounts, rebates and refunds.

8.2 Amounts Credited to Owner. Amounts which accrue to Owner in accordance with the provisions of Article 8.1 shall be credited to Owner as a deduction from the Contract Price.

ARTICLE 9 **SUBCONTRACTS AND OTHER CONTRACTS**

9.1 General Subcontracting Requirements.

9.1.1 The following specific minimum requirements apply to selection Subcontractors performing Construction Phase Services for this Project:

- (a) The CM/GC must self-perform a minimum of 50% of the Construction Phase Services Work with its own forces.

- (b) The CM/GC may select Subcontractors to perform Construction Phase Services Work utilizing either a competitive bidding process or through negotiation.
- (c) Subcontractors must be qualified to perform the Work for this Project by being appropriately licensed and registered by the State of Alaska.
- (d) The CM/GC shall comply and require Subcontractor compliance with the prevailing wage requirements of the Federal Davis-Bacon Act and related acts unless a higher wage rate and fringe benefits are required by the Alaska Department of Labor for public contracts in Alaska.

9.2 CM/GC's Obligations under Subcontracts.

9.2.1 No use of a Subcontractor or Supplier shall relieve the CM/GC of any of its obligations or liabilities under the Contract. Except as may expressly otherwise be provided in this Contract, the CM/GC shall be fully responsible and liable for the acts or omissions of all Subcontractors and Suppliers including persons directly or indirectly employed by them. The CM/GC shall have sole responsibility for managing and coordinating the operations of its Subcontractors and Suppliers, including the settlement of disputes with or between the CM/GC and any such Subcontractor or Supplier.

9.2.2 The CM/GC shall include in each subcontract and require each Subcontractor to include in any lower tier subcontract, any provisions necessary to make all of the provisions of the Contract Documents, including the General Conditions, fully effective as applied to Subcontractors. CM/GC shall indemnify Owner for any additional cost based on a Subcontractor claim which results from the failure of CM/GC to incorporate the provisions of this Contract in each subcontract. The CM/GC shall provide all necessary Plans, Specifications, and instructions to its Suppliers and Subcontractors to enable them to properly perform their work.

9.2.3 Retainage from Subcontractors. The Owner and the CM/GC shall agree upon a mutually acceptable procedure for review and approval of payments and retainage for Subcontractors.

9.2.4 CM/GC shall notify Owner in writing in advance before award of any proposed Subcontract, which notice shall include summaries in a form acceptable to Owner of all Offers received for the Subcontract at issue. Owner reserves the right to disapprove any proposed Subcontractors, suppliers and Subcontract or supply contract awards, based on legal standards of responsibility.

9.2.5 CM/GC's subcontracting records shall not be considered public records; provided, however, that Owner and other agencies of the State shall retain the right to audit and monitor the subcontracting process in order to protect the Owner's interests.

ARTICLE 10
ACCOUNTING RECORDS

10.1 Accounting; Audit Access. The CM/GC shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management under this Contract; the accounting and control systems shall be satisfactory to Owner. Owner and Owner's representatives, including its accountants and auditors, shall be afforded reasonable and regular access to the CM/GC's records, books, correspondence, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to this Contract, and the CM/GC shall preserve these for a period of three years after final payment, or for such longer period as may be required by law.

10.2 Periodic and Final Audits. Owner may, at its discretion, perform periodic audits of the progress payments and any other reimbursable costs associated with the Project. The CM/GC shall cooperate fully with Owner in the performance of such audits. Disputes over audit findings or conclusions shall be subject to the process set forth in Article 12.4.

ARTICLE 11
PROGRESS PAYMENTS

11.1 Integration with General Conditions. The requirements of this Article 11 and Article 12 are in addition to, and not in lieu of, the requirements of Article 13 of the General Conditions.

11.2 Progress Payments. Based upon applications for payment submitted pursuant to Article 13 of the General Conditions, Owner shall make progress payments to the CM/GC as provided below and elsewhere in the Contract Documents. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein.

11.3 Percentage of Completion. Applications for payment of fixed price Work items shall show the percentage completed during the billing period of each portion of such Work item, as well as the overall percentage completion of such Work item.

11.4 Unit Prices. Progress payments on account of Unit Price Work shall be based upon the number of units completed.

11.5 Withholding of Payments. The Owner can withhold payment or portions of payments to the CM/GC if the Work performed by the CM/GC does not comply with the Contract Documents.

11.6 Mobilization/Demobilization Allowance. A Mobilization/Demobilization allowance shall be established in the Schedule of Values. Measurement for the Mobilization allowance shall be as follows: When 4% of the Contract Price from other schedule of value items is earned: 40% of the Mobilization/Demobilization allowance, or 4% of the Contract Price, whichever is less, will become due and payable. When a total of 8% of the Contract Price from other schedule of value items is earned, an additional 40% of

the Mobilization/Demobilization allowance, or an additional 4% of the Contract Price, whichever is less, will become due and payable. The remaining balance of the Mobilization/Demobilization allowance for this item will become due and payable after all submittals required under the Contract are received and approved.

ARTICLE 12 **FINAL PAYMENT**

12.1 Final Payment Accounting. CM/GC shall submit to Owner a final detailed accounting of the Contract Price together with CM/GC's final application for payment.

12.2 Calculation of Final Payment. The amount of the final payment shall be calculated as follows:

12.2.1 Take the Contract Price, as the same may have been previously adjusted.

12.2.2 Subtract amounts, if any, for which the Owner withholds, in whole or in part, approval of payment.

12.2.3 Subtract the aggregate of previous payments made by Owner to CM/GC. If the aggregate of previous payments made by Owner exceeds the amount due the CM/GC, the CM/GC shall reimburse the difference to Owner within 30 Days.

12.3 Final Payment Review. Owner or its accountants will review and report in writing on the CM/GC's final accounting within 30 Days after delivery of the final accounting by the CM/GC. Based upon such amounts as Owner or Owner's accountants report to be substantiated by the CM/GC's final accounting, and provided the other conditions of this Contract have been met, the Owner will, within 10 Days after receipt of the written report of Owner's accountants, either issue an approval of CM/GC's final application for payment to the CM/GC or notify the CM/GC in writing of the Owner's reasons for withholding approval of any part of the application for payment, which disapproval shall include Owner's estimate of the amount that is due Contractor under the application for payment.

12.4 Payment Disputes. If Owner's accountants report the Final Payment as substantiated by the CM/GC's final accounting to be less than the amount claimed by the CM/GC or if Owner declines to approve any duly submitted payment request by CM/GC, the CM/GC shall be entitled to demand a review by the Owner's highest contracting authority of the disputed amount. Such demand shall be made by the CM/GC within 30 Days after the CM/GC's receipt of a copy of the rejection of the application for payment; failure to demand additional review within this 30-Day period shall result in the substantiated amount reported by Owner's accountants becoming binding on the CM/GC. In addition, If Owner or any other governmental agency performs a subsequent audit of the Contract Price and determines any item therein to have been unsubstantiated or that CM/GC was otherwise overpaid, CM/GC shall have 30 Days after delivery of request for reimbursement by Owner to demand additional review by Owner's highest contracting

authority; failure to make such demand within this 30 Day period shall result in the requested reimbursement becoming unconditionally due and payable by CM/GC. If CM/GC timely submits a protest to the Owner's highest contracting authority, CM/GC's Claim shall be subject to the Claims review process in Article 15 of the General Conditions. Pending a final resolution, Owner shall pay the CM/GC the amount of the application for payment approved by the Owner.

12.5 Effect of Payment. Neither approval of an application for payment, a progress payment, release of retainage, or final payment, or partial or entire use or occupancy of the Project by the Owner shall constitute acceptance of Work not conforming to the Contract Documents, or waiver of the right to assert overpayment.

ARTICLE 13 **TERMINATION OR SUSPENSION**

13.1 Owner's Right to Terminate Prior to Execution of Fixed Price Amendment. Prior to execution by both Parties of the Fixed Price Amendment, the Owner may terminate this Contract at any time without cause. Upon such termination, the amount to be paid to the CM/GC shall not exceed the Pre-construction Costs payable to the date of termination, together with amounts payable for Early Work if an Early Work Amendment has been executed. If Owner terminates for convenience during the Pre-construction Phase, Owner shall be entitled to copies of, and shall have the right to use, all Work Product of CM/GC and its Subcontractors performed to the date of termination, and CM/GC shall deliver copies of the same to Owner on request.

13.2 Owner's Termination for Convenience after Fixed Price Amendment. After the Fixed Price Amendment is executed by both Parties, the Contract may be terminated by Owner without penalty for convenience pursuant to Article 14.4 of the General Conditions in which case CM/GC shall be entitled to payment of the actual amount for Pre-construction Phase Services, together with the actual Work completed prior to the date of termination, but in any event not in excess of the Contract Price.

13.3 Owner's Termination for Cause. In the event of termination of this Agreement by Owner for cause pursuant to Article 14.2 of the General Conditions, the amount, if any, to be paid to the CM/GC after application of the General Conditions and Owner's rights at law shall not exceed the amount the CM/GC would be entitled to receive under Article 13.2 above.

13.4 CM/GC Termination for Cause. CM/GC acknowledges that disputes regarding payments and Change Orders may occur as part of the CM/GC process, and that Owner's declining to pay disputed amounts shall not be grounds for suspension of the Work or termination for cause by CM/GC. If CM/GC terminates this Contract for Owner's material breach, the amount to be paid to CM/GC shall not exceed the amount CM/GC would have been entitled to receive under Article 11 above through termination and demobilization from the Project.

13.5 Assignment of Subcontracts. Each subcontract and supply contract for any portion of the Work is hereby irrevocably assigned by the CM/GC to the Owner, provided that such assignment is effective only after termination of this Contract by the Owner, and only for those subcontracts and supply contracts which the Owner accepts by notifying the Subcontractor/Supplier and CM/GC in writing. For those subcontracts and supply contracts accepted by Owner, if the Work has been suspended for more than 30 Days, the Subcontractor's/Supplier's compensation shall be equitably adjusted for increases in cost resulting from the suspension. CM/GC shall include a provision in each subcontract and supply agreement whereby the Subcontractor/Supplier acknowledges Owner's rights under this Article 13.5.

ARTICLE 14 **REPRESENTATIONS AND WARRANTIES**

14.1 Representations. CM/GC represents and warrants to Owner as of the effective date of this Contract:

14.1.1 It is qualified to do business as a licensed general contractor under the laws of the State of Alaska, and has all requisite corporate power and corporate authority to carry on its business as now being conducted;

14.1.2 It has full corporate power and corporate authority to enter into and perform the Contract and to consummate the transactions contemplated hereby; CM/GC has duly and validly executed and delivered the Contract to Owner and that the Contract constitutes the legal, valid and binding obligation of CM/GC, enforceable against CM/GC in accordance with its terms, except as enforceability may be limited or affected by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting creditors' rights generally and by general principles of equity (regardless of whether enforceability is considered in a proceeding in equity or at law);

14.1.3 CM/GC's execution and delivery of the Contract and the consummation of the transactions contemplated hereby will not conflict with or result in a material breach of any terms or provisions of, or constitute a material default under, (i) CM/GC's Articles of Incorporation or Bylaws; (ii) any note, bond, mortgage, indenture, license, lease, contract, commitment, agreement or other instrument or obligation to which CM/GC is a party or by which CM/GC may be bound; or (iii) any statute, order, writ, injunction, decree, rule or regulation applicable to CM/GC;

14.1.4 No material consent, approval, authorization, declaration or other order of, or registration or filing with, any court or regulatory authority or any third person is required for the valid execution, delivery and performance of the Contract by CM/GC or its consummation of the transactions contemplated hereby;

14.1.5 There is no action, proceeding, suit, investigation or inquiry pending that questions the validity of the Contract or that would prevent or hinder the consummation of the transactions contemplated hereby; and

14.1.6 The CM/GC's Project Principal and Project Manager/Sponsor identified in Schedule 1 are duly appointed representatives and each has the authority to bind the CM/GC to any and all duties, obligations and liabilities under the Contract Documents and any Amendments thereto that involve amounts up to \$10,000,000.00.

ARTICLE 15 **MISCELLANEOUS**

15.1 Headings. The headings used in the Contract are solely for convenience of reference, are not part of the Contract and are not to be considered in construing or interpreting the Contract.

15.2 Merger. The Contract Documents constitute the entire contract between the Parties. No waiver, consent, modification or change of terms of the Contract shall bind either party unless in writing and signed by both Parties. Such waiver, consent, modification or change, if made, shall be effective only in the specific instance and for the specific purpose given. There are no understandings, agreements, or representations, oral or written, not specified herein regarding the Contract. CM/GC, by signature of its representative, hereby acknowledges that it has read the Contract, understands it and agrees to be bound by its terms and conditions.

ARTICLE 16 **FEDERAL TERMS & CONDITIONS**

The services to be provided under this Contract relate to a project funded in part by federal funds administered by the Federal Transit Administration. Federal funds may be used to pay for part or all of the Work provided under this Contract. Accordingly, CM/GC agrees to comply with the applicable Federal Terms and Conditions stated in Exhibit B attached hereto and to require its Subcontractors and Suppliers to also comply.

THIS CONTRACT is executed in two original copies of which one is to be delivered to the CM/GC, and the other to Owner.

APPENDIX E

CM/GC:

Address: _____

CM/GC's Federal I.D. #: _____

Construction Contractor's License No.: _____

Signature of Authorized Representative of CM/GC

Title: _____

Date: _____

OWNER:

ALASKA RAILROAD CORPORATION

William O'Leary

Title: President & CEO

Date: _____

ATTACHMENTS:

Schedule 1 CM/GC Key Persons

Schedule 2 Pre-construction Phase Services Fees

Exhibit A – General Conditions

Exhibit B - Federal Terms & Conditions

Exhibit C - Form of Fixed Price Amendment

Exhibit D - Supplemental Conditions

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Schedule 1

CM/GC Key Persons

Name

Title

To be developed – Key Persons shall be as stated in the RFP and in accepted proposal

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Schedule 2

Pre-construction Phase Services Fees

Name

Title

Rate/Hour

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EXHIBIT A
GENERAL CONDITIONS

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EXHIBIT B
FEDERAL TERMS & CONDITIONS

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EXHIBIT C

**ALASKA RAILROAD CORPORATION
FIXED PRICE AMENDMENT TO CM/GC CONTRACT**

THIS AMENDMENT IS BETWEEN:

OWNER: ALASKA RAILROAD CORPORATION

and

**CONSTRUCTION MANAGER/
GENERAL CONTRACTOR ("the CM/GC"):**

The Project is: BR 370.7 Pier #3 Replacement - CMGC

Date of CM/GC Contract ("Contract"): _____

Date of this Amendment: _____

APPENDIX E

The Owner and CM/GC hereby amend the Contract as set forth below. Capitalized terms not otherwise used herein shall have the meanings given in the Contract Documents. Except as amended hereby, the Contract remains in full force and effect.

1. Fixed Price. The Parties agree that the Fixed Price for the Project is \$_____, which sum includes the cost of the Work required to construct the Project in accordance with the Contract Documents and the CM/GC's overhead, profit and general and administrative costs.

For purposes of determining the Fixed Price, the cost of the Work includes the CM/GC's Contingency, and the costs of all components and systems required for a complete, fully functional Project.

2. Basis of Fixed Price. The Fixed Price is based on the Fixed Price Supporting Documents attached as Attachments A-G (___ pages) including the Allowances, assumptions, exclusions, unit prices, and alternates designated therein.

3. Plans and Specifications. The Plans and Specifications for the Project are as listed in the Fixed Price Supporting Documents. CM/GC shall perform Construction Phase Services in accordance with the Plans and Specifications and the other Contract Documents.

4. Substantial Completion Date. Notwithstanding any provision in the Fixed Price Supporting Documents to the contrary, the required date for Substantial Completion shall be: _____, 20__.

THIS AMENDMENT is executed in two original copies of which one is to be delivered to the CM/GC, and the remainder to Owner.

CM/GC:

Name of Firm: _____

Address: _____

CM/GC's Federal I.D. #: _____

Construction Contractor's License No.: _____

Signature of Authorized Representative of CM/GC

Title _____

Date _____

OWNER:

ALASKA RAILROAD CORPORATION

Signature of Owner's Authorized Representative

Title_____

Date_____

- Attachment A Plans, Specifications, Supplemental Conditions of the Contract, on which the Fixed Price is based, pages __ through __ dated _____.
- Attachment B Allowance items, pages __ through __ dated _____.
- Attachment C Assumptions and clarifications made in preparing the Guaranteed Maximum Price, pages __ through __, dated _____.
- Attachment D Completion schedule, pages __ through __, dated _____.
- Attachment E Alternate prices, pages __ through __, dated _____.
- Attachment F Unit prices, pages __ through __, dated _____.
- Attachment G Schedule of Values, pages __ through __, dated _____.

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EXHIBIT D
SUPPLEMENTAL CONDITIONS

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APPENDIX F
CMGC GENERAL CONDITIONS AND SUPPLEMENTAL CONDITIONS

1. Drug and Alcohol Free Workplace and Wage & Hour Requirements
2. CMGC General Conditions for Construction
3. Supplemental Conditions

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Appendix F1
Drug and Alcohol Free Workplace and Wage & Hour Requirements

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**DRUG AND ALCOHOL-FREE WORKPLACE
And DAVIS BACON REQUIREMENTS:
INSTRUCTIONS & SPECIAL REQUIREMENTS
(CONSTRUCTION)**

Drug and Alcohol-Free Workplace: Safety is paramount at ARRC. For that reason, ARRC maintains an alcohol and drug-free workplace and requires that the Contractor do the same. At all times during the performance of this contract, the Contractor shall have in place a written drug and alcohol program that includes, at a minimum, the following:

- a. a requirement that all applicants present a negative pre-employment drug screen prior to being hired by the Contractor;
- b. a requirement that employees submit to a "reasonable suspicion" drug and/or alcohol test when showing signs and symptoms of drug and/or alcohol influence on duty;
- c. a requirement that employees submit to "reasonable cause/post accident" drug and alcohol tests following certain accidents or incidents (with the threshold level triggering testing to be determined by the Contractor);
- d. a provision defining a positive alcohol test as one that reveals a breath alcohol level of .02 or greater;
- e. a provision defining a positive drug test as one that reveals concentrations at the levels set forth in 49 C.F.R. § 40.87(b)(screening test) and 49 C.F.R. § 40.87(c)(confirmatory test) or greater;
- f. a provision that outlines the consequences of a positive drug or alcohol test and the consequences of an employee's refusal to submit to drug/alcohol testing; and
- g. a provision that establishes the conditions under which an employee may return to work following a positive drug and/or alcohol test, which at a minimum include an evaluation by a substance abuse professional and compliance with a recommended treatment program.

The Contractor agrees that at any time during the performance of this contract, if an ARRC employee reports to the Contractor that an employee of the Contractor or its subcontractor is showing signs and symptoms of drug/alcohol influence on duty, the Contractor shall remove the employee from ARRC property immediately and shall have the employee tested for drug/alcohol influence. If the employee tests positive, the Contractor shall ensure that the employee is not returned to work on the project until he/she has met the return to work requirements contained in the Contractor's written program.

Offer Acceptance Period: For the purpose of award, offers made in accordance with this ITB shall be good and firm for a period of thirty (30) days from the date of bid opening.

Site-Safety Plan Requirement: Before the contractor or any subcontractor begins any construction related work under this contract including but not limited to mobilization, equipment setup, storage, etc., taking place on sites under Alaska Railroad Corporation (ARRC) control, they will submit a site Health and Safety Plan to ARRC for compatibility acceptance.

The plan must be compatible with ARRC Safety Policies, including On-Track Safety, ARRC on-site employee safety including safety for Project Managers, Construction Managers, Flaggers, Visitors, Safety personnel, Quality Assurance staff, vendors, and the public. The plan must outline procedures for first aid, emergency response, chemical exposures, spills, site sign-in requirements for site-safety briefings, coordination with ARRC dispatch, Section 6.16 (SAFETY AND PROTECTION), Section 6.17 (WORK SAFETY ON RAILROAD PROPERTY), and Section 6.18 (EMERGENCIES), other sections of the contract GENERAL CONDITIONS.

A complete, detailed Site-Safety Plan shall be submitted to the Project Manager at least 10 days prior to commencement of any Work on the Project

Contractor's Instructions for Submitting Certified Payroll (03/25/08)

This contract may include work on an Alaska Railroad Corporation (ARRC) construction project, which is subject to the wage/certified payroll requirements of the DOLWD and/or it may include work on a federally funded construction project and be subject to U. S. Department of Labor Davis-Bacon Act wage/certified payroll requirements. As part of the contract the following will be required:

1. All contractors paid under a construction contract funded in whole or in part with federal funds shall pay laborers and mechanics the higher of the two wages listed in this contract from the U. S. Department of Labor (www.access.gpo.gov/davisbacon/) or from the DOLWD (www.labor.state.ak.us/lss/home.htm). Contractors paid under ARRC only funded construction contracts shall pay laborers and mechanics the appropriate wage established by the DOLWD, which is often called Little Davis-Bacon wages.
2. All contractors employing laborers and mechanics under this contract, including the owner/operator if he or she worked on the job, must submit weekly certified payrolls that contain the information listed on the DOLWD Weekly Certified Payroll Form 07-6058, pages 1 and 2. Owner/operators working on the project as mechanics or laborers, either as prime or subcontractor, must file certified payrolls and record all information including the hourly wage, fringe benefits, hours worked, overtime, et cetera, however they can defer the weekly payment and write over the total deductions and net pay boxes "owner/operator." Page 2 is the "Statement of Compliance" and must bear an original signature. The prime contractor is responsible for gathering the certified payrolls, with original signatures, from each subcontractor and for

submitting them, along with its own, to the ARRC Certified Payroll Processor.

3. **Private utility companies** exempt by the state of Alaska from filing certified payrolls because they are working on their own lines must provide a copy of the state approved sworn work affidavit indicating they are paying state DOLWD required wages. Private Utility companies shall file Notices of Work (NOW) and Notices of Completion (NOC) with DOLWD, listing subcontractors, if any. The DOLWD approved finalized affidavit, NOW, and NOC shall be sent to the ARRC. The utility company shall collect original certified payrolls from all subcontractors and submit them weekly to the ARRC as outlined in these submission instructions.
4. These weekly certified payrolls must be sent to ARRC within seven days after the regular “payday” for that certified payroll at the following address:

The Alaska Railroad Corporation
Attn: Certified Payroll Processor
P.O. Box 107500
Anchorage, AK 99510-7500

The contractor and its subcontractors are also responsible for filing certified payrolls with DOLWD as required.

5. The certified payroll must be completely filled out by the contractor including, but not limited to:
 - i. **Contractor’s complete name**, including join ventures, Inc., LLC. etc.
 - ii. **Contractor’s license number**, also called the contractor’s registration number, is required in addition to a business license to do construction work in the state. The prime contractor must be registered even if the contractor does not work on the site, but only uses site subcontractors.
 - iii. **Employee’s**
 - a. Name
 - b. Address (domicile and mailing)
 - c. Social security number
 - d. Job classification
 - e. Hours worked
 - f. Wages/fringe benefits paid

Owner/operators working on the project as mechanics or laborers, either as prime or subcontractor, must file certified payrolls and record all information including the hourly wage, fringe benefits, hours worked, overtime, et cetera, however they can defer the weekly payment and write over the total deductions and net pay boxes “owner/operator.”

- iv. **Contracting agency project number**, which is the ARRC contract/purchase order number, is listed on the DOLWD

finalized Notice of Work. This notice also lists the **DOLWD project number, project name, and location**. The prime contractor will supply all of this information to its subcontractors.

v. **Week ending date and payroll numbers.** The first week or part of a week of payroll will be designated as payroll number 1 for the first week, 2 for the second week, etc. until the final week worked on the project. The final payroll must be marked FINAL.

vi. The **Statement of Compliance** must be completely filled out indicating how fringe benefits are paid and listing the payroll period. The Statement of Compliance must be signed, dated, and filed (delivered or postmarked) within seven days of the payment date of the payroll. The Statement of Compliance must have an original signature.

vii. **Stamp or write “Confidential”** on the certified payroll to help ensure the privacy of contractor employees.

Failure to submit timely, complete, and accurate weekly certified payrolls to ARRC may result in the delay of payment on the contract. Sample copies of DOLWD certified payroll forms with the “Statement of Compliance” are shown in Appendix A of this section.

Appendix A-1: State of Alaska Certified Payroll Form, 07-6058



CERTIFIED PAYROLL

Alaska Department of Labor & Workforce
Development
Labor Standards & Safety Division
Wage & Hour Administration

Contractor Name		Contractor License No.		Week Ending		Payroll No.		Contracting Agency Project #		Dept. Labor Project #		Project Name and Location		Contract Amount		Date Work Started		Est. Completion Date							
Alaska Strong Steel, Inc		28888		18-Dec-04		1		35014		04/12-15/00		Gold Creek Bridge Repair		\$50,000.00		12-Dec-04		October-05							
Name, SSN, Permanent Domicile Address (NO P.O. BOX or RURAL ROUTES ACCEPTED) and Mailing Address (if different) for each employee		Specific Work Class Code including certificate #s for Electricians, Plumbers, Painters, Powdermen, Asbestos Workers. Truck drivers include truck license number		Apprentice (%) if Applicable		Union Membership? If NONE put N/A		Date of the Month		Total Hours Worked		Hourly Rate Paid		Gross Amount Earned		DEDUCTIONS		Total Deductions		Net Amount Paid		Check No.			
Joe H. Worker, SSN: 555-55-5555 316 Timber Lake Road Anchorage, AK 99515		S0301						S M T W T H F S		1.50		42.15		63.23		FICA									
		Classification: Carpenter						0.50 1.00		8.00 8.00		8.00 0.00		899.20		FED WHTAX ESD		259.21		1024.06		#678		11/04/04	
		Truck License #						S M T W T H F S		8.50 9.00		8.00 0.00		427.13		106.29		365.50		1024.06		#678		11/04/04	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	
		Certificate #						S M T W T H F S																	
		Truck License #						S M T W T H F S																	
		Classification Code:						S M T W T H F S																	
		Classification:						S M T W T H F S																	

"Confidential"

Appendix A-2: State of Alaska Certified Payroll Form, 07-0658, page 2

STATEMENT OF COMPLIANCE

CERTIFIED PAYROLL FORM 07-6058

Contractors & Subcontractors Please Note!!!

SSN MUST be listed for each employee on payroll

8 AAC 30.020 CERTIFIED PAYROLL. (a) All Contractors (including owner/operators) who perform work on a public construction contract for the state or political subdivision of the state shall file with the Department a certified payroll (Form 07-6058) before Friday of each week that covers the preceding week.

(b) The certified payroll shall be submitted to the Department's regional office in which the work is performed.

Region I, North of N63°	Region II, South of N63°	Region IIA, Southeast Alaska, (From Yakutat south)
Labor Standards & Safety Div, DOLWD 675 7th Ave., Station J-1 Fairbanks, AK 99701-4593 (907) 451-2886 Fax: (907) 451-2885	Labor Standards & Safety Div, DOLWD 3301 Eagle Street, Suite 301 Anchorage, AK 99503-4149 (907) 269-4900 Fax: (907) 269-4915	Labor Standards & Safety, DOLWD P. O. Box 21149 1111 W. 8th Street, Rm 302 Juneau, AK 99801 (907) 465-4842 Fax: (907) 465-3584

In lieu of submitting Form 07-6058, contractors may submit his/her payroll form. THE FORM MUST CONTAIN SOCIAL SECURITY NUMBERS FOR EACH EMPLOYEE.
The contractor's payroll record must contain the same information required on this form.

Sec. 35.05.040 requires that all contractors or subcontractors who perform work on a public construction contract for the state or a political subdivision of the state shall, **BEFORE FRIDAY OF EACH WEEK**, file with the Department of Labor and Workforce Development (DOLWD), a sworn affidavit for the previous week, setting out in detail the number of workers employed, wages paid each week, job classification of each employee, hours worked each day and week, and other information which the DOLWD requires.

CONTRACTORS WHO DISREGARD THEIR OBLIGATIONS TO THEIR EMPLOYEES, INCLUDING PAYMENT OF THE APPROPRIATE PREVAILING RATES OF PAY, UNCONDITIONAL PAYMENT, AND PAYMENT NOT LESS THAN ONCE A WEEK MAY BE DEBARRED FROM PUBLIC CONSTRUCTION.

Date: 22-Dec-04

(2) That Alaska Strong Steel, Inc.
(Contractor / Subcontractor)

I Jane Doe, President do hereby state
(Name of Signatory Party) (Title)

(1) That I pay or supervise the payment of persons employed by Alaska Strong Steel, Inc. on the
(Contractor / Subcontractor)

Gold Creek Bridge Project; that during the payroll
(Building or Work)

period commencing on 12-Dec-04, and ending on
(date)

18-Dec-04, all persons employed on said project have
(date)

been paid full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

Alaska Strong Steel, Inc.
(Contractor / Subcontractor)

from the full weekly wages earned by an person, and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions, on projects covered by Alaska Statute 36 as defined in regulations issued by the Commissioner of Labor; or on Federal Projects as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948; 63 Stat. 108; 72 Stat. 967; 76 Stat. 357; 40 USC 276 (c), and described below:

and;

is in full compliance with the provisions set forth in AS 36.10, which requires employment preference for Alaska residents as outlined in AS 36.95.010; and

(3) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers, mechanics or field surveyors contained herein are not less than the current applicable wage rates established by the DOLWD; that the classification set forth therein for each laborer, mechanic or field surveyor conforms with the work performed; and

(4) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with the State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such agency exists in the State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor; or

(5) That I am a bona fide owner/operator and that my contract amount meets or exceeds the prevailing wage for each hour I have worked. My last progress payment was received on _____ For _____

(6) That where fringe benefits are paid to approved plans, funds or programs: (check all applicable items)

(a) In addition to the basic hourly wage rates paid to each laborer, mechanic or field surveyor listed on this payroll, payments of fringe benefits as currently published by DOLWD

have been or will be made to a union trust.

(b) In addition to the basic hourly wage rates paid to each laborer, mechanic or field surveyor listed on this payroll, payments of fringe benefits as currently published by DOLWD have been or will be made to the appropriate programs for the benefit of such workers, except as noted in Section 6(d) below. Fringe benefit payments will be made at least quarterly to an approved plan. The name of the plan is:

(c) Each laborer, mechanic or field surveyor listed on this payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as currently published by DOLWD, except as noted in Section 6(d).

(d) Exceptions:

Exception (Craft)	Explanation

Remarks:

The willful falsification of any of the above information may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of the United States Code. Also see AS 36.05.060.

Jane Doe
Signature (original signature required)

Jane Doe, President
Name & Title (print or type)

Appendix F2
CMGC General Conditions for Construction

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CM/GC GENERAL CONDITIONS FOR CONSTRUCTION

ARTICLE 1 - DEFINITIONS.

ARTICLE 2 - AUTHORITIES AND LIMITATIONS

- 2.1 Authorities and Limitations
- 2.2 Evaluations by Project Manager
- 2.3 Means and Methods
- 2.4 Visits to Site

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

- 3.1 Incomplete Contract Documents
- 3.2 Copies of Contract Documents
- 3.3 Scope of Work
- 3.4 Intent of Contract Documents
- 3.5 Discrepancy in Contract Documents
- 3.6 Clarifications and Interpretations
- 3.7 Reuse of Documents
- 3.8 Document Control

ARTICLE 4 - LANDS AND PHYSICAL CONDITIONS

- 4.1 Availability of Lands
- 4.2 Visit to Site
- 4.3 Explorations and Reports
- 4.4 Utilities
- 4.5 Damaged Utilities
- 4.6 Utilities Not Shown or Indicated
- 4.7 Survey Control

ARTICLE 5 - BONDS AND INSURANCE

- 5.1 Delivery of Bonds
- 5.2 Bonds
- 5.3 Replacement of Bond and Surety
- 5.4 Insurance Requirements
- 5.5 Indemnification

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

- 6.1 Supervision of Work
- 6.2 Superintendence by CONTRACTOR
- 6.3 Character of Workers
- 6.4 CONTRACTOR to Furnish
- 6.5 Materials and Equipment
- 6.6 Anticipated Schedules
- 6.7 Finalizing Schedules
- 6.8 Adjusting Schedules
- 6.9 Substitutes or "Or-Equal" Items
- 6.10 Substitute Means and Methods
- 6.11 Evaluation of Substitution
- 6.12 Dividing the Work
- 6.13 Subcontractors
- 6.14 Use of Premises
- 6.15 Structural Loading
- 6.16 Record Documents
- 6.17 Safety and Protection
- 6.18 Safety Representative
- 6.19 Emergencies

- 6.20 Shop Drawings and Samples
- 6.21 Shop Drawing and Sample Review
- 6.22 Maintenance During Construction
- 6.23 Continuing the Work
- 6.24 Consent to Assignment
- 6.25 Use of Explosives
- 6.26 CONTRACTOR's Records
- 6.27 Load Restrictions
- 6.28 Construction Quality Control Plan
- 6.29 Drug and Alcohol-Free Workplace

ARTICLE 7 - LAWS AND REGULATIONS

- 7.1 Laws to be Observed
- 7.2 Permits, Licenses, and Taxes
- 7.3 Patented Devices, Materials and Processes
- 7.4 Compliance of Specifications and Drawings
- 7.5 Accident Prevention
- 7.6 Sanitary Provisions
- 7.7 Business Registration
- 7.8 Professional Registration and Certification
- 7.9 Local Building Codes
- 7.10 Air Quality Control
- 7.11 Archaeological or Paleontological Discoveries
- 7.12 Applicable Alaska Preferences
- 7.13 Preferential Employment
- 7.14 Wages and Hours of Labor
- 7.15 Overtime Work Hours and Compensation
- 7.16 Covenant Against Contingent Fees
- 7.17 Officials Not to Benefit
- 7.18 Personal Liability of Public Officials
- 7.19 Federally Assisted Projects
- 7.20 Gratuity and Conflict of Interest

ARTICLE 8 - OTHER WORK

- 8.1 Related Work at Site
- 8.2 Access, Cutting, and Patching
- 8.3 Defective Work by Others
- 8.4 Coordination

ARTICLE 9 - CHANGES

- 9.1 OWNER's Right to Change
- 9.2 Authorization of Changes within the General Scope
- 9.3 Directive
- 9.4 Change Order
- 9.5 Shop Drawing Variations
- 9.6 Changes Outside the General Scope; Supplemental Agreement
- 9.7 Unauthorized Work
- 9.8 Notification of Surety
- 9.9 Differing Site Conditions

ARTICLE 10- CONTRACT PRICE; COMPUTATION AND CHANGE

- 10.1 Contract Price: Guaranteed Maximum Price (GMP)
- 10.2 Claim for Price Change
- 10.3 Change Order Price Determination
- 10.4 Lump Sum Price Change Method
- 10.5 Cost of the Work Change Method

- 10.6 CONTRACTOR's Fee
- 10.7 Cost Breakdown
- 10.8 Cash Allowances
- 10.9 Unit Price Work
- 10.10 Determinations for Unit Prices
- 10.11 Disadvantaged and Women Business Enterprises (DBE and WBE) Program

ARTICLE 11- CONTRACT TIME, COMPUTATION AND CHANGE

- 11.1 Commencement of Contract Time; Notice to Proceed
- 11.2 Starting the Work
- 11.3 Computation of Contract Time
- 11.4 Time Change
- 11.5 Extension Due to Delays
- 11.6 Essence of Contract
- 11.7 Reasonable Completion Time
- 11.8 Delay Damages

ARTICLE 12 - QUALITY ASSURANCE

- 12.1 Warranty and Guaranty
- 12.2 Access to Work
- 12.3 Tests and Inspections
- 12.4 Uncovering Work
- 12.5 OWNER May Stop the Work
- 12.6 Correction or Removal of Defective Work
- 12.7 One Year Correction Period
- 12.8 Acceptance of Defective Work
- 12.9 OWNER may Correct Defective Work

ARTICLE 13- PAYMENTS TO CONTRACTOR AND COMPLETION

- 13.0 Guaranteed Maximum Price (GMP) Allowable Costs, Cost of the Work (COW), Fees, and Allowances
- 13.1 Schedule of Values
- 13.2 Preliminary Payments
- 13.3 Application for Progress Payment
- 13.4 Review of Applications for Progress Payments
- 13.5 Stored Materials and Equipment
- 13.6 CONTRACTOR's Warranty of Title
- 13.7 Withholding of Payments
- 13.8 Retainer
- 13.9 Request for Release of funds
- 13.10 Substantial Completion
- 13.11 Access Following Substantial Completion
- 13.12 Final Inspection
- 13.13 Final Completion and Application for Payment
- 13.14 Final Payment
- 13.15 Final Acceptance
- 13.16 CONTRACTOR's Continuing Obligation
- 13.17 Waiver of Claims by CONTRACTOR
- 13.18 No Waiver of Legal Rights

ARTICLE 14- SUSPENSION OF WORK, DEFAULT AND TERMINATION

- 14.1 OWNER May Suspend Work
- 14.2 Default of Contract
- 14.3 Rights or Remedies
- 14.4 Convenience Termination

ARTICLE 15- CLAIMS AND DISPUTES

- 15.1 Notification
- 15.2 Presenting Claim
- 15.3 Claim Validity, Additional Information & Project Manager's Action
- 15.4 Contracting Officer's Decision
- 15.5 Fraud and Misrepresentation in Making Claims

ARTICLE 1 – DEFINITIONS

Wherever used in the Contract Documents the following terms, or pronouns in place of them, the intent and meaning, unless a different intent or meaning is clearly indicated, shall be interpreted as set forth below.

The titles and headings of the articles, sections, and subsections herein are intended for convenience of reference and will not govern their interpretation. Whenever used in the Specifications or other Contract Documents the following terms have the meaning indicated which are applicable to both the singular and plural thereof. Working titles that have a masculine gender are intended to refer to persons of either sex.

Terms not defined below shall have their ordinary accepted meanings within the context that they are used. Words that have a well-known technical or trade meaning when used to describe work, materials or equipment shall be interpreted in accordance with such meaning.

Acceptance Tests - Quality Control tests taken by the CONTRACTOR, the results for which are used by the OWNER to determine whether the Work complies with the requirements of the Contract Documents.

Access Road - The right-of-way, the roadway, and all improvements constructed thereon connecting the Site to a public thoroughfare.

Addenda - All clarifications, corrections, or changes to the Solicitation issued graphically or in writing by the OWNER after the Advertisement but prior to the opening of Proposals.

Advertisement - The public announcement, as required by law, inviting bids or proposals for Work to be performed or Materials to be furnished. Advertisement of Subcontractor bids shall be in accordance with the CM/GC Subcontractor Solicitation and Award Procedures approved by the OWNER.

Affiliate - Affiliate shall mean any subsidiary of CM/GC, and any other entity in which CM/GC has a financial interest or which has a financial interest in CM/GC (including without limitation parent companies, related businesses under the same holding company, or any other business controlled by, under common control with, or which controls CM/GC).

Allowances - Allowances shall mean the allowance amounts shown in the GMP Supporting Documents, together with such further allowances as may be developed by the parties as the Project progresses.

Amendment - Amendment shall mean a written modification of the Contract (including without limitation any agreed change to the GMP), identified as an Amendment, and executed by CM/GC and the Owner .

Application for Payment - The form on which the CONTRACTOR requests progress or Final Payments and which includes such supporting documentation as is required by the Contract Documents.

Approved or Approval - Means written approval by the Contracting Officer or his authorized representative as defined in Article 2.1.

Architect/Engineer (A/E) - A person, firm, or corporation, other than the CONTRACTOR or those engaged by the CONTRACTOR, retained directly by the OWNER to prepare Drawings, Specifications and other Contract Documents, perform construction administration services, or other Project related services.

ARRC - Initials which stand for Alaska Railroad Corporation.

ARRC Procurement Rules - Means the rules governing the procurement of supplies, services, professional services and construction adopted by ARRC in accordance with A.S. 36.30.015(e). Said Rules may be downloaded from ARRC's web site, www.alaskarailroad.com, under General Information, Purchasing/Contracts.

A.S - Initials that stand for Alaska Statute.

Award - The acceptance, by the OWNER, of a successful bid or Proposal. For Subcontractor bids, the acceptance of the CM/GC of a successful bid, in accordance with Subcontractor Solicitation and Award Procedures approved by the OWNER.

Bid Bond - A type of Proposal Guaranty.

Bidder - Any individual, firm, corporation or any acceptable combination thereof, or joint venture submitting a bid for the advertised Work.

Business Days - Business Days shall mean every day except Saturday, Sunday, and Holidays.

Calendar Day - Every day shown on the calendar, beginning and ending at midnight.

Change Order - A written order by the OWNER to the CONTRACTOR requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Articles 9 and/or 10 in administering the Contract, including OWNER's written change Directives as well as changes reflected in a writing executed by the parties to this Contract and, if applicable, establishing a Contract Price or Contract Time adjustment for the changed Work.

Claim - A demand by CONTRACTOR pursuant to Article 15 for review of the denial of CONTRACTOR's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these General Conditions.

Construction Contingency - An amount established by the OWNER for its sole use in accordance with Article 13 herein.

Construction Management (CM) Services - CM Services shall mean the services specified in Article 3.3 of the Contract.

Construction Manager/General Contractor (CM/GC) - The individual, firm, corporation or any acceptable combination thereof, contracting with the OWNER to provide Pre-construction Phase Services, and once a GMP is established, to perform the Work as the CONTRACTOR, which performance shall include the management of Subcontractor bidding in accordance with Subcontractor Solicitation and Award Procedures approved by the OWNER and completion of the construction Work within the GMP and Project schedule.

Construction Phase - The Construction Phase shall mean the period commencing on the OWNER's execution of a GMP Amendment or Early Work Amendment, together with the earlier of (i) issuance by OWNER of a Notice to Proceed with any on-Site construction or (ii) execution of a subcontract or issuance of a purchase order for Materials or Equipment required for the Work.

Construction Phase Services - Means all Work, other than Pre-construction Phase Services, consisting of, without limitation, construction-related activities of the CONTRACTOR, including schedule refinement, advance Materials procurement, advance construction (if approved by an OWNER-issued Early Work Amendment), Project budget management, and development of Subcontractor bid packages.

Consultant - A person, firm, agency or corporation retained by the OWNER to prepare Contract Documents, perform construction administration services, or other Project related services.

Contract - The written CM/GC contract between the OWNER and the CM/GC setting forth the obligations of the parties and covering the Work to be performed, all as required by the Contract Documents.

Contract Documents - The Contract form, Solicitation and Addenda thereto, CM/GC's proposal as accepted by OWNER, GMP Amendment, the bonds, the General Conditions, Supplemental Conditions and all other Contract requirements, the Specifications, Drawings and Final PS&E furnished by the OWNER to the CONTRACTOR, together with all Change Orders, Directives and documents approved by the OWNER, and modifications, amendments, and supplements to the same issued on or after the Effective Date of the Contract.

Contract Price – The sum of the Pre-construction Costs, the Fixed Fee, actual reimbursable bonds and insurance costs, and the Cost of the Work (including any Early Work), but not exceeding the GMP.

Contract Time - The number of Calendar Days following issuance of a Notice-to-Proceed in which the CONTRACTOR must Substantially Complete the Project, or if specified as a calendar date, the Substantial Completion date specified in the Contract Documents.

Contracting Officer - The person authorized by the OWNER to enter into and administer the Contract on behalf of the OWNER. He has authority to make findings, determinations and decisions with respect to the Contract and, when necessary, to modify or terminate the Contract.

CONTRACTOR - The individual, firm, corporation or any acceptable combination thereof, contracting with the OWNER for performance of the Work under this Contract. CONTRACTOR is also referred to as "CM/GC" in other Contract Documents.

CONTRACTOR's Contingency – An amount established by the OWNER for CONTRACTOR's sole use in accordance with Article 13 herein.

Cost of the Work (COW) – The sum of all reimbursable costs as defined in Article 8 of the Contract to perform the Work. Prior to award of the GMP Amendment to perform the Work, the COW is the estimated and negotiated sum of all reimbursable costs as defined in Article 8 of the Contract for the performance of the Work, as follows:

COW = Negotiated Cost of the Work (Self-Performed Work Costs + Subcontract Costs + Allowances + Construction Contingency + Contractor's Contingency).

Critical Path - The sequence of activities, events, and dependencies that determine the longest overall duration and the shortest time possible, to complete the Project. Any delay of an activity on the Critical Path directly affects the planned Project completion date (i.e., there is no float on the Critical Path).

Defective - An adjective which refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or Approval referred to in the Contract Documents, or has been damaged prior to the OWNER's Approval of Final payment.

Design Team - The A&E's dedicated staff working on the design of the Project with responsibility for development of the Design Development Documents.

Design Development Documents - Means the Drawings and other documents that fix and describe the size and character of the entire Project, including architectural, structural, mechanical, and electrical systems, Materials, and such other elements as may be appropriate. These documents include the draft plans, progress plans, and Final PS&E.

Direct Cost - Means, unless otherwise provided in the Contract Documents, the cost of Materials, including sales tax, cost of delivery, cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's compensation insurance; rental cost of Equipment, and machinery required for execution of the Work; and the additional costs of field personnel directly attributable to the Work.

Directive - A written communication to the CONTRACTOR from the OWNER interpreting or enforcing a Contract requirement or ordering commencement of an item of Work.

Drawings - The Drawings that show the character and scope of the Work to be performed and which have been furnished by the OWNER or the A/E and are by reference made a part of the Contract Documents.

Early Work - Construction Phase Services authorized by an Early Work Amendment that the parties agree should be performed in advance of establishment of the GMP. Permissible Early Work shall be limited to early procurement of Materials and supplies, early release of bid or proposal packages for Site development and related activities, and any other advance Work related to critical components of the Project for which performance prior to establishment of the GMP will materially affect the Critical Path schedule of the Project.

Early Work Amendment - An Amendment to the CM/GC Contract executed to authorize Work under an Early Work Package.

Early Work Package - A Work package, authorized by the OWNER under an Early Work Amendment, consisting of Work to be performed in advance of establishment of the GMP.

Early Work Price – The amount to be paid to CONTRACTOR for the performance of Work specified in an Early Work Amendment.

Effective Date of the Contract - The date on which the Contract is fully executed by both CONTRACTOR and the OWNER.

Equipment - All machinery together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the Work.

Final Acceptance - The OWNER's written acceptance of the Work following Final Completion and the performance of all Contract requirements by the CONTRACTOR.

Final Completion - The Project (or specified part thereof) has progressed to the point that all required Work is complete as determined by the OWNER.

Final Payment – The last payment to be made to the CONTRACTOR following the issuance of and Final Acceptance.

Final PS&E - The final, stamped, and sealed Plans, Specifications, and estimate used to construct the Project.

Fixed Fee – The amount established and payable to the CONTRACTOR for home office overhead, profit and general and administrative costs in accordance with the terms and conditions of the Contract Documents.

$$\text{Fixed Fee} = \text{Fixed Fee Percentage} \times \text{COW}$$

Fixed Fee Percentage – The Fixed Fee percentage set forth in Article 6.3.1 of the Contract.

Full Cost Recovery (of equipment ownership costs) – Full cost recovery of equipment ownership costs is defined as the depreciation associated with the equipment as well as insurance, cost of money, property taxes, mechanics' supervision, storage, licenses, and record keeping costs. If any of these costs are recovered in project or general company overhead, those respective costs are excluded from the full cost recovery.

Guaranteed Maximum Price (GMP) – The maximum amount of compensation payable to the CONTRACTOR for performing the Work as stated in the GMP Amendment and as it may be adjusted from time to time pursuant to the provisions of the Contract Documents. The GMP consists of the Pre-construction Costs, the COW and the Fixed Fee as established by the Contract.

$$\text{GMP} = \text{Pre-construction Costs} + \text{COW} + \text{Fixed Fee}$$

GMP Amendment -- Means an amendment to the Contract, executed by and between the parties, to establish the GMP and identify the GMP Supporting Documents for Construction Phase Services.

GMP Supporting Documents -- Means the documents referenced in the GMP Amendment as the basis for establishing the GMP. The GMP Supporting Documents shall expressly identify the Drawings and Specifications, assumptions, qualifications, exclusions, conditions, Allowances, bid items, estimated quantities, unit prices, and alternates that form the basis for the GMP.

Holidays - In the State of Alaska, Legal Holidays occur on:

1. New Years Day - January 1
2. Martin Luther King's Birthday - Third Monday in January
3. President's Day - Third Monday in February
4. Seward's Day - Last Monday in March
5. Memorial Day - Last Monday in May
6. Independence Day - July 4
7. Labor Day - First Monday in September
8. Alaska Day - October 18
9. Veteran's Day - November 11
10. Thanksgiving Day - Fourth Thursday in November
11. Christmas Day - December 25
12. Every Sunday
13. Every day designated by public proclamation by the President of the United States or the Governor of the State as a legal Holiday.

If any Holiday listed above falls on a Saturday, Saturday and the preceding Friday are both legal Holidays. If the Holiday should fall on a Sunday, except (12) above, Sunday and the following Monday are both legal Holidays.

Inspector – The OWNER's representative authorized to make determinations and inspections of Contract performance and materials.

Interim Work Authorization - A written order by the OWNER authorizing initiation of Work on changes to the Contract, within its general scope, until a subsequent Change Order is executed.

Install - Means to build into the Work, ready to be used in complete and operable condition and in compliance with Contract Documents.

Invitation for Bids - A portion of the bidding documents soliciting bids for the Work to be performed.

Laboratory - The official testing laboratories of the OWNER or such other laboratories as may be designated by the OWNER or identified in the Contract Documents.

Markup Fee – The maximum rates of cost markup as outlined in Article 10.6 to cover both the overhead and profit of a Subcontractor or Supplier, to be used in Change Order price determination as described in Articles 10.3, 10.4 and 10.5.

Materials - Any natural or manmade substances specified for use in the construction of the Project.

Notice of Intent to Award - The written notice by the OWNER to all Offerors identifying the apparent successful Offeror and establishing the OWNER's intent to execute the Contract when all conditions required for execution of the Contract are met. For Subcontractor bids, the written notice by the CONTRACTOR to all bidders identifying the apparent successful bidder, in accordance with Subcontractor Solicitation and Award Procedures approved by the OWNER, contingent upon all conditions required for execution of a subcontract being met.

Notice to Proceed (NTP)- A written notice to the CONTRACTOR to begin the Work and establishing the date on which the Contract Time begins.

Offer: - A bid in connection with an Invitation to Bid and a proposal in connection with a Request for Proposals.

Offeror - A bidder in connection with an Invitation to Bid and a proposer in connection with a Request for Proposals.

OWNER – Alaska Railroad Corporation and its designated representatives.

Payment Bond - The security furnished by the CONTRACTOR and his Surety to guarantee payment of the debts arising out of performance of the Work.

Performance Bond - The security furnished by the CONTRACTOR and his Surety to guarantee performance and completion of the Work in accordance with the Contract Documents.

Person -- An entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, or any other entity possessing the legal capacity to contract.

Plans - The Drawings and other documents which show the location, type, dimensions, and details of the Work to be performed under the Contract.

Pre-construction Costs – The amount paid to CONTRACTOR by OWNER for Pre-construction Phase Services.

Pre-construction Meeting - A preparatory meeting between the CONTRACTOR and the OWNER, and other parties affected by the construction, to discuss the Project before the CONTRACTOR begins work.

Pre-construction Phase - Means the period commencing on the Effective Date of the Contract and ending upon commencement of the Construction Phase; provided that if the OWNER and CONTRACTOR agree, the Construction Phase may commence before the Preconstruction Phase is completed, in which case both phases shall proceed concurrently, subject to the terms and conditions of the Contract Documents.

Pre-construction Phase Services -- Means all pre-construction services described in the Contract performed during the planning and design of the Project, but excluding any Early Work. Early Work shall be considered part of the Construction Phase Services.

Project - The total construction, of which the Work performed under the Contract Documents is the whole or a part, where more than one contractor may perform such total construction.

Project Manager – The representative or representatives designated by the Contracting Officer, consistent with General Condition Article 2.1, to manage the Project.

Project Records - Means all information in any way relating to the Project or performance of the Contract, including but not limited to all:

- Financial and accounting records and information;
- Correspondence - including internal communications, E-mails, field notes, file notes, diary entries, and communications among the OWNER, CONTRACTOR, Subcontractors, and governmental authorities;
- Notices, orders, permits, and opinions;
- Survey data - including survey drawings, reports, maps, original computations, and other data;
- Materials testing records and Materials certifications;
- Work Products;
- All other documents and information whether generated by or for, or received by, the CONTRACTOR in performance of the Contract; whether any of such records are:
 - Paper-based;
 - In the form of electronic data;
 - In electronic/digital format capable of being reduced to paper-based or electronic/digital format;
 - In audio format; or

- In a format that constitutes visual reproductions such as photos or videotape, in any way relating to the Project.

Proposal - Means the written Offer submitted by a Person in response to an Invitation to Bid or RFP, to do stated Work in the manner indicated and at the prices quoted.

Proposal Guaranty - The security furnished with a Proposal to guarantee that the Offeror will enter into a Contract if the OWNER accepts his Proposal.

Quality Assurance (QA) – Tests and inspections performed by or on behalf of the OWNER to evaluate the methods, accuracy, precision, and reproducibility of Quality Control and material acceptance tests.

Quality Control (QC) - Tests and inspections by the CONTRACTOR to insure that the Work conforms to the requirements of the Contract Documents and may determine its acceptability for payment.

Regulatory Requirements – All laws, rules, regulations, ordinances, codes, or orders applicable to the Work, including requirements of permits, issued by a governmental entity with lawful authority over a matter.

Schedule of Values - The OWNER's document, submitted by the CONTRACTOR and reviewed by the Project Manager, which shall serve as the basis for computing payment and for establishing the value of separate items of Work that comprise the GMP.

Scope Change - Scope Change shall mean only (i) changed site conditions not reasonably inferable from information available to the CONTRACTOR at the time of execution of the GMP Amendment, and (ii) significant Work modifications (including additions, substitutions, and deletions), application of Allowances, and selection of alternates, all as approved by the OWNER under the Contract beyond that identified or inferable from the GMP Supporting Documents (but in the case of Allowance items, the GMP will increase only if the cost to OWNER of the Allowance items exceeds the total amount of the Allowances).

Self-Performed Work – Work by the CONTRACTOR with its own forces in accordance with the terms and conditions of the Contract Documents and that is not performed by Subcontractors or Suppliers.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by the CONTRACTOR to illustrate material, equipment, fabrication, or erection for some portion of the Work. Where used in the Contract Documents, the term “Shop Drawings” is also meant to include “Submittals”.

Site - Means the geographical dimensions of the real property on which the Work is to be performed, including designated contiguous staging areas.

Solicitation - The Request for Proposals issued by OWNER for CM/GC services for the Project.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions the physical or functional characteristics of Materials, Equipment, construction systems, standards and workmanship as applied to the Work and certain administrative and procedural details applicable thereto. Specifications may include a description of any requirement for inspecting, testing or preparing a material, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

Standards -- References to standards, material specifications, test methods, or other publications of Alaska Department of Transportation and Public Facilities (DOT&PF), American Association of State Highway and Transportation Officials (AASHTO), American Society for Testing and Materials (ASTM), other governmental agencies, or other recognized national organizations that have been officially adopted by those agencies and

organizations. The applicable standard, test method, material specification, or other reference shall be that which is in effect on the date the activity governed by the standard, method, etc., is performed.

Standard Specifications - Means the Alaska Department of Transportation and Public Facilities Specifications for Construction, current published edition unless another organization is otherwise specified.

Subcontractor - An individual, firm, or corporation to whom the CONTRACTOR or any other Subcontractor sublets part of the Work.

Substantial Completion - Although not fully completed, the Work (or a specified part thereof) has progressed to the point where, in the opinion of the OWNER, as evidenced by the OWNER's written notice, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended. The terms "Substantially Complete" and "Substantially Completed" as applied to any Work refer to Substantial Completion thereof.

Supplemental Agreement - A written agreement between the CONTRACTOR and the OWNER covering work that is not within the general scope of the Contract.

Supplemental Drawings - Means detailed Drawings for Work or methods of construction furnished by the OWNER that are Project-specific, and are denoted by title in the Project title block.

Supplemental Conditions - The part of the Contract Documents that amends or supplements these General Conditions or other Contract Documents.

Supplier - A manufacturer, fabricator, distributor, materialman or vendor of Materials or Equipment.

Surety - The corporation, partnership, or individual, other than the CONTRACTOR, executing a bond furnished by the CONTRACTOR.

Target GMP Range - Means the estimated range of the GMP as determined by the OWNER in the course of Project development.

Traffic Control Plan (TCP) - A Drawing of one or more specific plans that detail the routing of pedestrian, aircraft, and/or vehicular traffic through or around a construction area.

Unit Price Work - Work to be paid for on the basis of unit prices.

Utility or Utilities - The privately, publicly or cooperatively owned lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway or runway drainage, and other similar commodities, including publicly owned fire and police signal systems, street lighting systems, and railroads which directly or indirectly serve the public or any part thereof. The term "Utility" shall also mean the utility company, inclusive of any wholly owned or controlled subsidiary.

Validate -When required by the Contract Documents to validate a dimension or condition, the CONTRACTOR will be responsible for substantiating or verifying that the dimension or condition as represented in the Contract Documents meets the desired intent in sufficient time to allow correction prior to impacting the Work.

Work - Work is the act of, and the result of, 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. Such Work, however incremental, will culminate in the entire completed Project, or the various separately identifiable parts thereof.

Work Product - Means the Plans and Specifications, Drawings, Final PS&E and all other documents, analysis, computations, models, computer programs, and information obtained or developed for the Project or in

performance of the Work, in or capable of being reduced to tangible paper-based, electronic, audio, or video format, whether or not designated as a deliverable under the Contract.

ARTICLE 2 - AUTHORIZATION AND LIMITATIONS

2.1 Authorities and Limitations

2.1.1 The Contracting Officer alone shall have the power to bind the OWNER and to exercise the rights, responsibilities, authorities and functions vested in the Contracting Officer by the Contract Documents. The Contracting Officer shall have the right to designate in writing authorized representatives to act for him. Wherever any provision of the Contract Documents specifies an individual or organization, whether governmental or private, to perform any act on behalf of or in the interest of the OWNER that individual or organization shall be deemed to be the Contracting Officer's authorized representative under this Contract but only to the extent so specified.

2.1.2 The CONTRACTOR shall perform the Work in accordance with any written order (including but not limited to instruction, direction, interpretation or determination) issued by an authorized representative in accordance with the authorized representative's authority to act for the OWNER. The CONTRACTOR assumes all the risk and consequences of performing the Work in accordance with any order (including but not limited to instruction, direction, interpretation or determination) of anyone not authorized to issue such order, and of any order not in writing.

2.1.3 Should the Contracting Officer or his authorized representative designate an A/E to act for the OWNER as provided for in Article 2.1.1, the performance or nonperformance of the A/E under such authority to act, shall not give rise to any contractual obligation or duty of the A/E to the CONTRACTOR, any Subcontractor, any Supplier, or any other organization performing any of the Work or any Surety representing them.

2.1.4 The term "Contracting Officer" when used in the text of these General Conditions or other Contract Documents shall also mean any duly authorized representative of the Contracting Officer when authorized in accordance with Article 2.1.1

2.2 Evaluations by Project Manager

2.2.1 The Project Manager will decide all questions which may arise as to:

- a. Quality and acceptability of Materials furnished;
- b. Quality and acceptability of Work performed;
- c. Compliance with the schedule of progress;
- d. Interpretation of Contract Documents;
- e. Acceptable fulfillment of the Contract on the part of the CONTRACTOR.

2.2.2 In order to avoid cumbersome terms and confusing repetition of expressions in the Contract Documents the terms "as ordered", "as directed", "as required", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used it shall be understood as if the expression were followed by the words "the Project Manager".

When such terms are used to describe a requirement, direction, review or judgment of the Project Manager as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise).

2.2.3 The use of any such term or adjective shall not be effective to assign to the OWNER any duty of authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Article 2.3.

2.3 Means & Methods

The means, methods, techniques, sequences or procedures of construction, or safety precautions and the program incident thereto, and the failure to perform or furnish the Work in accordance with the Contract Documents are the sole responsibility of the CONTRACTOR.

2.4 Visits to Site/Place of Business

The Project Manager may, but is not required to, make visits to the Site and approved remote storage sites at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The Project Manager may, at reasonable times, inspect that part of the plant or place of business of the CONTRACTOR or Subcontractor that is related to the performance of the Contract. Such observations or the lack of such observations shall in no way relieve the CONTRACTOR from his duty to perform the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.0 Contract Phasing

The Work under this Contract may be divided into two or more phases.

3.1 Incomplete Contract Documents

The submission of a GMP by the CONTRACTOR is considered a representation that the CONTRACTOR examined the Contract Documents to make certain that all sheets and pages were provided and that the CONTRACTOR is satisfied as to the conditions to be encountered in performing the Work. The OWNER expressly denies any responsibility or liability for a GMP submitted on the basis of an incomplete set of Contract Documents.

3.2 Copies of Contract Documents

The OWNER shall furnish to the CONTRACTOR at least one electronic and one paper copy of the Contract Documents, and up to the number of additional copies specified in the Supplemental Conditions. Additional copies beyond the number specified in the Supplemental Conditions will be furnished, upon request, at the cost of reproduction.

3.3 Scope of Work

The Contract Documents comprise the entire Contract between the OWNER and the CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the Regulatory Requirements of the place of the Project.

It is specifically agreed between the parties executing this Contract that it is not intended by any of the provisions of the Contract to create in the public or any member thereof a third party benefit, or to authorize anyone not a party to this Contract to maintain a suit pursuant to the terms or provisions of the Contract.

3.4 Intent of Contract Documents

3.4.1 It is the intent of the Contract Documents to describe a functionally complete Project to be constructed in accordance with the Contract Documents. Any Work, Materials or Equipment that may reasonably be inferred

from the Contract Documents as being required to produce the intended result will be supplied, without any adjustment in GMP or Contract Time, whether or not specifically called for.

3.4.2 Reference to Standard Specifications, manuals or codes of any technical society, organization or association, or to the Regulatory Requirements of any governmental authority, whether such reference be specific or by implication, shall mean the edition stated in the Contract Documents or if not stated the latest standard specification, manual, code or Regulatory Requirements in effect at the time of Advertisement for the Project (or, on the Effective Date of the Contract if there was no Advertisement). However, no provision of any referenced Standard Specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the OWNER and the CONTRACTOR, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the OWNER or any of the A/Es, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Article 2.3.

3.5 Discrepancy in Contract Documents

3.5.1 Before undertaking the Work, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures, and dimensions shown thereon and all applicable field measurements. Work in the area by the CONTRACTOR shall imply verification of figures, dimensions and field measurements. If, during the above study or during the performance of the Work, the CONTRACTOR finds a conflict, error, discrepancy or omission in the Contract Documents, or a discrepancy between the Contract Documents and any Standard Specification, manual, code, or Regulatory Requirement which affects the Work, the CONTRACTOR shall promptly report such discrepancy in writing to the Project Manager. The CONTRACTOR shall obtain a written interpretation or clarification from the Project Manager before proceeding with any Work affected thereby. Any adjustment made by the CONTRACTOR without this determination shall be at his own risk and expense. However, the CONTRACTOR shall not be liable to the OWNER for failure to report any conflict, error or discrepancy in the Contract Documents unless the CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

3.5.2 Discrepancy - Order of Precedence

When conflicts, errors, or discrepancies within the Contract Documents exist, the order of precedence from most governing to least governing will be as follows:

Contract Amendments and Change Orders

Contract

Supplemental Conditions

General Conditions

Specifications

Drawings

Supplemental Drawings (if any)

Architectural drawings over structural drawings, structural drawings over mechanical and electrical drawings

In addition, the following shall apply:

Contents of the most current Addenda will govern over respective prior Addenda and base Solicitation Documents

Notes on a Drawing shall take precedence over Drawing details

Recorded dimensions will govern over scaled dimensions

Large scale details will govern over small scale details

Schedules (e.g. equipment schedules, finish schedules, door schedules, material schedules and all similar type schedules where identified) in Specifications or Plans will govern over plans

3.6 Clarifications and Interpretations

The Project Manager will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as the Project Manager may determine necessary.

3.7 Reuse of Documents

Neither the CONTRACTOR nor any Subcontractor, or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the OWNER shall have or acquire any title to or ownership rights in any of the Contract Documents (or copies thereof) prepared by or for the OWNER and they shall not reuse any of the Contract Documents on extensions of the Project or any other project without the prior written consent of the Contracting Officer.

Contract Documents prepared by the CONTRACTOR in connection with the Work shall become the property of the OWNER.

3.8 Document Control

3.8.1 The CONTRACTOR shall manage and conduct its correspondence with OWNER as follows.

3.8.2 Correspondence Requirements – All notices and other communications concerning the Contract shall be in English. All correspondence shall be identified by OWNER's Contract number and shall reference the Contract section, if any, applicable to the subject of the correspondence.

3.8.3 Document Identification and Coding – CONTRACTOR shall assign a unique sequential identifying code or serial number to each item of correspondence transmitted to OWNER. OWNER will include the identifying code or serial number in its response. In responding to correspondence from OWNER, the CONTRACTOR shall reference OWNER's identifying code or serial number on the CONTRACTOR's return correspondence.

3.8.4 Use of Electronic Mail – Electronic mail (E-mail) may be used between the CONTRACTOR and OWNER with OWNER's prior written consent (which may be withdrawn at any time). Notwithstanding any written consent, E-mail shall not, under any circumstance, constitute formal notice under the Contract, and in particular, shall not constitute notice of a Claim for time or cost.

3.8.5 Retention of Project Records – Notwithstanding any other provision to the contrary, the CONTRACTOR shall maintain all Project Records (including copies of all original documents delivered to OWNER) for a minimum of three years from date of Final Payment or resolution of all disputes relating to the Contract, whichever is later (the "Record Retention Period"). CONTRACTOR shall notify OWNER where such Project Records are kept. Further, the CONTRACTOR shall require in each of its contracts with Subcontractors, Suppliers, and consultants that they shall keep and preserve all of their Project Records for the Record Retention Period and require that each of their lower-tier subcontractors, suppliers and consultants do likewise.

3.8.6 Maintenance of, Access to, and Audit of Project Records – For the duration of the Contract, CONTRACTOR shall maintain at its Project Manager's local Project office a complete set of all Project Records. CONTRACTOR shall afford OWNER access to such records for inspection and copying as OWNER may request in connection with the issuance of Change Orders, the resolution of disputes, audits and inspections, and such other matters as OWNER reasonably deems necessary for purposes of verifying compliance with the Contract and applicable Regulatory Requirements. CONTRACTOR shall make these records and documents available for audit and inspection to OWNER at CONTRACTOR's office within the Municipality of Anchorage, at all reasonable times, without charge, and shall allow such persons to make copies of such documents (at no expense to the CONTRACTOR). Further, the CONTRACTOR shall require in each of its contracts with Subcontractors, Suppliers, and consultants that they shall grant to OWNER access to such records for inspection and copying at any time during normal business hours upon reasonable notice and require that their lower-tier subcontractors, suppliers, and consultant do likewise.

3.8.6.1 Where the payment method for any Work is on a time and material basis, such examination and audit rights shall include all books, records, documents, and other evidence sufficient to identify all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of such Work. If the audit indicates the CONTRACTOR has been over-credited under a previous progress report or progress payment, that over-credit will be credited against current progress reports or payments.

3.8.6.2 For cost and pricing data submitted in connection with pricing Change Orders, unless such pricing is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law, OWNER and its representatives have the right to examine all books, records, documents, and other data of the CONTRACTOR related to the negotiation of or performance of Work under such Change Orders for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data submitted. The right of examination shall extend to all documents deemed necessary by such OWNER to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

3.8.6.3 In every case in which the CONTRACTOR is required to retain for the benefit of OWNER or produce to OWNER information from CONTRACTOR's Subcontractors or Suppliers, CONTRACTOR shall include in each subcontract and purchase order a requirement that the Subcontractor or Supplier retain or produce such information to OWNER.

3.8.7 Audit Rights – All Claims filed against OWNER shall be subject to audit. The audit may be performed by employees of OWNER or by an auditor under contract with OWNER. No notice is required before commencing any audit. CONTRACTOR, its Subcontractors, and their agents shall provide adequate facilities, acceptable to OWNER, for the audit during normal business hours. CONTRACTOR, its Subcontractors, and their agents shall cooperate with the auditors. Failure of the CONTRACTOR, its Subcontractors, and their agents to maintain and retain sufficient Project Records to allow the auditors to verify all or a portion of the Claim, or to permit the auditor reasonable and timely access to the Project Records, shall constitute a waiver of the Claim and shall bar any recovery thereunder.

3.8.7.1 CONTRACTOR shall make available to OWNER and its auditors all Project Records, including but not limited to:

- a. Daily time sheets and supervisor's daily reports;
- b. Union agreements;
- c. Insurance, welfare, and benefits records;
- d. Payroll registers;
- e. Earnings records;
- f. Payroll tax forms;
- g. Material invoices and requisitions;
- h. Material cost distribution work sheets;
- i. Equipment records (list of company Equipment and rates);
- j. Subcontractors' (including Suppliers) invoices;
- k. Subcontractors' and agents' payment certificates;
- l. Canceled checks (payroll and Suppliers);
- m. Job cost report;
- n. Job payroll ledger;
- o. General ledger;
- p. Cash disbursements journal;
- q. All documents that relate to each and every claim, together with all documents that support the amount of damages as to each claim; and
- r. Work sheets used to prepare the claim establishing the cost components for items of the claim, including labor, benefits and insurance, Materials, Equipment, Subcontractors, all documents that establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals.

3.8.7.2 Full compliance by the CONTRACTOR with the provisions of this Article 3.8 is a contractual condition precedent to CONTRACTOR's right to seek judicial relief.

3.8.8 Audits – OWNER, its authorized representatives, any firm of auditors appointed by OWNER and other authorized governmental authorities shall have access at all reasonable times to all Project Records maintained by the CONTRACTOR and its Subcontractors and Suppliers and their respective agents and employees for the purpose of auditing and verifying the CONTRACTOR's costs claimed to be due and payable hereunder. OWNER shall also have the right to reproduce any such records. CONTRACTOR shall make said evidence (or, to the extent accepted by OWNER, authentic reproductions thereof) available to OWNER at the CONTRACTOR's offices at all reasonable times and without charge.

3.8.8.1 The operations of the CONTRACTOR and its Subcontractors and Suppliers shall be subject at any time to audits by OWNER and other authorized governmental authorities to verify compliance with all Contract requirements relative to practices, methods, procedures, and documentation required under generally accepted accounting practices and principles.

3.8.8.2 With respect to changes in the Work, the following shall apply:

a. If the CONTRACTOR has submitted cost or pricing data in connection with the pricing of any change to the Work, OWNER and other authorized governmental authorities shall have the right to examine, copy, and audit Project Records, including computations and projections; related to negotiating, pricing, or performing the modification in order to evaluate the accuracy, completeness, and currency of the cost or pricing data.

b. Unless the agreed-upon method of payment for any change in the Work is to be on a time and material basis, the CONTRACTOR shall maintain and segregate relevant Project Records, including cost and pricing data, books, documents, and any other accounting evidence sufficient to properly reflect all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred.

c. At any time during the term of the Contract and for a period of three years from the date of Final Payment under the Contract, OWNER shall have the right to examine all Project Records, including but not limited to books, documents, and other data that relate to the negotiation and/or performance of any Work, for the purpose of evaluating the accuracy and completeness of the cost or pricing data submitted by the CONTRACTOR.

d. To the extent that the examination reveals inaccurate, incomplete, or non-current data, the data shall be considered defective. If the audit indicates the CONTRACTOR has been overpaid under a previous payment application such overpayment will be credited against current progress payment applications, and the Change Order price shall be adjusted.

e. OWNER or its authorized representatives may require that the CONTRACTOR supply appropriate documentation to support the prices proposed for changes in the Work and may refuse to complete negotiations until satisfactory documentation is submitted. CONTRACTOR's Project Records pertaining to such Change Order pricing shall be subject to audit and inspection.

f. Also subject to audit review by OWNER, or its authorized representatives, shall be the CONTRACTOR's Project Records relating to those items on a progress payment application that relate to the following:

- o Work performed on a time and materials basis;
- o Materials not yet incorporated into the Project; and
- o Work performed under a Change Order negotiated on a time and materials, unit price, or lump sum basis.

g. If the audit indicates that the CONTRACTOR has been overpaid under a previous payment application, that overpayment shall be deducted from current progress payment applications.

ARTICLE 4 - LANDS AND PHYSICAL CONDITIONS

4.1 Availability of Lands

The OWNER shall furnish as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for use of the CONTRACTOR in connection with the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents.

4.1.2 The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of Materials and Equipment unless otherwise provided in the Contract Documents.

4.1.3 CONTRACTOR shall be responsible for any access badges or keys issued to its employees by OWNER which badges or keys shall be returned to OWNER upon completion of the Work. CONTRACTOR shall be responsible for any lost or stolen badges and shall reimburse the OWNER at a cost of twenty-five dollars (\$25) each. If CONTRACTOR loses a key, it shall reimburse OWNER for the core and replacement key cost in an amount not to exceed two hundred dollars (\$200).

4.2 Visit to Site

The submission of a GMP by the CONTRACTOR is considered a representation that the CONTRACTOR has visited and carefully examined the Site and is satisfied as to the conditions to be encountered in performing the Work and as to the requirements of the Contract Documents.

4.3 Explorations and Reports

Reference is made to the Supplemental Conditions for identification of those reports of explorations and tests of subsurface conditions at the Site that have been utilized by the OWNER in preparation of the Contract Documents. The CONTRACTOR may for his purposes rely upon the accuracy of the factual data contained in such reports but not upon the completeness or sufficiency thereof. Except as indicated in the immediately preceding sentence and in Articles 4.4 and 9.9, CONTRACTOR shall have full responsibility with respect to surface and subsurface conditions at the Site.

4.4 Utilities

The horizontal and vertical locations of known underground Utilities as shown or indicated by the Contract Documents are approximate and are based on information and data furnished to the OWNER by the owners of such underground Utilities.

4.4.1 NOT USED

4.4.2 The CONTRACTOR shall have full responsibility for:

- a. Reviewing and checking all information and data concerning Utilities.
- b. Locating all underground Utilities shown or indicated in the Contract Documents which are affected by the Work.
- c. Coordination of the Work with the owners of all Utilities during construction.
- d. Safety and protection of all Utilities as provided in Article 6.17.
- e. Repair of any damage to Utilities resulting from the Work in accordance with Articles 4.4.4 and 4.5.

4.4.3 If Work is to be performed by any Utility owner, the CONTRACTOR shall cooperate with such owner to facilitate the Work.

4.4.4 In the event of interruption to any Utility service as a result of accidental breakage or as result of being exposed or unsupported, the CONTRACTOR shall promptly notify the Utility owner and the Project Manager. If service is interrupted, repair work shall be continuous until the service is restored. No Work shall be undertaken around fire hydrants until the local fire authority has approved provisions for continued service.

4.5 Damaged Utilities

When the CONTRACTOR damages Utilities, the Utility owner shall have the choice of repairing the Utility or having the CONTRACTOR repair the Utility. In the following circumstances, the CONTRACTOR shall reimburse the Utility owner for repair costs or provide at no cost to the Utility owner or the OWNER, all materials, equipment and labor necessary to complete repair of the damage:

- a. When the Utility is shown or indicated in the Contract Documents.
- b. When the Utility owner has located the utility.
- c. When no locate was requested by the CONTRACTOR for Utilities shown or indicated in the Contract Documents.
- d. All visible Utilities.
- e. When the CONTRACTOR could have, otherwise, reasonably been expected to be aware of such Utility.

4.6 Utilities Not Shown or Indicated

If, while directly performing the Work, an underground or concealed Utility is uncovered or revealed at the Site which was not shown or indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by Article 6.19) identify the owner of such underground or concealed Utility and give written notice thereof to that owner and to the Project Manager. The Project Manager will promptly review the underground or concealed Utility to determine the extent to which the Contract Documents and the Work should be modified to reflect the impacts of the discovered Utility. The Contract Documents will be amended or supplemented in accordance with Article 9.2 and to the extent necessary through the issuance of a Change Order by the Contracting Officer. During such time, the CONTRACTOR shall be responsible for the safety and protection of such underground or concealed Utility as provided in Article 6.17. The CONTRACTOR may be allowed an increase in the GMP or an extension of the Contract Time, or both, to the extent that they are directly attributable to the existence of any underground or concealed Utility that was not shown or indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of.

4.7 Survey Control

The OWNER will identify sufficient horizontal and vertical control data to enable the CONTRACTOR to survey and layout the Work. All survey work shall be performed under the direct supervision of a registered land surveyor when required by Article 7.8. Copies of all survey notes shall be provided to the OWNER at an interval determined by the Project Manager. The Project Manager may request submission on a weekly or longer period at his discretion. Any variations between the Contract Documents and actual field conditions shall be identified in the survey notes.

ARTICLE 5 - BONDS, INSURANCE, AND INDEMNIFICATION

5.1 Delivery of Bonds

Prior to commencement of the construction Phase, the CONTRACTOR shall deliver to the Contracting Officer such bonds as the CONTRACTOR may be required to furnish in accordance with Article 5.2.

5.2 Bonds

The CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount as shown on the Contract as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These bonds shall remain in effect for one year after the date of Final Acceptance and until all obligations under this Contract, except special guarantees as per 12.7, have been met. All bonds shall be furnished on forms provided by the OWNER (or copies thereof) and shall be executed by such Sureties as are authorized to do business in the State of Alaska. The Contracting Officer may at his option copy the Surety with notice of any potential default or liability.

5.3 Replacement of Bond and Surety

If the Surety on any bond furnished in connection with this Contract is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Article 5.2, or otherwise becomes unacceptable to the OWNER, or if any such Surety fails to furnish reports as to his financial condition as requested by the OWNER, the CONTRACTOR shall within 5 days thereafter substitute another bond and Surety, both of which must be acceptable to OWNER.

5.4 Insurance Requirements

5.4.1 The CONTRACTOR shall provide evidence of insurance with a carrier or carriers satisfactory to the OWNER covering injury to persons and/or property suffered by the OWNER or a third party, as a result of operations that arise both out of and during the course of the Contract by the CONTRACTOR or by any Subcontractor. This coverage will also provide protection against injuries to all employees of the CONTRACTOR and the employees of any Subcontractor engaged in Work under this Contract. The delivery to the OWNER of a written 30-day notice is required before cancellation of any coverage or reduction in any limits of liability. Insurance carriers shall have an acceptable financial rating.

5.4.2 The CONTRACTOR shall maintain in force at all times during the performance of Work under the Contract the following policies of insurance. Failure to maintain the specified insurance or to provide substitute insurance if an insurance carrier becomes insolvent, is placed in receivership, declares bankruptcy, or cancels a policy may be grounds for withholding Contract payments until substitute insurance is obtained, and may, in the OWNER's discretion, be grounds for declaring the CONTRACTOR in default. Where specific limits and coverage are shown, it is understood that they shall be the minimum acceptable. The requirements of this Article shall not limit the CONTRACTOR's responsibility to indemnify under Article 5.5. Additional insurance requirements specific to this Contract are contained in the Supplemental Conditions, when applicable.

a. Worker's Compensation Insurance:

The CONTRACTOR shall provide and maintain, for all employees engaged in Work under this Contract, statutory limits coverage as required by AS 23.30.045. The policy must waive subrogation against the OWNER and include Employer's Liability Protection with policy limits not less than:

\$500,000 each accident, \$500,000 each disease.

b. Commercial General Liability Insurance: On an occurrence policy form covering all operations by or on behalf of the CONTRACTOR with combined single limits not less than:

\$5,000,000 each occurrence

\$5,000,000 for Bodily Injury and Property Damage Liability
\$5,000,000 aggregate for Products-Completed Operations
\$10,000,000 general aggregate

The OWNER shall be named as additional insured. There shall be no right of subrogation against the OWNER or its agents performing work in connection with the Work, and this waiver of subrogation shall be endorsed upon the policies. This insurance shall be considered to be primary and non-contributory to any other insurance carried by the OWNER through self insurance or otherwise.

c. Automobile Liability Insurance: Covering all vehicles used by the CONTRACTOR in the performance of Work under this Contract with combined single limits not less than \$5,000,000 each occurrence. The OWNER shall be named as additional insured. There shall be no right of subrogation against the OWNER or its agents performing work in connection with the Work, and this waiver of subrogation shall be endorsed upon the policies. This insurance shall be considered to be primary and non-contributory to any other insurance carried by the OWNER through self insurance or otherwise.

d. Builder's Risk Insurance:

Coverage shall be on an "All Risk" completed value basis including "earthquake and flood" and protect the interests of the OWNER, the CONTRACTOR and his Subcontractors. Coverage shall include all materials, supplies and equipment that are intended for specific installation in the Project while such materials, supplies and equipment are located at the Site, in transit from port of arrival to job site and while temporarily located away from the Site.

In addition to providing the above coverage the CONTRACTOR shall ensure that Subcontractors provide insurance coverage as noted in clauses a., b., and c. of this section. Builders Risk Insurance will only be required of Subcontractors if so stated in the Supplemental Conditions.

e. Other Coverages:

As specified in Supplemental Conditions.

f. In addition to providing the above coverages the CONTRACTOR shall, in any contract or agreement with Subcontractors performing work, require that all indemnities and waivers of subrogation it obtains, and that any stipulation to be named as an additional insured it obtains, also be extended to waive rights of subrogation against the OWNER and to add the OWNER as an additional named indemnitee and as an additional insured.

5.4.3 CONTRACTOR shall furnish evidence of insurance to the OWNER before award of the Contract. All other coverage, including required subcontractor furnished insurance shall be evidenced prior to commencement of Work. Acceptance by the OWNER of deficient evidence does not constitute a waiver of Contract requirements as provided for by the Contract Documents.

The evidence shall be issued to the OWNER and shall be either a certificate of insurance or the policy declaration page with all required endorsements attached and must:

Denote the type, amount, and class of operations covered;
Show the effective (and retroactive) dates of the policy;
Show the expiration date of the policy;
Include all required endorsements;
Be executed by the carrier's representative; and
If a certificate of insurance, include the following statement:

"This is to certify that the policies described herein comply with all aspects of the insurance requirements of (Project Name and Number). The insurance carrier agrees that it shall notify the Contracting Officer, in writing, at least 30 days before cancellation of any coverage or reduction in any limits of liability."

5.5 Indemnification

The CONTRACTOR shall indemnify, save harmless, and defend the OWNER, its Consultants, its agents and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from the construction or the performance in the course of this Contract of the CONTRACTOR, or its Subcontractors or Suppliers, including any of their consultants, agents or employees; however, this provision has no effect if, but only if, the sole proximate cause of the injury or damage is the OWNER's negligence.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision of Work

The CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. All Work under this Contract shall be performed in a skillful and workmanlike manner. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

6.2 Superintendence by CONTRACTOR

The CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent. The Project Manager shall be advised in writing of the superintendent's name, local address, and telephone number. This written advice is to be kept current until Final Acceptance by the OWNER. The superintendent will be the CONTRACTOR's representative at the Site and shall have full authority to act and sign documents on behalf of the CONTRACTOR.

All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall cooperate with the Project Manager in every way possible.

6.3 Character of Workers

The CONTRACTOR shall provide a sufficient number of competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the Site. The Project Manager may, in writing, require the CONTRACTOR to remove from the Work any employee the Project Manager deems incompetent, careless, or otherwise detrimental to the progress of the Work, but the Project Manager shall have no duty to exercise this right.

6.4 CONTRACTOR to Furnish

Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all Materials, Equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance testing, start-up and completion of the Work.

6.5 Materials and Equipment

All Materials and Equipment shall be of specified quality and new, except as otherwise provided in the Contract Documents. If required by the Project Manager, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of Materials and Equipment. All Materials and Equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to the OWNER or any of the A/Es, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Articles 2.3.

6.6 Anticipated Schedules:

6.6.1 Unless otherwise directed by OWNER, the construction of the Project shall be planned and recorded with a Critical Path Method ("CPM") schedule. The CONTRACTOR shall submit an anticipated CPM schedule. Prior to submitting the CONTRACTOR's first Application for Payment, the CONTRACTOR shall submit to the OWNER for review an anticipated progress schedule indicating the starting and completion dates of the various stages of the Work.

6.6.2 Prior to submitting the CONTRACTOR's first Application for Payment, the CONTRACTOR shall submit to the Project Manager for review:

Anticipated schedule of Shop Drawing submissions; and

Anticipated Schedule of Values for all Work. The Schedule of Values shall include quantities and prices of items aggregating the GMP and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. The CONTRACTOR's Fixed Fee and the Contingency accounts shall be shown as separate items.

6.7 Finalizing Schedules:

Prior to processing the first Application for Payment the Project Manager and the CONTRACTOR will finalize schedules required by Article 6.6.2, and the CONTRACTOR shall submit the anticipated CPM schedule required by Article 6.6.1. No Applications for Payments will be accepted by the OWNER after 60 days of issuing of the NTP without OWNER acceptance of the Finalized CPM Schedule. The finalized CPM schedule will be acceptable to the OWNER as providing information related to the orderly progression of the Work to completion within the Contract Time; but such acceptance will neither impose on the OWNER nor relieve the CONTRACTOR from full responsibility for the progress or scheduling of the Work. If accepted, the finalized schedule of Shop Drawings and other required submissions will be acknowledgment by the OWNER as providing a workable arrangement for processing the submissions. If accepted, the finalized Schedule of Values will be acknowledgment by the OWNER as an approximation of anticipated value of Work accomplished over the anticipated Contract Time. Receipt and acceptance of a schedule submitted by the CONTRACTOR shall not be construed to assign responsibility for performance or contingencies to the OWNER or relieve the CONTRACTOR of his responsibility to adjust his forces, equipment, and work schedules as may be necessary to insure completion of the Work within prescribed Contract Time. Should the prosecution of the Work be discontinued for any reason, the CONTRACTOR shall notify the Project Manager at least 24 hours in advance of resuming operations.

6.8 Adjusting Schedules:

Upon substantial changes to the schedule or upon request, the CONTRACTOR shall submit to the Project Manager for acceptance (to the extent indicated in Article 6.7) adjustments in the schedules to reflect the actual present and anticipated progress of the Work. The CONTRACTOR's failure to submit adjustments in the schedules upon substantial change shall preclude and waive any Claim the CONTRACTOR may have had related to the impacts of delays caused by the substantial change.

6.9 Substitutes or "Or-Equal" Items:

6.9.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that substitution is limited or not permitted, the Project Manager may accept Materials or Equipment of other Suppliers only if sufficient information is submitted by the CONTRACTOR clearly demonstrating to the Project Manager that the Material or Equipment proposed is equivalent or equal in all aspects to that named. The procedure for review by the Project Manager will include the following.

6.9.2 The Project Manager will not accept requests for review of substitute items of Material and Equipment from anyone other than the CONTRACTOR following the issuance of the Contract.

6.9.3 If the CONTRACTOR wishes to furnish or use a substitute item of Material or Equipment, the CONTRACTOR shall make written application to the Project Manager for Approval thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as the specified. The application will state that the evaluation and Approval of the proposed substitute will not delay the CONTRACTOR's timely achievement of Substantial or Final Completion, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with the OWNER for Work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

6.9.4 All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the OWNER in evaluating the proposed substitute. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR's expense additional data about the proposed substitute. The Project Manager may reject any substitution request which the Project Manager determines is not in the best interest of the OWNER.

6.10 Substitute Means and Methods

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to the Project Manager, if the CONTRACTOR submits sufficient information to allow the Project Manager to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by the Project Manager will be similar to that provided in Article 6.9 as applied by the Project Manager.

6.11 Evaluation of Substitution:

The Project Manager will be allowed a reasonable time within which to evaluate each proposed substitute. The Project Manager will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without the Project Manager's prior written Approval which will be evidenced by either a Change Order or a Shop Drawing Approved in accordance with Articles 6.20 and 6.21. The Project Manager may require the CONTRACTOR to furnish at the CONTRACTOR's expense a special performance guarantee or other Surety with respect to any substitute.

6.12 Dividing the Work:

The divisions and sections of the Specifications and the identifications of any Drawings shall not control the CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade. The CONTRACTOR is solely responsible for ensuring that all Contract requirements are accounted for in dividing the work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.13 Subcontractors:

The CONTRACTOR shall utilize the services of appropriately licensed Subcontractors on those parts of the Work which, under normal contracting practices, are performed by Subcontractors, in accordance with the following conditions:

6.13.1 Prior to the submittal of a GMP proposal, the CONTRACTOR shall contact potential subcontractors and material suppliers to encourage their interest in bidding on the Work.

6.13.2 It is the objective of the OWNER to obtain the best value for the funds expended. Competition is the preferred method of assuring the least cost, and sub-bidding of the Work is expected and encouraged. Prequalification of Subcontractors may be allowed subject to OWNER approval.

6.13.3 The CONTRACTOR will develop subcontracting solicitation procedures for OWNER approval. The CONTRACTOR will be expected to follow approved procedures, document their use, and to publicly conduct the sub-bidding of designated construction Work including, where applicable, developing a subcontractor pre-qualification process for critical items of Work. At a minimum this will include:

a. The CONTRACTOR shall attempt to obtain a minimum 3 bids for each package of Work bid greater than \$10,000.

b. All bids for non-self performed Work valued at more than \$100,000 are required to be sealed, written, and submitted to a specific location at a specific time.

c. For non-self performed work valued at less than \$100,000, the CONTRACTOR may receive a minimum of 3 bids by telephone.

6.13.4 The CONTRACTOR shall not award any Work to any Subcontractor without prior written Approval of the Project Manager. The CONTRACTOR shall not allow any Subcontractor to proceed with any Work under this Contract until the CONTRACTOR submits a written statement concerning the proposed award to the Subcontractor which shall contain required Equal Employment Opportunity documents, evidence of insurance whose limits are acceptable to the CONTRACTOR, and an executed copy of the subcontract to the Project Manager and receives Approval to proceed with the subcontract work. All subcontracts shall contain provisions for prompt payment, release of retainer, and interest on late payment amounts and retainer as specified in A.S. 36.90.210. Contracts between subcontractors, regardless of tier, must also contain these provisions. No acceptance by the Project Manager of any such Subcontractor shall constitute a waiver of any right of the OWNER to reject Defective Work.

6.13.5 The CONTRACTOR shall be fully responsible to the OWNER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions.

6.13.6 All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate written agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER and contains waiver provisions as required by Article 13.17 and termination provisions as required by Article 14.

6.13.7 Nothing in the Contract Documents shall create any contractual relationship between the OWNER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of the OWNER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Regulatory Requirements. The OWNER will not undertake to settle any differences between or among the CONTRACTOR, Subcontractors, or Suppliers.

6.13.8 The CONTRACTOR and Subcontractors shall coordinate their work and cooperate with other trades so to facilitate general progress of Work. Each trade shall afford other trades every reasonable opportunity for installation of their work and storage of materials. If cooperative work of one trade must be altered due to lack of proper supervision, or failure to make proper provisions in time by another trade, the CONTRACTOR shall remedy such conditions with no change in GMP or Contract Time.

6.13.9 The CONTRACTOR shall include on his own payrolls any person or persons working on this Contract who are not covered by written subcontract, and shall ensure that all Subcontractors include on their payrolls all persons performing Work under the direction of the Subcontractor.

6.14 Use of Premises

The CONTRACTOR shall confine construction equipment, the storage of Materials and Equipment and the operations of workers to the Project limits and approved remote storage sites and lands and areas identified in and permitted by Regulatory Requirements, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any such owner make any claim against the OWNER or occupant because of the performance of the Work, the CONTRACTOR shall hold the OWNER harmless.

6.15 Structural Loading

The CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.16 Record Documents

The CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Directives, Change Orders, Supplemental Agreements, and written interpretations and clarifications (issued pursuant to Article 3.6) in good order and annotated to show all changes made during construction. These record documents together with all Approved samples and a counterpart of all Approved Shop Drawings will be available to the Project Manager for reference and copying. Upon completion of the Work, the annotated record documents, samples and Shop Drawings will be delivered to the Project Manager. Record documents shall accurately record variations in the Work which vary from requirements shown or indicated in the Contract Documents.

6.17 Safety and Protection

The CONTRACTOR alone shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.17.1 All employees performing the Work and other persons and organizations who may be affected thereby;

6.17.2 All the Work and Materials and Equipment to be incorporated therein, whether in storage on or off the Site; and

6.17.3 Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction. The CONTRACTOR shall comply with all applicable Regulatory Requirements of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and Utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the CONTRACTOR with no change in GMP or Contract Time except as stated in Article 4.6, except damage or loss attributable to unforeseeable causes beyond the control of and without the fault or negligence of the CONTRACTOR, including but not restricted to acts of God, of the public enemy or governmental authorities.

The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until Final Acceptance (except as otherwise expressly provided in connection with Substantial Completion).

6.18 Safety Representative

The CONTRACTOR shall designate a responsible safety representative at the Site. This person shall be the CONTRACTOR's superintendent unless otherwise designated in writing by the CONTRACTOR to the Project Manager.

6.19 Emergencies

In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the OWNER, is obligated to act to prevent threatened damage, injury or loss. The CONTRACTOR shall give the Project Manager prompt written notice if the CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If the OWNER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a change will be authorized by one of the methods indicated in Article 9.2, as determined appropriate by the Project Manager.

6.20 Shop Drawings and Samples

6.20.1 After checking and verifying all field measurements and after complying with applicable procedures specified in the Contract Documents, the CONTRACTOR shall submit to the Project Manager for review and Approval in accordance with the accepted schedule of Shop Drawing submissions the required number of all Shop Drawings, which will bear a stamp or specific written indication that the CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as the Project Manager may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable the Project Manager to review the information as required.

6.20.2 The CONTRACTOR shall also submit to the Project Manager for review and Approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that the CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.20.3 Before submission of each Shop Drawing or sample the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

6.20.4 At the time of each submission the CONTRACTOR shall give the Project Manager specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to the Project Manager for review and Approval of each such variation. All variations of the proposed Shop Drawing from that specified will be identified in the submission and available maintenance, repair and replacement service will be indicated. The submittal will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such variation, including costs of redesign and claims of other Subcontractors affected by the resulting change, all of which shall be considered by the OWNER in evaluating the proposed variation. If the variation may result in a change of Contract Time or Price, or Contract responsibility, and is not minor in nature; the CONTRACTOR must submit a written request for Change Order with the variation to notify the OWNER of his intent. The OWNER may require the CONTRACTOR to furnish at the CONTRACTOR's expense additional data about the proposed variation. The Project Manager may reject any variation request which the Project Manager determines is not in the best interest of the OWNER.

6.20.5 When required by the Contract Documents to Validate a dimension or condition, the CONTRACTOR will be responsible for Validating that the dimension or condition is as represented in the Contract Documents in sufficient time to allow correction prior to impacting the Work. Any rework or impact to the Work resulting from the CONTRACTOR's failure to perform timely Validation will be the responsibility of the CONTRACTOR and the GMP will not be increased as a result of this failure on the part of the CONTRACTOR.

6.21 Shop Drawing and Sample Review

6.21.1 The Project Manager will review with reasonable promptness Shop Drawings and samples, but the Project Manager's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate acceptance of the assembly in which the item functions. The CONTRACTOR shall make corrections required by the Project Manager and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review. The CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by the Project Manager on previous submittals.

6.21.2 The Project Manager's review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless the CONTRACTOR has in writing advised the Project Manager of each such variation at the time of submission as required by Article 6.20.4. The Project Manager if he so determines, may give written Approval of each such variation by Change Order, except that, if the variation is minor and no Change Order has been requested a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample review comments shall suffice as a modification. Approval by the Project Manager will not relieve the CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of Article 6.20.3.

6.21.3 The OWNER shall be responsible for all OWNER review costs resulting from the initial submission and first re-submittal. The CONTRACTOR shall, at the discretion of the OWNER, pay all review costs incurred by the OWNER as a result of any additional re-submittals.

6.21.4 Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to the Project Manager's review and Approval of the pertinent submission will be the sole expense and responsibility of the CONTRACTOR.

6.22 Maintenance During Construction

The CONTRACTOR shall maintain the Work during construction and until Substantial Completion, at which time the responsibility for maintenance shall be established in accordance with Article 13.10.

6.23 Continuing the Work

The CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the OWNER. No Work shall be delayed or postponed pending resolution of any disputes, disagreements, or Claims except as the CONTRACTOR and the Project Manager may otherwise agree in writing.

6.24 Consent to Assignment

The CONTRACTOR shall obtain the prior written consent of the Project Manager to any proposed assignment of any interest in, or part of this Contract. The consent to any assignment or transfer shall not operate to relieve the CONTRACTOR or his Sureties of any of his or its obligations under this Contract or the Performance Bonds. Nothing herein contained shall be construed to hinder, prevent, or affect an assignment of monies due, or to become due hereunder, made for the benefit of the CONTRACTOR's creditors pursuant to law.

6.25 Use of Explosives

6.25.1 When the use of explosives is necessary for the prosecution of the Work, the CONTRACTOR shall exercise the utmost care not to endanger life or property, including new Work and shall follow all Regulatory Requirements applicable to the use of explosives. The CONTRACTOR shall be responsible for all damage resulting from the use of explosives.

6.25.2 All explosives shall be stored in a secure manner in compliance with all Regulatory Requirements, and all such storage places shall be clearly marked. Where no Regulatory Requirements apply, safe storage shall be provided not closer than 1,000 feet from any building, camping area, or place of human occupancy.

6.25.3 The CONTRACTOR shall notify each public Utility owner having structures in proximity to the Site of his intention to use explosives. Such notice shall be given sufficiently in advance to enable Utility owners to take such steps as they may deem necessary to protect their property from injury. However, the CONTRACTOR shall be responsible for all damage resulting from the use of the explosives, whether or not, Utility owners act to protect their property.

6.26 CONTRACTOR's Records

6.26.1 Records of the CONTRACTOR and Subcontractors relating to personnel, payrolls, invoices of materials, and any and all other data relevant to the performance of this Contract, must be kept on a generally recognized accounting system. Such records must be available during normal work hours to the Project Manager for purposes of investigation to ascertain compliance with Regulatory Requirements and provisions of the Contract Documents.

6.26.2 Payroll records must contain the name and address of each employee, his correct classification, rate of pay, daily and weekly number of hours of work, deductions made, and actual wages paid. The CONTRACTOR and Subcontractors shall make employment records available for inspection by the Project Manager and representatives of the U.S. and/or State Department of Labor and will permit such representatives to interview employees during working hours on the Project.

6.26.3 Records of all communications between the OWNER and the CONTRACTOR and other parties, where such communications affected performance of this Contract, must be kept by the CONTRACTOR and maintained for a period of 3 years from Final Acceptance. The OWNER or its assigned representative may perform an audit of these records during normal work hours after written notice to the CONTRACTOR.

6.27 Load Restrictions

The CONTRACTOR shall comply with all load restrictions as set forth in the "Administrative Permit Manual", and Title 17, Chapter 25, of the Alaska Administrative Code in the hauling of Materials on public roads, beyond the limits of the Project, and on all public roads within the Project limits that are scheduled to remain in use upon completion of the Project.

Overload permits may, at the discretion of the State of Alaska, be issued for travel beyond the Project limits for purposes of mobilization and/or demobilization. Issuance of such a permit will not relieve the CONTRACTOR of liability for damage which may result from the moving of equipment.

The operation of equipment of such weight or so loaded as to cause damage to any type of construction will not be permitted. No overloads will be permitted on the base course or surface course under construction. No loads will be permitted on a concrete pavement, base or structure before the expiration of the curing period. The CONTRACTOR shall be responsible for all damage done by his equipment.

6.28 Construction Quality Control Plan

The CONTRACTOR shall establish and maintain an effective quality management system. The quality management system shall consist of plans, procedures, and the organization necessary to assure that Material, Equipment, and workmanship provided complies with the requirements of the Contract Documents. The system shall cover the proposed sequence of the Work including both on-Site and off-Site operations. To meet this requirement, the CONTRACTOR shall prepare a Construction Quality Control (CQC) plan that addresses all quality control requirements specified in the Contract Documents. A complete, detailed CQC plan shall be submitted to the Project Manager at least 10 days prior to commencement of any Work on the Project. The CQC plan must be approved in writing by the Project Manager prior to proceeding with the Work. The CONTRACTOR shall not revise the CQC plan or the QC staffing levels or replace any of the key personnel specified therein without prior written approval from the Project Manager.

6.29 Drug and Alcohol-Free Workplace

Safety is paramount at ARRC. For that reason, OWNER maintains an alcohol and drug-free workplace and requires that the CONTRACTOR do the same. At all times during the performance of the Work, the CONTRACTOR shall have in place a written drug and alcohol program that includes, at a minimum, the following:

- a. a requirement that all applicants present a negative pre-employment drug screen prior to being hired by the CONTRACTOR;
- b. a requirement that employees submit to a "reasonable suspicion" drug and/or alcohol test when showing signs and symptoms of drug and/or alcohol influence on duty;
- c. a requirement that employees submit to "reasonable cause/post accident" drug and alcohol tests following certain accidents or incidents (with the threshold level triggering testing to be determined by the CONTRACTOR);
- d. a provision defining a positive alcohol test as one that reveals a breath alcohol level of .02 or greater;
- e. a provision defining a positive drug test as one that reveals concentrations at the levels set forth in 49 C.F.R. § 40.87(b)(screening test) and 49 C.F.R. § 40.87(c)(confirmatory test) or greater;
- f. a provision that outlines the consequences of a positive drug or alcohol test and the consequences of an employee's refusal to submit to drug/alcohol testing; and
- g. a provision that establishes the conditions under which an employee may return to work following a positive drug and/or alcohol test, which at a minimum include an evaluation by a substance abuse professional and compliance with a recommended treatment program.

The CONTRACTOR agrees that at any time during the performance of this Contract, if an OWNER employee reports to the CONTRACTOR that an employee of the CONTRACTOR or its Subcontractor is showing signs and/or symptoms of drug/alcohol influence on duty, the CONTRACTOR shall remove the employee from OWNER'S property immediately and shall have the employee tested for drug/alcohol influence. If the employee tests positive, the CONTRACTOR shall ensure that the employee is not returned to work on the Project until he/she has met the return to work requirements contained in the CONTRACTOR'S written program.

ARTICLE 7 - LAWS AND REGULATIONS

7.1 Laws to be Observed

The CONTRACTOR shall keep fully informed of all federal and state Regulatory Requirements and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the Work, or which in any way affect the conduct of the Work. The CONTRACTOR shall at all times observe and comply with all such Regulatory Requirements, orders and decrees; and shall protect and indemnify the OWNER and its representatives against any claim or liability arising from or based on

the violation of any such Regulatory Requirement, order, or decree whether by the CONTRACTOR, Subcontractor, or any employee of either. Except where otherwise expressly required by applicable Regulatory Requirements, the OWNER shall not be responsible for monitoring CONTRACTOR's compliance with any Regulatory Requirements.

7.2 Permits, Licenses, and Taxes

7.2.1 The CONTRACTOR shall comply with all required permits and licenses, pay all charges, fees and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the Work. As a condition of performance of this Contract, the CONTRACTOR shall pay all federal, state and local taxes incurred by the CONTRACTOR, in the performance of this Contract. Proof of payment of these taxes is a condition precedent to Final Payment by the OWNER under this Contract.

7.2.2 The CONTRACTOR's certification that taxes have been paid (as contained in the *Release of Contract*) will be verified with the Department of Revenue and Department of Labor, prior to Final Payment.

7.2.3 If any federal, state or local tax is imposed, charged, or repealed after the date of the submission of the GMP and is made applicable to and paid by the CONTRACTOR on the articles or supplies herein contracted for, then the GMP shall be increased or decreased accordingly by a Change Order.

7.3 Patented Devices, Materials and Processes

If the CONTRACTOR employs any design, device, material, or process covered by letters of patent, trademark or copyright, the CONTRACTOR shall provide for such use by suitable legal agreement with the patentee or owner. The CONTRACTOR and the Surety shall indemnify and save harmless the OWNER, any affected third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the OWNER for any costs, expenses, and damages which it may be obliged to pay by reason of any infringement, at any time during the prosecution or after the completion of the Work.

7.4 Compliance of Specifications and Drawings

If the CONTRACTOR observes that the Specifications and Drawings supplied by the OWNER are at variance with any Regulatory Requirements, CONTRACTOR shall give the Project Manager prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in Article 9.2. as determined appropriate by the Project Manager. If the CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Regulatory Requirements, and without such notice to the Project Manager, the CONTRACTOR shall bear all costs arising therefrom; however, it shall not be the CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings supplied by the OWNER are in accordance with such Regulatory Requirements.

7.5 Accident Prevention

The CONTRACTOR shall comply with AS 18.60.075 and all pertinent provisions of the Construction Code Occupational Safety and Health Standards issued by the Alaska Department of Labor.

7.6 Sanitary Provisions

The CONTRACTOR shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees and OWNER representatives as may be necessary to comply with the requirements of the State and local Boards of Health, OSHA or of other bodies or tribunals having jurisdiction.

7.7 Business Registration

CONTRACTOR shall comply with AS 08.18.011, which states as follows: "it is unlawful for a person to submit a bid or work as a contractor until he has been issued a certificate of registration by the Department of Commerce.

A partnership or joint venture shall be considered registered if one of the general partners or ventures whose name appears in the name under which the partnership or venture does business is registered."

7.8 Professional Registration and Certification

All craft trades, architects, engineers and land surveyors, electrical administrators, and explosive handlers employed under the Contract shall specifically comply with applicable provisions of AS 08.18, 08.48, 08.40, and 08.52. CONTRACTOR shall provide copies of individual licenses within 7 days following a request from the Contracting Officer.

7.9 Local Building Codes

The CONTRACTOR shall comply with AS 35.10.025 which requires construction in accordance with applicable local building codes and the obtaining of required permits. The CONTRACTOR shall be responsible for coordinating with and providing access to the authority having jurisdiction for inspections.

7.10 Air Quality Control

The CONTRACTOR shall comply with all applicable provisions of AS 46.03.04 as pertains to Air Pollution Control.

7.11 Archaeological or Paleontological Discoveries

When the CONTRACTOR's operation encounters prehistoric artifacts, burials, remains of dwelling sites, or paleontological remains, such as shell heaps, land or sea mammal bones or tusks, the CONTRACTOR shall cease operations immediately and notify the Project Manager. No artifacts or specimens shall be further disturbed or removed from the ground and no further operations shall be performed at the Site until so directed. Should the Project Manager order suspension of the CONTRACTOR's operations in order to protect an archaeological or historical finding, or order the CONTRACTOR to perform extra Work, such shall be covered by an appropriate Contract change document.

7.12 Applicable Alaska Preferences N/A

7.13 Preferential Employment N/A

7.14 Wages and Hours of Labor

7.14.1 One certified copy of all payrolls shall be submitted weekly to the State Department of Labor and, upon request, to the Contracting Officer to assure compliance with AS 36.05.040, *Filing Schedule of Employees Wages Paid and Other Information*. The CONTRACTOR shall be responsible for the submission of certified copies of payrolls of all Subcontractors. The certification shall affirm that the payrolls are current and complete, that the wage rates contained therein are not less than the applicable rates referenced in these Contract Documents, and that the classification set forth for each laborer or mechanic conforms to the Work he performed. The CONTRACTOR and his Subcontractors shall attend all hearings and conferences and produce such books, papers, and documents all as requested by the Department of Labor. Should federal funds be involved, the appropriate federal OWNER as identified by the OWNER shall also receive a copy of the CONTRACTOR'S certified payrolls. Regardless of project funding source, copies of all certified payrolls supplied to the State Department of Labor by the CONTRACTOR shall be supplied also to the Project Manager, upon request, including submittals made by, or on behalf of, subcontractors.

7.14.2 The following labor provisions shall also apply to this Contract:

a. The CONTRACTOR and his Subcontractors shall pay all employees unconditionally and not less than once a week;

b. Wages may not be less than those stated under AS 36.05.010, regardless of the contractual relationship between the CONTRACTOR or Subcontractors and laborers, mechanics, or field surveyors. The current prevailing rate of wages shall be based on the date as specified in AS 36.05.010 unless such date is modified in the Supplemental Conditions. The current prevailing rate of wages shall be the prevailing rate of wages contained in the latest determination of prevailing rate of wages issued by the Department of Labor and Workforce Development at least 10 days before the final date for submission of the CONTRACTOR's NTP for each phase of the Work.

c. The scale of wages to be paid shall be posted by the CONTRACTOR in a prominent and easily accessible place at the Site of the Work;

d. The OWNER shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the CONTRACTOR or Subcontractors the difference between:

1. The rates of wages required by the Contract to be paid laborers, mechanics, or field surveyors on the Work, and

2. The rates of wages in fact received by laborers, mechanics or field surveyors.

7.14.3 Within 3 calendar days of award of a construction contract, the CONTRACTOR shall file a "Notice of Work" with the Department of Labor and shall pay all related fees. The Contracting Officer will not issue Notice to Proceed to the CONTRACTOR until such notice and fees have been paid to the Department of Labor. Failure of the CONTRACTOR to file the Notice of Work and pay fees within this timeframe shall not constitute grounds for an extension of contract time or adjustment of GMP.

7.15 Overtime Work Hours and Compensation

Pursuant to 40 U.S.C. 327-330 and AS 23.10.060 -.110, the CONTRACTOR shall not require nor permit any laborer or mechanic in any workweek in which he is employed on any Work under this Contract to work in excess of 8 hours in any Calendar Day or in excess of forty hours in such workweek on Work subject to the provisions of the *Contract Work Hours and Safety Standards Act* unless such laborer or mechanic receives compensation at a rate not less than one and one half times his basic rate of pay for all such hours worked in excess of 8 hours in any Calendar Day or in excess of forty hours in such workweek whichever is the greater number of overtime hours. In the event of any violation of this provision, the CONTRACTOR shall be liable to any affected employee for any amounts due and penalties and to the OWNER for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of this provision in the sum of \$10.00 for each Calendar Day on which such employee was required or permitted to be employed on such Work in excess of 8 hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by this Article.

7.16 Covenant Against Contingent Fees

The CONTRACTOR warrants that no person or selling agent has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the CONTRACTOR for the purpose of securing business. For breach or violation of this warrant, the OWNER shall have the right to annul this Contract without liability or, in its discretion, to deduct price of consideration from the Contract or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

7.17 Officials Not to Benefit

No member of or delegate to the U.S. Congress, the Alaska State Legislature or other state official shall be admitted to any share or part of this Contract, nor to any benefit that may arise there from. However, this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

7.18 Personal Liability of Public Officials

In carrying out any of the provisions thereof, or in exercising any power or authority granted to the OWNER by the Contract, there will be no liability upon the OWNER nor upon its employees or authorized representatives, either personally or as officials of the OWNER, it being always understood that in such matters they act as agents and representatives of the OWNER.

7.19 Federally Assisted Projects

When the United States Government pays all or any portion of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws must be observed by the CONTRACTOR, and the Work shall be subject to the inspection of the appropriate Federal agency. Such inspection shall in no sense make the Federal Government a party to this Contract and will in no way interfere with the rights of either party hereunder.

7.20 Gratuity and Conflict of Interest

The CONTRACTOR agrees that he will not extend any loan, gratuity or gift of money of any form whatsoever to any employee or agent of the OWNER nor will he rent or purchase any equipment or materials from any employee of the OWNER or to the best of his knowledge from any agent of any employee of the OWNER. Before payment of the Final Payment, the CONTRACTOR shall execute and furnish the OWNER an affidavit certifying that he has complied with the above provisions of the Contract.

ARTICLE 8 - OTHER WORK

8.1 Related Work at Site

8.1.1 The OWNER reserves the right at any time to contract for and perform other or additional work on or near the Work covered by the Contract.

8.1.2 When separate contracts are let within the limits of the Project, the CONTRACTOR shall conduct his Work so as not to interfere with or hinder the work being performed by other contractors. The CONTRACTOR when working on the same Project with other contractors shall cooperate with such other contractors. The CONTRACTOR shall join his Work with that of the others in an acceptable manner and shall perform it in proper sequence to that of others.

8.1.3 If the fact that other such work is to be performed is identified or shown in the Contract Documents the CONTRACTOR shall assume all liability, financial or otherwise, in connection with this Contract and indemnify and save harmless the OWNER from any and all damages or Claims that may arise because of inconvenience, delay, or loss experienced by the CONTRACTOR because of the presence and operations of other contractors.

8.1.4 If the fact that such other work is to be performed was not identified or shown in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work. If the CONTRACTOR believes that such performance will require an increase in GMP or Contract Time, the CONTRACTOR shall notify the Project Manager of such required increase within fifteen (15) calendar days following receipt of the Project Manager's notice. Should the Project Manager find such increase(s) to be justified, a Change Order will be executed.

8.2 Access, Cutting, and Patching

The CONTRACTOR shall afford each Utility owner and any other contractor who is a party to such a direct contract with the OWNER (or the OWNER, if the OWNER is performing the additional work with the OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with the work of others. The CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work, the CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter such other work with the written consent of the Project Manager. The duties and

responsibilities of the CONTRACTOR under this Article are for the benefit of other contractors to the extent that there are comparable provisions for the benefit of the CONTRACTOR in said direct contracts between the OWNER and other contractors.

8.3 Defective Work by Others

If any part of the CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor, Utility owner, or the OWNER, the CONTRACTOR shall inspect and promptly report to the Project Manager in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. The CONTRACTOR's failure to so report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

8.4 Coordination

If the OWNER contracts with others for the performance of other work at the Site, the Project Manager will have authority and responsibility for coordination of the activities among the various prime contractors.

ARTICLE 9 – CHANGES

9.1 OWNER's Right to Change

Without invalidating the Contract and without notice to any Surety, the OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work within the general scope of the Contract, including but not limited to changes:

9.1.1 In the Contract Documents;

9.1.2 In the method or manner of performance of the Work;

9.1.3 In OWNER-furnished facilities, Equipment, Materials, services, or Site;

9.1.4 Directing acceleration in the performance of the Work.

9.2 Authorization of Changes within the General Scope

One or more of following means shall be used to authorize additions, deletions, or revisions in the Work within the general scope of the Contract as specified in 9.1:

9.2.1 Directive (pursuant to Article 9.3)

9.2.2 A Change Order (pursuant to Article 9.4)

9.2.3 OWNER's acceptance of Shop Drawing variations from the Contract Documents as specifically identified by the CONTRACTOR as required by Article 6.20.4.

9.2.4 Interim Work Authorization (pursuant to Article 9.10)

9.3 Directive

9.3.1 The Project Manager shall provide written clarification or interpretation of the Contract Documents (pursuant to Article 3.6).

9.3.2 The Project Manager may authorize minor variations in the Work from the requirements of the Contract Documents that do not involve an adjustment in the GMP or the Contract Time and are consistent with the overall intent of the Contract Documents.

9.3.3 The Project Manager may order the CONTRACTOR to correct Defective Work or methods that are not in conformance with the Contract Documents.

9.3.4 The Project Manager may direct the commencement or suspension of Work or emergency related Work (as provided in Article 6.19).

9.3.5 Upon the issuance of a Directive to the CONTRACTOR by the Project Manager, the CONTRACTOR shall proceed with the performance of the Work as prescribed by such Directive.

9.3.6 If the CONTRACTOR believes that the changes noted in a Directive may cause an increase in the GMP or an extension of Contract Time, the CONTRACTOR shall immediately provide written notice to the Project Manager depicting such increases before proceeding with the Directive, except in the case of an emergency. If the Project Manager finds the increase in GMP or the extension of Contract Time justified, a Change Order will be issued. If however, the Project Manager does not find that a Change Order is justified, the Project Manager may direct the CONTRACTOR to proceed with the Work. The CONTRACTOR shall cooperate with the Project Manager in keeping complete daily records of the cost of such Work. If a Change Order is ultimately determined to be justified, in the absence of agreed prices and unit prices, payment for such Work will be made on a "cost of the work basis" as provided in Article 10.5.

9.4 Change Order

A change in Contract Time, GMP, or responsibility may be made for changes within the scope of the Work by Change Order. Upon receipt of an executed Change Order, the CONTRACTOR shall promptly proceed with the Work involved that will be performed under the applicable conditions of the Contract Documents except as otherwise specifically provided. Changes in GMP and Contract Time shall be made in accordance with Articles 10 and 11. A Change Order shall be considered executed when it is signed by the OWNER.

9.5 Shop Drawing Variations

Variations by shop drawings and a request for a Change Order submitted as per Article 6.20.4 shall only be eligible for consideration under Article 9.4 when the CONTRACTOR identifies in writing conditions that affect the price, time, or responsibility.

9.6 Changes Outside the General Scope; Supplemental Agreement

When the Project Manager determines that a change is outside the general scope of the Contract, it must be authorized by a Supplemental Agreement signed by the appropriate representatives of the OWNER and the CONTRACTOR.

9.7 Unauthorized Work

The CONTRACTOR shall not be entitled to an increase in the GMP or an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in this Article 9, except in the case of an emergency as provided in Article 6.19 and except in the case of uncovering Work as provided in Article 12.4.2.

9.8 Notification of Surety

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, GMP or Contract Time) is required by the provisions of any bond to be given to a Surety, the giving of any such notice will be the CONTRACTOR's responsibility, and the amount of each applicable bond will be adjusted accordingly.

9.9 Differing Site Conditions

9.9.1 The CONTRACTOR shall promptly, and before such conditions are disturbed (except in an emergency as permitted by Article 6.19), notify the Project Manager in writing of: (1) subsurface or latent physical conditions at the Site differing materially from those indicated in the Contract, and which could not have been discovered by a careful examination of the Site, or (2) unknown physical conditions at the Site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The Project Manager shall promptly investigate the conditions, and if the Project Manager finds that such conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or time required for, performance of this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly.

9.9.2 Any Claim for additional compensation by the CONTRACTOR under this clause shall be made in accordance with Article 15. In the event that the Project Manager and the CONTRACTOR are unable to reach an agreement concerning an alleged differing site condition, the CONTRACTOR will be required to keep an accurate and detailed record which will indicate the actual "cost of the work" done under the alleged differing site condition. Failure to keep such a record shall be a bar to any recovery by reason of such alleged differing site conditions. The Project Manager shall be given the opportunity to supervise and check the keeping of such records.

9.10 Interim Work Authorization

An Interim Work Authorization may be used to establish a change within the scope of the Work; however, only a Change Order shall establish associated changes in Contract Time and GMP. Work authorized by Interim Work Authorization shall be converted to a Change Order. The basis of payment shall be as stated in the Interim Work Authorization, unless it states that the basis of payment has not been established and is to be negotiated, in which case the basis of payment shall be Cost of the Work pursuant to Article 10.5.

ARTICLE 10 - CONTRACT PRICE; COMPUTATION AND CHANGE

10.1 Contract Price: Guaranteed Maximum Price (GMP)

The GMP, as outlined in Article 13, constitutes the maximum amount of compensation payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the CONTRACTOR shall be covered under the GMP. The GMP may only be changed by a Change Order, Amendment or Supplemental Agreement.

In establishing the GMP, the CONTRACTOR will have become thoroughly familiar with the Contract Documents upon which the GMP will be based, and will have made its best efforts to determine the complete scope of Work contemplated therein. No Change Order will be issued for an adjustment in Contract Price or Contract Time for Work resulting from issuance of subsequent updates to the Contract Documents that should have been reasonably anticipated in the documents used to prepare the estimated COW component of the GMP.

10.2 Claim for Price Change

Any Claim for an increase or decrease in the GMP shall be submitted in accordance with the terms of Article 15, and shall not be allowed unless the notice requirements of the Contract have been met.

10.3 Change Order Price Determination

The value of any Work covered by a Change Order for an increase or decrease in the GMP shall be determined in one or a combination of the following ways as the OWNER may elect:

10.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of Articles 10.9.1 through 10.9.3, inclusive).

10.3.2 Where the Work involved is performed by a Subcontractor or Supplier or is Self-Performed as described in Articles 13.0.6.a and 13.0.6.b, by mutual acceptance of a lump sum price, which includes a markup for overhead and profit (determined as provided in Articles 10.4 and 10.6)

10.3.3 When Articles 10.3.1 and 10.3.2 are inapplicable and where the Work involved is covered by a Subcontractor or Supplier or is Self performed as described in Articles 13.0.6.a and 13.0.6.b , on the basis of the "cost of the work" (determined as provided in Article 10.5) plus a markup fee for overhead and profit (determined as provided in Article 10.6).

10.3.4 Before a Change Order is approved, the CONTRACTOR shall submit cost or pricing data in accordance with Articles 6.26 and 10.7 regarding the changed or extra Work. The CONTRACTOR shall certify that the data submitted is, to his best knowledge and belief, accurate, complete and current as of a mutually determined specified date and that such data will continue to be accurate and complete during the performance of the changed or extra Work.

10.4 Lump Sum Price Change Method

The CONTRACTOR shall prepare a lump sum proposal in the following format:

10.4.1 Direct Costs

a. Material (itemize)

1. The cost to the CONTRACTOR for the Material directly required for the performance of the changed Work. Such cost of Material may include the cost of transportation. Only the applicable portion of a delivery charge will be allowed if the delivery is not specifically for the changed Work,

2. Trade discounts offered by the supplier to the CONTRACTOR shall be credited to the OWNER. If the Material is obtained from a source owned wholly or in part by the CONTRACTOR, payment thereof will not exceed the current wholesale price for the material. The term "trade discount" includes the concept of cash discounting.

3. If, in the opinion of the OWNER, the cost of the Material is excessive or if the CONTRACTOR fails to furnish satisfactory evidence of a cost to him from the Supplier then, in either case, the cost of the Material shall be deemed to be the lowest current wholesale price at which similar material is available in the quantities required.

4. The OWNER reserves the right to furnish such Material as it deems advisable and the CONTRACTOR shall have no Claims for cost or profit on Material furnished by the OWNER.

b. Labor (man-hours, rates by crafts)

1. Payroll costs shall include, but not be limited to, salaries and wages, and fringe benefits including social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. The costs for all supervision, including general superintendents and foremen, shall be included in the markups established by this Contract. The only exception to this shall be working foremen who perform manual labor. No labor charges will be accepted for engineering or proposal preparation. These costs shall be included in the markups established by this Contract.

c. Equipment (type, size, attachments, hours, rate)

1. The cost to the CONTRACTOR for the use of Equipment directly required in the performance of the changed Work. No mobilization or demobilization cost will be allowed for equipment already on Site.

2. For Equipment owned, furnished, or rented by the CONTRACTOR, costs allowed shall be the actual usage costs incurred as supported by the CONTRACTOR's published standard equipment rates or rental invoices. Rates charged shall not exceed the rates established by the Rental Rate Blue Book.

3. The amount to be paid to the CONTRACTOR for the use of Equipment as set forth above will constitute full compensation for the cost of fuel, power, oil, lubricants, supplies, small tools, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators) and any and all costs incidental to the use of the Equipment.

d. Consultants

1. Cost of outside consultants and professional personnel (including but not limited to engineers, architects, testing laboratories, and surveyors) employed for services necessary for the completion of the Work as may be required by the CONTRACTOR. The CONTRACTOR shall obtain the consent of the OWNER prior to engaging such outside consultants if the consultant's services are not specifically identified in the Contract Documents and qualifications are not previously provided therefor.

e. Direct costs shall not include:

1. Payroll costs and other compensation of the CONTRACTOR's officers, executives, principals of partnerships and sole proprietorships, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, superintendents and non-working foremen, and similar administrative personnel. These costs shall be considered administrative costs covered by the CONTRACTOR's Fixed Fee.

2. Expense of the CONTRACTOR's principal and branch offices other than that portion of the CONTRACTOR's office at the Site devoted to the Work.

3. Any part of the CONTRACTOR's capital expenses. Interest on the CONTRACTOR's capital employed for the Work. Charges against the CONTRACTOR for delinquent payments.

4. Costs due to the negligence of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Negligence costs include correction of defective Work, disposal of material wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind.

6. Cost of supplies not incorporated into the Work.

7. Cost of safety programs.

8. Cost of warranty work.

10.4.2 Subcontract Costs

a. If required by OWNER, CONTRACTOR shall obtain competitive quotes from Subcontractors or Suppliers and shall select and award subcontracts in accordance with the CONTRACTOR's subcontracting solicitation plan approved by the OWNER.

b. Direct Costs shall be as outlined in Article 10.4.1.

c. Subcontractors' (at any tier) markups for overhead and profit shall not exceed ten percent (10%) of the Direct Costs.

10.4.3 Overhead and Profit

a. The CONTRACTOR's markup fee for overhead and profit shall not exceed the amounts provided in Article 10.6.1.

10.5 Cost of the Work Change Method

10.5.1 The term "cost of the work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall include only the Reimbursable Costs identified in Articles 10.5.1.a through 10.5.1.f and shall not include any of the Not Reimbursable Costs itemized in Article 10.5.1.g. "Cost of the work" may include the following items:

a. Cost of all Material furnished and incorporated in the Work, in accordance with Article 10.4.1.a.

b. Labor costs for employees in the direct employment of the CONTRACTOR in the performance of the Work in accordance with Article 10.4.1.b. Reimbursement for overtime and premium time outside of the CONTRACTOR's established working hours requires a minimum of 72 hours advanced notification provided to the Project Manager.

c. Cost of Equipment furnished and used in completion of the Work in accordance with Article 10.4.1.c.

1. Equipment will be eligible for payment when operated and used on a full-time basis. Equipment is considered to be used full time when the equipment must be manned and ready for use at all times.

2. When the OWNER determines that Equipment need not remain at the Site continuously, payment will be limited to actual hours of use.

3. Rental rates for equipment retained on the Work for an extended duration will be adjusted to the then-current rate on the anniversary of the Work start date.

4. The hourly operating cost will be allowed for each hour that the Equipment is in use. The rate will be the monthly rate divided by 176 hours for single-shift operations. Hourly rates will be adjusted for two- and three-shift operations as recommended by the Rental Rate Blue Book.

5. Equipment attachments will be included in the rate only when deemed by the OWNER to be essential to the Work. When multiple attachments are approved for use (tractor with ripper, dozer or tractor with loader and backhoe, etc.) and the attachments are being used interchangeably, only the one attachment having the higher rate will be eligible for payment.

6. Standby time, when ordered by the OWNER for CONTRACTOR-owned Equipment on Site longer than two weeks, will be paid as follows: One-third of the total rate established in Articles 10.5.1.c.4 and 10.5.1.c.5 above, rounded to the nearest 10 cents. Standby rates which are calculated at less than one dollar per hour will not be paid. No more than 8 hours of standby will be paid during a 24-hour period. No more than 40 hours of standby will be paid during a one-week period. In the event of breakdown, or shutdown by order of the OWNER, of part or all of the Equipment being used, payment for such Equipment that is idled shall cease. Labor that is idled and cannot be diverted to other Work will be paid through the one-half shift during which the breakdown or shutdown occurred. No other payment will be made for non-operating hours.

7. Rental will not be allowed for equipment listed in the Shop Tools section of the Rental Rate Blue Book having a daily rate of less than \$5 each. Individual pieces of equipment not specifically covered by the Rental Rate Blue Book and having a value of \$750 or less shall be considered "small tools and equipment for which no rental is allowed."

d. Payments made by the CONTRACTOR to Subcontractors for Work performed by Subcontractors in accordance with Article 10.4.2

e. Cost of outside Consultants and professional personnel as may be required in connection with services provided by the CONTRACTOR for completion of the Work in accordance with Article 10.4.1.d.

f. Supplemental costs:

1. Sales, use, or similar taxes related to the Work, and for which the CONTRACTOR is liable, imposed by any governmental authority.

2. Costs for royalty payments, fees, permits, and licenses other than those caused by the negligence of the CONTRACTOR or the CONTRACTOR's employees, agents, or Subcontractors.

3. Losses, damages, and related expenses sustained by the CONTRACTOR in connection with the execution of the Work that are not caused by the negligence of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and are not compensated for by insurance recovery. Losses, damages, and related expenses shall include settlements made with the written consent and approval of the OWNER. For any loss or damage requiring reconstruction that the CONTRACTOR is placed in charge of, the CONTRACTOR shall be paid for services to the extent otherwise eligible for payment under Article 10.5.

4. The cost of utilities, fuel, and sanitary facilities at the Site.

5. Minor expenses in connection with the Work such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and petty cash items.

6. Rental of all the CONTRACTOR-owned and operated power tools and equipment having a value greater than \$750, which the OWNER approves for use. The cost of small tools and equipment, excluding hand tools owned by the workers, having a value of \$750 or less which are consumed in the performance of the Work.

g. Cost of the Work method shall not include the following items:

1. Payroll costs and other compensation of the CONTRACTOR's officers, executives, principals of partnerships and sole proprietorships, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, superintendents and non working foremen, and similar administrative personnel. These costs shall be considered administrative costs covered by the CONTRACTOR's Fixed Fee.

2. Expense of the CONTRACTOR's principal and branch offices other than that portion of the CONTRACTOR's office at the Site devoted to the Work.

3. Any part of the CONTRACTOR's capital expenses. Interest on the CONTRACTOR's capital employed for the Work. Charges against the CONTRACTOR for delinquent payments.

4. Costs due to the negligence of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Negligence costs include correction of defective Work, disposal of material wrongly supplied, and making good any damage to property.

5. The costs of any item not specifically and expressly included in Articles 10.5.1.a through 10.5.1.f.

10.5.2 Overhead and Profit

a. The CONTRACTOR's Markup fee for overhead and profit shall not exceed the amounts provided in Article 10.6.

10.6 Fee on Changed Work

10.6.1 CONTRACTOR's Fixed Fee

The CONTRACTOR's Fixed Fee included in the GMP shall not be increased or decreased unless the COW, adjusted to include all Change Orders, varies more than five percent (5%) above or five percent (5%) below the original COW. If the COW, adjusted to include all Change Orders, is:

a. Greater than one-hundred and five percent (105%) of the value of the original COW, the CONTRACTOR's Fixed Fee shall increase. The amount of the Fixed Fee increase shall be determined by multiplying the portion of the COW, adjusted to include all Change Orders, which is above this value, by the Fixed Fee Percentage; the OWNER will add the resulting product to the CONTRACTOR's Fixed Fee component of the GMP.

b. Less than ninety-five percent (95%) of the value of the original COW, the CONTRACTOR'S Fixed Fee shall decrease. The amount of the Fixed Fee decrease shall be determined by multiplying that portion of the COW, including all Change Orders, which is below this value by the Fixed Fee Percentage; the OWNER will subtract the resulting product from the CONTRACTOR'S Fixed Fee component of the GMP.

10.6.2 Subcontractor's Markup Fee

The Markup Fee for overhead and profit for Subcontractor changed Work, shall be determined as follows:

a. A Markup Fee based on the following maximum rates of cost markup for the Subcontractor (to cover both overhead and profit of the Subcontractor) shall be used in the negotiation of a lump sum Change Order under Article 10.4 or a "cost of the work" Change Order under Article 10.5 :

1. When the work is performed by a Subcontractor, the Markup Fee for the Subcontractor which is performing the work shall not exceed ten percent (10%) of the Direct Costs incurred. When multiple tiers of Subcontractors are involved, the Markup Fee to each intermediate tier Subcontractor shall not exceed five percent (5 %) of the total cost of the changed work by the Subcontractor which actually performs the work.

2. These terms shall also apply to the proposals of Subcontractors of all tiers.

3. No Markup Fee is allowed for costs listed in Articles 10.4.1.e through 10.5.1.g.

b. The amount of credit to be allowed by the Subcontractor to the OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in Subcontractor's Markup Fee by an amount equal to ten percent (10%) of the net decrease.

c. When both additions and credits are involved in any one change, the adjustment in Subcontractor's Markup Fee shall be computed on the basis of the net change in accordance with Articles 10.6.2.a through 10.6.2.c, inclusive.

d. Cost Changes to Bonds and Insurance:

When changes in the Work require new or increased premiums on bonds and insurance, or premiums for property insurance coverage within the limits of the deductible amounts established by the OWNER in accordance with Article 5, the OWNER shall reimburse such costs.

10.7 Cost Breakdown

Whenever the value or cost of any Work is to be determined pursuant to Article 10, the CONTRACTOR will submit in a form acceptable to the OWNER an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the GMP all Allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums within the limit of the Allowances as may be acceptable to the Project Manager. CONTRACTOR agrees that:

10.8.1 The Allowances include the cost to CONTRACTOR (less any applicable trade discounts) of Materials and Equipment required by the Allowances to be delivered at the Site, and all applicable taxes; and

10.8.2 CONTRACTOR's cost for unloading and handling on the Site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the GMP and not in the Allowances. No demand for additional payment on account of any thereof will be valid. Prior to final payment, an appropriate Change Order will be issued to reflect actual amounts due the CONTRACTOR on account of Work covered by Allowances, and the GMP shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the GMP will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract Documents. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial GMP. Determinations of the actual quantities and classifications of Unit Price Work performed by the CONTRACTOR will be made by the OWNER in accordance with Article 10.10.

10.9.2 Each unit price will be deemed to include an amount considered by the CONTRACTOR to be adequate to cover the CONTRACTOR's Direct Costs for each separately identified item; however, it shall not include the CONTRACTOR's Fixed Fee. If the "Basis of Payment" clause in the Contract Documents relating to any unit price requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Contract Documents.

10.9.3 Payment to the CONTRACTOR shall be made only for the actual quantities of Work performed and accepted or Materials furnished, in conformance with the Contract Documents. When the accepted quantities of Work or Materials vary from the quantities stated in the Contract Documents, or change documents, the CONTRACTOR shall accept as payment in full, payment at the stated unit prices for the accepted quantities of Work and Materials furnished, completed and accepted, except as provided below:

a. When the quantity of Work to be done or Material to be furnished under any item, for which the total cost of the item exceeds ten percent (10%) of the total GMP, is increased by more than twenty five percent (25%) of the quantity stated in the Contract Documents, or change documents, either party to the Contract, upon demand, shall be entitled to an equitable unit price adjustment on that portion of the Work above one-hundred-twenty-five percent (125%) of the quantity stated in the Contract Documents.

b. When the quantity of Work to be done or Material to be furnished under any major item, for which the total cost of the item exceeds ten percent (10%) of the total GMP, is decreased by more than twenty-five percent (25%) of the quantity stated in the Contract Documents, or change documents either party to the Contract, upon demand, shall be entitled to an equitable price adjustment for the quantity of Work performed or Material furnished, limited to a total payment of not more than seventy-five percent (75%) of the amount originally set for the item.

10.10 Determinations for Unit Prices

The Project Manager will determine the actual quantities and classifications of Unit Price Work performed by the CONTRACTOR. The Project Manager will review with the CONTRACTOR preliminary determinations on such matters before finalizing the costs and quantities on the Schedule of Values. The Project Manager's

acknowledgment thereof will be final and binding on the CONTRACTOR, unless, within 10 days after the date of any such decisions, the CONTRACTOR delivers to the Project Manager written notice of intention to appeal from such a decision.

ARTICLE 11 - CONTRACT TIME; COMPUTATION AND CHANGE

11.1 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day indicated in the Notice to Proceed.

11.2 Starting the Work

No Work on Contract items shall be performed before the effective date of the Notice to Proceed. The CONTRACTOR shall notify the Project Manager at least 24 hours in advance of the time actual construction operations will begin. The CONTRACTOR may request a limited Notice to Proceed after a GMP Amendment has been executed, to permit him to order long lead Materials which could cause delays in Project completion. However, granting is within the sole discretion of the Project Manager, and refusal or failure to grant a limited Notice to Proceed shall not be a basis for claiming for delay, extension of time, or alteration of GMP.

11.3 Computation of Contract Time

11.3.1 When the Contract Time is specified on a Calendar Day basis, all Work under the Contract shall be completed within the number of Calendar Days specified. The count of Contract Time begins on the day following receipt of the Notice to Proceed by the CONTRACTOR, if no starting day is stipulated therein. Calendar Days shall continue to be counted against Contract Time until and including the date of Substantial Completion of the Work.

11.3.2 When the Contract completion time is specified as a fixed calendar date, it shall be the date of Substantial Completion.

11.4 Time Change

The Contract Time may only be changed by a Change Order, Amendment or Supplemental Agreement.

11.5 Extension Due to Delays

The right of the CONTRACTOR to proceed shall not be terminated nor the CONTRACTOR charged with liquidated or actual damages because of delays to the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to the following: acts of God or of the public enemy, acts of the OWNER in its contractual capacity, acts of another contractor in the performance of a contract with the OWNER, floods, fires, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather and delays of Subcontractors or Suppliers due to such causes. Any delay in receipt of Materials on the Site, caused by other than one of the specifically mentioned occurrences above, does not of itself justify a time extension, provided that the CONTRACTOR shall within twenty four (24) hours from the beginning of any such delay (unless the Project Manager shall grant a further period of the time prior to the date of final settlement of the Contract), notify the Project Manager in writing of the cause of delay. The Project Manager shall ascertain the facts and the extent of the delay and extend the time for completing the Work when the findings of fact justify such an extension.

11.6 Essence of Contract

All time limits stated in the Contract Documents are of the essence of the Contract.

11.7 Reasonable Completion Time

It is expressly understood and agreed by and between the CONTRACTOR and the OWNER that the date of beginning and the time for Substantial and Final Completion of the Work described herein are reasonable times for the completion of the Work.

11.8 Delay Damages

Whether or not the CONTRACTOR's right to proceed with the Work is terminated, he and his Surety shall be liable for damages resulting from his refusal or failure to complete the Work within the specified time.

Liquidated damages for delay shall be paid by the CONTRACTOR or his Surety to the OWNER in the amount as specified in the Contract for each Calendar Day the completion of the Work or any part thereof is delayed beyond the time required by the Contract, or any extension thereof.

The OWNER may deduct any monies due the OWNER for liquidated damages from any monies due the CONTRACTOR. If no money is due the CONTRACTOR, the OWNER shall have the right to recover said sum from the CONTRACTOR, the Surety or both.

The CONTRACTOR acknowledges that the liquidated damages established herein are not a penalty but rather constitute a reasonable estimate of damages that the OWNER will sustain by reason of delayed completion. The liquidated damages represent a reasonable estimate of actual damages resulting from additional costs for continued management, loss of production and the value of money.

These liquidated damages will continue to run both before and after termination in the event of default termination. These liquidated damages do not cover excess costs of completion or OWNER costs, fees, and charges related to re-procurement. If a default termination occurs, the CONTRACTOR or his Surety shall pay, all excess costs and expenses related to completion as provided by Article 14.2.9 in addition to these damages.

Permitting the CONTRACTOR to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the OWNER of any of its rights under the Contract.

ARTICLE 12 - QUALITY ASSURANCE

12.1 Warranty and Guaranty

The CONTRACTOR warrants and guarantees to the OWNER that all Work will be in accordance with the Contract Documents and will not be Defective. Prompt notice of all defects shall be given to the CONTRACTOR. All Defective Work, whether or not in place, may be rejected, corrected or accepted as provided for in this Article.

12.2 Access to Work

The OWNER's representatives, testing agencies and governmental agencies with jurisdiction interests will have access to the Work at reasonable times for their observation, inspecting and testing. The CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 The CONTRACTOR shall give the Project Manager timely notice of readiness of the Work for all required inspections, tests or Approvals.

12.3.2 If Regulatory Requirements of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, the CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish the Project Manager the required certificates of inspection, testing or approval. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any

inspection or testing required in connection with OWNER's acceptance of a Supplier of Materials or Equipment proposed to be incorporated in the Work, or of Materials or Equipment submitted for Approval prior to the CONTRACTOR's purchase thereof for incorporation in the Work.

The CONTRACTOR shall pay the cost of all inspections, tests and approvals that are required by the Contract Documents in addition to those above. The OWNER may perform additional tests and inspections that it deems necessary to insure quality control. All such failed tests or inspections shall be at the CONTRACTOR's expense.

12.3.3 Not Used

12.3.4 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of the Project Manager, it must, if requested by the Project Manager, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the Project Manager timely notice of CONTRACTOR's intention to cover the same and the Project Manager has not acted with reasonable promptness in response to such notice.

12.3.5 Neither observations nor inspections, tests or Approvals, including Quality Assurance tests or inspections by the OWNER or others shall relieve the CONTRACTOR from the CONTRACTOR's obligations to perform the Work in accordance with the Contract Documents.

12.4 Uncovering Work

12.4.1 If any Work is covered contrary to the written request of the Project Manager, it must, if requested by the Project Manager, be uncovered for the Project Manager's observation and replaced at the CONTRACTOR's expense.

12.4.2 If the Project Manager considers it necessary or advisable that covered Work be observed, inspected or tested, the CONTRACTOR, at the Project Manager's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Project Manager may require, that portion of the Work in question, furnishing all necessary labor, Material and Equipment. If it is found that such Work is Defective, the CONTRACTOR shall bear all direct and indirect costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) and the OWNER shall be entitled to an appropriate decrease in the Contract Price. If, however, such Work is not found to be Defective, the CONTRACTOR shall be allowed an increase in the GMP or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction.

12.5 OWNER May Stop the Work

If the Work is Defective, or the CONTRACTOR fails to supply suitable Materials or Equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, the Project Manager may order the CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Project Manager to stop the Work shall not give rise to any duty on the part of the Project Manager to exercise this right for the benefit of the CONTRACTOR or any other party.

12.6 Correction or Removal of Defective Work

If required by the Project Manager, the CONTRACTOR shall promptly, as directed, either correct all Defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the Project Manager, remove it from the Site and replace it with Work which conforms to the requirements of the Contract Documents. The CONTRACTOR shall bear all direct and indirect costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.7 One Year Correction Period and Standard Warranty

If within one year after the date of Substantial Completion of the Construction Contract or such longer period of time as may be prescribed by Regulatory Requirements or by the terms of any applicable special guarantee or extended warranty required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be Defective, the CONTRACTOR shall promptly, without cost to the OWNER and in accordance with the Project Manager's written instructions, either correct such Defective Work, or, if it has been rejected by the Project Manager, remove it from the Site and replace it with conforming Work. If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the OWNER may have the Defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by the CONTRACTOR. In special circumstances where a particular item of Equipment is placed in continuous service for the benefit of the OWNER before Substantial Completion of all the Work, the correction and warranty period for that item may begin on an earlier date if so provided in the Specifications or by Change Order. Provisions of this Article are not intended to shorten the statute of limitations for bringing an action.

12.8 Acceptance of Defective Work

Instead of requiring correction or removal and replacement of Defective Work, the Project Manager may accept Defective Work; the CONTRACTOR shall bear all direct and indirect costs attributable to the Project Manager's evaluation of and determination to accept such Defective Work (costs to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to Final Payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the OWNER shall be entitled to an appropriate decrease in the GMP. If the OWNER has already made Final Payment to the CONTRACTOR, the CONTRACTOR or his Surety shall pay an appropriate amount to the OWNER.

12.9 OWNER May Correct Defective Work

If the CONTRACTOR fails within a reasonable time after written notice from the Project Manager to proceed to correct Defective Work or to remove and replace rejected Work as required by the Project Manager in accordance with Article 12.6, or if the CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if the CONTRACTOR fails to comply with any other provision of the Contract Documents, the OWNER may, after 7 days' written notice to the CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this Article the OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, the Project Manager may exclude the CONTRACTOR from all or part of the Site, take possession of all or part of the Work, and suspend the CONTRACTOR's services related thereto, take possession of the CONTRACTOR's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all Materials and Equipment stored at the Site or approved remote storage sites or for which the OWNER has paid the CONTRACTOR but which are stored elsewhere. The CONTRACTOR shall allow the Project Manager and his authorized representatives such access to the Site as may be necessary to enable the Project Manager to exercise the rights and remedies under this Article. All direct and indirect costs of the OWNER in exercising such rights and remedies will be charged against the CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the OWNER shall be entitled to an appropriate decrease in the GMP. Such direct and indirect costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of the CONTRACTOR's Defective Work. The CONTRACTOR shall not be allowed an extension of time because of any delay in performance of the work attributable to the exercise, by the Project Manager, of the OWNER's rights and remedies hereunder.

ARTICLE 13 - PAYMENTS TO CONTRACTOR AND COMPLETION

13.0 Guaranteed Maximum Price (GMP), Allowable Costs, Cost of the Work (COW), Fees, and Allowances

13.0.1 Basis

The CONTRACTOR shall be entitled to the following compensation, and no other, for satisfactory performance of the Work required under the Contract:

a. Subject to the provisions of this Contract, including but not limited to provisions regarding the GMP, reimbursement of reasonable costs actually incurred in performance of the Work for which reimbursement is expressly authorized by the Contract Documents;

b. A Fixed Fee equal to the Fixed Fee Percentage multiplied by the COW for Work under the original GMP) plus any increase or decrease to the Fixed Fee resulting from Change Orders in accordance with Article 10.6.1; and

c. In addition to and not as a part of the GMP, the CONTRACTOR shall be entitled to an Early Completion Incentive Fee in accordance with the provisions of Article 5.5 of the Contract.

13.0.2 Guaranteed Maximum Price (GMP)

The GMP consists of the Pre-construction Costs plus the COW plus the Fixed Fee.

13.0.3 Cost of the Work (COW)

a. Amount

The OWNER's obligation to the CONTRACTOR for allowable reimbursable costs under this Contract shall not exceed the COW, subject only to adjustments up or down to reflect changes in Work or Scope Changes effected by fully executed Change Orders.

b. Components

The two components of the COW are (1) the negotiated cost of the Work, and (2) the Contingency.

1. Negotiated Cost of the Work

The Negotiated Cost of the Work may include the following pursuant to Article 13.0.6: (1) Subcontractor and Supplier Costs, (2) Self-performed Work Costs, and (3) CONTRACTOR administrative and support Work Costs allowed by Article 13.0.6.c. In addition, the Negotiated Cost of the Work may include Allowances as directed by the OWNER pursuant to Article 13.0.9.

2. Contingencies:

i. The Construction Contingency, may only be expended or committed by the CONTRACTOR for the Cost of the Work with prior review between CONTRACTOR and OWNER with documentation of notification and written consent of the OWNER before the CONTRACTOR may commit or expend these Construction Contingency funds. Articles 10.4 and 10.5, 10.6.2, 10.6.7, and 10.9 shall be used for price determination when utilizing Construction Contingency funds. Any Construction Contingency remaining at Final Completion shall revert to the OWNER, and is not payable to the CONTRACTOR. Written notification and consent may occur at work sessions related to the Construction Contingency utilization review and/or during the monthly billing review procedure. The Construction Contingency is to be used for:

Scope Changes.

Additional Work arising from Regulatory Requirements.

- ii. The CONTRACTOR's Contingency component shall be used for the cost of the Work at the CONTRACTOR's discretion. This portion of the contingency shall be reviewed with the OWNER monthly on an information only basis. Unused CONTRACTOR's Contingency component shall be returned to the OWNER through the Change Order process.

13.0.4 Not Used

13.0.5 Adjustments

- a. The CONTRACTOR shall familiarize itself with the Design Development Documents and make every effort to determine the complete scope of Work reflected therein. CONTRACTOR acknowledges that the Design Development Documents are not complete, but the CONTRACTOR represents that it has priced all of the Work reflected on the Contract Documents and all Work reasonably inferable as necessary to complete the design reflected in the Contract Documents. No Change Order shall be issued for an adjustment in GMP or Contract Time for Work which should have reasonably been anticipated from the Contract Documents.
- b. The design upon which the GMP is based is fully described in the Contract Documents. The CONTRACTOR represents that it relied upon the Contract Documents in extrapolating costs for the GMP:
- c. The GMP shall be adjusted up or down in response to fully executed Change Orders, Amendments or Supplemental Agreements that change the scope of the Work required under the Contract.

13.0.6 Reimbursable Costs

Subject to the GMP and other provisions of the Contract Documents, the OWNER shall reimburse the CONTRACTOR for reasonable costs directly attributable to the Contract and incurred in the following categories, and no others (for purposes of this section reimbursable costs exclude CONTRACTOR mark-up and fees, which are addressed elsewhere):

a. Subcontractors and Suppliers

Payments to Subcontractors and Suppliers, provided that the OWNER shall receive the benefit of trade and quantity discounts, and the CONTRACTOR shall retain the benefits of discounts for early or timely payment.

b. Self-Performed Work

The OWNER will reimburse the CONTRACTOR for the costs required to perform the Work with its own forces in accordance with the following Articles, provided the CONTRACTOR authenticates to the satisfaction of the OWNER that these costs are not included in the CONTRACTOR's Fixed Fee:

1. Regular Labor Costs

Salaries or wages, plus fringe benefits routinely provided by the CONTRACTOR (including, as applicable, retirement, life insurance, medical insurance, sick leave, holiday pay, vacation, and other benefits required by law or by a then current labor agreement), for all of the following employees for the time they are engaged in the work under the Contract:

- i. Field labor, including field superintendents;
- ii. Employees stationed at the CONTRACTOR's field office;
- iii. Employees engaged at the shops or on the road in expediting the production or transportation of Materials or Equipment required of this contract; and

2. Not Used

3. Not Used

4. Not Used

5. Overtime Labor Costs

Overtime identified in the CONTRACTOR's estimate of reimbursable costs, plus overtime approved by the Project Manager in advance for additional work required by the OWNER. Unscheduled, same-day overtime in support of urgent job requirements may be exercised at the CONTRACTOR's discretion. Any activity requiring overtime extending over 2 days in duration requires 72 hour advance notification to the Project Manager.

6. Subsistence and Travel

Subsistence and travel for the CONTRACTOR's salaried employees normally stationed in the field office when those employees are required to travel and remain out of the Anchorage metropolitan area in direct performance of work under this Contract, but only with OWNER prior approval.

7. Supplies

Field office supplies and services, including office supplies, telephone, postage, reproduction, photographs, and field office data processing equipment.

8. Fire and Safety

Safety, first aid, and temporary fire protection.

9. Job Site Facilities and Services

Temporary facilities and services at the job Site, including the job shack and other structures, sanitation, debris removal, roads, heat, light, water, air, and weather protection. Utilities shall be reimbursable to the extent that they are not furnished by the OWNER as outlined in the Contract Documents.

10. Materials

Materials, expendable supplies, consumables (other than hand tools owned by CONTRACTOR's employees on the Project), and their transportation to the work Site.

11. Taxes, License Fees, Bond Premiums, Insurance Premiums, and Subcontractor Default Insurance as required pursuant to Article 5.4.2, and Royalties Licenses, royalties, bond premiums, and sales or similar taxes which the CONTRACTOR is required by law to pay and are in effect as of the effective date of this contract, other than personal property taxes on the CONTRACTOR's construction equipment and CONTRACTOR's income taxes.

12. CONTRACTOR's Equipment

Reimbursement for use of CONTRACTOR owned equipment shall be at the CONTRACTOR's published rental equipment rates included in this Contract, plus cost of fuel and routine maintenance. Prior to use of such equipment, the CONTRACTOR shall furnish the OWNER with a rent versus purchase analysis, the OWNER shall have the unilateral right to decide whether to rent the equipment or provide OWNER equipment to the CONTRACTOR. For those items of equipment for which the total rental is expected to exceed the replacement cost shown on the equipment rental rate table, the OWNER will have the right to discontinue further monthly rental payments beyond the replacement

value but retain the service of the equipment; reimbursing the CONTRACTOR only for fuel and routine maintenance costs. For equipment furnished by the OWNER to the CONTRACTOR for use on the Work, the CONTRACTOR will be reimbursed for transportation to and from the Site, unloading and loading at the Site, repair, maintenance and fueling.

13. Rented Equipment

Rental of equipment owned by third party equipment vendors while it is engaged in Contract work, plus fuel and routine maintenance at the CONTRACTOR's actual cost. Prior to use of such equipment, the CONTRACTOR shall furnish the OWNER with a rent versus purchase analysis, the OWNER shall have the unilateral right to decide whether to rent the equipment or provide OWNER equipment to the CONTRACTOR. For equipment furnished by the OWNER to the CONTRACTOR for use on the Work, the CONTRACTOR will be reimbursed for transportation to and from the Site, unloading and loading at the Site, repair, maintenance and fueling.

14. Material Storage

Offsite storage of Materials in a location and under circumstances approved by the OWNER in advance and in writing.

15. Permits

All building and other permits for which the CONTRACTOR is responsible under the Contract.

16. Documents

Preparing, obtaining, and copying reports, schedules, manuals, drawings, specifications, related data processing services, and other documents necessary for the performance of the Contract work, except as specified in Article 13.0.7.6.

17. Legal Costs

Reasonable attorney's fees and other costs necessarily incurred by the CONTRACTOR in mediation, arbitration, or litigation necessarily and reasonably incurred in the performance of the Work, but not including fees or costs arising in connection with disputes between the CONTRACTOR, including its Subcontractors or Suppliers and the OWNER. The CONTRACTOR shall notify the OWNER in writing within 5 days of the CONTRACTOR's knowledge of potential for incurring such cost.

18. Consultants

Cost of outside consultants and professional personnel as may be required in connection with services provided by the CONTRACTOR. The CONTRACTOR shall obtain the consent of the OWNER prior to engaging such outside consultants who not specifically required and identified in the Contract Documents.

19. Insurance Losses

Excluding losses resulting from gross negligence, willful misconduct or malicious behavior, the cost of repairing damaged Work, only to the extent that the cost of such repairs is not recoverable by the CONTRACTOR from others and the CONTRACTOR is not compensated therefore by insurance or otherwise, provided that the remaining available Contractor's Contingency within the GMP is not exceeded.

13.0.7 Costs Not Reimbursable

The following is a non-exclusive list of categories of costs for which the CONTRACTOR is not entitled to reimbursement, and are to be accounted for in CONTRACTOR's Fixed Fee:

a. Certain Salaries and Other Compensation

The salary of any individual who is a partner in or an officer of the CONTRACTOR, or of any individual employed in any of the CONTRACTOR's offices other than the field office except as provided for in the Contract Documents.

b. Overhead

Home Office overhead and any corporate general and administrative costs including any costs described in 13.0.6 that are included in the CONTRACTOR's Home Office overhead.

c. Interest

Interest on capital.

d. Employee Relocation Expenses

Any expenses related to employee relocation, including but not limited to moving costs, subsistence, and/or living allowances.

e. Profit

Profit.

f. Proposal

Preparation of the CONTRACTOR's response to the OWNER's Solicitation for this Contract.

g. Hand Tools

The hand tools owned by the CONTRACTOR's employees on the project.

h. Corrective Work

The cost of corrective work performed as Self-Performed Work or by Subcontractors and Suppliers.

i. Excess Costs

Otherwise reimbursable costs in excess of the GMP.

13.0.8 COW Allowances

The COW may be subject to adjustment for changes in the Allowances for the cost of Work items included in the COW. Allowances will be indicated in the Contract Documents.

a. Unless otherwise stated, the Allowances cover all costs related to the described items, including but not limited to labor, Material, Equipment, delivery, taxes, handling costs, installation costs, and subcontracts.

b. If the final cost of an Allowance item is more or less than the Allowance, the COW and GMP may be increased or decreased by subsequent Change Order by an amount equal to the difference between the final

cost of the Allowance item and the Allowance amount stated in the Contract Documents, as approved by the OWNER.

13.1 Schedule of Values

The Schedule of Values established as provided in Article 6.6 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the Project Manager. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Preliminary Payments

Upon approval of the Schedule of Values the CONTRACTOR may be paid for Direct Costs substantiated by paid invoices and other prerequisite documents required by the Contract Documents. Direct Costs shall include the cost of bonds, insurance, approved Materials stored on the Site or at approved remote storage sites, deposits required by a Supplier prior to fabricating Materials, and other approved direct mobilization costs substantiated as indicated above. These payments shall be included as a part of the total GMP as stated in the Contract.

13.3 Application for Progress Payment

The CONTRACTOR shall submit to the Project Manager for review an Application for Payment filled out and signed by the CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents. The CONTRACTOR may submit periodically, but not more than once each month, a request for payment for Work performed, Materials delivered and stored on the Site and progress payment of the CONTRACTOR's Fixed Fee equal to a proportional amount of the reimbursable costs for each payment request. Payment shall be based on the most recent Schedule of Values submitted by the CONTRACTOR in accordance with the Contract Documents. The Schedule of Values shall allocate the entire GMP among the various items of work, except the CONTRACTOR's Fixed Fee and the contingency account shall be shown as separate items. Applications for Payment shall show the percentage of completion for each portion of the Work as of the end of the period covered as described below.

The percentage of completion for costs covered under Articles 10, 13.0.6.a and 13.0.6.b for Subcontractor and Supplier, and Self-Performed Work shall be the percentage of that portion of the Work that has actually been completed.

Payment requests shall be submitted to the Project Manager, who will promptly verify the correctness thereof for payment. Payment will be due and payable promptly by the OWNER after the Project Manager's receipt and approval of a correct payment request. Final Payment will be processed in the same manner. For all payment requests after the initial Application for Payment, the CONTRACTOR shall transmit such cost reports as requested by the OWNER from the CONTRACTOR's automated cost accounting system that detail and substantiate the actual expenses incurred during the prior Application for Payment period, together with the current payment request. The CONTRACTOR shall make adjustments up or down when the actual expenses are higher or lower than the corresponding amount requested in the prior Application for Payment. The CONTRACTOR shall retain accounting records that show, in detail and as completely as possible, moneys paid by the CONTRACTOR on account of the cost of the Work during the period involved, with copies of payroll for labor, records of equipment used, and copies of bills. These records shall be kept at the CONTRACTOR's jobsite office and shall be available for audit by the OWNER at any time. At any time the OWNER may request copies of supporting invoices or other documents required by the OWNER.

13.4 Review of Applications for Progress Payment

The Project Manager will either indicate in writing a recommendation of payment or return the Application for Payment to the CONTRACTOR indicating in writing the Project Manager's reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the Application for Payment.

13.5 Stored Materials and Equipment

If payment is requested on the basis of Materials and Equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, paid invoice or other documentation warranting that the OWNER has received the Materials and Equipment free and clear of all charges, security interests and encumbrances and evidence that the Materials and Equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the Project Manager. No payment will be made for perishable Materials that could be rendered useless because of long storage periods. No progress payment will be made for living plant Materials until planted.

13.6 CONTRACTOR's Warranty of Title

The CONTRACTOR warrants and guarantees that title to all Work, Materials and Equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to the OWNER no later than the time of payment free and clear of any claims, liens, security interests and further obligations.

13.7 Withholding of Payments

The OWNER may withhold or refuse payment for any of the reasons listed below provided it gives written notice of its intent to withhold and of the basis for withholding:

13.7.1 The Work is Defective, or completed Work has been damaged requiring correction or replacement, or has been installed without Approval of Shop Drawings, or by an unapproved Subcontractor, or for unsuitable storage of Materials and Equipment.

13.7.2 A Change Order has reduced the GMP,

13.7.3 The OWNER has been required to correct Defective Work or complete Work in accordance with Article 12.9.

13.7.4 The OWNER's actual knowledge of the occurrence of any of the events enumerated in Articles 14.2.1.a through 14.2.1.m inclusive.

13.7.5 Claims have been made against the OWNER or against the funds held by the OWNER on account of the CONTRACTOR's actions or inactions in performing this Contract, or there are other items entitling the OWNER to a set off.

13.7.6 Subsequently discovered evidence or the results of subsequent inspections or tests nullify any previous payments for reasons stated in Articles 13.7.1 through 13.7.5.

13.7.7 The CONTRACTOR has failed to fulfill or is in violation of any of his obligations under any provision of the Contract Documents.

13.8 Retainage

At any time the OWNER finds that satisfactory progress is not being made it may in addition to the amounts withheld under Article 13.7 retain a maximum amount equal to ten percent (10%) of the total amount earned on all subsequent progress payments. This retainage may be released at such time as the Project Manager finds that satisfactory progress is being made.

13.9 Request for Release of Funds

If the CONTRACTOR believes the basis for withholding payment is invalid or no longer exists, immediate written notice of the facts and Contract provisions on which the CONTRACTOR relies shall be given to the OWNER,

together with a request for release of funds and adequate documentary evidence proving that the problem has been cured. In the case of withholding which has occurred at the request of the Department of Labor, the CONTRACTOR shall provide a letter from the Department of Labor stating that withholding is no longer requested. Following such a submittal by the CONTRACTOR, the OWNER shall have a reasonable time to investigate and verify the facts and seek additional assurances before determining whether release of withheld payments is justified.

13.10 Substantial Completion

When the CONTRACTOR considers the Work ready for its intended use, and has obtained the Approval of all maintenance and operating manuals and marked up record documents, the CONTRACTOR shall notify the Project Manager in writing that the Work or a portion of Work which has been specifically identified in the Contract Documents is substantially complete (except for items specifically listed by the CONTRACTOR as incomplete) and request that the OWNER issue a Certificate of Substantial Completion. Within a reasonable time thereafter, the Project Manager, the CONTRACTOR and appropriate Consultant(s) shall make an inspection of the Work to determine the status of completion. If the Project Manager does not consider the Work substantially complete, the Project Manager will notify the CONTRACTOR in writing giving the reasons therefore. If the Project Manager considers the Work substantially complete, the Project Manager will within fourteen days execute and deliver to the CONTRACTOR a Certificate of Substantial Completion with a punch list of items to be completed or corrected. At the time of delivery of the Certificate of Substantial Completion the Project Manager will deliver to the CONTRACTOR a written division of responsibilities pending Final Completion with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties which shall be consistent with the terms of the Contract Documents.

The OWNER shall be responsible for all OWNER costs resulting from the initial inspection and the first re-inspection; the CONTRACTOR shall pay all costs incurred by the OWNER resulting from re-inspections, thereafter.

13.11 Access Following Substantial Completion

The OWNER shall have the right to exclude the CONTRACTOR from the Site after the date of Substantial Completion, but the OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the punch list.

13.12 Final Inspection

Upon written notice from the CONTRACTOR that the entire Work or an agreed portion thereof is complete, the Project Manager will make a final inspection with the CONTRACTOR and appropriate Consultant(s) and will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or Defective. The CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies. The CONTRACTOR shall pay for all costs incurred by the OWNER resulting from re-inspections.

13.13 Final Completion and Application for Payment

After the CONTRACTOR has completed all such corrections to the satisfaction of the Project Manager and delivered all finalized maintenance and operating instructions, schedules, guarantees, bonds, certificates of payment to all laborers, Subcontractors and Suppliers, certificates of inspection, marked-up record documents and other documents - all as required by the Contract Documents and after the Project Manager has indicated in writing that the Work has met the requirements for Final Completion, and subject to the provisions of Article 13.18, the CONTRACTOR may make application for payment for Final Completion following the procedure for progress payments. All remaining certificates, warranties, guarantees, releases, affidavits shall accompany the application for Final Payment, and other documentation required by the Contract Documents.

13.14 Final Payment

13.14.1 Following the issuance of payment for Final Completion, the OWNER shall conduct a final review of project documentation to verify the Work has been completed in conformance with the Contract Documents. Upon request, the CONTRACTOR shall provide the OWNER with documentation to support its review. If on the basis of the Project Manager's observation of the Work during construction and final inspection, and the Project Manager's review of the application for Final Payment and accompanying documentation - all as required by the Contract Documents; and the Project Manager is satisfied that the Work has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the OWNER will process application for Final Payment. Otherwise, the Project Manager will return the application for Final Payment to the CONTRACTOR, indicating in writing the reasons for refusing to process Final Payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the application for Final Payment.

13.14.2 If, through no fault of the CONTRACTOR, Final Completion of the Work is significantly delayed, the Project Manager shall, upon receipt of the CONTRACTOR's application for Final Payment, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by the OWNER for Work not fully completed or corrected is less than the retainage provided for in Article 13.9, and if bonds have been furnished as required in Article 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the CONTRACTOR to the OWNER with the application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

13.15 Final Acceptance

Following certification of payment of payroll and applicable taxes, and Final Payment to the CONTRACTOR, the OWNER will issue a letter of Final Acceptance, releasing the CONTRACTOR from further obligations under the Contract, except those (1) specified in Articles 13.16, 13.17, and 13.18, (2) required by law or regulation, or (3) continuing obligations established by the provisions of the Contract, such as warranty, guaranty, indemnity, insurance or bond.

13.16 CONTRACTOR's Continuing Obligation

The CONTRACTOR's obligation to perform and complete the Work and pay all laborers, Subcontractors, and Suppliers in accordance with the Contract Documents shall be absolute. Neither any progress or Final Payment by the OWNER, nor the issuance of a Certificate of Substantial Completion, nor any use or occupancy of the Work or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any review and Approval of a Shop Drawing or sample submission, nor any correction of Defective Work by the OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.

13.17 Waiver of Claims by CONTRACTOR

The making and acceptance of Final Payment will constitute a waiver of all Claims by the CONTRACTOR against the OWNER other than those previously made in writing and still unsettled.

13.18 No Waiver of Legal Rights

The OWNER shall not be precluded or be estopped by any payment, measurement, estimate, or certificate made either before or after the completion and acceptance of the Work and payment therefore, from showing the true amount and character of the Work performed and Materials furnished by the CONTRACTOR, nor from showing that any payment, measurement, estimate or certificate is untrue or is incorrectly made, or that the Work or Materials are Defective. The OWNER shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the CONTRACTOR or his Sureties, or both, such damages as it may sustain by reason of CONTRACTOR's failure to comply with requirements of the Contract Documents. Neither the acceptance by the OWNER, or any

representative of the OWNER, nor any payment for or acceptance of the whole or any part of the Work, nor any extension of the Contract Time, nor any possession taken by the OWNER, shall operate as a waiver of any portion of the Contract Documents or of any power herein reserved, or of any right to damages. A waiver by the OWNER of any breach of the Contract shall not be held to be a waiver of any other subsequent breach.

ARTICLE 14 - SUSPENSION OF WORK, DEFAULT AND TERMINATION

14.1 OWNER May Suspend Work

14.1.1 The OWNER may, at any time, suspend the Work or any portion thereof by notice in writing to the CONTRACTOR. If the Work is suspended without just cause the CONTRACTOR shall be allowed an increase in the GMP or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an Approved Claim therefore as provided in Article 15. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that suspension is due to the fault or negligence of the CONTRACTOR, or that suspension is necessary for Contract compliance, or that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the CONTRACTOR.

14.1.2 In case of suspension of Work, the CONTRACTOR shall be responsible for preventing damage to or loss of any of the Work already performed and of all Materials whether stored on or off the Site or Approved remote storage sites.

14.2 Default of CONTRACTOR

14.2.1 The OWNER may give the CONTRACTOR and its Surety a written Notice of Default if the CONTRACTOR:

- a. fails to begin the Work within the time specified in the Contract Documents,
- b. fails to use sufficient resources to assure prompt completion of the Work,
- c. performs the Work unsuitably or neglects or refuses to remove and replace rejected Materials or Work,
- d. discontinues prosecution of the Work,
- e. fails to resume stopped Work after receiving notice to do so,
- f. becomes insolvent (except that if the CONTRACTOR declares bankruptcy, termination will be under Title 11 US Code 362 and/or 365. The CONTRACTOR's bankruptcy does not relieve the Surety of any obligations to assume the Contract and complete the Work in a timely manner.),
- g. allows any final judgment to stand against him unsatisfied for a period of 60 days,
- h. makes an assignment for the benefit of creditors without the consent of the OWNER,
- i. disregards Regulatory Requirements of any public body having jurisdiction,
- j. otherwise violates in any substantial way any provisions of the Contract Documents,
- k. fails to comply with Contract minimum wage payments or civil rights requirements,
- l. is party to fraud, deception, misrepresentation , or
- m. for any cause whatsoever, fails to carry on the Work in an acceptable manner.

14.2.2 The Notice of Default will detail the conditions determined to be in default, the time within which to cure the default and may, in the OWNER's discretion, specify the actions necessary to cure the default. Failure to cure the delay, neglect or default within the time specified in the OWNER's written Notice of Default authorizes the OWNER to terminate the Contract. The OWNER may allow more time to cure than originally stated in the Notice of Default if it deems it to be in the best interests of the OWNER. The OWNER will provide CONTRACTOR and its surety with a written termination that details the default and the failure to cure it.

14.2.3 If the CONTRACTOR or Surety, within the time specified in the above Notice of Default, shall not proceed to cure the default in accordance therewith, then the OWNER may, upon written notification of termination from the OWNER of the fact of such delay, neglect or default and the CONTRACTOR's failure to comply with such notice, have full power and authority without violating the Contract, to take the prosecution of the Work out of the hands of the CONTRACTOR. The OWNER may terminate the services of the CONTRACTOR, exclude the CONTRACTOR from the Site and take possession of the Work and of all the CONTRACTOR's tools, appliances, construction equipment, machinery plant and associated items at the Site and use the same to the full extent they could be used by the CONTRACTOR (without liability to the CONTRACTOR for trespass or conversion), incorporate in the Work all Materials and Equipment stored at the Site or for which the OWNER has paid the CONTRACTOR but which are stored elsewhere, and finish the Work as the OWNER may deem expedient. The OWNER may enter into an agreement for the completion of said Work according to the terms and provisions thereof, or use such other methods that in the opinion of the OWNER are required for the completion of the Work in an acceptable manner.

14.2.4 Rather than taking over the Work itself, the OWNER may, by written notice to the CONTRACTOR and its Surety or its representative, transfer the employment of the Work from the CONTRACTOR to the Surety, or if the CONTRACTOR abandons the Work undertaken under the Contract, the OWNER may, at its option with written notice to the Surety and without any written notice to the CONTRACTOR, transfer the employment for said Work directly to the Surety. The Surety shall submit its plan for completion of the Work, including any contracts or agreements with third parties for such completion, to the OWNER for Approval prior to beginning completion of the Work. Approval of such contracts shall be in accordance with all applicable requirements and procedures for Approval of subcontracts as stated in the Contract Documents.

14.2.5 On receipt of the transfer notice, the Surety must take possession of all tools, appliances, construction equipment, machinery plant and associated items at the work Site, provide required items, employ an appropriate work force, and complete the Work, as specified. The Contract specifications and requirements shall remain in effect. However the OWNER will make subsequent Contract payments directly to the Surety for Work performed under the terms of the Contract. The CONTRACTOR forfeits any right to Claim for the same Work or any part thereof and is not entitled to receive any further balance of the amount to be paid under the Contract.

14.2.6 If the Contract is terminated for default, the CONTRACTOR and the Surety shall be jointly and severally liable for damages for delay as provided by Article 11.8, and for the excess cost of completion, and all costs and expenses incurred by the OWNER in completing the Work or arranging for completion of the Work, including but not limited to costs of assessing the Work to be done, costs associated with advertising, soliciting or negotiating for bids or proposals for completion, and other re-procurement costs. Following termination the CONTRACTOR shall not be entitled to receive any further balance of the amount to be paid under the Contract until the Work is fully finished and accepted, at which time if the unpaid balance exceeds the amount due the OWNER and any amounts due to persons for whose benefit the OWNER has withheld funds, such excess shall be paid by the OWNER to the CONTRACTOR or the Surety, as appropriate. If the damages, costs, and expenses due the OWNER exceed the unpaid balance, the CONTRACTOR and his Surety shall pay the difference.

14.2.7 If, after notice of termination of the CONTRACTOR's right to proceed under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, or that termination was wrongful, the rights and obligations of the parties shall be determined in accordance with the clause providing for convenience termination.

14.3 Rights or Remedies

Where the CONTRACTOR's services have been so terminated by the OWNER, the termination will not affect any rights or remedies of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due the CONTRACTOR by the OWNER will not release the CONTRACTOR from liability.

14.4 Convenience Termination

14.4.1 The performance of the Work may be terminated by the OWNER in accordance with this section in whole or in part, whenever, for any reason the OWNER shall determine that such termination is in the best interest of the OWNER. Any such termination shall be effected by delivery to the CONTRACTOR of a Notice of Termination, specifying termination is for the convenience of the OWNER and the extent to which performance of Work is terminated, and the date upon which such termination becomes effective.

14.4.2 Immediately upon receipt of a Notice of Termination and except as otherwise directed by the OWNER, the CONTRACTOR shall:

- a. Stop Work on the date and to the extent specified in the Notice of Termination;
- b. Place no further orders or subcontracts for Materials, services, or facilities except as may be necessary for completion of such portion of the Work as is not terminated;
- c. Terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;
- d. With the written Approval of the OWNER, to the extent it may require, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, the cost of which would be reimbursable, in whole, or in part, in accordance with the provisions of the Contract;
- e. Submit to the OWNER a list, certified as to quantity and quality, of any or all items of termination inventory exclusive of items the disposition of which had been directed or authorized by the OWNER;
- f. Transfer to the OWNER the completed or partially completed record drawings, Shop Drawings, information, and other property which, if the Contract had been completed, would be required to be furnished to the OWNER;
- g. Take such action as may be necessary, or as the OWNER may direct, for the protection and preservation of the property related to the Contract which is in the possession of the CONTRACTOR and in which the OWNER has or may acquire any interest.

The CONTRACTOR shall proceed immediately with the performance of the above obligations.

14.4.3 When the OWNER orders termination of the Work effective on a certain date, all Work in place as of that date will be paid for in accordance with Article 13 of the Contract. Materials required for completion and on hand but not incorporated in the Work will be paid for at invoice cost plus ten percent (10%) with Materials becoming the property of the OWNER - or the CONTRACTOR may retain title to the Materials and be paid an agreed upon lump sum. Materials on order shall be cancelled, and the OWNER shall pay reasonable factory cancellation charges with the option of taking delivery of the Materials in lieu of payment of cancellation charges. The CONTRACTOR shall be paid five percent (5%) of the cost, freight not included, of Materials cancelled, and direct expenses only for CONTRACTOR chartered freight transport which cannot be cancelled without charges, to the extent that the CONTRACTOR can establish them. The extra costs due to cancellation of bonds and insurance and that part of job start-up and phase-out costs not amortized by the amount of Work accomplished shall be paid by the OWNER. Charges for loss of profit or consequential damages shall not be recoverable except as provided above.

a. The following costs are not payable under a termination settlement agreement or OWNER's determination of the termination Claim:

1. Loss of anticipated profits or consequential or compensatory damages
2. Unabsorbed home office overhead (also termed "General & Administrative Expense") related to ongoing business operations
3. Bidding and project investigative costs
4. Direct Costs of repairing equipment to render it operable for use on the terminated work

14.4.4 The termination claim shall be submitted promptly, but in no event later than 90 days from the effective date of termination, unless extensions in writing are granted by the OWNER upon written request of the CONTRACTOR made within the 90 day period. Upon failure of the CONTRACTOR to submit his termination Claim within the time allowed, the OWNER may determine, on the basis of information available to him, the amount, if any, due to the CONTRACTOR by reason of the termination and shall thereupon pay to the CONTRACTOR the amount so determined.

14.4.5 The CONTRACTOR and the OWNER may agree upon whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of Work pursuant to this section. The Contract shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount.

14.4.6 In the event of the failure of the CONTRACTOR and the OWNER to agree in whole or in part, as provided heretofore, as to the amounts with respect to costs to be paid to the CONTRACTOR in connection with the termination of the Work, the OWNER shall determine, on the basis of information available to it, the amount, if any, due to the CONTRACTOR by reason of the termination and shall pay to the CONTRACTOR the amount determined as follows:

a. All costs and expenses reimbursable in accordance with the Contract not previously paid to the CONTRACTOR for the performance of the Work prior to the effective date of the Notice of Termination;

b. So far as not included under "a" above, the cost of settling and paying claims arising out of the termination of the Work under subcontracts or orders which are properly chargeable to the terminated portions of the Contract;

c. So far as practicable, claims by the CONTRACTOR for idled or stand-by equipment shall be made as follows: equipment claims will be reimbursed as follows:

1. CONTRACTOR-owned equipment usage, based on the CONTRACTOR'S ownership and operating costs for each piece of equipment as determined from the CONTRACTOR'S accounting records. Under no circumstance, may the CONTRACTOR base equipment claims on published rental rates.

2. Idle or stand-by time for CONTRACTOR-owned equipment, based on the CONTRACTOR'S internal ownership and depreciation costs. Idle or stand-by equipment time is limited to the actual period of time equipment is idle or on stand-by as a direct result of the termination, not to exceed 30 days. Operating expenses will not be included for payment of idle or stand-by equipment time.

3. Rented equipment, based on reasonable, actual rental costs. Equipment leased under "capital leases" as defined in Financial Accounting Standard No. 13 will be considered CONTRACTOR-owned equipment. Equipment leased from an Affiliate, division, subsidiary or other organization under common control with the CONTRACTOR will be considered CONTRACTOR-owned equipment, unless the lessor has an established record of leasing to unaffiliated lessees at competitive rates consistent with the rates the CONTRACTOR has agreed to pay and no more than forty percent (40%) of the lessor's leasing business, measured in dollars, is with organizations affiliated with the lessor.

14.4.7 The CONTRACTOR shall have the right of appeal under the Claim procedures, as defined in Article 15, for any determination made by the OWNER, except if the CONTRACTOR has failed to submit its Claim within the time provided and has failed to request extension of such time, CONTRACTOR shall have no such right of appeal. In arriving at the amount due the CONTRACTOR under this section, there shall be deducted:

- a. All previous payments made to the CONTRACTOR for the performance of Work under the Contract prior to termination;
- b. Any claim for which the OWNER may have against the CONTRACTOR;
- c. The agreed price for, or the proceeds of sale of, any Materials, supplies, or other things acquired by the CONTRACTOR or sold pursuant to the provisions of this section and not otherwise recovered by or credited to the OWNER; and,
- d. All progress payments made to the CONTRACTOR under the provisions of this section.

14.4.8 Where the Work has been terminated by the OWNER said termination shall not affect or terminate any of the rights of the OWNER against the CONTRACTOR or its Surety then existing or which may thereafter accrue because of default. Any retention or payment of monies by the OWNER due to the CONTRACTOR under the terms of the Contract shall not release the CONTRACTOR or its Surety from liability.

14.4.9 The CONTRACTOR'S termination claim may not include Claims that predated the notice for termination for convenience. Those Claims shall be prosecuted by the CONTRACTOR under Article 15.

14.4.10 The CONTRACTOR'S termination claim may not exceed the GMP as awarded plus agreed upon Change Orders less the amounts that have been paid for Work completed.

a. Unless otherwise provided for in the Contract Documents, or by applicable statute, the CONTRACTOR, from the effective date of termination and for a period of 3 years after final settlement under the Contract, shall preserve and make available to the OWNER at all reasonable times at the office of the CONTRACTOR, all its books, records, documents, and other evidence bearing on the cost and expenses of the CONTRACTOR under the Contract and relating to the Work terminated hereunder.

b. Definitions. In this Article 14.4, the term "cost" and the term "expense" mean a monetary amount in U.S. Dollars actually incurred by the CONTRACTOR, actually reflected in its contemporaneously maintained accounting or other financial records and supported by original source documentation.

Cost Principles. The OWNER may use the federal cost principles at 48 CFR §§ 31.201-1 to 31.205-52 (or succeeding cost principles for fixed price contracts) as guidelines in determining allowable costs under Article 14.4 to the extent they are applicable to construction contracts and consistent with the specifications of this Contract. The provisions of this Contract control where they are more restrictive than, or inconsistent with, these federal cost principles.

ARTICLE 15 - CLAIMS FOR ADJUSTMENT AND DISPUTES

15.1 Notification

15.1.1 The CONTRACTOR shall notify the OWNER in writing as soon as the CONTRACTOR becomes aware of any act or occurrence which may form the basis of a Claim for additional compensation or an extension of Contract Time or of any dispute regarding a question of fact or interpretation of the Contract Documents. The OWNER has no obligation to investigate any fact or occurrence that might form the basis of a Claim or to provide any additional compensation or extension of Contract Time unless the CONTRACTOR has notified the OWNER in writing in a timely manner of all facts the CONTRACTOR believes form the basis for the Claim.

15.1.2 If the CONTRACTOR believes that he is entitled to an extension of Contract Time, the CONTRACTOR must state the Contract section on which he bases his extension request, provide the OWNER with sufficient

information to demonstrate that the CONTRACTOR has suffered excusable delay, and show the specific amount of time to which the CONTRACTOR is entitled. The OWNER will not grant an extension of Contract Time if the CONTRACTOR does not timely submit revised schedules under Article 6.8.

15.1.3 If the matter is not resolved by agreement within 7 days, the CONTRACTOR shall submit an Intent to Claim, in writing, to the OWNER within the next 14 days.

15.1.4 If the CONTRACTOR believes additional compensation or time is warranted, then he must immediately begin keeping complete, accurate, and specific daily records concerning every detail of the potential Claim including actual costs incurred. The CONTRACTOR shall provide the OWNER access to any such records and furnish the OWNER copies, if requested. Equipment costs must be based on the CONTRACTOR's internal rates for ownership, depreciation, and operating expenses and not on published rental rates.

15.1.5 If the Claim or dispute is not resolved by the OWNER, then the CONTRACTOR shall submit a written Claim to the Contracting Officer within 90 days after the CONTRACTOR becomes aware of the basis of the Claim or should have known the basis of the Claim, whichever is earlier. The Contracting Officer will issue written acknowledge of the receipt of the Claim.

15.1.6 The CONTRACTOR waives any right to Claim if the OWNER was not notified properly or afforded the opportunity to inspect conditions or monitor actual costs or if the Claim is not filed on the date required.

15.2 Presenting the Claim

15.2.1 The Claim shall be submitted in accordance with ARRC Procurement Rule 1800.12 and shall include all of the following:

- a. The act, event, or condition the Claim is based on
- b. The Contract provisions which apply to the Claim and provide relief
- c. The item or items of Work affected and how they are affected
- d. The specific relief requested, including additional Contract Time if applicable, and the basis upon which it was calculated
- e. A statement certifying that the Claim is made in good faith, that the supporting cost and pricing data are accurate and complete to the best of the CONTRACTOR'S knowledge and belief, and that the amount requested accurately reflects the Contract adjustment which the CONTRACTOR believes is due.

15.3 Claim Validity, Additional Information, and OWNER's Action

15.3.1 The Claim, in order to be valid, must not only show that the CONTRACTOR suffered damages or delay but that it was caused by the act, event, or condition complained of and that the Contract provides entitlement to relief for such act, event, or condition.

15.3.2 The Contracting Officer can make written request to the CONTRACTOR at any time for additional information relative to the Claim. The CONTRACTOR shall provide the Contracting Officer the additional information within 30 days of receipt of such a request. Failure to furnish the additional information may be regarded as a waiver of the Claim.

15.4 Contracting Officer's Decision

The CONTRACTOR will be furnished with the Contracting Officer's Decision within 90 days, unless the Contracting Officer requests additional information or gives the CONTRACTOR notice that the time for issuing a decision is being extended for a specified period. The Contracting Officer's decision is final and conclusive unless, within 14 days of receipt of the decision, the CONTRACTOR delivers a Notice of Appeal in accordance

with ARRC Procurement Rule 1800.13. The appeal of CONTRACTOR's Claim shall be handled in accordance with the provisions of ARRC Procurement Rules 1850.1-1850.22.

15.5 Fraud and Misrepresentation in Making Claims

Criminal and Civil penalties authorized under AS 36.30.687 (including, but not limited to, forfeiture of all claimed amounts) may be imposed on the CONTRACTOR if the CONTRACTOR makes or uses a misrepresentation in support of a Claim or defrauds or attempt to defraud the OWNER at any stage of prosecuting a Claim under this Contract.

INDEX TO GENERAL CONDITIONS

A	Article or Article Number
Acceptance of Insurance	5.3
Access to the Work	8.2; 13.11; 12.2
Actual Damages	11.8
Addenda-definition of	Article 1
Advertisement - definition of	Article 1
Alaska Agricultural/Wood Products	7.12.3
Alaska Bidder - definition of	7.12.1
Alaska Preferences	7.12
Alaska Products	7.12.2
Application for Payment-definition of	Article 1
Application for Payment, Final	13.2
Application for Progress Payment	13.3
Application for Progress Payment-review of	13.4
Approved or Approval -definition of	Article 1
Architect/Engineer (A/E) -definition of	Article 1
Authorized Minor Variations in Work	9.3.2
Availability of Lands	4.1
Award-defined	Article 1
B	
Before Starting Construction	11.2
Bid Bonds-definition of	Article 1
Bidder-definition of	Article 1
Bonds and insurances-in general	Article 5
Bonds, Delivery of	5.1
Bonds, Performance and Other	5.2
Builder's Risk Insurance ("ALL RISK")	5.4.3.d
C	
Cash Allowances	10.8
Change Order-definition of	Article 1
Change Orders-to be executed	9.4
Changes in the Work	9.1
Claims, Waiver of-on Final Payment.....	13.17
Clarifications and Interpretations.....	2.2.1.d; 3.6
Cleaning.....	6.5
Completion, Final	13.14
Completion, Substantial	13.10
Conferences, Preconstruction	6.6.1
Conflict, Error, Discrepancy-CONTRACTOR to Report	3.5
Construction Quality Control Plan	6.28
Construction Machinery, Equipment, etc	6.4
Continuing the Work	6.23
Contract-definition of	Article 1
Contract Documents-amending and Supplementing	9.1; 9.4; 9.6
Contract Documents- definition of	Article 1
Contract Documents-Intent	3.4
Contract Documents-Reuse of	3.7
GMP Contract Price, Change of	9.4; 9.6; 10.1

GMP Contract Price-definition of	Article 1
Contracting Officer's Authorities and Limitations	2.1
Contracting Officer- definition of	Article 1
Contracting Officer's Evaluations	2.2
Contract Time, Change of.....	9.4; 9.6; 11.4
Contract Time, Commencement of	11.1
Contract Time-definition of	Article 1
CONTRACTOR-definition of	Article 1
CONTRACTOR May Stop Work or Terminate	3.5.1; 4.6; 14.4.1
CONTRACTOR'S Continuing Obligation	13.5
CONTRACTOR'S Duty to Report Discrepancy in Documents	3.5
CONTRACTOR'S Fee-Cost Plus	10.3.3
CONTRACTOR'S Liability Insurance	5.4.3
CONTRACTOR'S Records	6.26
CONTRACTOR'S Responsibilities-in general	Article 6
CONTRACTOR'S Warranty to Title	13.6
CONTRACTOR's-other	8.1; 8.2
Contractual Liability Insurance	5.4.3.b
Coordination	6.13.8; 8.4
Copies of Contract Documents	3.2
Correction or Removal of Defective Work	12.6
Correction Period, One Year	12.7
Correction, Removal or Acceptance of Defective Work-in general	12.6; 12.8
Cost and Pricing Data	10.3.4
Cost-net decrease	10.6.2.c; 10.6.d
Cost of Work	10.5
Costs, Supplemental	10.5.1.f

D

Day, Calendar-definition of	Article 1
Defective-definition of	Article 1
Defective Work, Acceptance of	12.8
Defective Work, Correction or Removal of	12.6; 12.9
Defective Work-in general	12.6; 12.8
Defective Work, Rejecting	12.4.2; 12.5
(February 2009) 00700-60	
Definitions	Article 1
Delivery of Bonds	5.1
Document Control	3.8
OWNER May Correct Defective Work	12.9
OWNER May Stop Work	12.5
OWNER May Suspend Work	14.1
OWNER'S Liability Insurance	5.4.3.d
OWNER'S Responsibilities-in general	2.1
OWNER'S Separate Representative at Site	2.1.1; 2.1.3
Determination for Unit Prices	10.10
Differing Site Conditions	9.9
Directive-definition of	Article 1
Directive-to be executed	9.3
Directive-required performance	9.3.5
Disadvantaged and Women Business Enterprise	10.11
Disputes, Decisions by Contracting Officer	2.2.1; 15.4
Documents, Copies of Contract	3.2
Documents, Record	6.16; 13.13
Documents, Reuse	3.7

Drawings-definition of	Article 1
Drug and Alcohol-Free Workplace	6.29

E

Easements	4.1
Effective date of Contract-definition of	Article 1
Emergencies	6.19
Equipment, Labor, Materials and	6.3; 6.4; 6.5
Equivalent Materials and Equipment	6.9
Explorations of physical conditions	4.3
Explosives	6.25

F

Fee, CONTRACTOR'S-Costs Plus	10.3.3
Final Acceptance	13.15
Final Acceptance- definition of	Article 1
Final Completion and Application for Payment	13.13
Final Completion- definition of	Article 1
Final Inspection	13.12
Final Payment	13.14
Final Payment, Processing of	13.14

G

Giving Notice	3.5.1; 4.4.4; 4.6; 5.4.2; 6.17.3; 6.19; 6.20.4; 7.4; 7.11; 8.1.4; 8.3; 9.3.6; 9.8; 9.9; 10.10; 11.1; 11.2; 11.5; 12.1; 12.3.1; 12.3.4; 12.9; 13.10; 13.12; 14.1.1; 14.2.1 thru 14.2.4; 14.4.1; 15.1; 15.5
Guarantee of Work-by CONTRACTOR	12.1

I

Indemnification	7.1; 7.3; 5.5
Inspection, Final	13.12
Inspection, Tests and	12.3
Install-definition of	Article 1
Insurance, Bonds and- in general	Article 5
Insurance, Certification of	5.4.2
Insurance, Completed Operations	5.4.3.b
Insurance, CONTRACTOR'S Liability	5.4.3.b
Insurance, Contractual Liability	5.4.3.b
Insurance, Owner's Liability	5.4.1
Insurance, Property Damage	5.4.3.b
Insurance, Waiver of Subrogation Rights	5.4.1
Intent of Contract Documents	3.4
Interpretations and Clarifications.....	2.2.1.3; 3.6
Interim Work Authorization- definition of	Article 1
Interim Work Authorization	9.10
Investigations of physical conditions	4.3
Invitation for Bids- definition of	Article 1

L

Labor, Materials and Equipment	6.3; 6.4; 6.5
Laws and Regulations- general	Article 7
Liability Insurance- CONTRACTOR'S	5.4.1
Liability Insurance-Owner's.....	5.4.1
Liens, Resulting Judgments	14.2.1.g
Liquidated Damages	11.8
Load Limits	6.27

M

Materials and equipment- furnished by CONTRACTOR	6.4
Materials and equipment- incorporated in Work	6.5
Materials or equipment- equivalent	6.9
Multi-prime contracts	8.1

N

Notice, Giving of (See Giving Notice)	
Notice of Final Acceptance	13.15
Notice of Intent to Award-definition of	Article 1
Notice to Proceed-definition of	Article 1
Notice to Proceed-giving of	11.1; 11.2; 11.3

O

"Or-Equal" Item	6.9
Other contractors	Article 8
Other work	8.1.1
Overtime Work-authorization of	7.15; 10.4.1.b.2
OWNER - definition of	Article 1

P

Partial Utilization	13.10
Partial Utilization (See Substantial Completion)- definition of	Article 1
Partial Utilization- Property Insurance	13.10
Patent Fees and Royalties	7.3
Payment, Recommendation of	13.4
Payments to CONTRACTOR-in general	Article 13
Payments of CONTRACTOR- withholding	13.7
Performance and other Bonds	5.2
Permits	7.2
Physical Conditions-in general	Article 4
Physical Conditions- Contracting officer's review	9.9
Physical Conditions- existing structures	4.3
Physical Conditions- explorations and reports	4.3
Physical Conditions-possible document change	9.9
Physical Conditions-price and time adjustments	9.9
Physical Conditions-report of differing	4.6; 9.9
Physical Conditions- Underground Utilities	4.4
Preconstruction Conference	6.6.1
Premises, Use of	6.14
Price, Change of Contract	10.1

Price, Contract-definition of	Article 1
Progress Payment, Application for	13.1
Progress Payment-retainage	13.8
Progress schedule	6.6; 6.7; 6.8
Project-definition of	Article 1
Project Manager-definition of	Article 1
Project Representation- provision for	2.1.1
Project, Starting the	11.2
Property Insurance	5.4.3
Property Insurance- Partial Utilization	13.10
Protection, Safety and	6.17
Punch list	13.10

R

Recommendation of Progress Payment	13.4
Record Documents	6.16
Reference Points	4.7
Regulations, Laws and	Article 7
Rejecting Defective Work	12.4.2; 12.5
Related Work at Site	3.4.1
Removal or Correction of Defective Work	12.6; 12.9
Responsibilities, CONTRACTOR'S-in general	Article 6
Retainer	13.8
Reuse of Documents	3.7
Review of Shop Drawings and Samples	6.21
Right of Ways	4.1
Royalties, Patent Fees and	7.3

S

Safety and Protection	6.17
Samples	6.20; 6.21
Schedule of Progress	6.6; 6.7; 6.8
Schedule of Shop Drawing submissions	6.6; 6.7; 6.8; 6.20.1
Schedule of Values- definition	Article 1
Schedule of Values	6.6; 6.7; 6.8
Schedules, Finalizing	6.7
Shop Drawings and Samples	6.20; 6.21
Shop Drawings-definition of	Article 1
Shop Drawings, use to approve substitutions	6.9.4; 6.20.4
Site, Visits to-by Contracting Officer	2.4
Specifications-definition of	Article 1
Starting Construction, Before	6.6.1
Starting the Project	11.2
Stopping Work-by CONTRACTOR	3.5.1; 4.6; 14.4.1
Stopping Work-by Owner	12.5; 14.1
Subcontractor-definition of	Article 1
Subcontractors-in general	6.13
Subcontracts-required provisions	6.13.4; 6.13.6
Substantial Completion- certification of	13.10
Substantial Completion- definition of	Article 1
Substitute or "Or-Equal" Items	6.9
Subsurface Conditions	Article 4, 9.9
Supplemental Agreement- definition of	Article 1
Supplemental Agreement- general use	9.6

Supplemental costs	10.5.1.f
Supplemental Conditions- definition of	Article 1
Supplemental Conditions- principal references to	3.5; 4.3; 5.4; 11.8
Supplier-definition of	Article 1
Supplier-principal references	2.1.3; 3.7; 6.9; 6.12; 6.13.5; 6.20; 6.21
Surety-consent to payment	13.14.2
Surety-Consultant has no duty to	2.13
Surety-notice to	9.8; 14.2
Surety-qualification of	5.2; 5.3
Surety Replacement	5.3
Suspending Work, by Owner	14.1
Suspension of Work and Termination-in general	Article 14
Superintendent-CONTRACTOR's.....	6.2
Supervision and Superintendence	6.1; 6.2

T

Taxes-Payment by CONTRACTOR	7.2
Termination-by Owner	14.4.1
Termination, Suspension of Work and-in general	Article 14
Tests and Inspections	12.3
Time, Change of Contract.....	9.4; 11.4
Time, Computations of	11.3
Time, Contract-definition of	Article 1

U

Uncovering Work	12.4
Underground Utilities- general	4.4
Underground Utilities-not shown or indicated.....	4.6
Underground Utilities- protection of	4.4.2.d
Underground Utilities- shown or indicated	4.4.1
Unit Price Work-definition of	Article 1
Unit Price Work-general	10.9
Unit Prices	10.9.1
Unit Prices, Determination for	10.10
Use of Promises	6.14
Utility Owner's Notification	4.4.2.c; 4.4.3; 4.4.4; 4.5; 4.6
Utility, Damaged	4.5

V

Values, Schedule of	6.6; 6.7; 6.8
Variations in Work- Authorized	9.2
Visits to Site-by Contracting Officer	2.4

W

Waiver of Claims-on Final Payment.....	13.17
Waiver of Rights by insured parties	13.18
Warranty and Guarantee-by CONTRACTOR	12.1
Warranty of Title, CONTRACTOR'S	13.6
Work, Access to	8.2; 13.11; 12.2
Work-by others-general	Article 8
Work Continuing During Disputes	6.23
Work, Cost of	10.5

Work-definition of	Article 1
Work, Neglected by CONTRACTOR	14.2.1.c
Work, Stopping by CONTRACTOR	3.5.1; 4.6
Work, Stopping by Owner	12.5; 14.1

Appendix F3
Supplemental Conditions

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Supplemental Conditions

SC-5.4.2 ADD THE FOLLOWING:

TRAIN DELAYS

SC-5.4.2.1 All work on ARRC Property shall be conducted in such a manner as to prevent delays to trains or other rail traffic operated by ARRC.

SC-5.4.2.2 Should any of the Permittee/Contractor's or its subcontractor's actions or activities cause delays to trains or other rail or water traffic, the agreed amount of liquidated damages shall be at the following rates and shall be collected from the Permittee/Contractor by ARRC.

- (a) Passenger trains each: \$50 per minute of delay, 60-minute minimum charge.
- (b) All other rail traffic: \$50 per minute for each delay over five minutes, 30-minute minimum charge.
- (c) Rail barges or other Connecting Carrier Vessels: No charge for delays of one hour or less; \$1,000 per hour for each hour or any part of an hour thereafter with a minimum charge of \$6,000.

SC-5.4.2.3 Delay time will be taken from the train sheet in ARRC's Dispatcher's Office, Anchorage for all delays and such train sheet shall be the official document by which the length of time a train is delayed will be determined. If another crew is needed to relieve the original crew, the charge shall also apply to the second crew. If such delay causes a water carrier to miss a sailing, the liquidated damage computation of time covering the period of time to the next possible sailing time shall be in addition to the length of time determined by said train sheet.

(Additional Supplemental Conditions will be added during Preconstruction).

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**APPENDIX G
REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID CONTRACTS**

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**REQUIRED CONTRACT PROVISIONS
FOR
FEDERAL-AID CONTRACTS
[Revised August 19, 2013]**

The following contract provisions shall apply, where applicable, to all work performed on the contract by the contractor's own organization and by subcontractors. As provided in this Section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions and further require their inclusion in any lower tier subcontracts or purchase orders that may in turn be made. Incorporation by reference shall not be allowed. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all applicable Required Contract Provisions.

1. CARGO PREFERENCE REQUIREMENTS - 46 USC §1241, 46 CFR Part 381 [Applicable to all Federal-aid contracts involving equipment, materials or commodities which may be transported by ocean vessel]

Cargo Preference Use of United States - Flag Vessels - The contractor agrees: **a. to use** privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels; **b. to furnish** within twenty (20) working days following the date of loading for shipments originating within the United States or within thirty (30) working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding subsection to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to ARRC (through the contractor in the case of a subcontractor's bill-of-lading.) **c. to include these** requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

2. DEBARMENT, SUSPENSION, INELIGIBILITY & VOLUNTARY EXCLUSION - 49 CFR Part 29; Executive Order 12549 [Applicable to all Federal-aid contracts which exceed \$25,000]

Instructions for Certification - Lower Tier Covered Transactions:

1. By signing and submitting this bid or proposal, the prospective lower tier participant is providing the signed certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, ARRC may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to ARRC if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "persons," "lower tier covered transaction," "principal," "proposal," and voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549 [49 CFR Part 29]. You may contact ARRC for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized in writing by ARRC.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction", without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Non-procurement List issued by U.S. General Service Administration.

8. Nothing contained in the foregoing shall be construed to require establishment of system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under Paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to all remedies available to the Federal Government, ARRC may pursue available remedies including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Lower Tier Covered Transaction

(1) The prospective lower tier participant certifies, by submission of this bid or proposal, that neither it nor its "principals" [as defined at 49 CFR §29.105(p)] is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) When the prospective lower tier participant is unable to certify to the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DAVIS-BACON AND COPELAND ANTI-KICKBACK ACTS - 40 USC 3141 et seq.; 18 USC 874; 29 CFR Part 5; 49 CFR 18.36(i)(5) [Applicable to all Federal-aid construction contracts which exceed \$2,000]

(1) Minimum wages - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or

(C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(v)(A) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination with 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(v) (B) or

(C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(2) Withholding - ARRC shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, ARRC may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to ARRC for transmission to the Federal grantor agency. The payrolls submitted shall set

out accurately and completely all of the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal grantor agency or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees - (i) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must

be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements - The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(6) Subcontracts - The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment - A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements - All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards - Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - 40 USC 3701 et seq.; 29 CFR Part 5; 29 CFR §1926 [Applicable to all Federal-aid construction in excess of \$100,000 and all nonconstruction contracts which employ mechanics and laborers on a public work in excess of \$100,000]

A. Overtime (Applicable to construction and nonconstruction contracts)

(1) Overtime requirements - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages - ARRC shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

(5) Payrolls and basic records - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

B. Contract Work Hours and Safety Standards Act (Applicable to construction contracts only) (i) The Contractor agrees to comply with section 107 of the Contract Work Hours and Safety Standards Act,

40 USC § 333, and applicable DOL regulations, "Safety and Health Regulations for Construction" 29 CFR Part 1926. Among other things, the Contractor agrees that it will not require any laborer or mechanic to work in unsanitary, hazardous, or dangerous surroundings or working conditions.

(ii) **Subcontracts** - The Contractor also agrees to include the requirements of this section in each subcontract. The term "subcontract" under this section is considered to refer to a person who agrees to perform any part of the labor or material requirements of a contract for construction, alteration or repair. A person who undertakes to perform a portion of a contract involving the furnishing of supplies or materials will be considered a "subcontractor" under this section if the work in question involves the performance of construction work and is to be performed: (1) directly on or near the construction site, or (2) by the employer for the specific project on a customized basis. Thus, a supplier of materials which will become an integral part of the construction is a "subcontractor" if the supplier fabricates or assembles the goods or materials in question specifically for the construction project and the work involved may be said to be construction activity. If the goods or materials in question are ordinarily sold to other customers from regular inventory, the supplier is not a "subcontractor." The requirements of this section do not apply to contracts or subcontracts for the purchase of supplies or materials or articles normally available on the open market.

5. CLEAN WATER REQUIREMENTS - 33 USC 1251 [Applicable to all Federal-aid contracts which exceed \$100,000]

Clean Water - (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq. The Contractor agrees to report each violation to ARRC and understands and agrees that ARRC will, in turn, report each violation as required to assure notification to the Federal grantor agency and the appropriate EPA Regional Office. (2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal funds.

6. CLEAN AIR REQUIREMENTS - 42 USC 7401 et seq., 40 CFR 15.61 & 49 CFR Part 18 [Applicable to all Federal-aid contracts which exceed \$100,000]

Clean Air - (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 USC 7401 et seq. The Contractor agrees to report each violation to ARRC and understands and agrees that ARRC will, in turn, report each violation as required to assure notification to the Federal grantor agency and the appropriate EPA Regional Office. (2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal funds.

7. ACCESS TO RECORDS AND REPORTS - 49 CFR 18.36 [Applicable to all Federal-aid contracts]

Access to Records - The following access to records requirements apply to this Contract:

1. Contractor agrees to provide ARRC, the Federal grantor agency, the Comptroller General, or any of their duly authorized representatives access to the Contractor's books, documents, papers and records which are directly pertinent to this contract for the purpose of making audit, examination, excerpts and transcriptions.
2. Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
3. Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain the same until ARRC, the Federal grantor agency, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

8. FEDERAL CHANGES - 49 CFR Part 18 [Applicable to all Federal-aid contracts]

Federal Changes - Contractor shall at all times comply with all applicable Federal regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement between ARRC and the Federal grantor agency, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

9. NO GOVERNMENT OBLIGATION TO THIRD PARTIES [Applicable to all Federal-aid contracts]

(1) ARRC and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to ARRC, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

10. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS - 31 USC 3801 et seq.; 49 CFR Part 31; 18 USC 1001 [Applicable to all Federal-aid contracts]

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 USC §3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the Federally assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance, the Government reserves the right to impose the penalties of 18 USC §1001 on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

11. SEISMIC SAFETY REQUIREMENTS - 42 USC 7701 et seq. & 49 CFR Part 41 [Applicable only to Federal-aid contracts for the construction of new buildings or additions to existing buildings]

Seismic Safety - The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations, 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.

12. ENERGY CONSERVATION REQUIREMENTS - 42 USC 6321 et seq. & 49 CFR Part 18 [Applicable to all Federal-aid contracts]

Energy Conservation - The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

13. CIVIL RIGHTS REQUIREMENTS - 29 USC §623, 42 USC §2000, 42 USC §6102, 42 USC §12112, 42 USC §12132, 29 CFR Part 1630, & 41 CFR Parts 60 et seq. [Applicable to all Federal-aid contracts]

Civil Rights - The following requirements apply to the underlying contract:

1. Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 USC §2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 USC §6102, and section 202 of the Americans with Disabilities Act of 1990, 42 USC §12132, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements the Federal grantor agency may issue.

2. Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:

(a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, and 42 USC §2000e, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 CFR Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 USC §2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements the Federal grantor agency may issue.

(b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, and 29 USC § 623, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements the Federal grantor agency may issue.

(c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 USC §12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements the Federal grantor agency may issue.

3. The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance, modified only if necessary to identify the affected parties.

14. BREACHES AND DISPUTE RESOLUTION - 49 CFR Part 18 [Applicable to all Federal-aid contracts in excess of \$100,000]

Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in accordance with ARRC's Procurement Rules.

Performance During Dispute - Unless otherwise directed by ARRC, Contractor shall continue performance under this contract while matters in dispute are being resolved.

Notification - In addition to the notice requirements set out elsewhere in this contract, if the contractor becomes aware of any act or occurrence which may form the basis of a claim by the contractor for additional compensation or an extension of time for performance, or if any dispute arises regarding a question of fact or interpretation of the contract, the contractor shall immediately inform the Project Manager. If the matter cannot be resolved by agreement within 7 days, the contractor shall, within the next 14 days, submit an Intent to Claim in writing to the Project Manager. The claim, if not resolved, shall

be presented to the Project Manager, in writing, within 60 days following receipt of the Intent to Claim. Receipt of the claim will be acknowledged in writing by the Project Manager. The Contractor agrees that unless these written notices are provided, the contractor will have no entitlement to additional time or compensation for such act, event or condition.

Presenting Claim - A claim shall be submitted in accordance with ARRC Procurement Rule 1800.12 and shall specifically include the following:

1. The act, event or condition giving rise to the claim.
2. The contract provisions which apply to the claim and under which relief is provided.
3. The item or items of contract work affected and how they are affected.
4. The specific relief requested, including additional contract time if applicable, and the basis upon which it was calculated.

Claim Validity, Additional Information, & Project Manager's Actions - The claim, in order to be valid, must not only show that the contractor suffered damages or delay but that those conditions were actually a result of the act, event or condition complained of and that the contract provides entitlement to relief to the contractor for such act, event, or condition. The Project Manager reserves the right to make written request to the contractor at any time for additional information which the contractor may possess relative to the claim. The contractor agrees to provide the Project Manager such additional information within 30 days of receipt of such a request. Failure to furnish such additional information may be regarded as a waiver of the claim. The claim, if not resolved by agreement within 60 days of its receipt, will automatically be forwarded to the Manager of Purchasing & Materials for formal written decision.

Decision on Claim - The contractor will be furnished the Manager of Purchasing & Materials' decision within the next 90 days, unless additional information is requested by the ARRC. The Manager of Purchasing & Materials' decision is final and conclusive unless fraudulent as to the Claim.

Notice of Appeal - Within 14 days of receipt of the Manager of Purchasing & Materials' decision, the contractor may deliver a Notice of Appeal to ARRC in accordance with ARRC Procurement Rule 1800.13 and request a hearing. The Notice of Appeal shall include specific exceptions to the Manager of Purchasing & Materials' decision, including specific provisions of the contract, which the contractor intends to rely upon in the appeal. General assertions that the Manager of Purchasing & Materials' decision is contrary to law or to fact are not sufficient.

Decision on Appeal - The decision of the ARRC on appeal will be rendered within 90 days after the conclusion of a hearing conducted under ARRC Procurement Rule 1800.15 or the date of receipt of the Notice of Appeal, whichever is later. The time limits given above may be extended by mutual consent. The decision of ARRC on appeal shall be final and conclusive unless the Contractor appeals to the superior court in accordance with ARRC Procurement Rule 1800.18.

15. NONSEGREGATED FACILITIES [Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more]

1. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO Provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

2. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, or national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

3. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to the award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

16. NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS - 16 USC §470 et seq.
[Applicable to all Federal-Aid contracts]

In the performance of this contract, neither Contractor nor its subcontractors shall take any action (which term includes but is not limited to the seeking of any required federal license or permit, and the extraction of material or natural resources from any source whatsoever) that may affect a district, site, building, structure or object that is included in or eligible for inclusion in the National Register of Historic Places without prior notice to ARRC and compliance with the requirements of the National Historic Preservation Act of 1966, 16 USC § 470 et seq. Contractor is advised that both historic and cultural sites may be eligible for inclusion on the National Register.

17. FLY AMERICA REQUIREMENT - 49 USC §40118; 41 CFR § 301-3.61(b) & 301-10.131 et seq.
[Applicable to all Federal-aid contracts which may involve the international air transportation of equipment, materials, commodities, products or personnel]

The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

18. RECYCLED PRODUCTS - 42 USC §6962; 40 CFR PART 247 [Applicable to all Federal-aid contracts for items designated by the EPA, for the purchase of \$10,000 or more of one of these items during the fiscal year]

The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 USC 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247. The contractor agrees to include this requirement in all subcontracts issued pursuant to this contract when the subcontract may involve the purchase of said items.

19. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION TERMS - FTA Circular 4220.1F [Applicable to all FTA funded contracts]

The provisions herein include, in part, certain Standard Terms and Conditions required by USDOT, whether or not expressly set forth in the contract provisions. All contractual provisions required by USDOT, as set forth in FTA Circular 4220.1F are incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this agreement. The contractor shall not perform any act, fail to perform any act, or refuse to comply with any ARRC requests which would cause ARRC to be in violation of the FTA terms and conditions.

20. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM [Applicable to all FTA and FHWA funded contracts]

1. Assurance - The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 C.F.R. Part 26 in the award and administration of U.S. Department of Transportation-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the ARRC deems appropriate.

2. Contract Goal - This contract has no contract goal for the participation of Disadvantaged Business Enterprises (DBEs). Nonetheless, the ARRC strongly encourages the contractor to use the services of small businesses, including DBEs, as subcontractors whenever possible. The ARRC requests that the contractor consider such measures as: (1) subcontracting to small businesses, including DBEs, portions of the work the contractor might otherwise do with its own forces; (2) reducing or waiving subcontractor bonding requirements for small businesses, including DBEs; (3) reviewing the list of businesses certified in the Small Business Administration's 8(a) Business Development Program for potential subcontractors [contact the SBA at (907) 271-4022] and (4) reviewing the list of businesses certified as DBEs by the Alaska Unified Certification Program for potential subcontractors [<http://www.dot.state.ak.us/cvlrts/directory.shtml>].

3 Prompt Payment - The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than thirty (30) days from the receipt of each payment the prime contractor receives from the ARRC. The prime contractor agrees further to return retainage payments to each subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed. Any retainage not returned to a subcontractor will be reported to the ARRC by the prime contractor. This clause applies to both DBE and non-DBE subcontractors.

21. FHWA BUY AMERICA REQUIREMENTS - 23 CFR §635.410 [Applicable only to FHWA funded construction contracts in excess of \$100,000]

Unless a waiver has been granted by the FHWA, all steel and iron materials which are incorporated into the work, and the action of applying a coating to a covered material (i.e., steel and iron), shall be manufactured in the United States except that minor amounts of steel and iron materials of foreign manufacture may be used, provided the aggregate cost of such materials does not exceed one tenth of one percent (0.1 percent) of the total contract amount, or \$2500, whichever is greater. Coating includes epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of a material subject to the requirements of this section. For the purposes of this section, the cost is the value of the products as they are delivered to the project. When steel and iron materials manufactured in the United States are shipped to a foreign country where non-steel or iron products are installed on or in them (i.e., electronic components in a steel cabinet), the steel and iron is considered to meet the requirements of this section. A certification of materials origin, attesting to compliance with this provision, shall be furnished to the Engineer prior to incorporating any steel or iron products into the project. Bidders may submit an alternate bid for the project based on the use of foreign iron or steel materials. In this event, the contract will be awarded to the bidder who submits the lowest total responsive bid based on furnishing domestic iron and steel materials unless such total bid exceeds the lowest total responsive bid based on furnishing foreign steel and iron materials by more than 25 percent.

Certificate of Compliance with 23 CFR §635.410

The bidder or offeror hereby certifies that it will comply with the requirements of 23 CFR §635.410.

Date: _____

Signature: _____

Company Name: _____

Title: _____

22. FTA BUY AMERICA REQUIREMENTS - 49 USC §5323(j); 49 CFR Part 661 [Applicable only to FTA funded construction contracts and contracts for the purchase of goods or rolling stock in excess of \$100,000]

Buy America - The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, microcomputer equipment, software, and small purchases (currently less than \$100,000) made with capital, operating, or planning funds. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

Certification requirement for procurement of steel, iron, or manufactured products:

Certificate of Compliance with 49 U.S.C. 5323(j)(1)

The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 C.F.R. Part 661.5.

Date: _____
Signature: _____
Company Name: _____
Title: _____

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1)

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Date: _____
Signature: _____
Company Name: _____
Title: _____

Certification requirement for procurement of buses, other rolling stock and associated equipment:

Certificate of Compliance with 49 U.S.C. 5323(j)(2)(C)

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(2)(C) and the regulations at 49 C.F.R. Part 661.11.

Date: _____
Signature: _____
Company Name: _____
Title: _____

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(2)(C)

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11, but may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 CFR 661.7.

Date: _____
Signature: _____
Company Name: _____
Title: _____

23. FRA BUY AMERICA REQUIREMENTS-SUPPLIES - 41 USC §§10a-d; 48 CFR Part 25
[Applicable only to FRA funded contracts for the purchase of goods, supplies or equipment in excess of \$100,000]

(a) The FRA requires its grantees to comply with The Buy American Act (41 U.S.C. 10) which provides that preference be given to domestic end products.

Components, as used in this clause, means those articles, materials, and supplies incorporated directly into the end products.

Domestic end product, as used in this clause, means (1) an unmanufactured end product mined or produced in the United States, or (2) an end product manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as the products referred to in subparagraphs (b) (2) or (3) of this clause shall be treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

End products, as used in this clause, means those articles, materials, and supplies to be acquired for public use under this contract.

(b) The Contractor shall deliver only domestic end products, except those-

(1) For use outside the United States;

(2) That government agencies have determined are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality. A current list of such items is contained in 48 CFR 25.108.

(3) For which the agency determines that domestic preference would be inconsistent with the public interest; or

(4) For which the agency determines the cost to be unreasonable under 48 CFR 25.105. The offered price of a domestic end product shall be determined to be unreasonable when the lowest acceptable domestic offer exceeds the lowest acceptable foreign offer, inclusive of duty, by more than 6 percent, if the domestic offer is from a large business or more than 12 percent, if the domestic offer is from a small business concern.

A bidder must submit to ARRC the Buy America certification (below) with its bid response for FRA funded supply contracts. Bids that are not accompanied by a completed Buy America certification may be rejected as nonresponsive.

Certificate of Compliance with 41 USC §§10a-d - Supplies

The bidder or offeror hereby certifies that the products it proposes to supply hereunder comply with the requirements of 49 USC §§10a-d and the applicable regulations in 48 CFR Part 25.

Date: _____

Signature: _____

Company Name: _____

Title: _____

24. FRA BUY AMERICA REQUIREMENT-CONSTRUCTION - 41 USC §10a-d; 48 CFR Part 25
[Applicable only to FRA funded construction contracts in excess of \$100,000]

(a) The FRA requires its grantees to comply with The Buy American Act (41 U.S.C. 10) which provides that preference be given to domestic construction materials. As used in this clause-

Components means those articles, materials, and supplies incorporated directly into construction materials.

Construction material means an article, material, or supply brought to the construction site for incorporation into the building or work. Construction material also includes an item brought to the site pre-assembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, which are discrete systems incorporated into a public building or work and which are produced as a complete system, shall be evaluated as a single and distinct construction material regardless of when or how the individual parts or components of such systems are delivered to the construction site.

Domestic construction material means (1) an unmanufactured construction material mined or produced in the United States, or (2) a construction material manufactured in the U.S., if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of cost of all its components. Materials of foreign origin of the same class or kind as the materials listed in 48 CFR 25.108 shall be treated as domestic.

(b)(1) The Buy American Act (41 U.S.C. 10a-10d) requires that only domestic construction material be used in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) The requirement in paragraph (b)(1) of this clause does not apply to the excepted construction materials or components listed by the Government as follows: NONE

(3) Other foreign construction material may be used on this project if ARRC determines that-

(i) The cost would be unreasonable (the cost of a particular domestic construction material shall be determined to be unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent, unless the agency head determines a higher percentage to be appropriate);

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(4) The Contractor agrees that only domestic construction materials will be used by the Contractor, subcontractors, material men, and suppliers in the performance of this contract, except for foreign construction materials, if any, listed in paragraph (b)(2) or allowed under paragraph (b)(3) of this clause.

(c) *Request for determination.* (1) Contractors requesting to use foreign construction material under paragraph (b)(3) of this clause shall provide adequate information for ARRC evaluation of the request for a determination regarding the inapplicability of the Buy American Act in time to allow determination before submission of bids or offers. Each submission shall include a description of the foreign and domestic construction materials, including unit of measure, quantity, price, time of delivery or availability, location of the construction project, name and address of the proposed contractor, and a detailed justification of the reason for use of foreign materials cited in accordance with paragraph (b)(3) of this clause. A submission based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause. The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(2) If ARRC determines after contract award that an exception to the Buy American Act applies, the contract shall be modified to allow use of the foreign construction material, and adequate consideration shall be negotiated. However, when the basis for the exception is the unreasonable price of a domestic

construction material, adequate consideration shall not be less than the differential established in paragraph (b)(3)(i) of this clause.

(3) If ARRC does not determine that an exception to the Buy American Act applies, the use of that particular foreign construction material will be a failure to comply with the Act.

(d) For evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the following information and any applicable supporting data based on the survey of suppliers shall be included in the request:

**FOREIGN AND DOMESTIC CONSTRUCTION
MATERIALS PRICE COMPARISON**

Construction material description	Unit of Measure	Quantity	Price (Dollars) ^{1/}
Item 1: Foreign construction material Domestic construction material			
Item 2: Foreign construction material Domestic construction material			

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary. Include other applicable supporting information.

^{1/}Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

A bidder must submit to ARRC the Buy America certification (below) with its bid response for FRA funded construction. Bids that are not accompanied by a completed Buy America certification may be rejected as nonresponsive.

Certificate of Compliance with 41 USC § 101a-d - Construction

The bidder or offeror hereby certifies that the construction materials it proposes to provide hereunder comply with the requirements of 49 USC §§101a-d and the applicable regulations in 48 CFR Part 25.

Date: _____

Signature: _____

Company Name: _____

Title: _____

25. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING - 31 USC §1352, 49 CFR Parts 19, 20 [Applicable to all Federal-aid contracts and to all related subcontracts which exceed \$100,000]

A bidder must submit to ARRC the below certification with its bid response for any Federally funded contract that exceeds \$100,000. Bids that are not accompanied by a completed certification may be rejected as nonresponsive.

1. The undersigned Contractor certifies, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. The undersigned also agrees that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.
3. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 USC 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____ certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 USC 3801, *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official: _____

Name and Title of Contractor's Authorized Official: _____

Date: _____

26. FTA PRE-AWARD AND POST DELIVERY AUDITS REQUIREMENTS - 49 U.S.C. 5323 & 49 CFR Part 663 [Applicable only to FTA funded contracts for the purchase of rolling stock in excess of \$100,000]

Pre-Award and Post-Delivery Audit Requirements - The Contractor agrees to comply with 49 U.S.C. § 5323(l) and FTA's implementing regulation at 49 C.F.R. Part 663 and to submit the following certifications:

(1) Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Bidder/Offeror certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and 2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

(2) Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.

(3) Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit 1) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or 2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

27. CERTIFICATION REGARDING COMPLIANCE WITH 49 CFR 26.49 - ESTABLISHMENT OF DBE GOAL [Applicable to all FTA funded contracts for Transit Vehicles]

Certificate of Compliance with 49 CFR 26.49

The bidder or offeror hereby certifies that it has established a DBE goal and submitted it to the FTA for approval in accordance with the provisions of 49 CFR 26.49.

Date: _____

Signature: _____

Company Name: _____

Title: _____

**APPENDIX H
FEDERAL AND STATE WAGE PROVISIONS**

1. Federal General Decision Number AK170001, Building and Heavy Construction Wages, April 21, 2017
2. Laborers' & Mechanics' Minimum Rates of Pay, Title 36. Public Contracts, AS 36.05 & AS36.10, Wage and Hour Administration Pamphlet No. 600, April 1, 2017

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Appendix H1
Federal General Decision Number AK170001, Building and
Heavy Construction Wages, April 21, 2017

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General Decision Number: AK170001 04/21/2017 AK1

Superseded General Decision Number: AK20160001

State: Alaska

Construction Types: Building and Heavy

Counties: Alaska Statewide.

BUILDING AND HEAVY CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	01/20/2017
2	01/27/2017
3	02/17/2017
4	03/17/2017
5	03/31/2017
6	04/07/2017
7	04/21/2017

ASBE0097-001 01/01/2017

	Rates	Fringes
Asbestos Workers/Insulator (includes application of all insulating materials protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 38.68	20.07
HAZARDOUS MATERIAL HANDLER (includes preparation, wetting, stripping, removal scrapping, vacuming, bagging, and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....	\$ 37.38	19.55

BOIL0502-002 08/01/2016

	Rates	Fringes
BOILERMAKER.....	\$ 44.26	28.41

BRAK0001-002 07/01/2016

	Rates	Fringes
Bricklayer, Blocklayer, Stonemason, Marble Mason, Tile Setter, Terrazzo Worker.....	\$ 40.81	19.15
Tile & Terrazzo Finisher.....	\$ 34.79	19.15

CARP1501-001 09/01/2014

	Rates	Fringes
MILLWRIGHT.....	\$ 35.74	21.29

CARP2520-003 09/01/2014

	Rates	Fringes
Diver		
Stand-by.....	\$ 41.65	23.34
Tender.....	\$ 40.65	23.34
Working.....	\$ 81.45	23.34
Piledriver		
Carpenter.....	\$ 37.34	23.34
Piledriver; Skiff Operator and Rigger.....	\$ 37.34	23.34
Sheet Stabber.....	\$ 36.59	22.59
Welder.....	\$ 42.90	23.34

DEPTH PAY PREMIUM FOR DIVERS BELOW WATER SURFACE:

50-100 feet	\$1.00 per foot
101 feet and deeper	\$2.00 per foot

ENCLOSURE PAY PREMIUM WITH NO VERTICAL ASCENT:

5-50 FEET	\$1.00 PER FOOT/DAY
51-100 FEET	\$2.00 PER FOOT/DAY
101 FEET AND ABOVE	\$3.00 PER FOOT/DAY

SATURATION DIVING:

The standby rate applies until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. the diver rate shall be paid for all saturation hours.

WORK IN COMBINATION OF CLASSIFICATIONS:

Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

CARP4059-001 09/01/2014

	Rates	Fringes
CARPENTER		
Carpenter.....	\$ 37.34	23.34
Lather/Drywall Applicator...	\$ 36.59	22.59

ELEC1547-004 04/01/2017

	Rates	Fringes
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CABLE SPLICER.....	\$ 39.82	3%+25.44
ELECTRICIAN.....	\$ 39.49	3%+25.69

ELEC1547-005 04/01/2017

Line Construction

	Rates	Fringes
CABLE SPLICER.....	\$ 52.57	3%+30.81
Linemen (Including Equipment Operators, Technician).....	\$ 50.52	3%+30.81
Powderman.....	\$ 48.52	3%+30.81
TREE TRIMMER.....	\$ 35.84	3%+22.56

ELEV0019-002 01/01/2017

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 53.76	31.585+a+b

FOOTNOTE: a. Employer contributes 8% of the basic hourly rate for over 5 year's service and 6% of the basic hourly rate for 6 months to 5 years' of service as vacation paid credit. b. Eight paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day; Friday after Thanksgiving, and Christmas Day

ENGI0302-002 01/01/2017

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 40.28	22.65
GROUP 1A.....	\$ 42.04	22.65
GROUP 2.....	\$ 39.51	22.65
GROUP 3.....	\$ 38.79	22.65
GROUP 4.....	\$ 32.58	22.65
TUNNEL WORK		
GROUP 1.....	\$ 44.31	22.65
GROUP 1A.....	\$ 46.24	22.65
GROUP 2.....	\$ 43.46	22.65
GROUP 3.....	\$ 42.67	22.65
GROUP 4.....	\$ 35.84	22.65

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Roller: Breakdown, Intermediate, and Finish; Back Filler; Barrier Machine (Zipper); Beltcrete with power pack and similar conveyors; Bending Machine; Boat Coxwains; Bulldozers; Cableways, Highlines and Cablecars; Cleaning Machine; Coating Machine; Concrete Hydro Blaster; Cranes-45 tons and under or 150 foot boom and under (including jib and attachments): (a) Hydralifts or Transporters, all track or truck type,(b) Derricks; Crushers; Deck Winches-Double Drum; Ditching or Trenching Machine (16 inch or over); Drilling Machines, core, cable, rotary and exploration; Finishing Machine Operator, Concrete Paving, Laser Screed, Sidewalk, Curb and Gutter Machine; Helicopters; Hover Craft, Flex Craft, Loadmaster, Air Cushion, All Terrain Vehicle, Rollagon, Bargecable, Nodwell, and Snow Cat; Hydro Ax: Feller Buncher and similar; Loaders (2 1/2 yards through 5 yards, including

all attachments): Forklifts with telescopic boom and swing attachment, Overhead and front end, 2 1/2 yards through 5 yards, Loaders with forks or pipe clamps; Loaders, elevating belt type, Euclid and similar types; Mechanics, Bodyman; Micro Tunneling Machine; Mixers: Mobile type w/hoist combination; Motor Patrol Grader; Mucking Machines: Mole, Tunnel Drill, Horizontal/Directional Drill Operator, and/or Shield; Operator on Dredges; Piledriver Engineers, L. B. Foster, Puller or similar Paving Breaker; Power Plant, Turbine Operator, 200 k.w. and over (power plants or combination of power units over 300 k.w.); Scrapers-through 40 yards; Service Oiler/Service Engineer; Sidebooms-under 45 tons; Shot Blast Machine; Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards and under), Spreaders, Blaw Knox, Cedarapids, Barber Greene, Slurry Machine; Sub-grader (Gurries, Reclaimer, and similar types); Tack tractor; Truck mounted Concrete Pumps, Conveyor, Creter; Water Kote Machine; Unlicensed off road hauler

GROUP 1A: Camera/Tool/Video Operator (Slipline), Cranes-over 45 tons or 150 foot (including jib and attachments): (a) Clamshells and Draglines (over 3 yards), (b) Tower cranes; Licensed Water/Waste Water Treatment Operator; Loaders over 5 yds.; Certified Welder, Electrical Mechanic, Camp Maintenance Engineer, Mechanic (over 10,000 hours); Motor Patrol Grader, Dozer, Grade Tractor, Roto-mill/Profiler (finish: when finishing to final grade and/or to hubs, or for asphalt); Power Plants: 1000 k.w. and over; Quad; Screed; Shovels, Backhoes, Excavators with all attachments (over 3 yards), Sidebooms over 45 tons; Slip Form Paver, C.M.I. and similar types; Scrapers over 40 yards;

GROUP 2: Boiler-fireman; Cement Hog and Concrete Pump Operator; Conveyors (except as listed in group 1); Hoist on steel erection; Towermobiles and Air Tuggers; Horizontal/Directional Drill Locator; Licensed Grade Technician; Loaders, (i.e., Elevating Grader and Material Transfer Vehicle); Locomotives: rod and geared engines; Mixers; Screening, Washing Plant; Sideboom (cradling rock drill regardless of size); Skidder; Trenching Machine under 16 inches; Waste/ Waste Water Treatment Operator.

GROUP 3: "A" Frame Trucks, Deck Winches: single power drum; Bombardier (tack or tow rig); Boring Machine; Brooms-power; Bump Cutter; Compressor; Farm tractor; Forklift, industrial type; Gin Truck or Winch Truck with poles when used for hoisting; Grade Checker and Stake Hopper; Hoist, Air Tuggers, Elevators; Loaders: (a) Elevating-Athey, Barber Green and similar types (b) Forklifts or Lumber Carrier (on construction job site) (c) Forklifts with Tower (d) Overhead and Front-end, under 2 1/2 yds. Locomotives: Dinkey (air, steam, gas and electric) Speeders; Mechanics (light duty); Oil, Blower Distribution; Post Hole Diggers, mechanical; Pot Fireman (power agitated); Power Plant, Turbine Operator, under 200 k.w.; Pumps-water; Roller-other than Plantmix; Saws, concrete; Skid Steer with all attachments; Straightening Machine; Tow Tractor

GROUP 4: Rig Oiler/Crane Assistant Engineer; Parts and Equipment Coordinator; Swamper (on trenching machines or shovel type equipment); Spotter; Steam Cleaner; Drill Helper.

FOOTNOTE: Groups 1-4 receive 10% premium while performing tunnel or underground work. Rig Oiler/Crane Assistant Engineer shall be required on cranes over 85 tons or over 100 feet of boom.

IRON0751-003 07/01/2015

Rates Fringes

Ironworkers:

BRIDGE, STRUCTURAL, ORNAMENTAL, REINFORCING MACHINERY MOVER, RIGGER, SHEETER, STAGE RIGGER, BENDER OPERATOR.....	\$ 36.25	28.05
FENCE, BARRIER INSTALLER....	\$ 32.75	28.05
GUARDRAIL INSTALLERS.....	\$ 33.75	28.05
GUARDRAIL LAYOUT MAN.....	\$ 33.49	28.05
HELICOPTER, TOWER.....	\$ 37.25	28.05

LAB00341-005 04/01/2016

Rates Fringes

Laborers: South of the 63rd
Parallel & West of Longitude
138 Degrees

GROUP 1.....	\$ 30.00	26.17
GROUP 2.....	\$ 31.00	26.17
GROUP 3.....	\$ 31.90	26.17
GROUP 3A.....	\$ 35.18	26.17
GROUP 3B.....	\$ 38.72	23.46
GROUP 4.....	\$ 19.57	26.17
TUNNELS, SHAFTS, AND RAISES		
GROUP 1.....	\$ 33.00	26.17
GROUP 2.....	\$ 34.10	26.17
GROUP 3.....	\$ 35.09	26.17
GROUP 3A.....	\$ 38.70	26.17
GROUP 3B.....	\$ 42.59	23.46

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer(curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzlemann; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or

Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer; Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds);Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

* LAB00942-001 04/01/2017

	Rates	Fringes
Laborers: North of the 63rd Parallel & East of Longitude 138 Degrees		
GROUP 1.....	\$ 30.55	26.52
GROUP 2.....	\$ 31.55	26.52
GROUP 3.....	\$ 32.45	26.52
GROUP 3A.....	\$ 35.73	26.52

GROUP 3B.....	\$ 39.27	23.81
GROUP 4.....	\$ 20.12	26.52
TUNNELS, SHAFTS, AND RAISES		
GROUP 1.....	\$ 33.61	26.52
GROUP 2.....	\$ 34.71	26.52
GROUP 3.....	\$ 35.70	26.52
GROUP 3A.....	\$ 39.30	26.52
GROUP 3B.....	\$ 43.20	23.81

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer (curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer; Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds); Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

PAIN1959-001 09/01/2015

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
PAINTER		
BRUSH/ROLLER PAINT OR WALL COVERER.....	\$ 32.07	20.01
TAPING, TEXTURING, STRUCTURAL PAINTING, SANDBLASTING, POT TENDER, FINISH METAL, SPRAY, BUFFER OPERATOR, RADON MITIGATION, LEAD BASED PAINT ABATEMENT, HAZARDOUS MATERIAL HANDLER.....	\$ 32.59	20.01

PAIN1959-002 02/01/2016

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes
PAINTER		
Brush, Roller, Sign, Paper and Vinyl, Swing Stage, Hand Taper/Drywall, Structural Steel, and Commercial Spray.....	\$ 30.31	19.76
Machine Taper/Drywall.....	\$ 31.56	19.76
Spray-Sand/Blast, Epoxy and Tar Applicator.....	\$ 31.66	19.76

PAIN1959-003 01/01/2017

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER.....	\$ 38.63	21.54

PAIN1959-004 07/01/2012

	Rates	Fringes
FLOOR LAYER: Carpet.....	\$ 30.09	13.02

PAIN1959-006 01/01/2017

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER.....	\$ 38.63	20.82

PLAS0867-001 02/01/2016

	Rates	Fringes
PLASTERER		
North of the 63rd parallel..	\$ 37.25	20.41
South of the 63rd parallel..	\$ 37.00	20.41

PLAS0867-004 02/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
North of the 63rd parallel..	\$ 37.25	20.41
South of the 63rd parallel..	\$ 37.00	20.41

PLUM0262-002 01/01/2017

East of the 141st Meridian

	Rates	Fringes
Plumber; Steamfitter.....	\$ 38.02	26.72

PLUM0367-002 07/01/2016

South of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter.....	\$ 39.85	22.85

PLUM0375-002 07/01/2016

North of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter.....	\$ 40.81	24.25

PLUM0669-002 01/01/2015

	Rates	Fringes
SPRINKLER FITTER.....	\$ 43.75	22.57

ROOF0189-006 04/01/2016

	Rates	Fringes
ROOFER.....	\$ 42.62	15.50

SHEE0023-003 07/01/2015

South of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER.....	\$ 40.79	22.38

SHEE0023-004 07/01/2015

North of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER.....	\$ 45.93	21.44

TEAM0959-003 09/01/2016

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 39.59	21.17
GROUP 1A.....	\$ 40.86	21.17
GROUP 2.....	\$ 38.33	21.17
GROUP 3.....	\$ 37.51	21.17
GROUP 4.....	\$ 36.93	21.17
GROUP 5.....	\$ 36.17	21.17

GROUP 1: Semi with Double Box Mixer; Dump Trucks (including rockbuggy and trucks with pups) over 40 yards up to and including 60 yards; Deltas, Commanders, Rollogans and similar equipment when pulling sleds, trailers or similar equipment; Boat Coxswain; Lowboys including attached trailers and jeeps, up to and including 12 axles; Ready-mix over 12 yards up to and including 15 yards); Water Wagon (250 Bbls and above); Tireman, Heavy Duty/Fueler

GROUP 1A: Dump Trucks (including Rockbuggy and Trucks with pups) over 60 yards up to and including 100 yards; Jeeps (driver under load)

GROUP 2: Turn-O-Wagon or DW-10 not self-loading; All Deltas, Commanders, Rollogans, and similar equipment; Mechanics; Dump Trucks (including Rockbuggy and Trucks with pups) over 20 yards up to and including 40 yards; Lowboys including attached trailers and jeeps up to and including 8 axles; Super vac truck/cacasco truck/heat stress truck; Ready-mix over 7 yards up to and including 12 yards; Partsman; Stringing Truck

GROUP 3: Dump Trucks (including Rockbuggy and Trucks with pups) over 10 yards up to and including 20 yards; batch trucks 8 yards and up; Oil distributor drivers; Oil Distributor Drivers; Trucks/Jeeps (push or pull); Traffic Control Technician

GROUP 4: Buggymobile; Semi or Truck and trailer; Dumpster; Tireman (light duty); Dump Trucks (including Rockbuggy and Truck with pups) up to and including 10 yards; Track Truck Equipment; Grease Truck; Flat Beds, dual rear axle; Hyster Operators (handling bulk aggregate); Lumber Carrier; Water Wagon, semi; Water Truck, dual axle; Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame manufactured rating over 5 tons; Bull Lifts and Fork Lifts with Power Boom and Swing attachments, over 5 tons; Front End Loader with

Forks; Bus Operator over 30 passengers; All Terrain Vehicles; Boom Truck/Knuckle Truck over 5 tons; Foam Distributor Truck/dual axle; Hydro-seeders, dual axle; Vacuum Trucks, Truck Vacuum Sweepers; Loadmaster (air and water); Air Cushion or similar type vehicle; Fire Truck/Ambulance Driver; Combination Truck-fuel and grease; Compactor (when pulled by rubber tired equipment); Rigger (air/water/oilfield); Ready Mix, up to and including 7 yards;

GROUP 5: Gravel Spreader Box Operator on Truck; Flat Beds, single rear axle; Boom Truck/Knuckle Truck up to and including 5 tons; Pickups (Pilot Cars and all light duty vehicles); Water Wagon (Below 250 Bbls); Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame, manufactured rating 5 tons and under; Bull Lifts and Fork Lifts (fork lifts with power broom and swing attachments up to and including 5 tons); Buffer Truck; Tack Truck; Farm type Rubber Tired Tractor (when material handling or pulling wagons on a construction project); Foam Distributor, single axle; Hydro-Seeders, single axle; Team Drivers (horses, mules and similar equipment); Fuel Handler (station/bulk attendant); Batch Truck, up to and including 7 yards; Gear/Supply Truck; Bus Operator, Up to 30 Passengers; Rigger/Swamper

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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Appendix H2
Laborers' & Mechanics' Minimum Rates of Pay, Title 36. Public
Contracts, AS 36.05 & AS36.10, Wage and Hour Administration
Pamphlet No. 600, April 1, 2017

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Laborers' & Mechanics' Minimum Rates of Pay

Effective April 1, 2017
Issue 34

Title 36. Public Contracts
AS 36.05 & AS 36.10
Wage & Hour Administration
Pamphlet No. 600

ALASKA DEPARTMENT OF LABOR
& WORKFORCE DEVELOPMENT

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THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of Labor and
Workforce Development**

Office of the Commissioner

Post Office Box 111149
Juneau, Alaska 99811
Main: 907.465.2700
fax: 907.465-2784

April 1, 2017

TO ALL CONTRACTING AGENCIES:

At the Alaska Department of Labor and Workforce Development, our goal is putting Alaskans to work. This pamphlet is designed to help contractors awarded public construction contracts understand the most significant laws of the State of Alaska pertaining to prevailing wage and resident hire requirements.

This pamphlet identifies current prevailing wage rates and resident hire classifications for public construction contracts (any construction projects awarded by the State of Alaska or its political subdivisions, such as local governments and certain non-profit organizations). Because these rates may change, this publication is printed in the spring and fall of every year, so please be sure you are using the appropriate rates. The rates published in this edition become effective April 1, 2017.

All projects with a final bid date of April 11, 2017, or later, must pay the prevailing wage rates contained in this pamphlet. As the law now provides, these rates will remain stable during the life of a contract or for 24 calendar months, whichever is shorter. **The 24-month period begins on the date the prime contract is awarded.** Upon expiration of the initial 24-month period, the latest wage rates issued by the department shall become effective for a subsequent 24-month period or until the original contract is completed, whichever occurs first. This process shall be repeated until the original contract is completed.

The term "original contract" means the signed contract that resulted from the original bid and any amendments, including changes of work scope, additions, extensions, change orders, and other instruments agreed to by the parties that have not been subject to subsequent open bid procedures.

If a higher federal rate is required due to partial federal funding or other federal participation, the higher rate must be paid.

For additional copies of this pamphlet, contact the nearest office of the Division of Labor Standards and Safety, Wage and Hour office or the Web address at: <http://labor.state.ak.us/lss/pamp600.htm>

For questions regarding prevailing wage or resident hire requirements, please contact the nearest Wage and Hour office. These offices are listed on Page xi.

Sincerely,

A handwritten signature in cursive script that reads "Heidi Drygas".

Heidi Drygas
Commissioner

Table of Contents

Excerpts from Alaska Law

Sec. 36.05.005. Applicability.....	iii
Sec. 36.05.010. Wage rates on public construction.....	iii
Sec. 36.05.040. Filing schedule of employees, wages paid and other information	iii
Sec. 36.05.045. Notice of work and completion; withholding of payment	iii
Sec. 36.05.060. Penalty for violation of this chapter	iv
Sec. 36.05.070. Wage rates in specifications and contracts for public works	iv
Sec. 36.05.080. Failure to pay agreed wages.....	iv
Sec. 36.05.090. Payment of wages from withheld payments and listing contractors who violate contracts	iv
Sec. 36.05.900. Definition.. ..	v

Additional Information

Laborer Classification Clarification.....	v
Accommodations and Per Diem	v
Apprentice Hiring Requirements	vi
Apprentice Rates.....	vii
Fringe Benefit Plans.....	vii
Special Prevailing Wage Rate Determination.....	vii
Request for Notice of Proposed Change of Labor Standards Regulations	ix
Alaska Hire Employment Preference.....	x
Debarment List	xi

Wage Rates	Pages 1-25
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Note to Readers: The statutes and administrative regulations listed in this publication were taken from the official codes, as of the effective date of the publication. However, there may be errors or omissions that have not been identified and changes that occurred after the publication was printed. This publication is intended as an informational guide only and is not intended to serve as a precise statement of the statutes and regulations of the State of Alaska. To be certain of the current laws and regulations, please refer to the official codes.

EXCERPTS FROM ALASKA LAW

(The following statute (36.05.005) applies to projects bid on or after October 20, 2011)

Sec. 36.05.005. Applicability.

This chapter applies only to a public construction contract that exceeds \$25,000.

Sec. 36.05.010. Wage rates on public construction.

A contractor or subcontractor who performs work on a public construction contract in the state shall pay not less than the current prevailing rate of wages for work of a similar nature in the region in which the work is done. The current prevailing rate of wages is that contained in the latest determination of prevailing rate of wages issued by the Department of Labor and Workforce Development at least 10 days before the final date for submission of bids for the contract. The rate shall remain in effect for the life of the contract or for 24 calendar months, whichever is shorter. At the end of the initial 24-month period, if new wage determinations have been issued by the department, the latest wage determination shall become effective for the next 24-month period or until the contract is completed, whichever occurs first. This process shall be repeated until the contract is completed.

Sec. 36.05.040. Filing schedule of employees, wages paid, and other information.

All contractors or subcontractors who perform work on a public construction contract for the state or for a political subdivision of the state shall, before the Friday of every second week, file with the Department of Labor and Workforce Development a sworn affidavit for the previous reporting period, setting out in detail the number of persons employed, wages paid, job classification of each employee, hours worked each day and week, and other information on a form provided by the Department of Labor and Workforce Development.

Sec. 36.05.045. Notice of work and completion; withholding of payment.

- (a) Before commencing work on a public construction contract, the person entering into the contract with a contracting agency shall designate a primary contractor for purposes of this section. Before work commences, the primary contractor shall file a notice of work with the Department of Labor and Workforce Development. The notice of work must list work to be performed under the public construction contract by each contractor who will perform any portion of work on the contract and the contract price being paid to each contractor. The primary contractor shall pay all filing fees for each contractor performing work on the contract, including a filing fee based on the contract price being paid for work performed by the primary contractor's employees. The filing fee payable shall be the sum of all fees calculated for each contractor. The filing fee shall be one percent of each contractor's contract price. The total filing fee payable by the primary contractor under this subsection may not exceed \$5,000. In this subsection, "contractor" means an employer who is using employees to perform work on the public construction contract under the contract or a subcontract.
- (b) Upon completion of all work on the public construction contract, the primary contractor shall file with the Department of Labor and Workforce Development a notice of completion together with payment of any additional filing fees owed due to increased contract amounts. Within 30 days after the department's receipt of the primary contractor's notice of completion, the department shall inform the contracting agency of the amount, if any, to be withheld from the final payment.
- (c) A contracting agency
 - (1) may release final payment of a public construction contract to the extent that the agency has received verification from the Department of Labor and Workforce Development that
 - (A) the primary contractor has complied with (a) and (b) of this section;
 - (B) the Department of Labor and Workforce Development is not conducting an investigation under this title; and
 - (C) the Department of Labor and Workforce Development has not issued a notice of a violation of this chapter to the primary contractor or any other contractors working on the public construction contract; and

- (2) shall withhold from the final payment an amount sufficient to pay the department's estimate of what may be needed to compensate the employees of any contractors under investigation on this construction contract, and any unpaid filing fees.
- (d) The notice and filing fee required under (a) of this section may be filed after work has begun if
 - (1) The public construction contract is for work undertaken in immediate response to an emergency; and
 - (2) The notice and fees are filed not later than 14 days after the work has begun.
- (e) A false statement made on a notice required by this section is punishable under AS 11.56.210.

Sec. 36.05.060. Penalty for violation of this chapter.

A contractor who violates this chapter is guilty of a misdemeanor and upon conviction is punishable by a fine of not less than \$100 nor more than \$1,000, or by imprisonment for not less than 10 days nor more than 90 days, or by both. Each day a violation exists constitutes a separate offense.

Sec. 36.05.070. Wage rates in specifications and contracts for public works.

- (a) The advertised specifications for a public construction contract that requires or involves the employment of mechanics, laborers, or field surveyors must contain a provision stating the minimum wages to be paid various classes of laborers, mechanics, or field surveyors and that the rate of wages shall be adjusted to the wage rate under AS 36.05.010.
- (b) Repealed by §17 ch 142 SLA 1972.
- (c) A public construction contract under (a) of this section must contain provisions that
 - (1) the contractor or subcontractors of the contractor shall pay all employees unconditionally and not less than once a week;
 - (2) wages may not be less than those stated in the advertised specifications, regardless of the contractual relationship between the contractor or subcontractors and laborers, mechanics, or field surveyors;
 - (3) the scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work;
 - (4) the state or a political subdivision shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the contractor or subcontractors the difference between
 - (A) the rates of wages required by the contract to be paid laborers, mechanics, or field surveyors on the work; and
 - (B) the rates of wages in fact received by laborers, mechanics, or field surveyors.

Sec. 36.05.080. Failure to pay agreed wages.

Every contract within the scope of AS 36.05.070 shall contain a provision that if it is found that a laborer, mechanic, or field surveyor employed by the contractor or subcontractor has been or is being paid a rate of wages less than the rate of wages required by the contract to be paid, the state or its political subdivision may, by written notice to the contractor, terminate the contractor's right to proceed with the work or the part of the work for which there is a failure to pay the required wages and to prosecute the work to completion by contract or otherwise, and the contractor and the contractor's sureties are liable to the state or its political subdivision for excess costs for completing the work.

Sec. 36.05.090. Payment of wages from withheld payments and listing contractors who violate contracts.

- (a) The state disbursing officer in the case of a state public construction contract and the local fiscal officer in the case of a political subdivision public construction contract shall pay directly to laborers, mechanics, or field surveyors from accrued payments withheld under the terms of the contract the wages due laborers, mechanics, or field surveyors under AS 36.05.070.
- (b) The state disbursing officer or the local fiscal officer shall distribute to all departments of the state government and to all political subdivisions of the state a list giving the names of persons who have disregarded their obligations to employees. A person appearing on this list and a firm, corporation,

partnership, or association in which the person has an interest may not work as a contractor or subcontractor on a public construction contract for the state or a political subdivision of the state until three years after the date of publication of the list. If the accrued payments withheld under the contract are insufficient to reimburse all the laborers, mechanics, or field surveyors with respect to whom there has been a failure to pay the wages required under AS 36.05.070, the laborers, mechanics, or field surveyors have the right of action or intervention or both against the contractor and the contractor's sureties conferred by law upon persons furnishing labor or materials, and in the proceedings it is not a defense that the laborers, mechanics, or field surveyors accepted or agreed to accept less than the required rate of wages or voluntarily made refunds.

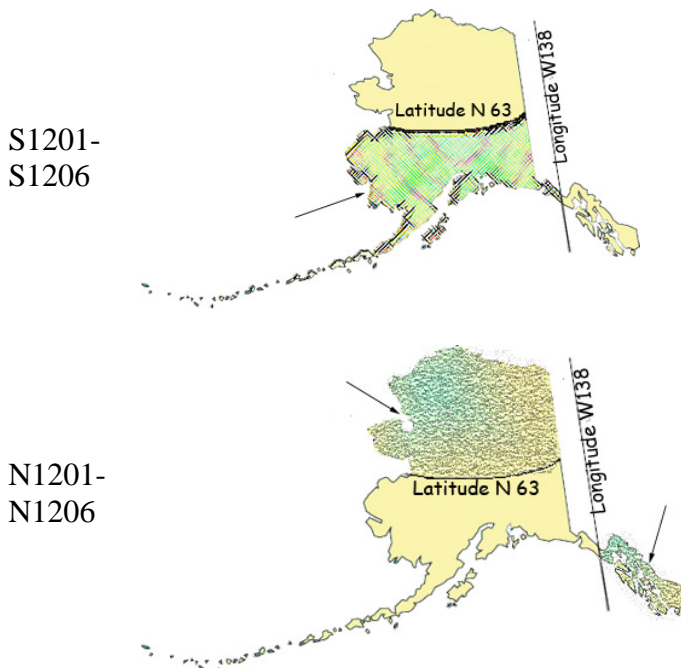
Sec. 36.05.900. Definition.

In this chapter, "contracting agency" means the state or a political subdivision of the state that has entered into a public construction contract with a contractor.

ADDITIONAL INFORMATION

LABORER CLASSIFICATION CLARIFICATION

The laborer rates categorized in class code S1201-S1206 apply in one area of Alaska; the area that is south of N63 latitude and west of W138 Longitude. The laborer rates categorized in class code N1201-N1206 apply in two areas of Alaska; the Alaska areas north of N63 latitude and east of W138 longitude. The following graphic representations should assist with clarifying the applicable wage rate categories:



ACCOMMODATIONS AND PER DIEM

The Alaska Department of Labor and Workforce Development has adopted a per diem requirement for blocklayers, bricklayers, carpenters, dredgemen, heat & frost insulators/asbestos workers, ironworkers, laborers, operative plasterers & cement masons, painters, piledrivers, power equipment operators, roofers, surveyors, truck

drivers/surveyors, and tunnel workers. This per diem rate creates an allowable alternative to providing board and lodging under the following conditions:

Employer-Provided Camp or Suitable Accommodations

Unless otherwise approved by the Commissioner, the employer shall ensure that a worker who is employed on a project that is 65 road miles or more from the international airport in either Fairbanks, Juneau or Anchorage or is inaccessible by road in a 2-wheel drive vehicle and who is not a domiciled resident of the locality of the project shall receive meals and lodging. Lodging shall be in accordance with all applicable state and federal laws. In cases where the project site is not road accessible, but the employee can reasonably get to the project worksite from their permanent residence within one hour, the Commissioner may waive these requirements for that employee upon a written request from the employer.

The term “domiciled resident” means a person living within 65 road miles of the project, or in the case of a highway project, the mid-point of the project, for at least 12 consecutive months prior to the award of the project. However, if the employer or person provides sufficient evidence to convince the department that a person has established a permanent residence and an intent to remain indefinitely within the distance to be considered a “domiciled resident,” the employer shall not be required to provide meals and lodging or pay per diem.

Where the employer provides or furnishes board, lodging or any other facility, the cost or amount thereof shall not be considered or included as part of the required prevailing wage basic hourly rate and cannot be applied to meet other fringe benefit requirements. The taxability of employer provided board and lodging shall be determined by the appropriate taxation enforcement authority.

Per Diem

Employers are encouraged to use commercial facilities and lodges; however, when such facilities are not available, per diem in lieu of meals and lodging must be paid at the basic rate of \$75.00 per day, or part thereof, the worker is employed on the project. Per diem shall not be allowed on highway projects west of Livengood on the Elliott Highway, at Mile 0 of the Dalton Highway to the North Slope of Alaska, north of Mile 20 on the Taylor Highway, east of Chicken, Alaska, on the Top of the World Highway and south of Tetlin Junction to the Alaska-Canada border.

The above-listed standards for room and board and per diem only apply to the crafts as identified in Pamphlet 600, *Laborers’ and Mechanics’ Minimum Rates of Pay*. Other crafts working on public construction projects shall be provided room and board at remote sites based on the department’s existing policy guidelines. In the event that a contractor provides lodging facilities, but no meals, the department will accept payment of \$36 per day for meals to meet the per diem requirements.

**** NEW ** APPRENTICE HIRING REQUIREMENTS**

On November 5, 2015, Governor Walker signed Administrative Order No. 278 to help ensure that there is an adequate pool of well-trained Alaskan construction workers to satisfy the industry needs. AO 278 replaced AO 226 and established a 15 percent goal for hiring federally registered apprentices in certain job categories on all public construction projects awarded by the Alaska Department of Transportation and Public Facilities and the Alaska Department of Administration that exceed \$2.5 million. The Order requires the commissioners of DOTPF and DOA to strive to require not less than 15 percent labor hours on a qualified project are performed by federally registered apprentices in the following classifications:

- | | | |
|---------------|-----------------------------------|--------------------------|
| Boilermakers | Elevator Constructors & Mechanics | Plumbers and Pipefitters |
| Bricklayers | Insulation Workers | Roofers |
| Carpenters | Ironworkers | Sheetmetal Workers |
| Cement Masons | Laborers | Surveyors |

Culinary Workers
Electricians
Equipment Operators

Mechanics
Millwrights
Painters
Piledriving Occupations

Sprinkler Fitters
Truck Drivers
Tug Boat Workers
Welders

A federally registered apprentice is enrolled in an apprentice training program under 29 U.S.C. 50 and 29 C.F.R. 29.1 – 29.13. Contractors will be expected to file apprentice utilization forms throughout the project or utilize the online certified payroll filing system available on the My Alaska website. A copy of AO 278 may be viewed in its entirety at <http://gov.state.ak.us/admin-orders/278.html> or call any Wage and Hour office to receive a copy.

APPRENTICE RATES

Apprentice rates at less than the minimum prevailing rates may be paid to apprentices according to an apprentice program which has been registered and approved by the Commissioner of the Alaska Department of Labor and Workforce Development in writing or according to a bona fide apprenticeship program registered with the U.S. Department of Labor, Office of Apprenticeship Training. **Any employee listed on a payroll at an apprentice wage rate who is not registered as above shall be paid the journeyman prevailing minimum wage in that work classification.** Wage rates are based on prevailing crew makeup practices in Alaska and apply to work performed regardless of either the quality of the work performed by the employee or the titles or classifications which may be assigned to individual employees.

FRINGE BENEFIT PLANS

Contractors/subcontractors may compensate fringe benefits to their employees in any one of three methods. The fringe benefits may be paid into a union trust fund, into an approved benefit plan, or paid directly on the paycheck as gross wages.

Where fringe benefits are paid into approved plans, funds, or programs including union trust funds, the payments must be contributed at least monthly. If contractors submit their own payroll forms and are paying fringe benefits into approved plans, funds, or programs, the employer's certification must include, in addition to those requirements of 8 AAC 30.020(c), a statement that fringe benefit payments have been or will be paid at least monthly. Contractors who pay fringe benefits to a plan must ensure the plan is one approved by the Internal Revenue Service and that the plan meets the requirements of 8 AAC 30.025 (eff. 3/2/08) in order for payments to be credited toward the prevailing wage obligation.

SPECIAL PREVAILING WAGE RATE DETERMINATION

Special prevailing wage rate determinations may be requested for special projects or a special worker classification if the work to be performed does not conform to traditional public construction for which a prevailing wage rate has been established under 8 AAC 30.050(a) of this section. Requests for special wage rate determinations must be in writing and filed with the Commissioner at least 30 days before the award of the contract. An applicant for a special wage rate determination shall have the responsibility to support the necessity for the special rate. An application for a special wage rate determination filed under this section must contain:

- (1) a specification of the contract or project on which the special rates will apply and a description of the work to be performed;
- (2) a brief narrative explaining why special wage rates are necessary;
- (3) the job class or classes involved;
- (4) the special wage rates the applicant is requesting, including survey or other relevant wage data to support the requested rates;
- (5) the approximate number of employees who would be affected; and
- (6) any other information which might be helpful in determining if special wage rates are appropriate.

Requests made pursuant to the above should be addressed to:

Director
Alaska Department of Labor and Workforce Development
Labor Standards & Safety Division
Wage and Hour Administration
P.O. Box 111149
Juneau, AK 99811-1149
-or-
Email: anchorage.lss-wh@alaska.gov

**LABOR STANDARDS REGULATIONS
NOTICE REQUEST**

If you would like to receive *notices of proposed changes to regulations* for Wage and Hour or Mechanical Inspection, please indicate below the programs for which you are interested in receiving such notices, print your name and email or mailing address in the space provided, and send this page to:

Alaska Department of Labor and Workforce Development
Labor Standards & Safety Division
Wage and Hour Administration
1251 Muldoon Road, Suite 113
Anchorage, AK 99504-2098
Email: anchorage.lss-wh@alaska.gov

For *REGULATIONS* information relating to any of the following:

- Wage and Hour Title 23 Employment Practices
- Wage and Hour Title 36 Public Works
- Employment Agencies
- Child Labor
- Employment Preference (Local Hire)
- Plumbing Code
- Electrical Code
- Boiler/Pressure Vessel Construction Code
- Elevator Code
- Certificates of Fitness
- Recreational Devices

Request any of the following *PUBLICATIONS* by checking below:

- | | |
|--|---|
| <input type="checkbox"/> Wage and Hour Title 23 Employment Practices | <input type="checkbox"/> Public Construction Pamphlet |
| <input type="checkbox"/> Minimum Wage & Overtime Poster | <input type="checkbox"/> Public Construction Wage Rates |
| <input type="checkbox"/> Child Labor Poster | <input type="checkbox"/> Child Labor Pamphlet |

PLEASE NOTE: DUE TO INCREASED MAILING AND PRINTING COSTS, ONLY ONE OF EACH PUBLICATION REQUESTED WILL BE MAILED TO YOU. IF YOU WISH TO RECEIVE ADDITIONAL COPIES OR SUBSEQUENT PUBLICATIONS, PLEASE CONTACT OUR OFFICE AT (907) 269-4900.

Name: _____

Mailing Address: _____

Email Address: _____

**DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
ALASKA EMPLOYMENT PREFERENCE INFORMATION**

By authority of AS 36.10.150 and 8 AAC 30.064, the Commissioner of Labor and Workforce Development has determined the State of Alaska to be a Zone of Underemployment. A Zone of Underemployment requires that Alaska residents who are eligible under AS 36.10.140 be given a minimum of 90 percent employment preference on public works contracts throughout the state in certain job classifications. **This 90 percent Alaska resident hiring preference applies on a project-by-project, craft-by-craft or occupational basis and must be met each workweek by each contractor/subcontractor in each of the following classifications:**

Boilermakers	Electricians	Laborers	Roofers
Bricklayers	Engineers & Architects	Mechanics	Sheet Metal Workers
Carpenters	Equipment Operators	Millwrights	Surveyors
Cement Masons	Foremen & Supervisors	Painters	Truck Drivers
Culinary Workers	Insulation Workers	Piledriving Occupations	Tug Boat Workers
	Ironworkers	Plumbers & Pipefitters	Welders

This determination became effective July 1, 2015, and remains in effect through June 30, 2017. This determination will be applied to projects with a bid submission deadline on or after July 1, 2015 and to projects previously covered by the 2013 Alaska employment preference determination. This will afford contractors an opportunity to consider the impacts of Alaska resident hire in their bids.

The first person on a certified payroll in any classification is called the "first worker" and is not required to be an Alaskan resident. However, once the contractor adds any more workers in the classification, then all workers in the classification are counted, and the 90 percent calculation is applied to compute the number of required Alaskans to be in compliance. To compute the number of Alaskan residents required in a workweek in a particular classification, multiply the total number of workers in the classification by 90 percent. The result is then rounded down to the nearest whole number to determine the number of Alaskans that must be employed in that classification.

If a worker works in more than one classification during a week, the classification in which they spent the most time would be counted for employment preference purposes. If the time is split evenly between two classifications, the worker is counted in both classifications.

If you have difficulty meeting the 90 percent requirement, an approved waiver must be obtained before a non-Alaska resident is hired who would put the contractor/subcontractor out of compliance (8 AAC 30.081 (e) (f)). The waiver process requires proof of an adequate search for qualified Alaskan workers. Qualified Alaska residents identified through the search must be hired before waivers for non-resident workers may be granted. To apply for a waiver, contact the nearest Wage and Hour Office for instructions.

Here is an example to apply the 90 percent requirement to four boilermaker workers. Multiply four workers by 90% and drop the fraction ($.90 \times 4 = 3.6 - .6 = 3$). The remaining number is the number of Alaskan resident boilermakers required to be in compliance in that particular classification for that week.

The penalties for being out of compliance are serious. AS 36.10.100 (a) states "A contractor who violates a provision of this chapter shall have deducted from amounts due to the contractor under the contract the prevailing wages which should have been paid to a displaced resident and these amounts shall be retained by the contracting agency." If a contractor/subcontractor is found to be out of compliance, penalties accumulate until they come into compliance.

Contractors are responsible for determining residency status. If you have difficulty determining whether a worker is an Alaska resident, you should contact the nearest Wage and Hour Office. Contact Wage and Hour in Anchorage at (907) 269-4900, in Fairbanks at (907) 451-2886, or in Juneau at (907) 465-4842.

**Alaska Department of Labor and Workforce Development
Labor Standards & Safety Division
Wage and Hour Administration
Web site: <http://labor.state.ak.us/lss/pamp600.htm>**

Anchorage

1251 Muldoon Road, Suite 113
Anchorage, Alaska 99504-2098
Phone: (907) 269-4900

Email:
anchorage.lss-wh@alaska.gov

Juneau

1111 W. 8th Street, Suite 302
Juneau, Alaska 99801
Phone: (907) 465-4842

Email:
juneau.lss-wh@alaska.gov

Fairbanks

Regional State Office Building
675 7th Ave., Station J-1
Fairbanks, Alaska 99701-4593
Phone: (907) 451-2886

Email:
fairbanks.lss@alaska.gov

DEBARMENT LIST

AS 36.05.090(b) states that “the state disbursing officer or the local fiscal officer shall distribute to all departments of the state government and to all political subdivisions of the state a list giving the names of persons who have disregarded their obligations to employees.”

A person appearing on the following debarment list and a firm, corporation, partnership, or association in which the person has an interest may not work as a contractor or subcontractor on a public construction contract for the state or a political subdivision of the state for three years from the date of debarment.

Company Name

Debarment Expires

Bengal Groups, LLC	November 3, 2017
Mohammed Ali, Individual	November 3, 2017
Fry’s Services, LLC	November 16, 2017
John Paul Freie, Individual	November 16, 2017
Pyramid Audio & Video, Ltd.	June 19, 2018
Jeffrey P. Schneider, Individual	June 19, 2018

Laborers' & Mechanics' Minimum Rates of Pay

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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Boilermakers

A0101	Boilermaker (journeyman)	44.26	8.57	15.34	1.60	VAC 3.00	SAF 0.34	73.11
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Bricklayers & Blocklayers

**See note on last page if remote site

A0201	Blocklayer	40.81	9.53	8.50	0.55	L&M 0.15	0.49	60.03
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Bricklayer
Marble or Stone Mason
Refractory Worker (Firebrick, Plastic, Castable, and Gunitite Refractory Applications)
Terrazzo Worker
Tile Setter

A0202	Tuck Pointer Caulker	40.81	9.53	8.50	0.55	L&M 0.15	0.49	60.03
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Cleaner (PCC)

A0203	Marble & Tile Finisher	34.79	9.53	8.50	0.55	L&M 0.15	0.49	54.01
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Terrazzo Finisher

A0204	Torginal Applicator	38.83	9.53	8.50	0.55	L&M 0.15	0.49	58.05
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Carpenters, Statewide

**See note on last page if remote site

A0301	Carpenter (journeyman)	38.34	9.78	14.56	0.70	L&M 0.10	SAF 0.15	63.63
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Lather/Drywall/Acoustical

Cement Masons, Region I (North of N63 latitude)

**See note on last page if remote site

N0401	Group I, including:	37.50	7.43	11.80	1.18	L&M 0.10		58.01
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Application of Sealing Compound
Application of Underlayment
Building, General
Cement Mason (journeyman)
Concrete

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
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Cement Masons, Region I (North of N63 latitude)

**See note on last page if remote site

N0401 Group I, including:	37.50	7.43	11.80	1.18	L&M 0.10	58.01
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- Concrete Paving
- Curb & Gutter, Sidewalk
- Curing of All Concrete
- Grouting & Caulking of Tilt-Up Panels
- Grouting of All Plates
- Patching Concrete
- Screed Pin Setter
- Spackling/Skim Coating

N0402 Group II, including:	37.50	7.43	11.80	1.18	L&M 0.10	58.01
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- Form Setter

N0403 Group III, including:	37.50	7.43	11.80	1.18	L&M 0.10	58.01
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- Concrete Saw (self-powered)
- Curb & Gutter Machine
- Floor Grinder
- Pneumatic Power Tools
- Power Chipping & Bushing
- Sand Blasting Architectural Finish
- Screed & Rodding Machine Operator
- Troweling Machine Operator

N0404 Group IV, including:	37.50	7.43	11.80	1.18	L&M 0.10	58.01
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- Application of All Composition Mastic
- Application of All Epoxy Material
- Application of All Plastic Material
- Finish Colored Concrete
- Gunite Nozzleman
- Hand Powered Grinder
- Tunnel Worker

N0405 Group V, including:	37.75	7.43	11.80	1.18	L&M 0.10	58.26
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- Plasterer

Cement Masons, Region II (South of N63 latitude)

**See note on last page if remote site

S0401 Group I, including:	37.25	7.43	11.80	1.18	L&M 0.10	57.76
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Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Cement Masons, Region II (South of N63 latitude)

**See note on last page if remote site

							L&M	
S0401	Group I, including:	37.25	7.43	11.80	1.18	0.10		57.76
	Application of Sealing Compound							
	Application of Underlayment							
	Building, General							
	Cement Mason (journeyman)							
	Concrete							
	Concrete Paving							
	Curb & Gutter, Sidewalk							
	Curing of All Concrete							
	Grouting & Caulking of Tilt-Up Panels							
	Grouting of All Plates							
	Patching Concrete							
	Screed Pin Setter							
	Spackling/Skim Coating							
S0402	Group II, including:	37.25	7.43	11.80	1.18	0.10		57.76
	Form Setter							
S0403	Group III, including:	37.25	7.43	11.80	1.18	0.10		57.76
	Concrete Saw (self-powered)							
	Curb & Gutter Machine							
	Floor Grinder							
	Pneumatic Power Tools							
	Power Chipping & Bushing							
	Sand Blasting Architectural Finish							
	Screed & Rodding Machine Operator							
	Troweling Machine Operator							
S0404	Group IV, including:	37.25	7.43	11.80	1.18	0.10		57.76
	Application of All Composition Mastic							
	Application of All Epoxy Material							
	Application of All Plastic Material							
	Finish Colored Concrete							
	Gunite Nozzleman							
	Hand Powered Grinder							
	Tunnel Worker							
S0405	Group V, including:	37.50	7.43	11.80	1.18	0.10		58.01
	Plasterer							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
Culinary Workers * See note on last page							
A0501	Baker/Cook	25.67	7.25	6.66		LEG 0.07	39.65
A0503	General Helper	22.67	7.25	6.66		LEG 0.07	36.65
	Housekeeper						
	Janitor						
	Kitchen Helper						
A0504	Head Cook	26.22	7.25	6.66		LEG 0.07	40.20
A0505	Head Housekeeper	23.04	7.25	6.66		LEG 0.07	37.02
	Head Kitchen Help						
Dredgemen							
**See note on last page if remote site							
A0601	Assistant Engineer	39.51	9.30	12.25	1.00	L&M 0.10	62.16
	Craneman						
	Electrical Generator Operator (primary pump/power barge/dredge)						
	Engineer						
	Welder						
A0602	Assistant Mate (deckhand)	38.35	9.30	12.25	1.00	L&M 0.10	61.00
A0603	Fireman	38.79	9.30	12.25	1.00	L&M 0.10	61.44
A0605	Leverman Clamshell	42.04	9.30	12.25	1.00	L&M 0.10	64.69
A0606	Leverman Hydraulic	40.28	9.30	12.25	1.00	L&M 0.10	62.93
A0607	Mate & Boatman	39.51	9.30	12.25	1.00	L&M 0.10	62.16
A0608	Oiler (dredge)	38.79	9.30	12.25	1.00	L&M 0.10	61.44
Electricians							
A0701	Inside Cable Splicer	39.82	12.67	13.01	0.95	L&M 0.20 LEG 0.15	66.80

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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Electricians

A0702	Inside Journeyman Wireman, including: Technicians	39.49	12.67	13.25	0.95	L&M	LEG	66.71
A0703	Power Cable Splicer	52.27	12.67	18.76	0.95	0.20	0.15	85.00
A0704	Tele Com Cable Splicer	47.45	12.67	15.44	0.95	L&M	LEG	76.86
A0705	Power Journeyman Lineman, including: Power Equipment Operator Technician	50.52	12.67	18.71	0.95	L&M	LEG	83.20
A0706	Tele Com Journeyman Lineman, including: Technician Tele Com Equipment Operator	45.70	12.67	18.56	0.95	L&M	LEG	78.23
A0707	Straight Line Installer - Repairman	45.70	12.67	15.39	0.95	L&M	LEG	75.06
A0708	Powderman	48.52	12.67	18.65	0.95	L&M	LEG	81.14
A0710	Material Handler	26.57	11.97	4.78	0.15	L&M	LEG	43.77
A0712	Tree Trimmer Groundman	27.17	12.67	11.56	0.15	L&M	LEG	51.85
A0713	Journeyman Tree Trimmer	35.84	12.67	11.82	0.15	L&M	LEG	60.78
A0714	Vegetation Control Sprayer	39.29	12.67	11.92	0.15	L&M	LEG	64.33
A0715	Inside Journeyman Communications CO/PBX	38.07	12.67	12.96	0.95	L&M	LEG	65.00

Elevator Workers

A0802	Elevator Constructor	37.63	15.28	15.71	0.60	L&M	VAC	72.95
A0803	Elevator Constructor Mechanic	53.76	15.28	15.71	0.60	L&M	VAC	91.62

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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Heat & Frost Insulators/Asbestos Workers

**See note on last page if remote site

A0902	Asbestos Abatement-Mechanical Systems	38.68	9.24	9.51	1.20		SAF	58.75
A0903	Asbestos Abatement/General Demolition All Systems	38.68	9.24	9.51	1.20		SAF	58.75
A0904	Insulator, Group II	38.68	9.24	9.51	1.20		SAF	58.75
A0905	Fire Stop	38.68	9.24	9.51	1.20		SAF	58.75

IronWorkers

**See note on last page if remote site

A1101	Ironworkers, including:	36.25	8.33	19.87	1.57		L&M	IAF	66.58
	Bender Operators								
	Bridge & Structural								
	Machinery Mover								
	Ornamental								
	Reinforcing								
	Rigger								
	Sheeter								
	Signalman								
	Stage Rigger								
	Toxic Haz-Mat Work								
	Welder								
A1102	Helicopter	37.25	8.33	19.87	1.57		L&M	IAF	67.58
	Tower (energy producing windmill type towers to include nacelle and blades)								
A1103	Fence/Barrier Installer	32.75	8.33	19.62	1.47		L&M	IAF	62.73
	Guard Rail Installer								
A1104	Guard Rail Layout Man	33.49	8.33	19.62	1.47		L&M	IAF	63.47

Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

**See note on last page if remote site

N1201	Group I, including:	30.55	8.21	17.06	1.25		L&M	LEG	57.47
	Asphalt Worker (shovelman, plant crew)								

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

**See note on last page if remote site

					L&M	LEG	
N1201	Group I, including:	30.55	8.21	17.06	1.25	0.20	0.20 57.47
	Brush Cutter						
	Camp Maintenance Laborer						
	Carpenter Tender or Helper						
	Choke Setter, Hook Tender, Rigger, Signalman						
	Concrete Labor (curb & gutter, chute handler, grouting, curing, screeding)						
	Crusher Plant Laborer						
	Demolition Laborer						
	Ditch Digger						
	Dumpman						
	Environmental Laborer (hazard/toxic waste, oil spill)						
	Fence Installer						
	Fire Watch Laborer						
	Flagman						
	Form Stripper						
	General Laborer						
	Guardrail Laborer, Bridge Rail Installer						
	Hydro-seeder Nozzleman						
	Laborer, Building						
	Landscaper or Planter						
	Laying of Mortarless Decorative Block (retaining walls, flowered decorative block 4 feet or less - highway or landscape work)						
	Material Handler						
	Pneumatic or Power Tools						
	Portable or Chemical Toilet Serviceman						
	Pump Man or Mixer Man						
	Railroad Track Laborer						
	Sandblast, Pot Tender						
	Saw Tender						
	Slurry Work						
	Steam Cleaner Operator						
	Steam Point or Water Jet Operator						
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)						
	Tank Cleaning						
	Utiliwalk & Utilidor Laborer						
	Watchman (construction projects)						
	Window Cleaner						

					L&M	LEG	
N1202	Group II, including:	31.55	8.21	17.06	1.25	0.20	0.20 58.47

- Burning & Cutting Torch
- Cement or Lime Dumper or Handler (sack or bulk)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

**See note on last page if remote site

					L&M	LEG	
N1202	Group II, including:	31.55	8.21	17.06	1.25	0.20	58.47
	Certified Erosion Sediment Control Lead (CESCL Laborer)						
	Choker Splicer						
	Chucktender (wagon, air-track & hydraulic drills)						
	Concrete Laborer (power buggy, concrete saws, pumpcrete nozzleman, vibratorman)						
	Culvert Pipe Laborer						
	Cured Inplace Pipelayer						
	Environmental Laborer (asbestos, marine work)						
	Foam Gun or Foam Machine Operator						
	Green Cutter (dam work)						
	Guniting Operator						
	Hod Carrier						
	Jackhammer or Pavement Breaker (more than 45 pounds)						
	Laser Instrument Operator						
	Laying of Mortarless Decorative Block (retaining walls, flowered decorative block over 4 feet - highway or landscape work)						
	Mason Tender & Mud Mixer (sewer work)						
	Pilot Car						
	Pipelayer Helper						
	Plasterer, Bricklayer & Cement Finisher Tender						
	Powderman Helper						
	Power Saw Operator						
	Railroad Switch Layout Laborer						
	Sandblaster						
	Scaffold Building & Erecting						
	Sewer Caulker						
	Sewer Plant Maintenance Man						
	Thermal Plastic Applicator						
	Timber Faller, Chainsaw Operator, Filer						
	Timberman						

					L&M	LEG	
N1203	Group III, including:	32.45	8.21	17.06	1.25	0.20	59.37
	Bit Grinder						
	Camera/Tool/Video Operator						
	Guardrail Machine Operator						
	High Rigger & Tree Topper						
	High Scaler						
	Multiplate						
	Plastic Welding						
	Slurry Seal Squeegee Man						
	Traffic Control Supervisor						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)

**See note on last page if remote site

						L&M	LEG	
N1203	Group III, including:	32.45	8.21	17.06	1.25	0.20	0.20	59.37

Welding Certified (in connection with laborer's work)

						L&M	LEG	
N1204	Group IIIA	35.73	8.21	17.06	1.25	0.20	0.20	62.65

Asphalt Raker, Asphalt Belly Dump Lay Down
 Drill Doctor (in the field)
 Driller (including, but not limited to, wagon drills, air-track drills, hydraulic drills)
 Licensed Powderman
 Pioneer Drilling & Drilling Off Tugger (all type drills)
 Pipelayers
 Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)

						L&M	LEG	
N1205	Group IV	20.12	8.21	17.06	1.25	0.20	0.20	47.04

Final Building Cleanup
 Permanent Yard Worker

						L&M	LEG	
N1206	Group IIIB	39.27	5.50	17.06	1.25	0.20	0.20	63.48

Federally Licensed Powderman (Responsible Person in Charge)
 Grade Checking (setting or transferring of grade marks, line and grade, Stake Hopper)

Laborers (The area that is south of N63 latitude and west of W138 longitude)

**See note on last page if remote site

						L&M	LEG	
S1201	Group I, including:	30.55	8.21	17.06	1.25	0.20	0.20	57.47

Asphalt Worker (shovelman, plant crew)
 Brush Cutter
 Camp Maintenance Laborer
 Carpenter Tender or Helper
 Choke Setter, Hook Tender, Rigger, Signalman
 Concrete Labor (curb & gutter, chute handler, grouting, curing, screeding)
 Crusher Plant Laborer
 Demolition Laborer
 Ditch Digger
 Dumpman
 Environmental Laborer (hazard/toxic waste, oil spill)
 Fence Installer
 Fire Watch Laborer
 Flagman

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The area that is south of N63 latitude and west of W138 longitude)

**See note on last page if remote site

					L&M	LEG	
S1201	Group I, including:	30.55	8.21	17.06	1.25	0.20	57.47
	Form Stripper						
	General Laborer						
	Guardrail Laborer, Bridge Rail Installer						
	Hydro-seeder Nozzleman						
	Laborer, Building						
	Landscaper or Planter						
	Laying of Mortarless Decorative Block (retaining walls, flowered decorative block 4 feet or less - highway or landscape work)						
	Material Handler						
	Pneumatic or Power Tools						
	Portable or Chemical Toilet Serviceman						
	Pump Man or Mixer Man						
	Railroad Track Laborer						
	Sandblast, Pot Tender						
	Saw Tender						
	Slurry Work						
	Steam Cleaner Operator						
	Steam Point or Water Jet Operator						
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)						
	Tank Cleaning						
	Utiliwalk & Utilidor Laborer						
	Watchman (construction projects)						
	Window Cleaner						

					L&M	LEG	
S1202	Group II, including:	31.55	8.21	17.06	1.25	0.20	58.47
	Burning & Cutting Torch						
	Cement or Lime Dumper or Handler (sack or bulk)						
	Certified Erosion Sediment Control Lead (CESCL Laborer)						
	Choker Splicer						
	Chucktender (wagon, air-track & hydraulic drills)						
	Concrete Laborer (power buggy, concrete saws, pumpcrete nozzleman, vibratorman)						
	Culvert Pipe Laborer						
	Cured Inplace Pipelayer						
	Environmental Laborer (asbestos, marine work)						
	Foam Gun or Foam Machine Operator						
	Green Cutter (dam work)						
	Gunite Operator						
	Hod Carrier						
	Jackhammer or Pavement Breaker (more than 45 pounds)						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The area that is south of N63 latitude and west of W138 longitude)

**See note on last page if remote site

						L&M	LEG	
S1202	Group II, including:	31.55	8.21	17.06	1.25	0.20	0.20	58.47

- Laser Instrument Operator
- Laying of Mortarless Decorative Block (retaining walls, flowered decorative block over 4 feet - highway or landscape work)
- Mason Tender & Mud Mixer (sewer work)
- Pilot Car
- Pipelayer Helper
- Plasterer, Bricklayer & Cement Finisher Tender
- Powderman Helper
- Power Saw Operator
- Railroad Switch Layout Laborer
- Sandblaster
- Scaffold Building & Erecting
- Sewer Caulker
- Sewer Plant Maintenance Man
- Thermal Plastic Applicator
- Timber Faller, Chainsaw Operator, Filer
- Timberman

						L&M	LEG	
S1203	Group III, including:	32.45	8.21	17.06	1.25	0.20	0.20	59.37

- Bit Grinder
- Camera/Tool/Video Operator
- Guardrail Machine Operator
- High Rigger & Tree Topper
- High Scaler
- Multiplate
- Plastic Welding
- Slurry Seal Squeegee Man
- Traffic Control Supervisor
- Welding Certified (in connection with laborer's work)

						L&M	LEG	
S1204	Group IIIA	35.73	8.21	17.06	1.25	0.20	0.20	62.65

- Asphalt Raker, Asphalt Belly Dump Lay Down
- Drill Doctor (in the field)
- Driller (including, but not limited to, wagon drills, air-track drills, hydraulic drills)
- Licensed Powderman
- Pioneer Drilling & Drilling Off Tugger (all type drills)
- Pipelayers
- Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Laborers (The area that is south of N63 latitude and west of W138 longitude)

**See note on last page if remote site

						L&M	LEG	
S1205	Group IV	20.12	8.21	17.06	1.25	0.20	0.20	47.04
	Final Building Cleanup							
	Permanent Yard Worker							

						L&M	LEG	
S1206	Group IIIB	39.27	5.50	17.06	1.25	0.20	0.20	63.48
	Federally Licensed Powderman (Responsible Person in Charge)							
	Grade Checking (setting or transferring of grade marks, line and grade, Stake Hopper)							

Millwrights

						L&M		
A1251	Millwright (journeyman)	36.74	9.78	12.21	1.00	0.40	0.05	60.18

						L&M		
A1252	Millwright Welder	37.74	9.78	12.21	1.00	0.40	0.05	61.18

Painters, Region I (North of N63 latitude)

**See note on last page if remote site

						L&M		
N1301	Group I, including:	32.07	8.03	11.10	1.08	0.07		52.35
	Brush							
	General Painter							
	Hand Taping							
	Hazardous Material Handler							
	Lead-Based Paint Abatement							
	Roll							

						L&M		
N1302	Group II, including:	32.59	8.03	11.10	1.08	0.07		52.87
	Bridge Painter							
	Epoxy Applicator							
	General Drywall Finisher							
	Hand/Spray Texturing							
	Industrial Coatings Specialist							
	Machine/Automatic Taping							
	Pot Tender							
	Sandblasting							
	Specialty Painter							
	Spray							
	Structural Steel Painter							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
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Painters, Region I (North of N63 latitude)

**See note on last page if remote site

N1302	Group II, including:	32.59	8.03	11.10	1.08	L&M 0.07	52.87
	Wallpaper/Vinyl Hanger						
N1304	Group IV, including:	38.63	8.03	12.46	1.05	0.05	60.22
	Glazier						
	Storefront/Automatic Door Mechanic						
N1305	Group V, including:	29.31	8.03	5.02	0.83	0.07	43.26
	Carpet Installer						
	Floor Coverer						
	Heat Weld/Cove Base						
	Linoleum/Soft Tile Installer						

Painters, Region II (South of N63 latitude)

**See note on last page if remote site

S1301	Group I, including :	30.31	8.03	10.85	1.08	L&M 0.07	50.34
	Brush						
	General Painter						
	Hand Taping						
	Hazardous Material Handler						
	Lead-Based Paint Abatement						
	Roll						
	Spray						
S1302	Group II, including :	31.56	8.03	10.85	1.08	L&M 0.07	51.59
	General Drywall Finisher						
	Hand/Spray Texturing						
	Machine/Automatic Taping						
	Wallpaper/Vinyl Hanger						
S1303	Group III, including :	31.66	8.03	10.85	1.08	L&M 0.07	51.69
	Bridge Painter						
	Epoxy Applicator						
	Industrial Coatings Specialist						
	Pot Tender						
	Sandblasting						
	Specialty Painter						
	Structural Steel Painter						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other	Benefits	THR
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Painters, Region II (South of N63 latitude)

**See note on last page if remote site

S1304	Group IV, including:	38.63	8.03	11.71	1.08		L&M	59.52
	Glazier							
	Storefront/Automatic Door Mechanic							

S1305	Group V, including:	29.31	8.03	5.02	0.83		L&M	43.26
	Carpet Installer							
	Floor Coverer							
	Heat Weld/Cove Base							
	Linoleum/Soft Tile Installer							

Piledrivers

**See note on last page if remote site

A1401	Piledriver	38.34	9.78	14.56	0.70		L&M	IAF	63.63
	Assistant Dive Tender								
	Carpenter/Piledriver								
	Rigger								
	Sheet Stabber								
	Skiff Operator								

A1402	Piledriver-Welder/Toxic Worker	39.34	9.78	14.56	0.70		L&M	IAF	64.63
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A1403	Remotely Operated Vehicle Pilot/Technician	42.65	9.78	14.56	0.70		L&M	IAF	67.94
	Single Atmosphere Suit, Bell or Submersible Pilot								

A1404	Diver (working) ***See note on last page	82.45	9.78	14.56	0.70		L&M	IAF	107.74
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A1405	Diver (standby) ***See note on last page	42.65	9.78	14.56	0.70		L&M	IAF	67.94
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A1406	Dive Tender ***See note on last page	41.65	9.78	14.56	0.70		L&M	IAF	66.94
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A1407	Welder (American Welding Society, Certified Welding Inspector)	43.90	9.78	14.56	0.70		L&M	IAF	69.19
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Plumbers, Region I (North of N63 latitude)

N1501	Journeyman Pipefitter	40.81	8.25	14.60	1.25		L&M	S&L	66.01
	Plumber								

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Plumbers, Region I (North of N63 latitude)

N1501	Journeyman Pipefitter	40.81	8.25	14.60	1.25		L&M	S&L	66.01
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Welder

Plumbers, Region II (South of N63 latitude)

S1501	Journeyman Pipefitter	39.85	8.88	12.72	1.25		L&M		62.90
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Plumber

Welder

Plumbers, Region IIA (1st Judicial District)

X1501	Journeyman Pipefitter	38.02	12.97	11.25	2.50		L&M		64.98
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Plumber

Welder

Power Equipment Operators
 **See note on last page if remote site

A1601	Group I, including:	40.28	9.30	12.25	1.00		L&M		62.93
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- Asphalt Roller: Breakdown, Intermediate, and Finish
- Back Filler
- Barrier Machine (Zipper)
- Beltcrete with Power Pack & similar conveyors
- Bending Machine
- Boat Coxswain
- Bulldozer
- Cableways, Highlines & Cablecars
- Cleaning Machine
- Coating Machine
- Concrete Hydro Blaster
- Cranes (45 tons & under or 150 feet of boom & under (including jib & attachments))
 - (a) Hydralifts or Transporters, (all track or truck type)
 - (b) Derricks
 - (c) Overhead
- Crushers
- Deck Winches, Double Drum
- Ditching or Trenching Machine (16 inch or over)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Power Equipment Operators

**See note on last page if remote site

					L&M	
A1601 Group I, including:	40.28	9.30	12.25	1.00	0.10	62.93
Drag Scraper, Yarder, and similar types						
Drilling Machines, Core, Cable, Rotary and Exploration						
Finishing Machine Operator, Concrete Paving, Laser Screed, Sidewalk, Curb & Gutter Machine						
Helicopters						
Hover Craft, Flex Craft, Loadmaster, Air Cushion, All-Terrain Vehicle, Rollagon, Bargecable, Nodwell, & Snow Cat						
Hydro Ax, Feller Buncher & similar						
Hydro Excavation (Vac-Truck and Similar)						
Licensed Line & Grade						
Loaders (2 1/2 yards through 5 yards, including all attachments):						
(a) Forklifts (with telescopic boom & swing attachment)						
(b) Front End & Overhead, (2-1/2 yards through 5 yards)						
(c) Loaders, (with forks or pipe clamp)						
(d) Loaders, (elevating belt type, Euclid & similar types)						
Material Transfer Vehicle (Elevating Grader, Pickup Machine, and similar types)						
Mechanic, Welder, Bodyman, Electrical, Camp & Maintenance Engineer						
Micro Tunneling Machine						
Mixers: Mobile type with hoist combination						
Motor Patrol Grader						
Mucking Machine: Mole, Tunnel Drill, Horizontal/Directional Drill Operator and/or Shield						
Operator on Dredges						
Piledriver Engineer, L.B. Foster, Puller or similar paving breaker						
Plant Operator (Asphalt & Concrete)						
Power Plant, Turbine Operator 200 k.w & over (power plants or combination of power units over 300 k.w.)						
Remote Controlled Equipment						
Scraper (through 40 yards)						
Service Oiler/Service Engineer						
Shot Blast Machine						
Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards & under)						
Sideboom (under 45 tons)						
Spreaders Topside (Asphalt Paver, Slurry machine, and similar types)						
Sub Grader (Gurries, Reclaimer & similar types)						
Tack Tractor						
Truck Mounted Concrete Pump, Conveyor/Tele-belt, & Creter						
Unlicensed Off-Road Hauler						
Wate Kote Machine						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Power Equipment Operators

**See note on last page if remote site

A1602 Group IA, including:	42.04	9.30	12.25	1.00	L&M		0.10	64.69
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- Camera/Tool/Video Operator (Slipline)
- Certified Welder, Electrical Mechanic, Camp Maintenance Engineer, Mechanic (over 10,000 hours)
- Cranes (over 45 tons or 150 feet including jib & attachments)
 - (a) Clamshells & Draglines (over 3 yards)
 - (b) Tower Cranes
- Licensed Water/Waste Water Treatment Operator
- Loaders (over 5 yards)
- Motor Patrol Grader, Dozer, Grade Tractor, Roto-Mill/Profiler (finish: when finishing to final grade and/or to hubs, or for asphalt)
- Power Plants (1000 k.w. & over)
- Quad
- Scrapers (over 40 yards)
- Screed
- Shovels, Backhoes, Excavators with all attachments (over 3 yards)
- Sidebooms (over 45 tons)
- Slip Form Paver, C.M.I. & similar types

A1603 Group II, including:	39.51	9.30	12.25	1.00	L&M		0.10	62.16
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- Boiler - Fireman
- Cement Hogs & Concrete Pump Operator
- Conveyors (except those listed in Group I)
- Grade Checker
- Hoists on Steel Erection, Towermobiles & Air Tuggers
- Horizontal/Directional Drill Locator
- Licensed Grade Technician
- Locomotives, Rod & Geared Engines
- Mixers
- Screening, Washing Plant
- Sideboom (cradling rock drill, regardless of size)
- Skidder
- Trenching Machines (under 16 inches)
- Water/Waste Water Treatment Operator

A1604 Group III, including:	38.79	9.30	12.25	1.00	L&M		0.10	61.44
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- "A" Frame Trucks, Deck Winches
- Bombardier (tack or tow rig)
- Boring Machine
- Brooms, Power
- Bump Cutter

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Power Equipment Operators
 **See note on last page if remote site

A1604	Group III, including:	38.79	9.30	12.25	1.00	0.10	61.44
						L&M	
	Compressor						
	Farm Tractor						
	Forklift, Industrial Type						
	Gin Truck or Winch Truck (with poles when used for hoisting)						
	Hoists, Air Tuggers, Elevators						
	Loaders:						
	(a) Elevating-Atthey, Barber Greene & similar types						
	(b) Forklifts or Lumber Carrier (on construction job sites)						
	(c) Forklifts, (with tower)						
	(d) Overhead & Front End, (under 2-1/2 yards)						
	Locomotives: Dinkey (air, steam, gas & electric) Speeders						
	Mechanics, Light Duty						
	Oil, Blower Distribution						
	Posthole Digger, Mechanical						
	Pot Fireman (power agitated)						
	Power Plant, Turbine Operator, (under 200 k.w.)						
	Pumps, Water						
	Roller (other than Asphalt)						
	Saws, Concrete						
	Skid Hustler						
	Skid Steer (with all attachments)						
	Stake Hopper						
	Straightening Machine						
	Tow Tractor						

A1605	Group IV, including:	32.58	9.30	12.25	1.00	0.10	55.23
						L&M	
	Crane Assistant Engineer/Rig Oiler						
	Drill Helper						
	Parts & Equipment Coordinator						
	Spotter						
	Steam Cleaner						
	Swamper (on trenching machines or shovel type equipment)						

Roofers
 **See note on last page if remote site

A1701	Roofer & Waterproofer	44.62	11.75	2.91	0.81	0.10	0.03	60.22
						L&M		
A1702	Rofer Material Handler	31.23	11.75	2.91	0.81	0.10	0.03	46.83
						L&M		

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Sheet Metal Workers, Region I (North of N63 latitude)

						L&M	
N1801	Sheet Metal Journeyman	47.13	10.16	10.64	1.45	0.12	69.50

- Air Balancing and duct cleaning of HVAC systems
- Brazing, soldering or welding of metals
- Demolition of sheet metal HVAC systems
- Fabrication and installation of exterior wall sheathing, siding, metal roofing, flashing, decking and architectural sheet metal work
- Fabrication and installation of heating, ventilation and air conditioning ducts and equipment
- Fabrication and installation of louvers and hoods
- Fabrication and installation of sheet metal lagging
- Fabrication and installation of stainless steel commercial or industrial food service equipment
- Manufacture, fabrication assembly, installation and alteration of all ferrous and nonferrous metal work
- Metal lavatory partitions
- Preparation of drawings taken from architectural and engineering plans required for fabrication and erection of sheet metal work
- Sheet Metal shelving
- Sheet Metal venting, chimneys and breaching
- Skylight installation

Sheet Metal Workers, Region II (South of N63 latitude)

						L&M	
S1801	Sheet Metal Journeyman	41.38	10.16	12.25	1.22	0.37	65.38

- Air Balancing and duct cleaning of HVAC systems
- Brazing, soldering or welding of metals
- Demolition of sheet metal HVAC systems
- Fabrication and installation of exterior wall sheathing, siding, metal roofing, flashing, decking and architectural sheet metal work
- Fabrication and installation of heating, ventilation and air conditioning ducts and equipment
- Fabrication and installation of louvers and hoods
- Fabrication and installation of sheet metal lagging
- Fabrication and installation of stainless steel commercial or industrial food service equipment
- Manufacture, fabrication assembly, installation and alteration of all ferrous and nonferrous metal work
- Metal lavatory partitions
- Preparation of drawings taken from architectural and engineering plans required for fabrication and erection of sheet metal work
- Sheet Metal shelving
- Sheet Metal venting, chimneys and breaching

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Class Code	Classification of Laborers & Mechanics	BHR	H&W	PEN	TRN	Other Benefits	THR
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Sheet Metal Workers, Region II (South of N63 latitude)

S1801	Sheet Metal Journeyman	41.38	10.16	12.25	1.22	L&M 0.37	65.38
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Skylight installation

Sprinkler Fitters

A1901	Sprinkler Fitter	46.00	9.17	13.65	0.47	L&M 0.25	69.54
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Surveyors

**See note on last page if remote site

A2001	Chief of Parties	42.81	10.58	10.39	1.35	L&M 0.10	65.23
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A2002	Party Chief	41.22	10.58	10.39	1.35	L&M 0.10	63.64
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A2003	Line & Grade Technician/Office Technician	40.62	10.58	10.39	1.35	L&M 0.10	63.04
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A2004	Associate Party Chief (including Instrument Person & Head Chain Person)	38.50	10.58	10.39	1.35	L&M 0.10	60.92
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A2005	Stake Hop/Grademan	35.57	10.58	10.39	1.35	L&M 0.10	57.99
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A2006	Chain Person (for crews with more than 2 people)	34.16	10.58	10.39	1.35	L&M 0.10	56.58
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Truck Drivers

**See note on last page if remote site

A2101	Group I, including:	39.59	10.58	10.39	1.35	L&M 0.10	62.01
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- Air/Sea Traffic Controllers
- Ambulance/Fire Truck Driver (EMT certified)
- Boat Coxswain
- Captains & Pilots (air & water)
- Deltas, Commanders, Rollagons, & similar equipment (when pulling sleds, trailers or similar equipment)
- Dump Trucks (including rockbuggy & trucks with pups) over 40 yards up to & including 60 yards
- Helicopter Transporter
- Lowboys, including attached trailers & jeeps, up to & including 12 axles (over 12 axles or 150 tons to be negotiated)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Truck Drivers

**See note on last page if remote site

A2101 Group I, including:	39.59	10.58	10.39	1.35	L&M		0.10	62.01
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- Material Coordinator and Purchasing Agent
- Ready-mix (over 12 yards up to & including 15 yards) (over 15 yards to be negotiated)
- Semi with Double Box Mixer
- Tireman, Heavy Duty/Fueler
- Water Wagon (250 Bbls and above)

A2102 Group 1A including:	40.86	10.58	10.39	1.35	L&M		0.10	63.28
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- Dump Trucks (including rockbuggy & trucks with pups) over 60 yards up to & including 100 yards (over 100 yards to be negotiated)
- Jeeps (driver under load)

A2103 Group II, including:	38.33	10.58	10.39	1.35	L&M		0.10	60.75
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- All Deltas, Commanders, Rollagons, & similar equipment
- Boom Truck/Knuckle Truck (over 5 tons)
- Construction and Material Safety Technician
- Dump Trucks (including rockbuggy & trucks with pups) over 20 yards up to & including 40 yards
- Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating over 5 tons)
- Lowboys (including attached trailers & jeeps up to & including 8 axles)
- Mechanics
- Partsman
- Ready-mix (over 7 yards up to & including 12 yards)
- Stringing Truck
- Super Vac Truck/Cacasco Truck/Heat Stress Truck
- Turn-O-Wagon or DW-10 (not self loading)

A2104 Group III, including:	37.51	10.58	10.39	1.35	L&M		0.10	59.93
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- Batch Trucks (8 yards & up)
- Boom Truck/Knuckle Truck (up to & including 5 tons)
- Dump Trucks (including rockbuggy & trucks with pups) over 10 yards up to & including 20 yards
- Expeditor (electrical & pipefitting materials)
- Gin Pole Truck, Winch Truck, Wrecker (truck mounted "A" frame manufactured rating 5 tons & under)
- Greaser - Shop
- Oil Distributor Driver
- Thermal Plastic Layout Technician
- Traffic Control Technician

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Truck Drivers

**See note on last page if remote site

A2104 Group III, including:	37.51	10.58	10.39	1.35		L&M	0.10	59.93
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Trucks/Jeeps (push or pull)

A2105 Group IV, including:	36.93	10.58	10.39	1.35		L&M	0.10	59.35
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- Air Cushion or similar type vehicle
- All Terrain Vehicle
- Buggymobile
- Bull Lift & Fork Lift, Fork Lift with Power Boom & Swing Attachment (over 5 tons)
- Bus Operator (over 30 passengers)
- Combination Truck-Fuel & Grease
- Compactor (when pulled by rubber tired equipment)
- Dump Trucks (including Rockbuggy & trucks with pups up to & including 10 yards)
- Dumpster
- Expeditor (general)
- Fire Truck/Ambulance Driver
- Flat Beds, Dual Rear Axle
- Foam Distributor Truck Dual Axle
- Front End Loader with Fork
- Grease Truck
- Hydro Seeder, Dual Axle
- Hyster Operators (handling bulk aggregate)
- Loadmaster (air & water operations)
- Lumber Carrier
- Ready-mix, (up to & including 7 yards)
- Rigger (air/water/oilfield)
- Semi or Truck & Trailer
- Tireman, Light Duty
- Track Truck Equipment
- Vacuum Truck, Truck Vacuum Sweeper
- Warehouseperson
- Water Truck (Below 250 Bbls)
- Water Truck, Dual Axle
- Water Wagon, Semi

A2106 Group V, including:	36.17	10.58	10.39	1.35		L&M	0.10	58.59
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- Batch Truck (up to & including 7 yards)
- Buffer Truck
- Bull Lifts & Fork Lifts, Fork Lifts with Power Boom & Swing Attachments (up to & including 5 tons)

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Truck Drivers
 **See note on last page if remote site

						L&M	
A2106	Group V, including:	36.17	10.58	10.39	1.35	0.10	58.59
	Bus Operator (up to 30 passengers)						
	Farm Type Rubber Tired Tractor (when material handling or pulling wagons on a construction project)						
	Flat Beds, Single Rear Axle						
	Foam Distributor Truck Single Axle						
	Fuel Handler (station/bulk attendant)						
	Gear/Supply Truck						
	Gravel Spreader Box Operator on Truck						
	Hydro Seeders, Single axle						
	Pickups (pilot cars & all light-duty vehicles)						
	Rigger/Swamper						
	Tack Truck						
	Team Drivers (horses, mules, & similar equipment)						

Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)
 **See note on last page if remote site

						L&M	LEG
N2201	Group I, including:	33.61	8.21	17.06	1.25	0.20	60.53
	Brakeman						
	Mucker						
	Nipper						
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)						
	Topman & Bull Gang						
	Tunnel Track Laborer						

						L&M	LEG
N2202	Group II, including:	34.71	8.21	17.06	1.25	0.20	61.63
	Burning & Cutting Torch						
	Certified Erosion Sediment Control Lead (CESCL Laborer)						
	Concrete Laborer						
	Jackhammer						
	Laser Instrument Operator						
	Nozzlemen, Pumpcrete or Shotcrete						
	Pipelayer Helper						

						L&M	LEG
N2203	Group III, including:	35.70	8.21	17.06	1.25	0.20	62.62
	Miner						
	Retimberman						

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Tunnel Workers, Laborers (The Alaska areas north of N63 latitude and east of W138 longitude)
 **See note on last page if remote site

						L&M	LEG	
N2204	Group IIIA, including:	39.30	8.21	17.06	1.25	0.20	0.20	66.22
	Asphalt Raker, Asphalt Belly Dump Lay Down							
	Drill Doctor (in the field)							
	Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)							
	Licensed Powderman							
	Pioneer Drilling & Drilling Off Tugger (all type drills)							
	Pipelayer							
	Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)							

						L&M	LEG	
N2206	Group IIIB, including:	43.20	5.50	17.06	1.25	0.20	0.20	67.41
	Federally Licensed Powderman (Responsible Person in Charge)							
	Grade Checking (setting or transferring of grade marks, line and grade, Stake Hopper)							

Tunnel Workers, Laborers (The area that is south of N63 latitude and west of W138 longitude)
 **See note on last page if remote site

						L&M	LEG	
S2201	Group I, including:	33.61	8.21	17.06	1.25	0.20	0.20	60.53
	Brakeman							
	Mucker							
	Nipper							
	Storm Water Pollution Protection Plan Worker (SWPPP Worker - erosion and sediment control Laborer)							
	Topman & Bull Gang							
	Tunnel Track Laborer							

						L&M	LEG	
S2202	Group II, including:	34.71	8.21	17.06	1.25	0.20	0.20	61.63
	Burning & Cutting Torch							
	Certified Erosion Sediment Control Lead (CESCL Laborer)							
	Concrete Laborer							
	Jackhammer							
	Laser Instrument Operator							
	Nozzlemen, Pumpcrete or Shotcrete							
	Pipelayer Helper							

						L&M	LEG	
S2203	Group III, including:	35.70	8.21	17.06	1.25	0.20	0.20	62.62
	Miner							
	Retimberman							

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

Tunnel Workers, Laborers (The area that is south of N63 latitude and west of W138 longitude)
 **See note on last page if remote site

						L&M	LEG	
S2204	Group IIIA, including:	39.30	8.21	17.06	1.25	0.20	0.20	66.22
	Asphalt Raker, Asphalt Belly Dump Lay Down							
	Drill Doctor (in the field)							
	Driller (including, but not limited to wagon drills, air-track drills, hydraulic drills)							
	Licensed Powderman							
	Pioneer Drilling & Drilling Off Tugger (all type drills)							
	Pipelayer							
	Storm Water Pollution Protection Plan Specialist (SWPPP Specialist)							

						L&M	LEG	
S2206	Group IIIB, including:	43.20	5.50	17.06	1.25	0.20	0.20	67.41
	Federally Licensed Powderman (Responsible Person in Charge)							
	Grade Checking (setting or transferring of grade marks, line and grade, Stake Hopper)							

Tunnel Workers, Power Equipment Operators
 **See note on last page if remote site

						L&M		
A2207	Group I	44.31	9.30	12.25	1.00	0.10		66.96
A2208	Group IA	46.24	9.30	12.25	1.00	0.10		68.89
A2209	Group II	43.46	9.30	12.25	1.00	0.10		66.11
A2210	Group III	42.67	9.30	12.25	1.00	0.10		65.32
A2211	Group IV	35.84	9.30	12.25	1.00	0.10		58.49

* A remote site is isolated and relatively distant from the amenities of civilization, and usually far from the employee's home. As a condition of employment, the workers must eat, sleep, and socialize at the worksite and remain there for extended periods.

** This classification must receive board and lodging under certain conditions. A per diem option of \$75 is an alternative to providing meals and lodging. See Page v for an explanation.

*** Work in combination of classifications: Employees working in any combination of classifications within the diving crew (working diver, standby diver, and tender) in a shift are paid in the classification with the highest rate for a minimum of 8 hours per shift.

Wage benefits key: BHR=basic hourly rate; H&W=health and welfare; IAF=industry advancement fund; LEG=legal fund; L&M=labor/management fund; PEN=pension fund; SAF=safety; SUI=supplemental unemployment insurance; S&L=SUI & LEG combined; TRN=training; THR=total hourly rate; VAC=vacation

**APPENDIX I
FORMS**

1. List of Required Forms
2. Price Proposal Fixed Fee Form
3. Contractor's Questionnaire
4. Performance Bond
5. Payment Bond

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APPENDIX I-1 PROPOSAL FORMS

PROPOSAL FORMS [Submittals]

A. Technical Proposal Fixed Price Proposal (sealed in a separate envelope):

1. Cover letter
2. Technical Proposal
3. Resumes
4. Contractor's Questionnaire and Certifications
 - a. Contractor's Questionnaire
 - b. Certification regarding use of funds for lobbying
 - c. FTA Buy-America certification

Do not include any price information in Technical Proposal.

B. Fixed Fee Proposal Form and Pre-construction Services Price Proposal (sealed in a separate envelope for each of the price proposal form and the pre-construction services price proposal):

1. Fixed Fee Proposal Form
2. Preconstruction Services Price Proposal

C. REQUIRED FOR AWARD

In order to be awarded the contract, the successful contractor must completely fill out and submit the following documents within the time specified in the intent to award letter:

1. Certificate of Insurance - [from Insurance Carrier]
2. Payment Bond - [Form 395-0126]
3. Performance Bond - [Form 395-0127]
4. Contract and limited Preconstruction Notice to Proceed [ARRC Generated]
5. Contractor's QA/QC Plan
6. Contractor's Site Health & Safety Plan

D. POST AWARD DOCUMENTATION

1. State of Alaska Department of Labor – Notice of Work
2. Certified Payrolls
3. QA/QC Reports
4. Copy of State of Alaska Contractor Letter of Completion

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APPENDIX I-2 PRICE PROPOSAL FIXED FEE FORM

Proposers, please read the following carefully before preparing this Fixed Fee Form:

The Proposer shall insert a fixed percentage to be applied to the total construction cost to arrive at the Guaranteed Maximum Price (GMP) as described in the RFP. Conditioned, qualified, or incomplete Fixed Fee Forms will be considered non Responsive. Fixed fee Proposals will be evaluated as described in the RFP. The fixed fee shall apply to early work amendments, GMP and change orders.

BR 370.7 PIER REPLACEMENT	
Fixed Fee Percentage	
Fixed fee Percentage to be applied to the total construction cost	_____ %

Proposer's Team (Printed)

Project Principal's Name (Signed)

Project Principal's Name (Printed)

CONTRACTOR RESPONSIBILITY QUESTIONNAIRE

PART I - INSTRUCTIONS

1. All Bidders/Proposers submitting a Bid/Proposal for federally funded contracts are to complete and submit all Parts of this Questionnaire with their Bid or Proposal. Failure to complete and return this questionnaire, any false statements, or failure to answer question when required, may render the bid/proposal non-responsive. All responses must be typewritten or printed in ink. All information must be legible.
2. Please state "not applicable" in questions clearly not applicable to Bidder/Proposer in connection with this solicitation. Do not omit any question.
3. The completed Questionnaire must be sworn to by a partner (if partnership), a duly authorized officer or individual (if a corporation or LLC), or a principal (if a sole proprietorship).
4. The term "Proposer" includes the term "Bidder" and also refers to the firm awarded the Contract. The term "Proposal" includes the term "Bid".
5. ARRC reserves the right to inquire further with respect to Proposer's responses; and Proposer consents to such further inquiry and agrees to furnish all relevant documents and information as requested by ARRC. Any response to this document prior or subsequent to Proposer's Proposal which is or may be construed as unfavorable to Proposer will not necessarily automatically result in a negative finding on the question of Proposer's responsibility or a decision to terminate the contract if it is awarded to Proposer.

PART II - IDENTITY OF PROPOSER

1. Proposer's Full Legal Name: _____
 2. The Proposer represents that it operates as the following form of legal entity: (Check whichever applies and fill in any appropriate blanks.)
 - an individual or sole proprietorship
 - a general partnership
 - a limited partnership
 - a joint venture consisting of: _____
and _____
(List all joint venturers on a separate sheet if this space is inadequate.)
 - a non-profit organization
 - a corporation organized or incorporated under the laws of the following state or country: _____
on the following date: _____
 - a limited liability company organized under the laws of the following state or country: _____
on the following date: _____
 3. Proposer's federal taxpayer identification number: _____
 4. Proposer's Alaska business license number: _____
 5. Proposer's contractor's license number (for construction only): _____
 6. Proposer's legal address: _____
-

APPENDIX I

Telephone Number: (____) _____ Fax Number: (____) _____

7. Proposer's local or authorized point of contract address:

Name: _____ Title: _____

Address: _____

Telephone Number: (____) _____ Fax Number: (____) _____

8. How long has the Proposer been in business? _____

9. Has Proposer been in business under another name? If so, identify name and dates used.

10. Does your firm consider itself to be an MBE, WBE or DBE?
YES NO If answer is "YES," attach a copy of certification.

11. Number of employees: _____ including _____ employees in the State of Alaska.

PART III-CONTRACTING HISTORY

1. Has the Proposer been awarded any contracts within the last five years by ARRC, the State of Alaska, or any other public entity for the same or reasonably similar goods or services sought by this solicitation? If none, answer "No". If yes, on a separate sheet of paper describe those contracts beginning with the most recent. State the name of the contracting entity; give a brief description of the contract and the contract number, the dollar amount at award and at completion, date completed; state the contract period, the status of the contract, and the name, address, and telephone number of a contact person at the agency. Indicate if award was made to Proposer as prime contractor or joint venture. Proposer need not provide more than three such descriptions.

YES NO

2. Has the Proposer been awarded any private sector contracts within the last five years for the same or reasonably similar goods or services sought by this solicitation? If none, answer "No." If yes, on a separate sheet of paper provide the name and address of the contracting entity, a brief description of work, the dollar amount at award and at completion, date completed, status of the contract and name, address and telephone number of contact person as to each, beginning with the most recent. Indicate if Proposer acted as prime contractor or joint venture. Proposers need not provide more than three such descriptions.

YES NO

NOTE: ANY "YES" ANSWERS TO #3 BELOW MUST BE FULLY EXPLAINED ON A SEPARATE SHEET OF PAPER AND ATTACHED TO THIS QUESTIONNAIRE.

3. In the past five years has the Proposer been the subject of any of the following actions?
A. Been suspended, debarred, disqualified, or otherwise declared ineligible to bid?

YES NO

B. Failed to complete a contract for a public or private entity?

YES NO

C. Been denied a low-bid contract in spite of being the low bidder?

APPENDIX I

YES NO

D. Had a contract terminated for any reason, including default?

YES NO

E. Had liquidated damages assessed against it during or after completion of a contract?

YES NO

F. Been a defaulter, as principal, surety or otherwise?

YES NO

G. Been denied an award of a public contract based upon a finding by a public agency that your company was not a responsible contractor?

YES NO

H. A public entity requested or required enforcement of any of its rights under a surety agreement on the basis of your company's default or in lieu of declaring your company in default?

YES NO

I. Been denied a performance or payment bond by a surety company?

YES NO

J. Been required to pay back wages and/or penalties for failure to comply with state or federal prevailing wage or overtime laws?

YES NO

4. Does Proposer currently possess the financial, organizational, technical, equipment, facilities, and other resources necessary to supply the goods or services sought by this solicitation? If no, on a separate sheet of paper describe how you intend to obtain the resources necessary to supply the goods or services sought by this solicitation.

YES NO

5. Does Proposer have any present or anticipated commitments and/or contractual obligations that might impact its ability to meet the required delivery or performance requirements of this solicitation? If yes, on a separate sheet of paper describe any apparent conflicts as between the requirements/commitments for this solicitation with respect to the use of Proposer's resources, such as management, technical expertise, financing, facilities, equipment, etc.

YES NO

PART IV-CIVIL ACTIONS

If "Yes" to Parts IV or V, provide details on a separate sheet of paper including a brief summary of cause(s) of action; indicate if Proposer, its principals, officers or partners were plaintiffs or defendants; define charges explicitly, by what authority, court or jurisdiction, etc. In the case of tax liens, please indicate whether the liens were resolved with the tax authorities. Please submit proof of payment or agreements to pay the liens. Complete details are required!

APPENDIX I

1. Violations Of Civil Law. In the past five years has Proposer, any of its principals, officers or partners been the subject of an investigation of any alleged violation of a civil antitrust law, or other federal, state or local civil law?

YES NO

2. Lawsuits With Public Agencies. At the present time is, or during the past five years has Proposer, any of its principals, officers or partners been a plaintiff or defendant in any lawsuit or arbitration regarding services or goods provided to a public agency?

YES NO

3. Bankruptcy. During the past five years, has the Proposer filed for bankruptcy or reorganization under the bankruptcy laws?

YES NO

4. Judgments, Liens And Claims. During the past five years, has the Proposer been the subject of a judgment, lien or claim of \$25,000 or more by a subcontractor or supplier?

YES NO

5. Tax Liens. During the past five years, has the Proposer been the subject of a tax lien by federal, state or any other tax authority?

YES NO

PART V-COMPLIANCE WITH LAWS AND OTHER REGULATIONS

1. Criminal: In the past five years has the Proposer, any of its principals, officers, or partners been convicted or currently charged with any of the following:

A. Fraud in connection with obtaining, attempting to obtain, or performing a public contract, agreement or transaction?

YES NO

B. Federal or state antitrust statutes, including price fixing collusion and bid rigging?

YES NO

C. Embezzlement, theft, forgery, bribery, making false statements, submitting false information, receiving stolen property, or making false claims to any public agency?

YES NO

D. Misrepresenting minority or disadvantaged business entity status with regard to itself or one of its subcontractors?

YES NO

E. Non-compliance with the prevailing wage requirements of the State of Alaska or similar laws of any other state?

YES NO

F. Violation of any law, regulation or agreement relating to a conflict of interest with respect to a government funded procurement?

YES NO

APPENDIX I

G. Falsification, concealment, withholding and/or destruction of records relating to a public agreement or transaction?

YES NO

H. Violation of a statutory or regulatory provision or requirement applicable to a public or private agreement or transaction?

YES NO

I. Do any principals, officers or partners in Proposer's company have any felony charges pending against them that were filed either before, during, or after their employment with the Proposer?

YES NO

2. Regulatory Compliance. In the past five years, has Proposer or any of its principals, officers or partners:

A. Been cited for a violation of any labor law or regulation, including, but not limited to, child labor violations, failure to pay correct wages, failure to pay into a trust account, failure to remit or pay withheld taxes to tax authorities or unemployment insurance tax delinquencies?

YES NO

B. Been cited and assessed penalties for an OSHA or Alaska/OSHA "serious violation"?

YES NO

C. Been cited for a violation of federal, state or local environmental laws or regulations?

YES NO

D. Failed to comply with Alaska corporate registration, federal, state or local licensing requirements?

YES NO

E. Had its corporate status, business entity's license or any professional certification, suspended, revoked, or had otherwise been prohibited from doing business in the State of Alaska?

YES NO

PART VI-FINANCIAL

Copies of the following documents are to be submitted with this Questionnaire:

1. Proposer's current Alaska Business License, if required by state law.
2. Proposer's Financial Statements (see specific requirements below):

A. PUBLICLY TRADED COMPANIES: Financial information will be accessed on-line. However, if additional information is needed, it will be specifically requested from the Proposer.

B. NON-PUBLICLY TRADED COMPANIES WITH AUDITED OR REVIEWED FINANCIAL STATEMENTS: Statements, including balance sheet, statement of earnings and retained income, with footnotes, for the most recent three years.

C. NON-PUBLICLY TRADED COMPANIES WITHOUT AUDITED OR REVIEWED FINANCIAL STATEMENTS: Company generated financial statements, including balance sheet, statement of earnings and retained income for the most recent three years. The Chief Financial Officer of the corporation, a partner, or owner, as appropriate, must certify these financial statements.

APPENDIX I

D. SOLE PROPRIETORSHIPS: Refer to C. If financial statements are not generated, please fill out and sign the Financial Statement form attached hereto. Submit one form for each of the most recent three years.

NOTE: ARRC reserves the right to ask for additional documentation if it is reasonably required to make a determination of integrity and responsibility relevant to the goods or services the Proposer will provide to ARRC if awarded a contract. All financial information provided is considered confidential and not subject to public disclosure under Alaska law.

PART VII -VERIFICATION AND ACKNOWLEDGMENT

The undersigned recognizes that the information submitted in the questionnaire herein is for the express purpose of inducing ARRC to award a contract, or to allow Proposer to participate in ARRC projects as contractor, subcontractor, vendor, supplier, or consultant. The undersigned has read and understands the instructions for completing this Questionnaire.

STATE OF _____

COUNTY OF _____

I, (printed name) _____, being first duly sworn, state that I am the (title) _____ of Proposer. I certify that I have read and understood the questions contained in the attached Questionnaire, and that to the best of my knowledge and belief all information contained herein and submitted concurrently or in supplemental documents with this Questionnaire is complete, current, and true. I further acknowledge that any false, deceptive or fraudulent statements on the Questionnaire will result in denial or termination of a contract.

I authorize ARRC to contact any entity named herein, or any other internal or outside resource, for the purpose of verifying information provided in the Questionnaire or to develop other information deemed relevant by ARRC.

Signature of Certifying Individual Date

Subscribed and sworn to before me this _____ day of _____, 20__

Signature of Notary
Notary Public in and for the State of _____
My Commission Expires: _____

NOTICE TO PROPOSERS

A material false statement, omission or fraudulent inducement made in connection with this Questionnaire is sufficient cause for denial of a contract award or revocation of a prior contract award, thereby precluding the Proposer from doing business with, or performing work for ARRC, either as a vendor, prime contractor, subcontractor, consultant or subconsultant for a period of five years. In addition, such false submission may subject the person and/or entity making the false statement to criminal charges under applicable state and/or federal law.

APPENDIX I

Financial Statement

To be completed by Proposers that do not produce company generated financial statements, including balance sheet, statement of earnings and retained income for the most recent three years (one sheet per year.)

ASSETS

Cash on Hand and in Banks	\$ _____
Account and Notes Receivable	\$ _____
Fixed Assets (net of depreciation)	\$ _____
Other Assets	\$ _____
 Total Assets	 \$ _____

LIABILITIES

Accounts Payable	\$ _____
Notes Payable to Banks in next twelve months	\$ _____
Notes Payable to Others	\$ _____
Taxes Payable	\$ _____
 Long Term Liabilities (More than twelve months)	 \$ _____
Other Liabilities	\$ _____
 Total Liabilities	 \$ _____
 Net Worth	 \$ _____

INCOME FROM OPERATIONS

Revenue	\$ _____
Interest	\$ _____
Cost of Goods Sold (if appropriate)	\$ _____
 Gross Profit	 \$ _____
 General & Administrative Expenses	 \$ _____
Depreciation	\$ _____
Interest Paid	\$ _____
 Net Gain or Loss	 \$ _____

I hereby certify that the above information is true and accurate to the best of my knowledge and belief. I understand false statements may result in denial of a contract, and possible debarment for a period of five years.

Signature of Owner or Officer

Date Signed

Company Name

For the Year Ended

Federal ID #

**ALASKA RAILROAD CORPORATION
PERFORMANCE BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

That _____
of: _____ as Principal,
and _____
of: _____ as Surety,
firmly bound and held unto the Alaska Railroad Corporation 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 Alaska Railroad Corporation, 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 Alaska Railroad Corporation,
on the _____ of _____, 20____,
for _____,
said work to be done according to the terms of said contract.

ARRC Project: RFP 17-12-205605 Bridge 370.7 Pier Replacement CMGC

NOW, THEREFORE, the conditions of the foregoing obligation is 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 Alaska Railroad Corporation any sums paid him/her 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 this _____ day of
_____, 20_____.

Principal: _____

Address: _____

Telephone Number: _____

Contact Name: _____

By: _____

By: _____

Surety: _____

Address: _____

Contact Name: _____

By: _____

By: _____

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

Alaska Railroad Corporation [Authorized Representative] Date

(Instructions on Next Page)

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, telephone number, and point of contact of the Principal and Surety shall be inserted 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 entered in words and in figures.
4. 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.

Form 395-0127

**ALASKA RAILROAD CORPORATION
PAYMENT BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

That _____
of: _____ as Principal,
and _____
of: _____ as Surety,
firmly bound and held unto the Alaska Railroad Corporation 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 Alaska Railroad Corporation, 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 Alaska Railroad Corporation,
on the _____ of _____, 20_____,
for _____, said work to be done
according to the terms of said contract.

ARRC Project: RFP 17-12-205605 Bridge 370.7 Pier Replacement CMGC

NOW, THEREFORE, the conditions of the foregoing obligation is 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 this _____ day of
_____, 20_____.

Principal: _____
Address: _____
Telephone Number: _____
Contact Name: _____

By: _____
By: _____

Surety: _____
Address: _____
Contact Name: _____

By: _____
By: _____

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

Alaska Railroad Corporation [Authorized Representative] Date _____
(Instructions on Next Page)

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, telephone number, and point of contact of the Principal and Surety shall be inserted 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 entered in words and in figures.
4. 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.

Form 395-0126

**APPENDIX J
PRECONSTRUCTION SERVICES AND OPEN BOOK ESTIMATING
REQUIREMENTS**

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APPENDIX J
PRECONSTRUCTION SERVICES AND OPEN BOOK ESTIMATING REQUIREMENTS

A. General.

The CMGC shall provide consulting, scheduling and estimating, and cost control services, and will function as one of the key team members (Project Team) consisting of ARRC, the program management consultant, the A&E, and the CMGC. The CMGC's Key Personnel participating in the Pre-Construction Phase shall be made available for the Construction Services if awarded to the CMGC, and any Key Personnel changes shall require prior written approval of ARRC. The CMGC will be responsible for:

1. developing a Guaranteed Maximum Price (GMP) during the Pre-Construction Phase to construct the Project; and
2. scheduling, estimating, and recommending optimal Construction Work phasing and sequences.

If awarded a construction phase amendment, the CMGC will be responsible for:

1. performing and delivering the Project to ARRC within the approved GMP; and
2. self-performing or subcontracting certain minimum percentages, as set forth within this RFP, for the Construction Work related to completing the Project.

B. Pre-Construction Phase Services.

Pre-Construction Phase Services shall include, but not be limited, to the following:

1. Consult with, advise, assist, and provide recommendations to ARRC on all aspects of the planning, design, and proposed Construction Work, as requested by ARRC.
2. Participate in an initial kickoff meeting and goal setting session with ARRC; the outcome of this session will be to review the goals as currently identified by ARRC to ensure that the CMGC understands these goals and to allow the CMGC to provide recommendations to ARRC regarding these goals.
3. Identification and mitigation of risk through analysis and assessment by participation in on-going risk analysis during the Pre-Construction Phase.
4. Develop and update Project schedules.
5. Computation and reconciliation of quantities of materials based on Construction Documents.
6. Develop detailed Construction Phase cost estimates in accordance with cost estimating requirements set forth below:
 - (a) Provide a preliminary evaluation of ARRC's Project budget and schedule requirements

APPENDIX J

- (b) If so directed, participate in an initial alternatives analysis
 - (c) Prepare a cost estimate based on the 60% construction documents
 - (d) Perform constructability and material availability reviews; provide written reports and recommendations for the conceptual drawings at the, 75% and 95% development stages that identify revisions to improve clarity for estimating, and propose value engineering-like revisions that reduce Construction Phase costs and time of performance
7. Collaborate with ARRC and the A&E in the development of Early Work Packages including permitting, consultation, and assistance.
 8. Assist ARRC in preparing the necessary documentation to obtain environmental and administrative permits for the Construction Phase and otherwise comply with all legal requirements relating to the Construction Work.
 9. Provide recommendations on that minimize adverse effects of labor or material shortages, time requirements for procurement, installation, and Construction Phase completion, and other factors related to Construction Phase cost, including estimates of alternative designs if so directed, or materials, and other possible economies.
 10. Provide information on Construction Phase materials, methods, systems, phasing, and costs to assist in determinations aimed at providing ARRC with the highest quality Project consistent with the budget and design intent.
 11. Recommend to ARRC a schedule for procurement of long-lead-time items that will constitute part of the Construction Work as required to meet the Project schedule.
 12. Prepare and submit a safety plan, in compliance with ARRC requirements.
 13. Develop, implement, and maintain a quality plan that assures work, equipment, and material conformance (i) with applicable legal requirements and (ii) to the applicable requirements of every section of the specifications. Develop a quality program to ensure continuing attention to the production and installation of error-free work complying with the Construction Documents, including education, training, tool box meetings, meetings with subcontractors and suppliers, and other activities that accomplish the following:
 - (a) Emphasize the importance of high-quality work
 - (b) Stress the concept that quality is best achieved during initial fabrication and/or installation of the Construction Work (i.e., "Do it right the first time")
 - (c) Enhance the exchange of technical and other information pertaining to quality throughout the Proposer's Project organization
 - (d) Eliminate non-complying Construction Work requiring rework or replacement
 14. Prior to development of the GMP, prepare a detailed, baseline, cost-loaded, Critical Path Method (CPM). CPM schedule submittals for 75%, 95% and GMP, shall be cost and resource loaded, encompassing all Project activities and all costs. Schedules shall be

prepared in software that is intended for the CMGC's use during the Construction Phase (Primavera P6 is preferred). It shall be comprehensive for the Project and include ARRC and A&E activities based on input from those entities. For each submittal a schedule narrative will be required. The schedule will be presented as both "PDF" in Gantt chart format and native (xer) format.

C. Construction Cost Estimate Detail

1. Construction cost estimates submitted to the owner for review on the Project shall be open book estimates. They shall comprise detailed reports of item-by-item breakdowns of construction cost presented in the CMGC's estimating software output files. The Owner will provide a cost estimate breakdown structure and this will be refined with the CMGC at the initial meeting on estimating. The CMGC may use his own estimating programs so long as they are consistent with the desired breakdown structure. The cost-estimating output must provide the required level of detail and transparency of calculation and rollup as required.
2. The CMGC shall provide successively refined Construction Costs Estimates at pre-construction. Each Construction Cost Estimate shall be:
 - (a) Comprehensive for the entire Project.
 - (b) Presented in the approved cost-estimating model format.
 - (c) Inclusive of all direct costs and allowable field indirect costs as described in paragraph h below.
 - (d) Exclusive of home office overhead and profit, which shall be presented separately as fixed fee in accordance with Section F below
 - (e) Exclusive of Risk Contingency, which shall be established using the results of the risk analysis and mitigation process
 - (f) Inclusive of Design Development Contingency that results from incomplete design prior to Final Construction Documents.
 - (g) Based on milestone design drawing packages delivered by the Designer.
 - (h) Accompanied by a brief narrative to address variance analysis since the preceding estimate and remaining significant unknowns that may affect the Construction Cost Estimate. Include a discussion of how specific items were developed in the estimate, such as (but not limited to) fuel pricing, material sources, labor rates, and any craft labor agreements. Discuss approach to equipment availability and rental rates, including any equipment adjustments to hourly equipment rates used in the estimate based on schedule usage of equipment versus length of time equipment will be on the job, or if a buy-sell basis of ownership costs is applicable to the Project. Discuss which material and subcontract pricing is firm, which uses plug prices, and the expected variability of such pricing. Discuss temporary construction required, such as haul roads, detours, temporary bridges and access, and borrow or waste pit development. Discuss approach to schedule, including hours of work, double or triple shifts, weather and winter considerations, and in general the

duration of the estimated work.

3. The CMGC shall provide a detailed Construction Cost Estimate for milestones indicated. The estimate is to be developed using current pricing for wage and equipment rates (material pricing will depend on how quoted and the amount of time for which the quote is fixed). All estimates shall represent realistic costs given known conditions (e.g., labor production rates). Since early Construction Cost Estimates will not have the pricing for all material suppliers and subcontractors to enable firm fixed pricing for use in the GMP, there may be limited items of plug pricing, which should be noted.
4. Submitted documents shall clearly itemize the estimated costs of performing the Work of the Bid Items and also the CMGC's field indirect items. A summary-level cost is requested for each of the items provided as well as a detailed cost of each item. The detail shall provide crews with rates of production for each activity within the line item. Crews shall clearly show the numbers of equipment and personnel within each activity and work hours for overtime calculations. Estimates of cost shall be further divided into the CMGC's customary cost categories such as man-hours, labor, permanent materials, expendable materials, equipment ownership and operation, and subcontract cost, as appropriate. The detail of the work breakdown may include several activities within a line item, and then that shall subtotal to a one-line entry for the summary report. The summary report shall include the same cost categories, along with the unit cost of the total. Further groupings of similar items of Work can be agreed upon to further facilitate reconciliation of owner and CMGC estimates. For line items with an incomplete design, a Design Development Contingency shall be developed per line item and be clearly itemized in a separate value from (i.e., separated from the customary cost categories) in the line item estimate.
5. The CMGC shall participate in a design review for each milestone design submittal to discuss development and changes as well as the cost and constructability impacts of the design.
6. At the final design milestone, the CMGC shall prepare a Proposal for executing the Project at a GMP. The GMP is the sum of the total, and agreed upon, estimated Cost of the Work plus a fixed fee. The fixed fee is a fixed percentage of the total construction cost of the construction services under the Contract.
7. The Risk Contingency amount shall be established using results of the risk analysis and mitigation process. As part of the GMP negotiation, Risk Contingency will be assigned to either the Owner or CMGC. Risk Contingency assigned to the Owner will be administered through the Change provisions in the Construction General Conditions. Risk Contingency assigned to the CMGC will be included as a separate line item(s) within the GMP, or as mutually agreed.
8. The CMGC shall prepare a detailed baseline cost-loaded Critical Path Method (CPM) Schedule to serve as the Project Baseline Schedule, which identifies all activities and progress payment processing during construction. The proposed Project Baseline Schedule shall be cost-loaded with the estimated Cost of the Work included in the GMP and shall be a part of the GMP proposal.
9. The CMGC's field indirect costs shall be included in the Cost of the Work. The list below shows an example breakdown of indirect cost categories that is acceptable to ARRC.

APPENDIX J

However, it is also acceptable to use the CMGC's own customary indirect template with an explanation of the costs included within each item, as long as the level of detail is similar to that shown.

10. Field indirect costs shall include the following categories (as applicable):
 - (a) Job Supervision and Overhead: Wages including benefits, payroll insurance and taxes for onsite management, supervision, engineers, safety personnel, quality control staff, and administration staff.
 - (b) Survey: Cost of construction survey including both CMGC-hired and outside service.
 - (c) Site Office Expense: Ownership or rental of building, maintenance, removal, utilities, office and engineering expendables, furniture, computers and infrastructure, and photographs.
 - (d) Insurance and Taxes: Insurance other than that based on payroll, and other specified or CMGC-required insurances. Taxes excluding payroll taxes such as property tax.
 - (e) Temporary Buildings: Ownership or rental, setup, maintenance, and removal of such buildings as owner's office (if not a direct bid item), warehouses, first aid building, and other miscellaneous temporary buildings.
 - (f) Personnel Expense: Small tools and supplies, safety expendables, drug screen testing, training, physicals, and hiring expenses. Include any per-diem costs for craft or indirect personnel. Limited relocations of supervisory personnel may be discussed with the ARRC for inclusion in this category.
 - (g) Project Utilities: Site utilities such as temporary electric, water, and sanitary.
 - (h) Mobile Equipment: Overhead vehicles, maintenance equipment and personnel (if not in Equipment Operating Expense), and general service equipment and personnel (such as flatbeds and forklifts if not in direct cost).
 - (i) Mobilization: Transportation of equipment and other items for move in, move out, set up, and take down. Include personnel moves and related expense.
 - (j) Construction Plant: Site fences, parking areas, material yards, temporary access, and other such special construction not included in direct costs. Haul road construction and maintenance to be included in direct costs.
 - (k) Quality Control: Cost of quality control labor, equipment, and supplies and outside services and CMGC-hired personnel with site overhead wages.
 - (l) Bonds: Payment and performance bond or other guaranties as specified or allowed. Include subcontract or material bond.
 - (m) The CMGC is cautioned that the proposed indirect costs and level of supervision and management that are presented should in normal course of the work be actually mobilized to the field. The ARRC expects that the field supervision and management presented in the proposed indirect costs will actually be mobilized to the field and that the ARRC will benefit from this management in execution of the contract. If significantly less management effort is actually expended on the project, than represented in the proposed indirect costs, the ARRC reserves the right to re-negotiate this item at their discretion.

D. Allowable Construction Costs for Direct and Field Indirect Costs

Definitions of some of the items included in direct and field indirect costs are set forth below and shall not be included in the fixed fee:

1. Labor: Wages and add-ons including overtime, vacation pay, and all fringe payments such as health and welfare, pensions, and any other that may be included in union agreement or as paid to both craft and staff employees. Payroll insurance including Worker's Compensation and General Liability, if based on labor amounts. Payroll taxes, including FICA and State and Federal unemployment.
2. Permanent Materials: Materials incorporated into the Work. Includes estimated loss, waste, and non-pay overruns, and any shipping for these materials.
3. Construction Expendable Materials: Non-permanent materials, temporary facilities, small tools, formwork, temporary construction, office supplies, services, insurance, and taxes.
4. Equipment Ownership: Rental or ownership charge of both company-owned and outside rentals on any rentals. Equipment rental rates shall be subject to review and shall be customary for the CMGC for the work required.
5. Equipment Operating Expense: Repair parts, tires and tracks, repair labor, services and fuel, and oil and grease.
6. Subcontract: Items of work subcontracted, including contracted trucking.

E. Use of Cost of the Work Estimate and GMP

The detailed cost breakdown structure will be the basis of developing the Construction Cost Estimates during pre-construction and of preparing the GMP.

F. Fixed Fee

The CMGC shall propose a fixed fee for the Work expressed as a percentage of the Cost of the Work. The fixed-fee percentage will include the CMGC's profit and the home office overhead (G&A) allocated to the Project. The fixed-fee percentage proposed in the RFP will be used in the Construction Cost Estimates and final GMPs.

The profit component of the fixed fee is to include any bonuses and incentives but excludes all costs associated with direct Project construction activities, including but not limited to risk or Risk Contingency. Home office overhead (G&A) is defined as all auditable costs that are allocated to all of the CMGC's ongoing projects, including insurance that is maintained by the CMGC as a general cost of doing business.

The fixed fee shall not include any field indirect costs or direct costs of the Project.

The fixed-fee percentage shall be applied to the total estimated construction cost.



BRIDGE 370.7 PIER REPLACEMENT CONSTRUCTION MANAGER – GENERAL CONTRACTOR (CMGC)

VOLUME 2 APPENDIX K – REFERENCE INFORMATION DOCUMENTS

REQUEST FOR PROPOSALS
No. 17-12-205605

APRIL 27, 2017

ALASKA RAILROAD CORPORATION
327 WEST SHIP CREEK AVENUE
ANCHORAGE, ALASKA 99501

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APPENDIX K
REFERENCE INFORMATION DOCUMENTS

The following reference documents are provided for information only

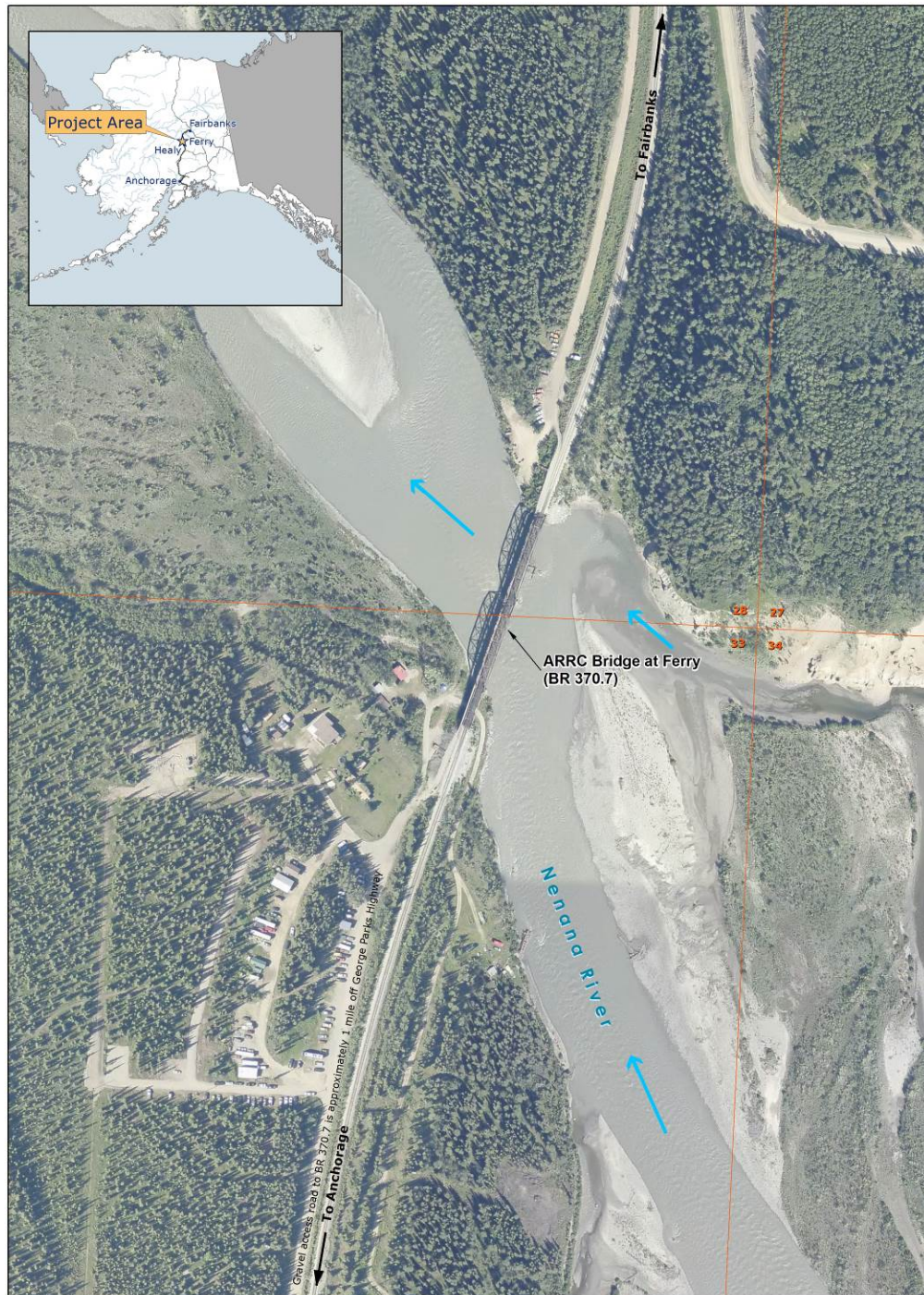
1. Figures
2. As-built plans (ARRC, 1925)
3. 60% design submittal (Wilson & Co, January 9, 2017)
4. NOT USED
5. ARRC Bridge 370.7 Nenana River Crossing - GDR Final (Golder Assoc., March 3, 2017)
6. Technical Review of Ice Forces (HDR, May 21, 2015)
7. Bridge Pier Survey (TerraSond, April 2, 2015)
8. Historical non-current gage data on Nenana River (USGS)

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Appendix K1 Figures

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APPENDIX K



Township 10S, Range 8W, Fairbanks Meridian

LEGEND



-  Section
-  Flow Direction



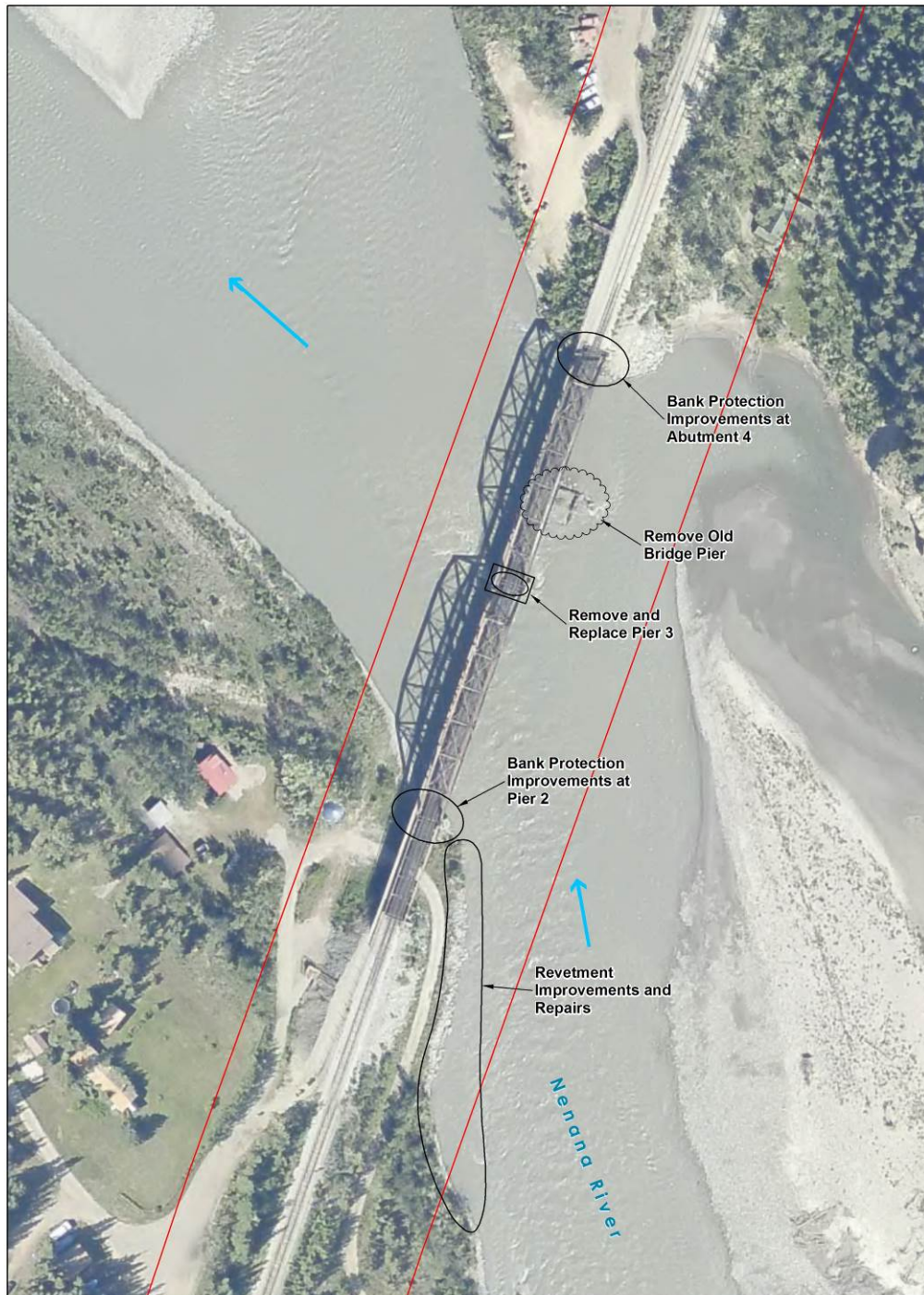
Figure 1. ARRC
BR 370.7

Project Location



Map Production: M&C E3 ASP-3 Field
Data Sources: ARRC, H&M
Author: H&M Engineering, Inc.
Date: 01/16/2017

Figure 1: ARRC Bridge 370.7 Location



Township 10S, Range 8W, Fairbanks Meridian

- LEGEND**
- ARRC ROW (200' total width)
 - Construction Project Element
 - Demolition Project Element
 - ← Flow Direction



Figure 2. ARRC
BR 370.7
Work Detail



Map Projection: NAD 83 SPS 3 Feet
Data Source: ARRC, HERE
Author: HJB Engineering, Inc.
Date: 01 Feb 2017

Figure 2: ARRC Bridge 370.7 Work Detail

APPENDIX K



Figure 3: Bridge 370.7 Detail

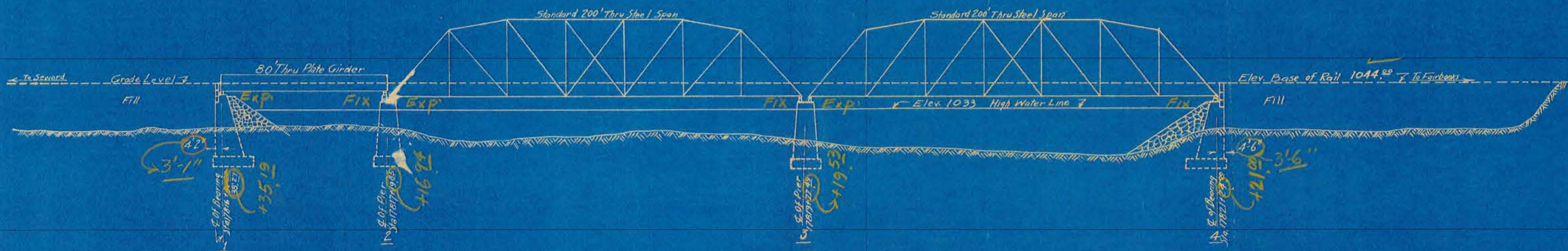


Figure 4: Bridge 370.7 Pier #3 Detail

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Appendix K2
As-built plans (ARRC, 1924)

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Pier Base 19'-4" x 31'-4" Pier Base 13'-4" x 37'-6"
 These two Piers are subject to slight change.

Pier Base 14'-0" x 38'-6"

Base of Pier 19'-8" x 32'-6"

ELEVATION

Note: Yellow Figures are as Constructed.

Note: - ϕ of existing concrete Pier is at Station 17819 + 90.375

OUTLINE SKETCH OF BRIDGE
 No. 3707
 Nenana River Crossing.
 Scale 1"=25'
 By Pollock 10/1/24.

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B. 3707



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2	10
3	10
4	10
5	10
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7	10
8	10
9	10
10	10
11	10
12	10
13	10
14	10
15	10
16	10
17	10
18	10
19	10
20	10

7661344 P.O.T
 7661344 B.C.T 1/2

17769X644 CC 3+R
 17768+128 B.C.T 1

17777+502 EC
 R 17775+205 C.C.T 3
 17775+205 C.C.T 3

R 17777+205 EC
 R 17775+205 EC

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1057.00

"I" LINE

1/10

1043.02

1050

17803+295 P.C.
17803+255 P.O.T.

1025

1000

"N" LINE

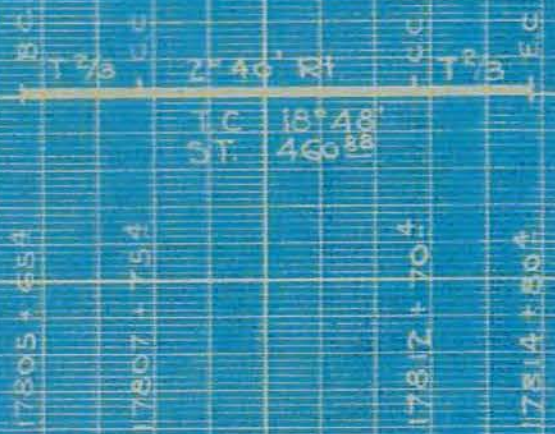
Level

NENANA RIVER

1043.00

1/10

17834+513 P.O.T.
17834+513 E.C.



17805+654

17807+754

17812+704

17814+804

17821+474

17823+574

17824+924

17827+024

Note - Small circles denote Elevations of Base of Rail on present constructed line.

790

17800

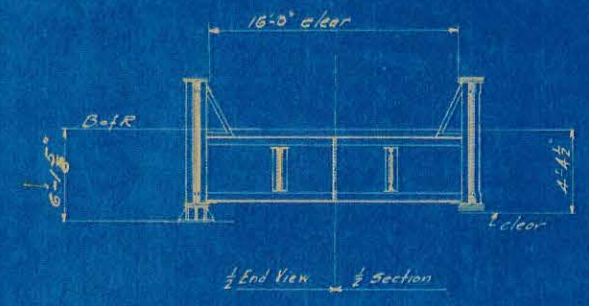
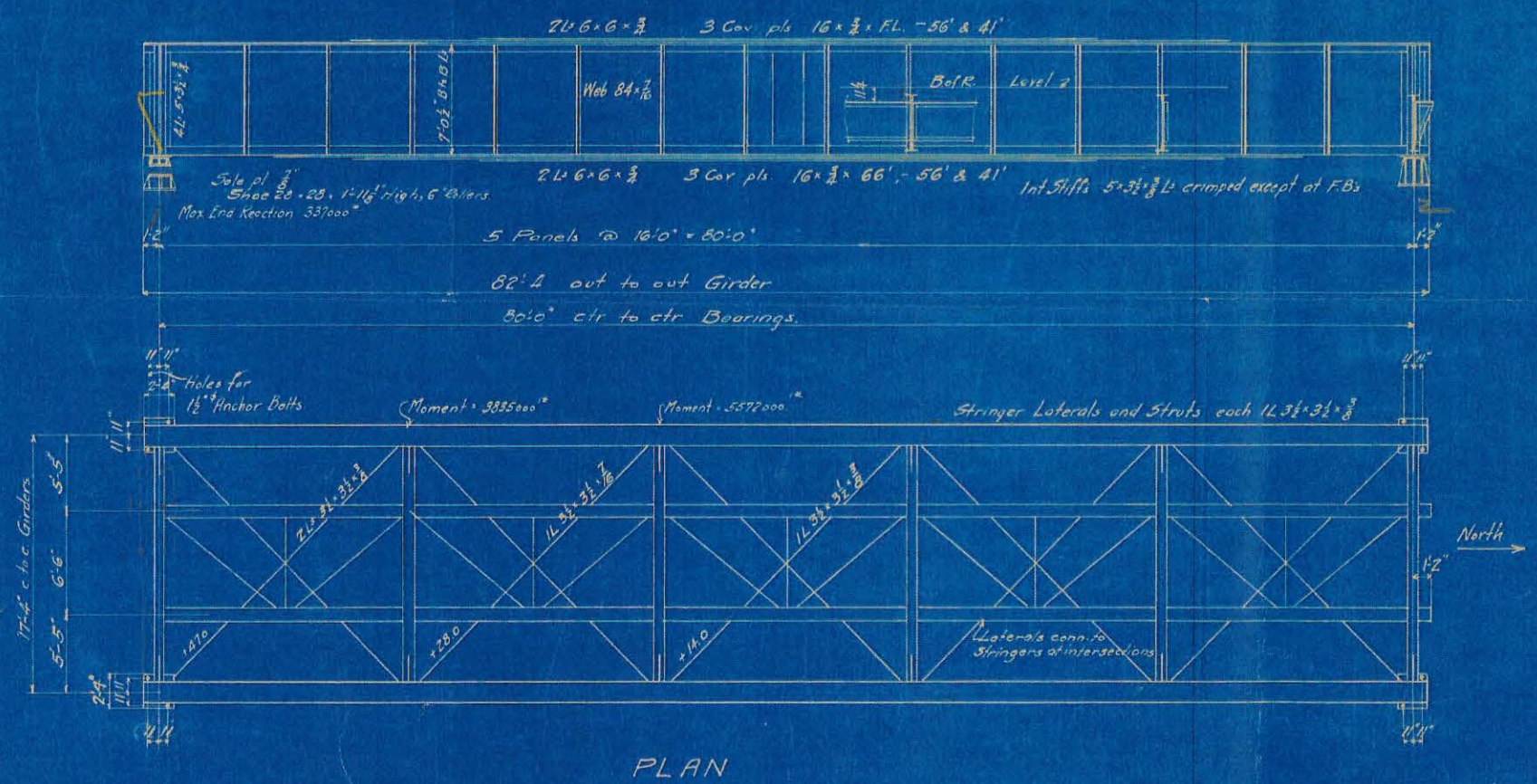
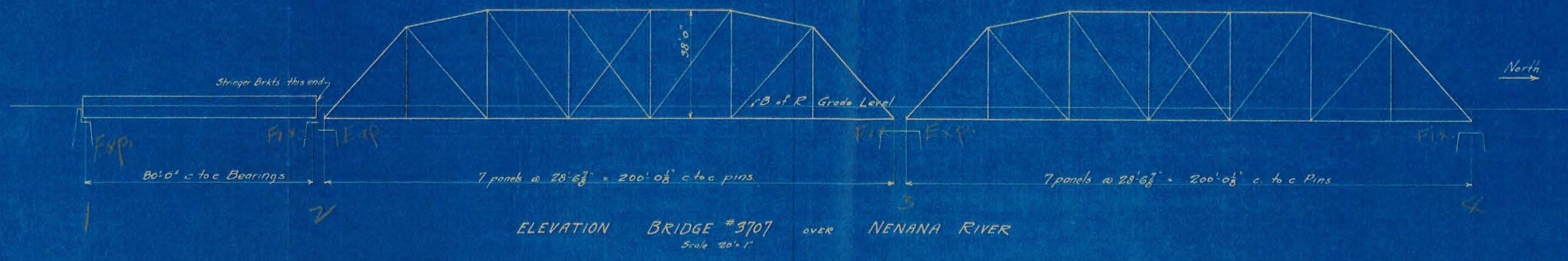
810

820

830

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	MOMENT	SHEAR	WEB	FLANGE
STRINGER	D. 12800 ^{lb}	3200 ^{lb}		
	L. 175000	53300	30 x 1/2	2L 5 x 3 1/2 x 7/16 (1/4)
	I. 173000	52500	15°	9.69° net 10.81° gr.
	T. 360800	109000	No stiffeners	
INT. FL. BM	D. 43700	8500		
	L. 385000	71200	44 x 3/8	2L 6 x 6 x 11/16 (1/2 h)
	I. 374000	69000	16.5°	15.96° net 17.82° gr.
	T. 502700	148700		
END FL. BM	D. 27600	5500		
	L. 328000	60500	44 x 3/8	2L 6 x 4 x 11/16 (1/2 h) II
	I. 324000	60000	16.5°	12.80° net 14.86° gr.
	T. 679600	126000		
MAIN GIRDER	D. 852000	40000		
	L. 2580000	111800	84 x 7/16	2L 6 x 6 x 3/8 (2h)
	I. 2140000	92700	36.76°	1 Car 16 x 3 x FL - Top 66' Bot (2h)
	T. 5572000 ^{lb}	244500 ^{lb}		2 Covs 16 x 3 x 5'6" + 4'1" T-B (2h)

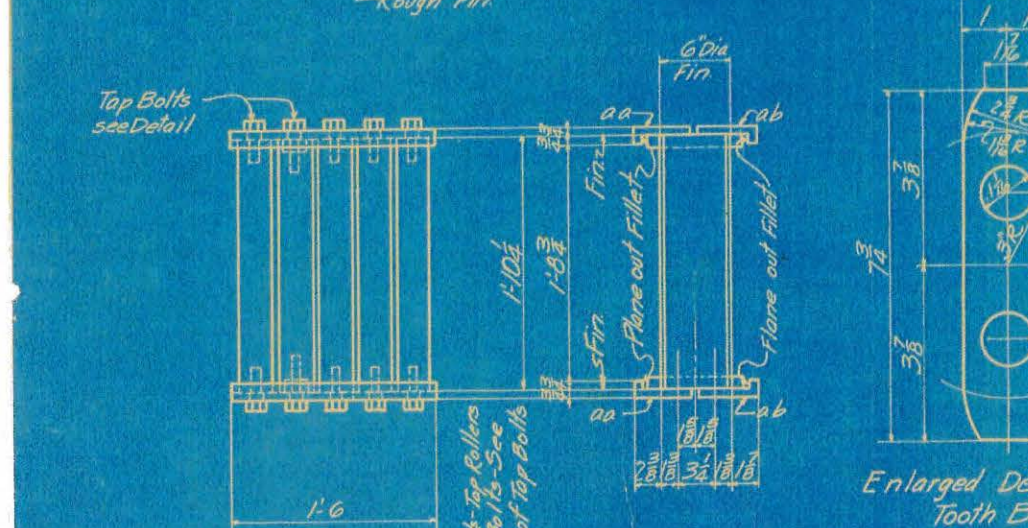
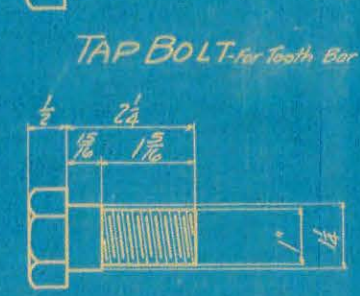
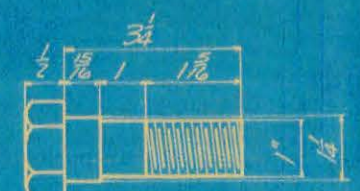
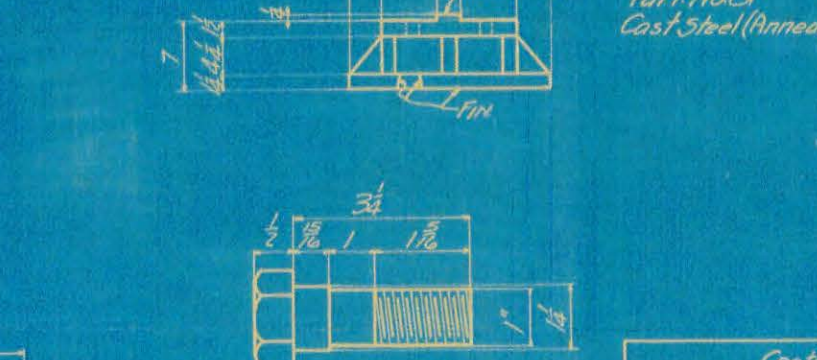
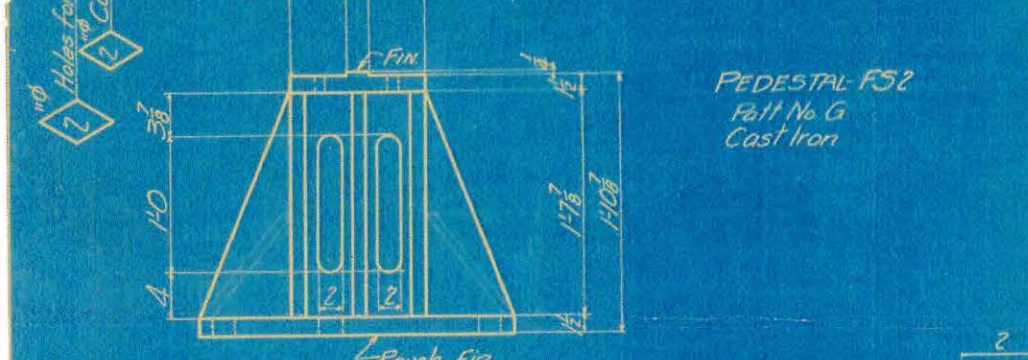
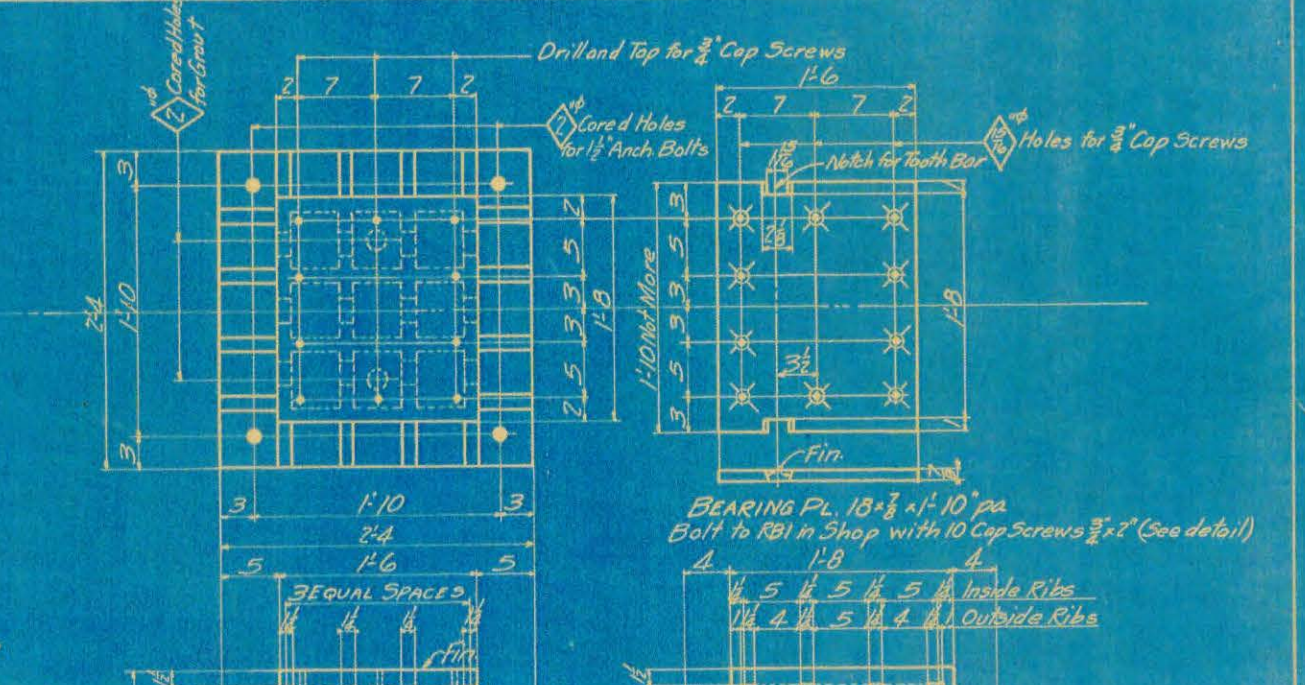
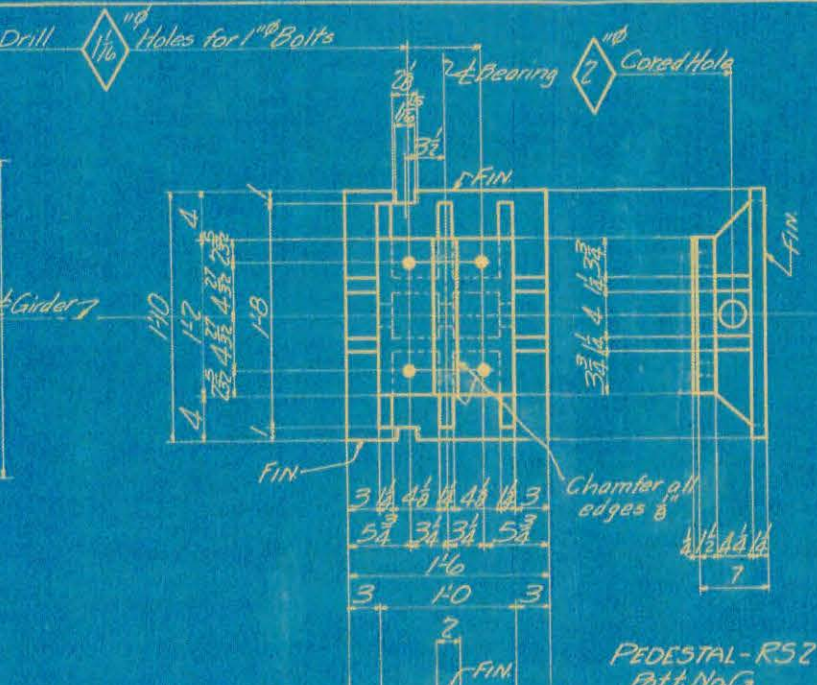
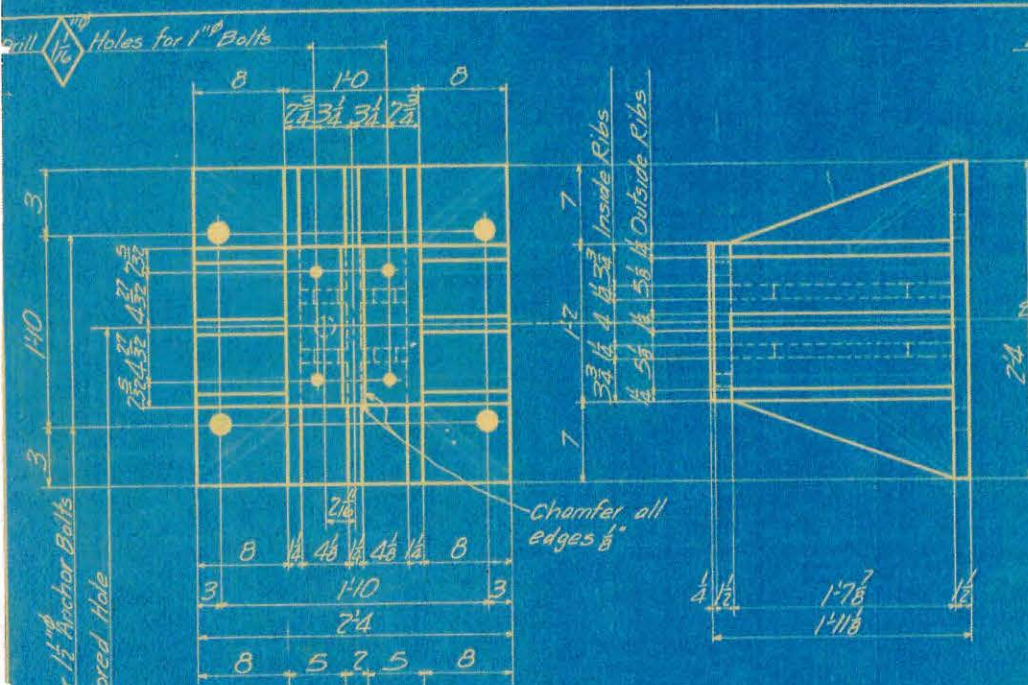
	Base of Rail to Clearance	Base of Rail to Masonry
Tie	11 1/2	11 1/2
Stringer	2 - 6 1/2	2 - 6 1/2
To bot of F.B.	7	7
Lat Pl.	0	0
Flg L	0	0
Cov Pls	2	2
Riv Heads	0	0
Total	4 - 4 1/2	6 - 1 1/2

NOTES:-
 Specifications - A.R.E.A. 1920 (revised to 1922)
 Live Load - Coopers 500 loading
 Dead Load asd Deck - 500^{lb} per ft of span
 Steel - 1700 " " "
 Total 2200 " " "
 Lateral Forces
 Wind on Steel - 360^{lb} per ft.
 " Train - 300 " "
 Horiz Impact - 370 " "
 Total 1030 " "
 Rivets - 3"
 Temperature Change - from -70° to +100° Fahrenheit.
 Anchor Bolts 1 1/2" furnished by Alaska R.R.
 Floor - 8x12 Ties spaced 16' ctrs. Furnish 2 hook bolts and washers for every third tie plus 5%
 Workmanship - Reamed Work.
 Lateral Plates to be shipped separately from Girders.
 For Design of 200 SPANS see Alaska R.R. Drawing 223-1+2.
 Clearance as specified by customer.

Read 12/30/24 BR # 3707
 THE ALASKA RAILROAD
 DEPARTMENT OF THE INTERIOR
 BRIDGE NO 3707 OVER NENANA RIVER
 Scale 1/2" = 1'-0" 1/2"
 Oct 1924
 AMERICAN BRIDGE Co
 Engr. Dept Chicago Office
 Copyright A.B.Co 1924

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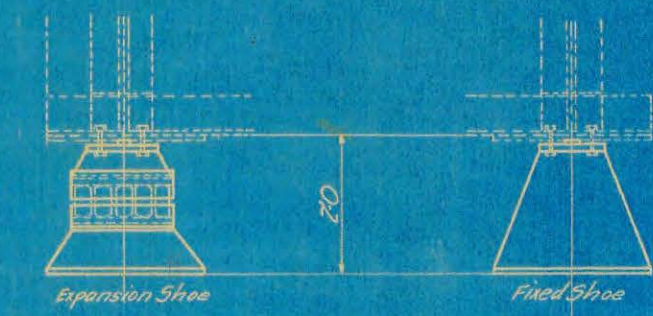
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5 Rollers 6" Fin. \times 3" \times 1" 10 1/2" Fin. - Forged
 2" \times 5" \times 1/2" \times 1" 6" aa - Fillet Planed out
 2" \times 4" \times 1/2" \times 1" 6" ab - Fillet Planed out
 2" Tooth Bars 2" \times 1" 0" 7/8" - Fin. all over
 4" Tap Bolts 1 1/2" \times 0" 3 3/4" - For Tooth Bar
 16" Tap Bolts 1/2" \times 0" 2 1/4"

Enlarged Detail of Tooth Bar

Contract E8268 80'0" Deck Spans									Contract E8271 80'0" Thru Spans							Cont. E8272 80'0" Thru Span on 7" Curve	Cont. E8277 82'4" Thru Span	REQUIRED			
Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Total for Contract	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Bridge No.	Grand Total	Description	Mark	
2	2	2	2	2	2	2	2	16	2	10	2	4	2	8	2	30	2	2	50	Fixed Pedestals	F5Z
2	2	2	2	2	2	2	2	16	2	10	2	4	2	8	2	30	2	2	50	Exp. Pedestals	R5Z
2	2	2	2	2	2	2	2	16	2	10	2	4	2	8	2	30	2	2	50	Exp. Pedestals	RB1
2	2	2	2	2	2	2	2	16	2	10	2	4	2	8	2	30	2	2	50	Roller Nests	RN3



Rec'd 1/6/25

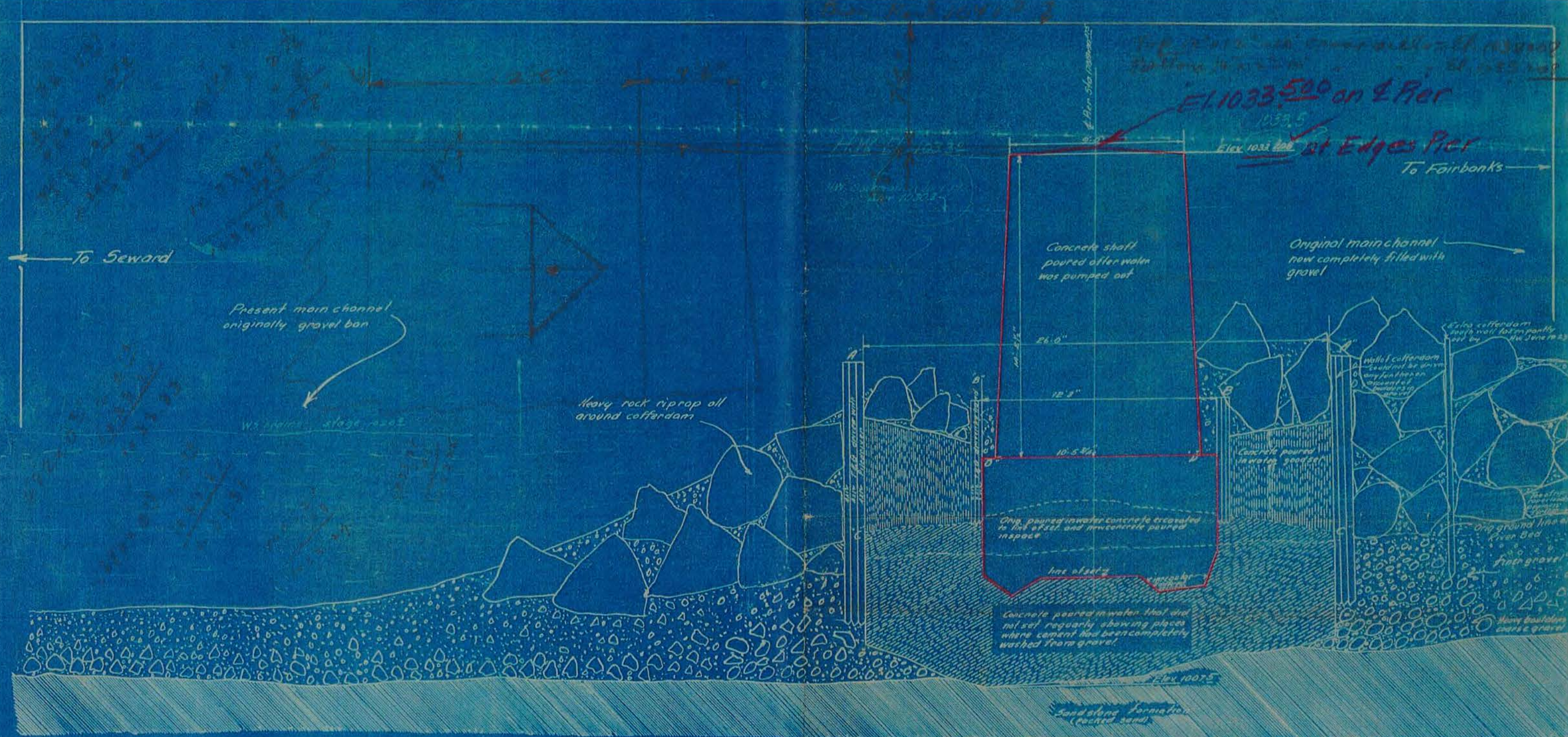
FOR APPROVAL

ALASKA R.R.
82'4" AND 80'0" GIRDER SPANS
Detail of Shoes.

Approved 1/17/25
Robert M. K...
Superintendent

AMERICAN BRIDGE COMPANY.
DRAWINGS MADE AT Gary, IN.
WORK FABRICATED AT Gary, IN.
IN CHARGE OF Gary Fraser
DRAWN BY M.M.S.
DRAWN CHECKED BY Am.J.
DATE 11-22-24
DATE 11-22-24
ORDER No. E8268 E8271 E8272 E8277
SHEET No. 1

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Note:
 Unable to pump out water in cofferdam "A-A" so put in heating coil and warmed water to temp 55°F and poured concrete in water to dotted line "C-C". This concrete did not set properly, still unable to pump out water, so put in cofferdam "B-B" and filled carefully between walls "B-B" and "B-B" with concrete containing more cement. This set firmly sealing wall "B-B" so that it could be pumped dry. Excavated orig concrete to line of set and poured footing "D-D" without form except wall "D-D" 4" steel rails set in footing and projecting up into shaft forms contact. All concrete heavily reinforced with rebar.

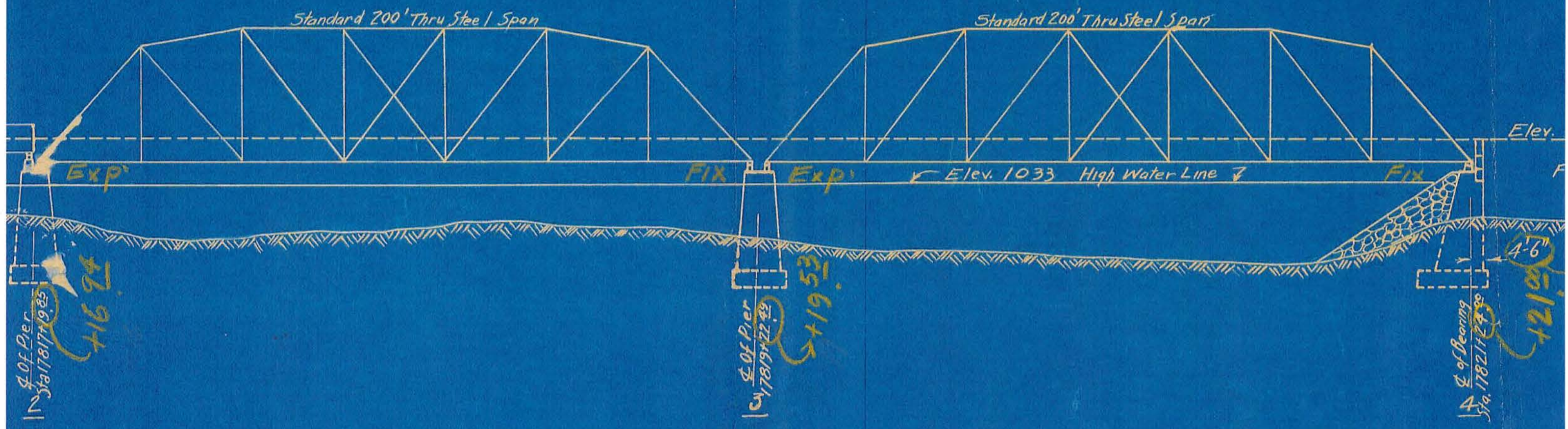
DEPARTMENT OF THE INTERIOR
THE ALASKA RAILROAD
 THE ALASKAN ENGINEERING COMMISSION
 OFFICE OF RESIDENT ENGINEER - FAIRBANKS
SECTION THRU CENTER OF CONCRETE PIER - BRIDGE 3707
 SHOWING ORIGINAL CONSTRUCTION AND PRESENT CONDITIONS

INFORMATION FROM FOLLOWING SOURCES
 Orig. notes of construction 1922
 Observations during summer of 1923

H. G. Hasler
 Resident Engineer

Scale 1/4" = 1'
 February 1924
 FILE NO.

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Base 13'-4" x 37'-6"
to as light change.

Pier Base 14'-0" x 38'-6"

Base of Pier 19'-8"

ELEVATION

Note: Yellow Figures are as Constructed.

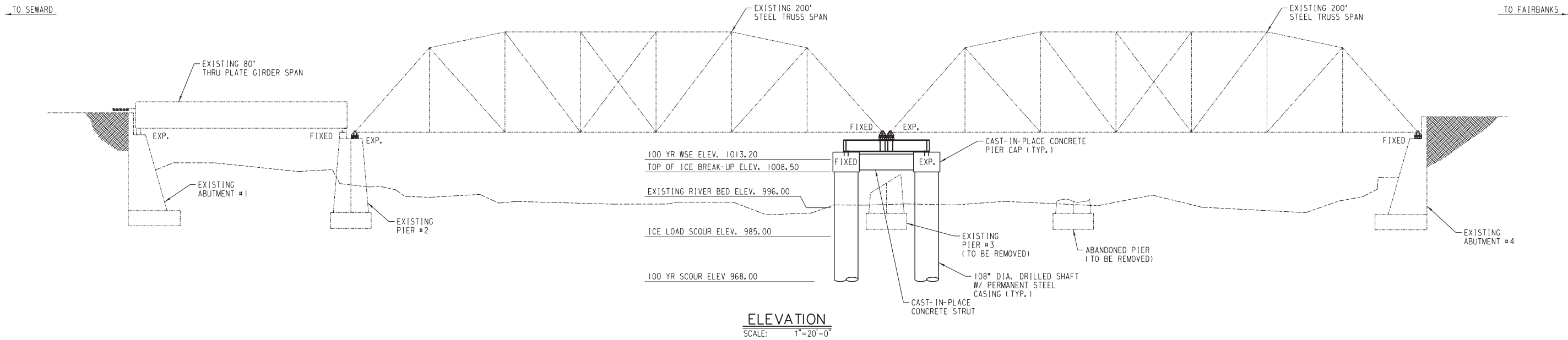
Note: - ϕ of existing concrete Pier is at Station 17819 + 90.375

OUTLINE

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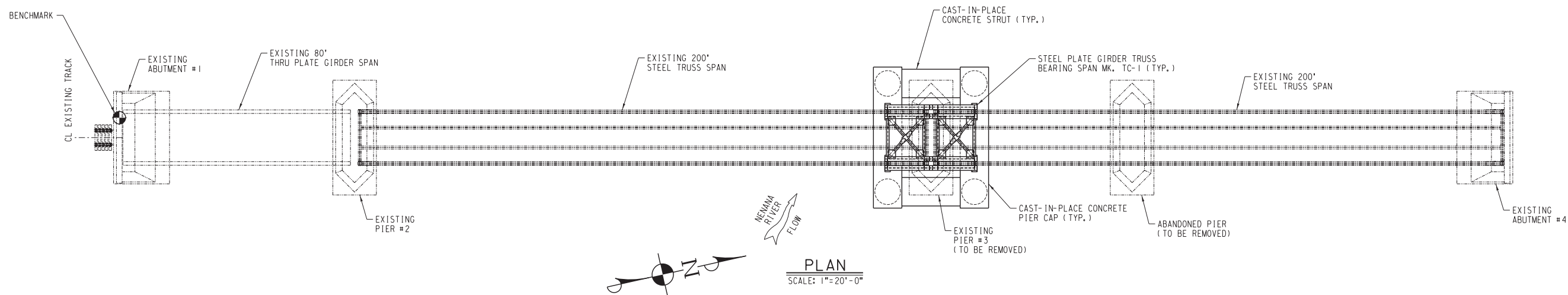
Appendix K3
60% design submittal (Wilson & Co, January 9, 2017)

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BORING TH-370.7-P2-1
ELEV. 1007.50

BORING TH-370.7-P4-2
ELEV. 1009.00



DRAWING SCHEDULE	
DWG. NO.	DESCRIPTION
1	BRIDGE PLAN AND ELEVATION
2	PHASING DETAILS (SHEET 1 OF 2)
3	PHASING DETAILS (SHEET 2 OF 2)
4	PIER #3 DRILLED SHAFT LAYOUT
5	PIER #3 PLAN
6	PIER #3 SECTION AND DETAILS
7	PIER #3 ELEVATION VIEW
8	PIER #3 DRILLED SHAFT DETAILS
9	CAST-IN-PLACE CONCRETE PIER CAP (SHEET 1 OF 2)
10	CAST-IN-PLACE CONCRETE PIER CAP (SHEET 2 OF 2)
11	CAST-IN-PLACE CONCRETE STRUT (SHEET 1 OF 2)
12	CAST-IN-PLACE CONCRETE STRUT (SHEET 2 OF 2)
13	FRAMING PLAN
14	STEEL PLATE GIRDER TRUSS BEARING SPAN MK. TC-1 (SHEET 1 OF 2)
15	STEEL PLATE GIRDER TRUSS BEARING SPAN MK. TC-1 (SHEET 2 OF 2)
16	LATERAL BRACING DETAILS
17	EXPANSION BEARING ASSEMBLY DETAILS
18	FIXED BEARING ASSEMBLY DETAILS
19	MISCELLANEOUS STEEL
20	BORINGS (SHEET 1 OF 2)
21	BORINGS (SHEET 2 OF 2)

NOTE:
ABANDONED PIER TO BE REMOVED INCLUDES FOUNDATION, REINFORCED CONCRETE, REMNANT COFFERDAM MATERIALS AND ROCK ARMORING.

60% SUBMITTAL

LETTER SERIES

SHEET NO. CUT ON

SECTION DESIGNATION

SHEET NO. SHOWN ON

WILSON & COMPANY
1516 MIRACLE HILLS DRIVE STE. 102
OMAHA, NE 68154-4473
(402) 896-6100
FAX (402) 496-4070

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 370.7 PIER REPLACEMENT

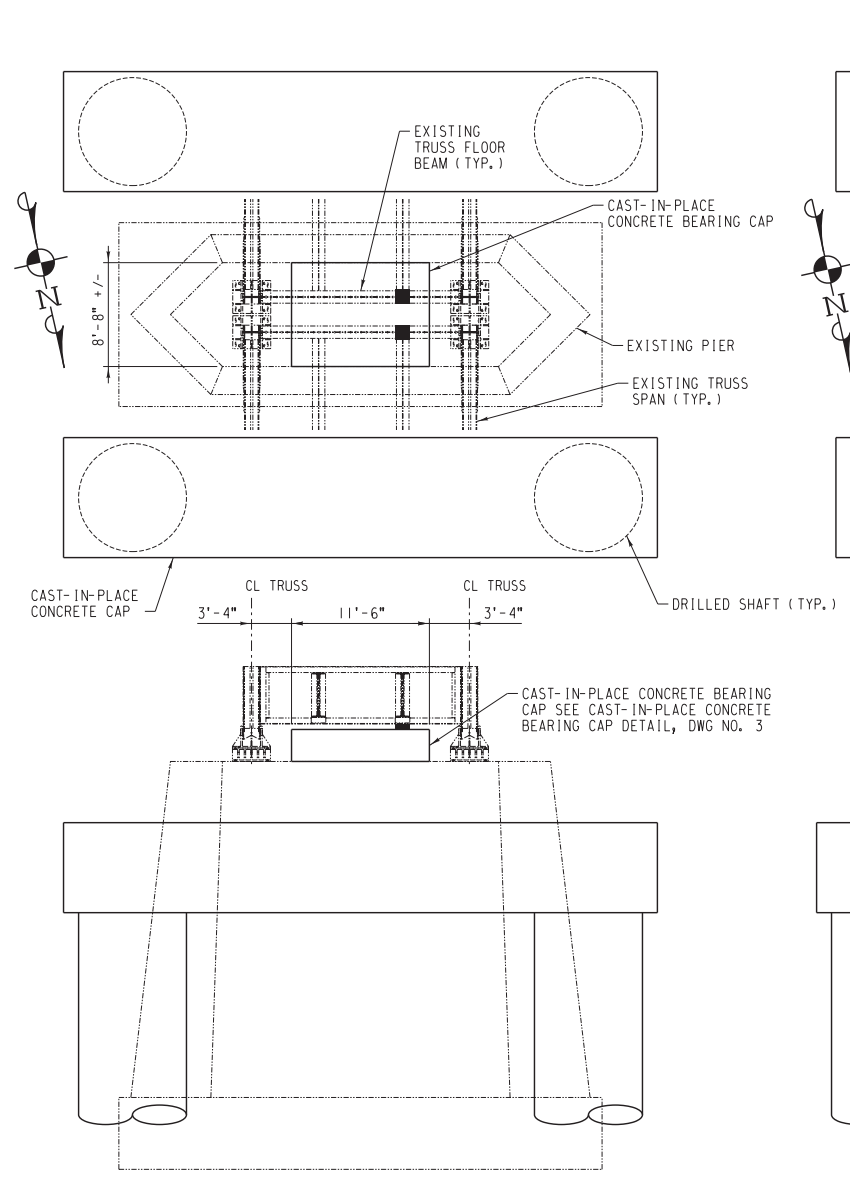
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DESIGNED BY: JBH
DRAWN BY: DTP
CHECKED BY: EDA
APPROVED BY: DAO

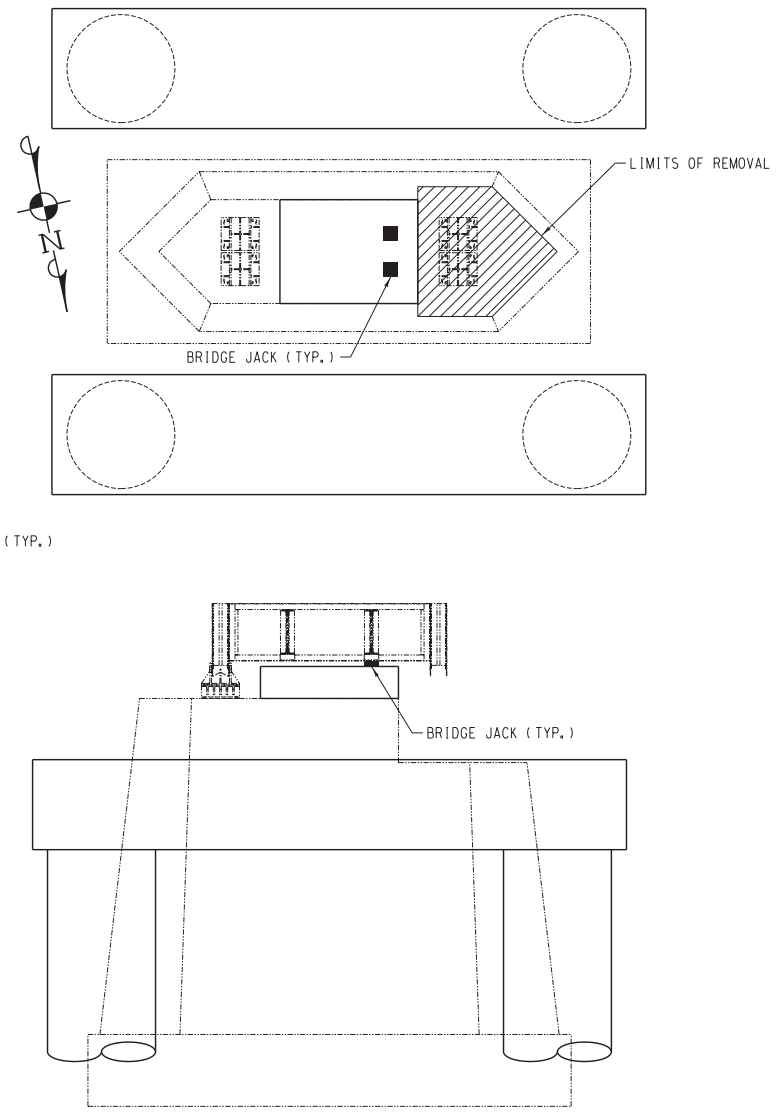
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DATE: 1/09/17

AFE NO.:
ACAD FILE:
DWG NO. S01
1 OF 21

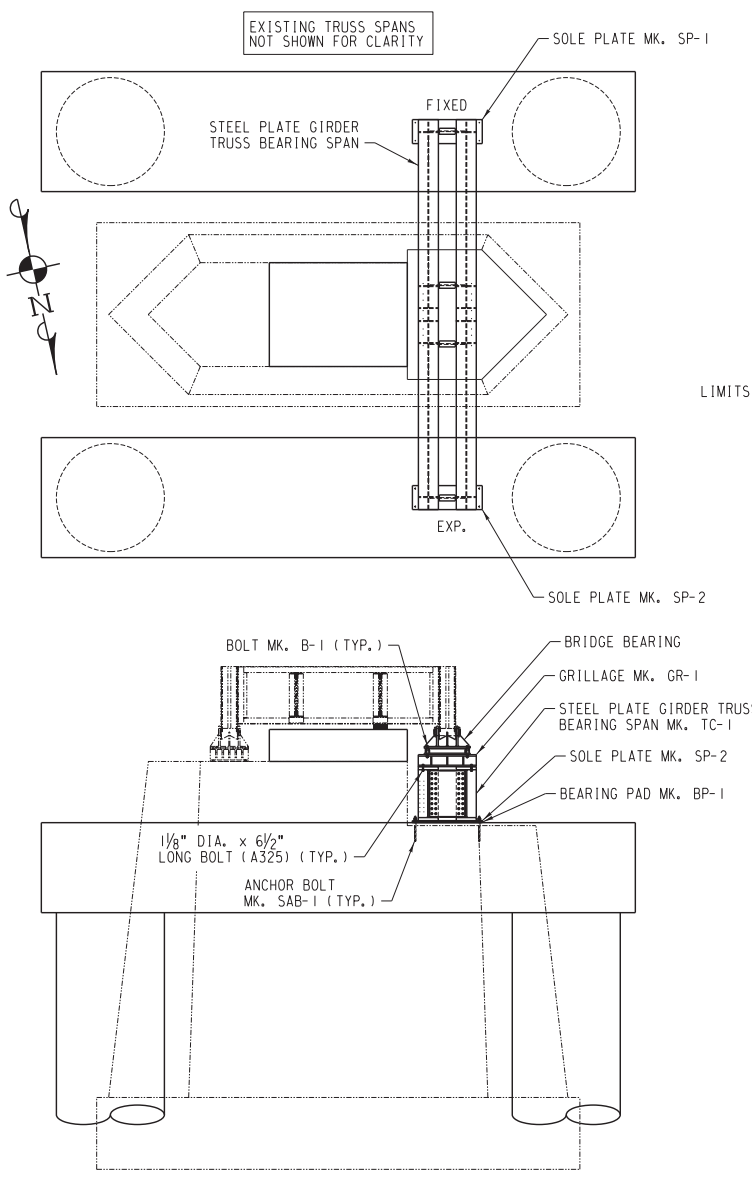
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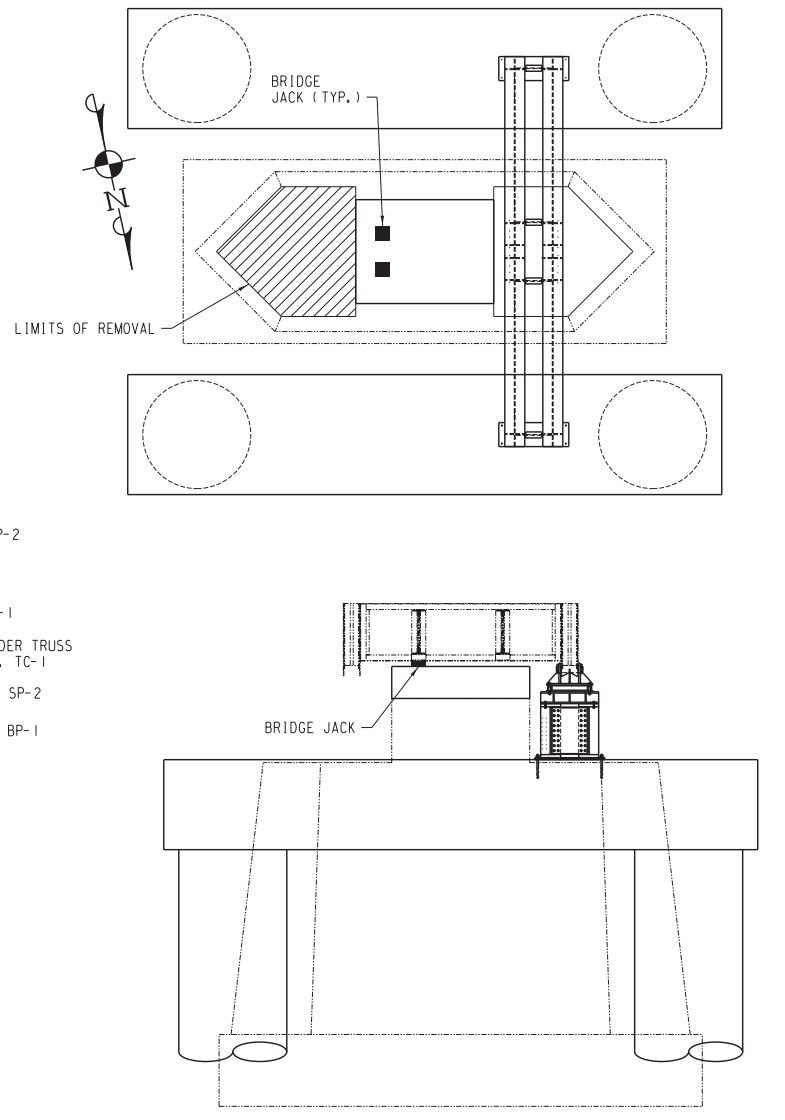
CONSTRUCTION SEQUENCE - PHASE 1
SCALE: 1/8" = 1'-0"



CONSTRUCTION SEQUENCE - PHASE 2
SCALE: 1/8" = 1'-0"



CONSTRUCTION SEQUENCE - PHASE 3
SCALE: 1/8" = 1'-0"



CONSTRUCTION SEQUENCE - PHASE 4
SCALE: 1/8" = 1'-0"

PROPOSED CONSTRUCTION SEQUENCE

- PHASE 1
 1. CONSTRUCT DRILLED SHAFTS.
 2. CONSTRUCT CAST-IN-PLACE CONCRETE CAPS.
 3. CONSTRUCT CAST-IN-PLACE CONCRETE BEARING CAP ON EXISTING PIER.
- PHASE 2
 4. SHUT DOWN BRIDGE TO RAILROAD TRAFFIC.
 5. INSTALL BRIDGE JACKS AND JACK ONE SIDE OF BOTH TRUSS SPANS.
 6. REMOVE PORTION OF EXISTING PIER.
- PHASE 3
 7. ERECT STEEL PLATE GIRDER TRUSS BEARING SPAN.
 8. INSTALL NEW BEARINGS FOR TRUSS SPANS.
 9. LOWER TRUSS SPANS.
- PHASE 4
 10. INSTALL BRIDGE JACKS AND JACK OTHER SIDE OF BOTH TRUSS SPANS.
 11. REMOVE PORTION OF EXISTING PIER.
- PHASE 5
 12. ERECT STEEL PLATE GIRDER TRUSS BEARING SPAN.
 13. INSTALL NEW BEARINGS FOR TRUSS SPANS.
 14. LOWER TRUSS SPANS.
- PHASE 6
 15. REMOVE CAST-IN-PLACE CONCRETE BEARING CAP AND PORTION OF EXISTING PIER.
 16. INSTALL STEEL PLATE GIRDER TRUSS BEARING SPAN BRACING.
 17. CONSTRUCT CAST-IN-PLACE CONCRETE STRUTS.
- PHASE 7
 18. ALLOW RAILROAD TRAFFIC BACK ON THE BRIDGE.
 19. REMOVE REMAINING EXISTING PIER AND OLD PIER REMNANTS.
 20. FIX STREAM BED.

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REV.	DATE	BY	REVISION

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: **BR. 370.7 PIER REPLACEMENT**

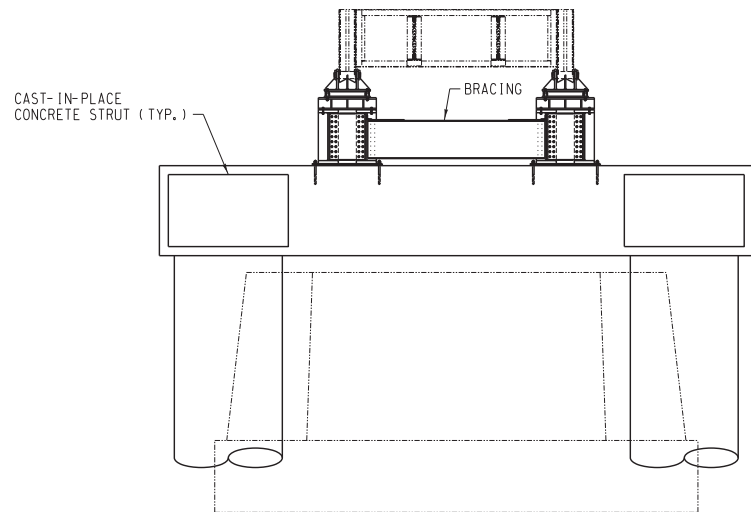
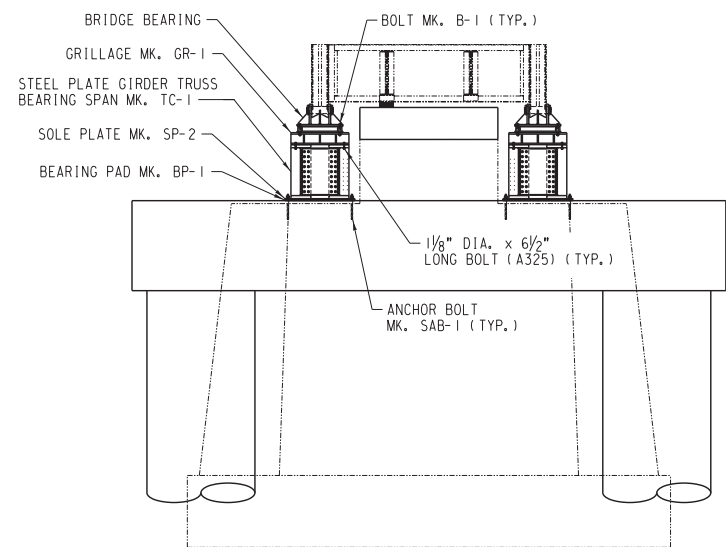
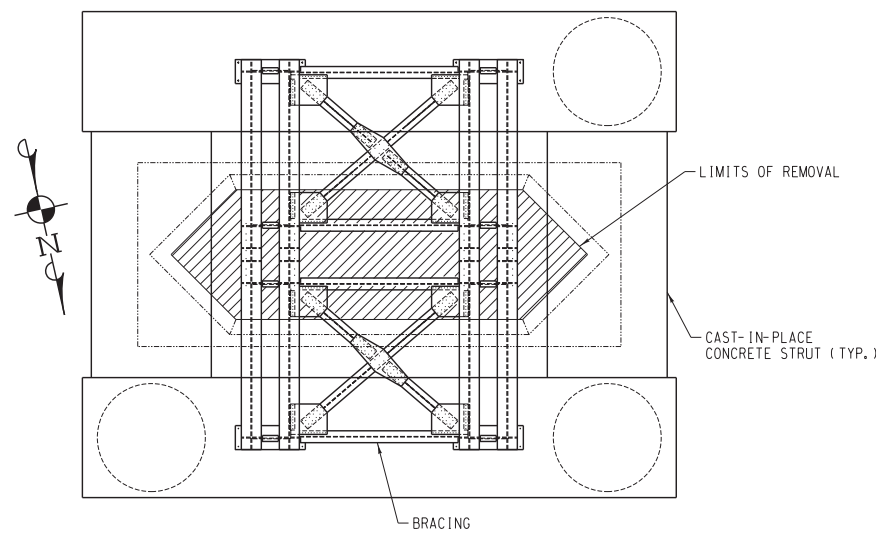
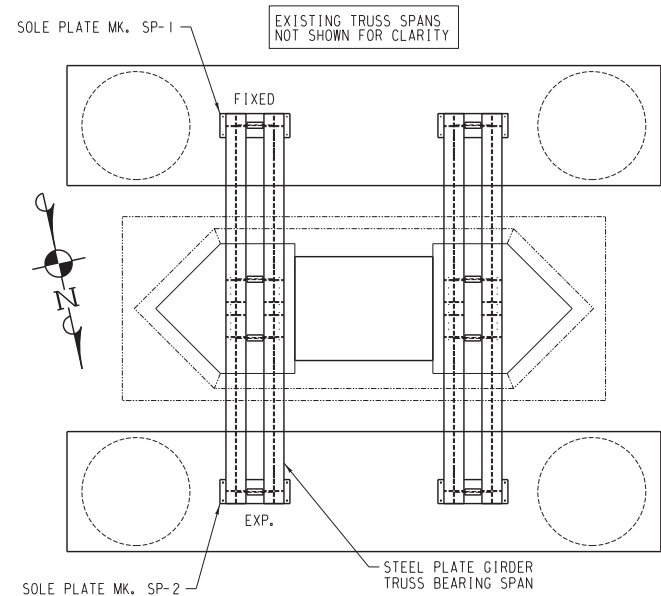
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DESIGNED BY: JBH
DRAWN BY: DTP
CHECKED BY: EDA
APPROVED BY: DAO

SCALE: AS NOTED
DATE: 1/09/17

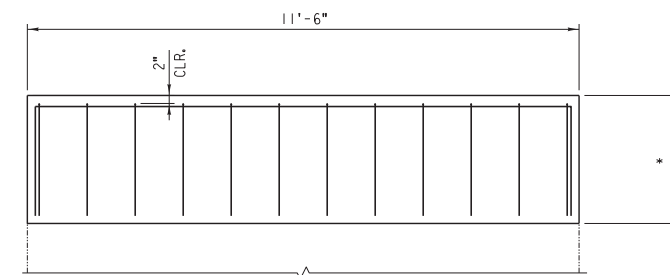
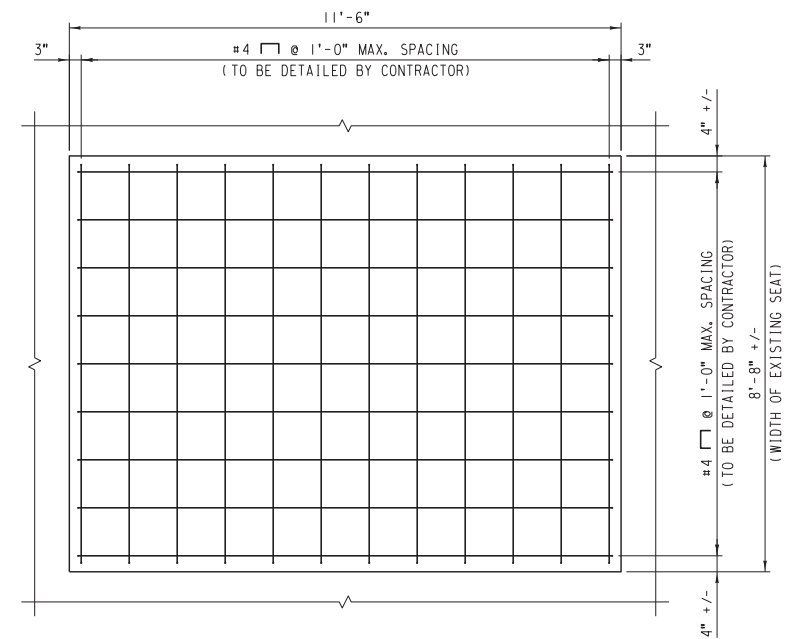
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ACAD FILE:
DWG NO. **S02**
2 OF 21

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CONSTRUCTION SEQUENCE - PHASE 5
SCALE: 1/8"=1'-0"

CONSTRUCTION SEQUENCE - PHASE 6
SCALE: 1/8"=1'-0"



CAST-IN-PLACE CONCRETE BEARING CAP
SCALE: 1/2"=1'-0"

NOTE:
* = TO BE DETERMINED BY CONTRACTOR
BASED ON JACKING EQUIPMENT

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 370.7 PIER REPLACEMENT

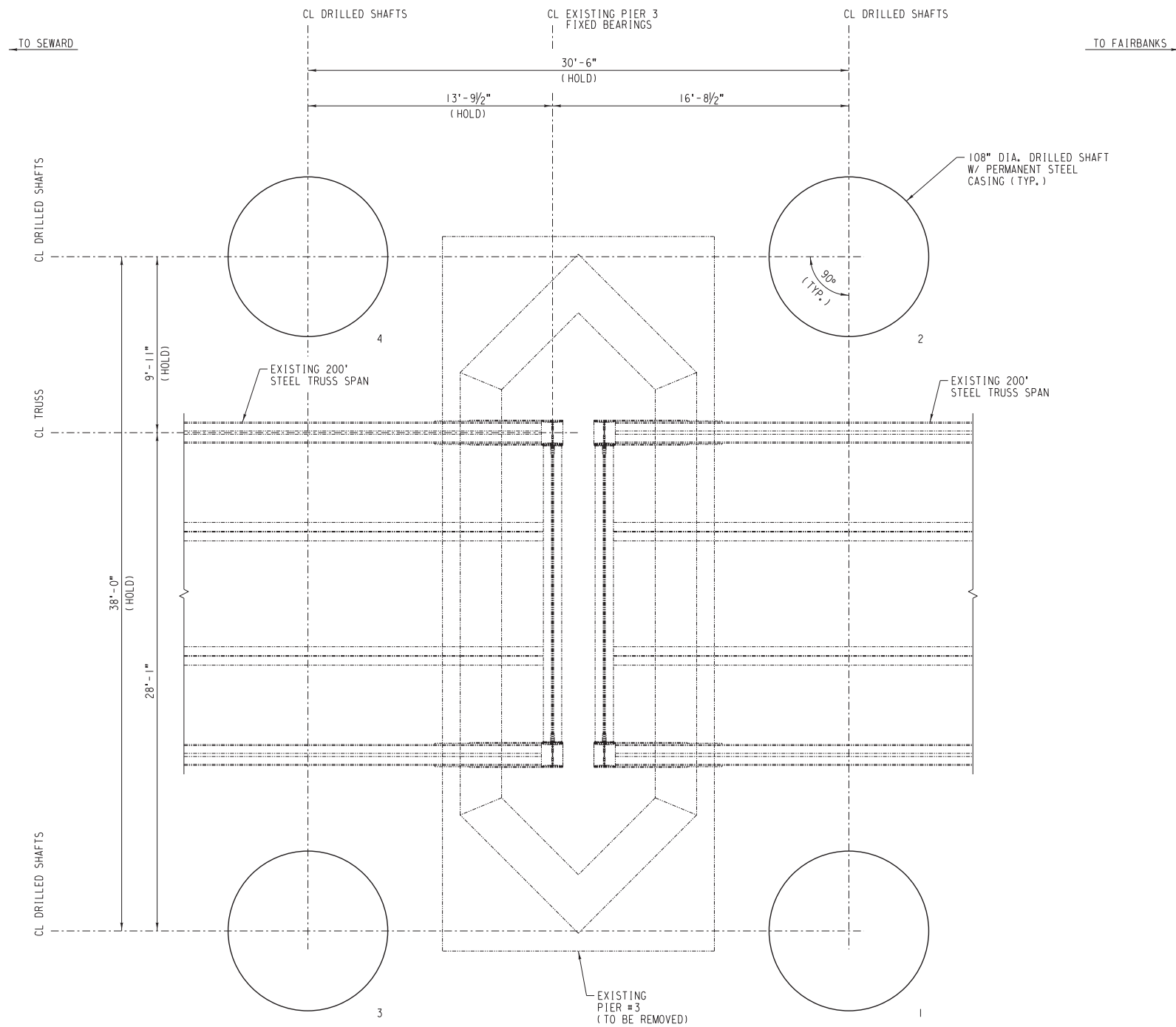
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(SHEET 2 OF 2)

DESIGNED BY: JBH	SCALE: AS NOTED	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17	ACAD FILE:
CHECKED BY: EDA		DWG NO.:
APPROVED BY: DAO		3 OF 21

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DRILLED SHAFT LAYOUT
SCALE: 1/4" = 1'-0"

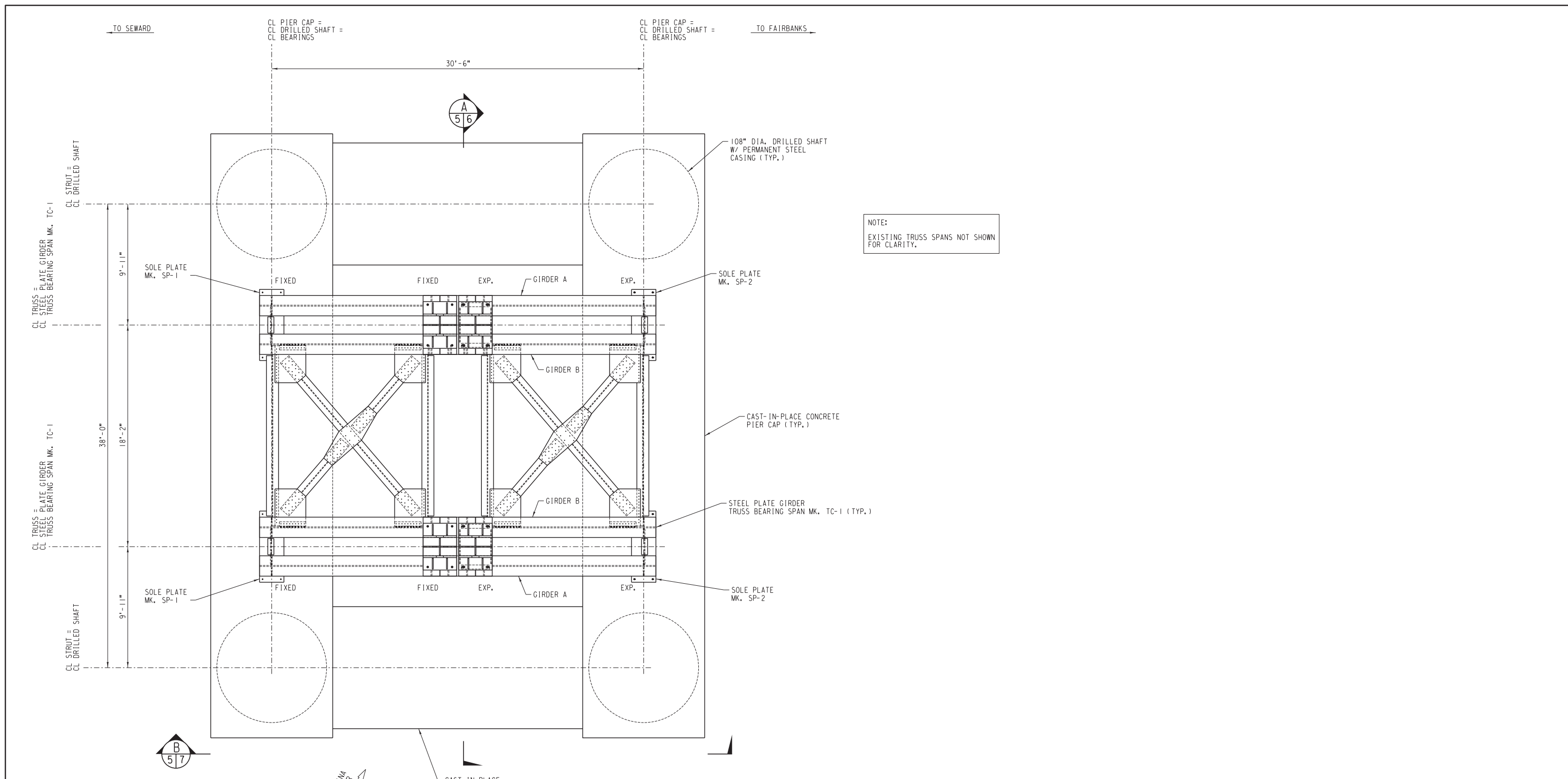
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PROJECT: BR. 370.7 PIER REPLACEMENT			
TITLE: PIER #3 DRILLED SHAFT LAYOUT			
DESIGNED BY: JBH	SCALE: AS NOTED	S04	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO. 4 OF 21
APPROVED BY: DAO			

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NOTE:
EXISTING TRUSS SPANS NOT SHOWN FOR CLARITY.

PLAN - PIER #3
SCALE: 1/4" = 1' - 0"

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
BR. 370.7 PIER REPLACEMENT

TITLE:
PIER #3 PLAN

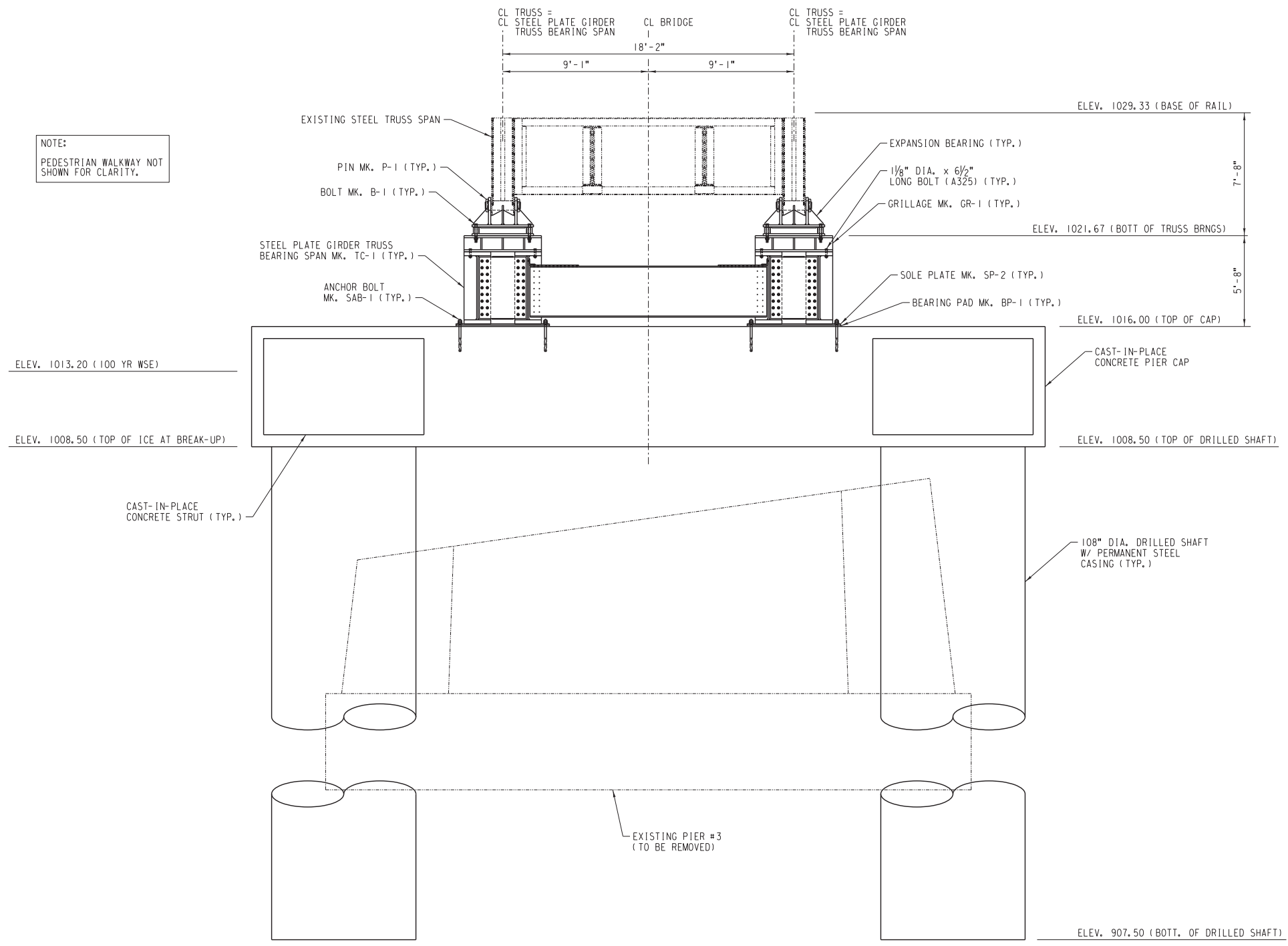
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DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO. 5 OF 21
APPROVED BY: DAO			

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(402) 896-6100
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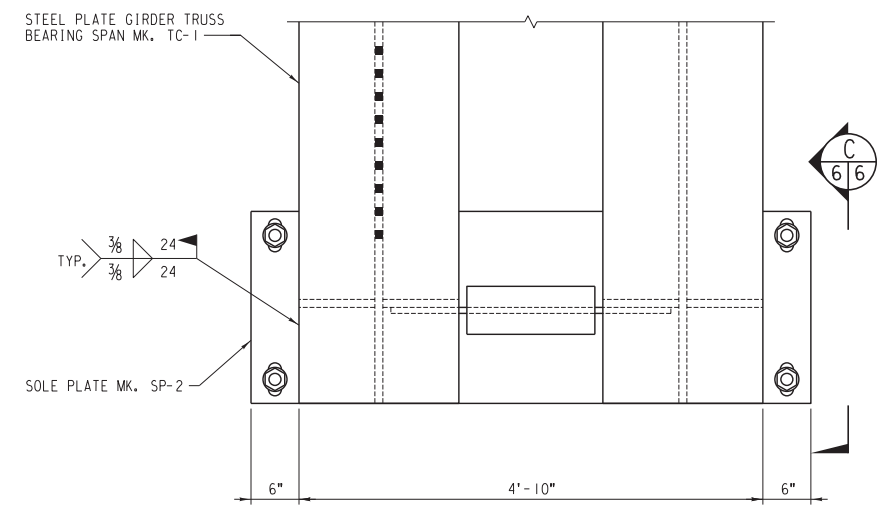
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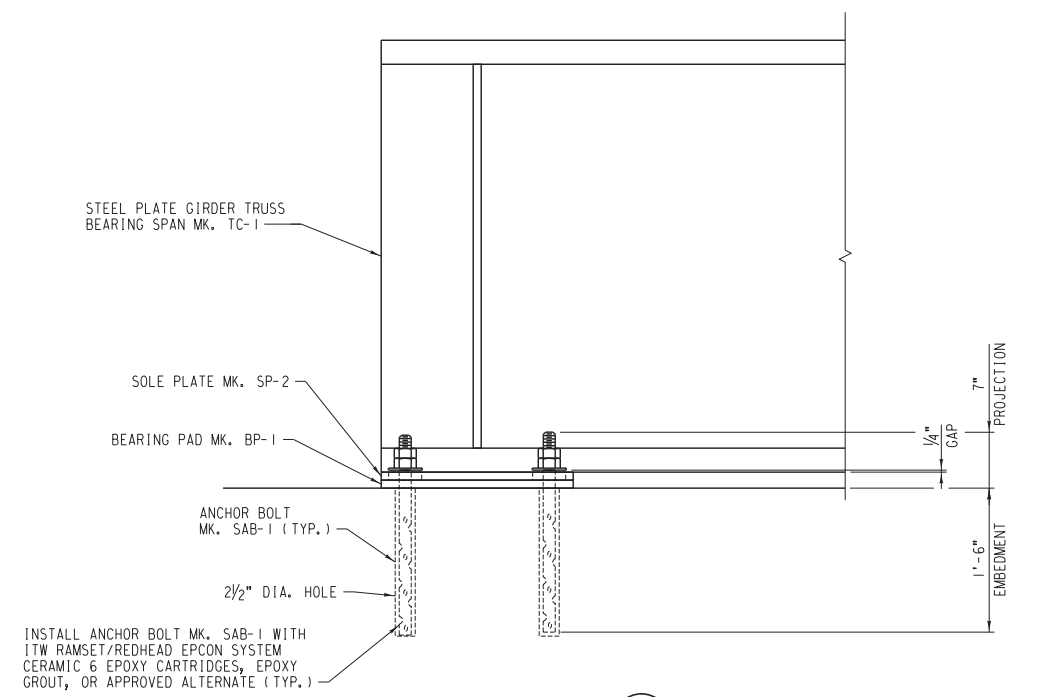
NOTE:
PEDESTRIAN WALKWAY NOT SHOWN FOR CLARITY.



SECTION A
SCALE: 1/4" = 1'-0" 5/6



CAP BEARING DETAIL
SCALE: 1" = 1'-0"



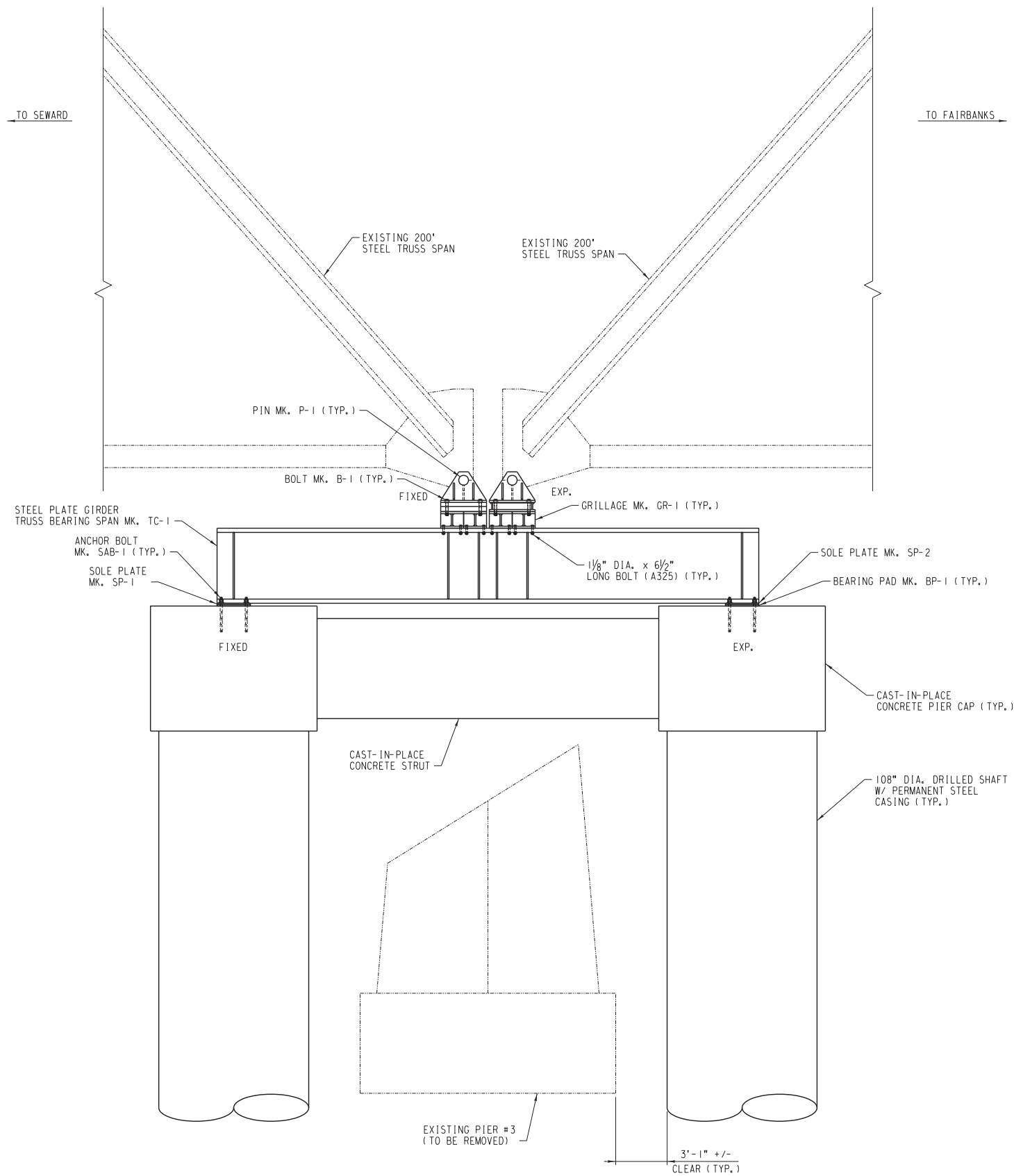
VIEW C
SCALE: 1" = 1'-0" 6/6

60% SUBMITTAL

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT: BR. 370.7 PIER REPLACEMENT			
TITLE: PIER #3 SECTION AND DETAILS			
DESIGNED BY: JBH	SCALE: AS NOTED	S06	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO.:
APPROVED BY: DAO			6 OF 21

	1516 MIRACLE HILLS DRIVE STE. 102 OMAHA, NE 68154-4473 (402) 896-6100 FAX (402) 496-4070
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VIEW B
SCALE: 1/4" = 1'-0"

60% SUBMITTAL

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 370.7 PIER REPLACEMENT

TITLE: PIER #3 ELEVATION VIEW

DESIGNED BY: JBH	SCALE: AS NOTED	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17	ACAD FILE:
CHECKED BY: EDA		DWG NO.:
APPROVED BY: DAO		7 OF 21

WILSON & COMPANY
1516 MIRACLE HILLS DRIVE STE. 102
OMAHA, NE 68154-4473
(402) 896-6100
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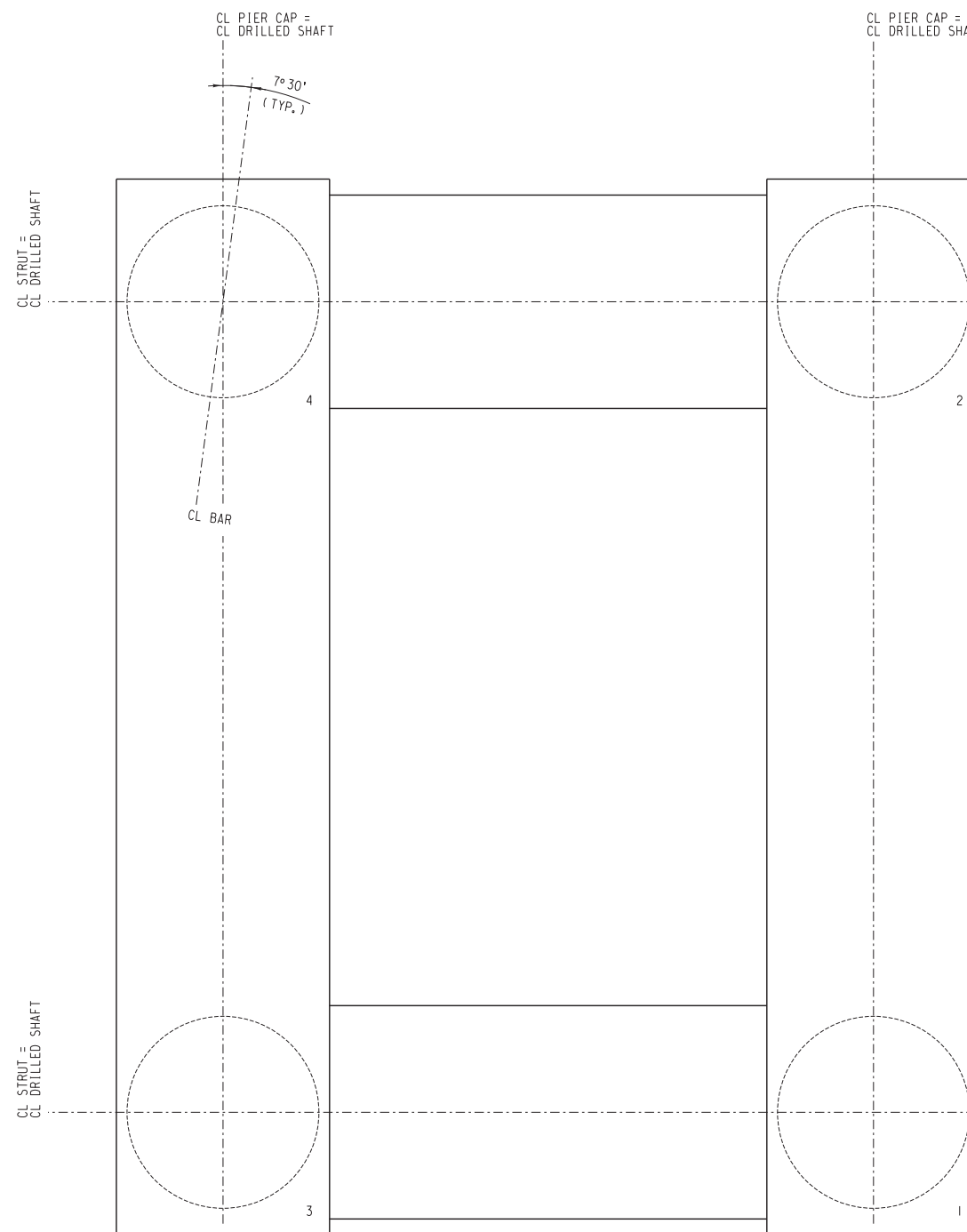
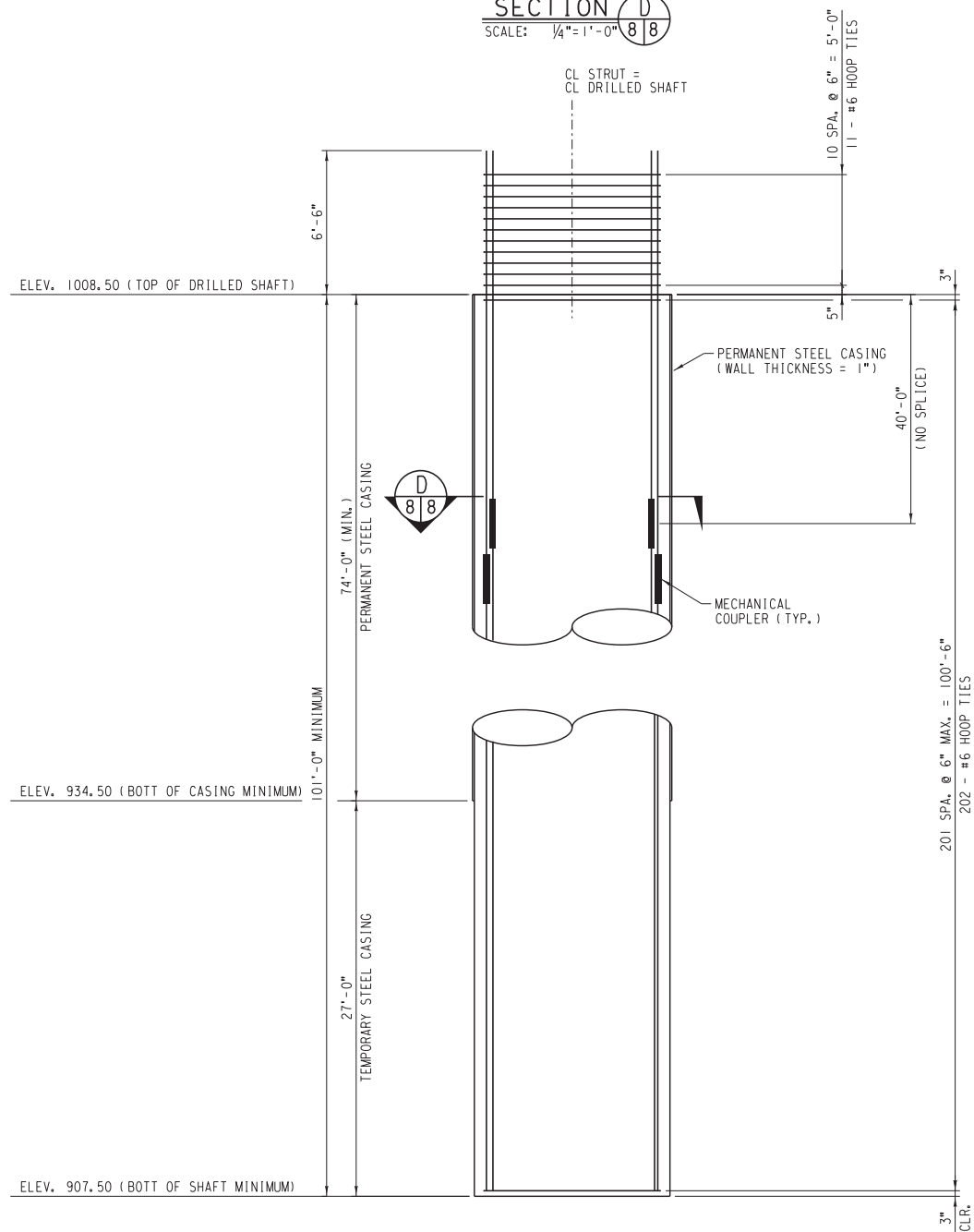
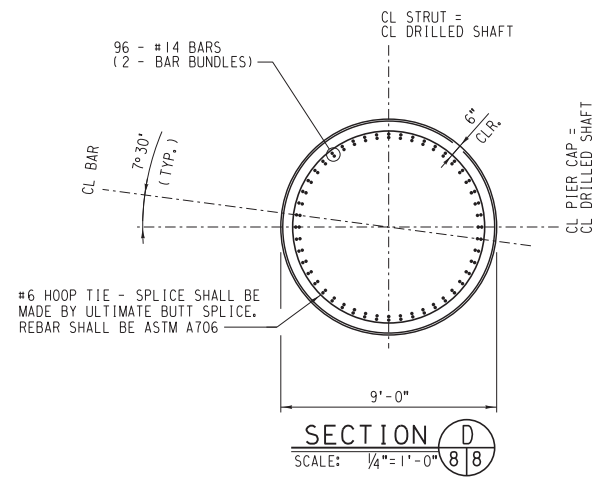
REV.	DATE	BY	REVISION

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DRILLED SHAFT CAST-IN-PLACE CONCRETE SCHEDULE			
TOTAL	PER DRILLED SHAFT	UNIT	DESCRIPTION
X	X	CU. YD.	4000 P. S. I. CONCRETE (PER SPECIFICATIONS, DWG NO. X)

DRILLED SHAFT REINFORCING SCHEDULE				
TOTAL	MARK	SIZE	LENGTH	SHAPE
X	X	X	X	
X	X	X	X	

EST. WT. OF REINFORCING STEEL PER DRILLED SHAFT = XX LB.
 TOTAL EST. WT. OF REINFORCING STEEL = XX LB.



- NOTES:
- DRILLED SHAFTS ARE END BEARING SHAFTS. PROBE HOLES ARE REQUIRED AT THE BASE OF EACH DRILLED SHAFT. SEE DRILLED SHAFT NOTES, DRAWING NO. X.
 - ORIENTATION OF DRILLED SHAFT REINFORCING IN RELATION TO CL DRILLED SHAFT AND CL PIER CAP IS CRITICAL FOR INSTALLATION OF CAP REINFORCING
 - MECHANICAL COUPLERS TO BE D250L BAR-LOCK 14L BY DAYTON SUPERIOR OR APPROVED ALTERNATE.

60% SUBMITTAL

ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 370.7 PIER REPLACEMENT

TITLE: PIER #3
 DRILLED SHAFT DETAILS

DESIGNED BY: JBH
 DRAWN BY: DTP
 CHECKED BY: EDA
 APPROVED BY: DAO

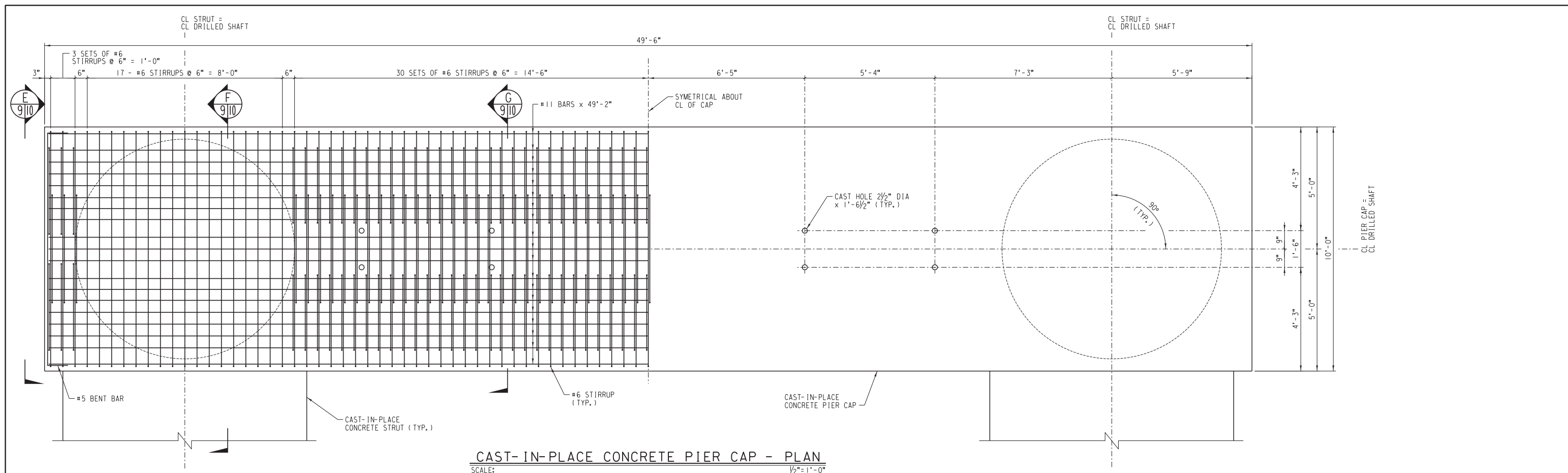
SCALE: AS NOTED
 DATE: 1/09/17

AFE NO.:
 ACAD FILE:
 DWG NO. S08
 8 OF 21

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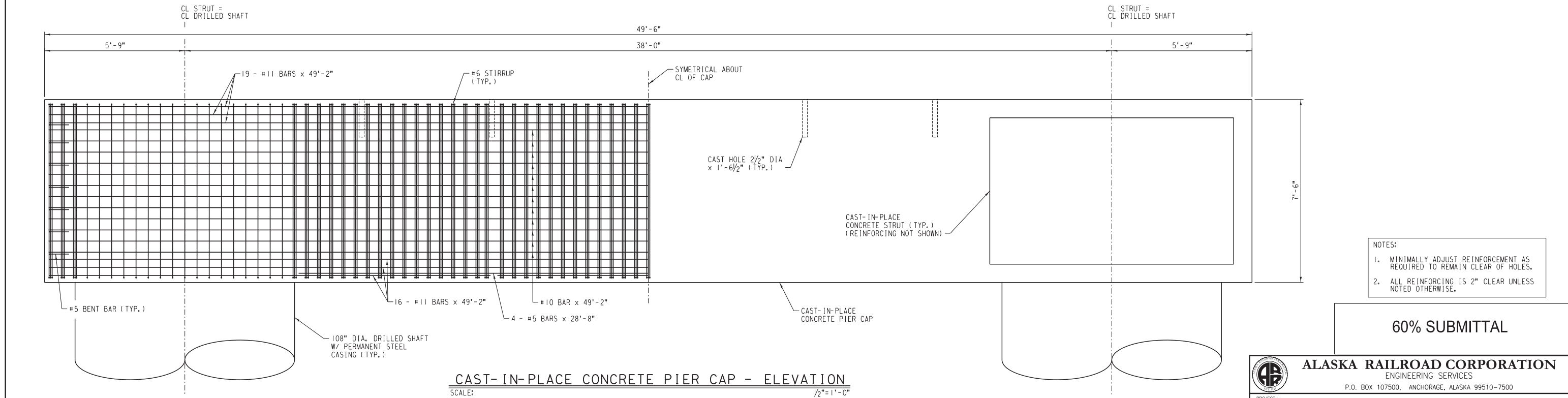
REV.	DATE	BY	REVISION

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CAST-IN-PLACE CONCRETE PIER CAP - PLAN

SCALE: 1/2" = 1'-0"



CAST-IN-PLACE CONCRETE PIER CAP - ELEVATION

SCALE: 1/2" = 1'-0"

- NOTES:
1. MINIMALLY ADJUST REINFORCEMENT AS REQUIRED TO REMAIN CLEAR OF HOLES.
 2. ALL REINFORCING IS 2" CLEAR UNLESS NOTED OTHERWISE.

60% SUBMITTAL

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: **BR. 370.7 PIER REPLACEMENT**

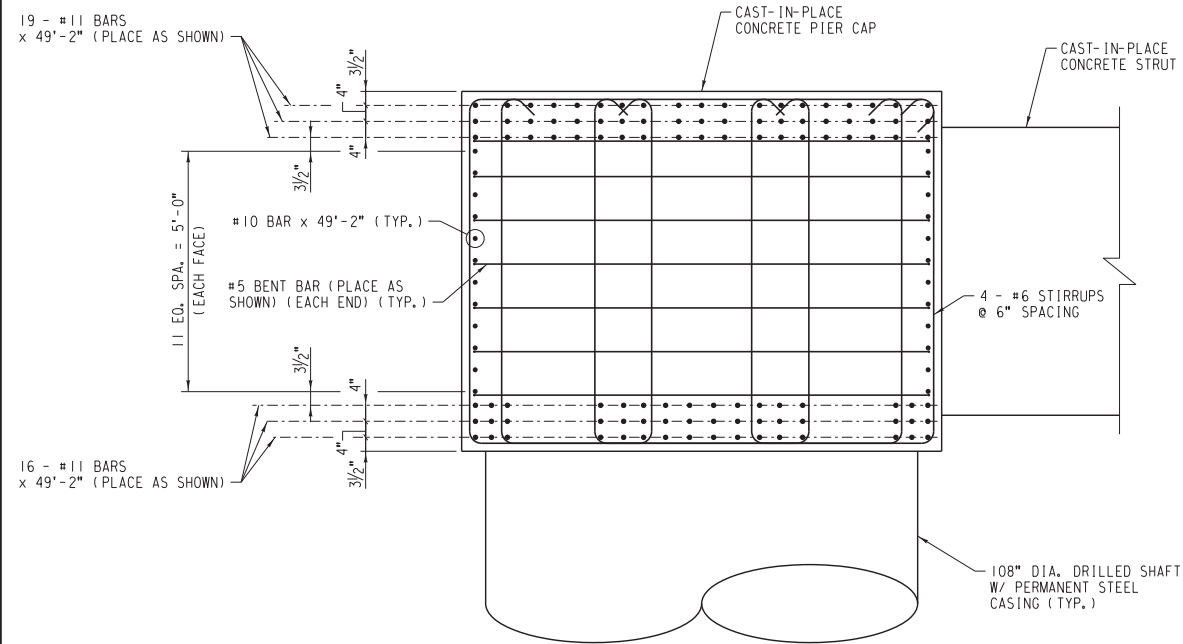
TITLE: **CAST-IN-PLACE CONCRETE PIER CAP (SHEET 1 OF 2)**

DESIGNED BY: JBH	SCALE: AS NOTED	S09	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO.:
APPROVED BY: DAO			9 OF 21

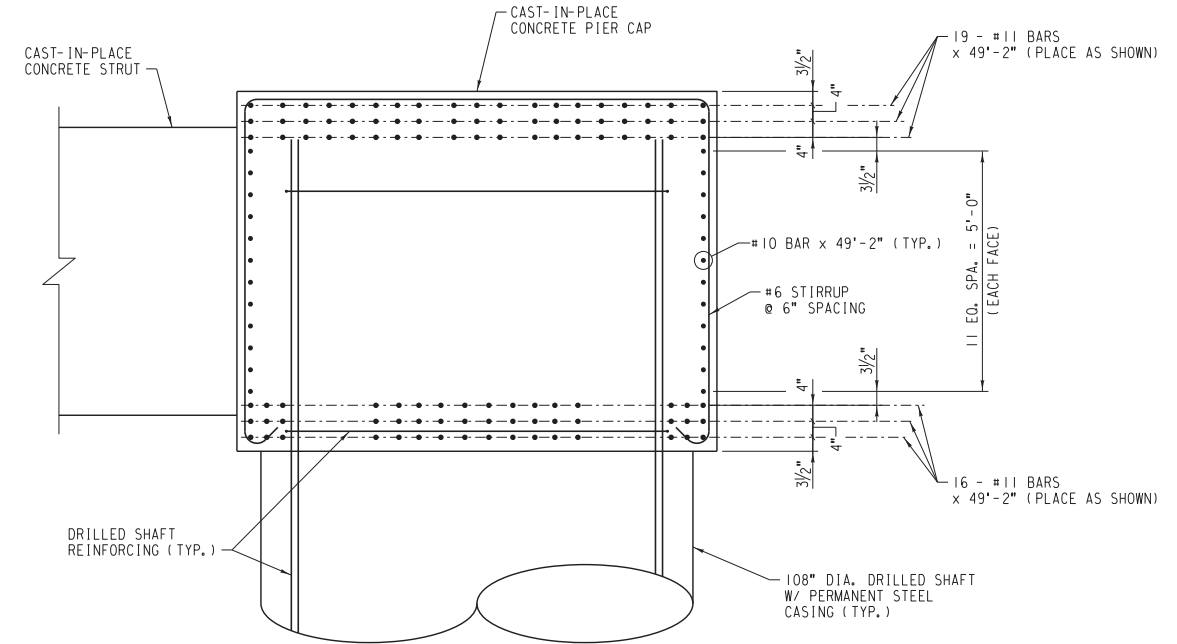
WILSON & COMPANY
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FAX (402) 496-4070

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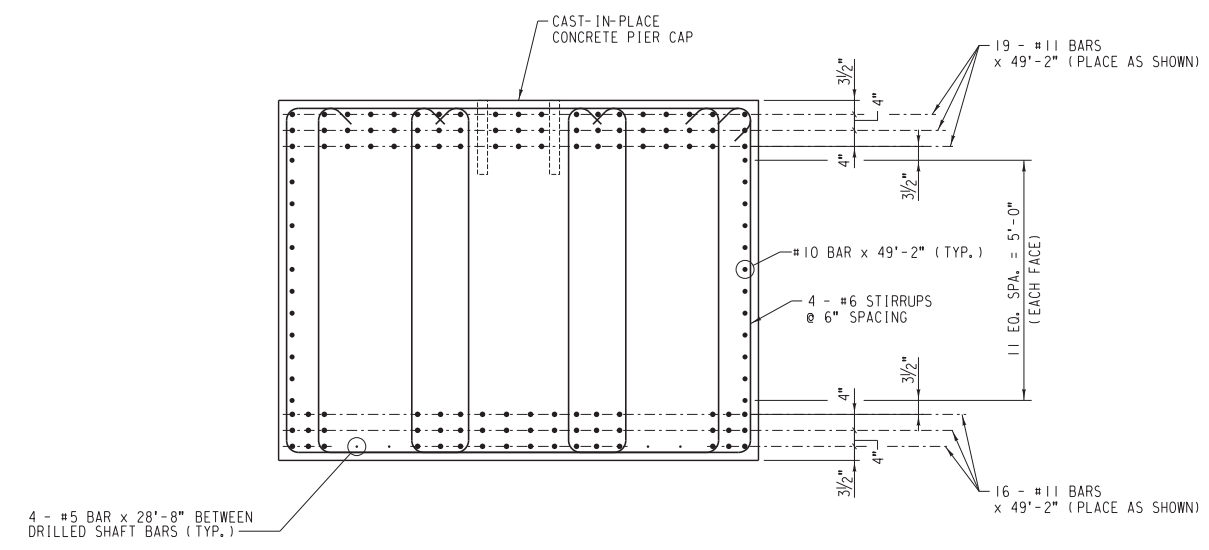
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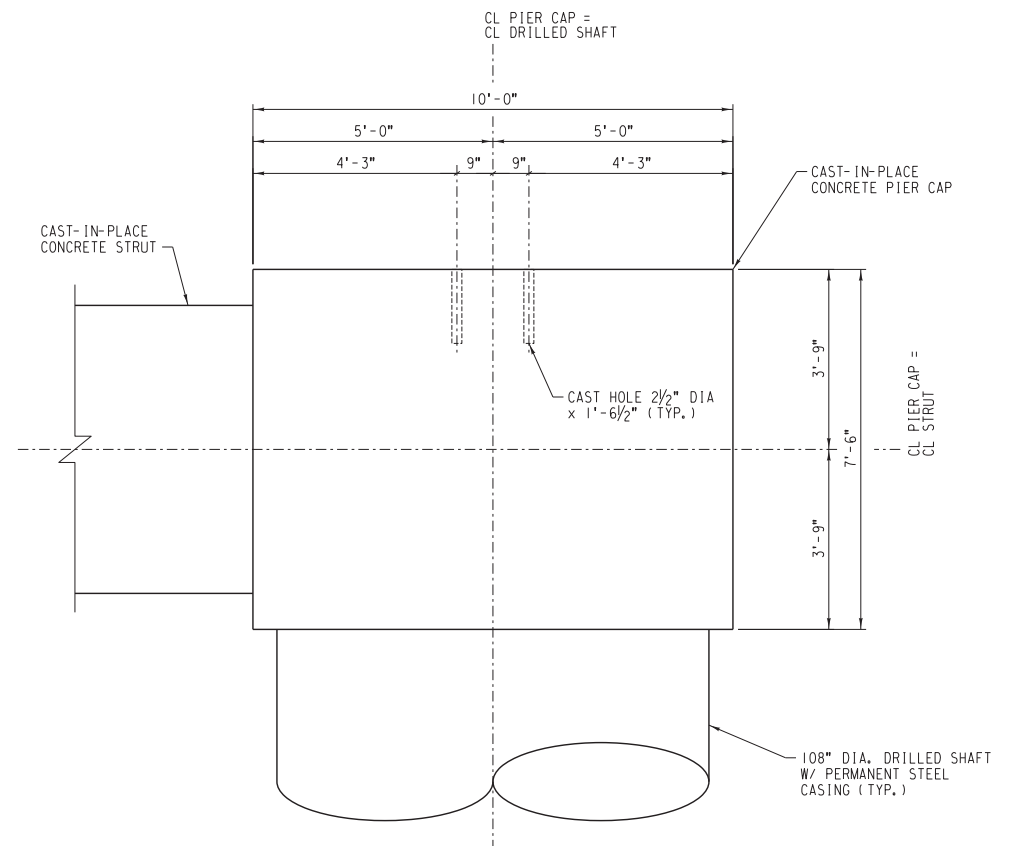
VIEW **E**
SCALE: 1/2" = 1'-0" 9/10



SECTION **F**
SCALE: 1/2" = 1'-0" 9/10



SECTION **G**
SCALE: 1/2" = 1'-0" 9/10



TYPICAL SECTION - FRAMING
SCALE: 1/2" = 1'-0"

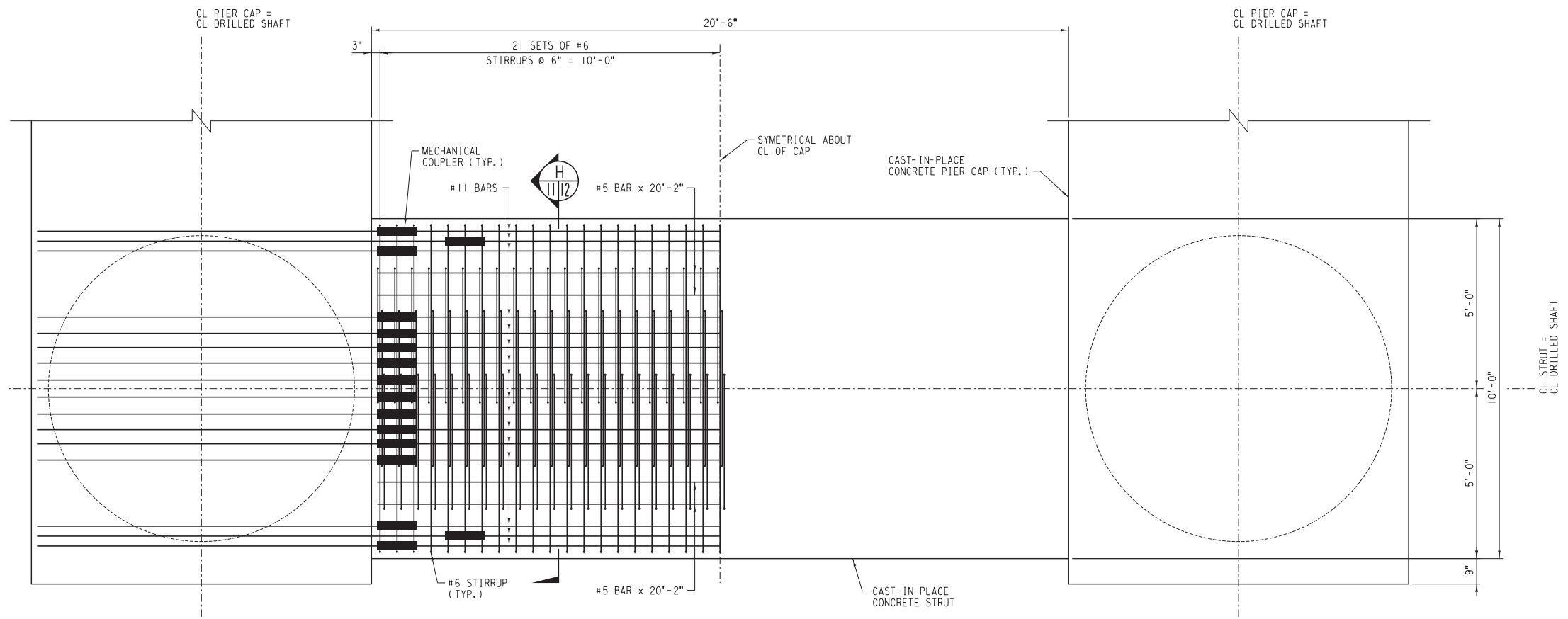
60% SUBMITTAL

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PROJECT: BR. 370.7 PIER REPLACEMENT			
TITLE: CAST-IN-PLACE CONCRETE PIER CAP (SHEET 2 OF 2)			
DESIGNED BY: JBH	SCALE: AS NOTED	S10	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO.:
APPROVED BY: DAO			10 OF 21

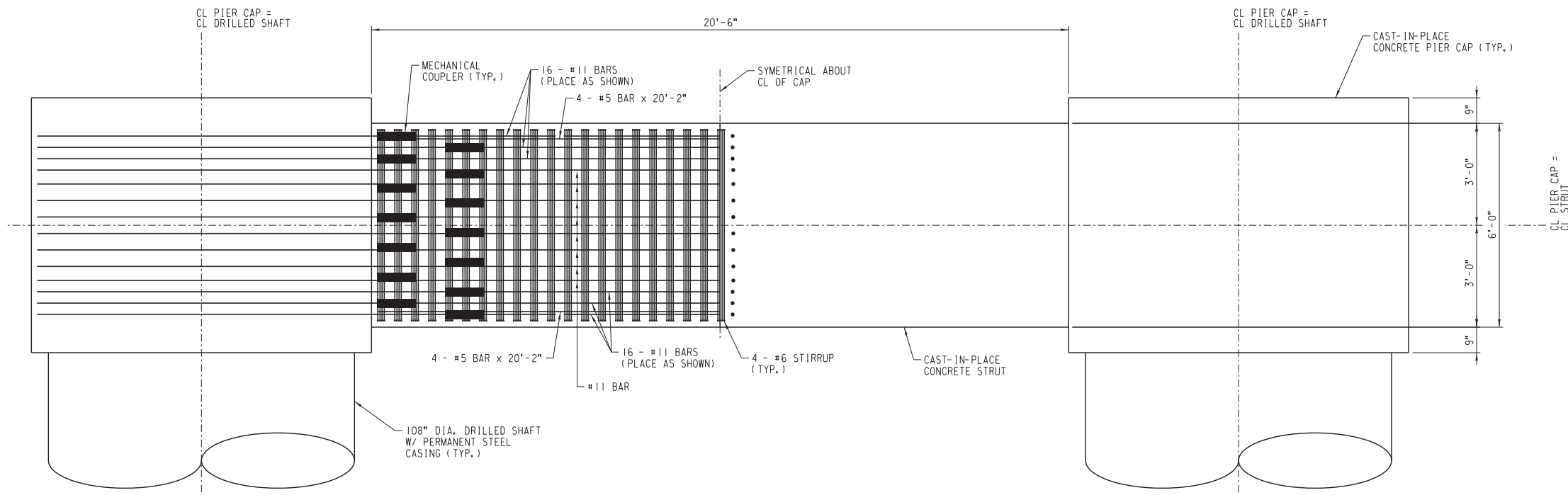
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CAST-IN-PLACE CONCRETE STRUT - PLAN
SCALE: 1/2"=1'-0"



CAST-IN-PLACE CONCRETE STRUT - ELEVATION
SCALE: 1/2"=1'-0"

- NOTES:
1. ALL REINFORCING IS 2" CLEAR UNLESS NOTED OTHERWISE.
 2. MECHANICAL COUPLERS TO BE D250SCA BAR-LOCK 115/CA BY DAYTON SUPERIOR OR APPROVED ALTERNATE.

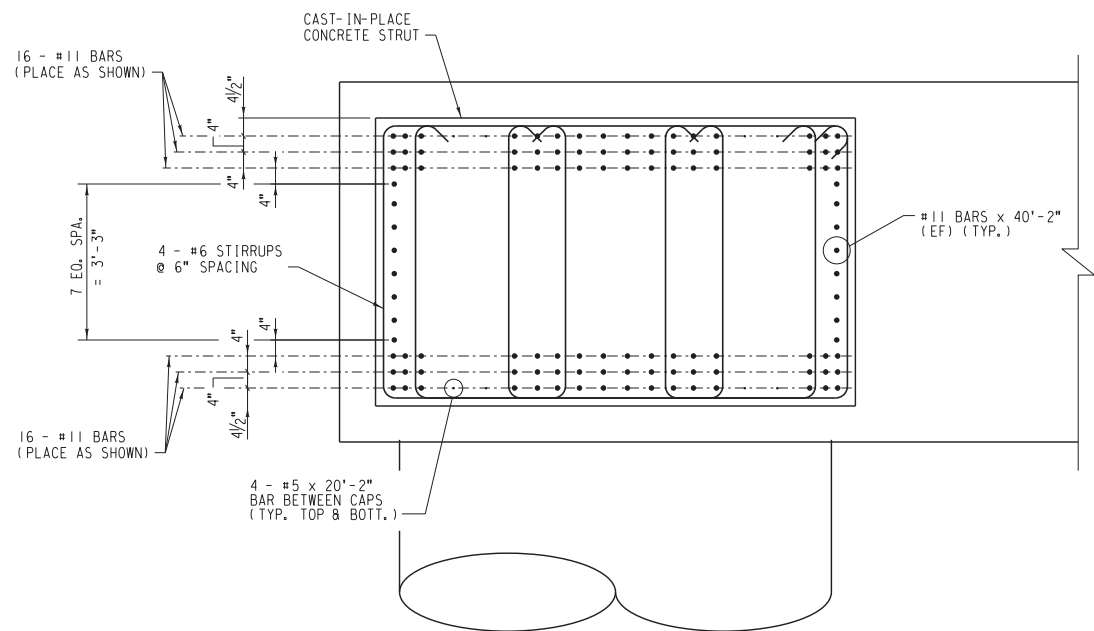
60% SUBMITTAL

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PROJECT: BR. 370.7 PIER REPLACEMENT	
TITLE: CAST-IN-PLACE CONCRETE STRUT (SHEET 1 OF 2)	
DESIGNED BY: JBH DRAWN BY: DTP CHECKED BY: EDA APPROVED BY: DAO	SCALE: AS NOTED DATE: 1/09/17 SII AFE NO.: ACAD FILE: DWG NO.: 11 OF 21

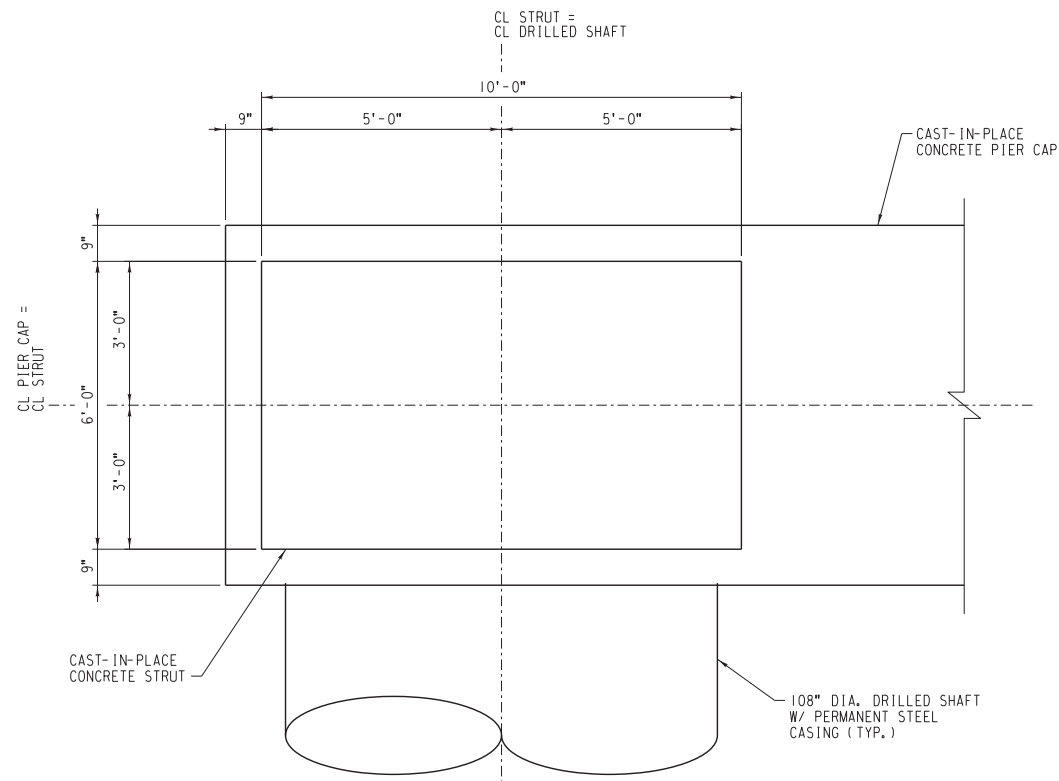
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SECTION H
SCALE: 1/2" = 1'-0"



TYPICAL SECTION - FRAMING
SCALE: 1/2" = 1'-0"

60% SUBMITTAL

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PROJECT: BR. 370.7 PIER REPLACEMENT	
TITLE: CAST-IN-PLACE CONCRETE STRUT (SHEET 2 OF 2)	
DESIGNED BY: JBH	SCALE: AS NOTED
DRAWN BY: DTP	DATE: 1/09/17
CHECKED BY: EDA	APPROVED BY: DAO
AFE NO.:	12 OF 21
ACAD FILE:	
DWG NO.:	

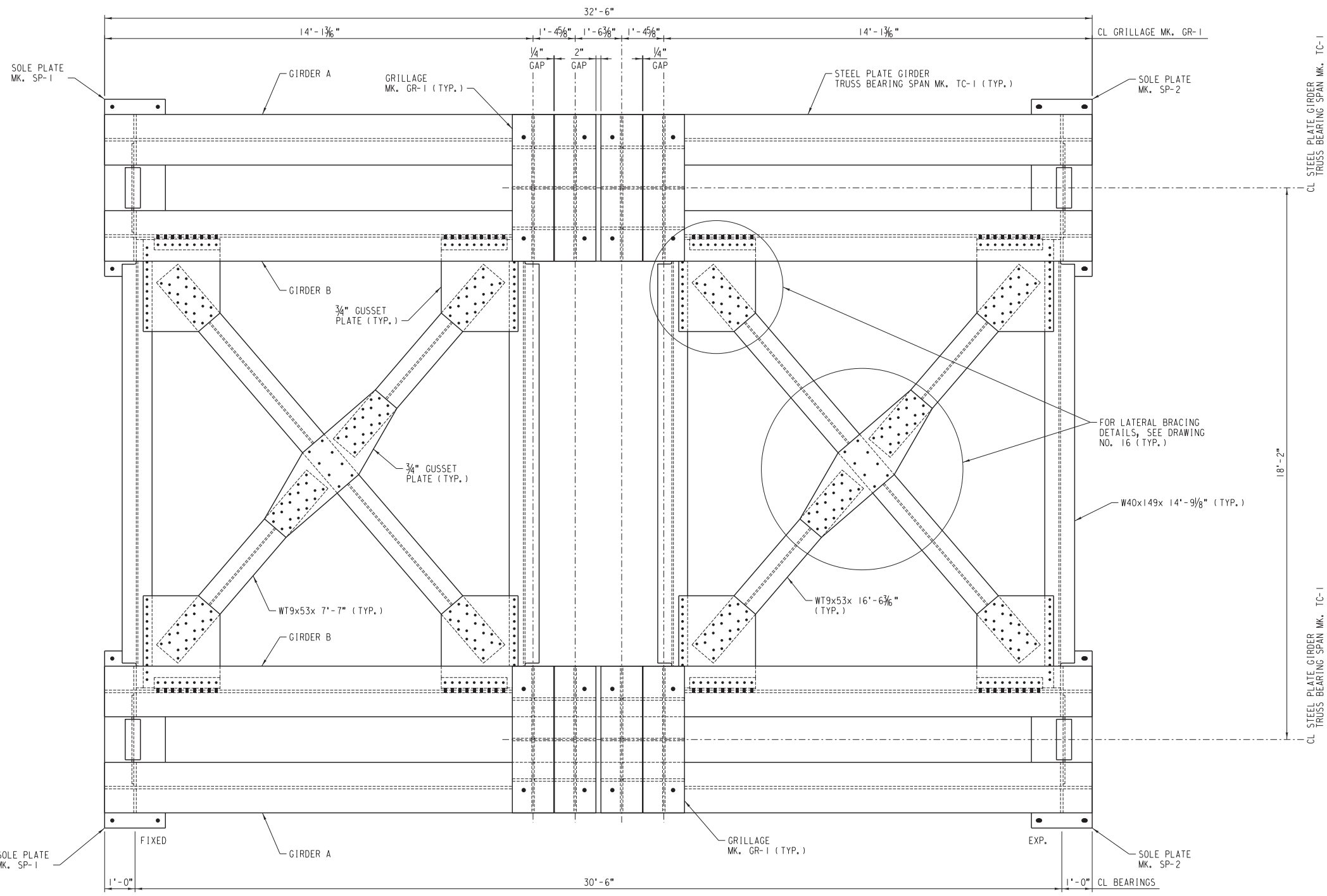
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TO SEWARD

TO FAIRBANKS



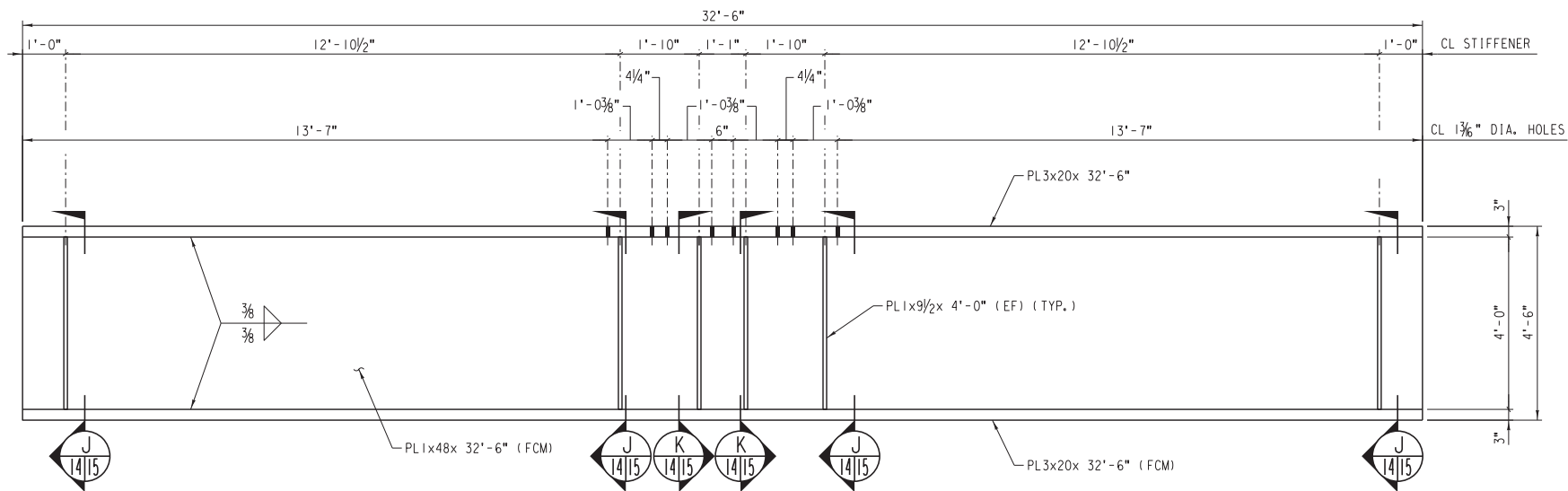
FRAMING PLAN
SCALE: 1/2" = 1'-0"

60% SUBMITTAL

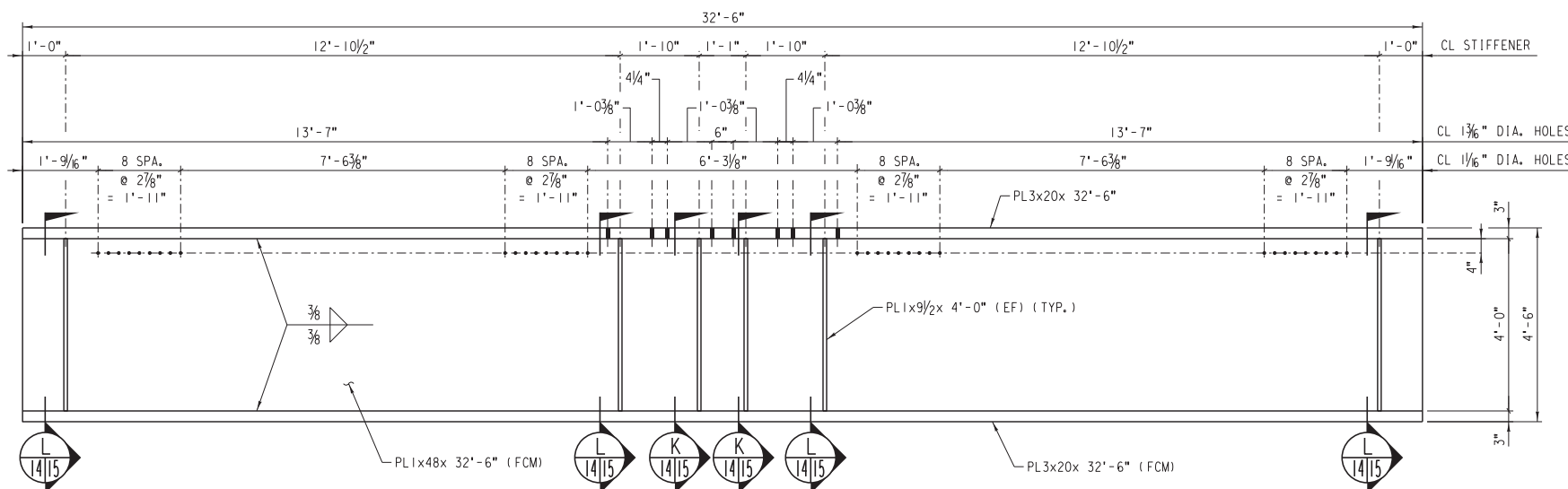
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500									
PROJECT: BR. 370.7 PIER REPLACEMENT									
TITLE: FRAMING PLAN									
DESIGNED BY: JBH	SCALE: AS NOTED								
DRAWN BY: DTP	DATE: 1/09/17								
CHECKED BY: EDA	S13								
APPROVED BY: DAO									
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REV.	DATE	BY	REVISION						
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AFE NO.:	13 OF 21								
ACAD FILE:									
DWG NO.:									

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STEEL PLATE GIRDER A DETAIL
 SCALE: 1/2" = 1'-0"
 (OUTSIDE FACE SHOWN)



STEEL PLATE GIRDER B DETAIL
 SCALE: 1/2" = 1'-0"
 (OUTSIDE FACE SHOWN)

- NOTES:
1. ALL HOLES TO BE 1 1/8" DIA. UNLESS NOTED OTHERWISE.
 2. ALL BOLTS SHALL BE 1" DIA. ASTM A325 UNLESS NOTED OTHERWISE.
 3. ALL STEEL SHALL CONFORM TO ASTM A709, GRADE 50W. STRUCTURAL STEEL IMPACT TEST REQUIREMENTS SHALL BE T3 FOR NON-FRACTURE CRITICAL MEMBERS AND F3 FOR FRACTURE CRITICAL MEMBERS.
 4. FCM = FRACTURE CRITICAL MEMBER

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PROJECT: BR. 370.7 PIER REPLACEMENT

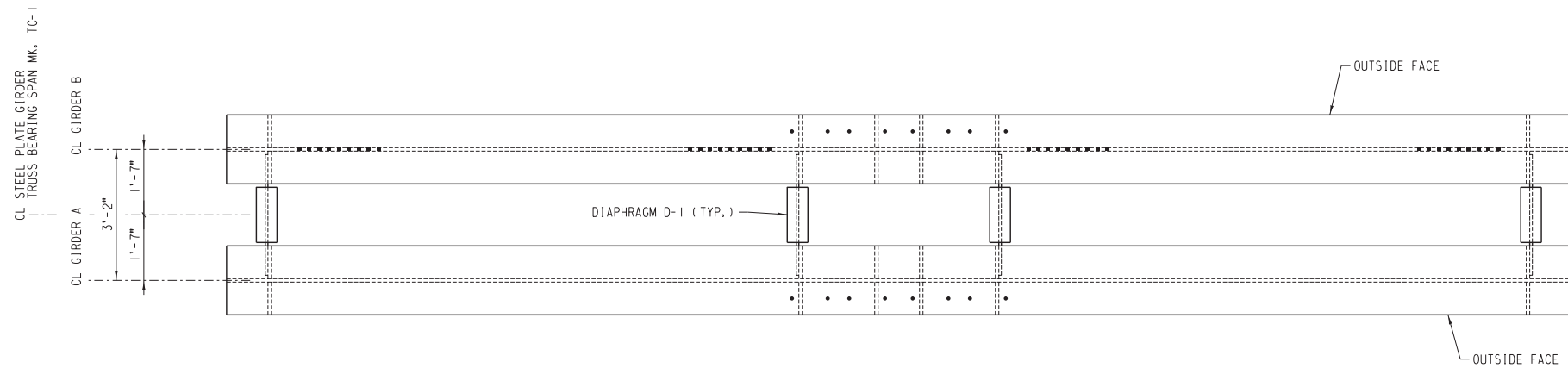
TITLE: STEEL PLATE GIRDER TRUSS BEARING SPAN MK. TC-1 (SHEET 1 OF 2)

DESIGNED BY: JBH	SCALE: AS NOTED	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17	ACAD FILE:
CHECKED BY: EDA		DWG NO.:
APPROVED BY: DAO		14 OF 21

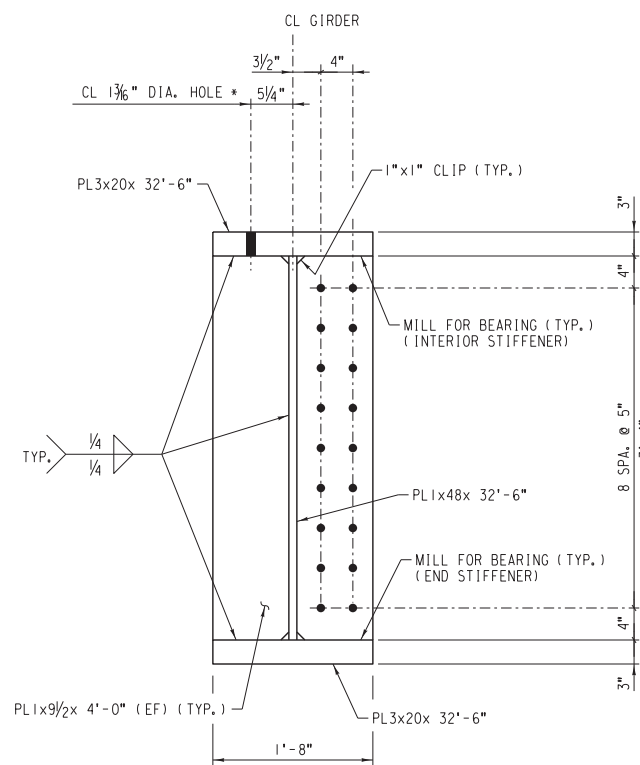
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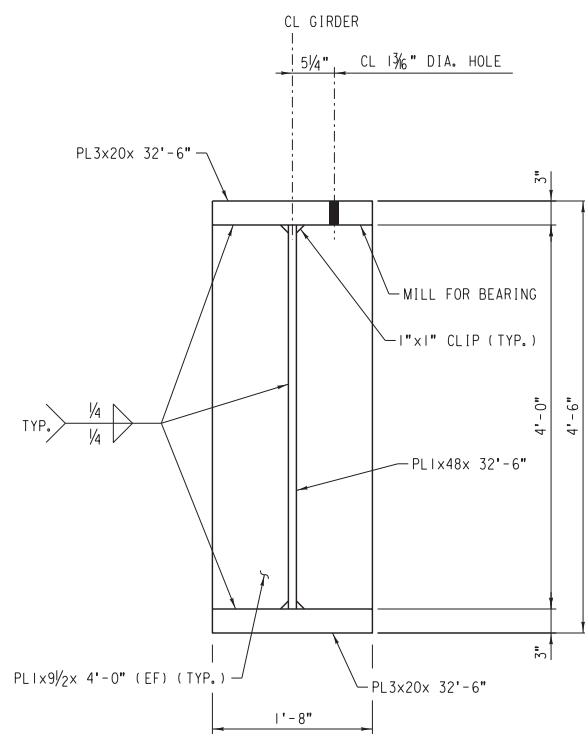
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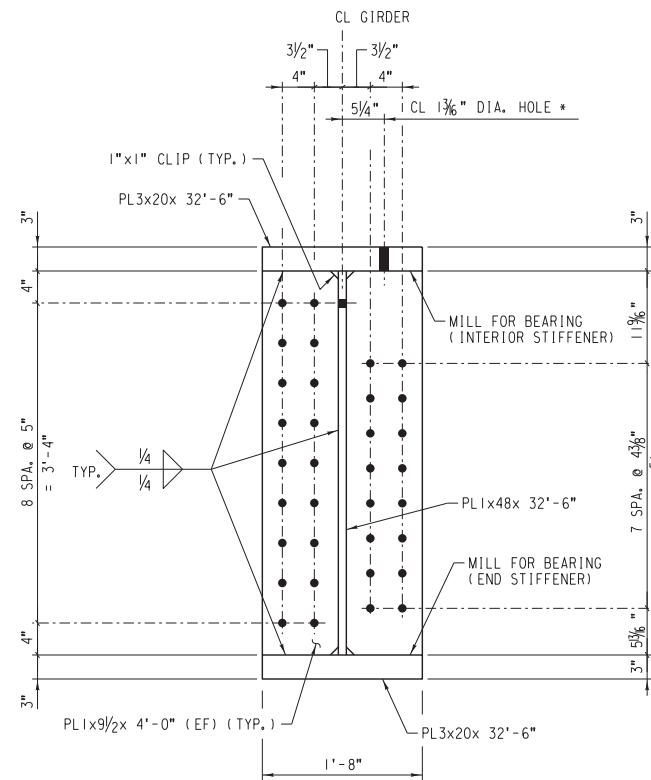
STEEL PLATE GIRDER TRUSS BEARING SPAN MK. TC-1
SCALE: 1/2"=1'-0"



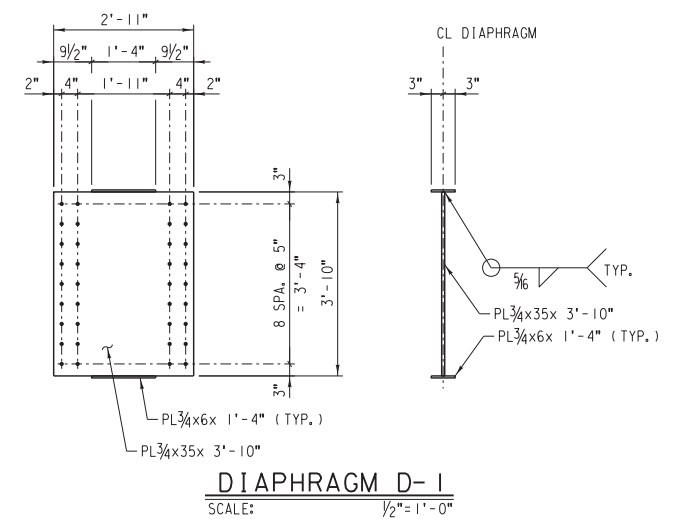
SECTION J
SCALE: 1"=1'-0" 14/15



SECTION K
SCALE: 1"=1'-0" 14/15



SECTION L
SCALE: 1"=1'-0" 14/15



DIAPHRAGM D-1
SCALE: 1/2"=1'-0"

60% SUBMITTAL

- NOTES:
1. ALL HOLES TO BE 1/16" DIA. UNLESS NOTED OTHERWISE
 2. * = HOLES NOT PRESENT AT THE END OF SPANS

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ENGINEERING SERVICES
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PROJECT: BR. 370.7 PIER REPLACEMENT

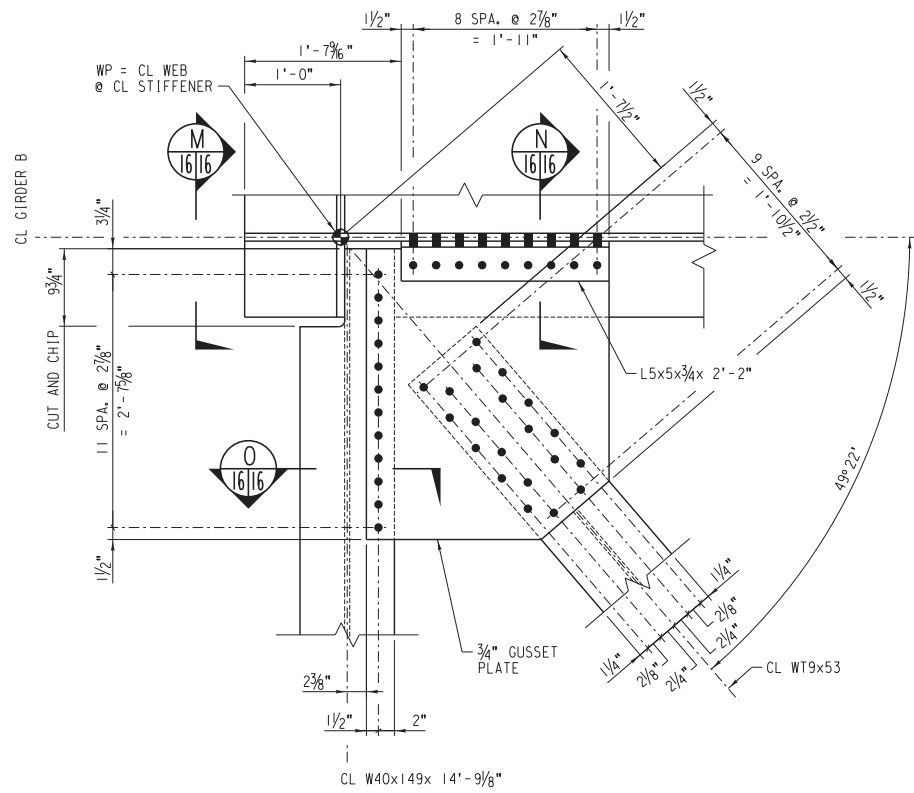
TITLE: STEEL PLATE GIRDER TRUSS BEARING SPAN MK. TC-1 (SHEET 2 OF 2)

DESIGNED BY: JBH
DRAWN BY: DTP
CHECKED BY: EDA
APPROVED BY: DAO

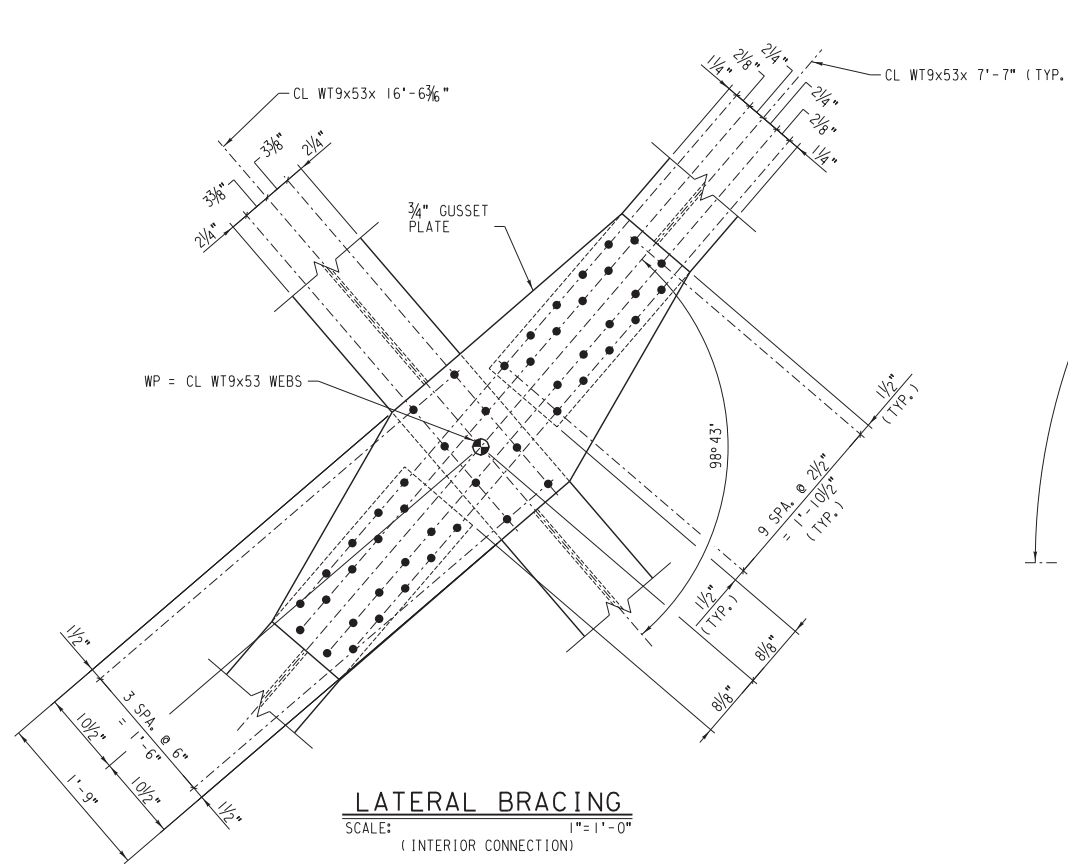
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DATE: 1/09/17

AFE NO.:
ACAD FILE:
DWG NO. S15
15 OF 21

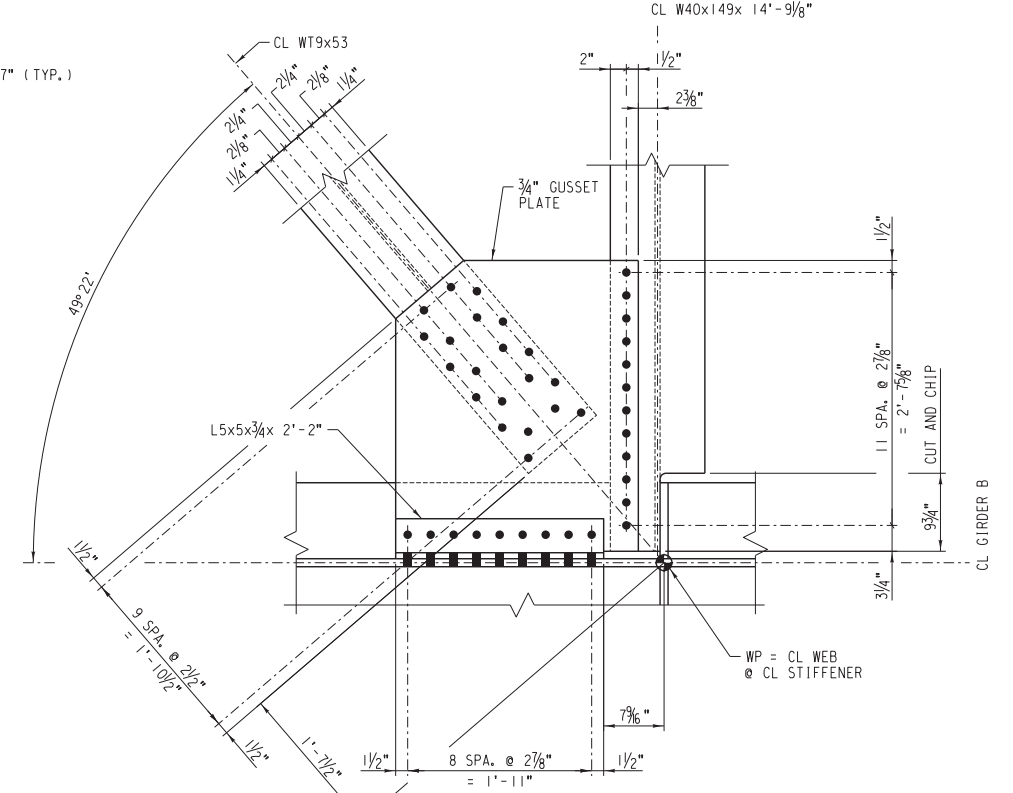
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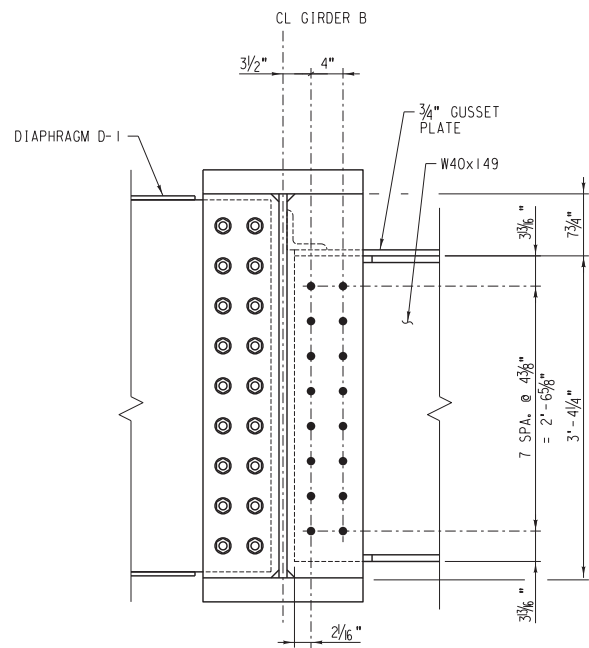
LATERAL BRACING
SCALE: 1"=1'-0"
(END CONNECTION)



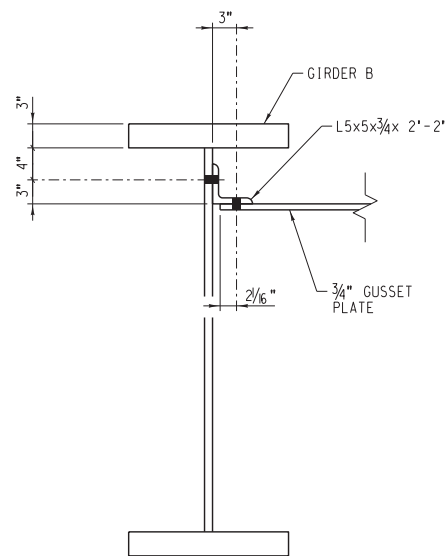
LATERAL BRACING
SCALE: 1"=1'-0"
(INTERIOR CONNECTION)



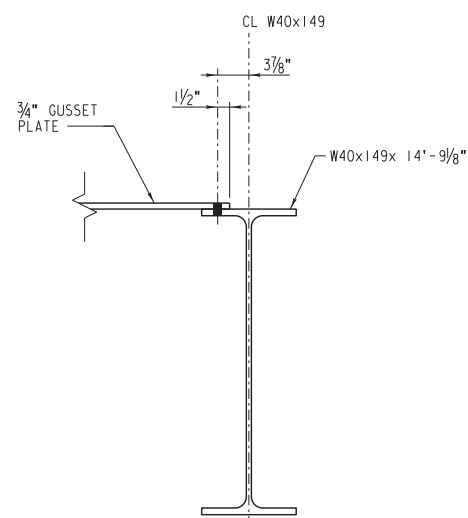
LATERAL BRACING
SCALE: 1"=1'-0"
(INTERIOR CONNECTION)



VIEW M
SCALE: 1"=1'-0"



SECTION N
SCALE: 1"=1'-0"



SECTION O
SCALE: 1"=1'-0"

- NOTES:
1. ALL HOLES TO BE 1/8" DIA. UNLESS NOTED OTHERWISE.
 2. ALL BOLTS SHALL BE 1" DIA. ASTM A325 UNLESS NOTED OTHERWISE.
 3. WP = WORKING POINT

60% SUBMITTAL

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PROJECT: **BR. 370.7 PIER REPLACEMENT**

TITLE: **LATERAL BRACING DETAILS**

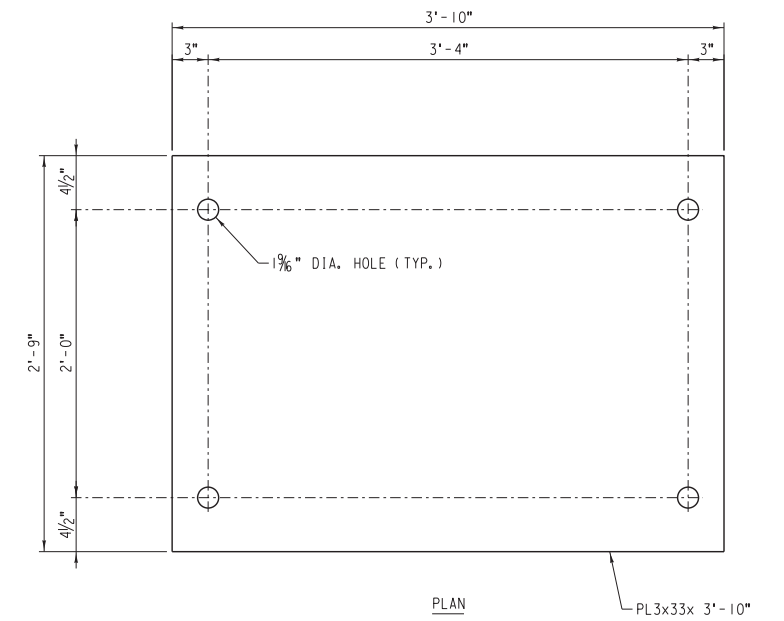
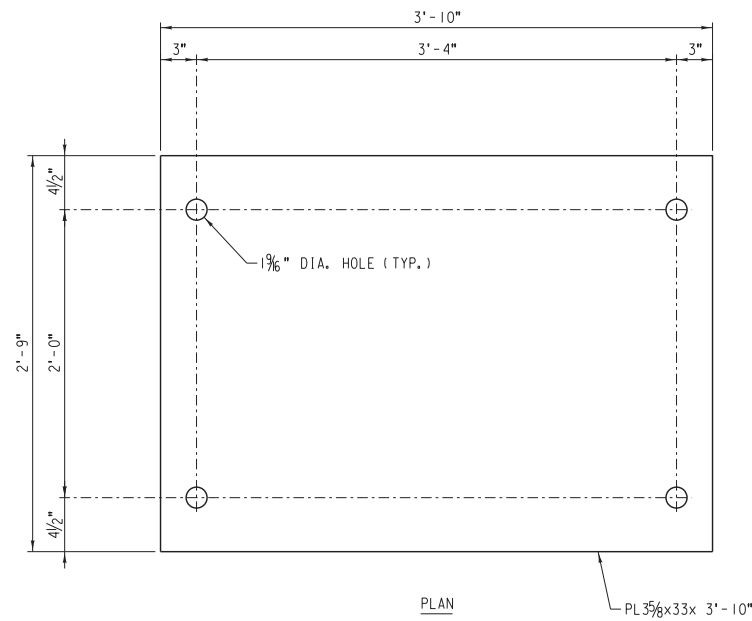
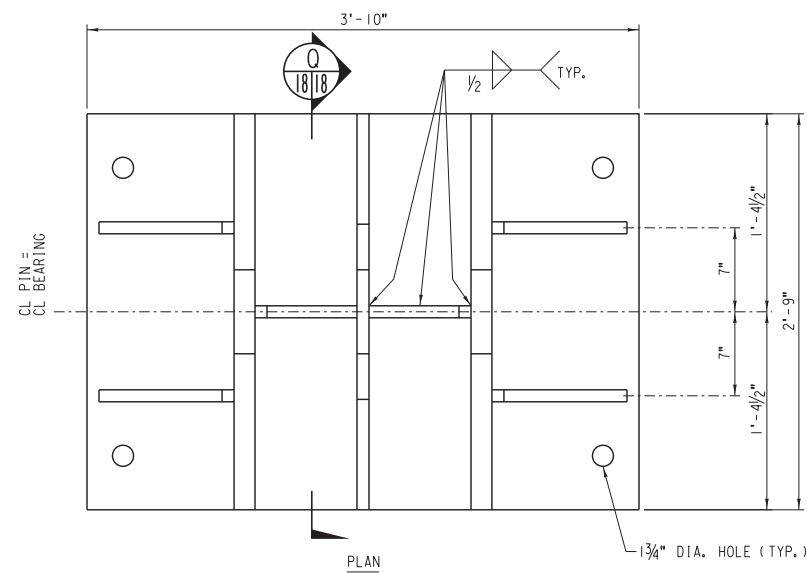
DESIGNED BY: JBH	SCALE: AS NOTED	S16	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		DWG NO.:
CHECKED BY: EDA			16 OF 21
APPROVED BY: DAO			

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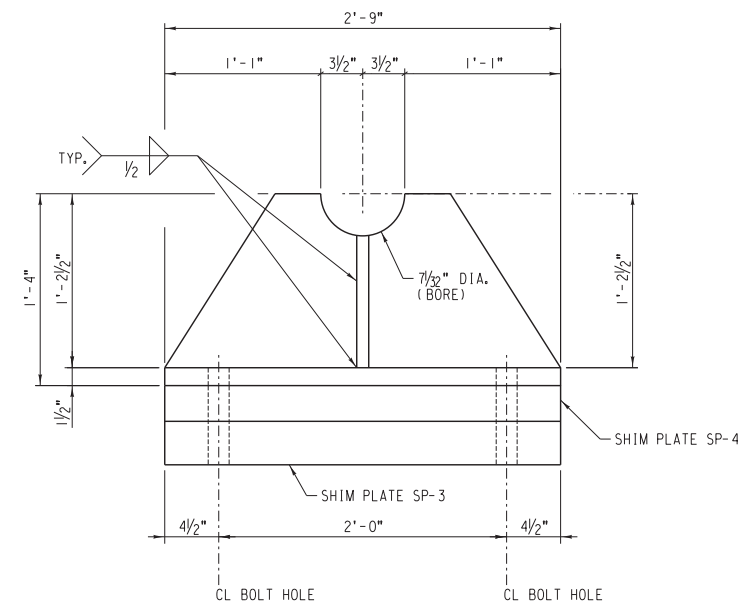
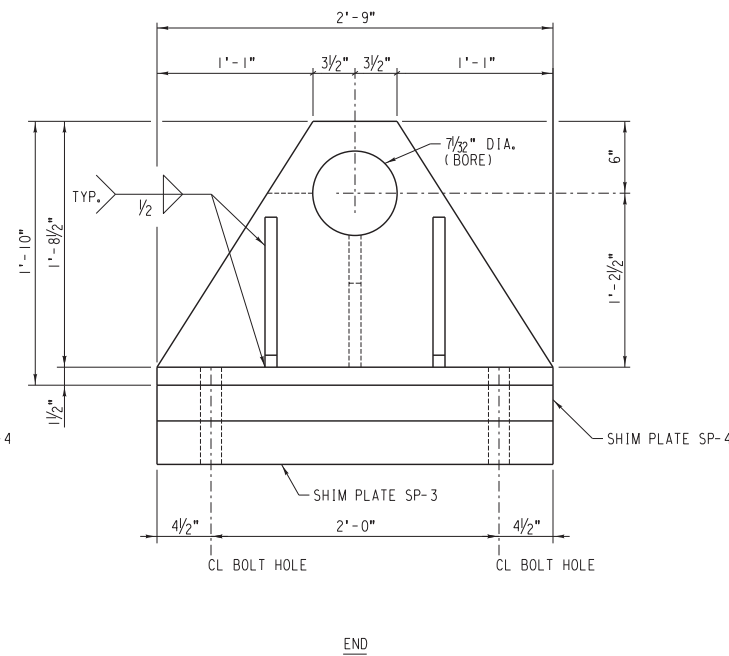
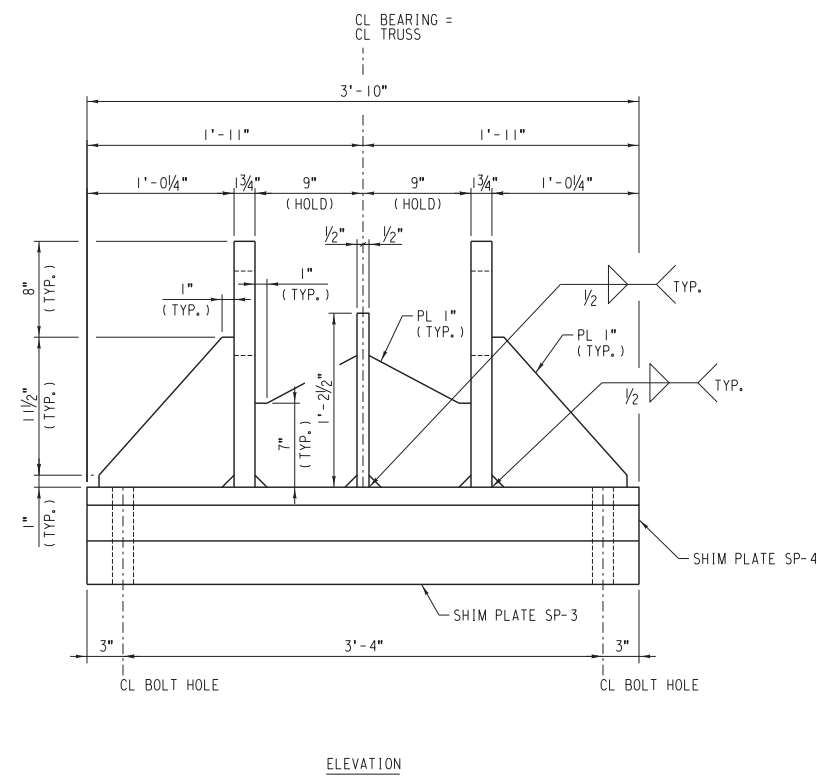
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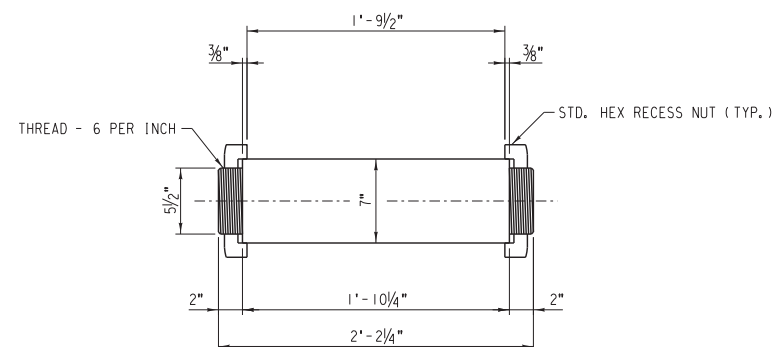
SHIM PLATE SP-3
SCALE: 1/2" = 1'-0"

SHIM PLATE SP-4
SCALE: 1/2" = 1'-0"



SECTION Q
SCALE: 1/2" = 1'-0"

FIXED BEARING
SCALE: 1/2" = 1'-0"



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ENGINEERING SERVICES
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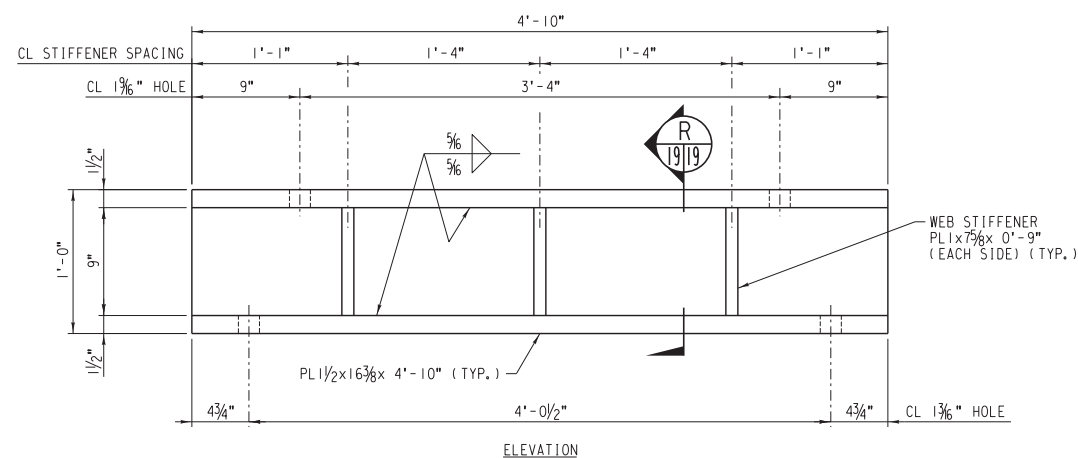
PROJECT: **BR. 370.7 PIER REPLACEMENT**

TITLE: **FIXED BEARING ASSEMBLY DETAILS**

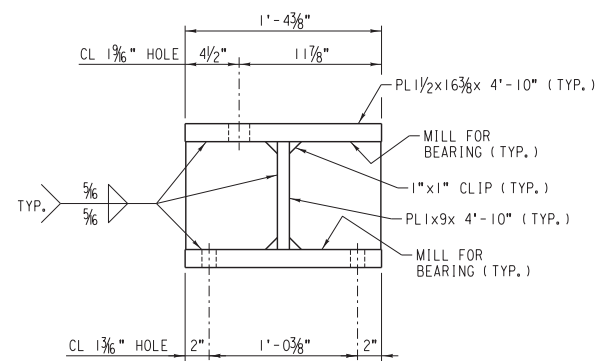
DESIGNED BY: JBH	SCALE: AS NOTED	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17	ACAD FILE:
CHECKED BY: EDA		DWG NO.:
APPROVED BY: DAO		18 OF 21

S18

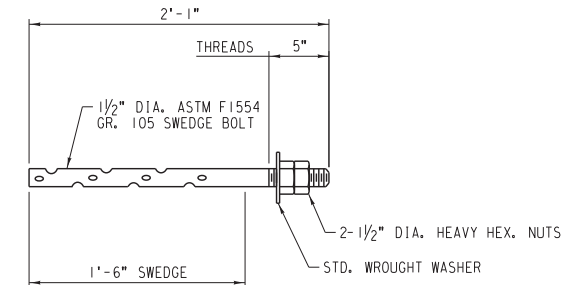
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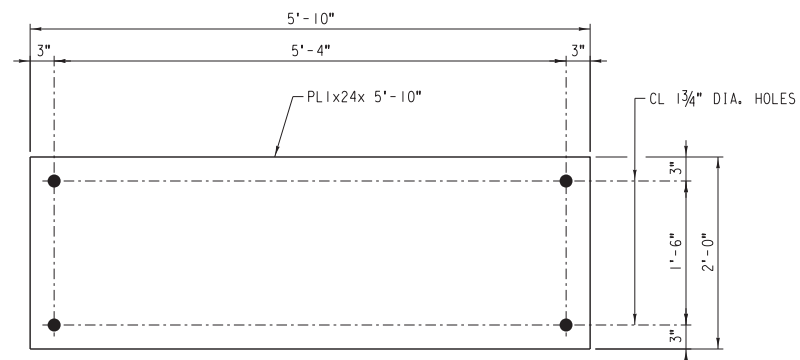
GRILLAGE MK. GR-1
SCALE: 1/2" = 1'-0"



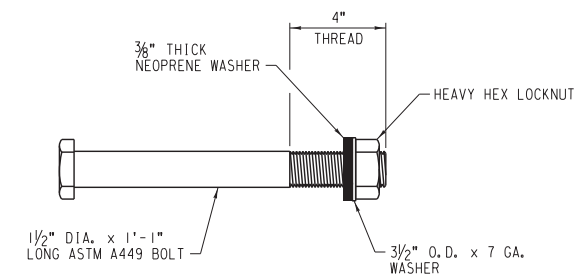
SECTION R
SCALE: 1/2" = 1'-0"



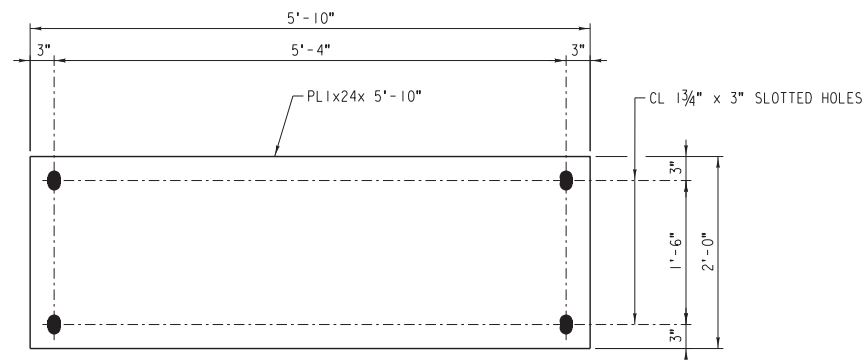
ANCHOR BOLT MK. SAB-1
SCALE: 1/2" = 1'-0"



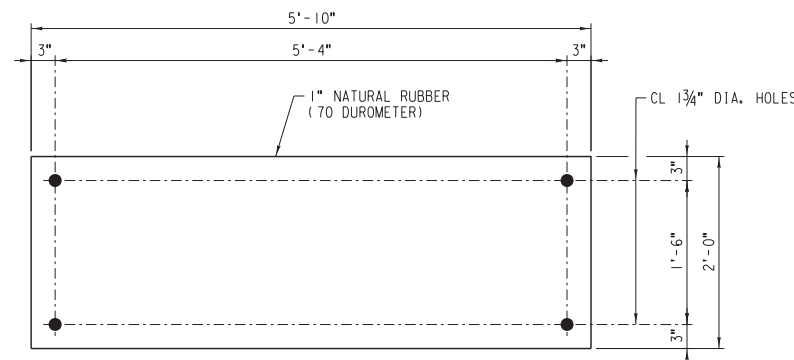
SOLE PLATE MK. SP-1
SCALE: 1" = 1'-0"



BOLT MK. B-1
SCALE: 3" = 1'-0"



SOLE PLATE MK. SP-2
SCALE: 1" = 1'-0"



BEARING PAD MK. BP-1
SCALE: 1" = 1'-0"

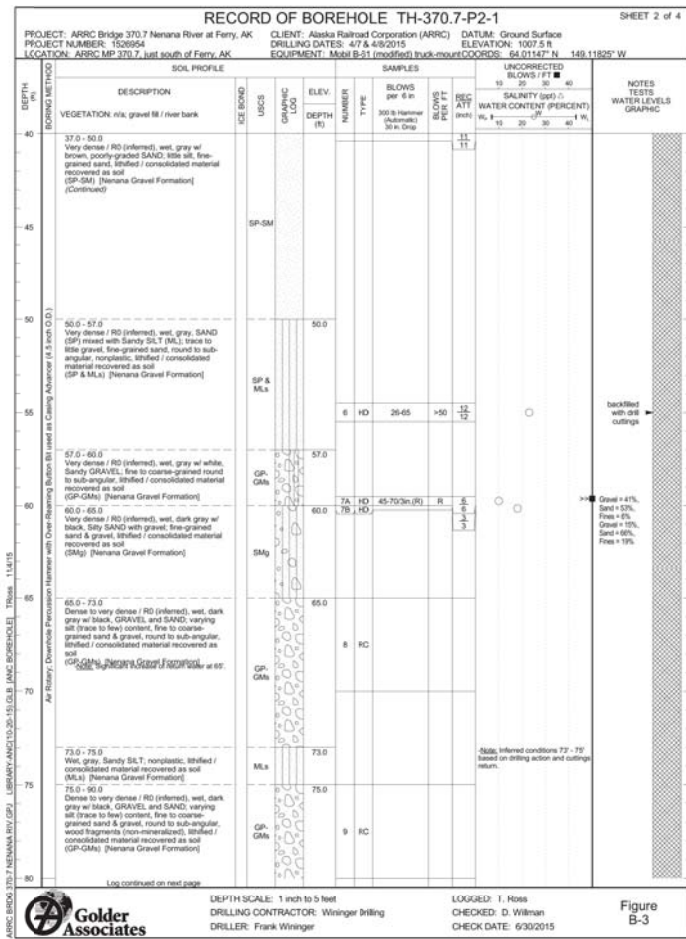
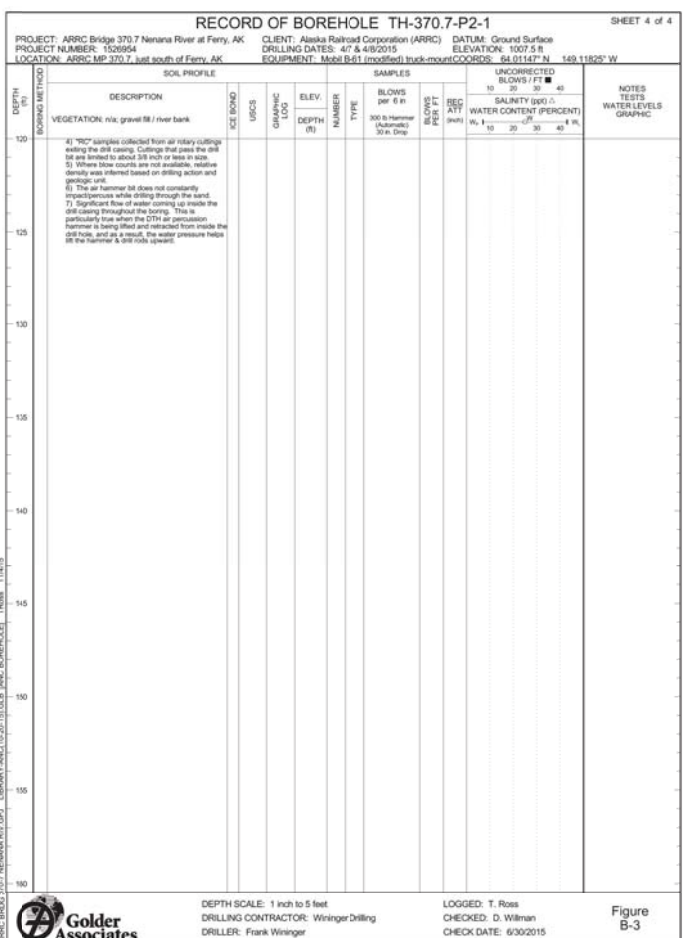
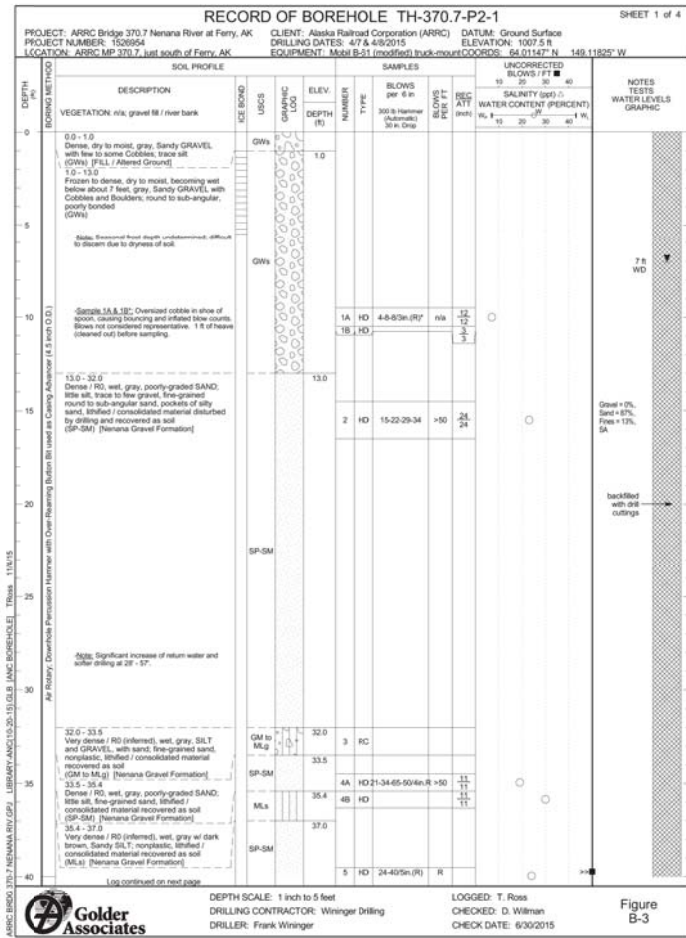
60% SUBMITTAL

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT: BR. 370.7 PIER REPLACEMENT			
TITLE: MISCELLANEOUS STEEL			
DESIGNED BY: JBH	SCALE: AS NOTED	S19	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17		ACAD FILE:
CHECKED BY: EDA			DWG NO.:
APPROVED BY: DAO			19 OF 21

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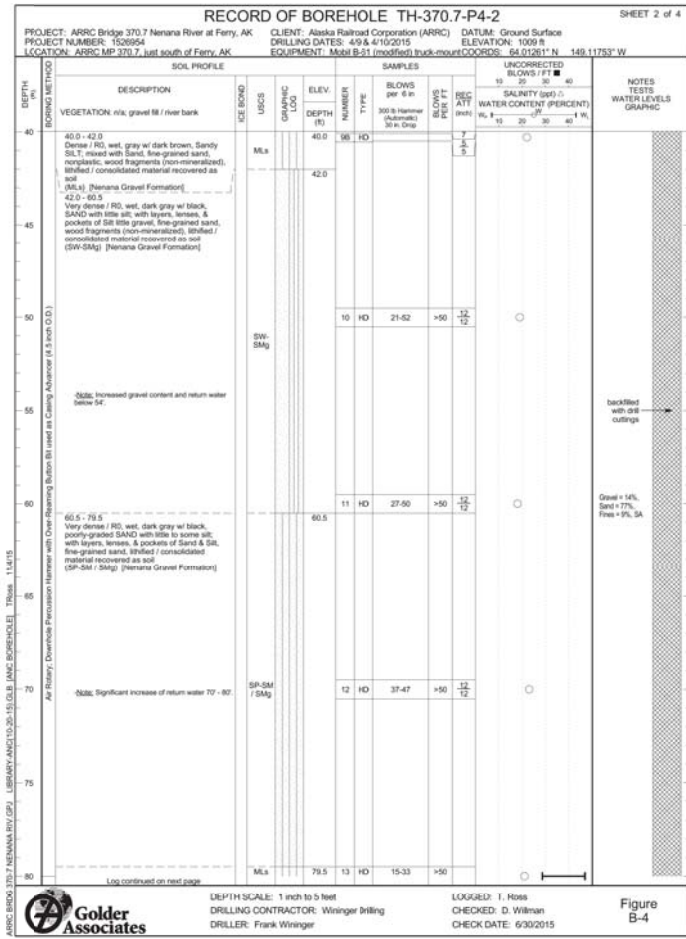
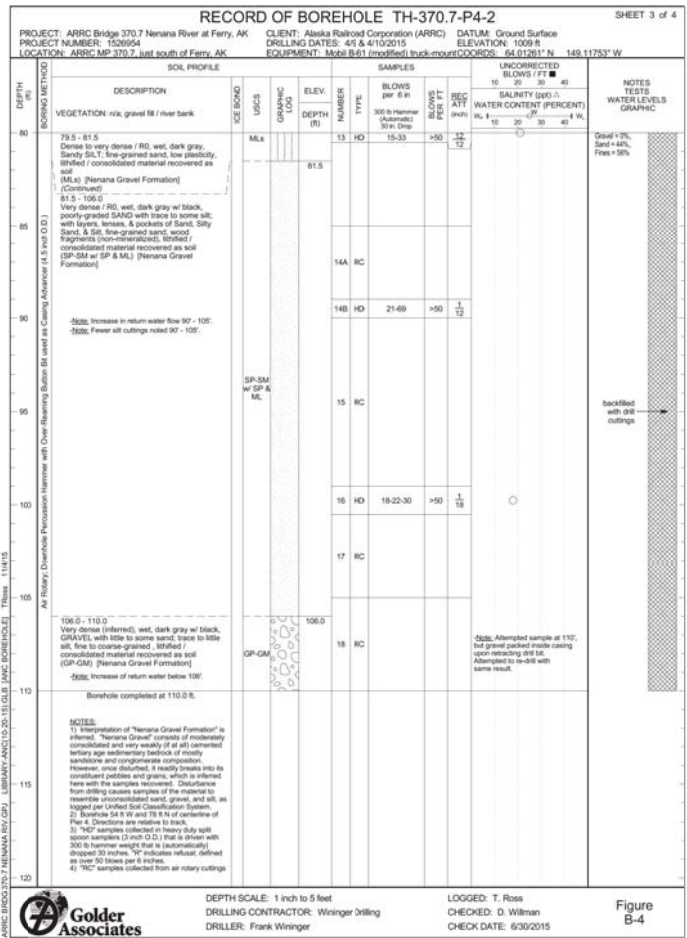
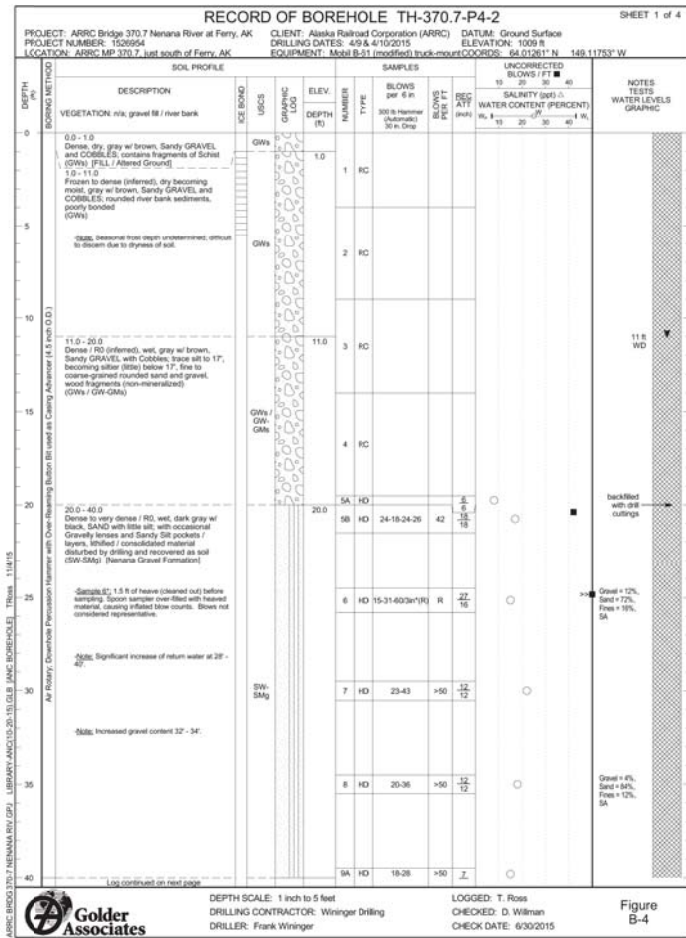
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PROJECT: **BR. 370.7 PIER REPLACEMENT**

TITLE: **BORINGS (SHEET 1 OF 2)**

DESIGNED BY: JBH	SCALE: AS NOTED	AFE NO.:
DRAWN BY: DTP	DATE: 1/09/17	ACAD FILE:
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APPROVED BY: DAO		20 OF 21

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ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: **BR. 370.7 PIER REPLACEMENT**

TITLE: **BORINGS (SHEET 2 OF 2)**

DESIGNED BY: JBH
 DRAWN BY: DTP
 CHECKED BY: EDA
 APPROVED BY: DAO

SCALE: AS NOTED
 DATE: 1/09/17

AFE NO.:
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 DWG NO. **21 OF 21**

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Appendix K5
ARRC Bridge 370.7 Nenana River Crossing -
GDR Final (Golder Assoc., March 3, 2017)

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March 3, 2017

1526954

Brian Lindamood, Mark Peterburs, and Roy Thomas
Alaska Railroad Corporation
327 W. Ship Creek Avenue
Anchorage, AK 99501

**RE: GEOTECHNICAL DATA REPORT
ARRC BRIDGE 370.7 NENANA RIVER CROSSING AT FERRY, ALASKA**

Dear Brian, Mark, and Roy:

Golder Associates Inc. (Golder) is pleased to present the results of our geotechnical investigation for the proposed replacement of Pier 3 support at the Nenana River crossing Bridge 370.7. This Geotechnical Data Report (GDR) presents methods and results of the subsurface investigation, laboratory testing, subsurface conditions, seismic hazard parameters, and USGS streambed measurements taken in 2015.

1.0 INTRODUCTION / PROJECT UNDERSTANDING

Alaska Railroad's (ARRC's) Bridge 370.7 is a 480-foot long, three-span structure built in 1925 that spans the Nenana River. This bridge crossing is immediately track south of the Ferry Siding and the small cabin community of Ferry, Alaska, and is about 12 track miles north of the Healy Yard. The track along this stretch follows the Nenana River Valley; and is on the west side of the river plain approaching from the south and switches over to the east side of the river at this crossing. The rail is roughly parallel to the Parks Highway, which is offset $\frac{1}{2}$ to $\frac{3}{4}$ miles to the west within the greater Nenana River Valley (see Figure 1).

The two main spans are steel thru-truss structures that are each 200-foot long. The south end of the bridge has an 80-foot girder span as an approach to the truss. Each of the four substructures, Abutments 1 & 4 and Piers 2 & 3, are concrete piers supported on concrete footings. The base of all footings are reported to be embedded into and bearing on "sandstone" (Alaska Railroad, 1924a); which, in our interpretation, is inferred to be part of the geologic unit Nenana Gravel Formation (Wahrhaftig, 1958, see Appendix A). This same formation is visible in outcropped bluffs at the riverbank immediately northeast of the bridge.

Two boreholes were drilled to explore subsurface conditions at the crossing along the river banks. Boreholes were located at the south and north river banks, near Pier 2 and Abutment 4, adjacent to the rail embankment, as shown in Figure 2. The late timing of the season and deteriorated condition of the ice prevented drilling at Pier 3. A generalized profile of subsurface conditions is shown in Figure 3.

The Nenana River has historically (and continues to) caused scour and erosion at the bridge crossing. We understand that the current structure has had past scour issues, requiring periodic filling of scour holes and, in the 1970's, prompting consideration of a more permanent solution. Scour is a product of not only a fast moving, high energy river, but also the fact that the river plain and flow is partially restricted by the crossing embankment.

In past times, including as represented in the 1924 as-builts, the main channel of the river was under the north span. However, it was reported that, in the last few years the main channel flow has shifted to the south. This has caused substantial erosion and shifting of the south river bank that precedes the bridge, and this has encroached toward and onto the south rail approach embankment. Armor stone revetment



was subsequently placed at the base of the embankment along the south approach. Now, the river along the new south bank encounters the protected embankment, and then runs roughly parallel to it, which causes the flow to traject toward the broad southside of Pier 3. This has caused accelerated scour at the center pier; wherein the redirected flow changes the angle-of-attack and hits more directly toward the broadside of the pier, instead of in-line with the pier, resulting in increased constriction and significantly more local scour.

In spring of 2015, significant scour was noted at Pier 3, with the most severe noted upstream on the broadside of the pier. Streambed measurements (USGS, 2015) taken around the perimeter of the pier footing revealed approximately 1 to 4 feet of scour below the base of the footing on the upstream side; but much less so on the downstream side, where the streambed was 0.5 to 7 feet above the bottom of the footing. This prompted emergency action from the railroad by filling in the scour hole at Pier 3 with gravel and rip-rap fill. Despite the success of these efforts, scour potential remains at Pier 3 and a long-term solution is needed.

According to the Railroad, the truss structures still have plenty of useful life. We understand realigning the bridge onto a new alignment downstream is not an option. And therefore, the most feasible alternative is keeping same alignment and replacing the existing pier substructure in-place. This would entail adding four new drilled shafts, installed outboard of the existing concrete pier and footing and truss structure, and will require a new structural frame to connect the shafts and to transfer the truss onto.

2.0 SUBSURFACE EXPLORATION

Two boreholes were advanced, located at the south and north river banks near Pier 2 and Abutment 4, with a truck-mounted Mobil B-61 drill rig that is custom modified and owned and operated by Wininger Drilling, Inc. of Wasilla, Alaska. The drill rig was equipped for air-rotary drilling methods. By this method, 4.5-inch outside diameter (OD) drill casing is advanced using a down-the-hole (DTH) air-percussion hammer, with button-bit face, that over-reams a slightly larger hole in advance of the casing. The DTH hammer bit is advanced ahead of the casing during drilling, while contact between a casing shoe and the DTH hammer advance the casing. During sampling, the bit is retracted by reverse spinning so that the entire assembly can be removed from the cased hole for allowance of the sampler. Drill cuttings were alleviated from the borehole by compressed air, which both runs the percussion hammer and forces the material up through the inside of the drill stem.

Disturbed but representative samples were collected by driving heavy-duty 3-inch OD split spoon samplers ahead of the casing in consecutive six-inch intervals, up to 24 inches or until refusal. Refusal is defined here as over 50 blows per foot. The split spoon samples were generally collected at 5-foot to 10-foot or more intervals to the depth of exploration. The split spoon samples were obtained by driving the sampler with an automatically operated 300-pound hammer free falling 30 inches. The number of blows required to advance the sampler over a six-inch interval was recorded. The number of blows required to advance the sampler through a 12-inch sampling interval (between 6 and 18 inches penetration), not counting the first six-inch interval, is presented as blows per foot on the borehole log. The blow counts on the borehole logs are field values and have not been corrected for sampler size, overburden, hammer energy, system efficiency, rod length, or other factors.

Subsurface conditions were also logged by monitoring and/or collecting return of air-cuttings exiting the drill casing. At various intervals, a small portion of the collected rotary cuttings were also retained as samples for further examination in our laboratory. It is noted that rotary cuttings are highly disturbed, and therefore subject to interpretation. That is to say: 1) none of the in-situ condition, density, or structure is retained, 2) natural moisture and composition is altered by drilling and the fluid within the borehole, 3) particles are impacted by drill hammering and sometimes fractured, and 4) sizes recovered are limited to only pieces less than about 3/8 of an inch.

A Golder engineer supervised drilling and sampling, performed visual field classification on recovered samples, and logged the boreholes. The soils encountered were classified in the field according to the Unified Soil Classification System (USCS) summarized in Appendix B, Figure B-1. Borehole Logs are

presented in Appendix B. Representative portions of the samples were sealed in double polyethylene bags to preserve their natural moisture contents.

Borehole locations were documented in the field by recording geographical coordinates, referenced to the WGS84 datum, using a hand-held GPS instrument with navigational accuracy, and by measuring the distances to known features on the bridge. GPS coordinates are listed on the borehole logs.

3.0 LABORATORY TESTING

Samples were re-examined in our Anchorage laboratory to verify field classifications, and geotechnical index testing was conducted on select samples. Laboratory testing was conducted in general accordance with ASTM standards. Laboratory testing included the determination of moisture content (per ASTM D2216), grain size distribution and fines content (percent passing the U.S. Number 200 sieve size) (per ASTM D422), and Atterberg Limits (plastic & liquid limits/plasticity, per ASTM D4318).

Results of the laboratory testing are summarized in Table C-1 in Appendix C, along with plots of particle size distribution (Figure C-1) and Atterberg Limits (Figure C-2). The moisture content and summarized sieve analysis results are also plotted on the borehole logs (Appendix B) adjacent to the tested sample.

4.0 SUBSURFACE CONDITIONS

The upper soil material consists of 13 to 20 feet of mostly Sandy Gravel with trace to little fines content, and also contains cobbles and possible occasional boulders. This material is interpreted as recent (Pleistocene era and younger) alluvial deposits from the Nenana River. These sediments are generally rounded and were found in dense condition.

Materials encountered below the river gravels are interpreted as part of the "Nenana Gravel Formation." The "Nenana Gravel Formation" is the major bedrock unit along the Nenana River north of Healy (Wahrhaftig, 1958). Excerpts from the Wahrhaftig report related to the formation are included in Appendix A-1. The formation is mapped on both sides of the floodplain (see Appendix A-2), including the outcropped bluffs forming the east bank of the river located immediately adjacent to the north bridge abutment in the northeast direction. Wahrhaftig and others describe the "Nenana Gravel Formation" here as consisting of moderately well consolidated and very weakly cemented [if at all] tertiary age sedimentary bedrock of mostly coarse dark sandstone and fine conglomerate composition.

Exposures of the "Nenana Gravel Formation" found in the nearby bluffs is considered extremely weak rock (Grade R0), according to International Society for Rock Mechanics (ISRM), as summarized in Appendix B-2. However, once disturbed, such as with very light strike of a geologic hammer, it breaks down readily into its constituent pebbles and grains, with no resemblance of cementation or lithification. This was the case during our subsurface investigation; where disturbance from drilling caused recovered samples of the material to resemble unconsolidated sand, gravel, and silt with no cohesion, no cementation, and no stone-like characteristics. The disturbed samples were therefore logged per the Unified Soil Classification System based on their composition of gravel, sand, and silt. Sampler blow counts, which commonly exceeded 50 blows per foot and often met refusal, suggest that the "Nenana Gravel Formation" encountered was very dense and over-consolidated.

Significant in-flow of water was encountered below the level of the river and throughout drilling. High flows of water were noted coming up inside the drill casing throughout the boring; this is particularly true when the DTH air percussion hammer was lifted and retracted from inside the drill hole, and as a result, the water pressure helps lift the hammer & drill rods upward.

5.0 SEISMIC HAZARD DESIGN PARAMETERS

Probabilistically-derived seismic hazard mapping for Alaska has been completed by the U.S. Geological Survey as part of the National Seismic Hazards Mapping Program (USGS NSHMP, 1998), and subsequently updated in 2008 (USGS, 2008). The 2008 updates are based mostly on revisions to the

hazard maps made by Wesson and others (Wesson, 2007, see Appendix D-1), that includes consideration of the 2002 Denali Fault earthquake. The USGS seismic dataset is incorporated into a computer application titled *U.S. Seismic Design Maps* (USGS, 2008, see Appendix D-2) and made available through the USGS website. The USGS on-line application incorporates various design standards, including: International Building Code (2012), AASHTO (2009), and American Society of Civil Engineers (2010).

The American Railway Engineering and Maintenance-of-Way Manual for Railway Engineering (AREMA, 2013) provides a framework for seismic design of railroad structures, based on three levels of performance criteria, including Serviceability, Ultimate, and Survivability, which reflect incrementally increasing seismic hazards with a decreasing probability of exceedance. The three performance criteria levels, and associated peak ground acceleration (PGA) for firm bedrock, are shown in Table 1.

This site classifies as “Soil Type 1” per AREMA (2013). The corresponding seismic “Site Coefficient (S)” for “Soil Type 1” is 1.0. AREMA defines “Soil Type 1” as:

“rock of any characteristic, that may be characterized by a shear wave velocity greater than 2,500 feet per second, or stiff soil conditions where the soil depth is less than 200 feet and the soil types overlying the rock are stable deposits of sand, gravel, or stiff clays.”

No direct measurements of shear wave velocity were taken, and soil site class was inferred based on geologic conditions.

Table 1: Seismic Design Parameters

AREMA Seismic Performance Criteria Limit State	Return Period (years)	Probability of Exceedance	Peak Ground Acceleration (PGA, g) ¹
Serviceability	100-yr.	50% in 50 years	0.12g ²
Ultimate	475-yr.	10% in 50 years	0.25g ³
Survivability	2,475-yr.	2% in 50 years	0.43g ^{3, 4}

- Notes: 1) PGA values represent mean values for firm rock.
 2) USGS, 1996.
 3) Wesson, et. al., 2007, seismic hazard, incorporated into USGS 2008 dataset.
 4) ASCE 7-10, 2010, Risk-Targeted Maximum Considered Earthquake (MCE_R) is 2 percent probability of exceedance in 50-years. Probabilistic hazard is based on USGS 2008 dataset.
 5) See Appendix B-1 thru B-3.

The current 2008 USGS dataset does not provide seismic ground motions specifically for AREMA’s Serviceability (100-year return) criteria, nor is this recurrence period listed in the Wesson, et. al. report (2007). Instead, PGA listed for Serviceability Limit State is based on the 1996 USGS data (see Appendix D-3), which does not reflect the most current seismic model, but is considered suitable for this purpose.

6.0 2015 STREAMBED MEASUREMENTS AND RIP-RAP PLACEMENT AT PIER 3

6.1 2015 USGS Streambed Measurements

Streambed measurements were taken by USGS in March 2015 (USGS, 2015) of the scour hole that had developed at Pier 3. A copy of USGS’s field notes, as provided by ARRC, is presented in Appendix E-1. Streambed measurements were made at numerous locations around the perimeter of the footing and at some locations apparently on top of the footing. Their measured elevations were presented relative to the

top of the pier, which was assumed at 1035.7 feet elevation, presumably based on the 1924 bridge as-built plans.

Golder re-interpreted the USGS data (see Appendix E-2) by converting the streambed elevations to be: 1) relative to the current vertical datum of the 2014 land survey and 2) relative to the bottom of the footing. The bottom of footing was assumed at 1,001.7 foot elevation based on the 1924 bridge as-built plans. It is noted that the 2014 land survey measured the top of pier elevation at 1,021.0 feet elevation, based on NAVD88 datum, which represents a -14.7 foot vertical translation between the 1924 and 2014 datums.

At the time of the measurements, the following was noted:

- Scour was deepest on the broad side of the pier on the upstream side (south side of substructure), where scour was noted 1.5 to 3.8 feet below the bottom of the footing.
- Scour below the bottom of the footing was also noted on the eastern (upstream) nose of the pier ranging from 0.9 to 1.8 feet below the base.
- On the downstream sides, both north and west, the streambed varied from 0.4 to 7.1 feet above the base of the footing.

6.2 2015 Rip-Rap Placement

The scour hole was subsequently filled-in with gravel fill and rip rap by Brice Inc. under contract with ARRC and under general guidelines from HDR's Emergency Pier Protection Plan (HDR, 2015). The aerial extent of the rip-rap placement was surveyed by Terrasound, which shows rip-rap was placed surrounding the east, south, west, and part of the north sides of Pier 3, by 15 to 50 feet beyond. The finished surface ranged between about 997 and 1,001 foot elevation. Details of fill material types or rip-rap sizes were not provided to Golder. At least three of the four proposed new drilled shafts will be within the area of rip-rap placement, and encountering rip-rap should be expected during drilling and installation.

7.0 CLOSING

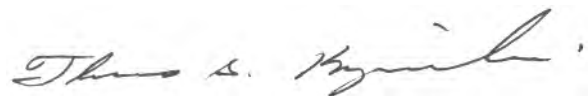
Thank you for allowing us to assist with this interesting project. Please let us know if you have any questions or comments or require additional information. We look forward to continued involvement on this project and can further assist the Railroad as needed.

Sincerely,

GOLDER ASSOCIATES INC.



Travis E. Ross, PE
Project Geotechnical Engineer



Thomas G. Krzewinski, PE, D.GE, F.ASCE
Principal and Senior Geotechnical Engineering
Consultant

Attachments:

- Figure 1: Vicinity Map
- Figure 2: Borehole Location Map
- Figure 3: Generalized Profile

Appendix A: Background Geology

- Appendix A-1 Quarternary Geology of the Nenana River Valley (Wahrhaftig, 1958)
- Appendix A-2 Geology Map of Part of Fairbanks A-5 Quadrangle (Wahrhaftig, 1958)

Appendix B: Record of Borehole Logs

Appendix C: Laboratory Testing

Appendix D: Seismic Hazard

Appendix D-1 Seismic Hazard Maps of Alaska (Wesson, et. al, 2007)

Appendix D-2 USGS Seismic Design Summary Report (USGS, 2008)

Appendix D-3 Probabilistic Seismic Hazard Deaggregation (USGS, 1996)

Appendix E USGS Streambed Measurements

Appendix E-1 USGS Field Notes

Appendix E-2 Golder's Interpretation of USGS Streambed Measurements

TER/TGK/mlp

8.0 REFERENCES

- Alaska Railroad, 1924a, Department of the Interior, Office of the Bridge Engineer, Anchorage, Alaska, Main Line Bridge No. 370.7 Nenana River, Bridge As-Built Plan Sheets: 1) *Abutment 1 and Pier 2 - Tie Spacing, Foundation, and Details* (Sheet 3524-2), and 2) *Pier 3 and Abutment 4* (Sheet 3524-2).
- Alaska Railroad, 1924b, Department of the Interior, American Bridge Co., Bridge #370.7 Over Nenana River, Shop and Erection Plans: 1) *Details of Shoe Casting*, 2) *Detail of Trusses, Chords & Posts*, 3) *Detail of Trusses*, 4) *Details of Girders, Cross Frames & Bracing*, 5) *Rollers & Top Laterals*, 6) *Bot. Laterals, Plts. & Portal Braces*, 7) *Bottom Lateral Bracing*, 8) *Matchmarking Diagram*, 9) *Erection Diagram*, and 10) *Masonry Plan* (for matching Bridge #227.2).
- American Society of Civil Engineers (ASCE), 2010, Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7-10), in cooperation with Structural Engineering Institute (SEI).
- HDR Engineering, Inc., March 23, 2015, *BR 370.7 Nenana River at Ferry – Emergency Pier Protection*, copy of plan sheet shown to Golder field staff during site reconnaissance.
- USGS, March 2015, field notes of scour streambed measurements by USGS at Pier 3, provided by Alaska Railroad
- USGS, 1996, Earthquake Hazards Program, Interactive Deaggregations of Seismic Hazard for Alaska, accessed July 2015, <http://geohazards.usgs.gov/deaggint/1996/>,
- USGS, 2008, Earthquake Hazards Program, U.S. Seismic Design Maps, on-line application tool, accessed May 2015, <http://earthquake.usgs.gov/designmaps/us/application.php>, utilizing hazard data available in 2008.
- Wesson, R.L., Boyd, O.S., Mueller, C.S., Bufe, C.G., Frankel, A.D., Petersen, M.D., 2007, Revision of time-Independent probabilistic seismic hazard maps for Alaska: U.S. Geological Survey, Open-File Report 2007-1043.

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FIGURES

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 IMAGERY ACQUIRED IN SUMMER 2009 WAS PROVIDED BY U.S. DEPARTMENT OF COMMERCE, ECONOMICS AND STATISTICS ADMINISTRATION, U.S. CENSUS BUREAU AND DISTRIBUTED BY ALASKA SDMI.

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PROJECT
 ARRC BRIDGE 370.7 NENANA RIVER CROSSING

FERRY, AK

TITLE
VICINITY MAP

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	TH-370.7-P2-1 BOREHOLE LOCATION AND NAME

REFERENCE
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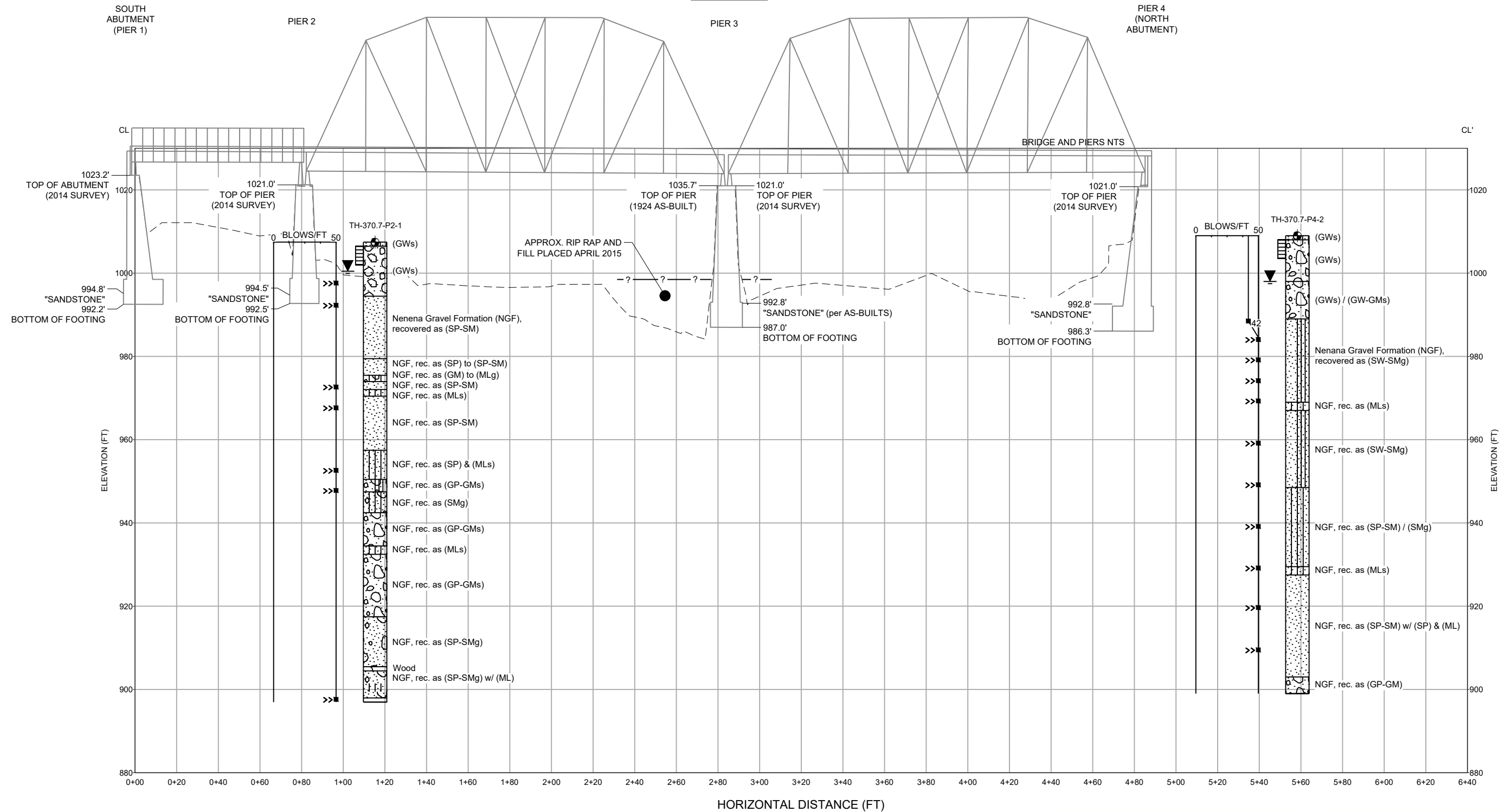
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TITLE	BOREHOLE LOCATION MAP		
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BRIDGE 370.7



NOTES

- BRIDGE AND PIER SCHEMATICS, INCLUDING BOTTOM OF FOOTING AND TOP OF "SANDSTONE" ELEVATIONS ARE FROM 1924 BRIDGE AS-BUILT PLANS, AND SHOULD BE CONSIDERED APPROXIMATE.
- THE EXTENTS OF THE APRIL 2015 RIP RAP & FILL PLACEMENT ARE APPROXIMATE, PER HDR EMERGENCY PROTECTION PLAN.
- INTERPRETATION OF THE "NENANA GRAVEL FORMATION" IS INFERRED. "NENANA GRAVEL FORMATION" CONSISTS OF MODERATELY CONSOLIDATED AND VERY WEAKLY (IF AT ALL) CEMENTED TERTIARY AGE BEDROCK OF MOSTLY SANDSTONE AND CONGLOMERATE COMPOSITION. HOWEVER, ONCE DISTURBED, IT READILY BREAKS INTO ITS CONSTITUENT PEBBLES AND GRAINS, WHICH IS INFERRED HERE WITH THE SAMPLES RECOVERED. DISTURBANCE FROM DRILLING CAUSES SAMPLES OF THE MATERIAL TO RESEMBLE UNCONSOLIDATED SAND, GRAVEL, AND SILT, AS LOGGED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM.
- BLOW COUNTS ARE FIELD VALUES THAT ARE NOT CORRECTED FOR SAMPLING METHODS, SAMPLER SIZE, HAMMER ENERGY, SYSTEM EFFICIENCY, OR OTHER FACTORS.

REFERENCES

- CAD SURFACE PROVIDED BY HDR ON 04/28/2015, INCLUDING GROUND SURFACE, STREAMBED CHANNEL, AND TOP OF PIER ELEVATIONS.
- THE BASIS OF THE SURFACE IS REPORTED TO BE A COMPILATION OF: A) CHANNEL SURVEY BY SURVBASE, LLC ON 04/08/2014, B) ADCP DATA BY HDR ON 10/03/2013, AND C) STREAMBED POINTS COLLECTED BY USGS ON 03/11/2015 AT PIER 3.
- ELEVATIONS RELATIVE TO NAVD88 VERTICAL DATUM.
- BRIDGE AS-BUILT DRAWINGS, DATED 1924, PROVIDED BY ARRC.
- THE 1924 AS-BUILTS SHOW TOP OF PIERS 1 THRU 3 AT 1035.7 FEET ELEVATION. THIS REPRESENTS A VERTICAL ADJUSTMENT OF +14.7 FEET COMPARED TO THE 2014 SURVEYED TOP OF PIER ELEVATIONS AT 1021.0 FEET.
- QUATERNARY AND ENGINEERING GEOLOGY IN THE CENTRAL PART OF THE ALASKA RANGE, USGS, 1958, BY C. WAHRHAFTIG AND R.F. BLACK.
- ESTIMATE OF 2015 RIP RAP PLACEMENT PER SURVEY BY TERRASOUND. SEE PLAN EXTENTS.

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FERRY, AK

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APPENDIX A
BACKGROUND GEOLOGY

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APPENDIX A-1
QUARTERNARY GEOLOGY OF THE NENANA RIVER VALLEY (WAHRHAFTIG, 1958)

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Quaternary and Engineering Geology in the Central Part of the Alaska Range

GEOLOGICAL SURVEY PROFESSIONAL PAPER 293



Quaternary and Engineering Geology in the Central Part of the Alaska Range

A. Quaternary geology of the Nenana River valley and adjacent parts of the Alaska Range

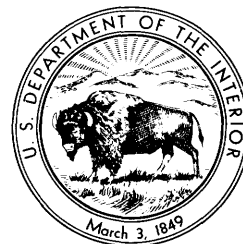
By CLYDE WAHRHAFTIG

B. Engineering geology along part of the Alaska Railroad

By CLYDE WAHRHAFTIG *and* ROBERT F. BLACK

GEOLOGICAL SURVEY PROFESSIONAL PAPER 293

Studies of glacial features and periods of glaciation in the Nenana River valley and of landslides, icings, and frost heaving and settling affecting maintenance of track bed along 63 miles of the Alaska Railroad



UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1958

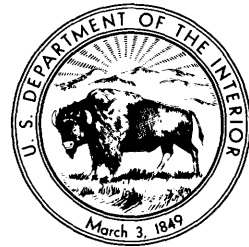
Quaternary Geology of the Nenana River Valley and Adjacent Parts of the Alaska Range

By CLYDE WAHRHAFTIG

QUATERNARY AND ENGINEERING GEOLOGY IN THE CENTRAL PART
OF THE ALASKA RANGE

GEOLOGICAL SURVEY PROFESSIONAL PAPER 293-A

*A study of glacial features and periods of
glaciation in an area on the northern
margin of the Cordilleran ice sheet in
Alaska*



UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1958

NENANA GRAVEL

The Nenana gravel is the major bedrock formation along the Nenana River north of Healy. It consists largely of poorly consolidated, moderately well sorted conglomerate and sandstone. Capps (1912, p. 30) gave this formation its name for its exposures on the east bank of the Nenana River between Healy and Lignite Creeks. It has recently been described by Wahrhaftig, Hickcox, and Freedman (1951, p. 152-153) and by Wahrhaftig (1951, p. 176-179).

In the vicinity of Healy the Nenana gravel consists largely of conglomerate, the pebbles of which range in average size from 1-2 inches at the base to 3-4 inches near the top of the formation, and in maximum size from 4 inches at the base to 18 inches near the top. The pebbles are composed of sandstone and conglomerate from the Cantwell formation, schist, quartzite, and granite and other intrusive rocks that are abundant in the Alaska Range. Interstitial material is coarse- to very coarse-grained dark sandstone. Pebbles and sand grains are commonly coated with thin layers of iron oxide. Interbedded with the conglomerate are lenses of coarse sandstone 5-10 feet thick, 50-100 feet long, and spaced 30-50 feet apart. Locally, near the base and in the upper part of the formation, the Nenana gravel contains beds of claystone 3-5 feet thick, spaced 30-50 feet apart. The Nenana gravel east of Healy has a total thickness of 4,000 feet and appears to contain most of the stratigraphic units that have been recognized in this formation.

Northward from Lignite the lower part of the Nenana gravel is exposed in bluffs along the river. It consists of about equal parts of coarse dark sandstone and fine conglomerate. Most of the pebbles of the conglomerate range in size from $\frac{1}{2}$ to 3 inches; pebbles larger than 5 inches are rare. Claystone layers are more abundant here than farther south, and fragments of coalified wood are abundant in the sandstone. Between miles 384 and 385 on the Alaska Railroad, about $3\frac{1}{2}$ miles north of Browne station, a bed of lignite about 4 feet thick is exposed in the Nenana gravel at the crest of an anticline.

The pebbles in the Nenana gravel are generally slightly weathered. Most pebbles and boulders, especially those of graywacke and conglomerate, have weathered rinds as much as an inch thick, in which the rock is friable and iron-stained. The core of each pebble is generally unweathered. Pebbles of certain kinds of granite and volcanic rocks have been decomposed to angular sand or gr \ddot{u} ss. These decomposed pebbles are found in fresh outcrops in roadcuts and river banks. Presumably the weathering of the peb-

bles in the Nenana gravel took place during or shortly after deposition.

For the most part the Nenana gravel, although moderately well consolidated, is poorly cemented. It supports steep cliffs, 50-100 feet high, for long periods of time; however, when struck lightly with a hammer, it breaks into its constituent pebbles and grains. It is more resistant to erosion than the underlying coal-bearing formation, because its greater perviousness permits more of the water from rain and melting snow to sink into the ground, leaving less runoff for erosion, and because its constituent particles are coarse and therefore less easily removed by streams. Hence, the outcropping edge of the Nenana gravel, where underlain by the coal-bearing formation, forms hogbacks and ridges that rival in height nearby mountains of much harder rocks. On the other hand, in structural basins where the Nenana gravel is not underlain by the coal-bearing formation but rests instead directly on harder rocks, it forms rolling plains and valleys. An example of such a valley is the eastward-trending valley west of McKinley Park station that the McKinley Park highway follows for 20 miles.

The Nenana gravel along the Nenana River has about the same attitude as the coal-bearing formation beneath it. Elsewhere, however, there are indications that an angular unconformity separates the two formations (Wahrhaftig, 1951, p. 182-183). This unconformity represents only a minor orogeny compared with that which took place before the deposition of the coal-bearing rocks, for the formations above and below the unconformity are equally well consolidated, and throughout much of the Alaska Range they are parallel.

In the belt near Healy the Nenana gravel strikes about N. 60°-70° E. The dip at the south contact is about 45° N., but within a distance of about a mile northward it decreases to about 10° N. Just north of Poker Creek the Nenana gravel is broken by the large fault that forms the south boundary of the coal-bearing formation around Lignite Creek. Eastward, coal-bearing rocks and Birch Creek schist are brought up on the north side of the fault; and westward, the fault dies out and is replaced by the monocline that is described in the section on the coal-bearing formation. The Nenana gravel north of Pangengi Creek occupies a cross syncline that is parallel to the Nenana River. Dips are commonly gentle (10°-15°) toward the river, and beds along the river are nearly horizontal. An anticline in the Nenana gravel crosses the Alaska Railroad between mile 384 and 385 (see pl. 5).

Capps (1940, p. 126-128) regarded the Nenana gravel as definitely of Tertiary age and younger than the

coal-bearing formation. In 1955 Roland W. Brown collected specimens of *Trapa* sp., from the Nenana gravel exposed along the Alaska Railroad about 3½ miles north of Browne station. According to Brown (oral communication, 1956) these fossils indicate that the Nenana gravel is Oligocene or Miocene in age, more likely Miocene than Oligocene, and that it was deposited in a warm temperate climate.

IGNEOUS ROCKS

TOTATLANIKA SCHIST

The Totatlanika schist crops out on Slate Creek, on Moose and Chicken Creeks, and in the mountains east of the Nenana River in the vicinity of Browne (see pls. 1, 2, and 5). The formation probably underlies the Nenana gravel from Slate Creek to the northern edge of the gravel. It forms a belt 5–20 miles wide that extends along the north edge of the Alaska Range from the Kantishna Hills, 40 miles west of the Nenana River, to the Little Delta River, 60 miles east of the Nenana River (Capps, 1940, pl. 3). The formation was named by Capps (1912, p. 22–23) for its exposures in the canyon of the Totatlanika River, 15 miles east of the Nenana River.

Two types of Totatlanika schist occur in the areas shown on plates 2 and 5. On Slate Creek, and on Chicken and Moose Creeks, the formation consists of fine-grained yellow slate, which contains scattered grains of feldspar and quartz less than 0.1 inch in diameter. In the mountains east of Browne the formation consists of coarse-grained gneiss, which is made up of subhedral porphyroblasts of orthoclase as much as half an inch in diameter and porphyroblasts of quartz as much as 0.1 inch in diameter; the porphyroblasts are set in a matrix consisting largely of sericite and quartz. It is thought that the Totatlanika schist resulted from the metamorphism of rhyolite flows and tuffs (Capps, 1940, p. 105). Foliation in both types of the schist is well developed and is commonly about parallel to the bedding in overlying rocks. This means only that the foliation at the time the younger rocks were laid down was nearly horizontal, not necessarily that it has always been nearly horizontal.

Capps (1940, p. 106–107) assigned the Totatlanika schist to the Paleozoic and stated that it is probably of an earlier age than Middle Devonian, based on its degree of metamorphism and on long-range correlations with other formations. At the time of his report no fossils had been found in the formation. In the summer of 1954 the writer found fossils in float from a limestone lens in the upper part of the Totatlanika schist. The fossil locality is just west of the junction of Rogers and Sheep Creeks (tributaries of the Wood River) at

an altitude of 4,100 feet (pl. 1). These fossils were submitted to Helen Duncan, of the Geological Survey, who reported (May 20, 1955) as follows:

I examined all the pieces of rock in this collection and sawed and polished several. The only things I could find that I am sure are organic are crinoid columnals, a small gastropod in section, and several pieces of a species of *Syringopora* that is closely similar to if not identical with a form that occurs in the Wachsmuth limestone of the Lisburne group. The specimens of *Syringopora* are a little distorted, but the internal structures are well preserved. . . .

The presence of *Syringopora* (sensu stricto) indicates that the rock is post-Ordovician, and the chances are that it is not Silurian—at least I have not seen any good evidence that *Syringopora* in the strict sense occurs in the Silurian of Alaska. However, Silurian species of the genus have been described from the Arctic regions of the U. S. S. R. and might occur in Alaska. I have seen a few specimens from the Devonian of Alaska that I would refer to *Syringopora*, but they did not closely resemble the species in this collection. We do not have enough information on stratigraphic occurrences, however, to rule out the possibility of Devonian age in this case. Possibly because I am more familiar with the Mississippian *Syringoporas* of Alaska and because the species in this collection looks very much like a form that I know is common in the Mississippian, I favor a Mississippian assignment. Verification of that assignment will depend on getting other kinds of fossils.

On the basis of Miss Duncan's report, the Totatlanika schist is assigned to the Mississippian (?).

GREENSTONE

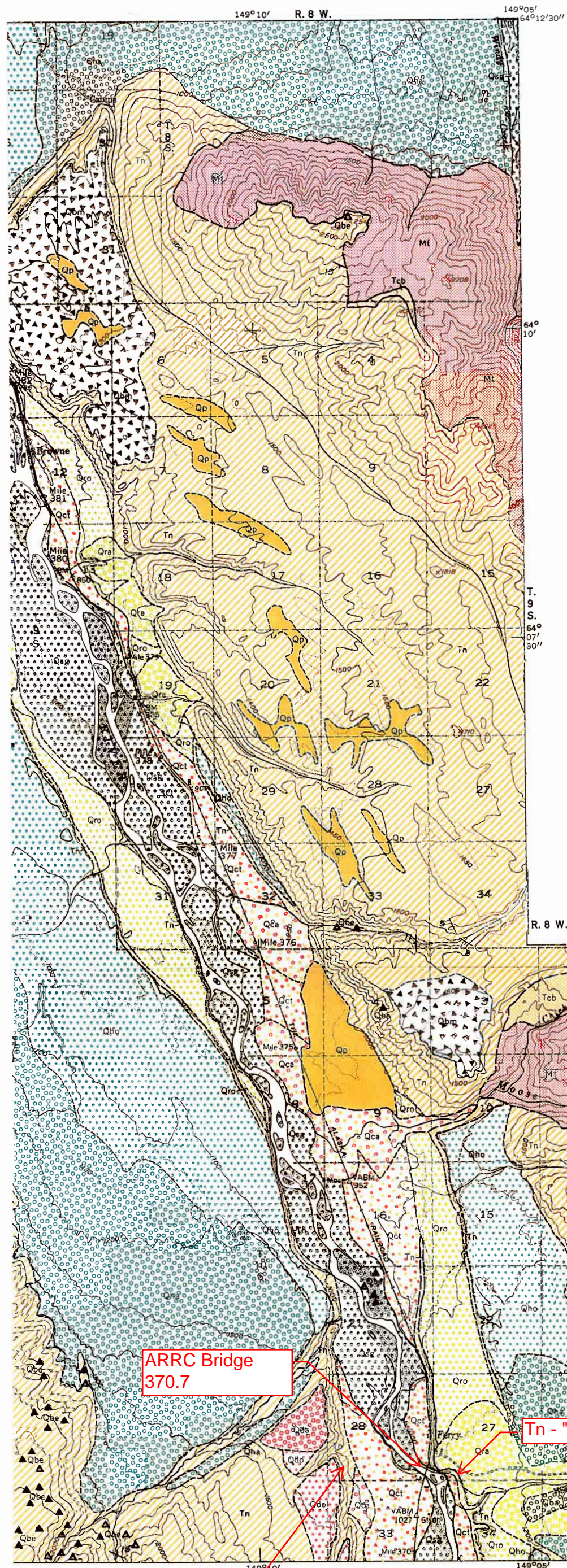
A band of greenstone crosses the Alaska Railroad between miles 327.5 and 329.5. It is shown on plates 3 and 4 (on plate 1 it is grouped with the undifferentiated Paleozoic and Mesozoic rocks). The greenstone apparently makes up Panorama Mountain and the Windy Peaks and extends westward to the head of Clear Creek. The rock is predominantly dark green, but weathered surfaces are dark brown. Where it crosses the railroad the greenstone appears to be of two types.

One of the two types of greenstone occupies the southern half of the greenstone body. It consists of blocks of massive unaltered gabbro surrounded by zones in which intense shearing and serpentization have taken place. The rock is moderately close jointed, but massive enough to form the most rugged mountains in this part of the Alaska Range. Microscopic study of a fresh specimen collected from talus west of the railroad showed it to consist of about 55 percent calcic labradorite and 40 percent augite. The calcic labradorite occurs as euhedral grains 2–3 millimeters long, and the augite as aggregates of crystals, each of which is ½– to 1 inch in diameter. The aggregates of augite crystals generally fill the spaces between the feldspar crystals and are molded to their shape, giving the rock an ophitic texture. Five percent primary magnetite or ilmenite is present as skeleton crystals in the feldspar

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APPENDIX A-2
GEOLOGY MAP OF PART OF FAIRBANKS A-5 QUADRANGLE (WAHRHAFTIG, 1958)

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EXPLANATION

UNCONSOLIDATED SEDIMENTARY DEPOSITS

- Recent**
 - Qp** Peat
 - Qsg** Stream gravel
Deposits in modern stream beds
- Pleistocene and Recent**
 - Qca** Alluvium and terrace gravel
Deposited by tributaries of the Nenana River during and after the Carlo readvance
 - Qct** Terrace gravel
Deposited by the Nenana River during and after the Carlo readvance
 - Riley Creek glaciation**
 - Qra** Alluvium and terrace gravel
Deposited by the tributaries of the Nenana River before the Carlo readvance
 - Qro** Outwash gravel
Deposited by the Nenana River before the Carlo readvance
 - Healy glaciation**
 - Qho** Alluvium and terrace gravel
Deposited by tributaries of the Nenana River
 - Qho** Outwash gravel
Deposited by the Nenana River
 - Dry Creek glaciation**
 - Qda** Alluvium
Deposited by tributaries of the Nenana River on the outwash gravel of the Dry Creek
 - Qdo** Outwash gravel
Deposited by the Nenana River
 - Browne glaciation**
 - Qbm** Till and some outwash gravel
 - Qbe** Glacial erratics

SEDIMENTARY DEPOSITS



Nenana gravel

UNCONFORMITY(?)



Coal-bearing formation

IGNEOUS ROCKS



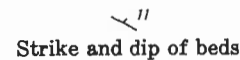
Totatlanika schist

Contact

Dashed where approximately located

Inferred contact

Includes contacts mapped from topographic expression only

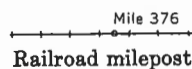


Strike and dip of beds

Approximate strike and dip of beds



Horizontal beds



Railroad milepost

ARRC Bridge 370.7

Tn - "Nenana Gravel"

Tn - "Nenana Gravel"

Geology by Clyde Wahrhaftig, assisted by John W. James, 1948

MAP OF PART OF FAIRBANKS A-5 QUADRANGLE, ALASKA, PLEISTOCENE DEPOSITS ALONG THE NENANA RIVER

Scale 1:63,360

5 Miles

0 0 21000 Feet

Contour interval 100 feet

Dotted lines represent half-interval contours

Datum is mean sea level

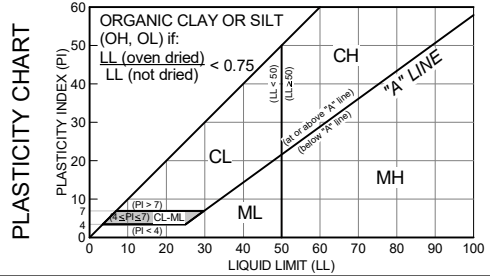
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**APPENDIX B
RECORD OF BOREHOLE LOGS**

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UNIFIED SOIL CLASSIFICATION (adapted from ASTM D2487)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES AND GROUP SYMBOLS USING LABORATORY TESTS	GROUP SYMBOL	SOIL GROUP NAMES & LEGEND
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO. 4. SIEVE	CLEAN GRAVELS <5% FINES $C_u \geq 4$ AND $1 \leq C_c \leq 3$	GW WELL-GRADED GRAVEL
		$C_u < 4$ AND/OR [$C_c < 1$ OR $C_c > 3$]	GP POORLY GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES FINES CLASSIFY AS ML OR MH	GM SILTY GRAVEL
		FINES CLASSIFY AS CL OR CH	GC CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO. 4. SIEVE	CLEAN SANDS <5% FINES $C_u \geq 6$ AND $1 \leq C_c \leq 3$	SW WELL-GRADED SAND
		$C_u < 6$ AND/OR [$C_c < 1$ OR $C_c > 3$]	SP POORLY GRADED SAND
		SANDS AND FINES >12% FINES FINES CLASSIFY AS ML OR MH	SM SILTY SAND
		FINES CLASSIFY AS CL OR CH	SC CLAYEY SAND
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT <50	CL LEAN CLAY	
		ML SILT	
	SILTS AND CLAYS LIQUID LIMIT ≥ 50	OL ORGANIC CLAY OR SILT	
		CH FAT CLAY	
		MH ELASTIC SILT	
		OH ORGANIC CLAY OR SILT	
HIGHLY ORGANIC SOILS	PRIMARYLY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR	PT PEAT	



NOTES:

$$C_u = \frac{D_{60}}{D_{10}} \quad C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

Gravels or sands with 5% to 12% fines require dual symbols (GW-GM, GW-GC, GP-GM, GP-GC, SW-SM, SW-SC, SP-SM, SP-SC) and add "with clay" or "with silt" to group name. If fines classify as CL-ML for GM or SM, use dual symbol GC-GM or SC-SM. $D_{(X\%)}$ is soil particle diameter where X% is % finer. *Optional Abbreviations:* Lower case "s" after USCS group symbol denotes either "sandy" or "with sand" while "g" denotes either "gravelly" or "with gravel"

RELATIVE DENSITY / CONSISTENCY ESTIMATE USING STANDARD PENETRATION TEST (SPT) VALUES (adapted from Terzaghi and Peck 1967 and NAVFAC DM 7.1)

COHESIONLESS SOILS ^(a)		COHESIVE SOILS ^(b)		UNCONFINED COMPRESSIVE STRENGTH (TSF) ^(d)
RELATIVE DENSITY	$(N_1)_{60}$ (blows/ft) ^(c)	CONSISTENCY	$(N_1)_{60}$ (blows/ft) ^(c)	
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.50
COMPACT (MEDIUM DENSE)	10 - 30	FIRM	4 - 8	0.50 - 1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

(a) Soils consisting of gravel, sand, and silt, either separately or in combination possessing no characteristics of plasticity, and exhibiting drained behavior.
 (b) Soils possessing the characteristics of plasticity, and exhibiting undrained behavior.
 (c) Refer to ASTM D1586 for a definition of N value. $(N_1)_{60}$ is the N value corrected for hammer energy and overburden pressure, and is detailed in ASTM D6066. N values may be affected by a number of factors including: material size, sampler size, hammer weight and type, depth, drilling method, and borehole disturbance. **N values are only an approximate guide for cohesive soil and do not apply to frozen soil.**
 (d) Undrained shear strength, $s_u = 1/2$ unconfined compression strength, U_c . Note that Torvane (TV) measures s_u and pocket penetrometer (PP) measures U_c .

CRITERIA FOR DESCRIBING MOISTURE CONDITION (adapted from ASTM D2488)

DRY	ABSENCE OF MOISTURE, DUSTY, DRY TO THE TOUCH
MOIST	DAMP BUT NO VISIBLE WATER
WET	VISIBLE FREE WATER, USUALLY SOIL IS BELOW WATER TABLE

COMPONENT DEFINITIONS BY GRADATION

COMPONENT	SIZE RANGE
BOULDERS	GREATER THAN 12 in.
COBBLES	12 in. to 3 in.
GRAVEL	3 in. to #4 Sieve (4.76 mm)
COARSE GRAVEL	3 in. to 3/4 in.
FINE GRAVEL	3/4 in. to #4 (4.76 mm)
SAND	#4 (4.76 mm) to #200 (0.074 mm)
COARSE SAND	#4 (4.76 mm) to #10 (2.0 mm)
MEDIUM SAND	#10 (2.0 mm) to #40 (0.42 mm)
FINE SAND	#40 (0.42 mm) to #200 (0.074 mm)
SILT & CLAY (FINES)	SMALLER THAN #200 (0.074 mm)

SAMPLER ABBREVIATIONS

SS SPT Sampler (2 in. OD, 140 lb hammer)	C Core (Diamond Bit)
HD Heavy Duty Split Spoon (3 in. OD, 340 lb hammer)	TW Thin Wall (Shelby Tube)
-BL Brass Liners used in Split Spoon	TP Thin Wall Piston Sampler
R Refual when driving Split Spoon	MS Modified Shelby
CA Continuous Core (Soil in Hollow-Stem Auger)	MC Geoprobe Macro-Core
GS Grab Sample from Surface / Testpit	RC Air Rotary Cuttings
AC Auger Charge	AW Auger Wash
	AG Auger Cuttings

DESCRIPTIVE TERMINOLOGY FOR PERCENTAGES (ASTM D2488)

DESCRIPTIVE TERMS	RANGE OF PROPORTION
TRACE	0 - 5%
FEW	5 - 10%
LITTLE	10 - 25%
SOME	30 - 45%
MOSTLY	50 - 100%

LABORATORY TEST AND NOTES ABBREVIATIONS / SYMBOLS

Con Consolidation	PID Photoionization Detector	TXCD Triaxial, Consolidated Drained
Dd Dry Density	PM Modified Proctor (D1557)	TXCU Triaxial, Consolidated Undrained
K Thermal Conductivity	PP Pocket Penetrometer (Field)	TXUU Triaxial, Unconsolidated Undrained
MA Sieve and Hydrometer	PTLD Point Load	W_L Liquid Limit (LL)
NP Non-plastic	SA Sieve Analysis	W_p Plastic Limit (PL)
OLI Organic Loss	SpG Specific Gravity	Ω Soil Resistivity (Res.)
P200 Passing #200 Sieve (D1140)	TC Thaw Consolidation/Strain	▼ Water Level
pH Soil pH	TV Torvane (Field)	▼ Water Level While Drilling
PI Plasticity Index (D4318)		

LIBRARY-ANCS(9-9-15)/GLB [ANC_SOIL_LEGEND] 9/10/15



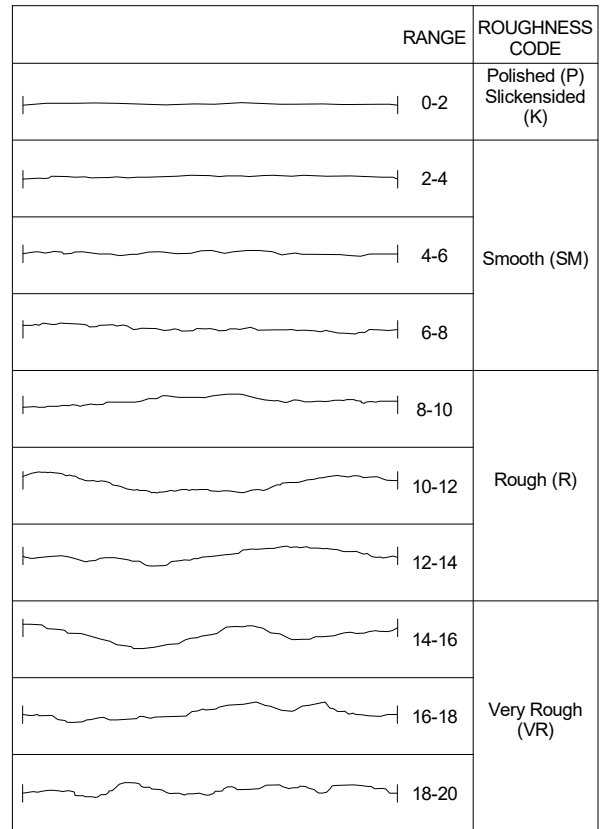
SOIL CLASSIFICATION / LEGEND

Figure B-1

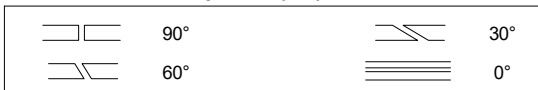
WEATHERING CLASSIFICATION*

TERM	DESCRIPTION	GROUP	SYMBOL
Fresh (FR)	No visible sign of rock material weathering; perhaps slight discoloration on major discontinuity surfaces	I	W1
Slightly Weathered (SW)	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.	II	W2
Moderately Weathered (MW)	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as discontinuous framework or as corestones.	III	W3
Highly Weathered (HW)	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as discontinuous framework or as corestones.	IV	W4
Completely Weathered (CW)	All rock material is decomposed and/or disintegrated to a soil. The original mass structure is largely intact.	V	W5
Residual Soil (RS)	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.	VI	

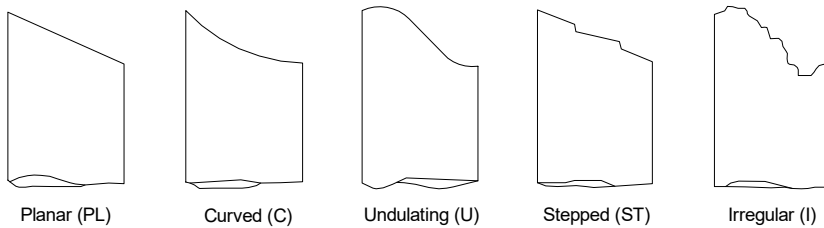
TYPICAL ROUGHNESS PROFILES FOR JRC*



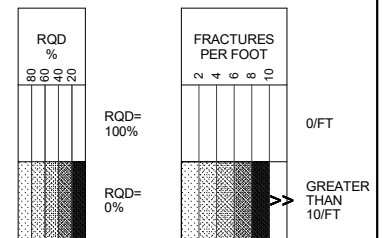
FRACTURE ORIENTATION with respect to (wrt) core axis



SHAPE



RQD & FRACTURES / FOOT (as illustrated on Drillhole logs)



INTACT ROCK STRENGTH CLASSIFICATION*

GRADE	DESCRIPTION	FIELD IDENTIFICATION	APPROX. RANGE OF UNIAXIAL COMPRESSIVE STRENGTH	
			MPa	(psi)
R0	Extremely weak rock	Indented by thumbnail	0.25 - 1.0	(35 - 150)
R1	Very weak rock	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	1.0 - 5.0	(150 - 725)
R2	Weak rock	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blows with point of geological hammer	5.0 - 25	(725 - 3500)
R3	Medium strong rock	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single firm blow from geological hammer	25 - 50	(3500 - 7000)
R4	Strong rock	Specimen requires more than one blow geological hammer to fracture it	50 - 100	(7000 - 15000)
R5	Very strong rock	Specimen requires many blows from a geological hammer to fracture it	100 - 250	(15000 - 36000)
R6	Extremely strong rock	Specimen can only be chipped with a geological hammer	>250	(>36000)

MODIFIED CORE RECOVERY AS AN INDEX OF ROCK QUALITY

RQD	DESCRIPTION OF ROCK QUALITY
0 - 25	Very poor
25 - 50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

NOTE: Rock Quality Designation (RQD) is measured as the summation of all the core pieces that are greater than 4 inches in length, divided by the total core run length.

*From Brown, 1981, "Suggested Methods for Rock Characterization Testing and Monitoring," International Society for Rock Mechanics (ISRM)

RECORD OF BOREHOLE TH-370.7-P2-1

SHEET 1 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/7 & 4/8/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1007.5 ft
 COORDS: 64.01147° N 149.11825° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT		NOTES TESTS WATER LEVELS GRAPHIC		
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)		SALINITY (ppt) Δ	
													WATER CONTENT (PERCENT)	
0		VEGETATION: n/a; gravel fill / river bank												
0.0 - 1.0		Dense, dry to moist, gray, Sandy GRAVEL with few to some Cobbles; trace silt (GWs) [FILL / Altered Ground]		GWs										
1.0 - 13.0		Frozen to dense, dry to moist, becoming wet below about 7 feet, gray, Sandy GRAVEL with Cobbles and Boulders; round to sub-angular, poorly bonded (GWs)		GWs										
		<i>-Note:</i> Seasonal frost depth undetermined; difficult to discern due to dryness of soil.												
10						1A	HD	4-8-8/3in.(R)*	n/a	12				
		<i>-Sample 1A & 1B:</i> Oversized cobble in shoe of spoon, causing bouncing and inflated blow counts. Blows not considered representative. 1 ft of heave (cleaned out) before sampling.				1B	HD			3				
										3				
13.0 - 32.0		Dense / R0, wet, gray, poorly-graded SAND; little silt, trace to few gravel, fine-grained round to sub-angular sand, pockets of silty sand, lithified / consolidated material disturbed by drilling and recovered as soil (SP-SM) [Nenana Gravel Formation]				2	HD	15-22-29-34	>50	24				
		<i>-Note:</i> Significant increase of return water and softer drilling at 28' - 57'.												
32.0 - 33.5		Very dense / R0 (inferred), wet, gray, SILT and GRAVEL, with sand; fine-grained sand, nonplastic, lithified / consolidated material recovered as soil (GM to MLg) [Nenana Gravel Formation]		GM to MLg		3	RC							
33.5 - 35.4		Dense / R0, wet, gray, poorly-graded SAND; little silt, fine-grained sand, lithified / consolidated material recovered as soil (SP-SM) [Nenana Gravel Formation]		SP-SM		4A	HD	21-34-65-50/4in.R	>50	11				
35.4 - 37.0		Very dense / R0 (inferred), wet, gray w/ dark brown, Sandy SILT; nonplastic, lithified / consolidated material recovered as soil (MLs) [Nenana Gravel Formation]		MLs		4B	HD			11				
										11				
40						5	HD	24-40/5in.(R)	R					

Air Rotary: Downhole Percussion Hammer with Over-Remaining Button Bit used as Casing Advancer (4.5 inch O.D.)

Gravel = 0%, Sand = 87%, Fines = 13%, SA

backfilled with drill cuttings

Log continued on next page

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-3

RECORD OF BOREHOLE TH-370.7-P2-1

SHEET 2 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/7 & 4/8/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1007.5 ft
 COORDS: 64.01147° N 149.11825° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT		NOTES TESTS WATER LEVELS GRAPHIC		
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)		SALINITY (ppt) Δ	
													WATER CONTENT (PERCENT)	
40		VEGETATION: n/a; gravel fill / river bank										10 20 30 40		
40 - 45		37.0 - 50.0 Very dense / R0 (inferred), wet, gray w/ brown, poorly-graded SAND; little silt, fine-grained sand, lithified / consolidated material recovered as soil (SP-SM) [Nenana Gravel Formation] (Continued)		SP-SM								10 20 30 40		
50	Air Rotary; Downhole Percussion Hammer with Over-Remaining Button Bit used as Casing Advancer (4.5 inch O.D.)	50.0 - 57.0 Very dense / R0 (inferred), wet, gray, SAND (SP) mixed with Sandy SILT (ML); trace to little gravel, fine-grained sand, round to sub-angular, nonplastic, lithified / consolidated material recovered as soil (SP & MLs) [Nenana Gravel Formation]		SP & MLs	50.0							10 20 30 40		
55						6	HD	26-65	>50	12 12		10 20 30 40	backfilled with drill cuttings	
60		57.0 - 60.0 Very dense / R0 (inferred), wet, gray w/ white, Sandy GRAVEL; fine to coarse-grained round to sub-angular, lithified / consolidated material recovered as soil (GP-GMs) [Nenana Gravel Formation]		GP-GMs	57.0	7A 7B	HD HD	45-70/3in.(R)	R	6 6 3 3		10 20 30 40	Gravel = 41%, Sand = 53%, Fines = 6%, Gravel = 15%, Sand = 66%, Fines = 19%	
65		60.0 - 65.0 Very dense / R0 (inferred), wet, dark gray w/ black, Silty SAND with gravel; fine-grained sand & gravel, lithified / consolidated material recovered as soil (SMg) [Nenana Gravel Formation]		SMg	60.0							10 20 30 40		
70		65.0 - 73.0 Dense to very dense / R0 (inferred), wet, dark gray w/ black, GRAVEL and SAND; varying silt (trace to few) content, fine to coarse-grained sand & gravel, round to sub-angular, lithified / consolidated material recovered as soil (GP-GMs) [Nenana Gravel Formation] <i>Note: Significant increase of return water at 65'.</i>		GP-GMs	65.0	8	RC					10 20 30 40		
75		73.0 - 75.0 Wet, gray, Sandy SILT; nonplastic, lithified / consolidated material recovered as soil (MLs) [Nenana Gravel Formation]		MLs	73.0							10 20 30 40	<i>Note: Inferred conditions 73' - 75' based on drilling action and cuttings return.</i>	
80		75.0 - 90.0 Dense to very dense / R0 (inferred), wet, dark gray w/ black, GRAVEL and SAND; varying silt (trace to few) content, fine to coarse-grained sand & gravel, round to sub-angular, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (GP-GMs) [Nenana Gravel Formation]		GP-GMs	75.0	9	RC					10 20 30 40		
		Log continued on next page												

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-3

RECORD OF BOREHOLE TH-370.7-P2-1

SHEET 3 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/7 & 4/8/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1007.5 ft
 COORDS: 64.01147° N 149.11825° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT				NOTES TESTS WATER LEVELS GRAPHIC				
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)	SALINITY (ppt) Δ						
												WATER CONTENT (PERCENT)						
VEGETATION: n/a; gravel fill / river bank												10 20 30 40		10 20 30 40				
80	Air Rotary: Downhole Percussion Hammer with Over-Remaining Button Bit used as Casing Advancer (4.5 inch O.D.)	75.0 - 90.0 Dense to very dense / R0 (inferred), wet, dark gray w/ black, GRAVEL and SAND; varying silt (trace to few) content, fine to coarse-grained sand & gravel, round to sub-angular, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (GP-GMs) [Nenana Gravel Formation] (Continued)																
85						10	RC											
90		90.0 - 102.0 Dense to very dense / R0 (inferred), wet, dark gray w/ black, SAND with little gravel; trace to little silt, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (SP-SMg) [Nenana Gravel Formation]			90.0													
95						11	RC											
100																		
102.0		102.0 - 103.0 Wood (inferred)			102.0	12	RC											
103.0		103.0 - 109.5 Dense to very dense / R0 (inferred), wet, dark gray w/ black, SAND with little gravel, contains layer of Sandy SILT; trace to mostly silt, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (SP-SMg w/ ML) [Nenana Gravel Formation]			103.0													
105																		
109.5		109.5 - 110.5 Very dense / R0 (inferred), no recovery, broke sampler			109.5	14	HD	17-60/6in.(R)*	R	0.12								
110		Borehole completed at 110.5 ft.																
115		NOTES: 1) Interpretation of "Nenana Gravel Formation" is inferred. "Nenana Gravel" consists of moderately consolidated and very weakly (if at all) cemented tertiary age sedimentary bedrock of mostly sandstone and conglomerate composition. However, once disturbed, it readily breaks into its constituent pebbles and grains; which is inferred here with the samples recovered. Disturbance from drilling causes samples of the material to resemble unconsolidated sand, gravel, and silt, as logged per Unified Soil Classification System. 2) Borehole 54 ft W and 78 ft N of centerline of Pier 4. Directions are relative to track. 3) "HD" samples collected in heavy duty split spoon samplers (3 inch O.D.) that is driven with 300 lb hammer weight that is (automatically) dropped 30 inches. "R" indicates refusal; defined as over 50 blows per 6 inches.																
120																		

backfilled with drill cuttings

-Note: Wood inferred at 102' based on drilling & cuttings.

-Note: Inferred based on silty cuttings and siltier return water at 108'.

Gravel = 2%,
Sand = 95%,
Fines = 3%

-Sample 14*: Sampler bouncing at end of drive, meeting refusal. Sampler was very tight in borehole upon retrieval, and broke inside hole.

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-3

RECORD OF BOREHOLE TH-370.7-P2-1

SHEET 4 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/7 & 4/8/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1007.5 ft
 COORDS: 64.01147° N 149.11825° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT ■				NOTES TESTS WATER LEVELS GRAPHIC		
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)	SALINITY (ppt) Δ				
												WATER CONTENT (PERCENT)				
120		VEGETATION: n/a; gravel fill / river bank										10 20 30 40	10 20 30 40			
125		4) "RC" samples collected from air rotary cuttings exiting the drill casing. Cuttings that pass the drill bit are limited to about 3/8 inch or less in size. 5) Where blow counts are not available, relative density was inferred based on drilling action and geologic unit. 6) The air hammer bit does not constantly impact/percuss while drilling through the sand. 7) Significant flow of water coming up inside the drill casing throughout the boring. This is particularly true when the DTH air percussion hammer is being lifted and retracted from inside the drill hole, and as a result, the water pressure helps lift the hammer & drill rods upward.										10 20 30 40	10 20 30 40			
130												10 20 30 40	10 20 30 40			
135												10 20 30 40	10 20 30 40			
140												10 20 30 40	10 20 30 40			
145												10 20 30 40	10 20 30 40			
150												10 20 30 40	10 20 30 40			
155												10 20 30 40	10 20 30 40			
160												10 20 30 40	10 20 30 40			

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Wininger Drilling
 DRILLER: Frank Wininger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

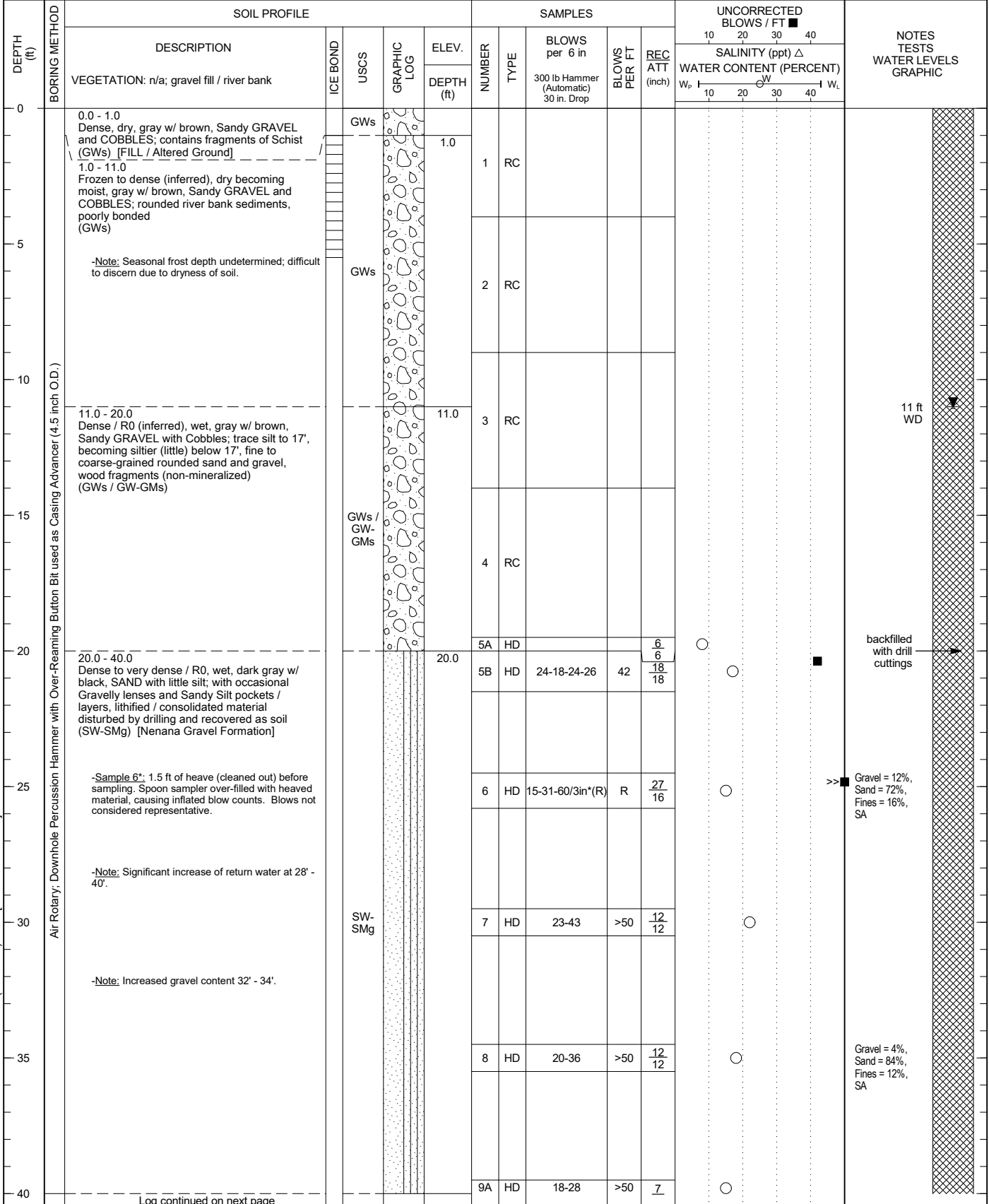
Figure B-3

RECORD OF BOREHOLE TH-370.7-P4-2

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/9 & 4/10/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1009 ft
 COORDS: 64.01261° N 149.11753° W



ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-4

RECORD OF BOREHOLE TH-370.7-P4-2

SHEET 2 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/9 & 4/10/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1009 ft
 COORDS: 64.01261° N 149.11753° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT				NOTES TESTS WATER LEVELS GRAPHIC		
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)	SALINITY (ppt) Δ				
												WATER CONTENT (PERCENT)				
		VEGETATION: n/a; gravel fill / river bank									10	20	30	40		
40	Air Rotary; Downhole Percussion Hammer with Over-Remaining Button Bit used as Casing Advancer (4.5 inch O.D.)	40.0 - 42.0 Dense / R0, wet, gray w/ dark brown, Sandy SILT; mixed with Sand, fine-grained sand, nonplastic, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (MLs) [Nenana Gravel Formation]		MLs	40.0	9B	HD			7 5 5		○				<div style="text-align: center;"> </div> <p style="text-align: center; margin-top: 100px;">backfilled with drill cuttings</p> <p style="text-align: center; margin-top: 100px;">Gravel = 14%, Sand = 77%, Fines = 9%, SA</p>
		42.0 - 60.5 Very dense / R0, wet, dark gray w/ black, SAND with little silt; with layers, lenses, & pockets of Silt little gravel, fine-grained sand, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (SW-SMg) [Nenana Gravel Formation]		SW-SMg	42.0							○				
50						10	HD	21-52		>50	12 12		○			
			-Note: Increased gravel content and return water below 54'.										○			
60						11	HD	27-50		>50	12 12		○			
			60.5 - 79.5 Very dense / R0, wet, dark gray w/ black, poorly-graded SAND with little to some silt; with layers, lenses, & pockets of Sand & Silt, fine-grained sand, lithified / consolidated material recovered as soil (SP-SM / SMg) [Nenana Gravel Formation]		SP-SM / SMg	60.5							○			
70						12	HD	37-47		>50	12 12		○			
			-Note: Significant increase of return water 70' - 80'.										○			
80					MLs	79.5	13	HD	15-33		>50		○	-----		
			Log continued on next page										○			

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-4

RECORD OF BOREHOLE TH-370.7-P4-2

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/9 & 4/10/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1009 ft
 COORDS: 64.01261° N 149.11753° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT		NOTES TESTS WATER LEVELS GRAPHIC		
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS per 6 in 300 lb Hammer (Automatic) 30 in. Drop	BLOWS PER FT	REC ATT (inch)		SALINITY (ppt) Δ	
													WATER CONTENT (PERCENT)	
80	Air Rotary; Downhole Percussion Hammer with Over-Remaining Button Bit used as Casing Advancer (4.5 inch O.D.)	VEGETATION: n/a; gravel fill / river bank												
79.5 - 81.5		Dense to very dense / R0, wet, dark gray, Sandy SILT; fine-grained sand, low plasticity, lithified / consolidated material recovered as soil (MLs) [Nenana Gravel Formation] (Continued)		MLs		81.5	13	HD	15-33	>50	12/12			Gravel = 0%, Sand = 44%, Fines = 56%
81.5 - 106.0		Very dense / R0, wet, dark gray w/ black, poorly-graded SAND with trace to some silt; with layers, lenses, & pockets of Sand, Silty Sand, & Silt, fine-grained sand, wood fragments (non-mineralized), lithified / consolidated material recovered as soil (SP-SM w/ SP & ML) [Nenana Gravel Formation]		SP-SM w/ SP & ML			14A	RC						
90							14B	HD	21-69	>50	1/12			
95							15	RC						backfilled with drill cuttings
100							16	HD	18-22-30	>50	1/18			
106.0 - 110.0		Very dense (inferred), wet, dark gray w/ black, GRAVEL with little to some sand; trace to little silt, fine to coarse-grained, lithified / consolidated material recovered as soil (GP-GM) [Nenana Gravel Formation]		GP-GM		106.0	18	RC					-Note: Attempted sample at 110', but gravel packed inside casing upon retracting drill bit. Attempted to re-drill with same result.	
110		Borehole completed at 110.0 ft.												
115		NOTES: 1) Interpretation of "Nenana Gravel Formation" is inferred. "Nenana Gravel" consists of moderately consolidated and very weakly (if at all) cemented tertiary age sedimentary bedrock of mostly sandstone and conglomerate composition. However, once disturbed, it readily breaks into its constituent pebbles and grains; which is inferred here with the samples recovered. Disturbance from drilling causes samples of the material to resemble unconsolidated sand, gravel, and silt, as logged per Unified Soil Classification System. 2) Borehole 54 ft W and 78 ft N of centerline of Pier 4. Directions are relative to track. 3) "HD" samples collected in heavy duty split spoon samplers (3 inch O.D.) that is driven with 300 lb hammer weight that is (automatically) dropped 30 inches. "R" indicates refusal; defined as over 50 blows per 6 inches. 4) "RC" samples collected from air rotary cuttings												

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Winger Drilling
 DRILLER: Frank Winger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-4

RECORD OF BOREHOLE TH-370.7-P4-2

SHEET 4 of 4

PROJECT: ARRC Bridge 370.7 Nenana River at Ferry, AK
 PROJECT NUMBER: 1526954
 LOCATION: ARRC MP 370.7, just south of Ferry, AK

CLIENT: Alaska Railroad Corporation (ARRC)
 DRILLING DATES: 4/9 & 4/10/2015
 EQUIPMENT: Mobil B-61 (modified) truck-mount

DATUM: Ground Surface
 ELEVATION: 1009 ft
 COORDS: 64.01261° N 149.11753° W

DEPTH (ft)	BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / FT ■				NOTES TESTS WATER LEVELS GRAPHIC
		DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS per 6 in	BLOWS PER FT	REC ATT (inch)	SALINITY (ppt) Δ	WATER CONTENT (PERCENT)	
		VEGETATION: n/a; gravel fill / river bank						300 lb Hammer (Automatic) 30 in. Drop					10 20 30 40 W _e ----- W _L W _p	
120		exiting the drill casing. Cuttings that pass the drill bit are limited to about 3/8 inch or less in size. 5) Where blow counts are not available, relative density was inferred based on drilling action and geologic unit. 6) The air hammer bit does not constantly impact/percuss while drilling through the sand. 7) Significant flow of water coming up inside the drill casing throughout the boring. This is particularly true when the DTH air percussion hammer is being lifted and retracted from inside the drill hole, and as a result, the water pressure helps lift the hammer & drill rods upward.												
125														
130														
135														
140														
145														
150														
155														
160														

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(10-20-15).GLB [ANC BOREHOLE] TRoss 11/4/15



DEPTH SCALE: 1 inch to 5 feet
 DRILLING CONTRACTOR: Wininger Drilling
 DRILLER: Frank Wininger

LOGGED: T. Ross
 CHECKED: D. Willman
 CHECK DATE: 6/30/2015

Figure B-4

APPENDIX C
LABORATORY TESTING

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TABLE C-1: SAMPLE SUMMARY

Client: Alaska Railroad Corporation (ARRC)	Project No.: 1526954
Project: ARRC Bridge 370.7 Nenana River at Ferry, AK	
Location: ARRC MP 370.7, just south of Ferry, AK	Reviewed By: J. Holland Date: 5/18/2015

SAMPLING DATA										CLASSIFICATION AND INDEX TEST RESULTS									
SAMPLE LOCATION	SAMPLE NUMBER	DEPTH (ft)		ELEVATION (ft, Ground Surface)		RECOVERY (%)	SAMPLE TYPE	BLOWS PER FOOT	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (LL) (%)	PLASTIC LIMIT (PL) (%)	PLASTICITY INDEX (PI) (%)	GRADATION (%)			ORGANIC CONTENT (%)	DESCRIPTION (USCS)	TESTS / OTHER TESTS	
		TOP	BOTTOM	TOP	BOTTOM								GRAVEL	SAND	FINES (SILT & CLAY)				
TH-370.7-P2-1	1A	9.5	10.5	998.0	997.0	100	HD	n/a	7								GWs		
TH-370.7-P2-1	1B	10.5	10.8	997.0	996.7	100	HD										GWs		
TH-370.7-P2-1	2	14.5	16.5	993.0	991.0	100	HD	>50	23				0.0	86.6	13.4		SM	SA	
TH-370.7-P2-1	3	32.0	33.5	975.5	974.0		RC												
TH-370.7-P2-1	4A	34.5	35.4	973.0	972.1	102	HD	>50	19									SP-SM	
TH-370.7-P2-1	4B	35.4	36.3	972.1	971.2	102	HD		30									MLs	
TH-370.7-P2-1	5	39.5	40.4	968.0	967.1	102	HD	refusal	24									SP-SM	
TH-370.7-P2-1	6	54.5	55.5	953.0	952.0	100	HD	>50	23									SP to MLs	
TH-370.7-P2-1	7A	59.5	60.0	948.0	947.5	100	HD	refusal	10				41	53	6			SP-SM	
TH-370.7-P2-1	7B	60.0	60.3	947.5	947.2	100	HD		18				15	66	19			SM	
TH-370.7-P2-1	8	65.0	70.0	942.5	937.5		RC												
TH-370.7-P2-1	9	75.0	80.0	932.5	927.5		RC												
TH-370.7-P2-1	10	80.0	90.0	927.5	917.5		RC												
TH-370.7-P2-1	11	90.0	100.0	917.5	907.5		RC												
TH-370.7-P2-1	12	100.0	105.0	907.5	902.5		RC												
TH-370.7-P2-1	13	108.0	109.5	899.5	898.0		RC		29				2	95	3			SP	
TH-370.7-P2-1	14	109.5	110.5	898.0	897.0	0	HD	refusal											
TH-370.7-P4-2	1	0.0	4.0	1009.0	1005.0		RC												
TH-370.7-P4-2	2	4.0	9.0	1005.0	1000.0		RC												
TH-370.7-P4-2	3	9.0	14.0	1000.0	995.0		RC												
TH-370.7-P4-2	4	14.0	19.5	995.0	989.5		RC												
TH-370.7-P4-2	5A	19.5	20.0	989.5	989.0	100	HD		8									GW-GMs	
TH-370.7-P4-2	5B	20.0	21.5	989.0	987.5	100	HD	42	17									SW-SMg	
TH-370.7-P4-2	6	24.5	25.8	984.5	983.2	173	HD	refusal	15				12	72	16			SM SA	
TH-370.7-P4-2	7	29.5	30.5	979.5	978.5	100	HD	>50	22									SP	
TH-370.7-P4-2	8	34.5	35.5	974.5	973.5	100	HD	>50	18				4	84	12			SW-SM SA	
TH-370.7-P4-2	9A	39.5	40.1	969.5	968.9	97	HD	>50	15									SP	
TH-370.7-P4-2	9B	40.1	40.5	968.9	968.5	105	HD		22									MLs	
TH-370.7-P4-2	10	49.5	50.5	959.5	958.5	100	HD	>50	19									SW-SM	
TH-370.7-P4-2	11	59.5	60.5	949.5	948.5	100	HD	>50	18				14	77	9			SW-SM SA	
TH-370.7-P4-2	12	69.5	70.5	939.5	938.5	100	HD	>50	23									SP-SMg	

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANCI(10-20-15).GLB [ANC_SAMPLE_SUMMARY] TRoss 11/4/15



TABLE C-1: SAMPLE SUMMARY

Client: Alaska Railroad Corporation (ARRC)	Project No.: 1526954
Project: ARRC Bridge 370.7 Nenana River at Ferry, AK	
Location: ARRC MP 370.7, just south of Ferry, AK	Reviewed By: J. Holland Date: 5/18/2015

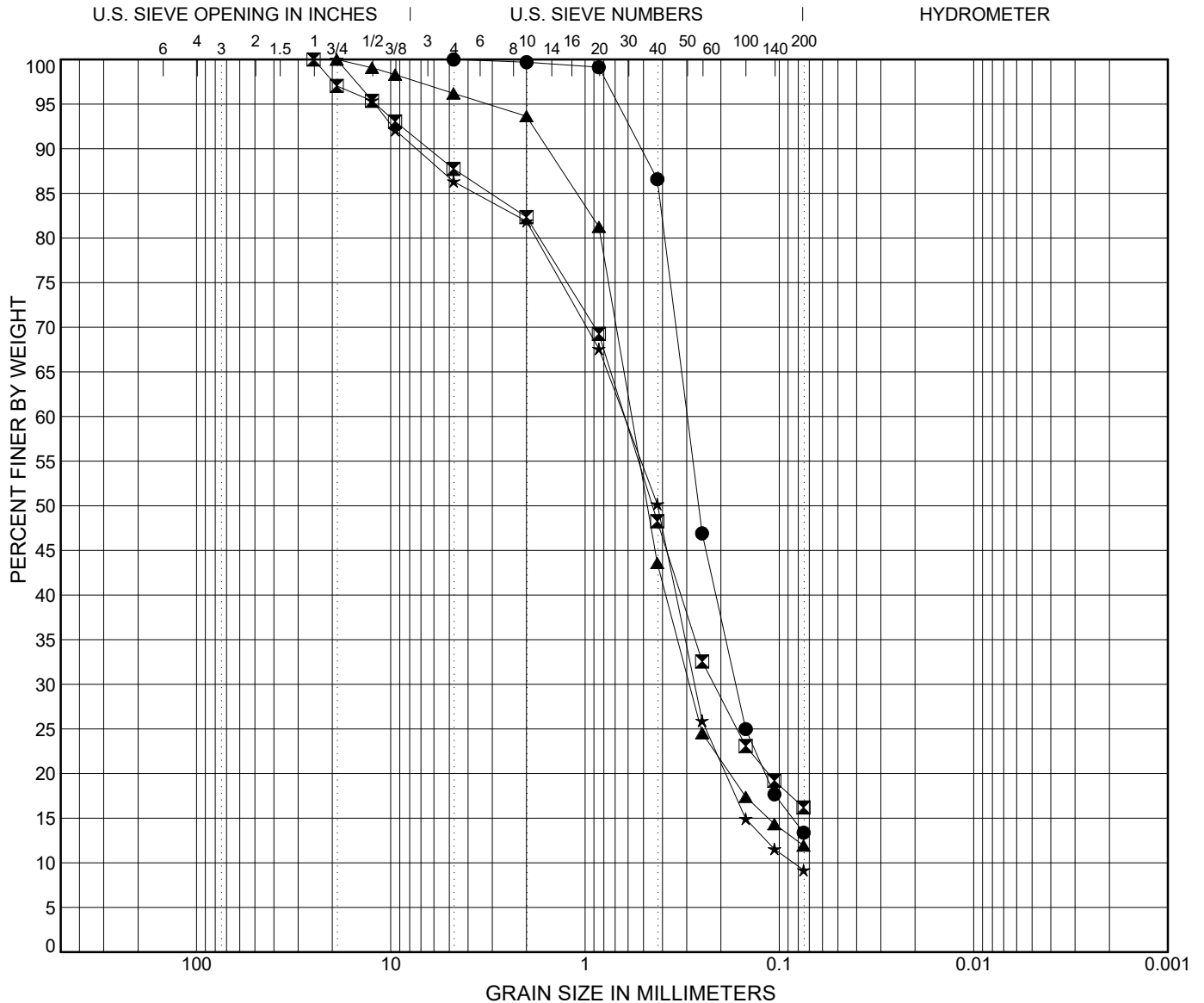
SAMPLING DATA										CLASSIFICATION AND INDEX TEST RESULTS								
SAMPLE LOCATION	SAMPLE NUMBER	DEPTH (ft)		ELEVATION (ft; Ground Surface)		RECOVERY (%)	SAMPLE TYPE	BLOWS PER FOOT	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (LL) (%)	PLASTIC LIMIT (PL) (%)	PLASTICITY INDEX (PI) (%)	GRADATION (%)			ORGANIC CONTENT (%)	DESCRIPTION (USCS)	TESTS / OTHER TESTS
		TOP	BOTTOM	TOP	BOTTOM								GRAVEL	SAND	FINES (SILT & CLAY)			
TH-370.7-P4-2	13	79.5	80.5	929.5	928.5	100	HD	>50	21	47	29	18	0	44	56		MLs	
TH-370.7-P4-2	14A	85.0	89.0	924.0	920.0		RC											
TH-370.7-P4-2	14B	89.0	90.0	920.0	919.0	8	HD	>50									SP-SM	
TH-370.7-P4-2	15	90.0	99.0	919.0	910.0		RC											
TH-370.7-P4-2	16	99.0	100.5	910.0	908.5	5	HD	>50	18								SP-SM	
TH-370.7-P4-2	17	100.5	105.0	908.5	904.0		RC											
TH-370.7-P4-2	18	105.0	110.0	904.0	899.0		RC											

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANCI(10-20-15).GLB [ANC_SAMPLE_SUMMARY] TRoss 11/4/15

FIGURE C-1: SUMMARY OF PARTICLE SIZE DISTRIBUTION RESULTS

 Reference(s)
 ASTM D422
 ASTM D6913

Client: Alaska Railroad Corporation (ARRC)	Project No.: 1526954
Project: ARRC Bridge 370.7 Nenana River at Ferry, AK	QA/QC By: J. Randazzo Date: 4/29/2015
Location: ARRC MP 370.7, just south of Ferry, AK	Reviewed By: J. Holland Date: 5/18/2015



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

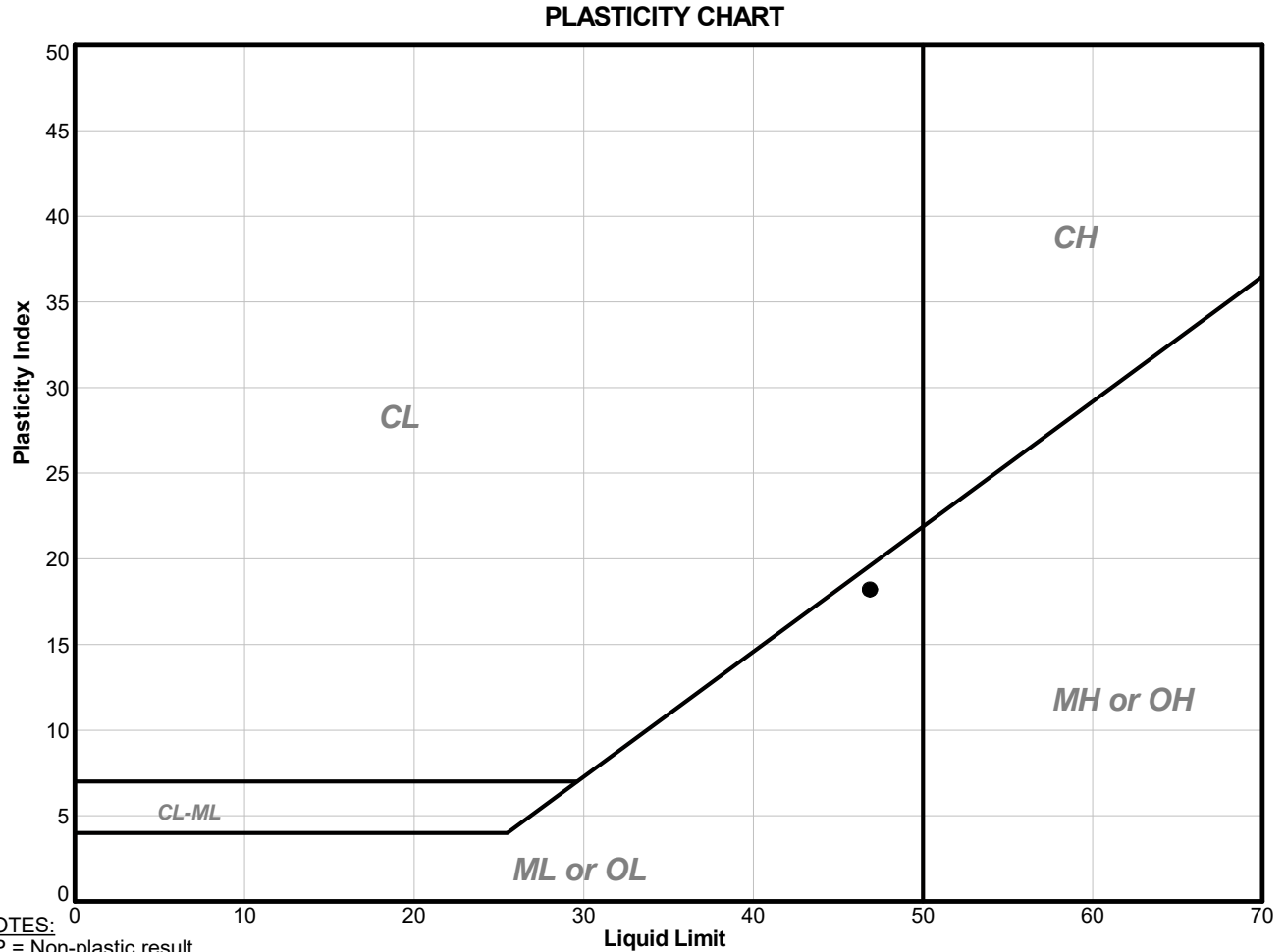
	Sample Location	Sample Number	Depth (ft)	USCS Classification	Cc	Cu	% Gravel	% Sand	% Fines	% < 0.02 mm
●	TH-370.7-P2-1	2	14.5	silty sand (SM)	-	-	0	87	13.4	
⊠	TH-370.7-P4-2	6	24.5	silty sand (SM)	-	-	12	72	16.2	
▲	TH-370.7-P4-2	8	34.5	well-graded sand with silt (SW-SM)	2.6	10.1	4	84	11.9	
★	TH-370.7-P4-2	11	59.5	well-graded sand with silt (SW-SM)	1.4	7.4	14	77	9.2	

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANQC(12-5-16).GLB [ANC LAB GRAIN SIZE] TRoss 3/2/17

FIGURE C-2: LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

 Reference(s)
ASTM D4318

Client: Alaska Railroad Corporation (ARRC)	Project No.: 1526954
Project: ARRC Bridge 370.7 Nenana River at Ferry, AK	QA/QC By: J. Randazzo Date: 4/29/2015
Location: ARRC MP 370.7, just south of Ferry, AK	Reviewed By: J. Holland Date: 5/18/2015



NOTES:
 NP = Non-plastic result
 Plastic Limit test performed by hand rolling
 Liquid Limit test performed using mechanical device

	Sample Location	Sample Number	Depth (ft)	Bottom (ft)	Passing #40 Sieve (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	USCS	Natural Moisture Content (%)
●	TH-370.7-P4-2	13	79.5	80.5		47	29	18	MLs	21

ARRC BRDG 370-7 NENANA RIV.GPJ LIBRARY-ANC(12-5-16).GLB [ANC LAB ATTERBERG CASAGRANDE MULTI (10)] TRoss 3/2/17

**APPENDIX D
SEISMIC HAZARD**

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APPENDIX D-1
SEISMIC HAZARD MAPS OF ALASKA (WESSON, ET. AL, 2007)

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Revision of Time-Independent Probabilistic Seismic Hazard Maps for Alaska

Open-File Report 2007–1043

**U.S. Department of the Interior
U.S. Geological Survey**

Revision of Time-Independent Probabilistic Seismic Hazard Maps for Alaska

By Robert L. Wesson, Oliver S. Boyd, Charles S. Mueller, Charles G. Bufe,
Arthur D. Frankel, and Mark D. Petersen

Open-File Report 2007–1043

U.S. Department of the Interior
U.S. Geological Survey

24 Revision of Time-Independent Probabilistic Seismic Hazard Maps for Alaska

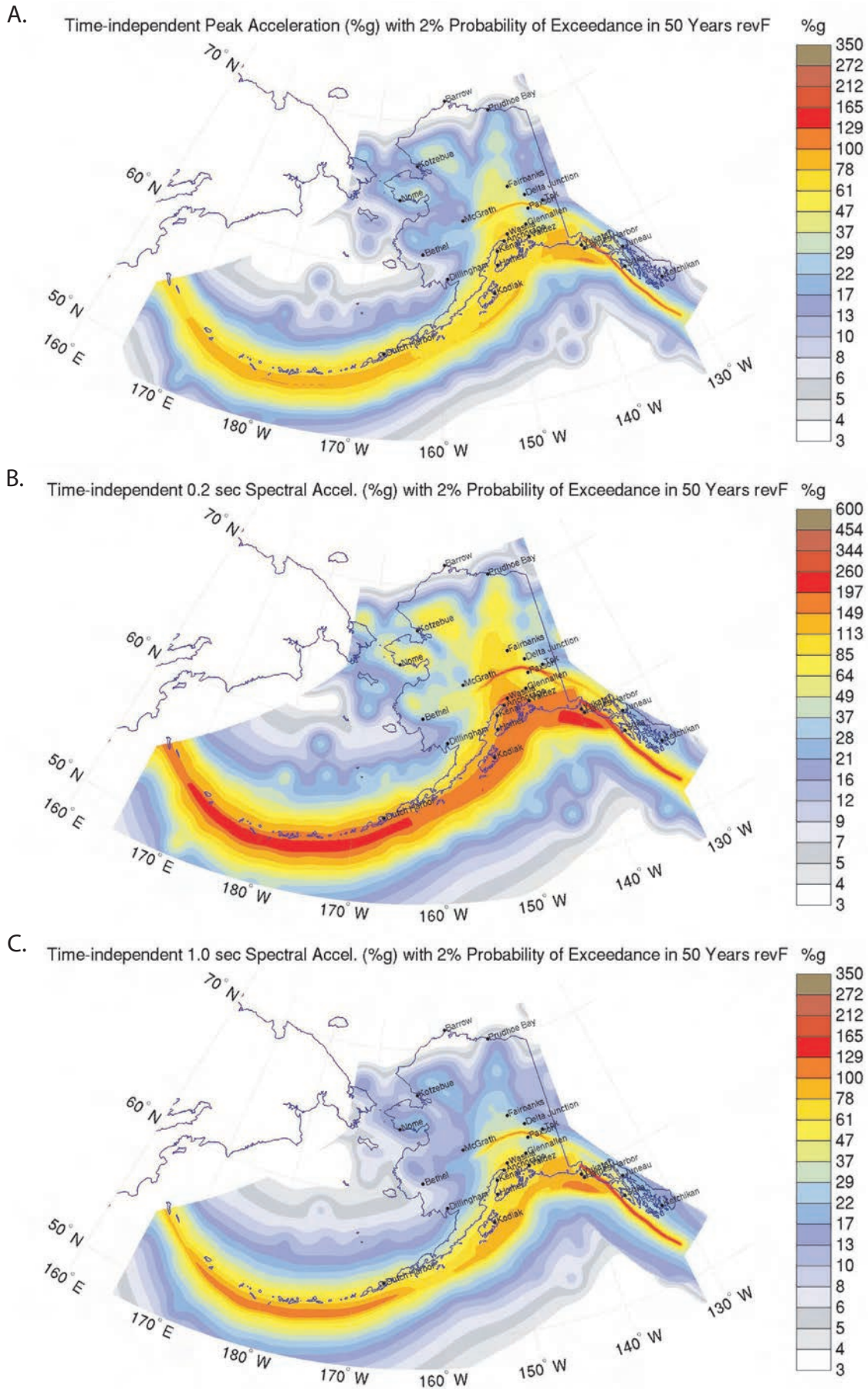
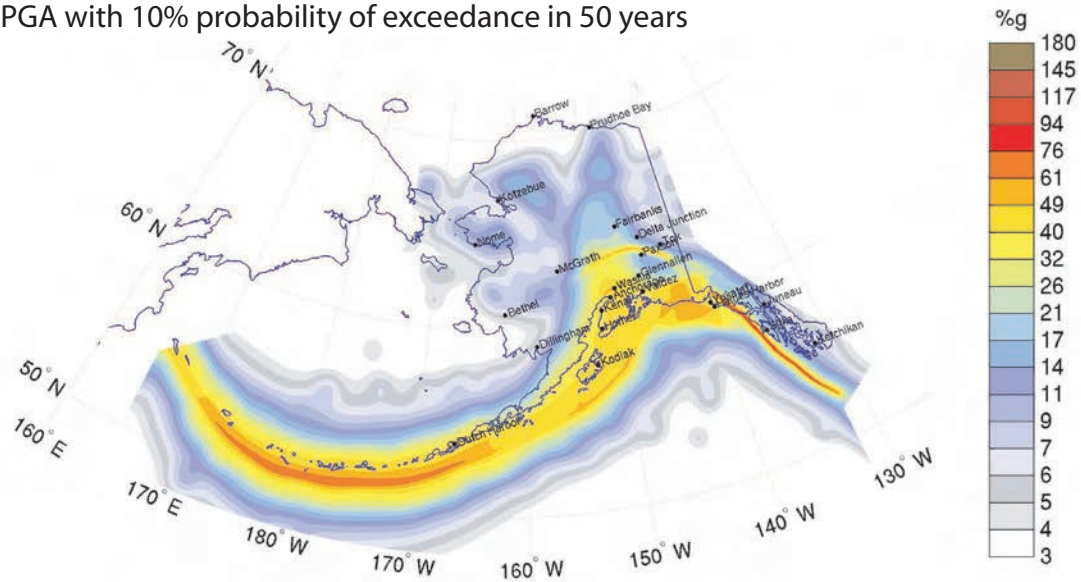
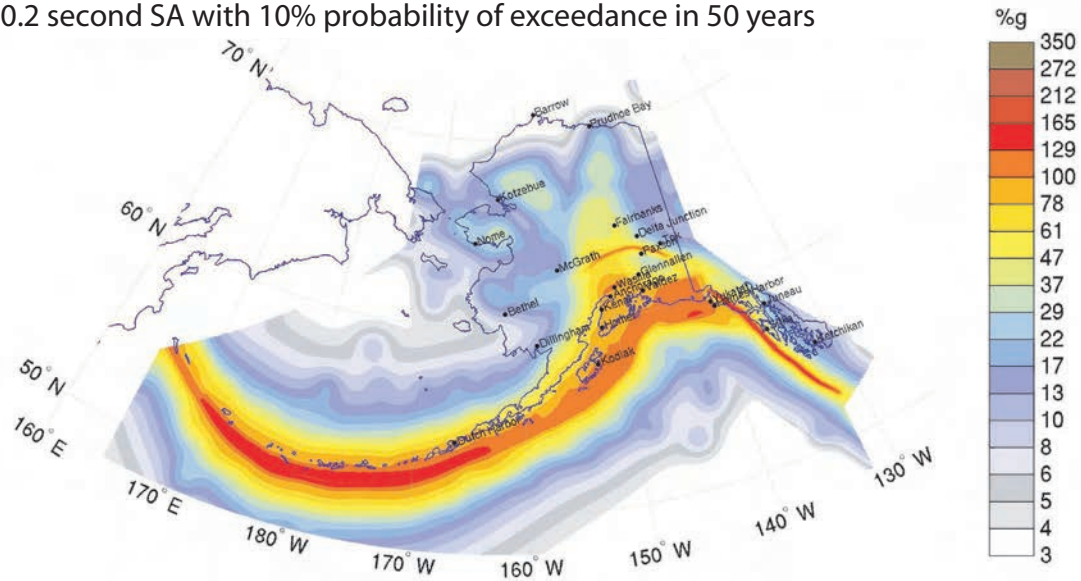


Figure 10. Probabilistic ground motion with a 2-percent probability of exceedance in 50 years for peak ground acceleration (A), 0.2 second spectral acceleration (B), 1.0 second spectral acceleration (C).

A. PGA with 10% probability of exceedance in 50 years



B. 0.2 second SA with 10% probability of exceedance in 50 years



C. 1.0 second SA with 10% probability of exceedance in 50 years

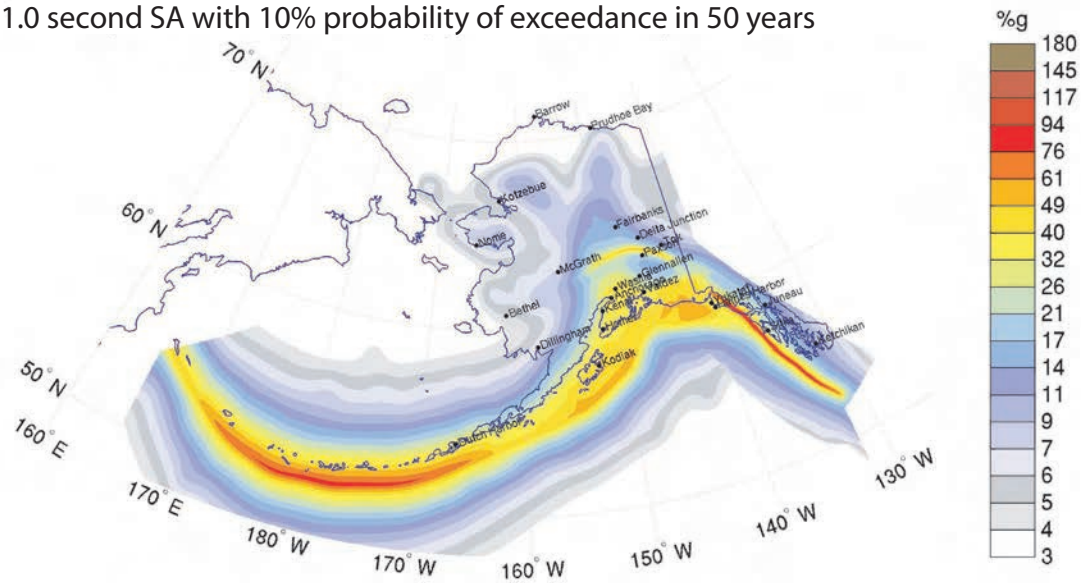


Figure 11. Probabilistic ground motion with a 10-percent probability of exceedance in 50 years for peak ground acceleration (A), 0.2 second spectral acceleration (B), and 1.0 second spectral acceleration (C).

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APPENDIX D-2
USGS SEISMIC DESIGN SUMMARY REPORT (USGS, 2008)

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USGS Design Maps Summary Report

User-Specified Input

Report Title ARRC Bridge 370.7 Nenana River at Ferry, AK

Mon May 4, 2015 22:04:11 UTC

Building Code Reference Document ASCE 7-10 Standard

(which utilizes USGS hazard data available in 2008)

Site Coordinates 64.01192°N, 149.11772°W

Site Soil Classification Site Class C – “Very Dense Soil and Soft Rock”

Risk Category I/II/III

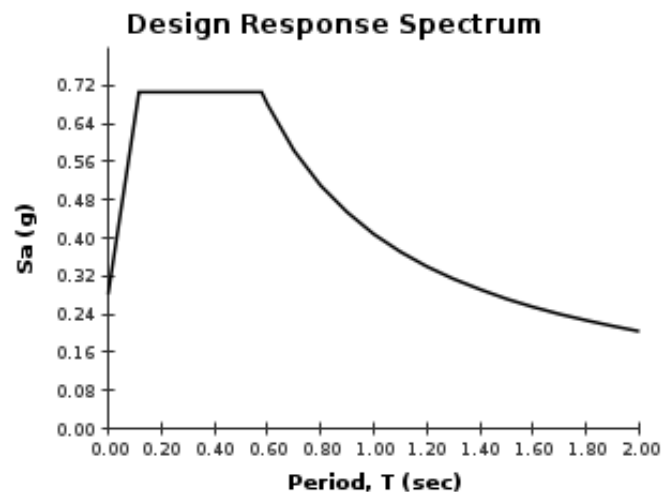
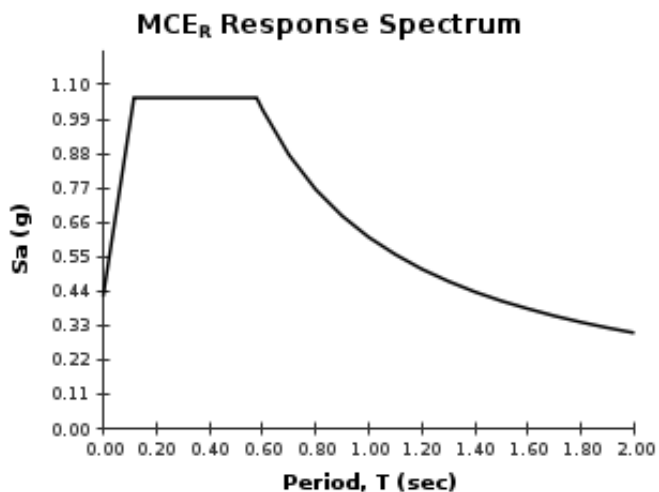


USGS-Provided Output

$$S_s = 1.058 \text{ g} \quad S_{MS} = 1.058 \text{ g} \quad S_{DS} = 0.706 \text{ g}$$

$$S_1 = 0.455 \text{ g} \quad S_{M1} = 0.612 \text{ g} \quad S_{D1} = 0.408 \text{ g}$$

For information on how the S_s and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the “2009 NEHRP” building code reference document.



For PGA_M , T_L , C_{RS} , and C_{R1} values, please [view the detailed report](#).

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_s) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From [Figure 22-3](#) ^[1]

$$S_s = 1.058 \text{ g}$$

From [Figure 22-4](#) ^[2]

$$S_1 = 0.455 \text{ g}$$

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

Site Class	\bar{v}_s	\bar{N} or \bar{N}_{ch}	\bar{s}_u
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
Any profile with more than 10 ft of soil having the characteristics: <ul style="list-style-type: none"> • Plasticity index $PI > 20$, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\bar{s}_u < 500$ psf 			
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient F_a

Site Class	Mapped MCE _R Spectral Response Acceleration Parameter at Short Period				
	$S_s \leq 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_s

For Site Class = C and $S_s = 1.058$ g, $F_a = 1.000$

Table 11.4-2: Site Coefficient F_v

Site Class	Mapped MCE _R Spectral Response Acceleration Parameter at 1-s Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_1

For Site Class = C and $S_1 = 0.455$ g, $F_v = 1.345$

Equation (11.4-1):

$$S_{MS} = F_a S_s = 1.000 \times 1.058 = 1.058 \text{ g}$$

Equation (11.4-2):

$$S_{M1} = F_v S_1 = 1.345 \times 0.455 = 0.612 \text{ g}$$

Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4-3):

$$S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.058 = 0.706 \text{ g}$$

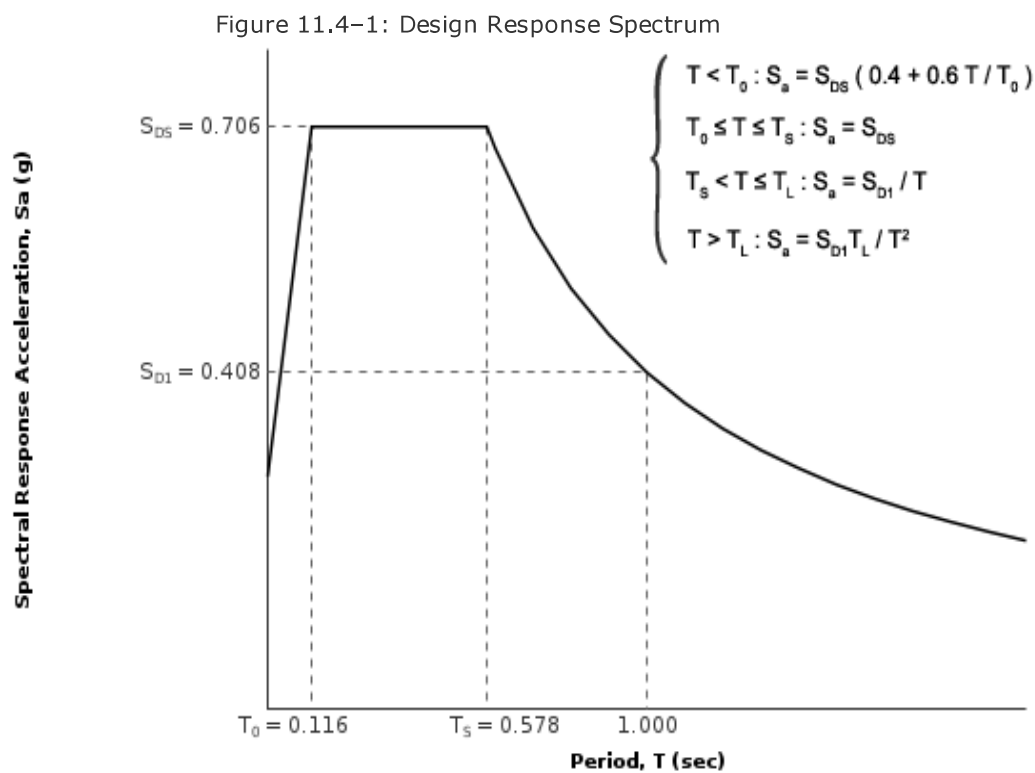
Equation (11.4-4):

$$S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.612 = 0.408 \text{ g}$$

Section 11.4.5 — Design Response Spectrum

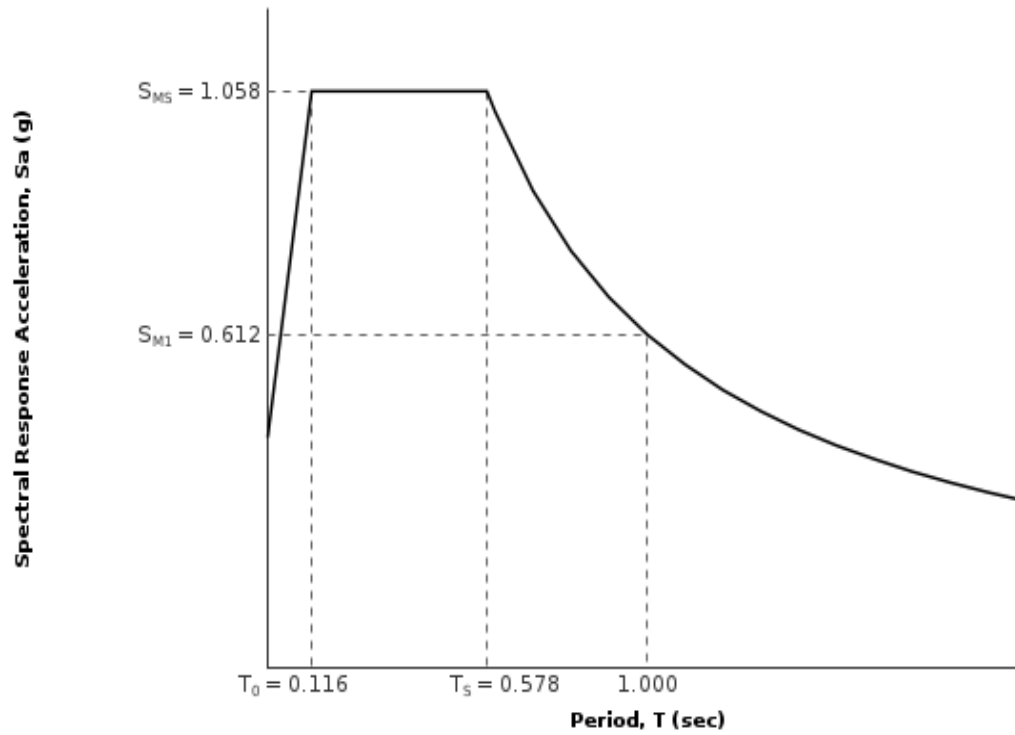
From [Figure 22-13](#) ^[3]

$T_L = 12$ seconds



Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From [Figure 22-9](#) ^[4]

$$PGA = 0.427$$

Equation (11.8-1):

$$PGA_M = F_{PGA} PGA = 1.000 \times 0.427 = 0.427 \text{ g}$$

Table 11.8-1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of PGA

For Site Class = C and PGA = 0.427 g, $F_{PGA} = 1.000$

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From [Figure 22-17](#) ^[5]

$$C_{RS} = 1.002$$

From [Figure 22-18](#) ^[6]

$$C_{R1} = 1.020$$

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and $S_{DS} = 0.706 g$, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and $S_{D1} = 0.408 g$, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category \equiv "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

1. Figure 22-3: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-3.pdf
2. Figure 22-4: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-4.pdf
3. Figure 22-13: http://ehp2-earthquake.wr.usgs.gov/designmaps/us/2010_ASCE-7_Figures_22-13_and_22-14.pdf
4. Figure 22-9: http://ehp2-earthquake.wr.usgs.gov/designmaps/us/2010_ASCE-7_Figures_22-8_and_22-9.pdf
5. Figure 22-17: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. Figure 22-18: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

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APPENDIX D-3
PROBABILISTIC SEISMIC HAZARD DEAGGREGATION (USGS, 1996)

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Prob. Seismic Hazard Deaggregation

ARRC_Brdg_3707 149.1177° W. 64.0119 N.

Peak Horiz. Ground Accel. ≥ 0.1164 g

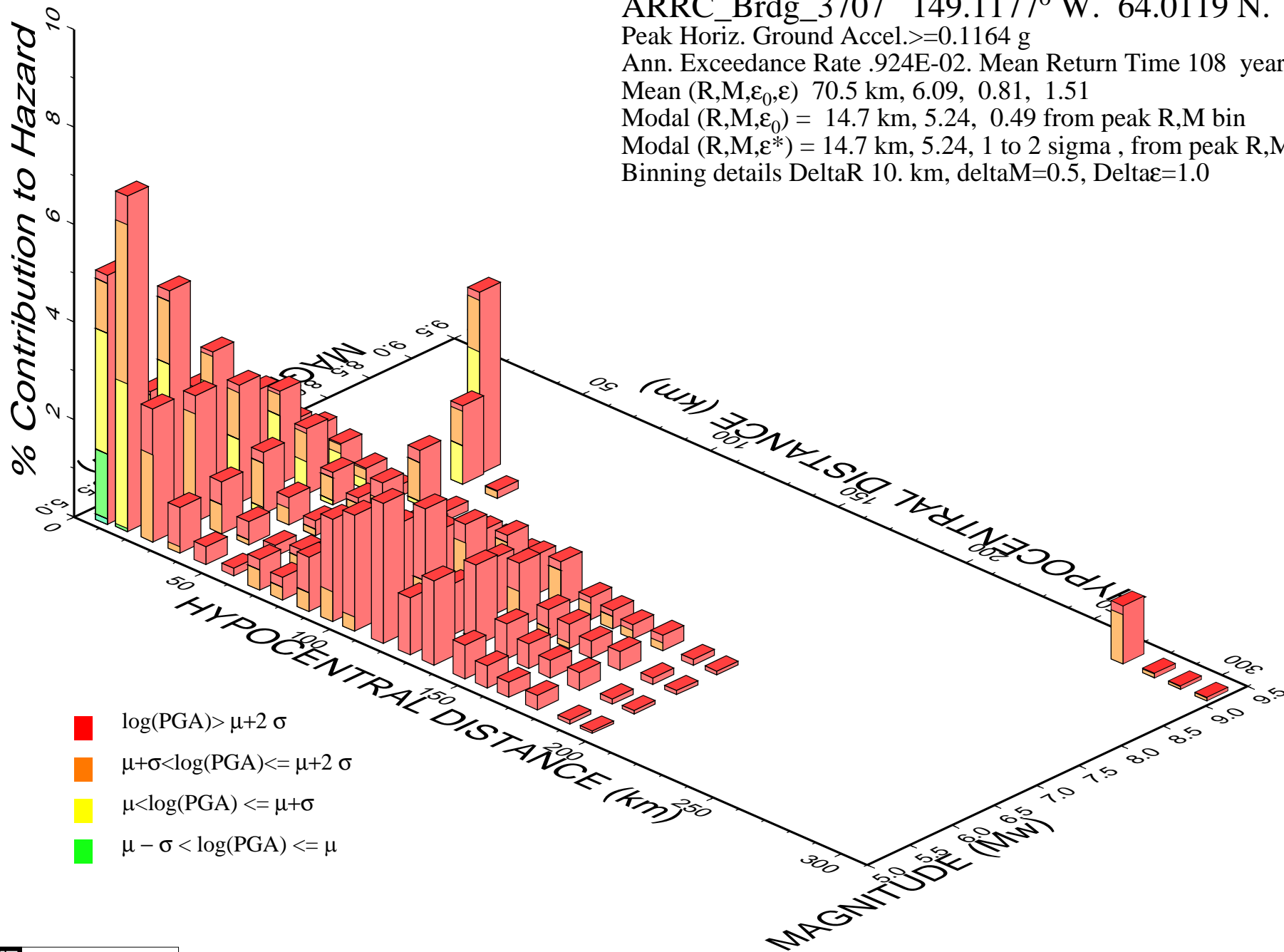
Ann. Exceedance Rate .924E-02. Mean Return Time 108 years

Mean (R,M, ϵ_0 , ϵ) 70.5 km, 6.09, 0.81, 1.51

Modal (R,M, ϵ_0) = 14.7 km, 5.24, 0.49 from peak R,M bin

Modal (R,M, ϵ^*) = 14.7 km, 5.24, 1 to 2 sigma, from peak R,M, ϵ bin

Binning details DeltaR 10. km, deltaM=0.5, Delta ϵ =1.0



Prob. Seismic Hazard Deaggregation

ARRC_Brdg_3707 149.1177° W. 64.0119 N.

Peak Horiz. Ground Accel. ≥ 0.2166 g

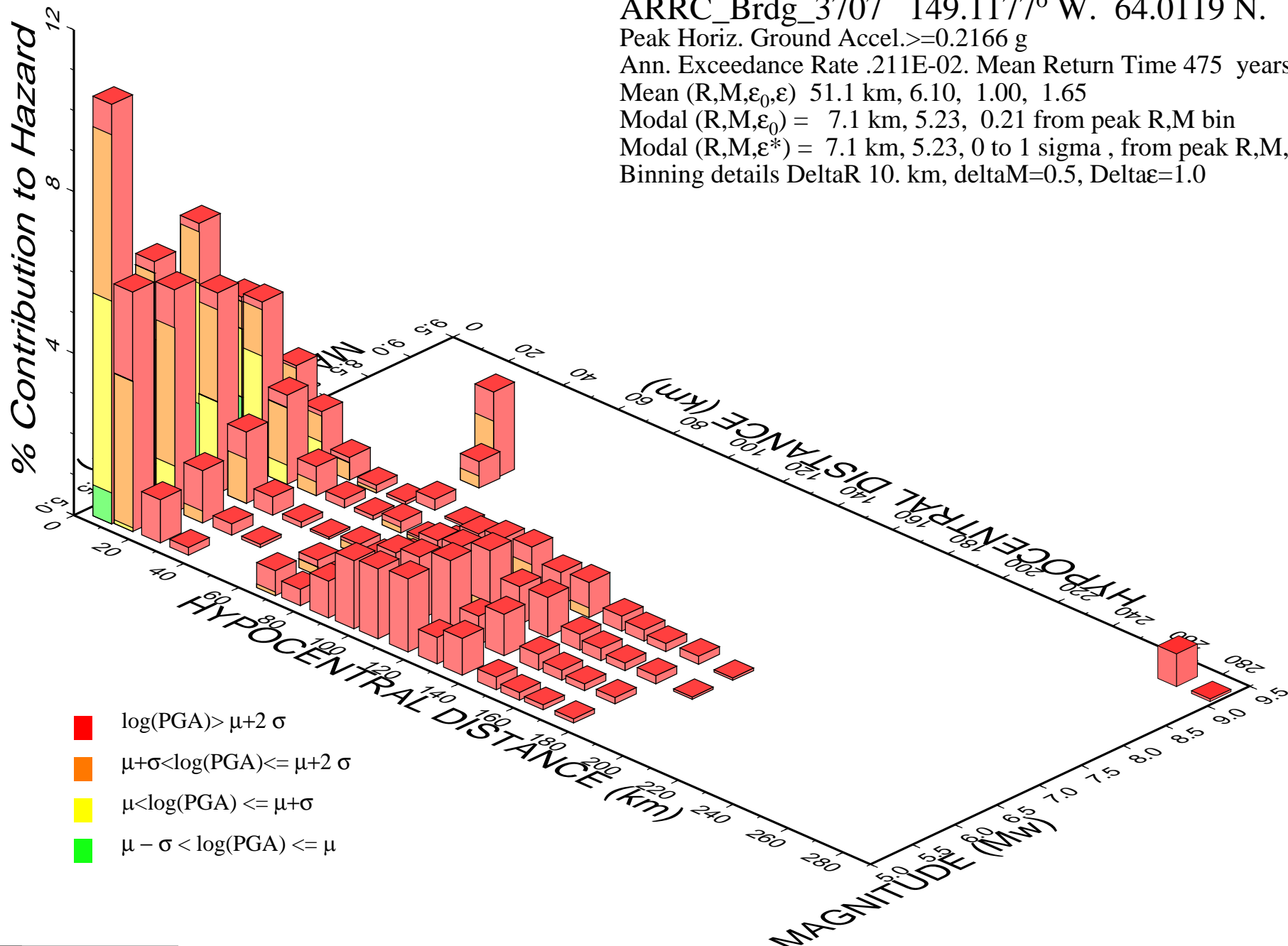
Ann. Exceedance Rate .211E-02. Mean Return Time 475 years

Mean (R,M, ϵ_0 , ϵ) 51.1 km, 6.10, 1.00, 1.65

Modal (R,M, ϵ_0) = 7.1 km, 5.23, 0.21 from peak R,M bin

Modal (R,M, ϵ^*) = 7.1 km, 5.23, 0 to 1 sigma, from peak R,M, ϵ bin

Binning details DeltaR 10. km, deltaM=0.5, Delta ϵ =1.0



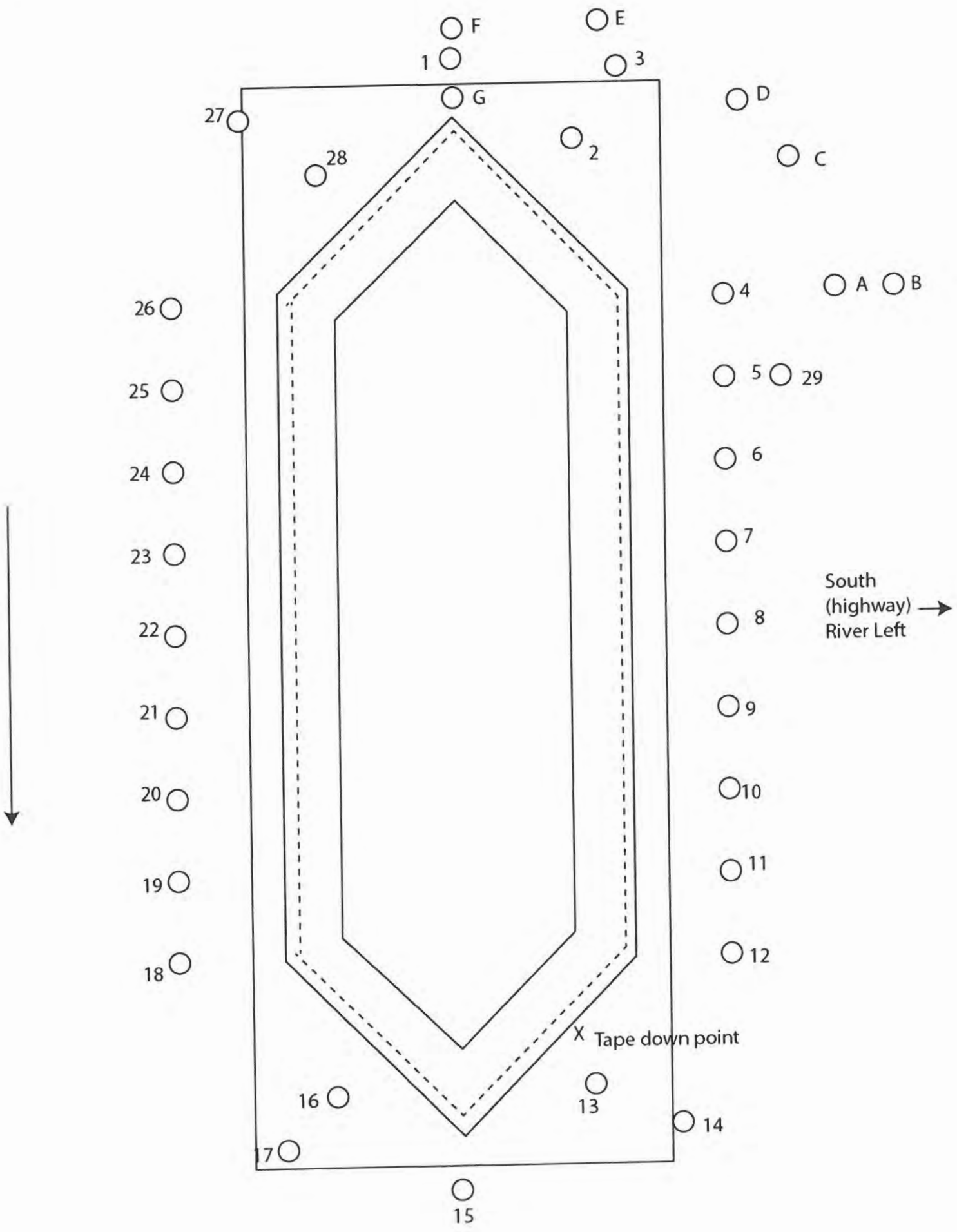
APPENDIX E
USGS STREAMBED MEASUREMENTS

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**APPENDIX E-1
USGS FIELD NOTES**

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upstream



Downstream

Dashed line is approximate ice line around pier

Pt #	Depth From Top of Ice	Note	Top of Ice Streambed Elevation	
1	16.8		1016.68	999.88
2	10.3		1016.74	1006.44
3	10.3		1016.68	1006.38
4	17.4		1016.77	999.37
5	18.3		1016.95	998.65
6	19.1	gravel bed	1018.51	999.41
7	19.2	soft gravel	1018	998.8
8	19.2		1018.05	998.85
9	18.5	current rattled ice rod	1016.92	998.42
10	18.1	soft gravel	1016.88	998.78
11	17.9		1016.79	998.89
12	18.1		1016.79	998.69
13	9.5		1016.79	1007.29
14	9.7		1016.9	1007.2
15	15.15		1017.22	1002.07
16	10.7		1018.98	1008.28
17	10		1017.25	1007.25
18	10.2	solid bottom (footing?)	1018.98	1008.78
19	10.97	solid bottom (footing?)	1019	1008.03
20	10.9	gravel bed	1018.96	1008.06
21	10.95	gravel bed	1018.96	1008.01
22	11.8	soft gravel	1018.88	1007.08
23	10.5		1018.89	1008.39
24	12.3		1018.94	1006.64
25	13		1017.62	1004.62
26	10.5		1017.24	1006.74
27	11.6	solid bottom (footing?)	1017.04	1005.44
28	10.85	strong current rattled ice rod	1017.2	1006.35
29	4.2	ripap or woody debris?	1017.04	1012.84
A	15.5		1016.95	1001.45
B	17.6		1017.85	1000.25
C	18.8		1016.69	997.89
D	10.7	solid bottom (footing?)	1016.68	1005.98
E	15.9	gravel bed	1016.72	1000.82
F	16.6		1016.73	1000.13
G	16.5		1016.73	1000.23

Survey

Known Elevation is Top of Pier:	1035.7
Footing/Sandstone:	1007.5
Tape Down Top of Rail on Ped Walkway to Top of Pier	11.15
Tape Down Top of Rail on Ped Walkway to Top of Ice	30.05
Top of Rail on Ped Walkway	1046.85
Top of Ice Elevation DS of Pier:	1016.8

PT	Level Read	Elevation	
PT			
Tape Down Point on top of ice	7.26	1016.8	
Ice Holes A	7.36	1016.7	
B	6.21	1017.85	
C	7.37	1016.69	
D (Also 3)	7.38	1016.68	
E	7.34	1016.72	
F	7.33	1016.73	
G	7.33	1016.73	
	1	7.38	1016.68
	2	7.32	1016.74
	3	7.38	1016.68
	4	7.29	1016.77
	5	7.11	1016.95
	6	5.55	1018.51
	7	6.06	1018
	8	6.01	1018.05
	9	7.14	1016.92
	10	7.18	1016.88
	11	7.27	1016.79
	12	7.27	1016.79
	13	7.27	1016.79
	14	7.16	1016.9
	15	6.84	1017.22
	17	6.81	1017.25
TURN 1		6.65	1017.41
TURN 2		4.58	1017.41
	16	3.01	1018.98
	18	2.99	1019
	19	3.03	1018.96
	20	3.03	1018.96
	21	3.11	1018.88
	22	3.1	1018.89
	23	3.05	1018.94
	24	4.37	1017.62
	25	4.75	1017.24
	26	4.95	1017.04
	27	4.79	1017.2
	28	4.95	1017.04
	29	same as 5	1016.95

APPENDIX E-2
GOLDER'S INTERPRETATION OF USGS STREAMBED MEASUREMENTS

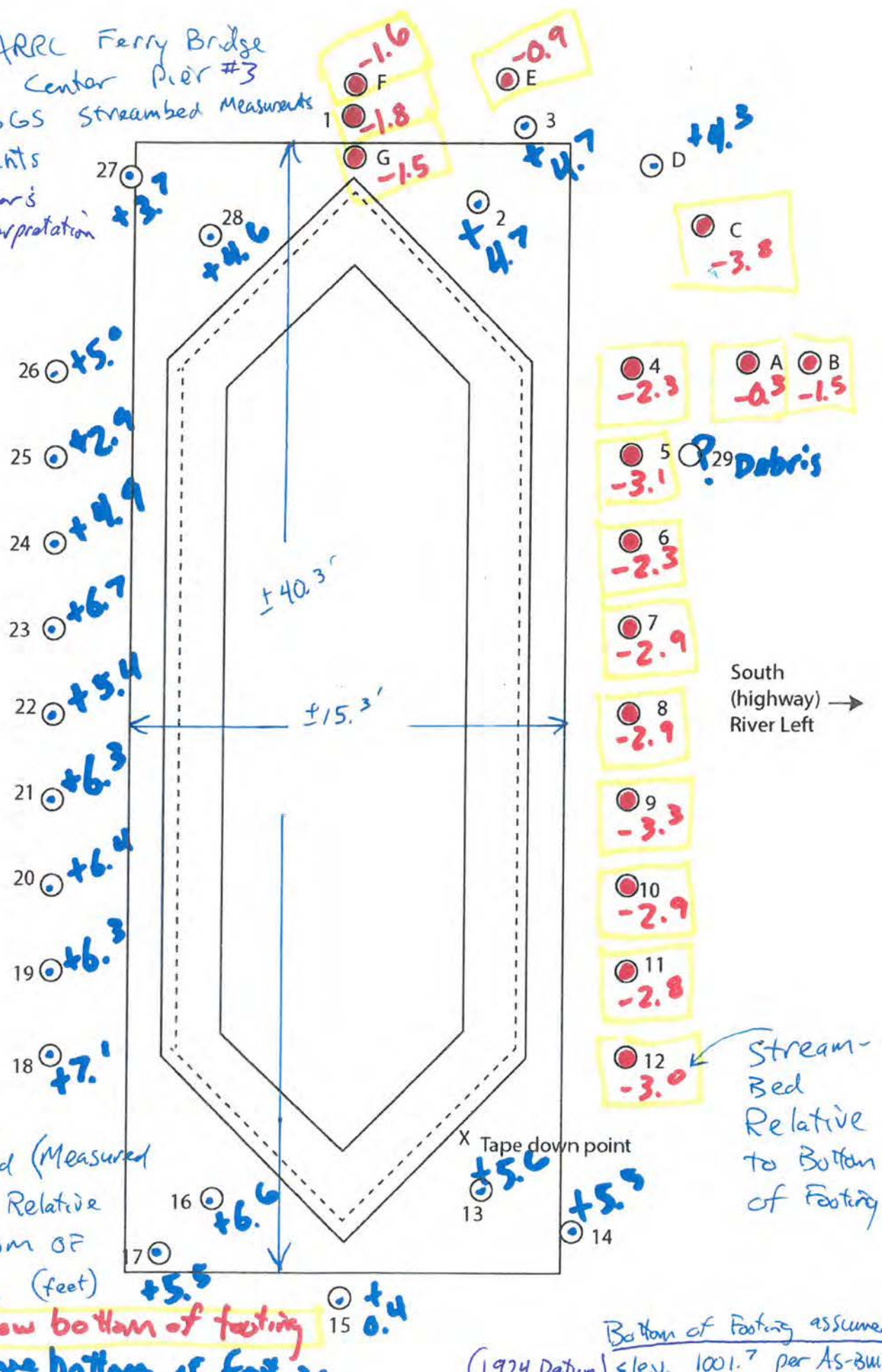
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upstream

ARRC Ferry Bridge
Center Pier #3

USGS Streambed Measurements

Points
Goldar's
Interpretation



LEGEND

Streambed (Measured 03-2015) Relative to BOTTOM OF FOOTING (feet)

- below bottom of footing
+ above bottom of footing

X Tape down point

South (highway) →
River Left →

Stream-Bed Relative to Bottom of Footing

Bottom of Footing assumed (1924 Datum) Elev. 1001.7 per AS-BUILT
Dashed line is approximate ice line around pier (2014 Datum) Elev. 987.0

Downstream

ARRC Ferry Bridge - Center Pier - Streambed Measurements by USGS March 2015

pt #	Depth From Top of Ice	Notes	Top of Ice (1924 as-built datum)	Top of Ice (2014 survey, NAVD88 datum)	Streambed Elevation (1924 as-built datum)	Streambed Elevation (2014 survey, NAVD88 datum)	Streambed RELATIVE to BOTTOM OF FOOTING	Survey	Elev. (1924 as-built datum)	vertical translation between datums	Elev. (2014 survey, NAVD88 datum)
1	16.8		1016.68	1002.0	999.88	985.2	-1.8	Known Elevation is Top of Pier: Footing/"Sandstone" : TOP OF FOOTING BOTTOM OF FOOTING	1035.7	-14.7	1021
2	10.3		1016.74	1002.0	1006.44	991.7	4.7		1007.5		
3	10.3		1016.68	1002.0	1006.38	991.7	4.7		1007.7	Per As-	993
4	17.4		1016.77	1002.1	999.37	984.7	-2.3		1001.7	Built	987
5	18.3		1016.95	1002.3	998.65	984.0	-3.1				
6	19.1	gravel bed	1018.51	1003.8	999.41	984.7	-2.3	Tape Down Top of Rail on Ped Walkway to Top of Pier	11.15		
7	19.2	soft gravel	1018	1003.3	998.8	984.1	-2.9	Tape Down Top of Rail on Ped Walkway to Top of Ice	30.05		
8	19.2		1018.05	1003.4	998.85	984.2	-2.9	Top of Rail on Ped Walkway	1046.9		
9	18.5	current rattled ice rod	1016.92	1002.2	998.42	983.7	-3.3	Top of Ice Elevation DS of Pier:	1016.8		
10	18.1	soft gravel	1016.88	1002.2	998.78	984.1	-2.9				
11	17.9		1016.79	1002.1	998.89	984.2	-2.8	PT			elevation
12	18.1		1016.79	1002.1	998.69	984.0	-3.0	Tape Down Point on top of ice		7.26	1016.8
13	9.5		1016.79	1002.1	1007.29	992.6	5.6	A		7.36	1016.7
14	9.7		1016.9	1002.2	1007.2	992.5	5.5	B		6.21	1017.85
15	15.15		1017.22	1002.5	1002.07	987.4	0.4	c		7.37	1016.69
16	10.7		1018.98	1004.3	1008.28	993.6	6.6	D (Also 3)		7.38	1016.68
17	10		1017.25	1002.6	1007.25	992.6	5.5	E		7.34	1016.72
18	10.2	solid bottom (footing?)	1018.98	1004.3	1008.78	994.1	7.1	F		7.33	1016.73
19	10.97	solid bottom (footing?)	1019	1004.3	1008.03	993.3	6.3	G		7.38	1016.68
20	10.9	gravel bed	1018.96	1004.3	1008.06	993.4	6.4		1	7.32	1016.74
21	10.95	gravel bed	1018.96	1004.3	1008.01	993.3	6.3		2	7.32	1016.74
22	11.8	soft gravel	1018.88	1004.2	1007.08	992.4	5.4		3	7.38	1016.68
23	10.5		1018.89	1004.2	1008.39	993.7	6.7		4	7.29	1016.77
24	12.3		1018.94	1004.2	1006.64	991.9	4.9		5	7.11	1016.95
25	13		1017.62	1002.9	1004.62	989.9	2.9		6	5.55	1018.51
26	10.5		1017.24	1002.5	1006.74	992.0	5.0		7	6.06	1018
27	11.6	solid bottom (footing?)	1017.04	1002.3	1005.44	990.7	3.7		8	6.01	1018.05
28	10.85	strong current rattled ice rod	1017.2	1002.5	1006.35	991.7	4.6		9	7.14	1016.92
29	4.2	rirap or woody debris?	1017.04	1002.3	1012.84	998.1	11.1		10	7.18	1016.88
A	15.5		1016.95	1002.3	1001.45	986.8	-0.3		11	7.27	1016.79
B	17.6		1017.85	1003.2	1000.25	985.6	-1.5		12	7.27	1016.79
c	18.8		1016.69	1002.0	997.89	983.2	-3.8		13	7.27	1016.79
D	10.7	solid bottom (footing?)	1016.68	1002.0	1005.98	991.3	4.3		14	7.16	1016.9
E	15.9	gravel bed	1016.72	1002.0	1000.82	986.1	-0.9		15	6.84	1017.22
F	16.6		1016.73	1002.0	1000.13	985.4	-1.6	TURN 1	17	6.81	1017.25
G	16.5		1016.73	1002.0	1000.23	985.5	-1.5	TURN 2		6.65	1017.41
				AVG						4.58	1017.41
				1002.8					16	3.01	1018.98
									18	2.99	1019
									19	3.03	1018.96
									20	3.03	1018.96
									21	3.11	1018.88
									22	3.1	1018.89
									23	3.05	1018.94
									24	4.37	1017.62
									25	4.75	1017.24
									26	4.95	1017.04
									27	4.79	1017.2
									28	4.95	1017.04
									29 same as 5		1016.95

BLUE TEXT EQUATES TO GOLDBER ADDITIONS TO USGS SUPPLIED DATA

Appendix K6
Technical Review of Ice Forces (HDR, May 21, 2015)

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Tech Memo

Date: Thursday, May 21, 2015

Project: ARRC Bridge 370.7 Nenana River Crossing Ferry, AK

To: Travis Ross; Golder Associates, Inc.

From: Jon Zufelt, HDR

Subject: Technical Review of Ice Forces on Bridge Pier #3

Pier #3 of the ARRC Crossing at Ferry, AK over the Nenana River has experienced significant scour at its base as a result of changes in the alignment of the flow direction of the river in the vicinity of the pier. Flow currently approaches the pier at almost 45 degrees to the pier alignment resulting in significant scour of the bed on the “upstream side” of the approach flow. Scour holes have developed that reach below the level of the pier base. The scour holes were repaired with riprap and fill material in April 2015. ARRC has investigated options for repair or replacement of Pier #3. One option is to replace the pier with four 6-ft to 7-ft diameter drilled shafts. This tech memo reviews the calculations of the ice forces that would result on the drilled shaft piles.

1. Ice thickness. Periodic direct ice thickness measurements for this location were not found but there are other indications of the ice thickness at this location. In March 2015, the USGS used a thermal drill to take elevation measurements of the bed of the river around the pier to determine the scour depth. While they did not directly measure the ice thickness, they did report (personal conversation with Robin Beebee, USGS) that the ice thickness was between 4-6 ft based on the length of the shaft of the thermal drill and when it penetrated the bottom of the ice cover. The ice thickness was greater right at the pier than it was several feet away which could be the result of a previous breakup event this winter piling ice around the pier or due to heat conduction resulting in thicker ice at the pier. Photos taken post-breakup show ice pieces stranded on the island upstream of the bridge and along the banks on both sides of the river. These pieces appear to be in the range of 3-5 ft. thick.

A very good record of ice thickness exists at Nenana, AK on the Tanana River just upstream of the mouth of the Nenana River where measurements are taken periodically every winter in association with the Nenana Ice Classic. The ice conditions at that location would be considered closer to those associated with thermal growth as the Tanana River at this location is wide and deep with low discharge rates during the winter months. Ice thickness records go back to 1989 and show that the maximum ice thickness ranges from 30 to 58 inches and generally decreases from the maximum value prior to breakup. Breakup dates have been recorded since 1917 and range from April 20 to May 20. The range of ice thicknesses recorded include the effects of variations in air temperature and snow cover over the winter.

Based on this information, an appropriate estimate for the thickness of a thermally grown sheet ice cover near Ferry on the Nenana River would be 4 ft. The photos of post-breakup conditions do show pieces that are somewhat thicker and could be composed of both thermally grown and deposited frazil ice. While a conservative value of the ice thickness would be 5 ft for a sheet composed of thermally grown and deposited frazil ice, its strength would be less. Therefore, it is appropriate to use a sheet thickness of 4 ft of thermally grown ice.

2. Ice strength. The Canadian Standards Association (CSA), AASHTO, and AREMA all provide recommendations for ice strength (effective ice crushing pressure) based on the temperature and condition of an ice sheet moving into bridge piers. The ice cover at Ferry would be expected to begin moving as discharges increase from snowmelt and river elevations become high enough to lift the cover from the bed and banks and push it downriver. The CSA code (2000) indicates ice strength of “1.1 MPa (159.5 psi) for ice that breaks up at the melting temperature but the ice moves in large floes and is internally sound.” AASHTO (2012) code specifies ice strength of “24.0 ksf (166.7 psi) where breakup or major ice movement occurs at melting temperatures, but the ice moves in large pieces and is internally sound.” AREMA indicates an ice pressure “in the range of 200 psi (1.4 MPa) where breakup occurs at melting temperatures, but the ice moves in large pieces and is internally sound” or “in the order of 300 psi (2.1 MPa) where at breakup there is an initial movement of the ice sheet as a whole or where large sheets of sound ice may strike the piers”.

The Nenana River near Ferry in 2015 experienced a mid-winter breakup which indicates ice breaking and moving when it is internally sound. Pictures from March 2015 during the USGS scour hole definition show shear walls along the banks and a thermally grown (smoother) cover reformed in the main channel at a slightly lower elevation. It would be expected that this ice cover is lifted and pushed initially as an entire sheet into the bridge pier. The alignment of the river also indicates that large ice pieces would be expected to move down the river during breakup and strike the pier. Pictures taken following breakup in April showed large ice pieces stranded on the upstream island and along the banks, also indicating that general condition of the ice sheet during breakup is that it moves as a sheet initially or in large pieces that are internally sound.

Both the CSA and AASHTO codes use a similar coefficient to account for the effects of the pier width to ice thickness ratio during crushing. The effect of this coefficient is to increase the effective pressure over the relatively small width of narrow structures because the actual contact area of brittle crushing is much smaller than the full contact area of the pier (actual simultaneous crushing only occurs over part of the pier width). As the structure width to ice thickness ratio increases, this coefficient reduces. The empirical coefficient is based on full-scale measurements of ice forces on large structures with high structure width to ice thickness ratios.

The AREMA codes use a simpler empirical coefficient to modify the effective ice pressure dependent on the ratio of pier width to ice thickness, with the effective ice pressure increased for narrow structures and actually decreased slightly for structures that have a width to ice thickness ratio

greater than 3.0.

3. Ice elevation. The elevation that the ice would impart forces on the piers is based on the breakup discharge flows and water surface elevation during breakup. An inspection of the discharge records for the USGS gages of Nenana River at Healy, Nenana River near Healy, and Nenana River near Rex indicate that the discharge rises in late April to May and induces breakup of the cover but the peak discharge of the year often follows the breakup peak by several weeks with the annual peak occurring in late June to late July. The breakup discharge depends on several factors including the stage occurring at freeze-up, ice thickness, and the rate of increase in discharge during breakup. It is likely that breakup discharge can vary from year to year and range from 5000 to 10,000 cfs at Ferry. The HEC-RAS model of the Ferry reach indicates that the water levels associated with this discharge range would be approximately 1005-1008 ft (NAVD88). Assuming an ice cover thickness of 4 ft, this would result in the maximum ice forces (due to the sheet failing in continuous crushing mode) occurring on the piers between 1004.5 – 1008.5 ft (NAVD88). Top of ice measurements taken during the USGS scour investigation during March 2015 indicated elevations in the range of 1002-1003 ft (NAVD88). A rule of thumb is that the water level must rise between 1 – 1.5 times the ice thickness to result in breakup of the cover. For the 4 ft thick cover, this would be a breakup ice elevation of 1006-1008 ft (NAVD88) which compares well with the elevations estimated by the HEC-RAS model for a 4 ft thick ice cover.
4. Ice forces on drilled shaft piers. Three conditions of ice forces should be considered in determining the design of the new pier structure.
 - a. Four new drilled shaft piers with the existing masonry pier removed. This condition would provide less flow blockage with the ice sheet failing in crushing at each of the piers. Based on the current approach flow direction of approximately 45 degrees to the alignment of the existing pier, the pier spacing is approximately 18 ft normal to the flow direction and each pier would experience the crushing force of the ice sheet acting on it, representing the maximum total force on the structure. For other approach flow alignments (such as 35 degrees) the leading and trailing piers would cut the same track through the ice, resulting in only three of the four piers experiencing crushing force loadings. Assuming an ice thickness of 4 ft, pier width of 6 ft, $C_a = 2.08$: AASHTO (166.7 psi) provides a force of 1200 kips. AREMA (300 psi but with a coefficient of ~ 1.1) provides a force of 1140 kips. Assuming an ice thickness of 4 ft, pier width of 7 ft, $C_a = 1.96$: AASHTO (166.7 psi) provides a force of 1315 kips. AREMA (300 psi but with a coefficient of ~ 1.05) provides a force of 1270 kips.
 - b. Four new drilled shaft piers with the existing masonry pier remaining. This condition would cause considerable flow blockage and result in a combined structure width of approximately 45 ft (with the incoming flow direction at approximately 45 degrees to the alignment of the existing pier). AASHTO provides 5193 kips and AREMA provides 6220 kips total on the pier structure. In this case, the drilled shafts would bear approximately 40-45% of the total load.
 - c. Ice jammed conditions with the ice moving as a broken cover or jam through the structure. Under this condition, the ice jam thickness would be greater than the sheet ice thickness but the forces are much less. Forces are based on passive pressure theory for a granular

material (ice pieces) in a jammed condition acting on the pier structure. For a rubble accumulation approximately 10 ft thick (the estimate of the ice jam thickness upstream of the bridge), the force acting in the downstream direction would be 640 lbs/ft of width acting at an elevation of 1003 to 1013 ft (NAVD88). This would amount to 3.8 kips on each 6 ft diameter drilled shaft pier or 4.5 kips on each 7 ft diameter pier.

5. This review covers the likely ice strength, thickness, and failure mode (crushing) as well as the procedure used for calculating the resultant ice forces on proposed drilled shaft piers. No review of the structural design of the pier structure has been provided.

Appendix K7
Bridge Pier Survey (TerraSond, April 2, 2015)

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Alaska Railroad Ferry Bridge Pier Survey

Survey Dates:
March 30, 2015 – March 31, 2015

Technical Memo

Submittal:
April 2, 2015

Submitted to:



Submitted by:



907-745-7215

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TABLE OF CONTENTS

1 **SURVEY PLAN SUMMARY** 1

2 **SURVEY OPERATIONS** 1

3 **PROJECT GEODETICS** 2

4 **DATA REDUCTION AND PROCESSING** 2

 4.1 OPUS SOLUTION 2

 4.2 TOTAL STATION 3

5 **SURVEY RESULTS** 3

 5.1 CONTROL POINT OBSERVATIONS 3

 5.2 RIVER BED TOPOGRAPHY 3

 5.3 ROCK PILE VOLUMES 4

6 **DELIVERABLES** 4

7 **APPENDICES** 4

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1 SURVEY PLAN SUMMARY

Due to changing conditions of the Nenana River the Alaska Railroad Corporation (ARRC) had expressed concern about erosion of river sediments around the central pier of the Ferry, Alaska Railroad Bridge.

A preliminary study performed through the ice in March 2015 by personnel from the USGS confirmed that scouring of the river sediments had developed adjacent to the central bridge pier. TerraSond Limited (TerraSond) was hired by HDR Inc. (HDR) to deploy a high resolution 3D scanning sonar that would be used to quantify the depth and extent of the riverbed scour and image the pier footing. The plan was to deploy the sonar through the river ice which measured 5 to 6 feet thick at the time of request. Before TerraSond was deployed to the site, Brice Inc. (Brice) was hired by ARRC to start filling the scour with large rock that would resist erosion and protect the structure. It was thought the scanning sonar could still be used at this point to image the protective rock structure and look for additional scour holes around the pier that may have been missed during the remedial process.

On March 29th TerraSond received direction to mobilize to Ferry, AK where the sonar would be deployed. Upon arriving on March 30 TerraSond found the site in a condition far different than expected. All ice leading up to and around the pier had been removed and rock was being trucked to the pier on a temporary road that was at least two feet underwater. This new site condition rendered the sonar deployment system unusable.

Unable to deploy the sonar TerraSond worked with ARRC Project Director Mark Peterburs to develop an alternative survey plan. It was determined that TerraSond would perform a topographic survey of the rock placed around the pier using a total station. Access to the site would be provided by Brice using their Hitachi 450 excavator. Mr. Peterburs also requested that TerraSond survey the remaining rock piles for volume computation purposes.

2 SURVEY OPERATIONS

TerraSond's Palmer based field crew mobilized to the Ferry, Alaska worksite on March 30th. After developing an alternative survey plan TerraSond spent the afternoon locating and verifying local survey control monuments. A Leica GS14 GPS base station broadcasting RTK corrections was established over NGS monument TT2978 stamped "STEEL 1942". A Leica GS14 GPS rover was then used to check in on NGS published survey control point TT2980. A summary of utilized NGS control points are provided in Table 1. Two additional temporary monuments were established on either side of the river for use during the total station survey. These two monuments were surveyed with RTK GPS using 180 second observations. Table 3 provides coordinates for TerraSond's temporary control points and observations on existing control points.

On March 31st TerraSond met with Brice to begin the topo survey of the placed rock around the central bridge pier. 112 points were measured with the total station. The area along the north side of the pier was inaccessible due to the proximity of the swift and deep river channel. The total station was also used to verify the elevation of the top of pier for comparison with previous observations (Table 3).

Following the topo survey RTK GPS was used to survey the remaining rock piles for volume computation. Table 4 summarizes the material pile surveys.

Station	Published Coordinates Northing (ft)	Published Coordinates Easting (ft)	Published Ortho-Height NAVD88 (ft)	Description
TT2978 Vertical- Horizontal	3657305.955	1781520.436	1031.43	Bronze Disk Stamped "Steel 1942"
TT6764 Horizontal	3659016.548	1781766.995		Brass Disk Stamped T10S-R8W-S28/CWS33 1917-SEARCHED FOR, NOT FOUND
TT2980 Vertical			1028.21	Azimuth Mark Disk Stamped "Steel 1942"

Table 1. NGS Published Control point data. Horizontal datum NAD83(1986). State Plane Alaska Zone 4. Vertical Datum NAVD 88. Units - U.S. Survey Feet.

3 PROJECT GEODETICS

The survey was conducted in the following geodetics:

- Horizontal Datum: North American Datum of 1983 (1986)
- Horizontal Projection: Alaska State Plane Zone 4
- Vertical Datum: Project Datum
- Units: US Survey Feet

4 DATA REDUCTION AND PROCESSING

4.1 OPUS SOLUTION

An OPUS submission was processed from two independent static sessions collected at "Steel 1942". The data was very noisy due to the location of the monument and yielded the following results for a gross-error check.

PID	MONUMENT	NGS-RECORD			DELTA (NGS-OPUS)			OPUS		
		N (ft)	E (ft)	Z (ft)	N (ft)	E (ft)	Z (ft)	N (ft)	E (ft)	Z (ft)
TT2978	STEEL 1942	3657305.95	1781520.43	1031.43	1.98	-1.26	1.36	3657303.97	1781521.70	1030.07

Table 2. "STEEL 1942 Control Point summary". Horizontal datum NAD83(1986). State Plane Alaska Zone 4. Vertical Datum NAVD 88. Units - U.S. Survey Feet.

4.2 TOTAL STATION

RTK methods were used to establish temporary project control to utilize the total station for conventional topography. Two temporary control points were set and 180 epoch RTK observations were used and recorded for use in controlling the site. A Nikon DTM-522 total station was then set up for topographic data collection.

5 SURVEY RESULTS

5.1 CONTROL POINT OBSERVATIONS

Station	Observed Coordinates Northing (ft)	Observed Coordinates Easting (ft)	Observed Ortho-Height NAVD 88 (ft)	Description
TT2978 Vertical- Horizontal	3657303.97	1781521.70	1030.07	NGS OPUS Solution Bronze Disk Stamped "Steel 1942"
TT2980 Vertical	3659317.64	1781910.35	1029.13	Azimuth Mark Disk Stamped "Steel 1942"-RTK observed position
HUB-1	3659875.52	1781994.49	1009.61	Temporary Control Station for Total Station-RTK observed position
ROCK-X	3659403.42	1781908.12	1007.77	Temporary Control Station for Total Station- RTK observed position
Station	Observed Coordinates Northing (ft)	Easting (ft)	Project Datum (US Survey Ft)	Description
Top of Bridge Pier	3659595.59	1781980.64	1033.5	Position taken toward the west side of flat surface of pier under the pedestrian walkway, average position of two shots
Orange Spray- Paint Dots	3659597.00	1781978.11	1015.9	Used by Brice & ARRC for locative purposes, average position of two shots

Table 3. Project Control Points and Reference Marks Surveyed by TerraSond. Horizontal datum NAD83(1986). State Plane Alaska Zone 4. Vertical Datum NAVD 88. Units - U.S. Survey Feet.

5.2 RIVER BED TOPOGRAPHY

Topography data collection for area around the pier was limited to safe access by the excavator. Data collected, adjusted and presented represent the conditions of the site at the time of data collection. An adjustment of (+12.57) was applied to the on-the-fly NAVD88 heights of the temporary control stations to shift the all points vertically into the project datum. The known elevation of the

centerline of the pier of 1033.500 was used from the pdf labelled “Bridge_Blueprints”, as provided by client. The “Bridge_Blueprints” drawing is included as an appendix to this report.

Known Bridge Pier Blueprint Centerline Elevation	1033.500'
Measured NAVD88 Elevation	1020.93'
Vertical Adjustment	+12.57'

5.3 ROCK PILE VOLUMES

Four rock piles were surveyed with RTK GPS. “Original Ground” (OG) to compute the volume of material for “Healy Gold” and “Brown’s Hill Healy” rock piles was computed assuming relatively flat ground under the pile of rocks. For the materials “Skookum” and “Road-Access-Removal” the slope was measured by extrapolating the observable slope of the existing railroad bed. Using AutoCAD Civil 3D, a continuous slope was created using the measured data and extending the slope under the material to the 3D poly line created by points at the slope-toe at each end of the rock pile. Table 4 summarizes the volume computations.

Cut/Fill Report			
Volume Summary			
Name	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)
<i>OG vs SKOOKUM</i>	7086.6	2.9	672
<i>OG vs Road Access Removal</i>	821.7	0	70
<i>Browns Hill OG vs Browns Hill</i>	3454.1	0	601
<i>Healy OG vs Healy Gold</i>	2026.1	0	272

Table 4. Rock pile Cut/Fill Volume Summary Report.

6 DELIVERABLES

The following digital deliverables are included with this report:

- Technical Memo
- .xyz data set of the modified river bed topography
“FERRY_BRIDGE370.7_PIER_PTS_ASPZ4NAD83_PROJ-DATUM_FEET.csv”
- March 30th and 31st Site Condition Photos.

7 APPENDICIES

APPENDIX A: Bridge Blueprint

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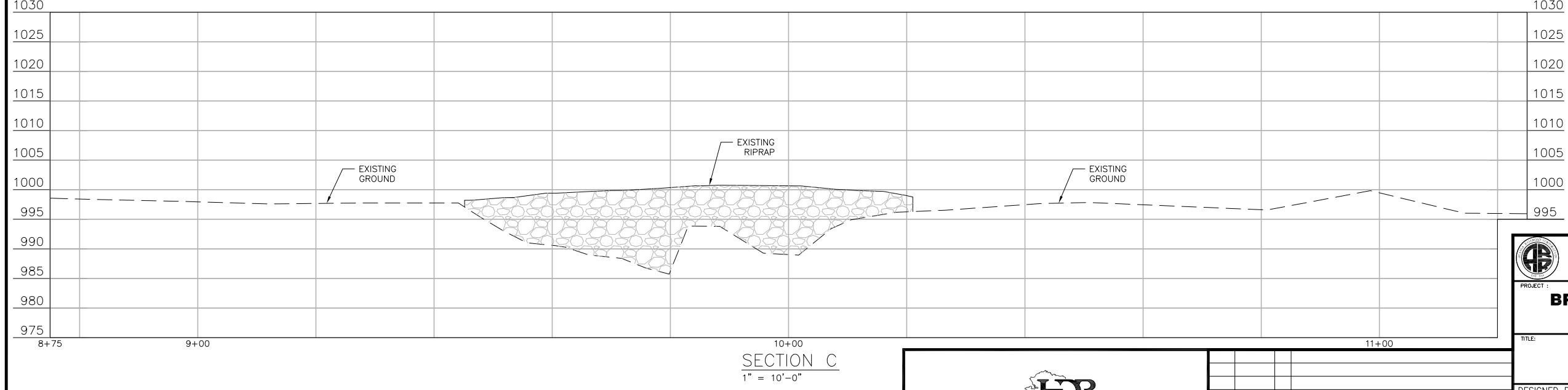
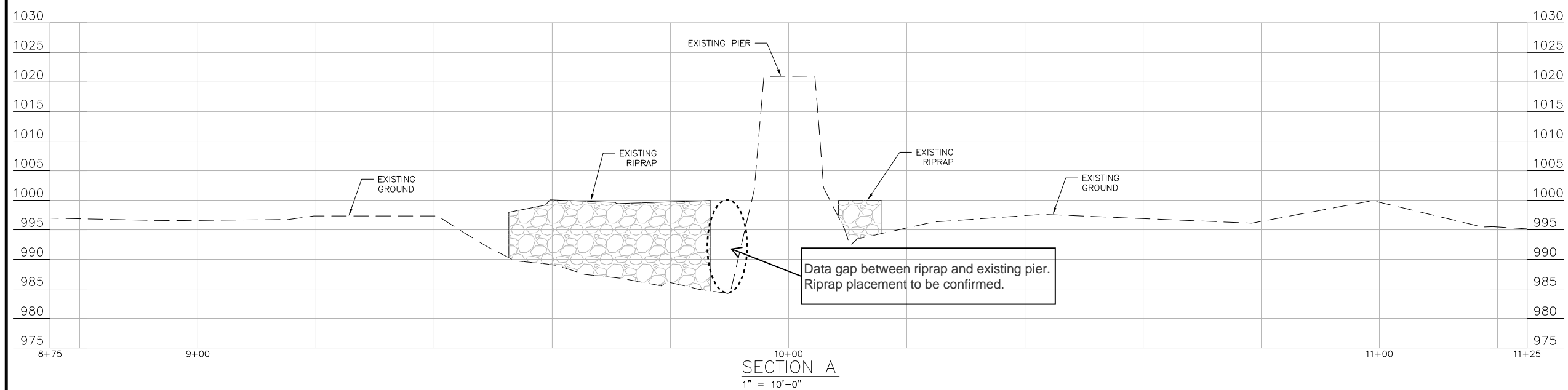
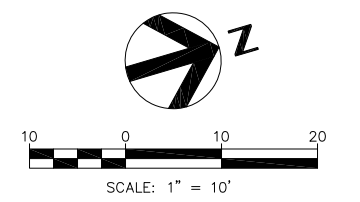
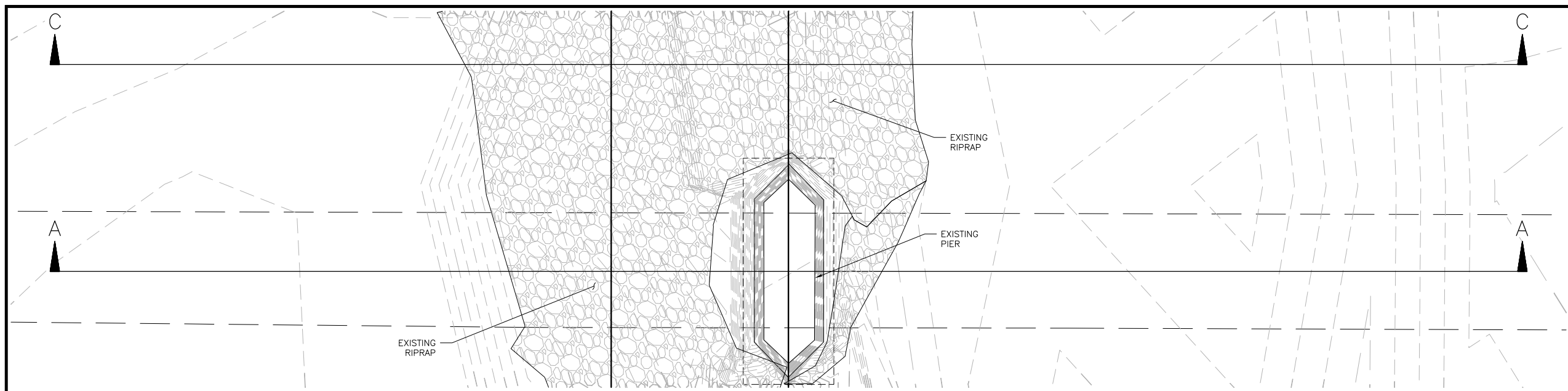
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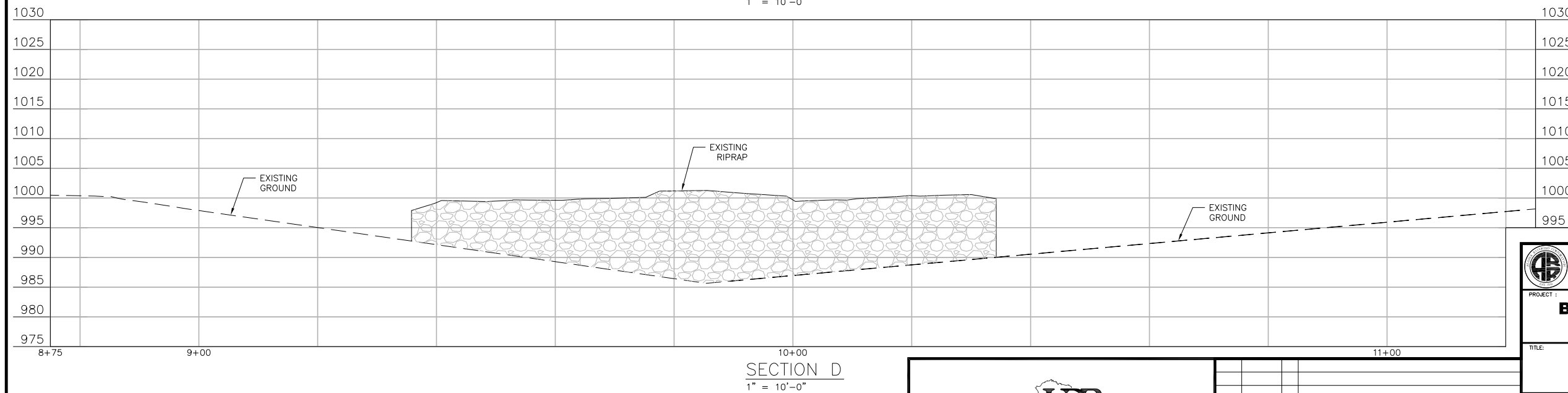
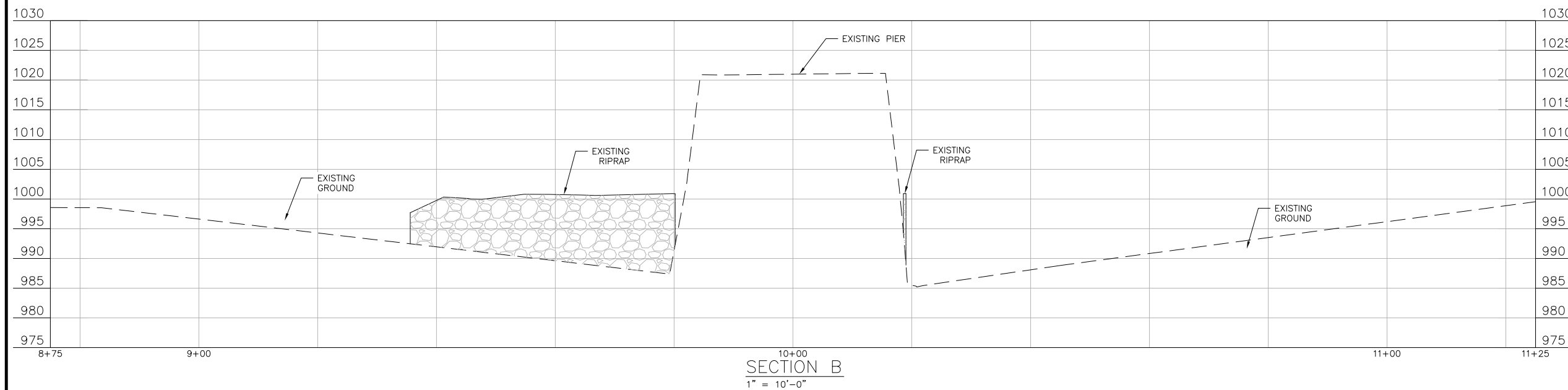
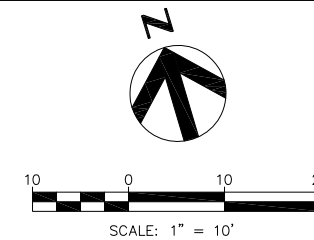
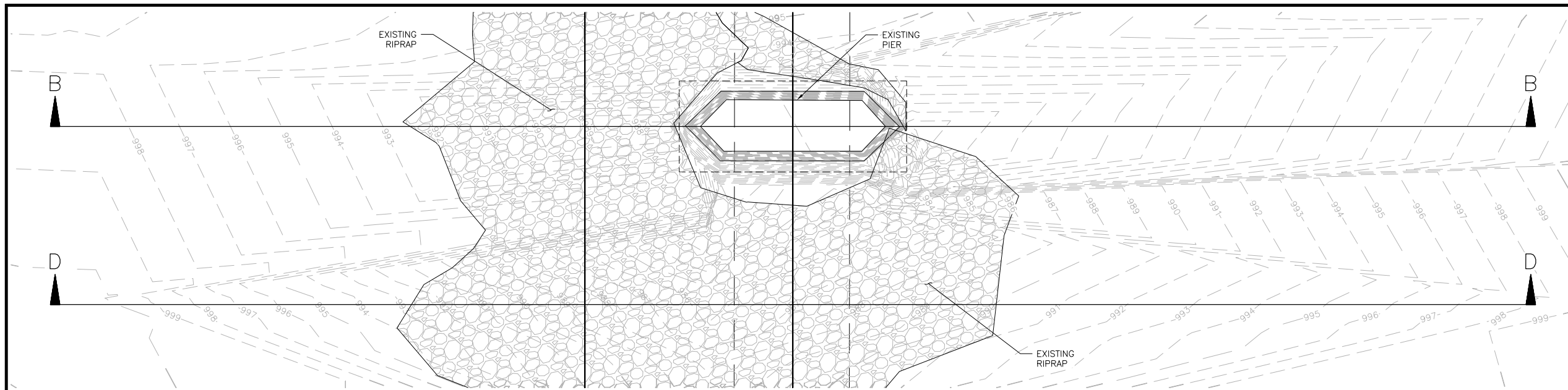


ALASKA RAILROAD CORPORATION ENGINEERING SERVICES <small>P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500</small>			
PROJECT : BR 370.7 NENANA RIVER AT FERRY			
TITLE: EMERGENCY PIER PROTECTION CROSS SECTIONS			
DESIGNED BY:	GTK	SCALE: 1" = 10'	AFE NO.:
DRAWN BY:	PEO	DATE: 05/08/2015	ACAD FILE:
CHECKED BY:			DWG NO.
APPROVED BY:			OF



REV.	DATE	BY	REVISION

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ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT:
BR 370.7 NENANA RIVER AT FERRY

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DESIGNED BY: <u>GTK</u>	SCALE: 1" = 10'	AFE NO.:
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APPROVED BY:		OF



REV.	DATE	BY	REVISION

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Appendix K8
Historical non-current gage data on Nenana River (USGS)

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ARRC BR 3707.7 PIER REPLACEMENT
REFERENCE INFORMATION DOCUMENT 8

NENANA RIVER GAGE 15518000 INFORMATION USGS

https://nwis.waterdata.usgs.gov/ak/nwis/inventory/?site_no=15518000&agency_cd=USGS

NENANA RIVER GAGE 15518040 INFORMATION USGS

https://nwis.waterdata.usgs.gov/ak/nwis/inventory/?site_no=15518040&agency_cd=USGS

NENANA RIVER GAGE 15518300 INFORMATION USGS

https://nwis.waterdata.usgs.gov/ak/nwis/inventory/?site_no=15518300&agency_cd=USGS

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